OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

VOL 34 & 35

JAN THRU APR

1886

MICRO PHOTO INC
CLEVELAND. OHIO

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME XXXIV.

JANUARY 5 TO MARCH 30, INCLUSIVE,

1886.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1886.

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INDEX OF PATENTS AND PATENTEES FOR THE QUARTER YEAR, JANUARY TO MARCH, 1886.

ERRATA.

333,617, page 38, claim 2, line 1, for the reference-figure "31'" read 31.

333,809, page 80, strike out all after number—title, drawings, and claims—and insert CANCELED.

333,905, page 104, in title, name of assignee, for "George B. Adams" read *George B. McAdams.*

333,917, page 107, claim 3, lines 3—4, strike out "intermediately of their length" and insert the same between the words "teeth" and "coiled" in line 3.

334,159, page 181, in title, date of foreign patents, for "July 14" read *June* 14.

334,199, page 195, in title, foreign patents, after number of Belgian patent, insert *and in England Oct.* 11, 1884, *No.* 13,455.

334,346, page 234, in title, date of filing, for "Filed Dec. 21, 1885," read *Original application, No.* 147,067, *filed Nov.* 3, 1884, *divided, and this division, No.* 186,370, *filed Dec.* 21, 1885."

334,354, page 236, in title, residence of assignee, for "same place" read *Detroit, Mich.*

334,880, page 380, claim 4, line 3, strike out the comma after the word "head."

334,982, page 403, in title, name of inventor, for "Reuben F. Redick" read *Reubin F. Redick.*

335,074, page 427, in title, names of assignees, for "himself" read *Edward W. Jewett.*

335,413, page 523, claim 2, line 3, strike out "one."

335,994, page 676, claim 7, last line, for "uncontrolled" read *controlled.*

336,013, page 680, in title, after "(No specimens.)" insert *Patented in England Sept.* 18, 1884, *No.* 12,566; *France Sept.* 3, 1884, *No.* 164,097; *in Italy Sept.* 30, 1884, *No.* 17,354, *and in Germany June* 11, 1885, *No.* 34,420.

336,222, page 744, claim 1, line 2, after the word "throat" insert *in front.*

336,191, page 812, in title, after "assignor" insert *one-half.*

336,509, page 815, in title, after residence of inventors, insert *assignors to Edwin F. Hyatt, same place.*

336,575, page 838, in title, name of assignee, for "Clothier Pierre Haskins" read *Clother Pierce Haskins;* claim 2, line 3, for "bow-string" read *bow-spring.*

336,804, page 896, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

337,037, page 964, in title, after the residence of inventor, insert *assignor to the New York Steam Company.*

337,176, page 999, in title, name of assignee, for "Fiberline Collar Company" read *Fiberlene Collar Company.*

337,188, page 1002, in title, name of assignee, for "Charles W. Shonk" read *Charles W. Shonk.*

337,436, page 1073, claim 2, line 3, and claim 3, line 3, strike out the hyphen between the words "boiler" and "passages" and insert comma.

337,694, page 1129, in title, after "(No specimens.)" insert *Patented in France Aug.* 23, 1884, *No.* 156,171; *in England Aug.* 26, 1884, *No.* 11,655; *in Italy Oct.* 7, 1884, *No.* 17,330 *and No.* 17,331, *and in Austria-Hungary Sept.* 14, 1885, *No.* 17,670 *and No.* 49,311.

337,891, page 1182, in title, after residence of inventors, insert *said Offutt assignor to said Thomas.*

337,987, page 1207, claim 6, line 1, for "springs" read *rings.*

338,667, page 1382, in title, name of inventor, for "Ernst A. Hornbostet" read *Ernst A. Hornbostel.*

338,700, page 1399, in title, names of assignees, after "Dauphin S. Hines" insert *Maria L. Hines, executrix, and Cyrus C. Hines, executor, of said Dauphin S. Hines, deceased.*

10,678, (reissue,) page 247, claim 4, lines 4 and 5, strike out "in proper relative position."

Page 828, tabular statement of patents issued, ratio of population to each patent granted, for "California, one to every 11,740," read *California, one to every* 1,740.

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ANNOUNCEMENTS—VOL. XXXIV.

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

JANUARY–MARCH, 1886.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 34—No. 1. TUESDAY, JANUARY 5, 1886. PRICE—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., December 23, 1885.

SIR: I am directed by the Secretary to inform you that he has ordered that Alfred Little, of Jackson, Breathitt county, Kentucky, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

S. A. JONAS,
Acting Chief Clerk.

The Commissioner of Patents.

The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume. 60 pages. In paper covers, $1.50.

Issue of January 5, 1886.

Patents	494	No. 333,494 to No. 333,987, inclusive.
Designs	3	No. 16,451 to No. 16,453, inclusive.
Trade-Marks	21	No. 12,910 to No. 12,930, inclusive.
Labels	None.	
Reissues	None.	
Total issue	518	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	.....	Montana Territory	1	.....
Arizona Territory	.....	.....	Nebraska	4	.....
Arkansas	.....	.....	New Hampshire	2	.....
California	21	1	New Jersey	20	.....
Colorado	2	.....	New Mexico Territ'y	.....	.....
Connecticut	19	.....	New York	82	5
Dakota Territory	.....	.....	North Carolina	2	.....
Delaware	.....	.....	Ohio	32	.....
District of Columbia	3	.....	Oregon	3	.....
Florida	2	.....	Pennsylvania	55	1
Georgia	3	.....	Rhode Island	8	.....
Idaho Territory	1	.....	South Carolina	.....	.....
Illinois	45	2	Tennessee	1	.....
Indian Territory	.....	.....	Texas	3	.....
Indiana	9	2	Utah Territory	.....	.....
Iowa	9	.....	Vermont	3	.....
Kansas	5	.....	Virginia	5	.....
Kentucky	2	.....	Washington Territ'y	1	.....
Louisiana	1	.....	West Virginia	.....	.....
Maine	4	.....	Wisconsin	9	.....
Maryland	5	3	Wyoming Territory	.....	.....
Massachusetts	50	4	United States Army	.....	.....
Michigan	17	1	United States Navy	.....	.....
Minnesota	8	1			
Mississippi	1	.....	Total to citizens of		
Missouri	12	.....	the United States	452	20

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria-Hungary	2	.....	Germany	9	.....
Barbadoes	.....	.....	Hawaii	1	.....
Belgium	1	.....	Holland	.....	.....
Bermuda	.....	.....	Ireland	1	.....
Brazil	.....	.....	Mexico	.....	.....
Canada	5	.....	Norway	.....	.....
Central America	1	.....	Russia	1	.....
Colombia, U. S. of	.....	.....	Scotland	1	.....
Cuba	.....	.....	Switzerland	5	.....
Denmark	.....	.....	Victoria	.....	.....
Egypt	.....	.....			
England	13	1	Total to citizens of		
France	5	.....	foreign countries	45	1

DESIGNS.

16,451.—TABLE-FOUNTAIN.—*George Brown*, Washington, D. C. Application filed November 7, 1885. Serial No. 182,153. Term of patent 3½ years.

16,452.—DISHES FOR TABLE-SERVICE.—*Charles Ed. Haviland*, Limoges, France. Application filed October 5, 1883. Serial No. 108,230. Term of patent 14 years.

16,453.—INKSTAND.—*William A. Pike*, New York, N. Y. Application filed December 3, 1885. Serial No. 184,648. Term of patent 7 years.

TRADE-MARKS.

(Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.)

12,910.—CHEWING AND SMOKING TOBACCO.—*American Eagle Tobacco Company*, Detroit, Mich. Application filed December 4, 1885.
"The words 'LABOR UNION' and a picture of the uplifted arm of an artisan flanked upon either side by the letters 'L U.'"

12,911.—CORSETS.—*Bay State Corset Company*, West Brookfield, Mass. Application filed November 21, 1885.
"The word 'EQUILINE.'"

12,912.—CORSETS.—*Bay State Corset Company*, West Brookfield, Mass. Application filed November 21, 1885.
"The word 'TOKOLINE.'"

12,913.—AERATED WATER.—*Richard Bryant Oater*, Bath, county of Somerset, England. Application filed December 15, 1885.
"The word 'SULIS.'"

12,914.—WHEAT-FLOUR.—*Central Milling Company*, Niagara Falls, N. Y. Application filed November 27, 1885.
"The words 'BRIDAL VEIL.'"

12,915.—CURE FOR NASAL CATARRH, COLD, AND HAY-FEVER.—*Frank E. Engelman*, Philadelphia, Pa. Application filed December 10, 1885.
"The word 'SNUFFENE.'"

12,916.—LAUNDRY-SOAP.—*N. K. Fairbank & Company*, Chicago, Ill. Application filed December 11, 1885.
"The word 'FLANNEL.'"

12,917.—IMPORTED FRENCH WINES AND CHAMPAGNES.—*Jean Baptiste Fontanel*, Chicago, Ill. Application filed November 27, 1885.
"The representation of a Dutch windmill."

12,918.—PUNCH.—*William Fowler*, New York, N. Y. Application filed December 3, 1885.
"The word 'WEBSTER.'"

12,919.—ABIETENE OR EXTRACT FROM THE GUM OF PINUS SABINIANA. *Derrick F. Fryer*, Oroville, Cal. Application filed December 12, 1885.
"The representation of a tapped pine-tree."

12,920.—STRAIGHT FAMILY FLOUR.—*Frank A. Johnston*, Winona, Minn. Application filed July 20, 1885.
"The words 'LITTLE JOE.'"

12,921.—WHISKY.—*Moritz Lowenbach*, Baltimore, Md. Application filed December 10, 1885.
"The words 'PIMLICO CLUB.'"

12,922.—PILLS FOR PURIFYING THE BLOOD.—*Samuel B. McMurray*, Indianapolis, Ind. Application filed December 7, 1885.
"The capital letters 'M. I. S. T.,' having periods between them and grouped in the order shown."

12,923.—PILLS FOR PURIFYING THE BLOOD.—*Samuel B. McMurray*, Indianapolis, Ind. Application filed December 7, 1885.
"The word 'MIST.'"

12,924.—COFFEES, ROASTED OR GREEN.—*William H. Milnor & Co.*, Baltimore, Md. Application filed December 7, 1885.
"The representation of a quartered disk or shield supported by two griffins rampant accompanied by the words 'CHOICE CARACAS.'"

12,925.—TEAS.—*William H. Milnor & Co.*, Baltimore, Md. Application filed December 7, 1885.
"The word 'MIKADO.'"

12,926.—KID AND GOAT SKINS.—*Mulford, Cary & Conklin*, New York, N. Y. Application filed December 9, 1885.
"The word 'JEWEL.'"

12,927.—VEGETABLE FIBER AND CLOTH MANUFACTURED THEREFROM.—*Anton B. Newman*, New York, N. Y., and Newark, N. J. Application filed November 21, 1885.
"The word 'WOOLINE.'"

12,928.—BINDER'S TWINE AND ROPE.—*Standard Cordage Company*, Boston, Mass. Application filed December 8, 1885.
"The word 'EUREKA.'"

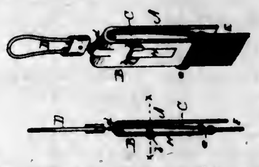
12,929.—REFRIGERATORS.—*George R. Wight*, New York, N. Y. Application filed October 24, 1885.
"The word 'LORILLARD.'"

12,930.—BITTERS.—*Wood, Pollard & Co.*, Boston, Mass. Application filed December 14, 1885.
"The word 'MOOSEWOOD.'"

PATENTS

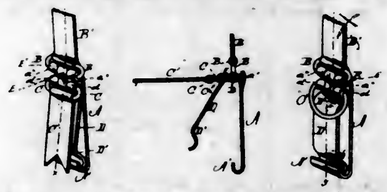
GRANTED JAN. 5, 1886.

333,494. CUFF-HOLDER. JAMES F. ATWOOD, Boston, Mass. Filed May 18, 1885. (No model.)



Claim.—In a cuff-holder consisting, essentially, of three folds or layers, A B C, means for attaching the same to a coat-sleeve or a shirt-sleeve, and a cam-lever pivoted to the outer fold, B, in an opening, B', formed therein, the combination of the cam-lever H, provided with the opposite spindles *h*, and the fold or layer B, having the opening or slot B', and provided with the recesses or bearing-places *b b* next the opposite sides of said slot, substantially as and for the purpose set forth.

333,495. GARMENT-SUPPORTING CLASP. JAMES F. ATWOOD, Boston, Mass. Filed May 18, 1885. (No model.)



Claim.—1. In a garment-supporting clasp, the combination of the back plate provided with the lip A', the spring *a'*, the cam-link E, and the front plate, D, all constructed and arranged to operate substantially as and for the purpose set forth.

2. The combination of the back plate, A, provided with the lip A' and spring *a'*, the front plate, D, bent at D', as described, and the cam-link E, provided with the flat or squared end E', and pivotally secured at different points to the upper ends of said plates, substantially as and for the purpose described.

3. The herein-described improved garment-supporting-clasp, consisting, essentially, of the back plate, A, provided with the lip A', spring *a'*, and folds *a''*, the links or loops B C, cam-link E E', front plate, D D', and tab or handle C', all constructed and arranged substantially as and for the purpose set forth.

333,496. WINCH-ENGINE. EARLE C. BACON, New York, N. Y., assignor to Copeland & Bacon, same place. Filed May 20, 1885. (No model.)

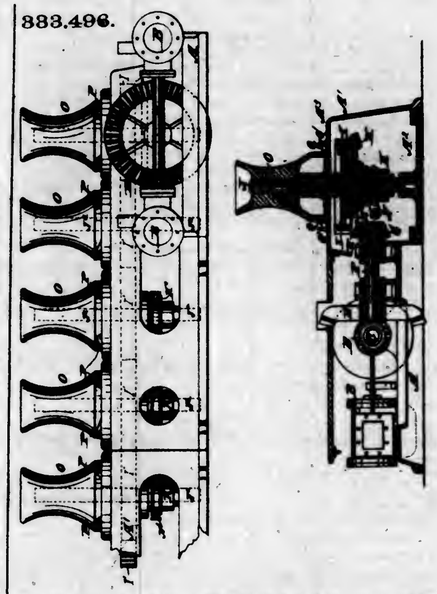
Claim.—1. In a winch-engine, a train of gear-wheels mounted on separate shafts and adapted to be driven from the engine, in combination with a series of windlasses mounted on said shafts, and a separate clutch mechanism for each shaft, whereby said windlasses may be operated separately or simultaneously, substantially as set forth.

2. In a winch-engine, a train of gear-wheels mounted loosely on separate shafts and adapted to be driven from the engine, in combination with a series of windlasses mounted on said shafts and provided with a series of pivoted pawls engaging ratchet-teeth, and separate clutch mechanism constructed to connect said gears with the shafts for separate or simultaneous action, substantially as set forth.

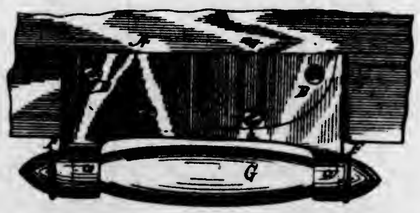
3. In a winch-engine, a train of gear-wheels mounted loosely on separate shafts and adapted to be driven from the engine, in combination with a series of windlasses mounted on said shafts, and a separate friction-clutch for each gear-wheel, substantially as set forth.

4. In a winch-engine, the frame A', divided into sections joined together, each section being provided with a train of gear-wheels, of which each gear-wheel is placed loosely on the vertical shaft J^3, which is provided with the clutch K, the clutch-lever N, the windlass O, the pivoted pawls P, and the ratchet-teeth Q, formed on the annular projection Q', all arranged and operating substantially as shown and described.

333,496.



333,497. FENDER FOR VEHICLE-BODIES. CHARLES D. BAILEY, Hartland, Vt. Filed July 14, 1885. (No model.)



Claim.—In a fender for wagons or other vehicles, the plates B B, diminishing in thickness from D to E, and provided with shoulders or flanges C, arm F, and sockets *a*, the said sockets adapted to receive the spindles *b* of the roller G, for the purpose herein shown and described.

333,498. REVERSIBLE FILTER. ELBRIDGE G. W. BARTLETT, Yonkers, N. Y. Filed May 18, 1885. (No model.)



Claim.—1. A reversible filter provided with a filtering medium, a central passage, and a longitudinally-adjustable mouth-piece carrying a valve adapted to a seat in said passage, substantially as set forth.

2. A reversible filter provided at opposite ends with filtering-disks, and having a central tube or passage through said disks and the body of the filter, and a removable adjustable mouth-piece carrying a valve adapted to a seat in said central passage, substantially as set forth.

3. A reversible filter provided with a central tube supported therein and having valve-seats at its opposite extremities, and a filtering-disk at each end of said tube and surrounding the latter, and a removable adjustable mouth-piece adapted to either end of the filter and carrying a valve adapted to said seats, substantially as and for the purpose set forth.

4. A reversible filter composed of the body A, provided with a central tube supported therein by arms *b*, internally-shouldered caps C C, screwing onto the ends of said body, filtering-disks surrounding the central tube at opposite ends and interposed between said arms and shoulders, and a longitudinally-adjustable and removable mouth-piece carrying a valve adapted to a seat at either end of said tube, substantially as and for the purpose set forth.

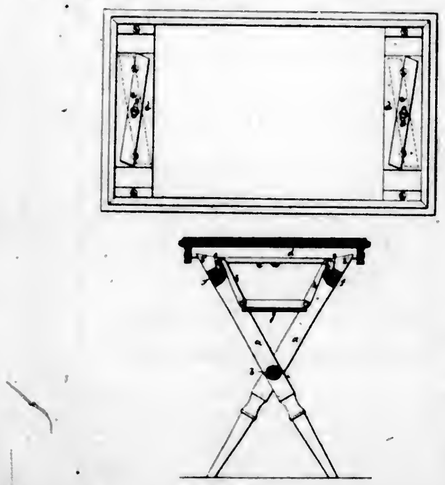
333,499. METHOD OF APPLYING CLOTH TO INSOLES. FRANK L. BLAIR, Allegheny, Pa. Filed May 18, 1885. (No model.)



Claim.—1. The method hereinbefore described of applying cloth to insoles, which consists in placing the cloth over a recess whose shape and size conform approximately to those of the insole, superposing the insole, pressing it into the recess over the cloth, and securing the latter to the insole by pasting the projecting edges of the cloth, substantially as and for the purposes described.

2. The method hereinbefore described of applying cloth to insoles, which consists in placing the cloth over a recess whose shape and size conform approximately to those of the insole, superposing the insole, pressing it into the recess over the cloth, and securing the latter to the insole, substantially as and for the purposes described.

333,500. FOLDING TABLE. JOHN T. BOX, Syracuse, N. Y. Filed May 8, 1885. (No model.)



Claim.—1. In a folding table, the combination of the detachable cross-legs and the bed-pieces *d*, having under-cuts in their ends, into which the upper ends of the legs are inserted and secured, substantially as described.

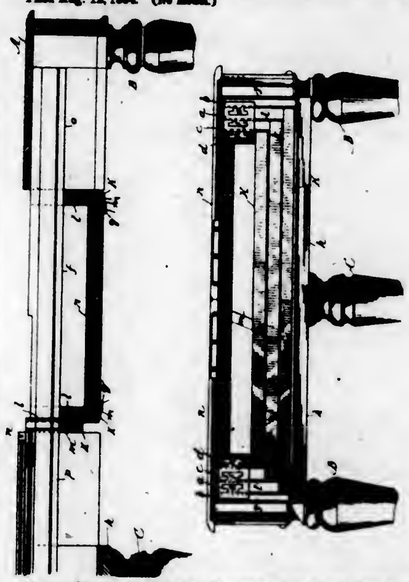
2. In a folding table, the combination of the detachable cross-legs *a a*, bed-pieces *d d*, having under-cuts in the ends thereof, into which the upper ends of the legs are inserted, and braces or buttons for holding them in place, forming a rigid frame independent of the table-top, substantially as herein described.

3. The combination of a brace, *e*, having an oblong pivoting-slot therein, with the legs *a* of the table, as and for the purposes specified.

4. The bevel-notches *c* in the legs *a*, in combination with the braces *e* for wedging the legs in place, in the manner herein specified.

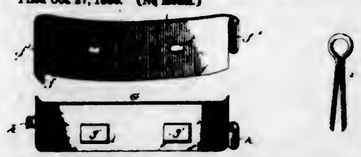
5. In combination with a folding table having folding legs connected by cross-bars *f*, substantially as above described, hanging shelf, *g* attached to the cross-bars *f* by means of hooked arms *h*, pivoted to the shelf *g*, substantially as and for the purposes specified.

333,501. EXTENSION-TABLE. HERMON P. BURNETTE, Chicago, Ill. Filed Aug. 12, 1884. (No model.)



Claim.—In an extension-table, the combination of end sections, A, slides *b*, *a*, *c*, and *d*, cross-pieces *h*, and angle-irons *g*, said irons connected at one end to cross-piece *h* and at the other end to slides *a*, and so constructed as to allow slides *b* to move between them and slides *a*, as set forth.

333,502. NUT-LOCK. JOHN P. CHAMPION, Gainesville, Ga., assignor of two-thirds to Joseph L. Green and John A. Smith, both of same place. Filed Oct. 27, 1885. (No model.)



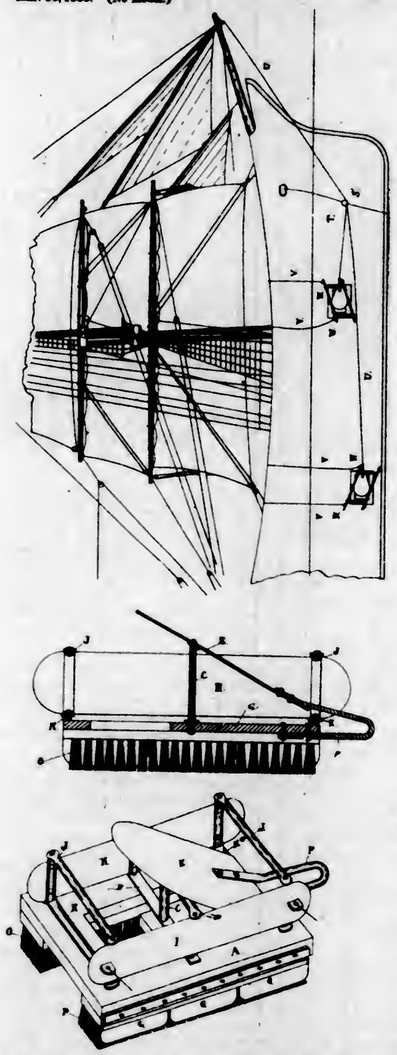
Claim.—1. The combination of the rails, the fish-plates, the through-bolts having nuts, an elastic pressure-plate interposed between the nuts and the fish-plates, and a nut-securing plate detachably connected to the elastic pressure-plate, substantially as described.

2. The combination of the rails, the fish-plates, bolts having nuts, a spring-pressure plate fitted over the bolts and interposed between the nuts and fish-plate, and a rigid securing-plate detachably secured to the spring pressure-plate, and having sockets *g'* to engage and hold the nuts, substantially as described.

3. The combination of the rails, the fish-plate, the through-bolts having nuts, a spring pressure-plate interposed between the nuts and fish-plates, and having a socket at one end and an eye at its opposite end, a nut-securing plate having a tongue to engage the socket of the spring pressure-plate, and an eye that registers with the eye of said pressure-plate, and a fastening-key fitted in the eyes of said pressure and securing plates, as set forth.

4. The combination of the rails, the fish-plates, through-bolts having securing-nuts, a spring-plate, E, interposed between the nuts and fish-plates, and having a lip, *f*, and socket *f'* at one end, and an eye, *f²*, at its opposite end, a securing-plate, G, having sockets *g'* to engage the nuts, and one end fitted beneath the lip *f*, and the tongue *h* and sockets *h'*, and a spring fastening-key, I, substantially as described.

333,503. IMPLEMENT FOR BRUSHING AND SCRAPING SHIPS' HULLS. CHARLES G. CROSS, Longsight, Manchester, England. Filed Mar. 30, 1885. (No model.)



Claim.—1. The combination, with the frame and brushes, of the scrapers Q, arranged along the sides of the frame and extending below the same, and the rubber strips Y, arranged between the scrapers and the frame, and the pressure-board, as set forth.

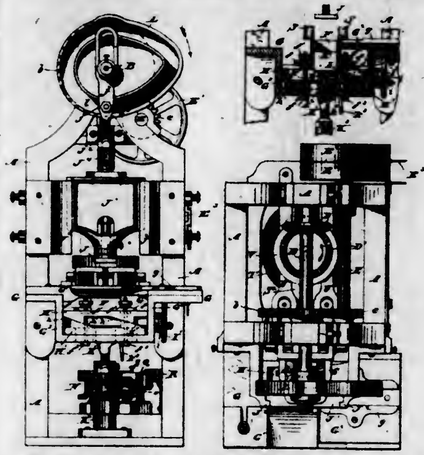
2. The combination, with the frame, of fins pivoted to said frame midway their ends and connected at their ends by bars J K, the inclined pressure-board E, the brushes secured to the under side of the frame, the scrapers secured to the sides of the frame, and the elastic strips under the scrapers, as set forth.

333,504. TILTING GATE. STEPHEN S. DAVIS, Chicago, Ill. Filed Jan. 24, 1885. (No model.)



Claim.—In combination with a gate, a pivotal bearing therefor consisting of an externally-threaded metallic pipe provided with lock-nuts, and bearings K, tapped to receive a central screw-bolt, tubular brace-arms screwed into the pipe and attached to the gate, and posts for supporting the bearing and gate, substantially as and for the purpose specified.

333,505. SOAP-PRESS. JOHN DERRIS and JOSEPH A. CORAN, Lowell, assignors to said Coran and Stephen M. Crosby, executor of Nathan Crosby, deceased, Boston, Mass. Filed May 19, 1885. (No model.)



Claim.—1. The combination, with the die-box and the upper and lower dies, of the longitudinal shaft B and its cam, the upright shaft C and its cams, and devices operated by said cams to compress the cake, raise it from the die-box, and deliver it, substantially as set forth.

2. The combination, with the die-box, of a laterally-extensible clamp for engaging boxes of different sizes, and means for securing said clamp to the table, substantially as set forth.

3. The combination, with the die-box, of two supports provided with inclined planes, and means for imparting lateral motion to one of said parts to cause said planes to operate and raise or lower the die-box, substantially as described.

4. The combination, with the die-box, of a laterally-extensible clamp, two supports having inclined planes, one of said supports being laterally movable, and bolts *f⁸*, for securing together the parts of the clamp, the die-box, and the supports, substantially as described.

5. The combination, with the die-box F, the upper die, J, and its operating mechanism, of means, as the coupling J^4, for adjusting said die toward or from the die-box without turning or removing the die, substantially as described.

6. The combination, with the die-box and the lower die situated therein, of the die-carrier and a latch and operating-handle for holding the die and releasing it from the carrier, substantially as set forth.

7. The combination, with the die-box F, the die K, and its operating mechanism, of means, as the coupling K^3, for adjusting said die in the die-box without turning or removing the die, substantially as set forth.

8. The combination, with the die-box and the upper and lower dies, of the longitudinal shaft B, the cam L, shaft C, the cam N, and a lever and connections for transmitting motion from the cam N to the lower die, substantially as set forth.

9. The combination, with the die-box and pressing devices, of the lever O, for raising the lower die, mechanism for operating the lever, and an adjustable fulcrum, whereby the throw of the lever may be accommodated to die-boxes of different depths and different thicknesses of soaps, substantially as set forth.

10. The combination, with the lower die and the lever O, connected therewith, of the cam N and a guard for preventing longitudinal move-

ment of the lever and keeping it in proper relation to the cam, substantially as set forth.

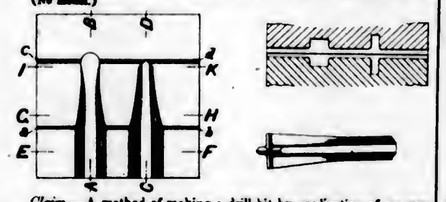
11. The combination, with a press, of an automatic picking-off device, the grasping parts of which are arranged to operate during a pause in the movement of the device, substantially as set forth.

12. The combination, with a press, of an automatic picking-off device and mechanism for moving said device relatively to the dies of the press, there being combined with the grasping parts of said device a mechanism for positively opening and closing said parts irrespective of the motion of the whole device, substantially as described.

13. The combination, with the pressing mechanism and the mechanism for raising the cake from the die-box, of a slide at substantially right angles to the pressing device, nipper-levers and jaws pivoted to said slide, and means for reciprocating said slide and for operating the nipper-levers, substantially as described.

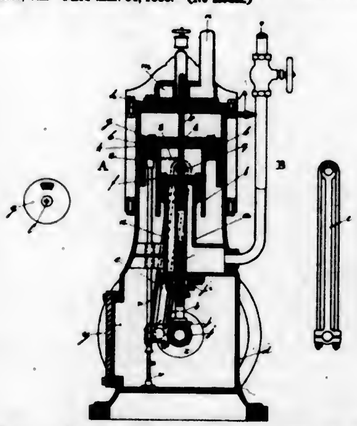
14. The combination, with the pressing and cake-raising mechanism, of a slide at substantially right angles to the pressing devices, nipper-levers and jaws pivoted to the slide-levers U, engaging with the nipper-levers and adapted to permit their reciprocation, and cams T and V, for reciprocating the slide and operating the levers U, substantially as set forth.

333,506. METHOD OF MAKING DRILL-BITS. MATTHEW DIAMOND, Tarrytown, and WILLIAM H. BROCK, Newtown, N. Y. Filed Nov. 16, 1885. (No model.)



Claim.—A method of making a drill-bit by application of pressure or of a power-hammer to metal in dies having the novel definite design herein shown and described, so that the bit thus produced by mechanical agency alone shall be perfectly formed and sharpened ready for use, all substantially as set forth.

333,507. COMPOUND ENGINE. WALTER H. DONALDSON, San Francisco, Cal. Filed Mar. 31, 1885. (No model.)



Claim.—1. In a compound engine, the combination, with the stationary low-pressure cylinder and the stationary high-pressure piston, of the portion *b*, forming both the low-pressure piston and the high-pressure cylinder, lying and working between the two first-named parts, and provided with connections for the rods *c*, substantially as set forth.

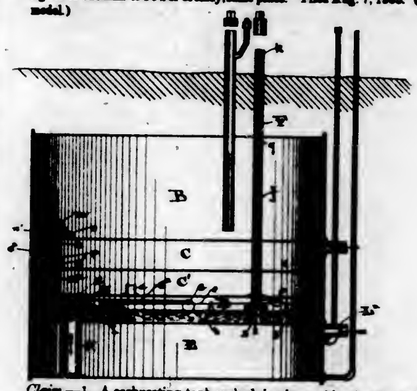
2. In a compound engine, the combination, with the stationary high-pressure piston, combined reciprocating high-pressure cylinder and low-pressure cylinder, and the stationary low-pressure cylinder, of the rotating high-pressure valve *f*, located in high-pressure piston, rotating intermediate valve, *g*, in the combined cylinder and piston, and the rotating exhaust-valve *h* in the low-pressure cylinder, and means, substantially as described, for imparting a rotary motion to said valves, as set forth.

3. In a compound engine, the combination, with the two pistons and cylinders, as described, of the valves *f*, *g*, and *h*, located as shown and described, and the shaft *i*, and suitable gearing for rotating valve *f*, and non-circular spindle $i^{\times}$, for rotating valves *g* and *h*, connected with shaft *i*, as set forth.

4. The combination, with the water-tight crank-case, of a pump having the tube or stationary plunger *s* and the tube or working-barrel *r*, both of said tubes being provided with ball-valves and valve-seats, as set forth.

5. The combination, with the water-tight crank-case, of a pump connected to a reciprocating part of the engine, whereby lubricant may be drawn from the case to the working parts of the engine, as set forth.

333,508. CARBURETOR. ANDREW J. ENSLEN, Cincinnati, Ohio, assignor of one-half to Pearal Crumley, same place. Filed Aug. 7, 1885. (No model.)



Claim.—1. A carbureting-tank embodying in combination the ordinary carbureting-chambers in the path of the air-inflow, an outlet for the heavier gasoline from the lower carbureting-chamber into the reservoir, and actuating devices for opening and closing the same automatically governed and regulated by the inflow of air into the machine, substantially as set forth.

2. In a carbureting-tank having a reservoir for residuum, substantially as described, a capillary siphon, W, provided with mechanism for automatically bringing the same into operation when the machine is in operation, and preventing the action of the same when the machine is out of operation, substantially as and for the purpose set forth.

3. In a carbureting-tank having a reservoir, E, the tubes H I, siphon W, pivoted lever *e*, and air-valve *d*, combined substantially as and for the purpose set forth.

4. In a carbureting-tank having a reservoir, E, the siphon W, pivoted lever *e*, and valve *d*, in combination with the valve *d'*, pivoted lever *d'*, and regulating-rod F, substantially as set forth.

5. In a carbureting-tank embodying one or more carbureting-chambers and a feeding-reservoir arranged above the same, an independently-acting spring-seated valve controlling the feed-orifice, in combination with float mechanism, substantially such as described, for lifting said valve by contact upon exhaustion of liquid from the lower chamber, as set forth.

6. In a carbureting-tank embodying one or more carbureting-chambers and a feeding-reservoir arranged above the same, a disk feed-valve seating flatwise upon an annular raised edge or curb, and provided with a spring by which it is normally held seated, in combination with float mechanism by the temporary contact of which it is opened upon exhaustion of liquid in the lower chamber, substantially as set forth.

7. In a carbureting-tank embodying one or more carbureting-chambers and a feeding-reservoir arranged above the same, the combination of the independent spring-seated valve *m*, and stem *o*, with the pipe o^2, standard o^1, pivoted lever o^3, and float *c*, substantially as set forth.

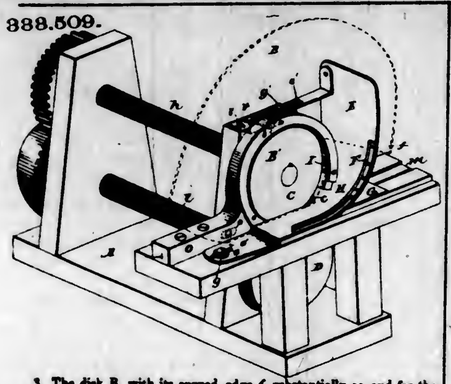
333,509. MACHINE FOR COILING METAL STRIPS. CHARLES C. FISHBURN, Painesville, Ohio, assignee of three-fourths to O. G. Tuttle, H. J. Wilcox, and W. C. Reed, same place. Filed Nov. 23, 1884. (Model.)

Brief.—The strip of metal to be coiled passes into a groove under a curved guide at the right of the machine, and is fed by the rollers. A circular curved guide causes the strip to pass nearly around the upper roller, and then, in conjunction with a third guide, bends it away from the roller to the front of the machine. A stop prevents the coils from passing off the machine, and, together with the first-mentioned curved guide, causes the strip bent into a circle by the rollers and the circular curved guide to form a tight coil.

Claim.—1. The circular guide O, with its grooved inner edge, I, and curved end H, substantially as and for the purpose as hereinbefore set forth.

2. The curved guide E, with its stop F and guide *c*, substantially as and for the purpose as hereinbefore set forth.

333,509.



3. The disk B, with its curved edge *f*, substantially as and for the purpose as hereinbefore set forth.

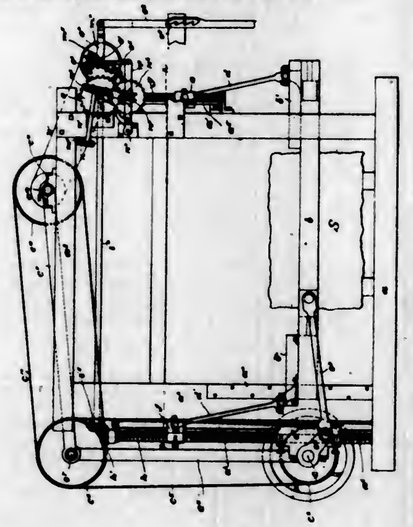
4. The combination of the circular guide O, with its grooved inner edge I, and curved end H, the curved guide E, with its stop F, and guide *c*, the disk B, with its curved edge *f*, the lower roller, D, with its grooves *v v*, the clip G, and groove *m*, in combination with the other working parts of the machine, substantially as and for the purpose as hereinbefore set forth.

333,510. APPARATUS FOR SAWING STONE. JOHN H. PERRIN, Rutland, Vt. Filed Feb. 9, 1885. (No model.)

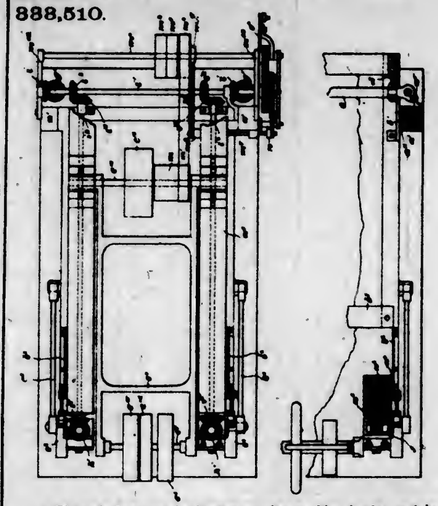
Claim.—1. In a sawing-machine, a single main frame provided with upright guides at its ends, combined with a saw-frame, supports movable vertically on said guides, links pivoted to said supports and the saw-frame, an actuating crank-shaft, the pitman c^3, connecting the crank-shaft and saw-frame, the screw-rods *g h*, the latter common to both the saw-frame and crank-shaft, and connecting-gearing for said rods, and means to operate said gearing, substantially as described.

2. The saw-frame and its vertically-movable supports or blocks, and pivoted connecting-links, combined with the actuating crank-shaft, its connecting-rod c^3, and vertically-movable supports, and the screw-rods *h*, common to both the said saw-frame and crank-shaft, movable supports or blocks, and the mechanism to rotate said screw-rods *h*, whereby both saw-frame and crank-shaft are moved vertically in unison, substantially as described.

3. The main frame-work and main shaft c^{12}, having stationary bearings on said frame-work, and provided with a pulley, c^{13}, the crank-shaft *c*, and means to move it vertically on said frame-work, combined with a pulley, c^4, and its two supporting-frames, c^1 and c^2, the former moving with the vertical movement of the crank-shaft, and the latter having a pivotal movement on the main shaft, a pulley, c^4, on the crank-shaft, and belts c^5 c^{14}, connecting the pulley c^4 through the pulley c^6 with the driving-shaft pulley, substantially as described.



333,510.



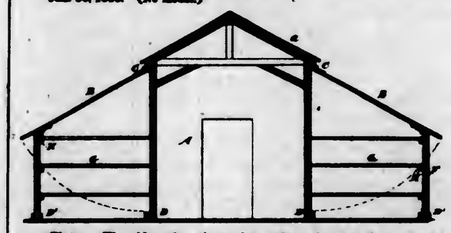
4. The main frame-work of a stone-sawing machine, having uprights provided with means to guide and vertically adjust the forward end of the saw-frame, combined with guides a^4 on the main frame, and guides b^3 extending beyond the rear end of the saw-frame and embracing said guides a^4, and means to adjust the rear end of the saw-frame harmoniously with the adjustment of the forward end, substantially as described.

5. In a sawing-machine, a single main frame provided with upright guides at its ends, combined with a saw-frame, supports movable vertically on said guides, links pivoted to said supports and the saw-frame, an actuating crank-shaft, the pitman c^3, connecting the crank-shaft and saw-frame, the screw-rods *g h*, the latter common to both the saw-frame and crank-shaft, and connecting-gearing for said rods, and means to operate said gearing, and a reversing feed mechanism for controlling the motion of said gearing, substantially as described.

6. In a stone-sawing machine, the main frame-work having uprights a^2, provided with guides a^4, combined with the reciprocating saw-frame having guides b^3 extending beyond one of its ends and embracing the co-operating guides a^4 of the uprights between them, and the actuating crank-shaft *c*, and its bearing-carriages *c'*, movable vertically upon the said uprights, substantially as described.

7. In a stone-sawing machine, the main frame having uprights provided with guides a^4 a^2, combined with the saw-frame and supporting-blocks thereof movable on the said guides, and the actuating crank-shaft *c*, having a carriage, *c'*, also movable on the same guides that serve for one end of the same frame, and the screw-rods *h*, engaging the blocks and carriage, and mechanism to rotate said screw-rods, whereby one end of the saw-frame and the crank-shaft are vertically moved in unison, substantially as described.

333,511. TOBACCO-DRIER. GEO. M. GALBRAITH, Oxford, Ky. Filed Jan. 26, 1885. (No model.)

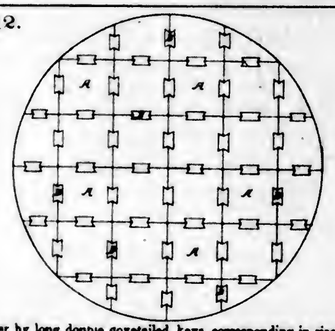


Claim.—The sides of a tobacco-house formed of top-hinged panels fitting closely together and provided with strips E, breaking joint therewith, whereby said panels may be used as an entirety or weather-boarding to the side of house, and as a roof for side receptacles, as described.

333,512. HEAT-BLOCK. EDWARD GARDNER, Allegheny, Pa. Filed Feb. 26, 1885. (No model.)

Claim.—As an article of manufacture, a meat-block consisting of a collection of closely-fitting rectangular blocks, each respective block being provided with a deep undercut channel or dovetail groove along each of its four sides, and the blocks being joined, drawn, and firmly

333,512.

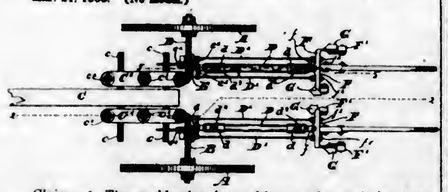


held together by long double dovetailed keys corresponding in size and form to the said dovetailed channels, substantially as described.

333,513. REMEDY FOR ASTHMA. JOHN GIRDWOOD, Carrickfergus, Ireland. Filed Aug. 24, 1885. (No specimens.) Patented in England Feb. 24, 1885, No. 2,465.

Claim.—The within-described remedy for asthma, consisting of a composition of stramonium-leaves, saltpeter, cascarilla-bark, and sugar, in the proportions substantially as set forth.

333,514. CULTIVATOR. JOHN GOODWOOD, Indianapolis, Ind. Filed Mar. 21, 1885. (No model.)



Claim.—1. The combination, in a cultivator, of an axle consisting of two parts, each part consisting of a vertical and two horizontal portions, the upper portion being secured to clamp-bars, a tongue having transverse rods or bars, and said clamp-bars, said clamp-bars being secured upon said transverse rods alongside of said tongue, substantially as shown and described.

2. The combination, in a cultivator, of an arched axle formed of round iron and having vertical portions, said vertical portions being squared at a point just above the horizontal portions on which the wheels are mounted, clamps fitted to and secured upon said square portions of the axle, and having stud-shafts thereon to which the plow-beams are secured.

3. The combination, in a cultivator, of the axle, the plow-beams, intermediate attaching devices consisting in part of upwardly-projecting arms, springs secured to said arms, clamps on the vertical portions of the axle to which said springs are secured, said clamps consisting of inclined blocks and adjustable holders fitted over the inclines and adapted to be raised and lowered by being moved thereon, substantially as set forth.

4. The combination, with the springs E' and axle B, of clamps consisting of inclined blocks b^3, holders c^3, and bolts b, substantially as shown and described, and for the purposes specified.

5. The combination of the axle A, devices E, plow-beams D, cross-heads F, rods D^2, and eyebolts f', substantially as set forth.

6. The combination of the plow-beams D, having bearing-plates d, with elastic cushions d', and cross-heads F, pivoted to said bearing-plates by tapered pivots f, and said tapered pivots, substantially as described, and for the purposes specified.

7. The combination, in a cultivator, of the plow-beams, cross-heads thereon having rearward extensions, housings for the plow-shanks having inclined flanges g^3, and bolts passing through said extensions, plow-shanks, and housings, substantially as shown and described, and for the purposes specified.

8. The combination, in a cultivator, of the rearward extensions having tapered cavities therein, the housings F', having tapered flanges g^3 thereon adapted to fit into said cavities, the plows, and the bolts g, whereby said several parts are secured together, substantially as set forth.

333,515. RUFFLING ATTACHMENT FOR SEWING-MACHINES. H. C. GOODRICH, Chicago, Ill. Filed Jan. 2, 1885. (No model.)

Claim.—1. The combination, with a presser-foot and a reciprocating ruffling-blade, of a spring pivotally connected with the presser-foot and a head or plate, B, connected with said spring, substantially as and for the purpose described.

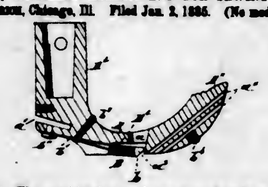
333,515



2. A presser-foot, A, having a bearing-point on its under side, in combination with a head or plate, B, spring B', pivotally attached to the foot, and a reciprocating ruffling-blade, substantially as and for the purpose specified.

3. A presser-foot, A, and adjusting-screw b^4, in combination with a ruffling-blade, C, a head or plate, B, and spring or spring-plate B', pivotally attached to the presser-foot, for increasing the bearing-pressure on the head or plate without interfering with the rocking movement thereof, substantially as and for the purpose specified.

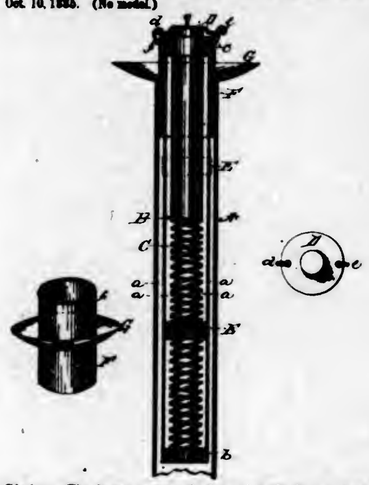
333,516. RUFFLING ATTACHMENT FOR SEWING-MACHINES. H. C. GOODRICH, Chicago, Ill. Filed Jan. 2, 1885. (No model.)



Claim.—1. The combination, with a presser-foot formed with a recess in its under side, and a reciprocating ruffling-blade, C, of a head or block, B, in the recess, a spring to which the head or block is secured, and by which it is carried to rise and fall, and a set-screw for projecting the head or block more or less from the recess in the presser-foot, substantially as described.

2. A presser-foot, A, having a projecting bearing-point, b^4, in combination with a ruffling-blade operating beneath the presser-foot for giving a torsional movement to the blade, substantially as and for the purpose specified.

333,517. CANDLESTICK. MARY A. GREELEY, Ottumwa, Iowa. Filed Oct. 10, 1885. (No model.)



Claim.—The frame composed of a series of wires, *a*, fastened at their lower ends by a plate, *b*, and their upper ends by band *c*, having hook *d* and pin *e*, the cap D, and band E, constructed as described, to receive the spring G, provided with a seat, B, substantially as herein shown and described.

333,518. THILL-COUPLING. GEORGE W. GRAHAM, Streator, Ill., as signor of one-half to James L. Pringle, same place. Filed Feb. 10, 1885. (No model.)

Claim.—1. In a vehicle-thill-coupling support, the combination, with a coupling-pin provided with a keyed end, of the thill-iron and clip having key-slots, as shown, and a cam upon one of the plates formed with the key-slot, against which the keyed end of the pin bears to tighten it, substantially as and for the purpose set forth.

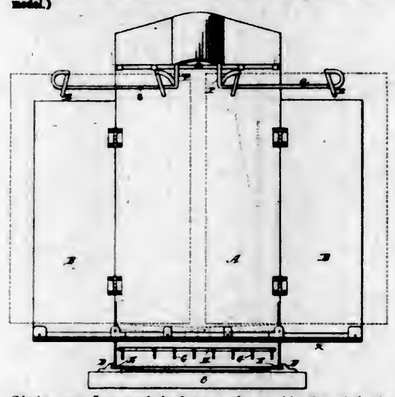
333,518.



2. In a vehicle-thill-coupling support, the combination, with the thill-iron and clip having the clamping-plate terminating at its forward end in a catch or keeper formed with a beveled end, of a flat curved spring connected at one end to the clip and extending upward and around and downward below the clip, substantially as and for the purpose specified.

3. In a vehicle-thill-coupling support, a thill-iron having an eye with key-slot, a clip having eye-plates with corresponding key-slots, and a cam upon one of said plates, in combination with a keyed end coupling-pin, a catch or keeper formed on the clamping-plate, and a curved spring connected at one end to the clip and extending upward and around and downward below the thill-iron and clip, substantially as and for the purpose set forth.

333,519. MUSIC-LEAF TURNER. JOHN HERRON, Olney, Ill., assignor of one-third to F. T. Phillips, same place. Filed Nov. 23, 1884. (No model.)

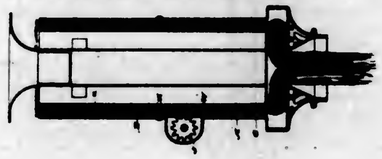


Claim.—1. In a music-leaf turner, the combination of the frame having a slot through its lower end, the handles which project through the slot, the levers pivoted on the back of the frame, the rack-bars connected to the upper ends of the levers, pinions L on the rod N, arms O, and the vertical pieces P, having the arms and holding devices on their lower ends, substantially as shown.

2. The combination of the frame A, for supporting the music, the levers pivoted upon its back and provided with handles at their lower ends, the rack-bars J K, the pinions L, rod N, arms O, and projections P, which extend upward from the arms and are centered at their upper ends upon the rod N, and which have the arms Q and spring holding devices R secured to their lower ends, substantially as described.

333,520. LAMP. CHARLES H. HUSSEY, New York, N. Y., assignor to Andrew J. Davies, same place. Filed Apr. 4, 1885. (No model.)

Claim.—1. The combination, with an annular wick, of a guard consisting of thin flexible material folded beneath and across the lower edge of the wick and upward on both sides, substantially as set forth.



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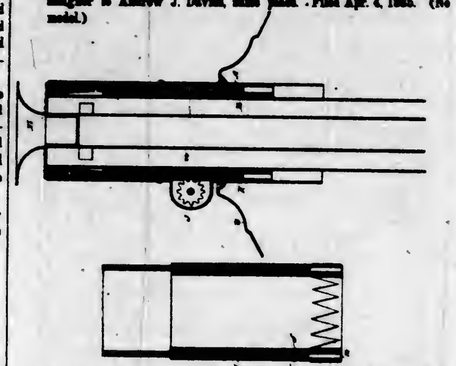


2. The combination, with a wick, of a guard consisting of a strip or sheet of thin flexible material around the wick, and provided with fingers extending beneath the wick and upward, the body of the sheet being on one side and the fingers on the other, substantially as specified.

3. The combination, with a lamp-burner provided with a receptacle for an annular wick, of a wick-feeding tube and elevating device, an annular wick carried thereby, and a guard, *n*, crossing the lower edge of the wick and extending upward on both sides, substantially as described.

4. The combination, with a burner provided with an annular wick-chamber and a movable annular wick, of a fixed wick and a guard-strip, *n*, substantially as described.

333,521. COAL-OIL LAMP. CHARLES H. HUSSEY, New York, N. Y., assignor to Andrew J. Davies, same place. Filed Apr. 4, 1885. (No model.)



Claim.—1. The combination, with an Argand lamp-burner, of a stationary feeding-wick, a burning-wick, and an adjustable carrier-tube supporting both wicks, the feeding-wick being secured to the carrier-tube, and the burning-wick being adjustable longitudinally in respect to the stationary wick and tube, substantially as set forth.

2. The combination, with an Argand burner having an annular-wick receptacle open at the top, of a vertically-adjustable wick-carrying tube, a feeding-wick secured thereto, and a burning-wick supported by the tube in contact with the feeding-wick, but adjustable independently of the latter, the wicks and wick-carrying tube being detachable from the burner, substantially as described.

3. The combination of the wick-carrying tube, feeding-wick secured to said tube, and a burning-wick supported adjustably by the said tube, and a guard, *n*, extending around the lower edges of the tube and feeding-wick and upward within the latter, substantially as set forth.

333,522. HEEL-PLATE FOR BOOTS OR SHOES. FRANKLIN R. HOSMOOR and GEORGE O. WOOLOCKS, Brooklyn, N. Y. Filed Sept. 2, 1885. (No model.)



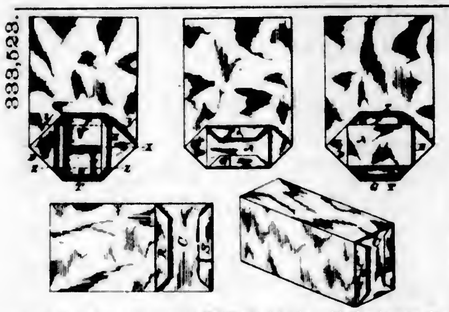
Claim.—1. As an article of manufacture, a heel-guard comprising a base or securing plate perforated for the reception of screws, and a cross or tie bar connecting the ends thereof, a U-shaped beveled rib forming a groove formed thereon, said rib being widened at predetermined points to obviate wear, substantially as specified.

2. The combination of the base or securing plate C, perforated as at C', and having the U-shaped rib D formed thereon, and having a groove, D', said rib being widened at predetermined points, as at F, of the top lift, E, beveled as at E' and F', whereby it is adapted to snugly fit within the groove D' and under the widened portion F, and retaining-screw G, substantially as shown and described.

333,523. PAPER BAG. WILLIAM H. HOMER, Hartford, Conn., assignor to Felix W. Leinbach and Clarence A. Wells, both of Bethlehem, Pa. Filed Oct. 1, 1884. (No model.)

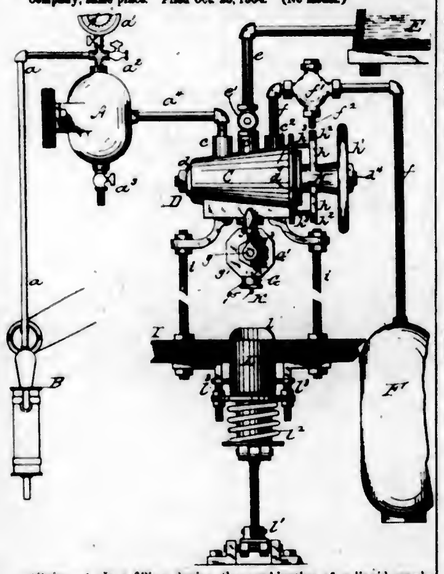
Claim.—A paper bag which has its bottom made by pasting a sep-

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arate piece of paper, substantially identical in size with that bottom, between two pairs of folds made in the lower end of the paper tube which constitutes the body of the bag, all substantially as described.

333,524. BOTTLE-FILLING MACHINE. JAMES HUNT, Philadelphia, Pa., assignor to the United States Exhaust, Filling and Carbonating Company, same place. Filed Oct. 25, 1884. (No model.)



Claim.—1. In a filling device, the combination of a liquid-supply tank, a gasometer, separate outlet-pipes for said tank and gasometer, and a single controlling-valve for said pipes, substantially as shown and described.

2. The combination of a liquid-supply tank, a gasometer, and an exhaust device, each having separate pipe-connection with a single controlling-valve, substantially as shown, and for the purpose set forth.

3. In a filling device, the combination of a vacuum-chamber having exhausting mechanism, a supply-tank, and separate outlet-pipes for said chamber and tank, leading to a single controlling-valve, D, constructed and arranged for operation substantially as shown and described.

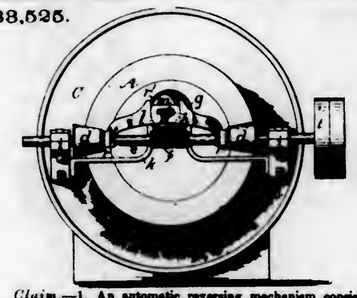
4. In a filling device, the combination of a vacuum-chamber having an exhaust device, a supply-tank, a gasometer, and separate outlet-pipes for said parts, leading to a single controlling-valve which successively opens and closes said pipes, substantially as shown and described.

5. In a filling device, the combination of a gasometer having pipe-connection *f*, provided with compression-valve *f'*, and the single controlling-valve D, having arms h, substantially as and for the purpose set forth.

6. The combination of a series of separate pipes, one of which has a compression-cock, and all leading to a single controlling-valve having arms h on its stem for opening said compression-cock, substantially as shown and described.

333,525. AUTOMATIC REVERSING MECHANISM. THOMAS H. KIMBA, New Haven, Conn., assignor of one-half to Frederick B. Farnsworth, same place. Filed Nov. 17, 1885. (No model.)

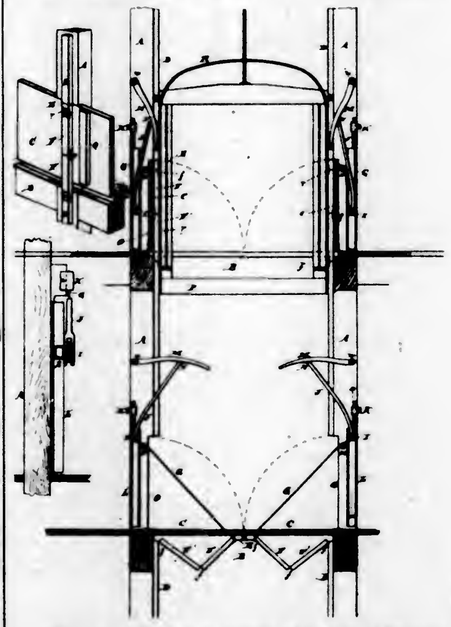
333,525.



Claim.—1. An automatic reversing mechanism consisting of a beveled friction wheel or disk, a pair of friction-cones mounted on a shaft at right angles with the axis of the disk and on opposite sides of its face, and a shipping device actuated alternately in opposite directions by the movement of the revolving mechanism, and adapted to reciprocate the cones lengthwise and bring them successively in contact with the bevel surface of the disk, substantially in the manner described.

2. In combination, the beveled wheel or disk A, the pair of friction-cones *d d*, mounted on a shaft at right angles with the axis of the disk and on opposite sides of its face, a screw or worm formed or arranged on the shaft, a worm-wheel engaging therewith and carrying a cam, *m*, and the shipping-yoke *l*, reciprocated by the cam and adapted to slide the shaft endwise in its bearings and successively engage the friction-cones with the disk, substantially in the manner and for the purpose specified.

333,526. ELEVATOR-HATCHWAY. ADOLPH A. KLEIN, Philadelphia, Pa. Filed June 1, 1885. (No model.)



Claim.—1. A hatch-door for elevators, hinged to the hatchway at one side, in combination with the guide-posts and the guides, and a folding guide hinged to said door and the guide-post, and adapted to lie flat against the door when raised, being longer than the width of the door, and completely filling up the space in the fixed guide necessarily cut away for the reception of the hatch-door when raised, substantially as and for the purpose specified.

2. A hatch-door having the hinged guide-sections F F', in combination with the fixed guide D, one end of said sections being hinged to the door and the other end to the guide D, substantially as and for the purpose specified.

3. The hatch-door C, having the fixed guide-section E, in combination with the fixed guide D and hinged sections F F', connected, respectively, to section E and guide D, substantially as and for the purpose specified.

4. A hatch-door made rectangular and without mutilations, in combination with a fixed mutilated guide for the cage and a folding or hinged guide carried by said door and adapted to completely span the mutilated or cut-away portion of the fixed guide, thereby making a continuous guide without leaving any aperture in the door when closed, substantially as and for the purpose specified.

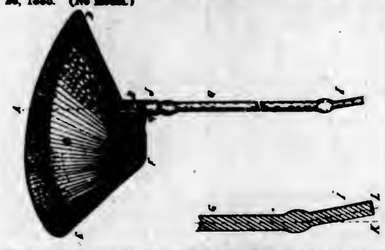
5. The combination of the hatchway B with the hinged door C, the chain or cable G, guide-roller H for the cable, over which it is drawn by the link J, link J, a vertical guide for said link, lever M, and cage P, one end of the link being secured to the lever, and the other end being arranged to actuate the chain or cable to raise or lower the door, substantially as and for the purpose specified.

6. The combination of the hatchway B and hinged door C with the chain or cable G, guide-roller H, link J, having rollers I and S, guide L, lever M, and cage P, substantially as and for the purpose specified.

7. The combination of the hatchway B and hinged door C with the chain or cable G, guide-roller H, link J, having rollers I and S, guide L, lever M, and cage P, having the lifting-iron R, substantially as and for the purpose specified.

8. The combination of the hatchway B and hinged door C, having an adjustable guide and bearing, Q, with the chain or cable G, guide-roller H, link J, having rollers I and S, guide L, lever M, and cage P, having the lifting-iron R *r*, substantially as and for the purpose specified.

333,527. MORTAR-HOD. ROBERT LAW, Toledo, Ohio. Filed June 26, 1885. (No model.)



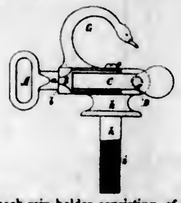
Claim.—1. In combination with handle G, having one or both of its ends adapted in form to enter the holding-socket J, the tray D, having one or both of its sides D E set at an obtuse angle to the axial line A of the handle, substantially as shown, and for the purpose set forth.

2. In combination with the tray D, the handle G, when constructed with either of its ends I at a different angle from the general mass of the handle, substantially as shown, and for the purpose set forth.

3. In combination with the handle G, having one or both of its ends adapted in form to enter the socket J, and tray D, having its side D or E, or both, set at an obtuse angle or angles to the axial line of the mass of the handle G, the metallic pad B, substantially as shown, and for the purpose set forth.

4. In combination with tray D and handle G, the socket J, substantially as shown, and for the purpose set forth.

333,528. CHECK-REIN HOLDER. JEFFERSON LAWTER, Boston, Mass. Filed Oct. 19, 1885. (No model.)

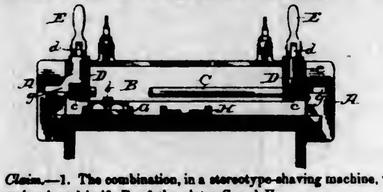


Claim.—1. A check-rein holder consisting of the shanked eye A and of the socketed head B, having not only means of connecting the latter with a harness-saddle, but one or more catches, substantially as described, to engage with shank of the eye, as set forth.

2. The check-rein holder consisting of the eye A, its shank *a*, grooved, pointed, and provided with a shoulder, as described, the socketed head B, the two lever-catches C C, their operating-spring D, and the fastening screw-threaded shank A, all being arranged substantially in manner to operate as and for the purpose as set forth.

3. The combination of the eye provided with the shank with the head to be applied to a harness-saddle, and socketed to receive the said shank, and also with means or mechanism for holding the shank of the eye in engagement with the head, and for disconnecting them, substantially as set forth.

333,529. MACHINE FOR SHAVING STEREOTYPE-PLATES. GEO. E. LLOYD, Chicago, Ill. Filed May 12, 1885. (No model.)



Claim.—1. The combination, in a stereotype-shaving machine, with the carrier A and knife B, of the plates G and H.

2. The combination, in a stereotype-shaving machine, with the carrier A, of knife B, having a recess, *b*, in its cutting-edge.

3. The combination, in a stereotype-shaving machine, with the carrier A and knife B, having a rectangular recess, *b*, in its cutting-edge, of plate G.

4. The combination, in a stereotype-shaving machine, with the carrier and the knife, of the plate H, having longitudinal side ledges and a longitudinal central mortise.

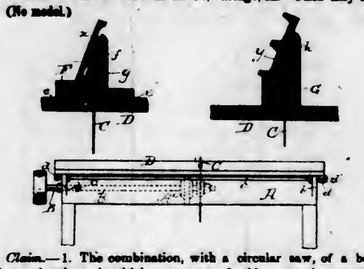
5. The combination, in a stereotype-shaving machine, with carrier-head A and knife B, having recess *b* therein, of the plates G and H, said plate G corresponding in thickness to stereotype plate or base, and said plate H having a longitudinal central mortise and corresponding in thickness to a stereotype-plate.

6. The combination, in a stereotype-shaving machine, with the carrier-head A and knife B, of the friction-roller arranged parallel with, on about the same horizontal plane as and in front of, the cutting-edge of said knife.

7. The combination, in a stereotype-shaving machine, of a friction-roller, blocks in which the same is journaled, spindles projecting upward from said blocks, cam-handles, and guides in which said spindles move.

8. The combination, with a stereotype-shaving machine, of a friction-roller, C, blocks *c*, spindles *d*, handles E, guides D, and spring *e*, as hereinbefore described.

333,530. MACHINE FOR FITTING STEREOTYPE-PLATES AND THEIR BACKING. GEO. E. LLOYD, Chicago, Ill. Filed May 12, 1885. (No model.)



Claim.—1. The combination, with a circular saw, of a bed-plate having a slot through which a segment of said saw projects, and means for adjusting said plate laterally.

2. The combination, with a vertical saw and frame in which the shaft thereof is journaled, of a bed-plate, pivotal shaft, and nuts thereon, through the medium of which said bed-plate is made adjustable.

3. The combination, with a circular saw, of the bed-plate and guide placed thereon in alignment with said saw, said guide having a vertical flange, one side of which is inclined and is intersected by a vertical slot through which said saw passes.

4. The combination, with a circular saw, of the bed-plate capable of vertical adjustment, and a guide one side of which is inclined and is intersected by a vertical slot, and which is placed in alignment with said saw.

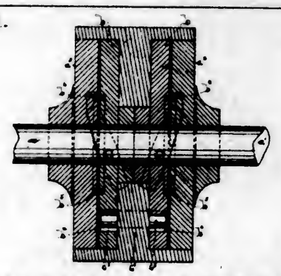
5. The combination, with a circular saw, of a bed-plate, means for adjusting the same laterally, and a guide one side of which is inclined and intersected by a vertical slot, and which is placed in alignment with said saw.

333,531. CLUTCH FOR TRICYCLES. JOHN M. HARLIN, New Haven, Conn. Filed Oct. 3, 1885. (No model.)

Claim.—1. The combination of the divided shaft *a a'*, one or more disks, a^2, attached thereto, each provided with two pawl teeth or slots, a^3 a^4, inclined in opposite directions around the shaft, one or more pawl-carrying disks, *b*, each provided with two yielding pawls inclined in opposite directions, and a driving-pulley part, *c*, connected to said disk or disks *b* by a coupling, permitting a limited independent movement of the same back and forth, and provided with a tripping device for each pawl operated by said independent movement, substantially as described.

2. The combination of divided shaft *a a'*, one or more disks, a^2,

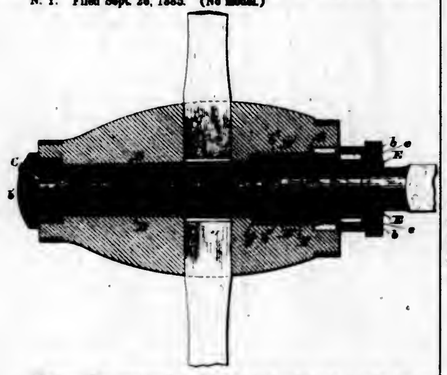
333,531.



provided with slots a^3 a^4, inclined in opposite directions, one or more disks, *b*, provided with oppositely inclined pawls b^1 b^1, springs b^2 b^2, and slot b^4, and the pulley part *c*, provided with pin c^2 and notches c^3 c^3, substantially as described.

3. The combination of divided shaft *a a'*, one or more disks, a^3, provided with slots a^3 a^4, inclined in opposite directions, the pressure-spring b^2, one or more disks *b*, provided with opposite-inclined pawls b^1 b^1, springs b^2 b^2, and slot b^4, and the pulley part *c*, provided with pin c^2 and notches c^3 c^3, substantially as described.

333,532. SELF-OILING AXLE. JUSTUS W. MARSHALL, Cassnovia, N. Y. Filed Sept. 26, 1885. (No model.)



Claim.—The combination of the straight solid axle A with the enlarged section A', and shoulder *a'*, the oil-groove *a*, the axle-box B, having the enlarged section B', and shoulder b^2 and b^3, the cap-nut b', the radial opening for oil-space *c*, the washer F, the packing-box G, the packing-gland E, having the shoulder *e*, the gland-nut *b*, the oil-hole, and screw C, all substantially as and for the purpose set forth and illustrated.

333,533. HARVESTER. DON C. MATTESON, Stockton, Cal. Filed Jan. 15, 1885. (No model.)

Claim.—1. In a combined traveling header and thrasher, a separator frame or case supported by bearing-wheels, a header-frame extending at right angles from the side of the separator, to which one end is hinged, while the other is supported by a bearing-wheel, and a supplemental frame supporting upon its front end the cutter-bar, carrying belt or draper, and reel, the said frame being pivoted at its center upon the shaft I of the main header-frame C, and extending at the rear beyond the said frame C, and having counterbalance-weights thereon, substantially as described.

2. The main header-frame, having one end hinged to the side of the separator, the other supported by a bearing-wheel, a secondary frame, fulcrumed or journaled upon the main frame, the cutter-bar, carrying belt or draper, and reel supported from the front of the secondary frame, said frame counterbalanced at the rear, in combination with ropes or chains by which the frame is tilted about its journals and raised or lowered, the drum or windlass by which the ropes are operated, and a foot-pawl, K, and a bolding-plate, O, substantially as herein described.

3. The seat Y, supported upon the projecting frame, which has the rear end hinged to the front of the separator, in combination with the notched adjusting-wedge *s*, substantially as herein described.

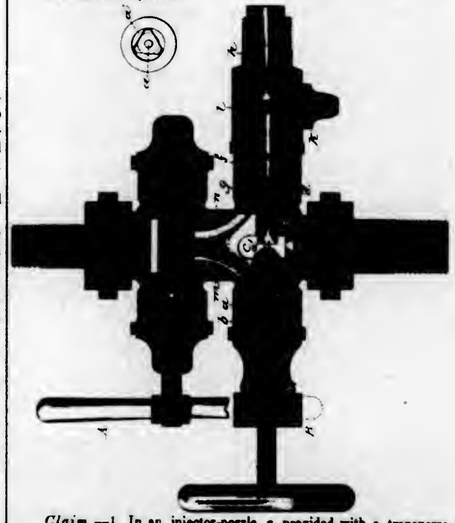
4. In a traveling header and thrasher, a separator frame or case supported upon bearing-wheels, and a bevel gear-wheel upon the wheel-shaft, by which the sickle is driven, a header-frame extending at right angles from the side of the separator, to which the inner end is hinged, while the outer end is supported by a bearing-wheel, in combination with a supplemental frame hinged or journaled so as to tilt upon the main frame,

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and a jointed shaft or tumbling-rod with a crank upon one end to drive the sickle, the other end turning in a box journaled upon the main axle and having a bevel-pinion which engages and is driven by the bevel-gear, substantially as herein described.

333,534. INJECTOR. SILAS W. MORELAND, Geneva, Ohio. Filed Feb. 24, 1885. (Model.)



Claim.—1. In an injector-nozzle, *a*, provided with a transverse opening through it communicating with the bore of the nozzle and steam-chamber *b*, combined with fixed nozzle *a'*, and constructed with a triangular guide and conical valve at the end of the triangular section adapted to a concave seat in nozzle *a'*, the point of nozzle *a* tapering and extending through nozzle *a'* into water-chamber *c* and entering within the throat of nozzle *d*, nozzle *a'* also extending into chamber *c*, but not into nozzle *d*, nozzles *a* and *a'* combined with water-chamber *c*, nozzle *d*, steam-chamber *g*, nozzle *f*, into the throat *e* of which the point

of nozzle *d* enters, chamber *l*, tube *h*, and overflow *k*, and nozzles *a*, *d*, and *f* and tube *h*, aligned in a straight line with each other and inclosed in a case provided with suitable connections for steam and water pipes, and all arranged, constructed, and operating as set forth.

2. In an injector, steam-chamber *e*, provided with a cap at each end of the chamber, and within and combined with said chamber-valve *i*, provided with handle A upon a stem held in line in boxes in said caps, and a conical bearing adapted to a concave seat in the cap at the end of chamber *e*, next to handle A, said chamber *e* also provided with ports under valve *i*, and passages *m* and *n*, communicating with steam-chambers *b* and *g*, combined with steam-nozzles *a*, *d*, and *f*, tube *h*, and overflow *k*, all arranged, combined, constructed, and operating as set forth.

333,535. CULTIVATOR. JOSEPH MORGAN, West Springfield, Mass. Filed May 11, 1885. (No model.)

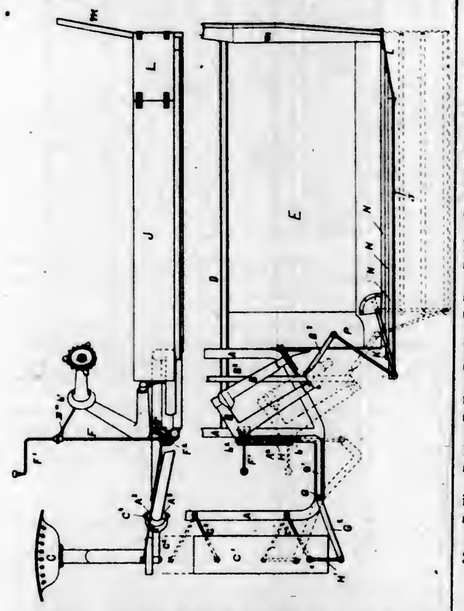


Claim.—1. The improved anti-clogging hoes *i i*, of uniform thickness, with straight upper and under edges tapering narrow in the rear and curved up in front to an elevated point, having front also curved diagonally, substantially as and for the purposes set forth.

2. In combination with pole *b* and brace-bar *a*, the standards *c*, having the broad upper section provided with two series of holes, and the outer standard, *d*, adjustable vertically and toward and from the inner hoe by means of the said series of holes, substantially as shown and described.

3. The combination, with the frame *a b* and standards *c d*, of the flanged hoe-stocks having the attaching-plates arranged diagonally to the standards and frame, substantially as shown and described.

333,536. GRAIN-HARVESTER. LA VERNE W. NOYES, Chicago, Ill., assignor to William Deering, same place. Filed Oct. 27, 1884. (No model.)



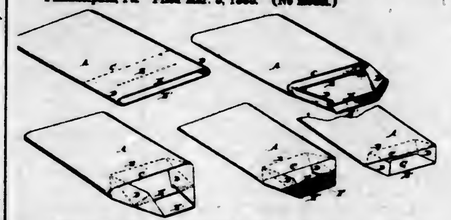
Claim.—1. In a self-binding grain-harvester, the combination, with the main frame, and with the binder-frame movable backward and forward thereon, and with the grain-platform rigid with the main frame, of the back board, J, movable to and from the cutter-bar, substantially as and for the purpose set forth.

2. In a self-binding grain-harvester, the combination, substantially as hereinbefore set forth, of the main frame, the binder-frame movable backward and forward thereon, the grain-platform, the adjustable back board, and the adjustable platform extension composed of the slats N N N, and the links K L.

3. In a self-binding grain-harvester, in combination with the main frame, the binder-frame movable backward and forward thereon, the grain-platform, the back board, and the links which connect it to the platform, the slats sustained by said links, and the push and pull rod connected to the binder-frame and actuating the back board, substantially as and for the purpose set forth.

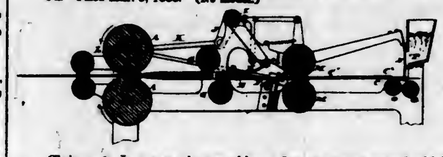
4. In combination, substantially as hereinbefore set forth, the grain-platform, the adjustable back board, the link K, the divider, and the link L, substantially equal in width to the back board, and hinged thereto and to the divider.

333,537. MANUFACTURE OF PAPER BAGS. JOHN P. OSBORDONK, Philadelphia, Pa. Filed Mar. 5, 1885. (No model.)



Claim.—The step in the method of forming the bottom of a paper bag which consists in tucking in between the two faces of the tube a portion of one face thereof, substantially as and for the purpose specified.

333,538. PAPER-BAG MACHINE. JOHN P. OSBORDONK, Philadelphia, Pa. Filed Mar. 5, 1885. (No model.)



Claim.—1. In a paper-bag machine, a former over or around which the paper tube passes, having a notch or incision, into which one face or side of the tube may be thrust to form an inward fold, in combination with a forming-knife adapted to force the paper down into said incision, substantially as and for the purpose specified.

2. In a paper-bag machine, a former over or around which the paper tube passes, having a notch or incision, into which one face or side of the tube may be thrust to form an inward fold, and a rearwardly-extending tongue, over which the bottom folds are made, in combination with a forming-knife adapted to force the paper down into said notch or incision, substantially as and for the purpose specified.

3. The former D, having notch or incision E, edge D', and shoulders F', in combination with reciprocating forming-knife H, substantially as and for the purpose specified.

4. The former D, having notch or incision E, edge D', tongue F, and shoulders F', in combination with reciprocating forming-knife H, substantially as and for the purpose specified.

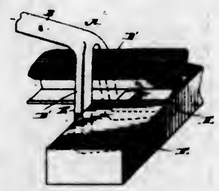
5. The former D, having notch or incision E and tongue F, in combination with the forming-knife, substantially as and for the purpose specified.

6. The former D, having notch or incision E and tongue F, furnished with raised part F^2, in combination with the forming-knife, substantially as and for the purpose specified.

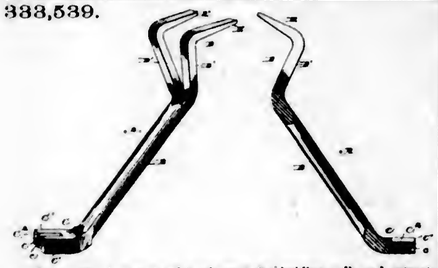
7. The combination of former D, having notch or incision E, knife H, rollers M, rollers O, paste-knife N, and paste-vat P, substantially as and for the purpose specified.

8. The combination of cutting-blade B, former D, having notch or incision E, knife H, rollers M, rollers O, paste-knife N, and paste-vat P, substantially as and for the purpose specified.

333,539. COMBINED TIE AND RAIL HOLDER AND SPIKE-PULLER. WILLIAM PALMER, Jacksonville, Ohio. Filed Aug. 21, 1885. (No model.)



333,539.

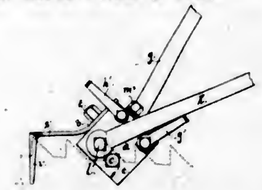


Claim.—1. A compound implement for holding rails and extracting spikes, consisting of a handle-bar having at one end two recessed arms arranged at an angle to said bar and provided at its opposite end with prongs having bent arms, as set forth.

2. A compound implement for holding rails and extracting spikes, comprising a handle-bar having two bent prongs at one end diverging laterally from each other and having a bent arm, and at its opposite end with parallel bent arms having recessed faces, as set forth.

3. A compound implement for holding rails and extracting spikes, comprising a handle-bar having two bent laterally-diverging prongs, D', at one end, and each prong provided with a bent arm, E, and at its opposite end with bent parallel arms C', separated by an intermediate slot, and having recesses c formed on the vertical inner faces thereof, as set forth.

333,540. SAW-TOOTH SWAGING DEVICE. SARAH A. PAREK, Bay City, Mich. Filed Nov. 19, 1885. (No model.)



Claim.—1. In a saw-swage, a rotary die having a die-face formed by cutting away a portion of the cylindrical die, forming a flattened portion, *n*, with the side depressions, *o* and *o'*, and the central depression, *p*, in one edge of the said portion *n*, forming the raised parts *r* between the said depressions, substantially as and for the purpose set forth.

2. In a saw-swage, the swage-block *a*, provided with a longitudinal slot in its lower portion, a shaft, *l*, passed into the block and provided with a die-face opposite the slot, and a clamping device adapted to hold the saw within the said slot, in combination with a screw-threaded bolt passed into the swage-block above the die-face, and with its inner end forming an anvil, against which one edge of a saw-tooth rests while the die acts upon its opposite edge, substantially as and for the purpose set forth.

3. In a saw-swage, the combination, with the swage-block *a*, having the longitudinal slot *b*, of a shaft, *l*, having a die-face formed thereon, the screw-threaded anvil *m* above the die-face, and the clamping-bolts *c* and *d*, passed through opposite sides of the block and extending into the said slot, substantially as and for the purpose set forth.

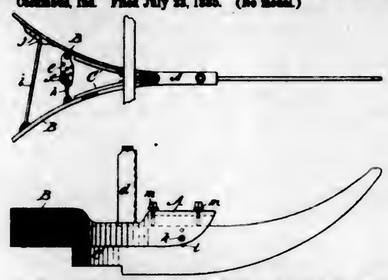
4. In a saw-swage, the combination of the block *a*, a shaft, *l*, passed into the block and provided with a die-face, and a lever, *k*, on the outer end of the shaft, with the stopping devices *g'* and *k'*, substantially as and for the purpose herein described.

5. In a saw-swage, the swage-block *a*, the shaft *l*, having a die-face, the anvil *m*, secured above the die-face, and clamping-bolts *c* and *d*, in combination with the piece *h*, secured to the swage-block, and provided with an extended part having an opening, *i*, passed over the head *f* of the clamping-bolt *c*, substantially as and for the purpose set forth.

6. In a saw-swage, the swage-block *a*, the shaft *l*, having a die-face formed thereon, the anvil *m*, passed through the block above the die-face, and the clamping-bolts *c* and *d*, in combination with the guide *s*, secured to the block by the bolt *t*, and provided with the slot *u* and the outward-extending arm *s'*, substantially as and for the purpose set forth.

7. In a saw-swage, the swage-block *a*, the shaft *l*, provided with a die-face and having a groove, *i'*, in combination with a piece, *h*, secured to the block, and with an extended portion, *j'*, within the said groove and adapted to hold the shaft *l* in position, substantially as set forth and shown.

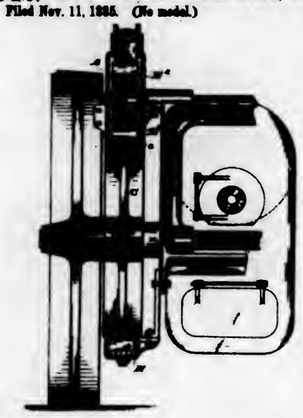
333,541. CORN-PLANTER ATTACHMENT. JOSEPH B. PERRIN, Columbus, Ind. Filed July 22, 1885. (No model.)



Claim.—1. In combination with the furrow-runner of a corn-planter, the attachment consisting of the pair of plates B B, united at one end to form the saddle A, and diverging therefrom, the bolt *k*, and the set-screws *m m*, all arranged to operate substantially as specified.

2. In combination with the furrow-runner of a corn-planter, the attachment consisting of the pair of plates B B, united at one end to form the saddle A, and diverging therefrom, link *e*, hook *h*, bar *i*, bolt *k*, and set-screws *m m*, all arranged to operate substantially as specified.

333,542. INCASED GEARING. EDGAR PERRIN, Waynesborough, Pa. Filed Nov. 11, 1885. (No model.)



Claim.—1. The combination, substantially as before set forth, with a pair of intermeshed toothed wheels, of a casing composed of a channel-ring for covering the toothed rim of one of the said wheels, and a wing on said channel-ring for covering the other wheel.

2. The combination, substantially as before set forth, with a pair of intermeshed toothed wheels, of a casing composed of a channel-ring which covers and is fitted on ring-flanges of the toothed rim of one of the wheels, and a wing on said channel-ring for covering the other wheel.

3. The combination, substantially as before set forth, with a pair of intermeshed toothed wheels, of a casing composed of a channel-ring which covers and is fitted on ring-flanges of the toothed rim of one of the wheels, and a wing on said channel-ring, which covers the other wheel and carries an oil-cup for lubricating the wheels.

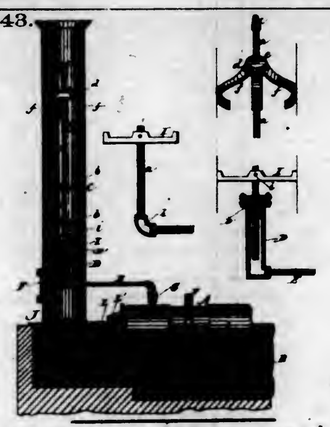
333,543. STEAM-BLOWER FOR STACKS OF BOILER-FURNACES. TOWNSEND POORE, Scranton, Pa. Filed May 9, 1885. (No model.)

Claim.—1. A steam-blower in a stack provided with a centering contrivance applied to its sectional steam-blast pipe and binding against the stack, and adjustable up and down with the pipe in the stack by pushing the pipe up or pulling it downward, substantially as described.

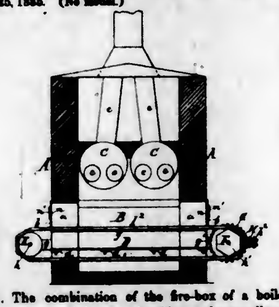
2. The combination, with the stack, of the steam-blower built up of sections of pipe which form a continuous laterally-closed steam-blast pipe, and provided with a centering contrivance and connected with the supply-pipe of the steam-generator, substantially as described.

3. The combination of the removable stuffing-box section and temporary guide and support, the steam-supply pipe of the boiler, the blast-pipe and its steam-blast nozzle or jet, a centering contrivance, and a stack having a man-hole covered with a door for the admission of an anemometer and for other uses, substantially as and for the purpose described.

333,543.



333,544. BOILER-FURNACE. TOWNSEND POORE, Scranton, Pa. Filed May 25, 1885. (No model.)

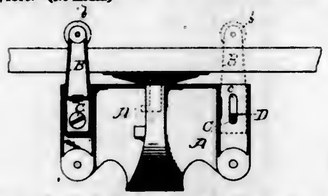


Claim.—1. The combination of the fire-box of a boiler-furnace, provided with openings and doors on its sides, and an endless traveling-chain grate arranged across the fire-box upon drums, by one of which it is operated, substantially as and for the purpose described.

2. The combination of the fire-box having openings and doors in its sides, transverse endless traveling-chain grate, and the ash screen or platform, substantially as described.

3. An endless sectional traveling-chain grate arranged across a fire-box, having openings and doors in its sides, substantially as and for the purpose described.

333,545. HAY-CARRIER. JOSEPH B. PORTER, Chicago, Ill. Filed Oct. 2, 1885. (No model.)



Claim.—1. The combination, with a hay-carrier and vertically-adjustable travelers, of a track, substantially as set forth.

2. The combination, with a hay-carrier, travelers, and vertically-adjustable hangers, in the upper end of which said travelers are journaled, of a suspended track.

3. The combination, with a hay-carrier having vertical slots therein, as described, travelers, and vertically-adjustable hangers, in the upper end of which said travelers are journaled, and which are provided with bolt-holes in their lower ends, of a suspended track.

4. The combination, with a hay-carrier having vertical slots *c c* therein, as described, travelers *b b*, hangers B B, having holes in their lower ends, bolts C C, and sleeve D D, of the suspended track, substantially as and for the purpose hereinbefore described.

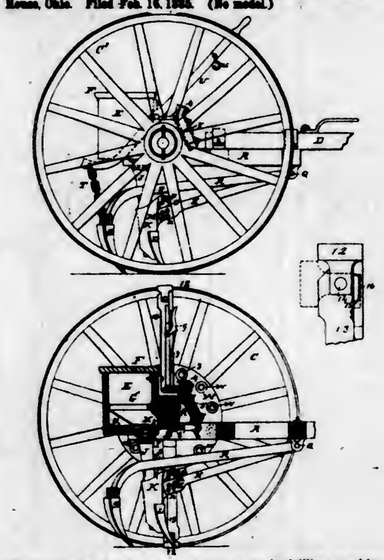
333,546. FANNING-MILL HOPPER. CHARLES H. PERRINE, Otsego, and PERRY WALKER, Lawton, Mich. Filed Apr. 14, 1885. (No model.)

Claim.—In a fanning-mill hopper, the combination of the inclined board having the discharge-opening, the sliding gate to said opening, having the slot in its upper edge, the lifting-bar pivoted at its lower end in said slot, the operating-lever pivoted at its lower end to said board, a slotted brace-cleat at the upper edge of the board, in the slot of which the operating-lever plays, said lever being pivotally connected with the upper end of the lifting-bar, and a stop projection to limit the play of the operating-lever, all substantially as set forth.

333,546.



333,547. CORN-PLANTER. EDWIN R. PROUTY, Washington Court-House, Ohio. Filed Feb. 16, 1886. (No model.)



Claim.—1. In a seed or corn planter or grain-drilling machine, the combination, with the grain-compartments G G' G'', having their seed-dropping slides H hinged to extensible two-part links 6 6', of the ground-wheel C, having the fixed clutch-plate V, the axle B, the loose clutch-plate W, having tappets 3, and the rocking piece or lever 5, which communicates motion of the clutch-tappets through said links 6 6' to the said slides H, substantially as herein shown and described.

2. In a corn-planter or grain-drill, the combination, with the fixed axle B, bearing the slidable clutch-plate W, of the lever Z, frame fast upon said axle and to which said lever is secured, link Y, and yoke X, said lever having a latch, *z*, capable of engagement in one or more notches 1 of rack 2, whereby said clutch can, at the user's discretion, be readily thrown and held either into or out of gear with the fixed clutch-plate V upon the ground-wheel, substantially as described, and for the purposes stated.

3. The combination, with an axle and ground-wheel, of the clutch-plate V, secured to said ground-wheel, clutch-plate W, sliding on said axle and having annular series of holes *w*, tappets in said holes, grain-delivery slide, means connecting said tappets and said slide, yoke X, secured to said sliding clutch-plate, lever Z, having catch *z*, rack 2, having notches 1, and link Y, connecting said lever and said yoke, substantially as set forth.

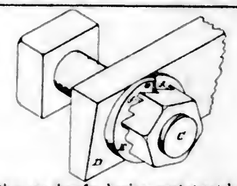
4. The combination of loose clutch-plate W, the pivoted markers 12, and the spring-detents 15, as and for the purposes set forth.

5. In a corn-planter or grain-drill, the combination, with the grain-dropping slide H and the revolving tappets 3, of the rocker 5, having the adjustable heel 4, and the link 6 6', in two screw-threaded portions, as and for the purposes designated.

333,548. NUT-LOCK. EDWIN R. PROUTY, Washington Court-House, Ohio. Filed Feb. 26, 1886. (No model.)

Claim.—1. The nut-lock consisting of the combination, with a

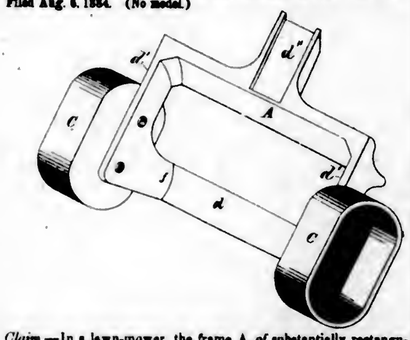
333,548.



screw-bolt, and with a nut therefor having ratchet-notches *f* in its side, of the downwardly chamfered or beveled fish-plate D, and of the upwardly chamfered or beveled radially-split washer E, having the outturned spring-lip *e* on the left side of the split, as and for the purpose set forth.

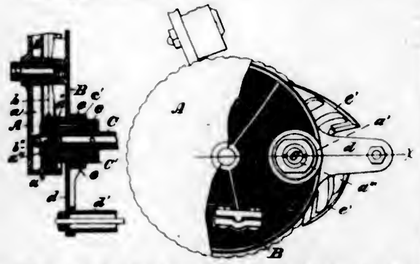
2. In a nut-lock, the upwardly-chamfered radially-split washer E, having the outturned spring-lip *e* on the left side of the split, as and for the purpose set forth.

333,549. LAWN-MOWER. TIMOTHY ROGERS, Springfield, Ohio, assignor, by mesne assignments, to the Rogers Fence Company, same place. Filed Aug. 6, 1884. (No model.)



Claim.—In a lawn-mower, the frame A, of substantially rectangular form, with side bars, *d'*, hangers *f*, extending at right angles downward therefrom and connected at their lower ends by the cutter-bar *d*, and the gear-case C, of hollow ellipse-shaped form attached on the outside of said frame over the angle formed by the said hangers and side bars with its longest axis in line with the latter, said frame having an extension at the middle of the rear bar of the same provided with a recess, *d''*, therein for the tongue, and being cast in a single piece with the attachments described, for the purpose specified.

333,550. LAWN-MOWER. TIMOTHY ROGERS, Springfield, Ohio, assignor, by mesne assignments, to the Rogers Fence Company, same place. Filed Aug. 6, 1884. (No model.)

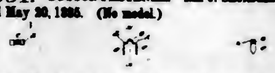


Claim.—1. In a lawn-mower, the ground-wheel having the V-shaped groove therein, the adjustable friction-pinion engaged therewith, the pin-clutch, the knife-reel, and the frame, said pin-clutch forming the journal of the shaft of said knife-reel, and the case of said friction-pinion forming a section of said pin-clutch.

2. In a lawn-mower operated by friction-gearing, as described, the combination, with the knife-reel, of the drive-wheel having the internal V-shaped groove, the rubber pinion, and means for adjusting the same, the pinion-case, the pin-clutch, both of the latter being attached to the shaft of said knife-reel, and said pinion-case forming a section of said pin-clutch, and the frame provided with a bearing for said pin-clutch, which latter forms the journal of said knife-reel, as set forth.

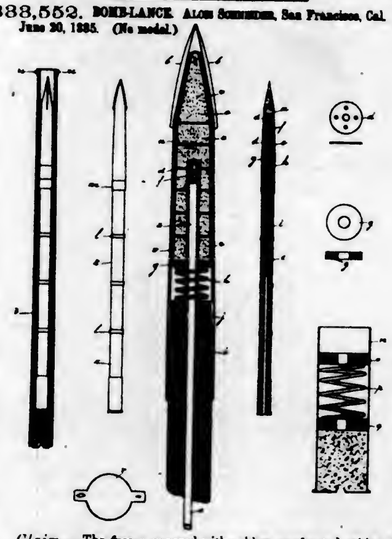
3. In a lawn-mower, the drive-wheel having the V-shaped groove therein, the adjustable rubber pinion, the pinion-case, the pin-clutch, said pinion-case forming a section of the latter, the knife-reel shaft, and the frame having the disk-shaped end, and a bearing in the latter for the clutch-journal of the knife-reel shaft, as set forth.

333,551. BUTTON-FASTENER. IRA J. SAUNDERS, Union City, Mich. Filed May 20, 1885. (No model.)



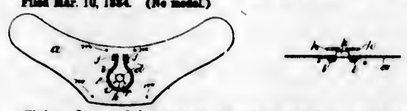
Claim.—The herein-described metallic staple-like fastener, bent to form two prongs, and having a cross-bar or crown carved upwardly from a shoulder or shoulders, *d*, adapted to rest upon the material to which the button is to be attached, the upwardly-carved portion being concave at its upper side or top and convex at its under side, the convex portion forming a rest for contact against it of the eye of the shank of the button, substantially as described.

333,552. BOMB-LANCE. ALOIS SCHNEIDER, San Francisco, Cal. Filed June 20, 1885. (No model.)



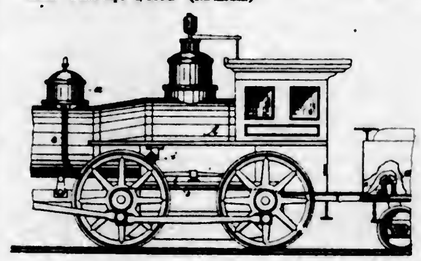
Claim.—The fuse *e*, covered with rubber, perforated rubber disks *d* between sections of the explosive material, rubber bag *v*, for inclosing the charge, perforated rubber wad *g* at bottom of the charge, spiral spring *h*, hollow wooden rod *i*, having guide-rings *l*, and recessed spaces *k*, in combination with the steel shell *a*, armed with lances *b*, and screwed to the wooden rod, substantially as described, and for the purpose set forth.

333,553. NECKTIE-SUPPORTER. BENJAMIN R. SCULLY, Lynn, Mass. Filed Mar. 10, 1884. (No model.)



Claim.—In a necktie-supporter, a catch or stop, *k*, arranged to engage the lower part or edge of the collar-stud to prevent the rising of the supporter when in use, substantially as specified.

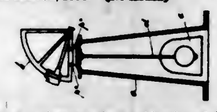
333,554. MAGNETIC FRICTION DEVICE FOR LOCOMOTIVES. N. S. SHALER, Cambridge, assignor to Theodore A. Dodge, trustee, Brookline, Mass. Filed Apr. 4, 1884. (No model.)



Claim.—1. A locomotive and receptacle for magnetic gritty material thereon, combined with the drive-wheel, means to magnetize the same, and a delivery-pipe leading from the said receptacle to the periphery of the drive-wheel, substantially as described.

2. A locomotive and receptacle for gritty or friction-increasing material, and the drive-wheel and means for delivering the gritty or friction material from the receptacle at its point of contact with the rail, combined with a cleaning device for removing the crushed material remaining on the wheel, substantially as described.

333,555. ALTITUDE-INSTRUMENT. BENJAMIN B. SHARP, San Francisco, Cal. Filed Mar. 31, 1885. (No model.)



Claim.—1. In an anglometer, the combination of the frame or stand having the rings *f* and *g*, movable as described, a cross-bar, *t*, swung in ring *g* by means of a shaft, *h*, a pendulum attached to said cross-bar below and a graduated arc, and radial limbs having a nonius or vernier, *n*, index-bar *l*, and telescope *m*, secured adjustably to the upper side of the bar *t*, as set forth.

2. In an anglometer, the combination, with the stand having the rings *f* and *g*, as described, and the cross-bar *t*, having the shaft *h*, by means of which it is swung in the ring *g*, and provided with the spirit-levels *i*, and lugs *k* on top and the pendulum beneath, of the graduated arc having the two radial limbs at ninety degrees from each other, provided with slots *p*, adjusting-screws for connecting the radial limbs to lugs *k*, and the vernier *n*, bar *l*, and telescope, as described.

333,556. HARNESS. ALLEN SHERWOOD, Syracuse, N. Y. Filed Nov. 6, 1885. (No model.)



Claim.—1. In combination with the yoke A, the draw-plate B, provided with a bar, b^3, having a series of notches, b^3, substantially as and for the purpose described.

2. The combination of a steel yoke, consisting of a single bar of metal bent centrally in the form of an arch, with inverted arches on each side thereof, with a pulley upon the central arch, and a combined cap and draw-plate, substantially as and for the purpose described.

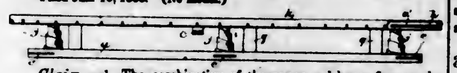
3. The combination of a yoke having an eye cut out at each end, and a tongue, *k*, projecting outwardly therefrom, with traces engaged therewith, substantially as described.

4. The combination of a yoke having an eye at each end with the back-strap G and buckle L, having a hook and spring-bolt, substantially as and for the purpose described.

5. The combination of a yoke having projecting therefrom a tongue, *k*, perforated at *k'*, a pin, k^3, therein, a back-strap, a buckle provided with a spring-bolt, and a chain connecting said buckle within the pin k^3, substantially as and for the purpose described.

6. The combination of a yoke, consisting of single-tree bar bent centrally in the form of an arch, with a pulley upon said arch, and a combined cap and draw-plate provided with lugs b^4 and rings b^4, substantially as and for the purpose described.

333,557. VENTILATED SPRING-CUSHION FOR VEHICLES AND FURNITURE. E. RIPLEY SHELEY and HARLAN P. WELLS, Salisbury, Mass. Filed Jan. 16, 1885. (No model.)



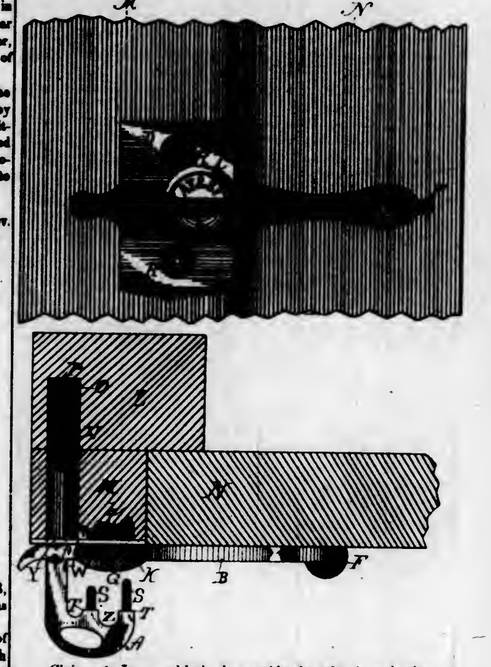
Claim.—1. The combination of the upper and lower frames, the spring-seating cup-like supports *d*, secured to the lower frame, the spring-steadying plates *p*, secured to the upper frame and formed with plate *h* and projection *i*, to enter the top of the spring, the volute springs *j*, and flexible stays *g*, all substantially as specified.

2. The combination of the upper and lower frames formed with bars *a b* and *a' b'*, respectively, the spring base-sockets *d*, and supports *p*, respectively secured to said frames, volute springs *j*, yielding stays *q*, covering *k*, and an overlying cushion, all substantially as specified.

3. The combination, with the volute springs and supporting-frame, of the metallic spring base-supports formed with flange *e*, adapted to secure together the side and end bars of the frame, and with a vertical circular rim to receive the base of the spring, a bottom, *g*, to support the spring, and an opening, *f*, for the escape of water therefrom, all substantially as specified.

4. The combination, with the volute springs and frame, of spring stay-plates *p*, formed with wing *h*, to be secured to the bars of the frame, and with projection *i*, to enter the axial passage in the spring to steady the same, substantially as specified.

333,558. SEAL-LOCK. JOHN H. SMITH, Kansas City, Mo. Filed Mar. 27, 1885. (Model.)



Claim.—1. In a seal-lock, the combination of a hasp having an opening for the reception of the main bolt, a head upon said hasp, a seal adapted to fit over said head, a main bolt, a latch engaging therewith, and a metal-plate having an opening through which said bolt passes, all combined and adapted to operate as described.

2. A seal-lock provided with a perforated cup-shaped seal having an annular ridge upon its outer surface, for the purpose substantially as described.

3. The combination, in a seal-lock, of a movable bolt provided with inwardly-projecting points upon its outer part, a latch adapted to engage therewith, a hasp having an opening to receive the outer end of said bolt, and a perforated dish-shaped seal adapted to engage with said points, to hold the hasp upon the bolt, substantially as described.

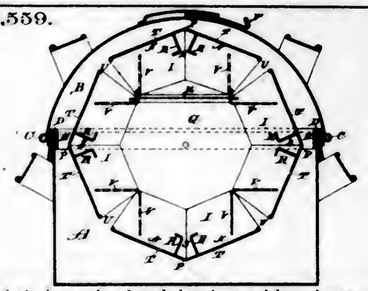
4. The herein-described seal-lock provided with a metal plate having guards about the opening, through which the main bolt passes, in combination with a hasp having a recess for the reception of said guards, substantially as described.

5. In a seal-lock, the combination of a main bolt, a latch engaging therewith, a metal plate having an opening over said latch, guards about said opening, a hasp having rabbets to receive said guards, and a seal, all arranged and adapted to operate as described.

333,559. WASHING-MACHINE. ORREMAN J. SMITH, Iola, Kans. Filed May 9, 1885. (Model.)

Claim.—1. The combination of the boiler with the rotating cylinder, said cylinder having the peripheral buckets, spaces U between the

333,559.

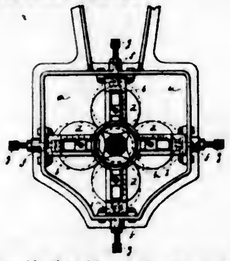


ends of the buckets, and perforated plates bent at right-angles over said spaces and connecting the buckets, substantially as described.

2. The combination of the boiler with the rotating cylinder, said cylinder having the peripheral buckets, perforations in the bottoms of the buckets, and the transverse ribs R in the bottoms of the buckets, said ribs having the spaces S between them for the passage of water through the clothes, substantially as described.

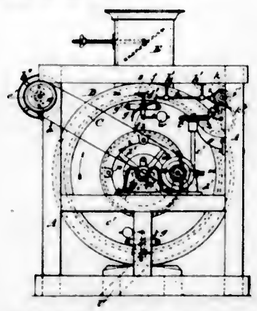
3. The combination of the boiler with the rotating cylinder, said cylinder having the peripheral buckets, spaces U between the ends of the buckets, perforated plates bent at right angles over said spaces and connecting the buckets, perforations in the bottoms of the buckets, and the transverse ribs R in the bottoms of the buckets, said ribs having the spaces S between them, substantially as described.

333,560. JOURNAL-BEARING. AUGUST W. SPATHER, Leipsic, Germany. Filed May 26, 1885. (No model.)



Claim.—The combination of frame *a*, having ways *b*, and perforated cross-pieces *f* with rolls *d*, having bearings *c*, and with set-screws *g*, and re-enforcing ring *h*, substantially as and for the purpose specified.

333,561. BARLEY-MACHINE. SIGMUND SPITZER, Vienna, Austria-Hungary. Filed July 25, 1885. (No model.)

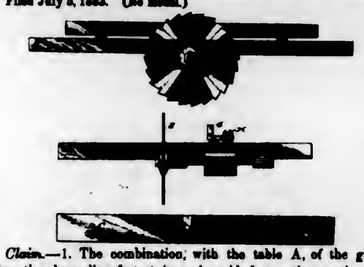


Claim.—1. In a barley-machine, the combination of the revolving stone, the perforated inclosing-casing revolving in opposite direction to said stone, and the stationary casing with the shafts f^3, valves *f*, provided with the arms f'', weights *w*, and the tappets *g*, rod *h*, cam *i*, and the gearing whereby said valves are actuated, as and for the purpose specified.

2. In a barley-machine, the combination of the revolving stone B, pulley *b'*, the perforated revolving casing C, revolving in opposite direction to said stone, gear-wheel d^2, the pinion d^3, shaft d', and cone-pulleys *d* and *s*, as and for the purpose set forth.

3. A pearl-barley machine comprising the frame A, shell D, the revolving stone B, revolving perforated casing C, provided with the openings c^2, and forming with said shell the space *a*, the mechanism for actuating said stone and casing, and the shafts f^3, arms f'', tappets *g*, valves *f f*, and weights *w*, secured on said casing and revolving therewith, rod *h*, cam *i*, and the mechanism for actuating said cam, consisting of the gearing *k k' k²*, face-wheel *l*, the shaft *l'*, the worm-wheel *m*, worm *n*, pinion d^3, and gear-wheel d', as and for the purpose specified.

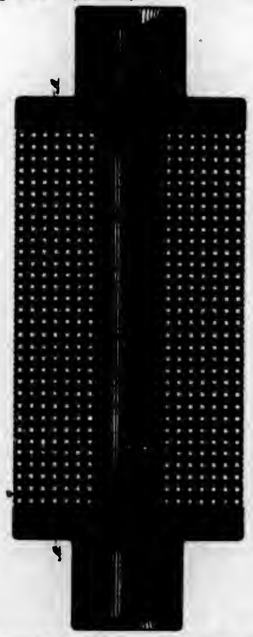
333,562. SAW-TABLE GAGE. DAVID W. STANISFORD, Oakland, Cal. Filed July 5, 1883. (No model.)



Claim.—1. The combination, with the table A, of the guide G, having the depending feet at its ends, said feet resting on the table A and supporting the guide from contact therewith, so as to leave a space between the guide and table, for the purpose set forth

2. The combination, with the table A, of the guide G, having the depending feet C and the elongated foot C^2, as set forth.

333,563. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. WILLIAM STANLEY, Jr., and OLIVER B. SHALLENBERGER, Pittsburg, Pa. Filed Aug. 7, 1885. (No model.)



Claim.—1. An armature-core composed of spirally-coiled wire wound in layers about a central shaft and having straight wire wound in the interstices formed by the layers of coiled wire, substantially as and for the purposes set forth.

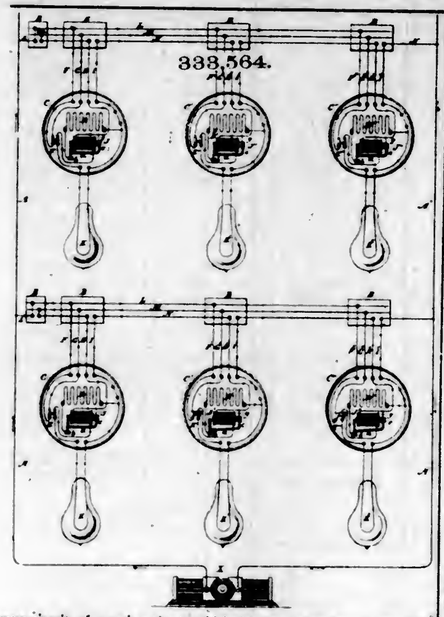
2. An armature-core composed of spirally-coiled and straight wire wound in alternate layers about a central shaft, substantially as set forth.

3. In an armature-core, the combination of a central shaft, end plates thereon, and spirally-coiled and straight insulated wire wound in alternate layers upon the shaft and between the end plates, substantially as set forth.

333,564. SYSTEM OF ELECTRIC LIGHTING. WILLIAM STANLEY, Jr., Pittsburg, Pa. Filed Sept. 30, 1885. (No model.)

Claim.—1. In a system of electrical distribution having translating devices in cross-circuits between the mains, the combination, in each

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cross-circuit, of a series wire to which the translating devices are connected in series to one another, two auxiliary wires, one of which is connected to one of the mains and the other to the series wire, and cross-circuits between the auxiliary wires, substantially as and for the purposes set forth.

2. In a system of electrical distribution having translating devices in series in cross-circuits between the mains, the combination, in each cross-circuit, of as many paths for the current between the mains as there are translating devices in the circuit, and means for opening one of the paths between the mains as each translating device is cut out, to the end that when the last translating device is cut out the whole circuit shall be open, substantially as set forth.

3. In a system of electrical distribution having incandescent lamps in series in cross-circuits between the mains, the combination, with each lamp, of a resistance, means for automatically establishing the resistance in place of the lamp when the latter is extinguished, a switch in multiple arc between separate sections of the cross-circuit, a switch in the lamp-circuit, and means for opening or closing both switches at the same time, substantially as and for the purposes set forth.

4. In a system of electrical distribution having cross-circuits between the mains and translating devices in series in the cross-circuits, the combination, in each cross-circuit, of a wire, L, connected with one of the mains, a wire, N, connected with the other main, a wire, M, connected with the wire N, cross-circuits between the wires L and M, and means for opening or closing the cross-circuits between the wires L and M at the same time with the lamp-circuits, substantially as and for the purposes set forth.

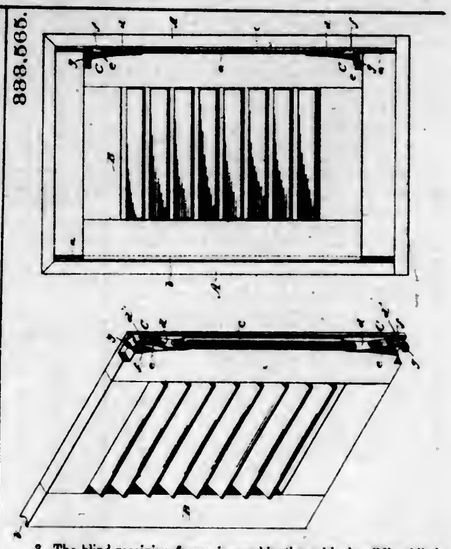
5. The combination, with a main circuit, of cross-circuits, each consisting of two sections connected, respectively, to the wires forming the main circuit, incandescent lamps connected in series in one of the sections, cross-circuits equal in number to the lamps between the sections, and switches, each of which is adapted to open or close at the same time one of the cross-circuits between the sections and a corresponding lamp-circuit, substantially as and for the purposes set forth.

333,565. BLIND, SHUTTER, OR SCREEN. BENJAMIN D. STEVENS, Burlington, Vt., assignor of one-half to T. S. Peck, same place. Filed Oct. 31, 1885. (No model.)

Claim.—1. The blind-receiving frame and the sliding blind having on one edge a ledge or shoulder, in combination with the retractible spring-holder carried by the blind and provided with a projecting fin, between which and the said ledge or shoulder the guide-rib or the adjoining face of the frame is received, substantially as and for the purposes hereinbefore set forth.

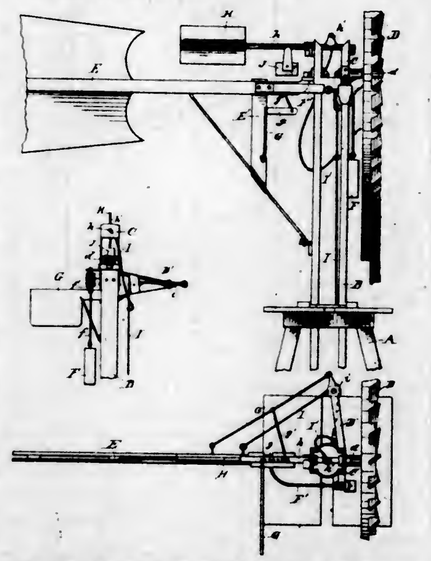
2. The retractible spring-holder having a projecting fin, and also a face adapted to bear with yielding pressure against the guide-rib on the frame, in combination with the sliding blind provided on the edge on which the holder is located with a ledge or shoulder, and the blind-receiving frame, substantially as hereinbefore set forth.

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3. The blind-receiving frame, in combination with the sliding blind having on one edge a ledge or shoulder, *c*, and the retractible spring-holders C, mounted in recesses in the blind and formed or provided with fins *f* and pressure-faces *d'*, as and for the purposes hereinbefore set forth.

333,566. WINDMILL. CHARLES V. STEVENS, Somonauk, Ill., assignor of four-fifths to John Clark and Harrison Wright, both of same place. Filed Oct. 22, 1885. (No model.)



Claim.—1. The combination, with the main wheel and main vane, of a side vane pivoted to the main vane and connected to the main wheel to operate the same, substantially as and for the purposes specified.

2. The combination, with the main wheel and its support, of the main vane pivoted to said support in line with the axis of the main wheel, and a side vane pivotally mounted on the main vane and connected to the support of the main wheel, substantially as and for the purposes specified.

3. The combination, with the main wheel and its support, of the main vane pivoted to the said support, the auxiliary vane supported on said support in a position normally in line with the main vane, and the

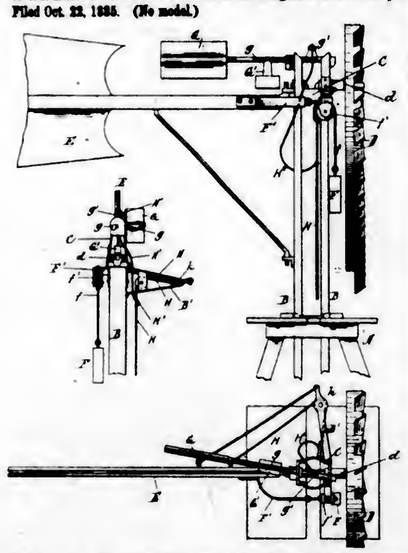
side vane pivotally mounted on the main vane and connected to the support, substantially as and for the purposes specified.

4. The combination, with the main wheel D and its revolving support B, provided with arm B', of the main vane E, pivoted to said support, and the side vane, G, pivotally mounted on the vane E, and provided with an arm, *g*, connected with the arm B', substantially as and for the purposes set forth.

5. The combination, with the main wheel and its revolving support, of the main vane pivoted to said support in line with the axis of the main wheel, and the auxiliary vane mounted on said support in a position normally in line with the main vane, substantially as and for the purposes specified.

6. The combination, with the main wheel and its support, of the main vane and its operating-rope I and the auxiliary vane H, attached to a shaft mounted in bearings in the support and connected to the rope I by a rope, I', to operate said auxiliary vane simultaneously with the main vane, substantially as for the purposes specified.

333,567. WINDMILL. CHARLES V. STEVENS, Somonauk, Ill., assignor of four-fifths to John Clark and Harrison Wright, both of same place. Filed Oct. 22, 1885. (No model.)

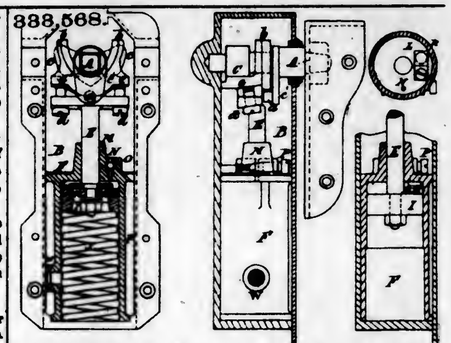


Claim.—1. The combination, with the main wheel and its support, of the main vane pivoted to said support and an auxiliary vane mounted on said support in a position normally at a small angle to that of the main vane, substantially as and for the purposes specified.

2. The combination, with the main wheel and its support, of the main vane pivoted to said support, and held normally in line with the axis of the main wheel by means of a suitable weight, and the auxiliary vane mounted on said support in a position normally at a small angle to the main vane, substantially as and for the purposes specified.

3. The combination, with the main vane and its operating cord or rope H, of the auxiliary vane arranged at an angle to the main vane, and attached to a shaft provided with an arm connected to the said cord H, substantially as and for the purposes specified.

333,568. COMBINED DOOR SPRING AND CHECK. JOHN S. STEVENS, and CHARLES G. MAJOR, Battersea, County of Surrey, England. Filed June 29, 1885. (Model.)



Claim.—1. The combination, with the door-pivot A, of the arms C C, the false head *c*, provided with horns *b b*, the piston-rod E, the set-screws *d d*, the piston I, provided with ports K K, the valve L, the spring J, the cylinder F, in which said spring works, the gauze-covered inlet-hole W and outlet-hole N in said cylinder, and the adjusting-screw P, all substantially as and for the purposes set forth.

2. The combination of a pivot having two arms, with the false head *c*, set-screws *d d*, the piston-rod E, spring J, and the cylinder F, substantially as set forth.

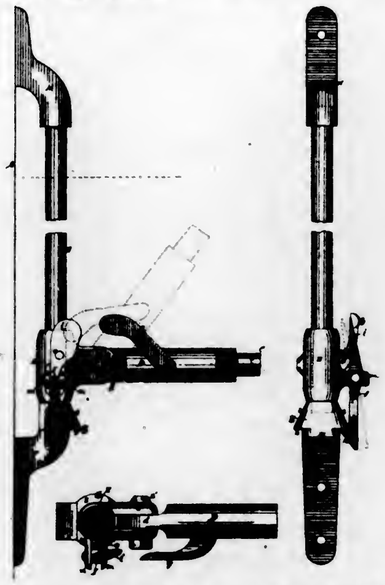
3. In a combined spring hinge and check, the arms C C of the pivot A, in combination with the cam c and false head *c*, having horns *b b*, for curbing the free movement of the door, substantially as set forth.

4. The arm C', provided with pin *a*, in combination with the false head *c*, having horns *b b*, the piston-rod E, to which said false head is attached, and the lower arms, C C, of pivot A, one of said horns *b* being moved into and out of position for engaging said pin *a*, and thereby preventing the closing of the door, substantially as set forth.

5. The combination, with the cylinder F, provided with the gauze strainer W and the intersecting exit-holes N and O, of the regulating-screw P, for controlling the outlet of liquid or air, substantially as set forth.

6. In a double or single acting spring hinge and check, the combination of false head *c* and set-screws *d d* with piston-rod E and cylinder F, for adjusting alignment of cylinder.

333,569. AWNING. WILLIAM J. STOREMAN, Albany, N. Y. Filed Apr. 17, 1885. (No model.)



Claim.—1. In awnings, the combination, with frame C, hinged to sleeves E, having ears *m*, and the lever I, provided with hook *n*, of bracket F, having catch-keeper *g*, substantially as and for the purposes set forth.

2. In an awning, the combination, with a frame which is hinged to sleeves working on vertical ways secured to the casing, of a lever-catch pivoted to said sleeves, a keeper secured to a stationary piece attached to the casing, and a tripping-finger secured to the arms of the frame for operation with said lever-catch, substantially as and for the purposes and operations set forth.

3. In an awning, the combination, with frame C, hinged by ear-couplings D to sleeves E, provided with tripping-fingers *q*, secured to said couplings, of the ways E, keepers *g*, spring-lever catch I, pivoted with sleeves G, substantially as and for the purposes and operations set forth.

4. The sleeve E, provided with ears *m m*, and lever-catch I, supported by a spring operating to throw the hook of said lever-catch toward a keeper, and provided with ears *a a*, for hinging with an arm of an awning-frame, substantially as and for the purposes set forth.

5. The ear-coupling D, provided with tongue or ear *d*, and provided with a screw-threaded perforation in its upper end, and having the tripping-finger *q* made on one side thereof and adapted to exert pressure on a lever-latch pivoted to the sleeve to which this ear-coupling piece is hinged for operating the same for release from a keeper secured to the casing of a window, all substantially as and for the purposes set forth.

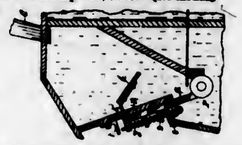
6. The way-bracket F, provided with means for attachment to a casing, and having in its upper end a socket for receiving the lower end of a way, and provided with a keeper, *g*, at its upper end for holding a lever-latch working on the way held by this bracket, substantially as and for the purposes set forth.

7. The combination, with way G and bracket H, of bracket F, provided with keeper *g*, and lever-latch I, pivoted to a sleeve working on said ways, substantially as and for the purposes set forth.

8. In an awning, the combination, with the hinged frame C and bull's-eyes *b* b^2, double bull's-eyes *b'* b^3, of the endless double halyards *a a*, arranged and connected with said frame and said bull's-eyes, substantially as and for the purposes and operations set forth.

9. In an awning, the combination, with frame C, hinged to sleeves E, working on ways G, and keepers *g*, secured to the casing, of the lever-latches I, hinged each to a sleeve, and the tripping-fingers *q*, secured to the heel ends of said frame, and halyards *a a'*, and their coacting bull's-eyes *b b' b^2 b^3*, above described, all substantially as and for the purposes set forth.

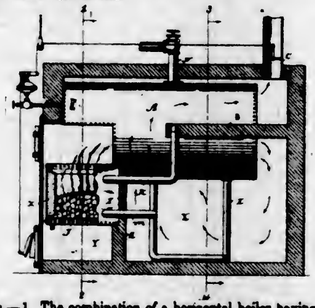
333,570. FEED-REGULATOR FOR ROLLER-MILLS. ELI STRONG, Kalamazoo, Mich. Filed Apr. 14, 1885. (No model.)



Claim.—1. The combination of the feed-gate, the operating-levers fulcrumed in the casing, the inner ends of the levers bearing a bridge, the outer ends having the perforated concave pockets, the feed-gate, the rods having the rounded heads in said pockets, an upwardly-extending rod bearing a spring forming a resistance against the rise of the feed-gate, said rod centrally connecting the gate, and an adjustable stop secured to the casing in position to limit the upward movement of the spring-bearing rod, substantially as set forth.

2. The combination of the feed-gate, operating-levers centrally fulcrumed in the casing, rods connecting the ends of the gate with the outer ends of the levers, an upwardly-extending rod centrally connecting the gate and bearing a spring, forming a resistance against the rise of the feed-gate, an adjustable stop secured to the casing in position to contact with the spring-bearing rod in its upward movement, and a vertically-tilting bridge connecting the inner ends of the operating-levers and disconnected from the hopper-casing, substantially as set forth.

333,571. BOILER. RICHARD T. STEER, Minneapolis, Minn. Filed Aug. 4, 1885. (No model.)



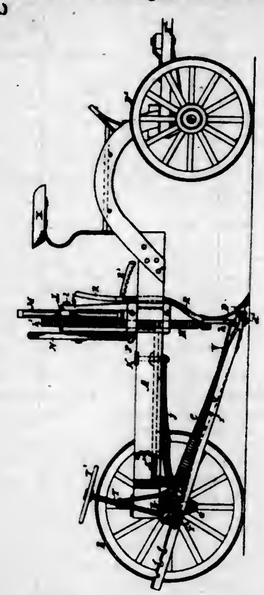
Claim.—1. The combination of a horizontal boiler having horizontal flues or tubes, a fire-place at one end of the boiler, the said boiler having an upper extension above the fire-place, formed by projecting the boiler at the said point beyond the end, and an independent fire-box provided with double walls arranged beneath said extension, substantially as set forth.

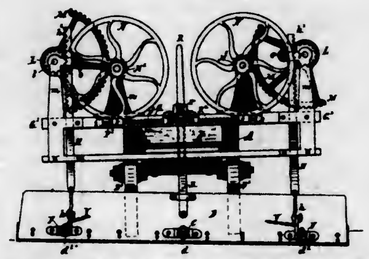
2. The combination of a horizontal boiler having an upper extension, a fire-place opposite and below the extended end of the said boiler, inclosing-walls forming a chamber around said boiler, and a partition, *b*, extending across the rear end and for a part of the length along the sides of the boiler, substantially as set forth.

3. The combination of the horizontal boiler inclosed within a chamber, a partition, *b*, extending along the sides and end of the boiler, a fire-place consisting of a double-walled box inclosing a hot-water chamber, and circulating-pipes extending from said chamber to the sides and bottom of the boiler, substantially as set forth.

4. A horizontal boiler provided with an extension, E, arranged within a chamber divided by a wall, *a*, and partitions *b*, in combination with a double-walled fire-box and with circulating-pipes connecting the chambers in the fire-box and boiler, substantially as set forth.

333,572. MACHINE FOR MAKING, REPAIRING, AND CLEANING ROADS. GEO. W. TAFT, Abington, Conn. Filed June 1, 1885. (No model.)





Claim.—1. In a road-machine, the combination, substantially as hereinbefore described, with a diagonally-reversible scraper bar or blade, of adjustable push-bars adapted for sustaining the ends of said scraper from the rear and permitting adjustment thereof to either right or left oblique position.

2. The combination, substantially as hereinbefore described, of a diagonally-adjustable scraper suspended beneath a carriage-frame mounted on front and rear axles and wheels, adjustable push-bars extending from the ends of said blade to the rear of the carriage, and means for adjustably fastening said push-bars at their junction with the carriage.

3. In a road-machine, the combination, substantially as hereinbefore described, of a carrying-frame mounted on front and rear wheels, a thrust-frame in rear of the scraper, a diagonally-reversible scraper centrally pivoted at the front of said thrust-frame, and adjustable push-bars connected at their front ends with the respective ends of said scraper and detachably connected at their rear to the carriage or axle of the machine, for the purpose set forth.

4. In a road-machine, the combination, substantially as described, with a carrying-frame mounted on front and rear wheels, a vertically-swinging V-shaped thrust-frame hinged upon the rear axle, and a horizontally-adjustable scraper pivoted on said thrust-frame and suspended from adjusting mechanism mounted on the carriage, of longitudinally-ad-

jestable push-bars hinged to the respective arms of said scraper, and locking devices detachably connecting said push-bars with the rear part of the machine, for the purposes set forth.

5. In a road-machine, the combination, substantially as described, of a diagonally-adjustable scraper bar or blade, adjustable push-bars sustaining the respective ends of said scraper from the rear, locking devices detachably engaging said push-bars at the several positions of their adjustment, and disengaging levers or means for releasing said push-bars in convenient reach of the operator from his position on the platform of the machine.

6. In a road-machine, the combination, substantially as described, of a diagonally-reversible scraper-blade suspended beneath a carriage or body frame mounted on wheels, adjustable push-bars sustaining the respective ends of said scraper from the rear, locking-dogs engaging and detachably securing said push-bars at their junction with the carriage or axle, actuating-levers connected with said dogs, and the foot-pedal connected with said levers, for the purpose set forth.

7. In a road-machine, the combination of the carrying-frame, the V-shaped thrust-frame, the diagonally-reversible scraper pivotally attached thereto, the adjustable push-bars hinged to the ends of said scraper and provided with recesses to receive engaging-lugs, the rear axle, consisting of a round shaft to which the thrust-frame is hinged, and devices for attaching and detaching said push-bars therewith under control of the operator, as set forth.

8. In a road-machine, the combination, substantially as described, of a carriage-frame mounted on wheels, a swinging frame or turn-table mounted on said carriage, a diagonally-reversible scraper suspended from lifting and adjusting mechanism mounted upon said swinging frame, a central thrust-frame pivotally connected at its front end with said scraper and hinged at its rear to the carriage-axle, and side push-bars hinged to the ends of said scraper and detachably connected with the carriage-axle by fastening devices under control of the operator, for the purposes set forth.

9. In a road-machine, the combination, substantially as described, with a diagonally-adjustable scraper and the scraper-supporting bars, of the pinion, the segment-gear connected with said pinion, and the hand-wheel and pinion, for the purpose set forth.

10. In a road-machine, the combination, substantially as described, with a carriage-frame mounted on wheels, of a swinging frame centrally pivoted thereon, a vertically-adjustable V-shaped thrust-frame, the diagonally-reversible scraper pivotally connected to the front end thereof, adjusting suspending-bars connecting the ends of the scraper with lifting-gears supported on the respective arms of the swing-frame, and the gear-segments, pinions, hand-wheels, and brake mechanism mounted on said swing-frame in respective right and left order for independently adjusting the ends of said scraper, as set forth.

11. In a road-machine, the combination, substantially as described, with a diagonally and vertically adjustable scraper-blade having rack-bars connected for effecting adjustment at the respective ends of said scraper, a pinion (or pinions) engaging and working said rack-bars, and the scraper, of a gear-segment fixed to and working said pinion, a second wheel or pinion engaging said gear-segment, and a hand-wheel fixed to said second pinion for imparting motion to said mechanism for adjusting the scraper, as set forth.

12. In a road-machine, the combination, with an adjustable scraper-blade, provided with a hand-wheel (or hand-wheels) for operating the blade-adjusting devices thereof, of a stop device that engages with said wheel for retaining the wheel and scraper at position of adjustment, substantially as set forth.

13. In a road-machine, the combination, substantially as hereinbefore described, of a diagonally-adjustable scraper-blade pivoted to a vertically-adjustable push-frame, an upright shaft supported on said frame and provided with a sprocket wheel or sheave, and a chain passing around said wheel or sheave and connected at its ends with the respective arms of the blade, and a hand device for operating said shaft from the platform of the carriage, for the purpose set forth.

14. In a road-machine, the combination, substantially as described, of a V-shaped thrust-frame sustaining the blade from the rear of the machine, a diagonally-reversible scraper-blade pivotally connected to said frame, a hand-shaft and sprocket-wheel supported in connection with said frame, and a chain engaging said sprocket-wheel and having its ends connected with the blade, respectively at the right and left of its pivoted center, for the purpose set forth.

15. In a road-machine, the combination, substantially as described, of a carriage-frame, a diagonally-reversible scraper-blade, rearwardly-extending longitudinally-adjustable push-bars connected with the ends of said blade, a hand-shaft and sprocket-wheel, a shifting-chain engaging said sprocket and having its ends connected with the respective ends of the blade, and devices for detachably fastening the mechanism with the blade at different positions of diagonal adjustment.

16. In a road-machine, the combination, substantially as described, of the carrying-frame mounted on front and rear wheels, the swing-frame pivoted on said carriage for right and left diagonal adjustment, a scraper suspended from the arms or ends of said swing-frame by racks and gears, and hand-wheels for imparting motion thereto for raising and lowering the end or ends of the scraper, and brakes or stop devices adapted to be operated by the foot engaging with said wheels, substantially as set forth.

17. In a road-machine, the combination, substantially as hereinbefore described, of the carriage, the turn-table or swing-frame, a diagonally-adjustable scraper-blade suspended therefrom, and a lever for controlling the pitch adjustment of said blade.

18. In a road-machine, the combination, substantially as described, of the carrying-frame mounted on front and rear wheels, the swing-frame supported thereon for right and left diagonal adjustment, the scraper-blade suspended therefrom and hinged for backward and forward tipping action, a thrust-frame sustaining the blade from its rear, and a lever and locking device connected with the swinging parts for adjusting the pitch of said blade, as set forth.

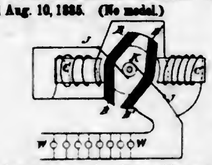
19. The combination, substantially as described, with the scraper-blade adapted to have independent vertical adjustment at either end, and hinged for forward and backward pitch adjustment, of a pitch-adjusting lever attached to said blade by a pivot adapted to permit such vertical adjustment without imparting sidewise action to the pitch-adjusting lever, as set forth.

20. In a road-machine, the combination, substantially as described, of the adjustable scraper-blade D, the longitudinally-adjustable push-bars F, and guides *e*, adapted to sustain the rear part of said push-bars, as set forth.

21. The combination, substantially as described, with the swing-frame G and hand-wheels N, of brake mechanism P, arranged on said frame for operation as set forth.

22. In a road-machine having a diagonally and vertically adjustable scraper, the combination, with mechanism by which the scraper is suspended or adjusted, of a hand wheel and pinion, N N', gear segment and pinion M L, and a rack, as A', meshing together for action as set forth.

333,573. DYNAMO-ELECTRIC MACHINE. ELIHU THOMSON, Lynn, Mass. Filed Aug. 10, 1885. (No model.)



Claim.—1. In a dynamo-electric machine or motor, field-magnet cores wound with wire connected in derived circuit or shunt to the work, and an armature surrounded by stationary coils traversed by the main current of the machine.

2. In a dynamo-electric machine or motor, an armature surrounded by stationary coils applied in the manner described to correct the tendency to distortion of the magnetic field by the reaction of armature and field-magnetism.

3. In a dynamo-electric machine or motor, the combination, with the revolving armature, of stationary coils mounted on an adjustable support, whereby their plane of winding may be varied with relation to the line of field-magnetism, as and for the purpose described.

4. In a dynamo-electric machine, an armature-core surrounded by coils of wire placed in an inclined position with respect to the magnetic axis of the field-magnets.

5. In a dynamo-electric machine, stationary coils surrounding only the armature-core of the machine and set in an inclined position, as described.

6. In a dynamo-electric machine or motor, an armature wound with a continuous wire and having connections therefrom to the commutator, in combination with commutator-brushes connected to a system of field-magnet coils in derived circuit around the work, and connected in series to the work through a system of stationary coils surrounding the armature-core.

7. In a dynamo-electric machine, an armature-core constructed with spaces leading to the interior of said core, in combination with leading-wires passing through such spaces from the armature-coil system to the segments of the commutator.

8. In a dynamo-electric machine, leading-wires from the commutator passing into the body of the armature-core and outwardly toward the greatest periphery of said core, as described.

9. In a dynamo-electric machine or motor, leading-wires connected to the armature-coils and passing inwardly through the armature-core itself, as and for the purpose described.

10. In a dynamo-electric machine or motor, an armature circular in sections transverse to its axis, and having commutator leading-wires passing through openings in the armature-core, as and for the purpose described.

11. An armature-core composed of end plates, M N, a series of disks of varying diameter, spaces *g g*, dividing the disks into groups, and leading-wires inserted into passages made in the body of the armature-core, as described.

12. In a dynamo-electric machine, a system of coils wound upon an armature whose peripheral surface is a portion of a sphere or ellipsoid, said system of coils being wound in two series overlying and underlying, with the wire of one coil in a series passing to the next coil in the series diagonally across the space existing between the coils at or near the place of greatest peripheral diameter of the armature.

13. In a dynamo-electric machine or motor, a spherical armature wound with a series of coils connected to one another diagonally across the spaces at or near the greatest peripheral diameter of the armature-core.

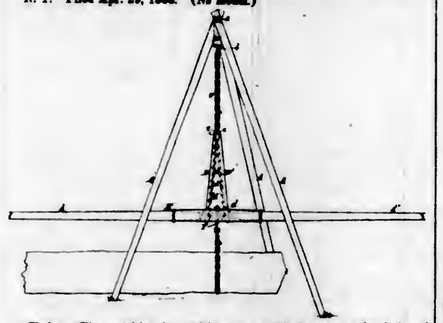
14. In a dynamo-electric machine or motor, leading-wires passing through a portion of the armature-core and connected with the coil system at the places where the coils are separated by passing over the greatest peripheral diameter of the curved armature-core, as described.

15. In a dynamo-electric machine or motor, an armature wound with a continuous conductor placed in an underlying and overlying series of coils or coil-sections joined to the leading-wires from the commutator at points where the armature conductor or coil passes diagonally from one section or coil to the succeeding section or coil, as described.

16. In a dynamo-electric machine having its field-magnet coils connected in derived circuit to the work, a set of coils inclined to the magnetic axis of the field-magnet and connected in series with the work.

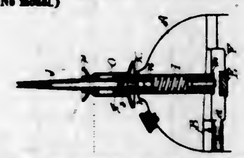
17. In a dynamo-electric machine or motor, the combination of field-magnet coils, and coils set at an angle to the magnetic axis of the field, one set of coils being in series with the work and the other in derived circuit thereto.

333,574. HOISTING-MACHINE. CORNELIUS J. WALDRON, Medina, N. Y. Filed Apr. 29, 1885. (No model.)



Claim.—The combination, with the portable frame or tripod A and jack-racks D D', suspended by chain C from swivel B *b*, secured to the upper end of said tripod, of lever E, provided with vertical perforations *e e'*, fulcrum-pins *s s'*, and hook F, all substantially as and for the purposes set forth.

333,575. OIL-CAN. ORRIN H. WARREN, Syracuse, N. Y. Filed May 8, 1885. (No model.)



Claim.—1. In a machine-oiler, the combination of a force-pump with an oil-retainer, substantially as herein described, the foot-valve of the pump controlling the passage connecting the pump barrel or chamber and the oil-retainer, there being an opening between the oil-retainer and the oil-reservoir for the admission of oil to the retainer, as and for the purposes specified.

2. The adjustable finger-piece, in combination with the piston of the force-pump in an oiler and attached onto or about the stem of the can, as described.

3. The chamber F and helical tube composing an oil-retainer, constructed substantially as and for the purposes specified.

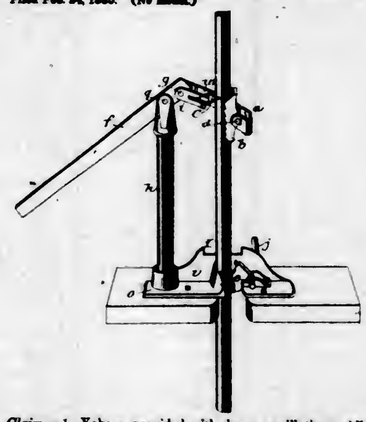
4. In combination with the oil-retainer and force-pump, the opening E, through the bottom of the chamber F, opposite the base of the force-pump, for giving access to the working parts of the pump, as specified.

333,576. PAVEMENT. LEVI WARSHAW and ALBERT C. PORTER, Louisville, Ohio. Filed June 15, 1885. (No model.)

Claim.—1. A composite paving-block consisting in the combination of a vitrified or burned shell and a plastic composition compressed and hardened in the shell prior to laying the latter, substantially as described.

2. A pavement consisting of vitrified or burned angular shells arranged with the whole of their surrounding walls in direct contact with each other, and plastic composition compressed and hardened in the shells, substantially as described.

333,577. PIPE-LIFTING MACHINE. ELIAS M. WATSON, Beloit, Wis. Filed Feb. 24, 1885. (No model.)



Claim.—1. Yoke *a*, provided with dog *c*, oscillating saddle *b*, and pin *d*, in combination with lever *f*, pin *g*, vibrating standard *h*, and pin *g*, all substantially as described and set forth.

2. Base *o*, with rib *v* and notch I, in combination with cam-clamp *e* and lever *j*, all substantially as described.

3. Vibrating standard *h*, in combination with base *o* and lever *f*, as set forth.

4. Cam-clamp *e* and lever *j*, in combination with base *o*, as described.

5. Yoke *a*, in combination with dogs *c*, oscillating saddle *b*, pin *d*, lever *f*, pin *g*, vibrating standard *h*, pin *g*, base *o*, notch I, cam-clamp *e*, and lever *j*, all substantially as described, and for the purpose set forth.

333,578. ENAMELED SLATE. PHILIPP WERNER, Mentz, Germany. Filed Apr. 22, 1885. (No model.) Patented in Germany Oct. 7, 1884, No. 29,947.

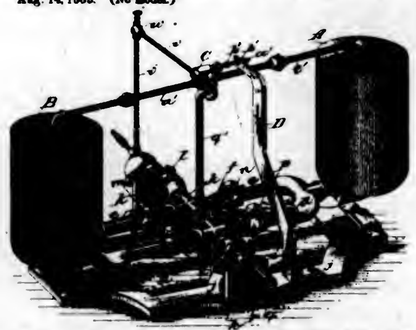


Claim.—1. A writing-slate consisting of a metal body coated or covered with enamel and having a white surface, substantially as described.

2. A writing-slate consisting of a sheet-metal body coated or covered with enamel, the glaze of which is roughened or matted to present a white writing-surface, substantially as described.

3. A writing-slate consisting of a thin sheet-iron base coated or covered with a white silicious enamel, the surface of which is bitten or roughened with acid, to produce a proper writing-surface.

333,579. STEAM-TRAP. FRANCIS H. WEST, Milwaukee, Wis. Filed Aug. 14, 1885. (No model.)



Claim.—1. In a steam-trap having two tanks adapted to be alternately filled with and discharged of water, and having a receiving and a discharging pipe communicating with each of said tanks and with a common inlet and a common outlet pipe, two sets of check-valves, one set located in the receiving and one set in the discharging pipe, the valves in each set opening in opposite directions, said valves being adapted to be closed by twos by steam-pressure on one side, thereby shutting off the tank on that side from inflowing water, leaving a valve in the receiving-pipe open toward the other tank for the inflowing water, in combination with apparatus for admitting steam to said tanks alternately, substantially as and for the purpose set forth.

2. In a steam-trap having two chambers, A and B, adapted to be alternately filled with and discharged of water, four check-valves, *m n o p*, two of which, *m n*, are set in the receiving-pipe *c*, and the other two, *o* and *p*, are set in the discharge-pipe *d*, the two valves *m* and *n* being located one on each side of the common intake pipe *f*, and opening outwardly with the flow of the water toward the tank, and the two valves *o* and *p* being located one on each side of the common discharge-pipe *i*, and opening inwardly with the flow of the water toward the pipe *i*, substantially as set forth.

3. In a steam-trap, the combination of two closed tanks, A and B, the receiving and discharging pipes *d* and *c*, opening at their outer ends into the tanks A and B, respectively, and at their inner ends opening into the cross-pipe *f*, the cross-pipe *f*, provided with the partition *g*, and having a rotary movement in its connection at its two ends with the ends of pipes *h* and *i*, and the check-valves *m n o p*, substantially as described.

4. In an oscillating steam-trap, the central supporting rotating pipe, *f*, provided with the partition *g*, having an upwardly-opening apertare, in combination with the horizontal rigid pipe *q*, introduced longitudinally into the pipe *f*, and having a movable connection with pipe *f* by being inserted with a screw-thread into a horizontal intercepting apertare therefor in the partition *g*, wherein it turns when the pipe *f* oscillates, substantially as and for the purpose set forth.

5. The tanks A and B, the therewith-communicating receiving and discharging pipes *c* and *d*, the therein-inserted check-valves *m*, *n*, *o*, and *p*, the axial cross-pipe *f*, provided with partition *g*, and communicating with the pipes *h*, *c*, *d*, and *i*, respectively, and the pipes *h* and *i*, in combination with the pipe *q q'*, steam-chest C, provided with outlet-ports closed by a slide-valve, *s*, having a stem, *a'*, and collars *b b'*, the tilting-arm D, and the steam-pipe *t'* and *u'*, connecting the steam-chest C with the tanks A and B, respectively, all supported on frame *j*, substantially as and for the purpose set forth.

6. In a steam-trap having two oscillating tanks, A and B, an oscillating steam-chest, C, having two ports, *t* and *u*, and pipes *t'* and *u'* therefrom, by and through which communication is had therefrom to the two tanks A and B, respectively, and the sliding valve *s*, provided with stem *a'*, having collars *b* and *b'*, in combination with the rigid tilting-arm D, substantially as described.

333,580. NUT-LOCK. GEORGE W. WHITE, Belle Mina, Ala. Filed Nov. 2, 1885. (No model.)



Claim.—1. A nut-lock consisting of two metal bars or rods bent, as described, to conform to the sides of a nut, and hinged together in reversed positions, substantially as described.

2. A nut-lock consisting of two metal bars or rods bent, substantially as described, to conform to the sides of a nut, said rods hinged together in reversed position and provided with a locking hook and stud, substantially as described.

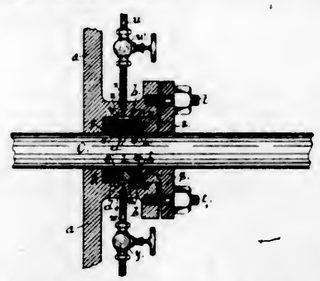
3. In a nut-lock, the combination of two metal rods, *e f*, bent to inclose two or more sides of a nut, and provided, respectively, with hooks *e*^{4} and studs *f*^{5}, with the nuts D, substantially as described.

333,581. OVERDRAW-CHECK FOR BRIDLES. JOHN W. WHITE, Syracuse, N. Y. Filed Mar. 5, 1885. (No model.)



Claim.—The combination, in an overdraw-check, of the curved elongated box-loops A A', connected rigidly to the bridle crown-piece B, with said crown-piece B and the two-part check-rein *c c'*, all substantially as and for the purpose specified.

333,582. PISTON-ROD PACKING. BENJAMIN F. WILLISTON, West Bay City, Mich., assignor of one-half to Samuel A. Plummer, same place. Filed Oct. 12, 1885. (No model.)



Claim.—1. In a piston-rod packing, the piston-rod *c* and packing-box *b*, in combination with a sleeve, *d*, located within the packing-box and surrounding the piston-rod, the chambers *e* and *e'* on the inner part of the sleeve, the packing-rings *h* within the said chambers, the chamber *n* between the sleeve and packing-box, the ports *o* and *o'* and *p* and *p'*, connecting the chamber *n* with the chambers *e* and *e'*, the packing *r'*, the gland *s*, holding the said sleeve in position, the steam-supply pipe *u*, provided with a valve, *u'*, connected with the packing-box, and a relief-pipe, *w*, provided with a valve, *y*, connected with the under side of the said box, substantially as and for the purpose set forth.

2. In a piston-rod packing, the combination, with the packing-box provided with pipes for admitting steam to and from the box, of a sleeve provided with inner chambers for holding compression-rings and surrounding the piston, and an outer chamber between the sleeve and packing-box, and steam-ports connecting the said outer chamber with the inner chambers, and with compression-rings placed within the said inner chambers and surrounding the piston, substantially as and for the purpose set forth.

3. In a piston-rod packing, a compression-ring formed of an inner divided ring, *i*, surrounding the piston, and an outer divided ring, *l*, surrounding the said inner ring, and with their dividing-openings placed in such positions as that one ring shall close the opening in the other ring, and a pin, *m*, passed through recesses between the rings and adapted to hold the rings in their position relative to each other, substantially as and for the purpose set forth.

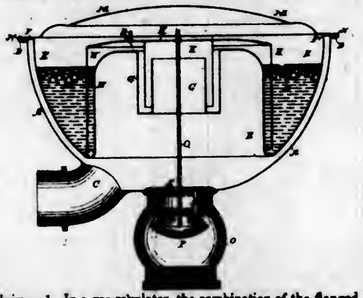
4. In a piston-rod packing, the piston-rod *c* and packing-box *b*, provided with pipes arranged to admit steam to and from the box, in combination with a sleeve, *d*, placed within the packing-box and provided with the chambers *e* and *e'*, the removable end pieces, *f* and *f'*, passed into the open end of the said chambers *e'* and *e*, the rings *h* within the chambers *e* and *e'* and surrounding the piston, a chamber, *n*, between the sleeve and packing-box, and the steam-ports *o* and *o'* and *p* and *p'*, connecting the chamber *n* with the chambers *e* and *e'*, substantially as and for the purpose set forth.

333,583. ROLLER-SKATE. JOHN A. YARDEN, New Hampton, Iowa. Filed Jan. 22, 1886. (No model.)



Claim.—A toe-brake for a roller-skate, consisting of a plate for attachment to the toe of the skate, a holder on said plate, and elastic or yielding material contained in said holder, substantially as described.

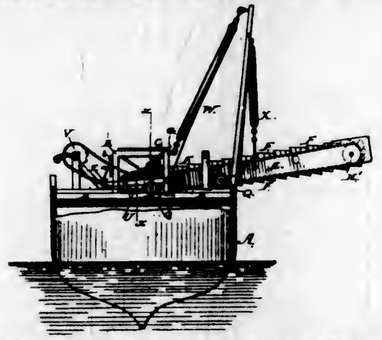
333,584. GAS-REGULATOR. NYRON J. ABBEY, Portland, Oreg. Filed Oct. 2, 1886. (No model.)



Claim.—1. In a gas-regulator, the combination of the flanged hemispherical case A, the flanged inner circular casting, E, and the double tubular guide G, all constructed and arranged substantially as set forth.

2. In a gas-regulator, the combination of the flanged hemispherical case A, the flanged inner circular casting, E, the double tubular guide G, the gas-drum, the guide K, carried by the gas-drum, and the weight R', applied to one side of the drum, substantially as set forth.

333,585. APPARATUS FOR LOADING COAL. WILLIAM G. BARNARD, Ballaire, Ohio. Filed Dec. 2, 1885. (No model.)



Claim.—1. In an apparatus for loading coal, the adjustable frame E, having the elevated inclines P, and provided with the sprocket-wheels I, in combination with the link-chains J and sectional baskets F, all constructed substantially as and for the purpose set forth.

2. The adjustable frame E, provided with the sprocket-wheels I, the anti-friction wheels K, and supporting-rods M, in combination with the link-chains J and sectional baskets F, all constructed substantially as and for the purpose set forth.

3. The adjustable frame E, provided with the sprocket-wheels I, the anti-friction wheels K, and supporting-rods M, in combination with the link-chains J, sectional baskets F, and the hopper C, provided with flanges or lips *c* at its discharge-opening, substantially as and for the purpose set forth.

4. The adjustable frame E, provided with the sprocket-wheels I and shafts H H', in combination with the sprocket-wheels U and V, connected by a link-chain, and suitable power for driving the same, substantially as and for the purpose herein set forth.

5. The adjustable frame E, provided with the sprocket-wheels I, link-chains J, and baskets F, in combination with the wheels Q and track R, all constructed to operate substantially as and for the purpose set forth.

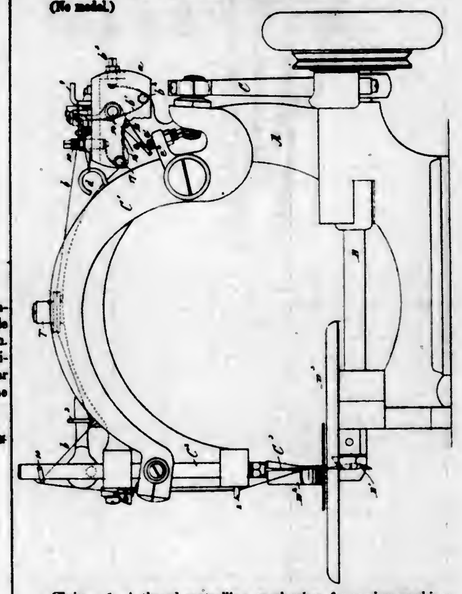
6. The adjustable frame E, wheels Q, and track R, in combination with the lever S, provided with the recess *s*, and the weight T, whereby the frame may be locked in position, substantially as and for the purpose set forth.

7. The adjustable frame E, shafts H H', and sprocket-wheels I, in combination with the adjustable bearings N, whereby the distance between the shafts may be regulated, substantially as and for the purpose set forth.

8. The sectional baskets F, constructed of concave-convex plates of metal, substantially as and for the purpose set forth.

9. The hopper C, provided with the flanges or lips *c* and sliding door G, in combination with the lever *g*, substantially as and for the purpose set forth.

333,586. THREAD CONTROLLING MECHANISM FOR SEWING-MACHINES. WILLIAM F. BRADSLEE, Boston, Mass. Filed May 20, 1885. (No model.)



Claim.—1. A thread-controlling mechanism for sewing-machines, it containing as elements a thread-clamp composed of two members, between which the thread is passed, one of the said members being made as a lever, through which the thread passes and acts when strain is put upon it, then turning the lever to close the clamp upon the thread, and of a spring to act upon one of the said members to determine the degree of the constant pressure of the clamp upon the thread, and of a pressure-augmenting device to effect the increase in the clamping pressure upon the needle-thread just while the stitch is being set or completed, substantially as described.

2. The plate, the clamping member a^2, provided at one end with a face to bear upon the needle-thread, and at its other end with an eye or notch to receive the needle-thread, the opposed rest for the thread opposite the said movable member, and an adjustable spring to produce a constant pressure on the said movable member, combined with a lever and adjustable spring to act intermittingly upon the said movable member, substantially as described.

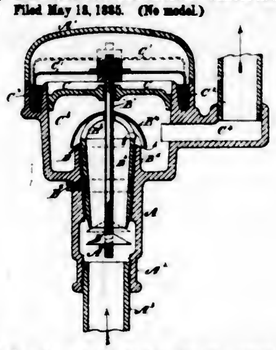
3. The plate, the clamping member a^2, provided at one end with a face to bear upon the needle-thread, and at its other end with an eye or notch to receive the needle-thread, the opposed rest for the thread opposite the said movable member, a spring to produce a constant pressure on the said movable member, and a lever, *c*, and a spring to act upon the said lever, combined with means, substantially as described, to act upon the said lever and permit it to act intermittingly upon the movable member, as set forth.

4. The head A of the machine, the needle-bar, its attached guide 13, to receive the needle-thread through it, and the needle and rotating hook, combined with the thread-holder, composed, essentially, of the

notched plate *f* and the spring *f'*, the latter being placed in an inclined and diagonal position across the face of the said head and across the plane in which the needle-bar is reciprocated, all substantially as described.

5. In a sewing-machine employing an eye-pointed needle for carrying the thread, and a rotating hook for forming the same into a chain-stitch, the thread-clamping members a^2 a^4, the adjustable spring acting thereon in all positions of the needle-bar to determine the degree of constant or minimum pressure, and the pressure-augmenting mechanism to intermittingly increase the so-called "constant" or "minimum" pressure on the needle-thread, and the pull-off and means to move it, combined with the head A and the thread-holder, consisting, essentially, of a notched plate, *f*, and spring *f'*, the latter being placed in an inclined and diagonal position on the head relatively to the plane of the path of the needle, to catch and hold the needle-thread during the first part of the descent of the needle-bar, as and for the purpose described.

333,587. GAS-PRESSURE REGULATOR. SAMUEL A. BEATTY, New York, N. Y. Filed May 18, 1885. (No model.)

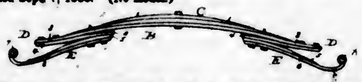


Claim.—1. In a gas-pressure regulator having a casing containing two annular chambers, as described, the combination of a tubular valve-seat B^3, provided with bail B^2, and having an outer annular groove for the reception of a screw for holding it in position, the adjustable rod B', valve B, shield B^4, disk C, and cup-shaped disk C', all arranged and operating substantially in the manner and for the purposes specified.

2. In a gas-pressure regulator, the combination of the rod B', carrying at its lower screw-threaded end a valve, B, adjustable upon said screw-thread, the valve-seat B^3, having perforated bail B^2, serving to guide the rod B, the disk C, and the cup-shaped disk C', adjustable upon the upper screw-threaded end of the rod B', substantially as and for the purpose specified.

3. In a gas-pressure regulator, the combination, with the body A, having a portion of its interior tapering, of a conical tubular valve-seat, B^3, provided with a perforated cross-bail, B^2, and an outer annular groove for the reception of a screw for holding it in position, substantially as shown and described.

333,588. VEHICLE-SPRING. CHARLES A. BEHLEN, Cincinnati, Ohio. Filed Sept. 7, 1885. (No model.)



Claim.—1. In combination with a vehicle-body, the herein-described spring, consisting of the main semi-elliptic leaf C, the intermediate leaves, D D, attached to the ends of leaf C and extending inwardly in contact therewith or in close proximity thereto, and the leaves E E, attached at one end to the leaves D D, and at the other ends to the vehicle, substantially as shown and described.

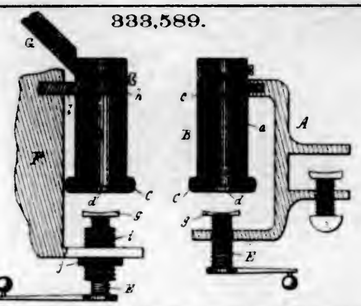
2. The herein-described spring, comprising the main leaf C, having plates 1 2 3, inwardly-extending leaves D, attached to the outer ends of plates 3, and outwardly-extending leaves E, consisting of plates 5 and 6, riveted or otherwise secured to the inner ends of leaves D, as shown.

333,589. DEVICE FOR CRIMPING CARTRIDGE-SHELLS. ORLANDO F. BELCHER, Winthrop, Mass. Filed Oct. 10, 1885. (No model.)

Claim.—1. In combination with the screw E, for acting against the lower end of a cartridge-shell, the lower bushing, *b*, which incloses the body of the cartridge, the upper doubly-flared bushing, *b*, for crimping the upper end of the cartridge, and the cylindrical cartridge-holder B, which incloses both of said bushings from end to end, substantially as set forth.

2. In combination with the screw E and the two bushings *b b*, the screw-threaded holder B, which incloses both of said bushings, and the cap C, which screws on said holder to keep them in place, substantially as set forth.

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3. In a crimping device, the combination, with the standard A, pivoted shell-holder B, and co-operating screw E, of the tubular bushing opened at both ends, and provided with a contracted oppositely-flared mouth, which operates substantially as and for the purposes herein described.

4. The combination, with the pivotally-disposed cartridge-holder B, composed of the shell *a*, bushing *b*, cap C, and double oppositely-flared bushing *c*, of the forcing-screw E and its support, as herein set forth.

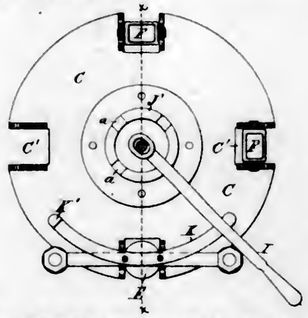
333,590. PENCIL-CLASP. HENRY C. BERSON, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed Oct. 27, 1885. (No model.)



Claim.—1. The combination, with the base or supporting plate, of spring-controlled yielding jaws standing at right angles, or thereabout, to said base-plate, provided with flaring or rounded outer edges, *c*, and susceptible of bodily movement to and from one another, substantially as and for the purposes hereinbefore set forth.

2. A pencil-clasp the body of which is formed of a single strip of spring sheet metal, bent as hereinbefore shown and described, so as to form a base-plate, A', and bodily-yielding spring-jaws B' C', provided with flaring or rounded outer edges, substantially as and for the purposes set forth.

333,591. PROCESS OF COMPRESSING FLUID METAL. FRANK BILLINGS, Cleveland, Ohio, and WILLIAM R. HINSDALE, Brooklyn, N. Y., assignors to the Compressed Steel Company, Cleveland, Ohio. Filed Nov. 8, 1884. (No model.)



Claim.—The method herein described for removing the gases from fluid metal in an ingot-mold provided with a gas-outlet in its upper end, consisting, first, in gently pressing the fluid metal while the gases accumulate in the head of the ingot; secondly, in applying an increased pressure, rupturing the surface metal over the head of the ingot, and discharging a portion of the same from the head thereof to liberate the confined gases; and, thirdly, in subjecting the ingot to a greatly-increased pressure after the discharge of the gases from the head to consolidate the metal, substantially as herein shown and described.

333,592. JOURNAL-BEARING FOR VELOCIPEDES. ANTON H. BOCK, Meissen, Saxony, Germany. Filed Dec. 30, 1884. (No model.)

Claim.—1. Bearings for the axles of light-running vehicles, consisting in the combination, with the axle and its bearing, of angular bearing-surfaces, the angles of which differ, one of said bearing-surfaces be-

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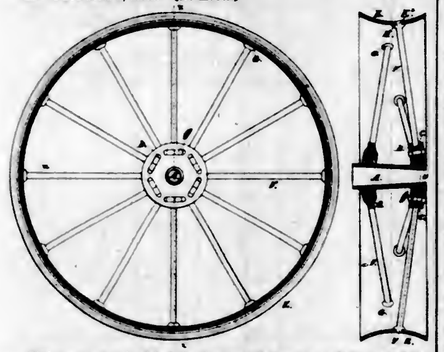


ing formed by a re-entrant and the other by a salient angle, substantially as described, for the purpose specified.

2. Bearings for the axles of light-running vehicles, consisting in the combination, with the axle and its bearing, of wedge-shaped bearing-surfaces, the angles of which differ, one of said bearing-surfaces being formed by a re-entrant and the other by a salient angle, and one of said bearing-surfaces having a rolling motion, substantially as described, for the purpose specified.

3. Bearings for the axles of light-running vehicles, consisting in the combination, with the axle and its bearing, of angular bearing-surfaces, the angles of which differ, one of said bearing-surfaces being formed by a re-entrant and the other by a salient angle, both having their apices rounded off, substantially as described, for the purpose specified.

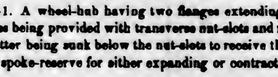
333,593. CORN-PLANTER WHEEL. GEORGE S. BRIGGS, Rockford, Ill. Filed June 1, 1885. (No model.)



Claim.—1. A wheel-hub having two flanges extending around the hub, the flanges being provided with transverse nut-slots and radial spoke-sockets, the latter being sunk below the nut-slots to receive the inner ends of spokes, as spoke-reserve for either expanding or contracting a wheel-rim.

2. A metallic wheel having the hub A, furnished with flanges B, the latter provided with transverse nut-slots D, and radial spoke-sockets C, extending below the nut-slots D, to receive the inner ends of the spokes F, as spoke-reserve for either expanding or contracting the wheel-rim E, the spokes F, the nuts I, and concave rim E.

333,594. DRAWING-PEN. CHARLES M. BURNS, Jr., Philadelphia, Pa. Filed Nov. 3, 1885. (No model.)



Claim.—1. A drawing-pen consisting of two blades having their upper ends in close contact and united together, forming a screw-threaded shank, and the balance of their length slightly bowed, in combination with a nut engaging with said screw-threaded shank formed integral with the blades and having a collar engaging with the blades, substantially as and for the purpose described.

2. The combination of two drawing-pen blades pivotally secured together at their shank end, and having said shank formed integral with the blades, and exteriorly screw-threaded and secured to a handle, with a nut mounted upon said screw-threaded shank of the blades, and having a collar engaging with the blades and adapted to force the points of the blades together, substantially as described.

333,595. RUBBER SOLE AND HEEL. GEORGE F. BUTTERFIELD, Stoneham, Mass. Filed Dec. 29, 1884. (No model.)

Claim.—1. A vulcanized rubber sole or heel molded with depressions or recess in its surface, separated by partitions subdividing such surface, substantially as set forth.

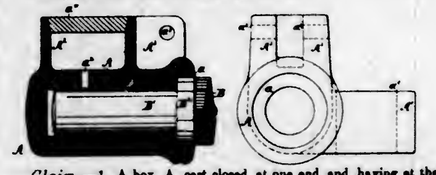


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2. A sole or heel having one or more recesses or open depressions in its upper surface, and provided with a fibrous or cellular filling suitably secured therein, substantially as set forth.

333,596. JOURNAL-BOX FOR SNOW-SWEEPERS. NEIL CAMPBELL, Brooklyn, N. Y., assignor to the Brooklyn Rail Way Supply Company, same place. Filed Mar. 24, 1885. (No model.)



Claim.—1. A box, A, cast closed at one end and having at the mouth of its bore an enlarged recess, in combination with a shaft, B, having a journal and a flange fitting, respectively, the bore and the recess of the box, said flange entering and filling the annular recess and cutting off the journal within the box from any and all communication with the exterior, substantially as described.

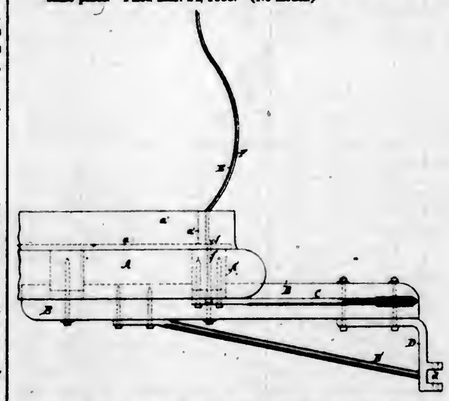
2. A box, A, having a lateral lug, A', with a guide-hole, *a'*, all so constructed and arranged as to be capable of sliding on a vertical guide-rod, substantially as herein specified.

3. A box, A, cast with a U-shaped raised portion at its upper surface, said U-shaped portion having a transverse partition, whereby a grease-box, A^3, and lugs A^2, for receiving a suspension-rod, are formed, substantially as herein specified.

4. A box, A, having a lateral lug, A', with a guide-hole, *a'*, capable of receiving a vertical guide-rod, and a lug or lugs, A^2, by which it may be suspended, substantially as described.

5. A box, A, having a lateral lug, A', with a guide-hole, *a'*, a lug or lugs, A^2, by which it may be suspended, and a grease-box, A^3, communicating with the bore of the main body, all cast in one piece, substantially as described.

333,597. DRAW-BAR FOR SNOW-SWEEPERS. NEIL CAMPBELL, Brooklyn, N. Y., assignor to the Brooklyn Rail Way Supply Company, same place. Filed Mar. 24, 1885. (No model.)



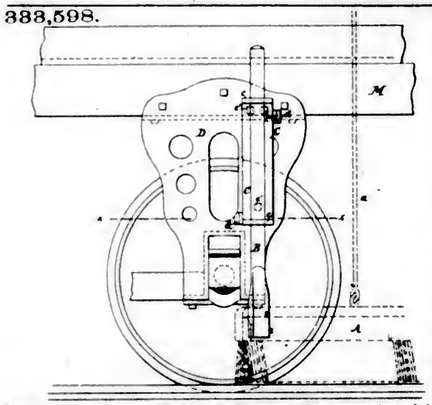
Claim.—In a snow-sweeper having revolving brooms, the combination of a draft-bar projecting beyond the end of the frame, with a curved bar serving to brace said draft-bar against lateral strain, and adapted to carry aprons, substantially as herein specified.

333,598. SNOW-SWEEPER. NEIL CAMPBELL, Brooklyn, N. Y., assignor to the Brooklyn Rail Way Supply Company, same place. Filed Mar. 24, 1885. (No model.)

Claim.—1. In a snow-sweeper having a relatively stationary oblique broom, a pedestal cast with projections rising from its face, whereby a seat is provided for a broom-supporting piece, substantially as described.

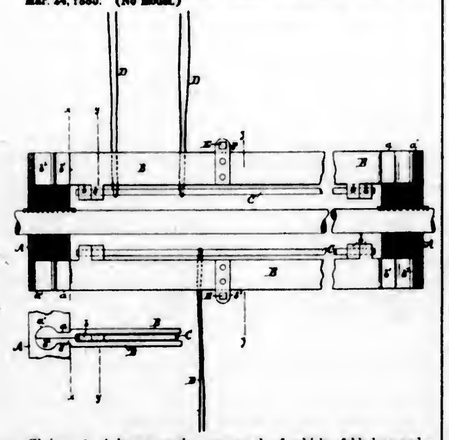
2. A pedestal, D, cast with projections *d'*, in combination with a

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broom-supporting piece, C, adapted to apply in the recesses formed by the face of the pedestal and the lateral faces of the projections, substantially as described.

333,599. SNOW-SWEEPER. NEIL CAMPBELL, Brooklyn, N. Y., assignor to the Brooklyn Rail Way Supply Company, same place. Filed Mar. 24, 1885. (No model.)



Claim.—1. A broom-section composed of whisks folded around a rod, C, and clamping-bars hinged together by means of said rod, substantially as described.

2. One or more pairs of hinged clamping-bars having enlarged ends and carrying broom-whisks, in combination with two broom-heads having slots and recesses shaped to receive the ends of the clamping-bars when the latter are folded together, substantially as specified.

3. A broom-section having enlarged ends, in combination with broom-heads having slots and recesses shaped to receive the ends of the broom sections, substantially as specified.

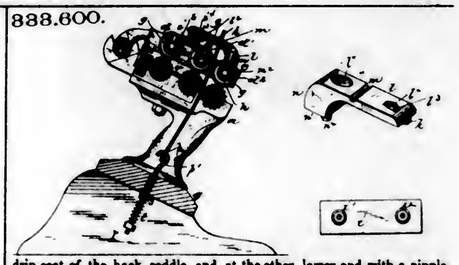
333,600. SADDLE FOR TOP ROLLS. NORMAN H. CHESEY and JAMES F. BOYLES, Taunton, Mass. Filed Feb. 26, 1884. (No model.)

Brief.—The arbors are provided with oil-cups, oil-passages, and axial bores, and the saddles are provided with countersunk perforated nipples to enter the oil-cups. The particular improvement consists in the provision of the front saddle with a perforated drip-rib adapted to rest in the drip-seat of the back saddle, whereby the middle arbor can be oiled readily without removing the saddles.

Claim.—1. The combination, with the arbors having oil-cups, oil-passages, and axial bores, of the front saddle provided with countersunk nipples and drip-rib, and the back saddle having the perforated rib-seat, and the lower nipples secured upon the arbors, and the spring-actuated stirrup for connecting the saddles, substantially as specified.

2. The combination, with the arbors having axial bores closed at the ends, oil-cups, and discharge-openings, of the back saddle provided with nipples on its under surface seated in the oil-cups of the back and intermediate arbors, and a drip-seat on its upper surface located between the nipples, the front saddle, having a perforated drip-rib seated on the

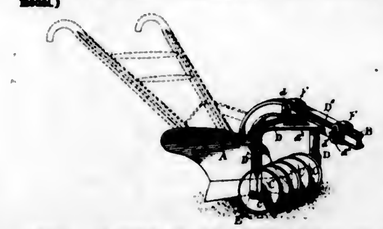
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drip-seat of the back saddle, and at the other lower end with a nipple seated in the oil-cup of the lower arbor, and a spring-actuated stirrup seated on the front saddle for connecting the said saddles, substantially as described.

3. The combination, with the arbors having axial oil-passages closed at the ends, oil-cups, and discharge-openings, of the back saddle having perforated nipples seated in the oil-cups of the back and intermediate arbors and a drip-seat on its upper surface, the front saddle having a perforated drip-rib on its lower face seated on the drip-seat of the back saddle, and having a nipple, n, and the stirrup for holding the saddles in position, substantially as described.

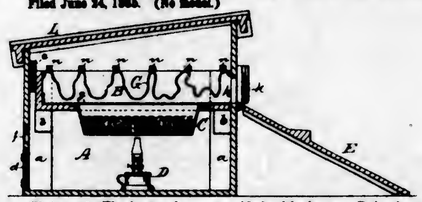
333,601. PLOW. WILLIAM H. CLARKE, Jr., Chicago, Ill., assignor of one-third to C. Clarence Poole, same place. Filed Feb. 3, 1885. (No model.)



Claim.—1. In combination with a plow mold-board and share, a series of rotary cutting-disks or colters placed in front of the said share and mold-board, and a supporting arm or frame for said disks or colters, substantially as and for the purpose set forth.

2. The combination, with a plowshare, mold-board A, and plow-beam B, of the frame D and a series of rotary cutting-disks or colters, C, placed in front of the said share and mold-board, substantially as shown and described.

333,602. ARTIFICIAL MOTHER. JOHN W. COOKE, Plainville, Conn. Filed June 24, 1885. (No model.)



Claim.—1. The box or house provided with the tray B, having an opening, the flanged water-vessel C, placed within said opening, and the platform *g*, covering the water-vessel and bottom of the tray, substantially as described, and for the purpose specified.

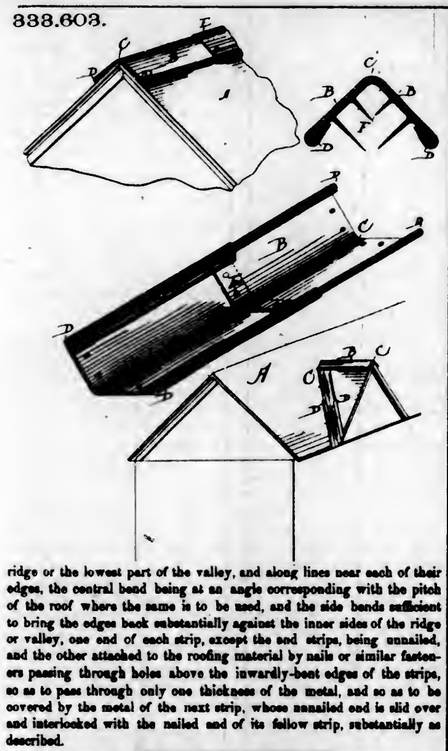
2. The combination of the tray having vertical walls upon two or more sides, the sheet of flexible material of about the width of said tray in one direction, but longer than the tray in the other direction, and the slats *n*, secured to said sheet at different points along its length, with the ends of the slats projecting beyond the side edges of said sheet, substantially as described, and for the purpose specified.

3. The artificial mother herein described, consisting, essentially, of the box or house provided at its lower story with the compartment for receiving the lamp, the removable tray B, the water-receptacle C, platform *g*, suitable covering for the birds to nestle under, and the removable roof L, substantially as described, and for the purpose specified.

333,603. RIDGE AND VALLEY FOR ROOFING. LEWIS D. CORTRIGHT, Chicago, Ill. Filed Sept. 17, 1885. (No model.)

Claim.—A ridge or valley consisting of strips of metal bent longitudinally along their center lines, or lines intended for the apex of the

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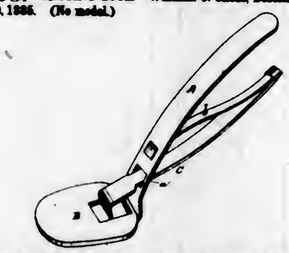
ridge or the lowest part of the valley, and along lines near each of their edges, the central bend being at an angle corresponding with the pitch of the roof where the same is to be used, and the side bends sufficient to bring the edges back substantially against the inner sides of the ridge or valley, one end of each strip, except the end strips, being unnailed, and the other attached to the roofing material by nails or similar fasteners passing through holes above the inwardly-bent edges of the strips, so as to pass through only one thickness of the metal, and so as to be covered by the metal of the next strip, whose nonnailed end is slid over and interlocked with the nailed end of its fellow strip, substantially as described.

333,604. FEED-TROUGH. ELIZABETH A. CRAIG, Arlington, Kans. Filed Sept. 16, 1885. (No model.)



Claim.—A feed-trough consisting of the vessel A, having the cover F, the bottom B, projecting beyond the sides and ends, as shown, the cups C on the sides and one end, and communicating with the interior through openings D, and the extension E on the other end of the vessel and communicating therewith through opening *e'*, said extension having the cover E', substantially as described.

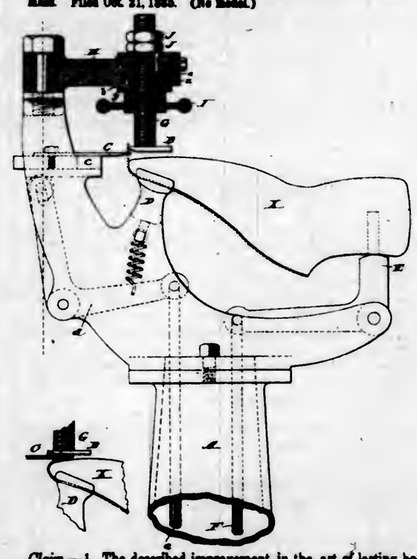
333,605. LASTING-TOOL. WILLIAM C. CROSS, Boston, Mass. Filed Oct. 20, 1885. (No model.)



Claim.—1. A tilting temporary former having a front end approximating in outline that of the toe of the last, and provided with a fulcrum-piece adjustable or movable vertically, so as to raise the former, substantially as and for the purposes hereinbefore set forth.

2. The combination of a temporary former having a front end approximating in outline that of the toe of the last, and a pivoted lifter-lever by which the wheel or the former can be lifted whenever desired, substantially as and for the purposes hereinbefore set forth.

333,606. LASTING BOOTS AND SHOES. WILLIAM C. CROSS, Boston, Mass. Filed Oct. 21, 1885. (No model.)



Claim.—1. The described improvement in the art of lasting boots and shoes consisting in applying a temporary former to the inside of the edge of the upper projecting above the last, then tucking said edge between the said former and the bottom of the last and pinching it against the under face of the former, and then while the upper is thus pinched drawing it up over the last, substantially as and for the purposes hereinbefore set forth.

2. The combination of the temporary former, the wiper or wipers, and last-supporting devices, substantially as and for the purposes hereinbefore set forth.

3. The combination of the wiper or wipers, the last-supporting devices, and the temporary former adjustable to different heights above the said supporting devices, substantially as and for the purposes hereinbefore set forth.

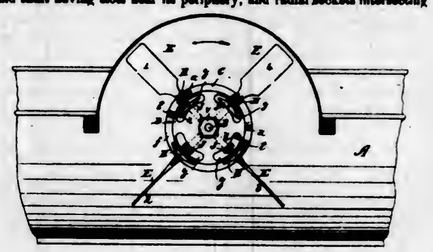
4. The temporary former, made vertically yielding to accommodate different thicknesses of leather, in combination with the wiper or wipers and last-supporting devices, substantially as and for the purposes hereinbefore set forth.

5. The temporary former and its swinging supporting-arm, in combination with the wiper or wipers and last-supporting devices, substantially as hereinbefore set forth.

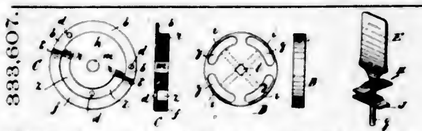
6. The adjustable and vertically-yielding temporary former and its swinging supporting-arm, in combination with the wiper or wipers and last-supporting devices, substantially as and for the purposes hereinbefore set forth.

333,607. PADDLE-WHEEL. PATRICK CUMMINGS, Newton, Mass., assignor to Patrick J. Cummings, same place. Filed July 16, 1885. (No model.)

Claim.—In a feathering paddle-wheel, a stationary plate provided with complementary annular cams, a shaft, a revolving head-stock on said shaft having slots near its periphery, and radial sockets intersecting



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said slots and extending through them toward the shaft, paddles having shanks occupying said sockets, and cross-bars on said shanks at right angles to each other, adapted to be engaged by said annular cams, the inner of said cross-bars operating within said slots and the other outside of the periphery of said head-stock, substantially as described.

333,608. INHALER. HENRY D. COSHMAN, Three Rivers, Mich. Filed May 26, 1885. (No model.)

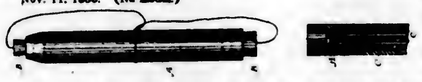


Claim — 1. The combination, with an inhaling-tube, A, of the hollow or opener stoppers B, covered with perforated or reticulated fabric, substantially as set forth.

2. The combination, with an inhaling-tube, A, of the hollow or open stoppers B, covered with reticulated fabric, and the spiral or the like menthol-separator in the body of the tube, substantially as set forth.

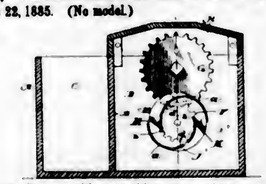
3. An inhaling-tube open at both ends for use, (preferably having stoppers for closing it when not in use,) and having a body of loose crystalline substance or medicament in its middle, through which air will pass, held in place by open stoppers B, which will also permit the passage of air, substantially as set forth.

333,609. INHALER. HENRY D. COSHMAN, Three Rivers, Mich. Filed Nov. 11, 1885. (No model.)



Claim.—An improved inhaler, consisting of a tube open at both ends for use, (preferably having stoppers for closing it when not in use,) and having a body of solid medicament held within it, and provided with one or more artificial air-passages, substantially as and for the purpose set forth.

333,610. WASHING-MACHINE. SAMUEL DANIELSON, Pittsville, Md. Filed June 22, 1885. (No model.)



Claim.—1. In a washing-machine, the suds-box, in combination with a cylinder revolving within the same and comprising two sections, perforated, as described, said sections having free communication with each other, and each constructed to hold the clothes, whereby the cylinder when in operation causes the transfer or throwing of the clothes from one section to the other, as set forth.

2. In a washing-machine, the suds-box, in combination with the cylinder revolving therein and comprising heads or ends and semicircular perforated sections secured to the heads, said sections having one end set farther away from the center of the heads than the other end, as set forth.

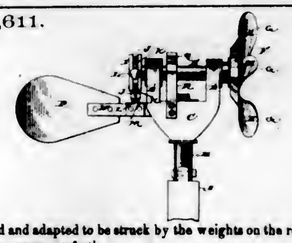
3. In a washing-machine, a suds-box, in combination with a cylinder revolving therein and comprising two perforated semicircular sections, a space being left between the meeting ends of each section, as set forth.

4. In a washing-machine, the suds-box, in combination with a cylinder revolving therein and comprising heads or ends, and curved shoulders formed on the heads from the periphery to one side of the center, and semicircular perforated sections having a portion of their ends secured to the periphery of the heads and the remaining portion bent over the shoulders, a space being left between each section at the point where one end of one section meets the end of the other section, as set forth.

333,611. ORCHARD-GUARD. JOHN R. DAVENDO, Paicines, Cal. Filed Apr. 25, 1885. (No model.)

Claim.—1. The herein-described orchard or field guard, comprising a swiveled bracket, the vane, the wind-wheel, its shaft, the pawl and ratchet, the grooved block on the wheel-shaft, a series of pivoted weighted rods fitted in the grooves of this block, and a plate, bell, or other alarm

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arranged and adapted to be struck by the weights on the rods successively, for the purpose set forth.

2. The herein-described orchard-guard, comprising the swiveled bracket, the wind-wheel, its shaft, the vane, and a series of weighted rods attached to the shaft, and a plate, bell, or other alarm arranged below the wheel-shaft and adapted to be struck by the weight on the rod, for the purpose set forth.

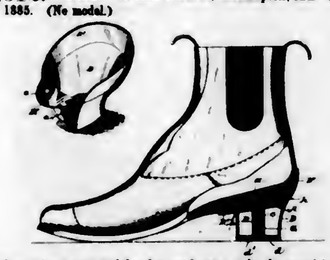
3. The herein-described orchard-guard, comprising a swiveled bracket, the wind-wheel, its shaft, the vane, vane-bar, a plate, bell, or other alarm attached to the vane-bar, and a block fitted on the wheel-shaft and carrying a series of weighted rods arranged and adapted to strike the alarm in succession, for the purpose set forth.

4. The horizontal shaft provided with a wind-wheel at one end, in combination with a series of pivoted weighted rods connected to the other end of the shaft, and a plate, bell, or other alarm arranged below the shaft at such distance therefrom as to be struck by the weights on the rods, as and for the purpose set forth.

5. The combination, with the wind-wheel and its shaft, of a grooved block on the shaft, a series of pivoted weighted rods fitted in the grooves of the block, and a plate, bell, or other alarm arranged to be struck by the weights on the rods, as set forth.

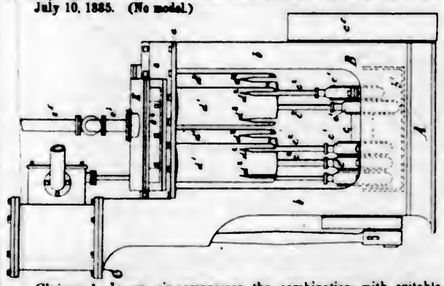
6. The combination, with the wind-wheel and its horizontal shaft, of a frame-piece or block arranged vertically on the shaft, a series of weighted rods pivoted at different points on the block, the swiveled bracket below the wheel-shaft, and a bell, plate, or other alarm attached to the bracket, and adapted to be struck by the weights on the rods, as set forth.

333,612. HEEL. ROBERT C. DAVIS, Indianapolis, Ind. Filed Sept. 11, 1885. (No model.)



Claim.— As a new article of manufacture, a heel comprising a plate, A, secured to the shoe and having a downwardly-extending hollow post, B, an elastic packing, H, seated in a recess between the shoe and plate A, a shell, D, bearing against the shank and counter of the shoe to inclose the plate A and packing H, and having a perforated wear-plate, a core or filling in the hollow post B, and a screw passing through the wear-plate of the shell and fitting in the core of the post, said post bearing against the wear-plate of the shell, as set forth.

333,613. AIR-COMPRESSOR. HEZEKIAH E. DEPT, Sedalia, Mo. Filed July 10, 1885. (No model.)



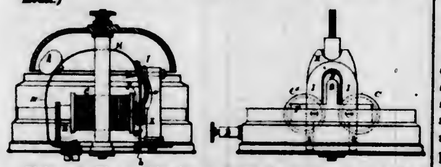
Claim.—1. In an air-compressor, the combination, with suitable driving mechanism, of the eccentrics c', cylinders d', having tapering

slots d^2, and arranged and sustained in rows radial with the main shaft, and suitable pistons, rods, valves, chambers, and pipes, substantially as and for the purpose described.

2. In an air-compressor, the single-acting cylinder d', having the end slots, d^2, and piston d, having valves d^3, substantially as and for the purpose described.

3. The compressing-cylinders of air-compressors made with open lower ends and provided with slots tapered to a proper extent toward their upper ends, substantially as and for the purpose described.

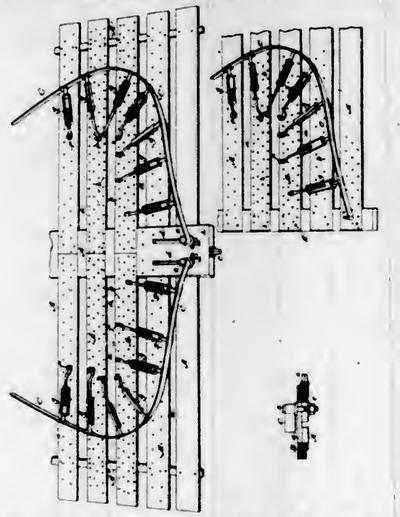
333,614. ELECTRIC BELL. CONSTANT F. DE REDON, Paris, France, assignor to Jean Felix Moreau, same place. Filed Jan. 10, 1884. (No model.)



Claim.—1. The combination, to form a rheotomic electric bell, of an electro-magnet, a curved spring, the armature, hammer, and contact-spring fixed to said curved spring, the contact-stop, and a retractor carried by the armature and adapted on the attraction of the armature to withdraw said contact-spring from said stop, substantially as set forth.

2. The combination of the electro-magnet C, the spring H, the hammer A, and armature F, fastened to said spring, the contact-stop a, and contact-spring D, and the re-enforce plate I, fastened to the armature against the outer side of the spring H, and slotted to admit the spring D and to form a retractor, e, substantially as set forth.

333,615. MACHINE FOR BENDING, SHAPING, AND SETTING THE TIMBERS OR FRAMES OF BOATS OR SMALL VESSELS. JAMES A. DOWER, Honolulu, Hawaii, assignor of one-half to George P. Castle, same place. Filed July 1, 1885. (No model.)



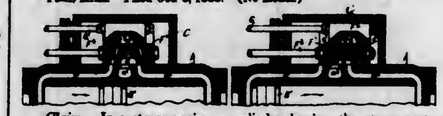
Claim.—1. The combination, in a bending-machine, of a platform, a flexible continuous bar, C, to form a molding-bar to bend on, and screw couplings or devices, substantially as described, arranged behind the said bar, and attached at one end to said bar and at the other end to the platform, whereby the said bar may be adjustable to the proper position on the platform and held in that position during the bending process, substantially as set forth.

2. The combination, in a bending-machine, of the platform, the continuous flexible bar C, and the turn-buckles g, attached at one end to the said platform and having at their other ends jaws which embrace the edges of said bar C, but leave it free to be moved endwise in said jaws, substantially as set forth.

3. The combination, with the perforated platform, of the slotted plate B, affixed thereto, the flexible bars attached at one end to the plate B by studs s s, which pass through the slots therein, the said studs, the turn-buckles attached at one end to the flexible bars and at the other to the platform by pins, and the said pins, all substantially as set forth.

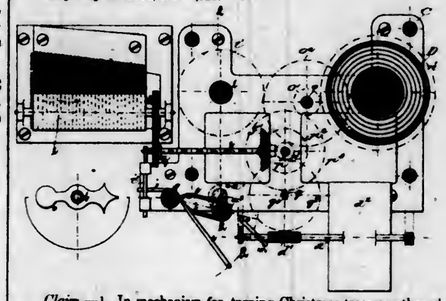
4. The combination, with the platform, the flexible bars, the studs s s, and the means, substantially as described, for imparting the proper curve to said bars and for securing them in position on the platform, of the plate B, provided with slots d, having lateral branches d', said studs s being located in the slots d and adjustably secured therein, substantially as set forth.

333,616. STEAM-ENGINE RELIEF-VALVE. JAMES H. DUFFEY, St. Paul, Minn. Filed Oct. 5, 1885. (No model.)



Claim.—In a steam-engine, a cylinder having the steam-ports a' a^2, exhaust-port a^3, and piston B', a valve, F', having exhaust-cavity d, side ports, a' a^2, and central port, d^3, and adapted to be moved back and forth to alternately open and close said steam and exhaust ports, and a relief-valve, F², having cavity g and adapted to be moved back and forth over said valve F' to connect its cavity g alternately with said ports a' a^2 and a^2 a^3, whereby communication is opened between said exhaust-port a^3 and the exhaust end of said cylinder to prevent the formation of back-pressure therein.

333,617. MECHANISM FOR TURNING CHRISTMAS-TREES WITH OR WITHOUT ACCOMPANIMENT OF MUSIC. JOHANNES C. ECKARDT, Stuttgart, Germany. Filed Jan. 5, 1885. (No model.) Patented in Germany July 22, 1884, No. 30,617.



Claim.—1. In mechanism for turning Christmas-trees or other objects with or without accompaniment of music, the combination of a clock-work with a music-work, disengaging-gear adapted to connect the music-work with the clock-work and to disconnect it from the same, a crank-shaft, a, and a two-armed spring, i, coiled round a fixed pin, one arm being adapted to receive oscillating motion from the crank-shaft, while the other arm is adapted to transmit this motion to the disengaging-gear, substantially as described.

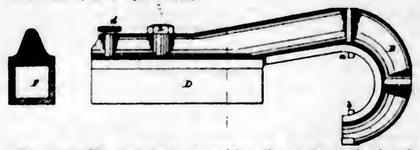
2. The combination of a clock-work with crank-shaft a, pivoted shaft f, and wheel g, slide i', adapted to move the shaft f to and fro, and two-armed spring i, coiled round a fixed pin, one arm being adapted to receive an oscillating motion from the said crank-shaft a, while the other arm is adapted to transmit this motion to the slide i', and a music-work, c, having a driving-wheel, h, adapted to receive motion from the wheel g when the latter is in one of its extreme positions, substantially as described.

3. The combination of a fan, d^3, and fan-axle d, geared together with the part holding the tree or other object to be turned, with a crank-shaft, a, and a brake-spring adapted to be pressed against the shaft d by turning the shaft a, substantially as described.

4. The combination of a clock-work adapted to turn the Christmas-tree or other object with a music-work, a disengaging-gear adapted to set the music-work in and out of action, a crank-shaft, a, a two-armed spring, i, coiled round a fixed pin, s, one arm being adapted to receive oscillating motion from the crank-shaft a, while the other arm transmits this motion to the disengaging-gear, and a brake-spring, c, coiled round the fixed pin s and adapted to receive oscillating motion from the shaft a and to act as a brake for the clock-work, the springs i and c being placed so that in one of the extreme positions of the crank-shaft a the music-work gears with the clock-work while the brake-spring is out of action, that in the opposite position the music-work is disengaged while the brake-spring acts on the clock-work, and that in the intermediate position neither the music-work nor the brake-spring is in action, substantially as described.

5. The combination of a fan and axle geared together with the clock-work, with hollow crank-shaft a and a brake-spring, m, passing through the said axle, and adapted to be pressed more or less against the fan-axle, and to retain itself at the desired height, substantially as described.

333,618. PIPE-CUTTER. ROBERT C. ELLSEN, Southington, Conn. Filed Feb. 4, 1885. (No model.)

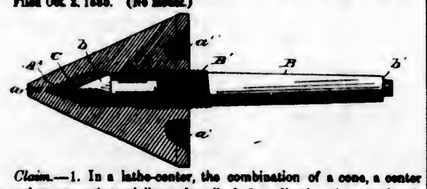


Claim.—1. The tool-frame comprising the portion A, having the curved head B, and the tool and handle receiving part D, pivoted to the portion A, and the spring-held locking-pin *d* for holding said part D fixed with relation to the portion A, substantially as described.

2. In a tool substantially as described, the combination, with the curved head B, of the fixed pin *a*, at one side of said curved head, and a spring-held pin, *b*, at the opposite side of said head, for locking a tool, C, in said head, as set forth.

3. The portion A, having the curved head B, combined with the tool and handle receiving block D, having a pivot-pin, *m*, whereby it is removably secured to the frame A, and a locking device, substantially as described, for retaining said block D fixed with relation to the portion A, as set forth.

333,619. LATHE-CENTER. WILLIAM H. FAIRLESS, Portsmouth, Va. Filed Oct. 2, 1885. (No model.)



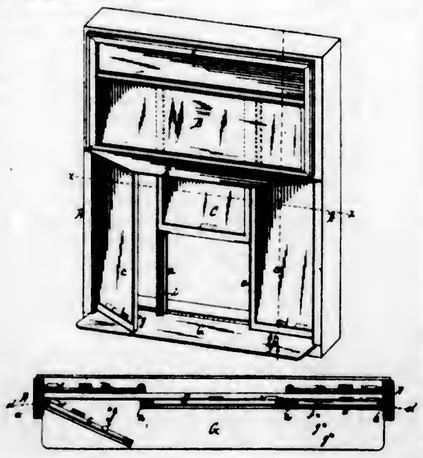
Claim.—1. In a lathe-center, the combination of a cone, a center pin, and means, substantially as described, for adjusting the cone longitudinally on the pin, as set forth.

2. In a lathe-center, the combination of a cone having a central bore funnel-shaped at one end and recessed at the other, as at *a*, and in part screw-threaded, and a central pin having an enlarged screw-threaded part and a cone-shaped point adapted to fit the bore in the cone, substantially as described.

3. In a lathe-center, the combination of a cone having a central bore, a pin adapted to fit said bore, and a washer adapted to fit in the funnel-shaped end of the bore in the cone and over the end of the pin, whereby the cone may be longitudinally adjusted on the pin and still preserve its true central line, substantially as described, for the purposes set forth.

4. An adjustable lathe-center consisting of a cone having a central bore funnel shaped at one end and in part screw-threaded, a central pin having an enlarged screw-threaded part and a cone-shaped point adapted to fit the bore in the funnel-shaped end, and a socket end, substantially as described.

333,620. CAR-WINDOW. JOHN M. PENNEBY, Memphis, Tenn. Filed June 2, 1885. (No model.)



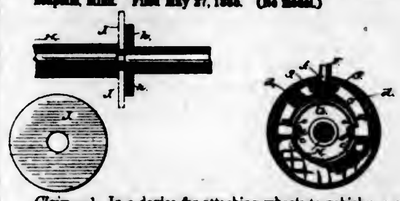
Claim.—1. In a car-window, the combination of two independent laterally-swinging sashes pivoted on opposite sides of the frame or casing, and an intermediate vertically-sliding sash, substantially as and for the purposes specified.

2. In a car-window, the combination, with an intermediate sliding sash, of two laterally-swinging side sashes pivoted on opposite sides of the frame or casing, and adapted to slide vertically therein, substantially as and for the purposes specified.

3. In a car-window, the combination of a central vertically-sliding sash, an overhanging shed and a sill which project beyond the sliding central sash, and two laterally-swinging vertically-sliding sashes pivoted on opposite sides of the frame or casing, substantially as and for the purposes specified.

4. In a car-window, the combination, with two laterally-swinging sashes pivoted on opposite sides of the frame or casing, of duplicate sliding sashes arranged within the laterally-swinging or pivoted sashes, and an intermediate sliding or central sash, substantially as and for the purposes specified.

333,621. HUB-ATTACHING DEVICE. ADOLPH F. C. GARBER, Minneapolis, Minn. Filed May 27, 1885. (No model.)



Claim.—1. In a device for attaching wheels to vehicles, a spindle, in combination with a loosely-mounted rotating washer, and suitable automatically-operating spring-jaws adapted to engage the washer and rotate the same by frictional contact, substantially as herein described.

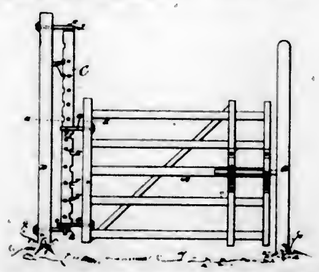
2. The combination, with a spindle having a rigid collar, A, and an annular groove, *a*, of a loosely-mounted washer rotated by frictional contact with automatically-operating jaws, substantially as herein described.

3. In a device for attaching wheels to vehicles, a hub having automatically-operating spring-jaws, in combination with a spindle having a loose washer, whereby the spindle may be inserted within the hub and be held by means of the jaws rigidly engaging the washer, substantially as herein described.

4. An improved means for attaching or detaching hubs of wheeled vehicles to their spindles, consisting, essentially, in a spindle having an immovable collar, and a loosely-revolving washer, J, in combination with a hub having the automatically-operating jaws E and an actuating-bolt, F, having projections which engage the jaws, substantially as herein described.

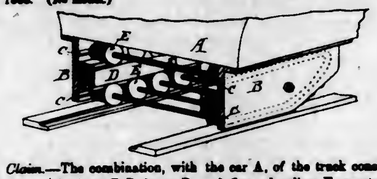
5. The spindle H, having rigid collar A, and the loosely-revolving washer J, in combination with the hub A, the cap C, having the pins *d*, the automatically-operating curved jaws E, provided with catches, the bolt F, having projections which engage the slotted upper ends of the jaws, a spring, G, and a disk, D, substantially as herein described.

333,622. GATE-HINGE. ADAM M. GARMAN, Sinking Creek, Va. Filed Apr. 13, 1885. (No model.)



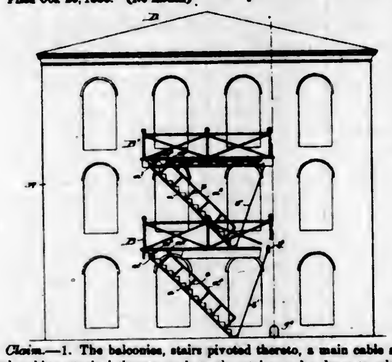
Claim.—The gate-post having the sockets *d*, in combination with the gate provided with the upper and lower slotted straps, B, the bar C, longer than the gate, provided at its ends with pivots *c c*, working in the sockets *d*, and having notches F on its forward edge, below the center, and notches F' on its rear edge, above the center, and holes E along its length, and pins *e*, passed though the holes, the straps B encompassing the bar C above the pins *e*, so as to rest on and be supported thereby, the rear walls of the slot in the upper strap engaging the upper rear notches, F', and the front wall of the slot in the lower strap engaging the lower forward notches, F, as set forth.

333,623. CAR-TRUCK. ANDREWS W. GRISWELL, Cleveland, Ohio, assignor of one-eighth to Theodore W. Ensign, same place. Filed Aug. 28, 1885. (No model.)



Claim.—The combination, with the car A, of the truck consisting of the grooved plates B B, beam D, and flanged rollers E, constructed and arranged to operate substantially as and for the purpose specified.

333,624. FIRE-ESCAPE. WALTER S. GOODWILLIE, Cambridge, Mass. Filed Oct. 20, 1885. (No model.)

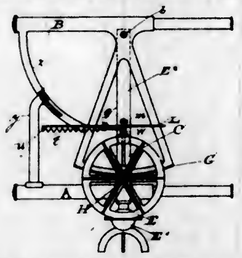


Claim.—1. The balconies, stairs pivoted thereto, a main cable and branch cables attached thereto and to the stairs, and a drum to which the main cable is fastened, combined with a locking mechanism for the said drum, a cord to move it, and a series of connected branch cords and gongs or alarms located at each floor, substantially as described.

2. The balconies, stairs pivoted thereto, a main cable and branch cables attached thereto and to the stairs, and a drum to which the main cable is fastened, combined with a locking mechanism for the said drum, a cord to move it, and gongs or alarms located at each floor and operated by the said cord, and the cord *g'*, whereby the stairs may be lowered and the alarms sounded from outside the building.

3. The balconies and the stairs and railing pivoted thereto, combined with the supports *b*, having the right-angled extensions *b*^{3}, substantially as and for the purpose described.

333,625. DISTANCE-INSTRUMENT. JOE L. HAMMARD and GEO. W. TRIBBY, Oroville, Cal. Filed May 18, 1885. (No model.)

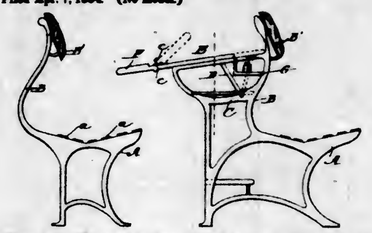


Claim.—1. An instrument for measuring distances, consisting of a lower telescope having a ball-and-socket joint in a supporting-frame, and an upper pivoted telescope having means for detachable attachment, and a segmental rack, a horizontal shaft having a pinion at one end engaging the said rack, and a gear at its opposite end engaging a pinion on a pointer-shaft to move the same over an indicating-dial, substantially as specified.

2. In an instrument for measuring distances, the dial L, having slot *r*, the bearing *u*, spring *t*, slide *q*, pinion-shaft I, carrying the pointer *m*, and the cord W, secured at one end to the said shaft and at its opposite end to the slide, the whole combined and adapted to operate substantially as specified.

3. The combination, with the movable tube B, of the spindle I, geared with the toothed segment G and provided with a pointer, *m*, the dial L, the slide *q*, adapted to move along the scale, and the spring *t* for moving the slide in one direction and the cord W for moving it in the opposite direction, substantially as specified.

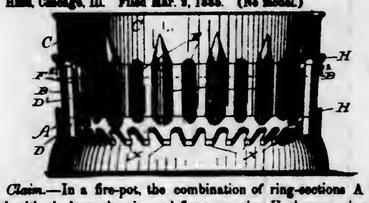
333,626. TABLE AND DESK. ARNOLD H. HEIDEMANN, Chicago, Ill. Filed Apr. 7, 1884. (No model.)



Claim.—1. The combination, with the open-work frame C, of top plate, E, arms D, secured to said plate and frame, and receptacle G, mounted in the frame and exposed when top plate, E, is drawn forward, as described and shown.

2. The combination, with open-work frame C, of two-part leaf E F, arms D, secured to part E and frame C, and receptacle G, mounted in the frame and exposed when the top plate is drawn forward, as described and shown.

333,627. FIRE-POT FOR STOVES AND FURNACES. GEORGE H. HIMS, Chicago, Ill. Filed Mar. 9, 1885. (No model.)



Claim.—In a fire-pot, the combination of ring-sections A B, provided with air-ducts therein, and flange or rim H thereon, ring-section C, resting upon and covering ring-section B and the air-ducts therein, and cement joint G between said flange H and the outer surface of the next higher ring-section, all substantially as described, and for the purpose set forth.

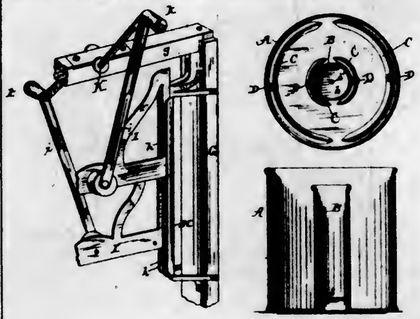
333,628. COVERED FRAME FOR FURNITURE. HENRY HEYWOOD, Gardner, Mass. Filed July 11, 1885. (No model.)



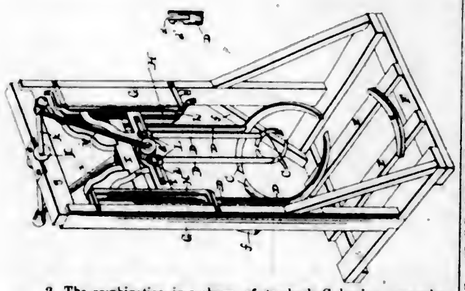
Claim.—The improved covered frame above described, consisting of the frame A, sheet material B, groove *a*, and spline *a'* on the upper side, and groove *b* and spline *b'* on the under side of the frame, the sheet material covering not only the upper side of the frame, but also its edge and a portion of the lower side.

333,629. CHURN. GEORGE W. HEMAN, Paducah, Ky. Filed July 19, 1884. (No model.)

Claim.—1. The combination of a stationary churn-body having a vertical water-tube in the center thereof, with vertically-acting dashers arranged concentrically around said water-tube, in the manner herein described, for the purpose of providing means for regulating the temperature of the cream to be churned, as hereinbefore set forth.

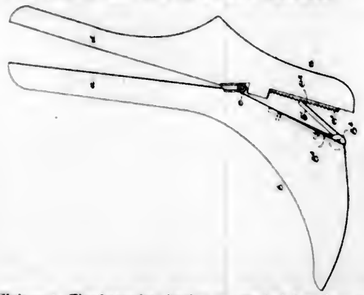


333,629.



2. The combination, in a churn, of standards G, having a cross-bar, *g*, with the brackets H, having grooves *h*, the sliding frames I, having the levers *i*, the journal K, having cranks *k*, the sleeves L, the staffs D, having notches *d d'*, and the dashers C, in the manner herein described, for the purpose of suitably agitating the contents of a stationary churn-body when provided with a vertical water-tube in the center thereof, as hereinbefore set forth.

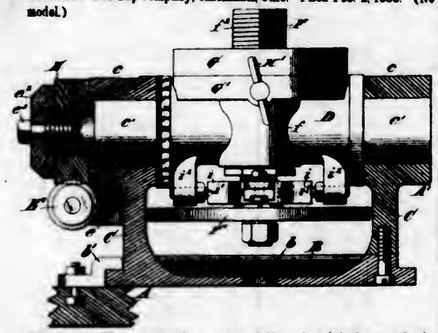
333,630. TREE FOR BOOTS OR SHOES. SAMUEL H. HODGES, Parish of Street, County of Somerset, England, assignor of one-third to George E. Barnard, Lynn, Mass. Filed Oct. 26, 1885. (No model.)



Claim.—1. The front piece having an attached foot-piece, and the hinged back piece provided with a heel-piece, combined with the dog to hold the heel-piece and foot-piece in their expanded or extended condition, substantially as described.

2. The front piece having an attached foot-piece, and the hinged back piece provided with a heel-piece, combined with the dog and the co-operating toothed surface to hold the heel-piece and foot-piece in their expanded or extended condition, substantially as described.

333,631. UNIVERSAL HEAD FOR MILLING-MACHINES. FRED HOLS and GEORGE A. MUELLER, Anderson's Ferry, assignors to the Cincinnati Screw and Tap Company, Cincinnati, Ohio. Filed Feb. 2, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the circular base-plate, the slotted table or bed-plate, the pivotal bolt for the base-plate, having a nut sliding in the slot in the bed-plate, the brackets rising from the base-plate, the stock having trunnions journaled in said brackets, the work-carrier or mandrel supported in said stock and transversely thereof, the clamp for the base-plate, and a clamp for the trunnions of the stock.

2. The combination, substantially as hereinbefore set forth, of the base-plate, the stock, the mandrel or work-carrier supported transversely of said stock, the index-plate secured to the outer end of the mandrel, the index-lever pivoted to hangers from the stock, and the adjustable index-pin carried by said lever, the rod secured to the rear end of the index-lever and passing through an eye in an offset from said stock, and the spring interposed between the rod and said offset to hold the index-lever down toward the plate.

3. The combination, substantially as hereinbefore set forth, of the base-plate, the stock journaled in brackets rising from the latter, the mandrel or work-carrier supported transversely of said stock and borne therewith in its adjustments, the index-plate secured to the outer end of the mandrel, the index-lever pivoted to hangers from the stock, and the adjustable index-pin carried by said lever, the rod secured to the rear end of the index-lever and passing through an eye in an offset from said stock, the spring interposed between the rod and said offset to hold the index-lever down toward the plate, and means for locking the index-lever in a raised position away from the plate.

4. The combination, substantially as hereinbefore set forth, with the mandrel and the stock in which it is supported, of the index-plate secured to the outer end of the mandrel, the index-lever pivoted to ears or hangers from said stock, the index-pin adjustable along the lever to lock the index-plate, the rod pivoted to the rear end of said index-lever and passing through an eye in an offset from said stock, the spring interposed between the rod and the offset to hold the lever down toward the index-plate, and the latch or dog, also pivoted to the heel of said lever and arranged to be turned up and latched against the adjacent side of the offset to hold the index-lever away from the index-plate.

5. The combination, substantially as hereinbefore set forth, of the mandrel formed with a flange, its supporting-stock correspondingly flanged, the gibs or keys sliding in an annular T-slot in the first-mentioned flange and projecting into apertures in the opposite flange, and the tapering screws or cotters passing through apertures in said keys and threading into the stock, whereby the mandrel may be locked firmly to said stock and prevented from axial rotation.

6. The combination, substantially as hereinbefore set forth, of the supporting-base, the stock journaled in brackets from said base, so as to be capable of a complete rotation, means for locking said stock against rotation in any given adjustment, the mandrel carried transversely of said stock and partaking of its adjustments, and capable of an independent rotation on its own axis, and means for locking said mandrel to the stock to prevent said independent rotation.

7. The combination, substantially as hereinbefore set forth, of the supporting-base pivoted to the bed-plate, so as to be adjustable about an axis perpendicular to its own plane, the clamp or clamps whereby said base is locked to the bed-plate and prevented from rotation, the stock journaled in brackets from said bed-plate and locked in any given adjustment about its own axis by a suitable clamping device, the mandrel transverse of and rotating in said stock and partaking of its adjustments, and a clamping device for locking said mandrel to the stock.

8. The combination, substantially as hereinbefore set forth, of the supporting-base, the stock journaled in brackets from said base, the worm-wheel keyed to one end of the stock, the worm-shaft engaging with said wheel, whereby the stock may be adjusted about its own axis, the mandrel journaled in the bearing afforded by said stock, and transversely thereof, and a clamp or clamps to lock said mandrel to the stock in any given axial adjustment of the mandrel.

9. The combination, substantially as hereinbefore set forth, of the supporting-base, the stock journaled in brackets rising therefrom, the worm-wheel splined to one end of the stock, outside of the trunnion at that end, the worm-shaft engaging with said wheel to adjust the stock, the cap bridging the end of the stock and resting upon the exterior face of the worm-wheel, and the set-screw passing through said cap and entering the end of the stock, whereby said stock and worm-wheel may be drawn forcibly against the bearing at that end and clamped against displacement.

10. The combination, substantially as hereinbefore set forth, of the supporting-base, the stock journaled in brackets rising therefrom, the split bearing and clamping-screw, the worm-wheel and worm-shaft, the cap, and set-screw.

11. The combination, substantially as hereinbefore set forth, of the supporting-base having a central bore therethrough, the bed-plate with its longitudinal T-slot and recess, the nut sliding in said recess, and the cylindrically-headed screw passing through the bore in the base and through said nut and taking into the recess to afford a pivot-pin for the base.

12. The combination, substantially as hereinbefore set forth, of the supporting-base having an axial bore, the bed-plate or table having a T-slot and recess, the nut sliding in said recess, as described, the cylindrically-headed screw passing through said bore and nut, and a clamp or keeper for the base-plate having a headed screw-bolt also sliding in said slot.

13. The combination, substantially as hereinbefore set forth, with a mandrel or work-carrier, of an index-plate supported upon the outer end thereof, an index-pin to lock the plate and mandrel against rotation in their supporting-stock, and controlling mechanism interposed between said stock and pin, whereby the index-plate, index-pin, and mandrel may be together temporarily displaced from their normal adjustment and then restored thereto, in order that in the interval a second cut may be made alongside the primary cut.

14. The combination, substantially as hereinbefore set forth, with the mandrel and the stock in which it is supported, of an index-plate mounted upon the outer end of the mandrel, a sectional index-arm secured to the stock in such manner that one section is held against lateral movement thereby, an index-pin adjustable along the other section, to lock into the perforations of the index-plate to hold it and the mandrel against movement, and an adjustable connection between said latter section of the arm and the other, whereby the section carrying the index-pin may be moved laterally and then restored to the original adjustment, for the purpose explained.

15. The combination, substantially as hereinbefore set forth, with the mandrel and its supporting-stock, of the index-plate secured to the outer end of the mandrel, the index-arm composed of the sections I I', lying alongside each other and steadied by a collar upon one closely embracing a hub upon the other axially of the mandrel, a connection between the section I' and the stock, whereby said section is positively prevented from lateral movement, the index-pin adjustable along the section I, the segmental wing from the latter section passing laterally across the other, and the eccentric pivoted to the section I' and engaging with said wing to move the index-pin and its carrier laterally, and therewith the index-plate.

16. The combination, substantially as hereinbefore set forth, of the mandrel and its supporting-stock, the index-plate attached to the outer end of the mandrel, the index-lever composed of the sections I and I', the latter of which is pivoted to ears from the supporting-stock and embraces a hub upon the other by means of an annular collar, said hub surrounding the end of the mandrel, the index-pin adjustable along the section I, the curved wing L, extending laterally from said section and across the other, the eccentric pivoted upon the latter section and taking into a slot in the wing, and a clamping-screw to lock the two sections together.

17. The combination, substantially as hereinbefore set forth, of the arm or section I, the arm or section I', the index-pin i^3, the wing L, the eccentric l^2, taking into a slot in said wing, the pointer l^3, attached to said eccentric, the scale l^5, the stock, the mandrel, and the index-plate.

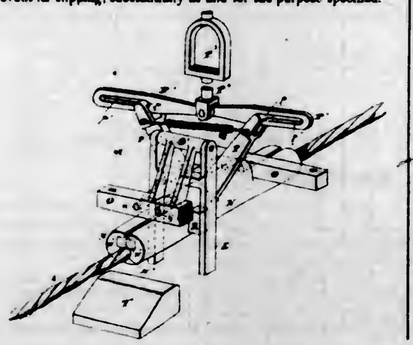
333,632. MEDICINAL TEA. PAUL ROMMER, Trieste, Austria-Hungary. Filed Oct. 27, 1885. (No specimens.)

Claim.—The herein-described composition, consisting of *Polygonum aviculare* and *Lepidium ruderale*, to be used in the proportions above set forth, as a medicinal tea against all complaints of the throat and lungs.

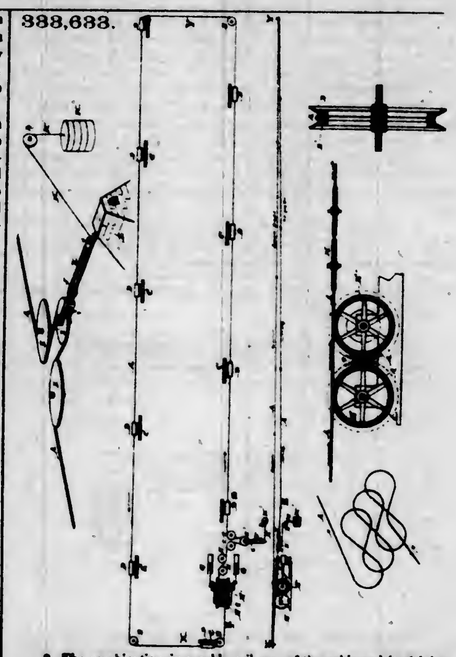
333,633. GRIPPING DEVICE FOR CABLE RAILWAYS. WILLIAM G. HUEY and THOMAS J. LOVEMOVE, Philadelphia, Pa. Filed Apr. 17, 1884. Renewed Oct. 9, 1885. (No model.)

Brief.—Pivoted grip-jaws applied through a toggle device are locked to the cable by a swinging frame, which is automatically raised by contact with a block upon the track when the car arrives at the cable-driving mechanism, which is located below the track and upon a downgrade of the same, to enable the cars to pass said mechanism while disengaged from the cable. Elastic strips project from the faces of the grip-jaws, and are forced against the cable when the grip is applied to prevent slipping of the cable therethrough.

Claim.—1. The combination of the hinged jaw N, having the longitudinal grooves N^3, facing each other, and the longitudinal elastic strips or blocks N', carried by said jaws and adapted to be forced together and thereby caused to press down upon the cable held in the grooves N, to prevent its slipping, substantially as and for the purpose specified.



333,633.



2. The combination, in a cable railway, of the cable and its driving mechanism with the railway-bed arranged in a downgrade over the driving mechanism, the railway-cars provided with clamping-jaws, and automatic mechanism, substantially as set forth, for disconnecting the clamping-jaws and cable as the car is about passing over the driving mechanism, substantially as and for the purpose specified.

3. In the gripping device for cable railways, hinged jaws provided with clamping-grooves, and rubber blocks to press down upon the cable to prevent its slipping, substantially as and for the purpose specified.

4. The combination of the hinged jaws N, having the longitudinal grooves N^3, lugs R, facing each other, and the longitudinal elastic strips or blocks N', carried by said jaws and adapted to be forced together and thereby caused to press down upon the cable held in the grooves N, to prevent its slipping, and hinged locking-dog S, substantially as and for the purpose specified.

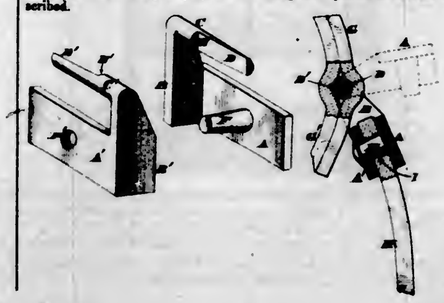
5. The combination of hinged jaws N N, having arms P, slotted links P', and rod P^2, substantially as and for the purpose specified.

6. The combination of hinged jaws N N, having arms P, slotted links P', spring Q, and rod P^2, substantially as and for the purpose specified.

7. The combination of hinged jaws N N, having arms P and lugs R, slotted links P', spring Q, locking-dog S, and rod P^2, substantially as and for the purpose specified.

333,634. HARNESS-COUPLING. NATHANIEL W. HUNTER, Cincinnati, Ohio. Filed Nov. 7, 1885. (No model.)

Claim.—1. A harness-coupling consisting of the separable plates A A', having, respectively, end pieces, B B', provided with lateral extensions adapted to engage with the tag or other supporting member, a retaining device being employed for uniting said plates, as herein described.



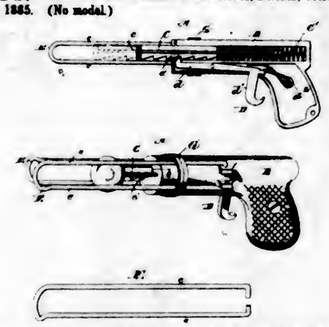
2. A harness-coupling consisting of the separable plates A A′, having, respectively, end pieces, B B′, provided with scarfed lateral extensions adapted to engage with the tug or other supporting member, a retaining device being employed for uniting said plates, as herein described

3. The combination, in a harness-coupling, of the front plate, A, having the end piece, B, lateral extension C D, and integral rivet F, and the rear plate, A′, having an end piece, B′, lateral extension C′ D′, and a hole, F, for the reception of said rivet, as herein described.

4. As a new article of manufacture, a harness-coupling consisting of the separable plates A B C D F and A′ B′ C′ D′ F′, either of said plates being provided with one or more flanges, K, for the purpose specified.

5. A harness-coupling consisting of the separable plates A B C D F and A′ B′ C′ D′ F′, joined with a retaining device and halved together at one side, as at M, for the purpose described.

333,635. **TOY PISTOL.** LUTHER J. INGERSOLL, Denver, Colo. Filed Oct. 6, 1885. (No model.)



Claim.—1. The combination, with a pistol-barrel and the expelling-plunger, of yielding retaining-arms secured to the barrel independent of the plunger and projecting beyond the same, to retain and guide the projectile between said arms, substantially as described.

2. The combination of a pistol-barrel, the expelling-plunger, and laterally-yielding retaining-arms pivoted to the barrel independent of the plunger, and arranged on opposite sides thereof and beyond the same, to retain and guide the projectile between the arms, substantially as described.

3. The combination of a pistol-barrel, the expelling-plunger, yielding arms pivoted to the barrel independent of the plunger, and a band encompassing the barrel and rear ends of the arms to regulate the tension of the latter, substantially as described.

4. The combination of a pistol-barrel, the expelling-plunger, laterally-yielding spring-arms pivoted to the barrel independent of the plunger and on opposite sides thereof, and an elastic band encompassing the rear ends of the arms and the pistol-barrel, substantially as described.

5. As a new article of manufacture, a toy pistol comprising a casing and barrel, a spring-actuated plunger having teeth, a trigger pivoted in the casing and adapted to engage the teeth of the plunger, laterally-yielding arms pivoted to the barrel independent of the plunger and on opposite sides thereof, and an elastic band encompassing the barrel and arms, substantially as described.

6. The combination, with a pistol-barrel and the expelling-plunger, of yielding arms pivoted to the barrel independently of the plunger, each arm being bent from a single piece of spring-wire, substantially as described.

333,636. **DEVICE FOR PRESERVING EGGS.** OWEN W. JONES, New Cambria, Mo. Filed Sept. 19, 1885. (No model.)



Claim.—1. In an egg-preserving apparatus, the combination of an open frame, A, a sliding frame, and a series of independently-journaled rollers, C, mounted in the sliding frame and having their bearings projected beyond the sliding frame, and provided with bearing-wheels C′, adapted to bear on the track or way of the main frame and support the sliding frame therein, substantially as described.

2. In an egg-preserving apparatus, the combination of an open main frame having a track or way, a sliding frame arranged between the track of the main frame and the lower edge of the side pieces below the plane of such track, and a series of rollers independently journaled in the sliding frame and having bearing-wheels C′ rigidly secured to the bearings of the rollers and bearing on the track or way of the main frame, whereby the sliding frame is suspended from the track or way, and the rollers are rotated when the frame is operated, substantially as described.

3. In an apparatus for preserving eggs, the combination of a main frame, a sliding frame mounted therein and having a series of independently-journaled rollers having bearing-wheels C′, and a stop-pin adapted to limit the movement of the sliding frame, substantially as described.

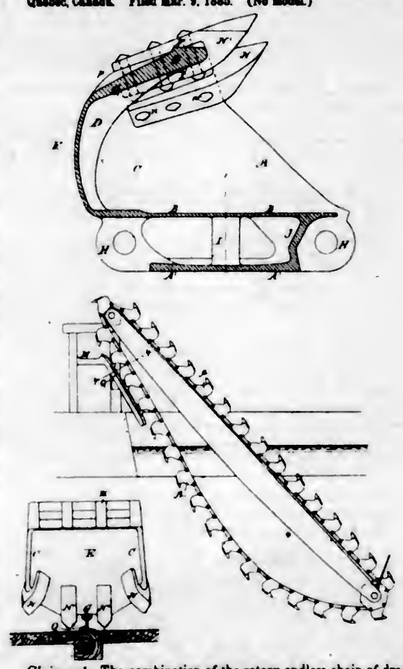
4. In an apparatus for preserving eggs, the combination of a main frame, a sliding frame mounted on and suspended from said frame, a series of independently-journaled rollers having bearing-surfaces, and an adjustable stop-pin adapted to vary and limit the movement of the sliding egg-carrying frame, substantially as described.

5. In an apparatus for preserving eggs, the combination of a main frame, an egg-carrying frame having rollers and arranged to slide on the main frame, and a stop adjustably secured to the main frame and adapted to engage the sliding egg-carrying frame, to limit and vary the movement of the latter frame, as set forth.

6. In an apparatus for preserving eggs, the combination of a main frame, a sliding frame mounted thereon, and an adjustable stop to limit and vary the movement of the sliding frame, as set forth.

7. In an apparatus for preserving eggs, the combination of an open main frame, A, having a series of tracks or ways, A^2, a series of sliding frames, B, mounted on and suspended between the tracks of the main frame, and having limiting-shoulders d', a series of rollers, C, independently journaled in the frames B, and having bearing-wheels C′ at their ends bearing on the tracks or ways to support the frames B and revolve the rollers, stop-blocks E, having holes e, and stop-pins D, removably secured in the holes e and adapted to alternately strike the shoulders d' to limit the movement of the frames B, substantially as described.

333,637. **ENDLESS-CHAIN DREDGER.** JOHN KENNEDY, Montreal, Quebec, Canada. Filed Mar. 9, 1885. (No model.)



Claim.—1. The combination of the rotary endless chain of dredger-buckets, means for supporting it, the chute or hopper, and the rail-like deflector acting upon the central portions of the tops of the buckets, substantially as and for the purpose set forth.

2. A dredge-bucket having the interior and exterior back plates and the link-lugs formed complete in one piece with the said plates, substantially as and for the purpose set forth.

3. A dredge-bucket having the interior and exterior back plates extending from side to side, and the cross-rib connecting the back plates all in one piece, substantially as and for the purpose set forth.

4. A dredge-bucket having the one-piece interior and exterior back plates, the link-lugs, and the cross-rib connecting both the back plates and the sides of the bucket, substantially as and for the purpose set forth.

5. A dredge-bucket having the thickened top part or lip and the strengthening-rib connecting said lip with the back of the bucket, substantially as and for the purpose set forth.

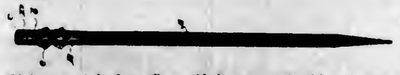
6. A dredge-bucket having its top and sides cast together, with sharp angles at their junctures L L, provided with seatings for inclined end teeth, substantially as and for the purpose set forth.

7. A dredge-bucket having its lips formed with the flat seatings and the seat-lugs for the detachable teeth, substantially as and for the purpose set forth.

8. The combination, with the bucket having the thickened top part or lip and the seatings for the teeth, of the detachably-secured central teeth, and the inclined end teeth projecting at their points beyond the bucket-sides, substantially as and for the purpose set forth.

9. A dredge-bucket having the centrally-arranged bearing-surface at top parallel with its back, whereby it is adapted to be acted upon by the rail-like deflector, substantially as and for the purpose set forth.

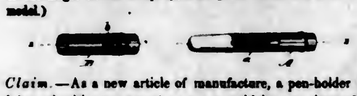
333,638. **LEAD-PENCIL.** SAMUEL KRAUS, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed Apr. 16, 1885. (No model.)



Claim.—1. A lead-pencil provided at one end with a sheet-metal tube, B, containing rubber or other erasive material, and formed with an external groove which stops short of the end of the tube, and a sheet-metal covering-sleeve, D, longitudinally movable in the tube, and having a depression which forms an internal projection that enters the groove in the tube, substantially as hereinbefore set forth.

2. A lead-pencil provided with the tube, B, containing rubber or other erasive material, in combination with the covering-sleeve D, screwing upon said tube and provided with the flange c, as and for the purposes set forth.

333,639. **PEN-HOLDER.** SAMUEL KRAUS, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed June 27, 1885. (No model.)



Claim.—As a new article of manufacture, a pen-holder having a barrel formed with an external groove, a, which stops short of the ends of the barrel, combined with a sleeve longitudinally movable on the barrel, and having a depression which forms an internal projection, b, that enters the groove in the barrel, substantially as and for the purposes hereinbefore set forth.

333,640. **CLASP FOR CIGAR-BOXES.** CHARLES KUHER, Newark, N. J. Filed July 6, 1885. (No model.)



Claim.—1. The combination, with a box-body having a front wall recessed at its upper edge, a slotted plate attached in front of the recess, of a hinged lid having a spring-hook having inwardly-bent tapering anchors, the spring-hook being integral with a fastening-plate attached to the front edge and top of the lid, substantially as set forth.

2. In a spring-clasp for cigar and other boxes, a spring-hook provided with inwardly-projecting tapering anchors, and made integral with a fastening-plate having perforated ears for attachment to the lid, substantially as set forth.

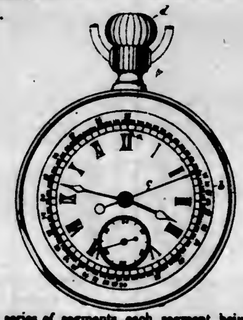
333,641. **DIAL FOR SPEED-MEASURER.** HENRI LAUCHLI, St. Imier, Switzerland. Filed May 26, 1885. (No model.)

Claim.—1. In a watch, the combination of a timing-hand with a series of figures on the dial thereof, decreasing in the direction of the forward movement of said hand, and adapted to indicate, substantially as described, the speed of a moving object.

2. In a watch, the circle of the dial divided into a series of segments, each segment being longer than the preceding segment of the same series, read in the direction of the forward movement of said hand, combined with a timing-hand, and adapted to indicate the speed of a moving object, substantially as described.

3. In a watch, a timing-hand combined with the circle of the dial

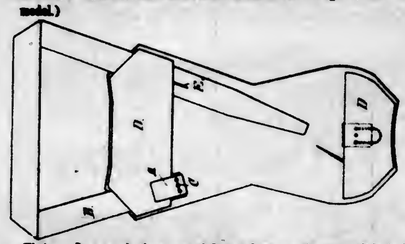
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divided into a series of segments, each segment being longer than the preceding segment of the same series, read in the direction of the forward revolution of said hand, provided with a series of figures decreasing in the direction of the forward revolution of said hand, said figures being spaced so as to be adapted to indicate, substantially as described, the speed of a moving object.

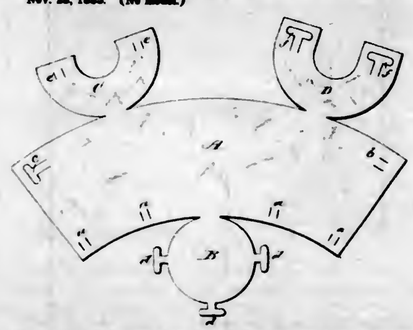
4. In a watch, the combination of a stop-hand with a dial provided with a series of figures decreasing in the direction of the revolution of said hand, which is started when an object begins and stops when it completes its journey through a given portion of space, said figures being so spaced as to indicate by the position of said hand when stopped the number of units of space through which said object, if moving uniformly, would travel in a given period of time, substantially as described.

333,642. **NECKTIE-FASTENER AND REVERSIBLE SCARF-BAND HOLDER.** LEON LEMON, San Francisco, Cal. Filed Aug. 31, 1885. (No model.)



Claim.—In a neck tie or scarf for neck-wear, the reversible holder consisting of a metal plate bent double to form two catches or leaves, and provided with holes or perforations, constructed, arranged, and operating substantially in the manner as described

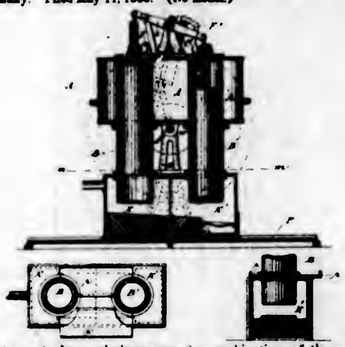
333,643. **PAPER BOX.** WILLIAM W. D. LEWIS, Camden, N. J. Filed Nov. 23, 1885. (No model.)



Claim.—1. The herein-described box, constructed from a blank consisting of a curved strip, which forms the body, and having on one edge a circular piece to form the bottom, and on the opposite edge two semicircular pieces to form the top, the ends of the strip being united, the bottom strip being attached to the side strip, and the free ends of the semicircular strips being united together, substantially as and for the purpose set forth.

2. A blank for paper boxes, consisting of a curved strip having on one edge a circular piece and on the opposite edge two semicircular pieces, to form, respectively, the body, bottom, and top of the box, substantially as and for the purpose specified.

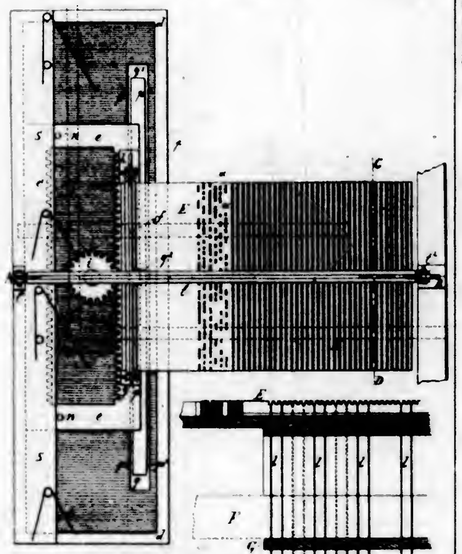
333,644. AIR-ENGINE. PAUL LOCHMANN, Leipsic-Gohlis, Saxony, Germany. Filed May 11, 1885. (No model.)



Claim.—1. In a caloric-engine, the combination of the cooling-vessel A, air-cylinders B B', working-cylinder C, with lugs *w w*, and with the driving-shaft S, in the manner and for the purpose specified.

2. In a caloric-engine, the furnace K K', divided near the middle, with the air-cylinders B B', and sliding top plates, *p p'*, as and for the purpose described.

333,645. MECHANICAL MUSICAL INSTRUMENT. HEINRICH LORENTZ, Stettin, Prussia, Germany. Filed Apr. 9, 1884. (No model.) Patented in Belgium Mar. 15, 1884, No. 64,513; in France Mar. 15, 1884, No. 160,974; in England Mar. 15, 1884, No. 4,968; in Italy May 19, 1884, No. 16,808/368; in Austria-Hungary Sept. 21, 1884, No. 16,788 and No. 42,309, and in Denmark Feb. 10, 1885, No. 743.



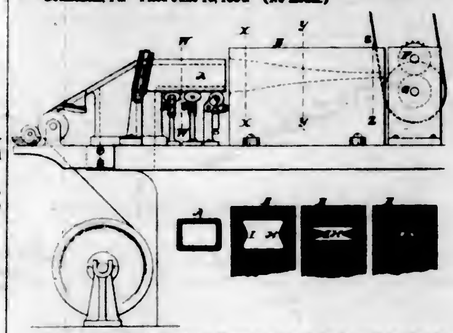
Claim.—1. In a mechanical musical instrument, the combination, with the key-levers, of a music-sheet having transverse rows of musical notes or characters running in opposite directions across said sheet, a reciprocating rack-frame, to which one end of said music-sheet is attached, a pinion meshing with said rack-frame, and the devices, substantially as described, for shifting said rack-frame at the opposite ends of the path which it is made to traverse, substantially as described.

2. The combination of a flat or corrugated music-sheet, E, having transverse rows of raised portions or characters *a*, laterally-reciprocating rack-frame *e e'*, having top pins, *n n*, and bottom guide-pins, *p p*, a supporting-frame, *d*, having guide-grooves *p' p²*, and connecting-grooves *q q' q²*, and shifting-springs *o o r r*, substantially and for the purpose as set forth.

3. The combination of a music-sheet, E, having transverse rows of raised portions or characters, key-levers *b b*, fulcrumed valve-levers *u*, having stirrup-shaped ends, and means whereby the key-levers are longitudinally shifted, so as to be actuated by a different series of transverse rows, substantially as set forth.

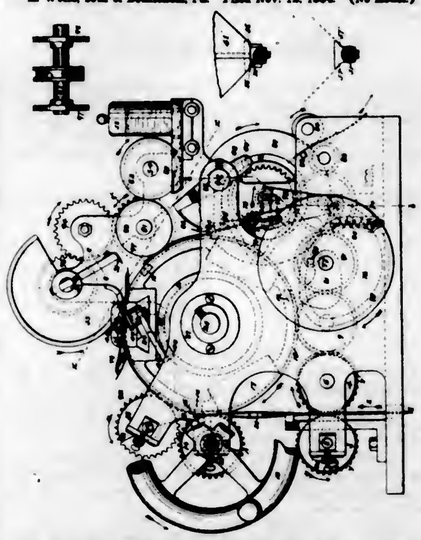
4. The combination of a corrugated music-sheet, E, having transverse rows of raised portions or characters *a*, key-levers *b b*, fulcrumed valve-levers having stirrup-shaped ends, a shifting-lever, whereby the key-levers are longitudinally shifted so as to be actuated by a different series of transverse rows, a laterally-reciprocating rack-frame, *e e*, top and bottom guide-pins, *n n* and *p p*, guide and connecting grooves *p' p²* and *q q' q²*, and shifting-springs, substantially as and for the purpose set forth.

333,646. PAPER-BAG MACHINE. WILLIAM A. LORING, Hartford, Conn., assignor to Felix W. Leinbach and Clarence A. Wells, both of Bethlehem, Pa. Filed June 16, 1884. (No model.)



Claim.—The hollow former E, open at both ends, and having its greatest interior width uniform throughout its length, and having its interior vertical expanse continually diminishing from one end thereof to the other, substantially as described.

333,647. PAPER-BAG MACHINE. WILLIAM A. LORING and WILLIAM H. HOBBS, Hartford, Conn., assignors to Felix W. Leinbach and Clarence A. Wells, both of Bethlehem, Pa. Filed Nov. 12, 1884. (No model.)



Claim.—1. The combination of the revolving cylinder 17 with one or more pairs of box-folding mechanisms, constructed substantially as described, attached thereto and revolving therewith, substantially as described.

2. The combination of the fixed blade 31', the turning-blade 33, and the presser-plate 34, constructed and arranged substantially as described, and operating substantially as explained.

3. The combination of the slide 24, the shaft 32, the fixed blade 31, the turning-blade 33, and the presser-plate 34, all substantially as described.

4. The combination of the turning-blade 33 with the presser-plate 34, both operating together to clasp the upper fold of the tuck of the paper tubing and to turn it over upon itself, substantially as described.

5. The combination of the presser-plates 34 and 34', arranged with their axial edges on a line with each other and with the axes of the shafts 32 and 32', and operating, when turned over on their axial edges, to define the line *d d* of the blank of Fig. 3, all substantially as described.

6. The rotary presser 36, constructed in the form of a sector of a cylinder, so as to allow the passage of the fixed blades, the turning-blades, and the presser-plates beneath it, and so as immediately after their passage to press the forward edge, 40, upon the tucked paper tubing in their rear, and then to hold it firmly while it is being entered by the pair of box-folding mechanisms, all substantially as described.

7. The combination of the fixed blades 31 31' and the turning-blades 33 33', operating to firmly hold the bottom of the box-like form, with the diamond-folder finger 51 and the diamond-sweeper 53, operating to fold the walls of the box-like form of Figs. 2 and 4 down into the diamond form of Fig. 5, all substantially as described.

8. The combination of the diamond-folder finger 51, the shaft 52, the cylinder 17, and the shaft 25, all operating together substantially as described.

9. The reversing-pocket 67, oscillating on an axis and having its longer wall as much longer than the other as the width of the bottom of the bag exceeds half that width, all substantially as shown and described.

10. The combination of the arms 72 and 72', worked by the cam-groove 75 and carrying the pinion 78, with the arm 90, worked by the cam 81 and carrying the sector-gear 79, and with the reversing-pocket 67, all substantially as described.

333,648. FISHING-TACKLE. LLEWELLYN D. LOVEROP, Gloucester, Mass. Filed Oct. 8, 1885. (No model.)



Claim.—1. The fishing-line tackle consisting of the clamp-pieces E, provided with cavities C, and curved grooves H, the swivel B, and the spring-wire loop P, secured at its ends between the said clamps, as and for the purposes set forth.

2. The fishing-line tackle consisting of the clamp-pieces E, provided with curved grooves H, and the spring-loop P, having its end portions secured between the clamp-pieces within the said grooves, as described.

333,649. MANUFACTURE OF DERIVATIVES OF AURIN. CHARLES LOWE, Reddish, near Stockport, County of Lancaster, England. Filed July 5, 1885. Renewed Oct. 3, 1885. (Specimens.) Patented in England Nov. 22, 1883, No. 5,854.

Claim.—The process of manufacturing the described derivative of aurin, consisting in the following steps: first, heating one part of aurin with five parts sulphuric acid at a temperature between 100° and 212° Fahrenheit; second, separating the excess of sulphuric acid in the usual manner; third, heating the product with an aqueous or alcoholic solution of ammonia until the coloring-matter designated by me "rosophenoline-sulphonic acid" is produced.

333,650. DISH-WASHING MOP. GEORGE W. HAGUE, Washington, D.C., assignor of one-half to Octavius Knight, same place. Filed Mar. 24, 1885. (No model.)

Claim.—1. A mop consisting of a handle and a body of cord stitched on a band or web running transversely of the body, folded over the end



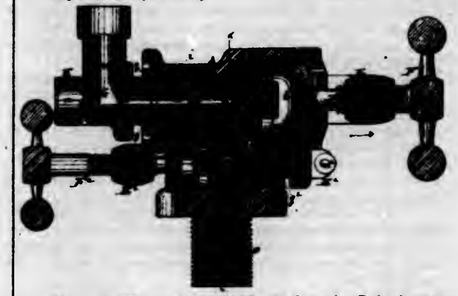
of the handle, and secured to the end and sides of the latter, substantially set forth.

2. A mop consisting of a handle having a depression in the end thereof and a body of cord stitched on a band or web transversely of the body, folded over the end of the handle, and secured in the depression and to the sides of the handle by tacks, substantially as set forth.

3. A mop consisting of a handle and a body of cord stitched on a band or web transversely of the body, folded over the end of the handle, wound spirally around the sides, and secured by tacks through the web or band, substantially as set forth.

4. A mop consisting of a handle and a body of cord stitched on a band or web transversely of the body, folded over the end of the handle, and secured to the end and sides of the latter by tacks, the free edges of the band or web being lapped one on the other over the stitched and tacked portion and tacked to the handle, substantially as set forth.

333,651. COCK FOR SODA-WATER FOUNTAINS. JOHN H. MATTHEWS, Brooklyn, and THOMAS DUNN, New York, and JOHN GREENWOOD, Brooklyn, assignors to the firm of John Matthews, New York, N. Y. Filed May 20, 1885. (No model.)



Claim.—1. The combination of the tubular valve B, having apertures *b* near one end and enlargements *f* and *h*, with the shell A, having inwardly-projecting valve-seat *g*, which is adapted to close all the apertures *b*, and with the spring C, which embraces the valve, and which is kept from contact with the liquid in the chamber *i* of the shell between the enlargement *h*, fixed seat *g*, unperforated part of the valve and outer shell, A, substantially as herein shown and described.

2. The hollow valve B, combined with the shell A, plug D, clamp E, and screw F, the clamp carrying the pipe *m*, all arranged so that when said parts are in operative connection the tube *m* is in contact with the open end of the valve, substantially as herein shown and described.

3. The hollow block G, having annular seats *r* and *s*, in combination with the valve B and shell A, against which said seats are caused to bear successively, as set forth.

4. The combination of the shell A, which is closed at one end and open at the other end, and which has the inwardly-projecting valve-seat *g* near its middle, and the separated chambers *i* and *l*, with a hollow valve placed into the open end of said shell, and with the spring C, surrounding said hollow valve and kept from contact with the liquid in the chamber *i*, said spring being adapted to hold the valve against its seat, substantially as herein shown and described.

5. The combination of the clamp E with the screw F and swiveled block G, having tube *m*, and with the shell A and valve B, substantially as specified.

6. The combination of the clamp E with the screw F in one end thereof, block G in the other end thereof, shell A, and hollow valve B, all arranged so that on turning the screw the block G will be pressed against the valve to open it, as specified.

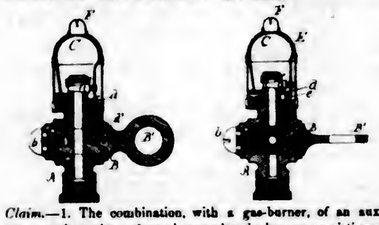
7. The combination of the clamp E, having screw F and block G, with the recessed plug D, shell A, and hollow valve B, the shell forming a recess, *q*, for receiving the block G, all arranged so that when the valve is closed the recessed parts of the shell and plug will still hold the clamp in position on the shell, as specified.

333,652. **TRANSFORMING SOFT SUGAR INTO HARD BLOCK SUGAR.** FRANZ O. MATTHIESSEN, Irvington, N. Y. Filed June 29, 1885. (Specimens.)

Claim.—1. The process of transforming soft sugar into cubes or blocks of comparatively light hard sugar herein described, which consists in forming from soft sugar or moistened granulated sugar, or mixtures of soft and granulated sugar, by suitable compression and baking, a cake of hard sugar, and in then cleaving such cake of hard sugar in parallel lines both crosswise and lengthwise, and thereby dividing it into cubes or blocks of the required dimensions.

2. As a new article of manufacture, a cube or block of hard sugar comparatively light in density, two opposite sides of which cube or block have the smoothness characteristic of pressed surfaces, and the remaining four sides the roughness and irregularities characteristic of the planes of cleavage of hard sugar.

333,653. **AUTOMATIC SAFETY GAS-BURNER.** AUGUST MEYER, Baltimore, Md. Filed Jan. 24, 1883. (No model.)



Claim.—1. The combination, with a gas-burner, of an auxiliary valve stem or plug, a bow of metal secured to the burner, consisting of two strips, the outer one having a lesser degree of expansibility than the inner one, the valve B, and cam-piece D, whereby said plug is held out of its seat when the bow is heated by the burning gas and automatically forced into its seat when the bow is cold, thus cutting off the supply of gas when the flame is extinguished, as set forth.

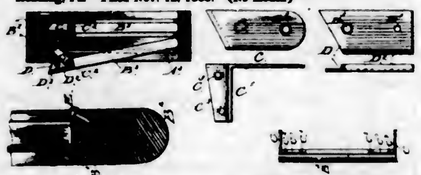
2. The combination of a gas-burner, an elastic bow composed of an outer and inner strip of metal of different degrees of expansibility, one end of which bow is secured to the body of the burner, while the other end carries a valve stem or plug, the valve B, and cam-piece D, as and for the purpose set forth.

3. The combination, in a gas-burner, of the body A, valve B B', bow C, valve *a*, cam-piece D, spring *e*, and the cam on valve-stem B, as and for the purpose set forth.

4. The combination of the body A, having perforations longitudinally and transversely thereof, as described, valve-stem B, having cam-groove, bow C, of brass inner and steel outer strip, plug *a*, spring *e*, and cam-piece D, the bow and cam-piece having corresponding hooks, as and for the purpose set forth.

5. The combination of a burner, an auxiliary valve-stem, strips of differently-expansible material, arranged substantially as described, one end of said strips being attached to said valve-stem and the other to the burner, the valve B, provided with groove *d'*, and the cam D, substantially as and for the purposes set forth.

333,654. **WINDOW SASH AND FRAME.** WILLIAM R. MICHAEL, Reading, Pa. Filed Nov. 12, 1885. (No model.)



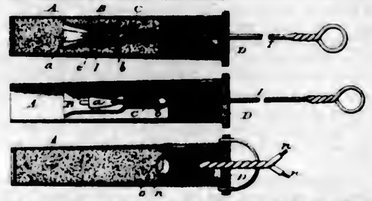
Claim.—1. As an improved construction of window-frames, the parallel semicircular grooves A', sunk within the same, in combination with sash having convex-edged, divided, and hinged stiles, whereby stops and parting-strips are dispensed with, substantially as and for the purpose set forth.

2. In removable window-sash, the convex-edged stiles with an angular vertical division of one of the same, said divided stile-strip held by suitable hinge-arms at each end thereof, the plates of said hinges fulcrumed upon flanged seats sunk flush within the top and bottom rails of said sash, the stile-strip in its normal state in contact upon the line of division and removably secured in such position by a screw, E, in combination with a suitable frame, as described, whereby said sash is readily removed and replaced, as and for the purpose specified.

3. As a new article of manufacture, hinge-plates C, provided with arms C', pivoted aperture C^2, and securing-holes C^3, combined with hinge-seat D, its ledge D^2, pivotal hole D', and securing-hole D^3, substantially as shown, described, and for the purpose set forth.

4. As an improvement in window-sash and frames, the combination, essentially, of the following elements: a frame, A, with parallel vertical grooves A', bead-stop A^2, sash B, with divided stile B^2, hinges C C', and plates D D^2, fulcrumed at C^2, and securing-screw E, all arranged and combined to make a readily removable and replaced sash, as shown, specified, and for the purpose set forth.

333,655. **OBTURATING-PRIMER.** OTTO E. MEHRMANN, Philadelphia, assignor of one-half to Henry Bower, Gray's Ferry Road, Philadelphia, Pa. Filed Nov. 28, 1885. (No model.)



Claim.—1. An obturating-primer consisting of the metallic case A, having its outer end closed by a solid metal head, with a central perforation for the firing-wire, with a compressible plug, D, arranged therein, said parts being constructed and arranged to operate substantially as and for the purpose set forth.

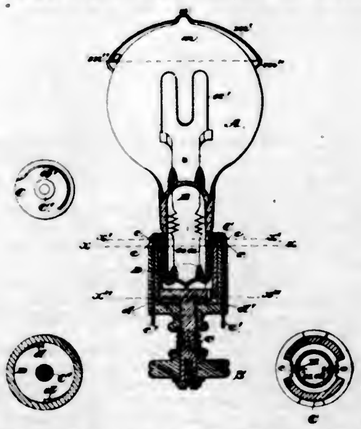
2. The combination, in a primer, of the metallic case A, provided at its outer end with a flanged metallic head, the compressible plug D, and the firing wire or wires, all arranged to operate substantially as shown and described.

333,656. **CUPBOARD-LATCH.** FRANK W. NIX and AUGUST ARBES, New Britain, Conn., assignors to P. & F. Corbin, same place. Filed Mar. 30, 1885. (Model.)



Claim.—The herein-described latch, consisting of the keeper B, the case A, the two radial arms *a b*, having trunnions *c c* at their junction, said trunnions having their bearing in recesses in the case, the spring *g*, having one end secured to said case A and its opposite end bearing upon the inner side of the arm *a*, and mechanism acting upon the arm *b* for throwing the latch, substantially as described, and for the purpose specified.

333,657. **REVERSIBLE SWITCH FOR INCANDESCENT LAMPS.** RICHARD R. MOWATT, Brooklyn, N. Y., assignor to the Brooklyn Electric Construction Company, same place. Filed Feb. 8, 1882. (No model.)



Claim.—1. The combination of an electric incandescent lamp and a reversing-switch.

2. An incandescent electric lamp, substantially as described, provided with means for closing and breaking the circuit that will change or reverse the course of the current through the carbon filament each time the circuit is closed therein, substantially as and for the purpose specified.

3. An incandescent electric lamp provided with means for closing and breaking the circuit through said lamp by rotating or turning the lamp upon its longitudinal axis, substantially as herein specified.

4. An incandescent electric lamp provided with means for breaking and closing the circuit therein, and that will also change or reverse the course of the current through the carbon filament each time the said circuit is closed in said lamp by rotating the lamp upon its longitudinal axis, substantially as and for the purpose herein specified.

5. In an incandescent electric lamp, the combination of the vacuum bulb A, within which is a carbon filament of high resistance forming a continuous unbroken conductor that will give out light by its entire incandescence, with means for changing or reversing the current therein, substantially as described, and for the purpose specified.

6. In an incandescent electric lamp, the combination of the receiver A, rotating socket C, having a central spindle, C', the stationary socket D, and the spring *v*, substantially as and for the purpose specified.

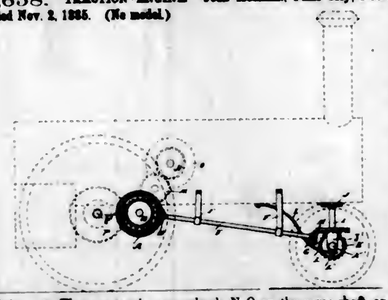
7. An incandescent electric lamp provided with means, substantially as described, for permitting the receiver A to be turned upon its longitudinal axis (to a limited distance) without breaking the circuit, for the purpose of utilizing the maximum light-giving surface of the carbon filament in any desired direction, substantially as specified.

8. In an incandescent electric lamp, the combination of the receiver A, rotating socket C, stationary socket D, the lugs or projections *d*, and the spring or ratchet *d'*, substantially as herein specified.

9. In an incandescent electric lamp, the receiver, A, having a teat *m*, in combination with an adjustable reflector, *m'*, provided with a central indentation, *n*, or its equivalent, substantially as and for the purpose herein specified.

10. In an incandescent electric lamp, the receiver A, provided with a teat-like projection, *m*, in combination with an adjustable reflector, *m'*, having a central indentation, *n*, and one or more perforations, *m''*, substantially as and for the purpose specified.

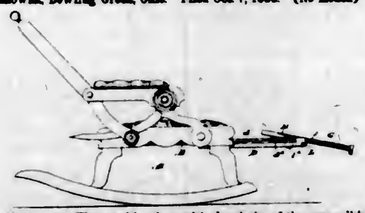
333,658. **TRACTION-ENGINE.** JOEL MORMAN, Falls City, Nebr. Filed Nov. 2, 1885. (No model.)



Claim.—1. The concentric gear-wheels N O on the same shaft, operated as described, in combination with the gear-wheels M B P A, the shaft E, having terminal pinions D G, the toothed wheels H K, and the shaft K', whereby the front and rear drivers are simultaneously impelled.

2. The concentric gear-wheels N O, mounted on the same shaft, operated as described, in combination with the gear-wheels M B P A, the shaft E, having terminal pinions D G, the toothed wheels H K, the shaft K', and the universal joint J, depending from the engine, the whole coacting for the purpose set forth.

333,659. **FOOT-REST FOR RECLINING-CHAIRS.** GEORGE W. MOWBRAY, Bowling Green, Ohio. Filed Oct. 7, 1885. (No model.)



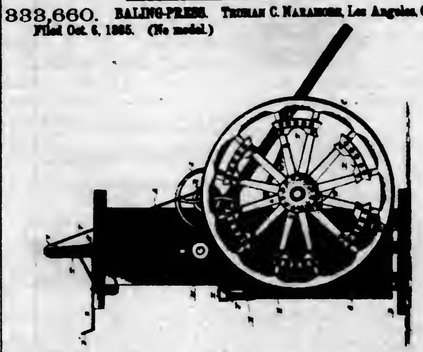
Claim.—1. The combination, with the chair, of the extensible frame D, the foot-rest G, and the plates L, hinging the latter to the frame D, said plates having stops l^2, to catch against the frame and limit the degree of inclination of the foot-rest, as set forth.

2. The combination, with the chair having guides B, provided with tongues C, of the extensible frame D, having grooves d^2 in its sides to receive the tongues, and the brackets F, having the tongues f^2 at their lower ends, the threaded shanks *f'*, and the shoulders f^3, as set forth.

3. The combination, with the chair, of the extensible frame D, the foot-rest G, having grooves I, the plates L, hinged to the frame D, and fitting at their upper edges in the grooves I, and having stops l^2 provided below the frame D, to limit the inclination of the foot-rest, as set forth.

4. The combination of the chair, the extensible frame D, secured to the bottom thereof, the grooved foot-rest in the frame, and the hinge-plates pivoted to the frame and having the tongues entering the grooves in the foot-rest, and the depending extensions having the stops for limiting the angle to which the foot-rest may be inclined, substantially as described.

333,660. **BALING-PRESS.** THOMAS C. NARAMORE, Los Angeles, Cal. Filed Oct. 6, 1885. (No model.)



Claim.—1. A cart having its body portion provided with a press-chamber and a baling-chamber, and devices for operating a follower therein, substantially as and for the purpose specified.

2. A cart having its sides longitudinally slotted for the ends of the follower head-block, and the wheels acting as power winding-drums for ropes connected to said follower, substantially as specified.

3. The wheels with the casting forming a partial guide for the power-rope, combined with the slotted body and plunger or follower with the head-block projecting through said slots, substantially as specified.

4. The wheels with the external drums for applying the power, combined with a body forming the press and a follower operated upon by said wheels, to which it is connected by a rope, substantially as specified.

5. Wheels with segmental brackets secured on one side to form drums, and a casting forming a partial guide on the other side, a slotted body, and a follower connected to said wheels by ropes, the whole combined substantially as specified.

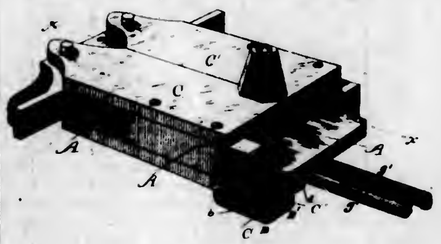
6. Combined with a slotted body, a follower with a head-block resting in said slots and a shaft with winding-drums connected to said head-block by ropes to raise and lower the said follower, substantially as and for the purpose specified.

7. Combined with the slotted body, a follower with a head-block projecting through the said slots and carrying pulleys at each end, a drum-shaft journaled to said body and connected to the follower by ropes, and tracks on one end of said body for the reception of the said pulleys, substantially as described.

8. Combined with the body forming a press and the axle to which said body is secured, levers fulcrumed on said axle and normally resting in slots in said body, substantially as and for the purpose specified.

9. The combined cart and press consisting of a slotted body, a follower with a head carrying pulleys and projecting through said slots, tracks on one end of said body for the said pulleys, a drum-shaft journaled to the body and connected to the follower, an axle with levers fulcrumed thereto and normally resting in slots in said body, and wheels on said axles, said wheels having segmental brackets on one side and a partial guiding-casting on the other, and having connection to the follower, substantially as specified.

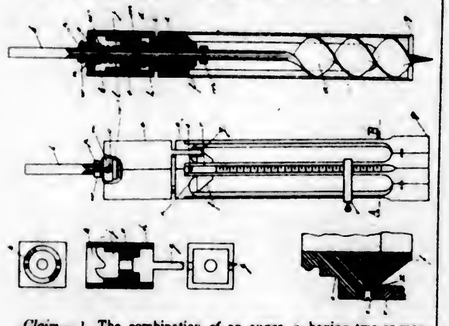
333,661. **MOLD.** JOHN B. ORELL, Chicago, Ill. Filed June 26, 1884. (Model.)



Claim.—1. In molds for casting electrodes, the removable pin *a*, in combination with the cover C C' and center piece, A, all adapted and arranged to operate as and for the purpose set forth.

2. In molds for casting electrodes, the removable pin *a*, guide-pin *c*, and connecting-bar *b*, in combination with the discharging-pins *d d*, all constructed and arranged to operate as and for the purposes set forth.

333,662. **AUGER FOR CUTTING SQUARE HOLES.** WILLIAM PATTERSON, San Francisco, Cal. Filed Apr. 20, 1885. (No model.)



Claim.—1. The combination of an auger, *a*, having two or more twists, and the feed or point coarse, and a rectangular cutting-lip, chisels *q*, surrounding said auger, and formed in right angle or straight, with their edges straight, convex, or concave, a hammer, *c*, having a vertical movement on the shank *b* of the auger to deliver a succession of blows upon an anvil, and the anvil *d*, to which the shanks of the chisels *q* are attached, the said movement of the hammer being produced in one direction by the rotation of the auger, and in the other direction by the spiral spring *l*, substantially as hereinbefore described.

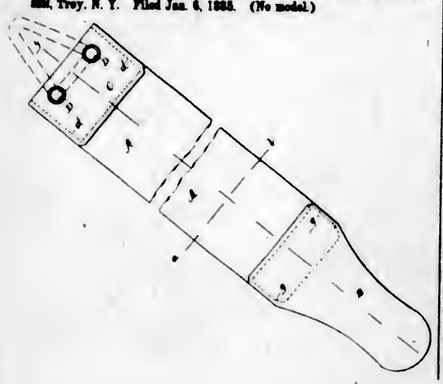
2. In a mortising-tool for cutting square holes, the combination of the auger or boring device, the cutting device formed of a chisel or chisels, a hammer having a vertical movement, and an anvil to which the chisels are attached, the said hammer being adapted to deliver a succession of blows upon the said anvil during the rotation of the auger, and the whole adapted to move on the auger-shank, substantially as specified.

3. The combination of an auger, *a*, chisels *q*, surrounding the auger-blades, the hammer *c*, and anvil *d*, surrounding the auger-shank, the guides *g*, extending from the hammer, slots g^x for the passage of the guides, the spiral spring *l*, engaging the hammer, cam *k*, regulating-collar *m* of the auger-stem, ratchet-collar *n*, arranged on the auger-stem the cam-pin, pawl and ratchets, and fixed collars *w* w^x on the auger-stem, substantially as specified.

4. The combination of the separable, angular, or straight chisels *q*, having pins, and holes *u*, to receive the pins to preserve true linear position of the chisels, and the clamp carrying a set-screw to embrace and lock the chisel-sections together and serve with an auger, substantially as specified.

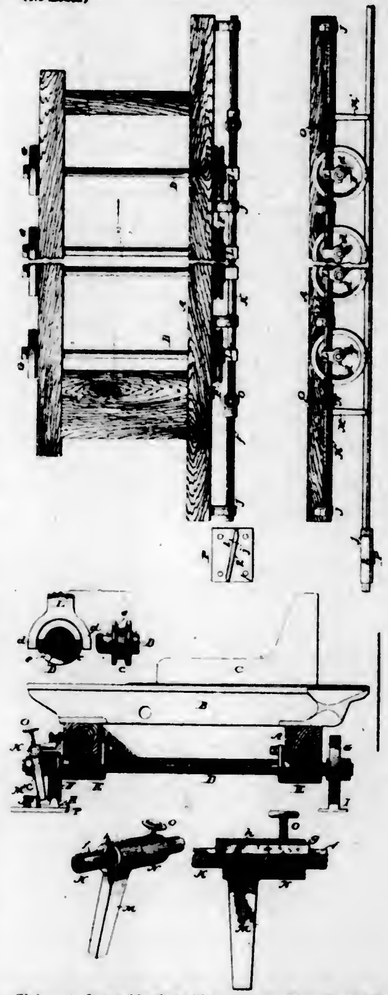
5. The combination of a rotating auger, *a*, surrounding chisels *q*, the hammer *c*, and anvil *d*, arranged, respectively, on the shank of the auger, and the said hammer being operated by the rotary movement of the auger so as to deliver successive blows upon the said anvil to which the shanks of said chisels are attached, substantially as specified.

333,663. **METHOD OF MAKING RAZOR-STROPS.** JULIUS M. PAULSEN, Troy, N. Y. Filed Jan. 6, 1885. (No model.)



Claim.—The described method of making a swing-strop for razors, which consists in, first, subjecting canvas to moisture; secondly, removing the nap, and, thirdly, applying pressure to the surfaces to polish them, substantially as set forth.

333,664. **SAW-MILL CARRIAGE.** THERON W. PERK, Milwaukee, Wis., assignor to Edward P. Allis & Co., same place. Filed Oct. 27, 1885. (No model.)



Claim.—1. In combination with a saw, a track by the side thereof, a carriage movable upon said track past the saw, a rock-shaft mounted in bearings upon the carriage and connected with the axles thereof, an arm at each end of said shaft, and a cam-plate adapted to be struck by said arms alternately, whereby the carriage is shifted bodily to and from the saw.

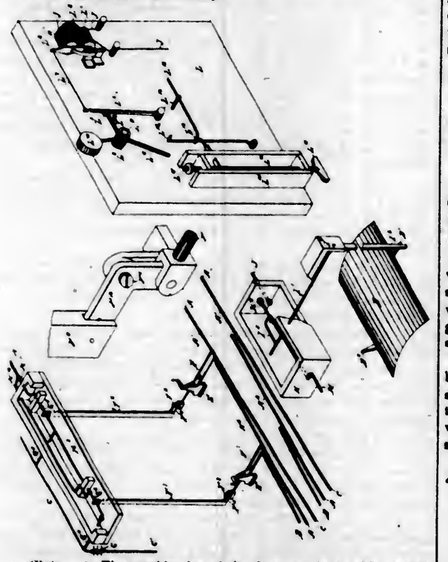
2. In combination with a saw, a track by the side thereof, a carriage movable upon said track past the saw and laterally movable upon its axles, a rock-shaft mounted in bearings upon the carriage and connected with the axles thereof, an arm at each end of said shaft, each having a limited movement upon and independent of the latter, and a cam-plate in the path of said arms adapted to operate them alternately.

3. In combination with a saw, a track by the side thereof, a carriage movable past the saw upon said track, an offsetting device for said carriage carried by the latter, arms carried by the carriage at each end and adjustable longitudinally thereupon, and a cam-plate in the path of the arm for operating the shifting or offsetting device.

4. In combination with a saw, a track by the side thereof, a carriage movable past the saw upon said track, an offsetting device for said carriage carried by the latter, arms at each end of said carriage adjustable longitudinally thereupon and having a limited rocking motion in different directions, and a cam-plate in the path of the arms for operating the latter alternately.

5. In combination with a saw, a carriage, axles D, boxes E therefor, wheels F G, attached to said axles, recessed collar *c* on the axle, brackets J upon the carriage, rock-shaft K, mounted therein, yokes L, rigidly secured to shaft K and engaging the collars *c*, arms M, carried at opposite ends of shaft K, and cam-plate P in the path of the arms M, as shown.

333,665. **RAILWAY-SWITCH ALARM.** ABEL PEVEY, Lowell, Mass. Filed Oct. 22, 1881. (No model.)



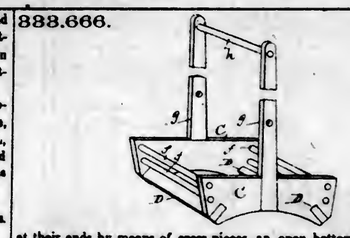
Claim.—1. The combination of the drop provided with a notch, the sliding piece adapted to enter said notch, the armature of an electro-magnet, and means for connecting the same with said sliding piece, and the lever, spring, and gong supported upon the cab of a locomotive, as and for the purpose specified.

2. In combination with the wires G' G^2 H J and stationary battery G and circuit-closer of the open electrical circuit, a railway-switch, E, and connecting mechanism, a locomotive-cab, D, provided with a projection, D', and mechanism for connecting the same with said wires to close said circuit by the operation of said switch and by the movement of said cab, as herein described.

3. In an electric signaling apparatus for railways, a drop, and means, substantially as described, whereby, upon the closing of an electric circuit by the misplacement of a switch and by the subsequent approach of a locomotive toward said switch, said drop will be caused to fall into a position to be struck by a lever pivoted on said locomotive and to draw said lever back against the resistance of a spring, the subsequent contraction of which spring will draw forward said lever against a gong secured to said locomotive, in combination with said lever, gong, and spring, as and for the purpose specified.

4. In an electric signaling apparatus for railways, a drop provided with a notch, the slide adapted to enter said notch, the electro-magnet, the armature, the weighted lever held in position by said armature and released upon the closing of the circuit by the misplacement of a switch and by the subsequent approach of a locomotive toward said switch, the lever pivoted upon said locomotive adapted to engage with said drop, whereby the lever will be drawn back against the resistance of a spring, the subsequent contraction of which spring will draw forward said lever against a gong secured to said locomotive, in combination with said lever, gong, and spring, as and for the purpose specified.
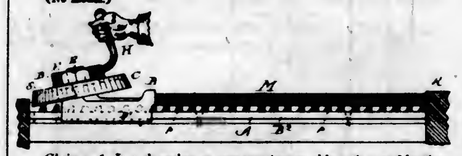
333,666. **WASHING-MACHINE.** THEODORE PHILLIPS, Whiting, Iowa, assignor of one-half to Eugene Egli, same place. Filed Apr. 13, 1885. (No model.)



Claim.—1. An open-bottomed rubbing device for washing-machines, composed of parallel sides C, ends D, cross-bars *f*, and arms *g*, substantially as and for the purposes set forth.

2. The combination of a rubbing device having solid sides, connected at their ends by means of cross-pieces, an open bottom, and rigid arms extending vertically from the centers of the sides, in combination with a washing-machine tub having a concave wash-board surface, to operate in the manner set forth, for the purposes specified.

333,667. **CLAMP.** ROBERT B. POOLE, Utica, N. Y. Filed Feb. 8, 1884. (No model.)



Claim.—1. In a clamping or compressing machine, the combination, with the bed-piece having cogs or projections with projecting flanges, substantially as shown, of the slide fitting over and sliding on the same, with a cam screw circle pivoted thereon, as shown, with flange for engaging the cogs or projections, substantially as shown, for the purposes stated.

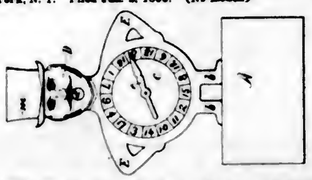
2. In a clamping or compressing machine, the combination of the bed-piece with cogs and flanges, and the movable slide fitting over and sliding on the bed-piece, with a cam screw circle with flange to engage the cogs mounted on the slide, and with means for rotating the same, whereby the slide is moved toward a stationary stop, substantially as shown, for the purposes stated.

333,668. **SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES.** CHARLES POTTER, Jr., Plainfield, N. J. Filed Oct. 26, 1885. (No model.)

Claim.—The combination, with the lapping-cylinder K, the tapes or belts A, and the pulleys for the same, of the cylinder N, the rock-shaft P, supported by and moving with the same, the arms P', extending out from such rock-shaft and forming lifters for the advancing end of the sheet of paper, and the mechanism, substantially as set forth, for

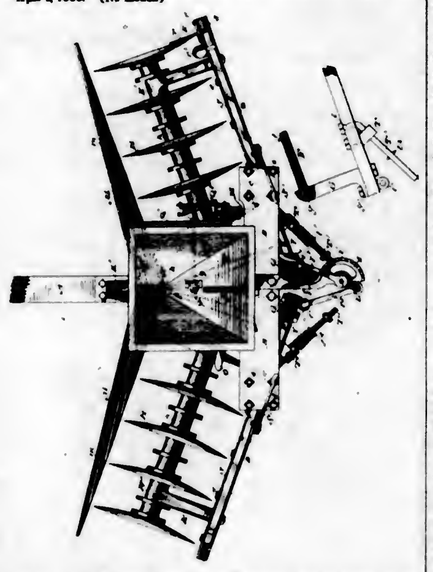
partially rotating the rock-shaft and actuating the arms, substantially as set forth.

333,669. COMBINED TOY AND CIGAR-CUTTER. JOHN PRENTICE, New York, N. Y. Filed Jan. 2, 1885. (No model.)



Claim.—The combination, with the toy figure provided with an orifice to receive cigar-tips, of a pusher at the top thereof, carrying a cigar-cutter, a central dial, an arbor provided with a roller and a hand, a rod attached to the pusher, and a spring, as set forth.

333,670. COMBINED DISK-HARROW AND SEEDER. SILAS G. RANDALL, Greene, N. Y., assignor to Amelia A. Randall, same place. Filed Apr. 4, 1885. (No model.)



Claim.—1. The combination, with the harrow and its frame, of the grain carrying and discharge devices, the distributing grain plate or board having inclined unobstructed grooves or grain-conveying ways which run from the point where the grain is delivered in bulk upon the board and terminate at different points along the edge of the board, whereby it is adapted to receive the grain in bulk and deliver it upon the ground at the required intervals in front of the disks.

2. The combination, with the harrow, its frame, and a grain-receptacle and discharging devices, of inclined grain-distributing drill plates or boards extending laterally on each side from the grain-discharge opening or openings, and having unobstructed grooves or grain-conveying ways which extend on both sides from the center of the board where the grain is delivered in bulk and terminate at different points along the edge of the board, whereby the board is adapted to receive the grain in bulk and deliver it upon the ground in proper position at the desired intervals in front of the harrowing devices, as set forth.

3. The combination, with the harrow, its frame, and a grain-receptacle and discharging devices, of grain-distributing drill plates or boards which extend laterally on each side from the central grain-discharge opening or openings, are inclined outwardly and downwardly from the center, as shown, and have unobstructed grooves or grain-conveying ways which extend from the central grain-discharge outwardly in both directions and terminate at different points along the edge of the board, substantially as described.

4. The combination, with the harrow and its frame, of a grain-box and the grain-distributing plates or boards mounted so as to vibrate freely vertically to seek a level position, and adapted to receive the grain in bulk and deliver it upon the soil at the desired intervals in front of the harrowing devices, substantially as set forth.

5. The combination, with the harrow devices and frame, of the grain-box and the inclined grain-distributing plates formed with longitudinal parallel grooves for the purpose of conveying and distributing the grain, and cut away at an angle, as set forth, whereby the grooves are caused to terminate at different points on the boards and deliver the grain upon the ground at the desired intervals with reference to the harrowing devices.

6. The combination of the frame or pole, a grain-box, the grooved distributing grain plates or boards arranged in V-shaped position or at an angle to each other, as shown, and adapted to deliver the grain received in bulk from the grain-box in drills at suitable intervals, and the disk-gangs adapted to be set in working position parallel, or substantially so, with the grain-distributing boards.

7. The combination of a disk-gang, means for adjusting the gang so as to bring the disks at an angle to the line of draft, a grain-box, and grain-discharge devices, and an inclined grain-distributing plate or board arranged parallel with the disk-gang in its adjusted position and having longitudinal parallel grain-conveying grooves or ways, the board being cut away at an angle so as to cause the grain-grooves to terminate at the proper interval along the edge of the board which is parallel with the disk-gang.

8. The combination of the frame or tongue, the inclined grain-distributing boards arranged in V shape, the disk-gangs, means for adjusting the gangs so as to bring the disks at an angle to the line of draft, and the grain-box located at the inner ends of the grain-boards and disk-gangs.

9. The combination of the frame, the grain-distributing boards arranged in V shape, disk-gangs arranged in corresponding V shape when adjusted into working position, and the grain-box located over the inner ends of the disk-gangs.

10. The combination, with a frame and gangs of disks or harrowing devices on which the weight of the machine is carried, of mechanism for adjusting said harrowing devices at an angle to the line of draft or in V-shaped relation to each other, a grain-box located centrally on the machine or at the apex of the series of harrowing devices, and grain dropping or distributing devices arranged in corresponding V-shaped relation to said harrowing devices, as set forth.

11. The combination of the grain-box and grain-distributing devices, the driving-roller for agitating the grain, mounted on a rising and falling arm, and the disk or wheel traveling in or upon the earth with which said roller makes contact, for the purpose set forth.

12. The combination of the tongue, the cross-beam, the adjustable disk-gangs, an extension or casting projecting from the rear of the machine, a cranked arm having a bearing in such extension or casting, link-connections between the cranked arm and the inner ends of the disk-gang beams, the disk-gang shafts, and an arm or lever for operating the cranked arm to adjust the disk-gangs.

13. The combination of the pole, the cross-beam, the disk-gangs, the casting I, projecting from the rear of the cross-beam and formed with a half-circular detent-rack on one side, a vertical cranked arm having a bearing in said casting at or about the center of the machine, connections between said cranked arm and the disk-gangs or gang-beams, and the horizontally-vibrating lever for adjusting the gangs.

14. The combination of the disk-gangs arranged to turn the earth from the center of the machine and having their inner disks arranged in close proximity to each other, and the opposing scrapers or eveners arranged at an angle to the line of draft and adapted to refill or partly refill the large furrow cut by said two inner disks.

15. The combination of the disk-gang beams, the inclined rearwardly-projecting leveler or scraper-carrying rods, the levelers or scrapers carried thereby, and the springs.

16. The combination of a cutting-disk and a pivoted weighted scraper, the weight of which normally tends to throw the scraper against the disk.

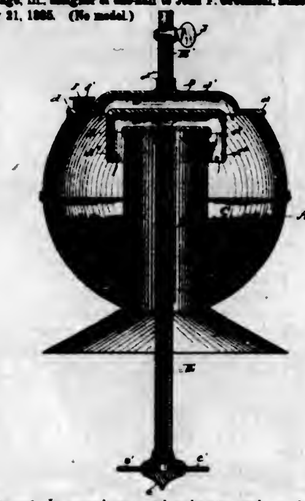
17. The combination of the cutting-disk, the pivoted weighted scraper, the weight of which normally tends to throw the scraper against the disk, and the sliding wedge-block adapted to lift the weighted end of the scraper and throw it out of engagement with the disk.

18. The combination of the gang-beam, a series of pivoted weighted scrapers mounted thereon, the sliding bar carrying a series of wedge-blocks, one for each scraper, and a lever for actuating the sliding bar to throw the scrapers into and out of engagement with the disks.

19. The combination of the pole, the cross-beam, the standard having enlarged circular head, the hooked bolts which connect the standard with the cross-beam and yet permit it to turn horizontally, and the disk-gang.

20. The combination of the main frame, the depending standards, the disk-gang beams carried by said standards, bearings for the disk-gangs carried by said gang-beams and projecting forwardly therefrom, disk-gangs mounted in said bearings, and scrapers or eveners arranged to act upon the soil between the ends of the disk-gangs mounted upon the inner end of the disk-gang beams.

333,671. GAS-BURNER AND CARBURETOR. NEWMAN A. RANSOM, Chicago, Ill., assignor of one-half to John F. Greenleaf, same place. Filed July 21, 1885. (No model.)



Claim.—1. In a gas-burner and carburetor such as described, the combination of the hollow chamber or receptacle for the hydrocarbon provided with the central opening or flue, the cap or head for said chamber provided with induction-passages and eduction-passages, the supply and delivery pipes connected to the cross-piece or bridge of said cap, the said delivery-pipe extending through the opening and below the said chamber, and the burner applied to the lower end of the delivery-pipe, substantially as described.

2. In combination with the casing A and central tube, B, a head, D, provided with induction and eduction passages and a downwardly-projecting collar or flange, as described, the delivery-pipe connected to the head D, communicating with the eduction-passages and extending through the tube B, and the burner applied to the said delivery-pipe and located in line with but below the said tube B, substantially as described.

3. In a gas-burner and carburetor, such as described, the combination of the supply-pipe, the hollow casting and its diaphragm or spreading plate, the carburetor connected to the supply-pipe below the said hollow casting and provided with an opening for the passage of the heated products of combustion, and a delivery-pipe communicating with said carburetor and carrying burners located beneath the said opening in the carburetor, substantially as and for the purpose specified.

4. In combination with the hollow chamber, the supply and the delivery pipes, the annular head or casting applied thereto and provided with the cross-piece or bridge formed with the induction and eduction passages communicating, respectively, with the supply and delivery pipes, as set forth.

5. In a gas-burner and carburetor, such as described, the combination, with the receptacle or chamber and its heating flue or passage, of the burner located beneath said chamber and adjustable with respect thereto, substantially as described.

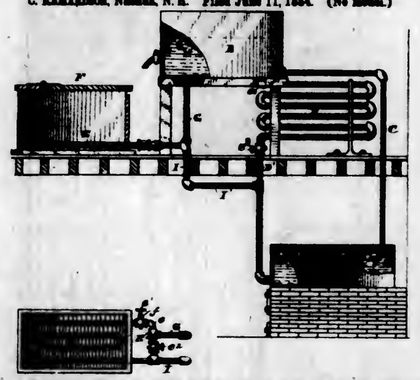
6. In combination with the chamber and its central heating-passage, the head or casting applied to said chamber and provided with induction and eduction passages, the delivery-pipe attached to said head and extending down through the central passage, and the burner located below the said chamber and adjustably connected to the delivery-pipe, substantially as and for the purpose set forth.

7. In a carburetor for application to gas-burners, the combination, with the casing A and tube B, of the annular casting D, applied to the upper ends of the said casing and tube and provided with the cross-piece or bridge having the induction and eduction passages, and the upper and lower bosses for attachment to the supply and delivery pipes, substantially as described.

8. The herein-described improved carbureting-burner, consisting, essentially, of the annular carbureting-chamber provided with the bridged cap-plate at its upper end and the deflecting-plate at the lower end, the supply-pipe communicating with the induction-passages in the cap, a delivery-pipe communicating with the induction-passages in said cap and projecting through the central opening in the carbureting-chamber, and the burners applied to the delivery-pipe below the carbureting-chamber, substantially as described.

9. The combination, with the carbureting-chamber having the central heating-flue and supply and delivery pipes communicating with the interior of the chamber, said delivery-pipe extending through the heating-flue and carrying the burners below, of the downwardly-projecting flange or collar located within the carburetor and intermediate the inlet and outlet passages for spreading the gas and conducting it toward and upon the hydrocarbon, substantially as described.

333,672. COMBINED HEATING AND COOKING APPARATUS. I. C. RICHARDSON, Nashua, N. H. Filed June 11, 1884. (No model.)



Claim.—1. In a combined heating and cooking apparatus, the combination, with a closed boiler, of a tank directly connected therewith by a supply-pipe, radiating and cooking circulation-coils located at suitable points and each supplied from said tank, a return-pipe to the boiler with which each coil is connected, and valves whereby any one or all of said coils may be cut out of circulation, substantially as and for the purpose set forth.

2. In a combined heating and cooking apparatus, the combination, with a closed boiler, a supply-tank directly connected therewith, and heating and cooking coils each connected with said tank and with a return-pipe leading to the boiler, of valves whereby each coil may be cut out of circulation, one of said valves having a collar upon its stem, whereby it is prevented from closing wholly, substantially as and for the purpose set forth.

3. The combination, with the radiating-coil D and cooking-coil E, each connected with the tank B and with the return-pipe D', of the valves e', e^3, and e^4, the valve e' having the collar f, substantially as and for the purpose described.

333,673. APPARATUS FOR DISTILLING WOOD, &c. JACOB ROSMAN, Brooklyn, N. Y. Filed June 15, 1883. (No model.)

Claim.—1. In an apparatus for distilling coal, wood, or analogous material, the combination, with an endless carrier composed of a perforated or reticulated endless band forming the bottom and chains provided with plates forming the sides, of rollers having cylindrical bodies for receiving the endless band, and polygonal end pieces receiving the chains, substantially as specified.

2. In an apparatus for distilling coal, wood, and analogous material, the combination of a fire-chamber, a carrier adapted to travel over and around the fire-chamber, a distilling-chamber extending over and around the fire-chamber and inclosing the carrier, and a casing inclosing the sides and top of the distilling-chamber and receiving the products of combustion from the fire-chamber, substantially as specified.

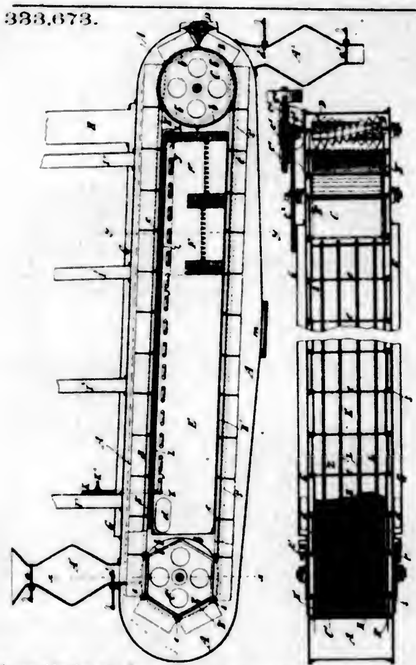
3. In an apparatus for distilling coal, wood, and analogous material, the combination of a fire-chamber, a carrier adapted to travel over and around the fire-chamber, a distilling-chamber extending over and around the fire-chamber and inclosing the carrier, and a number of pipes separate from and unconnected with each other extending from the distilling-chamber at different points in its length for carrying off vapors of distillation evolved at different temperatures, substantially as specified.

4. In an apparatus for distilling coal, wood, and analogous material, the combination of a fire-chamber, a carrier adapted to travel over and around the fire-chamber, a distilling-chamber extending over and around the fire-chamber and inclosing the carrier, all arranged on an incline, and a number of pipes for carrying off vapors of distillation evolved at different temperatures, substantially as specified.

5. In an apparatus for distilling coal, wood, and analogous material, the combination of a fire-chamber, a distilling-chamber extending over and around the fire-chamber, and an endless carrier also extending around the fire-chamber and arranged in an inclined position in said distilling-chamber, and constructed to receive and support material to be distilled on that portion which is uppermost as it travels along, whereby the weight of material on the carrier is made to aid in propelling the carrier, substantially as specified.

6. In an apparatus for distilling coal, wood, or analogous material,

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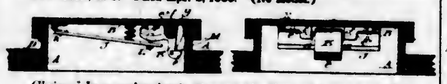


the combination of a fire-chamber, a carrier adapted to travel over the fire-chamber, a distilling-chamber extending over the fire-chamber and inclosing the carrier, and a roller arranged in the distilling-chamber and serving to clear the carrier, substantially as specified.

7. In an apparatus for distilling coal and wood and analogous material, the combination of a fire-chamber, a carrier adapted to travel over the fire-chamber, a distilling-chamber extending over the fire-chamber and inclosing the carrier, and a roller serving to clear the carrier arranged in the distilling-chamber, and provided with teeth which extend obliquely or spirally on its surface, substantially as and for the purpose specified.

8. In an apparatus for distilling coal, wood, or analogous material, the combination of a fire-chamber, a distilling-chamber, a carrier having a perforated or reticulated bottom, a superheater for a mixture of steam and carbonic acid extending under the fire-plate of the fire-chamber, and a distributing-pipe connected with the superheater and extending over the fire-plate of the fire-chamber, substantially as specified.

333,674. SPRING-LATCH FOR SCUTTLES, &c. ISAAC N. ROGERS, New York, N. Y. Filed Apr. 2, 1885. (No model.)



Claim.—In a spring-latch, the combination, with the latch E, having a long arm, *e*, provided with hook *e'*, and a short arm, e^2, of the lever J, hinged to the door, the bolt I, connecting said lever and short arm, the spring e^3, and beveled lug M, substantially as and for the purpose set forth.

333,675. STEAM ENGINE OR PUMP. WILLIAM C. SALMON, Portland, Oreg. Filed Oct. 14, 1885. (No model.)

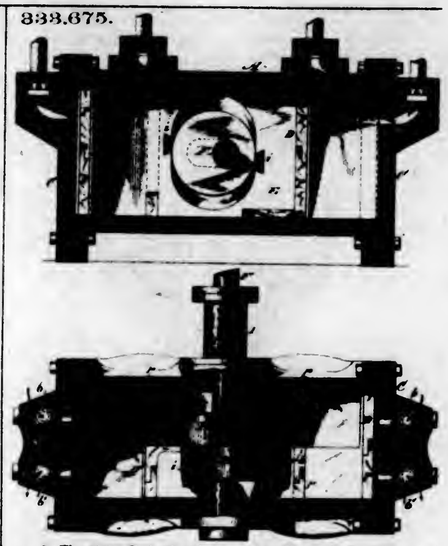
Claim.—1. The combination of the pistons D, each provided with the extension E and pistons D', the cylinder, and means, substantially as described, for actuating said pistons, for the purpose set forth.

2. The combination of the square piston D, provided with square extensions E, terminating in the pistons D', and the cylinder, substantially as and for the purpose specified.

3. The combination, with the pistons D, having the extensions E, provided with recesses and terminating in pistons D', of the cylinder, the shaft F, and the eccentrics H H, substantially as and for the purpose set forth.

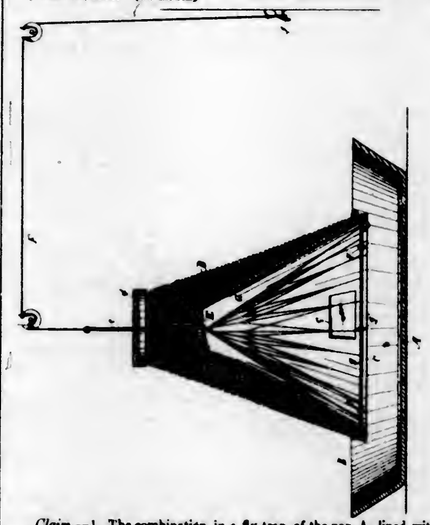
4. The combination, with the pistons D, having the extensions E, provided with recesses, and the facing-pieces upon two of their opposite sides and terminating in pistons D', of the cylinder, the shaft, and the eccentrics H H, substantially as and for the purpose described.

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5. The piston D, having the extensions E, provided with recesses and terminating in pistons D', said extensions and pistons being provided with packing-strips, in combination with the cylinder, the shaft, and the eccentrics, substantially as and for the purpose set forth.

333,676. FLY-TRAP. BENJAMIN SANFORD, Smartsville, Cal. Filed June 23, 1885. (No model.)



Claim.—1. The combination, in a fly-trap, of the pan A, lined with dark cloth B, the opaque vessel C, adapted to be lowered into the pan to form a dark chamber, the exterior wire cloth or gauze, D, forming a light chamber, and a port or passage connecting the dark with the light chamber, substantially as herein described.

2. In a fly-trap, the pan A, in combination with the opaque vessel C, having port or passage *c* in its top, the loosely-hung gravity valve or gate E, controlling the port or passage, and having a stem, *e*, the suspending-cord F, attached to the stem *e*, and the exterior wire gauze or cloth, D, all arranged and adapted to operate substantially as and for the purpose herein described.

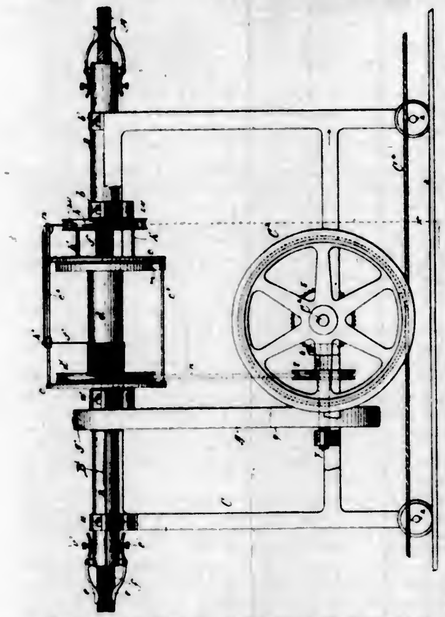
3. In a fly-trap, the combination of the pan A, the opaque vessel C, having port or passage *c*, the exterior wire gauze or cloth, D, and the slide-door *c'* in the vessel C, whereby the flies are removed, substantially as herein described.

4. In a fly-trap, the opaque vessel C, forming the dark chamber and having a port or passage in its top through which the flies pass, as described, in combination with the loosely-hung or slack netting G within the vessel, substantially as and for the purpose herein described.

5. In a fly-trap, the combination of pan A, opaque vessel C, forming with said pan the dark chamber, said vessel having a port or passage, *c*, in its top, the wire gauze or cloth D, encircling the vessel C and forming the light chamber, the gravity valve or gate E, controlling the port or passage, and having stem *e*, the valve-actuating cord F, secured to the stem, whereby the vessel C is suspended above the pan and is adapted to be lowered therein, and the loose or slack netting G, secured to the valve or gate and having the wire *g* at its base secured to vessel C, all arranged and adapted to operate substantially as herein described.

333,677. ROPE-SERVING MACHINE. CHARLES R. P. SAUNDERS, Boston, Mass., assignor of one-half to Hiram H. Webber and Alfred T. Sinker, both of same place. Filed Mar. 2, 1884. (No model.)

Brief.—The carriage is provided with a hollow rotable spindle to which is attached the flier containing a spool. To one end of the flier is attached the serving-block, composed of central piece of wood and metal ring, from the latter of which the central piece is held in position by screws. A friction device or drag on the flier and engaging the spool gives the necessary tension to the yarn as it is laid on the rope.



Claim.—1. The carriage C, mounted upon a suitable way, the hollow spindle B, arranged to rotate in bearings therein, a pulley on said spindle and means to rotate it, the flier *c*, attached to said spindle and containing a spool, and the serving-block *h*, connected with the flier, combined with the clamp or retarding device *o*, substantially as shown and described.

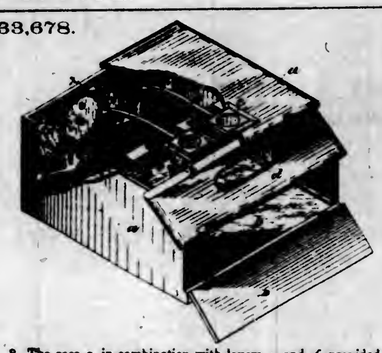
2. The flier *c*, having the leg c^3 and connected serving-block *h*, the spool *d*, and traverse-block h^2, and sheave 12 on said leg, combined with the carriage C, spindle mounted therein, and means to rotate said spindle, substantially as described.

3. The carriage C, the hollow spindle B, mounted therein, provided with a pulley, *g'*, belt *g*, pulley 9, and means to rotate the latter, combined with a flier on said spindle containing a serving-yarn spool, a friction device or drag, *m*, engaging the said spool, and a serving-block or presser, *h*, driven by said flier, substantially as described.

333,678. EGG-REGISTER. HERMAN SCHELLHORN and EDWARD SCHMIDT, Horn's Corners, Wis. Filed Feb. 12, 1885. (No model.)

Claim.—1. The case *a*, in combination with lever *e*, provided with egg-receiving frame *c*, arm *g*, pivoted at one end to case *a* and attached at its other end to the rear extremity of lever *e*, pawl *h*, pivoted to arm *g* and catching on the teeth of ratchet-wheel *i*, ratchet-wheel *i*, and ratchet-wheel *o*, rotated by contact with wheel *i*, the said wheels *i* and *o* being provided with numerals and adapted for counting and registering, substantially as described.

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2. The case *a*, in combination with levers *e* and *f*, provided with frame *c c*, said levers being respectively connected to arms *g* and *j*, the arms *g* and *j*, the thereto pivoted pawls *h* and *k*, and the ratchet-wheel *i*, substantially as set forth.

3. The case *a*, in combination with levers *e* and *f*, (connected to arms *g* and *j*,) arms *g* and *j*, pawls *h* and *k*, ratchet-wheel *i*, provided with pins *n n*, and the ratchet-wheel *o*, substantially as and for the purpose set forth.

4. The case *a*, in combination with levers *e* and *f*, (attached to arms *g* and *j*, respectively,) arms *g* and *j*, pawls *h* and *k*, ratchet-wheel *i*, provided with pins *n n*, the ratchet-wheel *o*, provided with pin *q*, and the wheel *p*, substantially as set forth.

5. The case *a*, in combination with centrally-pivoted levers *e* and *f*, provided with frames *c c* and attached to arms *g* and *j*, respectively, arms *g* and *j*, pawls *h* and *k*, ratchet-wheel *i*, provided with pins *n n* and with numbered teeth, the ratchet-wheel *o*, provided with pin *q* and with numbered teeth, the ratchet-wheel *p*, having numbered teeth, index-fingers *t*, *u*, and *v*, and the pawls *x x x*, substantially as and for the purpose set forth.

333,679. CLASP. ALBERT SCHURCH, San Francisco, Cal., assignor of one-half to Salomon Stammer, same place. Filed May 18, 1885. (No model.)



Claim.—1. The combination, with the plate A, having the knobs or projections at the end and slotted openings D at the bases, of the plate B, having a shank adapted to be introduced between the aforesaid knobs, shoulders F, which engage the slotted openings, and a single knob or projection at the outer end of the plate B, substantially as herein described.

2. A lock or fastening consisting of the knobs or projections at the end of the plate A, having slotted openings at their bases, and the projecting guides *a*, in combination with the plate B, having a shank which may be introduced between the aforesaid knobs, shoulders which will enter the slots at the base of these knobs, and a single knob or projection at its outer end, substantially as herein described.

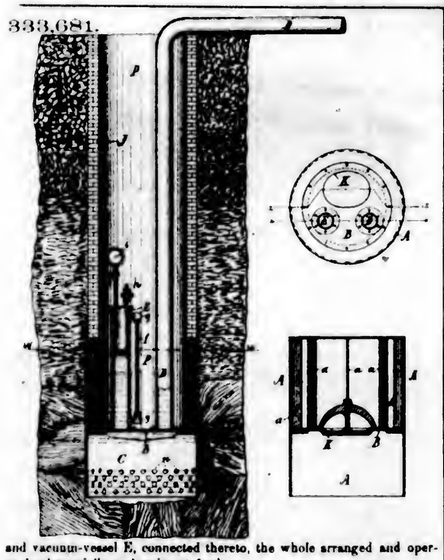
333,680. MANUFACTURE OF SIZING COMPOUNDS FOR PAPER-MAKERS' USE. CONRAD SIEMPER, Philadelphia, Pa., assignor to Harrison Brothers & Co., same place. Filed July 22, 1885. (No specimens.)

Claim.—The process of producing directly from any ferruginous aluminous material a porous neutral or basic compound for paper-makers' use, free or nearly free from iron, said process consisting, essentially, in adding to a neutral ferruginous solution of sulphate of alumina, obtained in any usual manner, plumbic dioxide or other substance which will precipitate iron in a solution of sulphate of alumina, and in removing from said solution insoluble impurities by filtration or by other suitable means, and in making said solution, either before or after its treatment with plumbic dioxide by the addition thereto of oxide of zinc or its equivalent, sufficiently basic to fail to act upon ultramarine-blue, and in then adding bicarbonate of soda to said solution when in a sufficiently cool and concentrated condition, and in allowing the same to harden to form a porous mass, as specified.

333,681. VACUUM-WELL. JAMES M. SAYBOUR, Newark, N. J. Filed Nov. 12, 1884. (No model.)

Claim.—1. In a well excavated as described and provided with a tight curb or casing, A, at the bottom, the combination, with such curb, of the water-chamber C, the tight diaphragm B at the top of said chamber, in contact with the water, and provided with the suction-pipe D

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and vacuum-vessel E, connected thereto, the whole arranged and operated substantially as herein set forth.

2. In a well excavated as described, the combination, with the curb A, of the chamber C, the diaphragm B in contact with the water, the suction-pipe D and vacuum-vessel E, and the man-hole K, the whole arranged and operated substantially as set furth.

3. In a well excavated as described and provided with a curb, A, at the bottom, the combination, with such curb, of the diaphragm B in contact with the water, the suction-pipe D, the vacuum-vessel E, and the cock *h* in the vessel E, for regulating the inlet or outlet of air, the whole arranged and operated substantially as set forth.

4. In a well excavated as described and provided with a curb, A, at the bottom, the combination, with such curb, of the diaphragm B in contact with the water, the suction-pipe D, the vacuum-vessel E, the cock *h*, and the glass gage *f*, to indicate the level of the water in the vacuum-vessel, the whole arranged and operated substantially as set forth.

5. In a well excavated as described and provided with a curb, A, at the bottom, the combination, with such curb, of the diaphragm B in contact with the water, the suction-pipe D, the vacuum-vessel E, the cock *h*, and the vacuum-gage i, applied to the vacuum-vessel, to indicate the degree of vacuum therein, the whole arranged and operated substantially as and for the purpose set forth.

333,682. TIME-LOCK. CHARLES H. SHAFFER, Rockford, Ill., assignor to Jackson B. Young, Sioux Falls, Dak. Filed May 26, 1884. (Model.)

Claim.—1. In a time-lock, a permutation-tumbler provided with a stop projection, in combination with an elastic or yielding stop adapted to engage therewith and throw the tumbler out of setting position by its elasticity, but without preventing its rotation, and an adjustable support on which said stop is mounted, whereby it may be moved bodily out of operative position, substantially as and for the purposes set forth.

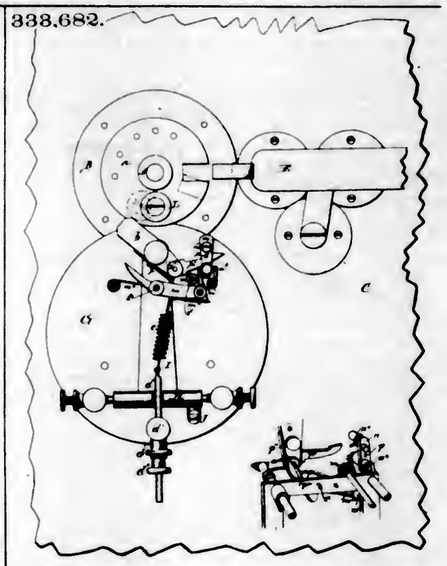
2. In a time-lock, a permutation-tumbler provided with a stop projection, in combination with an elastic or yielding disarranging-lever mounted on a pivot, on which it is free to vibrate back and forth, and arranged to stand normally in the path of the tumbler projection at a point where it will be turned somewhat to one side when the tumbler is brought into setting position, and which by its elasticity will throw the latter out of position when it is released by the setting-knob, substantially as and for the purposes set forth.

3. In a time-lock, a permutation-tumbler provided with a stop projection, in combination with an elastic or yielding disarranging-lever mounted on a pivot, on which it vibrates, a spring arranged to hold the lever in a normal position directly in the path of the permutation-stop, a dog or pawl, and a catch arranged to operate with the pawl to hold the lever out of operative position when turned to one side, substantially as and for the purposes set forth.

4. In a time-lock, a permutation-tumbler provided with a stop projection, and a disarranging-lever having the corners beveled or rounded at the free end thereof, substantially as and for the purposes set forth.

5. In a time-lock, a permutation-tumbler provided with a stop projection consisting of an anti-friction wheel or roller, in combination with an elastic or yielding disarranging-lever, substantially as and for the purposes set forth.

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6. In a time-lock, a permutation-tumbler provided with a stop projection consisting of an anti-friction roller, in combination with an elastic or yielding disarranging-lever having beveled or rounded corners at its outer end, substantially as and for the purposes set forth.

7. The combination of a pivoted lever-support, a disarranging-lever having a pivoted connection with the supporting-lever, and a disarranging-spring connected to the disarranging-lever, substantially as and for the purpose set forth.

8. In a time-lock, a permutation-tumbler, in combination with a pivoted disarranging-lever, a vibrating support on which said lever is mounted, and a double-acting spring arranged to actuate both the lever and its support, substantially as and for the purposes set forth.

9. In a time-lock, a time-movement, in combination with a permutation-tumbler, vibrating disarranging-lever, vibrating support for said lever, a double-acting spring arranged to actuate both the lever and its support, and a stop device connected to the lever-support and arranged to be operated by the time-movement to vibrate the said support in a direction against the force of the spring, substantially as and for the purposes set forth.

10. The combination, with the drop-wheel of a time-movement, and with a tumbler of a locking mechanism, of a double-action spring-actuated disarranging mechanism to prevent the adjustment of the look-tumblers, substantially as and for the purpose set forth.

11. The combination, with the mechanism connecting the spring-actuated disarranging-lever with the drop-wheel connected with the time-movement, of a spring made adjustable to hold the connecting parts in their relative position in a yielding manner, substantially as and for the purpose set forth.

12. The combination, with the connecting-rod and with the right-angled lever, of an adjustable screw-nut to limit the movement of the rod relatively with the arm of the angle-lever, a drop-lever connected to the said rod, and a drop-wheel operated by the time-movement, substantially as and for the purpose set forth.

13. The combination of a spur-toothed pinion having a connection with the time-movement, a spring-actuated trip-lever fitted with a spring-actuated serrated pawl to engage the spur-toothed gear-pinion, and the disarranging-lever fitted to engage the free arm of the trip-lever, substantially as and for the purpose set forth.

14. The combination of the spur-toothed pinion, the spring-actuated serrated pawl, the spring-actuated crank-lever arm, and the spring-actuated hook-lever detent to engage the latch-pin on the crank-lever arm, and having a pivotal connection with disarranging-lever, substantially as and for the purpose set forth.

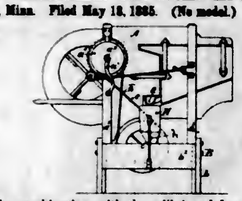
15. In a time-lock, a permutation-tumbler, in combination with a yielding vibrating disarranging-lever, a detent connected to the lever, and a stop arranged to engage with said detent, substantially as and for the purposes set forth.

16. In a time-lock, the disarranging-lever provided with a hook-detent, in combination with a pivoted yielding crank-arm provided with a latch-pin adapted to engage the said detent, substantially as and for the purpose set forth.

17. In a time-lock, permutation-tumblers, in combination with a disarranging device mounted on a movable support, a wheel controlled by the time-movement, and drop mechanism, substantially as and for the purposes set forth.

18. The combination, with the rotary dial and with the drop mechanism, of a pin-toothed wheel in irregular outline, operating automatically to engage the drop mechanism, substantially as and for the purpose set forth.

333,683. FANNING-MILL. JOHN W. SHAW and GEORGE R. SHAW, Little Rock, Minn. Filed May 18, 1885. (No model.)

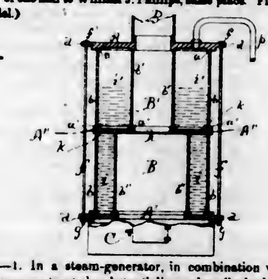


Claim.—The combination, with the mill A and frame B, and means for securing the frame, to the legs of the mill, of the perforated metal cylinder C, mounted in said frame, and having the grooved ring *c*, the pulley a^4, and separable belt E, all substantially as described.

333,684. GEM-TYPE FIXER. AMANDA E. SHEARER, Humphreys, assignor of one-half to Isaac Richard Marion Benson, Milan, Mo. Filed June 23, 1885. (No specimens.)

Claim.—The herein-described compound for fixing gem types or pictures, consisting of carbonate of ammonia, alum, hyposulphite of soda, aqua-ammonia, and water, combined in substantially the proportions stated, and for the purposes set forth.

333,685. STEAM-BOILER. CHARLES S. SHEPARD, Cherry Creek, N. Y., assignor of one-half to William J. Phillips, same place. Filed Aug. 6, 1885. (No model.)



Claim.—1. In a steam-generator, in combination with the walls, case, and flues, constructed substantially as described, the cast-iron flat disks or heads A A′, having circular V-shaped grooves therein for the reception of the ends of the case and flues, the rims *a a*, projecting beyond the walls of the case, and all the parts held together by the screw-rods *f f*, passing through said rims outside of the case, all arranged as and for the purpose specified.

2. In a steam-generator, the combination of the heads A A′, screw-rods *f f*, outer shell, *b*, flues *b′ b″*, and the division-plate A″, the latter having the circular grooves *a a′*, the central opening, *h*, and steam and water openings *k k*, all substantially as specified.

333,686. BILGE-WATER INDICATOR. JOHN P. SMITHELLS, Chicago Ill. Filed Oct. 15, 1885. (No model.)

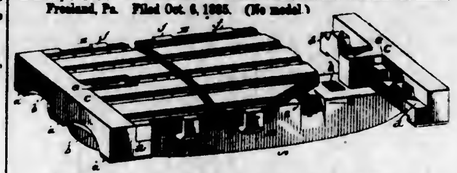


Claim.—1. The combination of the base G, having an oil-chamber therein, the pipe E, screwed into its bottom from below, and the pipe F, screwed into the same from above, with an open passage between the adjacent ends of the two pipes, and the hollow cylinder H, having air-tight cap I on its upper end, and its lower end screwed into the base G, adapted to conduct the compressed air forced up by the bilge-water down upon the oil in the chamber in the base G, substantially as described.

2. The described base, having an oil-chamber therein, provided with two branches and also with a vertical hole through its bottom for the pipe E, and a hollow projection, Q, situated over said hole, and provided with an opening therein continuous with said hole, and a socket for the lower end of pipe F, substantially as and for the purpose described.

3. The combination of the screw-cap I, having the flange I′, which is provided with suitable openings through it for the upper ends of graduated plate L and glass tube K, and the base G, provided with said plate L and tube K, and also furnishing bearings for their lower ends, substantially as described.

333,687. GRATE-BAR. WILLIAM SOLT, Sr., and WILLIAM D. KLEIN, Freeland, Pa. Filed Oct. 6, 1885. (No model.)



Claim.—1. The ventilator-bar A, having side walls, B B, slots or ventilating-openings *b*, and mortises *a*, in combination with the perforated plate grate-section E, having depending flanges F and tenons *g*, as and for the purpose set forth.

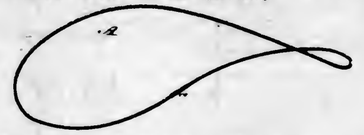
2. The ventilator-bar A, having side walls, B B, slots or ventilating-openings *a*, and mortises *b* between the slots, in combination with the perforated plate grate-sections having depending flanges F, extensions or projections *f*, and tenons *g*, as set forth.

3. The ventilating-bar A, having side walls, B B, slots or openings *a*, mortises *b* between the slots, and bearing-plates C at the ends of the bar, all cast in one piece, said plates having a ledge, *d*, provided with blocks or lugs *e*, and the integral middle finger, D, in combination with the perforated plate grate-sections having depending flanges F, projections or extensions *f*, and recesses *h* in the under side of the end grate-sections, as set forth.

4. The bearing-plates C, provided with the ledge *d*, formed with blocks or lugs *e*, in combination with the perforated plate grate-sections having recesses *b* in the ends thereof to receive the blocks or lugs, as set forth.

5. The ventilator grate-bar A, in combination with the bearing-plates C, extending transversely across the ends of the bar, and of greater length than the width of said bar, and recesses or depressions *b′*, provided in the under side of the bearing-plates on each side of the point of juncture with the bar A, as set forth.

333,688. WIRE FRAME FOR HAT-BRIMS. LYMAN B. SOMERS, Danbury, Conn. Filed Nov. 27, 1885. (No model.)



Claim.—A frame for hat-brims, composed of a polygonal-shaped wire, substantially as and for the purpose set forth.

333,689. MACHINE FOR CLEARING TWIST-DRILLS. GEORGE R. STETSON, New Bedford, Mass., assignor to himself and the Morse Twist Drill and Machine Company, same place. Filed July 11, 1884. (No model.)

Claim.—1. In a machine for clearing twist-drills, supporting and guiding jaws adjustable for various sizes of drill, substantially as described.

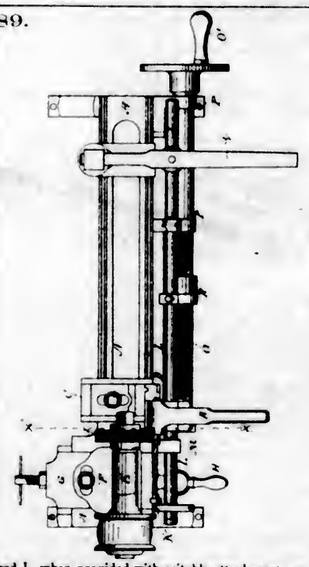
2. In a machine for clearing twist-drills, the combination, with adjustable supporting and guiding jaws, of a sliding support for the point of the drill, all substantially as herein set forth.

3. In a machine for clearing twist-drills, the combination, with mechanism for clearing the lands of the drill, of supporting-jaws adjustable for various sizes of drill, adapted to receive and support the drill, and mechanism for moving the drill longitudinally through the said jaws and past the said clearing mechanism, and also for rotating it during said longitudinal motion, all being substantially those herein shown and set forth, and for the purposes herein specified.

4. The combination, with mechanism of the character described for receiving and supporting drills of various sizes to be cleared, and provided with means, substantially the same as herein set forth, for regulating the vertical and lateral position of said mechanism, of a clearing-tool, I, provided with adjustments, substantially as herein described, whereby it may be adjusted toward and away from the drill and longitudinally upon the same, and also radially to correspond with the taper of the same, an arm or chuck for supporting the point of the said drill, said arm being adjustably mounted upon a rod, L, adapted to move the drill longitudinally past the cutter, and a finger or pin, *c*, adapted to rotate the drill during such longitudinal motion, all substantially as herein set forth.

5. In combination, the adjustable chuck or point-supporting arm K

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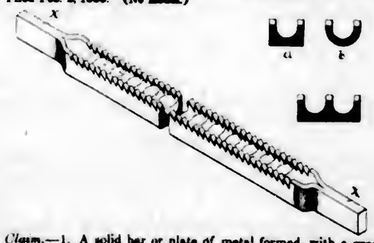


and sliding rod L, when provided with suitable attachments, as set forth, for imparting longitudinal motion in both directions to the said arm and rod, substantially as herein described.

6. The combination of the adjustable point-supporting chuck K, sliding arm L, nut-formed strap R, attached to said sliding rod, and screw O, passing through the nut and entering said strap R, all substantially as set forth.

7. The improved adjustable drill-supporting jaw herein described, consisting of the main jaw B and cylindrical and supplemental jaw *d*, carrying the pin or finger *c*, all substantially as herein set forth, and for the purposes herein specified.

333,690. BEADING-TOOL. CHARLES M. STEVENSON, Syracuse, N. Y. Filed Feb. 2, 1885. (No model.)



Claim.—1. A solid bar or plate of metal formed with a groove or grooves on one of its longitudinal faces, as described, the projecting edges being serrated with saw-teeth, as described, in combination with a cutting or rasping surface between them to form a bead while cutting the saw-kerfs, substantially as and for the purposes specified.

2. The grooved bar or plate with two or more serrated edges for cutting in the same plane, as described, having its two ends contracted into a thin shank, like a single saw-blade, to be readily inserted into the saw-frame, in the manner and for the purposes described.

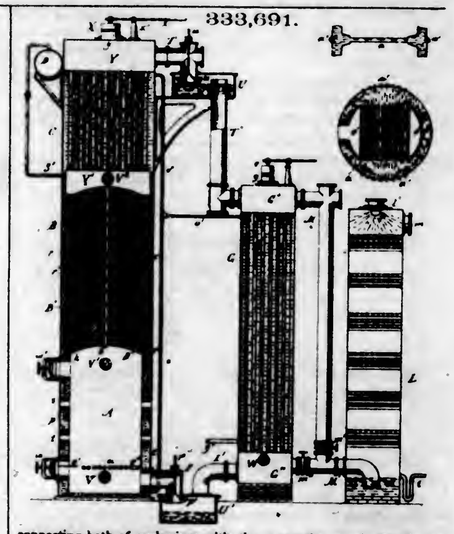
333,691. APPARATUS FOR MANUFACTURING GAS. JOHN L. STEWART, Philadelphia, Pa. Filed Apr. 30, 1885. (No model.)

Claim.—1. A gas-generating cupola having a fuel and steam decomposing chamber and a fixing-chamber, in combination with an oil still or vaporizer, separate means for heating it, and valved pipes connecting such still with the generating-cupola, whereby the water-gas may be mixed with the oil-vapor and the mixture passed through the fixing-chamber.

2. The combination, with a gas-generating cupola-furnace having a fuel-chamber and a fixing-chamber, of an oil still or vaporizer provided with means for heating it and storing vapor under pressure, and a valved vapor-pipe connecting such still with the cupola generator, for the purpose described.

3. In combination with a cupola generator, the separate oil still or vaporizer, means for heating it, a vapor-pipe leading from the top of the dome, an oil-pipe leading from near the bottom of the still, and a pipe

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connecting both of such pipes with the generating-cupola, for the purpose described.

4. In combination with the generating-cupola, the separate oil-still, valved pipes connecting them adapted to admit the hot oil or vapor to the generator, and a vent-pipe provided with a safety-valve connected with the still and a condenser, for the purpose described.

5. In combination with a gas-generating furnace, a water-jacket surrounding it, and a tubular steam-boiler mounted on top of the furnace and water-jacket and freely communicating with the latter, for the purpose described.

6. The gas-generating cupola having a fuel-chamber at the base and a fixing-chamber above, in combination with a water-jacket surrounding them both, and a steam-boiler mounted above the fixing-chamber and water-jacket and freely communicating with such jacket, for the purpose described.

7. In combination with a gas-generating chamber, a fixing-chamber having a filling of brick formed of perforated arches, for the purpose described.

8. In combination with a gas-generating chamber, a fixing-chamber provided with brick arches placed one above the other and having perforations or passages falling in vertical lines in the successive arches, whereby numerous vertical passages are formed from bottom to top of the fixing-chamber, for the purpose described.

9. A fixing-chamber for gas-generators formed of perforated brick laid in arches one above the other, so as to form vertical passages through the chamber, for the purpose described.

10. In combination with a gas-generating furnace, the water-jacket forming a portion of the walls thereof, and the tubular bars *a*, connecting opposite portions of such jacket near its base and forming the grate, for the purpose described.

11. In combination with a gas-generating furnace, the water-jacket having in its outer casing near the base series of openings and screw-plugs, and the tubular grate-bars *a*, connecting opposite portions of such jacket and having their ends adjacent to the said openings and plugs, for the purpose described.

12. The generating-furnace having a water-jacket and a steam-boiler, in combination with a water-heater having a water-supply pipe, a pipe connecting the heater with the water-jacket, and an air-escape pipe connecting the heater with the upper part of the boiler, for the purpose described.

13. The generator connected at top and bottom to the water-heater by pipes having interposed hydraulic boxes into which the pipes from the generator dip, in combination with the cone and cup valves connected to close the ends of such dip-pipes.

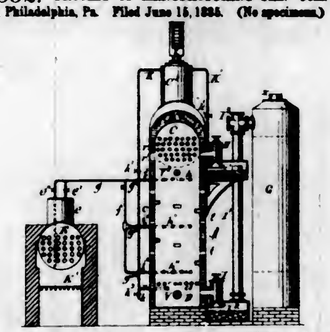
14. In combination with the hydraulic seal-box, the outlet-pipe of the generator projecting down into such box, and a cone-valve having an annular cup adapted to close the end of the projecting pipe and having an operating-rod.

15. The generator and the water-heater connected together at top and bottom by valved pipes, in combination with the scrubber, pipe M', having a valve connecting the base of the heater with the base of the scrubber, and having its end bent down in the scrubber to dip into a sealing-liquid, and pipe M, having a valve connecting the top of the heater with pipe M', for the purpose described.

16. The cupola gas-generator having the fuel-chamber at the base, the fixing-chamber above, and the steam-boiler at the top, in combination with blast-pipe V, connecting with the ash-pit, blast-pipe V,' connecting with the top of the fuel-chamber, and blast-pipe V², connecting with chamber Y', between the fixing-chamber and boiler, for the purpose described.

17. In combination with the cupola, the air-blast pipe V', having its inner end perforated, and the oil-pipe A, projecting into the blast-pipe and discharging near the perforated end thereof, for purpose described.

333,692. PROCESS OF MANUFACTURING GAS. JOHN L. STEWART, Philadelphia, Pa. Filed June 15, 1885. (No specimens.)



Claim.—1. The process of generating gas which consists in heating a body of fuel to incandescence by combustion thereof, then decomposing steam by passing it through or in contact with such fuel and conducting the resulting heating-gas off from the generating-chamber, then, when the fuel is reduced by such operation to the proper temperature, shutting off the main current and volume of steam, admitting hydrocarbon oil or vapor into contact with the fuel, and converting the resulting vapors into a fixed hydrocarbon gas by passing them through the heated fuel and conducting the gas from the generator.

2. The process of generating gas which consists in decomposing steam by passing a current of it through a body of heated or incandescent fuel and passing off the resulting heating-gas, then, when the fuel is reduced by such operation to the proper temperature, shutting off such current of steam and admitting hydrocarbon oil or vapor into the middle portion of the body of fuel and passing it in either direction, or first in one direction and then in the other, through the fuel and conducting the resulting hydrocarbon gas off from either end of the body of fuel.

3. The process of generating gas which consists in first generating water-gas by passing a current of steam into one end of a body of heated fuel and withdrawing the resulting gas from the other end thereof, then, when the body of fuel is reduced to the proper temperature to receive hydrocarbon vapor, shutting off a portion of such current of steam and admitting hydrocarbon vapor near the center of the body of fuel, whereby it is decomposed into hydrocarbon gas, and at the same time continuing the flow of the reduced current of steam into one end of the body of fuel and mixing the resulting gases of decomposition with the hydrocarbon vapor or gas, and passing the entire product off at the opposite end of the body of fuel, and reversing the direction of the inflowing steam and outflowing gas at will.

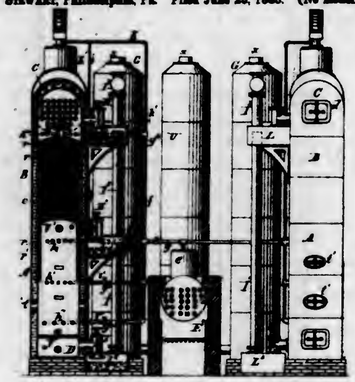
4. The process of making both heating and illuminating gas in the same apparatus, which consists in heating up the apparatus by the combustion of fuel and the resulting gaseous products, then superheating and decomposing steam by passing it down through the superheating and decomposing chambers, and conducting the resulting gases off at the base of the fuel-chamber, then, when the apparatus is reduced to the proper temperature, spraying oil into the top of the superheating-chamber, converting the resulting oil vapors into hydrocarbon gas by passing them through such chamber and conducting the gas off from the fuel-chamber.

5. The process of generating gas which consists in injecting and spraying liquid hydrocarbon, by means of water-gas under pressure, into a chamber containing heated refractory material, thereby vaporizing such liquid, then converting the mixed vapor and water-gas into a fixed gas by passing them down through a body of heated fuel.

6. The process of generating gas which consists in decomposing steam in a body of incandescent fuel till such fuel is reduced to the proper temperature for converting oil or vapor into gas, then shutting off the main current of steam and injecting or blowing hydrocarbon oil or vapor by a small jet of steam or water-gas under pressure into the fuel, thereby forming a fixed hydrocarbon gas and conducting it off from the generator.

7. In the manufacture of heating and illuminating gas in one apparatus, the method of conducting the operation which consists in raising the fuel to incandescence by an air-blast, then decomposing steam by passing it in contact with the heated fuel and withdrawing the resulting heating-gas till the fuel is reduced to the desired temperature for making hydrocarbon gas, then shutting off the steam, and by suitable bars making a number of openings in the fuel, then forcing or blowing hydrocarbon oil or vapor into such openings, so that it may be uniformly distributed in the body of fuel, and thus converting it into a fixed illuminating-gas and passing it from the generator above or below the fuel, as desired

333,693. APPARATUS FOR MANUFACTURING GAS. JOHN L. STEWART, Philadelphia, Pa. Filed June 25, 1885. (No model.)



Claim.—1. In combination with a fuel and generating chamber, a hydrocarbon-supply pipe connecting with the middle portion thereof, a steam-supply pipe connecting with the upper end thereof, and a gas-discharge pipe leading from the lower end thereof, for the purpose described.

2. In combination with a fuel and generating chamber, a hydrocarbon-supply pipe connecting with the middle portion thereof, a steam-supply pipe connecting with the upper and lower ends thereof, and gas-discharge pipe connecting with its top and bottom, for the purpose described.

3. In combination with a fuel and generating chamber, a hydrocarbon-supply pipe provided with an injector-pipe for steam or water-gas connecting with the middle portion of such chamber, a steam-inlet pipe connecting with one end thereof, and a gas-discharge pipe leading from one end thereof, for the purpose described.

4. In combination with a fuel and generating chamber, the injector-pipe having connections for steam and hydrocarbon connecting with the middle portion and with the upper and lower ends of such chamber and gas-discharge pipe, and pipes leading from the top and bottom thereof, for the purpose described.

5. In combination with a fuel and generating chamber, a hydrocarbon-supply pipe connecting with the middle portion thereof, a steam-supply pipe connecting with one end of the chamber, and a gas-discharge pipe leading from each end of the chamber, for the purpose described.

6. In combination with a fuel and generating chamber, a hydrocarbon-supply pipe and a jet-pipe for steam or water-gas connecting with the middle portion of the chamber, and a gas-discharge pipe leading from each end of the chamber, for the purpose described.

7. In combination with a fuel and generating chamber, an inlet-pipe connecting with the fuel-space of such chamber, having at its outer end a removable plug or stopper, and having a connecting-pipe for hydrocarbon oil or vapor, and a connecting-pipe for steam or water-gas, for the purpose described.

8. In combination with a fuel and generating chamber, an inlet-pipe for steam and hydrocarbon oil or vapor, having at its outer end a removable plug or stopper, for the insertion of a bar or rod to open the fuel, whereby the oil or vapor may be better distributed in such fuel.

9. In combination with a fuel and generating chamber, projecting fuel-supports secured at different heights in the walls of such chamber, for assisting in breaking up caked fuel, and sufficiently supporting it to prevent its packing on the grate.

10. In combination with the water-jacket casings of a gas-generating furnace, the hollow tubular projections secured to the inner jacket and open to the water-space, for supporting the fuel and preventing its packing on the grate.

11. In combination with the water-jacket casings of a gas-generating furnace, a circular row of hollow tubular projections secured to one or both jackets and open to the water-space, for supporting the fire-brick lining of the furnace.

12. In a cupola gas-generating furnace, the fuel-chamber provided

with stoke-holes at different points in the circumference and height of its walls, from near the grate-bars to near the top of such chamber, in combination with a superheating chamber or boiler placed above the fuel-chamber, for the purpose described.

13. The walls of a fuel and generating chamber provided with stoke-holes at different points in its circumference and height, in combination with fuel-supports secured at different heights to the walls of such chamber, whereby caked fuel may be broken up and kept open sufficiently for the free passage of air, steam, and vapor or gas.

14. The fuel and generating chamber having a gas-outlet pipe at top and bottom, in combination with a horizontal tubular boiler having at its outer end an outlet-passage and cap for the escape of products of combustion.

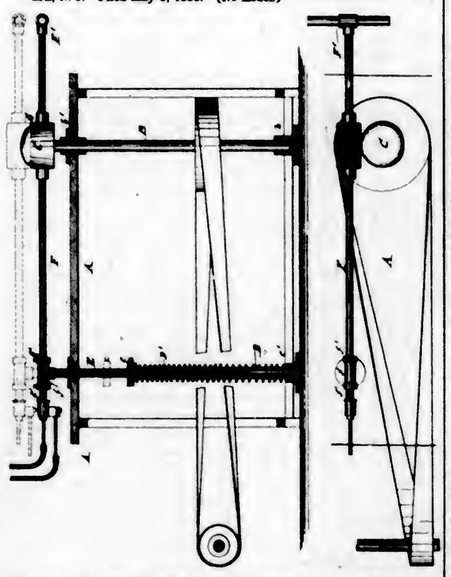
15. The fuel and generating chamber having a gas-outlet pipe at top and bottom, connecting with the top of a water-heater, in combination with a horizontal tubular boiler having an outlet-passage for products of combustion, and a pipe connecting the rear end or smoke-box of such boiler with the top of the heater.

16. The fuel and generating chamber having two or more gas-outlet pipes leading directly from it, and each connecting with a seal-box, a pipe or pipes connecting such boxes, and a pipe connecting the upper box with the top of the water-heater.

17. A gas-generating furnace or cupola having a fuel-chamber, a fixing or superheating chamber, and a boiler connecting above the fixing or superheating chamber, in combination with gas-outlet pipes leading, respectively, from the ash-pit, the top of the fuel-chamber, and the top of the fixing-chamber, for the purpose described.

18. The combination of a gas-generating furnace or cupola having a water-jacket, a gas-outlet pipe having a water-jacket, a connected water-heater, and pipes connecting the water-jackets and heater, for the purpose described.

333,694. MACHINE FOR FINISHING HATS. JACOB SURREUS, Newark, N. J. Filed May 8, 1885. (No model.)



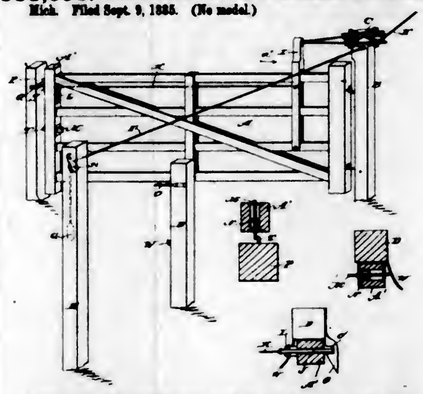
Claim.—1. The combination of a vertical rotating shaft carrying the hat-block, a fixed tubular guide-pillar, a vertically-sliding and spring-cushioned arm having a sleeve at the upper end, a tubular handle-rod turning axially in said sleeve, and a finishing-iron attached to said handle-rod, substantially as set forth.

2. The combination of a supporting-table, a vertical rotating shaft supported in step and neck bearings, a hat-forming block at the upper end of the shaft, a fixed tubular pillar, a vertical arm guided on said pillar, an adjustable collar on said arm, a spiral spring interposed between the collar and the base of the pillar, a horizontal handle-rod turning axially in the sleeve of the vertically-movable arm, collars for retaining the handle-rod on the sleeve, and a finishing-iron attached to the handle-rod, substantially as set forth.

3. The combination of a tubular handle-rod, a finishing-iron attached to said handle-rod, a vertical arm connected by a sleeve and stop-collars to the handle-rod, a fixed guide-pillar, and a spiral balancing-spring interposed between a collar of the arm and the base of the pillar, substantially as set forth.

4. In a hat-finishing machine, the combination of the finishing-iron having air-inlet holes and outlet-channels for the products of combustion, a tubular handle-rod attached to the iron, an interior air-tube passing through the tubular rod, gas and air supply pipes connected to the tubular rod and interior air-tube, and a gas-burner extending into the iron, said burner being composed of a head having longitudinal channels, a sleeve inclosing said head, and a cylindrical sleeve having air-holes and surrounding the inner end of the air-supply tube, substantially as set forth.

333,695. FARM-GATE. WILLIAM W. SWEETLAND, Edwardsburg, Mich. Filed Sept. 9, 1885. (No model.)

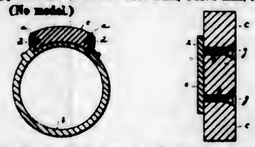


Claim.—1. The combination, with the posts B D P, of the gate A, the latch M in the swinging end of the gate, the projection T on the post P, and the curved prongs W on the posts D, substantially as herein shown and described.

2. The combination, with the posts B D P, of the gate A, the latches M and J in the swinging end piece of the same, the notched cross-piece Q on the post P, the pivoted bar S on the post P, and the curved prongs W on the posts D, substantially as herein shown and described.

3. The combination, with the posts B, D, and P, of the gate A, the latches J and M, the spring L, acting on the bolt J, levers and ropes for swinging the gate and withdrawing the bolt J, the notched cross-piece Q on the post P, the projection T on the post P, the hooks O, and curved prongs W on the posts D, and of the bar S, pivoted on the post P, substantially as herein shown and described.

333,696. FINGER-RING. OTTO THIE, Union Hill, N. J. Filed Mar. 18, 1885. (No model.)

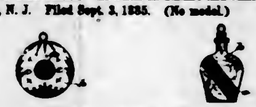


Claim.—1. The combination of a finger-ring having head *a*, perforated at the flanges which adjoin shank *b*, with stone *c*, recessed at opposite sides, and with pins *d*, substantially as specified.

2. The combination of a finger-ring having head *a*, perforated at the flanges which adjoin shank *b*, with recessed stone *c*, and screw-threaded pins *d*, having ornamental heads, substantially as shown and described.

3. The combination, in a finger-ring, of recessed head *a*, with stone *c*, having countersunk perforations *g*, and with pins *d* and ornament *e*, having tubes *f*, substantially as specified.

333,697. ARTICLE OF JEWELRY AND METHOD OF ORNAMENTING THE SAME. EDWARD A. THIEBY and CHARLES F. CROSSLEIGH, Newark, N. J. Filed Sept. 3, 1885. (No model.)

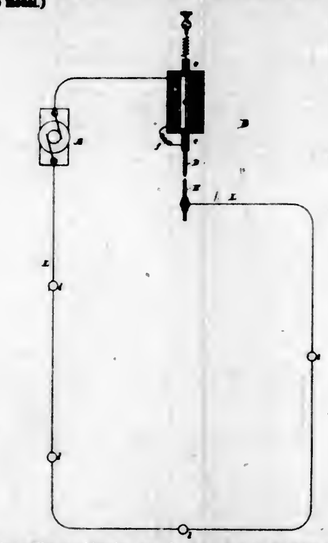


Claim.—1. That improvement in the art of ornamenting articles of jewelry which consists in taking a base of crystal, glass, or analogous material of the form of the article to be produced, coating the same with metal by electrolysis, and afterward cutting away suitable designs or tracings through the metal, substantially as set forth.

2. That improvement in the art of ornamenting articles of jewelry which consists in taking a base of crystal, glass, or analogous material of the form of the article to be produced, coating the same with metal by electrolysis, cutting suitable designs or tracings in the metal, and applying a contrasting metal in the design, or tracing in intaglio or relief, substantially as set forth.

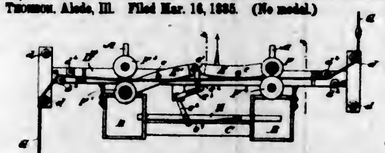
3. An article of jewelry having a glass, crystal, or analogous base substantially of the form of the article, with a seamless coating or covering of metal, and designs, tracings, or ornaments cut through the metal, exposing the transparent base, substantially as set forth.

333,698. REGULATOR FOR ELECTRIC-LIGHT CIRCUITS. WILLIAM M. THOMAS, Grand Rapids, Mich., assignor of one-half to the Grand Rapids Electric Light and Power Company, same place. Filed Nov. 24, 1884. (No model.)



Claim.—The combination of a dynamo-electric machine or source of electric energy, its circuit, electric lamps, or other appliances connected in series in said circuit, and a safety and indicating device, also in said circuit, consisting of the arc-lamp carbons D E, having a relatively-low resistance as compared with the lamps and appliances in the circuit, and having a solenoid coil for regulating the relation of the carbons D E to each other, as and for the purpose set forth.

333,699. CHECK-ROW ATTACHMENT FOR CORN-PLANTERS. J. THOMSON, Aledo, Ill. Filed Mar. 16, 1885. (No model.)



Claim.—1. In a check-rower attachment, the combination, with the wire and the levers actuated thereby, of pulleys mounted upon said levers and opposing stationary pulleys, substantially as specified.

2. The combination, in a check-rower attachment, of the flexibly-jointed pivoted levers E E', carrying pulleys F F', and the pulleys F² and F³, opposing said pulleys F F', substantially as specified.

3. In a check-rower attachment, the combination, with the dropping device H, of the flexibly-jointed pivoted levers, the pulleys whereby said levers are actuated, and the intervening mechanism by which the movement of the levers is carried to the dropper, substantially as specified.

4. The combination, with the dropper device H, of a single pair of flexibly-jointed pivoted levers placed transversely of the machine, sheaves for guiding the wire at each side of the machine and alike in both directions, pulleys for actuating said levers, and mechanism for transferring the movement of the levers to said dropper, substantially as specified.

5. The combination, with the levers E E' and their actuating pulleys, of guiding-sheaves at each side of the machine, adapted to guide the wire alike from either direction, substantially as specified.

333,700. RIVET. JUDSON L. THOMSON, Syracuse, N. Y. Filed Nov. 13, 1885. (No model.)



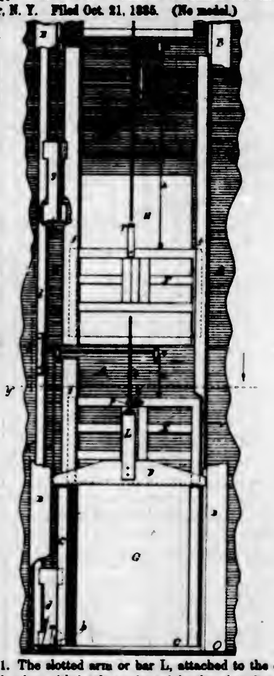
Claim.—1. A rivet having clinching-prongs each flattened on opposite sides and arranged with its flat sides directly opposite those of the other, with a space between them, as set forth and shown.

2. A rivet having clinching-prongs each flattened on opposite sides and arranged with its flat sides directly opposite those of the other, and tapered throughout its length in a plane at right angles to the flat sides, substantially as described and shown.

3. A rivet having clinching-prongs each flattened on opposite sides and arranged with its flat sides directly opposite those of the other, and beveled to a broad chisel-point at the free end, substantially as described and shown.

4. A rivet having clinching-prongs each flattened on opposite sides and arranged with its flat sides directly opposite those of the other, with a space between them, and tapered throughout its length and beveled to a broad chisel-point at the free end, substantially in the manner specified and shown.

333,701. ELEVATOR. CHARLES G. TRIPPE and LEONARD TRIPPE, Rochester, N. Y. Filed Oct. 21, 1885. (No model.)



Claim.—1. The slotted arm or bar L, attached to the elevator-carriage, in combination with latch *p*, pivoted in the slot thereof, roller *u*, attached to said latch, a catch-piece, *r*, on the gate F, arranged to be engaged and lifted by said pivoted latch, and a fixed doubly-inclined trip, *t*, on which said roller travels to free said latch from said catch, substantially as set forth.

2. An elevator-carriage provided with a tilting latch, *b'*, and a stop arranged below the inner end of said latch, in combination with a vertically-movable gate, a counter-balance for said gate provided with a catch adapted to engage with said latch, and a stationary doubly-inclined-trip, and a pin or roll attached to said latch and arranged to come into contact with said trip, and thus free the latch from the catch and allow it to pass above the latter, for the purpose of checking the ascent of the weight and the descent of the gate, substantially as set forth.

333,702. HORSE-POWER. CHARLES VILLENEUVE, Boise City, Idaho. Filed Nov. 4, 1885. (No model.)



Claim.—1. In a horse-power, the combination of a base, a cap rotatively mounted thereon, and a sectional master-wheel having its spokes or arms fitted in the cap, substantially as described.

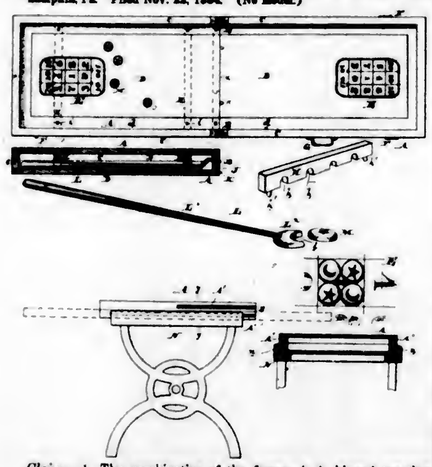
2. In a horse-power, the combination of a base, a cap rotatively mounted thereon, a master-wheel having its arms fitted in the cap, a supporting wheel or track secured to the master-wheel, and friction-rollers on which the supporting-wheel bears, substantially as described.

3. In a horse-power, the combination of a base, a cap mounted thereon, a sectional master-wheel having its arms fitted in the cap, a sectional track secured to the master-wheel, and a series of rollers mounted on the base and bearing against the track, substantially as described.

4. In a horse-power and in combination with the base thereof, a master-wheel comprising a series of segmental bars detachably fitted together and removable protecting and brace plates secured over the joints between said bars, substantially as described.

5. In a horse-power, the combination, with a base and a master-wheel mounted thereon, of a track secured to the master-wheel and comprising segmental bars and circumferential securing-plates, and a series of supporting-rollers, substantially as described.

333,703. **GAME APPARATUS.** A. F. ALEXANDER VOORHAAR, Philadelphia, Pa. Filed Nov. 23, 1884. (No model.)

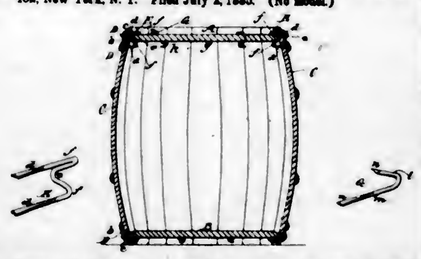


Claim.—1. The combination of the frames A A, hinged together at B, and having floors D, and sliding blocks M, and cues L, with the retaining-bars H and J, the former having notches for receiving and holding the cues, the said bars being removably secured within the frames A A when closed to support said cues and blocks and close the hinged end of said frames, substantially as and for the purpose specified.

2. The table N, having strips *n*, in combination with the hinged game-board frames A A, having grooves A′, whereby the game-board may be opened and pushed into position on the rigid table, substantially as and for the purpose specified.

3. A cue for game apparatus, consisting of the handle L′, with a pushing-block, L², having the curved recess portion *l*, and which block is secured to said handle at an angle thereto, substantially as and for the purpose specified.

333,704. **FASTENER FOR BARREL-HEADS, &c.** JAMES W. WESTON, New York, N. Y. Filed July 2, 1885. (No model.)



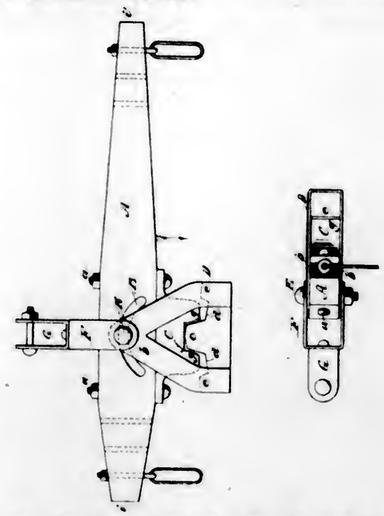
Claim.—1. As a new article of manufacture, the within-described permanent fastening E, for the heads or ends and outer end hoops of barrels and other like vessels, the same being constructed with sharpened legs *d d*, arranged to point in the same direction and united at their back by an inwardly curved or bent portion, *s*, corresponding to the cross of the barrel or vessel, and extended in their rear to form arms or lips *f f*, substantially as shown and described.

2. The combination, with the head or end A of the barrel or other like vessel and its end hoops, D, of the cross-shaped double-legged fastenings E, essentially as specified.

3. The combination, with the head or end of the barrel or other like vessel, staves or sides C thereof, arranged to form a chine, *c*, having a cross, *d*, and the outer end hoop, D, of the brace-head nails G, having flattened end portions *s s*, and constructed and applied to secure the head or end of the barrel, and to support and brace it and the chine *c*, and to secure the hoop D, essentially as shown and described.

4. The combination, with the head or end A of the barrel or other like vessel, the staves or sides C, arranged to form a chine, *c*, having a cross, *b*, and the outer end hoops, D, of the cross-shaped doubled-legged permanent fastenings E and the removable brace-head nails G, constructed to act in conjunction with said permanent fastenings and to secure and support and brace the head or end of the barrel, its chine *c*, and outer end hoop, D, substantially as specified.

333,705. **DRAFT-EQUALIZER.** ALBION WHEELER, Ridgeway, Iowa. Filed May 26, 1885. (No model.)



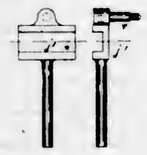
Claim.—The evener A, slotted at B, and provided with the toothed block C, in combination with the rocking yoke or clevis D, formed with projections and held to the evener by a bolt passing through it and through the slot B, substantially as shown and described.

333,706. **VALVE-GEAR.** WILLIAM WILSON, Bloomington, Ill. Filed Nov. 2, 1885. (No model.)

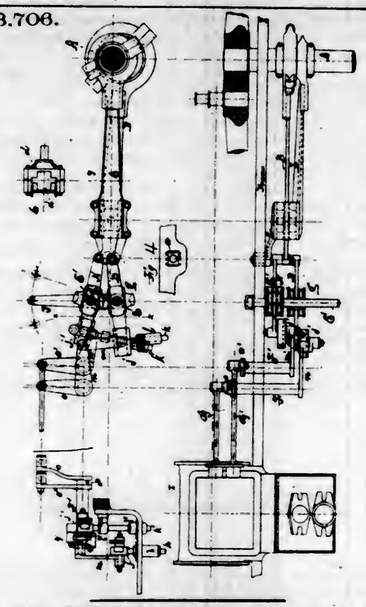
Claim.—1. The combination of an axle or main shaft, an eccentric lever fulcrumed forward of its center, and two levers, D H, one to operate an admission-valve and the other to operate an exhaust-valve, substantially as and for the purposes specified.

2. The combination of an axle or main shaft, an eccentric lever fulcrumed forward of its center, two levers, D H, and two reversing-shafts, each carrying a guide in which one of the two levers D H is supported and fulcrumed, substantially as and for the purposes specified.

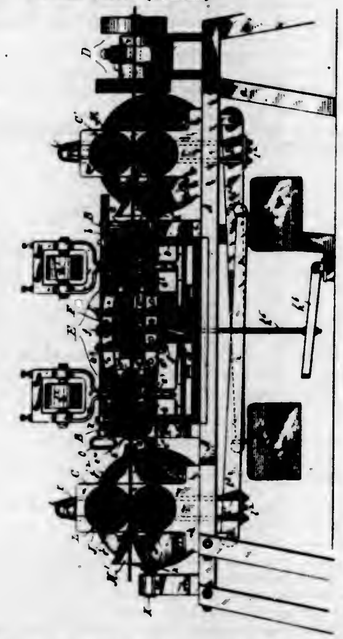
3. The combination of an axle or main shaft, an eccentric lever fulcrumed forward of its center, two levers, D H, each supported in a guide on a reversing-shaft, and pivoted at one end to the eccentric lever, and at the other end to a slotted yoke, two valve-rods, and connections between the valve-rods and yokes, substantially as and for the purposes specified.



333,706.



333,707. **MACHINE FOR STRAIGHTENING WIRE.** JAMES WITHINGTON, Chambersburg, assignor to the Trenton Iron Company, Trenton, N. J. Filed June 3, 1884. (No model.)



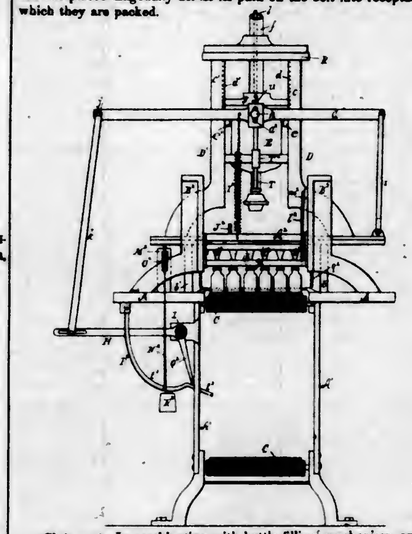
Claim.—1. The combination, in a wire-straightening machine, with a revolving head or flier, of a series of axially-apertured eccentrically-disposed dies or thimbles, each of which is provided with a bell-mouth the peripheral diameter of whose conical or flaring face is greater than the diameter of the circle described by the free end of a wire or rod passed through one of the said eccentric dies, revolving with the head, and fed toward said bell-mouth, substantially as described.

2. In combination, with the yoke-bars of the revolving head arranged on opposite sides of the axis, cross-bars provided with bell-mouthed thimbles or dies, clamp-plates, bolts for securing said clamp-plates to the yoke-bars, and adjusting-nuts upon the projecting threaded extremities of said cross-bars, substantially as set forth.

3. In a wire-straightening machine, the combination of a revolving head or flier provided with straightening dies or thimbles, feeding-rolls in advance of said head adapted to feed wire through it, driving devices for revolving the head at a predetermined speed, driving devices for revolving the feed-rolls at a predetermined speed, and means for at will and without the stoppage of the machine varying the relative speeds of the driving devices respectively of said head and feed-rolls, substantially as set forth.

333,708. **BOTTLING-MACHINE.** EDMUND M. WOOD, Natick, and ALBERT G. MEAD, Boston, Mass. Filed Dec. 17, 1884. (No model.)

Brief.—A series of bottles are carried upon an endless belt moving intermittently, first through a drying-chamber, where the labels previously placed upon the bottles are dried, thence brought under the spouts of a filling-machine designed to fill a certain quantity of liquid into each bottle simultaneously, thence to a corking-machine, where they are corked. The bottles are then carried by the action of the endless belt and rod placed diagonally across its path off the belt into receptacles, in which they are packed.



Claim.—1. In combination with bottle-filling mechanism, an endless traveling apron, which constitutes a carrier for the bottles, and a drying-chamber, through which said apron travels, but is not wholly inclosed therein.

2. The combination of a bottle-filling mechanism with an endless traveling apron, which constitutes a carrier for the bottles, and a shaft and finger for sweeping each row of bottles into line with the liquid-filling spouts should the initial positions of the bottles have been previously disturbed.

3. In bottle-filling machines, the combination of the endless belt to carry one or more series of bottles, a drying-chamber arranged over said belt, the filling and measuring cylinder with its operative mechanism, the tilting pan, and the corking-machine, all substantially as and for purposes stated.

4. In a bottle-filling machine, a cylinder adapted to move upon and with a piston, said piston having a stroke shorter than the cylinder inclosing it, whereby upon a stopping of the former the latter moves away and forms a chamber to contain the liquid delivered and discharged by valves, the opening and closing of which is to be effected by the movement of said cylinder upon certain operative mechanism connected with the valves, substantially as stated.

5. In a bottle-filling machine, the spring-actuated supply-valve *m*, with its operative mechanism, consisting of the shipper-bars *o t* and shoulders *r w*, in combination with the plate K and lever O, with its operative mechanism, whereby upon the downstroke of the cylinder shoulder *w* effects the closing, and the return or upward stroke, by and through the shoulder *r*, effects the opening of said valve, substantially as stated.

6. The supply-valve *m*, contained within the piston F, and the rod *l*, attached thereto and operated by the lever O, pivoted to the plate K, in combination with the shipper-rod *o*, carrying the pin *q*, and the spring

rock-lever P, with its locking-finger Q, whereby the upward motion of the cylinder operates to press the stop *r* against the plate R, thereby to depress lever O and open the valve at proper intervals of time by means of the pin *q* upon the rod *o*, substantially as described.

7. The operative mechanism for closing the supply-valve *m*, consisting of the rod *l*, operated by the lever O, in combination with the shipper-rod *t*, with its stop *w*, plate-spring *s*, rocking-lever P, locking-pin Q, and spring S, whereby the downward motion of the cylinder brings the stop *w* against the spring *s*, to effect release of the lever, as herein described, and close the valve at intervals of time, substantially as and for the purposes stated.

8. In a bottle-filling machine, the combination of the parts to effect the opening of the spring-actuated discharge-valve *v*, consisting of the rod *u*, with its slotted connection upon the trunnion *h*, and the shoulder b^2 and plate R, whereby motion of the valve-rod *u* is stopped and further advance motion of the cylinder by means of said slot and away from the valve effects the opening of said valve at proper intervals, substantially as stated.

9. In combination with the discharge-valve and its operating-rod *u*, the spring-actuated rock-lever *y*, its locking-finger *z*, the lip d^3, and ear e^3, whereby said valve is retained open above its seat until the rise of the cylinder brings the lever *y* against the ear e^3, to effect disengagement of locking-finger *z* from lip d^3, to close the valve at proper stated intervals, as and for the purposes herein described.

10. In a bottle-filling machine, the combination of the piston and cylinder, moving relatively to each other, as described with their operative mechanism, consisting of the rods *i i*, levers G G', connecting-rod *k*, crank H, and semi-rotating driving-shaft I, whereby a variable measured amount of liquid is to be received and discharged at proper stated intervals, substantially as stated.

11. In combination with the cylinder and the spring which raises it, the tilting pan, its series of spouts, the supply-valve, and intermediate devices, whereby the rising of said cylinder opens said valve, substantially as set forth.

12. The combination of the tilting pan, its spouts i^2 i^3, &c., and its operating mechanism with the swinging gravity-balanced drip-trough j^3 and its operative parts—viz., bent rod K^3, bar m^3, with its mutilation o^3, and bent finger l^3—whereby a sudden movement is imparted to the trough upon tilting of the pan, substantially as and for purposes herein described.

13. In a bottle-filling machine, the combination, with an endless belt carrying series of bottles arranged at right angles to the course of the belt, of the reciprocating semi-rotary arm q^2, for purposes herein described, with its operative mechanism, substantially as described.

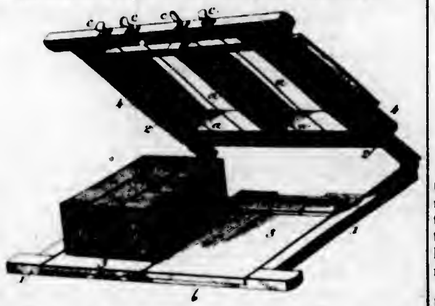
14. In combination, the shaft I, rock-lever Q^2, spring P^2, and chain N^2, with the pallet M^2, counterpoise-weight R^2, shaft L^2, and wiper-rod g^2, spring I^2, and the palleys, chain, and weight, to effect a proper fixed position for each series of bottles when being filled.

333,709. TACK-STRIP. ERASTUS WOODWARD, Somerville, and GEORGE W. COPELAND, Malden, Mass. Filed July 18, 1884. (No model.)



Claim.—A tack-strip comprising the web a^2, the shanks *c*, projecting therefrom, and the independent or separate heads *b*, formed in line with the shanks and upon or above the upper surface of the web, all substantially as and for the purposes described.

333,710. DEVICE FOR MOLDING BRICK. SILAS WEBBER, Washington, Middlesex County, N. J. Filed June 30, 1885. (No model.)



Claim.—1. A brick-machine substantially as described, comprising a base-frame, a frame normally movable with reference to said base-frame, and a number of cutters connected with said movable frame, substantially as set forth.

2. The combination, with the base-frame, of the cutter-frame hinged at one end thereto and cutters connected with said hinged frame, substantially as set forth.

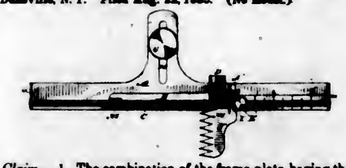
3. In a brick-machine, the combination of the base, the cutter-frame movable with reference to said base and provided with cutters, and the mold-box fitted into said frame, substantially as set forth.

4. The combination of the base-frame, the frame hinged at one edge to and movable toward and from the base-frame, cutters secured to the lower side of the hinged frame, and a molding-box fitted into said hinged frame, substantially as set forth.

5. In a brick-molding machine, the combination of the base-frame having pallet-supports 6, 7, and 8, formed with their upper surfaces below that of the main portion of the said frame, pallets rested on said supports, and a cutter-frame, substantially as set forth.

6. The brick-machine herein described, consisting of the base-frame 1, having depressed pallet-supports 6, 7, and 8, the pallets 3, rested on said supports, with their upper surfaces flush with that of the body of the base-frame, the frame 2, hinged at one end to the base, the cutting-wires connected with the frame, the screws connecting one end of said wires, whereby their tensions may be adjusted, and the molding-box, substantially as set forth.

333,711. HAND PLAITING ATTACHMENT. ELIZABETH M. YOUNG, Dansville, N. Y. Filed Aug. 22, 1885. (No model.)

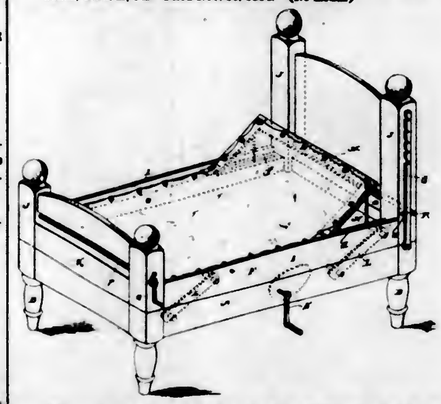


Claim.—1. The combination of the frame-plate having the side slot, the guide-rod connected at its ends to the frame-plate, the slide of the guide-rod, the blade carried by the slide, and the thumb-piece for reciprocating the slide, substantially as and for the purpose set forth.

2. The combination of the frame-plate having the side slot, the guide-rod connected at its ends to the frame-plate, the slide reciprocating on the guide-rod, the blade carried by the slide, and the adjustable gage, substantially as and for the purpose set forth.

3. The combination of the frame-plate, the guide-rod connected at its ends to the frame-plate, the slide on the guide-rod, having the strip N bearing upon the frame-plate at its free end, and the blade, substantially as and for the purpose set forth.

333,712. INVALID-BEDSTEAD. JACOB D. EBERSOL and HENRY Z. JOHNS, Cedarun, Pa. Filed Nov. 19, 1884. (No model.)



Claim.—1. In an invalid-bedstead, the combination, with the stationary lower section, of the movable upper section, shifting-levers connecting the two sections, a shaft carrying arms or cams *b* to operate against the upper section and partly raise or elevate the same when by drawing the upper section on a longitudinal line it is caused to extend beyond the lower section, and a swinging brace-bar connected to the latter and arranged to hold the upper section in its adjusted position, as set forth.

2. In an invalid-bedstead, the combination, with the lower section having grooves or slots provided in the side boards, of the movable upper section also provided with grooves or slots in its side boards, and shifting-levers pivoted in the grooves of the upper and lower sections, whereby when the upper section is lowered down the levers are hid from view, as set forth.

3. In an invalid-bedstead, the combination, with the lower section, of the movable upper section and levers pivoted in grooves or slots of the upper and lower sections, as and for the purpose set forth.

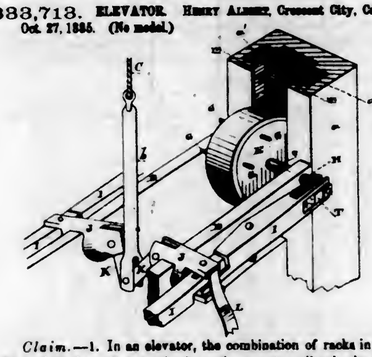
4. In an invalid-bedstead, the combination, with the lower section, of the upper section, shifting-levers pivoted in grooves or slots formed in the upper and lower sections, and a rod or shaft provided with cams or arms working through the grooves or slots to elevate the upper section, as and for the purpose set forth.

5. In an invalid-bedstead, the combination, with the lower section, of the movable upper section connected by a set of shifting-levers with the lower section to cause said upper section to be elevated above and then shifted in a longitudinal line slightly beyond the end of the lower section and thus allow room for the attendant to withdraw the bedding from the latter while the upper section is elevated, and a roller and windlass at one end of said upper section arranged to receive one end of the sheet, operating, substantially as described, to cause the withdrawal of the sheet from under the patient when the two sections are closed down, and allow him to rest on the clean bedding supplied to the lower section, for the purpose set forth.

6. In an invalid-bedstead, the combination, with the lower section, of the movable upper section, shifting-levers connecting the two sections, and a brace-bar connected to the lower section and notched on one of its faces to engage with a pin or stud carried by the upper section, as and for the purpose set forth.

7. In an invalid-bedstead, the combination, with the stationary lower section, of the movable upper section, shifting-levers connecting the two sections, whereby the upper section may be elevated above and shifted in a longitudinal line beyond the end of the lower section, and a pivoted brace-bar connected to the latter and arranged to swing forward as the upper section is raised and holding the said upper section when the limit of its movement is reached, as set forth.

333,713. ELEVATOR. HENRY ALBERT, Crescent City, Cal. Filed Oct. 27, 1885. (No model.)



Claim.—1. In an elevator, the combination of racks in the shaft with anti-friction rollers or wheels on the cage traveling in the shaft, and sliding bolts in the rollers or wheels adapted to be projected within the racks when the supporting-strain on the cage is relieved, and to be retracted when the strain is applied, substantially as described.

2. In an elevator, the combination of racks in the shaft with anti-friction rollers or wheels on the cage traveling in the shaft, sliding bolts in the rollers or wheels, a yielding spring-spindle on the cage, to which the lifting or supporting strain is applied, and mechanism connecting the spindle with the bolts, whereby when the strain on said spindle is relieved the bolts are projected to engage the racks, and when the strain is again applied to the spindle the bolts are retracted, substantially as described.

3. In an elevator, the shaft A, having the grooved or slotted ways *a* in its sides, with cross-pins *a'*, forming racks, in combination with the cage B, having the anti-friction rollers or wheels E in the sides of its top traveling against the walls of the shaft between the racks, and the sliding bolts G in the rollers or wheels adapted to be projected through their sides to engage with the racks when the supporting-strain on the cage is relieved, and to be retracted into the rollers or wheels when the strain is applied, substantially as described.

4. In an elevator, the shaft A, having the grooved or slotted ways *a* in its sides, with cross-pins *a'*, forming racks, in combination with the cage B, having the anti-friction rollers or wheels E in the sides of its top traveling against the walls of the shaft between the racks, the sliding bolts G in said rollers or wheels, the sliding spring-actuated spindle *b* in the top of the cage, to which the supporting or lifting strain is applied, and connecting mechanism between the spindle and the bolts, whereby the latter are projected and retracted to engage with or to be disengaged from the racks according as the strain is relieved or applied, substantially as described.

5. In an elevator, the vertical racks in the elevator-shaft, consisting of the grooved ways *a* and cross-pins *a'*, the innermost edge of the ways being beveled, in combination with the rollers or wheels E of the cage, having sliding bolts G, adapted to be projected and retracted, as described, said bolts having beveled points, substantially as and for the purpose herein described.

6. In an elevator, the hollow anti-friction rollers or wheels E on the reciprocating cage having hollow journals or axles *e*, by which they are mounted, in combination with the sliding heads F in the wheels, the rack-engaging bolts G, attached thereto and projecting through the sides of the rollers or wheels, the rods H, passing through the hollow journals *e* and connected with the heads F, and a mechanism for reciprocating said rods, substantially as herein described.

7. In an elevator, the hollow anti-friction rollers or wheels E on the reciprocating cage having hollow journals or axles *e*, by which they are mounted, in combination with the sliding heads F in the wheels, the rack-engaging bolts G, projecting through the sides of the wheels and headed loosely in the heads, the adjusting-springs N, pressing on the heads of the bolts, the rods H, passing through the hollow journals *e* and connected with the heads F, and a mechanism for reciprocating said rods, substantially as herein described.

8. The hollow anti-friction rollers E of the elevator-cage, in combination with the heads F within the rollers, the sliding bolts G, passing through the sides of the rollers and loosely headed on the heads F, and the springs N, pressing on the heads of the bolts, substantially as herein described.

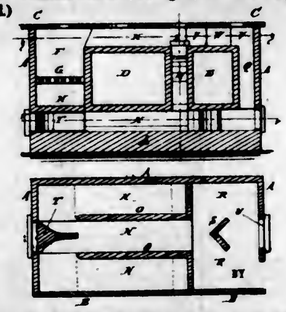
9. In an elevator, the cage B and the sliding spring-actuated spindle *b*, by which it is suspended, in combination with the hollow anti-friction rollers or wheels E, having hollow journals or axles *e*, by which they are mounted in the cage, the sliding heads F within the rollers, the bolts G, carried thereby and adapted, when projected, to engage racks in the elevator-shaft, the rods H, passing through the hollow journals *e* and connected with the heads, the pivoted levers I, connected with said rods, the sliding blocks or studs J, connected with the levers, the links or toggles K, connecting the spindle and the sliding blocks, and the springs L, bearing against said blocks, substantially as herein described.

10. In an elevator, the shaft A, having the grooved ways *a*, with cross-pins *a'*, forming racks, and the cage B, having a spring-actuated spindle, *b*, by which it is suspended, in combination with the hollow anti-friction wheels or rollers E, having hollow journals or axles *e*, by which they are mounted on the cage, the sliding heads F within the rollers, the adjustable bolts G, carried by the heads and adapted to engage the racks, the rods H, passing through the hollow journals *e* and connected with the heads F, the pivoted levers I, connected with the rods, the sliding blocks or studs J, connected with the levers, the toggles or links K, connecting the spindle with the sliding blocks, and the springs L, bearing against said blocks, substantially as herein described.

11. In an elevator, the hollow wheels or rollers E on the cage having the hollow axles or journals *e*, and the heads F, with the rack-engaging bolts G, operating as described, in combination with the rods H, passing through the hollow axles, the pivoted levers I, operated as described, and a sliding or movable pivot-connection between the levers and rods, by which the latter are moved in a straight line, substantially as described.

12. The bolt-operating rods H and the pivoted levers I, in combination with the bearings T, pivoted and sliding in grooves in the end of the levers and connected with the rods H, substantially as described.

333,714. COMBINED COOKING-STOVE AND BAKING AND WARMING OVEN. FREDERIK ARTMANN, Lexington, Miss. Filed Sept. 17, 1884. (No model.)

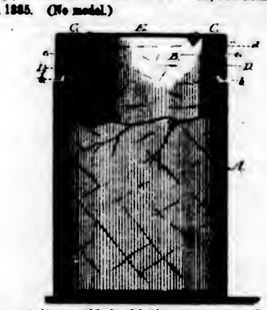


Claim.—1. The combination, with the stove, of the three flues N below the oven thereof, and the removable wedge-shaped plug T in the end plate, in front of the central flue N, whereby the flues may be cleaned by removing said plug and the products of combustion be made to meet at an acute angle, substantially as set forth.

2. The combination, with the baking-oven D and the warming-oven E, and flues above and between the same, of the flue R below the warming-oven, the three horizontal flues N below the baking-oven, the wedge-

shaped guide T in front of the middle flue N, and the wedge-shaped guide S in the flue R, in line with the middle flue N, substantially as set forth.

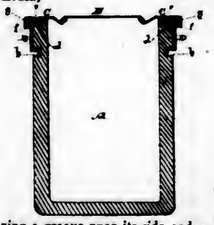
333,715. FRUIT-JAR. DELMAR R. ASHBY, San Francisco, Cal. Filed June 25, 1885. (No model.)



Claim.—1. A jar provided with the grooves *a* and *b*, the groove *b* having its upper wall dovetailed, in combination with the rubber packing B, provided with the lip *d*, and the collar D, having its lower edge bent into the groove *b*, and provided with the indentation *e*, all constructed and arranged substantially as and for the purpose set forth.

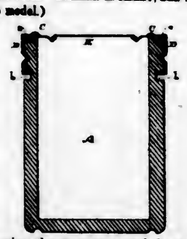
2. A jar provided with the grooves *a* and *b*, the groove *b* having its upper wall dovetailed, in combination with the rubber packing B, coated with a mixture of beeswax and rosin or other equivalent substances, and the collar D, having its lower edge turned or bent into the groove *b*, and provided with the indentation *e*, all constructed and arranged substantially as and for the purpose described.

333,716. FRUIT-JAR. DELMAR R. ASHBY, San Francisco, Cal. Filed Oct. 7, 1885. (No model.)



Claim.—A jar having a groove upon its side and a lip projecting upwardly around the inner periphery of the top, so as to form an exterior ledge, in combination with a rubber or elastic ring fitting said ledge, a ring surrounding the upper part of the jar, having its lower edge turned into the groove or channel and a cap so formed as to press the rubber upon the ledge, and having a downwardly-projecting ring or flange engaging by a folded joint a corresponding flange in the annular ring, whereby the two are united and secured, substantially as herein described.

333,717. FRUIT-JAR. DELMAR R. ASHBY, San Francisco, Cal. Filed Oct. 7, 1885. (No model.)

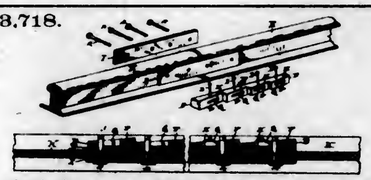


Claim.—A jar having the grooves *a* and *b* upon its side, a lip, *c*, projecting upwardly around the inner periphery of the top and forming an exterior ledge, in combination with a rubber or elastic ring fitting said ledge, a cap provided with an annular upwardly-curved ridge fitting the lip *c*, a depression, *e*, for engaging and compressing the elastic ring, and a downwardly-projecting flange or rim, the lower edge of which is bent or indented into the grooves in the sides of the jar, substantially as herein described

333,718. BOLT-LOCK. WILLIAM H. BABCOCK, Altea, Iowa, assignor of one-half to Peter Geeble, same place. Filed Sept. 1, 1885. (No model.)

Claim.—Combined with a bolt provided with lateral inclined shoulders, a key having a correspondingly-inclined surface and a differential slot-opening on said surface, and a pin normally extending across said slot, substantially as and for the purpose specified.

333,718.



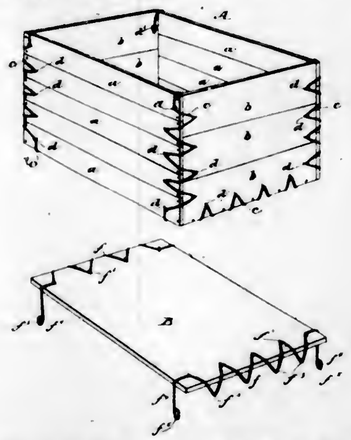
333,719. ENGINE FOR RUNNING SEWING-MACHINES. LOUIS W. BALDWIN, Jersey City, N. J. Filed Apr. 27, 1885. (No model.)



Claim.—1. The combination of the triangular-shaped valve and a strap-spring under it to keep it normally thrown upward with a cone-shaped dome or cap, with an eduction-pipe in its apex, and a cam-bar for operating the valve, as set forth.

2. The combination, with the triangular-shaped valve and dome formed to fit it, of a spring under said valve, a standard beside it, a cam-bar passing through it and pivoted in the standard, and a hinged extension secured upon said bar outside of the dome, as and for the purpose set forth.

333,720. PACKING-BOX. WILLIAM H. BEACH, Minneapolis, Minn. Filed Sept. 4, 1885. (No model.)



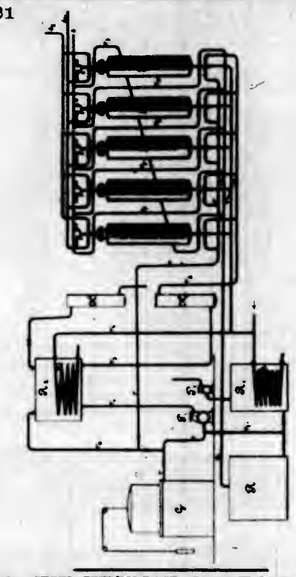
Claim.—1. As an improved article of manufacture, a packing-box having its corners stayed with a lacing-wire passed back and forth across the corners, and having its bends secured to the outside of the box and its ends passed over the edge of the box and secured to the inside thereof, as set forth.

2. The cover B for the box, provided with the stay-wires *f*, secured to the upper surface of the cover and folded in loops over the ends of the same, to be secured to the body A of the box, substantially as and for the purposes set forth.

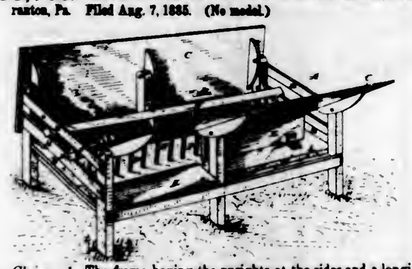
333,721. PROCESS OF FILTERING ALCOHOL. JOSEF BERDIX, Berlin, Germany. Filed Aug. 7, 1885. (No specimens.)

Claim.—The process herein described of filtering alcoholic fluid, which process consists in first diluting the alcohol, in then depriving it of atmospheric air by a charge of gas, and then forcing it through charcoal from which the air has been removed by a charge of steam, substantially as herein shown and described.

333,721



333,722. SHEEP-FEEDING RACK. DOUGLAS W. BERKEBILE, Cochranton, Pa. Filed Aug. 7, 1885. (No model.)



Claim.—1. The frame having the uprights at the sides and a longitudinal rack, E, along the center, comprising the rungs or short bars F and the connecting longitudinal bars D, in combination with the swinging leaves C, pivoted to the upper ends of the side uprights and folding inward over the frame so as to rest at their inner ends on and be supported by the bars D of the rack E, as set forth.

2. The frame having the uprights at the sides and the rack in the center, in combination with the leaves pivoted to the upper ends of the uprights to form sides for the frame when in a vertical position, the said leaves when folded inwardly reaching the sides or top edges of the rack and extending outwardly and upwardly therefrom, and projecting beyond the outer sides of the frame, substantially as described.

333,723. COMBINED FERTILIZER-DISTRIBUTER AND PLANTER. GEORGE B. BELLMER, Lebanon, N. H. Filed July 11, 1885. (No model.)

Claim.—1. The combination, with the phosphate hopper and pan, of the shake-bar, the seed-wheel loosely mounted on the ground-wheel axle and operating said bar, and the said ground-wheel axle, adapted to be connected with or disconnected from the seed-wheel, as set forth.

2. The combination, with the phosphate hopper and pan, of the shake-bar, the crank-screw regulating the inclination of the pan, and the seed-wheel mounted on the driving-wheel axle, and adapted, substantially as shown, to operate said shake-bar, as set forth.

3. The combination, with the phosphate-hopper D and pan E, of the crank-screw G, lateral spring *f'*, the pivot F', and spring *f*, the seed-wheel J and its ratchet-gear K, and the axle H, adapted to rotate the seed-wheel, as set forth.

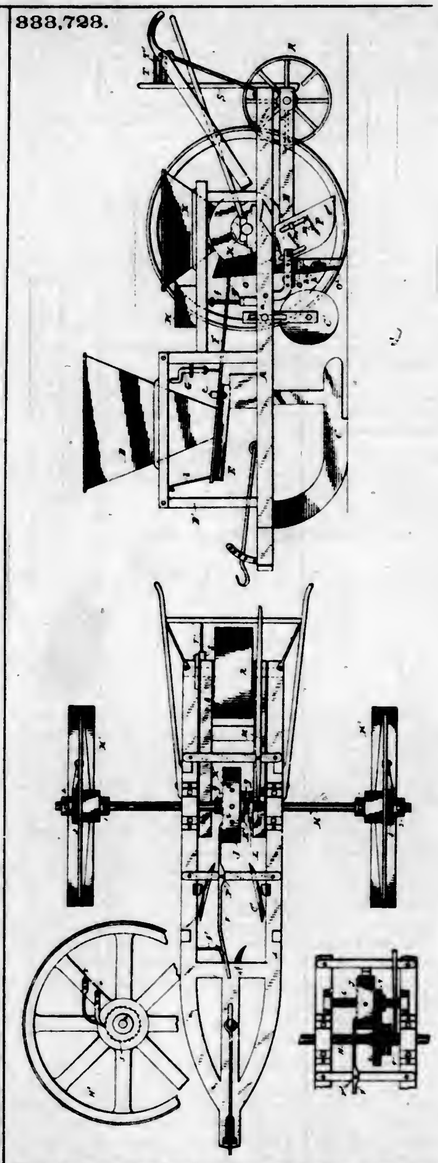
4. The combination, with the phosphate-hopper D, of the pan E, having link *b* and bail *c*, the plow C, and the adjustable inclined disks C', the shake-bar F, the crank-screw G, the lateral spring *f'*, the pivot F, and spring *f*, the seed-wheel J, and its ratchet-gear K, and the axle H, adapted to rotate the seed-wheel, as set forth.

5. The combination, with axle H, having thereon the seed-wheel J, geared and ungeared, substantially as shown, of the driving-wheels H', having the clutch and spring 4 5, the united collar and ratchet-gear 2 3, and the set-screw collars 1 1, whereby the wheels H' may be turned backward without rotating axle H, and also be adjusted for row-marking, as set forth.

6. The combination, with a seed-hopper, the shake-bar, and phosphate-pan, of the seed-wheel J, loosely mounted on ground-wheel axle H, between collars *g g*, and having ratchet-gears K K', and the axle H, provided with a laterally-moving ratchet-disk, L, shifted by lever M, whereby the seed-wheel J may rotate with axle H to both drop seed and operate the phosphate-pan, or the said axle may rotate alone, as set forth

7. The combination, with the seed-hopper N and wheel J, of the seed-spout O, attached to the main frame, the seed-opener O', attached to the roll-frame, pivoted to rise and fall below the main frame, the share O², adjustable vertically on the opener by the set-screws and slots *h h'*, the scraper P, adjustably attached to the roll-frame, and the roll R and its frame, as set forth.

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8. The combination, with the main frame A, of the roll-frame B, pivoted to rise and fall below the former, the roll R, the notched lever S, the spiral spring T, extending between the lever and a round of the handles, and the wire-bail stop T', preventing the spring from pulling the lever too far back, as set forth.

333,724. MICRO-AUDIPHONE. FRANK M. BLODGETT, New York, N. Y. Filed Oct. 10, 1885. (No model.)

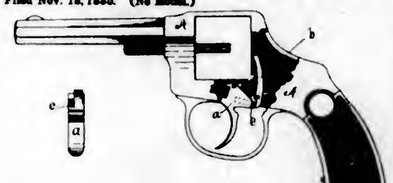


Claim.—1. In a device for assisting the hearing, the combination, with the tube that enters the ear-orifice, of a thin membrane or diaphragm placed at one side of the tube, substantially as described.

2. As a new article of manufacture, the micro-audiphone A, formed of thin material, and shaped to fit the human ear, and formed with the tube *a*, to one side of which is secured the thin diaphragm or membrane *d*, substantially as and for the purpose set forth.

3. The micro-audiphone A, formed with cavities *b b*, and tube *a*, and a chamber, *d'*, in combination with the diaphragm *d* and thimble *e*, formed with orifice *e'*, to expose the diaphragm *d*, substantially as and for the purposes set forth.

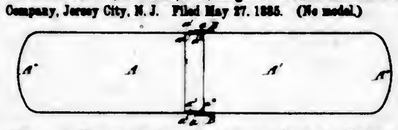
333,725. REVOLVING FIRE-ARM. JAMES BOLAND, Norwich, Conn., assignor to the Hopkins & Allen Manufacturing Company, same place. Filed Nov. 12, 1885. (No model.)



Claim.—1. In an arm of the class referred to, a trigger pivoted within a suitable frame, a cylinder-pawl pivoted to the rear of said trigger and having its lower portion extended below its pivotal connection, as herein described, and a spring held within a recess in the trigger, whose free end engages said lower portion of the pawl, said elements being combined, substantially as and for the purpose specified.

2. In combination with a suitable frame, a trigger, a pawl pivoted to the rear portion of said trigger and having its lower portion extended below its pivotal point and slotted transversely, as described, and a spiral spring concealed within the trigger, capable of engaging the pawl, as described, for the purpose of throwing the longer arm of said pawl forward into engagement with the cylinder-ratchet.

333,726. JOINT FOR CYLINDERS OR CYLINDRICAL VESSELS. WILLIAM H. BROWN, New York, N. Y., assignor to Brown's Seamless Metal Company, Jersey City, N. J. Filed May 27, 1885. (No model.)



Claim.—1. The combination, with a female cylinder or cylindric section having an internal screw-thread and a circular outward indentation behind the screw-thread, of a male cylinder or cylindric section having an external screw-thread at a little distance from its end, whereby it is connected with the female cylinder or cylindric section, and caused to lap across and extend beyond the circular indentation therein, and a solder filling for the circular indentation, whereby the two sections are firmly connected together, substantially as herein described.

2. The combination, with a female cylinder having an internal screw-thread and a circular outward indentation behind the screw-thread, of a male cylinder screwed into the female cylinder and lapping over and extending across the circular indentation therein, the two cylinders being sweated together at their contact-surfaces, and a filling of solder in the circular indentation, substantially as herein described.

3. The combination, with a female cylinder or cylindric section having an internal screw-thread and a circular outward indentation behind the screw-thread, of a male cylinder or cylindric section having an external screw-thread at a little distance from the end, whereby it is connected with the female cylinder or section and caused to lap across and extend beyond the circular indentation therein, a solder filling for the circular indentation, and an external band lapping upon and sweated to the two cylinders or sections at the joint, the solder filling and the external band serving to firmly connect the cylinders or cylindric sections together, substantially as herein described.

333,727. ORNAMENTAL WALL-COVERING. JOHN H. CAMPBELL, New York, N. Y. Filed Sept. 26, 1885. (No model.)



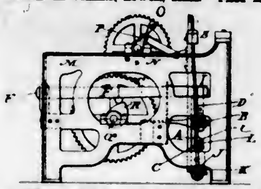
Claim.—A wall-covering provided with artificial flowers attached to said covering, and incandescent electric lamps arranged in said flowers, substantially as set forth.

333,728. CARTRIDGE. HENRY F. CLARK, Poughkeepsie, N. Y. Filed Sept. 3, 1885. (No model.)



Claim.—The cartridge having a patch around the bullet to fit tightly within the case and prevent the lubricating material, whether solid or liquid, reaching the powder, and the end of the case closed in tightly around the bullet to confine such lubricating material in the case and around the tapering portion of the bullet, substantially as specified.

333,729. MEANS FOR OPERATING PICKER-STAFFS IN POWER LOOMS. DAVID M. COLLINS, Lowell, Mass. Filed May 5, 1883. (No model.)



Claim.—1. The combination of the lay, the cam-shaft, the cam secured thereto, the cam-lever, the bell-crank lever pivoted on said lay, means, substantially as described, for connecting said cam-lever and said bell-crank lever, the picker-staff, the plate secured thereto and provided with a slot, and the connecting-rod formed in two overlapping lengths secured to each other where they overlap, the outer length passing through said slot and having a bent outer end, and the outer end of the inner length adapted to strike against said plate in its outward motion and to throw said picker-staff outward, as and for the purpose specified.

2. The combination of the lay, the cam-shaft, the cam secured thereto, the cam-lever, the bell-crank lever pivoted on said lay, means, substantially as described, for connecting said cam-lever and said bell-crank lever, the picker-staff, the plate secured thereto and provided with a slot, the connecting-rod formed in two overlapping lengths, one of said lengths being provided with a slot and the other with a threaded stud, and a nut adapted to be turned upon said stud and to bind said lengths together, as and for the purpose specified.

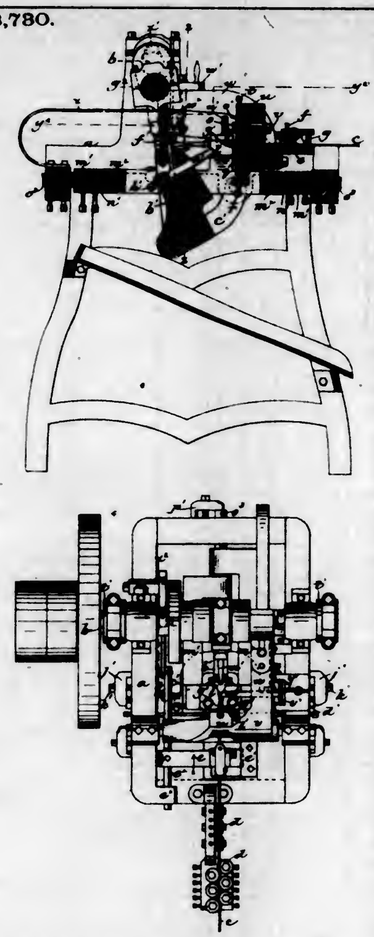
3. The combination of the lay, the cam-shaft, the cam secured thereto, the cam-lever, the bell-crank lever pivoted on said lay, the yoke-rod pivoted to said bell-crank lever and provided with a yoke embracing said cam-lever, the spring secured to said cam-lever and pressing upon said yoke, the picker-staff pivoted at its lower end on said lay, and the rod connecting said picker-staff and bell-crank lever, as and for the purpose specified.

333,730. WIRE-NAIL MACHINE. GEORGE N. COOPER, Haverhill, assignor, by mesne assignments, to the Wire Goods Company, Worcester, Mass. Filed July 20, 1884. Renewed Sept. 10, 1885. (No model.)

Claim.—1. In a wire-nail machine, the feeding mechanism consisting of the cross-head *a*, having the spring-dog *f* and rod e^3, the cam A on the driving-shaft, the bell-crank lever *i*, and the arm *k*, connecting said lever with the slide e^3, and detachable from the latter, as set forth.

2. The pivoted head supporting the die *o'*, and provided with the

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lever *w*, having the adjustable terminal adapted to be moved away from the operating-cam, as set forth.

3. The combination, with the gripping-dies *e e'*, of the header or hammer *a'*, the lever *b'*, supporting the hammer and pivoted to the supporting-frame, the crank or eccentric g^3 on the driving-shaft, and the connecting-rod *f'*, pivoted to said lever and mounted on said eccentric, as set forth.

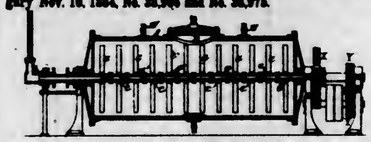
4. The combination of the cutting-dies *g' g'*, the offset bars $m' m^3$, supporting said dies and pivoted to each other and to the frame *a*, as described, and mechanism for oscillating said bars, and thereby causing the cutting-dies to alternately approach and recede from each other, as set forth.

5. The combination of the cutting-dies *g' g'*, the offset bars $m' m^3$, supporting said dies and pivoted to each other and to the frame *a*, as described, the levers $r' r'$ on said bars, the eccentrics $t' t'$ on the driving-shaft, and the eccentric-rods $s' s'$, mounted on said eccentrics and connected with the levers $r' r'$ by ball-and-socket joints, as set forth.

6. The combination of the driving-shaft having the crank or eccentric g^3, the hammer or header *a'*, connected with said crank by devices substantially as described, the cutting-dies *g' g'*, the oscillating bars supporting said dies, and the eccentrics *t' t'* on the driving-shaft connected with said oscillating bars by means substantially as described, and arranged at the opposite side of the center of the driving-shaft from the crank g^3, as and for the purpose specified.

7. The clearer *u'*, supported by a rock-shaft, combined with the spring *y'*, whereby it is normally held over the wire, and the bell-crank lever w^3, and cam *x'*, whereby the clearer is intermittently depressed, as set forth.

333,731. OPERATING ON AND TREATMENT OF VEGETABLE FIBROUS SUBSTANCES. CHARLES CROSS, London, England, assignor to Sidney Horne, Herbert Charles Williams, and Sidney Horne, all of same place. Filed Oct. 31, 1885. (No model.) Patented in England Feb. 24, 1883, No. 1,004; in France Aug. 1, 1883, No. 156,236; in Belgium Aug. 7, 1883, No. 63,263; in Canada Sept. 22, 1883, No. 17,779; in Italy Sept. 30, 1883, XVII, 15,217, and XXXI, 397, and in Austria-Hungary Nov. 10, 1884, No. 32,926 and No. 36,978.



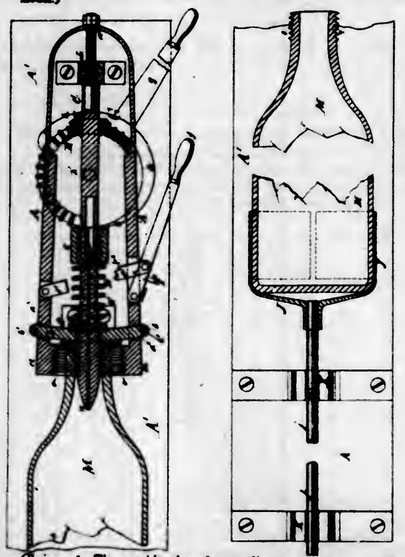
Claim.—Fibrous vegetable materials operated on and treated separately and afterward combined together in the mode or manner substantially as hereinbefore described, for the purpose of producing half-stuff.

333,732. FELLY FOR VEHICLE-WHEELS. EBENEZER DANFORD, Geneva, Ill. Filed Oct. 19, 1883. (No model.)



Claim.—A felly for vehicles, consisting of a filling of wood, paper, or other similar and appropriate material bound in by a thin metal covering united by means of a joint formed by locking together the bent edges of the same, substantially as shown and described.

333,733. TOOL FOR FORMING THREADS, &c., UPON BOTTLES, &c. CHARLES DE GRILLENZOT, New York, N. Y. Filed Apr. 25, 1885. (No model.)



Claim.—1. The combination of expanding molding-jaws *a a*, firmly closable to encircle exteriorly the tubular plastic article to be operated upon, and means, as F, for locking the said jaws, with a core, C, encircled by and movable within the tubular opening in the said article, and means, as G, for expanding the said opening by radial outward pressure of the said core.

2. The combination of the expanding jaws *a a*, firmly closable to encircle exteriorly the tubular or plastic article to be operated upon, and provided with guide-pins b^3 and corresponding sockets to insure perfect register of the mold when the jaws are closed, the yoke B, having lateral arms *b* for guiding the movement of the said jaws, and suitable stops, *b'*, to limit the said movement, and means, as F, for locking the said jaws, with the core C, encircled by and movable within the tubular opening in the said article, and means, as G, for expanding the said opening by radial outward pressure of said core.

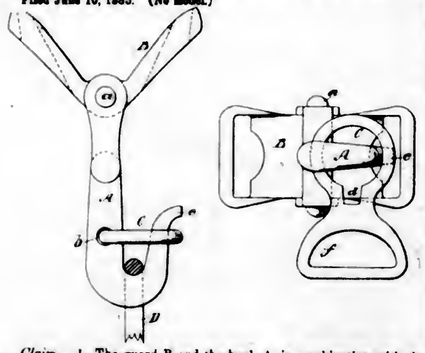
3. The combination of the expanding jaws *a a*, firmly closable to

encircle exteriorly the tubular plastic article to be operated upon, the handle-lever *f*, pivoted to one of the jaw-shanks, and a link, *f'*, pivoted with one end to the said lever *f*, and with the other end to the other jaw-shank for locking the said jaws, the core C, and means, as G, for expanding the opening in the said tubular article by radial pressure of the said core.

4. In combination with the firmly-closable jaws *a a*, and means, as F, for locking the same, substantially as described, the spindle or core C, divided at its forward end by a central slit uniting by inclines c^3 with a central slot, the spring-pressed collar *c*, surrounding the spindle C and provided with the pin *c'* going through the said slot and normally tending to withdraw from the said slit, the pinion I, secured upon the said spindle, and the pivoted cog-segment H, gearing with the said pinion and provided circumferentially with the cam *h*, acting upon the sliding collar *c*, all substantially as and for the purposes hereinbefore set forth.

333,734. BREAST-STRAP HOOK. WALTER D. DRAKE, Santa Fé, Mo.

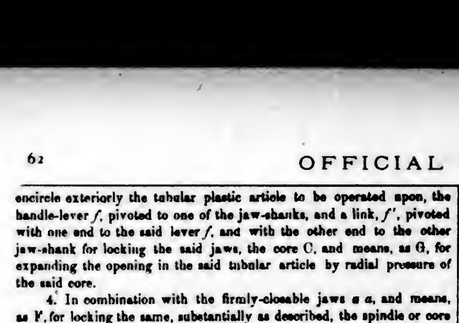
Filed June 10, 1885. (No model.)



Claim.—1. The guard B and the hook A, in combination with the retaining-ring C, formed with the loop *f*, substantially as and for the purposes set forth.

2. The guard B, having the hook A attached to it, in combination with the retaining-ring C, notched at *d* and formed with the loop *f*, the hook A being formed with the outwardly-projecting point *e*, substantially as and for the purposes set forth.

333,735. DIE FOR DRAWING WATCH-SPRINGS. MYRON W. ELLIOTT, Elgin, Ill., assignor to the Elliott & Moseley Watch Spring Company, same place. Filed Sept. 18, 1885. (No model.)



Claim.—1. In a device for finishing watch-mainsprings or other analogous ribbons of metal, a pair of slides or dies faced with precious stones, jewels, or other equivalent stones, hard substances or material capable of receiving a uniform polish and surface, and arranged to compress the sides of said springs, substantially as and for the purposes specified.

2. In a device or apparatus for finishing watch-mainsprings or other analogous ribbons of metal, a pair of slides or dies faced with precious gems, jewels, or other equivalent stones, hard substances, or material capable of receiving a uniform polish and surface, and arranged to compress the edges of said springs, substantially as and for the purposes specified.

3. In a device for finishing watch-mainsprings or other analogous ribbons of metal, a pair of adjustable slides or dies faced with precious gems, jewels, or other equivalent stones, hard substances, or material capable of receiving a uniform polish and surface, and arranged to compress the sides or faces of said springs, substantially as and for the purposes specified.

4. In a device or apparatus for finishing watch-mainsprings or other analogous ribbons of metal, a pair of adjustable slides or dies faced with precious gems, jewels, or other equivalent stones, hard substances, or material capable of receiving a uniform polish and surface, and arranged to compress the edges of said springs, substantially as and for the purposes specified.

5. In an apparatus for finishing watch-mainsprings or other analogous ribbons of metal, a series of adjustable slides or dies faced with precious gems, jewels, or equivalent stones, hard substances, or material capable of receiving a uniform polish and surface, and arranged to compress the sides or faces and edges of said springs at one operation, substantially as described.

6. An apparatus for imparting uniformity of width and thickness to watch-mainsprings or analogous metal strips, consisting of a series of adjustable slides or dies faced with precious stones, jewels, or other equivalent stones, substances, or material capable of receiving a uniform polish and surface, arranged to compress the sides and edges of said spring, and means for drawing said spring between the same, substantially as described.

7. A device or apparatus for finishing watch-mainsprings or analogous metal strips, provided with a series of adjustable jewel-faced slides arranged in a suitable frame to compress said springs from opposite directions, whereby uniformity in width and thickness may be imparted to the latter, substantially in the manner described.

8. A device for finishing mainsprings provided with a pair of adjustable jewel-faced slides or dies arranged in a given plane, and a similar pair of jewel-faced slides or dies arranged in a plane perpendicular thereto, the faces of one pair of said dies having paraboloidal or curved notches therein and those of the other being straight, whereby the edges of the spring may be rounded simultaneously with the parallel flattening of its sides, substantially as described.

9. In a finishing device for watch-mainsprings or analogous metal strips, the combination of a pair of longitudinally-adjustable jewel-faced slides and a laterally-adjustable sub-frame for one of said slides, whereby the faces may be made parallel with each other in use, substantially as and for the purposes specified.

10. In a finishing device for watch-mainsprings or like metal strips, the combination of a pair of longitudinally-adjustable jewel-faced slides, movable in opposite directions in the same plane, and a trunnioned sub-frame for the reception of one of said slides, with means, as set-screws, for the lateral adjustment of its jeweled end in the arc of a circle, substantially as and for the purposes specified.

11. In a device for rendering metal strips parallel and uniform in width and thickness, the combination, with a suitable frame, of the jewel-faced slides G G and C C', having screws, respectively, for adjusting the same longitudinally, substantially as described.

12. In a device for rendering metal strips uniform in width and thickness, the combination of the jeweled-faced slides G G and C C', means, as screws, for adjusting the same longitudinally, and the trunnioned block B, with suitable screws for adjusting the same laterally, substantially as and for the purposes set forth.

13. The combination, with a suitable frame, of the longitudinally-adjustable slide F, having the jewel-faced slides G G, arranged in a groove therein, and jewel-faced slides C C', each of said slides, respectively, having one or more set-screws, whereby the same may be adjusted in the direction of its length, substantially as described.

14. In a device for rendering metal strips uniform in width and thickness, the combination of the slides G G and C C', having their meeting ends provided with dies formed from diamonds or other hard stones or materials, and adjusting-screws for moving said dies longitudinally, one of said screws controlling the dies, which compress the flat sides of the metal strip, having an enlarged head with a graduated scale upon its periphery, whereby the extent of its rotation, with reference to a stationary indicator, may be shown, substantially as set forth.

15. In a device for rendering metal strips uniform in width and thickness, the adjustable jewel-faced slides G G C C', and a suitable reel or reels for drawing the metal strips between the same, substantially as described.

333,736. RAZOR-GUARD. HENRY G. FREE, Springfield, Mass., assignor of one-half to Asa K. Patten, Jr., same place. Filed Nov. 4, 1885. (No model.)



Claim.—1. The combination, in a razor-guard, of the shell A, the adjustable fingers *a*, the stop *b*, the socket *c*, and the cam B, substantially as shown and described.

2. The combination, in a razor-guard, of the shell A, the adjustable fingers *a*, the socket *c*, and the cam B, substantially as shown and described.

3. The combination, in a razor-guard, of the shell A, the adjustable fingers *a*, and the socket *c*, substantially as shown and described.

4. The combination, in a razor-guard, of the shell A, having a protecting-edge, with the socket c and cam B, substantially as described.

5. The combination, in a razor-guard, of the shell A, having a protecting-edge, with the socket c and stop *b*, substantially as described.

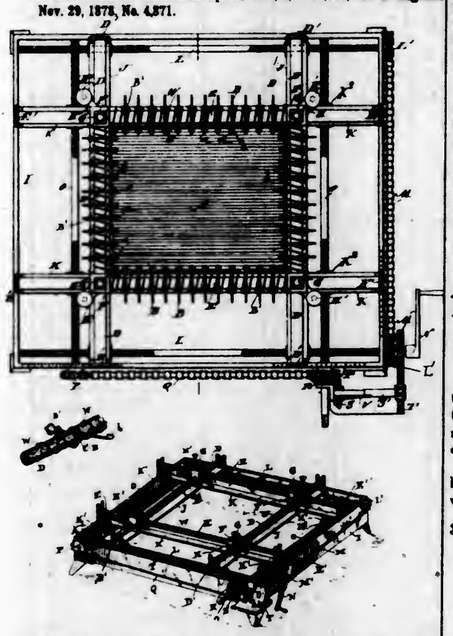
6. The combination, in a razor-guard, of the shell A, having a protecting-edge, with the socket *c*, cam B, and stop *b*, substantially as shown and described.

7. In a razor-guard, protecting-fingers having coiled tips adapted to the purpose herein shown and described.

8. In a razor-guard, protecting-fingers having the offset *e*, adapted to the purpose herein shown and described.

9. The combination, in a razor-guard, of the shell A, with a protecting-edge composed of sections constructed separately from the said shell and attached thereto adjustably, and adapted to the purpose herein shown and described.

333,737. APPARATUS FOR ENLARGING AND REDUCING DRAWINGS. AUGUSTE FOUQUADOIRE, Paris, France. Filed Dec. 4, 1883. (No model.) Patented in France Apr. 3, 1877, No. 117,355, and in England Nov. 29, 1878, No. 4,871.



Claim.—1. In an apparatus for enlarging and reducing drawings, &c., the combination, with two pairs of parallel rods, one pair crossing the other at right angles, of spindles each having right and left hand screws and passing through nuts in the bars, which support said rods for the purpose of drawing the rods of each pair toward or from each other, substantially as herein shown and described.

2. In an apparatus for enlarging and reducing drawings, &c., the combination, with two pairs of parallel rods each extending across the machine, and the rods of one pair crossing those of the other pair, of screw-spindles for moving the rods of each pair toward or from each other, and of means for operating the spindles of both pairs together, substantially as herein shown and described.

3. In an apparatus for enlarging and reducing drawings, &c., the combination, with two pairs of parallel rods, the rods of one pair crossing the rods of the other, of screw-spindles for moving the rods of each pair toward or from each other and of the described means for clamping the crossing rods together at their intersections, substantially as herein shown and described.

4. In an apparatus for enlarging and reducing drawings, &c., the combination, with two pairs of parallel rods, the rods of one pair crossing the rods of the other, of hook-rods held on the said rods by suitable devices and provided with nuts and of means for moving the rods of each pair toward or from each other, substantially as herein shown and described.

5. In an apparatus for enlarging and reducing drawings, &c., the combination, with two pairs of parallel rods, the rods of one pair crossing the rods of the other, of means, substantially as described, for moving the rods of each pair toward or from each other, means, substantially as described, for locking the rods to each other at their intersections, and of screw-standards for supporting the frame formed of the said rods, substantially as herein shown and described.

6. In an apparatus for enlarging and reducing drawings, &c., the combination, with the two pairs of parallel rods D D and E E, of the clevises C on the said rods, the hook-rods B, passed through the clevises, and the nuts B' on the hook-rods B, substantially as herein shown and described.

7. In an apparatus for enlarging and reducing drawings, &c., the combination, with the two pairs of parallel rods D D and E E, of the clevises C on the said rods, the hook-rods B, passed through the clevises, the nuts B' on the hook-rods B, and of the spiral springs W, surrounding the said rods D E, substantially as herein shown and described.

8. In an apparatus for enlarging and reducing drawings, &c., the combination, with the crossing bars J K, extending across the machine, of the screw-spindles L O, and the rods D E, substantially as herein shown and described.

9. In an apparatus for enlarging and reducing drawings, &c., the combination, with the crossing bars J K, extending across the machine, having their ends turned upward and recesses formed in the upturned ends, the screw-spindles L O, the rods D E, resting in the notches or recesses of the bars J K, and of means for holding a rubber sheet, A, to the rods D E, substantially as herein shown and described.

10. In an apparatus for enlarging and reducing drawings, &c., the combination, with the crossing bars J K, extending across the machine, of the rods D E, the screw-spindles L O, the sprocket-wheels L' and P, and the chains M Q, substantially as herein shown and described.

11. In an apparatus for enlarging and reducing drawings, &c., the combination, with the bars J K, of the rods D E, the screw-spindles L O, the sprocket-wheels L' and P, the chains M O, the cog-wheel M, the spindle S', the cog-wheel T, the beveled cog-wheels E S, and the spring V on the spindle S', substantially as herein shown and described.

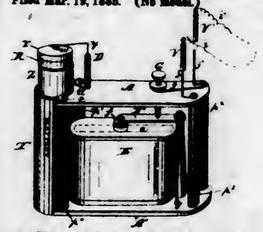
333,738. METALLIC THERMOMETER. WILLIAM B. POWLE, Newton, Mass. Filed Feb. 19, 1884. (No model.)



Claim.—1. In a thermometer of the class described, and in combination, a spiral bimetallic strip, an index-finger, a suitable gearing between the shaft of said finger and the spiral, means for holding the spiral rigidly at one end, and a connection at the other adapted to allow longitudinal expansion or contraction of the spiral, substantially as described.

2. The described combination of the spiral, the means for rigidly holding it at one end, the plate attached to the spiral at the other, the wheel, and the fixed pins, substantially as described.

333,739. ELECTRO-MEDICAL BATTERY. SAMUEL FRANKE, Bourbon, Ind. Filed Mar. 19, 1885. (No model.)



Claim.—1. The combination of the non-conducting plates A A', supporting-posts p' p^2 p^3 p^4, post *q*, spring-arm F, attached to said post, the flat electro-magnet E, the adjusting-screw, and the battery and circuit connections, substantially as described.

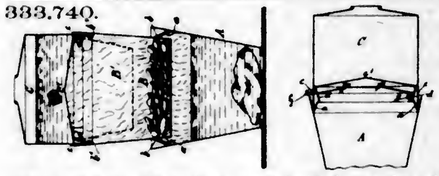
2. The apparatus constructed, as described, with the upwardly-projecting connecting-pins *j j'*, metal tube D, and metal cap *r* of the plug which supports the negative electrode, in combination with the casing having a lid with openings *k k'* and k^2 k^3, for affording access to said parts, as set forth.

333,740. BOILER AND STEAMER. SIMON W. FRANKE, Brooklyn, N. Y. Filed Mar. 18, 1885. (No model.)

Claim.—1. The combination of a boiler having annular water-groove with a condenser having peripheral downwardly-projecting rim fitting said groove, and a projecting rim within the outer rim for returning the condensed vapors to the boiler, substantially as and for the purpose set forth.

2. The combination of the boiler A, having rim *a*, forming a pe-

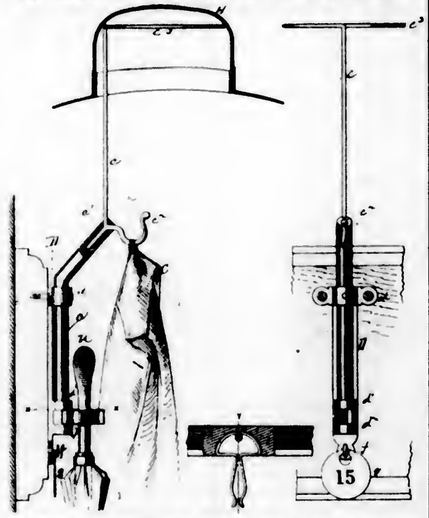
333,740.



ripheral water-groove, the condenser provided with the two rims *c d*, and the intermediate vessel having perforated bottom and exterior rim, *b*, all constructed substantially as and for the purpose set forth.

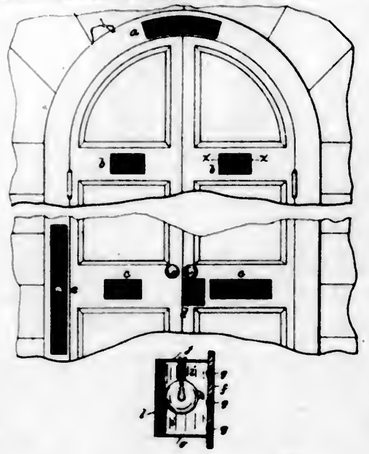
3. In combination with a boiler, the condenser C, provided with the bottom rim, *d*, having the inner flange, F, and above the flange a lateral discharge, *f*, the said flange also having a downward discharge, *g*, substantially as and for the purpose set forth.

333,741. COMBINED CANE, UMBRELLA, AND HAT RACK. AUGUST FRANK, New York, N. Y. Filed Mar. 11, 1884. (No model.)



Claim.—In a combined cane, umbrella, and hat rack, the combination of the plate D, having the eyes *d d' d²*, the shank *a*, and the spring-clip *b*, located between the eyes *d'* and *d²*, and held in place by the shank *a*, substantially as shown and described.

333,742. ELECTRIC ILLUMINATING APPARATUS. ELLA N. GALLARD, New York, N. Y. Filed Apr. 11, 1884. (No model.)



Claim.—1. The combination, with an illuminable name, number, or key-hole plate, of an incandescent electric illuminator and reflector located in an inclosed recess of the door covered by said plate, and suitable wires connecting the illuminator in an electric circuit, substantially as described.

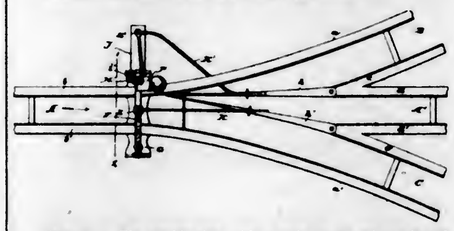
2. The combination of an incandescent electric light and suitable wires for connecting in an electric circuit with a glazed sign or other glazed plate having a flange, *j*, adapted for attaching the light to the glazed plate, to enable the light and the plate to be mounted by attaching the glazed plate to the door or other object on which it is to be mounted, substantially as described.

3. The combination of an incandescent electric light, suitable connecting-wires, and a reflector with a glazed name-plate, said light and reflector being attached to the said glazed plate, to be mounted together with the glazed plate by attaching the latter to the door or other object on which it is to be mounted, substantially as described.

4. The combination, with a door-lock, of a glazed key-hole plate to be illuminated, having a case at the back containing one or more incandescent electric lights, suitable connecting-wires, and a reflector or reflectors mounted therein and supported by said glazed plate suitably to be mounted by the mounting of said glazed plate, substantially as described.

5. A sign, name, number, key-hole, or other plate to be illuminated, glazed with panes *g*, of transparent material, having a conical fluted exterior face, substantially as described.

333,743. THREE-WAY SWITCH FOR STORE-SERVICE. EDWIN L. GILES, Lowell, Mass. Filed June 5, 1885. (No model.)



Claim.—1. The combination, with a main track and two branch tracks, of two switch-tongues pivoted at the junctions of the tracks, and appliances, substantially as described, arranged adjacent to the track, to be operated by graduated balls, and connections between the said appliance and the tongues, substantially as set forth.

2. The combination, with the main and branch tracks, and tongues pivoted at the intersection of the tracks, of a movable arm arranged to be struck by graduated balls, and connections between the arm and the tongues, whereby one or both of the latter are moved, according to the extent of the movement of the arm, substantially as set forth.

3. The combination, with the main and branch tracks, tongues pivoted at the intersection of the tracks, of a weight holding the tongues normally in one position, and appliances, substantially as described, arranged to be operated by graduated carriers to move the tongues, substantially set forth.

4. The combination, with the main and branch tracks and pivoted tongues, of a weight whereby the tongues are held normally in one position, and an arm arranged to be struck by graduated carriers, and connected to move the tongues according to the extent to which the arm is swung, substantially as set forth.

5. The combination of the main and branch tracks, tongues pivoted at the intersection of the tracks, a swinging arm arranged to be struck by graduated carriers, and connections between the arm and each tongue, arranged, substantially as described, to permit a limited movement of the arm after the position of one tongue is changed, and before the movement of the other tongue, for the purpose set forth.

6. The combination, with the main and branch tracks and pivoted tongues, of a shaft carrying an arm arranged to be struck by graduated carriers, and with two arms, each engaging with a lever, and connections between each lever and one of the tongues, substantially as set forth.

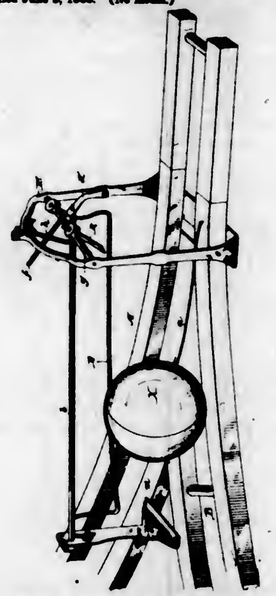
7. The combination, with the main and branch tracks and pivoted switch-tongues, of a rock-shaft provided with three arms, levers I I', each engaging with one of said arms, and levers K K', each engaging with one of the levers I I', and with one of the tongues, substantially as described.

8. The combination, with the main and branch tracks and pivoted tongues, of a weighted rock-shaft provided with three arms, levers I I', having shoulders *s s' s²*, arranged as described, and levers K K', constituting connections between the levers I I' and the tongues, substantially as set forth.

9. The combination, with the switch-tongues and tracks, of switch-adjusting appliances constructed to be operated by carriers, substantially as described, and arranged in proximity to the loose ends of the tongues,

to permit the carriers to pass upon the tongues before leaving the adjusting devices, substantially as set forth.

333,744. SWITCH FOR STORE-SERVICE. EDWIN L. GILES, Lowell, Mass. Filed June 5, 1885. (No model.)



Claim.—1. The combination, with the main and branch tracks of a store-service apparatus, of a rail extending across the branch track where it connects with the main track, and an adjustable deflector arranged to be struck by graduated carriers and to guide the latter over the said rail to the branch track, substantially as set forth.

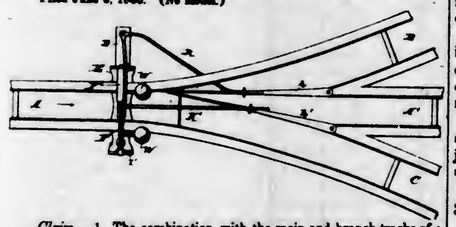
2. The combination, with the main and branch tracks and deflector arranged above the tracks, of a rail extending across the branch track at its junction with the main track, and depressed, substantially as and for the purpose set forth.

3. The combination, with the main and branch tracks, of an adjustable deflector and appliances, substantially as described, for moving the deflector by the action of graduated carriers, for the purpose set forth.

4. The combination of the main and branch tracks, rail *a*, deflector hung to supports above the tracks, and rocking arm arranged to be struck by graduated carriers, and connections between the arm and the deflector, substantially as described.

5. The combination of the main and branch tracks and rail *a*, and a deflector hung in bearings above the tracks, provided with a weighted arm, a rock-shaft hung above the tracks and provided with an arm extending under said weighted arm, and with a pendent arm arranged to be struck by the larger carriers, substantially as described

333,745. THREE-WAY SWITCH. EDWIN L. GILES, Lowell, Mass. Filed June 6, 1885. (No model.)



Claim.—1. The combination, with the main and branch tracks of a store-service apparatus, of switch-tongues and independent devices, substantially as described, arranged to be operated by carriers of different sizes, and connections between each of the devices and one of the tongues, substantially as set forth.

2. The combination, with the tracks and switch-tongues, of independent arms arranged adjacent to the track to be struck by carriers of different sizes, weights connected to maintain the tongues normally in one of the positions in which they can be set, and connections between the arms and the tongues, substantially as described.

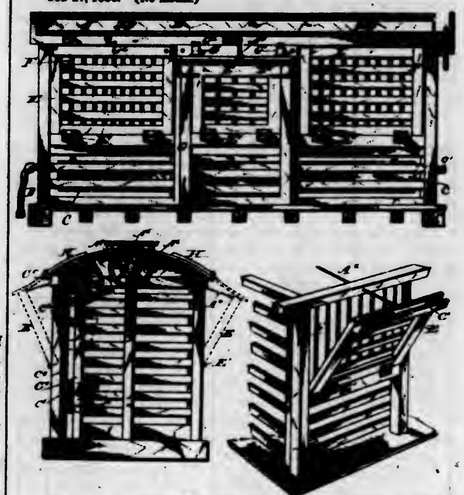
3. The combination of the track, independent switch-tongues, independent shafts carrying arms of different lengths, and connections, substantially as described, between each shaft and one of the tongues.

4. The combination of the main and branch tracks, independent switch-tongues, shaft F, provided with an arm arranged to be struck by the carriers and connected with one of the tongues, and hollow shaft F', also provided with an arm turning on the shaft F and connected to the other tongue, substantially as set forth.

333,746. MEDICAL COMPOUND. RUFUS G. GEE, Redfield, Kans. Filed May 2, 1885. (No specimens.)

Claim.—The herein-described medicine for the treatment of consumption, &c., consisting of blood-root, dandelion, black cohosh, burdock-root, spikenard, comfrey, bitter-sweet, sassafras, water, sweet yeast, loaf sugar, and spirits, about in the quantities given.

333,747. STOCK-CAR. CHARLES L. GOSNELL, Belair, Md., assignor of two-thirds to Aquilla R. and Octavius M. Whitaker, same place. Filed Oct. 27, 1885. (No model.)



Claim.—1. A stock-car provided with a hinged fodder-rack, in combination with a connecting-rod and a crank-shaft mounted in the car, substantially as specified.

2. In a stock-car, the combination of a hinged fodder-rack, a connecting-rod, a crank-shaft mounted in the car, and a spark-protector adapted to be folded over the rack, substantially as specified.

3. In combination with the door of a stock-car, a hinged fodder-rack provided with a horizontal rod, a connecting-rod movably mounted thereon, and a crank-shaft mounted in the car, substantially as specified.

4. In a stock-car, and in combination with the door thereof, a hinged fodder-rack mounted upon the door and provided with a horizontal rod, a connecting-rod movably mounted thereon, an adjacent hinged fodder-rack provided with a door-supporting bar, and a connecting-rod extending from the rack in rear of the bar, and a crank-shaft mounted in the car, substantially as specified.

5. In a stock-car, the combination, with a windlass-shaft mounted in its upper portion, a water-trough extending the whole length of the car and having pipes projecting between posts at the ends of the car, chains connecting the trough with the shaft, and a ratchet and wheel mounted on the shaft, and a holding-pawl, substantially as specified.

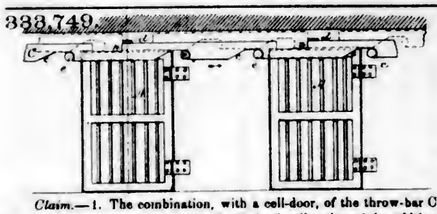
6. The combination of the posts C^4 of the frame-work of the car, arranged at each end thereof, the troughs C, having the pipes $C' C^5$ projecting between the posts, the cushions C^6, chains B', and shaft B^2, substantially as shown and described.

333,748. SELF-HARDENING MANGANESE STEEL. ROBERT HADFIELD, Sheffield, County of York, England. Filed May 7, 1885. (No specimens.) Patented in England Dec. 6, 1884, No. 16,049.

Claim.—As a new article of manufacture, self-hardening steel containing from two and one-half up to but not including seven per cent. of manganese.

333,749. DEVICE FOR FASTENING PRISON-DOORS. LEMUEL H. HAM, Boston, Mass. Filed Aug. 17, 1885. (No model.)

333,749.



Claim.—1. The combination, with a cell-door, of the throw-bar C, adapted to be reciprocated longitudinally in the direction of the width of the door, and having recesses therein adjacent to the door provided with lifting-offsets *c*, which, in the longitudinal reciprocation of the throw-bar, engage with pins *e* in the wall of the cell, and cause the throw-bar to be lifted from or lowered to its place of engagement with the cell-door, substantially as described.

2. In combination with the wall and door of a prison-cell, a throw-bar adapted to be moved longitudinally in front of the cell-door, a notch on the upper side of said throw-bar shorter than the length of reciprocation of the bar, a stop, *d*, firmly attached to the walls of the cell, fixed pins *e* in the walls of the cell, to support the throw-bar from falling, and inclined planes *c*, or their lifting equivalents, to engage said pins *e* and operate substantially as described.

333,750. APPARATUS FOR DISTILLING WOOD. LUDVIG HARDEN and ANDREW SMITH, Wilmington, N. C. Filed Oct. 10, 1885. (No model.)

Claim.—1. A furnace, A', having fire-place provided with arch *a'* and flues a^2 at opposite sides through the inner end of said arch, and a retort or cylinder, B, set in the said furnace above said arch and surrounded by an air-space, *b*, in combination with transverse partitions b' b^2, dividing alternately the lower and the upper half of the said space *b*, for circulating the heat round the said retort, in the manner herein set forth.

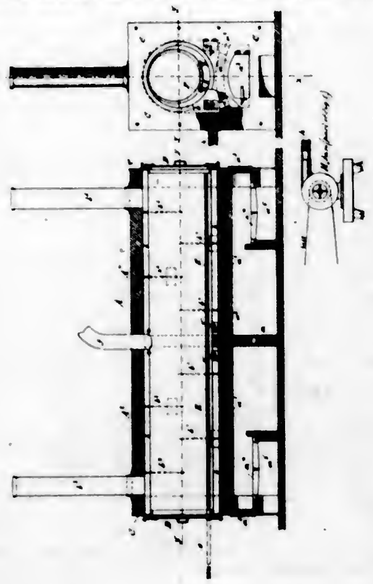
2. The combination of the double furnace A, provided with the arches *a'* and flues a^2, with the retort B and the air-space *b*, surrounding the said retort and divided by alternate transverse partitions b' b^2.

3. The combination of the double furnace A, provided with the arches *a'* and flues a^2, with the retort B and the air-space *b*, surrounding the said retort and divided by alternate transverse partitions b' b^2, and having ventilating end doors, G.

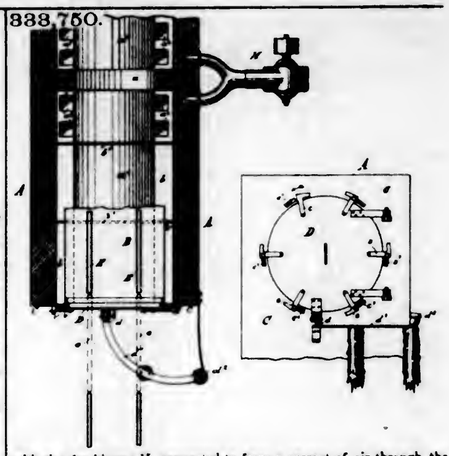
4. The combination of the double furnace A, provided with the arches *a'* and flues a^2, with the retort B, having end doors, D, provided with latches *c*, and the air-space *b*, surrounding the said retort and divided by alternate transverse partitions b' b^2, and having ventilating end doors, G.

5. The combination, with a retort-furnace, A B, having opening *g* leading to its flues, of a fan or blower, H, connected to said openings to force a current of air through said flues for the rapid cooling of the retort.

6. The combination of the retort double furnace A, having around its retort air spaces or flues *b*, provided with ventilating end doors, G,

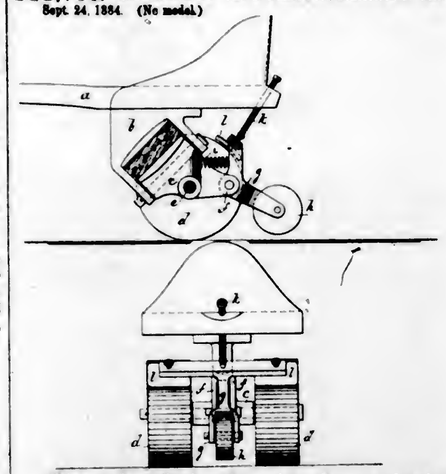


333,750.



with the fan-blower H, connected to force a current of air through the said flues at opposite sides of the partition *a*, dividing the said furnace.

333,751. ROLLER-SKATE. JAS. B. HARRIS, Jr., Geneseo, N. Y. Filed Sept. 24, 1884. (No model.)



Claim.—1. In a roller-skate, the crank or elbow arm, pivoted at its angle to the rear axle-box, the lower end of said arm carrying a roller or stop, and the upper end of said lever carrying a brake shoe or shoes, said roller being held elevated from the floor or surface simultaneously with the holding of the brake-shoe out of contact with or off the skate roller or rollers, substantially as and for the purpose set forth.

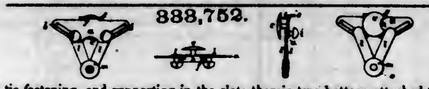
2. In a roller-skate, the crank or elbow arm, pivoted at its angle to the rear axle-box, the lower end of said arm carrying a roller or stop, and the upper end of said lever carrying a brake shoe or shoes, in combination with a spring holding the brake shoe or shoes off the rear skate-roller, and the screw tapped in the heel end of the foot-piece and holding the roller of the elbow or crank arm elevated from the floor or surface as against the action of said spring, substantially as and for the purpose set forth.

3. In a roller-skate, the crank or elbow arm having at its lower end a roller or stop and at its upper end a cross-bar provided with brake-shoes, in combination with the bifurcated rear axle-bracket, between lugs or arms of which bracket said elbow or crank arm is pivoted at its angle, the spring holding the crank or elbow arm off the rear skate-rollers, and the screw tapped in the heel end of the foot-piece and holding the roller of said crank or elbow arm elevated from the floor or surface as against the action of said spring, substantially as described.

333,752. COLLAR-BUTTON. CARL G. HARSTROM, Peekskill, N. Y. Filed May 28, 1885. (No model.)

Claim.—1. An elastic collar-fastening consisting of a slotted plate having a button for insertion in a shirt-collar band, a hook for a neck-

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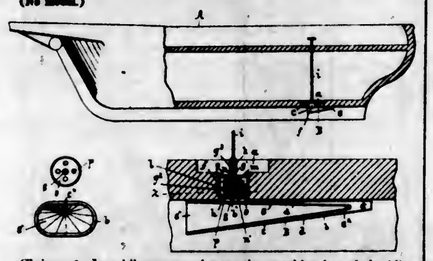
tie-fastening, and supporting in the slots therein two buttons attached to spring-actuated arms, the whole combined and operating substantially as described.

2. In an elastic collar-fastening, arms *l l*, provided with buttons, *i i*, combined with slotted plate *a* and button *c*, substantially as shown.

3. In an elastic collar-fastening, arms *l l*, carrying buttons *i i*, combined with plate *a*, provided with button *c* and hook *e*.

4. In an elastic collar-fastening, plate *a*, arms *l l*, carrying buttons *i i*, and spring A, combined substantially as described.

333,753. BILGE-WATER EJECTOR. GEORGE HAYDE, Baltimore, Md., assignor to William L. Deming, Salem, Ohio. Filed Mar. 30, 1885. (No model.)

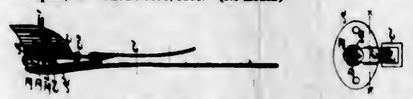


Claim.—1. In a bilge-water ejector, the combination of the bilge-well *a*, the ejector B, the pipe or neck *f*, connecting the two, and the check-valve *g*, located in the neck or recess *f* that connects the ejector with the bilge-well, arranged to be automatically closed by the pressure of the water from the outside, whereby when the vessel is not under way the water is prevented from passing into the same through the neck *f*, as herein specified.

2. In a bilge-water ejector, the combination of the ejector B, the neck *f*, communicating with the bilge-well and connected to the ejector, the check-valve *g*, arranged to be closed by the inward pressure of the water, and the cut-off valve A, arranged to be operated from above deck by turning the stem in case the check-valve *g* should become inoperative, as set forth.

3. The combination of the ejector B and the check-valve *g* located in the neck *f*, and provided with the float *l* in the neck *f* at the bottom of the vessel, whereby the valve is closed and held shut by the inward pressure of the water.

333,754. NECK-WEAR RETAINER. ROBERT B. HELLIWELL, Philadelphia, Pa. Filed Nov. 5, 1885. (No model.)



Claim.—1. A necktie-retainer consisting of a plate having a fixed jaw and a movable jaw, said jaws being connected by springs, and a button having a groove or recess in its shank, substantially as described.

2. A necktie-retainer having a slotted plate with a fixed jaw and a movable one, the movable jaw fitted in the slot of the plate, a spring connecting said jaws and adapted to force them together, a handle attached to said movable jaw, and a button, the shank thereof having a groove or recess, substantially as and for the purpose set forth.

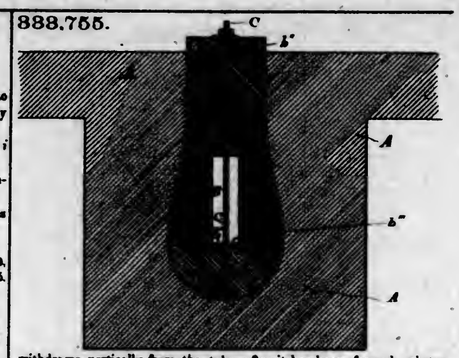
3. The necktie-retainer consisting of the plate A, having a vertical slot, A', the stationary jaw B, connected to said plate, the movable jaw C, fitted in said slot A', springs D, connecting said jaws B and C and normally adapted to hold the same in contact, and the button E, having head E' and shank E^2, with a groove or recess, E^3, substantially as described.

333,755. METHOD OF MOLDING CONCRETE TUBES FOR CABLE RAILWAYS. JOHN D. ISAACS, Oakland, Cal. Filed Oct. 30, 1884. Renewed Aug. 21, 1885. (No model.)

Claim.—1. The method herein described of forming concrete tubes for cable railways, consisting of building the tube around a former, made of separate wooden pieces bound together, so as to form a solid mold, and which are arranged so as to be separated and withdrawn piece by piece out from the molded tube vertically, substantially as and for the purpose herein described.

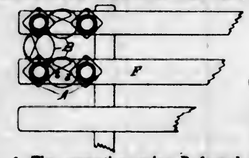
2. A former for molding concrete tubes for cable railways, consisting of several separate wooden blocks matched and bolted together to form a solid mold, the blocks being arranged so as to be separated and

333,755.



withdrawn vertically from the tube after it has been formed, substantially as and for the purpose herein described.

333,756. SPRING-CONNECTION FOR BED-SPRINGS AND SPRING-BEDS. HIRAM S. JOHNSON, Portland, Me. Filed Oct. 5, 1885. (No model.)



Claim.—1. The connection-spring B, formed of a single wire bent in the form of a circle, the end of said wire overlapping upon a part of the circumference of said circle, then turning inward toward the center of the circle, crossing each other substantially at the center of the circle, passing the center of the circle, and terminating in hooks *b b*, substantially as described.

2. The combination of the bed-slat frame F, spiral springs A, having rectangular flat tops, and circular connection-springs B, having the hooks *b b*, substantially as described.

333,757. SUSPENDING AND DETACHING DEVICE. MARTIN KAUTH, Buffalo, N. Y. Filed Nov. 30, 1885. (No model.)



Claim.—1. A suspending and detaching device consisting of the two sets of prongs *c*, c', c^3, and c^3, each provided at its end with the fork c^4, and having the spaces *d d* and d' d' between the prongs, the whole mounted upon a pole or staff, substantially as shown and described.

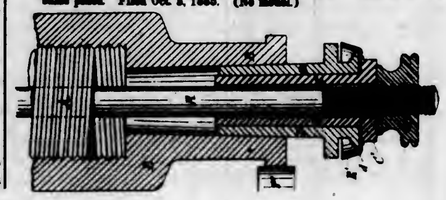
2. A suspending and detaching device having its two sets of forked prongs *c c'* and c^3 c^3 arranged in an inclined plane, substantially as and for the purpose stated.

3. A suspending and detaching device consisting of the two sets of prongs *c c'* and c^3 c^3, each provided at its end with the fork c^4, and the arm *f*, secured to the base *a*, and having at its outer end an auxiliary set of prongs, substantially as and for the purpose stated.

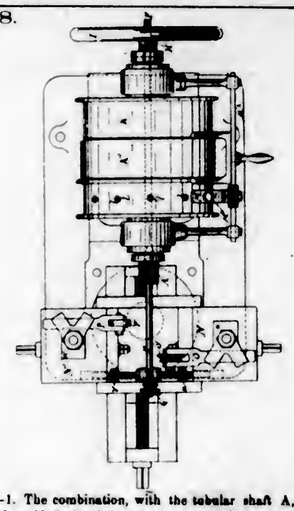
4. A suspending and detaching device consisting of the arm *f*, secured at or near the upper end of a pole or staff, and provided at its outer end with two sets of forked prongs, substantially as and for the purpose stated.

5. A suspending and detaching device consisting of the two sets of forked prongs *c c'* and c^3 c^3, each prongs being covered with leather or other suitable material, substantially as and for the purpose stated.

333,758. MACHINE FOR MAKING WATCH-CASE RINGS. EDUARD KELLER, Bienne, Switzerland, assignor to Keller & Gruring-Dutoit, same place. Filed Oct. 5, 1885. (No model.)



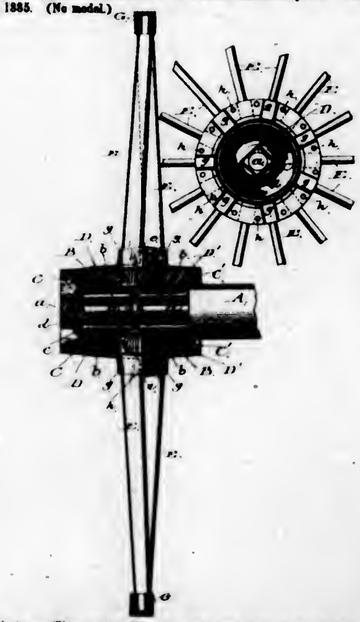
333,758.



Claim.—1. The combination, with the tubular shaft A, holder B, and supports for said shaft, of the tubular support C, having a flange at its outer end, the tubular-divided form *d* surrounding said support C, the rod F passing through the support C, and the nuts G and H at the ends of said rod F, substantially as and for the purposes specified.

2. The combination, with the tubular shaft A, holder B, supports for said shaft, tubular support C, divided form *d*, rod F, and nuts G and H, of the drum L, fixed to the shaft A and having holes in its periphery, the shaft M^3, and arm M, having a pin, M^4, at its outer end, to enter one of the holes in the drum L, substantially as and for the purposes specified.

333,759. VEHICLE-WHEEL. FREDERICK L. KIRKBRIDE, Wyandotte, Kans., assignor of one-half to W. C. Duvall, Kansas City, Mo. Filed Feb. 2, 1885. (No model.)



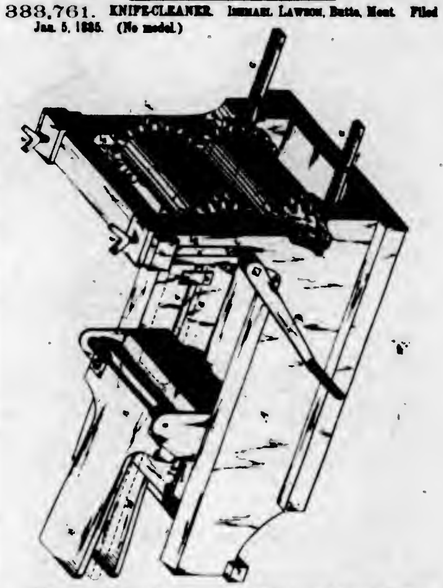
Claim.—The combination of a hub and axle, a spindle having a collar at or near its center, a double series of loosely-mounted rollers located upon each side of the collar and between the securing and main portion of the axle, and adapted to travel around an inclosing-shell and change their position, as herein described.

333,760. DESK. CHRIS LARSON, Chicago, Ill., assignor to Larson Torgerson & Co., same place. Filed Aug. 7, 1885. (No model.)



Claim.—In a desk, the bottom having the curved groove B and the two concentric grooves C D, connecting with the same on the outer side thereof, in combination with pigeon-hole case E, provided with studs fitting into said grooves, substantially as set forth.

333,761. KNIFE-CLEANER. ISHMAEL LAWSON, Butte, Mont. Filed Jan. 5, 1885. (No model.)



Claim.—1. In a knife-cleaner, the combination of oppositely-rotating parallel rollers upon which the cleaning composition or substance is placed, and adapted to receive and rub the knife-blade between them, a traveling carriage moving to and from the rollers, and operated thereby in a direction opposite to their direction of revolution, and a clamp for the knife-handle to feed the blade between the rollers, said clamp being hinged upon the carriage, whereby it is adapted to be adjusted through a vertical arc to guide the blade to the rollers, substantially as herein described.

2. In a knife-cleaner, the knife-handle clamp I, consisting of a bed, *m*, having a handle, *m'*, and the pivoted or hinged top or cam *n*, adapted to bear down upon the bed, and having a handle, *n'*, by which and handle *m'* the compression is effected, substantially as described.

3. In a knife-cleaner, the knife-handle clamp I, consisting of the cushioned bed *m*, having handle *m'*, and the pivoted cushioned top or cam *n*, having handle *n'*, and adapted to bear down upon the cushioned bed, substantially as described.

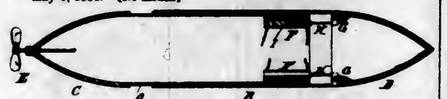
4. In a knife-cleaner, the combination of the oppositely-rotating parallel rollers C C', the reciprocating carriage H, moving oppositely to the direction of revolution of the rollers, and the adjustable handle-clamp I, consisting of the bed *m*, hinged to the carriage, and the top or cam *n*, hinged to the bed, all arranged to operate substantially as herein described.

5. In a knife-cleaner, the combination of the parallel rollers C C', having gears F, meshing directly together, the carriage H, the hinged handle-clamp I on the carriage, and the means for reciprocating said carriage in a direction opposite to the direction of revolution of the rollers, consisting of the racks G of the carriage, and pinions *g* on the lower roller, C', substantially as herein described.

6. The frame A, having standards B, and the parallel rollers C C', mounted therein and geared directly together, in combination with the carriage H, the hinged or adjustable handle-clamp I on the carriage, the racks G, to which the carriage is secured, and mounted in the sides of the frame, and the pinions *g* on the lower roller meshing with the racks, substantially as herein described.

7. A machine for cleaning knives, consisting of the frame A, having standards B, the vertically-adjustable upper roller, C, having shaft *c* and crank D, the fixed lower roller, C', the gears F, by which the rollers are connected, and the pinions *g* on the lower roller, the carriage H, the knife-clamp I, consisting of the handled bed *m*, hinged to the carriage, and the handled top or cam *n*, hinged to the bed, and the racks G, on which the carriage is mounted, and with which the pinions *g* engage, all arranged and operating substantially as herein described.

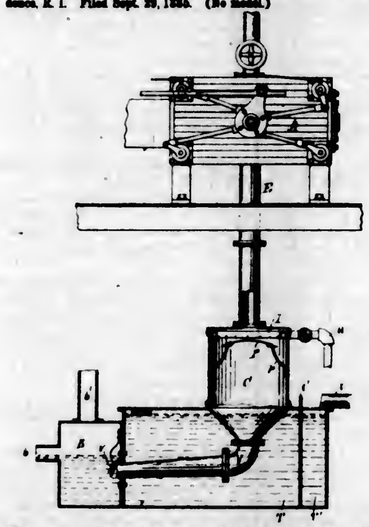
333,762. TORPEDO-BOAT. C. SMITH LEE, New York, N. Y. Filed May 9, 1885. (No model.)



Claim.—1. A torpedo-boat formed of two parts, each part having a portion the sides of which are parallel, the parallel sides of one part of the boat being arranged to slide over the parallel sides of the other part of the boat, to admit of diminishing or increasing its length and of condensing or rarefying the air contained by the boat, substantially as and for the purpose herein specified.

2. The combination, with a boat formed of two parts, A B, capable of sliding one over the other, of hydraulic cylinders F, attached to one part of the boat, and their pistons connected with the other part of the boat, and means for furnishing water under pressure to the hydraulic cylinders, substantially as herein specified.

333,768. CONDENSER FOR STEAM-ENGINES. ROBERT LEES, Providence, R. I. Filed Sept. 29, 1885. (No model.)



Claim.—1. A steam-condenser consisting of a condensing-chamber having a deflector, above and around which is disposed the perforated pipe-coil of an injector, said deflector and injector both located near the exhaust-port, and the base of said condensing-chamber connecting with a valved eduction-pipe passing through the cold-water tank and into the hot-water tank, all for the purpose described.

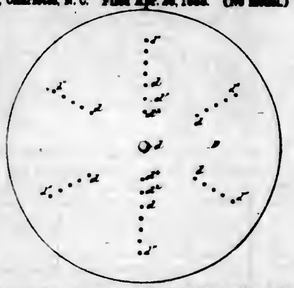
2. The combination, with the exhaust-pipe E, of the condensing-chamber C, having the deflector P, the injector I, and the eduction-pipe V, provided with the valve *v*, and leading from the chamber C, through the tank T, into the tank B, for the purpose described.

333,764. CAN-OPENER. CHARLES F. LEDYARD, Philadelphia, Pa., assignor to the American Manufacturing Company, same place. Filed Oct. 24, 1885. (No model.)



Claim.—A can-opener consisting of the handle A, stock B, bearing-piece D, guide E, and curved knife C, said handle, stock, piece, and guide being formed integral, of cast metal, the knife having its point projecting beyond and in front of the guide and bearing-piece, the latter being above the cutting-edge of the blade, and the guide at the outer end thereof, said bearing-piece being of arch form, substantially as and for the purpose set forth.

333,765. MACHINE FOR MOLDING PULLEYS. WALTER J. F. LEDBELL, Charlotte, N. C. Filed Apr. 20, 1885. (No model.)



Claim.—1. In an apparatus for molding pulleys, the bed-plate or templet provided with the series of holes arranged equidistant from each other in circles, and with means for holding the half-pulley pattern in place thereon, substantially as and for the purpose described.

2. In an apparatus for molding pulleys, the combination of the bed-plate having the series of holes arranged in concentric circles for the reception of the parts of flasks of different diameters, the two parts of the flask and the half-pulley pattern, each provided with pins engaging the bed-plate, and the latter adapted to serve as a templet for locating said pins on the parts of the flasks, and half-pulley patterns of different diameters, all substantially as described.

333,766. WHEEL-CULTIVATOR. ANDREW LEIDEKER, Moline, Ill., assignor to the Moline Plow Company, same place. Filed Sept. 5, 1885. (No model.)



Claim.—1. In a wheel-cultivator, the combination, substantially as described, of the following elements: an arched frame, wheel-carrying axles jointed to the frame to turn horizontally, locking devices to secure the axles rigidly to the frame, a tongue or draft-pole pivoted to the frame to swing horizontally, and means, substantially as described, for locking the tongue rigidly to the frame.

2. In a wheeled cultivator, the combination of the arched frame or axle having the shovel-beams jointed thereto, the draft-pole or tongue pivoted to said axle, and the curved bar *w*, connecting the tongue and axle, whereby it is prevented from falling forward or backward, but permitted to swivel freely beneath the tongue.

3. The wheeled main frame having shovel-beams jointed thereto, in combination with the draft-pole pivoted to said frame, the bar *w*, attached to the frame, and means, substantially as described, for locking said bar to the tongue.

4. The main frame, the wheels swiveled thereto to swing horizontally, and the wheeled guiding-arms *f*, in combination with the rock-shaft having the tubular beams attached, and the draft-rods *g*, passing through the guide-arms to the rock-shaft, as described, whereby the draft-rods are caused to serve the double purpose of directing the wheels and of influencing the vertical movement of the beams.

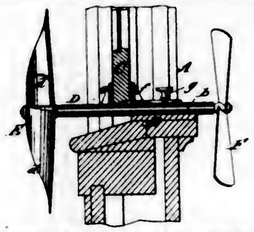
5. The combination of the frame, the swiveling axle *c*, the arm *f*, rock-shaft *k*, draft-rod *g*, and plate *i*, the latter connected to the rock-

shaft by a vertical pivot, as described, that it may follow the direction of the draft-rod.

6. In combination with the arched axle, the open rectangular frame *a*, bolted to its ends, and each provided with a vertical socket, *b*, to receive the axle, and with two bearings to sustain the ends of the rock-shaft *k*.

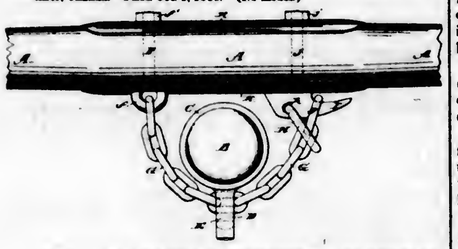
7. In combination with the wheeled frame and the tongue pivoted thereto, the connecting-bar *w*, attached to the frame, and having its ends extended rearward to form supports for the shovel-beams.

333,767. **FANNING DEVICE FOR RAILWAY-CARS.** ROBERT W. MACGOWAN, New York, N. Y. Filed Oct. 18, 1884. (No model.)



Claim.—In railway-cars, the independent automatic and removable fanning device consisting of the box D, for receiving and holding the shaft *b*, the driving wind-wheel E and inner fan, F, and the adjustable clamps *e f*, secured to the box D, for receiving and clamping the lower edge of the window-sash, the whole resting upon and supported by the window-sill, substantially as set forth.

333,768. **NECK-YOKE COUPLING.** SAMUEL MANSER, Craigvale, Ontario, Canada. Filed Oct. 2, 1885. (No model.)



Claim.—1. In a neck-yoke and tongue couplings, the combination, with the neck-yoke A, of the chain G, held at one end to the yoke, and a hook, I, secured to the yoke and provided with the snatch-ring H, substantially as herein set forth.

2. A neck-yoke and tongue coupling comprising a chain, G, held at one end to the neck-yoke, a hook, as at I, fixed to the yoke and provided with a snatch-ring, H, through which the chain is adapted to be passed prior to hooking it to the hook I, and a collar, C, held to the tongue, and provided with an eye, D, to receive the bight of the chain G, substantially as herein set forth.

3. A neck-yoke and tongue coupling comprising a chain, G, held at one end to the neck-yoke, a hook, as at I, held to the yoke, and provided with a snatch-ring, H, and a collar, C, held to the tongue so as to be adjusted along it, and provided with an eye, D, to receive the bight of the chain G, substantially as herein set forth.

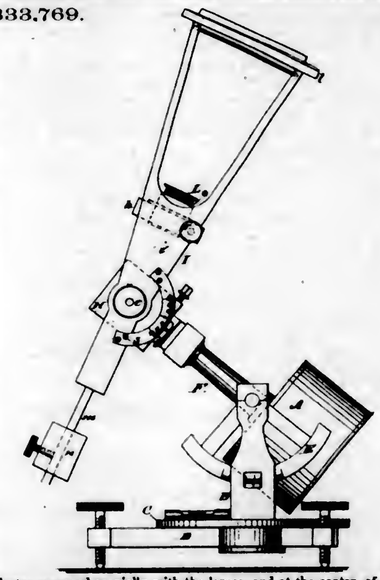
4. In a neck-yoke and tongue coupling, the combination, with the yoke A, of the eyebolt F, the chain G, connected therewith, the bolt J, having a hook-head, I, and a snatch-ring, H, and the collar C, fitted adjustably on the tongue B, and provided with an eye, D, through which the bight of chain G is passed, and said chain then being passed through the ring H and hooked onto hook I, substantially as herein set forth.

5. In neck-yoke and tongue couplings, the collar C, fitted adjustably to the tongue, and provided with the eye D and the lug E, substantially as herein set forth.

333,769. **HELIOSTAT.** ALFRED M. MAYER, South Orange, N. J. Filed Sept. 11, 1885. (No model.)

Claim.—1. In a heliostat, the combination of a converging lens, a lens for rendering the convergent rays parallel, convergent, or divergent, a reflector placed at the intersection of the axis of the lenses and the polar axis, or the axis of the clock-work rotating the frame, an equatorial mounting supporting the lenses and reflector, and driving mechanism for maintaining the direction of the lenses, substantially as herein specified.

2. In a heliostat, a converging lens, a lens for rendering the convergent rays either parallel, convergent, or divergent, an adjustable reflector arranged coaxially with the lenses, and at the center of rotation of the frame carrying the large converging lens, and means for supporting and moving the lenses, reflector, and their support, substantially as herein specified.



3. The combination, in a heliostat, of one or more lenses for concentrating solar rays, a reflector consisting of a right-angled prism, or its equivalent, and means for maintaining the direction of the axis of the concentrating lens or lenses, substantially as specified.

4. The combination, in a heliostat, of a system of lenses and a frame for supporting the same, a prism-case provided with trunnions for receiving the lens-carrying frame, an adjustable reflecting-prism located within the case, and a driving-clock adapted to carry the prism-case and lens-supporting frame, substantially as herein specified.

333,770. **TRACK-LAYING MACHINE.** ABRAHAM L. MCFARLAND, Palatka, Fla. Filed July 6, 1885. (No model.)

Claim.—1. The combination, with the machine and transportation cars of a track-laying train, of the portable tramways provided with level-footed trestles and adapted to be set along the flat floor of the cars as fast as they are unloaded, and thus gradually extened from the front to the rear end of the train.

2. The combination, with the machine-car provided with an engine and an open-link endless-chain carrier extending from the rear end to the point in advance of said car, and one or more transportation-cars, constituting a track-laying train, of portable tramways each provided with trestles and a sufficient length of chain, whereby said tramway may, as required, be added on and the endless chain extended by inserting additional lengths of chain, as set forth.

3. The portable tramway provided with rollers 24, and trestles provided with spurs in the feet, guide-rollers, and chains, substantially as set forth.

4. The tramway for track-laying machines, provided with three sets of rollers, the central set elevated above the side, as set forth.

5. The combination of the machine-car 10, provided with the forwardly-extending crane 16, the tramway-carrier 19, suspended therefrom, the carrier 20 and 32, mounted permanently on said car, and the endless-chain driver 23, substantially as set forth.

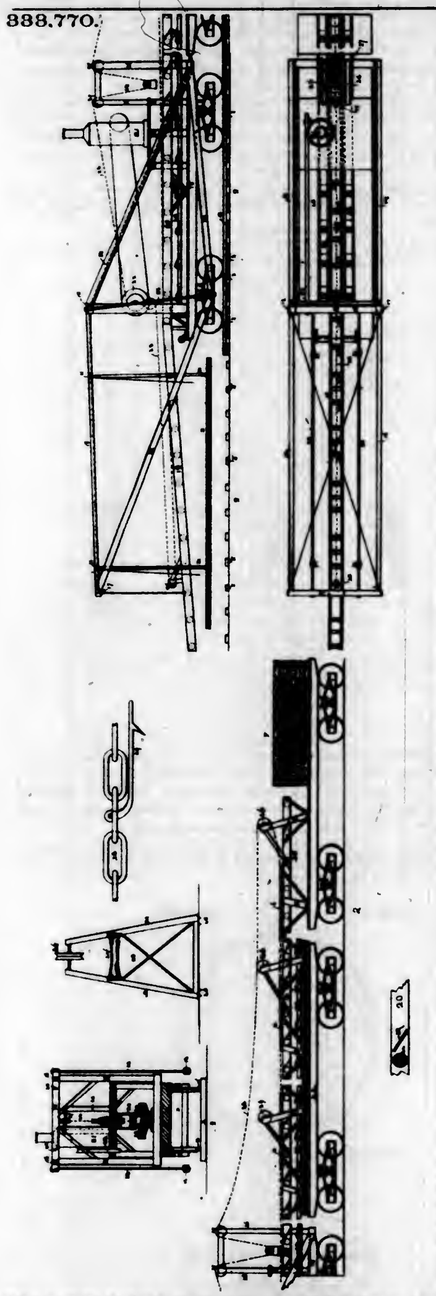
6. The combination, with the machine-car 10, provided with the crane 16 and tramways 32, of the truss-rods on either side of the tramway, and traveling tackles running thereon, whereby the rails are seized and supported after leaving the tramway and independently delivered upon the ties at both sides of the way, as set forth.

7. The machine-car 10, provided with an engine, an endless-chain carrier, a gallows-frame, and stock take-up 28.

8. The combination, with a track-laying machine-car and a tramway mounted thereon, of an overhead endless-carrier chain provided with hooks or dogs, whereby the ties may be positively engaged and forcibly pulled along said tramway.

9. The combination, with the several cars constituting a track-laying train, of tramways, each provided with tramway-rollers, and inclined

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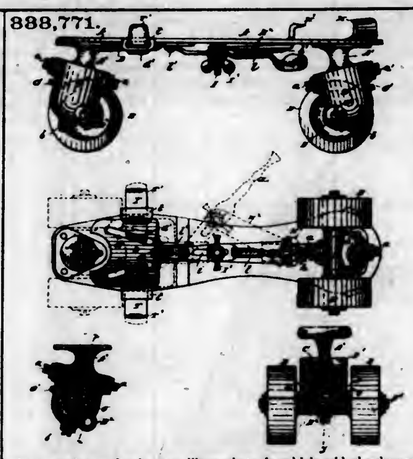


chutes or aprons in advance of two or more rollers adjacent to the ends of the tramway, to guide the ties upon the rollers, as set forth.

333,771. **ROLLER-SKATE.** REGALD F. MCPHELY, Erie, Pa., assignor of one-half to the Jarecki Manufacturing Company, (Limited,) same place. Filed Nov. 28, 1884. (No model.)

Claim.—1. In a roller-skate, the combination, substantially as set forth, of a foot-plate, shanks or studs extending from said foot-plate, running-gear frames having cup-like sockets, in which said shanks are pivoted, so as to allow of lateral pivotal movement, springs contained in said cups to resist said lateral movement, and adjusting-screws extending from said cups to regulate the tension of said springs.

333,771.



2. In a roller-skate, the combination, substantially as set forth, of a foot-plate, shanks extending from said foot-plate, running-gear frames having cup-like sockets, in which said shanks are pivoted, so as to allow of lateral pivotal movement, springs contained in said cup to resist said lateral movement, a lubricant-chamber within said cup, and passages extending from said space to the axle-journals to convey said lubricant to said journals.

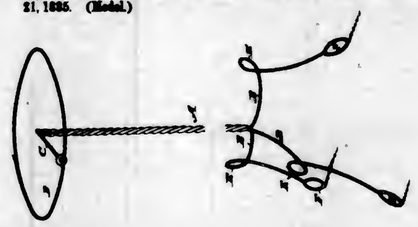
3. In a roller-skate, the combination, substantially as set forth, of a foot-plate, shanks extending from said foot-plate, running-gear frames having cup-like sockets, in which said shanks are pivoted, so as to allow of lateral pivotal movement, springs contained in said cups to resist said lateral movement, a lubricant-chamber within said cup, passages from said lubricant-chamber to the axle-journals, and plungers fitted in said passages, which are moved by the same action which compresses said spring.

4. In a roller-skate, the combination, substantially as set forth, of the foot-plate A, having heel-clamp jaws H H and toe-clamp guide-loops *t t* thereon, and the slot *h*, the lever L, bar H^3, with jaw H', the cam-plate D, with slots *d d*, the pivots I and *I'*, and the clamp-bar T T, having lugs *d' d'* and jaws T' T'.

5. In a skate-clamping device, the combination, substantially as set forth, of the bars T T, with lugs *d' d'*, and the jaws T' T', the cam-plate D, with cam-slots *d d*, which receive said lugs *d' d'*, the lever L, and the jaw-bar H^3, said lever being pivoted to said cam-plate and jaw-bar by the pivots *I'* and I.

6. In a skate-clamping device constructed substantially as herein shown, the combination, with the lever L and jaw-bar H^3, of the rib *h'* and the lips *l l*, arranged substantially as and for the purposes set forth.

333,772. **HAT-STAND.** JOSEPH HERRMAN, Dalphon, Ohio. Filed Apr 21, 1885. (Model.)



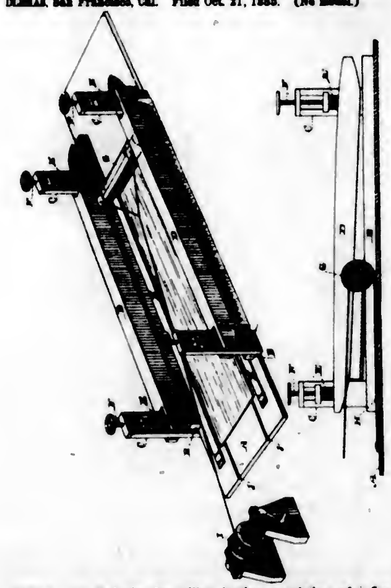
Claim.—1. A hat-stand formed of wires twisted together to form a post having an arm on its upper end, on the end of which arm a ring is formed which surrounds the top of the post, substantially as herein shown and described.

2. A hat-stand consisting of a post provided at its upper end with a ring and at its lower end with legs having spring-loops, the whole being formed of wire, substantially as herein shown and described.

3. A hat-stand formed of the wires B, twisted together to form the post A, at the upper end of which an arm, C, is formed, which carries a

ring, D, surrounding the top of the post, and at the lower end of which post three or more wire legs, each having a spring-loop, E, are formed, substantially as herein shown and described.

333,773. APPARATUS FOR ROLLING LEATHER. GEORGE MIDDLEMAS, San Francisco, Cal. Filed Oct. 21, 1885. (No model.)

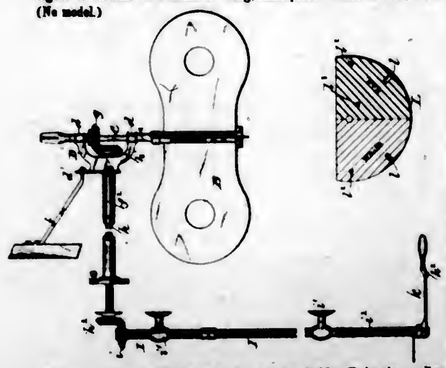


Claim.—1. A device for rolling leather, consisting of a floor or table upon which the material is placed, a roller traversing this table between guides, and spring or weight actuated bars pressing upon the trunnions or ends of the roller, substantially as herein described.

2. An apparatus for rolling leather or other material, consisting of a floor or table upon which the sheets are placed, a roller traversing this table between guides, and bands or belts by which it is caused to advance, in combination with bars pressing upon the ends or trunnions of the roller, and springs by which the pressure of these bars may be regulated, substantially as herein described.

3. A floor or table having guides upon either side, and channels for the reception of tying-cords, in combination with a roller traversing the table between the guides, provided with trunnions extending outward between the guides, spring or weight actuated bars resting upon the ends of these trunnions, and belts having one end fixed to the table and the other end passing over the roller and connected with the drum, by which they are drawn forward so as to cause the roller to advance and roll up the material, substantially as herein described.

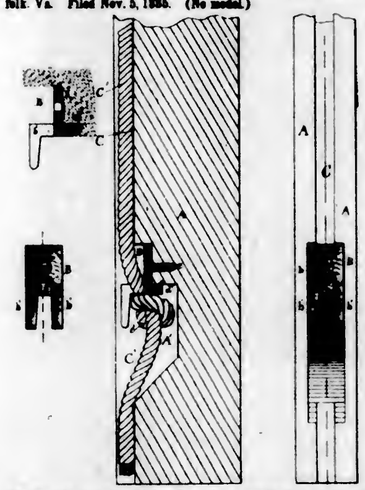
333,774. TRAIN-SIGNAL. COLLINS F. NEWTON, Omaha, Nebr., assignor of one-half to William S. Wing, same place. Filed Oct. 10, 1885. (No model.)



Claim.—1. The combination of the tubular holder E, having collar e at its inner end and at its outer end the cast support D, provided with a flange, d', having divergent braces f and f² secured thereto, and bearings d d, vertically one above the other, with the vertical shaft C, carrying the four-wing signal B, and the shaft A, passing through the tubular holder, the shafts C and A being connected by bevel-gear, substantially as and for the purpose described.

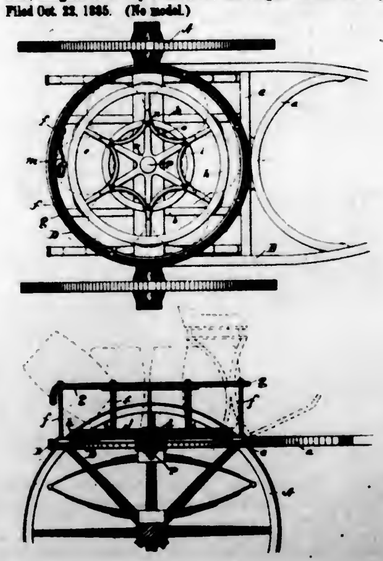
2. The combination of the tubular holder E, having collar e at its inner end and at its outer end the cast support D, provided with divergent braces, with the vertical shaft C, carrying the four-wing signal B, and the shaft A, passing through the tubular holder, the shafts C, A, and I being connected by bevel-gears, and the latter shaft provided with a spring-handle resting upon a table having colored segments corresponding with the colored signal B, substantially as and for the purpose described.

333,775. SASH-CORD FASTENER. ABRAHAM OBERNDORFER, Norfolk, Va. Filed Nov. 5, 1885. (No model.)



Claim.—In a sash-cord fastener, the combination of the shank B, having a rearwardly-extending flange and securing-lip, d', and the fork b', for the retention of the knot in the end of the sash-cord, extending downwardly and in an opposite direction from the main body of said shank.

333,776. DELIVERY-WAGON. HENDRICK C. OHLSEN, Sr., Cincinnati, Ohio, assignor to Henry Ohlsen, Jr., and August Ohlsen, same place. Filed Oct. 22, 1885. (No model.)

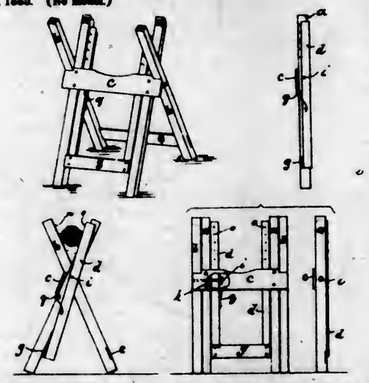


Claim.—1. A delivery-wagon for barrels or packages of goods, embodying, essentially, a fixed wagon-body with outer circular holding rail or partition and a horizontal rotating platform, substantially as set forth.

2. In a delivery-wagon, an outer circular railing or partition secured upon the wagon-body and provided with a gate or opening, in combination with a rotating platform concentrically arranged upon the wagon-body for holding packages, and adapted by its rotation to bring the packages successively opposite the gate or opening, as set forth.

3. The combination, in a delivery-wagon, of the fixed railing *f g*, the rotating platform A *i j*, and the catch *m*, substantially as set forth.

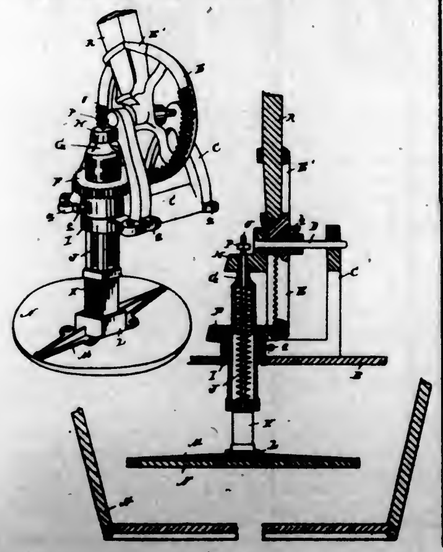
333,777. SAW-BUCK. HORACE PALMER, Lebanon, Conn. Filed July 8, 1885. (No model.)



Claim.—1. In a saw-buck, the combination, with the main frame comprising the uprights *a b*, pivotally connected together, and the cleat *c*, secured to the uprights *a* and extended to serve as a stop, the inner faces of the extended ends of the cleat being cut away to conform to the angle of uprights *b*, of the auxiliary frame eccentrically pivoted within the main frame, and comprising the uprights *d*, connected by bar *g*, and the spurs *n o*, substantially as set forth.

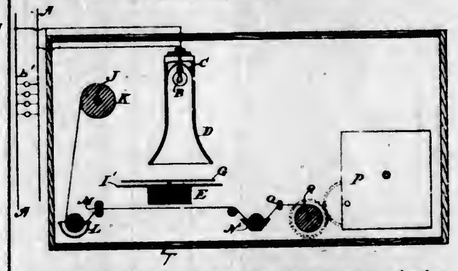
2. In a saw-buck, the combination, with a frame comprising the uprights *a b*, pivotally connected together, and the cleat *c*, secured to the uprights *a* and extended to serve as a stop, of the auxiliary frame comprising the uprights *d*, connected by bar *g* and pivoted within the main frame, the spurs *n o*, projecting from the uprights *b d*, the spring connecting the main and auxiliary frame, said auxiliary frame and main frame being pivoted upon short bolts, as shown and described.

333,778. WASHING-MACHINE. SAMUEL W. PARSONS, Ypsilanti, Mich. Filed May 13, 1885. (No model.)



Claim.—The combination, with the frame C, as shown, having the perforated leg H, of the oscillating hollow shaft G, journaled in the lower part of said leg and supported by the part I, and having rectangular socket, the link K, fitted loosely in the rubber-board and having a rigid rod, O, which passes up through the leg H, and the spring J, housed in the hollow shaft G, all arranged for joint operation, as set forth.

333,779. ELECTRICAL METER. WILLIAM C. PATTERSON, Elizabeth, N. J. Filed Sept. 29, 1885. (No model.)



Claim.—1. In an electric meter, the combination of a strip of paper prepared in the manner described, a galvanometer-needle with an enlarged head having a hole therein, and a source of light, said source and said hole being in a straight line which makes an angle with the surface of said paper, substantially as and for the purpose mentioned.

2. In an electric meter, the combination of a strip of paper, a galvanometer having a needle provided with an enlarged head containing a hole, said needle being located directly above said paper, an incandescent electric lamp, said lamp being located directly above said hole, a roller containing said paper, a pulley located in a bath of a silver salt and on the under surface of which passes said paper, two pulleys or rollers between which the paper next passes, a pulley located in a bath of water and under which pulley the paper next passes, two other pulleys or rollers between which the paper next passes, and a pulley connected up with clock-work and upon which the paper finally passes, substantially as and for the purpose specified.

3. In an electric meter, the combination of an electric circuit, a lamp in said circuit, a reflector behind said lamp, a galvanometer in a shunt to a constant resistance, a needle to said galvanometer, an enlarged head to said needle, said head having a hole therein, a galvanometer-plate provided with a larger hole, said larger hole being located underneath the hole in said needle, and both holes being located directly beneath said lamp, a roller containing a roll of paper, a bath of a salt sensitive to light and through which bath passes said paper, a second bath through which the paper next passes, and clock-work geared to a roller upon which the paper finally passes, the portion of the paper between the two baths being under said holes, substantially as and for the purpose specified.

333,780. RIVETING-MACHINE. OLE PEDERSEN, Columbus, Ohio, assignor to the Lechner Manufacturing Company, same place. Filed Jan. 30, 1884. (No model.)

Claim.—1. In a riveting-machine, the combination of two opposing riveters and two supporting frames or tables respectively connected with the said riveters and adjustable, substantially as set forth, whereby the said riveters can be arranged to reciprocate on a common line or at an inclination to each other, as described.

2. In a riveting-machine, the combination of two opposing riveters, supporting frames or tables respectively holding said riveters, and carriages interposed respectively between the riveters and their corresponding frames, the said frames being adjustable, substantially as set forth, whereby the carriages can be caused to move either on common lines or move in paths inclined to each other, substantially as set forth.

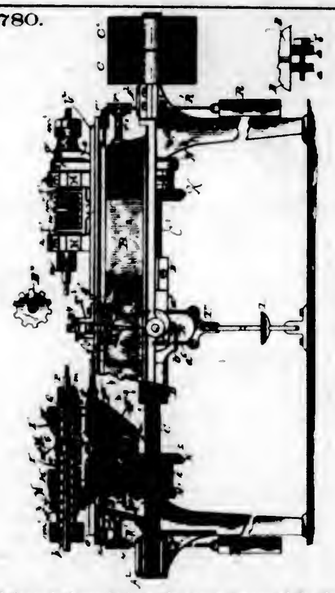
3. In a riveting-machine, the combination of a holder for the rivet, a reciprocating riveter, and a frame which carries the riveter and which is adjustable, substantially as set forth, whereby the line of movement of the riveter can be regulated relatively to the said holder, substantially as described.

4. In a riveting-machine, the combination of a riveter, a frame which carries the riveter, a pivot or hinge which supports the inner end of the frame, and a clamp to lock the frame relatively to the axis of the pivot or hinge, substantially as described.

5. In a riveting-machine, the combination of two opposing riveting-punches, a main frame formed in two sections respectively carrying the said punches, a pivot or hinge connecting the inner ends of the said sections, and a clamp which locks the said sections relatively to the axis of the pivot or hinge, substantially as set forth.

6. In a riveting-machine, the combination of two opposing riveters, a main frame formed in two sections respectively supporting said riveters, which sections are adjustable at their inner ends, a shaft mounted on one

333,780.



section of the main frame for imparting power to one of the riveters, a shaft mounted on the other section of the frame for imparting power to the other riveter, the two shafts being adjustable with the frame, and a power-trahsmitter connected with both of said shafts, substantially as described.

7. In a riveting-machine, the combination of the following elements: a supporting-frame, a power-shaft mounted in said frame, a reciprocating riveter situated substantially parallel to the power-shaft, an eccentric revolving in a plane parallel to the riveter, a second shaft transverse to the power-shaft, and a reciprocating bar interposed between the eccentric and the riveter to impart power from the former to the latter, substantially as set forth.

8. In a riveting-machine, the combination of a reciprocating riveter, springs which engage with the riveter, a tube or carrier which holds the riveter, a reciprocating driver in proximity to the said tube or carrier, the power devices which reciprocate said driver, and springs interposed between the said driver and the tube or carrier to receive the initial impact at each throw of the driver, substantially as set forth.

9. The combination, with the reciprocating riveter, of the carriage having bearing-brackets in which the riveter is mounted, and having for a shaft transverse to the line of the riveter another bearing-bracket with an aperture transverse to the line of the riveter, in which bracket the said shaft is mounted, and another bearing-bracket parallel to the line of the riveter in which is mounted a counter-shaft to rotate the first aforesaid shaft, substantially as set forth.

10. The combination, with a reciprocating riveter, of a revolving eccentric, *g*, a reciprocating bar or plate driven by the said eccentric, and devices, substantially as described, interposed between the said reciprocating bar or plate and the riveter and connecting them together, substantially as set forth.

11. The combination, with a reciprocating riveter, of a reciprocating bar, I, having projections I', the springs *s s*, and devices, substantially as described, interposed between the said springs and the riveter, substantially as set forth.

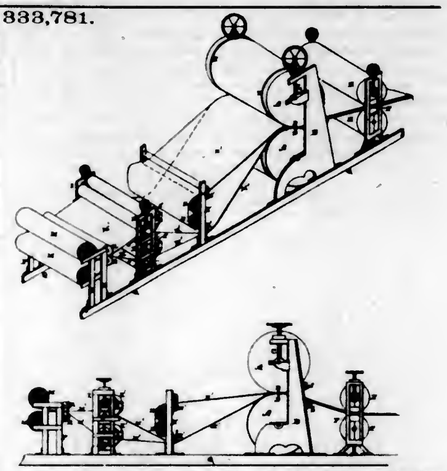
12. In a riveting-machine, the combination of a reciprocating riveting-punch, the driver which moves the riveter, the plate J, moving on lines longitudinal of and on lines transverse to the riveter and driver and engaging with the driver, and the crank which drives said plate J, substantially as set forth.

13. The combination, with the riveter, of a frame, B, which supports the riveter, the pivot or hinge connected with the end of the frame and about which the latter can be adjusted, and a movable abutment or stop, as at B', against which the end of the frame bears, substantially as described.

14. The combination of two opposing riveters, a frame made in two sections, the pivot or hinge *b*, and clamping devices having a screw-rod, *b'*, engaging with both frame-sections, substantially as described.

333,781. MACHINE FOR MAKING PAPER BOARDS. GEORGE QUELLY, St. Louis, Mo. Filed Aug. 13, 1885. (No model.)

333,781.



Claim.—1. In a machine for making paper-boards, the combination of a series of rollers, K K', and the troughs L, whereby the paper M, which is passed between them, is pasted on both sides alike, substantially as shown.

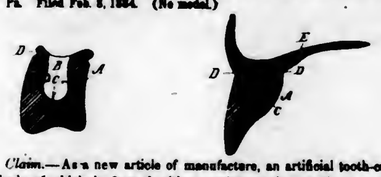
2. The combination of the pasting-rollers K K' with the endwise-moving scrapers J, which are applied thereto for evenly distributing the paste upon the rollers, substantially as described.

3. The combination of the forming-cylinders A, having grooves T extending around them, with the trimming devices S, which are run at a higher rate of speed than the cylinders, substantially as set forth.

4. The combination of the forming-cylinders A, having the grooves D cut in their sides, so as to enable the formations upon the cylinders to be cut, substantially as specified.

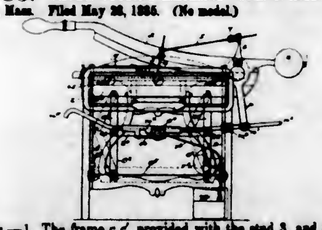
5. In a machine for forming paper boards, the combination of the frame A, holding the rolls of paper, the pasting-rollers K K', the scrapers or rollers J, for distributing the paste, the frame H, for holding the unpasted paper N, and the guiding-rollers R R', the cylinders A, the forming devices, and the cylindering-rollers E', the parts being combined to operate substantially as specified.

333,782. ARTIFICIAL TOOTH. HENRY C. REGESTER, Philadelphia, Pa. Filed Feb. 8, 1884. (No model.)



Claim.—As a new article of manufacture, an artificial tooth-crown the body of which is formed with a cavity opening at the top of the crown, and into the substance of which crown are burned portions of platinum pins, hooks, staples, or kindred retaining devices, the remaining portions of which project into said cavity, substantially as and for the purposes set forth.

333,788. PAPER-CUTTING MACHINE. JOHN T. ROBERSON, Hyde Park, Mass. Filed May 28, 1885. (No model.)



Claim.—1. The frame *c c'*, provided with the stud 3, and carrying the spring edge-gage having the finger 8, combined with the elbow-lever 4, mounted on said frame, and the link 5, connected to one end of said lever, and provided with a collar, 7, engaged by a post, 6, on the knife, substantially as shown and described.

2. The clamp mounted at each end on guide-rods, combined with

the toggle-levers c^3 c^3, affixed to a stationary part of the machine, and jointed to the movable bar c^3, which supports the guide-rods, and arranged one at each end of the same, and a connecting-link provided with a weight to hold said levers in a given position, and means, substantially as set forth, to operate said levers, substantially as shown and described.

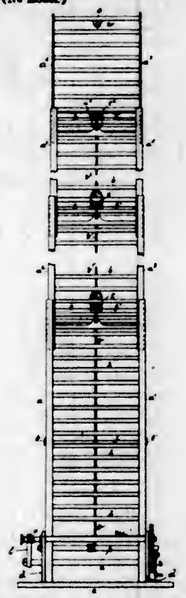
3. In a paper-cutter, the clamp, slide-rods carrying it, the toggle-jointed levers connected therewith, and the link to connect the said levers, combined with the hooked or notched clamp-lifting rod n^3, movement of which causes the clamp to be lifted, substantially as described.

4. In a paper-cutter, the clamp, its slide-rods, connected toggle-levers, and link b^4, combined with a bolt and a weight, the said bolt passing over a pulley and being secured to the said link, substantially as described.

5. In a machine for cutting paper, a blade or knife provided with a projection, and a clamp, and guide-rods to support it at each end, and toggle-jointed levers to lift the clamp, and a link to connect the toggle-jointed levers, combined with the clamp-operating rod, provided with a plurality of notches or projections to engage a projection upon the link, and with the collar to be struck by an arm projecting from and operated with the blade or knife, the movement of the latter operating the clamp sooner or later during the descent of the blade or knife, according to which notch is made to operate the link, the combination being and operating substantially as described.

6. In a paper-cutter, the pivoted blade *d*, provided with the projection *p*, and the hooked rod n^3, provided with a handle, n^6, arranged at the side of the machine below the handle of the blade, and the collar n^4 upon the said rod, combined with a clamp and means, substantially as described, between it and the said hooked rod, and actuated by the said rod, whereby by change of position of the hooked rod, as described, the clamp may be raised more or less as the knife is moved, the adjustment being made by the operator at the same side of the machine where is located the handle of the blade, substantially as described.

333,784. EXTENSION-LADDER. JOHN ROYDS, Chester, Pa. Filed Nov. 23, 1885. (No model.)



Claim.—1. In combination with the telescoping sections of an extension-ladder, the described means of raising the same when in a closed condition from the prostrate to the upright position—to wit, arms *h* and *i*, rigidly attached to a shaft, *o*, the lever *l*, also rigidly attached to said shaft *o*, the chain *s*, the crank-shaft *m*, and base-plates *d d'*—substantially as set forth.

2. An extension-ladder consisting of a fixed section and one or more movable sections, which consist, respectively, of flanged side bars, such as *a* and *a'*, and which are provided, respectively, with rungs arranged to form one side of a cage, while the side bars and their flanges form the opposite side of said cage, into which the movable section next in the series telescopes, substantially as set forth.

3. The combination of arms *h* and *i*, shaft *o*, lever *l*, chain *s*, shaft *m*, base-plates *d d'*, the fixed section of the ladder, and one or more movable sections, the latter being connected by chains directly or indirectly to the crank-shaft *p*, whereby they are simultaneously raised, said movable sections being adapted to telescope into said fixed section, substantially as set forth.

333,785. PROCESS OF TREATING ORES. GEORGE W. SHELLAY New York, N.Y. Filed July 3, 1885. (No specimens.)

Claim.—The process, substantially herein described, of obtaining precious metals from the ores containing them, which process consists of first mixing together pulverized ore and pulverized iron in suitable proportions, as above set forth, and of then fusing the metal contained in the combined pulverant, causing them to form an alloy or a conglomerate in a granular form through the ganges by the mere application of heat thereto, driving off the sulpher in excess of a protosulphide and similar impurities of the ore, if any, as an incident of the process.

333,786. SOLDER FOR ALUMINUM. JOHN S. SELLON, Hatton Garden, County of Middlesex, England. Filed Oct. 26, 1885. (No specimens.)

Claim.—An alloy or compound for soldering aluminium, consisting of zinc, tin, and lead, in substantially the proportions set forth.

333,787. WIRE-STRETCHER. JACOB SHELLER, Otterbein, and EDWARD E. SHELLER, Indianapolis, Ind. Filed July 21, 1884. (No model.)



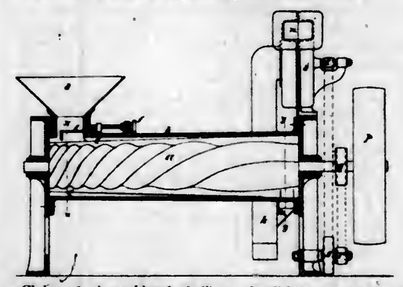
Claim.—1. In a wire-stretcher, the combination of the post-hook, an idle chain wheel or sheave, a clevis in which said wheel is loosely mounted, a chain passing over said wheel, a wire-gripper, and a lever adapted to pass through the strands of the chain and engage with and operate upon both, substantially as described, and for the purposes specified.

2. The combination, in a wire-stretcher, of a post-hook carrying a wire-gripper, a clevis connected to said hook, an idle chain wheel or pulley mounted in said clevis, a spring-pawl pivoted upon said clevis and operating to engage with the chain, a chain passing over said wheel or pulley, a wire-gripper thereon, and a lever for operating upon said chain, substantially as set forth.

3. The combination, in a wire-stretcher, of a post-hook carrying a wire-gripper, and having a wheel or sheave and spring-pawl pivoted in the clevis formed upon or attached to the shank of said hook, a chain passing around said wheel and carrying a wire-gripper, and a lever adapted to engage with the opposite strands of said chain and operate to draw it around the pulley, substantially as set forth.

4. The combination, in a wire-stretcher, of a clevis, an idle chain wheel or sheave mounted therein, a pawl mounted on said clevis and adapted to engage with said chain as it passes over said wheel, a lever which is adapted to pass through the two strands of the chain, and thus draw said chain around said wheel, and devices for attaching the stretcher to the post and to the wire to be operated upon.

333,788. MACHINE FOR HULLING AND POLISHING COFFEE. J. SIMOUT, Guatemala, Guatemala, Central America. Filed Sept. 14, 1885. (No model.) Patented in England July 13, 1884, No. 10,086.

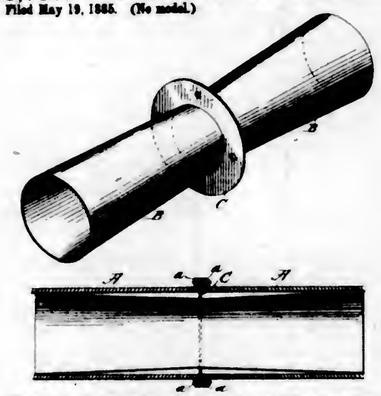


Claim.—1. A machine for hulling and polishing coffee, embodying in its construction an external casing having internal spiral fluted surfaces of increasing pitch affixed thereto, and an internal revolving cylinder having ribs or flutes of increasing pitch, substantially as shown and described.

2. A machine for hulling and polishing coffee, embodying in its construction an external casing having internal spiral fluted surfaces of increasing pitch, an internal revolving cylinder having ribs or flutes of

increasing pitch, a hinged outlet-door, a regulated hopper, and a refuse exhaust-fan, substantially as shown and described.

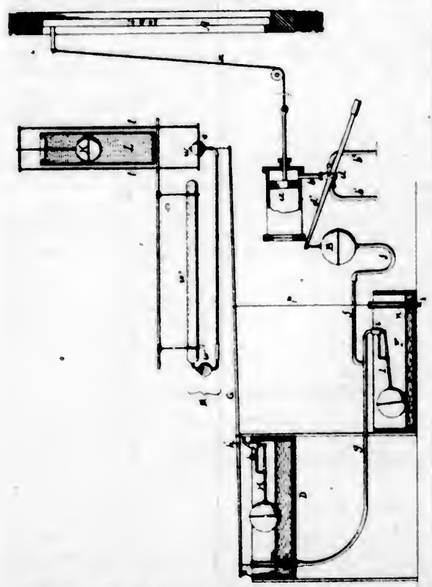
333,789. TRANSMITTING POWER. ROBT. SPEAR, New York, N. Y. Filed May 19, 1885. (No model.)



Claim.—1. A device for reducing the internal diameter of tubes or pipes at their joints, consisting of a tube the ends of which have a diameter equal to the diameter of the main pipe, and the middle portion having internal diameter smaller than that of the main pipe, and provided with circular external flange, substantially as shown and described, and for the purpose specified.

2. The combination, with a conduit for the transmission of power, consisting of the main pipes A, having coupling-flanges *a*, of closely-fitting reducers or contractors of smaller middle diameter than that of the main pipes, and expanded at both ends to a diameter that equals the internal diameter of said main pipes, and provided with a circular external flange, C, which interlock with the flanges of pipes A, substantially as shown and described, and for the purpose specified.

333,790. AUTOMATIC REGULATING MECHANISM FOR HEATING AND VENTILATING APPARATUS. HENRY B. TATHAM, Jr., Philadelphia, Pa. Filed July 23, 1883. (No model.)



Claim.—1. The combination of a liquid-receiver forming part of a device for operating a valve or damper, an elevated liquid-reservoir, a pipe, *g*, communicating with said reservoir and with the liquid-receiver of the damper-operating device, valves whereby the liquid is caused to flow from the elevated reservoir to the receiver or is discharged from the latter, and a thermostat for operating said valves, all substantially as specified.

2. The combination of a liquid-receiver forming part of a damper-operating device, two tanks, D and F, located one above the other, a pipe, *g*, whereby a flow of liquid from the upper to the lower tank is permitted, a branch, *f*, communicating with said pipe and with the receiver of the damper-actuating device, valves for controlling the flow of liquid through the pipe *g*, and a thermostat for operating said valves, all substantially as set forth.

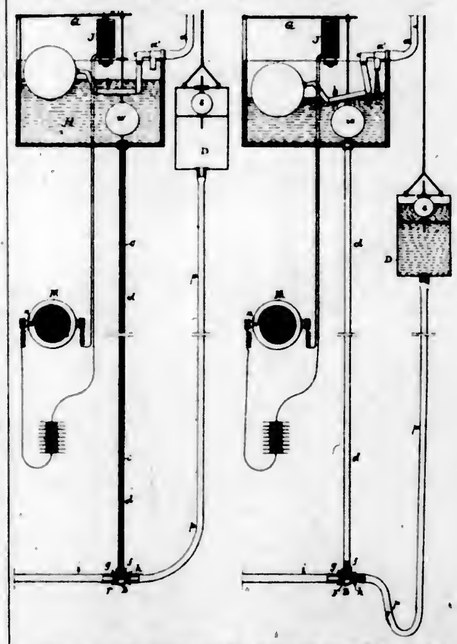
3. The combination of a damper-actuating device, a vessel, B, suspended therefrom, an elevated liquid-reservoir, a pipe, *g*, communicating therewith and having a flexible connection with the vessel B, valves controlling the flow of liquid through said pipe, and a thermostat for operating said valves, all substantially as specified.

4. The combination of the damper, the cylinder *a*, having a piston the rod of which is connected to said damper, supply and discharge pipes for said cylinder, a three-way valve, *d*, having an arm, *d'*, a vessel, B, suspended from said arm, an elevated liquid-reservoir having a discharge-pipe, *g*, a flexible connection between said pipe and the vessel, valves for controlling the flow of liquid through said pipe, and a thermostat for operating said valves, all substantially as specified.

5. The combination of a liquid-receiver forming part of a damper-operating device, two tanks, D and F, located one above the other, a pipe, *g*, forming a communication between said tanks, a valve, *m*, governing the inlet to said pipe, a valve governing the outlet from said pipe and having a float-lever, I, a valve, *n*, governing the discharge from the tank F, a thermostat for operating said valves *m* and *n*, and a branch, *f*, communicating with the pipe *g* and with the liquid-receiver of the damper-actuating device, as specified.

6. The combination, with the vessel w^3, of a thermostat, the vessel L, the submerged float K, a frame, *t*, connected to said float, and a bulb, *w*, carried by said frame and having a flexible connection with the vessel w^3, as set forth.

333,791. AUTOMATIC REGULATING MECHANISM FOR HEATING AND VENTILATING APPARATUS. HENRY B. TATHAM, Jr., Philadelphia, Pa. Filed July 23, 1883. (No model.)



Claim.—1. The combination of a liquid-receiver forming part of a device for operating a valve or damper, an elevated liquid-reservoir, a pipe communicating with said reservoir and with the liquid-receiver, valves whereby the liquid is caused to flow from the elevated reservoir to the receiver or is discharged from the latter, an electro-magnet the armature of which is connected to said valves, and a thermostat for making and breaking the circuit through the magnet, all substantially as specified.

2. The combination of a damper actuating-device, a vessel, D, suspended therefrom, an elevated liquid-reservoir, A, a pipe, *d*, communicating therewith and having a flexible connection with the vessel D, valves whereby the liquid is caused to flow from the elevated reservoir to the vessel D or is discharged from the latter, an electro-magnet the armature of which is connected to said valves, and a thermostat for making and breaking the circuit through said electro-magnet, all substantially as specified.

3. The combination of a liquid-receiver forming part of a device for operating a valve or damper, an elevated liquid-reservoir, A, a pipe, *d*, communicating therewith, a valve-casing, B, having seats *m* and *n*, a branch, *h*, communicating with the liquid-receiver, a branch, *f*, communicating with the pipe *d*, and a branch, *g*, communicating with a waste-pipe, a duplex valve adapted to said seats *m* and *n*, an electro-magnet the armature of which is connected to the valve, and a thermostat for making and breaking the circuit through said magnet, all substantially as specified.

4. The combination of the liquid-receiver forming part of a device for operating a valve or damper, an elevated liquid-reservoir, A, a pipe, *d*, communicating therewith, a valve-casing, B, having two seats, *m* and *n*, a branch, *h*, communicating with the liquid-receiver, a branch, *f*, communicating with the pipe *d*, and a branch, *g*, communicating with the waste-pipe, a duplex valve adapted to said seats *m* and *n*, a valve-rod having a submerged float, *w*, an electro-magnet the armature of which is connected to said valve-rod, and a thermostat for making and breaking the circuit through said magnet, all substantially as specified.

333,792. STOP-WATCH. JOHN TITHER, San Francisco, Cal. Filed July 7, 1885. (No model.)



Claim.—1. In a stop-watch, the independent staff having the seconds-hand and the returning-heart secured to it, the driving-pinion turning loosely upon it, a longitudinally-expanding spring with collars upon each side which are pressed against the heart and the driving-pinion, so as to set the staff and hand in motion, substantially as herein described.

2. In a stop-watch, the central staff having the seconds-hand and the returning-heart secured to it, the driving-pinion turning loosely about it, a spring acting longitudinally between collars so as to force them in contact respectively with the driving-pinion and the cam, in combination with levers fulcrumed so that their ends press upon the outer faces of the collars and force them together against the tension of the spring and out of contact with the pinion and heart, substantially as herein described.

3. In a stop-watch, the staff carrying the independent seconds-hand and returning-heart having the driving-pinion turning loosely upon it, the longitudinally-expanding spring, and the collars between which it acts, in combination with levers fulcrumed so that at one end they extend outside of the collars and at the opposite end they are moved to or from each other, substantially as herein described.

4. In a stop-watch, the staff carrying the second-hand and returning-heart having the driving-pinion turning loosely upon it, the longitudinally-expanding spring, collars and operating-levers W and X, having lugs or projections *o* and *n*, as shown, in combination with the wheel having the teeth P, beveled or inclined so as to pass between the lugs, substantially as herein described.

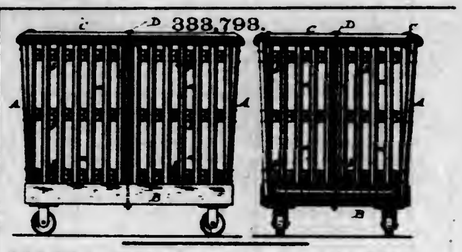
5. In a stop-watch, the staff carrying the seconds-hand, roller, and returning-heart having the driving-pinion turning loosely upon it, the longitudinally-expanding spring, and the friction-collars, the levers, and toothed wheel by which these collars are compressed or allowed to expand, as shown, in combination with the lever R, disk, and ratchet-wheel, substantially as herein described.

6. In a stop-watch, and in combination with the independent seconds-hand, staff, and the heart-shaped returning cam, the lever N, having the end which presses upon the cam formed with points and curves to fit the curves of the heart, substantially as herein described.

333,793. BASKET. SIMON TUFFLER, New York, N. Y. Filed Feb. 2, 1886. (No model.)

Claim.—The combination, in a basket, of a bottom provided with socket-holes, a grooved hand-rail, a series of wooden slats having their lower ends resting in said socket-holes and their upper ends in said grooved hand-rail, metallic chains interlaced with said slats transversely thereof, bolt-rods extending vertically between said hand-rail and bottom, and nuts on said bolt-rods for tightly clamping and re-enforcing the body of the basket, substantially as described.

333,798.

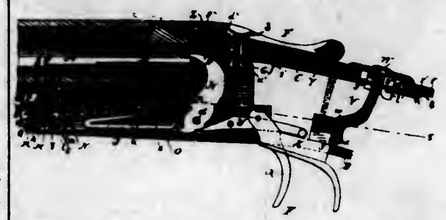


333,794. BUTTON. GEORGE W. TOMS, Newark, N. J. Filed Apr. 7, 1885. (No model.)



Claim.—The herein-described button, consisting of the front and back, *a b*, provided with flanges *a' b'*, and a cross-bar placed in the hub or depression formed by the flange *b'*, and held loosely therein by the flange *a'* on the face-plate, whereby the cross-bar is located near the back portion of the button and the latter is permitted to revolve upon the bar, as and for the purposes described.

333,795. BREECH-LOADING FIRE-ARM. JOSEPH TOMES, Malden, Mass. Filed June 27, 1883. Renewed May 13, 1885. (No model.)



Claim.—1. In a breech-loading gun, the combination, with its fore end, of a lever pivoted to the breech-block and connected to a bar, N, by a link, M, a hammer, H, acted on by the bar N to bring it into a cocked position, and mechanism for securing it in such position, substantially as described.

2. In a breech-loading gun, the combination of its fore end, having a pin, R, a lever, L, pivoted to the breech-block and having an arm, P, a bar, N, a link, M, connecting said bar and lever L, a hammer, H, acted on by the bar N to bring it into a cocked position, and mechanism for securing it in such position, substantially as described.

3. In a breech-loading gun, the combination of its fore end, having a pin, R, a lever, L, pivoted to the breech-block and having an arm, Q, a bar, N, a link, M, connecting said bar and lever L, a hammer, H, acted on by the bar N to bring it into a cocked position, and mechanism for securing it in such position, substantially as described.

4. In a breech-loading gun, the combination of its fore end, having a pin, R, a lever, L, pivoted to the breech-block, and having arms P and Q, a bar, N, a link, M, connecting said bar and lever L, a hammer acted on by the bar N to bring it into a cocked position, and mechanism for securing it in such position, substantially as described.

5. In a breech-loading gun, the combination of its fore end, provided with a friction-roller, a lever, L, pivoted to the breech-block and having arms P and Q, a bar, N, a link, M, connecting said bar and lever L, a hammer acted on by said bar to bring it into a cocked position, and mechanism for securing it in such position, substantially as described.

6. In a breech-loading gun, the combination of the mainspring J, the breech-block provided with stud *s*, bearing on the mainspring, the hammer H, the bar N, slotted to receive the stud *s*, and sliding to strike the hammer to bring it into a cocked position, means for sliding said bar, and mechanism to hold the hammer in its cocked position, substantially as described.

7. In a breech-loading gun, the combination of the trigger K, the lever V, pivoted to project over the upper edge of the trigger when moved in one direction, the sliding bar Y, to secure the trigger from movement, and the swinging top snap-lever, F, provided with the spindle G, having a cam, *u'*, working against the end of bar Y, to move the bar, substantially as described.

8. In a breech-loading gun, the combination, with the trigger K, of a pivoted lever, V, adapted to abut against said trigger, a sliding thumb-piece, W, provided with arms *a'* and *b'*, to bear against opposite

sides of the upper end of said lever, a sliding bar, Y, on the under side of tang C, adapted to move arms a' and b', and a lever, F, provided with a cam, u', to bear against bar Y to move the same, substantially described.

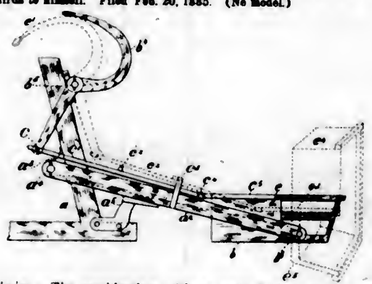
9. In a breech-loading gun, the combination, with the trigger K, of a lever, V, thumb-piece W, having arms a' and b', a bar, Y, having a projection, s', and notch r' in tang C, and a pin, l', in arm b', and notch m' in said bar, substantially as and for the purpose specified.

10. In a breech-loading gun, the combination, with the trigger K, of a lever, V, a thumb-piece, W, having arms a' and b', a bar, Y, having a projection, s', and notch f in tang C, and a pin, l', in arm b', and notch m' in said bar Y, substantially as and for the purpose specified.

11. In a breech-loading gun, the combination, with a trigger, K, of a lever, V, adapted by one end to abut against said trigger, and by its other end to be operated by arms a' b', of a thumb-piece, W, a sliding bar, Y, having a notch, x', for engagement with a pin, l', on the arm b' of said thumb-piece W, substantially as described.
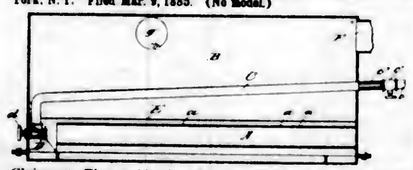
12. In a breech-loading gun, the combination, with the rib-extension A′ at the rear of the barrels, of a plate or bolt, Z, pivoted at one side of the center line of the rib-extension, and provided with an arm, b^2, engaging in a notch, d^2, in spindle G of top snap-lever, F, substantially as described.

333,796. BUNDLE-CARRIER. ANDREW J. UNDERHILL, 2d, Gasport, assignor of one-third to Emeline Hinchey, Middleport, N. Y., and two-thirds to himself. Filed Feb. 20, 1885. (No model.)



Claim.—The combination, with a carrier-basket, of supporting-arms a' a^2 therefor, pivoted to it and to the frame so that each may swing independently, the arm a' being the longer and being pivoted to the basket at a point nearer the outer side thereof, a supporting-bracket for each arm to prevent it from dropping too far, a pivoted band-lever, the connecting-rod c', pivoted to the lever, and the connecting-rod c^2, pivoted to the basket and to rod c', substantially as and for the purposes described.

333,797. GAS OR OIL STOVE. ARCHIBALD B. VANDEMARK, New York, N. Y. Filed Mar. 9, 1885. (No model.)



Claim.—1. The combination of a suspended retort and an oil-supply with a perforated tubular burner below said retort, and a valve governed gas-feed pipe for injecting gas from said retort into the burner, substantially as set forth.

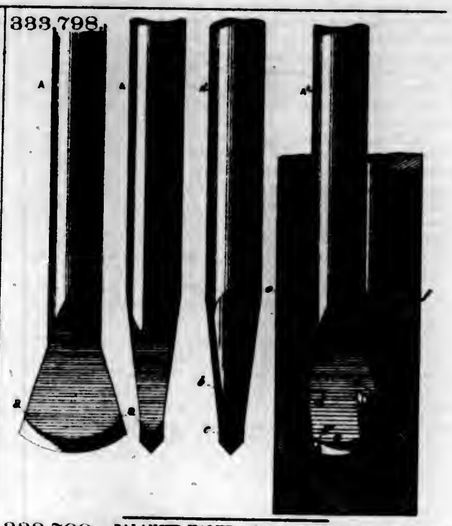
2. The combination of a suspended retort connected with a suitable oil-supply tank, a perforated tubular burner attached to and below said retort, and provided with air-deflecting wings and a valve-governed gas-feed pipe for injecting gas into the burner, all as and for the purpose set forth.

3. The combination, with a gas or oil stove, as herein shown and described, of a heat-distributing pipe making a circuit from the stove through the space or apartment to be heated and returning to a point near to the wall of the stove before reaching the vent or chimney, and connected with the stove by a cross pipe or connection provided with a valve or damper, substantially as and for the purpose set forth.

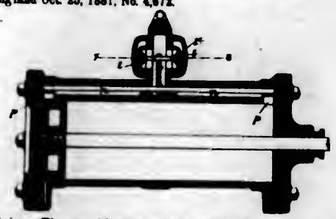
333,798. MINING-DRILL. THOMAS H. WALTON, Ashland, assignor of one-half to J. Warren Coulston, Philadelphia, Pa. Filed July 31, 1884. (No model.)

Claim.—The hereinbefore-described drill having a sharp bottom edge, C, inclined heel g, and projecting cutter b, arranged above the edge C upon the side opposite to said heel, substantially as set forth.

333,798.



333,799. BALANCED VALVE. THOMAS H. WARD, Tipton, County of Stafford, England. Filed July 24, 1882. (No model.) Patented in England Oct. 25, 1881, No. 4,672.



Claim.—The combination of the valve-chest of a steam-engine and two valve-seats, with a valve made in two parts, united by a tie-rod, a lever, L, connected to the tie-rod, and a rod adapted to be operated by the piston, and controlling said lever, substantially as set forth.

333,800. MEANS FOR CONVEYING AND SUPPLYING GAS. G. WESTINGHOUSE, Jr., Pittsburg, Pa. Filed Feb. 3, 1885. (No model.)



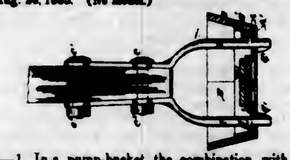
Claim.—1. The combination of a gas-supply pipe, a reduced-pressure main connected thereto, a relief-valve governing a discharge-opening in the reduced-pressure main, and a series of exhausting mechanisms, each having a receiving-pipe connected with the main and a delivery-pipe communicating with service-pipes leading to burners or furnaces or with an independent distribution system, substantially as set forth.

2. The combination of a main through which gas is conducted at a pressure at or below that of the atmosphere, a gas-supply pipe leading thereinto, a series of exhausting mechanisms, each having a receiving-pipe connected with the main and a delivery-pipe leading to a special supply or distribution system, and a series of pressure-regulators each actuated by the pressure of the gas in the main or in a delivery-pipe, and governing the supply of motive fluid to one of the exhausting mechanisms, substantially as set forth.

333,801. ARTIFICIAL LITHOGRAPHIC STONE. JULIUS WEBB, Rauchitz, near Leipsic, Germany. Filed Mar. 23, 1885. (No specimens.)

Claim.—An artificial lithographic stone consisting of a metal plate coated with a mixture of lime salt of fatty or resinous acid and sulphate of lime, substantially as specified.

333,802. PUMP-BUCKET. RICHMOND W. WHEELER and SILAS G. DUFFLEY, Bushnell, Ill., assignors to Bushnell Pump Company, same place. Filed Aug. 26, 1885. (No model.)

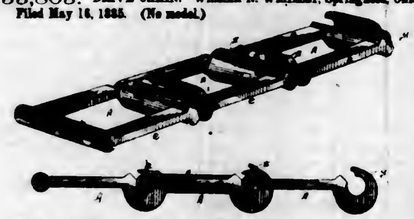


Claim.—1. In a pump-bucket, the combination, with the packing and a pair of disks having slots, of a pair of straps or shanks each having a pair of lugs located, respectively, above and below said disks, and projecting from opposite sides of its axis, one toward and the other from a line drawn through the axis of the bucket at right angles to a line drawn through the apertures, said shanks being forced in the direction in which their respective upper lugs project and held by bolts to the sucker-rod, as set forth.

2. In a pump-bucket, the combination, with the packing and a pair of disks having key-hole slots F F′, said disks being so arranged that the cylindrical portions F of said slots coincide while the notched portions F′ alternate, as described, of the shanks C, each having a cylindrical portion for filling the cylindrical portion of said slots, and a pair of lugs, G G′, located, respectively, above and below said disks, substantially as set forth.

3. In a pump-bucket, the combination, with the packing and a pair of disks each having key-hole slots arranged with their cylindrical portions coincident and their elongated or notched portions alternate, as explained, of the shanks C, each having the lugs G G, located, respectively, above and below said disks and projecting in opposite directions, and the rod D and bolts C′ C², for forcing and holding the upper portions of said shanks in the directions in which their respective upper lugs, G, project, as explained.

333,803. DRIVE-CHAIN. WILLIAM H. WHITELEY, Springfield, Ohio. Filed May 16, 1885. (No model.)



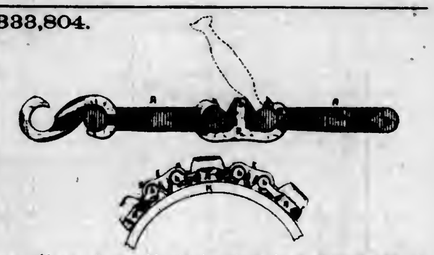
Claim.—1. A chain-link constructed with a spur, g, projecting from its coupler end, thinner than the main body of the hook, and with its inner surface in continuation of the cylindrical curve of the inner surface of the hook, whereby said hook and spur may both be cast upon the same cylindrical chill, and without angle or seam across the wearing-surface.

2. A chain-link provided at one end with a coupler-hook, i, and a spur, g, thinner than said hook i, and joined to the side thereof back of its point, whereby it will be detached and free to be raised or depressed without changing the form of said hook.

333,804. DRIVE-CHAIN. WILLIAM H. WHITELEY, Springfield, Ohio. Filed Aug. 14, 1885. (No model.)

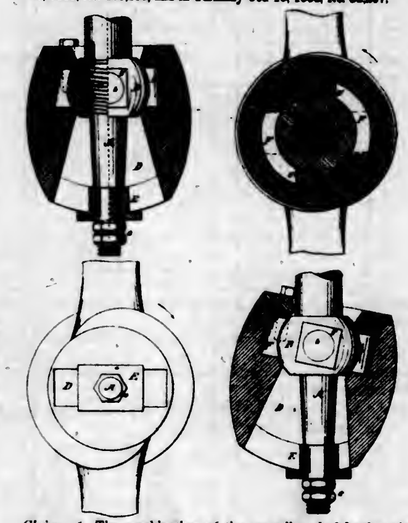
Claim.—A chain constructed of alternate links and couplers, the couplers having open slots at the points of the hooks to admit the end bars, b, of the links A, and each hook having a spur, h, projecting partly

333,804.



over said open slot, capable of being closed down without bending the hook out of circular form to prevent disengagement, the coupler having also a central portion, i, projecting upward between the hooks to retain the end bars, b, in their proper working position, and to support the chain on the sprocket-wheel, substantially as and for the purpose set forth.

333,805. SCREW-PROPELLER. NIKOLAS YASH, St. Petersburg, Russia. Filed May 15, 1885. (No model.) Patented in Belgium Apr. 30, 1885, No. 68,542; in Italy Aug. 27, 1885, No. 16,601; in France Sept. 16, 1885, No. 168,396, and in Germany Oct. 10, 1885, No. 33,297.



Claim.—1. The combination of the propeller-shaft having pivot-pins b with the propeller-hub mounted on said shaft to receive said pivot-pins, the hub having a slot for the reception of the outer end of the shaft, substantially as set forth.

2. The combination of the propeller-shaft having a spherical enlargement, B, and pivot-pins b, with a hub and an inclosing-cap, C′, to fit said spherical enlargement and to receive the pivot-pins, all substantially as set forth.

3. The combination of the propeller-shaft having pivot-pins b and a bearing-block, E, at its outer end, with a hub to receive the pivot-pins and having a slot, D, in which said block finds its seat, as specified.

4. The combination of the propeller-shaft with a hub free to oscillate on said shaft, and also to turn thereon to a limited extent, substantially as described.

5. The combination of the propeller-shaft having pivot-pins with a hub free to oscillate on the shaft and having grooves to receive the said pins, substantially as specified.

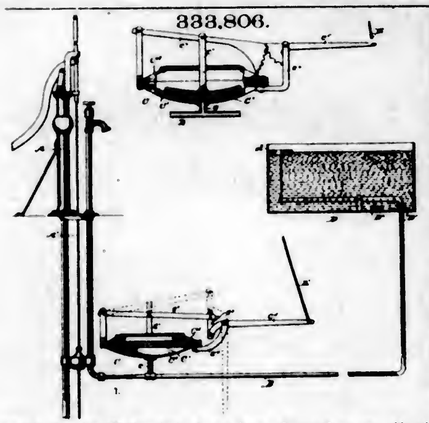
6. The combination of the propeller-shaft having a boss carrying pivot-pins, and bearing-blocks on the pins, with a hub mounted on the shaft and having interior grooves, to which said blocks are adapted, substantially as set forth.

333,806. WINDMILL-REGULATOR. FRANK T. EMMERMAN, Auburn, Ind. Filed Aug. 26, 1885. (No model.)

Claim.—1. The combination, with the pump A, pipe B, tank D, and float-actuated valve D′, of the plate C′, diaphragm C², shaft c', lever c^3, lever c^4, said levers being connected and operating as described, and wire or chain E, substantially as shown and described.

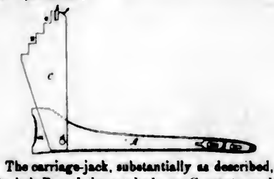
2. The combination of the pump A and pipe B, connected therewith and communicating at its opposite end with the tank D, having float-valve D′, with the plate C′, having flexible diaphragm C² extended

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across it, the ring C^3, the shaft c', and lever c^2, seated on one side of said ring and plate, and operated by said diaphragm, and lever c^3, connected with lever c^2 by link c^4, all combined and operating substantially as described.

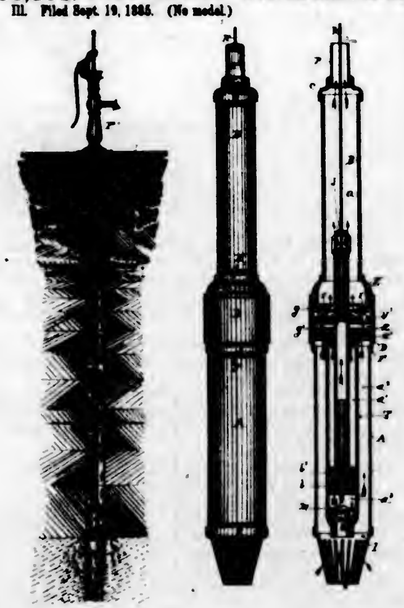
333,807. CARRIAGE-JACK. PASCHAL J. ABBOTT, Dexter, Me. Filed Nov. 23, 1885. (No model.)



Claim.—1. The carriage-jack, substantially as described, consisting of the lever A, the bolt B, and the notched arm C, constructed, arranged, and combined essentially as set forth.

2. The combination of the lever A and the sliding bolt B, applied thereto, with the arm C, pivoted to such lever and provided with the series of notches *c*, the recess *b*, and incline *f*, arranged in it, (the said arm,) as set forth.

333,808. DOUBLE-ACTING PUMP. H. RAYMOND ADAMS, Marseilles, Ill. Filed Sept. 19, 1885. (No model.)



Claim.—1. The double-acting pump shown and described, consisting of the combination of the three cylinders A, B, and D, of different diameters, reduction-couplings E and F, for connecting said cylinders, reduction-coupling C, for connecting cylinder B with discharge-pipe P, strainer I, secured to the lower end of cylinder A, annular valve-seat V', having the ports *n*, central opening Y and packing W, annular valve-seat Z', having the ports *u*, central opening X, and depending central screw-threaded flange, X', annular band-rings *g* and *g'*, annular valves V and Z, having packings V^2, held thereon by means of the annular rings and screws V^3 pump-cylinder T, having valve-seat O and clack-valve *m* at its lower end, and arranged to hang centrally in cylinder A from the depending screw-threaded flange of valve-seat Z', reciprocating pipe G, having the plunger H at its lower end and clack-valve J at its upper end, and pump-rod R, all arranged to operate substantially as and for the purpose set forth.

2. In the double-acting pump shown and described, the reciprocating pumping-pipe G, having the plunger H at its lower end and lift-valve J at its upper end, in combination with the central depending cylinder, T, having the clack-valve *m* at its lower end, cylinder A, and valve-seats V' and Z', and valves V and Z, all located at the upper end of said pump-cylinder T and centrally in the pump in cylinder D, as and for the purpose set forth.

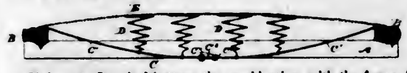
3. The double-acting pump shown and described, formed of the three external cylinders, A, B, and D, of different diameters and connected by means of the reduction-couplings E and F, and connected with a supporting-strainer, I, at its lower end and a discharge-pipe, P, at its upper end, in combination with the annular valve-seat V', having the annular packing W, annular valve-seat Z', annular valves V and Z, having the valve-packings V^2, said valve-seats and valves all being located in the central and largest cylinder, D, depending centrally-located pump-cylinder T, having the valve *m* at its lower end, and reciprocating pipe G, having the plunger H at its lower end and lift-valve J at its upper end, all arranged to operate as and for the purpose set forth.

4. In the double-acting pump shown and described, the internal cylinder, T, in combination with the external cylinders, A, B, and D, and their couplings, the annular valves V and Z and their seats V' and Z' and valve *m*, the pipe G, having the plunger H at its lower end, and arranged to reciprocate in cylinder T, and having its upper end provided with valve J, to project into and reciprocate in the chamber *a* of cylinder B, in the manner substantially as set forth.

5. The combination of the cylinders A, B, D, and T, reduction-couplings C, E, and F, reciprocating pipe G, having the plunger H and valve J, valves *m*, V, and Z, valve-seats V', Z', and O, band-rings *g* and *g'*, discharge-pipe P, and strainer I, and pump-rod R, all arranged to operate as and for the purpose set forth.

6. In the double-acting pump shown and described, in combination with the external cylinders, A, B, and D, the central depending cylinder, T, having the lower valve, *m*, the reciprocating pipe G, having the plunger H on its lower end and valve J at its upper end, the annular valve-seats V' and Z', and the annular valves V and Z, all arranged to operate substantially as set forth.

333,809. BED-BOTTOM. CHARLES L. AMES, Ridgeland, Ill. Filed Aug. 24, 1885. (No model.)



Claim.—1. In a bed-bottom, the combination, with the frame A B A B, woven-wire fabric E, and springs D, of supports C, composed of sections C', connected by yokes C^2, and adjusting-bolts C^3, substantially as shown and described.

2. In a bed-bottom, the combination, with the frame A B A B, woven-wire fabric E, and springs D, of downwardly-directed supports C, composed of sections C', connected in pairs by yokes C^2, and adjusting-bolts C^3, substantially as shown and described.

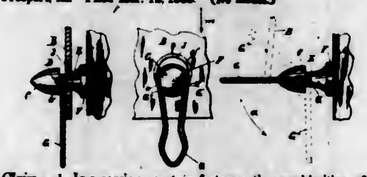
333,810. PLANT-PROTECTOR. OSCAR W. BAILY, Enterprise, Fla. Filed June 26, 1885. (No model.)



Claim.—1. As an improved article of manufacture, the plant-protector herein described, comprising a cylindrical vessel, A, and a conical cap, B, made of paper, and detachably connected together, the cap being formed from a circular piece having a slit, *a*, and a series of apertures, *b c*, and provided with lugs D, substantially as described.

2. As an improved article of manufacture, the plant-protector herein described, comprising a cylindrical body or vessel, A, formed from a sheet of paper having a series of apertures, and a conical cap, B, formed from a circular piece of paper having a slit, *a*, apertures *b c*, and perforated lugs D, the cap fitting over the body A and the lugs D thereof secured thereto by pins E, as set forth.

333,811. CARRIAGE-CURTAIN FASTENING. JAMES H. BAKER, Prescott, Ill. Filed Mar. 12, 1885. (No model.)



Claim.—1. In a carriage-curtain fastener, the combination of a stud having a head and a neck of less diameter than the head, with a lever pivoted to said stud and adapted to force the eyelet of the curtain over said head and about said neck, substantially as and for the purpose set forth.

2. In a carriage-curtain fastener, the combination of a suitable stud and a lever consisting of two branches whose ends are turned inward and pivoted in the stud at opposite points in its periphery, substantially as and for the purpose set forth.

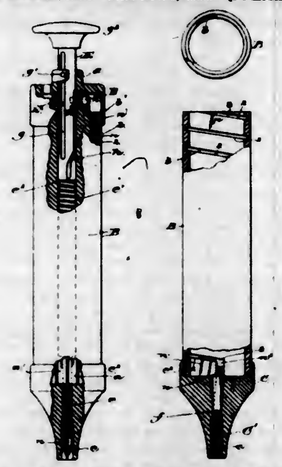
3. The combination, in a carriage-curtain fastener, of a cone-headed stud and a lever pivoted to said stud and adapted to force the eyelet of a curtain over said head, substantially as and for the purpose set forth.

4. In a carriage-curtain fastener, the combination of a conical-headed stud, a double lever pivotally connected therewith, and depressions in the head of said stud adapted to receive and retain the branches of said double lever.

5. The combination, in a carriage-curtain fastener, of a stud comprising a head and a neck of less diameter than that of the head, with an elastic lever consisting of two integrally-formed branches whose ends turn inward and are pivoted in the neck of said stud, whereby, in the rotation of the lever, the head forces apart the branches thereof, substantially as and for the purpose set forth.

6. The combination, in a carriage-curtain fastener, of a stud consisting of a conical head and a neck of less diameter than that of the head, with an elastic lever consisting of two integrally-formed branches whose ends are turned inward and pivoted in the neck of said stud, whereby, in the rotation of the lever, the branches thereof are separated by the passage of the head between them, substantially as and for the purpose set forth.

333,812. NAILING-MACHINE FOR BOOTS OR SHOES. FRANK A. BEAL, Haverhill, Mass. Filed Nov. 5, 1885. (No model.)



Claim.—1. The spirally-grooved cone or shell, combined with a rotating feeding device substantially such as described, to engage the headed nails supported by their flanges at the inner side of the said cone or shell, as described, the feeding device effecting the gradual feeding of the headed nails from the upper to the lower end of the cone or shell, substantially as described.

2. The cone or shell provided with a spiral groove, the attached cone provided with a groove for the driver, and having a groove to lead the tacks from the spiral groove into the driver-groove, and the driver-bar, and the driver, combined with the rotating feeding device, grooved substantially as described, and with a pawl to engage the ratchet-wheel upon and rotate the said feeding device, substantially as set forth.

333,813. COVERING FOR FEED-ROLLS OF SPINNING MACHINERY. SAML. BRIGGENSHAW, Philadelphia, Pa. Filed Mar. 30, 1885. (No model.)

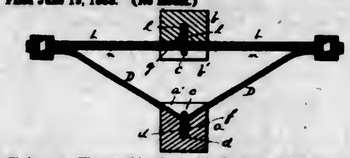
Brief.—For the improved covering, a tubular fabric is made (preferably knitted) of woolen yarn, and then felted till the diameter is decreased to the desired extent, and to the surface of the tube thus formed a paint or filling composition is applied.



Claim.—1. The within-described covering for feed-rolls of machinery, said covering consisting of a felted tubular fabric having a paint or filling composed applied to the outer face, as set forth.

2. A feed-roll for machinery, having applied to the core or body of the same a covering consisting of a felted tubular fabric of wool with a paint or filling composition on the surface, as set forth.

333,814. VERGE-SPRING. EDWARD H. BLACK, Philadelphia, Pa. Filed June 19, 1885. (No model.)

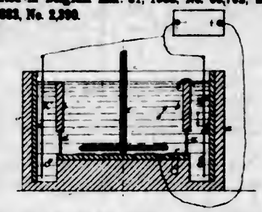


Claim.—1. The combination, with the spring N, constructed as described, of the lever-bars D, seat-block *a*, having recess *f*, groove *a'*, and retaining-pin *c*, arranged and operating in the manner and for the purpose set forth.

2. The combination, with the spring N, constructed as described, and seat-blocks *a* and *b*, of the lever-bars D, having bent angle portions *d*, bearing-plates L, having bent angle portions *l*, and retaining-pins *c*, as set forth.

3. The combination, with a spring, N, constructed substantially as described, and seat-blocks *a* and *b*, of the recesses *f* and *g*, grooves *a'* and *b'*, lever-bars D, having bent angle portions *d*, bearing-plates L, having bent angle portions *l*, and retaining-pins *c*, as set forth.

333,815. PROCESS OF OBTAINING GOLD, SILVER, COPPER, NICKEL, AND COBALT FROM THEIR ORES BY ELECTROLYTIC ACTION. MICHEL BUDY, Liege, Belgium. Filed June 26, 1883. (No model.) Patented in Belgium Mar. 31, 1883, No. 60,763, and in England May 10, 1883, No. 2,399.



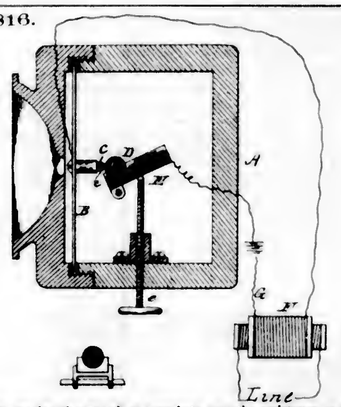
Claim.—1. The herein-described process of separating gold, silver, copper, and other metals from chlorinated or chlorine-containing ores by electrolytic action, consisting in first roasting the ores or subjecting them to an equivalent oxidizing treatment, as specified, and then subjecting the ore to the action of ferric-salt solutions, and at the same time passing an electric current through said solution, whereby the metal becomes dissolved and precipated, and chlorine gas is generated at the positive pole, which reconverts the resulting ferrous salts into ferric salts, substantially as herein set forth.

2. In the process of separating gold, silver, copper, and other metals from their ores by electrolytic action, the method of dissolving and precipitating the metal from its ore, and reconverting ferrous salts into ferric salt, consisting in subjecting the ore to the action of ferric-salt solutions under the influence of an electric current, substantially as described.

333,816. TELEPHONE. JAS. W. BOSTA, Philadelphia, Pa., assignor to J. Daniel Eby, trustee, same place. Filed Sept. 25, 1885. (Model.)

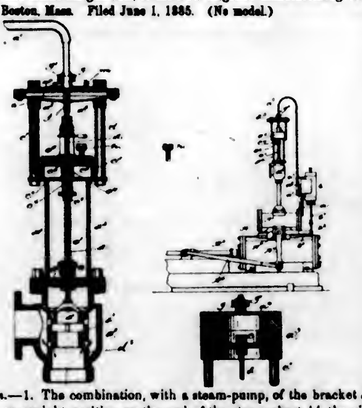
Claim.—The art or method of transmitting articulate speech or other sounds telephonically by induced currents over a secondary circuit, which

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consists in causing the speech or sounds to vary the resistance as well as to open and close the primary circuit associated with such secondary circuit, substantially as before set forth.

333,817. GOVERNOR. CHARLES B. BOSWORTH, Everett, assignor, by direct and mesne assignments, to the New England Manufacturing Company, Boston, Mass. Filed June 1, 1885. (No model.)



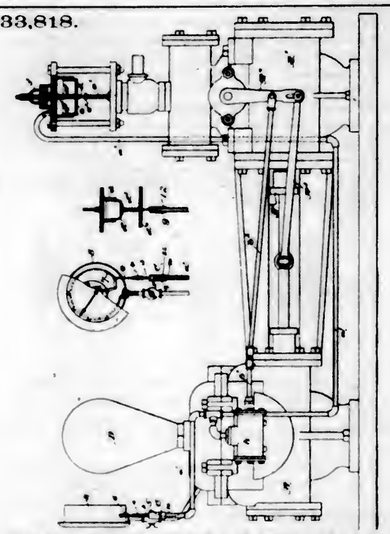
Claim.—1. The combination, with a steam-pump, of the bracket *a*, secured in an upright position on the end of the steam-chest A', the air-pump cylinder *b* on said bracket, and connections with the valve-movement of the steam-pump, the chamber a^3, connected by pipe *a'* with the air-pump, the diaphragm *c* in said chamber, the valve-rod *d*, carried by said diaphragm, and the throttle-valve of the steam-pump, all substantially as shown and described.

2. The throttle-valve case d^1, valve *d'*, and rod *d*, the cap d^4, supporting the standards d^2 d^3, the plate c^3, standards *c' c'*, mounted thereon, and the air-chamber a^3, supported on said standards and provided with a diaphragm, *c*, carrying the rod of the throttle-valve, combined with an air-pump and connections therefor with the steam-pump, to operate it harmoniously with the speed of the pump, substantially as described.

3. The combination, with a steam-pump, and air-pump attached to and operated by the same, and an air-chamber supported upon standards over the throttle-valve of the steam-pump, of the bed-plate c^3, arranged upon the said standards, the curb c^2, the head or piston c^3, arranged in said curb, and the throttle-valve and its rod operated by a diaphragm on said air-chamber, the latter carrying the piston c^4 and operating it in its curb as a dash-pot, substantially as described.

4. The air-pump, and means, substantially as described, to reciprocate its piston in unison with that of the piston-rod of the pump the speed of which is to be regulated, a ported chamber to receive air compressed by the said air-pump, and a diaphragm or piston arranged in the said chamber, and a valve-moving rod actuated thereby, combined with means, substantially as described, to more or less close the ports in the chamber, and with the spring *c'* and the adjustable sleeve *f*, to operate substantially as described.

333,818. AUTOMATIC PRESSURE-REGULATOR. CHARLES B. BOSWORTH, Everett, assignor, by direct and mesne assignments, to the New England Manufacturing Company, Boston, Mass. Filed Sept. 7, 1885. (No model.)



Claim.—1. In a pressure-regulator for pumps, a pipe to contain compressed air, and one or more outlets therein, and a valve co-operating with the said outlets, combined with a pipe containing fluid under pressure, and with means, substantially as described, actuated by the pressure and not the weight of the said fluid to operate the valve and permit the escape of air from the air-pipe, substantially as described.

2. In a pressure-regulator for pumps, a pipe, *a'*, provided with one or more outlets, and a pump in connection therewith to compress a fluid therein, and a valve to co-operate with the said outlets, combined with a pipe and a pump to force water into the said pipe under pressure, and with means, substantially as described, actuated by variation in pressure of the water to increase or diminish the effective pressure of the pump A.

333,819. RING-SPINNING FRAME. JEAN J. BOURDART, Zurich, Switzerland. Filed Sept. 24, 1881. (Model.) Patented in Germany Mar. 19, 1880, No. 11,976; in England Dec. 2, 1880, No. 5,029, and in Austria-Hungary Jan. 11, 1882, No. 32,625 and No. 371.

Brief.—A ring-tube surrounds the upper part of the spindle, has a suitable traverse imparted to it, and at the same time can be moved independently. Secured to the spindle above the bolster is a disk having a rough upper edge to facilitate the winding on. Means are provided for automatically arresting the motion of the drawing-rollers independently of that of the spindles to secure uniform tension at all points of the traverse.

1. A movable ring-tube, C, combined with an operating-shaft, and devices, substantially as described, for imparting a continuous ascending movement, and for permitting the tube to be moved independently of the shaft, and devices, substantially as described, for imparting thereto an alternate ascending and descending movement during the continuous ascent of the tube for the formation of the body of the cop, substantially as described.

2. The combination of the ring *t'*, ring-tube, and traveler *t*, with the fixed thread-guide B, thread-guide A_1 secured to the ring-tube, and mechanism, substantially as described, for moving said guide A and the ring *t'* up and down during the operation of spinning, as described.

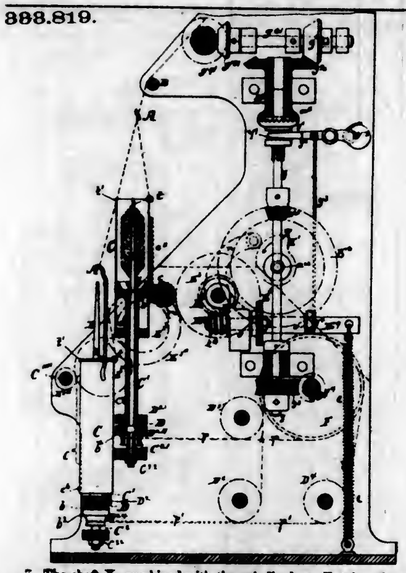
3. The disk *v*, made with rough upper edge, substantially as described, combined with and arranged on the spindle D below the part designed to receive the cop, and ring-tube C, and with means, substantially as described, for raising and lowering the ring-tube C, for the purpose of underwinding the thread, as described.

4. The combination of the spindle D with the disk *b*, secured to it, loose pulley D^3, disk b^3, step C^{iv}, ring-tube C, and bolster or guide-tube C', substantially as herein shown and described.

5. The combination of the drawing-roller *g*, with mechanism, substantially as described, for turning it, and with the spindles D, and mechanism, substantially as described, for turning them, and with the rings, and mechanism, substantially as described, for gradually lifting the rings with a reciprocating motion, and for automatically arresting the motion of the drawing-roller independently of that of the spindles, as described.

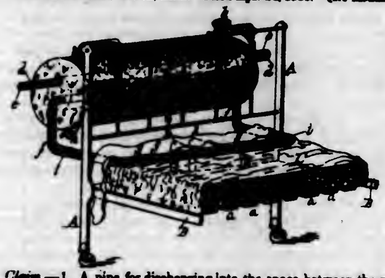
6. The ring-tube C, having rack *c'''*, combined with fixed guide-tube C', pinion *e*, shaft C''', and clutch e^1, and mechanism, substantially as described, for turning the shaft C''' first in one direction and then in the other, as set forth.

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7. The shaft X, combined with the spindle-drum F, tube n^2, worm g^1, worm-wheel g^2, shaft *y*, clutch *y' c²*, shifting-lever g^3, rod g^4, lever H, cam F', spring *e*, and mechanism, substantially as described, for turning the spindles D, for turning the drawing-roller *g*, and for raising the ring-tubes C, substantially as described.

333,820. AIR-HEATING DEVICE FOR BEDS AND ROOMS. WILTHROP H. BOWMAN, Boston, Mass. Filed Apr. 24, 1885. (No model.)

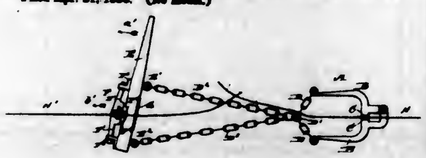


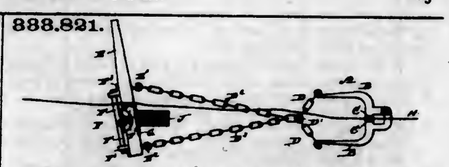
Claim.—1. A pipe for discharging into the space between the mattress and bed-clothing, in combination with a heater which is connected to said pipe and an outlet extending from said pipe, said outlet and the supply-pipe of the heater being provided with check-valves located, respectively, in said outlet and supply pipe, to allow the motion of the bed-clothes in creating a current of warm fresh air, substantially as set forth.

2. A transverse warm-air pipe, E, arranged in the space between the mattress and the bed-clothes and provided with holes *g*, in combination with a heater communicating with said pipe and an outlet pipe or pipes extending from it to the space below the bed, substantially as set forth.

3. The combination, with the heater, as herein described, and its supply-pipes *d d*, with their valves, of the connecting-pipes *f f* and perforated pipe R, by which the air-current is permitted to pass into the bed, substantially as stated.

333,821. WIRE-STRETCHER. GEORGE H. BRACKMAN, Lake Ree, Pa. Filed Apr. 21, 1886. (No model.)

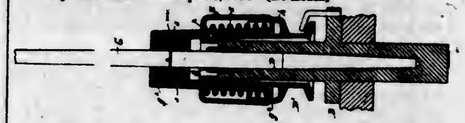




Claim.—1. In a wire-stretcher, the lever E, having the hooks E' and E² and the bearings F², in combination with the clamp F, having the pivoted arms F' and the clamping-plates F², substantially as shown and described.

2. In a wire-stretcher, the clamp A, having the pivoted arms B, provided with clamping-plates C, the short chains D, the link D', and the chains D^2 and D^3, in combination with the lever E, having the hooks E' and E², the bearings F², and the clamp F, provided with pivoted arms F', and having the clamping-plates F², substantially as shown and described.

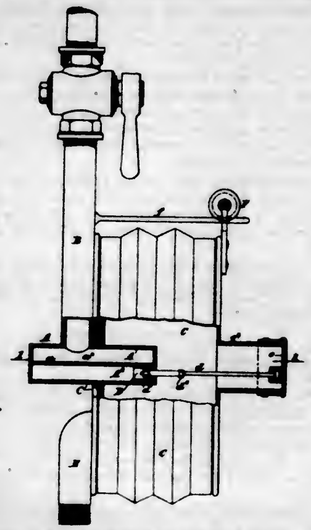
333,822. SLEEVE-WHIRL SPINDLE FOR SPINNING-FRAMES. EDWD. R. BRADLEY, Stonington, Conn., assignor to George Draper & Sons, Hopedale, Mass. Filed Apr. 21, 1884. (No model.)



Claim.—1. The rotatable whirl-spindle D, the stationary bolster-case provided with a chamber to receive the lower end of the whirl-spindle, the whirl attached to the said spindle, the cap provided with the flange 2 and a washer, combined with the spring *c* and the bobbin-carrying spindle provided with a supporting-foot, g^3, and a lip g^4, the said spring acted upon or held between the said flange and lip holding the foot g^3 against the washer and permitting the bobbin-carrying spindle to move or tip laterally on or with relation to the whirl-spindle, the combination being and operating substantially as described.

2. The bobbin-carrying spindle provided with a foot and spring support and the spring, combined with the whirl-spindle D, provided with a whirl and adjustable cap, to vary the force of the spring, and with a support for the said spindle D, substantially as described.

333,823. GAS-REGULATOR. GEORGE BRAY, Blackman Lane, Leeds, County of York, England. Filed Sept. 29, 1885. (No model.) Patented in England May 22, 1885, No. 6,207.



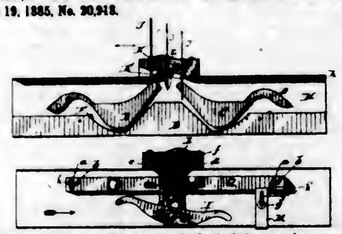
Claim.—1. The combination of the collapsible reservoir *a* of a gas-regulator and gas-pipes with a casing having a narrow long slot and a sliding valve controlled by said collapsible reservoir.

2. The combination of the gas-pipes and collapsible reservoir, and a casing having a long narrow slot, with a sliding valve connected to

the collapsible part of the reservoir, but leaving a play between the same, as and for the purpose set forth.

3. The combination of the gas-pipes and casing having an opening, and a valve adapted thereto, with a collapsible reservoir carrying a spindle *d*, passing through said valve and provided with stops d^2 and d^3.

333,824. KNITTING-MACHINE. WILLIAM BENNETT, Georgetown, Ontario, Canada. Filed Jan. 16, 1885. (No model.) Patented in Canada Jan 19, 1885, No. 20,913.



Claim.—1. The combination, with the knitting-machine cam-cylinder provided with needle-operating cams A B C, of the dog E, pivoted between said cams A C, and a lever and connections for throwing said dog in the path of the idle needles, as set forth.

2. The combination, with the cam-cylinder having cams A B C, of a dog pivoted between said cams A C, a spring arranged to hold said dog with its needle-engaging end in either direction, and a lever and rods *d e*, for depressing the free end of the dog to throw it into the path of the idle needles, as set forth.

3. The combination, with the cam-cylinder H, having cams A B C, of the dog E, pivoted between the cams A C, the pawl K, and the spring L, substantially as and for the purpose specified.

4. The combination, with the cam-cylinder having stationary cams A B C, the dog E, pivoted between said cams A C, the pawl K, spring L, lever I, and intermediate connections, as described, for throwing the dog E into the path of the idle needles at will, all arranged and operating substantially as and for the purposes specified.

5. The combination, with the cam-cylinder, needles, and dog E, arranged as described, of the lever I, pivoted centrally to the cylinder, the rods *d e*, pivoted to said lever, one upon each side of such central pivot, and having bent ends, which serve to engage and depress the dog to throw it in the path of the idle needles, and the adjustable roller *g*, arranged to engage the lever I, as and for the purpose set forth.

6. The combination, with the cam-cylinder having cams A B C, of the dog E, pawl K, spring L, lever I, rods *d e*, and adjustable roller *g*, all arranged and operating for the purposes set forth.

7. The combination, with the cam-cylinder having cams A B C, of the pivoted dogs F, as shown, the gates D, arranged to be thrown into or out of contact with the cams A or C at will, the slide G, and connections with said gates, as set forth.

8. The combination, with the cam-cylinder having cams A B C, of the pivoted dogs F, arranged one upon either side of said cams, and the pivoted dog E, located above and between said cams A C, said dogs being constructed to engage the needles and force them to the upper side of the cams, and to lower the needles successively to render them acting and non-acting, as set forth.

9. The combination, with the cam-cylinder provided with needle-actuating arms A B C, and with the pivoted gates D, arranged to be thrown into or out of contact with said cams at will, of the dogs F, arranged adjacent to said point of contact, as and for the purposes set forth.

10. The combination, with the cam-cylinder H, having needle-actuating cams and slots A', dogs F, and pivoted gates D, having pins *a*, of the sliding-bar G, having inclined slots *b*, all arranged and serving as and for the purposes set forth.

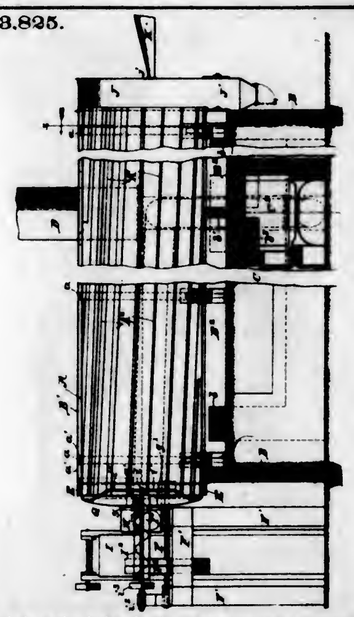
333,825. DRIER. LYDIA J. CADWELL, Chicago, Ill. Filed Sept. 10, 1885. (No model.)

Claim.—1. The combination, with a rotary drying-cylinder, a furnace for supplying the same with dry or heated air internally, and a furnace for heating the drying-cylinder externally, of a sheath or shell constituting a chamber about the drying-cylinder for the purpose of retaining and evenly distributing all the heat evolved from the external furnace, and thus preventing loss of heat from the motion of the drying-cylinder or otherwise.

2. The combination, with a drier for pulverulent fertilizers and similar substances, provided with means for dissipating the mass within the drier, of means for producing a current of air through the drier, a furnace separate from the means for producing the current of air, and a flue arranged to conduct vapor and gases from the drier to this furnace.

3. In combination with a drier constructed to dissipate within its drying-chamber the mass being treated, a furnace constructed to supply

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heated air to the drying-chamber, a separate furnace arranged to heat the wall of the drying-chamber, and a flue arranged to conduct the vaporous air and gases from the drying-chamber to one of the furnace-fires.

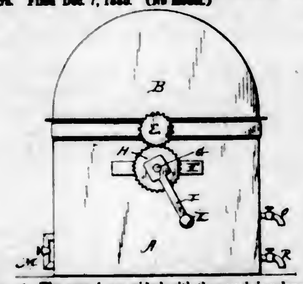
4. The combination, with a drier constructed to dissipate within the drying-chamber the material being dried, of a furnace constructed to supply heated air to the drying-chamber, a furnace arranged to heat the wall of the drying-chamber, a flue arranged to conduct the vapor and gases from the drying-chamber to the fire of one of said furnaces, and a fire-box for a secondary fire, located in position to receive the products of combustion from the furnace to which said vapor and gases are first conducted.

5. The combination, with a metal drying-cylinder, A, and a housing therefor, of a transversely-divided passage, B^2, in the housing, a furnace, a chimney, passages leading from the furnace to the several compartments of the passage B^2, and passages leading from the said several compartments to the chimney, substantially as described.

6. The combination of a metal-walled drying-chamber, a furnace arranged to heat the drying-chamber by contact of its products of combustion with the chamber-wall, a flue leading from the drying-chamber to the furnace, a chimney having a receiving-flue, b^2, leading from the furnace, and a fire-grate, O, located in the chimney above the grate, substantially as and for the purpose set forth.

7. The combination of a drying-chamber, means for supplying said chamber with air, a furnace, and a flue leading from the drying-chamber to the fire-box of the furnace, and provided with a branch passage, whereby a part only or the whole of the vapor-laden air from the drier may be delivered to the fire.

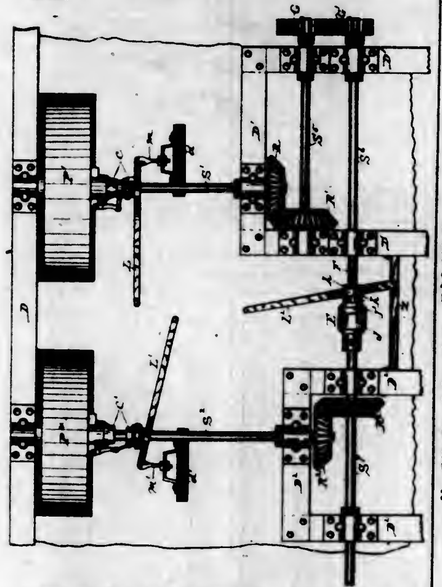
333,826. GEARING. DAVID C. CAMP and HENRY P. CAMP, Gainesville, Ga. Filed Dec. 7, 1885. (No model.)



Claim.—1. The case A, provided with the revolving drum C, having pinion E, and the bracket F, having journal-stud G, in combination with the gear H and the integral handle I, as set forth.

2. The combination, with the integral gear H and crank I, journaled upon the stud G, secured to the case A, having chamber N and pipes *n* and *p*, of the pinion E, rigidly secured to the drum C, having holes *r* and *t*, as set forth.

333,827. SPEED-REGULATOR FOR THE ROLLS OF A PAPER MILL. JAMES L. CAMPBELL, Lockport, Ill. Filed July 22, 1885. (No model.)



Claim.—1. In a speed-regulator, two or more drive-pulleys arranged on their respective shafts, substantially as shown and described, each having a friction-clutch for detachably connecting it with its shaft, a shaft of one of said pulleys being connected with a counter-shaft by means of miter or bevel gears, and said counter-shaft being in turn connected with a secondary counter-shaft by means of interchangeable spur-gears of different diameters, the shaft or shafts of the other of said pulley or pulleys being connected with a main drive-shaft for driving the rolls of a paper-mill by means of miter or bevel gears, wherein said drive-shaft is arranged to be detachably coupled with said secondary counter-shaft, for the purpose set forth.

2. In the speed-regulator described, the train of pulleys of different diameters, each independently mounted on and arranged to be detachably connected with a suitable shaft, in combination with said shafts, and the shafts S^2, S^3, and S^4, miter or bevel gears R R' and R^2 R^3, and interchangeable spur-gears G G', and clutch E, and the means, substantially as set forth, for operating said clutches, for the purpose specified.

3. In the speed-regulator, the train of two or more pulleys shown and described, each mounted loosely on a shaft, which shafts are provided with miter or bevel gears for meshing with similar gears of a main counter-shaft for driving the rolls of a paper-mill, and having the friction-clutches shown and described for detachably connecting said pulleys with their respective shafts, and for throwing them in and out of service, substantially as and for the purpose specified.

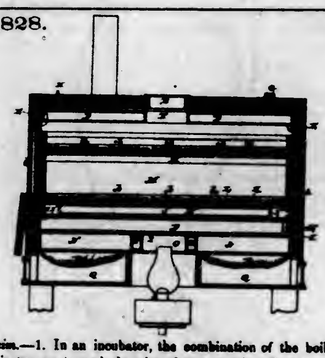
4. In the speed-regulator shown and described, and in combination with the shafts S^2 S^3, and shaft S^4, and the driving mechanism, the spur-gears of different diameters, arranged to connect said shafts S^2 and S^3, in the manner substantially as and for the purpose set forth.

5. In the speed-regulator described, the combination of the pulleys P^2 and P^3, shafts S^2 and S^3, clutches C and C', having the levers L L', gears R R' and R^2 R^3, shafts S^2, S^3, and S^4, clutch E, having the lever L^2, and the interchangeable gears G G', as and for the purpose set forth.

6. In the speed-regulator shown and described, the combination of the train of pulleys P, P', P^2, P^3, and P^4, shafts S, S', S^2, S^3, and S^4, each having a friction-clutch for connecting them with their respective pulleys, and each provided with a gear-wheel, as shown and described, for connecting them with the shafts S^2 and S^3, belt B, tightening-pulleys *a*, *a'*, and a^2, and the means, substantially as set forth, for supporting said parts, for the purpose specified.

333,828. INCUBATOR. JAMES L. CAMPBELL, West Elizabeth, Pa. Filed Sept. 8, 1883. Renewed Nov. 5, 1885. (No model.)

333,828.



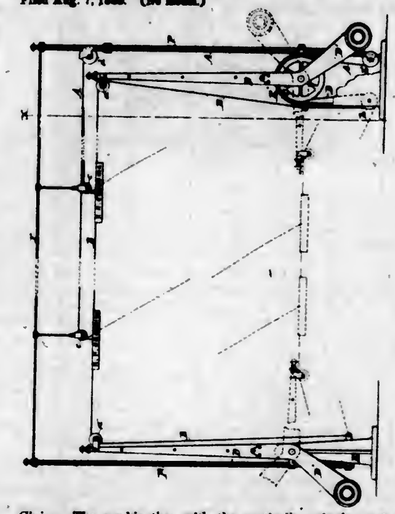
Claim.—1. In an incubator, the combination of the boiler, which is made in two parts, and the pipes for connecting them together, two pipes having their upper ends projecting into the top of the upper portion of the boiler, and the other two pipes having their lower ends projecting down into the lower portion of the boiler, substantially as set forth.

2. The trays having their bottoms constructed of pieces or slats which are higher upon one side than the other, so as to tilt the large ends of the eggs upward, substantially as specified.

3. The trays having their bottoms formed of the strips K L, the strips K being made higher upon one side than the other, substantially as shown.

4. The combination of the incubator having a hot-air chamber on its under side, and which has an opening or space at its center, with the perforated box or frame which is applied thereto, and the lamp, substantially as set forth.

333,829. RAILROAD-GATE. ROBERT C. CREPS, Syracuse, N. Y. Filed Aug. 7, 1885. (No model.)



Claim.—The combination, with the vertically-swinging gate-bars D D, drum C, bar-operating cable or chain B, wound on said drum, posts P P, rod *r*, and pulleys *c c* and *d*, of the supporting cable or chain A, wound on the drum in opposite direction from the cable or chain B, substantially as described and shown.

333,830. COMPOUND TOOL. JOHN OGDLEY, Pullman, Ill. Filed Sept. 1, 1885. (No model.)

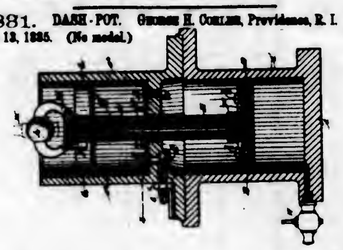


333,880.



Claim.—A tool, substantially for the purpose described, provided with the two levers pivoted and constructed to form the recessed jaws A′ and B′, combined with the blades D, adjustably seated and held in the recesses of said jaws, the screws H, passing through the slots formed transversely through the said jaws, and the screws I, applied to the jaws and abutting against the rear edges of the blades, substantially as shown and described, and for the purpose set forth.

333,881. DASH-POT. GEORGE H. CORLISS, Providence, R. I. Filed June 13, 1885. (No model.)



Claim.—1. A dash-pot for steam-engine valve-gear, consisting of two cylinders, A′ A^2, of equal or nearly equal diameter, having a common axis, with a diaphragm, A^3, situated between them, and provided with means for allowing the air to flow freely through it on each upward movement of the pistons, and with means for restricting the return-flow at will, in combination with each other and with the pistons D G, working air-tight, or nearly so, in the cylinders, a rigid connection, E, and a suitable connection to the valve mechanism.

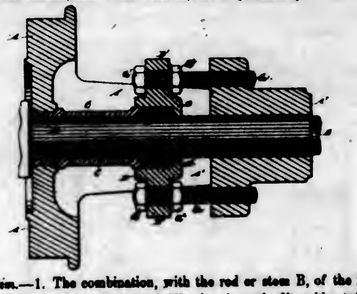
2. The cylinders A′ A^2 and diaphragm A^3, with its orifice *a* and valve or valves B, in combination with the double piston D G, sleeve G′, connection E, and with means, as C, for adjusting the area for allowing the air to escape from the cylinder A^2 into the cylinder A′, and a suitable connection to the valve mechanism, as herein specified.

3. The screw-threaded clamp H and its operating means I, in combination with the stem E and two pistons, D G, and with the inclosing-cylinders A′ A^2, and a suitable connection, as M, to the valve-operating mechanism, the clamp H being arranged as shown, so as to serve the double functions of confining the piston G to the stem, and forming a bearing for the connection M, as herein specified.

4. A screw-threaded clamp, H, and transverse clamping screw-bolts, I, in combination with each other and with a screw-threaded connection, E, said clamp H being adapted to work freely while it is being screwed onto the connection E until it reaches its seat, and then to be firmly set upon the connection E by the transverse screw-bolts I, to insure at all times a firm connection and true alignment of the parts, as shown and described.

5. In a dash-pot for steam-engine valve-gear, the piston G, provided with a sleeve, G′, combined with a connection, E, diaphragm A^3, provided with a central orifice, *a*, piston D, and cylinders A′ A^2, said sleeve G′ being of slightly larger diameter than the connection E, and adapted to move completely fill the orifice *a*, thereby obsoking the flow of air from A^2 into A′ and retarding the descent of the pistons, as herein specified.

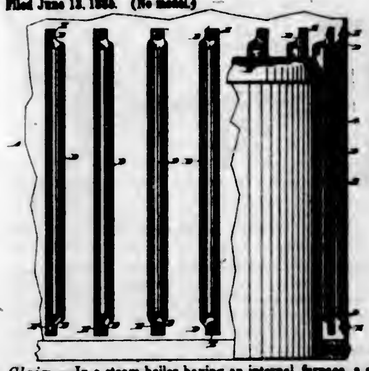
333,882. STUFFING-BOX FOR STEAM-ENGINES. GEORGE H. CORLISS, Providence, R. I. Filed June 13, 1885. (No model.)



Claim.—1. The combination, with the rod or stem B, of the fixed head A, the long sleeve C, fixed rigidly thereto, and adjustable stuffing-box D and inclosed packing E, all arranged for joint operation as herein specified.

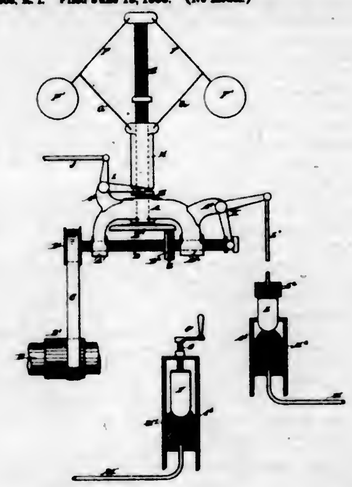
2. The fixed portion A, with its yoke A′, studs G, check-nuts G′, and heads G^2, in combination with each other and with the stem B, stuffing-box D, and sleeve C, adapted for joint operation, as herein specified.

333,883. STEAM-BOILER. GEORGE H. CORLISS, Providence, R. I. Filed June 13, 1885. (No model.)



Claim.—In a steam-boiler having an internal furnace, a series of tubes, as D D, extending up and down in the space between the furnace and shell, open at each end and cut away to form lips *d*, the tube D being secured to the shell A by fastenings E, which pass through said lips, all arranged for joint operation substantially as herein specified.

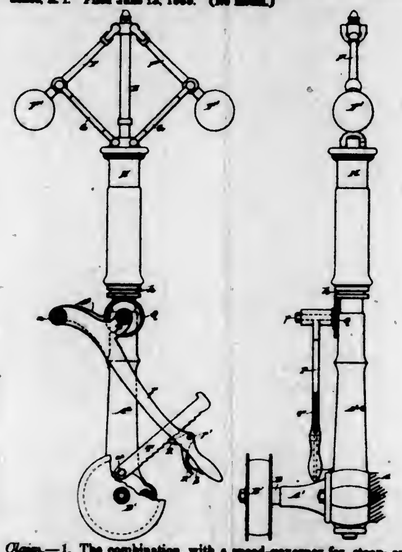
333,884. GOVERNOR-REGULATION. GEORGE H. CORLISS, Providence, R. I. Filed June 13, 1885. (No model.)



Claim.—1. In combination with a governor, and with means for changing the velocity ratio thereof, as the face-wheel E′, friction-rim *d*, with liberty to shift the latter endwise, the bulb or vessel A^4, plunger L, connection L′, for actuating by the changes of pressure in a fluid, and the pipe M and bulb or vessel M′, and means, as N O O′, for compressing and holding compressed to various degrees at a distant point, all arranged for joint operation substantially as herein specified.

2. In combination with a governor, and with means for changing its velocity ratio, a constant force, as weight L′, acting to compress the bulb or vessel A^4, connected pipe M, bulb or vessel M′, and means, as N O O′, for increasing and relaxing the pressure on the latter at a distant point adapted to allow a single pipe and compressing means to adjust the speed of the governor in both directions, substantially as herein specified.

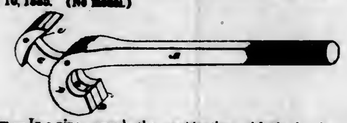
333,885. STEAM-ENGINE GOVERNOR. GEORGE H. CORLISS, Providence, R. I. Filed June 13, 1885. (No model.)



Claim.—1. The combination, with a speed-governor for steam-engines, of an anti-friction wheel, Q, arranged, as shown, relatively to the sleeve H, and adapted to afford a frictionless bearing for said sleeve and hold the governor out of action when the speed is below a certain rate without imposing any appreciable friction, substantially as herein specified.

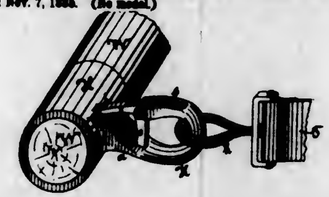
2. The combination, with a speed-governor for steam-engines, of the anti-friction wheel Q, lever P^2, spring-dog R, and ratchet-bar T, arranged to serve as herein specified.

333,886. PIPE-WRENCH. JAMES E. DAVIS, Palmyra, Ohio. Filed Aug. 10, 1885. (No model.)



Claim.—In a pipe-wrench, the combination, with the head or shank A, having the slotted serrated head B formed integral therewith, and with the block D, located in the slot of said head, of the pivoted pawl or dog C, having laterally-projecting side flanges, *c c*, constituting a head equal in width to the width of the slotted head, substantially as described.

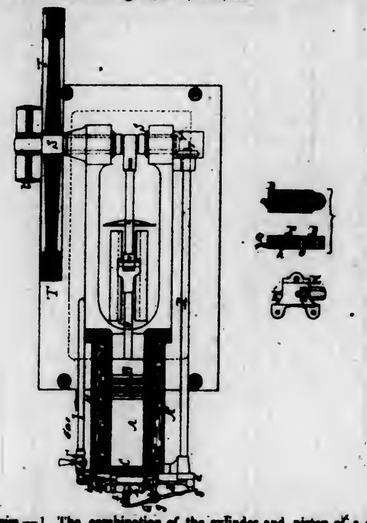
333,837. WHIFFLETREE-HOOK. JOHN R. DAVIS, Bristol, Wis. Filed Nov. 7, 1885. (No model.)



Claim.—1. The combined ferrule and hook H, said hook being provided with longitudinal slots *a* and *b*, adapted to admit and hold in position the V-shaped stop *s*, substantially as described, and for the uses and purposes mentioned.

2. The ferrule and hook H, in combination with the stop *s*, substantially as described, and for the uses and purposes mentioned.

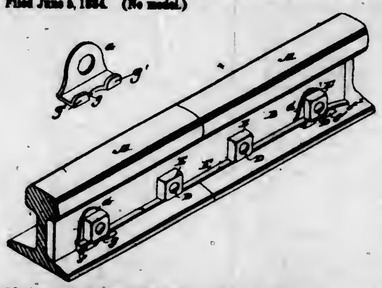
333,838. GAS-ENGINE. RICHARD DELAMARE-DEBOUTTEVILLE and LEON PAUL CHARLES MALANDIN, Fontaine-le-Bourg, Seine-Inférieure, France. Filed Apr. 14, 1884. (No model.) Patented in France Feb. 12, 1884, No. 160,257; in Belgium Feb. 28, 1884, No. 64,263; in England Feb. 26, 1884, No. 2,906; in Germany Mar. 4, 1884, No. 28,915; in Italy Mar. 26, 1884, No. 76,697; in Russia Apr. 2, 1884; in Spain May 26, 1884, No. 5,979, and in Austria Aug. 26, 1884, No. 3,731.



Claim.—1. The combination of the cylinder and piston of a gas-engine with the head C, having a chamber, C′, and a slide, D, provided with a series of longitudinal air-openings, Q, transverse gas-passages P, and port O.

2. The combination of the cylinder and piston of a gas-engine with a gas-supply pipe, I, having a spring-valve, i, and a separate slide-valve, D, carrying the air and gas passages and adapted to come into contact with the said valve to open the same periodically, substantially as set forth.

333,839. NUT-LOCK. ROY DODGE, Central, St. Louis County Mo. Filed June 5, 1884. (No model.)

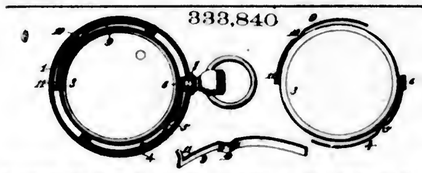


Claim.—1. In a nut-lock, the perforated stirrup-shaped washers G G, having the lips *f f*, in combination with the perforated rails A A, bolts D D, nuts E E, spring locking-rod F, having the head *f* at one end and the curved elastic portion *f* at the opposite end, substantially as set forth.

333,840. WATCH-CASE SPRING. CHAS DEMPLEMAN, Bog Harbor, N. Y., assignor to the Fahys Watch Case Company, same place. Filed Sept. 26, 1885. (No model.)

Claim.—1. A watch-case spring of substantially uniform thickness throughout its length curved lengthwise to fit the case-center of a watch and formed between its ends with an abrupt inwardly-projecting bend to rest against the movement-holding ring and serve as a fulcrum for

333,840

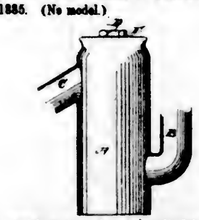


producing the requisite elasticity or tension to the acting end of the spring, which engages the cap or cover of a watch, substantially as described.

2. The combination, with the case-center of a watch-case and a movement-holding ring contained in said case-center, of a case-spring curved lengthwise to fit the case-center and formed between its ends with the abrupt inwardly-projecting bend, which rests against the periphery of the movement-holding ring and serves as a fulcrum to retain the acting or engaging end of the spring away from the movement-holding ring for the purpose of providing the requisite tension or elasticity at such acting end, substantially as described.

3. The combination, with the case-center and movement-holding ring of a watch-case, of case-springs for locking the cap or cover and for throwing the cap or cover to its open position, said springs being each composed of a flat strip of spring metal curved lengthwise to fit the case-center, and each constructed between its ends with the abrupt inwardly-projecting end, which bears against the movement-holding ring as a fulcrum, whereby the ring subserves to confine the case-springs in proper position without the use of extraneous fastening devices, and provides the requisite tension or elasticity at the acting ends of the springs, substantially as described.

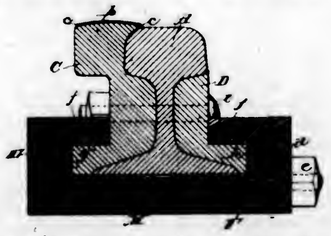
333,841. STENCH-TRAP. JAMES F. DONOVAN, Fall River, Mass. Filed May 25, 1885. (No model.)



Claim.—1. A stench-trap made of a cylindrical body, A, having inlet and outlet passages B C entering its vertical sides one below the other, and the trap-chamber thereof provided with an upward-projecting extension, F, in continuation of the outlet-passage C, and acting as a direct guard or fender thereto, substantially as described, for the purpose specified.

2. A stench-trap made of a cylindrical body, A, having a clean-out opening, D, at its upper end closed by an attachable and detachable cover or stopper, E, and inlet and outlet passages B C entering its vertical sides one below the other, and the trap-chamber thereof provided with an upward-projecting extension, F, in continuation of the outlet-passage C, and acting as a direct guard or fender thereto, substantially as described, for the purpose specified.

333,842. DEVICE FOR COUPLING AND SPLICING RAILROAD-RAILS. JAMES DOTY, Marion, Wis. Filed Sept. 10, 1885. (No model.)



Claim.—1. In a railroad-rail joint, one end of each rail secured to the bridge-piece and angle-bar by a single bolt and the opposite end of said rail left free, substantially as and for the purpose set forth.

2. In a railroad-rail joint, a laterally-extended bridge-piece constructed to conform with the outer sides of the rails and tapered toward its ends, and an angle-bar constructed to conform with the foot, web, and under side of the rail-treads, in combination with a clamp or clamps consisting of two unequal jaw-sections detachably united and concaved upon their lower inner faces in a horizontal direction, substantially as and for the purposes set forth.

3. In a railroad-rail joint, the clamps, each composed of two unequal detachably-united jaw-sections having their inner lower faces constructed to present a continuous concavity in a horizontal direction when said jaw-sections are united, substantially as described.

4. In a railroad-rail joint, a jawed clamp, substantially as herein described, consisting of two unequal sections, the larger formed with a bolt-extension and the smaller with an opening or passage for said bolt-extension, packings of hard leather or other suitable material secured to the inner vertical faces of the clamp-jaws, and a nut adapted to be placed upon the outer extremity of the bolt-extension of the larger clamp-section, as and for the purpose set forth.

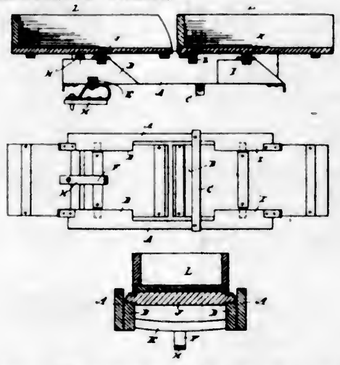
5. The joint for railroad-rails herein described, consisting of a bridge-piece and an angle-bar relatively placed one on each side of the meeting-rails, the clamps formed by two unequal jaw-sections, the larger of these sections united to the smaller by an integral bolt-extension passed through the latter and secured by a nut, and the packing of hard leather or other suitable material interposed between the bridge-piece and angle-bar and the inner vertical faces of the clamp-jaws, all arranged to operate substantially as and for the purpose set forth.

333,843. NOSE-GUARD FOR EYEGLASSES. WILLIAM H. ECCLESTON, Southbridge, Mass. Filed Oct. 8, 1885. (No model.)



Claim.—In an eyeglass, the combination, with the frame A, provided with a bow, B, of a nose-piece, C, having a longitudinal slot, c, and a bracket, D, provided with a longitudinal slot, *d*, and the guide-piece E, composed of a body, *e*, and two T ends, *e'*, as shown, adapted to be inserted in the slots c and *d*, and to retain its position therein when turned flatwise, while permitting adjustment of the nose-piece C, as and for the purpose set forth.

333,844. DUMPING-WAGON. JUDAH H. FERGUSON, Rattle Run, Mich. Filed Oct. 15, 1885. (No model.)



Claim.—1. The combination, with the side rails, of the bearing-blocks D I, secured to the inner faces of said rails, the rock-shafts J K, journaled in bearings in said blocks, and the boxes L, rigidly secured to said rock-shafts, substantially as described.

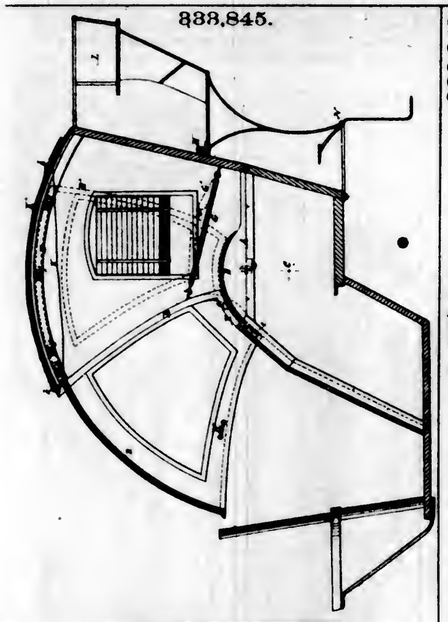
2. The combination, with the side rails, of the bearing-blocks D I, secured thereto and having their rear ends beveled, the rock-shafts journaled in bearings in said blocks, and the boxes L, rigidly secured to said rock-shafts, substantially as and for the purpose specified.

3. In a farm-wagon, the combination of the side rails, A', bolster C, bearing-blocks D I, bar E, hanger F, reach-bar H, rock-shafts J K, and boxes L, all constructed, arranged, and operating substantially in the manner and for the purposes set forth.

333,845. HANSOM-CAB. CHARLES A. FLOYD, Eastbourne, County of Sussex, England. Filed Oct. 13, 1885. (No model.)

Claim.—A cab made with its upper part, consisting of a roof and hood, separable from the lower part or body, substantially as and for the purpose herein set forth.

333,845.



333,846. STEAM-BOILER. ENOS FREY, GEORGE F. MOTTER, and JACOB REICHLEY, York, Pa. Filed Oct. 15, 1885. (No model.)



Claim.—1. In a boiler, a fire-box located within the same, having an enlarged top and surrounded by a water-jacket, tubes or flues leading downward through said jacket from said enlarged top, and tubes or flues leading upward from said enlarged top to openings communicating with the exterior of said boiler, the upper and lower tubes being coincident, substantially as specified.

2. In a boiler, a fire-box located within the lower portion of the same, tubes or flues leading downward from the upper portion thereof, tubes or flues registering with the downward flues and leading upward from said fire-box, a chambered ring provided with holes, and receiving said upward-extending flues, and caps normally closing said holes, substantially as specified.

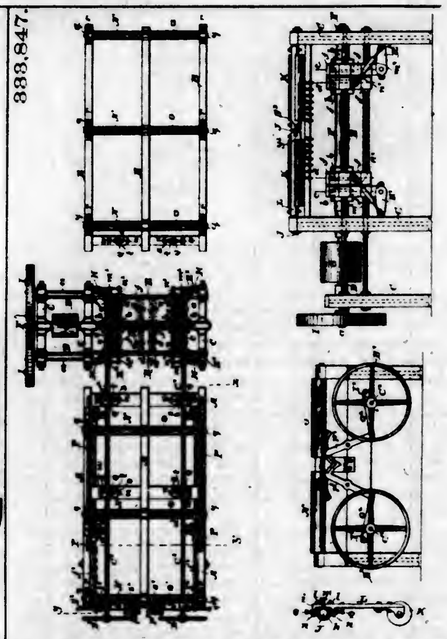
333,847. DOUBLE AND GANG EDGER. MILHAM GARLAND, Bay City, Mich. Filed Sept. 3, 1885. (No model.)

Claim.—1. In combination with the stationary saw of a gang-edger, a movable saw-guide and a mechanism for adjusting the latter, composed, essentially, of a rock-shaft and cranks connected by means of pitmen to both ends of the saw-guide, all substantially as and for the purposes hereinbefore set forth.

2. In combination with the stationary and movable saws of a gang-edger, and means for adjusting the movable saw-guide, the depending



333,847.



pointers located above and in close proximity to the upper portions of the peripheries of the saws, and by means of which the operator can sight the condition of the machine with reference to the kind of work it may be set to do, all substantially as hereinbefore set forth.

3. In a gang-edger, the combination, with the edge-guide arranged to move bodily and laterally, of a rock-shaft and cranks thereon, suitably connected, as specified, to said edge-guide, near the ends of the latter, a suitable handle for turning said rock-shaft, and means for locking said handle in place, all substantially in the manner and for the purpose hereinbefore set forth.

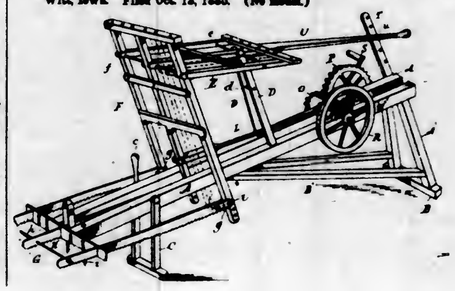
4. In combination with a frame carrying an upper feed-roll geared to a lower feed-roll, and the shaft or bar to which said frame is hinged, means for adjusting said frame relatively to the said shaft or bar, for the purpose of effecting a relative adjustment of the said upper and lower feed-rolls, all substantially as hereinbefore set forth.

5. In combination with the hinged frame L, which carries an upper feed-roll, and the shaft or bar J, to which said frame is hinged, an idler-roller, M, mounted to turn freely upon said shaft or bar, for the purpose of facilitating the return through the machine of defective lumber, all as hereinbefore set forth.

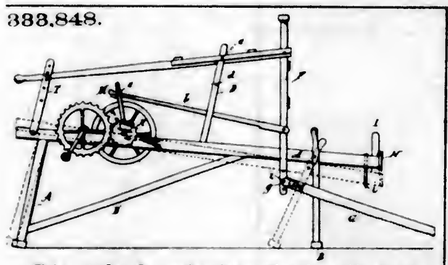
6. In combination with the feed-table, edge-guide, drawing feed-rollers, saws, and receiving-table of a gang-edger, a series of three or more liners, Q, arranged to have two come in front of and one in rear of and out of line with the saws, as set forth.

7. In combination with the edge-guide, a liner or liners, Q, composed each of a toothed disk mounted in a swiveled stand, and thus adapted to have its degree of obliquity varied, substantially in the manner and for the purpose hereinbefore set forth.

333,848. FIRE-WOOD-SAWING MACHINE. JAMES GILMORE, De Witt, Iowa. Filed Oct. 12, 1885. (No model.)



333,848.

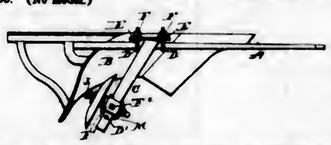


Claim.—1. In a fire-wood-sawing machine, the combination of the main frame, a pivoted support for one end thereof, the upright D, the horizontal frame and lever U, pivoted thereto, the perforated upright T, secured to the main frame, the adjusting-pin *u*, securing the lever to said upright, the swinging frame F, carrying the saws, the saw-guide H, and suitable operating mechaniam, substantially as and for the purpose described.

2. In a fire-wood-sawing machine, the combination of the main frame, an adjustable pivoted support therefor, the perforated upright T, the upright D, the horizontal frame E, pivotally secured to said uprights, the perforated lever U, secured to the frame E and adjustably secured to the upright T, the swinging frame F, pivotally secured to frame E, the saws G, adjustably and pivotally secured to frame F, the saw-guide H, a pitman, and means for driving the same, all as and for the purpose set forth.

3. A fire-wood-sawing machine comprising the following instrumentalities: a main frame, an adjustable support therefor, a slotted brace-bar, a slotted saw-guide, retaining-pins, a perforated upright, T, a lever, U, a horizontal frame, E, pivoted to uprights D, a swinging frame, saws adjustably pivoted to the lower end of said swinging frame, a pitman pivotally secured to one of the bars of said frame, a double split crank to which the pitman is adjustably secured, the shafts N, pinion O, secured to one of said shafts, and fly-wheel R to the other, the gear-wheel P, and crank-handle S, all as and for the purpose set forth.

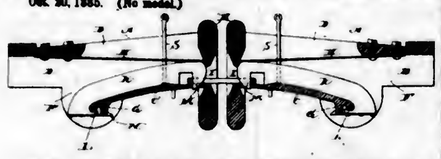
333,849. SOD-CUTTING ATTACHMENT FOR PLOWS. JOSEPH J. GOTTSCHEDOSH and OLE S. WANGSNESS, Minneapolis, Minn. Filed Sept. 16, 1885. (No model.)



Claim.—1. The combination, with the plow and the curved perforated arm clipped to the plow-beam, of the adjustable clamp, the journal, and the rotary cutting-disk on the rear end of said journal, substantially as specified.

2. The combination, with the plow and the curved arm secured to the plow-beam, of the adjustable bearing-clamp, its journal, the bolt F, the wedges M, and the rotary concavo-convex disk, substantially as specified.

333,850. CAR-COUPLING. DAVID U. GRAVELINE, Byron, Ill. Filed Oct. 20, 1885. (No model.)

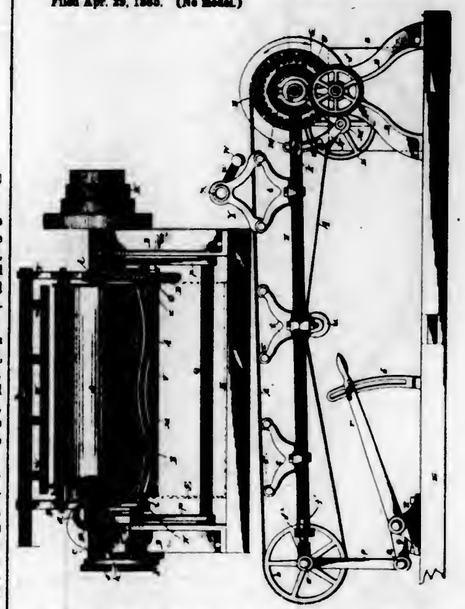


Claim.—1. The combination of the hollow draw-head having the opening F and the stud G, the draw-bar fitting in the draw-head and having the spring-hook to engage with the stud G and secure the draw-bar in place, and the spring H, bearing on the draw-bar, substantially as described.

2. The combination of the hollow draw-head, having the opening F and the stud G, and the draw-bar fitting in the draw-head, and having the spring-hook to engage with the stud G and secure the draw-bar in place, substantially as described.

3. The combination of the draw-head, the draw-bar therein, the link secured to the draw-bar, the feathered rod secured to the link and passed through a plate secured to the top of the car, and the hand-levers fulcrumed to the end of the car and connected to the link, substantially as described.

333,851. ORE-CONCENTRATOR. THOMAS J. GRAY, Chicago, Ill., assignor of two-thirds to John T. Greene and George M. Gram, same place. Filed Apr. 29, 1885. (No model.)



Claim.—1. In an ore-concentrator, the combination, with the drum-shaft, the drum mounted eccentrically thereon and provided with an intaglio gear, a foot-drum, and an apron carried by said drums, of a gear-wheel mounted concentrically on the shaft and in engagement with the intaglio gear, whereby a rotary motion of the shaft rotates the drum and imparts thereto a positive vibratory motion in two or more planes, substantially as set forth.

2. In an ore-concentrator, the combination, with the drum-shaft, the drum mounted eccentrically thereon and provided with an intaglio gear, a foot-drum, and an apron mounted on said drums, of a gear-wheel mounted concentrically on the shaft in engagement with the intaglio gear, a pinion mounted on an independent shaft in engagement with the gear-wheel, and means for transmitting the motion of the drum-shaft to the independent shaft, whereby the rotary motion of the drum on its shaft is reduced, while the vibratory motion of the drum is rapid, substantially as set forth.

3. In an ore-concentrator, the combination, with the drum-shaft, the drum with its intaglio gear mounted eccentrically thereon, the gear-wheel mounted concentrically thereon, the foot drum, and an endless apron mounted on said drums, of the independent shaft with the pinion gearing with the said gear-wheel, and cone-pulleys on the two said shafts for varying the rotary motion of the drum relatively to the vibratory motion of the same, substantially as set forth.

4. The combination, with head and foot drums, and endless-belt carrier, and the shaft on which the head drum is eccentrically mounted, of a wiper-roller journaled in bearings fulcrumed on the drum-shaft concentric with the drum, and means for transmitting the rotary motion of the drum-shaft to the roller-shaft, substantially as set forth.

5. The combination, with head and foot drums, an endless-belt carrier and the shaft on which the head drum is eccentrically mounted, of the wiper-roller, the vertically-adjustable arms fulcrumed on the eccentric portion of the drum-shaft, and a pinion secured on said eccentric portion, substantially as set forth.

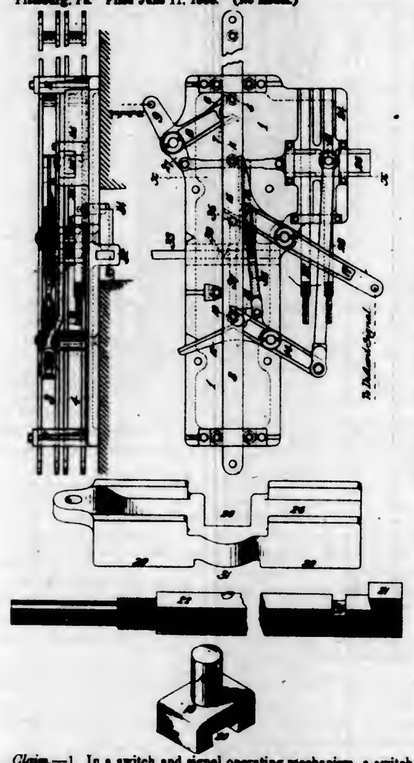
6. The combination, with the head and foot drums and the endless-belt carrier supported thereon, of tubular side rails connecting the drum-shafts and provided with screw-threaded sections, whereby the lengths of the rails are made adjustable for the purpose substantially as set forth.

7. The combination, with one of the drums and an endless-belt carrier, of a lever fulcrumed on the bed-plate, and the drum-shaft supports hinged to its end, whereby the slant of the carrier is determined, substantially as set forth.

8. The combination, with the head-drum having a vertical vibratory motion, and the carrier-belt supported thereon, of a water-tank located beneath the drum and adapted to retain water at a height which will allow the drum to dip therein at each vibration, substantially as set forth.

9. The combination, with the endless-belt carrier and the wiper-roller located in close proximity thereto, of wipers arranged on the surface of the wiper-roller in bow-shaped form for working the ore or metal toward the center of the belt, substantially as set forth.

333,852. SWITCH AND SIGNAL APPARATUS. JAMES T. HANRAY, Pittsburg, Pa. Filed June 11, 1885. (No model.)



Claim.—1. In a switch and signal operating mechanism, a switch-actuating lever, in combination with a reciprocating slide, a signal-lever operated by said slide, two signal-rods, and a movable clutch mechanism adapted to be shifted from one signal-rod to the other by the switch-lever, substantially as set forth.

2. In a switch and signal operating mechanism, two or more longitudinally-movable signal-rods, in combination with a shifting-plate and the rod-engaging block 19, carried by the shifting-plate, substantially as set forth.

3. In a switch and signal operating mechanism, two or more longitudinally-movable signal-rods, in combination with a shifting-plate adapted to engage and lock the signal-rods alternately, and the block, 19, carried by the shifting-plate, and constructed to engage the signal-rods, substantially as set forth.

4. In a switch and signal operating mechanism, the locking-bar 33, connected to the switch-rails and provided with the angular slot 38, in combination with the roller or pin 36, movable across the path of the locking-bar by or from the movement of the switch-lever, substantially as set forth.

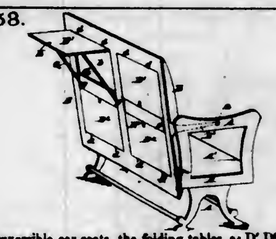
5. In a switch and signal operating mechanism, the switch-operating lever, in combination with the shifting-plate provided with a notched depending flange and two or more movable signal-rods having grooved upper edges for the reception of the flange when moved longitudinally into the notch in the flange, thereby interlocking the switch-lever and slide-plate, substantially as set forth.

333,853. RAILROAD-CAR FURNITURE. REINARD F. HANDY, New York, N. Y. Filed Sept. 4, 1884. (No model.)

Claim.—1. A reversible upholstered car-seat back having a section of its rear upholstered side hinged to form a shelf, and adjustable supporting means, as set forth.

2. A reversible upholstered car-seat back having sections of its rear upholstered side hinged in different directions and opening from the center, and a single adjustable supporting means, G, as set forth.

333,853.



3. In reversible car-seats, the folding tables, as D' D², hinged in opposite directions, combined with a single supporting means, as G, as herein specified.

4. In a reversible seat-back, the hinged tables D' D², arranged opposite to each other, in combination with the reversible braces G, adapted to support either table as it may come uppermost.

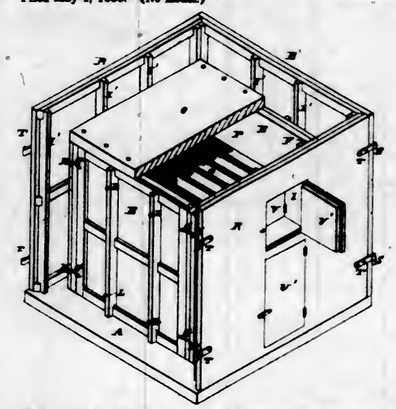
5. In a seat with reversible back, two pairs of hinged tables, D' D², arranged as shown, locking means, as E, for holding each in the closed position, and provisions, as *d*², for allowing either shelf to be adjusted level or to incline in either direction, as herein specified.

333,854. STRAP-HINGE. WILLIAM H. HART, New Britain, Conn., assignor to the Stanley Works, same place. Filed June 7, 1881. (No model.)



Claim.—An ordinary strap-hinge consisting of the leaves, pintle, and knuckles *a a a*, in combination with the strengthening-wings *b*, having round and flattened heads of a size equal to that of the knuckles, and curved bodies which extend from said heads over the outer face of the leaf or leaves, and are provided with a screw-hole at the end opposite said head, substantially as described, and for the purpose specified.

333,855. REFRIGERATOR. BERNHARD HARNMANN, Belleville, Ill. Filed May 1, 1885. (No model.)



Claim.—1. A refrigerator having an inner and outer case, whose upright walls are composed of sections engaged together at the vertical corners, and having stiffening-ribs I and I' between the corners, engaged together, substantially as set forth.

2. An inner case having wall-sections E E', and containing lower chamber, N, and ice-chamber P, an outer case having wall-sections R R', and a floor having a water-channel communicating with a discharge-pipe extending from the inner chamber to the outside of the refrigerator.

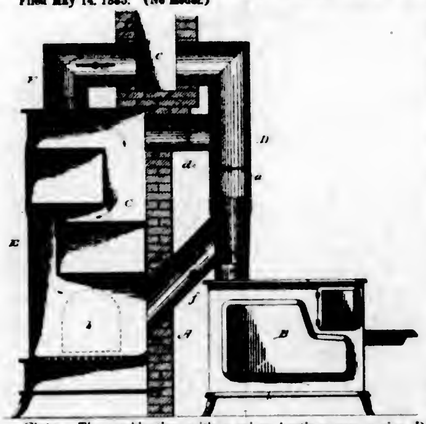
3. The two cases E E' and R R', one within the other, and the lower and upper openings through the sides of the cases, with doors U U' and V V', closing in the planes of the sides, substantially as set forth.

4. The combination of the bottom A, an inner and outer case, E E' and R R', standing upon the same, cover O, and doors U U' R R', substantially as set forth.

5. In a refrigerator, an ice-chamber having a floor composed of slats dovetailed at their ends into their supports, substantially as set forth.

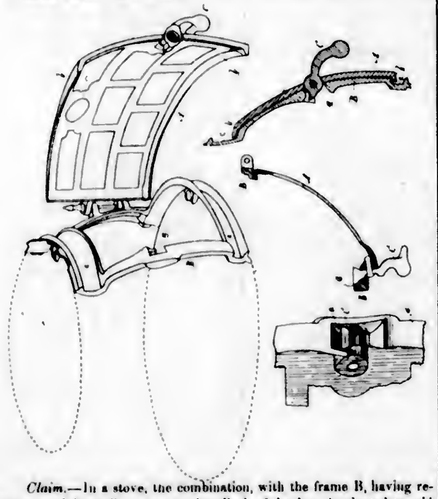
6. In a knockdown refrigerator, the combination, with the opposite removable side E E, of the slats Q, connected therewith by means of dovetail joints, as set forth.

333,856. HEATING-STOVE. HENDRICH P. HEITMANN, Ableman, Wis. Filed May 14, 1885. (No model.)



Claim.—The combination, with a prime heating-stove, a pipe, D, for the discharge of smoke and products of combustion, of a secondary heater, a pipe, *f*, connecting the base of the secondary heater with the pipe D, a pipe, *d*, connecting the upper portion of the secondary heater with the pipe D, the said pipes *d f* being provided with dampers *e g*, and a damper, *a*, for closing the pipe D above its connection with the pipe *f*, substantially as set forth.

333,857. STOVE-DOOR. JAMES H. HERRICK, London, Ontario, Canada, assignor of one-half to William M. Gartshore, same place. Filed June 25, 1885. (No model.)



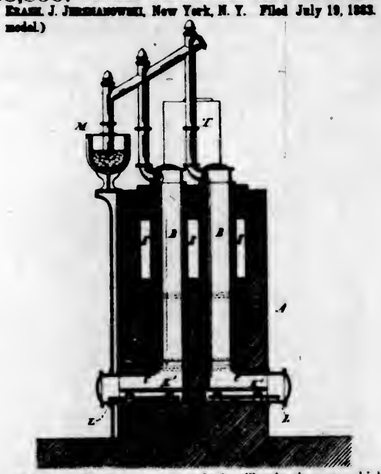
Claim.—In a stove, the combination, with the frame B, having recesses *c* and dovetail recess *a*, as described, of the door A, pivoted to said frame, and provided at top and bottom with an inwardly-projecting flange, *b*, and at its edge with a recess, as shown, and a lever pivoted in said recess, the short arm of said lever being dovetail in form, substantially as and for the purpose specified.

333,858. GAGE-WHEEL ATTACHMENT FOR DRILL-TEETH. EDWIN P. JANVIER, Still Pond, Md. Filed May 22, 1885. (No model.)



Claim.—The drill-tooth A, having the notch or notches B for the reception of the clamping-bolt F, in combination with the perforated arms D, and adjustable gage or covering wheel C, with the slotted clamp O, substantially as shown and described.

333,859. PROCESS OF AND APPARATUS FOR PRODUCING GAS. FRANK J. JESSIMANOWSKI, New York, N. Y. Filed July 19, 1883. (No model.)



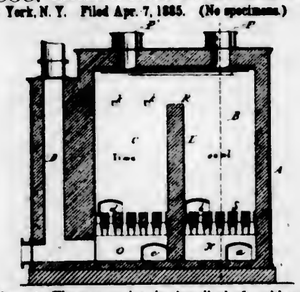
Claim.—1. The process of producing illuminating-gas, which consists in externally heating a body of lime to about a cherry-red, injecting steam and such a surplus of liquid hydrocarbon into the lime as will primarily produce hydrogen and carbonic acid and then carburet the same and convert it into a permanent illuminating-gas, in one operation, substantially as described.

2. The process of continuously producing illuminating-gas at one operation, which consists in heating a body of lime to about cherry-red by continuously-applied external heat, injecting steam and a surplus of liquid hydrocarbon into the bottom of the body of lime, and thereby primarily producing hydrogen and carbonic acid, and then fixing the same and producing a permanent gas by combining the surplus hydrocarbon, nascent hydrogen, and carbonic acid in the upper part of the body of heated lime, substantially as described.

3. The mode of continuously producing a combustible gas by passing steam and hydrocarbon through a body of lime maintained in a heated condition by external heat, substantially as set forth.

4. The gas-generator herein described, which consists of an L-shaped lime-chamber provided with a grate to support the lime, and a perforated injection-pipe beneath the lime-support, in combination with an external furnace or other suitable contrivance for continuously heating the same, substantially as described.

333,860. PROCESS OF PRODUCING GAS. ERASM. J. JESSIMANOWSKI, New York, N. Y. Filed Apr. 7, 1885. (No specimens.)



Claim.—1. The process herein described of making a combustible gas, which consists in first making water-gas by injecting steam through an incandescent body of carbon, in then adding to said water-gas steam and hydrocarbon, and in passing the combined water-gas, steam, and hydrocarbon through a converting body of heated lime, substantially as described.

2. The process herein described of making a combustible gas, which consists in first making water-gas by injecting steam through an incandescent body of carbon, in then adding to said water-gas steam and hydrocarbon, and in passing the combined water-gas, steam, and hydrocarbon through a converting body of heated lime, and alternately heating the lime by the products of combustion of the carbon used in making the water-gas, substantially as described.

3. The mode of producing a combustible gas, consisting in combining hydrocarbon and steam with a water-gas, and then subjecting the said gas, steam, and hydrocarbon to the action of heated lime, substantially as described.

333,861. MANUFACTURE OF SOLUBLE METHYL-BLUE FROM ROSANILINE. ALFRED KERN, Basle, Switzerland, assignor to Badische Anilin und Soda Fabrik, Mannheim, Germany. Filed June 8, 1885. (No specimens.)

Claim.—As a new product, methyl-blue S, the blue dye-stuff or coloring-matter produced by the sulphonization of trimethyltriphenylrosaniline, as hereinbefore described, and having the characteristics above set forth.

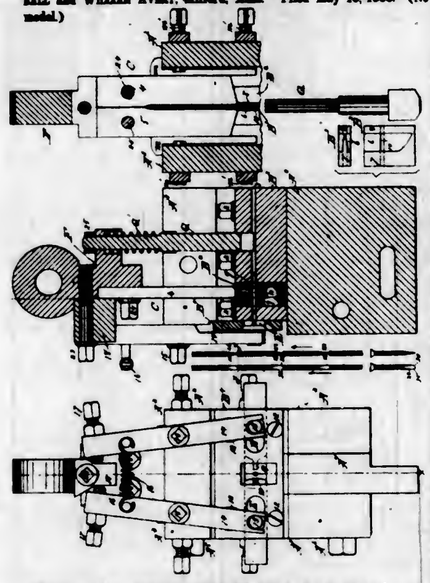
333,862. CARBURETING ATTACHMENT FOR GAS-FIXTURES. JOSHUA KIDD, Newark, N. J. Filed July 30, 1885. (No model.)



Claim.—1. The combination, with a gas-fixture, of a carbureting-vessel having a single opening and detachably suspended from the fixture at said opening, substantially as described.

2. The combination of the fixed pipe E, the heater D, and tubular casing B, attached to said pipe, the burners A, supported by said tubular casing, and the carbureting-vessel C, having a single opening or neck, *g*, and detachably suspended from the casing at said opening, substantially as described.

333,863. MACHINE FOR MAKING WIRE NAILS. JOSEPH E. KIMBALL and WILLIAM AVERY, Milford, Mass. Filed May 18, 1885. (No model.)



Claim.—1. The wedge-shaped die B^2, having its narrow end re-enforced with the end piece, 8, and forming a support for the wire under the action of the punch C, substantially as described.

2. The punch C, combined with the die B^2, having the narrow web 6 and the end piece, 8, the said die having a passage for the wire to be cut, the wire-passage in the web 6 exposing the wire to be acted upon by the said punch, substantially as described.

3. The feeding and corrugating rolls combined with the punch and the die to remove portions of the periphery of the wire at opposite points to form the beveled sides 28, to serve as the sides of the clinching-point of the completed nail, substantially as described.

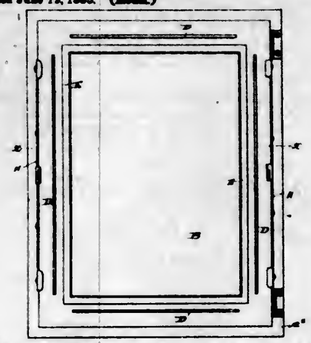
4. The two-part punch C and the die to support the wire, combined with the clamp to hold the wire while it is being acted upon by the said punch, substantially as described.

5. The two-part punch C and the die to support the wire while being acted upon by the said punch, combined with the guide-block, and the cutters to act upon and cut the wire to form chamfers 30 for the point of the nail, the said cutters moving in lines at right angles to that in which the punch C works, substantially as described.

6. The cutter E', provided with the projection or rest 19, and the cutter E, provided with the notch opposite the said rest, and the levers to move the said cutters toward each other, combined with the cam 18, and means, substantially as described, to operate it, the said cam being shaped to cause the part 19 of the cutter E' to be brought against and support the wire before the cutter E commences to cut to form the chamfers 30 for the nail-point, as set forth.

7. The feeding rollers or mechanism, the punch C and its co-operating die, the guide-block, and the two cutters E E', and means, substantially as described, to operate the same, combined with the cutter A, the gripping-slides A^{10} and A^{11}, and with the header H, substantially as described.

333,864. STENCIL-HOLDER. AUGUSTUS D. KLAMER, New York, N. Y. Filed June 19, 1885. (Model.)



Claim.—1. The combination, with a board, A, of the frame C, hinged on the same, and of a clamping-frame F on the frame C, substantially as herein shown and described.

2. The combination, with the board A, of the frame C, provided with the flanges E on the inner edge and hinged on the board A, and of the clamping-frame F on the frame C, substantially as herein shown and described.

3. The combination, with the board A, of the frame C, hinged on the same, and having tongues D, and of the clamping-frame F, having grooves G, for receiving the tongues D, substantially as herein shown and described.

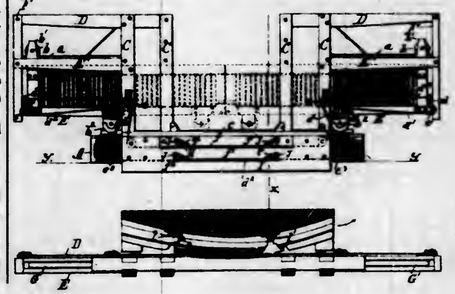
4. The combination, with the board A, of the hinged frame C, the clamping-frame F on the same, and of catches for locking the frames C and F together, substantially as herein shown and described.

5. The combination, with the board A, of the flanged frame C, hinged on the board, the top of the flange being flush with the top of the board A, and of the clamping-frame F, the top of which is slightly below the top edge of the flange, substantially as herein shown and described.

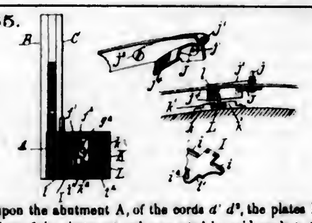
333,865. OPERATING GATES. HANS F. KLOFT, Chicago, Ill. Filed Feb. 2, 1884. (No model.)

Claim.—1. In a gate-operating mechanism, the combination, with a pair of plates constructed to slide laterally in recesses in the abutment and connected to the gates by lines and pulleys, as described, of a pair of vertically-adjustable plates or catches mounted upon the draw and constructed to engage the sliding plates, and oblique spring-guides, also mounted in the abutment and constructed to release the catches from the sliding plates, substantially as described.

2. The combination, with the sliding gates G G' and the slotted



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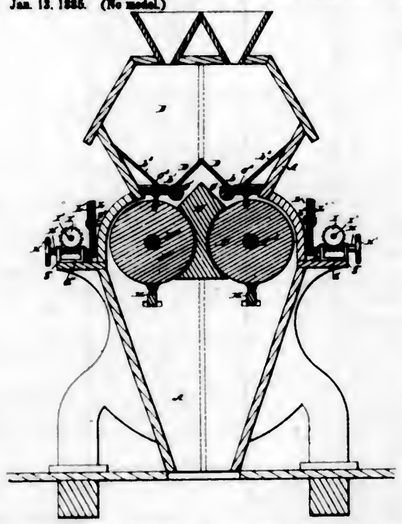


plates *f f* upon the abutment A, of the cords *d' d³*, the plates H I, sliding in the slots of the abutment and connected by said cords to the gates, the vertically-adjustable plates L L', constructed to engage plates H I, the spring-plates J, and the polleys for leading the cords from the sliding plates to the gates, substantially as set forth.

3. The combination, with the abutment A, carrying the plates *f f*, with their slots *f³ f³*, the frame B C D E E' F, the gates G G', and the pulleys, of the cords *d' d³*, connecting plates H I with the gates, the spring-plates J, and the brackets *k*, carrying the vertically-moving plates L L', as specified.

4. The combination, with abutment carrying the gate-frame, the sliding gates, and the slotted plates, of the plates constructed to slide in the slots and provided with the pins, the spring-guides, and the brackets mounted upon the draw and carrying the plates L L', having the pins *l l'*, as and for the purposes set forth.

333,866. ROLLER-MILL. FRANK LAUHOFF, Detroit, Mich. Filed Jan. 13, 1885. (No model.)



Claim.—1. In a roller-mill, the combination, with grinding-rollers, of an intermediate stationary grinding-bed separating said rollers and having concaved faces upon which said rollers grind, rotatable shafts eccentrically connected with said rollers, and worm-gears to operate said shafts and adjust said rollers upon their concaved grinding-bed, substantially as described.

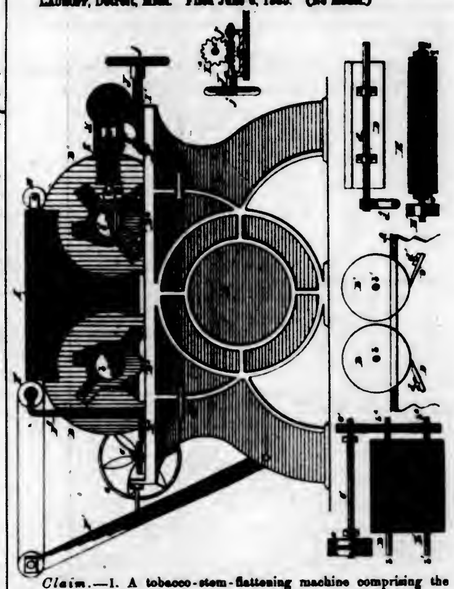
2. In a roller-mill, the combination, with grinding-rollers, of an intermediate stationary grinding-bed having concaved faces upon which said rollers grind, said bed separating said rollers and the grain ground thereby upon its opposite concaved faces, rotatable shafts eccentrically connected with said rollers, worm-gears to operate said shafts and adjust said rollers upon said grinding-bed, and indicators connected with said gears, substantially as described.

3. The combination, with the adjustable grinding-rollers F F' and the intermediate stationary bed, E, separating said rollers and having concave faces, of the hopper B having ridge-shaped way D, throats *b b'*, and auxiliary inner walls, *b³ b³*, feed-rollers C C', and adjustable gates C³ C³, substantially as described.

4. The combination, with the hopper B, having throats *b b'*, the feed-roller C C', adjustable grinding-rollers F F', and intermediate stationary bed, E, of the adjustable gates C³ C³, the crank-shafts *c c'*, mounted beneath said gates in engagement therewith and provided with indicating-fingers, and the indicators N, attached to the end of the hopper, substantially as described.

5. The combination, with the casing A, brackets G G', grinding-rollers F F', sliding boxes K, and the intermediate stationary bed, E, of the studs *l³*, having index-fingers L', the rotatable indicators L, the worm-shafts H, having hand-wheels H' and pinions A, the shafts I', having gears 1 and eccentrics J J, and eccentric-rods *k*, for connecting the eccentric-straps and sliding roller-boxes, substantially as described.

333,867. MACHINE FOR FLATTENING TOBACCO-STEMS. FRANK LAUHOFF, Detroit, Mich. Filed June 6, 1885. (No model.)



Claim.—1. A tobacco-stem-flattening machine comprising the frame A, the crushing-rolls B B', one of which is geared to rotate faster than the other, the side brackets, A' A', forming a chute, and the moistening-roller E, supported by said brackets or chute and engaged with the faster crushing-roll, substantially as described.

2. A tobacco-stem-flattening machine comprising the supporting-frame A, having side brackets, A' A', forming a chute, the crushing-rolls B B', one of which is adjustable and geared to rotate faster than the other, the apron F, for feeding the material to the chute and crushing-rolls, the yielding scrapers D D', and a moistening-roller, E, supported by the chute and engaged with the faster crushing-roll, substantially as described.

333,868. LUBRICATING DEVICE. JOSEPH LAUHOFF, Detroit, Mich. Filed Sept. 21, 1885. (No model.)



Claim.—1. A lubricating device for journals, consisting of a journal-box having an oil-cavity, and a collar, D, encircling the journal, with a spiral spring, D', upon its periphery, to dip into and lift the oil, substantially as described.

2. A lubricating device for journals, consisting of a journal-box having an oil-cavity, and a collar, D', encircling the journal, made in two parts, and secured together by a spiral spring, D, upon the peripheries thereof, said spring also serving to dip into and lift the oil, substantially as described.

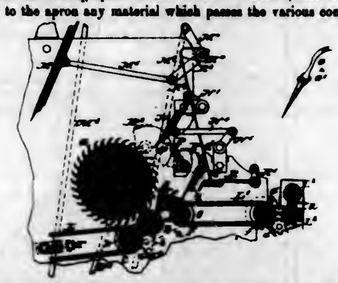
3. A journal-box provided with a cavity, C, and groove C' at each side thereof, near the ends of the boxing, extending entirely around the interior surface of the boxing, forming a continuous annular channel, with a returning-duct, C³, located in the lower section of the box below the surface thereof, and connecting the channels C' and cavity C, so that oil passing along the shaft or journal will be carried back to the central cavity through said channels and duct, substantially as described.

4. The journal-box provided with an oil-cavity, C, and grooves C' at each side thereof, near the ends of the boxing, and extending entirely around the interior surface of the boxing, forming a continuous annular channel of an enlarged bore, *a*, between said channels and the ends of the boxing, substantially as and for the purpose described.

5. The combination, with the boxing provided with central cavity, C, and grooves C' at each side thereof, near the ends of the boxing, extending entirely around the interior surface of the boxing, forming a continuous annular channel, of a longitudinal channel adjacent to the surface of the shaft, substantially as described.

333,869. FEEDING MECHANISM FOR CARDING-MACHINES. J. T. LEHARE, Philadelphia, Pa., assignor to Jerome Carty, same place. Filed Apr. 20, 1885. (No model.) Patented in Germany June 6, 1886, No. 12,130, July 16, 1881, No. 17,928, July 4, 1882, No. 20,456, Dec. 28, 1882, No. 23,496, and Apr. 27, 1883, No. 24,827.

Brief.—Improvement on United States Letters Patent Nos. 255,519 and 304,206. The feeding-drum is caused to have an intermittent motion, and in connection therewith are employed a comb driven by elliptical-segmental gears, a stationary comb, a stripping-comb having a rising and falling motion, a delivery-apron, and a holder. A brush co-operates with the feeding-apron, within which is a heater, and the drum, to return to the apron any material which passes the various combs.



Claim.—1. A feed-drum and means, substantially as described, for imparting an intermittent rotary motion thereto, in combination with two combs having means for imparting an elliptical motion to the same, one of the said combs having a support above and in front of the said drum, and the other comb being also above but in the rear thereof, substantially as described.

2. The comb P, in combination with the comb Q, having a shaft, Q', a holder, a drum, a frame having curved slots, a rod pivotally secured to said shaft, and means, substantially as described, for imparting a rising and falling motion to said rod, and for operating the said comb P, substantially as and for the purpose set forth.

3. The drum F, with means for rotating the same, in combination with the comb Q, comb P, located between the comb Q and drum F, a support for the material below said comb Q, means, substantially as described, for oscillating said comb P, and means for imparting a rising and falling motion to said comb Q, substantially as and for the purpose set forth.

4. A discharge-apron, in combination with a holder, a comb, and means, substantially as described, for imparting a rising and falling motion to said comb, and for imparting motion to said apron, substantially as and for the purpose set forth.

5. The comb P, and means, substantially as described, for oscillating the same, and for imparting a variable speed during each oscillation thereof, in combination with the stripping-comb Q, a holder, a delivery-apron, and means, substantially as described, for imparting a rising and falling motion to said comb Q, and for operating said holder and apron, substantially as and for the purpose set forth.

6. The holder R, having a lip, link R', connecting one end of the holder with the frame, frame A, and means, substantially as described, connected with the other end of the holder, for imparting a rising and falling motion to the same, substantially as and for the purpose set forth.

7. The comb P, in combination with the stationary comb S, stripping-comb Q, and drum F, and means, substantially as described, for operating the combs P and Q and drum F, substantially as and for the purpose set forth.

8. The stationary comb S, in combination with the stripping-comb Q, holder R, and apron L', and means, substantially as described, for operating said comb Q, holder, and apron, substantially as and for the purpose set forth.

9. A supply-apron and feed-drum, in combination with a rotary brush and mechanism, substantially as described, for operating said apron, drum, and brush, substantially as and for the purpose set forth.

10. The comb P, in combination with the frame A, the toothed segments P' P², of elliptical form and meshing with each other, and mechanism, substantially as described, for operating the said segments, substantially as and for the purpose set forth.

11. A comb provided with teeth having a body or shank of a single piece and bifurcated working ends, substantially as and for the purpose set forth.

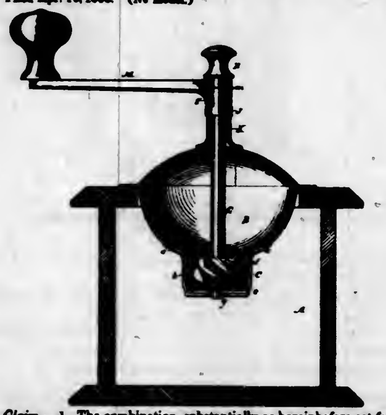
12. A feed-drum provided with teeth having a body or shank of a single piece and bifurcated working ends, substantially as and for the purpose set forth.

13. A tooth formed of a shank with bifurcated ends, substantially as and for the purpose set forth.

14. A supply or feed apron, in combination with a feed-drum, two combs having means for imparting elliptical motions thereto, a comb having means for oscillating the same, and for imparting a variable speed thereto during each oscillation thereof, a stripping-comb, a stationary comb, a holder, a discharge-apron, and mechanism, substantially as described, for operating said feed-apron, drum, stripping-comb, holder, and discharge-apron, substantially as and for the purpose set forth.

15. A feed-apron and a heater therefor, in combination with a drum, and means, substantially as described, for imparting an intermittent motion thereto, straightening-combs, stripping and holding devices, a discharge-apron, and a brush for the return of escaping material, and means, substantially as described, for operating the said movable parts, substantially as described.

333,870. COFFEE-MILL. MATTHEW LEPAGE, Woodhaven, assignor to the Lalance & Grosjean Manufacturing Company, New York, N. Y. Filed Apr. 16, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with the hopper of a coffee-mill and its stationary grinder, of a support for said grinder, consisting of a strap the ends of which pass within the lower end of said hopper.

2. The combination, substantially as hereinbefore set forth, in a coffee-mill, of a hopper formed with recesses in its lower edge, a movable and a stationary grinder, the latter formed with recesses in its upper edge, and a strap constituting a guide for the movable grinder, and having shoulders for supporting the stationary grinder, the ends of said strap being secured in recesses within the hopper, substantially as described.

333,871. PRESS FOR THE MANUFACTURE OF SHEET-METAL GOODS. MATTHEW LEPAGE, Woodhaven, assignor to the Lalance & Grosjean Manufacturing Company, New York, N. Y. Filed Apr. 16, 1885. (No model.)

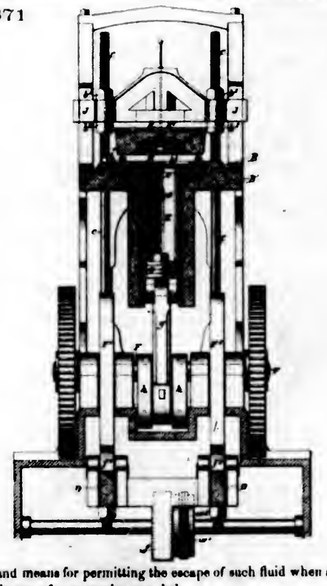
Claim.—1. The combination, substantially as hereinbefore set forth, of a forming female die for the manufacture of sheet-metal goods, an opening through the wall of the same, a movable section for closing said opening, means for holding a metal blank before said die, a fluid-compartment closed by such blank, and means for placing a fluid contained in said compartment under pressure, thereby forcing the blank to enter said die, and to place said section in said opening.

2. The combination, substantially as hereinbefore set forth, with a female die, of means for clamping a metal blank against said die, means, substantially such as described, for forcing said blank into said die by fluid-pressure, an opening for permitting the air to escape in front of the blank as it approaches the surface of the die, a movable section of the die fitting into said opening, and a rod extending through said opening, to which said section is attached.

3. The combination, substantially as hereinbefore set forth, with a die and means for supporting the same, of a receiving-plate for the same, a fluid-chamber beneath said plate, a piston for placing a fluid in said chamber under pressure, a revolving shaft, a pitman connecting said shaft with said piston, one or more cams carried by said shaft, and bearing-surfaces for said cams upon the support of said die, whereby said die is caused to approach said receiving-plate and be held in contact therewith during a portion of the revolution of said shaft, and while said piston is operated to place the fluid under pressure while said die is so held.

4. The combination, substantially as hereinbefore set forth, with a die for forming sheet-metal goods, having an air-outlet through its walls, of a fluid-chamber, means, substantially such as described, for forcing metal blanks into said die by the direct pressure of a fluid contained in said

333,871

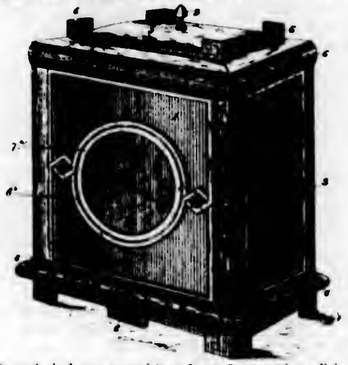


chamber, and means for permitting the escape of such fluid when a predetermined degree of pressure is exceeded.

333,872. EXPLOSIVE COMPOUND. MILTON F. LINDSLEY, West Hoboken, N. J. Filed May 19, 1885. (No specimens.)

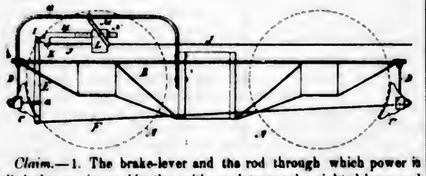
Claim.—The herein-described explosive compound, consisting of nitro-cellulose, saltpeter, charcoal, chlorate of potash, starch, and carbonate of potash, mechanically mixed in the proportions specified.

333,873. CLOCK-CASE. JOHN G. LOW, Chelsea, Mass., assignor of one-half to John F. Low, same place. Filed Dec. 13, 1884. (No model.)



Claim.—A clock-case comprising a frame, 6, supporting a dial-frame, 6*, front tile, 1, having dial-opening 1*, back tile, 2, end tiles, 3 and 4, top tile, 5, and dial-tile 7, having a frame, 7*, by which it is secured in the dial-frame, and dial-opening, substantially as set forth.

333,874. CAR-BRAKE. WILLIAM H. MASTERMAN, Newark, assignor of one-sixth to Alford H. Walker, Oakland, Cal. Filed Oct. 31, 1885. (No model.)



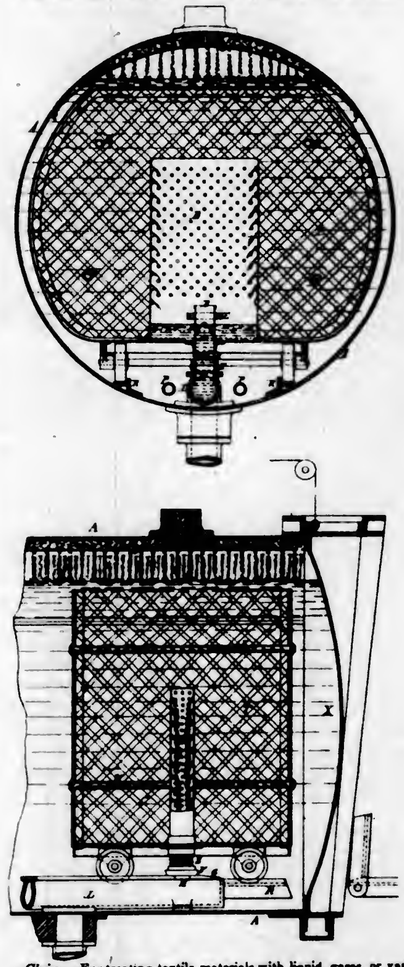
Claim.—1. The brake-lever and the rod through which power is applied thereto, in combination with an interposed weighted lever and an arm connected therewith, having an eye sliding upon a fixed rod, so as to bind thereon when the weight is raised, substantially as herein described.

2. The weight upon the bell-crank lever through which power is applied to the brake-lever, and having shoulders O formed upon each side, in combination with the forked lever pivoted to the weight and its supporting-arm, and provided with an eye formed at its upper end, so as to slide upon the fixed rod or bar when the weight is down and to bind upon said rod when the weight is raised, substantially as herein described.

333,875. PROCESS OF BLEACHING. WILLIAM MATHER, Salford, County of Lancaster, England. Filed Mar. 31, 1885. (No specimens.)

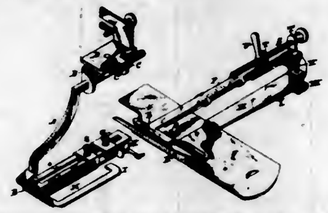
Claim.—The improvement in the art of bleaching cotton yarns and fabrics, which consists in first treating them with a boiling solution of caustic soda, then subjecting them to the action of steam in a closed vessel, and while so subjected to steam occasionally introducing the soda-liquor, then washing the yarns or fabrics, these steps being repeated, if necessary, then subjecting the material to the action of chlorine-liquor, then washing them, and finally scouring the same, substantially as set forth.

333,876. APPARATUS FOR TREATING TEXTILE MATERIALS WITH LIQUIDS, GASES, OR VAPORS. WILLIAM MATHER, Salford County of Lancaster, England. Filed Aug. 11, 1885. (No model.)



Claim.—For treating textile materials with liquid, gases, or vapors, in combination with a chamber, A, having tightly-closing door or doors X, a pipe, L, flanged and planed on its upper face, and lattice trucks T, with central perforated partitions, B, and telescopic pipes D, urged down by springs, substantially as and for the purposes herein set forth.

333,877. TUCK-FOLDER FOR SEWING-MACHINES. WILLIAM MATTHEWS, Sedalia, Mo., assignor of one-fourth to William Campbell, same place. Filed Mar. 9, 1885. (No model.)



Claim.—1. As an improvement in tuck-folders, the combination, with means for folding goods, of a gage-carrier pivotally connected to a sewing-machine and swinging on said pivot either to the right or left of the line of delivery to the needle, the free end of said carrier remaining at all times at the same relative position to the said line of delivery, substantially as and for the purpose specified.

2. As an improvement in tuck-folders, the combination, with means for folding goods, of a gage-carrier pivotally connected to a sewing-machine and swinging to the right or left of the line of feed in a horizontal plane, the free end thereof retaining its relative position to the said line of feed, and also pivoted or hinged at one end to have a vertical play, substantially as and for the purpose specified.

3. As an improvement in tuck-folders, the combination, with means for folding goods, of a pivoted gage-carrier swinging to the right or left in a horizontal plane of the line of feed and having its free end retaining its relative position thereto, said carrier having a vertical play and being adjustable laterally, substantially as and for the purpose specified.

4. As an improvement in tuck-folders, the combination, with means for folding goods, of a pivoted gage-carrier swinging in a horizontal plane to the right or left of the line of feed, the free end retaining its relative position thereto, said carrier having a lateral adjustment relative to the said line of feed, substantially as and for the purpose specified.

5. In a tuck-folder, the combination, with means for folding goods, of a gage-carrier suspended from a sewing-machine head by means of a hanger, said hanger being pivotally connected to the said head and swinging in a horizontal plane to carry the gages to either the right or left of the line of delivery to the needle, substantially as and for the purpose specified.

6. In a tuck-folder, the combination, with a hanger pivoted to a sewing-machine head and swinging in a horizontal plane, of a gage-carrier pivotally supported by said hanger so as to have vertical play, substantially as and for the purpose specified.

7. In a tuck-folder, a hanger pivoted to a sewing-machine head to swing in a horizontal plane and adjustable laterally, in combination with a gage-carrier pivoted to the hanger and moving vertically on said pivot, substantially as and for the purpose specified.

8. In a tuck-folder, a hanger having one end of polygonal shape with a threaded continuation provided with thumb-nuts, in combination with an angle-piece having a hole in one side of polygonal shape and a round hole in the other and pivoted to a socket secured removably to the sewing-machine head, the whole combined substantially as and for the purpose specified.

9. In a tuck-folder, a gage-carrier consisting of a strip or plate with a folding-head at one end and a strip or plate with a longitudinal slot and graduations arranged above and parallel to the other plate, in combination with a gage having a lipped head and an indicator-gage with a headed spring-arm, the two gages having independent longitudinal adjustment on the said carrier, substantially as and for the purpose specified.

10. In a tuck-folder, the combination, with a hanger adjustable laterally and pivoted to swing in a horizontal plane, of a gage-carrier hinged or pivoted to the said hanger to swing vertically and carrying an indicator-gage, a lipped folding-gage, and a supplemental gage, all adjustable longitudinally on said carrier, substantially as and for the purpose specified.

11. In a tuck-folder, the combination of a gage-carrier supporting a lipped folding-gage, an indicator-gage having a headed spring-arm and placed on one side of the carrier, and a supplemental gage consisting of a slotted strip with one end turned at an angle and the other formed into a hook, substantially as and for the purpose specified.

12. As an improvement in tuck-folders, the combination, with means for folding goods, of a guide pivoted at one end to the slide-plate and having the other end nearly reaching to the needle, said guide having a restricted lateral adjustment, substantially as and for the purpose specified.

13. As an improvement in tuck-folders, the combination, with means for folding goods, of a guide pivoted at one end to the slide-plate and having the other end reaching nearly to the needle, said guide having a restricted lateral adjustment by means of a screw passing through a slot therein, substantially as and for the purpose specified.

14. In a tuck-folder, a folder proper formed of a main arm of general U shape, with one end secured and the other end free, in combination with an arm having a folding-head and being longitudinally adjustable on the free end of the U-shaped arm, the said U-shaped arm being vertically adjustable, substantially as and for the purpose specified.

15. In a tuck-folder, the combination of a folder having one end secured and the other end free, a longitudinally-adjustable arm with a folding-head carried by said arm, and a spring-plate acted upon by a thumb-screw to vertically adjust the said folder, substantially as and for the purpose specified.

16. In a tuck-folder, the combination of a folder formed of a U-shaped arm having one end secured and the other end free, an arm with a folding-head, longitudinally adjustable by means of a thumb-screw and clamp-nut or lever, and a means for vertically adjusting said free end and arm thereon, consisting of a spring-plate acted upon by a thumb-screw, substantially as and for the purpose specified.

17. In a tuck-folder, the combination of a folder-arm with an adjustable guide formed at one end, a longitudinally-adjustable folding-head supported by the other end and actuated in the adjustment by a thumb-screw, and a spring-plate acted upon by a thumb-screw to adjust the folder-arm vertically, substantially as and for the purpose specified.

18. The combination, with a folder provided with an adjustable guide and a folding-head adjustable both vertically and longitudinally, of a hanger pivotally connected to a machine and adjustable relatively lateral to the plane of the feed and needle, said hanger carrying pivotally a carrier on which travels a lipped gage, an indicator-gage, and a supplementary gage, substantially as and for the purpose specified.

333,878. LIFTING-JACK. THOMAS MAXON, Dayton, Ohio, assignor of one-half to James W. Carpenter, same place. Filed June 15, 1885. (No model.)



Claim.—1. A lifting-jack having a hollow lift-bar provided with an internal longitudinal core secured therein, substantially as and for the purpose specified.

2. A lifting-jack having a hollow lift-bar of malleable iron provided with a longitudinal core, consisting of a rod or bar of steel, substantially as and for the purpose specified.

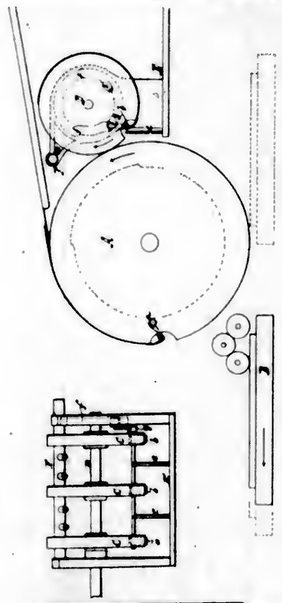
3. A lifting-jack having a hollow lift-bar provided with an internal longitudinal core secured therein, and having externally longitudinal tongues and a clutch with grooves in which the tongues rest, said clutch carrying a pawl, substantially as and for the purpose specified.

4. A lifting-jack having a hollow malleable iron lift-bar provided with an internal core consisting of a steel rod or bar secured therein, and also provided externally with longitudinal tongues, a clutch with grooves in which the tongues rest, and a pawl carried by said clutch and engaging with said bar, substantially as and for the purpose specified.

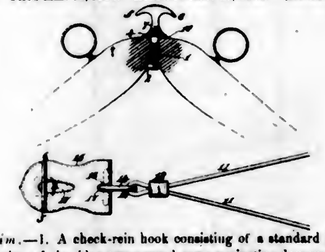
333,879. SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES. CHARLES B. MAXSON, Westerly, R. I. Filed July 30, 1885. (No model.)

Claim.—The combination, substantially as hereinbefore described, with the impression-cylinder of a printing-press and with its grippers, of a series of reels which are mounted on a common shaft and revolve with the same superficial velocity as the cylinder, a table situated beneath the reels for receiving the printed sheets, stops projecting from the table up between the reels, a set of delivery-grippers carried by the reels, mechanism, such substantially as described, for closing these grippers upon the printed sheet at the moment the same is released by the grippers of the impression-cylinder, and for opening said delivery-grippers a short time after they have passed, or just as they are passing, their lowest position, and a pipe for injecting between the reels a blast of air.

333,879.



333,880. CHECK-REIN HOOK. HENRY D. MCKINNEY, Janesville, Wis. Filed Mar. 10, 1885. Renewed Nov. 18, 1885. (No model.)



Claim.—1. A check-rein hook consisting of a standard provided with an enlarged shoulder, two curved arms projecting downwardly, arranged on opposite sides of the standard, and a shank for its attachment to a saddle, substantially as described.

2. The combination of the check-rein consisting of rein 11, hook-strap 15, and ring 14, and the check-rein hook having arms 5 6 projecting on opposite sides of the standard 7, substantially as described.

333,881. ORNAMENTING FABRICS FOR COVERING WALLS. FREDERICK MECKE, New York, N. Y. Filed Sept. 10, 1885. (Specimens.)

Claim.—1. The method of making flocked silk or satin, substantially as above described, consisting in providing it with a backing of paper by means of a coating of varnish and the use of heat and pressure, and then printing on the silk or satin the desired design in size and varnish, or varnish alone, and then passing the fabric through a flock-chamber and applying flock to the surface while the varnish of the pattern or design is wet or sticky, substantially as described.

2. The method, substantially as above described, of producing flocked silk or satin by printing thereon the desired design in size and varnish, or varnish alone, and then applying flock to the varnished design while still wet, substantially as described.

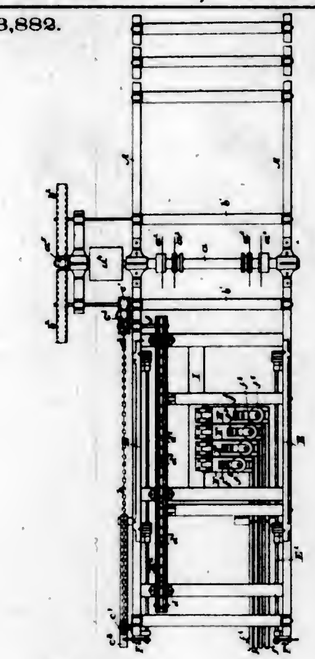
3. As a new article of manufacture, silk or satin for wall-decoration or other purposes, provided with designs on its surface in flock, substantially as described.

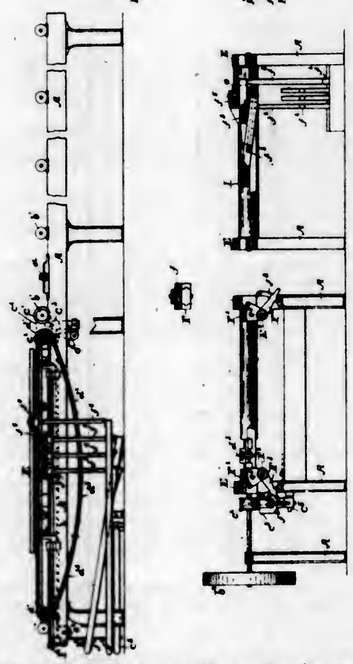
4. As a new article of manufacture, silk or satin for wall-decoration or other purposes, having a backing of paper, as set forth, and provided on its front face with designs in flock, substantially by the method above described.

333,882. GANG-EDGER. CHARLES A. MERRILL, Bay City, Mich., assignor of one-half to Michael Garland, same place. Filed Sept. 29, 1885. (No model.)

Claim.—1. In combination with the edge-guide of a gang-edger,

333,882.





an endless chain or carrier provided with spurs adapted to engage with the under surface of the lumber and thereby feed or carry the lumber along in proper contact with the edge-guide, and a suitable means or mechanism for throwing said carrier contrivance into and out of operation at the pleasure of the operator of the machine.

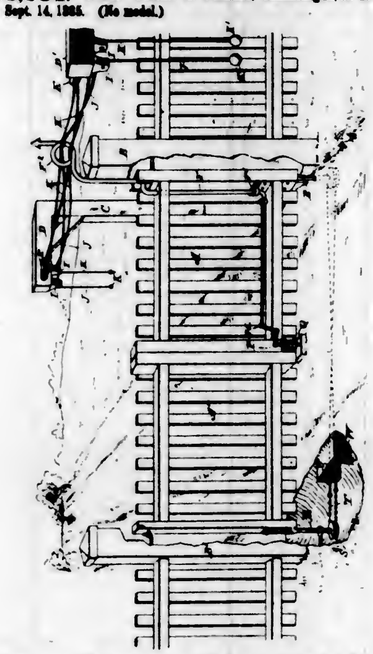
2. In combination with the edge-guide E of a sawing-machine, a series of edge-rollers, f^3, mounted so as to operate with a yielding or elastic pressure on the edge of the board, as specified, and means for throwing the said roller into and out of operative position, substantially as and for the purposes hereinbefore set forth.

3. In combination with the edge-guide E, an edge-roller, f^3, mounted on a hinged frame, f, the hinge of which is located in a plane lower than that occupied by the roller when the latter is in its working position, and suitable means for supporting said devices, so that, as shown and described, the pressure on the periphery of said roller (while at work) will operate to hold the roller-frame f up in its working position, as hereinbefore set forth.

333,883. COMPOSITION FOR PREVENTING AND REMOVING RUST. JOHN F. NOLAN, San Francisco, Cal. Filed Aug. 6, 1885. (No specimens.)

Claim.—The herein-described composition of matter to be used for preventing and removing rust from metallic surfaces, consisting of bisulphide of carbon, beeswax, and sperm-oil united substantially in the proportions specified, and substantially as herein described.

333,884. GATE. THOMAS H. O'REILLY, Canandaigua, N. Y. Filed Sept. 14, 1885. (No model.)



Claim.—1. The combination, with a gate, of the bar F on the hinged end of the gate, which bar F is mounted to turn slightly and has its upper part bent, a bolt connected with said rod, and ropes connected with the upper bent part of said rod, substantially as herein shown and described.

2. The combination, with the standards C, of the arms D and D' on the same, pulleys J and E on said arms, a gate, the bar F on the gate, a bolt on said gate connected with said rod or bar, which bar has its upper end bent, and ropes passed over the pulleys on the arms D D' and connected with the rod F, substantially as herein shown and described.

3. The combination, with the posts C, of arms on the same, pulleys on the arms, the hinged gates A A', means for connecting the gates together, the rod F on the hinged end of one gate and provided at its upper end with a bend, forming an eye, F^2, ropes secured to the eye, passed over pulleys, and hanging down from the arms, and ropes secured to the eye, passed over a pulley on one arm, then back through the eye and through a pulley on the opposite arm, and then hanging down, and a bolt on one gate, which bolt is connected with said rod, substantially as herein shown and described.

333,885. SLAT-IRON FOR VEHICLE-TOPS. JOHN M. PERKINS, South Bend, Ind. Filed Nov. 2, 1885. (No model.)

Claim.—1. In combination with a standard or carriage-bow, the slat-iron provided with the projecting shoulder, the tapering fillet, the screw-threaded spindle, the strengthener inserted in the bow and engaging with the said spindle, and the ferrule in the end of the core, substantially as and for the purpose described.

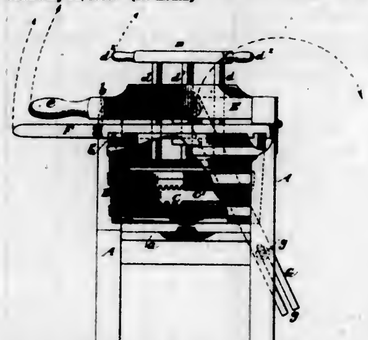
333,885.



2. The slat-iron provided with a screw-threaded spindle and a projecting shoulder, the iron tapering both ways from said shoulder and having the fillet a^2 between said shoulder and the said spindle, substantially as described.

3. The strengthener consisting of a flat metallic bar provided with a slot and screw-threaded, whereby the same is adapted to engage with the spindle of a slat-iron, substantially as described.

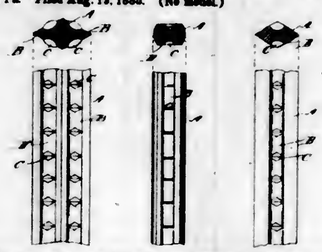
333,886. WASHING-MACHINE. DAVID L. PERRY, Mount Solon, Va. Filed July 11, 1885. (No model.)



Claim.—1. The combination of the part C', the lifter D, and the hinged piece E, having the end slotted bar, G, with frame A, having the stop-pin g', whereby the parts C' D E F may be conveniently held out of the way while the clothes are being put in or removed from the tub.

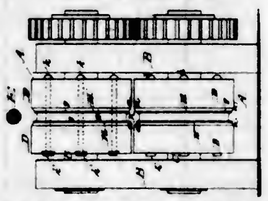
2. The combination, with the bottom pivoted tub, of the lever F, locking in the tub-notch b' and fulcrumed on the central bar, d', whereby the tub may be turned by hand, as described.

333,887. GROOVED AND BARBED ROD. WILLIAM H. PERRY, Sharon, Pa. Filed Aug. 19, 1885. (No model.)



Claim.—As a new article of manufacture, a rolled, molded, cast, or died bar or rod having longitudinal grooves within which are teeth or barbs at intervals, substantially as described.

333,888. ROLLS FOR ROLLING BARBED RODS. WILLIAM H. PERRY, Sharon, Pa. Filed Aug. 28, 1885. (No model.)



Claim.—In rolls for forming grooved and barbed rods or bars, the combination, with the cylindrical sections forming the body of the roll, and with an intermediate section of smaller diameter, of disks or plates

having their edges indented or notched, said disks or plates being located between the said cylindrical sections and the intermediate section, and being separable or detachable therefrom, substantially as described.

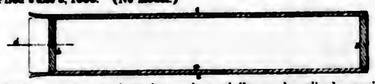
333,889. NAIL OR SPIKE. WILLIAM H. PERRY, Sharon, Pa. Filed Sept. 7, 1885. (No model.)



Claim.—1. As a new article of manufacture, a pointed and headed nail or spike of a cylindrical or partially-cylindrical shape in cross-section, having two or more longitudinal grooves, with barbs or projections formed in said grooves, substantially as described.

2. As a new article of manufacture, a nail or spike of cylindrical or partially-cylindrical shape in cross-section, having two or more longitudinal grooves of uniform depth extending substantially from the head to the point, and having formed within said grooves teeth or barbs whose outer extremities or edges are flush and even with the surface of the nail or spike, as set forth.

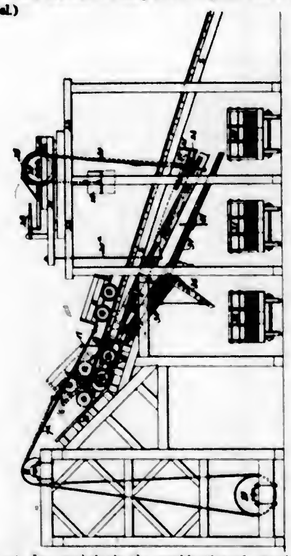
333,890. POSTAL PACKET. HENRY A. ROBINSON, Fezeroft, Me. Filed June 8, 1885. (No model.)



Claim.—1. A postal packet, substantially as described, consisting of the paper tube, the two rabbeted heads, the external covering extending around and pasted to such tube and across and to one of the said heads, and projecting beyond the other head at its end of the tube, so as to be capable of being folded down thereupon, as explained, and a fastening device or devices, as described, adapted to the tube, so as to be capable of being turned from over its head or end, and when the head is in place of being bent, turned, or twisted down thereupon or over it, so as to hold or aid in holding it in place, as set forth.

2. A tube closed at one end and open at the other, and provided with the rabbeted head and the paper covering, and also with the fastening device or devices, substantially as described, applied to such tube and to the head, when therein, as and for the purpose set forth.

333,891. COAL-TIPPLE. WILLIAM W. ROSSMEISSEL, Vanceburg, assignor to Oliver Brothers & Phillips, Pittsburg, Pa. Filed Sept. 29, 1885. (No model.)



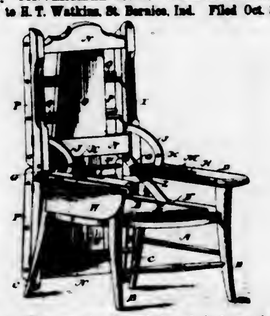
Claim.—1. In a coal-tipple, the combination of a truck, 6, mounted on a track, a traction-cable for moving the truck on the track, an auxiliary truck or car, 11, situate at the terminus of said track and having its bed flush therewith, so that the truck 6 may be drawn thereon, and a second inclined track, on which said truck 11 is set, whereby motion of the latter thereon will tilt the truck 11 and its superimposed truck to discharge the burden, substantially as and for the purposes described.

2. In a coal-tipple, the combination of a truck, 6, mounted on a track, a traction-cable for moving the truck on the track, an auxiliary truck or car, 11, situate at the terminus of said track and having its bed flush therewith, so that the truck 6 may be drawn thereon, a stop, 16, on the truck 11 in the path of the truck 6, and a second inclined track, on which said truck 11 is set, whereby when the truck 6 mounts the truck 11 and engages the stop 16 the traction of the cable will tilt the latter truck and its superimposed truck 6 to discharge the burden, substantially as and for the purposes described.

3. The combination, in a coal-tipple, of an inclined trestle, 2, having several sets of tracks, 3 and 4, arranged thereon side by side, trucks mounted on said tracks and provided with traction-cables so arranged that as one truck ascends the track its fellow will descend, an auxiliary tipping-truck, 11, at the upper terminus of said tracks, for receiving the trucks 6, the inner rails of the tracks crossing each other above the passing-point of the tracks, and a rotary drum for winding said cables, the wrapping of the cables thereon beginning at or near the outer ends of the drum and continuing toward the middle of the width of the tipple-frame, substantially as and for the purposes described.

4. The combination of an inclined trestle, 2, and trucks mounted on tracks thereon, sheaves or rollers 8 and 9, journaled at or above the summit of the tracks, a driven drum or windlass, 10, situate below the same, and traction-cables 7 and 7ª, attached to said trucks, passing over the sheaves 8 and 9, and inwrapping the drum 10 in respectively opposite directions, substantially as and for the purposes described.

333,892. CONVERTIBLE CHAIR. JAMES B. ROSS, Toronto, assignor of one-half to H. T. Watkins, St. Bernice, Ind. Filed Oct. 3, 1885. (No model.)



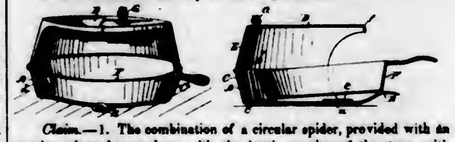
Claim.—1. The combination of the chair-frame having slotted arm-rests, the upwardly-extending arms pivoted in longitudinal slots near the edges of the seat, the back-frame connected pivotally to the upper ends of the said arms, and the curved or segmental brackets secured to the said back-frame and having perforations adapted to register with perforations in the supporting-arms, and suitable spring bolts or latches secured to the arm-rests and adapted to engage the said perforations for the purpose of retaining the back-frame in any position to which it may be adjusted, substantially as and for the purpose herein set forth.

2. In a combined chair, ironing-board, &c., the combination of a chair-frame, the back-frame connected with the chair-seat by means of pivoted supporting-arms, an ironing-stand hinged to the lower edge of the back-frame, a supporting-leg hinged to the under side of the outer end of said ironing-stand, a brace between said leg and stand, folding clothes racks or frames hinged to the sides of the said back-frame, and a turn-button at the upper edge of the latter, adapted to secure the ironing-stand when the latter has been folded over the folding clothes-racks, which may thereby be secured in their folded position, all arranged and operating substantially as and for the purpose herein shown and specified.

333,893. INSECTICIDE. T. WOODWARD SHUGART and CHARLEY D. CLIFTON, Dublin, Tex. Filed Oct. 26, 1885. (No specimens.)

Claim.—The hereinbefore-described inflammable composition for exterminating destructive animals and insects, composed of the following ingredients mixed in substantially the proportions set forth, viz: alkanet-root, two ounces; arsenious acid, two ounces; gum-camphor, four ounces; iodine resubl., one ounce; phosphorus, two ounces; sulphur resubl., forty-eight ounces; bisulphide carbon, quantity sufficient to make one gallon.

333,894. DRAFT ATTACHMENT FOR FRYING-PANS. WILLIAM SIMMONS and JAMES F. SPRAGUE, Providence, R. I.; said Sprague assignor to said Simmons. Filed May 18, 1885. (No model.)



Claim.—1. The combination of a circular spider, provided with an opening adapted to register with the kettle-opening of the stove, with the inwardly-projecting lugs, and a handle for the convenient manipulation of the spider, the handled cooking-utensil of less diameter than the spider, and supported by the projecting lugs of the same, forming the required downward-draft passages, and the covering-bonnet made to fit upon the rim of the spider, the said bonnet being open at its front portion, and made to circularly project over the front upper portion of the cooking-utensil, whereby the cooking materials can be inspected and manipulated and the said cooking-utensil inserted or removed without necessitating the removal of the bonnet from its seat on the rim of the spider, substantially as described.

2. The combination of the spider A, provided with an opening, *a*, adapted to register with the kettle-opening of a stove, and with an upward flange, C, extending partially around the spider, inwardly-projecting lugs *c*, raised portion *e*, and handle B, the cooking-utensil F, and the bonnet D, registering with the flange C, and provided with an overhanging portion, *f*, which forms with the spider an opening through which the cooking-utensil can be passed without necessitating the removal of the bonnet from its seat on the rim of the spider, substantially as described.

333,895. BALING-PRESS. WILLIS D. SLAUSON, Racine, Wis. Filed Nov. 7, 1885. (No model.)

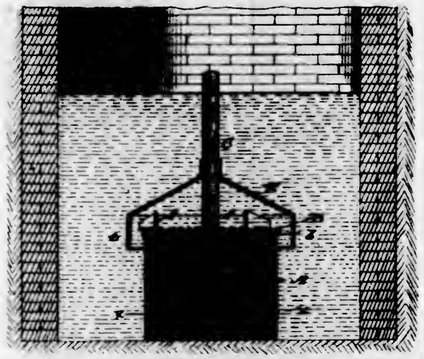


Claim.—1. In a bale-press, a bale-box with sides having the ends nearest the feed-chamber adjustable outwardly for imparting an enlarged wedge shape to said box, substantially as specified.

2. In a bale-press, a bale-box with sides pivoted to permit the ends nearest to feed-chamber to swing outwardly, and clamps connecting said sides and adjusting the swing or travel thereof, substantially as specified.

3. A bale-box having outwardly-swinging sides with the free ends beveled or chamfered, adjusting-clamps retaining said sides in place, and toothed stops for the bale located at the end of the stroke of the plunger and coincident with the beveled ends of the sides, substantially as specified.

333,896. FILTER. JOSEPH D. SMITH, Rising City, Nebr. Filed Sept. 26, 1885. (No model.)



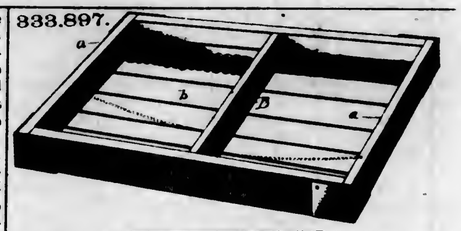
Claim.—The improved filterer for cisterns, herein described, consisting of a receptacle, A, having a perforated top and closed bottom, a compartment, D, located within said receptacle and having perforated sides, a tube, C, depending into the receptacle A, to communicate with the compartment-filtering medium located in said receptacle, and a covering-plate supported by said tube and provided with a flange depending below the top of the receptacle, and braced relative thereto by supports *f f*, substantially as set forth.

333,897. FRUIT-DRYING RACK. JACOB M. STRICKER, Mount Erie, Ill. Filed July 24, 1885. (Model.)

Claim.—1. The combination, in a fruit-drier, of a frame provided at opposite sides with a series of registering-recesses and a series of spring-bars, each adapted to have one end inserted in one of the recesses and the other end sprung into the corresponding recess of the opposite bar, substantially as set forth.

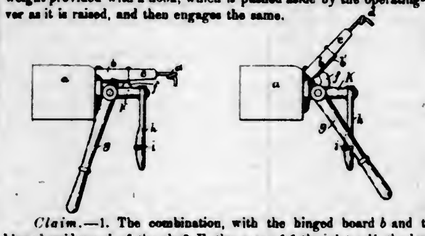
2. The combination of the frame A, having its sides *a a* each provided with a series of recesses, a bar, B, provided with a series of regis tering-recesses, and a series of spring-bars, *b*, for the purpose specified.

333,897.



333,898. RING-SPINNING MACHINE. GUSTAVUS E. TAFT, Whitinsville, Mass., assignor to the Whitin Machine Works, same place. Filed Aug. 31, 1885. (No model.)

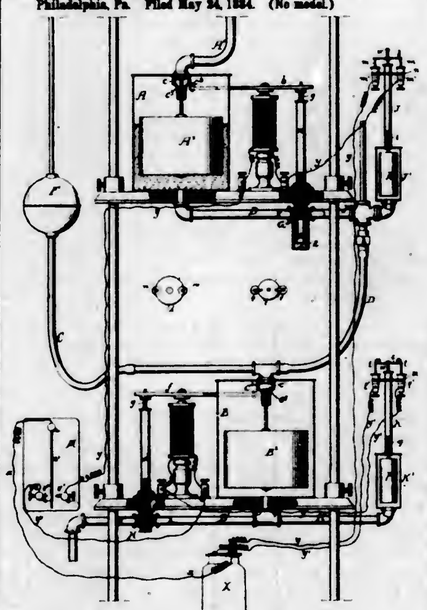
Brief.—The hinged guide-rail having the guide-wire blocks hinged thereto is raised, together with all of the blocks that then may be out of the way in doffing, by means of a shaft provided with cam-surfaces bearing against the under side of the rail. The rail is held up by a pivoted weight provided with a hook, which is pushed aside by the operating-lever as it is raised, and then engages the same.



Claim.—1. The combination, with the hinged board *b* and the hinged guides *c d*, of the shaft E, the cams *f f*, the plates *b'*, the lever *g*, and gravity-support A, as described.

2. The combination, with the hinged guide-rail *b*, having the hinged guide-wire pieces *c* and the plates *b'*, and the shaft E, having the cams *f f*, and operating-lever *g*, of the gravity-support A, pivoted to the standard *k*, and having the hook *i*, for the purpose described.

333,899. HEAT-REGULATING DEVICE. HENRY R. TATHAM, Jr. Philadelphia, Pa. Filed May 24, 1884. (No model.)



Claim.—1. The combination of a liquid-receiver forming part of a device for operating a valve or damper, an elevated liquid-reservoir, a pipe communicating with said reservoir and with the liquid-receiver, valves G and H, whereby the liquid is caused to flow from the elevated

reservoir to the receiver, and is discharged from the latter, an electro-magnet for each valve, two electrical circuits, one for each magnet, and a thermostat controlling both circuits, all substantially as specified.

2. The combination of a liquid-receiver forming part of a device for operating a valve or damper, a liquid-reservoir, a pipe communicating with said reservoir and with the receiver, a valve controlling the flow through said pipe, an electro-magnet for operating said valve, a thermostat controlling the circuit through the magnet, and an automatic circuit-breaker independent of the thermostat, all substantially as specified.

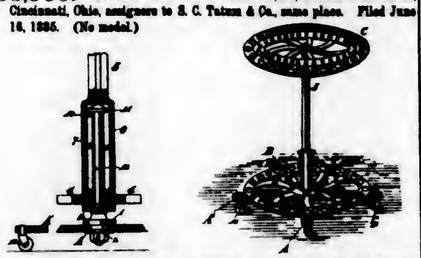
3. The combination of a liquid-receiver forming part of a device for operating a valve or damper, a liquid-reservoir, a pipe communicating therewith and with the receiver, a valve controlling the flow of liquid through said pipe, an electro-magnet for operating said valve, a thermostat controlling the circuit through said magnet, a circuit-breaker independent of said thermostat, and a vessel communicating with the liquid-reservoir and containing a float connected to one of the contacts of said independent circuit-breaker, all substantially as specified.

4. The combination of the two vessels A and B, located one above the other, a liquid-receiver forming part of a device for operating a valve or damper, a pipe, D, connecting the two vessels and communicating with said receiver, a discharge-pipe communicating with the said vessel B, valves in said connecting and discharge pipes, an electro-magnet for operating each valve, two electrical circuits, one for each magnet, and a thermostat controlling both circuits, all substantially as specified.

5. The combination of the two vessels A and B, located one above the other, a liquid-receiver forming part of a device for operating a valve or damper, a pipe, D, connecting the two vessels and communicating with said receiver, a discharge-pipe communicating with said vessel B, valves in said connecting and discharge pipes, an electro-magnet for operating each valve, two electrical circuits, one for each magnet, a thermostat controlling both circuits, and an automatic circuit-breaker independent of the thermostat in each circuit, all substantially as specified.

6. The combination of a liquid-receiver, a discharge-pipe having a valve, a tube surrounding the stem of the valve and extending above the level of the water in the reservoir, and an electro-magnet for operating the valve, all substantially as specified.

388,900. BROOM-RACK. SAMUEL C. TATUM, Jr., and JAMES HATFIELD, Cincinnati, Ohio, assignors to S. C. Tatum & Co., same place. Filed June 16, 1885. (No model.)



Claim.—1. The combination, with the cross-arms A A' and spindle 12, detachably secured thereto, of the post 5, formed in two sections, provided with socket 6 and lug 10, and carrying the heads B and C, substantially as described.

2. A knockdown broom-rack composed substantially of the supporting-base A A', spindle 12, socket-post 5, and heads B C, attached to said post, substantially as specified.

3. In combination with the post 5, carrying heads B C, the sectional socket 6, forming the base of the post and provided with lug 10, adapted to receive and hold the flange 11 of spindle 12, substantially as specified.

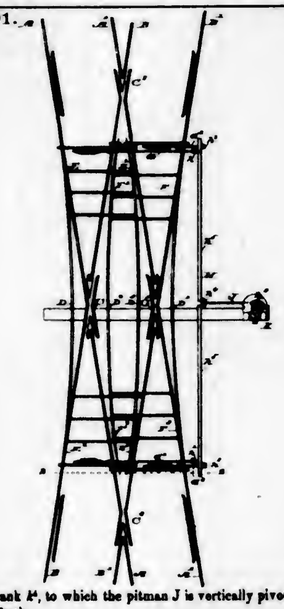
388,901. RAILWAY-SWITCH. HUBERT P. TAUSSIG, St. Louis, Mo. Filed Jan. 3, 1885. (No model.)

Claim.—1. The combination of the switch-rails, the switch-bars, the rock-shaft H, having the arms A A' A^2 A^3 and crank A^4, the bar J, the crank-shaft *k*, and the switch-stand K, substantially as described.

2. The combination, with the rails of the crossing lines and the fixed switch-rails, of the tapering movable switch-rails at the ends of said fixed rails and adapted to be pressed against the main rails, the switch-bars carrying said movable tapering rails, the rock-shaft and arms linked to the switch-bars, as described, the crank A^4, and pitman J, and the crank k^4, having the pitman pivoted thereto at such point as to be on the dead-center when the tapering rails are pressed against the main rails, and means for operating the crank k^4, substantially as set forth.

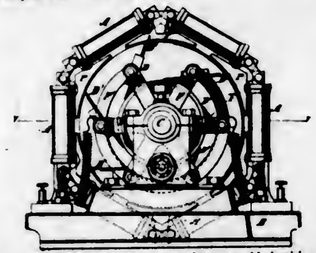
3. The combination, with the rails of the crossing lines, the fixed switch-rails at the end of the latter, and the bars and links for operating the same, of the horizontal rock-shaft having the crank A^4, the pitman J, pivoted horizontally and vertically to said crank, and the shaft *k* and

388,901.



horizontal crank k^4, to which the pitman J is vertically pivoted, substantially as set forth.

388,902. MAGNETO OR DYNAMO ELECTRIC MACHINE. RENÉ THURY, Geneva, Switzerland, assignor, by mesne assignments, to A. De Meuron & Cuénod, same place, and George H. Benjamin, New York, N. Y. Filed Dec. 10, 1883. (No model.) Patented in France Oct. 11, 1883, No. 158,007; in Italy Oct. 22, 1883, No. 14,884; in Germany Nov. 6, 1883, No. 29,836; in Belgium Nov. 22, 1883, No. 63,315; in England Dec. 8, 1883, No. 5,683; in Russia Jan. 11, 1884, No. 7,005; in Canada Jan. 17, 1884, No. 18,563; in Austria-Hungary Mar. 4, 1884, No. 44,198 and No. 10,008, and in Spain June 12, 1884, No. 3,892.



Claim.—1. A dynamo-electric machine provided with an armature consisting of a drum upon which are disposed helices formed from a continuous wire and wound in consecutive order around the surface of the drum, the end of one helix forming the beginning of the next, and having their sides parallel to each other and to the axes of rotation, and whose ends pass over the ends of the drum as chords, dividing it into any equal number of parts.

2. A dynamo-electric machine provided with an induction-armature consisting of a drum upon which is wound, at right angles to the axis, a mass of iron wire or other magnetic material, upon which is disposed a number of rectangular helices formed from consecutive windings of a continuous wire whose sides are parallel, and whose ends pass over the ends of the drum as chords of the circumference of the drum, dividing the latter into any even number of parts.

3. In a dynamo-electric machine, an armature consisting of a drum upon the surface of which are arranged rectangular helices formed from consecutive windings of a continuous wire whose sides are parallel, and whose ends pass over the ends of the drum as chords of its circumference, each helix united to two succeeding commutator-segments through long chords crossing one end of the drum, substantially as described.

4. In a dynamo-electric machine, an armature upon which are disposed rectangular helices formed from consecutive windings of a continuous wire, the said helices divided into sets of two and united through a long chord on the end of the armature to form a double helix, and in

which each single helix forms one-half of a double helix next preceding or succeeding it, and to which it is similarly connected, and each of said double helices connected to one segment of the commutator, substantially as described.

5. The combination of the polygonally-arranged magnets, the field-pieces formed and located as described, and an armature consisting of a drum upon which are disposed, parallel to the axis, rectangular helices wound in consecutive order around the surface of the drum, the ends of which pass over the ends of the drum as chords, corresponding in length with the fraction of the circumference, as determined by the number of magnets forming the magnetic polygon.

6. In a dynamo-electric machine, and in combination with the system of field-magnets and their pole-pieces, an armature upon which are arranged rectangular helices united on the end of a drum through a long chord, to form double helices, and commutator-segments corresponding in number with the helices, substantially as described.

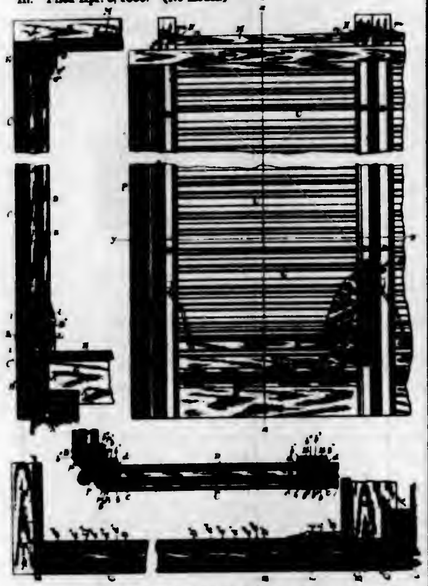
7. In a dynamo-electric machine, the combination of the system of field-magnets and their pole-pieces, an armature upon which are arranged rectangular helices united to form double helices, commutator-segments corresponding in number with the helices on the armature, and collecting-brushes corresponding in number with the magnets in the inductor, substantially as described.

8. In a dynamo-electric machine, the combination, with the inducing-magnets, of the armature composed of the drum T, disks K, insulating-cylinder I, magnetic mass M, and the rectangular coils of wire formed thereon, substantially as described.

9. The combination, in a dynamo-electric machine, of an inductor having an even number of field-poles, with an armature upon which are disposed an uneven number of helices formed from consecutive windings of a single continuous wire, and helices united together in pairs to form an uneven number of double helices, substantially as described.

10. The combination, in a dynamo-electric machine, of an inductor having an even number of field-poles, with an armature upon which are disposed, parallel to the axis of rotation, an uneven number of helices formed from consecutive windings of a continuous wire whose ends pass over the ends of the drum as chords, corresponding in length with the fraction of the circumference as determined by the number of magnets forming the inductor.

333,903. CONSTRUCTION OF HOUSES. EDSELL TOWNAM, Hinsdale, Ill. Filed Apr. 9, 1885. (No model.)



Claim.—1. A house-wall composed of separately portable sections, each section consisting of two marginal frame-pieces united by transverse planks having their ends movably held in longitudinal grooves of the frame-pieces, and the adjacent sections being joined to each other by placing and fastening together their marginal frame-pieces, which thus form double studding or frame-pieces of the building, substantially as described.

2. A section or panel for the construction of houses, comprising two studs or frame-pieces, and planks united with said frame-pieces by dovetailed joints, said frame-pieces being provided upon their outer faces with tongues and grooves, whereby tight joints may be formed between the contiguous sections or panels, substantially as described.

3. A section or panel for the construction of houses, comprising two longitudinal marginal frame-pieces having grooves therein, a series of transverse planks inserted at their ends in said grooves, means for holding the frame-pieces in proper relative position, and bolts for tightening the joints between the planks connected with the said frame-pieces and with the end plank of the series, said section or panel being adapted to be joined with other similar sections or panels to form a house-wall, substantially as described.

4. In combination with converging walls having marginal frame-pieces B, a corner-piece, P, occupying the angular space between the frame-pieces B, substantially as described.

5. In combination with the adjacent frame-pieces B at the wall-angle, the corner-post P, the adjacent faces of the frame-pieces and the corner-post being provided with interfitting tongues and grooves, substantially as described.

6. The combination, with the parallel frame-pieces of a house and a series of transverse planks forming siding or ceiling, of means for tightening the joints between the planks, consisting of bolts connected at one of their ends with the said frame-pieces and at their opposite ends with a plank at one end of the series, substantially as and for the purpose set forth.

7. The combination, with the parallel frame-pieces of a house provided with dovetailed grooves, and a series of planks having upon their ends dovetailed tongues engaged with said grooves, of means for tightening the joints between said planks, consisting of bolts connected with the said frame-pieces and with the plank at one end of the series, substantially as set forth.

8. The combination, with the studding of a house and a double series of planks forming inner and outer walls, of means for holding the said planks from movement at one end of the studding, a movable bar or follower at the opposite end of the studding, located in contact with the end planks of both the inner and outer walls, and tightening-bolts secured in the said studding and engaged with the said follower, substantially as set forth.

9. The combination, with the upright frame-pieces or studding of a house and a double series of planks forming inner and outer walls, the upper planks of the series being held from upward movement, of a follower, K, forming a water-table resting against a lower plank of each series, bolts engaged with the studding and with the follower, and a removable plank, C', below the said follower, substantially as and for the purpose set forth.

10. The combination, with the sill and floor of a house, the vertical frame-pieces of studding, and a double series of planks forming inner and outer walls, of which the upper planks are held from upward movement, of a follower located above the floor, and below the lower planks of both series, bolts engaged with the studs and the follower, a removable plank, C', fitted against the sill beneath the follower, and a stationary base-board covering said follower, substantially as and for the purpose set forth.

11. The combination, with studs or frame-pieces having longitudinal grooves therein, of transverse plank, sheathing or lath held at its ends in said grooves, said plank, sheathing, or lath having means to receive and hold plastering, substantially as described.

12. The combination, with the studs or frame-pieces of a house having longitudinal grooves therein, of transverse lath, plank, or sheathing held at its ends in the said grooves and provided in one or both faces with dovetailed grooves affording a hold for plaster, substantially as described.

13. A combined sheathing and lath for buildings, consisting of laths or planks, each provided with a dovetailed groove in the middle of one of its faces and a half-groove upon its opposite face at each of its edges, substantially as and for the purpose set forth.

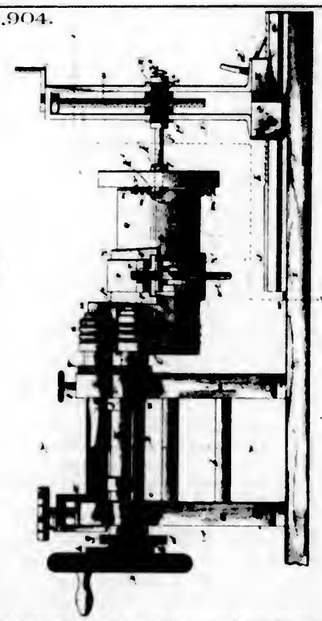
14. The improved construction in house-sills, consisting of the flat bottom pieces, A', pieces A^2 set on edge thereon, and the pieces A^3 laid on the bottom pieces, and all arranged to break joints, and secured together, substantially as and for the purpose set forth.

15. The combination, with the house-sills, consisting of three planks, A', A^2, and A^3, secured together, as described, of floor-joists G, gained to fit over the piece A^2 and come flush with the top of the piece A^3, substantially as described.

333,904. MACHINE FOR MAKING SCREW-THREADS FOR PIPE-JOINTS. FERDINAND P. VOIGT, Walla Walla, Wash. Filed Oct. 16, 1884. (Model.)

Claim.—1. The rotary shaft formed or provided with a former on the free end thereof, and means, substantially as described, for imparting motion thereto, in combination with a detachable non-revolving shaft or bar mounted parallel with the revolving shaft, a rotary former mounted loosely on a round extension of the non-revolving shaft and having gear engaging gear on a rotary shaft, an adjustable stirrup or loop to carry and adjust the square free end of the non-revolving bar, and means, sub-

333,904.



stantially as described, to raise and lower the bar in its seat next to the former, as set forth.

2. The rotary shaft, formed or provided with a former on its free end, and means, substantially as described, for imparting motion thereto, in combination with a non-revolving adjustable bar or shaft mounted loosely in seats and arranged parallel to the revolving shaft, and provided with a spring fixed to the under side thereof to raise the bar, and a cross-pin projected transversely through the bar to hold it against horizontal movement, an adjusting loop or stirrup to carry and set the free end of the bar, a rotary former mounted loosely on the round extension of the non-revolving shaft or bar and provided with gear engaging with the gear on the revolving shaft, and held in position on its axle by a screw-nut, a rotary guide-washer mounted on a stud passed transversely through the end of the fixed rotary shaft, and a clamp for gaging the pressure of the matrix, substantially as described, and for the purpose stated.

3. The rotary shaft formed or provided with a former on its free end and means for imparting rotation thereto, in combination with the non-revolving shaft or bar mounted parallel with the rotary shaft and provided with means, substantially as described, to raise and lower it, a former mounted on a round extension of the non-rotary shaft, and gear to mesh with gear on a rotating shaft, and a rotary guide-washer mounted on a stud or axle projected transversely through the end of the non-rotary shaft, substantially as described.

4. The base-plate formed with horizontal grooves in its side faces, and pivotally secured at one end to admit of movement in a horizontal line, and provided with means to gage and set it in position, and a rack on its upper face, and a sliding base-plate provided with a pawl to engage the rack and having vertical standards secured thereto, in combination with an adjustable carrier on said standards; a horizontal shaft journaled to said carrier, and a revolving disk provided with means upon its outer face to hold a joint of stove-pipe and adjustably secured to said shaft, substantially as described.

5. The vertical standards or frame, a carrier to slide within the frame, a shaft having a limited horizontal movement mounted in the carrier and provided with a spring to return the shaft to position, and means, substantially as described, to adjust the carrier in elevation and clamp it on the standards, in combination with the disk detachable and adjustably secured on the shaft, and having clasps radially set on its outer face, substantially as described, and for the purpose stated.

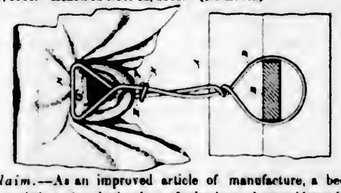
6. In a stove-pipe-making machine, a rotary disk provided with a series of holding studs or clasps arranged radially to the axis thereto, substantially as described, and for the purpose stated.

7. The guiding-clamp formed with its edges on a line with the pitch of a thread to be impressed or formed on the joint of pipe, in combination with the formers mounted upon revolving and non-revolving shafts, and operated substantially as set forth.

8. The guiding-clamp consisting of two semicircular pieces hinged together, said pieces being formed of an outer metallic plate and an inner flexible lining, and with its edges conforming to the pitch of a worm or thread to be formed on a pipe, and having the wider end centrally cut away to admit the other end, and provided with projecting side wings adapted to serve as seats for the guiding-stud on the former, substantially as described.

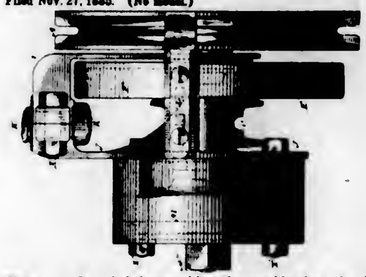
9. In combination, a rotary shaft carrying a former on its free end, means for imparting motion thereto, a non-revolving shaft or bar mounted parallel with the rotary shaft, means, substantially as described, for raising and lowering the non-rotating shaft, a rotary former mounted on a rounded projection of the non-rotary bar and receiving motion from the rotary shaft, and a rotary stud or washer pivotally secured to a stud or axle projected through the end of the non-rotary bar, a revolving disk provided with a series of holding-studs on its outer face and mounted on a shaft having a limited horizontal movement, and mounted on a carrier having means to adjust and set it in elevation, and a guide-clamp adapted to clamp about a joint of stove-pipe, substantially as described, and for the purpose set forth.

333,905. BED-CLOTHES SECURER. WILLIE C. WALTER, Richmond, Va., assignor of two-thirds to George B. Adams, same place. Filed Jan. 23, 1885. Renewed Nov. 12, 1885. (No model.)



Claim.—As an improved article of manufacture, a bed-clothes clamp consisting of a single piece of wire bent about midway its length to form a slat loop, D, and having one of its branches provided with a jaw-loop and the opposite one with a projection adapted to pass through the said jaw-loop, and a slide arranged on the said branches to serve substantially as specified.

333,906. HOISTING-MACHINE. THOMAS A. WESTON, Stamford, Conn., assignor to the Yale & Towne Manufacturing Company, same place. Filed Nov. 27, 1885. (No model.)



Claim.—1. In a hoisting-machine, the combination of a driving-pulley exterior to the frame on one side, a driving-shaft, and a friction-brake or lowering device exterior to the frame on the other side, and operated by means of the said driving-pulley through said shaft.

2. In a hoisting-machine, a driving-shaft passing centrally through the main hoisting-sheave of said machine, and provided at one end exterior to the frame with a driving device or wheel and at its other end exterior to the frame a frictional lowering and retaining device.

3. The combination, with a portable or pulley-block frame, of a driving-pulley exterior to the frame on one side, a driving-shaft and a friction-brake or lowering device exterior to the frame and operated by means of the said driving-pulley.

4. The combination, with a portable or pulley-block frame, of a driving-shaft passing centrally through the main hoisting-sheave of the said hoisting-machine, and provided at one end and exterior to the main frame with a driving device or wheel and at the other end exterior to the main frame with a frictional lowering and retaining device.

5. The combination, with a portable or pulley-block frame, of a driving and a counter shaft, and connecting gearing arranged approximately on the same horizontal plane.

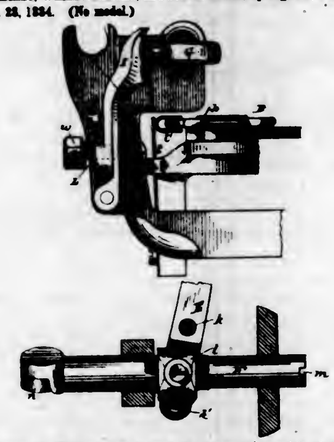
6. In a hoisting-machine, the combination, with an automatic safety friction-brake or lowering device, of a frictional check-wheel, as and for the purposes described.

7. In a hoisting-machine, a frictional check-wheel provided with rollers of disk form and parallel guiding-surfaces therefor, as and for the purposes set forth.

8. In a hoisting-machine, the combination of the screwed or helically-formed driving-shaft A' A^3, the nut or abutment A^4, the pinion B, disks C' and B^2, disk-box C, frictional check-wheel D, and the cover or housing M, substantially as and for the purposes set forth.

9. In a pulley-block or portable lift, a lifting-sheave, G, provided with a spur-toothed flange or rim, F, and a driving-pinion, F^2, both placed inside the main frame, spur-gears E and B on the exterior of the said frame on one side and a driving-wheel exterior to the said frame on the other side, substantially as and for the purposes set forth.

333,907. KNOTTING DEVICE FOR GRAIN-BINDERS. WILLIAM N. WHITELEY, WILLIAM BAYLEY, and SAMUEL DYER, Springfield, Ohio. Filed Jan. 23, 1884. (No model.)



Claim.—1. The stripper J, made in two parts, capable of adjustment as to each other, whereby the position of the free or stripping end of said lever may be adjusted, substantially as set forth.

2. The stripper J, made in two parts, both pivoted upon the bolt *e* and provided with intersecting slots *f h*, and the connecting-bolt *i*.

3. The combination of the pivoted lever E, carrying the pawl D, whereby the disk is actuated, connected with the sleeve *l* by a slot, *k'*, in its end, said sleeve *l*, fitted upon the plunger-rod F, having a screw-thread thereon, and provided with a nick, *m*, at its outer end, whereby a tool may be applied to revolve said rod, and thereby change the position thereon of the sleeve *l*, for the purpose set forth.

4. The lever E, pivoted at *k* to the frame and jointed at its front end to the pawl D, and provided at its rear end with a sliding pivotal connection with the sleeve *l*, combined with said sleeve provided with the set-screw *q*, and the screw-threaded plunger-bolt provided with the groove *p* to receive the set-screw *q*, as set forth, whereby the lever E may be adjusted by rotating the plunger-rod, and the correct position for pause determined, as set forth.

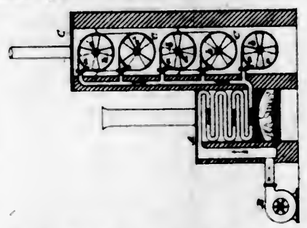
5. The disk B, with the notches *b*, combined with an elastic U-shaped holder, C, which incloses the edge of said disk, as and for the purpose set forth.

6. The folded U-shaped holder C, constructed from a single piece of sheet metal, as and for the purpose set forth.

7. The elastic U-shaped holder C, constructed from a single piece of sheet metal, pivoted to the frame by pin *r*, combined with the spring *t* and the notched disk B.

8. The revolving knotting-hook G and its hinged jaw *d*, provided with the roller *u*, combined with an arm, I, pivoted at its lower end to the frame and at its upper end fashioned to act as a closing-cam for the jaw *d*, and the adjustable tension-spring, substantially as set forth.

333,908. GRAIN-DRIER. FREDERICK W. WHEELOCK, New York, N. Y. Filed Aug. 23, 1884. (No model.)



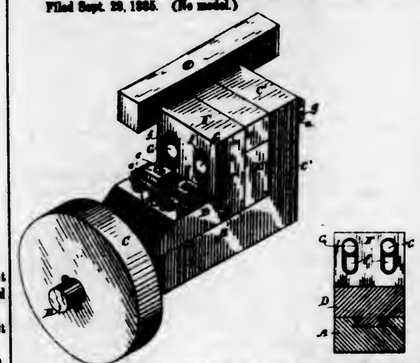
Claim.—1. In a drying apparatus, a series of stationary cylinders having oblong flues arranged tangentially and extending from end to end of said cylinders, and connected to an air-heating apparatus, substantially as and for the purpose specified.

2. In a drying apparatus, a series of stationary cylinders having oblong flues arranged tangentially and extending from end to end of said cylinders, and connected to an air-heating apparatus, in combination with the inclined detachable plates placed at opposite ends of a series of said cylinders, and the perforated vertical plates *e*, all arranged substantially as set forth.

3. The series of stationary cylinders, containing revolving shafts provided with spirally-arranged agitators, and connected by tangential slots or flues *a* to hot-air flues, an air-heating apparatus, and a blower, all substantially as and for the purpose specified.

4. In a drying apparatus, the combination of a series of stationary cylinders having revolving shafts provided with agitators, with a housing, inclined plates *d*, and vertical perforated plates *e*, and connected by lateral flues and tangentially-arranged slots in the cylinders with a heating apparatus and blower, as set forth.

333,909. HARVESTER-TRUCK. COLEMAN W. WILLCOXON, Farmersville, Tex., assignor of one-half to Samuel R. Hamilton, same place. Filed Sept. 29, 1885. (No model.)



Claim.—1. The combination, with an axle, of an adjustable clamping device located thereon and adapted to receive and hold sills of varying sizes, substantially as set forth.

2. The combination, with an axle and its carrying-wheel, of a movable clamping-plate having elongated slots, and bolts fitting in said slots and securing the plate to the axle, as set forth.

3. The combination, with an axle and its carrying-wheel, and provided with an upwardly-projecting extension, of a clamping-plate having an extension at its inner ends, and vertically-movable securing means, such as bolts, connecting the extensions and adapted to hold the sill between the extension, substantially as set forth.

4. The combination, with an axle, of longitudinally and vertically adjustable clamping devices mounted thereon and operating substantially as and for the purpose set forth.

5. The combination, with a stub-axle having an extension projecting upwardly at its inner end, of a movable clamping-plate having an upwardly-projecting extension, and means for securing the clamping-plate to the axle, as set forth.

6. The stub-axle having a groove and extension, in combination with the plate having a rib and extension, and means for securing the plate to the axle, as set forth.

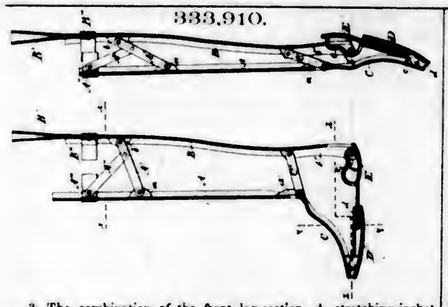
7. The combination, with the axle having the extension projecting upwardly from its inner end, said extension having elongated slots, the movable plate having the extension provided with elongated slots, bolts fitting in said slots, and means for securing the plate to the axle, as set forth.

333,910. STRETCHER FOR FELT BOOTS, SHOES, OR STOCKINGS. WILLIAM A. YOUNG, Berlin, Ontario, Canada, assignor to Hugo Kraus and Henry Aletter, both of same place. Filed Oct. 22, 1885. (No model.)

Claim.—1. A stretcher for felt boots and the like articles, consisting of the leg-sections A and B, collapsibly connected by link A', the foot-section composed of the pieces C, D, and E, collapsibly connected to the leg-sections above the instep by a lever, C', and a sliding pivot-joint at the heel, the toe-pieces C and D, hinged together at the toe, and the heel-piece E, slidingly connected with the sole-piece D.

2. The combination of the sections A and B, link A', pivoted thereto, upper foot-plate, C, having lever C', which is pivoted to A and B, sole-piece D, pivoted to C at the toe, heel-piece E, sliding in a bed formed by lips *d'* on the sole-piece and slidingly hinged to the leg-section B at the heel by a pin working in an elongated slot in the bracket or staple *e*.

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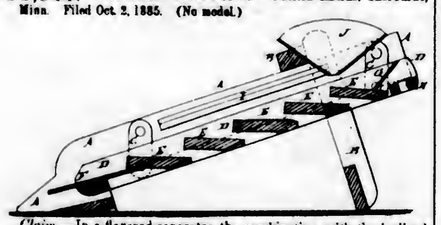


3. The combination of the front leg-section, A, stretching-jacket A''', slidingly connected thereto, rear leg-section B, having socket B' for handle B'', and stretching-jacket B''', link A', connecting said sections, and link A'', pivoted to link A' and jacket A'''.

4. The combination of the top foot-piece, C, lever C', front leg-section, A, hinged thereto, and rear leg-section B, hinged to the end of lever C' at one-fourth the length of the stretcher from the heel.

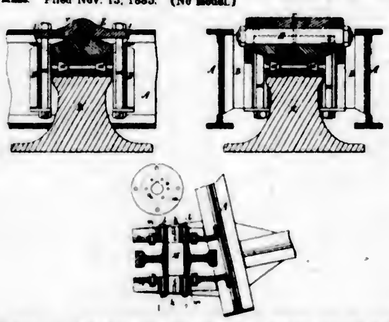
5. The combination of the top foot-piece, C, front sole-piece, D pivot-joint at the toe, heel-piece E, slidingly connected with D, bracket or staple *e*, having elongated slot to receive slidingly a pin, *b''*, in the brackets *b'*, all substantially as shown and described, as and for the purpose set forth.

333,911. FLAXSEED-SEPARATOR. GEORGE ADAMS, Sherburne, Minn. Filed Oct. 2, 1885. (No model.)



Claim.—In a flaxseed-separator, the combination, with the inclined frame A B, provided with cleats f, of the vibrating frame D, supported by pivoted straps C, and provided with inclined overlapping plates E and guard-plates F f1, and the hopper J, substantially as herein shown and described, whereby round seeds will be separated from the flaxseed and discharged beneath the machine, as set forth.

333,912. RAILWAY TURN-TABLE. DAVID H. ANDREWS, Chelsea, Mass. Filed Nov. 13, 1885. (No model.)

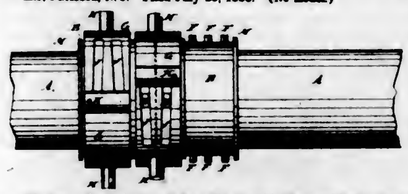


Claim.—1. The turn-table provided at its middle with the saddle D and bearing-plate F, and with the cylinder E, extending between them and keyed or fastened at one end to the saddle and at the other to the said plate, all being substantially as set forth.

2. The turn-table provided with the saddle D and its supporting screw bolts and nuts, and with the cylinder E, arranged between and in such saddle and the bearing-plate F, and keyed or fastened at one end to the saddle and at the other to the said bearing-plate, all being substantially as set forth.

3. The combination, substantially as described, for effecting the vertical adjustment of each end wheel of the turn-table, such combination consisting of the shaft M, having eccentric journals, the circular plates keyed to such journals and provided with screws, as described, to engage with circular ranges of screw-holes in the wheel-supporting brackets or circular plates fixed thereto, all being essentially as represented.

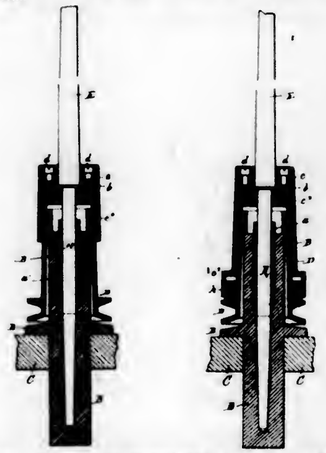
333,913. HOSE-COUPLING. FRANK ATHERTON and MANTON T. BENTLEY, Paterson, N. J. Filed July 20, 1885. (No model.)



Claim.—In a hose-coupling, the combination, with the tube B, having dowel-pin C and lugs E and F, of the sleeve G, having lugs H, grooves I L, pairs of inclined slots J, and stop-pins K, substantially as herein shown and described, whereby sections of hose can be readily coupled, and will be securely connected, as set forth.

333,914. SPINDLE. EDWARD E. BRADLEY, Stonington, Conn., assignor to George Draper & Sons, Hopedale, Mass. Filed Apr. 21, 1884. (No model.)

Brief.—The spindle is divided into two parts, the lower of which is supported by a bolster and has a sleeve-whirl attached to its head, and the upper of which has a sleeve extending downwardly from its base and partly over the whirl-sleeve, and is connected thereto by an annular rubber cushion or washer. The heads of the two sleeves are also loosely connected to each other by screws, a rubber washer being interposed between them.



Claim.—1. The supporting-case, spindle A, and its attached sleeve-whirl, combined with the bobbin-carrying spindle having a foot and attached sleeve, the latter being extended downwardly about the sleeve of the whirl, and with means to connect the parts to effect the rotation of the bobbin-carrying spindle from the spindle A, substantially as described.

2. The supporting-case, spindle A, and its attached sleeve-whirl, and the bobbin-carrying spindle E, and its foot and downwardly-extended sleeve, combined with the packing A, interposed between the sleeve of the spindle E and the sleeve of the whirl, substantially as described.

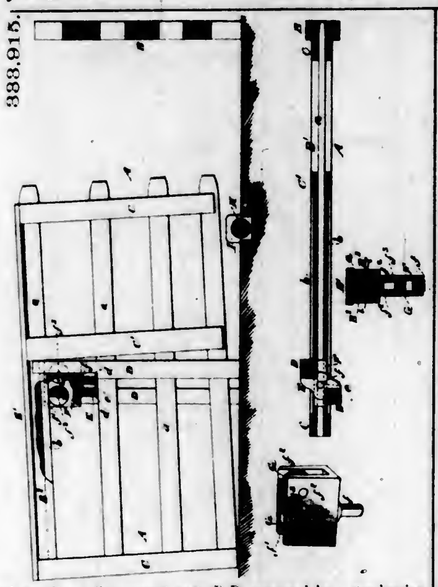
3. The supporting-case, the spindle A, its attached sleeve-whirl, and the bobbin-carrying spindle provided with a foot and a sleeve, combined with an elastic washer interposed between the lower end of the said foot and the top of the sleeve of the whirl, and with means to effect the rotation of the bobbin-carrying spindle from the spindle A, substantially as described.

4. The supporting-case, the spindle A, and its attached sleeve-whirl, and the bobbin-carrying spindle E and its attached foot, combined with the elastic washer interposed between the foot of the spindle E and the upper end of the sleeve of the whirl, and with screws *d* in holes of greater diameter in the said foot, substantially as described.

333,915. SWINGING AND ROLLING FARM-GATE. GEORGE BRESSLER, Huntington, Ind. Filed Apr. 9, 1885. (No model.)

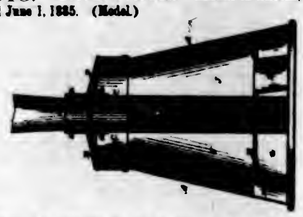
Claim.—In a rolling and swinging gate, the combination of a top rail having subjacent grooves *b b*, a hinge, F, having top flanges which work in said grooves, one or more rolls arranged between said flanges

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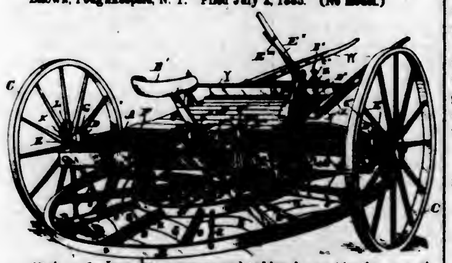
and two diagonally-arranged posts D D, connected by a step-bearing, E, that receives the hingle-pintle *f*, all as shown and described.

333,916. CLOTHES-POUNDER. ALBERT A. BROOKS, Seneca, Kans. Filed June 1, 1885. (Model.)



Claim.—The combination of the body A, the horizontal partition B, the central tube, C, which extends down through the partition at its lower end, and which has its outer end extended up far enough to receive the lower end of the handle F, the cover which has vertical flanges at its outer edges to fit over the top of the body A, and the vertical flanges *a* at its center to catch over the top of the upper end of the tube C, substantially as shown.

333,917. COMBINED HAY SWEEP AND TEDDER. THOMAS S. BROWN, Poughkeepsie, N. Y. Filed July 2, 1885. (No model.)



Claim.—1. In a hay sweeper and tedder, in combination, a main frame supported upon supporting-wheels, a horizontal circular tooth-frame supported on said main frame and provided with sweeping-teeth, and means, substantially as described, to revolve said tooth-frame in the forward movement of the machine, as and for the purpose specified.

2. In a hay sweeper and tedder, in combination, a main frame mounted upon supporting-wheels, a horizontal revolvable circular tooth-frame provided with tooth-shafts attached to said frame and carrying teeth and having at one end thereof crank-arms with wheels mounted thereon, and a horizontal semicircular track under and by which said crank-wheels are caused to travel and to operate the cranks and depress the teeth, as and for the purpose specified.

3. In a hay sweeper and tedder, in combination, a horizontal revolvable circular tooth-frame, shafts radially mounted in said frame, raking-teeth coiled about and attached to said shafts intermediately of their length, and devices, substantially as described, for operating said tooth-shafts to bring the teeth in close contact with the ground, as and for the purpose specified.

4. In a hay sweeper and tedder, a horizontal revolvable circular tooth-frame carrying raking-teeth, and means, substantially as described, whereby said teeth are brought into contact with the ground at the front and out of contact with the ground at the rear thereof, as and for the purpose specified.

5. In a hay sweeper and tedder, in combination, a main frame supported upon wheels, a horizontal revolvable circular tooth-frame provided with raking-teeth, and connecting mechanism, substantially as described, to revolve said tooth-frame by the forward revolution of the axle, as and for the purpose specified.

6. In a hay sweeper and tedder, in combination, a main frame mounted upon supporting-wheels, a horizontal revolvable circular tooth-frame provided with raking-teeth disposed at right angles to the radii of said circular frame, a central shaft operating said frame, connecting mechanism by which said frame is operated by the axle of the machine, and roller-guides depending from the main frame and traveling upon the rim of the circular frame, as and for the purpose specified.

7. In a hay sweeper and tedder, in combination, a horizontal revolvable circular tooth-frame, tooth-shafts attached to said frame and carrying raking-teeth, and having at one end thereof crank-arms with wheels mounted thereon, and a horizontal semicircular track provided at one end thereof with a horizontally-pivoted switch-section adapted to be raised and lowered and to cause the crank-wheels to travel upon the upper or upon the lower surface of the semicircular track, as and for the purpose specified.

8. In a hay sweeper and tedder, in combination, a main frame, a divided axle, its two divisions connected by a universal joint, supporting-wheels mounted loosely thereon and connected therewith by pawls and ratchets, whereby said axle is revolved in the direction of the moving machine by the forward movement of the supporting-wheels, and is permitted to remain stationary in the backward movement of said wheels, and a horizontal revolvable circular tooth-frame provided with rake-teeth and supported from the main frame by a central shaft having a gear-wheel meshing with a pinion on the axle, as and for the purpose specified.

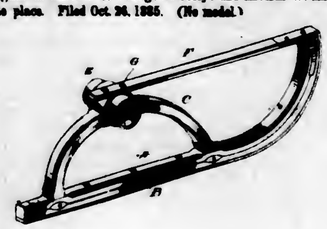
9. In a hay sweeper and tedder, in combination, a divided axle connected by a universal joint and provided with supporting-wheels, a main frame provided with axle-block bearings, housing frames attached to said main frame, and set-screws which bear upon and abut against the upper surfaces of said axle-blocks, as and for the purpose specified.

10. In a hay sweeper and tedder, in combination, a main frame supported upon wheels and carrying a horizontal circular tooth-frame provided with sweeping-teeth and adapted to be revolved in the forward movement of the machine, and thills intermediately of their length pivoted to the forward part of the main frame, and an adjustable lever mounted upon the main frame and connected to the rear ends of said thills, as and for the purpose specified.

11. In a hay sweeper and tedder, in combination, a main frame supported upon wheels and carrying a horizontal circular tooth-frame provided with sweeping-teeth and adapted to be revolved in the forward movement of the machine, and thills intermediately of their length pivoted to the forward part of the main frame, an adjustable lever mounted upon the main frame, and an intermediate spring-cushioned connecting device, as and for the purpose specified.

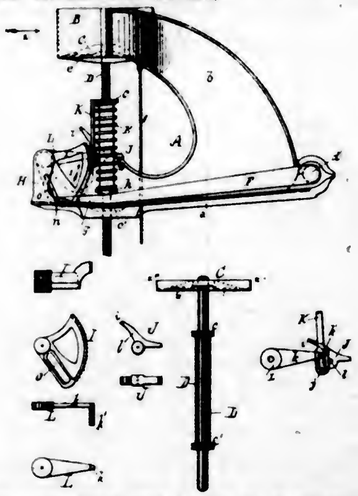
12. In a hay sweeper and tedder, in combination, a main frame supported upon wheels and carrying a horizontal circular revolvable tooth-frame provided with sweeping-teeth, and thills connected with the main frame at that side of the center of the axle at which the raking-teeth, when in contact with the ground, exert a draft in opposition to the forward movement of the machine, as specified.

333,918. SLEIGH-RUNNER. STEPHEN C. BROWNELL, Lapeer, Mich., assignor of one-half to George H. Scalyo and Alvirus W. Annis, both of same place. Filed Oct. 26, 1885. (No model.)



Claim.—The combination, in a sleigh-runner, of the arched bow, the hub gained or grooved in parallel planes above and below, and the connecting-rave and bolts or clips by which the whole is secured together, substantially as and for the purposes specified.

333,919. **APPARATUS FOR OPERATING RAILWAY DANGER-SIGNALS.** HENRY A. BOOK, Boston, Mass., assignor to Hiln L. Motte, same place, and James Murray Kay, St. John, New Brunswick, Canada, trustees. Filed Mar. 7, 1885. (No model.)



Claim.—1. The metallic piston C, thinned near its periphery, and provided with radial strengthening-ribs *m*, in combination with the vacuum-chamber in which it operates, the lever and connections whereby said piston is actuated on the passage of a train, and the pipe extending from said vacuum-chamber to the signaling devices, substantially as set forth.

2. The piston-supporting rod D, provided with shoulders *c c'*, the rocking collar A, the lever F, which is arranged to be actuated by a passing train to raise said collar, a replacing-spring, E, interposed between said collar and stop *c*, and devices which prevent the descent of the rod and piston to the normal position until tripped by the action of said spring and interposed mechanism, substantially as set forth.

3. The combination, with the lever F, segment I, and pawl J, by which the segment and lever are locked upon the passing of a train, of the slotted rod K and the throw-off lever L, operating automatically by the action of the spring E'' to release said pawl, substantially as herein described.

4. The combination, in railway-signals, of the lever F, provided with a lateral stud, segment I, having a radial slot which receives said stud, pawl J, and spring E, by which the lever is rendered active upon the passage of a train, and so maintained to actuate a piston until a vacuum is produced, and slotted rod K, for freeing said segment, as and for the purposes herein described.

5. The combination, with the reciprocating piston-rod D and its rod K, slotted at *j*, of the throw-off lever L, provided with the arm *k'*, by which release of the pawl is effected, as and for the purposes described.

6. In a signal-operating device for railways, the standard formed with a vertical web and horizontal base-plate, substantially as described, the vacuum-chamber supported thereby, a piston working freely in said chamber, and operative mechanism, all co-operating to produce a vacuum by the passing of a train, as and for purposes herein set forth.

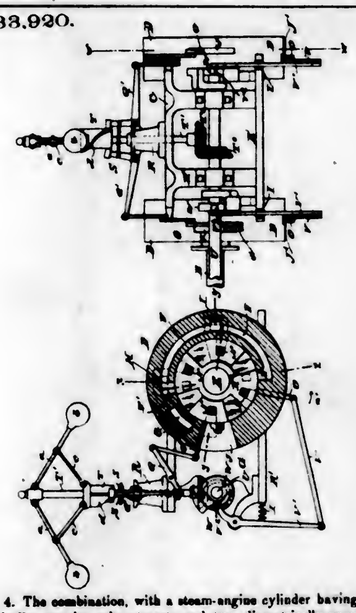
333,920. **STEAM-ENGINE.** MARTIN BURKLEY, Moline, Ill. Filed Mar. 23, 1885. (No model.)

Claim.—1. A steam-engine having valves arranged in each head of the cylinder, and fitted in pairs upon a common axis for simultaneous alternate action, substantially as herein shown and described.

2. A steam-engine having steam inlet and outlet ports in the ends or heads of the cylinders, and valves arranged to rock on the said heads or ends, and fitted in pairs upon a common axis for simultaneous alternate action, substantially as herein shown and described.

3. The combination, with a steam-engine cylinder, of two rocking valves on each end or head, two of said valves being connected by levers to spring-connected elbow-levers acted upon by the governor, substantially as herein shown and described.

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4. The combination, with a steam-engine cylinder having two diametrically-opposite exhaust-ports and two diametrically-opposite inlet-ports at each end, of two valves arranged to rock on each end, two of said valves being connected to spring-acted-upon levers actuated by cams upon the operating-shaft, substantially as herein shown and described.

5. The combination, with a cylinder having valves on each end or head, of a cam for operating one valve on each head and a centrifugal governor for controlling the action of the other valves, said cam being arranged upon the shaft geared to the governor-shaft, substantially as herein shown and described.

6. The combination, with a steam-engine cylinder having a compartment formed on each end or head, in which compartments steam-channels are arranged, of two valves arranged to rock in each compartment, two of said valves being connected by levers to spring-connected elbow-levers actuated by a cam adjustable by the governor, substantially as herein shown and described.

7. The combination, with a steam-engine cylinder having a compartment in each end, of two valves arranged in each compartment, and arms projecting from the valves, which arms are connected, two by levers to spring-connected elbow-levers actuated by a cam adjustable by the governor, the remaining two arms being connected by spring-acted-upon levers actuated by cams upon a driven shaft, substantially as herein shown and described.

8. In a steam-engine, the combination, with a cylinder having the two diametrically-opposite exhaust-ports P P and the inlet-ports P' P' at each end, of two valves, K, each formed of a ring, K', and the opposite lugs, K^3, provided with the apertures N and N', said valves being arranged upon a common axis, with the inner concaved ends of their lugs projecting at one side beyond their rings, arranged in the manner substantially as shown and described.

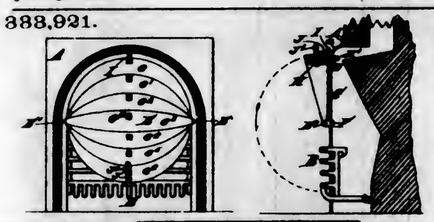
9. The combination, with a cylinder having a compartment at each end, with each of which compartments a channel for live steam and a channel for exhaust-steam are arranged, which channels in each compartment are parallel, and have connections with the cylinder-chamber by short channels extending to the inner rim of the cylinder-chamber, which compartments are each in communication with the corresponding ends of the cylinder by two outlet and two inlet ports, of two valves, K, arranged in each compartment, the valves being each formed of a ring, K', and two opposite lugs, K^3, having apertures N N' arranged in the sides and ends of said lugs, substantially as herein shown and described.

333,921. **ATTACHMENT FOR FIRE-PLACES.** STEPHEN B. BURWELL, Cincinnati, Ohio. Filed Jan. 17, 1885. (No model.)

Claim.—1. In a grate attachment, the combination, with the pivoted leaves or plates *e e' e² e³ e⁴ e⁵*, of the spring-catch device I J J' and the attaching hook or plate H H', substantially as herein set forth.

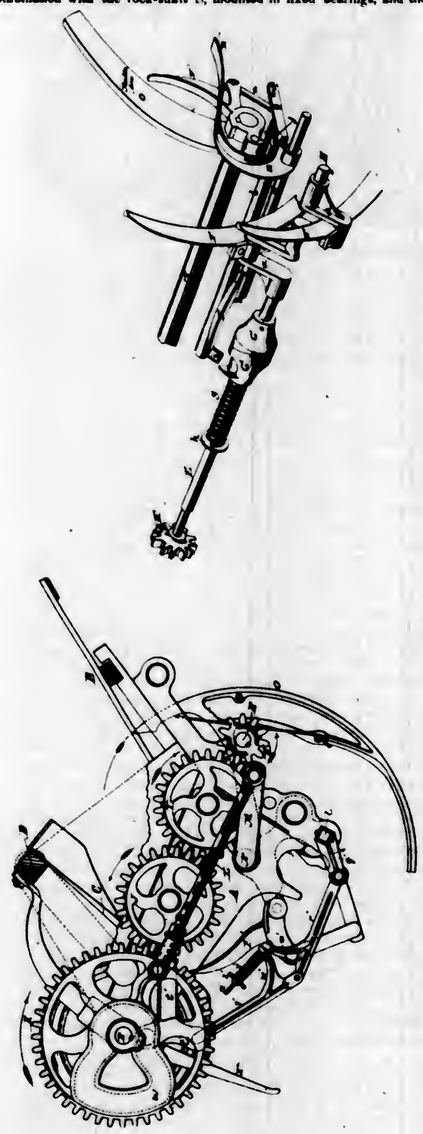
2. In a grate attachment, the combination, with the leaf *e*, provided with ways, and leaves or plates *e' e² e³ e⁴ e⁵*, and a sliding damper-plate, K, mounted in the ways of plate *e*, substantially as and for the purpose set forth.

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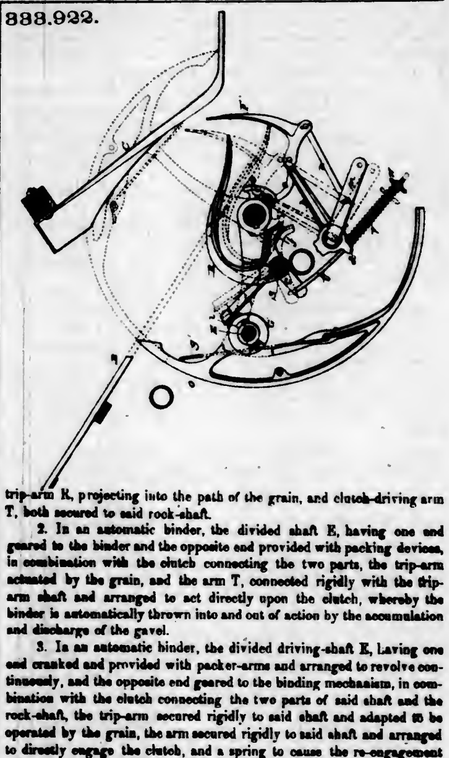


333,922. **GRAIN-BINDING MACHINE.** WILLIAM BUTTERFIELD, Auburn, assignor to D. M. Osborne & Company, New York, N. Y. Filed May 26, 1884. (No model.)

Claim.—1. In an automatic grain-binder, the binder-driving shaft E, and its actuating-clutch provided with an inclined or spiral surface, in combination with the rock-shaft S, mounted in fixed bearings, and the



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trip-arm K, projecting into the path of the grain, and clutch-driving arm T, both secured to said rock-shaft.

2. In an automatic binder, the divided shaft E, having one end geared to the binder and the opposite end provided with packing devices, in combination with the clutch connecting the two parts, the trip-arm actuated by the grain, and the arm T, connected rigidly with the trip-arm shaft and arranged to act directly upon the clutch, whereby the binder is automatically thrown into and out of action by the accumulation and discharge of the gavel.

3. In an automatic binder, the divided driving-shaft E, having one end cranked and provided with packer-arms and arranged to revolve continuously, and the opposite end geared to the binding mechanism, in combination with the clutch connecting the two parts of said shaft and the rock-shaft, the trip-arm secured rigidly to said shaft and adapted to be operated by the grain, the arm secured rigidly to said shaft and arranged to directly engage the clutch, and a spring to cause the re-engagement of the clutch, said parts organized for joint operation substantially as described, whereby the cranked portion of the shaft is permitted to revolve continuously, and the motion of the binder-driving mechanism controlled by the accumulation and discharge of the gavel.

4. In combination with the binder-driving clutch, the arm T, its rock-shaft, and the trip-arm to engage the gavel, the rod U, and spring V, and the spring-adjusting devices.

5. The packer-shaft connected with the binding mechanism by the clutch, in combination with the trip-arm, and the arm connected therewith for disengaging the clutch, the needle, and the heel projection on the needle to hold the clutch-disengaging arm out of engagement, whereby the clutch is permitted to remain in engagement after the action of the bundle on the trip-arm has ceased.

6. The needle having the heel projection or cam, and the trip-arm having a heel projection to co-operate with the cam, in combination with binder-driving mechanism connected with and controlled by the trip-arm, substantially as described and shown.

7. In combination with the needle or cord-carrier, the elastic tucker consisting of a U-shaped wire or rod placed astride of and secured to the needle, as described and shown.

8. In combination with the tyer-spindle, its pinion, and the L-shaped pivoted knife extending past the edge of the wheel, the wheel Y, provided with teeth and delay-surfaces to actuate the pinion, and with the cam to operate directly upon the knife.

9. The wheel Y, provided with the cam or incline on its outer side face, in combination with the pivoted angular knife, one arm thereof extending past the edge to the outer side of the wheel, and the other arm with its cutter extending to the opposite side thereof.

10. The actuating-wheel provided with the cam or incline, the angular knife extending across the edge of the wheel, and the spring-acting on the heel of the knife, combined substantially as described and shown.

11. In a grain-binder, the combination, with a movable compressor and its rock-shaft, of the arms *r' s'* with lateral extensions, the spindle *s'*, and the spring *y'*.

12. In combination with the swinging compressor, the actuating-cam *n'*, the intermediate arms or links, *r' s'*, and the spring tending to hold said arms out of line, as described and shown.

13. The compressor F', in combination with the swinging support *k*, pivoted to its lower forward end, and the link *o*, attached to the com-

pressor at or about the same point as the support *k*, and extending thence to the heel of the needle or equivalent projection on the needle-shaft, whereby the compressor is permitted to tip backward and downward around the point of connection with the link and support.

14. In combination with the needle, the compressor, the rock-shaft *l*, and its arm *m*, the links *k* and *n* to sustain the compressor, and the link *o* to effect the movement of the compressor toward the needle.

15. In combination with the compressor, the link *k*, having a swinging action, and the link *n*, having both a swinging and a longitudinal motion.

16. In combination with the vibratory needle, the compressor F', its supports *k* and *n*, and the connecting-link *o*.

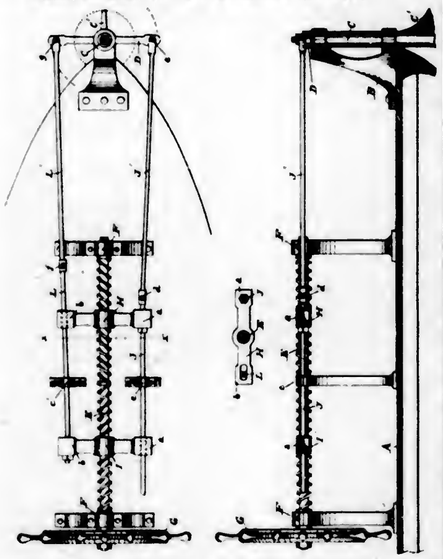
17. In combination with a needle or cord-carrier, the fixed cord-guides, and the swinging guide having two arms.

18. In combination with the fixed cord-guides, the swinging guide provided with a long arm and a short arm, as described.

19. In combination with a rotary tyer-bill having a movable jaw, a spring acting to close said jaw and adapted to rise independently thereof, and a cam, substantially as described, acting to lift the spring out of operation, whereby the jaw may be relieved from the pressure of the spring without being opened.

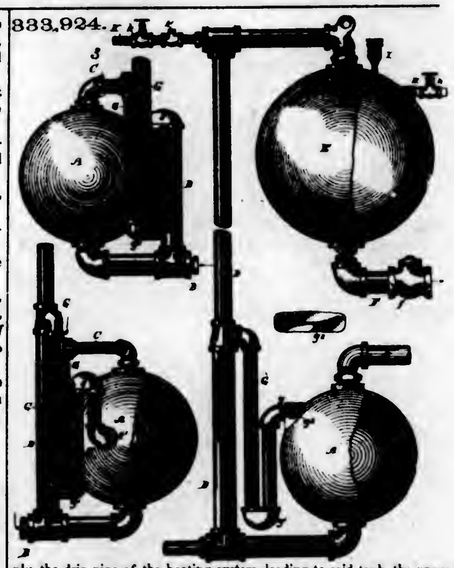
20. In combination with the rotary tyer-bill having the movable jaw, the sliding rod to close the jaw, the independent spring acting on said rod, and the revolving wheel provided with the cam a^2, as described and shown.

333,923. **STEERING APPARATUS.** JOHN H. COX and EDWARD S. WILLEY, Fairmount, Md. Filed Oct. 15, 1885. (No model.)



Claim.—A steering apparatus having in combination a rudder-post provided with a cross-lever, D, a right-and-left-hand screw mounted in bearings to turn freely, a nut, H, on one part and a nut, I, on the other part of the screw, and each nut having two arms, which project in opposite directions, and two jointed rods, each jointed to an opposite end of the said cross-lever and carried by one arm of one nut and supported and guided by an arm of the other nut, as shown and described.

333,924. **STEAM-TRAP.** ANDREW MCNAIR COTLE, Washington, D. C. Filed Sept. 9, 1885. (No model.)



Claim.—1. The combination of the chamber A, the drip or water-supply pipe leading thereto, an open connection from a source of steam-supply, also leading thereto, the upper or vacuum chamber, the water-transfer pipe connecting the two chambers, and a liquid-seal pipe interposed between the two chambers, substantially as set forth, whereby water is elevated from the lower to the upper chamber by the steam-pressure acting against a vacuum.

2. The combination of the tank A, the chamber E, the transfer-pipe connecting them, the seal-pipe interposed between the two chambers, and additional means, substantially such as described, for insuring the prompt filling of the seal-pipe when the liquid reaches a given height in the tank A.

3. In a steam-heating system, the combination of the tank A, an open connection between said tank and a boiler or source of steam-supply, the drip-pipe of the heating system leading to said tank, the upper or vacuum chamber, E, the transfer-pipe connecting the two chambers, the seal-pipe interposed between the two chambers, whereby the passage of steam from the lower chamber to the upper chamber is alternately prevented and permitted, as set forth, means for insuring the prompt filling of said seal-pipe when the liquid reaches a given height in the tank A, and a water-return pipe leading from the upper chamber to the steam-boiler.

4. In a steam-heating system, the combination of the chamber A, the drip-pipe, the vacuum-chamber E, the transfer-pipe connecting them, the open connection between the tank A and the source of steam-supply, and means for periodically elevating the water which accumulates in the tank by the pressure of the steam acting against a vacuum, as set forth.

5. In a steam-heating system, the combination of the drip-tank A, the drip-pipe, an open connection between said drip-tank and the steam-boiler, the upper chamber, E, a pipe leading therefrom to the boiler, and pipe-connections between the upper and lower chambers.

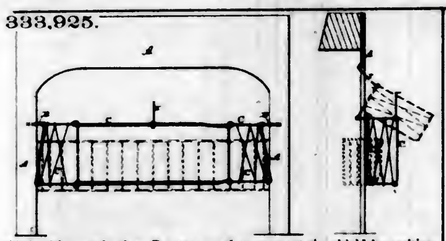
6. The combination, in a steam-heating system, of the drip-tank, the drip-pipe leading thereto, an open connection between the drip-tank and a steam-boiler, the upper or vacuum chamber, a water-transfer pipe connecting the vacuum-chamber and drip-tank, and the bent water-seal pipe interposed between said water-transfer pipe and the drip-tank, substantially as described, whereby the passage of the steam from the tank to the vacuum-chamber is alternately prevented and permitted and the water elevated by the pressure of the steam acting against a vacuum.

7. The combination of the drip-tank, a fluid-seal pipe connected therewith, and a siphon for insuring the proper filling of the fluid-seal pipe when the water reaches a given level in the tank A, substantially as set forth.

8. In a steam-heating system, the combination of the drip-tank, the drip-pipe, an open connection between a source of steam-supply and the drip-tank, the vacuum-chamber, the transfer-pipe between the two chambers, the seal-pipe interposed between the two chambers, a siphon for insuring the filling of the seal-pipe when the water in the drip-tank has reached a given level, and a water-discharge pipe leading from the vacuum-chamber.

9. The combination of the upper and lower chambers, a water-transfer pipe connecting them, a fluid-seal pipe interposed between said chambers, a connection between the lower chamber and a permanent source of steam-supply of substantially uniform pressure, and a water-seal pipe interposed between the two chambers, for alternately permitting and preventing the passage of steam to the upper chamber, the organization and operation being substantially as herein shown and described, whereby water may be periodically elevated from the lower chamber to the upper one by steam-pressure acting against a vacuum, substantially as set forth.

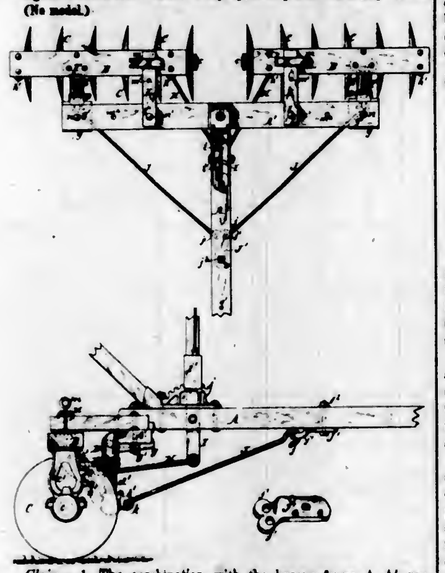
333,925. **GUARD OR SCREEN FOR FIRE-PLACES.** WILLIAM S. CRAFT, Washington, Pa. Filed May 9, 1885. (No model.)



Claim.—1. A shield for grates, composed of two parts or sections which slide freely back and forth upon each other, each part being provided with a projection, B, at one end to support the shield in position, substantially as described.

2. A shield for grates, composed of two endwise-sliding sections, each of which is provided with a projection or support, B, in combination with a hook, I, for supporting the shield in a raised position, substantially as set forth.

333,926. **HARROW.** GEORGE G. CROWLEY, Little Falls, N. Y., assignor to the Warrior Mower Company, same place. Filed July 6, 1885. (No model.)



Claim.—1. The combination, with the harrow-frame A A', provided with a pair of openings, *n n'*, on each side of the machine, of two interchangeable disk-gangs, each provided with a hinge, D, and a fastening-bolt, *g'*, which may be passed through either of the openings *n n'*, and whereby the hinge can be secured at different distances from the center of the machine, draft-rods H, adjustably connected to the harrow-frame, and eyes *h'*, attached to each gang, near both ends thereof, for the attachment of the draft-rods, substantially as set forth.

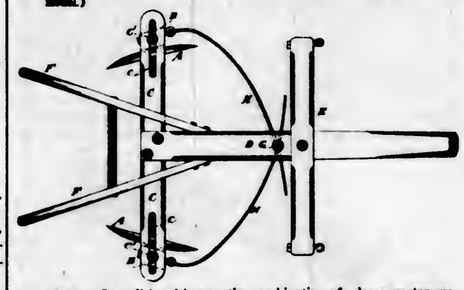
2. The combination, with the harrow-frame A A', provided with a pair of openings, *n n'*, on each side of the machine, of two interchangeable disk-gangs, each provided with a hinge, D, and a fastening-bolt, *g'*, which may be passed through either of the openings *n n'*, and whereby the hinge can be secured at different distances from the center of the machine, draft-rods H, adjustably connected to the harrow-frame, eyes *h'*, attached to each gang, near both ends thereof, for the attachment of the draft-rods, and braces J, attached with their rear ends to the hinges D, and having their front ends adjustably connected to the harrow-frame, substantially as set forth.

3. The combination, with the harrow-frame and the hinged disk-gangs, of draft-rods H, having their rear ends made vertically adjustable on the gangs, substantially as set forth.

4. The combination, with the harrow-frame and the hinged disk-gangs provided with vertical series of eyes *h'*, of the draft-rods H, having their rear ends attached to said eyes and their front ends adjustably connected to the harrow-frame, substantially as set forth.

5. The combination, with the pole A, rigid cross-piece A', and hinged disk-gangs, of the pins *d*, secured to the cross-piece, the sleeves *d'*, applied to said pins, the sockets *e*, attached to the gangs, and the braces J, connecting said sockets with the pole, substantially as set forth.

333,927. **DISK-CULTIVATOR.** JOHN O. CURRIER, Sangerville, Me., assignor to Lewis E. Currier, same place. Filed July 22, 1885. (No model.)



Claim.—In a disk-cultivator, the combination of a beam or tongue carrying eyebolts G, a cross-bar, C, slotted near each end, hangers B B, carrying eyebolts *b c'*, and brace-rods H H, hinged to eyebolts *b*, whereby the hangers and brace-rods may be correspondingly adjusted with the disks to regulate their distances apart or their obliquity, in the manner described

333,928. **EYEGLASSES.** JOHN CURRIE, Southbridge, Mass., assignor of one-half to Nelson Baker, same place. Filed Oct. 10, 1885. (No model.)

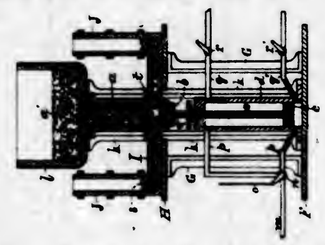


Claim.—1. In an eyeglass, the combination of a frame, a stud, secured thereto, a spring having its lower end detachably connected to the stud, and a nose-guard removably secured at its lower end to the frame and having its upper end bearing against the lower end of the spring, to hold the same in place, and detachably connected to the stud, substantially as described.

2. In an eyeglass, the combination of a frame, a stud secured thereto and having an upper slotted arm, and a lower arm provided with a lug, a spring having a slotted lower end connected detachably to the lug of the lower stud-arm, and a nose-guard secured at its lower end to the frame and bearing at its upper end against the lower end of the spring and detachably connected to the stud, substantially as described.

3. In an eyeglass, the combination of a frame, a stud secured thereto and made in two pieces secured together, one piece having a projecting ear or lug and the other piece having a slotted arm arranged above the projecting lug of the fellow piece, a spring passed through the slotted arm of one of the pieces of the stud and having a slot in its lower end fitted over the lug of the lower piece of said stud, and a nose-guard detachably connected at its lower end to the frame and having its upper end passed through the slotted upper arm of the stud-piece, and slotted to fit over the projecting lug of said stud and bearing against the spring, substantially as described.

333,929. **CASTING METAL INGOTS.** JAMES H. DALLIBA and FRANK DALLIBA, Cleveland, Ohio. Filed May 26, 1885. (No model.)



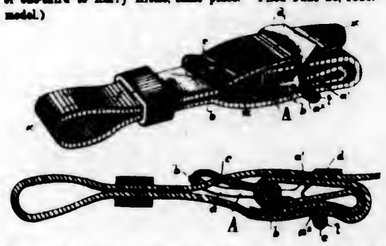
Claim.—1. The combination, with a mold, a vertical ingate, and a runner connecting the mold and ingate at their lower ends, of a movable stopper fitted within the ingate and operated to draw the fluid metal down into the ingate to the mouth of the runner, as and for the purpose set forth.

2. The combination, with a series of molds, a vertical ingate, and a series of runners connecting the mold and ingate at their lower end, of a movable stopper fitted within the ingate and operated to draw the

fluid metal down into the ingate to the mouths of the runners, as and for the purposes set forth.

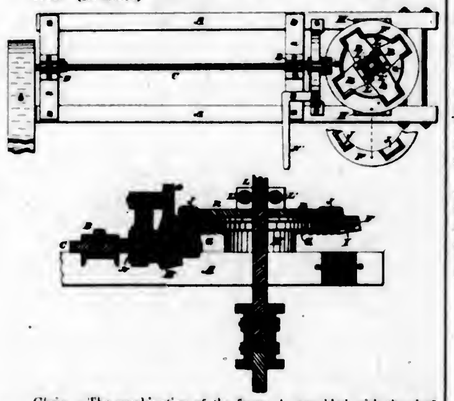
3. The apparatus for casting a series of ingots, consisting in the molds J, runners I, ingate *a*, and the kettle *l*, detachably secured together, as described, and the stopper fitted to the ingate at the bottom of the kettle while filling the latter with fluid metal, and means for lowering the stopper to the mouths of the runners, in order to fill the molds, substantially as shown and described.

333,930. BUCKLE. JAMES E. DAVENNY, Cornforth, Iowa, assignor of one-third to Harry Hittle, same place. Filed June 26, 1885. (No model.)



Claim.—As an improved article of manufacture, a buckle having its side bars forked in the rear of a single tongue-bar at an angle of about forty-five degrees, its upper prongs being united by a flattened bar and its lower prongs by a round bar, upon which is a roller, all substantially as and for the purpose set forth.

333,931. EARTH-BORING MACHINE. JAMES E. DAVIS, Palmyra, assignor of one-half to Thomas C. Snyder, Canton, Ohio. Filed Sept. 7, 1885. (No model.)



Claim.—The combination of the frame A, provided with the shaft C, having pinion E, of the annular plate G, provided with the supports H, of the auger-propelling wheel F, provided with the notches or recesses J, of the removable arms or spokes K, fitting in the recesses J, of the anti-friction rollers L, and the auger-shank, substantially as and for the purpose specified.

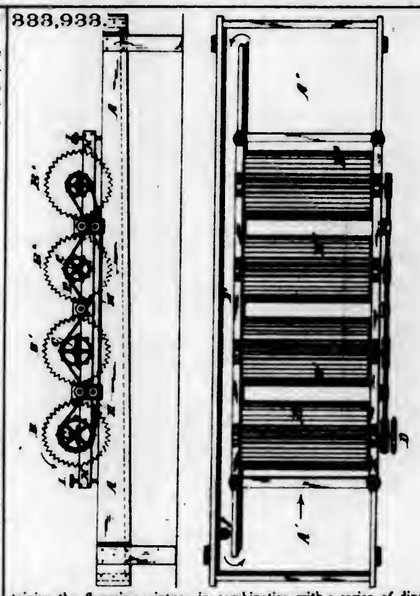
333,932. TELEPHONE-RECEIVER. NORTH DOWLING, Philadelphia, Pa. Filed Feb. 14, 1885. (No model.)



Claim.—In a telephone-receiver, the combination, with the diaphragm, of a central magnet, a series of magnets arranged around the same having alternately-opposite polarity, and the coil extending around the inside and outside of the alternate magnets alternately and connecting with suitable binding-posts, substantially as specified.

333,933. MACHINE FOR CASING TOBACCO. ADAM U. DRAYER and VERMONT C. HATFIELD, Middletown, Ohio. Filed May 29, 1885. (No model.)

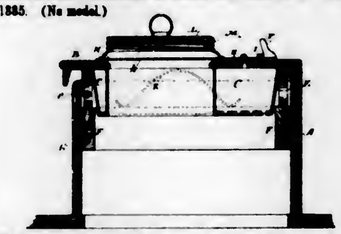
Claim.—1. In a casing-tub for flavoring tobacco, a vessel for containing the flavoring-mixture, in combination with a series of dipping-cylinders and mechanism for revolving them at different rates of speed, substantially in the manner and for the purpose specified.



2. A casing-tub for flavoring tobacco, comprising a vessel having the dipping-chamber A' and A'', and the chamber F, having the outlet *f* at one end, the chamber A' and A'' communicating with the chamber F at both ends, whereby the sand and impurities washed from the tobacco in the chamber A' and A'' are deposited in the chamber F, and discharged through the outlet *f*, substantially as described.

3. In a casing-tub for flavoring tobacco, a vessel containing the flavoring-mixture, in combination with an adjustable frame having raising or lowering mechanism at each end, carrying one or more fluted cylinders for dipping the tobacco under the liquid and moving it through the vessel, substantially as described.

333,934. AUTOMATIC APPARATUS FOR DRY DISINFECTING MATERIALS. BERNHARD A. DRYER, New York, N. Y. Filed Sept. 24, 1885. (No model.)



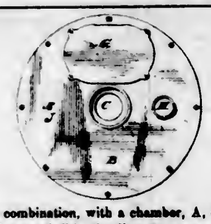
Claim.—1. The combination, with a closet or privy seat, of a disinfecting-pan having a central opening through it and small openings in the bottom, and springs to support the pan, so that the pan containing the disinfecting material will be agitated automatically by the movement of the seat, substantially as set forth.

2. The combination, with a movable seat in a closet or privy, of a movable pan having a central opening through the same and small openings in the bottom, springs and bearers for supporting such pan, and a stop for limiting the downward movement of the seat, substantially as specified.

3. In a cover for a privy or other receptacle for offensive material, a holder for disinfecting material having a flat sheet-metal bottom with openings in the same, a sheet-metal screw-ring forming the upper end of the sides of the holder, and a screw-cap for the same, in combination with the hinge at one side of the flat bottom and a flat seat upon which the bottom of the sheet-metal holder rests, substantially as set forth.

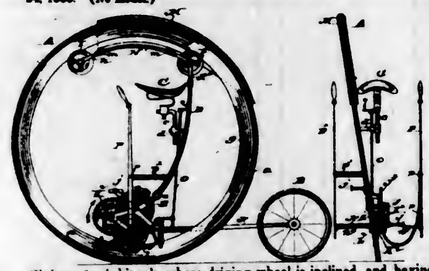
333,935. STRAINER FOR CATCH-BASINS. ROBERT D. DUNCAN, Omaha, Nebr., assignor of one-half to Alexander Wallace, same place. Filed May 14, 1885. (No model.)

333,935.



Claim.—The combination, with a chamber, A, containing the convex perforated and sparred disk of a diameter approximating that of the said chamber, of an independent top provided with an inlet-opening, a man-hole, and cock J, substantially as set forth.

333,936. BICYCLE. CHARLES E. DURYEA, St. Louis, Mo. Filed Aug. 24, 1885. (No model.)



Claim.—1. A bicycle whose driving-wheel is inclined, and having the rider's seat alongside the wheel and over the bottom part, as described.

2. A bicycle whose driving-wheel is inclined, and having the driver's seat alongside it, as described.

3. A bicycle whose rider's seat is alongside the driving-wheel, as described.

4. The combination of the inclined wheel A, the standard D, supported at its ends in said wheel, and supporting the rider's seat at its side, as described.

5. The combination of the wheel A, the standard D, the pulleys F I I', the frame-work E, and the arm H, as described.

6. The combination of the inclined wheel A, the small wheel B, and the backbone N, said backbone leading from the small wheel forward and connecting with a frame-work within the rim of the large wheel.

7. The combination of the large wheel A, the small wheel B, and the backbone N, said backbone leading from the small wheel forward and connecting with a frame-work within the rim of the large wheel, which also supports the standard to which the rider's seat is attached.

8. The combination of the wheels A B and the backbone N, said backbone at its forward end being jointed, to swing laterally, to a frame-work held within the rim of the large wheel.

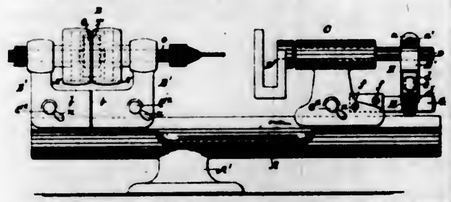
9. The combination of the wheels A B and the backbone N, said backbone at its forward end being jointed, to swing vertically, to a bearing held within the rim of the large wheel.

10. The combination of the wheels A B, the backbone N, the frame N', the frame-work E, the pulleys F I I', the standards D, and the arm H, as described.

11. The combination of the wheels A B, the handle-bars P P', the standard D, the frame-work E, the bearings *p p'*, the backbone N, and the cross-arm *n'*, as described.

12. The combination of the wheels A B, the frames E N', the backbone N, the standard D, and the screw O, as described.

333,937. TAPPING-MACHINE. VICTOR H. EISELE, Jersey City, N. J. Filed Dec. 6, 1884. (No model.)



Claim.—1. In a tapping-machine, the combination, with the foot-stock and its spindle, of a yielding follower fitted to the said spindle, and working against a suitable guide, and adapted to receive the pressure on said spindle, substantially as described.

2. In a tapping-machine, the combination, with the foot-stock and its spindle, of an adjustable yoke fitted to the same, and a suitable guide, substantially as described.

3. In a tapping-machine, the combination, with the foot-stock and its spindle, of an adjustable yoke fitted to the same, and having an arm attached to the arm of the yoke, a suitable guide, and yielding rollers on said arms, substantially as shown and described.

4. In a tapping-machine, the combination, with the foot-stock and its spindle, of a suitable guide, and the yoke E, having an arm, E', the arm E², and the rollers H, consisting of the shouldered sleeves I and flexible bands H', substantially as described.

5. In a tapping-machine, the combination, with the foot-stock and its spindle, of a suitable guide, the yoke E, having arm E', the arm E², adjustably secured to the arm E', the rollers H, consisting of the shouldered sleeves I and flexible bands H', and of means for diametrically adjusting the rollers H, substantially as described.

6. In a tapping-machine, the combination, with the foot-stock and its spindle, of the yoke E, having arm E', the T-arm E², the stem of which is held in an aperture of the arm E', the plate *d*, screw *c*, and a suitable guide, substantially as described.

7. The combination of the clamp-sleeve Q, having projections R on its side faces, and the pulleys N, having clutch-pieces S, substantially as described.

8. The combination, with the clamp-sleeve Q, having projections R on its side faces, and having a binding-screw, *j*, of the pulleys N, having removable clutch-pieces S, substantially as described.

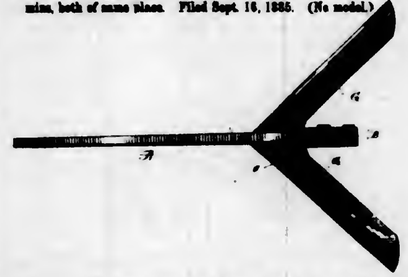
9. The combination, with the tap-spindle, of a clamp-sleeve mounted thereon, said clamp-sleeve adapted to engage the clutch-pulleys, and having a binding-screw which binds on the tap-spindle, substantially as described.

10. The combination, with the clamp-sleeve and clutch-pulleys, of a case or shell encircling the clamp-sleeve, substantially as and for the purpose specified.

11. The combination of the clamp-sleeve having projections on its side faces, the pulleys having clutch-pieces to engage the clamp-sleeve, and a shell or case surrounding the clamp-sleeve, substantially as described.

12. The combination, with the pulleys having removable clutch-pieces, of a clamp-sleeve having projections on its side faces adapted to engage the clutch-pulleys, and a shell encircling the clamp-sleeve between the pulleys, substantially as described.

333,938. STALK AND WEED CUTTER. JOSEPH J. FAIRES, McKinney, Tex., assignor of two-thirds to Francis Emerson and John R. Cummins, both of same place. Filed Sept. 16, 1885. (No model.)



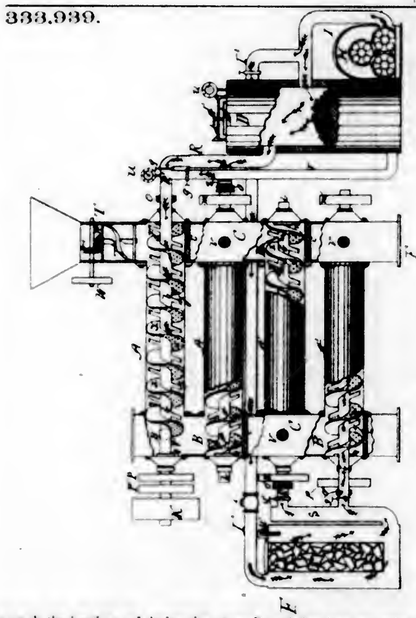
Claim.—The improved plow herein described, consisting of the beam A, having rearwardly, downwardly, and forwardly curved standard, the arrow-point D, having the stem or shank C, formed entire and open at its bottom, rear side, and top to receive the said standard, and the diamond-shaped cutter consisting of two wings inclined upwardly from their front to rear edges, and curved inwardly at their outer ends from their cutting-edges to their back edges, substantially as shown and described.

333,939. GRAIN-DRIER. HERBERT R. FOOTE, New York, N. Y. Filed Feb. 2, 1885. (No model.)

Claim.—1. In a machine for drying and cooling wet products and provided with separate and independent drying and cooling cylinders, each having a conveyer mounted therein, a hot-air conduit leading from the interior of the combustion-chamber of the stove to the drying-cylinders, and a cold-air conduit leading from the refrigerating-chamber to the cooling-cylinders, the parts being combined and arranged substantially as set forth, so that the air-currents shall pass through the products, and back and forth through the cylinders, in the manner and for the purposes explained.

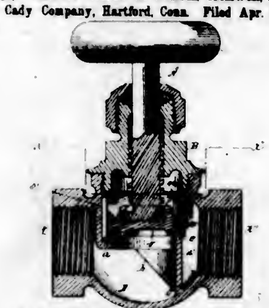
2. In a machine for drying and cooling grain or wet products, the independent heating and cooling cylinders, within which the material is

333,939.



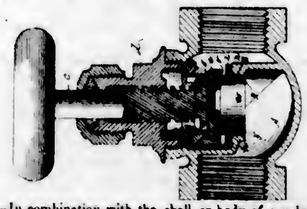
moved, the heating and desiccating stove D, and the pipe connecting the combustion-chamber thereof with the interior of the heating-cylinders, the refrigerating air-receiver E, and the pipe connecting the same with the interior of the cooling-cylinders, the connecting-pipes being provided with valves, substantially as shown and described.

333,940. VALVE. HENRY R. FERRIER, Cromwell, assignor to the Pratt & Cady Company, Hartford, Conn. Filed Apr. 27, 1885. (No model.)



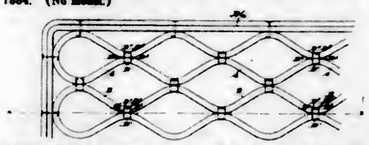
Claim.—In a globe-valve, a diaphragm consisting of the inclined portions *b b*, having their lower ends terminating at the point *o* removed inwardly from the point *z* of the opening K', the part *a*, the curved part a^2, and the cylindrical section *a'*, having the valve-seat *c* on its upper edge, and having its side opposite said opening K' terminating directly under said valve-seat at the point *o* on the interior of the valve-body D, substantially as set forth.

333,941. VALVE. HENRY R. FERRIER, Cromwell, assignor to the Pratt & Cady Company, Hartford, Conn. Filed Apr. 27, 1885. (No model.)



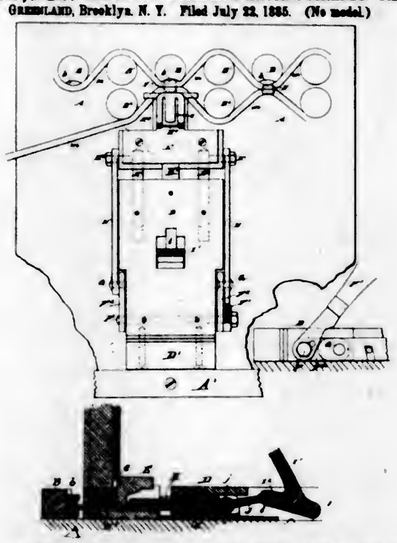
Claim.—In combination with the shell or body of a valve having diaphragm-partition and screw-threaded aperture therein, the screw-threaded seat-ring D, having plane-faced valve-seat and upwardly-extending guides *b b*, the flat-faced valve *c*, of diameter to fit between and bear against guides *b*, and the operating-spindle by which said valve is moved, all substantially as set forth.

333,942. MAT. FRANK GREENLAND, Brooklyn, N. Y. Filed June 18, 1884. (No model.)



Claim.—The open-work mat described, composed of a continuous strand of flexible fibrous material bent to form points of contact at regular intervals to form a body, and having a border or edge formed of parallel lines of said strand, the points of contact in the body and points of contact between the body and the border being secured by metallic fastenings, substantially as shown and set forth.

333,943. MACHINE FOR STAPLING MATTING-STRANDS. FRANK GREENLAND, Brooklyn, N. Y. Filed July 22, 1885. (No model.)



Claim.—1. The combination, with the body D, lever F', and carriage or cross-head E, operated by said lever and having a recess for receiving a number of staples, N, of the lever I', carriage K, and arm K', operating through the cross-head to drive the staples, all arranged for joint operation, as herein specified.

2. The cross-head E and means, as F' H, for reciprocating it, in combination with the arm K', the carriage K, and means, as I' I' J, for reciprocating it, arranged for joint operation relatively to each other and to strands *m m* of a mat and abutting pins B B' B^2, substantially as herein specified.

3. The bench or supporting means A, abutting pins B, with concaves *b*, and additional pins, as B' B^2, for holding the strands in position, in combination with each other and with the cross-head E and arm K', and means, substantially as described, for operating the arm and cross-head, as set forth.

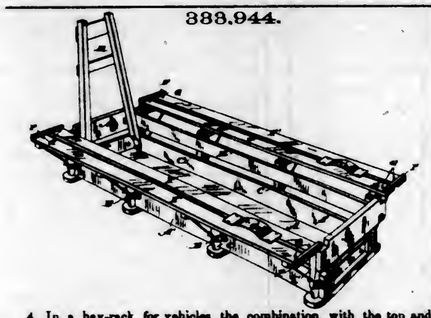
333,944. HAY-RACK. JOSEPH GRIESS, Perry, Ill. Filed Sept. 23, 1885. (No model.)

Claim.—1. A hay-rack having its sides formed of two sections hinged together, the lower section being provided with stakes projecting below its lower edge to enter keepers on the wagon-body, substantially as shown and described.

2. A hay-rack having its sides formed of two sections, hinged together and provided with angular stops and brace-rods, the said lower section being provided with projecting stakes to enter keepers on the wagon-body, substantially as herein shown and described.

3. In a hay-rack for vehicles, the combination, with the top and bottom sections hinged together, of the staples L on the stakes of the lower sections, and the brace-rods J on the bars of the upper sections, substantially as herein shown and described.

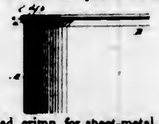
333,944.



4. In a hay-rack for vehicles, the combination, with the top and bottom sections hinged together, of the brace-rods J on the bars of the upper sections, and of the angle-pieces H, secured on the bars of the upper sections at their hinged ends, substantially as herein shown and described.

5. The combination, with a vehicle, of a hay-rack having each side formed of an upper and a lower section hinged together, of a tie-rod uniting the upper sections when raised, and of the end piece, O, having cleats S, provided with slots T, substantially as herein shown and described.

333,945. SHEET-METAL CAN. WILLIAM HEPPERLING, New York, N. Y., assignor to Ginna & Co., same place. Filed Nov. 30, 1885. (No model.)

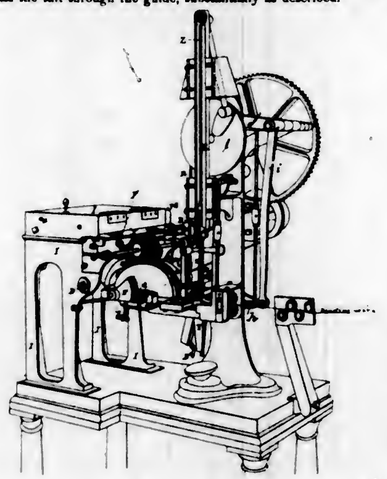


Claim.—An improved crimp for sheet-metal cans having a body and head, which consists of the flanges *d* and *e* on the head and the outwardly-deflected edge *a* on the body, the flange *d* having an annular shoulder, *f*, and the extreme edges of the flange *e* terminating at the base of the deflected edge *a*, substantially as shown and described.

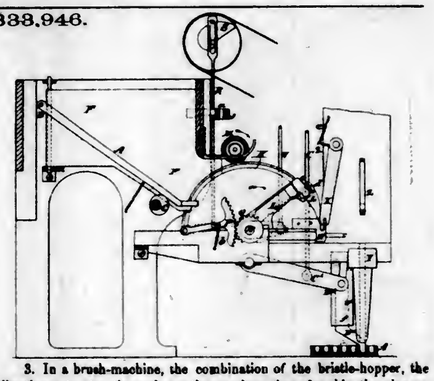
333,946. MACHINERY FOR MAKING BROOMS AND BRUSHES. JOHN G. HORSEY, London, England. Filed Aug. 11, 1883. (No model.) Patented in England Mar. 14, 1883, No. 1,341; in France Sept. 14, 1883, No. 151,063; in Germany Oct. 19, 1883, No. 3,133; in Belgium Oct. 24, 1883, No. 59,377, and in Denmark Oct. 27, 1883.

Claim.—1. In a brush-machine, the combination of a bristle receiver or hopper having a vertically-jogging bottom and laterally-shaking bars for evening the fibers and keeping them in a loose condition, a vibrating tuft-extractor for taking the bristles from the hopper, and a reciprocating receiver to receive the bristles from said extractor, substantially as described.

2. In a brush-machine, the combination of the bristle receiver or hopper, the carved guides, the vibrating tuft-extractor, the reciprocating receiver, the guide to receive the tuft from said receiver, and the plunger to pass the tuft through the guide, substantially as described.



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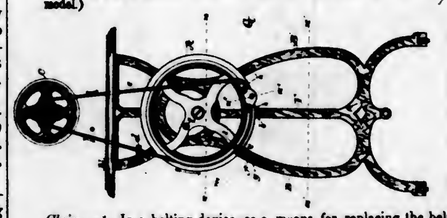


3. In a brush-machine, the combination of the bristle-hopper, the vibrating extractor, the reciprocating receiver, the tuft-guide, the plunger to pass the tuft through the guide, and the automatic gaging-finger for setting the hole in the brush-stock under the tuft-plunger, substantially as described.

4. In a brush-machine, the combination of the bristle-hopper, the vibrating tuft-extractor, the pinion Q, quadrant P, and spring *b*, substantially as described.

5. In a brush-machine, the combination, with the tuft-guide Y and plunger Z, of the gage-finger B', provided with lug *f*, the finger-socket D', formed with projection *g*, and a lever for moving said finger, substantially as described.

333,947. SEWING-MACHINE. WILLIAM HOUGHTALING, Bridgeport, Conn., assignor to Eleazar Parmly, same place. Filed Apr. 22, 1885. (No model.)



Claim.—1. In a belting device, as a means for replacing the belt on the driving-wheel, the combination, with a lug to operate as a take-up or belt-replacer, said lug secured within one edge of the driving-wheel, and projecting beyond the periphery of the same, and having a radial and laterally-outward inclination, of a guide or series of guides secured to the adjacent parts of the machine, so that by the action of said guide or guides and take-up, in co-operation with the driving-wheel, moving in the right direction, the belt will be automatically placed in the groove of said wheel, substantially as set forth.

2. The combination, with the take-up *a*, secured within one edge of the driving-wheel A, and projecting beyond the periphery of the same, and having a radial and laterally-outward inclination, of the adjustable guide *c*, said guide operating to keep the belt in contact with the groove of the driving-wheel, substantially as described.

3. The combination, with the take-up *a*, secured within one edge of the driving-wheel A, and projecting beyond the periphery of the same, and having a radial and laterally-outward inclination, of the adjustable guides *c* and *d*, substantially as shown and described.

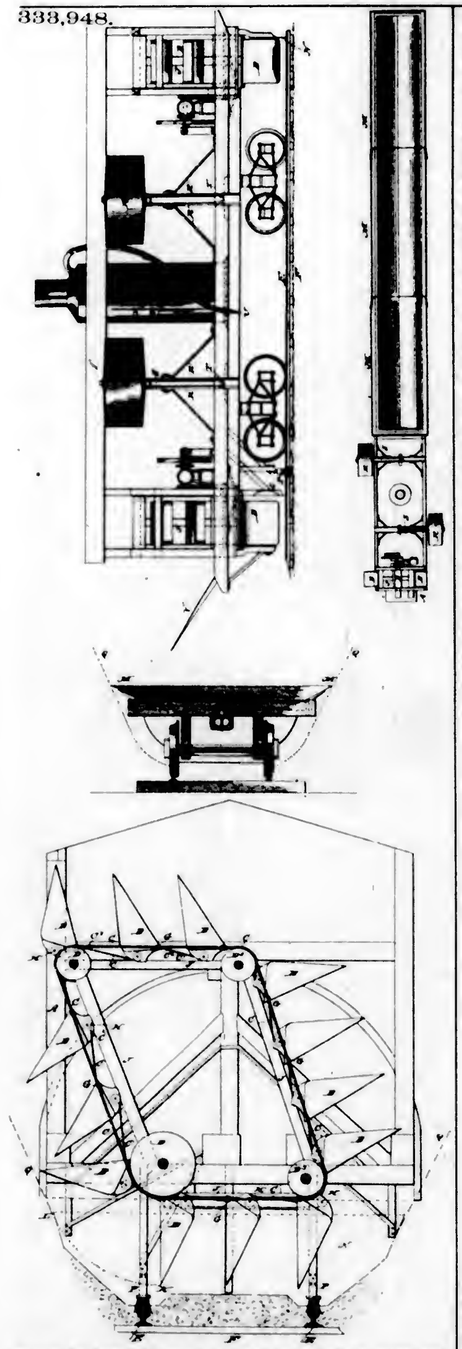
4. The combination, with the driving-wheel A, having the belt take-up *a* situated thereon, of the guides *c*, *d*, and *b*, all substantially as described, and for the purpose set forth.

333,948. SNOW-PLOW. CYRUS HOWARD, Pittsburg, Pa., assignor of one-third to William Wallace Patrick, same place. Filed May 12, 1885. (No model.)

Claim.—1. The combination, with a railway-car, of a series of scoops pivoted on chains mounted on rollers journaled in bearings in the car, which bearings are nearly parallel with the line of the car, the lower two of the said rollers being located near the sides of the car and the next roller in the line of travel of the chain located above and farther out than the vertical plane of the lower roller on the delivery side of the car, and means for revolving the chains, substantially as shown and described, whereby the car advancing in snow will scrape the snow across the road and form a slanting bank at the side thereof, as specified.

2. The combination of a car, a series of scoops, chains therefor, wheels for the chains and scoops to run on transversely to the car, and

333,948.



a scraper fixed vertically across the car to the rear of the scoops, substantially as shown and described.

3. The combination of a car, a series of scoops pivoted at their upper rear edges on chains, wheels to carry the chains, journaled on the car at the angles of a rhomboid, one of whose sides is parallel with the road-bed, and one of whose opposite angles extends over the side of the car, stud or rollers projecting from the sides of the scoops below their pivotal points and near their rear sides, and guide-rails for the rollers attached to the car in planes parallel with the said chains, substantially as shown and described.

4. The combination of the wheels D D′ D^2 D^3, journaled longitudinally in a car, the wheel D′ being above the wheel D and outside of the vertical plane thereof, chains C, mounted on the said wheels, snow-scoops B, pivoted at their upper rear edges to the chains, shoes or rollers H on the rear sides of the scoops below their pivots and near their lower edges, and the guide-rails J, fixed below the path of the chains from D^2 to D and fixed within the path of the chains from D to D′, substantially as shown and described, whereby the scoops are held at right angles to the chains while gathering snow, and whereby the said scoops are permitted to slant backward from D to D′, for the purpose of discharging the snow, substantially as shown and described.

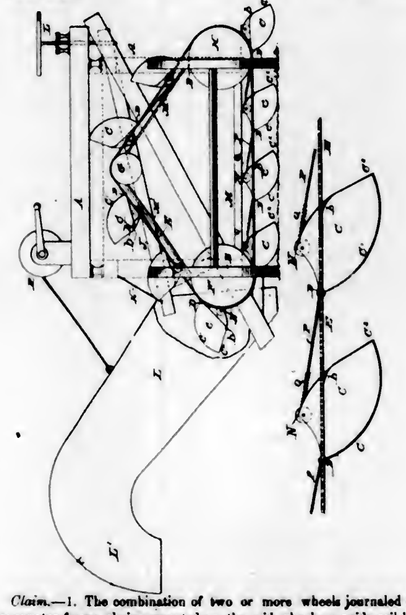
5. The combination, with a car and means, substantially as described, for moving snow to one side thereof, of a roller journaled beside the car on an axis projecting laterally therefrom and guides for the axis to rise and fall in, substantially as shown and described.

6. The combination of a car, an axle projecting over the side thereof transversely thereto, a pivot for the axle parallel with the body of the car, and a roller journaled on the projecting end of the axle, substantially as shown and described, whereby the said roller may be rolled upon snow and be permitted to rise and fall over an uneven path, as set forth.

7. The combination, in a railway snow-plow, of a snow-elevator, substantially as described, and a car attached to the rear of the elevator, provided with inward-slanting sides which project at their upper edges beyond the line of travel of car-bodies, substantially as shown and described.

8. The combination, in a railway snow-plow, of a snow-elevator, substantially as described, and a series of cars attached to the rear thereof, each car being provided with inward-slanting sides which project at their tops, the sides and bottoms of adjacent cars overlapping each other, substantially as shown and described.

333,949. EXCAVATOR. CYRUS HOWARD, Pittsburg, Pa., assignor of one-third to William Wallace Patrick, same place. Filed May 12, 1885. (No model.)



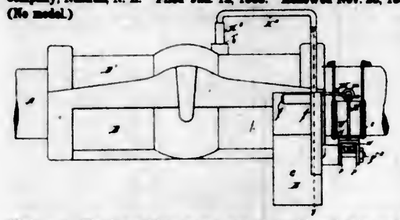
Claim.—1. The combination of two or more wheels journaled in an excavator-frame, chains mounted on the said wheels, a guide-rail located nearly parallel with the chains, and a series of scoops pivoted at their upper edges to the chain, and provided each with a shoe or roller to engage the said rail, the relative position of the rail, the chains, the pivotal attachments of the scoops, and the shoe or roller being such as described, whereby the scoops are carried with their bottoms slanting rearward, with the edge of the bottom dragging on the ground while gathering earth, for the purpose specified.

2. An excavator-scoop hung by the upper edge of its back with its bottom slanting rearward to its edge, and provided with sides having curved edges extending from the said upper edge to the said rear edge and curved as low as the latter, substantially as shown and described.

3. The combination of two or more wheels journaled in an excavator-frame, chains passing around the wheels, scoops attached to the chains in position to carry their bottoms nearly radially around the wheels, and a spout slanting upward and away from the machine nearly tangent to one of said wheels in the path of the delivery of the said scoops, substantially as shown and described, whereby earth thrown loose in the air by the scoops will be guided, as described.

4. The combination of two or more wheels journaled on an excavator-frame, chains passing around the wheels, scoops pivoted at their upper edges to the said chains, and elastic connections between adjacent scoops, substantially as shown and described.

333,950. MECHANICAL OILER AND JOURNAL-BOX FOR SHAFTING. HENRY P. HUMPHREY, Lowell, Mass., assignor to the Lowell Oiler Company, Nashua, N. H. Filed Jan. 12, 1885. Renewed Nov. 25, 1885. (No model.)



Claim.—1. The journal-box proper provided with end drip-receivers, inclined grooves on the inside of said box near the top of the same and leading from points about midway between the ends of said box into said drip-receivers, the cover having a chamber on the inside of the top of the same, an oil-hole leading through the top of said cover into said chamber, and oil-passages leading from said chamber into said inclined grooves, as and for the purpose specified.

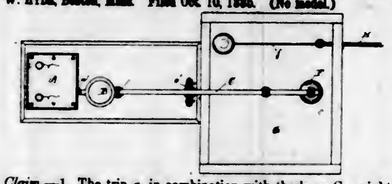
2. The combination of the box proper provided with end drip-receivers, and the cover having a chamber in the inside of the top of the same, an oil-hole leading through said cover into said chamber, and oil-passages cored out in said cover and leading from said chamber into said drip-receivers, as and for the purpose specified.

3. The combination of the box, its cover having an oil-hole communicating with the interior of said cover and box, the pump having a nozzle, the free end of which extends over said oil-hole, and a sleeve surrounding said free end of said nozzle and sliding freely thereon and adapted to enter said oil-hole and fit the same, as and for the purpose specified.

4. The cam or eccentric provided near its side edges with grooves and adapted to be wrapped partly around a shaft and to be held thereon by wires laid in said grooves and fastened around said shaft, as and for the purpose specified.

5. The cam or eccentric formed of a strip of metal, provided near its side edges with grooves, and scarfed at each end to an edge between said grooves, and adapted to be wrapped partly around a shaft and to be held thereon by wires laid in said grooves and fastened around said shaft, as and for the purpose specified.

333,951. APPARATUS FOR FLUSHING WATER-CLOSETS. DANIEL W. HYDE, Boston, Mass. Filed Oct. 10, 1885. (No model.)



Claim.—1. The trip *a*, in combination with the lever C, weight B, counter-weight F, cistern G, and valve D, substantially as set forth.

2. The magnets *g* and armature *d*, in combination with trip *a*, lever C, weight B, counter-weight F, cistern G, and valve D, substantially as set forth.

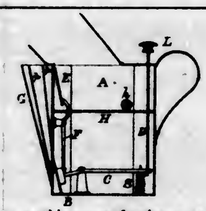
333,952. VESSEL FOR CONDENSING BEER AND OTHER LIQUORS. CHARLES H. JOHNSON, West Sutton, Mass. Filed Sept. 22, 1884. (No model.)

Claim.—1. A beer-condenser having a central chamber, A, side chambers, I I, and a spout having a passage communicating with the lower portion of said central chamber, and a separate passage communicating with the upper portion of said central chamber, in combination with a perforated disk, H, substantially as and for the purpose set forth.

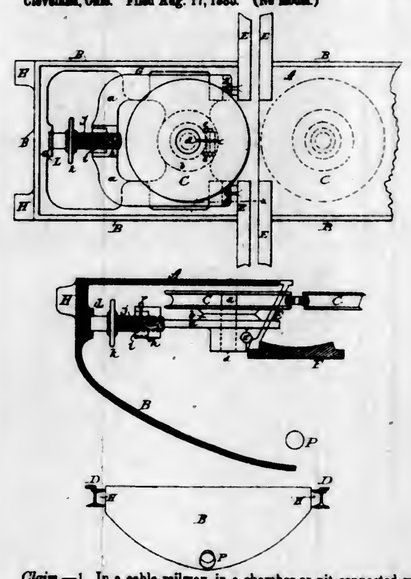
2. A beer-condenser having the central chamber, A, side chambers, I I, spout G, having partitions *p p*, forming passages directly leading into the upper and lower portions, respectively, of said central chamber, perforated valve E, and valve B, substantially as and for the purpose set forth.

3. In a beer-condenser having the chambers A and L L, the spout G, having passages, substantially as described, in combination with valve B, operated by lever C, spring S, and rod D, and perforated valve E, having pivoted lever F, the said lever F being so connected to the said valve B that when one valve is opened the other is closed, substantially as and for the purpose set forth.

333,952.



333,953. CABLE-RAILWAY CONSTRUCTION. TOM L. JOHNSON, Cleveland, Ohio. Filed Aug. 17, 1885. (No model.)



Claim.—1. In a cable railway, in a chamber or pit connected with the cable-conduit, the combination of twin carrying-pulleys and adjustable carrying-frames whereon said pulleys are mounted, whereby said pulleys are adjusted to carry the cable and to release the same by horizontal adjustment, and are also adapted for removal from said chamber or pit, substantially as and for the purposes set forth.

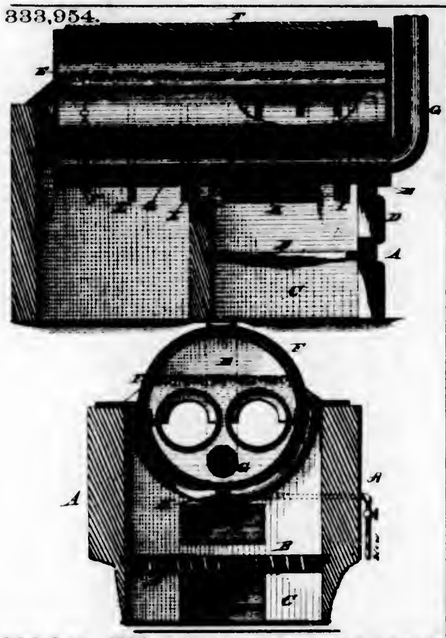
2. In a cable railway, in combination with the cable-conduit, a pulley chamber or pit forming a double catch basin or chamber having an angular or curved bilge on each side meeting in a central line at bottom, vertical end walls, and openings on top for the insertion or removal of the pulleys, whereby said basins may be readily cleaned from each side of said central line, substantially as and for the purposes set forth.

3. In a cable railway, in combination with the cable-conduit, a double catch-basin having an angular or curved bilge on each side of a central line at bottom, openings on top, and vertical end walls provided with a pipe or pipes for sewer-connection whereby said basin can be cleaned out by means of scoops or shovels without danger of solid material being forced or falling into said connections, substantially as and for the purposes set forth.

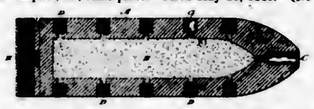
333,954. STEAM-BOILER FURNACE. LYSANDER JOHNSTON, Danville, Ill., assignor of one-half to James R. Cox, same place. Filed Aug. 17, 1885. (No model.)

Claim.—The boiler E, the circulating-pipe beneath the boiler, the longitudinal pipe H, connected with the circulating-pipes, and the external flanges around the under side of the boiler, all combined, constructed, and adapted to operate substantially as shown and described.

333,954.



333,955. SHELL. WILLIAM KENNEDY, Brooklyn, N. Y., assignor to James E. Simpson, Jr., same place. Filed May 25, 1885. (No model.)



Claim.—1. An explosive projectile provided with recesses G, formed in and distributed over the surface of its body, and said recesses filled up to the level of the exterior surface of the projectile with plugs D, which plugs and recesses are respectively provided, as set forth, with positive retaining devices, whereby the said plugs form substantially parts of the body of the projectile, and the recesses determine the fracture of the said body into numerous fragments, as set forth.

2. An elongated hollow projectile for rifled ordnance, provided as follows, namely: with a sabot to engage the rifles in the gun, with perforations G, formed in and distributed over its body, and such perforations provided with internal grooves or recesses to form retaining devices, and with leaden plugs D, fitted into said perforations and engaging said internal grooves or recesses, substantially as set forth.

3. A hollow explosive projectile provided with numerous counterbored and screw-threaded perforations, G, formed in and distributed over its body at substantially equal distances apart, and with leaden plugs D, fitted tightly into said perforations G, and engaging the screw-threads in same, substantially as set forth.

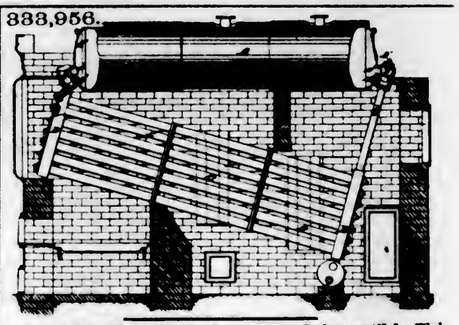
4. The combination, with the projectile A, provided with the undercut or dovetail intersecting grooves F, of the soft-metal sabot E, provided with dovetails which engage the grooves F, substantially as and for the purposes set forth.

333,956. STEAM-BOILER. CHARLES A. KNIGHT, Glasgow, County of Lanark, Scotland. Filed Apr. 8, 1885. (No model.) Patented in England Sept. 9, 1884, No. 12,189; in France Sept. 24, 1884, No. 164,468; in Germany Sept. 24, 1884, No. 32,341, and in Belgium Sept. 25, 1884, No. 66,415.

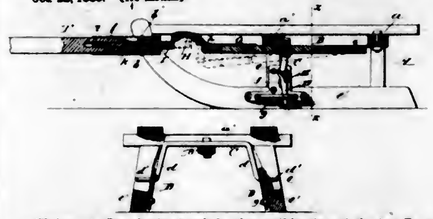
Claim.—1. A steam-generator composed of headers connected by a series of water-tubes, an elevated steam and water-drum, and an intermediate water-box extending across said series of water-tubes, the respective parts connected and communicating by means of stay-tubes, as shown.

2. A header composed of cast-steel, cast malleable iron, or similar material, having internal ribs or partitions dividing the same into communicating sections to accommodate the staggered position of the connected water-tubes, said header being connected to a steam-drum direct or to an intermediate water-box, as described.

333,956.



333,957. SLED-BRAKE. THOMAS J. KYTE, Dockertown, N. J. Filed Oct. 22, 1885. (No model.)

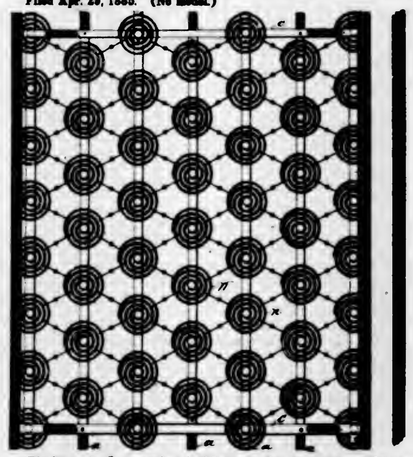


Claim.—1. In a brake for sleds, the combination of the bar B, attached to the frame by a spring and to a sliding tongue by a link, an angle-bar, C, having its lower ends bent outwardly and passing through vertical slots in a plate, E, and the pivoted dogs D, attached thereto, so as to play under the bails *g* and contact with the rear portion of said bails, substantially as shown, and for the purpose set forth.

2. The combination, in a brake for sleds, of an angle-plate, E, having vertical slots *f*, and horizontal bails *g*, pivoted dogs D, and bent bar C, which is rigidly connected to a longitudinal spring-bar attached to the sled, substantially as shown, and for the purpose set forth.

3. In a brake for sleds, the spring-bar B, attached at its rear end to the sled-body and provided centrally with a bar having downwardly-projecting members with outwardly-bent ends, the angle-plates E, with vertical slots through which the horizontal ends of the bar C pass, bails *g*, formed on the angle-plates, and pivoted dogs D, and curved link connecting the forward end of the spring-bar B with the rear end of the tongue, said tongue having a rearward and forward movement with respect to the sled, the parts being combined and organized substantially as shown, and for the purpose set forth.

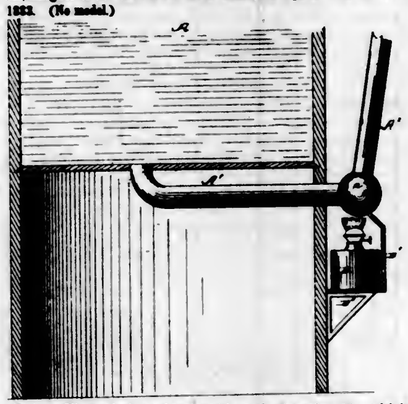
333,958. SPRING BED-BOTTOM. THOMAS P. LYNCH, New York, N. Y. Filed Apr. 29, 1885. (No model.)



Claim.—1. In a spring bed-bottom, the transverse stripe *c*, elevated at each end to form the spring-brace *a*, in combination with the upper side strips and extension-pieces *m*, as described and set forth.

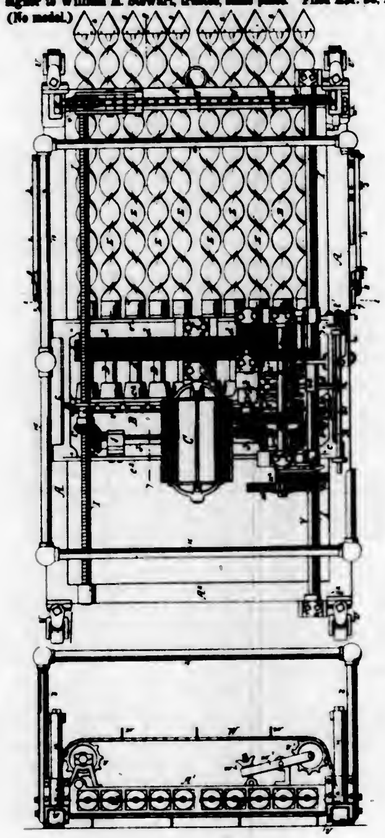
2. A spring bed-bottom constructed of the corrugated stripe *c*, transverse stripe *c*, elevated at each end to form the brace *a*, and extension-pieces *m*, in combination with the springs *w*, side top slats, *c*, and chains or links to hold the springs vertical, all as described and specified.

333,959. RAILROAD WATER-TANK. ALBERT E. LYTLE, Chicago, Ill., assignor of one-third to Robert B. Smith, same place. Filed Dec. 18, 1883. (No model.)

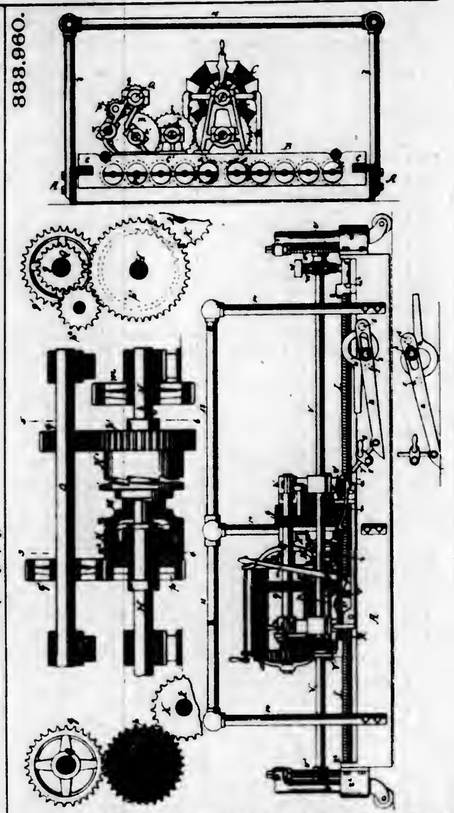


Claim.—The tank A, outlet-pipe A', conducting-pipe A^4, and joint *a*, in combination with the lamp B, case B', and bracket B^2, all constructed and arranged to operate substantially as and for the purpose set forth.

333,960. MINING-MACHINE. JOHN LEGAS, Philadelphia, Pa., assignor to William M. Stewart, trustee, same place. Filed Apr. 30, 1885. (No model.)



333,960.



Claim.—1. The combination of the frame and traveling carriage of a mining-machine, carrying-drills, with the driving-shaft H, a clutch, M, on said shaft, a drum having teeth engaging with those of the clutch, and a wheel forming part of the feed-gear of the carriage and having a frictional connection with the drum, as set forth.

2. The combination of the frame and carriage of a mining-machine, carrying a series of drills, with the shaft H, a clutch, M, thereon, a drum engaging with said clutch, a wheel forming part of the feed-gear, and a frictional disk confined between said drum and wheel, substantially as described.

3. The combination, in a mining-machine, of the frame and carriage, and a feeding-gear having a clutch with mechanism for automatically reversing the movement of the carriage, a lock for locking the clutch to the carriage when it is moving forward, and a plate at the front end of the frame for automatically releasing the lock at the end of the movement of the carriage, substantially as set forth.

4. The combination, in a mining-machine, of the frame and carriage, and feeding-gear, and a clutch, M, with a bar, R, connected to the clutch, a stop on the frame, with which the bar comes into contact to arrest the forward movement of the carriage, and a spring, *f'*, attached to the end of the bar, substantially as set forth.

5. The combination, in a mining-machine, of the frame and carriage, the feeding-gear, a clutch, M, controlling the feed, a bar, R, connected to the clutch-lever, and a shaft, *s'*, extending transversely across the machine, and having handles s^2 at each end thereof, and a link, s^3, connecting the shaft with the bar R, substantially as set forth.

6. In a mining-machine, the combination, with a stationary frame and a carriage thereon, of a series of drills carried by the carriage, an endless belt carrying scrapers, and extending transversely across the machine and supported upon the front of the frame, and a driving-shaft and gearing for operating the chain, substantially as set forth.

7. The combination, with the traveling carriage and drills, of the endless belt having scrapers extending across the front end of the machine, wheels for said belt, a driving-shaft and reversing-gearing, whereby the chain may be driven so as to discharge the débris at either side of the machine, substantially as set forth.

8. The combination of the supporting-frame of a mining-machine

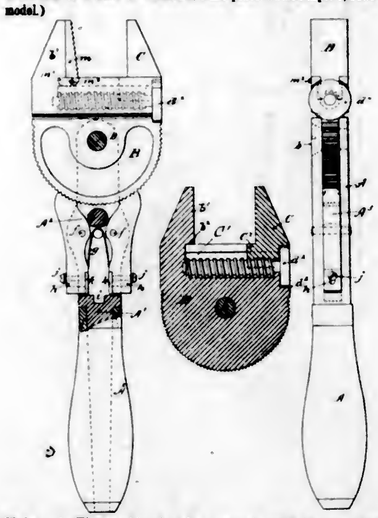
with thrust-struts pivoted to the sides of the frame and projecting rearwardly, so as to engage with the floor, and handled cams to operate the said thrust-struts, substantially as set forth.

9. The combination of the frame of a mining-machine and a slotted thrust-strut, 2, pivoted to the frame and having pins 5 6, the pivot 3, passing through the slot of the strut and supporting the cam 4, for controlling the movement of the strut, substantially as described.

10. The combination, with the sides of the supporting-frame, of a slotted thrust-strut provided with pins, a cam arranged between said pins, a pivot engaging with the slot of the thrust-strut and supporting the cam, and a rod pivoted to the outer end of the strut and to the frame, substantially as set forth.

11. In a mining-machine, the combination of the frame and carriage, the driving-shaft H, for feeding the carriage and operating the drills, the clutch M on the shaft H, the drum N, the teeth of which are adapted to the teeth of the clutch, the gear-wheel *p*, secured to the drum N, and a friction-disk, n^2, confined between the drum and wheel, substantially as set forth.

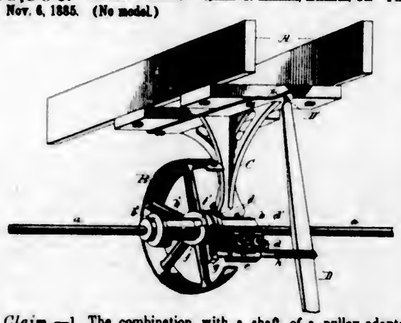
333,961. WRENCH. JOSEPH LUBNER, Minneapolis, Minn., assignor of one-half to Wilbur F. Williams, same place. Filed Apr. 9, 1885. (No model.)



Claim.—1. The combination, in a wrench, with the rotary head B, provided with fixed jaw *b'* and movable jaw *c*, of the pivoted pawls *e e*, having openings *h*, the pins *j*, catches *k*, recess *i*, and spring *g*, substantially as described.

2. The combination, in a wrench, with the rotary head B, having the recess *c'*, fixed jaw *b'*, and shoulder b^2, of the serrated jaw-face *m*, having lug *m'*, the set-screw m^2, the movable jaw *c*, and operating-screw *d*, substantially as described.

333,962. LOOSE PULLEY. JAMES T. MILLER, Atlanta, Ga. Filed Nov. 6, 1885. (No model.)



Claim.—1. The combination, with a shaft, of a pulley adapted to be converted into a fast or loose pulley by shifting longitudinally, substantially as described.

2. The combination, with a shaft, of a loose pulley adapted to remain stationary when shifted out of gear with the shaft, substantially as and for the purposes set forth.

3. The combination of a shaft, two sleeves, and a pulley adapted to be shifted from one sleeve to the other, substantially as described.

4. The combination, with a loose pulley, of a sleeve rigidly mounted in a hanger by means of adjustable set-screws, and a shaft passing through said sleeve free from contact therewith, substantially as described.

5. The combination of a rigidly-mounted sleeve, a shaft passing through said sleeve without contact therewith, a clutch keyed or otherwise secured to said shaft, and a pulley having a clutch and adapted to be shifted into engagement with the clutch on the shaft, substantially as described.

6. The combination of a rigidly-mounted sleeve, a shaft passing through the center of the same, another sleeve, of the same diameter as the former, having a clutch keyed or otherwise secured to said shaft, a pulley with a similar clutch, and means for shifting said pulley from one sleeve to the other in the manner substantially as described.

7. The hangers C, the sleeves *b* and *b'*, shaft *a*, pulley B, shifting-lever D, and intermediate connection between said lever and pulley, all constructed, combined, and arranged substantially as described.

333,963. WRENCH. JOHN H. MILLER, Lewistown, Pa., assignor of one-half to Charles Andrew Zarbe, same place. Filed Aug. 1, 1885. (No model.)



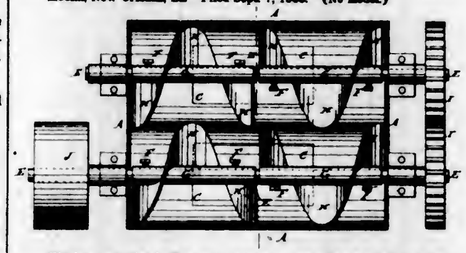
Claim.—In the herein-described wrench, the combination of the bar B, having the stationary jaw C at one end, with the operating-screw E and the sliding jaw D, having loops *a*, surrounding the bar B, a movable section, D', hinged at one end to the sliding jaw, a socket, *c*, formed between the sliding jaw and movable section and adapted to receive the operating-screw, said movable section D' partially surrounding said operating-screw and forming the outer portion of the socket *c*, and having a half-nut, *e*, on its free end, engaging with the screw E, and a spring, F, holding the movable section to its place, all arranged and operating substantially as shown and described.

333,964. GELATINIZED PELT. THOMAS P. HILLMAN, South Orange, N. J. Filed Oct. 15, 1885. (Specimens.)

Claim.—1. The hereinbefore-described process of producing gelatinized or partially-gelatinized pelts, which consists in, first, subjecting the pelts to the action of an alkaline bath, removing the alkali by washing, then in immersing them in a solution of alum, and, finally, placing them in a warm atmosphere, whereby they are both dried and partially gelatinized.

2. As a new article of manufacture, dry gelatinized or partially-gelatinized pelts, substantially as described.

333,965. RICE-HULLER AND CUTICLE-REMOVER. JOHN S. MOORE, New Orleans, La. Filed Sept. 7, 1885. (No model.)



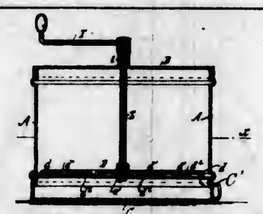
Claim.—A rice-huller and cuticle-remover constructed substantially as herein shown and described, and consisting of the case A, provided with supports B, discharge-door C, and a hopper, D, two parallel shafts, E, each provided with a right- and a left spiral flange, H, with connecting gear-wheels I, and a pulley, J, to receive a driving-belt, whereby the hulls and cuticle will be removed from the rice-kernels by friction, as set forth.

333,966. FLOUR-SIFTER. PAULINE MORGENROTH and THERE LEVISON, Brooklyn, N. Y. Filed Oct. 15, 1885. (No model.)

Claim.—1. The combination, with the casing A, the shaft E, and screen C', of the rotary agitator, consisting of the disk D, fixed to shaft E, and provided with holes *d'*, substantially as described.

2. The combination, with the casing A, of the rotary agitator D, formed with the holes *d'* therein, having downwardly-projecting edges

333,966.

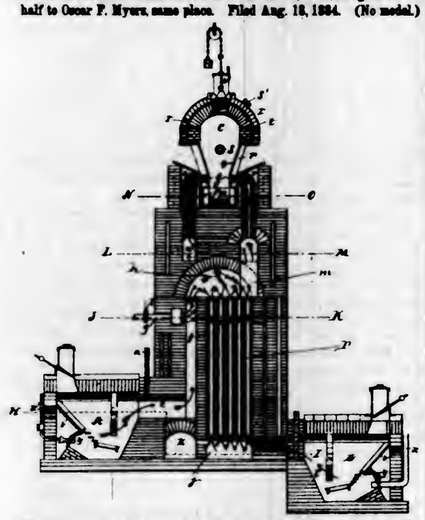


or burrs d^2, and the screen C' below said agitator, substantially as shown and described.

3. As a new article of manufacture, a flour-sifter consisting of a casing open at its top and bottom, a cover fitting the top of the casing, a removable bottom or tray, a screen in the lower part of the casing, a disk situated above the screen and having therein holes with downwardly-projecting edges or burrs, a shaft provided with bearings in the cover and screen, and a detachable crank, which is attached to the upper end of the shaft, substantially as shown and described.

4. The herein-described agitator D, consisting of a disk, *d*, having therein holes *d'*, provided with downwardly-projecting edges or burrs d^2, and a rotary shaft secured to the disk, substantially as shown and described.

333,967. FURNACE FOR REDUCING AND DISTILLING ZINC FROM ITS ORES. CHARLES H. MURRAY, Denver, Colo., assignor of one-half to Oscar F. Myers, same place. Filed Aug. 18, 1884. (No model.)



Claim.—1. In a furnace for reducing and distilling zinc from its ores, and for reducing and smelting other ores, the gas-tight retort and smelting-furnace C, in combination with the fire-clay-lined water-jacket and gas-tight feed-hopper with revolving half-top, in combination with the feed-bell and circular water-jacket, constructed and operated as set forth and exhibited.

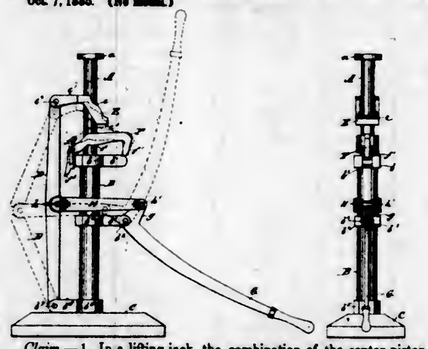
2. In a furnace for reducing and distilling zinc from its ores, and for reducing and smelting other ores, the re-enforcers D and D', constructed and operated as set forth, in combination with the independent furnaces or gas-producers A and B, and in combination with the retort and smelting-furnace C, communicating therewith through the fire-clay pipes or tuyeres *o o o o*, all substantially as shown, and for the purpose specified.

3. In a furnace for reducing and distilling zinc from its ores, and for reducing and smelting other ores, a fire-tile and non-conducting lining *z*, penetrating the water-jacket and communicating between the heated-gas conduits *o o o o* and the interior of the water-jacket, as shown and set forth.

4. In a furnace for reducing and distilling zinc from its ores, and for reducing and smelting other ores, a gas-tight retort and smelting-furnace, C, placed above the re-enforcers D and D', constructed to communicate with the gas-producers A and B through the re-enforcers D and D' by the gates *a a' c c' d d'* and the tuyere-pipes *o o o o*, all as exhibited, and for the purposes herein specified.

5. In a furnace for reducing and distilling zinc from its ores, and for reducing and smelting other ores, the blast-pipe *x*, communicating with the retort or furnace C through the gas-producer B, and the gates *c c'*, and the re-enforcers D D', and the gates *d d'*, and the tuyere-pipes *o o o o*, and the tile-lined apertures *z z*, all as shown and as herein specified.

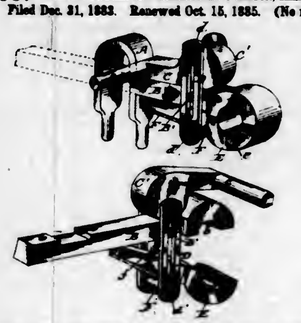
333,968. LIFTING-JACK. ERASMUS NORDYKE, Hopper, Oreg. Filed Oct. 7, 1885. (No model.)



Claim.—1. In a lifting-jack, the combination of the center piston, the toggle-levers, the clutch E, having hole *e* therein for engaging with the said piston, and the arm *e'*, connected to the upper toggle-lever, the clutch F, having the hole *f*, engaging with the center piston, and provided with the arm *f'*, the cylinder having projecting arm *b'*, and a lever for working the toggle-levers, substantially as and for the purpose set forth.

2. In a lifting-jack, the combination of the center piston, the toggle-levers, the clutch E, having hole *e* therein for engaging with the said piston, and the arm *e'*, connected to the upper toggle-lever, the clutch F, having the hole *f*, engaging with the center piston, and provided with the arm *f'*, the catch f^2, the cylinder having the collar *b* and projecting arm *b'*, and a lever for working the toggle-levers, substantially as and for the purpose set forth.

333,969. THILL-COUPLING. HARRISON D. OVERTON, Missouri Valley, Iowa. Filed Dec. 31, 1883. Renewed Oct. 15, 1885. (No model.)



Claim.—1. In a thill-coupling, the stationary jaw B, provided with outwardly-projecting lugs B', and a lower or movable jaw, E, having attached thereto slotted links D, and a cam-lever connected to said links and bearing upon the stationary jaw, substantially as shown, and for the purpose set forth.

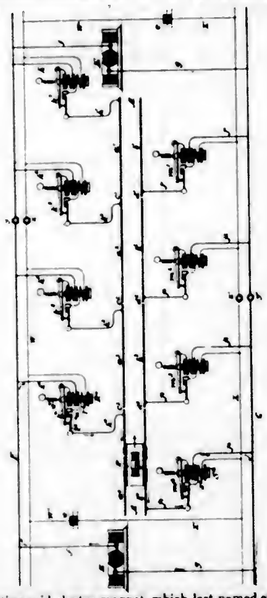
2. In a thill-coupling, the stationary jaw B, having projecting lugs B', and slotted links D, embracing said lugs and connected at one end to a cam-lever and at the other and to a spring, which is rigidly attached to a lower jaw, the parts being combined and organized substantially as shown, and for the purpose set forth.

3. In a thill-coupling, the stationary jaw B, rigidly attached to a supporting means, and provided with a flat under surface having a recess formed therein, the slotted links D, connected at their upper ends to a cam or eccentric provided with an outwardly-projecting operating-handle, the lower jaw having a plain upper surface, with a projecting lug, *f*, and a spring, F, embracing the transverse bar *d'* of the links, the parts being organized and combined for the purpose set forth.

333,970. CIRCUIT FOR ELECTRIC RAILWAYS. FRANK L. POPE, Elizabeth, N. J. Filed Dec. 29, 1884. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of an electrically connected and insulated line of rails in a railroad-track, a conductor for connecting said line of rails with a source of electricity, a normally-open circuit-controller placed in said conductor, an electro-magnet for actuating said circuit-controller, and an independent electric

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circuit for actuating said electro-magnet, which last-named circuit is completed by the presence of a vehicle on said insulated line of rails.

2. The combination, substantially as hereinbefore set forth, of a railroad-track having its opposite lines of rails electrically insulated from each other, two electric conductors which unite said opposite lines of rails respectively with the opposite poles of a generator of electricity, two circuit-controllers, one in each of said conductors, which are simultaneously actuated to admit an operative electric current to said track or to interrupt the same, and electro-magnets for actuating said circuit-controllers having helices included in another electric circuit distinct from that of the said generator.

3. The combination, substantially as hereinbefore set forth, of an electrically connected and insulated line of rails in a railroad-track, a normally-closed conductor connecting said line of rails with a source of electricity, a normally-open conductor connecting said line of rails with another and independent source of electricity, a device for closing said normally-open circuit, and an electro-magnet for actuating said device, the helices of which are included in said normally-closed circuit.

4. The combination, substantially as hereinbefore set forth, of an electrically connected and insulated line of rails in a railroad-track, a normally-closed conductor connecting said line of rails with a source of electricity, a normally-open conductor connecting said line of rails with another and independent source of electricity, a circuit-changing device which simultaneously opens said normally-closed conductor and closes said normally-open conductor, and one or more electro-magnets for actuating said circuit-changing device, the operative helices of which are included in both said circuits.

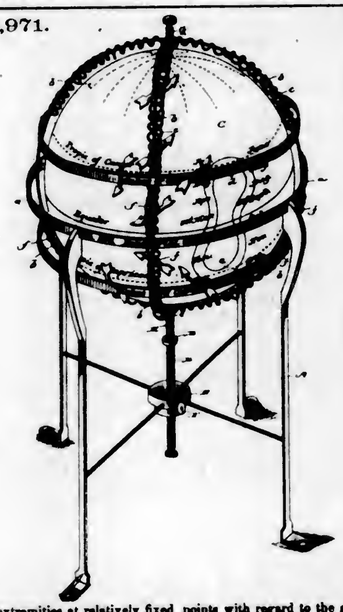
5. The combination, substantially as hereinbefore set forth, of a railroad-track having its opposite lines of rails electrically insulated from each other and included with a source of electricity in an electric circuit, an electro-magnet which is actuated upon the formation of a conducting-connection between said opposite insulated lines of rails, a circuit-controller actuated by said electro-magnet, and an independent source of electricity, which is brought into action by said circuit-controller, to increase the strength of the electric current traversing the said insulated lines of rails.

6. The combination, substantially as hereinbefore set forth, of a railroad-track divided into two or more sections insulated from each other and from the earth, a generator of electricity, positive and negative conductors extending from the respective poles of said generator along the line of said railroad, and branch conductors uniting the opposite lines of rails of each insulated section of track with said positive and negative conductors, respectively.

333,971. GLOBE FOR SHOWING THE DIRECTIONS OF THE WINDS. JOHN P. ROYALL, Columbia, Mo. Filed Sept. 25, 1885. (No model.)

Claim.—1. The combination, with a globe and a scale indicating the months or seasons of the year, of springs or elastics secured at

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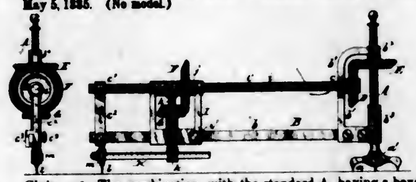


their extremities at relatively fixed points with regard to the globe, the bands or indicators representing the equatorial and tropical calms secured to the springs or elastics, and arrows or pointers secured to said bands or indicators and to the springs or elastics to indicate the directions of the winds, substantially as described.

2. The combination, with the pedestal having the band *a*, indicating the track of the sun and the equatorial calms, of the rod or axis B, movable in the pedestal, a set-screw for clamping said rod, the globe, and the sleeves G H on the rod, the rings *b*, encircling the globe and secured to the said sleeves, the coiled springs on said rings, the bands indicating the tropical calms secured to the springs, the arrows or pointers secured to said bands and springs, and a scale indicating the months or seasons of the year, for the purpose set forth, substantially as described.

3. The combination, with a globe, of springs or elastics secured at their ends to relatively fixed points, and bands or indicators representing the equatorial and tropical calms secured to the springs, as set forth.

333,972. ELLIPSOGRAPH. RICHD. W. RUSSELL, Buffalo, N. Y. Filed May 5, 1885. (No model.)



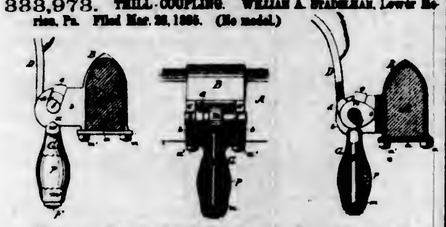
Claim.—1. The combination, with the standard A, having a bevel-wheel, E, rigidly secured thereto, of a frame, B, mounted on the standard A to turn on the same, a horizontal shaft, C, journaled in the frame B and provided with a bevel-wheel, D, meshing with the wheel E, and a bevel-wheel, F, a vertical shaft, A, provided with a bevel-wheel, G, meshing with the wheel F, and a horizontal scriber-arm, K, attached to the shaft A, substantially as set forth.

2. The combination, with the standard A, having a bevel-wheel, E, rigidly secured thereto, of a frame, B, mounted on the standard A to turn on the same, a horizontal shaft, C, journaled in the frame B, a bevel-wheel, D, secured to the shaft C and meshing with the wheel E, a bevel-wheel, F, mounted on the shaft C to turn with the same, while being capable of adjustment lengthwise of the shaft, a frame, I, made lengthwise adjustable on the frame B, a vertical shaft, A, journaled in the frame I and carrying a bevel-wheel, G, which meshes with the wheel F, and a scriber-arm, K, adjustably attached to the shaft A, substantially as set forth.

3. The combination, with the standard A, having a bevel-wheel, E, rigidly secured thereto, of a frame, B, mounted on the standard A to turn on the same, a horizontal shaft, C, journaled in the frame B and provided with a longitudinal groove, *i*, a bevel-wheel, D, secured to the

shaft C and meshing with the wheel E, a bevel-wheel, F, mounted on the shaft C and provided with a projection, *j*, entering the groove *i*, a frame, I, made lengthwise adjustable on the frame B, a vertical shaft, A, journaled in the frame I and carrying a bevel-wheel, G, which meshes with the wheel F, and a scriber-arm, K, adjustably secured in an opening in the shaft A, substantially as set forth.

333,973. THILL-COUPLING. WILLIAM A. STADELMAN, Lower Merion, Pa. Filed Mar. 20, 1885. (No model.)



Claim.—1. The combination of the axle-clip and its slotted ears, having notches *s*, the thill having a pivot-pin adapted to the slots, the bolt F, hung to said pin, a retainer, G, carried by the bolt and adapted to the notches in the ears, and a spring acting on said retainer, as specified.

2. The combination of the slotted ears, the thill, the pivot-pin, the bolt F, hung to said pin, and the retainer, spring, and nut carried by the bolt, said retainer and nut having serrated faces, as set forth.

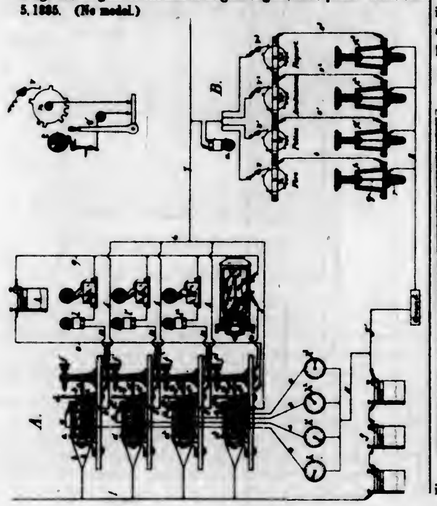
3. The combination of the axle-clip and its slotted ears, the thill having a pivot-pin adapted to the slots, the bolt hung to the pin and having a cam-head, and a spring-retainer carried by the bolt, as set forth.

4. The combination of the axle-clip and its slotted ears, the thill having a pivot-pin adapted to the slots, and a bolt hung to the pin and carrying a retainer engaging with the ears of the clip, said bolt being free to swing on the pivot-pin, so as to release the retainer from the control of the ears, as set forth.

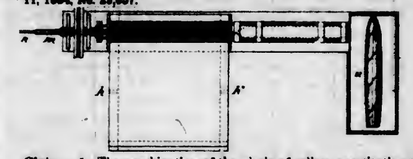
333,974. HORSESHOE. GEORGE O. STANDISH, Boston, Mass. Filed Apr. 30, 1885. (No model.)

Claim.—A horseshoe made in two parts, A A′, pivoted together at the toe portion, the part A being provided with an extension, *a*, that fits in a corresponding recess in the part A′, in combination with the wedge *d*, and the groove *b c*, as and for the purpose set forth.

333,975. MUNICIPAL ALARM SERVICE. WILLIAM A. STERN, Pittsburg, Pa., assignor of one-half to Eugene Ingold, same place. Filed Jan 5, 1885. (No model.)



333,976. CIGAR-MACHINE. JOHANN G. STROTHOFF, Jr., Brunen, Germany. Filed Jan. 3, 1885. (No model.) Patented in Germany June 11, 1884, No. 29,857.

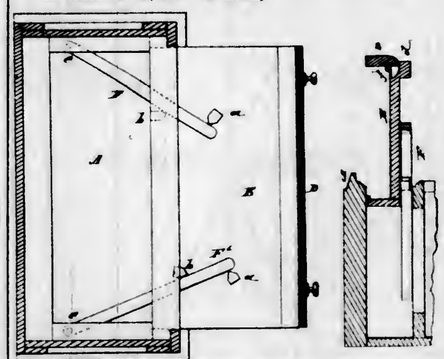


Claim.—1. The combination of the circle of rollers constituting the wrapping-chamber with a frame and an oscillating table centrally pivoted to the frame to permit the edge of the table to be brought above or below the point of feeding the tobacco to the rollers.

2. The combination of a feed-table and circle of rollers constituting the wrapping-chamber with a central rod, *n*, and the sleeve *m*, surrounding said rod, as and for the purpose set forth.

3. The combination of the frame and the circle of rollers constituting the wrapping-chamber with the sliding upper part, *l′*, of the frame and hinged portion *k′*, some of the rollers having their bearings in said portions *k′ l′*, and the other rollers in the fixed portion of the frame.

333,977. DRESSING-CASE OR BUREAU. GEORGE SOSS, Chicago, Ill. Filed Mar. 10, 1884. (No model.)

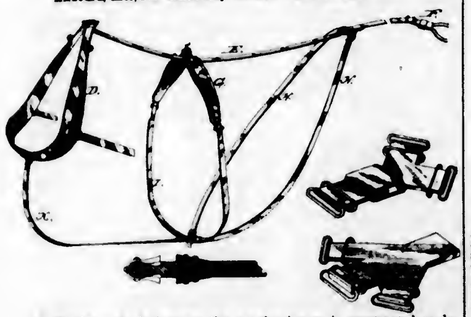


Claim.—1. The combination, with the frame of a case, A, of a sliding shelf, E, supporting-arms for said shelf pivoted at one end to the case-

frame and extended under the shelf, and at the latter end free to move in a lateral direction, and a guide-piece attached to the shelf and bearing against the supporting-arm to fold and unfold the arm as the shelf is moved in and out, one of said supporting-arms being placed at a greater angle than the other, to bring one arm in front of the other when the two are folded, substantially as described.

2. The combination, with the frame of a case, A, of a sliding shelf, E, supporting-arms F F′ for said shelf pivoted at one end to the sides of the case-frame and extended under the shelf and at one end free to move laterally under the shelf, and guide-pieces secured to said shelf and bearing against said supporting-arms to fold and unfold the arms as the shelf is moved in and out, one of said supporting-arms being placed at a greater angle than the other to bring one arm in front of the other when the two are folded, substantially as described.

333,978. HARNESS. ALBION W. TOURGEE, Mayville, N. Y., assignor to Linsea De Forrest Jennings and S. E. Kilbourn, same place, and A. C. Kilbourn, Erie, Pa. Filed May 11, 1885. (No model.)



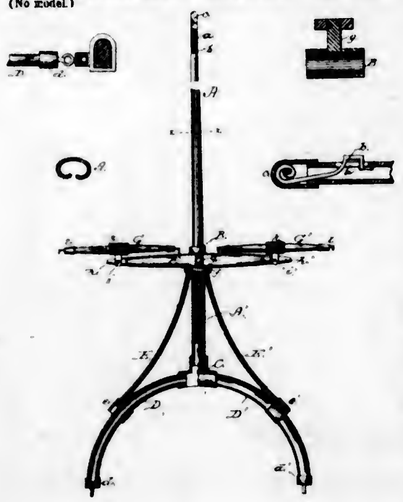
Claim.—1. In harness, the traction-levers A, constructed as described, and hinged or pivoted to the breast-yokes C, whereby force is equally and instantly applied upon each side of the collars D, substantially as and for the purpose specified.

2. The traction-levers A, constructed as described, and hinged or pivoted to the breast-yokes C at one end and to the connecting plate or link B at the opposite end, in combination with the load-attaching devices, substantially as and for the purpose specified.

3. The breast-yokes C, formed as described, and removably connected to the collars D, in combination with the traction-levers A, substantially as and for the purpose specified.

4. The back-strap E, crupper F, stay straps H, harness-pad G, girth I, and holdback-straps K, in combination with the collars D, breast-yokes C, and traction-levers A, substantially as and for the purpose specified.

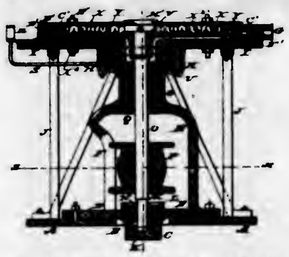
333,979. VEHICLE POLE AND SHAFT. ALBION W. TOURGEE and LINSON DE F. JENNINGS, Mayville, N. Y., assignors to said Jennings and S. E. Kilbourn, same place, and A. C. Kilbourn, Erie, Pa. Filed May 19, 1885. (No model.)



Claim.—1. A carriage-pole formed, as described, of tubular or sheet steel struck up into oval form, and consisting of the two parts A A′, connected to the cross-bar D D′ by the T-shaped coupling C and braces E E′, and provided with the double-tree F, whiffletrees G G′, screw-caps *d d′*, having suitable attaching devices, and the screw-cap *c*, and spring-catch *b*, all substantially as shown, and for the purpose specified.

2. In a carriage-pole, the braces E E′, formed of oval sheet-steel, as described, and adapted to fit the curve of the pole, and the cross-bar connecting with the pole by the screw-coupling B, and with the cross-bar D D′ by the collar-couplings *e e′*, substantially as and for the purpose specified.

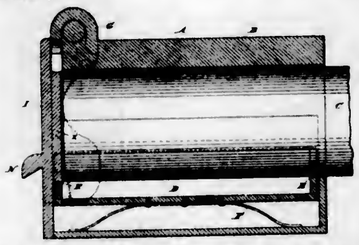
333,980. GRINDING MILL OR DECORTICATOR. JEAN BAPTISTE TOUYA, Fils, Tarbes, France. Filed Apr. 8, 1884. (No model.) Patented in France Jan. 15, 1884, No. 159,715, and in England Jan. 15, 1884, No. 1,470.



Claim.—1. The combination of the base, the table suitably supported upon the same on legs or uprights, a disk resting upon the base and having an upward-extending hood and a downward-extending collar, said hood being provided with an opening in one side and a flanged neck at its upper end, the bearings seated in the said flanged neck of the hood and the collar of the disk, and the central vertical shaft journaled in the said bearings and having a driving-pulley located within and protected by the hood, substantially as and for the purpose herein set forth.

2. A grinding mill or decorticator comprising an upper grinding-disk provided on its under side with alternate annular grooves and ridges, the latter of which have teeth or cutters, the surrounding casing having a discharge-opening, the lower grinding-disk having on its upper side alternate grooves and ridges, which latter are provided with teeth or cutters, the grooves of the lower disk registering with the ridges of the upper disk, and vice versa, the base, the table supported upon the same on uprights, a disk resting upon the base and having an upwardly-extending hood and a downwardly-extending collar, the said hood having an opening in one side and a flanged neck at its upper end, the bearings seated in the said flanged neck of the hood and in the collar of the disk, and the central vertical shaft journaled in the bearings, having a driving-pulley within the hood and bearing the lower grinding-disk at its upper end, as and for the purpose shown and set forth.

333,981. CAR-AXLE BOX. JAMES W. TUCKER, Springville, assignor of one-half to John W. Ash, Beaver Valley, Ala. Filed June 17, 1885. (No model.)



Claim.—1. The combination, with the axle-box having the arched upper portion, and the hinged removable door with the annular projection on its inner face, of the oil-pan having springs secured to its bottom, substantially as specified.

2. The combination, with the axle-box having the arched upper portion, the head with end pintles, and locking-catches on the sides of the box, of the spring-actuated oil-pan and the removable door, substantially as specified.

3. The combination, with the axle-box having the top head with end projections, of the flanged door with recesses engaging said projections, and recesses engaging the locking-studs on the axle-box, substantially as specified.

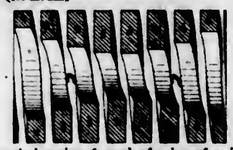
333,982. HORSE-BOOT. ALLEN H. TYSON, Lansdale, Pa. Filed Oct. 30, 1885. (No model.)



Claim.—1. The combination, with a horse-boot, of a concavo-convex stiffening-plate, as at C, provided with a slot, as at *c*, about at the point of greatest convexity of the plate, substantially as specified, whereby the plate may be held to the body of the boot by stitches formed through the slot *c*, as set forth.

2. A horse-boot made with an interior stiffening-plate, as at C, provided with a slot, as at *c*, and secured between the outer leather facing, A, and inner lining, B, of the boot by marginal stitches D and stitches E, passing through the slot *c* of the stiffening-plate and connecting the facing and lining of the boot, and means, substantially as described, for securing the boot to the animal, as and for the purposes set forth.

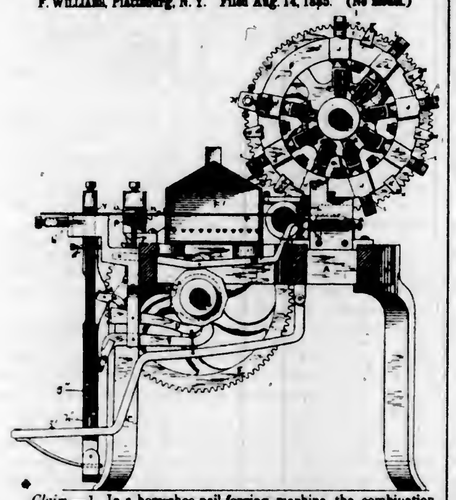
333,983. CAR-SPRING. RICHARD VOSS, New York, N. Y. Filed Oct. 23, 1885. (No model.)



Claim.—1. A spiral spring formed of a bar of uniform thickness throughout, but whose width from end to end varies, the width being greatest at the center on one side from a straight line drawn through said bar, the opposite side being perfectly straight, wound on its edge on the mandrel to shape said spiral, substantially as described, and for the purpose specified.

2. A spiral spring formed of a bar of uniform thickness throughout, whose width varies from end to end, the width being greatest at the center on one side, the opposite side being a straight line, said bar being wound on a double mandrel, as shown in Fig. 5, substantially as described, and for the purpose specified.

333,984. MACHINE FOR FORGING HORSESHOE-NAILS. DAVID F. WILLIAMS, Plattsburg, N. Y. Filed Aug. 14, 1885. (No model.)



Claim.—1. In a horseshoe-nail-forging machine, the combination, with the anvil, of a revolving wheel-carrier provided with a series of forging-rollers on its periphery and a series of edge-rollers attached to said carrier intermediate as to said forging-rollers, substantially as set forth.

2. In a horseshoe-nail-forging machine, the combination, with the anvil, of a revolving wheel-carrier provided on its periphery with a series of adjustable forging-rollers and an intermediate series of movable edge-rollers, and stationary guides for said edge-rollers, whereby at the proper point in the revolution the edge-rollers will be caused to approach each other and roll the edge of the nail approximately in the shape desired.

3. In a horseshoe-nail-forging machine, the combination, with the anvil, of a revolving wheel-carrier provided with a series of radially-adjustable forging-rollers and intermediate therewith a series of radially adjustable and movable edge-rollers, and movable cutters also carried by said carrier to separate the forged nail from the nail-rod, substantially as set forth.

4. In a horseshoe-nail machine, the combination, with the anvil, of a revolving wheel-carrier provided with a series of forging-rollers intermediately a series of edge-rollers, a cutter to detach the nail from the nail-rod, and the die-pieces *m m*, carried with the cutters to deliver a blow to the end of said rod as the nail is severed therefrom, as set forth.

5. In a horseshoe-nail-forging machine, the combination, with the anvil and forging-rollers, of the edge-rollers and the lifting-guide arranged to lift the nail immediately after the action of each forging-roller, substantially as set forth.

6. In a horseshoe-nail-forging machine, the combination, with the anvil and forging-rollers, of the edge-rollers and the forked guide to hold the nail from twisting between the edge-rollers, substantially as set forth.

7. In a horseshoe-nail-forging machine, the combination, with the anvil and forging-rollers, of the edge-rollers mounted on arms pivoted to adjustably-connecting plates, whereby said rollers may be adjusted radially, substantially as set forth.

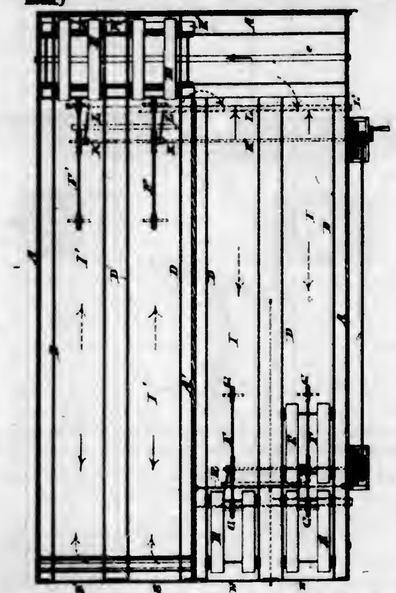
8. In a horseshoe-nail-forging machine, the combination, with the anvil and the forging-rollers, of the automatic holding grip and the automatic vibrating feeding-grip and the cam, substantially as set forth.

9. In a horseshoe-nail-forging machine, the cam combined with the levers U V, both pivoted to the frame and arranged to engage the said cam close together, but one slightly in advance of the other in the order named, and the grip-bolt whereby the feeding-grip is released and then retracted to catch a new hold on the nail-rod, as set forth.

10. In a horseshoe-nail-forging machine, the combination, with the anvil and the edge-rollers, of the nose-guide, the lever whereon it is mounted, and the cam adjusted to raise said guide and the nail-rod from the anvil just in advance of the arrival of said edge-rollers, substantially as set forth.

11. In a horseshoe-nail machine, in combination, a revolving carrier provided with a series of forging-rollers mounted on one shaft provided with a gear-wheel, D, and an automatic reciprocating feed device actuated by a set of levers, and a cam or cams on another shaft provided with a gear-wheel, E, and an intermediate shaft provided with a band-pulley, C, and pinion T in mesh with and less in diameter than the wheels D E, whereby the driving-belt may run at a high speed and the operative devices at a lower speed, as set forth.

333,985. TOBACCO-DRIER. ROBERT WILSON, Middletown, Ohio, assignor to Wilson & McCalley, same place. Filed May 29, 1885. (No model.)



Claim.—1. A tobacco-drying kiln comprising parallel chambers communicating at one end and provided with doors at the other, one of

said chambers being provided with a hot-air-injecting mechanism, ways in each chamber, and cars upon the ways for conveying the tobacco from end to end of both chambers in a direction opposite to the direction of the air-current, and mechanism, substantially as described, for transferring the cars from the ways in one chamber to the ways in another, substantially as described.

2. A tobacco-drying kiln having means for closing it against the admission of cold air, ways throughout the kiln, cars upon the ways, a chain and sprocket-wheels engaging with the car to propel the same, and operated by means of a handle and shaft extending outside of the kiln, whereby the car may be moved without opening the kiln, substantially as described.

3. A tobacco-drying kiln comprising two or more chambers communicating with each other at one end, a hot-air blower communicating with the last chamber at its outer end, means, substantially as described, for closing the chambers against the admission of cold air, tracks running longitudinally through each chamber, a car upon said tracks, mechanism in each chamber, substantially as described, for moving the car, a transfer-car moving transversely across the end of the kiln to convey the cars from one chamber to the other, and a shaft provided with projecting fingers and a handle for pushing the tobacco-carrying cars from the transfer-car upon the track in the next chamber, substantially as described.

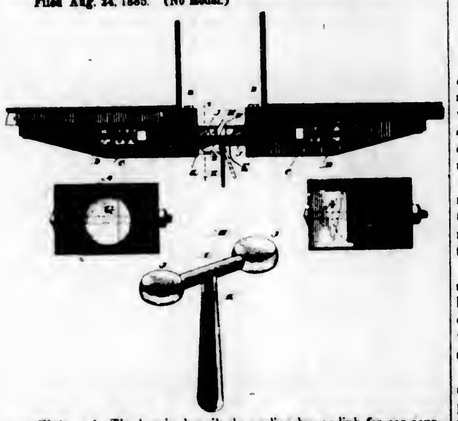
4. A tobacco-drying kiln having one or more chambers and doors to permit entrance and exit of tobacco-carrying cars, a hot-air blower at the outlet to force a current of hot air through the kiln in a direction opposite to the movement of the tobacco, and flues and dampers to control the current of hot air, whereby the tobacco is acted upon by warmer and purer air as it passes through the kiln substantially as described.

5. In a drying-kiln, the two parallel chambers 1 and 1', connected at one end and having doors at the other, and provided with cars E, for carrying the tobacco, and a transfer-car, E', for moving the cars E from one chamber to the other, and mechanism, such as the lugs on the car, and the chain and sprocket-wheels connected with a handle outside of the kiln, for propelling and operating the cars, substantially as described.

6. In a tobacco-drying kiln provided with two or more chambers, the cars E, provided with suitable projections or lugs, moving on ways in the chamber, in combination with the chains F, engaging with the lugs, sprocket-wheels G, G', and G'', for propelling the cars, and shifting mechanism, substantially as described, for moving the cars on either track or in either direction without entering the kiln.

7. In a closed drying-kiln through which the material to be dried is passed on cars, the mechanism for starting the cars, comprising a rock-shaft, N, provided with an arm, M, to impinge against the cars, and handle N', substantially as described.

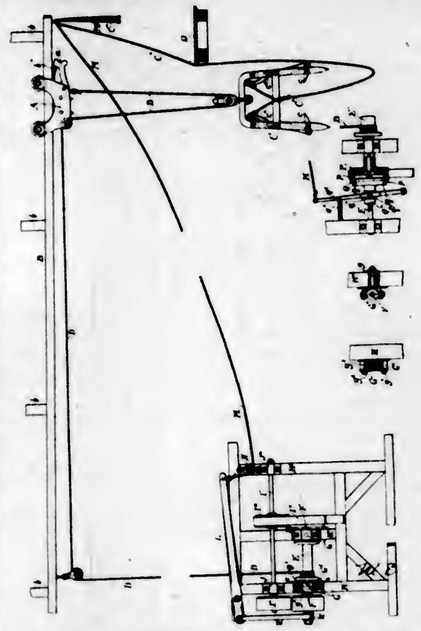
333,986. CAR-COUPLING. FERDINAND WINDLER, Keokuk, Iowa. Filed Aug. 24, 1885. (No model.)



Claim.—1. The herein-described coupling bar or link for car-couplings, the same consisting of a rod or bar provided at each end with a horizontal circular disk or plate having the rounded edges and having a centrally-located downwardly-extending arm or lever, whereby it may be manipulated, substantially as and for the purpose herein set forth.

2. As an improvement in car-couplings, the combination, with the draw-head provided at its front end with a vertical slot opening into an approximately spherical somewhat elongated mouth or recess, of a coupling-link consisting of a bar provided at its ends with flattened circular disks or plates having the rounded edges, and having a centrally-located downwardly-extending arm or lever, all constructed and operating substantially as and for the purpose herein shown and specified.

333,987. CONVEYING APPARATUS. AMOS WOLCOTT, Wolcott, Ind. Filed Nov. 27, 1885. (No model.)



Claim.—1. The combination, with a carrying apparatus comprising a traveling carrier and a hoisting device operated by a single rope, of a winding-drum for the rope, driving-connections uniting the drum-shaft with a source of power, comprising a clutch device or its equivalent, constructed to stand normally disconnected, and a rope or equivalent means connected with said clutch device for actuating the latter from a point remote from the drum, substantially as described.

2. In a carrying apparatus, the combination, with a traveling carrier, of a winding-drum, a shaft therefor, a driving-shaft parallel with the drum-shaft, friction-pulleys upon the said shafts adapted to stand normally apart, and means engaged with one of said shafts for bringing the pulleys together, substantially as described.

3. The combination, with a traveling carrier, of a winding-drum, a shaft therefor, a driving-shaft parallel with the drum-shaft, friction-pulleys upon the said shafts, and means for bringing the pulleys together, comprising a pivoted lever, L, a bar, K, connected with the lever and with one of the said shafts, and a rope, M, connected with the lever, substantially as described

4. The combination, with a traveling carrier, of a winding-drum, a shaft therefor, a driving-shaft parallel with the drum-shaft, friction-pulleys upon the said shafts, a pivoted lever, L, a bar, K, connected with the lever and with one of said shafts, a rope, M, and one or more guide-pulleys for the rope, substantially as described.

PHOTO LITH. NORRIS PETERS WASH. D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

HOE *et al.* v. KAHLER.

Decided October 23, 1885.

HOE PRINTING-PRESS—CONSTRUCTION OF PATENT NO. 131,217—REGULARITY OF ISSUE OF PATENT.

Where it was sought to be shown by the file-wrapper and contents that an oath sworn to by applicant March 12, 1872, was not taken before a proper officer, the court said: "Showing what were the contents of the file-wrapper in January, 1861, or what are its contents now, or what was the practice of the Patent Office in regard to preserving papers filed in applications for patents, and letters to and from the Office, and in regard to the record of the proceedings and the dates of filing papers, and of receiving and sending communications, and the scope and functions of a file-wrapper and contents in the matter of a patent, is not sufficient to rebut the presumption that the Commissioner required and received a proper preliminary oath from Mr. Hoe. The affirmative probative force of a paper in a file-wrapper, to show the existence of its contents, is one thing, but its negative probative force, to show that a paper or a fact not shown by anything in its contents did not exist, is quite a different thing. The fact that papers known to have existed, and which properly belonged in a file-wrapper, are missing therefrom is a fact of such frequent occurrence in patent suits as to have become a matter of judicial cognizance."

MOTION for rehearing.

Mr. B. F. Thurston and *Mr. M. B. Philipp* for the plaintiffs.

Mr. B. F. Lee and *Mr. W. H. L. Lee* for the defendant.

BLATCHFORD, *J.*:

The bill in this case was filed April 21, 1879, the answer on August 9, 1879, and an amended answer on October 7, 1879. The proofs were taken between February 16, 1880, and July 7, 1881. The case was heard on December 6, 1881, and decided on March 27, 1882, in an opinion reported in 20 Blatchford, 430, and 12 Federal Reporter, 111. A decree was ordered in favor of the plaintiffs on claims 3 and 4 of the patent sued on, and was entered May 5, 1883. It declared the validity of the patent and the infringement of claims 3 and 4, and ordered an account of profits and damages before a master and a perpetual injunction as to claims 3 and 4. The accounting has been had, and the master has reported no profits and six cents damages. Both parties have stipulated to file no exceptions to the report. Before the reference was closed and the report made, and on the 13th of July, 1885, the defendant gave notice of a motion for the relief prayed for in a petition sworn to July 11, 1885.

The petition sets forth that one of the defenses urged on the hearing was that the oath to the application by Mr. Hoe was not taken before an officer authorized to administer oaths, and that, as a matter of law, no oath to the application was ever taken by Mr. Hoe; that, although a certified copy of the file-wrapper and contents in the matter of the patent was in evidence, the court held that under the pleadings and evidence the defense was not properly made out; that it is the practice in the Patent Office to preserve all papers filed in support of the application for a patent, as well as the communications between the applicant and the Office, a memorandum of which is placed on the file-wrapper, together with the date of the receipt of each paper, and of the sending of any communication from the Office in respect thereto, and of all other proceedings had in the Office; that the file-wrapper and contents contain a complete record of the proceedings had on an application for a patent, together with the memoranda referred to as being on the file-wrapper, and that the file-wrapper and contents are *prima facie* evidence of the complete record of the application for a patent, and of the papers filed in support thereof, and of the communications in respect thereto, and can only be rebutted by competent evidence.

The petition further sets forth that since the decision of this cause certain cases have been decided by the Supreme Court of the United States which, had they been decided prior to the hearing and decision of this cause, would have caused this court to rule that the defense above set forth was well taken, and refers to the case of *Mahn* v. *Harwood*, (112 U. S., 354; S. C., 5 Sup. Ct. Rep., 174,) and cases there cited, as holding that where the Commissioner of Patents has exceeded his authority in granting or reissuing a patent such fact furnishes a good defense to a suit brought for its infringement.

The petition also sets forth that in several cases in which the validity of a reissue was in question the Supreme Court of the United States has held that the question was properly raised upon pleadings no more explicit and exact than those in the case at bar.

The petition also sets forth that a defense urged in behalf of the defendant was that the patent was not infringed by him; that there have been several cases in the Supreme Court of the United States which, had they been decided prior to the hearing and decision of this cause, would have caused the defendant's contention in that behalf to prevail; that the tendency of the decisions referred to has been to confine a patentee to a strict construction of his claims, and to include within a claim nothing which was not included within its language, and not to extend it beyond the objects set forth in the specification as those designed to be accomplished by the inventor; that, in accordance with that rule, nothing contained in the claim can be excluded from it to prevent a narrowing of its scope, and that this relates to claims 3 and 4 of the patent in suit.

The petition also sets forth that a defense urged as to claim 4 was the non-patentability of its subject-

matter in view of the state of the art; that an adjusting-roller exactly like that mentioned in claim 4 is shown by the record to have been previously used for similar or analogous purposes, and that under decisions made by the Supreme Court of the United States since the hearing and decision of this cause it must be held that the subject-matter of claim 4 was not patentable.

The petition also sets forth that the petitioner is desirous of being further heard on the effect of the filing of the caveat by Hoe; and on the question whether the alleged inventions of claims 3 and 4 were those of Hoe alone or of the plaintiffs jointly; and as to the anticipation of the alleged inventions by Campbell; and as to whether the patent, in any event, was not surreptitiously and unjustly obtained for that which was in fact invented by Campbell, who was using reasonable diligence in adapting and perfecting the same, and as to whether, as a matter of law and public policy, inventors can be allowed to keep their invention dormant for so many years.

As reasons for the delay in applying for the rehearing the petition sets forth that the plaintiffs did not proceed with the accounting till near the end of the year 1884, and that the practical effect of the decree has recently become much more onerous than before, because the defendant is now largely interested in making printing-presses, and the decree is now being used to the detriment of his interests, and to prevent the sale of machines to parties who would otherwise purchase them.

The petition prays that the court will order a rehearing; that, if it deems it necessary, the proofs may be opened to show the practice in the Patent Office in regard to preserving papers filed in applications for patents, and letters to and from the Office, and in regard to the record of the proceedings, and the dates of filing papers, and of receiving and sending communications, and the scope and functions of a file-wrapper and contents, in the matter of a patent; and that the defendant may be allowed to amend his answer, and allege that the patent is void, in that Hoe never made oath to the application and the Commissioner exceeded his jurisdiction in issuing the patent.

The petition is not sworn to by the defendant, but is sworn to by one of his solicitors, for the reason stated in the affidavit that the defendant resides in Chicago, Illinois, and is absent from the state of New York.

The petition is supplemented by an affidavit made by the defendant on the 1st of October, 1885, which sets forth that in November, 1884, he became largely interested in the Bullock Printing Press Company, an Illinois corporation, which owns his patent, in accordance with which the machine complained of as an infringement in this case was made; that that corporation is deterred from using the device in controversy, by reason of the injunction ordered against him, and is desirous of making machines containing it; that no effort was spared prior to the original hearing to obtain every possible defense and present it to the court; that he made exhaustive inquiries among printing-pressmen and others, and experts were employed to examine into the state of the art, and an exceptional amount of time and labor was spent in so doing, and that at the time of the first hearing he knew of no defense which had not been set up.

At the hearing on the petition the defendant presented to the court an affidavit sworn to September 26, 1885, by Mr. B. F. Lee, one of his solicitors, setting forth that the plaintiffs had sought to carry back the date of their invention to the date of the caveat filed by Hoe in 1854; that in 1876 the affiant was also counsel for the Bullock Printing Press Company, the plaintiff in a case against George Jones as treasurer of the New York *Times*; that in that case Stephen D. Tucker, one of the plaintiffs in this suit, was examined as a witness, and there testified, in substance, that the efforts of Hoe and himself to construct a delivery apparatus were in the experimental stage, and were still unsuccessful as late as 1859 or 1860; that during the taking of the testimony in this cause he had entirely forgotten the fact that the examination of Tucker in the suit against the New York *Times* contained that piece of evidence, as he had been engaged in a large number of other cases, and had been very busy with other matters in the interval; that he considers that the introduction of that evidence is of great importance in this cause, for the following reasons:

The caveat shows a certain method of successively retarding a number of sheets in their progress out of the printing-press by switching them into paths of different lengths in such a manner that they may be all held back until they are reached by the last of the series, which travels through the normal or shortest path toward the outlet of the machine. In this way a long gap was to be created between successive series of sheets, so as to enable the well-known fly-frame to get back in time to receive the series of sheets and fly them upon the table.

That the plaintiffs contend, and the court has decided, that claim 3 of the plaintiffs' patent is to be so construed as to include merely the device of the caveat, consisting of a switch, a long tape path, and a short tape path, and the invention is thus sought to be carried back to 1854; that Tucker shows, by his evidence in the *Times* case, that Hoe and Tucker had not succeeded in making a rapid fly-delivery as late as 1859 and 1860, although they had been experimenting for a long time; that the device which they finally adopted, as shown in the patent, and which was successful enough to be put upon the *Daily News* press, was a very different delivery contrivance from that of the caveat, for it involved another switch and two fly-frames, so that successive pairs of newspapers, brought together by the first switch and long and short tape-paths, were then switched alternately upon two different fly-frames, and laid upon two different tables; that this evidence of Tucker would seem conclusively to show that Hoe and Tucker's invention could not be considered as having passed out of the experimental stage in 1860, and yet, so far as the mechanism of the caveat is concerned, that was in the same unsatisfactory condition in 1854, as it remained ever afterward, down to the time when the second switch and the two sheet-fliers were combined with a switch and a long and short tape path, so as to make the delivery described in the patent; that it would thus seem clear that the plaintiffs cannot carry back the invention of claim 3 beyond the date of their application for a patent, April 4, 1872; that previous to that date Campbell had made his working drawings, and was engaged in building a printing press which, while it did not contain the device which the defendant considers to be the device of the patent, did contain a device precisely similar in principle to that described in the caveat; that while, according to the defendant's view, Campbell's mechanism does not contain either the invention of the patent or the mechanism of the defendant, it clearly contains the mechanism of the caveat and the mechanism of the plaintiff's patent, under the broad construction given to it by the court; that the reason why that evidence was not introduced in this case was because the defendant knew nothing of its existence, and the affiant had lost sight of it; that the New York *Times* case related to an entirely different mechanism—namely, a cutting apparatus which severs a continuous web into sheets—and it would not have been naturally supposed that any evidence pertinent to that case could be of value in this; that the matter first came to the affiant's attention shortly before the time he introduced it in evidence in a suit brought by the plaintiffs on the same patent against the Boston *Daily Advertiser*; that he caused Tucker's said deposition to be put in evidence in the *Advertiser* suit; and that the delay in making the application to be founded on his affidavit is due to the same causes as those referred to as preventing an application for a rehearing from being made earlier herein.

A copy of the deposition of Tucker in the *Times* case is annexed to the affidavit. It was taken October 23, 1876, in the presence of Mr. B. F. Lee. A copy of the affidavit of Mr. Lee and of the deposition of Mr. Tucker was served September 28, 1885, with notice of a motion to be made (in connection with the motion for a rehearing) on all the proceedings and papers herein, and on the evidence taken for the defendants in the suit against the Boston *Daily Advertiser*, that the proofs herein be opened for the purpose of allowing the deposition of Tucker in the suit against Jones to be put in evidence; and of a motion to be made, on all the proceedings and papers herein, for a reconsideration of the questions of novelty, patentability, and infringement, and all other questions affecting the validity of the plaintiffs' patent, passed upon by the court at the time of the entry of the interlocutory decree.

The motions thus noticed have been heard. At the hearing the plaintiffs interposed a demurrer to the petition, setting forth as causes of demurrer: (1) That it does not appear by the petition that the petitioner could not with reasonable diligence have discovered the alleged matters therein set forth, for the purpose of showing which he desires to have the proofs reopened, and could not have duly presented such matters to the attention of the court at a prior stage of the case; (2) that it does not appear by inspection of said petition that said matters are in any way material or controlling upon the merits of this case; (3) that the said petition is not verified by the defendant, or by any one authorized to act for him in that behalf, but by a solicitor only; (4) that the petition does not disclose any matter of equity whereon or whereby the prayer of the petition should be granted.

The plaintiffs also presented an affidavit, made by Mr. W. Hunter, who has been in the service of the United States in the State Department for fifty-six years last past, and for the last nineteen years Second Assistant Secretary of State, setting forth that he personally knows J. Nunn, before whom as "a London commissioner to administer oaths in common law" the oath of Mr. Hoe to the application was taken in London, March 12, 1872. The affidavit further says as to Mr. Nunn:

He was vice and deputy consul of the United States at London, England, from September 18, 1869, to November 25, 1881. A vice-consul is a consular officer who performs the duties of consul when the consul himself is absent. A deputy-consul is a consular officer who performs the duties of consul when the latter, though present, may be prevented from acting. I have been familiar with the handwriting of the said J. Nunn during the whole period of his holding the office above stated.

The affidavit further states that Mr. Hunter has examined the original records of the Patent Office of the application for the patent in suit, and recognizes the signature of J. Nunn appended to the oath of Mr. Hoe as the signature of the said J. Nunn, who was such vice and deputy consul. The fact that Mr. Nunn held those official positions during the time named by Mr. Hunter is further shown by certificates and certified papers from the Department of State.

1. The defendant contends that claim 4 involved no invention and was not patentable. Claim 4 is this:

4. The employment and use of the adjusting-roller 59, for regulating the travel of the first sheet, constructed and operating substantially in the manner described and specified.

As to claim 4 the former decision said:

Claim 4 is a claim to the adjusting-roller for regulating the travel of the first sheet in its longer path, relatively to the travel of the second sheet in its shorter path. It thus involves the two several series of tapes of the two several paths. The adjustment of the relative lengths of the two paths to each other, by modifying the length of the longer one, through an adjustment of the roller acting on the longer tapes, is the point of the claim.

The defendant contends that all there is of claim 4 is that the roller 59, instead of being rigidly held in position, is attached to the frame by a set-screw and a slot, so that it can be slid up and down in order to lengthen or shorten the longer tape-path which runs around it. The view is urged that to fasten the bearings of a roller in such manner that it will be adjustable by means of a set-screw and a slot is an obvious thing not involving invention, and the following cases are cited in support of this view: *Slawson* v. *Grand St. R. Co.*, (107 U. S., 649; S. C., 2 Sup. Ct. Rep., 663:) *Pennsylvania R. Co.* v. *Locomotive Truck Co.*, (110 U. S., 490; S. C., 4 Sup. Ct. Rep., 220;) *Morris* v. *McMillin*, (112 U. S., 244; S. C., 5 Sup. Ct. Rep., 218;) *Blake* v. *San Francisco*, (113 U. S., 679; S. C., 5 Sup. Ct. Rep., 692;) *Thompson* v. *Boisselier*, (114 U. S., 1; S. C., 5 Sup. Ct. Rep., 1042;) *Stephenson* v. *Brooklyn R. Co.*, (Id., 149; S. C., 5 Sup. Ct. Rep., 777;) *Spill* v. *Celluloid Manufacturing Co.*, (22 Blatchf., 441; S. C., 21 Fed. Rep., 631.) But the definition of the invention covered by claim 4 above given shows that the cases cited do not cover the present case. It is not the abstract adjustment of the roller 59 in different positions that is claimed, but it is the adjustment of the relative lengths of the paths traveled by the two sheets to each other, by regulating the length of the path of the first sheet, through the adjustment of the position of the roller 59 by the means shown.

It is also contended that a similar device for an analogous purpose was used in the Dryden press at Gray & Green's, and that the fastening of boxes or journal-bearings to the frame-work of machinery by a slot, a screw, and a jam-nut was old. On this subject I am satisfied of the correctness of the views stated in the former decision, which were these:

The defendant's expert says that the English patent to Dryden and Miles does not contain any description of the apparatus relied on, and that the drawing alone is imperfect and is not a sufficient description to invalidate claim 4. The plaintiffs' expert says that the roller of Dryden and Miles does not act on one set of tapes alone, but varies the lengths of two sets of tapes simultaneously and to substantially the same extent. The defendant's expert says that the Dryden press at Gray & Green's exhibited the invention in claim 4, but he gives no reason for so thinking. The plaintiffs' expert says that that press had only one set of tapes, and had no method of adjustment by which the travel of one sheet could be adjusted relatively to the travel of another and following sheet, and that the adjustment of the roller in it adjusted the travel of the same sheet relatively to forms of types

which printed the two sides of it, so as to make the impressions register. This is not the invention of claim 4.

It is also urged that the invention in claim 4 could not have been the joint production of two minds. The soundness of this proposition is not perceived, and there is nothing in the evidence to overcome on this point the force of the grant.

2. The question in regard to the oath of Mr. Hoe is strenuously urged. That question is stated thus in the former decision:

In the contents of the file-wrapper in the matter of the patent is an oath sworn to by Mr. Hoe, March 12, 1872, at London, England, before "J. Nunn, a London commissioner to administer oaths in common law," the official character of Mr. Nunn being authenticated by a certificate made by the consul-general of the United States at London. No other oath by Mr. Hoe to the specification or application appears among the contents of the file-wrapper. There is a proper affidavit by Mr. Tucker that he verily believes himself to be the first, original, and joint inventor with Mr. Hoe, and as to the other particulars required. The form of the oath by Mr. Hoe is not criticised; but it is objected that the oath was not taken before a proper officer, and so there was no oath by Mr. Hoe, and no valid patent. The contents of the oath were prescribed by section 30 of the act of July 8, 1870. (16 U. S. St. at Large, 202.) That section provided that the oath might be made "before any person within the United States authorized by law to administer oaths, or, where the applicant resides in a foreign country, before any minister, *charge d'affaires*, consul, or commercial agent holding commission under the Government of the United States, or before any notary public of the foreign country in which the applicant may be."

On this subject the former decision said:

The bill alleges that the plaintiffs obtained letters patent for their invention "in due form of law." It alleges nothing as to any oath, or as to any application, except to say that they obtained the patent "upon due application therefor." The answer does not aver any defect in Mr. Hoe's oath, or any want of an oath, but alleges merely that the defendant "is not informed whether, in other respects, the requirements of law relative to the granting of letters patent were complied with by the said Hoe and Tucker, or what, if any, proceedings were had prior to the issue of said letters patent, and therefore denies the allegations of the bill of complaint in respect to the same, and leaves the complainants to make such proof thereof as they may be advised." The plaintiffs sustained whatever *prima facie* burden there was upon them because of the averment as to "due application" by introducing the patent. The plaintiffs did not put in evidence the file-wrapper and contents. They were put in evidence by the defendant under the objection by the plaintiffs that they were incompetent, irrelevant, and immaterial. There is no disclosure in the record of any point being made by the defendant as to a defect in Mr. Hoe's oath, or as to the want of an oath by Mr. Hoe. The plaintiffs had put the patent in evidence without any objection being taken by the defendant that it was not properly granted because there was no proper oath. There is no evidence put in by the defendant to rebut the presumption from the grant of the patent that there was a proper prior oath by Mr. Hoe tending to show that there was no such oath by him or that the oath appearing was the only oath he made. The copy of the file-wrapper and contents is a copy certified January 9, 1881, and speaks only as to what were the contents of the file-wrapper on that date. The papers are not evidence to show that there was not a proper oath by Mr. Hoe other than the one referred to, even if that were an improper one. They were not competent or relevant to show the want of an oath. The patent recites that the plaintiffs "have complied with the various requirements of law in such cases made and provided," and "upon due examination made" they are "adjudged to be justly entitled to a patent under the law." Section 26 of the act of 1870 provides that the inventor must make application in writing to the Commissioner of Patents for the patent. Section 30 provides for the oath to be made by the applicant. Section 31 provides that "on the filing of any such application and the payment of the duty required by law the Commissioner shall cause an examination to be made of the alleged new invention or discovery, and if, on such examination, it shall appear that the claimant is justly entitled to a patent under the law, and that the same is sufficiently useful and important, the Commissioner shall issue a patent therefor." Assuming that it is open to a defendant on pleadings such as those in this case or in any case to defend a suit on a patent for infringement by setting up and showing a defect in or a want of the preliminary affidavit, when a patent is issued containing such recitals as that in this case—a question not now necessary to be considered or discussed—it is very clear that the defendant in this case does not show the existence of such a defect or want by any competent evidence.

It is contended that, in view of recent decisions of the Supreme Court, the determination of this court on the former hearing in regard to the oath of Mr. Hoe cannot be sustained. The decisions referred to are *Miller* v. *Brass Co.*, (104 U. S., 350;) *James* v. *Campbell*, (Id., 356;) *Eagleton Manufacturing Co.* v. *West, &c., Manufacturing Co.*, (111 U. S., 490; S. C., 4 Sup. Ct. Rep., 593;) *Mahn* v. *Harwood*, (112 U. S., 354; S. C., 5 Sup. Ct. Rep., 174;) *Wollensak* v. *Reiher*, (115 U. S., 96; S. C., 5 Sup. Ct. Rep., 1137.) Attention is called to the fact that the answer, after the paragraph before quoted, ending with the word "advised," goes on to say "and this defendant denies that the said letters patent granted or secured to the said Hoe and Tucker, or to either of them, any exclusive rights or privileges whatsoever," and also contains a general denial of the allegations of the bill; and it is urged that the defense that Hoe failed to make oath to his application can be set up under the answer in this case. But the point of the former decision was that, even though the defendant could show in defense a defect in or a want of the preliminary affidavit, he did not show the existence of such a defect or want by any competent evidence. This view still remains good, and is not obviated by anything now in the case, or which it is proposed to introduce. Showing what were the contents of the file-wrapper in January, 1881, or what are its contents now, or what was the practice of the Patent Office in regard to preserving papers filed in applications for patents, and letters to and from the Office, and in regard to the record of the proceedings, and the dates of filing papers, and of receiving and sending communications, and the scope and functions of a file-wrapper and contents in the matter of a patent, is not sufficient to rebut the presumption that the Commissioner required and received a proper preliminary oath from Mr. Hoe. The affirmative probative force of a paper in a file-wrapper, to show the existence of its contents, is one thing, but its negative probative force, to show that a paper or a fact not shown by anything in its contents did not exist, is quite a different thing. The fact that papers known to have existed, and which properly belonged in a file-wrapper, are missing therefrom is a fact of such frequent occurrence in patent suits as to have become a matter of judicial cognizance.

From observations made at the bar it is apparent that the decision in *Eagleton Manufacturing Co.* v. *West, &c., Manufacturing Co.*, *ubi supra*, has been misunderstood. The patent in that case was issued December 19, 1871, to the Eagleton Manufacturing Company, as assignee of Sarah N. Eagleton, administratrix of J. J. Eagleton. It recited that it was issued on the petition of J. J. Eagleton, as inventor. He had filed a petition July 6, 1868, for a certain invention, and had died in February, 1870, after his application had been rejected. After his death the application was renewed in his name, and the specification and claims were amended by his original attorneys, and the patent was granted with claims covering inventions of which there was no suggestion in the specification sworn to by Eagleton, and which inventions were shown to have been made and put in use by one Cary before the amendments to Eagleton's original specification were made; and there was no sufficient evidence that Eagleton had any knowledge of those inventions before Cary made them. The bill alleged that the administratrix applied for the patent. The answer put that fact in issue, and the allegation was not established. The Supreme Court said:

In view of the entire change in the specification, as to the invention described, the patent, to be valid, should have been granted on an application made and sworn to by the administratrix. (Act July 8, 1870, chap. 230, sec. 34, 16 St., 202.) The specification, as issued, bears the signature of Eagleton and not of the administratrix, and it is sufficiently shown that the patent was granted on the application and oath of Eagleton, and for an invention which he never made.

The question whether the patent was issued on the application of the administratrix was directly put in issue, and found against the plaintiff, and the right of the Commissioner to issue the patent was purely a question of law. The rule was applied according to the distinction set forth in *Mahn* v. *Harwood*, *ubi supra*, where it was said:

It was not intended then, [that is, in *Miller* v. *Brass Co.*, (104 U. S., 350,)] and is not now, to question the conclusiveness, in suits for infringements of patents, of the decisions of the Commissioner on questions of fact necessary to be decided before issuing such patents, except as the statute gives specific defenses in that regard. Where it is evident that the Commissioner, under a misconception of the law, has exceeded his authority in granting or reissuing a patent, there is no sound principle to prevent a party sued for its infringement from availing himself of the illegality, independently of any statutory permission so to do.

Under the foregoing views, it is unnecessary to consider the objections made to the written oath of Mr. Hoe found in the file-wrapper, either those made at the former hearing or the new one, that Mr. Hoe did not reside in England, within the meaning of section 30 of the act of 1870, or the effect of the papers now presented by the plaintiffs to show that Mr. Nunn was vice-consul and deputy-consul of the United States at London.

3. It is urged that claim 3 is not infringed, because the fly-frame must be regarded as an element in the combination covered by that claim. This subject was fully considered in the former opinion, and it was there said:

The object of the invention in claim 3, as indicated by the text of the specification, is to carry along the sheets in succession and divide them into two series, each series consisting of all the alternate sheets, and to cause a sheet of one series and the following sheet of the other series to be brought together in pairs, surface to surface, with coinciding forward edges, and thus be delivered ready for the next operation that is required. In the plaintiffs' patent a fly takes them. In the defendant's apparatus they pass on and are mechanically folded, the two sheets at a time. In the plaintiffs' patent the use of the two flies makes necessary the switches 71, to direct each successive pair of sheets to a different fly. But there is nothing in claim 3 which refers to any operation that is to be performed upon the sheets after any successive two sheets are made thus to coincide and be superimposed. The separation into two paths, the longer and the shorter travel, the meeting and the issuing one upon the other, are all there is that is made essential either by the description or the claim. It is true that the travel is to the fly-frame because there is a fly-frame, and that the fly takes the pair of sheets when they issue because there is a fly. But the invention of separation, travel in paths of different lengths, and uniting and issuing one upon the other has no relation to and does not include the fly-frame or the switches 71, nor does claim 3 include them. The word "switches" in claim 3 cannot be construed to include the switches 71 without distorting the language of the claim. The switches 71 take no part in separating two following sheets of paper in their travel to the fly-frame into two different paths, one longer than the other. The switches 71 act upon the sheets after they have left their different paths and have come together again, one upon the other, and act upon them only as pairs, and have no action to make pairs of them.

Reference is made to the cases of *Gage* v. *Herring*, (107 U. S., 640; S. C., 2 Sup. Ct. Rep., 819;) *Fay* v. *Cordesman*, (109 U. S., 408; S. C., 3 Sup. Ct. Rep., 236;) *Coon* v. *Wilson*, (113 U. S., 268; S. C., 5 Sup. Ct. Rep., 537;) *Thompson* v. *Boisselier*, (114 U. S., 1; S. C., 5 Sup. Ct. Rep., 1042,) and *Wooster* v. *Handy*, (22 Blatchf., 307, S. C.; 21 Fed. Rep., 51;) but it is not perceived that there is anything in them in conflict with anything held in this case.

4. In the former decision it was held, as to claim 3, that Hoe and Tucker invented what is covered by it before Campbell did, and described it in the caveat and drawings filed in 1854, and that in December, 1871, the press they made for the *Daily News*, embodying claim 3, was built and set up and successfully worked in the factory of Mr. Hoe, while tapes were not applied to Campbell's delivery apparatus, nor were the switches, or the mechanism that operates them, applied by him until January or February, 1872. The *Daily News* press embodied claim 4 also, and although the caveat did not, the above facts show priority of invention by Hoe and Tucker in regard to claim 4 as well as claim 3.

5. The first, second, and fourth grounds of demurrer to the petition are well taken. There has been laches on the part of the defendant within the rule laid down in the cases cited in *Spill* v. *Celluloid Manufacturing Co.*, (22 Blatchf., 441, 459; S. C., 21 Fed. Rep., 631,) and the new proofs sought to be introduced are not material. There has been laches in moving to amend the answer and in seeking to introduce the deposition of Tucker taken in the New York *Times* suit. Moreover, in the view taken of the case that deposition is immaterial, and it does not show what is claimed for it by the defendant. The deposition was taken in October, 1876. In it Mr. Tucker states that he engaged in the construction of a "perfecting-press" in 1850 or 1851 in R. Hoe & Co.'s establishment in New York, and does not think it is finished "yet," they having been at work on perfecting-machines up to that time. Nor would it be competent to put in evidence a copy of the deposition, with the fact that Mr. Tucker made it, as this case now stands. Mr. Tucker was examined as a witness for the defendant in this case in December, 1880, and as a witness for the plaintiffs in May, 1881. On neither occasion was he inquired of as to the making of the deposition in the New York *Times* case so that he could explain what he said in it. The deposition was taken in a suit to which the present plaintiffs were not parties, and as a deposition it is not competent evidence in this case.

Confirmation of the correctness of the views announced in the former decision herein is afforded by the decision of Judge Lowell in *Hoe* v. *Boston Daily Advertiser Corporation*, (14 Fed. Rep., 914,) which was a suit brought on claim 3 of the same patent. He states that he has examined the record in this suit and the opinion of this court in it and agrees with the conclusions arrived at.

The motions and the prayer of the petition are denied.

U. S. Circuit Court—Western District of Pennsylvania.

DICK *et al* v. STRUTHERS *et al.*

Decided September 19, 1885.

1. PATENT ABOUT TO EXPIRE—INJUNCTION.

A suit in equity was brought on May 5, 1885, on letters patent which expired on the 16th of June next succeeding. There was service on the defendants on May 7, but no steps were taken to secure a preliminary injunction. The bill, however, on its face disclosing a case cognizable in equity, on demurrer, *Held*, that the court would not dismiss the bill because of the expiration of the patent.

2. SUIT BY RECEIVER OF CORPORATION.

In Pennsylvania a receiver of a corporation is the mere custodian of its property, and, not being invested with the title of the corporation to letters patent, he cannot maintain suit thereon in his own name.

SUR demurrer to the bill of complaint.

Mr. Joshua Douglass for the complainants.

Mr. D. F. Patterson for the defendants.

ACHESON, *J.*:

This suit was brought on May 5, 1885, upon letters patent which expired on the 16th day of June next succeeding. The bill charges the defendants with past,

and then continuing and threatened, infringement, and prays for an injunction, "provisional as well as final," and that the infringing drilling jars in the possession of the defendants might be destroyed; also, for a discovery, alleged to be "essential and material" to a just determination of the case, for an account, and decree for profits and for damages. Process was served on the defendants on May 7, but no steps were taken to secure a preliminary injunction, and, the patent having now expired, it is insisted that for this reason the court should not further hold the bill; but if a case is cognizable in equity at the time the bill is filed the mere fact that the patent has expired does not oust the jurisdiction of the court. (*Gottfried* v. *Moerlein*, 14 Fed. Rep., 170.) True, in *Betts* v. *Gallais*, (L. R. 10 Eq., 392,) cited in *Root* v. *Railway Co.*, (105 U. S., 211,) it was held that the court would not entertain a bill for the mere purpose of giving relief in damages for the infringement of a patent where suit was begun so immediately before the expiration of the patent as to render it utterly impossible to have obtained equitable relief during the life of the patent, which had only four days to run after bill filed; and in *Burdell* v. *Comstock*, (15 Fed. Rep., 395,) and in *Davis* v. *Smith*, (19 Fed. Rep., 823,) where suits in equity were commenced, in the former case only five days and in the latter but one day, before the expiration of the patent, the bills were dismissed; but in each of those cases it was evident that the bill was a mere device to transfer a plain jurisdiction to award damages from the forum to which it properly belonged, to a court of equity. Here, however, such is not the apparent purpose, and this ground of demurrer is not sustained.

But there is another real difficulty in the plaintiffs' way, in that they do not represent the entire right in the patent, which is necessary in order to sustain the suit. (Walk. Pat., sec. 399, 400, 574; *Gayler* v. *Wilder*, 10 How., 494; *Blanchard* v. *Eldridge*, 1 Wall., Jr., 339; *Hewitt* v. *Pennsylvania Steel Co.*, 24 Fed. Rep., 367.) The bill discloses that the Gibbs & Sterrett Manufacturing Company, a corporation which, as the case stands, is a stranger to the suit, is the owner of one-half the patent. F. W. Ames, the receiver of that company, is, indeed, the plaintiff; but, clearly, he has no title upon which to maintain an action in his own name. (*Yeager* v. *Wallace*, 44 Pa. St., 294; Kerr, Rec., p. 192, note 1; High, Rec., sec. 209.) By the law of Pennsylvania Ames is the mere custodian of the property of the corporation. By virtue of his appointment as receiver no title to the patent passed from the corporation to him. Doubtless it was competent for the court appointing him to authorize him to bring suit on the patent; but then it should have been brought in the name of the corporation. The objection, therefore, that the plaintiff Ames has no title upon which to maintain this suit, the same being in a corporation which is not a party hereto, is well taken, and for this cause the demurrer is sustained.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., January 5, 1886.

SIR: I am directed by the Secretary to inform you that he has ordered that Henry C. Wallace, of Lilletown, Green county, Kentucky, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

S. A. JONAS,
Acting Chief Clerk.

The Commissioner of Patents.

The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.20.

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Issue of January 12, 1886.

Patents	415	No. 333,998 to No. 334,402, inclusive.
Designs	16	No. 16,454 to No. 16,469, inclusive.
Trade-Marks	20	No. 12,931 to No. 12,950, inclusive.
Labels	6	No. 4,695 to No. 4,700, inclusive.
Reissues	2	No. 10,677 to No. 10,678, inclusive.
Total issue	459	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	.....	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	1	.....
Arkansas	1	.....	New Hampshire	1	1
California	12	1	New Jersey	20	.....
Colorado	3	.....	New Mexico Territ'y	.....	.....
Connecticut	16	.....	New York	89	12
Dakota Territory	.....	.....	North Carolina	1	.....
Delaware	.....	.....	Ohio	32	2
District of Columbia	4	.....	Oregon	1	.....
Florida	.....	.....	Pennsylvania	45	1
Georgia	3	.....	Rhode Island	10	.....
Idaho Territory	.....	.....	South Carolina	3	.....
Illinois	39	2	Tennessee	4	.....
Indiana	12	.....	Texas	1	.....
Indian Territory	.....	.....	Utah Territory	1	.....
Iowa	5	.....	Vermont	1	.....
Kansas	4	.....	Virginia	1	1
Kentucky	1	.....	Washington Territ'y	1	.....
Louisiana	3	.....	West Virginia	.....	.....
Maine	1	.....	Wisconsin	11	.....
Maryland	4	2	Wyoming Territory	.....	.....
Massachusetts	36	2	United States Army	.....	.....
Michigan	12	1	United States Navy	.....	.....
Minnesota	4	.....			
Mississippi	1	.....	Total to citizens of the United States	400	25
Missouri	14	.....			
Montana Territory	1	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Argentine Republic	.....	.....	Germany	8	.....
Austria-Hungary	2	.....	Holland	.....	.....
Barbadoes	.....	.....	Ireland	1	.....
Belgium	1	.....	Italy	.....	.....
Bermuda	.....	.....	Norway	.....	.....
British Columbia	.....	.....	Russia	.....	.....
Canada	11	.....	Scotland	1	.....
Chili	.....	.....	Sweden	.....	.....
Colombia, U. S. of	.....	.....	Switzerland	1	.....
Cuba	.....	.....	West Indies	.....	.....
Denmark	1	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	31	1
England	4	.....			
France	1	1			

DESIGNS.

16,454.—WALL-PAPER.—*Joseph Baumgarten*, New York, N. Y., assignor to the *Manhattan Wall Paper Company*, same place. Application filed September 18, 1885. Serial No. 177,503. Term of patent 3½ years.

16,455.—OVERSHOE.—*Harry I. Crampton*, Naugatuck, Conn., assignor to the *Goodyear's Metallic Rubber Shoe Company*, same place. Application filed November 16, 1885. Serial No. 183,054. Term of patent 14 years.

16,456.—MOLDING.—*Frederick Mankey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,714. Term of patent 7 years.

16,457.—MOLDING.—*Frederick Mankey*, Williamsport, Pa. Application filed November 13, 1885. Serial No. 182,757. Term of patent 7 years.

16,458.—SURFACE ORNAMENTATION OF WALLS, &c.—*Frederick Mankey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,720. Term of patent 7 years.

16,459.—OPEN-WORK PANEL.—*Frederick Mankey*, Williamsport, Pa. Application filed November 13, 1885. Serial No. 182,765. Term of patent 7 years.

16,460 and 16,461.—OPEN-WORK PANEL.—*Frederick Mankey*, Williamsport, Pa. Applications filed November 13, 1885. Serial Nos. 182,767 and 182,768. Term of patents 7 years.

16,462.—PANEL.—*Frederick Mankey*, Williamsport, Pa. Application filed November 13, 1885. Serial No. 182,770. Term of patent 7 years.

16,463.—CASKET.—*Levi K. Smedes*, Mount Vernon, N. Y. Application filed October 29, 1885. Serial No. 181,335. Term of patent 14 years.

16,464.—SHOVEL FOR POTATO-DIGGERS.—*David Feigly*, Medway, Ohio. Application filed November 9, 1885. Serial No. 182,313. Term of patent 14 years.

16,465.—EAR FOR CASKET-HANDLES.—*Otto F. Fogelstrand*, Westfield, Mass., assignor to the *Textile Manufacturing Company*, same place. Application filed June 10, 1885. Serial No. 168,242. Term of patent 7 years.

16,466.—WATCH-CROWN.—*Edward A. Marsh*, Newton, Mass. Application filed November 16, 1885. Serial No. 183,052. Term of patent 14 years.

16,467 and 16,468.—ORNAMENTATION OF HUBS.—*Jared Maris*, Columbus, Ohio. Applications filed November 28, 1885. Serial Nos. 184,223 and 184,224. Term of patents 14 years.

16,469.—HANGINGS, COVERINGS, &c.—*Candace Wheeler*, Jamaica, N. Y. Application filed June 10, 1885. Serial No. 168,283. Term of patent 3½ years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,931.—SOAP.—*Adrot, Christello & Co.*, Chicago, Ill. Application filed December 5, 1885. Used since November 6, 1885.

"The picture of a man kneeling upon a barren rock and the words 'ENOCH ARDEN' and word 'SILICIO.'"

12,932.—MANILA AND SISAL CORDAGE AND BINDERS' TWINE.—*The Akron Twine and Cordage Company*, Akron, Ohio. Application filed November 23, 1885. Used since November 11, 1885.

"The representation of a red star with ten points."

12,933.—BEER, ALE, PORTER, AND STOUT.—*Bauernschmidt & Marr*, Baltimore, Md. Application filed December 21, 1885. Used since November 1, 1885.

"The representation of a horseshoe."

12,934.—CATALOGUES.—*Butler Bros.*, New York, N. Y. Application filed December 16, 1885. Used since 1880.

"The words 'OUR DRUMMER.'"

12,935.—CATALOGUES.—*Butler Bros*, New York, N. Y. Application filed December 16, 1885. Used since 1880.

"The words 'SANTA CLAUS.'"

12,936.—TOBACCO IN ITS RAW STATE.—*The Havana Tobacco Company*, (*limited,*) New York, N. Y., and Havana, Cuba. Application filed November 30, 1885. Used since October, 1885.

"The letters 'H. T. Co.'"

12,937.—BISCUITS.—*Henriot & Co.*, Rheims, France. Application filed November 9, 1885. Used since September 15, 1885.

"The word 'ELITE.'"

12,938.—LAUNDRY AND TOILET SOAP.—*Lautz Bros. & Co.*, Buffalo, N. Y. Application filed November 23, 1885. Used since November 10, 1885.

"The words 'NEW ENGLAND'S BEST.'"

12,939.—LAUNDRY AND TOILET SOAP.—*Lautz Bros. & Co.*, Buffalo, N. Y. Application filed November 23, 1885. Used since November 11, 1885.

"The words 'MAY BELL.'"

12,940.—PERFUMERY FOR THE HANDKERCHIEF AND TOILET.—*Lorenz Bros.*, Toledo, Ohio. Application filed December 16, 1885. Used since January 1, 1883.

"The words 'ST. TRELODY PINK.'"

12,941.—TONIC.—*Francis C. Miville*, Manchester, N. H. Application filed September 30, 1885. Used since April 15, 1878.

"The fac-simile signature 'F. C. MIVILLE,' and two vignettes of a woman, associated with the words 'VIN FORTIFIANT.'"

12,942.—PERFUMERY.—*Mülhens & Kropff*, New York, N. Y. Application filed December 15, 1885. Used since August 6, 1884.

"The word 'RHINE.'"

12,943.—COTTON AND WOOLEN CASSIMERES.—*J. Morton Brown & Co.*, Norristown, Pa. Application filed November 17, 1885. Used since April 1, 1885.

"The word 'WOODSTOCK' and scene showing a stream of water and a man in the act of fishing."

12,944.—PERFUMERY.—*Mülhens & Kropff*, New York, N. Y. Application filed December 15, 1885. Used since August 6, 1884.

"The word 'WALDMEISTER.'"

12,945.—PERFUMERY.—*Mülhens & Kropff*, New York, N. Y. Application filed December 15, 1885. Used since August 6, 1884.

"The words 'SEVEN MOUNTAINS.'"

12,946.—PLUG, TWIST, AND SMOKING TOBACCO.—*J. B. Pace Tobacco Company*, Richmond, Va. Application filed November 24, 1885. Used since September 25, 1885.

"The word 'TOKAY.'"

12,947.—PREPARATION FOR RELIEVING WHOOPING-COUGH.—*Porter Specific Company*, Boston, Mass. Application filed November 12, 1885. Used since November 1, 1885.

"The words 'PORTER'S SPECIFIC' and the representation of a child bent forward in the act of coughing."

12,948.—OLIVE-OIL.—*Société Hygiénique Alimentaire*, New York, N. Y. Application filed November 30, 1885. Used since about August 1, 1885.

"The representation of an olive-tree in colors of green and wood, with a background of a small landscape of lawn and foliage."

12,949.—COTTON PIECE-GOODS.—*Henry G. Woodruff*, New Brighton, N. Y. Application filed December 17, 1885. Used since March, 1884.

"The words 'ALPINE ROSE.'"

12,950.—LAUNDRY AND TOILET SOAPS.—*Lautz Bros. & Co.*, Buffalo, N. Y. Application filed November 23, 1885. Used since November 5, 1885.

"The word 'SPRAY.'"

LABELS.

4,695.—Title: "THE INDELIBLE CRAYON."—*Albert A. Fairfield*, Battle Creek, Mich. Application filed December 21, 1885.

4,696.—Title: "G. W. SHOTWELL & CO'S CEREAL COMPOUND" (FOR THE LUNGS.)—*Geo. W. Shotwell & Co.*, Centralia, Ill. Application filed November 25, 1885.

4,697.—Title: "STRONTIA MINERAL SPRING WATER."—*Strontia Spring Company*, Baltimore, Md. Application filed December 21, 1885.

4,698.—Title: "THE SPEAR PERFECT FERTILIZER."—*Benjamin Spear*, Springfield, Mass. Application filed December 22, 1885.

4,699.—Title: "EASTERN DISTILLING CO'S D. D. RYE GIN."—*Eastern Distilling Company*, New York, N. Y. Application filed December 2, 1885.

4,700.—Title: "THAT RED LINIMENT."—*Henry Kessler*, Yreka, Cal. Application filed December 22, 1885.

DISCLAIMER.

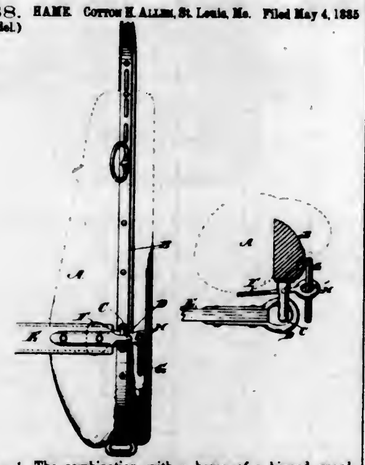
208,541.—*William Roemer*, Newark, N. J. Dated October 1, 1878. IMPROVEMENT IN LOCKS FOR SAFE-DOORS. Disclaimer filed January 2, 1886.

Enters his disclaimer to: "In the first and second claims in said specification any blocks B that have for the notches formed in them, as shown in the drawing, for receiving the handle-rings as described in the specification."

PATENTS

GRANTED JAN. 12, 1886.

333,988. HAME. COTTON H. ALLEN, St. Louis, Mo. Filed May 4, 1885. (No model.)

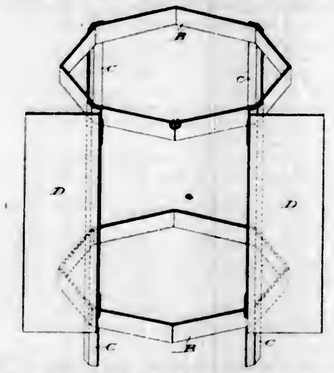


Claim.—1. The combination, with a hame, of a hinged guard-plate having at its end an eye set obliquely to its face and a ring connected to the plate by said eye, substantially as described.

2. The combination, with a hame, of a draft-staple and a plate hinged between its ends, and provided at its outer end with an attached breast-strap ring which moves with the plate when the latter is swung on its hinge, substantially as described.

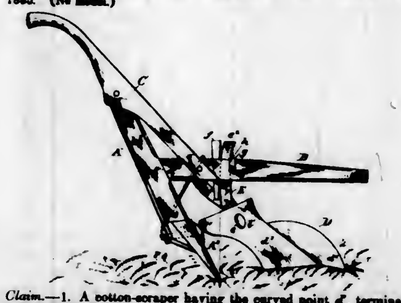
3. The combination of a draft-staple, a guard or plate hinged to said staple, and a breast-strap ring connected to said guard or plate to move therewith, substantially as described.

333,989. CASING FOR HOT-AIR FURNACES. STEPHEN N. BEITS, Adams, Hillsdale County, Mich. Filed Sept. 22, 1881. (Model.)



Claim.—The combination, in the heater, equalizer, and ventilator, of the doors D with the frame, having the circles B and standards C, substantially as and for the purpose described.

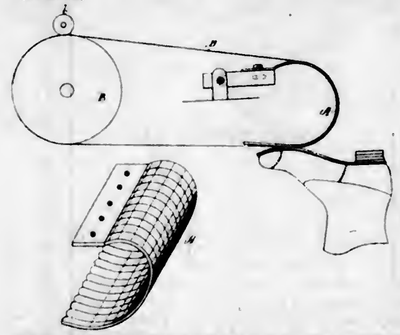
333,990. SCRAPER. JAMES T. BOYD, Cooper, Miss. Filed Sept. 23, 1885. (No model.)



Claim.—1. A cotton-scraper having the curved point d', terminating at its forward extremity in a plunging point, d^2, extending below the plane of the lower edge of a mold-board, d^3, having a broad cutting-edge next to the ground, and with a flanged upper part describing a curve upon the off side of plow, in combination with an adjustable notched standard secured thereto and adapted to be secured to the beam in front of a plow or shovel, as set forth.

2. In an adjustable cotton-scraper, the combination of the curved point d', the plunging point d^2, and the mold-board d^3, all substantially as shown, and for the purposes specified.

333,991. ABRADING-MACHINE. CHARLES K. BRADFORD, Lynnfield, assignor to G. H. P. Flagg, trustee, Boston, Mass. Filed Mar. 22, 1884. (No model.)



Claim.—The combination of pulley B, belt D, and the non-revolving, yielding, curved support A, substantially as and for the purpose described.

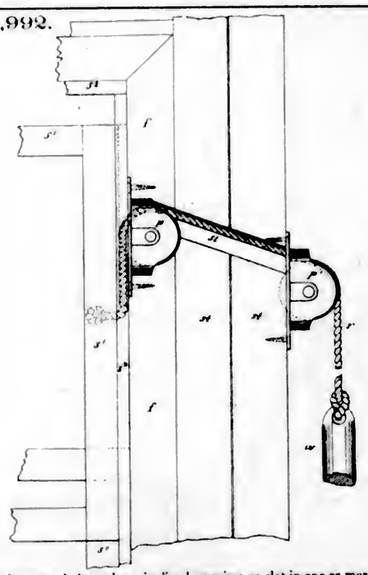
333,992. SASH-BALANCE. HENRY R. BRIDGES, Greencastle, Ind. Filed Oct. 29, 1885. (No model.)

Claim.—1. The frame *f*, studding *st*, pulleys *p p'*, and rope *r*, connected to sash and passing over pulleys *p p'* and through slot *sl* in studding, all combined and arranged to operate substantially as described.

2. A sash-balance wherein the sash is supported by a weighted rope passing over one or more pulleys and through an inclined opening in the studding adjacent to the window-frame.

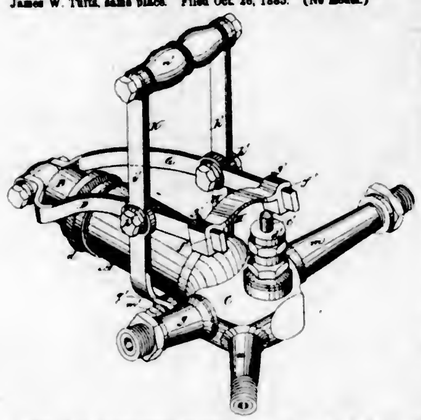
3. A sash-balance composed of a weighted cord connected with the sash and passing over a sheave-pulley let into the window-frame,

333,992.



thence downward through an inclined opening or slot in one or more adjacent studding, and thence over an additional pulley and downward to the attached weight, all combined substantially as described.

333,993. SIRUP-GAGE. JOHN BROWN, Medford, Mass., assignor to James W. Tufts, same place. Filed Oct. 26, 1885. (No model.)

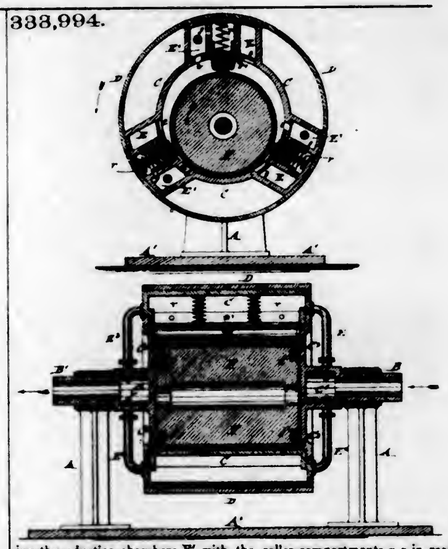


Claim.—In a sirup-pump, the combination, with the cylinder A and piston B, of the body or casting C, having the separate inlet and outlet passages *f l*, each communicating directly with the inner end of the cylinder and controlled by valves *h n*, provided with springs *i p*, and the separate inlet-passage *l*, communicating with the outlet-passage *l* and controlled by a valve, *a'*, provided with a spring, *b'*, and having a stem, *c'*, projecting upon the outside of the body C, the hand-lever K, and the rods D G, pivoted to the piston B and to the said hand-lever K, and provided with a cross-bar, H, adapted to be brought into contact with the stem *c'* to open the valve *a'* at the end of the inward stroke of the piston, all constructed to operate substantially in the manner and for the purpose set forth.

333,994. AIR-COMPRESSOR. LEWIS S. CHESBROUGH, Jersey City, N. J., assignor to C. M. Edward Schroeder, same place. Filed Nov. 19, 1884. (No model.)

Claim.—1. The combination of a rotating casing, C, having an exterior pulley, D, an interior roller or piston, F, contact-rollers R, spring-cushioned guide-bearings *r' r'* for said rollers, roller-compartments *r r*, air induction and eduction chambers E E', having valved openings communicating with the interior of the casing C, and air-ports *g g*, connecting the eduction-chambers E' with the roller-compartments *r r* in rear of the rollers, whereby air-cushions are formed behind said rollers, substantially as and for the purpose set forth.

333,994.



2. A roller provided with lubricating end pockets and with an anti-friction ring provided with holes opposite said pockets, said holes being adapted to receive felt plugs, through which the lubricant passes, substantially as described.

3. In an air-compressor, the combination of the rotary casing, the interior rolling piston, spring-cushioned rollers bearing against the periphery of said piston, radial compartments, and roller-bearings for said rollers, adapted to slide in said compartments, said roller-bearings being provided with lubricating devices in their side walls, substantially as described.

333,995. FURNACE. GATES A. CLARK, Rochester, N. Y. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a furnace provided with a fire-chamber for burning solid fuel, a rotary fuel-chamber, oven, or retort exposed to the fire, and a flue leading from the said fuel-chamber to the fire-chamber, the fuel-chamber normally communicating with the fire-chamber only through the said flue, substantially as described.

2. A furnace provided with a fire-chamber, combined with a rotary fuel-chamber exposed to the fire, but normally without direct communication with the said fire-chamber, a flue leading from the said fuel-chamber, and means for establishing direct communication between the fuel-chamber and fire-chamber, for discharging the fuel from the former into the latter, substantially as described.

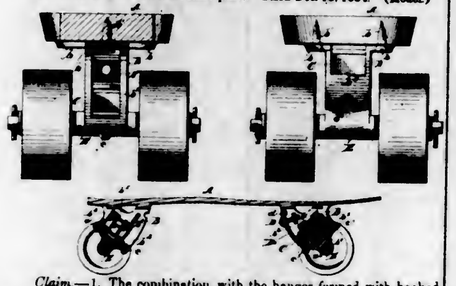
3. In a furnace, a grate and a fire-chamber above it, and an ash-pit or air-inlet chamber below the same, combined with a rotatable fuel-chamber or retort exposed to the fire in the said fire-chamber, and a flue leading from the said fuel-chamber to the ash-pit, substantially as and for the purpose described.

4. In a furnace provided with a fire-chamber, a fuel-chamber, oven, or retort capable of rotation upon a longitudinal axis, normally without direct communication with the fire-chamber, and having an opening or door to receive fuel from the outside of the furnace, combined with a flue leading from the said fuel-chamber to the fire-chamber, and means for discharging fuel from the fuel-chamber into the fire-chamber, substantially as described.

5. In a furnace provided with a fire-chamber, a rotarily-movable fuel-chamber and a flue leading therefrom, the said fuel-chamber having an opening, which may by its movement be placed in communication with the said flue or with the fire-chamber, substantially as and for the purpose described.

6. A furnace having a fire-chamber, combined with a cylindrical fuel-chamber capable of rotation about its axis and a flue leading from said fuel-chamber to the fire, the said fuel-chamber being placed by its rotary movement in communication with the said flue or with the fire-chamber, substantially as and for the purpose described.

333,996. ROLLER-SKATE. HIRAM S. COBBS, Detroit, Mich., assignor to Frank H. Leavenworth, same place. Filed Dec. 18, 1884. (Model.)



Claim.—1. The combination, with the hanger formed with hooked pendent fingers between its front and rear brackets, of the axle-bearing formed with fingers fitting between the fingers of the hanger, and an elastic cushion interposed between said hanger and bearing, and engaged by said fingers to hold the hanger and bearing together, substantially as described.

2. The combination, with the hanger formed with fingers between its front and rear brackets, and having recesses in the ends of said brackets, of the axle-bearing having fingers fitting between the fingers of the hanger and formed with a sleeve to receive the axle, and trunnions to fit in the recesses of the brackets and a cushion between the hanger and the bearing, substantially as described.

3. The combination, with the hanger and the axle-bearing held together by an elastic cushion, of the compression-jaw trunnioned at one end to the front of one bracket of the hanger and at the other end on the same side of the bracket bearing against the elastic cushion, and a screw passed through said jaw and engaging with a part of the hanger to hold the jaw to its place and regulating the tension of the cushion, substantially as described.

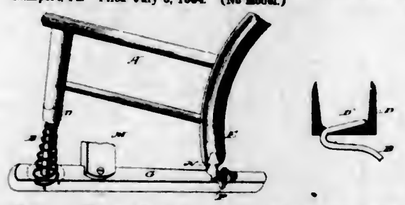
333,997. BOBBIN-HOLDER FOR SPINDLES OF SPINNING-MACHINES. JOHN DAVIS, Providence, R. I. Filed Apr. 18, 1885. (No model.)

Brief.—The holder consists of a metallic disk surrounding and attached to the spindle and provided with both spring-arms and upwardly-extending spurs to engage the base of the bobbin.



Claim.—A holder for bobbins, consisting of the part or plate having the prongs or points *c c* and the spring-arms B, substantially as and for the purpose set forth.

333,998. SPRING CHAIR AND SEAT. THEODORE D. DAVIS, Williamsport, Pa. Filed July 8, 1884. (No model.)



Claim.—1. The combination of seat A, frame G, springs B, flexible tie H, and hinged joint N P, substantially as shown and described.

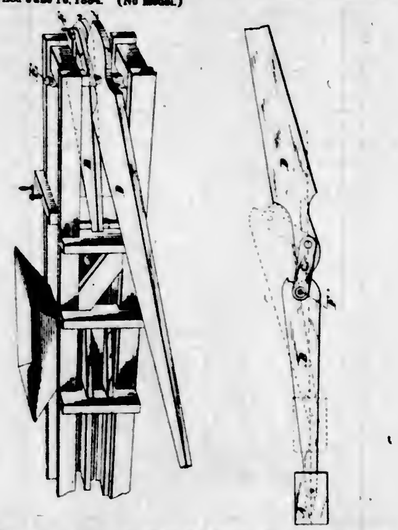
2. The combination, substantially as before set forth, of a runner-frame, a chair, the rear legs of which are hinged thereto, and springs interposed between the front legs and the runner-frame.

3. The combination, substantially as before set forth, of a runner-frame, a chair, the rear legs of which are hinged thereto, springs interposed between the front legs and the runner-frame, and ties to limit the expansion of the springs.

4. The leg-socket having an oblique hole and an inclined channel in the bottom for the insertion of the spring, substantially as before set forth.

5. The combination, substantially as before set forth, of the runner-frame and the springs screwed through transverse holes in the runners to secure their lower ends thereto.

333,999. BALING-PRESS. PETER K. DEDERICK, Londonville, N. Y. Filed June 16, 1884. (No model.)



Claim.—1. In a power device for presses, the combination, with the traverser, of a pitman guided at its outer end in a curved path back and forth across the center line, and having shoulders or bearings at opposite sides of its outer end, and a vibratory horse-lever provided with a central bearing for engaging the shoulders or bearings on the pitman, in the manner and for the purpose described.

2. In a power device for presses, the combination, with the traverser and its pitman having the two bearings or shoulders, of the links for guiding the outer end of the pitman and the vibratory horse-lever provided with the central and side bearings, substantially as described.

334,000. BALING-PRESS. PETER K. DEDERICK, Londonville, N. Y. Filed July 12, 1884. (No model.)



Claim.—1. In a power device for baling-presses, the combination of a piman connected at its inner end to a traverser and having a guide for its outer end, with a vibrating horse-lever and connection, substantially as described, between the horse-lever and pitman for causing the outer end of the pitman to pass twice across the central line at each complete movement of the horse-lever in either direction, substantially as described.

2. In a power device for baling-presses, the combination of a pitman connected at its inner end to a traverser and at its outer end to a pivoted arm or arms, with a rotary head applied to said arm and provided with stops, as described, and a vibratory horse-lever carrying a reversible pawl for engaging said stops, substantially as described.

3. In a power device for baling-presses, the combination, with a pitman connected at its inner end to a traverser and at its outer end to a pivoted arm or arms, and a rotary head applied to said arm, and provided with stops, as described, of a vibratory horse-lever carrying a pawl for engaging said stops, and automatic devices for reversing said pawl, substantially as described.

4. In a continuous baling-press, the combination, with the hopper, of double condensing-heads operating therein, substantially as and for the purpose set forth.

5. In a continuous baling-press, and in combination with the hopper thereof, double condensing-heads and an intermediate head or partition above the feed-orifice, substantially as described.

6. In a continuous baling-press, and in combination with the hopper

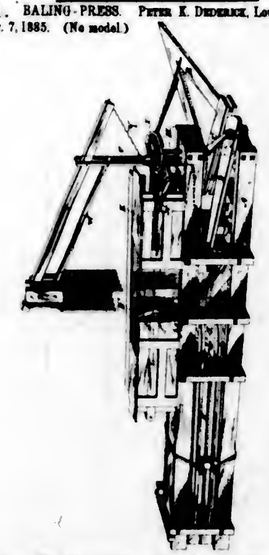
thereof, double condensing-heads and a movable partition located above the feed-orifice and between the condensing-heads, substantially as described.

7. In a continuous press in which there are imparted to the traverser two reciprocations at each complete movement of the horse-lever from side to side, a hopper communicating with the feed-opening and having double condensing-heads, substantially as described.

8. In a continuous press in which there are imparted to the traverser two reciprocations at each complete movement of the horse-lever from side to side, a hopper communicating with the feed-opening, double condensing-heads arranged to reciprocate within said hopper, and a partition located between said condensing-heads, substantially as described.

9. In a continuous baling-press, the combination of a partition or follower provided with a transverse shaft having gears attached to opposite ends co-operating with racks on the press-frame, whereby the follower is maintained in proper position during its passage through the press, substantially as described.

334,001. BALING-PRESS. PETER K. DIEDERICK, Loudonville, N. Y. Filed Apr. 7, 1885. (No model.)



Claim.—1. The combination of traverser E, connection Y, and rock-lever V, as and for the purpose set forth.

2. The combination of horse-lever B and projection or arm I, passing around the connection Y, as and for the purpose set forth.

3. The combination of horse-lever B and projection or arm I, passing around the standard U, as and for the purpose set forth.

4. The combination of lever V, blade or blades *x*, and weight Z with the press-box and traverser of a baling-press, as and for the purpose set forth.

5. The combination of arm *i*, pitman N, condensing-head K, and hopper F, as and for the purpose set forth.

6. In combination with a baling-press, a feed-orifice, a gravity-feeder or feed device, and a hopper provided with one or more movable condensing-heads, as set forth.

7. In a baling-press, the double-acting pitman D, with the traverser E, press-box J, and feed-orifice M, in combination with a hopper, movablecondensing-head, and a gravity-feeder, for the purpose set forth.

8. In a baling-press, the combination of double-acting pitman D, a traverser, E, a press-box, J, a feed-orifice, M, with a hopper and condenser, and automatic feed device, whereby the loose material is condensed and passed from the hopper into the press-box in front of the traverser and pitman, as set forth.

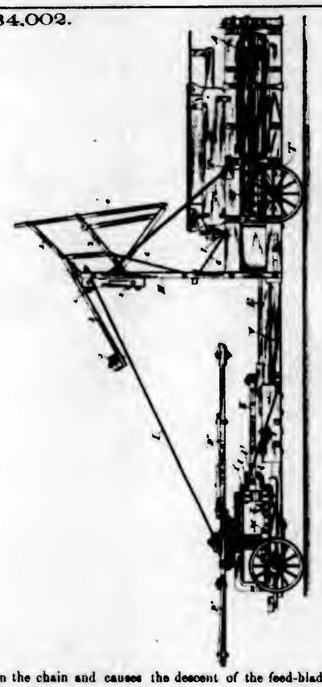
9. In a baling-press, the combination of a gravity-feeder or feed device with a reciprocating traverser, a press-box, and retainers at the junction of press-box and bale-chamber, for the purpose set forth.

10. The combination, with the traverser, of a chamber, a condenser moving therein, and a feeding device operated by gravity to force the condensed charges into the press-box, substantially as described.

334,002. BALING-PRESS. PETER K. DIEDERICK, Loudonville, N. Y. Filed May 20, 1885. (No model.)

Claim.—1. The combination, with the hopper, of the feed blade or head, the pivoted arms by which it is supported, the traverser, and the chain, whereby as the traverser is retracted it operates to positively pull

334,002.



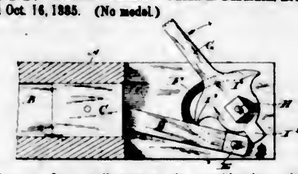
upon the chain and causes the descent of the feed-blade, substantially as described.

2. The combination, with the hopper, of the feed blade or head, the pivoted arms by which it is supported, the weighted arm, the traverser, and the chain, whereby after the feed-blade has been caused to positively descend by the operation of the traverser the weighted arm will cause said feed-blade to be automatically raised, substantially as described.

3. The combination, in a baling-press, of gears M L, connected, and in combination with traverser D and an automatic feeder, substantially as set forth, whereby the feed device is operated twice to one revolution of the horse-lever or power-shaft.

4. In a baling-press, a pair of oblong or eccentric gears and a crank connected to and in combination with a reciprocating traverser and feed device, whereby the motion of the latter is accelerated and time for feeding proportionately increased, substantially as set forth.

334,003. BALING-PRESS. PETER K. DIEDERICK, Loudonville, N. Y. Filed Oct. 16, 1885. (No model.)

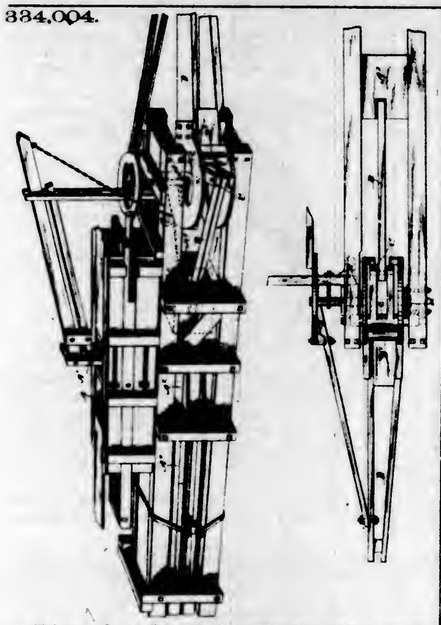


Claim.—1. In a baling-press, the combination, with a traverser and a pitman connected thereto, of a guide for the outer end of the pitman, by which, as pressure is applied to said outer end, it is made to approach a central line, and a vibratory horse-lever or sweep having one bearing co-operating with the pitman to carry the latter up nearly to the central line and then release it, and two other bearings, alternating in their operation upon the pitman, respectively, with the first-named bearing, for forcing the pitman up to and over the central line, whereby to produce two reciprocations of the traverser at each complete movement of the horse-lever in either direction, substantially as described.

2. In a baling-press, the combination, with a traverser and the pitman connected thereto, of a guide for the outer end of the pitman and a vibratory horse-lever having two extreme and an intermediate bearing for co-operating with the pitman, substantially as and for the purpose specified.

334,004. BALING-PRESS. PETER K. DIEDERICK, Loudonville, N. Y. Filed Oct. 20, 1885. (No model.)

334,004.



Claim.—1. In a baling-press, the combination, with a reciprocating traverser, of a pitman connected thereto, a guide for controlling the movement of the outer end of the pitman, a vibratory horse-lever or sweep, and intermediate connections between the horse-lever and pitman for causing the latter to approach and recede from a central line twice or oftener at each movement of the horse-lever in either direction, substantially as described.

2. In a baling-press, the combination, with a reciprocating traverser and its attached pitman, of a guide for the outer end of the pitman, a vibrating horse-lever, bearings for forcing the pitman past the central line in opposite directions, and an intermediate bearing, operating as described, to carry the pitman toward the central line during a portion of the traverse of the horse-lever in either direction and release it alternately on opposite sides of the center, substantially as described.

334,005. BALING-PRESS. PETER K. DIEDERICK, Loudonville, N. Y. Filed Nov. 23, 1885. (No model.)

Claim.—1. In a power device for baling-presses, the combination, substantially as described, of the traverser, a pitman, and swinging arm, constituting the toggle, and a horse-lever or sweep mounted upon an axis or pivot separate from that of the swinging arm and having two bearings adapted to carry the toggle across the center from opposite sides, and a third or intermediate bearing adapted to carry the toggle nearly to the center and then release it, as and for the purpose set forth.

2. In a power baling-press, the combination, with traverser, pitman, and swinging arms, of the horse-lever or sweep pivoted to one side of the axis of the swinging arms, having the intermediate bearing adapted, when the horse-lever is moved, to bear upon the said swinging arm and travel toward and off of the outer end of the same, and having, also, the two remote bearings, substantially as described.

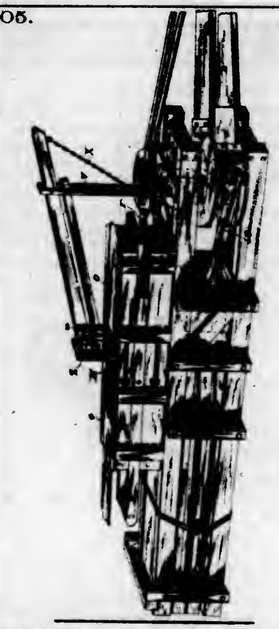
3. The combination, with the horse-lever, the crank-arms, and their shafts or pivots, respectively, of the removable bearing-plates, substantially as described.

4. In a power device for baling-presses, the combination, substantially as described, of the traverser, a pitman, and a swinging arm, constituting a toggle, and a horse-lever or sweep having two bearings adapted to carry the toggle across the center from opposite sides, and a third intermediate and movable bearing adapted to carry the toggle nearly to the center and then release it, substantially as set forth.

5. The combination, with the condensing-hopper, the double condensing-heads, and the intermediate head or partition movable back and forth across the feed-opening, of the automatic feeder operating to force each charge of condensed material down through the feed-opening, substantially as described.

6. The combination, with the condensing-hopper, the double condensing-heads, and the intermediate head or partition movable back and forth across the feed-opening, of the automatic feeder operating to force each charge of condensed material through the feed-orifice, and the double-acting traverser, substantially as described.

334,005.



334,006. HARNESS-TRIMMING. GEORGE F. EBERHARD, Cleveland, Ohio. Filed Mar. 20, 1885. (No model.)



Claim.—1. A drop pad-hook for harness, consisting of a hook formed with an annular recess or bearing, and a plate formed with a recess in its under side to receive and cover the bearing end of the hook, substantially as described.

2. The hook *a*, formed with the bearing *a'*, in combination with the plate *s*, formed with lips *n n*, and a recess, *c*, covering the bearing end of the hook and closed at *s'*, substantially as described.

334,007. HARNESS-TRIMMING. GEORGE F. EBERHARD, Cleveland, Ohio. Filed Mar. 20, 1885. (No model.)



Claim.—1. A halter loop and ring formed with the upper part of the loop split and reduced, as shown, having shoulders at the ends of the reduced portion, and a ferrule on the reduced part, substantially as described.

2. A halter loop and ring having the loop formed with an eye, and with the upper part of the loop split down into the eye to admit the ring into the latter, substantially as described.

334,008. HAND-STAMP. VICTOR H EMERSON, New York, N. Y. Filed Sept. 22, 1884. (No model.)



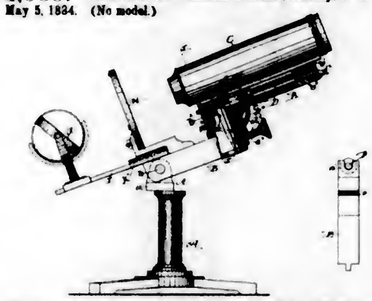
334,008.



Claim.—1. The combination of the tubular shell A, one half of the lower end of which is cut away, while the remaining half, E, is provided with an ink-pad, *j*, a slide, C, arranged within the case A and held by the spring *d*, a type-case, D, pivoted to the slide C, a socket, B, spring A between the bottom of the socket B and the top of the slide C, and parts, substantially as described, connecting the socket B with the pivoted type-case D.

2. The combination of the tubular case A, ink-pad *j*, inserted into the lower end, E, of the same, slide C, spring *d*, pins *c*, type-case D, pivoted to the slide C, socket B, spring A, and rod *f*, secured to the socket B and pivoted to the arm *m* of the type-casing D, constructed and operated substantially as described.

334,009. MICROSCOPE. CHARLES FASOLDT, Albany, N. Y. Filed May 5, 1884. (No model.)



Claim.—1. In a microscope, the combination, with the tube C, provided with a screw-nut, *c*, as herein described, of the adjusting-screw D, auxiliary screw-nut *d*, and spring *d'*, the said spring being interposed between the nuts *c* and *d*, as and for the purpose herein specified.

2. In a microscope, the combination, with the tube C, adjusting-screw D, and spring d^2, of the lever E and adjusting-screw e^2, arranged to operate as and for the purpose herein specified.

3. The nose-piece F, provided with a segmental portion, *f*, of a screw-nut, and with a spring-actuated sliding piece, *f'*, having screw-threads on its lower end, as herein described, all being constructed and arranged to operate as herein specified.

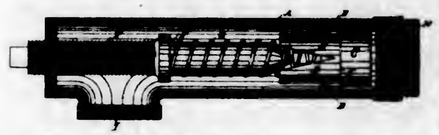
4. In a microscope, the combination, with the tube C, of the nose-piece F, provided with a segmental portion, *f*, of a screw-nut, and a spring-actuated sliding piece, *f'*, having on its lower end screw-threads which supplement the threads of the segmental portion *f*, as and for the purpose herein specified.

334,010. WRENCH. DAVID FOLLETT, Woodsport, N. Y. Filed Sept. 23, 1885. (No model.)



Claim.—In a duplex ratchet-wrench, the pivoted heads A A, provided with ratchets *r r*, in combination with the case C, provided with two slots, *a a*, the pawls *p p*, provided with lugs *b b*, and V-shaped notches in the heels, and the spring S, bowed at its center and bearing with its ends in the aforesaid V-shaped notches of the pawls, the whole constructed and combined to simultaneously shift the two pawls into corresponding positions in relation to the ratchets, substantially as described and shown.

334,011. GAS OR WATER REGULATOR. BENJAMIN FRANKLIN, Bradford, Pa. Filed Nov. 20, 1885. (No model.)

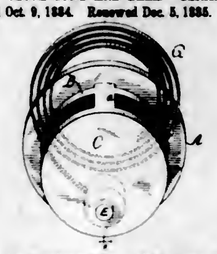


Claim.—1. The combination, in a gas or water regulator, of a valve, C, provided with slots or openings E therein, with a valve-seat, B, and sustaining-spring G, substantially as and for the purpose set forth.

2. The combination, in a gas or water regulator, of a valve, C, provided with V-shaped openings or slots E, with a valve-seat, B, a sustaining-spring, G, and adjusting-screw F, substantially as and for the purpose set forth.

3. The combination, in a gas or water regulator, of the body A thereof provided with a valve-seat, B, substantially as shown, with a hollow valve, C, provided with V-shaped slots or openings E, the sustaining-spring G, and regulating-screw F, substantially as and for the purpose set forth.

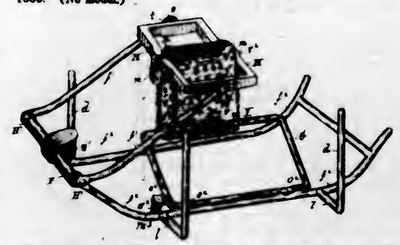
334,012. CLOCK GONG AND BELL. GEORGE GARDNER, Winsted, Conn. Filed Oct. 9, 1884. Reissued Dec. 5, 1885. (No model.)



Claim.—1. An attachment for a clock gong or bell, consisting of a series of parallel disks or plates connected together by a transverse post or bar, connecting the series so as to hold them relatively secured together with small spaces between them, and two of the said sounding plates or disks further attached together by an intervening bolt or pin to which is attached the sounding device, substantially as shown and described.

2. The combination of the plate A, post *a*, plates B C and gong G, and means for securing the same in place, substantially as shown and described.

334,013. CAR-AXLE OILER. JOHN GIBSON, West Troy, N. Y., assignor to the Menesly Hardware Company, same place. Filed Sept. 14, 1885. (No model.)



Claim.—1. In an oiler for a car-axle, the combination, with a frame that is composed of two parts that are hinged together at one of each of their ends or sides, and provided with an intermediate spring, of a wick-roller frame that is horizontally pivoted to the upper part of said two-part frame, a roller arranged in said wick-roller frame, an endless-belt-form wick arranged to pass over said roller, and a horizontal wick-guide frame adapted to be passed through the lower stretch of said belt-form wick, substantially as and for the purposes set forth.

2. The combination of the wick-holder frame N, pivoted at its ends horizontally to an adjustable support, the roller R, arranged in the sides of said holder-frame parallel to its ends, the adjustable wick-guide frame G, made with the side Y, having the opening O', said parts being constructed and arranged in the manner as and for the purposes set forth.

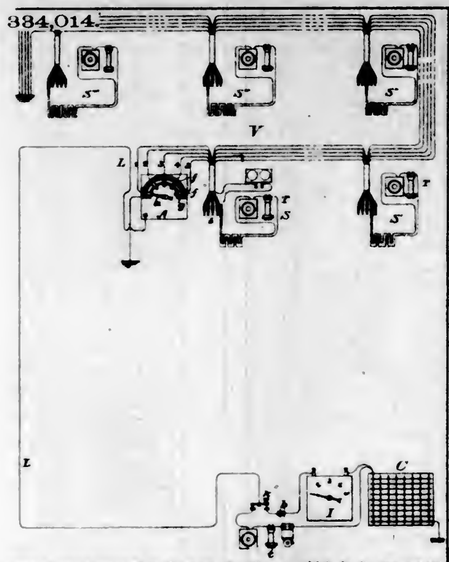
334,014. AUTOMATIC CIRCUIT-CHANGER. EZRA T. GILLILAND, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Oct. 31, 1885. (No model.)

Claim.—1. An automatic circuit-changer consisting of a motor-driven arm forming the terminal of an electrical circuit and an electro-magnet located in said circuit for controlling the motor, combined with two or more circuits having their terminals in movable contact-points normally resting on a ground-contact in the path of the moving arm, whereby the said arm in its movement makes connection with and breaks the normal ground-contact of each circuit in succession.

2. The combination, in an automatic circuit-changer, of a movable circuit-terminal controlled by an electro-magnet, and two or more circuits having movable terminals normally connected to ground and located in the path of the first-named terminal, which in its movement simultaneously makes connection with and breaks the ground-contact of each of the last-named circuits in succession.

3. An automatic circuit-changer consisting of the combination of a motor-driven arm forming the terminal of an electrical-circuit, an electro-magnet located in said circuit for controlling said motor, and two or more circuits having their terminals in flexible spring-fingers normally resting

334,014.

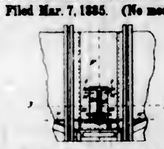


upon a ground-contact in the path of said arm, which in its movement passes under one spring-finger after another, making an electrical connection and breaking the ground-contact thereof.

4. The combination of two or more main lines and a series of stations equipped with communicating instruments, which may be placed in either main line, a main line extending from one of said stations to a distant point, and an automatic circuit-changer located at said station for connecting the last-named line to any one of the first-named series.

5. The combination of two or more main lines, a series of subscribers' stations equipped with telephones, means whereby the telephone of any station may be inserted in any line of the series, a main line extending from one station of the series to a distant station, and an automatic circuit-changer at the former station for connecting said main line to any other line.

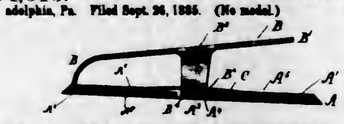
334,015. TAPPING-HOLE FOR FURNACES. GEORGE W. GOSER, Cleveland, Ohio. Filed Mar. 7, 1885. (No model.)



Claim.—1. In a melting-furnace, the combination of a slot or opening in the side wall and lining extending from the bottom of the furnace upward, and a series of bricks arranged in said opening one above the other, said bricks having a series of tapping-holes therethrough one above the other, so that one after another said holes from the top downward may be tapped, substantially as and for the purpose set forth.

2. In a melting-furnace, the combination, with a lateral opening or slot in the wall and lining of the furnace, and a series of bricks arranged therein, and tapping-holes arranged in the said bricks, of water-blocks arranged at the outer end and on either side of and in contact with the said bricks, and suitable means for passing water through the water-blocks, substantially as set forth.

334,016. SPRING CLAMPING DEVICE. ISAAC W. HETTINGER, Philadelphia, Pa. Filed Sept. 26, 1885. (No model.)



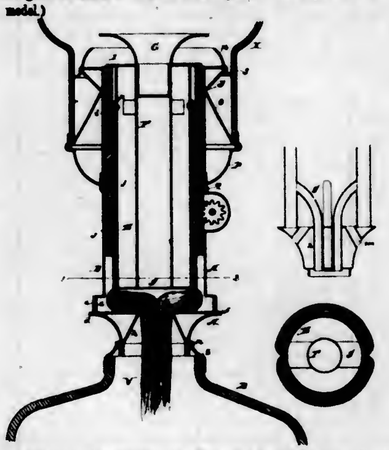
Claim.—1. The combination of a base provided with a central longitudinal spring-slot having shoulders formed beneath the ends thereof, and a transverse bridge or pivot support along the length thereof, with a vibrating clamping lever or jaw pivoted upon said support, provided with a top plate having a downwardly-extended strap or loop open from front to rear, to permit the passage of a bar-spring, together with a bar-spring supported upwardly at the ends against the shoulders at the ends of the said spring-slot, and impinging at its middle part upon the horizontal portion of the said strap or loop, whereby its pressure upon the edge of said horizontal portion of said strap will bring the clamping-lip down upon the base, substantially as described.

2. In a spring paper-clip, the combination of the base A, provided with a clamp-supporting extension, A^2, a longitudinal spring space or slot extending along the said base and having terminal spring-supporting shoulders A^3 A^3, a central pivot-support, A^4, provided with a transverse pivot groove or seat, A^4, with the vibrating lever B, provided with a clamping-lip adapted to impinge against said extension A^2, and a downwardly-extended strap, B^4 B^4, open from front to rear, and cast or otherwise formed integral with the said clamping-lever B, and provided with a pivot adapted to engage in said pivot-support A^4 and form a pivot-joint therewith, the whole being held in place by the elongated detachable spring C, engaged at its ends under the shoulders A^3 A^3, and passing, under tension, through the strap B^4 B^4, and impinging upon the lower or horizontal portion thereof, substantially as described.

3. In a clip or clamp, in combination with the base A, spring C, and pivoted clamping-lever B, the bearing B^6 A^4, having the lower surface of B^6 convex from side to side, so that the spring C shall tend to bring the clamping-lip down upon the base A^2 with a close fit from side to side, substantially as described.

4. In a clip or clamp, in combination with the base A, spring C, and pivoted clamping-lever B, the bearing B^6 A^4, Fig. 5, having the lower surface of B^6 and the upper surface of A^4 convex and concave, respectively, so that when one or the other is moved from side to side it will vary or adjust the fit of the clamping-jaws, substantially as described.

334,017. LAMP-BURNER. CHARLES H. HUBER, New York, N. Y., assignor to Andrew J. Davies, same place. Filed Apr. 4, 1885. (No model.)



Claim.—1. The combination of the perforated base, tubes D and E, and transverse tube *g*, communicating at the ends with the space between the tubes D and E and tube A, substantially as set forth.

2. The combination, in a lamp-burner, of a base, tubes arranged to form an annular-wick chamber, a flame-deflector, a stationary annular wick connected to or forming a part of a supply-wick extending through the base, and an annular burning-wick arranged to slide outside of and in contact with the stationary wick, and a wick-carrying tube supporting the annular wick and adjustable within the wick-chamber, substantially as set forth.

3. The combination, in a lamp-burner, of a stationary annular wick, a supply-wick extending to the base of the burner connected with the stationary wick, an adjustable annular wick, and an adjustable tube carrying the said adjustable wick, substantially as set forth.

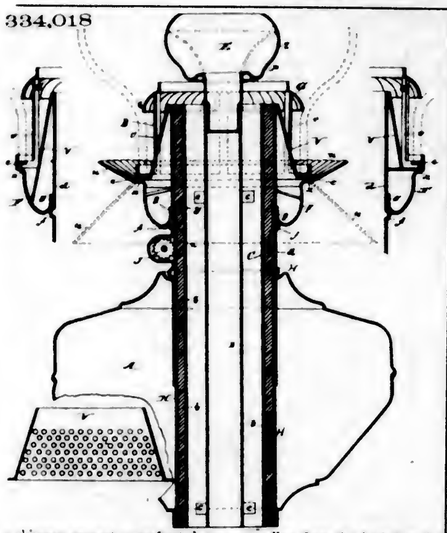
4. The air-tube E of a lamp-burner, provided with an annular groove, *z*, adapted to receive a portion of a stationary wick, in combination with a tube, D, and with a wick-carrying tube vertically adjustable and supporting an annular wick, I, substantially as set forth.

334,018. LAMP. CHARLES H. HUBER, New York, N. Y., assignor to Andrew J. Davies, same place. Filed June 2, 1885. (No model.)

Claim.—1. The combination, with an Argand burner, of a central deflector extending downward and outward from the center and then upward and outward, forming an annular projection on the under side of said deflector, approximating in size the interior of the air-tube, substantially as set forth.

2. The combination, with an Argand burner, of a central flame-spreader, perforated basket surrounding the wick-tube and provided with

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a chimney-support, a perforated cone extending from the basket to the top of the wick-tube, a deflector of greater diameter than the wick-tube extended to a point between the plane of the top of the wick-tube and that of the spreader, and supports for the deflector, substantially as described.

3. The combination, with an Argand burner, of a central flame-spreader, a perforated cone surrounding the wick-tube and extending to the top of the same, and an annular deflector extending above the top of the wick-tube and provided with a slotted flange, constituting a bearing for the chimney, and a bottom rest for the chimney below said flange, substantially as set forth.

4. The combination, with the wick-tube, perforated basket provided with a support for the chimney, central flame-spreader and annular deflector extending above and supported adjacent to the top of the wick-tube, and provided with a slotted flange, forming a bearing for the chimney, of a cone surrounding the wick-tube and extending downward from the top thereof to the basket, substantially as set forth.

5. The combination of the Argand burner, spreader, open-base deflector, and cone provided with an imperforate portion near the top, and supports for the deflector and cone, substantially as described.

6. The combination, with an Argand burner, of a central spreader, a perforated basket surrounding the wick-tube, a perforated cone extending from the base to the top of the wick-tube, an open-base deflector having its upper edge at a point between the plane of the top of the wick-tube and that of the spreader, a slotted flange upon said deflector, and a support for the chimney below the flange, substantially as described.

7. The combination of the Argand burner, spreader, cone extending to the upper end of the wick-tube, perforated at the lower part, and having an imperforate portion at the upper edge, and a deflector, G, having its upper edge on a plane between that of the spreader and that of the upper end of the wick-tube.

334,019. PAINT AND VARNISH. JOHN W. HOARD and FREDERICK R. HOARD, Providence, R. I. Filed Oct. 21, 1884. (Specimens.)

Claim.—1. The above-described varnish, finish, or base or body for paint, composed of linseed or equivalent oil highly oxidized throughout its mass.

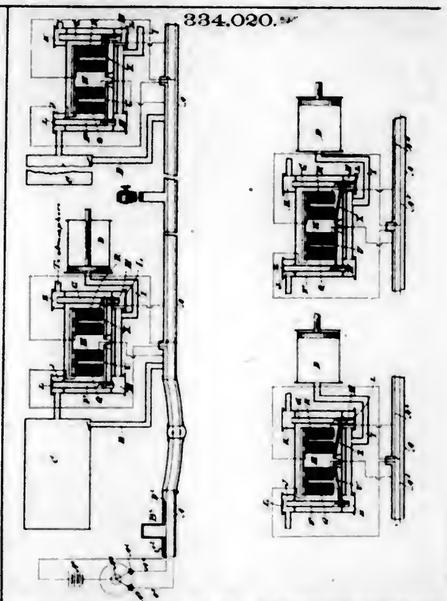
2. A paint, substantially as above described, having a main material or body of linseed or equivalent oil highly oxidized throughout its mass, and a suitable pigment or coloring material in combination therewith.

334,020. ELECTRO-MAGNETICALLY-OPERATED AIR-BRAKE FOR RAILWAY-CARS. HERMAN HOLLERITH, St. Louis, Mo. Filed Apr. 30, 1885. (No model.)

Claim.—1. In an air-brake system, a pair of valves arranged in the lines of communication from a power-chamber to a brake-cylinder, and from the latter to the external air, in combination with electro-magnets in separate circuits or branches, with apparatus for making and breaking such separate circuits or branches, so as to shift such valves either simultaneously or independently, whereby either of said valves may be held open or closed, or both held closed or both open, substantially as described.

2. In an air-brake system, the combination, with the air-supply or power chamber and the brake-cylinder, of independent valves for controlling the admission of air to the brake-cylinder and the exhaustion of air from said cylinder, and electrical apparatus for independently operating said valves, whereby the brakes are enabled to be applied with any desired degree of force, and the pressure upon them is enabled to be augmented or diminished without producing a rise and fall of pressure in the main air-pipe and auxiliary reservoir.

334,020.



3. In an air-brake system, the combination, with a main air-pipe and a series of brake-cylinders arranged on different cars having pistons connected with the brakes thereof, respectively, of a series of valves arranged to connect said cylinders through suitable connections with the main air-pipe, and another series of valves arranged to connect said cylinders with the external air, of two series of electro-magnets, each arranged to operate one series of valves, substantially as described, whereby independent control is given of each series of valves throughout the train, and the simultaneous operation of all the valves of either series insured.

4. The combination, with the main air-pipe of an air-brake system and a series of auxiliary reservoirs and brake-cylinders arranged on different cars, of a series of valves arranged to connect said cylinders with the auxiliary reservoirs, and another series of valves arranged to connect said cylinders with the external air, and two series of electro-magnets, each arranged to operate one series of valves independently of the other series of valves, substantially as described.

5. In an air-brake system, the combination, with an air-supply or power chamber and a brake-cylinder, of an intermediate valve-chamber interposed between the air-supply or power chamber and the brake-cylinder, and having passages leading from the power-chamber to the brake-cylinder and from the latter to the external air, and containing two independent valves for controlling said passages, and electro-magnets, one for each valve, arranged in separate circuits or in different branches of the same circuit, substantially as described.

6. The combination, with the valve-casings having the independent upper chambers in communication with the compressed-air supply and the external air, respectively, and having the lower chamber in communication with the brake-cylinder, of the tubular inlet and exhaust valves having their ends opening into the upper and lower chambers, as described, the armatures for co-operating with said valves, and the electro-magnets by which said armatures are controlled, substantially as described.

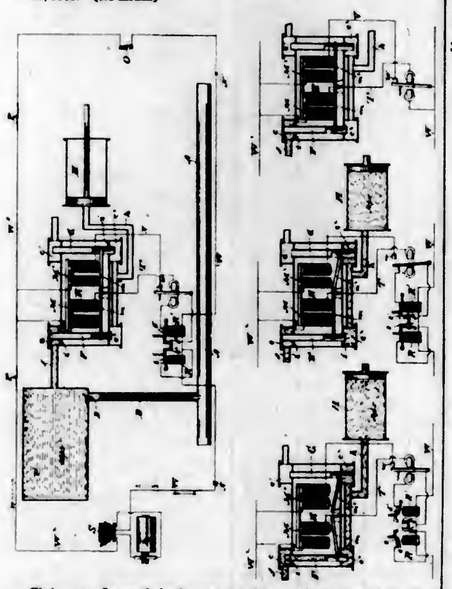
7. In an air-brake system, the combination, with a main air-pipe, and a series of brake-cylinders arranged one on each car and connected mediately or immediately to the main air-pipe, of a series of valves arranged to put the brake-cylinders in connection with the air-supply, and another independent series of valves arranged to connect said cylinders with the external air, two series of electro-magnets, each arranged to control one series of valves, and circuit-conductors extending throughout the train and adapted, when separated or broken, to operate the electro-magnets in a manner to apply the brake, substantially as described.

8. In an air-brake system, the combination of a main air-pipe extending throughout the train, the brake-cylinders on the several cars, connections between said cylinders and the main air-pipe, valves for controlling the inlet and exhaust of air to and from the cylinders, electro-magnets for controlling said valves, an electric valve-circuit extending throughout the train, and one or more pistons with circuit-breaking devices connected thereto controlled by the pressure in the main air-pipe, and adapted, when such pressure falls below a predetermined point, to break the electric valve-circuit and cause the brakes to be applied, substantially as described.

9. In the herein-described air-brake system, and in combination with the main air-pipe and the electric valve-circuit, a piston and valve located in the main pipe, and a circuit-breaker connected to and operated by the piston to open the electric-valve circuit when the pressure in the air-pipe is below a predetermined point, and to open said circuit and at the same time hold back the pressure in the main air-reservoir when a break or opening in the main air-pipe occurs, substantially as described.

10. The combination, with the main air-pipe, of the valve-casing interposed therein, having the upper and lower compartments, the valve-stem carrying the piston at its upper end, and the valve and circuit-breaking device at its lower end, and communicating ports leading from the lower compartment, and from the upper and lower portions of the upper compartment, and the three-way cock, substantially as described.

334,021. ELECTRO-MAGNETICALLY-OPERATED AIR-BRAKE FOR RAILWAY-CARS. HERMAN HOLLERITH, St. Louis, Mo. Filed Apr. 30, 1885. (No model.)



Claim.—1. In an air-brake system, the combination, with a valve arranged in the line of communication from the power-chamber to a brake-cylinder, and another independent valve arranged in the line of communication from the brake-cylinder to the external air, of a main electric circuit having magnets for separately controlling the said independent valves, and a switching device operated by a reversal of the current to cut out the electro-magnet which controls the valves in the line of communication from the brake-cylinder to the external air, substantially as described.

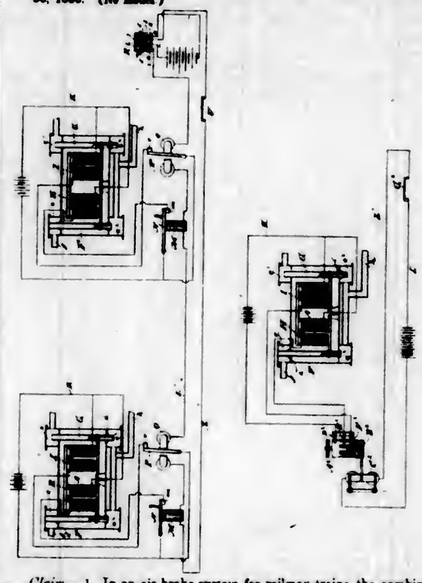
2. In an air-brake system for railway-trains, the combination, on each car, of an air-supply or power chamber, a brake-cylinder and brakes operated thereby, and separate inlet and exhaust valves for controlling the admission of pressure to the brake-cylinders, and the exhaustion of pressure therefrom, with an electric circuit extending throughout the train, and having arranged therein a series of electro-magnets for controlling the inlet-valves, and another series of electro-magnets for controlling the exhaust-valves, a switching device, operated by reversal of the current, to cut out the electro-magnets which control the exhaust-valves, and a switch, under the control of the engineer, for establishing, breaking, or reversing the current in the main circuit, substantially as described, for the purpose specified.

3. In an air-brake system for railway-trains, the combination, on each car, of an air-supply or power chamber, a brake-cylinder, brakes operated thereby, and separate inlet and exhaust valves for controlling the admission of pressure to the brake-cylinder and the exhaustion of pressure therefrom, with an electric circuit having arranged therein an electro-magnet for controlling the inlet-valve, another independent electro-magnet for controlling the exhaust-valve, a switching device operated by the reversal of the current to cut out the electro-magnet which controls the exhaust-valve, and relays for cutting out or putting in both valve-magnets when the main circuit is broken or established, substantially as described.

4. In an air-brake system for railway-trains, the combination, on each car, of an air-supply or power chamber, a brake-cylinder and brakes operated thereby, and separate inlet and exhaust valves for controlling the admission of pressure to the brake-cylinders and the exhaustion therefrom, with an electric circuit extending throughout the train and having arranged therein a series of electro-magnets for controlling the inlet-valves, and another series of electro-magnets for controlling the exhaust-valves, a switching device, operated by reversal of the current, to cut out the electro-magnets which control the exhaust-valves, and a switch, under the control of the engineer, for establishing, breaking, or reversing the current in the main circuit, substantially as described, for the purpose specified.

5. In an air-brake system, the combination, substantially as herein described, of the main air-pipe, auxiliary reservoir, brake-cylinder, intermediate valve-casing, independent inlet and exhaust valves, the main electric circuit and branch circuits T and V, the former including the electro-magnet which operates the inlet-valve, the polarized relay, and the armatures of the relays or magnets in the main circuit, and the latter including the magnet which controls the exhaust-valve, and the armature of the polarized magnet, the whole constructed and arranged substantially as described.

334,022. ELECTRO-MAGNETICALLY-OPERATED AIR-BRAKE FOR RAILWAY-CARS. HERMAN HOLLERITH, St. Louis, Mo. Filed Apr. 30, 1885. (No model.)

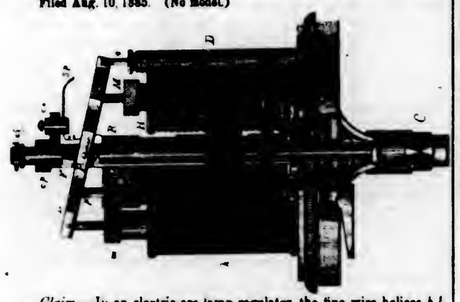


Claim.—1. In an air-brake system for railway-trains, the combination, with separate inlet and exhaust valves for controlling the admission of pressure to the brake-cylinder and the exhaustion of pressure therefrom, of a local circuit on each car, including an electro-magnet for controlling the inlet-valve and an independent electro-magnet for controlling the exhaust-valve, a main circuit extending throughout the train, and switch devices operated by the manipulation of the current in the main circuit for cutting in or out either or both of the valve-magnets, substantially as described.

2. In an air-brake system such as described, the combination, with the inlet-valves for controlling the admission of compressed air from the air-supply or power chamber to the brake-cylinders, and with independent exhaust-valves for controlling the exhaustion of air from the brake-cylinders into the atmosphere, of separate electro-magnets for operating said inlet and exhaust valves, switching devices for cutting out or putting in said valve-magnets, or either of them, from or into local circuits, a main circuit extending throughout the train, electro-magnets in said main circuit for actuating the switching devices, and means for opening and closing the main circuit, substantially as described.

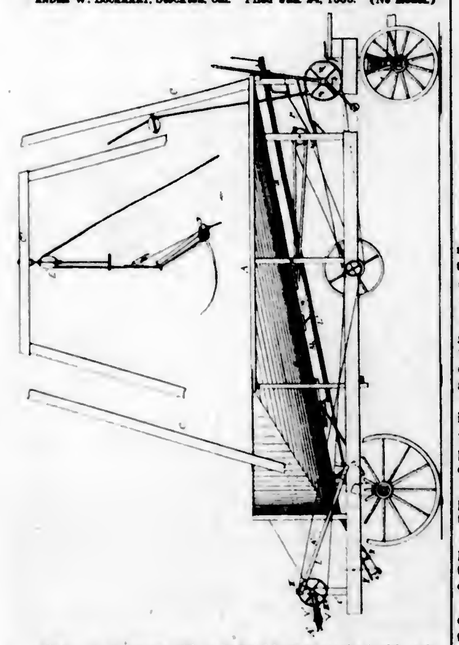
3. In an air-brake system substantially such as described, the combination, with the separate inlet and exhaust valves, of the local circuits including in separate branches electro-magnets for controlling the said inlet and exhaust valves, the main circuit extending through the train and containing the relays for controlling the inlet-valve magnets, and the polarized relays for controlling the exhaust-valve magnets, and switching devices for making or breaking or reversing the current on the main circuit, as set forth.

334,023. ARC-LAMP REGULATOR. JAMES A. JENNEY, Fort Wayne, Ind., assignor to the Fort Wayne Electric Light Company, same place. Filed Aug. 10, 1885. (No model.)



Claim.—In an electric-arc-lamp regulator, the fine-wire helices *h h* in the shunt-circuit, the coarse-wire helices H H in the main circuit, the soft-iron magnets or cores M and *m*, the lever L, the clutch *c*, the resistance R, the dash-pot D, the cut-out spring *sp*, and the cut-out circuit from *sp* through *co* and R to *ew*, each and all constructed, combined, and operated substantially as described and set forth.

334,024. FEED-REGULATOR FOR THRASHING-MACHINES. ALEXANDER W. LOCKHART, Stockton, Cal. Filed Jan. 24, 1885. (No model.)



Claim.—1. A hopper with an inclined bottom provided with reciprocating feeding-bars, in combination with relief-bars operating in conjunction with the feeding-bars and automatically-adjustable toothed arms, receiving the grain from the said feeding-bars and delivering it to the conveyer of the thrashing-machine, substantially as and for the purpose specified.

2. The combination of the tooth N, connecting-rod M, rod L^2, relief-bars O, connecting-levers M', rod L, frame K, arms A^3, and shafts J and J', all operating substantially as and for the purpose specified.

3. The combination of the bars A' and their operating mechanism the shifting-lever P, rod L^2, rod L, frame K, and toothed bars A^3, substantially as and for the purpose specified.

4. The automatically-adjustable arms A^3 and crank-shafts supporting them at more than one point, combined with the frame which is pivotally supported on one of said crank-shafts, substantially as specified.

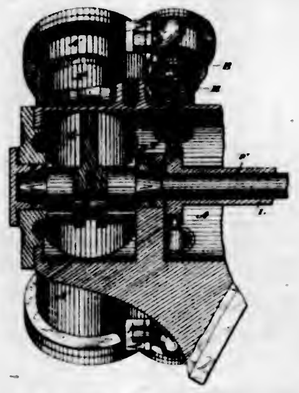
5. The combination of the hopper, the frame K, crank-shafts J and J', toothed arms A^3, and boards R and R', hinged to the rear of the hopper, one of the boards being provided with teeth which extend through the other board, substantially as and for the purpose specified.

6. The combination, with the toothed arms, of the crank-shafts supporting said arms at more than one point and moving coincidently, the frame K, forming journal-bearings for the shafts, and the sprocket-wheels and chain, substantially as and for the purpose specified.

7. In combination with the crank-shafts carrying the toothed arms, the sprocket-wheels and chain, and the frame forming the journal-bearings for the shafts, substantially as and for the purpose specified.

8. The combination of the rod L, frame K, crank-shafts J and J', toothed arms A^3, sprocket-wheels V, rod L^2, rod M, the feed-bars, and the relief-bars, all connected and operating substantially as and for the purpose specified.

334,025. PITMAN ATTACHMENT FOR MULTIPLE-CYLINDER STEAM-ENGINES. MERABEAU N. LYNN, Rising Sun, assignor to the American Electric Headlight Company, Indianapolis, Ind. Filed June 1, 1885. (No model.)



Claim.—1. In a multiple-cylinder steam-engine, as a means for connecting the pitmen to the crank-pin, and in combination with the latter, the headed pitman and sectional yoke applied directly to the crank-pin, the pitmen provided with flanged curved bearings fitting the grooved ways in the said yoke, substantially as described.

2. In combination with the pitman having the bearing *g'* and flanges g^2, the yoke G', provided with the concentric grooves g^{11}, and the pitmen having curved bearings g^9 and flanges g^{10} applied to said yoke and engaging the grooves therein, substantially as and for the purpose set forth.

3. In combination with the head *g* of the pitman, its curved bearings and ways, the sectional yoke, flanged as described, and provided with arms fitting the ways in the head *g*, and the several independent pitmen, each having a curved and flanged bearing engaging and co-operating with the flanges of the yoke, substantially as described.

4. In combination with the pitman and yoke applied to the crank-pin, the independent pitmen mounted in ways upon the yoke, substantially as described.

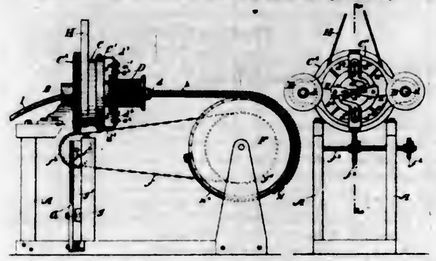
5. In combination with a divided yoke and the series of independent pitmen applied thereto, the pitman applied directly to the crank-pin and the key for securing the yoke to said pitman and confining the independent pitmen upon said yoke, substantially as described.

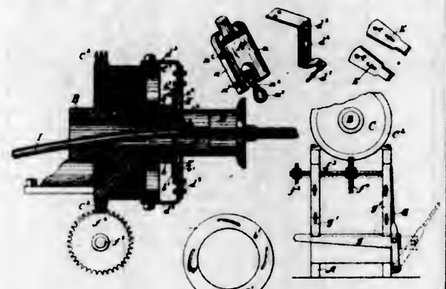
6. In combination with the valves, the socketed pitman and the detachable heads applied to the eccentric and to the pitmen, substantially as described.

7. In combination with the eccentric, as a means for actuating the valve, the sectional collar provided with grooved ways to receive the independent pitmen heads and arms for insertion in the socket of one of the pitmen, substantially as and for the purpose described.

8. In a steam-engine such as indicated, the combination, with the piston having the opening for the passage of the lubricant, of the pitman pivoted to the piston at one end and applied to the crank at the other, and provided with the longitudinal duct or passage, substantially as described.

334,026. MACHINE FOR WINDING WIRE UPON HOSE. IVES W. MCGAFFEY, Chicago, Ill., assignor to Everett B. Preston and George E. Preston, both of same place. Filed Oct. 12, 1885. (No model.)





Claim.—1. The machine for winding wire upon hose, consisting of an exterior mold or form adapted to render the hose self-sustaining and rigid, and forming the only support therefor, in combination with a winding-head rotating around said mold and acting to lay the wire directly on the hose immediately after it has emerged from the mold, substantially as specified.

2. The machine for winding wire upon hose, consisting of an exterior mold adapted to render the hose self-sustaining and rigid, and forming the only support therefor, in combination with a winding-head rotating around said mold and acting to lay the wire directly on the hose immediately after it has emerged from the mold, and positively-actuated feeding devices, substantially as specified.

3. In a machine for winding wire upon hose, the combination of a stationary mold or form for the hose, a winding-head for laying the wire upon the hose as it passes out of said mold, and a positively-actuated receiving-reel, substantially as and for the purpose set forth.

4. In a machine for winding wire upon hose, the combination of a mold or form for the hose, consisting of adjustable sections E and a winding-head having adjustable guides for the wire, substantially as specified.

5. In a machine for winding wire upon hose, the combination, with the winding-head, of a mold or form for rendering the hose rigid and self-sustaining, consisting of adjustable sections E, substantially as specified.

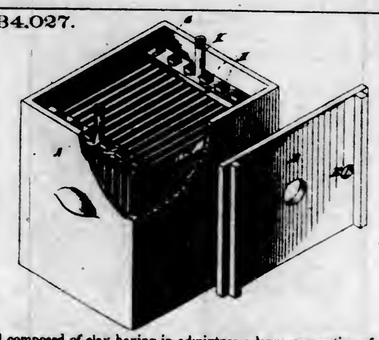
6. In a machine for winding wire upon hose, the combination, with the hose-receiving reel and its driving-chain, of the gear f^4, supported in bearings which may be lowered, as set forth, and the worm C^2, substantially as specified.

7. In a machine for covering hose with wire, the combination, with the mold and the winding devices, of an interior support for the end of the hose, substantially as specified.

8. The combination, in a hose-winding machine, of a hose-receiving reel, and a clamp for connecting the hose to the reel, consisting of a short interior plug, N, and jaws *n*, substantially as specified.

9. The combination, with the winding-head, of the laterally-adjustable bush or eye *d'* for guiding the wire, substantially as specified.

334,027.

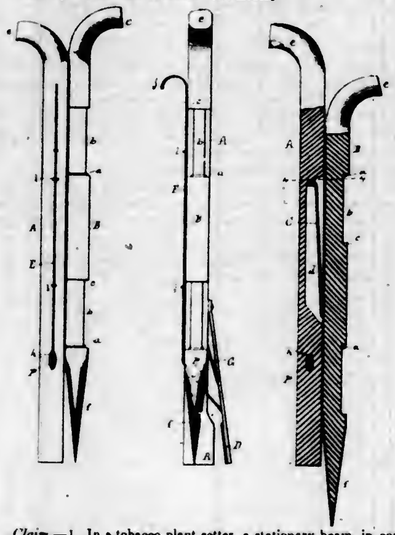


and composed of clay having in admixture a large proportion of fusible silicates, substantially as described.

334,028. SALVE. ANTON MEYER, Empire City, Nev. Filed Sept. 28, 1885. (Specimens.)

Claim.—The herein-described composition of matter to be used for the healing of burns, bruises, &c., consisting of hog's lard, beeswax, fir-balsam, camphor, arnica, and alcohol, in the proportions specified.

334,029. TOBACCO-PLANT SETTER. JOHN B. MITCHUM, Manfordville, Ky. Filed June 29, 1885. (No model.)



Claim.—1. In a tobacco-plant setter, a stationary beam, in combination with an arm pivoted to the lower part of said beam, an interposed spring between said beam and arm, which holds said arm normally away from said beam, and a movable operating-wire secured to the inner face of said arm, substantially as set forth, whereby said arm may be moved toward said stationary beam.

2. In a tobacco-plant setter, a stationary beam and a movable beam pivoted at its lower end, which slides in guides on said stationary beam, in combination with an arm pivoted to said stationary beam, an interposed spring between said arm and stationary beam, and a movable wire secured to the inner face of said arm, substantially as set forth.

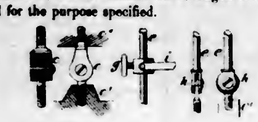
334,027. MANUFACTURE OF EARTHENWARE TANKS OR CELLS FOR GALVANIC BATTERIES. FREDERICK W. MINNER, New York, N. Y. Filed May 14, 1884. (No model.)

Claim.—1. A tank or cell for containing the elements and electrolyte of secondary and other galvanic batteries, the same being of vitrified clay of the described composition—that is to say, a composition of silicate of alumina and silica in about equal proportions, with a small amount of fusible silicates mixed therewith, substantially as described.

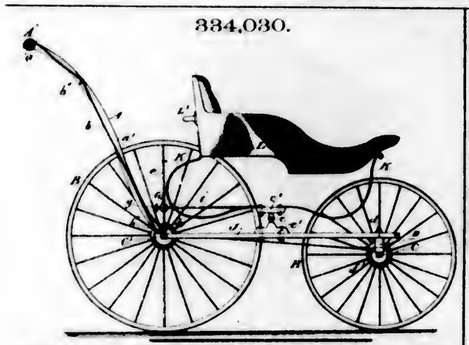
2. A tank or cell for containing the elements and electrolyte of secondary and other galvanic batteries, the same being composed of vitrified clay of the desired composition, glazed with a vitrified slip-glaze intimately combined with and penetrating the body of said vessel,

334,030. BABY-CARRIAGE. JOHN R. MOORE, Newton, Mass. Filed Aug. 17, 1885. (No model.)

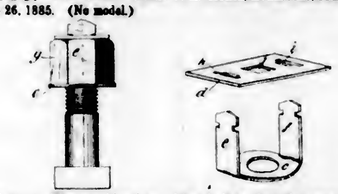
Claim.—The combination, with a baby-carriage running-gear, of a body and springs therewith connected by a pivot-joint, *c*, the rods *i i*, the sliding sleeve G, and the vertical rod *e*, hinged to rear axle, substantially as and for the purpose specified.



334,030.



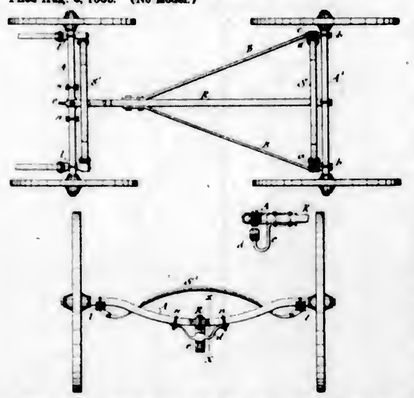
334,031. NUT-LOCK. JAMES F. M. MORSE, Evansville, Ind. Filed June 26, 1885. (No model.)



Claim.—1. The combination, with a bolt having the extreme end of its threaded portion angular in section, and a nut adapted to be screwed on said bolt, of a washer having a pair of arms adapted to embrace and to extend beyond the face of said nut, and a plate having a central perforation adapted to engage the said angular portion of the bolt and arranged to interlock with the arms of the washer, all arranged to co-operate substantially as and for the purpose specified.

2. The combination, with a bolt having an angular portion, *b*, and a nut, *g*, of washer *e*, having arms *e* and *f*, and plate *d*, having perforation *j*, and slots *h* and *i*, said plate being arranged to engage portion *b* of the bolt and to interlock with arms *e* and *f* of the washer, substantially as and for the purpose specified.

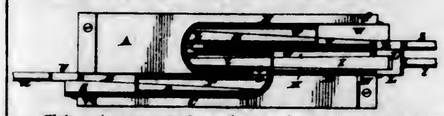
334,032. SPRING-VEHICLE. HARVEY A. MOYER, Syracuse, N. Y. Filed Aug. 6, 1885. (No model.)



Claim.—1. In combination with the hind axle, A', and central reach, R, the reach-braces B B, attached to said axles near the wheels thereof, and formed in front of the axle with the straight cylindrical portions *c c*, and extended thence diagonally to the reach, the hangers *a a*, hung on the reach portions *c c* and retained in position by the diagonal deflection of the reach, and the spring S, coupled to the said hangers, all constructed and combined substantially in the manner specified and shown.

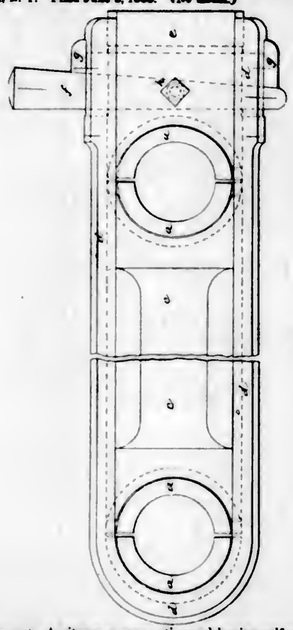
2. In combination with the forward axle and the reach R, pivoted on the center of the axle, the arch or brace *d*, arranged lengthwise the axle and secured thereto at opposite sides of the reach and having its central portion deflected from the axle, and the brace *e*, projecting from the reach and pivoted on the brace *d*, substantially as described and shown.

334,033. MOLD FOR CASTING STENCH-TRAPS. EDWIN H. MUNDOM, Cincinnati, Ohio. Filed Jan. 24, 1885. (No model.)



Claim.—An apparatus for casting stench-traps having three communicating chambers, which apparatus includes a divided mold furnished with three matrices, each matrix having a sectional core-bar fitted therein, and said core-bars being provided with lateral stamps that form the passages between said chambers, in the manner herein described.

334,034. JOURNAL-BEARING FOR CRANK-CONNECTING RODS. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed June 3, 1885. (No model.)



Claim.—1. A pitman or connecting-rod having self-adjusting bearing-boxes seated upon the opposite ends of the rod, in combination with a separate strap forming a bearing for one of said end boxes and confining said rod and separate end boxes upon their seats, substantially as described, for the purpose specified.

2. The combination, with a journal-bearing box composed of two semi-ring sections having a circumferential bearing of the form of a section of a sphere, of a rod having bearing-seats corresponding to the arc-bearing of the box, a confining and inclosing strap extending the length of the rod, and a fastening-key and gib, substantially as described, for the purpose specified.

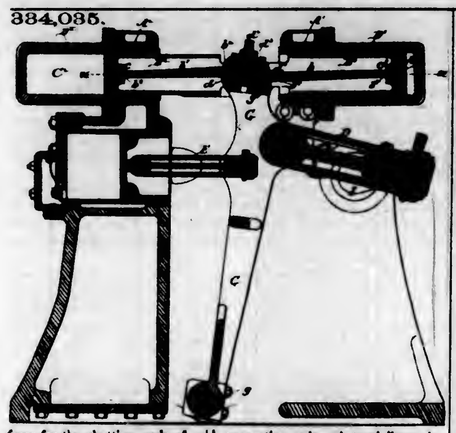
3. A connecting-rod having its ends formed concave transversely, in combination with a divided ring-bearing box seated therein, the abutting block, the inclosing and confining strap, and means for securing it to said abutting block, the latter and the boxes having a conformation corresponding to the crosswise form of the end of the rod and the inner wall of the strap and outer edges of the rod, and of the abutting block having a form corresponding to the arc-bearing of the box, substantially as described.

4. A self-adjusting journal-bearing box composed of two semi-ring sections, in combination with a connecting-rod and means, substantially such as described, whereby the said bearing-ring sections are secured upon the ends of the rod, substantially as hereinbefore set forth.

334,035. CONNECTING-ROD FOR PISTONS, &c. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed June 3, 1885. (No model.)

Claim.—1. The combination, with a rectilinear-moving device, of a connecting-rod device therefor, consisting of separate and independent connecting-rods, and a vibratable or rocking arm having bearing-surfaces for the abutting ends of said connecting-rods, substantially as described, for the purpose specified.

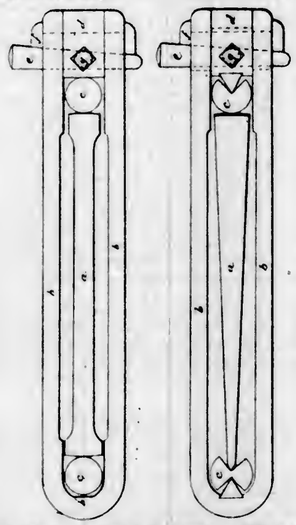
334,035.



2. The combination, with a rectilinear-moving device having bearing-seats, of a rocking or vibratable arm having bearing-seats on opposite sides and independent connecting-rods having rolling or rocking contact-seats upon the vibratable arm and upon the rectilinear-moving device, substantially as described, for the purpose specified.

3. The combination, in a connecting-rod device, of a rectilinear-moving device and a pivoted arm having its non-pivoted end entering an open way in said rectilinear-moving device at or about the middle of its length, provided with curved steel bearings on opposite sides, with independent connecting-rods having abutting and contact bearings upon the moving parts, and one or more operating-rods connecting the pivoted arm, substantially as herein described, for the purpose specified.

334,036. BEARING-PIN CONNECTING-ROD. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed June 3, 1885. (No model.)



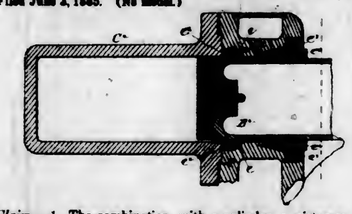
Claim.—1. The combination, in a connecting-rod having pin-bearings, of a rod and its bearing-pins having points of bearing contact at each end of the rod, adapted to rock or to roll upon each other, substantially as described, for the purpose specified.

2. In a connecting-rod having pin-bearings, the combination, with the rod and its pin-bearings having points of bearing contact at each end of the rod, adapted to roll or to rock upon each other, of a strap inclosing said bearing-pins and the rod having a contact bearing-point upon one of said pins, substantially as described, for the purpose specified.

3. The combination of a connecting-rod having abutting end bearings with the bearing-pins, a strap inclosing said bearing-pins, and the rod having a contact bearing-point upon one of said pins, and an abutting block having a contact bearing-point upon the other of said pins, and means for securing said strap to said abutting block and of adjusting the bearings upon the pins, substantially as described, for the purpose specified.

4. A connecting-rod having abutting point bearing ends, substantially flat, in combination with the bearing-pins, an abutting block having a flat bearing upon one of said pins, a strap having a flat bearing upon the other of said pins inclosing both pins, the abutting rod, and the abutting block, and a key and a gib for securing and adjusting the bearing parts, substantially as described, for the purpose specified.

334,037. PLUNGER-PACKING FOR ENGINES. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed June 3, 1885. (No model.)

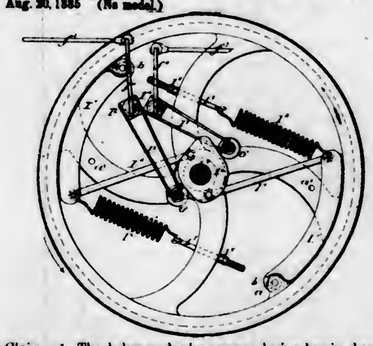


Claim.—1. The combination, with a cylinder, a piston or plunger, and a packing-ring for the latter, of an adjustable ring-bearing seat for the plunger independent of the packing-ring, arranged at the open end of the cylinder, substantially as described, for the purpose specified.

2. The combination, with a piston or plunger and a cylinder having a packing-ring, of an independent bearing-ring, its inner wall containing metalline, and arranged to lubricate the walls of the plunger and the said packing-ring, substantially as set forth.

3. The combination, with the cylinder, the plunger, and the packing-ring therefor, of an independent lubricating bearing-ring, seated upon an inclined seat in the cylinder-walls, and an adjusting screw-ring fitted in said cylinder upon the said lubricating bearing-ring, substantially as described, for the purpose specified.

334,038. GOVERNOR FOR GAS-ENGINES. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Aug. 20, 1885. (No model.)



Claim.—1. The balance-wheel governor device herein described, consisting of the pivoted weights I', the springs I^2 and their adjusting connections, the loose cam I^4, and the links I^3, connected thereto and to the free ends of said weight-arms, in combination with the rocking arm I^5, the lever f^6, and the supply-valve, as set forth.

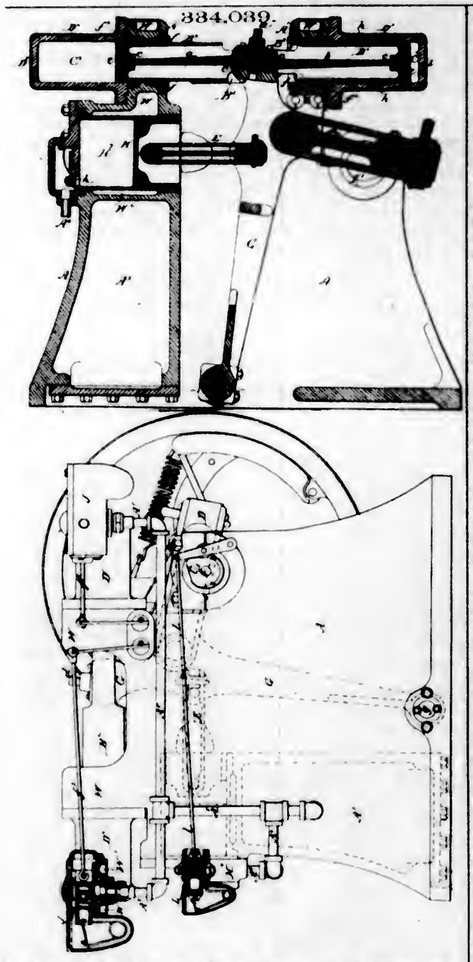
2. The combination, with the slide-valve, the loose cam, and the rocker-arm I^5, connected with said valve, of a spring for maintaining the rocker-arm in contact with said cam, and a governor device carried by the balance-wheel, consisting of the pivoted weights, the adjustable springs, and the links, all constructed and arranged to operate in the manner and for the purpose described.

3. A balance-wheel governor consisting of the pivoted weights, the springs for supporting the weights, the links, the loose cam, and means for adjusting the tension of said springs to change the speed of the engine, substantially as described.

334,039. GAS-ENGINE. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Aug. 20, 1885. (No model.)

Claim.—1. The combination, in a gas-engine, of a double-ended plunger with bearing-cylinders therefor placed in line, having cooling-jackets and separate combustion-chambers formed of non-jacketed cylin-

334,039.



der-caps having their inner walls free of contact with the plunger-trunks, and suitable operating connections for the double-ended plunger and power-transmitting crank, substantially for the purpose specified.

2. The combination, in a gas-engine, of a double-acting piston or plunger with a combustion-cylinder chamber for each end of said plunger, and a pivoted rocker-arm having suitable connections with the said plunger between the opep ends of said cylinder-chambers, and suitable connections with the crank-shaft between the plunger and pivot of said rocker-arm, substantially as described, for the purpose specified.

3. The combination, in a gas-engine, of a bearing-cylinder having a water-cooling jacket and a combustion-chamber formed thereon by a separate cap, with an induction-valve case having a water-jacket mounted upon the hot combustion-chamber, whereby the bearing-cylinder and the supply-valve are prevented from being unduly heated while the combustion-chamber is maintained highly heated, substantially as described, for the purpose specified.

4. In combination, in a gas-engine, a bearing-cylinder, a plunger, a separate cap forming combustion-chamber, and joint-forming rings having a bearing upon said plunger, the said cylinder having a length less than the stroke of the engine, the said cap forming combustion-chamber having an interior diameter greater than that of the plunger, to allow the latter to operate therein, and maintained at a greater heat than said cylinder, substantially as described, for the purpose specified.

5. The combination of the bearing-cylinders placed in line and separate cap forming combustion-chambers, with a double-end plunger, the separate plunger connecting-rods *a b*, and an air-compression cylinder arranged parallel with the bearing-cylinder, with a pivoted rocker-arm, G, connecting said plunger between the open ends of said cylinders, the crank-shaft connecting-rod D, and compressor connecting-rod E, whereby the combined power of the cylinders is transmitted in a rotary motion for the crank-shaft and a reciprocating motion for the compressor, substantially as described.

6. The combination of the power trunk-cylinders arranged in line, the double-ended plunger, and the rocker-arm, with the connecting-rods D and E, the compression-cylinder, the storage-chamber, the engine supply-valves, and the supply-connections for the charge for both cylinders, substantially as described.

7. A gas-engine composed of two power-cylinders placed in line, each having a combustion-chamber, and a rigid double-ended piston or plunger having power-transmitting connections adapted to rock upon contact-bearings upon each piston-head and upon the said power-connections, substantially as described.

8. The combination, in a gas-engine, of two power-cylinders placed in line, and a piston or plunger for each cylinder rigidly connected, having power-transmitting connections adapted to rock upon contact-bearings at their points of connection, and a compression-pump connected with said piston-rocking connections, substantially as described, for the purpose specified.

9. The combination, in a gas-engine, of a double-ended plunger, with bearing-cylinders therefor placed in line, and separate combustion-chambers formed of cylinder-caps having their inner wall free of contact with the plunger-trunks, and suitable operating-connections for the double-ended plunger and power-transmitting crank, substantially as described, for the purpose specified.

10. The combination, in a gas-engine, of two power-cylinders placed in line, and jointed connected pistons or plungers for each cylinder, with an independent cylinder and piston arranged below one of said power-cylinders, a power-transmitting shaft arranged below the other power-cylinder, and suitable connections for the moving parts, substantially as described.

11. The combination, in a gas-engine, of two short bearing-cylinders arranged in line, with a piston or plunger for each cylinder, having a stroke greater than the length of said cylinder, a combustion-chamber forming cap for each cylinder, and suitable operating-connections for said plungers, substantially as described, for the purpose specified.

12. The combination, in a gas-engine, of two power-cylinders placed in line, and connected pistons or plungers for each cylinder, with a storage supply-chamber, and suitable supply-connections for the charge for both cylinders, substantially as described.

13. The combination, with the power-cylinders, each having a combustion-chamber placed in line and a separate piston for each cylinder, of a connecting-rod device for said pistons, consisting of separate and independent connecting-rods, and a vibratable or rocking arm having bearing-surfaces for the abutting ends of said connecting-rods, substantially as described, for the purpose specified.

14. The combination, with the powar-cylinders placed in line and a piston for each cylinder, of a rocking or vibratable arm having bearing-seats on opposite sides, and independent connecting-rods having rolling or rocking contact-seats upon the vibratable arm and upon the pistons, substantially as described, for the purpose specified.

15. The combination, with the power-cylinders placed in line and a piston for each cylinder rigidly connected, of a pivoted arm having its non-pivoted end entering an open way in said rigid piston connection at or about the middle of its length, provided with curved bearings on opposite sides, and independent connecting-rods having abutting end bearings upon the moving parts, substantially as described, for the purpose specified.

16. The combination, with two power-cylinders, each having a combustion-chamber placed in line and rigidly-connected pistons for each cylinder, of a pivoted arm having a fixed and an adjustable bearing, the independent rods connecting the pivoted arm, and an adjusting device for said rocker-arm bearing, substantially as described, for the purpose specified.

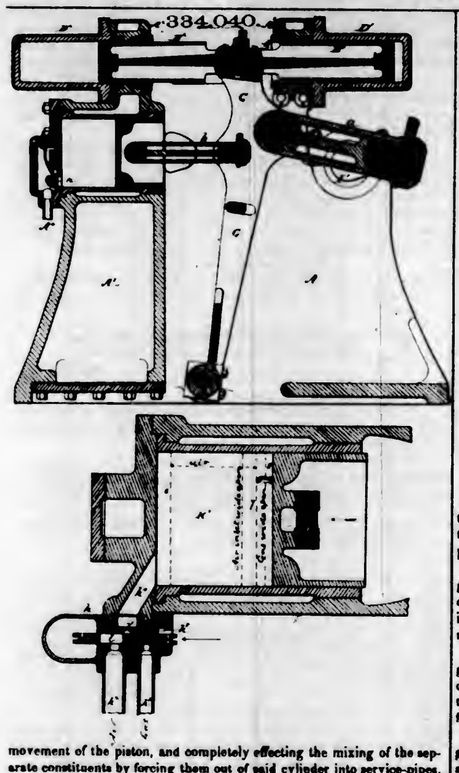
334,040. METHOD OF FEEDING AND OPERATING GAS-ENGINES. LEWIS H. NASH, Brooklyn, assignor to the National Motor Company, New York, N. Y. Filed Aug. 20, 1885. (No model.)

Claim.—1. The method herein described of feeding a gas-engine, which consists in measuring each constituent separately by admitting each separately into a compression-pump during a time corresponding to a definite movement of the piston, compressing the constituents in their imperfectly mixed state, and effecting their complete mixing in their passage into the power-cylinder, as set forth.

2. The method herein described of feeding a gas-engine, which consists in measuring each constituent separately by admitting each in separate succession into a compression-pump during a time corresponding to a definite movement of the piston, and compressing the partially-mixed constituents into a supply-reservoir, as described.

3. The method herein described of forming a gaseous mixture, which consists in measuring each constituent separately, by admitting each separately into a cylinder during a time corresponding to a definite

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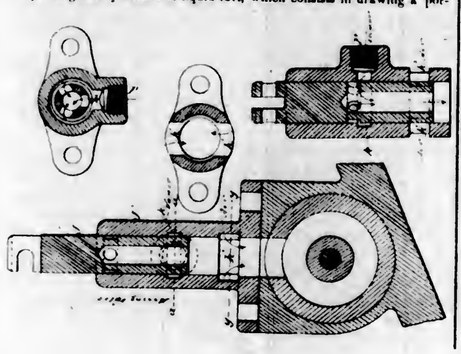
movement of the piston, and completely effecting the mixing of the separate constituents by forcing them out of said cylinder into service-pipes, as described.

4. The method herein described of operating and governing the power of an explosive-gas engine, which consists in measuring each constituent separately into a cylinder during a time corresponding to a definite movement of the piston, mixing them to the same density under all conditions of the running of the engine, and controlling the power of the engine by varying the volume of the charge by a governor, as described.

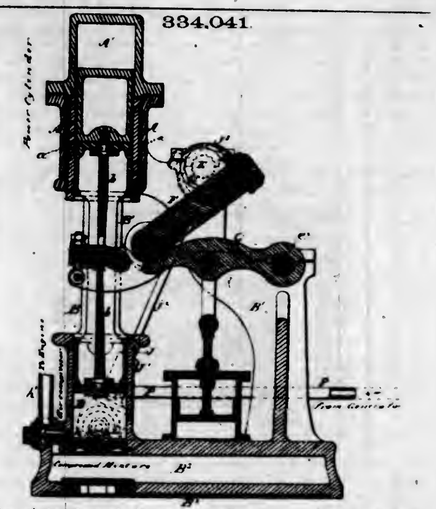
5. The method herein described of governing the power of an explosive-gas engine, which consists in forming an intimate gaseous mixture of uniform density, admitting it in charges into the power-cylinder, igniting the charge therein, and controlling the power of the engine by a governor, which regulates the quantity of the uniform combustible mixture for each charge, as described.

334,041. METHOD OF OPERATING EXPLOSIVE-VAPOR ENGINES. LEWIS H. NASH, Brooklyn, assignor to the National Motor Company, New York, N. Y. Filed Sept. 5, 1885. (No model.)

Claim.—1. The method herein described of operating explosive-vapor engines by means of liquid fuel, which consists in drawing a portion



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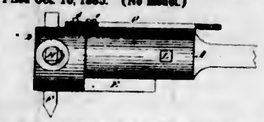
tion of the air-supply for the charge through a volatile fuel, regulating the quantity of such constituent so drawn in by a governor, and completing the charge by drawing into it a separate supply of air.

2. The method herein described of operating explosive-vapor engines by means of liquid, which consists in drawing a portion of the charge through a volatile liquid fuel into a chamber and admixing with it another portion of air to complete the charge and compressing the mixture before its ignition.

3. The method herein described of operating explosive-vapor engines by means of liquid fuel, which consists in utilizing the suction of a compression-pump to draw therein a portion of the air through a volatile liquid fuel, and forcing it therefrom with another portion of air to form the combustible mixture.

4. The method herein described of operating explosive-vapor engines by means of liquid fuel, which consists in drawing a portion of the air-charge through a heated volatile fuel to evaporate it, conveying it into a compressor, mixing it therein with another portion of the air-charge, compressing the same, and regulating the supply of the fuel-laden air from the said heater by the controlling action of a governor.

334,042. TOOL-HOLDER. EDWARD F. NOYES, Hamilton, Ontario, Canada. Filed Oct. 10, 1885. (No model.)



Claim.—1. In a tool-holder for holding tools for cutting internal screw-threads, the combination of the bar A and a movable tool-box, D, attached thereto, and provided with openings for cutting-tools to be inserted therein, substantially as and for the purpose specified.

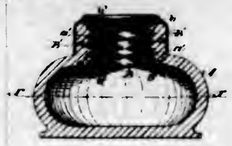
2. In a tool-holder, the combination of the bar A, movable box D, and tool F, for cutting screw-threads on large internal diameters, substantially as specified.

3. In a tool-holder, the bar A, having the lug E attached thereto, in combination with the movable box D, having the projection *a*, substantially as described.

4. In a tool-holder, the combination of the movable box D, bar A, lever O, and pin *e*, substantially as and for the purpose specified.

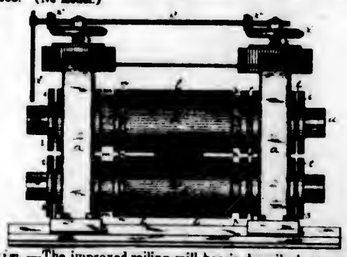
5. The combination, with the movable box D, provided with the groove J, of the collar K and cup set-screw L, for securing the box to the bar A, as specified.

334,043. LAMP-COLLAR. WILLIAM B. PALMER, Greenwich, N. Y. Filed Aug. 26, 1885. (No model.)



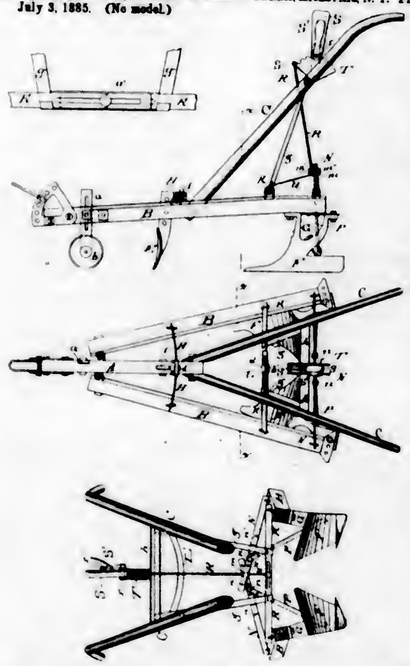
Claim.—The combination, with the body A of the lamp provided with an annular rim, *a*, having an internal screw-thread, *a'*, formed in the opening thereof, as herein described, of a metallic collar, B, provided with an external screw-threaded portion, *b*, adapted to engage in the screw-thread *a'* and expanded under the shoulder a^2, an upper collar, *b'*, having an internal screw-thread, b^2, and a pendent cylindrical curtain, B', concentrically arranged to said collar B, to fit over the annular rim *a* of the lamp-body, as herein specified.

334,044. ROLLING-MILL. JOHN PEDDER, Pittsburg, Pa. Filed Jan. 2, 1885. (No model.)



Claim.—The improved rolling-mill herein described, comprehending in its construction the rolls having plain surfaces for flat and cross rolling and grooves within the housings, and with other grooves exterior to the housings for edge-rolling, and mechanism for adjusting, as usual, the rolls toward and from each other.

334,045. CULTIVATOR. WILLIAM C. PETERS, Hicksville, N. Y. Filed July 3, 1885. (No model.)



Claim.—1. The combination, with the center beam, A, and adjustable side beams, B, and handles C, of the slotted bars K, bolt L, bars N, having holes *n'* and centrally connected by a suitable bolt, rod R, a lifting-lever, S, and a suitable pawl and ratchet for retaining said lever in position when the rod is lifted, all substantially as and for the purpose herein set forth.

2. The combination, with the center beam, A, and adjustable side beams, B, and handles C, of the slotted bars K, bolt L, bars N, having holes *n'* and centrally connected by a suitable bolt, rod R, a lifting-lever, S, a suitable pawl and ratchet for retaining said lever in position when the rod is lifted, slotted bars H, and fastening bolt or device *d*, all substantially as and for the purpose herein set forth.

3. The combination, with the center beam, A, and adjustable side beams, B, and handles C, of the slotted bars K, bolt L, bars N, having holes *n'* and centrally connected by a suitable bolt, rod R, a lifting-lever, S, a ratchet, T, fixed in relation to the handles, a pawl, *r*, arranged to slide transversely through the lever, and a secondary lever, S', pivoted to the lever S, to actuate the said pawl, all substantially as and for the purpose herein set forth.

4. The combination, with the center beam, A, and adjustable side beams, B, and handles C, of the slotted bars K, bolt L, bar N, having holes *n'* and centrally connected by a suitable bolt, rod R, a lifting-lever, S, a ratchet, T, fixed in relation to the handles, a pawl, *r*, arranged to slide transversely through the lever, and a secondary lever, S', pivoted to the lever S, to actuate the said pawl, slotted bars H, and fastening bolt or device *d*, all substantially as and for the purpose herein set forth.

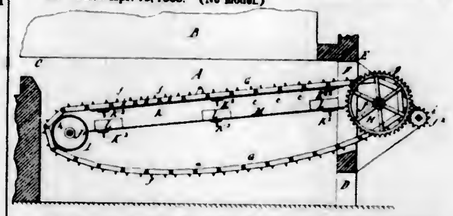
334,046. MUCILAGE-HOLDER. CHARLES S. PINKHAM, Boston, Mass., assignor to Etta G. Pinkham, same place. Filed May 9, 1885. (No model.)



Claim.—1. A mucilage holder and swab consisting of the combination of a rigid receptacle or body, a sponge or other absorbent materials, and an elastic bulb, substantially as described.

2. In a mucilage holder and swab, the combination of a rigid receptacle or body having a contracted neck, and a shoulder, a sponge, a bulb, and a cap, substantially as described.

334,047. ENDLESS-CHAIN GRATE. TOWNSEND POORE, Scranton, Pa. Filed Apr. 15, 1885. (No model.)



Claim.—1. A grate for boiler-furnaces and heating structures, formed of two or more endless chains which are suitably supported in a fire-chamber, and can be operated separately or together, substantially as and for the purpose described.

2. A grate for boiler-furnaces, formed of two or more endless chains which are longitudinally separated by intermediate girders, K', supported by girders K and K^2, and are operated either forward or backward separately or together by a driving sectional spider and sliding pinions at one end, and supported at the other end by a plain sectional drum, substantially as and for the purpose described.

3. The combination, with an endless chain forming a grate-surface or fire-supporting bed for a boiler-furnace and heating structure, of a driving-spider, H, forming a flanged drum, and a plain drum, I, substantially as and for the purpose set forth.

4. The combination, with a grate formed of a series of endless chains suitably arranged and supported in a fire-chamber, of a series of sliding pinions on a shaft and a series of spur-wheels applied on a sectional spider, substantially as and for the purpose described.

5. The combination, with the T and L shaped longitudinal girders K K', of the transverse girders K^2, fastened to the side walls, and the sectional endless-chain grate G, provided with a plain sectional drum, I, a sectional spider, H, and suitable mechanism for moving the sections of the grate separately or together, substantially as described.

6. The combination, with an endless-chain grate suitably arranged and operated in a fire-chamber, of the platform or screen M, supported by suitable girders, K^2, substantially as and for the purpose described.

7. The combination, with the fire-chamber of boiler-furnaces and heating structures provided with the draft and cleaning doors L, of the endless-chain grate, substantially as and for the purpose described.

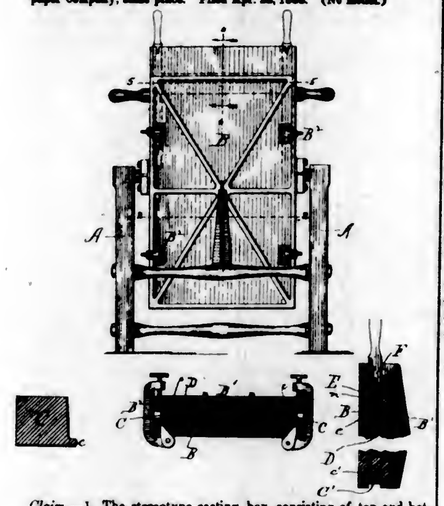
8. The endless-chain grate formed of links pivoted together by pins *c*, provided with cotters *d*, substantially as and for the purpose described.

9. The endless-chain grate formed of links which are provided with angular depressions *e* on their under side, for the wings of the spider to catch upon, substantially as and for the purpose described.

10. The endless-chain grate formed of links provided with ribs *f* on their upper surfaces, substantially as and for the purpose described.

11. Sections, as *a a' a²* a^3, of an endless-chain grate guided by the horizontal flanges of T-shaped girders, and separated by the vertical web of said girders, said legs forming horizontal surfaces flush with the upper surface of the grate-sections, substantially as described.

334,048. STEREOTYPE-CASTING BOX. EDWIN E. PRATT and CHARLES S. PARTRIDGE, Chicago, Ill., assignors to the A. N. Kellogg Newspaper Company, same place. Filed Apr. 22, 1882. (No model.)



Claim.—1. The stereotype-casting box consisting of top and bottom plates and the guides and head-piece, in combination with stripe upon opposite sides, supported from the bottom plate, and positioned and otherwise adapted, as specified, to support the wood backing uniformly at the proper remove from the matrix, and to act in conjunction with the top to clamp the backing in the direction of its thickness, and thereby to straighten it and prevent its curling under the heat of the mold, substantially as specified.

2. The mold for casting stereotypes upon wood backs, consisting of the bottom B, top B', side rails, C C, head-guide C', tail-block E, constructed as shown, and stripe c c, substantially as specified.

3. The mold for casting stereotypes upon wood backs, consisting of the bottom B, top B', side rails, C C, head-guides C', tail-block E, and stripe c c c' e, substantially as specified.

4. The combination, in a stereotype-casting box, of the side guides and their ledges, and the tail-piece resting upon said ledges, substantially as specified.

5. The stereotype-casting box provided with a removable tail-piece at the pouring end, and supports for said piece, whereby it is sustained above the pouring-channel, substantially as specified.

334,049. VEHICLE-HUB AND AXLE-COUPLING. JOHN RADDIN, Lynn, Mass. Filed Apr. 3, 1885. (No model.)



Claim.—In combination with the axle-arm A, provided with the circumferential groove a^2, the axle-skein C, having the radial opening *c'*, the locking-block D, fitting into said opening and engaging with said groove, and the sprung-clip E, adapted to embrace the enlarged part c of said skein and to hold said block in place, substantially as and for the purpose set forth.

334,050. BLIND FOR BRIDLES. ALBERT F. RAMSOM, Burlington, Wis. Filed May 25, 1885. (No model.)



334,050.



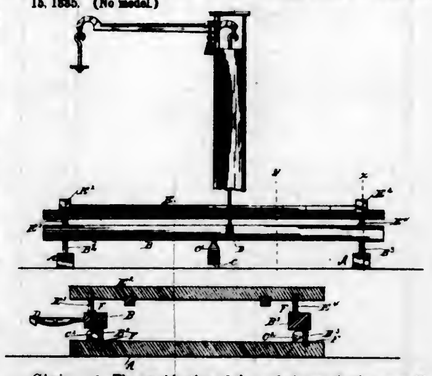
Claim.—1. A headstall provided with a single blind extending from one side strap thereof to the other, the central portion of said blind forming a single forwardly-projecting visor, substantially as set forth.

2. A blind for headstalls, consisting of the central curved portion, *a*, provided with a stiffening-piece, *c*, and the end portions, *b*, forming the sides of the blind, substantially as set forth.

3. A blind for headstalls, adapted to extend from one side strap of the headstall to the other, said blind consisting of the central curved portion, *a*, and end pieces, *b*, and being provided on its upper side with a series of ventilating-holes, *g*, substantially as set forth.

4. A blind for headstalls, adapted to extend from one side strap of the headstall to the other, said blind consisting of the central curved portion, *a*, forming a forwardly-projecting visor, and end portions, *b*, forming the sides of the blind, the upper side of said blind being provided with holes *d* for the overcheck, substantially as set forth.

334,051. PIVOT-SCALE. JOSEPH S. REHLING, Davis, Pa. Filed Aug. 15, 1885. (No model.)



Claim.—1. The combination of the main beams having metallic cups set therein, cross-beams provided with coincident projections depending from their lower side and resting in said cups, a platform having depending projections spaced at a distance apart equal to the distance between the lower cups and bearing on the upper side of the cross-beams to one side of their supports, as and for the purposes set forth.

2. The combination, with the main supporting-beams, of the cross-beams provided with pivot-pins which rest upon the main beams, and the platform provided with pivot-pins resting upon the cross-beams, substantially as shown and described.

3. The hereinbefore-described platform-scales, comprising the main beams, the cross-beams provided with pivot-pins which rest upon the main beams, one of said cross-beams being provided with a hook, a scale-beam connected with said hook, the brace connecting the two cross-beams, hangers depending therefrom and pivotally attached to the opposite ends of the brace, and the platform provided with pivot-pins resting upon the cross-beams, all arranged and operating substantially as set forth.

334,052. SPIRIT-LEVEL. SAMUEL REID and JOHN C. THAYER, Chicago, Ill.; said Reid assignor to said Thayer. Filed Mar. 30, 1885. (No model.)



Claim.—1. In a spirit-level, a continuous spirit-chamber, the outer wall of which is polygonal, substantially as described.

2. In a spirit-level, a glass ring provided with a continuous spirit-holding chamber, the outer wall of which is polygonal, substantially as described.

3. In a spirit-level, the combination, with the glass ring, provided with a continuous groove on its under side, of an annular stopper for closing the outer portion of said groove, substantially as described.

4. The annular spirit-chamber, in combination with the scale-plate arranged within the circle of said chamber, substantially as described.

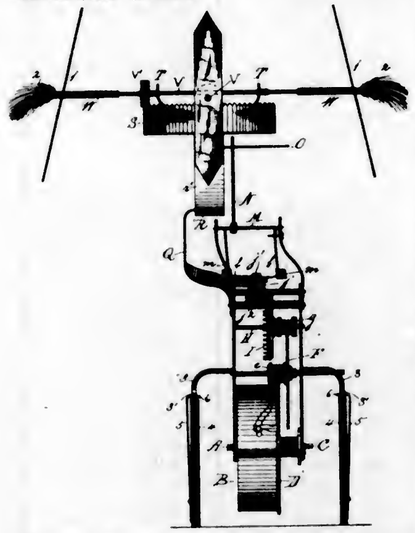
5. The glass ring, the continuous spirit-chamber thereof, the stopper, and a base-support therefor, in combination with a plate mounted upon the ring and a screw-bolt passing through said plate, and tightening said plate upon the ring, and locking the stopper in the spirit-chamber of the ring, substantially as described.

6. In a spirit-level, a continuous spirit-chamber, the outer wall of which is polygonal and each side of said polygon is perpendicular to the line drawn from the middle thereof to the center of the circle forming the inner wall of said spirit-chamber, substantially as described.

7. In a spirit-level, a spirit-chamber, the outer polygonal wall of which is so constructed that the sides which make with the edge of the stock the angles which are nearest in value shall be arranged approximately opposite each other, substantially as described.

8. In a spirit-level, an annular spirit-chamber provided with a polygonal outer wall, in combination with scale-marks on the outer and inner sides of said chamber, said scale-marks registering with each other on a line at a right angle to and through the center of length of each side of said polygon, substantially as described.

334,053. **AUTOMATIC FAN.** JOHN W. RYEARD, Abbeville, S. C. Filed Oct. 9, 1884. (No model.)



Claim.—1. The clock-work comprising the spring, the train of gearing, the shaft *j'*, the pinion *j*, the disk provided with tappets *l*, the shaft M, carrying pallets *m*, and crutch N, in combination with the pin O, the spindle P, the stationary crown-wheel, the fan-shafts V, having pinions V' and their supports connected with spindle P, whereby the fan-shafts are supported and driven and given a reciprocating circular and rotary motion, substantially as described.

2. In combination with the frame carrying the clock mechanism, the bracket Q, and the frame R, said frame R being supported by said bracket and provided with arms *r'*, extending upward and carrying the stationary crown-wheel S, the spindle P, and the arms T, secured to said spindle and carrying the fan-shafts, which are provided with pinions that engage with said crown-wheel, substantially as described.

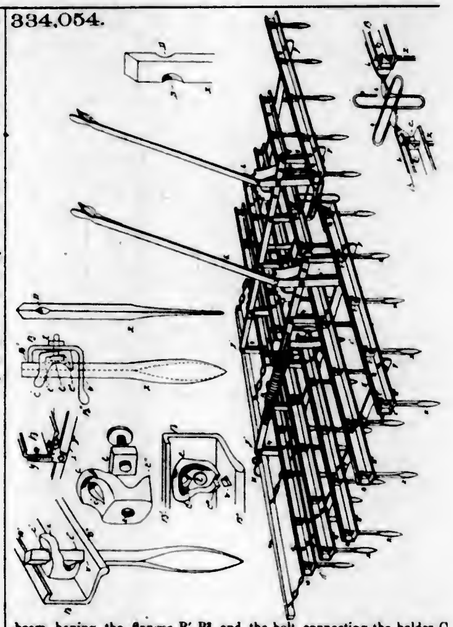
3. In an automatic fan and fly-brush machine, the clock mechanism described, in combination with the shaft M, a crutch, the spindle P, and the adjustable pin O, for operating the fan and brush shafts and giving them their circular motion, substantially as described.

334,054. **HARROW.** HANS H. SATER, Dubuque, Iowa. Filed July 3, 1885. (No model.)

Claim.—1. A reversible harrow-tooth formed of one piece of metal and having a flattened point with cutting-edges upon each side, and a shank with notches D D' in opposite edges, combined with a harrow-beam, and a holder adapted to engage with one or the other of said notches as the tooth is reversed, substantially as described.

2. In combination with the tooth having the notches D D' in opposite edges, a holder, C, adapted to engage with said notches, the metal

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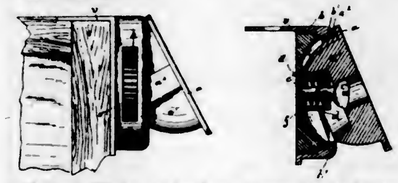
beam having the flanges B' B², and the bolt connecting the holder C with said beam, substantially as described.

3. In combination with the draft-bars F F' and the harrow-beams, and with the lever G, the spring H, connected at one end to the upper bar and at the other end to the projecting arm of the lower bar, substantially as described.

4. In combination with a harrow-beam, a harrow-tooth having a diamond-shaped shank, with notches D D' in the edges thereof, and a holder embracing the shank fitted to said notches and adapted to secure the tooth to the beam, substantially as described.

5. The combination, in a harrow, of a beam having a broad lower flange and an upper narrow flange, with a harrow-tooth passing through an opening in the lower flange, with its upper part bearing against the edge of the upper flange and held in position by a suitable holder, the edge of the upper flange being practically in line with the opening in the lower, substantially as described.

334,055. **VISE-JAW.** EDGAR SHAW, Lynn, Mass. Filed May 23 1885. (Model.)



Claim.—1. The jaw or plate having a convex boss on its rear side, combined with a socket having an annular bearing for said boss of a lesser diameter than the boss at the largest portion of the latter, so that the boss may be tipped in any direction on said fixed bearing, a bolt connecting the jaw and socket, and devices, substantially as described, whereby the jaw may be held or supported at any angle to which it may be adjusted on the fixed annular bearing, as set forth.

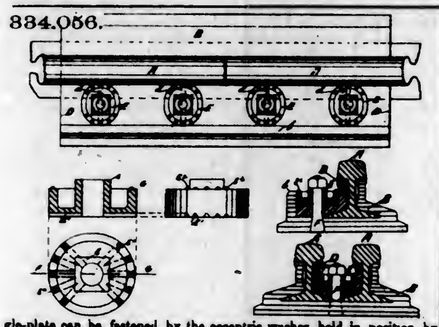
2. The combination of the jaw or plate having the convex boss, the socket having the annular bearing, the connecting-bolt and the rotary plate having the spiral or volute rib formed to support a shoulder on said boss, as set forth.

3. The jaw or plate having the convex boss with the shoulder or projection a^3 thereon, combined with the socket having the annular bearing *b'*, and the slots *p p*, adapted to receive said shoulder, as set forth.

334,056. **RAIL-JOINT.** JOHN SHIPLEY, Sayre, Pa. Filed Sept. 19, 1885. (No model.)

Claim.—1. A rail-joint chair consisting of two pieces embracing the rails, the chair proper having an abutment by which the loose an-

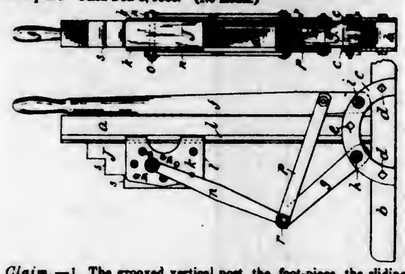
334,056.



gle-plate can be fastened by the eccentric washer held in position by the bolt and locked by the nut, all substantially as and for the purpose specified and set forth.

2. A rail-joint consisting of two pieces combined with the eccentric washer, substantially as described, for the purpose set forth.

334,057. **WAGON-JACK.** WILLIAM H. STURGESS, Indianapolis, Ind., assignor of one-half to Thomas L. Springer and Hezekiah Smart, both of same place. Filed Dec. 3, 1885. (No model.)



Claim.—1. The grooved vertical post, the foot-piece, the sliding axle-support arranged to engage the grooves in the post, the toggle-joint, the lever *f* and rods *p*, connecting said lever and toggle-joint, all combined and arranged to co-operate in the manner and for the purpose set forth.

2. In a wagon-jack, the combination, with the vertical post, the foot-piece, and levers *g* and *f*, of the pair of curved plates, *c*, arranged to form braces for said post and foot-piece, and also supports for said levers, substantially as shown and described.

3. In a wagon-jack, the combination, with the grooved vertical post, the foot-piece, the toggle-joint, and the lever *f*, of the reversible axle-support J, adapted to engage the grooves in the post, and connected with said toggle-joint, and having a broad bearing-surface on one end and a series of steps on the opposite end, substantially as and for the purpose specified.

334,058. **NUT-LOCK.** LEVI STAPLES, Barrington, and CHARLES STAPLES, Providence, R. I. Filed Jan. 23, 1885. (No model.)



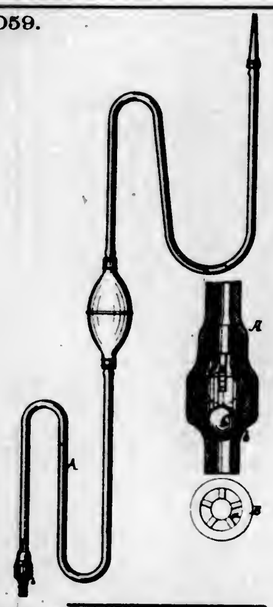
Claim.—1. The nut A, provided with the lugs *a a*, in combination with a spring-catch, *s*, provided with lugs *s' s'*, adapted to engage slots *b b* in the lugs *a a*.

2. The combination of the bolt B, provided with the transverse slot *c*, with a nut, A, and a spring-catch, *s*, provided with a depending flat post, *d*, said post *d* being adapted to engage the slot *c* in the end of the bolt B, for locking purposes.

334,059. **VALVE FOR SYRINGES.** CHARLES A. TATUM, New York, N. Y., assignor to Whitall, Tatum & Co., same place. Filed Oct. 23, 1885. (No model.)

Claim.—The combination of the rubber tube A, inner expanding tube, B, and ball C, all arranged with reference to one another substantially as described, so that the valve is free to be seated on the body of the rubber tube where the same folds over the end of the metal tube, as set forth.

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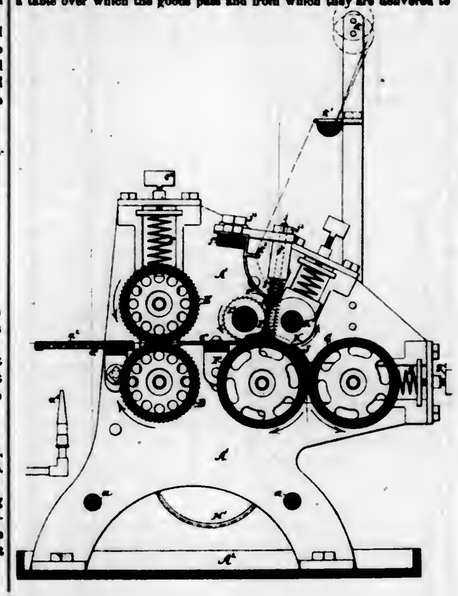


334,060. **PLAITING-MACHINE.** GEORGE TAYLOR and JAMES H. TAYLOR, Nottingham, County of Nottingham, England. Filed Sept. 26, 1884. (No model.)

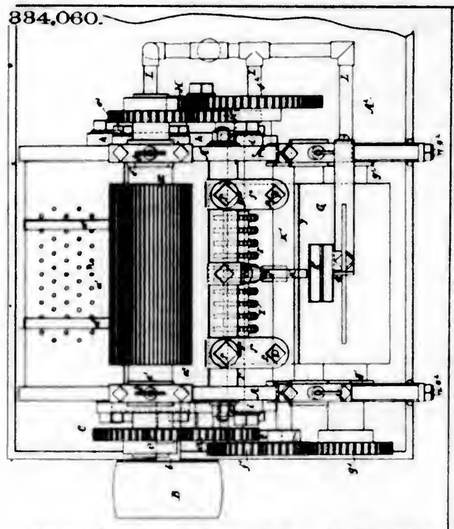
Claim.—1. In a machine for forming and pressing plaits in a strip of fabric, the combination of two grooved crimping-rolls, two feed and pressure rolls, one or more laying-wheels, and a guide-plate extending from the laying-wheels to near the line of contact between the pressure-rolls, substantially as described.

2. In a machine for forming and pressing plaits in a strip of fabric, the combination of two grooved crimping-rolls, two feed and pressure rolls, one or more laying-wheels, and a guide-plate formed with slots, through which the laying wheel or wheels operate, substantially as described.

3. In a machine for forming and pressing plaits in a strip of fabric, a table over which the goods pass and from which they are delivered to



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two crimping-rolls, and a table or support for the goods as they pass toward the laying mechanism and guide-plate and over the moving feed-surface, in combination with said crimping-rolls, laying mechanism, and moving feed-surface, substantially as described.

4. In a machine for forming and pressing plaits in a strip of fabric, the combination of two crimping-rolls, two pressing-rolls, a laying wheel or wheels, a guide-plate extending from the laying-wheels to near the line of contact between the pressing-rolls, and devices for adjusting said guide-plate, and devices for causing it to yield, substantially as described.

5. In a machine for forming and pressing plaits in a strip of fabric, the combination of two grooved crimping-rolls with a laying mechanism consisting of one or more wheels and means for moving the latter at a high velocity in comparison with the crimping-rolls, substantially as described.

6. In a machine for forming and pressing plaits in a strip of fabric, the combination of one or more laying-wheels with a slotted guide, a moving feed-surface, and devices for imparting motion to said laying-wheels, and feed-surface so constructed as to cause the laying-wheels to move faster than the feed-surface, substantially as described.

7. In a machine for forming and pressing plaits in a strip of fabric, the combination of a series of laying-wheels having roughened surfaces, as shown, with a slotted guide-plate, a moving feed-surface, and devices for imparting motion to said laying-wheels and feed-surface, so constructed as to cause the laying-wheels to move faster than the feed-surface, substantially as described.

8. In a machine for forming and pressing plaits in a strip of fabric, the combination of two grooved crimping-rolls, a laying wheel or wheels, two feed and pressure rolls, and devices for imparting motion to these several parts, so constructed as to cause the feed and pressure rolls to revolve at the same or a faster surface-speed than the crimping-rolls, and the laying-wheels at a faster surface-speed than either pressure or crimping rolls, substantially as described.

9. In a machine for forming and pressing plaits in a strip of fabric, the combination, with two grooved crimping-rolls, two feed and pressing rolls, means for imparting the same or a higher surface-speed to the latter than that of the crimping-rolls, and a guide-plate constituting, conjointly with one of said feed-rolls, a channel for the goods, of a laying mechanism and of means for imparting a higher surface-speed to the latter than that of either the crimping or feed rolls, substantially as described.

10. In a machine for forming and pressing plaits in a strip of fabric, the combination, with two grooved crimping-rolls, two feed and pressing rolls, means for imparting a higher surface-speed to the latter than that of the crimping-rolls, and a slotted guide-plate constituting, conjointly with one of said feed-rolls, a channel for the goods, of a laying mechanism operating through the slots in said guide-plate and of means for imparting a higher surface-speed to said laying mechanism than that of either the crimping or feed rolls, substantially as described.

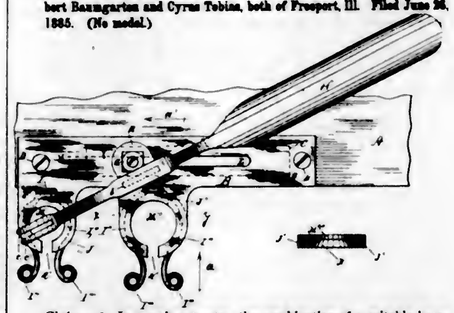
11. In a machine for forming and pressing plaits in a strip of fabric, the combination of a laying mechanism, a slotted guide-plate, and a feed-surface, with one or more rollers arranged to press gum cords upon the plaited goods through said slotted guide-plate, substantially as described.

12. In a machine for forming and pressing plaits in a strip of fabric, two crimping-rolls grooved with ratchet-teeth and arranged to intermesh so that the goods are delivered from them with crimps having one inclined and one vertical portion, in combination with laying mechanism, feeding mechanism, devices for imparting a more rapid surface-speed to the laying mechanism than that of either the crimping-rolls or the feed mechanism, and a channel for the goods, extending between the laying mechanism and the feed mechanism, substantially as described.

13. In a machine for forming and pressing plaits in a strip of fabric, the combination, with two crimping-rolls having oblique and vertical ratchet-teeth, of laying and pressing mechanism, the teeth in said crimping-rolls being so set as to deliver the goods with the vertical side of each crimp toward the laying and pressing mechanism, substantially as described.

14. In a machine for forming plaits in a strip of fabric, a table over which the goods pass as they enter the machine, two longitudinally-grooved crimping-rolls provided with oblique and vertical ratchet-teeth, and arranged to deliver the goods with the vertical side of the crimps forward, a series of laying-wheels operating through slots in the guide-plate and laying the crimps all one way as the goods pass between the under surface of the guide-plate and the upper surface of one of a pair of feed and pressure rolls, all combined and arranged to operate substantially as herein specified.

334,061. CORK-EXTRACTOR. CYRUS TOBIAS, Freeport, and EDWARD W. SHOEMAKER, Lena, assignors, by direct and mesne assignments, to Albert Baumgarten and Cyrus Tobias, both of Freeport, Ill. Filed June 26, 1885. (No model.)



Claim.—1. In a cork-extractor, the combination of a suitable base, a lever-support pivoted on said base, and a cork-extracting lever pivoted on said support, whereby the lever is free to oscillate about its own pivot and the pivot of its support and is adapted to operate on bottles at different points.

2. In a cork-extractor, the combination of a suitable base adapted to be screwed to a table or other stationary support, an adjustable lever-support adapted to be moved from point to point on said base and to be rigidly fastened thereto at each point, and a cork-extracting lever pivoted on said support and adapted through the adjustability of said support to operate on corks at different points about the base.

3. In a cork-extractor, the combination of a suitable base, a stop rigid therewith formed with an opening larger than the cork to be extracted but smaller than the bottle-neck inclosing the cork, and slotted at one point to admit the shank of a corkscrew fixed in the cork, a cork-extracting lever pivoted on the base and adapted to engage a corkscrew when in place in said stop-opening, and a spring-clasp surrounding the stop-opening but having an opening corresponding in position to the slot in the stop and adapted to admit the neck of the bottle by the same lateral movement that passes the corkscrew-shank through the slot in the stop, substantially as shown and described, and for the purpose set forth.

4. The slotted base B, one or more stops, J J', sliding fulcrum E, lever H, and spring-clasp I' I'' I''', combined substantially as and for the purpose described.

5. The base B, having the slot L, one or more stops, J J', rigidly attached thereto, the swiveled fulcrum E, the forked lever H, and spring-clasps I' I'' I''', combined substantially as and for the purpose set forth.

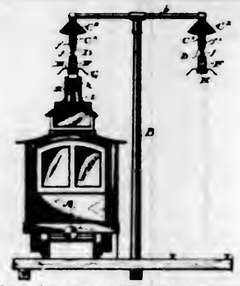
334,062. OVERHEAD CONDUCTOR FOR ELECTRIC RAILWAYS. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Aug. 1, 1885. (No model.)

Claim.—1. The combination, with a car and a vertically-yielding contact roller or brush, of a suspended conductor, and means, substantially as described, for adjustably supporting the same in a practically horizontal plane, as set forth.

2. The combination, with a car provided with a contact device, of a series of posts having arms extending over the path of the car, a conductor, a cable of high tensile strength secured to said arms, and which is also a conductor, and means, as described, for electrically connecting the cable and conductor and suspending the latter from said cable in a practically horizontal plane above said car, as set forth.

3. The combination, with a car provided with a vertically-yielding

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contact device, of a series of posts having horizontal arms extending above the path of the car, a cable suspended from the end of the transverse arm, means, as described, for insulating the cable from the posts, a conductor, and means, as described, for suspending the conductor below the cable and placing it in electrical connection therewith and in the path of the contact device, substantially as described.

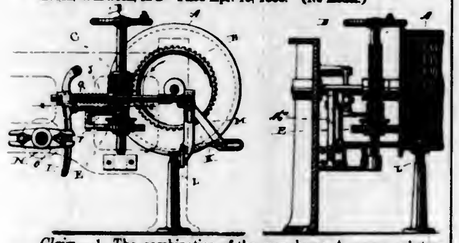
4. The combination, with a car provided with a vertically-yielding flat contact device, of a series of posts having horizontal arms extending over the path of the car, a cable suspended from the end of the transverse arm, means, as described, for insulating the cable from the posts, a flat-surface conductor, and means, as described, for suspending said conductor below the cable and in the path of the contact device, substantially as set forth.

5. In a system of suspended electric-railway conductors, the combination, with a branching conductor, of a branching metallic cover or roof therefor, forming part of the conductor, substantially as set forth.

6. In a system of suspended railway-conductors, the continuous cover or roof G, of thin sheet metal, arranged along the top and sides of the conductor, protecting the said conductor from water and ice and increasing its capacity, substantially as described.

7. The combination, with the conductor E, of the adjustable stirrups F, the cable D, the insulated suspenders C', hood C'', the transverse arm *b*, and the post B, substantially as set forth.

334,063. LET-OFF MECHANISM FOR LOOMS. REINARD E. WATERHOUSE, Warwick, R. I. Filed Apr. 15, 1885. (No model.)



Claim.—1. The combination of the yarn-beam A, means, substantially as described, for operating it, following plate K, having slotted end, spring L, for causing plate K to rest against the circumference of the beam, lever M, having a connecting rod or stud working in the slot in plate K, a support for the lever M, rod J, connected to lever M, and connections, substantially as described, from rod J to the mechanism for operating the yarn-beam, all substantially as and for the purpose set forth.

2. The combination of the horizontal rod J, spring Q, and lever I, and means for operating said lever with rod H, lever F, pawls G, ratchet R, shaft D, worm C, wheel B, lever M, connected to rod J, stud or rod R, plate K, spring L, and yarn-beam A, all substantially as set forth.

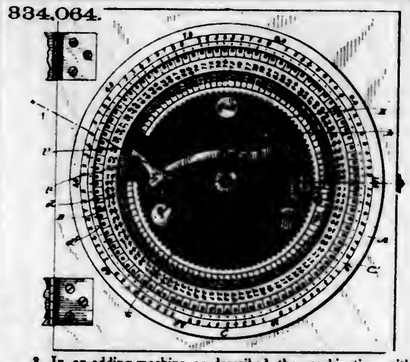
3. The combination of shaft N, bar O, rollers P, lever I, and devices, as described, intermediate of lever I and the yarn-beam, whereby the latter is operated by the former, with spring Q, rod J, lever M, rod R, plate K, spring L, and the yarn-beam A, substantially as and for the purpose set forth.

334,064. CALCULATING-MACHINE. ELIJAH W. WATSON, McLean, N. Y. Filed May 9, 1885. (No model.)

Claim.—1. In combination with a stationary scale, as *c'*, and a movable scale, as *d*, having a corresponding series of holes, as *d'*, a stop, as O, adapted to stop the said scale in one direction, and a shoulder, as d^3, and a detachable lug engaging therewith adapted to check the scale in the opposite direction when the zeros in the two scales correspond, as specified.

2. In an adding-machine as described, the combination, with the ring D, having pin d^3, shoulder d^3, and cam-surface d^4, and with the ring G, having teeth *g'*, of the pawls I and K, the lever L, and springs i M M', as and for the purposes set forth.

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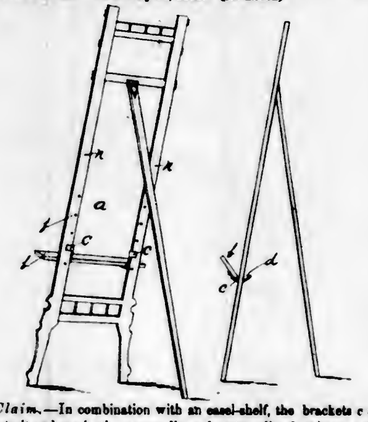
3. In an adding-machine as described, the combination, with the ring D, having pin d^3, shoulder d^3, and cam-surface d^4, and with the ring G, having teeth *g'*, of the lever L, pawl K, pivoted on said lever, and the pawl I, having tooth i' and arm i^3, with incline i^3, as and for the purposes set forth.

4. In an adding-machine as described, the combination, with the stationary scale and with the rings D and G, constructed as set forth, of the lever L, the pawls I K, and the lever N, having arms *n n'*, as and for the purposes specified.

5. The base-plate B, having annular flange *b*, and the stationary ring C, having flange *c*, and face C', the ring D, having rabbet d^2, the ring G, having its bearings in said rabbet, and the face-plate H, having vision-slot h^2, all adapted to serve in an adding-machine as set forth.

6. The combination, with the stationary scale, the rings D and G, as described, the lever L, and pawls I and K, of the lever N, having arms *n* and *n'*, adapted to engage first the pawls I K and then to liberate the lever L, as and for the purposes specified.

334,065. EASEL-SHELF BRACKET. THOMAS P. WATKINS, New Bedford, Mass. Filed July 31, 1885. (No model.)



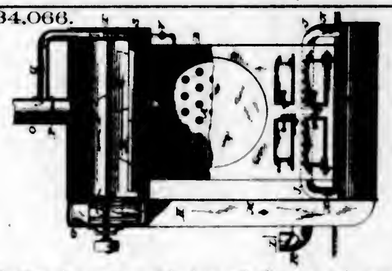
Claim.—In combination with an easel-shelf, the brackets *c c*, secured to it and projecting upwardly and outwardly, forming an obtuse angle, and their outer ends provided with projections *d d*, to engage with corresponding holes in the uprights of the easel, substantially as and for the purpose shown and described.

334,066. SMOKE-CONSUMING FURNACE. THEODORE S. WILKIN, Milwaukee, Wis. Filed Sept. 11, 1885. (No model.)

Claim.—1. In a smoke-consuming furnace, the combination, with a fire-chamber, of a smoke drum or reservoir, into which the smoke and products of combustion pass directly from the furnace, a pipe communicating with said reservoir and with the fire-chamber, an air-forcing device in or communicating with said pipe, a separate pipe communicating with the smoke-drum and with the atmosphere, and an air-forcing device in or communicating with said second pipe, whereby the products of combustion are separated into two classes previous to being acted upon by the air-forcing devices, one class returning to the fire-chamber and the other class discharged into the air.

2. In combination with a furnace, a smoke-drum above said furnace, and into which the gases rise by their own buoyancy, a passage

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leading from the upper part of the drum to the fire-space, and a passage leading from the lower part of the drum to the outer atmosphere, whereby the lighter and more volatile gases are separated and conducted from the drum to the fire-space, and the heavier and non-combustible gases are delivered into the air.

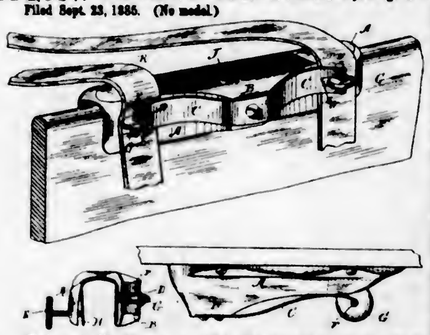
3. In combination with a furnace, a drum or reservoir communicating directly therewith and receiving the gases free from pressure, a pipe passing from the lower part of said drum to the atmosphere, a second pipe connecting with the drum above the opening of the first, and air-forcing devices for each pipe, adapted to produce an outward current through the same from the drum.

4. In combination with a furnace, a smoke-drum communicating with the interior thereof, a concave shield or guard within the lower part of said drum, but separated therefrom by an open space or passage beneath, a passage leading from the drum to the fire-space, a separate passage leading from the concave upper side of the shield to the outer air, and air-forcing devices communicating with said passages, and serving to produce a current of air or gases through each.

5. The herein-described furnace and smoke-consumer, consisting of a fire-space and grate, a drum, F, opening therefrom, a shield, Q, located in the lower part of said drum and concave on its upper side, a trunk or passage, H, leading from the drum to the fire-space, a fan or air-forcing device, G, communicating with said pipe, a pipe, R, extending along the upper side of the shield and opening into the atmosphere, and an air-forcing device communicating with said pipe R.

6. The combination, substantially as described and shown, of a furnace, a smoke-drum, F, having shield Q, pipe H, extending from drum F to the fire-chamber and provided with fan G, pipe R, communicating with the space above the shield Q and with the air, and steam-pipe S, provided with jet or nozzle T.

334,067. REIN-HOLDER. WILLIAM E. BARBER, Wyoming, R. I. Filed Sept. 23, 1885. (No model.)



Claim.—1. The base A, provided with suitable means for securing it in position, in combination with the spring C and the wheel or roller G, mounted in the tip of the spring, substantially as set forth.

2. The base A and slotted spring C, in combination with the wheel G, mounted for rotation in said slot at the tip of the spring, the base being recessed to receive the edge of the wheel, substantially as set forth.

3. The base A, spring C, and wheel G, pivoted at the tip of the spring, in combination with the clamp H and set-screw E, substantially as set forth.

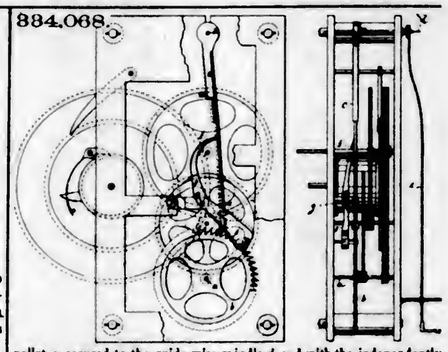
4. As a new article of manufacture, the rein-holder herein described, consisting of the body or base A, roughened externally, as at J, Fig. 1, having the clamping means E H, and provided with the holding-springs C, having terminal wheels G, substantially as and for the purposes herein set forth.

334,068. CLOCK-ESCAPEMENT. CHRISTOPHER BECKER, Sr., New Rochelle, N. Y. Filed Aug. 12, 1885. (No model.)

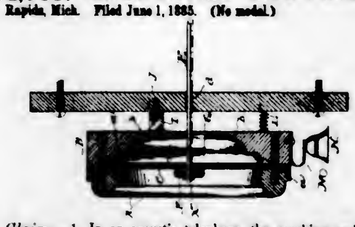
Claim.—1. The combination of arbor *a*, carrying scape *b*, with the pallet *c*, secured to the guide-wire spindle *d*, and with the independently-pivoted pallet *f*, substantially as specified.

2. The combination of arbor *a*, carrying scape *b*, with the pallet *c*, secured to the spindle *d*, and with bent pallet *f*, the upper arm of which bears against pallet *c*, while the lower arm engages the scape *b*, substantially as specified.

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334,069. ACOUSTIC TELEPHONE. CHARLES D. BENTLEY, Eaton Rapids, Mich. Filed June 1, 1885. (No model.)



Claim.—1. In an acoustic telephone, the speaking and hearing cups having a bell connected thereto, in combination with a spring-plate rigidly connected at its center to the wall or other support, and having its ends fitted to the cups so as to yield outward when the latter are pressed inward, as set forth.

2. In an acoustic telephone, the speaking and hearing cups having a bell connected thereto, in combination with a rigidly-fastened spring-plate attached to the wall or other support, and having a yielding connection with the cup and forming the sole support for the same, as set forth.

3. In an acoustic telephone, the speaking and hearing cups having a bell connected thereto, in combination with the spring-plate connected near the upper ends of the cups, and a spring bearing against the lower ends, so as to retain the cups in the vertical position and obviate the necessity of hinging the cups, as set forth.

4. In an acoustic telephone, the speaking and hearing cups having a bell connected thereto, in combination with a spring-plate rigidly connected to the center and working through guides at its ends, as set forth.

5. In an acoustic telephone, the mouth-piece A, in combination with the bed-piece B, hollowed out to provide a sounding-chamber, and the double diaphragm having its edges received between the parts A B at their point of connection and held in place by the same securing means, the section of the diaphragm facing the sounding-chamber being constructed of pasteboard or the like, so as to transmit speech from the said chamber, while the other section is made of metal, the line-wire being passed through the sounding-chamber and the double diaphragm, and having the button pressing against the metallic section, whereby the latter will be enabled to withstand the tension placed on the wire, as set forth.

334,070. NUT-LOCK. ORLANDO L. CASTLE, Upper Alton, Ill. Filed Aug. 26, 1885. (No model.)

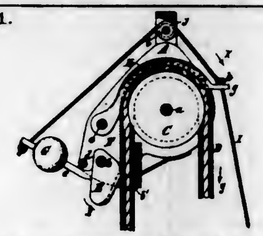


Claim.—A nut-holder provided at each end with a washer having a half-hinge, by means of which the said holder is connected on opposite sides of the nuts to be held with the washer.

334,071. PULLEY-BLOCK. GEORGE W. CLARK, Brooklyn, N. Y. Filed Jan. 31, 1885. (No model.)

Claim.—1. The combination of a hoisting cord, chain, or rope, a pulley or pulleys, over which said cord, chain, or rope passes, a clamping-piece for preventing the movement of the cord, chain, or rope in one direction, a fixed surface independent of the pulley or pulleys opposite the clamping-piece, and against which the cord, chain, or rope is clamped by the clamping-piece, and a cord connected directly to the clamping-piece for operating the clamping-piece to permit the hoisting cord, chain, or rope to move freely in either direction, substantially as specified.

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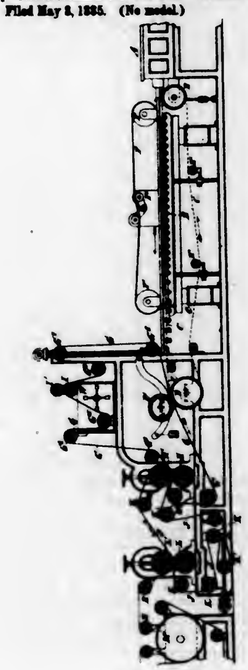


2. The combination of a hoisting cord, chain, or rope, a pulley or pulleys, over which said cord, chain, or rope passes, a clamping-piece for preventing the movement of the cord, chain, or rope in one direction, a cord connected directly to the clamping-piece for operating the clamping-piece to allow the hoisting cord, chain, or rope to move freely in the same direction, and a brake independent of the clamping-piece operated by the cord last mentioned, and acting directly on the hoisting cord chain, or rope, substantially as specified.

3. The combination of a hoisting cord, chain, or rope, a pulley or pulleys, over which said cord, chain, or rope passes, a clamping-piece for preventing the movement of the cord, chain, or rope in one direction, a cord connected directly to the clamping-piece, and a brake independent of the clamping-piece and operated by the cord last mentioned, substantially as described, whereby, when it is desired that the hoisting cord, chain, or rope move freely in one direction, the other cord may be operated to release the clamping-piece from the hoisting cord, chain, or rope, without applying the brake to the hoisting cord, chain, or rope, and the said cord may then be operated further to apply the brake to the hoisting cord, chain, or rope.

4. The combination, with a pulley-block, of a pulley or pulleys, C, a hoisting cord, chain, or rope, the clamping device E, the weight G, the brake H, having the outwardly-extending portion *g*, and the cord I, having the stop *k*, substantially as specified.

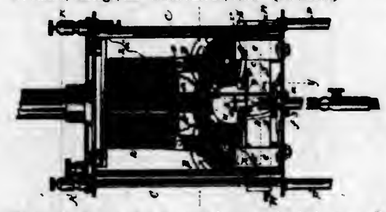
334,072. PAPER-MAKING MACHINE. WILLIAM F. EDWARDS, Summit, N. J. Filed May 8, 1885. (No model.)



Claim.—1. In a paper-making machine, the combination, with a former for the paper-pulp, of a couch-roll above the former and an endless apron passing above the former and below the said couch-roll, and taking the paper-pulp on its under side from the former, and carrying the same away directly forward of the couch-roll and away from over it, substantially as specified.

2. In a paper-making machine, the combination, with a former for the paper-pulp, of an endless apron for taking the paper-pulp upon its under side directly from the former and carrying it away to press-rolls, and another endless apron passing with the first endless apron between the said press-rolls, and taking the paper-pulp away to a second pair of press-rolls, substantially as specified.

334,073. ELECTRIC-ARC LIGHT. GEORGE A. GAGE and CORNMAN W. CRARY, Chicago, Ill. Filed Jan. 17, 1885. (No model.)



Claim.—1. In an electric-arc light, a mechanical power, B, pin-wheel *u*, slides S and S', bell-crank *b'*, in combination with a clamp, *f*, for the purpose of giving an intermittent downward and upward motion to the carbon to preserve a uniform arc, substantially as described.

2. In an electric-arc light, spring-rod *m*, clutch *f*, bell-crank *b'*, and carbon-holder *a*, in combination with the clock-work B, pin-wheel *u*, and slides S and S', all constructed and arranged to operate substantially as set forth.

3. In an electric-arc light, magnet 2, armature 4, lever 3, and clutch *f*, in combination with the bell-crank *b'*, slides S and S', pin-wheel *u*, clock-work B, constructed and arranged to operate substantially as and for the purpose set forth.

4. In an electric-arc light, a mechanical power, B, pin-wheel *u*, slide S, pawl *v*, slide S', and inclined plane *b*, in combination with bell-crank *b'*, clutch *f*, and carbon-holder *a*, all acting conjointly, substantially as and for the purpose set forth.

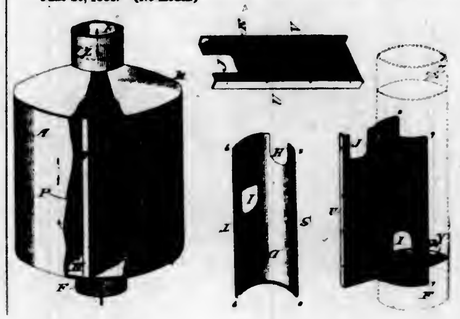
334,074. HORSE-POWER. SIGURD G. HOEKSTRA, Sheboygan, Wis. Filed June 26, 1885. (No model.)



Claim.—1. In a horse-power, a master-wheel provided with teeth and grooves upon both its sides, in combination with a main shaft having at its ends pinions to engage with the wheel on its upper and lower sides, and flanges on the pinions to engage with the grooves, substantially as and for the purpose set forth.

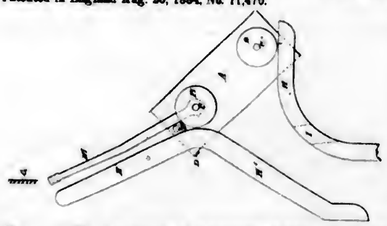
2. In a horse-power, a master-wheel having teeth and grooves, and guide-rollers working in the grooves, in combination with an obliquely-arranged main shaft having at its ends flanged pinions, a shaft arranged at right angles to the main shaft and provided with a pinion engaging with a gear-wheel thereon, substantially as and for the purpose set forth.

334,075. HEATING-DRUM. MARCUS N. KIMBLE, Lima, N. Y. Filed June 29, 1885. (No model.)



Claim.—The combination of pipe or flue and a heating-drum partially encircling the same with a division-plate within the drum extending from the pipe or flue to the side of said drum and provided with an opening near one end, the said pipe or flue being provided with two openings on different horizontal planes, one on each side of the division-plate, and a damper in the pipe or flue between the openings therein, substantially as and for the purpose set forth.

334,076. **MEANS FOR DISCHARGING AND RIGHTING SKIPS OR WAGONS.** JOHN KITTO, Llanidloes, County of Montgomery, ABEL PAUL, Devil's Bridge, County of Cardigan, and ROBERT R. NANCARROW, Llanidloes, County of Montgomery, England. Filed Nov. 11, 1885. (No model.) Patented in England Aug. 20, 1884, No. 11,470.

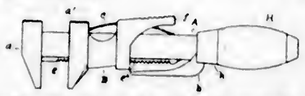


Claim.—1. The combination of mechanism, substantially as hereinbefore described, and illustrated at Figs. 1, 2, 3, 4, and 5, for automatically discharging and righting skips or wagons.

2. The combination of mechanism, substantially as hereinbefore described, and illustrated at Figs. 6, 7, 8, and 9, for automatically discharging and righting skips or wagons.

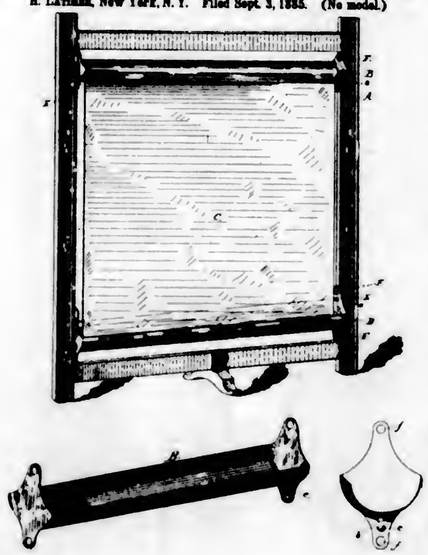
3. The combination of mechanism, substantially as hereinbefore described, and illustrated at Figs. 10 and 11, for automatically discharging and righting skips or wagons.

334,077. **WRENCH.** HANS A. LARSEN, Minneapolis, Minn. Filed Sept. 15, 1884. (No model.)



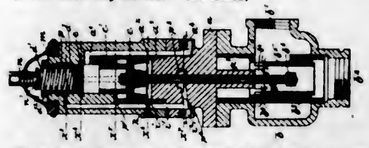
Claim.—The combination, with the shank A, bearing the fixed jaw *a*, and provided with serrations a^3, of the sleeve B, carrying the jaw *a'*, which is rounded interiorly in its upper portion to pivot said jaw and sleeve on the shank A, the serrations a^3 in the lower portion of said sleeve, the spring *c*, secured beneath the thumb-piece *f*, and the guard *b*, all constructed and arranged substantially as described.

334,078. **APPARATUS FOR COOLING AND DISINFECTING.** LEWIS H. LATHER, New York, N. Y. Filed Sept. 3, 1885. (No model.)



Claim.—In a deodorizing and cooling device for apartments, the combination consisting of a frame, the trough or reservoir mounted on said frame near the top thereof, the sockets located beneath said trough, adapted to receive the ends of the rod carrying the webbing, the upper edge of which enters the said trough, the lower trough, secured near the base of said frame, the sockets located above the said lower trough, adapted to receive the rod supporting the webbing, the lower edge of which enters the lower trough, both the upper and lower troughs containing any suitable chemicals for disinfecting or cooling the atmosphere, substantially as shown and described.

334,079. **STEAM-PUMP-PRESSURE REGULATOR.** WILLIAM B. MASON, Boston, Mass., assignor to the Mason Regulator Company, same place. Filed May 15, 1885. (No model.)



Claim.—1. A pressure-regulator for fluid-forcing apparatus, comprising a main piston or actuating device for the controlling device of the forcing apparatus, a pressure-chamber containing fluid under a pressure affected by and corresponding with that of the fluid delivered by the forcing apparatus, and a secondary piston acted upon in one direction by a predetermined governing force and in the other direction by the varying pressure of the fluid in the pressure-chamber, the said secondary piston, when moved by the preponderance of the fluid-pressure over the governing force, permitting the said fluid-pressure to be applied to the main piston, substantially as and for the purpose set forth.

2. The combination of a main piston having an extension of less area constantly acted upon by fluid-pressure with a secondary piston disconnected from the main piston and acted upon in one direction by a variable pressure and in the other direction by a substantially constant force of predetermined amount, the said secondary piston constituting a valve which controls the application of fluid-pressure to the main piston, which pressure, when applied, acts on the full area of the main piston in the direction opposite to that acting on the smaller extension thereof, substantially as and for the purpose described.

3. In a regulator operating by variable fluid-pressure, the main body provided with chambers of different sectional area and with inlet and outlet passages, the former communicating with the smaller chamber and containing the fluid having variable pressure, combined with a main piston working in the larger chamber and having an extension working in the smaller chamber, and a secondary piston or valve acted upon by the variable fluid-pressure and an opposing governing force, and controlling the admission of fluid to the larger chamber of the regulator, substantially as described.

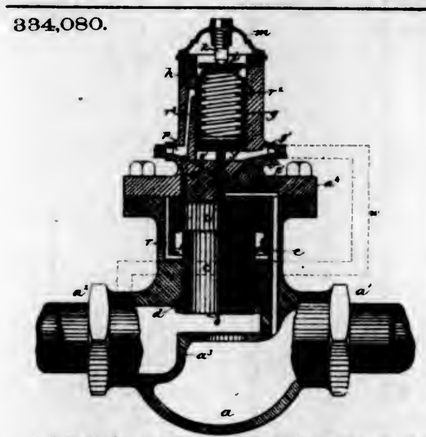
4. In a regulator operating by variable fluid-pressure, the main body provided with chambers of different sectional area and with inlet and outlet passages, the former communicating with the smaller chamber and containing the fluid having variable pressure, combined with a main piston working in the larger chamber and having an extension working in the smaller chamber, and a secondary piston or valve acted upon by the variable fluid-pressure and an opposing governing force, the regulator being provided with a connecting-passage between the larger and smaller chambers, controlled by the secondary piston or valve, and with an outlet-passage from the larger chamber of less capacity than the said connecting-passage, substantially as and for the purpose described.

5. In a regulator operating by variable fluid-pressure, the main body provided with chambers of different sectional area and a connecting-passage between them, and with inlet and outlet passages, the former communicating with the smaller chamber and the latter communicating with an outlet-passage from the larger chamber, combined with a main piston working in the larger chamber and having an extension working in the smaller chamber, and a secondary piston controlling the flow of fluid through the connecting-passage between the said chambers, and a valve governing the outlet-passage of the larger chamber, substantially as and for the purpose set forth.

334,080. **STEAM-PUMP-PRESSURE REGULATOR.** WILLIAM B. MASON, Boston, Mass., assignor to the Mason Regulator Company, same place. Filed Sept. 28, 1885. (No model.)

Claim.—1. The combination of a differential cylinder and piston therein having its smaller area constantly exposed to a motive fluid and the larger portion of the cylinder having an inlet for the motive fluid, with a valve controlling the said inlet and a pressure-chamber and actuating device for the said valve therein acted upon in one direction by a variable fluid-pressure and in the other direction by a predetermined governing force, the pressure-chamber being independent of the differential cylinder and adapted to receive the same or a different fluid, substantially as and for the purpose described.

334,080.



2. A main valve comprising a valve-shell having inlet and outlet openings, and a movable valve controlling the flow of fluid from one to the other, and a differential cylinder included in the said shell, having two portions of different bore or sectional area, and a piston therein composed of two parts of different diameter, each having a working fit in the corresponding part of the cylinder, the said piston having its smaller area constantly exposed to the pressure of the fluid entering the valve-shell, the larger portion of the cylinder being provided with an inlet-port, combined with a controlling-valve governing the flow of fluid through the said inlet-port, and a pressure-chamber and device therein governing the said controlling-valve, substantially as described.

3. A main valve comprising a valve-shell having inlet and outlet openings, and a movable valve controlling the flow of fluid from one to the other, and a differential cylinder included in the said shell having two portions of different bore or sectional area, and a piston therein composed of two parts of different diameter, each having a working fit in the corresponding part of the cylinder, the said piston having its smaller area constantly exposed to the pressure of the fluid entering the valve-shell, the larger portion of the cylinder being provided with inlet and exhaust ports, combined with a controlling-valve governing the flow of fluid through the said ports and a pressure-chamber and device therein governing the said controlling-valve, substantially as described.

4. The main-valve shell having inlet and outlet openings and a partition between them provided with an opening and valve-seat, and a differential cylinder above the valve-seat, having two portions of different bore or sectional area, and piston therein composed of two parts of different diameter, each having a working fit in the corresponding part of the cylinder, the said piston co-operating with the valve-seat to control the flow of fluid through the opening therein, and a port leading from the inlet portion of the valve-shell to the larger part of the cylinder, and an exhaust-port from the larger part of the cylinder, combined with a controlling-valve governing the flow of fluid through the said inlet-port and a pressure-chamber and actuating device therein for the said controlling-valve, substantially as described.

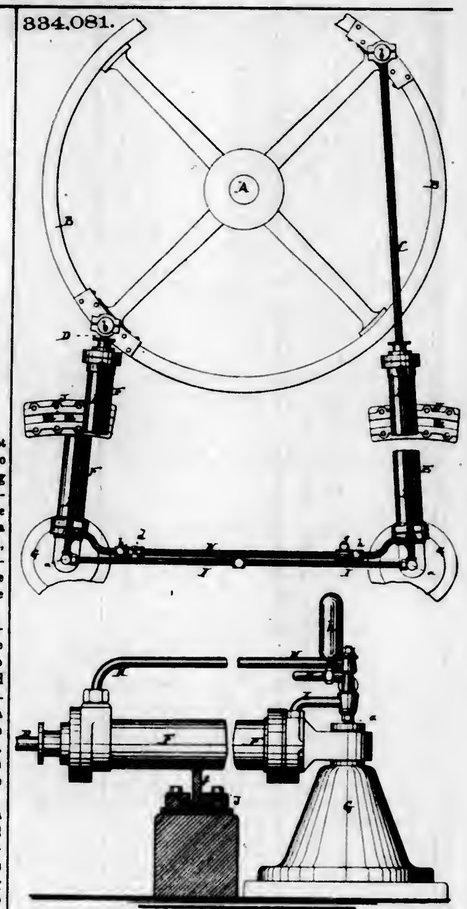
5. A valve-shell having inlet and outlet openings and a partition between them provided with an opening and valve-seat, and the differential cylinder above the valve-seat having two portions of different bore or sectional area, and a port leading from the inlet portion of the valve-shell to the larger part of the cylinder, combined with a piston composed of two parts, each having a working fit in the corresponding part of the differential cylinder, the said piston co-operating with the valve-seat to control the flow of fluid through the valve-shell, and a controlling-valve governing the flow of fluid through the port leading to the larger portion of the differential cylinder, substantially as described.

334,081. **LIQUID RUDDER-BRAKE.** GAVIN MCCOLL and WILLIAM B. CUMMINS, Liverpool, County of Lancaster, England. Filed Sept. 2, 1885. (No model.)

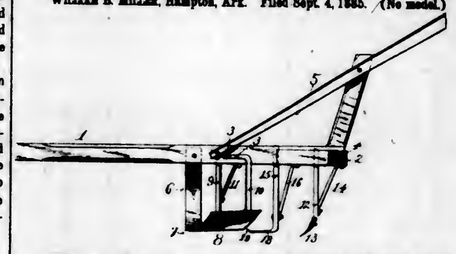
Claim.—1. The combination of the rudder-post and the wheel or crank thereon, and suitable means for turning the same, with one or more pivoted cylinders, one or more piston-rods that are pivoted to said wheel or crank, and with the liquid-circulating pipe H on said cylinder or cylinders, all arranged as a cushion for the rudder, substantially as herein shown and described.

2. The combination of the rudder-post A and its crank or wheel B, and suitable means for turning the same, with the piston-rod D, pivoted thereto, cylinder F, pivoted to a fixed support, pipe H on said cylinder, and cock *d* in said pipe, as specified.

334,081.



334,082. **COMBINATION SCRAPER, CLOD-GUARD, AND GAGE.** WILLIAM B. MILLER, Hampton, Ark. Filed Sept. 4, 1885. (No model.)



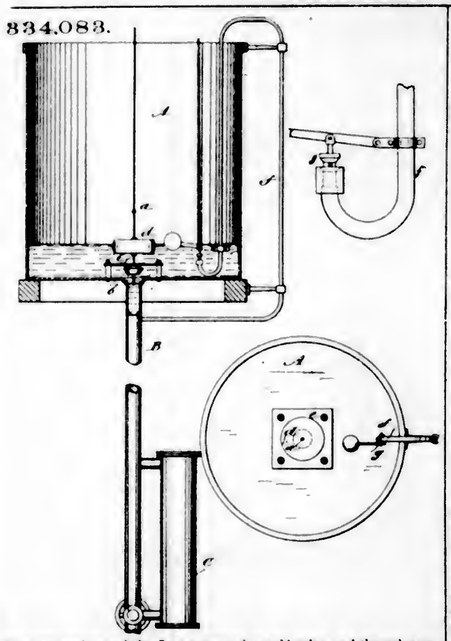
Claim.—1. In a cultivator and scraper as above described, having the main beam 1 and cross-beam 2, the combination of scraper 8, secured to the same as shown and described, the cutter and clod-guard 6, on a line with the right-hand side of the scraper 8, and the plow 13, substantially as shown and described, and for the purposes set forth.

2. In a cultivator and scraper as above described, having the main beam 1 and cross-beam 2, the combination of the scraper 8, secured to same as above described, cutter and clod-guard 6, adjustable gage 15, set in the junction of the said beams and having foot 18, and plow 13, substantially as shown and described, and for the purposes set forth.

334,083. **SAFETY DEVICE FOR ELEVATORS.** PETER MORAN, New Orleans, La. Filed Dec. 3, 1884. (No model.)

Claim.—1. In a hydraulic elevator, the tank having an outlet-pipe,

334,083.

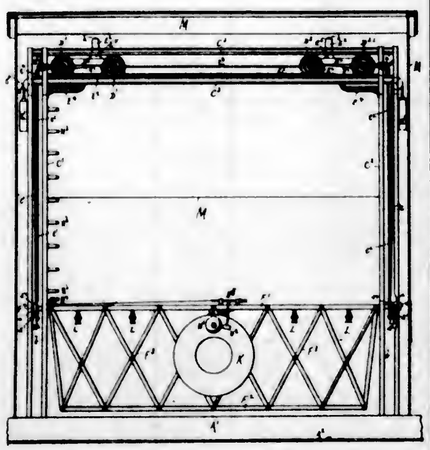


the safety-valve, and the float connected to said valve, and the valve arranged to open and close said outlet-pipe, in combination with a siphon, and a ball-cock arranged within said tank and connected to said siphon, the siphon being connected to the outlet-pipe, whereby suction is removed from the safety-valve to permit the ready opening of the valve as the water in the tank lifts the float, substantially as set forth.

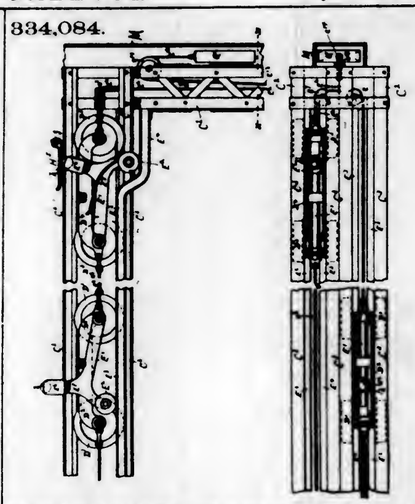
2. In a hydraulic elevator, the combination, with the tank having the outlet-pipe, of the valve, the float connected to the valve, the siphon connected to the outlet-pipe, the ball-cock arranged in said tank and connected to the siphon, and the guide-plate for the valve-stem, substantially as and for the purpose set forth.

334,084. AUTOMATIC DRAW-BRIDGE GATE. WALTER S. MORTON, St. Paul, Minn. Filed July 31, 1885. (No model.)

Claim.—1. In an automatic draw-bridge gate, a gate arranged to be raised and lowered across the entrance to the bridge, a horizontal track arranged crosswise of the entrance, a truck adapted to travel upon said track, and cables connecting said truck to the ends of said gate, whereby the movement of the track along said track in one direction will open said gate, in combination with a draw-bridge, and an operating-arm fixed to said bridge, which co-operates with said truck to move the same so as to open the gate, and to hold said gate at all times open when the draw is closed, substantially as set forth.



334,084.



2. In an automatic draw-bridge gate, a gate arranged to be raised and lowered across the entrance to the bridge, a housing above said gate, in which it is entirely concealed when raised, and a truck adapted to travel upon a suitable track across the entrance to said bridge within said housing, and connected by cables to said gate, so that when moved in one direction upon said track it will elevate said gate, and an operating-arm attached to said draw-bridge and adapted to act upon said truck when said bridge is being closed to elevate said gate, and hold it elevated while the draw is closed.

3. In an automatic draw-bridge gate, a gate arranged to be raised and lowered across the entrance to the bridge, a horizontal track above said gate, a truck adapted to travel upon said track, and connected to the ends of said gate by cables, so that the movement of said truck along said track in one direction will elevate said gate, and an arm fixed to said bridge and adapted to move said truck along said track when said bridge is being closed to elevate said gate, and hold it elevated at all times while the bridge is closed, substantially as set forth.

4. In an automatic draw-bridge gate, a gate arranged to be raised and lowered across the entrance to the bridge, horizontal double tracks extending parallel with each other crosswise of the entrance, two trucks which travel on said tracks, respectively, in opposite directions, and cables connecting said trucks with each other, and each truck with one side of the gate, respectively, whereby movement of either truck will operate said gate, in combination with a draw-bridge which may be opened in either direction, and two fixed operating-arms secured to said draw-bridge, one of said arms being arranged to engage with one of said trucks only to open the gate, and the other arm being arranged to engage the other truck only, said arms acting, respectively, according as the draw is closed in one direction or the other, substantially as set forth.

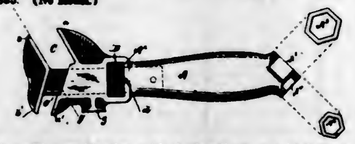
5. In an automatic draw-bridge gate, the combination of upright posts C' C^2, horizontal double tracks C^2, connecting them at their upper ends, a gate adapted to project across and be raised and lowered between said posts and beneath said tracks, two trucks adapted to run in opposite directions upon said tracks and connected to each other and to said gate by cables c' c^2 c^3, so that the movement of either or both of said trucks will raise and lower said gate, an arm, E', pivoted upon each of said trucks and provided with upwardly-projecting rollers E^2 and bearing-wheels E^3, tracks E^5, upon which said bearing-wheels are adapted to travel, said tracks being provided with depressed portions E^4, into which said bearing-wheels E^3 are adapted to run, and arms H^6 H^6, fixed to said bridge and adapted to act upon said rollers, and arms to move said trucks and elevate said gate when said bridge is being closed, substantially as set forth.

6. In an automatic draw-bridge gate, a gate arranged to be raised and lowered across the entrance to the bridge, a horizontal track above said gate, a truck adapted to travel upon said track and connected to the ends of said gate by cables, so that the movement of said truck along said track in one direction will elevate said gate, and counter-weights G' G^2, connected to said gate, and a bar, H^6, fixed to said bridge and adapted to move said trucks along said track when said bridge is being closed to elevate said gate, and hold it elevated at all times while the bridge is closed, substantially as set forth.

7. In an automatic draw-bridge gate, upright posts C' C^2, between which the ends of said gate are adapted to project and the gate raised and lowered, a gong, N', attached to said gate and provided with a striking-hammer, N^2, and pins N^3 upon one or both of said posts and adapted to operate said hammer and sound said gong at short intervals during the raising and lowering of said gate, substantially as set forth.

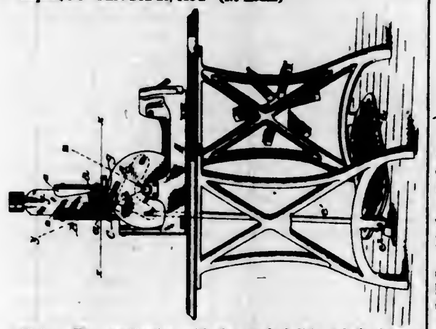
8. In an automatic draw-bridge gate, a gate arranged to be raised and lowered across the entrance to the bridge, a housing above said gate, in which it is entirely concealed when raised, and a system of signals for night and day use attached to said gate, so that when said gate is lowered said signals are exposed, and when said gate is elevated said signals are entirely concealed, substantially as set forth.

334,085. WRENCH. JOHN D. OSBUN, Springfield, Ohio. Filed Jan. 8, 1885. (No model.)



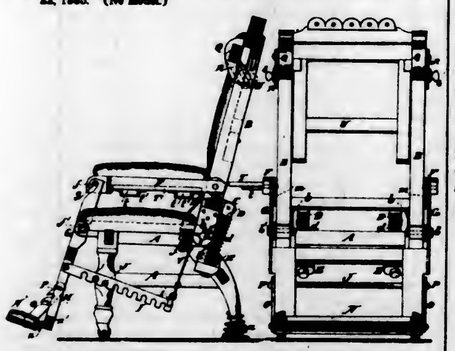
Claim.—The combination, with the handle A, provided at one end on opposite sides with stationary projections a and a' at an angle to each other, one of which is offset, as described, of a sliding bar, B, adapted to be moved by nut D into and out of said handle and provided with projections b b', which, with the projections a a' on the handle A, form jaws of different sizes on opposite sides of the said handle and at an angle to each other, substantially as and for the purpose set forth.

334,086. BRUSH-MAKING MACHINE. JOSEPH M. PERKINSON, Philadelphia, Pa. Filed Dec. 26, 1884. (No model.)



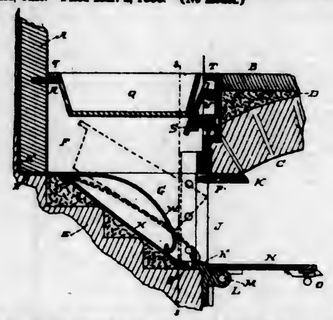
Claim.—The combination, with the notched disk and the hopper located above the disk, of the forwardly bent or curved bristle-supporting plates at the bottom of the hopper and on each side of the disk, substantially as described, whereby the cutting tendency of the disk is obviated, as set forth.

334,087. CHAIR. JAMES W. PEEK, Ogden City, Utah. Filed Apr. 22, 1885. (No model.)



Claim.—The combination, with the seat-frame A and back B, of the open-slotted angle-plates C C, the slide-bolts D D, carrying springs d, and the pivoted guides E E, as and for the purpose described.

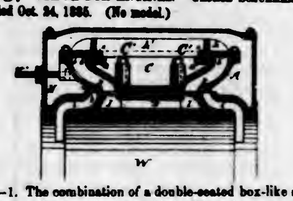
334,088. FIRE-PLACE. EDWIN R. PROUTER, Washington Court-House, Ohio. Filed Mar. 2, 1885. (No model.)



Claim.—1. In combination with the ash-chute G H and ash-chamber F, the ash-pan Q, the ledge R, projecting from the fire-back, and the spring-cheek S upon the front wall or jamb, T, of the said ash-chamber, supporting the ash-pan Q, in the manner and for the purpose explained.

2. In combination with the ash-chute G H and ash-pan Q, the spring buffer or buffers W on the sloping floor H of the said ash-chute, substantially as set forth.

334,089. VALVE FOR ENGINES. GEORGE SCHUEHANN, Reading Pa. Filed Oct. 24, 1885. (No model.)



Claim.—1. The combination of a double-seated box-like slide-valve with a stationary distance-piece provided with balance cavities or recesses a a in its upper face, substantially as shown, described, and for the purpose set forth.

2. In a double-seated slide-valve, as described, provided with a stationary distance-piece, the ports b b in the inner surface of the cover-plate of the valve, substantially as shown, and for the purpose specified.

3. In a double-seated valve, in sliding combination with a stationary distance-piece, as described, the leak or relief holes e or gutters e', located in the cover-plate h of the valve, as shown, and substantially for the purpose set forth.

4. The combination of a double-seated slide-valve with a stationary distance-piece C, provided with hollow or slotted strengthening-ribs d, as shown, described, and for the purpose specified.

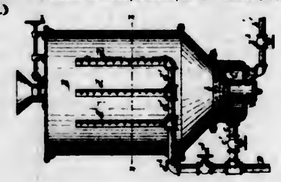
5. In a double-seated rectangular slide-valve, as described, the valve-frame A, having inwardly-projecting sides p p, substantially as shown, and for the purpose set forth.

6. In a double-seated slide-valve, frame A, having inwardly-projecting sides p p and outward-projecting hollow strengthening-ribs d' d', as shown and described, in combination with a fixed distance-piece, C, substantially as and for the purpose specified.

7. The combination of a steam-cylinder and double-seated slide-valve with a stationary distance-piece, C, having its wearing-surface of the same form and area as the valve-face upon the cylinder, substantially as shown, described, and for the purpose specified.

8. The combination of a steam-cylinder having a steam-chamber, I, inlet I', ports m, and exhaust-passages y in the shell of the same, with a double-seated slide-valve provided with relief-passages s s', exhaust-cavities a, and cavities b, said valve having a reciprocating movement over a fixed distance-piece, C, with prolongations c^3, substantially as and for the purpose set forth.

334,090. MANUFACTURE OF STARCH. JOHN C. SCHUMAN, Akron, assignor to William T. Jobb, Buffalo, N. Y. Filed Nov. 23, 1885. (No model.)



Claim.—1. The herein-described method of preparing the grain for reduction, which consists in first steeping the grain, then drawing off the water, and then drying the grain by an air-current, substantially as set forth.

2. The herein-described method of preparing the grain for reduction, which consists in first steeping the grain, then drawing off the water, and then drying the grain by forcing compressed air through the same, substantially as set forth.

3. The herein-described method of extracting starch from grain, which consists in first steeping the grain, then drawing off the water, then drying the grain by an air-current, then reducing the grain, and then separating the starch from the offal, substantially as set forth.

4. The herein-described method of extracting starch from grain, which consists in first steeping the grain, then drawing off the water, then drying the grain by forcing compressed air through the same, then reducing the grain, and then separating the starch from the offal, substantially as set forth.

334,091. **TWO-WHEELED VEHICLE.** NICHOLAS W. SHERMAN, Coldwater, Mich. Filed Nov. 12, 1885. (No model.)



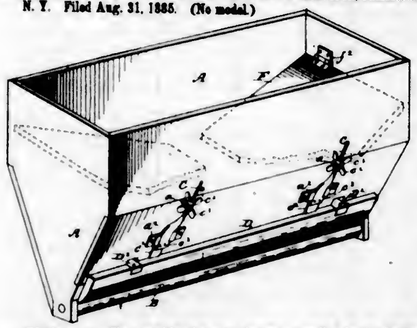
Claim.—1. In a two-wheeled vehicle, the combination, with a shaft-bar having an opening, as described, of a spring mounted in said opening, substantially as and for the purpose set forth.

2. In a two-wheeled vehicle, the combination, with the slotted cross-bar, spring mounted on loose links or shackles therein, and spring-bar, of the seat and seat-bars, the latter being secured to the shafts by loose links and to the spring-bar by knuckle-joints, as set forth.

3. The combination, with the spring, spring-bar, and seat-bars mounted thereon, of the foot-rest and straps curved under and secured to the front side of the spring-bar, as shown, and for the purpose set forth.

4. In a sulky, the combination, with the slotted shaft-bar and spring mounted loosely therein, of the spring-bar surmounting said spring, the seat-bars knuckle-jointed to the spring-bar and loosely connected to the shafts, and the foot-rest straps connected at one end to the seat and at the other to the front of the spring-ba.

334,092. **FEED-REGULATOR.** LEOPOLD C. SEROGNER, Jamestown, N. Y. Filed Aug. 31, 1885. (No model.)



Claim.—1. The combination of a bopper, a roller in the bottom thereof, the gate D, and its spring-metal straps with the arms D^2, projecting within the bopper, the vertical rods E, and the chutes F, hinged to the hopper, substantially as and for the purpose described.

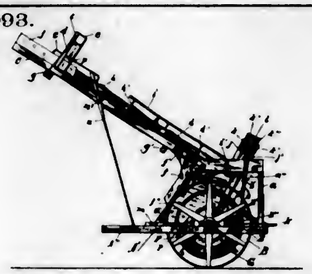
2. The combination of a bopper, the roller B, the gate D, its spring-supports, screw-threaded rods C, and bearing-plates *a* with the inner arms D^2, rods E, resting thereon, and chutes F, resting on the rods E, substantially as and for the purpose described.

334,093. **HAY RAKE AND LOADER.** CHARLES P. SLAGHT, Tiffin, Iowa. Filed Jan. 14, 1884. (No model.)

Brief.—The prominent novel features are the raking-cylinder having rakes operated by cams that are pivoted and adjustable, in which are the bearings of the cylinder-shaft, the stop-board above the raking-cylinder, the flanges on the cams and on the sides of the elevator-frame forming a chute-like passage from the raking-cylinder to the elevator, with adjustment of the latter, and the operating mechanism of the walking rakes.

Claim.—1. The combination of the wheel B" and drive-wheel B, the main frame of the machine supported by said wheels, the heads K

334,093.



K, shaft B^v, and shell H', the cams L L, pivoted at their rear margins to the main frame, and the levers *m*, attached to said cams and adapted to raise them and elevate the cylinder, the spring-teeth *s*, and rake-heads *t*, whose ends project through the slots in the heads K K into the cams L L, and the gears D E E' F connecting the drive-wheel and the shaft B^v, substantially as shown and described, and for the purpose set forth.

2. The combination of the shaft B^{vi}, the pin b''', passing through the outer end of said shaft, the drive-wheel B, and geared ring F, attached to the drive-wheel, and the pinion E, loosely mounted on the shaft B^{vi} and engaging with the guard-ring F, said pinion having ratchet-teeth on its outer face engaging with the pin b''', substantially as shown and described, whereby the rotation of the wheel B in one direction rotates the shaft B^{vi}, while the reverse rotation of the wheel B rotates the pinion E without affecting the shaft B^{vi}.

3. In a hay rake and loader, the combination of a suitably-suspended hollow raking-cylinder, a series of raking-teeth rotating with said cylinder and adapted to vary their position with reference to the axis thereof, a cam or cams pivoted to the frame of the machine and adjustable in relation thereto, and means connecting said raking-teeth and said cams, whereby as the cylinder rotates the position of the raking-teeth with reference to the axis of the cylinder is varied by the cams.

4. In a hay rake and loader, the combination of a hollow raking-cylinder suspended on the frame of the machine, a series of rake-heads suspended within the cylinder and rotating therewith, but projecting beyond the ends thereof, suitable raking-teeth attached to said rake-heads and adapted to project outside the cylinder, and a cam or cams pivoted to the frame of the machine and adjustable in relation thereto, adapted to engage with the projecting ends of said rake-heads and guide them in a path eccentric to the axis of the cylinder as they rotate about said axis, whereby said rake-teeth during a part of each rotation of the cylinder project outside the periphery thereof, and during the remainder of such rotation lie within the same, substantially as shown and described, and for the purpose set forth.

5. The combination of the wheels B B", the main frame of the machine supported on said wheels, the raking-cylinder, raking-heads, and raking-teeth, and means, substantially as shown and described, for operating the same, the inclined elevator C, attached to the main frame of the machine, the reciprocating carriers O, adjustable toothed levers A A', pivoted to said carriers, means for imparting longitudinal reciprocal motion to said carriers, and means for depressing the teeth of the levers A A' before each forward movement of the carriers, and for elevating said teeth before each backward movement thereof, substantially as shown and described, and for the purpose set forth.

6. The combination of the elevator C, cross-bar *p*, carriers O, supported by said cross-bar, levers A A', adjusting-rods *i*, swinging levers *j j'*, bolts *u'*, connecting the carriers, adjusting-rods, and swinging levers, the rock-shafts K K', pitmen *b b'*, cranks K" K"', and crank M, all combined and operating substantially as and for the purpose set forth.

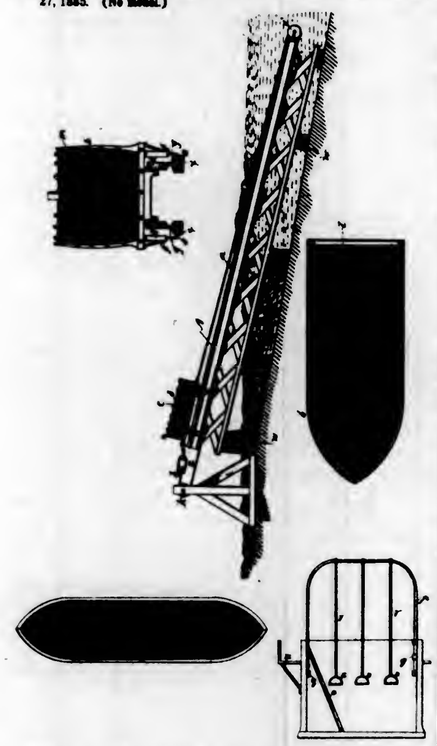
7. The combination of the cylinder H, rake-heads *t*, and teeth *s*, attached thereto, means, substantially as shown and described, for operating said rake heads and teeth, a stop-board above said cylinder adapted to prevent the carrying of hay completely around the cylinder, and means, substantially as shown and described, for taking hay from said rake-teeth and elevating it in front of the raking mechanism.

8. The combination, with the raking-cylinder, and means, substantially as shown and described, for operating the same, of the stop-board *a'"* above said cylinder, pivots connecting the lower edge of said stop-board with supports stationary with reference to the cylinder, and means, substantially as shown and described, for moving the upper edge of the stop-board backward or forward, thereby giving it an oscillating adjustment about the pivot at its lower edge, substantially as shown and described, and for the purpose set forth.

9. The combination of the elevator C, slotted posts *s*, cross-bar *p*, staples *n"*, guide-rods *c'*, sliding in said staples, the carriers O, and rocking levers A A', attached thereto, the adjusting-rods *i*, bolts *u'*, passing through holes in the rear ends of the adjusting-rods and through slots *u* in the rear ends of the carriers, the oscillating levers *j j'*, connected with the carriers by said bolts *u'*, the rock-shafts K K', and means, substantially as shown and described, for rocking the two shafts in reverse directions, substantially as shown and described, and for the purpose set forth.

10. The combination of the cams L L, the vertical flanges L', formed integrally therewith, the shields *f"*, attached to said flanges, the elevator C, provided with a bed curved downward at its rear end to form an apron, and the side pieces, *f*, following the downward curve of the bed and extending back to join the shields *f"*, substantially as shown and described, and for the purpose set forth.

334,094. **MARINE WAY.** JOHN E. STAPLES, York, Me. Filed Nov. 27, 1885. (No model.)



Claim.—1. The combination, with the cradle or car made of open-work at its sides and bottom, and provided with a floor of fine open-work, of adjustable means for propelling it along the beach, and for firmly anchoring it as against drifting or swinging by the run of the surf, as set forth.

2. The cradle or car made of open-work at its sides and bottom, being open at its rear end, and provided with a gate or gates of fine open-work, combined with taut anchoring and propelling cables, substantially as set forth.

3. The combination, with a track, of the car or cradle and means whereby its elevation above the said track may be changed, substantially as and for the purposes set forth.

4. The combination, with the car and its inclined marine way, of the offset axles, whereby said car may be adjusted by means of said axles to a higher or lower elevation.

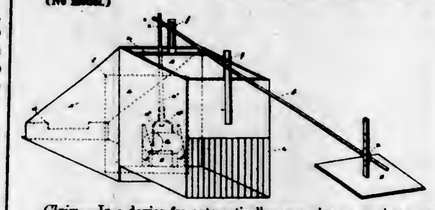
5. A non-floatable car or cradle for bathing purposes, adapted to roll upon the natural surface of the sea-beach, in combination with taut means to propel it up and down the same and anchor it as against drifting or swinging by the run of the waves, substantially as set forth.

6. A car or cradle provided with hollow broad-tread wheels, and adapted to traverse a track upon the sea-beach, and means for propelling it, substantially as set forth.

7. A cradle or car for bathing or boating purposes, provided with a gallery around it outside of and near the top of its walls, as and for the purposes set forth.

8. The combination, with a non-floating car or cradle and means for propelling and anchoring it fast, of arched bars and pendent ropes and hand-holds, as and for the purpose specified.

334,095. **DEVICE FOR AUTOMATICALLY GAGING THE FLOW OF WATER.** CHARLES N. TIBBETS, Denver, Colo. Filed Mar. 12, 1885. (No model.)



Claim.—In a device for automatically measuring or gaging water, the roller *a*, the arms a^2 a^3, the upright part *a'*, the lever *b*, the float *c*, the guide *g*, the upright part *f*, the pins or bolts *x*, *y*, and *z*, the wings *i i*, and the partition *s*, substantially as described, and for the purposes set forth.

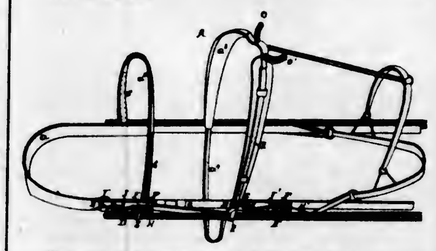
334,096. **ANIMAL-TRAP.** GOTTLOB F. VOEHTER, Pomona, Cal. Filed July 28, 1885. (No model.)



Claim.—1. In combination with the jaws of an animal-trap, the trigger, consisting of the pin provided at one end with the point, with the sharpened shoulder at the other, and the upward-extending pin, substantially as described.

2. As a new article of manufacture, an animal-trap made of one piece of metal, bent to form the spring B and the jaws, as described, and the trigger, provided at one end with the point and at the other with the pointed shoulder.

334,097. **DEVICE FOR RELEASING HORSES FROM HARNESS AND VEHICLES.** ORON W. WADE, Cave Spring, Mo. Filed Aug. 17, 1885. (No model.)



Claim.—1. In a harness, a plate, J, having a tongue, C, catch D, spring F, and string or rod H, substantially as shown and described.

2. A catch having a loop, *d*, a shoulder, d^2, and eyelets *f' f*, combined with a spring, F, cord or rod H, and tongue C, in combination, with a harness, substantially as shown and described.

3. The combination of a harness and cords or rods H H' with a sheath, G, and the detaching devices, substantially as and for the purpose specified.

4. The combination, in a harness, of a hame-string secured by a catch, and a girth secured in the same way, with a sheath, G, and cords or rods H H', all arranged substantially as and for the purpose specified.

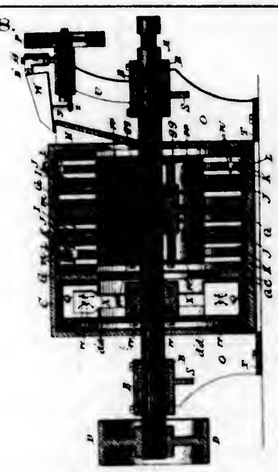
334,098. **PULVERIZING-MACHINE.** JAMES R. WOODBURN, St. John, New Brunswick, Canada. Filed May 18, 1885. (No model.)

Claim.—1. The combination, in a pulverizing-mill, with the annular central diaphragms, J, and the stationary diaphragms G, of the case C and the drum E, having the radial blades K, substantially as and for the purposes described.

2. The combination, in a pulverizing-mill, of the shaft A, the case C, the drum E, the stationary diaphragms G, the revolving diaphragms J, the blades K, and the fan X Q, whereby the material being pulverized is directed in its course through the mill and continuously and violently brought in contact with the many hard sharp edges of the swiftly-revolving blades K in a series of pulverizing-chambers and sub-chambers, as described, and for the purposes stated.

3. The combination, in a pulverizing-mill, of the shaft A, the case C, the diaphragms G, and the fan X Q, with the drum E, having the blades K and L, and diaphragms J, whereby the material being pulver-

334,098.



ized, in its course through the mill, is forced to pass alternately circumferentially and axially from one to another of a series of pulverising-chambers and sub-chambers, substantially as and for the purposes described.

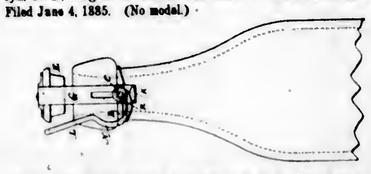
334,099. BILLIARD-CHALK HOLDER. WILLIAM ZAHRINGER, New Orleans, La. Filed Sept. 7, 1885. (No model.)



Claim.—1. In a billiard-chalk holder, the combination of the casting A, having an open front and provided with a groove, V, in its top, with the box B, having a pivot-flange, U, adapted to fit in the groove V, substantially as set forth.

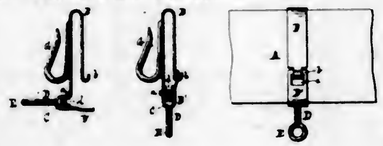
2. In a billiard-chalk holder, the combination of the casting A, having an open front, a groove, V, in its top, and a back, D, with the box B, having a curved bottom, a finger-piece, F, and a pivot-flange, U, adapted to fit into the groove V, substantially as described.

334,100. BOTTLE-STOPPER FASTENING. HERMAN P. BROOKS, Brooklyn, N. Y., assignor to himself and James L. Carson, Torrington, Conn. Filed June 4, 1885. (No model.)



Claim.—The combination, with the neck-band B and lever L, pivoted upon the neck-band, of the stopper E, slotted bail G, the pivots c, passing through said slots, the feet K, against which the lever L acts in closing the stopper, and the studs or projections R upon the bail G above the cam-shaped portions of the lever L, substantially as and for purposes set forth.

334,101. SLIDE FOR SWORD-BELTS. FRED T. BUFFUM, Providence, R. I. Filed June 3, 1885. (No model.)



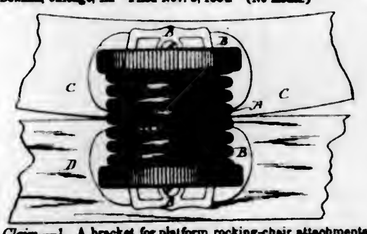
Claim.—1. In a slide for sword-belts, the combination of a slide having a screw-threaded hole with the screw D, engaging therewith, and a clamp, *d*, mounted loosely upon said screw D, and having a direct movement within said slide, to hold by pressure a belt contained in said slide, substantially as described.

2. In a slide for sword-belts, the combination of a slide having a screw-threaded hole with a clamping-screw, D, engaging therewith, and adapted to confine by pressure a belt within said slide, substantially as specified.

3. The combination of the hinged sections B B', having the hasp *b* and slot *c*, the nut C, the screw-bolt D, and clamp *d*, substantially as specified.

4. The combination of the hinged sections B B', having the hasp *b* and slot *c*, the nut C, the screw-bolt D, clamp *d*, and hook G, substantially as described.

334,102. ATTACHMENT FOR ROCKING-CHAIRS. WILLIAM I. BUNKER, Chicago, Ill. Filed Nov. 3, 1884. (No model.)



Claim.—1. A bracket for platform rocking-chair attachments, comprising two parts, one attached to the coiled spring and the other to the appropriate portions of the chair, the two when in operation being secured or fastened together by one interlocking with or into the other at the side of the spring, substantially as described.

2. A bracket for platform rocking-chair attachments, comprising two parts, one to be permanently attached to the chair and the other to the coiled spring, and the two to be connected together when in use by one dovetailing into the other at the side of the spring, substantially as described.

3. A bracket for platform rocking-chair attachments, comprising two parts, one to be attached to the chair and the other to the coiled spring, and the two to be connected together by one interlocking with or into the other at the side of the spring and between it and the rocker and base-rail, substantially as described.

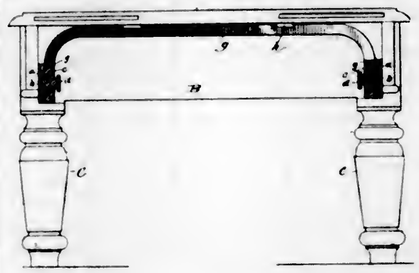
4. A bracket for platform rocking-chair attachments, comprising two parts, one to be rigidly attached to the chair and the other rigidly to the coiled spring, the two to be rigidly connected together by one interlocking with or into the other, and to be held in their proper relative positions when in use by the drawing tension of the spring, whereby by means of the rigid attachment of their ends the springs are flexed or bent by the rocking of the chair, substantially as described.

334,103. EXTENSION-TABLE. HENDRIK F. BURMEISTER, Chicago, Ill. Filed July 14, 1884. (No model.)

Claim.—1. The combination, with an extension-table, of a leaf composed of two parts hinged together, each part provided with a piece hinged to its under side at a point near its outer edge, said pieces occupying positions at right angles to the leaf when in use, and forming a continuation of the table side rail, as set forth.

2. The combination, with table A B, of leaves E, constructed as described, and provided with hinged pieces *r*, as and for the purpose set forth.

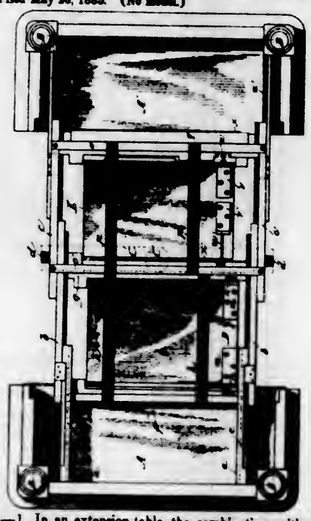
3. The frames D, provided with rollers *l* and hooks *m*, and leaves E, pivoted in said frames, in combination with the table A B, provided with grooves *j* and rods *g g'*, as and for the purpose set forth.



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334,104. EXTENSION-TABLE. HENDRIK F. BURMEISTER, Chicago, Ill. Filed May 26, 1885. (No model.)



Claim.—1. In an extension-table, the combination, with the table and a folding leaf thereof provided with pins mounted in angle-irons secured to the under side of the leaf, of a leaf-supporting frame, the cross-bars of which are each provided with an L-shaped slot, as set forth.

2. In an extension-table, the combination with the table and a folding leaf thereof provided with pins mounted in angle-irons secured to the under side of the leaf, of a leaf-supporting frame, the cross-bars of which are each provided with an L-shaped slot, and one cross-bar is hinged, as described.

3. In an extension-table, the combination, with the table and a folding leaf thereof provided with a long and short pin mounted in angle-irons secured to the under side, of a leaf-supporting frame, the cross-bars of which are each provided with an L-shaped slot, and one of said cross-bars provided with an opening, as set forth.

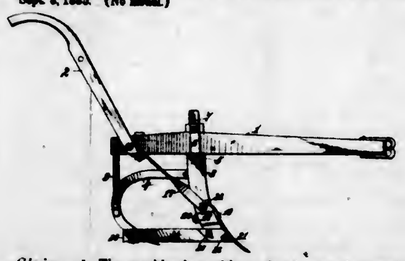
334,105. PUMP-VALVE. JONATHAN J. BURCH and JOSEPH B. SCOVILL, Carthage, Mo. Filed Aug. 18, 1885. (No model.)

Claim.—The combination, with the bucket having a dovetailed circumferential groove on its outer periphery and a beveled recess on its inner face, and the transverse bar having the hinge of the valve-wings, of the pump-rod secured to said bucket and extending inwardly therein to a point a short distance above the said valve-wings, serving as a fender, substantially as shown and described.

334,105.



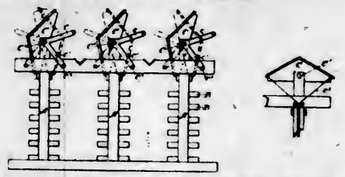
334,106. PLOW. JOSEPH M. BURROWS, Hawkinsville, Ga. Filed Sept. 8, 1885. (No model.)



Claim.—1. The combination, with a plow-beam, of a vertical standard arranged on one side of said beam, a clamping-plate placed on the opposite side of said beam, a cultivator-stock having its upper end slotted and placed over and parallel with the upper end of said standard, and bolts passed above and beneath the plow-beam and through the clamping-plate, standard, and slotted cultivator stock or shank, said bolts being provided with nuts, whereby the plow-standard and cultivator-shank are detachably and adjustably connected to the plow-beam substantially as described.

2. The combination, with the plow-beam and a plow-standard adjustably secured to said beam, of an outwardly-bent cultivator-shank, having its upper end arranged upon said standard and adjustably secured thereto, an outwardly-inclined brace, having its upper end secured to the beam and its lower end pivotally connected to the plow-standard, and a vertical brace secured to the rear end of the plow-beam, and having its lower end adjustably connected to the cultivator-shank, substantially as described.

334,107. BRICK-DRYING STRUCTURE. JOHN K. CALDWELL, Porter Station, Ind. Filed June 16, 1885. (No model.)



Claim.—1. A brick-drying structure comprising a series of supporting-standards and a series of pivoted roofs constructed to turn in either direction, and arranged with their edges in close proximity to each other, and means for turning the roofs, all substantially as described.

2. The combination, with a series of supporting-standards, of the pivoted roof C, constructed to turn in either direction, the spouts F, means for supporting the spouts beneath the edges of the roofs, and means for turning the roofs on their pivots, all substantially as described.

3. The combination, in a brick-drying structure, with the supporting-standards, of the centrally-pivoted roof C, adapted to turn in either direction upon its pivots to expose either side of the bricks to the rays of the sun, and means for turning said roof, all substantially as described.

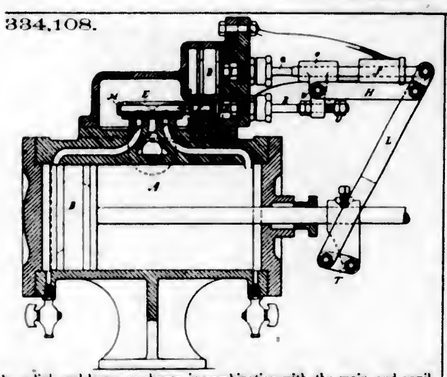
4. The combination, with the standards A, of the rod C', journaled in said standards, the roof C, secured to said rod, arms *c c'*, and means for fastening said arms, whereby the roof may be held when in a horizontal position, or when tilted in either direction, all substantially as described.

334,108. STEAM-ACTUATED VALVE. WALTER H. CARY, San Francisco, Cal. Filed June 29, 1885. (No model.)

Claim.—1. In a direct-acting engine, a main and supplemental piston having their rods connected at the outer end by a link and lever, as shown, in combination with the main and auxiliary steam-valves placed in line and operated by the single valve-stem, the collar O, and link H, substantially as herein described.

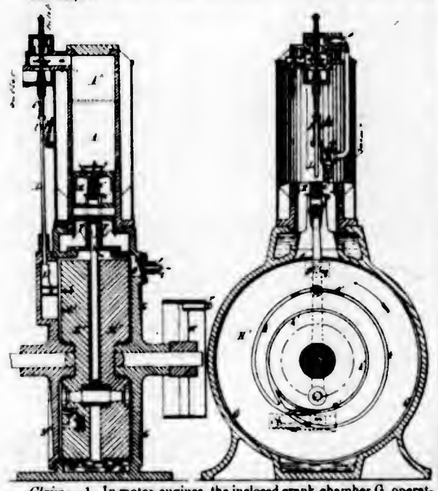
2. In a direct-acting engine, the main and supplemental cylinders with pistons moving therein, piston-rods having the outer ends connected

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by a link and lever, as shown, in combination with the main and auxiliary valves placed in line, the single valve-stem having the collars, between which the valves are held and moved, and the collar O upon the supplemental piston-rod, and the link H, substantially as herein described.

334,109. MOTOR-ENGINE WORKED BY COMBUSTIBLE GASES OR PETROLEUM. GOTTLIEB DAIMLER, Cannstadt, Würtemberg, Germany. Filed Sept. 21, 1885. (No model.) Patented in England Apr. 7, 1885, No. 4,315; in Belgium Apr. 30, 1885, No. 68,536; in Austria-Hungary July 10, 1885, No. 13,745 and No. 35,256; in Spain July 21, 1885, No. 5,021; in Italy Aug. 27, 1885, No. 18,747, and in France Sept. 16, 1885, No. 168,279.



Claim.—1. In motor-engines, the inclosed crank-chamber G, operating, in combination with the inlet-valve g', cylinder A, and piston E, with valve e, so as to constitute a compressing-pump by which combustible mixture or air is introduced into the cylinder through the piston, substantially as herein described.

2. In combination with the crank-chamber G, closed by the cover g'', the crank-disks H' H'', with cam-grooves k k', sliding block o, and rod L, actuating the discharge-valve c, substantially as herein described.

3. For producing a weaker combustible mixture for the last part of the cylinder-charge, the gas-admission valve q, operating, in combination with the arm l and screw s, on the rod L, so that the valve is partly closed and the supply of gas consequently restricted during the latter part of the suction-stroke.

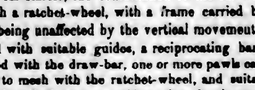
4. The governor-arm m, operating, in combination with the spring u and spring-switch n, with incline, and the cam-grooves k k', whereby when the normal speed is exceeded the block o is caused to remain in the circular groove k', substantially as and for the purpose set forth.

5. The removable crank-handle r, operating in combination with the pivoted strut p, for keeping open the discharge-valve, and the screw t, for keeping open the suction-valve g', for starting the engine, substantially as set forth.

6. The forked projection F, in combination with the valve s, spring e', and contact-plate e'', whereby the valve s is rendered free to open to the pressure in the crank-chamber at the end of the instroke, substantially as herein described.

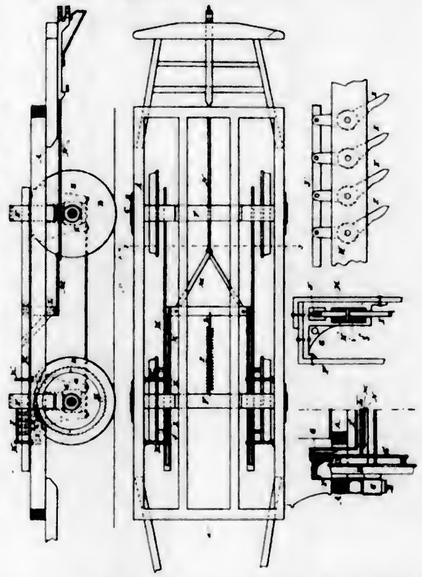
7. In a gas-motor engine, a closed crank-chamber acting as a pump-chamber, in which the crank is formed as a disk or disks to more or less completely fill out the chamber, substantially as herein set forth.

334,110. SPRAY-NOZZLE. EDWD. J. DELANEY, San José, Cal. Filed Apr. 9, 1885. (No model.)



Claim.—A spray-nozzle having a hole extending axially into its head and an angular notch having a vertical and horizontal wall formed by cutting away a portion of the head, so that said notch intersects the end of the hole, substantially as herein described.

334,111. CAR-STARTER. CHARLES F. DODGE, Philadelphia, Pa. Filed Sept. 1, 1885. (No model.)



Claim.—1. In a car-starter, the combination of the car-wheel and its axle, provided with a ratchet-wheel, with a frame carried by the axle-boxes or the axle, being unaffected by the vertical movement of the car-body, and provided with suitable guides, a reciprocating bar guided thereby and connected with the draw-bar, and one or more pawls carried by said bar and adapted to mesh with the ratchet-wheel, substantially as and for the purpose specified.

2. In a car-starter, the combination of the car-wheel and its axle, provided with a ratchet-wheel, with a frame carried by the axle-boxes or the axle, being unaffected by the vertical movement of the car-body, and provided with suitable guides, a reciprocating bar guided thereby and connected with the draw-bar, one or more pawls carried by said bar and adapted to mesh with the ratchet-wheel, and suitable devices, substantially as described, to cause said pawls to be thrown down in contact with said ratchet-wheel at the terminal of the back movement of said pawl-carrying bar and clear of the ratchet-wheel at the terminal of the forward movement of said bar, substantially as and for the purpose specified.

3. In a car-starter, the combination of the car-wheel and its axle, provided with a ratchet-wheel, with a frame carried by the axle-boxes or the axle, being unaffected by the vertical movement of the car-body, and provided with suitable guides, a reciprocating bar guided thereby and connected with the draw-bar, and one or more pawls carried by said bar and adapted to mesh with the ratchet-wheel, and suitable devices, substantially as described, to cause said pawls to be thrown down in contact with said ratchet-wheel at the terminal of the back movement of said pawl-carrying bar and clear of the ratchet-wheel at the terminal of the forward movement of said bar, and friction-creating device to cause said pawls to remain up or down, according as to the position assumed, and until said position is positively changed, as above specified, substantially as and for the purpose specified.

4. In a car-starter, the combination, with the car-wheels D and their axle-boxes C with the bent frame-work F, supported upon said axle-boxes and extending over the said car-wheels and independent of the car-body, of the ratchet-wheels E, secured to said wheels or their axle, guide-brackets G, secured to the frames F, reciprocating bars H, a draw-bar connected to said reciprocating bars and adapted to reciprocate them, and pawl mechanism, substantially as described, carried by said bar and adapted to mesh with the ratchet-wheels, substantially as and for the purpose specified.

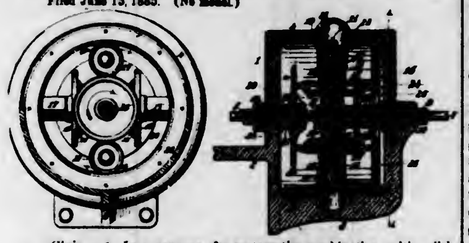
5. In a car-starter, the combination, with the car-wheels D and the axle-boxes C with the bent frame-work F, supported upon said axle-boxes, and extending over the said car-wheels, of the ratchet-wheels E, secured to said wheels or their axle, guide-brackets G, secured to the frame F, reciprocating bars H, and draw-bar connected to said reciprocating bars and adapted to reciprocate them, series of pawls I, pivoted to said bars and connected together on each bar by the bars J, and adapted to mesh with the ratchet-wheels E, and stops K, to raise or depress said pawls at the terminals of the reciprocation of the bars H, substantially as and for the purpose specified.

6. In a car-starter, the combination, with the car-wheels D and their axle-boxes C with the bent frame-work F, supported upon said axle-boxes, and extending over the said car-wheels, and independent of the car-body, of the ratchet-wheels E, secured to said wheels or their axle, guide-brackets G, secured to the frame F, reciprocating bars H, and draw-bar connected to said reciprocating bars and adapted to reciprocate them, a series of pawls, I, pivoted to each of said bars and connected together by the bars J and adapted to mesh with the ratchet-wheels E, stops K, to raise or depress said pawls at the terminals of the reciprocation of the bars H, and friction-creating device to retain the pawls in the raised or depressed conditions, substantially as and for the purpose specified.

7. The combination of the car-wheels D, their axle and the axle-boxes, with frames F secured to said axle-boxes and provided with guides, the bars H, formed with double part H', cross-bar L, connecting said bars H, draw-bar N, connected with said bars, and connecting mechanism, substantially as described, by which the reciprocation of the bars H imparts a rotary movement to the car-wheel, substantially as and for the purpose specified.

8. The combination of the car-wheel D and its ratchet-wheel E with the reciprocating bar H, carrying the pawls I, disks i, and means, substantially as described, to raise or depress said pawls at the terminals of the reciprocation of the bars H, substantially as and for the purpose specified.

334,112. GOVERNOR FOR MOTORS. JOSIAH DOW, Lowell, Mass. Filed June 15, 1885. (No model.)



Claim.—1. In a governor for motors, the combination, with a disk having independent bearing, of a friction gear or gears bearing thereon, bearings radiating from the axis of the disk-bearing upon which said gears are adjustable longitudinally, said bearings being mounted upon an axis coincident with that of the disk, mechanism for imparting to said friction gearing and to the bearing upon which it is mounted synchronous rotation, said mechanism being adapted to open and close a steam or other port by devices actuated by the revolution of said disk in opposite directions, substantially as described.

2. In a governor for motors, the combination, with a disk opening and closing the port of the engine, of friction-gears bearing upon the flat face of said disk, radial bearings upon which said friction-gears are rotated and adjusted, a shaft carrying said bearings and having synchronous revolution with the friction-gears, and springs drawing said gears toward the axis about which their bearings rotate, substantially as described.

3. In a governor for motors, the combination, with a shaft driven by any suitable means, of a hub rigid thereon, tubes projecting radially from opposite sides of said hub, miter-gears sleeved upon said tubes and having prolonged hubs held in place by nuts on the threaded ends of the tubes, friction-gears splined upon said prolonged hubs, springs drawing said gears toward the revolving shaft, a friction-disk sleeved upon said shaft with the plane face of which the friction-gears engage, and means for imparting to the shaft and to the said gears equal revolution in equal time, substantially as described.

4. In a governor for motors, the combination, with a disk journaled upon an independent axis, of friction-gears engaging with the plane face of said disk, rotating bearings upon which said gears are radially adjustable, and means for imparting to said bearing or to the gears mounted thereon equal and synchronous revolution in planes substantially at right angles to each other, substantially as described.

5. In a governor for motors, the combination, with a revolving shaft and hub rigid thereon, of tubular bearings radiating from said hub, miter-gears sleeved upon said bearings, friction-gears splined upon the prolonged hubs of said gears, a disk with a plane face of which the friction gears engage, a miter-gear meshing with the miters upon the tubular bearings, a spur-gear carried by the miter-gear, a stationary internal gear in the same plane with the spur-gear, and planet-gears meshing with said spur and internal gear and rigidly connected with the hub upon the shaft, substantially as described.

6. In a governor for motors, the combination, with a friction-gear splined upon the prolonged hub of an actuating-gear, of a bearing for the latter mounted radially upon a rotating axis, a spring drawing said friction-gear toward the rotating axis, a disk with the plane face of which the gear engages, and gearing whereby the friction-gear receives a single rotation upon its bearing to each rotation of the axis carrying said bearing, substantially as described.

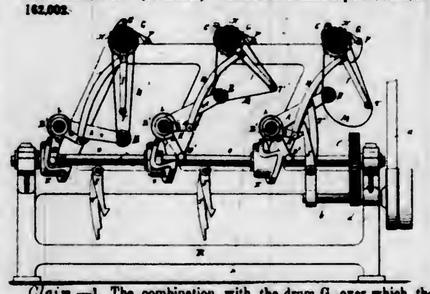
7. In a governor for motors, the combination, with a friction-gear splined upon the prolonged hub of an actuating-gear, of a bearing for the latter mounted radially upon a rotating axis, a spring drawing said friction-gear toward the rotating axis, means for varying the tension of said spring, a disk with the plane face of which the friction-gear engages, gearing whereby the latter receives a single rotation to each rotation of the axis carrying its bearing, and devices actuated by the disk for opening and closing the steam-port, substantially as described.

8. In a governor for motors, the combination, with a rotating support, of tubular bearings rigidly mounted thereon and containing spiral springs, miter-gear revolving upon said tubular bearings and having prolonged hubs, friction-gears splined upon said hubs and drawn by the springs toward the axis of the rotating support, a disk with a plane face of which the friction-gears engage upon sides of its axis, and gearing for giving equal rotation in equal times to the friction-gears, and the support carrying the tubular bearings, substantially as described.

9. In a governor for motors, the combination, with a disk, with the plane face of which friction-gears engage upon opposite sides of its axis, of a spring coiled upon the sleeve of said disk and forcing it against the friction-gears, bearings upon which the latter revolve, a rotating shaft carrying said bearings, and means for imparting to said shaft and to the friction-gears equal rotation in equal times, substantially as described.

10. In a governor for motors, the combination, with a stationary internal gear and a concentric spur-gear, of planet-gears meshing with both, a sleeve carrying said spur-gear and a miter-gear and driven by suitable means, miter-gears meshing with the miter on the sleeve and mounted on tubular bearings carried by a hub, which is rotated by arms connected with the planet-gears, friction-gears splined upon the prolonged hubs of the miters, springs coiled within the tubular bearings and drawing the friction-gears toward the axis of the hub, devices for adjusting the tension of said springs, a disk with the plane face of which the friction-gears engage, a sleeve on which the disk is mounted, a spring bearing on the rear face of the disk, a common shaft carrying the sleeve of the disk, and of the actuating miter and spur gears, and gearing carried by the former sleeve and actuating the devices opening and closing the port of the engine, the parts being so proportioned that the friction-gears revolve upon their axes in equal times with the revolution of the hub carrying the tubular bearings, substantially as described.

334,113. MECHANISM FOR OPENING AND SEPARATING THREADS OF HANKS OR SKEINS. PIERRE DURANDON, Lyons, France. Filed Jan. 2, 1885. (No model.) Patented in France Sept. 16, 1884, No. 162,602.



Claim.—1. The combination, with the drum G, over which the skeins or hanks are passed, of the beater B and tension-bar T, and

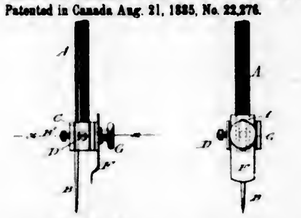
mechanism, substantially as specified, for operating the beater and the tension-bar, substantially as and for the purposes described.

2. The combination, with the drums G, cross-shaft G^2, and supporting-frames R, of the beaters B, arms A, link H, shaft B', the tension-bars T, arms I, pawls C P, ratchet-wheel N, arms D K, spring L, shaft *o*, and cam E, substantially as set forth.

3. The combination of a drum and mechanism, substantially as specified, for imparting to the same a step-by-step rotation, a yielding tension-bar and beater acting within the skein, and mechanism, substantially as specified, for operating said tension-bar and beater, the beater to produce a blow upon the threads in the hank as it falls, and the yielding tension-bar to spread and stretch the hank, substantially as specified.

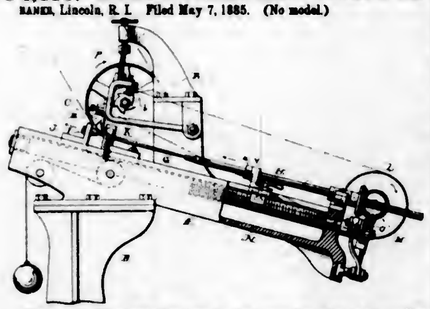
4. The combination, with the drum G, of the beater B, shaft B', and spring L, the tension-bar T, the arms A I K D, link H, double pawl S T', the shaft *o*, and cam E, substantially as specified.

334,114. TRIMMING ATTACHMENT FOR SEWING-MACHINES. JAMES W. EASTWOOD, Thorold, Ontario, Canada. Filed Oct. 8, 1885. (No model.) Patented in Canada Aug. 21, 1885, No. 22,376.



Claim.—In combination with the needle-bar of a sewing-machine, needle-bar A, needle B, screw B', head C, set-screw D, knife F, having slot *f*, set-screw G, and throat-plate H, provided with slot I, all substantially as set forth.

334,115. MACHINE FOR CUTTING FILES. CRAWFORD M. FAIRBANKS, Lincoln, R. I. Filed May 7, 1885. (No model.)



Claim.—1. The combination of the rotatable arbor, a traveling block, a screw for working the traveling block, and devices, substantially as described, for varying the relative rotation of the screw and arbor.

2. The combination of the arbor H, screw N, intermediate block, V, and mechanism, substantially as described, to give an independent feed-motion to the independently-rotating arbor H, for the purpose specified.

3. The combination, with a table or analogous supporting means having the slot W, of the rotatable arbor H, the slide J, the screw N, means for rotating the same, and the block V, engaging with said screw, and also engaging with the arbor, said block V and slide J resting and moving in slot W.

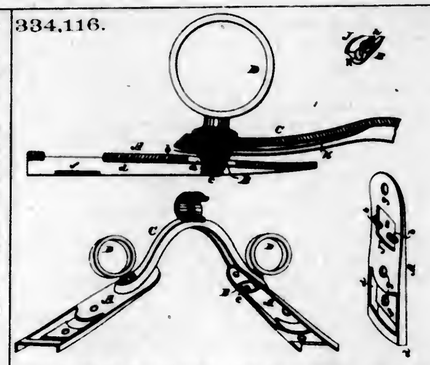
4. The combination, with the rotatable arbor H and rotatable screw N, of the intermediate block, V, having a vertically-movable screw-threaded portion, as described, and the cam X, for causing said movable portion to be engaged or disengaged with the screw N.

334,116. HARNESS-SADDLE. ALGERNON GILLIAM, Canton, Ohio. Filed July 10, 1885. (No model.)

Claim.—1. In a harness-saddle, the combination, with the jockey-plates, each having an opening therein, and trunnions projecting inwardly from opposite sides of said openings, of the nuts having laterally-projecting recessed ends adapted to take under the trunnions, the yoke located above the jockey-plates, and the terrets passing through the yoke, jockey-plates, and nuts and securing them in position, substantially as set forth.

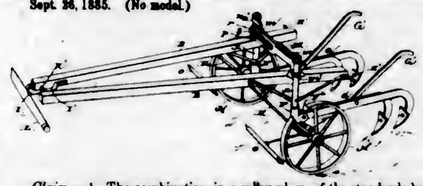
2. The combination, with a yoke concave on its under side, and

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provided with ribs *k* and *l* and the perforation *m*, of the nuts secured to jockey-plates and connected to the yoke, substantially as set forth.

334,117. SULKY-PLOW. SAML. W. GUTHRIDGE, Johnstown, Mo. Filed Sept. 26, 1885. (No model.)

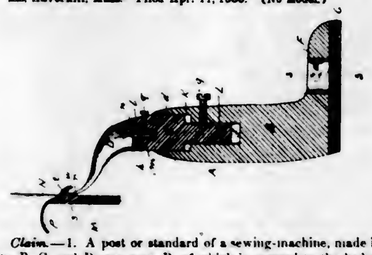


Claim.—1. The combination, in a sulky-plow, of the standards having the horizontal extensions, the skeins or spindles pivoted thereon and having the teeth C', the couplings pivoted on the standards and having the teeth meshing with teeth C', and the plows trailing therefrom, whereby the spindles or skeins may be turned by moving the rear ends of the plow-beams laterally, substantially as described.

2. The combination, in a sulky-plow, of the standards carrying the supporting-wheels and the trailing plows, and the couplings M, pivoted or hinged to the said standards, to permit independent longitudinal movement of the plows, substantially as described.

3. The combination, in a sulky-plow, of the standards carrying the supporting-wheels and the trailing plows, and the extensible couplings M, pivoted or hinged to the said standards, to permit independent longitudinal movement of the plows and lateral adjustment thereof, substantially as described.

334,118. ATTACHMENT FOR SEWING-MACHINES. ELMER S. HARRIS, Haverhill, Mass. Filed Apr. 11, 1885. (No model.)



Claim.—1. A post or standard of a sewing-machine, made in three parts, B, C, and D, one part, B, of which is secured to the bed-plate or table of the sewing-machine, the part D having a rest or guiding-edge, *s*, said part D and the part C being adapted to be connected to said part B and to each other by screw-and-swivel joints, and provided with means for securing them from movement, all substantially as and for the purpose specified.

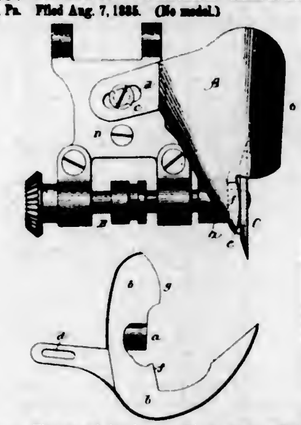
2. A post or standard of a sewing-machine, made in three parts, B, C, and D, one part, B, of which is connected to the bed-plate or table by a tongue-and-groove joint and provided with a slot and set-screw, the part D having a rest or guiding-edge, *s*, said part D and the part C being adapted to be connected to said part B and to each other by screw-and-swivel joints, and provided with means for securing them from movement, all substantially as and for the purpose specified.

3. A post or standard for a sewing-machine, made in three parts, B, C, and D, one part, B, of which is secured to the bed-plate or table of the sewing-machine, the part C adapted to screw into said part B, and secured therein by a set-screw, *g*, and the part D, provided with

a rest or guiding-edge, *s*, adapted to swivel in said part C, and secured therein by a set-screw, *q*, all substantially as and for the purpose specified.

4. A post or standard of a sewing-machine, made in three parts, B, C, and D, one part, B, of which is connected to the bed-plate or table of the sewing-machine by a tongue-and-groove joint, and provided with a slot, *a*, and screw *b*, the part C arranged to screw in said part B, and secured therein by a set-screw, *g*, and the part D provided with a rest or guiding-edge, *s*, adapted to swivel in the part C, and secured therein by a set-screw, *q*, all substantially as and for the purpose specified.

334,119. LEATHER-SKIVING MACHINE. JAMES D. HUMPHREY, Towanda, Pa. Filed Aug. 7, 1885. (No model.)



Claim.—1. The curved hood, of metal or other sufficiently-rigid substance, of the form substantially as shown, with the collar, substantially as shown, for attaching it to the shaft, together with the slot and flattened portion of the hood by the form of which the adjustment of the ejector is affected, substantially as shown.

2. The improvement in a leather-skiving machine, consisting of a collar, *a*, and the hood *b*, adapted to be adjusted to the shaft, knife, and hanger, substantially as shown.

334,120. ICE-MACHINE. AUGUSTUS H. KNIGHT, San Francisco, Cal. Filed Aug. 22, 1885. (No model.)



Claim.—1. In an ice-machine, the refrigerator-can C, having air-chambers *c'* in its ends, substantially as herein described.

2. In an ice-machine, the refrigerator-can C, having air-chambers *c'* in its ends and provided with suitable vents communicating with the outer air, for the purpose of permitting a free circulation of air through said chambers, substantially as herein described.

3. In an ice-machine, the box A, in combination with the refrigerator-can C, having the evaporator-coil D within it, the vertical diaphragm or partition *c* in the ends of the can, forming air-chambers *c'*, and the pipes c^3 and c^4, passing through the walls of the box and communicating with the air-chambers, substantially as herein described.

4. In an ice-machine, the box A, having the platform-strip B in its bottom, in combination with the refrigerator-can C, mounted on the said strip, and the air-chambers *c'* in the ends of the can, substantially as herein described.

5. In an ice-machine, the box A, having the platform-strip B in its bottom, provided with an enlarged forward end, b^3, and the gate M, notched out and fitting over the enlarged end of the platform-strip B, as described, in combination with the refrigerator-can C, within the box and resting on the platform B, the air-chambers *c'* in the ends of the can, the vent-pipes c^3, passing through the top of the box and communicating with the top of the air-chambers, and the vent-pipes c^4, communicating with the air-chambers near their bottoms and passing outwardly to the open air, substantially as herein described.

6. The box A, the platform-strip B, having enlarged forward end, b^3, and the gate M of the box, notched out and fitting tightly said enlarged end, in combination with the refrigerator-can C within the box and supported on the platform-strip, the air-chamber *c'* in the forward end of the can, the vent-pipe c^3 in the top of the air-chamber, and the vent-pipe c^4, communicating with said chamber near its top and passing outwardly through the enlarged end of the platform-strip, substantially as herein described.

7. In an ice-machine, the box A and hollow platform-strip B in its bottom, in combination with the refrigerator-can C, having air-chambers *c'* in its ends, with suitable air-vents, substantially as herein described.

8. In an ice-machine, the box A, having the platform-strip B, with enlarged forward end, b^3, and the gate M, fitting over said enlarged end, in combination with the refrigerator-can C, having an evaporating-coil, D, within it, the vertical air-chambers *c'* in the ends of the can, having vents above and below communicating with the outer air, and the exit-pipe I, passing through the rear wall of the box, the rear air-chamber of the can, and into the brine in said can, substantially as herein described.

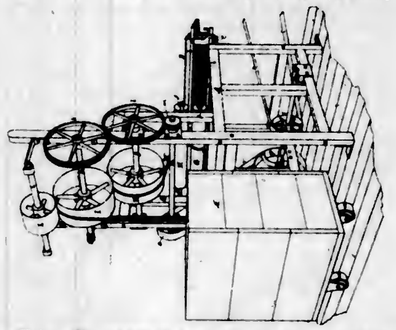
334,121. DEVICE FOR INSERTING BRISTLES IN BRUSH-BACKS. EMIL KIPPER, Adams, Mass. Filed Dec. 12, 1884. (No model.)



Claim.—1. A device for inserting bristles into brush-backs, consisting of the perforated guide-block 1 and the apertured ring or plate 4, detachably secured thereto and constructed with the undercut inner edge, 7, for overlapping the edge of the brush, substantially as described.

2. The combination, in a device for inserting bristles into brush-backs, of the perforated guide-block 1, the apertured ring or plate 4, having the undercut inner edge, 7, to overlap the edge of the brush-back, the screw-bolts passing through the guide-block and the undercut ring or plate, and nuts on the bolts, substantially as described.

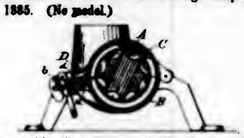
334,122. MACHINE FOR CONDENSING WARPS FOR BEING DYED. IRA F. LAWRY, Taunton, Mass. Filed June 12, 1885. (No model.)



Claim.—The combination of the riser and faller, as described, with the frame A, the reed having the dents of each pair of it connected by soldering arranged between them, as represented, the two pins or guides in advance of such reed, the two eveners or rollers in front of such guides, and the draw-rollers arranged over and in advance of such eveners, each

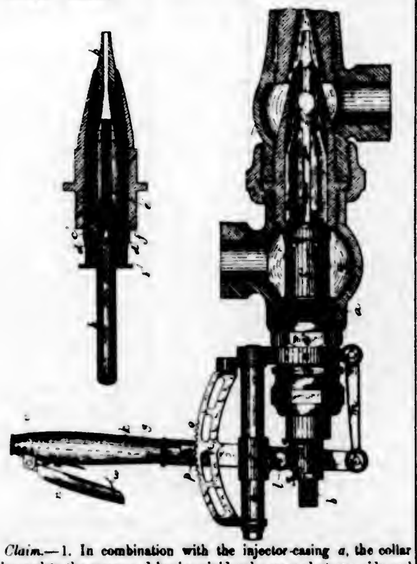
draw-rollers being provided with mechanism for revolving them, and all being essentially and for the purpose or purposes as set forth.

334,123. MEAT-CUTTER. THOMAS LYONS, New Britain, Conn., assignor to the Russell & Erwin Manufacturing Company, same place. Filed Sept. 8, 1885. (No model.)



Claim.—The combination of the spirally-ribbed cylinder, the case A B, having wings at its meeting edges, and the knife D, held between said wings, substantially as described, and for the purpose specified.

334,124. INJECTOR. WILLIAM B. MACK, Boston, Mass. Filed Oct. 31, 1884. (Model.)



Claim.—1. In combination with the injector-casing *a*, the collar *a'*, clamped to the same, and having rigid rod *e* secured at one side and link *m* pivoted at the other side of casing *a*, the notched sector *o*, attached to rod *e*, the slide *f* on rod *e*, the sleeve *f'*, attached to the slide and adjustably secured to the outer end of the steam-plug, and the operating-lever pivoted to link *m* and slide *f*, and having a fastening-catch engaging the notches on the sector-bar, as set forth.

2. In an injector, the combination of the casing *a*, the steam-plug *b*, the collar *a'*, detachably secured to the casing, the rod *e*, and segment-bar *o*, secured to the collar *a'*, the slide *f* and sleeve *f'*, located, respectively, on the rod *e* and plug *b*, and the lever *k*, pivotally connected to the said slide and sleeve and the collar *a'*, and provided with the dog *p* and its operating devices, as set forth.

3. The steam-plug *b'*, having holes *d' d'* therein, and separate tube *e'*, extending into the passage through the cone, in combination with starting-valve *c'* inside the plug *b'* and forward of holes *d'*, and seated to close the rear end of tube *e'*, as set forth.

334,125. JOINT MARKING AND DRESSING TOOL FOR CEMENT PAVEMENTS. MALCOM MACDONALD, Oakland, Cal. Filed Aug. 26, 1885. (No model.)



Claim.—1. A tool or implement for marking and dressing the joints of cement pavements and surfaces, having on its face a cutting blade or rib for making the indentation or joint, and laterally-concaved surfaces on its face on each side of and adjoining the blade or rib for rounding or convexing the edges and adjacent surfaces of the joint, substantially as herein described

2. A tool or implement for marking and dressing the joints of cement pavements and surfaces, having on its face a V-shaped cutting blade or rib with concave sides for making the indentation or joint and convexing its sides, and laterally-concaved surfaces on its face on each side of and adjoining the blade or rib, and continuing the curvature of its sides, for rounding or convexing the edges and adjacent surfaces of the joint, substantially as herein described.

3. A tool or implement for marking and dressing the joints of cement pavements, having a rabbing-face and a cutting blade or rib thereon for the joints, the face and rib being rounded or convexed in the direction of its length, substantially as described.

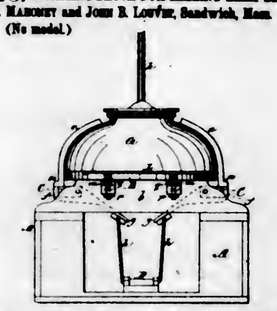
4. A tool or implement for marking and dressing the joints of cement pavements and surfaces, having on its face a cutting blade or rib with concave sides for making the indentation or joint and convexing its sides, and laterally-concaved surfaces on its face on each side of and adjoining the blade or rib, and continuing the curvature of its sides, for rounding or convexing the edges and adjacent surfaces of the joint, the whole face of the implement, including the blade or rib, being rounded or convexed in the direction of its length, substantially as herein described.

5. A tool or implement for marking and dressing the joints of cement pavements and surfaces, consisting of the angled pieces *a*, the blade or rib B, and the handled shank *d*, both blade and shank being clamped between the angled pieces, substantially as herein described.

6. A tool or implement for marking and dressing the joints of cement pavements and surfaces, consisting of the angled pieces *a*, having laterally-concaved faces, the V-shaped blade or rib B, clamped between the angled pieces and projecting below their faces, and the handled shank *d*, clamped between said pieces, substantially as herein described.

7. A tool or implement for marking and dressing the joints of cement pavements and surfaces, consisting of the angled pieces *a*, having laterally-concaved and longitudinally-convexed faces, the V-shaped curved blade or rib B, having concaved sides and clamped between the pieces *a*, and the handle D and the shank *d*, bolted between said pieces, substantially as described.

334,126. FORMING-BLOCK FOR MAKING LAMP-SHADES, &c. PATRICK F. MAHONEY and JOHN B. LOUVET, Sandwich, Mass. Filed July 25, 1885. (No model.)



Claim.—1. The combination, with the forming-block B, upon which the shade or other glass article is rotated, of the forming-arms or clamps *e*, secured to the rocker-shafts C and shaped to correspond to the contour of the block, and adapted to be brought into contact with and bear against the exterior surface of the glass article upon the said block, and a treadle mechanism and spring adapted to actuate the said rocker-shafts and forming-arms, all operating substantially in the manner and for the purpose described.

2. The combination, with the forming-block B, upon which the shade or other glass article is rotated, of the forming-arms or clamps *e*, secured to the rocker-shafts C C and shaped to correspond to the contour of the block, and adapted to be brought into contact with and bear against the exterior surface of the glass article upon the said block, the levers *g g*, connected with the rocker-shafts C C, rods A A, treadle D, and the spring *i*, all constructed to operate substantially as and for the purpose set forth.

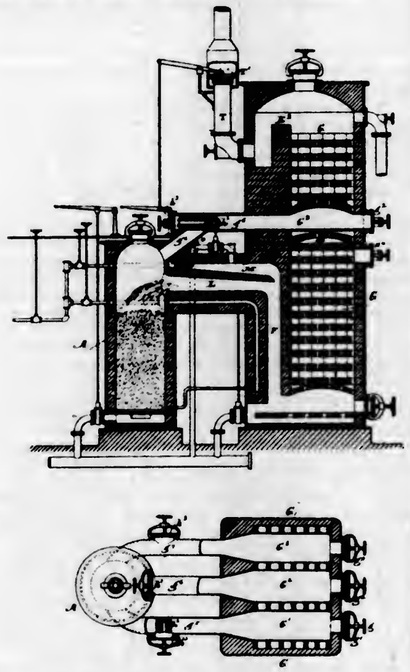
3. The combination, with the forming-block B and a rocker-shaft, C, operated substantially as described, of the removable forming-arms or clamps *e*, made adjustable in sockets or apertures in said rocker-shaft, substantially as and for the purpose set forth.

4. The combination, with the forming-block B and one or more forming-arms or clamps, *e*, operated substantially as described, of a yielding spring-rest adapted to lie in contact with and straighten or shape the lower edge of the shade or other glass article as it is rotated upon the forming-block, substantially as described.

5. The combination, with the forming-block B and one or more forming-arms or clamps, *e*, operated substantially as described, of a yielding edge straightening or shaping rest, L, mounted on vertically-moving threaded rods or bolts *m*, passing through lugs or supports *n*, and provided with adjusting-nuts *p* and springs *q*, all constructed to operate substantially in the manner and for the purpose set forth.

334,127. GAS-MAKING APPARATUS. THOMAS F. MARTIN, Newburg, assignor to the Martin Manufacturing Company, New York, N. Y. Filed June 4, 1885. (No model.)

Brief.—Steam is decomposed and the resulting water-gas mixed with oil-vapor and passed to the fixing-chamber. Coal is distilled in horizontal retorts in the superheater, and the resulting gas passed into the superheater and mixed with the water-gas and oil-vapor, and the mixture is converted into a fixed gas. Coke resulting from the distilled coal is discharged from the retorts into the water-gas generator.



Claim.—1. The combination, with the superheater and the generator and their connecting-flues, of a horizontal coking-retort passing through the superheater and provided with a damper and throat leading to the generator, and having openings in the top of such retort for the gases as generated to pass directly into the superheater, substantially as specified.

2. The combination, with the superheater and generator, of coking-retorts passing through the superheater and having throats that extend into the generator, fire-brick dampers within such throats, and removable covers to give access to the dampers, substantially as specified.

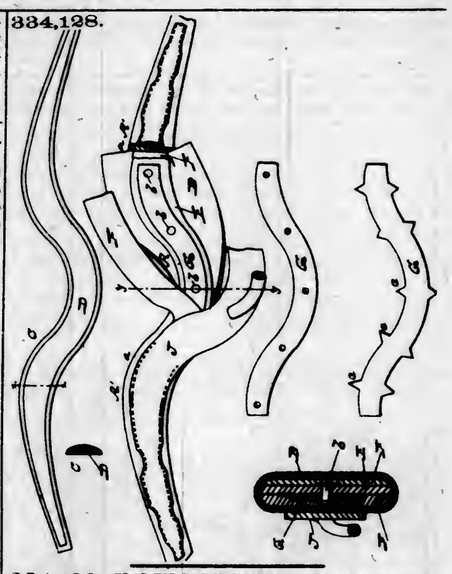
3. The combination, with the generator and superheater with which it is connected, of one or more horizontal coking-retorts passing through the superheater and having openings for the escape of the gases from the retorts directly into the superheater, to commingle with the gases passing from the generator, discharge-throats from the retorts into the generators, and dampers therein, so that the coke can be passed from the retorts into the generator, substantially as specified.

334,128. HARNESS BREAST-STRAP. I. AMOS MILLER, Westminster, Md. Filed Nov. 11, 1885. (No model.)

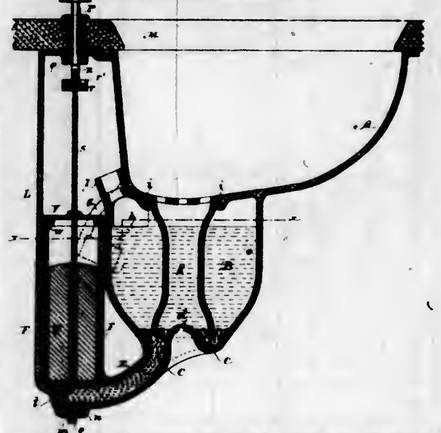
Claim.—1. The combination, with a breast-collar having the vertical arch A and filling or core E, as shown, of the flat elastic arched plate G and the metal fastenings therefor, the same constituting an improved article of manufacture.

2. The improved article of manufacture described, consisting of the flat elastic metal breast-collar plate, arched and perforated in the manner and for the purposes described.

334,128.



334,129. TRAP FOR BATHS, BASINS, &c. EZRA S. MCCLELLAN, Paterson, N. J. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination, with the basin, of a chamber, B, having an annular mercury-holding trough, a separate mercury-holder, a displacer within the mercury-holder and a rod for lifting the displacer, and a tube connecting the mercury-holding trough to the mercury-holding vessel, whereby the mercury will be allowed to run from the annular trough into the mercury-holding vessel and the contents of the basin to discharge, substantially as set forth.

2. The combination, with the chamber B and dip-pipe K, of a tube, E, and mercury-holder F, connected with the lower end of such chamber B, a displacer in the mercury-holder, a rod for raising the same, and a valve at the lower end of the rod for nearly closing the discharge-opening between the mercury-holder and the pipe leading to the chamber, substantially as set forth.

3. The combination, with the chamber B, having an annular mercury-trough in the bottom, the mercury-holder F, and connecting-tube E, of the dip-pipe K, extending down into the chamber B, and terminating above the bottom of the annular mercury-trough at the bottom of said chamber B, substantially as set forth.

4. The mercury-holder F, displacer U, valve and rod S, in combination with the handle R, lock-nut *r*, and cushion *r'*, substantially as set forth.

5. The frame L, connected at its lower end with the porcelain at the bottom of the mercury-holder, and having at its upper end a flange connected with the basin, in combination with the thimble P, tubular

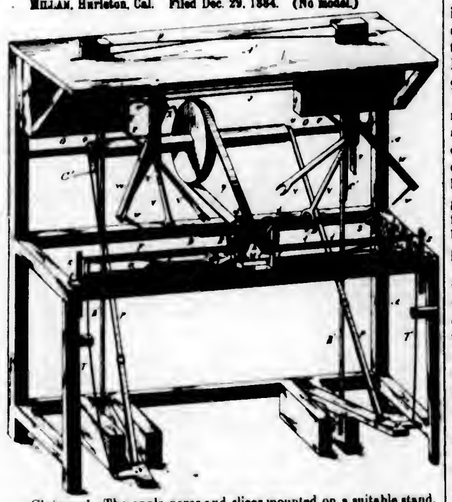
not Q, for connecting the frame to the slab, the handle R, passing through the thimble, the rod S, displacer U, mercury-holder F, and trap, substantially as set forth.

6. The combination, with a trap containing mercury, of a vessel for holding mercury, a pipe connecting the trap to the vessel, and a valve in the said mercury-pipe to open and allow the mercury to run rapidly out of the trap and to nearly close and allow the gradual return of the mercury into the trap, substantially as set forth.

7. The combination, with the basin or vessel holding water, of a trap containing mercury, a mercury-holding vessel, and a pipe connecting the same to the trap, a displacer within the mercury-holding vessel, and a valve in said pipe to regulate the gradual return of mercury to the trap, substantially as specified.

8. The basin or vessel for holding water, a discharge-pipe, and a trap containing mercury, in combination with a mercury-holding vessel, with an opening to connect the same to the trap to allow the rapid subsidence of the mercury for opening the seal, and a contracted opening for allowing the gradual return of the same for insuring the required time for the discharge of the water from the basin or bowl, substantially as specified.

334,130. APPLE PARER, SLICER, AND CORER. WILLIAM W. McMILLAN, Hurleton, Cal. Filed Dec. 29, 1884. (No model.)



Claim.—1. The apple parer and slicer mounted on a suitable stand, and consisting of the frame C, with its fork D, screw F, traveling knife-carriage H, having holder J and stud K, and driving-gears, as described, in combination with the pivoted bent lever-rod R, acting under the heel or edge of said carriage to throw its holder and stud to their engagement, the treadle N, and a connection between said treadle and the pivoted bent lever-rod, whereby said rod is oscillated, substantially as herein described.

2. The apple parer and slicer mounted on a suitable stand, and consisting of the frame C, with its fork D, screw F, traveling knife-carriage H, having holder J and stud K, and driving-gears, as described, in combination with the pivoted bent lever-rod R, acting under the heel or edge of said carriage to throw its holder and stud to their engagement, the treadle N, a connection between said treadle and the pivoted bent lever-rod, whereby said rod is oscillated, and a connection of power-transmitting devices between said treadle and the driving-gear of the machine, whereby its parts are operated, substantially as herein described.

3. The apple parer and slicer mounted on a suitable stand, and consisting of the frame C, with its fork D, screw F, traveling knife-carriage H, having holder J and stud K, and driving-gears, as described, in combination with the treadle N, the power-transmitting devices between the treadle and the driving-wheel of the machine, consisting of the strap P, shaft O, having small pulley *o* and large pulley Q, the pulley L on the driving-wheel, and the endless belt *q*, whereby the machine is operated, the pivoted bent lever-rod R, acting under the heel or edge of the carriage H to throw its holder and stud to their engagement, and the mechanism by which said lever-rod is operated, consisting of the spring-slide S, having catch *s'*, and connected with the lever-rod by a spring, *r*, and the pawl-rod T, connected with the treadle and engaging the catch *s'* of the slide S, substantially as herein described.

4. The apple parer and slicer, as herein described, mounted on a suitable stand, in combination with the pivoted and swinging arm V, overhanging the fork of the machine, and adapted to remove therefrom the pared and sliced apple, the short arms *v*, and the pivoted spring-arm W, having pin *w*, adapted to receive said apple, substantially as herein described.

5. The apple parer and slicer, as herein described, in combination with the pivoted and swinging arm V, overhanging the fork of the machine, and adapted to remove therefrom the pared and sliced apple, the short arm *v*, acting with arm V, the pivoted spring-arm W, against which the arm *v* bears to raise it, said arm having a pin, *w*, adapted to receive said apple, and a catch, X, to hold said arm in an elevated position, substantially as herein described.

6. The apple parer and slicer, as herein described, and a treadle by which it is operated, in combination with the pivoted double arm V V', overhanging the fork of the machine, and a connection between said arm and the treadle, by which a swinging movement is imparted to it to remove the apple and core, substantially as herein described.

7. The two apple parers and slicers, as herein described, mounted in line on a stand and reversed in position, having their driving-wheels united by a pulley, L, whereby they act together, in combination with a treadle, and power-transmitting devices between said treadle and the pulley L, whereby the knife-carriage of one machine is advanced to its work, while that of the other is carried to the beginning of its stroke, substantially as herein described.

8. The two apple parers and slicers, as herein described, mounted in line on a stand and reversed in position, having their driving-wheels united by a pulley, L, in combination with the mechanism by which they are simultaneously operated, consisting of the independent treadles N, straps P, shaft O, with small pulleys *o* and large pulley Q, and belt *q* from said large pulley to the pulley L, substantially as herein described.

9. The two apple parers and slicers mounted in line on a stand and reversed in position, having their driving-wheels united as described, and driven simultaneously by a common power, said machines consisting each of the frame C, with its fork D, screw F, slide-rod G, traveling knife-carriage H, having holder J and stud K, and an inclined plane or lug, *j*, by which the carriage is thrown back at the end of its stroke to disengage its holder and stud, in combination with the sliding bar or rod M, fitted on the slide-rods G, and acting between the two carriages, whereby one carriage on its advance stroke forces the other carriage to the place of beginning, substantially as herein described.

10. The two apple parers and slicers, as herein described, mounted in a line on a stand and reversed in position, having their driving-wheels united by a pulley, L, and the bent lever-rods R, pivoted at the outer ends of the frames of the machines and acting under the heel or edge of the carriages, for the purpose described, in combination with the mechanism by which the machines are driven, consisting of the independent treadles N, the shaft O, having pulleys *o* and Q, straps P, and belt *q*, arranged as described, and the mechanism by which the bent lever-rods R are operated, consisting of the spring-slides S, having catches *s'*, connecting-springs *r*, and pawl-rods T, connected with the treadles, substantially as herein described.

11. The two apple parers and slicers, as herein described, mounted in a line on a stand and reversed in position, having their driving-wheels united by a pulley, L, and the mechanism by which these machines are driven, consisting of the independent treadles N, pulley-shaft O, straps P, and belt *q*, arranged as described, in combination with the pivoted double arms V V', overhanging the forks of the machines, and a suitable connection between each set of double arms and the opposite treadle, whereby said arms are operated, substantially as herein described.

12. The two apple parers and slicers, as herein described, mounted in line on a stand and reversed in position, having their driving-wheels united by a pulley, L, and the mechanism by which these machines are driven, consisting of the independent treadles N, pulley-shaft O, straps P, and belt *q*, arranged as described, in combination with the pivoted double arms V V', overhanging the forks of the machines, and the mechanism by which each set of arms is operated by the opposite treadle, consisting of the shafts U, the pivoted bell-crank levers Y, the cranks Z, connecting-straps *y*, and the spring-strips B', connected with the bell-crank levers and having catches *b'* on their feet, with which the treadles engage, all arranged and operating substantially as herein described.

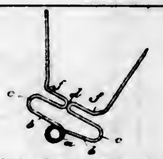
13. An apple parer, slicer, and corer, consisting of the two parers and slicers, as herein described, mounted in line on a stand, A, and reversed in position, having their driving-wheels E united, the pivoted bent lever-rods R, by which the knife-carriages are thrown to their engagement, the swinging double arms V V', and swinging spring-arm W, having receiving-pin *w*, all arranged with relation to each other, as described, in combination with the independent treadles N, a connection between said treadles and the driving-wheels E of the machines, whereby they are operated simultaneously, a connection between said treadles and the bent lever-arms R, by which they are operated, and a connection between said treadles and the double arms V V', by which they are swung and act upon arm W, all arranged to operate substantially as herein described.

334,131. CALF-WEANER. HERBERT W. MCNEAL, Ferndale, Cal. Filed July 29, 1885. (No model.)

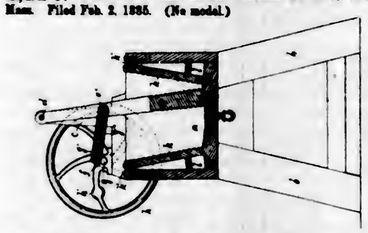
Claim.—1. A calf-weaner bent from a single piece of wire and having the spring-clamps *d* for bearing on opposite sides of the cartilage between the nostrils to secure the device to the nose of the animal, and having the extending sharpened points, substantially as described.

2. A calf-weaner formed from a single piece of wire, having the spring-coils *a*, the clamps *d*, and the extending sharpened points, substantially as described.

334,131.

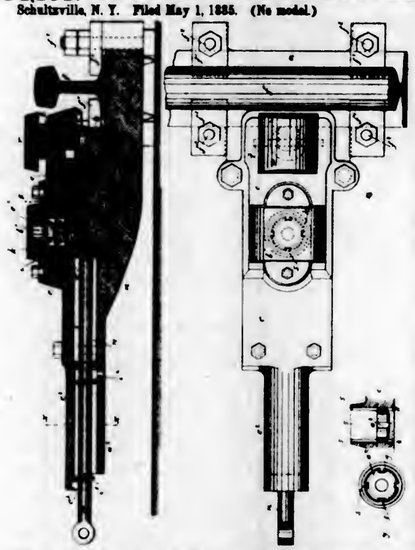


334,132. CLEANSING-MACHINE. THOMAS H. PAGE, Watertown, Mass. Filed Feb. 2, 1885. (No model.)



Claim.—In a cleansing-machine, the receptacle *a* and swing-pounder *e*, combined with the yielding side boards, *k k*, constructed and arranged substantially as described, each one being provided with a lower spring, *l*, to force its lower end inward against the influence of the upper flat spring, *k'*, secured to the upper ends, respectively, of the yielding board and case *a*, as and for the purpose set forth.

334,133. TORPEDO RAILWAY-SIGNAL. TIMOTHY G. PALMER, Schultzville, N. Y. Filed May 1, 1885. (No model.)



Claim.—1. The vertical circular torpedo-holding magazine having upon its inner surface ribs to guide the circular torpedoes that are placed flatwise one upon the other, and to facilitate their insertion, adjustment, or removal, substantially as set forth.

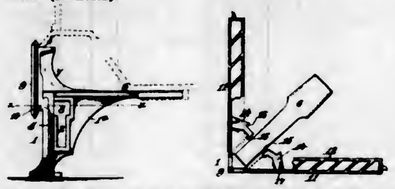
2. The vertical circular torpedo-magazine having a rim or stop around its inner surface at the lower end, in combination with the slide below the torpedo-magazine and a weight within the magazine that keeps the torpedoes in position and rests upon the rim when the torpedoes are exhausted, substantially as set forth.

3. The vertical circular torpedo-magazine having ribs upon its inner surface and a rim at the lower end, in combination with the slide beneath the magazine and the weight having notches in its edges for the ribs, substantially as set forth.

4. The combination, in the torpedo-holder, of the base with a trough-shaped projection, a cover with a similar projection, the slide *m*, and the rod passing through the space between the trough and cover, substantially as set forth.

5. The slide *m* and the rod *n*, having the collars i^3 i^3 around it, in combination with the base *a*, cover, and trough-shaped projections, between which the rod and collar are received, substantially as set forth.

334,134. STOVE-LEG. DANIEL R. PARR, Troy, N. Y. Filed Dec. 31, 1884. (No model.)



Claim.—1. A stove-leg formed with an exterior vertical filling-piece and a horizontal rearward-projecting plate for connecting with a stove, in combination with lateral side wings detachably connected with the leg and having their adjacent vertical edges bearing against said filling-piece, substantially as described.

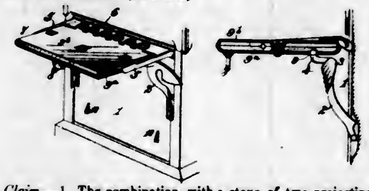
2. The combination of a stove-leg having a top table and a rearward-projecting horizontal plate, and formed with an exterior vertical filling-piece with lateral side wings detachably connected with the leg and having their adjacent vertical edges bearing against the said filling-piece, substantially as described.

3. In a stove-leg, the combination, with a central section or leg having a horizontal attaching-plate, and provided with a vertical slot or opening bounded upon each side by the metal of the plate, of wings having hooked and shouldered lugs lying one above another in said slot and having bearing against opposite faces of the central section, substantially as described.

4. The combination of a stove-leg having a top table and a rearward-projecting horizontal plate, and formed with an exterior vertical filling-piece and side slots, with lateral side wings provided with lugs engaging the said slots and having their adjacent vertical edges bearing against the said filling-piece, substantially as described.

5. The combination, with the leg 1, having shoulders 10 and the web 1* cast integral with the leg 1, having a slot, 2, and a communicating opening, 3, of the wings having lugs projecting from their interior faces, said lugs being provided with hooks or catches 15 and shoulders 16, substantially as described.

334,135. END SHELF FOR STOVES. DANIEL R. PARR, Troy, N. Y. Filed Dec. 31, 1884. (No model.)



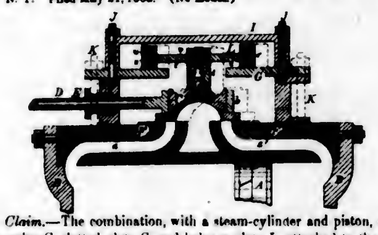
Claim.—1. The combination, with a stove, of two projecting shelf-carrying arms having a hinged connection with the stove at their inner ends, a shelf having a hinged connection with the outer ends of said arms, and a supporting arm or arms pivoted to the stove and provided with a device for engaging with the shelf between the said shelf-carrying arms, substantially as described.

2. The combination, with a stove, of projecting shelf-carrying arms having a hinged connection with the stove at the inner ends, a shelf having a hinged connection with the outer ends of said arms, two supporting-arms pivoted to the stove, and a rail connecting the outer ends of the supporting-arms and engaging the shelf between the shelf-carrying arms, substantially as described.

3. The combination, with a stove, of shelf-carrying arms having a hinged connection with the stove at their inner ends, a shelf having a hinged connection with the outer ends of said arms, supporting-arms pivoted to the stove, and a rail connecting the supporting-arms and provided with attached studs engaging the shelf between the shelf-carrying arms, substantially as described.

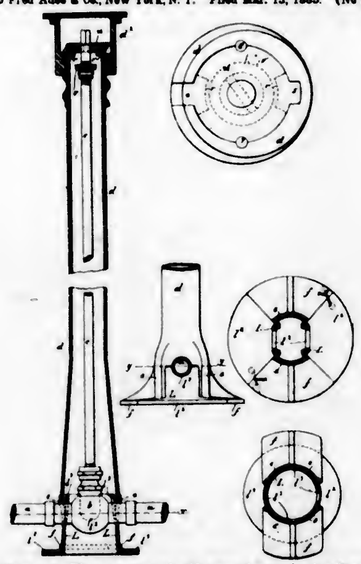
4. The combination, with a stove, of shelf-carrying arms hinged to the stove at their inner ends, a rigid strip connecting said arms adjacent to their inner hinged ends, a shelf having a hinged connection with the outer ends of said arms, supporting-arms pivoted to the stove, and a rail connecting the supporting-arms and provided with attached studs engaging the shelf between the shelf-carrying arms, substantially as described.

334,136. BALANCED VALVE. EDWIN B. SUTTERDEN, Rochester, N. Y. Filed May 21, 1883. (No model.)



Claim.—The combination, with a steam-cylinder and piston, of the slide-valve C, slotted plate G, and balance-plate L, attached to the slide-valve by a connection passing through the slot in the plate, and provided with the spring *o*, to compensate for expansion, substantially as and for the purposes set forth.

334,137. STOP-COCK BOX. BENJAMIN C. SMITH, Brooklyn, assignor to Fred Ades & Co., New York, N. Y. Filed Mar. 13, 1885. (No model.)



Claim.—1. The separate and self-supporting projecting flanges and base-piece L, having upward projections, notched at l^3, for the tubular arms of the cock *b* to rest upon, in combination with the stop-cock and the tubular box having a fork and feet at the lower end, substantially as set forth.

2. The combination, with the tubular stop-cock box having recesses at its upper end, of the guide-ring n, notched on its edges, and having projections 4 and 5 received into the recesses of the box, and the pins driven vertically into the notches at the edges of the guide-ring for holding the same in place, and the stop-cock and the rod, substantially as specified.

334,138. FASTENING FOR CARPETS, &c. DAVID M. SMITH and JOSEPH R. SMITH, Hartford, Conn. Filed Feb. 16, 1885. (No model.)



Claim.—The wire fastening having the points 1 and 2, the body portion 3, the head portion 4, bent slightly upwardly at the point 2, and the loop 5, formed of a compound curved backward bend at the upper part of the body at the junction of the same with the head, substantially as set forth.

334,139. PUNCHING-MACHINE. HANS TAY, Arcola, Ill. Filed May 9, 1885. (No model.)

Claim.—1. The combination, with the punch-standard and the bed-plate, of the slotted scale provided with guide-arms and the slotted plate and set-screw, substantially as specified.

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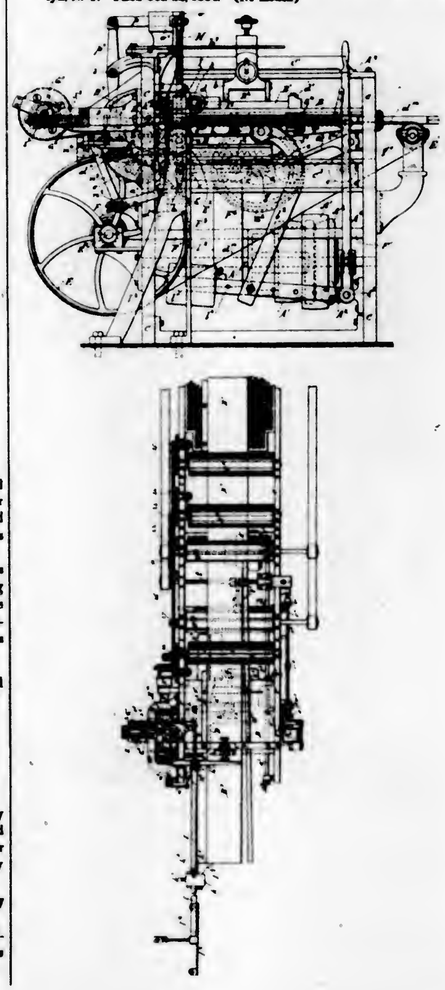


2. The combination, with the base and standard having the horizontal arm at its upper end, of the spring E and bail, the slide having the bail at its upper end and the punch-seat, and the spring S, connecting the slide and treadle, as set forth.

334,140. COMPOUND FOR SOFTENING AND DYEING BROOM-CORN. JOHN A. VAN WINKLE, St. Joseph, Mo. Filed Aug. 7, 1885. (No specimens.)

Claim.—The herein-described compound for treating broom-corn, consisting of water, alum, saltpeter, cider-vinegar, and diamond dye, (green,) in substantially the proportions specified.

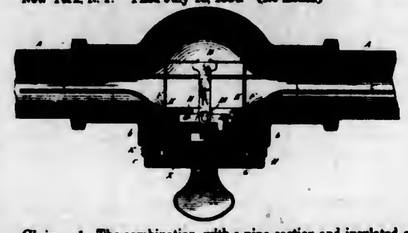
334,141. CIRCULAR SAWING MACHINE. JAMES F. WILSON, Brooklyn, N. Y. Filed Oct. 22, 1884. (No model.)



334,142. INCANDESCENT. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Nov. 20, 1883. (No specimens.)

Claim.—The process of manufacturing carbon conductors for incandescent lamps from non-fibrous or amorphous cellulose, which consists in producing the cellulose in sheets or films of greater thickness than desired, and drying the same, then reducing the thickness of the sheets by passing them between rolls, then cutting or stamping the blanks for the conductors from the sheets and carbonizing the same, substantially as herein set forth.

334,143. SWITCH OR CIRCUIT-CONTROLLER. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed July 13, 1884. (No model.)



Claim.—1. The combination, with a pipe-section and insulated contact-strips, forming circuit-terminals and secured in the same, of contact-strips on an insulating-plate, and adapted to enter the pipe and to register with the terminals therein, and a switch for making and breaking electrical connection between the contact-strips, substantially as set forth.

2. The combination, with a pipe-section, an insulated ring inserted in an opening in the side of the same, and circuit-terminals secured to the ring, of a plate carrying contact-strips constructed to register when inserted into the pipe with the terminals on the ring, and a switch for making and breaking connection between the contact-strips, all as set forth.

3. The combination, with a pipe-section having an opening in its side, an insulating-ring inserted in said opening, and circuit-terminals secured to the ring, of a flanged plate of insulating material, contact-strips secured thereto in position to register when inserted into the pipe with the terminals therein, and a switch secured to the plate and adapted to make and break connection between the contact-strips, all substantially as set forth.

4. The combination, with the pipe-sections A and joining-section D, containing the insulated terminals F, of the removable plate G, contact-strips K, and switch mechanism for making and breaking connection between the strips, these parts being constructed and combined in substantially the manner set forth.

5. The combination, with the pipe-sections A, joining-section D, the insulating-ring E, and terminals F, of the flanged plate G, contact-strips K, and switch for making and breaking connection between the strips as set forth.

334,144. ELECTRIC-ARC LAMP. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Feb. 12, 1885. (No model.)

Claim.—1. In an electric-arc lamp, the combination, with feed-controlling main and shunt circuit helices and magnets, a pivoted armature frame or lever, two sets of carbons, and clamps or clutches for controlling feed and adjustment, of a floor of varying height for tripping said clamps, and means for shifting the same operated or brought into operation by an abnormal strengthening of the shunt helix or magnet, and the movement of the armature-lever produced thereby, substantially as set forth.

2. In an electric-arc lamp, the combination, with feed-controlling main and shunt circuit helices or magnets, a pivoted armature frame or lever, two sets of carbons, and clamps or clutches for controlling their feed and adjustment, of a floor of varying height for tripping said clamps, springs for shifting the position of the floor, and a catch for retaining the same in position opposed by the springs, arranged to be released or tripped by the armature-lever when moved beyond its normal range of movement by an abnormal strengthening of the shunt helix or magnet, as set forth.

3. In an electric-arc lamp, the combination of a pivoted armature-lever, two sets of carbons, feed mechanism connected with the lever and controlling the carbons, a current-shifting mechanism operated by a given

Claim.—1. The combination, in a sawing-machine, with the bed B, crosscut circular saw, pulley, and saw-carriage, of a driving-pulley, E, and belt, a stationary pulley, E', and a pulley upon the saw-carriage, the same being below the bed B, a rack upon the saw-carriage, and a pinion, G, upon a moving frame, G^3, to give motion to the saw-carriage in one direction, and a spring-barrel, G^4, and a strap connecting the same with the saw-carriage to return said carriage to its normal position, substantially as specified.

2. The combination, with the crosscut-saw and carriage and table upon which the board is moved along, of a gage-bar, I, extending in the direction of the movement of the board, and adjustable gage and stock upon the same, against which the board acts, the lever H, and the links *i*, by which the gage-bar is pivoted to the lever, the link *h*, the frame G^3, pivoted upon the frame C of the machine, and the pinion G, pinion-shaft, and pulley carried by the said frame G^3, and the rack upon the saw-carriage, whereby the movement of the board as fed operates the gage-bar and lever H, and raises the pinion G to move the saw and its carriage in sawing off the board, substantially as specified.

3. The combination, with the crosscut-saw and carriage and a table upon which the board is moved along, of the gage-bar I, lever H, pinion G, and rack for moving the saw and carriage across the board, the friction-clutch A^3 upon the shaft A, the shaft A^2, and the fork connecting said shaft to the clutch, the rib *l*, roller *l'*, link l^2, and the weighted lever l^3, upon the shaft A^2, whereby the first movement of the saw-carriage disconnects the clutch and stops the feed of the board, substantially as set forth.

4. The combination, with the crosscut-saw and its carriage, and the gage-bar I, lever H, connected with the said gage-bar, pinion G, and frame G^3, connected with the lever H and carrying the pinion G and rack for moving the saw, of the rib *l*, with an inclined end, the roller *l'*, the arm pivoted at l^2 upon the frame C, the curved link l^3, operated by said roller and rib, the lever l^4, and weight l^5, the shaft A^2, to which the lever l^4 is connected, the pulley A', and frictional clutch A^3, substantially as set forth.

5. The combination, with the lever H, of the adjustable gage and stock, the gage-bar upon which the gage and stock are supported, the links *i*, and shaft *i'*, carrying such links and connecting the gage-bar to the lever H, the arms i^2 upon the shaft *i*, the link *n* at the end of the arm i^2, the lever *n'*, shaft n^2, and lever n^3, for giving motion to the lever n^3 by the end movement of the gage-bar I, the spring-latch n^4, and the saw-carriage to which such latch is connected, whereby the adjustable gage is moved from contact with the end of the board by the movement of the saw-carriage, substantially as set forth.

6. The combination, with the lever H, links, and gage-bar, of the bar *o*, connected to the upper end of the lever H, the bar *p*, and their box *o'*, and the forked pivoted lever *p'*, to which the bar *p* is connected, the screw *s'*, collars *s*, and nut s^4, and the saw-carriage and its block *q*, for withdrawing the bar *p* when the saw-carriage has moved the required distance and allowing the lever H to move and the frame G^3 and pinion G to descend, substantially as set forth.

7. The combination, with the crosscut-saw and carriage and its rack 2, pinion G, and pulleys, of the lever H and the gage-bar I, connected to and moving the same, the bar *o*, connected to the lever H, the bar *p*, and their box *o'*, the forked pivoted lever *p'*, to which the bar *p* is hinged, screw-rod *s'*, collars *s*, spiral spring s^3, and nut s^4, whereby the bar *p* is operated by the spring s^3 and pushed forward in the path of bar *o* as it is withdrawn, thus locking the bar *o* and retaining in position the mechanism described for operating the saw and carriage after the gage-bar has been disconnected from the boards, substantially as and for the purposes set forth.

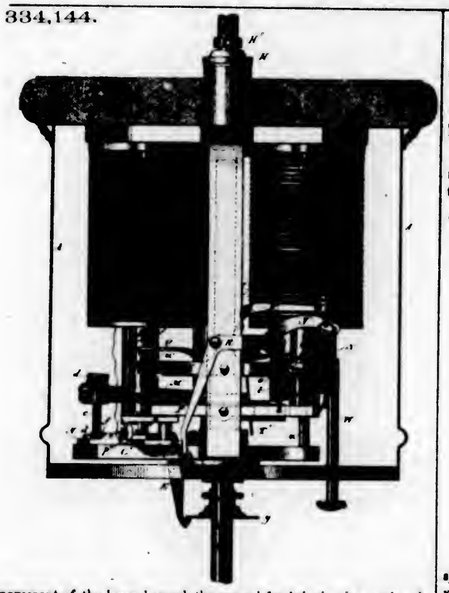
8. The screw *s'* and nut s^4 in bearings upon the frame of the machine, in combination with the crosscut-saw and carriage and the gage-bar I, against which the board is moved, the lever H, connected with the gage-bar, the pinion G in its frame, and the rack and pulleys for moving the saw-carriage in cutting off the board, substantially as set forth.

9. The combination, in a sawing-machine, with the crosscut-saw and its carriage and mechanism, substantially as specified, for actuating the same, of the edging-saw *t'*, the arbor *t* for the same, the adjusting-screw *u*, and arm *u'*, for moving the saw along upon its shaft, the gears *v v'*, and screw-shaft v^2, connected with the screw *u*, and the indicator v^4 upon the screw v^2, to indicate the width of the board and allow for the easy adjustment of the parts, substantially as set forth.

10. The combination, with the crosscut-saw and its carriage, of the screw *s'*, parallel with such carriage, the nut s^4 upon the said screw, the edging-saw *t'* and its shaft, the screw *u*, parallel with the saw-shaft, and the arm *u'* upon such screw, to hold and adjust the saw endwise of the shaft, and the shaft v^2 and gearing for connecting the screw-shafts *s'* and *u*, so that the nut s^4 and edging-saw *t'* may be simultaneously adjusted, substantially as set forth.

11. The combination, in a wood-working machine, of feeding-rollers for moving the board, a crosscut-saw and a carriage for the same, a gage-bar, I, extending beyond the crosscut-saw, and a stock and gage upon the same for the end of the board, whereby such gage-bar and

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movement of the lever beyond the normal for bringing into action the two sets of carbons successively, a main-circuit magnet or helix, and a shunt-circuit magnet or helix for controlling the movement of the armature-lever, the shunt-circuit magnet or helix being formed with two coils, one in a constantly-closed shunt, the other in a shunt that is completed by the descending carbon-holder of the set of carbons first consumed, as herein set forth.

4. In an electric-arc lamp, the combination of a pivoted armature-lever, two sets of carbons, clamps or clutches connected with the lever and controlling the carbons, a spring-actuated shifting floor of varying height for tripping said clamps, a catch for retaining the floor in a position opposed by the spring, and arranged to be released by a given movement of the armature-lever beyond the normal, a main-circuit magnet or helix, and a shunt-circuit magnet or helix for controlling the movement of the lever, the shunt-circuit magne or helix being formed with two coils, one in a constantly-closed shunt, the other in a shunt that is completed by the descending carbon-holder of the set of carbons first consumed, as herein set forth.

5. In an electric lamp, the combination of a pivoted lever, two sets of carbons, clamps or clutches connected with the lever and controlling the carbons, a current-shifting mechanism operated by a given movement of the lever for bringing into action the two sets of carbons successively, a main-circuit magnet or helix, and a shunt-circuit magnet or helix for controlling the movement of the lever, the shunt-circuit magnet or helix being formed with two coils, one in a constantly-closed shunt, the other in a normally-open shunt, including two separable parts of the shifting mechanism, and which is completed by the descending carbon-holder of the set of carbons first to be consumed, as and for the purpose set forth.

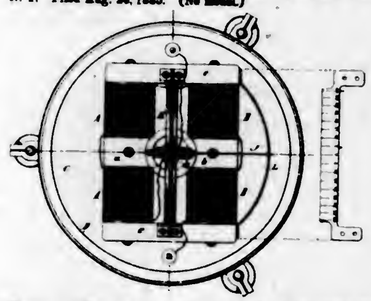
6. In an electric lamp, the combination of a pivoted lever, two sets of carbons, feed mechanism connected with the lever for controlling the carbons, a main magnet and a shunt-magnet for controlling the movement of the lever, a current-shifting mechanism operated or brought into operation by a given movement of the lever produced by an abnormal strength of the shunt-magnet, and a current-shunting device for cutting the lamp out of circuit, operated by a similar movement of the lever beyond the point at which the shifting mechanism is operated, as and for the purpose set forth.

7. In a double-carbon lamp, the combination of a main-circuit magnet, a shunt-circuit magnet having two coils, one constantly closed, the other in a circuit that is closed by the rod of the carbons first consumed, a pivoted lever and feed mechanism connected therewith, a current-shifting mechanism, and a current-shunting mechanism, both arranged to be operated or brought into operation by the movement of the lever toward the shunt-circuit magnet, the shifting mechanism in one position of the lever due to an abnormal strength of the said magnet, and the shunting device in a position near to the limit of movement, as and for the purpose specified.

8. In a double-carbon lamp, the combination, with the magnets, the frame or lever, the clamps or clutches connected therewith, and the carbons controlled by the clutches, of the lever P and catch *p*, the shifting floor N, the lever R, and spring *s*, connecting the same with lever P, constructed and arranged for operation in substantially the manner set forth.

9. In a double-carbon lamp, the combination, with the magnets, the frame or lever, the clamps or clutches connected therewith, and the carbons controlled by the clutches, of the shifting mechanism, and lever P, for operating the same, the shunting mechanism, and lever U, for operating the same, both of said levers being in the path of movement of the frame or lever of the feed mechanism, and arranged to be shifted by the frame at different points in its path, as and for the purpose specified.

334,145. ELECTRICAL INDICATOR. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Aug. 26, 1885. (No model.)



Claim.—1. The combination, with the poles of an electro-magnetic system constructed or wound so that the magnetic strength of the same varies with the strength of the current acting upon it, of a coil mounted in a plane parallel with the lines of force and capable of a movement across said lines, means for opposing such movement of the coil, connections for passing a current through the coil, and a pointer and scale for indicating the movements of said coil, all as set forth.

2. The combination, with the poles of an electro-magnetic system constructed or wound so that the magnetic strength of the same varies with the strength of the current acting upon it, of a coil suspended or mounted in a plane parallel with the lines of force and capable of a movement across said lines, a stationary soft-iron core within said coil, means for opposing the movement of the coil, connections for passing a current through it, and a pointer and scale for indicating the movements of the same, all as set forth.

3. The combination, with the poles of a magnetic system, of a coil suspended in a plane parallel with the lines of force and capable of a movement across the same, two wires forming a bifilar torsional support for the coil, and the means by which the current is passed through the coil, and a pointer and scale for indicating the changes of position of the coil, as set forth.

4. The combination, with magnetic poles forming a uniform or symmetrical field, of a coil suspended within said field, so as to be capable of movement across the lines of force, a stationary soft-iron core within said coil, means for passing a current through the coil, and a pointer and scale for indicating its changes of position, as described.

5. The combination, with the poles of a magnetic system, of a supporting arm or frame secured thereto, a coil suspended from said frame in the magnetic field and capable of a given movement across the lines of force, a stationary core within the coil and secured to the poles of the magnets, and a pointer and scale for indicating the changes of position of the coil, substantially as described.

6. The frame or spool for the suspended coil, formed of a flat strip having ears on its sides that are bent up to form the sides of the groove in which the coil is contained, the strip being bent into a ring or other suitable form and its ends secured together, as set forth.

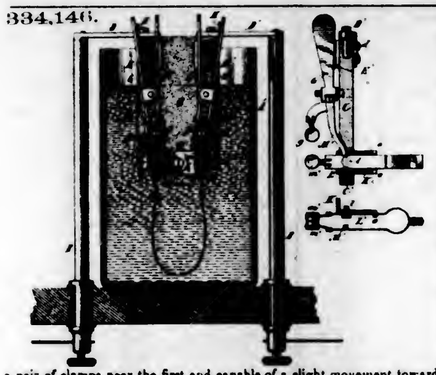
7. The combination, with the poles of a magnetic system, of a coil suspended in the field formed thereby, a bifilar torsional support for said coil composed of two wires secured to an insulating plug or head and forming the conductors by which the current is carried through the coil, an arm or frame supporting said plug and a pointer and scale for indicating the changes of position of the coil.

334,146. APPARATUS FOR TREATING CARBONS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Sept. 8, 1885. (No model.)

Claim.—1. In an apparatus for forming enlargements on carbon conductors, the combination, with two independent pairs or sets of clamps adapted to grip or bind the carbon at and near its ends, as described, of bars or levers connected therewith and adapted to open or control all of said clamps simultaneously or by a single operation, as set forth.

2. In an apparatus of the kind described, the combination, with a pair of stationary clamps adapted to receive the ends of the carbon, of

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a pair of clamps near the first and capable of a slight movement toward and from the same, as and for the purpose set forth.

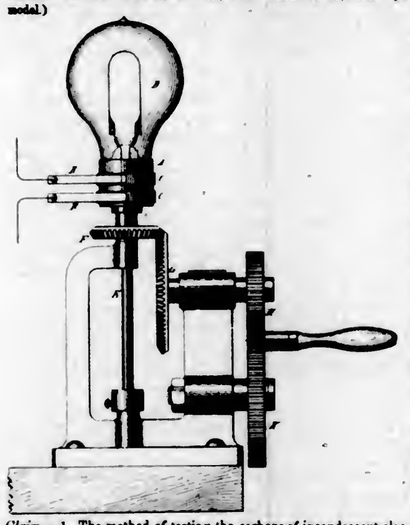
3. In an apparatus of the kind described, the combination, with a pair of stationary clamps adapted to receive the ends of the carbon, of a pair of pivoted clamps adapted to grip or bind the carbon at a short distance from the others, as and for the purpose specified.

4. In an apparatus of the kind described, the combination, with a pair of stationary clamps adapted to receive the ends of the carbon, of a pair of movable or pivoted clamps for gripping or binding the carbon at a short distance from the others, and levers connected with all the clamps and adapted to open or control the same simultaneously or by a single operation, as set forth.

5. In an apparatus of the kind described, the combination, with a pair of spring-clamps fixed to an insulating-plate, of a pair of spring-clamps pivoted to the plate, and connections whereby the movement or operation of the latter is controlled by a similar operation of the stationary clamps, these parts being combined for use and operation in substantially the manner set forth.

6. In an apparatus of the kind described, the combination, with the insulating-plate and the clamps secured thereto in a normally-vertical position, of the lower clamps pivoted in a nearly-horisontal position and capable of a slight oscillating movement, as set forth.

334,147. METHOD OF TESTING INCANDESCENT ELECTRIC LAMPS. EDWARD WESTON, Newark, N. J. Filed Oct. 13, 1885. (No model.)



Claim.—1. The method of testing the carbons of incandescent electric lamps, which consists in moving or rotating the carbons while incandescent at a speed that enables the weak or defective portions, when such exist, to be distinguished by the eye from the other parts of the carbon, as set forth.

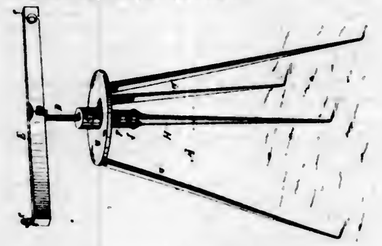
2. The method of testing the carbon loops of incandescent electric lamps, which consists in rotating the lamp or receiver containing the loop on a vertical axis while the current is directed through the loop, whereby the weak or defective spots, when such exist, are made apparent to the eye, in the manner set forth.

334,148. INK-WELL COVER. JAMES E. WHITTAN and ELDRIDGE M. BROWN, Spring Valley, Minn. Filed Oct. 6, 1885. (No model.)



Claim.—As an article of manufacture, an ink-well cover comprising a supporting-ring, a cover hinged thereto, so as to fold upwardly in a vertical position and normally lying in a closed horizontal position therein flush with the upper edges thereof, said cover having a countersunk middle portion and a dip-opening, and a valve or slide pivoted to the cover and lying flush with the upper edges thereof, as set forth.

334,149. GRADING-LEVEL. CHRISTIAN WILLIAMS, Little Stoney, Cal. Filed July 11, 1885. (No model.)



Claim.—1. In a grade-level, a stand or tripod provided with hinged or adjustable legs, in combination with a fixed gage-leg and a plumb by which the height of the tripod may be kept constant, substantially as herein described.

2. In a grading-level, the combination of a stand or tripod having hinged or adjustable legs, a level swiveled upon the tripod, a fixed gage-leg secured to the tripod and adapted to rest upon the ground, and a plumb attached to the tripod, whereby the perpendicular distance between the ground and the level may remain constant, substantially as herein described.

3. In a grading-level, the stand or tripod A, having hinged or adjustable legs, in combination with the gage-leg H, secured to the tripod, and the plumb-bob G, suspended from under the tripod and above the leg, substantially as herein described.

4. In a grading-level, the tripod A, consisting of the top *a* and hinged legs *a'*, in combination with the level E, swiveled on the top *a*, the tube or pipe F, having apertures *f*, the plumb-bob G, within the tube, and the gage-leg H, fitted in the lower end of the tube, substantially as herein described.

5. In a grading-level, the stand or tripod A, having hinged legs, in combination with the tube F, secured under the top of the tripod and having apertures *f*, the plumb-bob G, suspended within the tube, and the leg H, secured to the lower end of the tube and having the point A opposing the plumb-bob, substantially as herein described.

6. In a grading-level, the tripod A, having the socketed bed B in its top for supporting the level, said bed having an externally-threaded stem *b'*, projecting down through the top, in combination with the depending tube F, screwed to said stem and having apertures *f*, the plumb-bob G, suspended within the tube from the bottom of the stem, and the leg H, secured in the lower end of the tube and having the point A, substantially as herein described.

7. In a grading-level, the stand or tripod A, having a gage-leg rigidly secured thereto and a plumb, in combination with a level, E, swiveled on the top of the tripod and having sights on its ends, substantially as herein described.

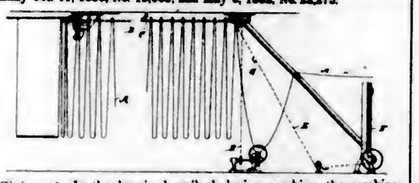
8. In a grading-level, the stand or tripod A, having a gage-leg rigidly secured thereto and a plumb, in combination with the level E, swiveled on top of the tripod and having sights on its ends, one of which is vertically adjustable to indicate the amount of grade, substantially as herein described.

9. In a grading-level, the tripod A, having the gage-leg H, and plumb G, by which it is set, as described, in combination with the level E, mounted on the top of the tripod, the fixed sight *e* at one end, and the adjustable sight at the other, consisting of the slotted and graduated standard *e'* and the sliding sleeve *e²*, substantially as herein described.

10. A grading-level comprising the tripod or stand A, having the top *a* and hinged legs *a'*, the socketed pieces B C on the top of the tripod, the ball standard or stem D in said pieces, and the level E on the stem, and provided with sights, as described, the tube F under the top of the tripod having apertures *f*, the plumb-bob G, suspended in the tube,

and the gage-leg H, fitted in the lower end of the tube and having a point, *h*, opposing the plumb-bob, all arranged and adapted to operate substantially as herein described.

334,150. PAPER-DRIER. HERMANN WESTERWELLER, Offenbach-on-the-Main, Germany. Filed Feb. 24, 1885. (No model.) Patented in Germany Oct. 19, 1880, No. 15,048, and May 6, 1882, No. 22,375.



Claim.—1. In the herein-described drying-machine, the combination of the conveyer for carrying the paper hung in loops from sticks thereon, the stick-receiving belt with its stick-holder, and the stick-delivering belt with its receiver and stick-starter, and the grip-rolls for shoving the sticks into the holder at the receiving end of the conveyer, substantially as set forth.

2. The combination, in a drying-machine in which loose sticks are used to suspend the material being dried, a belt for delivering the sticks into a receiver, rolls for withdrawing the sticks from the receiver and transferring them to a holder, and a starting device for pushing the sticks between the rolls, and a belt for taking the sticks from the holder and placing them in position for use, substantially as described.

3. In a drying-machine consisting of a conveyer for the material to be dried, composed of two parallel endless bands or chains, a turning mechanism for taking the sticks around a curve or angle where the conveyer deviates from a straight course, consisting of a wheel for carrying the inner chain, which is provided with a flange or disk arranged above and for the inner ends of the sticks to bear upon, substantially as and for the purpose set forth.

4. In combination with the two chains or bands of the conveyer, the wheel P, provided with the flange or disk Q, and the notched wheel R, for lifting the outer ends of the sticks and placing them upon the outer chain, substantially as set forth.

334,151. PRIVY AND ATTACHMENTS. PHILIP ANTHONY, Cleveland, Ohio. Filed Nov. 30, 1885. (No model.)



Claim.—1. The combination, with a privy-building mounted on wheels or rollers, of a privy-vault having a removable container located therein, and suitable mechanism for elevating the container, the parts being arranged substantially as described, and for the purposes set forth.

2. The combination, with a privy-building mounted on wheels or rollers, and skids or tracks arranged for the said wheels or rollers to travel on, of a removable container for night-soil, located in the privy-vault, said container having lids or covers for closing the same, and frames connected with the skids for supporting a hoisting apparatus, the parts being arranged and operated substantially as described.

3. The combination, with a privy-building mounted on rollers or wheels, and a removable container located in the privy-vault, of a measuring-stick arranged substantially as described, whereby the depth of the night-soil in container is indicated in feet and inches by the figures on the measuring-stick that are flush with the privy-seat.

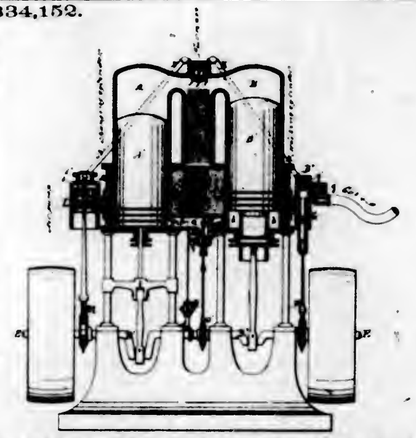
334,152. AIR OR GAS ENGINE. GEORGE H. BABCOCK, Plainfield, N. J. Filed Apr. 23, 1884. (No model.)

Claim.—1. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination, with a furnace communicating by ports or passages with the hot chamber behind the working piston or plunger, and within which chamber the actuating-fluid is expanded while doing work, of a regenerator for intermittingly cooling the said fluid after it has done its work, said regenerator retaining the heat for subsequent use, and a valve for removing the water condensed from said products of combustion, substantially as set forth.

2. In an air or gas-engine in which the same actuating-fluid is repeatedly heated and cooled, the combination, with a furnace communicating by ports or passages with the chamber containing the said fluid, so that the products of combustion may mingle with and thus heat the same, of a valve for removing the water which may be condensed from the said products of combustion, substantially as set forth.

3. In an air or gas-engine in which the same actuating-fluid is alternately heated and cooled, and in which hot products of combustion

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are mingled with said fluid within the engine, the combination of a valve for removing a portion of the cooled fluid from the engine at intervals, and a pocket or reservoir for collecting the water which may be condensed from the products of combustion, substantially as set forth.

4. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination of a piston or plunger for changing the fluid to or from the hot and cool portions of the engine, engine, a hot chamber in which the products of combustion are expanded, a furnace communicating with said hot chamber and adapted to mingle hot products of combustion with the fluid therein, a working piston or plunger operating in said hot chamber and adapted to utilize directly the expansive energy of the heated fluid, and a valve for removing the water condensed from said products of combustion, substantially as set forth.

5. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination of a piston or plunger for changing the fluid to or from the hot and cold portions of the engine, a working piston or plunger for directly utilizing the expansive energy of the heated fluid, a hot chamber in which said working-piston operates, a furnace communicating with the said hot chamber, a regenerator arranged to retain a portion of the heat of the fluid when the latter is on its way from the hot to the cool portion of the engine, and to restore the heat to said fluid on its return to the hot portion of the engine, and a valve for removing the water which may be condensed from said products of combustion, substantially as set forth.

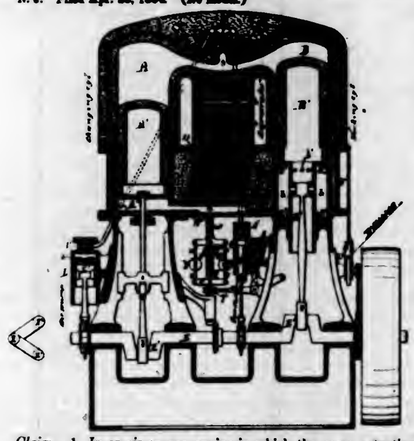
6. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination of a piston or plunger for changing the fluid to or from the hot and cold portions of the engine, a working piston or plunger for directly utilizing the expansive energy of the heated fluid, a hot chamber in which said working-piston operates, a furnace communicating with the said hot chamber, a regenerator arranged to retain a portion of the heat of the fluid when the latter is on its way from the hot to the cool portions of the engine, and to restore the heat to said fluid on its return to the hot portion of the engine, a refrigerator for conveying away such portions of the heat as is not stored up by the regenerator, and a valve for removing the water condensed from the products of combustion, substantially as set forth.

7. In an air or gas engine in which the same actuating-fluid is alternately heated and cooled, a contracted chamber or passage through which the said fluid is forced as it passes to and from the hot and cold ends of the engine, said chamber or passage being provided with a valve adapted to regulate the facility or speed of passage of the said fluid, substantially as set forth.

8. In an air or gas engine in which the same actuating-fluid is alternately heated and cooled, a contracted chamber or passage through which the said fluid is forced as it passes to and from the hot and cool ends of the engine, said chamber or passage being provided with a valve for regulating the speed of passage of said fluid, combined with a governor for automatically controlling said valve, substantially as set forth.

9. In an air or gas engine in which the same actuating-fluid is alternately heated and cooled, the combination of a furnace communicating with the chamber containing the said fluid, and thus adapted to mingle hot products of combustion with the latter, one or more measuring devices, as air-pumps, for regulating the supply of hot products of combustion, and a valve for regulating the resistance of the fluid in its passage to or from the hot and cool ends of the engine, and a governor for automatically controlling said valve, substantially as set forth.

334,153. AIR OR GAS ENGINE. GEORGE H. BABCOCK, Plainfield, N. J. Filed Apr. 23, 1884. (No model.)



Claim.—1. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination, with a chamber in which the working-piston reciprocates, of a compound burner, substantially as described, arranged to effect the combustion within said chamber behind said piston, whereby the combustible gas or vapor is mingled with a proper supply of air or oxygen at or near the point of combustion which occurs within the working-fluid, and the expansive energy of the heated fluid is communicated directly to the said piston, substantially as set forth.

2. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination, with a chamber in which the working-piston reciprocates, of a compound burner, substantially as described, arranged to effect the combustion within said chamber behind said piston, and an igniter for securing combustion within the actuating-fluid, substantially as set forth.

3. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination, with a chamber in which the working-piston operates, of a compound burner, substantially as described, arranged to effect the combustion within said chamber behind said piston, measuring-vessels operated by the engine for supplying a given amount of combustible gas or vapor and a proportionate amount of air or oxygen at regular intervals, and an igniter for securing combustion within the actuating-fluid, substantially as set forth.

4. In an air or gas engine in which the same actuating-fluid is alternately heated and cooled, the combination of one or more adjustable measuring-vessels, one or more governors for automatically varying the supply of gas or fluid passing through said vessel or vessels, and an igniter for securing combustion within said fluid, substantially as set forth.

5. In an air or gas engine working under a pressure greater than that of the atmosphere and using the products of combustion within the engine, the combination, with a valve or regulator for the supply passage or pipe for the combustible, of a governor for said valve or regulator adapted to decrease the supply of combustible as the speed of the engine is increased, and a pressure-valve forming a communication between the interior of the engine and the outside atmosphere, said valve being held to its seat by a force which is decreased by the governor only after the supply of combustible is reduced to a minimum, substantially as set forth.

6. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination, with a hot and a comparatively cool cylinder, of a working-piston operating in said hot cylinder, a changing-piston working in said cool cylinder, an air-pump, a gas-pump, and a compound burner, said burner being arranged to produce combustion within the actuating-fluid and behind the said working-piston, substantially as set forth.

7. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination, with a hot and a comparatively cool cylinder, of a working-piston operating in said hot cylinder, a changing-piston working in said cool cylinder, a regenerator, an air-pump, a gas-pump, and a compound burner arranged to produce combustion within the working-fluid and behind the said working-piston, substantially as set forth.

8. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination of the refractory lining to the hot part of the cylinder or cylinders, and a compound burner, substantially as set forth.

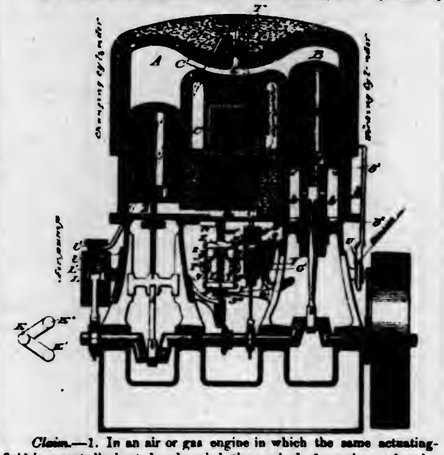
9. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination of the refractory lined hot cylinder B, the water-jacketed cool cylinder A^2, and the compound burner T, substantially as set forth.

10. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination of the refractory-lined hot cylinder B, the externally-cooled cylinder A^2, the compound burner T, and a regenerator composed partly or wholly of refractory material, substantially as set forth.

11. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination of the hot cylinder B, the externally-cooled cylinder A^2, the regenerator C C', the compound burner T, the air-pump L, the gas-pump G, and the pressure-valve W, substantially as set forth.

12. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the combination of the hot cylinder B, the externally-cooled cylinder A^2, the regenerator, the compound burner, air and gas pumps, the pressure-valve, and the governor, substantially as set forth.

334,154. METHOD OF OPERATING AIR OR GAS ENGINES. GEORGE H. BABCOCK, Plainfield, N. J. Filed June 29, 1885. (No model.)



Claim.—1. In an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, the method of securing and maintaining combustion within said fluid by introducing a combustible gas within the engine, together with a proportionate quantity of oxygen, and burning the gaseous fuel within the actuating-fluid in the main chamber of the engine and behind the working-piston, substantially as set forth

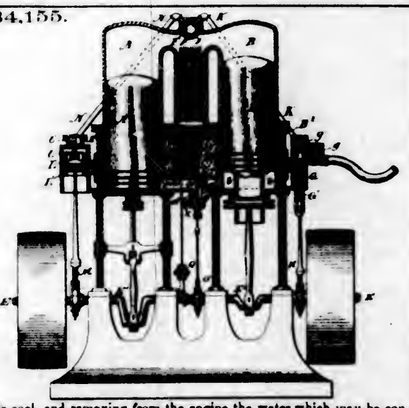
2. The method of operating an air or gas engine in which the same actuating-fluid is repeatedly heated and cooled, and of securing and maintaining combustion within a fluid which of itself is incapable of supporting combustion by introducing a measured quantity of combustible gas or vapor within said engine, together with a proportionate quantity of oxygen, mixing these gases together and burning the same within the actuating-fluid in the main chamber and directly behind the working-piston before they are mingled with the fluid of the engine, substantially as set forth.

334,155. OPERATING AIR AND GAS ENGINES. GEORGE H. BABCOCK, Plainfield, N. J. Filed June 29, 1885. (No model.)

Claim.—1. The method herein described of operating an air or gas engine by intermittingly mingling hot products of combustion into a volume of actuating-fluid within the engine, expanding the same directly against a working-piston while thus heated, afterward cooling said fluid in the intervals between the introduction of hot products of combustion, and removing from the engine the water which may be condensed from the products of combustion, substantially as set forth.

2. The method herein described of operating an air or gas engine by intermittingly mingling hot products of combustion with a volume of actuating-fluid within a hot chamber, expanding said fluid in the development of power directly against a working-piston, transferring a part or all of said fluid to a cool portion of the engine, compressing it therein

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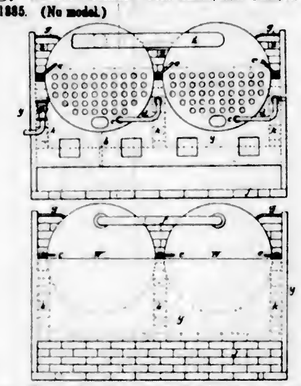


while cool, and removing from the engine the water which may be condensed from the said products of combustion, substantially as set forth.

3. The method herein described of developing power for operating air or gas engines, consisting in partly heating the actuating-fluid, which is repeatedly used within the engine as it is passed from the cool to the hot part of the engine, further heating the said fluid, and thus fully energizing the same, by mingling hot products of combustion therewith, utilizing its developed energy by expanding the heated fluid directly against the working piston or plunger, afterward cooling said fluid as it is passed from the hot to the cool part of the engine, and while thus cooled removing therefrom the water which may be condensed from the said products of combustion, substantially as set forth.

4. The method herein described of operating an air or gas engine and of regulating the pressure of the actuating-fluid thereof by intermittingly mingling hot products of combustion with the actuating-fluid, utilizing the developed energy thereof by expanding in its heated condition the same directly against a working piston or plunger, cooling the said actuating-fluid thereafter and between the intervals of introduction of said hot products of combustion, and intermittingly removing a certain desired portion of the cooled fluid, together with the water condensed from said products of combustion, substantially as set forth.

334,156. STEAM-BOILER. JOHN BAIRD, New York, N. Y. Filed Mar. 12, 1885. (No model.)



Claim.—1. The combination of a cylindrical boiler provided with proper flues or tubes, and of the same length as the cradle, with a cradle composed of double walls, so as to contain water, and inclosing the fire on all four sides, said cradle serving as a boiler-setting and being so shaped that the two ends of the boiler rest the one upon the front the other upon the rear of the cradle, and the whole combination being substantially such as set forth.

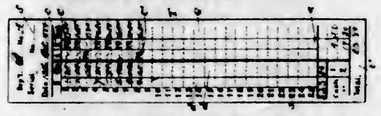
2. The combination of a cylindrical boiler provided with proper flues or tubes with a cradle, said cradle serving the purpose of a boiler-setting and being composed of double walls, so as to contain water, and inclosing the fire on all four sides, the front and rear walls of the cradle being connected by water-circulating tubes, said cradle also supporting the boiler and combined therewith, substantially as described.

3. The combination, with a cylindrical-shell boiler or boilers and a cradle, substantially as specified, of the brick-work supported by a tube or tubes and lying between adjacent boilers or a boiler and a cradle.

4. The combination, with a boiler or boilers and a cradle, substantially as specified, of the brick walls or pillars in the neighborhood of the back connections, which serve to insure combustion and divide the products of combustion, substantially as set forth.

5. The devices for insuring circulation, consisting of a feed-aperture into the cradle, a partition in the cradle, and pipes connecting the cradle with the boiler or boilers, the whole being and operating substantially as described.

334,157. STORE-SERVICE TICKET. CHARLES BAUM, Washington, D. C. Filed Nov. 7, 1884. (No model.)



Claim.—1. As a new article of manufacture, a store cash-service ticket, T, having thereon a column of dollar-and-cent sections, *d d*, with casting-up space at the foot thereof, each of said spaces *d d* having marginal numerals in consecutive order and laterally-aligning gross-receipt spaces G, and provided alongside of such spaces with sectional divisions *a a*, adapted and intended to receive cashier's audit-marks, all arranged as described, as and for the purpose intended, substantially as described.

2. In a store cash-service system, the slip-ticket T, having spaces thereon designed and adapted to receive a serial number, a clerk's designation, a date, and a department-emblem, all arranged substantially as set forth, as and for the purpose intended.

3. As a new article of manufacture, a store cash-service ticket, T, having thereon a column of sections, *d d*, with casting-up space at the foot thereof, each of said sections *d d* having marginal numerals in consecutive order and laterally-aligning gross-receipt spaces G, provided alongside of such spaces, with sectional divisions *a a*, adapted and intended to receive audit-marks of a receiving-cashier, and further provided with spaces for serial number, department-emblem, clerk's designation, and date-space, all arranged as described, as and for the purpose intended, substantially as described.

334,158. SEWER TRAP OR VENTILATOR. GEORGE W. BEARD, Baltimore, Md. Filed Oct. 22, 1885. (No model.)



Claim.—1. The combination, with a sewer and its drain-connections *a*, and with vertical passages B, leading from the top of the sewer, of gates *a'*, hinged in the drains to allow the ingress of water and prevent the egress of gas, and a showering apparatus arranged to break the stratum of gas, as and for the purposes set forth.

2. The combination, with the sewer and its connection B with a gas-burning jet, of a showering-rose, *w'*, arranged within the passage B, and having connection with the water-main W, as and for the purposes set forth.

3. The combination, with the sewer A and passage B, of the hollow column C, having a door-controlled chamber, C', with a series of conducting-plates, *c*, of the rack D, having conducting-plates *d'*, arranged alternately with the plates *c* and wires $D' D^2$, as specified.

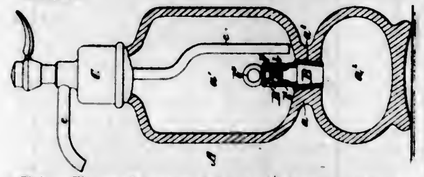
4. The combination, with an electric-light circuit, $D' D^2$, a street gas-lamp, a sewer, and connections for leading sewer-gas to said lamp, of alternating electric conducting-plates, as *c d'*, arranged in the passage for the gas, and adapted to serve as and for the purposes specified.

5. In a device for ventilating sewers, as described, the combination, with the burners and with a showering apparatus, as *w w'*, for eliminating solid matters and carbonic-acid gas from the sewer-gas, of deflecting-plates, as H, arranged above the burners to absorb and give off heat, and to retard the passage of the gas when in close contact with the burners, as set forth.

6. The combination, with the sewer, the hollow column C, and its burner *f'*, connected by a passage, B, of a showering means, as *w w'*, arranged in the passage B to wash and eliminate portions of the gas, and deflectors, as H, arranged adjacent to the burner to retard and force the inflammable portions into close relation with the burner, as specified.

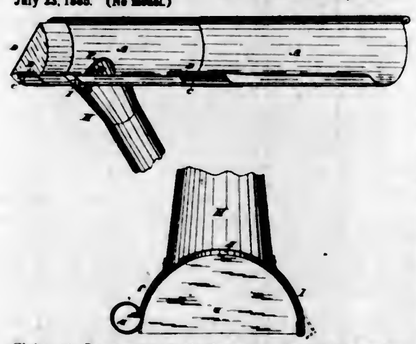
7. The combination, with the sewer, the hollow column and its gas-burning connections, and with the passage B, connecting said sewer and column, of means, as *w*, for showering water within the passage to separate the inflammable portion of the sewer-gas and conduct it back to the sewage, of electrical conductors, as *c d'*, and connections for ozonizing the air and neutralizing the sulphureted hydrogen, and of deflectors, as H, for insuring the combustion and purification of the hydrogen gas, as set forth.

334,159. SODA-WATER APPARATUS. LUDWIG BERGER, Vienna, Austria-Hungary, assignor of one-half to C. Stelzle's Sohne, same place. Filed Aug. 15, 1885. (No model.) Patented in France May 23, 1885, No. 169,127; in Germany May 22, 1885; in Italy July 14, 1885, XIX, 18,446, and XXXVI, 435, and in Austria-Hungary July 18, 1885, No. 10,122 and No. 37,900.



Claim.—The vessel A, contracted at *a*, and having a conical passage or seat, a^3, in said contracted portion, in combination with the conical valve-chamber B, having a flaring mouth, a ball-valve seated in said flaring mouth, and a confining-cap, B', attached to said flaring mouth and provided with ports b^2, and a hand-hole for removing the cap and valve-chamber from the seat of the latter, substantially as and for the purpose specified.

334,160. EAVES-TROUGH. WILSON C. BURGESS, Canton, Ohio. Filed July 23, 1885. (No model.)



Claim.—1. In an eaves-trough, the combination, with a drop-pipe, of straps riveted thereto and engaging with said trough to support the drop-pipe, substantially as described.

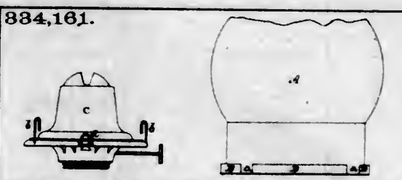
2. In an eaves-trough, the drop-pipe H, provided with the straps I and J, in combination with the trough proper, substantially as and for the purpose set forth.

3. In an eaves-trough, the opening E, provided with the downwardly-projecting flange or collar F, in combination with the drop-pipe H, provided with the straps I and J, substantially as and for the purpose specified.

334,161. DEVICE FOR HOLDING AND LOCKING CHIMNEYS ON BURNERS. JOHN R. BOWERS, Pittsburg, Pa., assignor of one-half to George W. Bowers, same place. Filed May 18, 1885. (No model.)

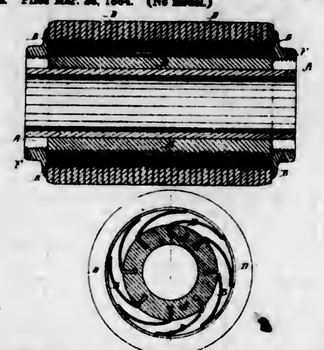
Claim.—The combination of the burner, the wires *b*, secured thereto, for holding the chimney down upon the burner, and the spring-catch *d*,

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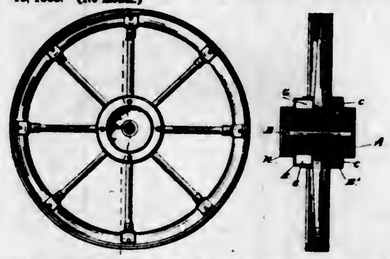
with the chimney A, having the flange B and recesses *a*, the catch being located between two of the wires *b*, so as to catch in one of the recesses *a* after the chimney has been turned partially around, substantially as shown and described.

334,162. BUFFING-ROLL FOR BOOTS OR SHOES. CHARLES I. BRADFORD, Lynnfield, assignor to George H. P. Flagg, trustee, Boston, Mass. Filed Mar. 26, 1884. (No model.)



Claim.—The roll above described, consisting of the core A, springs B, and rings D, arranged substantially as shown, the interior diameter of the rings being such that the rings form a yielding cushion.

334,163. WHEEL. EDWARD T. BURGESS, Meriden, Conn. Filed July 15, 1885. (No model.)



Claim.—1. The combination of a hub having spoke-recesses formed alternately in opposite edges with a pair of metal caps having coincident notches to correspond with the recesses in the hub, and placed thereon from its opposite ends to overlap each other, substantially as and for the purpose specified.

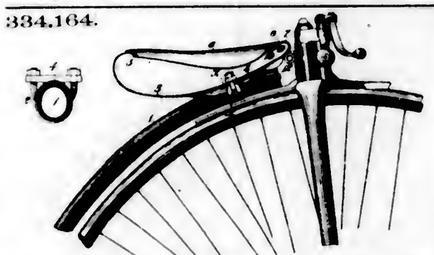
2. The combination of a hub alternately recessed on its opposite edges with a pair of caps having notches to correspond with the recesses in the hub, and provided with blocks in alignment with the notches, whereby when the caps are passed on the opposite ends of the hub, the blocks fitting in its recesses and the notches fitting around the spokes, the latter will be securely held in place, substantially as specified.

334,164. BICYCLE-SEAT. CHAS. M. CLARKE, Pittsburg, Pa. Filed July 6, 1885. (No model.)

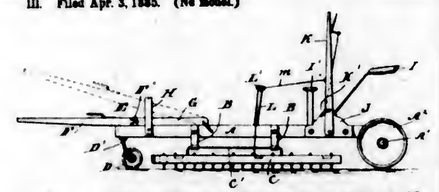
Claim.—1. The combination of the reach or backbone of a bicycle, a spring having upturned ends and secured at or near its middle point to said backbone and in such position thereon that its forward end may be supported on a shoulder formed on the neck of the reach, and a flexible seat having its front and rear ends attached to the upturned ends of the spring, substantially as set forth.

2. The combination of the reach or backbone of a bicycle, a C-shaped spring adjustably secured at or near its middle point to said backbone, its forward end being supported by a shoulder formed on the neck of the backbone, and a flexible seat having its front and rear ends attached to the ends of the spring, substantially as set forth.

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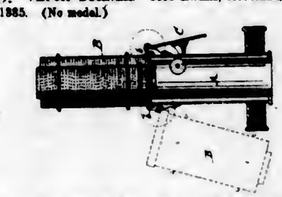
334,165. WHEEL-HARROW. HENRY L. EASLEY, Fredericksville, Ill. Filed Apr. 3, 1885. (No model.)



Claim.—1. The combination of the draft-frame provided with a vertical arch near its front end, with a tongue pivoted to said frame in the rear of the arch to have a vertical movement between the sides of the arch, said tongue being hinged in front of the arch to swing laterally only, substantially as and for the purposes described.

2. The combination of the single central draft-beam provided with racks, one on either side thereof, the levers pivoted to the beam and having pawls engaging the racks, the standards mounted on the beam and having anti-friction pulleys near their upper ends, the toothed sections hinged one on each side of the beam and adapted to fold toward each other, and the ropes or chains secured at one end to the levers, passed around the anti-friction pulleys, and secured at their other ends to the toothed sections, substantially as set forth.

334,166. VAPOR-BURNER. OTTO EWERT, Cleveland, Ohio. Filed Apr. 30, 1885. (No model.)



Claim.—1. The combination, with a wick-tube, of a perforated combustion-tube open at both ends and hinged at one side to the wick-tube, and of an extinguishing-cap hinged to the opposite side of the wick-tube, substantially as set forth.

2. The combination of a wick-tube, a perforated combustion-chamber open at both ends and hinged at one side to said wick-tube, and an extinguishing-cap hinged to the opposite side of said wick-tube, the pintles of said cap and chamber extending outwardly and provided with heads, substantially as described.

334,167. TIME BALL AND APPARATUS. WILLIAM F. GARDNER, Washington, D. C. Filed Apr. 30, 1885. (No model.)

Claim.—1. A time-ball consisting of a series of metallic ribs suitably covered and provided with a surrounding elastic strip or stripe, substantially as set forth.

2. A ball for time and other signals, consisting of a series of vertical and horizontal ribs joined to each other, the vertical ribs being secured to grooved plates at the top and bottom of the ball, substantially as set forth.

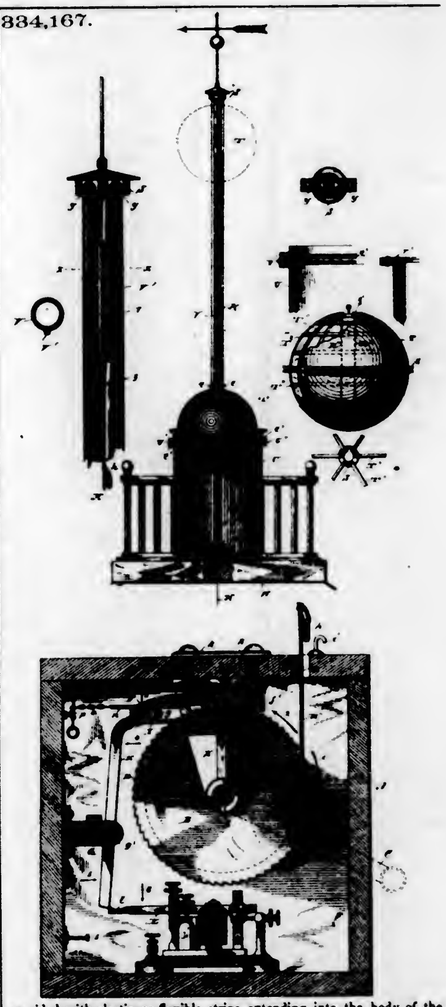
3. In combination with a ball for time and other signals having plates perforated and grooved, as shown, a staff provided with a tongue or tongues, V', substantially as set forth.

4. The combination, with a time-ball, of a single air-chamber into which the ball is dropped, and in which it cushions on the contained air, substantially as set forth.

5. The combination, with a time-ball or other signals, of a single air-chamber provided with means for preventing the rapid escape of the confined air when the falling ball is received into said chamber, substantially as set forth.

6. The combination, with a time or signal ball, of an air-chamber

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provided with elastic or flexible strips extending into the body of the chamber, substantially as set forth.

7. An air-chamber for signal-balls, provided with a base-plate, having an elastic cushion attached to the top of said base-plate, substantially as set forth.

8. A time-ball system having means for raising the ball and dropping it at a given moment, and provided with precautionary locking means for holding the ball and preventing it being dropped by a false signal.

9. In combination with a detaching device for time-balls, a locking-lever, F, provided with a lower curved surface, substantially as and for the purpose set forth.

10. In a locking and detaching device for time-ball systems, a pivoted locking-lever, E, provided with a friction-roller to engage with the under curved surface of the pawl-lever, substantially as and for the purpose set forth.

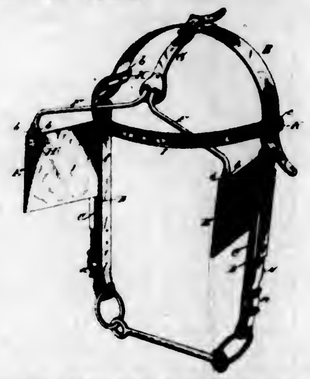
11. In a locking and detaching device for time-ball systems, the combination, with the locking-lever and the pawl-lever, of an arm, *l*, and spring *n*, substantially as set forth.

12. In a locking and detaching device for time-ball systems, the combination, with the winding-drum, of a pivoted pawl-lever having a lower curved surface, a locking-lever having a friction-roller engaging with the pawl-lever, a spring-arm, *l*, attached to the locking-lever, a friction-brake, and a magnet and its armature to hold the locking-lever, substantially as set forth.

13. In a time-ball system, the combination of the ball, its support-

ing-cord, staff, a single air-chamber to receive said ball, the holding and detaching apparatus, and means for preventing the ball being dropped by false signals, substantially as set forth.

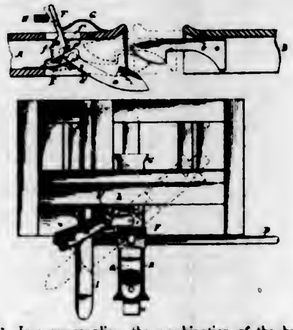
334,168. HARNESS-BRIDLE. MARTIN R. GOOD, New Holland, Pa. Filed Nov. 9, 1885. (No model.)



Claim.—1. In a harness-bridle, the combination, with the blinders thereof, of the braces and means for pivotally attaching them to the blinders, consisting of clamping-plates pivoted to the braces and tongues of leather or other suitable material held between them, said tongues being secured to the blinders, substantially as and for the purpose set forth.

2. A harness-bridle consisting of the cheek-and head straps, the brow-band having loops at the ends re-enforced by metal braces extending around the ends and sides thereof, the blinders, blinder-braces, and adjusting-strap, and means for connecting the braces to the blinders consisting of pivoted metal clamping-plates and tongues of leather held between them and secured to the blinders, substantially as and for the purpose specified.

334,169. CAR-COUPLING. DAVID McC. HARRIS, Douglass, Kans. Filed June 18, 1885. (No model.)



Claim.—1. In a car-coupling, the combination of the bumper A, pivoted upon the pin and provided with the hook *a*, and trigger F, and springs E and G, with the bumper C, also pivoted on a pin and adapted to be interchanged for bumper A, and the lever D, and spring *d'* for holding either of said bumpers in position, substantially as shown and described.

2. In a car-coupling, the combination of bumper A, provided with hook *a*, trigger F, springs E and G, the interchangeable bumper C, the bumper B, having hook *b*, the lever H for working trigger F, and an uncoupling-rod connected with said lever, substantially as shown and described.

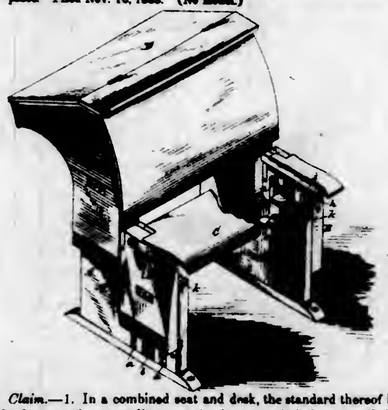
3. In a car-coupling, the combination of an uncoupling-rod made in sections and provided with hooked ends, the lever K for working said rod, and the trip-bracket J for disjointing the sections of the rod, substantially as described and shown.

334,170. CARPET-FASTENER. FREDERICK C. HELLRUTH, Brooklyn, N. Y., assignor to himself and John Hunz, Jr., same place. Filed Apr. 25, 1885. (No model.)



Claim.—A carpet-fastener consisting of a bottom plate having a central threaded opening and holes for the fastening-screws, and a flat top plate having a threaded shank at the under side and socket-holes in the top of said plate, substantially as set forth.

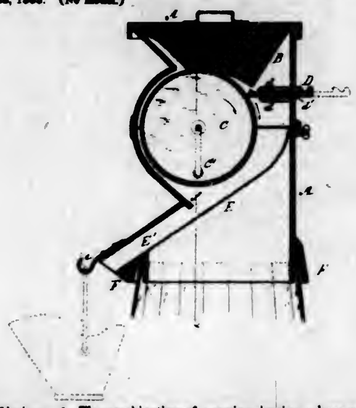
334,171. COMBINED ADJUSTABLE DESK AND SEAT. ANDY B. IRVIN, Twelve Mile, Ind., assignor of one-half to Jacob Rannells, same place. Filed Nov. 10, 1883. (No model.)



Claim.—1. In a combined seat and desk, the standard thereof having its front portion extending up only about one-half its entire height, said standard having serrated plates, grooves upon each side thereof, and elongated slots, in combination with the desk and seat provided with serrated plates to engage with those upon the standards, ribs to engage with the grooves, and bolts extending through the slots and having clamping-nuts thereon, substantially as and for the purpose set forth.

2. In a combined seat and desk, the standards thereof having their front portion of less height than the rear portion and having grooves on their upper edge, in combination with the seat provided with braces upon its under side, and also stops, and the means for adjusting the seat and desk, consisting of serrated plates, vertical grooves, and ribs fitting therein, elongated slots, and bolts extending through them and provided with clamping-nuts, substantially as and for the purpose specified.

334,172. ASH-SIFTER. CARL JAPTOK, New York, N. Y. Filed Oct. 23, 1885. (No model.)

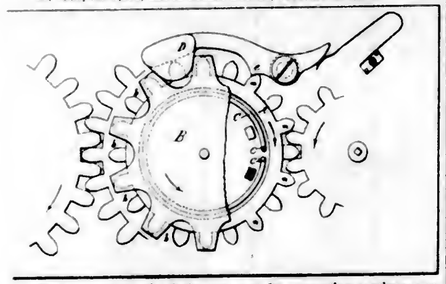


Claim.—1. The combination of a casing having a hopper at the upper part, a screening-drum at the middle part, a horizontally-guided gate at one side of the hopper, and a diagonally-inclined screen and discharge-spout at the lower part, substantially as set forth.

2. The combination of a casing having a hopper at the upper part, a screening-drum at the middle part, a horizontally-guided gate at one side of the hopper, a diagonally-inclined screen and discharge-spout below the drum, and a circular cover at the base of the casing, substantially as set forth.

3. The combination of a casing having a hopper at the upper part, a screening-drum at the middle part, a horizontally-guided gate at one side of the hopper, a diagonally-inclined screen below the drum, a discharge-spout, and a deflecting-flange projecting from the middle part of the casing below the drum toward the screen, substantially as set forth.

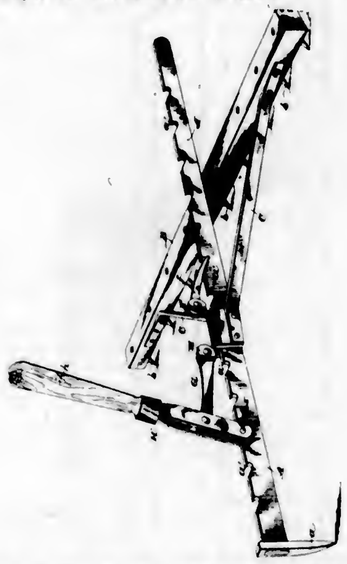
334,173. MECHANICAL MOVEMENT FOR CONVERTING MOTION. ALEXANDER KAISER, Freyburg, Switzerland. Filed June 10, 1885. (No model.) Patented in Germany Dec. 19, 1883, No. 27,626; in England Dec. 21, 1883, No. 5,833, and in France Dec. 24, 1883, No. 159,376.



Claim.—1. A mechanical movement for converting continuous rotary motion into intermittent rotary motion, consisting of a rotating gear-wheel, a ratchet-wheel, a tension-spring connecting the ratchet-wheel and gear-wheel, and a spring-actuated pawl engaging the ratchet-wheel and having a nose projecting into the path of the teeth of the gear-wheel, substantially as set forth.

2. A mechanical movement for converting continuous rotary motion into intermittent rotary motion, consisting of a rotating gear-wheel having a stop-pin, a ratchet-wheel having an arc-shaped slot, a tension-spring connecting the gear-wheel and ratchet-wheel, and a spring-actuated pawl having a nose projecting into the path of the gear-wheel, substantially as set forth.

334,174. CARPET-STRETCHER. JOHN H. KELLER and THOMAS WILEY, Clyde, Ohio. Filed Oct. 30, 1885. (No model.)

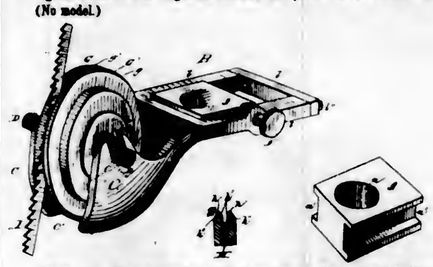


Claim.—1. The combination, with the notched bar and the sliding loop rigidly secured to the ends of the brace-rods, of the operating-lever connected with the loop by a link pivoted between the upturned ears at the front end of the loop, and the retaining-pawl pivoted between the upturned ears at the rear end of the loop, substantially as set forth.

2. In a carpet-stretcher, the combination, with a notched bar, stretcher-head, brace-arms, and a loop connecting the brace-arms and embracing the notched bar, of a bifurcated operating-lever provided with a cross bolt or rivet near its ends, adapted to serve as a dog, and a link pivoted between its branches above the cross-bolt and connected to the loop.

3. In a carpet-stretcher, a sliding loop constructed of a single piece of metal bent to form the loop about the notched bar, and the two pair of upturned ears for attaching the operating-lever and the retaining-pawl thereto, substantially as set forth.

334,175. BAND-SAW GUIDE. WAYNE KRATZER, Allentown, Pa., assignor of one-half to Tilghman Schadt, same place. Filed Oct. 19, 1885. (No model.)



Claim.—1. In combination with a saw-guide, the saw-guide frame having slideways and removable end, and the reversible sliding block having a perforation, *a*, near one end, and arranged to allow a different adjustment of the guide, as set forth.

2. The bearing-piece and guard, consisting of downward and inward curved sides provided with the bearing-notches, and separated by a slot or opening at the bottom, for the purpose set forth.

3. In combination with the saw-guiding wheel and its shaft, the supporting-frame having notches to receive the shaft, and hollow rubber blocks located in said notches and surrounding the shaft, whereby the shaft may yield and the guide adjust itself to the saw, as set forth.

4. In combination, in a band-saw guide, the hub and the washers G G', reversible thereon, and provided with the beveled edges *g g'*, of different lengths, whereby by reversing the washers the guide is adapted to saws of different widths, as and for the purpose set forth.

5. In combination, the hub having flange F' integral therewith, the reversible washers G G' thereon, the interchangeable washers H between same, the flange F'', threaded on the hub, and a shaft upon which it turns, as set forth.

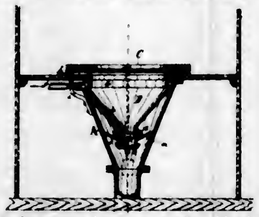
6. The combination, in an adjustable saw-guide having clamping-washers for securing the guide-wheel, of the hub supporting the same, and having recesses in its side, the central shaft-flange and nut having conical bearings on their inner faces, and the sleeve or bushing for locking said nut and flange, and forming a bearing for the same, whereby the working parts are held loosely in position, as set forth.

7. The combination, in a saw-guide, of the hub having central recesses in its side, a central annular projection between said recesses, a shaft having flange and nut with inner conical bearings, a sleeve by which said parts are secured in position, and anti-friction rolls, upon which the hub turns, as set forth.

8. In a band-saw guide, the hub having an annular flange on one of its sides, and a central bearing, a screw-thread on its opposite side, and annular recesses in its center, in combination with two reversible washers and a central washer carried by frictional contact, the said parts being constructed and arranged to operate on anti-friction rollers and conical bearings, as set forth.

9. The combination, in a saw-guide, of the central washer or saw-bearing with the reversible beveled washers, the latter being arranged to hold the former in position by frictional contact, and the hub carrying the same, the whole being mounted to rotate, substantially as described.

334,176. WATER-CLOSET. HUBERT C. KURTEN, Aix-la-Chapelle, Prussia, Germany. Filed May 26, 1885. (No model.)



Claim.—1. In a water-closet, an outer funnel having a flanged upper end to coact with the top of the closet-casing and an apertured diaphragm or bottom, in combination with an inner funnel or bowl supported vertically upon said bottom and laterally by the upper end of said outer funnel, substantially as herein specified.

2. In combination with an outer funnel having an apertured diaphragm or bottom, an inner funnel or bowl supported vertically upon said bottom and laterally by the upper end of said outer funnel, and constructed with tubular rims at its respective ends, having suitable water-outlets, and connected with the flushing-pipe and with each other, substantially as herein specified

3. In a water-closet adapted to be used as a urinal, the combination of a seat having pivots midway between its front and rear edges, and adapted also to turn back upon its rear edge, a connection near the latter with a water-seal trap, a water-cut-off block carried by the seat behind said pivots, an elastic flushing-pipe supported horizontally beneath said block, an inner funnel or bowl provided with water-outlets, and an outer funnel having a diaphragm beneath said bowl, constructed with a depending neck to coact with said strap, substantially as herein specified.

334,177. ROAD-SCRAPER. ELIAS LATHROP, Fort Wayne, Ind., assignor to the Fleming Manufacturing Company, same place. Filed Sept. 10, 1885. (No model.)

Claim.—1. The obliquely-arranged scraper located between the carriage-supporting trucks and propelled from the rear axle through oblique thrust-braces having a ball-and-socket or universal joint connection with said axle, substantially as described.

2. The obliquely-arranged scraper, in combination with converging braces in rear thereof, united in an angle-iron having a ball-and-socket or universal joint connection with the propelling and supporting carriage, substantially as described.

3. The combination, with the obliquely-arranged scraper, of the obliquely-arranged braces, the angle-iron connecting said braces, and the ball-and-socket or universal joint between said braces and the supporting-carriage, substantially as described.

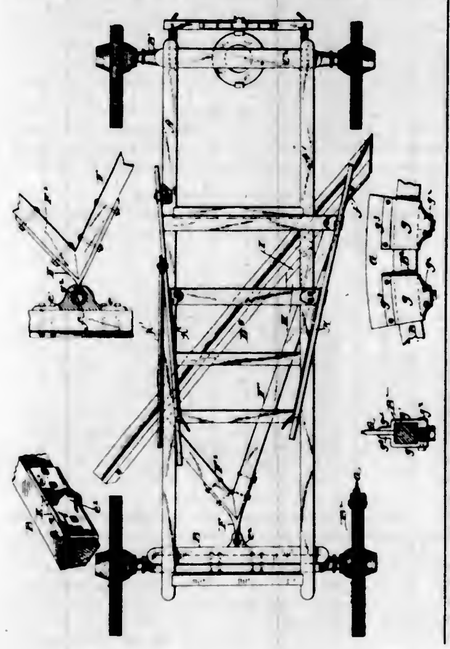
4. The combination, with the rear axle of the supporting-carriage, of the divided casting or socket-plates having the cylindrical socket formed therein, and the angle iron or casting provided with the ball fitting said socket and connected with the scraper-bar for supporting and propelling the latter, substantially as described.

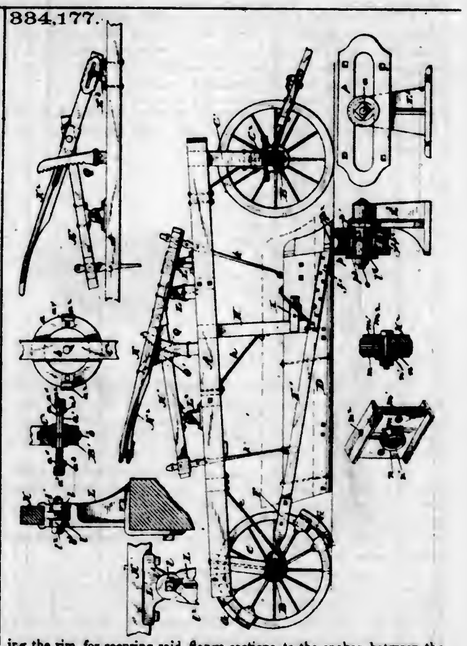
5. The lever K^3, provided with the slotted clamping and wear plates, in combination with and mounted upon the sleeve-stud of its supporting-standard and the retaining-bolt, arranged and operating substantially as described.

6. The levers K' and K^4, mounted on separate fulcrums and pivoted one to the other, in combination with the interposed wear-plates provided with the pivotal sleeves, and the through-bolt for connecting said levers and wear-plates, substantially as described.

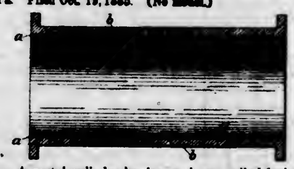
7. The combination, with the scraper-supporting frame and its forward truck or axle, of the fifth-wheel composed of the upper and lower rings or plates, the angle irons or clips connecting said plates, and the countersunk bolts adapted to be passed through perforations in one of said plates for securing the retaining-clips removably to the other plates, substantially as described.

8. In a road-scraper, the carrying-wheel provided with the peripheral flange made in sections, in combination with clamping-plates striding the rim for securing said flange-sections to the spokes between the rim and hub of the wheel, substantially as described.



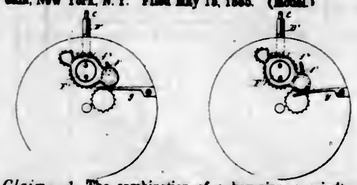


334,178. CAST WHEEL, PULLEY, &c. M. DE WITT LOOMIS, Pittsburg, Pa. Filed Oct. 19, 1885. (No model.)



Claim.—A metal cylinder having an inner cylindrical shell of malleable metal tubing, and an external structure of metal cast thereon, substantially as and for the purposes described.

334,179. STEM WINDING AND SETTING WATCH. HERBERT A. LUGRIN, New York, N. Y. Filed May 15, 1885. (Model.)



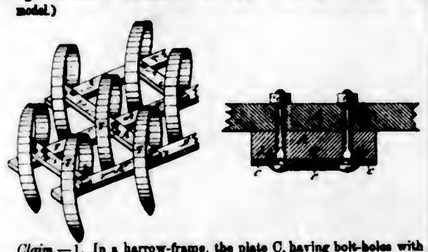
Claim.—1. The combination of a key-pipe, a spindle attached thereto, a winding-pinion having a hollow shank for the spindle, a winding and setting attachment, a slide-piece engaging the lower end of the spindle, and a fulcrumed lever connecting the slide-piece with the winding and setting mechanism, whereby the latter engages either the spring-barrel or the hand-setting gear, substantially as set forth.

2. The combination of a key-pipe, a spindle attached thereto, a winding-pinion having a hollow shank for the spindle, a slide-piece connected to the lower end of the spindle, a fulcrumed lever having a shoulder pressing against the slide-piece, and a winding and setting mechanism operated by said lever so as to engage either the spring-barrel or the hand-setting gear, substantially as set forth.

3. The combination of the key-pipe, a spindle attached thereto, a winding-pinion having a hollow shank fitted to the key-pipe, a fulcrumed and slotted slide-piece engaging the lower end of the spindle, and an axially-turning cam-screw, whereby the slide-piece may be laterally shifted for detaching the spindle from the movement, substantially as set forth.

4. The combination of a key-pipe, a spindle attached thereto, a winding bevel-pinion having a hollow shank fitted to the key-pipe, a fulcrumed and slotted slide-piece engaging the lower end of the spindle, a spring pressing on the slide-piece, and an axially-turning screw-stud having a sleeve with straight side, substantially as set forth.

334,180. HARROW. FRANKLIN J. MARSHAL, Wheeler, N. Y., assignor to Otto F. Marshal, Jr., same place. Filed May 14, 1885. (No model.)



Claim.—1. In a harrow-frame, the plate C, having bolt-holes with recesses and protuberances, respectively, on opposite sides of the plate around said bolt-holes, and having said protuberances seated in corresponding counter-sinks in the frame, and the tie-bolts having their heads seated in the recesses of the plate, substantially as set forth.

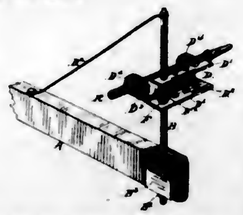
2. In combination with a harrow-frame and spring-teeth, plates placed astride the shanks of said teeth and against the harrow-frame, and provided with bolt-holes at the edges of said shanks, and tie-bolts passing through said holes and having back of their heads straight right-angled shoulders abutting against the edges of the tooth-shanks, substantially as set forth.

3. In combination with a harrow-frame and spring-teeth, plates or washers placed astride the shanks of the teeth and against the harrow-frame, and provided with square bolt-holes at the edges of said shanks, and tie-bolts formed with square necks passing through the aforesaid bolt-holes and with straight right-angled shoulders under their heads and abutting against the edges of the shanks, substantially as described and shown.

4. In combination with the harrow-frame and spring-teeth, plates placed astride the shanks of the teeth and against the harrow-frame, and provided with bolt-holes at the edges of said shanks and with openings over the shanks and adjacent to one side of the bolt-holes, and formed with countersinks around the remainder of the bolt-holes, and tie-bolts having the shoulder at one side of their heads bearing directly on the shanks of the teeth, and the remainder of the heads seated in the countersinks of the plates, as set forth and shown.

5. In combination with the harrow-frame and spring-teeth, plates placed astride the shanks of the teeth and against the harrow-frame, and provided with square bolt-holes at the edges of said shanks, and with openings over the shanks and adjacent to one side of the bolt-holes, and formed with concavo-convex countersinks around the remainder of the bolt-holes, and tie-bolts having square necks extending through the bolt-holes, straight right-angled shoulders on one side adjacent to said necks, and convex shoulders at the opposite side, substantially in the manner described and shown.

334,181. CULTIVATOR. MILLARD F. MCCRAY, Glasgville, Mo. Filed Sept. 23, 1885. (No model.)

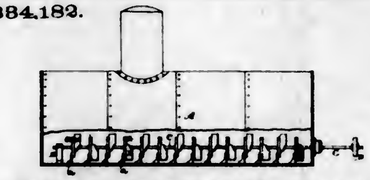


Claim.—The herein-described coupling for cultivators, consisting of two horizontal lips provided with a series of openings, through which is passed a standard secured to the cultivator-beam, a collar encircling the standard between the two horizontal lips and provided with a set-screw for securing it to the standard, and a back piece connecting the two lips and provided with two perforated ears, which receive the axle, substantially as described and shown.

334,182. AGITATOR FOR STEAM-BOILERS. HARRISON B. MINER, Cleveland, Ohio. Filed Dec. 29, 1884. (No model.)

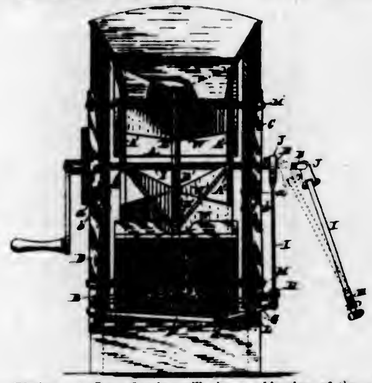
Claim.—In a mechanism for agitating the water in steam-boilers, the combination of the revolving shaft, the stirrers secured thereto, and

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the frictional plates secured to the boiler for the stirrers to rub against, substantially as shown and described.

334,183. FANNING-MILL. AUGUST MIELENZ, Milwaukee, Wis. Filed Jan. 27, 1885. (No model.)



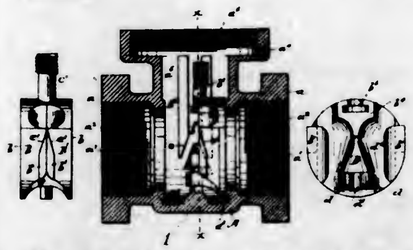
Claim.—1. In a fanning-mill, the combination of the series of screens A and B, connecting-levers C and D, central pivotal bearings, *a a*, screen-supporting bars M M, bar F, lever G, bar I, crank E, and shaft Y, substantially as set forth.

2. In a fanning-mill, the combination of the two series of screens A and B, levers C and D, supporting-arms *a a*, retaining-clasps *b b*, bars M M, connected at their respective ends to said levers C and D, bar F, lever G, bracket K, pin L, coupling-joint H, rod I, coupling-joint J, crank E, and shaft Y, substantially as and for the purpose specified.

3. In a fanning-mill, the combination of the fan-shaft Y, radial end arms, A', radial central arms, B', and angular radial blades W, said blades W being respectively formed in two parts, uniting centrally in a radial line upon said central radial arms and diverging outwardly and secured at or near their outer ends to said radial end arms, substantially as and for the purpose specified.

4. In a fanning-mill, the combination of the two series of screens A and B, connecting-levers C and D, supporting-arms *a a*, and mechanism for operating the levers C and D, and thereby reciprocating said screens horizontally in opposite directions, substantially as and for the purpose set forth.

334,184. STRAIGHT-WAY VALVE. JOSEPH T. PADEY, Boston, Mass., assignor to the Pest Valve Company, same place. Filed May 27, 1885. (No model.)

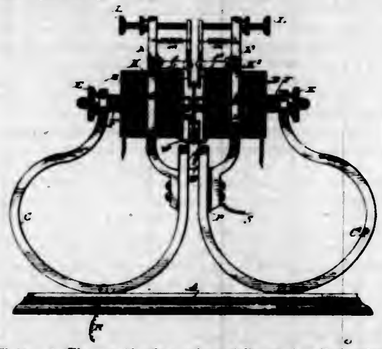


Claim.—1. In a straight-way valve, the combination of the casing A, having the guides b^2 b^2, and the inclines *c*, shaped as described, with the disks B B', having the ears *b' b'*, the spreading device D, and the operating-spindle *d'*, all substantially as and for the purpose described.

2. The combination of the disks B B', the spreading device therefor, located between the said disks at their ends adjacent to the seats, consisting of a conical head or plug, D, and attached spindle *d'*, and the curved arms *d*, attached to one of the said disks, and partially surround-

ing the spindle *d'*, thereby retaining the spreading device in position, all substantially as and for the purpose described.

334,185. POLARIZED RELAY. LOUIS J. PHELPS, New York, N. Y., assignor to the Railway Telegraph Company, same place. Filed Nov. 18, 1884. (No model.)



Claim.—1. The combination, substantially as described, of two permanent magnets having like poles conjoined, an armature polarized from the conjoined ends, and electro-magnets between which said armature is placed, said magnets having their cores polarized, respectively, from the two divergent poles of the permanent magnet—to wit, those that are of opposite name to the two poles that polarize the armature.

2. The combination, in a polarized relay, of two permanent magnets, having two of their poles of the same polarity clasping a block of soft iron, two magnets having their cores, respectively, in magnetic connection with the two remaining poles of the permanent magnet, and an armature polarized from the connected poles and playing between said electro-magnets.

3. The combination, substantially as described, of the two permanent magnets C C^2, the block D, clamped between like poles of said magnets, electro-magnets B B, having their cores arranged in line and projecting from the separated poles of the magnet, and an armature consisting of a plate of soft iron mounted on the block D between the contiguous poles of the electro-magnets.

4. The combination, in a polarized relay, of the two permanent magnets having two like poles magnetically united, and their two separate opposite poles extended above or beyond the point of union, and two electro-magnets supported in yokes carried by the permanent magnets, the cores for said electro-magnets being in magnetic connection, respectively, with the said two separate poles for the permanent magnets.

5. The combination, in a polarized relay, of a multipolar permanent magnet having a common or central pole of one polarity and two separate poles of the opposite polarity, of electro-magnets having their cores passing through the said separate poles, and adjusting-nuts applied to said cores and acting thereon to retract them from the armature in opposition to springs, as and for the purpose described.

6. In a polarized relay having a multipolar magnet with a common or central pole of one polarity for charging the armature, electro-magnets whose cores are arranged in line and are connected to the opposite poles of an armature consisting of a plate of soft iron mounted on the common or central pole, and stops therefor mounted on adjustable levers, as and for the purpose described.

7. The combination of the multipolar magnet having a central pole of one polarity, the yokes G G^2, supported by said magnet, the electro-magnets mounted thereon, an armature charged from the common or central pole, and adjustable contact-stops and adjusting devices mounted on extensions from the yokes.

8. The combination of the two permanent magnets, the yokes G G^2, mounted thereon, the contact-levers, the brackets *f* f^2, the adjusting-screws, the electro-magnets mounted in the yokes, and the armature playing between said electro-magnets, as and for the purpose described.

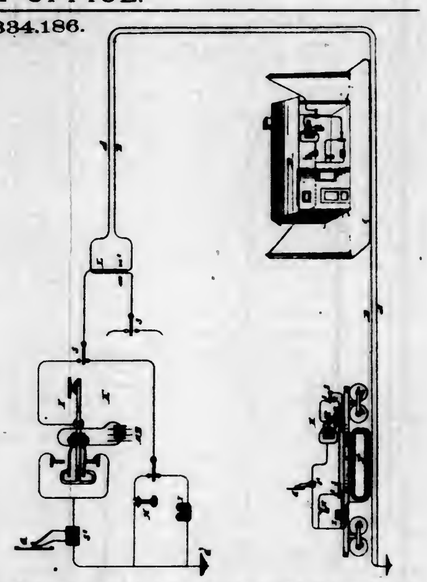
9. The combination, in a polarized relay, of a multipolar magnet, an armature polarized from a common or central pole, electro-magnets whose cores pass through poles of opposite name, the adjusting-nuts E, and the springs F, as and for the purpose described.

10. The combination, with the armature for a telegraph-receiver, of an inertia counterbalance, for the purpose described.

11. The combination, with the upright relay-armature, of a weighted arm extending downward to the opposite side of the pivotal point for said armature, and adapted to have an inertia the equivalent to that of the armature, as described.

334,186. RAILWAY-CAR TELEGRAPH. LOUIS J. PHELPS, New York, N. Y., assignor to the Railway Telegraph Company, same place. Filed Dec. 31, 1884. (No model.)

334,186.



Claim.—1. As a means for holding oral communication with a person upon a moving vehicle, a line-conductor parallel with the way over which the vehicle moves, a closed local circuit upon the vehicle, telephone transmitting and receiving apparatus connected to said local circuit, and similar apparatus connected to the line-circuit.

2. In an apparatus for inductive electric transfer to or from a moving vehicle, and consisting, essentially, of an induction apparatus one element of which is a conductor parallel to the way or path in which the vehicle travels, while the other is carried on the vehicle in inductive proximity to the line-conductor, a fixed way-station having its apparatus in a local circuit placed in suitable inductive proximity to the line circuit or conductor, as and for the purpose described.

3. The combination, substantially as described, of a line-conductor, a telephone-transmitter in the circuit with said conductor, a vehicle, a conductor thereon parallel to and in proper inductive proximity to the line-conductor, a telephone-receiver, and means for connecting the terminals of said conductor in closed electric circuit through said receiver.

4. The combination, substantially as described, with an induction apparatus, one element of which consists of a conductor parallel to a railway, while the other is carried in closed electric circuit upon a vehicle running over said way, and is arranged in suitable inductive proximity to the line-conductor, of a telephone-transmitting apparatus in a local circuit upon said vehicle, and means for connecting a telephone-receiver into the circuit with the line-conductor, as and for the purpose described.

5. In an apparatus for inductive electric transfer to or from a moving vehicle, and consisting, essentially, of a line-conductor and a vehicle-conductor carried in inductive proximity to the line, a fixed way-station having its apparatus in a closed local circuit a portion of which is parallel to the line-conductor.

6. In a railway-telegraph apparatus or system, a central or main office connected with a line-conductor carried along the way, as described, closed circuit-conductors placed upon the cars moving over said way and arranged parallel to and inductive proximity to said line-conductor, and one or more way-stations having apparatus in a closed circuit arranged in suitable inductive relation to the line-conductor.

7. In combination, the line-circuit parallel to the way over which the vehicle moves, and the local closed circuit upon the vehicle containing the receiving apparatus to be operated by induced current set up through the inductive agency of the currents on the line, of a generator of electricity—such as a galvanic battery—for producing continuous electric currents, and a pole-changing key controlling the connection of said generator with the line-circuit.

8. In an apparatus for inductive electric transfer to or from a moving vehicle, the combination, substantially as described, of a line-conductor, and an inductive coil or circuit on a vehicle carried in proper inducing relation to said line-conductor, and having its parts that are exposed to inductive action from a second conductor placed in equivalent but opposite inductive relation to the latter, so that the effects of the latter shall be rendered *nil*, as and for the purpose described.

9. The combination, with two or more line-conductors, of a vehicle-conductor having two substantially parallel portions, one of which par-

tions is in closer inductive relation than is the other with regard to one of the line-conductors, while the two portions are in equivalent inductive relation to the other line-conductor, as and for the purpose described.

10. The combination, with the two or more line-conductors, of an induction-coil for one of said conductors, having its main or leading and its return portion or portions arranged, as described, in equivalent inductive relation to the other conductor or conductors, so that the inductive action between the latter and the coil shall produce no disturbing effect, while at the same time the coil is left free to proper inductive action and reaction with its own line-conductor.

11. In an apparatus for inductive electric transfer to or from a moving vehicle, the combination of a line-conductor, an inductive apparatus or coil carried upon the vehicle in proper inductive relation to said conductor, and a second line-conductor which sets up in a portion of vehicle-conductor neutralizing currents for neutralizing the disturbance due to induction between said second line-conductor and the apparatus upon the vehicle assigned to the first line-conductor.

12. In an apparatus for inductive transfer to or from a moving vehicle, consisting, essentially, of an induction apparatus, one element of which is a line-conductor, while the other element is carried upon the vehicle in inductive proximity to the line-conductors, the combination, with two line-conductors, of two circuits upon the same vehicle, each of said circuits having a portion arranged in proper inductive relation to the other, so that there shall be a reactionary induction set up and the formation of disturbing induced current thus prevented.

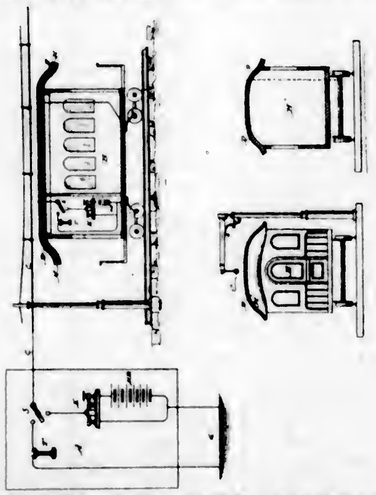
13. The combination, with the two line-conductors, of the two vehicle-conductors, arranged as described, with the main and return portion of each in equivalent inductive relation to the main or return portion of the other, thus preventing the formation of induced currents in either from the action of currents on the other.

14. The combination, with the two line-conductors, of the two vehicle-conductors, each having a portion through which reactionary neutralizing inductive effects are set up for the purpose of compensating for the tendency to disturbance by reason of the proximity of said vehicle-conductors to one another.

15. The combination, with the two line-circuits, as A B, of two straight or substantially straight plates, and conducting bodies or plates m m', of large area, as described, separated by a thin layer of insulating material, and having the two line-circuits reversed through them, as and for the purpose set forth.

16. The combination, with the line-circuit, as B, of the local station, as D, having its apparatus connected with a straight wire or conductor, as 5, extended parallel to the conductor B for a considerable distance, in contradistinction to a coil in which the conductor returns upon itself so as to give rise to the evil of self-induction.

334,187. RAILWAY-CAR TELEGRAPH. LOUIS J. PHELPS, New York, N. Y., assignor to the Railway Telegraph Company, same place. Filed Mar. 3, 1885. (No model.)



Claim.—1. The combination, substantially as described, of a conductor parallel to the path over which a vehicle moves, and having its terminal disconnected from earth or a metallic return, and a conducting plate or surface located upon the vehicle in suitable inductive proximity to said conductor and connected to earth or a metallic return.

2. The combination, as described, of an open-circuit line-conductor, a fixed station having apparatus for transmitting signals by alternate charge and discharge of said conductor, and a conducting plate or surface carried upon a vehicle in inductive relation to the open-circuit conductor and connected to earth.

3. The combination of an open-circuit line-conductor, a plate or surface upon the vehicle movable on a line parallel with the conductor and connected to earth, and a transmitting apparatus whose back or normal and front or transmitting stops are connected one with the earth directly and the other to earth through a source of electricity, whereby signals may be transmitted through the charge and discharge of the line-conductor effected by connecting the same to the source of electricity to receive a charge and then to earth to be discharged.

4. The combination, substantially as described, of a line-conductor, a vehicle moving parallel thereto and carrying apparatus whereby electric currents may be set up in the line or on the vehicle by the principle of static induction, a battery or other generator at a fixed station, and a Morse key or other manual transmitter having two sets of contacts, one connected to earth through a battery and the other to earth to a separate connection, as and for the purpose described.

5. The combination, with the conducting plate or surface D, connected to earth and constituting one element of a static-induction apparatus, the other element of which is composed of a conductor parallel to the path of the vehicle, of a telephone-receiver in the earth-connections from D, and at a fixed station a transmitting apparatus provided with connections to battery and to earth, whereby the conductor may be first connected to battery to receive a charge and then to earth to be discharged.

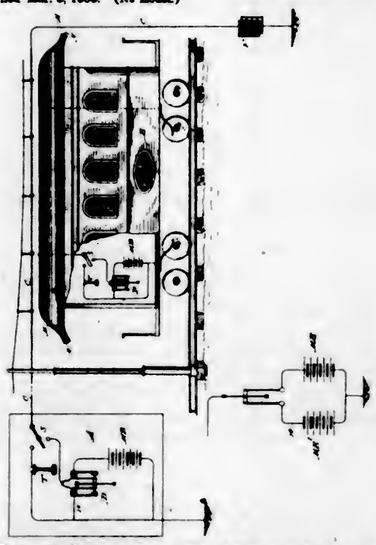
6. The combination of the line-conductor, the conducting plate or surface located on the vehicle and connected to earth, and a transmitter having two contacts, one connected to battery and the other to earth, whereby said plate or surface may receive a charge and may then be discharged, as and for the purpose described.

7. The combination, in an apparatus for telegraphing by static induction to a vehicle in motion or at rest, of a plate or other suitable inductive surface carried by the vehicle, and a line-circuit whose end distant from the generator is open-circuited, so as to have an abnormally high resistance and to cause said conductor to manifest a high inducing action at and near such distant end, as and for the purpose described.

8. The combination, with the conducting plate or surface upon the vehicle, of one or more condensing plates or surfaces, as H.

9. The combination of the two thin metal plates or surfaces D H upon the car-roof, separated from one another by insulating material and connected, respectively, as described, to the transmitting apparatus upon the car and to earth.

334,188. RAILWAY-CAR TELEGRAPH. LOUIS J. PHELPS, New York, N. Y., assignor to the Railway Telegraph Company, same place. Filed Mar. 3, 1885. (No model.)



Claim.—1. The combination, substantially as described, of a line-conductor parallel to the path over which the vehicle moves, a condensing plate or surface carried upon the vehicle, a line battery or batteries, a telephone-transmitter, and contact devices and connections for producing on the line a positive alternate static charge and discharge by first putting a battery to line and then discharging the line through a separate connection to earth, as and for the purpose described.

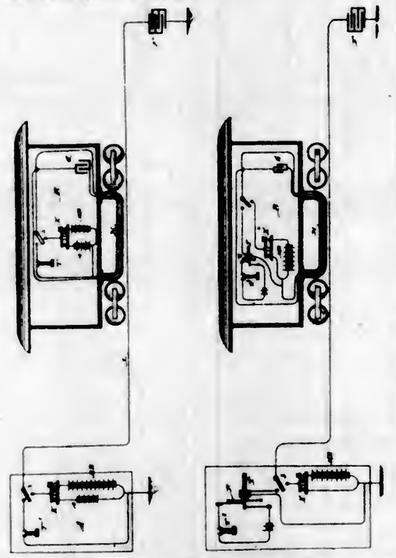
2. The combination of a vehicle, a line-conductor parallel to the path over which the vehicle moves and in static inductive proximity to a plate or sheet of conducting material upon the vehicle, a telephone-receiver in a circuit from said plate to earth, and at a fixed station a telephone-transmitter having two sets of contact-surfaces, one adapted to form connection between said line and a battery for imparting to said line a charge, and the other having a separate connection to earth for producing a positive discharge of said line on the reverse movement of the operating parts of the transmitter.

3. The combination of a line-conductor parallel to the path over which the vehicle moves, a condensing plate or surface upon said vehicle moving in inductive proximity to the line, and a condenser, as F, interposed in the line.

4. The combination, with the line-conductor, of a conducting plate or surface carried upon the vehicle in static inductive proximity to said line, a battery or batteries upon the vehicle placed in connections from the plate or surface to the earth, and devices controlled by the vibratory portions of a telephone-transmitter for producing in said plate an alternate static charge and discharge by direct battery action, as and for the purpose described.

5. The combination, substantially as described, of a line-conductor, a condensing plate or surface upon a vehicle carried in inductive proximity to said conductor and connected with the earth, telephone-transmitting apparatus at a fixed station, and a condenser interposed between said transmitting apparatus and the distant ground.

334,189. RAILWAY-CAR TELEGRAPH. LOUIS J. PHELPS, New York, N. Y., assignor to the Railway Telegraph Company, same place. Filed Mar. 3, 1885. (No model.)



Claim.—1. The combination, substantially as described, of a line-conductor parallel to the path over which a vehicle moves and a conductor upon the latter arranged in inductive proximity to the line-conductor and terminating in the opposite poles of a condenser.

2. The combination, substantially as described, of an open-circuit line conductor and transmitter at a fixed station for alternately charging and discharging said line-conductor, a conductor upon a vehicle arranged in continued inductive proximity to said line, in combination with a condenser upon the said vehicle having its opposite poles connected, respectively, to opposite terminals of the conductor upon the vehicle.

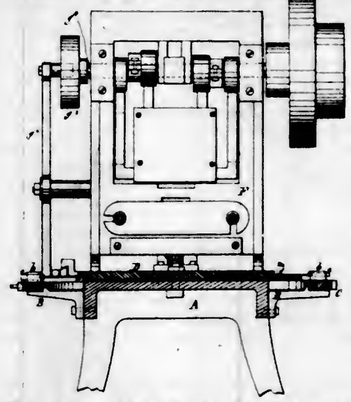
3. The combination of a line-conductor, as L, a condenser, F, connected thereto, a local conductor moving in continued inductive proximity to the line, and a condenser upon the vehicle, the poles of which form the terminals of the vehicle-conductor.

4. In an apparatus for intercommunication between a vehicle in motion or at rest and a fixed station by the principle of induction, an amplifier consisting, substantially as described, of a telephone-receiver and telephone-transmitting contacts operated thereby, said amplifier being connected to the line or to the vehicle-circuit and controlling in turn a local circuit upon which is placed the instrument through which communications are received.

5. The combination, substantially as described, of a line-conductor open-circuited, a telephone-receiver connected thereto, a telephone-transmitter operated by said receiver, and a local circuit containing a second telephone-receiver.

6. The combination, in an apparatus for communicating with a vehicle in motion or at rest, of a line-conductor, a vehicle-conductor, a conducting-surface in inductive proximity thereto, a telephone-receiver connected to the vehicle-conductor, and a local circuit controlled by said telephone, including a telephone-receiver, battery, and telephone-transmitter.

334,190. MACHINE FOR PUNCHING AND FEEDING SCRAPS OF SHEET METAL. CLARK M. PLATT, Waterbury, Conn., assignor to the Platt Brothers & Company, same place. Filed May 11, 1885. (No model.)



Claim.—1. A machine for feeding and punching scrap sheet metal having, in combination, the following elements: a revolving annulus, C, a table, D, with a groove formed in its edge, a slide, *c*, with a notch, *e*, in its edge, spring *d*, box *b*, curb E, and punches *k*, as and for the purpose described.

2. In a machine for feeding and punching scrap sheet metal, in combination, a revolving annulus, C, grooved table D, and devices for retaining the scrap metal between the annulus and the table, as and for the purpose described.

3. In a machine for feeding and punching scrap sheet metal, in combination, an annulus, C, grooved table D, holding devices fixed to the annulus C, punches *k*, and mechanism for operating said punches, as and for the purpose described.

4. In a machine for feeding and punching scrap sheet metal, in combination, an annulus, C, table D, curb E, and devices fixed to the annulus C for holding the scraps G of metal between the annulus and table, as and for the purpose described.

5. In a machine for feeding and punching scrap sheet metal, in combination, an annulus, C, suitable devices for revolving the same, a table, D, with an interrupted groove in the edge of the same, and work-holders on the annulus co-operating with the said groove, as and for the purpose described.

334,191. BUTTON. IRVING G. PLATT, Waterbury, Conn., assignor to the Platt Brothers & Company, same place. Filed May 11, 1885. (No model.)



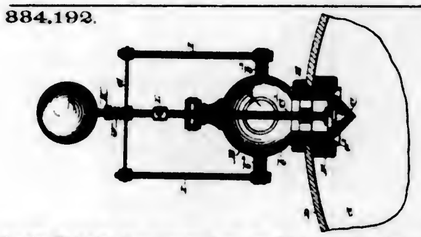
Claim.—The within-described button having the face A and tubular hub B, and the piece of wire slightly longer than the diameter of said hub, with its ends embedded in the sides of the bottom of the hub and constituting the cross-bar C, substantially as shown and set forth.

334,192. FEED-WATER HEATER. HAMILTON POE, St. Louis, Mo. Filed Nov. 11, 1884. Renewed Dec. 17, 1885. (No model.)

Claim.—1. The combination of the boiler D, the plug E, the chamber B, the cross-bar G, supported substantially as described, the valve C, the stem C', the spring J, and the shoulder K, substantially as described.

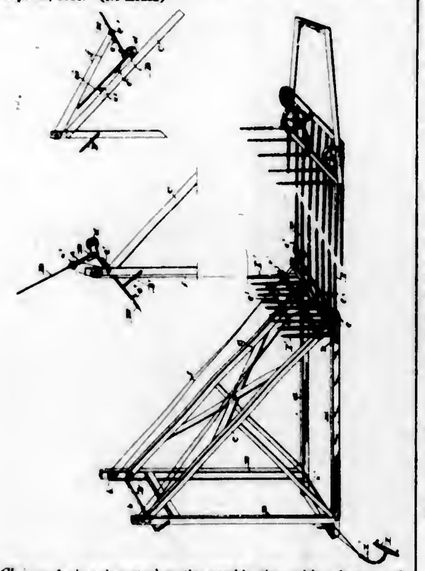
2. The combination, in a feed-water-heater device, of the boiler D,

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the plug E, having the valve-seat *e* and the flange *e'*, as described, and the valve C, substantially as described, and for the purpose set forth.

334,193. HAY-STACKER. JAMES S. RAYL, Green Camp, Ohio. Filed Sept. 29, 1885. (No model.)

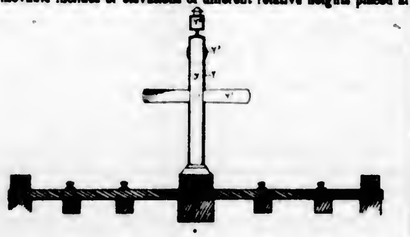


Claim.—1. In a hay-stacker, the combination, with a frame-work having an inclined tramway, of an elevator having two sets of teeth arranged substantially as described, a cross-bar secured to one of said sets of teeth in the position shown, and an elevating-rope passing over said cross-bar and connected with the elevator at a point behind said cross-bar, substantially as set forth.

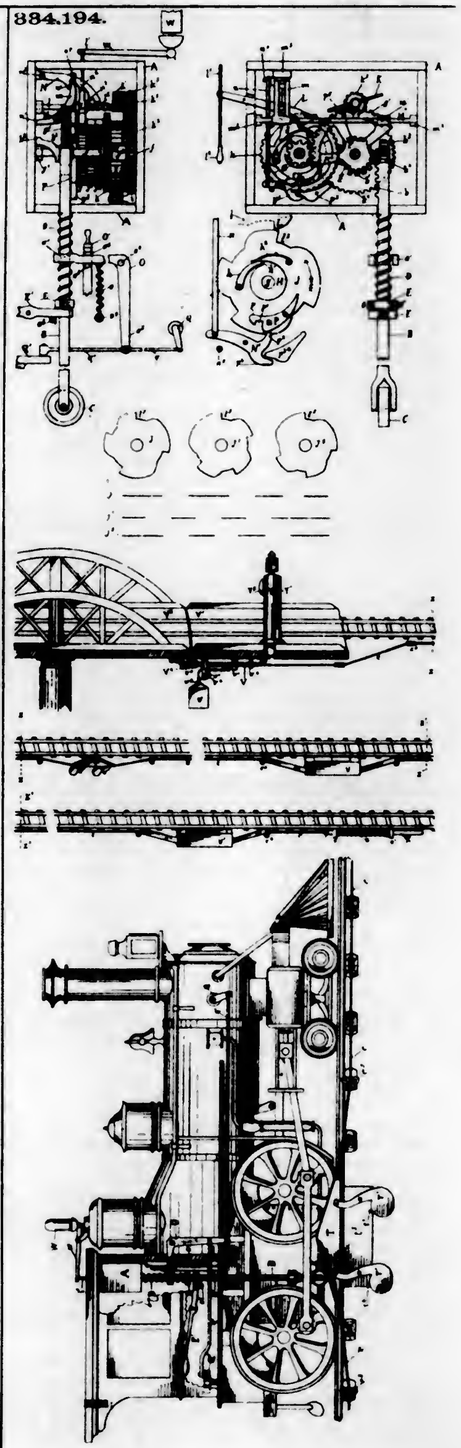
2. In a hay-stacker, the combination, with a portable frame-work having the inclined tramway and the bar B', of the elevator having two sets of teeth, substantially as described, wheels *d*, a cross-bar secured to one set of teeth, and elevating-rope passing over said cross-bar and connected to the elevator at a point behind said cross-bar, substantially as set forth.

334,194. AUTOMATIC ALARM SIGNALING AND SAFETY DEVICE FOR RAILWAYS. ELIAS E. RIDE, Baltimore, Md., assignor of one-fourth to Albert H. Henderson, same place. Filed Feb. 13, 1884. (No model.)

Claim.—1. The within-described system of automatic alarm-signals and safety devices for railway-trains, consisting of a series of fixed and movable inclines or elevations of different relative heights placed at



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different points alongside of a railway-track, a signal mechanism carried on a locomotive or train, capable of being operated by said elevations to give audible signals differing in their form and nature according to the height of the inclines causing them, a train-stopping mechanism, also carried on the locomotive, adapted to be operated by the highest of the inclines or elevations to control the movement of or stop a train in case of danger from an open draw-bridge or other source, actuating mechanism connected to a draw-bridge or switch, and designed and adapted to automatically elevate the aforesaid movable inclines or elevations connected therewith when the draw-bridge or switch is opened or moved, and one or more visual signals, substantially as described, operated by said actuating mechanism, for the purpose set forth.

2. An audible-signal mechanism for railroad-trains, carried on a locomotive or train, in combination with a series of inclines or elevations of different heights placed alongside of a railway-track, said mechanism being complete in itself to give or produce directly a number of definite audible signals varying from one another in their specific form and nature, and being set for the purpose by said inclines or elevations, said signals being regularly and uniformly given in a predetermined space of time, regardless and independent of the speed of the train, substantially as set forth.

3. In a railroad-signal system, a signal mechanism containing a number of signal-wheels carried on a locomotive, combined with mechanism placed along the railway for causing said signal-wheels to give a number of audible signals of different specific form upon a whistle or bell on said locomotive.

4. In a railroad-signal system, a signaling apparatus containing a number of signal-wheels designed and adapted to give or produce, respectively, a "crossing," "station," "misplaced-switch," "open draw-bridge," and down-brakes" signal on the whistle of a locomotive, combined with devices placed at or near each crossing, station, switch, and draw-bridge, and adapted to operate said signaling device for the purpose of giving or producing such signals.

5. In an audible railway-signal system, a signaling apparatus designed and adapted to give audible signals of definite predetermined form upon a moving locomotive or train, said signaling apparatus being provided with a governing or timing device, whereby the length or duration of the resulting signals may be controlled or regulated.

6. In a railway-signal system, the combination, with inclines or elevations adjacent to the track-rails, of a signaling apparatus designed and adapted to be operated by said inclines to give a series of audible signals, each signal consisting of a succession of long or short blasts, or a combination of both, upon the whistle of a locomotive, and a regulating or timing device for controlling the operation of the signaling apparatus and causes it to give its signals in a uniform manner and within a predetermined interval of time, for the purpose set forth.

7. An audible signaling apparatus for railroad-trains, carried on a locomotive or train, said apparatus having one or more signal-wheels, and mechanism adapted to revolve said wheel or wheels and cause them to produce audible signals upon a whistle or bell on said locomotive or train, said apparatus being also provided with a suitable regulating device for regulating and controlling the motion of the signal-wheels, and thereby enable them to produce uniform and regular signals, as set forth.

8. In an audible signaling or alarm device for railroad-trains, the combination of a vertically-guided rod or bar terminating in a shoe or wheel adapted to ride upon inclines or elevations alongside or adjacent to a railway-track, an actuating-spring (or its equivalent weight) adapted to be compressed or wound by the said rod when it is elevated by one of the inclines or elevations, and a suitable signaling mechanism capable of giving a number of dissimilar arbitrary signals, and designed and adapted to be set in motion and operated by said spring or weight to give one or more of such signals when the wheel or shoe has left the incline or elevation, substantially as and for the purpose set forth.

9. In an audible signaling or alarm device for railway-trains, the combination, with inclines or elevations alongside of or adjacent to the track-rails, of a vertically-guided rod or bar attached to a locomotive or train and adapted to be elevated by said inclines to different heights, and a signal mechanism operated by the descent of said bar to give one of a code of arbitrary signals upon a whistle or bell on said locomotive or train.

10. In an audible signaling or alarm device for railroad-trains, the combination, with inclines or elevations along the track, of a vertically-guided rod terminating at its lower end in a shoe or wheel adapted to ride upon said elevations, a suitable mechanism for imparting or utilizing the upward motion of the rod to wind or increase the tension of a coiled spring, one or more signal-wheels adapted to be set in motion by the said spring, a signal-lever for operating the steam-whistle of, or a bell or gong on, a locomotive, and means for automatically changing the form of signal given by the signaling or alarm device, substantially as and for the purpose set forth.

11. In an audible signaling or alarm device for railroad-trains, the combination, with elevations or inclines placed along a railway-track, and a spring-pressed or weighted rod or bar on a locomotive, adapted to be raised vertically by said elevations or inclines, of a retaining hand-lever, E', to enable the engineer or driver to lift the said rod or bar above said elevations when it is not desired that an alarm should be given, substantially as set forth.

12. In an audible signaling or alarm device, a series of signal-wheels having elevations and depressions in their periphery, means for revolving said wheels, and means whereby when the wheels are revolved arbitrary signals can be given upon a whistle, bell, or other sonorous body.

13. In an audible signaling or alarm device, a series of signal-wheels having elevations and depressions in their periphery, means, substantially as set forth, for revolving said wheels, and mechanism for automatically locking or arresting the motion of the signal-wheels when they have completed one revolution, for the purpose set forth.

14. An audible signaling or alarm device having a series of two or more signal-wheels provided with elevations and depressions in their periphery, a suitable signal lever or brush capable of being automatically transferred or moved to the proper signal-wheel for giving any desired signal, and means, substantially as described, whereby the signal lever or brush is enabled, when the signal-wheels are revolved, to give a series of signals, corresponding to the elevations and depressions on the signal-wheels, upon a whistle, bell, or gong, substantially as specified.

15. The combination, with an audible signaling or alarm device having one or more signal-wheels, and suitable spring-impelled mechanism for operating said wheel or wheels to give a signal upon a whistle, bell, or other sonorous body on a locomotive, of one or more inclines or elevations placed along the roadway to wind said spring by elevating a depending mechanism carried by the locomotive, substantially as and for the purpose described.

16. The combination, with an audible signaling or alarm device having one or more signal-wheels, and a signal-lever operated by the said wheel or wheels to give one or more signals on a steam-whistle or other sounding body when the said wheel or wheels revolve, of the rope or rod *F*, attached to said signal-lever, and the knob *f* at the extremity of said rope, whereby the whistle or other body can be sounded by hand when desired without interfering with or disturbing the signaling apparatus, as set forth.

17. In an audible signaling or alarm device for railroad-trains, the combination, with inclines or elevations along a railway-track, and a sliding bar or rod terminating in a friction roller or shoe at its lower end, carried on a locomotive and adapted to be raised vertically, of a rack or teeth, *h*, and a lever, F, having a toothed segment or sector at either end, substantially as and for the purpose described.

18. The combination, with inclines or elevations along a railway-line, a sliding bar carried on a locomotive, and a lever provided with a toothed sector at either end, of a gear or pinion, G, adapted to be revolved by one of the sectors of said lever when its other sector is engaged by said sliding bar, and a coiled spring, I, adapted to be wound when the pinion G is revolved, substantially as and for the purpose described.

19. In an alarm or signaling device, the combination, with the shaft *g*, pinion G, and an actuating spring or weight, of a ratchet or cam, H, having a single tooth or depression, *h'*, and a pawl, *h*, adapted to come in contact with said tooth or depression when the shaft *g* has made a complete revolution, substantially as described.

20. In an alarm or signaling device, the combination of a sliding lever and two or more signal-wheels provided with a common notch or opening in their periphery, across which the lever may slide.

21. The signal-wheels J J' J², provided with elevations and depressions in their periphery, and having a notch, l^2, extending across the face of said wheels, in combination with a signal-lever adapted to be moved along the line of said notch to either of said wheels, substantially as and for the purpose set forth.

22. The signal-wheels J J' J², turning loosely upon the shaft *g*, and having a common notch, l^2, at a suitable point in their periphery, a spring-pressed signal-lever capable of being moved back and forth in line with said notches, means for transferring or moving the signal-lever to the desired signal-wheel, and means for retaining said lever in position over such signal-wheel until said wheel has completed its signal, substantially as and for the purpose specified.

23. In an alarm or signaling mechanism, the combination, with the spring I and the signal-wheels J J' J², of the regulating mechanism, consisting of the fly or fan K, driving-gear *k*, intermediate gearing, *k'*, k^2, and k^3, and the sleeve f^2, to enable the gears *k'* and k^2 to revolve on shaft *f* independently of the motion of said shaft, substantially as specified.

24. The combination, with the signal-wheels, of the sliding signal-lever L, having one end of its hub tapered, substantially as and for the purpose set forth.

25. The combination, with the lever *w* of a steam or other whistle, of one or more revolving signal-wheels having elevations and depressions in their periphery, a signal-lever held in contact with one of said signal-wheels and adapted to rise and fall as the elevations and depressions of the signal-wheels pass under it, and a rod or cord connecting said signal-lever with the whistle-lever, for the purpose of imparting to

the latter the motion given to the signal-lever by the elevations and depressions of the signal wheel or wheels.

26. The combination, with the signal-wheels and the signal-lever, of a cam for moving said lever to the proper signal-wheel for giving a desired signal, and a spiral spring for returning the signal-lever and cam to their normal position after the signal has been given, substantially as set forth.

27. In an alarm or signaling mechanism for producing audible signals, the combination, with the signal-wheels, the movable signal-lever, and the spiral spring bearing against said lever, of a cam to transfer the signal-lever along the signal-wheels, and a gravity retaining-catch having teeth corresponding to the number of signal-wheels, and adapted to engage with and hold the nose of the transferring-cam, substantially as and for the purpose set forth.

28. The combination, with the signal-wheels, the movable signal-lever, the spiral spring bearing against said lever, the transferring-cam, and the gravity-catch, of the releasing-cam P, the lever N', having a hook, p^3, capable of rising upon the releasing-cam, and a rod, n, connecting the lever N' with the gravity-catch and adapted to be raised by the cam P at every revolution of the signal-wheels to release the transferring-cam m by lifting the gravity-catch, substantially as and for the purpose set forth.

29. In combination with the signal-wheels and regulating-gearing, the lever N', having a hook, p^3, adapted to fall into a notch or recess formed in or placed on the side of one of the signal-wheels, to arrest the progress of said wheels at the end of each revolution, substantially as described.

30. The combination, with the lever N', having a hook, p^3, and an arm, p^4, and the hook p and recess p', of the trip-lever and the pin or stud p^5, to release the signal-wheels from the retaining-hook p^3, as set forth.

31. The combination, with the signal-wheels and their operating mechanism, of the cam P, lever N', rod n, and gravity-catch N, substantially as and for the purpose described.

32. In an alarm or signaling device for producing audible signals, the combination, with the sliding bar or rod, spring I, pinion G, toothed cam H, and pawl h, of a double segmental toothed lever, F, having a small sector, b', to engage with a rack or teeth on the sliding bar, and a large sector, g', for turning the pinion G, said large sector being provided with twice the number of teeth contained by the pinion, substantially as and for the purpose set forth.

33. In an alarm or signaling device, the combination, with the rock-shaft, of the gravity-catch, the transferring-cam, and a projecting arm on said rock-shaft, by means of which the transferring-cam is moved to any desired tooth of the gravity-catch, substantially as shown, and for the purpose specified.

34. The combination, with the gravity-catch, the transferring-cam, the rock-shaft, and the projecting arm on said rock-shaft, of an arm or guide attached to the sliding bar or rack, said arm or guide being adapted to engage with and move the rock-shaft arm to varying distances when the bar or rack is moved beyond a certain point, substantially as and for the purpose set forth.

35. The combination, with the signal-wheels and signal-lever, of the rock-shaft and transferring-cam for moving said lever, and the gravity-catch for holding said lever to the desired signal-wheel, substantially as and for the purpose set forth.

36. In an alarm or signaling device, the combination, with the signal-wheels and a signal-lever, and a sliding bar or rack, and suitable mechanism for operating said wheels, of a rock-shaft having a cam for moving said lever, and a projecting arm adapted to be moved by an arm or guide attached to the sliding bar when the latter is lifted beyond a certain height, for the purpose set forth.

37. The sliding bar or rod B, provided at one end with a rack or teeth, in combination with the signal-wheels and their driving and regulating mechanism, substantially as and for the purpose described.

38. In an audible signaling or alarm device for railway-trains, the combination, with inclines or elevations alongside of a railway-track, of a sliding bar or rod guided in bearings on a locomotive and terminating in a shoe or wheel adapted to ascend the inclines or elevations, a signaling mechanism containing one or more signal-wheels, also carried on the locomotive, and designed to be operated by the said bar, to produce a signal while the bar is descending after having been elevated by one of the inclines, and a spiral spring bearing downwardly against a collar on said bar, substantially as and for the purposes set forth.

39. The combination, with elevations or inclines arranged alongside of a railway-track, of a vertically-guided rod terminating in a shoe or wheel supported in bearings on a locomotive and adapted to be raised or reciprocated to different heights by said inclines or elevations, a signaling mechanism capable of giving a number of definite audible signals differing from each other in nature and import, carried on the locomotive and adapted to be operated by the said rod to give any desired signal, a train-stopping mechanism, also carried by the said locomotive, and a suitable collar or projection on said rod designed and adapted to come in contact with and operate the train-stopping mechanism, to automatically stop the train when the rod is lifted the proper height to cause the signaling mechanism to give a down-brakes signal, as set forth.

40. The combination, with a vertically-guided bar designed and adapted to be raised to various heights by a series of inclines, elevations, or signal-arms placed at various points along a railway-track, and a revolving signal mechanism operated by said bar to give audible signals upon a locomotive or train, of a lever mechanism connected with and controlling the steam-supply pipe and the air, vacuum, or other brakes of the locomotive or train, and adapted to be operated by said bar when it is lifted to its highest point, for the purpose of controlling the speed of or stopping a railroad-train, substantially as specified.

41. The combination, with the steam-supply pipe and the air, vacuum, or other brakes of a locomotive or train, of a sliding bar or rod attached to said locomotive and adapted to be moved or reciprocated within certain limits by a series of fixed and movable inclines or guides placed alongside of and adjacent to the track-rails for the purpose of causing audible signals or alarms to be given by a signal mechanism carried by the locomotive, said signals varying in form and nature according to the extent or limit to which the said bar or rod is moved by said inclines, and a lever mechanism connected with said steam-pipe and brakes and normally held out of action while the rod or bar is being reciprocated within the ordinary limits, for giving one or more audible signals, but which is automatically operated by the said bar or rod to close or cut off the steam-supply and apply the brakes when the said bar or rod is moved to its fullest extent, substantially as set forth.

42. In a train-stopping and alarm device for railway-trains, the combination, with the steam-supply pipe and brakes, of a sliding bar or rod attached to the locomotive or train and adapted to be moved or reciprocated within certain limits by a series of inclines or guides of different heights placed alongside of or adjacent to the track-rails, a signal mechanism, also carried by said locomotive or train, and designed and adapted to be operated by the said bar or rod, to cause or produce audible signals of various forms on a whistle, bell, or other sounding body on said locomotive or train, said signals varying in form and nature according to the extent or limit to which the said bar or rod is moved by said inclines, and a suitable mechanism or apparatus connected with the steam-pipe and brakes of said train, and designed and arranged to be operated by the said bar or rod when a stop or "danger" signal is given by the signal mechanism, or under conditions of extreme or impending danger, to control and regulate the admission of steam to the locomotive-cylinders, and the application of the brakes, but which is not designed to be operated when the bar or rod is moved to cause ordinary warning or cautionary signals to be given by said signaling mechanism, as set forth.

43. The combination, with the steam-supply pipe, and the air, vacuum, or other brakes of a locomotive, of a bell-crank lever, O, having rods q q', connecting with cranks or levers Q Q', controlling, respectively, the supply of steam to the cylinders and the application of the brakes, said lever being operated by a collar or projection on a sliding bar or rod moving in bearings on said locomotive when said bar or rod is elevated the proper height by an incline or elevation alongside of the railway-track, as and for the purpose set forth.

44. The combination, with the bell-crank lever and intermediate lever mechanism for shutting off the supply of steam and applying the brakes, of a retaining-lever having one or more teeth or notches to retain the arm of the bell-crank lever when said arm is lifted, and thereby keep the supply of steam entirely or partially shut off and the brakes fully or partially on until released by the engineer, substantially as set forth.

45. The combination, with the bell-crank lever O, the retaining-lever O', and the intermediate lever mechanism connected with the steam-supply valve and the brakes of a locomotive, of the spring o, for returning the bell-crank lever and the lever mechanism connected therewith to its normal position when the bell-crank lever is released from the teeth of the lever O', substantially as shown.

46. The double inclined plane s, of iron or other metal, having its cross-section in shape of an I, increasing in height as it approaches the center of the incline, said inclined plane being secured to the road-bed at one side of a railway-track at a distance from a road crossing or station, in combination with a signaling device having one or more signal-wheels carried on a moving locomotive or train, and designed and adapted to be operated by said inclined plane to give a crossing or station signal upon a steam or other whistle on said locomotive or train, for the purpose set forth.

47. In a railroad-signal and safety system, the combination, with a railroad-track and a depending mechanism carried by a moving locomotive or train, of a series of fixed alarm inclines or elevations permanently placed at different points of said track and adapted to come in contact with and operate the depending mechanism each time it passes said inclines, and a second series of pivoted or movable inclines, also placed along the line of said track, for the purpose of operating said depending mechanism, but only adapted and designed to come into operative contact with said mechanism at certain times and under certain conditions, substantially in the manner set forth.

48. The combination, with a railroad-track and a sliding bar terminating in a shoe or wheel carried on a moving locomotive or train, of a series of fixed and movable inclines or elevations placed adjacent to the track-rails and at different points along the line of said track, said inclines being of different relative heights with respect to each other, and designed and adapted to come into successive operative contact with the said sliding bar at the proper time for the purpose of enabling it to produce a succession of predetermined audible signals of different specific forms, and perform other operations, each resulting signal or operation being dependent upon and determined by the proportionate height of the particular incline or elevation by which it is caused, substantially as set forth.

49. A movable incline or elevation for giving automatic signals upon a moving locomotive or train, consisting of the incline T, formed substantially as shown, and having weighted levers T' T' at either end, said levers being pivoted to a frame or plate secured to the cross-ties or road-bed of a railway-track, and stops t^4 t^4, for limiting the motion of the levers and the incline or elevation, substantially as set forth.

50. The combination, with the plate t^5, secured at one side of a railway-track, the alarm-incline T, and a rope or cable, c, secured to the alarm-incline for operating it, of the weighted levers T' T', formed, substantially as shown, to counterbalance the alarm-incline and aid in returning it to its normal position, and the stops t^4 t^4, to limit their motion, substantially as and for the purpose specified.

51. The combination, with one or more movable inclines or elevations arranged alongside of a railway-track and designed and adapted to operate depending mechanism, substantially as described, on a moving locomotive or train, of the returning-bar X and the spring x, moving in guides x' x', substantially as and for the purpose set forth.

52. In combination with a railway-track, the case U, embedded in the road-bed parallel with said track, and having signal-arms U' U', designed and adapted to form a double incline when raised at their longer extremities, substantially as and for the purpose described.

53. The combination, with the case U, the weighted signal-arms, and the vertically-guided support secured to said arms, of the compensating-links u' u', as and for the purpose set forth.

54. The combination, with the weighted arms and their operating mechanism, of the metallic protecting-case having a longitudinal slot or opening in its top, which opening is normally covered by the weighted arms, substantially as shown, and for the purpose set forth.

55. The combination, with the protecting-case, the weighted signal-arms, the compensating-links, and the vertical support terminating in a shoe or friction-wheel, of a shoe or cam having two or more horizontal steps or rests at different heights, said steps being connected by one or more inclines, and designed to act as a support for holding the signal-arms firmly against downward pressure when said arms are either elevated or depressed, substantially as shown.

56. The combination, with the protecting-case, the signal-arms, the compensating-links, the supporting-bar, and the shoe or cam, of a wire rope, chain, or cable, secured to either end of said shoe or cam, and friction-pulleys secured at or near the ends of the case, for supporting or guiding said rope, chain, or cable, substantially as and for the purpose specified.

57. The combination, with the case, the signal-arms, the supporting-bar, and the rope or cable, of the shoe having horizontal steps at different heights, as described, said steps being of sufficient length to compensate for expansion and contraction of the rope or cable, and of a longitudinal guide, rail, or plate having stops at its extremities, upon which the shoe may move, substantially as described.

58. The combination, with a fixed or movable projection or elevation placed at the side of a railway-track, designed to operate or give an audible signal upon a locomotive or train, of a filling of wood or other suitable substance between said elevation and one of the track-rails, said filling having its upper surface level with the upper surface of said track-rail, substantially as and for the purpose set forth.

59. The combination, with an operating bar or lever, in connection with a railway-switch or draw-bridge, of two or more movable inclines, elevations, or signal-arms capable of being raised to different relative heights for operating a suitable mechanism on a moving locomotive or train, to give audible signals or perform other operations corresponding to or depending upon such various heights, a rope or cable connecting said inclines, elevations, or signal-arms with each other and with the operating bar or lever of the switch or draw-bridge, and a suitable compensating device for enabling said operating mechanism to move said inclines, elevations, or signal-arms to their respective positions without regard to the expansion and contraction of said rope or cable, as and for the purpose set forth.

60. In an automatic alarm-signaling and safety system for railway-trains, the combination, with an operating bar or lever, in connection with a railway-switch or draw-bridge and a locomotive or train provided with a signaling device capable of giving a series of audible signals differing from each other in form and nature, said locomotive or train being also provided with a suitable device for controlling the supply of steam to the cylinders of the locomotive and the application of the brakes of said train, and a sliding bar or rod moving in bearings on said locomotive and suitably connected with and adapted to operate said devices, of two movable alarm inclines or elevations differing in height, placed alongside of a railroad at a distance from each other and from the switch or draw-bridge, and means whereby when the switch is moved from the main line or the draw is opened the alarm-inclines are simultaneously elevated to come into successive contact with and lift the sliding bar on a locomotive approaching the switch or bridge, thereby causing the signaling device first to give a misplaced-switch or an open-draw-bridge alarm-signal, as a warning to the engineer to slow up or stop, and then, if this warning is not obeyed before reaching the second incline, causing the latter to give a down-brakes-alarm signal and at the same moment operate the sliding bar to cut off the steam-supply and apply the brakes.

61. In an automatic alarm-signaling and safety system for railroads, the combination, with the switch-rails of a railroad-switch, the draw of a draw-bridge, and a moving locomotive or train, of a signaling device carried on said train, adapted to give among others, a misplaced-switch, open draw-bridge, and down-brakes signal, a suitable device, also carried by said train, to control under certain conditions the supply of steam to the locomotive-cylinders and the application of the brakes of said train, a depending mechanism suitably connected with and adapted to operate either or both of said devices, inclines or elevations placed adjacent to the track-rails at a distance, respectively, from the switch and draw, said inclines being normally held out of action with respect to the depending mechanism, and a suitable mechanism connected with and adapted to be operated by the movement of the switch-rails and draw when they are placed in a position of "danger" to an approaching train to bring their respective inclines into an operative position with respect to the depending mechanism, thereby causing the latter to operate the aforesaid devices, as and for the purposes set forth.

62. In an automatic alarm-signaling and safety system for railroads, the combination, with the draw of a draw-bridge and a moving locomotive or train, of a signaling device carried by said train and adapted of itself to give either of a code of audible signals, according as it shall be set therefor, and a series of inclines or elevations of different heights placed adjacent to the track-rails at various points along the roadway, and adapted to set said signaling device to give the signals corresponding to such different heights, one of said inclines being placed at a distance from said draw-bridge and adapted to be automatically operated by the opening of said bridge, to cause the signaling device to give a definite open-draw-bridge signal, different and clearly distinguishable from the other signals, for the purpose set forth.

63. In an automatic alarm-signaling and safety system for railroad-trains, the combination of the following elements: an inclined guide or rail secured to the draw of a draw-bridge, a draw bar or rod guided in bearings in the stationary end of the bridge and adapted to be moved or reciprocated by said inclined guide or rail when the draw is opened or closed, two or more elevations, inclines, or signal-arms placed alongside of the track at different distances from the bridge, a wire, rope, or cable connecting said inclines with each other and with the draw-bar at the bridge, and a signaling mechanism on a moving locomotive or train provided with a series of signal-wheels, and adapted, when the draw is open, to be operated by the elevations or inclines to give an open-draw-bridge and down-brakes signal, for the purposes stated.

64. In an automatic alarm-signaling and safety system for railroad-trains, the combination of the following elements: an inclined guide or rail secured to the draw of a draw-bridge, a draw bar or rod guided in bearings on the stationary end of the bridge and adapted to be moved or reciprocated by said inclined guide or rail when the draw is opened or closed, two or more elevations, inclines, or signal-arms placed alongside of the track at different distances from the bridge, a combined visible and audible home-signal placed at the bridge, a wire, rope, or cable connecting the distant inclines with the home-signal and the draw-bar at the bridge, and a signaling mechanism on a moving locomotive or train, adapted to be operated by the series of elevations or inclines when the draw is opened for the purpose of giving a series of audible signals.

65. In an automatic alarm-signaling and safety system for railway-trains, the combination, with the actuating draw-bar V, the primary weight v, the rope or cable c, and one or more movable alarm planes or elevations connected to said rope or cable, of the secondary or returning weight X^2 or spring x at the distant end of said cable, whereby the said cable is constantly kept taut, substantially as set forth.

66. In an automatic draw-bridge-signal system, the combination, with the actuating draw-bar and primary weight at the draw-bridge, one or more movable inclines, elevations, or signal-arms located alongside of a railway-track and designed and adapted to cause an audible signal to be given upon a moving locomotive or train or to control the movement of said locomotive or train, and means for automatically operating said elevations or signal-arms, of a home-signal, substantially as described, located at or near the draw-bridge and operated by the said primary weight to warn a train after its motion has been entirely or partially arrested by the last of said inclines by means of both a visible and audi-

ble signal that it is or is not safe for it to proceed, substantially as described.

67. In an automatic draw-bridge-signal system, the combination, with two or more movable elevations, inclines, or signal-arms placed alongside of a railroad-track at various distances from a draw-bridge, and a suitable mechanism at the bridge adapted to operate said inclines, &c., to give a series of audible signals on and control the movement of an approaching train, of the home-signal, consisting of the post Y, the signal-arm Y', the signal-lamp Y^2, and the bell or gong Y^3, said home-signal being connected with the inclines and operated simultaneously with them, substantially as and for the purpose specified.

68. In a railroad signal and safety system, the combination, with a locomotive or train having signaling and train-stopping devices respectively adapted to give distinct slow and stop signals and to stop the motion of the train, of the herein-described draw-bridge signaling and safety system, comprising the distant alarm elevation or incline and visible signal, the intermediate alarm elevation or incline, the train-stopping elevation or incline, and the combined visual and audible home-signal, all arranged and constructed to operate substantially as set forth.

69. In an automatic signaling and safety system for railroads, the combination, with the draw of a draw-bridge and a signaling and train-stopping mechanism carried on a moving locomotive or train, of one or more alarm-inclines at a distance from the draw to give one or more audible warning-signals on said train when the draw is open, a train-stopping incline at a nearer distance from the draw to operate the train-stopping mechanism in case the warning signal or signals are not heeded, and a combined visible and audible home-signal at the bridge to notify the train when the track is clear, said inclines and home-signal being simultaneously and automatically operated by means of mechanism affected by the movement or the position of the draw.

70. An automatic alarm device for giving audible signals on a moving train or locomotive, consisting of a series of movable or pivoted inclines or elevations connected with one another by a wire, rope, or cable, and placed at suitable points along a railway-track, a primary weight or lever and suitable actuating mechanism at a draw-bridge or switch connected to one end of said rope or cable, and designed and adapted to raise or elevate said inclines or elevations above the surface of the rail when the draw of a bridge is opened or a switch is moved, a secondary weight or spring placed at the distant end of the rope or cable, substantially as described, to depress said elevations or inclines when the bridge or switch is closed or replaced, and a suitable mechanism carried on the locomotive or train to come in contact with the series of alarm inclines or elevations when said inclines or elevations are raised, and thereby give suitable alarm-signals on the whistle of or a gong or bell on said locomotive or train, for the purpose set forth.

71. In a system of alarm-signaling and safety devices for railroads, the combination and co-operation of the following elements: a signal mechanism capable of giving a number of arbitrary signals on the whistle of or a bell or other sounding body on a locomotive or train, mechanism capable of being operated in connection with the signal mechanism to regulate and control the admission of steam to the cylinders and apply the brakes of the train, mechanism placed at different points of the road to operate the signal mechanism to give the desired signals at such points, mechanism located at other points of the road, which mechanism is normally in an inoperative position with respect to the signal mechanism, but is capable of being brought into operative contact therewith in cases of danger to cause other signals of a different nature to be given by the signal mechanism, and simultaneously therewith causing the train-stopping mechanism to reduce the speed of or stop the train, by cutting off or diminishing the supply of steam to the locomotive-cylinders and applying the brakes to the train.

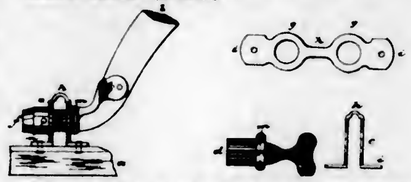
72. In a system of alarm signaling and safety devices for promoting safety on railroads, the combination of the following elements: a signal mechanism capable of giving a number of arbitrary signals on the whistle of or a bell or other sounding body on a locomotive or train, mechanism capable of being operated in connection with the signal mechanism to regulate and control the admission of steam to the cylinders and apply the brakes of the train, mechanism placed at different points of the road to operate the signal mechanism to give the required signals at such points, mechanism located at other points of the road which is normally in an inoperative position with respect to the signal mechanism, and mechanism placed at the various switches, draw-bridges, and other points along the road, connected with and adapted to automatically bring said mechanism into operative action with respect to the signal mechanism when the switch or draw is moved or the track otherwise placed in a position of "danger" to an approaching train, for the purposes set forth.

73. The herein-described apparatus for giving a series of distinct and separate arbitrary signals upon a steam-whistle, gong, or other sonorous body carried on a locomotive or train, consisting of a series of signal-wheels or contacting-surfaces having a succession of elevations and depressions corresponding in form to the different signals to be given, a suitable mechanism or device for producing the signals formed by such elevations and depressions upon said whistle, gong, or other body, and a sliding bar or rod connected with said apparatus and designed and adapted to cause any desired signal to be given by being moved to corresponding different heights.

74. The herein-described system of giving a series of arbitrary signals on a steam-whistle, gong, or other sonorous body carried on a locomotive or train, consisting of the combination of a signaling mechanism provided with a series of wheels or contacting surfaces having a succession of elevations and depressions corresponding to the different signals to be given, and adapted to produce the signals represented by such elevations and depressions upon said whistle, gong, or other body, and a series of inclines or elevations varying in their respective heights according to the number of signal-wheels used, said inclines or elevations being distributed along the line of the railroad at different points thereof, each incline of corresponding or relative height being adapted to produce an audible signal peculiar to and dependent upon such height upon the whistle or other sounding body on a passing locomotive without regard to the position of such incline with respect to other inclines on the line of way or to the order in which said inclines are placed.

75. The herein-described means or apparatus for automatically producing regular, uniform, and distinct audible signals upon a steam-whistle or other sounding body on a moving locomotive or train, consisting of a signal mechanism having one or more signal-wheels or analogous devices designed and adapted to be set in motion through the agency of inclines or elevations along the railway-track to operate a whistle, bell or other sounding body on said locomotive or train, and a suitable speed regulating or governing device designed to control and regulate the motion of said signal wheel or wheels or analogous device, and thereby cause the resulting signals to be given in a uniform and regular manner, regardless of the speed of the train, substantially as set forth.

334,195. **TRAVELING-BAG CLIP.** WILLIAM ROSSER, Newark, N. J. Filed June 15, 1885. (No model.)



Claim.—The clip or ear *c*, having two vertical arms connected at the top by the narrower part *h*, having the eyes *g g* in line with each other, and at its free ends means, substantially as described, by which said clip or ear is adapted to be secured to the satchel or bag frame, as set forth.

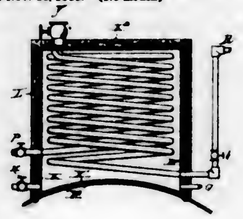
334,196. **HANDLE FOR SATCHELS, &c.** WILLIAM ROSSER, Newark, N. J. Filed June 15, 1885. (No model.)



Claim.—1. In combination with the handle, bag-frame, and a suitable stud, an end piece, *b*, embodying in one piece the tubular part *c*, a stop, *f*, a curved neck, *d*, and jaws *e*, a cap, *g*, covering said tubular part and co-operating with said stop to hold said stud, and a pin which passes through said tubular part, cap, and the end of the handle, to hold said parts together, substantially as shown and described.

2. In a handle for bags, the end piece, *b*, embodying in one piece ears *c*, forming the cylindrical portion into which the handle extends, jaws *e*, to grasp or extend to the side of the upper portion of the handle, a stop, *f*, and a curved neck, all said parts being arranged and combined substantially as and for the purposes set forth.

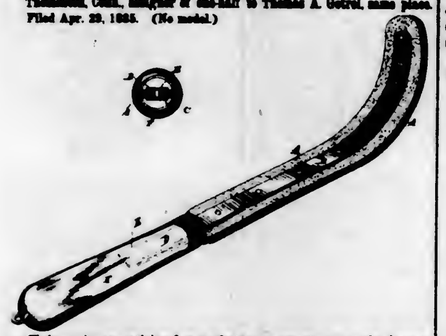
334,197. **FEED-WATER HEATER.** OSCAR ROTHROCK, New York, N. Y. Filed Nov. 10, 1885. (No model.)



Claim.—1. In a feed-water heater, the combination of a shell riveted to and located over the fire-box of a boiler, with a series of live and exhaust steam pipes, within the said shell, substantially as shown and described.

2. In combination with a boiler, a shell for a feed-water heater riveted thereto, and a series of coiled live steam and exhaust pipes, substantially as shown and described.

334,198. **SWEAT-SCRAPER FOR HORSES.** GEORGE W. SANFORD, Thomaston, Conn., assignor of one-half to Thomas A. Getrel, same place. Filed Apr. 29, 1885. (No model.)



Claim.—As an article of manufacture, a sweat-scraper for horses, consisting, essentially, of a handle, two curved metallic strips secured at one end within said handle, and a flexible strip secured between the metallic strips and following the contour thereof, substantially as set forth.

334,199. **METHOD OF PRODUCING WATER-MARKS.** CARL H. SCHMIDT, Berlin, Germany, assignor to the firm of F. Richter, Lille, France. Filed Apr. 4, 1885. (No specimens.) Patented in Belgium Feb. 16, 1885, No. 67,726.

Claim.—1. The method herein described of producing water-lines or water-marks on paper after the same is calendered or printed, which consists in preparing a pressing-plate or relievo, of the design on thin paper and card-board, and passing the paper to be waterlined or watermarked with the plate or relievo through a calendering-machine, substantially as set forth.

2. The method herein described of preparing water-lines or water-marks on paper after the same is calendered or printed, which consists in drawing or marking the designs on thin paper, pasting it on thin cardboard, cutting out the design or impression, and pasting it again on thin pasteboard, then pasting a thin sheet of paper over the design and submitting the whole to heavy pressure, and finally passing the paper to be waterlined or watermarked with the plate or relievo through a calendering-machine, substantially as set forth.

334,200. **HORSESHOE.** GUSTAV G. SUNDGREN, Washington, D. C., assignor of one-half to John B. Daughton, same place. Filed Oct. 23, 1885. (No model.)



Claim.—1. A supplementary horseshoe having inwardly-projecting ears B', provided with apertures b^2 and countersinks b^3, surrounding said apertures, in combination with clamps E and shoulder-nuts F, as and for the purpose intended, substantially as described.

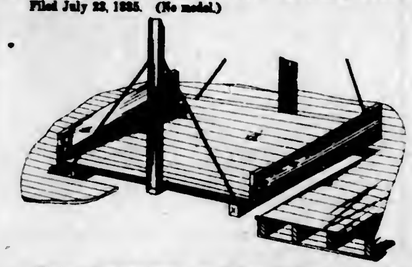
2. In a supplementary horseshoe, the clamping devices E, having a shank, *e*, screw-threaded at *e'*, and provided with countersink e^2, and having a laterally-extending plate, e^3, with roughened surface, in combination with shouldered fastening-nut F, having a central screw-threaded aperture, as and for the purpose intended, substantially as described.

3. A supplementary horseshoe or creeper, B having toe and heel flanges *b b'*, extending upward and located within the inner arc of the shoe, as and for the purpose intended, substantially as described.

4. A supplementary horseshoe having a cut-away portion, B^5, at the toe portion, as and for the purpose intended, substantially as described.

5. The combination of an ordinary horseshoe, A, with a detachable sub-shoe, B, having toe and heel flanges within its inner arc, to prevent lateral displacement, and supplied with inwardly-projecting ears B', having apertures b^2 and countersinks b^3, supplied with clamps E of the character described, and shouldered fastening-nuts F, having central screw-threaded apertures, as set forth, as and for the purpose intended, substantially as described.

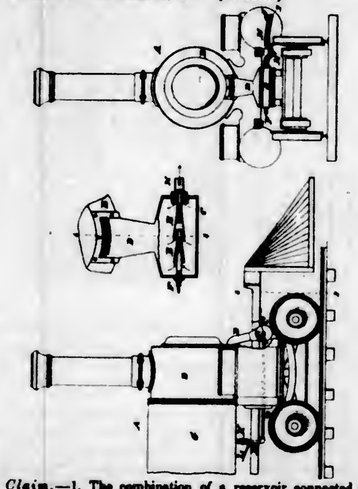
334,201. **ELEVATOR ATTACHMENT.** LUKE SIMON, Cleveland, Ohio. Filed July 22, 1885. (No model.)



Claim.—1. An elevator attachment consisting, essentially, of a plank or equivalent, hinged to the edge of the elevator-platform, springs for holding the plank in and returning the same to an upright position, and stops for tilting the plank to a horizontal position in passing the respective floors of the building, substantially as set forth.

2. In an elevator attachment, the combination, with guard-planks hinged to the elevator-platform, springs connected with the planks for holding the latter in and returning them to an upright position, of tilting levers connected with the guard-planks, stops connected with the different floors for engaging said levers, and arranged to automatically tilt the planks when the elevator is opposite the respective floors, substantially as set forth.

334,202. **DEVICE FOR EJECTING SPARKS.** HOWARD M. SMITH, St. Louis, Mo. Filed Jan. 15, 1885. (No model.)



Claim.—1. The combination of a reservoir connected with the smoke-box of a locomotive, and an ejector in said reservoir connected by a pipe with the water-space of the boiler, and having a discharge-pipe opening to the atmosphere, and having an outwardly-opening automatic valve, for the purpose set forth.

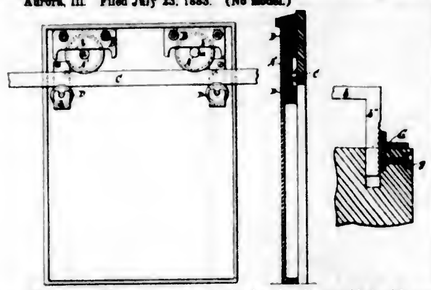
2. The smoke-box of a locomotive and a reservoir connected therewith, in combination with an ejector consisting of a direct passage-way through the reservoir for the ejecting-fluid, induction-openings for the admission of the cinder, and a discharge-pipe opening into the atmosphere, as set forth.

3. The combination, with the spark reservoir of a locomotive, of an ejector consisting of the overlapping conical tubes, a pipe for discharging

the ejecting-fluid into the first of said tubes, and a pipe communicating with the atmosphere, as set forth.

4. The combination, with the spark-reservoir C and ejector therein, of waste-pipe H, with self-closing valve I, for the purpose set forth.

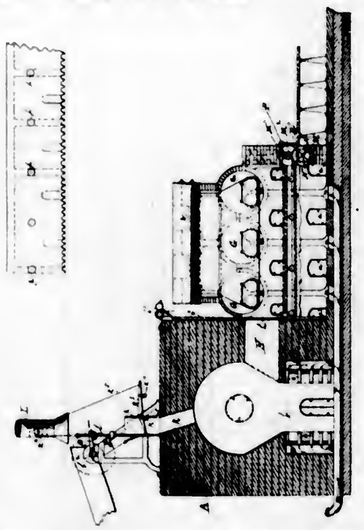
334,203. ATTACHMENT FOR SLIDING DOORS. WARREN SPEAR, Aurora, Ill. Filed July 23, 1885. (No model.)



Claim.—1. The combination of the housing B, provided with two short rails, *b b*, the small disks *a a*, and large disk A', as described, with rail C and guide-sheave D, arranged as shown, and for the purpose set forth.

2. In sliding doors, the bracket G, with set-screw *g*, in combination with the housing B, for the purpose set forth.

334,204. BAGASSE-FURNACE. WILLIAM W. SUTCLIFFE, New Orleans, La. Filed Sept. 23, 1885. (No model.)



Claim.—1. A bagasse-furnace having a combustion-chamber provided at each side of the base thereof with air-chambers having inner walls composed of perforated or tuyere plates, as described, and a draft-flue provided with separate openings and regulating-valves to each air-chamber, substantially as set forth.

2. The combination of a bagasse-furnace, a boiler-furnace, and a communicating flue, as described, with a draft-flue and regulating-valves for admitting air to either of said furnaces, substantially as set forth.

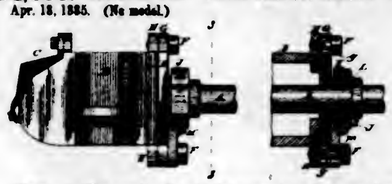
3. The combination of a bagasse-furnace having a feed-opening at the top thereof, a feed-hopper provided with a gate having a weighted arm, a rope adapted to operate over a loose sheave and connect the aforesaid weighted arm with a vertically-sliding bar having a side pin and roller, as described, and a crank connected with the drum-shaft at the discharge end of the bagasse-carrier, whereby the sliding bar and gate are operated, substantially as and for the purpose set forth.

4. The combination of a bagasse-furnace, a draft-flue, and a boiler-furnace, as described, with transverse rails located in the boiler-furnace, a grate-bar carriage adapted to operate on said rails, and means for operating the carriage, substantially as set forth.

5. The combination of a bagasse-furnace, a boiler-furnace, and a connecting-flue, with boilers having a breeching-flue, by which the steam-drum is partially or wholly incased, substantially as and for the purpose set forth.

6. The combination of a bagasse-furnace, a draft-flue, and a boiler-furnace having a flue-connection with said bagasse-burner, and means, substantially as described, to allow an outflow of smoke, when desired, without having the same first pass through the boiler-flues and breeching, as set forth.

334,205. CAR-AXLE BOX. WILLIAM SUTTON, St. Louis, Mo. Filed Apr. 18, 1885. (No model.)

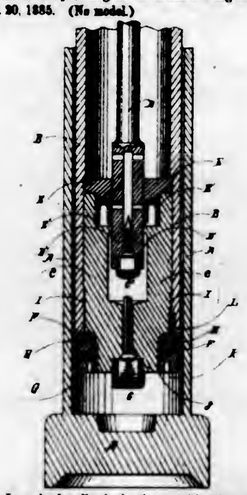


Claim.—1. The combination, in the grease-box of a car, of an adjustable plate at the inner side thereof carrying a stuffing-box, through which the axle passes.

2. The combination, in a grease-box for cars, of a plate adjustable in vertical guides and carrying a stuffing-box, through which the axle passes.

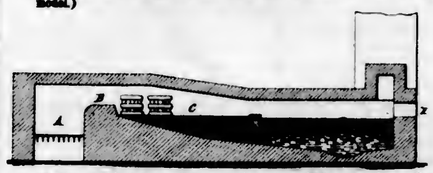
3. The plate carrying a stuffing-box and made movable upon the inner end of the grease-box and secured thereto by bolts passing through vertical slots of the plate and screwing into the body of the box.

334,206. HYDRAULIC JACK. JOHN WEBER, New York, and HARRISON TRAVER, Brooklyn, assignors to Richard Dudgeon, Oyster Bay, N. Y. Filed Oct. 20, 1885. (No model.)



Claim.—In a hydraulic jack, the combination, with the pump C and the ram B, of the packing F, the ring H, the pin L, and the packing ring or nut G, said pin passing through the packing and the ring H and entering the joint between the pump and the ram, substantially as herein shown and described, whereby the packing can be readily applied to the pump and the ram, as set forth, and the several parts prevented from moving relative to each other.

334,207. APPARATUS FOR FILTERING AND SEPARATING METALS. JOHN P. WETHERILL, Bethlehem, Pa. Filed July 15, 1885. (No model.)

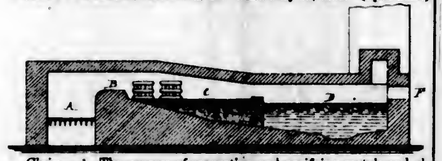


Claim.—1. A furnace for separating or purifying metals or alloys of metals, consisting of one or more chambers filled with refractory filtering material, one or more loosely-built walls of fire-bricks, one or more settling-chambers, and a fire-place for keeping the temperature in all the chambers at a certain uniform height, substantially as set forth.

2. A furnace for separating or purifying metals or alloys of metals, consisting of a fire-box and fire-bridge, one or more chambers filled with refractory material, one or more settling-chambers, and one or more loosely-built transverse walls of refractory material that separate the filtering and settling chambers, said chambers having openings in the side and end walls, substantially as set forth.

3. A furnace for separating or purifying metals or alloys of metals, consisting of a fire-box and fire-bridge, one or more chambers filled with refractory filtering material, one or more settling-chambers, loosely-built transverse walls of refractory material for separating the filtering and settling chambers, said chambers being in direct contact with the heat and arranged at nearly the same level, so as to permit the filtering material to be almost entirely submerged in the molten metal or alloy, substantially as set forth.

334,208. PROCESS OF FILTERING AND SEPARATING METALS. JOHN P. WETHERILL, Bethlehem, Pa. Filed July 15, 1885. (Specimens.)



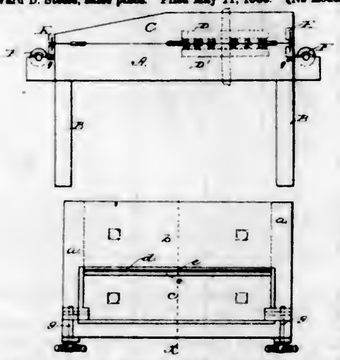
Claim.—1. The process of separating and purifying metals and alloys of metals which consists, first, in subjecting them in direct contact with the heating-gases to a temperature intermediately between the fusing-points of said metals or alloys of metals; and, secondly, in passing the metals having the lower fusing-point through a filtering material at said intermediate temperature, substantially as set forth.

2. The process of separating and purifying metals and alloys of metals which consists, first, in subjecting them in direct contact with the heating-gases to a temperature intermediately between the fusing-points of said metals or alloys of metals; secondly, in passing the metals having the lower fusing-point through a filtering material at said intermediate temperature; and, thirdly, in causing the filtered metals or alloys to stand in a molten state exposed to the heat, so that the metals or alloys separate according to their different specific gravities, substantially as set forth.

3. The process of separating or purifying metals and alloys of metals which consists, first, in subjecting them to a temperature intermediately between the fusing-points of the metals or alloys to be separated or purified: secondly, in passing the metal or alloy having the lower melting-point through a filtering material; and, thirdly, in causing the molten metal or alloy to nearly submerge the filtering material for preventing cementation, substantially as set forth.

4. The process of separating and purifying metals and alloys of metals which consists of the following steps: first, subjecting them in direct contact with the heating-gases to a temperature intermediate between the different fusing-points of the metals or alloys of metals; second, passing the metals having the lower fusing-point through a filtering material; third, causing the molten metal or alloy to nearly submerge the filtering material for preventing cementation; and, fourth, causing the filtered metals or alloys of metals to stand in a molten state exposed to heat, so that the metals or alloys separate according to their different specific gravities, substantially as set forth.

334,209. MACHINE FOR SCOURING AND DRYING SHEET METAL. FREDERICK J. WOOSTER, Waterbury, Conn., assignor of one-half to Edward D. Steele, same place. Filed May 11, 1885. (No model.)

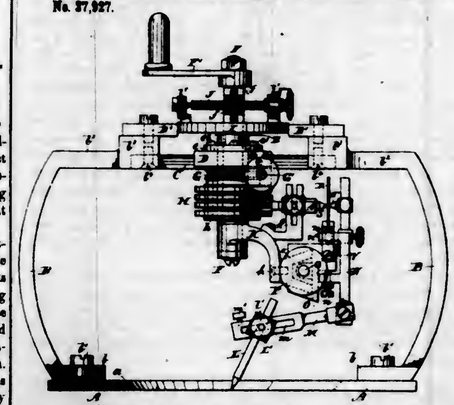


Claim.—1. The herein-described machine for scouring and drying sheet metal, consisting of the box or case A, having suitable supporting-legs, B, and hinged lid or cover C, and provided with the horizontally-arranged brushes D D', drying-out devices E, constructed as described, and the rollers F F', substantially as and for the purpose specified.

2. In combination with an inclosing box or case, A, for retaining sawdust, provided with suitable brushes, the drying-off device E, composed of the frame *a*, provided with the stationary gate *b*, and adjustable gate *c*, having elastic scraping-edges *e*, substantially as and for the purpose specified.

3. In a machine for scouring and drying sheet metal, the drying-off device E, consisting of the rectangular frame *a*, provided with the upper stationary gate, *b*, and lower adjustable gate, *c*, having the edges thereof provided with elastic scrapers, substantially as and for the purpose specified.

334,210. ROSE-ENGINE. ANTON ZEMANN, Vienna, Austria-Hungary, assignor of one-half to Wilhelm Putzker, Olbernhau, Saxony, Germany. Filed Apr. 13, 1885. (No model.) Patented in Germany Mar. 22, 1885, No. 33,207; in France Mar. 23, 1885, No. 167,835; in England Mar. 24, 1885, No. 3,796, and in Austria-Hungary July 22, 1885, No. 11,501 and No. 37,927.



Claim.—1. In a rose-engine, the combination of a rotary shaft, a pattern or rosette carrier loosely mounted on said shaft, a slotted centering disk or chuck, I, through which the shaft passes, and an adjusting-screw for adjusting the shaft along the slot of the chuck, with a graver controlled in its movements by said shaft, and the pattern or rosette on the carrier, as described.

2. In a rose-engine, the combination of a rotary shaft, a pattern or rosette carrier fitted thereto and adjustable around the same, a slotted centering disk or chuck, I, through which the shaft passes, and an adjusting-screw for adjusting the shaft in the slot of the chuck, with a graver controlled in its movements by the shaft and pattern or rosette, as described.

3. In a rose-engine, the combination, with a rotary shaft, a pattern or rosette carrier fitted thereon, a slotted centering plate or chuck, through which the shaft passes, an adjusting-screw for adjusting the shaft along said slot, and a sliding carriage connected with the shaft, of a graver controlled in its movements by the shaft and pattern or rosette, as described.

4. In a rose-engine, the combination, with rotary shaft, a pattern or rosette carrier loosely fitted thereon, a worm-gear for rotating the carrier on the shaft to adjust the same, a centering plate or chuck having a diametrical slot, through which the shaft passes, an adjusting-screw for adjusting the shaft along said slot, and a sliding carriage connected with the shaft, of a graver controlled in its movements by the shaft and pattern or rosette, as described.

5. In a rose-engine, the combination, with a rotary shaft, a pattern or rosette carrier loosely fitted thereon, a worm-wheel mounted on the carrier, a centering plate or chuck having a diametrical slot, through which the shaft passes, an adjusting-screw for adjusting the shaft along the slot of the chuck, and a sliding carriage connected with the shaft, of a worm or screw having its bearings in said carriage and meshing with the worm-wheel on the rosette-carrier, substantially as and for the purpose specified.

6. In a rose-engine, the combination, with a rotary shaft, a pattern or rosette carrier loosely fitted thereon, a sliding carriage connected with the shaft, a centering plate or chuck having a diametrical slot, through which the shaft passes, and an adjusting-screw for adjusting the shaft along the slot and connecting the same rigidly with the chuck, of stop-plates arranged on opposite sides of the chuck in the plane of its slot, for the purpose specified.

7. In a rose-engine, the combination, with a rotary shaft, a rosette-carrier fitted thereon, a slotted centering-chuck, and adjusting devices

for adjusting the shaft along the slot of said chuck, of a graver connected with the shaft and intermediate mechanism controlled by the rosette or pattern to transmit a differential movement to the graver, according to the form of the rosette or pattern, as described.

8. In a rose-engine, the combination, with a rotary shaft, a stationary rosette-carrier fitted thereon, a slotted centering disk or chuck, and adjusting devices for adjusting the shaft along the slot of the chuck, of a graver connected with the shaft and adjustable in a plane at right angles to the plane of adjustment of said shaft in the chuck, as described, for the purpose specified.

9. In a rose-engine, the combination, with a rotary shaft, a stationary rosette-carrier fitted thereon, a centering disk or chuck having a diametrical slot, through which the shaft passes, and adjusting devices to adjust the shaft along the slot of the chuck, of transmitting devices for transmitting variable motion to the graver controlled by the rosette or pattern on the carrier, and consisting of a stud or pin and a pivoted graver-carrier controlled by said pin, as described.

10. In a rose-engine, the combination of a laterally-adjustable rotary shaft and a stationary pattern or rosette carrier fitted thereon, with a graver supported from the shaft and controlled by the pattern or rosette on the carrier, said graver being arranged to bear on the plate operated on by gravity, substantially as and for the purpose specified.

11. In a rose-engine, the combination of a laterally-adjustable rotary shaft and a stationary pattern or rosette carrier fitted thereon, with an adjustable graver actuated by gravity supported from said shaft and transmitting devices controlled by the pattern or rosette on the carrier and controlling the graver, substantially as and for the purpose specified

12. In a rose-engine, the combination of a laterally-adjustable rotary shaft and a stationary pattern or rosette carrier fitted thereon, with an adjustable support whose movements are controlled by the pattern or rosette on the carrier, and a graver-holder pivoted to said support and carrying an adjustable weight, substantially as and for the purpose specified.

13. In a rose-engine, the combination, with a rotary shaft and a stationary rosette or pattern carrier, of a sliding carriage connected with the shaft, a graver-carrier supported from said carriage, and an adjusting-screw for adjusting the carriage in a plane at right angles and eccentric to the vertical plane of the shaft, substantially as and for the purpose specified.

14. In a rose-engine, the combination, with a rotary shaft, a stationary rosette or pattern carrier, and a guide-rail rigidly connected with the shaft, of a sliding carriage fitted to and adjustable on said guide-rail, and a vibratory graver-carrier connected with said sliding carriage and controlled from the pattern or rosette carrier, as described, for the purpose specified.

15. In a rose-engine, the combination, with a rotary shaft, a stationary rosette or pattern carrier, and a transmitting stud or pin fitted loosely in bearings rigidly connected with the shaft and controlled by the rosette or pattern on the carrier, of a pivoted graver-carrier connected and rotating with the shaft, and an intermediate pivoted transmitting-plate controlled from the transmitting lug or stud, whereby the reciprocating movements of the latter are transmitted to the graver-carrier, substantially as and for the purpose specified.

16. In a rose-engine, the combination, with a rotary shaft, a stationary rosette or pattern carrier, and a transmitting stud or pin fitted loosely in bearings adjustable vertically in their support along the pattern-carrier, said support being rigidly connected with the shaft, said stud or pin being controlled by the rosette or pattern on the carrier, of a pivoted graver-carrier connected and rotating with the shaft and an intermediate pivoted transmitting-plate controlled from the transmitting lug or stud, whereby the reciprocating movements of the latter are transmitted to the graver-carrier, substantially as and for the purpose specified.

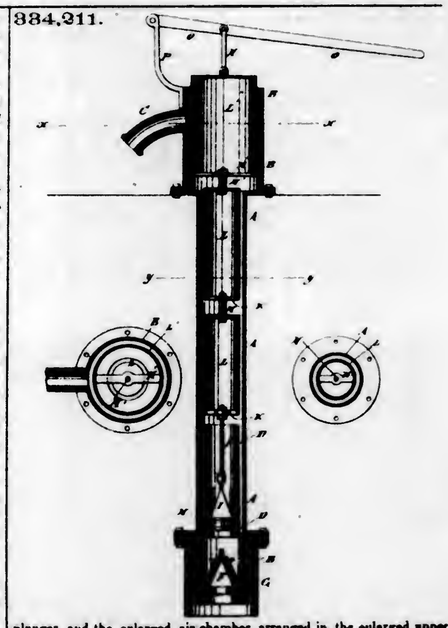
17. In a rose-engine, the combination of a stationary pattern or rosette carrier, a rotary shaft, a graver-carrier connected with and rotating around said pattern-carrier, and transmitting devices controlled from the pattern-carrier and controlling the graver-carrier, to impart to the latter a differential motion corresponding with the contour of the pattern, and an adjusting device for varying the amplitude of said differential motion, substantially as and for the purpose specified.

18. In a rose-engine, the combination of a stationary pattern-carrier, a centering disk or chuck having a diametrical slot, a rotary shaft passing through the chuck and carrier, adjusting devices for adjusting the carrier in the plane of rotation of the shaft and for adjusting the latter in a horizontal plane, a graver-carrier connected and rotating with the shaft around the pattern-carrier, adjusting devices for adjusting the graver-carrier in a plane at right angles to the plane of adjustment of the shaft, and transmitting devices controlled from the pattern or rosette carrier and controlling the graver-carrier, substantially as and for the purpose specified.

334,211. PUMP. HIRAM M. D. L. BABCOCK, San Francisco, Cal. Filed Feb. 16, 1885. (No model.)

Claim.—1. In a pump, the combination, with the pump-case having an enlarged upper end, of the lower air-chamber connected to the

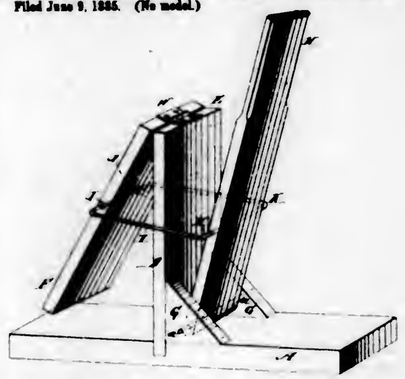
334,211.



plunger, and the enlarged air-chamber arranged in the enlarged upper end of the pump-case and having a lower open end, said air-chambers being connected together, substantially as and for the purpose set forth.

2. In a pump, the pump-case having in its lower end the working-barrel, surrounding which barrel is a water space or chamber, said pump-case having at its upper end an enlargement, in combination with the plunger, the lower air-chamber connected to the plunger, and the enlarged air-chamber arranged in the enlargement at the upper end of the pump-case, and having a lower open end, said air-chambers being connected together, substantially as and for the purpose set forth.

334,212. LEMON-SQUEEZER. SHERIDAN S. BADGER, Chicago, Ill. Filed June 9, 1885. (No model.)

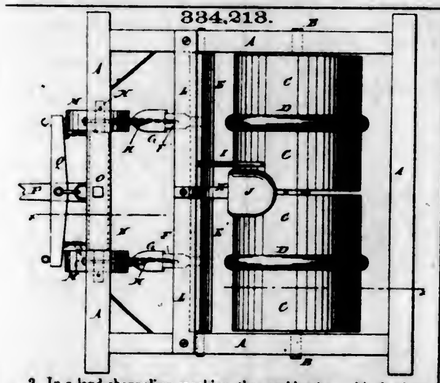


Claim.—A squeezer for expressing the juice from fruit, consisting of the base A, fixed or stationary jaws D, swinging jaw F, hinged at its upper end to jaw D, lever H, pivoted at its lower end to the frame, and yoke I, constructed and operating substantially as herein described.

334,213. LAND-CHANNELING ROLLER. ROBERT H. BAKER, Fort Lewis, Colo. Filed July 21, 1885. (No model.)

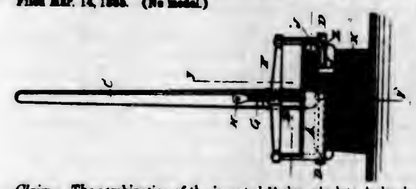
Claim.—1. A land-channeling machine consisting of the frame A L, the rollers C, having ribs D journaled in the rear part of the frame, the furrow-opening plows F G, secured to a bar, E, journaled in the frame in front of the rollers C, the axle N, pivoted at the center of its length to the front bar of the frame, the wheels M on the axle, and the tongue P, attached to the axle, substantially as herein shown and described.

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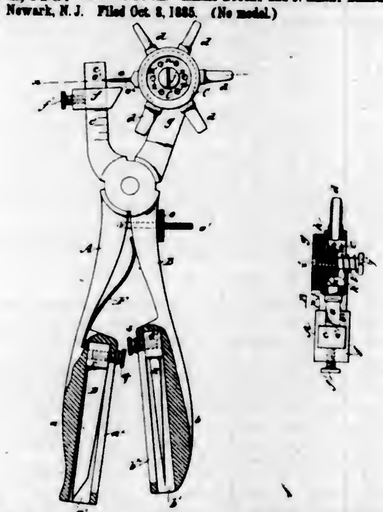
2. In a land-channeling machine, the combination, with the frame A, the rollers C D, and the wheels M at the forward end of the frame, of the shaft E, journaled in the frame in front of the rollers, the standards F, secured to the shaft, the plows G on the lower end of the standards, the chains H, connected to the standards and to the forward part of the frame, and the handle-lever I, attached to the shaft E, substantially as herein shown and described.

334,214. BROOM-HOLDER. JAMES F. BARRINGER, Bennettsville, S. C. Filed Mar. 14, 1885. (No model.)



Claim.—The combination of the inverted-U-shaped plate A, having outward-curved cross-pieces D at it ends, the U-shaped rod E, having its arms extending up between the cross-pieces D and the ends of plate A, the cross-bar F, to which the ends of the rod E are secured, said cross-bar having a central screw-threaded aperture, and the screw G, passed through the threaded aperture in the cross-bar F, and swiveled in the central part of the plate A, substantially as set forth.

334,215. BELT-PUNCH. HENRY BOOURY and J. HENRY BAMBERGER, Newark, N. J. Filed Oct. 8, 1885. (No model.)



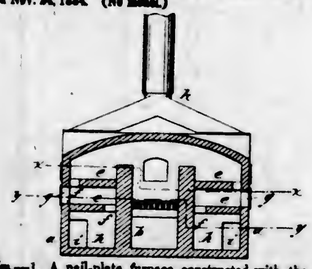
Claim.—1. As an improved article of manufacture, the herein-described belt-punch, consisting of pivoted lever-jaws provided with a sliding tool in each handle end, and a revolving head carrying cutting devices on one of the said jaws, as set forth.

2. The belt-punch herein shown and described, consisting of the cross-pivoted members A B, provided with sliding tools at their handle ends, the jaws *c g*, and the rotary plate or disk C, provided with punches *d* and the blade *e*, substantially as and for the purposes set forth.

3. A combination belt-punch consisting of the pivoted lever-jaws A *g* B *c*, provided with the revolving disk C, carrying punches *d* and blade *e* on the jaw *g*, the gage *f* on the jaw *c*, the sliding knife D in the handle end of lever A, the sliding punch or awl in the handle end of lever B, the screw-rod *o'*, and nut *o* thereon, substantially as herein shown and described.

4. In a belt-punch, the combination, with the jaw *g*, having hub *h*, provided with the screw-threaded aperture *i* and stud *n'*, of the chambered disk C, carrying cutting devices, and provided with the apertures *n*, the screw *j*, and the spring *l*, substantially as herein shown and described.

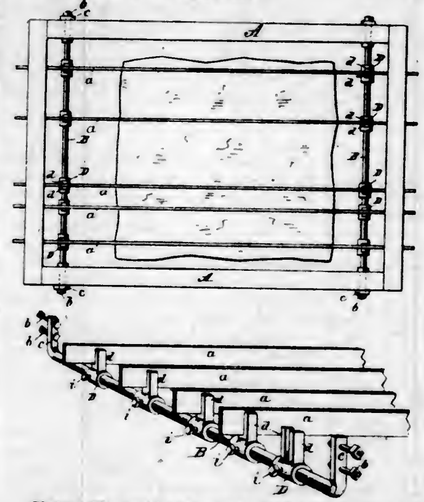
334,216. NAIL-PLATE FURNACE. SIMEON BURR, Belleville, Ill. Filed Nov. 24, 1884. (No model.)



Claim.—1. A nail-plate furnace constructed with the outer walls surrounding a central furnace, and provided with the double decks or bottoms, substantially as described.

2. The combination and arrangement, substantially as described, in a nail-plate furnace, of the double bottoms or decks *c*, having openings *f*, the outer walls, *a*, provided with the openings *g*, and the central furnace formed by the walls *b*.

334,217. MARBLE-SAWING MACHINE. JAMES F. COTHE, Chicago, Ill. Filed Sept. 29, 1885. (No model.)



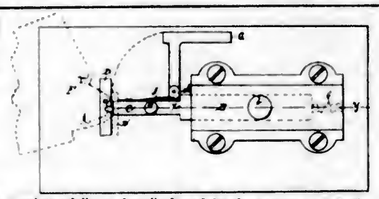
Claim.—The combination, with the frame A and saws *a a*, of transverse cylinder-bars B B, carrying guides formed by sleeves D, fitted to turn upon the bars B B, and fingers *d d*, that are held in place by set-screws *i*, substantially as described.

334,218. SEWING-MACHINE GAGE. HENRY C. COREN, Troy, N. Y. Filed Sept. 17, 1885. (No model.)

Claim.—1. In a sewing-machine gage, the combination of a spring-actuated movable bar provided with a guiding-face, a stop, P, a spring-stop, S, having a handle or thumb-piece, *b*, and a bar-support, B, substantially as described, and for the purposes set forth.

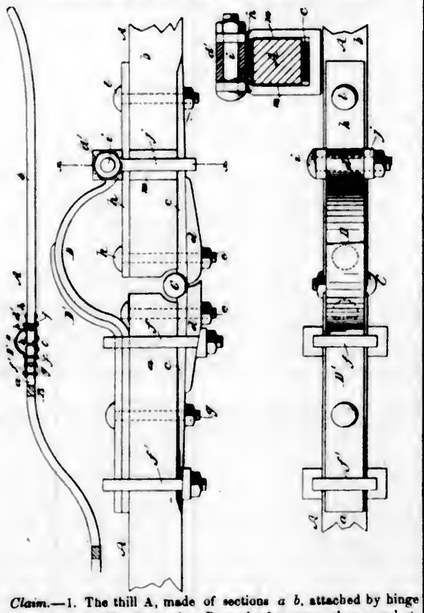
2. In a sewing-machine gage having two sections hinged one upon the other and adapted to slide to and from the sewing-machine needle, the combination, with said sections of an actuating-spring, stop P, and

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handle *e*, substantially as described, and for the purposes set forth.

334,219. TWO-WHEELED VEHICLE. WILLIAM E. DAVIES and WILLIAM C. GATLEY, Deringer, Pa. Filed May 19, 1885. (No model.)



Claim.—1. The thill A, made of sections *a b*, attached by hinge C, in combination with the spring D, made fast to section *a*, and attached at its forward end to section *b* by movable clip *j*, substantially as described.

2. The sections *a b* of the thill hinged together by hinge C, in combination with the spring D, and re-enforcing plates *d d*, attached to the plates of the hinge, substantially as and for the purposes described.

334,220. TAG-MAKING MACHINE. HARMER DENNET, Brooklyn, N. Y. Filed Sept. 18, 1884. (No model.)

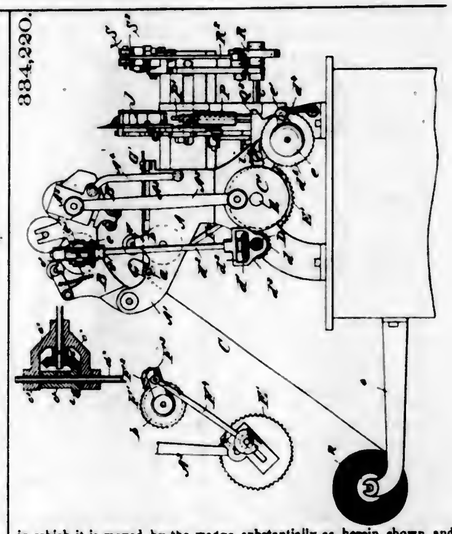
Claim.—1. In a tag-making machine, the combination, with the frame, of a driving-shaft, an arm mounted on the driving-shaft and on a crank of a shaft adjacent to the driving-shaft and operated from the same a vertically-movable carriage actuated by the said arm, and devices, substantially as described, for eyeleting the tags mounted on said carriage, substantially as herein shown and described.

2. In a tag-making machine, the combination, with a frame, of a vertically-movable carriage carrying an upsetting-punch, a transversely-movable carriage carrying a die, and means, substantially as described, whereby the said transversely-movable carriage is moved by the vertically-movable carriage, substantially as herein shown and described.

3. In a tag-making machine, the combination, with the frame, of a vertically-movable carriage carrying an upsetting-punch, a transversely-movable carriage carrying a die and provided with a roller, and a wedge upon the vertically-movable carriage acting on the said roller, and thereby shifting the transversely-movable carriage, substantially as herein shown and described.

4. In a tag-making machine, the combination, with a frame, of a vertically-movable carriage provided with a wedge and carrying an upsetting-punch, a transversely-movable carriage carrying a die and provided with a roller, which transversely-movable carriage is moved in one direction by the action of the wedge on the roller, and of a spring secured to the transversely-movable carriage and to the frame, which spring moves the transversely-movable carriage in the inverse direction of that

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in which it is moved by the wedge, substantially as herein shown and described.

5. In a tag-making machine, the combination, with a vertically-movable carriage carrying an upsetting-punch, of a transversely-movable carriage carrying two dies, and of a punch below one of the dies, substantially as herein shown and described.

6. In a tag-making machine, the combination, with a vertically-movable carriage carrying an upsetting-punch, of a transversely-movable carriage carrying two dies, a punch below one of the dies, and an inclined guide-track, at the upper end of which a box containing eyelets is held, substantially as herein shown and described.

7. In a tag-making machine, the combination, with a vertically-movable carriage carrying an upsetting-punch, of a transversely-movable carriage provided with a longitudinal slot, of two dies above the slot, a punch held on a sliding bar on the transversely-movable carriage, an elbow-lever for operating the said punch from a shaft operated from the main driving-shaft, and of an inclined track, at the upper end of which an eyelet-receptacle is held, substantially as herein shown and described.

8. In a tag-making machine, the combination, with a vertically-movable carriage carrying the tubular punch P, of the transversely-movable carriage J, provided with the slot J′, and above the slot with a boss or projection, M, in which the dies L^4 and P^4 are held, the vertically-sliding punch L′, held on the transversely-sliding carriage J, an elbow-lever operated from the main shaft, a rod, P′, extending through the tubular punch P, and of a bracket, Q^3, on the frame, substantially as herein shown and described.

9. In a tag-making machine, the combination, with a frame, of a transversely-sliding carriage carrying dies and a punch, a vertically-sliding carriage carrying a tubular upsetting-punch in which a rod is held to slide vertically, and of a bracket on the frame of the machine, against which bracket the said rod strikes when the carriage moves downward, whereby the said rod is pushed upward, substantially as herein shown and described.

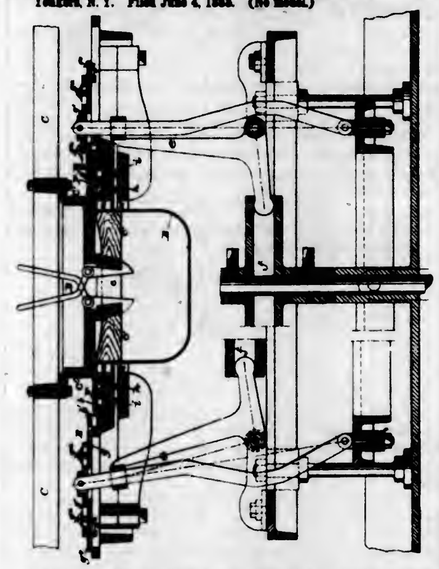
10. In a tag-making machine, the combination, with the swinging bar S, of the blade S, and the V-shaped blade S^2 held on the same, and of the pivoted support U, resting on a cushion or spring, W, substantially as herein shown and described.

11. In a tag-making machine, the combination, with the frame, of the fixed blade T, the pivoted bar S, carrying the blades S′ S^2, and the pivoted support U, resting on a rubber cushion, substantially as herein shown and described.

12. In a tag-making machine, the combination, with the frame, of the main driving-shaft, the shaft E, operated from the same, the shaft O, operated from the shaft E, the cam-wheel R on the end of the shaft O, the lever R′, acted upon by the cam-wheel, the connecting-rod R^2, the pivoted bar S, connected with the rod R^2, and of the blades S′ S^2 on the bar S, substantially as herein shown and described.

13. In a tag-making machine, the combination, with the frame, of the driving-shaft D, the shaft E, operated from the same, the shaft O, operated from the shaft E, the cam-wheel N′ on the shaft O, the elbow-lever N, acted upon by the cam-wheel N′, the transversely-sliding carriage J, and the vertically-sliding bar L on the same, which bar is operated from the lever N, the punch L′, held in the upper end of the ba L, dies held on the carriage J, a vertically-sliding carriage which operates the transversely-sliding carriage, an upsetting-punch on the vertically-sliding carriage, and of an inclined track held on the transversely-sliding carriage, on the upper end of which inclined track a receptacle for eyelets is held, substantially as herein shown and described.

334,221. HAT-BRIM-CURLING MACHINE. RUDOLF EICKEMEYER, Yonkers, N. Y. Filed June 4, 1885. (No model.)



Claim.—1. In machines for folding or curling the edges of hat-brims, the combination, substantially as hereinbefore described, of a hat-brim bed having a central opening for the reception of the crown of a hat and enabling a hat-brim to be presented bottom side up on said brim-bed, and brim folding or curling devices operating above said brim-bed and adapted to turn the edge of a hat-brim inwardly toward the opening in said hat, and to fold or curl said edge over and upon the under side of the brim.

2. In a machine for folding or curling the edges of hat-brims, the combination, substantially as hereinbefore described, with a clamping-ring, a guide-plate, and an expansible and contractible brim-folding ring, of a brim-bed and a flexible auxiliary brim-bed which is confined centrally to said brim-bed and is vertically adjustable at each end, whereby the surface contour of the brim-bed may be readily varied.

3. In a machine for folding or curling the edges of hat-brims, the combination, with a brim-bed, of a brim-folding ring constructed in sections, each composed of a base-plate and a cap-plate coupled together and longitudinally adjustable with reference to each other, substantially as described.

4. In a machine for folding or curling the edges of hat-brims, the combination, with a brim-clamping ring, of a guide-plate constructed in sections, each detachably coupled to said ring, substantially as described.

5. The combination of the flexible auxiliary brim-bed vertically adjustable at each end and confined centrally to the main brim-bed and the vertically-adjustable hat-block chuck, substantially as described.

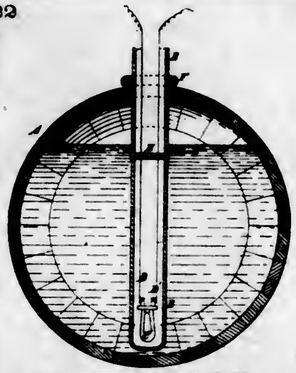
334,222. APPARATUS FOR AGING SPIRITUOUS LIQUORS, WINES, &c. HORACE A. FINCH, New York, N. Y. Filed Oct. 22, 1884. (No model.)

Claim.—1. The combination, with a receptacle for containing alcoholic liquors, &c., of a glass tube extending into the receptacle and having a closed bottom and a lamp arranged in the portion of the tube which is within the receptacle, substantially as specified.

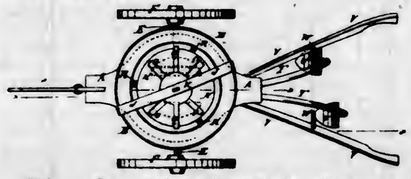
2. The combination, with a receptacle for containing alcoholic liquors, &c., of a glass tube extending into the receptacle and having a closed bottom, a lamp arranged in the portion of the tube which is within the receptacle, and a stopper in the tube above the lamp, substantially as specified.

3. The combination, with a receptacle for containing alcoholic liquors, &c., of a glass tube extending into the receptacle and having a closed bottom, a packing between the tube and the sides of the hole in the receptacle through which it passes, and a lamp arranged in the portion of the tube which is within the receptacle, substantially as specified.

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334,223. SEED-PLANTER. LOUIS S. PLATAU, Pittsburg, Tex. Filed Oct. 8, 1885. (No model.)



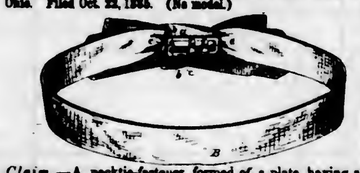
Claim.—1. In a seed-planter, the combination, with the rotary funnel-shaped hopper B, the rotary shaft K, connected with the said hopper, and the stationary funnel-shaped bottom pan, G, having lugs R, of the stationary radially-slotted bottom plate, L, and the adjustable radially-slotted gage-plate N, connected with the said bottom pan, and the spoke-wheel Q, attached to the said shaft, substantially as herein shown and described, whereby the seed will be discharged with certainty and in uniform quantities, as set forth.

2. The combination, with the frame A, the shaft E, and the gear D, of the tube H, extending through the frame, the funnel-shaped hopper B, having a neck fitting around the tube H, and a gear, C, meshing with the gear D, the tubular plow I, screwed upon the lower end of the tube H, and mechanism within the hopper for acting on the seed, substantially as set forth.

3. The combination, with the frame A, the rotary funnel-shaped hopper B, the gear C thereon, the axle E, and the gear D, of the inner fixed funnel-shaped pan, G, around which the hopper B revolves, the apertured bottom plate, L, in the hopper-shaped pan G, shaft K, connected to the hopper B and revolving therewith, and a seed-operating device carried by the lower end of the said shaft over the seed-plate L, substantially as set forth.

4. In a seed-planter, the combination, with the axle having a gear-wheel, of a revolving hopper on the frame having a gear-wheel meshing into that on the axle, and a seed-operating mechanism within the hopper and operated thereby, substantially as set forth.

334,224. NECKTIE-FASTENER. DANIEL T. FREEMAN, North Amherst, Ohio. Filed Oct. 22, 1885. (No model.)

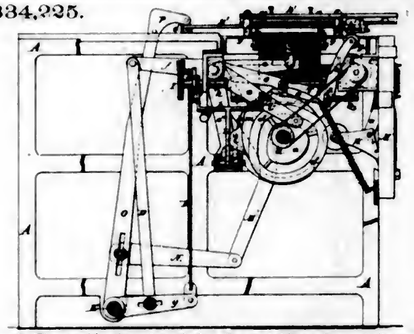


Claim.—A necktie-fastener formed of a plate having an oblong rectangular part, *a*, provided with parallel slots *b b*, forming in the body of the plate the bar *c*, and the forked arm *c*, formed integrally with the body of the fastener and bent over parallel with the face of the fastener with the forks of the arm approximately at right angles with the slots *b b* and bar *c*, substantially as specified.

334,225. PLATE-PRINTING MACHINE. ORVILLE S. HARMON, Brooklyn, N. Y. Filed July 12, 1877.

Claim.—1. The combination of a printing-die, an inking-roller, a lever for causing it to traverse the face of the die and capable of adjustment to vary its action with relation to the die, a cam for actuating the lever, a traveling wiping-apron, and a stamping mechanism, substantially as specified.

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2. The combination of a printing-die, an inking-roller, a bell-crank lever on which the inking-roller is mounted, an arm to which such bell-crank lever is fulcrumed, a cam for raising the said arm, and a cam for vibrating the bell-crank lever to cause the roller to traverse the face of the die, substantially as specified.

3. The combination of a printing-die, an inking-roller, a bell-crank lever on which the inking-roller is mounted, an arm to which the bell-crank lever is fulcrumed adjustably so that the action of the roller may be varied, a cam for raising the arm, and a cam for vibrating the bell-crank lever to cause the roller to traverse the face of the die, substantially as specified.

4. The combination of a printing-die, a wiping-apron having an intermittent feed, an elastic pad over which the wiping-apron is fed, a presser-plate, and screws, substantially as described, acting on the presser-plate, for varying the pressure with which the die is wiped, substantially as specified.

5. The combination of a printing-die, a wiping-apron, an elastic pad over which the wiping-apron is fed, a presser-plate, and screws acting on the presser-plate for varying the pressure with which the die will be wiped, said die being moved in a direction transversely to the direction of movement of the apron, substantially as specified.

6. The combination of a printing-die, a wiping-apron having an intermittent feed, and jaws for clamping and holding the wiping-apron while the wiping of the die is being performed, substantially as specified.

7. The combination of a printing-die, a wiping apron, a roller onto which the wiping-apron is wound, an arm from which motion is transmitted to the roller, a lever bearing against the wiping-apron wound upon the roller, and a connection between the lever and arm admitting of the action of the lever at different points in the length of the arm, substantially as specified.

8. The combination of a printing-die, a wiping-apron having an intermittent feed, the jaws *z*, the yoke *a'*, to which the jaws are pivotally connected, the link *b'*, and a lever and cam for actuating such link, substantially as specified.

9. The combination of a printing-die, a wiping-apron, a roller onto which the wiping-apron is wound, a pawl or dog connected to an arm whereby motion may be imparted to said roller, a rod for imparting motion to the said arm, and a lever impinging against the wiping-apron as it is coiled on the roller and serving to vary the point of connection between the said arm and rod as the coiled wiping-apron increases in diameter, substantially as specified.

10. The combination, with a printing-die, a wiping mechanism, and a stamping mechanism, of a lever for moving the die into its various positions, and means, substantially as described, whereby the throw of the lever may be varied, substantially as specified.

11. The combination, with a printing-die, a wiping mechanism, substantially as described, and a stamping mechanism, of the lever M', the lever O, and the link N, adjustably connected to the lever O, substantially as specified.

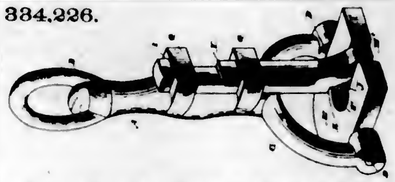
12. The combination, with a printing-die, a wiping-apron moving in one direction therefor, means for moving the die transversely to that of the direction of the apron, and ways, substantially as described, whereby the die is caused to make reverse motions in different planes, substantially as specified.

334,226. CLAMP FOR SUCKER-RODS. WILLIAM HELLER, Allentown, N. Y., assignor of one-half to Porter Barnes and Dennis Barnes, both of same place. Filed Nov. 13, 1885. (No model.)

Claim.—1. As an improvement in sucker-rod clamps or elevators, the combination of a shank or handle terminating in a yoke or bail at its lower end, a slotted plate pivoted in the said yoke, and a sliding latch mounted upon the front side of the said shank, substantially as and for the purpose herein set forth.

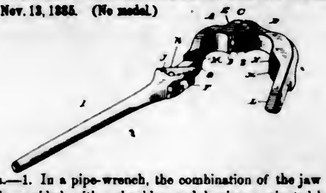
2. In a sucker-rod clamp or elevator, the combination of a shank having a swiveled link at its upper end and terminating at its lower end

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in a yoke or bail, a plate pivoted in said yoke and having a slot extending inwardly from its front edge, a seat formed in the upper side of said plate at the inner end of said slot, and a latch arranged to slide vertically in staples upon the front side of the shank, and having shoulders to limit its vertical movement, and terminating at its lower end in a beveled projection having a locking shoulder on its inner side, substantially as and for the purpose set forth.

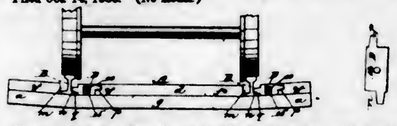
334,227. PIPE-WRENCH. WILLIAM HELLER, Allentown, N. Y., assignor of one-half to Porter Barnes and Dennis Barnes, both of same place. Filed Nov. 13, 1885. (No model.)



Claim.—1. In a pipe-wrench, the combination of the jaw A, having a shank provided with a shoulder, and having a pivoted handle or lever provided with a triangular plate, with the jaw B, hinged to the jaw A and having the arm L, substantially as and for the purpose set forth.

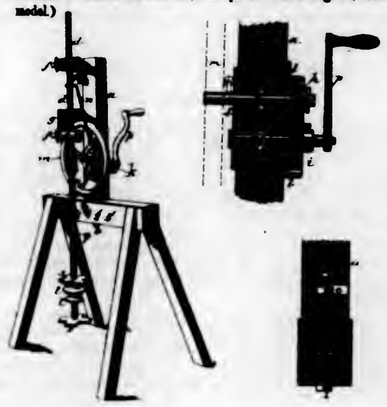
2. In a pipe-wrench, the combination of the jaws A and B, connected by a hinge which admits of a vibrating motion of the said jaws with relation to each other, the shank F, extending from the jaw A and having shoulder G and plate H, the pivoted handle I, having plate J, the arm L, extending from the jaw B, and the dies M M, partly embedded in the inner sides of the jaws and having projecting sharp rear edges, N, substantially as and for the purpose herein set forth.

334,228. RAILWAY-TIE. ENOS N. HIBLEY, Somersworth, N. H. Filed Oct. 14, 1885. (No model.)



Claim.—In a metallic railway-tie, the combination, with a vertical flange having a notch or aperture for the reception of the rail, of a reversible clamping-plate, D, bolted to one side of said flange and provided with projections *n p* at its opposite ends, adapted, by changing the position of the said clamping-plate, to bear upon the base-flange of the rail when raised at different heights above the surface of the tie, substantially as described.

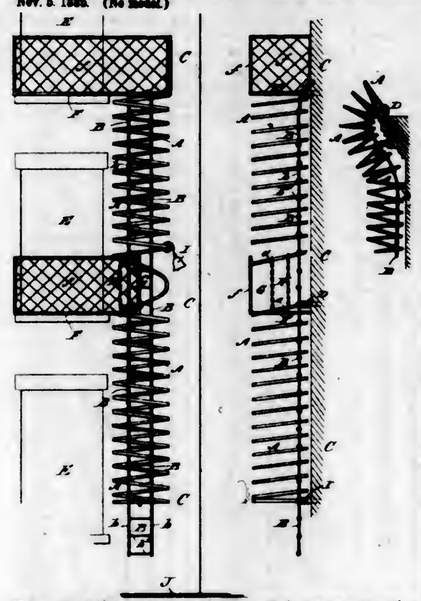
334,229. CHURN. WILLIAM JARRELL, Humboldt, Tenn., assignor of one-half to Watkins H. Dedeau, same place. Filed Aug. 22, 1885. (No model.)



Claim.—1. The structure consisting of a horse having a tenoned post secured to the horse-bar by the bolt *b* and nut *c*, the socketed bearing-brackets *g g*, attached to the post, having shouldered keyed guide-blocks *e e*, and the plates *l l*, having bearing-hubs meeting in said post, in combination with the dash-rod working through the said blocks, the pitman, and the operating-gearing, as shown and described.

2. The structure herein described, consisting of the horse, the post *a*, the brackets *g g*, attached to the post, and the shouldered bearing-blocks *e e*, mounted in said brackets, in combination with the hubbed bearing-plates *l l*, the dasher-rod having the curved knobs *t u* and cross-arms *s s*, the balance-wheel, and the connecting-rod *n*, as shown and described.

334,230. FIRE-ESCAPE. ANNIE M. JEFFERS, Chicago, Ill. Filed Nov. 5, 1885. (No model.)



Claim.—1. A fire-escape comprising a spiral structure, A, and a ladder, B, arranged therein and secured to a building, substantially as herein set forth.

2. A fire-escape comprising a spiral structure, A, and a ladder, B, arranged therein alongside of the windows of the building, and said spiral structure being stretched or opened at the windows to provide spaces, as at G, for entrance and exit of persons to and from the ladder, substantially as herein set forth.

3. A fire-escape comprising a spiral structure, A, and a ladder, B, arranged therein and extended to and around the eaves of a building to its roof, substantially as herein set forth.

4. A fire-escape comprising a spiral structure, A, and a ladder, B, arranged therein alongside of the windows of a building, and extended around the eaves to the roof, and said spiral structure being stretched or opened at the windows to provide spaces, as at G, for entrance and exit of persons to and from the ladder, substantially as herein set forth.

5. In a fire-escape comprising a spiral structure, A, and a ladder, B, arranged therein, and said spiral being stretched or opened to provide spaces at G, substantially as specified, the combination, with the spiral at the spaces, of the slip-chains H, substantially as and for the purposes herein set forth.

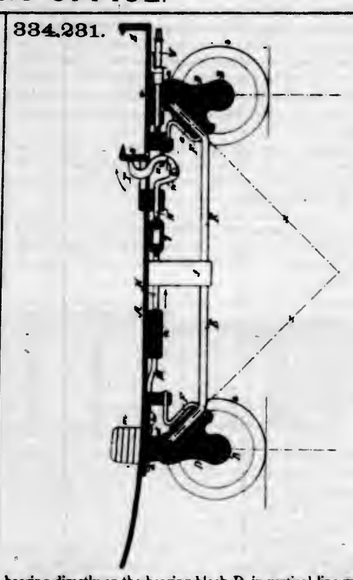
6. A fire-escape comprising a spiral structure, A, and a ladder, B, arranged therein and secured to a building alongside of the windows, and said spiral being stretched or opened to provide spaces at G, substantially as specified, and platforms, as at F, extending from the windows to the spiral structure, substantially as herein set forth.

7. In a fire-escape comprising a spiral structure, A, and a ladder, B, arranged therein and secured to a building, substantially as specified, the combination, with the spiral, of an alarm-bell, as at I, substantially as herein set forth.

334,231. ROLLER-SKATE. GEORGE F. JOHNSON, Philadelphia, Pa. Filed Sept. 17, 1885. (No model.)

Claim.—1. The combination, in a roller-skate, of the sole-plate A and rollers with a bearing-block, D, the pivot *e* at an angle, the plate A

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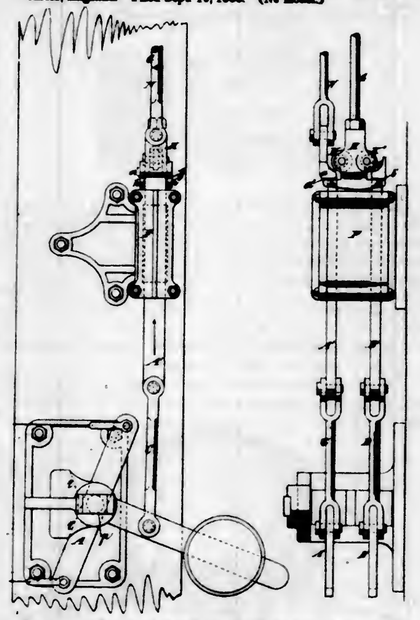


bearing directly on the bearing-block D, in vertical line with the axle B, substantially as set forth.

2. The combination of the plate A, with a bearing, D, attached thereto, a tie-rod, E, a spring, F, a post, *f*, and a sleeve, *g*, adjustable on the tie-rod, as and for the purpose set forth.

3. The combination of the levers M M, having jaws *m m* and jaws *s*, with rods N, N', and U, and a lever, T, acted on by the rod U, to clamp the jaw to the boot, as set forth.

334,232. MECHANISM FOR CONTROLLING SIGNALS, &c. HENRY JOHNSON, HERBERT A. JOHNSON, and JOHN T. CAINE, Flixton, County of Lancaster, England. Filed Sept. 19, 1885. (No model.)

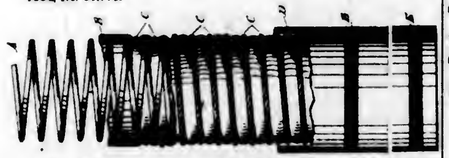


Claim.—1. The combination, with two or more signal-operating levers and a number of slides corresponding with said levers, one connected with said lever and each having a shouldered head comprising a wedge, of a signal-operating rod common to all of the said levers, hav-

ing an engaging piece furnished with projections to be operated upon by the said shouldered heads for moving the signal to "danger" by either lever singly, and furnished with rollers or equivalents to be acted upon by the wedges of the slides for the purpose of effecting the movement of the signal "off" or to "all clear" by the whole number of slides, but preventing such movement by less than the whole number, substantially as herein described.

2. The combination of the balance-operating levers A B, the slides A' B', having shouldered wedge-like heads, and the signal-operating rod having projections *h h* and rollers K K' or equivalents, substantially as and for the purpose herein described.

334,233. HOSE. JAMES JONES, Dublin, County of Dublin, Ireland. Filed Aug. 13, 1885. (No model.) Patented in England June 19, 1884, No. 9,169; in France Oct. 31, 1884, No. 165,130, and in Belgium Nov. 15, 1884, No. 66,771.

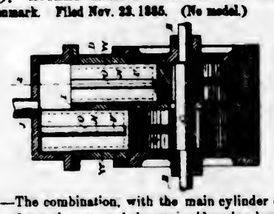


Claim.—The combination, with the spiral-wire core A, of the fabric covering B, treated with oils to render it air and liquid proof and wound on the core, the wire C, wound on the fabric B, the fabric D, wound around the fabric B and wire C, and the binding-wires E, wound around the fabric D, substantially as herein shown and described.

334,234. PRODUCING PRINTING-PLATES. CÆSAR F. JOSS, Bockenheim, assignor to Victor Emden, Frankfort-on-the-Main, Germany. Filed June 25, 1885. (No specimens.) Patented in France Oct. 2, 1884, No. 164,594; in Belgium Oct. 4, 1884, No. 66,499; in Germany Oct. 7, 1884, No. 33,312; in Austria-Hungary Dec. 1, 1884, No. 33,399 and No. 56,532, and in England Apr. 18, 1885, No. 4,816.

Claim.—The herein-described method of preparing metallic printing-plates, consisting in mechanically graining metallic plates of any kind, extracting all grease by means of alkaline earth, and then opening or raising the grains by means of astringents operating mechanically and giving the metallic surface the affinity for ink, lithographic crayon, &c., as set forth.

334,235. ROTARY ENGINE. CHRISTOPHER P. JÜRGENSEN, Copenhagen, Denmark. Filed Nov. 23, 1885. (No model.)



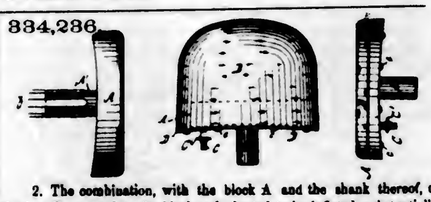
Claim.—The combination, with the main cylinder of a reversible rotary engine, of a casing secured thereto, said casing having a pipe secured at each side on a line with and registering with each other, and means, substantially as described, for connecting each of said pipes with the supply and exhaust pipes, and a valve sliding within said casing having similar grooves upon each of its opposite sides, said grooves connecting said pipes with the interior of said cylinder, as shown and described.

334,236. FINISHING-BLOCK FOR HATS. CHAS. E. KEATOR, Brooklyn, N. Y. Filed Oct. 7, 1885. (No model.)

Claim.—1. The combination, with the block A, of the bag B, secured to the block and adapted to be inflated, substantially as shown and described.



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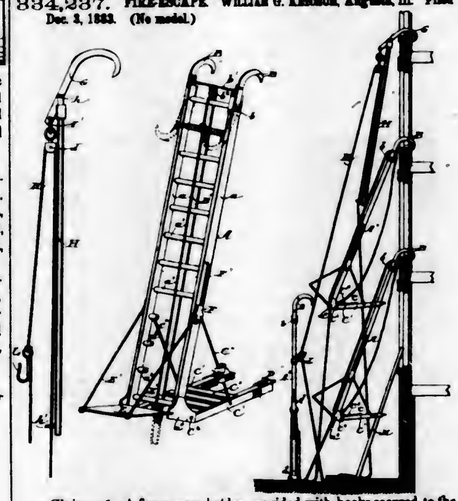


2. The combination, with the block A and the shank thereof, of the bag B, secured to the block and adapted to be inflated, substantially as shown and described.

3. The combination, with the sectional block A, of the bag B, secured at its mouth between the sections, and the orifice in the block which communicates with the interior of the bag, substantially as shown and described.

4. The combination, with the sectional block A, of the elastic bag B, secured to the sectional block and adapted to be inflated, and the shank on the lower section, substantially as shown and described.

334,237. FIRE-ESCAPE. WILLIAM G. KERSHAW, Augusta, Ill. Filed Dec. 3, 1883. (No model.)



Claim.—1. A fire-escape ladder provided with hooks secured to the upper end of the ladder, and adapted for fastening its upper end to a building, in combination with a base-supporting piece hinged to its lower end, whereby it may project from or be folded up against the lower end of the ladder, substantially as and for the purpose described.

2. A fire-escape ladder formed in sections, each section provided with fastening-hooks at its upper end, in combination, with a platform secured to the lower end and inner side of each section, whereby each section is held in an inclined position, with its upper end to the wall of the building, and its lower end outside of the upper end of the section below it, substantially as and for the purpose specified.

3. A fire-escape ladder provided with fastening-hooks for securing its upper end directly to a window, in combination with a platform extending inwardly therefrom at its lower end, upon which persons ascending and descending the ladder may stand, substantially as described.

4. A fire-escape ladder adapted to be held at an inclined position by means of fastening-hooks secured to its upper end, in combination with a section or platform hinged to its lower end, to project from and fold against the inner side thereof, substantially as described.

5. In a fire-escape, the combination, with the ladder-sections having partial steps at their lower ends, of fastening-hooks secured to the upper end of each section, and base-supports secured to the inner sides and lower ends of each section, substantially as and for the purpose specified.

6. A fire-escape ladder provided at its upper end with means for suspending it, in combination with a guard or platform hinged to the lower end of the ladder, to project from and fold against the outer side thereof, substantially as and for the purpose described.

7. A fire-escape ladder provided at its upper end with means for suspending it, in combination with a folding guard or platform hinged to its outer side, and a folding platform or base-support hinged to its inner side at the lower end of said ladder, substantially as described.

8. A fire-escape ladder provided at its upper end with means for suspending it, in combination with a guard or platform hinged to its outer side, a platform or base-support hinged to its inner side, and suspension-links supported upon guide-rods on the rails of the ladder, to operate the outer and inner hinged portions jointly, substantially as described.

9. The combination, with a fire-escape ladder, of the hinged sections C E, links C' E', guide-rail F', and sliding block F, all arranged for joint operation, substantially as described.

10. A fire-escape ladder provided at its upper end with means for suspending it, in combination with a base-support secured to its lower end, and a locking-clamp secured to the base-support, substantially as and for the purpose described.

11. A fire-escape ladder in combination with a base-support or platform hinged to the lower end of the ladder, and a clamp for securing said base-support or platform to the ladder, substantially as described.

12. A fire-escape ladder, in combination with a base-support or platform hinged thereto, to fold against the lower end thereof, and a clamp affixed to the swinging end of the base-support, and adapted to lock it when in its folded position, and secure it to another ladder when in its open position, substantially as described.

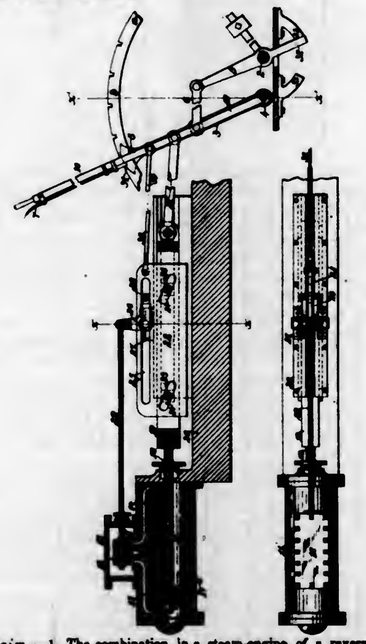
13. The combination of the jaws *d d'*, adapted to be secured to the swinging end of the base-support, the pivoted locking-jaw d^4, and spring-catch d^5, all combined and arranged to operate substantially as described.

14. In combination, in a fire-escape ladder, a suspension-hook pivotally secured to the upper end of the ladder, a cord secured to the hook and located at the outer side of the ladder, by means of which the hook may be pulled backward and downward, and another cord secured also to the hook, but located at the other side of the ladder, or side next the building, by means of which the hook may be thrust forward with force to engage it, substantially as described, and for the purpose specified.

15. An implement for elevating fire-escape ladders, consisting of the combination, with a suspension-hook, of a rod for elevating said hook, and a cord and pulley secured to said hook, these parts being combined and arranged to operate in the manner and for the purpose described.

16. The combination, in a ladder-elevator for fire-escapes, of the rod H, the suspension-hook pivotally connected therewith, and a cord and pulley secured to the suspension-hook, substantially as and for the purpose described.

334,238. REVERSING-GEAR. GEORGE S. KING, Pittsburg, Pa. Filed May 15, 1885. (No model.)



Claim.—1. The combination, in a steam-engine, of a reversing-lever, a piston connected therewith and capable of moving the same, a valve for admitting steam to the piston and for cutting it off, and a hand-lever for moving the valve, said hand-lever being connected both with the valve and with the reversing lever or piston, whereby movement thereof will not only move the valve, but will exert a strain on the reversing-lever, substantially as and for the purposes described.

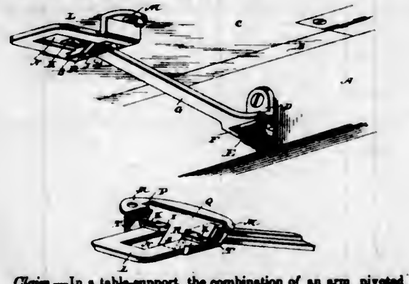
2. The combination of a reversing-lever, a piston connected therewith and capable of actuating the same, a valve for admitting steam to the piston and for cutting off the same, a piston-bar, and a plate movably mounted thereon connected with said valve, and capable of moving so as to operate the same when the plate and piston-bar are moved relatively to one another, substantially as and for the purposes described.

3. The combination of a reversing-lever, a piston connected therewith and capable of actuating the same, a valve for admitting steam to the piston and for cutting it off, a piston-bar, and a plate mounted thereon and provided with means for imparting a vertical motion to the plate when a longitudinal motion relative to the bar is given thereto, said plate being connected with the valve and capable of operating the same by its vertical movements, substantially as and for the purposes described.

4. The combination of a reversing-lever, a piston connected therewith and capable of actuating the same, a valve for admitting steam to the piston and for cutting it off, a piston-bar, a plate mounted thereon and provided with means for imparting a vertical motion to the plate when a longitudinal motion relative to the bar is given thereto, said plate being connected with the valve and capable of operating the same by the vertical movements of the former, and a hand-lever connected with said plate for moving it longitudinally, substantially as and for the purposes described.

5. The combination of a reversing-lever, a piston connected therewith and capable of actuating the same, a valve for admitting steam to the piston and for cutting off the same, a piston-bar, a plate mounted thereon and provided with means for imparting a vertical portion to the plate when a longitudinal motion relative to the bar is given thereto, said plate being connected with the piston and capable of operating the same by the vertical movements of the former, and a hand-lever connected with said plate for moving it longitudinally, substantially as and for the purposes described.

334,239. TABLE-LEAF SUPPORT. WILLIAM KLEIN, Piqua, Ohio. Filed Nov. 7, 1885. (No model.)



Claim.—In a table-support, the combination of an arm pivoted to the table-rail and having its outer end formed with a cross-head having a transverse shoulder upon its under side and a square recess in its outer edge, and lips or lugs at the outer corners of its ends, a box having its closed end secured to the table-leaf and formed with a slot in its rear side, and with a T-shaped slot in its bottom and having transverse bearings immediately inside of the inner side of the box, and a T-shaped locking-plate having its ends rocking in the bearings and formed with lips upon the lower edges of its ends for engaging the laterally-projecting lugs of the arm, and having its shank projecting into the slot in the box, as and for the purpose shown and set forth.

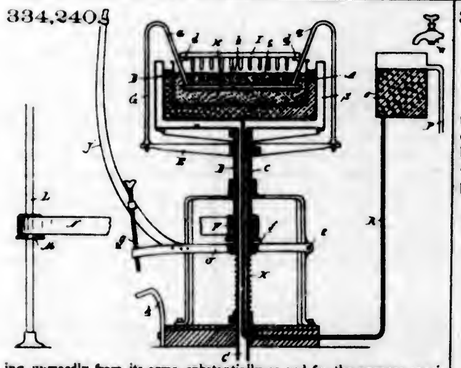
334,240. CAPSULE-MACHINE. JOHN KERSHNER, Detroit, Mich., assignor to the Globe Drug and Capsule Company, same place. Filed May 13, 1885. (No model.)

Claim.—1. In a device for the purposes described, a hot-water bath and a vessel containing the gelatine and floating in said bath, in combination with a water-reservoir having an overflow-pipe and a pipe leading therefrom to said bath, whereby a uniform water-level in said bath is maintained, substantially as set forth.

2. In a device for the purpose described, the combination, with a hot-water bath and a vessel containing gelatine floating in said bath, of a vertically moving and rotating frame having lugs for supporting the mold-plates, and mechanism for dipping said frame into the gelatine, as set forth.

3. In a device for the purpose described, and in combination with a rotating and vertically-reciprocating dipping-frame, a stirrer consisting of a spider supported by said frame and having a series of pins project-

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ing upwardly from its arms, substantially as and for the purpose specified.

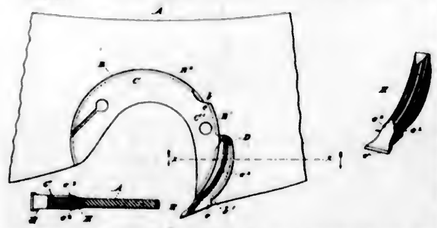
4. In a device for the purpose described, the combination, with a revolving shaft and a spider carried thereby, of a vertically-movable dipping-frame removably secured to and supported by said spider, substantially as specified.

5. In a device for the purposes described, the combination, with a hot-water bath and a vessel containing gelatine floating in said bath, of a revolving shaft, a spider, E, carried thereby, and a vertically-reciprocating frame supported by said spider and carrying a stirrer, and lugs for supporting a mold-plate, and mechanism for dipping said frame into the gelatine, substantially as described.

6. In a device for the purpose described, the combination of a hot-water bath, a vessel containing gelatine floating in said bath, a hollow standard supporting said bath, a water-reservoir having a water-supply and an overflow, and a communicating pipe passing through said hollow standard, the parts being constructed, arranged, and operating substantially as and for the purposes set forth.

7. In a device for the purpose described, the combination of the following elements: a hot-water bath, a gelatine-containing vessel floating in said bath, a water-reservoir having a water-supply and an overflow-passage, a communication between said reservoir and bath, and a stirrer rotating within said gelatine-containing vessel, the parts being constructed, arranged, and operating substantially as specified, and for the purposes set forth and shown.

334,241. INSERTIBLE SAW-TOOTH. ANDREW KRIEGER, Columbus, Ohio, assignor to James Ohlen, same place. Filed Sept. 18, 1885. (No model.)



Claim.—1. In combination with a saw-tooth having its rear edge formed on an arc of less radius than that upon which the front edge is formed, a saw-plate recessed to correspond with said rear edge, and a locking-plate whose curved bearing-face conforms to the arc of front edge of the tooth, substantially as specified.

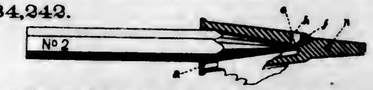
2. In combination with a saw-tooth having its rear edge made on the arc of a circle of less radius than that on which its front edge is made, provided with re-enforcing side ridges tongued on one edge and grooved on the opposite edge, a socket of corresponding shape formed by the locking and saw plates, substantially as specified.

334,242. PENCIL-SHARPENER. WARREN H. LAMSON, Lynn, Mass. Filed Jan. 12, 1885. (No model.)

Claim.—1. A pencil-sharpener consisting of a case, A, having an inner conical bore, a cutting-knife secured therein, an exit-passage for the chips or shavings, a stop, *e*, arranged at the rear of the conical bore, and an exit-opening leading from said conical bore, substantially as described.

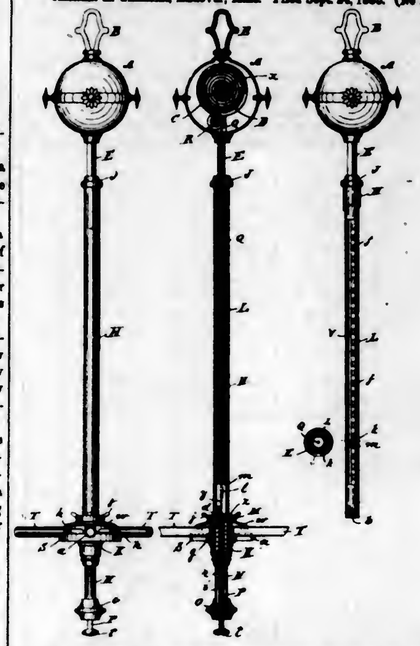
2. A pencil-sharpener consisting of a case, A, having an inner conical bore, a cutting-knife secured therein, an exit-passage for the chips or shavings, a stop, *e*, arranged at the rear of the conical bore, a vertical exit-opening for the lead fillings, and an inclined passage, *f*, substantially as and for the purpose described.

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3. In a pencil-sharpener of substantially the construction described, the case A, having the described longitudinal bore to receive the pencil end, an exit, *h*, and an inclined passage, *f*, the rear end of said sharpener being formed into a conical tang and provided with pin *n*, in combination with a suitable handle, C, having slot *p* to receive the pin *n*, and a chamber to receive the tang of the sharpener.

334,243. EXTENSION DEVICE FOR LAMPS. KIRBY LAMB and CHARLES A. GRANTER, Andover, Mass. Filed Sept. 24, 1885. (No model.)



Claim.—1. In a chandelier of the character described, the tube L, provided with the teeth *f* and slots *b v*, in combination with the tubes E H N, body K, rod P, spring *r*, pin *d*, cord Q, spring C, and head A, substantially as described.

2. The cap O, body K, tubes N E H L, rod P, springs *r* C, and cord Q, the tube L being provided with the slots *v b* and teeth *f*, and the rod P with the pin *d*, all constructed and arranged to operate substantially as set forth.

334,244. MAGAZINE FIRE-ARM. ADOLPHE L. LAHEEN and CLAS E. WESTERBERG, Liege, Belgium. Filed Sept. 18, 1884. (Model.) Patented in Belgium Oct. 6, 1883, No. 26,814, and in England Dec. 29, 1883, No. 5,925.

Claim.—1. The combination of the frame and sliding breech-bolt, carrying the firing-pin, with a recoil-piece, Q, pivoted to the frame and adapted to engage with the breech-bolt when in its closed position, and an operating-lever controlling the movements of the breech-bolt and recoil-piece.

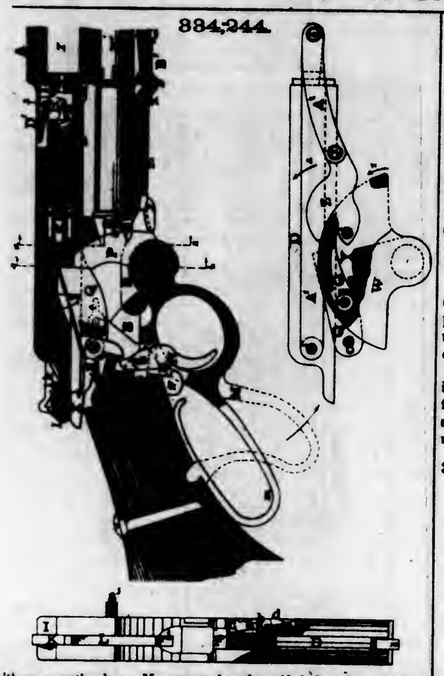
2. The sliding breech-bolt of a magazine-gun, carrying a firing-pin, F, and a spring, G, acting thereon, with a locking-lever, *k*, engaging with the breech-bolt to lock the firing-pin to the latter.

3. The combination of the sliding breech-bolt, carrying the firing-pin, and recessed on its under side, with a recoil-piece, Q, pivoted to the frame to engage with the bolt, and an operating-lever, M, therefor, carrying a cam-plate, W, acting on said recoil-piece and controlling its movement, substantially as set forth.

4. The combination of the sliding breech-bolt, a firing-pin, the recoil-piece Q, pivoted to the frame and adapted to engage with said bolt, an operating-lever therefor, and an index-finger on the outside of the gun connected to and moving with the recoil-piece, substantially as and for the purpose described.

5. The combination of the sliding breech-bolt, carrying a firing-pin, and a recoil-piece, Q, pivoted to the frame and engaging with the bolt,

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with an operating-lever, M, connected to the said bolt and recoil-piece and controlling their movements, and carrying a cam, P, to lock the recoil-piece when the bolt is closed, substantially as set forth.

6. The combination of the sliding breech-bolt, carrying a firing-pin, and a plate, Z, pivoted to the frame and connected to the sliding breech-bolt, with an operating-lever carrying a plate, W, embracing the said plate Z, and provided with projections 9 and 13 to engage with the opposite edges of the plate Z to throw the bolt, substantially as described.

7. The combination of the frame and sliding breech-bolt, with an operating-lever, carrying a plate, W, having projections 9 and 13, a pivoted plate, Z, embraced by the plate W and acted on by its said projections, link A^4, connected to the plate Z, and rod A', adapted to a groove in the frame and connected to the breech-bolt.

8. The combination of the sliding breech-bolt, carrying a spring firing-pin, with a spring safety-lock, *a*, pivoted to the bolt and engaging with the said pin to automatically lock the pin to the bolt when the latter is drawn back from the closed position.

9. The combination of the frame A and sliding breech-bolt, carrying a spring firing-pin, with a pivoted lever, *a*, carried by the bolt and adapted to engage with the firing-pin, and having a projection, *c*, and a spring, *f*, to act on the lever *a*, the said frame having a recess to receive the projection *c*, and a cam, *e*, to act on the said lever against the spring *f*.

10. The combination of the frame having a fixed finger, 17, behind the trigger, and a sliding breech-bolt, and firing-pin, with an operating-lever carrying the trigger, provided with a projection, 18, engaging with said fixed projection, as and for the purpose set forth.

11. The combination of the sliding breech-bolt of a magazine-gun, having its magazine below the barrel, with a pivoted lever carrying the cartridge-plate V, pivoted at one end thereof, and having at the other end an arm, S, and an operating-lever having a cam to act on the arm to raise the cartridge-plate, substantially as set forth.

12. The combination of the sliding breech-bolt of a gun, having a magazine below the barrel, and a projection, 11, on the frame, with a lever, R, carrying the cartridge-plate adapted to come into contact with said projection on the elevation of said lever and an operating-lever, M, controlling the movements of the lever R.

13. The combination of the pivoted cartridge-elevating lever of a magazine-gun, having a rearwardly extending-arm, S, with an operating-lever having projection 15 to engage with the under side of said arm to throw down the lever, and a cam, P, to engage with the upper side of the arm for the reverse movement.

14. The combination of the sliding breech-bolt of a magazine-gun, having the magazine below the barrel, and a spring, B', on the lower side of the mouth of the magazine, and carrying a projection, with the cartridge-elevating lever having a plate, V, to engage with said spring when depressed, substantially as set forth.

15. The combination of the sliding breech bolt of a fire-arm, with a magazine below the barrel, and a spring, B', on the lower side of the mouth of the magazine, and having a finger, *z*, and projecting end 19, with a movable cartridge-plate having a lug, X, notched and recessed at the end to engage with the spring when the plate is depressed, substantially as described.

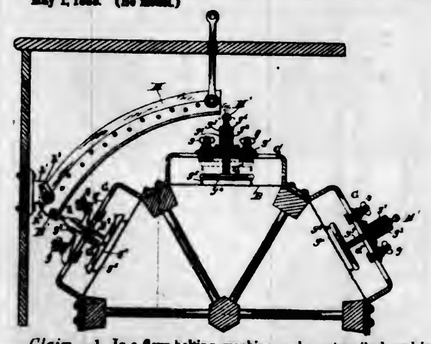
16. The combination of the frame of a magazine-gun, a cartridge-retaining lever pivoted thereto, and a cartridge-elevator with the sliding breech-bolt having a shoulder near its outer end to act on the said lever to throw it into the path of the cartridge when the bolt is drawn back, substantially as described.

334,245. PREPARING GLUTEN FLOUR AND BREAD. JOHN E. LABBE, New York, N. Y. Filed Apr. 1, 1885. (No specimens.)

Claim.—1. The improvement in the art of preparing wheaten bread and flour, consisting in mechanically removing or washing out a large portion of the starch from wheat-flour, and in removing or converting nearly all the remaining starch by fermentation, substantially as herein described.

2. The improvement in the art of preparing gluten flour, consisting in mechanically removing or washing out a large portion of the starch from wheat-flour, in then removing or converting nearly all the remaining starch by fermentation, and in then drying and grinding the fermented mass, substantially as herein described.

334,246. FLOUR-BOLT. ALBERT Y. LEAKE, Marietta, Ga., assignor of one-half to Gains C. Burnap and George S. Burnap, same place. Filed May 1, 1885. (No model.)



Claim.—1. In a flour-bolting machine such as described, and in combination with the reel thereof, a series of whipping-cords applied upon the exterior of the bolting-cloth, and elastic supports at each end thereof upon the heads of the reel, substantially as described.

2. In combination with the reel and the series of whipping-cords applied to the exterior surface of the bolting-cloth, means whereby they are maintained under tension, as described, a bridge-piece or support attached to the ribs of the reel, and a carrier mounted upon said bridge-piece and connected to the whippers, to alternately raise and release the latter, substantially as described.

3. In a flour-bolt, and in combination with the reel thereof, the series of whipping-cords, means whereby they are maintained under tension in proximity to the bolting-cloth, the bridge-piece applied to the ribs of the reel, a reciprocating carrier mounted upon said bridge-piece and connected to the whippers, and a stationary segment or cam for actuating the said carrier, and thereby alternately raising and releasing the whipping-cords, substantially as described.

4. In combination with the rotary reel and the whippers applied to the bolting-cloth thereon, a bridge-piece mounted upon the ribs of the reel and a carrier supported thereon for actuating the whippers, substantially as described.

5. In combination with the reel of a flour-bolt, a series of flexible whipping-cords applied to the exterior of the bolting-cloth and elastic holders therefor at each end, applied to the heads of the reel beyond the junction of the bolting-cloth and reel-head, substantially as described, whereby the whippers may be raised above and caused to impinge upon the bolting-surface throughout its entire length.

6. In a flour-bolt, and in combination with the reel thereof, a series of whippers, means whereby they are elastically supported and maintained in contact with the exterior surface of the bolting-cloth, a reciprocating carrier with flexible connections extending to the whippers, a bridge-piece applied to the ribs of the reel, and a support for the said carrier adjustably mounted thereon, substantially as described.

7. In combination with the reel of a flour-bolt, a series of whippers, elastic and adjustable holders therefor at each end, mounted upon the heads of the reel, a bridge-piece secured to the ribs and extending

over the bolting-section, and a reciprocating carrier adjustably mounted upon the bridge-piece and connected to the whippers, substantially as described.

8. In combination with the reel, the flexible whippers applied to the bolting-surface, and means whereby they are maintained under tension, the reciprocating carrier, and a support therefor fastened to the ribs of the reel, and connected to the whippers at a point intermediate of their supports, substantially as described.

9. The combination of the reel, the whipping-cord, a holder for the end of the whipping-cord pivotally supported on the head of the reel, and a spring for retracting the said holder, substantially as described.

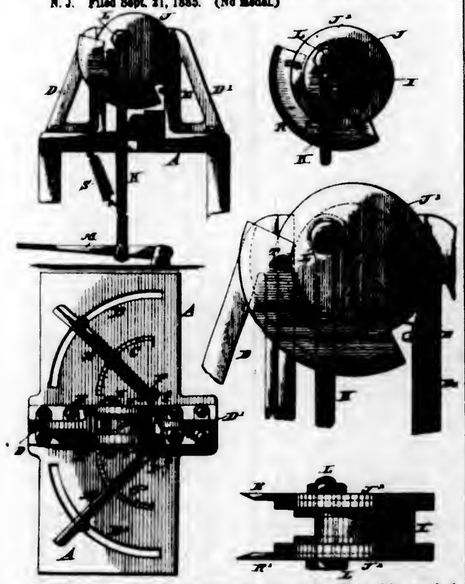
10. In combination with the flexible whippers and the bridge-piece applied to the exterior of the reel, the reciprocating carrier mounted on the bridge-piece and attached to the whippers by flexible connections, and a cam or segment mounted upon the casing and adapted to reciprocate the carrier, substantially as and for the purpose set forth.

11. In a flour-bolt, and in combination with the flexible whippers and reciprocating carrier therefor, mounted on the reel, the fixed cam or segment loosely suspended at its lower end for operating upon the carrier, substantially as described.

12. In combination with the bolting-surface of a reel, a series of whippers applied to the exterior thereof and means for sustaining said whippers in position upon the reel, substantially as described.

13. In combination with the reel and its bolting-sections, whippers, supports therefor outside the reel, and means for operating said whippers to cause them to impinge against the outer surface of the bolting material, substantially as described.

334,247. MITERING-MACHINE. JOHN G. LEFFINGWELL, Newark, N. J. Filed Sept. 21, 1885. (No model.)



Claim.—1. In a mitering-machine, the combination, with a toothed wheel, having cutters and standards, one of which has teeth, the said wheel engaging toothed standard, and adapted, when rotated, to travel along the same, substantially as specified.

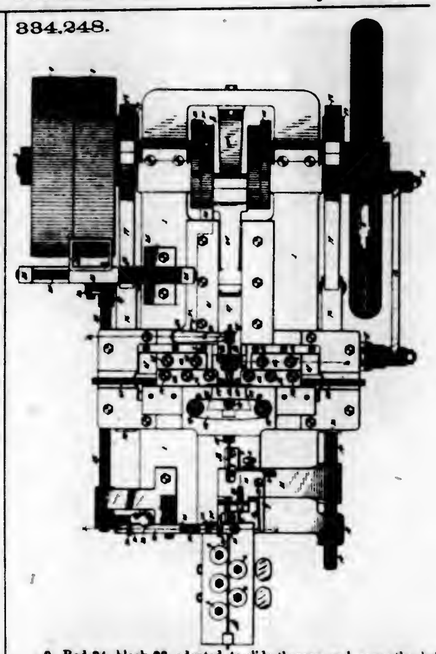
2. In a mitering-machine, the combination, with a base or stand, of two opposite standards, one of which is provided with teeth, a wheel carrying cutters and teeth to engage the teeth of the said standard, and a pitman-rod connecting the wheel, and a treadle to turn the said wheel, substantially as specified.

3. The combination, with a base having stock-guides, of two opposite vertical standards, one of which has teeth, a wheel having teeth arranged between the standards, arc-shaped cutters extending beyond the periphery of the wheel, a pitman connected eccentrically with the wheel, and a treadle connected with the pitman, substantially as specified.

334,248. WIRE-NAIL MACHINE. HARRY B. LESTER, Waterbury, Conn. Filed Aug. 10, 1885. (No model.)

Claim.—1. The combination, with the carrier, the gripping-lever, and spring 13, of a cam-lever adapted to act on the gripping-lever to turn and hold the latter out of operative position, whereby the feeding of the wire may be stopped instantly without stopping the machine.

334,248.



2. Rod 24, block 23, adapted to slide thereon and carry the belt-guide, and spring 33, acting against said block, in combination with the rock-shaft, arm 27, link, hand-lever, notched lever 32, rod 35, having flange, roller, and spring, and wedge 39, all arranged as described, and for the purpose set forth.

3. The combination, with tight and loose pulleys, belt, belt-guide, and a spring acting to force the belt on the loose pulley, of a lever, rock-shaft, and connections by which the belt is forced on the tight pulley, wedge 39, and a notched lever for engaging the hand-lever, said notched lever carrying at its opposite end spring-actuated rod 35, having flange 36 and roller 37.

4. Rod 35, having a flange and roller, between which the wire passes and by which said parts are held at their normal position, and spring 38, which carries said parts inward when the wire is exhausted, in combination with lever 32, which carries said rod, wedge 39, and mechanism—for example, the hand-lever, rock-shaft, and connections—by which the belt is controlled.

5. Lever 32, adapted to engage the hand-lever, whereby the belt is held on the tight pulley against the power of spring 33, in combination with rod 35, flange 36, roller 37 or its equivalent, spring 38, and reciprocating wedge 39, whereby lever 32 is tilted and the hand-lever is automatically released when the piece of wire is exhausted, thus allowing spring 33 to throw the belt on the loose pulley, which stops the machine.

6. Lever 32, having head 34, rod 35, passing through it, and having at its inner end a spring, 38, acting to draw it inward, and at its outer end a flange and roller, between which the wire to be operated upon passes, in combination with a hand-lever which controls the belt and is engaged by lever 32, and reciprocating wedge 39, which normally passes between the flange and head, but passes under the flange, thus tilting lever 32 and releasing the hand-lever when the wire is exhausted and the flange is moved toward the left.

7. Hand-lever 29, having pin 30, in combination with lever 32, having notch 31 and head 34, rod 35, having flange, roller, and spring, wedge 39, the rock-shaft and connections, sliding block, belt-guide, and spring 33.

8. Lever 32, rod 35, spring 38, and a flange and roller upon said rod, in combination with reciprocating wedge 39, which normally passes by the side of said flange, but when the parts are drawn outward by spring 38 passes under said flange and tilts the lever, as and for the purpose set forth.

9. In a wire-nail machine, dies secured to die-blocks, ways in which said die-blocks slide, and means—for example, screws engaging the die-blocks—whereby the dies are adjusted by movement of the blocks.

10. The combination, with the upper die-block, of a screw-bolt, 47, by which said die-block is carried, and a cross-piece which supports said screw-bolt and in which it turns freely, the adjustment of the die-block being accomplished by slight rotation of said screw-bolt 47.

11. The upper die-block and screw-bolt 47, in combination with rods 49 and cross-piece 48, the latter being pivoted to swing on one of said rods, and having notches adapted to engage the other rod and screw bolt 47, thus permitting the dies to be removed by swinging said cross-piece out of the way.

12. The combination, with the upper die-block and rods 49, by which it is carried, of a lever, 50, to which said rods are pivoted, the forward end of said lever being pivoted to the bed of the machine and the rear end provided with rollers which are adapted to bear against cams 53 on the main shaft.

13. Cams 53, double lever 50, and spring 54, in combination with rods 49 and the upper die-block, carried thereby, the arrangement being such that each revolution of the cams causes an upward and downward movement of the die-block.

14. The combination, with the feeding mechanism and stationary lower die, of an upper die, rods for carrying said upper die, and mechanism—for example, lever 50 and cams 53—for imparting reciprocating motion to said upper die.

15. The combination, with the dies, of a bunter carried by a cross-head, means for adjusting the bunter, consisting of an externally-threaded sleeve engaging a threaded recess in the cross-head, and a check-nut, 62, and a crank and connecting-rod for imparting motion to the cross-head.

16. In a wire-nail machine, cutting mechanism consisting, essentially, of straight rods having cutting-edges at their inner ends and blocks having longitudinal holes corresponding with said rods, and slots leading into said holes in combination with bolts which clamp the rods in place, and mechanism—for example, slide-cams—operated from the main shaft for imparting motion to the cutters.

17. The combination, with the cutters, of blocks having longitudinal holes to receive the cutters, horizontal slots leading into said holes, and bolts which pass into the blocks and across the slots, whereby the cutters are firmly held after being placed at the desired adjustment relatively to each other.

18. The combination, with the dies and the cutters, of blocks in which the cutters are secured and which are provided with slots 69, and slides to which the blocks are secured by bolts passing through said slots, whereby said blocks and cutters may be adjusted relatively to the dies to determine the amount of metal in each nail-head.

19. The combination, with the cutters, of blocks in which they are adjustably secured, slides to which the blocks are adjustably secured, slide-cams 76, and springs 82, whereby the return movement is imparted to the slides.

20. The slide-cams having inclines, the slides having rollers at their outer ends, and springs 82, which hold the rollers against the cams, in combination with the cutters carried by said slides, and eccentrics, straps, and connecting-rods, whereby reciprocating motion is imparted to the slide-cams.

21. The slide-cams, slides, blocks, and cutters, in combination with stop-pin 73 and screw 74, whereby the edges of the cutter are prevented from coming in contact.

22. The cutter-blocks having holes 70, slots 71, and bolts 66 and 72, in combination with the cutters, slides 67, having pins 80, springs 82, and the slide-cams.

23. The clearing mechanism consisting, essentially, of an arm, 85, detachably secured in a carrier, 86 88, and a spring, 89, in combination with a slide having an incline at its forward end, a spring, 95, and a cam, 94, on the main shaft.

24. The combination, with the clearer-arm and the carrier, of spring 89, the slide, spring 95, and cam 94.

25. The carrier, arm 85, set-screw 87, guide-pin 91, and spring 89, in combination with cam 94 on the main shaft, slide 93, having inclines 92, and spring 95.

334,249. METALLIC WHEEL. JAMES R. LOVEL, Quincy, Ill., assignor, by mesne assignments, to the Quincy Metal Wheel Company, same place. Filed June 1, 1883. (No model.)



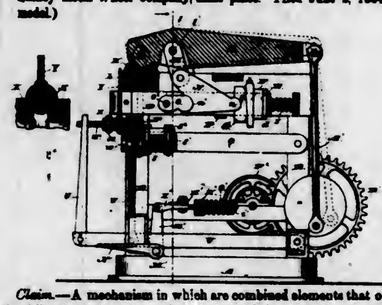
Claim.—1. A metal wheel in which each spoke is secured within a closed-end hub-mortise by compressing its inner end longitudinally until the same is caused to closely fill said mortise, substantially as and for the purpose specified.

2. A metal wheel in which the hub is provided with radial mortises that are enlarged at their inner closed ends, and is combined with spokes which are fitted into said mortises and by longitudinal compression are caused to closely fill the same, substantially as and for the purpose set forth.

3. A metal wheel in which the hub is provided with radial mortises that are closed at their inner ends, and is combined with spokes that are fitted into and caused to fill the same, and are larger at their inner ends and immediately outside of said mortises than at or within the central portion of the same, substantially as and for the purpose specified.

4. A metal wheel in which the hub is provided with radial mortises, in combination with spokes that have their inner ends fitted into and enlarged to closely fill said mortises, and within the same have each a greater diameter than the diameter of its body, substantially as and for the purpose shown.

334,250. MECHANISM FOR MANUFACTURING METAL WHEELS. JAMES R. LOVEL, Quincy, Ill., assignor, by mesne assignments, to the Quincy Metal Wheel Company, same place. Filed June 2, 1884. (No model.)



Claim.—A mechanism in which are combined elements that operate in the following order, viz: a mandrel which is adapted to pass axially into a wheel-hub and support the same in position to receive within a radial mortise the inner end of a spoke, means whereby said spoke may then be clamped at a point near the periphery of said hub, and means whereby said mandrel may then be moved toward said clamping mechanism, and said spoke thereby compressed longitudinally from its inner end to the point where it is clamped, substantially as and for the purpose specified.

2. In combination with the bar D, provided with the clamping-jaw d' d^2, the toggle-bar N, having its rear end pivoted to or upon said bar D, the toggle-bars O, pivoted at their front ends within a fixed bearing at their rear ends within the front end of said toggle-bar D, the spring I, operating to hold said bar at the front limit of its motion, and means whereby said toggle-bar D may be moved vertically, substantially as and for the purpose set forth.

3. In combination with the clamping-bar D and the toggle-bars N and O, the bifurcated block G, adapted to slide lengthwise of said bar and provided with bearings g, and the wedge F, which is fitted between the rear face of said bearing-block and a fixed block, E, upon said bar, and is adapted to be adjusted to and secured in vertical position, substantially as and for the purpose shown and described.

4. In combination with the bar D, adapted to be moved longitudinally within its bearings, and with the clamping-jaws d' d^2 and H A, the spring I, the toggle-bars O and N, the link M, the lever L, the shaft Z, provided with the crank z, and the pitman A', substantially as and for the purpose specified.

5. In combination with a horizontally-arranged mandrel which is adapted to receive and support a wheel-hub and to be moved upward toward spoke-clamping mechanism, a pivoted bar for supporting its outer end that is adapted to be engaged with and disengaged from said end, and when thus engaged and furnishing support is moved vertically with said mandrel, substantially as and for the purpose shown.

6. The combination of the horizontal pivoted bar Q, provided with the block S and mandrel T, the horizontal bars V, pivoted at their rear ends, and having pivoted to their front ends the supporting-bar U, and the rod W, extending between and connecting the front portions of said bars V with said block S, whereby the relative positions of said mandrel and supporting-bar are maintained as the former is moved vertically, substantially as and for the purpose set forth.

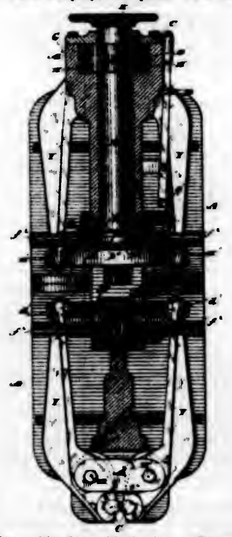
7. The combination of the horizontal bar Q, pivoted at its rear end, and provided at its front end with the mandrel T, the lever L, having the trunnions l' and adapted to oscillate within the bearings c^2, and the lifting-rods R, pivoted upon the front end of said lever, and secured within or to the front portion of said bar, substantially as and for the purpose specified.

8. In combination with the bar Q, pivoted at its rear end upon the frame, and with the lever L, which is adapted to oscillate upon the trunnions l', the lifting-rods R, pivoted at their upper ends upon the front end of said lever, and having their lower threaded ends passed through said bar, and provided below the same with nuts r, substantially as and for the purpose shown.

9. In combination with the shaft D', provided with the concave-faced disks C', the convex-faced clutches F', adapted to rotate with and

to slide lengthwise of said shaft, the forked levers G', the connecting-bars H', the bar I', adapted to move lengthwise and held at the rear limit of its motion by the spring O', the shaft M', provided with the radial arm L', and treadle N', said parts being arranged so that a downward movement of said treadle will cause said clutches to engage with said disks, substantially as and for the purpose set forth.

334,251. MECHANISM FOR MANUFACTURING METAL WHEELS. JAMES R. LITTLE, Quincy, Ill., assignor, by mesne assignments, to the Quincy Metal Wheel Company, same place. Filed June 2, 1884. (No model.)



Claim.—1. In combination with the levers Y, provided with the cylindrical bosses y, the links Z, fitted around and extending between said bosses and operating as pivotal connections for said levers, substantially as set forth.

2. In combination with the levers Y, having the bosses y, and with the links Z, the plate A^4 and bolts B', substantially as and for the purpose shown and described.

3. In combination with the lever Y, provided within its front end with the cylindrical recess y', having the radial groove y^3, the block C', fitted loosely into said recess, and provided with the radial stud c' and longitudinal peripheral groove c^2, substantially as and for the purpose specified.

4. In combination with the levers Y, provided within their rear ends with the semi-spherical recesses y^4, the toggle-bars D', having spherical ends d' and d^2, the pitman E', provided within its lower end with semi-spherical recesses e', and means whereby the lower end of said pitman may be moved vertically, substantially as and for the purpose shown.

5. In combination with the levers Y, and with mechanism, substantially as shown, whereby the rear ends of the same may be moved apart, the springs H', arranged to exert an inward pressure upon the rear ends of said levers, substantially as and for the purpose set forth.

6. In combination with the rear ends of the levers Y, the plate F', provided with the lateral guard-arms f^3, and the plate G', placed beneath and operating as a bearing for said levers, substantially as and for the purpose specified.

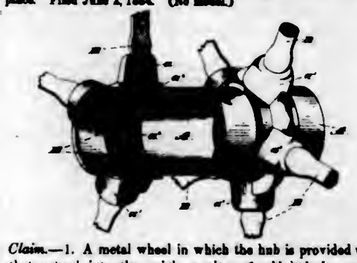
7. The pitman E', provided with the laterally-extended notched upper end, e^4, and the cam p^3, adapted to be rotated by the shaft B and to engage with and move said pitman downward, substantially as and for the purpose shown.

8. In combination with the upper portion of the pitman E' and with the cam p^3, the strap I', secured to said pitman and encircling said cam, substantially as and for the purpose set forth.

9. As a means for operating the plunger L, the shaft B, provided with the eccentric b', the yoke D, adapted to be moved vertically within the head A^3, the laterally-movable half-box E, the fixed half-box F, and the pitman G, having its upper end adapted to embrace the lower periphery of said eccentric and its lower end, g, to fit within said half-box F, said parts being combined to operate substantially as and for the purpose shown and described.

10. In combination with the yoke D and plunger L, the block K, provided with the vertical opening k' and recessed upper side, k^2, the block M, fitted within and adapted to be moved lengthwise of said recess, and provided with the longitudinal inclined recess m, which is adapted to receive the upper inclined end of said plunger, and means, substantially as shown, whereby said block M may be adjusted to and secured in longitudinal position, substantially as and for the purpose specified.

334,252. METALLIC WHEEL. JAMES R. LITTLE, Quincy, Ill., assignor, by mesne assignments, to the Quincy Metal Wheel Company, same place. Filed June 2, 1884. (No model.)

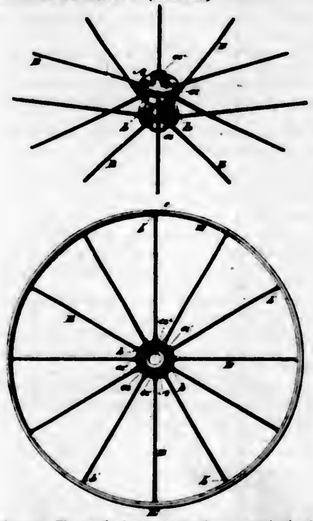


Claim.—1. A metal wheel in which the hub is provided with mortises that extend into the axial opening of said hub, in combination with spokes that are each secured within a mortise by radial enlargement of the portion contained therein, substantially as and for the purpose specified.

2. A metal wheel in which the hub is provided with radial mortises that extend into the axial opening of the same, and each mortise contains a spoke that is caused to closely fill the same by radial expansion, and is provided with an enlargement at or immediately beyond the outer end of said mortise, substantially as and for the purpose shown.

3. A metal wheel in which the hub is provided with radial mortises that extend from its outer side into a circumferential groove which is formed within the interior of said hub, and each mortise contains a spoke that is caused to closely fill the same by radial expansion, substantially as and for the purpose set forth.

334,253. METHOD OF MAKING METAL WHEELS. JAMES R. LITTLE, Quincy, Ill., assignor to the Quincy Metal Wheel Company, same place. Filed Oct. 19, 1885. (No model.)



Claim.—1. The method of constructing a metal wheel which consists, first, in securing the inner ends of the spokes within a mortised hub, next trimming said spokes to uniform length, next placing upon the outer ends of said spokes a solid mortised rim, and, lastly, expanding said spokes within and causing them to closely fill the rim-mortises, substantially as set forth.

2. The method of constructing a metal wheel which consists, first, in expanding the inner ends of the spokes within and causing the same to closely fill the mortises of a hub, next trimming said spokes to uniform length, next placing upon the outer ends of said spokes a solid mortised rim, and, lastly, expanding said spokes within and causing them to closely fill the mortises of said rim, substantially as shown and described.

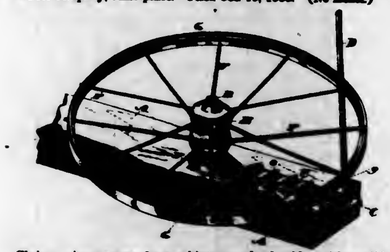
3. The method of constructing metal wheels which consists, first, in securing the ends of the spokes within a mortised hub, next trimming said spokes to a uniform length, next placing a solid mortised rim over the outer ends of the contiguous spokes at one side of said hub, and then springing said rim radially outward over the end of each of the remaining spokes, and, lastly, expanding said spokes within and causing the same to closely fill said rim-mortises, substantially as set forth.

4. The method of constructing metal wheels which consists, first, in expanding the inner ends of the spokes within and causing the same to closely fill the mortises of a hub, next trimming said spokes to a uniform length, next placing a solid mortised rim over the outer ends of the contiguous spokes at one side of said hub, and then springing said rim radially outward over the end of each of the remaining spokes, and, lastly, expanding said spokes within and causing the same to closely fill said rim-mortises, substantially as shown and described.

5. The method of constructing metal wheels which consists, first, in securing the ends of the spokes within a mortised hub, next trimming said spokes to a uniform length, next placing a solid mortised rim over the outer ends of the contiguous spokes at one side of said hub, and then springing said rim radially outward over the end of each of the remaining spokes, and, lastly, securing the latter within said rim by compressing the outer portion of each spoke longitudinally until it closely fills its mortise and is enlarged at each end of the same, substantially as shown.

6. The method of constructing metal wheels which consists, first, in expanding the inner ends of the spokes within and causing the same to closely fill the mortises of a hub, next trimming said spokes to a uniform length, next placing a solid mortised rim over the outer ends of the contiguous spokes at one side of said hub, and then springing said rim radially outward over the end of each of the remaining spokes, and, lastly, securing the latter within said rim by compressing the outer portion of each spoke longitudinally until it closely fills its mortise and is enlarged at each end of the same, substantially as set forth.

334,254. MECHANISM FOR THE MANUFACTURE OF METAL WHEELS. JAMES R. LITTLE, Quincy, Ill., assignor to the Quincy Metal Wheel Company, same place. Filed Oct. 19, 1885. (No model.)



Claim.—As a means for combining a wheel-spider with a solid mortised rim, and apparatus in which are combined the following elements, to wit: a fixed journal-bearing upon which the hub of the wheel-spider may be journalled, so as to be prevented from moving radially, a fulcrum that is secured to the frame of the apparatus at or near the point occupied by the outer ends of the spokes at one side of said spider, and a lever which is adapted to be placed against the inside of the wheel-rim, with one of its ends in engagement with said fulcrum, whereby when thus arranged an outward movement of the free end of said lever will operate to move said rim bodily in the same direction, substantially as and for the purpose specified.

334,255. MACHINE FOR UPSETTING TIRES. JAMES R. LITTLE, Quincy, Ill., assignor to the Quincy Metal Wheel Company, same place. Filed Sept. 22, 1885. (No model.)

Claim.—1. As an improvement in machines for upsetting tires, a number of jaws which are arranged around a common center and adapted to be simultaneously moved upon radial lines, in combination with levers and cams, substantially as described, whereby said jaws are automatically and continuously moved between the outer and inner limits of their motion, substantially as and for the purpose specified.

2. As an improvement in machines for upsetting tires, a number of jaws which are arranged around a common center and adapted to be moved upon radial lines, in combination with levers and cams, substantially as described, whereby said jaws are simultaneously moved to the inner limit of their motion, where they have a period of rest, and are then returned to the outer limit of their motion, such operation being automatic and continuous, substantially as and for the purpose shown.

3. As an improvement in machines for upsetting tires, a number of jaws arranged around a common center, which are adapted to be simultaneously moved upon radial lines, in combination with levers and cams, substantially as described, whereby said jaws are slowly moved to the inner limit of their motion, then have a period of rest, and are then moved rapidly to the outer limit of their motion, such operations being repeated automatically and continuously, substantially as and for the purpose set forth.

334,255.



4. A tire-upsetting machine in which are combined the following elements, to wit: a series of sliding jaws that are arranged around a common center and are adapted to move upon radial lines, pivoted levers which are each engaged at one end with and adapted to move one of said jaws, a cam-plate that is adapted to engage with and simultaneously move said levers upon their pivotal bearings, and means, substantially as shown, whereby said cam-plate may be caused to rotate, substantially as and for the purpose shown and described.

5. A tire-upsetting machine in which are combined the following elements, to wit: a series of sliding jaws that are arranged around and adapted to be moved toward or from a common center, pivoted levers which are each engaged at one end with one of said jaws, a rotating cam-plate that is adapted to impinge upon and simultaneously move said levers to cause said jaws to be moved to the inner limits of their motion and then released, and springs which are adapted to then return said jaws to the outer limits of their motion, substantially as and for the purpose specified.

6. A tire-upsetting machine in which are combined with a cam-plate that has a continuous rotary motion in one direction levers that are simultaneously moved upon their pivotal bearings by the cam-faces of said rotating plate, and jaws which are arranged around a common center, are engaged by said levers, and by the operation of the same are moved inward toward such center, substantially as and for the purpose shown.

7. In combination with the supporting-frame of the machine, the segmental plates F, having the jaws f^3, the levers E, engaging with said jaw-plates, and the rotatable plate M, provided with the cam-faces m, substantially as and for the purpose set forth.

8. In combination with the supporting-frame of the machine, the segmental plates F, having the jaws f^3, the levers E, engaging with said jaw-plates and adapted to move the same inward, the rotatable plate M, provided with the cam-faces m, and the springs G, adapted to move said jaw-plates outward, substantially as and for the purpose shown and described.

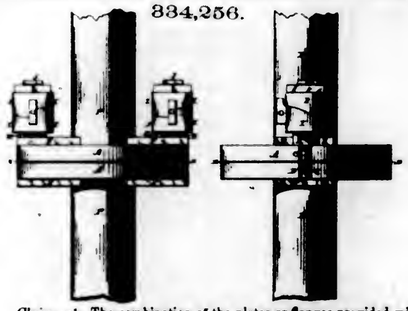
9. The combination of the table C, provided with the slots c and grooves c^2 and c^3, the levers E, pivoted within said slots, the segmental plates having each a rib, f, slot f', jaw f^3, and lug f^5, the springs G, the cam-plate M, secured upon the rotatable shaft H, and provided with the cam-faces m, and the rollers N, journaled within said levers and adapted to receive the impingement of said cam-faces, substantially as and for the purpose specified.

10. In combination with the levers E, pivoted within the table C, and adapted to have the lower end swung radially outward by means of the rotatable plate M, provided with the cam-faces m, the plate O, having radial faces o', which furnish bearings for the rear sides of said levers, substantially as and for purpose shown.

11. As a means for swinging the levers E upon their pivotal bearings, and in combination therewith, the worm-wheel I and the plate M, having the cam-faces m, which are secured to and rotate with the shaft H, and the worm K, that is secured to or formed upon the shaft L, and is adapted to engage with said worm-wheel, substantially as and for the purpose set forth.

334,256. DETACHABLE COUPLING. WILLIS E. LEEK, Radcliffe, Iowa. Filed Aug. 13, 1885. (No model.)

334,256.



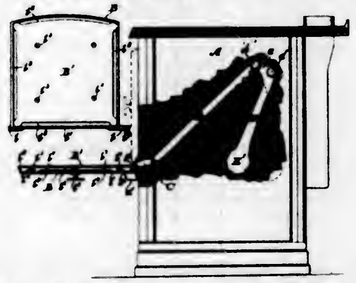
Claim.—1. The combination of the plates or flanges provided with slots and ribs on opposite sides of the slots with the clamping-bolts, the cams, and the nuts which are applied to the bolts, substantially as set forth.

2. The combination of the plates provided with pipes at their centers, slots through their edges, clamping-bolts, cams placed upon the bolts and provided with projections, and the nuts upon the bolts, substantially as specified.

334,257. **MANUFACTURE OF ARCHIL-RED AZO COLORS.** C. ALEXANDER MARTIUS, Berlin, assignor to the Farbfabriken, formerly Brönner, Frankfort-on-the-Main, Prussia, Germany. Filed Nov. 9, 1885. (Specimens.)

Claim.—The above-described process for the manufacture of an archil-red azo color, which process consists in the combination of beta-naphthylaminemonosulpho acid obtained according to the first claim of Dr. Hugo Prinz's hereinabove-mentioned application for United States Letters Patent No. 332,829, and dated December 22, 1885, with para-diazonitro-benzole.

334,258. **STOVE AND RANGE DOOR.** ALVIN C. MASON, Hyde Park, Ill. Filed May 29, 1885. (No model.)



Claim.—The combination, with a stove or range, of a door having a horizontal axis, and the suspended weighted elbow E, link D, and arm C, said elbow, link, and arm being arranged within the vertical line of said stove, and constructed substantially in the manner and for the purposes specified.

334,259. **ANIMAL-TRAP.** WILLIAM E. MADLENY, Cheboygan, Mich., assignor to the Oneida Community, (Limited,) Community, N. Y. Filed Oct. 19, 1885. (No model.)

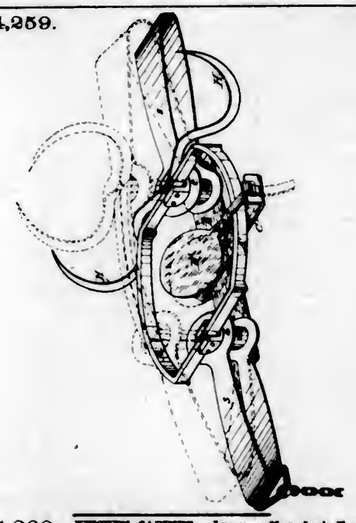
Claim.—1. In combination with the spring-actuated jaws A A', the gripping-hooks H H, pivoted independently of the said jaws, and the spring *s*, for actuating said hooks, substantially as and for the purpose set forth.

2. The combination, with the jaws A A', of the gripping-hooks H H, pivoted independently of the said jaws at the outside of the ends thereof, and the spring *s*, embracing the pivoted ends of the jaws and hooks to actuate the same simultaneously, substantially as described and shown.

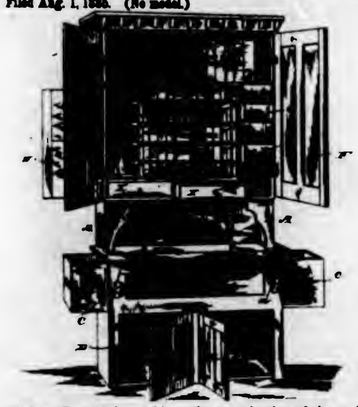
3. In combination with the jaws A A and the hooks H H, the post *a*, having ears set apart to receive between them side by side the pivoted ends of the said jaws and hooks, and pins passing through said jaws and intervening parts, substantially as described and shown.



334,259.



334,260. **KITCHEN-CABINET.** LEANDER MAY, Lock Haven, Pa. Filed Aug. 1, 1885. (No model.)



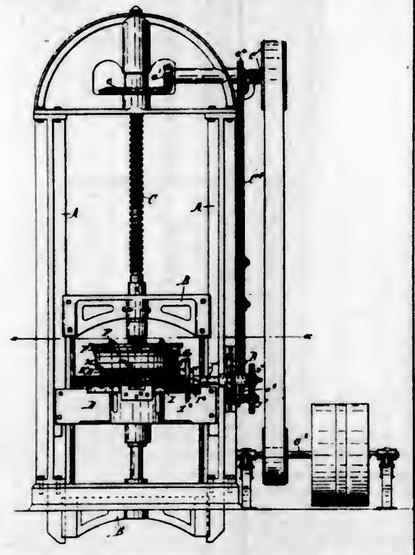
Claim.—In a kitchen-cabinet, the combination of the main casing provided with cleats, as described, of the row of shelves L in the center of the case, the drawers G G at the right of the shelves L, the square space H at the right hand, and the elongated space K at the left, substantially as and for the purposes set forth.

334,261. **SAFETY-STOP FOR THROTTLE-VALVES.** GEORGE E. MESSER, Boston, Mass. Filed Dec. 10, 1883. (No model.)



Claim.—In a fastening device for throttle-valves, the combination of the boiler with the projection or support, the throttle-lever, and the safety-stop pin, substantially as shown and described.

334,262. **MACHINE FOR DRESSING GRINDING-ROLLS.** FRED MESSER, Beloit, Wis. Filed Nov. 26, 1884. (No model.)



Claim.—1. The combination, with the head E, provided with worm-gear E', of the shaft I, having worm i, and a sleeve, I', mounted loosely on said shaft, and having a pinion, i', suitably connected with the motive power, and means for connecting the said sleeve with the said shaft, substantially as and for the purposes specified.

2. The combination, with the head E, having worm-gear E', of the shaft I, having worm i, disk i^2, splined on said shaft, and sleeve I', mounted loosely on said shaft, and having at its outer end a pinion, i', suitably connected with the motive power, and at its inner end the cup-shaped wheel I^2, threaded to receive the hand-wheel I^3, to clamp the disk i^2 against the wheel I^2, substantially as and for the purposes specified.

3. The combination, with the head E, of the tool-holders F', sliding radially therein and having beveled outer ends, the ring G, sliding vertically on said head, and ring H, supporting ring G, and threaded internally to work upon the threaded portion e of the head E, substantially as and for the purposes specified.

4. The combination, with the head E, of the tool-carriers F', arranged to slide radially therein, and having beveled outer ends, vertically-adjustable ring G, for operating the tool-holders, and springs F^2, arranged to hold the tool-carriers in contact with the ring G, substantially as and for the purposes specified.

5. The combination, with the tool-holders F', radially adjustable on the head E, of the tools F, screws *f'*, for adjusting said tools longitudinally on the tool-holders, and clamps *f*, for securing the tools on the holders when adjusted, substantially as and for the purposes specified.

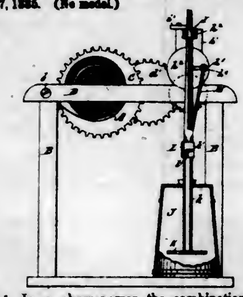
6. The combination, with the nut-ring H, for adjusting the tool-holders, having a lug or projection thereon, of a stop adjustable on the head E, and arranged in the path of the said projection, substantially as and for the purposes specified.

7. The combination, with nut-ring H, having projection h and screw h', of stop h^3, adjustably secured upon head E by means of a T-shaped bolt, h^3, fitting in a correspondingly-shaped circular groove in the head, substantially as and for the purposes specified.

8. The combination, with the head E, carrying the cutters F, and having one or more scales, K, arranged in a circle upon its horizontal portion, of a fixed pointer, K', extending over the said scale, and a shaft, I, for rotating the head, capable of being connected and disconnected with the motive power, and provided with a hand-wheel, I^4, substantially as and for the purpose specified.

9. The combination, with the head carrying the cutters, and having one or more scales arranged in a circle upon its horizontal portion of a fixed pointer extending over the said scale, and a shaft for rotating the head, substantially as and for the purposes specified.

334,263. **MOTOR.** JACKSON R. HILES, Lincolnton, Ga., assignor to himself, Thomas H. Ransom, and William T. Murray, all of same place. Filed Oct. 17, 1885. (No model.)

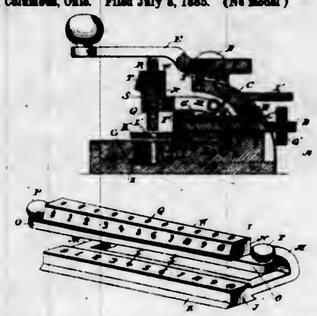


Claim.—1. In a churn-power, the combination of the churn-dasher staff having the pin *k'*, projecting therefrom, the connecting-rod, the hinged guide I, the socket L, provided with slots *l*, and the crank-plate having the slot k^3 therein, and a crank-pin for operating the dasher in the churn, substantially as shown and described.

2. In a churn-power, the combination of the churn-dasher staff, the socket L, having slots *l*, the connecting-rod, the crank-plate having an adjustable crank-pin, the guide I, provided with hinge *i*, the block k', having slot k^3 therein, the button i', and a train of mechanism operated by a spring for imparting motion to the dasher in the churn, substantially as described and shown.

3. In a churn-power, the combination of a spring provided with a ratchet-wheel and spring-pawl and means for winding it up, a train of mechanism for imparting motion to the dasher in the churn and containing the gear-wheel d', having a flat portion, d^2, the brake-rollers *e* and *e'*, the spring-arm e^2, and the adjustable screw for regulating the pressure of the brake-rollers and controlling the machine, substantially as described and shown.

334,264. **CHECK-PUNCHING MACHINE.** JAMES M. MONTGOMERY Jr., Columbus, Ohio. Filed July 8, 1885. (No model.)



Claim.—1. In a check-punching machine, the combination of the main frame, the transversely-sliding frame carrying a series of vertically-sliding punches or cutters, a block attached centrally to the rear side of the base of the main frame, and a feed or supporting plate attached to the said block on a level with the die-plate of the transversely-sliding frame, substantially as and for the purpose herein set forth.

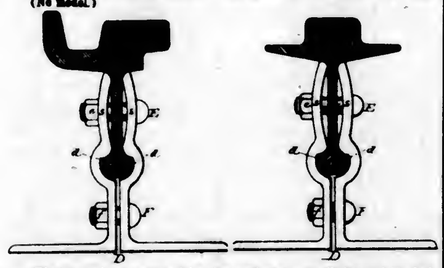
2. In a check-punching machine, the combination of the main frame, the transversely-sliding frame carrying a series of vertically-sliding punches or cutters, a block secured centrally to the base of the main frame, a feed or supporting plate secured to the latter, and a tilting frame pivoted to the sides of said block and having a longitudinal shaft carrying a pressure-roller, substantially as and for the purpose herein set forth.

3. In a check-punching machine, the combination of the main frame, the transversely-sliding frame carrying a series of vertically-sliding punches or cutters, a block secured centrally to the rear end of the base of the main frame and having a step or shoulder, a stripper-plate secured to the top of the said block and having a slot for the passage of a pressure-roller and a glass slide provided with a perforation for the passage of the punching-cutters, a supporting-plate secured to the lower step of the said block, and a tilting frame pivoted to the sides of the said block and having a longitudinal shaft carrying a pressure-roller at its front end, substantially as and for the purpose set forth.

4. In a check-punching machine, the combination of the main frame, a transversely-sliding frame carrying a series of vertically-sliding

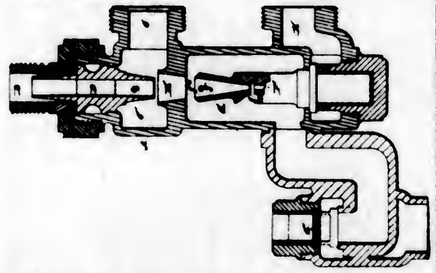
cutting-punches and corresponding dies, an operating-lever pivoted to the main frame, a spring arranged to force the front end of said lever in an upward direction, a shouldered block secured to the rear end of the base of the main frame and having a supporting-plate and a stripper-plate, the latter provided with a perforated glass slide, a tilting frame pivoted to the said block and having a longitudinal shaft provided with a pressure-roller at its front end and with a ratchet-wheel at its rear end, a spring arranged to force the said tilting frame downwardly, and a pawl pivoted to the rear end of the operating-lever and adapted to engage the ratchet-wheel at the rear end of the feed-roller shaft, substantially as and for the purpose herein set forth.

334,265. SPLICE-BAR RAIL-CHAIR FOR STREET-RAILROAD TRACKS. ARTHUR J. MCKEAN, Johnstown, Pa. Filed July 20, 1885. (No model.)



Claim.—As a new article of manufacture, a rolled-metal T-chair for street-car girder-rails of the form substantially as described, consisting of two side pieces shaped each to make a splice-bar fit under the head of the rail, offset, as at *d d*, to similarly fit on top of fillets on the web of the rail, and provided with bolts for tying said side pieces to the rail above and below said fillets, whereby said chair is caused to clamp the rail only by said splice-bar fit of its two sides and by said fit alone transmit the weight of the load upon the rail to the chair, substantially as and for the purposes set forth.

334,266. INJECTOR. HORACE B. MURDOCK, Detroit, Mich. Filed Sept. 21, 1885. (Model.)



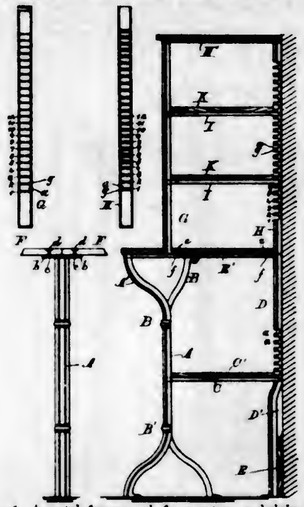
Claim.—1. In an injector, a delivery-tube constructed with its entrance end and relief orifices opening into the same overflow-chamber, and in connection therewith an escape-valve located below the entrance to said tube, said valve constructed to open automatically under the pressure of water in the overflow-chamber when the same has risen to a level a little below the entrance end of the delivery-tube, and to automatically close when the water has wasted below said level, substantially as described.

2. An automatic injector consisting of the combination, with a force-tube and a combining-tube, of a delivery-tube having its entrance end and relief orifices opening into said overflow-chamber, and a single escape-valve, said valve constructed to automatically open whenever the pressure within the overflow-chamber equals or exceeds that exerted by a column of water at a level a little below the entrance end of the said delivery-tube, and to automatically close and remain closed whenever there is less pressure within said chamber, substantially as described.

3. The combination, with an injector having an overflow-chamber, G, a steam-inlet, B, a water-inlet, C, and a vertical delivery-tube, F, provided with an entrance end and an opening, *g'*, located within the overflow-chamber, of an escape-valve, G', arranged below the upper entrance end to said delivery-tube and automatically opened by the column of water before the latter can rise to said upper entrance end, substantially as described.

4. In an injector, a reversible forcing-tube adapted by reversing the tube to present its discharge end at a different distance from the mouth of the combining-tube, substantially as and for the purposes described.

334,267. PORTABLE SHELVING AND COUNTER. DAVID W. MCELROY, Keokuk, Iowa. Filed Jan. 5, 1885. (No model.)



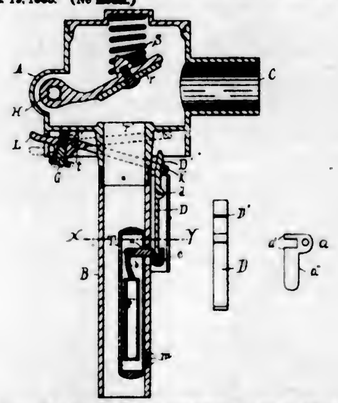
Claim.—1. A metal frame-work for counters or shelving-supports, composed of the standards A D and cross-bar E', having the lateral perforated wings, as described, whereby the board or top F is secured to the frame-work, as set forth.

2. A portable shelving consisting of metal supports or standards, said standards being provided with recesses *a* and ledges *g*, formed integral therewith, to receive the cross-bars which support the shelves, as set forth.

3. In a portable shelving the standards or supports of which are made of metal, the rear standards or supports, B, provided with offsets D', as described, whereby the base-board of the wall will lie therein and the upper portion of the shelving be permitted to lie or fit against the wall of the building, as set forth.

4. In a portable shelving, the cross-bars E', provided with numerous perforations, A, in combination with the standards G and cross-bars I, whereby the upper section of shelving can be made wide or narrow, as set forth.

334,268. BARREL-FILLER. JOHN MCKINSEY, West Troy, N. Y. Filed Oct. 19, 1885. (No model.)

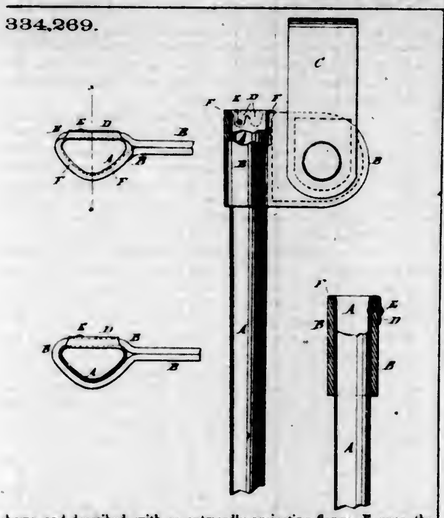


Claim.—In a barrel-filler, the combination, with the pipe B, having apertures *m*, the interior tube, T, and the float F, of the lever *a*, connected with said float by a pivoted link, and provided with arms *a' a''*, the lever D, notched at D', the notched spindle H, the trip-latch J, and the handled spring-actuated lever K, having the finger *g*, as and for the purpose set forth.

334,269. METALLIC BAYONET-SCABBARD. JAMES MCKINSEY, New York, N. Y. Filed Nov. 18, 1885. (No model.)

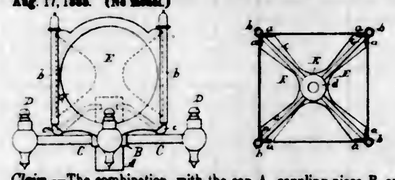
Claim.—A metallic bayonet-scabbard made, substantially as herein

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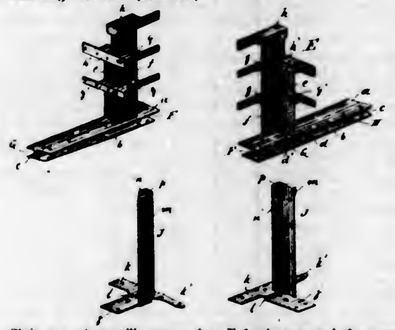
shown and described, with an outwardly-projecting flange, F, upon the angular side of its upper end to overlap the upper edge of the throg, as and for the purpose set forth.

334,270. REFLECTOR. JAS. R. MCLAUGHLIN, Portland, Oreg. Filed Aug. 17, 1885. (No model.)



Claim.—The combination, with the cap A, coupling-piece B, arms C, and bearers D, of four concave reflectors united at their perpendicular edges by ears *a a*, that project from tubular corner-pieces *b b*, said corner-pieces, arms *c c*, nut *d*, and a connecting device, substantially as described.

334,271. WAGON-BODY. PETER A. MCVEIGH, Auburndale, Mass. Filed Aug. 10, 1885. (No model.)



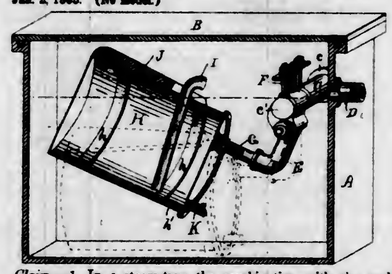
Claim.—1. A metallic corner-piece, E, for the front end of a wagon-body, provided with a recess or mortise, F, for receiving the end of the side sill, a recess or mortise, G, for receiving the end of the front sill, and a recess or mortise, H, for receiving the end of the foot-board, all formed by the flanges *a b* and webs *c d d'*, in combination with upwardly-projecting flanges, to which the side and front boards and top rails are secured, substantially as shown and described.

2. A metallic corner-piece, E, for the front end of a wagon-body, provided with a recess or mortise, F, for receiving the end of the side sill, a recess or mortise, G, for receiving the end of the front sill, and a recess or mortise, H, for receiving the end of the foot-board, all formed by flanges *a b* and webs *c d d'*, in combination with upwardly-projecting flanges *e f*, that form a corner, and provided with projections *g g'*, in which are recesses or mortises to receive the ends of the raves, and projections *h h'*, in which are recesses or mortises to receive the top rails, substantially as shown and described.

3. A metallic corner-piece, J, for the rear end of wagon-bodies, provided at its lower end with a flange, *j*, for securing it to the side sill, a flange, *k*, for securing to the sheltock, a rise or step, *l*, being between these two flanges, and a projection, *k'*, for supporting the stay L, in combination with upwardly-projecting flanges or plates *m n*, connected together at the rear by a web, *p*, so as to form a recess or mortise for the rear standard, substantially as shown and described.

4. In combination with a wagon-body, A, the metallic corner-pieces E and J, substantially as shown, and for the purposes described.

334,272. STEAM-TRAP. ROBERT NEWTON, Providence, R. I. Filed Jan. 2, 1885. (No model.)

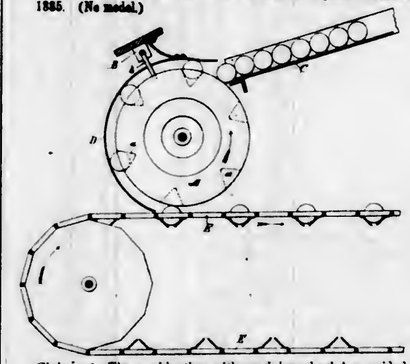


Claim.—1. In a steam-trap, the combination, with the tank A, provided with the overflow D, placed above the valve-chamber *c'*, of the cylinder H, provided with weights and connected by a tabular connection with the lower part of the valve-chamber *c'*, as described.

2. The combination, with the tank A, having a cover, B, and an outlet, D, of the inlet C, having the flange *c* and valve-chamber *c'*, submerged below the water-line, the cylindrical chamber H, having the rings *h*, the hole *h'*, and the pipes I K, and the arm G and elbow E, as specified.

3. The combination, with the cylindrical chamber and its connections with the valve, of the pipes I K and the weight J, as described.

334,273. CAN-COUNTING MACHINE. EDWIN NORTON, Chicago, Ill., assignor to himself and Oliver W. Norton, same place. Filed Aug. 1, 1885. (No model.)



Claim.—1. The combination, with revolving wheel A, provided with pockets *a* for the cans, of a delivery-chute, C, curved guard D, and counting device B, having operating-lever *b*, projecting across the path of said cans, substantially as specified.

2. The combination of chute C with wheel A, composed of two disks with intermediate space between them, and provided with can-pockets in its periphery, and a counting device having its operating-lever projecting into said space, substantially as specified.

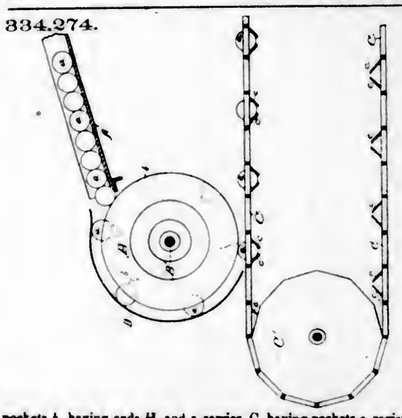
334,274. AUTOMATIC CAN-DELIVERING DEVICE. EDWIN NORTON, Chicago, Ill., assignor to himself and Oliver W. Norton, same place. Filed Dec. 3, 1885. (No model.)

Claim.—1. The combination, with a revolving wheel having pockets thereon for the cans, of a delivery-chute, a curved guard, and a carrier or conveyer having pockets registering with the pockets on said wheel, substantially as specified.

2. The combination of a can-delivery chute, A, with a wheel, B, having pockets *b* on its periphery, and a carrier, C, having pockets *c* registering with said pockets on said wheel, substantially as specified.

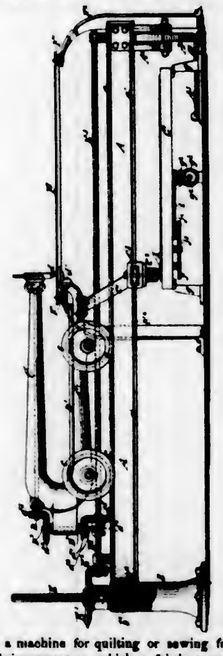
3. The combination of a chute, A, with a wheel, B, consisting of two separate disks adjustable to or from each other and provided with

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pockets *b*, having ends b^2, and a carrier, C, having pockets *c*, registering with the pockets on said wheel, substantially as described.

334,275. MACHINE FOR QUILTING BED-COMFORTABLES, &c. F. L. PALMER, New London, Conn. Filed Apr. 9, 1885. (No model.)



Claim.—1. In a machine for quilting or sewing fabrics, the combination, with a fabric-support on which a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for one of said parts, consisting of a beam or arm, A, having a bearing, a^2, fitting a pivot, *b*, and provided at the end with a roller-support, A', and a curved or arc-shaped track, A^3, for the roller-support, and a roller-carriage movable upon the beam or arm A^2 toward and from its supporting-pivot, substantially as and for the purpose herein described.

2. In a machine for quilting or sewing fabrics, the combination, with a support on which a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for the sewing-machine, consisting of a pivoted beam or arm, A, having a roller-support, A', at the end, a curved or arc-shaped track, A^3, for the roller-support, and rollers or wheels *c* upon the sewing-machine running upon the top of the beam or arm A toward and from the pivot thereof, substantially as herein described.

3. In a machine for sewing or quilting fabrics, the combination, with a support on which a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for one of said parts, and a pattern mechanism for controlling said movable part, consisting of a flexible traveling carrier arranged in pattern form, and a connection between said carrier and said movable part, substantially as herein described.

4. In a machine for sewing or quilting fabrics, the combination, with a support on which a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for the sewing-machine, gearing for transmitting motion to the needle-operating shaft of the movable sewing-machine, and a pattern mechanism for controlling the movable sewing-machine, consisting of a flexible traveling carrier arranged in pattern form, and a connection between said carrier and the sewing-machine, substantially as herein described.

5. In a machine for sewing or quilting fabrics, the combination, with a support on which a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for one of said parts, and a pattern mechanism for controlling said movable part, consisting of a flexible traveling carrier, a guide in pattern form, wherein said carrier moves, and a connection between said carrier and the movable part, substantially as herein described.

6. In a machine for sewing or quilting fabrics, the combination, with a support on which a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for one of said parts, and a pattern mechanism for controlling said movable part, consisting of a traveling carrier, a plate having upon it a guide of pattern form, wherein the said carrier moves, and a connection between said carrier and the movable part, substantially as herein described.

7. In a machine for sewing or quilting fabrics, the combination, with a support on which a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for one of said parts, and a pattern mechanism for controlling said movable part, consisting of a number of flexible traveling carriers arranged in pattern form, and a device, as pin or tracker I, whereby the movable part may be detachably connected with any one of the traveling carriers, substantially as herein described.

8. In a machine for sewing or quilting fabrics, the combination, with a support on which a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for one of said parts, and a pattern mechanism for controlling said movable part, consisting of an endless chain or flexible traveling carrier arranged in pattern form, gearing for driving said chain or traveling carrier, and a connection between the latter and movable part, substantially as herein described.

9. In a machine for sewing or quilting fabrics, the combination, with a support on which a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for one of said parts, and a pattern mechanism for controlling said movable part, consisting of an endless traveling carrier, a pattern-plate having in it a guide in pattern form for the said carrier, flanges overlapping said guide to confine the carrier therein, and a connection between said carrier and movable part, substantially as herein described.

10. In a machine for sewing or quilting fabrics, the combination, with a support on which a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for one of said parts, and a pattern mechanism for controlling said movable part, consisting of a pattern-plate having a circular portion capable of being turned, and a surrounding portion, traveling carriers arranged in pattern form on both portions of the plate, and a device, as pin or tracker I, forming a detachable connection between said carriers and the said movable part, substantially as herein described.

11. In a machine for sewing or quilting fabrics, the combination, with a support on which a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for one of said parts, consisting of a pivoted beam or arm and a roller-carriage movable thereon toward and from the pivot of the beam or arm, and pattern mechanism for controlling the said roller-carriage, consisting of a traveling carrier arranged in pattern form, and a connection between said carrier and the said roller-carriage, substantially as herein described.

12. In a machine for sewing or quilting fabrics, the combination, with a support whereon a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for one of said parts, and a pattern mechanism connected with the movable part for controlling its movements, and supports for the pattern mechanism capable of rotary movement to permit the operation of the pattern mechanism in different positions about the center of movement of its supports, substantially as herein described.

13. In a machine for sewing or quilting fabrics, the combination, with a support whereon a fabric may be stretched or extended, and a sewing-machine for operating thereon, of movable supports for one of said parts, pattern mechanism consisting of a traveling carrier connected with the movable part for controlling its movements, and a support for the traveling carrier capable of rotary movement to permit the operation of the traveling carrier in different positions, substantially as herein described.

14. In a machine for sewing or quilting fabrics, the combination, with a support on which a fabric may be stretched or extended, a sewing-machine for operating thereon, and movable supports for one of said parts, of a pattern for controlling the movable part, comprising in itself a portion which is movable relatively to the remaining portions of the pattern, and a connection between the pattern and the part which it controls, substantially as herein described.

15. In a machine for sewing or quilting fabrics, the combination, with a support on which a fabric may be stretched or extended, a sewing-machine for operating thereon, and movable supports for the sewing-machine, consisting of a pivoted carriage capable of swinging movement, and a second carriage movable upon the first carriage toward and from the pivot thereof, of a pattern for controlling the movements of the sewing-machine, and a connection between the sewing-machine and pattern, arranged concentrically with the needle of the sewing-machine, substantially as herein described.

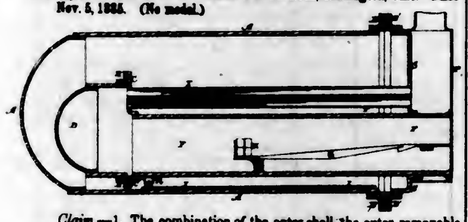
16. In a machine for sewing or quilting fabrics, the combination, with a support whereon a fabric may be stretched or extended, a sewing-machine for operating thereon, and movable supports for one of said parts, of a pattern-plate having upon it a guide in pattern form and capable of rotary movement to change the position of said guide, and a connection between the movable part and said guide, substantially as herein described.

334,276. PIPE-TONGS. JAMES J. PALMER, Full Brook, Pa. Filed July 17, 1885. (No model.)



Claim.—The pipe-tongs comprising the series of serrated links *a b c*, united by bolts, the serrated block A, the connected arms D E, having inner curved edges, and the lever-arm B, pivoted to the block A at its lower rear edge, and provided with a hook, C, at its lower forward end, substantially as and for the purpose set forth.

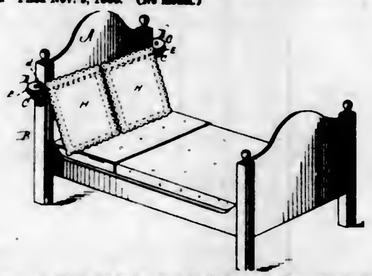
334,277. BOILER. WILLIAM C. PERROCK, Cardington, Ohio. Filed Nov. 5, 1885. (No model.)



Claim.—1. The combination of the outer shell, the outer removable head, the smoke-box, the fire-box having its outer end project beyond the outer head, S, and having a truck placed under its inner end, the return-flues, and the bonnet D, substantially as shown.

2. The combination of the shell A, the outer removable head, S, the smoke-box P, the fire-box F, having its outer end project beyond the head S, the return-flues T, and the bonnet D, substantially as set forth.

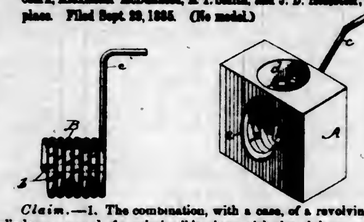
334,278. PILLOW-SHAM HOLDER. CHARLES F. PERCIVAL, Barton, Vt. Filed Nov. 9, 1885. (No model.)



Claim.—1. The hereinbefore described improved pillow-sham holder, consisting, essentially, of the brackets C, secured to the posts or sides of the head-board, the pulleys D, supported by said brackets, and the endless cord or belt E, running on said pulleys, and passing around the head-board and supporting the pillow-shams, substantially as and for the purpose set forth.

2. The combination of the head-board provided with the casing I, the pulleys D, supported by the brackets C, and the endless cord E, supporting the pillow-shams H, substantially as and for the purpose described.

334,279. NUTMEG-GRATER. ALBERT L. PLATT, Bowling Green, Mo., assignor, by direct and mesne assignments, to W. B. McPike, Champ Clark, Alexander McDonald, E. T. Smith, and J. D. Hostetter, all of same place. Filed Sept. 29, 1885. (No model.)

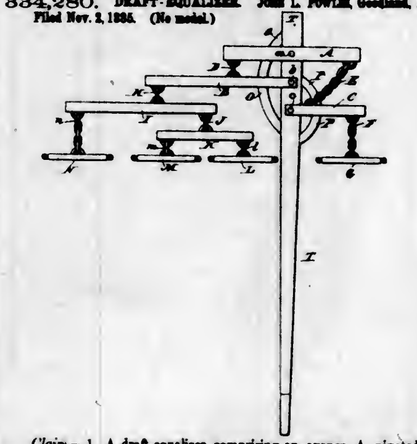


Claim.—1. The combination, with a case, of a revolving grating-cylinder composed of a spiral coil having a nicked periphery and bearings for sustaining the cylinder, substantially as described.

2. The combination, with a block having a hole bored through it and another at right angles, of a spiral coil having a nicked periphery and means for holding it in place and turning it, as described.

3. The combination, with a case, of a spiral coil having a nicked periphery and a crank at one end and an outturned section of wire, *b*, at the other to hold it in place, substantially as described.

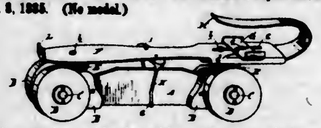
334,280. DRAFT-EQUALIZER. JOHN L. POWLEN, Goodland, Ind. Filed Nov. 2, 1885. (No model.)



Claim.—1. A draft-equalizer comprising an evener, A, pivoted to the tongue T, levers B C, pivoted at their inner ends to the tongue, and connected by couplings D E, respectively, to the opposite ends of the evener A, so that their leverages are three to one, as specified, a single-tree, G, coupled to the outer end of lever C, a double-tree, K, coupled to the inner end of evener I, single-trees L M, coupled to opposite ends of said double-tree K, and a single-tree, N, coupled to the outer end of evener I, so as to equalize the draft of three horses on lever B, all substantially as herein set forth.

2. In a draft-equalizer, the combination, with the tongue T, the evener A, and levers B C, pivoted to the tongue and coupled substantially as specified, of the plates O P, fixed to the tongue and supporting the levers, substantially as herein set forth.

334,281. ROLLER-SKATE. O. J. PUSHEE, Plymouth, Mich. Filed Oct. 8, 1885. (No model.)



Claim.—1. In combination with a roller-skate platform, a detachable and adjustable spring-extension thereof folding back upon the same to embrace the top of the foot, and a lateral clamp adjustable to embrace the edges of the sole of the shoe of the wearer, constructed and operating substantially as described.

2. An axle and platform support for a roller-skate, consisting of a flat wide steel spring, A, the ends of which are secured between blocks B, in combination with the axles C, and the spring E, upon which the

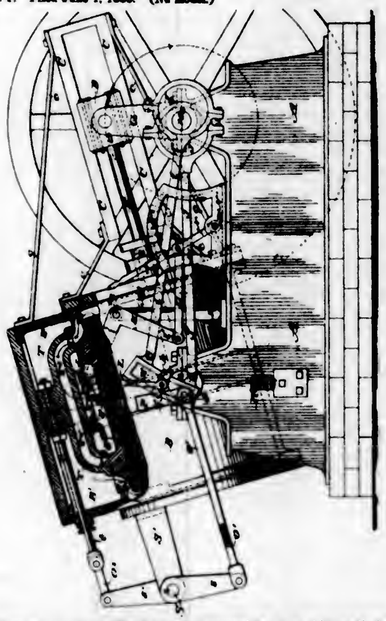
platform F is secured, the parts being constructed, arranged, and operating substantially as and for the purposes specified.

3. In a roller-skate, the platform F, resting upon suitable springs, with its bearings inside the vertical line of the axles, in combination with a saddle and yoke and flat wide spring A, the parts being constructed, arranged, and operating substantially as and for the purposes set forth.

4. In a roller-skate, the combination, with the blocks B, of the spring A, having its ends secured between said blocks, and the axles C, passing through said springs and blocks, and carrying the wheels, substantially as described.

5. A roller-skate consisting of the following elements: an extension steel strap-spring, A, the ends of which are secured between blocks B, axles C, wheels D, springs E, platform F, resting upon each springs, strap-clamp G, toe-extension spring-clamp H, saddle I, and yoke K, when the parts are constructed, combined, and operate substantially as and for the purposes specified.

334,282. OSCILLATING ENGINE. DOUIA C. PUTNAM, Wayne Centre, N. Y. Filed June 1, 1885. (No model.)



Claim.—1. An oscillating engine comprising a rocking cylinder, cross-head guides thereon, a cross-head, a crank-shaft, a link supported about at the center of oscillation of the cylinder, means for rocking the link, a block fitted to the link and supported at about the center of oscillation of the cylinder, a slide-valve controlling the ports of the cylinder, and connections from the link-block to the valve for moving the valve, substantially as herein set forth.

2. An oscillating engine comprising a rocking cylinder, cross-head guides thereon, a cross-head, a crank-shaft, oppositely-set eccentrics on said shaft, a link supported pivotally about at the center of oscillation of the cylinder and connected pivotally to rods strapped to the eccentrics, a block fitted to the link and supported about at the center of oscillation of the cylinder, a slide-valve controlling the ports of the cylinder, and rod and rock-shaft connections from the link-block to the slide-valve, substantially as herein set forth.

3. The combination, in an oscillating engine, of the cylinder B, guides C, cross-head D, piston-rod and piston E F, cranked shaft H, eccentrics I J thereon, rods *i j*, link K, block O, rock-arm P, rod O', rock-shaft S, journaled in bearings fixed to the cylinder and having arms *s s'*, rod O², valve-stem *t*, and a connected slide-valve controlling the ports of the cylinder, substantially as herein set forth.

4. The combination, in an oscillating engine, of the cylinder B, guides C, cross-head D, piston-rod and piston E F, cranked shaft H, eccentrics I J thereon, rods *i j*, link K, block O, arm P, rod O', rock-shaft S, having arms *s s'*, rod O², valve-stem *t*, a connected slide-valve controlling the ports of the cylinder, a rock-lever, M, connected pivotally to link K, and a lever or equivalent device adapted to shift the lever M for adjusting the link-block O, substantially as herein set forth.

5. An oscillating engine constructed with rigidly-coupled steam inlet and exhaust pipes communicating with the steam-chest and exhaust-passage of the cylinder, and fitted to rock in steam-chambers positioned at the center of oscillation of the cylinder, said chambers having connecting steam inlet and exhaust pipes, substantially as herein set forth.

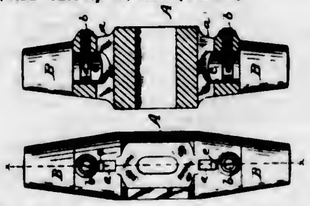
6. The combination, with the steam-cylinder provided at each end with a port serving both for steam inlet and exhaust, and also with an intermediate exhaust-port, of a slide-valve provided with an interior chamber for the exhaust-steam, and three exhaust-ports opening into said chamber, or one port at each end of the valve and an intermediate port, substantially as herein set forth.

7. The combination, with the steam-cylinder provided at each end with a port serving both for steam and exhaust, and also with an intermediate exhaust-port, of a slide-valve provided with an interior chamber for the exhaust-steam, and three exhaust-ports opening into said chamber, or one port at each end of the valve and an intermediate port, and said valve and cylinder, either or both, being shaped to provide a live-steam space at b^2 between the opposing body portions of the valve and cylinder, substantially as herein set forth.

8. The combination of the steam-cylinder B, constructed with transversely-ranging steam and exhaust ports B^2 B^3 at opposite ends, and a longitudinally-ranging exhaust-port, B^4, located at one side of the steam-chest, and the valve T, formed with an interior exhaust-chamber, T^5, and provided with transversely-ranging exhaust-ports T^7 T^8 at opposite ends, and longitudinally-ranging exhaust-port T^6, located at one side of the valve, substantially as herein set forth.

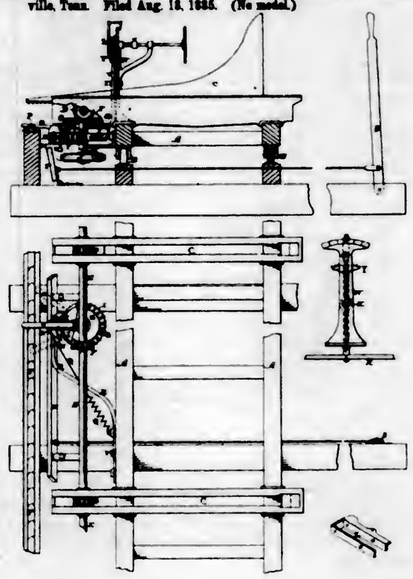
9. The valve T, made with an interior exhaust-steam chamber, T^5, transversely-ranging exhaust-ports T^7 T^8, and longitudinally-ranging exhaust-port T^6, said ports being formed through the raised valve-faces t^2 t^3 t^4 into the chamber T^5, substantially as herein set forth.

334,283. COPPER-TIPPED HAMMER. HARRY A. RANDALL, Terryville, Conn. Filed Sept. 30, 1885. (No model.)



Claim.—The herein-described hammer, consisting of the head A, having tip-receiving sockets and transverse slots connected therewith, the set-screws *b*, and the tips B B, having shank *c*, secured within the socket by means of the set-screw, substantially as described, and for the purpose specified.

334,284. HEAD-BLOCK FOR SAW-MILLS. THOMAS J. REANY, Nashville, Tenn. Filed Aug. 18, 1885. (No model.)



Claim.—In a head-block for saw-mills, the combination of the stationary rack-bar placed to the rear of the carriage, a vertical shaft journaled in the carriage and having a mechanism connected to its upper end for moving the knees, a frame pivoted on said vertical shaft and carrying a dog to engage with a ratchet-wheel rigid on said shaft, and a lever pivoted on said pivoted frame to engage with the said stationary rack-bar for the purpose of moving the knees, substantially as shown.

2. The combination of the pivoted lever, which is connected to the setting mechanism and carried back and forth by the carriage, a pivoted frame which is supported upon the vertical shaft and which carries and is moved by the said lever, a dog which is pivoted in the frame, the ratchet-wheel which is placed upon the vertical shaft and with which the dog engages, a mechanism connected to the upper end of the vertical shaft for moving the knees, and a rack-bar which is placed to the rear of the carriage, substantially as set forth.

3. The combination of the vertical shaft, a mechanism connected to its upper end for moving the knees to regulate the thickness of lumber being sawed, a friction-wheel which is secured to the lower end of the shaft, and a movable bolt or surface, T, which is attached to a permanent support and which is operated by a hand-lever so as to be thrown in and out of contact with the friction-wheel, substantially as specified.

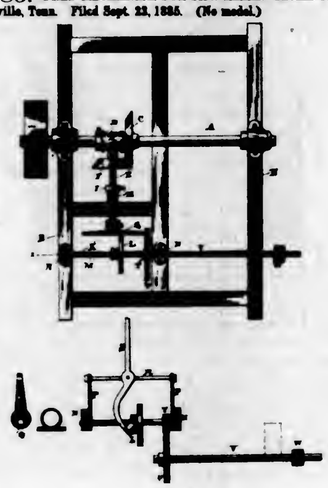
4. The combination of the mechanism for moving the knees, the vertical shaft carrying the bevel-gear G upon its upper end, a horizontal swinging frame pivoted upon the shaft and carrying a dog provided with a projection, a ratchet-wheel secured to the shaft and with which the dog engages, the friction-wheel which is secured to the lower end of the vertical shaft, the bolt T, pivoted upon a suitable support, and an operating-lever for moving the bolt, whereby the bolt, as it is moved toward the friction-wheel, is made first to move the dog out of contact with the ratchet-wheel and then operate the friction-wheel, substantially as shown and described.

5. The combination of the vertical shaft having a mechanism connected to its upper end for moving the knees, the swinging frame which is pivoted upon this shaft, the lever which is pivoted upon the top of the frame and which moves the frame horizontally around the shaft, the dog pivoted in the frame for engaging with the ratchet-wheel which is secured to the vertical shaft, a spring connected to the lever and which draws both the lever and the frame backward when they are left free to move, and a suitable stop carried by the carriage for regulating the distance the lever shall be moved backward, substantially as set forth.

6. The combination of the pivoted lever and the horizontal pivoted frame placed upon the vertical shaft H, the frame carrying a dog for engaging with the ratchet-wheel upon the vertical shaft, the stationary rack-bar with which the lever engages, and a spring for drawing the lever backward when it is left free to move, substantially as specified.

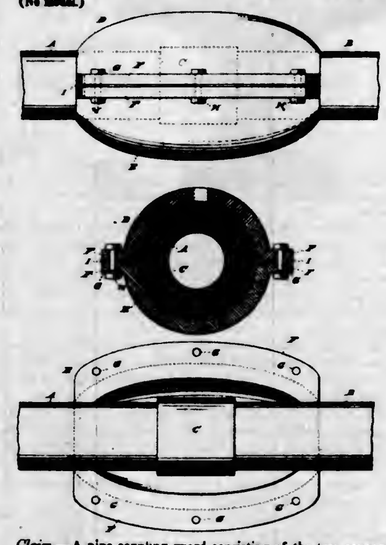
7. The combination of the adjustable stop which is carried back and forth by the carriage, a pivoted lever which has a horizontal movement around the vertical shaft, a frame which is pivoted upon the vertical shaft and which carries said lever, a spring for moving the lever and frame backward, and a setting mechanism connected with the upper end of the vertical shaft for regulating the thickness of the lumber to be sawed, and an adjusting mechanism, substantially, as shown, which is connected to the stop for regulating its movement, substantially as described.

334,285. FEED MECHANISM FOR SAW-MILLS. THOMAS J. REANY, Nashville, Tenn. Filed Sept. 23, 1885. (No model.)



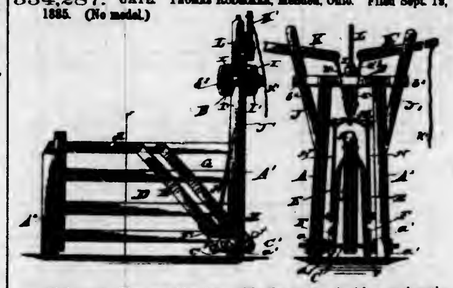
Claim.—The combination of the saw-arbor having a driving-pulley secured thereto, the shaft E, journaled at its inner end in a collar applied to the arbor A, and provided with the pulley F at one end and the friction disk at the other, the collar I and spring H, applied to the shaft E, to keep the shaft pressed endwise, and the pulleys E C, always in operative contact with each other, the friction-pulley L, placed upon a shaft of its own, a lever for moving the pulley back and forth in contact with the friction-disk, a shaft to move the carriage, and gears for connecting the two disks together substantially as shown and described.

334,286. GAS-SAVING DEVICE. GEORGE W. REED, Saltsburg, Pa., assignor of one-half to David O. Brown, same place. Filed June 19, 1885. (No model.)



Claim.—A pipe-coupling guard consisting of the two concave cast sections D E, having the lateral longitudinal flanges F, provided with perforations for securing-bolts, the elastic packing-strips I, arranged between the said flanges, an inner coating of white lead, and a filling of cement, all arranged and adapted to serve with two united sections of pipe substantially as shown and described.

334,287. GATE. THOMAS RODGERS, Meadon, Ohio. Filed Sept. 19, 1885. (No model.)



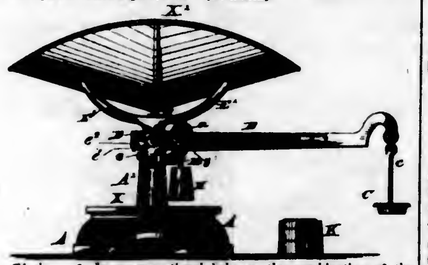
Claim.—1. The combination, with the posts A A', carrying the levers K and united by a slotted beam, B, of a guide-bar playing through a slot in said beam B, and prevented from binding therein by pulleys I I', secured to the upper and under surfaces of the beam at the ends of the slot, and operated by the said levers, substantially as described.

2. In a gate, the combination, with two supporting-posts, A A', united at top by a slotted beam and a guide-bar playing through the slot in the beam connected at its lower end to hinged bars to lift the gate from one side to the other, of levers pivotally secured to the upper ends of posts A A', connected at their inner ends to the guide-bar to move it vertically, and thereby operate the gate, substantially as specified.

3. The combination of the gate D, provided with bars G and E, having their lower ends secured to hangers F F', strung on rods C C', having suitable bearings on the lower portions of posts A A', and a beam, B, uniting the upper ends of posts A A', provided with longitudinal slot *b* and cross-slot *b'*, and pivotal levers N, suitably secured on

the posts, having hand-holds on their outer ends, with a guide-bar, L, playing through slot *b'*, and connected near its lower end by cords or rods to the inner ends of levers K K' and by a yoke and rods N with the lifting-bars G of the gate, all constructed and adapted to operate substantially as and for the purposes described.

334,288. **PROPORTIONAL WEIGHING SCALE.** ELIJAH I. ROWE, Lansingburg, N. Y., assignor to the Rensselaer Manufacturing Company, same place. Filed Sept. 3, 1885. (No model.)



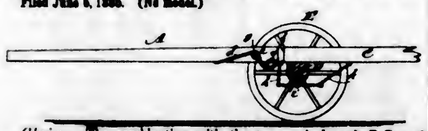
Claim.—1. In a proportional balance, the combination of the graduated scale-beam having its naught-notch vertically above its fulcrum and its inward end connected to the balance-platform, the poise arranged to indicate pounds and parts thereof on the scale-beam, and the poise-weights arranged to be placed upon the poise and to indicate each additional proportional weight as the actual weight of the said poise-weights is proportionate to the actual weight of the poise, substantially as specified.

2. In a proportional balance, the combination of the graduated scale-beam having the negative point of its scale vertically above its fulcrum on the standard of the balance provided at its free end with a suitable swinging counterpoise-plate, and having its inward end connected with the balance-platform and supporting the scale-scoop, the poise arranged to indicate pounds or fractions of pounds on the scale-beam, and the weights I, adapted to be placed on the poise and arranged to indicate such additional proportional weight as the actual weight of the poise-weights is proportionate to the actual weight of the poise, substantially as specified.

3. In a proportional balance, the combination, with the scale-beam fulcrumed and balanced upon the standard of the scale-frames, the platform connected to the inward end of the scale-beam, and counterpoise-plate swung on the outward end of the same, of the slotted weights K, adapted to rest upon the counterpoise-plate and the sets of weights *k*, supplementary to the same, substantially as specified.

4. In a proportional balance, the combination, with the base A, standard A', graduated scale-beam B, platform X, connected by the rod E to the scale-beam in the usual manner, and counterpoise-plate C, of the counterpoise-weights K, the weights *k*, supplementary to the counterpoise-weights, the poise-weight H, and the weights I, supplementary thereto, all substantially as and for the purpose specified.

334,289. **TONGUE-SUPPORT.** HILO M. RUSSELL, Hayward, Wis. Filed June 6, 1885. (No model.)

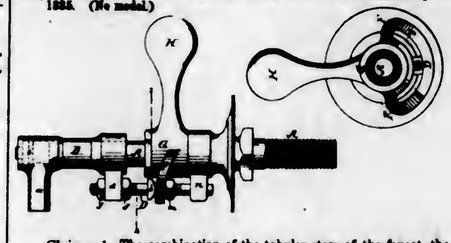


Claim.—The combination, with the tongue A, bounds B B, and axle D, of the spring G, constructed as described, with hook-shaped rear arms, *f f*, the bolt *g*, arranged in front of the axle and forming the fulcrum of said spring and rocking support for the tongue, the levers *i i*, pivoted to the under side of the axle, and the hitching and unhitching chains *h h* and connections *k k*, arranged to connect said levers and the bounds on opposite sides of the axle, substantially as shown and described.

334,290. **MANUFACTURE OF SALICYLIC ACID.** RUDOLF SCHMITT, Dresden, Saxony, Germany, assignor to Friedrich von Heyden, same place. Filed July 31, 1884. (No specimens.) Patented in Germany June 24, 1884, No. 29,289; in France July 5, 1884, No. 163,161; in England July 15, 1884, No. 10,167; in Belgium July 15, 1884, No. 65,781; in Luxemburg July 15, 1884, No. 421, and in Spain Nov. 20, 1884.

Claim.—The process of manufacturing salicylic acid and its homologues, consisting in first subjecting the phenolates of the alkalies and earthy alkalies to the action of dry carbonic acid under pressure at low temperatures, in order to produce phenyl carbonic alkaline and earthy alkaline salts, and afterward converting these salts into salicylates (salicylic salts) and their homologues by heating them in hermetically-closed vessels at a temperature of about 120° to about 140° centigrade, substantially as herein described.

334,291. **FAUCET.** PETER SCHOFIELD, Pomona, N. J. Filed Sept. 7, 1885. (No model.)



Claim.—1. The combination of the tubular stem of the faucet, the sliding valve-carrier, the valve of which closes against the stem when the carrier is moved inward, a weighted handle having a hub provided with a double cam, F, and hung to the faucet-stem, so as to swing transversely to both sides of the same, and mechanism, substantially as described, whereby the sliding valve-carrier is projected by the cam when the handle is in the central position, but is retracted on throwing the handle to either side, all substantially as specified.

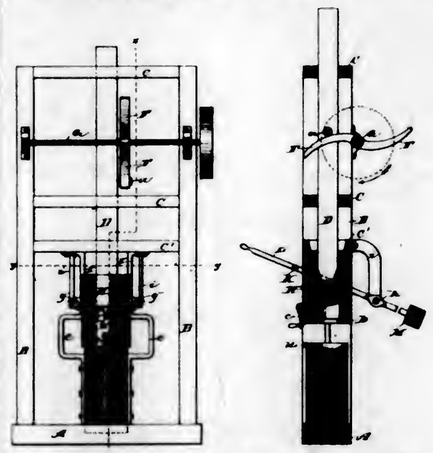
2. The combination of the stem A, the valve-carrier B sliding thereon, the weighted handle having a double cam, F, and hung to the stem A, so as to swing transversely to both sides of the same, and the rod D, secured to the valve-carrier B and longitudinally confined to the cam F, as set forth.

3. The combination of the stem A and the valve-carrier B, sliding thereon, and having a rod, D, the weighted handle hung to the stem, so as to swing transversely to both sides of the same, and the double cam F, carried by the handle and slotted for the passage of the rod D, but longitudinally confined thereto, as specified.

4. The combination of the stem A, the sliding tube B, the weighted handle H, the double cam F, and the rod D, adjustably secured to the tube B and longitudinally confined to the cam, as specified.

5. The combination of the stem A, having a lug, *n*, the sliding tube B, the handle H, the double cam F, and the rod D, connected to the tube B, guided in the stud *n*, and having flanges or projections on opposite sides of the cam F, as specified.

334,292. **PULVERIZER FOR DRUGS, &c.** ROBERT W. SIMMS, Milwaukee, Wis. Filed Oct. 13, 1885. (No model.)



Claim.—1. In a pulverizer for drugs or analogous materials, a mortar consisting of a lower section formed by a solid block having a depression in its upper end, in combination with a detachable upper section having a bore corresponding in diameter to that of the upper plane of the depression in said lower section, substantially as set forth.

2. In a pulverizer for drugs or other analogous materials, a mortar composed of two detachable sections, in combination with means for retaining the two parts temporarily in contact during the process of pulverizing, and a device for automatically separating the two parts of the mortar and elevating the upper portion thereof, substantially as and for the purpose set forth.

3. In a pulverizer for drugs or analogous materials, the combination of a sectional mortar and a pivotally-hung and weighted ball secured to the upper of said sections, substantially as and for the purpose set forth.

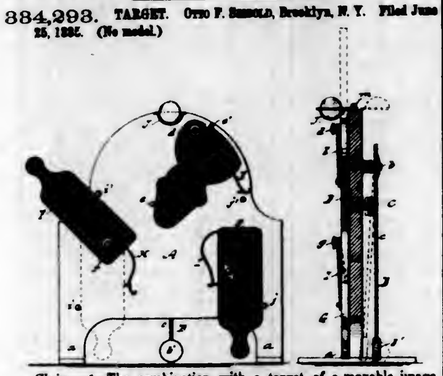
4. In a pulverizer for drugs or analogous materials, the combination of a sectional mortar and a pivotally-hung ball secured to the upper of the mortar-sections, and provided at its front end with a lever and at its rear end with a counter weight or weights, substantially as set forth.

5. In a pulverizer for drugs or analogous materials, a mortar composed of two detachable sections, the upper one of these sections being recessed and provided at its lower end with a latch, and the lower one of said sections being provided with a lug adapted to engage the latch of said upper section, in combination with a pivotally-hung and weighted ball adapted to be secured to the upper mortar-section, substantially as and for the purpose set forth.

6. In a pulverizer for drugs or analogous materials having a sectional mortar, the combination, with the upper section of said mortar, having grooves, of laterally-extended brackets secured to the lower mortar-section, as set forth.

7. A pulverizer for drugs or analogous materials, consisting of a sectional mortar having a pivotally-hung and weighted ball secured to the upper of the mortar-sections, in combination with a vertically-operating pestle, as set forth.

334,293. **TARGET.** OTTO F. SEBOLD, Brooklyn, N. Y. Filed June 25, 1885. (No model.)



Claim.—1. The combination, with a target, of a movable image mounted on the back thereof, a spring acting on the image, a releasing-pin engaging with the image and holding it against the action of the spring, a pendulum swinging in front of said pin, and a cup mounted upon an arm hinged to the target and exposed to the action of the movable image, substantially as described.

2. The combination, with a target, of a pendulum, a releasing-pin situated behind the pendulum and fitting loosely into the target, a movable image mounted on the target, a spring acting on the image, and a stop retaining the image against the action of the spring, substantially as shown and described.

3. The combination, with the target, of a pendulum, a releasing-pin situated behind the pendulum, a movable image mounted on the target, a spring acting on the image, a stop for retaining the image against the action of the spring, and an alarm exposed to the action of the image, substantially as shown and described.

4. In a target, the combination, with a movable spring-actuated image, of an oscillating mark, a releasing-pin for the image, in front of which said mark oscillates, operated by the backward thrust of said oscillating mark when struck, and one or more stationary marks, substantially as described.

334,294. **PRINTING-TELEGRAPH.** ROBERT J. SHERRY, New York N. Y. Filed Jan. 13, 1885. (No model.)

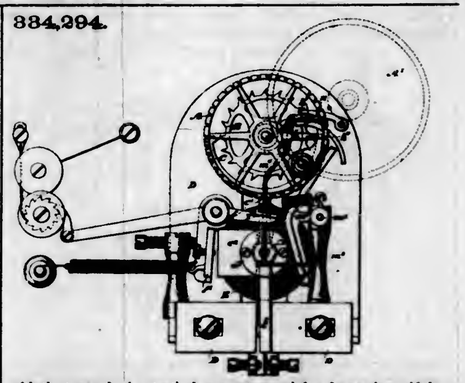
Claim.—1. The combination, substantially as hereinbefore set forth, of a type-wheel, an anchor for giving a step-by-step movement to the same, a soft-iron arm for vibrating said anchor, an electro-magnet polarizing said arm according to the direction of the current traversing its coils, a permanent magnet applied to said arm, substantially as described, a press-lever, and an armature for operating the same, applied to extensions of the respective poles of said electro-magnet.

2. The combination, substantially as hereinbefore set forth, of a type-wheel, an anchor for giving a step-by-step movement to the same, an arm of magnetic material for operating said anchor, an electro-magnet polarizing said arm, a permanent magnet serving to impel said arm in one direction or the other, according to the polarization of the electro-magnet, a press-lever, an armature for actuating the same, applied to said electro-magnet, and an independent armature applied to said electro-magnet for releasing a unison device.

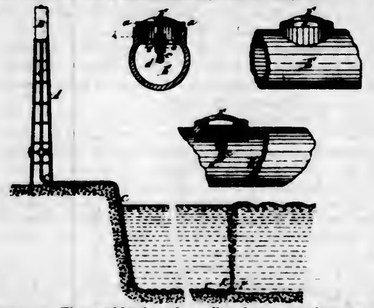
3. In a printing-telegraph instrument, a unison device consisting of a stop moving with the type-wheel, a detent, a cam or eccentric moving with the type-wheel, a toothed segment or rack-bar for moving said detent, and a pawl actuated by said eccentric for actuating said segment.

4. In a printing-telegraph instrument, a unison-stop, a unison-detent, a pawl driven to and fro by the movement of the type-wheel, and serving thereby to move said detent into the path of said stop, a retaining-pawl, an electro-magnet for operating the type-wheel, and an independent armature responding to printing-currents to release said detent from said pawls.

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334,295. **APPARATUS FOR DISTRIBUTING OIL UPON THE SEA AT HARBORS, DOCKS, &c.** JOHN SHIELDS, Perth, County of Perth, Scotland. Filed June 24, 1885. (No model.) Patented in England Mar. 8, 1882, No. 1,112, and in France Mar. 29, 1882, No. 148,102.



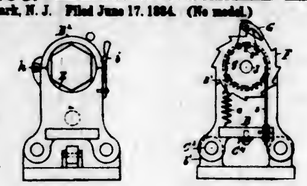
Claim.—1. The combination of an oil tank or reservoir, a conveying-pipe leading therefrom, one or more perforated distributing-pipes connected thereto, and automatically operating-valves, one at each perforation in the distributing-pipes, substantially as set forth.

2. The combination, with the distributing-pipes of a system for distributing oil upon the surface of a harbor or body of water, of outwardly-opening valves automatically closing the apertures therein against the ingress of water, but permitting the escape of oil therefrom, substantially as set forth.

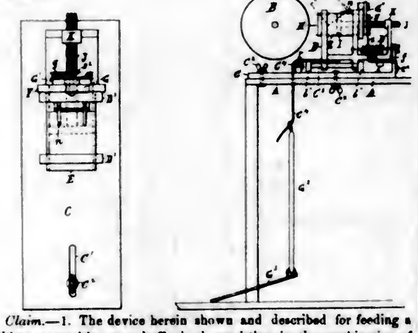
3. The combination, with the conveying and distributing-pipes of a system for distributing oil upon the surface of a harbor or body of water, of outwardly opening-valves automatically closing the openings in the distributing-pipes against the ingress of water, and means, substantially as described, for giving to the flowing oil force sufficient to open said valves, substantially as set forth.

4. The combination, of an oil tank or reservoir, a conveying-pipe connected thereto, one or more perforated distributing-pipes connected to the conveying-pipe, outwardly-opening automatic valves, one at each perforation in the distributing pipe or pipes, and a stop-cock in the conveying-pipe, substantially as set forth.

334,296. **FEEDER FOR POLISHING MATERIAL.** HARRY W. SMITH, Newark, N. J. Filed June 17, 1884. (No model.)



334,296.



Claim.—1. The device herein shown and described for feeding a polishing composition to a buff-wheel, consisting in the combination of the holder adapted to contain a plug of composition, the positive-feeding mechanism capable of only a limited and regulated movement at each actuation of the treadle, and the positively-moved treadle, and the means, substantially as described, and connected therewith, for actuating said mechanism and pushing the composition forward a regulated or uniform distance at each movement of the treadle, substantially as herein set forth.

2. The combination, in a polishing-tool feeder, of a holder mounted to rotate, and the means, substantially as described, for rotating the same, and the means, substantially as described, for feeding the polishing composition forward within the holder.

3. The combination, with the holder, mounted to rotate, and the treadle, and mechanism, substantially as described, for rotating the holder, of the feeding device automatically actuated by the rotation of the holder.

4. The combination, with the holder and means, substantially as described, for turning the same, of a follower fitted to rotate with the holder and the screw attached to the follower and fitted to a stationary nut, so as to feed forward when rotated.

5. The combination, with a polishing-tool, of a holder, a follower fitted thereto and provided with a screw for feeding it forward, and a nut constructed to open, so as to retract the screw and follower, substantially as herein described.

6. The combination, with a polishing-tool, of a holder mounted to rotate in a carrier, means, substantially as described, for adjusting the holder to and from the polishing-tool, and the means, attached to the carrier and operating substantially as described, for rotating the holder therein.

7. The combination, with a polishing-tool, of a holder mounted to rotate in a carrier, means, substantially as described, for adjusting the carrier to and from the polishing-tool, and means, substantially as described, for rotating such adjustable holder and for feeding the composition forward therein.

8. The combination, substantially as described, with a polishing-tool, of a holder mounted upon a carrier and provided with a ratchet-wheel, a pawl and lever mounted upon the carrier and connected with a treadle, for rotating the holder, and means, as spring *e*, for retracting the pawl and treadle, as and for the purpose set forth.

9. The combination, with a polishing-tool, of a rotating holder divided in two parts, for the convenient insertion of the composition, and means, as the bearing with cap D^2, for holding the two parts in their operative position, substantially as and for the purpose set forth.

10. The jointed holder provided with hinges *n* and ratchet-wheel F, in combination with the carrier D, having bearings D′ D′, one of which is provided with hinged cap D^3, the whole arranged and operated substantially as and for the purpose set forth.

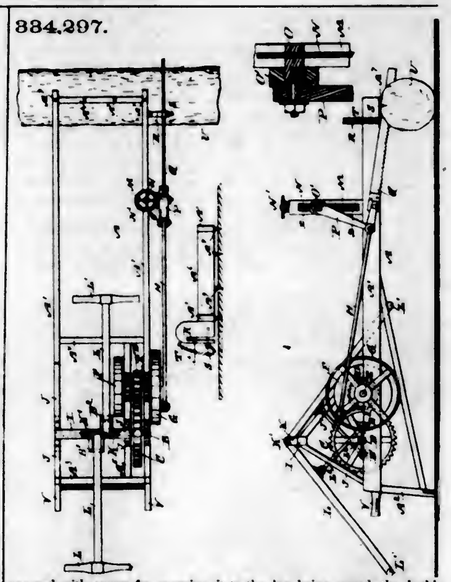
334,297. SAWING-MACHINE. DANIEL W. SMITH, Long Lake, Mich. Filed Aug. 29, 1885. (No model.)

Claim.—1. In a sawing-machine, the combination, with a supporting-frame, of the shaft B, journaled in the frame and provided with the cranks B′ B^2, and the gear-wheel C, the shaft E, journaled in the frame in front of the shaft B and provided with the crank-wheel G and pinion D, the levers L, pivoted to the frame above the shaft B, and extending in opposite directions, and the bars L^2, connecting the said levers to the cranks, substantially as herein shown and described.

2. In a sawing-machine, the combination, with a supporting-frame, a saw, a pitman, and means for operating said pitman, of a slotted bar secured to the supporting-frame, a screw working in said bar, a nut on the screw, and an arm having its upper end pivoted to said nut and its lower end pivoted to the said pitman and saw, substantially as herein shown and described.

3. A sawing-machine consisting of a supporting-frame provided at

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one end with means for securing it to the log being sawed, the double crank-shaft B B′ B^2, journaled in said frame, a gear-wheel on said shaft, the shaft E, journaled in front of the shaft B and provided with the fly-wheel F, crank-wheel G, and pinion D, the operating-levers L, pivoted to the frame above shaft B and projecting in opposite directions, connecting-rods L^2, the pitman H, the bar M, secured to the upper part of the frame, and the arm P, pivotally and adjustably connected to said bar M, and having its lower end pivoted to the pitman and saw, substantially as herein shown and described.

334,298. NUTMEG-GRATER. JOHN M. SMYTH, Windsor, Ontario, Canada. Filed Apr. 8, 1885. (No model.)



Claim.—In a nutmeg-grater, the tube A, having pan E′, strengthened as at *e*, combined with the grating-cancer F, having flanges *i* and handle H, and the set-screw *h*, passing through said cancer into an orifice in the strengthening-piece *e* and forming a central bearing for said cancer, substantially as and for the purpose specified.

334,299. DECORATING WALL-HANGINGS AND OTHER FABRICS. WILLIAM SCHERPEREEL, New York, N. Y. Filed July 2, 1885. (Specimens.)

Claim.—As a new article of manufacture, a decorated fabric composed of textile material—such as muslin—coated with a solution of shellac, and having a lining of a suitable material—such as paper—said material being caused to adhere by means of paste, and the textile side of the fabric being embossed and painted, as set forth.

334,300. EMBOSSED FABRIC FOR UPHOLSTERY, &c. WILLIAM SCHERPEREEL, New York, N. Y. Filed Sept. 4, 1885. (No model.)



Claim.—1. Embossed goods—such as leather, paper, or textile fabrics—provided with a soft elastic and yielding filling material, substantially as described, occupying the depressions of the embossed pattern, substantially as described.

2. The elastic filling composition, substantially as above described, combined with an embossed fabric by filling therewith the depressions in the back of the fabric, substantially as described.

3. The combination of the embossed fabric, the elastic filling material placed in depressions of the pattern on the back of the fabric, and the lining for covering the filling material, substantially as described.

334,301. VEHICLE-WHEEL. HARLOW C. STARR, and JOHN C. ROSEBAUGH, Fremont, Ohio, assignors to the Fremont Cultivator Company, same place. Filed Nov. 26, 1885. (No model.)



Claim.—1. In a vehicle-wheel, the combination of a tire having conical holes countersunk therein, a series of spokes having a conical head, *b*, at one end and a screw-threaded portion having nuts *b′* and b^2 at the other, a central hub provided with shoulders *c*, and the flanges D on the said hub, each cast with the rim, radial arms, and hub portion integral, forming the openings, and provided with the holes in the rim for the ends of the spokes corresponding with the several openings, *d*, substantially as and for the purpose set forth.

2. In a vehicle-wheel, the combination of a tire having conical holes countersunk therein, a series of spokes having a conical head, *b*, at one end and a screw-threaded portion having nuts *b′* and b^2 at the other, a central hub provided with shoulders *c* and projecting lugs *c′*, and the flanges D, each cast with the rim, radial arms, and hub portion integral, forming the openings, and provided with the holes in the rim for the ends of the spokes corresponding with the several openings, and the notches *d′*, engaging with the said projecting lugs, substantially as and for the purpose set forth.

334,302. SEAL-LOCK. GEORGE H. STEADMAN, Hopewell Cape, N. B., Canada. Filed Oct. 26, 1885. (Model.)



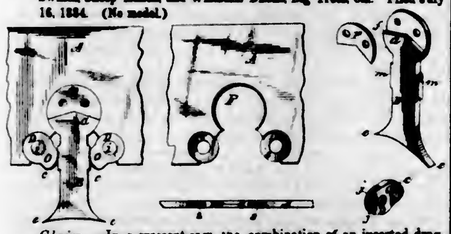
Claim.—1. The combination of the body A, provided with the spur J and recess H, the hasp C, provided with sides to receive the said body, and grooved in the inner faces of the said sides, and provided with a lug, G, fitted to engage the recess H, and a bolt, F, fitted to slide in the body A, and provided with projections F′, shaped to project through the sides of the body to engage the slots in the sides of the hasp, substantially as and for the purpose specified.

2. The combination of the lock-body A, the hasp C, a series of links, substantially as described, connecting the said body and hasp, the body being provided with a recess, H, and the hasp being provided with a lug, G, shaped to engage the said recess, and means for securing the free end of the hasp, substantially as shown and described.

3. The combination of the body A, provided with the spur J and the stud *a*, the hasp C, provided with internally-slotted side pieces, C′, the bolt F, provided with wings F′, the latch K, provided with the block K′ and the wedge-shaped flukes K^2, and pivoted upon the stud *a*, and the stirrup L, loosely hinged to the bolt and provided with wedge-shaped inward projections L′, substantially as shown and described.

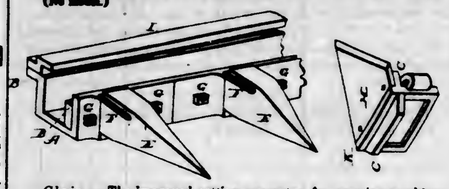
4. The combination of the bolt F, the stirrup L, loosely hinged thereto and provided with wedge-shaped projections L′, the body A, provided with the stud *a*, and the latch K, provided with the block K′, fitted to play through the body and provided with the wedge-shaped flukes K^2, substantially as shown and described, whereby the bolt will be retained until the said block K′ is permitted to project from the body, as and for the purpose specified.

334,303. INSERTIBLE OSCILLATING SAW-TOOTH. JACKSON S. SWANK, Sheep Ranch, and WINDELL DASHE, Big Trees, Cal. Filed July 16, 1884. (No model.)



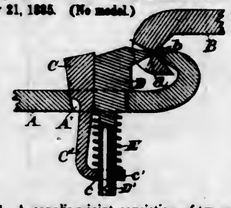
Claim.—In a crescent-saw, the combination of an inserted drag-tooth having a circular base, *a*, and plate *p*, connected to said base, with the grooved projections *m m* on the back of the tooth B, adjusters D D, having eccentric curved arms *c*, adapted to said grooved projections, as described, and for the purpose set forth.

334,304. ENDLESS REAPING-SICKLE. SAMUEL B. SWISHER, Reschdale, and JESSE M. GREENLEY, Waveland, Ind. Filed May 16, 1884. (No model.)



Claim.—The improved cutting apparatus for mowing-machines, consisting, essentially, of the following instrumentalities: the finger-bar A, having a longitudinal groove for the passage of the chain, bearings B B for the flanges of the links, guards E with lateral cutters F, the flanged adjustable holder-bar I, adapted to engage one of the flanges of the cutter-holders, and the cutter-carrying sections, each in the form of a chain-link, with a hook at one end and an engaging bar at the other, the lateral flanges C C to rest upon the bearings B B, the whole constructed and arranged for joint operation substantially as specified.

334,305. COUPLING-JOINT. BENJAMIN F. SWIRE, Fond du Lac, Wis. Filed July 21, 1885. (No model.)

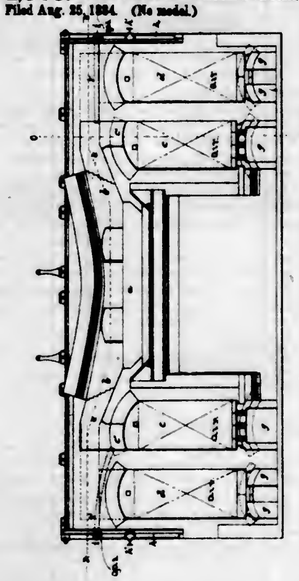


Claim.—1. A coupling-joint consisting of two parts and a locking-key having sharp edges and opposing sharp recesses, whereby a rocking or vibrating bearing is afforded at the points of contact, substantially as set forth.

2. A coupling-joint consisting of the parts A and B, with sharp edges and opposing sharp recesses *a b*, and the locking-key C D, the part D having a similar sharp bearing point or edge rocking upon a bearing point or edge in the part B, substantially as set forth.

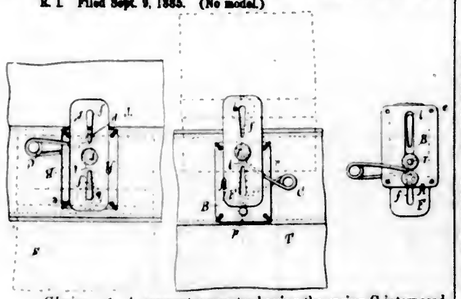
3. A coupling-joint consisting of the part A, having slot A′, and bearing points or edges *a*, the part B, with opposing bearing points or edges *b*, the locking-key C D, the part C having extension C′ with perforated foot *c′*, and the part D having a bearing-point, *d*, and a stem, D′, passing through the perforation in the foot *c′*, and the spring E, substantially as set forth.

334,306. GAS-FURNACE. WILLIAM SWINDELL, Allegheny City, Pa. Filed Aug. 25, 1884. (No model.)



Claim.—The combination, in a metallurgical furnace, of double air-regenerators and their hot-air ports with gas-pipes arranged to supply gas at a point or points above the air-ports leading from one regenerator and relatively below the air-ports of the other regenerator, so that hot air from the first regenerator shall enter the furnace below the current of gas, and hot air from the second regenerator shall be thrown into the furnace over the current of gas, substantially as and for the purposes described.

334,307. **GARMENT-SUPPORTER.** EDWIN THOMPSON, Providence, R. I. Filed Sept. 9, 1885. (No model.)



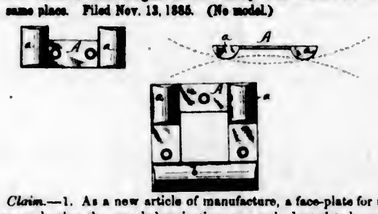
Claim.—1. A garment-supporter having the spring C interposed, giving a yielding medium to said supporter, as specified.

2. In a garment-supporter, the combination, with a slotted base-plate having in said slot a sliding rivet, of a spring having its ends attached, respectively, to said base-plate and rivet, for the purpose described.

3. The combination, with the base-plate B, provided with the slot *l*, in which slides the rivet *r*, of the spring C, having its ends attached to said base-plate B and rivet *r*, respectively, substantially as described.

4. The combination, with the base-plate B, having the pin *p*, and provided with the slot *l*, having therein the sliding rivet *r*, bearing the tape F, of the spring C, substantially as and for the purpose described.

334,308. **FACE-PLATE FOR MARKING-GAGES.** JUSTUS A. TRAUT, New Britain, Conn., assignor to the Stanley Rule and Level Company, same place. Filed Nov. 13, 1885. (No model.)

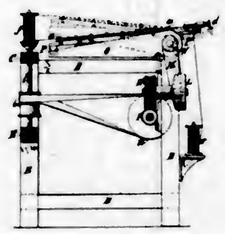


Claim.—1. As a new article of manufacture, a face-plate for marking-gages, having the rounded projections *a a*, and adapted to be secured to the flat side of the sliding block of said gages, substantially as described, and for the purpose specified.

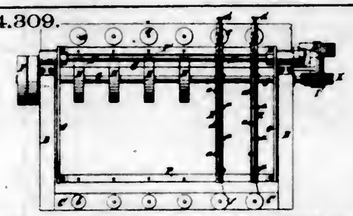
2. As a new article of manufacture, a face-plate for marking-gages, having the rounded projections *a a* and the longer rounded projection *b*, the whole adapted to be secured to the flat side of the sliding block of said gages, substantially as described, and for the purpose specified.

334,309. **MACHINE FOR POLISHING SILK AND OTHER THREAD.** CHARLES B. TRESCOTT, New York, N. Y. Filed June 30, 1884. (No model.)

Brief.—A rectangular frame carrying a series of cross-bars provided with rotatable polishing-cones and tension-regulating device is mounted on a rock-shaft journaled in bearings at each side of said frame and operated by means of a cam and arm to oscillate the frame, whereby the thread is polished and delivered to the receiving-spool mounted on a spindle, which is operated by a belt and pulley from the main driving-shaft.



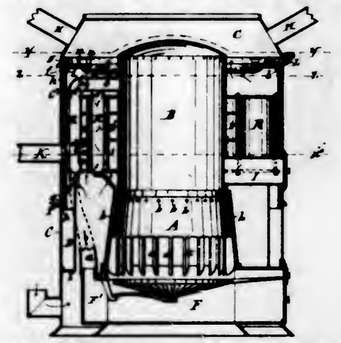
334,309.



Claim.—1. The combination, with a series of spindles having fixed bearings and pulleys and belts for rotating them, of several series of polishing-cones, one series for each of said spindles, a rocking frame carrying said series of cones, and a cam and connections, substantially such as described, for imparting a rocking motion to said frame, whereby the thread passing around said cones to said spindles may have a traverse motion imparted to it, substantially as herein set forth.

2. The combination, with the take-up spindles and their bobbins, and a driving-shaft for producing rotary motion thereof, of a rocking frame and series of polishing-cones mounted thereon, a rock-shaft carrying said rocking frame, a cam and cam-shaft for operating said rock-shaft, and gearing for transmitting motion from said spindle-driving shaft to said cam-shaft, substantially as and for the purpose herein described.

334,310. **HOT-AIR FURNACE.** EDWIN D. VAN STONE, Syracuse, and EDWARD W. TAYLOR, Albion, N. Y. Filed Sept. 16, 1884. (No model.)



Claim.—1. In combination with the fire-pot and combustion-chamber, two radiators, consisting of an endless flue in the form of segments, connected at their ends and arranged side by side around the combustion-chamber, a flue extended from the combustion-chamber and terminating with two branch flues, each of which communicates with one of the radiators at about the center of the length thereof, a damper between said branch flues, and an exit-flue extended from one of said radiators, substantially as described and shown.

2. The combination of the casing C, formed with horizontal joints *g g*, the ring *f*, interposed in the upper joint and provided with hooks *l l*, the ring *f'*, interposed in the lower joint and provided with the flange A, and the lining C', hung on the hooks *l l* and secured to the flange A, substantially as described and shown.

3. In combination with the fire-pot and combustion-chamber, radiators R R, surrounding the combustion-chamber, and the annular apron E, suspended from the bottom of one of said radiators, substantially as set forth and shown.

4. In combination with the fire-pot, combustion-chamber, and casing, the radiators R R, arranged side by side around the combustion-chamber, and the apron E, suspended from the bottom of the outer radiator, with a space between them, and having its base provided with an outward flange, i, extended to the casing, substantially as described and shown.

5. In combination with the radiators R R, the combustion-chamber B, rising above said radiators, and the casing C, the circumferential deflecting-plate *m*, projecting inward from the casing above the radiators, substantially as shown and described.

6. In combination with the fire-pot, combustion-chamber, radiators, and casing, a circumferential deflecting-plate projecting inward from the upper part of the casing and provided with perforations *t t*, substantially as and for the purpose set forth.

7. In combination with the casing C, provided near its top with the joint *g*, the ring *f*, having the annular disk *m*, and trough *n*, formed in one piece with the said ring, substantially as described and shown.

8. In combination with the combustion-chamber B, the radiators R R of segmental form, connected with each other at both ends, the

flue *o*, having branches *o' o'*, connected, respectively, with the top of the two radiators at the center of their length, the damper *p* between the branch pipes *o' o'*, the partition *r* in the inner radiator, R, and the exit-flue K, connected to the outer radiator, all combined substantially as described and shown.

334,311. **SPRING-TRAP.** JOSEPH VASHER, Jr., Ontonagon, Mich. Filed Jan. 30, 1885. (No model.)



Claim.—1. In a jaw-trap, the combination, with the jaws and spring, of a piece held on the bottom piece or plate transversely adjustable, and of the catch-lever provided with the pan and pivoted on the outer end of the said adjustable piece, substantially as herein shown and described.

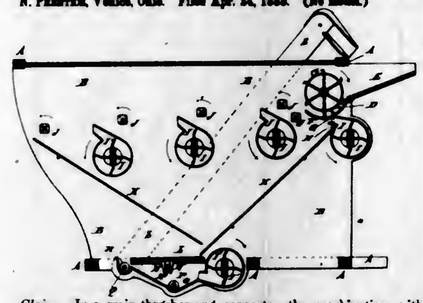
2. In a jaw-trap, the combination, with the jaws and spring, of a catch-lever adjustable a greater or less distance from the jaws, substantially as herein shown and described.

3. In a jaw-trap, the combination, with the jaws and spring, of the slotted piece D, held adjustably on the bottom plate, B, and of the catch-lever K, pivoted on the piece D, substantially as herein shown and described.

4. In a jaw-trap, the combination, with the jaws and spring, of the transversely-adjustable piece D, having its end bent up, and of the catch-lever K, having a hook passed through the upwardly-bent outer end of the piece D, substantially as herein shown and described.

5. In a jaw-trap, the combination, with the jaws and spring, of the slotted piece D, the bolt E, the lever K on the outer end of the piece D, and provided with the lug M, and pan L, substantially as herein shown and described.

334,312. **GRAIN-SEPARATOR.** FRANKIN WADSWORTH and HENRY N. PEMBERTON, Venice, Ohio. Filed Apr. 24, 1885. (No model.)



Claim.—In a grain thrasher and separator, the combination, with the frame and casing A B, the cylinder C, and the concave D, of the adjustable guide-fingers F, the series of fan-blowers I, and the series of rotary beaters J, substantially as herein shown and described.

334,313. **FOLDING BOOK REST AND STAND.** THEODORE C. WALKER, Penfield, and WILLIAM E. CRAYTON, Lima, Ohio. Filed May 26, 1885. (No model.)



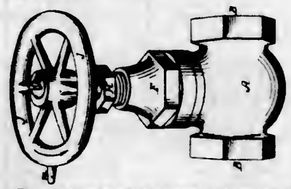
Claim.—1. A folding book rack and stand, consisting, essentially, of folding legs, shelves movably secured to said folding legs, a tilting top, and mechanism, substantially as described, for securing the top to the legs and for retaining it in any desired position, substantially as set forth.

2. In a folding book rack and stand, the combination, with folding legs arranged in pairs, of a shelf pivoted to one set of legs, and having projections for engaging grooves in the other legs, by means of which the shelf may be tilted to fold the legs, and when in a position to perform the functions of a shelf will hold the legs at a fixed point of separation, substantially as set forth.

3. In a folding book rack and stand, the combination, with legs arranged in pairs, annular grooves on the legs bisected by the contact-line thereof, of tilting brackets with arms for supporting a stand-top, rims attached to said brackets for engaging said grooves to form a hinge for the legs, and a pivotal bearing for the brackets and stand-tops, substantially as set forth.

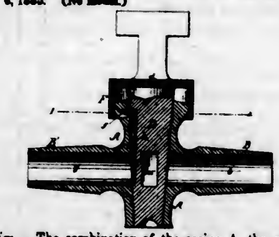
4. In a folding book rack and stand, the combination, with tilting brackets for supporting the stand-top, having laterally-projecting annular rings engaging annular grooves on the legs, forming hinges for the legs and pivotal bearings for the brackets, of notches in one of the brackets, a retaining-pawl for engaging said notches and retaining the stand-top in the desired position, substantially as set forth.

334,314. **VALVE.** JAMES WALSH, Jr., Philadelphia, Pa. Filed Aug. 6, 1885. (No model.)



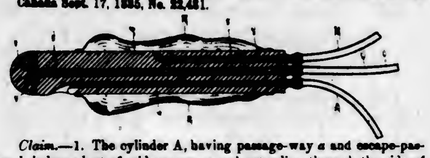
Claim.—The combination of the casing of the valve, the operating-stem longitudinally confined thereto, the nut, the valve having a stem adapted to said nut, a stop whereby the opening movement of the valve is arrested before the operating-stem has made a complete turn, and a handle having a pointer secured to or forming part thereof and rotating therewith, all substantially as set forth.

334,315. **STOP-VALVE.** JAMES WALSH, Jr., Philadelphia, Pa. Filed Aug. 6, 1885. (No model.)



Claim.—The combination of the casing A, the plug D, and the hood F, carried by the plug and fitting snugly to but projecting below the upper portion of the casing A, said hood and casing having passages whereby the waste water is discharged into that portion of the hood which projects below the bearing on the casing, all substantially as specified.

334,316. **SYRINGE.** JAMES W. WARD and GEORGE P. SYLVESTER, Galt, Ontario, Canada. Filed Sept. 7, 1885. (No model.) Patented in Canada Sept. 17, 1885, No. 22,481.



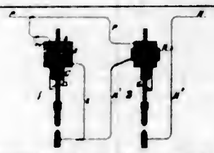
Claim.—1. The cylinder A, having passage-way *a* and escape-passage *b*, independent of said passage *a* and extending through the side of the cylinder, combined with the flexible inflatable bag B, surrounding said cylinder and provided with an inflation-passage independent of said passages *a b*, substantially as and for the purposes specified.

2. The cylinder A, having passage-way *a*, escape passage-way *b*, and inflation passage-way *d*, each independent of the other, combined with the flexible inflatable bag B, surrounding said cylinder, substantially as and for the purposes specified.

334,317. **ELECTRIC LAMP.** FRANK G. WATERHOUSE, Sacramento, Cal. Filed May 23, 1884. (No model.)

Claim.—1. In a system of electric lighting, two lamps arranged in branches of the main circuit, one lamp being of the class known as "series lamps," provided with a main and a shunt magnet which act in combination to maintain the proper separation of the carbons, and the other lamp provided with a main-circuit magnet for causing the separation of the carbons, and a magnet for causing the feed of the carbons

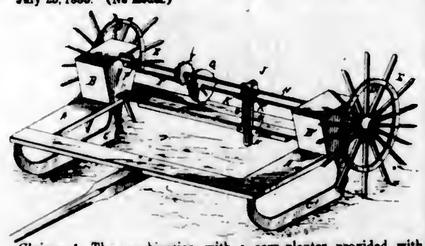
334,317.



included in the combined main and shunt circuit of the series lamp, substantially as described.

2. The combination of two lamps arranged in branch circuits, one of which is provided with two superposed magnet-coils, one in the main branch and another in a shunt circuit, the other being also provided with two superposed coils, one in the main branch circuit, and the other in the combined main and shunt circuits of the first lamp, substantially as described.

334,318. CORN-PLANTER. JOHN P. WEBB, Wakenda, Mo. Filed July 25, 1885. (No model.)

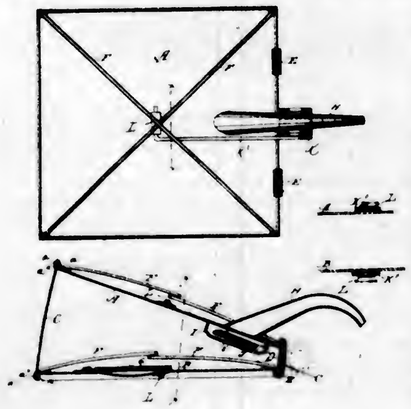


Claim.—1. The combination, with a corn-planter provided with suitable driving-wheels and shaft, of a wheel secured upon said shaft having sets of cogs upon its periphery at equal distances apart, a shaft secured to the dropper and provided with two wheels, one of which is provided with cogs and engages with the wheel upon the driving-shaft and the other wheel is an eccentric or zigzag cam-wheel, and a lever, one end of which engages with said eccentric and the other with the dropper-bar, as described.

2. The combination, with a corn-planter provided with a wheel secured upon a revolving shaft having sets or groups of cogs at equal distances apart on its periphery, of a shaft secured in bearings at the tops of the seed-boxes having two wheels secured thereon, one of said wheels having four sets or groups of cogs on its periphery and a wider and shorter cog between each set of cogs, the other of said wheels being an eccentric or zigzag cam-wheel, and a lever, one end of which engages with said eccentric and the other with the dropper-bar, as described.

3. The combination, with a corn-planter provided with the above-described cog-wheels having sets or groups of cogs upon their peripheries and eccentric or zigzag cam-wheel, of a slotted lever having a cross-piece at its top, two wheels journaled thereon, a slotted standard rigidly secured to the dropper-bar, one end of said lever engaging with said cam-wheels by means of said two wheels, and being secured at the other end to said slotted standard by means of set-screws, as described.

334,319. BELLOWS. JACOB FRED. WHITEHE, Cincinnati, Ohio, assignor to Charles F. Muth, same place. Filed Sept. 11, 1885. (No model.)



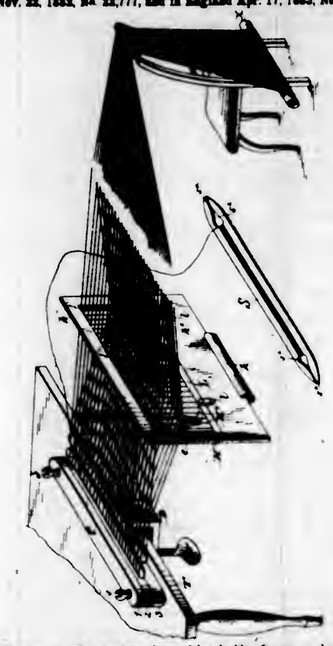
Claim.—1. A bellows comprising main plates of sheet metal bent at their edges, forming grooves or pockets, and the bag or flexible portion having its edges inserted and held in said pockets, substantially as set forth.

2. In a bellows, and in combination with the main plates having loops or eyes opening laterally, a spring bent, forming arms, the extremities of said arms being provided with prongs extending laterally at right angles to the plane of operation of the spring and in opposite directions, and projected into the loops or eyes from the opposite sides thereof, whereby each prongs will be held in their respective eyes by a tension of the spring-arms in a plane at right angles to that which operates the bellows, substantially as set forth.

3. The combination, in a bellows, of the top and bottom plates, the front plate, D, and a brace-cleat, E, substantially as set forth.

4. The combination, in a bellows, with the lower main plate and the inlet-valve supported thereon, of the brace-rods for such plate, located within the bellows and arranged to serve as a stop for the inlet-valve, substantially as set forth.

334,320. HAND-WEAVING APPARATUS. EUGENIA WEHRHEIM, Berlin, Germany. Filed July 24, 1884. (No model.) Patented in Germany Nov. 22, 1883, No. 22,777, and in England Apr. 17, 1883, No. 1,947.



Claim.—1. The combination, with a holder for one end of the warp-threads, a clamping device for securing said holder to a fixed support, and a holder for the other end of the warp-threads, of one or more bars adapted to be inserted in the warp, to serve as a guide against which the weft is beaten up, a heddle-frame constructed to be held in and operated by hand, and a shuttle, also constructed to be operated by hand, said devices constituting a hand-weaving apparatus, substantially as described.

2. The combination, with a fixed support for one end of the warp-threads, and a free support for the other end of said warp-threads, of one or more bars adapted to be inserted in the warp, to serve as a guide against which the weft is beaten up, a heddle-frame constructed to be held in and operated by the hand, and a shuttle, also constructed to be operated by hand, substantially as and for the purpose specified.

3. The combination, with a fixed support for one end of the warp-threads, and a free support for the other end of said threads, of one or more bars adapted to be inserted into the warp, and to serve as a guide against which the weft is beaten up, a heddle-frame constructed to be held and operated by hand, and a shuttle of lenticular form in cross-section, operated by hand to pass the weft-thread through the warp and for beating up the lay, substantially as described.

4. The holder or clamping device for one end of the warp-thread, consisting of the clamping-bars 1 2 3, the latter being provided with a screw-clamp or clamping-bracket, B, and the screws *s*, said parts being constructed for operation substantially as and for the purpose specified.

5. The heddle-frame consisting of a rectangular frame, H, the upper cross-bar, h', of which is provided with a groove, *g*, in its under side, and the lower cross-bar, h^2, with an offset, *o*, in combination with the rack-bars P, rectangular in cross-section, the hooks H', the stirrups E, the locking-bar l_1, and locking-latches *l*, substantially as and for the purpose specified.

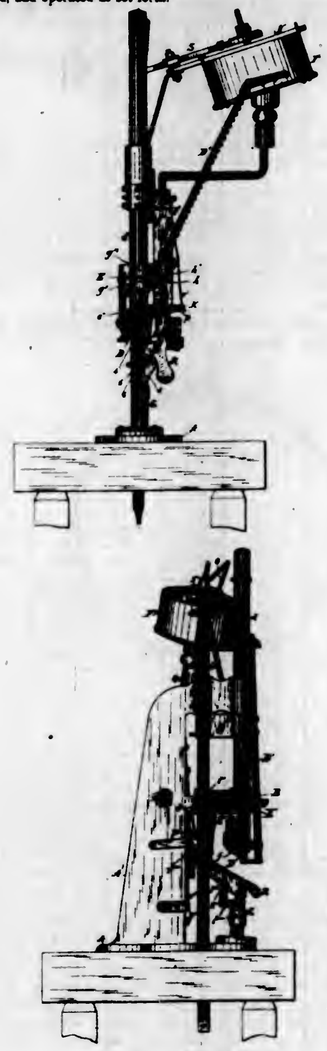
6. The herein-described shuttle, the body of which is of lenticular form in cross-section, having slitted points, the slit of which terminates in an eye, e^3, substantially as and for the purpose specified.

334,321. BUTTON-SETTING MACHINE. ALEXANDER G. WEARNE, Meadville, Pa., and HARCUS J. RANKLEY, Chardon, Ohio, assignors to the Railway Speed Recorder Company, Kent, Ohio. Filed Sept. 2, 1885. (No model.)

Claim.—1. In an automatic button-fastening machine, a button-conductor, in combination with an automatic vibrating button-latch to carry the button from the button-conductor to the fastening-point, and a curved face-cam, *f*, substantially as described.

2. The button-latch provided with a recess to receive the button, and an inclined way, 3, for the button to pass down, as specified.

3. The button-latch provided with spindle *o'* and pin o''', in combination with coiled spring f', to exercise an upward and torsional spring-pressure on said spindle, cam *f*, and button-conductor D', all constructed, arranged, and operated as set forth.





4. The button-conductor D', provided with slots h h', in combination with cut-off fingers g' g'', entering said slots, sliding bar E, moving in ways on the frame, coiled spring h'', cam-bar i'', and plunger *b*, all constructed, arranged, and operated substantially as and for the purpose described.

5. In a button-fastening machine, the plungers *b d*, in combination with the movable yoke *b'*, for adjusting the relation between the plungers, as specified.

6. The fastener-conductor F, in combination with the sliding transverse bar *p*, having arms p' p' and carrying stop-bars p'' p''', cut-off plate *q*, and means for reciprocating the same, all constructed, arranged, and operated as set forth.

7. The fastener-conductor F, in combination with the rectangularly-bent spring q', and transverse bar *p*, provided with cam-projection q'', and devices for reciprocating said bar *p*, as described.

8. The fastener-conductor F, in combination with a supplemental fastener-conductor, F', pivoted so as to have a movement in a vertical arc, substantially as set forth.

9. The supplemental fastener-carrier F, consisting of the two bars k k', pivoted at l l and l' l', to move through both a vertical and horizontal arc, and their inner faces parted by stops to form a conveying-slot, as described.

10. In a button-fastening machine, substantially as described, the supplemental fastener-carrier F', provided with a shield or cover, *j*, secured to one of the bars k', to protect the fastener-heads, as described.

11. In a button-fastening machine, substantially as described, the supplemental fastener-carrier F', having a downwardly-yielding movement, in combination with a thumb-plate, E, to depress said carrier in the act of applying the goods to the anvil, as set forth.

12. In a button-fastening machine, substantially as described, the slotted supplemental fastener-carrier, in combination with a curved stop at 7, or near its juncture with the anvil, to tumble the fasteners head first into the fastener-holder I, as described.

13. The button-conductor D', having its lower end at one side cut away in a curve, 18, in combination with a button-latch, substantially as set forth.

14. The supplemental fastener-carrier F', in combination with the anvil and connecting-link, to limit the vertical movement of the supplemental carrier, as specified.

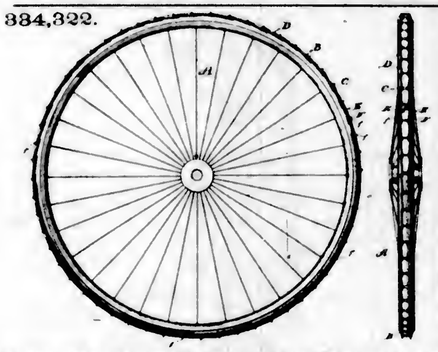
15. The button feeder or hopper having a rotating disk in its bottom, and a ratchet-wheel on the same spindle, in combination with spring-lever S, spring-pawl *s*, cam-bar O, fastened to the top of plunger *b*, and plunger *b*, all constructed, arranged, and operated as and for the purpose described.

16. In a button-fastening machine, substantially as described, a stationary anvil and a fastener-holder having their axial line in an acute angle to the axial line of the fastening-plunger, whereby the fastening-pin is slightly inclined in approaching the fastening or upsetting die, as set forth.

334,322. ICE-TIRE FOR VEHICLE-WHEELS. THOMAS B. WILLIAMS, Orange, Mass. Filed Aug. 27, 1885. (No model.)

Claim.—1. The combination, with a bicycle-wheel tire, of a flexi-

334,322.

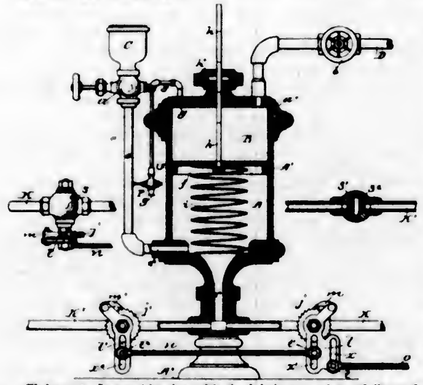


ble supplementary tire comprising a series of pivotal links having prongs at its bent ends projecting beyond the wheel-tire, and the side bars of said links being located on opposite sides of the wheel-tire below the plane of the outer surface of its periphery, substantially as described.

2. As a new article of manufacture, a flexible ice-tire adapted to be removably secured or fitted to the elastic tires of vehicles, and comprising a series of links pivotally connected together, and each link having hooked ends and teeth or prongs *f* projecting beyond the vertical face of the wheel-tire and on each side thereof, substantially as described.

3. As an article of manufacture, a wheel-tire adapted to be removably connected to the elastic tires of bicycles, comprising a series of links flexibly connected together, the side bars of each link being bent around the cross-bar of the adjacent link and upon itself, to provide outwardly-projecting prongs, which extend beyond the periphery of the elastic tire to which it is secured, substantially as described.

334,323. LUBRICATOR. OWEN WILLIAMS, Woonsocket, R. I. Filed Nov. 17, 1885. (No model.)



Claim.—1. In combination with the lubricator, substantially as described, the pipe K, receiving oil therefrom, the valve *s* on said pipe, the ratchet-wheel *j'*, secured to the stem of the valve, the lever *l*, pivoted on said stem and provided with a slot, *x*, the pawl *m*, controlling the ratchet-wheel, and the valve-rod O, actuating the lever, substantially as specified.

2. In combination with the lubricator, substantially as described, the pipes K K', valves *s s'*, ratchet-wheels *j j'*, levers *l l'*, pawls *m m'*, connecting-rod *n*, and reciprocating rod O, all constructed and arranged as and for the purpose specified.

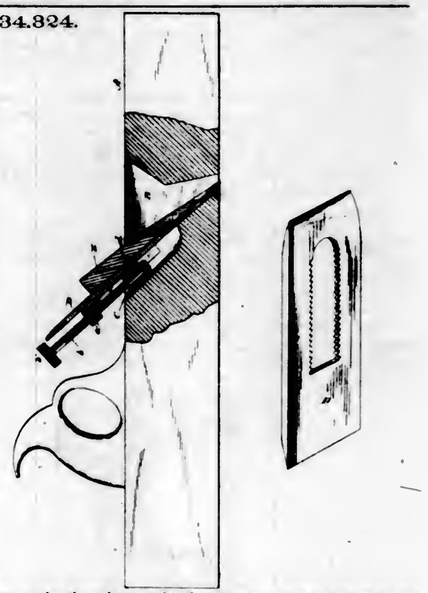
3. In a lubricator, the combination, with an oil-chamber, of one or more pipes leading from the lower portion thereof and provided with valves, ratchet-wheel arranged on the valve-stem, slotted levers carrying pawls, a rod connecting the said levers, so as to regulate their openings, and an operating-rod connecting with one of the said levers, substantially as specified.

4. In a lubricator, the combination, with a chamber divided into an oil and a steam compartment, a discharge-pipe opening from the steam-compartment, an oil-cup communicating with the oil-chamber, and oil-pipes leading from the said oil-chamber, and provided with valves carrying regulating devices, substantially as specified.

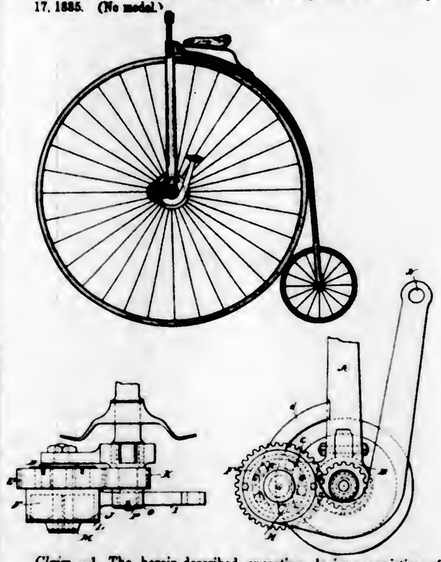
334,324. PLANE. JOHN WOODS, Columbia, Texas. Filed May 16, 1885. (No model.)

Claim.—The frame mounted in the rear of the box of a plane, a screw passing through a cross-bar therein, and a swiveled block on the end of said screw, having a projection with angular sides to engage the slot in the cutter or knife, combined with a cutter or blade with its longitudinal slot provided with notches or serrations in its sides corresponding in outline to that of the angular sides of the projection, substantially as described.

334,324.



334,325. BICYCLE. JOSEPH L. YOST, Chicopee, Mass. Filed Sept. 17, 1885. (No model.)



Claim.—1. The herein-described operating devices, consisting of the combination, with the fork and the axle of a bicycle, of the casting provided with a forward projection, the operating-gears provided with clutch mechanism and mounted in the forward end of said projecting casting, the operating-lever extending rearward to a point within a vertical plane dropped from the saddle, and a gear mounted upon the axle of the bicycle and meshing with the gear at the forward end of the projecting casting, the relation of the parts being such, as described, that the foot end of the operating-lever shall move up and down in a vertical plane dropped from the seat or saddle.

2. The combination, with the fork and axle of a bicycle, of the casting provided with a forward extension having mounted thereon the gear D, having connected therewith the clutch consisting of the shell, the disk provided with the inclined notches, the rollers placed in said notches and bearing against the shell, the coil-spring connected at one end to the pin upon which the clutch is mounted and to the shell at the other, and the operating-lever connected to the clutch and extending rearward to a point beneath the saddle, substantially as described.

3. The combination, with the bicycle, of the casting carrying the gear and clutch and operating-lever and the axle provided with a gear, and the rubber sleeve against which the operating-lever bears.

4. The combination, with a bicycle, of the casting carrying the gear-clutch and operating-lever and the axle provided with the gear and freely-revolving metal sleeve carrying the rubber sleeve, substantially as described.

334,326. FLUID-PRESSURE REGULATOR. WILLIAM J. ACHESON, Denver, Colo. Filed June 3, 1885. (No model.)

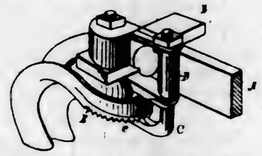


Claim.—1. The valve-chest B B', in combination with the shoulder *f*, the pipe A, the valve-seat *h*, and the pipe C, substantially as described, and for the purposes herein set forth.

2. The valve D, working inside of the valve-chest B B', in combination with the valve-chest B B', the shoulder *f*, the pipe A, the valve-seat *h*, and the pipe C, substantially as described, and for the purposes herein set forth.

3. The valve-chest B B', in combination with the shoulder *f*, the pipe A, the valve-seat *h*, the pipe C, and the valve D, all substantially as described, and for the purposes herein set forth.

334,327. CULTIVATOR. SAMUEL L. ALLEN, Cinnaminson, N. J. Filed Sept. 4, 1885. (No model.)



Claim.—1. The combination of a standard having a notched head, E, with a side bar, A, and with a staple-bolt, C, provided with a tooth or teeth, F, for securing the several parts together.

2. The combination of a standard having a head bound on its under side by a notched flange, E, with a staple-bolt, C, provided with teeth F, the side bar, A, and stay-bar, B, substantially as described.

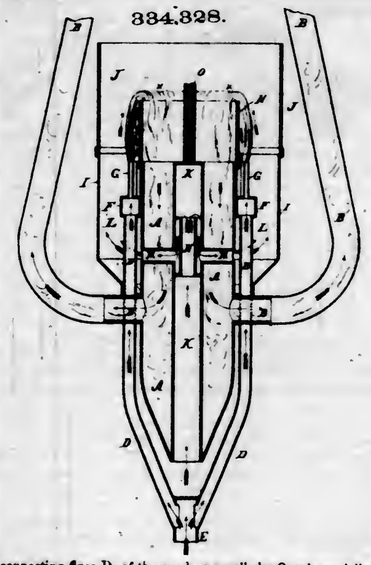
334,328. GAS-LAMP. JOHN W. BAKER, Philadelphia, Pa., assignor to the Regenerative Gas Light Company, Camden, N. J. Filed May 12, 1885. (No model.)

Claim.—1. In a lamp of the class recited, the combination, with an annular burner, of a chamber within the same, open above and closed below, said chamber being surmounted by a cylinder of refractory material, one or more draft-flues communicating therewith, a hollow central air-conduit contained within said chamber, having its lower end open and its upper end closed a casing surrounding the upper part of the burner, and pipes communicating between the latter and said central air-conduit, all constructed and adapted to operate substantially as and for the purpose set forth.

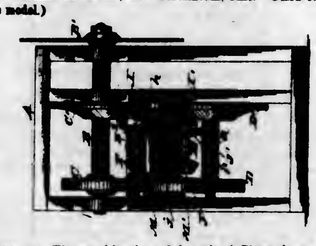
2. The combination of the annular burner, a chamber, such as A, within the same, a cylinder, such as H, of refractory material surmounting said chamber, one or more draft-flues, such as B, communicating with the latter, a hollow centrally-located air-conduit contained within the chamber, having its lower end open and its upper end closed, an air-deflecting cylinder, such as N, placed within said central air-conduit, an external casing, such as I, leaving a space open above and closed below between it and the walls of said chamber, and pipes, as M, communicating between said space and said central air-conduit, all constructed and adapted to operate substantially as and for the purpose set forth.

3. The combination, with the central air-conduit, the chamber A, casing I, with the communicating pipes M, the burner, the flue C, and the connecting-flues D, of the conductor-cylinder O, substantially as and for the purpose described.

334,328.



334,329. SPEED-REGULATOR FOR SHAFTS OF CIRCULAR SAWS, &c. WILLIAM A. BAKER, New Matamoras, Ohio. Filed Nov. 17, 1885. (No model.)



Claim.—1. The combination of the wheel C' on the saw-shaft, the wheel D' on the driving-shaft, the block F, secured in the frame E, and having one edge made on the arc of a circle, the block H, traveling on said edge, the wheels I I', having their shafts journaled in the block H, and arranged to engage, respectively, with the wheels C' and D', and mechanism, substantially as described, whereby the wheels I I' can be engaged to and disengaged from the wheels C' and D', and can be with their shaft moved in the plane forming the centers of the same, substantially as specified.

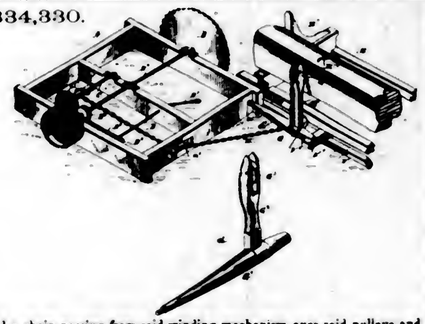
2. The combination of the wheel C' on the saw-shaft, the wheel D' of the driving-shaft, the block F, secured in the frame E, and block H, sliding on the block F, with the rock-shaft G, provided with the arm *g*, the shaft J, journaled in the arms *h* of the block H, the presser-bars *l*, the lever J', arm K, link-rod *k*, and supports and guide-loops g^3, substantially as specified.

3. The combination of the wheels C C' on the saw-shaft, the wheels D D' on the driving-shaft, the fixed block F, the block H, traveling thereon, the wheels I I', having their shaft journaled in the block H, and the shaft J, journaled in the arms *h* of the block H, and having the presser-bars *l l*, pivoted to its ends, with the lever J', the supporting and guide loop g^3, the arm K on the rear end of the lever J', the link-rod *k*, the rock-shaft G, provided with the arms *g g'*, the bar M, pivoted to the arm *g'*, and the friction-wheel M', pivoted to the bar M, substantially as specified.

334,330. LOG-TURNER. HENRY T. BAKER, Deanerville, Ohio. Filed June 19, 1885. (No model.)

Claim.—1. The combination, with a saw-mill frame having a suitable hoisting or winding mechanism, of a log-turner consisting of a horizontal body portion and an upright arm rigidly secured thereto, the upper end of said arm being provided with a pulley, a pulley secured beneath said horizontal body portion, and between it and the log-carriage,

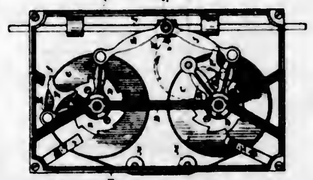
334,330.



and a chain passing from said winding mechanism over said pulleys and around the log, substantially as and for the purpose set forth.

2. The combination, with a portable saw-mill provided with a suitable hoisting or winding mechanism, of a log-turner consisting of a horizontal body portion and an upright arm secured thereto, one end of which body portion rests in a hole in the saw-mill frame and the other rests upon a support without the frame, the free end of said arm being slotted and provided with a pulley, a pulley journaled horizontally in the end of the saw-mill frame, a pulley secured to the track below said body portion, and a chain passing from said winding mechanism around said pulleys and around the log, substantially as and for the purpose set forth.

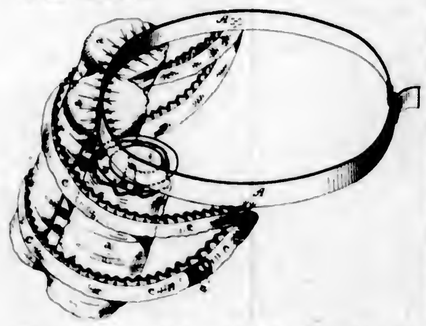
334,331. STREET-INDICATOR FOR CARS. THOMAS BEAVER and WILLIAM G. JEWITT, Toronto, Ontario, Canada. Filed Apr. 9, 1885. (No model.)



Claim.—1. In a street-indicator for cars, the combination, with the rollers C C, carrying the name cloth or band, and having secured thereto the oppositely-arranged ratchet-disks D D, of the bell-crank levers E K, pivoted to the axes *a a* of the rollers, the connecting-links G J, pawls F F', pivoted to the free end of one arm of each bell-crank lever, and the vertical actuating-rod I, substantially as described.

2. The combination, with the rollers C C, bell-crank levers E K, and pawls F F', of the links G J, connecting said levers with vertical rod I, the box H, and pin *g*, extended and projecting outward, to serve as a handle by which rod I can be actuated, substantially as described.

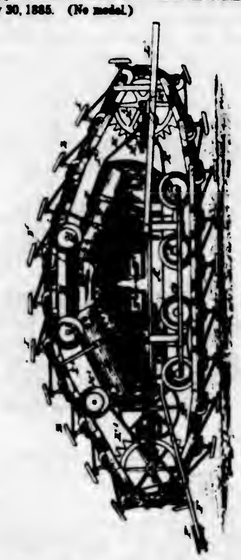
334,332. BUSTLE. ANNIE MACY BELDEN, Fairbury, Ill. Filed Oct. 10, 1885. (No model.)



Claim.—1. The combination of the belt A, the pockets *a*, connected thereto, the springs B, placed in the pockets, and the springs G, extending across the outer sides of the springs B and connected at their ends to the belt, the ends of the springs G being made to form supports for the skirts beyond the front sides of the springs B, substantially as described.

2. The combination of the belt A, the pockets *a*, connected thereto, the springs B, the cords D, the transverse pockets C, and the springs G, placed in the pockets C, the front ends of the springs G being fastened to the belt in advance of the springs B, substantially as set forth.

334,333. TRACTION-ENGINE. BENJAMIN S. BENSON, Baltimore, Md. Filed July 30, 1885. (No model.)



Claim.—1. In a traction-engine, the combination of two obliquely arranged cylindrical boilers having their inner ends the highest, a fire-box beneath the same, the sprocket-wheels at the ends of the boilers, and an endless track-chain with feet passing beneath, around, and over the boiler, and guide and truck wheels for the chain, substantially as and for the purpose described.

2. In a traction-engine, the combination of two obliquely-arranged cylindrical boilers having their inner ends the higher and provided with tubes through the same and smoke-boxes both at their ends and in the middle, a fire-box with partition arranged beneath the boilers and communicating with the end smoke-boxes, double doors for the fire-boxes, sprocket-wheels at the ends of the boiler, trucks beneath the same, and an endless track-chain disposed around the boiler and wheels for supporting the same, substantially as described.

3. In a traction-engine, the combination of two obliquely-arranged cylindrical boilers having their inner ends the higher and provided with tubes through the same, a fire-box beneath the same with hollow sides forming water-legs communicating with the boiler, the sprocket-wheels at the ends of the boiler, trucks beneath the same, and the endless track-chain passing around the boiler, substantially as shown and described.

4. In a traction-engine, the combination of the two obliquely-arranged cylindrical boilers having their inner ends the highest, the fire-box beneath the same, the supporting-trucks at the outer ends of the boiler, the sprocket-wheel, the endless track-chain disposed around the boiler and sprocket-wheels, and the step-irons and platforms arranged on the side of the boilers, substantially as shown and described.

5. In traction-engine, the combination, with the endless track-chain and the steam-boiler, of the supporting-trucks consisting of flanged wheels D, arranged in pairs upon trunnion-shafts D', the pendent bars D^2, the horizontal longitudinal bars D^3, supported in the pendent bars at their ends, and the cross bar or plate D^4, with vertical bolt or swiveling center, substantially as described.

6. In a traction-engine, the combination, with the boiler frame or body of the engine, of a bail-shaped draft-bar having its two ends attached to the rear of the boiler-frame and its middle portion bent to the curve of a circle struck from the center of the engine, a sliding draft-block secured upon the draft-bar, and an endless track-chain arranged to revolve inside the draft-bar, as and for the purpose described.

7. In a traction-engine, the combination, with the boiler and the endless track-chain, of the compound wheel $E' E^2$, having one end, E^2, formed as a sprocket-wheel and the other end, E', formed as a gear-wheel, the wide pinion E^3, and the driving-gear, substantially as described.

8. In a traction-engine, the combination of the track-chain, the laterally-adjustable driving sprocket-wheel provided with gear-teeth, a set of driving-gears, and a driving-pinion made of a width to accommodate the lateral adjustment of the sprocket-wheel without being disconnected from its gear-teeth, as shown and described.

9. A traction-engine having an endless revolving track-chain and two sprocket-wheels, one for driving the chain and the other for guiding it, both of said sprocket-wheels being made laterally adjustable, as and for the purpose described.

10. The combination, with the boiler-frame in a traction-engine, the sprocket-wheels, and the endless track-chain carried thereby, of a laterally-swinging frame pivoted vertically to the boiler-frame and carrying the front sprocket-wheels, and a front pilot connected to the adjustable frame, for guiding or deflecting the same to the right or left, as described.

11. The combination, with the boiler-frame, the track-chain, and the sprocket-wheels, of an adjustable support, H^4, carrying one of the sprocket-wheels, the frame H, and the screw-rods H^3, arranged parallel to the plane of the sprocket-wheel, and adapted to adjust the sprocket-wheel, substantially as and for the purpose described.

12. In a traction-engine, the combination, with the endless draft-chain with track-sections on the side, of cross-shafts bearing supporting-feet, the said cross-shafts being arranged in the draft-chain at points outside of or between the joints of the links, to prevent friction and loss of power, as described.

13. The combination, with the boiler-frame and sprocket-wheels, of the track-chain consisting of a middle draft-chain, cross-shafts having bent ends with supporting-feet, the side track-sections having one of their ends fastened to the cross-shafts and their other ends formed with hooks that embrace the next cross-shaft, and diagonal braces extending from the supporting-feet of one cross-shaft to the middle parts of the next cross-shaft, as and for the purpose described.

14. The combination, with the cross-shafts and the side track-sections in the track-chain, of the two clamp-pieces *a a'*, having lip *d*, the clamp-pieces *b b'*, having a recess for hooking over the lip *d*, and semi-circular flanges, and the collar *c*, the said clamp-pieces being clamped upon the cross-shaft and forming with the collar a chair or coupling for loosely connecting the cross-shaft with the joint of the side track-sections, as described.

15. In a traction-engine, the combination, with the boiler and sprocket-wheels, of the track-chain having its draft-link formed with beveled lugs projecting at right angles to the links, to cause the teeth of the sprocket-wheel to more certainly enter the spaces of the draft-chain, as shown and described.

16. In a traction-engine, the combination of the boiler, the laterally-adjustable sprocket-wheels, and the draft-chain having its links formed with beveled guide-lugs projecting at right angles to the links, to prevent the lateral movement of the sprocket-wheels from dislodging the chain, as described.

17. The combination, with a traction-engine having an endless track-chain and a laterally-adjustable front sprocket-wheel, of a pilot or guide truck, and a pilot-beam fulcrumed at its rear end to an attachment of the engine and connected by a bar with the adjustable carrying-frame of the sprocket-wheel, whereby the lateral motion or turning of the pilot is transmitted through the pilot-beam as a lever, and is made to correspondingly deflect the sprocket-wheel, as described.

18. The combination, with a traction-engine having an endless track-chain and a laterally-adjustable front sprocket-wheel, of a pilot or guide truck, and a pilot-beam fulcrumed at its rear end to an attachment of the engine, and a bar for connecting the pilot-beam to the sprocket-wheel frame, which connecting-bar is made adjustable in the direction of its length, to increase or diminish the distance between the beam and the sprocket-wheel, as described.

19. The combination, with the traction-engine having a laterally-adjustable front sprocket-wheel, of a front pilot having a rolling colter-wheel, a vertically-pivoted axle carrying the same, a pilot-beam, and parallel screw-rod, and an arm and sliding loop attached to said axle and operated upon by the screw-rod, for enabling the engineer to change the plane of the colter and guide the pilot, as set forth.

20. The combination, with the traction-engine having a laterally-adjustable front sprocket-wheel, of a front pilot or truck having a vertically-pivoted axle, a rolling colter mounted in a trunnioned frame on said axle, and a cord extending from said trunnioned frame to the engine, for raising and lowering the colter, a pilot-beam and screw-rod extending to the engine, and an arm and loop attached to the pilot-axle and acted upon by the screw-rod, to deflect the same, substantially as and for the purpose described.

21. In a pilot-steering apparatus, two pulley-faced wheels hung in a diagonal position, so that their square faces will press against the side walls of a guide-furrow, in combination with two square-faced wheels, one running in the bottom of the guide-furrow, so as to hold the diagonal wheels from coming in general contact with the bottom or floor of the furrow, but allowing them to take a firm grip on one or the other sides of the guide-furrow, the other square-faced wheel running on the unplowed ground, and all connected to the pilot-beam, substantially as described.

334,334. BOTTLE-STOPPER. RUDOLPH BLOEMER, Scranton, Pa. Filed Oct. 10, 1885. (No model.)

334,334.



Claim.—1. In a bottle-stopper, the combination, with the bail, of the stopper having the locking-lever pivoted to its upper side on an axis transverse to the plane of the bail, adapted to engage the under side of said bail and press the stopper firmly to its seat when swung upward, substantially as described.

2. In a bottle-stopper, the combination, with the bail having the shoulder or depression near its center, of the stopper and the locking-lever pivoted to its upper side on an axis transverse to the plane of the bail, and adapted to engage the under side of the bail and press the stopper firmly to its seat when swung upward, said depression or shoulder preventing the accidental displacement of the lever, substantially as described.

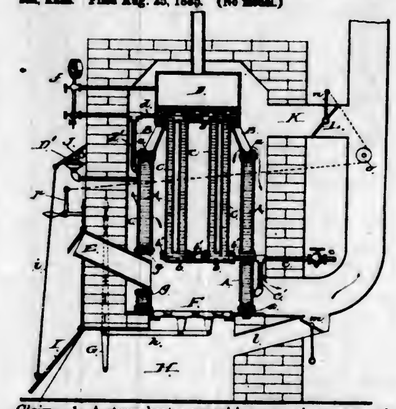
3. In a bottle-stopper, the combination, with the bail, of the stopper, the locking-lever pivoted thereto on an axis transverse to the plane of the bail and having the end extended beyond the point of engagement with the bail, so as to permit of its being operated more readily, substantially as described.

4. The combination, with the bail, of the stopper having the ears or loops for embracing the sides of the bail, and the locking-lever pivoted thereto on an axis transverse to the plane of the bail, and adapted to engage the under side of the bail to fasten the stopper in position, substantially as described.

5. The combination, with the bail, of the stopper and the locking-lever constructed of a single piece of wire, with the depending loop for engaging the bail pivoted thereto on an axis transverse to the plane of the bail, substantially as described.

6. The combination, with the bail, the stopper having the lugs on its upper side and the loops at its ends for embracing the sides of the bail, of the locking-lever pivoted on an axis transverse to the plane of the bail, constructed of the single piece of wire, with its ends turned so as to form bearings in the lugs on the plate, and the loop for engaging the under side of the bail, substantially as described.

334,335. UPRIGHT STEAM-HEATER. WILLIAM F. BOSWELL, Atchison, Kans. Filed Aug. 25, 1885. (No model.)



Claim.—1. A steam-heater comprising a continuous water-jacket, a steam-dome, a superheater, brackets for supporting the superheater above and within the water-jacket, the circulating-tubes in direct communication with the water-jacket and superheater, and the annular head to which the tubes are bolted, substantially as herein described.

2. In a steam-heater, the combination, with the water-jacket having cast iron or steel heads bolted thereto, of the superheater or dome, the braces which support the superheater, and the circulating water-tubes C within the water-jacket, whereby the heat from the fire circulates around on the outside of the tubes and establishes a continuous circulation between the water-jacket, the superheater, and the tubes, substantially as herein described.

3. The combination, with the water-jacket, the braces on the top thereof, and the superheater supported above and within said water-jacket, of the plates *b'*, the tubes C, and the head *b*, beneath the tubes, whereby a chamber is formed and the lower ends of the tubes brought in direct communication with each other, substantially as herein described.

4. The combination of a water-jacket, the superheater, the braces for supporting the same, the circulating water-tubes, and the head *b*, hav-

ing an annular chamber with which the lower ends of the tubes communicate, substantially as herein described.

5. The water-jacket, the superheater supported thereon, and the tubes C, in combination with the lower pipes, *c c'*, connecting the tubes and water-jacket, and the upper connection, *d e*, between the latter and the superheater, and a suitable water and steam gage, substantially as herein described.

334,336. **BRUSH.** JOHN F. BOWDITCH, Revere, Mass. Filed Feb. 20, 1885. (No model.)

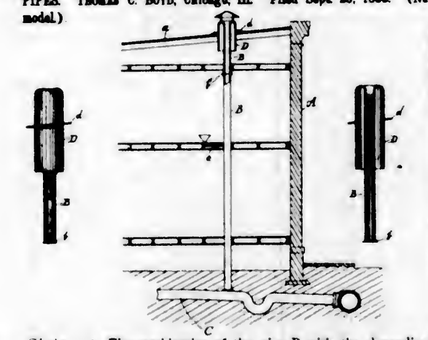


Claim.—1. The combination of the ferrule *d*, the mass *c* of bristles extending within it, and the two strips *a a*, inserted in the said ferrule and mass and connected thereto by nails *e e*, driven into them and the two strips, and clinched by a metallic plate, *b*, placed between such strips, with a wedge, *f*, driven between such strips, so as to force them asunder within the mass of bristles and tighten it in the ferrule.

2. The combination of the ferrule having channels and wires therein in the lower parts of its sides, as described, the mass of bristles extending within it, and the two strips *a a*, inserted in the said ferrule and mass and connected by nails driven into them and the two strips, and clinched by a metallic plate placed between the latter with a wedge, *f*, driven between such strips, so as to force them asunder and the bristles against the sides of the ferrule and the wires placed therein, all being substantially as set forth.

3. The combination of the handle placed and fixed in the upper part of the ferrule, with such ferrule and its mass of bristles, and with the two strips *a a* and the wedge inserted between them, such strips, ferrule, and mass being connected by nails extending into them and clinched against a metallic plate placed between the strips, all being substantially as represented.

334,337. **FROST-PROOF VENTILATOR FOR SOIL AND OTHER PIPES.** THOMAS C. BOYD, Chicago, Ill. Filed Sept. 28, 1885. (No model.)

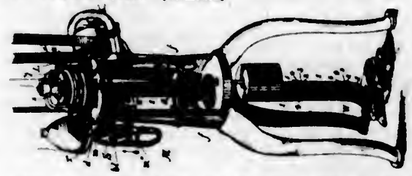


Claim.—1. The combination of the pipe B with the depending flange D, substantially as described, and for the purposes specified.

2. The combination of the ventilating-pipe B with the depending annular flange or case D and roof-flange *d*, substantially as described.

3. As a new article of manufacture, a section of ventilating-pipe having a return-case surrounding the same of sufficient length to extend beneath a roof from which said pipe may be protruded, said case being open at the bottom and having an air-space between it and said pipe, substantially as specified.

334,338. **KNITTING-MACHINE.** JAMES L. BRANSON, Philadelphia, Pa. Filed Oct. 20, 1883. (No model.)



Claim.—1. The combination, with the studded wheel A, adapted to be operated by the web W, the sprocket-wheel S, the pattern-chain M, the shaft *b l*, the trigger T, and the cam-pieces *g c* D, of the cam-cylinder and means to revolve it, the knockdown-pin K, the pawl P, the ratchet-ring having recesses or pockets *l*, the cams *i' i²*, and the stitch-cam provided with a pin, *q*, all arranged to operate substantially as specified.

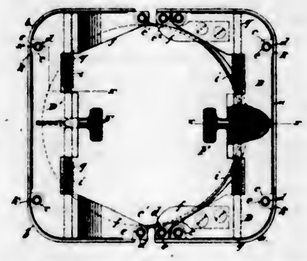
2. The combination, with the cam-cylinder, of the ratchet-ring R R, fitting loosely thereabout and provided with a groove, *z*, a recess, *r'*, and a space, *r²*, the mechanism for actuating the said ratchet-ring, and the controlling-lever L, pivoted on said cam-cylinder, all arranged to operate substantially in the manner specified.

334,339. **STOCKING-BLANK.** JAMES L. BRANSON and HENRY BRINTON, Philadelphia, Pa. Filed Apr. 24, 1885. (No model.)



Claim.—A stocking-blank having at each end a tuck-stitched leg portion connected to an intermediate ribbed foot portion by a succession of tapering alternate ribbed and tuck stitches, as set forth.

334,340. **MACHINIST'S JIG.** JAMES BRADY, Brooklyn, N. Y. Filed June 15, 1885. (No model.)



Claim.—1. In a machinist's jig, the combination, with the jig plate or frame, of two or more bearing bolts or clamps projecting from the plate in different directions, and adapted to grasp the sides of the casting or part to be fitted with an expanding and contracting device for operating the said bolts simultaneously, substantially as and for the purpose herein set forth.

2. In a machinist's jig, the combination, with the jig plate or frame, of two or more oppositely or differently directed bearing-bolts projecting from the plate, and adapted to grasp the casting or article to be fitted with an expanding and contracting device for moving the bolts equally in opposite directions, whereby the jig-plate is set central in or on each casting, substantially as herein set forth.

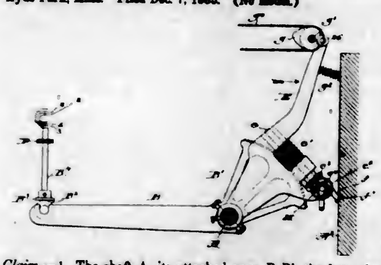
3. The combination, with a jig-plate, such as D, having drill-holes *s*, of the sliding bolts *g g*, protruding from the jig-plate in opposite directions, and a manipulating device for moving the bolts in or out, substantially as herein set forth.

4. A jig-plate provided with two or more bearing-bolts projecting therefrom in different directions, and formed with toothed or roughened ends to bear upon the casting, in combination with a manipulating device common to both bolts to project or retract the same, substantially as set forth.

5. The combination, with a jig-plate, of the bolts *g g* and expanding and contracting screw F, arranged and operating substantially as and for the purpose set forth.

6. The combination, with the jig-plate D, of the bolts *g g*, springs *i i*, and screw F, arranged and operating substantially as and for the purpose set forth.

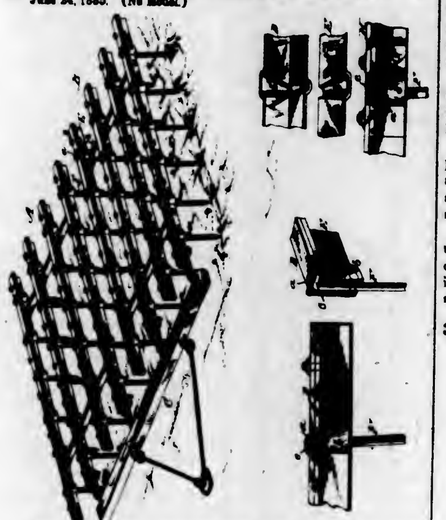
334,341. **MECHANICAL MOVEMENT.** WILLIAM C. BRAINERD, Hyde Park, Mass. Filed Dec. 7, 1885. (No model.)



Claim.—1. The shaft A, its attached arms B B', the latter having a worm-toothed segment, and a lever mounted loosely upon the said shaft and provided with a worm in engagement with the said segment, combined with means to intermittingly rotate the said worm and to vibrate the lever carrying it, substantially as described.

2. The shaft A, the attached arms B B', the latter having a segmental series of worm-teeth, and a vibrating lever mounted loosely upon the said shaft and provided with a shaft having a worm, and a bevel-gear, combined with a ratchet, and with means to move the worm-carrying lever, whereby the worm is rotated one step at each throw of the lever in one direction, substantially as described.

334,342. **HARROW.** CHARLES A. BRIGHTON, Rock Island, Ill. Filed June 24, 1885. (No model.)



Claim.—In a harrow, the combination, with the teeth thereof having angular heads, of an inverted L-shaped beam composed of two L-shaped plates suitably connected together and formed with an angular groove flaring at its lower end, substantially as and for the purpose set forth.

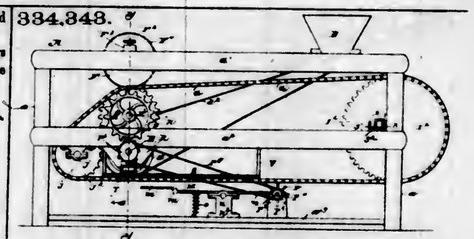
334,343. **CIDER-MACHINE.** MARTIN K. BRUBAKER, Mount Joy, Pa. Filed Nov. 18, 1885. (No model.)

Claim.—1. In a cider-machine, the combination, with the traveling belt, of a vibrating knocker-arm and a stop arranged on the opposite side of the belt to the arm, to limit the movement of the belt when acted on by the said knocker-arm, substantially as described.

2. In a cider-machine, the combination, with the traveling belt, of a vibrating knocker arranged beneath the belt and a suspended stop-frame arranged on the opposite side of the belt, substantially as described.

3. In a cider-machine, the combination, with the traveling belt, of a vibrating knocker-arm having a series of fingers and a stop-frame comprising a series of rods, substantially as described.

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4. In a cider-machine, the combination, with the traveling belt, of a suspended stop-frame having a series of rods, a vibrating knocker-arm having fingers and secured upon an oscillating shaft, a retracting-spring connected to the arm, and a rotating wheel having radial arms to strike and actuate the knocker-arm, substantially as described.

5. In a cider-machine, the combination of the main frame, a conveying-belt, a perforated fixed pressure-roller journaled in the frame, a yielding pressure-roller, idle-drums arranged at opposite ends of the machine for supporting the belt, one of said drums being arranged below the plane of the fixed pressure-roller, a driving-shaft geared to said fixed roller, and a hopper for receiving the extracted juices, the fixed roller having gear-wheels, with which actuating-chains of the conveying-belt mesh to drive said belt, substantially as described.

6. In a cider-making machine, the combination of a traveling belt, a knocking mechanism acting on one side of the belt, and a limiting-stop arranged on the opposite side of the belt to the knocking mechanism, substantially as described.

7. In a cider-making machine, the combination of a traveling belt, an oscillating knocker-arm having a series of fingers at one end, and a rotating drive-wheel provided with radial arms to act on the free end of the knocker-arm, substantially as described.

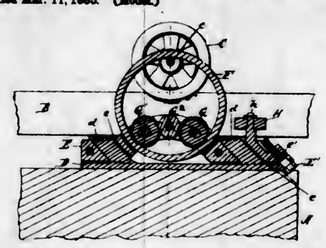
8. In a cider-machine, the combination of a traveling belt, an oscillating knocker-arm having beater-fingers at one end, an independent drive-wheel having radial arms to act on the free end of the knocker-arm, and a spring for normally retracting the beater-fingers of the knocker-arm out of engagement with the belt, substantially as described.

9. The combination of the main frame, a rotating lower pressure-roller having gear-wheels, an upper pressure-roller, and an endless belt having chains that engage and are actuated by the gear-wheels of the lower pressure-roller, substantially as described.

10. The combination of a main frame, the pressure-rollers, a supply-hopper having a reducing-cylinder, an endless belt traveling between and actuated by said rollers, a receiving-hopper having a discharge-spout, an oscillating spring-actuated knocker-arm, a drive-wheel therefor, and a stop-frame, substantially as described.

11. The combination of a main frame, a rotating perforated pressure-roller, an adjustable pressure-roller, a traveling belt having drive-chains at its side edges and an intermediate fabric section, and a receiving-hopper located below the belt and perforated pressure-roller, substantially as described.

334,344. **DOOR-HANGER.** CHARLES W. BULLARD, Chicago, Ill. Filed Mar. 11, 1885. (Model.)



Claim.—1. In a door-hanger, the combination, with the door and carrying-wheels, of a ring or segment of a ring mounted to rotate upon a suitable support attached to the door, and suspended upon the axle of the carrying-wheels, substantially as and for the purposes specified.

2. In a door-hanger, the combination, with the door and carrying-wheels, of a ring or segment of a ring resting upon the axle of the said wheels, and mounted to rotate on a suitable support in a yoke adjustably connected to the door, substantially as and for the purposes specified.

3. The combination, with the wheels C, of the ring F, supported on their axle and having one or more radial arms, *f*, carrying the bearing *f'*, mounted on an axis, *e*, in a yoke, E, connected with the door, substantially as and for the purposes specified.

334,345. ATTACHMENT FOR ROCKING-CHAIRS. WILLIAM I. BUNKER, Chicago, Ill. Filed Nov. 3, 1884. (No model.)



Claim.—1. A bracket for platform rocking-chair attachments, having side and middle projections for securing one end of the spring, and at least one of said projections having a shoulder and being adapted to be inserted between the coils of the spring, said shoulder being on the inside of the end coil when the spring is in place, whereby the spring is held in place and prevented from being drawn away from the rockers and base-rails of the chair, substantially as described.

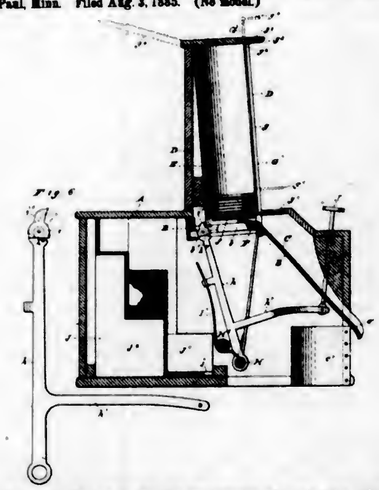
2. A bracket for platform rocking-chair attachments, having side projections to partially embrace or encircle the sides of the end coil of the spring, and a middle projection, the middle projection having a shoulder and being adapted to be inserted between the end coils of the spring, said shoulder being on the inside of the end coil when the spring is in place, whereby the spring is held in place and rigidly attached to the upper and lower parts of the chair, respectively, substantially as described.

334,346. ATTACHMENT FOR ROCKING-CHAIRS. WILLIAM I. BUNKER, Chicago, Ill. Filed Dec. 21, 1885. (No model.)



Claim.—A bracket for platform rocking-chair attachments, having side and middle shoulders for securing one end of the spring, the side shoulders being on the inside and the middle shoulder being on the outside of the end coil when the spring is in place, substantially as described.

334,347. SELF-REGISTERING CASH-BOX. THOMAS CARNEY, St. Paul, Minn. Filed Aug. 3, 1885. (No model.)



Claim.—1. In a cash-box, the combination of a coin-tube, a key, a lever, and a pivoted head, the coin-tube having a slotted bottom, the lever connected with the key, and the head pivoted to the upper end of the lever and adapted to be moved in the slot of the tube, substantially as specified.

2. The combination, in a cash-box, of a coin-tube, a key, a pivoted spring-lever, and a head, the tube having a slotted bottom for the passage of the head, the key connected with the pivoted lever, which latter has its upper end beveled forwardly, the head also beveled forwardly on its under side and hinged to the said lever, whereby the downward movement of the key will carry the hinged head through the slot of the coin-tube and remove the lowest coin therefrom, substantially as specified.

3. The combination, with a coin-tube, of a pivoted lever, a hinged head, a finger-key, and a chute, the horizontal portion of the chute being slotted beneath the coin-tubes, the key connected with the pivoted lever, and the head hinged to the upper end of the said lever, whereby pressure upon the key will cause the hinged head to move in the slots of the chute and carry the lowest coin in the tube out upon the chute, substantially as specified.

4. In a cash-box, the combination of the main casing A, the casting B, provided with the slots *b*, and having the inclined plane and chute formed upon it, the vertical casing D, the casting E, provided with the coin-tubes *c*, the casting F, provided with the slots *f*, the rods H H', the levers *h*, provided with the arms *h'* and adapted to have their upper ends push the lower coin of any box out of the latter, the keys I, and the springs I', substantially as specified.

5. In a cash-box, the combination, with the coin-tubes and the casting B, having the inclined plane and chute formed thereon and provided with the slots *b* and stops B', of the keys I, rods H H', levers *h*, provided with the arms *h'*, springs I', and heads *i*, pivoted to the upper ends of the levers *h*, as specified.

334,348. SULKY-PLOW. ARAD F. CASE, Twin Bluffs, Wis., assignor of one-half to Eugene M. Case, same place. Filed Oct. 12, 1885. (No model.)



Claim.—1. The combination, with the axle having the wheel at one end and formed at the other end with the vertical bearing, and the plow having the upwardly-pointing hook projecting from its standard within the plow-body, of the upright secured at its upper end in the vertical bearing on the end of the axle, and having an eye at its lower end in which the upwardly-pointing hook at the rear end of the plow-stand rocks, for the purpose set forth.

2. In a sulky-plow, the combination of a wheeled axle having an upright secured at its upper end to the end of the axle, said upright having an eye at its lower end, a plow-body having an upwardly-pointing hook projecting from the standard within the plow-body and rocking in the eye of the upright, an arm projecting upward from the rear portion of the plow, a hand-lever fulcrumed upon the axle and having means for adjusting it, and a connecting-rod pivoted at its ends to the lever and to the upwardly-projecting arm, as and for the purpose shown and set forth.

3. In a sulky-plow, the combination of a frame having a wheel at the end of the axle, a plow swiveled to the other end of the axle by means of an upright movably secured at its lower end within the body of the plow, and having a rearwardly-projecting bracket provided with a vertical bearing at its rear end, and having an upwardly-projecting rearwardly-curved bracket at the forward end of the beam provided with a vertical bearing at its end, a caster-wheel having its frame swiveled in the bearing of the rearwardly-projecting bracket, and a caster-wheel having the upper end of its forked frame swiveled in the bearing of the forward bracket and adjustable in the same by means of washers, as and for the purpose shown and set forth.

4. In a sulky-plow, the combination of a frame having one wheel at one end of its axle and having the other end of the axle formed into a vertical bearing, an upright swiveled at its upper end in the said bearing, a plow movably attached with its body to the lower end of the upright, and a chain secured to the forward end of the plow-beam and to the end of the axle, as and for the purpose shown and set forth.

5. The combination of the forked frame for the caster-wheel, wooden boxes secured at the lower ends of the said frame and having bores extending a distance into the boxes formed with lubricating perforations, sleeves secured at the outer ends of these bores, and the axle provided with washers secured upon it and fitting and turning within the sleeve, as and for the purpose shown and set forth.

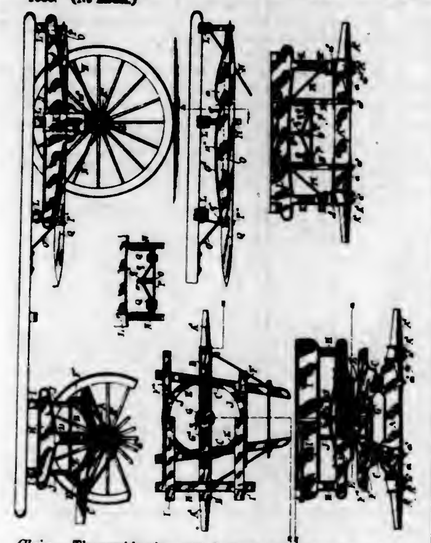
334,349. BUTTON OR STUD. THOMAS B. CLEVELAND, Newark, N. J. Filed May 15, 1885. (No model.)



Claim.—1. In a button or stud, the combination, with the front *a*, having the spring-socket formed of the two parts *c c'*, constructed and attached to the front, as described, of the cross-bar *b*, having a square stem fitted to the spring-socket, and operating substantially as and for the purpose set forth.

2. In a button or stud, the combination of the front *a*, having the spring-socket formed of the two parts *c c'*, as described, the cross-bar *b*, having the perforated square stem *d*, and the pin *e*, provided with head *f* and secured in the stem, the whole being arranged and operated as and for the purpose set forth.

334,350. WAGON. MARTIN CONRAD, Chicago, Ill. Filed May 26, 1885. (No model.)



Claim.—The combination, with the front axle, sand-board, and fifth-wheel of a wagon, of hounds made of bent wood and curved downwardly or depressed between their ends and attached between the axle and sand-board, and cross-bars of less vertical width than the sand-board attached to the front and rear elevated ends of the hounds for sustaining the fifth-wheel, substantially as described.

2. The combination, with the front axle, sand-board, bolster, and fifth-wheel of a wagon, of bent-wood hounds curved downwardly or depressed between their ends and attached between the axle and sand-board, cross-pieces of less vertical width than the sand-board attached to the front and rear elevated ends of the hounds, bars H H, attached transversely to the bolster, cross-pieces I I, attached to the bars H, and posts J J, interposed between the fifth-wheel and the said pieces I, substantially as described.

3. The combination, with a wagon, of a skid-support attached beneath the wagon-body, and consisting of a longitudinal bar, O, provided with a projection, *o*, substantially as and for the purpose set forth.

4. The combination, with a wagon, of a skid-support consisting of a longitudinal bar, O, provided with a projection, *o*, and transverse supporting-bars P and P', substantially as and for the purpose set forth.

5. The combination, with a wagon, of a skid-support consisting of a longitudinal bar, O, provided with projections *o* and *o'*, substantially as and for the purpose set forth.

334,351. APPARATUS FOR DISTRIBUTING, &c., LIQUID CARBONIC ACID. ADOLF CONVERT and EMIL RUDEL, New York, N. Y. Filed Oct. 7, 1885. (No model.)

Claim.—1. The combination of the liquid carbonic-acid receiving-chamber A, provided with an upper channel, *a*, for connecting with a reservoir containing the liquid carbonic acid, and having the lower channel, *b*, the distributing-chamber B, connected with the lower channel of the receiving-chamber and receiving the liquid carbonic acid from the latter, and a series of faucets radiating around the distributing-chamber, for discharging the liquid carbonic acid from the latter into a series of vessels to be supplied, substantially as described.

2. The combination of the liquid carbonic-acid receiving-chamber A, provided with an upper channel, *a*, for connecting with a reservoir containing the liquid carbonic acid, and having the lower channel, *b*, the level-gage E, having communication at its ends, respectively, with the upper and lower channels of the receiving-chamber, a distributing-chamber, B, connected with the lower channel of the receiving-chamber and receiving the liquid carbonic acid from the latter, and a series of discharge-openings radiating from the distributing-chamber, for discharging the liquid carbonic acid therefrom into a series of vessels, substantially as described.

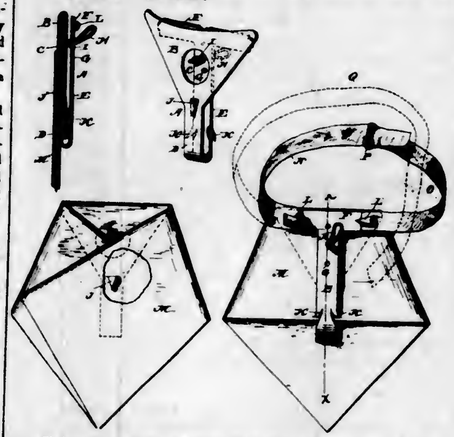
334,351.



3. The combination of the liquid carbonic-acid receiving-chamber A, having the upper channel, *a*, for connecting with a reservoir containing the liquid carbonic acid, and provided with the lower channel, *b*, the distributing-chamber B, connected with the lower channel of the receiving-chamber and receiving the carbonic acid from the latter, a series of discharge-openings radiating from the distributing-chamber, and a longitudinally-adjustable pin-valve, C', one for each discharge-opening, all of said valves seating in the distributing-chamber, substantially as described.

4. The combination of the receiving-chamber A, having the upper receiving-channel, *a*, and discharge-channel *b*, with the distributing-chamber consisting of several parts, the distributing-chamber formed of a separate part, to which are attached separate discharge-openings, and valves connected with the discharge-openings for discharging the liquid carbonic acid into a series of vessels, and valves for controlling the several discharge-openings, substantially as described.

334,352. FRAME FOR NECK-WEAR. EDWARD C. COOKE, Unionville, Conn., assignor of one-half to W. W. Woodford, same place. Filed Aug. 31, 1885. (No model.)

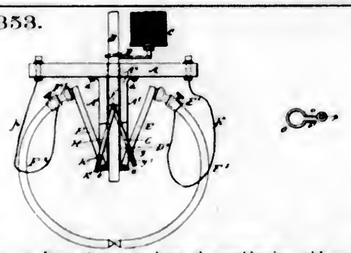


Claim.—1. A frame or shield for neck-wear, comprising a transverse top plate, a central shank extending downwardly from the same, a rear shank extending upwardly from the lower end of the said front shank, a cross-piece or T-plate arranged or formed at the upper end of the said rear shank, and means for securing the fabric to the said shield or frame, all constructed substantially as and for the purpose herein shown and specified.

2. A frame or shield for neck-wear, comprising the top plate, the front shank having a struck-up downwardly-facing sharp-pointed tongue or barb near its upper end, an upwardly-extending rear shank, the sides of which are provided near its lower end with struck-up barbs, and a T-plate at the upper end of said rear shank having inwardly-facing struck-up barbs, substantially as and for the purpose herein shown and specified.

334,353. ELECTRIC-ARC LAMP. JOSEPH R. DALBI and EDWIN L. ADAMS, Philadelphia, Pa. Filed Feb. 14, 1885. (No model.)

334,353.



Claim.—1. In an electric-arc lamp, the combination, with a vertically-reciprocating rod, and means, substantially as described, for effecting a movement of the same, of arms pivoted at one end to the frame of the lamp and carrying both carbons, and connected to the vertical rod by levers attached to said rod and to the said arms, substantially as described.

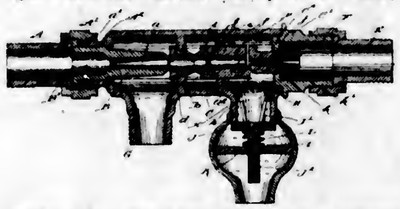
2. In an electric-arc lamp, the combination, with a vertically-reciprocating rod, and means, substantially as described, for effecting the movement of the same, of lever-arms pivoted at one end to the frame of the lamp and carrying both carbons, and connected to the vertical rod by levers attached to said rod and to the said arms at different distances from the fulcra of the same, whereby when the vertical rod is reciprocated one of said rods and its attached carbon will move a less distance than the other, substantially as described.

3. In an electric-arc lamp, the combination, with pivoted arms connected to a vertically-movable screw-threaded rod by pivoted levers, of a screw-threaded sleeve fitting said rod, a clutch adapted to engage with said sleeve and turn the same, and electro-mechanical devices, substantially as described, for operating said clutch, as set forth.

4. In an electric-arc lamp, the combination, with pivoted arms connected to a vertically-movable screw-threaded rod by pivoted levers, of a screw-threaded sleeve fitting said rod, a clutch adapted to engage with said sleeve and turn the same, and electro-mechanical devices, substantially as described, for operating said clutch, and a split collar adapted to grasp said sleeve and sustain it and the threaded rod when the clutch-operating devices are brought into play, substantially as described.

5. In an electric-arc lamp of the focusing class, the combination, with a vertically-movable rod and devices for operating the same, and swinging arms having carbon-holders upon their free ends, of pivoted levers secured to said rod at one point and pivotally attached to said swinging arms at different distances from the fulcra thereof, whereby any movement of the said rod will move the carbon-holders different different distances, substantially as described.

334,354. STEAM-INJECTOR. JOHN DESMOND, Cleveland, Ohio, assignor to Roe Stephens, same place. Filed Sept. 26, 1885. (Model.)



Claim.—1. In a steam-injector, the slide-valve D, comprising a flange or projection, *h*, a slot or recess, *n*, a disk, *f*, and a washer, *k*, and apertured and tubular, and constructed and arranged to register with flanges or inner walls of the valve-chambers C and C', substantially as shown and described.

2. The combination of slide-valve D, having a threaded end, *j*, with a washer, *k*, secured thereon, and a flange or projection, *h*, and a disk, *f*, in combination with flange C^2 and *e*, substantially as shown and for the purpose described.

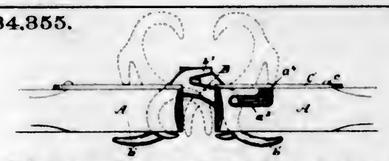
3. In a steam-injector, the slide-valve D, having a disk, *f*, flange or projection *h*, disk *h'*, having flattened sides, the slot or recess *n*, and tubular orifice a^2, substantially as shown and described.

4. In a steam-injector, the combination, with the chambers C and C' and the valved outflow-pipe, of the valve D, having disks *f* and *h'*, slot or recess *n*, and tubular orifice a^2, substantially as shown and described.

334,355. CAR-COUPLING. MATHEW DILL, Piqua, Ohio. Filed Nov. 7, 1885. (No model.)

Claim.—1. In a car-coupling, the combination of a socket in the top of the draw-head, a removable coupling hook or link having lateral bearings and pivoted in the said socket, and a cover-plate pivoted to the top of the draw-head over said socket and retaining the said hook or link within it, substantially as and for the purpose set forth.

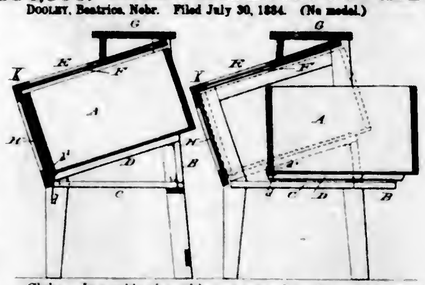
334,355.



2. In a car-coupling, the combination of the socket A, provided with the holes *a* and a^2, the slots *a'* and a^4, and the bar a^3, a coupling hook or link pivoted in the said socket, and a cover-plate pivoted to the top of the said socket and retaining the said hook or link within it, substantially as and for the purpose set forth.

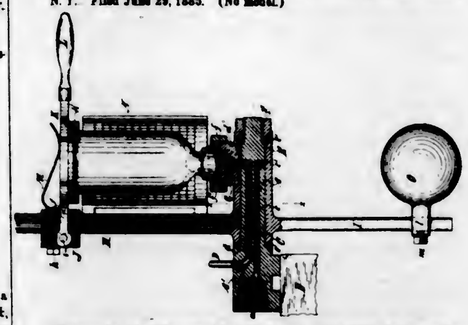
3. In a car-coupling, the combination of the socket A, provided with the holes *a* and a^2, the slots *a'* and a^4, and the bar a^3, the coupling-hook B, provided with the pivots *b*, the trip *b'*, and the stop b^2, and the cover-plate C, provided with the pivot-pin *c* and slot *c'*, substantially as and for the purpose set forth.

334,356. COMBINED COUNTER AND SHOW-CASE. SAMUEL B. DOOLEY, Beatrice, Nebr. Filed July 30, 1884. (No model.)



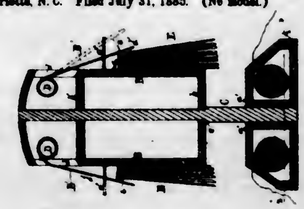
Claim.—In combination with a counter, G, and open frame-work, K, the stationary frame C, hinged pieces B, hinged to the rear end of stationary frame C, movable frame D, hinged to the hinged pieces B, and box A, resting on said frame D, substantially as shown and described.

334,357. BOTTLING-MACHINE. WM. F. DORFLINGER, New York, N. Y. Filed June 29, 1885. (No model.)



Claim.—In a bottling-machine, the combination, with the plug of a cock, of a rotary shell surrounding said plug, an arm rigidly secured to said shell, a collar fitting about said arm and adjustably secured thereto, and a swinging support for a bottle, supporting the bottle at its base, pivotally connected to said collar, and swinging toward and from the axis of the cock, substantially as specified.

334,358. COMBINED BAG AND TWINE HOLDER. JACOB DOLL, Charlotte, N. C. Filed July 31, 1885. (No model.)



Claim.—A combined bag and twine holder consisting of a rotary bag-holder, B, having many sides, each side provided with spring-catches and check-staples, the holder B being supported on a spindle from the base A, the same being provided with receptacles for holding twine for wrapping, all constructed substantially as and for the purpose described.

334,359. CORSET. KATE DURHAM, Holloway, Mich. Filed Nov. 30, 1884. (No model.)



Claim.—1. A corset provided with the top flaps, E, and an opening or space provided in the corset below the top flaps, a flap, F', located on one side of the space or opening from the top to the bottom thereof, a button-hole, K, provided in the flap F', a button, L, located on the opposite side of the space or opening, the said flap closing over the latter and connecting with the button and opening or being thrown back laterally in a vertical line, for the purpose set forth.

2. A corset provided with the nursing-pockets, comprising the flap I, having a button-hole, H, the flap F', provided with the button G and the button-hole K, and a button, L, provided on the corset beyond the flap I, for the purpose set forth.

3. A corset provided with the top flaps, E, and the pockets arranged to close a space or opening provided in the corset below the top flaps, said pockets comprising two flaps, F' I, both of which open laterally in opposite directions to expose the opening, the flap F' covering the flap I, when closed, as set forth.

334,360. FIRE-PROOF GARMENT. JOHN W. ELLIOT, Toronto, Ontario, Canada. Filed July 3, 1885. (No model.)



Claim.—1. An improved dress of fire-proof material provided with bellows beneath the feet, a pocket in said dress containing filtering material, a helmet, and a tube or tubes connecting the bellows and pocket with the helmet, substantially as described.

2. An improved dress of fire-proof material provided with a bellows forming a part thereof, a pocket containing filtering material, and also forming part of said dress, and a tube connecting said bellows and pocket with the helmet of the dress, substantially as and for the purposes specified.

3. An improved dress of fire-proof material provided with bellows A beneath the feet, and forming part of said dress, the pocket C, placed in the body of said dress and filled with spongy filtering material, the tubes B, connecting said bellows with said pocket, and the tubes E, connecting said pocket with the helmet D of the dress, substantially as and for the purpose specified.

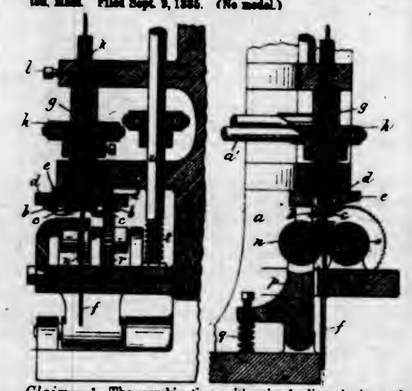
334,361. BOOT AND SHOE NAIL. ANDREW EPTLER, Jr., Boston, Mass. Filed Apr. 25, 1885. (No model.)



Claim.—1. A boot and shoe nail made of tubular metal, provided with a V-shaped notch at its upper end and a V-shaped point at its lower end, substantially as described.

2. A boot and shoe nail made of tubular metal with a fibrous core, and having a V-shaped notch in its upper end and a V-shaped point at its lower end, substantially as described.

334,362. WIRE-BURRING MACHINE. ANDREW EPTLER, Jr., Boston, Mass. Filed Sept. 9, 1885. (No model.)

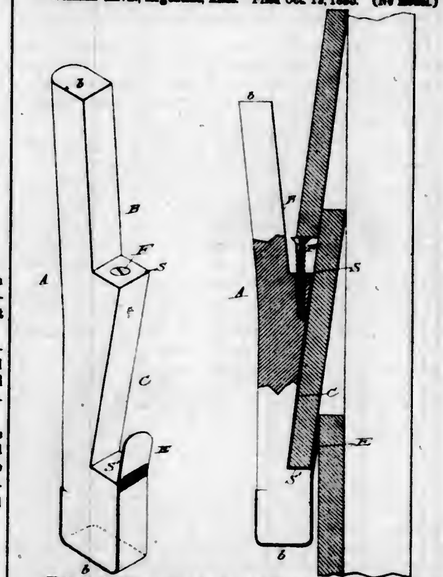


Claim.—1. The combination, with wire-feeding devices, of two loosely-rotatable burring-tools set obliquely at opposite sides of the wire, each tool being formed to make a series of independent or isolated burrs on the wire passed between them, and a positively-rotated holder, whereby said tools are revolved about the wire, as set forth.

2. The combination of the positively-rotated holder having the tubular stud, the fixed tube or guide *k*, projecting into said stud, the loosely-rotatable burring-tools set obliquely on said holder, each tool being formed to make a series of independent burrs or barbs, and means, substantially as described, for feeding wire between said tools and through the tubular stud, as set forth.

3. The combination of the burring-tools and their rotary holder, wire-feeding devices, substantially as described, and a single driving-belt, whereby both the holder and feeding devices are operated, as set forth.

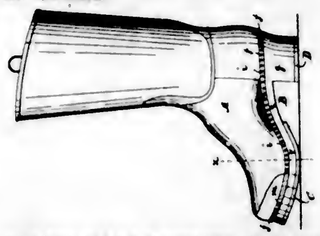
334,363. GAGE AND CLAMP FOR WEATHERBOARDING, &c. WILLIAM ERVIN, Argentine, Kans. Filed Oct. 19, 1885. (No model.)



Claim.—A clamp and gage for weatherboarding, &c., having faces B and C, stops or rests *a a'*, and flattened ends *b b*, formed out of a single piece of wood or other material, provided with a suitable tongue or

spring, E, the upper stop or rest, *a*, having an adjustable screw, F, working vertically therein, substantially as and for the purposes described.

334,364. BOOT OR SHOE. JOHN J. FERRISS, Amesbury, Mass. Filed Oct. 29, 1885. (No model.)



Claim.—As an improved article of manufacture, a boot or shoe comprising the sole, the body, shank, and heel of which are integral and composed of wood, and have a rabbet around their upper edge, a layer of cement therein, an upper having its lower edge cemented thereby within said rabbet, a stay applied to the outer face of said upper near its lower edge, and nails passing through said stay and upper into the sole, substantially as described.

334,365. MULTIPLEX ELECTRIC LIGHT. ARTHUR C. FERGUSON, Saratoga, N. Y., assignor, by mesne assignments, to D. Rogers Noble, Jersey City, N. J. Filed Feb. 19, 1885. (No model.)

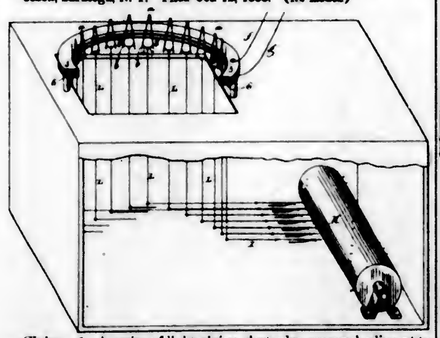


Claim.—1. The combination, in an electric lamp, of a range of carbons, a metallic contact to connect each range of carbons in an electric circuit, a spark-producing contact, and means for rapidly moving each contact across the range of carbons, for closing and opening the circuit and producing the range of sparks, substantially as specified.

2. The combination, in an electric lamp, of a metallic ring connected to one of the circuit-wires, a range of carbon pencils around the said ring, means for holding the carbons in contact with the ring, and a shaft and arm connected to the other circuit-wire carrying a contact of carbon or other material, and mechanism for revolving the shaft and arm and making and breaking contact with the circular range of carbon pencils, substantially as specified.

3. The combination, in an electric lamp, with the range of carbon pencils and a moving contact for the same, of circuit-connections, one of which is to the range of carbons and the other to the moving contact, and an induction-coil in the electric circuit, for lengthening the spark at the electrodes, substantially as specified.

334,366. ELECTRIC-LIGHTING APPARATUS. ARTHUR C. FERGUSON, Saratoga, N. Y. Filed Oct. 12, 1885. (No model.)



Claim.—1. A series of light-giving electrodes arranged adjacent to each other in the form of letters or figures, in combination with automatic mechanism, substantially as specified, for closing and separating the electrodes successively, substantially as set forth.

2. The combination, with a revolving cylinder having pins, of levers acted on by said pins, carbons and carbon-holders in pairs, and connections between the respective levers and carbon-holders for moving one or both electrodes successively and producing ranges of flashes in straight or curved lines, substantially as set forth.

334,367. FEED-CHAIN FOR FEED-CUTTERS. PETER FISHER, Oak Creek, Wis. Filed July 6, 1885. (No model.)



Claim.—1. A feed-chain for straw-cutters, consisting of a series of links arranged in pairs, each link having on top and at one end a forwardly-projecting spur, and midway between its ends a notch, while its end opposite the spur is rounded, as set forth.

2. The combination, in a feed-chain for straw-cutters, of the links A, arranged in pairs, each having a notch and spur, as described, with connecting-rods B, as set forth.

334,368. PARASOL OR UMBRELLA. DANIEL C. FISHER, Troy, N. Y. Filed July 13, 1885. (No model.)



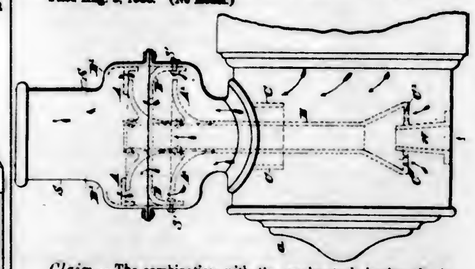
Claim.—1. A detachable false cover having a central opening surrounded by a tube and elastic cord, and provided at its border with socket-tips, in combination with the frame and cover of a parasol or an umbrella, substantially as described.

2. A detachable false cover having a central opening surrounded by a tube and an elastic cord, and provided at its border with socket-tips, in combination with a parasol or an umbrella, the said cover being larger than the cover proper, substantially as described.

3. A detachable cover having a central opening surrounded by a tube and an elastic cord within the tube, and provided at its border with socket-tips, in combination with the frame of an umbrella or a parasol, substantially as described.

4. A cover having a central opening surrounded by a tube, in combination with an elastic cord within said tube, the tip of the stick, and a ferrule covering the tube and cord, substantially as described.

334,369. SMOKE-STACK. WILLIAM H. GARLOCK, Missoula, Mont. Filed Aug. 3, 1885. (No model.)

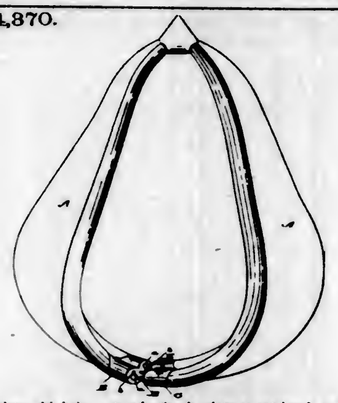


Claim.—The combination, with the smoke-stack having the inwardly-extending and upwardly-curved annular flanges B B' at its enlarged portion, of the draft-flue C, nozzle N, and the exhaust-pipe E, with the upwardly-extended annular flanges A A', and the flaring base with the perforated base-plate C, substantially as specified.

334,370. HORSE-COLLAR FASTENING. THOMAS G. GILLESPIE, Campbellford, and MATHEW S. CASSAN, Seymour, County of Northumberland, Ontario, Canada. Filed Sept. 22, 1885. (No model.)

Claim.—1. In a horse-collar divided as described, the combination, with the socket B, protecting the end of one division, and provided in its end plate with holes *a*, terminating in slots or notches *b*, and a pin, D, of the socket C, protecting the end of the other division, and having its end plate provided with hole *d*, and pins E, having necks *e* formed on them, substantially as and for the purpose specified.

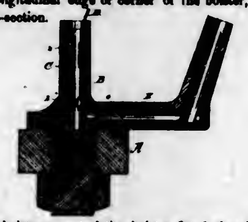
334,370.



2. In a horse-collar divided as described, the combination, with the socket B, protecting one end of the division, and provided in its end plate with holes *a*, terminating in slots or notches *b*, extending in opposite directions, as shown, and the pin D between said holes, of the socket C, protecting the other end of said division and provided with cone-shaped pins E, arranged to engage the holes *a*, and the pins formed with a neck, *e*, to engage the slots *b* in the socket B, and said socket C being further provided with a hole, *d*, made in its end plate between the pins E, and designed to engage the pin D on the socket B, substantially as and for the purpose specified.

334,371. SPINDLE-BOLSTER. STEPHEN P. GILBERT and ADELBERT R. YOUNG, Jewett City, Conn., assignors of one-half to George Draper & Sons, Hopedale, Mass. Filed Nov. 24, 1884. (No model.)

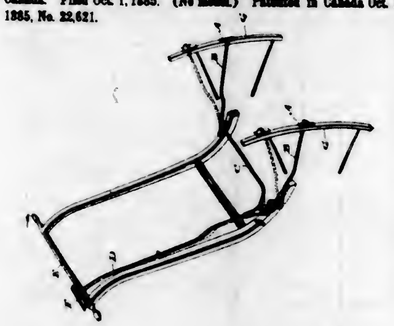
Brief.—The bolster, placed in the bolster-case loosely in the presence of oil, is held therein in a yielding manner by a loop-shaped spring which embraces a longitudinal edge or corner of the bolster, the latter being square in cross-section.



Claim.—1. The bolster-case and the bolster fitted therein loosely and provided with a projection or corner, 8, combined with a loop-shaped spring to engage the said projection or corner and hold the bolster, substantially as described.

2. The bolster-case and the loop-shaped spring having prongs by which to prevent it from being moved about in the said case, combined with the bolster placed loosely in the bolster-case and engaged, substantially as described, by the said spring, as and for the purpose set forth.

334,372. BABY-CARRIAGE. JOHN W. GRIFFIN, Toronto, Ontario, Canada. Filed Oct. 1, 1885. (No model.) Patented in Canada Oct. 10, 1885, No. 22,621.



Claim.—A brake-shoe, A, connected to the crank-rod C, journaled on the frame of the carriage, as indicated, in combination with the rod D, connected to the crank-rod C, and provided with a cross-T, F, arranged substantially as and for the purpose specified.

334,373. PIN. MARY E. GROW, Washington, D. C. Filed Dec. 24, 1884. (No model.) Patented in England Jan. 14, 1885, No. 553, and in France Jan. 16, 1885, No. 166,403.



Claim.—A straight single-shank pin formed in coils for its whole length, and each coiled and pointed or sharpened, substantially as and for the purpose described.

334,374. ATTACHMENT FOR FINGER-BARS OF HARVESTERS. NELS R. HAMILTON and EDWARD L. PERRIGO, Auburn, N. Y. Filed May 2, 1885. (No model.)



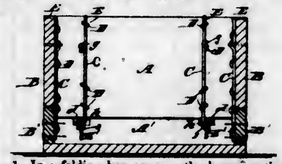
Claim.—1. The combination, with the cutting apparatus of a harvester, of a transverse shaft having a series of independently-movable sleeves provided with forwardly-extending rake-teeth having rearwardly-extending prongs, substantially as herein described, for the purpose set forth.

2. The combination, with the cutting apparatus of a harvester, of a transverse shaft having a series of studs, a series of sleeves having vertical slots working upon the said studs, and rake-teeth extending forwardly from the said sleeves and having rearwardly-extending prongs, substantially as and for the purpose herein set forth.

3. The combination, with the cutting apparatus of a harvester, of a transverse shaft, sleeves mounted upon the same and having forwardly-extending grooved arms provided with laterally-extending ears or projections and vertical perforations at their inner ends, and the rake-teeth attached to the said arms by means of downturned lugs at their rear ends, substantially as and for the purpose herein set forth.

4. The combination, with the cutting apparatus of a harvester, of a transversely-arranged rock-shaft having a series of radially-movable sleeves provided with forwardly-extending arms, and rake-teeth attached to the said arms and provided with flexible prongs extending from their points rearwardly over the cutter-bar, substantially as herein described, and for the purpose set forth.

334,375. FOLDING BOX OR CRATE. EDWARD HARRER, Cambria, Wis. Filed Mar. 25, 1885. (No model.)



Claim.—1. In a folding box or case, the lower section, A' B', provided with the wires E', bent to form hooks E^2, and eyes *h*, in combination with upper section, A B, the wires C, formed with eyes *g*, and hooks *d*, registering with the eyes *h*, and the staples D, securing the wires to the sections, one prong of each staple passing through an eye, *g*, substantially as set forth.

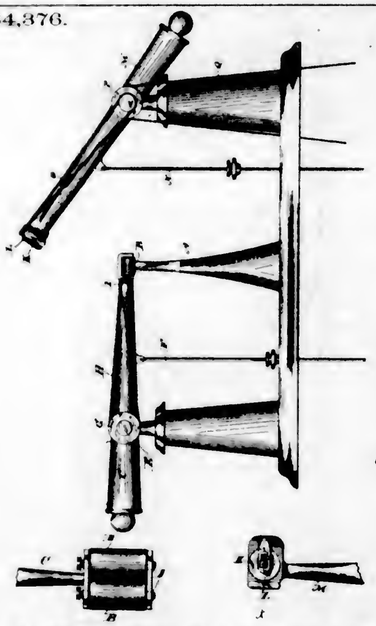
2. The combination, with the lower section, A' B', having the wires E' secured thereto and provided with eyes *h*, of the upper section, A B, the wires C, formed with hooks *d* at their lower ends, bent at their upper ends, as described, and formed with eyes *g* between their ends and the securing-staples, substantially as described.

3. A folding box or case consisting of the upper and lower hinged sections, the wires E' and C, secured to and hinging said parts, the wires C being bent at their upper ends to form hooks *c*, the cover K, the wires C', secured to the under side thereof and bent to form eyes *c'* at one end, which engage said hooks *c*, and bent upward at their opposite ends against the edge of the cover, substantially as set forth.

334,376. MACHINE FOR BEADING SHOE-UPPERS. CHARLES B. HATFIELD, Rochester, N. Y., assignor to the Automatic Shoe Beader Company, same place. Filed July 10, 1885. (No model.)

Claim.—1. In a shoe-beading machine, the combination, with a turning-iron adapted to receive the work turned right side out, of co-operating spring-seated compressing-rollers carried by a movable arm or support and operating simultaneously on both sides of the edge of the work, to compress the same between them while the work is still on the turning-iron, substantially as described.

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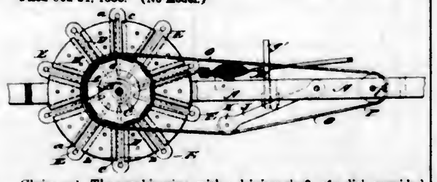
2. In a shoe-beading machine, the combination, with the turning-iron adapted to receive the work turned right side out, of a pair of spring-seated compressing-jaws mounted upon a movable arm or support and operating simultaneously on both sides of the edge of the work, to compress the same between them while the work is still on the turning-iron, and means, substantially as described, for imparting to said rollers rotation in a direction contrary to that of the movable arm on which they are supported, substantially as described.

3. In a shoe-beading machine, the combination, with a turning-iron adapted to receive the work turned right side out, of a compressing-roller and a co-operating jaw carried by a movable arm or support operating on both sides of the edge of the work, to simultaneously compress the same while it is still on the turning-iron, substantially as described.

4. In a shoe-beading machine, the combination, with a turning-iron adapted to receive the work, of a pair of automatic compressing-rollers mounted upon a movable arm or support, and an independent compressing-roller and a co-operating jaw, substantially as described.

5. In a shoe-beading machine, the combination, with a turning-iron having yielding jaws and adapted to receive the work turned right side out, of compressing-rollers mounted upon a movable arm or support and operating on both sides of the edge of the work, to simultaneously compress the same while it is still on the turning-iron, substantially as described.

334,377. EXPANDING PULLEY. JOHN M. HERMAN, Mallard, Iowa. Filed Oct. 31, 1885. (No model.)

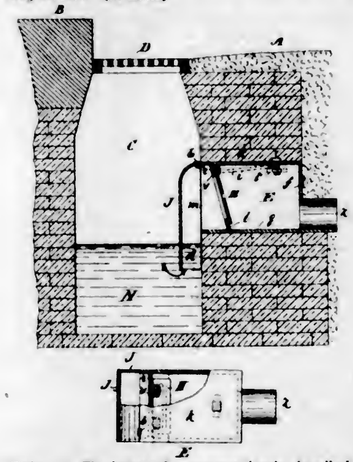


Claim.—1. The combination, with a driving-shaft, of a disk provided with sections, as D D, connected to one of its faces, arms E, having sections or plates *e*, rods *h h*, a collar, N, and a lever, M, substantially as described.

2. The combination, in an apparatus for accelerating motion, of the following elements, viz: a driving-shaft, B, disk C, arms E, sections *e*, collar N, lever M, belt O, pulley P, and a belt-tightening mechanism, substantially as described.

3. The combination, with a driving-shaft, of a disk carrying radial arms provided with sections, which unite and form a driving-pulley, and a collar connected to the radial arms by rods and operated by a lever, substantially as set forth.

334,378. SEWER-TRAP. DANIEL HIGGINS, Boston, Mass. Filed Aug. 23, 1885. (No model.)



Claim.—1. The improved sewer-trap herein described, the same consisting of the body E, valve H, and cowl J, constructed, combined, and arranged to operate substantially as described.

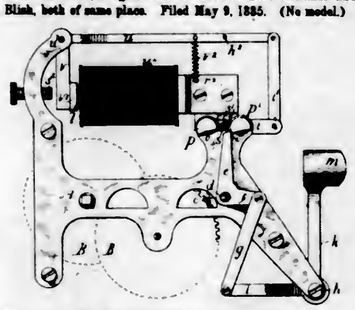
2. The body E, provided with the valve H and cowl J, in combination with the pipe *z*, cesspool C, and grate or strainer D, substantially as set forth.

334,379. CLOTHES-POUNDER. SAMUEL C. HILL, Richmond, Ind., and HERMAN D. CROOKER, Battle Creek, Mich. Filed Jan. 24, 1884. (No model.)



Claim.—In a clothes-pounder, the combination of a cone-shaped case having openings in the side near its apex, and provided with socket *i*, for the reception of a handle, a concave plate attached to the inner circumference of the case above its base, having openings *f* and *n*, the rim *c* and cup *d*, all arranged in such manner as to form the several spaces or chambers specified.

334,380. ELECTRIC ALARM APPARATUS. CHARLES H. HILTON, New Haven, Conn., assignor of two-thirds to Ellis B. Baker and Roger D. Blish, both of same place. Filed May 9, 1885. (No model.)

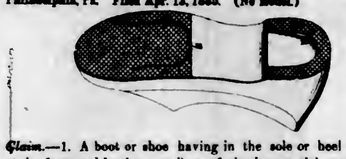


Claim.—1. In an electrical alarm apparatus, two oscillating detent-heads supported, respectively, on arbors journaled in the frame, connected by engaging rock-arms, and so adjusted that one detent is turned out of the path of the escapement-arm of the bell-striking mechanism as the other detent is turned into the same, thereby releasing and intercepting the movement of the arm, substantially in the manner and for the purpose set forth.

2. In an electrical alarm apparatus, the detent P, supported by the arbor *u*, having a slotted rock-arm, *r*, and the detent P', supported by the arbor *u'*, having rock-arms *t* and *s'*, the latter being provided with pin *s*, which engages the slotted arm *r*, in combination with the escapement-arm of a bell-striking mechanism, an electro-magnet, and suitable connections for operating the rock-arms, so as to vibrate the detent-heads and release the arm, substantially as described.

3. In combination, an electro-magnet with its armature, the pivoted arm *v*, supporting the armature, the spring-actuated arm *u*, the connecting-rod *t'*, the arbor *u'*, having a detent-head, P', and the rock-arms *t* and *s'*, the latter being provided with pin *s*, and the arbor *u*, having the detent-head P, and the slotted-rock-arm *r*, all arranged and combined substantially in the manner and for the purpose set forth.

334,381. CREEPER FOR BOOTS OR SHOES. LOUIS C. HOFFHEIMER, Philadelphia, Pa. Filed Apr. 13, 1885. (No model.)

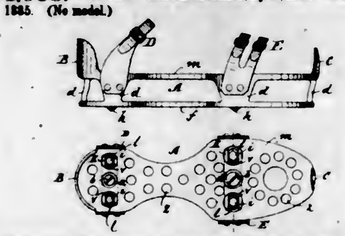


Claim.—1. A boot or shoe having in the sole or heel a chamber open at the front and having a wall, *a*, of elastic material presenting an abrupt retaining-shoulder, *z*, at the rear of the chamber, as set forth.

2. A boot or shoe having in the sole or heel a chamber open at the front and having a wall, *a*, of elastic material tapering in height from front to rear, and presenting an abrupt retaining-shoulder, *z*, at the rear of the chamber, as specified.

334,382. WITHDRAWN.

334,383. PATTEN. HAROLD HOLLAND, Lynn, Mass. Filed June 29, 1885. (No model.)



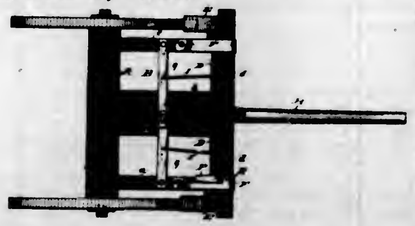
Claim.—1. In a patten substantially such as described, the section *m*, provided with the flanges B C and straps D E, in combination with the section *f*, and suitable calks for preventing pattern from slipping, said sections being connected by the pillars *d*, substantially as described.

2. In a patten substantially such as described, the screw-calks *h*, having the tapering heads *i*, in combination with the sole-section *f*, slotted plate K, and screw *b*, substantially as set forth.

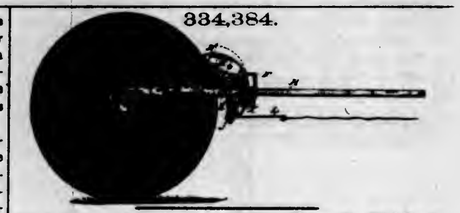
3. The improved shoe or patten herein described, the same consisting of the section *m*, provided with the holes *a l*, heel-piece B, and toe-piece C, the section *f*, connected to section *m* by the pillars *d*, and provided with the cross-bars *t*, and the screw-calks *h*, plate K, screw *b*, and straps D E, constructed, combined, and arranged to operate substantially as described.

334,384. AUTOMATIC BRAKE. JOHN T. HONEYCUTT, Vancouver, Wash. Filed Sept. 2, 1885. (No model.)

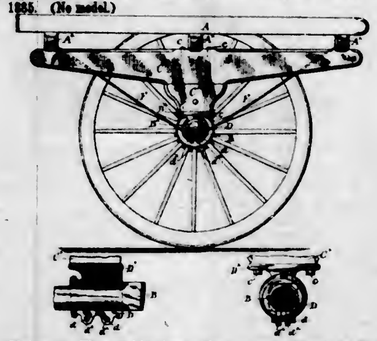
Claim.—In an automatic brake, the combination of the reciprocating pole, the sliding bar carrying the brake-shoes and provided with a projection, and the guides in which it is held, one of which is formed with a shoulder, the pivoted lever whose inner ends are slotted to receive a pin on the pole, the rods connecting such levers to the brake-bar, a ratchet on the lower face of the pole engaged by a pawl, a chain or cord, and a leaf-spring mounted at the rear of the pole and bearing against the same, all substantially as described.



334,384.



334,385. WAGON. CHRISTOPH HOTZ, Chicago, Ill. Filed May 25, 1885. (No model.)



Claim.—1. The combination, with a wagon-axle, of a split sleeve clamped upon the axle in position to form the collar of the wheel-arm and provided with a stool or flange for the attachment of the wagon-body, substantially as described.

2. The combination, with a wooden wagon-axle, of a tubular skein, B', and split sleeve D, clamped upon the axle and skein, forming the collar of the wheel-arm, and provided with a stool or flange, D', for the attachment of the wagon-body, substantially as described.

3. The combination, with the rear axle and body of a wagon, of bars C, for sustaining the rear portion of the wagon from the axle, and split sleeves D, clamped upon the axle and forming the collars upon the axle-arms, and also constructed to connect the said bars with the axle, substantially as described.

4. The combination, with the rear axle, B, and longitudinal bars C, of split sleeves D, clamped upon the axle and provided with stools or flanges D', for the attachment of said bars, substantially as described.

334,386. STRAINER AND CUT-OFF. WILLIAM W. HOUGH and HENRY C. HOFFMAN, Mound City, Ill. Filed July 30, 1885. (No model.)



Claim.—As an improved article of manufacture, a rain-water strainer and cut-off for cisterns, consisting in the pipes B C D, the intermediate casing, A, having an opening in its side, and an inwardly and downwardly inclined deflecting-plate, *d*, at the upper edge of the said opening, the diagonal strainer *a*, extending to the lower edge of the opening, below the deflecting-plate, and the pivoted cut-off *g*, above and between the pipes C D, substantially as set forth.

334,387. PIPE-WRENCH. HENRY L. HOUSHOLDER, Hebron, Ill., assignor of one-half to Henry R. Baldwin, same place. Filed Nov. 5, 1885. (No model.)

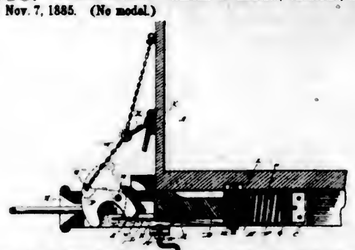


Claim.—1. In a pipe wrench or tongs constructed substantially as described, the stationary jaw A', formed integral with the handle-bar, said member being provided between the handle and the stationary jaw with a longitudinal slot, in combination with the bifurcated sliding block D, pivotally attached to the eccentric end of the handle-bar A'' and bail E, substantially as shown, and for the purpose set forth.

2. In a pipe-wrench, the stationary jaw A, having a flat portion

between the same and the handle, which is provided with a longitudinal slot, a sliding block attached thereto by a bail, E, and a lever having an eccentric-shaped end, which is adapted to pass through the slot B, and is pivotally connected to the sliding block D, the parts being organized substantially as shown, and for the purpose set forth.

334,388. CAR-COUPLING. LESTER B. KERSEY, Charlotte, Mich. Filed Nov. 7, 1885. (No model.)

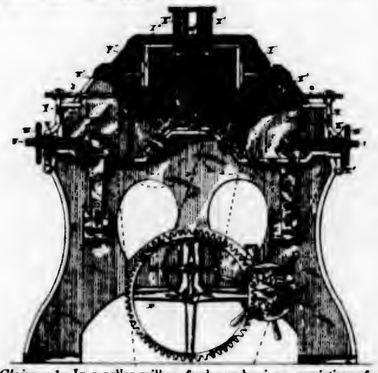


Claim.—1. A draw-bar having a vertical adjustment and a limited longitudinal play, combined with the flat spring secured thereto and the coupling-hook provided with flat bearing-faces at its rear end, adapted to rest on the spring, substantially as specified.

2. The combination, with the draw-bar, of the flat spring secured thereto and the coupling-hook provided with flat-bearing faces at its rear, adapted to rest upon the spring and hold the hook in position, substantially as specified.

3. The combination, with the pivoted draw-bar, of the coupling-hook pivoted therein and having flat bearing-faces at its rear end, a spring secured to the draw-bar and engaging with said end of the hook, and the connecting chains and levers, whereby said hook may be operated from the top or either side of the car, substantially as set forth.

334,389. ROLLER-MILL. EPHRAIM C. KETNER, Abilene, Kans. Filed June 4, 1885. (No model.)



Claim.—1. In a roller-mill, a feed mechanism consisting of a reciprocating box having a slanting top provided with spreading guides, and slanting extensions having retarding-strips, and an edge strip inclined from the center toward the edges, substantially as and for the purpose specified.

2. In a roller-mill, the combination of a feed-box, supporting-frames having extending strips, wheel or roller bearings, and buffers consisting of rods, springs surrounding said rods, and guides therefor, substantially as and for the purpose specified.

3. In a roller-mill, a feed mechanism consisting of a reciprocating box having a slanting or pitched top provided with spreading guides, slanting extensions having retarding-strips, and edge strips inclined from the center toward the edge, supporting-frames having strips, wheel or roller bearings, spring-buffers consisting of rods, springs surrounding said rods, and guides therefor, and a dividing-strip on the pitched top of the said box, substantially as and for the purpose specified.

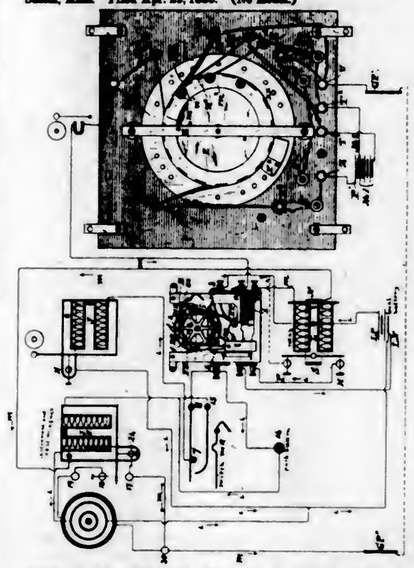
4. In a roller-mill, the combination of a lever, a through-shaft having curved and slotted arms, shafts, each carrying eccentrics and a projecting arm, connecting-rods with boxes receiving the eccentrics, pivoted arms to which said rods are secured, and means for connecting said pivoted arms to the bearings of the movable rolls, substantially as and for the purpose specified.

5. The combination of pivoted bearings for the rolls, spring-surrounded rods pivoted to said bearings, shouldered sleeves supported by suitable bearings, set-screws passing through said bearings and bearing against the shoulders on the sleeves, and hand-wheels traveling on the screw-threaded portions of said rods, substantially as and for the purpose specified.

6. In a roller-mill, in combination with the rolls, the belt, and the pulleys on said rolls, a belt-tightener consisting of a large gear-wheel carrying a pulley, and a pawl-retained operating-wheel carrying a pinion intermeshing with the gear, substantially as and for the purpose specified.

7. In a roller-mill, in combination with the rolls, the belt, and the pulleys on said rolls, a belt-tightener consisting of a large gear-wheel having a bearing with pivotal adjustment at right angles to its plane of rotation and carrying a pulley at a distance from its center, and an operating-wheel with a ratchet and pawl, and a pinion intermeshing with the large gear, substantially as and for the purpose specified.

334,390. INDIVIDUAL TELEPHONE-CALL. JOHN H. KINSMAN, Salem, Mass. Filed Apr. 29, 1885. (No model.)



Claim.—1. In a telephonic, telegraphic, or other electrical system, where individual calls or the use of one or more predetermined instruments is desired, to the exclusion of other instruments of the same system, a system comprising the following devices—namely, one main line, two main batteries, or one main battery which can be divided at a central office, a circuit-closer at the central office arranged to close the circuit in one direction at equal intervals when operated, and provided with means for closing the circuit in the other direction at variable intervals during such operation, an automatic connecting mechanism at an outlying station arranged to operate in response to the currents at regular intervals in one direction, so as to bring local circuit-closing devices to predetermined position, and devices at the said station arranged to operate said circuit-closers in response to the currents of variable intervals in the other direction, substantially as described.

2. The central call composed of the perforated back plate and front plate adapted for connection with a battery, the non-conducting perforated plate arranged between said plates, the adjustable pins inserted in the perforations of the plates, the metallic disks or wheels insulated from each other mounted upon a spindle, one of them being insulated from it and the other not, and provided with a metallic arm arranged to strike the pins when they are pushed in and the disks rotated, the metal springs connected to a battery and arranged to strike the disks in such manner as to send a current in regular or irregular alternating directions, the switch x' x^2 x^3, for cutting out the main-line battery and allowing a current from a local battery, or an induced current, to circulate, if desired, the switch x' x^2 x^3, for causing the current of one battery to pass in a direction contrary to its usual course, or for connecting the line for a local battery or an induced current, and the increased surfaces of the metallic and non-metallic contacts n' n^2 m' m^2, arranged with reference to the contact-springs, in the manner and for the purpose substantially as described.

3. The connector composed of the disk F P, having its margin guarded by insulating material, except at the space B B, and mounted upon a spindle, the wheel B P, mounted upon the same spindle, but insulated from it, and composed of segments separated from each other and having its margin guarded by insulating material, except at T and T, the pins insulated for a portion of their length and inserted in the perforations in the disk F P, and in the passages between certain segments of the disk B P, the toothed wheel mounted upon the same spindle with the wheels F P and B P, the pawl-lever for driving said toothed wheel, an electro-magnet for operating said pawl-lever, an electro-magnet having a pivoted armature provided with an arm for striking said pins, the springs 4 and 6, arranged to come in contact with the exposed metallic portion of the edge of the wheel F P, and the springs 3 and 5, arranged to come in contact with the exposed metallic portions of the edge of the wheel B P, substantially as described.

4. The combination, with the connector, as described, the polarized relay and the local battery, of the switch composed of the contacts 7 8 15, and the pivoted rod for operating them, the push-button 14, which push-button acts also as the instrument-call on the circuit-breaking calling device, the instrument-and-call magnet, and the intermediate local and main line conductors, as specified, said main-line conductor having the electro-magnet 1, and said local line having the electro-magnet 2, of the connector arranged therein, and said switch acting upon the instrument call-bell and the instrument-and-call magnet, respectively, as set forth.

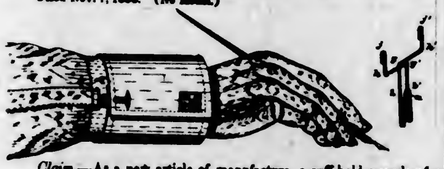
5. The combination, with the connector constructed and arranged to operate as specified, of the polarized relay and the switching mechanism of the main line, and the bell-magnet and instrument-and-call magnet, one having a retractile armature arranged to strike a bell and the other to break and close the main line, the central-office bell included in said main line, and the specified connections from the local battery to the bell-magnet and the instrument-and-call magnet, the said connector having its magnets 1 and 2 connected in the main line and the local line, as set forth.

6. The combination, with the connector-wheels and sliding pins arranged therein, of the inclined piece arranged to press said pins back to their normal positions when said wheels are rotated after the pins have been pushed in, substantially as described.

7. In a telephonic, telegraphic, or other electrical system where individual calls or the use of one or more predetermined instruments is desired, to the exclusion of other instruments of the same system, the combination, with the central calling apparatuses, the main line and main battery or batteries connected therewith, of the central-office bell included in said main line, and the station apparatus comprising the polarized relay, connector, local battery, switch, push-button, telephone, or telegraph, or other electrical instrument, instrument-and-call magnet, and bell-magnet, and the specified intermediate conductors, the whole being constructed and arranged to operate as described.

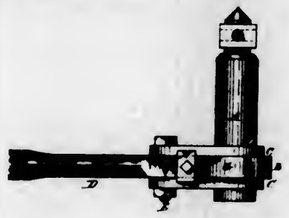
8. The combination, at a subscriber's station, with the connector comprising the disks, the sliding pins arranged therein, and a magnet with its armature for operating said pins at a predetermined time, of a relay for closing a local circuit including said magnet, substantially as specified.

334,391. CUFF-HOLDER. FREDERICK E. KOEHLER, Canton, Ohio. Filed Nov. 7, 1885. (No model.)



Claim.—As a new article of manufacture, a cuff-holder made of a single piece of spring-wire, bent substantially as described, and provided at one end with a hook for the attachment of the cuff thereto, and at its other end with a clasp for engaging the neck of the sleeve-button, and with ends *j j*, for releasing the holder from the sleeve-button, substantially as set forth.

334,392. DEVICE FOR CONVERTING RECIPROCATING INTO ROTARY GRIP AND SLIP MOTION. WLADISLAW T. KOSINSKI, Brooklyn, N. Y. Filed Nov. 11, 1885. (No model.)



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Claim.—1. The above-described grip and slip motion device, consisting of the serrated lever, side plates, check passing through the side plates, said check carrying a collar, and a spring connected to the lever, secured by a cross stay-bar, as described.

2. The combination of the lever, spring, and cross stay-bar with the screw X, as described.

334,393. WHEEL. JOSEPH B. MCCUNE, Chicopee, Mass. Filed Oct. 5, 1885. (No model.)

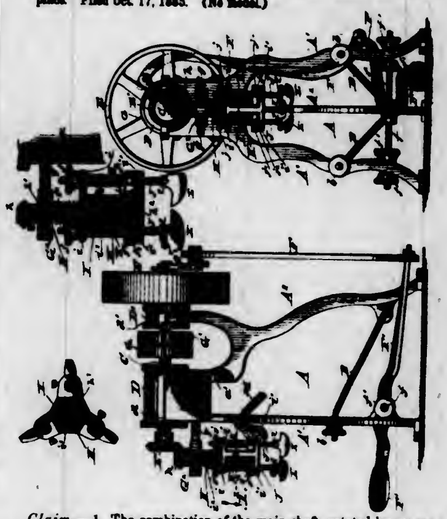


Claim.—1. The fastening device for spokes, consisting of the spokes provided with enlarged heads and lateral flanges, the exteriorly-screw-threaded sleeves placed upon the spokes and provided with slots for the reception of the flanges upon the spoke, and the screw-cap receiving the end of the screw-threaded sleeve.

2. The combination, with the curved felly and the spokes provided with enlarged flanges, of the screw-threaded sleeves provided with slots for the reception of the flanges on the spokes, and the screw-caps consisting of the lower tubular portion and an operating nut-head, substantially as described.

3. The combination, with the curved felly and the spokes provided with enlarged ends and lateral flanges, of the screw-threaded sleeves provided with slots for the reception of the said flanges, and the tightening-nut inclosing the sleeve and having that part which bears upon the tire slightly tapering to conform to the shape of the tire.

334,394. MACHINE FOR BURNISHING BOOTS AND SHOES. H. NELSON, Philadelphia, Pa., assignor of one-half to Daniel M. Shuma, same place. Filed Oct. 17, 1885. (No model.)



Claim.—1. The combination of the main shaft, rotated by means substantially as described, the vertical rotating shaft actuated by the main shaft, and the sleeve on and rotating with the vertical shaft and carrying one or more burnishing-tools, by means substantially as specified.

2. The combination of the main shaft, rotated by means substantially as described and having a gear-wheel on its end, the vertical shaft having a gear-wheel on its upper end meshing with that on the main shaft, the sleeve sliding on and rotating with the vertical shaft, the coiled spring bearing against the journal of the vertical shaft and against the top of the sleeve, the burnishing-tool rods passing through ears on the sleeve, and the burnishing-tools pivoted to the lower ends of said rods, substantially as specified.

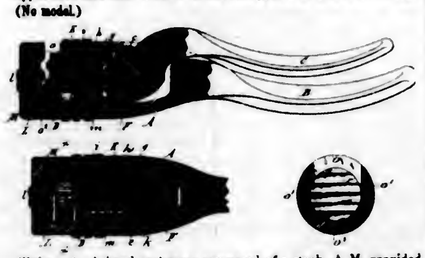
3. The combination, with the main shaft, provided with the gear-wheel E', the vertical shaft H, having the gear-wheel A and provided with the longitudinal slot h^2, the sleeve I, provided with the ears i i' and pin i^2, the spring i^3, depressing the sleeve, the rods J, passing through the

ears of the sleeve, the springs K, acting against the collars *j'*, and the burnishing-tools L, pivoted to the lower ends of the rods A J and their inner ends pointing to the axial line of the shaft H, substantially as specified.

4. The combination, in a boot and shoe burnishing machine, of a vertical rotating shaft, and a vertically-yielding sleeve arranged on the said shaft, rotating therewith and carrying burnishing-tools, substantially as specified.

5. The combination, in a boot and shoe burnishing machine, of a vertical rotating shaft, a vertically-yielding sleeve arranged on said shaft and fixed with relation to its rotative movements, and vertically yielding and adjustable burnishers carried by the said sleeve, substantially as specified.

334,395. **SEAL-PRESS.** CHARLES L. POND, Buffalo, N. Y. Original application filed Mar. 7, 1879; divisional application filed June 14, 1884. (No model.)



Claim.—1. A hand seal-press composed of a stock, A M, provided with a rigid handle, B, opening *o*, and stationary die L, a movable die, D, attached to the piston E, and an actuating-handle, C, pivoted in a mortise of the stock A, at *c*, and provided with an eccentric, F, bearing against the end of the piston E, substantially as set forth.

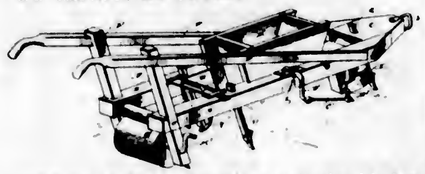
2. The combination, with the stock A, of the removable cap M, provided with the stationary die L and opening *o*, substantially as set forth.

3. In a seal-press, a stock inclosing a stationary die and a movable die and constructed with an opening, *o*, having its side walls, *o'*, projecting beyond the center of the dies, whereby the projecting end of the seal-wire must be doubled back upon the seal in order to introduce the latter between the dies, substantially as set forth.

4. In a seal-press, a tubular stock inclosing a stationary and a movable die and constructed with an opening for the insertion of the seal, and a bearing or support, *o²*, arranged contiguous to the edges of the dies opposite said opening, whereby the seal is arrested when it has reached the proper position, and prevented from passing beyond the edges of the dies, substantially as set forth.

5. In a hand seal-press, the combination, with a stock provided with a longitudinal bore or cavity and a stationary die secured in one end of said bore, of a rigid handle extending from the opposite end of the stock and forming a continuation of the same, a movable die arranged in said bore, and an actuating-handle which is pivoted in the stock to swing in the plane of the rigid handle, and whereby the movable die is closed upon the stationary die, substantially as set forth.

334,396. **SEEDING-MACHINE.** PRESTON E. ROGERS, Mullin's Depot, S. C. Filed Oct. 17, 1885. (No model.)



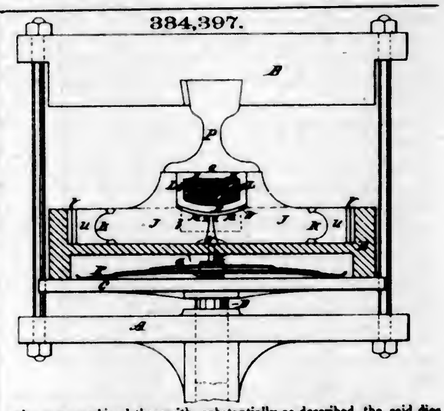
Claim.—1. In a seeding-machine, the combination of the frame having two standards at the forward end, a standard secured forward of the standards and provided with an opening-blade, and a shield secured to the forward side of the opening-standard and with its inwardly-bent ends in the sides of the two standards, having its lower edge above the point of the opening-blade, as and for the purposes shown and set forth.

2. In a seeding-machine, the combination of a coverer consisting of a rocking shaft having two rearwardly-curved arms bent inward at their lower ends with a shaft having cams bearing against the rear sides of the upper portions of the coverer-arms, as and for the purpose shown and set forth.

334,397. **MACHINE FOR SETTING BANDS ON ELLIPTIC SPRINGS.** EDWARD SPAULDING, Brooklyn, N. Y. Filed Feb. 18, 1882. Renewed May 8, 1884. (No model.)

Claim.—1. A pair of dies arranged to close by turning on pivots,

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and a ram combined therewith, substantially as described, the said dies having side faces, L, acting upon and squeezing the band sidewise between them, also having faces M, acting with the ram and squeezing the top and bottom of the band, substantially as described.

2. The combination of jaws J and base-plate E with the head and follower of a press, substantially as described.

3. The combination, with the head and follower of a press, of jaws J, having faces L and M, and being detachably pivoted to their supporting-plate by means of blocks U, and said blocks and jaws being adjustable by packing V, substantially as described.

4. The combination of jaws J, having faces L M, and being pivoted, as described, with base-plate E, having grooves I and F, and arranged and adapted for application to a press, substantially as described.

5. The combination of plate W with jaws J, having faces L and M, and being pivoted, as described, and arranged in a press or other means for closing them, substantially as described.

334,398. **SHOE.** SAMUEL C. TRIBOU, Rockford, Ill., assignor to the Rockford Boot and Shoe Manufacturing Company, same place. Filed July 29, 1885. (No model.)

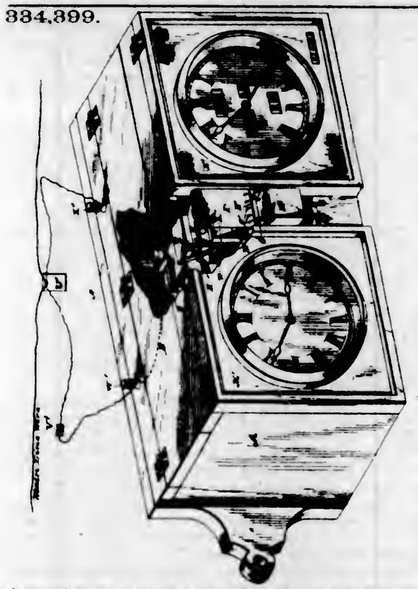


Claim.—A Congress gaiter provided with a leg-extension consisting of a front and a back portion formed by continuing the upper, said front and back portions being disconnected from the gaiter at both sides, and provided at one side with an independently-yielding elastic gore, and at the other side with overlapping ends and fastenings, substantially as described.

334,399. **FIRE-ALARM INDICATOR.** WILLIE C. WALTER, Richmond, Va., assignor of two-thirds to Geo. B. McAdams, same place. Filed Aug. 13, 1885. (No model.)

Claim.—1. In a fire-alarm indicator, the herein-described recording mechanism, comprising the record-slip wound upon a suitable drum, unwinding mechanism for the said record-slip, an electro-magnet, a vibrating frame carrying at one end the armature of said electro-magnet and at the other end a marking device adapted to make marks or impressions upon the record-slip, an escapement to control the unwinding of the record-slip from its drum, a lever having a laterally-extending arm adapted to form a stop or brake for the escapement-lever, and provided with an upwardly-extending arm extending under the rear end of the vibrating frame, so as to be tilted and cause the release of the escapement-lever when the said frame is first vibrated, and a counter-

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balance-weight at the end of the upper curved arm of the said tilting stop-lever, substantially as and for the purpose herein set forth.

2. In a fire-alarm indicator, the combination of the drum carrying the record-slip, the escapement connected with and adapted to control the revolution of the said drum when the said slip is being unwound, the vibrating armature-carrying frame carrying the marking device, the tilting stop-lever having an arm adapted to engage and arrest the escapement-lever, and having a curved arm extending upwardly under the rear end of the vibrating frame and provided with a weight at its outer end, the guide-rollers for the record-slip, and means for attaching a weight to the end of the latter, so as to cause it to be unwound from the drum when the armature-carrying frame is vibrated, so as to release the escapement, substantially as and for the purpose herein set forth.

3. In a fire-alarm indicator, the combination of a record-slip wound upon a suitable drum, mechanism for unwinding the said record-slip, the vibrating frame carrying at one end the armature of an electro-magnet, a receptacle containing oil or some suitable marking composition, a tube supported upon the end of the vibrating frame opposite to the armature, said tube being arranged within the said receptacle, a wick arranged within the said tube, suitably-arranged guide-rollers for the record-slip, and a pad arranged above the latter and above the marking-tube, which latter, when raised by the vibrating frame, shall bear against the said pad, substantially as and for the purpose herein set forth.

4. In a fire-alarm indicator, the combination of the record-slip wound upon a suitable drum connected with an escapement, the marking mechanism, suitably-arranged guide-rollers, a drum having attached thereto one end of a belt or strap of textile or other suitable material, the other end of said belt passing over the outermost guide-roller, underneath the record-slip, a plate attached to the free end of the said belt and having a series of barbs for the attachment of the outer or free end of the record-slip, and a weight adapted to be attached detachably to the said plate, substantially as and for the purpose herein set forth.

5. In a fire-alarm indicator, the combination, with the record-slip arranged substantially as herein described, of a re-enforcing belt or strap, the free end of which may be connected detachably with the outer or free end of the record-slip, for the purpose of supporting the weight, which is to be attached to the said record-slip for the purpose of unwinding the same from its drum, substantially as hereinbefore shown and specified.

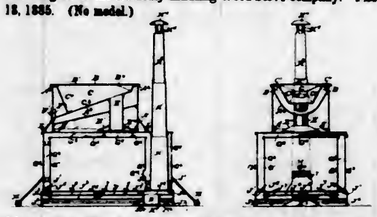
6. In a fire-alarm indicator, the combination, with mechanism, substantially as herein described, for automatically recording the number of the box from which an alarm may be sounded, said mechanism comprising a record-slip, unwinding mechanism for the same, and a vibrating frame carrying at one end a suitable marking device and at the other end the armature of an electro-magnet, of a suitably-arranged clock, and a lever, one of the arms of which normally rests upon the lower end of the vibrating armature-carrying frame, and the other arm of which is normally at a slight distance above the balance-wheel of the clock, with which latter it will be brought in contact, so as to stop the clock at the moment when the armature-carrying frame is vibrated by the making or breaking of the circuit, as the case may be, substantially as and for the purpose herein set forth.

7. In a fire-alarm indicator, the combination of a clock, an arm mounted upon the socket of the hour-hand of the same, the herein-described commutators, consisting each of the two spring-arms, one slightly longer than the other, normally in contact at their free ends, and arranged registering with the figures of the hours at which the time is struck electrically at the station at which the apparatus is arranged, said commutators being arranged in the local circuit in such manner that the same may be broken by contact of the arm upon the hour-hand socket with the free ends of the longer spring-arms of the said commutators, and the recording mechanism arranged to be operated by the action of an electro-magnet which is in the same circuit, substantially as and for the purpose herein shown and specified.

8. As an improvement in automatic fire-alarm indicators and recorders, the combination of the recording mechanism constructed as herein described, and adapted to be operated by an electro-magnet, the armature of which is mounted upon a vibrating frame, mechanism adapted to be released by the vibration of said frame, for controlling the unwinding of the record-slip from its drum, a clock, commutators arranged to be operated by an arm mounted upon the socket of the hour-hand of said clock, for breaking the circuit at stated hours, and a lever arranged to be tilted by the vibrating frame of the recording mechanism, for the purpose of stopping the clock when the said frame is actuated or vibrated by the electro-magnet in the act of first sounding an alarm, all arranged and operating substantially as and for the purpose herein shown and specified.

9. The combination, in a fire-alarm system, of the alarm-box, the battery, the recording mechanism constructed and arranged substantially as herein described, the stop-clock arranged to be operated automatically when an alarm is first sounded, the arm mounted upon the socket of the hour-hand of the clock, the herein-described commutators, consisting each of the spring-arms, one somewhat longer than the other, normally in contact at their free ends, and arranged registering with the figures of the hours at which the time is struck electrically at the station at which the apparatus is arranged, said commutators being arranged in the local circuit in such a manner that the same may be broken by contact of the arm upon the hour-hand socket with the free ends of the longer spring-arms of the said commutators, and the local line-wire arranged as described, substantially as and for the purpose shown and set forth.

334,400. **PORTABLE FURNACE.** S. LLOYD WIEGAND, Philadelphia, Pa., assignor to the Economy Kindling Wood Stove Company. Filed May 18, 1885. (No model.)



Claim.—1. The furnace C, consisting of an inclined bottom, C^3, connected at the rear to the plate B, sides C^2, partition C^4, draft-opening F, and descending flue E, combined with the top plate, B, and reflecting and supporting casing A, constructed to operate as set forth.

2. The furnace C, consisting of the inclined bottom C^3, partition C^4, sides C^2, draft-opening F, and descending flue E, suspended from and in combination with the horizontal top plate, B, and reflecting-plate A^3, constructed and arranged to operate substantially as set forth.

3. In a portable stove or furnace formed of light ductile metal for culinary use, the combination of the reflecting shell or jacket A with the furnace-top B, the furnace-chamber C, with converging sides and inclined bottom, the partition C^4, draft-opening F, flue E, having a funnel, E', thereon, and the reflecting-plate A^3, all constructed and arranged substantially as and for the purpose set forth.

4. In a portable furnace or summer cooking-stove, the combination of the flat top plate, B, supported by its outer edges, and having openings B' B^2 therein for the reception of cooking-vessels, with a furnace suspended from said plate B, having inclined sides C^2, rear and front walls provided with a draft-opening, and bottom C^3, inclined upwardly from the draft-inlet to the outlet-flue, and outlet-flue E, substantially as set forth.

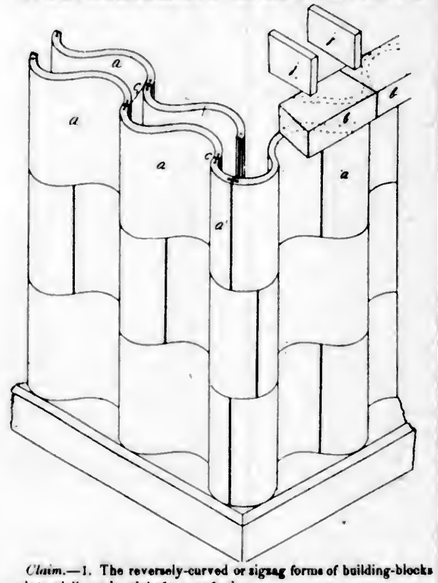
5. In a portable furnace or summer cooking-stove, the combination of an oven the sides, top, and bottom of which are constructed with double plates and with flues between said plates, through which hot products of combustion may be circulated from a furnace, with a descending flue, K, and a telescoping chimney; H, susceptible of two adjustments, whereby in one adjustment the products of combustion are discharged through the chimney, and in the other the chimney is closed and

the products of combustion escape through the flue K, substantially as set forth.

6. The combination of the furnace C, having a descending flue, E, and collar or cone E', with the oven G, having an opening, G^3, a surrounding flue, partitions G^4, and openings G^{11} and G^{12}, communicating from the interior of the oven to the surrounding flue, constructed and arranged to operate substantially as and for the purpose set forth.

7. The combination of the furnace C, having a descending flue, E, and reflecting-jacket A, with the oven G, having flue-spaces at the top and sides, and an opening, G^3, in the top thereof, and a base, J, having plates J^3, J^4, and J^5, forming flue-spaces, and flue K and chimney H, all constructed and arranged to operate substantially as set forth.

334,401. **FORM OF BUILDING MATERIAL.** JOHN S. ARMSTRONG, St. John, New Brunswick, Canada. Filed May 27, 1885. (No model.)



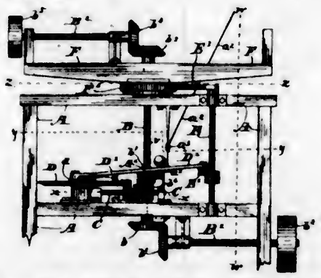
Claim.—1. The reversely-curved or zigzag forms of building-blocks *a*, substantially as hereinbefore set forth.

2. The combination of the blocks *a* with each other and with the part blocks *a'*, to form a wall, substantially as described.

3. The combination of the slabs *b* with a wall composed of the blocks *a*, substantially as described.

4. A wall composed of the blocks *a*, united and secured together by the catches *c*, as shown and described.

334,402. **STRAW-STACKER.** CHARLES N. LEONARD, Indianapolis, Ind., assignor of one-half to Chester Bradford, same place. Filed Sept. 4, 1884. (No model.)



Claim.—1. The combination, with the driving-gear of a straw-stacker and the yoke or base of the straw-carrier thereof, of intermediate mechanism consisting of a crank or crank-wheel driven by said driving-gear, a rock-shaft, a connection between said crank-wheel and said rock-shaft, and a connection between said rock-shaft and said yoke or base of the carrier, whereby said carrier is automatically driven back and forth through the arc of a circle, and the straw thus delivered over a large space, substantially as set forth.

2. The combination of the principal shaft of the carrier mechanism, a crank-wheel, gearing through which said shaft drives said crank-wheel, a rock-shaft, a connecting-rod connecting said crank-wheel and said rock-shaft, the straw-carrier, and a connection between said rock-shaft and the yoke of said carrier, whereby said carrier is alternately moved in one direction and the other, substantially as set forth.

3. The combination, in a straw-stacker, of a crank-wheel, gearing for driving the same, a rock-shaft, a connecting-rod connecting said crank-wheel and said rock-shaft, the straw-carrier, and the connection between said rock-shaft and said straw-carrier, whereby said carrier is driven by said rock-shaft, substantially as set forth.

4. The combination, in a straw-stacker, of the principal shaft B, the driving-shaft B', the shaft C, the crank-wheel D, gear-wheels connecting said several parts, the connecting-rod D', rock-shaft E, the yoke or frame-work on which the straw-carrier is mounted, and gearing connecting said rock-shaft and said yoke or frame-work.

5. The combination, in a straw-stacker, of the principal shaft B, a crank-wheel, D, intermediate gearing connecting them, the rock-shaft, and a connection between said rock-shaft and said crank-wheel, said rock-shaft being geared, as specified, to the straw-carrier, whereby it is adapted to move said straw-carrier back and forth through the arc of a circle, substantially as set forth.

6. The combination, in a straw-stacker, of the principal shaft, a pinion, b^2, thereon, a shaft, C, having a wheel which engages with said pinion, and a pinion which engages with the crank-wheel D, said crank-wheel being provided with several rows of cogs, and said pinion adapted to be moved on the shaft C and engage with any of them, whereby the speed of said crank-wheel may be varied, substantially as set forth.

7. The combination, in a straw-stacker, of the principal shaft B, a single gear-wheel thereon, the mechanism for moving the straw-carrier back and forth through the arc of a circle, and a clutch, b^3, mounted on said shaft, which is adapted to engage with said gear-wheel or to be disengaged therefrom, and thus cause said gear-wheel to revolve or permit it to remain stationary, substantially as set forth.

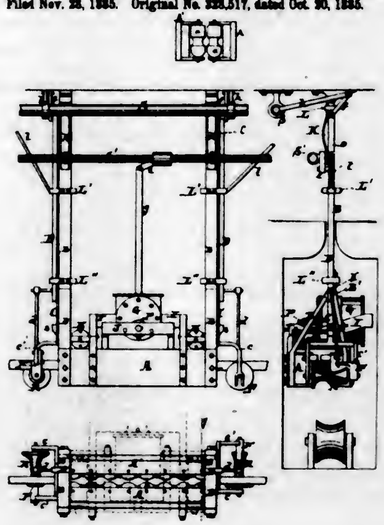
8. The combination, in a straw-stacker, of the straw-carrier, a shaft having a gear-wheel, b^3, (for operating the straw-carrier, as specified,) loosely mounted thereon, a clutch mounted on said shaft and adapted to engage with and lock said gear-wheel in position, a pivoted frame, A', having a weighted arm, *a'*, and a cord or rope, a^2, connected thereto and running to the extreme end of the straw-carrier, whereby said clutch may be disengaged and re-engaged by the workmen on the straw-stack, substantially as set forth.

9. The combination, in a straw-stacker, of a rock-shaft, E, mechanism for operating the same, a spur-segment, E^2, on said shaft, the yoke F, having a spur-gear wheel, F', rigidly secured thereto, and the straw-carrier, substantially as set forth.

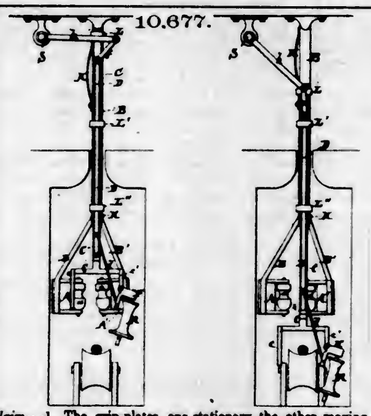
10. The combination, in a straw-stacker, of the frame A, the shafts B, B', B^2, C, and E, the crank-wheel D, the crank-arm E', the connecting-rod D', the yoke F, the gearing connecting said several parts, and the carrier G, substantially as set forth.

REISSUES.

10,677. **ROLLER CABLE-GRIP.** GARRET A. POLHEMUS, Nyack, N. Y. Filed Nov. 28, 1885. Original No. 323,517, dated Oct. 20, 1885.



10,677.



Claim.—1. The grip-plates, one stationary, the other moving laterally upon a hinge, combined with a hydraulic or pneumatic cylinder, said plates being connected to said cylinder, substantially as described.

2. In combination with a cable-grip, the sliding bars C and D, curved arms *c c'*, roller-arm F, roller R, and rod *d*, all connected to the shaft S by the link *f*, and arm *h* for lifting and introducing the cable within the grip-rollers, substantially as set forth.

3. The combination of the fixed bar B, sliding bar C, having projection *s*, sliding bar D, and band L with the spring K, which is secured at one end to the bar B, while its other end passes under the band L, and which serves to hold the bar C and roller R in the raised position, substantially as herein shown and described.

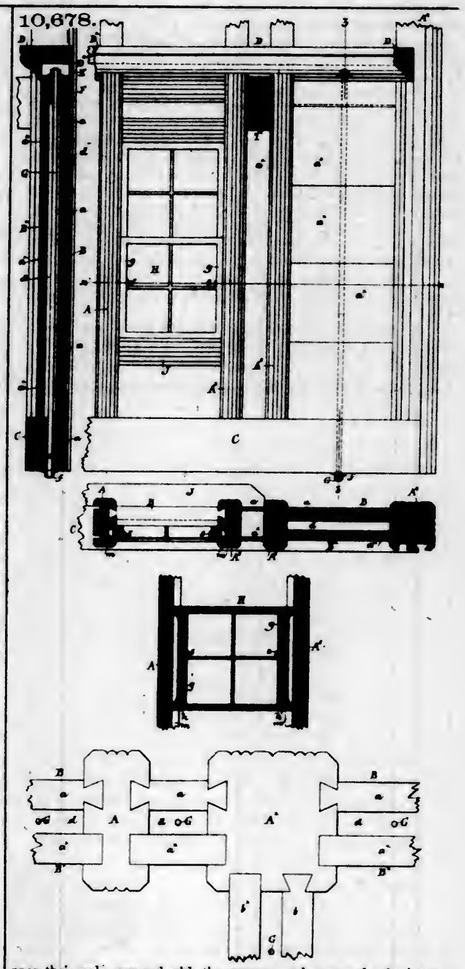
4. The grip-plates A A', provided with sockets and combined with the rollers *a a*, which are grooved in the middle to fit the cable, rounded at their lower ends, and provided with end pins that enter slots in the grip-plates, substantially as herein shown and described.

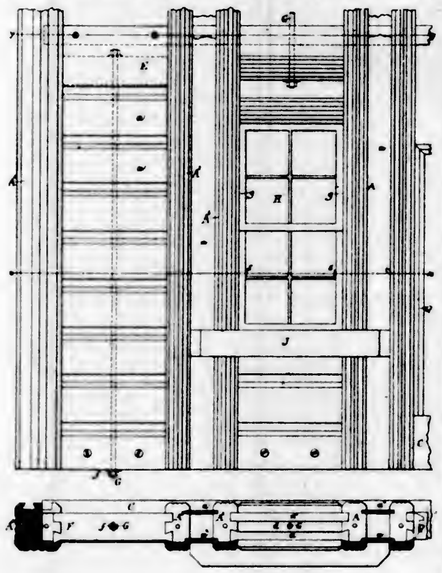
10,678. **MODE OF CONSTRUCTING FRAME HOUSES.** EDSELL TOPMAN, Hinsdale, Ill. Filed June 6, 1885. Original No. 299,596, dated June 3, 1884.

Claim.—1. The combination, with the longitudinal frame-pieces of a house, provided with dovetailed grooves, of planks provided upon their ends with dovetailed tongues engaged with the said grooves, substantially as and for the purpose set forth.

2. The combination, with the longitudinal frame-pieces of a house, provided with dovetailed grooves, of planks having dovetailed tongues

10,678.





upon their ends, engaged with the grooves, and means for forcing together the planks, whereby the joints between them may be tightened, substantially as described.

3. As a separately portable element in house construction, a wall-section composed of two longitudinally-grooved marginal frame-pieces, transverse planks held movably at their ends in the grooves of the frame-pieces, and means holding the ends of the planks in engagement with the frame-pieces, the whole forming an integral section or member adapted to be joined with other and similar sections, to form both the frame-pieces and the sheathing or siding of a house-wall, substantially as described.

4. A section or panel for the construction of houses, comprising longitudinal grooved studs or frame-pieces, transverse planks held at their ends in the grooves of the frame-pieces, means holding the ends of the planks in engagement with the frame-pieces in proper relative position, and means for forcing said planks together, to tighten the joints between the latter, substantially as described.

5. As an integral member in house construction, a panel or section composed of two marginal frame-pieces having dovetailed grooves in their proximate faces, and planks provided with dovetailed tongues on their ends, inserted in said grooves, and thereby uniting said pieces with each other and with the planks, to form such integral section or member, substantially as and for the purpose set forth.

6. The combination, with the frame-pieces of a house and transverse planks movably held upon the frame-pieces, of means for tightening the joints between the planks, consisting of bolts applied to draw or force the opposite end planks toward each other, substantially as described.

7. The combination, with the parallel frame-pieces of a house, pro

vided with dovetailed grooves, and a series of planks having upon their ends dovetailed tongues engaged with the said grooves, of means for tightening the joints between the said planks, consisting of bolts applied to draw or force toward each other the planks at the opposite ends of the series, substantially as described.

8. The combination, with the studding of a house and a double series of planks forming inner and outer walls, of means for holding the planks from movement at one end of the studding, a movable bar or follower located in contact with the end planks of both the inner and outer walls at the opposite end of the studding, and bolts applied to force the said follower against the said end planks, whereby the joints in both the inner and outer walls may be tightened, substantially as described.

9. A frame house having wooden walls provided with vertical tie and tightening rods, boarding E, and foundation C, whereby wind and water cracks are closed, substantially as described.

10. The combination of the walls B B', foundation C, movable beam F, screw-bar G, and means for tightening the same, substantially as and for the purpose described.

11. The frieze-board E, in combination with the movable beam F, walls B B', and foundation C, substantially as and for the purpose described.

12. A frame house provided with upright studs having longitudinal dovetail grooves to receive the planking, which constitutes the walls of the house, and with vertical tightening-rods G, movable beam F, and frieze-board E, substantially as and for purpose described.

13. The combination, with the grooved studs of a house and grooved window-sash H, of strips A, inserted in the grooves of the studs and sash, and means for detachably connecting said strips with the sash, substantially as and for the purpose set forth.

14. The combination, with the grooved studs of a house and grooved window-sash H, of wooden spring-strips A, inserted in the grooves of the studs and sash, and means connecting the strips with the sash, constructed to hold the said strips free from the sash, substantially as and for the purpose set forth.

15. The combination of upright studs A A^2, sash H, wooden spring-strips A A, and tightening-screws *s s*, substantially as and for the purpose described.

16. The combination, with the studding of a building, provided with longitudinal grooves, of a door-frame having a side piece or jamb provided with tongues engaging the grooves of the studs, substantially as described.

PHOTO LITH NORRIS PETERS WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of Connecticut.

THE BRADLEY & HUBBARD MANUFACTURING CO. *v.* THE CHARLES PARKER COMPANY.

Where a bill in equity was brought to restrain the defendants from infringement of the claims of Reissued Letters Patent No. 7,628, granted April 24, 1877, to the Bradley & Hubbard Manufacturing Company, as assignee of John A. Evarts, the inventor, for an improvement in extension lamp-fixtures, *Held* not to be the construction "that shade-ring and weight-ring must be directly connected to each other by the claims," because the court could "not find in the patent a suggestion that the patentee thought that this peculiarity of construction was a distinctive feature of his invention." Patentee "made a universally popular lamp, where none which met the public demand had previously existed, and had he known or appreciated the particulars wherein his lamp was, in fact, an advance, he probably would have stated them in his patent. In consequence of the omission I think that his patent states and claims nothing which the public did not have previously, and that title of his assignee to exclusive use of his actual improvement is therefore defective."

Mr. Charles E. Mitchell, Mr. O. H. Platt, and *Mr. John S. Beach* for the plaintiff.

Mr. Charles R. Ingersoll for the defendant.

SHIPMAN, J:

This is a bill in equity to restrain the defendant from the infringement of Reissued Letters Patent No. 7,628, applied for April 12, 1877, and granted April 24, 1877, to the complainant, as assignee of John A. Evarts, for an improved extension lamp-fixture. The original patent was dated October 31, 1876. As the decision of this case depends, in my opinion, upon the nature of the Evarts invention, as described and claimed in the reissued letters patent, I quote the entire descriptive portion of the specification, as follows:

> This invention relates to an improvement in what are called "extension lamp-fixtures"—that is to say, a fixture which, when suspended, will allow the lamp to be drawn down, or rest at different elevations, and especially to that class in which a removable shade, of glass or porcelain, is employed. Such shades cannot be made a permanent part of the fixture, and the fixture must therefore be constructed with devices for securing the shade and yet allow of its removal, as for cleaning or other purposes.
>
> In the usual construction the shade serves as the counter-balance and rises while the lamp is drawn down, hence the shade can serve its full purpose only in one predetermined position.
>
> The object of this invention is to so construct the fixture that the lamp and shade together will be drawn down; and it consists in combining in an extension lamp-fixture a shade-ring provided with a device for removably securing the shade to the ring, with the lamp attached to said shade-ring, and a weight, of ring form, to serve as a counter-balance, the said ring-shaped weight and shade-ring connected by chains or cords over a suitable support above, so that the lamp and shade may be drawn down, the weight-ring rising from the shade-ring, all as more fully hereinafter described.
>
> A is the shade-ring, from which chains or cords *a* extend up over pulleys *b*, thence down, and the other end of the chains attached to a weight, B, in shape a ring, the opening in which corresponds substantially to the opening in the shade-ring, and so that by drawing down this shade-ring the weight will rise, as indicated in broken lines; but when the shade-ring is at its highest elevation, then the weight-ring may rest thereon.

As the weight rises it will, owing to its ring or open shape, pass over the smoke-bell F, and is not, therefore, limited by the smoke-bell in such rising.

The shade C is of the usual form for such shades, and generally made from glass, porcelain, or similar material, a flange on its upper edge entering the ring A, and so as to rest therein, and secured by a set-screw, *d*, or other suitable device, which will hold the shade in place and yet allow of its being removed or replaced as occasion may require. E, the lamp-holder, is attached to the shade-ring, and so as to move up and down with the shade-ring and shade, as indicated in broken lines. To this holder the lamp is secured in the usual manner.

The ring-weight B is made of sufficient weight to counterbalance the shade, its ring, and lamp, and so that the lamp may rest at any position between its two extremes.

The claims are as follows:

1. The combination, in an extension lamp-fixture, of the shade-ring, a device for removably securing the shade to the ring, the lamp attached to said shade-ring, the ring-shaped weight and shade-ring, connected by chains or cords over a support above, substantially as described.

2. The combination, in an extension lamp-fixture, of the shade-ring, a device for removably securing the shade to the ring, a shade constructed at its upper edge for attachment to said shade-ring, and engagement with said securing device, the lamp attached to said shade-ring, the ring-shaped weight and shade-ring connected by chains or cords over a support above, substantially as described.

The lamp met the recognized wants of the public, displaced other one-light extension kerosene fixtures then in the market, and has had a wonderful sale. In 1883 the defendant began to infringe by making an imitation of the important features of the patented lamp. It is clearly proved that in 1865 Mitchell, Vance & Co., of New York city, made and sent to their salesroom for sale one one-light extension-lamp constructed substantially like the Evarts lamp, except that the porcelain shade was not fastened to the shade-ring, and except, also, that the chains were indirectly connected with the shade-ring by being hooked into the upper ends of the arms of the hasp, which arms also extended through the downwardly-projecting flange of the shade-ring. By the method of construction there is no way of removing the shade except by detaching the chains, when the suspending device would also be disarranged. This lamp was subsequently entered by its number in the printed price-list of Mitchell, Vance & Co., but was never shown or described in their printed descriptive catalogue.

In the Evarts lamp the chains are directly attached to the upper surface of the shade-ring and the two upper ends of the hasp are removably secured to the shade-ring by screws. The hasp and the shade can each be detached from the shade-ring without interfering with the chains, and the ring and weight will still be suspended without derangement of the suspending devices. This arrangement is far more convenient than the one shown in the Mitchell and Vance device, and this very convenience may have given to the Evarts lamp its great commercial success.

The plaintiff earnestly contends that the Mitchell and Vance lamp is not an anticipation of the patented invention by reason of these differences, and that the

Evarts patent, fairly construed, means that shade-ring and weight-ring must be directly connected to each other by the chains, and not through the intervention of the arms of the hasp.

Such a construction does not seem to me to be tenable, because I cannot find in the patent a suggestion that the patentee thought that this peculiarity of construction was a distinctive feature of his invention. The object of the invention was so to construct an extension-lamp, especially of the class having a porcelain shade which must be removably secured to the shade-support, that the shade and lamp could be drawn down together, and this was accomplished by having a ring-formed weight to serve as a counter-balance, the two rings being connected by chains over a suitable support above, so that the lamp and shade may be drawn down while the weight-ring rises from the shade-ring. The shade is to be removably secured to the shade-ring; the lamp is to be attached to the shade-ring so as to move up and down with the shade; the weight-ring and the shade-ring are to be connected by chains, so that as the lamp and shade are drawn down the weight-ring rises; but nothing is said as to the fact that the two rings are to be directly connected with each other, so that the other parts of the fixture may be disconnected without deranging the suspending devices. This construction was not, in the mind of the patentee, a part of the essence of his invention, and the effect produced by the construction was not a part of the expressed object of the invention. The direct attachment of the chains to the shade-ring was shown in the drawings, and was a mechanical feature of the device, but it was not made a distinctive part of the patented improvement. The patent did not claim, and the specification did not describe, any particular mode or method of the connection of the two rings.

Without reference to the question whether the improvement was a patentable invention, the advance which the patentee made was important, though apparently slight. He made a universally popular lamp, where none which met the public demand had previously existed, and had he known or appreciated the particulars wherein his lamp was, in fact, an advance, he probably would have stated them in his patent. In consequence of the omission I think that his patent states and claims nothing which the public did not have previously, and that the title of his assignee to the exclusive use of his actual improvement is therefore defective.

The bill is dismissed.

DECISION OF THE CANADIAN COMMISSIONER OF PATENTS.

TELEPHONE MANUFACTURING COMPANY OF TORONTO v. BELL TELEPHONE COMPANY OF CANADA.

Decided December 19, 1885.

1. In a dispute raised against a patent under section 28 of the Canadian patent act of 1872, the Minister of Agriculture or his Deputy have sole jurisdiction.
2. When forfeiture, on account of illegal importation and non-manufacture, is specially pleaded as a matter of defense in any suit for infringement, it simply becomes a *question préjudicielle*, which has to be determined by the arbitrator appointed by the law, whose decision, being final, is the only evidence to establish or countermand the fact of forfeiture alleged in the case. It does not vest the court seized of the suit for infringement with the jurisdiction of another tribunal, but it resolves itself into a simple question of the kind of evidence which is admissible on that specific point.
3. The legal meaning of the words "carry on in Canada the construction or manufacture of the invention or discovery patented" has been announced in *Smith* v. *Goldie*, and is not necessary to enter in this decision into details on the subject.
4. A patentee is within the meaning of the law, in regard of his obligation to manufacture, when he has kept himself ready either to furnish the patented article or to sell the right of using, though may be not a single specimen of the article has been produced, and he may have voided his patent by refusal to sell, although his patents were in general use.
5. Thomas Alva Edison's patents, No. 8,026, for telephonic communication, No. 9,922, for improvements in telephone, and No. 9,923, for improvements in telephones and circuits, have not become null and void under the provisions of section 28 of the patent act of 1872.

[This is a case of dispute raised against the existence of three patents granted to Thomas Alva Edison, (now owned by the Bell Telephone Company of Canada,) namely: No. 8,026, issued October 17, 1877; No. 9,922, issued May 1, 1879; and No. 9,923, issued May 1, 1879, for alleged forfeiture on the ground of non-manufacturing and of importing, in the terms of section 28 of the patent act of 1872.*]

Mr. J. R. Roaf for the disputants.

Messrs Hector Cameron, S. G. Wood, and *Z. A. Lash* for the respondents.

TASCHÉ, *Deputy of the Minister of Agriculture.*

The petition, addressed to the Minister of Agriculture, bears date October 9, 1885.

It is proper, first, to refer to the renewal of objections against the jurisdiction of this tribunal, and especially to the new point raised, which is, let it be remarked, in contradiction with the absolute denial of competency in this tribunal. This new exception is to the effect that the jurisdiction possessed by this tribunal is one concurrent with the jurisdiction of the ordinary courts in matters of patents and in relation to section 28 of the patent act. Of course, if it were so that a concurrent jurisdiction existed, it would follow that the court first possessed of the question would be the proper tribunal to adjudicate upon it—it would be one of the many applications of the maxim *prior tempore potior jure*. The point is here as to whether there is or not concurrent jurisdiction. The law leaves no possibility of doubt about the jurisdiction of this tribunal, about this jurisdiction being an exclusive one, and about its decisions being final, and therefore binding on every one. These three characters the patent act distinctly establish in the 28th section, which governs the matter. After reciting special causes of forfeiture, it goes on enacting as to the manner and way, and as to by whom such forfeiture is to be ascertained and declared, in the following terse, imperative, and unmistakable language:

Provided always, That in case disputes should arise as to whether a patent has or has not become null and void under the provisions of this section, such disputes shall be settled by the Minister of Agriculture or his Deputy, whose decision shall be final.

Such a clear enactment could not fail to be sustained by the courts before which an objection might be raised against it, and as a matter of fact it has been so sustained by the courts where the question has been brought.

It is now argued that, in virtue of the 26th section of the patent act, a concurrent jurisdiction is given to ordinary courts whenever it is there specially pleaded as a matter of defense in suits for infringements that the patentee's rights are forfeited for want of manufacture and for importation in the terms of the 28th section. To this contention the counsel for the disputants answered that the 26th section does not refer to such defaults as are created by the 28th section. The 26th section, however, most assuredly has reference to such defaults as well as to other defaults, for it says "any fact or default which by this act or by law would render the patent void;" but it does not, for all that, give rise to a concurrent jurisdiction, which is not mentioned nor even hinted anywhere in the act, and in that there are neither difficulties nor conflicts created. It is very easy to reconcile the two provisions of the statute in keeping with the ordinary rules of law and of procedure. When the forfeiture, on account of illegal importation and non-manufacture, is specially pleaded as a matter of defense in any suit for infringement, it simply becomes a *question préjudicielle*, which has to be determined by the arbitrator appointed by the law, whose decision, being final, is the only evidence which can be accepted to establish or countermand the fact of forfeiture alleged in the case. It does not vest the court seized of the suit for infringement with the jurisdiction of another tribunal, but it resolves itself into a simple question of the kind of evidence which is admissible on that specific point, which evidence, according to the Canadian patent act, can only be the decision of the Minister of Agriculture or his Deputy.

The allegation of importation after the expiration of twelve months from the granting of each of the three patents involved in this case has not been in any way sustained by evidence. It is not even necessary to examine whether the few articles imported after twelve months from the dates of any one of these patents could be properly, or to what extent properly, qualified as illegal importations, for the simple reason that the insignificance of their total value forbids the view of their being susceptible of affecting in the least any patent. The counsel of the disputants has, with commendable good faith, admitted this in saying—

I do not rely upon the importations as being of themselves importations sufficient to upset those patents without more proof.

The dispute raised in this case as regards non-manufacture must have been so raised through a misapprehension of the technical meaning of the word "manufacture" employed in the 28th section of the patent act, unless it was intended to rest exclusively on applying the three refusals proved in the case of the Bell Telephone, tried by the Minister of Agriculture, to the three patents aimed at in this case.

The technical and legal meaning of the words "carry on in Canada the construction or manufacture of the invention or discovery patented" is not to be searched for in *Webster* or *The Imperial Dictionary*, but must be extracted from the very matter itself, in accordance with the reason of things and the application to the subject of the ordinary rules of legal interpretation. It is not a question of grammar, but of jurisprudence. Forfeiture might reach a patent for want of manufacturing when Canada is at the same time flooded with the patented article. A patent might be proof against any attack for non-manufacturing when not a single one article patented has been produced or manufactured in the grammatical sense of the word.

The interpretation of the 28th section is laid down at length in the decision of the case *Barter* v. *Smith*. That interpretation has been sustained by several of the highest courts in Canada, and by the Supreme Court in the case of *Smith* v. *Goldie*. Therefore it is not necessary to enter here into any further details on the subject.

The whole case then, as regards the three patents, subject of this dispute, resumes itself into ascertaining whether or not the refusals to sell telephones, which have been proved in the dispute raised against Bell's patent, No. 7,789, applies to Edison's patents, No. 8,026, No. 9,922, and No. 9,923, as it is alleged by the disputants, who have filed, as sole evidence on this point, the evidence produced in the Bell case tried by the Minister of Agriculture. If it were clearly proved that the refusals to sell, which were a part of the defaults that have caused the forfeiture of Bell's patent, No. 7,789, were also refusals to sell Edison's patent, the forfeiture of those last-mentioned patents would have also to be declared as the conclusion of the present dispute.

The proof adduced, in Bell's patent case, of refusal to sell to Mr. Bate, of Ottawa, to Mr. Dickson, of Montreal, and to Mr. Dinnis, of Toronto, was brought against the existence of Patent No. 7,789, Bell's, and contributed in part to the voidance of that patent. It is evidence specifically concerning the patent mentioned and under trial in another case. Therefore, it cannot legitimately serve to destroy three other distinct patents, Edison's, unless it is specifically proved that the same refusals which applied to Bell's one patent were also extended to Edison's three patents. Nothing of this kind has been proved. Edison's patents are not specified in the declarations and correspondence of Bell's case, and nothing has been brought in this Edison's case to assert and establish, as a matter of proof, that the said refusals applied to Edison's three patents, on a

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*SECTION 28.—Every patent granted under this act shall be subject and expressed to be subject to the condition that such patent and all the rights and privileges thereby granted shall cease and determine, and the patent shall be null and void at the end of two years from the date thereof, unless the patentee, or his assignee or assignees, shall, within that period, have commenced, and shall, after such commencement, continuously carry on in Canada the construction or manufacture of the invention or discovery patented in such manner that any person desiring to use it may obtain it, or cause it to be made for him at a reasonable price, at some manufactory or establishment for making or constructing it in Canada, and that such patent shall be void if, after the expiration of twelve months from the granting thereof, the patentee, or his assignee or assignees, for the whole or part of his interest in the patent, imports or causes to be imported into Canada the invention for which the patent is granted: *And provided always*, That in case disputes should arise as to whether a patent has or has not become null and void under the provisions of this section, such disputes shall be settled by the Minister of Agriculture or his Deputy, whose decision shall be final.

2. Whenever a patentee has been unable to carry on the construction or manufacture of his invention within the two years hereinbefore mentioned, the Commissioner may, at any time, not more than three months before the expiration of that period, grant to the patentee a further delay on his adducing proof to the satisfaction of the Commissioner that he was for reasons beyond his control prevented from complying with the above-mentioned condition. (Patent act of 1872, as amended in 1875.)

3. The Commissioner may grant to the patentee, or his assignee or assignees, for the whole or any part of the patent, an extension for a further period of time, not exceeding one year beyond the twelve months limited by the first paragraph of this section, during which he may import or cause to be imported into Canada the invention for which the patent is granted: *Provided*, That the patentee, or his assignee or assignees, for the whole or any part of the patent, shall show cause satisfactory to the Commissioner to warrant the granting of such extension; but no extension shall be granted, unless application be made to the Commissioner at some time within three months before the expiry of the twelve months aforesaid or any extension thereof. (Amendment of 1882.)

formal demand to purchase them. In the absence of proof in any case, the legal presumption is in favor of the subsistence of the patent, and in this case there is more than the ordinary presumption, for it is impossible to reasonably pretend that in the demand for telephonic communication the parties formulating that demand intended to purchase all the patented instruments owned by the Bell Telephone Company, who were then proprietors of more than a dozen different patents. Reason and justice force on us the conclusion that the proof adduced against Bell's patent, without mention of other patents, applies only to that patent which was on trial in the case in which that proof was produced, and cannot be accepted, in that round-about way, as sufficient to destroy the other patents because they happen to be owned by the Bell Telephone Company of Canada. These several patents acquired by the Bell Company are all for the purpose of telephonic communications; they all make use of the same elements; but they are distinct combinations, and have a right to stand as separate inventions. This is a fundamental principle in patents in all countries, there being everywhere a great many patents of combinations for an occasional one for an entirely new art or mechanism. Therefore, the voidance of one patent for telephones does not by any means entail the voidance of another patent for telephones because they stand as distinct combinations. Bell's patent was declared null and void by the Minister of Agriculture because there was ample proof of importation, in forbidden time, having taken place to the notable detriment of home labor, and because there was sufficient proof of refusal to sell, which amounted to non-manufacture, while in this, Edison's case, there is no such proof as applied to any one of the three Edison's patents.

The efforts to prove that there was not for more than two years any instrument made according to patent No. 8,026; that the instruments executed by Mr. Foster were not the distinct articles patented in Patents No. 9,922 and 9,923, as well as the alleged illegal stamping of the articles produced, have no bearing upon the points at issue. A patentee is within the meaning of the law, in regard of his obligation to manufacture, when he has kept himself ready either to furnish the patented article or to sell the right of using, though, may be, not one single specimen of the article has been produced, and he may have voided his patent by refusal to sell, although his patents were in general use.

In this case there is absence of the proof, without which no patent should be considered forfeited. Therefore, Thomas Alva Edison's patents, No. 8,026, for telephonic communication, No. 9,922, for improvements in telephone, and No. 9,923, for improvements in telephones and circuits, have not become null and void under the provisions of section 28 of the patent act of 1872.

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[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1873, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

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Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth.....$10 00

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Issue of January 19, 1886.

Patents	328—	No. 334,403 to No. 334,729, inclusive.
Designs	19—	No. 16,470 to No. 16,488, inclusive.
Trade-Marks	12—	No. 12,951 to No. 12,962, inclusive.
Labels	6—	No. 4,701 to No. 4,706, inclusive.
Reissue	1—	No. 10,679.
Total issue	366	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Montana Territory	.....	.....
Arizona Territory	.....	.....	Nebraska	3	.....
Arkansas	.....	.....	New Hampshire	2	.....
California	12	.....	New Jersey	19	.....
Colorado	1	.....	New Mexico Territ'y	1	.....
Connecticut	9	.....	New York	72	7
Dakota Territory	.....	.....	North Carolina	.....	.....
Delaware	1	.....	Ohio	22	3
District of Columbia	3	.....	Oregon	2	.....
Florida	1	.....	Pennsylvania	39	1
Georgia	.....	.....	Rhode Island	3	1
Idaho Territory	.....	.....	South Carolina	.....	.....
Illinois	38	1	Tennessee	3	.....
Indian Territory	.....	.....	Texas	3	.....
Indiana	10	.....	Utah Territory	.....	.....
Iowa	6	.....	Vermont	1	.....
Kansas	2	.....	Virginia	2	.....
Kentucky	4	.....	Washington Territ'y	.....	.....
Louisiana	2	.....	West Virginia	2	.....
Maine	2	.....	Wisconsin	6	.....
Maryland	6	1	Wyoming Territory	.....	.....
Massachusetts	33	1	United States Army	.....	.....
Michigan	8	.....	United States Navy	.....	.....
Minnesota	4	.....			
Mississippi	2	.....	Total to citizens of		
Missouri	6	.....	the United States	301	15

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria-Hungary	.....	.....	Germany	3	1
Barbadoes	.....	.....	Hawaii	.....	.....
Belgium	.....	.....	Holland	.....	.....
Bermuda	.....	.....	Ireland	.....	.....
Brazil	.....	.....	Mexico	.....	.....
Canada	1	.....	New South Wales	1	.....
Central America	.....	.....	Russia	.....	.....
Colombia, U. S. of	.....	.....	Scotland	.....	.....
Cuba	.....	.....	Sweden	1	.....
Denmark	.....	.....	Switzerland	.....	.....
Egypt	.....	.....			
England	9	2	Total to citizens of		
France	1	.....	foreign countries	16	3

DESIGNS.

16,470 to 16,476, inclusive.—CARPET.—*Edwin Fisher*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed December 9, 1885. Serial Nos. 185,177 to 185,183, inclusive. Term of patents 3½ years.

16,477.—ORNAMENTATION OF BUCKETS.—*James I. Flanagen*, Philadelphia, Pa. Application filed August 22, 1885. Serial No. 175,114. Term of patent 14 years.

16,478.—HARNESS-TERRET.—*George M. Hubbard*, New Haven, Conn., assignor to *W. & E. T. Fitch*, same place. Application filed November 23, 1885. Serial No. 183,789. Term of patent 7 years.

16,479.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Application filed December 5, 1885. Serial No. 184,859. Term of patent 3½ years.

16,480.—WHEEL FOR CARPET-SWEEPERS.—*Edward T. Prindle*, Aurora, Ill. Application filed August 22, 1885. Serial No. 175,115. Term of patent 14 years.

16,481.—INDIA-RUBBER RATTLE.—*John P. Rider*, Matteawan, N. Y. Application filed November 20, 1885. Serial No. 183,458. Term of patent 14 years.

16,482.—CARPET.—*Emil G. Sauer*, Brooklyn, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed November 30, 1885. Serial No. 184,360. Term of patent 3½ years.

16,483.—HEATING-STOVE.—*Thomas White*, Quincy, Ill. Application filed December 17, 1885. Serial No. 186,015. Term of patent 7 years.

16,484.—FONT OF PRINTING-TYPE.—*Andrew Little*, New York, N. Y. Application filed November 12, 1885. Serial No. 182,648. Term of patent 3½ years.

16,485.—FONT OF PRINTING-TYPE.—*Andrew Little*, New York, N. Y. Application filed November 12, 1885. Serial No. 182,647. Term of patent 7 years.

16,486.—EMBOSSED LEATHER FOR HAND-BAGS AND OTHER FANCY LEATHER GOODS.—*John Mehl, Sr.*, Hoboken, N. J. Application filed December 19, 1885. Serial No. 186,234. Term of patent 7 years.

16,487.—RUG.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed December 15, 1885. Serial No. 185,778. Term of patent 3½ years.

16,488.—COACH-BOWL.—*Julius Proeger*, Pittsburg, Pa., assignor to *McKee & Brothers*, same place. Application filed December 4, 1885. Serial No. 184,746. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,951.—ARTICLES HAVING A SURFACE IN IMITATION OF AGATE.—*American Enamel Company*, Providence, R. I. Application filed November 23, 1885. Used since November 1, 1884.
"The word 'AGALOID.'"

12,952.—SHIRTS AND SHIRT-WAISTS.—*William B. Brokaw*, Newburg, N. Y. Application filed October 22, 1885. Used since April 1, 1880.
"The words 'THE RELIABLE.'"

12,953.—SMOKING-TOBACCO, CIGARS, AND CIGARETTES.—*Josephus Hanna* and *Horton H. Hanna*, Dayton, Ohio. Application filed November 23, 1885. Used since September 28, 1885.
"The monogram composed of the letters 'H' and 'B,' and the representation of a lion with mortar and pestle, surrounded by a wreath, which has a streamer flying from it bearing the words 'A NEW DISCOVERY,' and crossing the compound word 'NON-NICOTINE.'"

12,954.—WHEAT-FLOUR.—*Heywood & Williams*, Sandusky, Ohio. Application filed December 2, 1885. Used since May, 1883.
"The words 'CREAM OF THE WHEAT.'"

12,955.—DUCK.—*Gambrill Sons & Co.*, Baltimore and Woodbury, Md. Application filed December 15, 1885. Used since December 9, 1885.
"The word 'PURITAN.'"

12,956.—DRAWING-PAPER AND PAPER FOR PHOTOGRAPHIC PROCESSES.—*Kampfe & Esser*, New York, N. Y. Application filed December 16, 1885. Used since November 10, 1882.
"The word 'HELIOS.'"

12,957.—LAUNDRY-SOAP.—*Jas. S. Kirk & Co.*, Chicago, Ill. Application filed March 23, 1885. Used since February 13, 1885.
"The word 'WASH-TUB.'"

12,958.—FILLED WATCH-CASES.—*H. Muhr's Sons*, Philadelphia, Pa. Application filed December 26, 1885. Used since September 15, 1885.
"The representation of a lion."

12,959.—ACCORDIONS.—*Wilhelm Spaethe*, Gera, Reuss, Germany. Application filed December 16, 1885. Used since October 1, 1885.
"The word 'AJAX.'"

12,960.—CHEWING-GUM.—*William J. White*, Cleveland, Ohio. Application filed November 23, 1885. Used since November 14, 1885.
"The words 'YELLOW BAND.'"

12,961.—BICYCLES, TRICYCLES, AND OTHER VELOCIPEDES.—*D. Rudge & Co.*, Coventry, county of Warwick, England. Application filed December 14, 1885. Used since January 10, 1875.
"The word 'RUDGE.'"

12,962.—COLORING-MATTER AND CHEMICAL GOODS TO WHICH SUCH COLORING-MATTER IS APPLIED.—*Charles Lowe & Co.*, Piccadilly, Manchester, county of Lancaster, England. Application filed October 19, 1885. Used since September 25, 1885.
"The words 'EGYPTIAN BLUE,' and the representations of pyramids and the sun."

LABELS.

4,701.—Title: "EMMONS' PAIN TINCTURE."—*Ezra S. Carpenter*, North Cohocton, N. Y. Application filed December 26, 1885.

4,702.—Title: "PERMANENT CHLORIDE PAPER."—*Eastman Dry Plate and Film Company*, Rochester, N. Y. Application filed December 26, 1885.

4,703.—Title: "EXTENSION AND ADJUSTABLE CLOTHING."—*Klein, Goodhart & Kosh*, Cleveland, Ohio. Application filed December 26, 1885.

4,704.—Title: "WARREN'S STANDARD TEEKING COMPOSITION."—*Peder J. Lobben*, Worcester, Mass. Application filed December 26, 1885.

4,705.—Title: "WHITMORE'S REFINED PANCREATIC EMULSION."—*J. E. Whitmore*, Rochester, N. Y. Application filed December 19, 1885.

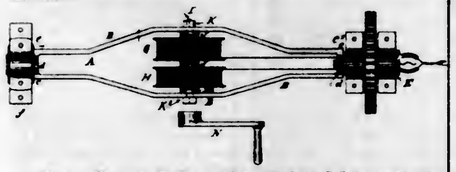
4,706.—Title: "ALBUMENOID FOOD."—*Edward E. Waters*, New York, N. Y. Application filed December 29, 1885.

PATENTS

GRANTED JAN. 19, 1886.

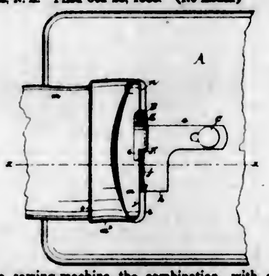
334,403. **SUPPORTING-FRAME FOR WIRE-REELS OF WIRE-TWISTING MACHINES.** GEORGE G. ADAMS, Quincy, Ill. Filed Sept. 4, 1884. (No model.)

Brief.—The reels are provided with hubs and are mounted on an axle journaled in the supporting-frame. Pins passing through holes in the hubs and axle cause the reels to revolve with the axle when they are to be filled with wire. A screw-nut on one end of the axle, taking against the side of the supporting-frame, gives the necessary tension to the wire.



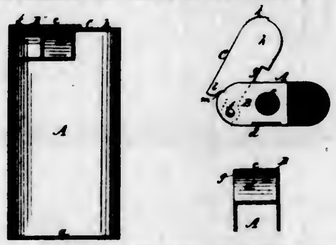
Claim.—The reels G H, provided with hubs J J, in combination with frame A, axle I, pins *m*, nuts K K', and twisting-head E, substantially as and for the purpose specified.

334,404. **WELT-GUIDE FOR SEWING-MACHINES.** WALTER AIKEN, Franklin Falls, N. H. Filed Oct. 25, 1883. (No model.)



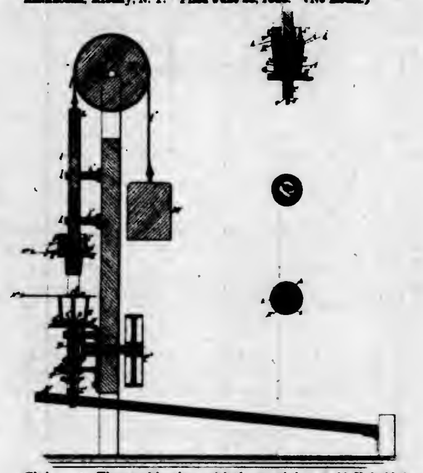
Claim.—In a sewing-machine, the combination, with a presser-foot cut away on one side to form a toe, 6, of a gage having an extended guiding portion, *f*, mainly in front of said presser-foot, to guide the fold 3 of the welt, a recess rearward of said guiding portion for the reception of said presser-foot, and a recess below said guiding portion for the reception of the projecting edge 2 of material, whereby the folded material may be properly held and guided, substantially as set forth.

334,405. **COMBINED CIGAR-CUTTER AND MATCH-BOX.** CHARLES S. ALDEN, Rochester, N. Y. Filed Oct. 19, 1885. (No model.)



Claim.—The box for holding matches, the permanent cover attached to the box, covering one-half of its top and provided with a hole for the insertion of the tip of a cigar, the chamber under the hole, opening through the side of the box for discharging the cut tip, and the cutter pivoted on the under side of the cover for cutting the tip, and provided with an extension which, when the cutter is closed, covers the remainder of the top of the box, the whole constructed to operate in the manner and for the purpose specified.

334,406. **MACHINE FOR MOLDING FLOWER-POTS.** HERMANN ARNEMANN, Albany, N. Y. Filed June 23, 1885. (No model.)



Claim.—1. The combination, with the revolving mold E, held from moving vertically, and reciprocating die I, held from revolving and having flange *i* at its upper end, and coacting with mold E, for forming flower-pots, of spring-receptacles *i'*, springs *r*, ring-form follower K, guide-pins *k k*, working through plate *j*, secured to flange *i*, and having their lower ends secured to follower K and their upper ends provided with heads, serving as seats of springs *r*, all substantially as described, for the purposes and operations set forth.

2. The combination, with mold E, which is revolved on one horizontal plane, disk G, provided with projecting spur *f* and mounted on reciprocating vertical shaft F, and step P, of the die I, secured to reciprocating vertical shaft H, elastic follower K, concentric to said die and steadied and made elastic by mechanism, as above described, yokes L L', draw-rods *l l*, treadle N, and weight W, having connection with yoke L, all substantially as shown and described, for the purposes and operations set forth.

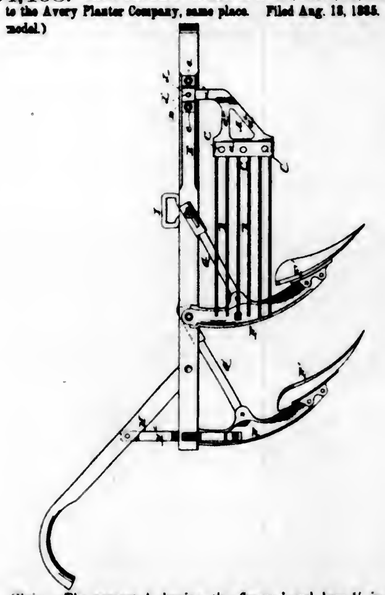
334,407. **SEAL-LOCK.** GEORGE H. ANGELL and CHARLES L. LESLIE, Omaha, Nebr. Filed Oct. 1, 1885. (Model.)



Claim.—A seal-lock consisting of two plates of metal, the front one of which is adapted to slide vertically in grooves within the back plate and is provided with a projecting lug on the front and a knifeway in the rear, in combination with a knife projecting from the lower portion of the back plate, and a card inserted under the bottom edge of the

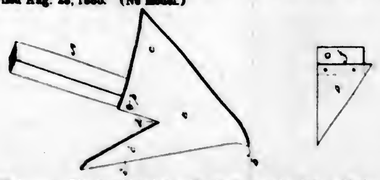
front plate and sprung in front and above the knife, substantially as and for the purpose described.

334,408. PLOW-FENDER. ROBERT H. AVERY, Peoria, Ill., assignor to the Avery Planter Company, same place. Filed Aug. 18, 1885. (No model.)



Claim.—The support A, having the flange *b* and lugs *b'*, in combination with the rods B and locking buttons or heads C, substantially as and for the purpose specified.

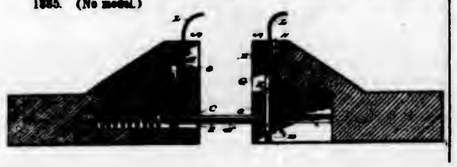
334,409. COTTON-SWEEP. JESSE C. AWALT, Steward's Mills, Tex. Filed Aug. 28, 1885. (No model.)



Claim.—1. The combination, with the sweep having a discharge-opening at one side of its upper edge, of a detachable wing-section adapted to fit in the sweep-opening and having a rigid flange to bear against the rear face of the sweep, the said sweep and flange having aligned openings and a single through-bolt and nut to secure the wing-section to the sweep, and secure both the sweep and wing-section to a standard, substantially as described.

2. The combination of a stock, A, a triangular transversely-curved sweep, B, having a beat point, *b*², and secured to the stock at or near its middle so that the wings *c c'* thereof are located on opposite sides of the stock, one wing, *c*, of said sweep being left solid, and the other wing, *c'*, having a cut-out portion, *d*, to provide a dirt-discharge opening and a tapering arm, *c*², a removable wing-section, D, adapted to be fitted in the discharge-opening *d* of the sweep to convert the device into a solid sweep, and having a flange or ledge, *f*, interposed between the stock and sweep, and a single through-bolt and nut, *b b'*, to detachably secure the sweep B and wing-section D to the stock A, substantially as described, and for the purpose set forth.

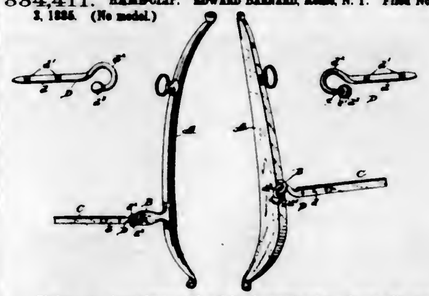
334,410. CAR-COUPLING. NATHANIEL RAMEY, Mound Station, assignor of one-half to William M. Cox, Mount Sterling, Ill. Filed Oct. 20, 1885. (No model.)



Claim.—1. The draw-head having the openings B and C, the link secured in opening C, and the spring bearing against the link to keep it normally extended beyond the draw-head, and the coupling-pin I, suspended in the opening B and free to swing therein to lock the link of the opposite draw-head, and adapted to be raised to release the link, substantially as described.

2. The draw-head having the opening B to receive the link and the vertical intersecting slot D, the housing having the transverse slot F and the longitudinal intersecting slot G, and the opening H, in combination with the pin I, having the trunnions K, the upper portion of the pin being in the recess F, its trunnions working vertically in said recess and bearing on the draw-head, and its lower end being suspended in the recess D, and a chain attached to the upper end of the pin for raising it vertically to release the link, substantially as described.

334,411. HAME-CLIP. EDWARD BARNARD, Rome, N. Y. Filed Nov. 3, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a hame-clip comprising a perforated shank, a hook formed integral with the shank and having a threaded end, and a removable cap or ball having a threaded socket to engage the hook, substantially as described.

2. As an improved article of manufacture, a hame-clip comprising a shank, an integral curved hook at the front end thereof, and a detachable head at the outer end of the hook, substantially as described.

334,412. HANDLE OR PULL FOR WATER-CLOSETS, &c. WALLACE H. BATE, Melrose, Mass. Filed Mar. 20, 1885. (No model.)

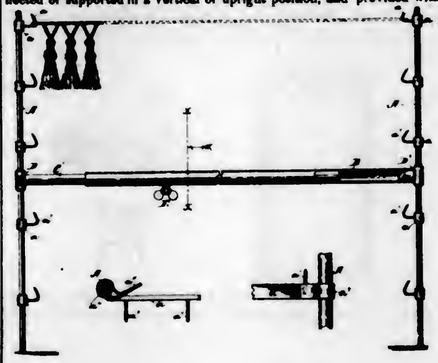


Claim.—1. The improved pull or handle composed of the sections 2 3, connected by the rod and nuts, and the rubber disk clamped between said sections, and having the projecting beaded edge standing out from the rigid surface of the pull, forming a buffer extending entirely around the body of the pull, as set forth.

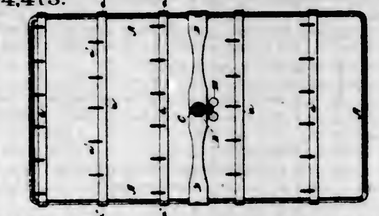
2. The rubber disk 7, having the thickened or beaded margin 8, projecting downwardly, and adapted to serve as a buffer or guard extending entirely around the body of the pull, as set forth.

334,413. FRAME FOR DRAPING FRINGE, &c. LEVI N. BACHAND, Chicago, Ill., assignor to John H. Whipple, same place. Filed Dec. 27, 1884. (No model.)

Claim.—1. A small frame adapted to be inclosed in a box for packing fringe or other like goods, and having two end pieces, as A A, connected or supported in a vertical or upright position, and provided with



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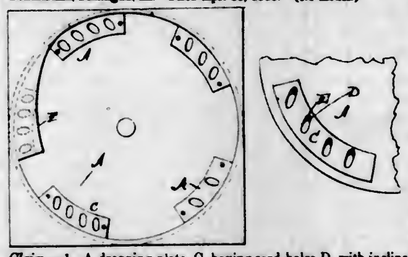


hooks *a' a'* upon their coincident sides, arranged to hold the layers or strands of fringe apart in the case, substantially as specified.

2. A frame having two upright end pieces, as A A, provided with two or more cross-pieces, *a a*, made adjustable up and down, and having hooks *a' a'*, as and for the purpose specified.

3. A frame having two upright end pieces, as A A, provided with two or more rows of hooks, *a' a'*, and an adjustable connection, as a rod, B, and tube C, provided with thumb-screw E, as and for the purpose specified.

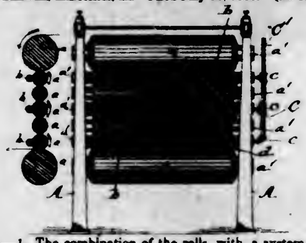
334,414. SEED-PLANTER. PETER BOXENDALE and FREDERICK W. BOXENDALE, Flanagan, Ill. Filed Apr. 11, 1885. (No model.)



Claim.—1. A dropping-plate, C, having seed-holes D, with inclines D' and ribs E, in combination with the frame and cut-off, for the purpose specified.

2. The combination, with the hopper having a discharge-opening in its bottom and a cut-off, F, over said discharge-opening, of the revolving planter-plate provided with arc-shaped openings, and the seed-plates C, having seed-holes D, with inclines D' and central ribs, E, substantially as specified.

334,415. STEAM-CONDENSING DOCTOR FOR PAPER-MACHINES. FRANK BREWER, Marseilles, Ill. Filed July 16, 1885. (No model.)



Claim.—1. The combination of the rolls with a system of steam-pipes to heat and moisten them on their exterior surfaces, substantially as specified.

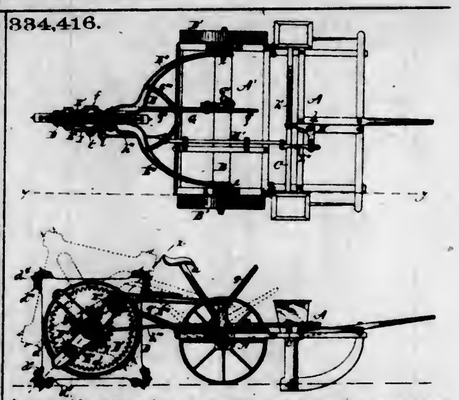
2. The combination of the rolls with a system of steam-pipes provided with longitudinal slots lying closely against the rolls, and through which they receive heat and moisture, the pipes acting as doctors to keep the rolls clear, substantially as specified.

3. The combination, with a stand of calender-rolls, of the pipes *b*, provided with the slots B, the interior steam-pipes, C, having the openings D, and the main steam-pipe C', connecting with the pipes C, all constructed and arranged substantially as shown and described, for the purpose specified.

334,416. CHECK-ROW CORN PLANTER. WILLIAM B. CRANDELL, Decatur, Ill., assignor of one-half to William J. Quinlan, same place. Filed Oct. 23, 1884. (No model.)

Claim.—1. In a check-row corn-planter, in combination with the planter, a supplemental drive-wheel for operating the seed-slides, connected with the planter by means of a frame, which is connected with the supplemental drive-wheel by a pinion journaled in said frame, and

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in gear with an internal gear in the drive-wheel, near the upper side of said wheel, substantially as and for the purpose specified.

2. In a check-row corn-planter, in combination with the planter, a supplemental drive-wheel provided with an internal gear, *d*, pinions F, F', and F'', and frame E, substantially as and for the purpose specified.

3. In a check-row corn-planter, in combination with the planter, a supplemental drive-wheel provided with an internal gear, *d*, a pinion, F, and a pinion, F', the pinion F' connected with the frame E, which draws the drive-wheel, and located near the upper side of the drive-wheel, substantially as and for the purpose specified.

4. In a check-row corn-planter, in combination with the planter, a supplemental drive-wheel provided with internal gear, *d*, pinions F and F', and frame E, substantially as and for the purpose specified.

5. In a check-row corn-planter, in combination, the planter drive-wheel D, having internal gear, *d*, pinions F F' F'', frame E, formed of bars E', and arms E'', and mechanism for transmitting motion from the pinion F to the planter seed-slides, substantially as and for the purpose specified.

6. In combination, the planter drive-wheel suspended in a swinging frame and provided with gear *d*, pinions F F', crank-bar I, rod *h'''*, sliding rod H', slotted connecting-rod *h''*, elbow-lever H, rod *h'*, and slide-bar C, substantially as and for the purpose specified.

7. In a check-row corn-planter, in combination with the planter and a drive-wheel, D, and pinions F F', the adjustable slotted crank-arm I, adapted to receive motion from the pinion F and to impart movement to the seed-slides of the planter through suitable connection therewith.

334,417. ARGAND BURNER FOR LAMPS. MAURICE J. DOOLEY, Chicago, Ill. Filed June 27, 1884. (No model.)



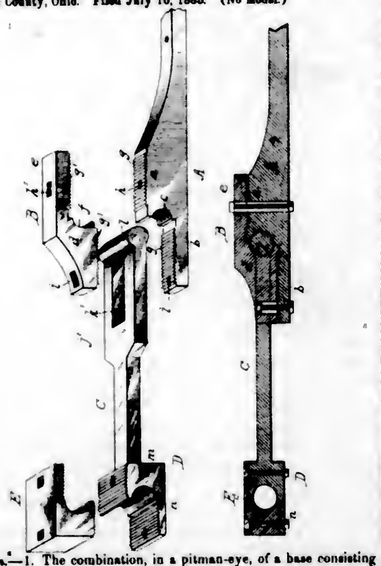
Claim.—1. In a lamp constructed as described, tube A, having perforations *a a a* therein, said tube A extending from the drip-cup Z, having perforations *y y*, or its equivalent, to the chimney-holder or globe-holder V, and supporting the same, in combination with tubes surrounding the wick and supplying air to the flame of the lamp, substantially as described, all constructed, operated, and controlled substantially as and for the purposes set forth.

2. In a lamp constructed substantially as described, the tube A, having perforations *a a a* therein, said tube extending from drip-cup Z, or its equivalent, to chimney-holder V and supporting said chimney-holder, in combination with the tube B, surrounding the wick, tube C on the inside of the wick, and tube D, placed inside of tube C and having a double spreader or air-distributer, constructed substantially as described, placed thereon, all operated, constructed, and controlled substantially as described, and for the purposes specified.

3. In a lamp constructed substantially as described, tube B, surrounding the wick, tube C on the inside of the wick, and tube D, placed in the center of tube C, in combination with a double spreader or air-distributer placed on tube D and forming a continuation thereof, all constructed and operated substantially as described, and for the purpose specified.

4. An air-deflector to be used in connection with the central air-tube in lamps of the character herein described, constructed of plates or pieces E E', connected together by posts *e e*, all arranged, operated, and controlled substantially as described, and for the purpose specified.

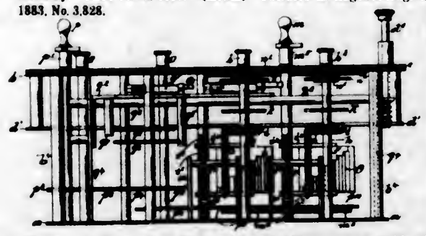
334,418. PITMAN EYE AND CONNECTION. WILLIAM P. DRAKE, Brown County, Ohio. Filed July 10, 1885. (No model.)



Claim.—1. The combination, in a pitman-eye, of a base consisting of the portion *a* and extension *b*, each vertically perforated, a recess, *c*, formed in said portion, a top or cap piece slotted, as described, for the passage of securing-bolts, and having a portion, *d*, and extension *e*, and transverse ribs *g g'*, formed on the adjacent faces of the base and top piece, substantially as set forth.

2. The combination, in a pitman-connection, of an eye consisting of a base, A, having an extension, *b*, and recess *c*, a top or cap piece, recessed as described, and provided with the body portion *d*, recessed to register with the recess *c*, a pitman-shank having a flat portion containing a rectangular opening, *k*, and carrying a cylinder, *l*, and securing means for the eye, substantially as set forth.

334,419. CALCULATING-MACHINE. KARL DUBCHANEK, Freiburg, Germany. Filed Oct. 9, 1883. (Model.) Patented in England Aug. 4, 1883, No. 3,828.



Claim.—1. In a calculating-machine or arithmometer capable of performing the operations of addition, subtraction, multiplication, and division, the combination of a rotary shaft, a toothed sector capable of sliding upon and rotating with said shaft, and means for vertically moving, holding, and releasing said sector, with a causation-disk set by said toothed sector and a result-disk rotated or actuated by said toothed sector, substantially as described.

2. In a calculating-machine or arithmometer, the combination of a series of rotary shafts, a corresponding number of toothed sectors capable of rotating with and sliding upon said shafts, means for sliding, locking, and releasing said sectors, numbered causation-disks applied to the shafts of the toothed sectors, and result-wheels rotated or actuated by said toothed sectors, substantially as herein set forth.

3. In a calculating-machine, the combination of a sector having nine teeth of unequal length on its curved face, the rotary shaft carrying said sector, a rack-bar and arms, and pinion-shaft for raising and lowering said sector on its shaft, with a causation-wheel set by the sector and a result-wheel acted upon by the same, substantially as herein set forth.

4. In a calculating-machine, the combination of the train of gearing, the shafts of the causation-disks, the toothed sectors and their shafts, and means for vertically moving and rotating the sectors, with the result-disks operated by the sectors, substantially as herein set forth.

5. In a calculating-machine, the combination of the rotary shaft, the toothed sector fitted to turn therewith and slide thereon, and means for vertically moving the sector, with the shaft *h*, carrying the causation-disk *l*, and ratchet-wheel *k*, the shaft m^4, having the cam m^{16}, and the pawl-lever k^2, substantially as herein set forth.

6. In a calculating-machine, the combination of the ratchet-wheel m^3, spring-pawl m^{20}, shaft m^4, shaft m^3, geared to said shaft m^4, and crank *m*, with the toothed sector, its rotary shaft, and the causation and result disks, substantially as herein set forth.

7. In a calculating-machine, the combination of a motor-shaft, *p'*, having a crank-arm, *p*, a train of gearing, and the toothed sectors, with their rotary shafts, adapted to be moved to the right or left by said crank, substantially as herein set forth.

8. In a calculating-machine, the combination of the shafts having disks, on which the result of an arithmetical operation is shown, and wheels possessing ten teeth, with the toothed sectors arranged opposite said toothed wheels, and means for causing the sectors to engage with said wheels or be released therefrom, substantially as herein set forth.

9. In a calculating-machine, the combination of the drums provided with two arms, the levers, and the shafts having pins, and an adjacent shaft having a toothed wheel and numbered disk, said levers acting upon the drums to raise them to such a height that one of the arms thereon engages with the toothed wheel of the adjacent shaft and turns the same to show the next figure, substantially as herein set forth.

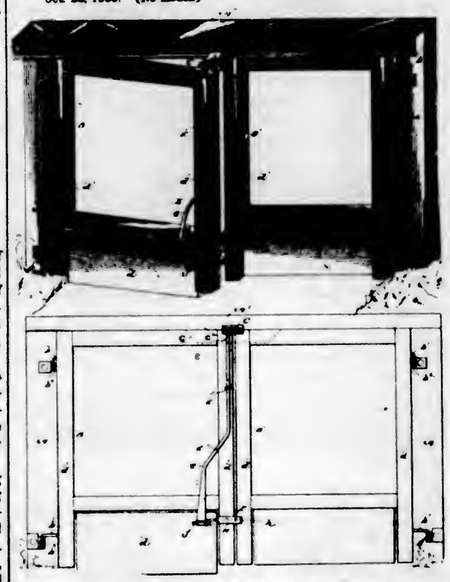
10. In a calculating-machine, the combination of the levers *q'*, and the springs *q*, acting upon the same, with the movable drums o^2, having arms o^3 o^4, the shafts of said drums, the causation and result wheels, and means for operating the same, substantially as herein set forth.

11. In a calculating-machine, the combination of the movable or sliding piece or plate q^2, the spring-pressed levers mounted thereon, the eccentrics for giving a to-and-fro movement to the sliding piece, with the toothed sectors and the causation and result wheels, substantially as described.

12. In a calculating-machine, the horizontally-shiftable frame or carriage having numbered disk for indicating the result of arithmetical operations, and the shafts with toothed wheels carrying said disks, in combination with the stationary frame and the rotating sectors, causation-disks, and operating devices mounted upon said stationary frame, substantially as herein set forth.

13. In a calculating-machine, the combination, with the stationary main frame having a notched base and carrying rotating sectors, causation-disks, and operating-gearing, of the carriage or shiftable frame having numbered disks for indicating the result of arithmetical operations, and with detent or locking mechanism engaging with the notched base of the stationary frame, substantially as herein set forth.

334,420. FLOOD-GATE. MELVIN A. EMMONS, Wauseon, Ohio. Filed Oct. 22, 1885. (No model.)



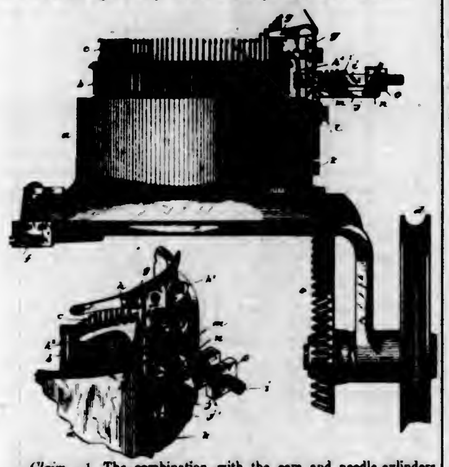
Claim.—1. The combination of the upright frame, the gravitating gates, a catch, C, pivoted to the cross-bar of the frame and adapted to lock both gates, when closed, a movable panel carried by one of said gates, and a vertically-movable rod connected with the panel to elevate the pivoted catch from engagement with the gates, substantially as described.

2. The combination of the upright frame, the gates hinged thereto, a pivoted catch adapted to lock both of said gates, a movable panel carried by one of the gates, a movable rod connected with the panel to release the pivoted catch from the gates, and a locking-arm also connected to the panel, said arm being pivoted on one of the gates and engaging the fellow gate to lock the same, the pivoted catch and locking-arm being operated simultaneously by the movable panel to unlock the gates, substantially as described.

3. In a flood-gate, the combination of the posts, gravitating gates hinged thereto, a panel pivoted in one of said gates, a pivoted catch, C, a sliding rod pivotally connected to the panel and arranged between a guide secured to the gate, that carries the pivoted panel, a latch, F, secured to one of the gates, and a pivoted locking-arm connected to the panel and adapted to engage the latch F, substantially as described.

334,421. LATCH-GUARD ATTACHMENT FOR KNITTING-MACHINES. GEORGE W. EVES, Washington, D. C. Filed Aug. 2, 1884. (No model.)

Brief.—The finger is designed to pass between the latches of the needles and edge of the stocking-top outside of the circle of needles, and thus prevent the latches from digging into or being caught by the top in their descent to form loops. The adjusting device is designed to insure an accurate setting of the finger in the position of use, and to readily throw it out of operative position when its presence is not essential.



Claim.—1. The combination, with the cam and needle cylinders and needles of a knitting-machine and means to rotate the cam-cylinder, of the latch-engaging finger, a retracting-spring thereon, a set-screw, and a supporting-bracket, substantially as shown and described.

2. The combination, with the cam and needle cylinders and needles of a knitting-machine and means to rotate the cam-cylinder, of a standard, the yarn-guide thereon, the bracket and means to adjust it vertically on said standard, a shank arranged in said bracket, a latch-engaging finger carried by said shank, a spring engaging said shank and adapted to hold said finger out of operative position, a set-screw to hold said finger in operative position on said bracket, and a nut to limit the throw of the finger's shank, substantially as shown and described.

334,422. WHEELED DIRT-SCRAPER. W. LAMARTINE FAY, Elyria, Ohio. Filed May 16, 1885. (No model.)

Claim.—1. The jointed draw-bars *d* and *d'*, in combination with the pole D, axle B, chains *b' b'*, and board F, all so combined that when said scoop A is raised from the ground said draw-bars *d* and *d'* will form an angle resting against said board F and prevent the scoop A from tilting or swaying in transportation, and which will also permit said scoop being dumped forward back of said axle, all as above set forth, and substantially as described.

2. The jointed draw-bars *d* and *d'*, in combination with the chains *b' b'*, attached thereto, and axle B, all so constructed as to permit said draw-bars bending or closing up in such a manner as to allow the scoop A, when carried, to fall forward until its center of gravity is nearly under said axle, and also permit said scoop, when desired, being dumped forward back of said axle, all as above set forth, and substantially as described.

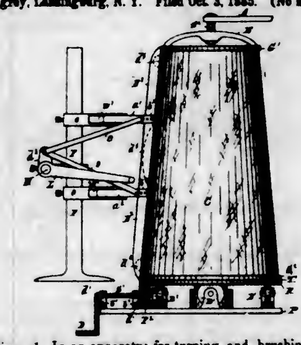
3. The jointed draw-bars *d* and *d'*, in combination with the scoop A, all so constructed as to permit said scoop to fall forward when raised from the ground, all as above set forth, and substantially as described.

4. The combination of the draw-bars *d* and *d'*, axle B, with the attachments above described, clutch, chains, wheels, pole, and foot-board, all as above set forth, and substantially as described.

5. The clutch *i*, consisting of the disk or collar R and its counterpart shown in Fig. IX, with the radiating arms *t t* and lugs *t' t'*, provided with the jaw *u*, with its arms *u' u'*, projection and pin *v*, and thimble *v'*, all as above set forth, and substantially as described.

6. The clutch *i*, as above set forth and described, in combination with the axle B and wheel C, all as above set forth, and substantially as described

334,423. APPARATUS FOR BRUSHING AND SHAPING SAND CORES. JAMES FLEMING, Troy, assignor of one-half to Howard M. Dongray, Lansingburg, N. Y. Filed Oct. 3, 1885. (No model.)



Claim.—1. In an apparatus for turning and brushing sand cores, the combination of a platform provided with rollers projected from its upper surface, a table adapted to support the core, said table being made with a circular gage-plate on its upper surface and outer edge, and a rack circumferentially arranged on its under surface, a cap having a vertical bearing and gage-plates adapted to rest on the top of the core, a pinion provided with a crank-shaft and bearing therefor, said pinion being adapted to mesh into said rack, and a finishing-blade or templet, all constructed and arranged to be operated substantially as and for the purpose set forth.

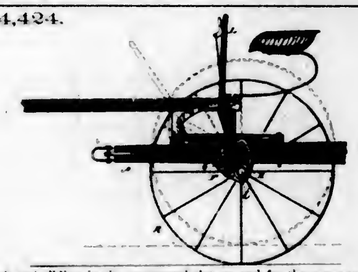
2. The combination of the platform P, constructed with rollers B', the table T, made with the gage-plate G^2 on its outer edge and the rack R on its under surface, the pinion P^2, arranged on the crank-shaft S', the cap C, made with the vertical shaft S^2 and the gage-plate G', the blade or templet B^2, the arms *a' a²*, made with guideways, and the connecting-rods O O and the shaft M, having bearings and provided with the crank-arm d^2, said parts being connected and constructed to operate substantially in the manner as and for the purposes set forth.

334,424. SULKY-PLOW. GEORGE H. FOWLER, Taughannock Falls, N. Y. Filed May 16, 1885. (No model.)

Claim.—1. A U-shaped stub-axle having the arm which is journaled in the vehicle-frame parallel to and pointing in the same direction as the arm bearing the wheel, as and for the purpose shown and set forth.

2. The combination, with a bearing-plate having a bearing and a segmental slot concentric with the bearing, of a U-shaped stub-axle having its arms parallel and pointing in the same direction, and having its shorter arm rocking in the bearing and the longer arm projecting

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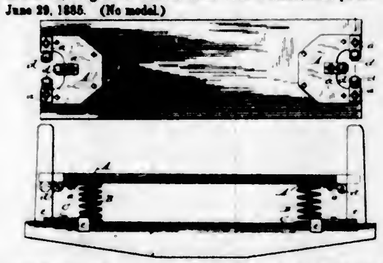
through and sliding in the segmental slot, as and for the purpose shown and set forth.

3. The combination, with a sulky-frame provided with a bearing-plate having a circular opening and a curved slot therethrough, of a U-shaped axle having its arms passing through the curved slot and circular opening, substantially as described.

4. The combination, with a sulky-frame provided with a bearing-plate having a circular opening and a curved slot therethrough, of a U-shaped axle having its arms passing through the circular opening and curved slot, and a lever having its fulcrum upon the arm passing through the opening in the bearing-plate and having one end secured to the arm of the axle sliding in the slot, as and for the purpose shown and set forth.

5. The combination, with a sulky-frame having two bearing-plates, each provided with a circular opening and a curved slot, and two U-shaped axles mounted in said aperture and slots, of a lever operatively engaging both ends of one axle, and a collar mounted on the arm of the opposite axle, passing through the slot in its bearing-plate, and having a strap attached to said collar, and means for adjusting said strap, substantially as described.

334,425. SEAT-SPRING FOR WAGONS. FORMAN F. FOWLER, Wolcott, N. Y., assignor of one-half to M. V. B. Walderf, same place. Filed June 29, 1885. (No model.)



Claim.—1. The spring attachment for wagons, consisting of the spring, the top plate secured thereto, the guides adjustably secured to the plate, and the base-plate provided with adjustable devices for attachment to the bolster.

2. In a spring attachment for use on existing wagons, a spring, in combination with a top plate secured thereto, and the horizontally-adjustable guide-rolls secured to the plate, whereby the guides may be adjusted to standards of different sizes.

3. In combination with a seat-sustaining spring, a base-plate adjusted to extend across the top of the bolster and provided with arms to clasp the two sides of the same, and a top plate recessed to admit the standard, said members constituting, jointly, a spring attachment applicable to wagons of ordinary construction.

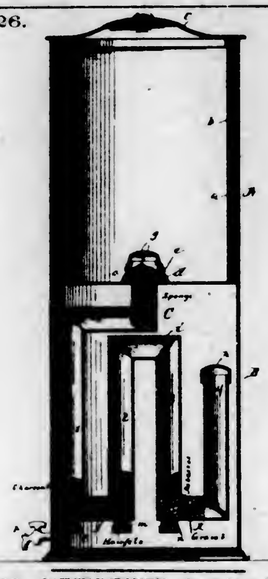
334,426. COMBINED COOLER AND FILTER. JOHN W. FRASER and ANDREW J. THOMAS, Kansas City, Mo. Filed June 11, 1885. (No model.)

Claim.—1. In a combined cooler and filter, the combination of an upper tank having double walls, a lower tank, and a filtering-tube communicating with the former at the bottom and extending down into the latter, substantially as described.

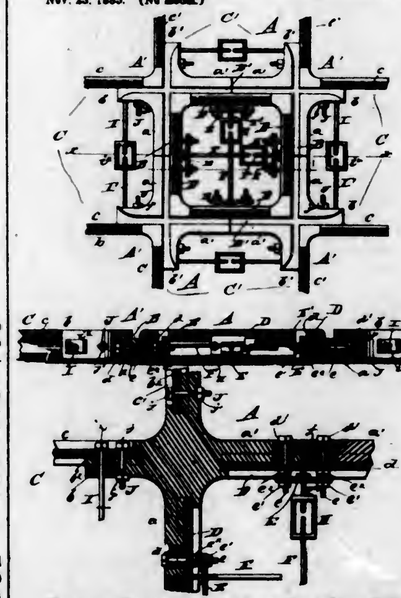
2. In a combined cooler and filter, the combination of an upper tank having double walls and provided in its bottom with an opening surrounded by a threaded flange having perforated cap, of a filtering-tube composed of a number of vertical sections united at their two ends by horizontal sections and provided at its extremity with a perforated cap, and the lower tank, B, said filtering-tube being provided with layers of the several-named filtering media, substantially as described.

3. The combination of the tanks A and B, constructed as described, and the filtering-tube C, constructed of the vertical sections 1 2 3 4, and horizontal sections *i j k*, and provided with the lower capped flanges, *l m n*, all as set forth.

334,426.



334,427. RAILWAY-CROSSING. JOSIAH GRAY, Chicago, Ill. Filed Nov. 23, 1885. (No model.)



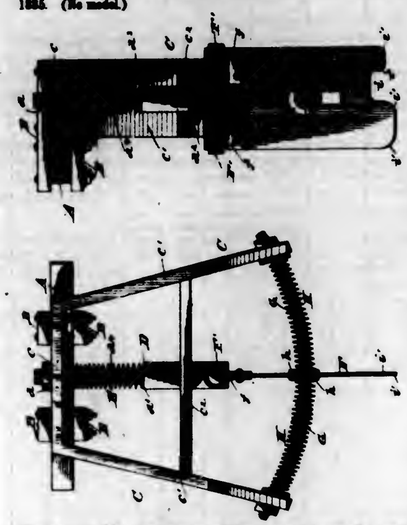
Claim.—1. The combination of the crossing railways C C', similar sections A' of the crossing-block A, and means, substantially as described, whereby the opposite sections A' may be either drawn toward or separated from each other.

2. The combination of the crossing railways, the crossing-block made in sections, the fish-plates connecting said sections, and the rods and turn-buckles connecting the opposite sections, substantially as specified.

3. The combination of the two crossing railways, C C', the similar sections A' of the crossing-block A, the fish-rails D, the rods F F', and the turn-buckles H, substantially as specified.

4. The combination of the crossing railways C C', the similar sections A' of the crossing-block A, the fish-rails D, the rods F F' and I I', and the turn-buckles H and i^3, all constructed and arranged substantially as and for the purposes specified.

334,428. RAILROAD-TRACK CLEARER. JOSIAH GRAY, Chicago, Ill., assignor to himself and Carter Smith, same place. Filed Nov. 30, 1885. (No model.)

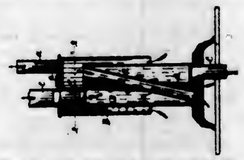


Claim.—1. The combination of the scraper-frame, the vertical shaft attached thereto, the scraper-blade connected to the lower end of said shaft and capable of turning back and forth thereon, the rod connecting the ends of the side rails of the scraper-frame and passing through a slot in the scraper-frame blade, and the coiled springs on said rod acting against opposite sides of the scraper-blade, substantially as specified.

2. In a rail-scraper, the combination, with the frame and vertical shaft connected thereto, of a rectangular scraper-blade attached to the lower end of said shaft, and having the notch *i* in its lower edge, I, and the rounded corners *i' i'*, substantially as specified.

3. The herein-described rail-scraping device, composed of the frame C, having the rails *c c' c²*, the shaft D, having the cylindrical portion d^3 and squared portion *d'*, the spring E on said shaft, the scraper-blade F, connected to the lower end of the shaft D, having its lower corners rounded, and the notch *i* on its lower edge, the rod G, connecting the lower ends of the rails *c' c'*, and the coiled springs H H, all constructed and arranged substantially as shown, and for the purposes specified.

334,429. HEATING ATTACHMENT FOR FURNACES AND STOVES. JOHN T. GREENWOOD, Kalamazoo, Mich. Filed July 27, 1885. (No model.)



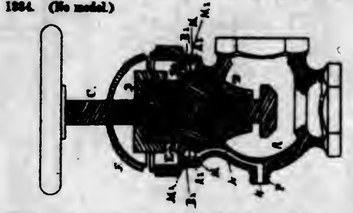
Claim.—1. The combination, with a basement-furnace, of an air-heater consisting of the heating-drum with air-pipes passing therethrough, and the jacket surrounding the upper portion of the drum, and forming an air-chamber above said drum, pipes connecting the heater with the furnace and chimney, and pipes connecting the jacket for conveying hot air, all substantially as set forth.

2. The air-heater consisting of the drum with air-pipes passing therethrough, and a jacket inclosing the upper portion of the drum and forming an air-chamber above said drum, and an air-receiving space around the drum, substantially as set forth.

334,430. ART OF MAKING BUTTER. LYMAN GURNSEY, Chicago, Ill. Filed May 23, 1885. (No specimens.)

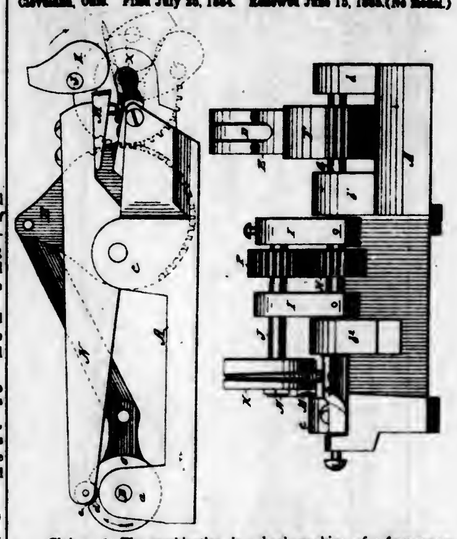
Claim.—The process herein described of making butter, the same consisting in mingling two bodies of cream of different age, then churning the same, then removing a portion thereof from the churn and mingling with the removed part a quantity of butter, then churning the residue until butter begins to separate, then adding butter thereto, as specified, and churning the mixture, and finally adding thereto the portion first abstracted and churning the whole until the butter is made, the proportions employed being substantially as specified.

334,431. VALVE. PATRICK HARVEY, Chicago, Ill. Filed July 19, 1884. (No model.)



Claim.—In a valve, the shell having the duct N, the exteriorly-accessible plug having the ports B^2, and the leakage-receiving cup surrounding said ports, said shell and plug having their binding-shoulders provided with an annular groove communicating with the duct N and with the ports B^2, all combined and co-operating substantially as and for the purpose set forth.

334,432. MACHINE FOR MAKING HOOKS. HENRY V. HARTS, Cleveland, Ohio. Filed July 25, 1884. Renewed June 15, 1885. (No model.)



Claim.—1. The combination, in a hook-machine, of a former corresponding to the inner contour of the hook, a holding or clamping jaw, and a bending device having a rotary movement around the former and a positively-actuated individual rotation about its own axis, as and for the purpose described.

2. The combination, in a hook-machine, of a former corresponding to the inner contour of the hook, a holding or clamping jaw, and a bending device having a rotary movement around the former and a secondary individual rotation, the said bending device being made of the shape shown at K, to give the reverse curve or outward turn to the end of the hook in one operation, as and for the purpose described.

3. The combination of the bed-frame A with former L, the holding-jaw M, the bending-pulley K, shaft J, with gear P, the shaft G, with arms I I, and the stationary gear H, as and for the purpose described.

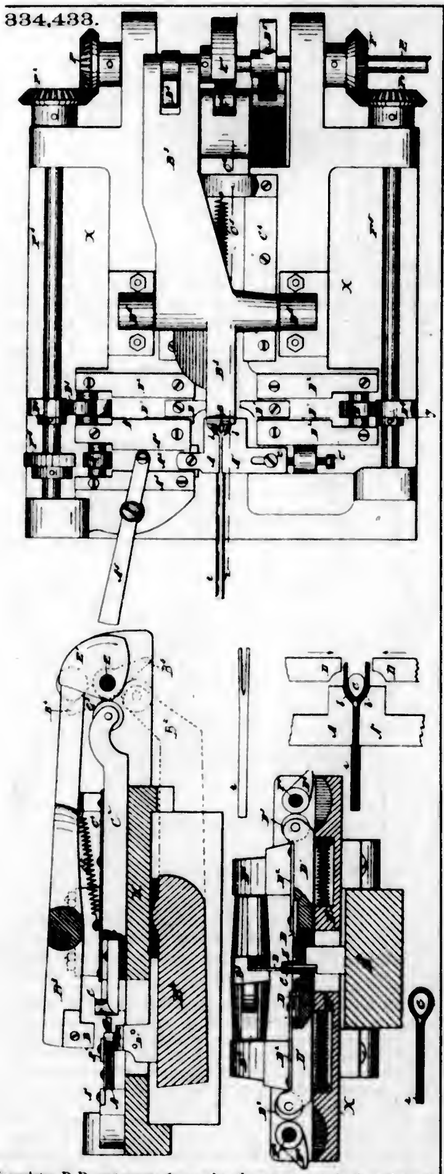
4. The combination of the bed-frame A, shaft B, with cam O, having opening *s*, the lever N, with holding-jaw M, the former L, bending-pulley K, shaft J, with gear P, the shaft G, with arms I I, stationary gear H, gears E and F, the pitman D, and crank C, substantially as and for the purpose described.

334,433. MACHINE FOR FORMING EYES FOR METAL BOLTS AND HOOKS. HENRY V. HARTS, Cleveland, Ohio. Filed July 5, 1884. Renewed June 15, 1885. (No model.)

Claim.—1. An eye-machine consisting of a set of clamping-plates for holding the iron bar, a former for expanding the slitted ends and forming the eye, bending-plates for bending the slitted ends around the former, and means for causing them to operate in the order substantially as and for the purpose described.

2. A machine for forming eyes in eyebolts, &c., consisting of the combination of the clamping-plates A A', the vertically-acting shear-blades B B', the longitudinally-sliding and expanding-former C, the bend-

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ing-plates D D, and means for causing them to operate in the order and for the purpose specified.

3. The combination, with the bed-frame, of the main shaft E, with cams and bevel-wheels, and counter-shafts F^4 F^5, with cams and bevel-wheels, the gripping-plate slide and gripping-plates, the shear-levers arranged one above and the other below the bed-plate and provided with shear-blades, the former-slide having former C, and the bending-plate slides with plates D D, as and for the purpose described

4. The clamping-plates A A', one being made rigid and the other being made movable and both provided with notches *b b* and concave edges *a a'*, in combination with the vertically-acting shear-blades B B', the expanding-former C, and bending-plates D D, as and for the purpose described.

334,434. SHOE-CLASP. JOSEPH C. HAMMOND, Jr., Rockville, and THEODORE E. KING, Westport, Conn. Filed May 15, 1885. (No model.)

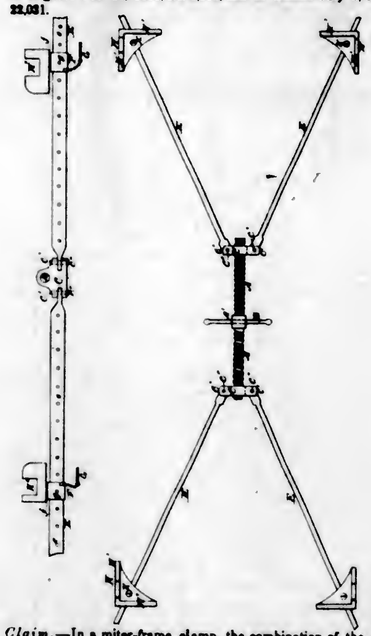
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Claim.—1. In combination, in a clasp, a tongue-frame formed of a single piece of wire bent to the form of the open frame, substantially as described, with sockets for supporting pivotal and locking projections on the tongue, and a tongue formed of a single piece of wire bent to shape, with pivots and projections adapted to fit the respective sockets, all substantially as described.

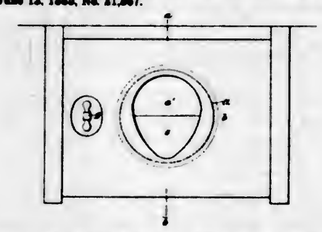
2. In combination, in a clasp, a tongue-frame, *a*, formed of a single piece of wire bent to shape, with pivot-sockets *c*, and locking-sockets, and the ends of the wire sharpened and turned downward from the plane of the frame, and a tongue, *d*, with pivots *d'*, and locking-projections *e*, all substantially as described.

334,435. MITER-FRAME CLAMP. GEORGE R. HAMMOND, Sandland, County of East, England. Filed June 2, 1885. (No model.) Patented in England Feb. 11, 1885, No. 1,993, and in Canada July 8, 1885, No. 22,031.



Claim.—In a miter-frame clamp, the combination of the double screw A, having a right and left hand screw-thread cut upon its ends, the boss and handle B between said screw-threaded ends, nuts upon each of said screws, and horns projecting laterally from said nuts, with bars pivoted to said horns, sliding sockets F, and stop-pieces H upon said bars, substantially as and for the purpose set forth.

334,436. DRY SYSTEM OF DISPOSING OF SEWAGE, &c. THOMAS HAWKSLEY, Brighton, County of Sussex, England. Filed Dec. 6, 1884. (No model.) Patented in England Aug. 30, 1884, No. 11,780; in Belgium Nov. 21, 1884, No. 66,961; in France Nov. 22, 1884, No. 165,536; in Italy Dec. 31, 1884, XVIII, 17,657, XXXV, 80; in India Jan. 12, 1885, No. 196; in Austria-Hungary Mar. 5, 1885, No. 44,656 and No. 11,262, and in Canada June 13, 1885, No. 21,867.



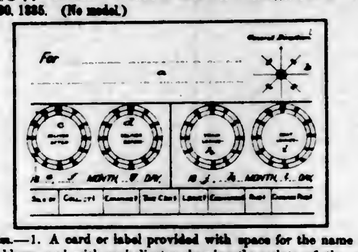
Claim.—1. In a dry-earth closet, a conical pan in two parts, each part having a counterbalance serving automatically to close these parts together, in combination with a single pull-handle, and levers jointed to each handle, serving to simultaneously draw the two parts away from each other, all substantially as set forth.

2. A dry-earth closet consisting of a conical pan in two parts combined with counter-weights serving to keep the two parts normally closed, to hold in readiness earthy or deodorizing material, and arranged, substantially as described, in connection with a handle serving to quickly move the parts away from each other, to discharge centrally the contents of the pan.

3. In combination with a closet having a lower conical part or bowl divided into two halves, as set forth, and normally held closed together, a loose or unattached flexible lining or bag, *i*, of suitable material, adapted for holding a portion or packet of deodorizing material, as and for the purposes set forth.

4. In combination with a set of closets for different stories of a building, such closets having conical bowls divided into two halves normally held closed together, for the purposes set forth, the straight shafts *l* beneath the same, normally closed at their top, a receiver, *n*, beneath each shafts, and the fresh-air ventilating air-shaft *o* outside the building communicating directly with the shafts *l* at a point near and directly over the receiver, the combination serving to prevent the passing of foul odors into the house and to carry them off outside of the house.

334,437. LABEL. GEORGE C. HEDDEN, Washington, D. C. Filed Jan. 30, 1885. (No model.)



Claim.—1. A card or label provided with space for the name and general address, and with an indicator showing the points of the compass, whereon may be designated the general direction or section of the city, substantially as described, and adapted to be marked by a simple pen-stroke to indicate the particular direction required.

2. A label provided with a space for an address, and with figures indicating the hours of the day, both printed or produced directly thereon, whereby a simple pen or pencil mark may be made to designate the time at, after, or before which a parcel is to be delivered to the address written on the card.

3. An address card or label provided with a series of questions adapted to be marked to constitute directions, as explained, whereby the necessary information may be given to a porter or other person without being disclosed to a purchaser.

4. The herein-described card or label provided with space *a* for the general address, indicator *b*, adapted, when marked, to indicate the general direction, circles *c d h i*, bearing figures indicating hours of the day, and instructions as to delivery of goods, spaces *e f g j k l*, to receive indications as to dates, and a series of instructions in the form of questions, all substantially as set forth and shown.

334,438. COMBINED TOOL FOR RAKING, HOEING, SHOVELING, AND PITCHING. WATSON HINTON, Carthage, Mo. Filed Apr. 9, 1885. (No model.)



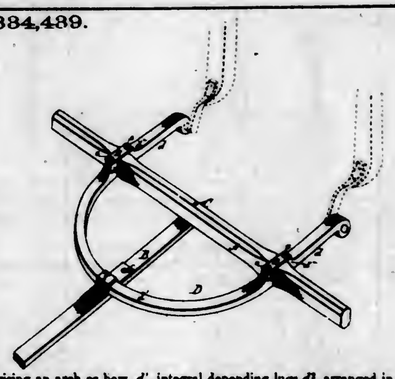
Claim.—1. The combination, with a frame, A, having arms *a' a²*, head *a*, and ferrule B, of a pin, *f*, pivot-bolt D, and a blade, C, having a sharp edge, *c'*, tines *c*, and a projection, E, provided with holes *e*, substantially as shown and described.

2. The combination of a frame, A, provided with arms *a' a²*, having holes a^2 a^3, a head, *a*, having a tongue, a^4, rabbets a^5 a^6, with a spring thumb-piece, F, having a pin, *f*, a blade, C, having a sharp edge, *c'*, tines *c*, and projection E, and pins D, all arranged to operate substantially as and for the purpose set forth.

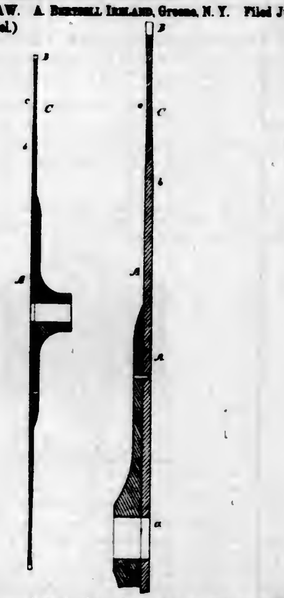
334,439. VEHICLE RUNNING-GEAR. FRANCIS HILDRETH, Townsend's Inlet, N. J. Filed July 6, 1885. (No model.)

Claim.—As an improvement in running-gear, the combination of an axle, A, a reach, B, a king-bolt, C, pivotally connecting the reach and axle, and a combined bounds and slide made in one piece of metal, and comprising an arch or bow, *d'*, integral depending lugs d^2, arranged in pairs and straddling the axle, the parallel arms *d*, projecting forwardly of the axle, to which the thills or draft-pole of the vehicle is connected, a plate, E, secured to each pair of lugs d^2 and bearing against the lower face of the axle, bolts *e*, for connecting the plates to the lugs, and a loop or staple, F, embracing the arch or bow *d'* and bolted to the reach, all arranged and adapted to serve substantially as described.

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334,440. SAW. A. RUSSELL IRELAND, Greene, N. Y. Filed June 6, 1885. (No model.)



Claim.—1. A saw formed with a depression or dish on each side, which commences at its extreme edge or periphery and extends inwardly for a suitable distance part way across the face of the saw to the inner or central undished part of the saw-body, substantially as shown and described.

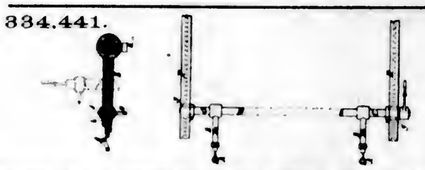
2. A circular saw having its central part or body slightly thicker than the teeth or periphery, and dished on each side from its extreme edge or periphery inwardly to the saw-body.

334,441. THREAD-GUIDE SUPPORT FOR RING-SPINNING FRAMES. WILCOXE JENCKS, Manchester, N. H. Filed June 15, 1885. (No model.)

Brief.—Each thread-guide is attached by a hinged arm to a shaft extending lengthwise of the frame and capable of rotation in its bearings. The arms are capable of adjustment longitudinally on the shaft and are held by set-screws. The guides are thus rendered capable of adjustment with respect to the spindle, and at the same time are capable of being turned up all together, or each independently of the rest.

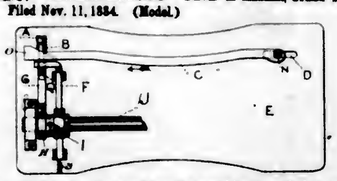
Claim.—The combination, with the frame of a ring-spinning machine, of a shaft pivoted thereto, so as to be capable of being turned or revolved laterally of it, (the said shaft,) a series of separate arms project-

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ing from and each adjustable on such shaft lengthwise thereof and having a set-screw for holding it to the shaft, and a series of yarn-guide carriers hinged to such arms and furnished with yarn-guides applied to them, (the said carriers,) as set forth.

334,442. SEWING-MACHINE. DAVID L. KEELER, Grand Rapids, Mich. Filed Nov. 11, 1884. (Model.)



Claim.—1. In a sewing-machine, the combination of the feed-bar F with the eccentric-rod G, bolt A, and incline O, said incline being adjustable, so as to shorten or lengthen the stroke or movement of the feed-bar, thereby regulating the length of the stitch, substantially as described.

2. The combination of the incline O, the incline-washer B, the bolt A, eccentric-rod G, and feed-bar F, said incline O being adjustable longitudinally between the end of feed-bar F and the head of bolt A, substantially as described.

3. The combination of the feed-bar F, eccentric-rod G, and bolt A, said bolt A being adjustable longitudinally in the eccentric-rod, substantially as and for the purpose described.

4. The combination of the following parts, viz: shaft J, eccentric H, rod G, feed-bar F, adjustable bolt A, and incline O, substantially as and for the purpose described.

334,443. RAT-TRAP. CHARLES F. A. KOSELKE, Chicago, Ill. Filed June 26, 1885. (No model.)

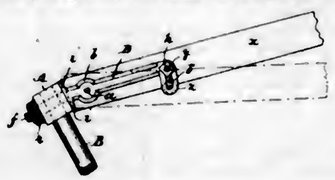


Claim.—1. An animal-trap consisting of a base with a top or cover having suitable supports, a cylinder open at top and bottom loosely surrounding the same, said cylinder being provided with a bail arranged to rest upon and suspend said cylinder from the top of a vertical trigger extending through and loosely supported by the top of said trap, substantially as and for the purposes specified.

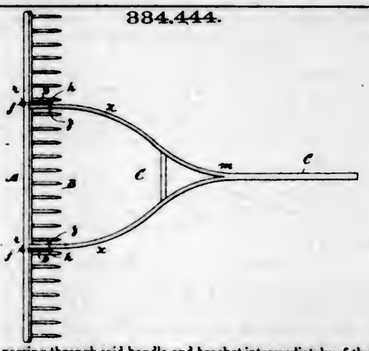
2. The combination, in an animal-trap, of the base A and top A', connected by suitable standards, said top being provided with a loose or pivoted vertical trigger, and the open-ended cylinder C, having bail D, substantially as and for the purposes set forth.

334,444. RAKE. HARRIS P. LANDER, Kingfield, Me. Filed Sept. 4, 1885. (No model.)

Claim.—1. The improved rake herein described, the same consisting of a handle and a head provided with teeth, in combination with a reversible bracket detachably secured at one end to said head and provided at the other end with a slotted lateral arm projecting from one side thereof, a bolt passing through said handle and engaging said slot, and



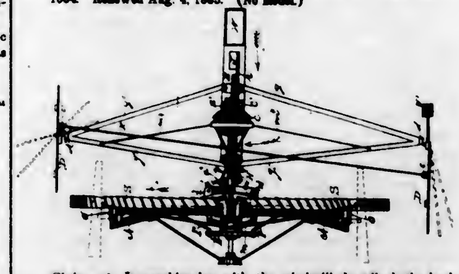
334,444.



a bolt passing through said handle and bracket intermediately of the ends of the latter, by which the parts are pivotally connected, substantially as described.

2. The improved rake herein described, the same consisting of a handle and a head provided with teeth, in combination with a reversible bracket provided at one end with a slotted lateral arm projecting from one side thereof, a bolt passing through said handle and engaging said slot, said bracket being provided at the other end with a screw-threaded stud adapted to pass through said head, and with flat-faced shoulders at the inner end of said stud, against which said head is adapted to rest, a nut on said stud for clamping said head in place, and a bolt passing through said handle and bracket intermediately of said radial arm and stud, by which the parts are pivotally connected, substantially as described.

334,445. WINDMILL. LEANDER LEACH, Joliet, Ill. Filed Mar. 11, 1884. Renewed Aug. 4, 1885. (No model.)



Claim.—1. In combination with the windmill described, the horizontal frame $g\,g'$, vane D, hinged at its front end to one outer end of said frame, vane D', hinged at about its center to the opposite end of said frame, and rod R, pivoted at one end to vane D, at the rear of its hinged connection with said frame, and pivoted at its opposite end to vane D', in front of its hinged connection with said frame, all adapted to operate as and for the purpose set forth.

2. In the windmill described, the combination of the shaft H, reciprocating sleeve i, placed on said shaft immediately in the rear of the spider Z, collar a^3, arranged in an annular groove on said sleeve, links $v\,v$, for connecting said collar with weight J, as described, bell-cranks n, pivoted at their elbows at n' to projecting lugs integral with said spider and connected with sleeve i, as shown and described, link-rods m, connecting said bell-cranks with wheel E' on the outer end of said shaft, rods F', for connecting said wheel E' with the vanes S, as shown and described, and vanes S, all arranged to operate substantially as and for the purpose set forth.

334,446. GUARD FOR BOOKS, PAMPHLETS, AND OTHER PUBLICATIONS. JOHN W. LOVELL, New York, N. Y. Filed June 4, 1885. (No model.)



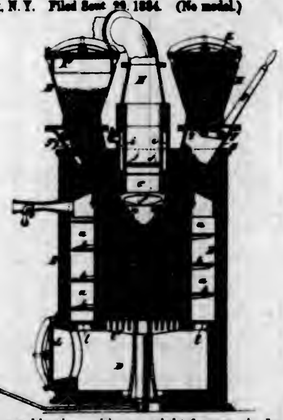
334,446.



Claim.—1. The combination, with a book, pamphlet, or other suitable publication, of a guard consisting of a band passed firmly about the same lengthwise and toward the back thereof, substantially as described, whereby if removed the band cannot be replaced without the fact of its having been removed being recognizable, as and for the purpose set forth.

2. In combination with a book, pamphlet, or other suitable publication, a guard consisting of a band having one portion inserted lengthwise between the leaves and the other portion passing lengthwise around the work, the band being applied, preferably, near the back of the book, toward the stitching, and tightly, that it may be impossible or difficult to remove the same without destroying it, substantially as and for the purpose set forth.

334,447. APPARATUS FOR PRODUCING GAS. PHILIP W. MACKENZIE, New York, N. Y. Filed Sept. 29, 1884. (No model.)

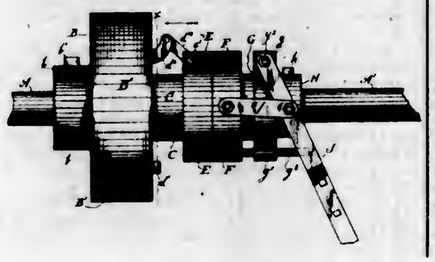


Claim.—The combination, with an upright furnace, A, for producing gas, of a gas-outlet pipe, E, leading from the top of the furnace at the center thereof, and two or more feeding-throats, G, converging downward from their upper ends and communicating with the top of the furnace around the wall of the furnace, hoppers H, surmounting the converging feeding-throats G, and having their outer sides inward of the outer walls of the throats, covers K for said hoppers, and valves I, hinged below the hoppers and beyond or outward of the outer sides or walls of the hoppers, whereby provision is afforded for so opening them downward as to leave a clear opening from the hoppers into the feeding-throats, substantially as herein described.

334,448. FRICTION-CLUTCH. JAS. MACDONALD, Chicago, Ill. Filed Oct. 19, 1885. (No model.)

Claim.—1. In combination with an expansible ring of a friction-clutch and a toggle-joint, the adjustable plates $d^4\,d^4$, notches d^3, formed in said plates and ring, respectively, and wedges d^5, substantially as and for the purposes specified.

2. In combination with an expansible ring of a friction-clutch, the



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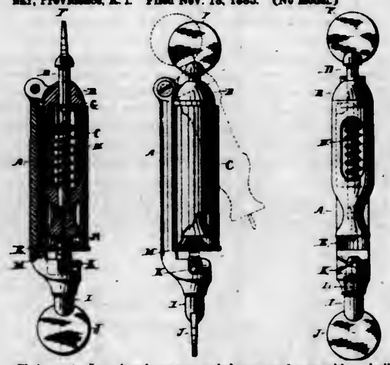
adjustable plates $d^4\,d^4$, provided with slots $d^7\,d^7$, whereby they may be attached, by means of bolts, to the meeting ends of said ring, notches d^3, formed in said plates and ring, respectively, and wedges d^5, whereby the slack of said ring resulting from wear may be taken up, substantially as and for the purposes set forth.

3. The combination of an annular wheel attached preferably to a driving-shaft, a ring, D, attached, as by a sleeve, C, and part C', to the dead-shaft, a toggle arranged to expand said ring against the interior of the flange of said annular wheel, rings E F, loosely connected with each other, pin d^6, links $d^{10}\,j$, and a shipping-lever having a fulcrum attachment upon a ring, G, secured from longitudinal movement upon said shaft, substantially as and for the purposes specified.

4. In a friction-clutch, the combination of the annular wheel B, having grooves b^3, apertures b^3, and notches b^4, with the blocks $b^4\,b^4$ and wedges b^5, substantially as and for the purposes set forth.

5. The combination of the annular wheel B, preferably attached to the driving-shaft, provided with interior grooves having blocks arranged therein, as specified, a sleeve, C, rigidly attached to the dead-shaft, and by means of a part, C', or its equivalent, to the ring D, a toggle-joint attached to the meeting ends of said ring, pin d^6, and shipping-lever j, attached to a ring preferably loosely secured against the end of the sleeve C, and connected by intermediate links with sliding rings E F, arranged by suitable grooves and gibs or equivalent connections to revolve independently of each other, substantially as and for the purposes specified.

334,449. CARTRIDGE CAPPER AND DECAPPER. JAMES MALONEY, Providence, R. I. Filed Nov. 18, 1885. (No model.)



Claim.—1. In a hand capper and decapper for cartridge-shells, the combination, with the frame A, having a spring-capping implement in one end, of the stud, as B, hinged to other end of frame A, and having the spring decapping implement in it, substantially as set forth.

2. In a capper and decapper, the combination, with frame A and hinged stud B, each having inclined surfaces, substantially as described, of the spring-shaft I, having projection for riding over inclined surface or frame A, and spring-shaft D, having projection for riding over inclined surface on part B, and means, substantially as described, for operating the shafts.

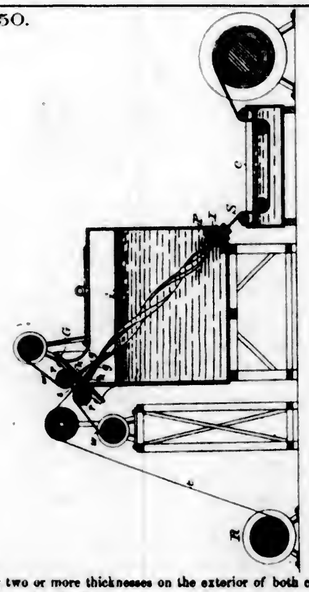
334,450. MANUFACTURE OF ELECTRICAL CONDUCTORS. HOWELL R. MASON, Chelsea, assignor to the American Bell Telephone Company, Boston, Mass. Filed May 15, 1884. (No model.)

Claim.—1. The method of insulating two electrical conductors herein set forth, which consists in simultaneously passing both conductors and an insulating body through an insulating fluid or compound, and closing or wrapping the insulating body upon the conductors while immersed, thereby forming a single strand.

2. The method of insulating two electrical conductors and uniting them into a single strand by inserting an insulating-strip between them and then winding the same two or more times around both conductors, substantially as described.

3. A double conductor comprising two wires, constituting a metallic circuit and an insulating-strip, the latter separating the two former

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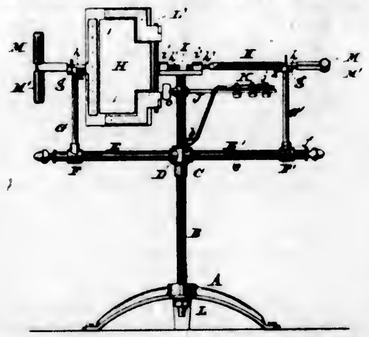


and having two or more thicknesses on the exterior of both conductors, substantially as described.

4. In an apparatus for insulating a pair of electrical conductors, the combination of the guide-plate containing openings for an insulating-strip and for the conductors, so arranged that the said strip passes between the two conductors, and the guide rods or wires for wrapping the strip two or more times around both conductors, substantially as described.

5. An apparatus for insulating electrical conductors, comprising, in combination, a guide-plate having openings for the passage of the conductors and of an insulating strip or tape, a vessel for containing insulating-liquid, through which vessel said conductors and strip pass, means, as indicated, for folding or wrapping the strip around the conductors while passing through said vessel, and a plate containing a hole or eye for the passage of the conductors and their inclosing-strip, substantially as described.

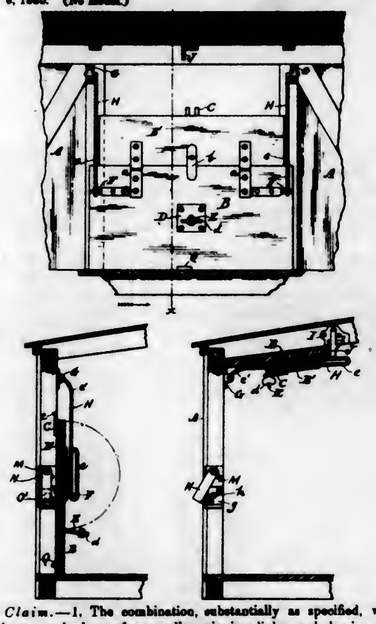
334,451. MACHINE FOR BAKING WAFERS. JOSEPH O. MEYER and WALTER STRECKER, Buffalo, N. Y. Filed Aug. 14, 1885. (No model.)



Claim.—1. In machines for baking hippen, wafers, and similar confects, the combination, with the molds H, of a revolving stand, consisting, essentially, of a tripod or base, A, standard B, double swinging arms E E', uprights G G', adjustably secured upon said arms E E', and provided with bearings for the said molds, and the fixed bracket J, with burner K, the whole being adapted for operation substantially in the manner as and for the object stated.

2. A supporting base and standard, in combination with a frame pivoted upon said standard, one or more molds pivoted on said frame, and a burner removably connected with said standard, said frame being provided with rests for supporting the molds in a horizontal position, substantially as specified.

334,452. CAR-DOOR. EDWARD Y. MOORE, Chicago, Ill. Filed Apr. 6, 1885. (No model.)



Claim.—1. The combination, substantially as specified, with a freight-car grain-door, of upwardly-swinging links, each having a long loop on its lower end, and there hinged or jointed to the door, and hinged or jointed at their other ends to the car, for the purposes set forth.

2. The combination, substantially as specified, with a freight-car grain-door, of the upwardly-swinging links H H, each having a loop, *s*, on its lower end, and there hinged or jointed to the door, and hinged or jointed at their other ends to the car, and of a fastening or support for retaining the door temporarily in its fully open or upturned position, for the purposes set forth.

3. The combination, substantially as specified, of a freight-car grain-door, the upwardly-swinging links H H, each having a loop, *s*, on its lower end, and there hinged or jointed to the door, and hinged or jointed at their other ends to the car, a pivoted hook arranged for engaging the fully open or upturned door, and a pivoted locker for holding the said hook in temporary engagement with the door, for the purposes set forth.

4. A grain-car door consisting of the combination of a main part, B, and of a supplemental part, B', hinged or jointed thereto, substantially as and for the purposes specified.

5. The combination, substantially as specified, of the main inwardly-folding grain-car door B, the inwardly-folding supplemental door B', hinged to the upper part of the door B, a fastening for securing the door B' temporarily in a vertical position on the upper edge of the door B, and a locking device for retaining the door B' temporarily in its position when folded against the door B, for purposes set forth.

6. The combination, substantially as specified, of the main inwardly-folding grain-car door B, the inwardly-folding supplemental door B', hinged to the upper part of the door B, the pivoted button *b*, for retaining the door B' temporarily in its vertical position on the upper edge of the door B, and a locking device for retaining the door B' temporarily in its position when folded against the door B, for the purposes set forth.

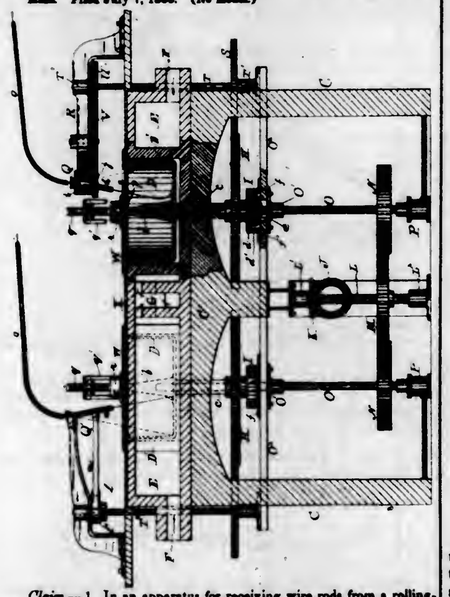
7. The combination, substantially as specified, in a grain-car door, of the main door B, having thereon the bolt E and nut *d*, and the supplemental door B', hinged to the door B, and having thereon the forked plate *c*, for the purposes set forth.

8. The combination, substantially as specified, with a freight-car and a grain-door in connection therewith, of the pivoted latch N, the plate O, the hinged leaf O', having thereon the stud O'', and an opening to receive the said stud, for the purposes set forth.

9. The combination, substantially as specified, with a freight-car and a grain-door in connection therewith, of the plate M, having therein a recess or depression, *g*, and an opening, *h*, the pivoted latch N, the plate O, and the hinged leaf O', having thereon the stud O'', for the purposes set forth.

10. The combination, with an inwardly and upwardly folding grain-car door, of the pivoted pendent hook J, applied to the car-roof, the pivoted gravitating locker K, and a shoulder or support, *f*, for the said locker, substantially as and for the purposes specified.

334,453. REELING MECHANISM. CHARLES H. MORGAN, Worcester, Mass. Filed July 7, 1885. (No model.)



Claim.—1. In an apparatus for receiving wire rods from a rolling-mill, the combination of the inclosed reel and the movable distributer for depositing the rod in continuous loops or coils within said reel and between its periphery and core, substantially as described.

2. The combination of the inclosed reel, the conducting-pipe, and the movable distributer for depositing the rod brought by said pipe within said reel, said distributer having a movement in a path between the periphery of the reel and its core, so that it deposits the wire in continuous loops or coils outside of said core, substantially as described.

3. The combination of the reel, the means for rotating the same, the distributer for depositing the rod in said reel, and the means for imparting to said distributer a movement between the periphery of the reel and its core, substantially as and for the purpose set forth.

4. The combination of the reel, the distributer consisting of a pipe or tube having its discharge-orifice directly above said reel and between the periphery and core thereof, and shafts and connections, as described, for imparting a slow movement to said reel and a more rapid movement to said distributer, substantially as and for the purpose set forth.

5. The improved reeling mechanism described, comprising, in combination, an inclosed reeling-receptacle, a stationary cover having an opening therein to one side of the center of said reel, a distributing-pipe supported above said opening, and shafts and connections, as specified, for imparting a rotary motion to said reel and for moving said distributing-pipe so that it will deposit the rod in successive coils or loops within said reel and between the periphery and core thereof, substantially as set forth.

6. The improved reeling mechanism described, comprising, in combination, the inclosed rotatory reel, the stationary cover therefor having an opening therein to one side of the center thereof, the conducting-pipe, the movable distributer above said opening, and the pulley for guiding the rod as it is drawn out of said reel, substantially as set forth.

334,454. WIRE-ROD-ROLLING MILL. CHARLES H. MORGAN, Worcester, Mass. Filed Nov. 23, 1885. (No model.)

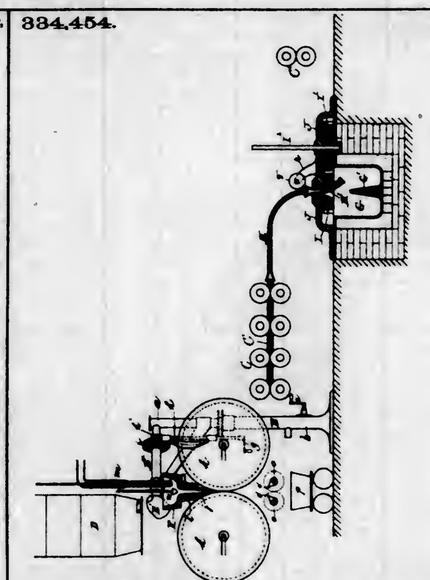
Claim.—1. The combination of a continuous train of reducing-rolls with the means for reducing scrap or pig iron to a molten state, for conducting said molten metal to a suitable receiving-ladle and refining the same during the transit thereof, for conducting the metal from said receiving-ladle to and between suitable forming-rolls, and for cutting said metal apart preparatory to its being fed into the first set of rolls of the aforesaid continuous train of rolls, substantially as and for the purposes set forth.

2. The combination of the continuous train of rolls C with the cutters *o*, forming-rolls *k k*, receiving-ladle F, means for supporting said ladle, and means for supplying the same with molten metal, for conducting said metal to the rolls *k k* aforesaid, and for controlling the discharge and temperature thereof, substantially as and for the purposes set forth.

3. The combination of the reeling mechanism constructed and arranged substantially as described, and the continuous train of rolls C with the cutters *o*, forming-rolls *k k*, receiving-ladle F, means for supporting said ladle, and means for supplying the same with molten metal, for conducting said metal to the rolls *k k* aforesaid, and for controlling the discharge and temperature thereof, substantially as and for the purposes set forth.

4. The combination of one or more sets of supplementary rolls, the reeling mechanism, constructed and arranged substantially as described, and the continuous train of rolls C with the cutters *o*, forming-rolls *k k*, receiving-ladle F, means for supporting the same, and means for supplying it with molten metal, for conducting said metal to the rolls *k k* aforesaid, and for controlling the discharge and temperature thereof, substantially as and for the purposes set forth.

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334,455. METAL BENDING AND STRAIGHTENING MACHINE. WALTER J. HUGGASTON, Cumberland, Md., assignor of one-half to Merwin McCaig, same place. Filed Nov. 25, 1885. (No model.)

Brief.—Improvement on Patent No. 319,603, dated June 9, 1885.

Claim.—1. In a machine for straightening or bending shafting, &c., the combination, with a supporting bed or frame and with a traveling press, of transverse frames, as D E, each provided with a beam or secondary frame, F, bearing rollers G, and adapted to be raised and lowered, substantially as and for the purpose set forth.

2. In combination with a bed or supporting frame, a press movable on said frame, transverse frames resting upon said bed, beams pivoted in said transverse frames and provided with rollers to sustain a shaft, rack-bars attached to the beams, and a shaft extending lengthwise of the main frame and provided with pinions to mesh with the rack-bars, as and for the purpose set forth.

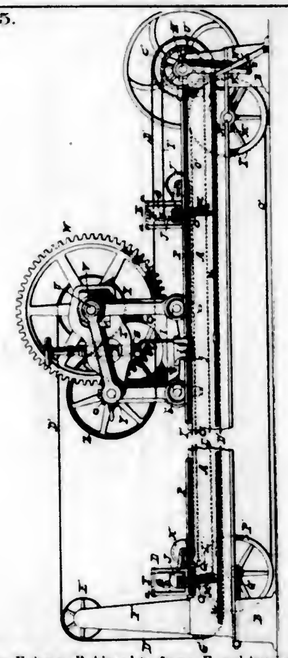
3. The combination of a bed or frame, A, a press, C, movable thereon, transverse frames D E, mounted upon frame A, beams F, pivoted in frames D E, provided with rollers G and rack-bars M, shaft P, provided with pinions O and ratchet-wheel Q, rod or shaft N, provided with pawl A, and a sleeve, *m*, movable lengthwise of said shaft, and provided with handle *n*.

4. In combination with frame A, cross-frame D or E, and beam F, pivoted in said cross-frame, rollers G, carried by said beam, a grooved driving-shaft for said rollers also carried thereby, a pulley mounted upon said shaft and provided with a feather to enter the groove, and a guide or holder for said pulley adapted to permit the rise and fall thereof with the shaft, but to prevent its movement in the direction of the axis.

5. In combination with frame A, press C, and transverse frame D or E, beam F, pivoted in said transverse frame, rollers G, carried by said beam and provided with worm-wheels *b*, shaft H, provided with worms or screws I and groove *c*, pulley J, having a circumferentially-grooved hub, and a feather to enter the groove *c*, a yoke seated in the circumferential groove of the hub, and a support adapted to hold the yoke against movement lengthwise of shaft H, but permitting it to rise and fall with said shaft.

6. In combination with main frame A, traveling press C, and slid-

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ing cross-frame E, beam F, hinged to frame E, and bearing rollers G, rack M, attached to the free end of the beam F, shaft P, provided with sliding pinions O, and splined sleeve *j*, swiveled in an arm of the press-frame, encircling shaft P, and provided with lever or handle *l*.

7. In combination with frame A, cross-frames D E, hinged beams F, provided with rack-bars M, and shaft P, carrying pinions for raising and lowering said beams, a ratchet-wheel secured upon said shaft, a second shaft, N, provided with pawl *h* for locking said ratchet and shaft, and a hand-lever mounted and free to slide upon shaft N, but locked thereto by a spline or feather, whereby the operator is enabled to slide the lever to and to control the pawl from any desired point.

8. In a machine for straightening and bending shafting, &c., the combination, with a supporting-bed, of a press, C, having a vertically-reciprocating beam, T, provided with a horizontal circular opening, a cylindrical block or nut, R, seated and free to turn in said opening, provided with a transverse threaded hole, and a screw-stem, S, passing through said hole and adapted to act upon the shaft or bar below.

9. In combination with frame A, having pulleys C', E', and G', and with press C, having pulleys X and Z, belt D', passing about said pulleys, in the manner described and shown.

10. In combination with frame A, cross-frames D E, and rollers G, driving-shafts H for said rollers, pulleys J on said shafts, driving-pulley H', guide-pulleys J' K' L', and driving-belt I', passing about said pulleys, as shown and described.

11. In combination with frame A, traveling press C, drum M, cable O', and gear-wheel X', driving-shaft B', pinion R', carried by said shaft, pinion Y', meshing constantly with pinion X', rock-shaft U', having arm *q*, and pinion S', carried by said arm and adapted to be brought into mesh with gear X' or pinion Y' at will.

12. In combination with frame A, press C, cable O', drum M', and gear-wheel X', pinions R' and Y', rock-shaft U', provided with arm *q*, carrying loose pinion S', lever V', secured to the rock-shaft U', lever W', connected with lever V' by a link, *s*, and sliding rod *u*, connected with lever W', substantially as shown and described.

334,456. POTATO-DIGGING MACHINE. WILLIAM H. MCCALL, Greenwich, N. Y., assignor of one-half to Oscar H. Eddy and Walden G. Eddy, same place. Filed July 10, 1885. (No model.)

Claim.—1. The combination of the digger and the screen R with the shoe S, secured to the mold-board of the digger, and the wheel W, journaled in slotted bearings in the shoe and arranged to oscillate on its bearings, substantially as described, and for the purpose stated.

2. The combination of the top, made with the downwardly-curved sides t^2, the mold-board M, made at the rear with the upwardly-curved sides m', to connect with said top, and in advance of the said connection having the downwardly-arranged side curves, m^4, and the screen R, made

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with blade-form bars *b*, attached to the under side of the mold-board, to be below the rear end of the latter, and made to curve upwardly at their rear ends, substantially in the manner as and for the purposes set forth.

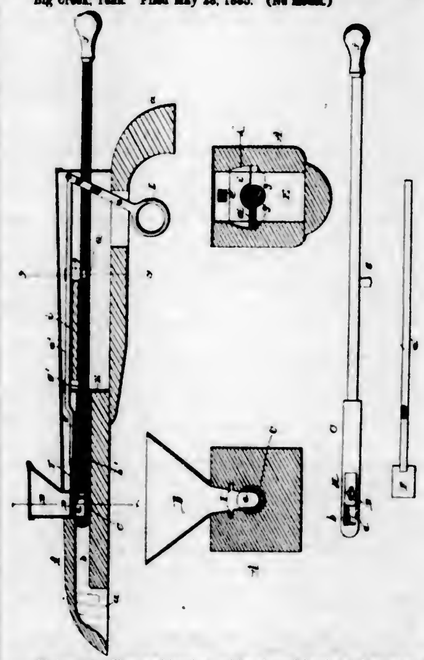
3. The combination of the top T, the mold board M, the screen R, the shoe S, made with the offsets s^3, the wheel W, having the shaft *e*, and the slotted bearings b^3, constructed and arranged to operate substantially in the manner as and for the purposes set forth.

334,457. MEASURE FOR DRAFTING GARMENTS. JAMES D. MCCANN, Falls City, Nebr. Filed Jan. 26, 1885. (No model.)



Claim.—A tailor's measure, C, reversely curved at its opposite ends, marked and notated with a figure for every inch-space near its margin, having a letter over every other figure, and having more or less of the inch-spaces subdivided into tenths, as and for the purpose described.

334,458. TOBACCO-FERTILIZER DROPPER. ALEXANDER MCNAIR, Big Creek, Tenn. Filed May 28, 1885. (No model.)



Claim.—1. The combination, with a barrel having a hopper and a discharge-opening, of a reciprocating and semi-rotary conveyer adapted to take the material from the hopper and convey it to the discharge-opening in the barrel, substantially as set forth.

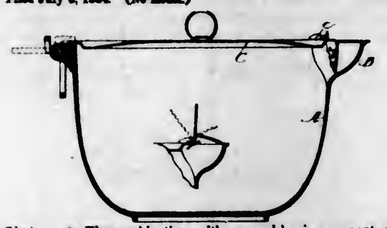
2. The combination, with a barrel or box having a hopper and a discharge-opening, of a cut-off gate and a reciprocating and semi-rotary conveyer adapted to move between the hopper and the discharge-opening, substantially as set forth.

3. The combination, with a box or barrel having a hopper and a discharge-opening, of a reciprocating and semi-rotary conveyer moving between the hopper and discharge-opening, and having a recess therein, and the movable plate for regulating the size of said cavity or recess, substantially as set forth.

4. The combination, with the box having the hopper, discharge-opening, shoulders, grooves, and block, of the reciprocating and semi-rotary conveyer provided with a lug, the above parts being combined and arranged substantially as set forth.

5. The combination, with the box or barrel having a hopper and discharge-opening, of the reciprocating and semi-rotary conveyer and the cut-off gate, all of the above parts constructed and operating substantially as described.

334,459. COOKING-VESSEL. ARTHUR W. OSBORNE, Chicago, Ill. Filed July 3, 1884. (No model.)



Claim.—1. The combination, with a vessel having a spout, of a cover for the spout pivoted across the spout, said cover being provided with a perforated plate extending into the spout at an angle to the cover, and conforming to the form of the spout, as and for the purpose set forth.

2. The combination, with a vessel and vessel cover or lid, the former having a spout, of a cover for the spout pivoted across the spout, said spout-cover being provided with suitable lugs, and with a perforated plate extending into the spout at an angle to the cover and conforming to the form of the spout, as and for the purpose set forth.

3. The combination, with a cooking-vessel, its spout, a combined cover and strainer, and bearing-plates situated upon each side of the spout, and provided with hook-like extensions, of a vessel lid or cover inserted between the vessel-top and the hook-like extensions of the bearing-plates, as set forth.

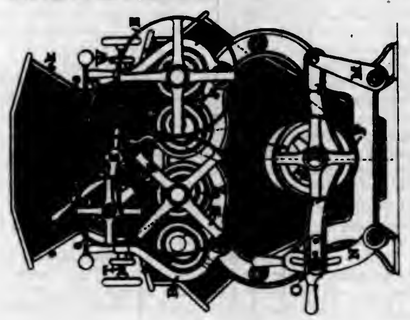
4. The combination, with a cooking-vessel provided with a spout, and having plates provided with hook-like extensions and situated upon each side of the spout, of a combined cover and strainer for the spout, mounted in the bearing-plates, a vessel cover or lid inserted between the vessel-top and the extensions of the bearing-plates, and a pivoted handle provided with an arm or extension to overlap the lid or cover, as and for the purpose set forth.

5. The bent strip D, partly solid and partly perforated, in combination with vessel A, provided with a discharge-spout having bearings for said strip, as set forth.

6. The vessel A, provided with discharge-spout B and bearing-plates c, in combination with bent strip D, partly solid and partly perforated, said strip having pivoted bearings in plates c and situated within the discharge-spout, as set forth.

7. The vessel A, provided with spout B and plates c, in combination with combined cover and strainer D and lid or cover C, said combined cover and strainer provided with lugs *k*, as set forth.

334,460. ROLLER-MILL. JOHN T. OSBORNE, Logansport, Ind. Filed June 22, 1885. (No model.)



Claim.—1. In a roller-mill, the combination of a supporting-frame, two pairs of rolls supported thereby, a pulley upon the transmitting end of one roll of each pair, a base-shaft below said two pulleys, compounded pulleys F upon said base-shaft, a pulley on the driving end of each of the two other rolls, a horizontal lever disposed below the last-mentioned two pulleys and pivoted at one end to the mill-frame, a base-shaft supported in said lever and coupled to the base-shaft at the transmitting side of the machine, and a pulley upon the base-shaft at the driving side of the machine, substantially as and for the purpose set forth.

2. In a roller-mill, the combination of a supporting-frame, two pairs of rolls supported thereby, a pulley on the transmitting end of one roll of each pair, a base-shaft disposed below said pulleys, compounded pulleys F upon said base-shaft, a pulley on the driving end of each of the other two rolls, a horizontal lever disposed below said last-mentioned pulleys and pivoted at one end to a fulcrum-slot, and provided at the other end with a tightening-bolt and a series of holes for the bolt, a base-shaft supported by said lever and coupled to the base-shaft at the transmitting side of the machine, and a pulley upon the base-shaft at the driving side of the machine, substantially as and for the purpose set forth.

3. In a roller-mill, the combination of a mill-frame, two pairs of rolls supported thereby, a pulley on the transmitting end of a roll of each pair, a base-shaft below said pulleys, compounded pulleys F on said base-shaft, brackets I and J, secured to the frame, lever H, bolt K, a base-shaft carried by said lever and coupled to the base-shaft at the transmitting side of the mill, and a pulley, C, upon the base-shaft at the driving side of the mill, substantially as and for the purpose set forth.

4. In a roller-mill, the combination of a mill-frame, two pairs of rolls supported thereby, a pulley on the transmitting end of a roll of each pair, a base-shaft below said pulleys, compounded pulleys upon said base-shaft, a pulley on the driving end of each of the other two rolls, slotted brackets I and J, lever H, bolt K, a base-shaft carried by said lever and coupled to the base-shaft at the transmitting side of the mill, and pulley C on the base-shaft at the driving side of the mill, substantially as and for the purpose set forth.

5. In a roller-mill, a supporting-frame, two pairs of rolls, a pulley on the driving end of one roll of each pair, a pulley on the transmitting end of each of the other rolls, a horizontal lever disposed below the last-mentioned pulleys and carrying a journal-box, a base-shaft carried in said journal-box, compounded pulleys F upon said base-shaft, and a base-shaft at the driving side of the mill, provided with a pulley and flexibly coupled to the base-shaft at the transmitting side of the mill, substantially as and for the purpose set forth.

6. In a roller-mill, the combination of a supporting-frame, two pairs of rolls, a pulley on the driving end of a roll of each pair, a pulley on the transmitting end of each of the other rolls, lever L, carrying a journal-box and having a shifting pivot, a base-shaft supported in such journal-box, compounded pulleys F upon such base-shaft, slotted lever N, bolt O, and a base-shaft at the driving side of the mill, provided with a pulley and coupled to the base-shaft at the transmitting side of the mill, substantially as and for the purpose set forth.

7. In a roller-mill, the combination of a mill-frame, two pairs of rolls, a pulley upon the driving end of a roll of each pair, a pulley upon the transmitting end of each of the other rolls, lever L, a base-shaft supported thereby, compounded pulleys F upon such base-shaft, levers M and N, bolt O, and a base-shaft at the driving side of the mill, provided with a pulley and coupled to the base-shaft at the transmitting side of the mill, substantially as and for the purpose set forth.

8. In a roller-mill, the combination of a mill-frame, two pairs of rolls, a pulley on the driving end of a roll of each pair, a pulley on the transmitting end of each of the other rolls, a horizontal lever provided with a handle and a shifting pivot and disposed below said last-mentioned pulleys, a series of coupled base-shafts, compounded pulleys F, pulley C, slotted lever N, provided with a handle, and a bolt engaging the two levers, substantially as and for the purpose set forth.

9. In a roller-mill, the combination of a mill-frame, two pairs of rolls, a pulley on the driving end of one roll of each pair, a pulley on the transmitting end of each of the other rolls, a series of coupled base-shafts, compounded pulleys F, pulley C, lever L, provided with a handle, lever M, slotted lever N, provided with a handle, and a bolt, O, substantially as and for the purpose set forth.

10. In a roller-mill, the combination of two pairs of rolls, a supporting-frame, two pulleys at the driving side of the mill, one upon a roll of each pair, two pulleys at the transmitting side of the mill, one upon a roll of each pair, two levers, one disposed at each side of the mill below said pulleys, and each carrying a journal-box, two base-shafts, each provided with forks, and one carried in each of said journal-boxes, and an intermediate base-shaft reaching between the before-mentioned base-shafts, substantially as and for the purpose set forth.

11. In a roller-mill, the combination, with roll-pulleys, coupled series of base-shafts, base-shaft pulleys, and base-shaft-supporting levers, of coupling-forks at the couplings of the base-shafts, coupling-rings encircling said forks, and set-screws secured in said forks and engaging out-

wardly into said coupling-rings, substantially as and for the purpose set forth.

12. In a roller-mill, the combination, with rolls, roll-pulleys, coupled series of base-shafts, base-shaft pulleys, and base-shaft-supporting levers, of coupling-forks at the couplings of the base-shafts, set-screws in said forks projecting outwardly, and coupling-rings encircling the forks and provided with interior oil-grooves and screw-bearings, substantially as and for the purpose set forth.

13. In a roller-mill, the combination of the rolls and roll-pulleys, coupled base-shafts, compounded pulleys F on the transmitting base-shaft, outwardly-dished pulley C on the driving base-shaft, and lever H, provided with a base-shaft box disposed within said dished pulley, substantially as and for the purpose set forth.

14. In a roller-mill, the combination of rolls and roll-pulleys, base-shafts P and P P P, provided with coupling-forks at their inner ends, base-shaft section P P, provided at each end with integrally-formed coupling-forks, pulley C, and compounded pulleys F, substantially as and for the purpose set forth.

15. In a roller-mill, the combination of rolls and roll-pulleys, pulley C, base-shafts P and P P, base-shaft P P P, two dished pulleys, F, and lever L, provided with a base-shaft box disposed within said pulleys, substantially as and for the purpose set forth.

16. In a roller-mill, the combination of a mill-frame, a roll supported in the frame, a lever pivoted to the frame at each side of the mill and provided with a roll-bearing, a roll supported in said bearings, adjustable springs to hold the levers in working position, adjustable stops to fix the working position of the levers, and testing-handles upon said levers, substantially as and for the purpose set forth.

17. In a roller-mill, the combination of a mill-frame, a roll supported thereby, levers R, provided with roll-boxes, a roll supported in said boxes, stop-screws T, and springs S, disposed below the stop-screws, substantially as and for the purpose set forth.

18. In a roller-mill, the combination of a frame provided with boxes for a grinding-roll, and having rigid portions projecting above the roll, levers pivoted to such frame and provided with roll-boxes, grinding-rolls supported in said frame, and levers, springs attached to the levers and to said upwardly-projecting frame portions, and screws articulated to the levers and engaging such frame portions, substantially as and for the purpose set forth.

19. In a roller-mill, a mill-frame provided with roll-boxes and having rigid portions projecting above the rolls, levers pivoted to the frame and provided with roll-boxes, rolls supported in the roll-boxes, springs attached to the levers and to said upwardly-projecting frame portions, and stop-screws articulated to the said levers and having their inner ends supported by said upwardly-projecting frame portions, and a nut upon each of said screws abutting against such frame portions, combined substantially as and for the purpose set forth.

20. In a roller-mill, the combination of a mill frame and rolls, levers carrying the movable roll-boxes, springs for holding the levers in working position, cams to serve in opening the rolls, fixed portions of the mill-frame contiguous to the cams, screws reaching from the levers to a position to be engaged by the cams, and nuts upon the screws to serve as adjustable abutments against said fixed portions of the mill-frame, substantially as and for the purpose set forth.

21. In a double roller-mill, the combination, with a mill frame and rolls, of levers R, springs S, screws T, with their ends in contiguity, nuts U abutting upon fixed portions of the mill-frame, and cams X, provided with hand-levers and disposed between the contiguous ends of said screws, substantially as and for the purpose set forth.

22. In a roller-mill, the combination, with a mill frame and rolls, of levers R, springs S, provided with means for the adjustment of their tension, cam-levers X, screws T, projecting through the levers and through fixed portions of the mill-frame, nuts U for adjusting the projection of said screws through said frame portions, nuts V upon one side of said levers, and nuts W upon the other side of said levers, substantially as and for the purpose set forth.

23. In a roller-mill, the combination of a pair of rolls, a feed-roll, weighted lever *g*, pivoted at the feed-roll and carrying a tightening-pulley adapted to engage the feed-belt and be held into action by said weighted lever, roll-opening cam-lever X, and projection a upon the hub of such cam-lever adapted to engage beneath the lever *g* and lift said tightening-pulley out of action, substantially as and for the purpose set forth.

24. In a roller-mill, the combination of a pair of mill-rolls, a feed-roll, *c*, a grooved gate, *d*, provided at one end with a worm segment or wheel, a pivot-bearing, *f*, a worm, *e*, journaled in such bearing and provided with a weighted handle, substantially as and for the purpose set forth.

25. In a roller-mill, the combination of a pair of mill-rolls, a revolving feed-roll, a grooved gate, *d*, a fender, *i*, secured to the gate, and a spring, *k*, substantially as and for the purpose set forth.

26. In a roller-mill, the combination of a pair of mill-rolls, a revolving feed-roll, a gate, *d*, provided with groove *h*, a fender, *i*, secured to the gate and fitted to be adjusted axially thereon, and spring *k*, substantially as and for the purpose set forth.

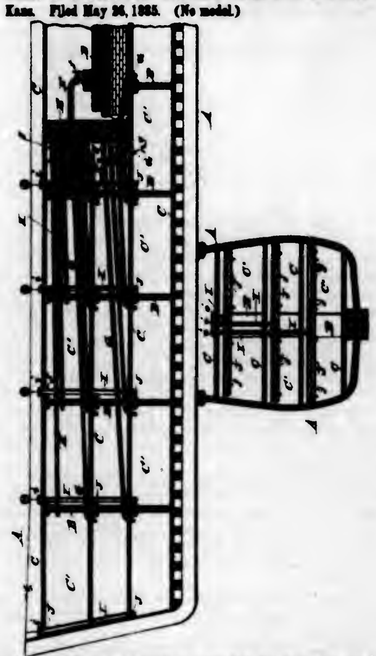
27. In a roller-mill, the combination of a pair of mill-rolls, a revolving feed-roll, grooved gate *d*, arms *j*, provided with shanks, fender *i*, and sockets *q*, substantially as and for the purpose set forth.

28. In a roller-mill, the combination of a mill-roll, a central scraper-support disposed below the roll, a pair of vertical set-screws in said support, a gutter-piece, N, provided with a weight and resting upon the points of said screws, and a scraper, *l*, attached to the gutter-piece, substantially as and for the purpose set forth.

29. In a roller-mill, the combination of a mill-roll, a rigid support secured below the roll, a central pin, *p*, horizontally pivoted to said support, and a scraper, *l*, pivoted to said pin, substantially as and for the purpose set forth.

30. In a roller-mill, the combination of a mill-roll, a scraper-support, *m*, provided with vertical set-screws, a weighted gutter-piece, *n*, resting upon the set-screws and provided with a pin, *p*, and a scraper, *l*, pivoted to said pin, substantially as and for the purpose set forth.

334,461. APPARATUS FOR LOCALIZING AND EXTINGUISHING FIRES IN HOUSES AND VESSELS. PETER L. PALMER, White Cloud, Kans. Filed May 26, 1885. (No model.)



Claim.—1. In an apparatus to extinguish fire on steam-vessels built in compartments, the combination, with the boiler of the engine, a steam drum or receiver communicating with the boiler by a pipe controlled by a throttle-valve, and steam-delivering pipes running from the receiver to the compartments, (each pipe being provided with a throttle valve or cock near the receiver, having a separate number marked on it near said cock and opening into a separate compartment,) of fire-indicating tubes, each running from a compartment to above the upper deck, and having on its end above the upper deck a removable cap marked with a number corresponding to the number of the steam-pipe communicating with the compartment to which the indicating-tube that it covers runs, substantially as specified.

2. In an apparatus to extinguish fire in steam-vessels built in compartments, the combination, with the boiler D, the receiver E, communicating with the boiler by the pipe F, controlled by the valve *f*, and the pipes G and H, controlled by the valves *g*, and each marked with a separate number near said valves and opening into a separate compartment, of the fire-indicating pipes I, the transverse perforated pipe J, and the screw-caps *i*, each marked on top with a number corresponding to the number on the steam-pipe opening into the compartment from which its pipe I ascends, substantially as specified.

334,462. TOBACCO-PIPE. WILFORD L. PALMER, New York, N. Y. Filed May 28, 1885. (No model.)

Claim.—1. The combination, with a pipe-bowl, of the tobacco-holder having its upper edge provided with a rim bent outward and downward with the lower edge of the downward extension bearing against the outer surface of the bowl, said holder having its outward

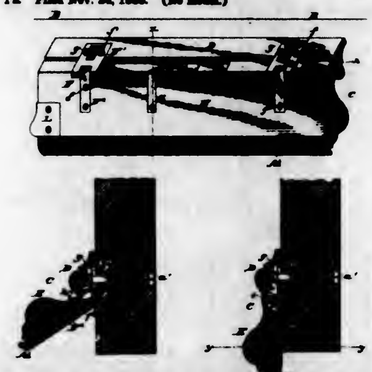
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bend separated from the top edge of the bowl to create an unobstructed space entirely around the holder, which extends around the top edge of the bowl to the point of contact of this downward extension with the outside surface of the bowl, substantially as described.

2. The combination, with a pipe-bowl, of the tobacco-holder having its upper edge provided with a rim bent outward and downward, with the lower edge of the downward extension bearing against the outer surface of the bowl, said holder having its outward bend separated from the top edge of the bowl to create an unobstructed space entirely around the holder, which extends around the top edge of the bowl to the point of contact of the downward extension with the outside surface of the bowl, and the cover E, hinged directly to the bent rim of the tobacco-holder and detachable from the bowl with said holder, substantially as described.

334,463. WEATHER-STRIP. CHARLES J. W. PLATT, Philadelphia, Pa. Filed Nov. 24, 1885. (No model.)



Claim.—1. The combination of the strip D, the bolts *a*, for rigidly securing the same to the door, the strip E, arranged beneath the strip D, the hinges F, secured to the strips, and a spring-rod inclosed within one of said strips and connected at its free end to one of the hinges F, substantially as described.

2. The combination of the strip D, rigidly secured to the door, a strip, E, hinges F, secured to said strips and comprising two plates pivotally connected together, a spring-rod secured to the strip E within a hollowed-out portion, *j*, thereof and connected to one of the hinge-plate, a stop-plate, *k*, to engage the spring-rod, and plates L L', substantially as described.

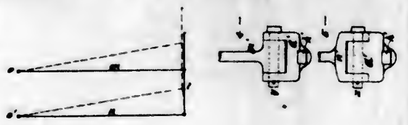
334,464. BOLT-HEADING MACHINE. FERDINAND PHILIPS, Philadelphia, Pa. Filed Apr. 2, 1885. (No model.)

Claim.—1. As an improvement in bolt-heading machines, the hereinbefore-described construction of lateral hammer mechanism, consisting of a reciprocating header, in combination with two vibrating guide-links and the hammer-guide, as and for the purposes specified.

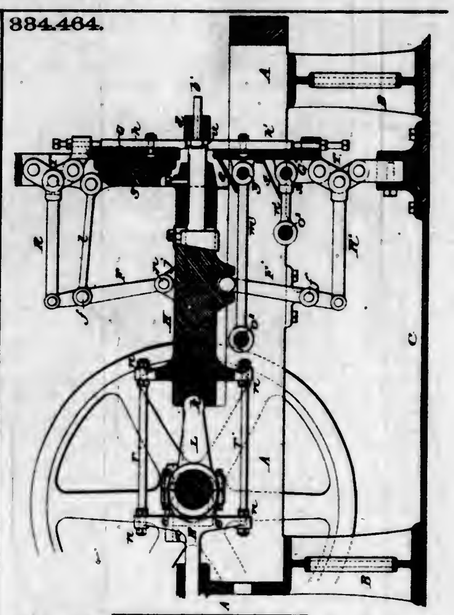
2. The combination of the hammer-guide G', links m' and n', toggle T', rod E', lever F', and header H, substantially as and for the purposes described.

3. In a bolt-heading machine, the combination of the reciprocating header with the crank-shaft and the described arrangement of driving mechanism, consisting of link L, knuckle-joint *k b*, guide E, and adjustable rods *r r'*, for taking up lost motion resulting from wear of the parts, substantially as set forth.

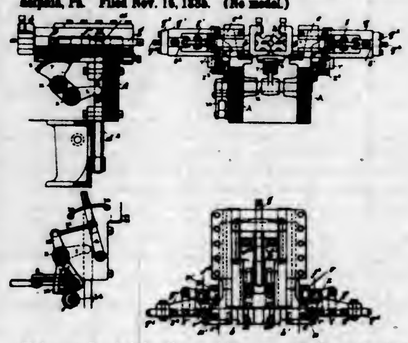
4. The combination, with the header and the two pairs of lateral hammer-guides, of a link-motion, substantially as described, whereby the header moves the lateral hammers, substantially as set forth.



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334,465. BOLT-HEADING MACHINE. FERDINAND PHILIPS, Philadelphia, Pa. Filed Nov. 16, 1885. (No model.)



Claim.—1. In a bolt-heading machine, a movable die-carriage locked in position by means of wedges entering the die-carriage up to or beyond the center line of the bolt-blank, substantially as and for the purposes described.

2. In a bolt-heading machine, a movable die-carriage provided with guides for the die-holders, in combination with die-holders, the latter being connected to toggles adjustable in arms of said die-carriage and operated by levers pivoted to the die-carriage, and actuated by endwise motion of said die-carriage through cams having a fixed position on the bed of the machine, substantially as and for the purposes described.

3. In a bolt-heading machine, a movable die-carriage, in combination with die-holders, the bell-cranks and cams and counter-cams so arranged as to hold the bolt-blank during one portion of the endwise motion of the die-carriage, and releasing the blank during the remaining portion of its movement, substantially as for the purposes described.

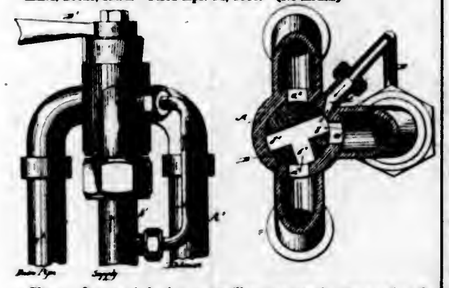
4. In a bolt-heading machine, the combination of a movable die-carriage, D, of bifurcated wedge *d d'*, with spring d^2, of lever 1 2, shaft 3, hand-lever 4, cam 5, trip mechanism 6, and main driving-shaft N, substantially as and for the purposes described.

5. In a bolt-heading machine, the combination of a movable die-carriage, D, with rack 8, sector 7, shaft 4, lever 10, double-acting trip mechanism 12, main driving-shaft N, cam 9, shaft 13, pinion 14, segment 15, lever 4, spring 18, and counter-weight 19, substantially as and for the purposes described.

6. In a bolt-heading machine, mechanism for operating the die-carriage, consisting of lever 4, spring 18, segmental lever 15, pinion 14, cam 5, shaft 13, cam 9, and tripping devices 6 and 12, operated from the

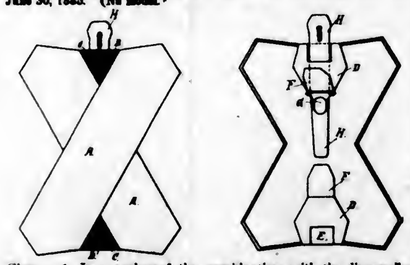
main driving-shaft N, and all arranged and operating in proper succession, substantially as described.

334,466. VALVE FOR OPERATING AIR-BRAKES. PHILIP PHILBRENS, Boone, Iowa. Filed Apr. 14, 1885. (No model.)



Claim.—In an air-brake, an auxiliary supply-pipe connecting the main supply-pipe with the operating-valve, and entering this valve through a port in close relation to the main supply-port, whereby both the main and auxiliary supplies enter the main passage through the same port in the plug, substantially as shown and described.

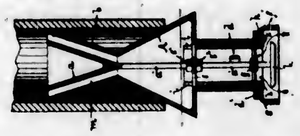
334,467. NECKSCARF. SIMON POPPER, San Francisco, Cal. Filed June 30, 1885. (No model.)



Claim.—1. In a neckscarf, the combination, with the diagonally-crossed stripe A A, of a shield, D, having flap F, and provided with a clasp, G, said shield and clasp being for the purpose of holding in position a removable strap, H, situated between them and the scarf, and having a button-hole at its upper end, by means of which the scarf is attached to the shirt of the wearer, substantially as shown and described.

2. In a neckscarf, the combination of intersecting stripe A, the shields D D, having flaps F F, the clasp G, attached to the upper of said shields, and the strap H, having a button-hole in its upper end, substantially as shown and described.

334,468. BOILER-TUBE CLEANER. ROBERT A. REBENTER, Baltimore, Md. Filed Apr. ?, 1885. (No model.)
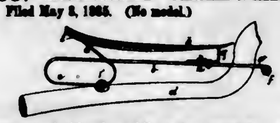


Claim.—1. In a boiler-tube cleaner, the combination of the body-piece A, provided with the cross-arm *c*, and the sliding shell B, provided with the slots *i*, that engage with the cross-arm *c*, whereby the shell is prevented from turning.

2. In a boiler-tube cleaner, the combination of the body part A, formed cone-shaped to fit different size tubes, the flaring neck *b*, secured to the apex of the cone A, the central part, *a*, formed with like angles to the neck *b*, by which the cylindrical cone-shaped passage *m* is formed, the stem *a'*, arranged to support the center part, *a*, the cross-arm *c*, secured to the casing A, the shoulder or nut *c'*, and the nut c^2, by which the stem *a'* is securely held to the arm *c*, thus centrally supporting the part *a*, by which the passage *m* is free from any obstruction.

3. In a boiler-tube cleaner, the combination of the cone-shaped body A, the flared neck *b*, the center part, *a*, by which the cylindrical cone-shaped passage *m* is formed, the neck *d*, the shell B sliding therein, the packing-ring *e*, interposed between suitable seats on the neck *d*, and the shell B, by which the steam is prevented from escaping when the device is operating, and the cut-off valve *l*, by which the steam is cut off when the device is not in operation, as herein specified.

334,469. BICYCLE-SADDLE. THEOPHILE J. REMBERT, Springfield, Mass. Filed May 8, 1885. (No model.)



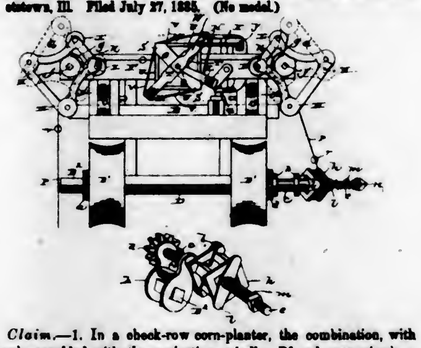
Claim.—1. A bicycle saddle-spring consisting of plate *a*, with spring-extension *c* at the rear end, bent downward and forward until it rests upon the perch, then backward and upward to engage the seat-frame *i*, substantially as described.

2. In a suspension-saddle for bicycles, the combination, with flexible seat *h*, of segmental bar *i*, provided with flange *j*, and box *k*, made from folded tongues *o*, substantially as described.

3. In a bicycle-saddle, the combination of flexible seat *h*, spring and spring-plate *a* and *c*, made integral with each other, adjustable standard *g*, and segmental bar *i*, provided with socket *k*, substantially as described.

4. A bicycle saddle-spring consisting of spring-plate *a*, attached at its forward end to the neck of the bicycle, and having at its rear end the spring-extension *c*, bent to a circular form and passing in the course of its curvature through slot *f* in said plate, and adapted to engage the saddle-seat, substantially as described.

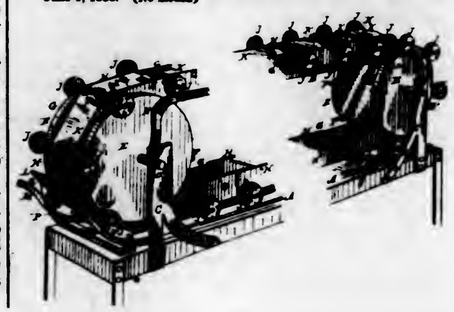
334,470. CHECK-ROW CORN-PLANTER. EARL H. REYNOLDS, Prophetstown, Ill. Filed July 27, 1885. (No model.)



Claim.—1. In a check-row corn-planter, the combination, with the axle provided with the projecting spindles D^a and spur-wheels *a*, located on the spindles so as to rotate with the supporting-wheels, of the bracket *b*, secured on the spindles outside of the spur-wheels *a*, the transverse shaft *c*, journaled in the bracket, the pinion *d* on the inner end of the shaft, meshing with the spur-wheels *a*, the rod *e*, extending from the outer end of shaft *c* and having the threaded outer end, the reel *h*, loose on the rod *e*, the loose friction-plates *l*, pressing against opposite sides of the reel, the spring *m*, bearing against one of the friction-plates, and the nut located on the threaded outer end of the rod *e*, for pressing against the spring, as and for the purpose set forth.

2. The combination, with a check-row corn-planter having its axle provided with a spur-wheel, *a*, of a suitably-journaled shaft having a pinion, *d*, at one end meshing with the spur-wheel, the reel loose on the shaft, loose friction-plates mounted on the shaft on each side of the reel, a spring on the outer end of the shaft pressing against one of the plates, and a nut working over the threaded end of the shaft against the spring to compress the latter, as set forth.

334,471. STONE-CONVEYER. GEORGE W. REMARDSON, Chicago, Ill., assignor to Jason H. Shepard and John Dalam, both of same place. Filed June 9, 1885. (No model.)

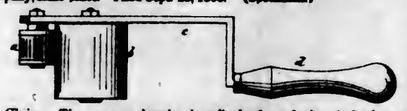


Claim.—1. A conveyer for carrying stone and other like material, the double track A A B B, in combination with the section-conveyer and the double sprocket-wheel E E, set a suitable distance apart for the free passage of the sectional conveyer, each section of which is provided with a dumping-bottom, as and for the purpose specified.

2. The conveyer composed of swinging bottoms K, hung to the journals D, and the sides G H, also hung to the said journals, forming a continuous trough over track A A, as specified.

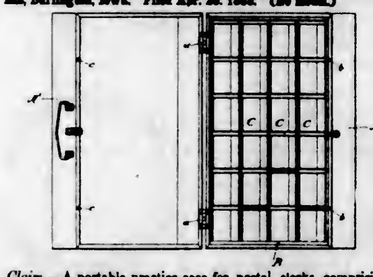
3. The continuous conveyer, combined with the two-part sprocket-wheels E E, E E, traveling wheels J, bottom-support S E, and sliding supports T, curved track M, to guide the sectional conveyer from the sprocket-wheels to the upper track and from the track to the sprocket-wheels at the opposite end of the track, as and for the purpose specified.

334,472. PROCESS OF ORNAMENTING GLASS SURFACES. JOHN S. ROBBINS, Rochester, N. Y., assignors to the Stein Manufacturing Company, same place. Filed Sept. 22, 1885. (Specimens.)



Claim.—The process herein described of producing imitations of ground and sand-blast designs on glass, which consists in first passing a rubber roller provided with the design and coated with varnish over the glass, and then sprinkling or sifting pulverized soapstone or similar material over the impression, as set forth.

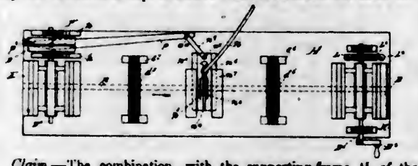
334,473. PRACTICE-CASE FOR POSTAL CLERKS. LOVERNY ROBBINS, Burlington, Iowa. Filed Apr. 20, 1885. (No model.)



Claim.—A portable practice-case for postal clerks, comprising the hinged parts A A', the removable and reversible pigeon-hole cases B B, having beveled partitions C, grooved on each side, and the removable slides F, said pigeon-hole cases being adapted to accurately fit within the parts A A', as set forth.

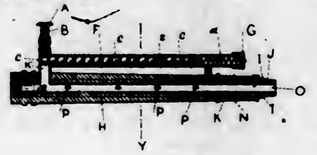
334,474. MACHINE FOR SINGEING FABRICS. JOHN RYLE, Paterson, N. J. Filed July 2, 1884. (No model.)

Brief.—Upon the frame is arranged in suitable guides a slide-bar, which carries the burners. To this slide-bar is attached by a link the belt-shifting lever, so that upon moving the slide and burners either under or away from the fabric the belt is shifted either to the fast or loose pulley and the fabric is kept in motion while the burners are under it.



Claim.—The combination, with the supporting-frame H, of the slide-bar n^3 on said frame, pipes n^4, burners n^5, pipe n^2, valve n', shields n^6, as described, the flexible supply-tube *n*, the guides n^7, the link n^8 for operating lever P, the lever P, pivot P', and guide-pins P^a, substantially as and for the purpose set forth.

334,475. WATER-GUN. JOHN L. SHAW, Grand Rapids, Mich. Filed July 29, 1885. (No model.)



334,475.



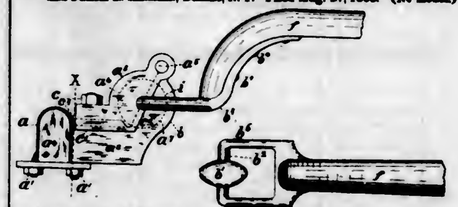
Claim.—1. In a water-gun, the combination, with a central tube, of a continuous water-chamber surrounding said tube, and having a series of openings communicating with the water-chamber, substantially as set forth.

2. In a water-gun, the combination, with a tube having a series of openings piercing it at an angle of forty-five degrees, of a continuous water-chamber surrounding the tube, substantially as set forth.

3. The combination, with the tube or barrel and the water-chamber surrounding it and having communication with said tube by means of openings in the latter, of a magazine arranged above the tube, said magazine being adapted to contain balls, a spring in the magazine, a pipe, K', connecting the tube and magazine, a vertically-moving plunger in said pipe, and a spring-actuated lug in the pipe K' below the magazine, as set forth.

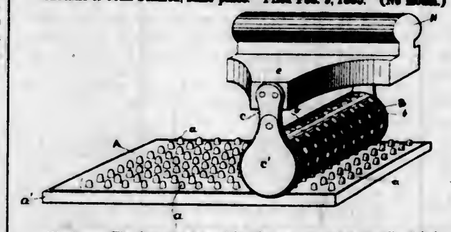
4. The combination, with a tube of a continuous water-chamber surrounding the latter, and having communication with the tube, of a magazine arranged above and communicating with the tube and adapted to contain projectiles, such as balls, as set forth.

334,476. THILL-COUPLING. ADOLPH SAMPSON, WILLIAM H. WEBSTER, and FRANK L. KINSMAN, Buffalo, N. Y. Filed Aug. 27, 1885. (No model.)



Claim.—A thill-coupling consisting of the body a^2, having a semicircular hollow chamber, a^7, a cover pivoted by a pin, a^5, to the upper part of the body and provided with a corresponding hollow portion, a^6, and downwardly-projecting sides c' c^3, for excluding the dust, and a small block of rubber to prevent rattling, in combination with the coupling-iron provided with a yoke, b^3, having the enlarged portion b' on the part b^2 adapted to fit closely in the chambers in the body and cover, and bolts for holding the cover securely when closed, substantially as and for the purposes described.

334,477. MACHINE FOR PRODUCING ORNAMENTAL SURFACES ON TEXTILE FABRICS. ADOLF SCHMIDT, Cincinnati, Ohio, assignor of one-half to John Schmed, same place. Filed Feb. 9, 1885. (No model.)

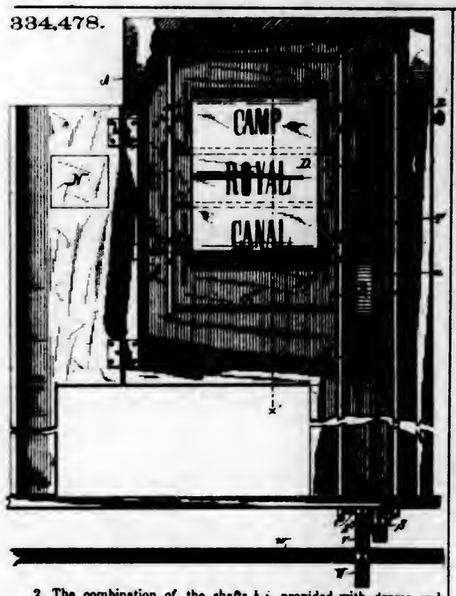


Claim.—The improved machine for ornamenting textile fabrics, consisting, substantially, of a base-plate having protuberances upon its surface, arranged in separate series both longitudinally and transversely of the plate, and a hollow roller provided with a manipulating-handle and having in its peripheral surface pits or cavities corresponding with the protuberances of the base-plate, said roller having one end open for the insertion of a heating-iron and provided with a closing gate, as and for the purpose set forth.

334,478. RAILWAY-STATION INDICATOR. JOSEPH SOBRIO, New Orleans, La. Filed Apr. 25, 1885. (No model.)

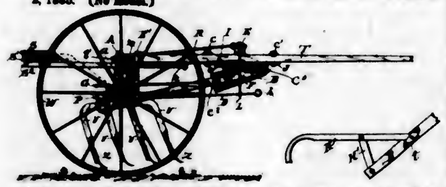
Claim.—1. The combination, with the frame-plates *b* *b'* *b''* and their connecting-rods, as described, the drum-axle *h*, having a squared or feathered end, and a cog-wheel adapted to fit said end and have a sliding movement thereon, of the spring B and push-rod R, for causing the aforesaid wheel to engage with or be disconnected from an operating-pinion, substantially as described, and for the purpose set forth.

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2. The combination of the shafts *h i*, provided with drums and tape, as described, the shaft *a''*, with spring B and cog-wheel *a'*, the latter adapted to engage a pinion on the shaft *i*, as set forth, with the sliding cog-wheel O and spring *p*, fitted on the shaft *h*, the push-rod R, and the train of gearing, chains, and chain-wheels, whereby the aforesaid mechanism is connected with the axle of a car, and thereby operated, substantially as and for the purpose specified.

334,479. CULTIVATOR. HENRY SKELTON, Cabery, Ill. Filed Nov. 2, 1885. (No model.)



Claim.—1. In a cultivator having an axle, a tongue, and a pair of traveling wheels, the combination of the shovel-standards V V', bearing the shovels Z, angular slotted plates P, and beams B, as and for the purpose set forth.

2. In the cultivator shown and described, the combination of the slotted tongue T, plate J, plate O, angular plates F F, and beams B B, as and for the purpose set forth.

3. In the cultivator shown and described, the angular plates F F, having the perforations d^3 d^3, and slots R' Q', in combination with the plate O, beams B B, and bolts c^3 and c^4, as and for the purpose set forth.

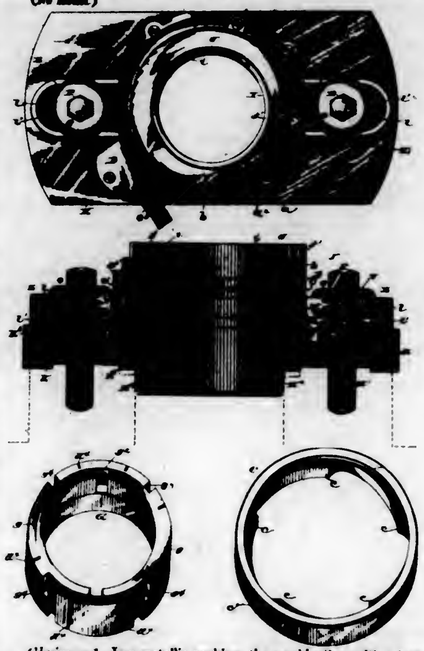
4. In the cultivator shown and described, the plate J, having the slots d^4 d^4, and having extending perforated side legs for securing it to the slotted tongue T, and a central perforation for the reception of bolt c^5, for pivotally connecting it with plate O, and plate O, having the perforations d^3 d^3, slots d^4 d^4, and a central perforation for the reception of bolt c^5, for pivotally connecting it with plate J, said plates being in combination with each other and with plates F F, beams B B, tongue T, and the bolts for connecting said parts in the manner and for the purpose set forth.

5. In the cultivator shown and described, the angular plates P, perforated at their rear portions so they may be pivotally attached to the cultivator-beams, and having the slots P', *f*, and *f*, in combination with the shovel-standards V V' and beams B B, as and for the purpose set forth.

6. In the cultivator shown and described, and in combination with the slotted tongue T, the plates J, O, and F, and beams B, bearing the shovels and standards, as specified, adapted to be moved horizontally on said tongue and held at any desired place within the limit of slot T' by means of the bolts *c* and *c'*, substantially as and for the purpose set forth.

7. In the cultivator shown and described, the combination of the beams B, having the slot c^2 and bolt-holes c^4, and angular plates F, having the perforation d^3, slot R', and notch R', and bolts c^3 and c^4, whereby the rear ends of said beams may have vertical adjustment and be held elevated for transportation by means of bolt c^3 being hooked in said notch, substantially as specified.

334,480. METALLIC PACKING FOR PISTON AND VALVE RODS. CHARLES T. SLEEPER and FREDERICK J. HUBBARD, Chicago, Ill., assignors to the Sleeper Manufacturing Company, same place. Filed Oct. 22, 1885. (No model.)



Claim.—1. In a metallic packing, the combination, with a box or casing provided with metallic packing, of devices for securing the box or casing to its face-plate and allowing the box to adjust itself toward and from said face-plate, substantially as set forth.

2. In a metallic packing, the combination, with a box or casing and metallic packing located within said casing and supported on a seat or bearing connected with the face-plate, of yielding fastenings for connecting the box or casing to the face-plate, substantially as set forth.

3. In a metallic packing, the combination, with a box or casing, metallic packing located therein, and means connected with the box or casing for adjusting the packing, of devices for connecting the box or casing in a yielding manner to the cylinder or steam-chest, substantially as set forth.

4. In a metallic packing, the combination, with a box or casing containing metallic packing, of springs and adjusting-nuts for securing the box or casing to the face-plate and allowing it to yield both laterally and vertically, substantially as set forth.

5. In a metallic packing, the combination, with a box or casing containing metallic packing, of springs and adjusting-nuts for securing the box or casing to the face-plate, so as to allow said box or casing to be self-adjusting in a lateral, vertical, and forward and backward direction, substantially as set forth.

6. In a metallic packing, the combination, with a box or casing, a metallic packing contained therein and supported on a seat connected with the face-plate, and devices for imparting both radial and endwise adjustment to the metallic packing, of yielding devices for fastening the box or casing to the face-plate, and thereby allowing the box or casing to be self-adjustable in any direction, substantially as set forth.

7. In a metallic packing, the combination, with the studs connected with the cylinder or steam-chest, of a box or casing containing the metallic packing and provided with slotted arms for reception of said studs, and springs and adjusting-nuts for securing the box or casing in place in a yielding manner, substantially as set forth.

8. In a metallic packing, the combination, with the box or casing having slotted arms, of studs extending into said slotted arms, washers or plates resting on flanges in the slots, springs seated on the washers, and screw-bolts, said parts being constructed and arranged to secure the box or casing to the face-plate, substantially as set forth.

9. The combination, with the studs on the stuffing-box and screw-bolts adapted to be screwed into the outer ends of the studs, of a box or casing provided with slotted arms adapted to receive said studs and springs interposed between the heads of the screw-bolts and the arms, substantially as set forth.

10. In a metallic packing, the combination, with the box or casing and a cam-ring located therein, of followers located wholly within the box or casing and adapted to be actuated by said cam-ring, substantially as set forth.

11. In a metallic packing, the combination, with a box or casing, metallic packing located therein, followers for contracting the ring, and devices for imparting simultaneous movement to the followers, of a screw-ring for imparting endwise adjustment to the packing and a pawl for locking the screw-ring against rotary displacement, substantially as set forth.

12. In a metallic packing, the combination, with a face-plate and a box or casing secured thereto, of a sectional metallic packing located within the box or casing, a screw-ring for holding the metallic packing in place, provided with ratchet-teeth, and a pawl engaging said teeth, substantially as set forth.

13. In a metallic packing, the combination, with the box or casing, metallic packing contained therein, and a screw-ring, of a follower-ring provided with an outwardly-projecting flange, substantially as set forth.

14. In a metallic packing the combination, with the sectional metallic packing-ring, of a sectional yielding band provided with outwardly-projecting spurs, substantially as set forth.

15. In a metallic packing, the combination, with the box or casing containing the sectional metallic packing-ring, of a face-plate provided with an annular flange adapted to enter the outer end of the stuffing-box, substantially as set forth.

16. A metallic packing-ring composed of sections, each of which is constructed to overlap the wearing portions of two adjacent sections, substantially as set forth.

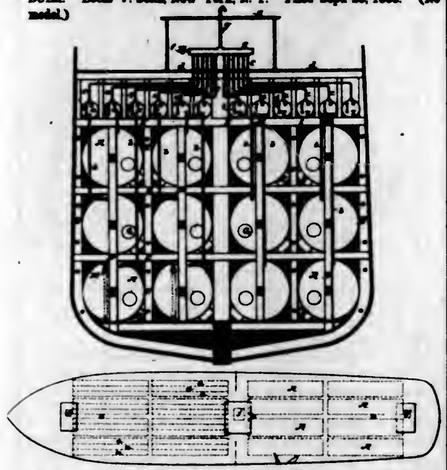
17. A metallic packing-ring constructed of sections, each of which is composed of a wearing portion and of a rear overlapping portion or plate, the latter being double or nearly double the width of the wearing portions, substantially as set forth.

18. A metallic packing-ring composed of sections having kerfs or slots formed in their outer sides.

19. In a metallic packing, the combination, with a laterally-adjustable box or casing having a metallic packing-ring located therein, of a screw-ring for forcing the packing-ring against its seat and drawing the box or casing away from the face-plate, substantially as set forth.

20. In a metallic packing, the combination, with a laterally-adjustable box or casing having metallic packing contained therein, of a screw-ring and springs arranged to allow the packing-ring to be self-adjusting under variations in temperature, and to retain it in place by the frictional contact with the adjacent parts, substantially as set forth.

334,481. VESSEL FOR TRANSPORTING LIQUID CARGOES IN BULK. LOUIS V. SIRE, New York, N. Y. Filed Sept. 25, 1885. (No model.)



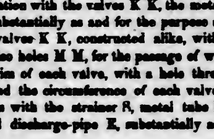
Claim.—1. The combination, in the hull of a vessel, of a series of main storage-tanks and a corresponding series of separated supplemental tanks located above said main tanks and connected therute by independent pipes, whereby the contents of each main tank are kept under continuous pressure, and diminution therein is automatically supplied from the corresponding supplemental tank, and the overflow from the main tank is received in the supplemental tank, substantially as described.

2. The combination, with a series of main storage-tanks arranged in the hull of a vessel, of a corresponding series of supplemental tanks located above the main tanks, each supplemental tank having pipe-connection with its corresponding main tank, and a gas-discharge pipe from each supplemental tank, as set forth.

3. In the hull of a vessel, the combination of a series of independent storage-tanks and a corresponding series of supplemental tanks located above the same, each supplemental tank having pipe-connection with the corresponding storage-tank, and each supplemental tank having an indicator, substantially as set forth.

4. The combination, in the hull of a vessel, of a series of independent storage-tanks, a corresponding series of supplemental tanks, each having an indicator and a gas-escape, and a pipe-connection from each supplemental tank to its corresponding main tank, as set forth.

334,482. BAG-HOLDER. IRVIN STEPHENS, Union City, Pa. Filed Oct. 12, 1885. (No model.)



Claim.—In a bag-holder, the combination, substantially as set forth, of the parts B, C, and D, telescoping together, as shown, the spring F in the part B, supporting the parts C, means, substantially as shown, for adjusting the part D in the part C, and the arms E E on the part D.

334,483. HAND FORCE-PUMP. AMOS STEVENS, Philadelphia, Pa. Filed Nov. 16, 1885. (No model.)

Claim.—1. The central discharge-pipe, E, the connecting-casting H, and rod I, terminating with a screw-thread and nut J at the bottom, in combination with the valves K K, the metal tube R, and cylinders A and B, substantially as and for the purpose set forth.

2. The two valves K K, constructed alike, with central holes, to admit the rod I, also holes M M, for the passage of water, and two lugs, X X, cast on the rim of each valve, with a hole through each lug, and a groove, N, around the circumference of each valve, to receive packing, in combination with the strainer S, metal tube R, rod I, connecting-casting H, and discharge-pipe E, substantially as and for the purpose set forth.

334,484. KEY-BOARD. SCOTT STEWART, Riversville, W. Va. Filed June 9, 1885. (No model.)

Claim.—1. In a key-board, a row of raised keys all located at equal distances apart from each other, in combination with a range of flat keys

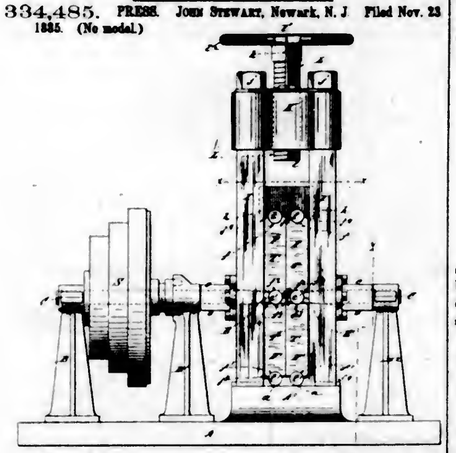
334,484.



exposed in the same plane in front and in the rear of said raised keys, substantially as and for the purpose described.

2. A key-board having each octave consisting of six raised keys, of which one or more have their upper surfaces corrugated, and six flat keys in front of said raised keys, substantially as and for the purpose described.

334,485. PRESS. JOHN STEWART, Newark, N. J. Filed Nov. 23, 1885. (No model.)



Claim.—1. In a power-press substantially such as designated, the combination, with a stationary rotating shaft formed with a screw-thread and with a toggle-joint, one lever of which is pivotally connected to a stationary part of the apparatus and the other lever of which is pivotally connected to a movable platen, of a traveling nut engaging the said screw-thread and provided with a supplementary link or lever by which the said nut is pivotally connected with and actuates the said toggle-lever, substantially in the manner and for the purpose described.

2. In a power-press substantially such as designated, the combination, with a stationary rotating shaft formed with a right and left screw-thread and with a pair of toggle-joints, the extremities of which are pivotally connected with a stationary part of the apparatus and the other extremities of which are pivotally connected with a movable platen, of oppositely-moving nuts engaging the said right and left screw-threads formed upon the stationary revolving shaft, said nuts being provided with supplemental levers or links by which the said nuts are pivotally connected with and actuate the said toggle-levers, substantially in the manner and for the purpose described.

3. In a power-press substantially such as designated, the combination, with one or more toggle-joints actuated by a nut or nuts movable upon screw-threads formed upon the power-shaft, of a loose cylindrical trunnion or trunnions seated in a suitable bearing or bearings formed in either or both the movable platen and the stationary bed and in similar concentric bearings in the extremities of the toggle-levers, substantially in the manner and for the purpose described.

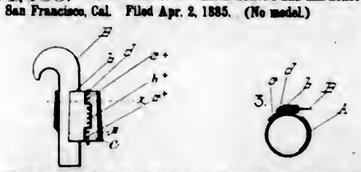
4. In a power-press substantially such as designated, the combination, with a rotating shaft formed with one or more screw-threads and with one or more toggle-joints, the levers of which are respectively pivotally connected to a stationary part of the apparatus and to a movable platen, of a traveling nut or nuts formed with one or more lateral projections which engage stationary shoulders which are parallel with the said actuating-shaft, substantially in the manner and for the purpose described.

5. In a power-press substantially such as designated, the combination, with a stationary revolving shaft formed with one or more screw-threads and with one or more toggle-joints, the levers of which are respectively pivotally connected with a stationary part of the apparatus and to a movable platen, of a traveling nut or nuts formed with one or more lateral projections provided with friction-rollers which engage stationary shoulders which are parallel with the said actuating-shaft, substantially in the manner and for the purpose described.

6. In a power-press substantially such as designated, the combination, with a stationary rotating shaft formed with one or more screw-threads and with one or more toggle-joints, the levers of which are respectively pivotally connected with a stationary part of the apparatus and to a movable platen and with a traveling nut or nuts engaging the said screw or screws upon the actuating-shaft, of an anvil or pressure-surface consisting of a screw which engages a female screw formed in a stationary part of the apparatus, substantially in the manner and for the purpose described.

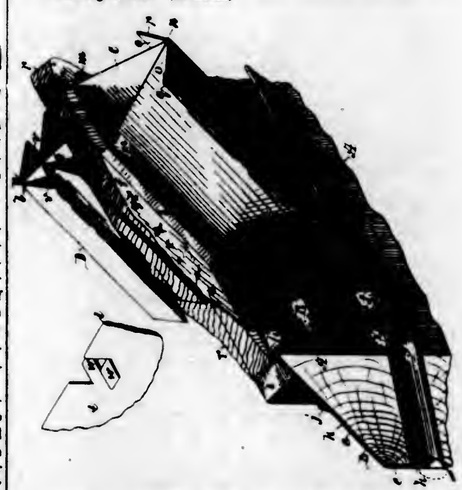
7. In a power-press substantially such as designated, the combination, with a stationary revolving shaft formed with one or more screw-threads and with one or more toggle-joints, the levers of which are respectively pivotally connected with a stationary part of the apparatus and to a movable platen, and with a traveling nut or nuts engaging the said screw or screws upon the said actuating-shaft and with an adjustable anvil or pressure-surface, of a stationary indicator-point and a gage upon the said adjustable anvil for regulating and indicating the position of the said pressure-surface with relation to the said movable platen, substantially in the manner and for the purpose described.

334,486. FRUIT-PICKER. LENA STROSS and ALPHONSO B. SMITH, San Francisco, Cal. Filed Apr. 2, 1885. (No model.)



Claim.—In a fruit-picking device, the combination, with the hook-shaped cutting-blade, of the expansible metallic ring, the cutting-blade being hinged to said ring in the manner described, whereby the device can be used on either hand, or the blade thrown back when not in use, substantially as and for the purpose set forth.

334,487. SKYLIGHT-FRAME. HUGH J. SULLIVAN, Milwaukee, Wis. Filed Aug. 3, 1885. (No model.)



Claim.—1. In skylight-frames, the wing-standard *t*, extending above the glass of the skylight, and the lugs *w w*, rigid on the standard *t*, in combination with the cover D, provided with shoulders *v v*, substantially as and for the purpose set forth.

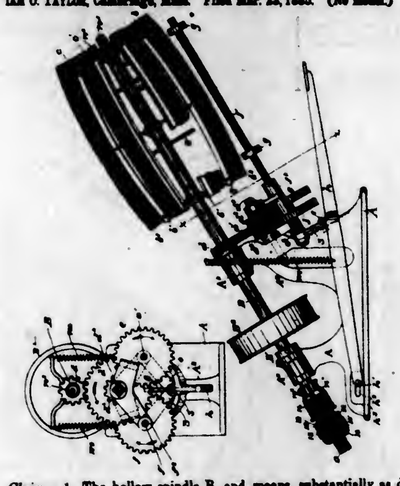
2. In skylight-frames, the sheet-metal curb-covering B, provided on its upper outer surface, directly above and upon the top of the curb A, with a glass-supporting shoulder, *i*, substantially as described.

3. In skylight-frames, the sheet-metal curb-covering B, provided on its inner side with a gutter, *g*, in combination with the pipe *x*, leading from the gutter *g* to the outside of the curb A, substantially as described.

4. The sheet-metal curb-covering B, provided on its upper outside surface with a glass-supporting shoulder, *i*, in combination with one or more central bars, C, provided with standards *t*, having lugs *w w*, the glass *r*, and the cover D, provided with shoulders *v v*, all substantially as described.

5. In skylight-frames, a central supporting-bar, C, constructed of a single piece of sheet metal folded together at *l*, provided with the shoulders *m m* and the gutters *o o*, said gutters being formed by the two leaves of the sheet metal being bent outwardly and backwardly, and the leaf on one side being folded backwardly upon itself on the outside and around over the edge of the other leaf at *q*, substantially as described.

334,488. MACHINE FOR CLEANING CASKS OR BARRELS. WILLIAM O. TAYLOR, Cambridge, Mass. Filed Mar. 23, 1885. (No model.)



Claim.—1. The hollow spindle B, and means, substantially as described, to rotate it, the arms *b*, radiating from said spindle, and provided with brush-backs *b'*, having metallic bristles *b²* secured thereto, and the end disk, *c*, provided with metallic bristles *c'*, combined with the barrel-supporting shafts and their rollers and connecting driving-gearing and pivoted bearings, substantially as shown and described.

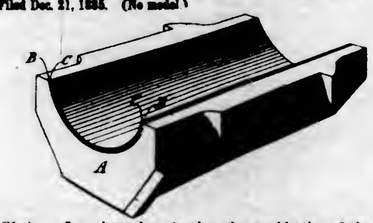
2. The rotating spindle, its attached brush, and the gear and the shafts, the pivoted bearings therefor, and the feed-rollers, combined with toothed wheels, to operate substantially as described.

3. The rotating spindle, its attached brush, and the gear and the shafts, the pivoted bearings therefor, and the feed-rollers, combined with toothed wheels, and with a treadle or lever to raise and lower the said shafts for the introduction of a barrel or cask between the brush and rolls, to operate substantially as described.

334,489. PLASTER OR CEMENT. JOHN THORLEBSON, Knothill Works, Carlisle, England. Filed July 27, 1885. (No specimens.) Patented in England Feb. 9, 1885, No. 1,773.

Claim.—The hereinbefore-described cement, consisting of calcined and powdered gypsum and powdered tincal with or without powdered alum, mixed together dry and in about the proportions set forth.

334,490. JOURNAL-BOX. ROBERT W. TRAYLOR, Richmond, Va. Filed Dec. 21, 1885. (No model.)



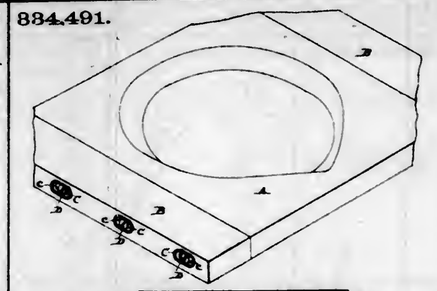
Claim.—In a journal or bearing, the combination of the brass bearing with a lead covering upon its bearing surface and welded thereto, and with a Babbitt covering or surface upon the lead covering and welded thereto, the three metals being thus welded together, substantially as and for the purposes herein set forth.

334,491. PRIVY-SEAT. GEORGE TURNBULL and JOHN TURNBULL, Chicago, Ill. Filed Apr. 16, 1885. (No model.)

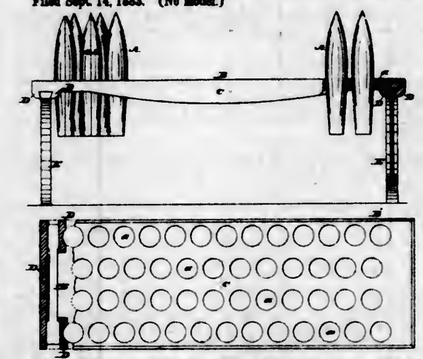
Claim.—1. In a seat for privies, the combination of the body A, provided with screws D, with the end cleats, B, provided with elongated slots to admit of a transverse movement of said screws within said cleats due to the expansion and contraction of the main body A of the seat, essentially as set forth.

2. In a seat for privies, the combination of the body A, provided with screws D, with the end cleats, B, having elongated slots that are provided with slotted metallic bushings C at their outer ends, essentially as and for the purpose set forth.

334,491.



334,492. CIGAR-MOLD. CHARLES A. VALENTIN, Philadelphia, Pa. Filed Sept. 14, 1883. (No model.)



Claim.—The cigar-mold herein described and shown, consisting of two sections of sheet-zinc of different diameters, so that one can fit within the other, the mold being substantially circular in cross-section at all points and made tapering at the tip and butt ends, substantially as and for the purpose set forth.

334,493. MIXED PAINT. TIARK J. VENEMA, Grand Rapids, Mich. Filed Nov. 9, 1885. (Specimens.)

Claim.—The herein-described composition of matter to be used for filling furniture or wooden surfaces of any kind, consisting of resin, beeswax, turpentine, silver-white, stucco, slaked lime, flour, raw linseed-oil, japan, naphtha, and coloring-matter, combined substantially in the manner and proportions specified.

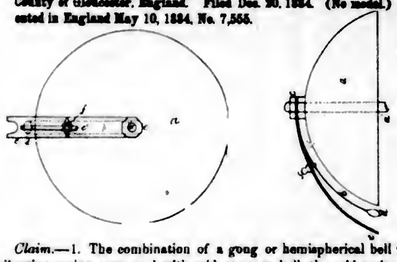
334,494. THILL-COUPLING. RANDALL W. WALKER and JAMES I. BEARDSLEY, Oxford, N. Y. Filed Oct. 20, 1885. (No model.)



Claim.—1. In a thill-coupling, the combination of a stationary and a sliding coupling-section, the former consisting of hooks projecting from the forward end and sides of a plate and having inclined faces and ends, and the latter section consisting of a box with sides having blocks, slotted end and bottom, and a key for holding the section in place, substantially as and for the purpose specified.

2. In a thill-coupling, a stationary and a sliding coupling-section, in combination with a spring bent, as shown, to form a seat for the end of the thill-iron, and a key connected to a spring and provided with a flat-sided head, substantially as and for the purpose set forth.

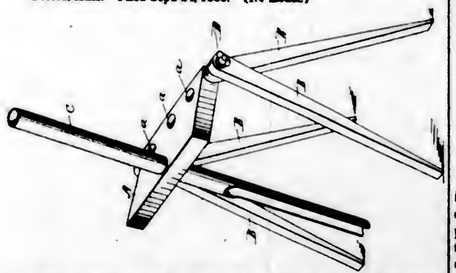
334,495. BICYCLE-BELL. THEODORE E. WARE, Clifton, Bristol, County of Gloucester, England. Filed Dec. 30, 1884. (No model.) Patented in England May 10, 1884, No. 7,555.



Claim.—1. The combination of a gong or hemispherical bell with a vibrating spring connected with said gong or bell, the said spring being rigidly held at one end and its free end carrying a spherical hammer, with rigid radial arms secured to the standard of the gong, whereby the vibration of said spring and hammer is controlled, substantially as described.

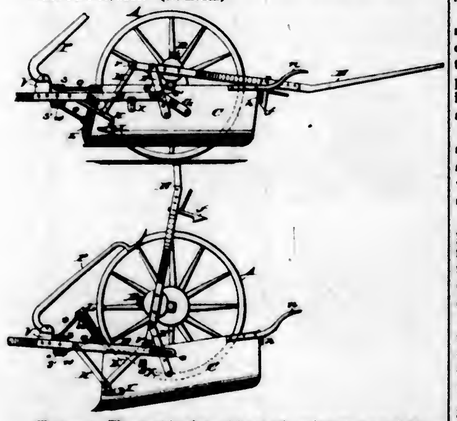
2. The combination of a gong or hemispherical bell and one or more vibrating springs *b*, and hammers, with the curved arm *e*, longitudinally slotted at *e'*, and the adjustable stop-pin *f*, passing through said slot and sustaining the spring-hammer, substantially as and for the purpose described.

334,496. PORTABLE FIRE-WORK STAND. HENRY C. WHEDON, Boston, Mass. Filed Sept. 24, 1885. (No model.)



Claim.—The portable fire-work stand herein described, consisting of the table A, discharge-tube C, borne or supported by the said table, and hinged or folding legs B B B B, journaled to the said table, all substantially as set forth, and for the purposes herein specified.

334,497. EXCAVATOR. S. FRANK WELCH, Mount Pleasant, Iowa. Filed June 18, 1885. (No model.)

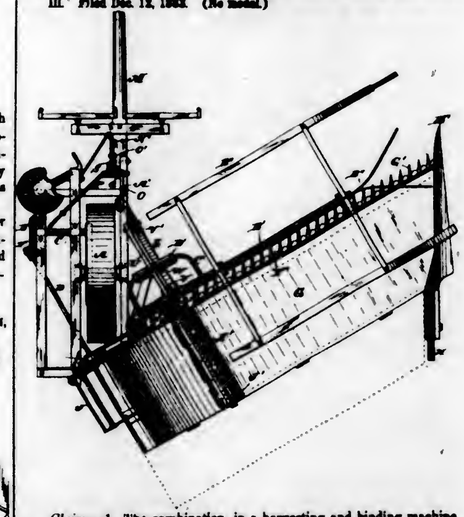


Claim.—1. The combination, with an axle and arms secured thereto and projecting in front of said axle, and a scoop pivoted to the arms, of rods pivoted to the draft attachments and connected with the handle, and adapted to engage the forward ends of the scoop, substantially as set forth.

2. In a wheel-scraper, the combination, with the draft-frame and a lever secured to the axle thereof and projecting in front of said axle, and a scoop pivoted to the lever, of draft attachments provided with slots at their rear ends, and connecting-rods and manipulating-bars provided with pins or studs adapted to register with said slots and loosely connect the draft attachments with the scoop, substantially as set forth.

3. The combination, with a scoop and draft-frame, of a gate and slotted plates secured to the frame, and pivotal connecting-rods between the plates and the gate, whereby the gate is adapted to automatically open and close the scoop, substantially as set forth.

334,498. HARVESTING-MACHINE. CHARLES WHITNEY, Sycamore, Ill. Filed Dec. 12, 1883. (No model.)



Claim.—1. The combination, in a harvesting and binding machine having rear delivery and balanced upon the main drive-wheel by means of the projection of the cutting apparatus and grain-receiving platform placed at an acute angle to the line of draft, the outer end of the platform projecting forward of the center of the drive-wheel and the other end in rear thereof, of a draft-bar supporting said platform and mechanism for simultaneously tilting the platform and the drive-wheel frame, substantially as described.

2. The combination, in a harvesting and binding machine delivering the grain in the rear of the main drive-wheel, and having the grain-receiving platform placed at an acute angle to the line of draft, of the draft-bar supporting said platform and the lever for simultaneously tilting the platform and main frame, substantially as described.

3. In a harvesting-machine, the combination, with the main frame and a cutter-bar placed at an acute angle thereto, of a universal-joint connection between the cutter-bar and the driving mechanism to permit the varying motions of the main frame and platform, a draft-bar supporting the platform and cutter-bar, and means for simultaneously tilting the grain-receiving platform and the drive-wheel frame, substantially as described.

4. In a harvesting-machine, the combination, with the main frame and a platform, of the draft-bar connecting the platform and main frame, and means for simultaneously moving the main frame and draft-bar, whereby the proper tilting of the platform is accomplished, substantially as described.

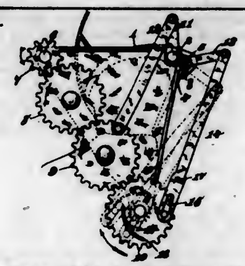
5. In a harvesting-machine, the combination of the main frame, the platform having a pivotal connection with the rear part of the main frame, the draft-bar connecting the platform with the forward end of the main frame, and means for simultaneously moving the main frame and draft-bar in opposite directions to adjust the platform, substantially as described.

6. In a harvesting-machine, the combination of the reel extending forward of the drive-wheel axle at an acute angle to the line of travel of the machine, the platform and the cutter-bar having the same extension, and the draft-bar for supporting the reel and tilting the same and the platform, and serving as a draft-bar, substantially as described.

334,499. GRAIN-BINDER. CHARLES WHITNEY, Sycamore, Ill. Filed Dec. 12, 1883. (No model.)

Claim.—1. The combination, with the binding-arm 1, the compressor-shaft 5, and the crank-arm 13, rigidly secured to the latter, of the gear-wheel 10, having a wrist-pin and an eccentric flange projecting laterally from its face between its center and its toothed periphery, and a link, 14, having its upper end pivoted to the crank-arm of the compressor-shaft, and its lower end loosely engaging the wrist-pin and provided with the roller or stud 17, substantially as described.

334,499.

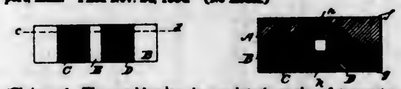


2. The combination of the gear-wheel 10, geared to the wheel 9 which operates the binder-arm, the wrist-pin, and the eccentric flange secured to the face of the wheel 10 between its toothed periphery and its center, the binder-arm shaft connected with the wheel 9, the compressor-shaft 5, the crank 13, rigid on the compressor-shaft, the link 14, pivoted at its upper end to the crank-arm of the compressor-shaft and at its lower end loosely engaging the wrist-pin on the gear-wheel 10, and the roller or stud 17 on the link, substantially as described.

3. The combination of the gear-wheel 10, geared directly with the binder-arm-operating wheel and through it with the binder-driving shaft, the eccentric flange, and the wrist-pin secured to the wheel 10 between its center and toothed periphery, the torsional compressor-shaft 5, the crank-arm 13, rigid on the torsional shaft, the link 14, pivoted at its upper end to the crank-arm and loosely connected at its lower end with the wrist-pin, and the roller or stud 17, substantially as described.

4. The combination, with a compressing device and a link having a roller or stud, of an adjustable flange for increasing the compression of the grain while being bound, substantially as described.

334,500. PRINTER'S QUOIN. WILLIAM R. WHITTIER, Newburyport, Mass. Filed Nov. 24, 1884. (No model.)



Claim.—1. The combination, in a printer's quoin, of two outer or bearing parts, A and B, arranged on opposite sides of a spool or cylinder, E, and bearing sections of scroll-threads, which engage with similar scroll-threads on the flanges of said spool or cylinder, so as to be moved apart by its rotation, and also between said bearing parts A and B two other parts, C and D, similar to each other and on opposite sides of said spool E, and wedge-shaped, by virtue of which shape, when forced apart at the same time and in the same manner as the parts A and B, they compel these parts to remain ever parallel.

2. In a printer's quoin, the combination of five parts, of which the central part is cylindrical, with flanges bearing scroll-threads, which threads engage with sections of similar scroll-threads on each of the other parts, so that by the rotation of said central part the other parts are separated from each other in pairs, one pair bearing against the chase and form, respectively, and the other pair acting as wedges between them, so as to open their ends equally, and thus to preserve their parallelism, substantially as described.

334,501. CAR-COUPLING. JOHN H. WILLIAMS, Brattleborough, Vt., assignor to the Williams Car Coupler Company, Concord, N. H. Filed May 4, 1885. (No model.)



Claim.—1. The combination of the draw-bar C, provided with the socket *a*, the shoulder *b*, and the laterally-projecting ears *c c*, and the three-armed coupling-hook D, provided with the slot d^2, and pivoted to the ears *c c*, and the pivoted latch-lever K, all arranged and adapted to operate substantially as and for the purposes described.

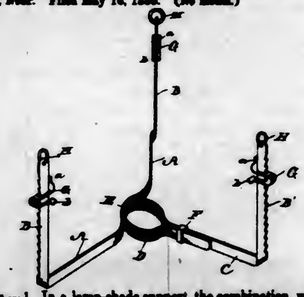
2. The combination of the draw-bar C, provided with the socket *a* and the ears *c c*, having their inner faces slightly inclined to each other, and the coupling-hook D, having the upper and under surfaces of the end of the arm d^2 made correspondingly inclined to each other, substantially as shown in Fig. 10, for the purpose specified.

3. The combination of the draw-bar C, the pivoted latch E, the chains *m* and *p*, the drums F and H, the shaft G, and the levers G' G' and *o'*, all arranged and adapted to operate substantially as described.

4. The combination of the draw-bar C, the pivoted latch E, the chain *m*, the drum F, having its ends slightly inclined to each other, the bearings *n n*, having their inner faces correspondingly inclined to each other, and the levers G', for rotating said drum, all arranged and adapted to operate substantially as described.

5. The draw-bar C, provided with the socket *a*, enlarged at its inner end, in combination with the latch E, chain *m*, drum F, shaft G, and lever G', all arranged and adapted to control and direct the link E', substantially as described.

334,502. LAMP-SHADE SUPPORT. SAMUEL S. WOODWARD, Guide Rock, Nebr. Filed May 16, 1885. (No model.)



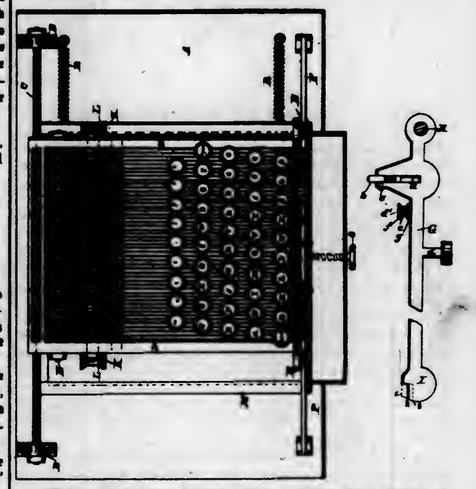
Claim.—1. In a lamp-shade support, the combination, with the central loop, of the three or more horizontal arms attached to said loop, bearing vertical racked bars, the brackets loosely mounted on the racked bars, provided with lips to carry the shade and lips to engage the teeth of the racked bars and secure the vertical adjustment thereof, substantially as set forth.

2. The combination, with the strip C, bent upon itself to form the loop, and having its outer end bent upward at right angles and racked, of the bowed strip A, whose ends are also racked and bent upwardly, and the sliding brackets adjustably mounted on the racked bars, and provided with lips to engage the shade, substantially as described.

3. In combination with the loop, the horizontal bars, and the racked vertical bars, the sliding brackets bowed and having vertically-aligned slots cut through the upper and lower sides of the bow for the admission of the bars, having the upper end turned upward and backward against the inner surface of the bar and the lower end provided with a lip to support the shade, substantially as specified.

4. The combination of strip A, bowed at the center and having both ends turned upwardly and racked, strip C, bent upon itself, secured to the strip A, its outer end turned upward and racked, slide-link F, traveling thereon, the sliding brackets mounted on the bars, as described, and the rings or hooks H, secured in the tops of the uprights, all for the purpose set forth.

334,503. TYPE-WRITING MACHINE. THOMAS D. WORRALL, Washington, D. C., assignor to the Worrall Manufacturing Company, Boston, Mass. Filed Feb. 16, 1885. (No model.)



Claim.—1. A type-writing machine consisting of a battery or series of type-holding levers or keys moving on a common center or pivot mounted in a sliding frame, as described, and adapted to be moved back and forth in suitable ways to and from the printing-point, as set forth.

2. A type-writing machine consisting of a battery or series of type-holding levers or keys mounted in a sliding frame, as described, in com-

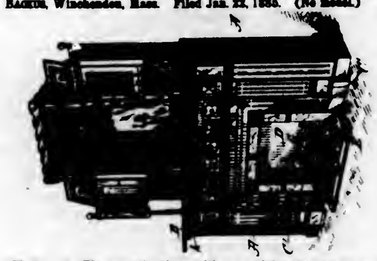
bination with a guide-bar having a notch into which the type-holding levers are depressed to bring the type into printing contact with the paper, as set forth.

3. In a type-writing machine, a guide-bar provided with a retaining-pawl and a vertically-movable operating-pawl, as described, in combination with the pivoted type-levers and paper-holding frame provided with a rack-bar, as set forth.

4. The guide-bar F, having the notch or slot *h* and pawl-guide *i*, in combination with the sliding pawl *k*, adapted to be moved up and down in said guide, the spring *l*, ratchet-bar P, and frame M, whereby the surface to be printed upon is moved over to insure the proper spacing between the letters, as described.

5. In a type-writing machine, the pivoted type-levers having their front ends plain or cut away, as described, in combination with the notched bar F, sliding pawl *k*, and rack-bar P, whereby the surface to be printed upon is moved over one or more notches, as the case may be, by the depression of the type-levers, as set forth.

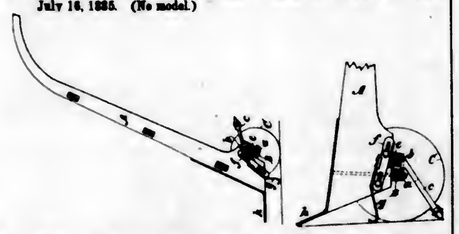
334,504. COMBINED BEDSTEAD AND FIRE-PLACE. QUINCY S. RACKUS, Winchendon, Mass. Filed Jan. 22, 1885. (No model.)



Claim.—1. The combination, with an article of furniture, as a folding bedstead, of a fire-place supported in a pivoted frame and provided with an incombustible lining, substantially as described.

2. The combination of the cabinet-casing A, having roller-pivots *k k*, the pivoted casing C, provided with slots *i i*, and the folding bed-sections F F′, substantially as described.

334,505. HAND-TRUCK. BROR F. BERGH, New York, N. Y. Filed July 16, 1885. (No model.)



Claim.—1. In combination with the frame of a hand-truck, the axle mounted on the frame, the handles whereby the forward end of the frame is tilted upward on the axle, and the dogging-lever pivoted to the truck intermediate the handles and the axle, whereby when the dogging-lever is in contact with the ground the wheels will be advanced by the downward movement of the handles, substantially as described.

2. In combination with a hand-truck, the dogging-lever pivoted to the truck, the spring whereby the dogging-lever is raised, and a piece connected with the lever on the opposite side of its pivot from the dog and projecting forward of the axle, substantially as described, whereby when the truck is thrown forward for the purpose of loading the dogging-lever is thrown downward, as set forth.

3. In combination with the axle of a hand-truck, two arms connected together and projecting one forward and the other backward of the axle, the arm projecting to the rear of the axle being pivoted to the hand-truck and connected with the arm projecting on the forward side of the axle, substantially as described, whereby pressure brought to bear against the arm projecting on the forward side of the axle causes the arm projecting to the rear of the axle to fall in contact with the floor or ground, as set forth.

4. In combination with a hand-truck, the swinging dog projecting to the rear of the axle, a movable piece connecting with the swinging dog and moving therewith, and provided with a spring-extension adapted to come in contact with the floor forward of the wheels, substantially as described.

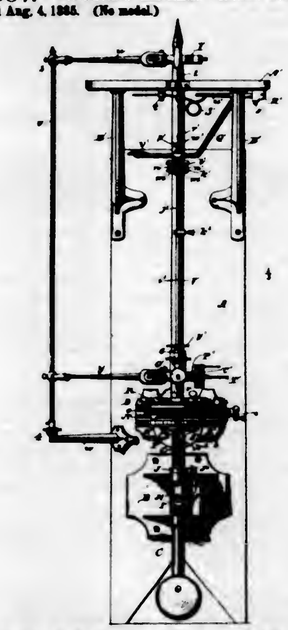
5. In combination with a hand-truck, the forward-projecting piece *h*, the forward-projecting piece *g*, and the backward-projecting piece *c*, all adapted to be in contact with the floor at the same time, and the backward-projecting piece *c* being connected with the forward-projecting piece *g*, substantially as described, whereby the upward motion of the latter, caused by its contact with the floor, produces the downward motion of the former into contact with the floor, substantially as described.

334,506. BOX. ROBERT W. BERTH, Montclair, N. J., assignor to Samuel Crump, same place. Filed Nov. 21, 1885. (No model.)



Claim.—A box formed with the ends or flaps B C, the side *f*, and the smaller sides, *e g*, constructed and adapted to be folded in the manner substantially as specified.

334,507. ENGRAVING-MACHINE. MARTIN BOOK, Hazleton, Pa. Filed Aug. 4, 1885. (No model.)



Claim.—1. In an engraving-machine, a work-table having a vertical adjustment to adapt it to the height of the work, a rotary adjustment to bring the various parts of the work in position to be engraved, right-angular crosswise adjustments for centering the work, and an angular adjustment to conform to the contour of the work, substantially as described.

2. In an engraving-machine, a work-table provided with a vertically-adjustable standard secured thereto by a ball-and-socket joint to permit rotation and inclination of the table, a sub-carriage and means to move it crosswise of the base of the table, and a carriage and means to move it crosswise of the sub-carriage and at right angles to the line of motion of the sub-carriage, combined substantially as described.

3. In an engraving-machine, a work-table provided with a base and a supporting-standard secured thereto, a sub-carriage and carriage and means to move them at right angles to each other crosswise of said base, and a binding-screw extended through the carriage and sub-carriage in slots in said carriage and base intersecting each other in the paths of travel of the carriage and sub-carriage, and clamped against the base to hold said carriage and sub-carriage to the base, substantially as described.

4. In an engraving-machine, a work-table having a rotary motion on its standard, and the notched flange F, combined with the gage or stop pin E, to engage said notched flange for use in properly moving the article being engraved in engine-work, substantially as described.

5. The combination, with a supporting-bracket, of a standard, an adjustable collar on said standard, and a clamping device engaging said standard to hold it in the position in said bracket predetermined by the adjustable collar, substantially as described.

6. The work-clamp B, composed of the movable jaws *m n*, shaped to receive the article to be engraved, thumb-screws to vary their position with respect to one another and hold the work in them, a slotted base-plate on one of said jaws, and a set-screw arranged in the slot in said base, combined with a work-table having a series of threaded holes to receive said set-screw to permit the movement of the work-holder to any desired position upon the table, substantially as described.

7. In a pantographic engraving-machine, a work-table, and means to hold the article to be engraved thereon, a graver, and the tracer, combined with a tracer-post, means, substantially as set forth, for insuring the coextensive operation of the tracer and graver, and a series of articulated connections between said tracer and graver and their common post, whereby the movement of the tracer is reproduced in the graver, substantially as described.

8. In an engraving-machine, a post, V, pivoted in a universal joint, a graver-arm secured to said post by a universal joint, and held up from the work by a spring-arm, and a tracer-arm also connected to said post by a universal joint, combined with a rod pivoted at one end in a universal joint arranged in the horizontal plane of the pivot of the post V and articulated with said post to follow its various movements, and also articulated with the graver-arm and tracer-arm to cause them to move in axial unison, substantially as described.

9. In an engraving-machine, the post V, pivoted in a universal joint, and provided with a counterpoise, combined with a graver-arm secured thereto by a universal joint having a vertical adjustment on said post, and with a tracer, and means to cause the graver to follow the motion of the tracer, substantially as described.

10. In an engraving-machine, a graver-arm secured to its operating-post by a universal joint, and adapted to be rotated upon said post to vary its angle to the vertical plane of said post, so as to reach out laterally over the table beyond the limit of the lateral movement of the post, substantially as described.

11. In an engraving-machine, the graver-arm and tracer-arm secured to a pivoted post by universal joints, and each having a yoke forming a member of said universal joints, combined with a pivoted rod, and arms articulated with said rod and the yokes of the graver and tracer arms, substantially as described.

12. In an engraving-machine, the graver-arm universally jointed to its operating-post, combined with a suspending-stem for its free end, a pivoted spring-arm from which the said stem depends, and a hand-rest for operating said arm to depress the graver-arm into operative position, substantially as described.

13. In an engraving-machine, the graver-arm universally jointed to its operating-post, combined with a suspending-stem for its free end, a pivoted spring-arm from which the said stem depends, a hand-rest for operating said arm to depress the graver-arm into operative position, and a pressure-pin for permitting additional pressure to be given to the graver, substantially as described.

14. The combination, with the graver-arm, of the graver-arm stem, its supporting and operating arm, and an articulated connection for the two, substantially as described.

15. The graver-arm provided with a chuck axially and longitudinally adjustable therein, substantially as described.

16. The graver-arm and the graver-chuck therein provided with a tool-holder having bearings therein, and rotatable by means of the graver-arm stem and a turn-button connected with said stem, substantially as described.

17. The graver-arm, tracer-arm, their common pivoted post to which they are articulated, a rod parallel to said post, and arms connecting said arms to said rod so as to move in parallelism, and means to vary the distance of the graver-arm from the pivot of the post, combined with the telescopic stem for supporting the free end of the graver-arm, substantially as described.

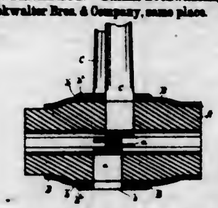
18. In an engraving-machine, a pattern-table composed of a series of separable boards held and guided together by a swivel-screw, and guide-pins and springs, substantially as described.

19. The arm Q′, for controlling the operation of the graver, pivoted to the pattern-table and provided with a stop, substantially as described.

20. The graver-arm, the suspending-stem, the plates *k′ l′*, and connecting-links and guide-pins, combined with the spring-raised arm Q′, to which said parts are connected and through which they are depressed, substantially as described.

21. In an engraving-machine, a graver-arm and chuck for receiving the graver-holder, combined with a stem for raising and lowering the graver from and to the work, and a universal joint interposed between the graver-holder and stem to permit the turning of the cutting-edge of the graver to the desired facet, substantially as described.

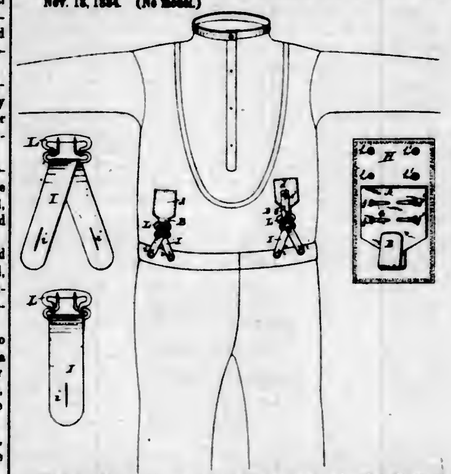
334,508. VEHICLE-HUB. DANIEL BOOKWALTER, Springfield, Ohio, assignor to Bookwalter Bros. & Company, same place. Filed Sept. 1, 1885. (No model.)



Claim.—1. In a vehicle-hub, the combination, substantially as specified, of the hub-body A, tapering at each end from the central portion, and the two-part metallic shell B D, incasing said hub, the said part B extending from the end of the hub beyond the center and provided with spoke-sockets, and the end of the case which extends beyond the spoke-sockets provided with a flange formed by the internal rabbet to overlap the inner end of the part D, which part is forced onto the hub from the opposite end.

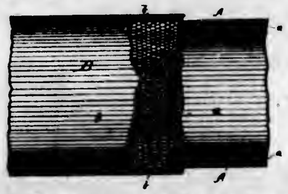
2. The combination, substantially as specified, of the hub A, the shell B, to incase said hub from one end to past the spoke-sockets in the center of said hub, and the flange b^3, forming with the hub-body an annular groove with the shell D, to incase the opposite end of the hub, and having its inner end thickened, forming an outwardly-flaring incline, so that when the flange is compressed down upon the end of shell D the two parts of the shell will be firmly interlocked upon the hub A.

334,509. SUSPENDERS. JOHN T. BROSNAN, New Orleans, La. Filed Nov. 18, 1884. (No model.)



Claim.—The combination, with a shirt having a series of textile straps, A, provided with button-holes *c c′*, the buttons *d*, adapted to engage said button-holes and hold the straps in looped form, as described, and the lower sections, I, with means for connecting the same with the aforesaid loops, substantially as and for the purpose set forth.

334,510. MANUFACTURE OF RUBBER-LINED AND RUBBER-COVERED HOSE. ABRAHAM REUBSAMEN, Jr., Chicago, Ill. Filed Nov. 10, 1885. (No specimens.)

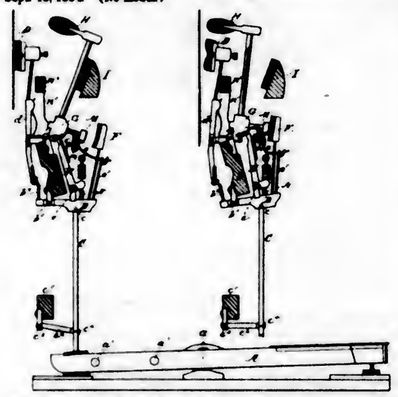


Claim.—1. The process or art of making an inside rubber-lined and outside rubber-covered hose, consisting in first making and vulcanizing two rubber lined or covered fabric tubes, one lined upon the inside and the other covered upon the outside, and then drawing the latter over the former, substantially as specified.

2. The art or process of making inside rubber-lined and outside rub-

ber-covered hose, consisting in first making and vulcanizing two rubber lined or covered fabric tubes, one lined upon the inside and the other covered upon the outside, then impregnating the fabric of said tubes with a preservative, and finally drawing the one over the other, substantially as specified.

334,511. PIANO-ACTION. ISAAC BULLARD, Hyde Park, Mass. Filed Sept. 18, 1884. (No model.)



Claim.—1. In an action for upright pianos, the repeating-spring *e*, secured to the jack E, as described, and having its upper end curved outwardly therefrom to bring it in contact with the inner surface of the bumper M, as specified, whereby the spring acts to check the backward movement of the hammer and to assist in returning the jack to a position under the knuckle, all substantially as described.

2. The combination, in an action for upright pianos, of the knuckle G, carrying or supporting the hammer H, the bumper M, having the face *m*, inclined or shaped as described, the jack E, having the spring *e*, attached to its outer face and bent or curved outwardly therefrom to come in contact with the inclined surface *m* of the bumper when the hammer is on its backward movement, all substantially as and for the purposes described.

334,512. TUBE-PACKING FOR SURFACE-CONDENSERS. DELPHIN B. COBB, Brooklyn, N. Y. Filed May 14, 1885. (No model.)



Claim.—1. The combination of a condenser-head having recessed holes, condenser-tubes passing through said holes, suitable packing placed around the tubes, and threaded thimbles or glands having conically-contracted and recessed outer ends, substantially as set forth.

2. The combination of a condenser-head having recessed holes, condenser-tubes guided in said holes, suitable packing provided with end washers, and threaded thimbles or glands having conically-contracted and recessed outer ends, substantially as set forth.

3. A thimble or gland for the tube-packing of surface-condensers, provided with an exterior screw-thread and a conically-contracted and recessed outer end, substantially as set forth.

334,513. GLOVE, &c. P. FLETCHER COLE, Newark, N. J. Filed Aug. 3, 1885. (No model.)



Claim.—As an improved article of manufacture, a glove or mit having an opening in the palm thereof which constitutes the mouth of a pocket, said opening extending the entire width of the same and being provided with a re-enforcing piece around the edge thereof, and having a piece of suitable material secured to the back of the palm within the glove around the opening in the palm, forming a pocket or receptacle which extends in the direction of its greatest length toward the fingers, substantially as and for the purposes set forth.

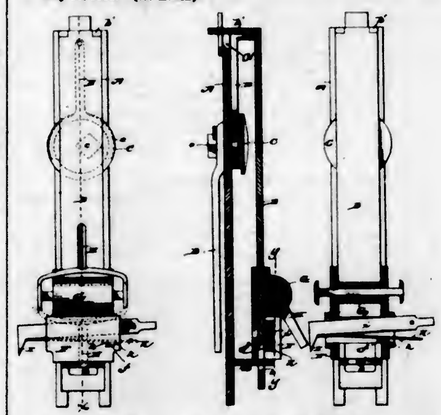
334,514. FIELD FENCE-MAKING MACHINE. SAMUEL B. CROSS, Wallington, Kans. Filed July 7, 1884. (No model.)



Claim.—1. In a fence-making apparatus, a movable carriage, parts of a fence-making machine mounted thereon, and a spacing-lever pivoted upon the movable carriage and operating, when forced against a picket, to cause the movable carriage to travel the distance required for the insertion of a picket, combined and adapted to serve with supporting posts or reels and with wires stretched between, as set forth.

2. The combination, with wires 1 2 and their sustaining posts or reels, of a movable carriage, A, the frame-work B, the shuttle-spindles D D', and their actuating-gears, mounted on said carriage, and the spacing-lever pivoted on the carriage and operated, when forced against a picket, to cause the carriage to move the distance designated for the insertion of a picket, substantially as set forth.

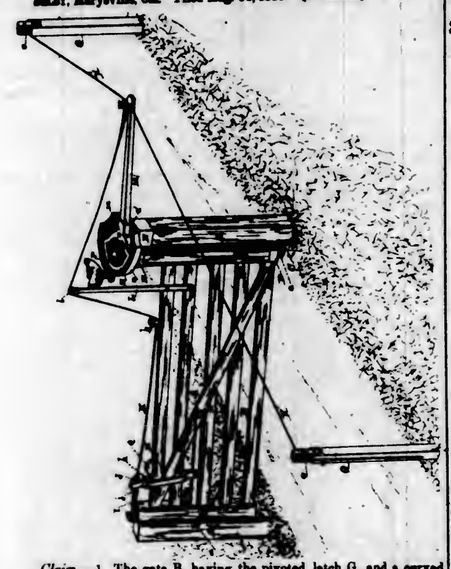
334,515. SAW-MILL DOG. JOSEPH B. DAVIS, Mooresville, Ind. Filed May 18, 1885. (No model.)



Claim.—1. The combination, in a saw-mill dog, of the rigid bar A, having the headed bracket *a'* and the slot *a*, the sliding bar B, having the slot *b*, in which the bracket *a'* works, and the headed bracket *b'*, working in slot *a*, means for raising and lowering the sliding bar, the box F on said bar, having the slotted opening, the shoulder *f*, and the cam for clamping the box to the bar, with the dog I, the bearing-spring K, fast thereto and having the tooth *k* for engaging with the shoulder *f*, for the purpose set forth, substantially as described.

2. The combination of the sliding bar B, the box F on said bar, having the slotted opening, the shoulder *f*, and the cam for clamping the box to the bar, with the dog I, the bearing-spring K, fast thereto, and having the tooth *k*, for engaging the shoulder *f*, substantially as described.

334,516. GATE. THOMAS DEPT, Meare's Station, and EDWARD H SELBY, Marysville, Cal. Filed Aug. 31, 1885. (No model.)



Claim.—1. The gate B, having the pivoted latch G, and a curved cam, Q, on its top, in combination with the means for releasing said latch, consisting of the link H, pivoted to the latch, and having a roller, *h*, in its top adapted to travel on the cam Q, and the rope K, connected with said link, substantially as herein described.

2. The gate B, having the cam Q on its top, and a pivoted latch, G, in combination with the link H on the gate pivoted to the latch, the roller *h* in said link adapted to travel on the cam to raise the latch, the eyebolt J in the link, the spring I, attached to one end of the bolt, and the rope K, attached to its other end, substantially as herein described.

3. The combination of the post A, casting E, secured to the top thereof and having the circular open-ended extension or housing *e*, lever M, pivoted on said casting and carrying the segmental gear N, which fits within the extension, the rope K, secured to the lever, the gate B, having pivot-post *b*, and the pinion P, mounted on top of said post, substantially as herein described.

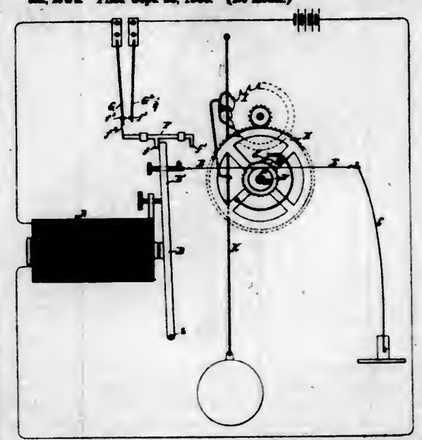
4. The gate-post A and the gate B, having the pivot-post *b*, suitably hinged at its base to the gate-post, in combination with the casting E on top of the gate-post, having the circular open-ended extension or housing *e*, the casting F on top of the pivot-post having top flange, *f*, bearing on the extension *e* and forming the top hinge, the lever M, having segmental gear N, fitted within the extension or housing *e*, the pinion P on top of the casting F, meshing with the segmental gear, and a rope attached to the end of the lever M, substantially as herein described.

5. The gate-post A and the gate B, having pivot-post *b*, in combination with the hinges, consisting of the casting C on the gate-post below, and the casting D on the pivot-post, the casting E on the gate-post above having circular open-ended extension *e*, the casting F on top of the pivot-post having top flange, *f*, and the means by which the gate is operated, consisting of the lever M, the segmental gear N, to which the lever is attached, said gear being housed in the extension *e*, the pinion P on top of the casting F, and a rope, K, attached to the lever M, substantially as herein described.

6. The gate-posts A and the gate B, having pivot-post *b*, hinged to one of the posts, a pivoted latch, G, adapted to engage the catch of the other post, and a curved cam, Q, on its top, in combination with the means by which the latch is released and the gate operated, consisting of the link H, pivoted to the latch, and having a roller, *h*, in its top adapted to travel on the cam Q of the gate, and the spring I, for returning said link, the lever M, having segmental gear N, the pinion P on top of the pivot-post, with which the segmental gear engages, and the rope K, attached to the link and passing over suitable guide-pulleys and around a pulley on the end of the lever M, substantially as herein described.

7. The gate-posts and the gate B, having pivot-post *b*, hinged to one of the gate-posts, a latch, G, adapted to engage with the catch of the other gate-post, a cam, Q, on its top, and a standard, L, in combination with the link H, having roller *h*, the spring I, returning said link, the lever M, having segmental gear N, guided on top of the gate-post, the pinion P on the pivot-post of the gate, and the rope K, attached to the link and passing around suitable guide-pulleys in the standard and the end of the lever, substantially as herein described.

334,517. ELECTRIC-CLOCK MOVEMENT. SILAS C. DERRICKSON, Wilton, Iowa. Filed Sept. 28, 1885. (No model.)



Claim.—1. The combination, with an electro-magnet and its armature-lever, and the spring C, and shaft *d*, and devices, substantially as described, whereby the tension of said spring operates to rotate the shaft, of the bar F, carrying arms *f*, *f'*, and *f*², and movable, as described, and the tongues G and G' in the battery-circuit, constructed and arranged to operate as and for the purpose specified.

2. The combination, with an electro-magnet and its armature-lever acted upon by mechanism, substantially as described, to be drawn from the magnet, of the sliding bar F, carrying the arms *f*, *f'*, and *f*², and the parallel tongues or bars G and G', placed in the battery-circuit, and constructed and arranged to operate as and for the purpose set forth.

3. The combination of the magnet A, armature B, carrying armature-lever B', spring C, drum D on shaft *d*, with its ratchet D', and pawl *d'*, the cord E, sliding bar F, carrying arms *f*, *f'*, and *f*², and the flexible tongues G and G', in the battery-circuit, together with the pinion H, escape-wheel I and pendulum K, in a clock mechanism, all constructed and arranged to operate as and for the purpose specified.

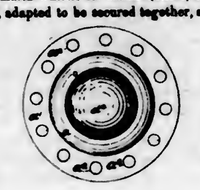
334,518. PROCESS OF MAKING LEATHER WATER-PROOF. JOS. A. DEMIX, St. Mary's, Pa., assignor of one-half to Ernest J. Wimmer, same place. Filed Dec. 22, 1884. (No specimens.)

Claim.—1. The within method of treating leather and hides and the like to render them water-repellent and pliable, consisting in applying water thereto, then partially drying the same, then applying a solution of sugar of lead and hot water, and subsequently applying a solution of alum and hot water, substantially as described.

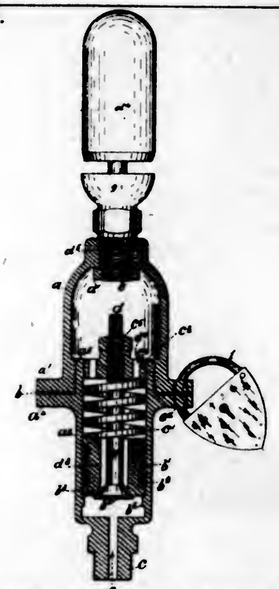
2. The within composed for treating leather and hides and the like to render them water-repellent and pliable, composed of two solutions, one being hot water one gallon and sugar of lead one ounce, and the other hot water two gallons and alum two pounds, to be used in the order named, substantially as described.

334,519. ALARM-WHISTLE FOR STEAM-BOILERS. DAVID P. DOMMETT, Buffalo, N. Y. Filed Nov. 23, 1885. (No model.)

Claim.—An alarm-whistle for steam-boilers, consisting of a cylindrical casing, *a a*², adapted to be secured together, substantially as speci-

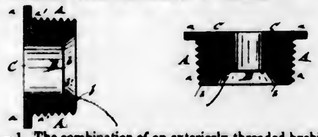


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fied, one portion having a perforated portion, c^3, provided with a vertically-adjustable valve-stem capable of being rigidly fixed at any desired point, a movable piston, and a spring interposed between the piston and portion c^3, in combination with a steam-whistle, substantially as described.

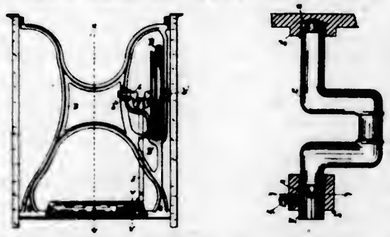
334,520. VENT-BUNG AND FAUCET-PLUG. CHRISTOPHER G. DODGE Jr., Baltimore, Md. Filed June 26, 1885. (No model.)



Claim.—1. The combination of an exteriorly-threaded bushing having an inwardly-projecting and beveled shoulder, a web resting on said shoulder, and a packing-ring driven into the bushing, so as to retain the web on said shoulder, substantially as set forth.

2. The combination of an exteriorly-threaded bushing having an inwardly-projecting and beveled shoulder, a web resting on said shoulder and having concentric creases, and a ring-shaped packing driven into the bushing, to retain the web on the shoulder, substantially as set forth.

334,521. SEWING-MACHINE-TABLE FRAME AND TREADLE. J. E. DONOVAN, Cincinnati, Ohio. Filed Dec. 9, 1885. (No model.)



Claim.—1. In a sewing-machine stand, a cross-brace having supports for both the band-wheel and the treadle integral with the brace, and having bearings for the treadle cast with the brace.

2. In a sewing-machine stand, a cross-brace having a dress-guard, and the supports for both the band-wheel and the treadle-bearings cast with the brace.

3. In a sewing-machine stand, the combination, substantially as hereinbefore set forth, of the legs A, having bosses *a*, having their faces cut away, as shown, and the brace B, having bosses *b*, and cut away counter to the bosses upon the legs A, whereby the brace and legs may be firmly secured together.

4. In a sewing-machine stand, the dress-guard B', integral with the brace, and having bosses cast with and projecting forward from the said guard and brace, so that the shaft-bearings may be drilled in line, substantially as shown and described.

5. In a sewing-machine stand, a cross-brace having a dress-guard integral with the brace, and bearings for the band-wheel, consisting of bosses b^3 and b^4, integral with the dress-guard, substantially as shown and described.

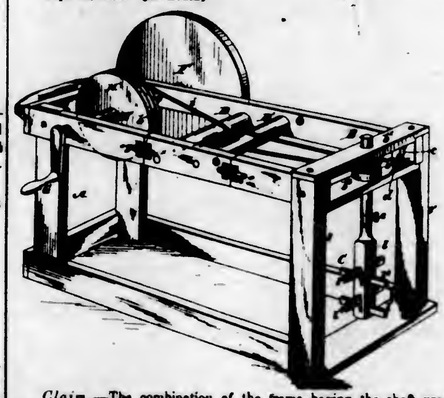
6. In a sewing-machine stand, the combination, substantially as specified, of the brace B, dress-guard B', and bosses b^3 b^4, with the ball-bearings *e*, plug F, and adjusting-screw *f*, combined and arranged substantially as specified.

7. In a brace for sewing-machine stands, the knife-edge bearings *g*, cast integral with the brace, and the treadle H, arranged to vibrate upon said knife-edge bearings, substantially as described.

8. A crank-shaft for band-wheels having cone ends, and ball-bearings for said ends, with means, such as shown, for adjusting the bearings with relation to each other, substantially as hereinbefore set forth.

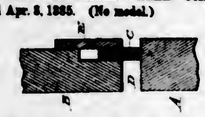
9. In a sewing-machine stand, the combination, as specified, of the brace B, the dress-guard B', and bosses b^3 b^4, cast integral with said brace, and the plug F and set-screw *f*, the said plug and boss b^3 having coincident conical depressions to admit of the adjustment of the band-wheel shaft in case of wear when ball-bearings are used, or to furnish bearings for the said shaft when the ball-bearings are dispensed with.

334,522. CHURN-MOTOR. ROBERT R. EMERSON, Pilot Oak, Ky. Filed Sept. 25, 1885. (No model.)



Claim.—The combination of the frame having the shaft provided with wheels H F, the belt *i*, connected to the wheel H, and rollers D D', as described, the roller D' being adjustable by means of a removable piece in one of the side rails of said frame, whereby the connection of said belt with the worm of the spindle B produces a greater revolution of the dasher C, as shown and described.

334,523. TURBINE WATER-WHEEL. JOSEPH P. FRISELL, Boston, Mass. Filed Apr. 8, 1885. (No model.)



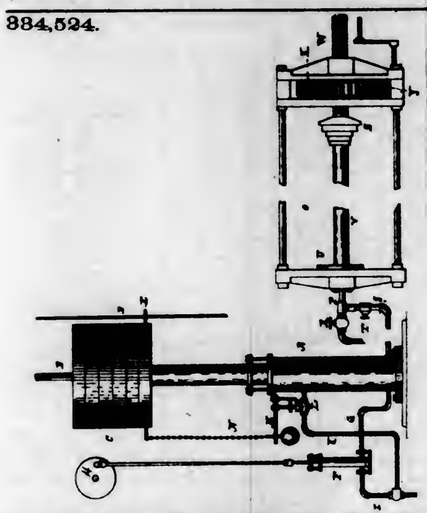
Claim.—1. The ring C, covering the space D between the fixed and revolving parts A and B of the wheel without being rigidly attached to either of these parts, being held upon its seat by the pressure of the water and free to move, so as to adapt itself to any displacement of the wheel, for the purpose specified.

2. The ring C, fitted to the revolving part A of the wheel, but capable of revolving or sliding thereon, and held by the pressure of the water against the fixed part B, substantially as described, and for the purpose specified.

334,524. PIPE-TESTING MACHINE. DAVID GILES, Chattanooga, Tenn. Filed Sept. 14, 1885. (No model.)

Claim.—1. The combination, with a pipe-holder, of a cylinder having a weighted plunger-rod, a pump connected to said cylinder, a pipe leading from the pump supply-pipe to the cylinder, a weighted valve in said pipe and operated by the weighted plunger-rod, and a pipe connecting said cylinder and pipe-holder, substantially as and for the purpose specified.

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2. The combination, with a pipe-holder, of a valved pipe leading to a water-supply, a cylinder connected to said pipe by a valved pipe and provided with a weighted plunger-rod, a pump connected to said cylinder, a pipe connecting said cylinder to the pump supply-pipe, and a weighted valve in said pipe, said valve being connected to and operated by said weighted plunger-rod, substantially as and for the purpose specified.

334,525. DIAL FOR TIME-PIECES. ARTHUR O. GOTT, San Francisco, Cal. Filed Feb. 17, 1886. (No model.)



Claim.—A fixed dial having the minutes of the hour indicated thereon, and provided with an opening at the top, and a dial having the hours indicated thereon revolving axially below the fixed dial and provided with internal gear-teeth, as shown, in combination with gear-wheels B C D, and the minute-hand, whereby the revolving hour-dial imparts motion to the minute-hand, and said dial may be rotated in either direction by applying power to the minute-hand, substantially as shown.

334,526. PIPE-JOINT. ROBERT GREEN, Oneida, Miss., assignor of one-half to Joseph Bird, same place, Joseph Bird administrator of said Green, deceased. Filed June 9, 1885. (Model.)

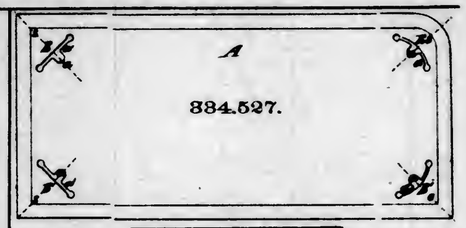


Claim.—A stove-pipe section having at its ends and on opposite sides thereof double depressions *a b*, forming parallel spiral grooves on the outer ends of said section, substantially as shown and described, and for the purpose set forth.

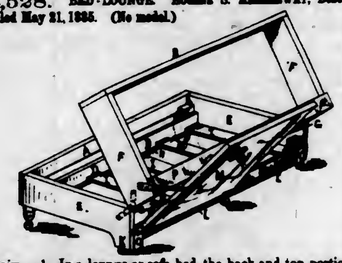
334,527. CUFF. WALLACE P. GROOM, Brooklyn, N. Y. Filed Sept. 4, 1885. (No model.)

Claim.—1. A cuff having button-holes in its opposite ends, arranged with their length oblique to the edges of the cuff and across the corners, so that when the button-holes in opposite ends are brought into coincidence they will cross each other at opposite angles, substantially as herein described.

2. A cuff or other article of apparel provided with a button-hole arranged obliquely to the edges thereof and across the corner, and having in its inner edge or margin a notch or recess extending in a direction away from the corner, substantially as herein described.



334,528. REED-LOUNGE. ROBERT S. HERRESHOFF, Boston, Mass. Filed May 21, 1885. (No model.)



Claim.—1. In a lounge or sofa bed, the back and top portion of the seat-frame hinged to the lower portion of the frame, and the oblique actuating hook-braces S R, adapted to slide on the back, whereby the said back and top portion of the seat-frame are both turned down backward simultaneously, substantially in the manner described, as and for the purpose set forth.

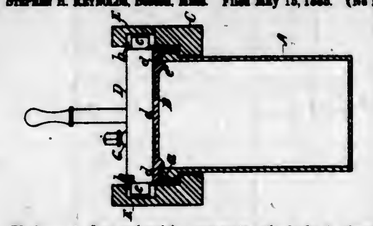
2. The combination, with the hinged frame A E E P and back portion M, of the oblique actuating-braces S R, adapted to slide upon the back in opening and closing the lounge-bed, as described.

3. In a lounge or sofa bed, the narrow front piece A, secured to the front side of the legs C, and the supplemental portion D, secured to the back side of the said legs, as described, and for the purposes set forth.

4. The combination, with the rear frame-piece, J, of the ledge-piece L and back portion M, hinged to the said portion J, so as to rest thereon when turned down to a horizontal position, as described.

5. The combination, with the rear frame-piece, J, of the support-blocks O and frame-pieces B, F F, and P, hinged to the end pieces E E, so that the said strip P will rest on said blocks O when turned down to a horizontal position, as set forth.

334,529. DENTAL VULCANIZING APPARATUS. JOHN HOOD and STEPHEN H. REYNOLDS, Boston, Mass. Filed May 15, 1885. (No model.)



Claim.—1. In a vulcanizing apparatus, the body A, ring C, and cover B, provided with packing-recess *c* and elevations *d*, in combination with the cam D, having ratchet-teeth *n*, and pawl *n'*, attached to the ears of ring C, arranged and operating as described.

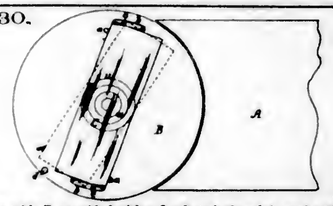
2. In a vulcanizing apparatus, the combination of the body A, having circumferential projection *a*, the cover B, having annular packing-recess *c* on its under side, and a series of flat-topped elevations, *d*, on its upper side, the ring C, provided with recessed ears E, the cam D, having ratchet-teeth *n*, and provided with journals *e*, for engaging the recesses in said ears, and the pawl *n'*, attached to one of said ears, all as shown and described.

334,530. MICROSCOPIST'S TURN-TABLE. CHAS. KLIPPERT, Rochester, N. Y., assignor of one-half to J. Frederick Parker, same place. Filed Sept. 8, 1885. (No model.)

Claim.—1. The turn-table B, formed with slots or openings *b b*, and provided with fixed pins *c c*, in combination with the plate or arms F, provided with pins *c c*, reaching up through the openings *b b*, said plate F having its bearings beneath the table, substantially as shown.

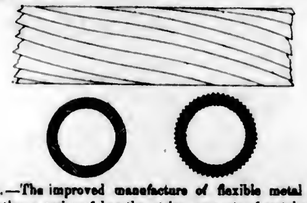
2. The combination of the turn-table B, formed with a rest or projection, *e*, and the plate F, provided with a spring, *l*, secured thereto and bearing upon the rest *e*, substantially as shown.

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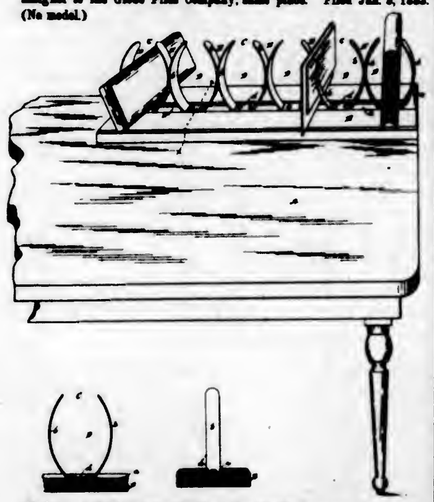
3. The table B, provided with a fixed stud, *d*, and formed with slots *b b*, in combination with the movable plate or arms F, provided with pins *c c*, held to reach through the slots *b b* and extend above the table, substantially as and for the purpose set forth.

334,531. MANUFACTURE OF METAL TUBES. ARTHUR LAKE, Westminster, County of Middlesex, England. Filed Nov. 12, 1885. (No model.) Patented in England Aug. 28, 1884, No. 11,743; in France Apr. 20, 1885, No. 165,819; in Belgium Apr. 21, 1885, and in Germany Apr. 22, 1885, No. 3,116.



Claim.—The improved manufacture of flexible metal tubes by twisting together a series of lengths, strips, or parts of metal of various sections in a similar manner and by similar means to that of forming or making wire ropes, (but in this case the bobbins would be fixed,) the section of each length, strip, or part forming the outside of the tube being so shaped as to interlock with those adjoining it, so that should any individual part be fractured it will still be retained in position, substantially as hereinbefore fully described.

334,532. DISTRIBUTING-FILE. ROBT. R. LEAHAN, Cincinnati, Ohio, assignor to the Globe Files Company, same place. Filed Jan. 5, 1885. (No model.)

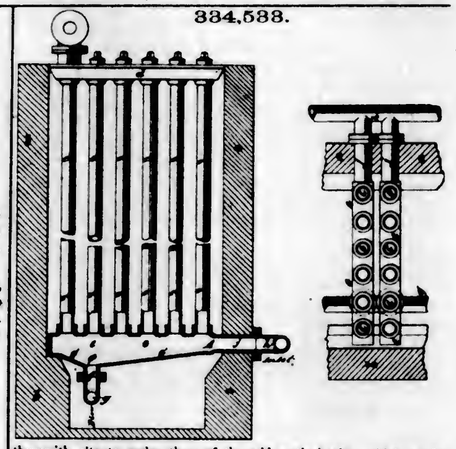


Claim.—A flat base-piece having a longitudinal groove, and a series of spring-arms formed in pairs, each pair having a flat portion of such width as to fit the groove in the base-piece, and secured therein, the pairs placed close together, so that the convex sides of the concavo-convex spring-arms of proximate pairs will face and nearly touch each other, all combined as stated.

334,533. FUEL-ECONOMIZER. ARTHUR LOWCOCK, Shrewsbury, County of Salop, and THOMAS SYKES, Manchester, County of Lancaster, England. Filed Aug. 12, 1885. (No model.) Patented in England Mar. 4, 1885, No. 2,875.

Claim.—The combination, with the vertical tubes *c c' c²*, of the bottom box, *e*, provided with an inlet-pipe, *j*, and having the lowest part, *e³*, of its bottom and the blow-off or mud pipe *f*, which is connected

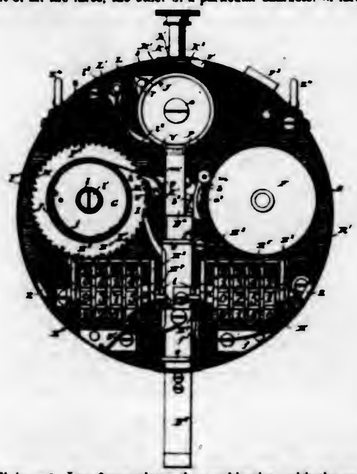
334,533.



therewith, situate under those of the said vertical tubes which are farthest from the inlet-pipe *j*, substantially as and for the purpose herein described.

334,534. FARE RECORDER AND REGISTER. HOLMES MARSHALL, Cleveland, Ohio. Filed Nov. 1, 1884. (No model.)

Brief.—One bar operates but one series of register-wheels, and the other operates both series of wheels, one set of wheels thus keeping an account of all the fares, the other of a particular character of fares.



Claim.—1. In a fare-register, the combination, with the apertured table which receives the fare slip or ribbon, of the bars, each carrying a pointed tooth or pin depending therefrom and overhanging the table, one of said bars having independent action and the other bar arranged for coaction with the independently-acting bar, substantially as and for the purpose set forth.

2. In a fare-register, the combination, with the ribbon, the fare slip or ribbon puncturing-bar provided with a pawl, of the gong or bell, the hammer-arm of said gong carrying a cam engaged by said automatically-actuated pawl of said bar, said bar also having a pawl to actuate the ribbon-receiving roll or drum ratchet upon the release or return movement of said bar, and the ribbon-receiving roll provided with a ratchet, substantially as and for the purpose described.

3. In a fare-register, the combination, with the fare-slip puncturing-bar, of the gong or bell, said bar having a primary pawl, and the supplementary spring-pawl acting upon the primary pawl, the latter pawl actuating the ribbon-receiving roll or drum ratchet upon the release or return movement of the said bar, and the hammer-arm of said gong or bell having a cam actuated by said primary pawl of the bar, substantially as and for the purpose described.

4. In a fare-register, the combination, with the fare-puncturing bar carrying the automatically-operating pawl, of the gong or bell, its hammer-arm provided with a cam, the tripping-stop for said pawl, and the

two rolls, the ribbon, and the table or plate, substantially as and for the purpose specified.

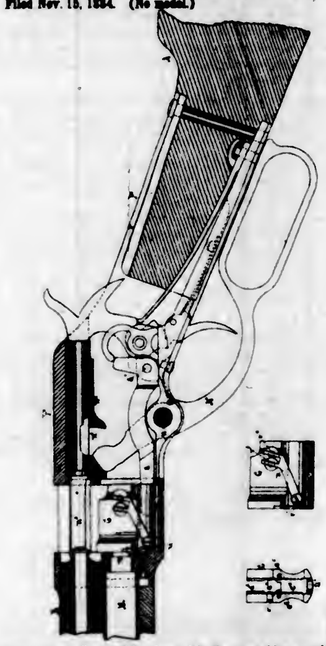
5. In a fare-register, the fare-slip puncturing-bar carrying a post or stud, in combination with the decimal-wheel, a pivoted arm carrying a rod or axis, and a pawl hanging upon said axis, the pivoted arm being provided with a crank having connection with said stud or post of the lever, substantially as and for the purpose specified.

6. In a fare-register, the fare-puncturing bars, one having independent action, and the other coacting with the independently-acting bar, and each bar carrying a stud or post, in combination with the duplicate decimal ratchet-pawls, each hung upon a rod or axis of pivoted arms, said arms having cranks provided with trunnions or pivots bearing in said studs or posts of the bars, substantially as and for the purpose described.

7. The combination, with the case having spaced-apart lugs upon the inside of its rim, of the back plate or cover having open-ended slots in its rim, and the bolt or latch pivoted and acted upon to snap past one of said lugs, substantially as and for the purpose set forth.

8. The combination, with the case having upon the inside of its rim spaced-apart lugs and a sealed aperture, of the back plate or cover having open-ended slots in its rim and a spring bolt or latch with its inner end entering a slotted case containing a tumbler acting upon said bolt or latch to unlock it, and carrying a finger or projection entering the sealed aperture of the case, substantially as and for the purpose set forth.

334,535. MAGAZINE-GUN. JOHN M. MARLIN, New Haven, Conn. Filed Nov. 15, 1884. (No model.)



Claim.—1. In combination with the cartridge-carrier C, provided with the cartridge-chamber c^2, spring-stop *o*, placed at the delivery end thereof, and with slot c^4, suitable mechanism for raising and lowering the said carrier, and the magazine and barrel of the arm placed in the path traversed by said carrier, substantially as described.

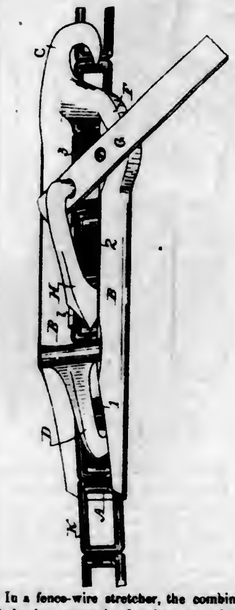
2. In combination with the cartridge-carrier C, provided with the cartridge-chamber c^2, the spring-stop *o*, placed at the delivery end thereof, and with slot c^4, having one or more lips, c^5, suitable mechanism for raising and lowering the said carrier, and the magazine and barrel of the arm placed in the path traversed by said carrier, substantially as described.

3. In combination with the cartridge-carrier C, provided with the cartridge-chamber c^2 and slot c^4, suitable mechanism for raising and lowering said carrier, the tongue *u*, fitting and sliding in said slot, and the barrel and magazine-passage *m*, placed in the path traversed by said carrier, substantially as described.

4. In the cartridge-carrier C, the combination of the cartridge-chamber c^2 with the elastic stop *o*, placed in the delivery end of said chamber, and provided with a flat outer face and a beveled face within the chamber, adapted to cause the said stop to yield and allow the cartridge to be forced outward from the chamber past it, substantially as described.

5. In the cartridge-carrier C, the combination, with the two holes v^2 v^3, through its side wall, of the plunger v^3, projecting into chamber c^2, through either one of said holes, across the path of the cartridge, and the spring *v*, having each member of its bifurcated end adapted to be brought across one of said holes and press upon the said plunger, substantially as described.

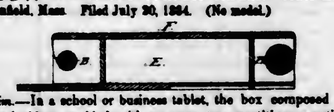
334,536. FENCE-WIRE STRETCHER. EDWARD J. HILES, Kellogg, Iowa, assignor of one-half to H. M. COX, same place. Filed May 11, 1885. (No model.)



Claim.—1. In a fence-wire stretcher, the combination of a hook-shaped detent, D, having a cross-head at its rear end that terminates in journals, and a lever, G, carrying a hook, H, with a frame having bearings for a sliding chain, for the purposes stated.

2. A wire-stretcher composed of a frame, A B B, having an integral hook, C, a lever, G, pivoted to the frame, a pawl, H, pivoted to said lever, a detent, D, pivoted to said frame, and a chain or perforated bar having a wire-holding device at its end, to operate in the manner set forth.

334,537. SCHOOL AND BUSINESS TABLET. CYRUS M. MOODY, Greenfield, Mass. Filed July 20, 1884. (No model.)



Claim.—In a school or business tablet, the box composed of two longitudinal sides provided with grooves, two partitions meeting said sides at right angles, to form, with the top, an apartment, E, and two open recesses at the ends, in combination with rollers B B and a sliding bottom, all arranged substantially as and for the purpose set forth.

334,538. LATHE FOR TURNING SHAFTING. WALTER J. MORGAN, Cumberland, Md., assignor of one-half to Merwin McKaig, same place. Filed Aug. 27, 1885. (No model.)

Claim.—1. The combination, in a lathe, of a frame, a head-stock provided with a face-plate, a tail-stock provided with a face-plate, a shaft carrying a pinion in mesh with the face-plate of the head-stock, a sleeve mounted upon the shaft and carrying a pinion in mesh with the face-plate of the tail-stock, said sleeve adapted to slide upon the shaft, but to rotate only in unison therewith, and an arm projecting from the tail-stock and having the sleeve loosely journaled in it, whereby the sleeve and its pinion are maintained always in fixed relation to the face-plate of the tail-stock.

2. In a lathe, the combination of a frame, A, a head-stock, B, provided with a face-plate, D, a tail-stock, X, provided with a face-plate, I', a shaft, F, provided with a pinion, E, meshing with face-plate D, a sleeve, G', encircling and adapted to slide upon the shaft F, a pinion, H^3, carried by said sleeve and meshing with face-plate I', and an arm, J',

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swiveled upon the spindle Y of the tail-stock, and having the sleeve G' journaled in it, all substantially as shown and described.

3. In a lathe, the combination of a frame, A, a head-stock, B, provided with a face-plate, D, a tail-stock, X, provided with a face-plate, I', a shaft, F, provided with a pinion, E, meshing with face-plate D, a sleeve, G', encircling and adapted to slide upon the shaft F, a pinion, H^2, carried by said sleeve and meshing with face-plate I', an arm, J', swiveled upon the spindle Y of the tail-stock, and having the sleeve G' journaled in it, and a screw connected with and serving to move said spindle longitudinally, substantially as set forth.

4. In combination with the arbor Y of tail-stock X, stem or spindle E', swiveled in the rear end of said arbor, threaded sleeve or screw B', encircling said stem or spindle and bearing at its ends against cross-bar D' and nut c', and cross-bar A', carried by the tail-stock and threaded to receive the screw B', whereby the rotation of the screw is caused to advance or recede the arbor, but the rotation of the arbor is prevented from turning the screw.

5. In combination with a turning-lathe, a reversible tool carriage or holder provided on both sides with devices for adjusting the tools, whereby it is adapted to be used either end forward.

6. In a lathe for turning shafting, &c., the combination of a frame provided with a head-stock and tail-stock, a carriage adapted to traverse the frame between said stocks, and a tool-holder mounted upon said carriage, and adapted to be swung or moved from one side of the vertical plane of the lathe-centers to the other.

7. The combination, in a lathe, of a head-stock, a tail-stock, gearing adapted to drive the arbors of both stocks directly and positively, and a tool-carriage having tool-holders adapted and arranged to be set at either the front or rear side of the vertical plane of the lathe-centers at will.

8. In a lathe, the combination of a reversible tool-carriage provided with tool-posts on opposite sides of the center, and feed-screws for said tool-posts extending from one side of the carriage to the other and adapted to be turned from either end at will.

9. The dog, for use in connection with a lathe such as described, consisting of the parts m' m^2, hinged together and provided with fastening p'.

10. The dog consisting of parts m' m^2, each provided with an extension or tail to engage with a face-plate, said parts being connected by a hinge, o', and provided with a fastening device, p', substantially as described and shown.

11. In a lathe, the combination of a driving-shaft, F, a head-stock and tail-stock, and gearing connecting the shaft and the arbors of said stocks, and supports for said shaft at points between the head and tail stocks, adapted to be thrown back to allow the tail-stock and its gearing to pass.

12. In a lathe, the combination, with tail-stock X, shaft F, and intermediate connections, of shaft-supports consisting of hinged arms L', provided with separable boxes M', and fastening devices for closing the boxes about the shafts and for holding the supports in an upright or working position.

13. In a lathe, the combination of a frame, a head-stock, a tail-stock, a traveling tool-carriage, a drum mounted within the frame near one end, a sheave or pulley mounted within the frame near the opposite end, and a rope or cable clamped to the tool-carriage, having both its ends made fast to the drum and wound upon the drum in sufficient length to permit the full travel of the tool-carriage as the cable is wound off the drum in one direction and upon it in the other.

14. The combination, with the traveling tool-carriage, of a lathe, a drum, K, at one end of the lathe, a sheave, M, at the opposite end, having a stem encircled and drawn back by a spring, as V, and a cable, L, made fast to the tool-carriage and to the drum, and passing about the drum and sheave, as shown and described.

15. In combination with the traveling tool-carriage of a lathe, a drum at one end of the lathe, a cable passing about the drum and attached to the tool-carriage, and a sheave or pulley at the opposite end of the frame, about which the cable passes, and a tension device applied to said sheave to keep the cable taut.

16. In combination with a lathe and its feed gear, the reversing mechanism consisting of gear H, rock-shaft A, rocking plate G, and segment j, secured upon said rock-shaft, pulley f and pinion g, mounted loosely upon the rock-shaft h, pinions i j k, carried by plate G, shaft O, and segment p, carried by said shaft and meshing with segment q.

17. In a lathe, the combination, with a reversing rock-shaft, O, of a controlling-lever, Q, mounted upon said shaft and adapted to slide lengthwise of said shaft, but held against movement about the axis of the shaft except in unison with the shaft.

18. In a lathe, the combination, with reversing-shaft O and tool-carriage N, of hand-lever Q, extending through an opening in the carriage and adapted to rock the shaft, but free to slide thereon in the direction of the length of the carriage.

19. In combination with shaft O, a counterbalanced support, S, and a traveling tool-carriage provided with a guard, T, adapted to press back said support to permit the passage of the carriage.

20. In a lathe, and in combination with a traveling tool-carriage having an annular support, Y', with a tapering opening, a split bushing, V', and a tapering split sleeve passing through said opening and provided at its ends with nuts X'.

21. In combination with frame A, having bottom a, provided with openings y' and covers z^2, supports w' for said frame, provided with doors x'.

22. In a lathe, the combination, with reversing-shaft O and its operating-lever, of locking-plate R, provided with notches w, and spring z, pressing against said plate, substantially as shown.

334,539. OINTMENT. MARK MUSGRAVE and HENRY J. BARTON, Oak Bar, Cal. Filed Oct. 27, 1885. (No specimens.)

Claim.—An ointment consisting of manzanita-leaves, (*Arctostaphylos pungens,*) oxide of lead, olive-oil, and vinegar, in the proportions substantially as stated.

334,540. CAR-AXLE BOX. ROBERT M. MCGRATH, Lafayette, Ind. Filed Sept. 26, 1885. (No model.)



Claim.—1. In a car-axle box, the combination, with the body of the box, of a lid provided with a stop or pawl pivoted to swing at right angles to the plane of the lid, substantially as described.

2. In a car-axle box, the combination, with the body of the box, of a lid provided with a stop or pawl pivotally held on the inner side thereof and entirely within the body of the box, substantially as described.

3. In a car-axle box, the combination, with the body of the box, of the lid having the recess C therein, and a stop or pawl, D, pivoted within said recess, substantially as described.

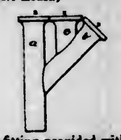
4. In a car-axle box, the combination, with the body of the box, of a lid having pivotally held on its inner side the pawl D, provided with a hooked end, d, substantially as described.

334,541. SAFETY-PIN. ROBERT F. NIEMS, Aix-la-Chapelle, Germany. Filed Aug. 11, 1885. (No model.) Patented in Germany May 23, 1883, No. 25,701.



Claim.—The combination of the collar B, which is compressed or flattened in one or more places, E, with the pin A, substantially as herein shown and described.

334,542. PLUMBER'S FITTING. JAMES NOBLE, New York, N. Y. Filed June 14, 1884. (No model.)



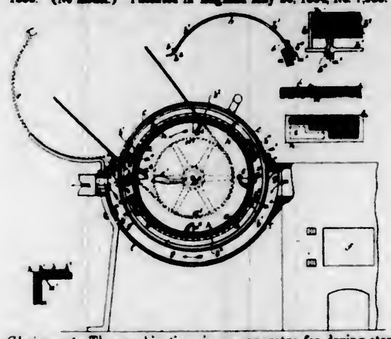
Claim.—A plumber's fitting provided with three or more arms constructed and arranged to permit iron-pipe connections with the waste-pipe, vent-pipe, and trap, substantially as set forth.

334,543. PLUMBER'S FITTING. JAMES NOBLE, New York, N. Y. Filed Mar. 14, 1885. (No model.)



Claim.—A plumber's fitting consisting of the pipe a, adapted for connection in the line of the vertical waste-pipe, a branch, b, extending from the side of the pipe and bent to form a trap, and an intermediate branch extending upward from the highest part of the branch b, and adapted for connection with the iron branch of the vent-pipe fitting, substantially as described.

334,544. APPARATUS FOR DRYING STEREOTYPE-MATRICES. GUSTAVE PAUL WALWORTH, County of Surrey, England. Filed July 13, 1885. (No model.) Patented in England May 30, 1884, No. 7,959.



Claim.—1. The combination, in an apparatus for drying stereotype-molds, of a rotary drum, clamping-frames carried by said drum for the attachment thereto of the molds to be dried, and a surrounding casing for the circulation of air around said drum and the attached molds, substantially as herein described.

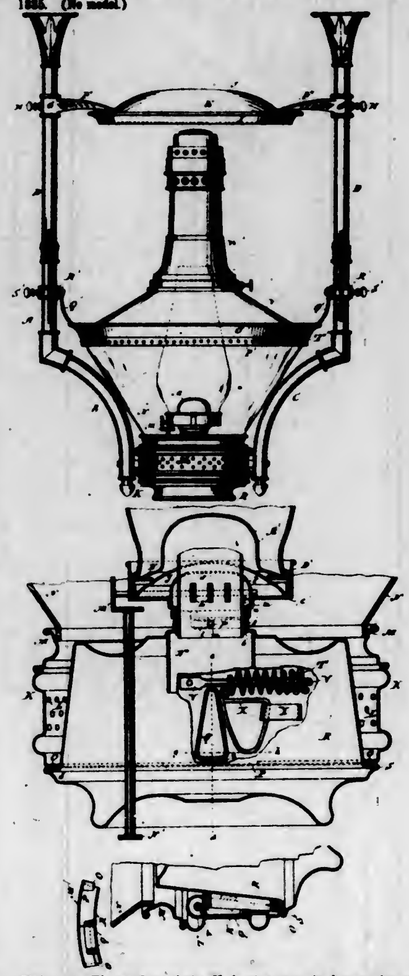
2. The combination of the rotary steam-heated drum a, the clamping-frames b, attached to said drum, the casing c, surrounding said drum and having outlets c^2, and the flue partly surrounding said casing and communicating with the interior thereof through the outlets c^2, substantially as herein described.

334,545. SASH AND DOOR BOLT. FRED. C. ROBINSON, New York, N. Y. Filed Nov. 2, 1885. (No model.)



Claim.—The combination, with a sliding bolt provided with a projecting handle, of a base-plate having a tongue-and-groove connection with the bolt, whereby the bolt is guided, and a cap-plate notched or grooved to receive the handle of the bolt, the ends of the tongue and groove forming a stop to limit the movement of the bolt in one direction, and the end of the notch or groove in the cap-plate serving to limit the movement of the bolt in the other direction by contact with the handle thereof, substantially as herein described.

334,546. LAMP. ELIAS B. RESER, Jersey City, N. J. Filed May 28, 1885. (No model.)



Claim.—1. The perforated rim K, having upon its lower edge the flange O and spaces P, combined with the oil-fount having projections upon its sides adapted to enter said spaces, and springs for giving the oil-fount a slight rotary movement after the projections have passed through said spaces, substantially as and for the purpose set forth.

2. The oil-fount provided with projections Q and supporting the wick-tube, combined with rim K, having flange O, spaces P, springs T, and slide X, substantially as set forth.

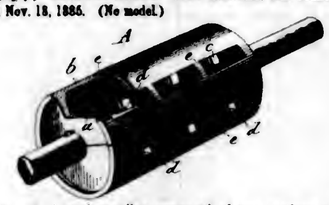
3. In a lamp, the oil-fount R and perforated supporting-rim K, combined with the globe N, the wick-tube, burner-base having flange w, flame-dome, rim D', and chimney, the flame-dome being provided with a row of apertures, B', and the upper portion of the oil-fount being tapered inward from the supporting-rim K, substantially as set forth.

4. In a lamp, the frame u, provided with flange w, the flame-dome, and rim D', provided with slot G', enlarged at its upper end, combined with the strip F', the screw H', and nut I', substantially as set forth.

5. In combination with the burner, the smoke-dome surmounted by a cap, X', containing a perforated screen encircling the outlet from the dome, and apertures a beyond the screen, substantially as set forth.

6. In combination with the fount and burner, the globe N, the rim or frame O', encircling the upper edge of the globe and having a line of perforations beyond the globe, and a shoulder, T', beyond the perforations, and the reflector V', which lies upon said shoulder, substantially as set forth.

334,547. SHAFT-COUPLING. JOHN RICHARDS, San Francisco, Cal. Filed Nov. 18, 1885. (No model.)



Claim.—1. A shaft-coupling composed of two sections, each section consisting of two semi-cylindrical shells formed integral with each other by means of transverse partitions located in the annular space between the shells, and said sections being connected by clamping-bolts, substantially as shown and described.

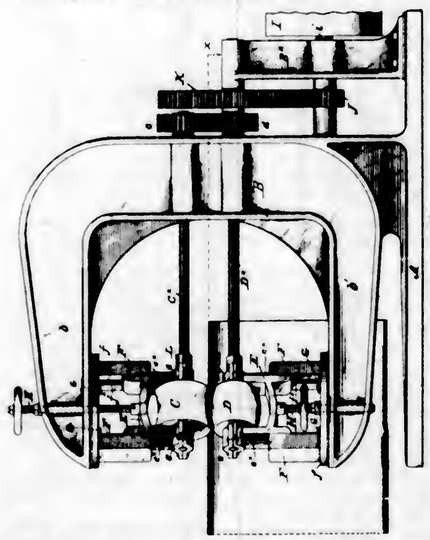
2. A shaft-coupling composed of two sections, each section consisting of two semi-cylindrical shells formed together of a single piece of metal in such a manner as to leave a hollow space between them, substantially as shown and described.

3. In a shaft-coupling, the combination of two sections, each section having an inner shell provided with a longitudinal flange perforated to receive clamping-bolts, an outer shell slotted to allow access to said bolts, and transverse partitions connecting the shells, substantially as shown and set forth.

4. In a shaft-coupling, the hollow chambered sections A A, provided with slots *d d*, and adapted to be secured together by bolts whose heads and nuts are inclosed within the hollow spaces, substantially as shown and described.

5. In a shaft-coupling, the sections A A, each cast in one piece, and consisting of an inner flanged semi-cylindrical shell, an outer slotted semi-cylindrical covering, and transverse partitions, substantially as shown and described.

334,548. MACHINE FOR ROLLING TUBES. STEPHEN P. M. TASKER, Philadelphia, Pa. Filed Oct. 6, 1885. (No model.)



Claim.—1. In a machine for rolling tubes of large caliber, the combination, with a suitable housing, of a convex and a concave roll the axes of which are maintained in parallelism, but which rolls are together maintained at an angle not being a right angle to the longitudinal axis of the tube, and which are adapted, respectively, to operate upon the interior and exterior of the tube, substantially as set forth.

2. In a machine for rolling tubes of large caliber, the combination of a convex and a concave roll the axes of which are maintained in parallelism, but which rolls are together maintained at an angle not being a right angle to the longitudinal axis of the tube, and which are adapted, respectively, to operate upon the interior and exterior of the tube, a frame-work for containing the said rolls in a given adjusted position, and means for driving the rolls in reverse directions, substantially as set forth.

3. In a machine for rolling tubes of large caliber, the combination of a convex and a concave roll the axes of which are maintained in parallelism, but which rolls are together maintained at an angle not being a right angle to the longitudinal axis of the tube, and which are adapted, respectively, to operate upon the interior and exterior of the tube, a frame-work for containing the said rolls in a given adjusted position, means for driving the rolls in reverse directions, and means for effectuating the angular adjustment of the rolls, substantially as set forth.

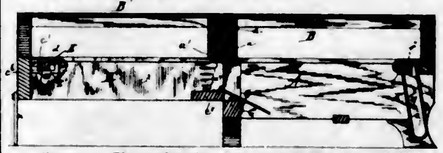
4. In a machine for rolling tubes of large caliber, the combination of a convex and a concave roll the axes of which are maintained in parallelism, but which rolls are together maintained at an angle not being a right angle to the longitudinal axis of the tube, and which are adapted, respectively, to operate upon the interior and exterior of the tube, a frame-work for containing the said rolls in a given adjusted position, means for driving the rolls in reverse directions, means for effectuating the angular adjustment of the rolls, and means for varying the distance between the rolls, substantially as set forth.

5. The combination, in a rolling-mill, of a pair or set of rolls, one of which is convex and one concave, bridles for containing the rolls, means for adjusting the bridles nearer together or farther apart, housings for containing the said bridles and permitting their circumferential adjustment, means for supporting the housings in such manner that a tube can be introduced between the rolls, and means for driving the rolls in reverse directions, substantially as set forth.

6. The combination, to form a rolling-mill, of the forked frame-work, the housings, the bridles, a concave and a convex roll forming a pair or set, shafts for driving the rolls, couplings for connecting the shafts with the axles of the rolls, and means for driving the said shafts in reverse directions, substantially as set forth.

7. The combination, to form a rolling-mill, of the forked frame-work, the housings, the bridles, a concave and a convex roll forming a pair or set, shafts for driving the rolls, couplings for connecting the shafts with the axles of the rolls, means for driving the said shafts in reverse direction, means for adjusting the vertical set of the bridles, and means for adjusting the circumferential disposition of the housings, substantially as set forth.

334,549. FOLDING SPRING BED-LOUNGE. FRANCIS H. WALKER, Chicago, Ill. Filed May 15, 1885. (No model.)



Claim.—1. The combination of the inclined slotted irons F F', having their slots *g* formed with shoulder-supporting portions *g'*, the section A of the frame, bed-support D, having extensions on its rails *c c'*, and the hinged section A', having corner supporting-irons, substantially as and for the purpose described.

2. The combination of the inclined slotted irons F F', having their slots formed with shoulder-supporting portions *g'*, the bed-support D, having one of its side rails arranged to rise and descend in the slots of the irons and to rest in the portions *g'* of said slots, and the frame of the lounge, substantially as and for the purpose described.

3. The combination of the tightening-irons, which afford oblong slots for the extensions of the rails *c'* to move in, the folding frame, and the elastic spring bed-support, substantially as described.

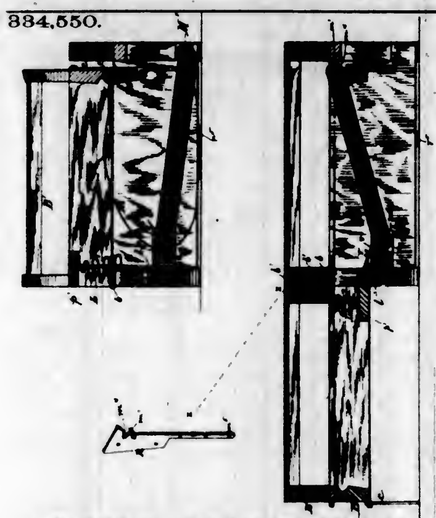
4. In a folding bed-lounge, the combination, with the slotted iron F, of the slotted iron F', having the opening *h*, for the admission of an extension of the rail *c* after the other extension of said rail has been admitted into the slot, substantially as described.

334,550. FOLDING BED-LOUNGE. FRANCIS H. WALKER, Chicago, Ill. Filed May 5, 1885. (No model.)

Claim.—1. The combination, with a folding lounge-bedstead frame comprising the sections A and B, jointed together by hinges *b b*, of the bed-supporting bottom M, fastened to section B of said frame, and having a rising-and-falling back bar, M', provided at each end with a pivot catch-pin, *m'*, the catch-rests R, attached to the head and foot pieces of section A of the frame, and the swinging and sliding locking-bars m^2 m^2, pivoted to bar M' by the said pivot catch-pins, and provided with longitudinal slots *v'*, and connected by said slots and a plate having pins *v* to the section A of the frame, substantially as and for the purpose described.

2. The combination of the hinged supporting-rod L, bracket *l*, folding frame B, and stationary frame A, substantially as and for the purpose described.

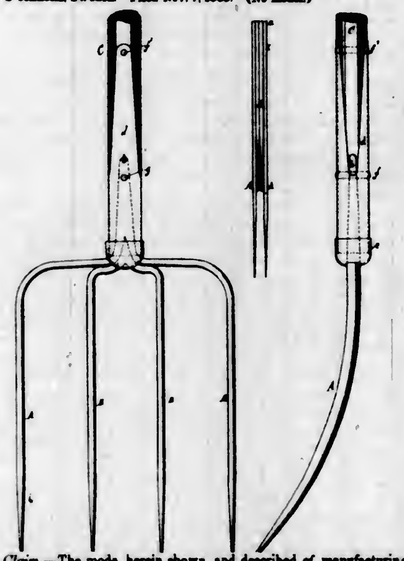
334,550.



3. The combination, with the folding lounge-bedstead frames A and B and bottom M, having rising-and-falling bar M', of the catch-rests R, swinging and sliding bars m^2, having slots *v'*, plates m^2, having pins *v*, springs *w*, and controlling-pins v^2, substantially as described.

4. The combination, with the folding lounge-bedstead frames A and B and bottom M, having rising-and-falling bar M', of the catch-rests R, swinging and sliding bars m^2, having slots *v'*, pins *v*, and notatching-springs *w*, substantially as and for the purpose described.

334,551. MODE OF MAKING FORKS. THURE EDUARD WAWERSKEY, Schelm, Sweden. Filed Nov. 7, 1885. (No model.)



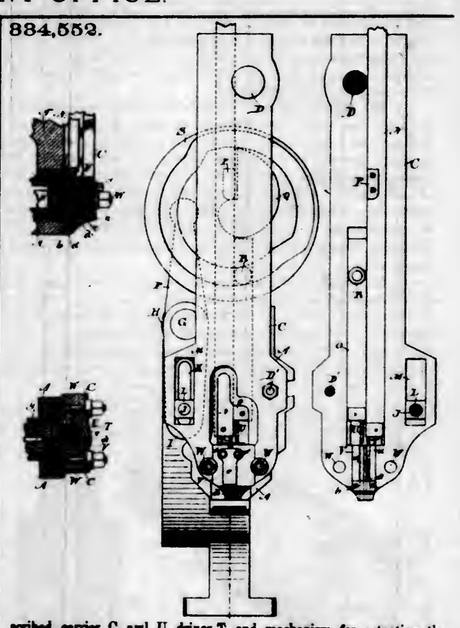
Claim.—The mode herein shown and described of manufacturing dung-forks and other pronged implements, which consists in welding together at one end two or more bars of the cross-section desired to be given to the prongs, then drawing out the welded portion to a tongue and bending the opposite free ends into the requisite shape for prongs.

334,552. NAIL-DRIVING MACHINE. EDGAR L. WHEELER, Marlborough, Mass. Filed Aug. 26, 1885. (No model.)

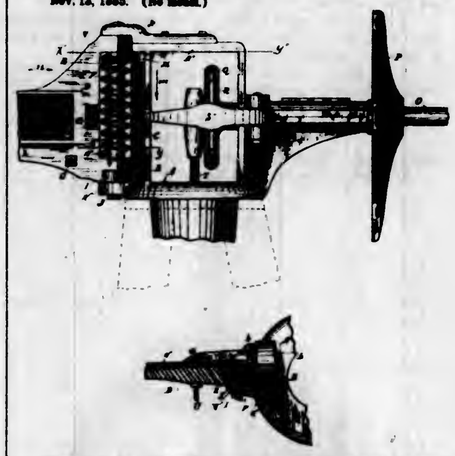
Claim.—1. The throat-piece V, provided with grooves *a*, *a'*, and *c*, cap *b*, pivoted plate *d*, and spring *e*, constructed, combined, and arranged to operate together as and for the purposes specified.

2. The grooved throat-piece V, constructed substantially as described, carrier C, awl U, driver T, and mechanism for actuating the same, substantially in the manner specified, and nail-race *g*, all combined and arranged to operate together and relatively to each other as and for the purposes specified.

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334,553. WINDMILL. HARRISON WOODHAMS, Prospect, Ill. Filed Nov. 13, 1885. (No model.)



Claim.—1. In a windmill, a vane whose plane is normally approximately parallel to the direction of the wind, combined with a wind-wheel-supporting frame, said vane and said frame being connected by a hinge allowing horizontal angular displacement of either with reference to the other, a spring adapted to resist while permitting such displacement, and means whereby the resistance of the spring may be varied as desired.

2. In a windmill, a casting in which the wind-wheel shaft is journaled, a casting to which the vane is rigidly attached, a spring whose ends are respectively attached to said castings, and means whereby tension may be applied to said spring at either or both extremities thereof, combined substantially as set forth.

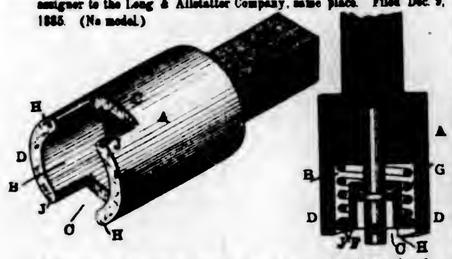
3. In a windmill, a casting pivoted in the vertical axis of the mill, and bearing the wind-wheel shaft, a second casting pivoted in the first and bearing the vane, one or more stops allowing angular displacement of said castings with reference to each other about the vane-pivot in one direction, but preventing such displacement in a contrary direction, a

spring whose ends are attached, respectively, to said castings, said spring adapted to be flexed by such displacement, and by its elasticity to force said castings into their normal position when the displacing force is diminished, and means whereby said spring may be made to resist such displacement with any desired force.

4. In a windmill, the combination of a wind-wheel-supporting casting pivoted on the vertical axis of the mill, a vane-casting connected with said wheel-supporting casting by a vertical hinge-joint, a stop or stops adapted to permit rotation of the castings about said hinge-joint with reference to each other in one direction, but not in the opposite direction, two independent sleeves, one above the other, inclosing the pintle of said vertical hinge-joint, and a spring coiled about said sleeves, and having its ends connected with said castings, respectively, and adapted to resist the relative rotation of said castings in the direction permitted by said stop or stops.

5. In a windmill, the combination, with a wind-wheel-supporting casting and a vane-casting, formed substantially as described, and having ears adapted to be connected and form a hinge-joint, of a pintle, J, passing through and connecting said ears, sleeves E E', encircling said pintle, the spring F, coiled about said sleeves, and regulating-bolts U c, connecting the ends of said spring with said castings, respectively, substantially as shown and described, and for the purpose set forth.

334,554. PUNCHING DEVICE. ROBERT ALLSTATTER, Hamilton, Ohio, assignor to the Long & Allstatter Company, same place. Filed Dec. 9, 1885. (No model.)

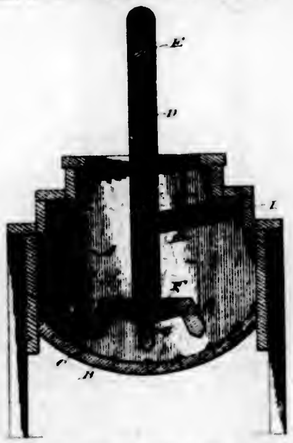


Claim.—1. A cylindrical annular punch gapped at its cutting-face to leave two punching-segments, in combination with a centering-pin and a die, substantially as and for the purpose set forth.

2. A cylindrical punch formed with two spiral-faced punching-segments, in combination with a counter-die having slots to fit the segments of the punch, substantially as and for the purpose set forth.

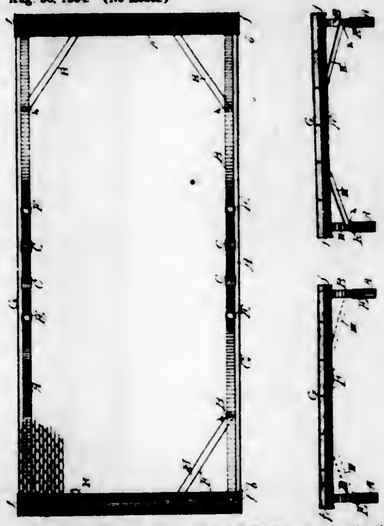
3. The punch A, formed with the punching-segments D, the centering-pin K, secured centrally therein, the stripper F, fitted to slide upon the pin between the segments, and a spring between the segments over the stripper, combined substantially as and for the purpose set forth.

334,555. WASHING-MACHINE. ALBERT ARBOGAST and WILLIAM HAHN, Selin's Grove, Pa. Filed Mar. 7, 1885. (No model.)



Claim.—The combination of the body or case A, having the curved bottom B, formed of separate strips, the ribs C, covering the joints in said bottom, and the links H pivoted to said body or case at I and to the standards D, with said standards having the rod E, bars F, and rubbers G, substantially as shown and described.

334,556. BED-BOTTOM. GEORGE E. BEDELL, Herkimer, N. Y. Filed Aug. 30, 1884. (No model.)



Claim.—1. The combination of the flexible and longitudinally-elastic mattress-supporting fabric, the bottom side bars, A, the end bars secured to the aforesaid mattress-support, the elastic stretcher-bars secured to the end bars and connected to the side bars at or near the centers of the latter, and the sliding clamps E, adapted, substantially as set forth, to be adjusted longitudinally of the stretcher-bars from the inner ends of the latter, said stretcher-bars being disconnected from the bottom side bars, A, at points outside of the said clamps, whereby they are free to be bent up by the elasticity of the fabric and free to be bent down by a superposed weight, and operate both to adjust and to keep the fabric under tension, substantially as set forth.

2. The combination of the mattress-support, the end bars secured thereto, the bottom side bars, A, the stretcher-bars secured at their outer ends to the end bars, the metallic sockets for the inner ends of the stretcher-bars secured to the side bars, A, and having walls which lie above the upper surface of the stretcher-bars, and the clamps E, adapted to be moved outward longitudinally of the stretcher-bars, the latter being disconnected from the side bars, I, at points outside of said clamps, substantially as set forth.

3. The combination of the flexible mattress-support, the end bars to which it is secured, the bottom side bars, the stretcher-bars secured at their inner ends detachably to the side bars, said side bars being disconnected from the stretcher-bars at the outer ends of the latter, and pivots *b*, connecting the stretcher-bars and the end bars, and about which the former may be swung under the end bars without being detached therefrom when they are separated from the side bars, and after which the flexible mattress-support may be wound around said stretcher-bars and end bar, substantially as set forth.

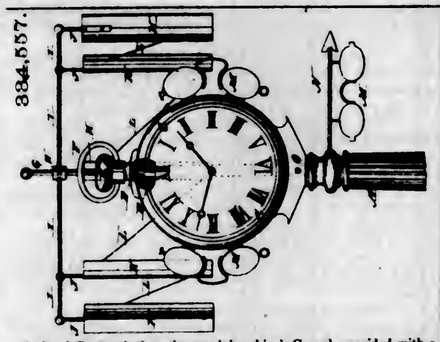
4. The combination of the mattress-support, the end bars secured thereto, the bottom side bars, A, the stretcher-bars B, detachably connected at their inner ends to said side bars and disconnected therefrom at their outer ends, the pivot-bolts uniting the stretcher-bars with the end bars, and constructed and arranged, substantially as set forth, whereby the stretcher-bar can be swung or rotated under the end bars, and the braces H, hinged to the stretcher-bars and adapted to bear against an end bar, substantially as and for the purposes set forth.

5. In a knockdown bed-bottom, the combination of the flexible mattress-support, the end bars to which it is secured, the side bars, A A, divided at the center and adapted to fold, the stretcher-bars secured at their inner ends detachably to the side bars and disconnected therefrom at their outer ends, and pivots *b*, connecting the stretcher-bars with the end bars and about which the former may be swung under the end bars without being detached therefrom when they are separated from the side bars, and after which the flexible mattress-support may be wound around the stretcher-bars and end bar, substantially as set forth.

334,557. REVOLVING SIGN. JOHN F. BENNERT, Brooklyn, N. Y. Filed June 1, 1885. (No model.)

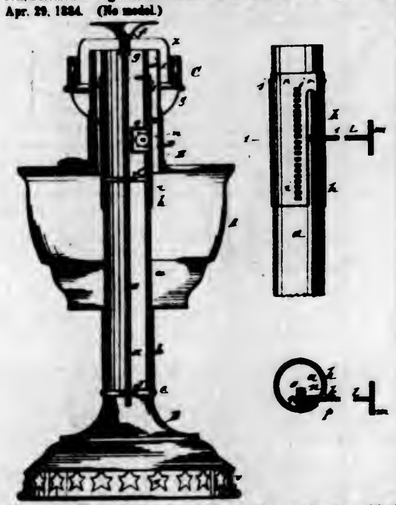
Claim.—A revolving sign constructed substantially as herein shown and described, and consisting of the pivot B, secured to a post, A, the block C, representing a watch, and revolving upon the said pivot B, the

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vertical rod G, attached to the revolving block C, and provided with a collar, H, the radial arms I, attached to the said collar, and the angular wings K, rigidly suspended from the said radial arms I, and strengthened in position by braces L, attached to adjacent wings, whereby the said sign will be revolved by the wind, as set forth.

334,558. LAMP. EDMUND B. BESELOW, Chicago, Ill., assignor to himself, Solomon L. Bignall, and Charles J. Glenn, all of same place. Filed Apr. 29, 1884. (No model.)



Claim.—1. The tube *b*, having groove *c*, in combination with the bridges or spiders *d d'*, stem *e*, and button *f*, substantially as described.

2. The combination of tube *a*, tube *p*, and the ratchet-wheel covering-box *o*, located within tube *a*, substantially as described.

3. The oil-tight ratchet-wheel box *o*, located within the tube *a*, and tube *p*, in combination with the wheel *n*, and shaft *l*, substantially as described.

4. The combination, with a tube, *a*, of a wick-holder, *h*, having upwardly-inclined and laterally-yielding spring-teeth *j*, for the purpose of effecting a new engagement of the teeth with the wick when the latter is held and the wick-holder is lowered, substantially as described.

5. The combination, with a tube, *a*, of the wick-holder *h*, applied to slide directly on the tube, and having the upwardly and outwardly inclined and inwardly-yielding spring-teeth *j*, for effecting a new engagement with the wick when the latter is held and the wick-holder lowered, substantially as described.

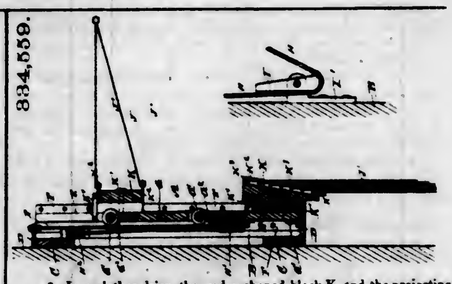
6. The screw-threaded collar *t*, in combination with the stem *e* and bridge *d*, substantially as and for the purpose set forth.

334,559. CLOTHES-DRIER. JOHN A. BOGLE, Milton, Pa. Filed Apr. 7, 1885. (Model.)

Claim.—1. In a clothes-drier, the frame A, the guides F, and the sliding frame G, in combination with the pivoted wedge-shaped block K, and the drying-rods hung on the inclined face of the said block, substantially as shown and described.

2. In a clothes-drier, the frame A, the guides F, the sliding frame G, and the pivoted wedge-shaped block K, in combination with the drying-rods J, substantially as shown and described.

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3. In a clothes-drier, the wedge-shaped block K, and the projecting strips K^2, having holes K^3, in combination with the drying-rods J, substantially as set forth and described.

4. In a clothes-drier, the sliding frame G, and the pivoted latches K^4, in combination with the pivoted wedge-shaped block K, the projecting strips K^2, and the drying-rods J, substantially as shown and described.

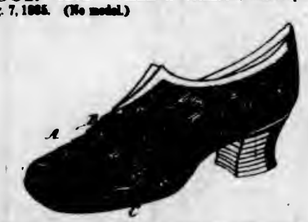
5. In a clothes-drier, the frame A, the rope H, the grooved pulleys H' and H^2, and the clamping-lever L, in combination with the sliding frame G, the pivoted latches K^4, the pivoted wedge-shaped block K, having strips K^2, and the drying-rods J, substantially as set forth and described.

334,560. SAUCEPAN AND COVER. GEORGE A. BRADFORD, Bergen Point, N. J. Filed May 9, 1885. (No model.)



Claim.—The combination, with the loose or removable saucepan lid or cover having draining-perforations and provided with a supplementary lid controlling said perforations, the body A of the saucepan, and its handle B, of the sliding lid-locking clip *g* on said handle, and the fixed clip *f* on the side of the saucepan-body opposite the handle B, substantially as shown and described.

334,561. SHOE. CHARLES H. BUCHANAN, Philadelphia, Pa. Filed Aug. 7, 1885. (No model.)



Claim.—1. A shoe or slipper the upper of which is made of straw braid or braided vegetable fiber, said braids being overlapped and stitched together and of different lengths, the longer braids completely surrounding the body of the shoe, while the shorter braids, or some of them, terminate at the sole, substantially as described.

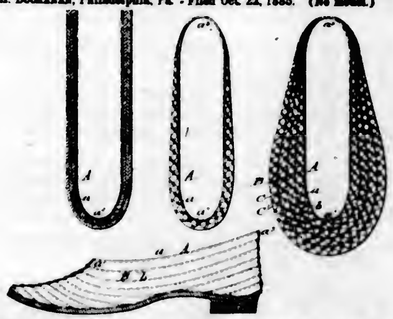
2. A shoe or slipper the upper of which is made of straw braid or braided vegetable fiber, and the sole of leather, the braids being over-

lapping, stitched together, and of different lengths and of gradually-varying curvature from the upper portion to the lower or sole portion, substantially as described.

3. A shoe or slipper made of braided straw or vegetable fiber, the braids being overlapping and stitched together and of different lengths and curvatures, the longer braids forming the upper portion of the shoe or slipper, and the shorter braids forming the toe or toe and heel and terminating at the sole, substantially as described.

4. A shoe or slipper upper consisting of strands or strips of braid or braid-like material united to each other in overlapping courses, substantially as shown and described.

334,562. MANUFACTURE OF SHOES AND SLIPPERS. CHARLES H. BOOKANAN, Philadelphia, Pa. - Filed Oct. 22, 1885. (No model.)

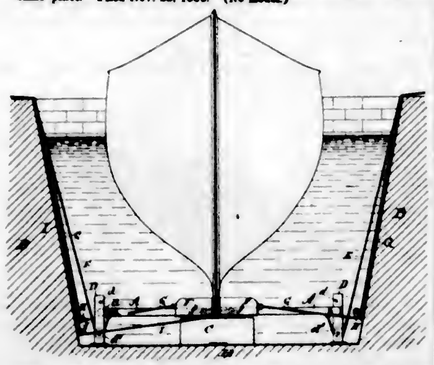


Claim.—1. A shoe or slipper upper composed of a guide-strip or band, A, having the outline of the top of the shoe produced by a line of stitching on or near its inner edge, which secures said configuration, and overlapping courses of material secured to said guide-strip and to each other, substantially as shown and described.

2. The process herein described of forming uppers for shoes or slippers from straw-braid or other material in strips or lengths, said process consisting in first stitching a strip to form a band or guide of the general configuration of the top of the shoe, and then stitching successive strands or pieces thereto, said strands overlapping each other at the edges substantially as shown and described.

3. The process herein described of forming an upper of a shoe or slipper, said process consisting of the following steps: first, forming a guide-strip or foundation-piece of a strip of material curved at or about its middle by stitching it along its inner edge and flaring it while so stitching it and fastening the ends of said strip together; second, securing to said foundation-piece a strip of long narrow material by uniting it to the outer edge of the foundation-piece by a line of stitching run in the direction opposite to that of the inner line of stitching; and, third, stitching successive courses of the second strip to each other, each inner course overlapping the one outside, and all the courses having a front curve and a rear curve similar to those of the guide-strip, said front curve being produced by flaring and said rear curve by drawing in the act of stitching them together, substantially as set forth.

334,563. DEVICE FOR CENTERING VESSELS IN DRY-DOCKS. ADAM BULEAN, Jersey City, N. J., assignor to himself and Joel W. Brown, same place. Filed Nov. 23, 1885. (No model.)



Claim.—1. The centering device for dry-docks, herein shown and described, consisting of a bar adapted to be moved vertically at the bottom of the dock, combined with sliding blocks, and attached ropes for sliding the blocks toward the center of the dock, substantially as and for the purposes set forth.

2. The bar A, adapted to be held loosely at the bottom of the dock, and provided with the central stop, *a'*, in combination with the sliding blocks F F', placed loosely upon the bar A, and provided with ropes for sliding them upon the bar, substantially as described.

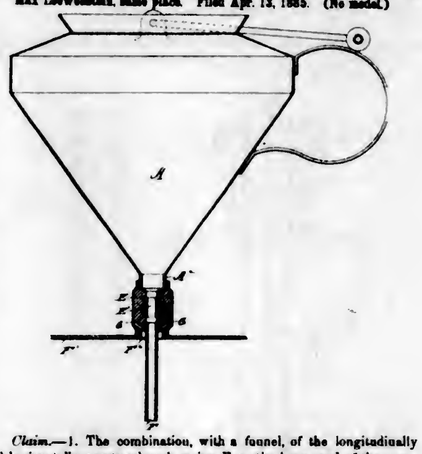
3. The blocks F F', provided with pulleys *j j'*, respectively, in combination with bar A and rope I, attached to block F, and passed over both pulleys, and thence to the top of the dock, substantially as described.

4. The studs D D, secured to the bottom of the dock, in combination with the bar A and sliding blocks F F', the bar A being held loosely by the studs, substantially as described.

5. The studs D D, secured at the bottom of the dock, and provided with the pulleys *d' d'*, in combination with the bar A, sliding blocks F F', and the ropes E, for lowering the bar A, substantially as described.

6. The bar A, provided with the central stop, *a'*, and held loosely in the dry-dock by studs D, in combination with the sliding blocks F F', ropes G and E, and the rope I for moving the blocks, substantially as and for the purposes set forth.

334,564. FUNNEL. FREDERICK CATLIN, New York, N. Y., assignor to MAX LOEWENSTEIN, same place. Filed Apr. 13, 1885. (No model.)

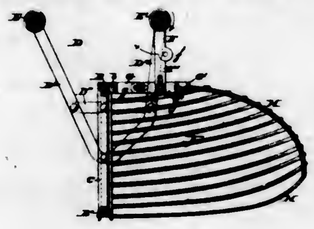


Claim.—1. The combination, with a funnel, of the longitudinally and horizontally apertured cock-casing E on the lower end of the same, having a cock, E', in said horizontal aperture, and the vent-apertures G, the tube F, secured in the lower end of the cock-casing and forming a continuation of the longitudinal aperture thereof, and the plate F, secured to the lower end of the cock-casing, and having a central aperture through which the tube passes, said aperture being of greater diameter than the tube, the inner ends of the vent-apertures G communicating with the space formed between said plate and tube, substantially as set forth.

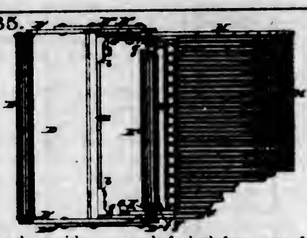
2. In a funnel, the cock-casing E, formed with the longitudinal and transverse apertures, two concentric screw-threaded sockets in its under face, vent-apertures G, leading from the space between said sockets to the outer face of the casing, and upper screw-thread, and a cock, E', substantially as set forth.

334,565. CRANBERRY-PICKER. MATTHIAS M. CREW, Williamstown, N. J. Filed Nov. 20, 1884. (No model.)

Claim.—1. In a cranberry-picker, the back frame, A, composed of bars B B' C C, and the top frame composed of the cross-bar G', connected with the back frame by adjustable bars G, the said bars B' C C G' being provided with fingers H, forming an inclosure, J, substantially as described.



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2. A cranberry-picker composed of a back frame, a top frame having adjustable side bars and pivotally connected to said back frame, and fingers extending from the side and bottom bars of said back frame and from the front bar of said top frame, whereby an inclosure is formed, the fingers of the top frame and bottom bar of the back frame being curved and interlocking, substantially as described.

3. A cranberry-picker composed of a back frame and a top frame pivotally connected, each of said frames having fingers secured thereto, forming an inclosure, the top frame having adjustable sectional side bars, whereby the fingers attached to the front bar of the top frame may be adjusted relatively to the fingers of the bottom bar of the back frame, substantially as described.

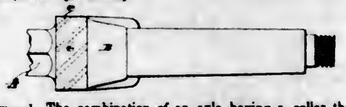
4. In a cranberry-picker, the back frame, A, in combination with pieces *b*, the top frame composed of side bars G and cross-bars G', the fingers H, forming an inclosure, supports D D, handles E E', and short bars F and F', having connecting ends forming a toggle or elbow joint, substantially as described.

5. A cranberry-picker composed of frame A, fingers H, supports D D, handles E E', short bars F F and F' F', having ends forming a toggle or elbow joint, and cross-bar G', substantially as described.

6. In a cranberry-picker, the handle E', in combination with the bars F F, adjustable bars F' F', and bars G G, substantially as described.

7. In a cranberry-picker, the frame A, having fingers secured to the sides and bottom of said frame, in combination with adjustable bars G, pivotally secured to blocks *b*, and cross-bars G', having fingers, and the bars G composed of two parts adjustably connected by bolts or rivets, substantially as described.

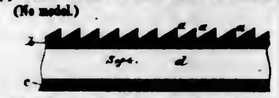
334,566. VEHICLE-AXLE. HERBERT M. CLARK, Oshkosh, Wis. Filed Aug. 24, 1885. (No model.)



Claim.—1. The combination of an axle having a collar thereon and an axle-box constructed to receive and closely encircle the collar, the said collar or box having a series of grooves, arranged substantially as described, and terminating at the inner end of the hub, whereby sand or grit is carried by the grooves and discharged from the hub, substantially as set forth.

2. The combination, with an axle having a collar, the latter provided on its periphery with a series of short grooves, arranged substantially as described, and passing through the outer face of the collar, of an axle-box the inner end of which snugly encircles the collar, substantially as set forth.

334,567. SAW. GEORGE N. CLEMSON, Middletown, N. Y. Filed Oct. 27, 1885. (No model.)

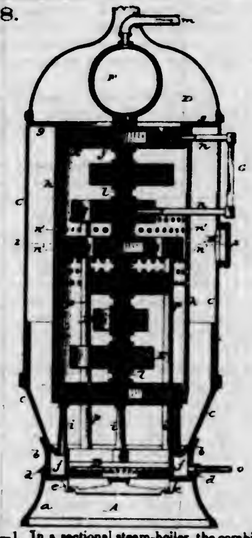


Claim.—A saw having hardened edges *b c* and a soft body, *d*, substantially as herein specified.

334,568. SECTIONAL STEAM-BOILER. ANDREW CRAIK, Williamsport, Pa. Filed May 11, 1885. (No model.)



334,568.



Claim.—1. In a sectional steam-boiler, the combination, with a casing or body and a fire-pot, of a series of chambers, E, of S form, substantially, and provided with a central water-outlet, *j*, and with vertical heat-flues *k* in its ends.

2. In a sectional steam-boiler constructed substantially as herein shown and described, the base A, consisting of sections *a b c*, the section *b* provided with upright hollow legs *i*, which support the chambers E, as set forth.

3. In a sectional steam-boiler substantially such as shown, the base A, consisting of the sections *a b c*, section *c* supporting the outer casing, and section *b* supporting the grate and the generating-chambers and resting upon section *a*, as set forth.

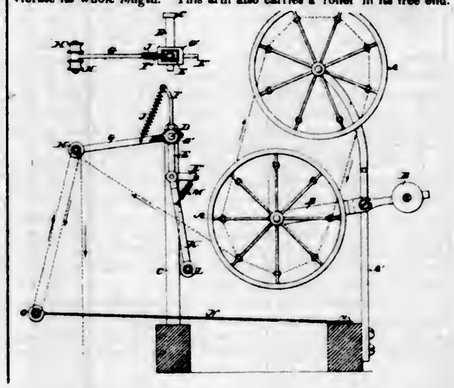
4. In a sectional steam-boiler, the combination, with base A, grate B, casing C, top D, and chambers E, of flange *g* and depending jacket *h*, as and for the purpose set forth.

5. In combination with generating-chambers E and fire-pot B, annular jackets C *h*, encircling the chambers E and forming a fuel-magazine, substantially as described and shown.

6. In a sectional steam-boiler substantially such as shown and described, the combination of the chambers E and *f* and the pipes *p*, connecting the same, as shown.

334,569. WINDING-MACHINE. ANDREW J. CULP and ALONZO W ALLEN, Philadelphia, Pa. Filed Dec. 6, 1884. (No model.)

Brief.—The swift is formed of two reels, one mounted on the upright frame and the other on a gravitating arm. To another upright of the frame an angular arm is secured, on which is pivoted a yielding arm, which is further connected to said angular arm by a spring. Another yielding arm is pivoted to the last-mentioned upright, and sustained in nearly horizontal position by a spring attached to it and to an extension of the upright. At the end of this yielding arm are two rollers. A spring-arm is secured at one end to the frame of the machine, and can vibrate its whole length. This arm also carries a roller in its free end.



Claim.—1. A feeding mechanism for a winding-machine having a swift, a yielding arm carrying two rollers or guides located at one end thereof, an angular arm, and a second yielding arm, the latter being pivoted to the said angular arm, substantially as and for the purpose set forth.

2. The swift A, supported on upright A', in combination with the upright A', the yielding arms G and K, angular arm E E', stud D, standard C, spring-arm N, and springs J and M, substantially as and for the purpose set forth.

3. The swift A, in combination with the yielding arms G and K, having rollers or guides, angular arm E E', standard C, having stud D, the yielding arm N, having roller or guide, springs J and M, and extension F, substantially as and for the purpose set forth.

4. The swift A, having the upright A', in combination with a yielding arm, N, carrying a roller, O, yielding arms G and K, having rollers or guides, standard C, having stud D, and angular arm E E', having upward extension F, spring J, secured to said extension F and arm G, and spring M, secured to said arm K and part E' of said angular arm, the said arm G being mounted on said stud D, and the said arm K being pivoted to the angular arm E E', substantially as and for the purpose set forth.

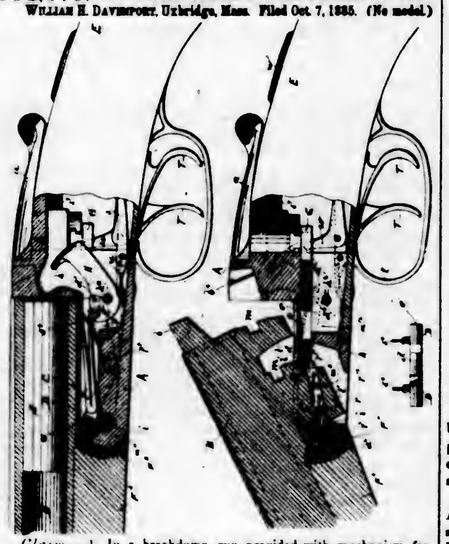
5. A feeding mechanism for a winding-machine, having a swift, A, yielding arms G K, a spring-arm, N, and supports for said swift and arms, and the springs J M, substantially as and for the purpose set forth.

6. A feeding mechanism for a winding-machine, consisting of the swift A, the arms G K, with guides H H and L, the spring J M, the spring-arm N, with guide O, and supports for said swift and arms, substantially as and for the purpose set forth.

7. The yielding arms G K, the angular arm E E', and springs J M, in combination with the support C, and the stud D, said stud supporting the angular arm E, and forming the bearing for the arm G, substantially as and for the purpose set forth.

334,570. COCKING MECHANISM FOR BREECH-LOADING GUNS.

WILLIAM H. DAVENPORT, Uxbridge, Mass. Filed Oct. 7, 1885. (No model.)



Claim.—1. In a breakdown gun provided with mechanism for opening, closing, and locking the same, the jointed link pivoted to the breech-frame above the barrel joint or hinge, and the hammer provided with a pin engaging the slotted or free end of the link, in combination with the link-operating pin loosely mounted in the lug or under side of the barrel, and the retaining-pin loosely mounted in the joint-pin, substantially as hereinbefore described, and for the purpose set forth.

2. The cocking device for breakdown guns, hereinbefore described, consisting of the jointed link adapted to be pivoted to the breech-frame above the joint-pin, the opposite or free end of said link having a slot or groove formed therein adapted to engage a pin secured to the hammer above its pivot and the loosely-mounted pin carried by the lug adapted to engage with the link for operating the same, the whole combined and arranged within the forward portion of the breech-frame below the barrels, substantially as shown and set forth.

3. In a breech-loading fire-arm provided with mechanism for opening, closing, and locking the same, the combination, with the hammer provided with a pin, d^3, spring p, for firing the shell, the spring-gear u, and trigger T, of the double or jointed link D D', pivoted to the breech-frame and engaging the said pin d^3 of the hammer, and the pin R, loosely mounted in the barrel-lug, said pin being adapted to engage a tie, d, of the link for the purpose of vertically moving the same, substantially as shown and set forth.

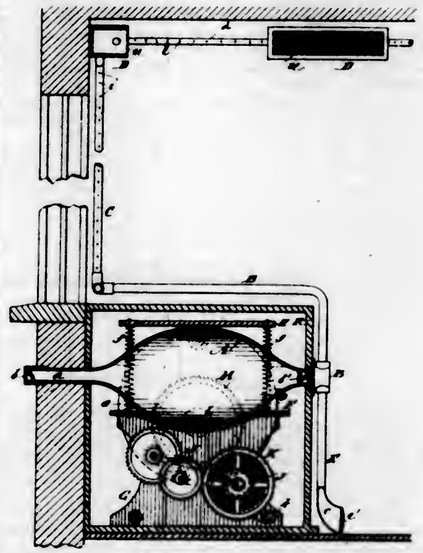
4. In a breakdown gun, the combination, with the jointed and slotted links D D', pivoted to the breech-frame and connected with the hammer, of the link-operating pin R, loosely mounted in the under side of the barrel, and the pin r^3, mounted transversely of the joint-pin i, substantially as shown, and for the purposes hereinbefore set forth.

5. In a double breakdown gun having its hammers each provided with a pin, d^3, the combination therewith of the double link D, pivoted to the breech-frame, and connected at its rear end by the tie d, slotted links D', pivoted to said link D, and the pin R, loosely mounted in the barrel-lug l', the whole arranged whereby in opening the gun the hammers are forced to the full-cock position, substantially as shown and set forth.

6. The improved cocking device hereinbefore described, consisting of the link D, pivoted to the breech-frame, slotted link D', pivoted to said link, its free or slotted end connected with the hammer H, the pin R, loosely mounted in the barrel-lug l', and the pin r^3, loosely mounted in the joint-pin i, the whole combined and arranged substantially as shown, and for the purposes set forth.

334,571. VENTILATOR.

RICHARD DE LOSSNOY, New York, N. Y. Filed Nov. 5, 1885. (No model.)



Claim.—1. In a ventilating apparatus, the combination, with a bulb, A, mounted between plates F and H, and formed with tubes a a', provided with valves b b', of springs f, connecting the plates F and H, eccentrics O, arranged to bear against the under side of the plate H, and an actuating mechanism, substantially as described.

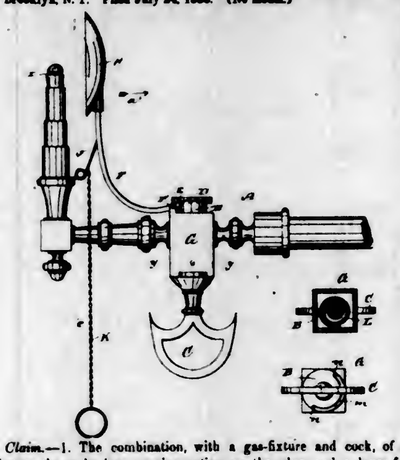
2. In a ventilating apparatus, the combination, with a bulb or sack, A, mounted between plates F and H, and formed with tubes a a', that are provided with valves b b', of springs f, connecting the plates F and H, a shaft, I, eccentrics O, and actuating mechanism, and tubes B and C, the tubes C being provided with perforations i, substantially as described.

3. In a ventilating apparatus, the combination, with a bulb, A, mounted between plates F and H, and formed with tubes a a', that are provided with valves b b', of springs f, uniting the plates F and H, gears M, and eccentrics O, said eccentrics being arranged to bear upon the under side of the plate H, a mechanism for imparting a rotary motion to the gears M, to which the eccentrics O are fixed, and tubes B, C, and E, the tubes C and E being formed with perforations, substantially as described.

4. In a ventilating apparatus, the combination, with a bulb, A, formed with tubes a a', that are provided with valves b b', of a stand G, carrying a concave plate, F, upon which the bulb A is mounted, a plate, H, arranged above the bulb, and spring f, connecting the plates, eccentrics O, made integral with the gears M, spring J, gears K, accelerating-gearing N, arranged between the gears K and M, and tubes B, C, and E, the tubes C and E being provided or formed with apertures, substantially as described.

334,572. AUTOMATIC SAFETY GAS-BURNER.

GEORGE DOUTHEY, Brooklyn, N. Y. Filed July 24, 1885. (No model.)



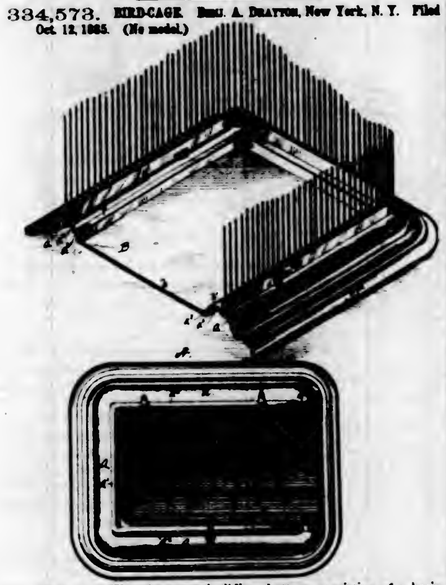
Claim.—1. The combination, with a gas-fixture and cock, of a ratchet on the cock-plug, a spring acting on the plug, and a lever for locking the plug by engagement with the teeth in the same, and a fan or plate on said lever in proximity to the burner, substantially as herein shown and described.

2. The combination, with a gas-fixture and cock, of a ratchet on the plug, a spring acting on said plug, a lever pivoted on the plug casing or box and engaging with the teeth on the plug, a fan or plate on the upper end of said lever, a lever resting against the lever carrying the fan, and a chain or wire connected with the lever resting against the lever carrying the fan, disk, or plate, substantially as herein shown and described.

3. The combination, with a gas-fixture and a cock in the same, of a ratchet-wheel on the plug of the cock, a spring for turning the same, a pivoted lever, and a fan, disk, or plate on said lever and adjacent to the burner-tip, substantially as herein shown and described.

334,573. BIRD-CAGE.

BENJ. A. BRAYTON, New York, N. Y. Filed Oct. 12, 1885. (No model.)

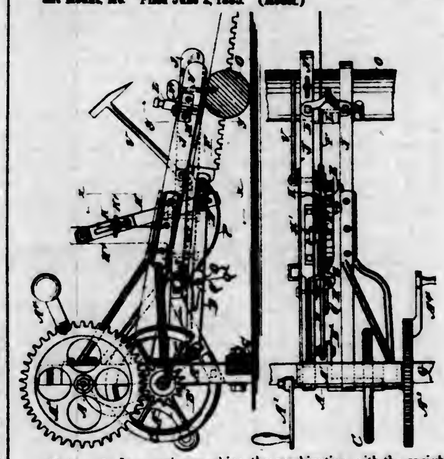


Claim.—1. The sheet-metal sliding bottom consisting of a basin having vertical walls and flanged edges, and provided with an end cross-piece formed to make one side of the bottom flanges of the bottom when set in the cage, substantially as described.

2. The bottom A, struck from a single piece of sheet metal, with base-walls a, extended on but three sides thereof, a rib, a^2, formed on the top of the main walls, and a seat or shoulder, a', forming a basin having an open end, in combination with the sliding bottom B, consisting of a single piece of sheet metal formed into a basin having vertical walls with edge flanges, and provided with an end cross-piece adapted to close the opening between the end walls and form a continuation thereof, substantially as described, and for the purpose stated.

334,574. WOOD-SAWING MACHINE.

SAMUEL P. DEBBER, Pleasant Mount, Me. Filed June 2, 1885. (Model.)



Claim.—1. In a sawing-machine, the combination, with the upright frame A' and the bars J, of a reciprocating saw-blade, gearing and levers for operating it, and a cross-piece uniting the bars J, and having a binding-screw for holding the blade, substantially as herein shown and described.

2. In a sawing-machine, the combination, with the upright frame A' and the bars J, of a reciprocating saw-blade, gearing and levers for operating it, the cross-piece L, uniting the bars J, and having a slot, L', and of the screw M in the cross-piece, substantially as herein shown and described.

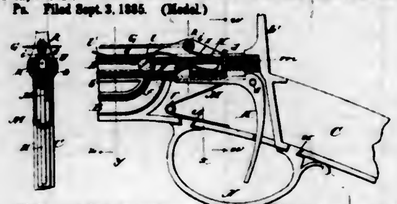
3. In a sawing-machine, the combination of the pitman D, the saw pivoted at its shank thereto, the lever Q, pivoted to the side of the pitman, the spring P, secured to the said lever and pivoted to the saw-shank, the lug S on the pitman, and the screw R, passing through the said lug and bearing against the spring between its points of attachment to the pitman and said shank, substantially as shown and described.

4. In a sawing-machine, the combination of the pitman D, the saw-blade F, pivoted at its shank thereto, the lever Q, pivoted to the side of the pitman and having a slot, Q', the pin Q^2, projecting from the pitman through the said slot, the lug S on the pitman, the screw R in the same, and the spring P, secured to the lever Q and to the saw-shank, substantially as shown and described.

5. In a sawing-machine, the combination, with the standard H' and the extensible lever H, pivoted to the standard H', of the pitman D, means for operating the same, the forked piece E, carrying the saw F, and the spring P, secured to the pitman and to the forked piece, the said pitman and the forked piece being pivoted to the lower end of the lever H by the same bolt, substantially as herein shown and described.

334,575. MAGAZINE SPRING-GUN.

STEPHEN D. EMERY, Hazleton, Pa. Filed Sept. 3, 1885. (Model.)



Claim.—1. In a magazine spring-gun having a longitudinally-slotted barrel and a follower fitted to work within and through the barrel, subject to control by a trigger and the propelling-spring of the gun, the within-described split tubular follower H, having a notch, n, in its under side, and provided with upturned separated lips or flanges i and an eyelet, k, uniting said flanges, substantially as shown and described.

2. In a magazine spring-gun having a longitudinally-slotted barrel, the combination, with the split and notched tubular follower H, having

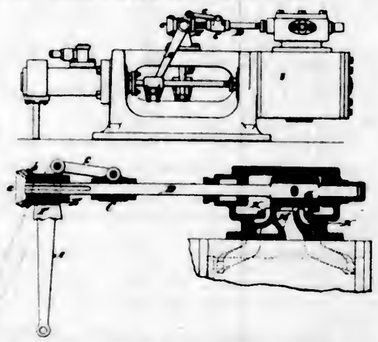
upturned lips or flanges *i*, united by an eyelet, *k*, of the spring I, attached to said eyelet, and having a downward crook or hook, *l*, arranged to project in front of the follower, substantially as and for the purpose herein described.

3. In a magazine spring-gun, the follower H, having an attached spring, I, formed with a downward crook or hook, *l*, extended to present an upward and forward extension, *l'*, essentially as and for the purposes herein set forth.

4. In a magazine spring-gun, the combination of the tubular follower H, having an attached spring, I, formed with a downward crook or hook, *l*, arranged to project in front of the follower, the cord G, the propelling-springs F, and the cross-bar E, the whole being arranged for operation in relation with the barrel and magazine of the gun essentially as shown and described.

5. In a magazine spring-gun, the combination of the notched tubular follower H, having the spring I, which controls the retention of the projectile in the barrel till discharged, and which is constructed with a forward crook or hook, *l*, attached to it, the forked sliding cut-off J, and spring *m*, the barrel D, and magazine B in communication with it, the trigger K, and the propelling-springs F F, and the cord G, connecting said springs with the follower, substantially as shown and described.

334,576. VALVE-GEAR FOR DUPLEX ENGINES. JOHN FIELDING, Gloucester, County of Gloucester, England. Filed Sept. 29, 1885. (No model.) Patented in England Apr. 2, 1885, No. 4,199.



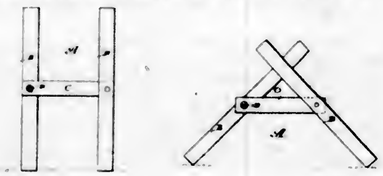
Claim.—1. In a duplex direct-acting pumping-engine, the combination of the two piston-rods, the two levers pivoted near their upper ends and connected with the piston-rods, the valve-rod carrying the slide-valve, a loose connection between the upper end of one of said levers and the valve-rod, a sleeve keyed to the valve-rod and provided with a gear, and a gear on the other lever engaging said gear on the sleeve, for imparting longitudinal and transverse movements to the slide-valve, substantially as and for the purposes described.

2. In a duplex direct-acting pumping-engine having a single slide-valve moved longitudinally and transversely, the combination of the two piston-rods, the levers A B, the slide-valve rod D, the sleeve C and its link *c*, and the bevel-segments *b* and *e*, substantially as described.

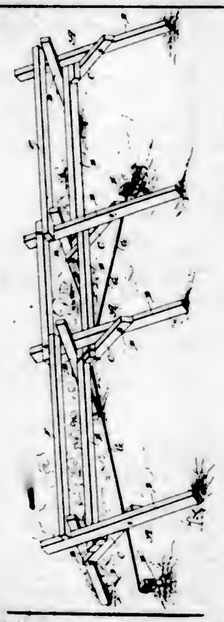
334,577. PORTABLE FENCE. LEWIS W. FREES, Rockville, Ind. Filed June 30, 1885. (No model.)

Claim.—1. The inclined posts B, in combination with the cross-bar C, pivoted at each end by bolts to the center of the posts, whereby said posts may be turned or swung inward toward each other, so as to cross at either end, and thus form a reversible post, the rails E, placed upon the cross-bar C in the crotchets formed by the crossed posts, and the wires G, wrapped around the rails and the cross-bar, and extending outward on each side of the posts and secured to the ground, as set forth.

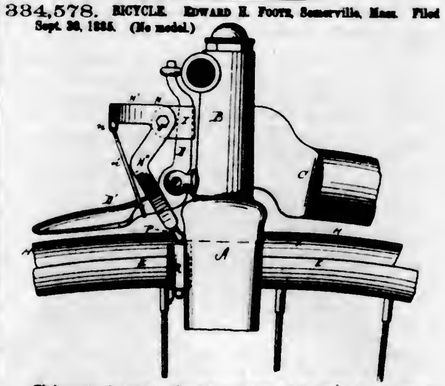
2. The crossed posts B, in combination with a cross-bar, C, connecting said posts and pivoted at each end thereto, the rails E, placed upon the cross-bar in the crotch formed by the crossed posts, the wire G, wrapped at its center around the rails and having its end secured to the ground on each side of the posts, and the top rails, F, as set forth.



334,577.



334,578. BICYCLE. EDWARD H. FOOTE, Somerville, Mass. Filed Sept. 30, 1885. (No model.)



Claim.—1. An automatic safety attachment for crank-bicycles, consisting, essentially, of a frame pivoted to a stationary portion of a bicycle, and provided with stops hanging on opposite sides of the felly of the driving-wheel, next the front edges of the fork, substantially as and for the purpose described.

2. An automatic safety attachment for crank-bicycles, consisting, essentially, of a frame pivoted to a stationary portion of a bicycle, and provided with friction-rolls hanging on opposite sides of the felly of the driving-wheel, next the front edges of the fork, substantially as and for the purpose described.

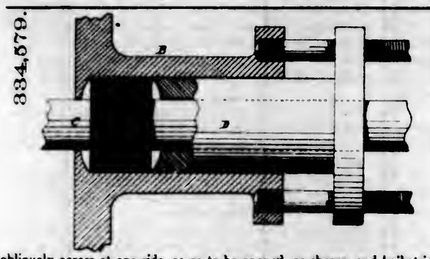
3. The herein-before-described automatic safety attachment for crank-bicycles, consisting, essentially, of the clip F, secured to the brake, bifurcated frame N, pivoted to said clip, and provided with the rods P and friction-rolls R, and a spring extending from the upper portion of said frame to the brake-spoon, for the purpose of holding said rolls against the fork, substantially as and for the purpose set forth.

334,579. PISTON-ROD PACKING. OLIN J. GARLOCK, Palmyra, N. Y. Filed Dec. 13, 1884. (No model.)

Claim.—Circular rings of packing for piston-rods, cut from sheets built up of alternate layers of India-rubber and cloth, said rings being cut

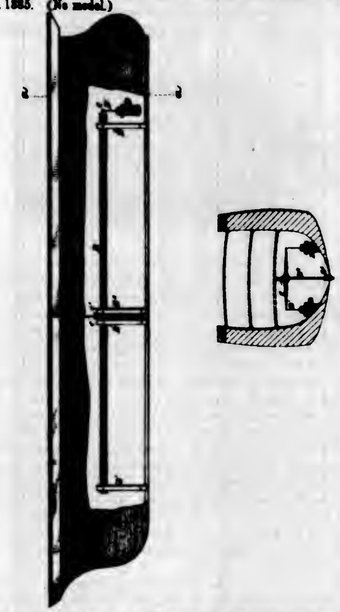
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334,579.



obliquely across at one side, so as to be opened, as shown, and boiled in oil with plumbago held in suspension, as and for the purpose specified.

334,580. PROPULSION OF SHIPS. FRANK GEORGE, Burly-Jacky, near Sheet-of-Bark, County of Bathurst, New South Wales. Filed Sept. 19, 1885. (No model.)



Claim.—A ship having a hull formed in transverse sections, standards or posts extending upwardly from the respective sections at or near the point of juncture and near the fore and aft ends, respectively, of the hull, a cylinder extending longitudinally along the hull, so as to connect the respective sections, and having rigid bearing within the standards or posts connected with the fore part of the hull, and loose bearing within the standards or posts in the aft part of the hull, a cross-head or walking-beam connected to the rear end of said cylinder, and air-pumps having their piston-rods connected to the said cross-head, whereby the undulatory movements of the fore section of the hull impart similar movement to the fore part of the cylinder, and cause its rear end to revolve in its bearings and operate the cross-head and pump-rods, substantially as and for the purpose set forth.

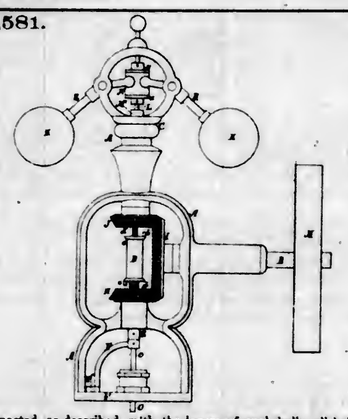
334,581. CENTRIFUGAL SPEED-GOVERNOR. MARSHALL ROOD GODDING, Portland, Me. Filed Apr. 23, 1885. (No model.)

Claim.—1. The combination of the rod L, the clutch D, the rod O, and tube E, the latter being held together firmly, and the clutch D, adjustable on both rod L and tube E, with gearing such as described, with which the clutch D connects, as set forth.

2. In a valve-stem consisting of the rod L, clutch D, rod O, and tube E, the combination of the rod L and the clutch D, the latter adjustable on the former with the set-screw *e*, as set forth.

3. The combination of the clutch D, internally screw-threaded, as described, and arranged to operate with the gears J and H, engaging with the driving-gear I, as represented; with the valve-stem, separate parts L and E, arranged with and screwed, as shown, into the said clutch, such part E being movable only vertically and fixed to the part O, and such part L being arranged with the spindle M' of the balls K,

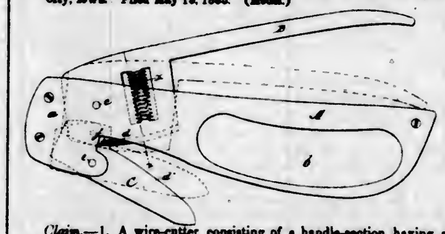
334,581.



and connected, as described, with the levers of such balls, all being essentially and to operate in a manner and for the objects as specified.

4. The combination of the stop F, fixed to the rod O, and adapted to slide on the post P, extending upward from the frame-base *b'*, with the speed-regulator, substantially as described, consisting of the frame A, rod O, screw-threaded tube E, internally screw-threaded clutch D, screw-threaded rod L, tubular spindle M', shaft B, gears H, I, and J, ring C, weighted lever R, and the spool or connection N, arranged and to operate essentially as set forth.

334,582. TWINE AND WIRE CUTTER. WILLIAM L. HAAS, Charles City, Iowa. Filed May 15, 1885. (Model.)



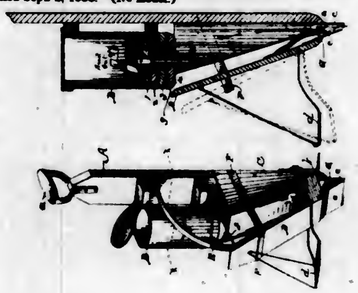
Claim.—1. A wire-cutter consisting of a handle-section having a hollow head, an upper lever-section fulcrumed in said head and having a cutting-edge on its lower surface, and a rearwardly-pointing movable jaw fulcrumed in the hollow head, and jointed also to the lever-section below its fulcrum, and a spring for holding the two sections apart, as described.

2. The lever B, having a slot in its head, with spring *x* lodged therein, in combination with the handle-section A, as and for the purpose described.

3. A wire-cutter consisting of two jointed handle-sections, one having a knife-edge, and a rearwardly-pointing movable jaw having a knife-edge and jointed to both the two handle-sections, substantially as shown and described.

4. The two sections A A, forming a hollow head and a handle, in combination with a lever-section, B, fulcrumed in the hollow head of sections A A, and having a knife-edge, *d*, and the rearwardly-pointing jaw C, having cutting-edge *d'*, and fulcrumed to both the sections A and B, as and for the purpose described.

334,583. HAND CORN-PLANTER. SETH HACKETT, Bronson, Mich. Filed Sept. 2, 1885. (No model.)



334,583.

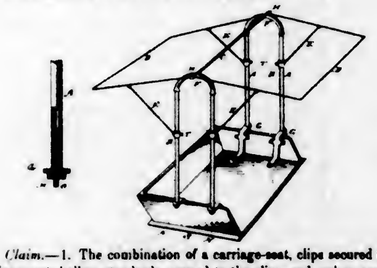


Claim.—1. In a hand corn-planter, the combination of the four perforated disks 1 2 3 4, of which one is fixed, two rotate together, and the fourth rotates independently, the spring-pawls arranged, as specified, the seed-bopper, the pivoted vibrating lever, the link connecting the latter with the lower disk, and the seed-guide and jaws, all as shown and described.

2. The combination of the loop guide and stop with the pivoted spring-lever, and staff A, as shown and described.

3. The combination of the spring-valve, the pivoted lever to which it is attached, and the seed-guide, all arranged and operating as specified.

334,584. CANOPY FOR CARRIAGES. CARLOS B. HAYNES, North Adams, Mass. Filed Aug. 15, 1885. (No model.)



Claim.—1. The combination of a carriage-seat, clips secured to the carriage-seat, hollow standards secured to the clips, and yokes connecting the standards, substantially as described.

2. The combination of standards connected by yokes, a rod connecting the yokes, and sections of a canopy hinged to the rod, substantially as described.

3. The combination of hollow standards having hollow connecting-yokes, a rod connecting the yokes, vertically-adjustable sleeves, and rods for connecting the sleeves and canopy, substantially as described.

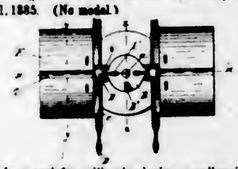
4. A canopy divided into two sections, in combination with a rod to which both sections are hinged, and two sets of yoked standards supported by a carriage-seat, substantially as described.

5. A canopy divided into two sections, connecting-rods to which both sections are hinged, brace-rods pivoted to the canopy-sections and to the sliding sleeves, the supporting hollow standards, and the clips, substantially as described.

6. A sleeve, B, having an ear, M, and a set-screw, in combination with a standard, a divided canopy hinged at its center, and a rod pivoted to the sleeve and to the divided canopy, substantially as described.

7. A device for supporting carriage-tops, consisting of tubular standards A A, having interior screw-threads at their lower ends, bolts o o, threaded at both ends, the upper ends being screwed into the threads of the tubular standards, threaded nuts N N, screwed onto the lower ends of the bolts, in combination with clips G G, seat S, and yoke F, substantially as described.

334,585. REEL FOR COILING LEAD PIPE. CHARLES E. HESS, Chicago, Ill., assignor of one-half to James N. Raymond, same place. Filed Nov. 11, 1885. (No model.)



Claim.—1. In a reel for coiling lead pipe, a collapsing or contractile drum cylindrical in shape and constructed of an elastic sheet of metal, substantially as and for the purposes specified.

2. In a reel for coiling lead pipe, the combination, with the wheel provided with supports, one of which is radially adjustable, of the elastic cylindrical drum mounted on said supports, substantially as and for the purposes specified.

3. The combination, with the wheel C, having fixed supports F and adjustable support G, of the elastic sheet-metal cylinder E, mounted on said supports, substantially as and for the purposes specified.

4. The combination, with the wheel C, having fixed supports F and movable support G, of the cam-cylinder H, surrounded by a yoke on the movable support, and the elastic cylinder E, substantially as and for the purposes specified

5. The combination, with the movable support G and the collapsing cylinder operated thereby, of the cam-cylinder H, connected to said support, the shaft I, on which said cam is mounted, and the crank-handle I', for operating said shaft, substantially as and for the purposes specified.

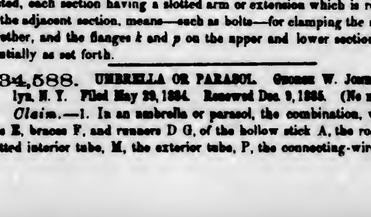
6. The combination, with the wheel C, having fixed and movable supports, and the collapsing cylinder mounted thereon, of the shaft I, provided with a cam, H, to operate the movable support, crank-handle I', and stop i, substantially as and for the purposes specified.

7. The combination, with a suitable base or support, of a plate pivoted on said support, and two or more reels mounted on said plate, substantially as and for the purposes specified.

8. The combination, with the support A, of the table B, pivoted thereon and provided with axles *b*, and the reels mounted on said axles, substantially as and for the purposes specified.

9. The combination, with the support A, provided with recesses *b'*, arranged as described, of the table B, pivoted on said support and provided with axles to receive the coiling-reels, and the locking-pin B', substantially as and for the purposes specified.

334,586. CHURN. THOMAS H. HEATH, Troy, Miss. Filed Sept. 17, 1885. (No model.)

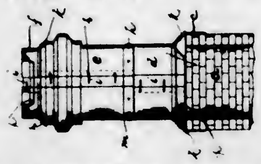


Claim.—1. The combination of the churn-body having the cover provided with the recesses *d'*, carving downwardly and outwardly, the frame composed of the ring, the standards, the diametrical strip, and the bracket having the dasher-actuating mechanism attached to it and provided with the curved bars D, which bind its parts together and enter the recesses *d'*, and the retaining-screw E, which passes through a proper opening in the cover of the churn and enables the frame and attached mechanism to be quickly and readily attached to or removed from the churn-cover, substantially as specified.

2. The combination of the churn-body provided with a cover, A', having a frame and attached dasher-actuating mechanism, substantially as described, detachably secured to it, and a dasher mechanism, substantially as described, provided with a central vertical shaft, I, having its upper end threaded and passing through one of the horizontal gear-wheels of the dasher-actuating mechanism and retained in connection therewith by means of a nut, *i'*, on its threaded end bearing upon the top of the said horizontal gear, so that by removing said nut the dasher mechanism and dasher-actuating mechanism can be quickly and readily separated, substantially as specified.

3. The combination of the churn-body provided with the cover A', the frame composed of the ring B, strip C, and bracket C', the bars D, retaining-screw E, crank-shaft F, hub G, and gear-wheels F', *g g'*, and H', with the dasher-shaft I, provided with the blades I', squared portion *i*, and shoulder I^3, nut *i'*, and dasher-frame J, composed of the transverse bar *j*, and vertical bars *k*, provided with the blades *k'*, all constructed and arranged substantially as shown and described, for the purpose specified.

334,587. ADJUSTABLE CHIMNEY. JAMES D. JILLSON, Willimantic, Conn. Filed Sept. 19, 1885. (No model.)

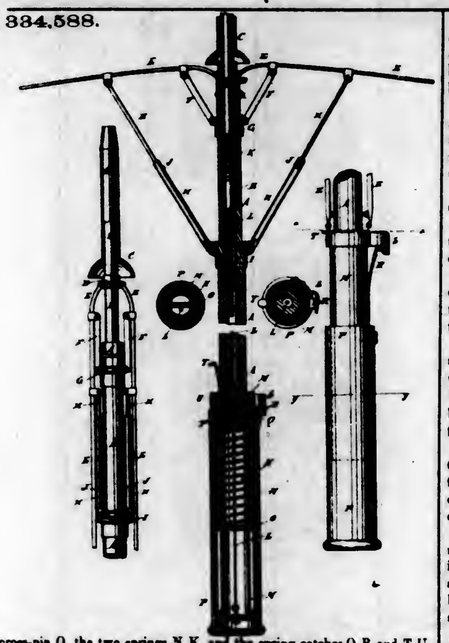


Claim.—The combination, with a chimney, of the ring *c* fitted thereon, the chimney-top comprising a series of sections adjustably connected, each section having a slotted arm or extension which is received by the adjacent section, means—such as bolts—for clamping the sections together, and the flanges *k* and *p* on the upper and lower sections, substantially as set forth.

334,588. UMBRELLA OR PARASOL. GEORGE W. JONES, Brooklyn, N. Y. Filed May 23, 1884. Renewed Dec. 9, 1885. (No model.)

Claim.—1. In an umbrella or parasol, the combination, with the ribs E, braces F, and runners D G, of the hollow stick A, the rod B, the slotted interior tube, M, the exterior tube, P, the connecting-wire L, the

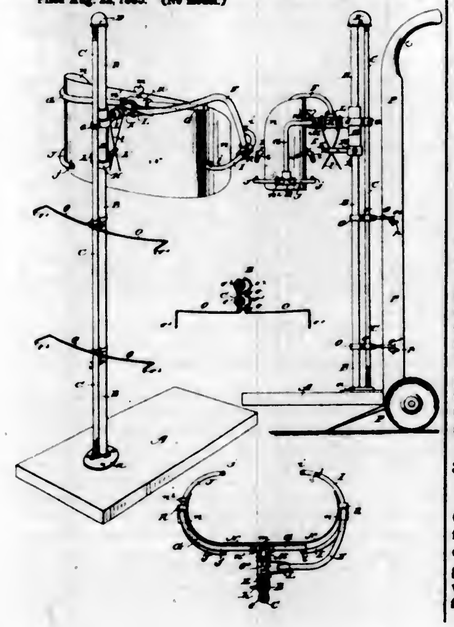
334,588.



cross-pin O, the two springs N K, and the spring-catches Q R and T U, substantially as herein shown and described, whereby the umbrella or parasol can be opened and closed by the action of the said springs, as set forth.

2. In a self opening and closing umbrella or parasol, the combination, with the ribs E, the braces F, and runner G, and the hollow stick A, of the telescopic braces H, and the runner I, substantially as herein above and described, whereby the said ribs will be held from being forced too far back, as set forth.

334,589. BAG-HOLDER. WALTER S. KENDALL, Grand Rapids, Ohio. Filed Aug. 22, 1885. (No model.)



Claim.—1. In a bag-holder, the combination, with a post, of an arm, F, supported by the post and adapted to swing in a vertical plane, and provided with a toothed bar, I, and a laterally-adjustable arm, G, held to the post and provided with a toothed bar, J, substantially as herein set forth.

2. In a bag-holder, the combination, with a post and a bag-holding arm, F, supported by the post and adapted to swing in a vertical plane, and an opposite laterally-adjustable bag-holding arm, G, held to the post, substantially as specified, of a spring adapted to swing the arm F upward, substantially as herein set forth.

3. In a bag-holder, the combination, with a post, of an arm, F, supported by the post and adapted to swing in a vertical plane, and provided with a toothed bar, I, an arm, G, held by the post and adapted to be adjusted laterally, and provided with a toothed bar, J, and a shield or guard-plate, N, held to the arm G, substantially as herein set forth.

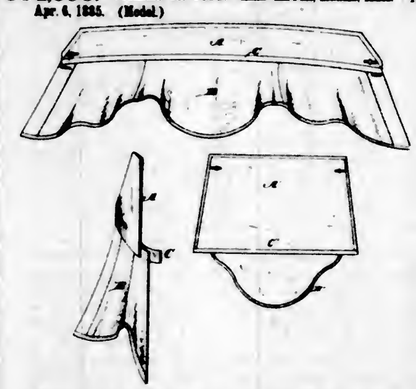
4. In a bag-holder, the supporting-post made of rods B C, a base or platform, and cap, D, substantially as specified, in combination with the sleeve E, fitted on the rods B C, and bag-holding arms, substantially as herein set forth.

5. In a bag-holder, the combination, with the supporting-post, of a sleeve, E, fitted thereon and provided with a shaft, *e'*, a coupling, K, secured on said shaft and carrying the arm F, provided with a toothed bar, I, a coupling, M, fixed to shaft *e'*, and an arm, G, provided with toothed bar J and fitted adjustably in coupling M, substantially as herein set forth.

6. In a bag-holder, the combination, with the bag-holding arms F G and a supporting-post, substantially as specified, of T-couplings R, fixed at the outer ends of said arms, and toothed bars I J, formed each of two parts, and provided with teeth, as at *i j*, and fixed at opposite ends of the couplings R, substantially as herein set forth.

7. In a bag-holder, the combination, with the post consisting, mainly, of rods B C, substantially as specified, of hook-bars O O, branching from the post and formed with bends o' o^2, adapted to the post-rods, and the bolts *o o*, passed through the inner ends of the bars, and said bars having hook ends o^3, adapted for eyes or staples on a hand-truck, substantially as herein set forth.

334,590. COLLAR OR CUFF. EBEL KEPNER, Adams, Mass. Filed Apr. 6, 1885. (Model.)



Claim.—1. A collar or cuff composed of zylonite or other pyroxyline compound provided with a cape of textile material having one edge cemented to the edge of the collar or cuff, substantially as described.

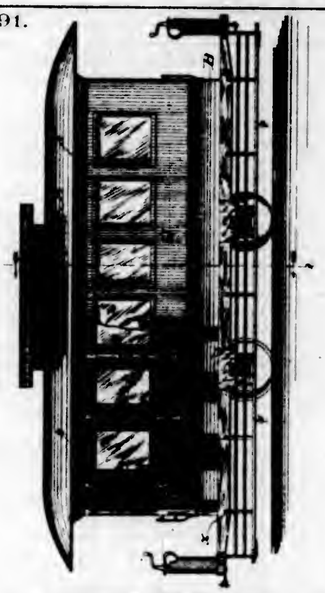
2. A collar or cuff composed of zylonite or other pyroxyline compound provided with a cape of textile material having one edge secured to the edge of the collar or cuff by an exterior strip of a pyroxyline compound cemented to the collar or cuff and the cape, substantially as described.

3. A collar, cuff, or similar article composed of zylonite or other pyroxyline compound and provided with a skirt or cape of textile fabric attached thereto without stitching, a strip of zylonite or similar material being cemented over the point of connection between the article and its skirt or cape, substantially as described.

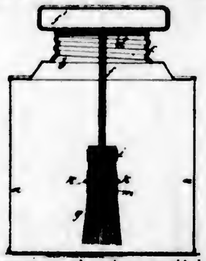
334,591. STREET-CAR. A. VIMEL LEE, Chicago, Ill. Filed Dec. 7, 1883. (No model.)

Claim.—In combination with a convertible car having the seats C placed in rows transversely to the length of the car and arranged to form an aisle between the said rows, ends D and D', containing windows *e* and doors E, having windows *u*, the strips *q*, timbers F, provided with grooves, and sides G, supported by the timbers F and strips *q*, and provided with windows, substantially as described, and for the purpose set forth.

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334,592. PACKAGE FOR LIQUID GLUE AND OTHER SUBSTANCES. CLINTON H. LEGGETT, New York, N. Y. Filed Nov. 28, 1885. (No model.)



Claim.—1. In a screw-capped package provided with a brush or distributing device, the combination, with the brush and the screw-cap, of a wire passed through the screw-cap, secured to the brush below the cap, and formed into a loop above the cap and soldered thereto, whereby the wire serves both as the handle or stem of the brush and as a wrench-handle for the screw-cap, substantially as herein set forth.

2. The combination, with screw-cap *c*, of hooked wire *f k* and brush *g*, bound onto said hooked wire, substantially as shown and described.

3. The combination, with screw-cap *c*, of wire *f*, having hook *k*, brush *g*, placed on said hooked wire, and bindings *i m* around said brush and hooked wire, substantially as shown and described.

4. The combination, with screw-cap *c* and brush *m*, of wire *f*, secured to brush and cap, having loop *f'*, soldered to cap, and hook *k*, bound to brush by binding *m*, substantially as shown and described.

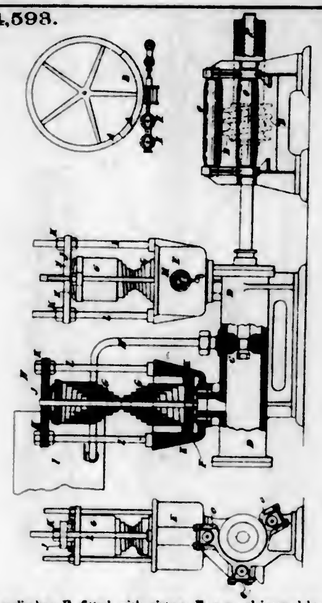
334,593. STEAM STEERING-GEAR FOR VESSELS. ARTHUR JOHN MACHINEN, Liverpool, England. Filed Nov. 23, 1885. (No model.)

Claim.—1. The combination of the worm, which can move endwise and also be rotated, the toothed arc into which the worm gears, and which is attached to the quadrant or tiller of a rudder, and spring or buffer mechanism, which allows the worm to move endwise whenever excessive strain comes on the rudder and brings it back to its normal position so soon as the excessive strain is relieved, substantially as described.

2. The combination of the toothed arc attached to the quadrant or tiller of a rudder, the worm gearing therewith, and also capable of endwise movement, the piston on the axis of worm working in a control-cylinder filled with liquid, and the regulating-cylinder at each end of control-cylinder fitted with a piston pressed inward by a powerful spring, substantially as described.

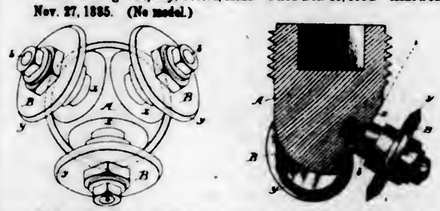
3. The combination of the toothed arc A, the worm B, the roller-bearing O, for supporting the worm, the piston C on the axis of the worm, the cylinder D, with opening H at its center for supply of liquid,

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and the cylinders E, fitted with pistons F, pressed inward by springs G, substantially as described.

334,594. CUTTER-HEAD FOR STONE-CUTTING MACHINES. JAS. W. MALOY, Somerville, assignor, by mesne assignments, to the American Marble Cutting Company, Boston, Mass. Filed Dec. 15, 1884. Renewed Nov. 27, 1885. (No model.)



Claim.—1. The combination, in a cutter-head, of a hub, circular cutting-disks, and studs supporting the said disks, extending laterally from the hub and arranged with the axis of the cutter parallel to but distant from a radial line extending from the axis of the cutter-head, to throw the forward cutting-edge of each disk farther from the center of the hub than the rear edge, substantially as and for the purpose set forth.

2. The hub A, having inclined equidistant faces *x*, and studs projecting from said faces at right angles to the plane 3 thereof, and parallel to radial lines crossing said faces at right angles, and cutter-disks carried by the said studs, substantially as specified.

334,595. STONE-CUTTER HEAD. JAS. W. MALOY, Somerville, assignor, by mesne assignments, to the American Marble Cutting Company, Boston, Mass. Filed Dec. 15, 1884. Renewed Nov. 27, 1885. (No model.)

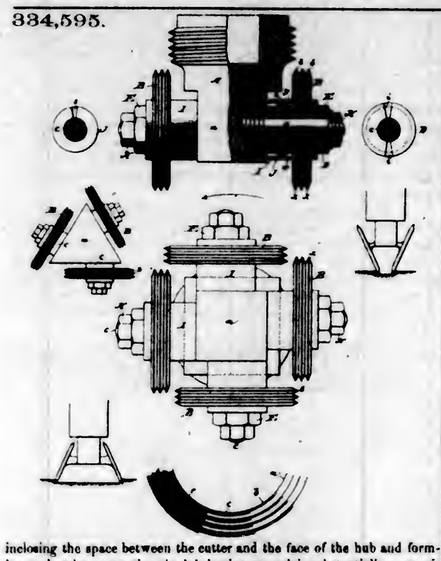
Claim.—1. The combination, in a stone-cutter head, of a hub carrying a series of studs projected at right angles to the axis of the hub and cutter-disks mounted upon said studs, parallel to the axis of the hub, substantially as set forth.

2. The combination, in a cutter-head, of a hub provided with laterally-projecting studs carrying disk-cutters at their outer ends, each of said studs being arranged with the axis of the disk forward of the axis of the hub, substantially as set forth.

3. The combination, in a cutter-head, of a hub, and studs extending laterally from the axis thereof and carrying circular cutters arranged at different distances from the axis of the hub and at the outer ends of the studs, so that the cutting-edges of each cutter will travel upon circular paths parallel to but differing from those of all the other cutters, substantially as set forth.

4. The combination of the cutter-head having an angular extension, *a*, a stud projecting laterally from each side face of said extension, a sleeve revolving upon said stud and carrying the cutter, and guard I,

334,595.

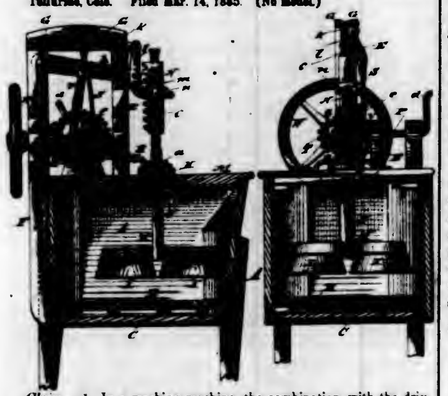


inclosing the space between the cutter and the face of the hub and forming a chamber to receive the lubricating material, substantially as specified.

5. The combination of the cutter-head, the hub, stud projecting laterally from the hub, cutters mounted on the stud, a sleeve also mounted upon the stud and provided with grooves *i*, and inclosing-guard I, substantially as set forth.

6. The combination, with the cutter-head, of the hub, a stud projecting laterally from the hub, a sleeve mounted on the stud, and cutters carried on the stud, channel-disk J, embracing the stud, tabular guard I, and intervening disk, K, substantially as set forth.

334,596. WASHING-MACHINE. BRODFORD A. MANERS and ROBERT E. GIBSON, Gunnison, assignors of one-third to William Wigglesworth, Telluride, Colo. Filed Mar. 14, 1885. (No model.)



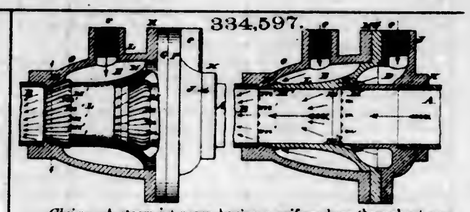
Claim.—1. In a washing-machine, the combination, with the driving-shaft and its wheel having a cam, of the pawl and spring-arm, the pitman and upper levers carrying the hanger, the rack-bearing, the ratchet, and the pounder-shaft, substantially as specified.

2. In a washing-machine, the combination, with a ratchet having a prismatic bearing, of the prismatic plunger passing through the same and having its upper portion cylindrical and turning in an adjustable vertically-reciprocating rack-bearing, and means, substantially as specified, for operating the same.

3. In a washing-machine, the driving-shaft and its bevel-wheel, operating the upper levers to reciprocate the plunger, and having a cam on its back, in combination with the said plunger, the spring-arm and pawl, and the fly-shaft having a bevel-wheel engaging the bevel-wheel of the driving-shaft, substantially as specified.

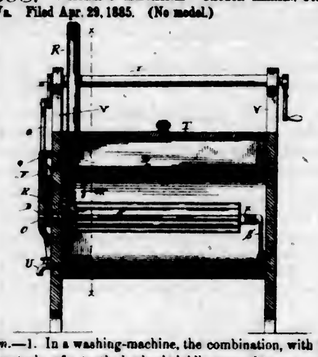
334,597. STEAM-JET PUMP. JOHN A. MARSH, Long Lake, Ill. Filed Mar. 30, 1885. (Model.)

334,597.



Claim.—A steam-jet pump having a uniform bore throughout, surrounded by one or more annular steam-chambers, with series of jet-passages leading from said chamber or chambers to the bore.

334,598. WASHING-MACHINE. TAYLOR MARTIN, Starm's Mill, W. Va. Filed Apr. 29, 1885. (No model.)

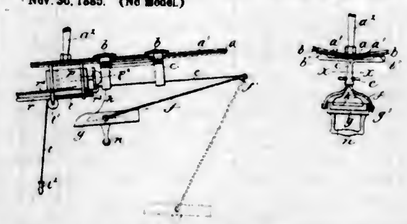


Claim.—1. In a washing-machine, the combination, with a suitable box or receptacle, of a toothed wheel rigidly secured to one end, a short shaft journaled in said box and projecting through said toothed wheel, a spring provided with a pintle and secured at the other end of the box, a frame secured between the end of the said shaft and the spring, rollers journaled in said frame, one end of each of which is provided with a pinion meshing with said toothed wheel, and means, substantially as described, for operating the said short shaft, as and for the purpose shown and set forth.

2. In a washing-machine, the combination, with a suitable box or receptacle, of a toothed wheel rigidly secured to one end, a short shaft journaled in said box and projecting through said toothed wheel, a spring provided with a pintle and secured at the other end of the box, a frame secured removably between the end of the said shaft and the spring, rollers journaled in said frame, one end of each of which is provided with a pinion meshing with said toothed wheel, a circular shield or guard secured to the end of said box around said toothed wheel and pinions, and means, substantially as described, for operating the said short shaft, as and for the purpose shown and set forth.

3. In a washing-machine, the combination, with a suitable box or receptacle, of a short shaft provided with a pinion and journaled in one end of said box, a spring provided with a pintle and secured at the other end of the box, a suitable dasher detachably secured to the end of said short shaft and the pintle of the spring, the lever pivoted to said box and provided with the toothed segment, the brace secured to the said box, a pitman secured to one end of said lever, and a shaft journaled in standards at one side of the box, one end of which connects with the pitman, substantially as and for the purpose set forth.

334,599. CASH-CARRIER. JOSEPH C. MARTIN, Florence, Mass. Filed Nov. 30, 1885. (No model.)



Claim.—1. In a conveying device, the combination, with the body or main portion, of a pivoted arm and receptacle connected with the free end of the said arm, substantially as described.

2. The combination of the main portion of a carrier with a pivoted arm and receptacle connected with the free end thereof, and a holder

connected with the main portion of the carrier and co-operating with the said receptacle, substantially as described.

3. The combination of the main portion of a carrier with an arm pivoted thereto, and a receptacle pivotally connected with the free end of the said arm, substantially as described.

4. The combination of the main portion of a carrier with an arm pivoted thereto, and a receptacle pivotally connected with the free end of the said arm, and provided with a handle in line with its joint with the said arm, substantially as described.

5. The combination of the main portion of a carrier with a spring-pressed arm pivoted thereto, a receptacle consisting of a flat tray adapted to receive a book connected with the said arm, and a holder connected with the main portion of the carrier, having parts which bear along the sides and across the end of a book in the said receptacle, substantially as described.

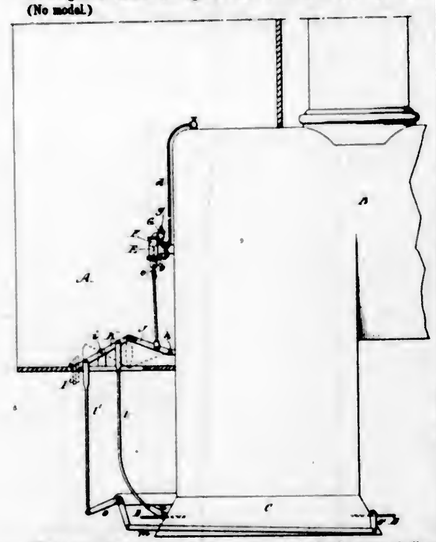
6. In a conveying apparatus, a pneumatic projecting device comprising a cylinder closed at one end, a piston working therein, combined with an actuating device having an engaging device, by which the piston is moved to compress the air in the cylinder, and a co-operating releasing device, by which the piston is disengaged and permitted to be acted upon by the air previously compressed by it, substantially as described.

7. In a conveying apparatus, a track provided with lateral guides or rails, combined with a carrier comprising frame-work and supporting-wheels bearing laterally on the track which lies between them, the frame-work hanging from the said wheels below the said track, substantially as described.

8. The combination of the track inclined upward from its terminal stations with a projecting device consisting of a cylinder closed at one end, a piston working therein and connected with a cushion that engages the carrier, and an actuating slide-rod provided with a catch, by which it may be connected with said piston to move the same into the cylinder, and a releasing device for disengaging the said catch, substantially as described.

334,600. DAMPER-REGULATOR FOR STEAM-BOILERS.

CHARLES A. MCDONALD and CHARLES W. TOWNSEND, Portland, Oreg.; said McDonald assignor of one-half his right to said Townsend. Filed July 8, 1885. (No model.)



Claim.—1. In damper and other valve regulators for steam-boilers and other purposes, the combination, with the damper or valve to be controlled, and with the regulator-cylinder, its piston, and mechanism, substantially as described, connecting said piston with said damper or valve, of a valve-case, a loaded pressure-valve therein, pipes or connections for supplying steam or other vapor, gas, or fluid under pressure to the face side of the pressure-valve, and after passage through such valve to the piston of the regulator, an exhaust and drain pipe from the regulator, and a spring or weight applied to return the piston to its normal position after it has been relieved of pressure, the whole being organized to close the damper or valve to be controlled by the pressure of the vapor, gas, or fluid brought to bear upon the piston, as herein set forth.

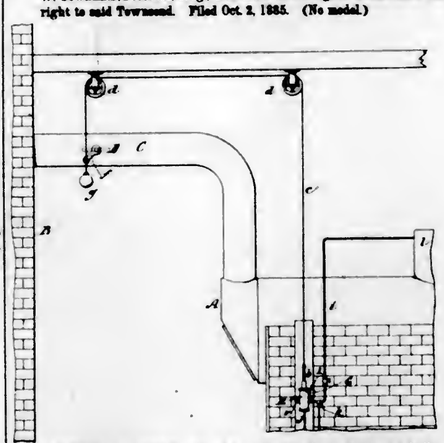
2. The combination, with the damper or valve to be controlled, of the cylinder E of the regulator, the piston F, the valve-case G, the pipes or connections *d v*, the adjustable pressure-valve H, the exhaust and drain pipe L, levers and rods connecting the piston with the damper or valve to be controlled, and a spring or weight applied to return the piston after the same has been relieved of the pressure used to operate it in closing the damper or valve to be controlled, essentially as described.

3. The pressure-valve H of the regulator, constructed to act as a piston, and having a controlling-spring, *s*, in combination with the valve-case G, having a cylindrical chamber, *c'*, grooves *b'*, and one or more outlet-apertures, *c'*, the pipes or connections *d v*, the cylinder E, with its piston F, having its return action controlled by a weight or spring, as described, and the exhaust and drain pipe L, substantially as specified.

4. The combination, with a steam-boiler, of the steam-supply pipe *d*, the valve-case G, with its adjustable pressure-valve H, the connection *v*, the cylinder E, with its piston F, having its return action controlled by a spring or weight, as described, one or more dampers, D, connected by rods and levers with the piston, and means, substantially as described, for relieving the cylinder and valve-case of vapor or fluid used to actuate the piston in closing the damper, essentially as herein set forth.

334,601. DAMPER-REGULATOR.

CHAS. A. MCDONALD and CHAS. W. TOWNSEND, Portland, Oreg.; said McDonald assignor of one-half of his right to said Townsend. Filed Oct. 2, 1885. (No model.)



Claim.—1. In damper and other valve regulators for steam-boilers and other purposes, the combination, with the valve-case G, the regulator-cylinder E, its piston F, and connection *h*, of the pressure-valve H, the centering-spindle *m*, the spring *o*, the follower *s*, and the hollow adjusting-screw I, substantially as shown and described.

2. The piston F of the regulator-cylinder, provided with an escape-aperture, *u*, through it, in combination with a drain-pipe connected with said cylinder on the reverse side or end to the inlet-opening through which the controlling gas or vapor is admitted to operate the piston, essentially as described.

334,602. SECTIONAL SIGN.

WILLIAM P. MCKENNA, Detroit, Mich. Filed June 4, 1885. (No model.)

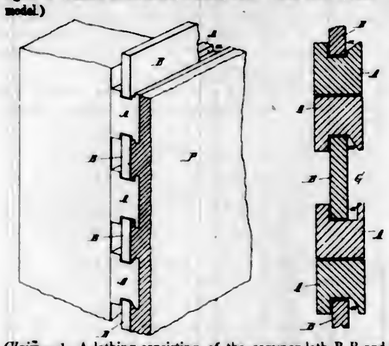


Claim.—1. The combination, with the frame hinged together at its corners and having groove *i*, of the removable horizontal retaining-bars E, having grooves upon two opposite faces, the vertical bars F, and interchangeable sections of glass, upon each of which is painted a letter, design, or number and held in position by said bars, as set forth.

2. A sectional sign constructed substantially as described, in combination with the frame hinged together at its corners, one or more sides of such frame being arranged to be opened or removed for giving access to the sections of which the sign is composed and the grooved retaining-bars removably secured in said frame, substantially as described.

334,603. LATHING.

CHARLES E. MERRIFIELD, Indianapolis, Ind., assignor to William M. Johnston, Wilmot, Ohio. Filed Nov. 2, 1885. (No model.)



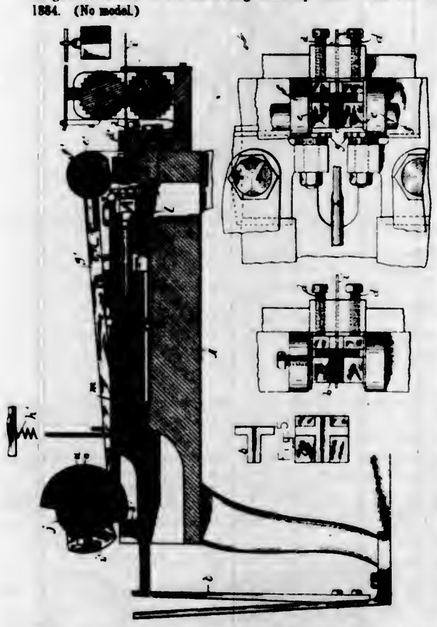
Claim.—1. A lathing consisting of the common lath B B and the narrow strips A A, having grooves *a a* cut into their edges of such a shape as to receive and hold the lath B B and to form a key for the plastering, substantially as described and specified.

2. In lathing, the combination of the common lath B B and the narrow strips A A, said strips A A having grooves *a a* cut in their edges of sufficient size and such a shape as to receive the lath B B and enough mortar to form a firm key for the plastering, substantially as described and specified.

3. In lathing, the combination, with the common lath B B, of the narrow strips A A, of sufficient thickness as to have grooves *a a* cut into their edge wide enough to receive the lath B B, and to allow of a mortar-key for the plastering between the face of the lath and the front wall of the groove, substantially as described and specified.

334,604. WIRE-NAIL MACHINE.

EPHRAIM S. MORTON, Plymouth, assignor of one-half to Samuel Loring, Duxbury, Mass. Filed Nov. 6, 1884. (No model.)

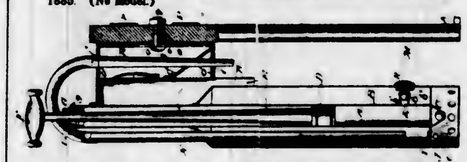


Claim.—1. In a wire-nail machine, the combination, with the header, of gripping-dies, through which the wire is projected, cutters for severing the wire in front of the gripping-dies, and means for adjusting said dies toward and from the cutters, so as to regulate the amount of metal between them, substantially as described.

2. In a wire-nail machine, the combination, with the header, of the gripping-dies through which the wire is projected, cutters for severing the wire in front of the gripping-dies, and means for adjusting the gripping-dies toward or away from the cutters, so as to regulate the amount of metal between them, and a device for securing the dies in their adjusted position, substantially as described.

334,605. PUMP.

ISAAC W. NUHAM, Canton, Ohio. Filed Apr. 6, 1885. (No model.)



Claim.—1. In a pump, the combination of a working-barrel, the piston, a tapering piston-rod, and a cap closing the top of the working-barrel and provided with a tapering opening, through which the piston-rod passes, substantially as set forth.

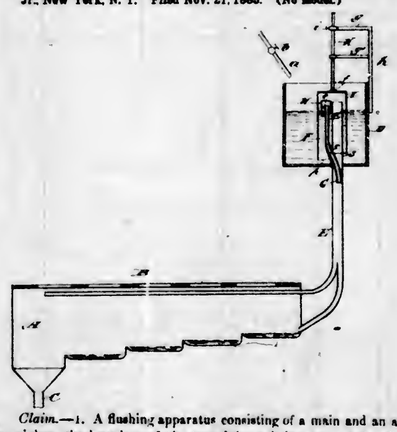
2. The combination, with a pump and the rod M, carrying a foot-piece, of a holder for said rod, comprising the parts O' O', permanently fastened to the pump at two points vertically, considerably distant apart, and carrying tubular receivers in which the rod M is mounted, and a clamp which securely unites the rod and holder after the rod has been adjusted, substantially as set forth.

3. The combination of a pump, the bracket or support O O' O', carried by the pump, the vertical part O being slotted, the rod M, the tubular receivers in which the rod is supported, and the clamping-bolt Q, passing through the slot in part O and the rod, and adapted to securely unite the rod and support in various vertical positions, substantially as set forth.

4. The combination of a pump, a chamber, B, surrounding the pump, a passage-way between the pump and chamber, a funnel-shaped valve-seat, *b'*, surrounding said passage, a ball, *b³*, within said seat, and a removable plug, E, seated in the wall of the chamber opposite the valve-seat, substantially as set forth.

334,606. AUTOMATIC FLUSHING-SIPHON.

WILLIAM B. PARSONS, Jr., New York, N. Y. Filed Nov. 21, 1885. (No model.)



Claim.—1. A flushing apparatus consisting of a main and an auxiliary siphon, the long legs of the two siphons being connected, substantially as described.

2. A flushing apparatus consisting of a main and an auxiliary siphon, the auxiliary siphon being arranged beneath the cap of the main siphon, and having its long leg connected to the long leg of the main siphon, substantially as described.

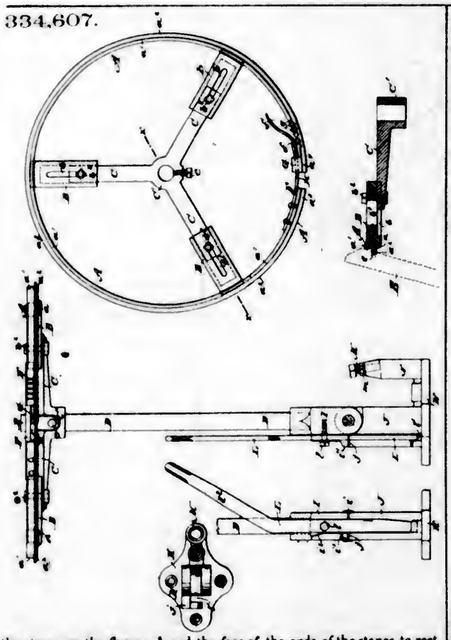
3. A flushing apparatus consisting of a siphon formed by a pipe, E, and a cap, I, adjustably mounted by means of a rod, K, said siphon being provided with an auxiliary siphon formed by a pipe, F, and a cap, H, substantially as described.

334,607. BARREL-MAKING MACHINE.

JORAN J. PHILBRICK, Birmingham, Ala. Filed Mar. 30, 1885. (No model.)

Claim.—1. In a machine for raising and coopering barrels, a spring croze-ring, A, with band *a'*, croze-flange *a²*, and the supports B, adjustable up and down by means of the post D, as described, so that the ring A is retained on the outer ends of the supports B to receive the croze of

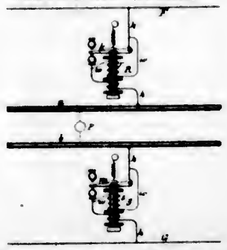
334,607.



the staves on the flange a^3, and the face of the ends of the staves to rest against the band a', as set forth.

2. In a machine for raising and coopering barrels, the expansible and adjustable spring croze-ring A, having a lug, G, secured to the end a^4 thereof, to move back and forth in a slot, H, formed in the spring-catch F, secured to the opposite end, a^3, to govern the expansion of the croze-ring A, substantially as described.

334,608. CIRCUIT FOR ELECTRIC RAILWAYS. FRANK L. POPE, Elizabeth, N. J. Filed Dec. 8, 1884. (No model.)



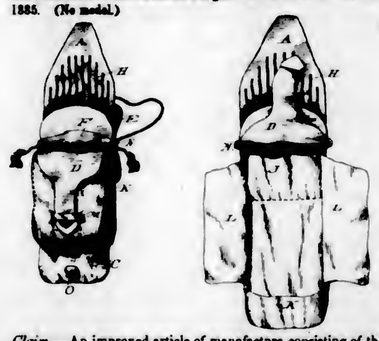
Claim.—1. The combination, substantially as hereinbefore set forth, of a railroad-track divided into two or more sections insulated from each other and from the earth, a generator of electricity, positive and negative conductors extended from the respective poles of said generator along the line of said railroad, branch conductors uniting the opposite lines of rails of each insulated section of track with said positive and negative conductors, respectively, and circuit-controllers, whereby the current for actuating an electrically-moved vehicle is permitted to traverse each of said branches only while said vehicle is passing over the insulated section of track connected with said branch.

2. The combination, substantially as hereinbefore set forth, of a railroad-track, mechanical and electrical connections between the abutting rails thereof, insulating material interposed between the rails and their connections and supports at such intervals as to divide the track into sections electrically insulated from each other and from the earth, a generator of electricity, insulated positive and negative conductors extending from the opposite poles of said generator uninterruptedly along two or more sections of said track, branch conductors uniting the opposite lines of rails of each insulated section with said positive and negative conductors, respectively, and circuit-controllers, whereby the current for actuating an electrically-moved vehicle is permitted to traverse each of said branches only while said vehicle is passing over the insulated section of track connected with said branch.

3. The combination, substantially as hereinbefore set forth, of an electrically connected and insulated line of rails in a railroad-track, a conductor connecting said line of rails with a source of electricity, and a normally-open circuit-controller placed in said conductor, which is actuated by an electro-magnet having its coils included in a shunt of comparatively high resistance spanning said circuit-controller.

4. A railroad-track having its opposite lines of rails electrically insulated from each other, two electric conductors which unite said opposite lines of rails respectively with the opposite poles of a generator of electricity, and two circuit-controllers—one in each of said conductors—which are simultaneously actuated to admit an operative electric current to said track or to interrupt the same.

334,609. POCKET-BOOK. WILLIAM B. PUTNAM and HENRY C. HOFFMAN, Lamar, Mo.; said Hoffman assignor to said Putnam. Filed Mar. 12, 1885. (No model.)



Claim.—An improved article of manufacture consisting of the parts A, B, C, O, K, and L, as shown and described, and furnished with the attachments D, E, F, G, H, N, and J, all forming a purse for coin, a holder for bills, and a pocket for stamps, as set forth.

334,610. MACHINERY FOR SANDING BRICK-MOLDS. DAVID RALSTON, Troy, N. Y. Filed Oct. 27, 1882. (No model.)

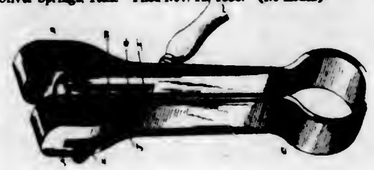


Claim.—1. The combination of the rotary sand containing drum formed with mold-receiving openings, as described, the molds, and mold-retaining devices, arranged and operating to permit the molds, after they are sanded, to be successively removed from the drum and replaced by others while the drum is continuously revolving, substantially as hereinbefore described.

2. The combination of the sand-containing drum formed with mold-receiving openings, the molds placed over and closing said openings, and spring-controlled latching or locking devices, whereby said molds are detachably held in place on said drum, substantially as hereinbefore set forth.

3. The sand-containing drum formed with mold-receiving openings bounded by mold-guides, in combination with the molds and the mold-retaining devices, consisting of spring latches or catches at one end of the drum and stationary holding-flanges at the other, substantially as and for the purposes hereinbefore set forth.

334,611. FLOORING AND CEILING CLAMP. EDWARDS A. REED, Oliver Springs, Tenn. Filed Nov. 12, 1885. (No model.)

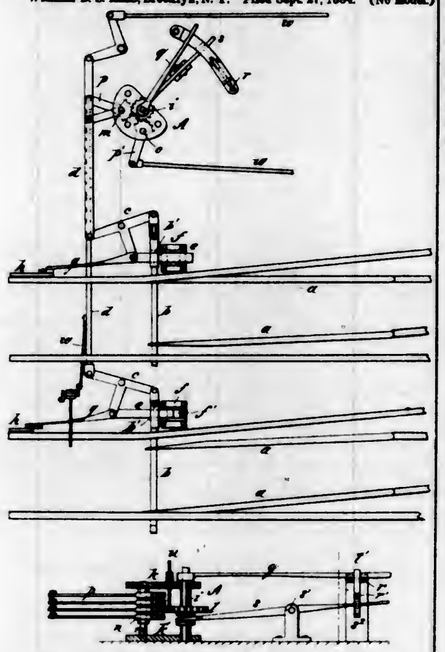


334,611.



Claim.—The combination, in a flooring and ceiling clamp, of a bent spring having the slotted clamping-heads at its free ends, said heads being provided with the steel points L, rounded shoulders D, inwardly-projecting gage pin or stud N, slots F and G, and the offset H, in combination with the lever or handle I, and fulcrum-pin J, whereby said lever has an adjustable fulcrum in one of the heads or jaws, substantially as and for the purpose herein shown and described.

334,612. OPERATING MECHANISM FOR RAILWAY-SWITCHES. WILLIAM B. S. REED, Brooklyn, N. Y. Filed Sept. 27, 1884. (No model.)



Claim.—1. In a railway-switch, the combination, with switch-bar *b* and the three-armed lever *c*, having one of its arms connected to said bar, of the locking-dog *e*, connected to the arm of the said lever, which projects at right angles to the other two arms, the detecting-bar *h*, and the rod *g*, connected to the detecting-bar and to the arm of the lever to which the dog is pivoted, substantially as herein shown and described.

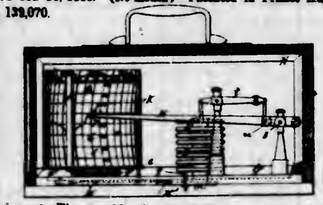
2. In a railway-switch, the combination of a series of segment-gears, *n*, having connections for operating separate switches, a gear-wheel fitted for adjustment on a shaft to engage either segment, and a lever or handle connected to the shaft for turning the gear-wheel, substantially as described.

3. The shaft *i*, adjustable gear-wheel *l*, shaft *m*, segment-gears *n*, switch-rods *d*, handle *q* on the shaft *i*, and lever *s*, connecting to wheel *l*, substantially as described, combined for operation as specified.

4. The slide-rod *r* and its slotted arm s^3, combined with lever *s*, and gear-wheel *l*, adjustably for operating either switch of a series, substantially as described.

5. In a switch, the slide-rod *r'*, having arms s^3 *l'*, spring *t*, switch-moving lever *q*, and lever *s*, combined for operation substantially as described.

334,613. RECORDING APPARATUS FOR BAROMETERS, &c. JULES RICHARD, Paris, France, assignor to the Société Richard Frères, same place. Filed Oct. 30, 1885. (No model.) Patented in France Aug. 26, 1886 No. 173,070.

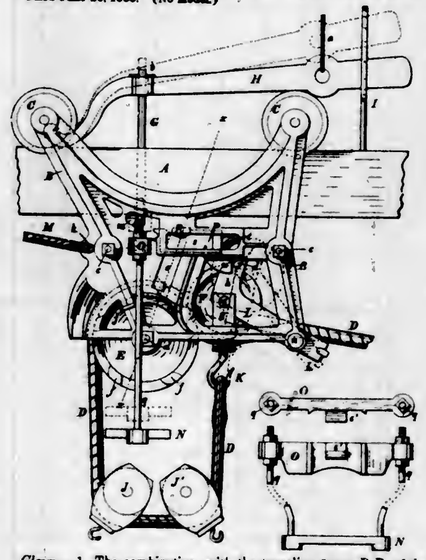


Claim.—1. The combination, with the recording-drum, the pen, and its lever-like arm, and the mechanism, substantially as described, for coupling the pen-arm to the instrument whose movements are to be recorded, of the said instrument, and means, substantially as described, for adjusting the position of the said instrument with respect to the drum, whereby the error in the instrument, if any, may be corrected, substantially as set forth.

2. The combination, with the drum A, the recording-pen, and its arm, the mechanism, substantially as described, for communicating the motion of the barometer to the pen, and the plate O' on which the above-named parts are mounted, of the barometer L, the spring-plate M, on which said barometer is mounted, and the screw *q*, for adjusting the spring-plate M, substantially as and for the purpose set forth.

3. The combination, with the drum A, provided with a mortise in its flange to receive the end of the normally curved and elastic spring-clamp J, of the said clamp J, constructed to play longitudinally through said mortise, and provided with a hook, *d*, to engage the drum-margin, whereby said hook may be engaged and disengaged by the longitudinal movement of the clamp, as set forth.

334,614. HAY-CARRIER. WENTWORTH G. REEKER, Rochester, N. Y. Filed June 26, 1885. (No model.)



Claim.—1. The combination, with the traveling frame B B, of the carrier-sheave E, swinging binding-pulley F, attached to the end of the swinging binding-frame I, pivoted to the frame of the machine, so that the binding-pulley can swing between the frames B B, and the draft-rope D, attached at one end to the binding-frame, substantially as described.

2. The combination, with the traveling frame B B, of the carrier-sheave E, provided with lugs *f f*, swinging binding-pulley F, attached to the end of the swinging binding-frame I, pivoted to the frame of the

machine, so that the binding-pulley can swing between the frames B B, draft-rope D, attached at one end to the binding-frame, and the sliding dog *o*, substantially as described.

3. The combination, in a hay-carrier, of the main carrying-sheave E, provided with lugs *f*, binding-pulley F, frame L, dog *o*, and sliding cam P, substantially as described.

4. The combination, in a hay-carrier, of the main carrying-sheave E, provided with lugs *f*, movable binding-pulley F, dog *o*, and sliding cam P, provided with lug *b'*, arranged to operate the cam by the friction of the binding-pulley, substantially as described.

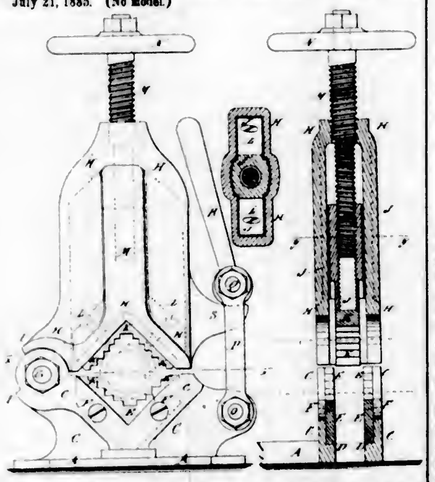
5. The combination, in a hay-carrier, of the main carrying-sheave E, provided with lugs *f*, binding-pulley F, supported on pivoted binding-frame L, dog *o*, and sliding cam P, provided with lug *b'*, arranged to operate the cam by the friction of the binding-pulley, substantially as described.

5. The combination, in a hay-carrier, of the main carrying-sheave E, binding-pulley F, pivoted binding-frame L, having one or more lugs, *d'*, and the sliding cam P, having one or more arms, *u*, adapted to engage with the said lug or lugs to sustain the binding-pulley, substantially as and for the purposes set forth.

7. The combination, in a hay-carrier, of the main carrying-sheave E, having alternately-arranged lugs *f f*, binding-pulley F, pivoted frame L, provided with projections *d' d''*, dogs *o o'*, and sliding cam P, provided with beveled arms *s s'*, arms *u u'*, and lug *b'*, arranged to operate substantially as and for the purposes set forth.

8. The combination, in a hay-carrier, of the main carrying-sheave E, having alternately-arranged lugs *f f*, binding-pulley F, pivoted frame L, provided with projections *d' d''*, dogs *o o'*, sliding cam P, provided with beveled arms *s s'*, arms *u u'*, and lug *b'*, and the track-beam A and catch-pin G, arranged to operate substantially as and for the purposes set forth.

334,615. PIPE-VISE. ANDREW L. ROSE, West Troy, N. Y. Filed July 21, 1885. (No model.)

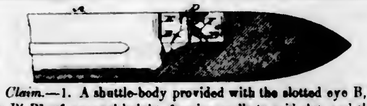


Claim.—1. In a pipe-vise, the combination, with the base A and flanges C, carrying the lower jaws, E, and the hinged upper part, H, of the stock carrying the stem J and jaw K, and having projection S, of the pivoted bars P and the cam-lever R, pivoted in the upper ends of the said bars, substantially as herein shown and described, whereby the jaws are made to grasp the pipe firmly and the screw relieved of strain, as set forth.

2. In a pipe-vise, the combination, with the upper part, H, of the stock having a right screw-thread in the inner surface of its upper end, and the stem J, carrying the upper jaw and having an interior left screw-thread, of the hand-screw M, having a right screw-thread on its large upper part and a left screw-thread on its smaller lower part, substantially as herein shown and described, whereby the said upper jaw can be quickly adjusted, as set forth.

334,616. LOOM-SHUTTLE. JAMES C. SERGESON, Philadelphia, Pa. Filed July 15, 1885. (No model.)



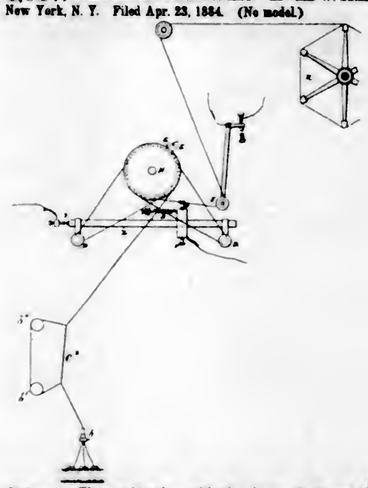


Claim.—1. A shuttle-body provided with the slotted eye B, having parts B' B², of unequal height, forming walls to said slot, and the plate D, having depending lip E, substantially as and for the purpose set forth.

2. A shuttle-body provided with the slotted eye B, having inner deflector, F, and parts B' B², in combination with the post C and plate D, having depending lip E, the latter being in contact with said part B² of the slotted eye B, substantially as and for the purpose set forth.

3. The shuttle-body A, in combination with the slotted eye B, having parts B' B², the latter, B², having an upper sloping portion, the spiral grooved post secured to said shuttle-body, and the plate D, having depending lips E and G, substantially as described.

334,617. SILK-REELING MACHINERY. EDWARD W. SERRELL, Jr. New York, N. Y. Filed Apr. 23, 1884. (No model.)



Claim.—1. The combination, with the drums G, C, and E, shaft H, and means for rotating the same, of the lever L and the pulleys or guides B and D, supported by such lever L, and the spring S, substantially as and for the purposes set forth.

2. The combination, with the drums E C G, of different diameters, and means for revolving the same, of pulleys or guides D B, around which the thread is passed from the drums in opposite directions, a pivoted support for such guides D B, and a spring to apply pressure to the pivoted support in a direction opposite to the pull of the thread on the guide D, substantially as specified.

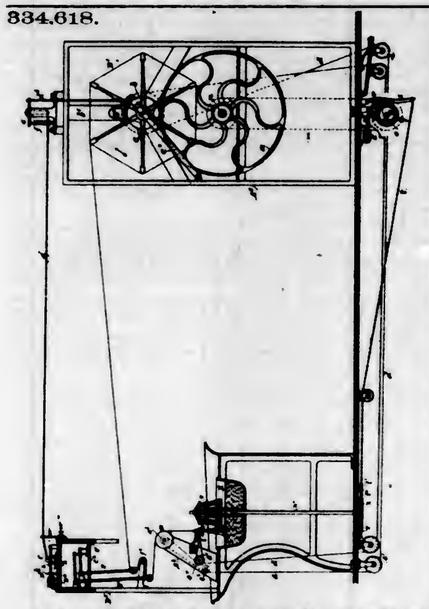
3. The combination of a feeding-drum to draw the thread through the croisure, a second and smaller drum that acts with the first to reduce the elongation of the thread, caused by drawing it through the croisure, a third drum of intermediate size that acts with the smaller drum to stretch the thread a constant amount, a guide and support that move under variations in the tension of the thread as stretched by the third drum, and means for rotating the drums, substantially as and for the purposes set forth.

334,618. SILK-REELING MACHINERY. EDWARD W. SERRELL, Jr. New York, N. Y. Filed Apr. 23, 1884. (No model.)

Claim.—1. The combination, with the cocoon-holder, filament-attaching device, feeding-drum, reel, and means, substantially as set forth, for rotating the same, of a lever, F, operated by the breaking of the thread, a lever, F', operated by variations in the strength of the thread, the electro-magnets D² and G, and their armatures and electric circuits, substantially as set forth, the lever L, controlled by the magnet D², and a spring, A, for interrupting the electric circuits when the lever L is released, and thereby preventing the magnet G bringing into action the devices that rotate the cocoon-holder, substantially as set forth.

2. The combination, with the cocoon-holder, filament-attaching device, feeding-drum, and reel, and means, substantially as specified, for rotating the same, of the lever F, electro-magnet D², its electric circuit, armature *k*, levers L and *e*, a connection between said levers L and *e*, the reel-frame, spring *f*, a connection, *d*³, between the reel-frame and lever *e*, and a circuit closing and opening spring, A, operated by the lever L, whereby the reel can be started previously to the spring A being brought upon its contact-point, substantially as and for the purposes set forth.

334,618.

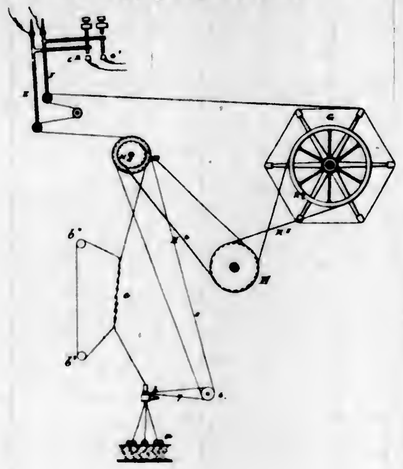


3. The combination, with the cocoon-holder, filament-attaching device, feeding-drum, reel, and means, substantially as specified, for rotating the same, of the lever F, electro-magnet D² and its circuit, armature *k*, lever L, spring A, lever *e*, and spring *f*, a wire or cord connection, *g*, between the levers L and *e*, the reel-frame, a connection between the reel-frame and lever *e*, and a guide, *w*, for said cord *g*, substantially as set forth.

4. The combination, with the electro-magnet D², pivoted armature *k*, and lever L, of the spring A, metallic plate B, upon which the spring A is pressed by the lever L when said lever is latched to the armature *k*, and an electric circuit which includes the said plate B, and which circuit is broken by the separation of A from B, substantially as and for the purposes set forth.

5. The combination, with the feeding-drum, reel, and belts and pulleys, substantially as set forth, for rotating the same, and the friction-brake, of the lever F, electro-magnet D² and its circuit, the armature *k*, lever L, spring A, devices, substantially as described, for causing the reel to be stopped by contact with the said brake, and a connection from the lever L to such devices, all substantially as set forth.

334,619. SILK-REELING MACHINE. EDWARD W. SERRELL, Jr. New York, N. Y. Filed Apr. 23, 1884. (No model.)

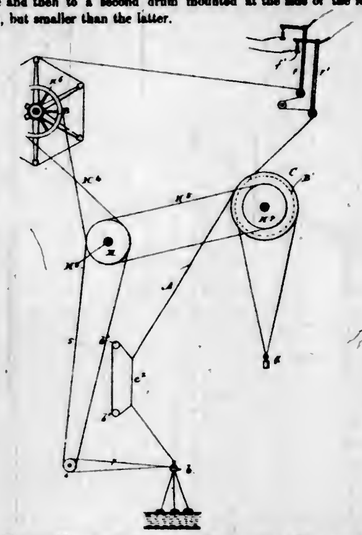


Brief.—The feeding-drum draws the thread through a croisure situated between it and the lance-boat or filament-attaching device. The thread, therefore, is consolidated and dried before reaching the drum, and is not liable to split and adhere to the latter. Also, between the drum and winding-reel it is free from variations in tension occasioned by irregularities in its movement through the croisure.

Claim.—The combination, with the revolving lance-boat or filament-attaching device *b*, of a feeding-drum, D, for drawing the thread through the croisure at *c*, a reel upon which the thread is wound, and means, substantially as specified, for rotating the reel and feeding-drum and stretching the silk between the reel and drum, substantially as and for the purposes specified.

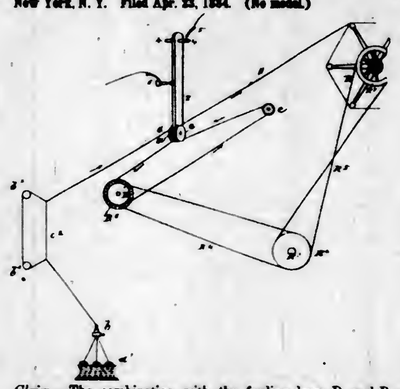
334,620. SILK-REELING MACHINE. EDWARD W. SERRELL, Jr. New York, N. Y. Filed Apr. 23, 1884. (No model.)

Brief.—In order to allow the thread to contract to its normal length and condition before being stretched between the feeding-drum and winding-reel to test its size, the thread, after having been drawn through the croisure by the feeding-drum, passes through a movable weighted guide and then to a second drum mounted at the side of the feeding-drum, but smaller than the latter.



Claim.—The combination, with the revolving filament-attaching device, of a feeding-drum for drawing the thread through the croisure, a second drum adjacent to and of less diameter than the feeding-drum, a movable guide for the thread to pass around between one drum and the other, a reel upon which the thread is wound, and means, substantially as specified, for revolving the reel and drums and stretching the thread, substantially as specified.

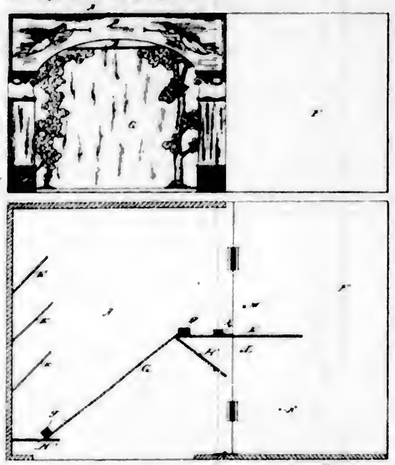
334,621. SILK-REELING MACHINERY. EDWARD W. SERRELL, Jr. New York, N. Y. Filed Apr. 23, 1884. (No model.)



Claim.—The combination, with the feeding-drum D, reel R, and means, substantially as set forth, for rotating said parts, so that the reel

is revolved at a greater circumferential speed than that of the feeding-drum, of the pivoted lever F, the rollers *e* on the lever, and the stationary roller *c*, the parts being arranged so that the tension of the thread is made to act upon the lever F in opposite directions, for the purposes set forth.

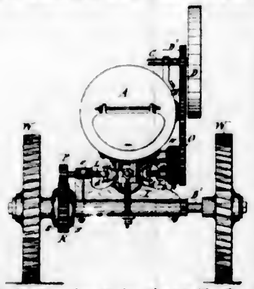
334,622. TOY THEATER. JOHN W. SHERMAN, San Francisco, Cal. Filed Apr. 24, 1885. (No model.)



Claim.—1. The combination, with a portable cabinet or case fitted up to represent a theatrical stage, with proscenium-arch, flies, curtains, and ornaments, and having a lateral extension or wing, the walls of which may be folded together for transportation, of a plate of transparent glass arranged and secured across the interior of the case, so as to reflect the image of objects placed in the lateral extension or wing to an audience in front of the case, the whole to be used in connection with puppets and miniature scenery, substantially as described.

2. The above-described toy, consisting of a portable case, A, fitted and ornamented to represent a theatrical stage, a lateral wing or extension formed by a hinged double side of the case, reflecting-plate of clear glass G, and a partition, K, to divide the extension or wing, the whole to be used and operated in connection with light, as described, and with puppets and miniature scenery, as set forth.

334,623. TRACTION-ENGINE. LOYAL C. TABER, Danforth, assignor to Wood, Taber & Morse, Eaton, N. Y. Filed Oct. 19, 1885. (No model.)



Claim.—1. In a traction-engine, the combination, with the four carrying-wheels and their axles, of two compensating-gears, one on each axle, an oscillatory counter-shaft supported at its oscillatory end in a bearing mounted on the forward or steering axle, and a train of gears extending from the driving-shaft to the two compensating-gears, all combined to transmit to all the carrying-wheels propelling power respondent to the various speeds of motion required of the several wheels in traveling around curves, substantially as set forth.

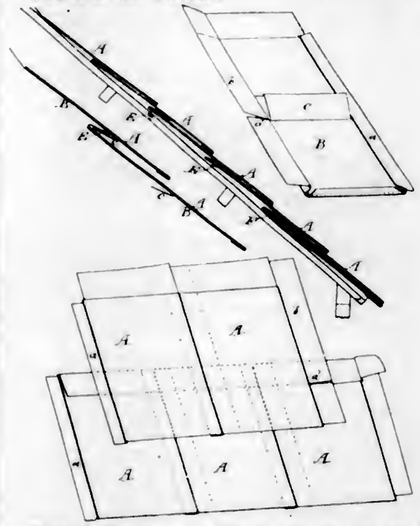
2. The combination, with the forward carrying-wheels and their axle, of a compensating-gear on said axle, an oscillatory counter-shaft carried at its oscillatory end by a bearing mounted on said axle, a laterally-movable gear on the counter-shaft meshing in the compensating-gear, and gears for transmitting motion from the driving-shaft to the counter-shaft, substantially as described and shown.

3. In combination with the driving-shaft, pivoted axle, and traction-wheels on the latter, a gear mounted on said axle, a flexible counter-shaft composed of a section carried parallel with the axle, a section carried parallel with the driving-shaft, and an intermediate section coupled to the other sections by universal joints, and gears for transmitting motion from the driving-shaft to the gear on the axle through the medium of the counter-shaft, substantially as set forth and shown.

4. In combination with the driving-shaft, pivoted axle, and traction-wheels on the latter, a gear mounted on said axle, a flexible counter-shaft having its joint remote from the pivot of the axle, and gears on said counter-shaft engaging with the gear on the axle, and with gears interposed between the driving-shaft and counter-shaft, substantially as set forth.

5. In combination with the driving-shaft, pivoted axle, and traction-wheels on the latter, a gear mounted on said axle, a flexible counter-shaft carried by a support on the axle to follow the same in its oscillatory movement, a gear sliding on the counter-shaft and held in engagement with the gear on the axle, and a gear on the counter-shaft engaging with gears interposed between the driving-shaft and counter-shaft substantially as and for the purpose set forth.

334,624. METAL ROOFING. FRANK C. TRESTHOFF, Cleveland, Ohio. Filed Oct. 28, 1885. (No model.)



Claim.—1. The metal-roofing shingle A, provided with a felt lining, B, having side and end projections and central cross-cut flap, C, substantially as described.

2. In metal roofing, the combination of the metal shingles A, provided with felt linings B, having side and end projections and central cross-cut flap, C, said shingles being laid in rows, with their side edges lapping and their upper edges interlocked with the central flap, substantially as described.

334,625. MANUFACTURE OF ORNAMENTAL NAILS. JAMES F TRAYER, Providence, R. I. Filed Oct. 13, 1885. (No model.)

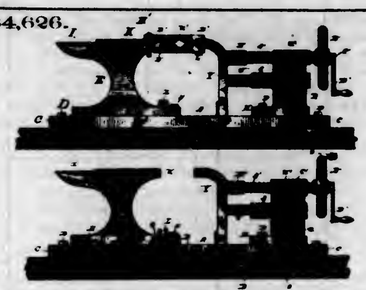


Claim.—1. The hereinbefore-described improvement in capping the elongated heads of nails with sole-leather or other suitable material, which consists in inserting said head into the under side of the cap or front, then turning it on its axis by suitable means, about ninety degrees, and finally closing or compressing the stock around the head, substantially as and for the purpose set forth.

2. The improved method of capping with sole-leather or other suitable material the hereinbefore-described and shown elongated metallic heads, provided with depending shanks, said method consisting in pressing or inserting the head into and about half-way through the said cap or front, then turning the shank on its axis ninety degrees, or nearly one-fourth of a revolution, within the cap, so as to stand at right angles to its former or entering position, and finally closing the cap around the head, substantially as and for the purpose set forth.

334,626. COMBINED ANVIL, VISE, AND DRILL. JAMES WEATHERS, Indianapolis, Ind. Filed Sept. 22, 1885. (No model.)

334,626.



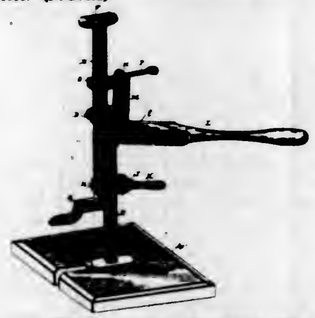
Claim.—1. The combined tool consisting of a slotted base, an anvil guided by said slot and adjustable on said base, a standard, also adjustably guided on said base and carrying a feeding-screw, and a movable vise-jaw guided by the base and by the standard, substantially as specified.

2. The combined tool consisting of a slotted base, an anvil adjustably guided on said base, a standard, also guided by said base, a feeding-screw on said standard, and a drill-shaft and stock passing through said screw, substantially as specified.

3. The combined tool consisting of a slotted base, an anvil guided therein adjustably, an adjustably-guided standard carrying a feed-screw and drill-stock, and a movable jaw guided by said standard and base, substantially as specified.

4. The combination, with a slotted base, of an anvil adjustable thereon, an adjustable standard on said base and carrying a feed-screw, a movable jaw guided by the base and standard, and supplemental serrated jaws removably secured to the anvil and movable jaw, substantially as specified.

334,627. LIFTING-JACK. JAMES WEATHERS, Indianapolis, Ind. Filed Oct. 5, 1885. (No model.)



Claim.—1. A lifting-jack consisting of a standard with a guide at its upper end, a lift-bar having a guide at its lower end, a clutch embracing said lift-bar, a lever connected thereto by links, and a cam-lever pivoted in the guide on the lower end of the said lift-bar, substantially as specified.

2. A lifting-jack consisting of a standard with a guide at its upper end and a rearward projection, a lift-bar with a guide at its lower end, a lever pivoted to said projection, a clutch on the lift-bar connected to the lever and having an extended handle, and a cam-lever with a serrated bearing-surface pivoted to the guide on the said lift-bar, substantially as specified.

334,628. SASH-BALANCE. JAMES WEATHERS, Indianapolis, Ind. Filed Oct. 29, 1885. (No model.)

Claim.—1. Combined with a sash longitudinally grooved on each side, fixed rods extending the length of the frame and resting in said grooves, and springs surrounding said rods and acting on said sash by their extensile force, substantially as specified.

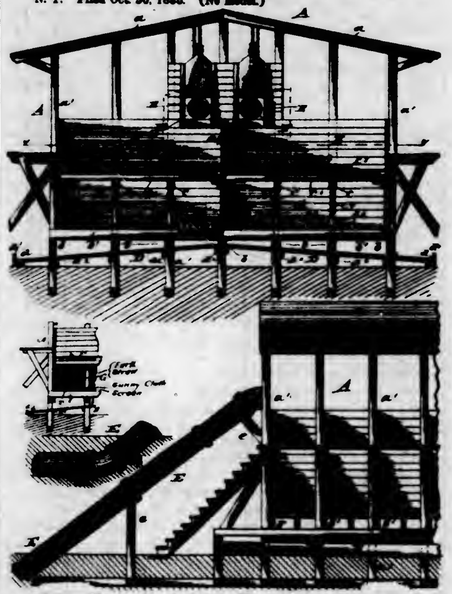
2. Combined with a sash longitudinally grooved on the edges, fixed rods extending the length of the window-frame and resting in said grooves, springs surrounding said rods and normally contained within said grooves, and slotted plates on the sash coincident with said grooves and forming bearings for said springs, substantially as specified.



334,629.

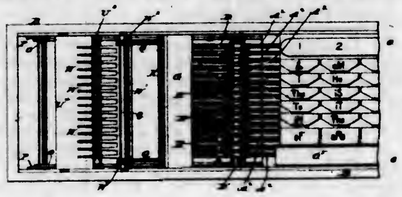


334,629. ELEVATED FILTER-BED. W. SCOTT WEST, New York, N. Y. Filed Oct. 30, 1885. (No model.)

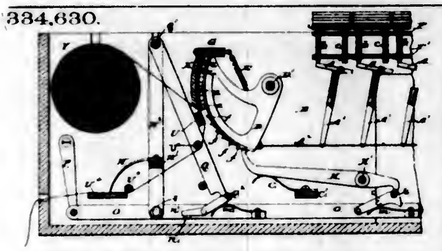


Claim.—The combination of the filter-bed frame A, provided with the floors B and C, each composed of the longitudinal joists, cross-strips, and longitudinal strips, substantially as described, and the latter braced upon the former by the standards c', the chutes D, inclined slightly longitudinally, and the walls d', forming the gutters *d* therewith, substantially as specified.

334,630. TYPE-WRITER FOR STENOGRAPHIC PURPOSES. JOHN C. ZACHOS, New York, N. Y. Filed Oct. 15, 1884. (No model.)



334,630.



Claim.—1. The combination, in a type-writer, with a reciprocating carrier fitted with a series of type and actuated by a spring to move the type automatically out of line for print, of a rocking plate whose pivotal axis is in the direction of its length, an arm, A', projecting from said plate at right angles to its axis and coupled to the type-carrier by a rod or chain, and a series of keys corresponding in number with the type on the type-carrier and supported upon the free edge of the rocking plate in a line parallel with its axis by means of pins graduated in length, whereby the depression of either key shall operate to bring the type appropriate to said key into proper position for print, substantially in the manner and for the purpose herein set forth.

2. The combination, in a type-writer, with a key-board constructed of a series of columns of keys, each column resting upon a single rocking plate whose axis is parallel with the length of the column, of a series of reciprocating type-carriers corresponding to the number of columns of keys and bearing in order each a series of type corresponding to the characters designated in the same order by the several columns of keys, the type being severally brought to a common line of print each by the movement of the rocking plate under its appropriate key, and of an arm fitted to said plate and coupled with the type-carrier by a rod or cord, substantially in the manner and for the purpose herein set forth.

3. The combination, in a type-writer, with a reciprocating type-carrier fitted with a series of type and a corresponding series of ratchet-teeth or detent-notches, and which is actuated in one direction by a spring to carry the type out of line of print, and with a series of keys and a rocking plate and arm actuated by said keys and coupled to said type-carrier, each to produce by its depression a different degree of movement in the type-carrier in the opposite direction, of a spring-seated print key or plate upon the key-board, supported to move independently of the type-keys, a bar or bars reciprocating to and from the type-carrier, a crank-lever interposed between the print key or plate and the reciprocating bars to cause the latter to move forward toward the type-carrier by the depression of the print-key and by its elevation to retract the same, and a pivoted spring-actuated detent-lever engaging automatically the ratchet-teeth or detent-notches on the type-carrier and released therefrom by the reverse movement of the bar or bars as the print-key rises, all substantially in the manner and for the purpose herein set forth.

4. The combination, in a type-writer, with a reciprocating type-carrier, a spring actuating the same in one direction, and rocking plate and arm supporting a series of type-keys and coupled with the type-carrier to actuate it in the opposite direction, of a spring-seated print key or plate, O^3, upon a key-board moving independently of its type-keys, bars O O, reciprocating to and from the type-carrier, interposed connecting crank-levers P' and O^3, operating when the print-plate is depressed to move the bars forward and when the plate is elevated by its spring to retract the same, and a lever, Q, governed by a spring-actuated catch-bar, Q^2, and which, carrying an impression plate or platen, swings to and from the type on the type-carrier, and is automatically moved toward the type-carrier so as to force the platen against the type brought into register therewith at each return-movement of the bars O O, all substantially in the manner and for the purpose herein set forth.

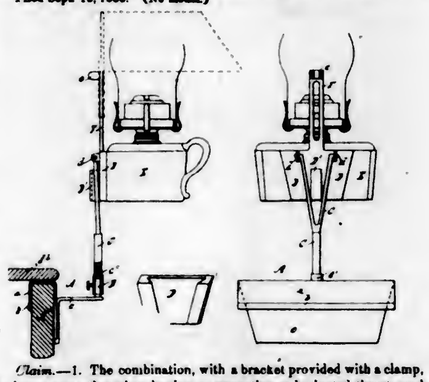
5. The combination, in a type-writer, with the spring-supported print key or plate O^3, of the longitudinally-reciprocating bars O O, the crank-arms O^3 P', interposed between the bars and print-plate, the swinging arms W, the teeth W', carried thereby, and the feed-table U^4, over which said teeth play, whereby the paper led from the impression-plate U over the table U^4 is fed forward by the movement of the teeth at each downward stroke of the print key or plate, all substantially in the manner and for the purpose herein set forth.

6. The combination, in a type-writer, with a series of type-carriers, D D, set in position for print by the movement of a series of type-keys in a suitable key-board, substantially as described, and with a series of pivoted detent-levers, H, each engaging and holding automatically one of the type-carriers when moved by its appropriate key into position for print, and with impression-levers Q, and an impression-plate, U, carrying a strip of paper against the type set for print, of a spring-seated print key or plate, O^3, in the key-board, reciprocating bars O O, moving back and forth beneath the detent and impression levers, crank-arms O^3 and P', connecting said bars with the print-key, and spring-actuated arms i and Q^2, pivoted to the bars O, to actuate the detent and impression levers, all substantially in the manner and for the purpose herein set forth.

7. The combination, in a type-writer, with a key-board embracing a series of type-keys arranged in rows or columns, each of which rests upon a single rocking plate, A, interposed arms A', rods A^3, reciprocating sectors or type-carriers D, and with a series of detent-levers, H, automatically detaining said type-carriers each at the end of its movement, of a single extended transverse spring-actuated print key or plate, O^3, connections substantially as described, whereby the key produces by its automatic upward movement a movement of the impression-lever Q, to carry the paper against the types on the type-carriers, and a subsequent movement of the detent-levers H, to cause their release from engagement with the type-carriers, all substantially in the manner and for the purpose herein set forth.

8. In a type-writing machine for stenographic purposes, the combination, substantially as described, with a key-board embracing fourteen or more columns of six keys or more each, and with a rocking plate under each column, of a series of pivoted sectors, one for each column, each bearing types corresponding, respectively, to the characters on the several keys of its appropriate column, and each connected with one of the rocking plates by an interposed link and arm, whereby several keys and type-carriers are made to co-operate and simultaneously set several types on the same line of print, substantially as and for the purpose described.

334,631. BRACKET-LAMP. ADOLPH C. O. ADLER, Brooklyn, N. Y. Filed Sept. 18, 1885. (No model.)



Claim.—1. The combination, with a bracket provided with a clamp, of a lamp-supporting plate having a supporting-rod pivoted thereto and an extension-projecting therefrom, the said bracket and the free end of the said supporting-rod and the extension being provided with post-and-socket constructions for connection, substantially as described.

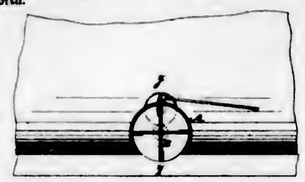
2. The combination, with the bracket provided with a clamp and a vertical post, of a lamp-supporting plate provided with a socket and having a supporting-rod pivoted thereto, and having a socket in its free end for connection, substantially as described.

3. The combination, with a bracket provided with a clamp, of a lamp-supporting plate having a supporting-rod pivoted thereto and an extension projecting therefrom, said bracket and the free end of the said supporting-rod and the extension being provided with post-and-socket construction, and a vertical catch on the lamp-supporting plate, substantially as described.

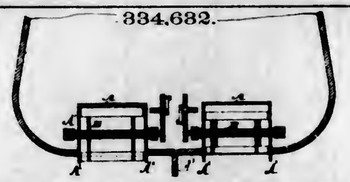
4. The combination of a bracket provided with a clamp, a lamp-body, a lamp-supporting plate having a dovetailed connection with the lamp-body and provided with an extension, and a supporting-rod hinged to the lamp-supporting plate, said bracket and the free end of the said supporting-rod and the extension being provided with post-and-socket constructions for connecting, substantially as described.

334,632. SHIP'S PROPELLER. HENRY C. BEECHER, Montgomeryville, Pa. Filed Apr. 11, 1885. (No model.)

Claim.—1. A ship's hull having a cylindrical-shaped wheel-case on each side of the keel, said cases having both their inner and outer sides extending below the bottom of the hull, substantially as and for the purpose set forth.

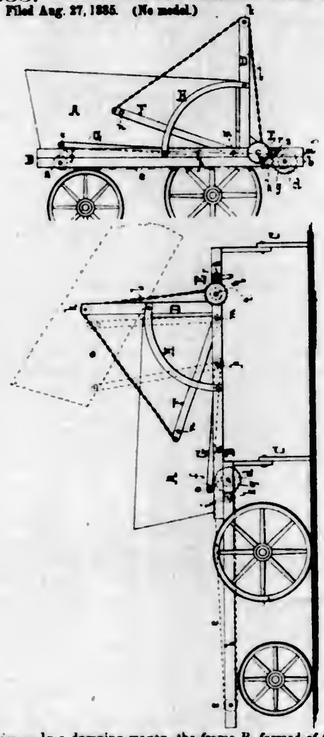


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2. A wheel-case having its bottom provided with an opening about equal to the distance between adjacent blades of the wheel, and its inner and outer sides extending below the bottom of the hull, substantially as and for the purpose set forth.

334,633. DUMPING-WAGON. LIVINGSTON O. BENNETT, Baltimore, Md. Filed Aug. 27, 1885. (No model.)



Claim.—In a dumping-wagon, the frame B, formed of the upper and lower sections, *a* and *b*, arranged to be extensible, as described, hopper A, and levers F and G, pivoted to the hopper A and the section *a*, combined with the standards D, and a chain and winding apparatus, whereby the hopper can be elevated and tilted at one operation, substantially as specified.

334,634. OINTMENT. MARY H. BERRY and FRANK H. BUTLER, San Francisco, Cal. Filed June 27, 1885. (No specimens.)

Claim.—An ointment for the treatment and cure of ulcers, cutaneous eruptions, and abrasions, consisting of olive-oil, oil of turpentine, beeswax, Burgundy pitch, rosin, and pure extract of tobacco and ox-gall, in the proportions specified.

334,635. EXERCISING-MACHINE. EPHRAIM N. BOWEN, Buffalo, N. Y., assignor of one-half to William S. Bull, same place. Filed June 10, 1885. (No model.)

Claim.—1. The combination, with the central standard, of the axle journaled in the same, two pedal-wheels mounted on said axle on opposite sides of the standard, pedals secured to said wheels, and a handle and seat secured to the upper portion of the standard, substantially as set forth.

2. The combination, with the lower tubular portion, *a*, of the standard, provided with the shaft *c* and pedal-wheels D, of the upper portion, *a'*, adjustably secured to said lower portion and provided with a handle-bar and saddle, substantially as set forth.

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3. The combination, with the lower tubular portion, *a*, of the standard, having its upper end slitted vertically, and the upper portion, *a'*, made vertically adjustable in said lower portion, of the divided clamp-collar M', embracing the upper slitted end of the portion *a*, substantially as set forth.

4. The combination, with the lower tubular portion, *a*, of the standard, of the horizontal shaft *c*, passing through the standard and journaled in lateral bearings projecting laterally from the standard, and a plug, *c'*, closing the bore of the standard below the shaft, whereby an oil-reservoir is formed, substantially as set forth.

5. The combination, with the pedal-pin *e*, of the sleeve F, closed at its outer end, a split ring and expanding-screw, whereby the sleeve is attached to the pedal-pin, and pedal-plates secured to the sleeve, substantially as set forth.

6. The combination, with the pedal-pin *e*, provided with an annular groove, *g*, of the sleeve F, provided at its outer end with a closed cap, F', an expanding-screw, g^2, attached to the sleeve, and a split ring, *g'*, seated in the groove *g*, substantially as set forth.

7. The combination, with the pedal-pin *e*, of the flat-sided sleeve F, metallic plates *f*, secured to the flat faces of the sleeve F on opposite sides of the sleeve F, and yielding plates *f'*, secured to the metallic plates *f*, substantially as set forth.

8. The combination, with the pedal-wheels and standard, of the brake K, pivoted to the standard, a spring-scale, L, attached to the brake, and the adjusting-screw *l*, connecting the spring-scale L with the standard, substantially as set forth.

9. The combination, with the backbone O, saddle N, and saddle-frame N', of the supporting-bracket P, to which the saddle-frame is attached, and a clip, *q*, whereby the bracket is adjustably secured to the backbone, substantially as set forth.

10. The combination, with the backbone O, saddle N, and saddle-frame N', of the supporting-bracket P, provided on its under side with concave bearings p^2 p^2, a clip, *p'*, whereby the saddle-frame is attached to the bracket P, and a clip, *q*, whereby the bracket is secured to the backbone, substantially as set forth.

11. The combination, with the handle-bar, of a handle, S, composed of an open rigid frame, *s*, and a yielding body, s^2, which envelops the frame *s* and fills the open spaces thereof, substantially as set forth.

12. The combination, with the handle-bar provided with a neck, *r'*, having an annular groove, r^2, of a handle, S, provided with a socket, *s'*, bolt *t*, screw t^2, and a spring, t^3, interposed between the bolt *t* and the screw t^2, substantially as set forth.

334,636. DOOR-SECURER. DANIEL BROMLEY, Carrollton, Ky. Filed Oct. 29, 1885. (No model.)



Claim.—1. In a door-securer, the combination, with a case, A, of a hasp, E, having a portion playing in said case, and provided at its free end with an angular portion adapted to be inserted and retained between the door edge and jamb, and a combination-lock for locking said hasp, substantially as set forth.

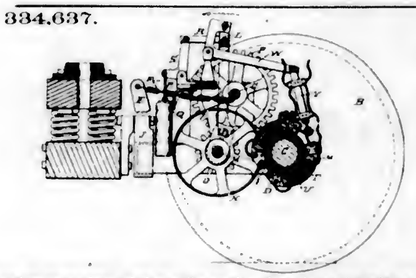
2. In a door-fastening device, the combination, with a movable hasp with angular projecting portion and body portion A, recessed for the reception of said shank, and having an end, *a*, with a straight side, of a movable ring attached to said end portion and provided with a cut-away side, substantially as shown, and for the purpose set forth.

3. In a door-fastener, the combination, with a body portion constructed substantially as shown, and provided with a longitudinal recess for the reception of a flat screw-threaded shank, of a hasp and operating-ring, C, secured upon the body portion and adapted to engage with a hasp, the disks G, and opened rings F, attached to the body portion, the parts being combined and organized substantially as shown, and for the purpose set forth.

334,637. CAR-BRAKE. GEORGE F. CARD, Covington, Ky., assignor to Henry K. Lindsay, same place. Filed June 8, 1885. (No model.)

Claim.—1. In a car-brake, in combination with a car-axle and brake-

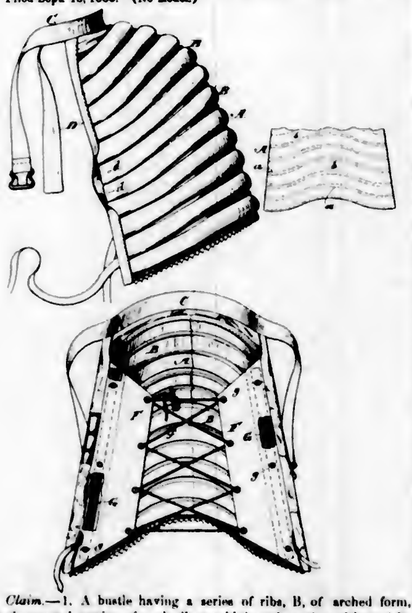
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setting mechanism, a hub or collar on the axle, a clamp adapted to grasp said collar and mechanically connected with the brake-setting mechanism, electro-magnets for operating said clamp, a source of electricity, and a circuit including said magnets and source, substantially as set forth.

2. The combination, with a car-brake operated by momentum of the train, of the electro-magnet clamp T, which embraces a hub, D, on the axle, and has normal electrical connection with a rheostat, X, and mechanical connection with the system of weighted levers, which set the brake-windlass in motion, substantially as set forth.

334,638. BUSTLE. CHARLES CLARIDGE CARPENTER, New York, N. Y. Filed Sept. 18, 1885. (No model.)



Claim.—1. A bustle having a series of ribs, B, of arched form, with the central portion of each rib at a higher plane than either of its ends, and means for securing the same in such position to increase the capacity of the ribs to resist downward pressure of drapery, as set forth.

2. The combination, with the arched ribs, as described, consisting of stuffed curved pockets supported by a fabric, A, of side bindings, D, arranged to hold the ends of the ribs forcibly together, and by the expansibility of the filling to throw the central portions of the ribs down to the limits of the fabric, as set forth.

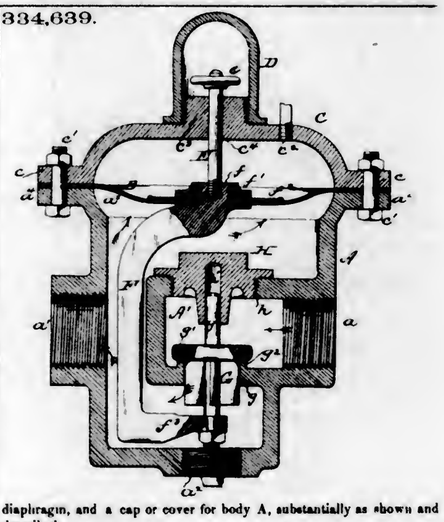
3. The combination, with a body, as A, having arched ribs B, and with lacing-aprons F, of stays G, arranged in said aprons close to the line of its attachment with the body, as set forth.

4. The bustle described, having the arched ribs B, with their ends held in close contact by bindings, D, the lacing-aprons F, cord *f*, and stays G, all combined and arranged to serve as set forth.

334,639. STOP-OFF VALVE FOR GAS. JOSEPH L. CHAPMAN, Haddonfield, N. J. Filed Apr. 23, 1885. (No model.)

Claim.—1. In a gas stop-off, a body, A, having an inlet-opening terminating in chamber A', having valve-seat *g* within said chamber, and screw-plug H, provided with a bore or opening, *h'*, the valve G, having guide-stem g^3, sliding in bore *h'*, diaphragm B, yoke F, connecting said valve and diaphragm, a rod, E, for manually lifting said valve and

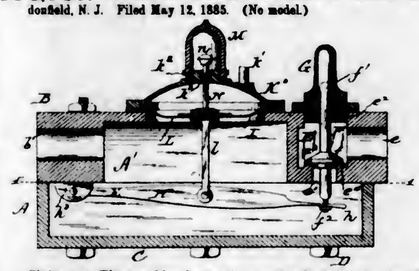
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diaphragm, and a cap or cover for body A, substantially as shown and described.

2. The stop-off herein shown and described, comprising a body, A, having an inlet-opening terminating in a chamber, A', having an outlet-opening to body A, and to which is adapted a valve, G, a diaphragm, B, having a lifting-rod, E, and a yoke, F, connecting valve G and diaphragm B, whereby valve G is manually raised to open a passage-way through the stop-off for the flow of gas, is maintained in its raised position as long as the gas flows by the pressure of the latter against the diaphragm, and falls by gravity to close the passage-way through the stop-off when the gas ceases to flow.

334,640. AUTOMATIC STOP-VALVE. JOSEPH L. CHAPMAN, Haddonfield, N. J. Filed May 12, 1885. (No model.)



Claim.—1. The combination casing-section B C, having lugs *b c* and fastening-bolts D, the diaphragm L, having stem *l* and lifting-rod N, cap K, chamber E, having inlet and outlet openings *e e'*, and valve *f*, having stem F, and lever H, pivoted to one of said sections and having connection with said diaphragm and valve-stems, substantially as shown and described.

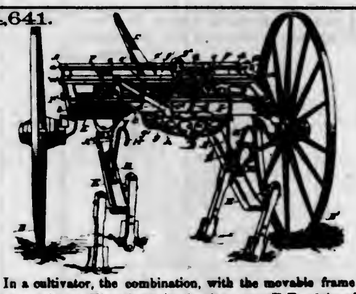
2. The combination of casing-sections B C, having fastening-bolts D, the diaphragm L, having stem *l* and rod N, chamber E, having inlet and outlet openings *e e'*, valve F, having stem *f*, and lever H, pivoted to one of said sections and having connection with said diaphragm and valve, substantially as shown, and for the purpose set forth.

334,641. CULTIVATOR. EDWIN CHILDERS, Danleith, Ill. Filed Sept. 9, 1885. (No model.)

Claim.—1. The combination, in a cultivator, of a movable frame comprising a sway-beam and a pair of swing-arms pivoted at one end and provided with friction-rollers on the opposite end, a pair of vertically-adjustable plow-beams pivoted to said sway-beam, a pivoted draft-pole with a friction-roller on its rear end, a telescopic shifting-lever, and intermediate link-connections between said draft-pole, swing-arms, and shifting-lever, substantially as and for the purposes set forth.

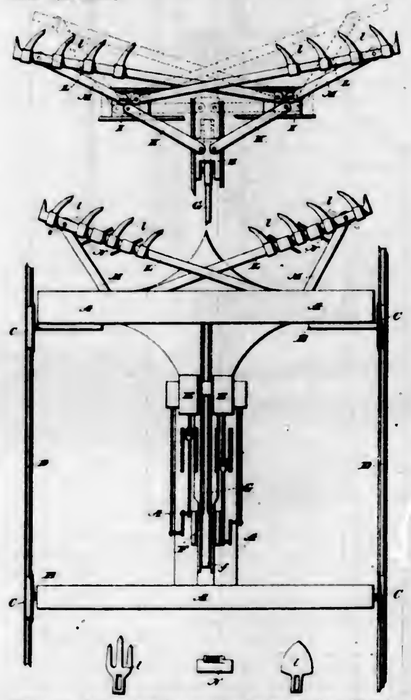
2. In a cultivator, the combination, with the movable frame comprising the swing-arms F F and sway-beam E', of the pivoted plow-beams E, ratchet-frames H, secured upon the same, levers H', with pawl *k*, and arm *k'*, cranes I, and the intermediate connections with said levers, and sockets I', pivoted to the swing-arms F and elastically supported upon the same, substantially as described.

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3. In a cultivator, the combination, with the movable frame comprising a sway-beam, E', and a pair of swing-arms, F F, of the pivoted draft-pole C, having arm *c'*, links *f* and *f'*, lever-pin *g*, having arm *g'* and recessed ring g^2, and telescopic lever G, substantially as and for the purposes set forth.

334,642. COAL-MINING MACHINE. FRANK L. CLEMO, Philipsburg, Pa., assignor of one-half to George T. Lewis, same place. Filed Aug. 22, 1885. (No model.)



Claim.—1. In a coal-cutting machine, in combination with two reciprocating blocks or heads, a swinging bar provided with pick-points or cutters pivoted to one of the blocks or heads and a pivotal swinging connection between the other block and the bar, substantially as and for the purpose specified.

2. In a coal-cutting machine, in combination with a suitable carriage or support, the two swinging pick-bars moving in opposite directions, the two reciprocating heads or blocks, each pivotally connected with one of the bars, and the links connecting each block with the bar pivoted to the other block, substantially as and for the purpose described.

3. In combination with a swinging pick-bar, one or more inclined scrapers adapted to engage and remove, as the bar swings back, the material loosened and broken by the pick point or points, substantially as and for the purpose described.

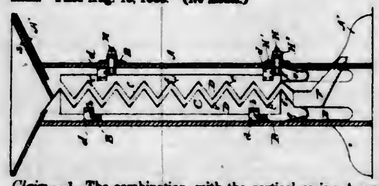
4. In a coal-cutting machine, in combination with a swinging pick-bar provided with picks or cutters on its forward side, the two blocks reciprocating in opposite directions, pivotally connected with the inner end of the bar, and a link connecting the outer portion of the bar with the outer block, substantially as and for the purpose described.

5. In a coal-cutting machine, in combination with the two bars armed on their forward sides with pick points or cutters, the two sliding blocks I I, each pivotally connected with the inner end of one of the bars, and the two links, each connecting the outer end of one of the bars with the block to which the inner end of the other bar is pivoted, and means for reciprocating the blocks simultaneously in opposite directions, substantially as and for the purpose described.

6. In combination with the reciprocating block or cross-head H and the two reciprocating blocks I I, the links connecting each blocks with the cross-head, the cutter or pick-carrying bars, each pivoted to one of the blocks, and the links, each connecting the outer portion of one of the cutter-bars with the block to which the other bar is pivoted, substantially as and for the purpose specified.

7. In a coal-cutting machine, in combination with the supporting frame or carriage, the motor E, the driving-shaft F, driven by the motor, the eccentric on the shaft, the eccentric-rod G, the cross-head H, the sliding blocks or heads I I, moving in a direction at right angles to the line of motion of head H, the links K K, connecting the head with blocks I I, the bars L L, provided with pick-points or cutters, and each pivoted to one of the sliding blocks, and links M M, each connecting one of the bars with the block to which the other bar is pivoted, substantially as and for the purpose described.

334,643. OCCKLE-SEPARATOR. BERNARD CLOUTIER, Minneapolis, Minn. Filed Aug. 18, 1885. (No model.)



Claim.—1. The combination, with the vertical casing A, provided with horizontal rails B, of the vertical frames D, provided with the opposing zigzag screens C, and having lugs *d*, adapted to slide on the rails B, as and for the purpose set forth.

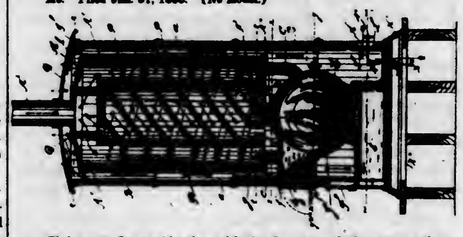
2. The combination, with the vertical casing A, having hopper A', the door A^2 in its vertical end, and the horizontal rails B, of the vertical frames D, carrying the opposing zigzag screens C, and having the lugs *d d*, adapted to rest and slide on the rails B, substantially as described, and for the purpose set forth.

3. The combination, with the vertical casing provided with the guide-rails B, of the vertical frames D, supported upon and adapted to slide on said rails, and provided with the opposing zigzag screens C, and separate conductors for conducting the grain and small seeds from the casing, all substantially as and for the purpose set forth.

4. The combination, with the vertical casing A, horizontal rails B, and means for adjusting said rails, of the vertical frames D, carrying the opposing zigzag screens C, and having the lugs *d*, adapted to slide on said rails B, all substantially as described.

5. The combination, with the vertical casing having a door in its vertical end and horizontal supporting-rails located within said casing, of the vertical frames D, supported upon and free to slide on said rails and carrying the opposing zigzag screens C, all substantially as described, and for the purpose set forth.

334,644. HEATING-FURNACE. EMERY C. COMBS, Kansas City, Mo. Filed Jan. 31, 1885. (No model.)

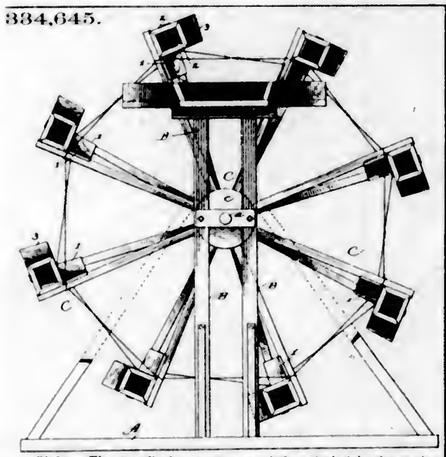


Claim.—1. In combination with the fire-pot and the outer casing, a series of spiral passages connected to fire-pot and exit-flue, an annular hot-air passage encircled by the said spiral passages, and a direct-draft passage encircled by the hot-air passage, substantially as described.

2. The combination, in a hot-air furnace, of spiral passages, the annular hot-air passage, the direct-draft passage, a damper therein, the fire-port having necks connecting with the several passages, and the outer casing provided with registers, substantially as described.

334,645. IRRIGATION OF LAND. CHARLES B. COX, San Marcial, N. Mex. Filed May 28, 1885. (No model.)

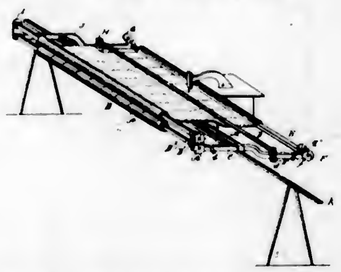
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Claim.—The described apparatus, consisting of a hub having spokes extending from each end of the periphery thereof, with one set slightly in advance of the opposite set, buckets attached directly to the ends of these spokes in an inclined position due to the arrangement of the spokes, the said buckets serving also to brace the spokes, paddle-boards forming one side of said buckets, and wire braces extending from one bucket to another, all substantially as described.

334,646. QUILTING-FRAME FOR SEWING-MACHINES. HENRY T. DAVIS, New York, N. Y. Filed Jan. 27, 1885. (No model.)

Brief.—Means are provided for winding the different parts or pieces of the quilt (before they are united and stitched together) on separate contiguous bars or rollers. The device has for its object the independent regulation of the feed of the cover and the lining of the quilt.



Claim.—1. In a quilting-frame for sewing-machines, the combination of the end pieces, the main winding-bar journaled within the same, and the supplemental winding-bar arranged directly above, contiguous to, and in the same vertical plane as the main winding-bar, substantially as shown, and for the purposes set forth.

2. In a quilting-frame for sewing-machines, the combination of the end winding and unwinding rollers and the end pieces of the frame with the tension-bar arranged above the quilt, the legs upon the frame provided with the vertical slots, and means, substantially as described, for locking the tension-bar at any desired height relatively to the bed-plate of the machine.

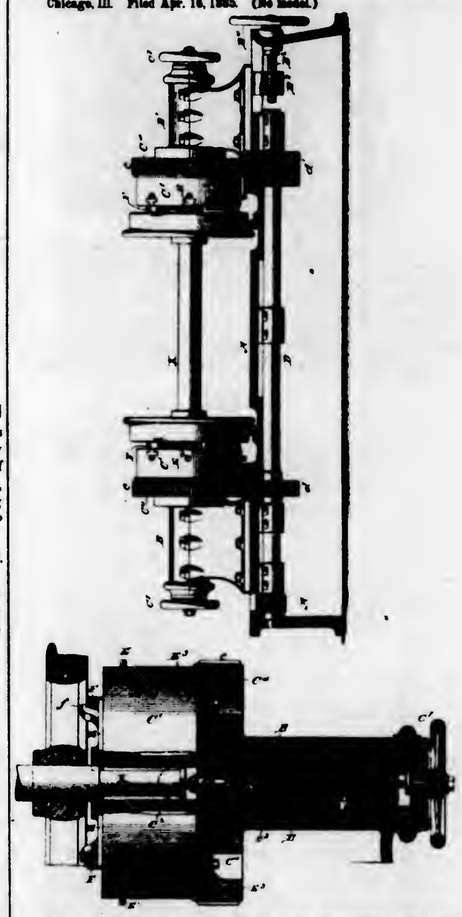
3. In a quilting-frame for sewing-machines, the combination of the end pieces provided with the upwardly-extending lugs adapted for the reception of the tension-bar and feed-rollers with said bar and rollers, as set forth.

4. In a quilting-frame for sewing-machines, the combination of the bed-plate of the sewing-machine, the end pieces, the adjustable winding-bar adapted for the reception of the goods when sewed, means for adjusting the winding-bar, and the feed-rollers, substantially as set forth.

5. In a quilting-frame for sewing-machines, the end pieces provided with the upwardly-extending lugs arranged at three different points on each piece, said lugs forming bearings for the feed-rollers, the tension-bar, and the final winding-bar, as set forth.

6. In a quilting-frame for sewing-machines, the combination of the end pieces provided with the upwardly-extending lugs, as and for the purposes set forth, with the feed-rollers, the tension-bar, and the final winding-bar, as described.

334,647. CAR-WHEEL-TRUING MACHINE. MELVILLE E. DAYTON, Chicago, Ill. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a lathe adapted for truing car-wheels when fixed upon their axle, a chuck external to the wheel having driving-points adjacent to the wheel-face, and radially distant from the axle, and provided with a space or passage between its driving-points, adapted to laterally admit the protruding journaled end of the axle to a central position as to the chuck, substantially as described.

2. In a lathe adapted for truing car-wheels when fixed upon an axle having outside journals, the combination, with means for centering the axle, of chucks constructed to present fixed driving-points in proximity to the car-wheels near the peripheries of the latter, said chucks being provided with spaces or passages between their driving-points, whereby the protruding ends of the axle may be radially admitted to their central position, and also provided with drivers movably applied to the said driving-points of the chucks for engaging the latter with the car-wheels, substantially as described.

3. In a lathe for truing car-wheels when on their axle, the combination, with a chuck, of a movable part adapted to lift the end of the axle to a central or proximately central position with respect to the chuck.

4. In a lathe for truing car-wheels when on their axle, the combination, with an external chuck, of a radially-movable part arranged to engage the adjacent protruding portion of the axle, and adapted to lift it to a central or proximately central position with respect to the chuck.

5. In a lathe for truing car-wheels when fixed upon their axle, the combination, with an external chuck, of a centering-bar, and a radially-movable part which engages the protruding portion of the axle, substantially as and for either or all of the purposes set forth.

6. In a lathe for truing car-wheels when fixed upon their axle, the combination, with the body of an external chuck, of drivers which engage the wheel radially external to the axle, and opposing jaws which laterally engage the protruding portion of the axle, substantially as and for either or all the purposes set forth.

7. The combination, with a lathe adapted for truing car-wheels when fixed upon their axles, and provided with chucks having mechanisms adapted to lift the axle to its central position, of tracks or guides arranged to direct the axles into position to be engaged by said lifting devices, substantially as described.

8. The combination, with a lathe adapted for truing car-wheels upon their axle, and provided with centering devices, of vertically-adjustable tracks for the car-wheels, whereby the latter may be brought into position for the engagement of their axle with the centering devices, substantially as described.

9. In a lathe adapted for truing car-wheels when fixed upon their axle having outside journals, the combination, with a plate on the spindle, of rigid posts projecting from said plate into proximity with the wheel-face near its rim, radially-movable driving-jaws at the free ends of said posts, adapted to engage the wheel-rim, and suitable devices for centering the axle, substantially as described.

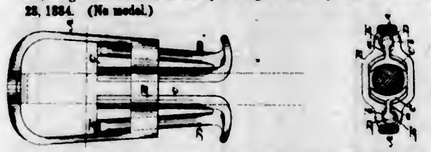
10. The combination, with a plate on the spindle of a lathe, of radially-moving driving-posts, suitable devices for securing the posts in a desired position on the plate, radially-movable jaws, as F, mounted on the free ends of said posts, and centering devices, substantially as described, and for the purpose set forth.

11. The combination, with the body of a lathe-chuck, of drivers which are severally movable both radially thereto and at right angles to the plane thereof, substantially as described.

12. The combination, in a lathe-chuck, of adjustable slides, as F', provided with radial guides in their outer faces, driving-jaws mounted movably in said guides, and centering mechanism, substantially as described.

13. In a lathe adapted for truing car-wheels when fixed upon an axle having outside journals, the combination, with a chuck constructed to radially admit the protruding ends of the axle to their central positions, and provided with driving mechanisms contrived to engage the wheels at points radially distant from the axle, of centering-bars having a range of movement by which they may engage the ends of axles having either outside or inside journals, and means for supporting the axle-engaging ends of the centering-bars when run out into engagement with inside-journaled axles, whereby the same machine is equally adapted to either class of axles, substantially as described.

334,648. CUE-TIP FASTENER. TIMOTHY DOUGHERTY, Philadelphia, Pa., assignor of one-half to Henry J. Bergman, same place. Filed Nov. 23, 1884. (No model.)



Claim.—A cue-tip fastener consisting of the yoke A with the cross-bar B, having the slotted guide-grooves *b*, and the wedge-shaped clamps C, having the guide-tongues D and outwardly-extending handles at their lower ends, said parts being combined and operating substantially as and for the purpose set forth.

334,649. CASH-CARRIER-PROPELLING MECHANISM. FRANK E. FISHER, Detroit, Mich., assignor to the Merchants Store Railway Company, same place. Filed Oct. 12, 1885. (No model.)

Claim.—1. In combination with a way and a car adapted to travel upon said way, a cylinder containing a piston and piston-rod, a pressure-chamber, a port connecting said cylinder with said pressure-chamber, and a valve whereby said port can be closed or opened at will, substantially as shown and described.

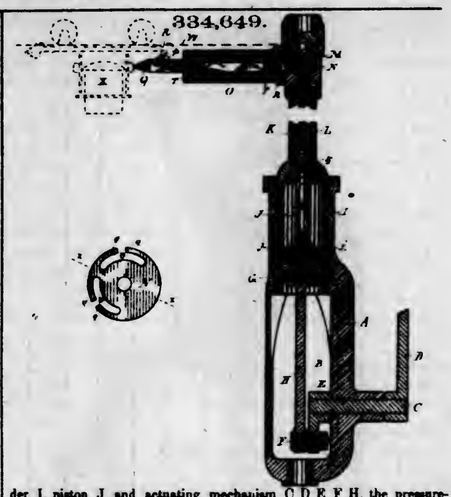
2. In combination with a way, a car adapted to travel on said way, a cylinder located near and parallel with said way, a piston and piston-rod in said cylinder, a pressure-chamber having a port connecting it with said cylinder, and a valve adapted to control said port, substantially as and for the purposes set forth.

3. In combination with the piston-rod Q and guide-opening T, the pivoted catch R, hung in a slot in said piston-rod, substantially as shown and described.

4. The herein-described mechanism for propelling a car upon a way, consisting of a cylinder, a piston and piston-rod within said cylinder, a pressure-chamber connected by a port with said cylinder, a valve adapted to control said port, an air-compressor connected with said pressure-chamber, and a connection between the piston of said air-compressor and the spindle of said valve, whereby the movement of the piston of said air-compressor actuates said valve, substantially as shown and described.

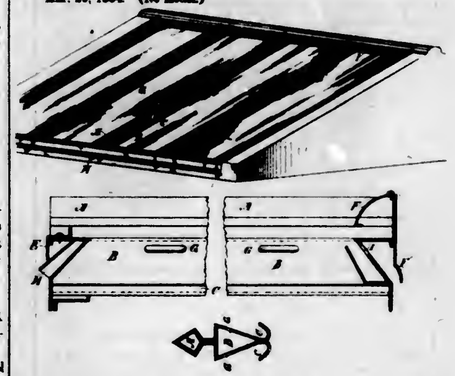
5. In combination with the air-compressor consisting of the cylinder I, piston J, and actuating mechanism C D E F H, the pressure-chamber M, connected with cylinder I by the pipe L, valve N, having spindle K, rod J, secured to the piston G, and having therein the slot *i* to engage with the pin *k* in spindle K, cylinder O, connected with pressure-chamber M by port *p*, and piston and piston-rod P Q, substantially as herein shown and described.

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6. In combination with a car adapted to travel upon a way, a cylinder containing a piston and piston-rod adapted to come in contact with said car, a reservoir containing elastic vapor in a state of tension, a port connecting said reservoir with said cylinder, and a valve controlling said port, substantially as shown and described.

334,650. SKYLIGHT. JOS. F. FORDERER, San Francisco, Cal. Filed Mar. 29, 1884. (No model.)



Claim.—1. In a skylight, the frame having the parallel bars formed of single sheets of metal, with permanent channels between the body and head, in combination with stops or plates E and F, secured across the ends of the bars, substantially as herein described.

2. In a skylight, the frame having the hollow bars formed in a single piece and perforated upon their sides, in combination with a cap, F, having a flange, F', forming an air-channel, substantially as herein described.

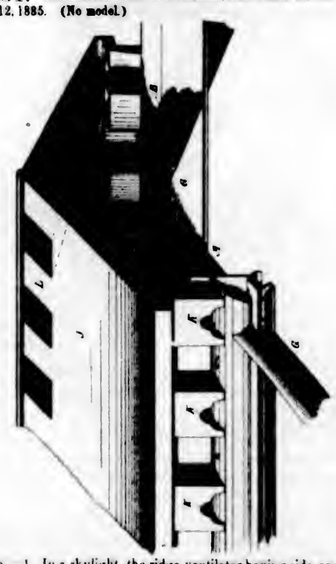
3. In a skylight, the frame with hollow perforated bars formed in a single piece, having their upper and lower ends open, and the caps E and F, extending across these ends, in combination with the hollow arched caps or ducts H, and the perforations I, and the flange F', substantially as herein described.

4. In combination with a skylight-frame, as herein described, the stop F, provided with a flange, F', forming an air-channel, substantially as herein described.

5. A skylight-bar formed of a sheet of metal folded at its center, so as to form a deep and open head or upper portion, and a similar body with spaces or channels for the reception of the glass, formed by the vertical rib extending between the head and body, the lower edges of the

sheet being turned outward and upward to form gutters at the bottom and below the plane of the glass and separate from it.

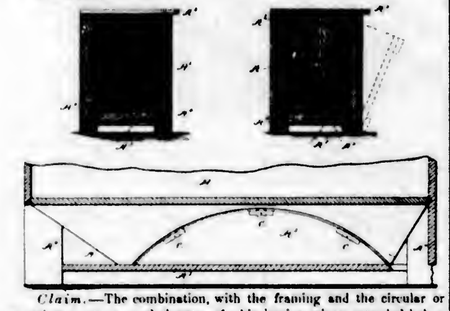
334,651. SKYLIGHT. JOS. F. FORDERER, San Francisco, Cal. Filed Nov. 12, 1885. (No model.)



Claim.—1. In a skylight, the ridge-ventilator having side openings, K, and the roof-passages L, extending from near the ridge on one side to a point beneath the overhanging eaves upon the other, substantially as herein described.

2. In a skylight, the hollow bars B, formed with opening G, and the ridge-ventilator J, having openings K and passage L, substantially as herein described.

334,652. BIN. JAS. D. GAILOR, Ahnapee, Wis. Filed Sept. 11, 1885. (No model.)



Claim.—The combination, with the framing and the circular or curved supports secured thereto, of a bin having wings extended below its bottom and recessed to fit and slide upon the semicircular supports, whereby in its operation the bin moves bodily inward or outward upon said supports in a curvilinear path, substantially as shown, and for the purposes set forth.

334,653. POST-HOLE DIGGER. WILLIAM GIBBS and ELMER W. GIBBS, Canton, Ohio. Filed Sept. 4, 1885. (No model.)

Claim.—1. In a post-hole digger, the combination, with a handle, a shovel pivoted to the lower end thereof, a bail pivoted to the opposite side edges of the shovel in front of the handle, and a rod pivotally connected

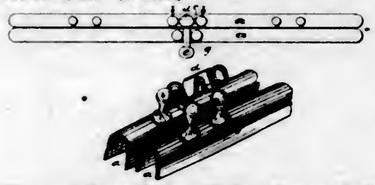




with the bail, of a lever pivoted to the handle in the position shown and connected with the rod, and adapted to be turned so as to rest alongside of said handle, substantially as set forth.

2. In a post-hole digger, the combination, with the handle, the ferrule B, having the bifurcated shank, and the shovel pivotally secured to said shank, of the bail pivoted to the opposite side edges of the shovel, the lever pivoted to the handle in the position shown, and the rod pivotally connected to the bail and lever, all of the above parts combined substantially as set forth.

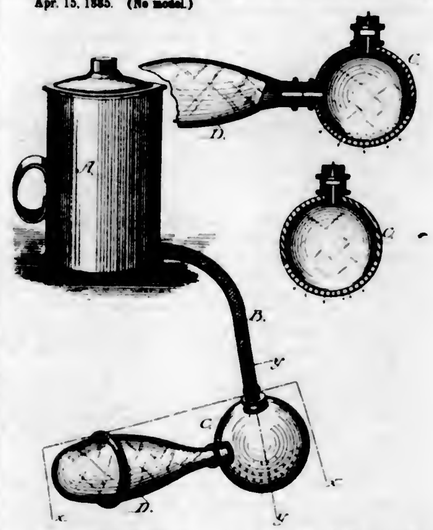
334,654. BAG-FRAME FASTENING. AUGUST GOERTZ, Newark, N. J. Filed Nov. 9, 1885. (No model.)



Claim.—1. The combination, with the sections *a a*, of a bag or satchel, studs *b b*, a pivotal pin, *c*, tongue *d*, having a notch, *e'*, and finger-piece, and a catching portion, *f*, on the section co-operating with that carrying the said tongue, all said parts being arranged and combined substantially as herein set forth.

2. In combination, studs *b b*, adapted to be secured to one bag-frame section, a pin carried by said studs, a tongue working on said pin and having an inclined slot to engage a catch on the co-operating section of the frame, substantially as set forth.

334,655. SPRINKLER. MORRIS GOLDMAN, Pittsfield, Mass. Filed Apr. 15, 1885. (No model.)

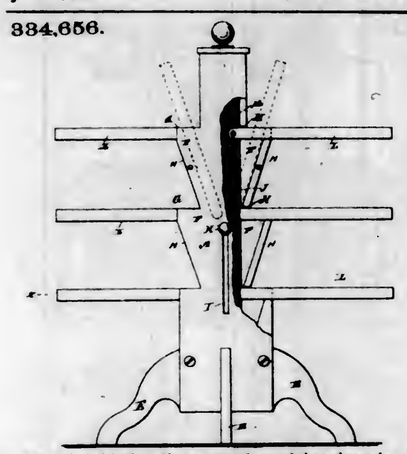


Claim.—In a sprinkler, the reservoir A and the flexible pipe B, in combination with the perforated nozzle or sprinkler C, having a valve at its inlet, and a bulb, D, connected to and projecting at right angles from the nozzle, the liquid entering both nozzle and bulb, and being forced through the perforations in said nozzle by the compression of the bulb, as herein described.

334,656. CLOTHES-DRIER. CHARLES GOODYEAR and WILLIAM MORSE, Warren, Pa. Filed Feb. 24, 1885. (Model.)

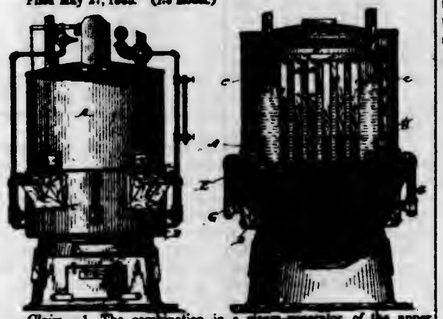
Claim.—In a clothes-bar, the combination, with an upright having the offsets F, and the sides H, inclined from the outer ends of the offsets down toward the vertical central line of the upright, of a slide, J, between the uprights, which slide has beveled recesses in the side edges,

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and bars pivoted in the said recesses and passed through openings in the offsets, substantially as herein shown and described.

334,657. STEAM-GENERATOR. CHARLES GORTON, New York, N. Y. Filed May 27, 1885. (No model.)



Claim.—1. The combination, in a steam-generator, of the upper portion provided with the annulus E, fuel-pockets C, and fire-pot D', substantially as set forth.

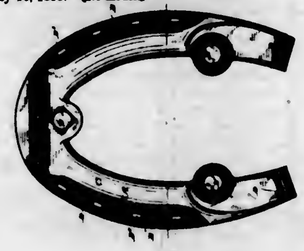
2. A steam-generator consisting of the upper section having the annulus, and the lower standing section forming the fire-pot, in combination with the fuel-reservoir and the connecting-tubes, arranged substantially as set forth.

3. A steam-generator consisting of the upper and lower sections connected together by water-circulating tubes, a fuel-reservoir between said sections, and a furnace having slanting inner walls, with the grate, all arranged for joint operation substantially as set forth.

4. A steam-boiler consisting of the upper section having the long and short series of tubes, an annular chamber forming the bottom of the return-smoke chamber, and also the top of the fuel-reservoir, in combination with the fuel-pockets and the fire-pot, substantially as set forth and described.

5. The combination, in a steam-generator, of the upper and lower sections, as described, the flat annular chamber located beneath the short tubes and over the fuel-reservoir, the depending annulus with the fire-pot, substantially as set forth.

334,658. DUPLEX HORSESHOE. ARNOLD C. HAWES, Norwich, Conn. Filed July 16, 1885. (No model.)



Claim.—1. A hoof-plate having on its outer edges raised flanges pierced with nail-holes, which flanges are separated from each other at the toe and terminate in the rear at a point forward of the heel of the shoe, substantially as described.

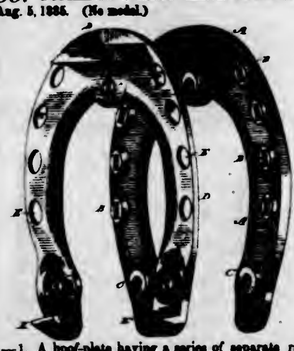
2. A duplex horseshoe composed of a hoof-plate having on its outer edges raised flanges pierced with nail-holes, said flanges being interrupted at the toe, and not extending to the heels, and a shoe-plate the outer edges of which register with the flanges on the hoof-plate, and may project between said flanges at the toe and at the heel to the full width of the shoe, substantially as described.

3. A duplex horseshoe having in combination a hoof-plate provided on its outer edges with raised flanges pierced with nail-holes, and a shoe-plate corresponding in periphery therewith, except where narrowed to correspond with the flanges of the hoof-plate, the said plates being secured together by one or more screw-bolts passing through interlocking hubs and recesses formed on the adjacent faces of the plates.

4. A duplex horseshoe having in combination a hoof-plate provided with raised flanges pierced with nail-holes, said flanges being interrupted at the toe and at the heel, and a metallic shoe-plate, shaped as described, provided with calks or bearings which are integral therewith, and which project between and past said flanges on the outer edges of the hoof-plate, both at the toe and at the heels, whereby the greatest separation of the calks or bearings may be obtained which the length of the shoe permits.

5. A duplex horseshoe having in combination a hoof-plate provided with raised flanges pierced with nail-holes, and a metallic shoe-plate, shaped as described, provided with one or more calks or bearings integral therewith, said shoe-plate projecting by and between the flanges on the hoof-plate to the outer edge of the latter, both at the toe and at the heels, the two plates composing the shoe being registered and held together by one or more interlocking hubs and recesses on their adjacent surfaces and by one or more bolts, substantially as described.

334,659. DUPLEX HORSESHOE. ARNOLD C. HAWES, Norwich, Conn. Filed Aug. 5, 1885. (No model.)



Claim.—1. A hoof-plate having a series of separate raised bosses pierced with nail-holes, substantially as described.

2. A duplex horseshoe composed of a hoof-plate having a series of separate raised bosses pierced with nail-holes, and a shoe-plate covering the whole surface of the hoof-plate and containing a series of holes adapted to receive the separate bosses on the hoof-plate, substantially as described.

3. A duplex horseshoe having in combination a hoof-plate provided with a series of separate raised bosses pierced with nail-holes, a shoe-plate covering the whole surface of the hoof-plate and containing a series of holes adapted to receive the separate bosses of the hoof-plate, and one or more screw-bolts serving to hold the two plates together.

4. In a duplex horseshoe, the improved support for each nail-head, consisting of a raised boss which contains a nail-hole and an enlarged recess for the nail-head, substantially as described.

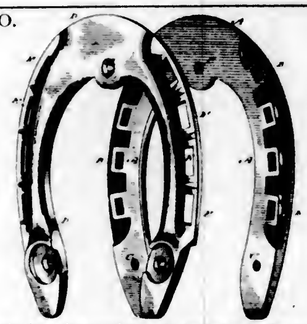
334,660. DUPLEX HORSESHOE. ARNOLD C. HAWES, Norwich, Conn. Filed Aug. 7, 1885. (No model.)

Claim.—1. A hoof-plate having a rabbeted cross-section, and provided with a series of separate bosses rising from the thinner part of the plate, substantially as described.

2. A duplex horseshoe composed of a hoof-plate having a portion of its under surface depressed or removed, so as to form a rabbet, and a shoe-plate, the upper surface of which is coincidently rabbeted, so as to fit into and against the rabbet on the hoof-plate.

3. A duplex horseshoe composed of a hoof-plate having a rabbeted cross-section and provided with a series of separate bosses rising from the thinner part, a shoe-plate fitting into and against the rabbet on the hoof-plate, and containing a series of holes fitting over and around the separate bosses on the hoof-plate, and one or more screw-bolts serving to hold the two plates together.

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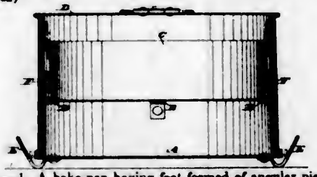
4. A duplex horseshoe consisting of a hoof-plate having a rabbet or offset on its under surface, with nail-bosses projecting therefrom, and a shoe-plate with one or more openings surrounding and fitting against the bosses on the depressed part of the hoof-plate, substantially as described.

334,661. AIR-HEATING FURNACE. JOHN M. HESS, Philadelphia, Pa. Filed Nov. 14, 1884. (No model.)



Claim.—The combination of the fire-pot B, heating-cylinder C, provided with a dished end, J, air-pipe G, and conical plate J', to thoroughly diffuse the warm pure air issuing from the upper end of the pipe G, substantially as shown and described.

334,662. BAKE-PAN. GUSTAV L. HEIDERER, Philadelphia, Pa., assignor of one-half to Charles Kaufmann, same place. Filed Apr. 11, 1885. (No model.)

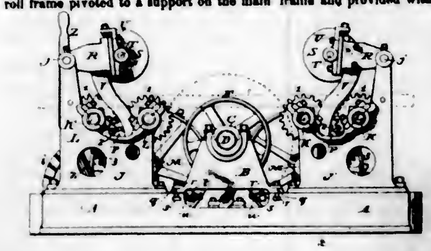


Claim.—1. A bake-pan having feet formed of angular pieces secured at one end thereof to the bottom of said pan, a portion of each of the said angular pieces extending upward alongside but not in contact with the pan, forming handles therefor, in combination with a cover having sides reaching to the bottom of the pan, substantially as and for the purpose set forth.

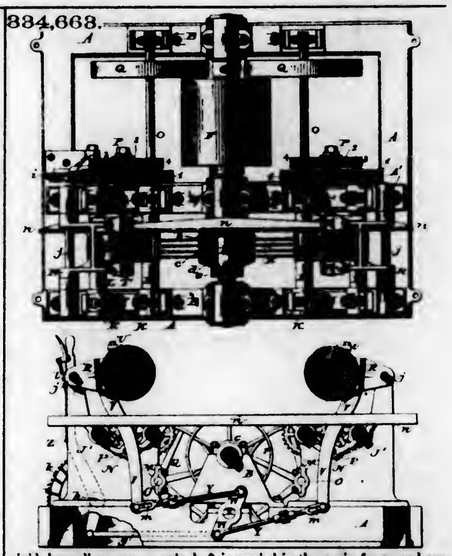
2. A bake-pan having an interior bead at the side thereof and a ledge on the inner side, and provided with an inner vessel with a perforated bottom, resting on said ledge, the outer side of said inner vessel having spring-catches attached thereto, adapted to bear against the side and to engage the bead of said pan, all of said parts being arranged and combined for preventing accidental lateral motion of the inner vessel and vertical displacement of the same, substantially as described.

334,663. CIRCULAR SAWING MACHINE. GEORGE M. HEKLEY, Milwaukee, Wis., assignor of one-half to Edward P. Allis & Co., same place. Filed July 12, 1884. (No model.)

Claim.—1. In a sawing-machine, the combination of a main frame, an arbor mounted therein and provided with one or more saws, a press-roll frame pivoted to a support on the main frame and provided with a



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rigid depending arm, a rock-shaft journaled in the main frame and provided with a radial arm, a pitman connecting the press-roll arm and the radial arm of the rock-shaft, and slotted at one end to slide upon the pitman which connects said depending arm, and a lever applied to the rock-shaft and serving to rock the same, and thus to move the press-roll.

2. In a sawing-machine, the combination of a main frame, a saw-arbor bearing saws and mounted in said frame, a press-roll frame pivoted to a support above the bed or table of the main frame, bearing a press-roll and provided with a rigid depending arm, a rock-shaft mounted in bearings in the main frame and provided with a radial arm, and a pitman connecting the arm of the press-roll frame and the radial arm of the rock-shaft, and having a sliding or loose connection with one of said parts, whereby the press-roll is permitted to automatically adapt itself to slight inequalities in the material passing beneath it.

3. The combination, substantially as described, of a supporting-frame, a saw-arbor and feed-rolls mounted therein, a press-roll carried by a swinging support above the feed-rolls, said support being provided with a depending arm, a rock-shaft journaled in the frame, a cross-head secured to said rock-shaft, and a pitman having one end slotted to receive a pin projecting from the depending arm of the press-roll and journaled at the other end of the cross-head.

4. In a sawing-machine, the combination of frame A, a saw-shaft, D, journaled upon the frame and provided with saws E, feed-rolls L, mounted in uprights J J' on the frame, and guide n, having screws o at each end, passing through the upright J, whereby the guide can be moved to and from the saws, as described.

5. In a sawing-machine, the combination of a frame, a saw-arbor mounted therein, and feed-rolls, a series of circular saws mounted upon said arbor and each having a thin annular portion with parallel faces immediately around their eye, thence increasing in thickness to the bases of the teeth or the gullets, thence of uniform thickness to the periphery, substantially as described, whereby clearance-space is afforded for the lumber between the saws.

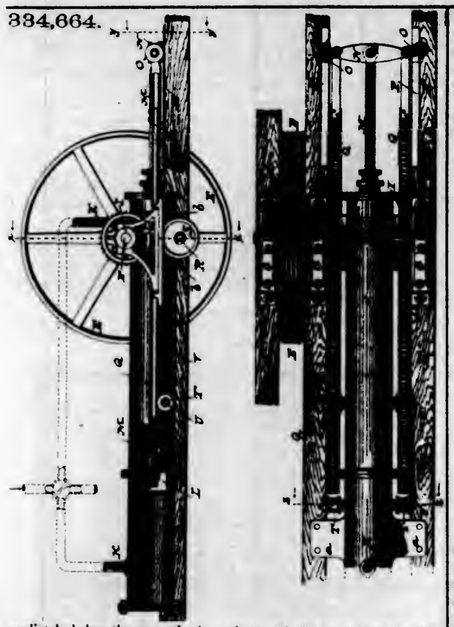
334,664. FEED-CARRIAGE FOR SAW-MILLS. GEORGE M. HEKLEY, Milwaukee, Wis., assignor of one-half to Edward P. Allis & Co., same place. Filed Oct. 16, 1885. (No model.)

Claim.—1. In combination with a saw-mill carriage and its propelling band or rope, a drum about which said band is wound, as shown, a shaft carrying said drum and mounted in a fixed frame, gear-wheels secured to said shaft, a fluid-cylinder, a reciprocating piston within said cylinder, a cross-head attached to said piston, and rack-bars connected to said cross-head and meshing with said gear-wheels.

2. In combination with a saw-mill carriage and its propelling band or rope, a shaft fixed relatively to said carriage, a drum and gear-wheels mounted upon said shaft, a fluid-cylinder, a piston and piston-rod therefor, rack-bars carried by said piston-rod and meshing with the gear-wheels, and a valve adapted to admit fluid to opposite ends of said cylinder alternately.

3. In combination with a saw-mill carriage and its propelling-band, a shaft mounted in a stationary frame, a drum and gear-wheels mounted upon said shaft, a fluid-cylinder provided at each side with wheels immediately below the gear-wheels, a piston and piston-rod for said cylinder, rack-bars carried by said piston-rod and meshing with the gear-wheels, and a valve admitting fluid to opposite ends of the cylinder alternately.

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4. In combination with a saw-mill carriage and its propelling-band, a shaft mounted in a stationary frame, a drum and gear-wheels carried by said shaft, a fluid-cylinder provided at each side with grooved guiding-wheels, as S T, a piston and piston-rod for said cylinder, rack-bars carried by said piston-rod and meshing with the gear-wheels, a guiding strip or rib, as V, secured to said rack-bar, and a valve for admitting fluid to opposite ends of the cylinder alternately.

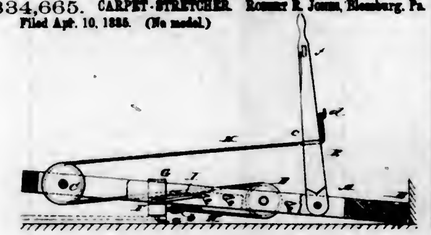
5. In combination with a saw-mill carriage and its propelling-band, a shaft mounted in a stationary frame, a winding-drum and gear-wheels carried by said shaft, a fluid-cylinder, a piston and piston-rod therefor, a cross-head secured to said piston-rod and provided with supporting-wheels O, rack-bars secured to said cross-head and meshing with the gear-wheels, and a valve adapted to admit fluid to opposite ends of the cylinder alternately.

6. In combination with a saw-mill carriage and its propelling-band, a shaft mounted in a stationary frame, a winding-drum and a gear-wheel secured to said shaft, a fluid-cylinder, a piston and piston-rod therefor, a rack-bar attached to said piston-rod and meshing with the gear-wheel, and a valve for admitting fluid to opposite ends of said cylinder alternately.

7. In a feed mechanism for saw-mill carriages, the combination, with a rack-bar composed of a cast-metal toothed portion and a wrought-metal guiding and strengthening strip, of supporting-wheels beneath the same, a gear-wheel meshing with the rack, and devices for reciprocating said rack-bar.

8. In a feed mechanism for saw-mill carriages, the combination, with a rack-bar, supporting-pulleys beneath said bar, and a gear-wheel meshing with the latter, the gear-wheel or the bar being flanged, as shown, of devices for reciprocating said rack-bar and causing the travel of the carriage.

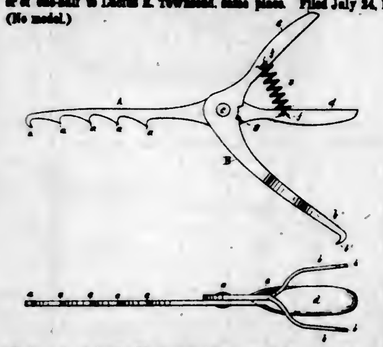
334,665. CARPET-STRETCHER. ROBERT R. JONES, Bloomsburg, Pa. Filed Apr. 10, 1885. (No model.)



Claim.—1. The combination, in a carpet-stretcher, of a mortised bar having a spur in one end, two sheaves and a lever journaled in the mortises of the said bar, a transverse cross-bar carrying pointed hooks, and a rope extending around the sheaves and connecting the cross-bar with the lever, as herein specified.

2. In a carpet-stretcher, the combination, with the actuating-lever E and rope H, of the hooks *d f*, projecting from the said lever E, as herein described.

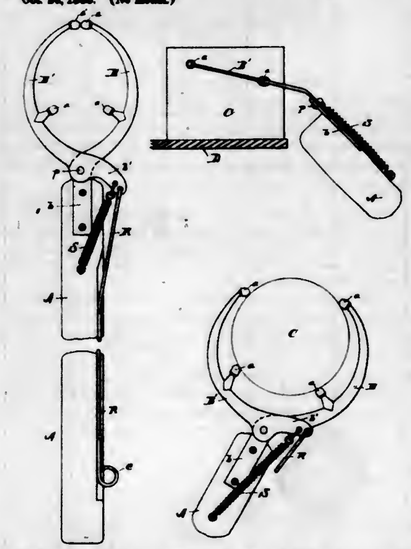
334,666. POT-LIFTER. JOHN B. KELLER, Minneapolis, Minn., assignor of one-half to Lacius B. Townsend, same place. Filed July 24, 1885. (No model.)



Claim.—1. A kettle-lifter comprising a straight or slightly-curved bar provided with teeth and a handle, an angular bar pivoted thereto and having forks provided with hooks at their ends on one of its arms and a handle on the other arm, and a spring between said handles for holding them apart, substantially as set forth.

2. In a kettle-lifter, the toothed bar A, having handle *d*, the bar B, having forks *b*, provided with hooks *b'*, and the handle *e*, the pivot *c*, and spring *s*, constructed and arranged substantially as and for the purpose set forth.

334,667. GRAPPLE. WILLIAM P. KIRCHER, Covington, Ky. Filed Oct. 26, 1885. (No model.)

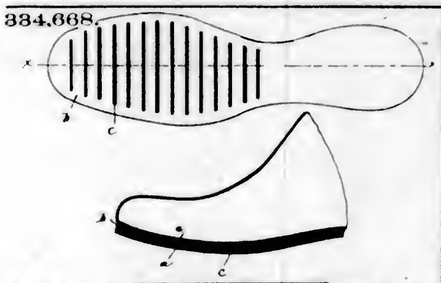


Claim.—The improved lifting utensil embodying in combination the pivoted jaws B B', provided with inner friction-surfaces, preferably of rubber or similar elastic material, the handle A, spring S, and actuating-rod R, substantially as set forth.

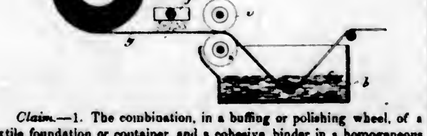
334,668. BOOT OR SHOE SOLE. WILLIAM A. KNIPE and LUTHER DAY, Haverhill, Mass. Filed Nov. 10, 1885. (No model.)

Claim.—The combination, with an outer sole, of an inner layer attached to said sole and slotted or grooved transversely, said slots or grooves being formed by the removal of a portion of the material of said inner layer, as set forth.

334,668.



334,669. BUTTON OR GLOVE-FASTENER. ARTHUR KÖHLER, Chemnitz, Saxony, Germany. Filed Oct. 20, 1885. (No model.)



Claim.—1. The combination of the wire-shanks d' d^2, crossed to form two loops, and carrying balls k' k^2, with the stud s and with the ball k^2, all being so constructed that the stod s and the shank of ball k^2 are embraced by said loops, substantially as specified.

2. The combination of wire shanks d' d^2, crossed to form two loops, with the balls k' k^2 k^3 and with the sted s, bell g, and plates p' q', substantially as specified.

334,670. ANTI-FRICTION JOURNAL-BEARING. WAYNE KRATHER, Allentown, Pa. Filed Dec. 16, 1885. (No model.)



Claim.—1. In an anti-friction journal having in its central bore a bushing which forms recesses in the end of the hub, two conical bearings having less diameter than the bushing, and a lock-sleeve interposed between said conical bearings, in combination with rolls, substantially as set forth.

2. The combination, in an anti-friction journal, of the hub having in its bore centrally located, a bushing, a spindle passing through said bushing which forms a conical bearing, the conical nut on the other end of said spindle, and a sleeve for locking the conical nut to the spindle, and rolls working in the recesses formed between the bushing and the conical bearings, substantially as described.

3. The combination, in an anti-friction journal, of the hub having a central bore, a bushing located therein, conical bearings and rolls adapted to work in the recesses formed in a hub, and a spindle having prolongations to carry noiseless cushioning devices, substantially as set forth.

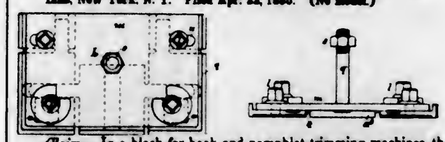
334,671. BUFFER AND POLISHER. JOSEPH B. LAUGHTON, Brooklyn, N. Y., assignor to himself, and Adolphus F. Bishop and John H. Aiken, Norwalk, Conn. Filed Apr. 24, 1885. (No model.)

Claim.—1. The combination, in a buffing or polishing wheel, of a textile foundation or container and a cohesive binder in a homogeneous composition, substantially as described.

2. The combination, in a buffer or polisher, of a textile foundation or container, a cohesive binder, and a polishing or abrading filler in a homogeneous composition, substantially as described.

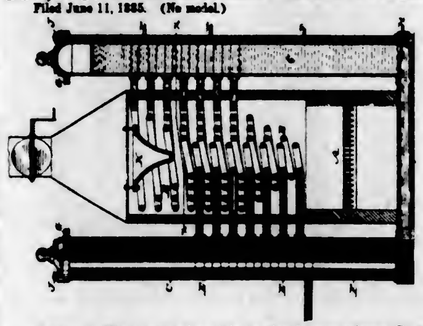
3. In a buffer or polisher consisting of a textile foundation or container, a cohesive binder and a polishing or abrading filler, in combination, said buffer having a limited area surrounding the hole for the mandrel from which the filler is excluded, substantially as described.

334,672. BOOK AND PAMPHLET TRIMMING MACHINE. CHAS. A. LEES, New York, N. Y. Filed Apr. 22, 1885. (No model.)



Claim.—In a block for book and pamphlet trimming machines, the combination of the following elements: the sections a, a^2, a^3, a^4, and a^5, an upper plate, m, provided with the openings n and o and standard q, and the bolts l, all constructed and operating substantially as and for the purposes set forth.

334,673. STEAM-BOILER. HARVEY J. MITCHELL, Hathorough, Pa. Filed June 11, 1885. (No model.)



Claim.—1. The combination of the sectional water-columns C, nest of coils B, and deflector K, substantially as described.

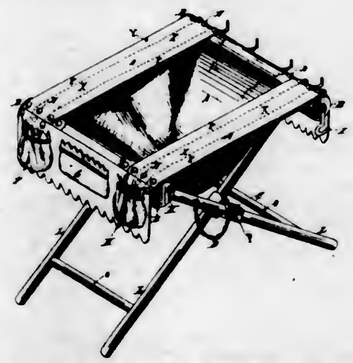
2. The combination of the sectional water-columns C, nest of coils B, having their convolutions increasing in width from the bottom upward, and having inlets in the said columns, one above the other, substantially as shown.

3. In a steam-boiler, a water-column composed of annuli having angular contiguous faces, thereby forming rabbet-joints, the said annuli being secured in position by bolts passing through flanges on the outer one thereof, substantially as described.

4. A furnace with a coil inclosed therein, a water column or columns outside of said furnace, and a water-base, the ends of the coil passing through the side of the furnace and connected with the column, the coil, column, and base being in communication, substantially as described.

5. A furnace having a water-column formed in sections, a water-base, and bolts or screws connected with the cap of said column, and ears or flanges on said base, substantially as described.

334,674. BATH OR BATHING APPARATUS. SARAH C. NEAL, New York, N. Y. Filed Jan. 24, 1885. (No model.)

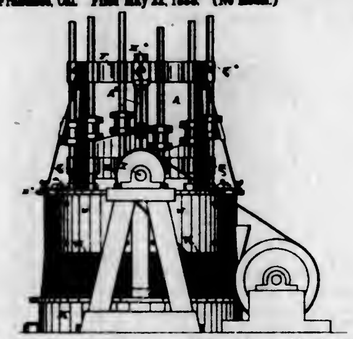


Claim.—1. In a folding bath-tub, a supporting-frame consisting of two sets of legs which cross each other and are pivotally connected, cross-bars or spreaders which connect the upper ends of each pair of said legs, and flexible inelastic bands which permanently connect the opposite ends, respectively, of said cross-bars or spreaders, in combination with a water-proof flexible receptacle for liquids, which is permanently secured between said bands at opposite edges to said cross-bars or spreaders, substantially as set forth.

2. A folding bath-tub or receptacle for liquids, made of flexible water-proof material, supported on two opposite sides by permanent attachment to rigid supporters or spreading bars B B, the latter provided with legs, and having its two other sides gathered up and drawn inward and plaited into the folds Y Y, and the ends of such folds Y Y secured to the said bars B B, substantially as described.

3. A folding bath or receptacle for liquids, consisting of a piece of flexible material formed into a pouch by gathering two opposite edges thereof into the folds Y Y, and securing such folds together with the unfolded edges thereof to bars or spreaders provided with pivoted legs adapted to be folded together, substantially as described.

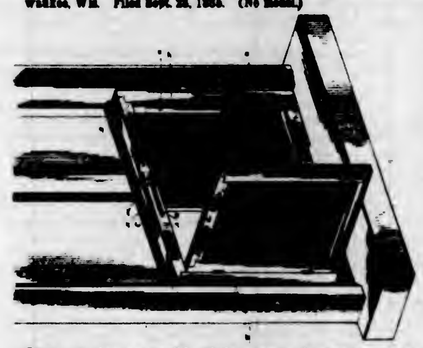
334,675. CIRCULAR ORE-STAMP BATTERY. ALMARIN B. PAUL, San Francisco, Cal. Filed May 22, 1885. (No model.)



Claim.—1. In a circular ore-stamp battery, the combination of the battery-frame X A, the bed-plate B, having the flange B^2, cut-away openings C, and boxes g, the upright columns A^2, and upper plate, F, having boxes g^2, that form guides for the stamp-stems above the tappets, as set forth.

2. A circular stamp-battery comprising the bed or mortar X, the columns A, screens W, and close sides w, the bed-plate B, having the cylindrical rim and boxes or guides, the stamp-stems, the upright columns A^2, and the upper plate, F, having rim and stamp-stem guides, the cam G, and the driving-gear G^2, the shaft I, and the pinion I^2, as set forth.

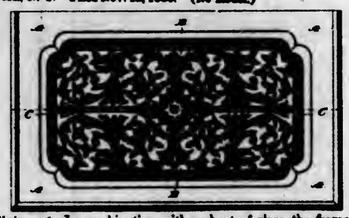
334,676. WINDOW-SCREEN. PIERRE FARRIS and HENRI FARRIS, Milwaukee, Wis. Filed Sept. 28, 1885. (No model.)



Claim.—1. In an extensible window-screen, the combination of a frame-half having the ends of its top and bottom pieces reduced and formed with longitudinal slots, a frame-half having the ends of its top and bottom pieces reduced and sliding upon the other reduced ends, and provided with screws projecting through the slots and having thumb-nuts, and strips of tin pivoted at their ends upon the screws between the reduced ends of the top and bottom pieces of the frame-halves, as and for the purpose shown and set forth.

2. In an extensible window-screen, the combination of a frame-half having the ends of its top and bottom pieces reduced and longitudinally slotted, a frame-half having the ends of its top and bottom pieces reduced, and provided with screws projecting through the slots and having thumb-nuts, strips of sheet metal pivoted at one end upon the said screws between the reduced ends, a screen hinged to the end piece of one frame-half, and turn-buttons pivoted upon the screws and holding the hinged screen closed, as and for the purpose shown and set forth.

334,677. ORNAMENTAL GLASS PANEL. CHAUNCEY D. PEASE, New York, N. Y. Filed Nov. 12, 1885. (No model.)



Claim.—1. In combination with a sheet of glass, the frame having a suitable panel-opening, cloth between the glass and the frame, a sheet or piece of cloth behind the glass, and a suitable beating-board fastened to the frame beyond the edges of the glass, substantially as and for the purpose described.

2. In an ornamental panel, in combination with the sheet of glass, the frame provided with a suitable panel-opening, and adapted to receive and hold the glass sheet at its edges, springs bearing against the edges of the sheet, substantially as and for the purpose described.

3. In combination with the sheet of glass for an ornamental panel, the frame provided on its back with strips to hold the glass from movement with relation to the panel-opening, and springs or cushions between the strips and the edges of the glass, substantially as and for the purpose described.

4. In combination with the panel-frame made of one piece of wood, and provided with a suitable panel-opening, the glass sheet or plate overlapping the rear edges of the opening, means, substantially as described, for engaging and holding the edges of the glass which run across the grain of the wood, and springs pressed against and holding the other sides or edges of the glass, substantially as and for the purpose described.

5. In combination with the sheet of glass having on its front face the raised ornamental design in flashed glass, the panel-frame made of one piece of wood, with the panel-opening cut therein, suitable shoulders on or attached to the back of the frame, adapted to engage the edges of the glass which run across the grain of the wood of the frame, and spring-blocks or cushions engaging and holding the sides or edges of the glass running with the grain, substantially as and for the purpose described.

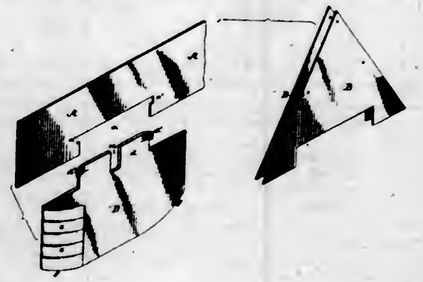
6. In combination with the ornamental sheet of glass, the panel-frame made of one piece of wood with the panel-opening cut therein, a packing of soft material between the frame and the front side of the glass, strips attached to the frame and engaging the sides of the glass sheet which run across the grain of the panel-strips on the frame parallel to the other sides of the sheet, and spring-cushions between these latter strips and the sides of the glass, substantially as and for the purpose described.

7. In combination with the panel-frame A, provided with panel-opening C, the sheet of glass B, the cloth between the glass and the frame, the strips D D and D′ D′, the rubber blocks d d between the sides of the glass, and strips D′ D′, the cloth back of the glass fastened to the strips and the board backing G, all substantially as and for the purpose described.

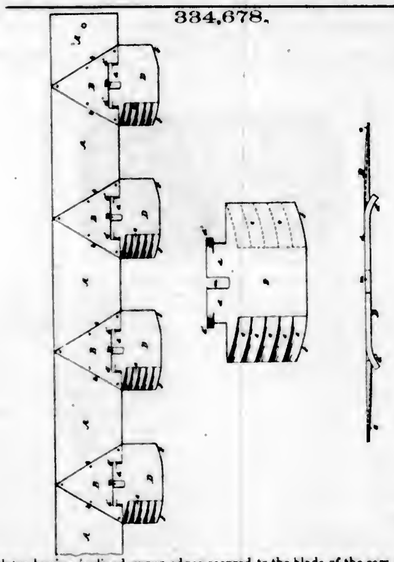
334,678. STONE-SAW. JAMES PEDGOTT, Philadelphia, Pa. Filed Nov. 6, 1885. (No model.)

Claim.—1. A stone-saw blade provided with projecting thickened teeth, and having on its sides immediately over the teeth inclined shoulders b, as and for the purpose set forth.

2. The combination of the saw-blade and thickened teeth with side



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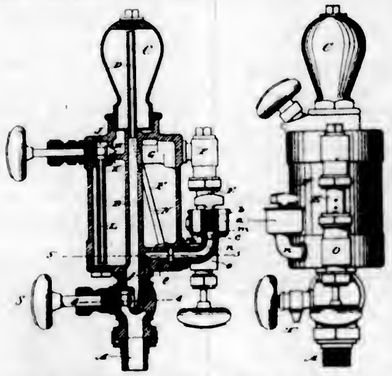
plates having inclined upper edges secured to the blade of the saw above the teeth, substantially as specified.

3. A stone-saw blade provided with teeth having on their sides inclined grooves *e*, as and for the purpose described.

4. The combination of the saw-blade having inclined shoulders *b* on its side, with teeth having inclined or beveled under surfaces, substantially as set forth.

5. The blade having recesses with notches at the corners thereof, in combination with teeth having notches *m* extending into their bodies, and having projections adapted to the recesses and notches in the blade, all substantially as and for the purpose set forth.

334,679. LUBRICATOR. ROBERT RUDDY, Mount Vernon, assignor to the Nathan Manufacturing Company, New York, N. Y. Filed Nov. 23, 1885. (No model.)

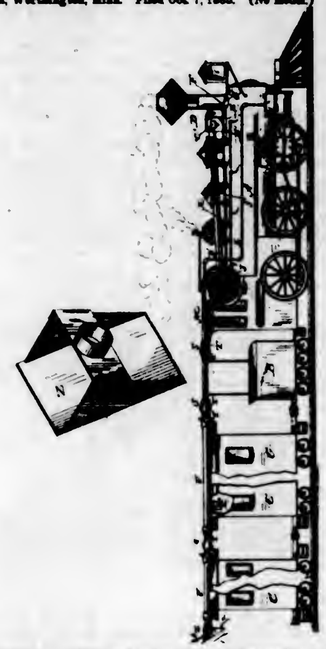


Claim.—1. A sight-feed lubricator provided with an auxiliary oiler of the described form and construction screwed into the lower part of the lubricator and communicating by its own separate and independent channel with the steam-conduit at a point below or beyond the steam-valve.

2. A sight-feed lubricator having the independent channel *e f*, located as described, and provided with the auxiliary oiler *a*, as and for the purposes hereinbefore set forth.

3. A lubricator having the oil and condensing chambers F C, the steam-channel B, and the steam-conduit A, and provided with an auxiliary oiler and a channel therefor independent of and separate from the channel B, but communicating also with the steam-conduit A, as and for the purposes hereinbefore set forth.

334,680. SPARK ARRESTER AND CONDUCTOR. THOMAS J. SIMPSON, Worthington, Minn. Filed Oct. 7, 1885. (No model.)



Claim.—1. The combination, with the locomotive provided with the circular chamber communicating both with the smoke-stack and with the smoke-conducting tube, of the herein-described angular damper, formed of the two wings meeting at an angle to adapt it to be held more firmly in its adjusted position by the pressure of the current of smoke, &c., as the latter enters either the smoke-stack or the smoke-conducting tube, substantially as shown and set forth.

2. The combination, with the smoke-conducting tube for railroad-locomotives and the combined suction and forcing fan arranged to create or assist the draft through the said tube, of the exhaust-steam pipes arranged to convey the exhaust-steam into the said smoke-conducting tube, for the purpose set forth.

3. The combination, with the smoke-conducting tube for railroad-locomotives, of the exhaust-steam pipes arranged to convey the exhaust-steam into the said smoke-conducting tube, for the purpose set forth.

4. The combination, with the smoke-conducting tube for railroad-locomotives and the combined suction and forcing fan arranged to create or assist the draft through the said tube, of the exhaust-steam pipes arranged to convey the exhaust-steam from each side of the locomotive and discharge it into the said smoke-conducting tube to the rear of the said fan, substantially as set forth.

5. The combination, with the smoke-stack, of the smoke-conducting tube communicating therewith and formed at a point immediately to the rear of its curved forward end with the herein-described spark box or arrester having the perpendicular rear side, and arranged to operate in the manner and for the purpose shown and set forth.

6. The combination of the combined suction and forcing fan located on the rear portion of the locomotive, the double smoke-conducting tubes arranged to conduct the smoke, gas, &c., from the smoke-stack of the locomotive and discharge the same into each eye or central end opening of the fan-chamber or casing, and the single smoke-conducting tube extending rearwardly from the said fan, substantially as described, for the purpose set forth.

7. The combination, with the tube-sections having the flanged ends, of the herein-described coupling devices, consisting each of a coupling-sleeve of suitable length having its interior diameter exactly equal to the exterior diameter of the said flanged ends of the tube-sections, and provided with the spring-catches arranged to operate as described, substantially as set forth.

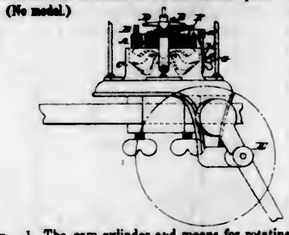
8. The combination, with the tube-sections having the flanged ends and the coupling-sleeves having the retaining spring-catches, of the herein-described non-combustible sack or envelope, adapted to be secured in its operative position by the spring-hoops or catches secured adjustably around each end of the same, as and for the purpose shown and described.

9. The combination, with the smoke-conducting tube, of the herein-described protecting-cap, secured to the rear open end thereof, and having the slanting back and the open front and top portions, and adapted to operate in the manner and for the purpose shown and set forth.

10. The combination, with the smoke-conducting tube having the spark-box at its forward end and the combined suction and forcing fan arranged, as described, in the said tube to create or assist the draft, of the valve-controlled port or opening formed immediately above the said spark-box in the side of the smoke-conducting tube, for the purpose set forth.

11. The combination of the herein-described air-tight smoke-conducting tube, communicating at its forward end only with the furnace of the locomotive, the combined suction and forcing fan arranged, as described, in the said tube to assist the draft, and the exhaust-steam pipes arranged to convey the exhaust-steam into the said smoke-conducting tube, as and for the purpose shown and set forth.

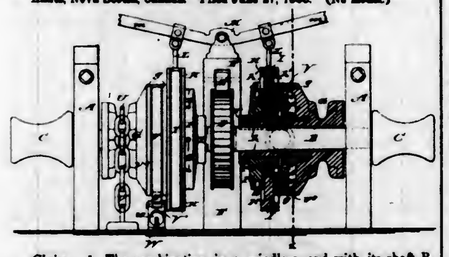
334,681. KNITTING-MACHINE. JOSEPH SHALLEY, Philadelphia, Pa., assignor of one-half to James H. Gemerall, same place. Filed May 29, 1884. (No model.)



Claim.—1. The cam-cylinder and means for rotating the same, in combination with the needle-cylinder, needles having pivoted latches, and a finger, the latter consisting of two limbs, one horizontal and the other vertical, the vertical being secured to the cam-cylinder, and the horizontal adjustably secured to the vertical, substantially as and for the purpose set forth.

2. The cam-cylinder and means for operating the same, in combination with the needle-cylinder, needles having pivoted latches, the finger, the fastening-screw G, and the stop H, substantially as and for the purpose set forth.

334,682. WINDLASS. FREDERICK W. THOMSON, Maitland, County of Hants, Nova Scotia, Canada. Filed June 27, 1885. (No model.)



Claim.—1. The combination, in a windlass, and with its shaft B, of a grab, G, loose thereon and having a rim-flange, *g*, the brake-shoes O, fitted for movement to and from said flange, screw-shafts *n*, pinions N on shafts *n*, and the adjusting gear-wheel P, substantially as herein set forth.

2. The combination, in a windlass, and with its shaft and a loose grab thereon, having a projecting rim-flange, of a drive-wheel, a friction driving-band on said wheel, and brake-shoes fitted on the drive-wheel so as to move to and from the flange on the grab, substantially as herein set forth.

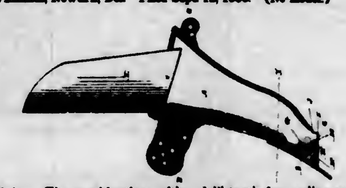
3. In a windlass, the combination, with the shaft B and a grab, G, loose thereon and having a rim-flange, *g*, of a band-wheel, H, fixed to shaft B, brake-shoes O, fitted to wheel H and adapted to said flange *g*, pinions N on shafts *n*, supported in hub A of wheel H and threaded into shoes O, a disk-wheel, P, having a gear, E, meshing with pinions N, and a friction driving-band encircling wheel H, substantially as herein set forth.

4. The combination, in a windlass, of the shaft B, grabs G, loose on shaft B, and having flanges *g*, wheels H, driving-bands I on wheels H, brake-shoes O, adapted to flanges *g*, screw-shafts *n*, pinions N on said shafts, a gear-wheel, P, meshing with pinions N, links J, connected to bands I, blocks K, rods L, and brakes M *m*, all constructed and adapted for operation substantially as herein set forth.

5. In a windlass, the drive-wheel H, made with a peripheral groove to receive the driving-band I, and with face projections h^4, adapted to support and guide the brake-shoes O, substantially as herein set forth.

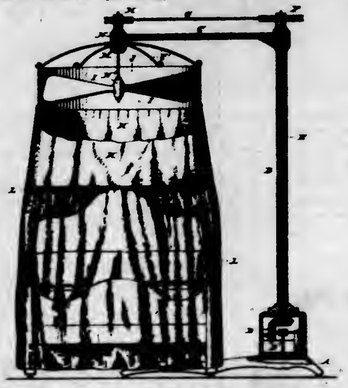
6. In a windlass, the combination, with the shaft B, grabs G, and a friction brake mechanism, substantially as described, connecting said wheels to the drive-wheels H, of the boldback-bands V, substantially as herein set forth.

334,683. DRILL-TUBE FOR SEEDING-MACHINES. GEORGE M. WILLIAMS, Newark, Del. Filed Sept. 12, 1885. (No model.)



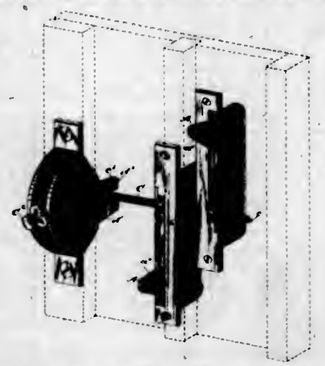
Claim.—The combination, with a drill-tooth for seeding-machines, of an upwardly-extending shield secured to the upper front end and sides thereof, said shield being directly below the seed-orifice of the planter, substantially as and for the purpose set forth.

334,684. SUMMER FAN. GEORGE H. AYLWORTH, Jacksonville, Fla. Filed Nov. 12, 1885. (No model.)



Claim.—The combination of a horizontal rotating fan, a drum surrounding the same, a cloth depending from the drum for attachment with a mosquito-bar, and suitable means for supporting the whole and rotating the fan, substantially as specified.

334,685. SASH-FASTENER. JOHN Y. BASSELL, Leesburg, Va., assignor to Rebecca G. Bassell, same place. Filed Oct. 3, 1885. (No model.)



Claim.—1. In combination with the locking-dogs and their actuating-spindle, the escutcheon provided with a slotted plate or furcated bearing for the said spindle, and adapted to be applied to the inner stop, substantially as described.

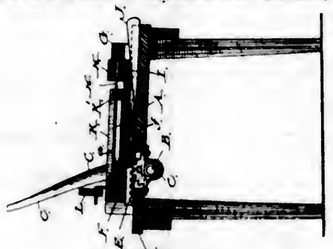
2. In a sash-fastener such as described, the combination, with the movable dogs and the spindle for engaging the dogs, provided with an actuating-lever bearing an extensible section, of the slotted locking-plate co-operating with the extensible section of the actuating-lever and the

furcated plate formed integral therewith, and embracing the spindle, and forming an adjustable bearing therefor, substantially as described.

3. In combination with the spindle for actuating the dogs, its arm or lever, and the shoulders or flanges on said spindle, the detachable escutcheon provided with the slotted plate or furcated bearing for application to the spindle, substantially as described.

4. The combination, as herein set forth, with the spindle C, its operating-lever C', movable section C², and locking-plate D, of the independently-supported locking-dogs A, provided with reversed and inclined surfaces a^4 and engaging surfaces a^2, each of said dogs being provided with a spring, an opening to receive the spindle C, and a shoulder, a^3, for engaging the feather on said spindle when the latter is oscillated in one direction, substantially as and for the purpose set forth

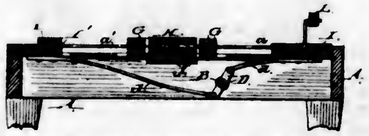
334,686. CIGAR-PERFORATOR. CHARLES A. BAYLER and BENJAMIN F. STRICKLER, York, Pa. Filed Oct. 16, 1885. (No model.)



Claim.—1. The guide-frame K, provided with the needle-bar K', and the cross-head F, in combination with the crank-bent needles *a a* and plate L, all constructed to operate substantially as and for the purpose set forth.

2. The cross-head F, provided with the rack E, the plate L, and crank-bent needles *a a*, in combination with the shaft B, lever C, and cog-segment D, all constructed to operate substantially as and for the purpose set forth.

334,687. CIGAR-BUNCH TURNER AND PERFORATOR. CHARLES A. BAYLER and BENJAMIN F. STRICKLER, York, Pa. Filed Dec. 4, 1885. (No model.)



Claim.—1. The table A, provided with the shaft B, lever C, double lever-arm D, and rods *d*, in combination with the mold H, needle-bars *a a'*, and cross-heads I I', carrying two series of needles, substantially as and for the purpose described.

2. The table A, provided with the shaft B, lever C, double lever-arm D, and rods *d*, in combination with an adjustable mold, needle-bars, and two cross-heads carrying two series of perforating-needles, one square and having cranked ends, and the other round, substantially as and for the purpose described.

3. In a cigar-bunch turner and perforator, the combination, with a series of horizontally-arranged round needles, of a horizontal series of opposing needles, square in cross-section, and having cranked rear ends, whereby the latter needles are adapted to be semi-rotated, a mold, suitable reciprocating cross-heads, and mechanism for drawing the needles to and fro, substantially as and for the purpose described.

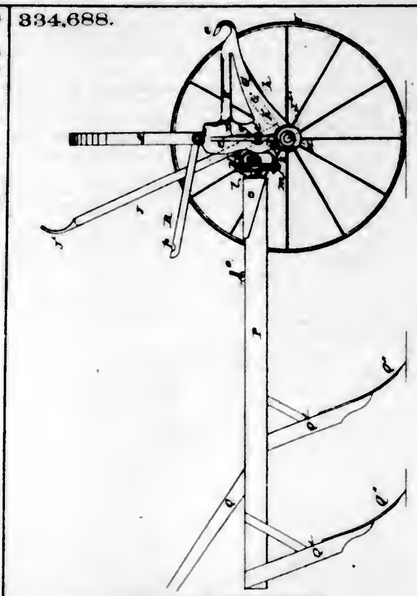
334,688. TONGUELESS CULTIVATOR. BYRON C. BRADLEY, Chicago, Ill. Filed Nov. 27, 1883. (No model.)

Claim.—1. The combination of the wheel-spindle bracket, the drag-bar J, having a projecting end provided with a notch, and a latch, K, for locking the drag-bar in both its elevated and depressed positions, the said drag-bar and latch being pivoted to the wheel-spindle bracket, substantially as described.

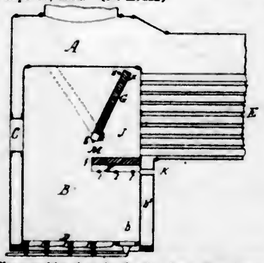
2. In a cultivator, the combination of an arch, a pipe-box provided with a slot to engage said arch, a drag-bar or runner, and a locking pawl or device for the drag-bar or runner for holding the arch in a vertical position and supporting the plow-beams when elevated, substantially as described.

3. In combination with a wheel-supporting bracket and plow-beams the upper bar, A A', the lower bar, B B', beneath the bar A A' and having its lower portion extended to form vertical portions between the parts A' B', the posts C, and the pipe-box L, substantially as described.

334,688.

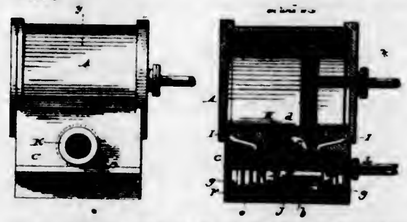


334,689. LOCOMOTIVE-FURNACE. THOS. A. BUCKLAND, St. Louis, Mo. Filed Sept. 19, 1884. (No model.)



Claim.—The combination, in the fire-box of a locomotive, of the bridge F and the diaphragm G, said bridge extending across the farther end of the fire-box, just below the flues E, and said diaphragm extending across the fire-box laterally, and from the farther upper corner of the fire-box downward and forward toward the fire-door end of the fire-box, but not down to the level of the bridge, substantially as described.

334,690. BALANCED VALVE. ANDREW CRAIG, Williamsport, Pa., assignor to Riley & Melbrish, same place. Filed May 11, 1885. (No model.)



Claim.—1. In a steam-engine, the combination of a steam-valve having four faces, and set with its diagonal axis radial to the cylinder, and a V-shaped cut-off valve seated upon a reduced portion of said steam-valve, substantially as shown.

2. In a steam-engine, the combination of a steam-chest having a V-shaped valve-seat, a slide-valve having four faces, two adapted to fit said seat, a V-shaped cap-plate fitting the other two faces of the valve, and a V-shaped cut-off valve applied to the slide-valve, substantially as shown.

3. In combination with cylinder A and steam-chest C, slide-valve

D, having enlarged ends and reduced middle portion, and cut-off valve E, applied to said reduced portion, substantially as shown.

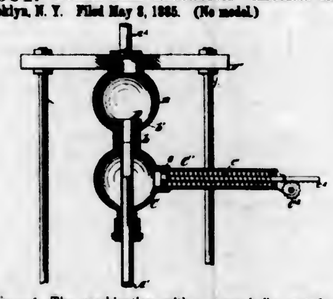
4. The combination, substantially as shown, of cylinder A, steam-chest C, hollow rectangular valve D, open at both ends, and V-shaped cut-off valve E, mounted upon the reduced central portion of valve D, substantially as described and shown.

5. In combination with cylinder A, steam-chest C, ports I I, and steam-inlet H, steam-valve D, having reduced middle portion and enlarged ends, cut-off valve E, seated upon the reduced portion of valve D, and caps F G, all combined and arranged to operate substantially as described and shown.

6. In combination with cylinder A and valve-chest C, steam-valve D, having reduced middle portion provided with slot *j*, and cut-valve E, provided with lug *i* and rod L.

7. In a steam-engine, the combination of a cylinder, a valve-chest, suitable inlet and outlet ports, a slide-valve having bearing-faces at each end and reduced between the said faces, and an independent bearing-block bearing upon said reduced portion, as shown.

334,691. BOILER-FEED REGULATOR. MIDDLETON CRAWFORD, Brooklyn, N. Y. Filed May 8, 1885. (No model.)



Claim.—1. The combination, with a steam-boiler and feed-water connections, of a valve having a tubular thermostatic stem arranged upon the plane of the desired water-level, as and for the purposes set forth.

2. The combination, with a boiler and feed-water connections, of a valve arranged with a tubular thermostatic stem upon the approximate plane of the desired water-level, and steam and water connections whereby the expansion of said stem by reason of contact of steam will open the valve to operate the feed devices, and the contraction of said stem by reason of contact of water will close the valve and allow the feed to be cut off, as set forth.

3. In combination with a steam-boiler and feed-water connections of two connected steam-chambers, a thermostatic valve arranged in the upper chamber and extending through the lower chamber, and a piston connected with the lower chamber, arranged to operate the feed-water connections to inject water into the boiler when the said valve is off its seat in the upper chamber, as set forth.

4. In a steam-boiler regulator, substantially as described, the combination, with the boiler, chambers, as B C, and pipe-connections, of a valve having a tubular thermostatic stem, *b*, arranged upon an incline with the boiler, as and for the purposes specified.

5. In a steam-boiler appliance, as described, the chambers B C and neck *b*, having valve-seat *b'*, a steam-pipe connecting the upper chamber with the steam above the water-level, and a water-pipe extending from the interior of the boiler below the water-level through the chamber C, and carrying a valve having a hollow stem of expansive metal, all combined and operating substantially as and for the purposes set forth.

6. In an automatic boiler-regulator, substantially as described, the valve-seat *b'*, arranged on a line with the desired water-level in the boiler, a hollow thermostatic valve, as D, a steam-chamber to receive steam when the water lowers and the valve is lifted, and a piston operated by such steam to open the feed-water devices, as set forth.

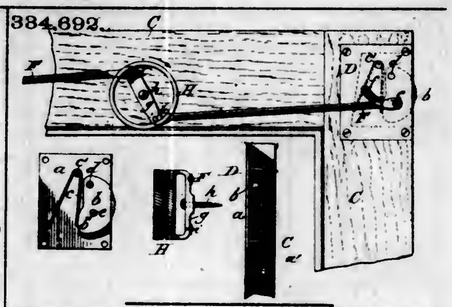
7. The casting B C *b b'*, as described, combined with the boiler, the pipes A' A^2, the valve D, the piston, and feed-water connections C^3, all arranged and operating as and for the purposes set forth.

334,692. SASH-HOLDER. MARTIN A. COTTER, Galveston, Tex. Filed Oct. 3, 1885. (Model.)

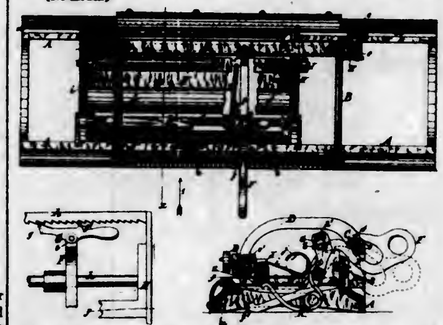
Claim.—1. In a holding or supporting device for sliding windows or blinds, the tubular operating-handle H, milled upon the outside and provided with the cross-bar *g*, adapted to receive the pivot upon which the handle turns and one end of the rods by which the holding-cams are operated, as set forth.

2. In a sash-holding device, the combination of the tubular operating-handle H, connecting-rods F, cam-cases D, provided with curved slots *f*, the cams *b*, and springs *c*, said cams being placed upon opposite sides of the sash, and the mechanism arranged to operate both cams simultaneously by turning the handle, as set forth.

334,692.



334,693. TYPE-WRITING MACHINE. JOHN F. DAWSON, New York, N. Y., assignor to Lee S. Burridge, same place. Filed Apr. 24, 1885. (No model.)



Claim.—1. In a type-writer, and in combination with the type thereof, a movable paper-carrying support, and a stylus on said support acting as a handle to bring the impression-point of the paper into alignment with the type whose impression is to be given.

2. In a type-writer, the combination, with a longitudinally-immovable type-plate and letter-plate, and with a paper-carrying support movable parallel with the said plates, of a stylus mounted upon the said support to bring the impression-point of the paper opposite to the letter to be printed, said stylus being also depressible to cause the impression, and said support moving laterally, by the rising of the stylus after each impression, a distance corresponding to the space between two adjacent letters.

3. In a type-writer, the combination, with the stationary letter-plate C, arranged in the front of the base-plate and having a notch, *c*, opposite each letter, and with the stationary type-plate D, having the type on its under side, and arranged at the rear of the base-plate, and with the paper-carrying frame H, arranged to slide upon the base A underneath and parallel with the type-plate, of the stylus F, fulcrumed upon the said sliding frame H, and provided at its handle end with the point *f* to guide it through the notches *c*, and at its opposite end with the flat impression-surface *f'*, which, on depressing the handle, rises and presses the paper against the type, substantially as hereinbefore set forth.

4. In a type-writer, the combination of the base A, provided with the stationary letter-plate C and type-plate D, substantially as described, the paper-carrying sliding frame H, provided longitudinally with the rod *h* and rack *h'*, the stylus F, fulcrumed and slidable upon the said rod *h*, and provided with the spring K, and the points *f f'* to work in connection with the said plates C D, respectively, and the feed-pawl G, pivoted to the said stylus and provided with the teeth *g g'*, to engage the teeth of the rack *h'*, all substantially as and for the purpose set forth.

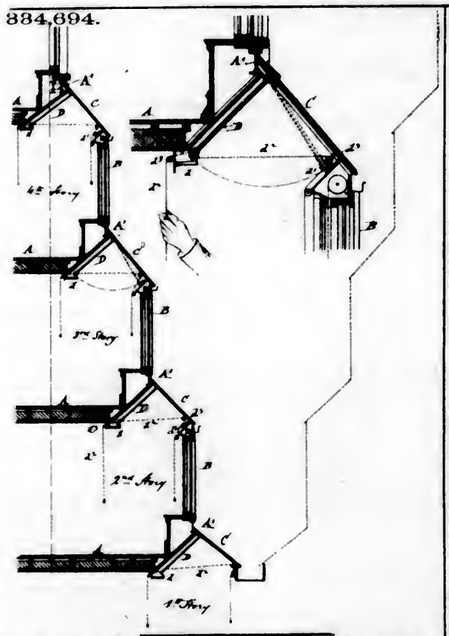
334,694. CONSTRUCTION OF BUILDINGS. THEODORE DE LEMOS and ALBERT W. CORDES, New York, N. Y. Filed June 5, 1885. (No model.)

Claim.—1. A building the court-wall of which is made with step-shaped offsets for different stories, the offsets being covered by skylights, substantially as set forth.

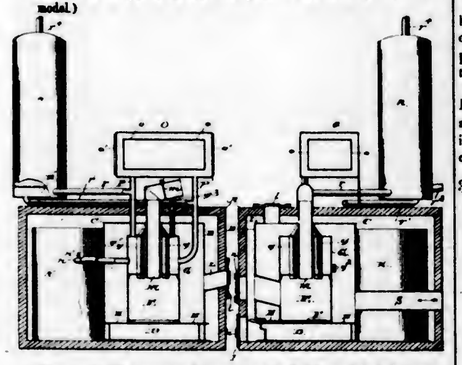
2. A building the court-wall of which is made with step-shaped offsets for different stories, the walls of the offsets being supported on beams above the floors, and covered by inclined skylights, substantially as set forth.

3. A building the court-wall of which is made with step-shaped offsets for the different stories, skylights covering the offsets, hinged shutters, and devices, substantially as described, for locking the shutters in open or closed position, substantially as set forth.

334,694.



334,695. HEATER. WILLIAM H. DIEBLOW, Troy, Pa., assignor of one-half to Joseph Jeralemon, same place. Filed Mar. 20, 1885. (No model.)



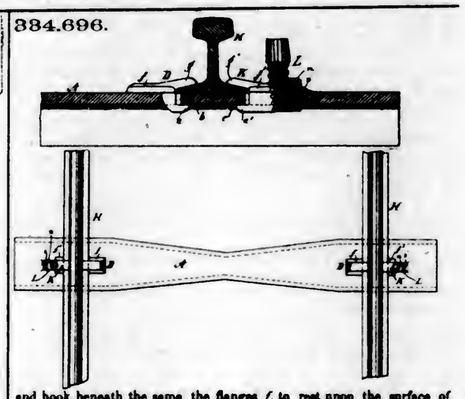
Claim.—1. The combined heater and boiler comprising the outer casing, C, the combustion-chamber E, and steam-boiler G, formed together and of like diameter, the boiler being above the combustion-chamber, and the said boiler and combustion-chamber being of smaller diameter than the outer casing, whereby an air-space is left surrounding them, pipes for supplying air to this space to be heated, and pipes for conveying the heated air therefrom, the smoke-pipe M, leading from the combustion-chamber up through the center of the boiler, and the flues *g* in the boiler, arranged around the smoke-pipe and communicating therewith at their upper ends, below the top of the outer casing, substantially as described

2. The combination, with the casing A, of the steam-boiler and air-heater inclosed in the casing, and the oven having double walls, located above and outside the casing, and the pipes P and P', connecting the oven with the boiler, to circulate steam around the oven and support the same, substantially as described.

334,696. FASTENING FOR RAILWAY-RAILS. HENRY L. DE ZEEW, Geneva, assignor to himself, Albert G. Lucas, Utica, and William D. Barrall, Waterloo, N. Y. Filed Apr. 27, 1885. (No model.)

Claim.—1. The combination, with the rail and tie-plate having mortises therein, of the clip-piece D, having a hook, *g*, to pass over the flange of the rail, a hook, *e*, to pass through the mortise in the tie-plate

334,696.



and hook beneath the same, the flanges *f*, to rest upon the surface of the tie-plate at each side of the hook *g*, a clip-piece, K, similar to the clip-piece, D, and a wedge-acting device passing through the mortise between the clip-piece K and the metal of the tie-plate, substantially as set forth.

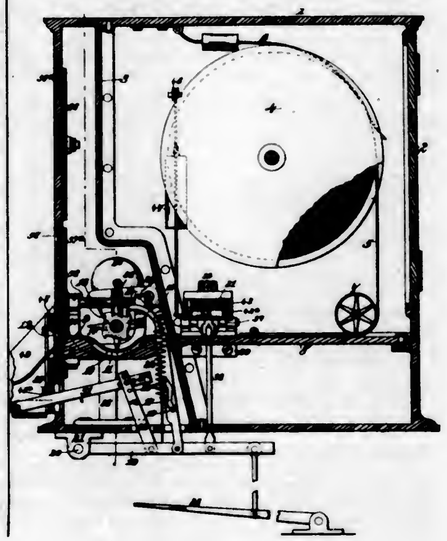
2. The combination, with the rail and tie-plate, of the clip K, having a hook, *e'*, passed through a slot in the tie-plate flanges *f'*, to rest upon the tie-plate, and a hook, *g'*, to pass over the rail-flange, and a wedge-acting device in the mortise between the clip-piece K and the metal of the tie-plate, substantially as set forth.

3. The combination, with the rail and tie-plate having mortises through the same, of the clip-piece K, having a hook, *e'*, passed through one of the mortises in the tie-plate, flanges *f'*, to rest upon the top of the tie-plate, and a hook, *g'*, to pass over the rail-flange, and a tapering screw, L, introduced between the movable clip-piece K and the metal of the tie-plate, to press the clip-piece K to its place and hold the rail, substantially as set forth.

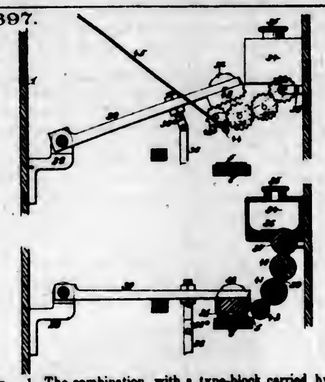
4. The combination, with the tie-plate and rail, of a clip-piece, K, having a hook to pass below the tie-plate, and a hook to retain the flange of the rail, and screw-thread indentations at the outer end of the clip-piece, and a tapering screw introduced between the clip-piece and the tie-plate, substantially as set forth.

5. The combination, with the tie-plate and rail, of the clip-piece D, having hooks *e g* and flanges *f*, the clip-piece K, having hooks *d' g'* and flanges *f'*, and screw-thread indentations at the end, and the tapering screw L, introduced between the clip-piece K and the thickened recessed portion behind the screw, substantially as set forth.

334,697. APPARATUS FOR PRINTING TICKETS. J. PARK DUNN, New York, N. Y. Filed Sept. 30, 1884. (No model.)



334,697.



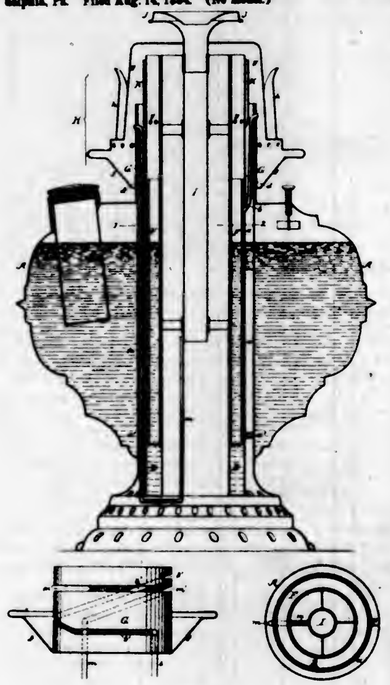
Claim.—1. The combination, with a type-block carried by a pivoted arm, of toothed plates mounted on said arm, an ink-roll having gears meshing with said plates, a feed-roll supplied from an ink-fount, and intermediate rolls geared to each other and to the ink-roll, said rolls being journaled in oscillating arms, substantially as described.

2. The combination, with a feed-wheel, of a ratchet mounted upon the shaft of said wheel, a pawl actuating said ratchet and having a three-way slot, a rigid guide-stud engaging with said slot, and a spring-actuated lever operating the pawl, substantially as described.

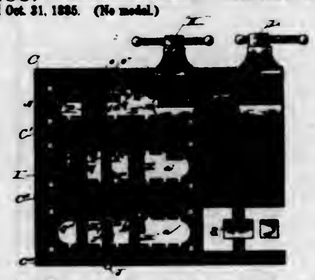
3. The combination, with a locked casing divided into two separate compartments, of feeding and registering mechanism wholly contained within one of said compartments, which is permanently closed, and a continuous ticket-strip with printing mechanism contained within the other, to which access is had by means of a suitable door in the casing, substantially as described.

4. The combination, with a feeding device for drawing a continuous ticket-strip from the spool upon which it is wound and printing and registering mechanism wholly contained within a locked casing, of a foot-lever operating the same and a gong sounded at each complete action of said lever, substantially as described.

334,698. LAMP. MICHAEL B. DYOTT and CHARLES G. DYOTT, Philadelphia, Pa. Filed Aug. 14, 1884. (No model.)



334,699. MECHANICAL MOVEMENT. JAMES FIRST, Baltimore, Md. Filed Oct. 31, 1885. (No model.)

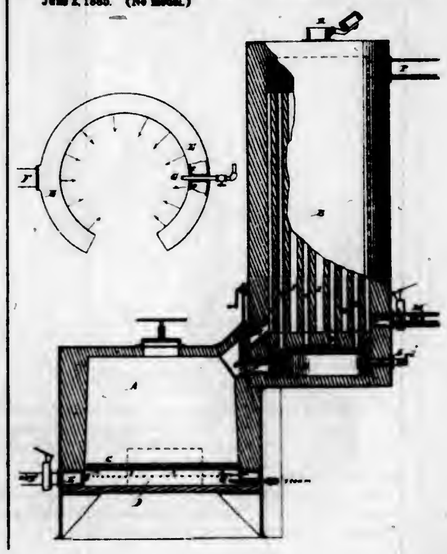


Claim.—1. The combination, with plate A, having ribs C' C'', of the four bars placed at the sides of a rectangle and provided with levers or equivalent devices for moving them simultaneously or separately toward a central included point, the opening being at all times complete, substantially as set forth.

2. The combination, with the plate A, having ribs C' C'' C''', of the bars D E F G, provided with grooved blocks D', E', F', and G' on one of their ends, respectively, each adjacent bar sliding in the groove in the adjoining block, and each block having a groove in its under side to engage bars H H', as set forth.

3. In combination, plate A, having its ribs C' C'' C''', the bars H H' H'', the fulcrum blocks and levers, and the bars D E F G, having doubly-grooved blocks D' E' F' G' on their ends, all arranged and operating as set forth.

334,700. GAS APPARATUS. ARTHUR O. GRANGER, Philadelphia, Pa., assignor to the United Gas Improvement Company, same place. Filed June 2, 1885. (No model.)



Claim.—1. A generator provided with steam and blast pipes, in combination with the superheater having two sets of flues, one of which is external to the other, and connecting flues by which the products of combustion pass through one set of flues and the water-gas passes through the other set of flues, and valves to control the passage of the products of combustion and water-gas to the said flues, substantially as and for the purpose specified.

2. A generator provided with steam and blast pipes, in combination with a superheater having one or more fixing-flues through which the water-gas passes, and a space or flue exterior to said fixing-flues, and through which products of combustion pass to heat the fixing-flues, and connecting valved passages by which said flues are connected with the generator, and hydrocarbon-nozzle to admit carbureting-fluid to the water-gas prior to its passage through the fixing-flues, substantially as and for the purpose specified.

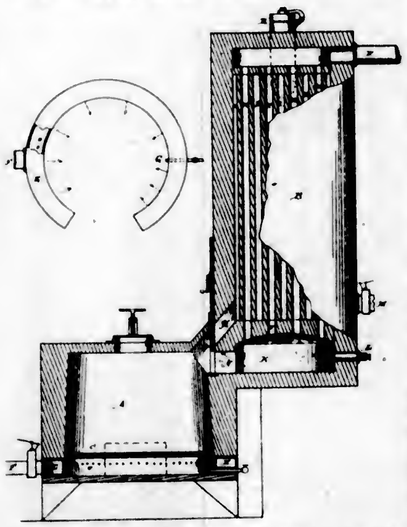
3. A generator provided with steam and blast pipes, in combination with a superheater having one or more fixing-flues through which the water-gas passes, and a space or flue exterior to said fixing-flues, and through which products of combustion pass to heat the fixing-flues, connecting-passages by which said flues are connected with the generator, a hydrocarbon-nozzle to admit carbureting-fluid to the water-gas prior to its passage through the fixing-flues, and valve mechanism to automatically close one passage-way upon opening the other, and vice versa, substantially as and for the purpose specified.

4. A generator for water-gas provided with steam and blast pipes in combination with a superheater having two sets of flues, both communicating with the generator at one end and uniting at the other, a gas-outlet, and a valved chimney-flue, the products of combustion and water-gas from said generator being alternately passed through the respective sets of flues in the superheater, substantially as and for the purpose specified.

5. The combination of the generator A, provided with steam and blast pipes, with a superheater, B, having flues H and I, arch J, chamber K, passages N and N', and valve mechanism to control the openings through said passage-ways, substantially as and for the purpose specified.

6. The combination of the generator A, provided with steam and blast pipes, with a superheater, B, having flues H and I, arch J, chamber K, blast-pipe M, hydrocarbon-nozzle L, passages N and N', and valve mechanism to control the openings through said passage-ways, substantially as and for the purpose specified.

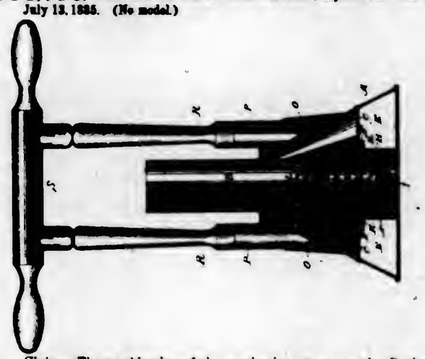
334,701. **PROCESS OF MANUFACTURING GAS.** ARTHUR O. GRANGER, Philadelphia, Pa., assignor to the United Gas Improvement Company same place. Filed Sept. 29, 1885. (No model.)



Claim.—1. The herein-described process, which consists in first passing the products of combustion from a water-gas generator heated by direct internal combustion through one set of flues of a superheater having two sets of flues, heating said superheater and raising the carbon of the generator to incandescence by said internal combustion, then passing the water-gas produced in said generator by the decomposition of steam through the other set of flues in the superheater, fixing the gas without bringing it into contact with any deleterious products or deposits from the generator produced when heating up, the said steps of heating up and producing water-gas in the generator being carried on alternately and independently of each other, substantially as and for the purpose specified.

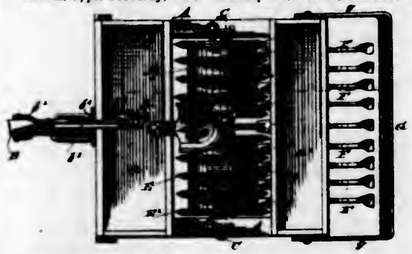
2. The herein-described process, which consists in first passing the products of combustion from a water-gas generator heated by direct internal combustion through one set of flues of a superheater having two sets of flues, heating said superheater and raising the carbon of the generator to incandescence by said internal combustion, then passing the water-gas produced in said generator by the decomposition of steam after being admixed with a hydrocarbon fluid or vapor through the other set of flues in the superheater, fixing the gas without bringing it into contact with any deleterious products or deposits from the generator produced when heating up, the said steps of heating up and producing water-gas in the generator being carried on alternately and independently of each other, substantially as and for the purpose specified.

334,702. **WASHING-MACHINE.** JAMES E. GRAY, Elyria, Ohio. Filed July 13, 1885. (No model.)



Claim.—The combination of the cup having the open tube B, the diaphragm, and the vertical radial partition-plates having the recesses F, with the valve-tube having the valve, and the depending bail-handle having lugs to enter recesses F, to lock the valve-tube in the tube B, substantially as described.

334,703. **COMBINED ROLLER AND PULVERIZER.** SAMUEL R HOOSER, Upper Sandusky, Ohio. Filed Sept. 26, 1885. (No model.)



Claim.—1. In an earth rolling and pulverizing machine, the combination of the main frame, the axle turning in bearings thereon, the rolling-cylinders turning on the axle, with the meeting edges of adjacent cylinders provided, respectively, with interior and exterior rabbets, the former adapted to lie closely within and against the latter, the pulverizing-disks with central openings, whereby they are adapted to fit over the interior rabbets and lie bound between the interior and exterior rabbets, the pulverizing-disks with central openings to fit over the axle, and lying against the outer side of the end cylinders of a set, and the rods with threaded ends and nuts thereon, whereby the cylinders and disks may be all tightly bound together or the cylinders alone may be bound together to form a continuous earth-roller, substantially as specified.

2. In an earth-pulverizing machine, the combination, with the main frame, of curved pulverizing-bars secured to the rear thereof, having their convex lower edges brought to a proper edge to pulverize the earth, and their rear ends twisted, so as to lie in oblique parallel planes and spread laterally the earth pulverized by their edges, substantially as specified.

3. In an earth-pulverizing machine, the combination, with the main frame, axle, and pulverizing-rollers composed of the rolling-cylinders and pulverizing-disks bound tightly together, of supplementary curved pulverizing-bars secured to the frame in rear of the rollers, having their convex lower edges properly edged to pulverize the earth, and their rear ends twisted, to lie in oblique planes and act as spreaders, substantially as specified.

4. In an earth-pulverizing machine, the combination, with the main frame, axle, and pulverizing-rollers composed of the rolling-cylinders and pulverizing-disks bound together, of supplementary curved pulverizing-bars pivoted to the main frame in rear of the rollers, with their front ends entering between the disks to form scrapers for the cylinders, their convex lower edges properly edged, to act as pulverizers, and their rear ends twisted, so as to lie in oblique planes and act as spreaders, substantially as specified.

5. In an earth-pulverizing machine, the combination, with the main frame, axle, and rollers, composed of the cylinders D and disks E E', of the pivoted pulverizing and spreading bars F, having the front ends, *f*, to act as cylinder-scrapers, and the spreading-frame G, pivoted to the rear end of the main frame, substantially as specified.

334,704. **CASE FOR EMBROIDERY-SILKS.** JOHN V. B. HOYLE, Springfield, Ohio. Filed Mar. 5, 1885. (No model.)



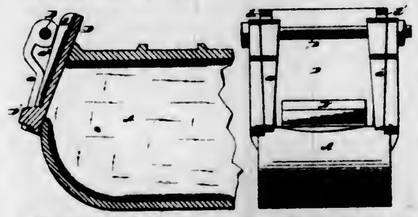
Claim.—1. In a case for silks, a card provided at one side with a series of detachable hooks or rings adapted to contain the silk in bunches, and at the other side with a swinging piece hinged to the said slide and adapted to be turned down upon the free ends of said bunches, substantially as set forth.

2. The combination, with the outer casing, of the cards provided at the rear with sliding pins adapted to slide in grooves in the ends of said casing, supports for holding the forward end of the cards when in the case, and the hinged strips provided with notches therein, and adapted to extend across the ends of said grooves when turned to a vertical position, and thus form a stop for the sliding pins, and adapted when turned to a horizontal position to open the ends of said grooves, so that the cards may be withdrawn, substantially as set forth.

3. The combination, with the outer casing provided on the inside at the respective ends with a series of horizontal grooves, and a hinged strip at the front adapted, when turned up, to close the ends of said grooves, of a series of cards provided with sliding pins adapted to slide in the grooves, and a hinged door adapted, when opened, to slide under the bottom of said casing and form a support for the sliding cards when withdrawn, substantially as specified.

4. The combination, with the outer casing provided on the inside, at the respective ends, with a series of grooves, and lateral projections between said grooves, of sliding cards adapted to rest on said lateral projections, and provided at the rear with sliding pins in said grooves, and stops for preventing the pins from coming out of said grooves, said cards being provided on each side with a longitudinal strip, one of said strips having detachable rings or hooks thereon, and the other provided with a swinging piece hinged thereto, substantially as set forth.

334,705. **CAR-AXLE-BOX COVER.** FRANKIN HYDE, Detroit, Mich. Filed Oct. 26, 1885. (No model.)

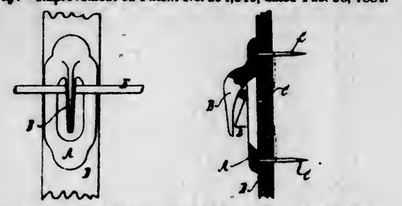


Claim.—1. The combination, with a car-journal box provided with grooved and recessed guideways, and a removable bolt passed through the upper ends of said guideways, of a wedge-shaped cover having wedge-shaped side flanges, and provided at its lower end with a transverse retaining-bar, substantially as described.

2. The combination, with a car-journal box having guideways provided with tapering grooves *a*' and recessed upper ends, *a*', of a wedge-shaped cover provided at its lower end with a retaining-bar, D', and having wedge-shaped side flanges, *d d*', and a removable bolt, B, secured in the upper ends of the guideways, substantially as described.

334,706. **TRELLIS-HOOK.** JOHN JUDD, Cherry Valley, N. Y. Filed Oct. 22, 1885. (No model.)

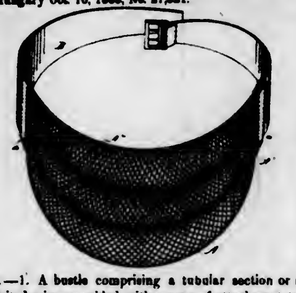
Brief.—Improvement on Patent No. 294,340, dated Feb. 26, 1884.



Claim.—1. A trellis-hook, A, consisting of a cast-metal base-plate having at its front a depending nose, B, and at its rear surface an upper and a lower attached spur, C, for connecting the hook with a slat to which the oblique cords of the trellis-frame are directly secured, substantially as described.

2. A trellis-hook, A, consisting of a cast-metal base-plate provided with a depending nose, B, and having its rear surface cast integral with the flexible spurs, to connect with a slat to which the oblique cords of the trellis-frame are secured, substantially as described.

334,707. **BUSTLE.** RENÉ KILIAN, Beverly, N. J. Filed July 2, 1884. (No model.) Patented in Belgium July 28, 1885, No. 69,736; in France July 28, 1885, No. 170,360; in England July 28, 1885, No. 9,073, and in Austria-Hungary Oct. 10, 1885, No. 27,821.

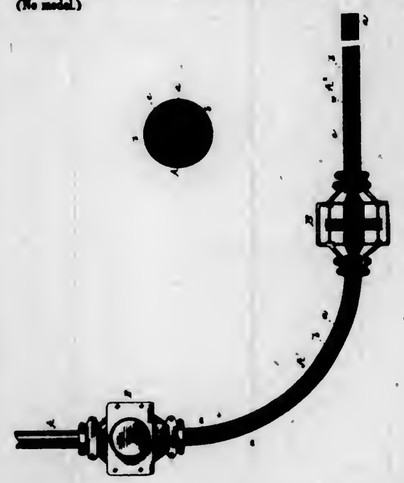


Claim.—1. A bustle comprising a tubular section or sections of braided or plaited wire, provided with means of attachment to a wearer or garment, substantially as set forth.

2. A bustle comprising a plurality of tubular sections of plaited or braided wire, secured to a waistband or fastening device, substantially as set forth.

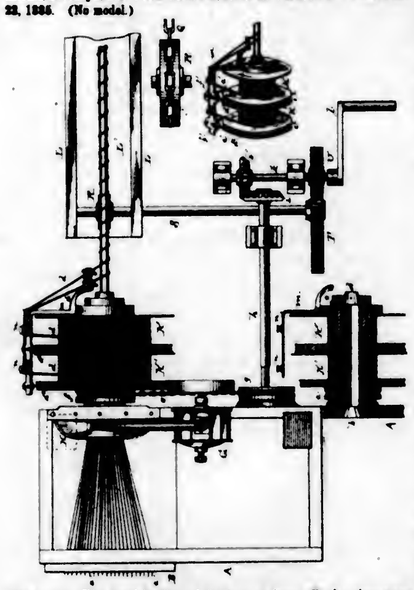
3. The combination, with a waistband or attaching device, of a bustle-body composed of a seamless section or sections of tubular form of braided or plaited wire, substantially as set forth.

334,708. **UNDERGROUND ELECTRICAL CABLE.** JOHN KRUESI, Brooklyn, and JOHN LANGTON, Jr., New York, N. Y. Filed June 23, 1885. (No model.)



Claim.—The combination, in a line of underground conductors, of straight tubes inclosing straight cables and bent tubes inclosing cables having one or more complete twists, so that the wires are in the same positions at opposite ends of said twisted cables, substantially as set forth.

334,709. MACHINE FOR MAKING ELECTRICAL CABLES. JOHN KRUESI, Brooklyn, and JOHN LANGTON, Jr., New York, N. Y. Filed June 22, 1885. (No model.)



Claim.—1. The combination of the box or frame B, the plate upon the front thereof and the die at the back thereof, the tank, the pump, and the connecting-pipes, whereby liquid insulation is poured upon the wires between said plate and said die, substantially as set forth.

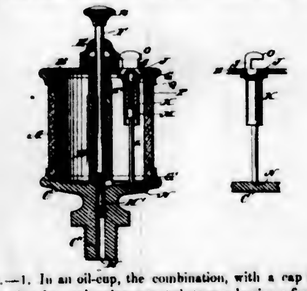
2. In a machine for making electrical conducting-cables, the combination of the die, the moving clamp for drawing the cable through the die, and the revolving reels for winding rope upon the moving cable, substantially as set forth.

3. The combination of the endless chain for drawing the cable, the revolving drum, and a common shaft for moving said parts simultaneously, substantially as set forth.

4. The combination, with the movable clamp for the cable, of means for revolving said clamp, substantially as set forth.

5. The combination, with the clamp for the cable, of the ratchet-wheel attached thereto, and a pawl and lever for turning said ratchet-wheel, substantially as set forth.

334,710. OIL-CUP. WILLIAM KRUTISCH, Dayton, Ohio, assignor to the Buckeye Iron and Brass Works, same place. Filed Dec. 17, 1885. (No model.)



Claim.—1. In an oil-cup, the combination, with a cap having a filling-orifice, of an internal spring-actuated stopper having a finger-piece that projects through said filling-orifice, substantially as described.

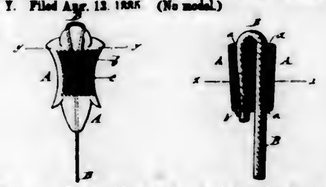
2. In an oil-cup, the combination, with a cap having a filling-orifice, of a laterally-movable spring-actuated stopper inclosed in said cup, and provided with a finger-piece projecting through said filling-orifice, and a movable rod for supporting said stopper, substantially as described.

3. In an oil-cup, the combination of a cap having a filling-orifice, a spring-actuated stopper inclosed in the oil-cup and having a finger-piece and a connecting-neck projecting through said filling-orifice, and a rod for supporting and guiding the stopper, said rod being seated at the bottom of the cup and having a collar for supporting the stopper-spring, substantially as described.

4. In an oil-cup, the combination of a cap having a filling-orifice, a bottom plate provided with a socket, a tubular stopper arranged within the oil-cup and having a finger-piece projecting through the filling-orifice, a movable rod seated in the socket of the bottom plate and having a collar, and a spring inclosed in the stopper and surrounding the upper end of said rod, substantially as described.

5. In an oil-cup, the combination of the cylinder A, the cap B, having a filling-orifice, 1, the bottom plate, C, provided with socket N, the tubular stopper J, the rod L, having collar M, and the spring P, substantially as described.

334,711. CLAMP FOR STRINGS, &c. ROBERT LORENZ, New York, N. Y. Filed Aug. 13, 1885. (No model.)

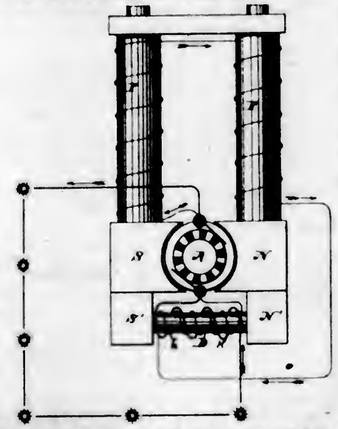


Claim.—1. The combination, in a cord-clamping device, of a stock provided with two perforations side by side and a longitudinal web or partition between said perforations, whereby the cord is adapted to be passed through one of said perforations over the intermediate web at one end thereof opposite adjacent ends of both perforations, and returned through the other perforation, and a wedge-shaped pin adapted to work against said cord in one of said perforations at the opposite end thereof, substantially as described.

2. The combination, in a cord-clamping device, of a stock having a chamber and provided with two perforations for receiving the cord, and a wedge-shaped locking-pin inserted in one of said perforations through said chamber, substantially as described.

3. The combination, in a cord-clamping device, of a stock having a chamber and a sliding cover therefor, and provided with two perforations for receiving the cord, and a wedge-shaped locking-pin inserted in one of said perforations through said chamber, substantially as described.

334,712. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. M. H. MATHER, Windsor, assignor to the Mather Electric Company, Manchester, Conn. Filed Sept. 19, 1884. (No model.)



Claim.—1. In combination with the armature and field-magnet of a dynamo-electric machine, whether generator or motor, the detractor D, consisting of a magnetic core wound with the helices H A, and provided with the pole-pieces N' and S', substantially as shown, and operating as described, for the purpose specified.

2. In combination with the armature and field-magnet of a dynamo-electric machine, whether generator or motor, a differential electro-magnetic armature or keeper of the field-magnet, substantially as shown, and operating as described, for the purpose specified.

3. In combination with the armature and field-magnet of a dynamo-electric machine, whether motor or generator, a variable magnetic switch or shunt consisting of the core of a compound electro-magnet, substantially as shown, and operating as described, for the purpose specified.

4. In combination with the armature and field-magnet of a dynamo-electric machine, whether motor or generator, an electro-magnet wound differentially with two coils or helices, one of which is in the main circuit of the machine and the other in a derived circuit, substantially as shown, and operating as described, for the purpose specified.

5. In combination with the armature and field-magnet of a shunt-wound dynamo-electric machine, whether motor or generator, an electro-magnet wound differentially with two coils or helices, one of which is connected in series and the other in parallel with the field-magnet coil, substantially as shown, and operating as described, for the purpose specified.

6. In combination with the armature and field-magnet of a dynamo-electric machine, whether motor or generator, a differential electro-magnet whose poles are respectively adjacent to like poles of the field-magnet, and one of whose helices is in circuit with the said armature independently of the helix of such field-magnet, substantially as shown, and operating as described, for the purpose specified.

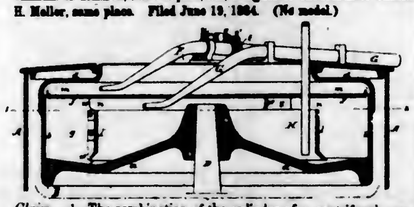
7. In combination with the armature and field-magnet of a dynamo-electric machine, whether motor or generator, a differential electro-magnet whose helices are connected, one in series with said field-magnet and with the source of current of said machine, and the other in series with said armature and with the external work or source of current, as the case may be, substantially as shown, and operating as described, for the purpose specified.

8. In combination with the armature and field-magnet of a dynamo-electric machine, whether motor or generator, an electro-magnet wound differentially with two coils or helices, one of said helices being connected in series with said armature, and with an external source of current or working resistance, as the case may be, and the other of said coils being connected in parallel with said armature, or with such external work, as the case may be, substantially as shown, and operating as described, for the purpose specified.

9. In combination with the armature and field-magnet of a dynamo-electric machine, whether motor or generator, an electro-magnet wound differentially with two coils or helices, one of said coils being connected in parallel with said field-magnet and the other of said coils being connected in parallel with said armature, or with external work, as the case may be, substantially in the manner and for the purpose specified.

10. In combination with the armature and field-magnet of a dynamo-electric machine, whether motor or generator, a differential electro-magnet whose coils are connected, one in parallel with said field-magnet and in series with said armature, and with the external work or source of current of such machine, and the other in parallel with such work or armature, as the case may be, and in series with said armature or external source of current, as the case may be, substantially in the manner and for the purpose specified.

334,713. CENTRIFUGAL MACHINE FOR SEPARATING LIQUIDS. CHARLES R. MELLOR, Philadelphia, Pa., assignor of one-fourth to Charles H. Meller, same place. Filed June 19, 1884. (No model.)



Claim.—1. The combination of the cylinder of a centrifugal separator, having an inner and outer discharge, with the partition-plates *g*, secured to and rotating with the said cylinder and extending inward to or beyond the limit of the inner discharge, whereby all portions of the liquid contents of the cylinder are prevented from whirling when the cylinder is rotated.

2. The combination of the rotating cylinder B of a centrifugal separator, a discharge-pipe which does not partake of the rotary motion of the cylinder, and partition-plates *g*, secured to and rotating with the cylinder, and having notches *w* at the upper inner corners for the reception of said pipe, as set forth.

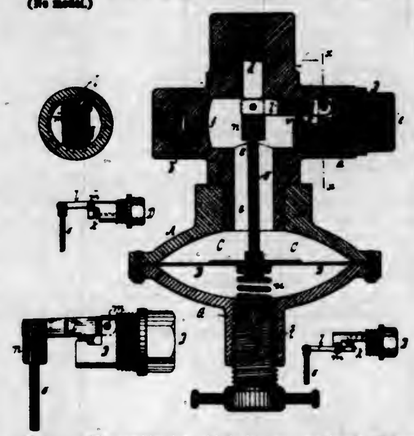
3. The combination of the cylinder B of a centrifugal separator, having inner and outer discharge, the supply-pipe, and the plates *g*, secured to and rotating with the cylinder and projecting inward to or beyond the limit of the inner discharge, but notched so as to terminate before reaching this limit at the point where the incoming stream joins the volume rotating with the cylinder, as set forth.

4. The combination of the cylinder B of a centrifugal separator and its inner discharge with the inner casing, I, secured to and rotating with the cylinder and occupying a position within the line of discharge, whereby churning action of the air on the inner surface of the liquid contents of the cylinder is prevented, as set forth.

5. The combination of the cylinder B, the plates *g*, secured to and revolving with the cylinder, and the internal casing, I, connected to the said plates and having an opening below for the passage of liquid, as set forth.

6. The combination of the cylinder B, the outer casing, A, the discharge-pipe, a bracket carrying the said pipe and having a longitudinal slot, *p*, and a transverse slot, *p'*, and securing-bolts adapted to said slots, as set forth.

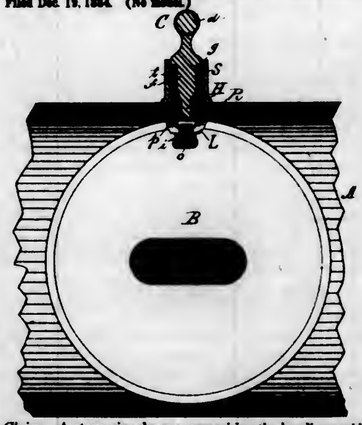
334,714. FLUID-PRESSURE REGULATOR. GUSTAV MESSERR, Newark, N. J., assignor to John B. Stetson, same place. Filed Nov. 7, 1885. (No model.)



Claim.—1. The combination, with the low-pressure chamber C, formed by the casing A and the diaphragm B, of the cross E, the valve-plug D, screwed into the cross E and containing the inlet-channel *g* and valve-nozzle *k*, the lever *l*, pivoted to the plug D, and containing the metallic valve-disk *v*, the rod *o*, adjustably connected to the lever *l'* and to the diaphragm B, an outlet, *f*, and means, substantially as described, for regulating the pressure upon the diaphragm, substantially as and for the purpose set forth.

2. The valve-disk *v*, formed of a hard metal, secured in the valve-lever, and coated with a thin layer of soft metal, in combination with the valve-nozzle *k*, substantially as and for the purpose specified.

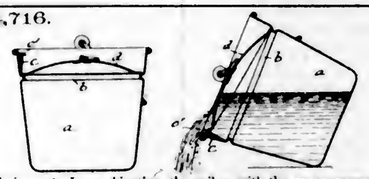
334,715. STOVE-PIPE DAMPER. GEORGE W. MUDD, Columbus, Ohio. Filed Dec. 19, 1884. (No model.)



Claim.—A stove-pipe damper comprising the handle provided with the collar *g*, the spindle part E, shank H, and lugs *i i*, in combination with the separate cup, spiral spring, the washer, and the damper-plate, the latter having formed on one edge and integral therewith the double slotted boss L, adapted to receive the washer, and having the recess *o* in the plate beyond said boss, to aid in the operation of the handle, substantially as described.

334,716. KETTLE-COVER. DANIEL H. MURPHY, Hartford, assignor of one-fourth to Elias H. Steele, Newington, Conn. Filed May 29, 1885. (No model.)

334,716.

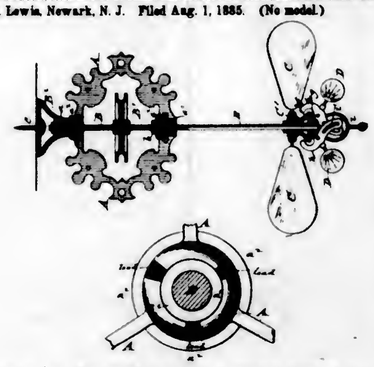


Claim.—1. In combination, the pail *a*, with the cover-support *b*, located below the upper rim of the vessel, the stop *c*, fast to the inner side of the vessel above the cover-support, and having the projecting lug *c'*, and the cover *d*, fitting within the vessel and suspended upon the cover-support, all substantially as described.

2. In combination, a culinary or the like household utensil having a cover-support fixed within the vessel and below its upper edge, an inward-projecting stop secured on one side within the vessel and above the support, whereby the cover is pushed aside and also held in the vessel, and a loosely-fitting cover adapted to rest upon the support within the vessel, all substantially as described.

3. In combination with a culinary or the like household utensil, an expansible ring fastened within the mouth of the vessel, and having an interned flange for supporting a cover, and also an inward-projecting stop attached to the ring at one side, and a loosely-fitting cover suspended upon the cover-support within the vessel and below its rim, all substantially as described

334,717. AUTOMATIC FAN. PETER MURRAY, Jr., Newark, assignor to himself, Richard S. T. Cissel and Robert B. Cissel, Elizabeth, and Alfred N. Lewis, Newark, N. J. Filed Aug. 1, 1885. (No model.)



Claim.—1. The combination, with a rotating fan-shaft, of a fan having a hub applied loosely to the shaft, and a friction-clutch for throwing the hub in or out of gear with the fan-shaft, substantially as set forth.

2. The combination of a rotating fan-shaft, a fan having a hub applied loosely to said shaft, said hub having an annular flange, a collar keyed to the lower end of the fan-shaft, a spiral spring interposed between said collar and the fan-hub, friction-levers fulcrumed to the collar, and a handle by which the levers are operated and the hub thrown in or out of contact with the collar, substantially as set forth.

3. The combination of a rotating fan-shaft, a fan having a hub placed loosely on said fan-shaft, said hub having an annular flange, a collar keyed to the lower end of the fan-shaft, clutch-levers fulcrumed to said collar, and a handle having a transverse pin passing through slots of said levers, substantially as set forth.

4. The combination of a rotating fan-shaft, a fan having a hub placed loosely thereon, said hub having an annular flange at the lower part, a collar keyed to the lower end of the shaft, a spiral spring interposed between the hub and collar, fulcrumed clutch-levers having slots at their lower ends, and a handle engaging the slotted ends of the clutch-levers, so as to throw the hub in or out of contact with the friction-collar, substantially as set forth.

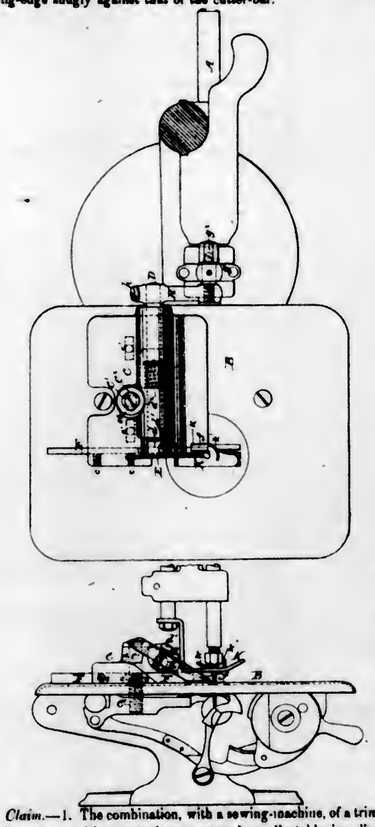
5. The combination of a rotating fan-shaft, a fan having a hub placed loosely on said shaft, a friction-clutch for throwing the hub in or out of gear with the rotating fan-shaft, and auxiliary fans attached to the fan-shaft below the main fan, substantially as set forth.

6. The combination of a rotating fan-shaft, a hanger made of sections, and journal-bearings for supporting the fan-shaft, said journal-bearings having annular flanges for locking the ends of the hanger-sections, substantially as set forth.

7. The combination of a rotating fan-shaft, a hanger made of several sections, journal-bearings having annular flanges for locking the ends of said hanger-sections, and an enlarged base having a fixed center screw, substantially as set forth.

334,718. TRIMMING ATTACHMENT FOR SEWING-MACHINES. GEORGE H. NOBLE, Providence, R. I., assignor to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed July 14, 1883. (No model.)

Brief.—The frame that carries the oscillatory trimmer-blade and the stationary but lengthwise-adjustable lower blade or cutter-bar is itself adjustably secured to the cloth-plate of a sewing-machine, so that its position may be varied, and thereby the trimmer may be arranged to operate at different distances from the line of feed. When the oscillatory blade is at or near its highest point, the shoulder formed by the head comes in contact with the end of the frame and acts as a stop to take off the pressure of the spring that operates to press this blade to hold its cutting-edge snugly against that of the cutter-bar.



Claim.—1. The combination, with a sewing-machine, of a trimming attachment comprising a stationary cutter-bar adjustable in a line parallel with the feed-movement in said machine and a co-operating movable cutter or shear blade, substantially as described.

2. In a combined sewing and trimming machine, or sewing-machine with trimmer attachment, the stationary cutter-bar having the cutting-edge at one end and the said end beveled or inclined, in combination with means, as explained, for securing said bar in place and for permitting its adjustment in a line parallel with the feed-movement, substantially as described.

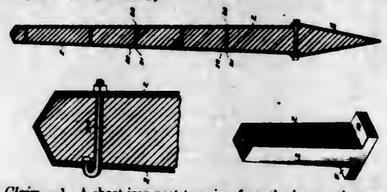
3. The combination of the trimmer-frame, rock-shaft having bearings in said frame, vibratory blade carried by said rock-shaft, and stationary blade adjustably secured in a slot running transversely through said frame in a line parallel with the feed-movement, substantially as described.

4. The combination of the trimmer-frame, adjustably secured to the cloth-plate of the machine, the rock-shaft carrying the vibratory blade, and the stationary blade adjustable lengthwise in said frame, substantially as described.

5. The combination, with the sewing-machine, of the trimmer-frame, rock-shaft, and blades or cutters, the stationary blade or cutter being adjustable in a line parallel with the feed-movement, and the whole attachment adjustable in a line at right angles to the feed, substantially as described.

6. In combination with the trimmer-frame, adjustably secured to the cloth-plate of the machine, the rock-shaft journaled in bearings in said frame, the bent lever or arm adjustably secured to the rock-shaft and connected with the operating mechanism of the machine, the stationary shear-blade secured to the frame and adjustable longitudinally in a line parallel with the feed-movement, and the vibratory blade secured to the rock-shaft, substantially as described.

334,719. FENCE-POST. ARTHUR A. PARKER, Jersey City, N. J. Filed July 3, 1884. (No model.)



Claim.—1. A sheet-iron post tapering from the base to the top, and filled the entire length with cement and concrete, and having transverse holes through the iron and through the concrete, substantially as set forth.

2. An improved brace for fence-posts, the same consisting of channel-iron enveloping an artificial-stone body, and having fastening-flanges projecting at each end, substantially as described.

3. A tapering rectangular hollow sheet-iron fence-post entirely filled with concrete or cement, and having holes in the iron at the places where the fence-wires are to be fastened, and a base filled with cement, to be inserted into the ground, substantially as set forth.

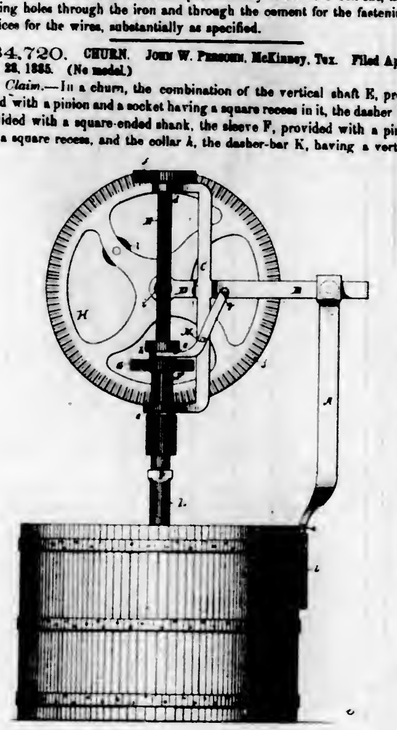
4. A tapering rectangular hollow sheet-iron fence-post having holes through the iron and through the cement, and a base with a projecting foot, the whole being entirely filled with cement, substantially as set forth.

5. A hollow sheet-iron fence-post filled entirely with cement or concrete, and having holes through the iron and through the cement, in combination with screw-bolts having hooked ends, each bolt passing through the post, and the hooked end being received into a hole in the iron, substantially as set forth.

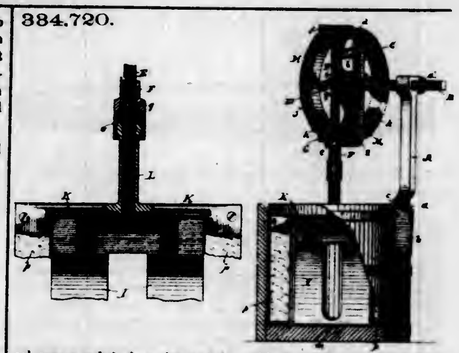
6. A hollow sheet-iron fence-post entirely filled with cement, and having holes through the iron and through the cement for the fastening devices for the wires, substantially as specified.

334,720. CHURN. JOHN W. PERSONS, McKinney, Tex. Filed Apr. 28, 1885. (No model.)

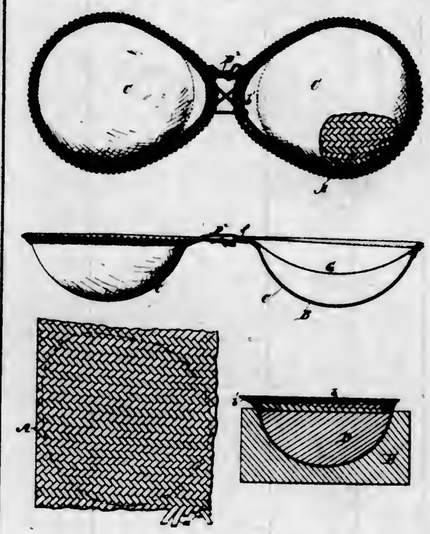
Claim.—In a churn, the combination of the vertical shaft E, provided with a pinion and a socket having a square recess in it, the dasher I, provided with a square-ended shank, the sleeve F, provided with a pinion, a square recess, and the collar *h*, the dasher-bar K, having a vertical square-ended sleeve integral therewith, the drive-wheel H, the lever M, the bar A, and the adjustable arm B, provided with bearings for the said shaft and sleeve, and a pin for the said lever, substantially as and for the purpose set forth.



334,720.



334,721. BOSOM-FORM. MARY PHILLIPS, New York, N. Y., assignor to Charles C. Carpenter, same place. Filed Sept. 19, 1885. (No model.)

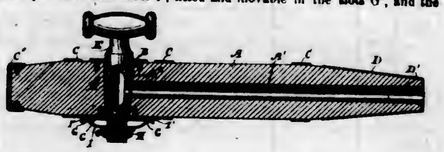


Claim.—1. In breast-pads, a convavo-convex form composed of woven blades of grass having glazed surfaces, the edges of the form being treated with cement to hold the strands in place at those points and to maintain the shape of the form, and the strands having free movement upon and against each other at points other than along said edge, as and for the purpose set forth.

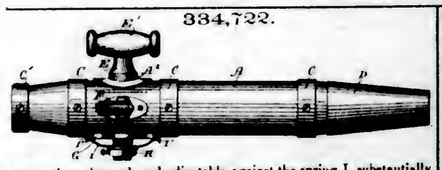
2. The breast-pad described, consisting of the concavo-convex form or body, formed of woven grass and cemented at the edges only, as set forth, the cover, diaphragm, and lacing, all combined and arranged to serve as specified.

334,722. TURNING PLUG. FREDERICK W. POLLE, Greenville, Miss. Filed June 27, 1885. (No model.)

Claim.—1. In a faucet, the combination of the body, the cock, the wearer-plate G, provided with slots G', the spring I, placed on the cock and provided with studs I', fitted and movable in the slots G', and the



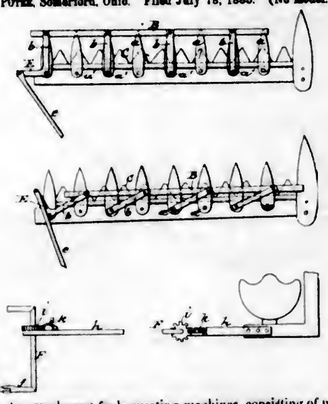
334,722.



not turned on the cock and adjustable against the spring I, substantially as set forth.

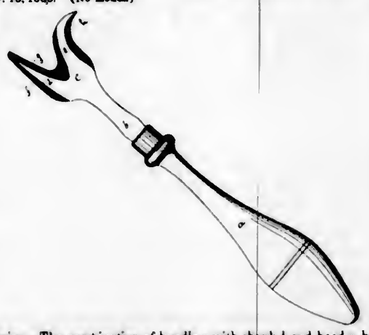
2. The faucet, substantially as herein described and shown, consisting of the body A, provided with openings A' A², the cap D, embracing the inner end of the faucet and provided with the tube D', projected into the inner end of opening A', the cock E, having its end extended beyond the body and threaded, the wear-plate G, having the slots G', the spring I, having studs I', fitted in slots G', and the nut H, turned on the cock and against spring I, and provided with a set-screw, H', whereby it may be fixed at any desired point, substantially as set forth.

334,723. CLEARER ATTACHMENT FOR HARVESTER-CUTTERS. CLAUDIUS POTTS, Somerford, Ohio. Filed July 18, 1885. (No model.)



Claim.—An attachment for harvesting-machines, consisting of metal bar B, attached to the finger-bar by loosely-pivoted arms *b*, and having a lever, E, said bar being adapted to be folded to the rear of the knives C, or projected to the front by means of an operating lever and rod, substantially as and for the purpose specified.

334,724. RIPPING-TOOL. JOHN RUKSTUHL, Matteawan, N. Y. Filed Nov. 18, 1885. (No model.)



Claim.—The combination of handle *a* with shank *b* and head *c*, having straight tapering prong *d* and curved prong *e*, the prong *d* having cutting-edges *f g*, and the prong *e* having cutting-edge *h*, substantially as specified.

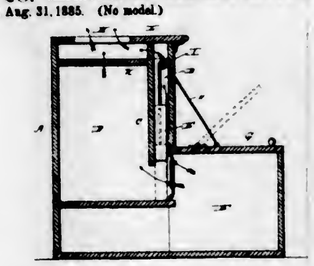
334,725. BAND-CUTTER AND FEEDER FOR THRASHING-MACHINES. WILLIAM H. SPENCE, Lesantville, Ind. Filed July 6, 1885. (No model.)

Claim.—The combination of the inclined traveling endless belt, the oppositely-inclined guard and convex knife attached to the lower edge thereof, and means, substantially as set forth, for imparting rectilinear reciprocation to the knife and guard transversely to the belt, all as specified.

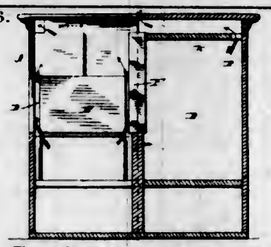
334,725.



334,726. REFRIGERATOR. JAMES STEPHENSON, East St. Louis, Ill. Filed Aug. 31, 1885. (No model.)



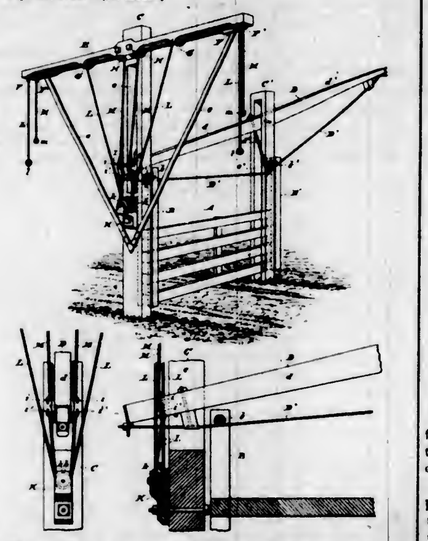
334,726.



Claim.—1. The combination, in a refrigerator, of the ice-chamber B and provision-chamber F, the hinged door G, cord H, and counter-balance E, arranged to slide in a space, D, the said counter-balance being of less area than the space, whereby a passage for the air upward out of the provision-chamber is provided, substantially as specified.

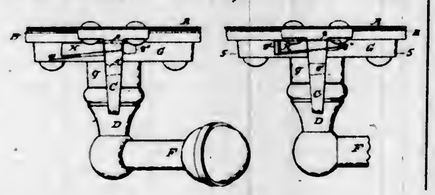
2. The combination, with the ice-chamber B, having spaces at its front and top, and an opening, M, of the provision-chamber, its hinged door, and the sliding counter-balance, of less area than the space in which it slides, the said balance serving to abut off communication between the ice and provision chambers when the door is opened and permit the ventilation of said provision-chamber when the door is closed, substantially as specified.

334,727. FARM-GATE. THOMAS B. THORN, Vincennes, Ind. Filed Sept. 21, 1885. (No model.)

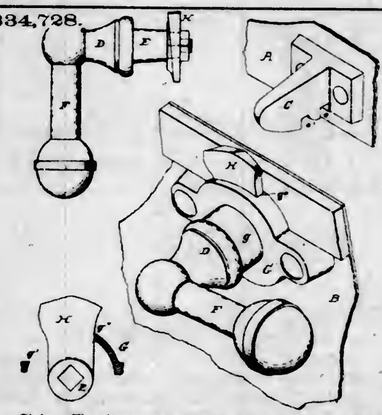


Claim.—The combination of the gate A, the end bars, B B', provided with the polleys *b b'*, respectively, the slotted gate-posts C C', the beam D, and rod D', with the horizontal recessed beam E, the polleys F, F', G, H, and K, the double-pointed hooks I I on the end of the arm *d* of the beam D, and the cords L and M, respectively provided with the hand-holds *l* and *m*, all constructed and arranged substantially as shown and described, for the purpose specified.

334,728. CATCH FOR OVEN-DOORS. LOUIS E. ZIEGLE, Cincinnati, Ohio, assignor to the John Van Range Company, same place. Filed May 1, 1885. (No model.)

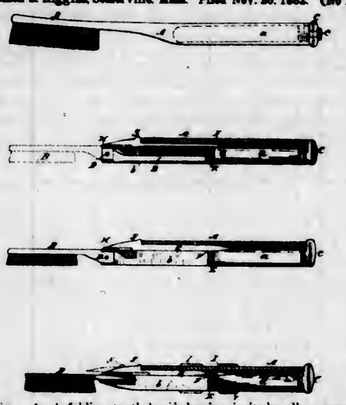


334,728.



Claim.—The combination of the guard G *g g' g''*, the latch D, having gravitating handle F, a pivot portion, E, and a wedge-shaped head, H, and the notched keeper C *c c'*, as and for the purpose set forth.

334,729. TOOTH-BRUSH. RINALDO S. LAKIN, Boston, assignor to Solomon S. Higgins, Somerville, Mass. Filed Nov. 20, 1882. (No model.)



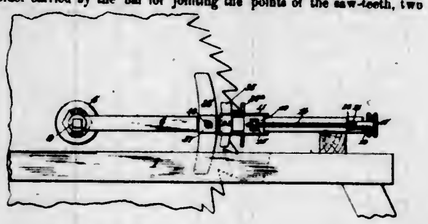
Claim.—1. A folding tooth-brush having in its handle a receptacle for tooth-powder and provided with a removable end cap, in combination with a feeding device, substantially as described, permitting delivery of the dentifrice to the brush, substantially as set forth.

2. A folding tooth-brush having in its handle a receptacle for tooth-powder and provided with a removable end cap, in combination with a tapering sliding plug serving to close the aperture from the receptacle to the brush-recess, for the purpose set forth.

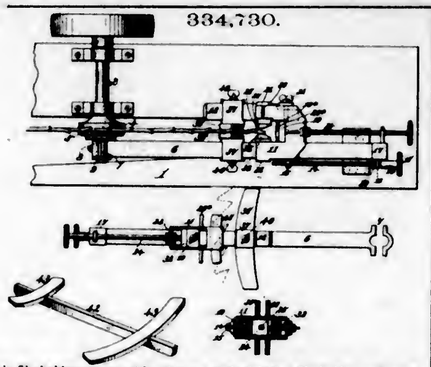
3. In a folding tooth-brush, the handle A, having receptacle *a* and recess *b*, separated by the partition E, and provided with the spring H, formed in one with the handle, in combination with the brush-head B, hinged at D to the handle, substantially as set forth

334,780. MACHINE FOR JOINTING AND DRESSING CIRCULAR SAWS. CASPAR SCHOOR, Truckee, Cal. Filed Apr. 24, 1885. (No model.)

Claim.—1. The combination of a main bar having at one end a hub or collar for mounting it on the mandrel carrying the circular saw, a file-holder carried by the bar for jointing the points of the saw-teeth, two



334,730.



side file-holders arranged in advance of the jointing file-holder, and screw-rods for independently adjusting the file-holder and the side file-holders longitudinally on the main bar, substantially as described.

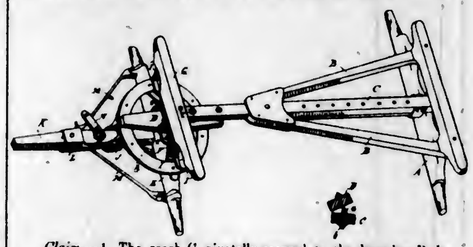
2. In a saw jointing and dressing machine, the combination of the adjustable frame carrying a jointing-file, the adjustable frame carrying a dressing-file, and the laterally-adjustable arm carrying a second dressing-file, with the main arm or bar on which the adjustable frames are mounted, and means, substantially as shown, for adjusting said frames, as and for the purpose set forth.

3. In a saw jointing and dressing machine, the combination of the adjustable collars having guide-plates, and the arms or bars on which said collars are fitted, with the adjustable frames carrying jointing and dressing files, substantially as described.

4. In a saw jointing and dressing machine, the combination of the screw shafts or rods and the collar forming outer bearings for the same, and the adjustable frames carrying files, and connected with said screw-rods, with the arm or bar adapted to be mounted on a shaft or mandrel bearing the saw to be operated upon, substantially as described.

REISSUES.

10,679. RUNNING-GEAR FOR VEHICLES. ALLEN J. BEACH, Flint, Mich.; Clara E. Beach administratrix of said Allen J. Beach, deceased. Filed Feb. 23, 1884. Original No. 254,104, dated Feb. 28, 1882.



Claim.—1. The reach C, pivotally secured to the draw-bar D, in combination with the circle I, below the draw-bar D, the bolster G, and the bolster-bearer F, above said draw-bar, and the bent bearing-brackets I', secured to the bolster and adapted to act against the circle I, and the axle E, as and for the purpose specified.

2. In combination with the draw-bar D, bolster G, and axle E, the circle I, secured to the axle, and the bent bearing-plates I', secured to the bolster and adapted to act against the circle, substantially as specified.

3. In a wagon, and in combination with the axle E thereof, the bolster-bearer F and draw-bar D, provided with the double-shouldered thimble *d*, adapted to support the center of the bolster-bearer, substantially as and for the purposes described.

4. In a wagon, and in combination with the circle I, provided with the hanger J, in which is pivotally hung the tongue K, the sliding sleeve L and draft-rods M, substantially as and for the purposes set forth.

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DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF
UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of New Jersey.

REED v. STREET.

1. Bill of complaint was filed against defendant for infringing two reissued letters patent, numbered 7,442 and 7,443, bearing date December 19, 1876. Original letters patent were issued March 23, 1875. These were surrendered and reissued in two divisions, Division A, No. 7,442, being for the hose therein described as a new manufacture. This was division claimed to be infringed.
2. The first defense rests mainly upon the fact that the patent in suit is stated upon its face to be the reissue of a former patent, No. 161,273, which patent is found to be for a different invention. Complainant held two patents, numbered, respectively, 161,272 and 161,273. "The former was in truth surrendered, but the statement was made upon the face, and before the specifications of the reissue, that the same was founded upon the latter. The Secretary of the Interior has given to the patentee, under seal of the Department, a certificate, which is exhibited in the case, stating that he has rectified the mistake 'by canceling in the caption of the specification the number 161,273, and in lieu thereof inserting number 161,272, the said correction being made for the purpose of remedying a clerical error.'" *Held:* "Expense and trouble would be involved in requiring a new surrender and reissue to correct mere clerical errors of this sort." *Woodworth* v. *Hall*, (1 W. & M., 260,) cited by court.
3. It was also insisted by the defendant that the complainant's reissue was void because in expressing the claim the word "woof" was used for "warp." *Held:* "Such a casual misuse of words could not mislead any one who would read the claim in connection with the specifications and drawings of the patent, to which he is referred by the words 'substantially as described.'"
4. As to question raised, "whether the production of the new article of manufacture claimed required the exercise of invention in view of what was shown," *Held* "that this [invention] is considerable is evidenced by the fact that fire-hose thus constructed has driven all the older forms from the market."
5. Upon question of infringement, *Held*, "he [defendant] has taken the essence of the complainant's patent, and it is no reply to the charge of infringement to say that he has improved upon it." Decree for complainant, with an injunction and an account.

NIXON, *D. J.:*

The bill was filed in this case against the defendant for infringing two reissued letters patent, numbered 7,442 and 7,443, bearing date December 19, 1876. The original letters patent were issued March 23, 1875. These were surrendered and reissued in two divisions, Division A, No. 7,442, being for the hose therein described as a new manufacture, and Division B, No. 7,443, being for the method whereby the said hose was made. It was acknowledged by the counsel for the complainant on the argument that no proof had been offered tending to show that the defendant had manufactured any hose, and that no decree would be claimed for the infringement of Division B of the reissue.

Three defenses are set up in the answer and proofs: (1) That the reissue is not for the same invention as the original patent; (2) that the alleged invention of the complainant, in view of the state of the art, is not of sufficient novelty to warrant a patent for the same; (3) non-infringement.

1. The first defense rests mainly upon the fact that the patent in suit is stated upon its face to be the reissue of a former patent, numbered 161,273, which patent, upon examination, is found to be for a different invention. The facts appear to be that the complainant held two patents, numbered, respectively, 161,272 and 161,273. The former was in truth surrendered, but the statement was made upon the face, and before the specifications of the reissue, that the same was founded upon the latter. The Secretary of the Interior has given to the patentee, under the seal of the Department, a certificate, which is exhibited in the case, stating that he has rectified the mistake—

> by canceling in the caption of the specification the number 161,273, and in lieu thereof inserting number 161,272, the said correction being made for the purpose of remedying a clerical error.

Expense and trouble would be involved in requiring a new surrender and reissue to correct mere clerical errors of this sort. The late Justice Woodbury, in *Woodworth* v. *Hall*, (1 W. & M., 250,) held it to be unnecessary, and no reason has been suggested why a correction should not be allowed, upon the proof of a mistake without fraud.

It may be proper to advert in this connection to another verbal error to which reference was made upon the argument. It was mildly insisted by the defendant that the complainant's reissue was void because in expressing the claim the word "woof" was used for "warp." The claim speaks of "two or more weft-threads interwound and packed with the woof-threads in concentric helical coils," &c.

The defendant's expert witness, Gregory, in commenting thereon, says:

> Woof is the same as weft, and this claim therefore calls for a fabric all of which is made of weft-threads, which is simply an absurdity, for warp-threads are always needed with woof or weft to compose a fabric.

Expert testimony was not required to teach us that. Such a casual misuse of words could not mislead any one who would read the claim in connection with the specifications and drawings of the patent, to which he is referred by the words "substantially as described." Nearly sixty years ago an eminent justice of this circuit, (Washington,) in charging the jury in a patent suit, said that a mistake in an expression, proved to be so by other parts of the specification, would not vitiate a patent. (*Kneap* v. *The Schuylkill Bank*, 4 W., C. C., 9.) And the late judge of the first circuit (Shipley) in *Kendrick* v. *Emmons*, (9 O. G., 201,) held that—

the mistake in copying the specifications in the reissued patent * * * is so obviously a mistake in description, and so easily corrected by reference to the other parts of the patent and the machine described, that it does not impair the rights of the patentee.

2. The next defense involves the more difficult question whether the production of the new article of manufacture claimed required the exercise of invention in view of what was previously known. In examining this question it will be necessary for us, first, to ascertain, as nearly as we can, what the complainant claimed in his reissue, and then look into the state of the art as to fire or hydraulic hose when the patent was obtained. In his schedule the patentee states his invention relates to a multiply fire or hydraulic hose, composed of cotton, linen, or other equivalent material, which, being woven in a cylindrical or equivalent form without abrupt bends in the weft-strands, in contradistinction to being woven in two flat sheds, with the woof strands sharply curved when they pass from this one shed around into the other, and the woof strands being closely packed into the web, is of substantially uniform appearance and strength throughout. After indicating a method and describing a loom by which those skilled in the art may be able to fabricate his new hose, he claims as a new manufacture:

Fire or hydraulic hose of more than one ply composed of cotton, linen, or other analogous material woven whole in a cylindrical or expanded form, with two or more weft-threads interwound and packed with the woof (warp) threads in concentric helical coils, one within another, and without any short bends, thus possessing substantially uniform strength and a uniform appearance around its entire body, substantially as described.

This seems definite and specific. There is no mistaking what the product is claimed to be. It is a seamless multiply hose woven in a cylindrical or expanded form, with weft-threads interwoven with warp-threads in concentric coils, the completed fabric being re-enforced and strengthened by the multiplies firmly uniting the component parts. Such being the construction of the patent, was there any manufacture then existing so analogous to it that it required no invention to produce it? It is probably true that all the distinguishing characteristics of the invention existed separately, but had they ever been combined in a single product? No patent is exhibited which shows it, and no witness testifies to it. Indeed, we do not understand that the defendant insists upon anything more than that it was no exercise of inventive skill for a mechanic having a knowledge of the various circular looms and of the existing forms of fire-hose to produce what the complainant claims.

It is hardly necessary to examine in detail the numerous patents which have been brought into the case, if not to anticipate the complainant's patent at least to show such a state of the art as will deprive it of all merit as an original invention. They reveal little more than Mr. Alexander Boyd has done. He has been for a quarter of a century a member of the house of James Boyd & Sons, the oldest manufacturers of fire-hose in the United States, and claims to have an extensive and intimate acquaintance with all kinds of hose that have been used. He says the first were made of leather, the seam sewed up with hempen thread. Then came the riveted leather hose, and after that the rubber hose. This was followed by the seamless single-ply and by the flat woven web of more than one ply and riveted like the leather. They made the attempt after this to produce a seamless multiply hose, but the experiment failed. Their specimens were woven substantially flat, with a short sharp bend of the filling-threads over on themselves at the edge of the web or sides of the loom, and thus woven it did not turn out to be as strong as the single-ply. The selvage edge or sharp bend proved the point of weakness, and the complainant's invention was brought forth to remedy this weakness by weaving the multiplies in the cylindrical or extended form. It required invention not of a high order to accomplish this, and the complainant is entitled to the benefit of all good results that have followed such a combination of old instrumentalities. That this is considerable is evidenced by the fact that fire-hose thus constructed has driven all the older forms from the market.

3. The remaining question is the one of infringement. The defendant is selling seamless multiply fire or hydraulic hose, woven on looms made by James E. Gillespie, under letters patent granted to him and dated February 15, 1876. The real inquiry, therefore, is whether these Gillespie patents infringe the complainant's patent. The hose manufactured and sold under them is of more than one ply, and composed of cotton; is woven whole in an expanded form; has weft-threads interwoven and packed with the warp-threads in concentric helical coils, one within another, and without any short bends. It differs from the complainant's only in the different mode of tying the webs together. The warp-threads of the complainant's patent go through the whole structure from side to side. Those of Gillespie's patents do not, but only half through, from the inner side and outer side, and tie the hose together by passing under and around an intermediate filling-thread; but the complainant, in his specification, after showing two arrangements of the threads, in some respects differing, states that he does not intend to limit himself to the words specified, and adds:

Any equivalent arrangement may be adopted by which there is produced a tube of the form herein described of several plies tied together into one web. Any mechanic or weaver skilled in the art will know how to adapt the said loom to accomplish such equivalent arrangements of the threads.

The change in the methods of locking or tying the warps introduced by Gillespie may be an improvement upon the complainant's patent, or upon the specific arrangements therein detailed, but the change is one of construction, and not of invention. He has taken the essence of the complainant's patent, and it is no reply to the charge of infringement to say that he has improved upon it.

There must be a decree for complainant, with an injunction and an account.

FOREIGN PATENT LAWS.

PATENT LAW OF LUXEMBURG.

The following is a translation of the patent law of the Grand Duchy of Luxemburg, made from an official copy, and furnished for publication by Messrs. W. P. Thompson & Boult, Liverpool and London, England.

We, WILLIAM the 3d, by the grace of God, King of the Low Countries, Prince of Orange Nassau, Grand Duke of Luxemburg, &c.

Our Council of State heard, and with the consent of the Chamber of Deputies, in view of the decision of the Chamber of Deputies of June 10, 1880, and that of the Council of State of the 16th of the same month carried in such manner as not to require a second vote, have ordered and do order:

CHAPTER I.—GENERAL DISPOSITIONS.

Article 1. Patents for new inventions susceptible of being worked industrially shall be granted, with the following exceptions: First. Inventions the working of which would be contrary to the law or good morals. Second. Those inventions which have for their object food or other objects of consumption, pharmaceutical products, or substances obtained by chemical means. Nevertheless this exception does not apply to any special process for manufacturing these objects.

Art. 2. An invention is not considered new when at the moment the declaration is made under the present law (date of application for a patent) it is found to be already so clearly described in any printed matter open to the public, or so openly worked in either the Grand Duchy or any of the States of the German custom-house union, as to render it possible for execution by other persons expert in the trade to which it refers.

Art. 3. The right of obtaining a patent appertains to the one who first declares to the invention in accordance with the present law, subject, however, to what is enacted herein, Article 16, No. 2.

Art. 4. The effect of a patent shall be that without the authority of the patentee or owner no one shall be allowed industrially to make, put into commerce, or expose for sale the object of the invention. If the object of the invention be a process, a machine, or any industrial engine, a tool or other instrument of labor, the effect of the patent will be, further, that without authorization of the patentee or owner no one can industrially apply the process or make use of the object of the invention.

Art. 5. The effect of the patent does not apply to any one who at the moment when the applicant made his declaration had already worked the invention in the Grand Duchy, or who had already made the necessary arrangements to this end. The effect of the patent does not extend to locomotive rolling-stock which only enter to pass through the Grand Duchy. A patent will cease to be effective as soon as a royal Grand Ducal decree, upon the advice of the Council of State, shall have declared that it is to the public interest that the patent shall be worked. In this case the patentee has a right, at the expense of the State, to an indemnity which, in default of agreement, shall be fixed judicially.

Art. 6. The right of obtaining a patent, like the rights to the patent itself, shall extend to the heirs or legal representatives of the person having such right. These rights can be transferred in whole or in part by deed or by will. The act of transmission by will is free of all duty. Deeds of assignment are registered at a fixed tax of 1 franc 70 centimes.

Art. 7. The duration of the patent is fifteen years. This period runs from the morrow of the day on which the invention has been declared, conformably to Article 10 of the present law. If the invention consists in an improvement on another invention, for which latter the applicant has already protection in the Grand Duchy, he can apply for the grant of a certificate of addition which expires with the principal patent. The certificates of addition taken by one of the persons interested in the principal patent profit all the others.* It will be open to the patentee to take a principal patent for the changes or improvements in his invention. The third party, who shall have taken a principal patent for an invention or an application relating to the object of another patent, shall not have the right to exploit the invention already patented; and, on the other hand, the patentee or owner of the primary patent shall not work the invention, the object of the new patent, except by their mutual consent.

Art. 8. An annual and progressive tax, as follows, shall be paid for each patent: First year, 10 francs; second year, 20 francs; third year, 30 francs; and so on till the fifteenth year, for which the tax will be 150 francs. The tax will be paid in advance to the receiver at the registry. It will not in any case be reimbursed.† For certificates of addition one tax only of 10 francs will be required.

Art. 9. No one can obtain a patent or exercise the rights of the patent if he have not chosen a domicile in the Grand Duchy. If he be a foreigner, he must choose as his domicile the house of a proxy, who will represent him, and to whom all communications will legally be made. Whatever domicile be chosen will be subject to jurisdiction, and will be a valid one as long as it is not replaced by a new election of domicile, according to Article 13.

* This has been held to mean that all those interested in the principal patent have an exactly corresponding interest in the patent of improvement. [W. P. T. & B.]

† In the case of two owners of one patent each paying the tax, both payments are retained. [W. P. T. & B.]

CHAPTER II.—ON THE DELIVERY OF PATENTS.

Art. 10. Whoever would secure a patent must file his declaration in writing with the functionary, who will be appointed for this purpose by the Government. A special declaration is required for each invention. The declaration must contain the full name, address, calling, and chosen domicile of the declarant, and also of his representative, if the case requires such. It must give a title containing a summary and precise description of the object of the invention. The declaration must be accompanied by, first, a description, in the French or German language, of the object invented; second, drawings, models, or samples that may be necessary for the comprehension of the description. The description and the drawings must be in duplicate. The description should be written without alteration or addition; words struck out or erased must be counted and certified, the pages and the references initialed. It should describe the invention in a clear and complete manner, and end with a precise statement of its characteristics. The drawings must be traced with ink to a metrical scale. All the papers must be signed by the declarant, or by his representative, whose power of attorney must be annexed to the declaration.

Art. 11. An application will only be received on the production of the receipt of the payment of the first annual tax. An official statement made without charge, on a register for this purpose, and signed by the declarant, shall authenticate the application while stating the day and the hour of filing of the papers. A duplicate of the official statement will be transmitted without charge to the deponent.

Art. 12. The patents whose application shall have been in regular form will be delivered, without preliminary examination, at the risk and peril of the applicants, and without guarantee either of the reality of the novelty, or of the meritoriousness of the invention, or of the fidelity or exactness of the description. A certificate of the Government official who has charge of the Department of Commerce and Industry certifying the regularity of the application will be delivered without charge to the applicant, and will constitute the patent of invention. To this notice will be added the certified duplicate of the description and of the drawings mentioned in Article 10. The same certificate will be inserted in abstract form in the memorial. The refusal of the Government to deliver a patent may be appealed against to the Litigation Committee of the State Council, who will decide on the matter.

Art. 13. Any changes that occur in the ownership of the patent or in the representative and chosen domicile of the patentee, as well as any partial assignment of the patent, should be brought in an authentic form to the notice of the Government official who has charge of the Department of Commerce and of Industry, and will be published in the memorial. As long as these formalities are not fulfilled, the person who has been previously designated as the patentee or his representative remains invested with the rights and subservient to the obligations of the present law, and all notifications and announcements will be validly sent to the previously-chosen domicile.

Art. 14. The public will be allowed to inspect in the Government bureaus descriptions of granted patents, and copies may be obtained on payment of fees.

CHAPTER III.—EXPIRATION OF PATENTS, NULLITY, AND FORFEITURE.

Art. 15. The patent becomes extinct, first, by the expiration of the time for which it has been allowed; second, by the renunciation of the titulary owner; third, by a single failure of payment of the annual tax within the three months from when it becomes due; fourth, if a patent for the same object be not applied for within the space of three months after the application in Luxemburg in the States with which the Grand Duchy may be allied by a custom-house union, or if, being applied for within this space, the patent be refused, or if, having been allowed, it be revoked, annulled, or becomes extinct in any other manner. Nevertheless, in the case where the forfeiture of the patent may be decreed in a country in this union by reason of the patent not being worked, it will be lawful for the Government to maintain the patent in the Grand Duchy.

Art. 16. The patent will be null and of no effect if it be proved, first, that according to the terms of Articles 1 and 2 the invention was not susceptible of being patented; second, that the essential contents of the declaration were derived from the descriptions, designs, models, instruments, tools, or processes of another party without his consent; third, if the title under which the patent is applied for indicates fraudulently an object other than the veritable object of the invention; fourth, if the description annexed to the patent be not sufficient for the carrying out of the invention, or if it does not show in a loyal and complete manner the true means employed by the inventor.

Art. 17. An action for annulment may be instituted by any interested person. This action, as well as all litigations relative to the property of the patent, will be heard before the civil tribunal of the arrondissement. If the action be directed simultaneously against the titulary owner of the patent and against one or more partial assignees, it will be heard before the tribunal for the domicile chosen by the titulary owner of the patent. Patent cases will be heard and judged in accordance with the form prescribed for summary proceedings by the Article 405 *et seq.* of the code of civil procedure. Notice of the case is to be given to the public minister. The public minister can interfere in the action and take steps to effect a complete declaration of nullity of the patent. He himself may for the same purposes institute an action. In the cases provided for by the two preceding paragraphs all those having a pecuniary interest in the patent whose titles have been registered

at the Government in conformity with Article 13 should be sued. The charges for the interference of the public minister and the proceedings of the office will be taxed, discharged, and collected as in the case of fines. When the absolute nullity of a patent shall have been pronounced by a judicial decree or sentence, notice thereof shall be given to the Government, in view of the publication prescribed by Article 19.

Art. 18. The patent can be revoked after three years by a royal Grand Ducal decree, subject to an appeal to the Litigation Committee of the Council of State, if the patentee neglect to put his invention into operation in the Grand Duchy to a suitable extent, or at least to do everything necessary to insure this working. Likewise, after three years a royal Grand Ducal decree may declare, on the advice of the Council of State, that the public interest requires that the right to work a patented invention may also be conceded to one or several others who have made application therefor. In this case the indemnity and the guarantees due to the patentee by the new claimants will be, in case of non-accord, settled by judicial decision.

Art. 19. The expiration of patents, their annulments, or revocation will be brought to the knowledge of the public by an insertion in the "Memorial."

CHAPTER IV.—INFRINGEMENT, PROSECUTION, AND PENALTIES.

Art. 20. Whosoever shall have knowingly made use of an invention contrary to the provisions of the Articles 4 and 5 shall be punished by a fine of one hundred francs to two thousand francs without prejudice to the damages that may be obtainable by a civil action. In the case of a repetition of the offense an imprisonment, in addition to the fine, of one month to six months shall be pronounced. A repetition of the offense exists when a first condemnation for the same offense has been given within the five previous years against the defendant. The prosecution shall only be entered on the plaint of the injured party. The tribunal can order the publication of the judgment at the cost of the condemned. The judgment shall direct the mode and the length of time of the publication. The sentence can direct either the destruction or the confiscation, for the profit of the State or for the profit of the injured party, on assessment of damages, of the objects which have been used in, or were destined for, the committal of the offense, and objects which have been produced thereby.

Art. 21. The court for the trial of misdemeanors, before which the action is brought, shall refer the parties to the proper civil judge to decide upon the pleas that shall be advanced by the defendant, either concerning the expiration, the nullity, or the forfeiture of the patent, or concerning any questions relative to the ownership of the patent.

Art. 22. Any person, without having a valid patent, who shall have applied to objects or their packing a notification to the purport that these objects have been patented in conformance with the present law, or who shall have made use of a similar notification in announcements, placards, advertisements, prospectus or signs shall be punished with a fine of from twenty-six francs to two hundred francs.

Art. 23. The penalties established by the present law shall not be cumulative. The highest penalty will only be pronounced for the entire set of infringements made prior to the action.

Art. 24. The provisions in vigor relative to extenuating circumstances can be applied to offenses coming within the preceding provisions.

Art. 25. Civil actions on account of the violation of the patent rights must be commenced within three years from the date of the infringements on which the actions are founded.

CHAPTER V.—TRANSITORY PROVISIONALS.

Art. 26. The law of January 25, 1817, and all provisions anterior to the present law relative to patents of invention, of importation, and of improvements are abrogated. Nevertheless, the patents actually in force will continue to be governed by the provisions in vigor at the moment of their delivery, unless their holders conform to the provisions that follow.

Art. 27. The holders of patents actually in force shall be allowed to convert them into patents governed by the present law, if they, within three months from the publication of the present law, make their declaration to this effect in conformance with what is prescribed by Article 10, saving that it will suffice for them to join thereto the original patent and its annexes. The term of fifteen years, fixed by Article 7, shall run from the date of the original patent. The annual taxes will be counted as due on the same date, on which date also the annual expirations (in default of payment) will be regulated. The tax paid for the original patent shall be placed to the account of the annuities already due or to become due. If it be not sufficient to cover the annuities already due, the difference must be paid before the deposit of the declaration.

Art. 28. The applications for patents filed previous to the present law, and about which we have not yet decided, must be changed by their inventors within three months from the publication of the present law into applications, according to the provisions of the foregoing Chapter II, under pain of forfeiture of the original application. The patents whose delivery is to take place shall be governed by the present law, still the time elapsed since the original application will be deducted from the term of fifteen years, fixed by Article 7.

Art. 29. The publication of descriptions and the open working mentioned in Article 2 can only be urged against those to whom patents have been delivered in accordance with the preceding Articles 27 and 28, if the publication of such descriptions or such working was anterior to the date of the original patent, and if at the date of the deposit of the (renewed) application the matter had not previously been adjudicated upon.

Art. 30. A royal Grand Ducal decree, issued in due order by the administration, will fix the provisions that the execution of the present law will render necessary.

Commanded and ordained that the present law be inserted in the "Memorial," to enable it to be carried out and observed by all those whom it may concern.

Signed at Loo, June 30, 1881. WILLIAM.

F. DE BLOCHAUSEN,
The Minister of State, President of the Government.

PAUL EYSCHEN,
The Director-General of Justice.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1873, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 2, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth $10 00

INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pp.—

Bound half-turkey	2 50
Bound in cloth	1 25
Paper covers	1 00

Issue of January 26, 1886.

Patents	369	No. 334,731 to No. 335,099, inclusive.
Designs	6	No. 16,489 to No. 16,494, inclusive.
Trade-Marks	15	No. 12,963 to No. 12,977, inclusive.
Labels	6	No. 4,707 to No. 4,712, inclusive.
Reissue	1	No. 10,680.
Total issue	397	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	4	
Arizona Territory	1		Nevada	1	
Arkansas	3		New Hampshire	2	
California	7		New Jersey	12	
Colorado	1		New Mexico Territ'y		
Connecticut	16	1	New York	67	4
Dakota Territory	2		North Carolina		
Delaware			Ohio	30	
District of Columbia	2		Oregon	2	
Florida	2		Pennsylvania	30	3
Georgia	2		Rhode Island	6	
Idaho Territory			South Carolina		
Illinois	36	1	Tennessee	1	
Indiana	17		Texas	4	
Indian Territory			Utah Territory		
Iowa	8		Vermont		
Kansas	6		Virginia		
Kentucky	7	1	Washington Territ'y		
Louisiana			West Virginia		
Maine	3		Wisconsin	7	
Maryland	4	2	Wyoming Territory		
Massachusetts	36	1	United States Army		
Michigan	10		United States Navy		
Minnesota	5				
Mississippi	1	1	Total to citizens of the United States	353	15
Missouri	17	1			
Montana Territory	1				

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Argentine Republic			Germany	5	
Austria-Hungary	1		Holland		
Barbadoes			Ireland		
Belgium	1		Italy		
Bermuda			Norway		
British Columbia			Russia		
Canada	2		South Australia	2	
Chili			Sweden		
Colombia, U. S. of			Switzerland		
Cuba			West Indies		
Denmark					
Ecuador			Total to citizens of foreign countries	22	6
England	9	4			
France	2	2			

DESIGNS.

16,489.—FIRE-PLACE BACK.—*Quimby S. Backus*, Winchendon, Mass. Application filed November 21, 1885. Serial No. 183,563. Term of patent 14 years.

16,490.—PRINTING-TYPE.—*Warren Barnhart*, Chicago, Ill., assignor to *Arthur M.* and *Alson E. Barnhart*, same place. Application filed July 27, 1885. Serial No. 172,825. Term of patent 14 years.

16,491.—PEN-PROTECTOR.—*Alexander Fraser*, New Glasgow, Nova Scotia, Canada. Application filed December 4, 1885. Serial No. 184,756. Term of patent 14 years.

16,492.—ZINC FOR ELECTRIC BATTERIES.—*Isaac W. Litchfield*, Warwick, N. Y. Application filed October 22, 1885. Serial No. 180,680. Term of patent 14 years.

16,493.—POSING-CHAIR.—*Charles A. Schindler*, West Hoboken, N. J. Application filed August 13, 1885. Serial No. 174,338. Term of patent 7 years.

16,494.—CARPET.—*Thomas J. Stearns*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed December 18, 1885. Serial No. 186,091. Term of patent 3½ years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,963.—LITHOGRAPHS.—*The Armor Lithographing Company, (Limited,)* Pittsburg, Pa. Application filed November 10, 1885. Used since March, 1882.

"The term or designation 'ARMOR.'"

12,964.—THREAD ON SPOOLS.—*James Chadwick & Brother*, Eagley Mills, near Bolton, county of Lancaster, England. Application filed January 5, 1886. Used since 1859.

"The crest of a lion rampant."

12,965.—WHITE AND COLORED THREAD ON SPOOLS.—*James Chadwick & Brother*, Eagley Mills, near Bolton, county of Lancaster, England. Application filed January 5, 1886. Used since January, 1879.

"The figure of a lion rampant within double concentric circles."

12,966.—WHITE AND COLORED COTTON THREAD ON SPOOLS.—*James Chadwick & Brother*, Eagley Mills, near Bolton, county of Lancaster, England. Application filed January 5, 1886. Used since September, 1874.

"The representation of a keystone placed within two concentric circles."

12,967.—WHITE AND COLORED COTTON THREAD ON SPOOLS.—*James Chadwick & Brother*, Eagley Mills, near Bolton, county of Lancaster, England. Application filed January 5, 1886. Used since December, 1882.

"The representation of a keystone within a circle."

12,968.—SURFACERS, JAPANS, STAINS, PAINTS, AND VARNISHES.—*Chicago Varnish Company*, Chicago, Ill. Application filed December 31, 1885. Used since December, 1883.

"The letters 'C. V. Co. C.,' arranged, respectively, in squares the points of which are contiguous to those of a larger square."

12,969.—FURNITURE-NAILS.—*A. Gallais & Co.*, Paris, France. Application filed December 30, 1885. Used since September, 1860.

"The representation of a sun and the words 'AU SOLEIL.'"

12,970.—MEDICATED MANILA PAPER FOR WATER-CLOSETS.—*B. T. Hoogland*, New York, N. Y. Application filed December 22, 1885. Used since January 1, 1876.

"The fac-simile signatures of 'JOS. C. GAYETTY' and 'B. T. HOOGLAND.'"

12,971.—DRIERS FOR PAINTS AND VARNISHES.—*Lefranc & Co.*, Paris, France. Application filed December 15, 1885. Used since June 14, 1885.

"The representation of an anchor and Mercury's rod or caduceus."

12,972.—EMBOSSED OR RELIEF WALL-PAPER.—*The Manhattan Wall Paper Company*, New York, N. Y. Application filed September 24, 1885. Used since July, 1883.

"Two parallel broken lines composed of sections approximating the shape of a losenge and the words 'ILLUMINATED WALL PAPER' arranged between said lines."

12,973.—SOAP-POWDERS.—*Franklin K. Miller* and *Samuel S. Bobst*, Reading, Pa. Application filed December 9, 1885. Used since August 1, 1885.

"The design of a circle or ring having on each side of it the figure '5.'"

12,974.—LINIMENT.—*Elisha H. Perkins*, Baltimore, Md. Application filed December 30, 1885. Used since 1850.

"The words 'RAIL ROAD LOTION.'"

12,975.—STOMACH BITTERS AND TONIC.—*Alfred A. Ulman*, Ulmanville, Bay St. Louis, Miss. Application filed January 9, 1886. Used since July 1, 1884.

"The word 'MA-HA-KA' and the picture of an Indian presenting a bunch of roots to a white man."

12,976.—HEATING AND COOKING STOVES, INCLUDING GASOLINE AND OIL STOVES.—*Western Stove Manufacturing Company*, St. Louis, Mo. Application filed January 9, 1886. Used since about 1868.

"The word 'WESTERN.'"

12,977.—FINE WRITING-PAPER.—*S. Worthington*, Springfield, Mass. Application filed January 4, 1886. Used since January, 1885.

"The word 'OBELISK.'"

LABELS.

4,707.—Title: "NICHOLS' CARBOLIZED TOOTH POWDER."—*Mathew S. Nichols*, Plainfield, Conn. Application filed December 31, 1885.

4,708.—Title: "PRESCRIPTION NUMBER 7907."—*Elisha H. Perkins*, Baltimore, Md. Application filed December 28, 1885.

4,709.—Title: "ROSS' OXYGENATED WATER" (FOR A BEVERAGE.)—*William S. Ross*, Pittsburg, Pa. Application filed January 5, 1886.

4,710.—Title: "CARBONATED SWEET CIDER."—*Charles Roth & Co.*, Louisville, Ky. Application filed December 30, 1885.

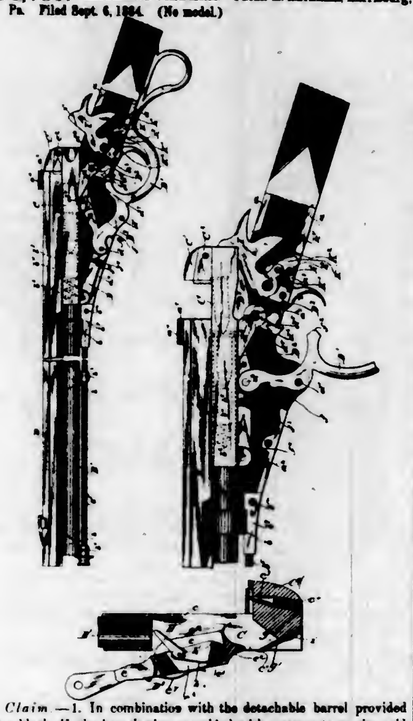
4,711.—Title: "THE MAGIC MOSQUITO BITE CURE."—*Sallade & Co.*, New York, N. Y. Application filed June 29, 1885.

4,712.—Title: "ROBERTS POSITIVE CURE FOR RHEUMATISM."—*Robert H. Lahy*, East New York, N. Y. Application filed January 4, 1886.

PATENTS

GRANTED JAN. 26, 1886.

334,731. MAGAZINE FIRE-ARM. PETER A. ALTHAUS, Harrisburg, Pa. Filed Sept. 6, 1884. (No model.)



Claim —1. In combination with the detachable barrel provided with a block, b^7, the breech-piece provided with a recess to receive said block, and an arch or socket for the end of the barrel, the pin passing through the breech-piece and block b^7, and the set-screws passing through the socket and into the barrel, substantially as described.

2. In combination with the barrel and its attached block b^7, the longitudinally-divided breech-piece having the recess for said block, the extensions a^2, forming the socket for the end of the barrel, the overlying bridge-piece, the set-screws for securing the same, and the pin for confining the block b^7, substantially as described.

3. In combination with the magazine-tube extending within the breech-piece, the reciprocating carrier sliding in ways beneath the barrel and upon said magazine-tube, and a cartridge-lifter working through said carrier to raise and deliver the cartridges one at a time, substantially as described.

4. In combination with the barrel and the breech-frame to which it is attached, the hollow reciprocating carrier provided with the breech-block and mounted in ways beneath the barrel, the cartridge-lifter attached at one end to the operating-lever and working through a slot in the said carrier, and the link connecting the carrier and said operating-lever, substantially as described.

5. In combination with the reciprocating carrier, its attached link, and the operating-lever connected to the latter, the pivoted locking-lever provided with cam-shaped arm and locking-pin, the shoulders on the carrier for engaging the locking-lever, and the projection on the operating-lever co-operating with the cam-shaped arm and locking-pin on the said locking-leve., substantially as described.

6. In combination with the reciprocating carrier, the link connected thereto and engaging shoulders on the frame, the operating-lever pivoted to said link and provided with a locking projection, and the locking-lever engaging shoulders on the carrier and provided with the cam and pin for co-operating with the locking projections of the lever, substantially as described.

7. In combination with the sliding carrier, perforated and slotted, as described, for the reception and delivery of the cartridges, and the operating-lever connected to the carrier by a link, the link *c*, pivoted to the said lever and carrying the cartridge-lifter *c'*, having the beveled end for engaging with the under side of the breech-block, substantially as described.

8. In combination with the slotted reciprocating carrier, its actuating-lever, and the bifurcated locking-lever, the cartridge-lifter carried by the actuating-lever and reciprocating between the arms of the locking-lever and into the slot in the carrier, substantially as described.

9. In combination with the operating-lever and the reciprocating carrier actuated thereby and provided with shoulders, as described, the pivoted locking-lever having arms for engaging the said shoulders on the carrier and actuated by the operating-lever, the trigger, and the spring sustained upon the pivot of the locking-lever, and bearing upon both the trigger and locking-lever, substantially as and for the purpose set forth.

10. The combination, with the reciprocating carrier provided with the slot and shoulders at its rear end, the hammer pivoted below said carrier and provided with shoulders corresponding thereto, as described, the breech-block mounted upon the carrier, and the firing-pin extending through said breech, substantially as and for the purpose set forth.

11. In combination with the hammer and its spring, a link pivoted to the hammer, a pin upon the breech-frame to engage the link when the hammer is raised, and the breech-operating lever, a portion of the link projecting in the path traversed by the lever, whereby as the latter is closed it makes contact with said link and raises it from engagement with the pin, thereby releasing the hammer, substantially as and for the purpose set forth.

12. In combination with the hammer, the sliding carrier operating to raise the former, the link K, attached to the hammer and engaging a pin on the frame, and the operating-lever engaging the said link to move it out of engagement with the pin, and thus free the hammer, substantially as described.

13. In combination with the breech-piece, its attached barrel, and magazine-tube, the reciprocating carrier sliding in ways beneath the barrel, the breech-block fastened to said carrier and provided with the side catches, as described, and a cartridge-lifter pivoted to the operating-lever and working through a slot in said carrier to transfer the cartridges from the interior of said carrier into position in front of the breech-block, and with the flanges under the said side catches, the said carrier being also connected to the operating-lever, substantially as and for the purpose set forth.

14. In a magazine-gun, and as a means for preventing the transfer of the cartridges from the magazine by the cartridge-feeding mechanism when it is desired to load by hand, the combination, with automatic feeding mechanism, of a catch pivoted to the cartridge-lifter and adapted to be elevated to cut off the feed or turn down out of the way when used as a magazine-feeder, substantially as described.

15. In a magazine-gun such as described, and in combination with the breech-piece or frame, to which are secured the stock, barrel, and

magazine-tube, the sliding carrier perforated for the reception of the cartridge and carrying the breech-block, the cartridge-lifter working through such perforation, and the hammer and its operating mechanism located in the breech-frame below and to the rear of the said carrier, substantially as described.

16. In combination with the sliding carrier and the hand-lever having a pin, as described, the cartridge-lifter and the link pivoted to the carrier and connecting it to the carrier, both the said link and lifter being pivoted upon and actuated by the pin on the hand-lever, substantially as described.

17. In combination with the mainspring, the hammer, and the operating hand-lever, the link pivoted to the hammer and provided with a hook, and the attaching-pin secured to the breech-frame and engaging the said hook, substantially as described.

18. In combination with the hammer, its tumbler, and the mainspring applied to the latter, the hooked link pivoted to the hammer and the pin fastened to the breech-frame and engaging the hook on said link, when the hammer is raised, to hold the latter, substantially as described.

19. In combination with the sliding carrier, the operating-lever, the link pivotally connected to the said lever and to the sliding carrier and provided with a shoulder, f^6, and a shoulder, f^5, attached to the main frame, with which said shoulder f^5 engages, when the lever is closed, to lock the carrier in position, substantially as described.

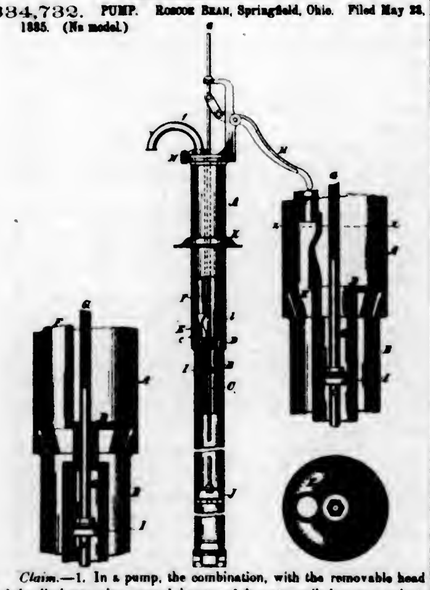
20. In combination with the reciprocating carrier, the operating-lever supported upon an axis below said carrier, a link, D, connecting the upper or forward end of the said lever to the sliding carrier at a point in advance of the axis of said lever, and a cartridge-lifter pivotally connected at its front end to the operating-lever, substantially as described.

21. In combination with the slotted reciprocating carrier provided with a longitudinal perforation communicating with the magazine, a lifter moving through the carrier to elevate the cartridges, and a catch mounted upon said lifter and in proximity to the perforation in the carrier through which the cartridges are fed, said catch being pivoted and provided with a sustaining-spring, substantially as and for the purpose set forth.

22. In combination with the vertically-reciprocating cartridge-lifter upon which the cartridges are delivered from the magazine, the catch pivotally supported within a slot in said lifter, and a sustaining-spring for holding the catch elevated above the surface of the lifter, to prevent the feeding of the cartridges, or depressed and within the slot, to permit the feeding, substantially as described.

23. In a breech-loading fire-arm, the combination, with the cartridge-feeding mechanism and a vertically-moving lifter for elevating the cartridges into position for insertion within the barrel, of a movable catch applied to the end of the lifter nearest the feeding-orifice, said catch operating, when elevated, to intercept the feeding of the cartridges upon the lifter, and when depressed to permit the free movement of the cartridge, substantially as described.

334,732. PUMP. ROSCOE BEAN, Springfield, Ohio. Filed May 23, 1885. (No model.)



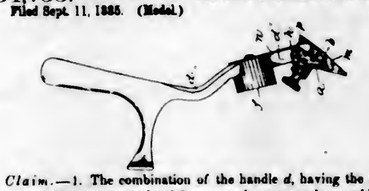
Claim.—1. In a pump, the combination, with the removable head and the discharge-pipe secured thereto, of the outer cylinder communicating with the discharge-pipe, and the smaller cylinder within the outer cylinder and supported by said head.

2. In a force-pump, the combination, with the removable head, of the tubular air-chamber and the discharge-pipe, both secured thereto at their lower ends.

3. In a force-pump, the combination, with the removable head and the water-way secured thereto and enlarged at its point of connection therewith, of the discharge-pipe connected to the said water-way.

4. In a force-pump, the combination, with the removable head, of the inner cylinder, secured thereto by an intervening neck or pipe of smaller diameter, whereby greater radial space between the edge of said neck and the periphery of the head is afforded for accommodation of the discharge-pipe.

334,733. HAIR-CLIPPER. PHILOGENE E. BEAUDETTE, Boston, Mass. Filed Sept. 11, 1885. (Model.)

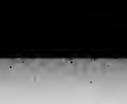


Claim.—1. The combination of the handle *d*, having the hollow neck *d'*, and the transverse head *h*, arranged at an angle to said neck, the lower blade affixed to said head, the handle *c*, pivoted to the handle *d* and extended through said hollow neck, and the upper blade, *a*, adapted to slide on the lower blade, and engaged, as described, with the handle, *c*, as set forth.

2. The combination of the handle *d*, having the hollow neck *d'*, and the transverse head *h*, set obliquely to said neck, the lower blade, *b*, having pins *i'*, entering said head, the upper blade, *a*, adapted to slide on the lower blade, the bolt *j*, passing through the blades and secured by a nut bearing on the head *h*, and the handle *c*, pivoted to the handle *d* and extended through the neck *d'* into a slot in the upper blade, as set forth.

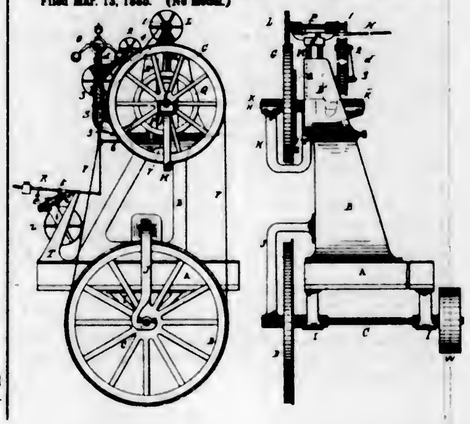
3. The combination of the handle *d*, having the spring-chamber *f* and head *h*, the lower blade, *b*, secured to the head *h*, the handle *c*, pivoted to the handle *d*, the upper blade, *a*, adapted to slide on the lower blade and engaged with the handle *c*, and the spring-plate *n*, secured to the handle *d* and bearing against the lower edge of the lower blade, *b*, as set forth.

334,734. TAIL-PIECE FOR BANJOS. ROBT. H. BEMARY, New York, N. Y. Filed July 3, 1885. (No model.)



Claim.—A tail-piece for musical instruments, made of ebony, horn, celluloid, or analogous material, provided at one end with an upwardly-projecting part having a hole through which the strings can be passed, from which upwardly-projecting part a flange projects over the top of the tail-piece toward the end opposite the one on which the upwardly-projecting part is formed, whereby a pocket is formed for receiving and concealing the knots formed on the ends of the strings, substantially as herein shown and described.

334,735. BAND-SAW MILL. EDWIN BENJAMIN, South Evanston, Ill. Filed Mar. 13, 1885. (No model.)



334,735. (continued)



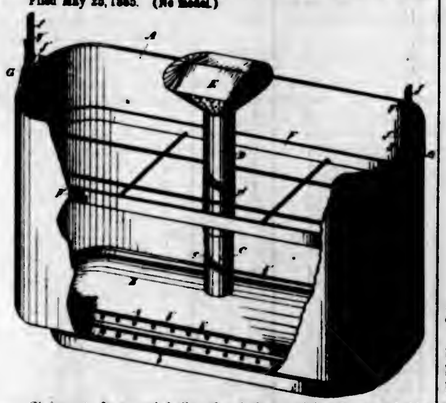
Claim.—1. In band-sawing machines, the friction-wheel L, hung to travel on the saw F on wheel G, and to be tilted from it by means of the tilting frame P, in combination with brake 6 8 and governor and rod O 5, whereby the brake is applied to retard the wheel G with a force graduated to correspond to the retarding movement of wheel L, to prevent the vertical portion of the saw from buckling, as specified.

2. The governor O, with its reciprocating rod 5, in combination with the lever R, which is hung to have an oscillating movement and bring the wheel Z, connected with lever R by means of the hanger *i* and disk *s*, to the inclined side of the saw F, and prevent any slack on the straight part of the saw, as specified.

3. The wheels D, G, and L, band pulleys or wheels 1 2 3, and governor O, with its reciprocating rod 5, in combination with the oscillating lever R, supporting the disk *e*, and the depending hanger *i*, arranged to turn on the disk and be held by means of a lag and screw, *r o*, to bring the inclined portion of the saw by means of the rotating wheel Z obliquely to the band-face of the wheels D G, and hold the saw to their flanges, substantially as specified and shown.

4. The wheels D G, faced with a band of wool felt, *a*, in combination with the saw F, as and for the purpose specified.

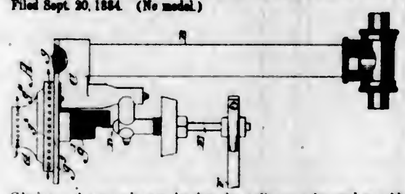
334,736. WASH-BOILER. GOTTFRED BENGSSEN, South Butte, Cal. Filed May 25, 1885. (No model.)



Claim.—1. In a wash-boiler, the clothes-retaining frame or holder F, provided with vertical arms *f*, having holes *g'*, the vertically-adjustable sleeves *f'* on the arms, and the spring-pawls G, carried by the sleeves and having hooked ends and studs *g*, whereby the frame or holder is suspended in the boiler and adjusted thereon, substantially as herein described.

2. In a wash-boiler, the combination of the false bottom B, provided with apertures *b* and guard-flanges *b'*, the vertically-adjustable central tube, D, communicating with space below the bottom and provided with spiral ribs and a sprinkler, E, on its top, the tube D having the spiral groove, and the vertically-adjustable clothes-retaining frame or holder F, suspended within the boiler above the false bottom, substantially as herein described.

334,737. VAPOR-BURNER. WILLIAM BLENNER, East St. Louis, Ill. Filed Sept. 20, 1884. (No model.)



Claim.—A vapor-burner having the ordinary valve and provided with the plate g^3, pivoted at *g*, and carrying the combining-chambers G and H, substantially as and for the purpose described.

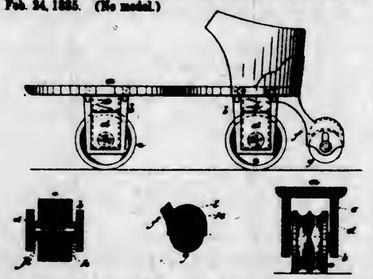
334,738. FASTENING DEVICE FOR BOOTS OR SHOES. GEORGE H. BLISS, Pittsfield, Mass. Filed Sept. 11, 1885. (No model.)



Claim.—1. The herein-described fastener, composed of an anchor-plate having the catch or projection *c'* and the loop-like bearing c^2, combined with the spring-lever having an attached button or projection and pivoted with relation to the anchor-plate, one end of the said lever being embraced snugly by the said loop-like bearing, whereby the lever, held in manner substantially as described, is prevented from undue lateral and longitudinal motion, as set forth.

2. The combination, with the anchor-plate having one end upturned to form a loop-like bearing, c^2, and having a catch or projection, *c'*, of a lever, *d*, composed of wire, extended through the said loop-like bearing and held therein snugly, the opposite end of the said lever being provided with a button or projection, and being adapted to spring down over and engage the projection *c'*, all substantially as shown and described, the catch or projection being shaped substantially as shown, whereby the lever may be disengaged from it without longitudinal motion of the lever with relation to the anchor-plate.

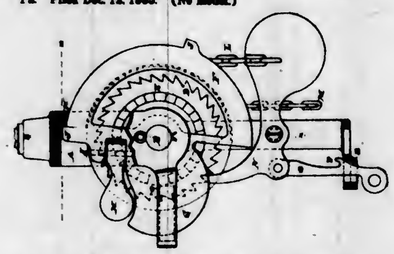
334,739. ROLLER-SKATE. GEORGE BLISS, Newark, N. J. Filed Feb. 24, 1885. (No model.)



Claim.—1. In combination with the body of a skate, a brake-arm *f*, friction-roller *g*, rubber or spring *l*, and guard *k*, all arranged and operating substantially as set forth.

2. The improved roller-skate, combining therein a foot-plate, to the bottom of which U-shaped hangers are secured, the upper ends of said hangers being open to allow the insertion of journal-plates and elastic bearing-pieces, and the inner edges being grooved to receive said plates, said plates providing bearings for the journals and elastic pieces upon which said plates bear, all said parts being arranged and combined substantially as and for the purposes set forth.

334,740. HOISTING-MACHINE. FRANCIS X. BRESNIHAN, Philadelphia, Pa. Filed Dec. 12, 1885. (No model.)



Claim.—1. The combination of a lifting or winding drum or roller having ratchet-teeth, a weighted chain-wheel adapted to be oscillated, a weighted pawl carried by said chain-wheel and arranged to engage with said ratchet-teeth, and a chain or cord to operate said chain-wheel against the action of its weight, substantially as and for the purpose specified.

2. The combination of a lifting or winding drum or roller having ratchet-teeth, a weighted chain-wheel adapted to be oscillated, a weighted

pawl carried by said chain-wheel and arranged to engage with said ratchet-teeth, a projection to throw said pawl out of contact with said teeth, and a chain or cord to operate said chain-wheel against the action of its weight, substantially as and for the purpose specified.

3. The combination of a lifting or winding drum or roller having ratchet-teeth, a weighted chain-wheel adapted to be oscillated, a weighted pawl carried by said chain-wheel and arranged to engage with said ratchet-teeth, a projection to throw said pawl out of contact with said teeth, suitable stops to limit the throw of said chain-wheel, and a chain or cord to operate said chain-wheel against the action of its weight, substantially as and for the purpose specified.

4. The combination of a lifting or winding drum or roller having ratchet-teeth, a weighted chain-wheel adapted to be oscillated, a weighted pawl carried by said chain-wheel and arranged to engage with said ratchet-teeth, the said weighted pawl being carried through a quadrant of a circle by the chain-wheel, whereby its axis of movement is changed from a horizontal to a vertical position, and a chain or cord to operate said chain-wheel against the action of its weight, substantially as and for the purpose specified.

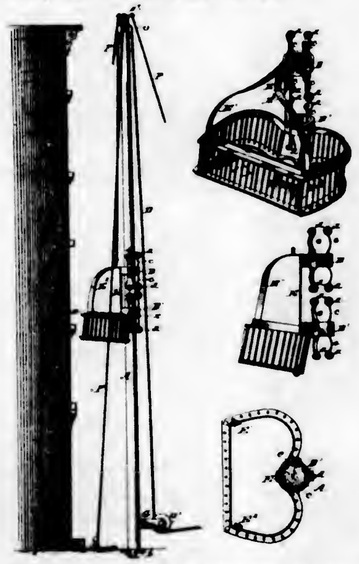
5. The combination of a lifting or winding drum or roller having ratchet-teeth, a weighted chain-wheel adapted to be oscillated, a weighted pawl carried by said chain-wheel and arranged to engage with said ratchet-teeth, a projection to throw said pawl out of contact with said teeth, suitable stops to limit the throw of said chain-wheel, and a pawl-and-ratchet device to prevent a backward movement of the winding drum or roller, and a chain or cord to operate said chain-wheel against the action of its weight, substantially as and for the purpose specified.

6. The shaft B and frame A, in combination with winding-arm C, having ratchet-teeth D and E, chain-wheel F, having weight G, weighted pawl H, pivoted to said chain-wheel and adapted to engage with the ratchet-teeth E, pawl N, adapted to engage with ratchet-teeth D, and chain L, to operate the chain-wheel, substantially as and for the purpose specified.

7. The shaft B and frame A, having projection K, in combination with winding-drum C, having ratchet-teeth D and E, chain-wheel F, having weight G and stops L, weighted pawl H, pivoted to said chain-wheel and adapted to engage with ratchet-teeth E, pawl N, adapted to engage with the ratchet-teeth D, and chain L, to operate the chain-wheel, substantially as and for the purpose specified.

8. The shaft B and frame A, having catch-bar R, in combination with winding-arm C, having ratchet-teeth D and E, chain-wheel F, having weight G, weighted pawl H, pivoted to said chain-wheel and adapted to engage with the ratchet-teeth E, pawl N, adapted to engage with the ratchet-teeth D, link O, having catch or hook P, and chain L, to operate the chain-wheel, substantially as and for the purpose specified.

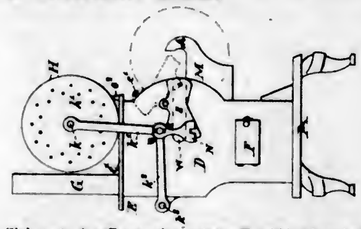
334,741. **FIRE-ESCAPE.** FREDERICK BRUEMMERSEN and EDWARD QUINN, Hastings, Nebr. Filed Nov. 5, 1885. (No model.)



Claim.—1. In a fire-escape, the combination, with a mast, of the inclosing-rings fitted with the interior projecting springs, having friction-rollers in their outer ends, and the basket secured thereto, with means for raising and lowering the same, substantially as and for the purpose set forth.

2. In a fire-escape, the combination of the mast A, provided with the plate F, guy-ropes P, pin i, and palleys O O', with the rings B B', having the interior springs, c, carrying friction-rollers d, and firmly united to the basket or car by the brace E E' E², constructed substantially as and for the purpose described.

334,742. **COFFEE-ROASTER.** THOMAS B. C. BURTON, Philadelphia, Pa. Filed June 24, 1885. (No model.)



Claim.—1. A coffee-roasting cylinder, H, within a hot-air chamber, a top, s', over the said hot-air chamber, adapted as a support for drying the coffee within the cylinder, and links k' k², which permit the removal of the cylinder to the top s' without uncoupling.

2. A coffee-roasting cylinder, H, within a hot-air chamber, a top, s', having stops s² over the said hot-air chamber, adapted as a support for drying the coffee previous or subsequent to roasting.

3. In a coffee-roaster, the slotted end plates, D, forming the ends of the hot-air chamber, the shutter S, covering the said slots and forming with the hook s² a stop to hold the journals k in proper position when at the center or when against the stop m' upon the projecting bracket M.

334,743. **TREE-PROTECTOR.** DAVID L. BYERS, Clinton, Mo. Filed Apr. 4, 1885. (No model.)



Claim.—1. A frame or box, A, consisting of slats a, bands B, and staples b, in combination with supports D, pieces E, and canvas F, substantially as described.

2. A frame or box composed of slats a, set close together, the end slats being rabbeted, as shown, bands B B, secured to the slats by staples b, the ends of the bands extending beyond the slats being twisted together and secured by a staple, substantially as described.

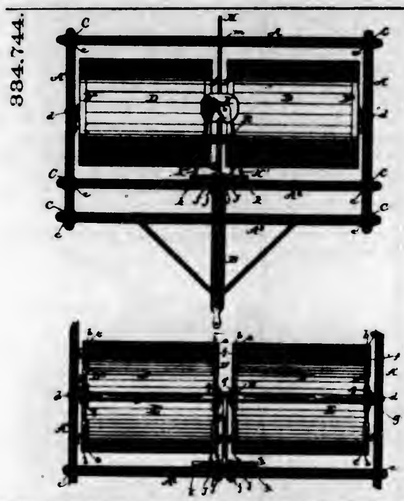
3. The combination, with a box made of slats a, bands B B, and staples b, of supports D, having beveled pieces E, by which said supports are secured to the box, and canvas F, secured around the box and provided with draw-string G, to secure it to the tree, substantially as shown and described.

334,744. **LAND-ROLLER.** GEORGE L. CALKINS, Toledo, Ohio. Filed June 25, 1885. (No model.)

Claim.—1. In a land-roller, the roller-cylinder composed of the metallic heads D' and D², intermediate narrow staves, F, axle E, hollow at its inner end and formed at its outer end into a journal-arm, d, and with screw-threads at each end, and clamping-nuts g', said staves having tenoned ends e, and said heads being each formed with a cast-metal rim and hub, and wrought-metal spokes, and with a circumferential groove to receive the tenoned ends of the staves, as described, for the purposes specified.

2. The combination, in a land-roller composed of two separate cylinders united together, each of which is composed of two metal heads and intermediate wooden staves, of the separate axle E, made hollow at its inner end, and with a journal-arm, d, at its outer end, and with screw-threads at both ends, and clamping-nuts g', whereby the parts of said roller are secured together and the whole supported in position in its frame, as described, for the purposes specified.

334,744.



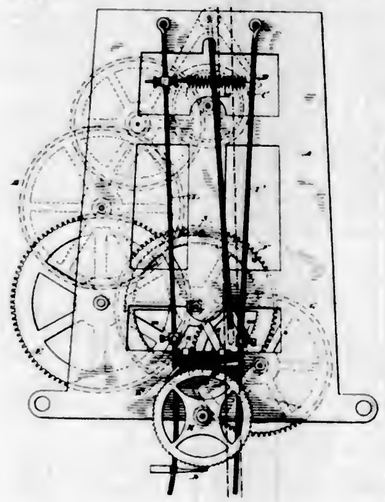
3. In a land-roller, in combination with the roller composed of two separate cylinders mounted upon separate axles having bearings in the frame at their outer ends and hollow at their inner or abutting ends, the draw-bar G, having the bars H and I at its ends, as described, for the purposes specified.

4. In a land-roller, the combination, with the frame of the machine, of the adjustable driver's seat K, supported upon divided rods K', and rear notched bar, M, with the eyebolts k k and m, as described.

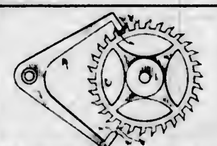
5. The combination, in a land-roller, of the frame A A' A⁹ A⁸ B, the roller composed of two short cylinders, D D, having composed metal heads, intermediate wooden staves, F e, hollow axles E, and clamping-nuts g', and removable draw-bar G, having the small bar H and large bar I at its ends, as described, for the purposes specified.

334,745. **ELECTRIC CLOCK.** JULIAN R. CAREY, New York, N. Y., assignor to the Electric Time Company. Filed Aug 28, 1884. (No model.)

Brief.—A clock driven by ordinary means has its escapement mechanism so constructed that when the normal source of power fails the train may be actuated by the pendulum and escapement-wheel. To this end the pendulum carries an armature, and may receive impulses from an electro-magnet.



334,745.



Claim.—1. The combination, with a clock-pendulum actuated by electric impulses, of winding devices for the driving-power of the clock, said winding devices being actuated by the pendulum.

2. The combination, with a clock-pendulum, of an impelling electro magnet or magnets and winding devices for the driving-power of the clock, said winding devices being operated by the pendulum, but located out of range of the pendulum when the latter is kept in vibration by the driving-power only.

3. The combination, with an electrically-actuated clock-pendulum, of winding mechanism for the driving-power of the clock and actuating devices for communicating movement to said mechanism by the pendulum's swing, said actuating devices being located, as described, out of the range of the pendulum when the latter is kept in vibration by the spring or weight only.

4. A clock having a time-train run by a spring or weight whose force is maintained by the vibrations of the pendulum and auxiliary devices for giving to said pendulum the force of swing necessary to permit its use as such maintaining device.

5. A clock with a spring or weight driven time-train, in combination with a winding-train actuated by the pendulum and auxiliary devices for maintaining the swing of said pendulum, as and for the purpose described.

6. A clock mechanism containing a winding device operated by the pendulum and intermediate actuating devices applied, in the manner described, so as to permit a limited free action of the pendulum sufficient to operate the time-train without winding.

7. A clock containing a winding device operated by the vibrations of the pendulum and an adjustable stop or abutment, as c, for adjusting or determining the point in the swing of the pendulum at which it shall impinge upon the winding device, so as to permit a normal action of the pendulum in conjunction with the time-train without interference from the winding devices.

8. A clock with a spring or weight driven time-train, means for propelling the time-train, kept in operation by the pendulum, and a magnet or magnets for giving additional force to the pendulum in its vibrations.

9. In a clock, a winding-train operated by the force of the pendulum's swing, in combination with devices auxiliary to the usual driving-power of the time-train for imparting force to the swing of said pendulum.

10. The combination, with a dial or indicating train, of a pendulum used as a power for operating other devices and auxiliary devices for maintaining in said pendulum the force of vibration necessary to permit its use as such operating-power.

11. The combination, with a dial or time-indicating train, of a driving spring or weight, a controlling or actuating pendulum used as a power for operating other devices, and an impelling electro magnet or magnets acting on said pendulum, for maintaining in the same the augmented power requisite to operate such other devices.

12. The combination, with a dial-train, a controlling or actuating pendulum, and auxiliary mechanism kept in action or operated by said pendulum in its vibrations, of an electro-magnet or magnets for giving to said pendulum an increased force, as and for the purpose described.

13. The combination, with a dial or time-indicating train and a controlling or actuating pendulum, of a supplemental or auxiliary lever or levers placed in range of the pendulum and means for giving to said pendulum an increased force of swing through the influence of electro-magnetism, whereby said pendulum may be enabled to overcome the resistance of said auxiliary lever or levers and the mechanism worked by the latter.

14. In a clock provided with actuating devices, whereby it may be kept in operation by the force of the pendulum's vibrations, the combination, with said pendulum, of an auxiliary independently-mounted pendulum or pivoted lever operating a circuit-closing device, said auxiliary pendulum or lever being connected with the clock-pendulum.

15. A clock containing a winding device, in combination with an actuating-pendulum receiving its actuating-power from an electro magnet or magnets acting on the same at or near its extreme of vibration and circuit-controlling devices operated by said pendulum, as and for the purpose set forth.

16. In a clock whose pendulum receives an increased power in its action from the influence of a magnet acting isochronously with the vibrations thereof, the combination, with said pendulum, of an auxiliary lever and circuit-closing devices actuated by the latter.

17. In a clock-escapement, the combination, with the escapement-wheel, of an anchor having its pallets formed with two sets of engaging-

surfaces, one set constituting the ordinary detent and impulse surfaces of the escapement and the other set being formed to impart power to the escapement-wheel when the latter is free from the continued influence of the driving-power geared thereto.

18. In an electric clock, the combination, with a time-train, of a driving-power, such as a spring or weight, anchor-escapement pallets having teeth formed, as described, to act as impelling-teeth, so that they may impart a forward movement to the escapement-wheel when the anchor is operated by means independent of the driving-power applied to the escapement-wheel, and an electro-magnet or magnets for actuating said anchor, as and for the purpose described.

19. The combination, in a clock, of a driving-power, such as a spring or weight, a dial or time-indicating train normally actuated by but adapted to rotate independently of said driving-power, and impelling devices for imparting a step-by-step movement to the dial-train when the aforesaid driving-power is out of action.

20. The combination, in a clock, of a dial or time-indicating train connected with an impelling spring or weight, as described, so as to permit the train to move although the spring or weight is out of action, an electrically-propelled pendulum for controlling the movement of the train under the force of the driving-power, and impelling devices actuated by the pendulum, for giving a positive movement to the dial-train when the driving-power is out of action.

21. In a clock, a dial or time-indicating train and driving spring or weight therefor, in combination with independent mechanism for imparting a time movement to said train when the spring or weight is out of action.

22. The combination, with the time-train of a clock and its escape-wheel and pendulum, of means for propelling said escape-wheel through the vibrations of the pendulum, and auxiliary devices, which may operate as a power independent of that derived through the escape-wheel, to keep said pendulum in vibration.

23. The combination, with a clock mechanism, of a driving spring or weight and actuating mechanism for operating the time or dial train of the clock independently of the action of driving spring or weight.

24. The combination, in a clock, of a dial or time train, a driving-power—such as a spring or weight—connected to said train through a pawl and ratchet, and electrically-operated impelling devices acting on said dial-train, whereby the latter may be kept in operation when the driving-power ceases to act.

25. In a clock, the combination of a driving-weight, supported by an endless chain or cord, and two wheels or drums, over which said cord or chain passes, one of said drums being fixed to and the other being loose upon a common shaft, and connected, respectively, as described, one with the time mechanism and the other with the electrically-operated winding devices.

26. In an electric clock, the combination, with the time-train, of a driving-weight carried by a pulley supported on an endless chain or cord, a driving wheel or drum, over which said cord passes, geared to the clock-train, a second independently-rotating drum or wheel for said cord, a winding-train connected with the latter wheel or drum, and actuating devices for said train, operated by electro-magnetism.

27. The combination, with a clock-train, of a driving-weight supported from an endless chain or cord, two independently-rotating drums or wheels, over which said cord passes, and actuating devices for one of said drums, operated by the vibrating pendulum of the clock.

28. The combination, with the driving-weight, of the endless cord or chain supporting said weight, a winding-train geared to a wheel, over which said cord passes, actuating devices for said train, operated by the vibrating pendulum of the clock, and an impelling magnet or magnets for giving to said pendulum the impulses necessary to keep it in vibration while it is doing the work of winding up the weight.

29. The combination, with the endless belt or cord, of the two drums, the two weights, a winding mechanism connected to one of said drums, and an electrically-operated pendulum for actuating said winding mechanism.

30. The combination, with the driving spring or weight and its winding train actuated at frequently-recurring intervals, of a pawl-and-ratchet connection, or its equivalent, as described, in said train near the weight or spring, whereby power may be applied to wind the weight or spring quickly without operating the normal winding devices.

31. The combination, with the driving spring or weight and the dial or time-measuring train actuated thereby, of the interposed pawl-and-ratchet connection, or its equivalent, as described, mechanism for imparting movement to the train by the pendulum's vibrations, and an impulse electro magnet or magnets, whereby electric impulses may be applied through the pendulum to the time-train when the spring or weight is not in action.

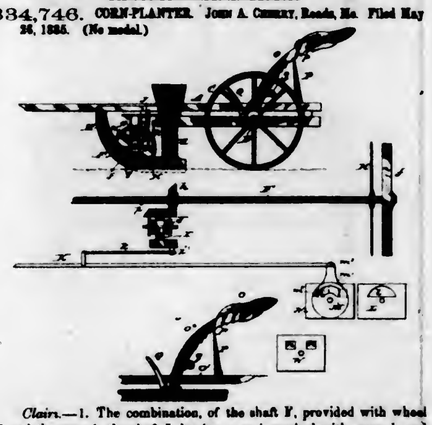
32. The combination, with a power-driven time-train, of an escapement and pendulum, and impelling devices worked by the pendulum for imparting a positive movement to the time-train, and an electro magnet or magnets for maintaining the action of said pendulum.

33. The combination, with the pendulum and a wheel, as H, kept in operation by said pendulum, of an independently-mounted yielding arm or arms engaging directly or indirectly with the pendulum, and actuating devices for said wheel, operated by the said arm or arms.

34. The combination, with the pendulum, of actuating devices for imparting movement to auxiliary mechanism through the force of the pendulum's swing, said actuating devices being arranged so as to allow a normal swing of said pendulum without bringing the parts into action.

35. The combination, with a time-train and escapement devices therefor, constructed in the manner described, to operate both as escapement devices when the driving-power applied to the escapement-wheel through the clock-train is in action and as impelling devices when the said power is out of action, of a pendulum and an electro magnet or magnets for giving impulses to said pendulum by magnetic influence.

334,746. CORN-PLANTER. JOHN A. CHERRY, Reade, Ms. Filed May 26, 1885. (No model.)



Claim.—1. The combination, of the shaft F, provided with wheel *f*, and the gear A, the shaft I, having gear *i*, meshed with gear A, and provided with a crank, *i'*, the seed-dropping devices, and a connection between such devices and the crank *i'*, substantially as and for the purpose set forth.

2. In a corn-planter, the combination of the shaft F, provided with wheels *f*, the block *g*, made adjustable in boxes G, the revolving knife-blades H, the bevel-wheels A and *i*, the shaft I, having crank *i'*, block *j*, adjustable in box J, and the dropping-plates worked by the said crank, substantially as described and shown.

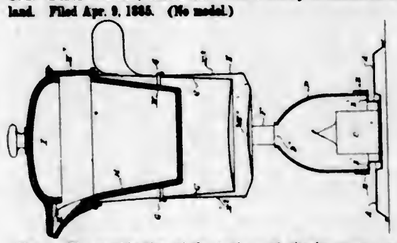
3. In a corn-planter, the combination of the seat O, the lever o^3, having notches *p* therein, the lever P, and the tongue provided with the slot *o'*, substantially as described and shown, and for the purpose set forth.

4. In a corn-planter, the combination of the seat O, the lever o^3, having notches *p* therein, the lever P, the tongue provided with slot *o'*, and the treadle Q, pivoted to the main axle and provided with the roller *q*, for raising the seat together with the front part of the machine, substantially as described and shown.

5. The combination of the shaft F, having wheels *f* and *h*, the boxes *g*, suitably supported, whereby they may be adjusted vertically, the shaft I, having a gear, *i*, meshed with gear H, a vertically-adjustable box, *j*, supporting said shaft I, and connections between such shaft and the seed-dropping devices, substantially as set forth.

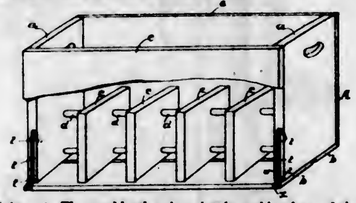
6. In a corn-planter, the combination of the seat-bar pivotally supported and provided with notches *p*, a stop pawl or lever, P, arranged to engage said notches, and a treadle or lever, Q, having an extended arm engaged with and adapted to adjust the seat-bar, substantially as set forth.

334,747. INFANTS' FOOD-WARMER OR NIGHT-LIGHT APPARATUS. SAMUEL CLARKE, Child's Hill Works, County of Middlesex, England. Filed Apr. 9, 1885. (No model.)



Claim.—The combination of the food-vessel, the hot-water vessel, into which the bottom of the food-vessel enters, the hot-air vessel, having a central bottom opening and side openings, and into which the hot-water vessel enters from above, the supporting-stand, upon the legs of which the hot-air vessel rests, the saucer for the night-light, resting in a cavity of the base-plate of the supporting-stand, and the dome-glass, supported upon the saucer beneath the hot-air vessel, and from which the heat passes into the hot-air vessel, substantially as and for the purpose set forth.

334,748. BOTTLE-PACKING BOX. EDWARD A. CORELESS, Madisonville, Ohio. Filed Jan. 24, 1885. (No model.)



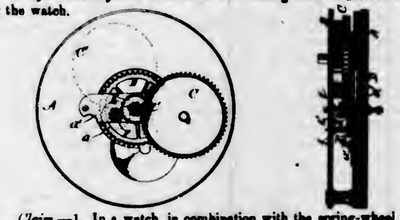
Claim.—1. The combination, in a bottle-packing box, of the half-partitions *c*, extending across within the same, and secured to the sides and bottom, with the rods *d d*, passed through and held in apertures in the partitions *c* and between the ends of the box, said rods constituting practically a longitudinal vertical partition separating rows of bottles, as set forth.

2. The box A, provided with the retaining-wires *w*, having their ends bent and driven into the end pieces, *a*, beneath the sides *c*, and carried thence around or through the bottom pieces, *b b*, and across in grooves *x*, constructed and arranged as set forth.

3. In a beer or wine bottle carrying box, the end pieces, *a*, side pieces, *c*, bottom pieces, *b*, retaining-wire *w*, and tightening-staple F, combined and arranged as and for the purpose set forth.

334,749. WATCH-MOVEMENT. PIERRE CORVIN, Farmington, Ill., assignor of one-half to L. B. Young, same place. Filed Apr. 6, 1883. (No model.)

Brief.—The object is to increase the running time without enlarging the watch.



Claim.—1. In a watch, in combination with the spring-wheel and center wheel, the spur-wheel E and pinion *d'*, fixed to a tubular shaft which forms a bearing for the shaft of the center wheel and receives motion from the spring-wheel, and the pinion F and spur-wheel F', which receive motion from the spur-wheel E, and gear with and give motion to the pinion *d* and connected center wheel, D, substantially as specified.

2. In a watch, in combination, a train of mechanism between the spring-wheel and center wheel, consisting of a pinion and spur-wheel fixed to a tubular shaft which is seated over one end of the shaft of the center wheel, and a pinion-wheel and spur-wheel which are adapted to receive motion from said parts and to transmit motion to the center-wheel, substantially as and for the purpose specified.

3. In a watch, the pinion *d'* and spur-wheel E, fixed to a tubular shaft which forms a journal-bearing for one end of the center-wheel shaft, and a pinion, F, and spur-wheel F', in combination with the spring-wheel and center wheel, and adapted to change the relative rate of speed of the spring-wheel and center wheel from the relative rate of speed of these parts in an ordinary one-day watch substantially as and for the purpose specified.

4. In combination with the center wheel, D, and adapted to drive the same, a cannon-pinion which forms a journal for one end of the center-wheel shaft, and a pinion, F, and spur-wheel F', substantially as and for the purpose specified.

5. In combination with the spring-wheel, the pinion *d'*, and spur-wheel E, the shaft of which is journaled in plate B and bridge-plate *a'*, and forms a journal-bearing for one end of the shaft *d'* of the center wheel, the pinion F and spur-wheel F', also having bearings in plate B and bridge-plate *a'*, and the center wheel and its pinion *d*, substantially as and for the purpose specified.

334,750. BUCKLE. CHARLES J. COOPER, Chicago, Ill. Filed June 24, 1885. (No model.)

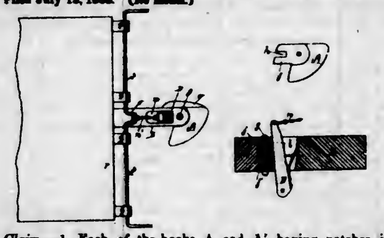
Claim.—1. The combination, in a buckle, of a forward and rear cross-bar, and a hinged arm secured to said rear cross-bar at one end, and having its opposite end carrying the tongue of the buckle resting in a depression of the front cross-bar, whereby the body of the said hinged arm is brought below the plane of the upper surfaces of the cross-bars, substantially as described, and for the purpose set forth.

2. The combination, in a buckle, of a forward and rear cross-bar, and a hinged arm secured to said rear cross-bar at one of its ends, and carrying the tongue of the buckle on its other end, said arm being curved downwardly from the plane of the said cross-bars, substantially as described, and for the purpose set forth.

334,750.



334,751. CAR-COUPLING. WILLIAM C. COUPE, Hyde Park, Mass. Filed July 13, 1885. (No model.)

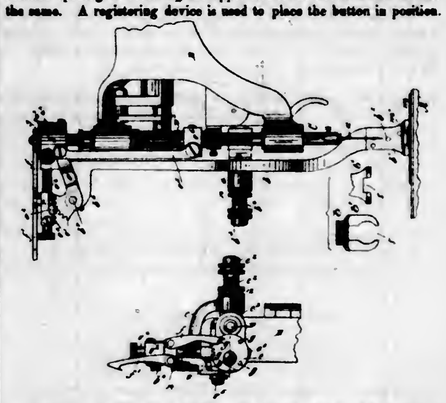


Claim.—1. Each of the hooks A and A', having notches in its shank portions, in combination with its carrying-bar B, provided with the locking-arm D, and its actuating-spring arranged in a slot in each bar and pivoted to the bar so as to operate with such notches, as set forth.

2. The combination of the cam *c*, projecting from the shank of the hook, with such hook and its carrying-bar, and with the locking-arm D and its spring, adapted, as represented, to the said bar, the shank of the hook being notched to receive the locking-arm, and all being substantially as set forth.

334,752. BUTTON HOLDING AND FEEDING ATTACHMENT FOR SEWING-MACHINES. HENRY H. CORNELL, Malden, Mass. Filed Apr. 2, 1884. (No model.)

Brief.—The button holding and moving foot of the attachment acts to move the material with the button, so that the needle penetrates in succession the holes of the button, whether it has two or any usual number of holes. The button-holder is actuated by the upper end of the needle-bar, said holder being composed, essentially, of a lever of the first order having its fulcrum on a pivoted arm, and provided at one end with a button-holding foot, the other end having a rotating feed-collar with an inclined opening for receiving the upper end of the needle-bar to actuate the same. A registering device is used to place the button in position.



Claim.—1. A button holding and feeding device composed of a lever having an attached foot, a rotating collar provided with an opening

inclined with relation to the center of the collar, and an arm upon which the said lever is pivoted, and a block or collar in which the said arm is pivoted, the said parts being at right angles each to the other, thus constituting a universally-jointed support for the said lever, to operate substantially as described.

2. The presser-bar, the lever *b*, provided with the attached button receiving and holding foot, and rotating collar provided with the inclined passage, combined with the arm *c*, to receive the fulcrum-stud for the said lever, and pivoted upon a block connected with the presser-bar, and with the needle-bar to enter the collar and move the lever *b*, substantially as described.

3. The lever *b*, provided with the button receiving or holding foot *b'*, stud b^2, arm *c*, and stud c^2, combined with the two adjustable screw-threaded sleeves, arranged at right angles each to the other and fitted to the said studs, adjustment of the said sleeves enabling the button to be placed in correct position under the needle, substantially as described.

4. The lever *b*, provided at one end with the button receiving and holding foot and at its other end with the rotating toothed collar having the inclined passage formed through it, combined with the needle-bar, and with means, substantially as described, between it and the said collar to rotate the same intermittingly, as set forth.

5. The lever *b*, provided with the button receiving or holding foot, and the rotating loose collar provided with the inclined opening and ratchet-pins, and a pawl and pawl-carrier adapted to be moved by or from the needle-bar to rotate the said collar, combined with the pivoted arm to support the said lever, substantially as described.

6. The lever *b*, provided with the button receiving or holding foot, and the rotating collar *e*, provided with the inclined opening and with ratchet-pins, and a pawl-carrier provided with a push and with a pull pawl, and arm *c*, to pivotally support the lever *b*, as described, combined with the needle-bar, and means, substantially as described, between it and the said pawl-carrier to actuate the latter, the upper end of the needle-bar entering the diagonal hole in the collar, as set forth.

7. The button-holding presser-foot, combined with the button-registering device, constructed substantially as described, it consisting of the shank provided with projections 6, and the connected spring, the shank and spring being of less width than the diameter of the button, the registering device enabling the button to be presented to the presser-foot in correct position to be entered by the needle of the sewing-machine, as set forth.

334,753. PATTERN-PLATE FOR MOLDERS. JOHN R. DAVIES, Whitewater, Wis. Filed Dec. 1, 1883. (No model.)



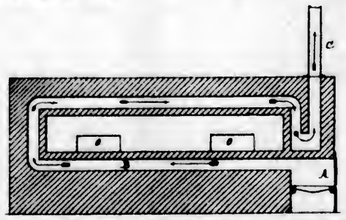
Claim.—1. The marginal frame D, having notches or corrugations *e a*, fastening-bars *a a*, and screws *b b*, in combination with the rubber filling *c' c'*, the pattern-halves C C', and the cope A and drag B of the flask, substantially as shown and described, and for the purpose set forth.

2. In combination, the marginal frame D, having notches or corrugations *e e* and fastening-bars *a a*, as set forth.

3. The combination of the marginal frame D, having notches or corrugations *e e*, the fastening-bars *a a*, and the rubber filling molded around and secured to said bars *a a*, as set forth.

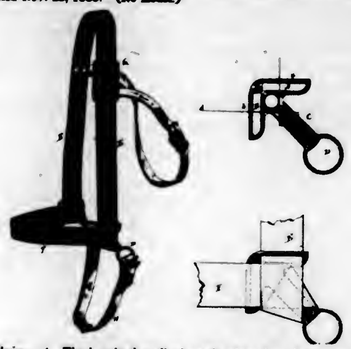
4. The marginal frame D, having notches or corrugations *e e*, bars *a a*, and screws *b b*, in combination with the filling *c' c'*, the undivided pattern C', and the cope A and drag B of the flask, substantially as shown and described, and for the purpose set forth.

334,754. MANUFACTURE OF ARTICLES MADE FROM TOUGHENED GLASS. FRANÇOIS BARTHÉLEMY ALFRED ROYER DE LA BASTIE, Paris, France. Filed Sept. 22, 1885. (No model.) Patented in England July 30, 1884, No. 19,796.



Claim.—As an improved article of manufacture, an article having its body made from opal glass and its surface composed of toughened glass, substantially as described.

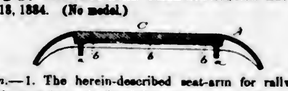
334,755. HALTER-TRIMMING. ERNEST DERRIS, Middletown, Conn. Filed Nov. 23, 1885. (No model.)



Claim.—1. The herein-described angle-piece for a halter, consisting of a frame constructed with slots A B at substantially right angles to each other, with a bar, C, extending from the inner angle and at an angle of substantially forty-five degrees to each of the said slots A B, the said bar terminating in a loop, D, substantially as described.

2. The herein-described angle-piece for a halter, consisting of a frame constructed with slots A B at substantially right angles to each other, with a bar, C, extending from the inner angle and at an angle of substantially forty-five degrees to each of the said slots A B, the said bar terminating in a loop, D, the outer bars, *a b*, of the slots A B thrown outward from the plane of the frame and bar C, substantially as described.

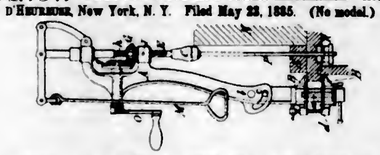
334,756. CAR-SEAT ARM. JAMES DENVER, New Haven, Conn. Filed Apr. 18, 1884. (No model.)



Claim.—1. The herein-described seat-arm for railway-cars, consisting of the metal cap A, fitted for attachment to the seat-frame, constructed with a recess, B, upon its upper surface shorter than the length of the cap, and so as to leave a portion of the cap at each end of said recess, combined with a non-metallic block, C, secured in said recess, and so as to leave the said end portions of the cap exposed at the respective ends of the said non-metallic block, substantially as described.

2. A seat-arm composed of a metal cap, A, constructed for attachment to the seat-frame combined with a non-metallic block, C, shorter than the arm, and secured upon the cap and so as to leave the end portions of the cap exposed at the respective ends of the said non-metallic block, substantially as described.

334,757. DRILL FOR WOOD AND OTHER MATERIALS. RUDOLPH D'HEUREUSE, New York, N. Y. Filed May 23, 1885. (No model.)



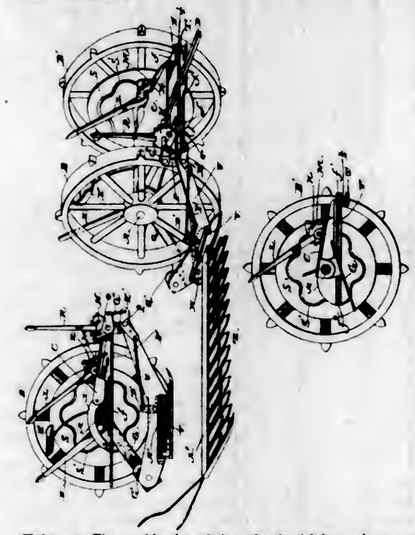
Claim.—1. A drilling-tool comprising a frame, having a hinged foot constructed to be adjustably secured near the object to be operated upon, mechanism for imparting a progressively forward movement to the drill-point, and mechanism for imparting the requisite rotary motion thereto, substantially as and for the purpose set forth.

2. A drill embodying in its organization a frame whose foot can be adjustably secured near the object to be operated upon, and whose top portion can be adjusted to enable the drilling-tool to penetrate at an angle to the vertical axis of the foot of the frame, gearing for imparting rotary motion to the drilling-tool, and drill-feed mechanism whereby said tool is progressively fed forward simultaneously with its rotation, substantially as set forth.

3. The frame A, whose foot-piece is provided with a clamping mechanism, one of the jaws, B, whereof is rigidly secured to said foot-piece, in combination with a drill-spindle, gearing for imparting rotary motion to said spindle, and the pull M, connected to the top extension of the drill-spindle and extending down near the foot of the drill-frame, whereby a forward or backward movement may be imparted to the drilling-tool, substantially as set forth.

4. The frame A, constructed to have one of its members adjusted at an angle with relation to its other member, and provided with adjustable clamps at its foot, in combination with the drill-spindle, gearing to effect the rotary movement of said spindle, and the pull M, connected to the top extension of said spindle and extending down to near the foot of the drill-frame, whereby a progressively forward movement of the drill-spindle may be effected, substantially as set forth.

334,758. MOWER. ELMER DICKINSON, Belair, Mich. Filed May 25, 1885. (No model.)



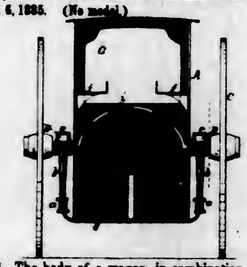
Claim.—1. The combination of the axle, the driving and supporting wheels secured thereto, the frame F, the hinged bracket G, the arm U, pivoted to the frame F and secured in a slotted arm of the bracket G, the cutter hinged to the arm U, and the lever for raising or lowering the bracket G, substantially as described.

2. The combination of the axle, the driving and supporting wheels mounted thereon, the frame F, the hinged bracket G, the arm U, pivoted to the frame F and secured in a slotted arm of the bracket G, the cutter hinged to the arm and having the stud V', the lever D', fulcrumed to the arm U and bearing on stud V', a lever connected to the lever D' for raising the outer end of the cutter, and a lever for raising the bracket G, and thereby raising the inner end of the cutter, substantially as set forth.

3. The combination of the axle having the driving and supporting wheels, and the wheel S, having the curved slot or camway S', the frame F on the shaft, the fulcrumed lever T, having the arm T', working in slot S', the arm U, secured to the frame F, the cutter hinged to the arm U and having the actuating bent lever W, and the rod W', connecting the free ends of the levers T' and W, for actuating the cutters, substantially as described.

4. The combination of the axle having the driving and supporting wheels, and the wheel S, having the curved slot or camway S', the frame F on the shaft, the fulcrumed lever T, having the arm T', working in slot S', the arm U, secured to the frame F, the finger-bar hinged to the arm U, and the fulcrumed lever W, connected to the lever T and to the cutting apparatus, for actuating the latter, substantially as described.

334,759. DELIVERY-WAGON. THOMAS DEWEY, Rochester, N. Y. Filed Nov. 6, 1885. (No model.)



Claim.—1. The body of a wagon, in combination with the wheels and axle thereof, said axle passing through the space within the body and formed with a vertical curve or bend, substantially as shown and described.

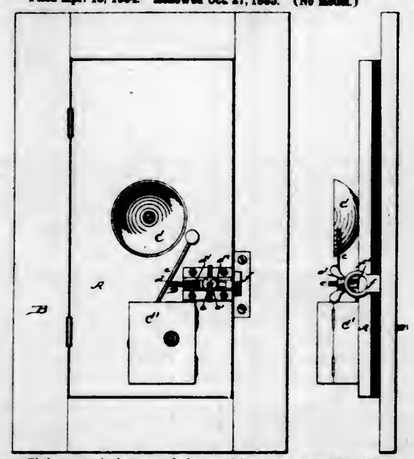
2. In combination with the body, thills, and axle of a wagon, rigid inclined suspenders *b* for the body, secured rigidly to the thills and pendent therefrom, horizontal springs secured to the lower angles of said suspenders, and rests *d* for said body, secured to said springs, substantially as shown and described.

334,760. CLEVIS. HENRY F. DUNN, Eagle Lake, Tex. Filed Apr. 15, 1885. Renewed Dec. 14, 1885. (No model.)



Claim.—The combination, with a plow-beam, of the clevis-plates bent or doubled and formed with attaching-loops, said plates intersecting each other and formed with registering holes or openings, and a loop having its end extending through said openings and held in place by a disk, substantially as set forth.

334,761. BURGLAR-ALARM. WALTER EGGLESTON, Hyde Park, Ill. Filed Apr. 18, 1884. Renewed Oct. 27, 1885. (No model.)



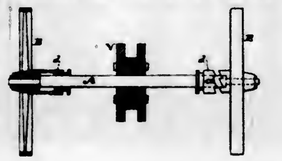
Claim.—1. A door or window and its frame, one of which is provided with a clock-alarm mechanism, and a bolt adapted when drawn back to engage and hold the mechanism, and having means for securing it in this position at will, in combination with a stop-catch, against which the end of the bolt rests, and provided with an opening into which it may spring on being moved, to secure the door or window and sound the alarm, substantially as shown and described.

2. In a door and window alarm, the door or window A, bell C, clock mechanism C', having a hammer, *c*, and bolt D, having a set-nut, *e'*, in combination with the frame B, and stop *f*, having opening *f''*, substantially as and for the purpose set forth.

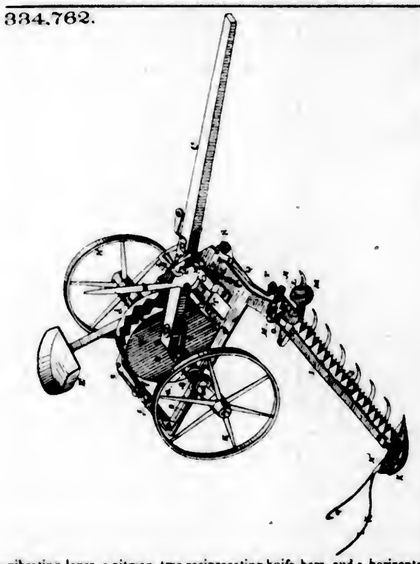
334,762. MOWING-MACHINE. BENTON ELDRIDGE, Shasta, Cal. Filed Feb. 13, 1885. (No model.)

Claim.—1. In a mowing-machine having the two oppositely-reciprocating knife-bars, the vibrating lever and actuating cam-wheel, and the pitman connecting the vibrating lever with one of the sickles, in combination with a horizontal lever with a central fulcrum having its opposite ends connected with the upper and lower sickles, respectively, substantially as herein described.

2. In a mowing-machine, the wheel-axle having the pole and sickle frames independently journaled upon it and adjustable with relation to each other, in combination with a cam-wheel fixed upon the wheel-axle.



334,762.

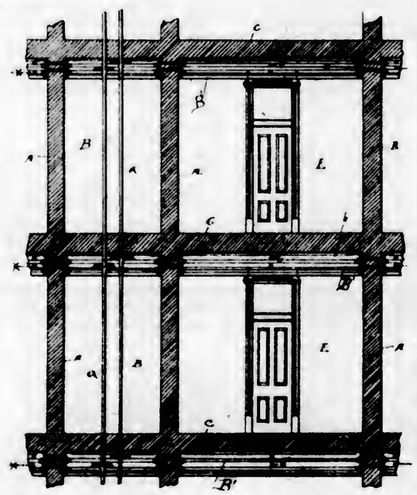


a vibrating lever, a pitman, two reciprocating knife-bars, and a horizontal centrally-fulcrumed lever having its ends connected with the upper and lower sickles, respectively, in combination with the universal joint 8, connecting the pitman and the vibrating lever, whereby the sickle-frame may be raised or lowered without interfering with the action of the joint, substantially as herein described.

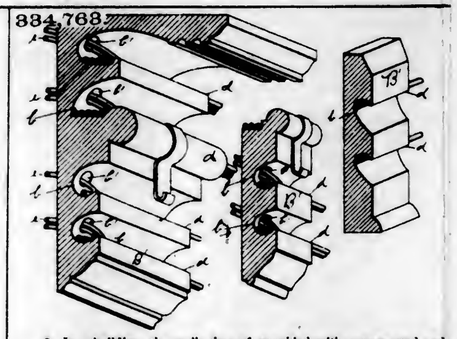
334,763. BUILDING AND SYSTEM FOR LAYING ELECTRIC CONDUCTORS THEREIN. CHARLES N. FAY, Chicago, Ill. Filed Jan. 20, 1885. (No model.)

Claim.—1. In a building, the walls thereof, provided with a connected and continuous system of grooved recesses or conduits having lateral openings extending up and down from floor to floor and branching at the floors to the different rooms or apartments, substantially as specified.

2. In a building, the walls thereof, provided with a connected and continuous system of grooved recesses or conduits extending up and down from floor to floor and branching at the floors to the different rooms or apartments, said grooved recesses or conduits being connected at angles between different walls by shutting directly upon each other and on opposite sides of the same wall by apertures piercing the wall, substantially as specified.



334,768.



3. In a building, the walls thereof, provided with a connected and continuous system of grooved recesses or conduits having lateral openings and extending up and down from floor to floor and branching at the floors to the different rooms or apartments, in combination with conductors laid in said grooved recesses or conduits, substantially as specified.

4. In a building, the walls thereof, provided with a connected and continuous system of grooved recesses or conduits having lateral openings extending up and down from floor to floor and branching at the floors along the hallways to the different rooms or apartments, substantially as specified.

5. In a building, the walls thereof, provided with a connected and continuous system of grooved recesses or conduits having lateral openings extending up and down from floor to floor and branching at the floors to the different rooms or apartments, said horizontally-branching grooved recesses having a projecting lip or member to conceal the conductors laid therein from view, substantially as specified.

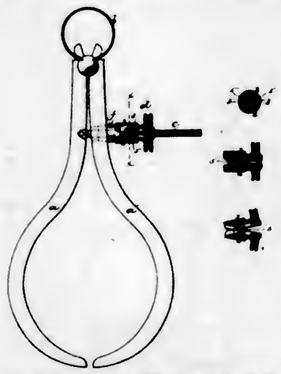
6. In a building, the combination of halls provided with moldings having grooved recesses therein, with rooms provided with moldings having corresponding grooved recesses therein, and apertures through the walls connecting said grooved recesses, substantially as specified.

7. A molding having a grooved recess for reception of a conductor and a flap closing the lateral opening to said grooved recess, substantially as specified.

8. A molding having a grooved recess for reception of a conductor and a hinged flap closing the lateral opening to said grooved recess, substantially as specified.

9. The combination, in a building, with an elevator-shaft wall provided with a grooved recess, *a*, of hall-walls provided with moldings having grooved recesses *b*, connected with the former, and room-walls provided with moldings having grooved recesses *c*, and apertures *a' a'*, connecting the latter with said grooves *b*, substantially as specified.

334,764. RAPIDLY-ADJUSTING NUT FOR CALIPERS AND DIVIDERS. CHARLES P. FAY, Springfield, Mass. Filed July 17, 1885. (No model.)



Claim.—1. A retaining-nut for spring-calipers and like instruments, composed of two sections hinged together and threaded at one end, said sections being capable of rocking on their connecting-hinges to engage their threaded ends with or disengage them from the retaining-rod, as set forth.

2. The retaining-nut composed of the two sections connected by rings 5 5, inserted in sockets formed in the sections, as set forth.

334,765. COMBINED BLASTING-BARREL, MEASURING-RULE, AND DRILL-HOLE SCRAPER. JOHN E. FISER, St. Clair, Pa. Filed Oct. 30, 1885. (No model.)



Claim.—1. The combination of the tube and the extensible rod in the tube having a scraper at its outer end, substantially as described.

2. The combination of the tube, the chuck screwed into one end thereof, and the extensible rod passed through the chuck and entering the tube, said rod having the scraper at its outer end, substantially as described.

3. The combination of the tube with the extensible rod therein having the scraper at its lower end, the said rod being inscribed or marked to form a measuring-rule, substantially as described.

4. The tube having a chain-attaching device at one end and an extensible detachable rod working through the other end of the tube and provided with a scraper, as set forth.

5. The combination of the tube having the bushing screwed on one end, the said bushing having an arm provided with an opening, and the extensible rod in the tube having a scraper at its outer end, substantially as described.

6. The combination of the tube having a chain-attaching device at one end, the chuck screwed into the opposite end thereof, and the extensible rod passed through the chuck and entering the tube, the said rod having the scraper at its outer end, substantially as described.

334,766. RAILWAY-CAR SIGNAL. SAMUEL FORMAN, Gold Hill, Nev. Filed Jan. 16, 1885. (No model.)

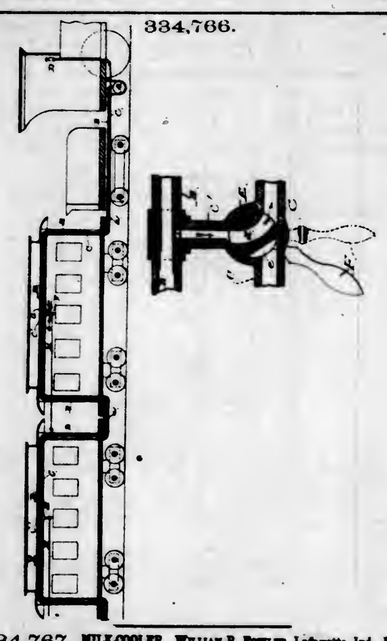
Claim.—1. An air-pipe connected with a chamber containing compressed air, and extending through the railway-train, a second pipe extending alongside the first and connected with a whistle or other signaling device upon the engine, in combination with a cock or valve, whereby the communication may be opened between the two pipes, and the rear portion of the second pipe closed so that the compressed air may pass forward to the signal, substantially as herein described.

2. The parallel pipes B and C, extending through the train, one being connected with a compressed-air chamber and the other with a whistle or signaling device, in combination with valves by which passage may be opened between these pipes within each car, levers by which the valves may be moved, and returning-springs connected with levers, substantially as herein described.

3. In a signaling apparatus, pipes extending through the train of cars, one being connected with a compressed-air receiver and the other with a signaling device upon the engine, valves within each car by which communication may be opened between the pipes, levers connected with said valves and having returning-springs, as shown, in combination with ropes or cords one of which extends from each lever to the front of the succeeding car, where it is attached, substantially as herein described.



334,766.

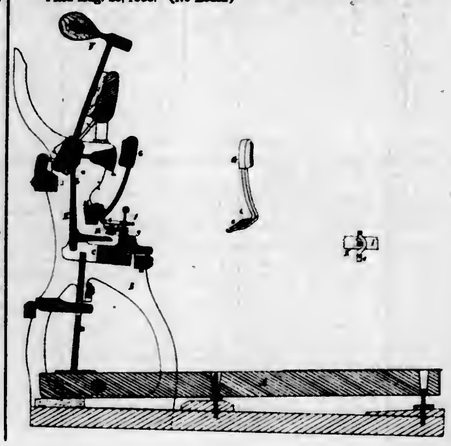


334,767. MILK-COOLER. WILLIAM R. POWLER, Lafayette, Ind. Filed Sept. 26, 1885. (No model.)



Claim.—A milk-cooler consisting of one deep and one shallow tank communicating with each other through a pipe formed with an elbow to act as a trap, and similar pipes passing through the ends of the tanks, and a bucket connected to the end of the shallow tank, as shown, the elbow of each pipe entering the water, and the tanks and covers thereto having a filling of a non-conducting material, substantially as and for the purpose set forth.

334,768. UPRIGHT-PIANO ACTION. IGNACIO FORD, Boston, Mass. Filed Aug. 29, 1885. (No model.)



Claim.—1. The tail of the back-catch, provided with a recess or opening arranged directly over the jack-stop to enable access to the upper end of such jack-stop to be had by a screw-driver inserted in the recess or opening, all being substantially as set forth.

2. The back-catch stop having in its tail a recess or opening, *t*, as described, and hinged to a bar separate from that for supporting the adjustable stop of the jack, such recess or opening being arranged immediately over the upper or nicked end of the said adjustable stop, as set forth.

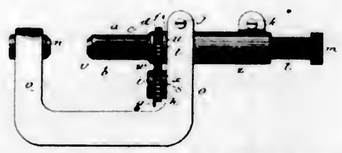
334,769. CHECK-REIN HOOK. JOHN A. GORLY, Pattonville, Mo. Filed Oct. 9, 1885. (No model.)



Claim.—1. The elastic self-releasing check-rein hook A, having the elevated forwardly-curved expansion-rein loop B, substantially as shown and for the purpose specified.

2. The self-releasing check-rein hook A, having the elevated expansion-rein loop B, in combination with the saddle C, substantially as shown.

334,770. MICROMETER-GAGE. GEORGE B. GRANT, Malden, Mass. Filed July 27, 1885. (No model.)



Claim.—1. The combination, upon a micrometer-caliper, of two linear scales divided to different graduations, and two ring-scales connected to turn together at rates of speed that are in the proportion of the graduations of the linear scales, as described.

2. The linear scale upon the inner and unthreaded end of the measuring-pin, in combination with the index-edge *d*, as described.

3. The ring-scale *s* on the pin *c* and on the inside of the frame *o*, sliding upon and connected to turn with the pin *c*, as described.

4. The two ring-scales *e* and *h* on the inside of the frame *o*, the ring *s* being connected to turn with the pin *c*, and the two rings being geared to turn together, as described.

5. The combination of the two ring-scales *e* and *h*, the gears *w* and *x*, the groove *f*, and the flange *g*, as described.

6. The combination of the pin *c*, smooth at its inner end and threaded at its outer end, with the clamping-jaws *j*, holding its smooth end, and the clamping-nut *k*, holding its threaded end, as described.

7. The combination, on a micrometer-caliper, of two linear scales near together on the same piece, with a single index-edge and with two separate ring-scales geared to run together at rates of speed that are in the proportion of the graduations of the linear scales, as described.

334,771. DEVICE FOR GAINING LEVERAGE. PERRY HARROD, West Warsaw, assignor of one-fourth to James Price, Sidney, Ohio. Filed Nov. 21, 1885. (No model.)

Claim.—1. The sliding or reciprocating bar or rod B, provided with the bars C, said bars C being provided with inclined bars or blocks D and the teeth *d*, substantially as and for the purpose specified.

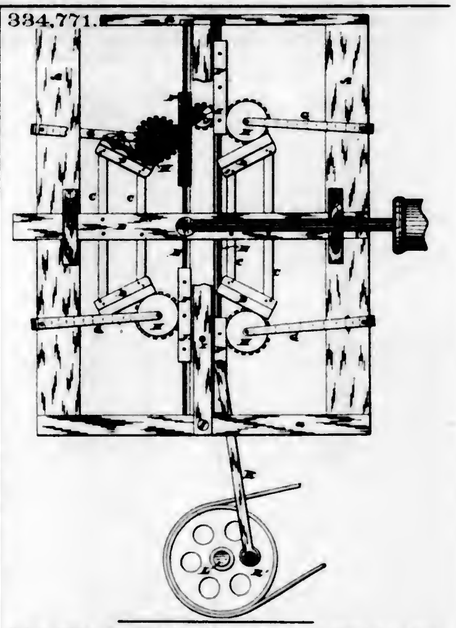
2. The combination, with the vibrating or swinging arms G, pivoted to the posts or standards A, of the wheels H, attached to the free ends of the arms G, and the reciprocating bars or blocks D and F, substantially as and for the purpose specified.

3. The combination, with the reciprocating bars or blocks F, of the wheels H, pivoted or bolted to the free ends of the vibrating or swinging arms G, and the pinions J, substantially as and for the purpose specified.

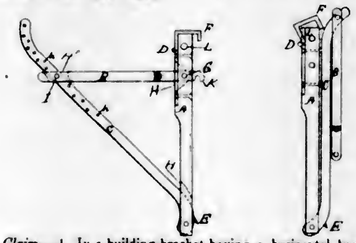
4. The combination, with the reciprocating bars or blocks F, of the pinions J and the shafts I, substantially as and for the purpose specified.

5. The inclined blocks or bars D, in combination with the wheels H and the vibrating or swinging arms G, substantially as and for the purpose specified.

334,771.



334,772. BUILDING-BRACKET. AMOS D. HART, Elmira, N. Y. Filed June 12, 1885. (No model.)

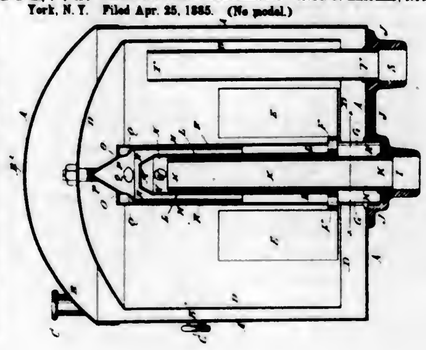


Claim.—1. In a building-bracket having a horizontal bar, B, and bar A and brace C, the combination therewith of a metal hook, F, bolted or otherwise securely fastened to the bar A, as and for the purpose shown and stated.

2. In combination with the bar A and arm B, the brace C, having the ends curved and being perforated with numerous holes at and near the top end thereof, as stated.

3. In a building-bracket, the combination, with the arm B, of brace C, bar A, and hook F, having the hinge D, as and for the purposes stated.

334,773. GAS-PRESSURE REGULATOR. ROBT. F. HATFIELD, New York, N. Y. Filed Apr. 25, 1885. (No model.)

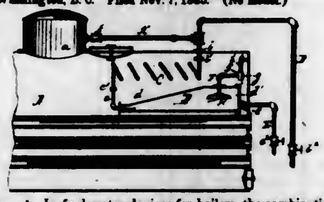


Claim.—1. The combination, with the inlet-pipe and regulator, having valve apparatus operated by the gas-pressure, of an independent float and attached valve operated by the rise and fall of the liquid, substantially as shown and described.

2. In a gas-pressure regulator, the combination, with the case A, the regulator D, the float E, and the inlet-pipe K, of the pipe L, connected at its lower end with the said float, having a closed conical upper end, M, and provided with apertures N at its upper end, and the pipe H, substantially as herein shown and described, whereby the gas will be shut off independent of the regulator by the downward movement of the float, and the upward movement of the said float will be limited, as set forth.

3. In a gas-pressure regulator, the combination, with the case A, the regulator D, and the pipe H, having valve-seat O at its upper end, of the cone-valve P, having apertures Q in its sides, and provided with a guide-pipe, R, sliding upon the inner surface of the said pipe H, substantially as herein shown and described, whereby the gas-pressure is regulated independent of the float, as set forth.

334,774. PURIFIER AND FEEDER FOR BOILERS. HENRY F. HAYDEN, Washington, D. C. Filed Nov. 7, 1885. (No model.)



Claim.—1. In feed-water devices for boilers, the combination, with a sediment or separation chamber arranged within the boiler and provided with a feed-water-supply pipe and a blow-off, of a water-heater interposed between the supply-pipe and the sediment or separation chamber and directly connected with both, so as to maintain a pressure in the sediment-chamber, substantially as and for the purposes specified.

2. In feed-water devices for boilers, the combination, with a sediment-chamber arranged within the boiler and having a supply-pipe and blow-off, of an independent steam-supply which connects the sediment-chamber with the steam-space of the boiler, substantially as and for the purposes specified.

3. In feed-water devices for steam-boilers, the combination, with a sediment or separation chamber arranged within the boiler and provided with a feed-water supply and a blow-off, of a delivery-pipe whose receiving end dips in the sediment-chamber, so as to draw the feed-water from below the surface-level of the sediment-chamber, substantially as and for the purposes specified.

4. In feed-water devices for steam-boilers, the combination, with a sediment or separation chamber having a water-supply and a blow-off, of a delivery-pipe whose receiving end dips in the sediment-chamber and is provided with a shield or inverted cup to arrest the float-matter, substantially as and for the purposes specified.

5. A tapering sediment or separation chamber for feed-water purifiers, having the supply-port at the contracted end and the blow-off and delivery ports at or near the opposite end of said chamber, substantially as and for the purposes specified.

6. In feed-water devices for steam-boilers, the combination, with the tapering sediment-chamber having the supply-port at its contracted end and the blow-off port at its opposite end, of the dip-pipe delivery arranged adjacent to the blow-off port of the sediment-chamber, substantially as and for the purposes specified.

7. In feed-water devices for boilers, the combination, with a sediment-chamber having a blow-off, of a heating-coil interposed between the sediment-chamber and the water-supply, and a valved steam-pipe which connects the heating-coil with the steam-space of the boiler, substantially as and for the purposes specified.

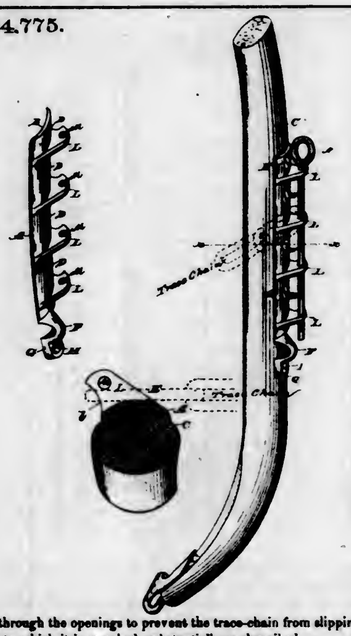
8. In feed-water devices for boilers, the combination, with a sediment-chamber having a water-supply and a blow-off, of a delivery-pipe provided with an automatic spring-valve arranged to cause the delivery of the feed-water under pressure, substantially as and for the purposes specified.

9. In feed-water devices for boilers, the combination of a supply-pipe, B, a heater, C, and sediment-chamber D, arranged within the boiler, a steam-pipe, K, having a check-valve, *k*, and which connects the steam-space of the boiler with the heater C, a valved delivery-pipe, F, and a blow-off pipe, substantially as and for the purposes specified.

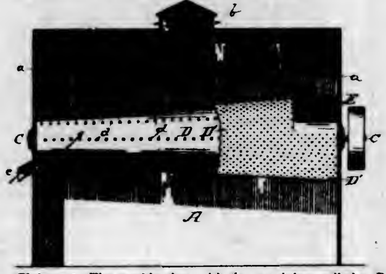
334,775. HAME. HENRY A. HUGHES, Collinsville, Tex. Filed May 19, 1885. (No model.)

Claim.—The hame attachment, preferably concave on its inner side, having the projecting hooks L for the attachment of the chain trace, said hooks having the aligned openings M, and the bolt or wire N, adapted to pass through the openings to prevent the trace-chain from slipping off the hook to which it is attached, substantially as described.

334,775.



334,776. SHODDY-PURIFIER. EDWIN M. HULME, Chicago, Ill. Filed Dec. 1, 1883. Renewed July 3, 1885. (No model.)



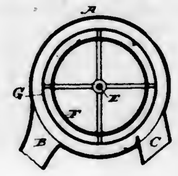
Claim.—1. The combination, with the revolving cylinder D, perforated shell D', surrounding the same, and the exit-pipe E, of the blast-pipe *e*, supplying picked rags between said cylinder and perforated shell, all arranged substantially as herein set forth.

2. In a shoddy-purifying machine, the combination of a revolving cylinder having spikes, a perforated shell surrounding the same, a blast-pipe supplying picked rags between said cylinder and perforated shell, an exit-pipe leading from the space between the cylinder and shell opposite to the end where said blast enters, and a dust-chamber having suitable outlets, in which the whole is placed.

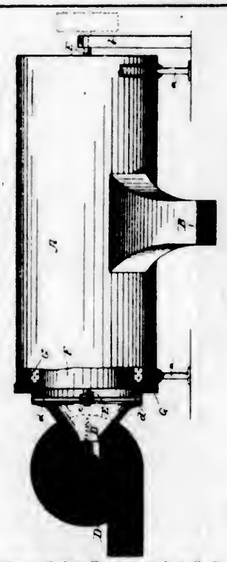
334,777. SHODDY-PURIFIER. EDWIN M. HULME, Chicago, Ill. Filed Dec. 1, 1883. Renewed July 3, 1885. (No model.)

Claim.—1. The combination, with the cylindrical casing having a suitable inlet and outlet, of a hollow perforated shell from the inside of which the air is exhausted.

2. The combination, with a cylindrical shell having a suitable inlet



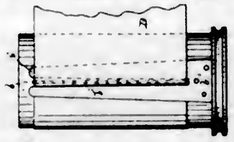
334,777.



and outlet, of a revolving cylinder, F, perforated shell G, and exhaust-fan D, arranged substantially as set forth.

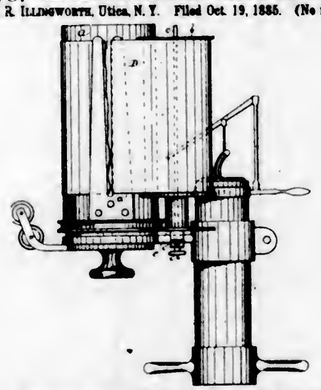
3. The combination of the case A, shaft E, cylinder F, and perforated shell G with an exhaust-fan, D', said casing A having an opening B, and an outlet, C, substantially as specified.

334,778. STEAM-ENGINE RECORDER. JOSEPH J. ILLINGWORTH and HARRY R. ILLINGWORTH, Utica, N. Y. Filed Feb. 13, 1885. (No model.)



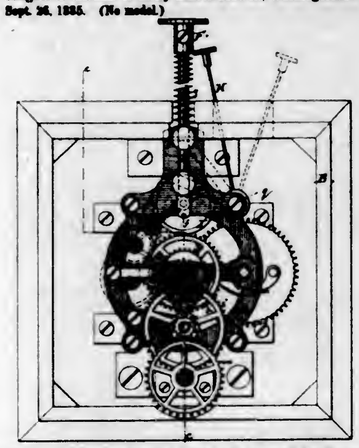
Claim.—The combination, with the cylinder of a steam-engine indicator and the devices usually employed for producing diagrams of pressure, of a spool adapted to rotate within such cylinder, provided with a slot and holding a continuous strip of paper which is passed through the slot and over the cylinder and receives a diagram.

334,779. STEAM-ENGINE RECORDER. JOSEPH J. ILLINGWORTH and HARRY R. ILLINGWORTH, Utica, N. Y. Filed Oct. 19, 1885. (No model.)



Claim.—The combination, with the cylinder of a steam-engine indicator and the devices usually employed for producing diagrams of pressure, of a spool constructed and mounted outside of the drum, holding a continuous strip of paper, which is wrapped and held on the drum for receiving the diagram, substantially as described.

334,780. CAB-REGISTER. ARTHUR O. JENNESS, Southport, Conn., assignor of one-half to Molly Elliott Seawell, Washington, D.C. Filed Sept. 26, 1885. (No model.)



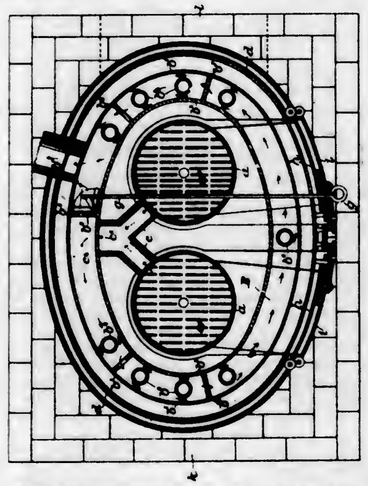
Claim.—1. The combination of the arbor *a* with the sleeve *d*, hand E, and heart-shaped cam *e*, said hand E and cam *e* being rigidly attached to said sleeve, with the sliding push-button F, having friction-roller *f*, and retracting-spring *g*, substantially as herein shown and described.

2. The combination of the clock mechanism and its center arbor, *a*, with the sleeve *d*, cam, *e*, hand E, sliding push-button F, carrying the roller *f*, balance-wheel I, pivoted lever H, and elastic projection *r* thereon, all substantially as and for the purpose herein shown and described.

3. The combination of the hand G, its arbor *j*, sleeve *k*, and pinion *l*, and dial *b*, in front of which said hand G is placed, with the sliding wheel *m*, having hub *p*, said hub projecting through an aperture of the dial *b*, all arranged to allow the wheel *m* to be set in gear with the pinion *l*, for the purpose of moving the hand G whenever access to said dial is permitted, as specified.

4. In a cab-register, the combination of the case B and hinged lid C with the clock-work having arbor *a*, hand E, sleeve *d*, cam *e*, push-button F, friction-roller *f*, spring *g*, lever H, elastic arm *r*, balance-wheel I, pinion *k*, toothed wheel *i*, arbor *j*, sleeve *k*, hand G, pinion *l*, toothed wheel *m*, angular hub *p*, spring *o*, and arbor *n*, substantially as herein shown and described.

334,781. HEATING-FURNACE. DAVID L. JOWER, Chicago, Ill. Filed June 16, 1884. (No model.)



Claim.—The fire-chambers *a a*, provided with drums *b b*, and pipes *c c* and *c'*, in combination with radiator B, having radiating-surfaces *b' b''*, deflectors and tubes, diaphragm *b''*, damper *f*, and rod *g*, passing out over the furnace-doors, flue *b'*, jacket *d*, having pipes *e*, and doors *h i*, provided with dampers *j*, substantially as specified.

334,782. MAKING TARGETS. FRED KIENLE, Peoria, Ill. Filed July 23, 1885. (No specimens.)

Claim.—1. As a new article of manufacture, a target composed of pitch and plaster-of-paris or whiting, in the proportions specified.

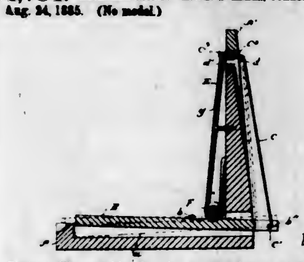
2. The process of making targets, which consists in mixing with melted pitch a quantity of either plaster-of-paris or whiting, and then pouring the composition so formed into suitable molds, substantially as described.

334,783. PANTALOONS-PROTECTOR. GUSTAVE KIENLE, Paterson, N. J. Filed Sept. 7, 1885. (No model.)



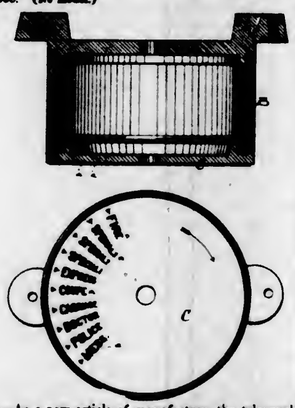
Claim.—In a pants-supporter, the band F, provided with the opening B and with the terminal hooks A A', and the spring I I', constructed substantially as above set forth and described.

334,784. ANIMAL-TRAP. IRWIN S. KERR, Connoquenessing, Pa. Filed Aug. 24, 1885. (No model.)



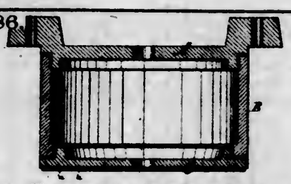
Claim.—The combination, in an animal-trap, of the base A, chambered as described, the upright portion A', provided with openings near its upper and lower ends, the pivoted treadle having the rear extension projecting through the lower opening in the upright, the spring E, and the latch C, pivoted to the upright at *d*, and provided with the hook *c*, projecting through the upper opening in the upright portion, and the hook *c'* at its lower end, substantially as described.

334,785. TELEGRAPH CALL-BOX. JOHN H. LA BAU, New York, N. Y., assignor to the New Haven Clock Company, same place. Filed Feb. 6, 1885. (No model.)



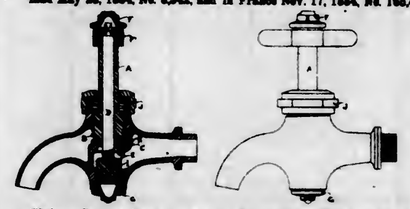
Claim.—As a new article of manufacture, the telegraph call-box composed of the non-conducting back A, non-conducting cylinder B, and non-conducting face-plate C, the said face-plate being constructed with the projecting letters *a*, the whole being composed of the same kind of plastic composition, but the composition of the letters being of different color throughout from the composition of the face of the box, substantially as herein shown and described.

334,786. PROCESS OF ATTACHING COMPOSITION LETTERS TO COMPOSITION SURFACES. JOHN H. LA BAU, New York, N. Y., assignor to the New Haven Clock Company, same place. Filed Dec. 7, 1885. (No model.)



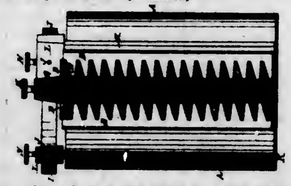
Claim.—The process described of attaching letters to surfaces, which process consists in first filling cavities in a proper mold with the plastic substance for the letters, then melting said substance and allowing it to become hard, then filling the mold further with the plastic substance for the holding-plate, then melting said substance and remelting said letters, and in then letting both the substance for the plate and that for the letters harden, as specified.

334,787. COCK AND TAP. CARLOS M. P. LAFFE, Brighton, County of Sussex, England. Filed Jan. 23, 1885. (No model.) Patented in England May 20, 1884, No. 6,342, and in France Nov. 17, 1884, No. 165,423.



Claim.—In a cock, tap, or faucet, the combination of a main valve having a hollow spindle projecting through the said cock, tap, or faucet, with a stop-valve located below the main valve and provided with a spindle or stem extending through the spindle of the main valve, and screw-caps for securing the parts together, substantially as set forth.

334,788. GALVANIC BATTERY. FRANK L. LATHROP, Brooklyn, N. Y. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a galvanic battery, a zinc made in the form of a screw, as set forth, and provided at its upper extremity with a binding-screw or equivalent means for securing contact with a conductor, and having a mercury-reservoir communicating with the said screw, substantially as shown and described.

2. A zinc for galvanic batteries made in the form of a screw, and provided with means for amalgamating the surface thereof while in position and in use in the battery, substantially as shown and described.

3. In a zinc for primary galvanic batteries, having a spiral thread formed upon its periphery, a mercury-receptacle located at the top thereof, said receptacle having communication with the thread, substantially as and for the purposes set forth and described.

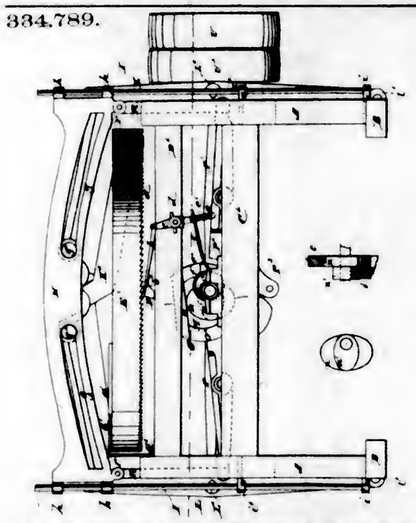
4. In a galvanic battery, a zinc having a spiral thread leading from the upper extremity to the bottom thereof, an annular pocket or gutter being formed in the top, as set forth, a perforation leading from said pocket to the screw-thread therebeneath, and a projection at the top of said screw bearing a binding-screw, substantially as shown and described.

5. A galvanic battery consisting of a cell or jar, A, porous cup B, screw-shaped zinc C, metal strip or band I, having projections J, and one or more carbons, K, provided with metal caps cast thereon, the whole constructed, combined, and arranged to operate substantially as shown and described.

334,789. MEAT-CUTTING MACHINE. FERDINAND LINDNER, Chicago, Ill., assignor to himself, Edward Melchior, Julius Clemens, and Charles Finkenieper, all of same place. Filed July 19, 1884. (No model.)

Claim.—1. The combination of the shaft M', the cams N thereon, the stirrups Q, encircling the cams, the levers P P', pivoted intermediate their ends and acted on at their adjacent extremities by the lower part of the stirrups, the vertically-movable guide-bars H, and a link-connection between the pivoted levers and the guide-bars, substantially as described.

334,789.



2. The combination of the machine-frame, the vertical guide-rods I, the guide-bars H, having loops *h*, loosely engaging the rods, the links R, connected with the bars, the levers P P', pivoted intermediate their ends and connected with the links, the stirrups O, acting on the adjacent ends of the levers, the cams N, inclosed by stirrups, and the shaft M', substantially as described.

3. The combination of the shaft M', the cams N, composed of two parts, *n n'*, and the stirrups O, encircling the cams and composed of the straight-faced top and bottom bars, *o o'*, and the curved-faced end bars, *o'' o''*, with the levers P P', pivoted intermediate their ends and acted on at their adjacent extremities by the lower bars of the stirrups, the links R, connected with the levers, and the guide-bars H, connected with the links, substantially as described.

4. The combination of the pivoted lever P, the stirrup O, attached to said lever, the pivoted lever P', having a head provided with the depression p^3, in which a part of the stirrup is seated, a pivotal connection between the adjacent ends of the levers, the cams N, inclosed by the stirrups, the shaft M', the guide-bars, and connections between the latter and the levers, substantially as described.

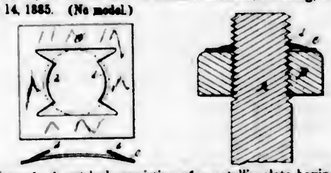
5. The combination of the levers L, pivoted at their lower ends and provided at their upper ends with heads L', having slots *l*, the detachable rod K^4, and the knife-shanks having hooked ends K^3 engaging the rod, substantially as described.

6. The cams N, stirrups O, arms or levers P P', link p^4, and links R, in combination with the guide-bars carrying knives, substantially as and for the purpose specified.

7. The cams N, stirrups O, arms or levers P P', link p^4, and links R, in combination with the bars H, carrying the knife-frames, and guide-rods I, substantially as and for the purpose specified.

8. The pawl *b*, arm *c*, shaft *d*, slotted arm *e*, rod *f*, ring *f'*, and eccentric *f''*, in combination with a cutting-table, E, having ratchet-teeth *a*, for giving the table an intermittent rotary movement, substantially as and for the purpose specified.

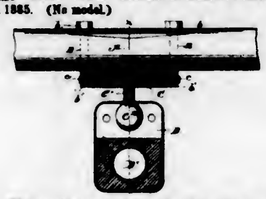
334,790. NUT-LOCK. WILLIAM J. MCTIGUE, Pittsburg, Pa. Filed Mar. 14, 1885. (No model.)



Claim.—1. A nut-lock consisting of a metallic plate having a central bolt-hole formed by one or more tongues projecting out of the plane of said plate, said tongues having their inner or gripping edges substantially smooth and forming the bolt-hole, the whole adapted to use by screwing onto the bolt by the inner edges of said tongues taking into the bolt-threads, and effecting frictional contact therewith, substantially as described.

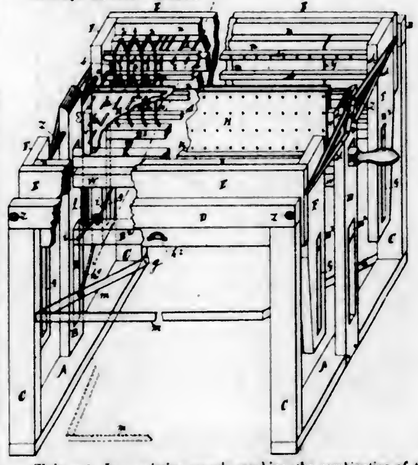
2. A nut-lock consisting of a flat or curved plate, C, having a central bolt-aperture formed by one or more inwardly and upwardly extending tongues, *d*, having substantially smooth inner edges and adapted to take into the threads of the bolt, and thereby screw onto the same, substantially as described, whereby the plate becomes a stop against the nut, and continued rotation of the plate forces the tongues *d* more tightly against the bolt.

334,791. NECK-YOKE. STEPHEN D. MEREW, Peabody, Kans. Filed Sept. 19, 1885. (No model.)



Claim.—The combination of the yoke, the eyebolts secured thereto, the rock-shaft journaled in the eyes of the bolts, and having the depending arm and the ball on the end thereof, and the eye-piece socketed to the ball, substantially as described.

334,792. CAPSULE-MACHINE. THEODORE C. MERZ, Detroit, Mich. Filed Apr. 24, 1885. (Model.)



Claim.—1. In a gelatine-capsule machine, the combination of the capsule-pin plate and its capsule-pin, the wiping-blades, the cloth or flexible wipers attached thereto, said blades mounted upon a suitable support, and mechanism for drawing the wipers transversely over the severed portion of a capsule upon its pin, as and for the purposes set forth.

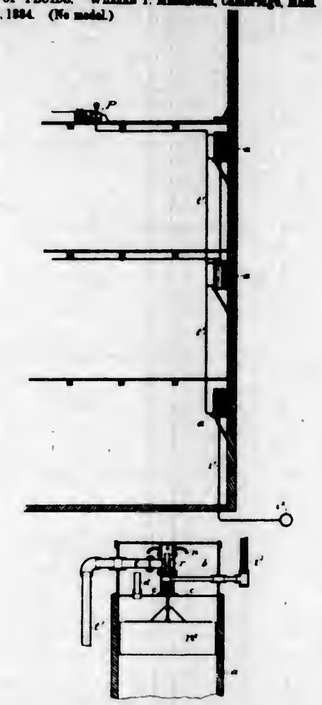
2. In a gelatine-capsule machine, the combination, with the capsule-pin plate, its capsule-pin, and capsule mounted thereon, of a wiping-pin located below the capsule-pin, the wiping-blades, the cloth or flexible wipers attached thereto, the vertical rod supporting the wiping-blades, and means for drawing transversely the wipers over the severed portion of a capsule and the wiping-pin, for the purposes set forth.

3. In a gelatine-capsule machine, the combination, with a capsule-pin plate having a series of capsule-pins with capsules and severed portions thereon, a series of wiping-blades, and wipers mounted upon suitable supports, of a series of wiping-pins, and mechanism for advancing said wiping-pins under the capsule-pins, and means for simultaneously advancing therewith the series of wipers vertically over the severed portions of the capsules, as set forth.

4. In a gelatine-capsule machine, the combination, with the frame, the supporting-rods having the sides and sliding uprights mounted thereon, said sides joined together by the pivoted levers, as set forth, and the series of wiping-pins attached to the sides, said sides adapted to be advanced toward each other, thereby bringing a wiping-pin vertically below each capsule-pin, of a double-faced capsule-pin plate, substantially as set forth.

5. In a gelatine-capsule machine, as set forth, the combination of the sliding uprights supporting the operating-bars within the vertical openings *f*, the fixed bar W, attached to the uprights B, the bar B^3, working in the openings S of the uprights B, said operating-bars attached together by the coupling-rods *i*, the springs *l*, the bars B^2, supporting a series of vertical rods and wiping-blades, as set forth, the connecting-rods A', and lever for moving the parts specified.

334,793. APPARATUS FOR LIFTING AND CONTROLLING THE FLOW OF FLUIDS. WILLIAM T. MICKLETHWAIT, Cambridge, Mass. Filed Nov. 26, 1884. (No model.)



Claim.—1. An apparatus for raising liquids, comprising a series of reservoirs at different levels, combined with a lifting apparatus at each higher reservoir, having a suction-pipe extending to a lower reservoir and entering the same below the normal level of the liquid therein, and a valve controlled by the fluid in each reservoir, which stops the action of the lifting apparatus when the liquid raised by it from a lower reservoir reaches the predetermined normal level in the reservoir corresponding to the said lifting apparatus, and into which the latter discharges, substantially as and for the purpose described.

2. The tank or reservoir and chamber surmounting it, provided with small and large passages into the reservoir from lower and higher levels, respectively, combined with a supplying device discharging into the said chamber in greater volume than can be delivered through the small passages, a valve controlling the supply of liquid to the chamber, and a float operating the said valve controlled by the liquid in the said reservoir, an additional amount of liquid being introduced to the tank from the chamber through the small passages after the flow into the chamber has been stopped, substantially as and for the purpose described.

3. The tank or reservoir having a fluid-inlet passage and a float in said tank, combined with a valve-controlling the said inlet-passage and a bearing-piece loosely connected therewith, affording a large area which receives the buoyant pressure of the float and transmits it to the valve, substantially as described.

4. The tank or reservoir and chamber surmounting it, provided with a main passage leading from a level above the bottom of the chamber to the tank and secondary passages from a lower level in the chamber, combined with a lifting apparatus, which, when in operation, raises a liquid from a lower level and discharges it into the said chamber, from which the said liquid is delivered through the main passage into the reservoir, a valve controlling the operation of the said lifting apparatus, and a float operating the said valve, controlled by the liquid in the said reservoir, an additional amount of liquid being introduced to the tank from the chamber through the secondary passages after the flow into the chamber has been stopped, substantially as and for the purpose described.

5. A tank or reservoir and fluid lifting and controlling apparatus surmounting it, composed of a shell having a lateral steam-inlet passage, with a downwardly-directed orifice provided with a valve-seat, the said shell having connected with it a steam-nozzle and combining-tube constituting an ejector for raising a liquid from a lower level, combined with a valve controlling the said steam-orifice and a float in the said reservoir, governing the operation of the said valve, substantially as described.

6. A tank or reservoir and fluid controlling apparatus surmounting it, containing a fluid-inlet passage with a downwardly-opening orifice and a valve-seat surrounding the same, combined with a valve and guide therefor below the said orifice, the said valve having a stem extending downward toward the reservoir and a guide having a seat surrounding the said stem, which receives the valve when removed from the seat around the orifice, substantially as described.

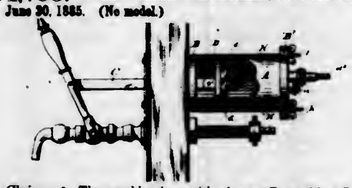
334,794. WALL-PROTECTOR FOR STEAM-COILS. ROBT. B. MILLER, Chicago, Ill. Filed Apr. 27, 1885. (No model.)



Claim.—1. A wall-protector consisting of the rear portion or wall, A, end walls, B, and trough or receptacle C, substantially as and for the purpose specified.

2. The wall A, walls B, and troughs G, with end doors, *b*, for forming a wall-protector over and around radiators, substantially as specified.

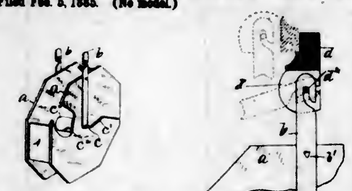
334,795. PUMP. HARRY C. MONTGOMERY, Cleveland, Ohio. Filed June 20, 1885. (No model.)



Claim.—1. The combination, with plunger D, packing G, screw *f*, and bar F, of ring E, divided by the oblique cleft *e*, and provided with the interior peripheral flange e^2, substantially as set forth.

2. The combination with plunger D, provided with ring E, having flange e^2, located on the inner periphery of said ring, of cross-bar F, bearing on said flange, and screw *f*, rigidly connecting said bar with the plunger, substantially as set forth.

334,796. RIBBON-HOLDER. FRANKLIN D. MOORE, Bloomfield, Iowa. Filed Feb. 5, 1885. (No model.)



Claim.—1. A lace or ribbon holder composed of a case or frame having hooks projecting vertically above the top edges of its sides, and a horizontal shaft in its center having a spool fixed thereto, and a crank on the end of the shaft, and cross-pieces 1 2 3 4 at its circumference, in combination with a horizontal bar or rod in a rack or case, for the purpose specified.

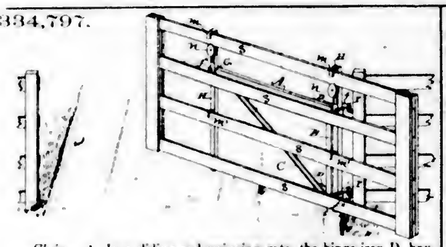
2. A lace or ribbon holder composed of a case or frame having hooks projecting vertically above the top edges of its sides, and a horizontal shaft in its center having a spool fixed thereto, and a crank on its end, in combination with a pivoted horizontal bar having parallel transverse slots in its lower portion, and a wire extending longitudinally through the bar and across the central portion of each slot, to operate in the manner set forth, for the purposes stated.

3. In a lace and ribbon holding and exhibiting device, the combination of the holder composed of the sides *a a*, a series of pieces, 1 2 3 4, metal strips *b*, having hooks at their top ends, and a shaft, *c*, having a crank, *c'*, and a fixed spool, *c''*, a pivoted bar, *d*, having slots *d'*, and a fixed wire extending through said slots, to operate in the manner set forth, for the purposes stated.

4. In a show-case, rack, or frame, the combination of a pivoted horizontal bar and a series of interchangeable and adjustable lace and ribbon holding frames or cases having spools in their centers, to operate in the manner set forth, for the purposes stated.

334,797. FARM-GATE. JASPER M. MOORE, Knoxville, Iowa. Filed Sept. 14, 1885. (No model.)

334,797.

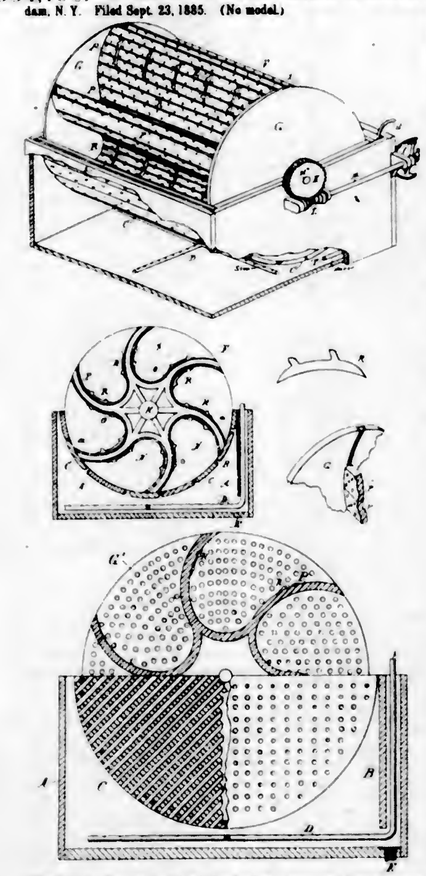


Claim.—1. In a sliding and swinging gate, the hinge-iron D, having an integral horizontal extension, *f*, provided with an eye, *f'*, and an integral open loop, *f''*, in combination with a frame and an auxiliary post, to operate in the manner set forth.

2. The combination of a frame having hinges at its rear end and fixed open loops at its opposite ends, a fixed gate-post, two auxiliary posts having wheels and hooks, and a gate, to operate in the manner set forth, for the purposes specified.

3. The frame A B C, having combined hinge-irons and open loops at its rear end and an angle-iron and loops at its front end, and pawls K, and the posts H, having series of notches 1 2 3 4 and carrying hooks *m* and *m'*, arranged and combined with a sliding gate and a fixed gate-post, substantially as shown and described, to operate in the manner set forth.

334,798. APPARATUS FOR DYEING. AMBROSE MORAN, Amsterdam, N. Y. Filed Sept. 23, 1885. (No model.)



Claim.—1. A cage or wheel for dyeing apparatus, having round-bottomed buckets with spirally-curved sides or walls expanding outwardly, substantially as described.

2. The combination, in a cage or wheel for dyeing apparatus, of the disks, the spirally-curved outwardly-expanding walls and round-bottomed buckets, and the retainers R, all as and for the purpose described.

3. The combination, in a dyeing apparatus, of a suitable vat or tank, a cage or wheel having perforated buckets, and a perforated concave or false bottom, all as and for the purpose described.

4. The combination, in a dyeing apparatus, of a suitable vat or tank, a cage provided with perforated buckets journaled therein, and suitable driving mechanism, substantially as described.

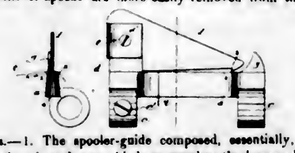
5. The combination, in a cage or wheel for dyeing apparatus, of the buckets and the saw-toothed retainers, substantially as described.

6. A dyeing apparatus comprising the following parts: a tank or vat, steam and water inlets, an outlet, a slatted perforated concave or false bottom, a cage or wheel, buckets having outwardly-expanding curved walls or sides and round bottoms, two or more series of retainers secured in said buckets, and suitable driving mechanism, substantially as set forth.

7. The combination, in a dyeing apparatus, of the cage having spirally-curved partitions forming buckets, the perforated disks, and the concave or false bottom provided with open ends, all as and for the purpose described.

334,799. SPOOLER-GUIDE. AMBROSE J. NICHOLS, New Market, N. H. Filed Dec. 27, 1884. (No model.)

Brief.—The upper blade or member is pivoted to the lower member, so as to act by gravity upon the thread or yarn. The lower member has two acting edges with a space between them, the edge of the upper or gravitating blade occupying a position in a vertical line directly opposite the space between the two edges of the lower member, whereby projections or specks are more easily removed from the thread or yarn.



Claim.—1. The spooler-guide composed, essentially, of a lower member and a pivoted upper blade or member, the lower edge of which acts by gravity against the thread or yarn extended between it and the lower member, substantially as described.

2. The spooler-guide composed of a lower member having two acting edges to support the yarn at opposite sides of a space, and of an upper blade or member, the lower edge of which bears upon the thread or yarn opposite and deflects it into the said space between the said edges of the lower member of the spooler-guide, to operate substantially as described.

3. The spooler-guide composed of a lower member having two acting-edges with a space between, and of a pivoted upper blade or member, the lower edge of which bears by gravity against the thread or yarn opposite the space between the two edges of the lower member of the spooler-guide, to operate substantially as described.

4. The combination, with the lower member of a spooler-guide having an ear, *d*, of an upper pivoted blade, *f*, having a shoulder or projection, *f'*, to co-operate with the said ear, substantially as described.

334,800. HOSE-NOZZLE. JOHN O'DONNELL, Chicago, Ill. Filed Nov. 27, 1885. (No model.)



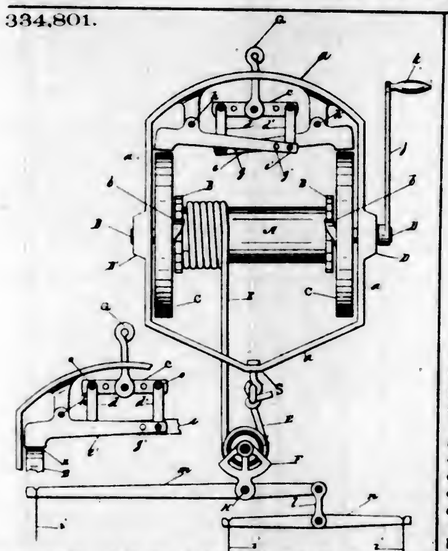
Claim.—1. A hose-nozzle formed in two parts connected by a screw-thread, whereby the same may be shortened or elongated, the former being provided with a perforated partition near its outer end, and a stationary central stem provided with a valve movable longitudinally thereon, and an obliquely-grooved head, while the latter is provided with an internal annular flange, into which said head may be intruded, said flange being provided with lateral openings *c'*, substantially as and for the purposes specified.

2. In a hose-nozzle, the combination of the part B, provided with perforated partition *b'*, a stationary central stem provided with a movable valve, and an enlarged obliquely-grooved head extending outwardly therefrom, and the adjustable part C, having annular flange *c* and perforations *c'*, substantially as and for the purposes set forth.

334,801. TENSION APPARATUS FOR WIRE FENCES. WILLIAM N. PARRISH, Richmond, Ind. Filed Aug. 7, 1885. (Model.)

Claim.—1. A tension apparatus for wire fences, consisting of a frame having a shaft journaled therein, said shaft being rigidly provided with a drum having end ratchet-wheels, said shaft being also provided with wheels C C, loosely mounted thereon between the outsides of the ratchet-wheels and inside of the frame, the wheels C C having pawls *b b*, in combination with the rope E, block F, and equalizing-arms *m n*, said rope having one end secured to the drum and the other to the frame, the rope passing around the pulley-block F outside the frame, said block being pivoted to the arm *m*, the arm *n* being linked to the arm *m*, substantially as described.

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2. A tension apparatus for wire fences, consisting of a frame having a shaft journaled therein, said shaft being rigidly provided with a drum having end ratchet-wheels and outside crank, *j*, said shaft being also provided with wheels C C, loosely mounted thereon between the outsides of the ratchet-wheels and inside of the frame, the wheels C C having pawls *b b*, in combination with the rope E, block F, and equalizing-arms *m n*, said rope having one end secured to the drum and the other to the frame, the rope passing around the pulley-block F outside the frame, said block being pivoted to the arm *m*, the arm *n* being linked to the arm *m*, substantially as described.

3. A tension apparatus for wire fences, consisting of a frame having a shaft journaled therein, said shaft having a drum with end ratchet-wheels secured thereto, and the wheels C C, provided with pawls *b b*, said wheels being loosely mounted on the shaft, in combination with the brake-levers *e e'*, fulcrumed in frame projections, the lever-actuating arms *d d'*, the cross-bar *c*, secured to said arms, and the anchor-hook G, centrally secured to the cross-bar *c*, substantially as described.

4. A tension apparatus for wire fences, consisting of a frame having a shaft journaled therein, said shaft being rigidly provided with a drum having end ratchet-wheels, wheels C C, loosely mounted on said shaft and provided with pawls *b b*, the rope E, pulley-block F, and equalizing-arms *m n*, said rope having one end secured to the drum and the other to the frame, the rope, passing around the pulley-block F outside the frame, said block being pivoted to the arm *m*, and the arm *n* being linked to the arm *m*, in combination with the brake-levers *e e'*, fulcrumed in frame projections, the lever-actuating arms *d d'*, the cross-bar *c*, secured to said arms, and the anchor-hook G, centrally secured to the cross-bar *c*, substantially as described.

334,802. SCHOOL SEAT AND DESK. WELLS J. PERRIN, Grand Rapids, Mich. Filed May 14, 1885. (No model.)

Claim.—1. The boxes adapted to slide in the channel of the standards, a desk pivoted on its rear and upper part to said boxes, and a support for the bottom of the desk, whereby the desk is supported upon two points, substantially as described.

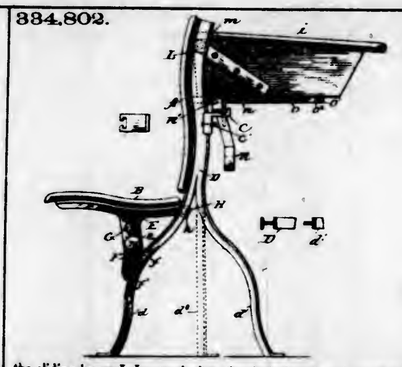
2. In combination, a desk pivoted to supporting-standards at or near its upper surface, its lower portion being unattached to said standards, and a cam-lever pivoted to the under part of said desk and bearing against the seat-back, whereby the inclination of the desk may be varied by swinging in and out of the lower part thereof, substantially as described.

3. In combination with the desk, journal-boxes vertically movable in the supporting-standards, and straps *n*, secured to the desk and pivoted to the said boxes, substantially as described.

4. Combined with the channeled standards, the desk connected thereto by sliding boxes, and the levers R R, with bearing-brackets adjustably fixed to the standards, substantially as described.

5. Combined with the desk, the channeled supporting-standards,

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the sliding boxes L L, attached to the desk by pivotal connection, and mechanism, substantially as described, for raising, lowering, and holding said desk, substantially as described.

6. In combination with the desk, the box connected to the standards by vertically-adjustable connection, and the levers R R, pivoted on suitable standards fixed to the bottom of the box, having their outer ends resting in brackets fixed to the supporting-standards of the desk, one of said levers being adapted to be acted upon by the leg of the occupant, whereby the seat may be raised, substantially as described.

7. In combination with the front boot legs of the desk, standard-legs upon each of said legs having projecting pivots, a seat-bracket pivoted thereon so as to swing freely between the legs, and the plugs G H, extending laterally from two points on the seat-bracket, so as to limit the movement thereof by the said plugs striking the flanges of the legs, substantially as described.

8. In combination with the standard of the desk or seat, brackets or arms adapted to support a seat or desk having flanges adapted to embrace the standard and adapted to slide thereon, and cotter-keys adapted to engage with said flanges and any one of a series of holes or notches in the standards, substantially as described.

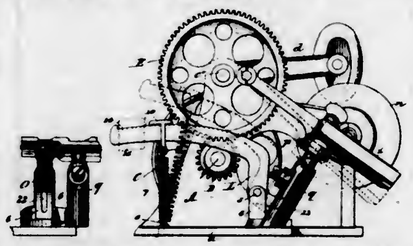
9. In combination with a school-desk box, a cover pivoted to said box on a line at right angles to the length of the desk, substantially as described.

10. The combination, with a desk pivoted to supporting-standards at or near its upper surface and having its lower part swinging freely, of a cam-lever pivoted to the bottom of the desk and bearing against the seat-back, whereby the inclination of the desk may be varied, and the catch for holding it in position, substantially as described.

11. Combined with a school-desk box, a cover therefor, consisting of two parts hinged to a box on the center line at right angles to the length of the desk, substantially as described.

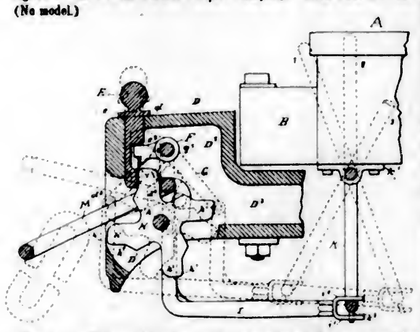
12. The combination, with a pivoted desk vertically adjustable on flanged supporting-standards, of the supporting-legs C', fitting the flanges of said standards and having keys registering with holes in the flanges of the standards, whereby they may be adjusted and secured at suitable points, substantially as described.

334,803. PENCIL-SHARPENER. GEORGE H. PHELPS, Newton, Mass. Filed Oct. 12, 1885. (No model.)



Claim.—In a pencil-sharpener, a rotary chuck for holding the pencil, a file-carrier, and means, substantially as set forth, to reciprocate it across the path of the pencil when it is in the chuck, and the movable support for the file-carrier, combined with the lever L, having its shorter effective arm in contact with the movable support of the file-carrier, and provided with a power device, such as a weight or spring, or both, adjustable thereon to vary the effective pressure of the file upon the pencil, substantially as described.

334,804. CAR-COUPLING. ROBERT POWELL, Kansas City, Mo., assignor to the Powell Perfect Coupler Company. Filed June 30, 1885. (No model.)



Claim.—1. The combination, with a draw-head of a car provided with a rotary coupling device having arms so arranged within the draw-head that they will engage with and lock the shackle, and a vertical slot in said draw-head, of a catch-bolt having a suitable longitudinal groove, a lever, a transverse perforation through the draw-head in rear of said catch-bolt adapted to receive said lever, and a cam keyed upon said lever and arranged in a suitable opening in the draw-head, and adapted to operate as shown and described.

2. The combination, with the draw-head provided with a rotary coupling device having arms adapted to engage with and lock the shackle and a vertical slot in said draw-head, of a catch-bolt having a suitable longitudinal groove, a lever, a transverse perforation through the draw-head in rear of said catch-bolt adapted to receive said lever, and a cam keyed upon said lever and arranged in a suitable opening in the draw-head, and a curved extension of said cam adapted to engage with and depress an arm of said wheel, as shown and described.

3. The combination, with the draw-head provided with a rotary coupling device having arms adapted to engage with and lock the shackle and a vertical slot in said draw-head, of a catch-bolt having a suitable longitudinal groove, a lever, a transverse perforation through the draw-head in rear of said catch-bolt adapted to receive said lever, and a cam consisting of a curved extension keyed upon said lever within the draw-head, and adapted to operate as shown and described.

4. The combination, with the draw-head provided with a vertical slot therein, of a catch-bolt having a suitable groove, and a lever extending through a suitable opening in the draw-head, and a cam provided with a curved extension keyed upon said lever, and a rotary coupling device arranged in a suitable opening in the draw-head, and having arms adapted to engage with and lock the shackle, and provided with curved outer ends, for the purpose specified.

5. In combination with the draw-head of a car provided with a rotary coupling device having arms adapted to engage with and lock the shackle, a lever for operating said device, and a transverse rod or lever upon and extending beneath the car, and a connecting-bar attached to said rod or lever on the car and to said coupling device upon the draw-head and adapted to automatically release itself from said lever, as herein described, for the purpose specified.

6. In combination with a vertical catch-bolt in the draw-head and a transverse lever connected with said bolt, a connecting-bar pivotally attached at one end to said lever and provided with an opposite forked end, and arranged to operate as shown and described.

7. In combination with a vertical catch-bolt in the draw-head and a transverse lever connected with said bolt, a connecting-bar pivotally attached at one end to said lever and provided with an opposite forked end, and a slot in said forked end, and a transverse lever upon and extending beneath the car, and a pin upon said lever adapted to engage with the slot in said connecting-bar, as described.

8. The combination, with a transverse lever arranged upon the car and provided with a bent portion extending beneath the coupling devices, of a spring having one end attached to the car near the coupling devices, and the opposite end engaging with the said bent portion of said transverse lever, as herein shown and described.

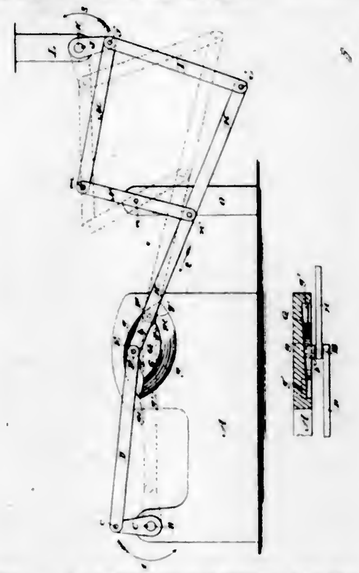
334,805. BOTTLE-RINSER. RICHARD PRESTON, Chelsea, Mass., assignor of one-half to Ewing Brothers, same place. Filed Mar. 14, 1885. (No model.)



Claim.—1. The combination, in a bottle washer or rinser, of the valve-seat, the discharge-pipe connected thereto, the valve arranged within the said valve-seat and provided with a rod extending into and slightly beyond the discharge-pipe, and the inclosing perforated sleeve D, inclosing the discharge-pipe, and forming a bearing-surface at its upper end for the end of the valve-rod, substantially as described.

2. The combination, in a bottle washer or rinser, of the valve-seat, the discharge-pipe connected thereto, the valve arranged within the said valve-seat and provided with a rod extending into and slightly beyond the discharge-pipe, and the inclosing perforated sleeve D, having the perforated disk at its upper end, against which the valve-rod bears, and provided at its lower end with the lugs adapted to support the bottles, the said lugs being situated a sufficient distance apart to allow the escape of the water, substantially as described.

334,806. MECHANICAL MOVEMENT. FREDERICK REED, Solomon City, Kans. Filed June 26, 1885. (No model.)



Claim.—1. A mechanical movement comprising a bar, D, a roller or pin, F, an elliptical cam-groove, G, in which the roller runs, a bar, H, pivoted to the bar D, pivoted bars I M, rock-bar N, and a cranked shaft, J K, all constructed and combined for operation substantially as herein set forth.

2. A mechanical movement comprising a bar, D, a roller or pin, F, an elliptical cam-groove, G, having opposite side parts, *g g*, inclined to form the high portions g^2 g^2 at opposite ends or parts of the groove, which has stop-shoulders g' g', a bar, H, pivoted to bar D, pivoted bars I M, a rock-bar, N, and a cranked shaft, J K, all constructed and combined for operation substantially as herein set forth.

334,807. TREE-BOX. ADAM R. REESE, Phillipsburg, N. J. Filed Apr. 24, 1884. (No model.)

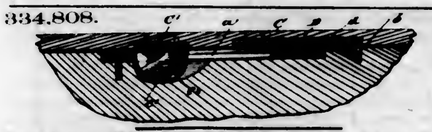


Claim.—A tree-box composed of semi-rings, substantially T-shaped in cross-section, lapped upon each other and secured together by bolts and having square holes and rims or barrs, as described, and square rods secured in said holes by calking or pressing the rims or barrs against the rods, substantially as set forth.

334,808. COFFIN. GILBERT REYNOLDS, Ridgefield, Conn. Filed Dec. 10, 1885. (No model.)

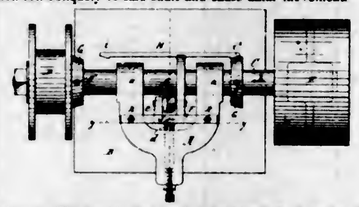
Claim.—The combination, with a body, A, having a recess, *a*, with aperture a^2, said aperture having inclined sides, and a locking-flange, a^3, said body having also a recess, B, with shoulder *b*, of the lid C, having frame C', with inclined lug c^3, and spring D, having thumb-piece *d*, as and for the purposes set forth

334,808.



334,809. MECHANISM FOR WINDING WIRE, &c. STILLMAN W. ROBINSON, Columbus, Ohio. Filed Oct. 20, 1884. (No model.)

Brief.—The bobbin-shaft, which has rotary and axial movement, is provided with a pair of stops adjustable on said shaft. An oscillator mounted on a stem which is supported in the main supporting-frame is provided with a friction-roll in contact with the bobbin-shaft and an arm which engages alternately with the stops on the shaft, to thereby present the friction-roll obliquely to said shaft and cause axial movement.



Claim.—1. The combination, with a bobbin-shaft adapted to have rotary and axial movement, as described, and provided with a pair of stops, of a rocker provided with a roll in frictional contact with the periphery of the bobbin-shaft, and an arm attached to the rocker and adapted to be engaged by the stops on the shaft to oscillate the said rocker, as and for the purpose set forth.

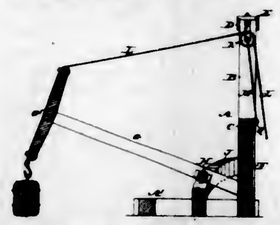
2. A bobbin-shaft adapted to have rotary and endwise movement, and provided with friction-stops adapted to be secured to the shaft at various points, combined with a rocker having a pivotal stem, an arm adapted to be engaged by the stops on the shaft, and a friction-roll held in frictional contact with the bobbin-shaft, substantially as and for the purpose set forth.

3. A bobbin-shaft adapted to have rotary and endwise movement, combined with a rocker adapted to have a rocking or oscillating movement and provided with a roll held in frictional contact with the periphery of the bobbin-shaft, and a lever rigidly attached to the rocker and provided with adjusting-screws, to limit the throw or oscillating movement of the rocker, and thereby cause the speed of the endwise movement of the bobbin-shaft to be increased or diminished, substantially as set forth.

4. The standard A, having bearings *a* for the bobbin-shaft, and provided with the stem-socket and the adjusting-screw, as specified, and the rotating bobbin-shaft, combined with a rocker provided with the slotted roll-bearings and the friction-roll, substantially as set forth.

5. The combination, with the bobbin-shaft provided with friction-collars, of a rocker provided with the friction-roll, the arm having friction-feet to engage the friction-collars, and the lever attached to the rocker and having adjusting-screws, as specified, and a shaft and rocker-supporting standard, substantially as and for the purpose described.

334,810. HOISTING APPARATUS. EDWIN O. ROOD, Maple Park, Ill. Filed June 26, 1885. (No model.)

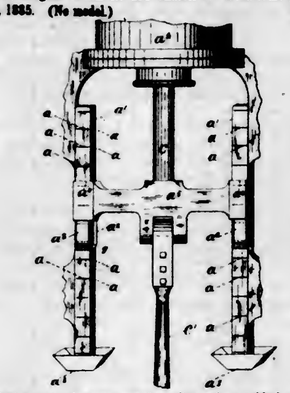


Claim.—1. A frame with a journaled center post, to which a crane is pivoted, and inclined or spiral ways rising in opposite directions from the base, and on which the crane is permitted to ride, in combination with a power-rope bearing on the crane, and a shifting cross-head carrying a pulley on which said rope runs, whereby said rope is moved to the right or left by said head to direct the crane to either side of the frame, and the crane is raised by gravity on either of the spiral ways, substantially as described.

2. A hoisting apparatus having a power-rope and a crane and means for imparting a lateral draft to the said rope, consisting of a shifting head which is mounted on the frame of the apparatus, and a lever connected therewith, the rope passing around a pulley attached to said head and bearing on the crane, substantially as described.

3. A hoisting apparatus having a T-headed crane, and a power-rope which bears on the head thereof, substantially as and for the purpose set forth.

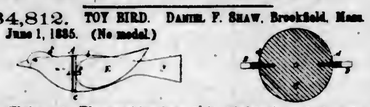
334,811. STEAM-ENGINE SLIDE. JOSEPH G. SCHUMACHER, Buffalo, N. Y., assignor to himself and Charles W. Wall, same place. Filed Oct. 17, 1885. (No model.)



Claim.—1. A steam-engine slide, *a'*, provided with a series of grooves or pockets, *a*, substantially as and for the purposes described.

2. The slides of a steam-engine provided with a series of transverse grooves or pockets, *a*, in combination with the cross-head having the inclined portion a^2 and brushes a^3, for the purposes described.

334,812. TOY BIRD. DANIEL F. SHAW, Brookfield, Mass. Filed June 1, 1885. (No model.)

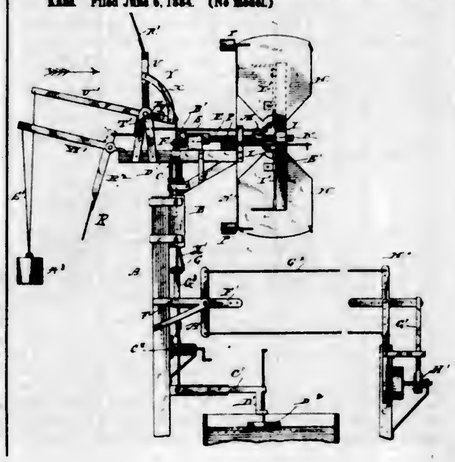


Claim.—1. The combination of the bird-body and the wings with the rotative ring or disk arranged within and pivoted to the said body, and with the two arms projecting from such ring or disk and applied thereto and to the wings, substantially as set forth.

2. The combination of the wings and body of the bird with a rotative ring or disk arranged in and applied to the body, substantially as represented, such wings being connected with the said ring or disk and adjusted so as to revolve with it when the bird is driven through the air, as explained.

3. The bird having a tail projecting from its body, and also having each of the two wings connected with the body by a rotary ring, disk, or device to cause the wings, by the resistance of the air while the bird may be swung or drawn through it, to revolve transversely about the body, as set forth.

334,813. WINDMILL. ALVIN SHERWOOD, Hampden, Coffey County, Kans. Filed June 6, 1884. (No model.)



Claim.—1. A windmill having a wheel with pivoted wings, a crane or pivoted frame supporting said wheel, a wind-wing pivoted to suitable bearings on the crane, a wind-wing also pivoted to the crane and projecting in a direction opposite to the other wing, and a weight supported by a cord or rope having connection to each wing, substantially as and for the purpose specified.

2. A windmill with a wheel having wings pivoted to the arms of the wheel by rods terminating in cranks, a sleeve on the wheel-shaft connecting with said cranks, a crane or pivotal support for the wheel, a wind-wing pivotally supported by said crane and connected to the said sleeve, a wind-wing supported by the crane and projecting oppositely to the other wing and connected to the wings on the wheel, and a weight on a cord or rope which has connection to the wings, substantially as and for the purpose specified.

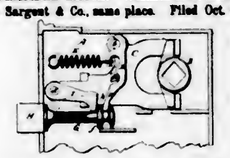
3. A windmill consisting of a standard, a crane mounted thereon, a wheel having bearings on the crane, wings pivoted to the arms of the wheel by rods having crank-continuations, a sleeve on the wheel-shaft engaging with said cranks, oppositely-projecting pivoted wind-wings, one of which is spring-retained, pivoted to the crane, a weight supported by a cord or rope connected to the wings, a pitman with a swivel-joint operated by the wheel-shaft, and a cord or rope connected to one of the wind-wings and passing down the standard, the whole operating substantially as and for the purpose specified.

334,814. KEY. EDMOND B. SLATER, Meriden, Conn., assignor to the Charles Parker Company, same place. Filed Apr. 13, 1885. (No model.)



Claim.—As an article of manufacture, the herein-described key, made from a blank of flat or sheet metal, the said blank having an extension extending from the tip in longitudinal line therewith and with the spindle portion of the blank, the said extension and tip portion of the blank made in a continuous semi-cylindrical shape upon the outside, the said extension doubled backward onto the tip, the cylindrical side outward, the bend or double forming a rounded or semi-spherical and close end at the tip, the double portions secured together and forming a cylindrical exterior for the tip portion of the key, substantially as described.

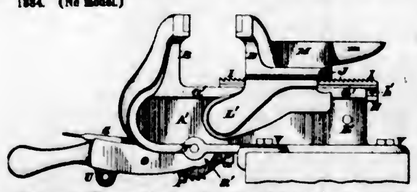
334,815. REVERSIBLE LATCH. WILLIAM E. SPARKS, New Haven, Conn., assignor to Sargent & Co., same place. Filed Oct. 5, 1885. (No model.)



Claim.—1. In a knob-latch, the combination of the hub B, the slide C, the lever D, hung upon said slide, latch-bolt H, with which said lever engages, and a spring, E, with the dog I, hung within the case so as to swing free by its own gravity in a vertical plane, and adapted to engage the latch-bolt when in an upright position or be released therefrom by its own gravity when the case is inverted, substantially as described.

2. The combination of the hub B, the slide C, the lever D, hung upon said slide, the spring E, the latch-bolt engaged with said lever, and a dog, I, hung to said slide so as to swing freely by its own gravity in a vertical plane, and adapted to engage the bolt when the case is in an upright position or turn therefrom by its own gravity when the case is inverted, substantially as and for the purpose described.

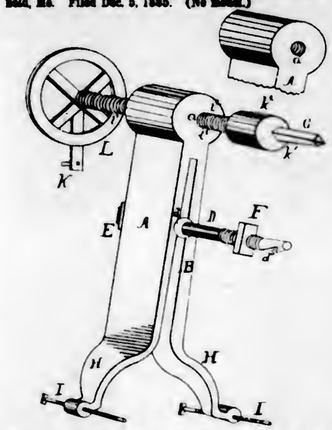
334,816. VISE. JOHN J. SPLAIN, Cincinnati, Ohio. Filed Oct. 2, 1884. (No model.)



Claim.—1. The combination, in a vise, of the stationary jaw B at the junction of the outer ends of the side plates, A A', the latter being separated by a longitudinal passage, C, having near its rear end a transverse pin, E, to which is coupled the link F of a toggle-lever, F G G' g, the links G G' of said toggle being united to the flange h of a reciprocating slide, H, that carries the detachable jaw D, a slotted lever, O, provided with a pair of cams, R R', and pawl S, being arranged to operate said toggle in the manner herein described, and a ratchet-wheel, P, being fitted in the slotted end of said lever for the purpose of holding said toggle to any specific adjustment, as set forth.

2. In combination with a vise having a reciprocating slide or carriage, H, and a shiftable jaw, D, coupled thereto in the manner described, the cheeks L L', provided, respectively, with bosses *l l'*, that bear against the under side of the flanges *a' a'* of the frame or bed, for the purpose specified.

334,817. DRILL ATTACHMENT. HIRAM S. SPRATLEY, North Springfield, Ma. Filed Dec. 5, 1885. (No model.)



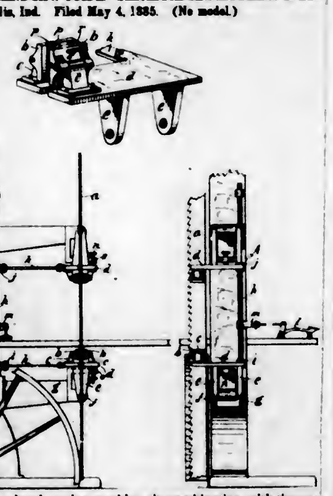
Claim.—1. A drill-frame, A, having an eye, *a*, slot B, legs H H, provided with thumb-screws I I, a drill, G, and bolt D, substantially as shown and described.

2. A bolt, D, having a hook, d^3, a nut, F, shoulder *d*, and nut E, combined with a frame having a slot, B, substantially as shown and described.

3. The combination of a drill, a frame having a slot, B, eye *a*, and thumb-screws I I, and a bolt or support, D, substantially as and for the purpose set forth.

4. The combination, with a drill composed of a winch, K, shaft *k'*, having a head, k^2, a wheel, L, provided with a hollow shaft, l^2, having threads l^3, of a frame having an eye, *a*, provided with screw-threads, a slot, B, legs H H, provided with thumb-screws I I, and an attaching-bolt, D, substantially as and for the purpose set forth.

334,818. BAND-SAW GUIDE. SAMUEL STEPHENS and DEMPSY B. HANSON, Indianapolis, Ind. Filed May 4, 1885. (No model.)



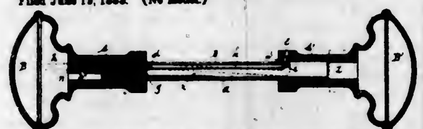
Claim.—1. In a band-sawing machine, the combination, with the saw, a frame on which the saw is mounted, and a pair of guide-plates between which the saw is embraced, of a support for said guide-plates pivoted to the frame and arranged to oscillate thereon, and means for controlling said oscillation, whereby the saw is held rigidly in the line of cut and deflected therefrom, substantially as and for the purpose specified.

2. In a band-sawing machine, the combination, with the saw, and a frame on which the saw is mounted, having two arms, one above the other, of two pairs of guide-plates and two supports for said guide-plates, said supports pivoted, respectively, to said arms, so as to oscillate thereon, and means, substantially as shown and described, for oscillating said supports simultaneously.

3. In a band-sawing machine, the combination, with the saw, the standard on which the saw is supported, and a movable guide-support arranged to move toward and from said standard, of the pair of short standards *c c*, erected on said guide-support, and guide-plates *b b*, arranged to embrace the saw between them and hinged to said short standards, substantially as and for the purpose specified.

4. In a band-sawing machine, the combination, with the upper and lower guides mounted on bases which are pivotally connected with upper and lower supporting-arms, of the vertical shaft *h*, having arms *i* and *j*, connecting-rods *k k*, and mechanism substantially as shown and described, whereby said shaft may be rotated and the guide-bases oscillated simultaneously.

334,819. KNOB ATTACHMENT. OSCAR STODDARD, Detroit, Mich. Filed June 19, 1885. (No model.)



Claim.—The combination, with the knobs, and the shanks *s s'*, having openings *z z'*, of the longitudinally-recessed spindle, the shank *s* having the arm *g*, the coupling-rod *h*, screw-threaded thereto, and adapted to be housed within the spindle, said rod having the curved portion *i*, adapted to engage the hole E of the shank *s'*, as and for the purposes set forth.

334,820. TOBACCO-CUTTING MACHINE. CHARLES A. STURTEVANT, Cleveland, Ohio. Filed Jan. 13, 1885. (No model.)



Claim.—1. In a tobacco-cutter, the combination, with the frames and the upper and lower rotary cutters, of the upper and lower series of strippers located between the cutters, the strippers of one series arranged to overlap the strippers of the other series, substantially as set forth.

2. The combination, with the two frames, the circular cutters located between the frames, and the plate J, secured to the outer faces of one of said frames below the opening therein, of the rotary knife located in close proximity to the plate J, and devices for operating the cutters and knife simultaneously, substantially as set forth.

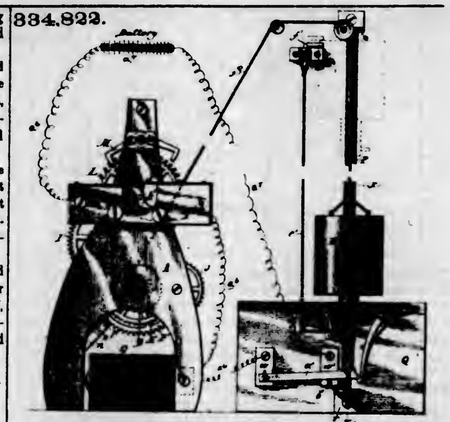
3. The combination, with a series of circular cutters arranged on spindles, as described, of a series of strippers arranged between the cutters, the strippers of each series being arranged to overlap each other at the central part between the cutters, substantially as set forth.

334,821. METHOD OF MANUFACTURING FLANGED CASTINGS. JAMES SULLIVAN, Newton Upper Falls, Mass. Filed Nov. 25, 1885. (No model.)



Claim.—That improvement in the art or method of manufacturing flanged cast-metal rails or bars of unequal thickness which consists in pouring hot metal against the thinner part of the casting after the same has been cast and while it is yet hot, to thereby keep up or re-enforce the heat in the thinner part of the casting, prevent warping, and insure the cooling of the casting to correspond with the pattern, substantially as described.

334,822. ELECTRO-MAGNETIC DEVICE FOR WINDING CLOCKS. WILCOXE F. SWIRE, Grand Rapids, Mich., assignor to himself and Michael Sullivan, John Sage, and Stephen Sweet, Jr., Chicago, Ill. Filed June 30, 1885. (No model.)



Brief.—Circuit closed at one point by the descent of the weight and at another intermittently by a cam on the escape-wheel arbor vitalizes a magnet the armature of which carries a pawl engaging with the winding-ratchet.

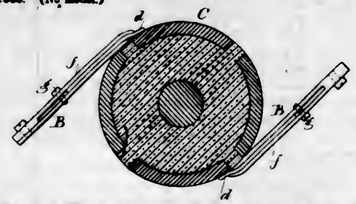
Claim.—1. The combination of a ratchet-wheel, E, a wheel, F, a spring, *c*, collar C, ratchet-wheel D, and a weight, R, substantially as and for purposes specified.

2. The combination, with a time-train, of a weight, a spring adapted to wind the weight and at the same time act on the train as a maintaining-power, and devices for winding the spring through a battery and magnet, substantially as and for the purposes specified.

3. In combination with a time-train, a weight, R, a battery, magnet, and connecting-wires, devices for winding the weight actuated by said magnet, and devices for closing and opening the circuit by the action of the weight, substantially as herein set forth.

4. The combination of a battery, a magnet, and connecting-wires, a weight, a spring for winding the weight and at the same time acting on the train as a maintaining-power, a circuit-breaker operated by the clock, and devices for closing and opening the circuit by the action of the weight, substantially as and for the purposes specified.

334,823. COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES. NIKOLA TESLA, Smiljan Lika, Austria-Hungary, assignor to the Tesla Electric Light and Manufacturing Company, Rahway, N. J. Filed May 6, 1885. (No model.)

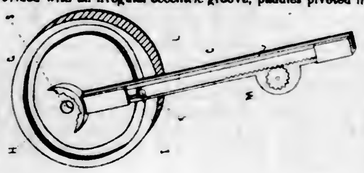


Claim.—1. The combination, with the commutator-bars and intervening insulating material and brushes in a dynamo-electric machine, of a solid insulator or bad conductor of electricity arranged to bear upon the surface of the commutator adjacent to the end of the brush, for the purpose set forth.

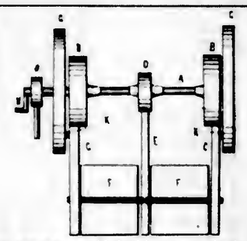
2. In an electric apparatus in which sliding contacts with intervening insulating material are employed, the combination, with the contact springs or brushes, of a solid insulator or bad conductor of electricity, as and for the purposes set forth.

334,824. STEAMBOAT AND WATER WHEEL. JAMES W. THOMAS, Muncie, Ind. Filed July 7, 1884. (No model.)

Claim.—1. The combination, in a paddle or water wheel, of the hub provided with an irregular eccentric groove, paddles pivoted in said



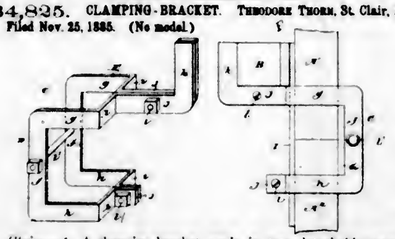
334,824.



wheel, having their journals provided with a gear-wheel, and a toothed rack supported in the wheel engaging said gear-wheel and operated by the cam-grooves, in the manner and for the purpose described.

2. The combination, in a paddle or water wheel, of the hub thereof provided with an irregular eccentric groove, paddles journaled in the sides of the wheel and in a central hollow spoke, the said journal provided with a gear-wheel, and a toothed rack-bar supported in the said hollow spoke engaging said gear and having its inner end fitted with a roller or thimble projecting into the eccentric groove, which is operated thereby to move the toothed racked bar back and forth in the manner and for the purpose set forth.

334,825. CLAMPING-BRACKET. THEODORE THORN, St. Clair, Pa. Filed Nov. 25, 1885. (No model.)



Claim.—1. A clamping-bracket made in two detachably-secured sections, each of which comprises an upright arm, a horizontal clamping-arm at each end thereof, and having branch arms bolted together, the upper horizontal arms of the sections having right-angled bar-supporting arms, substantially as described.

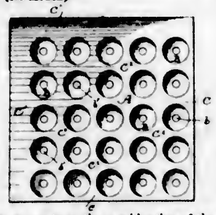
2. The combination of the upright sections, a plate, I, fitted over the joint thereof, a clamp inclosing the sections and plate, and a wedge inserted between the sections and clamp over the joint between the former and on the opposite face thereof, substantially as described.

3. The combination of the upright sections, a plate, I, fitted over the joint thereof, a sectional clamp arranged over the plate and upright sections, and having an angular bracket-arm, and a wedge inserted transversely of the joint of the upright sections and between the same and clamp, substantially as described.

4. The combination of the upright, a clamping-bracket made in two detachably-connected sections, each of which comprises a vertical arm, two horizontal clamping-arms, and a bar-supporting arm, and a wedge inserted between the vertical arms of the bracket-sections, and the upright, substantially as described.

5. A clamping-bracket for scaffolds, made in two detachably-bolted sections, each section being formed from a single piece of metal and comprising arms *f*, *g*, *h*, *i*, *j*, and *k*, substantially as described.

334,826. EGG-TRAY. NELSON F. TIPTON, Baldwin City, Kans. Filed May 11, 1885. (No model.)



Claim.—1. In an egg-tray, the combination of the sheets A′ and A² provided with perforations *a*, with the pockets B, formed of paper coiled as a cornucopia, and having a flanged rim, *b*, and opening *b*′, substantially as and for the purpose described.

2. In an egg-tray, the combination of the sheet A², having perforations *a*, and pockets each consisting of conically-coiled paper having its outer rim flanged and cemented to the sheet A², substantially as and for the purpose described.

3. An egg-coil consisting of paper conically coiled and molded, and having an opening in its small end and a flange, substantially as described.

334,827. HITCHING DEVICE. WILLIAM H. VADEEN, Quincy, Ill. Filed Nov. 1, 1884. (Model.)



Claim.—1. The combination, with the base, of the eccentric-clamp pivoted thereon and the lever-plate connected to the clamp in rear of its pivots, substantially as described.

2. The combination, with the base portion, of the eccentric-clamp having the recess in its under side and the lever-plate mounted therein, substantially as described.

3. The combination, with the base portion, of the eccentric-clamp having the recess in its under side, and the slot, and the lever-plate having the cut-away portions in its sides, so as to permit a limited motion up and down, substantially as described.

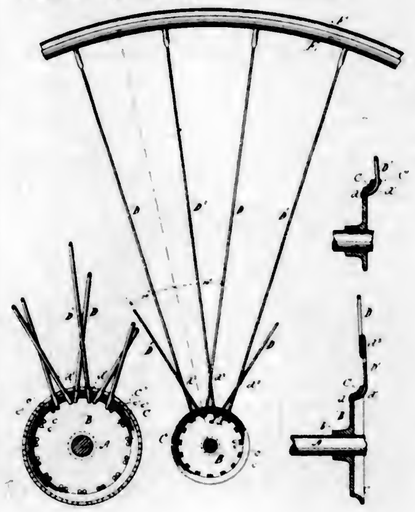
334,828. SICKLE-DRIVER ATTACHMENT FOR MOWING-MACHINES. JAMES WALKER and HENRY T. CAULK, Iantha, Mo. Filed Oct. 17, 1885. (No model.)



Claim.—1. The combination of the eye, the pitman having the downturned end and the ratchet-teeth, the gib N, having the ratchet-teeth engaging with the teeth of the pitman, said gib bearing against the eye to secure the latter between it and the downturned end of the pitman, the bolt or key S, to secure the gib N to the pitman, and the gib F, in the other end of the pitman, the gibs N and F being movable in the same direction, substantially as described.

2. The combination of the eye, the pitman having the downturned end and the ratchet-teeth, and the gib having the ratchet-teeth engaging with the teeth of the pitman, said gib bearing against the eye to secure the latter between it and the downturned end of the pitman, and the bolt or key to secure the gib to the pitman, substantially as described.

334,829. WHEEL FOR VELOCIPEDES. ALBERT E. WALLACE, Hartford, Conn., assignor to the Pope Manufacturing Company, same place. Filed Feb. 7, 1885. (No model.)

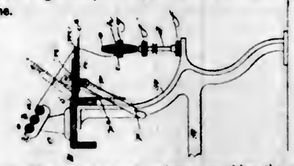


Claim.—1. In a suspension-wheel, a hub-flange having a nave for attachment to an axle, means for attachment of the spokes, a crown to receive the draw of the spokes, and a supplemental rim, C′, with notches *c*′, to receive and stay the spokes, essentially as set forth.

2. The combination, in a suspension-wheel, of flange B, with perforations *c*, for the spokes, crown C, and spokes D D′, constructed and operating essentially as set forth.

334,830. SPINNING-MACHINE. ROBINSON WALMSLEY, Fall River, Mass. Filed Oct. 7, 1885. (No model.)

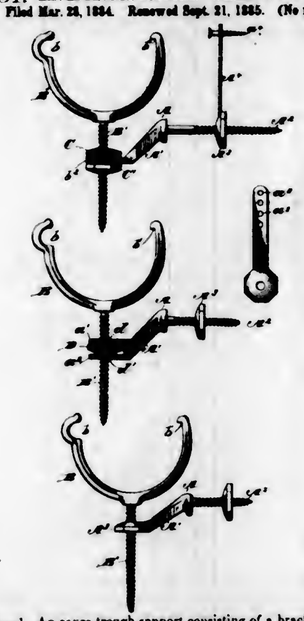
Brief.—The guide-board is hinged to the roller-beam and the wire-boards to the guide-board, so that the wire-boards can be thrown up simultaneously or independently of each other. The invention consists in the provision of a lifting-handle for the guide-board and of means for retaining it in its elevated position, consisting of a notched latch pivoted to the board and a leg or keeper to engage therewith secured to the frame of the machine.



Claim.—1. The roller-beam of a spinning-machine, the guide-board hinged to it, the series of wire-boards and their attached guide-wires, and a lifting-handle for said boards, combined with a notched latch pivoted to the guide-board, and a keeper or leg for said latch, substantially as described.

2. The roller-beam of a spinning-machine, the guide-board *o*, hinged to it, the series of guide-wire blocks or boards *n*, hinged to said board, the operating-handle o^3, and the locking device *p* p^3, substantially as shown and described.

334,831. EAVES-TROUGH SUPPORT. WILLIAM R. WILCOX, Nashua, N. H. Filed Mar. 28, 1884. Renewed Sept. 21, 1885. (No model.)



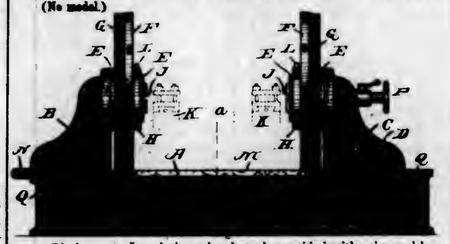
Claim.—1. An eaves-trough support consisting of a bracket having a threaded attaching-spindle at one end and a flat perforated plate at the other, a trough-hook having a threaded spindle which depends from its central portion and passes through said perforated plate, and nuts which are screwed upon the spindle and engage with said plate, substantially as specified.

2. In an eaves-trough support, the combination, with a reversible bracket having a threaded spindle, a body portion formed at an angle therewith, and one or more perforated flat plates upon its outer end, said plates being parallel with the axis of the spindle, of a trough-hook having a threaded spindle dropping from its central portion and entering the perforation in the end of the bracket, and nuts turned upon said spindle and supported by the flat end or plates of the bracket, substantially as specified.

3. The combination, with the reversible bracket A, having a spindle, A^2, and a body, A′, formed at an angle with said spindle, and provided with the flat parallel plates *a*′ and a^2, of the hook B, having a threaded spindle, B′, which enters a perforation in said plates, and a nut, D, lying between said plates, substantially as specified.

4. In an eaves-trough support, the combination, with a bracket having a threaded spindle which engages with the finish, of a bracing-nut having a strap which carries a screw engaging with the finish and preventing the rotation of the nut, substantially as described.

334,832. CAR-WHEEL LATHE. JOHN R. WILLIAMS, Chicago, Ill., assignor to the Niles Tool Works, Hamilton, Ohio. Filed July 9, 1884. (No model.)



Claim.—1. In a lathe, a head-stock provided with a journal-boss, a driving-plate fitted to revolve upon said journal-boss, and journal-box fitted to said journal-boss and adapted to receive and furnish a bearing for the axle on which work is being turned or ground, combined substantially as set forth.

2. In a lathe, a lathe-bed, a head-stock provided with a journal-boss and secured to the lathe-bed, a second similarly-provided head-stock secured to the lathe-bed and fitted to be adjusted longitudinally thereon, driving-plates fitted to revolve upon the journal-bosses of the head-stocks, and journal-boxes secured to said journal-bosses and adapted to receive and furnish bearings for the opposite ends of an axle on which large work is being turned or ground, combined substantially as set forth.

3. In a lathe, a lathe-bed, a head-stock, a second head-stock fitted to slide upon said bed, a driving-plate journaled to one of said head-stocks and provided with a central cavity adapted to receive the projecting end of a shaft or axle, and an axle-support disposed within said cavity, all combined substantially as set forth, for the purpose of enabling the driving-plate to be adjusted near to a wheel fixed near one end of an axle.

4. In a lathe, the combination of a head-stock, a driving-plate journaled to the head-stock and provided with a central cavity adapted to receive the projecting end of the axle or shaft, an axle-support disposed within said cavity, and an axially-arranged screw, as P, substantially as set forth.

5. In a lathe, the combination of a hollow spindle provided with a driving or face plate, a follower, and a device for centering the axle of a car-wheel in the lathe.

334,833. TRAVELING THRASHER. NEWTON S. WILSON, West Butte, Cal. Filed Aug. 14, 1885. (No model.)



Claim.—1. In a traveling thrasher, a wheeled frame carrying the separating and other grain-handling devices, in combination with an endless traveling draper or carrier mounted in a horizontal plane longitudinally on the side of the frame, and adapted to receive the headings from the elevator-spout of an independent header and to carry them to the separator, and an endless traveling draper inclining toward the in-

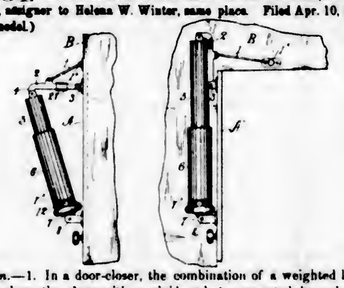
ner edge of said draper and adapted to feed the headings received from the spout to the horizontal draper, substantially as herein described.

2. In a traveling thrasher, the wheeled frame A, carrying the grain-feeding devices in combination with the frame F, supported longitudinally on the side of the frame A, the self-feeder, the endless traveling draper or carrier H in said frame, communicating at its rear end with said feeder, the standards S on the main frame, and the endless inclined supplementary draper I, arranged to travel on a line at right angles to the draper H, substantially as herein described.

3. In a traveling thrasher, the main frame A, carrying the separating, self-feeding, and other grain-handling devices, in combination with the endless traveling drapers H I, mounted longitudinally on the side of the frame, one of said drapers being horizontal and the other inclined toward the inner edge of the horizontal draper, and the mechanism by which said drapers are driven, consisting of the driving-shaft J, having pulley K, the drums G R, on which the drapers are mounted, the pulleys N L on the drums, and the endless belts *k m*, all arranged and adapted to operate substantially as herein described.

4. The combination, with the elevator-spout O of a header, of an independent wheeled frame, the grain feeding and cleaning devices mounted thereon, the horizontal draper H, and the inclined supplementary draper I, arranged above the draper H, the said drapers being mounted on one side of said frame and adapted to receive headings from the elevator-spout, substantially as herein described.

334,834. **AUTOMATIC DOOR-CLOSER.** DAVID T. WINTER, Peabody, Mass., assignor to Helena W. Winter, same place. Filed Apr. 10, 1885. (No model.)



Claim.—1. In a door-closer, the combination of a weighted lever, 2, fulcrumed on the door with a rigid rod, 1, connected by a ball or equivalent joint at one of its ends to such lever and at its other end by a similar joint to the door-frame, above the door, the combination operating to raise the lever toward a vertical position when the door is opened and to substantially a horizontal position when the door is closed, substantially as set forth.

2. In combination with the rod 1 on the frame above the door and arranged to rise and fall, the weighted lever 2 on the door, also arranged to rise and fall with such rod, and the elastic band 27 on this lever, as and for the purpose set forth.

3. In combination with the lever 2 and rod 1, connected together and arranged to rise and fall with the opening and closing of the door, an elastic or yielding connection applied to the outer end of such lever and to the door at a point below such lever, all as set forth.

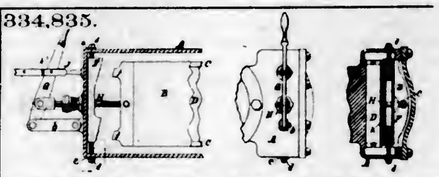
4. In combination, the lever 2, rod 1, both arranged to rise and fall, as set forth, an upright weight attached at its upper end to the outer end of the lever, and an upright tubular cylinder, 6, hinged to the door, and in which the weight is free to rise and fall, substantially as shown and described.

5. In combination, an upright air-cylinder pivoted at its lower end on the door and having an adjustable air-outlet at its lower end, a piston-weight working vertically, or nearly so, in said cylinder, bracket or lever 2, connected to such weight, and rod 1, connected to such lever and to the door-frame, this lever and rod being arranged to rise and fall, all substantially as set forth.

6. In a door check and closer, in combination with the upright air-cylinder having a file-cut in its bottom edge, as set forth, the weighted piston, and the hinge screw-cap 7 on the bottom of the cylinder, the low or half thread, as set forth, and a washer, 22, of leather or rubber, the combination serving for adjusting and regulating the amount of air admissible to the cylinder.

7. In a door check and closer, the combination of the rod 1, lever 2, vertical cylinder pivoted at its lower end upon the door, and the vertical weight adapted to rise and fall in such cylinder, and provided at its lower and with a cup-valve, all substantially as set forth.

334,835. **BALANCED VALVE.** DANIEL A. WOODBURY, Rochester, N. Y. Filed May 8, 1885. (No model.)



Claim.—1. In a balanced valve, the combination of a valve, working under a relief-plate, with the relief-plate, the latter regulated by means of wedges, mechanism, substantially as described, by which any degree of relief may be obtained, and a suitable guide or stop for arresting the return movement when the point of proper adjustment for ordinary working is reached, substantially as shown and described, and for the purpose set forth.

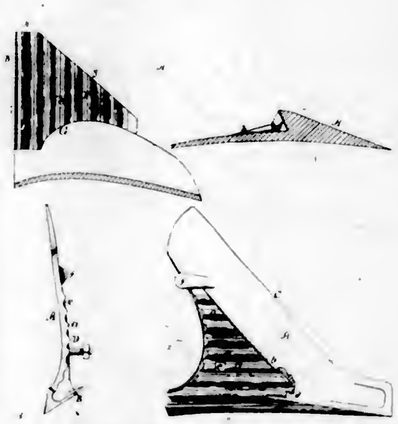
2. In a balanced valve, the combination of a valve with a relief-plate, and means, substantially as described, for adjusting the relief-plate to any degree that may be desired, guides or stops for arresting the movement of the adjusting device, and means, substantially as described, for adjusting the stop or guide to compensate for the wear of the parts, substantially as shown and described.

334,836. **NUT-LOCK.** GIDEON WOODLING, Dubois, Pa. Filed Mar. 2, 1885. (No model.)



Claim.—In a nut-lock, the combination of the bolt, the nut having a smooth inner face, the plate or bar provided with a retaining-notch, and the spring-washer consisting of a helically-coiled bar having its outer end pointed and turned slightly upward to bite against the inner face of the nut, and having its inner end bent at right angles and extended to form an arm, the end of which is bent at right angles to engage in a retaining-notch in the plate or bar, substantially as shown and described.

334,837. **PLOW-POINT.** PALMER D. ANDERSON, Waterport, N. Y. Filed Sept. 28, 1885. (No model.)



Claim.—In combination with the standard of a plow, a point therefor secured to said standard, having the bearing-face contiguous to said standard formed with ridges that are of uniform width and depth throughout their length and parallel with each other, said ridges being formed parallel with the line of advance of the plow, the standard-seat on said point being cut under along three sides thereof, said point being further provided with a projecting tongue, *f*, to lap under the edge of said standard, the latter having its face contiguous to said point correspondingly furrowed with parallel uniform grooves to meet said ridges of the point, and having its three bearing-edges against said point made acute to enter said undercut cavities of the point, substantially as shown, and for the purpose set forth.

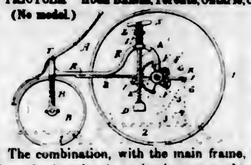
334,888. **THILL-COUPLING.** ISAAC W. ARCHIBALD, Elgin, Ill. Filed June 4, 1885. (No model.)

334,838.



Claim.—The combination of the forked piece E, provided with screw-holes in each arm, conical screw-pins J J, fitting and working in the screw-holes in arms of forked piece E, socketed thill-iron G, and bolt K, passing through conical screw-pins J J, substantially as shown.

334,839. **TRICYCLE.** HUGH BARRY, Toronto, Ontario, Canada. Filed Mar. 3, 1885. (No model.)



Claim.—1. The combination, with the main frame, an axle provided with a ratchet-wheel, and a lever having a pawl engaging the ratchet-wheel, of the vertically-sliding rod or bar connected to the lever, a seat secured to said rod or bar, and a spring by which said seat, rod, or bar is lifted and supported on the main frame, substantially as set forth.

2. The combination, with an axle having a ratchet-wheel and levers having pawls engaging the ratchet-wheel, of the vertically-sliding rods or bars supported by springs on the main frame and connected to their respective levers, one of the rods or bars being provided with a seat and the other being provided with a stirrup-frame, substantially as set forth.

3. The combination, with the main frame and axle, of the folding step-seat, substantially as set forth.

4. The combination, with the main frame and axle, of the folding step-seat and a wheel attached to the step-seat, substantially as set forth.

5. The combination, with the levers having pawls and an axle having a ratchet-wheel, of the propelling-levers 3 and 4, secured to the pawl-levers, and devices by which the pawl-levers are operated, substantially as set forth.

6. The combination, with the main frame, axle having ratchet-wheel, axle-support, and levers having pawls, of the propelling-levers and runners, substantially as set forth.

334,840. **LOCK FOR FREIGHT-CAR DOORS.** ANDREW B. BARNARD, Kansas City, Mo. Filed July 14, 1885. (Model.)



Claim.—1. The combination, with a car-door, of a lock inserted through its rear edge and provided with an operating-arm located outside such rear edge, both the lock and arm lying inside the outer face of the door, substantially as and for the purpose specified.

2. The combination, with a freight-car door, of a bolt inserted therein from the rear edge and provided with a locking projection adapted to engage with the car-side, and an exterior arm by which the bolt may be oscillated, both projection and arm standing at right angles to the bolt, substantially as specified.

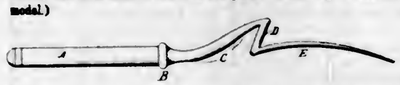
3. The bolt adapted to be oscillated and to be inserted edgewise in a car-door, and provided with a locking projection and an operating-arm, both standing at right angles to the bolt, the former being adapted to act by its weight to resist unlocking, substantially as specified.

4. The combination, with the car-door, of an oscillating bolt inserted in the door and provided with a locking projection and operating-arm, the door being recessed to permit the projecting arm to swing past the center, substantially as and for the purpose specified.

5. The lock for freight-car doors, consisting of the oscillating bolt C, having the locking projection *c* and arm *c'*, in combination with the plate D and cap D', substantially as specified.

6. The combination, with the oscillating bolt and its operating-arm secured thereto, of a locking projection weighted to outbalance said arm, substantially as and for the purpose specified.

334,841. **CARVING-FORK.** LIONEL B. BETHELL, Chelsea Lodge, Tite Street, Chelsea Embankment, London, England. Filed May 15, 1885. (No model.)



Claim.—1. As a new article of manufacture, a carving-fork the shank of which is first curved, turned, bent, or angled outwardly and upward from the plane of the axis of the handle, and then turned, curved, bent, or angled downward and toward said plane to form a flange or guard, at or near the lower portion of which flange or guard the tines are connected and from which they project, substantially as and for the purposes set forth.

2. The combination, to form an inherently-guarded carving-fork, of the handle A, curved shank C, flange D, and tines E K, substantially as and for the purposes specified.

334,842. **ANTI-RATTLER FOR THILL-COUPLINGS.** GEORGE W. BLAIR, Wabash, Ind. Filed Dec. 30, 1885. (No model.)



Claim.—The anti-rattler for thill-couplings hereinbefore described, made of a steel or other elastic plate, with the sharp return-curve at *a'*, the curved portions *c* and *c'*, and rib *b'* in the outer limb thereof, and having the back part bent forward at *a* to form the part X, and with the plate D secured thereto.

334,843. **HAY-PRESS.** HENRY F. BLANK, Quincy, Ill. Filed June 16, 1885. (No model.)



Claim.—1. The combination of the forked sweep, pivoted to the top and bottom of the frame outside of the double knuckle-lever and its shaft, with a link connecting the sweep to the forward end of the lever, the said double knuckle-lever, a pitman hinged to the rear side of it and the forward end of the plunger, and the said plunger, as set forth.

2. The sweep pivoted to the frame at both ends of the fork outside of the double knuckle-lever and its shaft, and having a bolt provided with a collar, combined with the double-looped link, the double knuckle-lever and its central vertical shaft, the doubly-hinged pitman, and the plunger, as set forth.

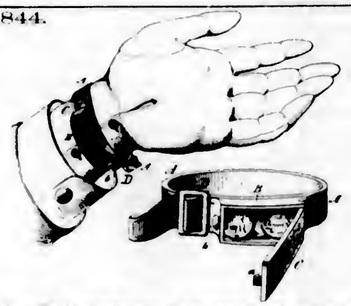
3. The combination of the plunger having the upper inclined groove, *g*, with the roof of the frame having the correspondingly-inclined cleat *g'*, and devices, substantially as shown, for operating said plunger, as set forth.

4. The combination, with the pressure-head J and the geared rack J', of the pinion K and its shaft K', the pulley L, the friction-band L', having ratchets *m m* and the tension-screw *l*, and the pivoted clutch M, as set forth.

5. The combination, with the floor of the bale-chamber, slotted at *r*, of the pivoted hook R, the laterally-moving block O, having a T-head wedge-shaped at *o*, and the horizontally-moving operating-lever N, as set forth.

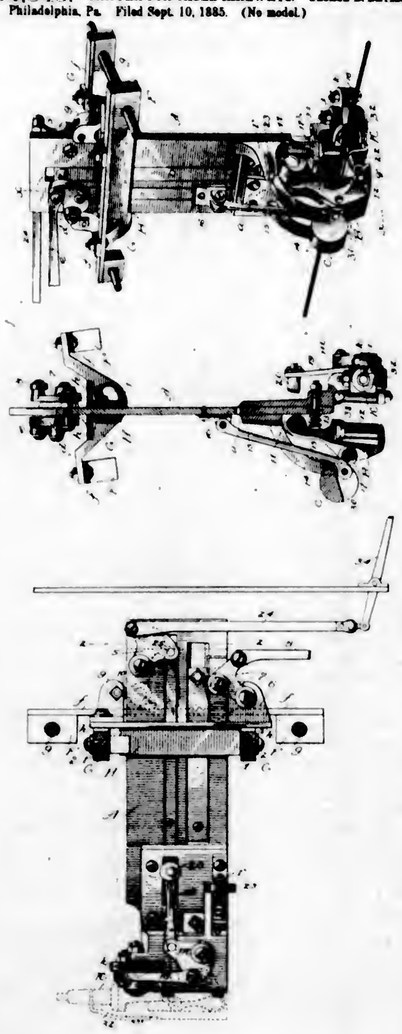
334,844. **BRACELET.** ARTHUR V. BRIESEN, New York, N. Y. Filed Jan. 15, 1885. (No model.)

334,844.



Claim.—The flexible bracelet A, constructed to form a coin-receptacle, B, rigidly connected thereto, the body of the bracelet extending beneath said receptacle to form a bottom or support for the same, said bracelet having a fastening, D, apart from said receptacle, as set forth.

334,845. GRIPPER FOR CABLE RAILWAYS. GEORGE B. BRYANT, Philadelphia, Pa. Filed Sept. 10, 1885. (No model.)



Claim.—1. A gripper for cable railways, consisting of the fixed jaw, the movable jaw pivoted thereto, a spring between the two adapted to keep them apart, and a cam mechanism for pressing the pivoted jaw against the cable, substantially as described.

2. The combination, with the fixed jaw, the movable jaw pivoted thereto, a spring between the two adapted to keep them apart, and a cam mechanism for pressing the pivoted jaw against the cable, consisting of the eccentric supported from the bracket-arms 14, and the lever 15, for operating the same, substantially as described.

3. In combination with the movable jaw, the eccentric having its central slot, the connecting-bar 15, pivoted within the slot in the eccentric, and the roller pivoted in the jaw having two bearing-surfaces, substantially as described.

4. In combination with the fixed jaw, the movable jaw pivoted thereto, a spring between the two adapted to keep them apart, and a cam mechanism for pressing the pivoted jaw against the cable, consisting of the eccentric supported from the bracket-arms 14, and the lever 15, for operating the same, substantially as described, and the friction-roller mounted on the stud 9, substantially as described.

334,846. CHECK-ROWER AND CORN-PLANTER. JOHN W. BUFFINGTON, Goodnight, Mo. Filed Dec. 15, 1884. (No model.)

Claim.—1. A wire, Q, having enlargements *q*, elbow-levers G' G, having forks g^3 g^4, T-shaped levers F F D, attachments g^3 g^3 E E, and a feed-bar, *l*, having a loop, l^2, all constructed and arranged substantially as shown and described.

2. The combination of a frame composed of pieces *b b*, cross-pieces b^4 I, and parallel pieces H H', with forked and pivoted elbow-shaped levers G' G, pivoted T-shaped levers F F D, and a feed-bar, *l*, having a loop, l^2, all substantially as shown and described.

3. A block, W, having a projecting edge, w', and a clevis, w^2, combined with a pivoted elbow-shaped lever, G, which has forks g^3 g^4, and a connection, g^3, with one end of a T-shaped lever, F, substantially as shown and described.

4. A frame composed of pieces *b b*, cross-pieces b^4 I, and parallel pieces H H', placed near the surface of the ground for supporting the wire Q, substantially as and for the purpose set forth.

334,845.



Claim.—1. The frame supported upon the axles of the car, yokes G, resting upon the frame, a block, and the gripper-bar sliding vertically therein, a bell-crank lever pivoted upon the block and combined with mechanism for raising and lowering the gripper-bar, all substantially as described.

2. The yokes resting upon the frames and hollowed upon their upper sides, the block carrying the gripper-bar adapted to rest thereon, and screw-bolts passing through slots in the yokes and into the ends of the block, substantially as described.

3. In combination with the block and the gripper-bar, the bell-crank lever 7, pivoted on the lug, in combination with the friction-roller on the stud 9, substantially as described.

4. In combination with the fixed jaw, the movable jaw pivoted thereto, a spring between the two adapted to keep them apart, and a cam mechanism for pressing the pivoted jaw against the cable, consisting of the eccentric supported from the bracket-arms 14, and the lever 15, for operating the same, substantially as described.

5. In combination with the movable jaw, the eccentric having its central slot, the connecting-bar 15, pivoted within the slot in the eccentric, and the roller pivoted in the jaw having two bearing-surfaces, substantially as described.

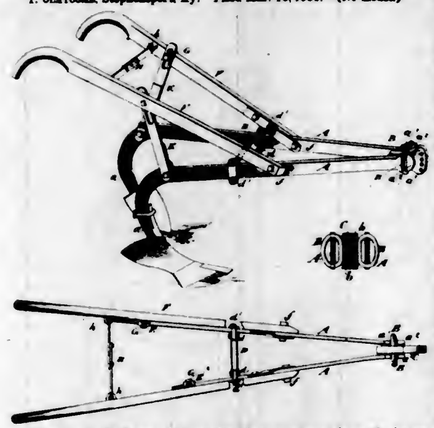
6. In combination, the pivoted arm *k*, and friction-roller mounted thereon, a mechanism consisting of a link, 18, bell-crank lever *m*, and sliding bar for swinging said arm *k* into and out of place, substantially as described.

7. The combination, with the pivoted arm, of the link 18, the bell-crank lever *m*, the link 19, arm 20, bar *o*, and the mechanism for operating the bar *o*, substantially as described.

8. The combination, with the swinging arm *k*, of the bracket 32, substantially as described.

9. In combination with the swinging bar and spindle, the bracket *q*, fixed to the movable jaw, substantially as described.

334,847. TURN-PLOW AND DOUBLE-SHOVEL FRAME. WILLIAM T. CLAYCOMB, Stephensport, Ky. Filed Mar. 10, 1885. (No model.)

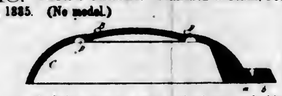


Claim.—1. In frames for two shovels or two turn-plows, the beams A A, journaled at their front ends in bearings B B, to turn laterally, as and for the purpose set forth.

2. The combination of two beams, A A, constructed at their front ends, as shown at a' a^2, the bearings B B, the intermediate draft-clevis, C, and the bolts *b b*, substantially as shown and described.

3. The combination, with the draft-clevis C, of the bearings B B, connected by a male and female screw working in said clevis, as shown and described.

334,848. FLYING TARGET. FREDERICK C. DAHM, Peoria, Ill. Filed June 3, 1885. (No model.)



Claim.—1. A flying target composed of top and sides of substantially the same thickness and a film-like connected between said top and sides, in combination with a perforation or indentation intermediate said film-like connection and the edges of the target, substantially as described.

2. A flying target provided with a lug projecting outwardly from the edge of the target, said lug being perforated or indented at a point within its edges, substantially as described.

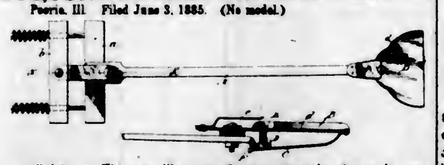
3. A flying target indented or perforated, substantially as described, in combination with a metallic lining embracing the walls of said perforation or indentation, substantially as described.

4. A flying target composed of top and sides of substantially the same thickness, in combination with a film-like connection between said top and sides, substantially as described.

5. A flying target of concavo-convex or dish-shaped form in one piece, and an annular film-like connection intermediate the top and sides of the target, substantially as and for the purpose described.

6. A flying target provided with a perforated or indented lug, in combination with a metallic plate forming a facing for said lug, and having arms extending along the edge of the target on both sides of the lug, substantially as described.

334,849. ARM FOR FLYING-TARGET TRAPS. FREDERIK C. DAHM, Peoria, Ill. Filed June 3, 1885. (No model.)



Claim.—1. The propelling-arm of a target machine or trap, in combination with a bed-plate, a fixed pivoted connection between said arm and plate, and a stud or pin adapted to project into a depression or perforation in the target, substantially as described.

2. In a target machine or trap, the propelling-arm, in combination with a bed-plate or support for the target, an affixed pivot-connection between said arm and bed-plate, and a spring-actuated stud for engaging a depression or perforation in a target placed in its operative position upon the bed-plate, substantially as described.

3. The swinging arm, the bed-plate pivoted thereto, and a projecting bracket on the upper side of said bed-plate, in combination with a spring-actuated stud supported on the under side of the plate and means for actuating said stud, substantially as described.

4. The propelling-arm provided at its forward end with a cam and a bed-plate pivoted on said arm rearwardly of the cam, in combination with a spring and a stud thereon, adapted to engage the cam on the propelling-arm, substantially as described.

5. The propelling-arm and the bed-plate provided with a flange or lugs on the side edge thereof, in combination with the bracket projecting forward over said plate and a spring-actuated stud below the bracket, adapted to be projected through said bed-plate, substantially as described.

334,850. INSULATING ELECTRIC CABLES. RUSSEL A. DERRICK, Providence, R. I. Filed Aug. 12, 1885. (No model.)



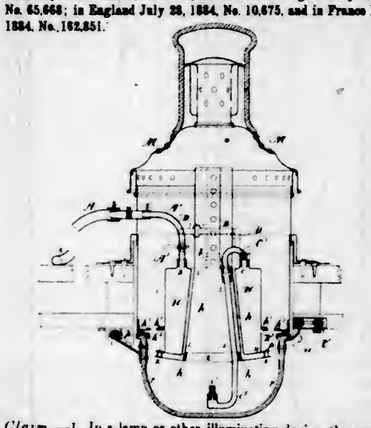
Claim.—1. As an improved article of manufacture, the insulating material for electric wires, herein described, the same consisting of the asbestus felt or paper base coated or saturated with crushed bituminous rock and Trinidad asphalt tempered with cowdie gum and mineral oil, a layer of pulverized glass and mica spread evenly over the surface, and the whole rolled or otherwise formed into webs or sheets having a series of continuous grooves or corrugations, as and for the purposes set forth.

2. The improved corrugated armor or shield B, herein described, consisting of the asbestus base *b*, enveloped by the asphaltic composition *b'*, and the thin layer b^2 of pulverized glass and mica covering the inner or concave surface of the said shield, substantially as shown, and for the purposes set forth.

3. The flat-band cable A, herein described, consisting of a series of conducting-wires, *a*, arranged within the two strips or webs of corrugated insulating material B, composed of asbestus *b*, covered with asphaltic composition *b'*, and powdered glass and mica b^2, all combined and arranged substantially as shown and hereinbefore set forth.

4. The combination, within the two closely-cemented corrugated strips or webs of insulating armor B, composed of asbestos, asphalt, and powdered glass and mica, substantially as set forth, of the conducting-wires *a*, arranged in said corrugations, substantially as shown, and for the purposes hereinbefore described.

334,851. CARBURETING LAMP. JULES E. DERY, Brussels, Belgium. Filed Sept. 24, 1885. (No model.) Patented in Belgium July 15, 1884, No. 65,668; in England July 28, 1884, No. 10,675, and in France Nov. 4, 1884, No. 162,851.



Claim.—1. In a lamp or other illuminating device, the combination, with the body of such device and the detachable top or cap thereof, of a carburetor detachably seated within said body, a gas-supply pipe detachably connected with the carburetor, a burner, and a pipe connecting the burner with the carburetor, substantially as and for the purpose specified.

2. In a lamp or other illuminating device, the combination, with the body of such device and the detachable top or cap thereof, of a carburetor loosely seated within the said body, a gas-supply pipe detachably connected with the carburetor, and a reflector and a burner rigidly connected with said carburetor, substantially as and for the purpose specified.

3. In a lamp, the combination, substantially as described, with the body thereof, a carburetor loosely seated therein, a burner-pipe supported therefrom, and a gas-supply pipe detachably connected with said

carburetor, of connections interposed between the burner-pipe and the pipe connecting the carburetor with the gas-supply pipe, and suitable stop-cocks for conducting the illuminating agent either through the carburetor or directly to the burner, and whereby the carburetor, burner-pipe, and said connections are made removable from the body of the lamp, for the purpose specified.

4. In a lamp, the combination, substantially as described, with the body or inclosing casing, a carburetor loosely seated therein and having an axial opening, and a gas-supply pipe detachably connected with the carburetor, of a reflector connected with the carburetor below its axial opening, and a burner-pipe supported from the carburetor and extending through said axial opening to support the burner below the reflector, for the purpose specified.

5. In a lamp, the combination, with the body or inclosing casing, a carburetor having an axial opening, a gas-supply pipe connected therewith, and a reflector arranged below the carburetor, and provided with a coinciding axial opening, of a burner located below the reflector, and a pipe connecting said burner with the carburetor and extending through the axial openings of the reflector and carburetor, for the purpose specified.

6. In a lamp, the combination of the body or inclosing casing, a carburetor having an axial opening, a gas-supply pipe connected with the burner, and a chimney or draft-flue arranged in said axial opening, with a burner and a pipe connecting the burner with the carburetor, extending through and supporting the burner below said chimney or draft-flue, substantially as and for the purpose specified.

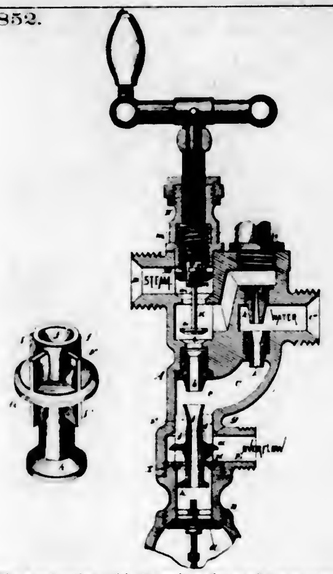
7. In a lamp, the combination of the body or inclosing casing, a carburetor having an axial opening, a gas-supply pipe connected with the carburetor, and a chimney arranged within and of less diameter than said opening, to leave an air-space around said chimney, of a burner and a pipe extending through the draft-flue or chimney, connecting the burner with the carburetor, and supporting the said burner below the said chimney, substantially as and for the purpose specified.

8. In a lamp, the combination of the body or inclosing casing, a carburetor, a gas-supply pipe connected therewith, a reflector supported below the same, both having axial openings, and a chimney arranged within the axial opening of the carburetor and surrounding the axial opening of the reflector, with a burner and a pipe extending through the chimney, connecting the burner with the carburetor, and supporting said burner below the axial opening of the reflector, substantially as and for the purpose specified.

9. In a lamp, the combination of the body or inclosing casing, a carburetor, a gas-supply pipe connected therewith, a reflector supported below the same, both having axial openings, and a chimney of less diameter than and arranged within the axial opening of the carburetor and surrounding the like opening of the reflector, with a burner and a pipe extending through the chimney and reflector, connecting the burner with the carburetor, and supporting said burner below the chimney and reflector, substantially as and for the purpose specified.

10. In a lamp, the combination, with the body thereof, a carburetor arranged within the same, a burner, and a pipe for connecting the burner with the carburetor and supporting the burner below said carburetor, and a reflector connected with the carburetor, of a transparent or translucent bottom hinged to the body of said lamp, and a lock consisting of the slotted arm *a* and the locking-lever *t*, for locking said bottom in position to close the lamp, substantially as and for the purpose specified.

334,852. INJECTOR. ALBERT S. EBERHAN, Cleveland, Ohio. Filed Mar. 6, 1885. (Model.)



Claim.—1. In an injector, the combination, with the main casing and main water-passage, of an injector discharge-nozzle and a valve for automatically closing the initial and secondary overflows independently of the check-valve, substantially as set forth.

2. In an injector, the combination, with the main casing, the main water-passage, and injector-tube adapted to operate as a combining and delivery tube, of a valve for automatically closing the initial and secondary overflows, substantially as set forth.

3. In an injector, the combination, with the main casing and main water-passage, of an injector combining-tube adapted to slide within the casing, and thereby automatically close the initial and secondary overflows, substantially as set forth.

4. In an injector, the combination, with the main casing and water-supply pipe, of an injector combining-tube adapted to admit water to the overflow both from the supply-pipe and from the pipe leading directly to the boiler, and further adapted to automatically close the said overflow-passages, substantially as set forth.

5. In an injector, the combination, with the main casing and main water-passage, of a movable injector-tube adapted to act automatically as a valve for shutting off the initial and secondary overflows, substantially as set forth.

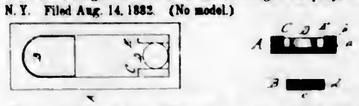
6. In an injector, the combination, with the main casing and main water-passage, of a movable injector-tube provided with enlarged portions, which serve as valves to close the initial and secondary overflows, said tube being automatically operated by the pressure of steam-forced water, substantially as set forth.

7. The combination, with the main casing, main water-passage, an injector-tube, and a valve for automatically closing the overflows, of a loose valve for throwing the whole force of the steam onto the water-lift in starting the injector, substantially as set forth.

8. In an injector provided with a water-lift and means for automatically closing the initial and secondary overflows, a loose valve operated by the valve which admits steam, and adapted to remain on its seat while the steam-inlet valve is slightly raised, for the purpose substantially as set forth.

9. The combination, with the main casing and main water-passage, of a water-lift, an injector-tube, and a valve for automatically closing the initial and secondary overflows independently of the check-valve, substantially as set forth.

334,853. MOLD FOR CARBONIZING. THOMAS A. EDISON, Menlo Park, N. J., assignor to the Edison Electric Light Company, New York, N. Y. Filed Aug. 14, 1882. (No model.)

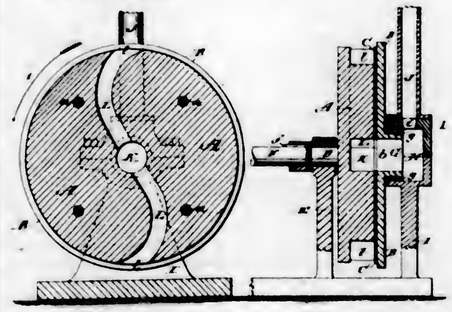


Claim.—1. A carbon mold for carbonizing, provided with a deposited coating of hard steel-like carbon, substantially as set forth.

2. The weights for a carbonizing-mold, each constructed with an external carbon covering and a core of heavier material, substantially as set forth.

3. The combination, with a carbonizing-mold constructed of carbon, of carbon-covered weights, substantially as set forth.

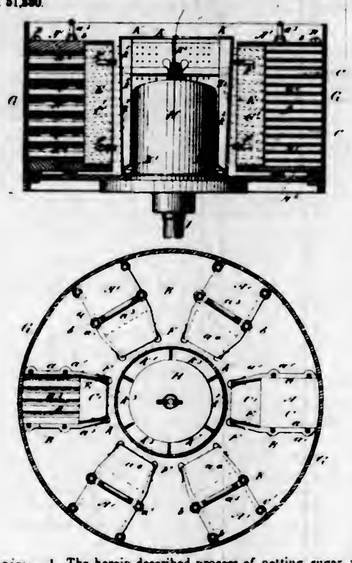
334,854. ROTARY ENGINE. JOHN W. EMERSON, Opopka, Fla., assignor to himself and Columbus Wellington Mills, same place. Filed July 8, 1885. (No model.)



Claim.—1. The combination, in a rotary engine, of the wheel A B, having shaft D and hollow shaft G, and provided with passages *b* K and curved passages L, for the steam or other driving fluid, the pillow-block or standard E, the pillow-block I, having a steam-chamber, H, and aperture *i*, and the steam-supply pipe J, substantially as and for the purpose set forth.

2. The combination, in a rotary engine, of the wheels A B, having shaft D and hollow shaft G, and provided with passages *b* K and curved passages I, for the steam or other driving fluid, the pillow-block or standard E, the pillow-block I, having a steam-chamber, H, and apertured at *i*, the steam-supply pipe J, and the packing *g*, substantially as herein set forth.

334,855. PROCESS OF AND MEANS FOR MANUFACTURING SUGAR BARS AND PLATES. ALBERT FRICA, Berlin, Germany. Filed Sept. 22, 1884. (No model.) Patented in France Sept. 16, 1884, No. 164,318; in England Sept. 16, 1884, No. 12,460; in Germany Sept. 17, 1884, No. 30,925, and in Austria-Hungary Nov. 14, 1884, No. 34,797 and No. 51,880.



Claim.—1. The herein-described process of netting sugar, which consists in liquoring the sugar to be netted while at rest before liquoring the same in the centrifugal machine, for the purposes set forth.

2. The herein-described process of netting sugar, which consists in liquoring the material to be netted while at rest and forming thereon a spongy or porous sugar covering before liquoring the same in the centrifugal machine, for the purposes specified.

3. The herein-described process of netting sugar, which consists in liquoring the material to be netted while at rest, forming thereon a spongy or porous sugary covering, and completing the operation of netting by liquoring the material by centrifugal force, for the purposes stated.

4. The herein-described form for manufacturing prism or plate sugar, consisting of a series of cells and a space or chamber, C', above the same, for the purposes specified.

5. The herein-described form for manufacturing prism or plate sugar, composed of a series of plates of such form as to produce, when united, cells of the described form, and a space, C', at one end of said cells, for the purposes specified.

6. The combination, substantially as herein described, of the plates A A' A² and the tie-rods B, said plates being constructed as set forth.

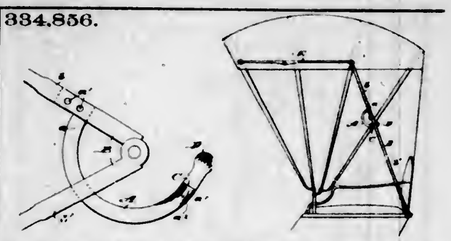
7. The combination, substantially as herein described, with the compound form A A' A², of the lining E and clamps F, said parts being arranged for operation as described.

334,856. BUGGY-TOP SUPPORT. JAMES J. FINNEY, Junction City, Tex. Filed Sept. 8, 1885. (Model.)

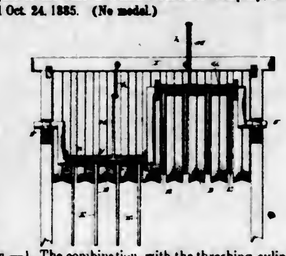
Claim.—1. As an improved article of manufacture, the buggy-top support A, comprising a curved plate of elastic material, adapted to be secured at one end to one section of a folding brace of the top, and provided with a shoulder, C, adapted to lock against the other section of the folding brace, substantially as herein set forth.

2. The combination, with a folding brace of a buggy or other vehicle top, of the support A, fixed at one end to one section of the folding brace and provided with a shoulder, C, adapted to lock against the other section of the brace, and also having an extension, D, forming a finger-piece, substantially as herein set forth.

334,856.



334,857. THRASHING-MACHINE. THOMAS K. GILKERSON, Leda, Ill., assignor to the Case & Willard Thresher Company, Battle Creek, Mich. Filed Oct. 24, 1885. (No model.)



Claim.—1. The combination, with the thrashing-cylinder, the straw-conduit, and forks, of a series of ribs forming a guard, each of said ribs having a hollowed-out face and beveled back, substantially as set forth.

2. The combination, with the thrashing-cylinder, and the straw-conduit located behind the thrashing-cylinder, of a series of longitudinally-curved ribs forming the upper side of the straw-conduit, the said ribs having double inclined backs, for the purpose substantially as set forth.

3. The combination, with the thrashing-cylinder and the straw-conduit leading therefrom, of a guard composed of a series of hollow-faced ribs adapted to form the upper side of the straw-conduit and hold and direct the air-blast from the cylinder, and forks for forcing the straw rearwardly through the straw-conduit, substantially as set forth.

4. The combination, with the thrashing-cylinder and the forks adapted to remove the straw therefrom, of a series of hollow-faced slanting-backed ribs adapted to form the upper side of the straw-conduit, substantially as set forth.

5. The combination, with the frame, the crank-shaft, and the fork-head consisting, essentially, of an elongated sleeve made in two parts and provided with laterally-extending perforated lugs, of the tines secured in said lugs and a jointed arm secured to the sleeve and frame, substantially as set forth.

334,858. ELECTRIC-LAMP REFLECTOR. DAVID W. GUERNSEY, St. Louis, Mo. Filed Jan. 30, 1885. Renewed Dec. 17, 1885. (No model.)



Claim.—The combination, in an electric-arc lamp, of the globe B, the frame C, the rods E E, and the guard F, having the spring-hooks *f' f'*, substantially as described.

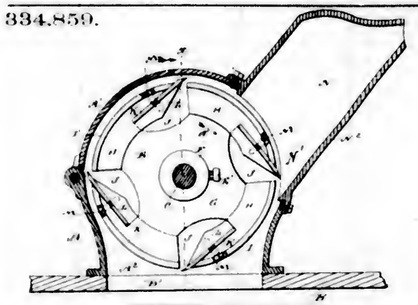
334,859. BARK-CUTTING MACHINE. JOHN C. HAGERTY, Santa Cruz, Cal. Filed May 29, 1885. (No model.)

Claim.—1. In a bark-cutting machine, a rotating wheel provided with recesses and knives for cutting the bark, and with bevels formed on the rim, between the outer edges of the rim and the web of the wheel, for ejecting the cut bark by the centrifugal force of the wheel, substantially as shown and described.

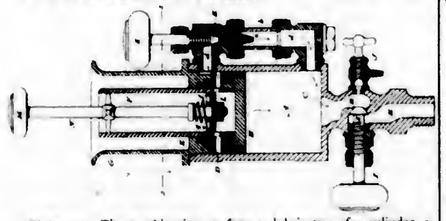
2. In a bark-cutting machine, the casing A, the hinged lid A', and the chute N, in combination with the rotating wheel E, provided with the bevels H and the knives K, substantially as shown and described.

3. In a bark-cutting machine, the wheel E, having the recesses J, the bevels H, and the rim I, in combination with the clamping-plates L, the bolts M, and the knives K, substantially as shown and described.

334,859.



334,860. ENGINE-CYLINDER LUBRICATOR. MILAN W. HALL, Plainfield, N. J., assignor to the Hall Steam Pump Company, New York, N. Y. Filed June 11, 1885. (No model.)



Claim.—1. The combination, to form a lubricator, of a cylinder, a piston dividing the cylinder into a steam-chamber on one side and an oil-chamber on the other, a stem attached to the piston on the oil-chamber side and passing out through the cylinder-head, whereby this side of the piston is reduced in area, a steam-inlet to the steam-chamber, an oil-passage extending from the oil-chamber and communicating with the said steam-inlet, a valve for controlling the feed of oil through said passage, and a valve in said steam-inlet arranged and adapted to cut off the steam-pressure from both chambers, substantially as set forth.

2. The combination, to form a lubricator, of a cylinder, a piston dividing the cylinder into a steam-chamber on one side and an oil-chamber on the other, a stem attached to the piston on the oil-chamber side and passing out through the cylinder-head, whereby this side of the piston is reduced in area, a steam-inlet to the steam-chamber, a valve controlling said steam-inlet, a sight-feed oil-passage extending from said oil-chamber and communicating with said steam-inlet above said valve, and a valve for controlling the feed of oil through said passage, substantially as set forth.

3. The combination, to form a lubricator, of a cylinder, a piston dividing the cylinder into a steam-chamber on one side and an oil-chamber on the other, a stem attached to the piston on the oil-chamber side and passing out through the cylinder-head, whereby this side of the piston is reduced in area, a valved steam-inlet to the steam-chamber, a relief-cock for the steam-chamber, a valved oil-feed passage extending from the oil-chamber and communicating with said steam-inlet, an oil-suction passage leading from outside the cylinder and entering the oil-chamber, and a check-valve in said passage opening inwardly and closing outwardly, substantially as set forth.

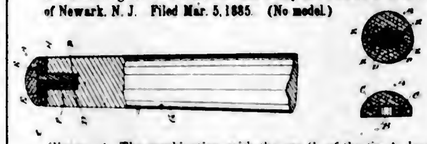
4. The combination, to form a lubricator, of a cylinder, a piston dividing the cylinder into a steam-chamber on one side and an oil-chamber on the other, stem attached to the piston on the oil-chamber side and passing out through the cylinder-head, whereby this side of the piston is reduced in area, a valved steam-inlet to the steam-chamber, a valved oil-feed passage extending from the oil-chamber, an oil-suction passage extending through said stem and entering the oil-chamber, an oil-cup outside the cylinder, with which said suction-passage communicates, and a valve controlling said passage, substantially as set forth.

5. The combination of a cylinder, a piston dividing the same into a steam-chamber on one side and an oil-chamber on the other, a tubular stem attached to the piston on the oil-chamber side and passing out through one end of the cylinder, an opening through said stem affording communication between its interior and the oil-chamber, and a check-valve in connection therewith adapted to prevent an outflow of oil from the chamber, but to permit an inflow thereto, with a valved steam-inlet to the steam-chamber and a valved oil-feed outlet from the oil-chamber, substantially as set forth.

6. The combination of a cylinder, a piston dividing the same into a steam-chamber on one side and an oil-chamber on the other, a tubular stem attached to the piston on the oil-chamber side and passing out through one end of the cylinder, an opening through said stem affording communication between its interior and the oil-chamber, a valve in said tubular stem adapted, when seated, to prevent an outflow of oil from the oil-chamber, and a stem or rod connected to said valve and extending out through the tubular stem, whereby by a manipulation of said rod the valve may be opened, with a valved steam-inlet to the steam-chamber and a valved oil-feed outlet from the oil-chamber, substantially as set forth.

7. The combination of a vertical cylinder, a piston therein dividing it into a steam-chamber below and an oil-chamber above, a tubular stem connected to the piston, and extending upward therefrom and out through the top of the cylinder, a steam-inlet entering said cylinder at the bottom, a valved oil-feed outlet extending from the top thereof, an opening from the interior of the hollow stem into the oil-chamber, a valve controlling said opening, and a cup arranged above the cylinder and inclosing said tubular stem, substantially as set forth.

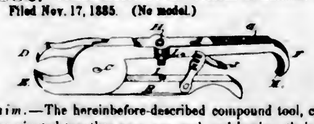
334,861. BILLIARD-CUE-TIP FASTENER. HENRY A. HARNER, East Newark, assignor to himself, and John Geary and Charles H. Price, both of Newark, N. J. Filed Mar. 5, 1885. (No model.)



Claim.—1. The combination, with the cue G, of the tip A, having an aperture, B, and recesses C, and a longitudinally-divided holder having a prong on the upper end of each section thereof and constructed to enter the recesses C, substantially as set forth.

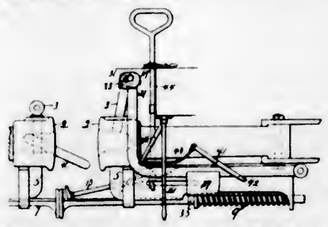
2. The combination, with the cue G, of the tip A, having recesses, and the longitudinally-divided holder, the sections of which are soldered together and each provided at its upper end with a prong engaging the recesses in the tip, substantially as and for the purpose set forth.

334,862. COMBINATION-TOOL. OSCEOLA D. HARMON, Helmsburg, Pa. Filed Nov. 17, 1885. (No model.)



Claim.—The hereinbefore-described compound tool, consisting of two levers pivoted together near one end and having their short arms bent toward each other to form nippers, and having their long arms of different lengths, the longer one having a hook formed at its end, a punch secured in one lever and a seat therefor formed in the other one, a file formed on the upper side of the longer lever, a spring secured to one lever in position to be compressed by the other lever when the two are brought together, and a hook pivoted on one of the levers and engaging a pin on the other, substantially as described and shown.

334,863. CAR-COUPLING. NELS W. HAWKINSON, Litchfield, Minn. Filed Sept. 16, 1885. (No model.)



Claim.—1. In an automatic car-coupler, a link-lifter comprising a spring-buffer with arms pivoted thereto and a stationary inclined surface, whereby as said buffer is pushed back the forward ends of the arms are raised, substantially as described.

2. In a car-coupler, the spring-buffer 7, carrying the pivoted arms 13, the wheel 15, and the stationary inclined surface 25, substantially as described, and for the purpose set forth.

3. In a car-coupler, the casing 5, having slots 21, and having the incline 25, in combination with spring-buffer 7, pivoted arms 13, having the curved forward ends, and the rear ends extending through the slots 20, and the wheel 15, all substantially as described.

4. The combination, with the draw-head 2, of the spring-buffer 7, carrying the pivoted link-lifting arms 13, and means for raising the forward ends of said arms as the buffer is pushed back, substantially as described, and for the purpose set forth.

5. The combination, in a car-coupler, with the draw-head 2, of the pin-lifter 27, pivoted beneath said draw-head and extending across the top thereof, the projections 29 on said pin-lifter having the diagonal slots 31, the coupling-pin 3, and a pin passing through said coupling-pin and through said diagonal slots, all substantially as described, and for the purpose set forth.

6. The combination, in a car-coupler, with the spring-buffer 7, having the projections 35, of the pin lifter and holder 27, having the wings 39, and means for raising said pin-lifter, all substantially as described, and for the purpose set forth.

334,864. TOILET PAPER AND FIXTURE. OLIVER H. HEER, Chicago, Ill. Filed July 22, 1885. (No model.)

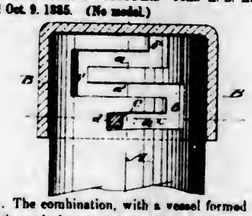


Claim.—1. The combination, with an open flexible band of toilet-paper, composed of a continuous strip wound into convolutions, the proximate surfaces of which are disconnected from each other, and terminating in a free end, of a fixed support for said band, which, when inserted, causes a round corner to be formed at the upper part of the band, so as to produce a convenient point for tearing the paper, whereby in the removal of the paper from the band a free end is always caused to drop into position to be grasped by the next user, substantially as described.

2. The combination, with an open flexible band of toilet-paper, formed of a convoluted strip and having its outer end free, of a tapering support or core, which serves, when forced into the band, to firmly unite the parts, substantially as described.

3. The combination, with an open flexible band of toilet-paper, such as described, composed of a continuous convoluted strip, and having its outer end free, of a support which, when inserted, will cause a rounded corner or corners to be formed on the band, and a guard for preventing the convolutions from slipping laterally, substantially as described.

334,865. BOTTLE AND STOPPER. JOHN H. B. HOWELL, Newton, N. J. Filed Oct. 9, 1885. (No model.)

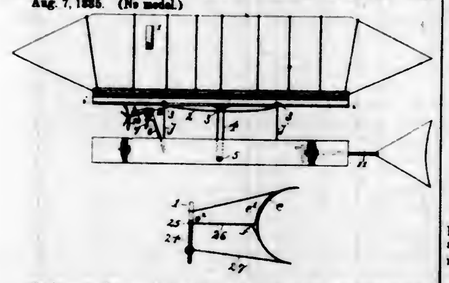


Claim.—1. The combination, with a vessel formed with horizontal grooves and with vertical grooves connecting the horizontal grooves, of a cover formed with a lug adapted to work in said grooves, substantially as set forth.

2. The combination, with a vessel formed with the vertical grooves b b' b^2 and the horizontal grooves a a' a^2, of a cover formed with a lug, c, substantially as described.

3. The combination, with a vessel formed with vertical grooves b b' b^2 and horizontal grooves a a' a^2, the groove a^2 being slightly depressed at its end d, of a cover formed with a lug, c, substantially as set forth.

334,866. AERIAL SHIP. HUBBAR HUBBOUTT, Malvern, Ark. Filed Aug. 7, 1885. (No model.)



Claim.—1. In an aerial ship as above described, the combination, with the balloon, of the car attached to the said balloon by means of the end pulleys, 3, running on the rail i at the base of the balloon, and pipes attached thereto and to said car, rope 2, attached to said end pulleys and passing around the center pulley, 3, and rope 4, passing around said center pulley, 3, and pulley 5, substantially as shown and described, and for the purposes set forth.

2. In combination with the car of an aerial ship as above described, the main shaft 12, running crosswise the bow of said car and extending beyond either side, and having on either end journal-bearings 18 and beveled gear-wheel 8, and on its center a pulley, g, the tubes or hollow shafts 16, having journal-bearings 19 and running on either end of said main shaft 12, and bearing on their outer ends the elbow-arms 13, which bear the propellers, and beveled gear-wheels 9, meshing with said beveled wheels 8, and on their inner ends a gear-wheel, 17, rigidly attached to the same, lever 7, pivoted to lever 6, its fulcrum end having teeth meshing with said wheel 17, connecting-arm 15, having securely clamped in either end outside pipes, 14, all substantially as shown and described, and for the purposes set forth.

3. In an aerial ship as above described, the combination of the levers 6, pivoted to the inside walls of the car by bolts h, their fulcrum ends encircling pipes 14, and adapted to raise the propelling power, as shown, and levers 7, pivoted to the right-angle arm of said levers 6, their teeth on their fulcrum ends meshing with gear-wheels 17, substantially as shown and described, and for the purposes set forth.

4. In an aerial ship as above described, the combination, with the balloon, of bracket f, lever 26, pivoted in said bracket, valve e, attached to the negative end e' of said lever, its positive end e^2 extending to barometer 24, barometer 24, bearing on its mercury a magnetic steel block, 25, substantially as and for the purposes set forth.

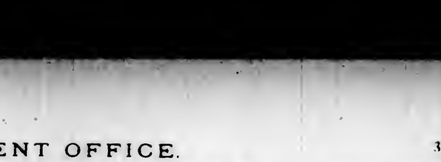
334,867. FRYING-PAN. THOMAS O. INMAN, Williamsport, Pa. Filed Oct. 24, 1885. (No model.)



Claim.—1. In combination with the frying-pan and its handle, the hollow handle or sleeve A, the lid B, and the hinge C, substantially as and for the purposes described.

2. In combination with the frying-pan and its handle, the hollow handle or sleeve A, the lid B, the hinge C, and the thumb-piece D, substantially as set forth, and for the purposes described.

334,868. SASH-BALANCE. ANDREW F. JOHNSON, Dassel, Minn. Filed Oct. 23, 1885. (No model.)

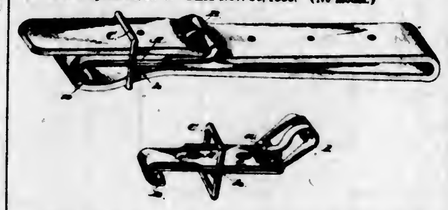


Claim.—1. The combination of the shaft 10, having the depressions 11 in its periphery near either end, with hub 5, having the nose 12, groove 7, and bearing-pins 4, substantially as shown and described, and for the purposes set forth.

2. In combination with a window-frame, 1, the window-sash 13, having the grooved lips 14, chain or cord 8, hubs 5, bearing-pins 4, and shaft 10, all when arranged substantially as shown and described, and for the purposes set forth.

334,869. WITHDRAWN.

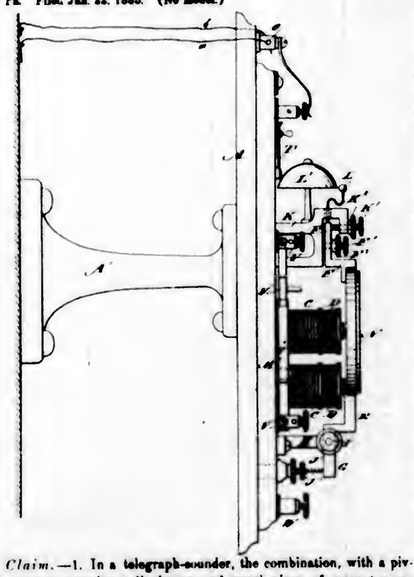
334,870. COMBINED BUCKLE AND STRAP-LOOP. REHARD W. JOHNS, Syracuse, N. Y. Filed Nov. 30, 1885. (No model.)



Claim.—1. A strap-loop and protector consisting of a sheet-metal plate doubled upon itself, and with its free ends bent into hooked form at one end, with bearings for a buckle at the double end, and an intermediate bearing for a keeper, substantially as described.

2. A strap-loop and protector consisting of a sheet-metal plate doubled upon itself and bent into hooked form at one end, with bearings for a buckle at the doubled end, and an intermediate bearing for a keeper, in combination with a buckle and keeper, substantially as described.

334,871. TELEGRAPH-SOUNDER. ALPHONSO S. KEATING, Corry, Pa. Filed Jan. 22, 1885. (No model.)



Claim.—1. In a telegraph-sounder, the combination, with a pivoted armature carrying a diaphragm and mouth-piece, of magnet-cores, each having a high and low resistance coil, one core being opposite the center of the diaphragm and the other one opposite the inner face of armature, substantially as herein shown and described.

2. In a telegraph-sounder, the combination, with a pivoted ring-shaped armature carrying a diaphragm and mouth-piece, of magnet-cores of unequal length, each having a high and low resistance coil, and arranged one above the other, with the upper one opposite the center of the diaphragm and the lower one opposite the ring-shaped armature, substantially as herein shown and described.

3. In a telegraph-sounder, the combination, with a pivoted ring-shaped armature, a diaphragm in the same, and a mouth-piece in front of the diaphragm, of magnet-cores each having a high and low resistance coil, contact-points, wires connecting said points to the high and low resistance coils, and a switch-lever connected to the line-wire, substantially as herein shown and described.

4. In a telegraph-sounder, the combination, with the magnet-cores B' B², high and low resistance coils C D on each of the said cores, pivoted ring-shaped armature E, and the diaphragm M in said armature, of the binding-posts R S, wires *c d*, connecting said posts to the coils C D, and the pivoted switch-lever T, substantially as herein shown and described.

5. In a telegraph-sounder, the combination, with magnet-cores and high and low resistance coils on the same, of binding-posts connected with said coils, a pivoted switch-lever connected with the line-wire, and springs or levers connected, respectively, with the battery and one of the said binding-posts, substantially as herein shown and described, whereby provision is made for polarizing the sounder, as set forth.

6. In a telegraph-sounder, the combination, with the magnet-cores B' B², high and low resistance coils C D on the same, and the pivoted armature E, carrying a diaphragm, M, of binding-posts connected to said coils, a switch-lever adapted to be brought into contact with said posts, a battery, levers for cutting out the battery, and a relay connected with a sounder, substantially as herein shown and described.

7. The combination, with magnet-cores and high and low resistance coils on the same, of the binding-posts R S, connected with the high and low resistance coils, the spring U', connected with the binding-post R, the spring V', connected with the binding-post V, and the contact-button M³, connected with the high-resistance coil and with the line-wire, substantially as herein shown and described.

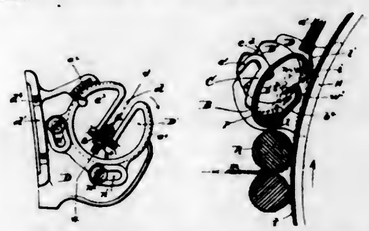
8. The combination, with the cores B' B², of which the former is slightly longer than the latter, of the high and low resistance coils C D wound on the same, the pivoted armature E, and the diaphragm M, held in the armature, substantially as herein shown and described.

9. The combination, with the magnet-cores B' B² and the high and low resistance coils C D wound thereon, of the ring-shaped armature E, provided with the upwardly-projecting tongue F, and the downwardly-projecting tongue G, substantially as herein shown and described.

10. The combination, with a support and magnet-cores, each having high and low resistance coils wound thereon, of the pivoted ring-shaped armature E, having the tongues F G, the hammer L on the tongue F, the bracket K, and the bell L' on the bracket, substantially as herein shown and described.

334,872. MOTE AND DIRT COLLECTING ATTACHMENT FOR CARDING-MACHINES. SAMUEL D. KIMBER, Providence, R. I., assignor of one-half to the New England Butt Company, same place. Filed Aug. 6, 1885. (No model.)

Brief.—The mote-collector box is provided with exteriorly and interiorly projecting flanges, and is adjustably mounted in circular end pieces, which are themselves centrically adjustable in end frames removably secured to the frame of the carding-machine immediately above the feed-rolls.



Claim.—1. The collector-box or receptacle B, hereinbefore described, the same being substantially uniform in cross-section throughout its length, and provided with the flange or deflector *i* and interior flange, *i'*, said flanges or ribs being separated from each other to form the longitudinal throat *w*, substantially as shown, and for the purpose set forth.

2. The collector-box B, herein described, provided with a lifting piece, C, at each end thereof, in combination with end frames, D D' within which the box is mounted, and means, substantially as shown and described, for adjusting the box, the whole constructed and arranged substantially as described.

3. The mote-collector box B, herein described, provided with the longitudinal flanges *i i'*, forming the throat *w*, and the depending flexible strip *l*, in combination with the frames D D', supporting said box, the card-frame *k*, feed-rolls R, and means, substantially as described, whereby the said frames D D' are removably secured to the card-frame, the whole constructed and arranged substantially as shown and set forth.

4. The combination, with the frames *k* and feed-rolls R thereof, of the collector-box B, mounted in frames D D' immediately above said feed-rolls, and means, substantially as shown and described, for attaching the frames D D' to said card-frames, the whole arranged substantially as shown, and for the purpose set forth.

5. The combination, with the carding-cylinder H, card-frames *k*, and feed-rolls R, of the mote-collector B, frames D', adapted to support the box B, and provided with slotted openings *n'*, frames D, means for adjustably securing the frames D' thereto, consisting of screws n^2, passing through the slotted openings *n'*, formed in the said frames D', and means, as described, for attaching the frames D to the card-frame, all substantially as shown and set forth.

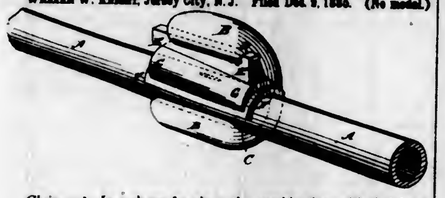
6. The combination, with the mote-collector box B, provided with end pieces C, of the frames D, adapted to be detachably secured to the card-frame above the feed-rolls, frames D', provided each with slots *d n'*, and an adjusting-screw, E, and screws n^2, passing through said slots *n* into the frames D, the whole constructed and arranged substantially as shown and described.

7. The cylinder H, feed-rolls R, mote-collector box B, frames D' D, having the scale or gage c^2 c^3, formed thereon, and means, substantially as shown and described, for adjustably securing said frames D' D in position, in combination with the flexible strip *l'*, deflector-board *a'*, carrying said strip, and the flexible strip *l*, secured to the under side of the box B, the whole arranged and adapted for use substantially as shown and hereinbefore set forth.

8. The improved mote-collector box B, herein described, provided with one or more glass-covered openings, *h*, ends D', each having the slot *d* and adjusting-screw E therein, frames D, carrying said ends, and screws n^2, adapted to retain the box B and the ends D' in position, substantially as shown and described.

9. The herein-described attachment or mote-collector for carding-machines, the same consisting of the elongated hollow box B, which is substantially uniform in cross-section throughout its length, the same being provided with the longitudinal flanges or deflectors *i i'*, a throat, *w*, separating said flanges and communicating with the interior of the box, the box being substantially of the length of the feed-rolls, and further consisting of the slotted frames D', provided with screws E, for adjusting the box with relation to the card-cylinder H, frames D, adapted to receive the frames D', and screws n^2, for retaining the same in position, substantially as shown and set forth.

334,873. CLAMP FOR STOPPING LEAKS AND BURSTS IN PIPES. WILLIAM W. KNIGHT, Jersey City, N. J. Filed Dec. 9, 1885. (No model.)



Claim.—1. In a clamp for pipes, the combination, with the clamp B, having a side opening and interior recesses, C D, at the opposite sides of the said side opening, the pad F, and the centered saddle G, of the key E, substantially as herein shown and described, whereby the said pad and saddle can be readily forced down upon a pipe and held in place, as set forth.

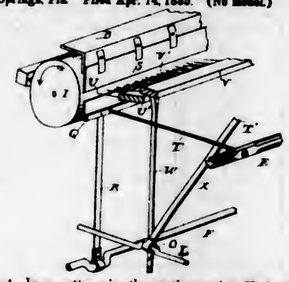
2. In a clamp for pipes, the combination, with the clamp B, the pad F, the saddle G, and the key E, of the horse I, having concaved recesses of different area in its sides, substantially as herein shown and described, whereby the clamp can be applied to pipes of different sizes, as set forth.

334,874. DRAFT-EQUALIZER. JOSEPH M. LANGSTON, Berlin, Ill. Filed May 20, 1885. (No model.)



Claim.—The combination, with the double-tree B, of the levers A, pivoted on the ends of the same, the single-trees C on the outer ends of the levers A, the metal bar G, having a depression, K, and of the bolt J, the head of which is in said depression, substantially as herein shown and described.

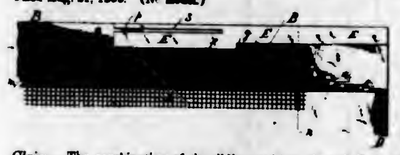
334,875. COTTON-GIN. JOHN S. LIVINGSTON and ANDREW McBRIDE, Orange Springs, Fla. Filed Apr. 14, 1885. (No model.)



Claim.—1. In a cotton-gin, the stationary bar U', having fingers U, in combination with the spreader-bar V, having fingers V', suitable elastic bars, a connecting-rod, X, a cross-shaft, L, provided with a crank, the belt N, and pulleys, and the roller I, substantially as set forth.

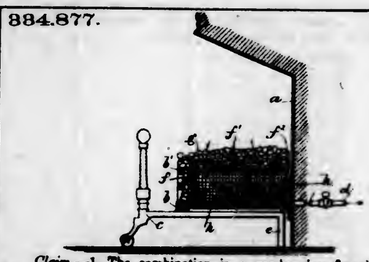
2. In a cotton-gin, the roller I, the blade B, the stationary bar U', having the fingers U, the reciprocating bar V, having fingers V', the flexible arms W, and the connecting-rod X, in combination with the cross-shaft L, having the crank O, the vertically-movable feeder-bar Q, the standards R, and the shaft F, having the cranks thereon, substantially as set forth.

334,876. WINDOW-SCREEN. EDWIN LOUDENBACK, Philadelphia, Pa. Filed Aug. 21, 1885. (No model.)



Claim.—The combination of the sliding end bar, the rail B, having the recess *a*, with shoulder *g*, the sliding strip E, attached to said end bar and provided with the stop or projection *f*, and the slot *s*, together with the pin entering said slot, all constructed and adapted to operate substantially as and for the purpose stated.

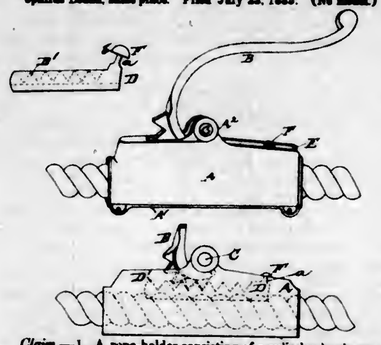
334,877. GAS-BURNING FIRE-PLACE. ELBER F. MACKENZIE, New York, N. Y., assignor to J. S. Conover & Co., same place. Filed Dec. 19 1884. (No model.)



Claim.—1. The combination, in a gas-burning fire-place, with a grate and a gas-supply pipe and burners, of an open-work support above and in front of the gas-burners and within the grate, and separate irregular lumps of glass resting upon said support and filling the space between the support and the grate, substantially as specified.

2. The combination, in a gas-burning fire-place, with a grate and a gas-supply pipe and burners, of an open-work support above and in front of the gas-burners and within the grate, and separate irregular lumps of glass resting upon said support and filling the space between the support and the grate, and the slabs *h*, of ruby or other colored glass upon the grate-bars and below the flame, for the purposes and substantially as specified.

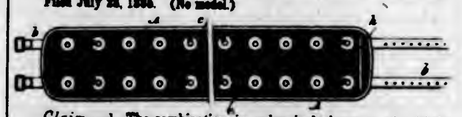
334,878. ROPE-HOLDER. STEPHEN H. MAUDSLEY and CHARLES F. MAUDSLEY, Adelaide, South Australia, assignors of one-half to John Theophilus Ledan, same place. Filed July 23, 1885. (No model.)



Claim.—1. A rope-holder consisting of a cylinder having an attaching-bed and a longitudinal slot in its upper face, an eccentric grip-lever pivoted within said cylinder and having a toothed under face, a plate adapted to rest within said cylinder and on its under portion to grip a rope, and having a toothed upper face and a support for retaining said plate within the cylinder, substantially as set forth.

2. A rope-holder consisting of a cylinder provided with a suitable attaching-bed and having a slotted and sloping or inclined end, a plate adapted on its under face to embrace and grip the rope to be held and having on its upper face a series of cogs or teeth, and a lug, knob, or its equivalent adapted to rest and slide within the slotted portion of the cylinder and support the rope-gripping plate in position within said cylinder, and a grip-lever having pivotal bearing within the cylinder, and having on its under face suitable teeth or cogs to engage with the teeth on the rope-gripping plate, substantially as set forth.

334,879. GALVANIC BODY-WEAR. JOSEPH MAYER, Yonkers, N. Y. Filed July 28, 1885. (No model.)

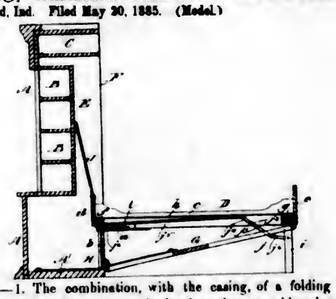


Claim.—1. The combination, in galvanic body-wear, of a fabric having wires woven throughout said fabric and eyelets of dissimilar metal passing through the fabric and clamped to the wires of the fabric, substantially as set forth.

2. The combination, in galvanic body-wear, of a fabric having wires interwoven in the same, metallic eyelets passing through the fabric and in contact with the metallic wires, and disks or rings of dissimilar metal secured by said eyelets, substantially as set forth.

3. The combination, in galvanic body-wear, of conducting-wires running in one direction and the intervening warp or weft threads to separate the conductors from each other, substantially as set forth.

334,880. COMBINATION FOLDING BED. ABRAHAM T. MCCURRY, Goodland, Ind. Filed May 20, 1885. (Model.)



Claim.—1. The combination, with the casing, of a folding bedstead pivoted in slotted bearings at its head portion to said casing, and the brace hinged to the casing beyond the pivotal point of the bedstead, and connected to the bedstead in front of the pivots, or toward its foot portion, whereby when the bedstead is swung down the brace will force it outward or forward, thereby rendering an outward pull by hand unnecessary, substantially as set forth.

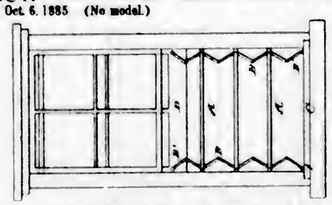
2. The combination, with the casing having pivots or bearings, of a folding bedstead having slots in its sides, within which the pivots or bearings pass, feet hinged to the foot of the bed, and a rod or lever pivotally connected to the hinged feet at its forward end, and having an elongated bearing at its rear end to receive the pivots or bearings, on which the bedstead works, as set forth.

3. The combination, with the casing and the bedstead having a sliding connection therewith at its head portion, of a brace pivotally connected with the casing beyond the pivots of the head portion, and pivotally connected to the bedstead in front of its head portion, whereby when the bedstead is lowered the brace will cause it to automatically slide outward from the casing, substantially as set forth.

4. The folding bedstead herein described, the same consisting of the casing, pivots or bearings in the lower ends thereof, the bedstead having the side pieces at the head, ends slotted to receive said pivots, the folding legs at the foot portion, the rod or lever pivotally connected to the said legs at its front end, and looped at its rear end to receive the said pivots or bearings, and the brace hinged to the casing beyond the pivotal point of the bedstead and connected to the bedstead in front of the pivots, or toward its foot portion, whereby when the bedstead is swung down the brace will force the bedstead forward and cause the rod to throw the legs outward, substantially as set forth.

5. The combination, with an upright article of furniture provided with a suitable recess in its back, of a bedstead hinged at its head in said recess, and of a brace of greater length than said bedstead, hinged to the foot of the bedstead and to the base of said article of furniture, substantially as shown and described.

334,881. WINDOW-GUARD. MALCOLM MCLEAN, New York, N. Y. Filed Oct. 6, 1885. (No model.)



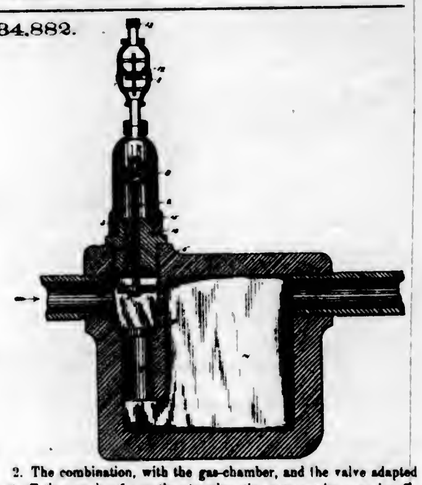
Claim.—1. As a new article of manufacture, a window-guard consisting of one or more horizontal or parallel bars, A, connected at or near their ends to the articulations of two sets of pivoted arms, B, the latter provided with suitable means for attachment to the window frame and sash, substantially as shown and described, whereby the opening between the sill of the window and lower rail of the sash is guarded when the latter is elevated, and the guard is concealed when the sash is lowered, substantially as hereinbefore set forth.

2. The combination, with the bars A and pivoted arms B, of the check pins or screws 3, substantially as and for the purpose set forth.

334,882. STOP-VALVE FOR GAS-SUPPLY SYSTEMS. EDWIN C. MERRELL, Pittsburg, Pa. Filed Sept. 24, 1885. (No model.)

Claim.—1. The combination, with the gas-chamber having inlet and outlet pipes and a main supply-port, of an auxiliary pressure-chamber normally in communication with the atmosphere, a passage connecting said inlet-pipe with said auxiliary chamber, and a weighted valve adapted in one position to seal said passage, and in the other to seal said main supply-port, substantially as described.

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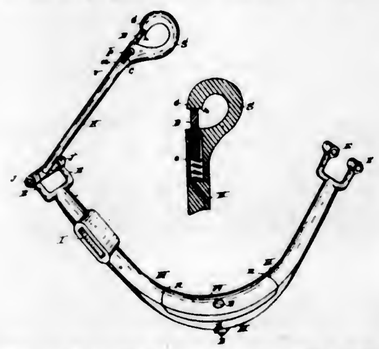
2. The combination, with the gas-chamber, and the valve adapted to cut off the supply of gas thereto when the pressure becomes insufficient to sustain said valve, of the auxiliary pressure-chamber having an inlet communicating with the supply-pipe and an outlet communicating with the atmosphere, and a second valve for closing said outlet, substantially as described.

3. In a gas cut-off, the combination of a gas-chamber having inlet and outlet pipes, and a main supply-port alongside of said inlet-pipe, and a weighted valve normally held above said inlet-pipe by the pressure therein, but adapted, when such pressure falls below the safety limit, to drop and seal said main supply-port, whereby the gas is cut off from the burners, substantially as described.

4. The combination, with the gas-chamber and the auxiliary pressure-chamber, the former having an inlet-pipe, an outlet-pipe, and a main supply-port, and the latter having a passage connecting it with the supply-pipe, of the weighted valve normally sustained by the pressure of the gas in position to seal the passage into said auxiliary chamber, but adapted to fall and seal the said supply-port when the pressure in the supply-pipe falls to or below that in the auxiliary pressure-chamber, substantially as described.

5. The combination of the supply-pipe, the main supply-port, the auxiliary pressure-chamber communicating by a passage with the supply-pipe, the weighted valve sustained in position to seal said passage by the pressure in said supply-pipe but adapted to fall and seal said supply-port when such pressure is reduced below the amount necessary to support combustion at the burners, the outlet from said auxiliary chamber to the atmosphere, and the valve for closing said outlet when the pressure in said auxiliary chamber rises above that of the atmosphere, substantially as described.

334,883. HOLDBACK ATTACHMENT FOR HARNESS. CHARLES R MILLER, Lansingburg, N. Y. Filed June 25, 1885. (No model.)

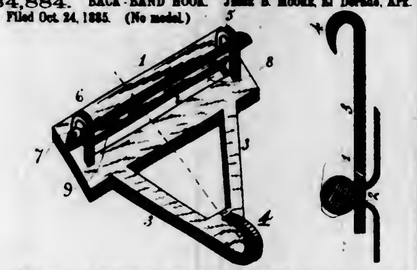


Claim.—1. The combination, with the holdback-plate H, made with hinging-eyes E E at each of its ends, of the snap-shanks K K, made with the journals *j j* at each of their lower ends, and having the snaps S rigidly secured to their upper ends, said parts being constructed and arranged to operate substantially as set forth.

2. The combination of the curved holdback-plate H, made with the centrally-located recess R, wearing-piece W, and with hinging-eyes E E at each end, and the snap-shanks K, made with the journals *j* at their inner ends and the snaps S at their upper end, said parts being constructed and arranged to operate substantially as set forth.

3. The combination of the snaps S S, made with their finger-pieces at the side, the snap-shanks K, made with hinging-journals *j*, and the holdback-plate H, made with the hinging-eyes E at each end, all constructed to operate substantially in the manner as and for the purposes set forth.

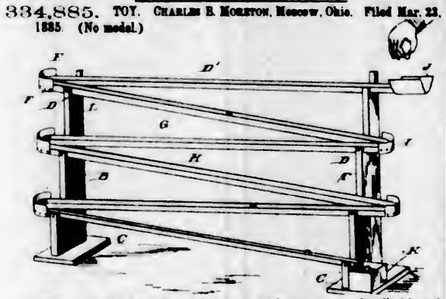
334,884. BACK-BAND HOOK. JESSE B. MOORE, El Dorado, Ark. Filed Oct. 24, 1885. (No model.)



Claim.—1. A back-band hook consisting of the plate 1, having the slot 2 and hook 4, elongated eyes 5 and 6, and a double-headed pin, 7, having the flat sides 9, said pin fitting loosely in the said eyes, substantially as and for the purposes set forth.

2. A back-band hook consisting of the plate 1, having the slot 2 and hook 4, elongated eye 5 and double-headed pin 4, having the flat sides 9, said pin fitting loosely in the said eye, as and for the purposes set forth.

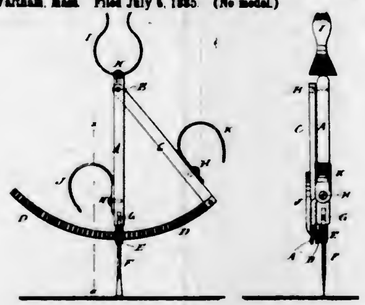
334,885. TOY. CHARLES B. MORTON, Moscow, Ohio. Filed Mar. 23, 1885. (No model.)



Claim.—1. In a toy for children, a series of grooved rails hinged together at the ends by means of a semicircular strap, the upper incline being provided with a raised rim, and the lower incline being provided with a catch-receptacle, the series of rails resting within the recesses on upright supports, said recesses being inclined backward in form of a series of steps or stairs, substantially as herein set forth.

2. The combination of a pair of supports, each having a series of steps provided with notches arranged like stairs, each succeeding one back of the one in front of it from the base up throughout the series of notches, to receive therein the ends of the inclines, with the series of notched inclines secured together at the ends and fastened to the uprights by means of pins, the whole arranged as and for the purposes substantially as herein set forth and described.

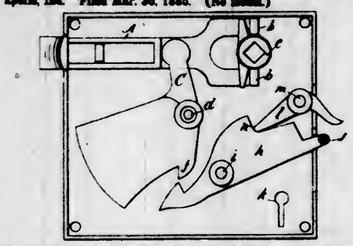
334,886. WATCH-MAKER'S SCREW-DRIVER. OLIVER L. NEAL, Waltham, Mass. Filed July 6, 1885. (No model.)



Claim.—1. A screw driver or drill constructed substantially as herein shown and described, and consisting of the bar A, the bar C, hinged to the bar A and provided with the curved rack-bar D, and the tool F, swiveled to the bar A and provided with a pinion-wheel, E, engaging with the said rack-bar, as set forth.

2. The combination, with a screw-driver or drill consisting of the bar A, pivoted bar C, rack D, and swiveled bit F, carrying pinion E, of thumb and finger pieces, as I J K, attached to bars A C, substantially as set forth.

334,887. COMBINED LATCH AND LOCK. OSCAR L. NEBLER, Indianapolis, Ind. Filed Mar. 30, 1885. (No model.)



Claim.—In a combined latch and lock, the combination, with the lock-case, the sliding bolt A, the weighted lever C, and the gravity catch-bar A, adapted to engage and to hold in position said lever and having the projection *n*, of the swinging stop *l*, adapted to engage said catch-bar, in the manner and for the purpose specified.

334,888. BURGLAR-ALARM. GEORGE W. NELSON, New York, N. Y. Filed May 1, 1885. (No model.)



Claim.—1. In a device of the character herein set forth, the bell mounted upon a standard or base and arranged to swing thereon, said bell carrying the striking mechanism, and the vertically-moving spring-actuated rod having the stop-pin applied thereto for arresting or releasing the striking mechanism, and the adjustable tripper mounted upon the standard and arranged to depress the rod, these parts being combined and arranged substantially as shown and described.

2. In a combined burglar-alarm and call-bell, the vertically-moving rod *l*, provided with an extended piece upon its upper end, and carrying the stop-pin for arresting the movements of the striking-hammer, said rod being held up by a suitable spring and arranged to be depressed by the finger or by the tripper, which is mounted upon and made adjustable upon the standard, substantially as and for the purposes set forth.

3. The combination, with the lock-bolt or latch-bolt of a door-lock, of a burglar-alarm mechanism, substantially as described, the said alarm mechanism being connected with the said bolt by a cord or line, and a hook applied thereon and entering between the door and its jamb, which hook is arranged to project over the bolt and to be released therefrom as soon as the bolt is withdrawn and before the door is opened, substantially as shown and described.

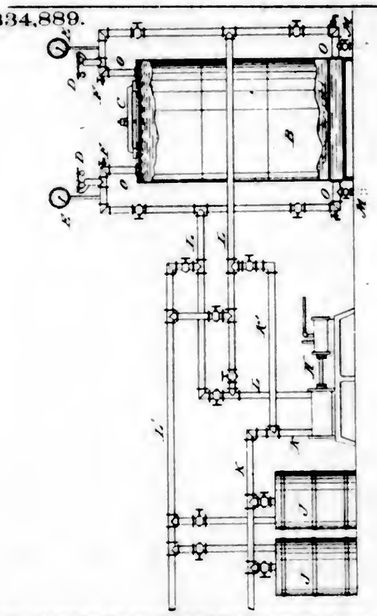
4. In combination with the swinging bell, the elastic cord or line connected at one end with the bell and at the other with a hook or catch applied and arranged to be released, substantially as shown and described, and for the purposes set forth.

334,889. APPARATUS FOR DYEING. JOHN O'CONNELL and FRANK E. WHEDON, Providence, R. I. Filed Dec. 24, 1884. Renewed Dec. 14, 1885. (No model.)

Claim.—1. In an apparatus for dyeing, scouring, and drying fibrous materials, the combination, with an operating-tank, of a supply-tank, a force-pump connected therewith, pipes leading from said pump into the upper and lower ends of the operating-tank, and branch return-pipes connected with the pipes leading to the operating-tanks and with the supply-tank, said return-pipes being provided with suitable valves, whereby the liquid or fluid may be forced into the material in the operating-tank from opposite directions, and then be forced back to the supply-tank, substantially as set forth.

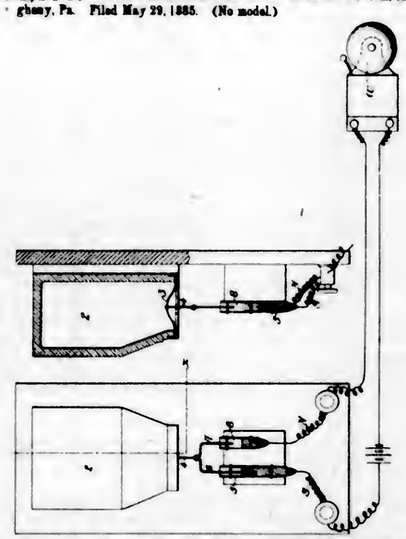
2. An apparatus for dyeing, scouring, and drying fibrous materials, the same consisting, essentially, in the operating-tank B, the supply tanks J J, force-pump H, pipes K K' L L', connected with the force-pump and supply-tank, as set forth, and the pipes O on opposite sides of the

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tanks and entering the operating-tank from the top and bottom, and connected with the pipes L, substantially as set forth.

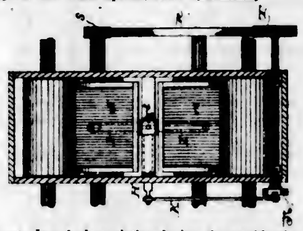
334,890. LEAK-DETECTOR FOR GAS. IRVIN M. O'DONEL, Allegheny, Pa. Filed May 29, 1885. (No model.)



Claim.—1. In a gas-detector, the combination of a vessel having minute passages for the diffusion of gas, a diaphragm capable of expansion and retraction with the varying pressure of the gaseous contents of the vessel, and an annunciator for indicating such varying pressure, said annunciator being connected with the diaphragm and capable of operation by the movements thereof, substantially as and for the purposes described.

2. In a gas-detector, the combination of a vessel provided with minute passages for the diffusion of gas, a diaphragm capable of expansion and retraction with varying pressure of the gaseous contents of the vessel, an electric circuit capable of being made and broken by movement of the diaphragm, and an annunciator operated by said circuit, substantially as and for the purposes described.

334,891. FEED-REGULATOR FOR ROLLER-MILLS. JOHN R. PALMER, Dayton, Ohio. Filed Apr. 22, 1885. (No model.)



Claim.—1. In a feed-regulating device, the combination of the independent feed-boards and horizontal lever to which both the feed-boards are connected, with the pitman and devices for imparting motion to the same, substantially as set forth.

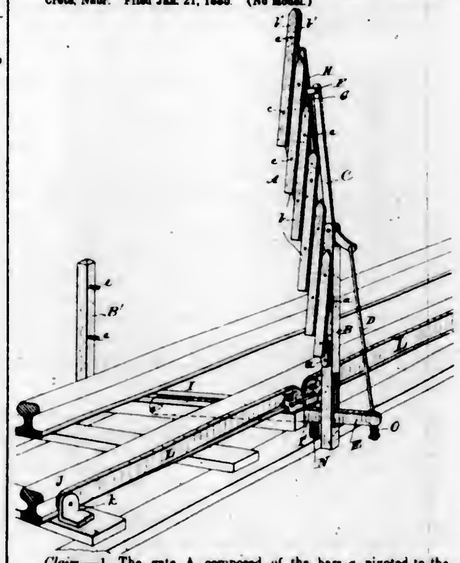
2. The inclined vibrating feed-board and a vertically-adjustable cross-piece and saddle, in combination with a discharge-spout which supplies meal or grain to said feed-board, substantially as herein set forth.

3. The adjustable inclined feed-tables, in combination with the double-bell-crank lever attached to their outer ends, the pitman-rod K, and the adjustable crank, substantially as herein set forth.

4. The combination of the adjustable inclined vibrating feed or distributing tables A, having the perforated end-gates F, the saddle B, the vertically-adjustable cross-piece E, the suspending-straps H, and the supply-spouts A', substantially as herein set forth.

5. The combination of the adjustable inclined vibrating feed or distributing tables, the cross-piece E, the saddle B, and the suspending-straps H, with the bell-crank-operating levers H' I and the pitman-rod K, substantially as herein set forth.

334,892. AUTOMATIC RAILWAY-GATE. JAMES K. PATTERSON, Creta, Nebr. Filed Jan. 21, 1885. (No model.)

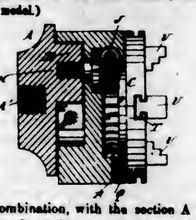


Claim.—1. The gate A, composed of the bars *a*, pivoted to the post B, and the pickets *b b'*, hinged to the bars *a*, in combination with the levers C E and the levers I, I, the lever C being connected to the iron H of the gate, and to the lever E by the connecting-rod D, substantially as and for the purposes set forth.

2. The lever E, pivoted at right angles to the railway-rails, and the depressing-levers I, pivoted along the rails and resting upon the lever E, in combination with the gate A and lever C, both pivoted to the post B, one end of lever C being connected to the gate, the other to the lever E by rod D, having spring O placed upon it, under lever E, to cushion the action of the lever E upon the gate, and also cushion the closing of the gate, substantially as described.

3. The lever E, pivoted at right angles to the railway-rails, the gate A, formed of pivoted bars *a* and the pickets *b*, pivoted to the bars *a*, and the lever C, pivoted to post B, and connected at one end to gate A by rod H and at the other by connecting-rod D to the lever E, in combination with the two depressing-levers I, pivoted along the rail and resting upon the lever E, the adjacent ends of the levers I being connected together by a bar, M, working in a slot, *d*, substantially as and for the purposes set forth.

334,893. LATHE-CHUCK. EDWARD PRESCOTT, Concord, Dak. Filed Oct. 23, 1885. (No model.)

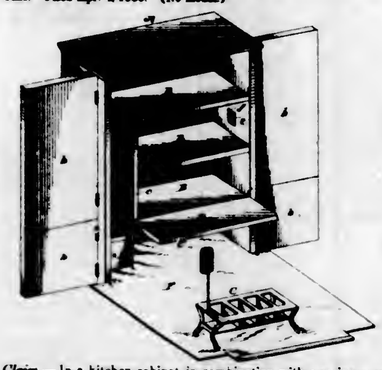


Claim.—1. The combination, with the section A and the section B, having the split collar Q, of the screw R, the worm-spindle J in the section B, and the section C, provided with the projection O, on the rim of which the teeth P are formed, substantially as herein shown and described.

2. The combination, with the section C and the section A, having the eccentric projection D, of the section B, and a screw passed through the section B and into the projection D of the section A, substantially as herein shown and described.

3. The combination, with the section C and the section A, having the eccentric projection D, of the section B, having the split collar E, the screw F, for closing said split collar, and of a screw passed through the section B into the projection D on the section A, substantially as herein shown and described.

334,894. KITCHEN-CABINET. JANE F. RANDOLPH, Manchester, Ohio. Filed Apr. 4, 1885. (No model.)



Claim.—In a kitchen-cabinet, in combination with a casing, a series of shelves shortened to leave a vertical space, *a*, between their ends and one side of the casing, the lower shelf being attached to leave a space between it and the bottom of the casing, said spaces communicating and being adapted to receive an oil-stove, and doors for closing the front of the casing, substantially as set forth.

334,895. WOVEN BELTING. FRANK REDGWAY, Pendleton, County of Lancaster, England. Filed Apr. 16, 1885. (Model.) Patented in England Jan. 10, 1884, No. 1,110.



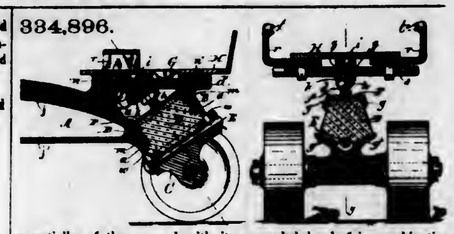
Claim.—1. A woven belting composed of cotton and camel-hair in suitable proportions, substantially as described.

2. A woven belting having two sets of warps, one of cotton and the other of camel-hair, together with camel-hair wefts, substantially as set forth.

334,896. ROLLER-SKATE. WILLIAM ROBINSON, Boston, Mass. Filed Aug. 7, 1885. (No model.)

Claim.—1. In a roller-skate, the adjustable follower F, consisting, essentially, of the screw *d*, with its expanded head *f*, in combination with the cushion D, and forced against the same by means of the nut A, turning on said threaded screw *d* and shouldering against the under side, *k*, of the upper portion of the pedestal, substantially as described.

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2. In a roller-skate, the adjustable follower F, consisting, essentially, of the screw *d*, with its expanded head *f*, provided with the flanges *g g*, adapted to overlap the edges of the cushion, substantially as described.

3. In a roller-skate, the adjustable follower F, consisting, essentially, of a screw with its expanded head, said follower being adapted to adjust the tension of the spring or cushion by means of a nut turning on the threaded stem of said screw, substantially as described.

4. The adjustable follower F, consisting, essentially, of a screw with its expanded head, in combination with the guiding-ribs *m m*, projecting inwardly from the jaws *a a* of the pedestal and adapted to steady and guide said follower between said jaws, substantially as described.

5. In a roller-skate, the adjustable follower consisting, essentially, of a screw with its expanded head resting on the cushion or spring, in combination with said cushion or spring, the guides *m m*, the hole *i* in the upper part of the pedestal, and the nut A, pressing against the shoulder *k* of said pedestal and adapted to control the movement of said adjustable follower, substantially as described.

6. The rocker C, provided with the perforated lugs *b b* for the reception of the rocker-pin, the depression or hollow *c*, extending longitudinally between said lugs, and the unbroken webs or flanges *g' g'* on either side of said depression *c*, substantially as and for the purpose described.

7. The skeleton frame of a roller-skate, consisting, essentially, of two pedestals connected by two independent ribs or braces, *j j'*, with space between them, one of said ribs or braces being in a vertical plane and the other in a horizontal plane, substantially as described.

8. In the skeleton frame of a roller-skate, the combination, substantially as described, of the following elements: two pedestals connected by two ribs or braces with space between them, and a strengthening-post, *F*, connecting said ribs or braces, one of said ribs or braces being wider horizontally than its vertical thickness and the other deeper vertically than its horizontal width.

9. In a roller-skate, the adjusting-follower consisting, essentially, of a screw with its expanded head resting on the cushion D, in combination with said cushion, the jaws *a a* of the pedestal provided with the slots *w w* in vertical plane, and the rocker C, pivoted in said slots, substantially as described.

10. In a roller-skate, the pedestal B, consisting, essentially, of the jaws *a a* and the upper plate connecting the same, cast with holes cored in said jaws and upper plate by means of two or more cores joined into one branching core, substantially as described.

334,897. SEED-PLANTER. JAMES A. ROGERS and NICHOLAS C. MORGAN, Deerbrook, Miss. Filed July 20, 1885. (No model.)

Claim.—1. In a seed-planter, the toothed wheel R for operating the feed-lever, made substantially as herein shown and described, with teeth of different lengths, and with the teeth of the same length at equal distances apart, whereby by the adjustment of the said wheel the feed-lever can be operated at longer or shorter intervals, as set forth.

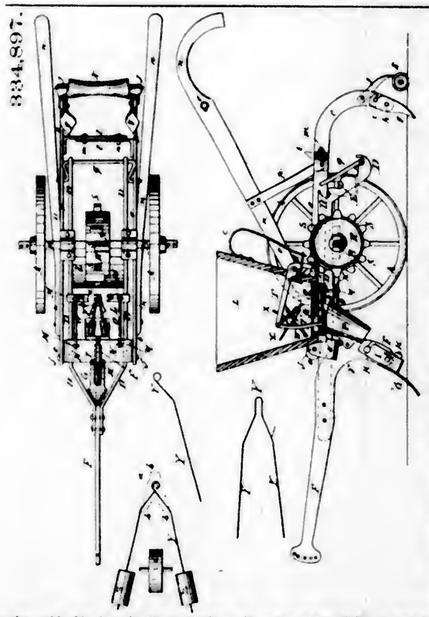
2. In a seed-planter, the combination, with the bottom of the seed-box L, of the rollers Z, the V-spring Y, carrying the said rollers, and the forked gage-plate *b*, applied to the said spring, substantially as herein shown and described, whereby the amount of seed discharged at a time can be regulated, as set forth.

3. In a seed-planter, the combination, with the rear plow-beams, *e*, and the covering-plows *g*, of the spring-arms *j*, and the concaved roller *k*, substantially as herein shown and described, whereby the soil thrown by the covering-plows will be packed upon the seed and the top of the row rounded, as set forth.

4. In a seed-planter, the combination, with the side bars, D, having downwardly inclined and recessed rear parts and the rear plow-beams, *e*, of the hinged bail *q*, substantially as herein shown and described, whereby the covering-plows can be adjusted to work at any desired depth in the ground or supported above the ground, as set forth.

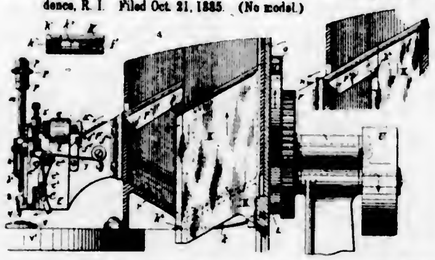
5. In a seed-planter, the combination, with the side bars, D, and the wheels and axles A B, of the beams *e* of the covering-plows, hinged

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to the said side bars in front of the said axle, substantially as herein shown and described, whereby the said wheels can pass over uneven ground without affecting the said plows, as set forth.

334,898. NAIL-FEEDING MECHANISM. CHARLES D. ROGERS, Providence, R. I. Filed Oct. 21, 1885. (No model.)



Claim.—1. The combination, with a reservoir, track, and mechanism, substantially as shown and described, for holding and separating the column of nails or blanks, of a vertically-moving plunger carrying a cross-head or frame provided with spring closing-jaws adapted to hold a nail, and a spring-lever constructed to center and support said nail during the operation of inserting it in a holder or other receiver therefor, substantially as shown and hereinbefore set forth.

2. In a nail-feeding device provided with an inclined track, and mechanism for automatically separating the nails, the combination of the head or frame loosely mounted on a stationary frame, two spring-actuated jaws pivoted to the head, a spring-actuated lever pivoted to said head, adapted to automatically bear against a nail and retain it in position in said jaws, and a suitably-operated shouldered plunger mounted in the head, adapted to both move said head and forcibly eject the nail from said jaws and insert it in a suitable die or holder, substantially as shown and set forth.

3. In a nail-feeding device, a hopper having the stationary track or ways F *f*, secured thereto, and the immovable frame E, connected therewith, provided with the nail-separating device or hawk's bill, substantially as shown and described, in combination with the head A, freely mounted on the frame E, two spring closing-jaws, B, pivoted to the head, a spring-lever pivoted also to said head, adapted to center and support a nail, a shouldered plunger, *a*, mounted in the head, adapted both to lift said head and insert the nail, a spring, I, and adjusting-screw G, adapted to limit the downward movement of the head, the whole arranged substantially as shown, and for the purposes hereinbefore set forth.

4. In a nail-feeding device, the combination, with the hopper or reservoir H, having an elongated opening in its base and an inclined track secured to and extending into the hopper, of the elongated blade or pick-up, adapted to move up and down in the hopper, and means for effecting said movement, substantially as shown and hereinbefore set forth.

5. In a nail-feeding device, in combination with the hopper H, having an inclined track, F', secured to and extending into the hopper, of the vertically-moving blade K, having the spring-stop *k'*, mounted thereon, substantially as shown, and for the purpose hereinbefore set forth.

6. In a reservoir or hopper, H, having the inwardly-projecting ways or track F', secured thereto, the vertically-moving blade K, having a spring, *k*, secured to its lower end, in combination with the loosely-mounted stop *k'*, forming the inner vertical edge of the blade, said stop engaging the free end of the spring, and adapted to connect with the end of the track F', substantially as shown and set forth.

7. A dial-press adapted to cap the heads of nails, &c., with sole-leather or other suitable material, in combination with the automatic nail-feeding device hereinbefore described, the same consisting of the hopper H, having the blade or pick-up K, moving vertically therein, the track F' F, secured to the hopper, adapted to receive the nails from said blade, mechanism for automatically separating the column of nails, the frame E, secured to the track or ways F, the head A, mounted loosely on said frame, having two spring closing-jaws, B, and nail-retaining spring-lever C, pivoted thereto, a spring, I, adjusting-screw G, and stop G', for controlling the downward movement of said head, and the shouldered plunger *a*, passing through the head and connected with suitable moving parts of the press, the whole combined, arranged, and adapted for use substantially as shown and set forth.

334,899. SASH-FASTENER. FRANK L. ROSENTRETER, Cleveland, Ohio, assignor to the Champion Safety Lock and Novelty Company, same place. Filed Dec. 24, 1884. (No model.)

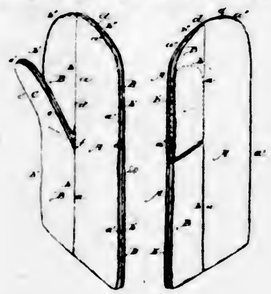


Claim.—1. A sash-holder composed of a base-plate adapted to be fixed to the window-frame, an outer plate pivoted centrally to and rotating upon the base-plate, and a holding-bar provided with a shoulder, by means of which and an eccentric cam or projection on the inner surface of the outer plate the holder is moved outward in relation to its casing, and provided also with a recess on its inner end, by means of which and a pin standing from the inner surface of the outer plate it is moved inward in relation to its casing, substantially as specified.

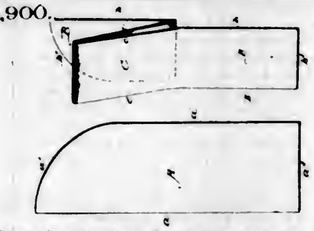
2. In a latching or clamping device, the combination, with the base-plate A, outer plate, B, provided with the eccentric projection *b'*, and pin *b²*, of the rivet or screw *a'*, holding-bar C, provided with the shoulder *c²*, and recess *c²*, substantially as specified.

334,900. REVERSIBLE MITTEN. GEORGE P. ROSS, Chicago, Ill. Filed May 29, 1885. (No model.)

Claim.—A reversible mitten composed of the duplicate set of blanks A B, each having opposite straight side edges, a straight end edge, and

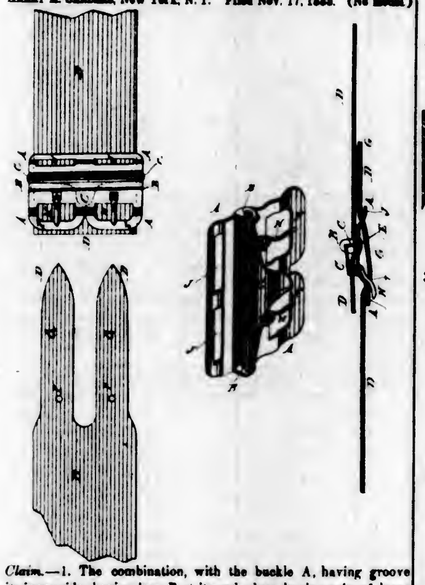


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a curved end edge, said blanks B each being upon alternate opposite faces of the mitten, and having a folded thumb portion, C, substantially as described.

334,901. WAIST-BELT BUCKLE. LOUIS SANDERS, Brooklyn, and HARRY A. SANDERS, New York, N. Y. Filed Nov. 17, 1885. (No model.)



Claim.—1. The combination, with the buckle A, having groove E in its inner side, having lugs B at its end edges, having pairs of loops F J in its front and rear parts, and provided with a pair of tongues, H, of the angular lever-clamp C, substantially as herein shown and described.

2. The combination, with the buckle A, having groove E, lugs B, and loops F J, and the angular lever-clamp C, of the belt D, having a pair of tongues, G, upon its forward end, and formed in one piece therewith, as set forth.

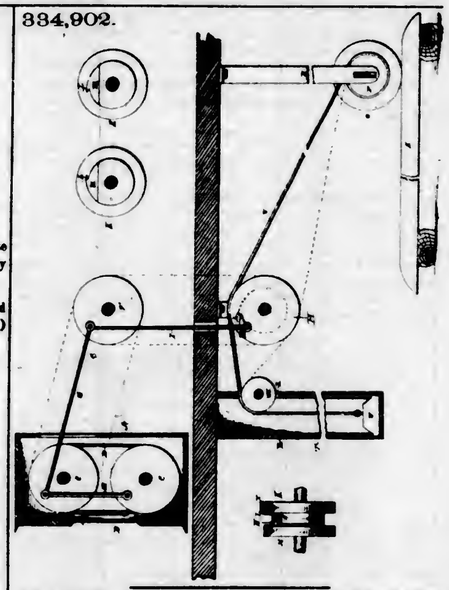
334,902. STATION-INDICATOR. GEORGE E. SCHLOSSLAUER, Philadelphia, Pa. Filed July 25, 1884. (No model.)

Claim.—1. In combination with a station-indicator, a friction-roller engaging with a short piece on the railway, a guided weight which the friction-roller operates, and a loose and fixed wheel operated by a band or chain connecting the said friction-pulley and the weight, the fixed wheel being connected to the indicator, substantially as and for the purpose specified.

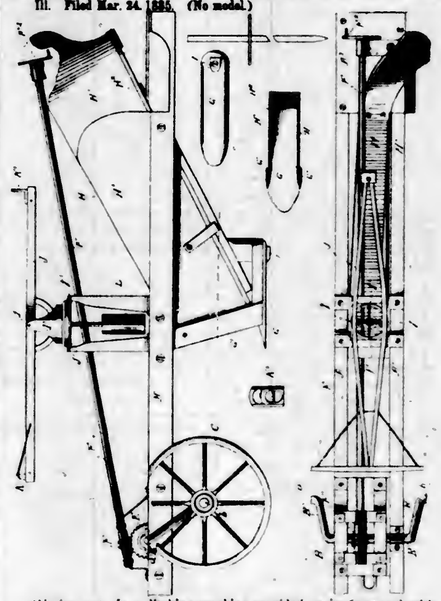
2. A reversing mechanism consisting of a weight and an operating-pulley connected by a band or chain, and a fixed pulley on a shaft and provided with a pawl, and a loose pulley on the same shaft and provided with an extension on which is a reversible ratchet-tooth, the loose pulley engaging with the band or chain, and the parts operating substantially as and for the purpose specified.

3. In combination with an indicator, a fixed wheel connected to the indicator and provided with a pawl, a loose pulley on the same shaft, and provided with an extension carrying a reversible ratchet-tooth, a wheel carrying a winding-drum and engaging by friction with a piece on the roadway, the said wheel having a restricted play in its bearings, and a weight guided and supported in bearings and connected to the drum by a band or chain which operates the loose pulley, the entire device operating substantially as set forth.

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334,903. DITCHING-MACHINE. JAMES L. SENTENEY, Cook's Mills Ill. Filed Mar. 24, 1885. (No model.)



Claim.—1. In a ditching-machine provided at its front end with vertically-adjustable supporting-wheels, a sight-bar pivoted between its ends on the ditcher and weighted to always occupy a horizontal position, and provided with a vertically-adjustable sight-piece, substantially as set forth.

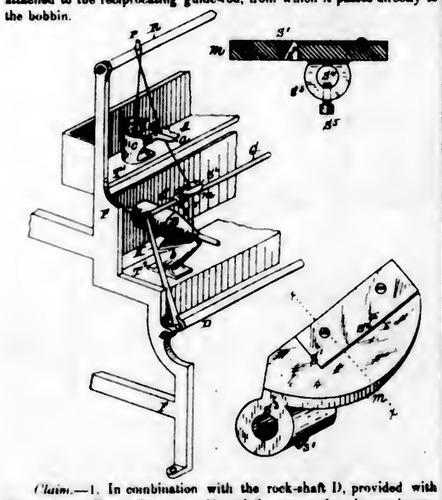
2. The combination, in a ditching-machine, of the crank-axle journaled at the front end of the machine, and provided at or near its center with a worm-wheel, the operating-shaft centrally journaled to and running lengthwise of the frame, and provided at its front end with a worm meshed with the worm on the crank-shaft, and having its other end extended in convenient reach of the operator, and a sight-bar pivoted between the ends of the machine in line with and directly over the operating-shaft, substantially as set forth.

3. In a ditcher, the combination, with the sole-piece, of a groover removably secured on the under side of and made of less width than the said sole-piece, substantially as set forth.

4. In a ditcher, the combination of the chute, the sole-piece, and the side cutters or blades secured on the front outer edges of the side plates of the chute, whereby a suitable clearance is provided, substantially as set forth.

334,904. **YARN-STRIPPER.** ALFRED SHAVER, Troy, N. Y., assignor of one-half to Lewis E. Shaver, same place. Filed Feb. 15, 1884. (No model.)

Brief.—A yarn-stripper consisting of two horizontal plates having a slit between them, one of said plates having a curved outer edge to facilitate the return of the thread should it leave the slit, is secured to a guide-rod which is reciprocated by a crank-arm and rock-shaft. Another yarn-stripper, secured to a cop-bonnet, is attached to the upper cop-table. The yarn passes from the upper cop, over a tension-regulating pin, through the upper yarn-stripper, then to and through the slit of the yarn-stripper attached to the reciprocating guide-rod, from which it passes directly to the bobbin.

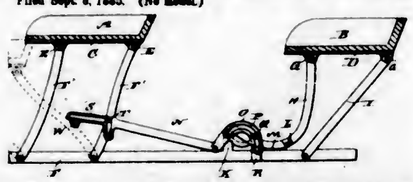


Claim.—1. In combination with the rock-shaft D, provided with the crank-arm K, and the yarn-guide rod G, connected to the crank-arm, the yarn-stripper S', consisting of the horizontal plate E, having slit S^p, curved outer edge, *m*, and sleeve S^p, with set-screw S^s, substantially as described, and for the purpose set forth.

2. The combination of a cop-bonnet, a yarn-stripper secured thereto, a tension-regulating rod provided with means to give tension to the yarn, a yarn-guide rod, and a yarn-stripper secured thereto, and a bobbin-spindle, substantially as described, and for the purpose stated.

3. The combination of the bobbin-spindle, guide-rod G, and means for reciprocating the same, and yarn-stripper S', secured to said rod, with cop-bonnet *c*, yarn-stripper A, secured thereto, and the tension-regulating pin-rod R, substantially as and for the purpose set forth.

334,905. **JUMP-SEAT IRON.** ANDREW F. SHULER, Arcanum, Ohio. Filed Sept. 8, 1885. (No model.)

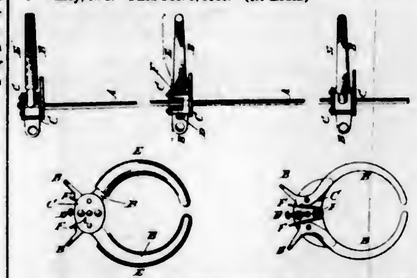


Claim.—1. The combination, with the front and two rear bars pivoted to the base-bar, the front bar of the rear pair having a pin at its lower end, beyond its pivot, of the bar N, pivoted to the lower end of the front bar of the rear pair, and provided beyond the pivot with a curved slot, into which a pin on a lug on the base-bar projects, the front end of the bar N being connected with the rear bar of the front pair, substantially as herein shown and described.

2. The combination, with two front bars and two rear bars pivoted to a base-bar, the front bar of the rear pair having a pivot beyond its joint-pivot, and at its lower end, of the bar N, having a curved slot at one end and an L-shaped slot at the other end, a pin projecting from a lug on the base into the curved slot of the bar N, and a pin projecting from the rear bar of the front pair into the front L-shaped slot of the bar N, substantially as herein shown and described.

3. The combination, with the bars F' F' and the bars H I, pivoted on the bar F, the bar H having the bend J, at which it is pivoted to the base, of the bar N, having the bend O and the curved slot P, and pivoted in front of the bend to the lower end of the bar H, and which bar N is provided at its front end with an L-shaped slot, S, the pin Q, passed from a lug on the base into the slot P, and the pin T, passed from the rear leg, F', of the front pair into the front L-shaped slot, S, in the bar N, substantially as herein shown and described.

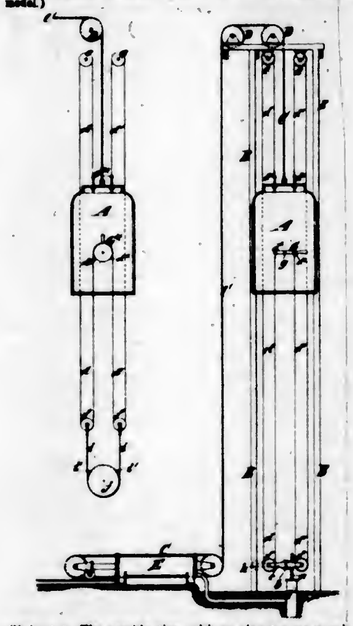
334,906. **FETTER FOR COWS' TAILS.** BENJAMIN S. SLEIN, Spring Valley, N. Y. Filed Feb. 9, 1885. (No model.)



Claim.—1. An anti-switching attachment for cows' tails, consisting of a rod and spring-clamps having apertured hubs to receive the rod and adjustably secured on the said rod, substantially as herein shown and described.

2. In an anti-switching attachment for cows' tails, the combination, with the rod A, of hubs C, having set-screws D, two or more pairs of clamps, B, pivoted to the said hubs, and springs F, substantially as herein shown and described, whereby the attachment can be readily applied to and detached from a cow's tail, and will prevent the cow from switching her tail, as set forth.

334,907. **MEANS FOR CONTROLLING THE VALVES OF ELEVATORS.** RUDOLPH C. SMITH, Yonkers, N. Y. Filed Dec. 15, 1885. (No model.)

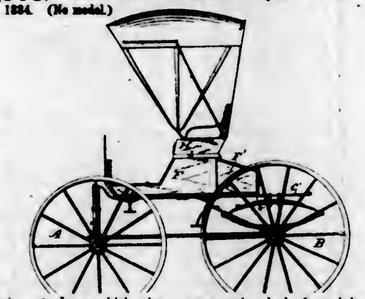


Claim.—1. The combination, with an elevator car or cab, of a rope or cable passing around pulleys above and below the travel of the car or cab, and having its ends terminating at the car or cab, and a handle whereby the portion of a rope or cable depending from the car or cab may be drawn in or shortened and paid out or lengthened, substantially as herein described.

2. The combination, with an elevator car or cab, of a rope or cable passing around pulleys above and below the travel of the car or cab, and having one of its ends attached to the car or cab and its other end terminating therein and attached to a handle, whereby it may be drawn in or shortened and paid out or lengthened, substantially as herein described.

3. The combination, with an elevator car or cab, of two ropes or cables passing around pulleys above and below the travel of the car or cab, attached at their one end to the car or cab and having their other ends terminating in the car or cab and attached at opposite points to an operating-handle, substantially as herein described.

334,908. **VEHICLE.** W. DEAN SMITH, Brooklyn, N. Y. Filed Sept. 17, 1884. (No model.)



Claim.—1. In a vehicle, the seat-supporting body formed in two sections, of which one is stationary and the other is hinged by its lower rear corner, the seat hinged to the movable section and adapted to be supported alternately upon the movable section and upon the stationary section, and supports projecting rearward from the body and adapted to support the weight of the seat when the vehicle is arranged with two seats, substantially as set forth.

2. In a vehicle, the seat-supporting body formed in two sections, of which one is stationary and the other is hinged by its lower rear corner, the seat hinged to the movable section and adapted to be supported alternately upon the movable section and upon the stationary section, supports projecting rearward from the body and adapted to support the weight of the seat when the vehicle is arranged with two seats, and braces connected at their upper ends to the movable section and at their lower ends to the frame-work, substantially as set forth.

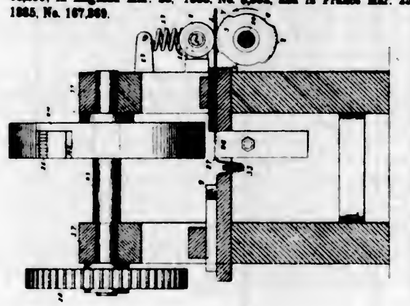
3. In a vehicle, the seat-supporting body formed in two sections, of which one is stationary and the other is hinged by its lower rear corner, and is provided with a substantially vertical rear wall, the seat hinged to the movable section and adapted to be supported alternately upon the movable section and upon the stationary section, and supports projecting rearward from the body and adapted to engage with the rear wall of the movable section, substantially as set forth.

4. The combination, with the stationary section of the body and the hinged section, of the finishing-strips adapted to be interposed between these sections, substantially as set forth.

5. The combination of the cushions K K with the seat ends J J, adapted to fold down between the panel-sections and below the upper edges of the panels, substantially as set forth.

6. The combination of the cushions K K with the seat ends J J, adapted to fold down between the panel-sections and below the upper edges of the panels, and the vertical supporting-strips h', adapted to receive the inner ends of the cushions K K, substantially as set forth.

334,909. **STAPLE MACHINE.** JOHN THOMSON, Brooklyn, N. Y. Filed May 14, 1885. (No model.) Patented in Belgium Mar. 24, 1885, No. 68,290; in England Mar. 25, 1885, No. 3,882, and in France Mar. 25, 1885, No. 167,969.



Claim.—1. In a staple-forming machine, the wire-feeding mechanism consisting in the combination of a feed-roll having portions cut away, a friction-roll, a pivoted lever on which the roll is mounted, and a spring drawing on said lever, substantially as described.

2. In a staple-forming machine, the combination of a grooved feed-roll having cut-away portions, another grooved feed-roll, a pivoted lever carrying one of the feed-rolls, and a spring connected to the frame of the machine and constantly drawing upon said lever, substantially as described.

3. In a staple-forming machine, the combination of a stationary female shearing-die and a rotating male shearing-die mounted on a disk, the dies being arranged to sever the blank and simultaneously form bevels and barbs in one end of the blank and the contiguous end of the wire, substantially as described.

4. In a staple-forming machine, the combination of the stationary grooved female die, a rotary disk mounted on a shaft and carrying a male die, a rotating former mounted on another shaft, and a continuously-operating intermittent feed, substantially as described.

5. In a staple-forming machine, the combination, with a female die having a round bottom groove or slot with the sides at right angles to the cutting-edge, of a male die co-operating with the female die and means, substantially as described, whereby the latter approaches the female die at an angle to the plane of the groove therein, so that the thrust of the male die tends to force the metal downward against the bottom of the groove, as and for the purpose set forth.

6. In a staple-forming machine in which all the motions are rotary and continuous, the combination of a continuously-rotating intermittent feed, a fixed female die, a rotary male die, and a rotary former, all arranged to operate in quick succession and from a single driving-shaft, substantially as described.

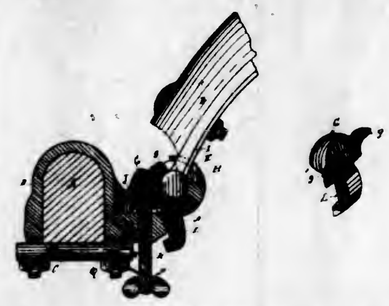
7. In a staple-forming machine, a cutter consisting of a section of a ring the outside contour of which is formed on different planes for cutting the barbs and separating the wire, substantially as described.

8. In a staple-forming machine, the combination, with a slotted disk, of a cutter consisting of a section of a ring having the desired contour for forming the barbs and cutting the wire, the said section being relatively adjustable to the disk by which it is carried, substantially as described.

9. In a staple-forming machine, the combination, with a slotted disk, of a cutter consisting of a section of a ring which is adjustable relative to the disk, and having a central projecting cutting-edge to sever the blank, and side cutting-edges to form barbs in the blank and contiguous wire, substantially as described.

10. In a staple-forming machine, the combination, with a disk, of a cutter formed of a section of a ring having the desired contour for forming the barbs and cutting the wire, and the wedge for locking the cutter in the disk, substantially as described.

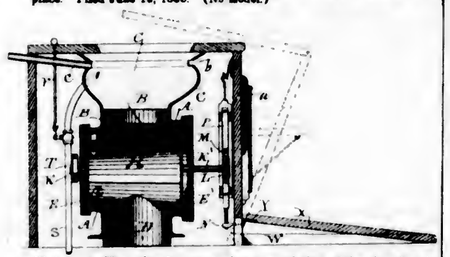
334,910. **THILL-COUPLING.** GEORGE TYLER, Rock Creek, Ohio, assignor to Augustus M. Barker, William W. Watkins, Charles M. Mahaffey, same place, and William C. Stiles, Rome, Ohio. Filed Nov. 6, 1885. (No model.)



Claim.—1. The combination, in a thill-coupling, of an axle-clip provided with a pair of hooked jaws adapted to engage with the front sides of trunnions on a thill-iron, and also with a vertical slot between said hooked jaws, and a regulating-screw, substantially as shown, with a movable jaw operating in said vertical slot, provided with hooked ears adapted to engage the back side of trunnions on a thill-iron, and also provided with an elastic cushion, substantially as shown, and for the purpose set forth.

2. The combination, in a thill-coupling, of the axle-clip B, having hooked jaws E E, and the slot N between said jaws, and a regulating-screw, K, provided with a ratchet, P, and a spring, Q, and a movable jaw, G, provided with hooked ears *g g*, and the elastic cushion J, with the thill-iron I, provided with a T, H, all operating together substantially as and for the purpose set forth.

334,911. WATER-CLOSET. JOSEPH VLADYKA, Newton, Iowa, assignor of one-half to J. M. Galusha and Willis M. Mitchell, both of same place. Filed June 15, 1885. (No model.)



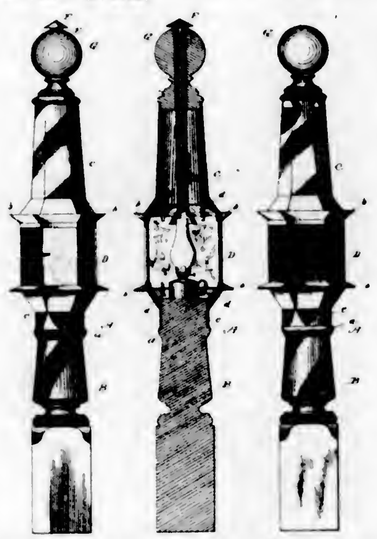
Claim.—1. The valve for water-closets consisting of the chamber A, having a flange or collar, B, and projections on the inside of its largest end, and the rotating valve H, having journals on its ends, and a projection, l, on the outside of its largest end, in combination with a bowl or basin, as and for the purposes stated.

2. The valve H in the chamber A, the journals K and K', the fixed pinion L, the rack M, having a toe attached at its lower end, the guard P, the spring O, and the platform or foot-board X, having a hook or projection to engage the toe N, arranged and combined to operate in the manner set forth, for the purposes stated.

3. The combination of the valve-chamber A, the valve H, having journals on its ends, the cam T, fixed to one of the journals, a water-supply pipe R, having a cock, V, and a lever extending therefrom to the said cam, for the purposes set forth.

4. The pivoted arms W, and the platform X, pivoted to the free ends of the said arms, in combination with a water-closet seat, for the purposes stated.

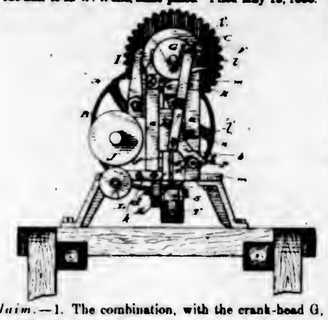
334,912. BARBER'S POLE. ROBERT F. WALTER, Peoria, Ill. Filed Feb. 19, 1884. (No model.)



Claim.—1. A barber's pole comprising the lower section, B, formed with a shoulder, a, the intermediate section, D, having its lower cylindrical end fitted over the upper end of section B and resting on the shoulder a, the upper section, C, a block closing the open upper end of the latter and formed with a ball or head, G, a pipe, E, arranged within the upper section, C, and passing through the head G, and a cap or covering, F, for the pipe above the latter, as set forth.

2. A barber's pole comprising the lower section, B, the intermediate section, D, containing the glass panes or lights, and forming a compartment for the lamp, the upper section, C, provided with a head or ball, G, a pipe, E, located within the upper section and having its lower end connecting with the chimney of the lamp and its upper end passing through the ball or head, and a cap or covering, F, for the upper end of the pipe above the head, as set forth.

334,913. MACHINE FOR MAKING AND DRIVING STAPLES IN HANDLES OF BASKETS. HENRY C. WARD, St. Joseph, Mich., assignor of one-half to A. W. Wells, same place. Filed May 13, 1885. (No model.)

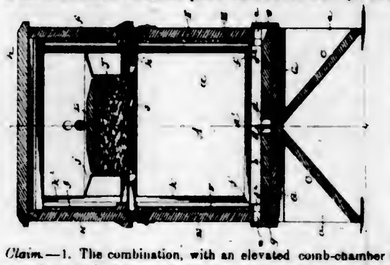


Claim.—1. The combination, with the crank-head G, having the roller *g*, of the pivoted spring-arm I and the cutter *f*, having a link-connection, as shown and described, and for the purpose set forth.

2. The combination, with the plate A, moving between suitable guides and having the elongated slot *i* and pin *l'*, of the connected benders located behind said plate, the hook-arm *b*, pivoted to said benders and arranged to engage with said pin, the roller *p*, for disengaging said arm, the driver *g*, arranged between the benders and having the projection *o*, entering the slot in said plate A, and the pitman H, connected to said plate and to the crank-head G, substantially as described.

3. The combination, with the feed-rollers, supporting-plate, and bending-block, of the cutter *f*, the spring-retracted arm I, connected with said cutter, the crank-head G, provided with the roller *g'* for operating said arm, the connected benders arranged to straddle the bending-plate, the plate A, having the slot *i* and pin *l'*, the driver *g*, arranged between the benders and having the projection *o*, entering said slot, the hook-arm *b*, the friction-roller *p*, the pitman H, and means, substantially as shown, for operating the feed-wheels and withdrawing the bending-block at proper times, essentially as set forth.

334,914. BEE-HIVE. MORRIS N. WARD, Vicksburg, Mich., assignor of one-half to Zenas Ward, same place. Filed Oct. 8, 1885. (No model.)



Claim.—1. The combination, with an elevated comb-chamber the bottom or floor of which is provided with an opening, of a partition dividing the opening into two parts and the inclined ways leading to said opening, substantially as set forth.

2. In a bee-hive, the combination, with the comb-chamber having a floor provided with a downward central opening, of the inclined ways leading directly to said opening, but separated from the floor by lateral open passages *p* on one or both sides of said opening, substantially as described.

3. The combination, in a bee-hive, of the elevated comb-chamber having the bottom opening, the inclined ways leading to said opening, the flaps or shutters with bottom entrance-openings, and the slides provided at their outer edges with the upwardly-projecting lips or plates, substantially as described.

4. The comb-chamber having opaque hinged side walls or flaps and stationary inner transparent-glass side walls or panes with free upper edges for supporting the comb-frames, all combined and arranged substantially as described.

5. The combination, with a bee-hive having an upper feeding-chamber, of a feed-basin located within said feeding-chamber and having the projecting rim *j* and the float, the latter arranged to cover the surface of the liquid food, but of less diameter than the interior of the basin, whereby a narrow annular space is left between the sides of the basin and the edge of the float, substantially as set forth.

334,915. FABRIC-TURFING IMPLEMENT. JOHN W. WENDEL, Toledo, Ohio, assignor of one-half to Howard M. Pottengill, same place. Filed May 14, 1885. (No model.)

334,915.



Claim.—1. The combination, with a loop-retainer and a spring-actuated vibrating needle arranged to be reciprocated endwise alternately, of an incline or cam secured to the needle, and an abutment-screw, substantially as and for the purpose set forth.

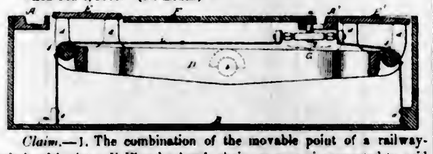
2. The combination, with two handles, a loop-retainer secured to one handle, and a needle pivotally secured to the other handle, the said needle and retainer arranged to be reciprocated endwise alternately, of an incline and abutment-screw, and a spring arranged to alternately separate and bring together the needle and loop-retainer, substantially as set forth.

3. The combination, with the parts A and B, having loops H H', and a needle and loop-retainer respectively secured to said parts, of the handles secured to said loops, substantially as set forth.

4. The combination, with the part A, provided with the lugs *a* and flange *a'*, of the parallel rods C, the part B, provided with the lugs *b* and *b'*, the lugs of the respective parts arranged the one set to support the parallel rod C, and the other set arranged to slide thereon, and the two sets of lugs arranged to abut against each other and form stops to limit the movement of the two halves of the device in both directions, substantially as set forth.

5. The combination, with the part A, the parallel rods secured thereto, and the adjustable loop-retainer, of the part B, adapted to slide on said rods, the needle, and the stop E, all of the above parts combined and operating substantially as set forth.

334,916. RAILWAY-SWITCH. WILLIAM WHARTON, Jr., Philadelphia, Pa., assignor to William Wharton, Jr., & Co., (Limited,) same place. Filed Oct. 6, 1885. (No model.)



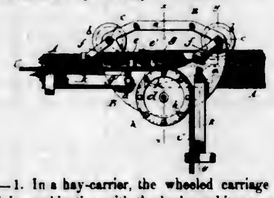
Claim.—1. The combination of the movable point of a railway-switch with plates E E' and a band, chain, or rope, *i*, connected to said movable point and controlled by said plates, substantially as set forth.

2. The combination of a movable point of a railway-switch with a rocking frame, D, platforms E E', adapted to act on said frame, and a rope, chain, or band, *i*, connected to said movable point and acted on by the frame, substantially as set forth.

3. The combination of the yielding plates E E', the movable switch-point having a pin, *g*, and a rope, chain, or band, *i*, secured to the pin and capable of adjustment, substantially as described.

4. The combination of the movable switch-point having a pin, *g*, the coupling-bar *h*, having an opening for the reception of said pin, and the operating rope, chain, or band *i*, connected to said coupling-bar, all substantially as specified.

334,917. HAY-CARRIER. FREDERICK A. WHITE, Rochester, N. Y. Filed Oct. 23, 1885. (No model.)



Claim.—1. In a hay-carrier, the wheeled carriage provided with the pulley *d*, in combination with the brake and its two sustaining-links.

2. In a hay-carrier, the wheeled carriage having the pulley *d* therein, in combination with the brake-bar and its sustaining-links, reversible as to inclination, as described, whereby the brake is adapted to hold the hoisting-rope against movement in either direction, as may be demanded.

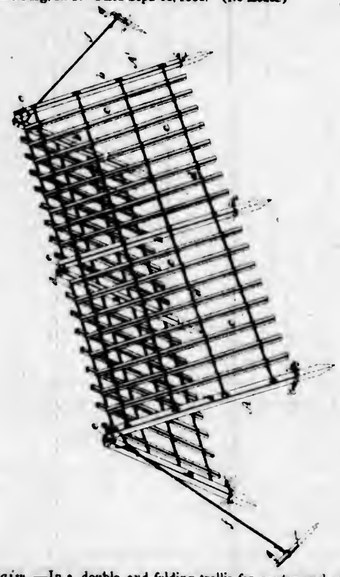
3. In combination with the carrier-frame and the pulley having studs or teeth, the pendent links and the brake-shoe having arms to engage the studs of the pulley, whereby the pulley is caused to assist in operating the brake.

4. In combination with the carriage provided with the pulley, the brake, and a locking-stirrup, the rails and the stationary plates, adapted, as described, to disengage the brake, and provided with the notches to receive the stirrups.

5. In combination with the carriage provided with stirrups or locking devices, the fixed plates provided with the notch *i* and the shoulder *i'* thereover.

6. In a hay-carrier, the carriage provided with the stirrups having the rollers, in combination with the fixed plate provided with notches to receive said rollers.

334,918. TRELLIS FOR GARDEN CROPS. WILLIAM A. WHITE, Staatsburg, N. Y. Filed Sept. 18, 1885. (No model.)



Claim.—In a double and folding trellis for garden and other like crops, the combination of the pickets *b*, the hinges or pivoted links *c*, connecting the upper ends of the pickets in the opposite side frames of the double trellis, the longitudinal wires *d* between the pickets in each side frame, and the cross bars or strips *c*, interwoven with said wires, essentially as shown and described.

334,919. GROUND-SCREW FOR BORING WELLS. SAMUEL WEIMER, Pierre, Dak., assignor to William C. Eickemeyer, Frank Hassler, John F. Hughes, and Harry Ernest, all of same place. Filed Sept. 12, 1884. (No model.)

Claim.—1. A ground-screw consisting of body A, enlarged at a point between its upper and lower ends, as at *a*, tapered each way from

334,919.



said point, provided with an external thread below the enlargement, and having a socket in its upper end undercut, substantially as shown and described.

2. In combination with point A, having socket c, with lateral enlargements c', boring rod or plug B, having ribs s' and collar s, substantially as shown and described.

334,920. TYPE-WRITING MACHINE. HERBON G. WOOD, Sharon, Pa., assignor of one-fourth to E. A. Wheeler, same place. Filed May 1, 1884. (No model.)



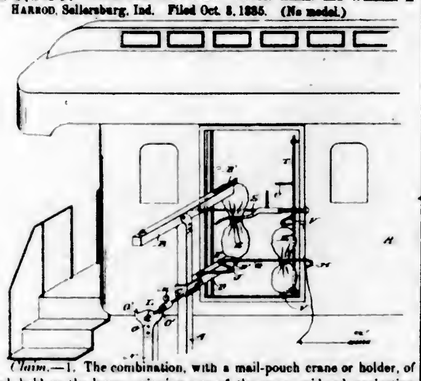
Claim.—1. In a type-writing machine, the combination of a spring-supported plate, spindles adapted to be coincidently rotated, and having arms i, cord F, pulley d, cord c', spring G, key-spindles e, rod j, and flexible disk M, substantially as set forth.

2. In a type-writing machine, a spring-supported plate adapted to be depressed in the printing operation, combined with the spring key-spindles, rod m, beveled block R, pawl O o p, spring P, and ratchet-bar N, substantially as set forth.

3. In combination with a type-disk spindle, the disk having a pin, d'', and spindle having a slotted disk, d''', substantially as set forth.

4. In a type-writing machine, a spring-supported plate, J, the series of key-spindles e, spindles C D E, arms i, cord c', spring g, cord F, disk M, rod j, rod m, and ratchet-and-pawl mechanism for effecting the movement of the machine as the plate J is depressed, all combined and operating substantially as set forth.

334,921. MAIL-BAG CATCHER. ETHAN ALLEN and WILLIAM H HARROD, Sellersburg, Ind. Filed Oct. 8, 1885. (No model.)



Claim.—1. The combination, with a mail-pouch crane or holder, of a rod held on the lower swinging arm of the same, said rod projecting beyond the swinging end of said arm and having a bend formed in the part on the arm, and having the projecting part parallel with the tracks, substantially as herein shown and described.

2. The combination, with a railroad mail-pouch crane or holder, of a rod held on the lower swinging bar of the crane and having a projecting part beyond the swinging end of the bar, the projecting part of the rod being parallel with the tracks, substantially as herein shown and described.

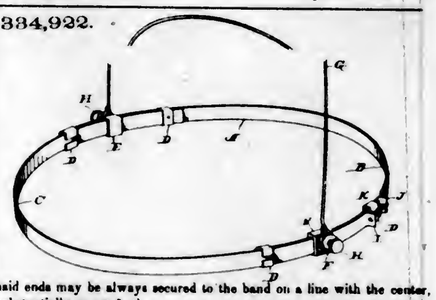
3. The combination, with the standard A, of the lever B, the bar D, the rod F on the bar D, which rod has the arm G and the bend J, and the weight on the inner end of the rod F, substantially as herein shown and described.

4. The combination, with the standard A, having the pivoted lever B and the pivoted bar D, of the rod F, having the arm G and the bend J, the balancing-weight L, and the standard N, and the plate O on the same, substantially as herein shown and described.

334,922. ADJUSTABLE BAIL AND COVER-HOLDER FOR JARS. MATHEW ALSTON, Adrian, Ill. Filed July 15, 1885. (No model.)

Claim.—1. An adjustable bail and cover-holder for jars, consisting of an adjustable band, combined with a bail provided with devices for securing it to said adjustable band, and also provided with setting devices whereby the ends of the bail may be moved upon the band and both of

334,922.



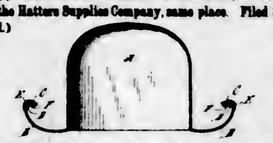
said ends may be always secured to the band on a line with the center, substantially as set forth.

2. The combination of a pair of sleeves oppositely disposed upon the band, formed outwardly to receive thereon the ends of the bail, and provided with a set-screw to engage the band-sections, with the band formed in two sections and provided with a series of keepers at the ends of the said section, each section being arranged to overlap its adjoining section, substantially as herein set forth.

3. The combination of a pair of sleeves oppositely disposed upon the band and constructed to receive thereon the ends of the bail, and having a set-screw to engage with the band-sections, and the band formed in two sections and provided with a series of keepers at the ends of the said section, each section being arranged to overlap its adjoining section, with an external protuberance near one end of one of the sections, and a corresponding protuberance some distance from the end of the other section, connected together by means of a spiral spring, so that when the band is placed upon the jar it will be at a tension, so as to hold the cover in position and may be held at that tension, substantially as herein set forth.

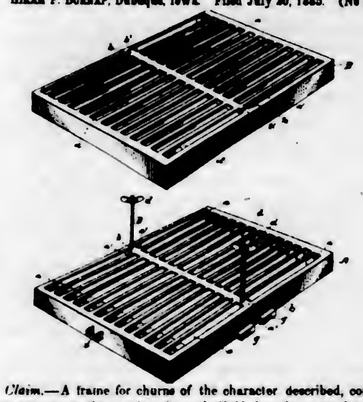
4. The combination of the band A, formed in two sections, B and C, provided with keepers D, the sleeves E, oppositely disposed upon the band, the set-screws H, the bail G, the external protuberances, I and J, and the connecting spiral spring K, as and for the purpose substantially as herein set forth.

334,923. HAT-WIRE. CHARLES S. ANDREWS, Danbury, Conn., assignor to the Hatters Supplies Company, same place. Filed Sept. 26, 1885. (No model.)



Claim.—As a new article of manufacture, a wire for hat-brims, having a curved portion which bears against the brim, and a flat or concaved portion over which the stitching passes, as described, and for the purpose set forth.

334,924. CREAM-TESTING CHURN. NATHANIEL S. ANDREWS and HIRAM F. BURNAP, Dubuque, Iowa. Filed July 20, 1885. (No model.)



Claim.—A frame for churns of the character described, consisting of two or more sections or boards, each divided at the center by a transverse partition, and provided on top with tube or bottle holding receptacles arranged on each side of and at right angles to said partition, and a pair of screw-threaded rods with nuts for securing the sections together, substantially as described and shown.

334,925. TOBOGGAN. CHARLES E. BABCOCK, Troy, N. Y. Filed Mar. 20, 1885. (No model.)



Claim.—The braces a, screws b, bolts d, and nuts e, combined on a toboggan with roller-hangers C, as and for the purpose herein specified.

334,926. SAFETY ATTACHMENT. JOHN H. BARNES, Greencastle, Ind. Filed Oct. 22, 1885. (No model.)



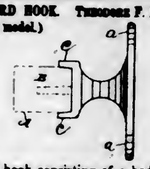
Claim.—1. In a safety attachment for pockets, the combination of a plate or main portion provided with a chain-supporting hook, and a look supported by said plate, and provided with a watch-securing device, all constructed and arranged substantially as described, whereby the watch may be secured and the chain passed up over the hook, as set forth.

2. In a safety attachment for watch-pockets, the combination of the plate or support having end flange, b, extended to form the chain-supporting hook C, the locking-bar having a hook at one end, whereby to secure a watch, and a detent arranged to engage said bar, substantially as set forth.

3. As an improved article of manufacture, the safety attachment for watch-pockets herein described, consisting of a supporting-plate, a bar provided with a hook whereby to engage a watch-ring, and supported by and movable along said plate, and provided with a notch, c', and the detent F, pivoted at one end to the plate, and made of a length to engage at its free end with notch c' at a point in rear of its pivotal support, whereby strain on the bar E will tighten the detent, substantially as set forth.

4. A safety attachment consisting of a supporting-plate, B, having a right-angled flange, b, provided with perforations b' b^2 and extended, forming a hook, C, a keeper, E, secured on said plate B, the hooked bar having a notch, c', and the detent-pawl, pivoted at one end to the plate B, and having its other end movable into and out of engagement with notch c', substantially as set forth.

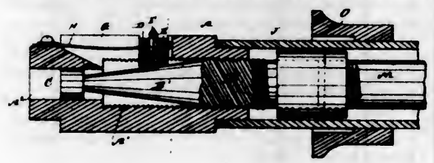
334,927. DRY-BOARD HOOK. THEODORE F. BARNUM, Troy, N. Y. Filed July 2, 1885. (No model.)



Claim.—A dry-board hook consisting of a body provided with a hole for screw-clamp, two flanges adapted to clamp one of the vertical bars of said dry-board, and a pair of hooks arranged to receive the horizontal rods thereof, as shown and described.

334,928. TUBE-CUTTER. DELBERT L. BAUGHMAN, Albion, Ind. Filed May 11, 1885. (Model.)

Claim.—1. The combination of the stock A, the cutters F, mounted

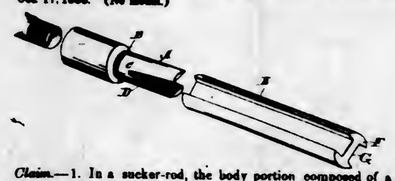


therein, and means, substantially as described, for extending the cutters from the stock, the tube J, secured upon the stock as an extension thereof, the collar O, provided with the set-screw P and fitted for adjustment longitudinally upon the tube J, and the pointer R, secured to the collar O, and carried outside of and to some distance from the stock A, substantially as shown and described, whereby a pipe to be cut off may pass over the stock and cutters F, and the pointer may extend over the said pipe to the boiler-head as a gage, as set forth.

2. In a tube-cutter, the combination, with the stock A, having the screw-bore A' and the smooth bore A^2, of the screw-spindle B, having a tapered part, B', and a head, C, fitting in the bore A^2, the radially-movable boxes E, carrying cutters F, substantially as herein shown and described.

3. In a tube-cutter, the combination, with the tubular stock A, of the mandrel B, having a tapered part, B', the radially-sliding boxes E, the cutters F, and the springs H, acting on the boxes, substantially as herein shown and described.

334,929. SUCKER-ROD. ROBERT H. BLACK, Kendall Creek, Pa. Filed Oct. 17, 1885. (No model.)

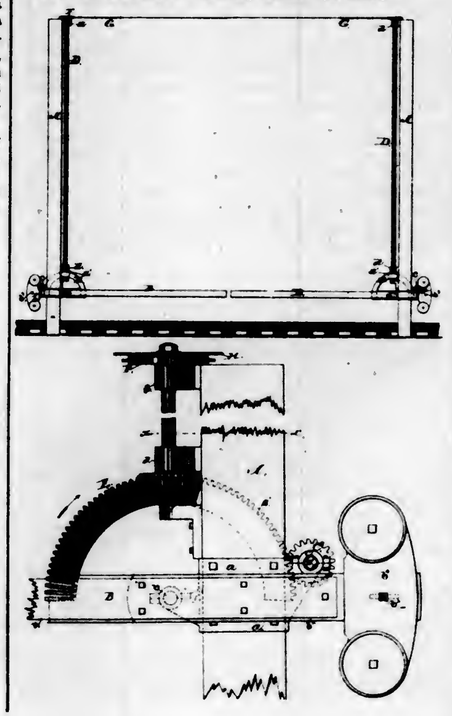


Claim.—1. In a sucker-rod, the body portion composed of a bar of metal formed L-shaped, so that a welding web portion may be embraced by the wings of the coupling, substantially as herein set forth.

2. In a sucker-rod, the coupling with a wedge-shaped opening to embrace the web of the rod between the wings, and thus form a solid weld, substantially as herein set forth and described.

3. The combination, in a sucker-rod, of the coupling A, having therein at one end the wedge-shaped opening D, so disposed that the web G of the said rod may be interposed between the wings of the coupling, the whole arranged as and for the purpose substantially as herein set forth and described.

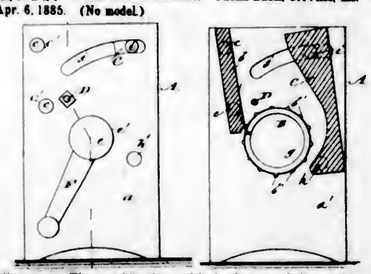
334,930. SAFETY-GATE FOR RAILROAD-CROSSINGS. ROBERT C. BLACKALL, Albany, N. Y. Filed July 30, 1885. (No model.)



Claim.—1. The combination, with a gate, B, adapted to swing in a vertical plane and provided with a segmental bevel-gear, *e*, and a segmental spur-gear, *e'*, as herein described, of the driving-shaft *c*, provided with a pinion, C, adapted to engage in gear with the segmental spur-gear *e'*, and the vertical shaft D, provided with a bevel-pinion, *d'*, adapted to engage with the segmental bevel-gear *e*, a sprocket-wheel, F, and the endless chain G, whereby the gate-operating mechanism is connected with like mechanisms to operate one or more similar gates, substantially as herein specified.

2. The combination, with two or more gates, B, arranged to swing in vertical planes—each of said gates being provided with the following parts, to wit: a segmental bevel-gear, *e*, and segmental spur-gear *e'*, a driving-shaft, *c*, having a pinion, C, secured thereto, a vertical shaft, D, provided with a bevel-pinion, *d'*, and sprocket-wheel F—of an overhead endless chain, G, which engages with all of said sprocket-wheels and connects the operating mechanisms of said gates in such manner that all the gates may be simultaneously operated by means of any one of the driving-shafts *c*, as herein specified.

334,931. **VEGETABLE-GRATER.** PETER BLUM, Orrville, Mo. Filed Apr. 6, 1885. (No model.)

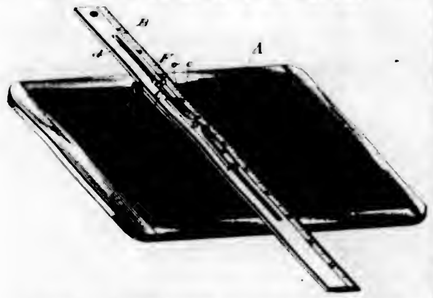


Claim.—1. The combination, with the frame and the grating-cylinder mounted therein, of the hopper consisting of the inclined board *b*, adjacent to and extending above the cylinder at one side thereof, and the concaved follower C, pivoted at its lower end below the axis of the cylinder and extended upward to a point at or near the upper open end of the frame above the cylinder, substantially as set forth.

2. A grating-machine consisting of the side boards *a a'*, having central apertures, *e' g*, the upper and lower apertures *c'* above and to one side of the central apertures, the apertures *h'* below and to one side of the central apertures, and the segmental slots *j* above the central apertures, the grating-cylinder at the central apertures, the board *b*, having tenons fitting into the apertures *c'*, and the follower C, having tenons *h* and *i*, working in the apertures *h'* and segmental slots *j*, respectively, substantially as set forth.

3. The frame A, having the apertures *c'* and *g* in the side boards, *a a'*, respectively, and the groove *f* in the inner face of the board *a'*, around the aperture *g*, in combination with the grating-cylinder B, secured at one end to the circular head, having a bearing in the aperture *c'*, and the opposite open end of the cylinder having a bearing in the groove *f*, substantially as set forth.

334,932. **RULER FOR SLATES.** GEORGE W. BOLTON and LARS JARGENSEN, Milwaukee, Wis. Filed July 28, 1885. (No model.)

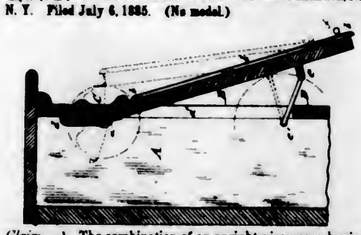


Claim.—1. A ruler consisting of a slotted blade, a slide provided at one end with a recessed cross-piece having a flush edge on one side and a notched edge on the other, and a hand-piece rigidly secured to the slide and adapted to bear upon the blade, substantially as and for the purpose set forth.

2. A ruler consisting of a slotted blade, a slide beveled upon its under face throughout its length, and provided at one end with a cross-piece having a flush edge upon one of its sides, and a beveled, graduated, and notched edge upon the other, and a hand-piece bearing upon the blade and suitably secured to the slide, substantially as and for the purpose set forth.

3. A ruler consisting of a slotted blade, a slide beveled upon its under face throughout its length, and provided at one end with a cross-piece and a screw-threaded stem, the latter adapted to pass through the blade-slot and receive a set-nut, and a hand-piece designed to bear upon said blade and be united to the slide, substantially as and for the purpose set forth.

334,933. **UPRIGHT-PIANO CASE.** STEPHAN BRAMBACH, New York, N. Y. Filed July 6, 1885. (No model.)



Claim.—1. The combination of an upright-piano case having a front opening, a pivoted auxiliary panel within said opening, and a music-rack hinged to said panel and adapted to swing into an inclined position below the panel or into a position to close the front opening of the case, substantially as set forth.

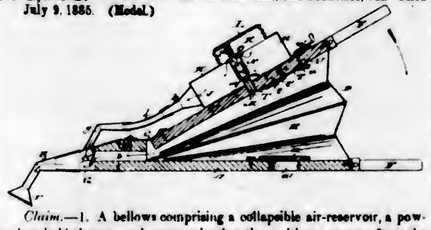
2. The combination of an upright-piano case having a front opening, an auxiliary panel pivoted by center pins to the upper part of said opening, and a music-rack hinged to said panel, substantially as set forth.

3. The combination of an upright-piano case having a front opening, an auxiliary panel pivoted by center pins to the case, a music-rack hinged to said panel, and pivot-links connecting the rack and case, substantially as set forth.

4. The combination of an upright-piano case having a front opening, an auxiliary panel pivoted by center pins to the upper part of the front opening, a music-rack hinged to the auxiliary panel, and pivot-links connecting the rack and case, said pivot-links exerting a locking action on the rack when closed, substantially as set forth.

5. The combination of an upright-piano case having a front opening, an auxiliary panel applied by center pivots to the upper part of said opening and provided with a stop-lip at one edge, a music-rack hinged to the opposite edge of the panel, and links pivoted to lugs of the rack and case, the lugs of the rack being longer than those of the case, so as to move the links over the center of the lugs of the case, substantially as set forth.

334,934. **BELLOWS.** GEO. T. CAMPBELL, San Francisco, Cal. Filed July 9, 1885. (Model.)



Claim.—1. A bellows comprising a collapsible air-reservoir, a powder-box held thereto and communicating therewith, a passage from the powder-box to the air-discharge end or nose of the bellows, a check-valve controlling the direct-air passage from the reservoir to the powder-box, and a spring acting normally to close said valve, substantially as herein set forth.

2. The combination, in a bellows, of the collapsible air-reservoir, outlet *b*, powder-box H, a check-valve fitted thereto and comprising a tube, M, apertured at *m*, a tubular cap, and a spring, P, and a passage from box H to outlet *b* or its nose G, substantially as herein set forth.

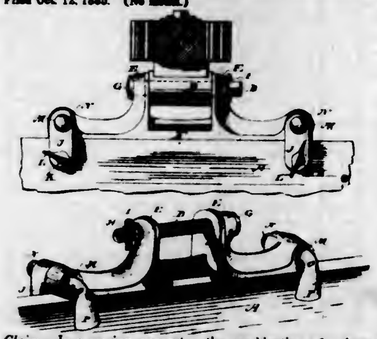
3. The combination, in a bellows, of the collapsible air-reservoir, outlet *b*, powder-box H, a check-valve fitted thereto, and comprising a tube, M, open at both ends and apertured at *m*, a tubular cap, N O, provided with passage *o* under plate O, and a spring, P, and a passage from box H to the outlet-passage G, substantially as herein set forth.

4. The combination, in a bellows, of the collapsible air-reservoir, outlet *b*, powder-box H, check-valve M N O P, a flexible tube, I, connecting box H with the nose G or a tubular offshoot therefrom, a check-valve, S, and a valve, T, substantially as herein set forth.

5. A bellows comprising a collapsible air-reservoir, a powder-box held thereto and communicating therewith, a passage from the powder-box to the air-discharge end or nose of the bellows, and a valve, as at T, substantially as herein set forth.

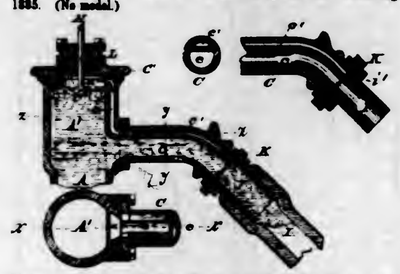
6. The combination, in a bellows, with the collapsible air-reservoir, powder-box H, and a passage from said box to the air-discharge end or nose of the bellows, of a valve, T, slotted at *t*[6] and pivoted at *t*, and a double-armed crank-lever U *u u'*, substantially as herein set forth.

334,935. **ROWING APPARATUS.** WILLIAM CHESCORSKI, Keota, Ind. Filed Oct. 12, 1885. (No model.)



Claim.—In a rowing apparatus, the combination of a base-plate having the rowing-gear secured to its upper side, and having transverse threaded eyes at its ends and downwardly-projecting perforated lips under the eyes, screw-threaded clamping-bolts having their heads formed into clamping-lips and having their ends fitting in the threaded eyes at the ends of the plate, and the clamping-screws fitting in the perforated lips at the ends of the plate, as and for the purpose shown and set forth.

334,936. **PUMP.** JOHN W. COLLIER, Lockport, N. Y. Filed Aug. 3, 1885. (No model.)



Claim.—1. A hand-pump consisting, essentially, of the pump-cylinder A, having base B and upper enlarged chamber, A', provided with a branch, D, the air-chamber E, handle F, and a suitable piston and piston-rod connected with said handle, said chamber A' having a vertical passage commencing at the upper end of said chamber and terminating outside of the same in or near the discharge-nozzle C, substantially as and for the object stated.

2. The combination, with the cylinder A, having the enlarged chamber A', closed by a cap, C', of the nozzle C, having the hose-coupling J K, said chamber being provided with an auxiliary outlet, *a' a''*, terminating in the face of the said nozzle, substantially as and for the purpose specified.

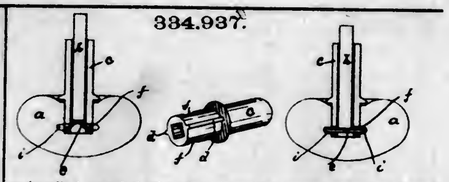
3. In hand and other pumps, a nozzle for the discharge, having a double passage, one being the regular and main discharge and the other an auxiliary one terminating in the uppermost portion of the discharge-chamber, whereby the discharge from the said chamber is through both passages at the beginning of the stroke, and through the main passage only during the return of the same, and whereby said auxiliary passage serves as a vent for the said chamber, to facilitate the discharge through said main passage, substantially as and for the object stated.

4. The nozzle C, having a main passage, *c*, and auxiliary passage *c'*, in combination with a hose-coupling, I, having the closing portion *i'* for said auxiliary passage, as and for the purpose specified.

334,937. **DOOR-KNOB.** WILLIAM H. COMSTOCK, Norwich, Conn. Filed Nov. 6, 1885. (No model.)

Claim.—1. In combination with a neck having lateral passages, substantially as described, and a knob whose central opening is provided with lateral chambers coincident with said lateral neck-passages, a bow of annealed metal adapted to enter said lateral neck-passages, and capable of extension to enter said lateral knob-chambers, substantially as herein described.

2. In combination with a knob having both slots *k* and chambers *i*,



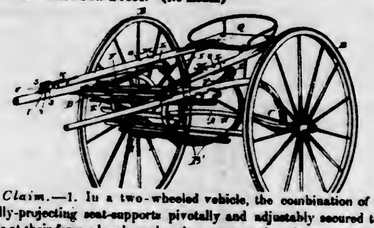
as described, a neck having ribs adapted to engage slots *k*, and lateral passages coincident with said chambers *i*, and a bow of metal adapted to enter said lateral neck-passages, and capable of extension to enter said coincident knob-chambers, as and for the object specified.

334,938. **NECK-YOKE.** REINARD T. COOK, Virginia City, Mont. Filed Aug. 17, 1885. (No model.)



Claim.—The combination, with the pole or tongue A of a vehicle, of the within-described attachment, consisting of a hollow cap or socket, C, applied to the front end of the pole or tongue and provided with a shoulder, *f*, and a downwardly and backwardly projecting hook, *b*, having its nose arranged to occupy a position on the under side of the pole or tongue, and bent upward to within a short distance of the forward end and under side of the cap or socket, the whole for use in connection with the neck-yoke B and its ring or loop *d*, substantially as specified.

334,939. **TWO-WHEELED VEHICLE.** JACOB J. DEAL, Jonesville, Mich. Filed Dec. 4, 1885. (No model.)



Claim.—1. In a two-wheeled vehicle, the combination of rearwardly-projecting seat-supports pivotally and adjustably secured to the shafts at their forward ends, and springs supported at their rear ends from the shafts and having longitudinal slots at their forward ends provided with bolts secured in the seat-supports, as and for the purpose shown and set forth.

2. In a two-wheeled vehicle, the combination of rearwardly-projecting inclined seat-supports secured pivotally and adjustably at their forward ends to the shafts, seat-supporting springs supported at their rear ends from the shafts and having longitudinal slots in their forward ends, plates having perforations registering with the slots in the springs and bearing against their under sides, and bolts passing through the perforations and slots into the seat-supports, as and for the purpose shown and set forth.

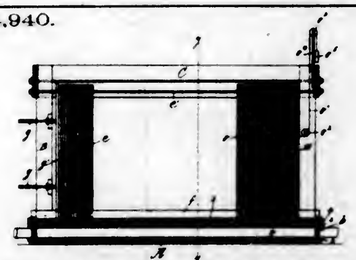
3. In a two-wheeled vehicle, the combination of the shafts having transverse eyes upon their upper sides and connected by cross-bars, seat-supports having lips at their forward ends formed with a series of perforations and connected to the eyes upon the shafts by bolts passing through them, flat springs secured at their forward ends to the cross-bars and having transverse eyes at their slightly upwardly-turned rear ends, springs having longitudinal slots in their forward ends sliding adjustably upon bolts upon the seat-supports and having eyed downwardly and forwardly and upwardly curved rear ends, and links or shackles pivoted with their ends upon bolts passing through the eyed ends of the springs, as and for the purpose shown and set forth.

4. In a two-wheeled vehicle, the combination of the shafts connected by cross-bars, seat-supporting springs movably connected at their rear ends, straps pivoted at their rear ends to the joints of the springs and having cross-slats connecting them and hook-shaped forward ends, and eyed bolts having the hooked ends of the straps engaging their eyes, and having their threaded and nutted upper ends fitting in perforations in the cross-bars, as and for the purpose shown and set forth.

334,940. **LUMBER-DRIER.** GEORGE H. DERBY, Somerville, Mass. Filed Aug. 7, 1885. (No model.)

Claim.—1. A drier comprising the base A, sides *a*, ends *b*, and heating-pipes *c*, constituting a heating-chamber, the drying-frame erected thereon, the supports 3 3 in the top of the heating-chamber, and the quadrangular separating-frames *e*, resting upon said supports, substantially as described.

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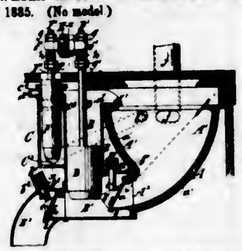
2. In a drier, the base A, sides *a*, ends *b*, and heating-pipes *c*, constituting a heating-chamber, the drying-frame superposed thereon, the supports 3 3 in the heating-chamber, the supporting-rods *c' c'*, and the quadrangular separating-frame *e e*, suspended from and movable upon the rods and sustained by the supports, substantially as described.

3. In a lumber-drier, the heating-chamber consisting of the base-board A, side and end boards, *a b*, and steam-pipe *c* passing therethrough, and frame attached to said chamber, combined with the supporting-rods 3, wire *e'*, and recticulated separators suspended loosely upon said wire, all as set forth, and for the purpose described.

4. In a drier, the drying-frame, the heating-chamber, and supports for the veneers or lumber, combined with separators suspended within the frame and adapted to be slid or moved freely into position one after another against the veneers or boards to be held in place by them and to be dried, and hooks to engage the said separators or veneers to retain the same while the next separator or veneer is being placed in position, substantially as described.

5. In a drier, the drying-frame, the heating-chamber, and supports for the veneers or lumber, combined with separators suspended within the frame and adapted to be slid or moved freely into position one after another, and means, substantially as described, for separately securing a series of narrow boards to the separator, all substantially as and for the purposes described.

334,941. WATER-CLOSET. J. JOSEPH DE RYCKE, New York, N. Y. Filed June 12, 1885. (No model.)



Claim.—1. The combination, with a closet-hopper having at the bottom a laterally-presented outlet throat or nozzle and a valve thereto hinged at its upper edge, so as to open outward and upward, of a soil-pump having at the bottom a laterally-extending chamber or valve-box secured to the throat or nozzle of the hopper, and provided with a discharge outlet and valve leading from the extreme bottom of the chamber or box, and a discharge-pipe leading downward from the discharge-outlet of the chamber or box, substantially as herein described.

2. The combination, with a hopper having a laterally-presented throat or nozzle, a box or chamber, B', connected with said outlet throat or nozzle, and a soil-discharge pipe, B^1, leading from the box or chamber B', of a soil-pump connected with the box or chamber, the valve-seat *a*, extending from the outlet throat or nozzle and inclined downward and outward from the hopper, the inclined valve *b*, hinged at its upper edge and closing automatically on the seat *a*, the valve-seat c^2, leading from the extreme bottom of the box or chamber B' into the discharge-pipe and inclined downward and outward from said box or chamber, and the valve *c*, hinged at the top to open outward and upward from the box or chamber, substantially as herein described.

3. The combination, with a closet-hopper having a laterally-presented outlet and a valve-seat, of a valve hinged at the upper edge to swing upward and outward in opening, and a soil-pump having a plunger, which, when forced down, operates with a wedge-like action upon the back of said valve, substantially as herein described.

4. The combination, with the hopper having a laterally-presented outlet-throat, A^1, and a valve-seat inclined downward and outward, and a valve hinged at the upper edge and closing on said seat, of the soil-pump having a plunger tapered at the lowered end and operating with a wedge-like action on the back of the valve, substantially as herein described.

5. The combination, with the hopper A, having the laterally-presented outlet throat or nozzle, the soil-pump and its valves *b c*, having projections on their backs, of the plungers c^3 and their actuating-springs b^3, acting upon the backs of the valves to hold them closed, substantially as herein described.

6. The combination, with a closet-hopper and a valve-box or chamber communicating with the outlet throat or nozzle of the hopper, and having the soil-discharge pipe extending from it, of a soil-pump consisting of a barrel connected at its lower end with the box or chamber and open at the upper end, and having at the upper end a discharge into the hopper, and a plunger fitting said barrel, substantially as herein described.

7. The combination, with a closet-hopper, of a soil-pump and a water-supply pump consisting of barrels or cylinders provided with suitable valves and plungers fitted thereto, and a pan or basin with the bottom of which the upper ends of the barrels or cylinders communicate, and which has a spout or nozzle delivering into the hopper, substantially as herein described.

8. The combination, with a closet-hopper having a discharge throat or nozzle and an outlet-valve closing thereon, of a soil-pump consisting of a barrel and a plunger, which, when forced down, acts upon said valve to hold it to its seat, a lever for operating the plunger, and a spring which is compressed or put under tension by the downward movement of the lever, and which causes the plunger to act with an elastic pressure or force upon the valve, substantially as herein described.

9. The combination, with a closet-hopper and a soil-pump consisting of a barrel and a plunger and an outlet-valve from the hopper, which is pressed to its seat by the plunger, of a lever or handle for operating the plunger, and a spring interposed between the lever and plunger, for insuring the action of the plunger on the valve, substantially as herein described.

10. The combination, with the hopper A and a pump-barrel, C, and the valve *b* of the pump, of the pump-plunger D and rod D', the lever E, receiving said rod through it, and the nuts *g g'* and spring *h* applied to said rod, substantially as herein described.

11. The combination, with a closet-hopper and soil and supply pumps connected therewith and consisting of barrels or cylinders and plungers fitted thereto, of valves which are held closed by the plungers when down, a lever or handle for operating the plungers, and springs interposed between the lever or handle and plungers, substantially as herein described.

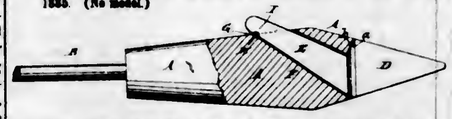
12. The combination, with a closet-hopper, and a water-supply pump consisting of a barrel or cylinder provided with suitable valves and a plunger, which, when depressed, acts to hold the inlet-valve to its seat, of a lever or handle for operating the plunger, and a spring interposed between the lever or handle and the plunger, for insuring the action of the plunger on the valve, substantially as herein described.

13. The combination, with a closet-hopper and a valve opening outwardly therefrom, of a soil-pump consisting of a barrel and a plunger operating, when down, to hold the valve closed, a lever for operating the plunger, and a hook or catch for holding the lever and plunger in their lowermost position, substantially as herein described.

14. The combination, with a closet-hopper and a valve opening outward therefrom, of a soil-pump consisting of a barrel and a plunger operating, when down, to hold the valve closed, a lever for operating the plunger, and a spring interposed between the lever and plunger, and a hook or catch for holding the lever and plunger depressed, substantially as herein described.

15. The combination, with a closet-hopper and a valve opening outward therefrom, of the soil-pump, and a water-supply pump consisting of a barrel provided with suction and discharge valves, and a plunger whereby water will on the downward movement of the said plunger be discharged into the hopper, substantially as herein described.

334,942. SOLDERING-IRON. HENRY M. DIXON, New York, assignor to himself and Henry S. Hollingsworth, Brooklyn, N. Y. Filed July 21, 1885. (No model.)

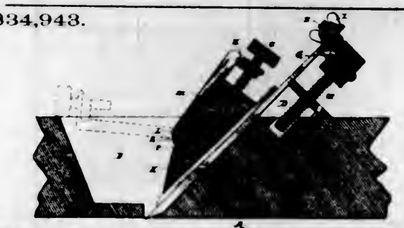


Claim.—The soldering-iron comprising the stock having its larger or tip end countersunk and an oblique perforation extending through it, and the tip shouldered at its inner end and provided with an oblique tang extending from said shoulder, and having in its under side near the outer end a transverse groove, together with a pin passed through an aperture formed by said groove and a groove in the stock jointly, substantially as shown and described, and for the purpose set forth.

334,943. PLANE. AUGUST DOLL, Lena, Ill. Filed Nov. 11, 1885. (No model.)

Claim.—1. In a plane, a wedge provided with one or more notches, a lever fulcrumed in front of said wedge, and provided with a spur or

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tongue for engaging said notches, and an adjusting-screw normally engaging the top of said wedge, and seated in the upper end of said lever, substantially as specified.

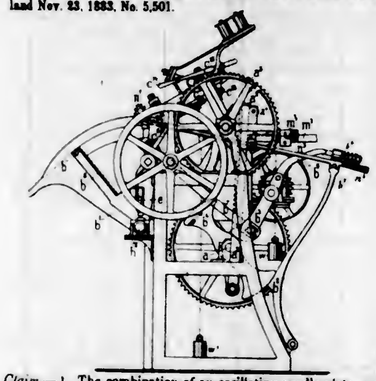
2. In a plane, an adjusting device consisting of a clamp-piece secured to the bit, and a screw having a seat secured to the body of the said plane and engaging said clamp-piece, combined with a bit-clamping device consisting of a wedge with a notch or notches on it, a lever fulcramed in front of said wedge and having a spur or tongue engaging said notches, and an adjusting-screw seated in the top of said lever and engaging with the upper end of said wedge, substantially as specified.

334,944. MIRROR-HINGE. PETER FORD, Somerville, Mass. Filed May 19, 1884. (No model.)



Claim.—The within-described mirror-hinge, consisting, essentially, of the ears *a*, having the end extensions or wings *b* in alignment with said ears, each wing having a foot arranged at right angles thereto and independent of the foot on the opposite wing of the same ear, the ears provided each with an orifice located nearer the bottom than the top thereof, a rivet to connect the ears, and a segmental-shaped spring-washer adapted to pass down between the feet pertaining to one of the halves of the hinge and with its chord or line of cut flush with the bottom of said hinge, all substantially as shown and described, and for the purpose set forth.

334,945. BOOK-SEWING MACHINE. RUDOLPH FRANK, Hamburg, Germany. Filed Apr. 9, 1884. (No model.) Patented in France Nov. 10, 1883, No. 158,470; in Belgium Nov. 12, 1883, No. 63,183, and in England Nov. 23, 1883, No. 5,501.



Claim.—1. The combination of an oscillating needle-plate, a series of needle-bars arranged in two sets, a laterally-reciprocating plate for actuating said sets of needle-bars alternately, a single shuttle operating with both sets of needle-bars, and means, substantially as described, for reciprocating the shuttle, substantially as set forth.

2. The combination, with an oscillating needle-plate, of a series of needle-bars arranged in two alternating sets, and a laterally-reciprocating plate having straight grooves and cam-grooves for alternately operating said sets, substantially as specified.

3. The combination of the oscillating needle-plate *b*, arms *b'*, cam b^4, fulcramed levers b^2 b^3, spring-cushioned lever b^5, and rods b^1, connecting the lever b^3 with the needle-plate *b'*, substantially as described.

4. The combination of two alternating sets of needle-bars, *c c'*, laterally-reciprocating plate c^3, having straight and cam grooves, fulcramed levers *f d* and *f' d'*, having pins d^3 d^4, and fingers d^5, passing through openings of the plate c^3, slotted disk d^1, pin d^2, and inclines d^6, substantially as set forth.

5. The combination of two alternating sets of needle-bars, *c c'*, a laterally-reciprocating plate, c^3, guide-rods c^7, pin c^8, spirally-grooved rotary reciprocating worm c^9, transmitting-gears c^{10} a^3, shaft a^4, pinion a^5, rack-bar a^6, and main shaft *a*, having crank *a'*, pivoted to the rack-bar, substantially as specified.

6. The combination of the reciprocating needle-bars *c c'*, take-up levers c^{11}, and tension-plate c^{12}, having lever c^{14}, and transverse guide-bars c^5, having holes for the passage of the needle-threads, substantially as specified.

7. The combination of the lever b^3, rack-bar n^3, pinion n', knocker *n*, presser-plate m^2, guide-rails *m'*, thread-plate *m*, and clutches m^4, the clutches being located at the rear ends of the rods m^3, substantially as set forth.

8. The combination, with the needle-plate *b* and supporting-plate b^4, of alternating sets of awl-holders *o o'*, two sets of fulcramed levers, *q r* and *q' r'*, and a stirrup, i^7, attached to the rail of the shuttle-driver, and provided with inclines *i i'*, for actuating the awl-holders, substantially as specified.

9. The combination of the transverse rail *c*, having guide-pins i^9, a sliding stirrup, i^7, having inclined slots i^4 and inclines *i i'*, a fulcramed lever, i^5, having pin i^6, and an oscillating stop-lever, i^7, said lever i^5 being actuated by a finger on the oscillating shaft b^3, substantially as set forth.

334,946. FOLDING TABLE. JAMES P. GAGE, Fairfield, Iowa. Filed Apr. 28, 1885. (Model.)

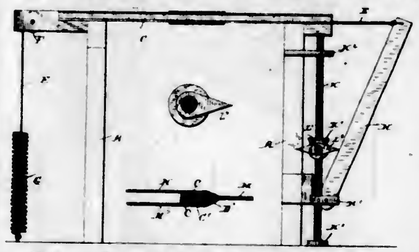


Claim.—1. In a folding table, the combination of the table-body, the front and rear trestles, each composed of front and rear legs hinged together at the top, and the rear trestle connected to the body by means substantially as described, and the hinged connecting-bars F, F', G, K, and K', constructed and arranged substantially as specified.

2. In a folding table, the combination of the body A, frame B, provided with the ways *b' b'*, and block D, traveling in said ways, with the trestle E, connected to said block by the hinges e^3, the trestle H, having its upper edge free, the hinged bars F F', joining the front and rear legs of the rear trestle, the hinged bars K K', connecting the front and rear legs of the front trestles, and the hinged bar G, connecting the front and rear trestles together, substantially as specified.

3. The combination, with the body A, provided with the recess d^7, the frame B, secured to the body, and having the loops C secured to it, the block D, traveling in ways in said frame and having the button d pivoted to it, and the rear trestle, E, hinged at its upper end to said block, of the connecting-rods F, F', G, K, and K', the front trestle, H, and the rods L L, connected thereto, all constructed and arranged substantially as shown and described, for the purpose specified.

334,947. MECHANISM FOR CUTTING DOUBLE-PILE FABRICS. CHAS. R. GARRATT, Bridgeport, Conn. Filed June 19, 1884. (No model.)



Claim.—1. The combination, with the frame-work of a loom having a cross-piece formed with a guiding-groove, of a knife adapted to slide flatwise in said groove, and having a cutting-edge the main part of which is straight, but which is rounded or chamfered off at both ends, and mechanism for reciprocating said knife in said guiding-groove, substantially as set forth.

2. The combination, with the frame-work of a loom having a cross-piece formed with a guiding-groove, of a knife adapted to slide flatwise in said groove, and having a straight cutting-edge which is rounded off at both ends, a lever, a spring, wires or cords for connecting said lever and spring with said knife, and mechanism for vibrating said lever, substantially as set forth.

3. The combination, with the frame-work of a loom having a cross-

piece formed with a guiding-groove, of a knife adapted to slide flatwise in said groove, and having a straight cutting-edge which is rounded off at both ends, a lever, a spring, a cam, wires or cords for connecting said lever and spring with said knife, an operating-shaft on which said cam is mounted, a driving-shaft, and connections between the latter and said operating-shaft, substantially as set forth.

334,948. AX-BLANK. HENRY HAMMOND, New Haven, Conn. Filed Oct. 26, 1885. (No model.)



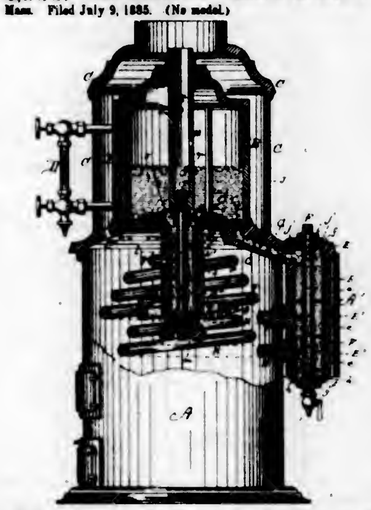
Claim.—A blank for an ax, ax-poll, hatchet, or other analogous article the head of which is substantially identical in thickness with the head of the article to be made, and the eye portion of which is as thick as any other portion, except the head, and as thick as the aggregate of the two cheeks of the article to be made, all substantially as described in the foregoing specification, and as illustrated in Figs. 3 and 4, 5 and 6, or Figs. 13 and 14, 15 and 16, of the accompanying drawings.

334,949. METALLIC FELLY FOR WHEELS. JAMES W. HAWORTH, Decatur, Ill. Filed Nov. 10, 1885. (No model.)



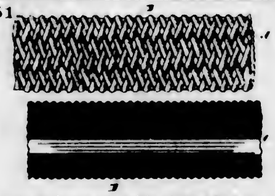
Claim.—In wheels, the combination of felly *c*, concave in cross-section, cross-braces *e f*, embossments *a* on braces *e f*, and tire *d*, having longitudinal concavity *b*, as and for the purpose set forth.

334,950. STEAM-GENERATOR. WILLIAM A. HODGKINS, Lawrence, Mass. Filed July 9, 1885. (No model.)



Claim.—In a steam-generator, the combination of the sectional tubes E E' E'', one or more of which are connected with the outer and lower end of a steam-tube made in helical spiral shape, the sectional tubes H H' H'', one or more of which are connected with the inner and upper end of such steam-tube, the furnace A, steam-dome B, ports J, and passage G, and means, substantially as described, for holding the sections of said sectional tubes together, substantially as and for the purpose hereinbefore set forth.

334,951. HOSE. ALBERT T. HOLT, Brooklyn, assignor to Rudolph A. Loewenthal and Albert G. Morganstern, both of New York, N. Y. Filed Sept. 17, 1884. (No model.)



Claim.—As an improved article of manufacture, a hose consisting of a single homogeneous vulcanized rubber tube and a tubular fabric braided or woven in place exteriorly to said vulcanized tube to protect the same, and embedded in the outer surface of the vulcanized substance which permeates the interstices of the fabric, the braiding having been performed prior to the vulcanization, and the rubber tube having subsequently been forced outward into the interstices of the fabric by internal pressure and there vulcanized, substantially as set forth.

334,952. TIRE-HEATING FURNACE. MONTRAVILLE HOYT, Jamaica, N. Y. Filed Oct. 31, 1884. (No model.)

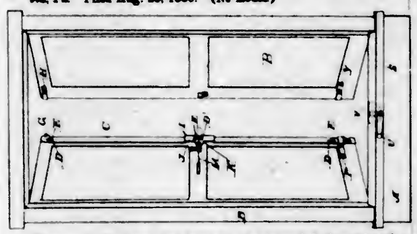


Claim.—1. The heater for cementing rubber tires, composed of the reservoir for a fluid, such as alcohol, the burners, the loops upon the reservoir, and the suspending-hooks, the lower portions of which pass through the suspending-loops, substantially as set forth.

2. The heater for cementing rubber tires, composed of a reservoir having a recess at one side, and two burners, and suspending-hooks, substantially as specified, so that one of the spokes can be within the recess when the heater is in use, as set forth.

3. A heater for cementing rubber tires, composed of a reservoir for a burning-fluid, such as alcohol, a burner upon each reservoir, and hooks by which the reservoir can be suspended from the wheel, as and for the purposes set forth.

334,953. BOLT FOR SHUTTERS, &c. HENRY J. HUSSEKER, Laurelton, Pa. Filed Aug. 25, 1885. (No model.)



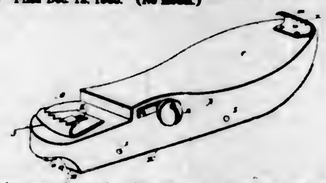
Claim.—1. In a lock for shutters, a horizontal shaft passing through the window-sill, having inwardly a crank and outwardly a bisected metal disk, so that when partially turning said disk will come in contact with a vertical bar engaging it with the recess in the frame, and simultaneously a pivotal bolt operated by a spring is turned centrally on the shutters, thus securing them in position, substantially as described.

2. In a lock for shutters, a horizontal shaft extending through the sill of the frame, having inwardly a crank and outwardly a bisected metallic disk provided with a lug on its outer face, which lug engages with a curved recess in the lower end of a vertical bar, while the periphery of the bisected disk may engage with a shoulder on the end of the vertical bar, and thus operate said bar vertically, all as shown and described.

3. The combination of the vertically-reciprocating bar, having the central portion raised to receive therein a pivotal bolt, with the spring engaging with the stud at one side of the pivotal bolt and operating through a slot in a lateral wing of the vertical bar, substantially as described.

4. The combination of the vertically-reciprocating bar, the central portion of which is raised to receive therein a pivotal bolt, with the spring engaging with the stud at one side of the pivotal bolt and operating through a slot in the lateral wing of the said vertical bar, the lower end of said bar having therein a curved slot, with which a lug on the outer face of said bisected disk engages, the whole arranged and operating substantially as shown and described.

334,954. COASTING-SKATE. EDWARD S. KNOWLES, Little Falls, N. Y. Filed Dec. 12, 1885. (No model.)



Claim.—1. A coasting-skate having a boat-shaped body formed with a flat keel portion, as an improved article of manufacture.

2. In a coasting-skate, the combination of a boat-shaped body formed with a flat metal-covered keel portion, a rigid toe-clamp having an inwardly-bent serrated flange, and a heel-clamp having an inwardly-bent flange and means for adjusting it longitudinally, as and for the purpose shown and set forth.

3. In a coasting-skate, the combination of a boat-shaped body formed with a flat metal-covered keel portion, a rigid toe-clamp having an inwardly-bent serrated flange, a heel-clamp having an inwardly-bent serrated flange, and having a longitudinal slot in its base portion, and a screw-bolt having a square shank fitting in the slot of the clamp and passing through a perforation in the heel of the skate, and provided with a nut bearing against the under side of the heel portion of the skate, as and for the purpose shown and set forth.

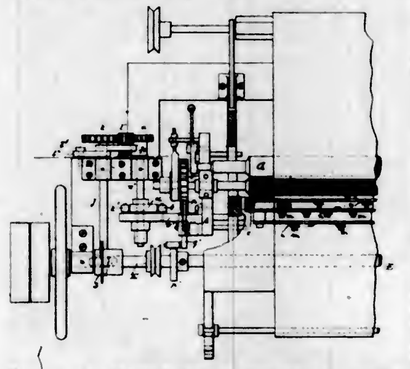
4. In a coasting-skate, the combination of a boat-shaped body, formed with a flat keel portion and an upwardly-turned tapering bow, with a metallic strip secured to the keel by means of screws, and at its tapering forward end by means of a staple driven into the upturned tapering bow, as and for the purpose shown and set forth.

5. In a coasting-skate, the combination of a boat-shaped body formed with a flat metal-covered keel and with a cut-away portion upon the under side of its heel portion, a rigid toe-clamp having an inwardly-projecting flange, a heel-clamp having an inwardly-bent flange and a longitudinally-slotted base-plate, and a nutted bolt having its square shank fitting in the slot of the heel-clamp and passing through a perforation in the heel portion of the skate, and having its nut bearing against the cut-away portion of the heel portion of the skate, as and for the purpose shown and set forth.

6. In a coasting-skate, the combination of a boat-shaped body formed with a flat metal-covered keel portion and having transverse perforations near the keel, a brake consisting of a flat block having its under side roughened, and an upwardly-projecting flange having its inner side inclined, and a bolt fitting into a perforation in the flange of the brake and in the aperture in the skate, as and for the purpose shown and set forth.

7. In a coasting-skate, the combination of a boat-shaped body formed with a flat metal-covered keel, and with the forward portion of its upper side concave to fit the sole and the heel end of the upper side cut away to fit the heel of a boot or shoe, a rigid clamp at the toe of the skate, and an adjustable clamp at the heel end of the skate, as and for the purpose shown and set forth

334,955. QUILTING-MACHINE. WILLIAM KOCH, New York, N. Y. Filed Jan. 30, 1884. (No model.)

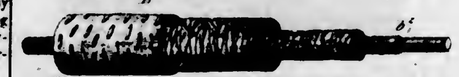


Claim.—1. In a quilting-machine, the combination of a vertically-reciprocating needle-bar having a series of needles arranged in three rows, one behind the other, the intermediate row having twice as many needles as the first or third row, the needles of said intermediate row being set in a diagonal line with and equidistant from the needles of the first and third rows, devices for feeding the fabric forward beneath the needles, and mechanism whereby laterally-reciprocating motion is imparted to the entire sewing mechanisms, substantially as set forth.

2. In a quilting-machine, a needle-bar constructed with three rows of needles, one behind the other, the intermediate row having twice as many needles as the first and third row, which needles are located in a diagonal line with and equidistant from the needles of the first and third rows, substantially as specified, in combination with means for operating the needle-bar.

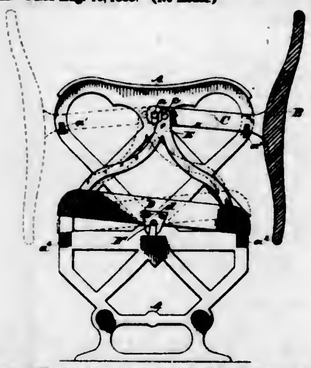
3. In a quilting-machine with two or more parallel needle-bars and needles fixed thereto, a series of openings in the needle-bars, whereby the set-screws of the rearmost needle-bars may be adjusted, as and for the purpose described.

334,956. WRINGER-ROLL. DANIEL LAMPSON, Rockford, Ill. Filed June 25, 1884. (Model.)



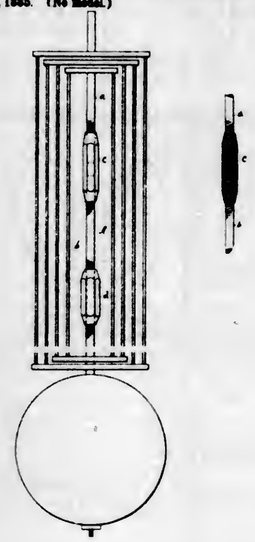
Claim.—In a wringer-roll, the combination of the flanged supporting-shaft, the fabric-quilted base, the rubber sleeve, the secondary quilted covering of coarse fabric treated with cement, as described, and the outer quilted covering of canvas, all arranged substantially as and for the purpose herein set forth.

334,957. REVERSIBLE CAR-SEAT. JOHN LESSIAK, Wakefield, Mass. Filed Aug. 10, 1885. (No model.)



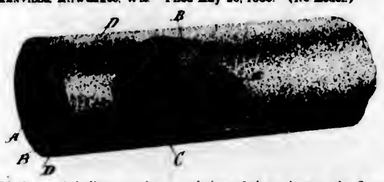
Claim.—The combination, substantially as before set forth, of the reversible back, the striker-arms of which are provided with crank-pins, the seat suspended from said crank-pins by standards rigidly secured to such seat, the guide-pins, and the guides for said guide-pins.

334,958. PENDULUM. CHAS. A. MARONY, Philadelphia, Pa. Filed May 13, 1885. (No model.)



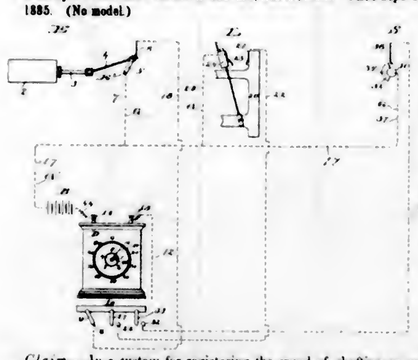
Claim.—An adjustable compensating pendulum rod or rods consisting of the rod or rods A, formed of substances, *a b*, of different expansibility, having their ends threaded, and connected together by a swivel-screw, *c*, by means of which the length of one of the pieces *a b* can be increased or diminished while the other is diminished or increased without altering the length of A, substantially as set forth.

334,959. **STEAM BOILER AND PIPE COVERING.** CHARLES B. MANVILLE, Milwaukee, Wis. Filed May 26, 1885. (No model.)



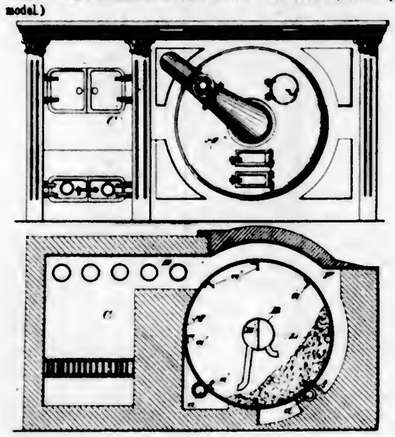
Claim.—A boiler-covering consisting of three layers, the first or inner coating consisting of clay mixed with wool or wool-dustings and glue, the next of a wrapping of fabric, and the third or outer coating of wool or wool-dustings mixed with soluble glass, as set forth, and in the proportions herein described.

334,960. **APPARATUS FOR INDICATING THE SPEED OF SHAFTING, MACHINERY, &c.** WILLIAM B. MASON, Boston, EDWIN J. WESCOTT, Hyde Park, and WILLIAM L. STEVENS, Boston, Mass. Filed Sept. 12, 1885. (No model.)



Claim.—In a system for registering the speed of shafting or machinery, a central office, two or more electric circuits centering therein, circuit-controlling devices in each of the said circuits and located at or near and operated by the said shafting or machinery, combined with a registering device and with circuit-controllers, one in each circuit, located in the said central office, said registering device being connected to one member of each of said circuit-controllers, whereby the said registering device may be placed in any one of the said circuits, to operate substantially as described.

334,961. **PROCESS OF DESULPHURIZING GOLD AND SILVER ORES.** JOSEPH H. MATHEWS, Canton, Ohio. Filed Nov. 12, 1884. (No model.)



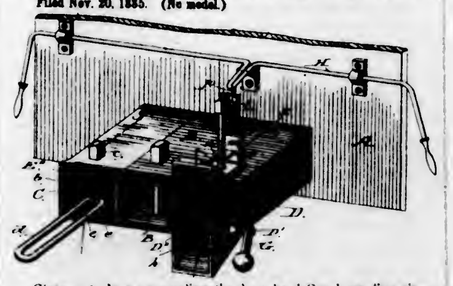
Claim.—1. The process of desulphurizing and oxidizing the base metals of gold and silver ores, consisting, essentially, in heating the ore in a closed vessel to degrees of heat ranging from 400° to 600° Fahrenheit, and at the same time subjecting the ore to the action of superheated steam under pressure, substantially as set forth.

2. The process of desulphurizing and oxidizing the base metals of gold and silver ores, consisting, essentially, in heating the ore in a closed vessel to degrees of heat ranging from 400° to 600° Fahrenheit, and preferably within the range of from 500° to 550°, and at the same time subjecting the ore to the action of superheated steam under pressure, substantially as set forth.

3. The process of desulphurizing and oxidizing the base metals of gold and silver ores, consisting, essentially, in heating the ore in a closed vessel to degrees of heat ranging from 400° to 600° Fahrenheit, and preferably within the range of from 500° to 550°, and at the same time subjecting the ore to the action of superheated steam under a pressure ranging from ten to fifteen pounds per square inch, and tumbling or stirring the ores to expose all parts of the mass alike to the action of the steam, substantially as set forth.

4. The process of desulphurizing and oxidizing the base metals of gold and silver ores, consisting, essentially, in heating the ore in a closed vessel to a temperature ranging from 400° to 600° Fahrenheit, and at the same time subjecting the ore to the action of superheated steam under pressure, and stirring the ores to expose all parts thereof alike to the action of the steam, substantially as set forth.

334,962. **CAR-COUPLING.** EUGENE L. MATTESON, Wever, assignor of one-half to Robert W. Curtis and James B. Diver, both of Keokuk, Iowa. Filed Nov. 20, 1885. (No model.)



Claim.—1. In a car-coupling, the draw-head C and coupling-pin *c*, in combination with a jaw, E″, for holding the link, and a weighted lever for keeping the jaw against the link, substantially as herein described.

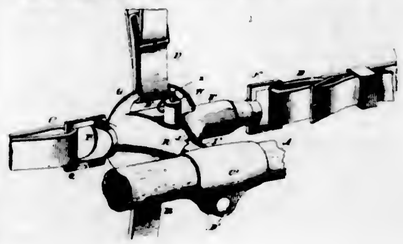
2. In a car-coupling, the draw-head C and the coupling link and pin, in combination with a holding-jaw, E″, provided with an arm, *a*, a transverse shaft, E, and a weighted lever, E′, substantially as herein described.

3. In a car-coupling, the draw-head D, provided with an opening, *h*′, and the coupling-pin *g*, in combination with a gate, D″, for supporting the pin, and having an opening, *h*, through which said pin passes when released, a shaft, D′, upon which the gate is mounted, and a weighted lever on the end of the shaft for returning the gate to its normal position when the pin is withdrawn, substantially as herein described.

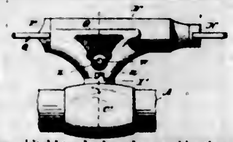
4. In a car-coupling, the combination, with a draw-head having an automatically-operating gate, of a coupling-pin supported upon said gate, a sliding plate attached to the pin, and a connection operated from the side of the car for withdrawing the pin, substantially as herein described.

5. In a car-coupling, the draw-head, the pivoted gate, and the coupling-pin, in combination with a bar secured to the draw-head, a plate moving upon said bar and engaging the pin, an operating-shaft, and a connection between the plate and shaft, whereby the pin is permitted to engage or be withdrawn from the link, substantially as herein described.

334,963. **HITCHING DEVICE.** WM. G. MAUK, Basil, Ohio. Filed Oct. 29, 1885. (No model.)



334,963.



Claim.—1. In a hitching device, the combination of a casting secured to the harness and having a horizontal perforation or bore in its side, a bolt projecting horizontally inward from the shaft of a vehicle, fitting within the bore and having a vertical perforation at its end, and a vertically-sliding bolt passing through the bore of the casting and through the perforation of the bolt, as and for the purpose shown and set forth.

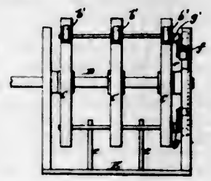
2. In a hitching device, the combination of a casting secured at each side of the harness and having a conical projection upon its outer side, formed with a horizontal bore having vertical notches in the annular face at its outer end, and formed with a vertical perforation intersecting the bore, and provided with an enlargement at its upper end, a cap fitting in the enlargement and having a perforation at its closed upper end, a pin sliding in the vertical perforation and with its upper end in the perforation of the cap, having a ring at its upper end, a spiral spring bearing against the closed upper end of the cap and a shoulder upon the pin, and a clip secured upon the shaft of a vehicle, and having an inwardly-projecting bolt formed with a vertical perforation registering with the vertical perforation in the bore, and with an annular shoulder at its inner end having vertical lips engaging the notches in the face of the conical projection, as and for the purpose shown and set forth.

3. In a hitching device, the combination of a cylindrical casting having a horizontal perforation or bore in its outer side and having bails projecting upward and downward near its rear end and a longitudinal bore enlarged to form a rearwardly-facing shoulder, a piston within the bore having a tag-eye at the forward end of its rod, a spiral spring bearing against the piston and against the shoulder formed within the bore, a screw-plug fitting in the rear end of the bore and having a holdback-strap eye, and a bolt projecting inward from the shaft of a vehicle and engaging into the horizontal bore in the casting, as and for the purpose shown and set forth.

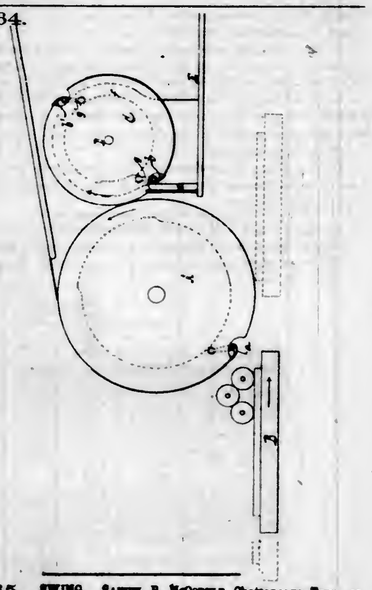
4. In a hitching device, the combination of a cylindrical casing having a laterally-projecting conical projection formed with a horizontal bore intersected by a vertical perforation and having vertical notches in the annular face of its outer end, and having a longitudinal bore enlarged to form a rearwardly-facing shoulder, bails projecting upward and downward from the rear portion of the casting, a piston sliding within the bore and having its rods provided at its forward end with a tag-eye, a spiral spring bearing against the piston and the shoulder within the bore, a screw-plug at the end of the bore having an eye at its rear end, a cap fitting in the enlarged upper end of the vertical perforation in the conical projection, a pin sliding in the said perforation and in a perforation in the top of the cap, a spring bearing against the top of the cap and against a shoulder upon the pin, and a clip having perforated lips at its free edges provided with a notted bolt for clamping it upon a shaft, and having an inwardly-projecting bolt having a vertical perforation, and an annular shoulder at its base formed with vertical lips, as and for the purpose shown and set forth.

334,964. **SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES.** CHARLES B. MANSON, Westerly, R. I. Filed July 30, 1885. (No model.)

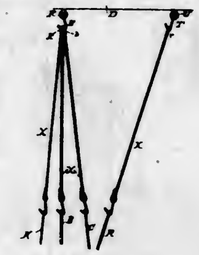
Claim.—The combination, with the impression-cylinder A of a printing-press having sheet-holding grippers *a*, of a series of circular reels, C, mounted on a shaft, D, common to all, and having their peripheries arranged in close proximity to the periphery of the impression-cylinder, to receive the printed sheet directly from the latter, said reels revolving with the same superficial velocity as the cylinder, a series of grippers located, respectively, at the peripheries of the said reels and carried around by the latter, mechanism, substantially as described, operating to close the reel-grippers upon the printed sheet carried by the impression-cylinder simultaneously with the release of the printed sheet by the cylinder-grippers, a sheet-receiving table arranged beneath the reels, and stops rising from the table and extending up between the reels, substantially as described.

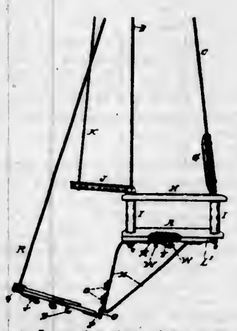


334,964.



334,965. **SWING.** SAMUEL B. MCCORKLE, Chattanooga, Tenn., assignor of one-fourth to Charles A. Heyt, same place. Filed Aug. 17, 1885. (No model.)





Claim.—1. In a swing, the combination of a chair or seat, front suspenders, B, rear suspenders, C, play-board or table J, secured by its rear side to the front suspenders, and a suspender, K, by which the front edge of the platform or table is supported, substantially as set forth.

2. In a swing, the combination of a seat, front suspenders, B, rear suspenders, C, legs N, secured to the bottom of the seat, and having a series of paired rings O, foot-board Q, having hooks P secured to its rear edge and engaging the rings O, and a suspender, E, supporting the front edge of the board, substantially as set forth.

3. In a swing, the combination of a detachable foot-board whose legs N have dovetailed blocks M, that engage in corresponding grooves.

L, on the seat A, and are retained by spring-catches V and a series of keepers, W, substantially as set forth.

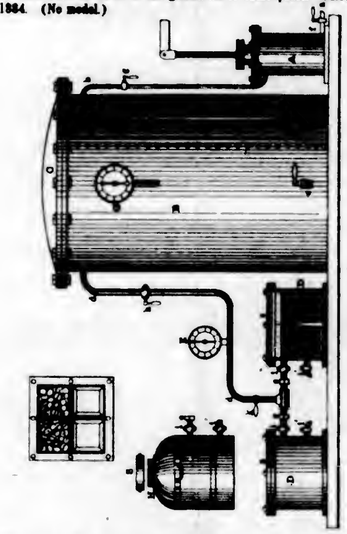
4. In a swing, the combination of a seat, A, paired cleats L', forming grooves L, blocks M, sliding in the grooves, legs N, secured to the blocks, and a foot-board supported on the legs, substantially as set forth.

5. In a swing, the combination of a seat, A, having grooves L, blocks M, sliding in the grooves, legs N, secured to the blocks, a foot-board secured to the legs, and the spring-catches V and series of keepers W, substantially as set forth.

6. In a swing, the combination, with the knotted cord R, of the series of hooks S on the under side of the hinged foot-board Q, as and for the purpose set forth.

334,966. APPARATUS FOR PRESERVING BY GAS.

Louis McMURRAY, Baltimore, Md., assignor of three-fourths to Edgar Malin, Arthur W. Lawton, and Louis S. Houghton, all of same place. Filed June 20, 1884. (No model.)



Claim.—1. In an apparatus for keeping and preserving fruits and vegetables, the pump A and preserving-vessel D, in combination with the intermediate gas-receiving tank, B, the said tank provided with the cock *c*, and pressure-gage, as described and set forth.

2. In an apparatus for keeping and preserving fruits and vegetables, the combination of the force-pump A, the intermediate gas-receiving tank, B, and pipe *d*, provided with the coupling *e*, and pressure-gage E, arranged and operating as set forth.

3. In an apparatus for keeping and preserving fruits and vegetables, the combination of the pump A, intermediate tank, B, having the cock *c*, connecting-pipes *b* and *d*, and cocks *g* and *h*, substantially as set forth.

334,967. APPARATUS FOR PRESERVING FRUITS.

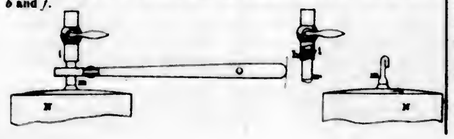
Louis McMURRAY, Baltimore, Md., assignor of three-fifths to Edgar Malin, Arthur W. Lawton, and Louis S. Houghton, all of same place. Filed July 9, 1884. (No model.)

Claim.—1. In an apparatus for preserving fruits and vegetables, the vacuum-tank A and gas-pressure tank D, connected by the pipe G, in combination with the pump B, having the valves *s* and *t*, connected together by suitable tubes and provided with the cocks *a*, *b*, and *c*.

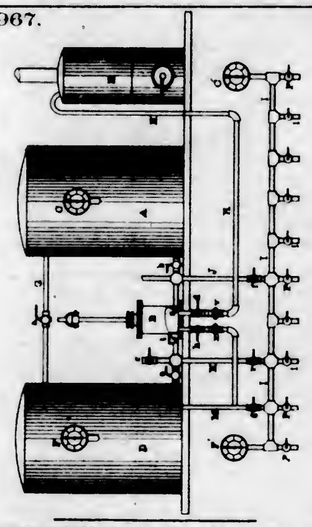
2. In an apparatus for preserving fruits and vegetables, the pump B, for inducing a vacuum, in combination with the vacuum-tank A, the pipes J and I, the latter being provided with the nozzles *i*, and having means for connecting and disconnecting the same with the packing-vessels.

3. In an apparatus for preserving fruits and vegetables, the gas-pressure tank D, vacuum-tank A, pump B, and generator E, with their connections, in combination with the pipes J, M, and I.

4. In an apparatus for preserving fruits and vegetables, the pump B, in combination with the vacuum-tank A, having suitable tubular connections, the pipe I, provided with the nozzles *i*, the pipe J, and the cocks *b* and *f*.



334,967.



334,968. TRUSS.

GERHARD MILLER, Newark, N. J. Filed July 16, 1885. (No model.)
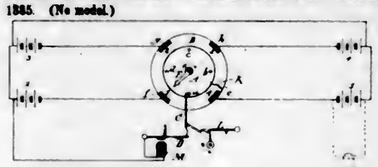


Claim.—1. In a truss, the combination, with a pad, as *a*, and a spring-actuated lever arranged in said pad, of an automatically-adjustable pad consisting of plates *b* and *d*, placed without and within said pad *a*, respectively, and connected by rods passing through perforations in the pad, for the purposes set forth.

2. In a truss, in combination, a shell or pad, *a*, plates *b* and *d*, arranged without and within said shell, respectively, and connected by rods, which pass through perforations in the shell, a spring-actuated lever pivoted within said shell, one end of which bears upon the plate *d*, and a strap which is attached to the ends of the lever, for the purposes set forth.

3. In a truss, in combination, a shell or pad, *a*, plates *b* and *d*, arranged without and within said shell, respectively, and connected by rods which pass through perforations in the shell, a spring-actuated lever, one end of which is bifurcated and provided with posts h h' h^2 thereon, which engage with the plate *d*, said lever being also provided with hooks i i' i^2, a strap, *m*, which is attached to the hooks i i' i^2 on the lever and passes around the body, and a strap, *o*, which is attached to the pad *a*, and extends down between the thighs, and is connected with the waist-strap, substantially as and for the purposes set forth.

334,969. APPARATUS FOR AUTOMATICALLY TESTING ELECTRICAL CIRCUITS.

GEORGE F. MILLIKEN, Boston, Mass. Filed May 16, 1885. (No model.)



Claim.—1. An automatic device for testing and signaling defects or faults in an electrical circuit, containing the following elements, viz: a battery or other suitable current-generator; an electro-magnet, with its armature-lever and armature; a moving part; an arm normally extending across the path of motion of the moving part, said arm being made flexible or resilient, so as to yield and allow the moving part to pass it, and so connected with the armature-lever that when this is moved by the energized magnet the arm will be clear of the moving parts; an alarm connected with the arm and armature and operated when the former is displaced, and two contact-points so located relatively to the arm and moving part as to come together when the said arm and said moving part are in contact, and thereby establish an electrical connection between the electro-magnet and the circuit or other service to be tested, all as set forth.

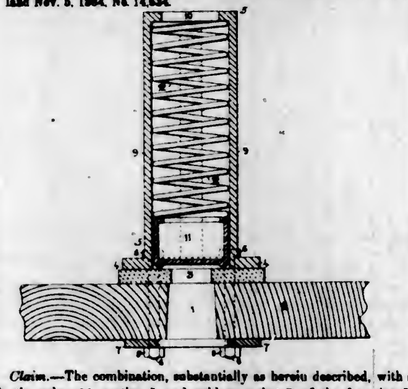
2. An automatic device for testing and signaling defects or faults in a series of electrical circuits, said device containing the following elements, viz: a battery or other suitable current-generator; an electro-magnet, with its armature-lever and armature; a series of moving parts or pins preferably carried by clock-work; an arm normally extending across the path of the moving parts or pins, said arm being made flexible or resilient, so as to yield and allow the moving pins to pass it, and also being so connected with the armature-lever that when this is moved by the energized magnet the arm will be clear of the moving pins; a series of fixed contacts, each connected with one of the lines or circuits to be tested; a moving contact-point arranged to make contact successively with each of the said fixed contacts when its corresponding pin is pressing against the said arm, and thereby to establish an electrical connection between the electro-magnet and the circuit or other service to be tested, and an alarm connected with the arm and armature and operated when the former is displaced, all as set forth.

3. In an automatic device for testing and signaling defects or faults in an electrical circuit or circuits, the combination of a testing-battery, Ba, electro-magnet M, armature D, arm C, dial A, carrying pins *a b c d*, moving contact K, fixed contacts *e f g h*, and an alarm, as set forth.

4. In an automatic device for testing and signaling defects or faults in an electrical circuit or circuits, the combination of a testing-battery, Ba, electro-magnet M, armature D, arm C, dial A, carrying pins *a b c d*, and pointer or index F, surrounding rim B, having numbers 1 2 3 4, corresponding to the circuits to be tested, moving contact K, fixed contacts *e f g h*, and an alarm, as set forth.

334,970. APPARATUS FOR AUTOMATICALLY CLOSING THE TAP-HOLES OF CASKS.

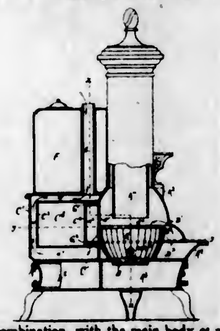
JOHN E. MIDDITT and JOHN H. VERKINS, Nottingham, England. Filed Sept. 8, 1885. (No model.) Patented in England Nov. 5, 1884, No. 14,634.



Claim.—The combination, substantially as herein described, with a cask, the valve 11, casting 5, and rubber gasket 3, of the face-ring 7, secured outside of the cask around the tap-hole, and bolts passing through said face-ring and the flange 4 of the casting 5, said parts being constructed and arranged for co-operation substantially as and for the purpose specified.

334,971. COMBINED SELF-FEEDING COOKING AND HEATING STOVE.

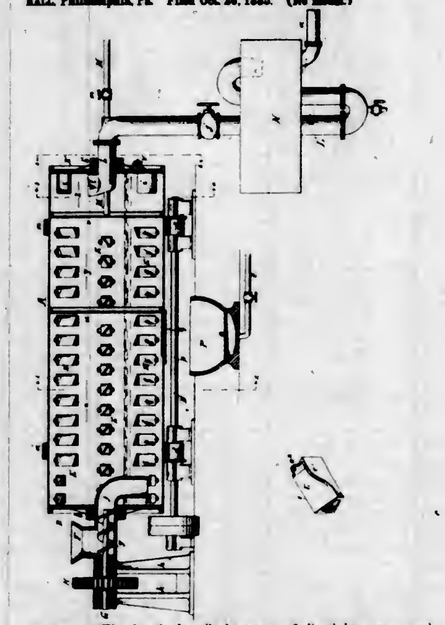
JOHN H. NEVINS, Minneapolis, Minn. Filed Jan. 30, 1885. (No model.)



Claim.—The combination, with the main body of a stove provided with an oven having a flue-space extending around said oven and communicating with the smoke-exit flue, of a fire-pot, plates D' D^2, the fire-pot communicating on one side with the space between plates D' D^2, and said space communicating on the opposite side of the fire-pot with the flue-space on one side of the oven, and dampers located in said flue-space above and below this point of connection, substantially as described.

334,972. DISSOLVING AND STRAINING SUGAR.

GEORGE H. NEWHALL, Philadelphia, Pa. Filed Oct. 26, 1885. (No model.)



Claim.—1. The herein-described process of dissolving sugar and like substances, said process consisting in introducing the material into a vessel continuously at one end, liquefying it in its passage through the vessel, and drawing the liquid off continuously from the other end, substantially as set forth.

2. The process herein described of dissolving sugar and like substances, said process consisting in causing the material to pass through a vessel, and subjecting said material to agitation, liquefaction, and screening in its passage through the vessel, substantially as set forth.

3. The process herein described of dissolving sugar and like substances, said process consisting in subjecting the material to the agitating action of a revolving drum, and liquefying and screening the said material as it passes through the drum, substantially as specified.

4. A rotary drum provided with one or more transverse screens and inlet and outlet passages, substantially as set forth.

5. A rotary drum provided with one or more transverse screens, mixing-blades, and inlet and outlet passages, substantially as described.

6. The drum having compartments *x y z*, and screens *u* and *v*, the screen *v* having finer perforations than the screen *u*, substantially as and for the purpose set forth.

7. The combination of the drum, having inlet and outlet passages *f* L, with screens *u* and *v* and blades E, with inclined faces to feed the material against the screens and toward the outlet, substantially as described.

8. The combination of the rotary drum, having one or more transverse screens, and buckets *i*, attached to or forming part of the drum, with a hopper, *l*, for receiving the liquid as it falls from the buckets, substantially as set forth.

9. The combination of the drum having blades E with a hopper, F, neck *f*, turned down into the drum, and screw *g*, for feeding the material into the drum below the level of the fluid contents, substantially as described.

10. The drum having transverse screens and inlet and outlet passages, with a steam-pipe, M, substantially as and for the purpose described.

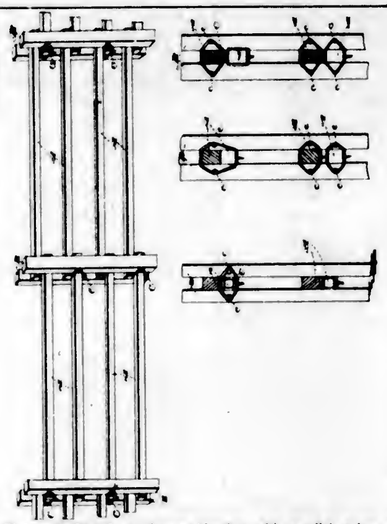
11. The combination of the rotary drum having a capped man-hole, *p*, with a receptacle, P, situated directly under the man-hole, substantially as set forth.

12. The hollow triangular blade E, having a cutting-edge, *e*, and flange *e'*, as and for the purpose described.

334,973. FENCE.

ABRAM NEWBERE, Cleveland, Ohio. Filed July 22, 1885. (No model.)

334,973.



Claim.—1. In a fence, the combination, with parallel stakes and the overlapping pairs of rails resting between said stakes, of the wire loops secured to both stakes, as shown, and embracing the lower rail of each pair, substantially as set forth.

2. In a fence, the combination, with parallel stakes and the rails arranged in pairs, with their overlapping ends between said stakes, of a wire loop embracing the lower rail of each pair and forming a rest or seat for the upper rails, and secured to both stakes, substantially as set forth.

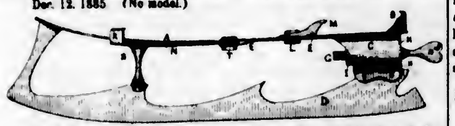
334,974. COMPOSITION OF MATTER FOR ROOFING, FURNITURE, &c. A. ATWOOD OLIVER, Brooklyn, assignor of one-fourth to Amelia F. Scott, New York, N. Y. Filed Oct. 3, 1885. (No specimens.)

Claim.—1. The composition consisting, in its essential elements, of fibrous stock, asbestine powder, oil, and tungstate of soda, combined substantially as and for the purpose herein described.

2. The composition consisting, in its essential elements, of fibrous stock, asbestine powder, linseed-oil, oil of tar, and tungstate of soda, combined substantially as and for the purpose herein described.

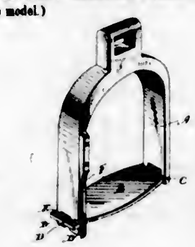
3. The composition consisting, in its essential elements, of fibrous stock, asbestine powder, oil, tungstate of soda, and emery, combined substantially as and for the purpose herein described.

334,975. SKATE-FASTENING. ULRIK OLSEN, Boston, Mass. Filed Dec. 12, 1885. (No model.)



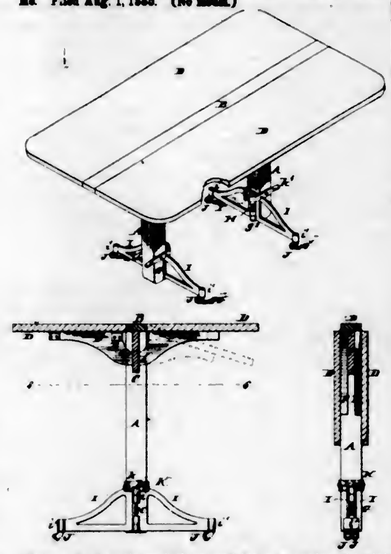
Claim.—The skate-fastening consisting of the combination of the curved plates C, vertical plates H, clamp-screw G, provided with a groove, F, and sliding bar E, having the slot K, and provided with the bolt L and adjustable sliding dog M, and having pivoted to the forward end thereof the curved oblique sliding clamp-bars N, having slots P, provided with bolts S, and having hook ends R, all being constructed and arranged to operate with the foot-plate A, provided with a longitudinal slot, and having spur-points B, substantially as shown and described.

334,976. STIRRUP. LORENZA D. O'ROARK, Louisa, Ky. Filed June 9, 1885. (No model.)



Claim.—The combination, with the stirrup-fork, one arm of which is provided with a recess forming two plain projections, the other arm being provided with a notch and a recess forming two notched projections, of a foot-piece hinged within said plain projections at one end, and provided at the other end with an aperture and a notch engaging with the notched projections of the arm of the stirrup-fork, and a spring secured to one of said arms and extending below the bottom of said arm, substantially as and for the purpose set forth.

334,977. COMBINED TABLE AND DESK. JOHN G. PEACE, Salem, Mo. Filed Aug. 1, 1885. (No model.)

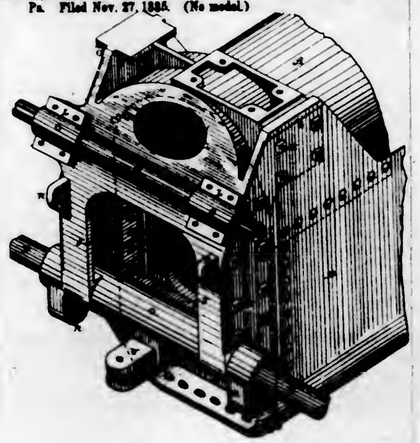


Claim.—1. A table or desk comprising a top strip, a leg rigidly secured thereto, a leaf hinged to the top strip, a brace by which the leaf is supported, feet hinged to the leg, and a clamp having notches to engage the feet and hinged to the leg, substantially as set forth.

2. A table or desk comprising a top strip, a leg rigidly secured thereto, a leaf hinged to the top strip, a brace by which the leaf is supported, feet hinged to the leg, and a clamp having notches to engage the feet and formed with treadles, the clamp being hinged to the leg, substantially as set forth.

3. The combination, with a table or desk having a hinged leaf, of a vertical strip, C, beneath the horizontal strip, having vertical notch *c* and inclined notch *c'*, and a brace, F, hinged to the leaf obliquely to the latter, and vertical strip having an end, *f*, for engaging the notches to support the leaf in an inclined as well as in a horizontal position, substantially as shown and described.

334,978. TRACTION-ENGINE. EDGAR PERSEY, Waynesborough Pa. Filed Nov. 27, 1885. (No model.)



Claim.—1. A gear-frame or casting which connects the outside edges of the fire-box sheet, and which has bearings for the axle and counter-shaft, and a seat upon which the bed of the engine is supported, substantially as shown.

2. The combination of the boiler, the sheet B, the gear-frame or casting, which is bolted between the ends of the sheet, and which is provided with bearings for the counter-shaft and axle, substantially as set forth.

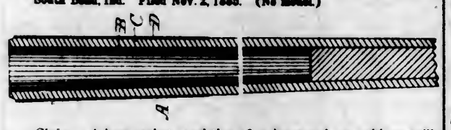
3. The combination of the boiler, the sheet B, applied thereto, and the casting or gear-frame provided with the flanges G, to support the frame in position, and which frame is provided with bearings for the shaft and the axle, substantially as described.

4. The combination of the boiler, the sheet B, applied thereto, the gear frame or axle provided with a suitable bearing upon its top for the engine-bed, the flanges G, and the bearings for the counter-shaft and axle, and which has suitable openings through it, substantially as specified.

5. The combination of the boiler, the sheet B, the gear-frame or casting C, provided with a bearing upon its upper end for the engine-bed, suitable openings through it, bearings for the counter-shaft and axle, and the lugs or projections E, substantially as shown.

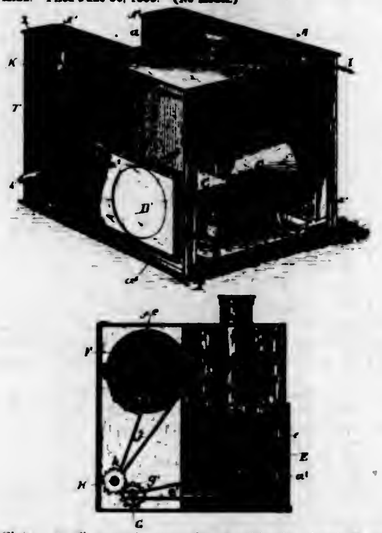
6. The combination of the engine-bed provided with the bearings X at one end, a suitable support for the rear end of the engine-bed, the boiler, the bearing W upon the boiler, and a coupling pin or bolt for connecting the bearings X W thereto, substantially as set forth.

334,979. BOW-SOCKET FOR VEHICLE-TOPS. JOHN M. PERKINS, South Bend, Ind. Filed Nov. 2, 1885. (No model.)



Claim.—A bow-socket consisting of an inner and outer thin metallic lining, substantially as described.

334,980. SIGNAL APPARATUS. JOHN R. PERSINEY, Owatonna, Minn. Filed June 30, 1885. (No model.)



Claim.—1. The case A, recessed at *a* and having signals E and F, connected as described, with shafts G and H, and reflectors C and lamp B, all combined as described.

2. In a signal apparatus, the weighted frame *e*, having a suitable color, its arm *e'* and shaft G, having spur-wheel *g'*, combined with the signal-frame *f*, arm *f'*, and shaft H, having spur-wheel A, all combined and operating as described.

3. In a case having smoke-exit pipe, the combination of the lamp and reflectors with the signals and shafts and their connecting spur-wheels, and the chains and pulleys by which the movable parts are operated, all as described.

334,981. LABEL. WILLIAM RAMPE, Jr., Ottawa, Ohio. Filed Nov 26, 1884. (No model.)

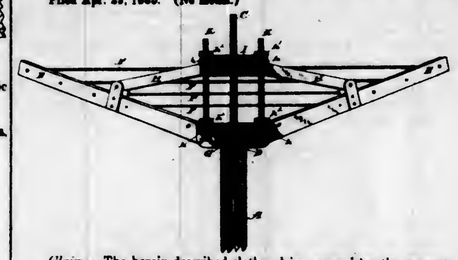
334,981.



Claim.—1. A price-indicator for boxes and other receptacles provided with vertical sides, of a body made from card-board and provided integrally at its lower portion with a straight projecting tongue, adjacent to the upper portion of which are formed slots presenting a short side piece at either side of said tongue, substantially as shown.

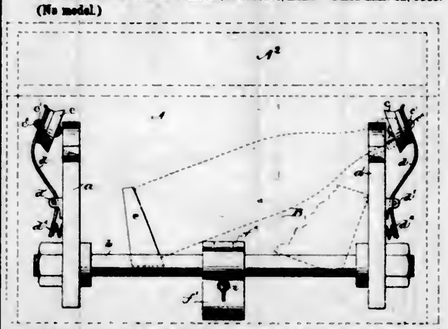
2. In an indicating tag or card for boxes and other receptacles having straight vertical sides, of a body made from card-board and having figures or emblems printed thereon and provided at its lower portion with a downwardly-projecting straight tongue, adjacent to which are open slots presenting side pieces shorter than the said tongue, the parts being formed integral with each other and from a single piece of material, substantially as shown.

334,982. CLOTHES-DRIER. REUBEN F. RHOCK, Spencerville, Ohio. Filed Apr. 29, 1885. (No model.)



Claim.—The herein-described clothes-drier, comprising the supporting-upright, the drier-arms, the line wires or cords, the head connecting the inner ends of the drier-arms, the bracing-arms pivoted to the drier-arms, the head connecting the bracing-arms, and bolts and nuts for drawing the two heads together for the purpose of tightening the wires or cords, as set forth.

334,983. STAND FOR HOLDING AND SEALING BOTTLES. CHAS. S. REYNOLDS and JAS. H. WELDON, Lawrence, Mass. Filed Mar. 12, 1885. (No model.)



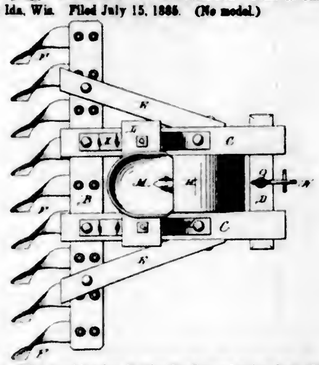
Claim.—1. A bottle-stand having an upright provided with a recess which receives the neck of the bottle, combined with a spring-pressed sealing device on said upright by which the mouth of the bottle is closed, substantially as described.

2. In a bottle-stand, the combination of two uprights and sealing devices connected therewith, with independent seats for receiving bottles of different size and supporting the same, with their mouths in position to be engaged and sealed by the sealing devices, substantially as described.

3. In a bottle-stand, the combination, with a seat which may receive and support a bottle, of a stopper and a holding-arm for the said stopper pivotally connected with the bottle-stand and loosely connected

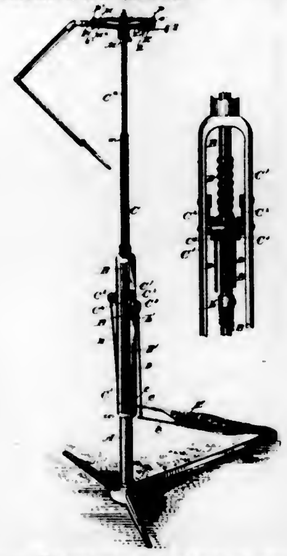
with the stopper, and a spring acting on the said arm to press the stopper toward the bottle held in the stand, substantially as described.

334,984. ROLLER AND PULVERIZER. JOHN L. SANDELBACH, Mount Ida, Wis. Filed July 15, 1885. (No model.)



Claim.—The combination, in a land roller and pulverizer, of the frame composed of the rear beam, B, front beam, D, longitudinal beams C, and diagonal brace-beams E, and the metallic brace-rods I, connecting the beams B and D, and secured on the under sides thereof, the roller H, journaled in the front of the frame, the spring harrow-teeth F, secured to the rear beam thereof, and the driver's seat supported on the frame between the roller and the teeth to distribute the weight of the driver evenly over the frame and cause it to bear partly on the roller and partly on the teeth, substantially as described.

334,985. DENTAL ENGINE. JOHN O. SCOTT, Waupaca, assignor of two-thirds to Myron F. Patterson and John G. Patterson, Milwaukee, Wis. Filed Nov. 9, 1885. (No model.)



Claim.—1. The combination, with a treadle, of a cord leading from the shaft to the arms of the treadle over suitable pulleys, and a torsion-spring for causing the cord to wind about the shaft, substantially as set forth.

2. The combination of the shaft, cord, treadle, and spring with a clutch, driving-pulley, and connections, as set forth.

3. The combination, with the driving-shaft and driving-pulley, of a clutch consisting of a lower plate having fingered hubs, a cap fitting over the hub, and rollers confined between the sides of the cap and the hub, as set forth.

4. The combination, with the driving-pulley, its frame, and a mandrel and pulley carried by the frame, of the sleeves C and C', and pin for supporting sleeve C' upon sleeve C, substantially as for the purpose set forth.

334,986. FOLDING CANVAS COT AND STRETCHER. SAMUEL F. BERLY, Toledo, Ohio, assignor of one-half to Brigham, Lamson & Co., same place. Filed Oct. 13, 1884. (No model.)

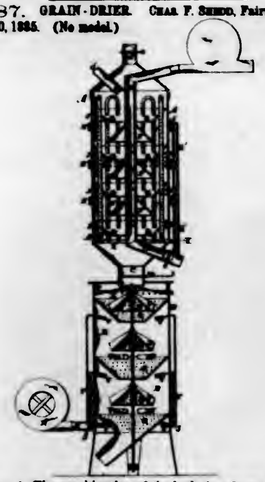


Claim.—1. In a canvas cot and stretcher, the combination, with the side rails, of cross-legs united thereto by hinges H, each having a back plate, I, a stud, S, and an arm, L, adapted to partly embrace the side rail upon its lower edge, substantially as specified.

2. In a combined canvas cot and stretcher, hinges H H, &c., consisting of the following parts: a plate, I, having a stud, S, angular arm L, and stops P P', fitted and secured to the rail A by means of bolts, screws, or rivets, to which is pivoted a plate, J, having two projecting wings, J' J', and brace *j*, and catch *n*, adapted to engage with the pawl N, to the wings J' J' of which is pivoted also the leg D, forming a double jointed hinge, as described and specified.

3. In a combined canvas cot and stretcher, the combination of the compound rails A A, tension-blocks T T, head-rest B, canvas C, hinges H H H H, legs D D D D, brace-rods E E, chains U U, and pins V V, all substantially as described and specified.

334,987. GRAIN-DRIER. CHAS. F. SHEDD, Fairfield, Nebr. Filed Nov. 20, 1885. (No model.)



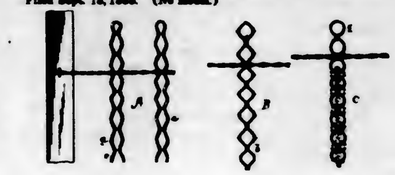
Claim.—1. The combination of the inclosing-frame, the hot-air pipe, the air-pipes which lead therefrom and extend around the frame, the cones, and the funnels, the frame being perforated both to admit the hot air from the pipes and to allow the damp hot air to escape, substantially as shown.

2. The combination of the body of the heater, the cones, the funnels, and the perforated central pipe having a suction-fan connected to its upper end with the steam-pipes and the pipes for forcing the hot air into the frames, substantially as described.

3. The combination of the perforated cones and funnels with the blower, the air-pipes connected thereto, and the nozzles through which the blasts of cold air are discharged under the funnels, substantially as specified.

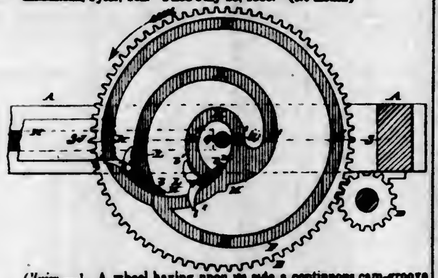
4. The combination of the revolving perforated cones, the blower, the pipes connected thereto, and the circular perforated pipes which are placed under the cones, substantially as set forth.

334,988. FENCE. EDWARD F. SHELLABERGER, Mount Vernon, Ohio. Filed Sept. 18, 1885. (No model.)



Claim.—As a new article of manufacture, a picket formed of a rod provided with bends regularly formed and folded on itself, the innermost elements of the bends of each leg of the folded rod coming directly opposite each other and touching when the picket is secured in position, substantially in the manner hereinbefore specified, substantially as and for the purposes set forth.

334,989. DEVICE FOR CONVERTING MOTION. SAMUEL L. SHELLENBERGER, Tyler, Tex. Filed July 23, 1885. (No model.)



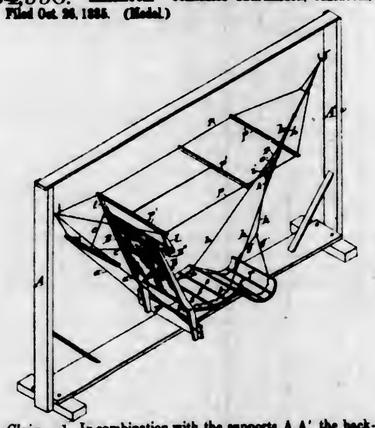
Claim.—1. A wheel having upon its side a continuous cam-groove forming two or more circuits around the center of the wheel.

2. A wheel having upon its side a continuous cam-groove forming two or more circuits around the center of the wheel, with devices to switch a stud at the intersection or intersections of the cam-groove.

3. A wheel having a continuous cam-groove upon its side forming more than one circuit around the center of the wheel, and having at the point or points of intersection of the groove a switch having a guide-finger, *l*, and horns *l'* and *l''*, substantially as and for the purpose set forth.

4. The combination, in a cam-wheel, of a continuous groove on the side of the same extending in two or more circuits around the center of the wheel, and one or more turning switches having horns *l' l''*, which are by the turning of the switch thrown alternately in the course of a stud traversing said groove, a guide-finger, *l*, and recesses M in the sides of the grooves to receive the end of the finger.

334,990. HAMMOCK. CORNELIUS SHEPARDSON, Canaseraga, N. Y. Filed Oct. 26, 1885. (Model.)



Claim.—1. In combination with the supports A A', the back-frame B, suspended by ropes extended from the support A to the foot of said frame, and by ropes suspended from the support A' and connected to the back-frame B above the foot thereof, a seat mounted on the latter ropes, and ropes connecting the upper part of the frame B with the support A, substantially as and for the purpose set forth.

2. In combination with the supports A A', the back-frame B, suspended by ropes *a a*, extended from the support A to the foot of the said frame, and by ropes *b b* suspended from the support A' and connected to the back-frame B above the foot thereof, and the ties *c c*, extending from the upper part of the back-frame B to the cross-bar *m* between the ropes *a a*, substantially as described and shown.

3. In combination with the supports A A', the back-frame B, suspended by ropes *a a*, extended from the support A to the foot of the said frame, and by ropes *b b* suspended from the support A' and connected to the back-frame B above the foot thereof, the seat *s s*, mounted on the ropes *b b*, and the ties *c c*, extending from the upper part of the back-frame B to the cross-bar *m* between the ropes *a a*, substantially as described and shown.

4. In combination with the supports A A', the back-frame B, suspended by ropes *a a*, extended from the support A to the foot of said frame, and by ropes *b b* suspended from the support A' and connected to the back-frame B above the foot thereof, ties *c c*, connecting the upper part of the back-frame B with the ropes *a a*, the seat *s s*, mounted on the ropes *b b*, and the foot-rest *f*, supported by ropes *d d*, substantially as described and shown.

5. In combination with the supports A A', the back-frame B, suspended by ropes *a a*, extended from the support A to the foot of said frame, and by ropes *b b* suspended from the support A' and connected to the back-frame B above the foot thereof, the seat *s s*, mounted on the ropes *b b*, the loop *o*, connected to the latter ropes, the ropes *g g*, extending from the seat and united in front thereof, and the rope A, connected at one end to the united ropes *g g*, and passing with the opposite end through the loop *o* and tied to the slide *i*, and the foot-rest *f* on the ropes *d d*, substantially as described and shown.

6. In combination with the supports A A' and awning C, the back-frame B, suspended by ropes *a a*, extended from the support A to the foot of said frame, and by ropes *b b* suspended from the support A' and connected to the back-frame B above the foot thereof, the seat *s s* on the ropes *b b*, and the braces *l l*, pivoted on the back-frame B and connected with the awning, to automatically adjust the same in its elevation over the back-frame B, substantially as described and shown.

334,991. TWO-WHEELED VEHICLE. HANS SPOOREN, East Portland, Oreg. Filed July 23, 1885. (No model.)



Claim.—1. In a two-wheeled vehicle, the side elliptic springs thereof connected to the axle, and at its forward end connected to brackets depending from the vehicle-steps, in combination with a transverse leaf-spring arranged obliquely and connected to the under side of the seat and at its ends to the side springs, substantially as and for the purpose set forth.

2. In a two-wheeled vehicle, the combination, with the body thereof, of a harness for attaching it to the cross-bar of the shafts, consisting of metal bars secured at their rear ends to the body and to the cross-bar by headed bolts passing through elongated slots in the bars constituting the harness, substantially as and for the purpose described.

3. In a two-wheeled vehicle, a harness for attaching the body to the cross-bar of the shafts, consisting of metal bars secured to the under side of the body and provided with elongated slots at their forward ends, and headed bolts extending through the slots for connecting the bars to the cross-bar of the shafts, in combination with means for attaching the cross-bar and shafts together, consisting of hooks and staples, substantially as and for the purpose specified.

4. In a two-wheel vehicle, the combination, with the body, shafts, and cross-bar thereof, of U-shaped springs connected to the cross-bar, one end or arm of each spring being connected to the body and the opposite end or arm to the shaft, substantially as and for the purpose described.

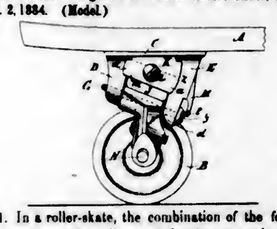
5. In a two-wheel vehicle, the combination of U-shaped springs, each of which is attached to the vehicle-body, the shafts, and the cross-bar thereof, as shown, the outer arms or ends of the springs terminating in fingers, and brackets to form guides for the fingers, substantially as and for the purpose set forth.

6. In a two-wheel vehicle, U-shaped springs attached, as shown, to the vehicle-body, the shafts, and cross-bar thereof, in combination with a harness for attaching the body to the cross-bar, consisting of

slotted bars and headed pins or bolts, substantially as and for the purpose described.

7. In a two-wheel vehicle, the combination of side springs attached to the axle and at their forward end to brackets, a transverse spring attached thereto and to the under side of the seat, U-shaped spring connected to the vehicle-body, the shafts, and cross-bar thereof, and a harness for attaching the body to the cross-bar, consisting of slotted bars and pins or headed bolts, substantially as and for the purpose set forth.

334,992. ROLLER-SKATE. SAMUEL E. SHUTE and GEORGE C. STEVENS, Richmond, Ind., assignors to Charles Albert Shaw, Boston, Mass. Filed Sept. 2, 1884. (Model.)



Claim.—1. In a roller-skate, the combination of the following instrumentalities, to wit: a foot-piece, a pair of arms projecting downwardly from said foot-piece, an axle-bolster journaled in said arms, a rubber spring interposed between the bolster and foot-piece, and means for simultaneously compressing said cushion or spring both vertically and laterally to increase its tension, substantially as described.

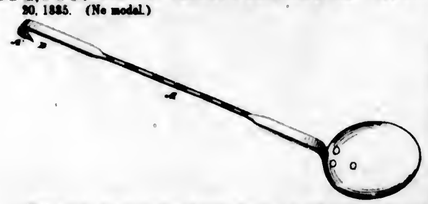
2. In a roller-skate, the clips K, provided with the screw L, in combination with the projection H, spring J, and bolster F, substantially as set forth.

3. In a roller-skate, the plate C, provided with the arms D E and V-shaped projection H, in combination with a bolster journaled in said arms, a spring interposed between said bolster and projection, and means for producing tension on said spring, substantially as described.

4. In a roller-skate, the plate C, provided with the arms D E and V-shaped projection H, the clips K, provided with the inclined sides *x* and flanges *m*, the cushion J, bolster F, screw L, and pin G, combined and arranged to operate substantially as set forth.

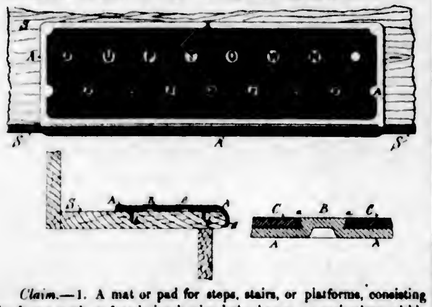
5. In a roller-skate, the bolster-pin G, having the head *d*, provided with the slot *f*, in combination with the V-shaped projection *t*, adapted to pass through said slot as the pin is inserted, and to prevent the pin from escaping after it is inserted, substantially as described.

334,993. HANDLE. FERNANDO B. SMITH, Canton, Ohio. Filed Nov. 20, 1885. (No model.)



Claim.—As a new article of manufacture, a handle bent at the end to form a hook having a sharp piercing point, substantially as and for the purpose specified.

334,994. MAT, STAIR, OR STEP TREAD OR PAD. AMADEE SPADONE, New York, N. Y. Filed Nov. 11, 1885. (No model.)



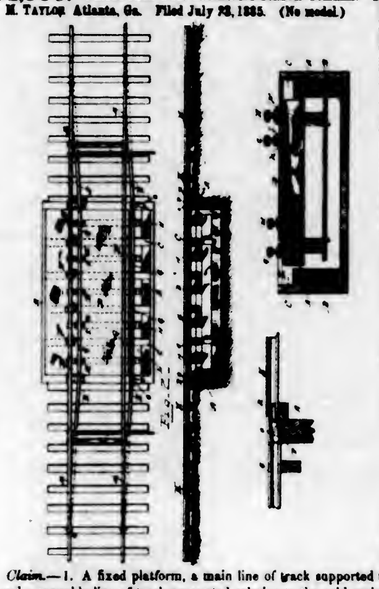
Claim.—1. A mat or pad for steps, stairs, or platforms, consisting of a frame-work or foundation having hubs, bosses, or projections within its area, about which hubs, bosses, or projections a facing of rubber is inlaid exposing a combined hard hub or boss surface and a surrounding compressible surface, substantially as set forth.

2. In a mat or pad for steps, stairs, or platforms, the combination of a frame-work or foundation provided with hubs, bosses, or projections, and a removable facing of rubber inserted or inlaid within the immediate area of the frame-work or foundation, and through which the hubs, bosses, or projections protrude, substantially as set forth.

3. In a mat or pad for steps, stairs, or platforms, the combination of frame-work or foundation A, hubs, bosses, or projections B, and the removable pad or mat C, substantially as shown and described.

4. In a mat or pad for steps, stairs, or platforms, the combination of a frame-work or foundation, A, hubs, bosses, or projections B, removable pad or mat C, and means for securing the same, substantially as shown and described.

334,995. PLATFORM FOR RAILWAY-TRACK SCALES. THOMAS M. TAYLOR, Atlanta, Ga. Filed July 23, 1885. (No model.)



Claim.—1. A fixed platform, a main line of track supported thereby, and a movable line of track supported relative to the said main line, all combined to act substantially as specified.

2. A fixed platform or decking, a series of bridge-sills supporting the same, and a series of movable cross-sills arranged beneath the decking and supporting a track above the same, all combined substantially as and for the purpose specified.

3. The combination of a suitable box or receptacle, a fixed decking or platform on the same, a main line of track supported on said platform, a series of movable cross-sills, and a supplemental line of track supported by said sills and having a lateral and longitudinal motion relative to the said platform, said main and supplemental tracks being connected by switches, substantially as and for the purpose specified.

4. Combined with the movable track, a device connecting the approach with the movable track, consisting of a short rail connected to the track by pivoted fish-plates, and prevented from moving laterally by a guide, substantially as and for the purpose specified.

5. The combination of a box or receptacle, a fixed platform or decking thereon, a series of laterally-moving cross-sills under said deck, a main line of track supported on said platform, a supplemental line supported by the cross-sills, switches connecting the main line with the supplemental track, and connecting devices from the leaders to the movable track, consisting of short pieces guided and connected to the track by pivoted fish-plates, substantially as and for the purpose specified.

334,996. FIRE-PROOF CEILING. CHARLES TOOPE, London, England. Filed May 28, 1885. (No model.) Patented in England May 6, 1884, No. 7,242.

Claim.—1. In a fire-proof ceiling, the combination, with joists or girders having flanges or fillets, of solid coherent blocks or slabs of fire-proof material, rabbeted to engage with said fillets or flanges and with one another, and the U-shaped metal stripe *d*, embedded in said blocks, substantially as described.

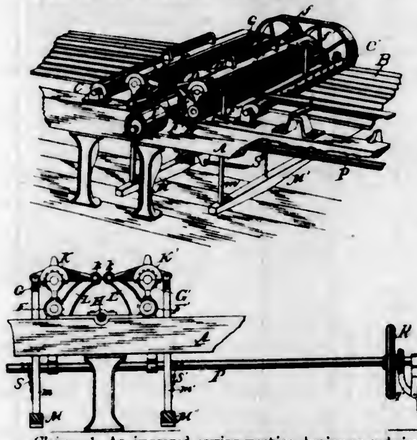
2. A fire-proof block or slab composed of fibrous material, pipe-clay, and a solution of silicate of soda, substantially as described.

3. The combination, with fire-proof blocks or slabs, of asbestos sheeting secured thereto by cement, substantially as described.

334,996.



334,997. GANG-EDGER. SAMUEL S. VAIL and JAMES SOLLIDAY, St. Louis, Mo. Filed Nov. 17, 1884. (No model.)



Claim.—1. An improved sawing-machine having an endwise-removable saw-mandrel and pressure-rolls, with hanger-frames pivoted nearly over the mandrel, and provided with stirrup-frames and shaft and chain under the sawing apparatus, for operating them, substantially as set forth.

2. The presser-roll of a sawing-machine, combined with a windlass-shaft, P, extending from the feeder's position under the sawing-bed, and provided with a chain or means of lifting, S', connecting with cross-head M, having uprights *m'* at the sides, to lift or hold up the presser-roll to admit material to be sawed.

3. The windlass-shaft P, under the bed of a sawing-machine, combined with a ratchet or other means for holding said shaft from rotating, and with a vertically-movable presser-roll, connected through bars *m'*, cross-head M', and chains S', to hold the roll up to an adjustable position, as set forth.

334,998. PULLEY. CLARUS S. WARDWELL, Stamford, Conn. Filed Dec. 17, 1885. (No model.)

Claim.—1. The combination, in a grooved wheel or pulley, of anti-slipping surfaces at the lower part of the groove, between which the belt normally rests, and smooth sides to the groove at the outer part thereof, over which the belt may slip, substantially as and for the purpose set forth.

334,998.



2. The combination, in a grooved wheel or pulley, of a recess at the lower part of the groove, within which is placed an anti-slipping material, between the surfaces whereof the belt normally rests, and smooth sides to the groove at the outer part thereof, over which the belt may slip, substantially as and for the purposes set forth.

3. A grooved pulley or wheel made in two parts, divided on a circumferential line, whereby, the parts being separated, an anti-slipping material may be introduced into the lower part of the groove, and the parts of the pulley or wheel again united, substantially as and for the purposes set forth.

4. The combination of a grooved pulley or wheel, the groove whereof has an anti-slipping internal surface, and outwardly-beveled plates fastened to the sides of the pulley, the beveled surfaces of the plates being smooth and extending substantially to the edges of the groove in the pulley, as and for the purposes set forth.

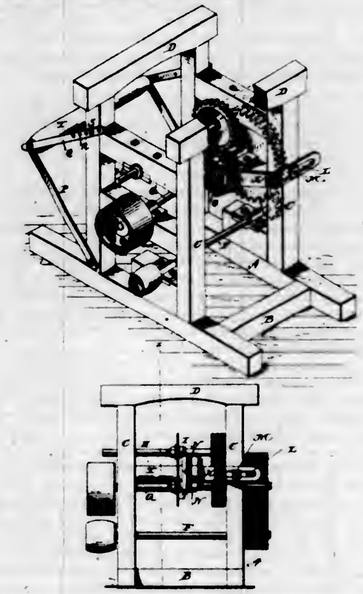
334,999. DRAFT-COUPLING. WILLIAM W. WATERBURY, Watertown, Wis. Filed July 28, 1885. (No model.)



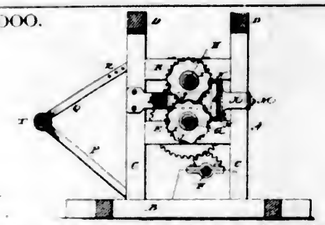
Claim.—1. An improved draft-coupling, consisting of two chambered or cylindrical parts with springs of different force in the two chambers, separated by a movable diaphragm, to which is connected the draft-rod, substantially as set forth.

2. In a draft-coupling, the combination of two chambered or cylindrical parts containing spiral springs of different force, a movable diaphragm with perforation and concavity or socket, a screw-bolt adapted to move laterally in a vertical slot in the front end of the forward part of the coupling, and a draft-rod supported in the eye of the screw-rod and perforation of the movable diaphragm, and provided with a ball-bearing at the rear end, and suitable tightening-nuts, substantially as set forth.

335,000. HOOP-SPLITTING MACHINE. HENRY WETHEE, Ithaca, Wis. Filed Nov. 13, 1885. (No model.)



335,000.



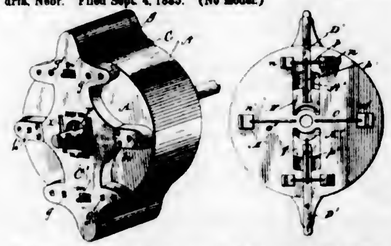
Claim.—1. In a machine for splitting hoops, the combination of a frame, a pair of transverse shafts suitably geared together, and the cutters mounted upon said shafts, said cutters consisting of sharp-edged disks having wavy or scalloped edges meshing or registering together, substantially as and for the purpose set forth.

2. In a machine for splitting hoops, the herein-described knives or cutters, consisting of flat sharp-edged disks having wavy or scalloped edges, substantially as and for the purpose set forth.

3. In a machine for splitting hoops, the combination of a suitable frame, a pair of transverse shafts geared together, the wavy-edged cutters mounted on said shafts, and a guide or gage consisting of a strap or bracket attached at the rear end of the frame, connected adjustably with the front end of the same, and having laterally-extending arms, in which is journaled a vertical roller located slightly in front of the cutters, substantially as and for the purpose set forth.

4. In a machine for splitting hoops, the combination of a frame, the transverse shafts having the wavy-edged cutting-disks, the laterally adjustable gage or guide roller, and a horizontal supporting-roller connected adjustably to the rear end of the frame by means of suitable brackets or braces, substantially as and for the purpose set forth.

335,001. ROTARY STEAM-ENGINE. DAVID G. WEBBER, Alexandria, Nebr. Filed Sept. 4, 1885. (No model.)



Claim.—1. In a rotary steam-engine, the side casing-plates provided with slots A', in combination with the rotary piston having eccentric grooves, within which slide blocks F, with projecting pins *d*, which engage with the aforesaid grooves and reciprocating bars, said bars having attached thereto cut-offs B, substantially as shown, and for the purpose set forth.

2. In a rotary engine, the combination, with the cut-offs B B, of a rotary piston having a projecting portion, E', and eccentric grooves *e*, for operating sliding blocks F, which are connected to the cut-offs B, so that said cut-offs will be moved by the piston, substantially as shown, and for the purpose set forth.

3. In a rotary engine, the piston E, provided with eccentric grooves, to which are connected rods for reciprocating the valves which cover the supply-ports, and also valves for opening and closing the exhaust-ports, substantially as shown, and for the purpose set forth.

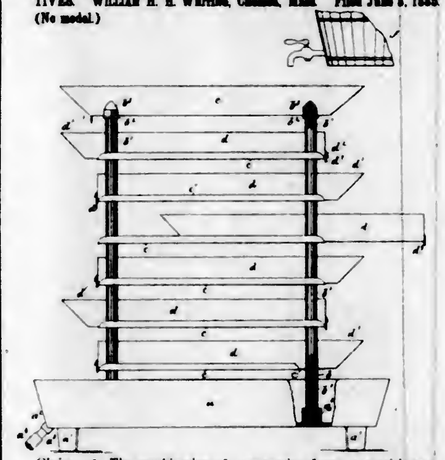
4. In a rotary engine, the cut-off valves *n n*, which reciprocate from the supply-ports, said valves being connected to each other by a rod, *p*, and rock-shaft *p'*, having an upturned end which engages with projections formed on an oscillating plate, P, said plate being moved by an eccentric attached on the shaft of the piston, substantially as shown, and for the purpose set forth.

5. In a rotary engine, the ports *g g'*, connected to the steam-supply by branch pipes, and valve T, connected with said supply-pipes, so as to admit steam from the boiler into either of said pipes, so as to cause the engine to rotate in a different direction, substantially as shown, and for the purpose set forth.

6. In a rotary engine, the plates provided on opposite sides with slots A', within which are located sliding blocks F, having projecting pins *d* on opposite sides, said pins engaging with eccentric grooves *e*, formed in the piston, and with sliding bars D', to which cut-offs are attached, so that the cut-offs will be moved out of the path of the projecting portion E, the inlet and cut-off valves operating over the supply and exhaust ports so as to change the entrance and exhaust of the steam to and from the piston, the valve and cut-offs being operated from the piston and its shaft, substantially as shown and described.

7. In a rotary steam-engine, the plate P, having perforations in which the upturned ends of the rods *o* are connected to the cut-offs for the exhaust-ports, and plate P', having projections *r'*, which engage with a rock-shaft for reciprocating the rod which carries the valves which cover the inlet-ports, said plates being operated by eccentrics rigidly attached to the shaft of the rotary piston, the parts being combined and organized substantially as shown, and for the purpose set forth.

335,002. APPARATUS FOR WASHING PHOTOGRAPHIC NEGATIVES. WILLIAM H. H. WHITING, Chelsea, Mass. Filed June 8, 1885. (No model.)



Claim.—1. The combination of a supporting-frame, comprising uprights and shelves fastened thereto, with a series of pans supported on the said shelves, each pan being provided at one end with a delivering-lip of a height greater than the thickness of the article to be washed, and projecting at the other end beyond the delivering end of the next pan above, substantially as described.

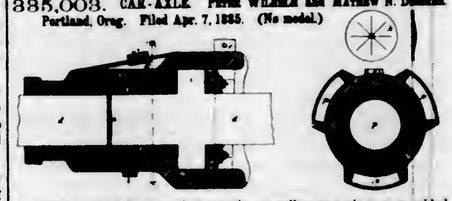
2. The combination of a supporting-frame, comprising uprights and shelves fastened thereto, with a series of pans supported on the said shelves, each pan being provided at one end with a delivering-lip of a height greater than the thickness of the article to be washed, and projecting at the other end beyond the delivering end of the next pan above, and each pan also having a stop which engages the corresponding shelf when the pan is in proper working position with relation thereto, substantially as described.

3. The combination, with the base and rods or uprights detachably connected therewith, of the sleeves and shelves, constituting, with the said uprights, a pan-supporting frame, and the pans co-operating therewith, the whole forming a separable negative-washing apparatus, substantially as described.

4. The base and rods or uprights detachably connected therewith, combined with the sleeves and shelves to be supported on said uprights, and the cross-bars and nuts by which all are clamped together, and the pan provided with projections to engage the said cross-bars, and with a series of delivering-openings at one end, and the series of pans supported on the shelves below, substantially as described.

5. The pan-shaped base provided with a discharge-passage, combined with the frame supported thereon, consisting of uprights and shelves, and the series of pans supported on the said shelves, substantially as described.

385,003. CAR-AXLE. PETER WILHELM and MATHEW N. DEMMER, Portland, Oreg. Filed Apr. 7, 1885. (No model.)

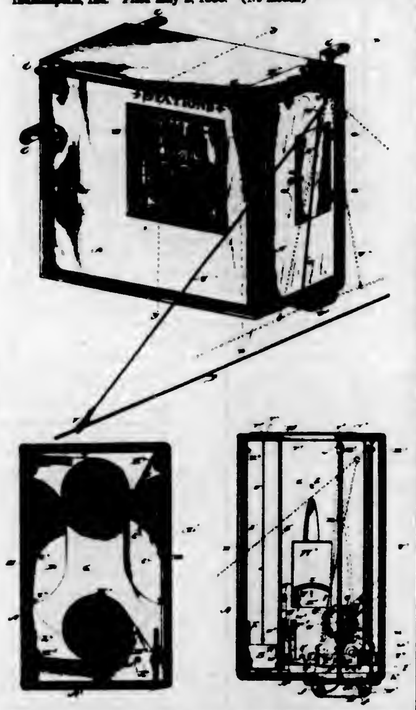


Claim.—1. The conical or tapering coupling or casing *a*, provided with oil-chambers *a'*, in combination with a conical or tapering open cut sleeve, *b*, said sleeve being kept from rotating by means of a screw or pin, A.

2. The dividable plate *c*, for retaining lubricants, and in combination with adjusting-keys *s* and collar *i*, whereby the sleeve *b* is adjusted and secured in its bearings in the coupling or casing *a*.

3. The spring *k*, in combination with the axle ends and the several parts connected therewith, substantially as described, and for the purpose set forth.

335,004. STATION-INDICATOR. DAVID WELSH, Richmond, Ind., assignor of one-third to John T. Brooks, same place, and Israel V. Kimball, Indianapolis, Ind. Filed May 2, 1885. (No model.)



Claim.—1. In a station-indicator, in combination with a surface having on it the names of several consecutive stations, and marks to designate and distinguish the names apart, an indicator provided with corresponding marks adapted to display such marks consecutively, substantially as and for the purpose specified.

2. In a station-indicator, in combination with a belt or strip provided with the names of the stations in their order, and with numbers or marks designating the different names, a wheel provided with the marks or numbers corresponding with those on the belt, and means, substantially as described, for rotating the wheel to bring the numbers or marks thereon to a display-opening, substantially as and for the purpose described.

3. In a station-indicator, in combination with a band or strip having on it in regular order the names of the stations and numbers opposite the names, the casing provided with a display-opening large enough to show several of the names at once, mechanism for moving the strip or band past the opening, a wheel or roller having on it the numbers of the stations, and means, substantially as described, adapted to rotate the wheel to bring its numbers consecutively opposite a suitable display-opening, substantially as and for the purpose described.

4. In a station-indicator, in combination with two rollers and a band or strip wound thereon having printed or otherwise marked on it the names of the stations in their order and numbers designating the station, the casing provided with a display-opening large enough to allow several of the names to be seen at once, suitable gearing connecting and driving the rollers at the same speed, a wheel or roller marked with numbers corresponding in arrangement with those on the belt, gearing for driving the wheel connected with that for driving the band-rollers, and means, substantially as described, adapted to drive the gearing to rotate the band-rollers intermittingly and to turn the numbered wheels in either direction desired, so as to bring its numbers consecutively opposite a suitable display-opening in the casing, substantially as and for the purpose described.

5. In a station-indicator, in combination with the casing having a display-opening in each side, the two rollers, the two bands carrying the names of the stations wound upon the upper roller in the same way from opposite sides, and having their lower ends similarly wound upon the lower roller, but in a direction opposite, to that in which the bands are wound on the upper roller, and means for turning the rollers in the same direction, either way, as desired, substantially as and for the purpose described.

6. In an indicator, in combination with the casing provided with a display-opening in each side, the upper band-roller and the lower band-roller, the two indicator-bands adapted to be moved past the opposite openings in the casing having their upper ends both wound upon the upper roller in the same way and their lower ends also wound upon the lower roller in the same way, and means for rotating the rollers so that the belts will be wound up on one roller and unwound from the other, substantially as and for the purpose described.

7. In combination with the indicator adapted, substantially as described, to be operated in either direction, as desired, to indicate the stations in their order from either end of the trip, the operating-cord attached, substantially as described, to the operating mechanism, so that as it is pulled toward one end of the car it will cause the mechanism to be turned in one direction, and if pulled in the other will cause the mechanism to turn in the opposite direction, the belt or signal rope, and means, substantially as described, whereby the operating-cord can be connected with said rope toward either end of the car from the indicator, as desired, all substantially as and for the purpose described.

8. In a station-indicator, in combination with the disk and means for rotating it, the concentric series of pins projecting from one side of the disk, and a band of transparent or semi-transparent material stretched over the pins and provided with numbers or indicating-marks, substantially as and for the purpose described.

9. In a station-indicator, in combination with the toothed wheel connected with the indicator mechanism, a block below the same, the two pawls pivotally attached to the block and so situated thereon that one or the other can be brought under the teeth on opposite sides of the wheel by longitudinal movement of the block, and means, substantially as described, for moving the block longitudinally and also vertically, substantially as and for the purpose described.

10. In combination with the toothed wheel for driving the mechanism of the indicator, the arm T, the slide thereon carrying two pawls adapted to be brought below the teeth on opposite sides of the wheel by the movement of the slide along the arm, and means for moving the slide in one direction or the other, as desired, and for raising and lowering the arm carrying the slide, substantially as and for the purpose described.

11. In a station-indicator, in combination with the toothed wheel connected with the indicating mechanism, the vertically-moving weight, the horizontal arm attached to the weight, the slide on the arm, the pawls carried by the slide, the cord attached to the weight so as to raise the same, and connected with the slide so as to move it in one direction or the other as the cord is pulled from one side or the other of the indicator, and means for connecting the cord, as desired, with the bell or signal rope on either side of the indicator, substantially as and for the purpose described.

12. In combination with the indicating mechanism, the toothed wheel, the vertically-moving weight, the arm attached thereto, the slide on the arm below the toothed wheel, the two pawl-arms on the slide, the swinging tube extending down through a loop on the slide, and the cord U, passing up through the tube over suitable pulleys down to the weight, and adapted to be connected with the bell or signal rope on either side of the indicator, substantially as and for the purpose described.

13. In combination with the toothed wheel, the weight, the arm attached thereto, the slide on the arm, the rock-shaft pivoted in the slide, and having its ends bent substantially at right angles, the weight tending to turn the rock-shaft so that the arms will project beyond the side of the slide, the swinging tube, and the cord U, passing up through the same over suitable pulleys, and down to the arm-carrying weight to which its end is fastened, substantially as and for the purpose described.

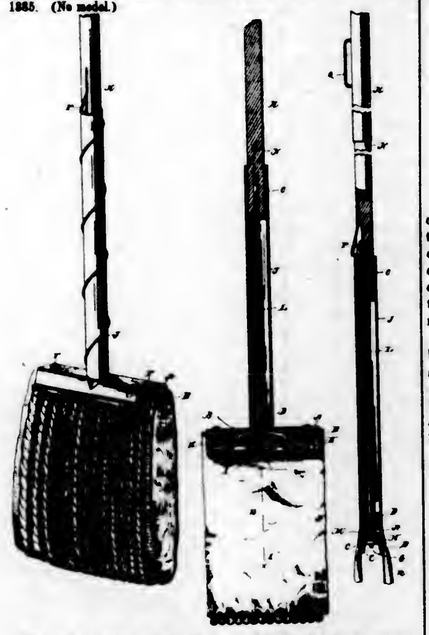
14. In combination with weight S, the arm T, provided with stops *t' t'*, the slide on the arm, the rock-shaft pivoted in the slide and provided with arms *t' t'*, a weight on one of the arms to turn the shafts, so that the arms project beyond the side of the slide, and a loop, *t*, on the slide, all substantially as and for the purpose described.

15. In a station-indicator, in combination with the toothed wheel O, the indicator band-roller having notches in its end, the latch or bolt, the spring tending to press the bolt inward to engage the notches in the roller, and the swinging lever adapted to force the spring and bolt outward away from the roller end, the weight, the arm carried by the weight, and provided with means for turning the toothed wheel as the weight is raised, and a lug on the weight adapted to engage and operate the latch-lever before the toothed wheel is turned, substantially as and for the purpose described.

16. In combination with the upper and lower band-rollers, and the two indicator-belts wound thereon, substantially as described, gear-wheels on the shafts of the rollers, and a gear-wheel between and meshing with such wheels, the wheel or roller provided with two series of numbers

starting from opposite sides of the wheel and running in the same direction, gear-teeth on such wheel, a shaft having pinions meshing with such teeth and the gear on the lower roller-shaft, and the toothed wheel and the gear-wheel on the same shaft therewith meshing with a pinion on the roller-driving shaft, substantially as and for the purpose described.

335,005. MOP. ERI F. WILSON, Rochester, N. Y. Filed Apr. 27, 1885. (No model.)



Claim.—In a mop, the combination, with a head consisting of two box-like castings, the top one of which is provided with a perforated thimble and the lower one with a slot, and nuts and bolts for securing the two castings together, of a tube rigidly secured to said thimble, and a handle having its lower portion of a less diameter than the tube, and having a ferrule of the same diameter as the tube fitting on its lower end, a spring-catch in the side of said handle, and a rod having a T-head at its lower end secured in the lower end of said handle, and passing through said thimble and said slot in said castings, as shown and described.

335,006. EXPLOSIVE COMPOUND. CHARLES W. A. ZADEK, Bartow-on-the-Sound, N. Y. Filed Oct. 7, 1885. (No specimens.)

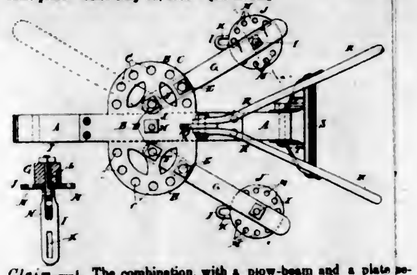
Claim.—An explosive compound consisting of a mixture of resinate of calcium or magnesium with trinitro-glycerine, substantially as set forth.

335,007. DRIP-CUP. GEORGE ASHBY, Harrison, Ohio. Filed Jan. 22, 1885. (No model.)



Claim.—A drip-cup for umbrellas composed of two conical sections formed integral with each other, the outer section being provided at its upper portion with openings *a*, designed to discharge drip-water from the side of the drip-cup, in combination with a ferrule, B, having a screw-thread, *b*, formed thereon, substantially as set forth.

335,008. COMBINED PLOW, CULTIVATOR, AND HARROW. C. ANDERSON, Gurdon, Ark., assignor to himself and William W. Strickland, same place. Filed July 11, 1885. (No model.)



Claim.—1. The combination, with a plow-beam and a plate secured thereto having a central aperture and apertures outside thereof, of the slotted standard I, having a bolt pivotally connected with its upper end and extending through the central aperture and the beam, and the curved bar N, notched on its under side, passed through the slotted standard, as set forth, with its ends held by said standard in the outer apertures of said plate, whereby the standard and curved bar may be readily reversed or removed, substantially as set forth.

2. A combined plow, cultivator, and harrow, consisting of the main beam A, the plates B, having central apertures, H, circular series of side apertures, C, and holes D, bolts E and F, the lug Q, formed on the upper plate B, and having upper and lower apertures, the removable side beams, the handles R, connected to the lug Q by a bolt passed through one of its apertures, and the pivoted bars T, connecting the handles and beam A, substantially as set forth.

335,009. CHUCK. GEO. A. BARNES, New Haven, assignor to Frank Armstrong, Bridgeport, Conn. Filed Aug. 7, 1885. (No model.)



Claim.—1. The head A and slide C, constructed and adapted to be arranged as described, in combination with the differential operating-screw F G, for centering and clamping the work, substantially as hereinbefore set forth.

2. The combination of the chuck-head A, differential screw F G, and slide C, the latter having a projection, E, adapted to enter a corresponding groove in the head, substantially as and for the purpose set forth.

3. In combination with the head A and differential screw F G, constructed as described, the slide C, provided with the gage-mark H, substantially as and for the purpose set forth.

335,010. CARPET-SWEEPER. MELVILLE R. BISSELL and WALTER J. DREW, Grand Rapids, Mich., assignors to the Bissell Carpet Sweeper Company, same place. Filed Aug. 15, 1884. (Model.)



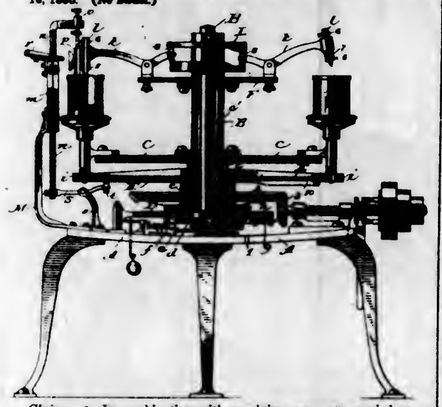
Claim.—1. In a carpet-sweeper, the combination, with the drive-wheels, of continuous elastic shafts extending from end to end of the casing and through enlarged openings in the end walls, the brush-shaft having pulleys intermediate of said drive-wheels, and supports mounted upon the casing and engaging with the central portions of the continuous shafts, substantially as described.

2. In a carpet-sweeper, the combination, with the sweeper-casing having end walls provided with enlarged openings, of the drive-wheels mounted on elastic continuous shafts passing through said openings and interior brackets pivoted upon blocks mounted on the casing and having an inward inclination toward the point where said brackets engage with the continuous shafts, substantially as described.

3. In a carpet-sweeper, the combination of the brush-shaft, brackets having notched lower ends, and the spring-tongues arranged adjacent thereto, with the brush-shaft having its journal ends held by said

springs, and the sweeper-casing and driving-wheels, substantially as described.

335,011. CAN-SOLDERING MACHINE. WILLIAM D. BROOKS, Baltimore, Md., assignor of one-third to D. D. Mallery, same place. Filed Nov. 16, 1885. (No model.)



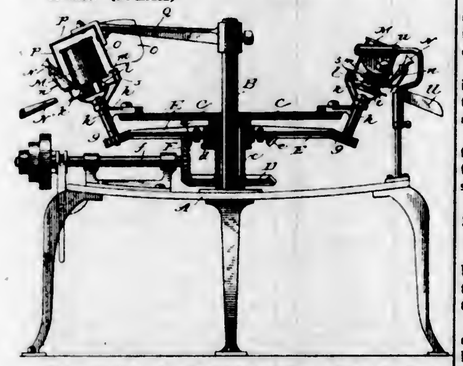
Claim.—1. In combination with revolving can-seats carried on a table having step-by-step movement, a soldering-iron suitably supported, a solder-tube for supplying solder to the can-top, a flame-tube for applying the flame to the said soldering-iron, and means for automatically raising and lowering the said iron from the cap-groove of the can, substantially as described.

2. In combination with the revolving can-seats carried upon a table having step-by-step movement, a rod, *u*, sliding in suitable standards, a soldering-iron, P, supported thereby, a lever, S, and cam 10, upon the under side of the master-wheel, adapted to operate said lever S, substantially as described.

3. In combination with the revolving can-seats, mechanism for holding down the caps at the solder-station, the vertically-adjustable soldering-iron, means for automatically raising and lowering said iron, a solder-feeding tube arranged in the described relation thereto, and a flame-tube adapted to heat said iron, substantially as described.

4. In combination, the revolving can-seats, mechanism for holding down the caps, the soldering-iron carried on the vertically-movable rod, the pipe *r*, for delivering the flame, and the concave disk R, secured directly to the soldering-iron between it and the flame, substantially as described.

335,012. CAN-SOLDERING MACHINE. WILLIAM D. BROOKS, Baltimore, Md., assignor of one-third to D. D. Mallery, same place. Filed Nov. 16, 1885. (No model.)



Claim.—1. In combination with a post, the revolving table C, with its sleeve, a beveled gear, D, the master-wheel E, meshing with the pinions of can-seat spindles carried upon said table, and the driving-gear F, in mesh with the gear D, and the gear *e* upon the under side of said master-wheel, substantially as described.

2. In combination, a continuously-revolving table, revolving can-seats carried thereon, and the solder-feeding tube N for each can-seat moving with the table, and supported in the described relation to the can-seats, substantially as described.

3. In combination with a revolving can-seat, solder-feeding tubes supported upon brackets from side plates, and having their lower ends held near to the part of the can which is exposed to the flame, substantially as described.

4. In combination with a series of revolving can-seats carried upon a revolving table, warming-chambers for the cans supported in the line of their movement, and opposite the heating-flame, substantially as described.

5. In combination with a revolving table, C, carrying revolving can-seats, heating-tubes, and shields O P, and presser-plates for holding down the cans, substantially as described.

6. In combination with the described machine, the revolving can-holders, consisting of the revolving plate *k*, the removable can-seat supported thereby, and the upper plate, *m*, supported upon the plate *k*, substantially as described.

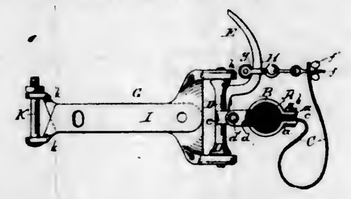
7. In combination, the revolving can-seat, the plate *m*, having its inner end beveled, and the inclined solder-feeding tube having its end beveled, substantially as described.

8. The combination of the revolving can-seat comprising the revolving plate *k*, the seat *l*, the upper plate, *m*, supported upon the lower plate, *k*, with the stationary half-wing 5, substantially as described.

9. The combination of a revolving can-seat comprising the seat *l* and the upper and lower revolving plates, *m k*, with the half-wing 5 and intermediate plates, 8, substantially as described.

10. The combination of a revolving can-seat comprising the seat *l* and the revolving upper and lower plates, *m k*, with the half-wing 5, lower plate, 8, and upper perforated plates, 7, substantially as described.

335,013. SPRING-CULTIVATOR. WILLIAM J. BROWNE, Fort Madison, Iowa. Filed Mar. 12, 1885. (No model.)



Claim.—1. In a cultivator-shovel-beam lifter and coupling, the combination, with coupling G, of bolt D, arm E, secured thereto, traveler *h*, spring C, axle A, to which said spring is rigidly secured, and means for connecting said traveler to said spring.

2. The combination, with bolt D, to which the coupling is connected, arm E, and traveler *h*, of the adjustable eye *f*, spring C, axle A, and means whereby said spring is connected to said axle.

3. The combination, with the coupling G, pivoted, as shown, to the ends of bolt D, of bolt D, pivoted at its center of length to arms *d* of band B, and said band B, substantially as described.

4. The combination, in a coupling, with plates I I, of corresponding shape and dimensions, having knuckles *i i* on one end and arms *k k* on the other, bolt K, connecting arms *k k*, and the cultivator-shovel beams, of the swivel-bolt D and band B.

5. The combination, with coupling G, bolt D, and arm E, projecting therefrom, of the traveler *h*, spring C, and means for connecting said traveler and spring, band B, having ends *a*, between which one end of spring C is secured, and cushion *c*.

6. The combination, with a coupling-bolt, D, and arm E, projecting therefrom, of traveler *h*, hook H, in and between the arms extending from which said traveler is journaled, eye *f*, having a screw-threaded shank-nut, *f'*, placed thereon, spring C, and band B.

335,014. SECTIONAL KITCHEN-SAFE. WILLIAM C. CAMPBELL, St. Louis, Mo. Filed Jan. 26, 1885. (No model.)

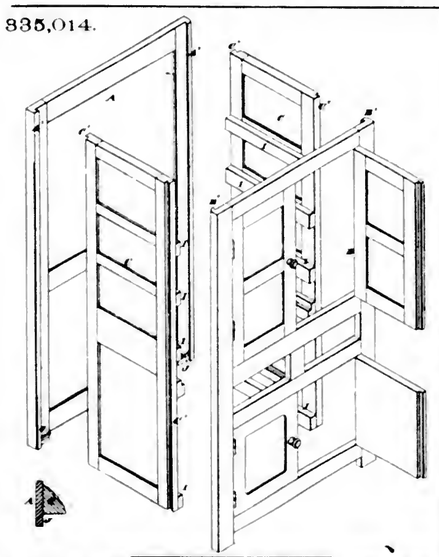
Claim.—1. In a sectional kitchen-safe, the combination of the front, back, and sides provided with continuous interlocking half-dovetail tongues, and means by which the parts are secured together, substantially as set forth.

2. In a sectional kitchen-safe, the combination of the front, back, and sides having continuous interlocking half-dovetail tongues formed by V-grooves, and means by which the parts are secured together, substantially as set forth.

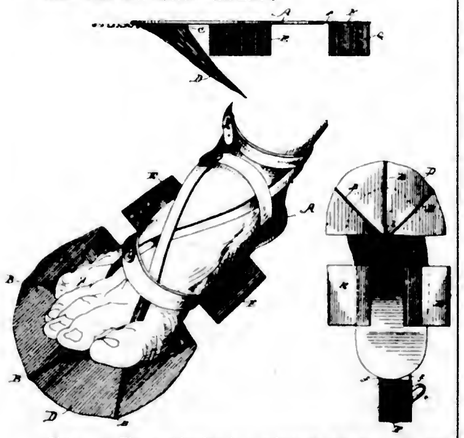
3. In a sectional kitchen-safe, the combination of the front, back, sides, and shelves, the front, back, and sides having continuous interlocking half-dovetail tongues, and the shelves holding the sides out to lock the tongues together, substantially as set forth.

4. In a sectional kitchen-safe, the combination of the front, back, sides, cleats secured to the sides, shelves, and blocks J, the front, back, and sides having half-dovetail tongues locked together by the shelves resting on the cleats, and the blocks acting to prevent the vertical movement of the sides when the safe is put together, substantially as set forth.

335,014.



335,015. SWIMMING APPARATUS. WILLIAM J. CORBETT, Tucson, Ariz. Filed Nov. 14, 1885. (No model.)



Claim.—1. The combination, in a swimming apparatus, of a support, a toe-blade pivoted at its inner edge to the support at a point back from the inner edge thereof, and a feathering-web having one edge secured to the outer edge of the toe-blade and its opposite edge secured to the toe end of the support, all arranged and operating substantially as and for the purposes specified.

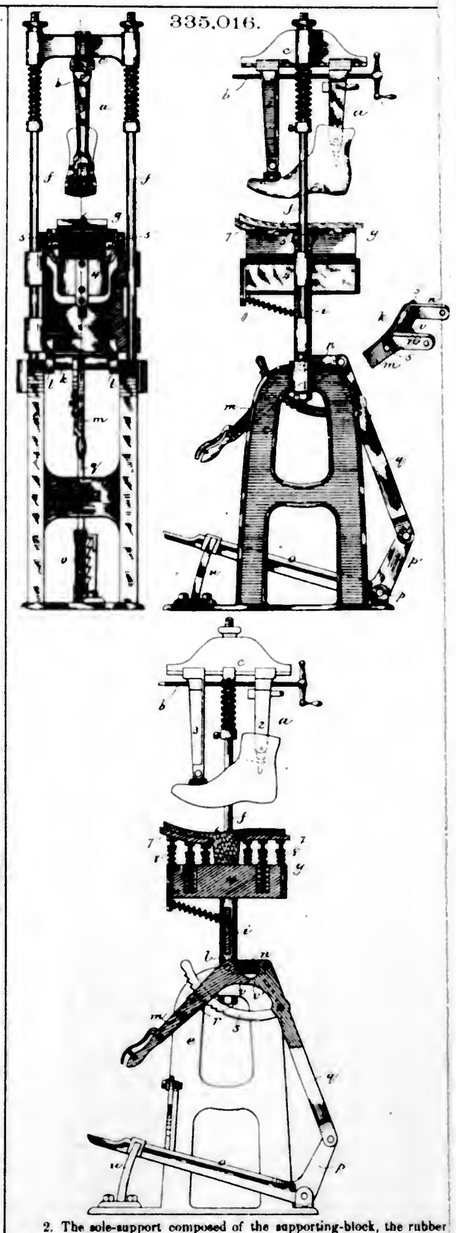
2. In a swimming apparatus, the combination of the support provided with a staple, C, of the blade-frame consisting of rods B, engaged at their inner ends with the staple C, and the web covering supported on said rods, substantially as set forth.

3. A swimming apparatus comprising a support, a double-armed frame projected rearwardly from said support, as described, and a blade pivoted to one of and adjustable to and from the other of such arms, substantially as set forth.

335,016. SOLE-LAYING MACHINE. PETER A. COUPAL, Boston, Mass., and CHARLES D. WOOD, Lincoln, R. I., assignors to the Boot and Shoe Sole Laying Company, Portland, Me. Filed June 8, 1885. (No model.)

Claim.—1. The combination, with the movable bed and its supporting devices, including the sliding cross-head, of the rock-shaft pivoted to said cross-head and provided with the lever *m* and arms *n*, the link *q*, pivoted to the arms *n*, the treadle-lever having an arm, *p'*, pivoted to the link *q*, the ratchet-bar *s*, pivoted to the link, and the dog *r* on the lever *m*, adapted to engage with said ratchet-bar, as set forth.

335,016.

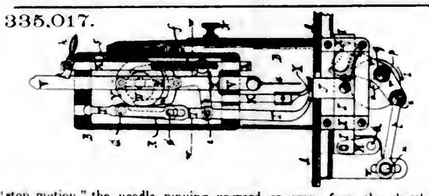


2. The sole-support composed of the supporting-block, the rubber bed 6, having the thickened, central portion bearing on the block and reduced ends, and the spring-supported plates interposed between the reduced portion of the rubber bed and the block, as set forth.

335,017. SHUTTLE-CARRYING MECHANISM FOR SEWING-MACHINES. DAVID H. COLES, New York, N. Y., assignor to himself, A. G. Darwin, Glen Ridge, and James C. Beach, Bloomfield, N. J., and Henry W. Guernsey, Brooklyn, N. Y. Filed June 25, 1885. (No model.)

Brief.—The course of the shuttle-carrier may be readily varied by adjusting one end of the steadying-arm as may be desired, whose other end is pivoted to the lower extremity of the shuttle-carrier. The needle has a reciprocating motion of the continuous order, or without a dwell or

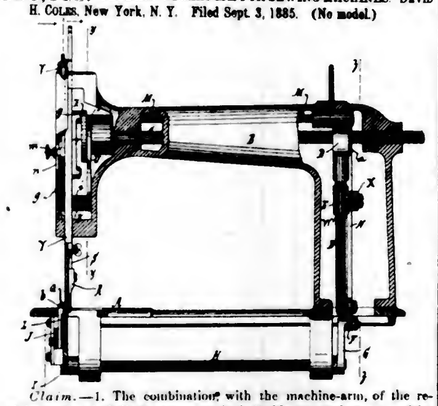
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"stop motion," the needle moving upward or away from the shuttle when the latter is partly within the loop of needle-thread.

Claim.—The combination of the slotted arm *v* with the steadying-arm *t*, having one end provided with the pin *u*, adjustable in the slot of said arm, the shaft *o*, having disk *p*, provided with eccentric-pin *q*, and the shuttle-carrier *r*, pivoted to the other end of the steadying-arm and to the eccentric-pin, for varying the course of the shuttle-carrier, substantially as described.

335,018. FEEDING MECHANISM FOR SEWING-MACHINES. DAVID H. COLES, New York, N. Y. Filed Sept. 3, 1885. (No model.)



Claim.—1. The combination, with the machine-arm, of the revolving main shaft C, the upper rock-shaft, M, operated at one end by the main shaft, the upper feed, Q, connected with said rock-shaft, the pivoted oscillating lever D, operated at its upper end by the main shaft, a link, F, connected with said oscillating lever, a rock-shaft, H, connected at one end with said link, and a feed-carrier, J, connected with the other end of the rock-shaft and operated thereby in a right line, substantially as described.

2. The combination, with the machine-arm, of the revolving main shaft C, the upper rock-shaft, M, operated at one end by the main shaft, the upper feed-carrying bar, P, connected with the rock-shaft, the pivoted oscillating lever D, operated at its upper end by the main shaft, the link F, connected at one end with the oscillating lever, the lower rock-shaft, H, having at one end an arm, G, connected with said link, an arm, I, attached to the other end of said lower rock-shaft, and a guided lower feed-carrying bar, J, pivoted to said latter arm and moved thereby in a right line, substantially as described.

3. The combination, with the machine-arm, of the revolving shaft C, the upper rock-shaft, M, the upper feed-carrying bar, P, connected with one end of the rock-shaft, a pendent arm, N, secured to the latter, a pivoted oscillating lever, D, operated by the main shaft, a link, F, connected with the oscillating lever and with the pendent arm of the upper rock-shaft, a lower rock-shaft, H, connected at one end with said link, and a feed-carrier, J, connected with the other end of said lower rock-shaft, substantially as described.

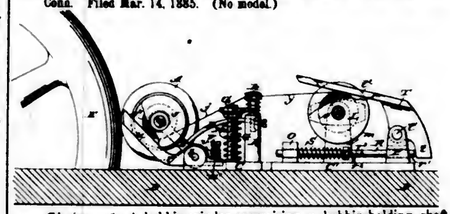
4. The combination, with the sewing-machine arm, of the pivoted oscillating lever D, the link F, pivotally connected with the lower end of said lever, the rocking shaft H, connected at one end with the link, the feed-carrier J, connected with the other and of the rock-shaft and reciprocated thereby in a right line, an upper feed-carrying bar, P, and connections between said upper feed-carrying bar and the oscillating lever, substantially as described.

5. The combination, with the sewing-machine arm, of the revolving main shaft C, provided with a cam, *a*, the pivoted oscillating lever D, operated by said cam, the link F, connected with the lower end of the oscillating lever, the rock-shaft H, connected at one end with the link, the lower feed-carrier, J, connected with the other end of the rock-shaft and moved thereby in a right line, and the upper feed, Q, connected with the said oscillating lever and receiving its motion therefrom to synchronously move both the upper and lower feeds by the said oscillating lever, substantially as described.

6. The combination, with the lower feed-carrier, J, the rock-shaft H, the link F, connected with the latter, the pivoted oscillating lever D, carrying the link, the revolving main shaft C, and the rock-shaft M, of the feed and presser bars P and S, and the lever U, operated by the main shaft and pivotally connected with the feed and presser bars, substantially as described.

7. The combination, with the upper and lower feed-carriers, the rock-shaft H, connected with the lower feed-carrier, the link F, the oscillating lever D, the main shaft C, and the rock-shaft M, connected with the oscillating lever, of the adjustable sliding pivot E, carrying the said oscillating lever and serving as a pivot therefor, substantially as described.

335,019. BOBBIN-WINDER. WILLIAM CONNOLLY, South Norwalk, Conn. Filed Mar. 14, 1885. (No model.)

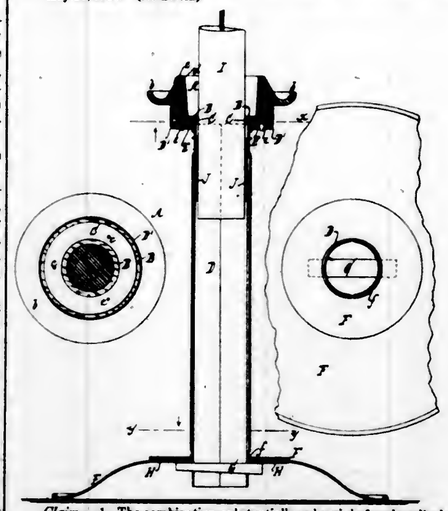


Claim.—1. A bobbin-winder comprising a bobbin-holding shaft journaled in a pivoted arm, and carrying a drive-wheel adapted to contact the sewing-machine drive-wheel, and said swinging arm carrying a tail-piece, a spring acting against the tail-piece to force the bobbin drive-wheel toward the sewing-machine drive-wheel, and a nut or equivalent device adapted to regulate the operative position of the bobbin drive-wheel or to hold it out of action, substantially as herein set forth.

2. The combination, in a bobbin-winder, of the pivoted arm B, shaft *a*, drive-wheel A, tail-piece F, post G, spring H, and nut I, substantially as herein set forth.

3. In a bobbin-winder, a pivoted arm provided with a tail-piece, a bobbin-holding shaft journaled in the said arm, a drive-wheel on said shaft, a spring acting against the tail-piece, and a nut for depressing the tail-piece against the action of the spring, in combination with a tension device, substantially as herein shown and described.

335,020. CANDLE-LAMP. WILLIAM DANEHEL, Brooklyn, N. Y. Filed May 21, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of an annular wastage-receiver, an elastic annular disk secured to the under side of said receiver, and a hollow shaft for receiving a candle.

2. The combination, substantially as hereinbefore described, of a hollow shaft, a cup-shaped support attached to the upper end of said shaft, an annular wastage-receiver inserted in said support, and annular elastic disks intermediate the receiver and support.

3. The combination, substantially as hereinbefore described, of an annular wastage-receiver, a cup-shaped support for said receiver, intermediate annular elastic disks, and a hollow candle-shaft having internal spring-arms.

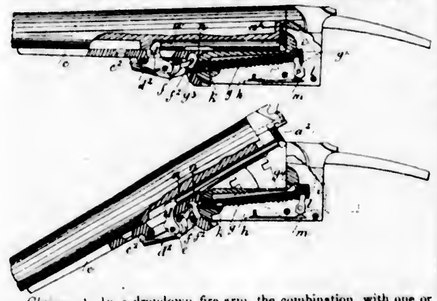
4. The combination, substantially as hereinbefore described, of the

hollow shaft, the cup-shaped support secured thereto, the annular wastage-receiver fitting the cup-shaped support, the elastic disk formed in said support, and the base.

5. The combination, substantially as hereinbefore described, of the split hollow shaft, the cup-shaped support for receiving and retaining the upper ends of the shaft-sections, the annular wastage-receiver fitting the cup-shaped support, the elastic disk, the base for receiving the lower ends of the shaft-sections, and the key for securing the shaft-sections to the base.

6. A wastage-receiver for candle-lamps, consisting of an annular cup-shaped body, *a*, having an external trough, *b*, and formed with a deep tapering orifice extending entirely through it, and provided at its lower end with an elastic disk, said body receiving the wastage and directing it to the body of the candle, to unite and be consumed therewith, substantially as and for the purpose described.

335,021. CARTRIDGE-EXTRACTOR FOR BREAKDOWN GUNS. JOHN DEELEY, JR., Aston, County of Warwick, England. Filed Nov. 18, 1885. (No model.) Patented in England Nov. 3, 1884, No. 14,526.



Claim.—1. In a dropdown fire-arm, the combination, with one or more extractor-hooks, of a spring-actuated arm pivotally mounted in the fore-end of the piece, a detent holding said arm under the tension of its spring, and a releasing-rod having automatic adjustment longitudinally in the body of the piece, whereby it is thrown into position to trip the detent as the barrel is dropped, substantially as described.

2. The combination, with one or more spring-actuated extractor-hooks, of a detent whereby the spring is held under tension, a releasing-rod having longitudinal adjustment in the body of the piece, a rocking arm engaging with said rod, a spring urging said arm in opposite directions as it passes its center of motion, and means for imparting to the releasing-rod a forward impulse as the piece is fired, to bring it in position to trip the detent as the barrel is dropped, substantially as described.

3. The combination, with one or more extractor-hooks, of a spring-actuated arm adapted to operate said hooks, a detent or sear-like lever engaging with and holding said arm under tension, a releasing-rod which is thrown forward by the hammer into position to trip the detent when the barrel is dropped and is retracted by a shoulder on the fore-end, and a spring-actuated arm holding the releasing-rod at its limit of movement, substantially as described.

4. The combination, with one or more spring-actuated extractor-hooks having a bolt or rod attached, of a detent for holding the spring under tension, a releasing-rod having a point at one end adapted to release the detent, and a shoulder at one side and in rear of said point, an arm mounted on a rock-shaft and connected with the rear end of the rod, and a spring acting successively upon oppositely-beveled faces of the rocking arm, and a shoulder on the fore-end of the piece acting on the shoulder on the releasing-rod, substantially as described.

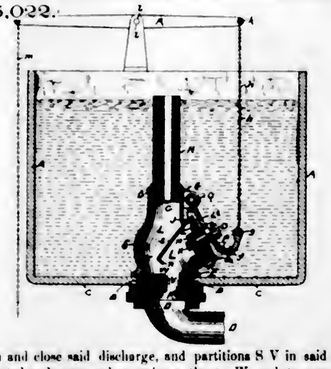
5. The combination, with one or more spring-actuated extractor-hooks having rods or bolts, of a detent pivoted in the fore-end of the piece for holding the actuating-spring under tension, an adjustable releasing-rod carried by the body of the piece, a spring-actuated rocking arm holding the rod at each point of adjustment, a firing-hammer throwing the rod forward in position to trip the detent as the barrel is dropped, a shoulder on the fore-end for restoring the rod, and a stop-pin limiting its movement, substantially as described.

335,022. VALVE FOR WATER-CLOSETS. JULIAN D'ESTE, Medford, Mass. Filed Apr. 20, 1885. (No model.)

Claim.—1. In a tank for liquid, having a discharge-pipe and an air and overflow pipe connected to said discharge, the combination of a hinged valve arranged to open and close said discharge, and a partition located and arranged in said discharge in relation thereto, and the communicating passage between overflow and discharge pipes, to secure, when the valve is opened in the discharge of liquid from the tank, a seal or trapping of the overflow-pipe against the entrance of air through it to the discharge-pipe, substantially as described, for the purpose specified.

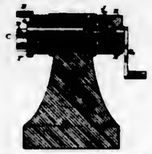
2. In a tank for liquid, having a discharge-pipe and an overflow-pipe connected to said discharge, the combination of a valve arranged

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to open and close said discharge, and partitions S V in said discharge, constructed and arranged to make a throat, W, and to operate in the discharge of liquid from the tank, substantially as described, for the purpose specified.

335,023. MAINSPRING-WINDER. ORRIN C. DOW, Orange, Mass. Filed Sept. 19, 1885. (No model.)



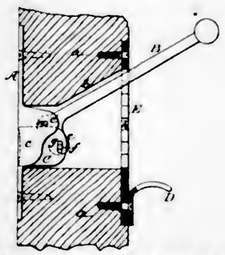
Claim.—1. The frame A, provided with a socket upon one end and an endwise-moving head inside of the socket, and the shaft upon which the spring is to be wound, substantially as shown.

2. The combination of the frame, a shaft which passes through it, a socket on one end of the frame having a recess or recesses, and an endwise-moving head which has projections to pass through the recesses in the head, substantially as described.

3. The combination of the frame, the shaft passing through it, the socket on one end of the frame, the endwise-moving head provided with a sleeve, and a nut for moving the sleeve and head endwise, substantially as set forth.

4. The combination of the frame, the shaft provided with a crank at one end and a pin at the other, a nut which is swiveled upon the shaft, the set-screw for preventing the nut and the shaft from being removed from the frame, and the head and sleeve made in single piece, substantially as specified.

335,024. SASH-HOLDER. JOHN H. FELHLEN, Greeley, assignor of one-half to George C. Norris, Denver, Colo. Filed July 30, 1885. (No model.)

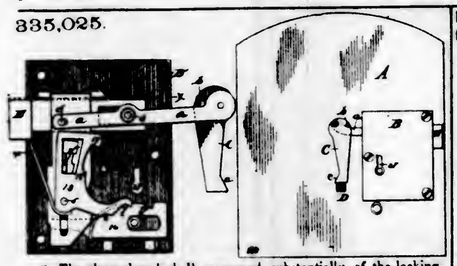


Claim.—The combination, with the plate A, having the slot *s*, and the guideway projecting from the side thereof inclosing said slot, the L-shaped lever B, pivoted within said projecting guideway, having its handle beveled, and the bolt supported in said guideway, of the slotted plate E, having ratchet-teeth *h*, corresponding to the bevel of the lever-handle, whereby the lever serves to slide the bolt to lock it to the sash and to lock the latter to the window, as described.

335,025. FIRE-ALARM BOX. THOMAS F. GAYNOR, Lexington, Ky., assignor to the Lexington Manufacturing Company, same place. Filed Nov. 18, 1884. (No model.)

Claim.—1. In combination with the lock B, the tripping mechanism *a c* and trip D of the bolt E, and a key turning in the lock, substantially as specified.

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2. The alarm-door lock B, composed, substantially, of the locking-bolt E, tumblers 1 and 2, operated by the key I to shoot the bolt, and the tripping-arm C, substantially as specified.

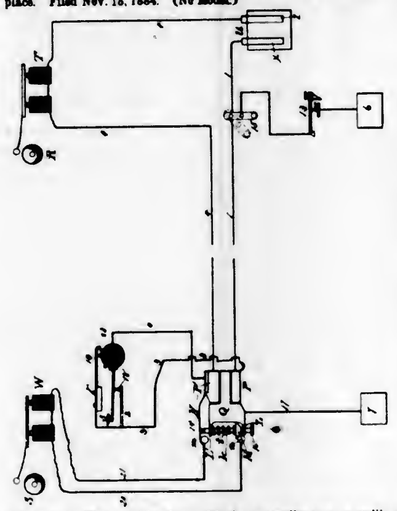
3. In combination with the bolt E, operated by tumbler 1, a tripping mechanism operated by tumbler 2, and suitable stop mechanisms, with the tumbler 17, for trapping the key I, substantially as specified.

4. In combination with the lock B, the stop-tumblers for operating the bolt and tripping devices the trap-tumbler 13, and the releasing-tumbler 16, for releasing the trap-tumbler by means of key 28, substantially as specified.

5. In a fire-alarm-door lock, B, the combination of tumblers 1 and 2 with the stop-plates 4 and 7, the key K, and bolt E, for unlocking the door without disturbing the tripping device which starts the alarm, substantially as specified.

6. The combination, with the door A, of the lock B, having tumblers 1 and 2, the stop-plates 4 and 7, a bar, *a*, connected with the tumbler 2, and the lock-bolt E, connected with tumbler 1 and adapted to be operated by interchangeable keys K and K', substantially as described.

333,026. FIRE-ALARM TELEGRAPHY. THOMAS F. GAYNOR, Lexington, Ky., assignor to the Lexington Manufacturing Company, same place. Filed Nov. 18, 1884. (No model.)



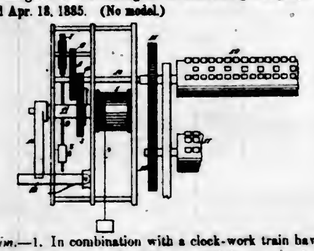
Claim.—1. The combination, with the normally-open metallic circuit and the clock-work train arranged therein, of the automatic switch M N, the ground-plates, the sliding rod *t*, and the door of the fire-box, substantially as described.

2. The combination, with the lightning-arrester and ground-connection, of the switch M N, the rod *t*, having its ends insulated, the door O, and a ground-circuit which is automatically closed by opening the door and opened when the box is shut, whereby danger of sounding alarm by breaking or cutting the wires is avoided, substantially as described.

3. The combination, with the clock-train, of a magnet, W, wires 20 and 21, binding-posts *m* and *n*, the spring-actuated rod K, spring-switch N, disk M, ground-connection 17, lightning-arrester P P', metallic circuit 1 3 4, magnet T, and ground 6, substantially as described.

4. In combination with the clock-work train, substantially as herein shown, and the normally-open metallic circuit in which said train is arranged, the detent-arm I and tripping-lever J, adapted to be set instantly in motion by the depression of the arm J, and a ground-branch which is automatically brought into circuit when the metallic circuit is broken by the closing of the door of the fire-box, substantially as specified.

335,027. FIRE-ALARM SIGNAL. THOMAS F. GAYNOR, Lexington, Ky., assignor to the Lexington Manufacturing Company, same place. Filed Apr. 18, 1885. (No model.)

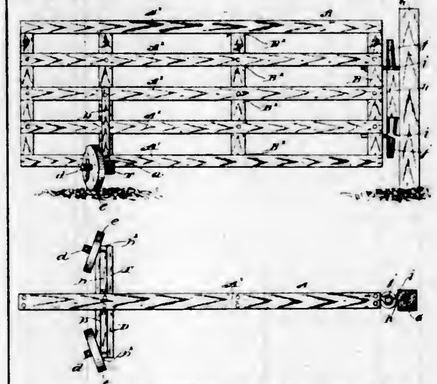


Claim.—1. In combination with a clock-work train having an arm upon its main shaft, a pivoted spring-actuated lever engaging with said arm, a series of cylinders, 14 17, driven by said train and having upon their peripheries circuit-breaking teeth, spring-arms C, resting upon said cylinders, and stocks B, carrying the spring-arms and adjustable longitudinally relatively to the cylinders, substantially as described.

2. In combination with a clock-work train, one or more cylinders having upon their peripheries several separate series of circuit-breaking teeth, each series being adapted to sound a separate signal, a main battery in circuit-connection therewith, a spring-arm, C, to each cylinder, and adjustable longitudinally upon said cylinders, and dials *a*, upon which said arms are adjusted, substantially as described.

3. In combination with a main battery, I, having-circuit-connection with one or more circuit-breaking cylinders, a circuit-closing spring-arm adjustable longitudinally upon said cylinders, a relay interposed in said circuit, an armature having a series of contact-points, each having connection with one pole of a separate battery, and a series of contact-points in connection with the other pole of said battery, substantially as described.

335,028. GATE. DELOS GILES, Cheshire, Mich. Filed Sept. 29, 1885. (No model.)



Claim.—1. The combination, with the gate-frame and the eyebolts serving as hinges connected to arms of a pintle, the lower one of said eyebolts being loosely secured to said gate-frame, of the truck having its transverse bar provided with beveled ends, whereon are secured wheels or rollers, substantially as shown, and for the purpose set forth.

2. The combination, with the gate secured by eyebolts to the arms of the pintle, the lower one of said eyebolts being loosely secured thereto, of the truck consisting of a transverse bar provided with beveled ends, whereon the wheels or rollers are secured, said truck being connected by brace-bars to the gate-frame, substantially as shown and described.

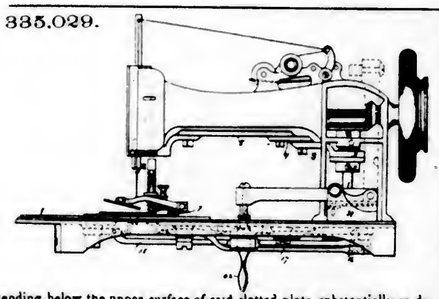
3. The combination, with the gate and the eyebolts serving as hinges secured to the arms of a pintle, of the truck and the wheel or rollers secured on the beveled or inclined ends of the transverse bar of said truck, substantially as shown and described.

4. The combination, with the swinging gate, of the truck having the transverse bar provided with beveled ends and the wheels secured thereon, substantially as shown and described.

335,029. BUTTON-HOLE SEWING-MACHINE. THOMAS F. HAGERTY, San Francisco, Cal. Filed Apr. 25, 1884. (No model.)

Claim.—1. The combination, with the cloth-clamp and the slotted plate S, of the spring-pressed guide-button 7, having its lower face ex-

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tending below the upper surface of said slotted plate, substantially as described.

2. The combination, with the cloth-clamp and the slotted plate 8 of the spring-pressed guide-button 7, having the lower face extending below the upper surface of said slotted plate and connected to the under plate, 9, also below the surface of the slotted plate 8, substantially as described.

3. The combination, with the cloth-clamp and the slotted plate 8, the latter being provided with a dovetailed groove, of a plate, 9, fitted within said groove, a guide-button, 7, and pin 73, mounted upon the plate, and a spring, 10, bearing against said pin, substantially as described.

4. The combination, with the feed-wheel, the slotted plate 8, and the clamp bearing the guide-pin 54, traveling within said slot, of the adjustable piece 11, fitted within a dovetailed groove at the front end of the slot, substantially as shown and described.

5. The combination, with the reciprocating needle, needle-bar, and means for operating the same, of the vertical shaft, levers 17 and 18, eccentrically connected to said shaft, guiding mechanism, substantially as described, for the looper-point ends of the levers, thread-carrying looper-point 21, short looper-point 22, and stationary detainer-points 34 and 35, substantially as shown and described.

6. The combination, with the reciprocating needle, needle-bar, and means for operating the same, of the vertical shaft 1, disk 14, crank-pin 18, levers 17 and 18, links 19 and 20, thread-carrying looper-point 21, short looper-point 22, and stationary detainer-points 34 and 35, substantially as described.

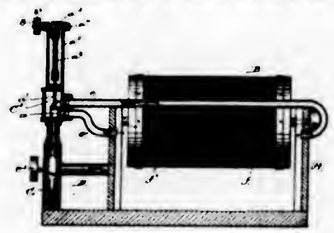
7. The combination, with the feed-wheel 13, of the pivoted feed-lever 23, bearing the pawls 25 26 and stitch-adjusting pins 27 28, and spring 24, the shipper-lever 29, and the vertical shaft 1, and disk 14, the latter bearing a double cam, 15, one arm of which is longer than the other, substantially as shown and described.

8. The combination, with the cloth-clamp base-plate 49, of the arm-supporting frame 50, presser-feet 60 61, eccentric spreader 53, pressing-arms 51 52, pivoted directly to the frame 50, and presenting their flat sides to the spreader and edges to the pressing-feet, the guide-pin 54, post 56, coil-spring 57, under spreading-plates, 58 59, and eccentric pressing-lever 55, and means, as pins 62 63, whereby the return movement of the pressing-arms is communicated to the under spreading-plates, substantially as shown and described.

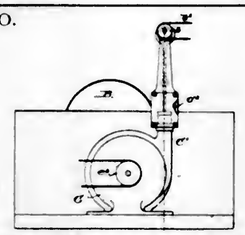
9. In a cloth-clamp for button-hole sewing-machines, the combination, with the base-plate 49, of the elevated frame 50, the under spreading-plates, 58 59, having pin projections 63 62, the presser-feet 60 61, spreader 53, presser-arms 51 and 52, bearing against the pin projections and presenting their edges to the presser-feet and their sides to the spreader, the spring 57, post 56, guide-pin 54, and pressing-lever 55, substantially as shown and described.

335,030. **PAPER-MAKING MACHINE.** SAMUEL H. HODGES, Parish of Street, County of Somerset, England, assignor of one-half to George E. Barnard, Lynn, Mass. Filed Oct. 26, 1885. (No model.)

Claim.—1. In a paper-making machine, a pulp-vat and a forming-cylinder therein, combined with a pump and a pipe to connect it with the pulp-vat, the pump operating to force the pulp into the pulp-vat in a direction parallel, or nearly so, to the axis of rotation of the forming-



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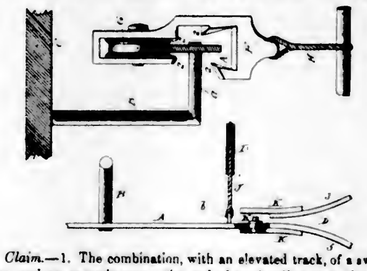


cylinder, to thereby establish a cross-current in the pulp-vat, substantially as described.

2. In a paper-making machine, a pulp-vat and one or more forming-cylinders therein, combined with a series of pipes and with a pump to force the pulp through one and then the other of the said pipes, in order to change at intervals the direction of the flow of the pulp in and through the said pulp-vat, for the purposes set forth.

3. The pulp-vat, a pipe, D, connected therewith, a pump, a valve-chamber and valve therein, combined with a forming-cylinder located within the pulp-vat, and with pipes *e e'*, through which the pulp is forced into the pulp-vat to change the direction of the current therein, substantially as described.

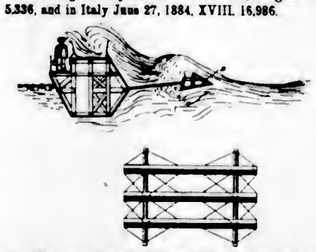
335,031. **APPARATUS FOR ASSISTING ROLLER-SKATERS.** CORNELIA JOHNSON, Cleveland, Ohio. Filed Aug. 31, 1885. (No model.)



Claim.—1. The combination, with an elevated track, of a switch, a pulley, and an operating-rope, the end of track adjacent to the switch being formed of spring metal, and provided with lateral bearing-pins at its outer end, the switch having guard-flanges provided with recesses to receive the said pins, the pulley arranged at one side of the track, and the rope connected at one end to the spring-track and passing over the pulley, substantially as specified.

2. The combination, with an elevated track, of the pulley G, arranged thereon, the pulley-casing constructed as described and provided with the guards 2, and the rope H, connected to the said casing and provided at its lower end with a handle, substantially as specified.

335,032. **BREAKWATER.** LEWIS W. LEEDS, London, England. Filed July 2, 1885. (No model.) Patented in France May 25, 1883, No. 155,667; in Belgium May 25, 1883, No. 61,487; in England Nov. 12, 1883, No. 5,336, and in Italy June 27, 1884, XVIII. 16,986.

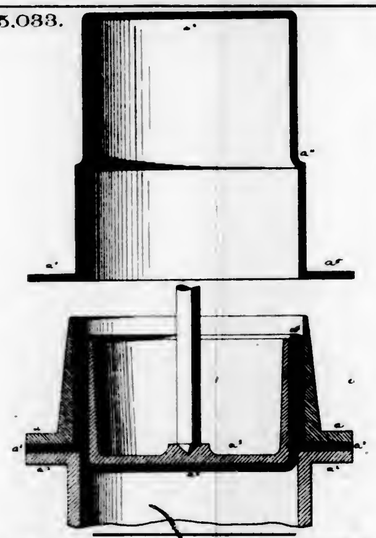


Claim.—The improved breakwater hereinbefore set forth, consisting of the floating structure provided with a cut-water having plain faces inclined upward and downward throughout the whole extent of the said structure, whereby the waves are cut or broken, a part passing under and part over the structure unobstructedly, substantially as and for the purpose set forth.

335,033. **DIAPHRAGM FOR PRESSURE-REGULATORS.** NATHANIEL C. LOCKE, Salem, Mass. Filed Dec. 17, 1885. (No model.)

Claim.—A diaphragm constructed substantially as herein shown and described, having that portion from a^4 to a^5 made smaller in diameter than the base portion and adapted to be folded in upon itself, as shown.

335,033.



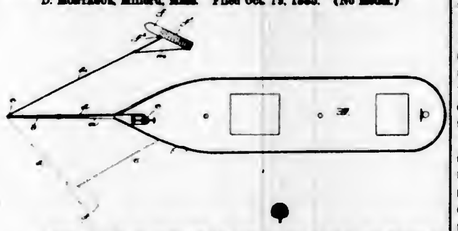
335,034. **KITCHEN-CABINET.** JOHN A. MULLEN, Georgetown, Ky. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a kitchen-cabinet, the herein-described V-shaped hoppers having U-shaped bottoms, in combination with the screw-conveyers, the shafts of which extend through the casing at the rear end and are provided with spur-wheels, agitator-shafts arranged above the said conveyer-shafts and having pinions meshing with the said spur-wheels and radial fingers, and the detachable operating-cranks, substantially as and for the purpose herein set forth.

2. The combination, in a kitchen-cabinet, as described, provided with an inclined hopper at each end, of a series of different-sized drawers between said hoppers, said drawers being arranged with the smaller drawers at the top and the larger drawers at the bottom of the cabinet, substantially as described, and for the purpose set forth.

335,035. **APPARATUS FOR DISTRIBUTING OIL UPON SEAS.** F. D. MONTAGUE, Milford, Mass. Filed Oct. 19, 1885. (No model.)



Claim.—1. In an apparatus for distributing oil over the surface of water, a vessel combined with a force-pump, supply-pipe therefor, a flexible discharge-tube leading therefrom, and a floating distributer, substantially as described, connected with the end of the discharge-tube, as set forth.

2. The combination, with a vessel, of a force-pump, supply-pipe therefor, a discharge-tube leading therefrom to and from the end of the jib-boom, and a distributer attached to the end of the tube to distribute the oil forced through the tube and into the distributer upon the surface of the water, substantially as described.

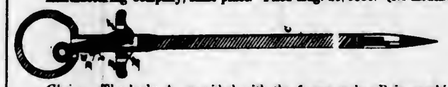
3. The combination, with a vessel, of a force-pump, supply-pipe therefor, the discharge-tube and distributer, the latter consisting of a hollow shell having perforated sides and closed ends, substantially as described.

4. The force-pump *c* and supply-pipe therefor, flexible discharge-tube *d*, passing to and around a grid on the end of the jib-boom, the distributer *f*, and cord *m*, substantially as described.

5. The floating distributer *f* for receiving oil and distributing it over the surface of the water, the same consisting of a hollow shell having perforated sides and closed ends, and a keel, the forward end being pointed, all as shown and described.

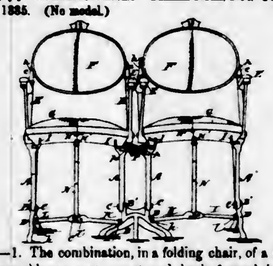
6. In an apparatus for distributing oil over the surface of water, a force-pump, supply-pipe therefor, a flexible discharge-pipe leading therefrom, and a floating distributer, substantially as described, connected with the end of the discharge-pipe, as set forth.

335,036. **HAY-FORK.** JACOB NEY, Canton, Ohio, assignor to the Ney Manufacturing Company, same place. Filed Aug. 21, 1885. (No model.)



Claim.—The body A, provided with the frame or bar B, in combination with the sliding bar C, provided with the locking-bar D, said locking-bar D being provided with the notch or recess F and the shoulder G, and the spring E, substantially as and for the purpose specified.

335,037. **FOLDING CHAIR.** PIERRE NÖEL, New York, N. Y. Filed June 5, 1885. (No model.)



Claim.—1. The combination, in a folding chair, of a stationary support and a movable support, a seat and back formed in substantially equal parts hinged together at their meeting edges, and also hinged at their outer edges to the supports, respectively, and a spring, which, acting on one-half of the seat of the chair, automatically closes the same by collapsing the seat and the back and drawing the movable support up to the stationary support, substantially as and for the purposes set forth.

2. The combination, in a folding chair, of a stationary support, A, a movable support, A', arm-rests E, a divided seat, G, hinged at its meeting edges, and also hinged at the outer edges, respectively, to the supports A and A', a divided back, F, a spring, P, arm Q, pivoted lever R, engaging with arm Q at one end and with an extension from the hinge or collar H at the other end, the levers K and L, the one adjacent to the stationary support being the longer, a connecting-rod, N, provided with a foot, *n*, a locking or holding device, O, and pin o^3, all combined and operating substantially as and for the purposes set forth.

3. The combination, in a folding chair, of a stationary support, A, a movable support, A', said supports both extending to the floor on substantially vertical lines, a divided seat, and a divided back, the parts whereof are respectively hinged together at their meeting edges and hinged at their outer edges to the supports A and A', respectively, the seat folding upwardly and the back folding inwardly, whereby the movable support may be shoved up toward the stationary support and the width of the chair reduced without lifting the movable support and without increasing the height of the chair or its depth when folded, substantially as and for the purposes set forth.

4. The combination, in a folding chair, of a seat divided on substantially a medial line from the front to the back thereof, hinged at its meeting edges and at its sides, respectively, to a stationary support and a movable support, and a spring which is put under tension by the opening of the seat, and which, when the seat is released from confinement, causes the same to collapse, drawing the movable support up to the immovable support, substantially as and for the purposes set forth.

5. The combination, in a folding chair, of a stationary support, A, a movable support, A', a seat, Q, divided on substantially a medial line from front to rear and hinged together at its meeting edges and at its sides to the stationary and movable supports, respectively, and a spring, P, fastened to one of the supports, and which acts on the seat to fold the same, and a rack-bar, O, pivoted to one half of the seat near the crack therein, and which spans the same and engages with a pin, o^3, on the other half of the seat when the chair is partly opened, but when pressed upon is disengaged from connection with the pin o^3 by reason of the recess or slot o^2 in the rack-bar *o*, substantially as and for the purposes set forth.

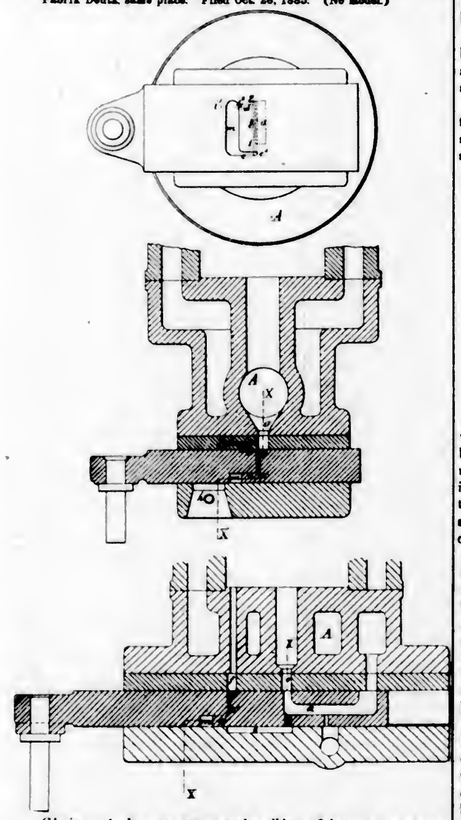
6. The combination, in a folding chair, of a divided seat hinged together at its meeting edges, and also hinged at one side to a movable support and at the other to an immovable support, and a spring attached

to the immovable support, the free end whereof engages with an arm attached to one of the parts of the seat, which spring is put under stress by opening the seat, and levers of unequal length pivoted together at one end and to the movable and immovable supports at their other ends, respectively, the longer lever being pivoted to the immovable support, and a connecting-rod connecting the seat with the levers at or near their point of connection with each other, said connecting-rod being provided with a foot, which engages with the shorter lever by a cam action, whereby the movable support is lifted from the floor during the closing of the chair, substantially as and for the purposes set forth

7. The combination, with an automatically-closing chair having a divided seat, of a holding rack-bar attached to one part of the seat adjacent to the dividing-line between the two parts, and a catch upon the other part, the rack-bar having teeth or catches arranged at its inner end to engage with the catch in a partially-opened condition of the chair, and having a recess between the teeth and its pivot to pass over the catch in the fully-opened condition thereof, whereby the rack-bar holds the chair partially open while the user is taking seat therein, but is disengaged when the weight of the user comes upon the chair, so as to permit its automatic closure when vacated, substantially as set forth.

8. The combination, in a folding chair having a divided seat, of hinges I, attached to the chair by a bolt, J, the said hinges being provided with a tongue, i, which is adapted to engage with a groove formed on the support of the chair when the seat is tipped back when in its extended position, thus preventing the closing of the chair until the seat is lowered again, substantially as and for the purposes set forth.

335,038. **SLIDE AND PASSAGE FOR GAS-MOTOR ENGINES.** NICOLAUS A. OTTO, Deutz-on-the-Rhine, Germany, assignor to the Gasmotoren Fabrik Deutz, same place. Filed Oct. 26, 1885. (No model.)

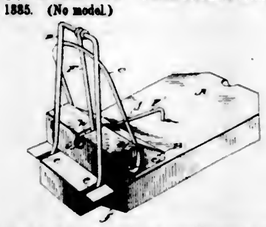


Claim.—1. In a gas-motor-engine slide, a firing-passage of considerable length and small sectional area, communicating at one end with the igniting-cavity *m*, and having at its other end an extended communication or several communications with the cylinder-port, substantially as and for the purposes set forth.

2. In a gas-motor engine, the combination of the igniting-cavity *m*, firing-passage e e' e^2, and channel *d* of the slide with two or more apertures, i' i^2, in the cylinder-face, through which the combustible mixture enters the firing-passage, substantially as and for the purpose set forth.

3. In a gas-motor engine, the combination of the igniting-cavity *m*, firing-passage e e' e^2, charging-passage *a*, and hole *b* of the slide with the channel *c* in the cylinder-cover and subsidiary cylinder-port *f*, substantially as and for the purpose set forth.

335,039. **ANIMAL-TRAP.** DENIEL PHILLIPS, Cochranton, Pa. Filed Jan. 30, 1885. (No model.)



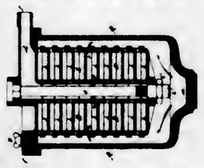
Claim.—1. In an animal-trap, the combination, with a base having a block secured thereto, of a spring-loop secured to said block, a pivoted looped standard working in slots of the base, the rod pivoted to the looped standard and having its lower end working in a slot in the block, and the pivoted trigger F, as set forth.

2. In an animal-trap, the combination, with a base having a block secured thereto, said block having a passage or opening, of a spring-loop having coiled ends and extensions therefrom, said extensions fitting holes or openings in the base, and means, substantially as described, for holding the spring-loop in a raised position, as set forth.

3. In an animal-trap, the combination, with the base and the spring-loop, of the looped standard pivoted in slots or openings of said base, and adapted to be turned back upon the under side thereof, substantially as set forth.

4. The combination, with the base-block having the block B secured thereto, and the spring-loop C, of the pivoted looped standard carrying a pivoted rod, and a trigger adapted to bear against the end of the same, substantially as set forth.

335,040. **FILTER.** CARL W. E. PIEPER, Berlin, Germany. Filed Apr. 24, 1885. (No model.) Patented in Germany Jan. 13, 1885, No. 32,634; in Austria-Hungary Jan. 23, 1885, No. 22,855, No. 44,570; in France Feb. 4, 1885, No. 166,795, and in England Feb. 20, 1885, No. 2,345.



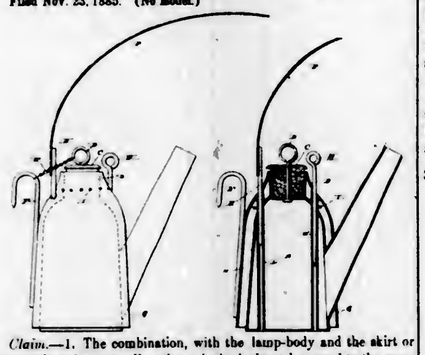
Claim.—1. In a filter, the combination, with a cylindrical inclosing-vessel having central bottom inlet-opening and top outlet-opening, of a battery of filtering-chambers concentric therewith supported therein remote from the sides and bottom thereof, said filtering-chambers having inlet-openings in their outer rims on one side of the filtering material in the chambers, and outlet-openings in their inner rims on the other side of said filtering material communicating with the outlet-opening in said inclosing-vessel, substantially as described.

2. In a filter, the combination, with a cylindrical inclosing-vessel having central bottom inlet-opening and top outlet-opening, of a battery of filtering-chambers concentric therewith supported therein remote from the sides and bottom thereof, said filtering-chambers consisting of concentric inner and outer rings forming side rims, and an interposed circular plate integral therewith, said outer rims being provided with inlet-openings on one side of said plate, and said inner rims with outlet-openings on the other side thereof, filtering-sheets adapted to be clamped between each pair of contiguous rims, and means for clamping said filtering-chambers together in a battery, substantially as described.

3. In a filter, the combination, with a cylindrical inclosing-vessel having central bottom inlet-opening and top outlet-opening, of a battery of filtering-chambers concentric therewith supported therein remote from the sides and bottom thereof, said filtering-chambers consisting of concentric inner and outer rings forming side rims, and an interposed circular plate integral therewith, said outer rims being provided with inlet-openings on one side of said plate, and said inner rims with outlet-openings on the other side thereof, filtering-sheets adapted to be clamped between each pair of contiguous rims, and a screw-rod supported in the upper end of said inclosing-vessel and passing through the central openings in said filtering-chambers, but smaller in diameter than said central openings, and a nut on said screw-rod for clamping said filtering-chambers together, substantially as described.

4. In a filter, the combination, with a cylindrical inclosing-vessel having central bottom inlet-opening and top outlet-opening, of a battery of filtering-chambers concentric therewith supported therein remote from the sides and bottom thereof, said filtering-chambers consisting of concentric inner and outer rings, forming side rims, and an interposed circular plate integral therewith, said outer rims being provided with inlet-openings on one side of said plate, and said inner rims with outlet-openings on the other side thereof, filtering-sheets adapted to be clamped between each pair of contiguous rims, and means for clamping said filtering-chambers together in a battery, said outer rims being provided with flanges on one edge adapted to overlap the next contiguous rim and hold the pile in position when the parts are clamped together, substantially as described.

335,041. **MINER'S LAMP.** HENRY J. RICHARDS, Wilkes-Barré, Pa. Filed Nov. 23, 1885. (No model.)

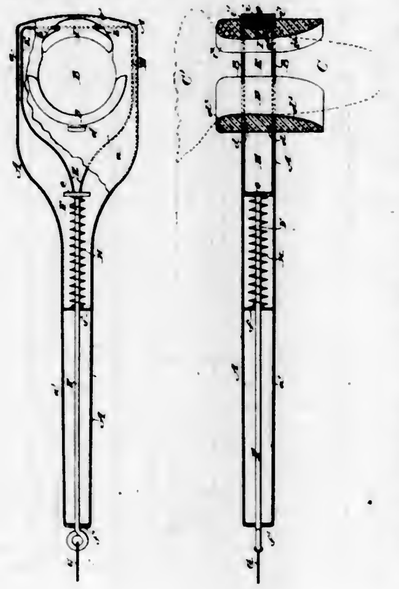


Claim.—1. The combination, with the lamp-body and the skirt or jacket, of the tubes extending through the body and secured to the same and to the jacket, substantially as and for the purposes specified.

2. The combination, in a miner's lamp, of the tubes extending vertically through the same and the hood having supporting-wires adapted to fit in two of the tubes to hold the hood over the flame, substantially as specified.

3. The combination, in a miner's lamp, of the lamp-body and surrounding jacket, the vertical tubes extending through the body and jacket, the shield having wires adapted to fit in two of said tubes, and the picker fitted in the remaining tube, substantially as and for the purposes specified.

335,042. **COW-MILKER.** REUBEN D. ROTH, Mummasburg, Pa. Filed Sept. 24, 1885. (No model.)



Claim.—1. The combination, in a cow-milker, of a case or head-piece provided with an elongated handle and a teat-receiving recess, and a sliding presser-frame fitting in the head-piece and provided with a recess facing the teat-receiving recess of the head-piece, and a stem connected to the presser and passing along the handle for operating the said presser, substantially as and for the purpose herein set forth.

2. The combination, in a cow-milker, of a case, A, having an elongated handle, *a'*, and apertured at B to receive the teat, an elastic presser, D, at one side of said aperture, a frame, E, fitted to slide in case A, and provided with an elastic presser, I, facing the presser D, and having a stem, F, passing along the case-handle *a'*, and a spring, H, acting to project the frame E when the back pull on said frame is relaxed, substantially as herein set forth.

3. The combination, in a cow-milker, of a case, A, having an elongated handle, *a'*, and apertured at B to receive the teat, an elastic presser, D, at one side of said aperture, a frame, E, fitted to slide in case A, and having an elastic presser, I, facing the presser D, and provided also with a stem, F, passing along the case-handle *a'*, a pull-cord, G, attached to stem F, and a spring, H, acting to project the frame E when the pull on cord G is relaxed, substantially as herein set forth.

4. A cow-milker provided with elastic teat-clamping plates or pressers D I, formed with rounded upper corners, as at d^2 i^2, and with faces having gradual outward curves toward their lower ends, as at d^4 i^3, substantially as herein set forth.

335,043. **BREECH-LOADING FIRE-ARM.** WILLIAM H. SHEAR, Albany, N. Y. Filed Nov. 5, 1885. (No model.)



Claim.—1. The combination of the handle or stock and the barrel pivoted thereon so as to be broken down and having a slot cut in its rear end, with a nipple-carrying plate or lever which is pivoted on the end of the barrel, and which is operated by a connecting-rod when the barrel is returned to its unbroken position to close the plate into said slot, substantially as shown.

2. The combination of the handle or stock, a barrel pivoted thereon, and a connecting-rod which is connected at one end to the stock and at the other to a nipple-carrying plate pivoted to the barrel and closed into a slot at the rear end thereof, together with the firing-bolt and hammer for actuating the same, as described.

3. The combination of the handle or stock and the barrel which is pivoted thereon so as to be broken down, which is cored out at its rear end so as to form a chamber to receive the powder, and has a vertical slot cut in its rear end, and which is provided with the ears D, with the lever or plate pivoted between such ears, which fits in the slot, and which has a nipple formed upon it to receive a percussion-cap, with the hammer for exploding the cap, whereby loose ammunition can be used in a breech-loader, substantially as set forth.

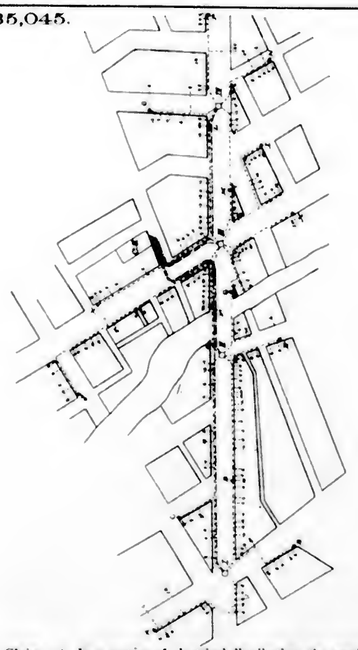
335,044. **PROCESS OF MANUFACTURING GRAPE-SUGAR.** FRANZ SOXHLET, Munich, Germany, assignor to Franz O. Matthiessen, Irvington, N. Y. Filed Dec. 2, 1885. (Specimens.)

Claim.—1. The herein-described process of manufacturing hydrate of grape-sugar in crystals of wart-like and compact form and glassy appearance, which consists in introducing into a suitable crystallizing-tank an aqueous solution of grape-sugar of a density of 36½° Baumé, determined at 194° Fahrenheit, and maintaining it at a temperature of 95° Fahrenheit during the crystallizing operation.

2. Pure hydrate of grape-sugar crystallized in wart-like and compact forms and of a glassy appearance, produced by the process herein set forth.

335,045. **SYSTEM OF ELECTRICAL DISTRIBUTION.** FRANK J SPRAGUE, New York, N. Y., assignor to the Edison Electric Light Company, same place. Filed Sept. 19, 1885. (No model.)

335,045.



Claim.—1. In a system of electrical distribution, the combination, with the main conductors, of two or more feeders connecting such main conductors with the source of electrical supply, said feeders carrying different normal loads and constructed of different resistance inversely proportional to the loads they carry, so as to produce the same difference in potential at the terminals of the two or more feeders, substantially as set forth.

2. In a system of electrical distribution, the combination, with main conductors and two or more feeders, such feeders carrying different normal loads and constructed of different resistance, connecting the mains with the source of electrical supply, of means for regulating such feeders to compensate for variations from the normal distribution of the translating devices, substantially as set forth.

3. In a system of electrical distribution, the combination, with main conductors and two or more feeders, such feeders carrying different normal loads and constructed of different resistance, connecting the mains with the source of electrical supply, of means for regulating such feeders to compensate for variations from the normal distribution of the translating devices, and means for regulating to compensate for changes in the total number of translating devices, substantially as set forth.

4. In a system of electrical distribution, the combination, with two or more feeders from the source of electrical supply, of main conductors connected with such feeders, and constructed of different resistance inversely proportional to the loads they carry, each main conductor being of uniform size throughout its length, substantially as set forth.

5. In a system of electrical distribution, the combination, with a source of electrical supply, of two or more feeders therefrom carrying different normal loads and constructed of different resistance inversely proportional to their normal loads, and main conductors connected with and supplied by such feeders, said mains being constructed of different resistance inversely proportional to their loads and of uniform size throughout their length, substantially as set forth.

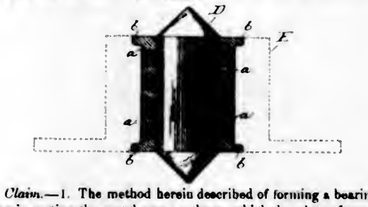
335,046. PULP-DIGESTER FOR PAPER-MAKING. CHARLES C. SPRINGER, Yarmouth, assignor to the American Sulphite Pulp Company, Portland, Me. Filed July 22, 1885. (No model.)



Claim.—1. The boiler-shell and sheets, plates, or sections of lining placed therein, and an acid-resisting packing placed at the joints of the lining, combined with the acid-resisting stay-strips B, to overlap the joints of the lining, substantially as described.

2. The boiler-shell and sheets, plates, or sections of lining placed therein, and an acid-resisting packing placed at the joints of the lining, combined with the acid-resisting stay-strips to overlap the joints of the lining, and with the bolts to clamp the stay-strips, lining, and sheets together, substantially as described.

335,047. JOURNAL AND BEARING. FRANCIS B. TORREY, Bath, Me. Filed Dec. 16, 1885. (No model.)



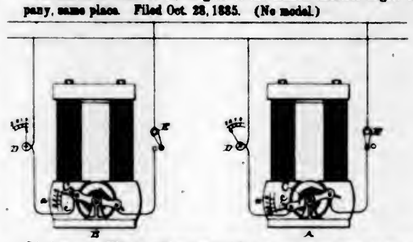
Claim.—1. The method herein described of forming a bearing, consisting in casting the metal upon a sleeve which has been formed with holes and provided with suitable filling, substantially as described.

2. A bearing for wheels, sheaves, or pulleys, consisting of a sleeve formed with holes, which are filled with suitable lubricating or non-heating material, combined with a wheel, pulley, or sheave or bushing cast thereon, substantially as described.

3. A bearing for wheels, sheaves, or pulleys, consisting of a sleeve formed with holes flaring from the inside outwardly and filled with lubricating or non-heating material, combined with a bushing, wheel, or pulley or sheave cast thereon, substantially as described.

4. The sleeve described, having flared holes and lubricating or non-heating filling adapted to be compressed by the shrinking of the metal thereon, substantially as described.

335,048. SYSTEM OF ELECTRICAL DISTRIBUTION. SCHUYLER S. WHEELER, New York, N. Y., assignor to the Edison Electric Light Company, same place. Filed Oct. 28, 1885. (No model.)



Claim.—1. The combination, with two or more dynamo-electric machines feeding into the same system in multiple arc, of means for independently regulating their respective electro-motive forces, and a contrivance arranged to show when the electro-motive force of one machine is sufficiently high to neutralize the opposing electrical pressure from the other machine or machines, substantially as described.

2. The combination, with two or more dynamo-electric machines, of regulating apparatus for regulating the strength of their fields simultaneously, and means whereby the fields may also be regulated independently of each other, substantially as described.

3. The combination, with a dynamo-electric machine, of two independent adjustable resistances in the field-circuit thereof, substantially as described.

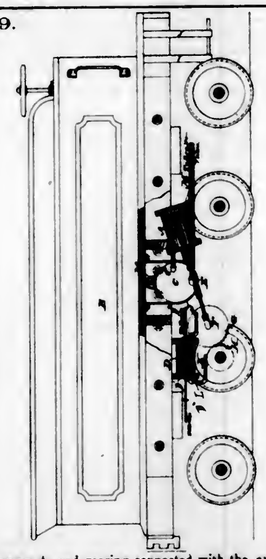
4. The combination, with two or more dynamo-electric machines or other sources of electric energy, of a circuit closing and opening contrivance for connecting and disconnecting one of the machines from the rest, and a galvanometer or current-indicator shunting the said contrivance, whereby the electrical pressure from the said machine may be compared with the electrical pressure from the other machines while the said contrivance is open and the machine practically disconnected, substantially as described.

335,049. AIR-BRAKE. ANDREW J. WEBER, Philadelphia, Pa., assignor of one-half to Marcus F. Richardson, same place. Filed Jan. 31, 1885. (No model.)

Claim.—1. The pump A, crank F, gearing G H, and axle of a car, in combination with the air-receiving cylinder C, the pipe C', the pipe M, and the brake-cylinder D, with pipes J K at its opposite ends, said pipes M J K being connected with the brake-valve, substantially as and for the purpose set forth

2. In a car-brake, a pump, in combination with the air-receiving cylinder C, the pipe C', the pipe M, and the brake-cylinder D with pipes J K at its opposite ends, said pipes M J K being connected with the brake-valve, substantially as and for the purpose set forth.

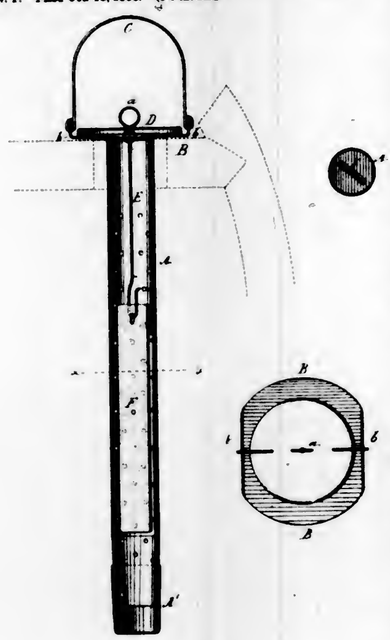
335,049.



3. The pump A, and gearing connected with the axle of a car for operating the pump, an air-receiving cylinder, C, the pipe C', and the pipe M, in combination with the brake-cylinder D, having pipes J K at its opposite ends, and piston-rods D^2, projecting in opposite directions through the end heads of said cylinder D, substantially as and for the purpose set forth.

4. The pump A, and gearing connected with the axle of a car for operating the pump, an air-receiving cylinder, C, a relief-valve on said cylinder, the pipe C', and the pipe M, in combination with the brake-cylinder D, having pipes J K at its opposite ends, and piston-rods D^2, projecting in opposite directions through the end heads of said cylinder D, substantially as and for the purpose set forth.

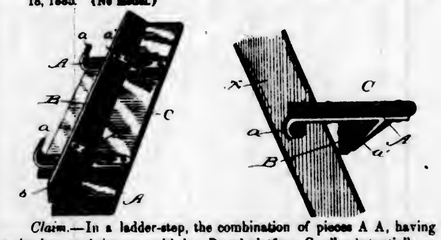
335,050. SULPHURING-TUBE. RUDOLPH A. WITTEMANN, New York, N. Y. Filed Oct. 13, 1885. (No model.)



Claim.—1. A sulphuring-tube consisting of a perforated tubular body having a detachable bottom cap, an enlarged head attached to the upper end of the tube, a disk resting on said head, and a suspension-wire supported by said disk and adapted to support the sulphuring-strip, substantially as set forth.

2. A sulphuring-tube consisting of a tubular perforated body having a detachable bottom cap, an enlarged head attached to the upper end of the body, a bail applied to ears of the head, a disk resting on the head, and a suspension-wire attached to the cap and adapted to support the sulphuring-strip, substantially as set forth.

335,051. LADDER-STEP. HORART AYRES, Chicago, Ill. Filed Dec. 18, 1885. (No model.)



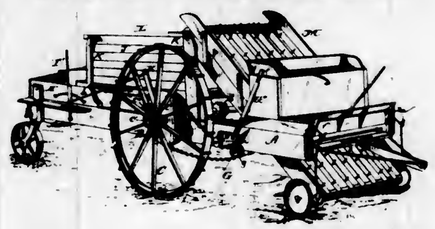
Claim.—In a ladder-step, the combination of pieces A A, having projections *a a'* thereon, with bar B and platform C, all substantially as described, and for the purpose set forth.

335,052. BOTTLE-WASHING BRUSH. JOHN BUCHHEIT, St. Louis, Mo., assignor of one-half to Max Hausman, same place. Filed Mar. 30, 1885. (No model.)



Claim.—A metal rod having a spiral line of tufts upon it inclined toward the end, and an end tuft, substantially as set forth.

335,053. PORTABLE HAY-PRESS. ELIPHAZ C. BURNETTE and WILLIAM H. PORTER, Parsons, Kans. Filed Dec. 17, 1885. (No model.)



Claim.—1. A combined hay-gatherer and baling-press, substantially as shown and set forth.

2. An apparatus for gathering and baling hay, consisting of an upper frame mounted on wheels and provided with baling mechanism, an endless carrier pivoted to the same and provided with means for gathering and conveying hay to the baling-box, substantially as shown, and for the purpose set forth.

3. In a device for gathering and baling hay, a frame provided with a plunger adapted to be operated from a shaft which carries the supporting-wheels, a rake and endless carrier attached to the frame, said carrier being operated from the same shaft as the plunger of the press, substantially as shown, and for the purpose set forth.

4. In a combined hay-gatherer and baling-press, a frame mounted on wheels and provided with a baling-box, reciprocating plunger, and means for moving said plunger in either direction, a frame carrying rake-teeth, and an endless belt, which is driven from the shaft of the supporting-wheels, so as to carry the hay into the baling-box, substantially as shown, and for the purpose set forth.

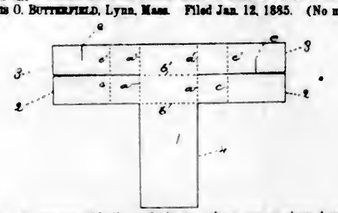
5. In combination with a frame constructed substantially as shown and described, and provided with a transverse shaft, upon which are mounted the supporting-wheels, a plunger adapted to reciprocate within the rear portion of said frame, and provided with a rack-bar for engagement with a pinion on the main shaft and a lever for throwing said rack-bar in and out of engagement, substantially as shown, and for the purpose set forth.

6. In a portable baling-press, a frame mounted on wheels and constructed substantially as shown, a reciprocating plunger provided with a

rack-bar, which engages with a cog-wheel or pinion attached to the shaft which carries the supporting-wheels, a lever for throwing said rack-bar in and out of engagement, flexible connections attached to the plunger and to a roller provided with a connection for operating the same from the main shaft, and means for throwing said connection in and out of engagement with the main shaft, the parts being organized substantially as shown, and for the purpose set forth.

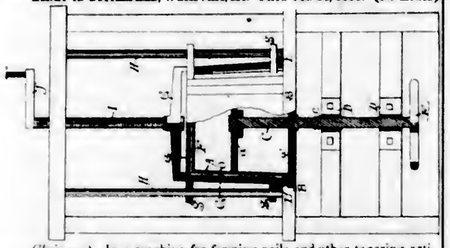
7. In combination with a press constructed substantially as described, and provided with a reciprocating plunger with a forwardly-extending portion, D'', an endless carrying-belt and a belt for carrying the hay from a receptacle to the haling-box, substantially as shown, and for the purpose set forth.

335,054. **WRAPPER FOR COINS AND OTHER SMALL ARTICLES.** FRANCIS O. BUTTERFIELD, Lynn, Mass. Filed Jan. 12, 1885. (No model.)



Claim.—A wrapper-blank made in one piece, cut or slotted to form laps 2 2 3 3, the laps 2 2 forming the ends and top of the completed receptacle, and the uncut portion between the laps and bottom thereof, the laps 3 3 forming the front and rear of the receptacle and re-enforcing the ends, said laps 3 3 having the interlocking slots *e e*, and the broad lap 4 projecting at right angles to the laps 2 2, and adapted to envelop the top, bottom, and sides, substantially as described.

335,055. **MACHINE FOR FORMING PAILS FROM PAPER-PULP.** HENRY R. BUTTERFIELD, Waterville, Me. Filed Oct. 24, 1885. (No model.)



Claim.—1. In a machine for forming pails and other tapering articles from paper-pulp, the porous former A, surrounded by the contractible and expansible perforated metal band O, combined with the female die or cylinder G, with its projecting head *g*, and means for raising and lowering the same, substantially as and for the purpose set forth.

2. In a machine for forming pails and other tapering articles from paper-pulp, a porous inverted former encircled by an overlapping perforated and tempered metal band, between which and the former the pulp is introduced, and which is collapsed about the former by the descending open-bottomed cylinder, carrying a head adapted to forming the bottom of the pail.

3. In a machine for forming pails from paper-pulp, the annular band having overlapping ends for compressing the formed pail, in combination with a cylinder which shuts down over them and presses them against the sides of the pail, substantially as described.

335,056. **SUSPENDER-BUCKLE.** SAMUEL A. CHAPMAN and DANIEL F. DALTON, Waterbury, Conn., assignors to the Chapman & Armstrong Manufacturing Company, same place. Filed June 11, 1885. (No model.)

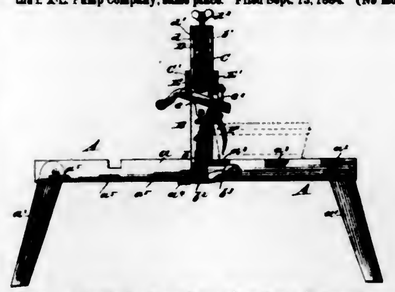


Claim.—1. A buckle composed of the main portion A, having the inwardly-projecting arms provided with slots *c*, the pivoted lever having the binding-lip *d*, and provided with projecting arms extending through the slots *c*, and bent back and around the stock of the buckle-frame, substantially as described.

2. A buckle composed of the main portion A, having the inwardly-projecting arms A', provided with slots *c*, and the binding-lever formed of the blank made up of the part K for grasping, the portion *d*, adapted to bind the strap of the suspender, and the arms *b*, adapted to enter the slots in the arms A' of the main body of the buckle.

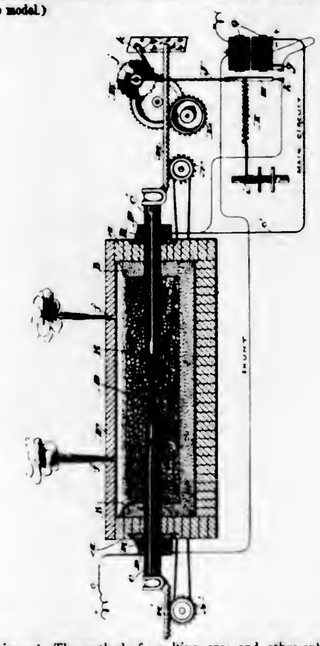
3. The body A, formed with wings A' and A', bent backward and over into a plane parallel with the plane of the frame and extending substantially to the middle thereof, and provided with slots *c* each side of the center, in combination with the binding-lever provided with arms *b*, introduced through said slots and bent around the body, substantially as and for the purpose set forth.

335,057. **WASH-BENCH.** GEORGE J. CLINE, Goshen, Ind., assignor to the I. X-L. Pump Company, same place. Filed Sept. 13, 1884. (No model.)



Claim.—A vertical wringer-frame pivoted to a horizontal supporting-frame, and having the lower ends of its standards notched to receive a transverse bar of said horizontal frame, and adapted to be engaged by detents, substantially as set forth.

335,058. **ELECTRIC FURNACE AND METHOD OF OPERATING THE SAME.** ALFRED H. COWLES, Cleveland, Ohio. Filed May 15, 1885. (No model.)



Claim.—1. The method of smelting ores and other substances by the incandescence of an electrical resistance material contained in said substances or mixed therewith, which consists in first bringing a limited quantity of the material to be treated between a pair of electrodes, and then gradually increasing the quantity of such material by causing the electrodes to recede from each other, substantially as herein set forth.

2. In the art of smelting ores and other substances by the direct heating action of the electric current, the method of obtaining a uniform action of said electric current upon the mass or charge to be treated, herein described, which consists in introducing into the charge electrodes which are normally in proximity to each other, and then gradually causing said electrodes to recede from each other, the contact with the charge still being preserved until the mass of the charge is contained between the said electrodes, substantially as set forth.

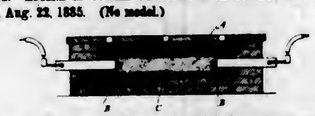
3. In an incandescent electrical smelting apparatus, the combination of a furnace-chamber having electrodes fitted into its opposite sides, with suitable mechanism for bringing said electrodes normally in proximity to each other within the furnace-chamber and gradually separating the same during the smelting process to the full extent of said furnace-chamber, substantially as herein set forth.

4. In an incandescent electrical smelting apparatus, the combination of a furnace-chamber having electrodes fitted into its opposite sides, mechanism for normally bringing said electrodes in proximity to each other and gradually separating the same during the smelting process to the full extent of the furnace-chamber, and a charge of electrical resistance material in contact with both electrodes during the entire process, substantially as herein set forth.

5. The combination, with an adjustable electrode of an electric furnace, of a mass of heat-conducting particles, preferably globular, encompassing the electrode outside of the furnace-chamber, substantially as and for the purpose set forth.

6. The combination, with adjustable electrodes, of contact-boxes, preferably of copper, located one at either end of an electric furnace, and through which the electrodes pass, filling for the boxes, preferably of copper, and preferably of a globular formation, arranged around the respective electrodes and in contact therewith, substantially as set forth.

335,059. **ELECTRIC FURNACE FOR METALLURGIC OPERATIONS.** EUGENE H. COWLES and ALFRED H. COWLES, Cleveland, Ohio. Filed Aug. 22, 1885. (No model.)

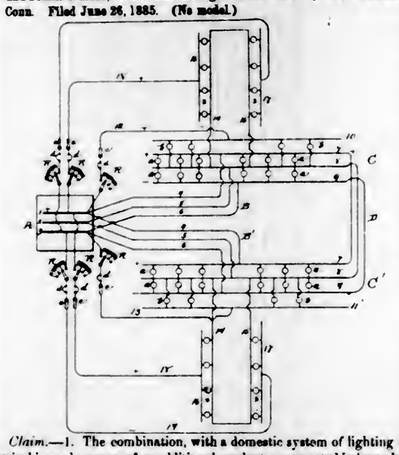


Claim.—1. In an electric furnace in which the current passes through the charge, a lining for the walls of the furnace, consisting of a mixture of charcoal and a refractory material which is a poor conductor of electricity, both being in a finely-divided condition, substantially as and for the purpose set forth.

2. A lining for the walls of an electric furnace, consisting of finely-divided charcoal previously prepared by soaking it in water impregnated with lime, substantially as and for the purpose set forth.

3. A lining for the walls of an electric furnace, consisting of a homogeneous mixture of charcoal and lime, both of which are in a finely-divided condition, substantially as and for the purpose set forth.

335,060. **SYSTEM OF ELECTRIC LIGHTING.** HARRY M. DOUBLEDAY, New York, N. Y., assignor of three-fourths to James S. Humbird and Frank S. Marr, both of Harrisburg, Pa., and James Lyman, Middlefield, Conn. Filed June 26, 1885. (No model.)



Claim.—1. The combination, with a domestic system of lighting by electrical incandescence, of an additional conductor connected independent of the domestic system with one pole of the source of electrical supply at the station, and lamps connected between such additional conductor and a conductor of the domestic system, substantially as set forth.

2. The combination, with a connected system of conductors, incandescent electric lamps connected in multiple arc with such conductors, and a source of electrical energy connected by feeding-circuits with such system of conductors, the whole forming a domestic system of electric lighting, of one or more additional conductors, incandescent electric lamps connected in multiple arc between such additional conductors and conductors of the domestic system, and one or more separate connections from such additional conductors to the source of supply of the domestic system, substantially as set forth.

3. The combination, with a three-wire or compensating system of electric lighting, of an additional conductor, electric lamps connected between such additional conductor and the neutral or compensating conductor of the system, and a separate connection from such additional conductor to one side of the source of electrical supply, substantially as set forth.

4. The combination, with a domestic system of electric lighting, of street-lamps connected between an additional conductor and a conductor of the domestic system, a separate single part connection from such additional conductor to one side of the source of electrical supply, and an adjustable resistance in such connecting-conductor, substantially as set forth.

5. The combination, with a domestic system of electric lighting, of street-lamps connected between an additional conductor and a conductor of the domestic system, a separate single part connection from such additional conductor to one side of the source of electrical supply, and a circuit making and breaking switch in such connecting-conductor, substantially as set forth.

6. The combination, with a domestic system of electric lighting, of street-lamps connected between an additional conductor and a conductor of the domestic system, a separate single part connection from such additional conductor to one side of the source of electrical supply, and a fusible safety-catch in such connecting-conductor, substantially as set forth.

7. The combination, with a domestic system of electric lighting composed of connected conductors supplied by feeders from a central station, of two or more separate and independent additional conductors, lamps connected between each of such additional conductors and the conductors of the domestic system, and a separate connection from each additional conductor to the source of supply at station, substantially as set forth.

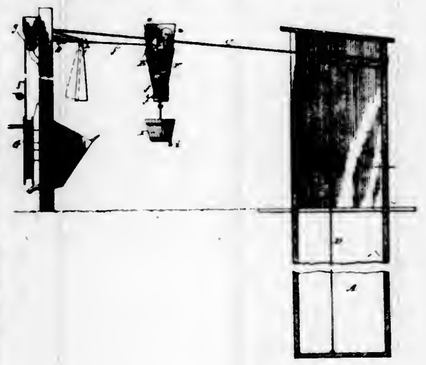
8. The combination, with a domestic system of electric lighting composed of connected conductors supplied by feeders from a central station, of street-lamps arranged in divisions, the lamps of each division being connected between an additional conductor and a conductor of the domestic system, and separate connections from such additional conductors to the source of supply, such connections being made some to one side or pole and some to the other side or pole of the source of supply, substantially as set forth.

9. The combination, with a three-wire or compensating system of electric lighting, of street-lamps arranged in divisions between independent additional conductors and the neutral or compensating conductor of the system, and separate connections from such additional conductors to the source of supply, such connections being made some to one side or pole and some to the other side or pole of the source of supply, substantially as set forth.

10. The combination, with the three-wire or compensating system of electric lighting, of an extension of the neutral conductor beyond the limits of the system, an additional conductor parallel with such extension of the neutral conductor, street-lamps located between such additional conductor and the extension of the neutral conductor, and a separate connection from said additional conductor to the source of supply, substantially as set forth.

11. The combination, with a three-wire or compensating system of electric lighting, of an extension of the neutral conductor beyond the limits of the system, two or more additional conductors parallel with such extension, connections from such additional conductors to opposite sides or poles of the source of supply, and street-lamps located between such additional conductors and said extension of the neutral conductor, substantially as set forth.

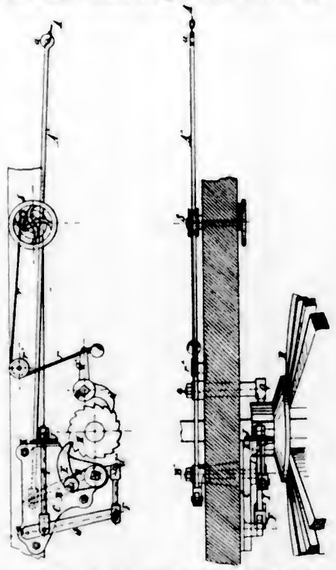
335,061. **WATER-ELEVATOR.** ROBERT C. DUGAN, Millersburg, Ohio. Filed Apr. 10, 1885. (No model.)



Claim.—1. The combination of wires D, standing within the well away from the walls thereof and provided with offsets D', an inclined supporting-wire, C, a carrier, E, provided with rollers *e*, to run on said wire C, a loose portion, *f*, provided with a cross-bar, f^3, having its ends hook-shaped, as described, and a cord, *f'*, passing around a pulley in the said loose portion *f* and over pulleys in the carrier E, substantially as shown and described.

2. The combination of the fixed wire C, the carrier E, mounted thereon, the latches f^4, pivoted to the carrier, the loose portion *f*, provided with the hook-ended bar f^3, the hooked fork H, pivoted at *h*, and the wedge-shaped pieces *h'*, hung to the said fork in the path of the bar f^3, substantially as shown and described, for the purpose specified.

335,062. APPARATUS FOR STARTING AND PROPELLING WHEELED VEHICLES. LÉON DUHAMEL, Paris, France. Filed Sept. 21, 1885. (No model.) Patented in England July 27, 1885, No. 9,032.



Claim.—1. A four-wheeled vehicle having the traction-traces connected with the hind-wheel hubs by a pawl and ratchet, substantially as described.

2. A four-wheeled vehicle having the traction-traces connected with the axle of the hind wheels by a lever and pawl and a ratchet on the wheel-hubs, substantially as described.

3. The combination, with the stationary hind-wheel axle of a four-wheeled vehicle, of hind wheels revolving on said axle, and each having a ratchet-wheel on its hub, brackets connected with the vehicle-body, a shaft carried by the brackets, pawl-levers on said shaft, a second lever on said shaft, and the traction-traces connected with the latter lever, substantially as described.

4. The combination, with the hind axle of a four-wheeled vehicle, of the wheel-hubs provided with ratchet-wheels, the brackets secured to the vehicle-body, a shaft carried by the brackets, the pawl-levers on the shafts, the second levers on said shaft, and the rods attached to the second levers for connecting with the traction-traces, substantially as described.

5. The combination, with the vehicle-body and the wheel-hub having a ratchet-wheel, of the bracket C, the shaft B', the lever B, secured to the shaft, the pawl-lever D, secured to the shaft, the lever G, connected by a link with the pawl-lever, the rod I, connected with said lever G, and the spring J, acting on said rod, substantially as described.

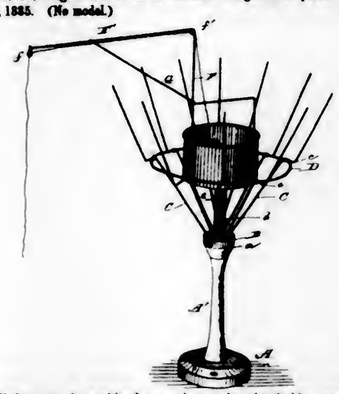
6. The combination, with the wheel-hub having a ratchet-wheel, of a shaft, B', having a lever, B, for connecting with the traction-trace, the pawl-lever D, secured to said shaft for turning the wheel-hub to advance the vehicle, and a second pawl, Q, for engaging the ratchet-wheel to prevent back movement of the vehicle, substantially as described.

7. The combination, with the lever B, shaft B', lever D, and pawl E, of the link F, lever G, rod I, and spring J; substantially as and for the purposes set forth.

8. The combination, with the road-wheel R, of the ratchet-wheel H, pawl Q, cord *r*, and barrel S, rotated by a hand-wheel, substantially as and for the purposes set forth.

9. The combination, with the road-wheel R, of the ratchet-wheel H, pawl E, levers D and B, trace-rod A', pawl Q, cord *r*, and barrel S, substantially as and for the purposes set forth.

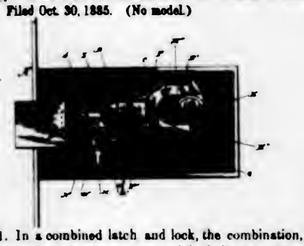
335,063. BAG AND TWINE HOLDER. LEVI Q. EDGERTON, Smithton, Mo., assignor of one-half to Frank L. Wright, same place. Filed July 2, 1885. (No model.)



Claim.—1. A combined paper bag and twine holder, consisting of a standard embraced by a collar having projecting arms C for the reception of paper bags, and a receptacle, E, having a horizontal projecting arm with an eye at the end thereof, substantially as shown, and for the purpose set forth.

2. In a combined bag and twine holder, the combination, with a base, A, and vertical standard A', having a reduced upper portion, *b*, and collar B, having diagonally-extending arms C, embracing the ring D, and extending upwardly therefrom so as to form supports for bags, of the receptacle E, with the depending socket *e*, mounted on the upper end of the portion *b* of the standard and provided with a projecting arm, F F', having eyes *f f'*, and the brace-rod G, the parts being combined and organized substantially as shown, and for the purpose set forth.

335,064. COMBINED LATCH AND LOCK. SAMUEL F. ESTELL, Chicago, Ill. Filed Oct. 30, 1885. (No model.)



Claim.—1. In a combined latch and lock, the combination, with a suitable inclosing-case, of a two-part extensible bolt, one or more tumblers pivoted to one of said parts, and adapted to engage a stump on the other and lock the two parts with reference to each other, and two dissimilar keys, one adapted to extend or shorten said two-part bolt, and the other to throw forward and back the entire bolt and the tumbler or tumblers pivoted thereto.

2. In a lock and latch, the combination, with a suitable case, of a two-part extensible bolt placed symmetrically with reference to the side walls of the case, a series of tumblers pivoted to the rear part of said bolt and symmetrically placed with reference thereto, and engaging a stump or pin on the front part of said bolt, a single spring connecting said tumblers with the case, and adapted to hold the tumblers in engagement with said stump, and at the same time to draw forward the entire bolt and the tumblers attached thereto, and a key provided with a central ward, and a series of wards symmetrically arranged with reference to said central ward, said central ward being adapted to engage with the front part of said bolt and throw it forward or back with reference to the rear part thereof, and the remaining wards being adapted to act on said tumblers and disengage them from said stump during such movement of the front part of the bolt.

3. The combination, with the two-part bolt B B', of the tumblers C C', pivoted to the part B' and engaging the stump D on the part B, the case inclosing said bolts and tumblers, the spring S, connecting the case and the tumblers C C', and the keys K K'—one adapted to throw back the entire bolt and the tumblers attached thereto, and the other to throw the part B of the bolt forward or back with reference to the part B' thus converting the mechanism from a latch to a lock, or from a lock to a latch.

4. The combination, with the two-part bolt B B', the tumblers C C', pivoted to the rear part, B', and engaging with the stump D on the part B, and the spring S, connecting the tumblers and the inclosing-case, of the shank-sleeve E, passing through the part B' and having wings E' and notch E'', and the sliding catch A''', attached to the case and adapted to engage the notch E'' and lock the sleeve E against rotation, substantially as shown and described, and for the purpose set forth.

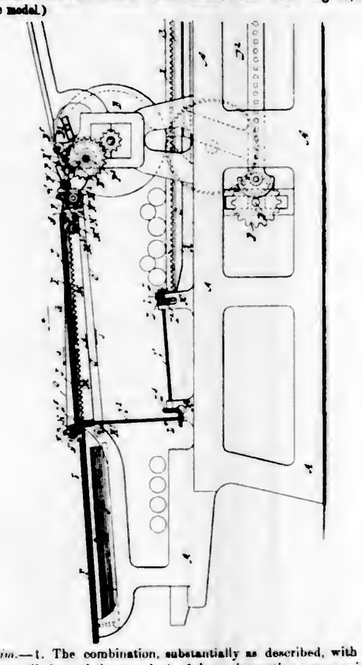
5. The combination, with a two-part bolt, B B', of a stump, D, on one of said parts, and one or more tumblers, C, pivoted on the other of said parts, each tumbler having a square end adapted to abut against the stump D and prevent relative longitudinal motion of the parts B B' when the bolt is extended, and having a slot, *c'*, open at one end, and provided at the other end with a notch, *c''*, adapted to receive the stump D and lock the parts B B' against relative longitudinal motion when the parts B B' are drawn together and the bolt is shortened.

335,065. MATCH. FREDERICK W. FARNHAM, White Mills, Pa., assignor to Eunice A. Farnham, same place. Filed July 7, 1884. (Specimens.)



Claim.—A match having a head composed of two separate compounds, one a safety composition and the other or tip an ordinary frictionally-ignitible composition.

335,066. SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES. GEORGE P. FERNER, New London, Conn. Filed Aug. 13, 1885. (No model.)



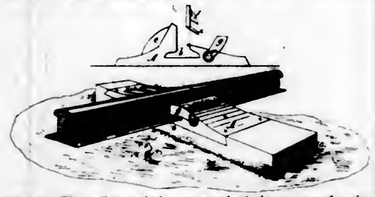
Claim.—1. The combination, substantially as described, with the impression-cylinder and the type-bed, of the reciprocating tape-carriage, the tape-rolls H H' thereon, one of which is restricted to an intermittent rotation in one direction, the tape-rolls H^2 H^3, mounted in the frame, one of which is confined to rotate intermittently in one direction only, and means, substantially as described, for conducting the sheets from the cylinder to the tapes.

2. The combination, substantially as shown and described, with the impression-cylinder, the type-bed, the reciprocating tape-carriage, and the roll H' thereof, of the roll H, having bearings in the carriage and restricted to rotate intermittently in one direction, the rolls H^2 H^3, mounted in the frame, the roll H^2 being restricted to rotate intermittently in one direction, the sheet-delivery tapes passing around the rolls H H' H^2 H^3, the sheet-delivery fingers P, and means, substantially as shown and described, for operating the same.

3. The combination, substantially as shown and described, with the impression-cylinder, the type-bed, and the rack K thereon, of the tape-carriage G, the rack thereof geared to the type-bed rack, for reciprocating the carriage G, the roll H, mounted on the carriage, the ratchet-wheel N and its pawl *n*, roll H', the rolls H^2 H^3, mounted in the frame, the ratchet-wheel N' and pawl *n*, controlling-roll H^3, the sheet-delivery tapes O, passing around the rolls, the sheet-lifters P, mounted on shaft P', the cam P^2, and lever *p* for controlling the sheet-lifter.

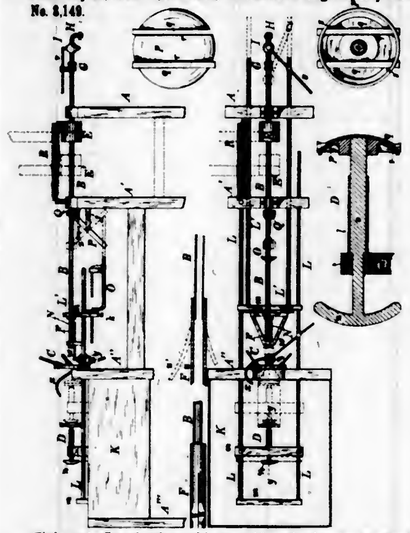
4. The combination of the reciprocating carriage G, the rolls H H' H^2 H^3, and the tapes O, passing round said rolls, the said tapes having imparted thereto an intermittent motion, substantially as shown and described.

335,067. RAILWAY-CHAIR. JOHN M. FINNERTY, Washington, D. C. Filed June 29, 1885. (No model.)



Claim.—The railway-chair composed of the two conforming parts herein described, the bolster-block having a socket-groove, buttress-braces, and slotted latching-catch, and the sliding wedge-plate having the shelving-flanges, all made to adjustably co-operate with the abutting and jointing ends of railway-track rails, substantially as and for the purpose herein specified.

335,068. BOTTLE-WASHER. GEORGE P. GOULDING, Rochester, N. Y. Filed May 22, 1884. (No model.) Patented in England, May 23, 1884, No. 8,149.



Claim.—1. In a bottle-washing machine, the herein-described device for cleaning the outer surface of bottles, said device comprising a series of radially-movable scrapers, E'', and a support therefor, substantially as described.

2. The herein-described device for cleaning the outer surface of bottles, the same comprising a series of radially-movable scrapers, E'', mounted in a suitable divided support, S, which permits the introduction of the bottles, substantially as described.

3. The herein-described device for cleaning the outer surface of bottles, consisting of a supporting-frame and a series of radially-arranged sliding rods, T, provided with scrapers E'' at their inner ends, substantially as described.

4. The combination, with a rotating brush adapted to clean the interior of bottles, of the herein-described external cleaning device consisting of radially-movable scrapers, substantially as described.

5. The combination, with the sliding frames L L', rest D, sleeve N, revolving mandrel B, and brush F, of the exterior-cleaning device C, consisting of a series of radially-moving scrapers, substantially as described.

7. The revoluble rest D for the bottoms of the bottles, provided with disk *p*, and one or more scrapers, *q*, substantially as described.

8. The combination, with the scraper E'', of the sliding rod T, pin *h*, spirally-grooved tube *g*, and spring *i*, substantially as described.

9. The combination, with a suitable support, of the series of radially-arranged sliding rods T, provided at their inner ends with the scrapers E'', and placed at an angle with the length of the bottle, substantially as and for the purposes described.

10. In a bottle-washing machine such as described, a series of scrapers for engaging the exterior of the bottle, radially disposed, and with their edges overlapping, said scrapers being mounted upon movable supports, substantially as described.

11. In a bottle-washing machine, and in combination with a movable frame carrying the bottle, a series of scrapers for engaging the exterior of the bottle, attached to yielding supports or carriers radially arranged and mounted upon a supporting-frame, substantially as described.

12. In a bottle-washing machine such as described, the combination of a reciprocating frame provided with suitable devices for supporting the bottle, a frame provided with an opening or passage to admit the bottle, and a series of yielding and radially-disposed scrapers mounted upon said last-named frame and adapted to engage the exterior of the bottle and yield to accommodate its different diameters, substantially as described.

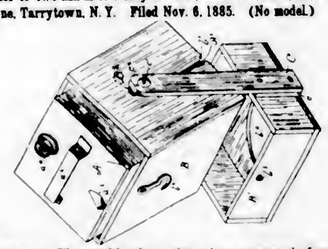
13. In a bottle-washing machine such as described, the combination of a reciprocating frame carrying supports for the bottle, revoluble spindle carrying a brush for cleaning the interior of the bottle, and a series of radially-disposed and yielding scrapers for engaging the exterior of the bottle, substantially as described.

14. In a bottle-washing machine such as described, the combination of a reciprocating frame carrying a revoluble support and cleaner for engaging the bottom of the bottle, a tubular or hollow support for the mouth of the bottle, and a revoluble spindle carrying a brush for cleaning the interior of the bottle, said spindle and brush being located in line with and adapted to enter the mouth of the bottle through the tubular or hollow support as the frame is reciprocated, substantially as described.

15. In a bottle-washing machine such as indicated, and in combination with the reciprocating frame carrying the revoluble and tubular or hollow supports for the bottom and mouth of the bottle, respectively, as described, the revoluble and reciprocating spindle carrying the brush for engaging the interior of the bottle, and mechanism, substantially as indicated, intermediate the reciprocating frame and revoluble spindle, for causing their simultaneous reciprocation in opposite directions, substantially as and for the purpose set forth.

16. In a bottle-washing machine such as described, and in combination with the reciprocating and revoluble spindle carrying the internal brush, and the reciprocating frame carrying the tunular support for the mouth of the bottle, and the revoluble support and cleaner for the bottom of the bottle, the series of radial scrapers, their supports and springs, said scrapers being arranged to engage the exterior of the bottle as it is reciprocated and conform to the different diameters thereof, substantially as described.

335,069. **CAN FOR LIQUIDS.** JOHN GRAVES, New York N. Y., assignor of two-thirds to Henry Denison, Elizabeth, N. J., and Cornelius B. Payne, Tarrytown, N. Y. Filed Nov. 6, 1885. (No model.)



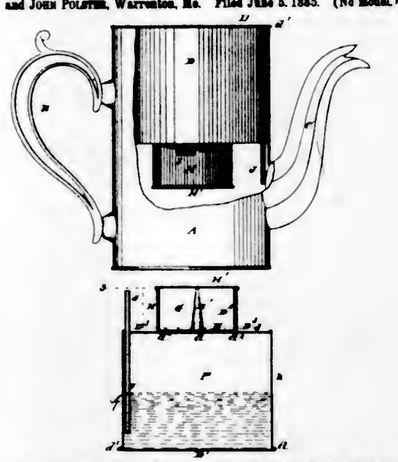
Claim.—1. The combination, with a box composed of two sections, B B', (preferably,) of unequal height, and inclosing a receptacle for liquids, rigidly attached to one of the sections of the box, as by means of the tube *a* and flange *a'*, of the two opposite vertical cleats C C, provided with the bolts *c'*, and the slots or ways *b'* in the box B, substantially as and for the purpose described.

2. The combination, with a box composed of two sections (preferably) of unequal height, the top of which is provided with an opening, *b*², and the bottom of which is provided with a perforation, *b*, and adapted to inclose an alcohol-can or other receptacle, of an alcohol-can, the top of which is provided with a handle, *a*², and the bottom of which is provided with the tube *a* and flange *a'*, substantially as and for the purpose set forth.

3. The combination, with the box B, the bottom of which is provided with a perforation, *b*, and with the can A, of the tube *a*, passing through the perforation *b*, and the flange *a'*, for the purpose of fastening the bottoms of the can and inclosing-case together, substantially as described.

4. The box B B', hooks *b*², screws *b*³, cleats C, slots *b'*, bolts *c'*, washers *c*², perforation *b*, can A, tube *a*, and flange *a'*, substantially as set forth.

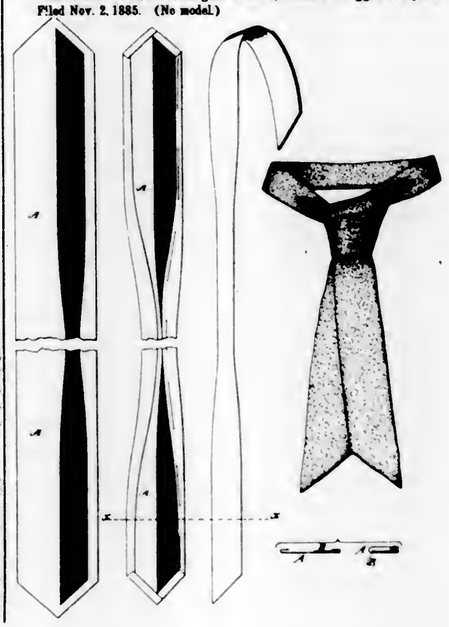
335,070. **COFFEE OR TEA POT.** JOHN P. GRONEMEYER, St. Louis, and JOHN POLSTER, Warrenton, Mo. Filed June 5, 1885. (No model.)



Claim.—1. A coffee and tea pot attachment consisting of a vessel having a water-chamber and a chamber for the material, a diaphragm between the chambers, a perforated cap to the chamber for the material, and a pipe for the admittance of air to the water-chamber, substantially as set forth.

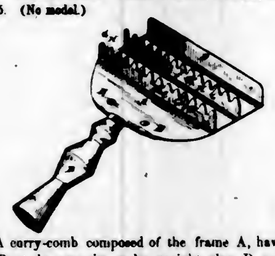
2. A coffee and tea pot attachment consisting of a vessel, D, formed with a bottom, D', having a marginal flange, *d'*, an opening, *d*, a neck, D², and a flange, *d*², surrounding the opening, the cap H, having a perforated top, H', the diaphragm E, formed with perforations and having post E' extending to the top, and the air-pipe J, substantially as set forth.

335,071. **METHOD OF MAKING SAILOR-KNOT SCARFS.** HENRY HEATH, New York, N. Y., assignor to Fink, Clark & Flagg, same place. Filed Nov. 2, 1885. (No model.)



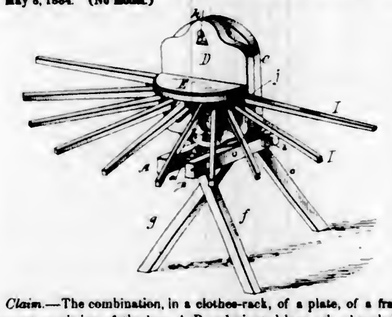
Claim.—The method of making a sailor-knot scarf with a narrow neckband and a wide end, which consists in cutting a strip to form its body or interlining piece, with an outward curve on both edges to form a narrow band with a wide end, then folding and fitting upon said body-strip an outer covering-piece to conform closely thereto along both edges thereof, and to meet upon one edge only, and finally uniting the two edges of said covering-piece along the entire length of the scarf by a single invisible seam along the one edge only of the body-piece, substantially in the manner and for the purpose herein set forth.

335,072. **CURRY-COMB.** FRANK I. HOWE, Medfield, Mass. Filed Nov. 4, 1885. (No model.)



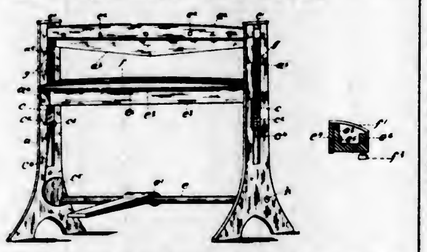
Claim.—A curry-comb composed of the frame A, having at one end a handle, B, at the opposite end a straight edge, D, and provided with intermediate combing-edges, C C², of a continuous undulatory form along their length without angles or corners, and with convex and concave portions G H, alternating with each other and in line with the corresponding portions of the others, substantially as shown and described

335,073. **CLOTHES-RACK.** EDWARD G. HURD, Seneca, Kans. Filed May 8, 1884. (No model.)



Claim.—The combination, in a clothes-rack, of a plate, of a frame or support consisting of the bars A B and pivoted legs *a b c*, beveled as described, and a plate provided with a series of pivoted arms and removably secured to said support or frame, substantially as set forth.

335,074. **MACHINE FOR JOINTING COMPRESSED BENT STAVES.** EDWARD M. JEWETT, Buffalo, N. Y., assignor to himself and Edward Michael, same place. Filed June 18, 1885. (No model.)



Claim.—In a machine for jointing staves, the combination of a stave-rest having a cutting-edge, a bar curved to conform to the edge of the stave, a top curved transversely and longitudinally to correspond with the hollow side of a compressed bent stave, an adjusting-bar, *e*, and a cutter having cutting-edge curved to conform with the stave-rest, substantially as described.

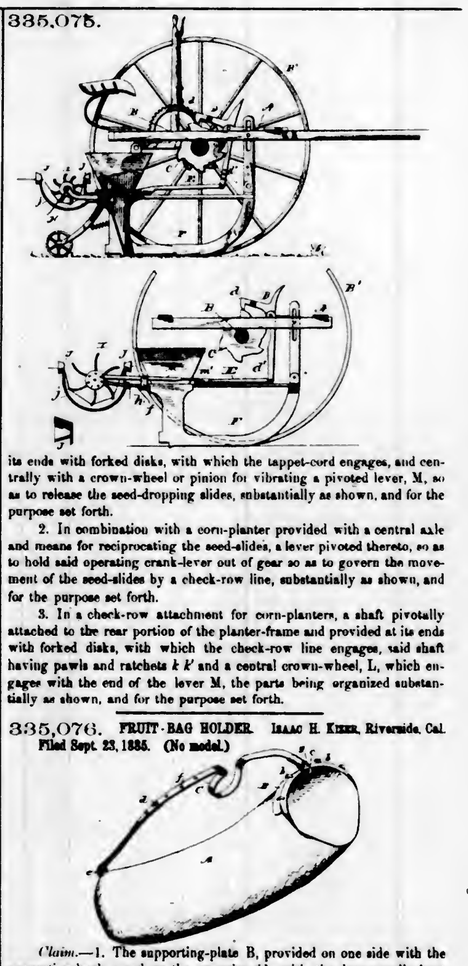
335,075. **CHECK-ROW ATTACHMENT FOR CORN-PLANTERS.** M. V. JORDAN and C. O. COLE, Letts, Iowa. Filed Oct. 5, 1885. (No model.)

Claim.—1. In a check-row mechanism for corn-planters, a transverse shaft journaled in supports attached to the rear of a frame carrying the seed planting and dropping mechanism, said shaft being provided at its ends with forked disks, with which the tappet-cord engages, and centrally with a crown-wheel or pinion for vibrating a pivoted lever, M, so as to release the seed-dropping slides, substantially as shown, and for the purpose set forth.

2. In combination with a corn-planter provided with a central axle and means for reciprocating the seed-slides, a lever pivoted thereto, so as to hold said operating crank-lever out of gear so as to govern the movement of the seed-slides by a check-row line, substantially as shown, and for the purpose set forth.

3. In a check-row attachment for corn-planters, a shaft pivotally attached to the rear portion of the planter-frame and provided at its ends with forked disks, with which the check-row line engages, said shaft having pawls and ratchets *k k'* and a central crown-wheel, L, which engages with the end of the lever M, the parts being organized substantially as shown, and for the purpose set forth.

335,076. **FRUIT-BAG HOLDER.** ISAAC H. KEER, Riverside, Cal. Filed Sept. 23, 1885. (No model.)



Claim.—1. The supporting-plate B, provided on one side with the supporting-hook c and on the opposite side with the downwardly-bent pins *b*, substantially as described.

2. A curved supporting-plate provided on its concave side with a hook and on its convex side with retaining-pins, in combination with a bag provided with a strap attached to the bottom thereof, said strap having a loop for engaging the said hook, substantially as described.

3. The combination of a curved supporting-plate provided with a hook on its concave side and retaining-pins on its convex side with a bag the upper edge of which laps over and engages with the retaining-pins, and which is provided with a loop at its bottom and a strap engaging at one end with said loop and provided with a loop at its other end, which engages with the hook on the curved supporting-plate, substantially as described.

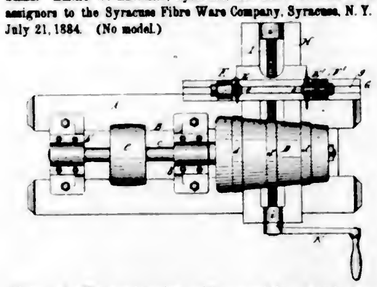
335,077. **LAND-ROLLER.** ELI W. KNOWLES, Francisco, assignor of one-half to Franklin M. Knowles, Owensville, Ind. Filed July 30, 1885. (No model.)



Claim.—In a land-roller, the herein-described roller, composed of a series of disks the sides of which are provided with annular grooves at some distance from their peripheries, alternating with a series of smaller

disks the peripheries of which have laterally-extending flanges that enter the grooves in the larger disks, said disks being secured together, substantially as and for the purpose herein set forth.

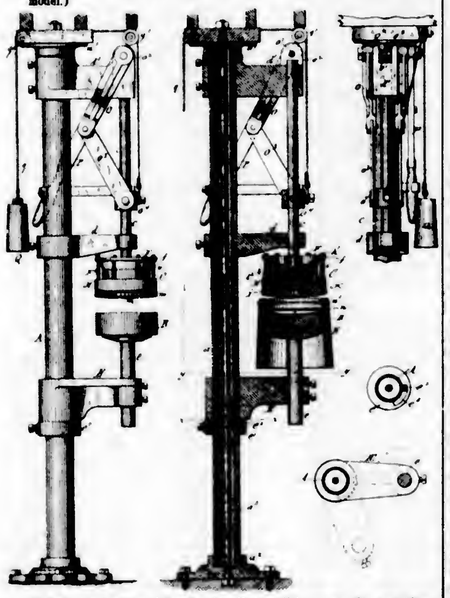
335,078. **MACHINE FOR TRIMMING THE ENDS OF PAPER VESSELS.** HENRY W. LEONARD, Syracuse, and JOHN STEVENS, Port Byron, assignors to the Syracuse Fibre Ware Company, Syracuse, N. Y. Filed July 21, 1884. (No model.)



Claim.—1. The combination, with a revolving tapering mandrel, of two circular cutters of different diameters adapted to bear simultaneously against the mandrel, substantially as set forth.

2. The combination, with a revolving mandrel, D, of a circular cutter attached to a standard, F, a guide-bar, G, arranged lengthwise of the mandrel and supporting the standard F, a guide-bar, H, arranged transversely to the guide-bar G and supporting the latter, and a feed-screw, I, substantially as set forth.

335,079. **MACHINE FOR BENDING PAIL-BOTTOMS.** HENRY W. LEONARD, Syracuse, and JOHN STEVENS, Port Byron, assignor to the Syracuse Fibre Ware Company, Syracuse, N. Y. Filed July 21, 1884. (No model.)



Claim.—1. In a machine for bending pail-bottoms, the combination, with a concave support, B, of a follower, C, provided with movable pressure-sections adapted to come in contact with the bottom near its periphery, and to gradually close against the bottom from its periphery toward its center, substantially as set forth.

2. In a machine for bending pail-bottoms, the combination, with a concave head-support, of a follower provided with movable convex pressure-sections, substantially as set forth.

3. In a machine for bending pail-bottoms, the combination, with a concave support, B, of a follower, C, provided with movable pressure-sections K and a flexible covering, *m*, substantially as set forth.

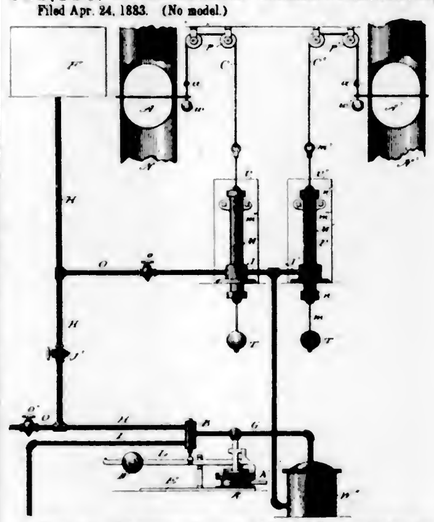
4. In a machine for bending pail-bottoms, a follower composed of the heads F F' G, movable ring H, interposed springs *i*, rod *h*, and pressure-sections K, attached loosely to said head, substantially as set forth.

5. In a follower, the combination, with the heads F F' G, of the movable ring H, rods *h*, springs *i*, pressure-sections K, ring *l*, and rods *l'*, substantially as set forth.

6. The combination, with the standard A and follower C, of the concave support B, bracket E, turning on said standard, and a stop whereby the movement of the bracket on the standard is limited, substantially as set forth.

7. The combination, with the standard A, provided with guides *d d'*, and the concave support B, of the follower C, attached to the rod *c*, toggle-bars O *o*², and hand-lever P, substantially as set forth.

335,080. **DAMPER-REGULATOR.** NATHANIEL C. LOCKE, Salem, Mass. Filed Apr. 24, 1883. (No model.)



Claim.—1. The combination, in a draft-regulating mechanism consisting of a damper and a motor for operating the same, and having a valve for controlling said motor, of the supplemental motor R, attached to said valve, having pipes G and K, and pipe H and reservoir F, all substantially as shown and described, and for the purpose specified.

2. The combination, with a damper and a motor for operating the same, of a supplemental motor having chamber *d*, loaded piston *d'*, and valve B, when said valve is connected for operation outside and beyond the center of said piston *d'*, as herein shown and described.

3. Damper-motor M, constructed as herein shown, having cylinder *m''*, piston P, with rod *m*, extending above, and having weight T, substantially as set forth, in combination with supplementary motor R, constructed substantially as herein shown and described.

4. In a draft-regulating device consisting of a damper, a valve, and a motor connected and operated as described, for operating said valve, of damper-operating motor M, constructed in the following manner: having cylinder *m''*, of sufficient length to allow piston P to rise and fall the full scope of the damper, having damper A, attached by a loose connection to piston-rod extending upward from the center of piston P, and having sufficient weight to open said damper, said weight adapted to move through the same space as piston P, substantially as shown and described.

5. In an automatic damper-regulator, a damper, a damper-motor connected with said damper to actuate and control the same, a source of water-supply under pressure, and a pipe connecting said supply with said motor, in combination with a valve in said supply-pipe, for controlling said damper-motor by controlling the water when being used as a motive power by being admitted to said motor under pressure and allowed to escape therefrom, said valve being connected with a steam-motor, whereby it is operated in accordance with the variations of boiler-pressure, substantially as shown and described.

6. In an automatic damper-regulator, a damper-motor having a cylinder and piston with a considerable range of motion, connected with the damper to control the same, a receptacle or source whence fluid is supplied under pressure, and a pipe connecting said source with said motor, combined with a regulating-valve in said pipe, to control the supply of said fluid, a steam-actuated motor of small range of motion, and means for connecting said motor with said valve, substantially for the purpose set forth.

7. In an automatic damper-regulator, in combination, a source of fluid-supply independent of the steam-generator, a damper-motor actuated by fluid under pressure drawn from said source, a regulating-valve to control said supply, and a motor connected with said generator and sensitive to variations of pressure therein, and with said valve to control the same by said steam-motor, whereby said motors are actuated by powers independent in source and pressure, but controlled in correspondence with fluctuations in the boiler-pressure, as set forth.

8. Valve B, constructed substantially as herein set forth, having a casing inclosing high-pressure chamber *i* and central chamber, *i'*, with exhaust-chamber *h'*, and chamber *g''*, with diaphragm *g*, separating it from high-pressure chamber *i*, and having ports *f* and *f'*, and having escape-passage *g'''*, with inlet-pipe H, outlet-pipe G, and exhaust-pipe I, and cylindrical piston *g'*, with a portion removed, all as shown, and for the purpose specified.

9. In an automatic damper-regulator, a source of fluid-supply and a damper-motor connected with the damper and with a source of fluid-supply, said damper-motor having a cylinder and a piston of considerable range of motion, combined with a regulating-valve, said valve connected to and operated by a steam-motor, whereby said fluid is admitted to actuate said damper-motor in one direction, and a weight to actuate said motor in an opposite direction when said fluid is exhausted, substantially as described.

10. The combination, with a damper and a motor for controlling the same and having a valve for operating said motor, of a supplemental motor having its movable piston resting upon a flexible diaphragm having the molded portion between said piston and the inside of chamber *d* extend upward from the bottom of said piston and return to be clasped between flanges, substantially as set forth.

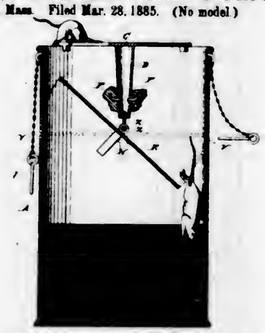
11. In an automatic damper-regulator having a damper and a damper-motor for controlling said damper, and a valve for controlling said motor, chamber W'', located in a line of pipe between said motor and said valve, substantially as shown and described, and for the purpose specified.

12. The combination, with a damper and a motor for operating the same, of a supplemental motor constructed in the following manner: having chamber *d*, loaded piston *d'*, and lever L, adapted to resist the force of steam-pressure acting upon piston *d'*, said lever L having a suitable valve-rod connecting lever L with pipe H and its valve, said valve-rod being connected with lever L at some distance from the point where piston *d'* connects with lever L, substantially as shown, and for the purpose set forth in the accompanying specification.

13. The combination, with a damper and a motor for operating the same, provided with a valve for controlling its operation, of a supplemental motor for operating said valve when said valve and its motor are connected by a suitable pipe with a source of water-supply, substantially as shown and described.

14. In a damper-regulating device, the combination of three subcombinations, the first of which is a steam-pressure motor of small range of motion, in combination with a device for multiplying the motion of the steam-motor, and with a valve actuated by the multiplied motion of the steam-motor; the second of which is the valve before referred to, serving to connect a water-way leading to a water-motor with either a source of supply under pressure or with an exhaust water-way, according to the position of the valve and the said water-way's source of supply under pressure and water-motor, and the third of which is the combination of the water-motor by suitable connections with the damper, all substantially as described.

335,081. **ANIMAL-TRAP.** GEORGE A. LONG and ALVIN A. LONG, Northfield, Mass. Filed Mar. 28, 1885. (No model.)

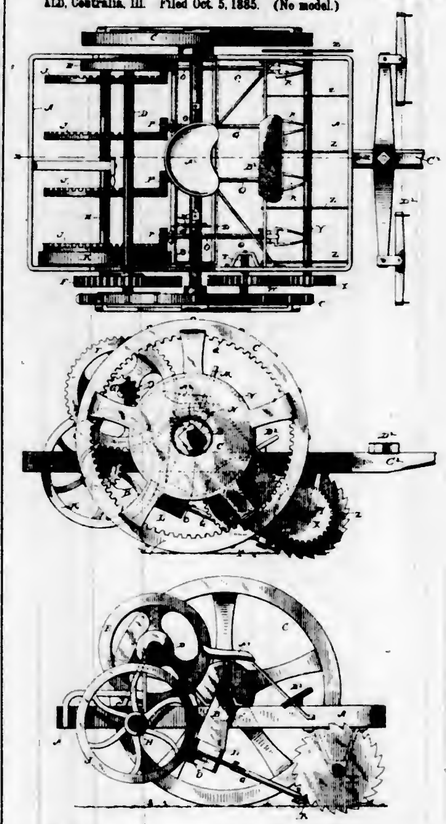


Claim.—1. The combination, with the vessel A, of the top cross-bar having the central hanger-arm, D, and the tilting false bottom E, joined to the hanger-arm by a free pivotal connection, whereby it is adapted to tilt in any direction, substantially as specified.

2. The animal-trap consisting of the vessel A, having an open cross-barred top formed with a central descending hanger-arm, provided with a tilting false bottom connected to the lower end of said hanger-arm, substantially as specified.

3. The animal-trap consisting of the vessel A, having the side perforations and pins described, the open cross-bar top having the hanger-arm extending downward, and the tilting false bottom pivoted to the lower end of said hanger-arm, substantially as specified.

335,082. **COMBINED PLOW AND HARROW.** ALEXANDER MCDONALD, Centralia, Ill. Filed Oct. 5, 1885. (No model.)



Claim.—1. In a combined plow and harrow, the combination of a main frame, a series of saws rotating in vertical planes for cutting parallel kerfs or furrows in the ground, and inclined cutters or augers rotating in horizontal planes and arranged in rear and to one side of the saws, for acting upon the soil between the saws, substantially as described.

2. In a combined plow and harrow, the combination of a main frame, a series of saws revolving in vertical planes, and horizontally-rotatable cutters or augers vertically adjustable independently of the saws, substantially as described.

3. In a combined plow and harrow, the combination of a main frame, the drive-wheels, a series of vertically-revolving saws, a series of horizontally-rotatable augers or cutters, each having a series of pivoted spring-actuated blades, and intermediate gearing between the auger and saw-shafts, and the drive-wheels for simultaneously rotating the shafts, substantially as described.

4. The combination of a frame, the drive-wheels, a series of horizontally-rotatable augers geared to the drive-wheels, and each comprising a shank and two or more spring-pressed blades pivoted on the shank, substantially as described.

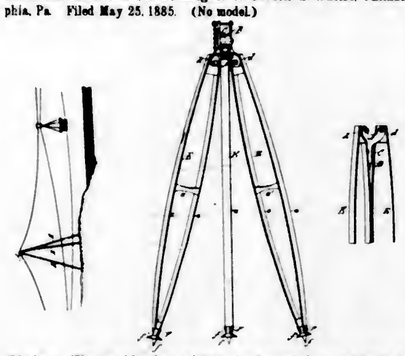
5. The combination of a frame, a series of augers journaled therein, and gearing for rotating the augers in horizontal planes simultaneously, each auger comprising a shank and two or more spring-actuated blades pivoted on the shank and curved at their front ends to a common center, substantially as described.

6. In a combined plow and harrow, the combination of a main frame, the drive-wheels, a series of saws revolving in vertical planes and having their shaft geared with one of the drive-wheels, a supplemental frame arranged below and secured to the main frame, a shaft, H, geared with the drive-wheels, and a series of cutters or augers jour-

naled in the supplemental frame and geared with the shaft H, the augers being rotated simultaneously in horizontal planes and arranged in rear and to one side of the vertically-revolving saws, substantially as described.

7. In a combined plow and harrow, the combination of the following elements: a main frame, the drive-wheels, a shaft, Y, provided with a series of saws and journaled in the main frame, a shaft, T, geared with one of the drive-wheels, shafts D H, journaled in the main frame and geared together, a supplemental frame, L, pivoted in the main frame, a lever for elevating or depressing the pivoted frame, and a series of augers journaled in the supplemental frame and geared with the shaft H, the whole combined and arranged substantially as described.

335,083. TRIPOD FOR LIFE-SAVING APPARATUS. CHARLES H. MCLELLAN, Tom's River, N. J., assignor to Goodell & Waters, Philadelphia, Pa. Filed May 25, 1885. (No model.)



Claim.—The combination, with a tripod consisting of a head, A, with a standard for supporting a sheave and legs pivotally secured to said head in lugs thereon, of a sheave, C, substantially as shown and described.

335,084. PROCESS OF MAKING BUTTER. WILLIAM A. MURRAY, Covington, Ky., assignor of three-fourths to A. L. France, Covington, Ohio, William C. France, New York, N. Y., and Frank Spinning, Cincinnati, Ohio. Filed Aug. 5, 1885. (No specimens.)

Claim.—1. An improvement in the art of making butter, which consists in mixing one gallon of sweet milk with one ounce of liquid rennet, twenty-five grains (Troy) of nitrate of potash, one ounce granulated sugar, half tea-spoonful of butter-coloring, and eight pounds of butter, churned together and worked, in the manner substantially as described.

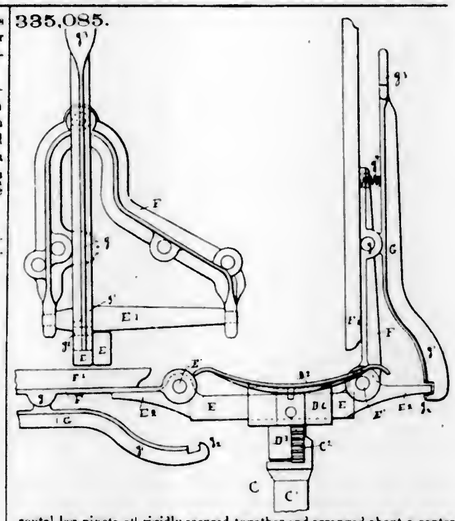
2. An improvement in the art of making butter, which consists in mixing with a quantity of sweet milk flavoring and coagulating matter and churning them together for a few minutes, then adding a quantity of ordinary butter almost equal in bulk and churning the whole together for a few minutes longer, in the manner substantially as described.

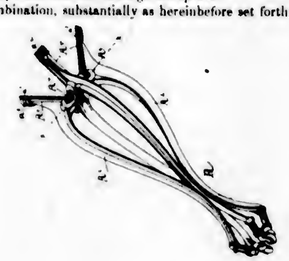
335,085. BOOK-HOLDER. LA VERNE W. NOYES, Chicago, Ill. Filed Jan. 12, 1885. (No model.)

Claim.—1. In combination, substantially as hereinbefore set forth, the horizontal leg-pivots all rigidly secured together and arranged about a center in the position of chords of a circle, the legs hung upon said pivots, respectively, and provided with extensions upward from said pivots, said extensions adapted to come into lateral contact and stop against each other as the legs are spread.

2. In combination, substantially as hereinbefore set forth, the clips arranged about a center and rigidly secured together solely by horizontal bolts adapted to serve as pivots for the legs, the legs pivoted upon said bolts, respectively, and extended upward beyond said pivots, and having on said extensions lateral surfaces adapted to come into lateral contact and stop each other as the legs are spread.

3. In combination, substantially as hereinbefore set forth, the horizontal leg-pivots all rigidly secured together and arranged about a center in the position of chords of a circle, the legs hung upon said pivots, respectively, and having extensions above said pivots adapted to approach each other radially as the legs are spread, and a central stem inserted and adapted to slide vertically within the circle of said extensions and to stop their radial approach and be clamped by them.





4. In combination, substantially as hereinbefore set forth, the horizontal leg-pivots all rigidly secured together and arranged about a center in the position of chords of a circle, the legs hung upon said pivots, respectively, and provided with extensions upward from said pivots, said extensions adapted to come into contact and stop against each other as the legs are spread, and a collar adapted to encircle said extensions and retain them stopped against each other.

5. In combination, substantially as set forth, the horizontal leg-pivots all rigidly secured together and arranged about a center in the positions of chords of a circle, the legs hung upon said pivots, respectively, and having extensions above said pivots adapted to approach each other radially as the legs are spread, a central stem inserted and adapted to slide vertically within the circle of said extensions, and to stop their radial approach and be grasped between them, and a collar adapted to encircle the ends of said extensions and re-enforce their grasp upon the central stem and retain them closely about it.

6. In combination, substantially as set forth, the horizontal leg-pivots rigidly secured together and arranged as described, the legs hung thereon, and having the upward extensions, as and for the purpose described, said extensions tapered and exteriorly screw-threaded, and the clamping-collar interiorly screw-threaded to engage the thread of the extensions, for the purpose set forth.

7. The clamp-collar A^4, located and adapted to clamp the leg-extensions about the central stem, and provided with lateral extensions constituting a rack or shelf, substantially as set forth.

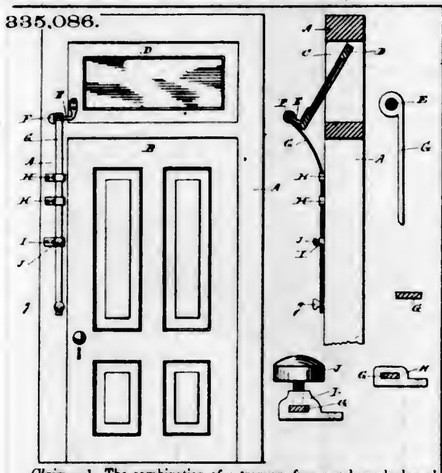
8. In a book-holder, in combination with the central support, the horizontal transverse slides sustained and adapted to slide side by side through said central support, and having the pivots of the shelf-plates, the shelf-brackets pivoted to said slides, means for securing the said slides in the central support, and means for securing the shelves in a vertical position over their pivots, substantially as set forth.

9. In a book-holder, in combination with the central support, the horizontal transverse slides sustained and adapted to slide side by side through said central support, and having stops for the shelves and pivots for the shelf-plates, the shelf-brackets pivoted on said slides, respectively, means for securing said slides in the central support, and means for securing the shelf-brackets in vertical position over their pivots, substantially as set forth.

10. In a book-holder, in combination with the shelf-pivots and the parts which support them, and the detent-spurs rigid with the pivots, respectively, the shelf-brackets adapted to rock over said pivots, the locking levers or latches pivoted to said shelf-plates, respectively, and provided each with a thumb-piece extended near the edge of the shelf and adapted at the other end to engage the detent-spurs when the shelves are vertical, and springs located and adapted to throw the latches into engagement with the spurs, respectively, substantially as set forth.

335,086. TRANSOM-LIFTER. JOSEPH M. OVERELL, Evansville, Ind. Filed Dec. 9, 1885. (No model.)

335,086.



Claim.—1. The combination of a transom-frame and crank-shaped bracket with a spring-rod passing through guides attached to the door-frame, one of which is provided with a thumb-nut, substantially as described, and for the purposes set forth.

2. The combination of a transom-frame and crank-shaped bracket with a rod having its upper portion made of spring and its lower portion of stiff metal, the said rod passing through guides attached to the woodwork of a building, one of said guides being provided with a thumb-nut.

335,087. CROSSCUT-SAW. JOHN J. PARKER, Aitkin, assignor to Henry H. Corbett, St. Cloud, Minn. Filed June 15, 1885. (No model.)

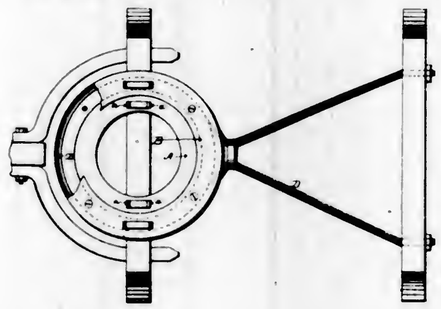


Claim.—1. A crosscut-saw having scoring-teeth and planer-teeth arranged in alternate groups of two, and having each approximately the same area of material, the front edge of the planers being arranged parallel with the adjacent edges of the scorers, and the back edge arranged but slightly divergent from a horizontal, as set forth.

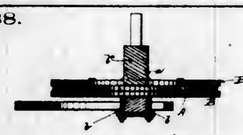
2. In a crosscut-saw, the dust or shaving recess D, formed in the body of the saw by continuing the parallel edges which constitute the backs of the scorers and the fronts of the planers, as shown, and for the purposes set forth.

3. The crosscut-saw described, having the scoring-teeth B B' and planer-teeth C C', arranged in alternate groups of two, all the teeth having the same area of material with straight edges, and the planers arranged with their front edges parallel with the back edges of adjacent scorers, the said edges being carried back to form shaving-chambers D, as set forth.

335,088. FIFTH-WHEEL FOR VEHICLES. CHARLES C. PINCKNEY, Valdosta, Ga., assignor of one-half to Thomas W. Terry, same place. Filed Oct. 16, 1885. (No model.)



335,088.



Claim.—1. In a fifth-wheel, the combination, with the interiorly and exteriorly grooved guide, of the reach encircling and resting in the exterior groove of said guide, and a revoluble center working in the interior groove, as set forth.

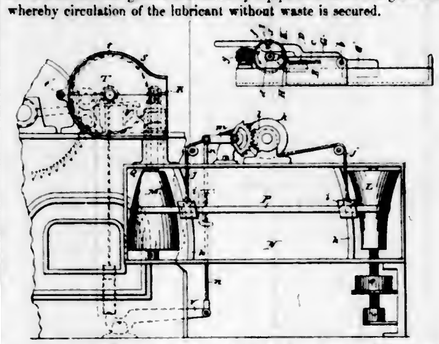
2. In a fifth-wheel, the combination, with the exteriorly and interiorly grooved circle or guide, of the reach or coupling-pole bent, as described, in front to work in exterior groove and the center working in the interior groove of said circle or guide, and having two upright arms to engage with the bolster of the wagon, as set forth.

3. In a fifth-wheel, the combination, with the center, of the circle or guide, the under plate extended inward beyond the upper plate and supporting the center, as and for the purpose set forth.

4. The herein-described circle or guide for fifth-wheels, having an exterior groove to receive the reach or coupling-pole and an interior groove to receive the rotatable center, as described, said circle or guide being bolted to the front axle, substantially as and for the purpose set forth.

335,089. COTTON OPENER AND LAPPER. JAMES C. POTTER, Lowell, Mass., assignor to the Atherton Machine Company, same place. Filed Sept. 8, 1885. (No model.)

Brief.—The knock-off devices can be adjusted to operate at any predetermined time, and after knocking off will automatically return to their adjusted position. The belt-shifters are actuated by ropes attached to a drum operated through a quadrant-wheel and a quadrant-lever connected to the evener-lever, whereby uniform tension is exerted upon the belt. The bushing for the shaft of the driven cone-drum is provided with an internal annular groove connected by a pipe with the worm-gear box, whereby circulation of the lubricant without waste is secured.



Claim.—1. The combination, with the drop-lever and the catch lever or device by which the same is upheld, of knocking-off devices for disengaging said catch from the drop-lever at predetermined times, mounted on and carried by said drop-lever, substantially as and for the purposes hereinbefore set forth.

2. The combination of the drop-lever, the catch device or lever, the rotary shaft carried by said drop-lever, the counterbalance or pendent weight, and pin and wheel fixed to said shaft, and the loosely-pivoted dog, these parts being combined and arranged for joint operation, substantially as and for the purposes hereinbefore set forth.

3. The combination of the drop-lever, the catch device or lever, and knocking-off devices for disengaging at predetermined times the catch from the drop-lever, arranged and operating, substantially as described, to automatically resume or return to their normal adjusted position when the drop-lever falls, substantially as and for the purposes hereinbefore set forth.

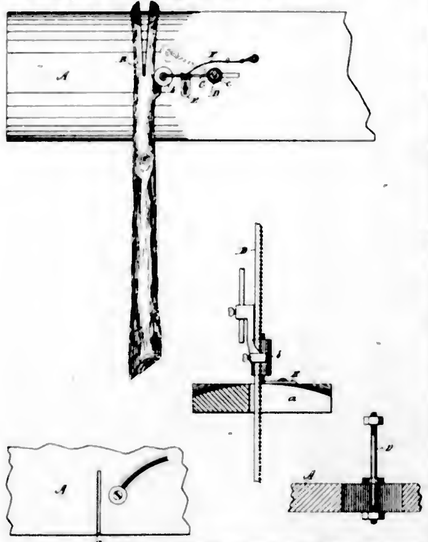
4. The combination, with the catch and drop levers, of the rotary shaft carried by said drop-lever, the wheel and pin fixed to said shaft, the pendent or counterbalance weight adjustably connected to said shaft and the loosely-pivoted dog, substantially as and for the purposes hereinbefore set forth.

5. The combination, with the cone-drum box, the cone-drums and their connecting-belt, of the evener-lever and evener mechanism, whereby said lever is actuated, the shifters *i*, guided and moving in slots *h* in the cone-drum box, the rope or ropes *j*, the drum *k* and its toothed quadrant-wheel *l*, and the toothed quadrant-lever *m*, connected to and operated by the evener-lever, as and for the purposes hereinbefore set forth.

6. The combination, with the cone-drum box, the driven cone-drum and its shaft, of the worm-gear box *t*, the stand *o*, the bushing *p*, pro-

vided with internal annular groove, *r*, and the downwardly-slanting pipe *s*, leading from said groove out through the bushing and stand, as and for the purposes herein set forth.

335,090. **MACHINE FOR SAWING HOOP-POLES.** EDWIN POWELL, Williamsport, Pa. Filed Sept. 30, 1885. (No model.)



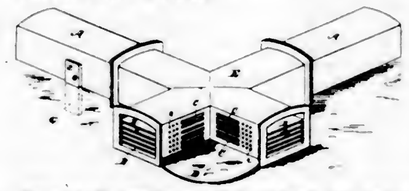
Claim.—1. A hoop-sawing machine comprising a table or support, a saw, and a gage arranged alongside of and laterally to the saw, said gage being rigid in a direction at right angles to the direction of movement of the pole being cut, substantially as described, whereby movement of the pole at right angles to its direction of longitudinal movement is prevented, and said gage being movable in an arc from the saw rearwardly with reference to the line of movement of said pole, substantially as set forth.

2. In a hoop-sawing machine, the combination of the table or support, the saw, the gage-arm having one end pivoted to the support in a line laterally to the saw and at right angles to the direction of the hoop-pole, and a stop, whereby said arm is held with its bearing end in line between its pivot and the saw, whereby said guide will, in its normal position, be rigid in a direction at right angles to the direction of movement of the hoop-pole, substantially as set forth.

3. In a hoop-sawing machine, the combination of the table or support having an elongated slot, the saw, the bolt D, having a fixed collar between its ends, and its lower end passed through the slot of the table and secured, the guide having one end pivoted on the upper end of the bolt, and a spring engaging said bolt, substantially as set forth.

4. In a hoop-sawing machine, the combination of the table or support, having an opening for the saw, and the saw operating through said opening, said table having its upper face curved transversely and downward on opposite sides from said opening, substantially as set forth.

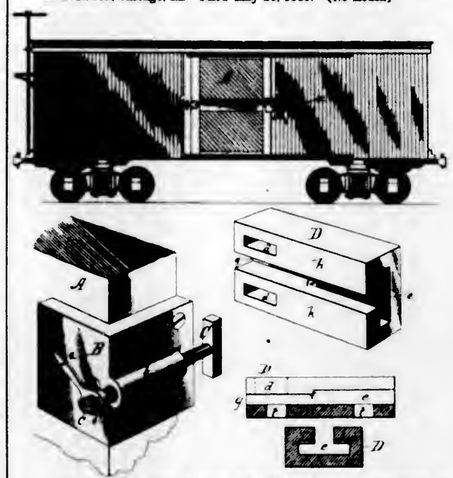
335,091. **UNDERGROUND CONDUIT.** THEODORE A. B. PUTNAM New York, N. Y., assignor of one-half to William Courtenay, same place. Filed Sept. 24, 1885. (No model.)



Claim.—1. The combination, with the conduit A, having horizontal partitions B, dividing the conduit into several compartments, one above the other, of the branch section E and the web piece or plate D, arranged as described, together with the drum or cylinder H and the series of apertures C and *c* in the walls of the branch section within the man-hole chamber, and affording communication, as described, between each separate compartment of the conduit and said chamber, as and for the purpose specified.

2. The combination, with the conduit A, divided into a vertical series of compartments by partitions B, and having branch section E, web D, cylinder H, and openings C, one from each compartment into the man-hole space comprised by said cylinder, of the endless rope or traveler I, running back and forth through the several compartments, and having the pulleys *f* and the winch L within the man-hole chamber, as and for the purpose set forth.

335,092. **RAILROAD-CAR-DOOR CLEAT OR FASTENER.** JAMES B. ROBINSON, Chicago, Ill. Filed May 28, 1885. (No model.)



Claim.—1. The plate B, with the boss *b*, having a perforation its entire length, fastened to the edge of a car-door, and a bolt, C, passing loosely through the boss *b*, and carrying a wrench-handled nut, *a*, and pin *c*, as and for the purpose set forth.

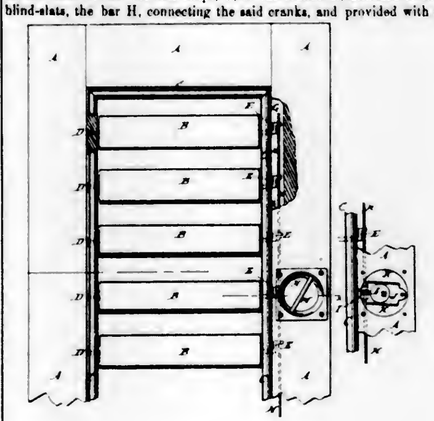
2. The jaw fastened to and embedded in the side surface of the car, having a longitudinal and horizontal slot its entire length, bearing a shoulder on its inside surface or lips, and having two lateral slots from its outside surface inward, one on each side of the longitudinal slot, as and for the purpose shown and described.

3. In a car-door cleat or fastener, the combination of a bolt passing through a perforated plate fastened to the edge of a car-door with a jaw set into the surface of or fixed to the side of a car, as and for the purpose set forth and specified.

4. The combination of the plate B and bolt C, carrying the handled nut *a* and pin *c*, and fastened to a car-door, with the jaw D, embedded in the surface or fixed to the side of a car, all as and for the purpose set forth, shown, and described.

335,093. **BLIND-SLAT ADJUSTER.** PETER RUNDQUIST, New York, N. Y. Filed Oct. 20, 1885. (No model.)

Claim.—1. In a blind-slat adjuster, the combination, with the frame A, the slats B, and the side strips, C, of the cranks E, attached to the blind-slats, the bar H, connecting the said cranks, and provided with a



335,093.

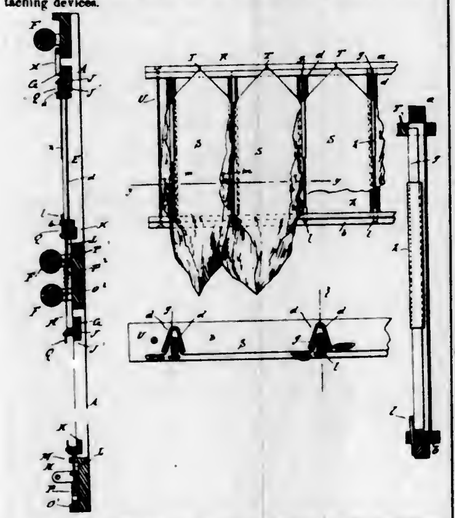


pin, I, the slotted and flanged pivoted plate J, the eccentric L, and the thumb-piece M, substantially as herein shown and described, whereby the blind-slats can be readily adjusted to any desired angle, as set forth.

2. In a blind-slat adjuster, the combination, with the blind-slats B, having end recesses, of the cranks E, having side lugs, F, on their stems to engage with the said recessed ends of the slats, substantially as herein shown and described, whereby the said cranks are made to turn the said slats, as set forth.

335,094. **EMBROIDERING-MACHINE.** FRIDOLIN SCHNELLE, West Hoboken, N. J. Filed Sept. 12, 1885. (No model.)

Brief.—The invention relates to the class known as the "Heilman" or "Swiss" embroidery-machines, and has for its object the provision of means for holding numerous separate pieces of fabric—such as pocket-handkerchiefs, neckerchiefs, towels, napkins, &c.—while being embroidered. Openings in the regular tambour-frame, whose movements are of the usual order, afford places for the location and operation of said attaching devices.



Claim.—1. The combination, with a Heilman or Swiss embroidery-machine of the usual construction, and provided with a frame, A, having openings, of bars held on said frame below the top edges of the openings, movable bars held in the openings of the frames short distances above the bottom edges of said openings, and the inner or fabric-carrying frame held between said bars, substantially as herein shown and described.

2. The combination, with a Heilman or Swiss embroidery-machine of the usual construction, and having a frame, A, provided with openings, of bars held in the openings below the top edges of said openings, bars held at the bottom edges of the openings, and springs for pressing the bottom bars upward, and the inner or fabric-carrying frame held between said bars, substantially as herein shown and described.

3. The combination, with a Heilman or Swiss embroidery-machine of the usual construction, and having a frame, A, provided with openings, of bars held on the frame below the top edges of the openings, bars held at the bottom edges of the openings, rods projecting downward from the lower bars, springs acting on said bars and pressing the lower bars upward, and the inner or fabric-carrying frame held between said bars, substantially as herein shown and described.

4. The combination, with a Heilman or Swiss embroidery-machine having the usual frame, A, provided with openings, of fixed bars held below the top edges of the openings, movable bars held above the bottom edges of the openings, springs for pressing the movable bars toward the fixed bars, which bars are rabbeted, buttons or latches pivoted on the bars for the purpose of holding frames on said bars, and the inner or fabric-carrying frame held between said bars, substantially as herein shown and described.

5. The combination, with a Heilman or Swiss embroidery-machine of the usual construction, and having the frame A, provided with openings, of the fixed bars in one edge of each opening, movable bars at the opposite edges, and the inner or fabric-carrying frame held between said bars, substantially as herein shown and described.

6. The combination, with a Heilman or Swiss embroidery-machine of the usual construction, and having the frame A, provided with openings, of fixed bars in one edge of each opening, movable bars at the opposite edges, bars for pressing the movable bars toward the fixed bars, and the inner or fabric-carrying frame held between said bars, substantially as herein shown and described.

7. Fabric-holding frames for embroidery-machines, consisting of top and bottom bars united by bars having grooves, clamping-pieces placed in said grooves, and provided with rubber sleeves, and of latches or buttons for locking the clamping-pieces in place in the grooves, substantially as herein shown and described.

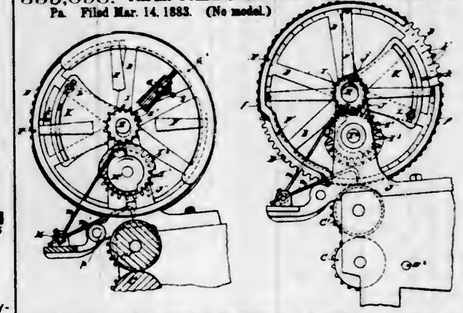
8. A frame for holding pieces of fabric in embroidery-machines, consisting of top and bottom bars united by grooved bars, clamping-pieces in the grooves, having rubber sleeves, latches or keys for holding the clamping-pieces in place, and of pins projecting from the upper bar about midway between each pair of grooved bars, substantially as herein shown and described.

335,095. **TICKET-CASE.** WILLIAM M. STEVENSON, Adelaide, South Australia. Filed Nov. 19, 1884. (No model.) Patented in South Australia Aug. 30, 1884, No. 483; in Victoria Sept. 10, 1884, No. 3,832; in England, Oct. 21, 1884, No. 13,945, and in New South Wales Oct. 23, 1884, No. 1,527.



Claim.—In a ticket-holder, the combination, with the containing-case and its inclosed spring-pressed follower, of the sliding cap having slots which receive lugs on the said follower, substantially as and for the purpose set forth.

335,096. **PAPER-FOLDING MACHINE.** JOHN H. STONEBRIDGE, Erie, Pa. Filed Mar. 14, 1883. (No model.)



Claim.—1. In a paper-folding machine, the combination, upon one shaft, of sector-shaped feeding-rollers, a paste-knife, a driving-gear, and means, substantially as shown, for securing said shaft to said drive-gear at various points, whereby the parts upon said shaft may be timed to move at varying relation to the other parts of said folding-machine, substantially as set forth.

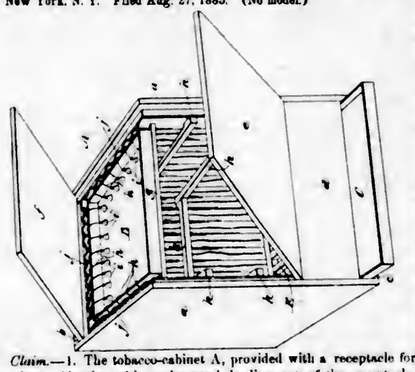
2. In a paper-folding machine, the combination, substantially as shown, of the following elements: the vertically-movable shaft E, the driving-gear D, gearing with the roller C', the arc-shaped arm K, with slot *l* and clamping-screw L, the sector-shaped feeding-rollers F F, the collars E' E', the gears I I I' I', and, finally, the cams I^2 I^2.

3. In a paper-folding machine, the combination, substantially as shown, of the following elements: the vertically-moving shaft E, the driving-gear D, gearing with the roller C' and adjustably connected upon the said shaft E, the sector-shaped feeding-rollers F F, the adjustable arm G, with paste-knife G', and, finally, means, substantially as shown, for moving said shaft vertically, in the manner and for the purposes set forth.

4. In a paper-folding machine, the combination, substantially as shown, of the following elements: the vertically-movable shaft E, the driving-gear D, gearing with the folding mechanism of said machine and adjustably mounted on said shaft, so as to permit the parts on said shaft and operated therefrom to be variously timed in relation to the movements of the said folding mechanism, sector-shaped feeding-rollers F F, substantially as shown, mounted on said shaft, and, finally, means, substantially as shown, operated from said shaft, for lifting and holding it up during alternate revolutions, for the purposes mentioned.

5. In a paper-folding machine, the combination, with the drop-roller shaft E, of the pinions I I I' I', the cams I^2 I^2, and collars E' E', substantially as shown.

335,097. CABINET FOR TOBACCO, CIGARS, &c. CHARLES N. SWIFT, New York, N. Y. Filed Aug. 27, 1885. (No model.)

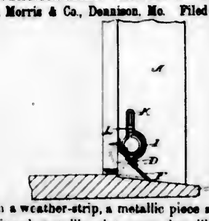


Claim.—1. The tobacco-cabinet A, provided with a receptacle for water, in combination with conductors *h*, leading out of the receptacle, for distributing the moisture and regulating the same in the body of the cabinet, substantially as described.

2. The cabinet A, lined with corrugated sheets, in combination with the water-receptacle and the conductors *h*, leading from the receptacle down the corrugations, substantially as described.

3. The cabinet A, lined with sheets *j*, in combination with the water-receptacle B, conductors *h*, and netting G, substantially as described, and for the purposes set forth.

335,098. WEATHER-STRIP. AUGUSTUS F. VAN DOLSEN, Liberal, assignor to R. J. Morris & Co., Deanison, Mo. Filed Sept. 5, 1885. (No model.)

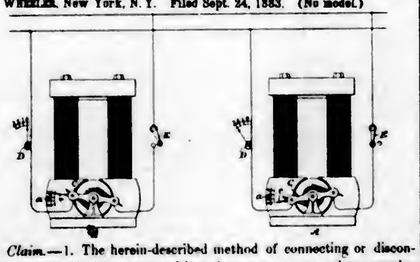


Claim.—1. In a weather-strip, a metallic piece attached to a staple on one edge of a hinged metallic plate over the sill, thence extending upwardly, passing over a pin and forming a loop, returns a short distance parallel with the opposite side, and then curved out laterally, so that an angled piece on the outer face of the door will come in contact with the said curve and will cause one edge of the hinged sill-plate to press up against the angled door-plate and make a tight joint, substantially as herein set forth.

2. The combination, in a weather-strip, of the sill-plate F, hinged at one side to the jamb, having therein at the opposite edge a staple, to which is attached a vertical piece forming a loop, K, over a pin in the side of the jamb, and with its inner side having a projecting curve, so as to be operated by an angled plate, D, substantially as herein set forth.

3. The combination of the sill B, the jamb A, the sill-plate F, the vertical piece I, looped at its upper end and inwardly formed with a curve, M, with the door C, and the angle-plate D on its outer face so disposed as to come in contact with the vertical piece I, and thus operate the sill-plate, substantially as herein set forth and described.

335,099. SYSTEM OF ELECTRICAL DISTRIBUTION. SCHUYLER S. WHEELER, New York, N. Y. Filed Sept. 24, 1883. (No model.)



Claim.—1. The herein-described method of connecting or disconnecting an electrical generator with or from one or more others, supplying the same circuit, which consists in producing such a relation between the electro-motive force of said generator and the electro-motive force of the others that practically no current will flow in either direction through said generator, and then connecting or disconnecting said generator.

2. The herein-described method of connecting an electrical generator with the other generators of a multiple-arc system, which consists in regulating its electro-motive force to such a point that practically no current will flow through it in either direction when connected, then connecting it with the circuit in multiple arc with the others, and then gradually raising its electro-motive force until it becomes equal to that of the others.

3. The herein-described method of disconnecting one electrical generator from the others of a multiple-arc system, which consists in reducing the electro-motive force of said generator before breaking its circuit.

4. The herein-described method of disconnecting one electrical generator from the others of a multiple-arc system, which consists in reducing the electro-motive force of said generator until practically no current flows through it in either direction before breaking its circuit.

5. The herein-described method of connecting an electrical generator with one or more others supplying the same circuit, which consists in producing such a relation between the electro-motive force of said generator and the electro-motive force of the others that when the new generator is connected practically no current will flow through it in either direction, then connecting the new generator with the others, and then equalizing the electro-motive forces of the generators so that the new one will assume its share of the load.

6. The herein-described method of connecting or disconnecting a dynamo-electric machine with or from one or more others supplying the same circuit, which consists in regulating the strength of the field-magnet of said generator until its electro-motive force neutralizes that of the others, and then connecting or disconnecting it.

REISSUES

10,680. DIE AND DIE-BLOCK FOR FORGE-HAMMERS. JAMES H. BAKER, Westville, Ohio. Filed Oct. 1, 1883. Original No. 280,998, dated July 10, 1883.

Claim.—1. The combination of the locking device, consisting of stop-bars *f*, lever *h*, and lips *g*, with the die *c*, having grooves *d*, substantially as described.

2. The combination of discharger *k* with die *c*, having grooves *d*, stop-bars *f*, and lever *h*, substantially as described.

3. The combination of lever *h*, spring-catch *i*, and spring *l*, with the die *c*, having grooves *d* and stop-bars *f*, substantially as described.

4. The combination, with a die, *c*, having grooves *d*, of retaining-cleats *j* and lips *g*, substantially as described.

5. The combination, with the die *c*, having the end grooves, *d d*, of the dischargers *k k* and the lever *m*, whereby the end of the forged article may be thrown up, as described.

6. The combination, with the die *c*, having end grooves, *d d*, of the stopper *f*, having lip *g*, the swinging lever *h*, provided with a corresponding lip, *g*, and the retaining-clips *j*, all arranged substantially as shown and described.

7. The combination, with the lever *h*, of the spring *l* and spring-catches *i*, to hold the lever on the article to be forged, as described.

8. The combination, with an anvil-block, of a movable block, a die, and a shifting-lever, as and for the purpose specified.

9. The combination, with the die-block *p*, having ledges *z*, of the bars *u*, rollers *s*, and the notched shifting-brackets *w*, as and for the purpose set forth.

10. The combination of a laterally-adjustable die-block, *p*, projecting supporting-bars *w*, and friction-rollers *s*, substantially as described.

11. The combination of a laterally-shifting die-block, *p*, projecting supporting-bars *w*, friction-rollers *s*, and adjustable bearing-brackets for said rollers, substantially as described.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

BROWN *et al.* v. DAVIS *et al.*

Decided January 11, 1886.

1. Reissued Letters Patent No. 8,589, granted to Charles F. Davis and William Allen, February 18, 1879, for improvement in grain-drills—the original patent, No. 74,515, having been granted to said Davis as inventor February 18, 1868, and application for reissue filed January 24, 1879,—construed, and the decision of the circuit court "declaring the reissued patent to be valid, and to have been infringed as to all its claims, and awarding a recovery of profits and damages and a perpetual injunction," reversed and the case remanded with a direction to dismiss the bill, with costs.

2. The view taken that, "claim 2 was infringed because the defendants use a rod the end of which is pushed and pulled by the hand of the operator, while in the patent the lever H pulls and pushes the end of the rod;" *Held*, "but the lever, or its equivalent, as a mechanical instrument, is made an essential element in claim 2, and dispensing with the lever, and using instead the human hand is not the use of an equivalent, although in the plaintiffs' machine the hand is applied to work the lever." Cases cited: *Water Meter Co.* v. *Desper*, (101 U. S., 332, 337;) *Gage* v. *Herring*, (107 Id., 640, 648;) *Fay* v. *Cordesman*, (109 Id., 408, 420, 421;) *Sargent* v. *Hall Safe and Lock Co.*, (114 Id., 63, 86.)

APPEAL from the Circuit Court of the United States for the Northern District of New York.

Mr. E. E. Wood, *Mr. Edward Boyd*, and *Mr. B. F. Thurston* for the appellants.

Mr. William F. Cogswell and *Mr. S. D. Bentley* for the appellees.

Mr. Justice BLATCHFORD delivered the opinion of the Court.

This is a suit in equity brought in the Circuit Court of the United States for the Northern District of New York on Reissued Letters Patent No. 8,589, granted to Charles F. Davis and William Allen, February 18, 1879, for an improvement in grain-drills, the original patent, No. 74,515, having been granted to said Davis, as inventor, February 18, 1868. The application for the reissue was filed January 24, 1879. The defenses set up in the answer are want of utility and novelty, invalidity of the reissue, and non-infringement. The specifications of the original and reissued patents are here placed side by side, the parts in each not found in the other being in italic:

Original.

Be it known that I, CHARLES F. DAVIS, of Auburn, *in the* county of Cayuga *and* State of New York, have invented certain new and useful Improvements in Grain-Drills; *and I do hereby declare* the following *to be* a full, clear, *and* exact description *of the same*, reference being had to the accompanying drawings, making *a* part of this specification, in which—

Reissue.

Be it known that I, CHARLES F. DAVIS, of Auburn, county of Cayuga, State of New York, have invented certain new and useful Improvements in Grain-Drills, *of which* the following *is* a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a *top* plan of the drill, with the seed-box removed, but its position shown by *red* lines, to show the parts underneath it. *Fig.* 2 represents the crank rod or shaft to which the front ends of the drag-bars are attached *when* detached from the machine. *Fig.* 3 represents an end view of the drill, with the wheel removed to show the parts behind it, and representing, by *black*, dotted, *and red* lines, the several operative parts, and their positions under the changes of the machine or its parts.

Similar letters of reference, *where they occur in the separate figures*, denote *like* parts in all *of* the *drawings*.

The object and purpose of my invention *are* to shift or change the seeding shoes or hoes from a straight to a zigzag line, and *vice versa*, and, further, to so hang the shoes or hoes as, in addition to the shifting process, to admit of being raised separately, or the whole series together, as may be found necessary.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

Upon an axle, A, supported on the usual carrying-wheels, B B, is mounted a main frame, C, and on the main frame a seed-box, D, the slides of which may be operated in any of the well-known ways. In bearings E in the front portion of the main frame is hung so as to rock or turn therein a zigzag or crank shaft, F, (shown detached in Fig. 2,) and to the cranks or wrists *a a a* of this shaft are connected *seriatim* the drag-bars *b b b*, by means of bows or yokes *c*, each bow or yoke taking two of said wrists, as shown in Fig. 1. To the rear ends of these drag-bars *b* are attached the shoes or hoes G in any of the usual well-known ways. In the projecting rear portion of the main frame C there is hung a shaft, *d*, upon which there is a lever, *e*, by which it can be rocked or rolled in its bearings. At suitable distances upon this shaft *d* there is placed a series of levers, *f f*, one for each shoe or hoe, which are kept in their proper positions on the shaft by pins 1 1, or other suitable devices, but which can be moved independent of the shaft or of each other, or all together, as will be explained. The levers *f* have a hub or swell, *g*, at their central portions, where they are slipped onto the shaft *d*; and into each one of these hubs is set a pin, 2, which is above the pins 1 1 in the shaft, so that each lever can be turned upon the shaft; but when the shaft is rocked or turned then all the levers are worked simultaneously. To the forward ends of these levers *f* the shoes or hoes are respectively connected by a link or hinged rod, *h*, the rearward-projecting ends of said levers serving as handles for the

Figure 1 represents a plan *or top view* of the drill with the seed-box removed (but its position shown by *dotted* lines) to show the parts underneath it. *Fig.* 2 represents the crank rod or shaft to which the front ends of the drag-bars are attached detached from the machine. *Fig.* 3 represents an end view of the drill, with the wheel removed to show the parts behind it, and representing, by *full and* dotted lines, the several operative parts, and their positions under the changes of the machine or its parts.

Similar letters of reference denote *corresponding* parts in all the *figures*.

The object and purpose of my invention *is* to shift or change the seeding shoes or hoes from a straight to a zigzag line, and *vice versa*, and, further, to so hang the shoes or hoes as, in addition to the shifting process, to admit of being raised separately, or the whole series together, as may be found necessary.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

Upon an axle, A, supported on the usual carrying-wheels, B B, is mounted a main frame, C, and on the main frame a seed-box, D, the slides of which may be operated in any of the well-know ways. In bearings E in the front portion of the main frame is hung so as to rock or turn therein a zigzag or crank shaft, F, (shown detached in Fig. 2,) and to the cranks or wrists *a a a* of this shaft are connected *seriatim* the drag-bars *b b b*, by means of bows or yokes *c*, each bow or yoke taking two of said wrists, as shown in Fig. 1. To the rear ends of these drag-bars *b* are attached the shoes or hoes G in any of the usual well-known ways. In the projecting rear portion of the main frame C there is hung a shaft, *d*, upon which there is a lever, *e*, by which it can be rocked or rolled in its bearings. At suitable distances upon this shaft *d* there is placed a series of levers, *f f*, one for each shoe or hoe, which are kept in their proper positions on the shaft by pins 1 1, or other suitable devices, but which can be moved independent of the shaft or of each other, or all together, as will be explained. The levers *f* have a hub or swell, *g*, at their central portions, where they are slipped onto the shaft *d*; and into each one of these hubs is set a pin, 2, which is above the pins 1 1 in the shaft, so that each lever can be turned upon the shaft; but when the shaft is rocked or turned then all the levers are worked simultaneously. To the forward ends of these levers *f* the shoes or hoes are respectively connected by a link or hinged rod, *h*, the rear-

operator to seize and work separately, when necessary to do so, or he can raise the whole series by seizing and working the lever *e*. One end of the shaft *d* projects through the timber of the main frame for convenience

Fig. 1.

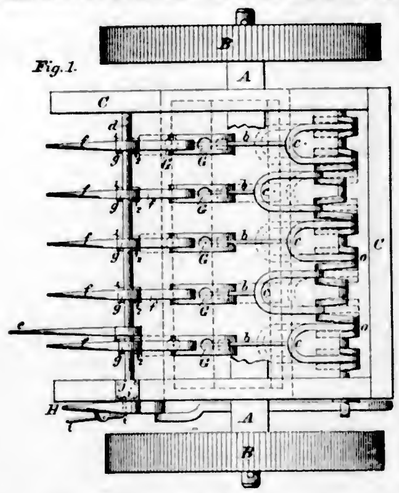


Fig. 2.

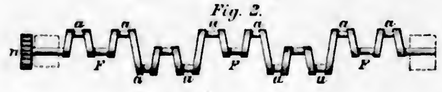
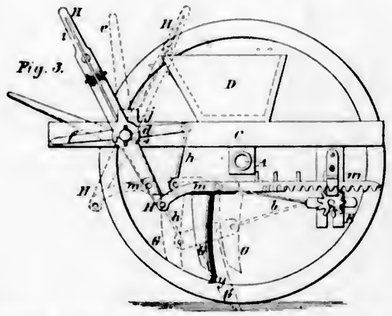


Fig. 3.



of placing the parts, and upon it is a lever, H, and a spring locking-lever, *i*, connected with it, both of which levers the operator may grasp at once, and by pressure first unlock the catch and then move the main lever H and the shaft *d*, as well as the parts connected with it. The catch or locking-lever *i* takes into or against a stop-plate, *j*, on the main frame when not otherwise controlled. The upper portion of the lever H serves as a handle to work it by, and to the lower end of it is pivoted a rack-bar, *m*, which takes into a pinion, *n*, fastened on the end of the crank or zigzag shaft F, and when the pinion *n* is turned the crank-shaft is also turned, and as it is turned it shifts the shoes or hoes into a zigzag or a straight line, as the case may be. When the lever H and the zigzag shaft F and their several connected and operative parts are in the positions shown by the *black* lines in Figs. 1 and 3, the shoes or hoes G are then in a straight line across the machine; but when the lever H is shifted into the position shown by the *red* lines in Fig. 3 it turns the shaft and moves the parts connected with them, and the shoes or hoes will then stand in a zigzag line across the machine, as shown by the *red* lines, or in what may be termed "two lines," one in advance of the other; and that the shoes or hoes may be thus moved into one or two lines and still be susceptible of being raised up separately or in their series capacity, their connections and attachments must all be hinged or yielding. When there is an odd number of shoes or hoes on the machine, the odd one should be in the rear series, in which case there would be no necessity of locking the lever H when the shoes *were* so arranged, as the greater resistance on the greater number would always keep them so; but if an even number of shoes be used, and an equal number in each row, then the lever would have to be locked or fastened in both of its positions.

It is obvious that other mechanical devices may be used for shifting the shoes or hoes from a straight into a zigzag line, or *vice versa*. I have devised several ways of accomplishing this movement, *as, for instance*, a sheave, pulley, or chain-wheel may be keyed to the end of the crank-shaft, and to this sheave or wheel a chain may be attached, and, passing around it, *extend thence to the lever*, so that by *working the lever* the same effect *would* be attained as by the rack and pinion.

Another plan may be as follows: A crank or cross-arms may be placed on the turning shaft, and by means of connecting-rods, *which connect the cranks or arms with the levers*, the shaft may be turned, and the shoes thus thrown into a straight or zigzag line, as may be desired; or, instead of the crank-shaft *to shift the shoes*, the shoes may be united in sets to different bars, which may be straight, both bars being united to cross bars or heads at their ends. Now, by shifting these two bars *they will* shift the shoes attached to them, *and change them* into the positions hereinabove described. When the hoes are set in a zigzag line, as above mentioned, and are in that position raised up, a pin, 3, in the extreme end of the shaft *d*, will take against a pin, 4, in the lever H, and thereby shifting the hoes into more nearly a straight line as they rise, or into quite a straight line, depending upon the extent to which they are raised.

Having *thus fully* described my invention, what I claim *therein* as new, and desire to secure by Letters Patent, is—

1. *So attaching the shoes or hoes of a seed-planter to the main frame as that, by means of a lever or its equivalent, said shoes may be shifted from a straight to a zigzag line, or vice versa, at pleasure, substantially as described.*

2. *I also claim, in combination with a series of shoes or hoes that are capable of being changed from a straight to a zigzag line, or vice versa, the so connecting of said shoes by independent levers to the lifting-bar as that they may be raised by the operator individually or as a whole, substantially as described.*

3. *I also claim bringing the shoe to both its drag-bar and its individual lever, so that the shoe may be raised and lowered in either of its changed positions by a lever that is permanently located, substantially as described.*

zigzag shaft F *and the connecting-bar m* and their several connected and operative parts are in the position shown by the *full* lines in Figs. 1 and 3 the shoes or hoes G are then in a straight line across the machine; but when the lever H is shifted into the position shown by the *dotted* lines in Fig. 3 it turns the shaft and moves the parts connected with them, and the shoes or hoes will then stand in a zigzag line across the machine, as shown by the *full* lines, or in what may be termed "two lines," one in advance of the other; and *in order* that the shoes or hoes may be thus moved into one or two lines and still be susceptible of being raised up separately or in their series capacity, their connections and *the* attachments must all be hinged or yielding. When there is an odd number of shoes or hoes on the machine, the odd one should be in the rear series, in which case there would be no necessity of locking the lever H when the shoes *are* so arranged, as the greater resistance on the greater number would always keep them so; but if an even number of shoes be used, and an equal number in each row, then the lever would have to be locked or fastened in both of its positions.

It is obvious that other mechanical devices may be used for shifting the shoes or hoes from a straight into a zigzag line, or *vice versa*. I have devised several ways of accomplishing this movement. *The rack-bar or connecting-bar m may be used for this purpose, and thereby the shoes or hoes may be shifted from a straight to a zigzag line, or vice versa, said connecting-bar m being held in position, if desired, by any of the usual mechanical devices for that purpose; second, by means of* a sheave, pulley, or chain-wheel, *which* may be keyed to the end of the crank-shaft, and to this sheave or wheel a chain may be attached, and passing around it, so that by *means thereof* the same effect *can* be attained as by the rack and pinion.

Another plan may be as follows: A crank or cross-arms may be placed on the turning-shaft, and by means of a connecting *rod* or rods the shaft may be turned *by the operator*, and the shoes thus thrown into a straight or zigzag line, as may be desired; or, instead of the crank-shaft, the shoes may be united in sets to different bars, which may be straight, both bars being united to cross bars or heads at their ends. Now, by shifting *the relations of* these two bars, *and by the means aforesaid, or by the connecting-rod m, the operator can* shift the shoes *or hoes* attached to them into the positions hereinabove described. When the hoes are set in a zigzag line, as above mentioned, and are in that position raised up, a pin, 3, in the extreme end of the shaft *d* will take against a pin, 4, in the lever H, and thereby shifting the hoes into more nearly a straight line as they rise, or into quite a straight line, depending upon the extent to which they are raised.

Having *now* described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. *The shoes or hoes of a seed-planter, attached to the main frame substantially as described, whereby they may be simultaneously shifted from a straight to a zigzag line, or vice versa, by a single movement.*

2. *The shoes or hoes of a seed-planter, attached to the main frame substantially as described, in combination with a lever or its equivalent, whereby they can be shifted at the pleasure of the operator from a straight to a zigzag line, or vice versa.*

3. *The shoes or hoes of a seed-planter, attached to the main frame substantially as described, in combination with a rod or its equivalent, whereby they can be shifted from a straight to a zigzag line, or vice versa.*

4. *A series of shoes or hoes that are capable of being changed from a straight to a zigzag line, or vice versa, in combination with independent levers, connecting said shoes or hoes with the lifting-bar, whereby they can be raised by the operator individually or as a whole, substantially as described.*

5. *The shoe hinged to both its drag bar and its individual lever, so that it can be raised or lowered in either of its changed positions by a lever that is permanently located, substantially as described.*

6. *In combination with a series of shoes or hoes that are capable of being changed by the operator at the rear of the machine from a straight to a zigzag line, or vice versa, a shaft and lifting-lever connected therewith, whereby the whole series can be raised at once by the operator, to pass obstructions, substantially as described.*

The cause was heard in the circuit court on pleadings and proofs and a decision rendered in May, 1881, (*Davis* v. *Brown*, 19 Blatchf., 263,) in pursuance of which an interlocutory decree was entered in June, 1881, declaring the reissued patent to be valid, and to have been infringed as to all its claims, and awarding a recovery of profits and damages and a perpetual injunction. On the report of a master a final decree was entered in February, 1882, by which the plaintiffs recovered $5,689.91 as damages and costs. The defendants have appealed to this Court.

The specification of the original patent stated the purpose of the invention to be to change the seeding shoes or hoes from a straight to a zigzag line, and *vice versa*, and also to so hang the shoes or hoes as, in addition to the shifting process, to allow the shoes or hoes to be raised all together, or any one separately. The mechanical means described in that specification for shifting the shoes are these: In the front part of the machine is a rotating shaft with cranks on it so arranged that the shaft does not have a straight continuous axis, but has sets of axes in different lines, alternating, so that yokes being attached each to two of the cranks, and each two of the cranks having axes in a different line from the line of the axes of the next two adjoining cranks, the yokes being of substantially equal length, and being connected by drag-bars, at the rear ends of the drag-bars, to the shoes, a rotating motion given to the crank-shaft will shift the shoes by moving all of them, each alternate shoe moving in an opposite direction from that in which the shoe next to it moves, and thus a space being opened or closed of double the distance through which any shoe travels. To rotate the crank shaft there is a cross-shaft in the rear of the machine, on the end of which is an upright lever which extends upward to form a handle, and has pivoted to it below a bar which extends forward, and the forward end of which is formed into a rack which works into a pinion on the end of the crank-shaft. By moving the lever the rack and pinion are worked and the crank-shaft is rotated and the shoes are shifted. The extent of the rotating movement of the crank-shaft is about half a circle back and forth. The original specification says that, instead of employing the crank-shaft, the shoes may be united in sets to different bars, which may be straight, both bars being united to cross bars or heads at their ends, and that by shifting these two bars the shoes attached to them will be shifted; but there is no more specific description of mechanism for the purpose nor any drawing of such mechanism.

In the defendants' machine every alternate shoe is connected with an immovable part of the frame, and every other alternate shoe is connected with a swinging cross-bar, which hangs down so as to have a motion back and forth in the arc of a circle, by reason of its being hung in bearings in the side of the frame. A rod extends from near the middle of the width of the swinging cross-bar to the rear part of the frame, behind the line from which the shoes are suspended, which rod is supported in the center of its length and terminates at its rear end in a handle, so that an operator can work it, and by pulling it shift simultaneously all the shoes that are attached to the swinging cross-bar. Two coiled springs are so arranged that when the rod is pulled the springs are compressed, and when the rod is released the action of the springs tends to throw the swinging cross-bar and the shoes attached to it toward the front of the frame again, restoring them to the position from which the pulling of the rod moved them. Thus only alternate shoes are shifted, but the positions of the toes of the shoes relatively to each other can be simultaneously changed and a wider space in a straight line be opened between any two toes at any time. The shoes are so set that their toes are never in a straight line across, but when nearest to each other are somewhat out of a straight line, and the pulling of the rod causes the distance between them to increase. The shoes which move in increasing such distance do so through the rotating motion to and fro of the swinging cross-bar to which they are attached, such motion being imparted by the pulling at the rear of the machine of the rod attached to the swinging cross-bar. In the plaintiffs' machine the shoes which move in increasing such distance do so through the rotating motion to and fro of the crank-shaft to which they are attached, such motion being imparted by the pushing at the rear of the machine of the rod that carries the rack, the rod being worked by a lever.

An examination of the claims of the original and reissued patents shows that claim 2 of the reissue is substantially the same as claim 1 of the original; that claim 4 of the reissue is substantially the same as claim 2 of the original, and that claim 5 of the reissue is substantially the same as claim 3 of the original.

The circuit court held that claim 2 of the reissue was infringed, although in the defendants' machine there is no lever such as the lever H of the patent, and no equivalent or substitute for it. The view taken was that claim 2 was infringed because the defendants use a rod the end of which is pushed and pulled by the hand of the operator, while in the patent the lever H pulls and pushes the end of the rod; but the lever or its equivalent, as a mechanical instrument, is made an essential element in claim 2, and dispensing with the lever, and using instead the human hand, is not the use of an equivalent, although in the plaintiffs' machine

the hand is applied to work the lever. (*Water Meter Co.* v. *Desper*, 101 U. S., 332, 337; *Gage* v. *Herring*, 107 Id., 640, 648; *Fay* v. *Cordesman*, 109 Id., 408, 420, 421; *Sargent* v. *Hall Safe and Lock Co.*, 114 Id., 63, 86.)

In order to determine what construction ought to be given to the other claims of the reissue, it is necessary to consider an invention made by one Powers, at Madison, Wisconsin, in 1862, the invention of Davis being carried back only to September, 1866. During the winter of 1861-'62, and the spring of 1862, Powers was selling at Madison grain-drills with iron drag-bars. During the season of 1862, noticing the working of drills in the field, he conceived the idea that the shoes could be put into single and double ranks by a more easy method than that then used. He worked out a plan and made a model of it, and applied for a patent November 10, 1862. The patent was ordered to issue December 6, 1862, but was never issued. The reason is not stated. The specification filed states that the—

invention consists of a device to enable the shovels or plows of a drill to be set in single or double rows or ranks with greater ease and facility than hitherto.

The method described and shown in the drawings is to have a cross-row of stationary shovels, and a cross-row of other shovels attached to a cross-bar, which is arranged at each end of it so as to slide to the extent of eight inches to and fro in a groove. Thus two rows may be made, or the sliding cross-bar may be set at a point where all the shovels will be in a line and one row be formed. The movable cross-bar is moved by hand, and secured, when set, by bolts. The claim covers—

the method of double and single ranking the drill-teeth by the adjustment of the sliding cross-bar A, to which are attached the alternate drill-teeth or shovels, to different positions between the side pieces of the frame.

The description states that—

by this device double or single ranking can be effected in a moment, instead of the more tedious process of other similar machines;

and that—

double and single ranking is a highly important feature in a drill to adapt it to different soils and circumstances.

Powers put this shifting arrangement "onto two or, may be, three drills" which he had on hand. He testifies to the use of two of them, and says they worked perfectly, so far as changing the rank of the drill was concerned. This was a completed invention. The idea of changing the relative positions of the shoes by having one row of them stationary and moving the other, which is the idea developed in the defendants' machine, was fully embodied in Powers' machine. It had no lever and rod to do the work of the hand in moving the sliding cross bar, and that cross-bar was held in position, when set, by bolts.

In view of this invention of Powers, we are of opinion that the invention of the Davis patent must be limited, so far as the shifting apparatus is concerned, to the special arrangement of the rotating crank-shaft described, and shown in the drawings. The words "substantially as described," found in each of the first two claims of the original patent, properly confined those claims to the shifting mechanism described. If claim 1 of the reissue is given a construction which includes any arrangement for shifting not substantially using a rotating crank-shaft, it becomes a claim which could not lawfully have been granted in the original patent, and as a claim in a reissued patent it is invalid within the defenses set up in the answer, because the application for the reissue was made nearly eleven years after the original patent was granted, and after machines effecting the shifting by other means than a rotating crank-shaft had gone into use subsequently to the date of the original patent, and no sufficient excuse is given for the laches and delay. The same remarks apply to claim 3 of the reissue.

In view of the rulings of this Court on the subject of reissued patents, made since the decision in this case was made by the court below, in May, 1881, this case must be considered in view of the fact that the new matter introduced into the specification of the reissue was put in for the purpose of reaching machines which the claims of the original patent would not reach, and of laying a foundation for claims 1 and 3 of the reissue. The inventor and patentee, Davis, distinctly says this in his testimony. The principal interpolation is in these words:

The rack-bar or connecting-rod *m* may be used for this purpose, and thereby the shoes or hoes may be shifted from a straight to a zigzag line, or vice versa, said connecting-bar *m* being held in position, if desired, by any of the usual mechanical devices for that purpose.

In the original specification *m* is called a "rack-bar," because it is pivoted at one end to the lower end of the lever H, and has on its other end a rack taking into a pinion on the end of the crank-shaft; but in the reissue *m* is called "a rack-bar or connecting-rod." Again, in the reissue the reference to the lever H, as connected with and working the chain to be used with the sheave or wheel, in the second suggested alternative means of shifting is erased, so as not to make the use of the lever H necessary. Before these changes the defendants' machine, which has no lever and no rotating crank-shaft, would not have been within the scope of the original claim, but, if the rack-bar were to become a connecting-rod, it was thought it might cover the rod in the defendants' machine. Claim 3 of the reissue was framed on this view, of shifting by a rod alone, while claim 1 is made so broad as to seem to claim shifting by any means by a single movement.

As to claims 4, 5, and 6 of the reissue, the shifting mechanism of the patent, with its rotating crank-shaft, must, in view of the Powers invention, be considered as an element in each claim; and that mechanism is not used by the defendants.

It follows, from these views, that the decree of the circuit court must be reversed and the case remanded, with a direction to dismiss the bill, with costs.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the Index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

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Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

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Reissue	3—No. 10,681 to No. 10,683,	inclusive.
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Brazil			Mexico		
Canada	3	1	New South Wales		
Central America			Russia		
Colombia, U. S. of			Scotland		
Cuba			Sweden	1	
Denmark	1		Switzerland	1	
Egypt					
England	6	3	Total to citizens of foreign countries	28	4
France	3				

DESIGNS.

16,495.—BELT.—*Charles H. Buchanan*, Philadelphia, Pa. Application filed November 2, 1885. Serial No. 181,708. Term of patent 3½ years.

16,496.—RUG.—*Henry Finck*, New York, N. Y., assignor to *John Bromley & Sons*, Philadelphia, Pa. Application filed December 11, 1885. Serial No. 185,421. Term of patent 3½ years.

16,497.—ORGAN-CASE.—*Levi K. Fuller*, Brattleborough, Vt., assignor to *The Estey Organ Company*, same place. Application filed October 5, 1885. Serial No. 179,069. Term of patent 14 years.

16,498.—ORGAN-CASE.—*Levi K. Fuller*, Brattleborough, Vt., assignor to *The Estey Organ Company*, same place. Application filed October 21, 1885. Serial No. 180,496. Term of patent 14 years.

16,499.—TRIMMING.—*Benjamin Lipper*, Philadelphia, Pa., assignor to himself, *Augustus A. Larzarus*, and *Isaac A. Schwarz*, same place. Application filed September 28, 1885. Serial No. 178,485. Term of patent 3½ years.

16,500.—RUG.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed November 18, 1885. Serial No. 183,255. Term of patent 3½ years.

16,501.—HOSIERY.—*John Phipps*, Philadelphia, Pa., assignor to *James Kitchenman*, same place. Application filed December 4, 1885. Serial No. 184,755. Term of patent 7 years.

16,502.—KNOB OR HANDLE FOR CANES.—*Joseph N. Provenzano*, New York, N. Y. Application filed August 18, 1885. Serial No. 174,751. Term of patent 7 years.

16,503.—BOTTLE.—*Sterling F. Hayward*, New York, N. Y. Application filed December 5, 1885. Serial No. 184,860. Term of patent 3½ years.

16,504.—SCARF-PIN.—*August F. Wehrle*, Denver, Colo. Application filed September 19, 1885. Serial No. 177,626. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,978.—VARIOUS GEOMETRIC FORMS MADE OF COPPER AND LACQUERED OR ENAMELED TO SIMULATE JEWELS.—*Rufus H. Bragdon*, New York, N. Y. Application filed November 5, 1885. Used since November 1, 1885.

"The words 'BYZANTO JEWELLO DECOR.'"

12,979.—COLORED POWDER OF THE NATURE OF FLOCK.—*Rufus H. Bragdon*, New York, N. Y. Application filed December 2, 1885. Used since November 1, 1885.

"The word 'PLUSHETTE,' accompanied by the picture of a dragon."

12,980.—LAMPS.—*J. Payson Bradley*, Boston, Mass. Application filed December 21, 1885. Used since the fall of 1878.

"The word 'SECURITY.'"

12,981.—JAPAN TEA.—*Carter, Hawley & Co.*, New York, N. Y. Application filed January 4, 1886. Used since July 24, 1882.

"The initial letters 'C. H. M.'"

12,982.—VARNISHES, STAINS, JAPANS, SURFACERS, AND KINDRED GOODS.—*Chicago Varnish Company*, Chicago, Ill. Application filed December 31, 1885. Used since November 24, 1885.

"The word 'HYPERION.'"

12,983.—VARNISHES, STAINS, JAPANS, SURFACERS, AND KINDRED GOODS.—*Chicago Varnish Company*, Chicago, Ill. Application filed December 31, 1885. Used since December, 1883.

"The word 'NONPAREIL.'"

12,984.—VARNISHES, STAINS, JAPANS, SURFACERS, AND KINDRED GOODS.—*Chicago Varnish Company*, Chicago, Ill. Application filed December 31, 1885. Used since November 24, 1885.

"The word 'SHIPOLEUM.'"

12,985.—VARNISHES, STAINS, JAPANS, SURFACERS, AND KINDRED GOODS.—*Chicago Varnish Company*, Chicago, Ill. Application filed December 31, 1885. Used since November 24, 1885.

"The word 'GRIPOLEO.'"

12,986.—BEER.—*H. Clausen & Son Brewing Company*, New York, N. Y. Application filed January 9, 1886. Used since December 28, 1885.

"The word 'ROYAL.'"

12,987.—SAFETY-FUSE FOR EXPLODING GUNPOWDER, &c.—*The Climax Fuse Company*, Avon, Conn., and New York, N. Y. Application filed January 6, 1886. Used since November 15, 1885.

"The word 'CLIMAX' and the representation of a fuse bent into a circle and having its ends twisted together."

12,988.—RUBBER BOOTS AND SHOES AND OTHER ARTICLES OF CLOTHING.—*Goodyear Rubber Company*, New York, N. Y. Application filed January 7, 1886. Used since November, 1883.

"The word 'TOBOGGAN.'"

12,989.—NEEDLES, PINS, CROCHET AND KNITTING NEEDLES, AND FISH-HOOKS.—*Thomas Henry Harper*, Redditch, England. Application filed January 5, 1886. Used since June 20, 1881.

"A monogram comprising the letters and characters 'M & Co.'"

12,990.—JAPAN TEA.—*Carter, Hawley & Co.*, New York, N. Y. Application filed January 4, 1886. Used since May 15, 1884.

"The representation of a basket of strawberries and the words 'STRAWBERRY CHOP.'"

12,991.—FOOD FOR CALVES.—*Seth Phillips*, London, England. Application filed August 7, 1885. Used since 1880.

"The word 'LACTIFER.'"

12,992.—LINIMENT.—*John Riley* and *John M. Boyer*, London, Ohio. Application filed January 6, 1886. Used since November 1, 1885.

"The word 'KREAK.'"

12,993.—MACAROONS.—*Simon Schayer*, New York, N. Y. Application filed January 7, 1886. Used since February 13, 1885.

"The words 'FIG BLOSSOMS.'"

12,994.—CERTAIN-NAMED HAIR TONIC OR WASH.—*Harry Bailey*, Philadelphia, Pa. Application filed May 11, 1885. Used since September, 1884.

"The picture of the seven Sutherland sisters."

12,995.—LAUNDRY AND TOILET SOAP.—*Empire Soap Company*, St. Louis, Mo. Application filed January 9, 1886. Used since December 21, 1885.

"The words 'TIN TAG.'"

12,996.—POLISHING-POWDER FOR METAL, GLASS, &c.—*Fischler & Co.*, Philadelphia, Pa. Application filed November 27, 1885. Used since September 5, 1885.

"The title 'PULVEVLVER' and an annulus having across its face a strap or band."

12,997.—MEDICINE FOR THE CURE OF CHILLS AND FEVER.—*Alexander B. Girardeau* and *Benjamin W. Johnson*, Monticello, Fla. Application filed January 8, 1886. Used since December, 1884.

"The symbol of a star with the words 'THE TEXAS CURE' upon its face, and the registrants' autograph, 'JOHNSON & Co.'"

12,998.—FELT AND SILK HATS.—*George Heath*, London, England. Application filed January 11, 1886. Used since August, 1865.

"The representation of a medal surmounted by regalia and supported by the figures of a lion and a unicorn on either side."

12,999.—SPECTACLES, EYEGLASSES, OPERA, FIELD, AND MARINE GLASSES, TELESCOPES, MICROSCOPES, AND LENSES.—*T. B. Hagstoz & Co.*, Philadelphia, Pa. Application filed March 6, 1885. Used since February, 1884.

"The pictorial representation of a crescent and comet."

13,000.—SPECTACLES, EYEGLASSES, OPERA, FIELD, AND MARINE GLASSES, TELESCOPES, MICROSCOPES, AND LENSES.—*T. B. Hagstoz & Co.*, Philadelphia, Pa. Application filed December 29, 1885. Used since February, 1884.

"The words 'CRESCENT & COMET.'"

13,001.—WHISKY.—*Ireland & Vannatta*, Lexington, Ky. Application filed January 8, 1886. Used since June 21, 1883.

"The words 'OWL CLUB.'"

LABELS.

4,713.—Title: "THE BRISTLE WHISK BRUSH."—*Richard Cahill*, Brooklyn, N. Y. Application filed January 6, 1886.

4,714.—Title: "DIPHTHERIA REMEDY."—*Henry Diekmann*, Waterloo, Ontario, Canada. Application filed January 6, 1886.

4,715.—Title: "MRS CLAYTON'S FAMILY MEDICINE."—*Francis J. Heath*, Victor, N. Y. Application filed January 7, 1886.

4,716.—Title: "DR. A. C. HOXSIE'S CERTAIN CROUP CURE."—*Anna Poole Hoxsie*, Buffalo, N. Y. Application filed October 2, 1885.

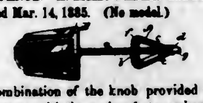
4,717.—Title: "F. H. METZGER'S PAIN ERADICATOR."—*William Jacob Metzger*, Minneapolis, Minn. Application filed December 24, 1885.

4,718.—Title: "GLASSCOCK'S CONCENTRATED COCAINE REMEDIES."—*Sallade & Eppinger*, Chicago, Ill. Application filed January 11, 1886.

PATENTS

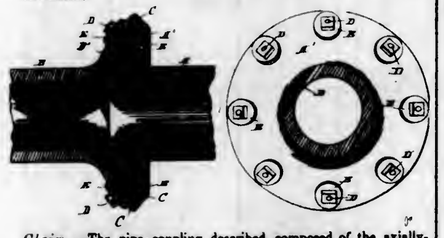
GRANTED FEB. 2, 1886.

335,100. EAR-KNOB. A. ROSELOW ADAMS and EZRA S. DODGE, Providence, R. I. Filed Mar. 14, 1885. (No model.)



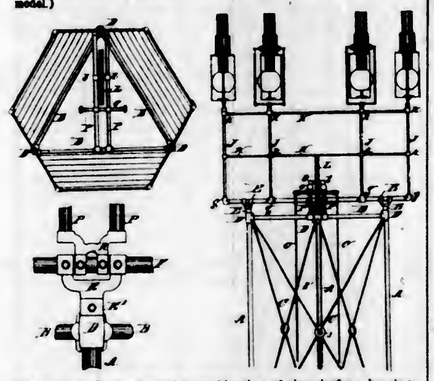
Claim.—The combination of the knob provided with the notched or circularly-grooved stem, with the spring-fastener having a cup-formed base adapted to form a bearing against the ear of the wearer, and the integral hollowed spring-arms extending in a backward direction from the knob and engaging with the notch or groove of the stem, substantially as described.

335,101. PIPE-COUPLING. JOHN S. ADAMS, Elgin, Ill., assignor to the Detroit Iron Tower Company, Detroit, Mich. Filed May 31, 1883. (No model.)



Claim.—The pipe-coupling described, composed of the axially-apertured members A and B, the member A having the convexed flange A', provided with an exterior screw-thread, and the member B having the flange B', concaved on its abutting face, and having its rear face convexed in a surface parallel with the opposite concaved surface, in combination with the nut E, interiorly threaded to fit the member A, and provided with the inwardly-projecting flange E', fitted to the convex face of the flange B', and constructed to afford room at e^3 and e^2 for the lateral movement of the member B, substantially as and for the purpose set forth.

335,102. TOWER. JOHN S. ADAMS, Detroit, Mich., assignor to the Detroit Iron Tower Company, same place. Filed June 30, 1884. (No model.)



Claim.—1. In a tower, the combination of the platform-brackets sleeved to receive horizontal bars of the platform, and secured to the tops of the uprights, the platform-bars supported by said brackets, and the pulley-bars composed of uprights and transverse connecting-pieces supported at opposite ends, substantially as described.

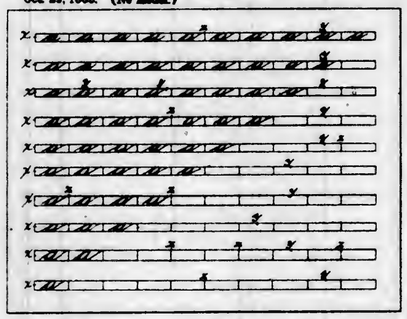
2. In a tower, the pulley-bar posts, in combination with the clamps or collars secured upon the girts of the tower, as and for the purpose specified.

3. In a tower, the pulley-bar posts, in combination with the clamps or collars secured upon the girt of the tower and supported by the strut, substantially as and for the purpose specified.

4. In an electric-light tower, the combination, with the railing-posts, of lamps connected therewith, whereby said posts form the supports for the lamps, substantially as described.

5. In an electric-light tower, the lamp-posts secured upon the railings, for the support of electric lamps, as and for the purposes specified.

335,103. COPY-BOOK. ALEXANDER AGAR, Brooklyn, N. Y. Filed Oct. 29, 1885. (No model.)



Claim.—In tracing copy-books, the combination on each page of the sets of lines *z z z*, divided by cross-lines *z z z* into regular spaces *y y y y*, having tracing copy-letters *a a a a* set in each space in the upper set of lines, *z z z*, and in each succeeding set of lines one more space, *y*, left without tracing-copy than in the preceding set, all other spaces *y y y* being filled with tracing-copy, so that the tracing-copy appears in regular receding gradation from right to left on the page.

335,104. TOY PISTOL. GEORGE A. BADGER and WILBER F. LAKIN, Quincy, Mass. Filed May 4, 1885. (Model.)

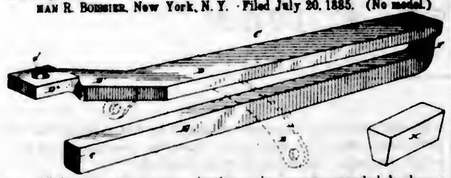


Claim.—1. In a toy pistol, the combination of a butt or handle, a rod or barrel suitably attached thereto, a compressible coiled spring having one end attached to the butt or handle and the other end attached to a sliding sleeve, and adapted to be compressed and expanded upon the barrel or rod, the sliding sleeve, a trigger or catch pivoted at or near its center upon the butt or handle, and adapted to engage, retain, and release the sliding sleeve and ball or missile to be expelled, and a small spring seated at one end upon the butt or handle and the other end seated upon

the trigger, so as to cause it to assume its normal position when released, all arranged and constructed as and for the purpose specified.

2. In a toy pistol, the combination of the handle A, the rod or barrel B, suitably attached to said handle, the compressible coiled spring *g*, attached at one end to the handle and at the other end to the sliding sleeve *c*, the hollow ball *a*, moving upon the rod B, the trigger E, having the concave portion O, adapted to hold the ball, and the small spring H, seated upon said handle A and trigger E, all arranged substantially as and for the purpose specified.

335,105. **ARMATURE FOR DYNAMO-ELECTRIC MACHINES.** HERMAN R. BOBBIER, New York, N. Y. Filed July 20, 1885. (No model.)



Claim.—1. An armature having a ring-core surrounded by heavy cast or forged copper sections having inner and outer legs arranged parallel, and in which the former are of less width than the latter, substantially as and for the purpose specified.

2. In an armature, a ring-core, in combination with heavy cast or forged copper sections having inner and outer legs, which surround the said core, made parallel, and all terminating at one end of the armature, and the commutator-sections, each of which is connected to the inner leg of one section and the outer leg of the next adjacent one, substantially as and for the purpose specified.

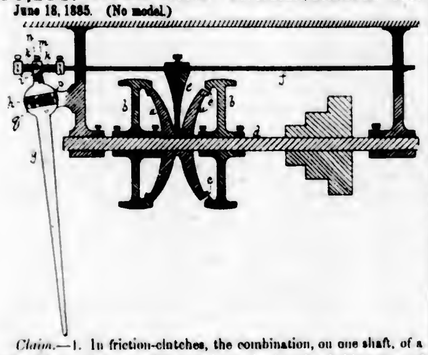
3. An armature having a ring-core surrounded by heavy cast or forged copper sections having inner and outer legs arranged parallel, but having their free ends arranged out of line, substantially as and for the purpose specified.

4. The copper section C, having legs D and E, united at F, the free end of leg D being bent substantially as indicated by D' D^2, substantially as and for the purpose specified.

5. The combination of core B, sections C, having legs D and E, commutator-sections F, commutator G, blocks K, and bands J, substantially as and for the purpose specified.

6. The sections C for the armature, formed or cast integral or in one piece, excluding joints, and consisting of the legs D and E, the resistance of the inner leg, E, being less than that of the outer leg, D, substantially as and for the purpose specified.

335,106. **FRICTION-CLUTCH.** WM. P. BRETT, Decatur, Ill. Filed June 18, 1885. (No model.)



Claim.—1. In friction-clutches, the combination, on one shaft, of a friction driving-wheel, an adjacent driven wheel, and suitable means of throwing and holding the wheels in or out of contact, whereby the opposing surfaces of the driving and driven wheels are directly utilized, as and for the purpose set forth.

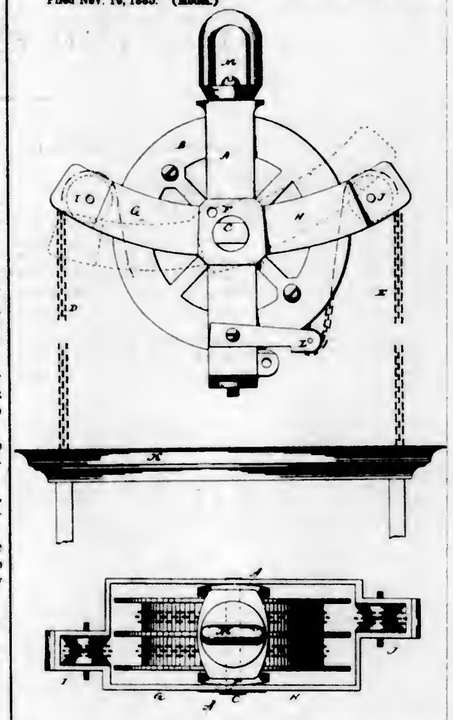
2. The friction-clamp, Fig. 3, consisting of a movable disk, *q*, having a suitable friction-surface, a permanent opposing disk, *o*, with a friction-surface suitable to coact with the friction-surface of disk *q*, and bolt *p* and spring *h*, whereby the disks are held in close contact and the necessary amount of friction is acquired and retained.

3. A device for adjusting and holding the co-operative parts of a friction-clutch in or out of contact, consisting in a lever, suitable means of connecting the lever with the sliding portion of the clutch, and a frictional adjusting mechanism, whereby the lever and clutch are retained as adjusted.

4. The combination of pulleys *a* and *b*, controlling device *e* on rod *f*, friction-clamp, Fig. 3, shifting-lever *g*, springs *k k*, collars *l h*, and collar *m*, constructed and arranged to operate as set forth, whereby the motion of the shifting-lever is elastically or rigidly imparted to the pulleys, as and for the purpose set forth.

5. A device for adjusting and holding the co-operative parts of a friction-clutch in or out of contact, consisting in a lever, suitable means of elastically connecting the lever with the sliding portion of a clutch, and a frictional adjusting mechanism, whereby the lever and clutch are retained as adjusted.

335,107. **SUSPENSION DEVICE FOR LAMPS, &c.** ROLAND L. BREWER, Meriden, Conn., assignor to Edward Miller & Co., same place. Filed Nov. 16, 1885. (Model.)



Claim.—1. In a suspension device for lamps, &c., consisting of a frame carrying a spring-drum, with two chains adapted to be wound upon said drum by the reaction of the spring, or to wind the spring as the chains are drawn from the drum, the combination therewith of a saddle hung to the frame so as to oscillate in a plane parallel with the plane of the drum, and extending to each side of the drum, and at such each side provided with a bearing for the chains, respectively, substantially as described.

2. In a suspension device for lamps, &c., consisting of a frame carrying a spring-drum, with two chains adapted to be wound upon said drum by the reaction of the spring, or to wind the spring as the chains are drawn from the drum, the combination therewith of a saddle hung to the frame to oscillate in a plane parallel with the plane of the drum, the said saddle carrying a bearing at each side of the drum, a guide-pulley, L, on one side of the drum, and around which the chain drawn from that side passes, thence over the bearing in that end of the saddle, the other chain passing directly from the drum over the bearing in the opposite end of the saddle, substantially as described.

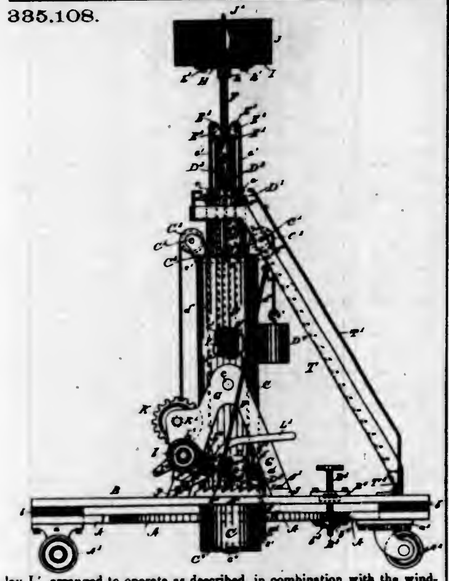
335,108. **FIRE-ESCAPE.** WILLIAM BROWN, Duncannon, Pa., assignor of one-half to William H. Pennel, same place. Filed June 15, 1885. (No model.)

Claim.—1. The combination of the adjustable base B, provided with serrated plate B', perforated plate B^2, for engaging with latch-bolt R of the tube C, the adjusting-screw B^3, and frame A, all constructed and arranged to operate as specified, for the purpose set forth.

2. The adjustable staircase T T', provided with adjustable prop V, having lateral extension *l*, in combination with the base B and serrated plate B', as and for the purpose set forth.

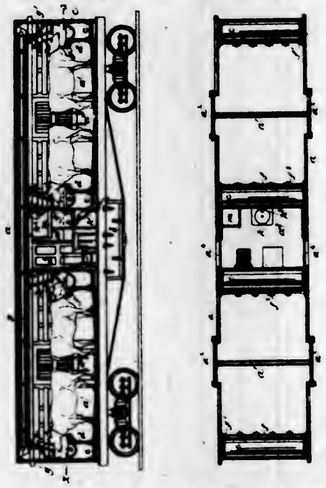
3. The lever L^3, provided with friction-bearing *l*, and friction-pulley L', arranged to operate as described, in combination with the winding mechanism, as and for the purpose set forth.

335,108.



4. The combination of the transporting-frame A, base B, pivoted thereto, as shown, the adjustable staircase, screw B^2, standards G G', the winding mechanism, intersliding tubes, ropes d''' e^2 s', latch-bolt R, and perforated plate B^2, all arranged to operate as and for the purpose set forth.

335,109. **STOCK-CAR.** GEO. D. BURTON, New Ipswich, N. H. Filed Aug. 31, 1885. (No model.)



Claim.—1. In a stock-car, the combination, with feed-troughs, of a concave or receding partition or boxing for inclosing the space below the said troughs, to avoid danger of injury to the animals, substantially as described.

2. In a stock-car, the combination, with feed-troughs, of a fastening-rail composed of iron tubing, and fastening-rings attached thereto, and a receding or concave partition below the said fastening-rail, substantially as and for the purpose set forth.

3. A stock-car provided with compartments for live stock and feed-troughs therein, and a separate compartment for an attendant, combined with a water-pipe discharging into the said troughs for supplying the animals with water, and a water-tank connected with the said pipe and having a delivery-pipe in the attendant's compartment, affording a supply of water for the attendant, substantially as described.

4. A stock-car having compartments provided with feed-troughs for live stock, and a separate compartment for the attendant, and a set basin in the attendant's compartment, and a water-pipe for supplying the said feed-troughs, combined with a reservoir connected with the said water-pipe and having a delivery-pipe leading to the said basin, substantially as described.

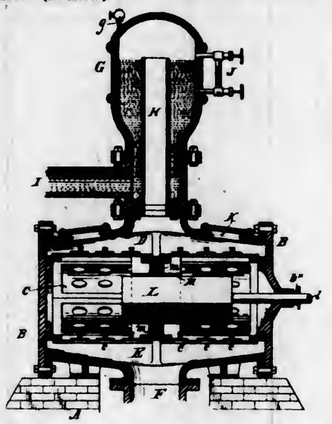
5. In a stock-car, the combination, with the water-pipe *g*, for supplying the animals with water, of the reservoir k^2, and pipe connecting the same with the water-pipe, and the valve in the said connecting-pipe, substantially as and for the purpose described.

335,110. **MICROMETER-GAGE.** PATRICK CLIFFORD and JOSEPH COUPAL, Wellesley Heights, Mass. Filed Dec. 4, 1884. (No model.)



Claim.—The combination of a right-handed and left-handed screw, when operating simultaneously inside each other, with a micrometer having indicating-gages for the purpose of measuring thicknesses, substantially as described, for the purpose specified.

335,111. **PUMP.** JOSEPH J. DE KINDER, Philadelphia, Pa. Filed Mar. 20, 1885. (No model.)



Claim.—In a pumping apparatus, the following elements in combination: a pump-cylinder, a circumscribed piston-chamber, diaphragms interposed between the pump-cylinder and the piston-chamber and dividing the circumscribed interspace between them into a delivery-chamber and a suction-chamber, an inlet communicating with the suction-chamber, a delivery-pipe leading from the delivery-chamber to within an air-chamber, an air chamber, an outlet leading therefrom below the delivering-orifice of the delivery-pipe, a piston bearing within the piston-chamber, a transverse diaphragm for supporting said bearing and dividing the piston-chamber into two compartments, a piston-plunger adapted to reciprocate in said bearing and with respect to the said two compartments, valve-ports in both compartments of the piston-chamber opening through the walls thereof, respectively, into the delivery-chamber and into the suction-chamber, valves opening into the piston-chamber and applied to the ports thereof which communicate with the suction-chamber, and valves opening into the delivery-chamber and applied to the ports of the piston-chamber which communicate with said delivery-chamber, substantially as shown and described, and for the purpose specified.

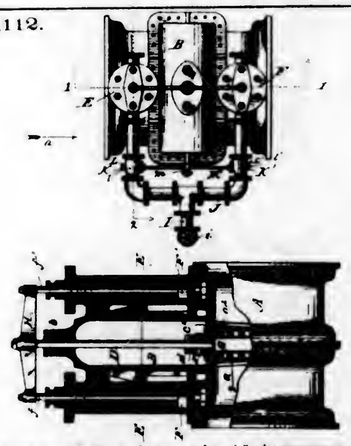
335,112. **VALVE.** JOSEPH J. DE KINDER, Philadelphia, Pa. Filed June 24, 1885. (No model.)

Claim.—1. The combination of a high or other pressure valve in a main or other conduit, the hydraulic cylinder, pistons, piston-rods, yoke connecting said piston-rods, and also connected with the stem of the valve, and cylinder inlet-pipes for introducing a motive-fluid simultaneously to both cylinders, substantially as set forth.

2. The combination of a high-pressure or other valve in a main or conduit, the hydraulic cylinders, pistons, piston-rods, yoke connecting said piston-rods, and also connected with the stem of the valve, the cylinder inlet-pipes, by-pass valve therein, and inlets for introducing a motive fluid simultaneously to said by-pass valves, substantially as set forth.

3. The combination of the main valve C, the cylinders E E', the

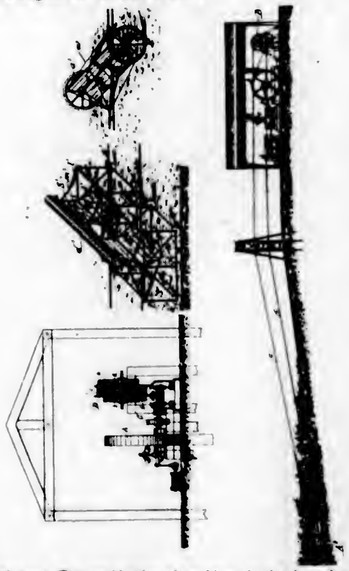
335,112.



cylinder inlet-pipes K K', the by-pass valves *l l'*, the transverse pipe J, the main inlet-pipe I, and the cock or valve *i*, substantially as described.

4. The combination of the main valve C, the cylinders E E', the cylinder inlet-pipes K K', the transverse pipe J, the main inlet-pipe I, the cock or valve *i*, the by-pass valves *l l'*, the horizontal valve-shaft M, and the lever O for operating said valve-shaft, substantially as set forth.

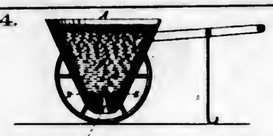
335,113. **SYSTEM FOR UTILIZING WAVE-POWER.** ANTOINE DE SOUSA, Paris, France. Filed Nov. 7, 1885. (No model.) Patented in France Aug. 17, 1882, No. 150,661; in England Nov. 4, 1882, No. 5,276, and in Belgium Nov. 6, 1882, No. 59,446.



Claim.—1. The combination of a cable, *c*, having its ends secured to and wound upon a drum, D, on shore, with the roller A^2, anchored in the water, with the movable receiving apparatus having flaps S', to which one strand of said cable is secured, the movable transmitting apparatus, which is adapted to clamp one strand of said cable-regulating apparatus, having tension-springs *s s'* *v*, and with mechanism, substantially as described, for converting the horizontal motion of the transmitting apparatus into rotary motion of a wheel, A, as set forth.

2. The combination of the sliding frame *a*, carrying the inclines *b b*, with the cable *c*, wedges *d d*, levers *f f*, and screw *g*, substantially as herein shown and described

335,114. **SLAG-BUGGY.** WALTER B. DEVEREUX, Aspen, Colo. Filed July 28, 1885. (No model.)



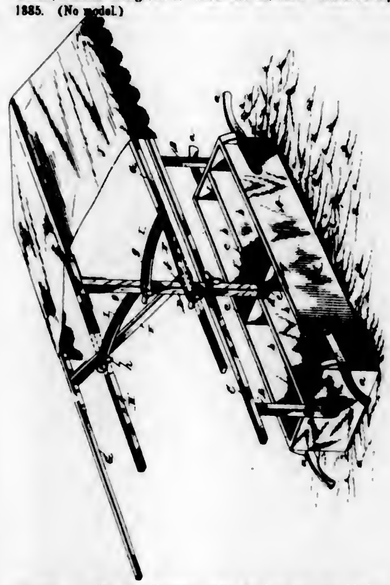
Claim.—1. In a slag-buggy, a receiving or slag pot having in its lower walls an opening containing a pipe projecting upward therein above said lower walls, through which the poor slag may be drawn off from the interior of the pot without carrying with it the rich slag, mattes, or metals in the bottom or on sides of the pot.

2. In a slag-buggy, the combination, substantially as hereinbefore set forth, of the slag-pot, the opening in the lower walls of the same, the flanged pipe in the interior of the pot fitting into said opening and projecting upward above said lower walls, whereby the poor slag in the interior of the pot may be drawn off without carrying with it the rich slag, mattes, or metal in the bottom or sides of the pot, and means, substantially as described, for closing said pipe and for attaching it to the walls of the pot.

3. In a slag-buggy, a receiving-pot having in its lower walls an interior cone projecting upward into the interior of the pot and provided with an opening in its apex, whereby the poor slag in the interior of the pot may be drawn off without carrying with it the rich slag, mattes, or metal in the bottom or on the side walls of the pot.

4. In a slag-buggy, the combination, substantially as hereinbefore set forth, of the slag-pot, the interior cone projecting upward into the interior of the pot, an opening at the apex of said cone, whereby the poor slag in the interior of the same may be drawn off without carrying with it the rich slags, mattes, or metal in the bottom or on the sides of the pot, and means for closing the orifice of said cone, substantially as described.

335,115. **HOP-BOX AWNING.** JEROME DILLENBECK and JACOB W. NEAHR, Palatine Bridge, N. Y. Filed Dec. 29, 1884. Renewed Sept. 14, 1885. (No model.)



Claim.—1. The combination, with the hop-box provided with the central vertical standard, D, having the central longitudinal bar, H, secured to the upper end to support the central portion of the canvas, of the arms F, pivoted at their lower ends to said standard and provided with the longitudinal side bars, G, to which the canvas is secured, the curved slotted brace-bars I, and clamping-screws *h*, whereby said awning may be folded in a contour, substantially as specified.

2. The herein-described awning for hop-boxes, consisting of the central vertical standard removably secured to the box-frame, the pivoted arms F, carrying the longitudinal side bars, G, and pivoted at their lower ends to the vertical standard D, and the curved slotted brace-bars I, connecting the central vertical standard to the arms F, and provided with the clamping-screws, as and for the purposes set forth.

3. The combination, with a hop-box, of an awning-frame adapted to be folded inwardly, the two sides thereof meeting in the center, and

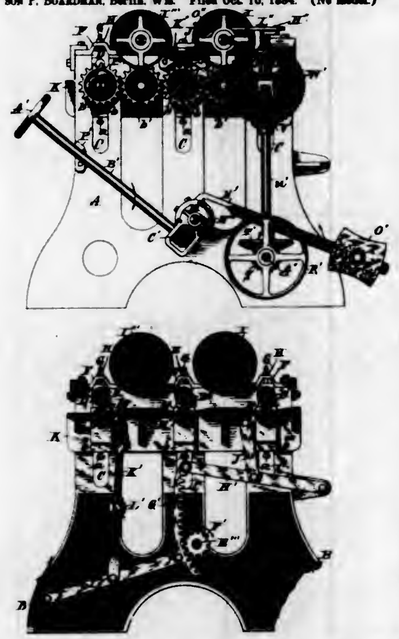
provided with the curved slotted brace-bars I, pivoted at their inner ends to the central vertical bar or standard, D, and their outer ends connected to the inclined bars F, pivoted at their inner ends to said standard and provided at their outer ends with the longitudinal side bars, G, to which the canvas is secured, said bars F having the thumb-screws engaging the slotted arms, whereby the same is secured in position.

335,116. **HARNESS-TERRET.** GEORGE F. EBERHARD, Cleveland, Ohio, assignor to the Eberhard Manufacturing Company, same place. Filed Apr. 6, 1885. (No model.)



Claim.—A drop-terret for harness, consisting of ring c and a clip, *a*, formed with a bearing for the ring on its under side, the sides of which are substantially parallel, and having its ends extending beyond the ends of the loop, with inclined openings on reverse sides, and rivet-holes for attachment, substantially as set forth.

335,117. **WOOD-POLISHING MACHINE.** WILLIAM H. ELMER and ANSON P. BOARDMAN, Berlin, Wis. Filed Oct. 10, 1884. (No model.)



Claim.—1. In a wood-polishing machine, the combination, with the polishing-cylinder I and its supporting-shaft L'', of the vibrating lever I'', pivoted at a fixed point at one end to the supporting frame or bracket, and centrally pivoted to a collar or sleeve surrounding said shaft between side bearings formed on said shaft, crank H'', operating in a slot in the free end of said lever I'', and shaft U', connected by gears with the operating mechanism of the machine, substantially as and for the purpose specified.

2. The combination of the shaft E''', lever N', provided with weight O', pinion D''', worm-gear C', shaft B''', provided with handle or hand-wheel A', pinion F', irregular rack-bar G', levers H' and I', and link-rods J' and K', bed or table K, and lower feed-rolls, E' E' E', substantially as set forth.

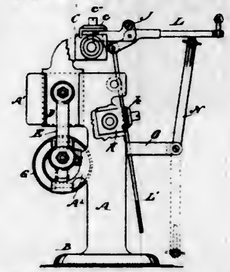
3. The combination of the shaft U', provided with groove B''', movable pinion V', provided with the feathers or spline A''', and sleeve G''', collar F''', retaining-screws H''' H''', sleeve or bracket C''', provided with socket D''', shaft *a'*, and gear W', all substantially as and for the purpose set forth.

4. In a wood-polishing machine, the device for producing an independent vertical adjustment of the lower feed-rolls relatively to each other and the bed or table, consisting of the combination, with the bed K, of the fixed bearings *b b b*, screws *a a a*, and movable journal-boxes E E E, substantially as set forth.

5. The combination of a band-pulley, R', located near the base of the machine, horizontal shaft A'', gears S' and T', vertical shaft U', vertically-moving gears V and W', shaft *a'*, and chain of gears L L, said pulley, gears, and shafts being adapted to communicate motion from the driving-belt to the upper feed-rolls, and to permit of their vertical movement, substantially as and for the purpose specified.

6. The combination, with the horizontal shaft A'', provided at one end with the driving-pulley, of the gears B'' and C'', located at the opposite end of said shaft, vertical shaft D'', gears E'' and F''', shaft U', and chain of gears G'' G'', communicating with the lower feed-rolls, substantially as set forth.

335,118. **MACHINE FOR EASING THE LEVERS OF TYPE-WRITERS.** VICTOR H. ELMER, Jersey City, N. J. Filed Oct. 14, 1885. (No model.)



Claim.—1. The improved mode of easing type-levers in their hangers, consisting in subjecting the said levers to a rapid reciprocating motion in their hangers until the desired easement is obtained preparatory to their being inserted in the writing-machine, substantially in the manner and for the purpose set forth.

2. In a machine of the character described, the combination of a reciprocating cross-bar, a rigid cross-bar below the same, each bar being provided with a like number of clamps, for the purpose set forth, and means, substantially as described, for actuating the reciprocating bar, as and for the purpose specified.

3. In a machine of the character described, the combination, with the standard A, of a cross-bar, C, having arranged thereon a series of holding or clamping devices; C', for holding the type-levers L, a rigid cross-bar, K, having clamping devices *k*, for rigidly holding the operating or connecting rods L' of the type-levers, and means for imparting a rapid reciprocating motion to the bar C, substantially as and for the purpose specified.

4. The combination, with the standards, of a reciprocating cross-bar, a sliding block or plate connected thereto, and a connecting-rod connected to the sliding block and to the operating-shaft, substantially as described.

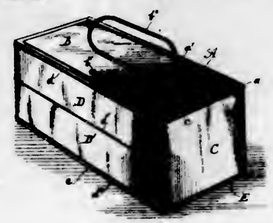
5. The combination, with the reciprocating bar, of clamping-heads mounted thereon, each provided with means for holding the clamp-plates raised for the ready insertion of the type-lever hangers, substantially as described.

6. The combination, with the standards, formed near their tops with grooved heads or shoulders, of the clamp-carrying cross-bar C, the sliding blocks D, the connecting-rods E, shaft and pulleys F G, and the cross-bar K, substantially as described.

7. The combination, with the operating-shaft, of headed sleeve H, carrying adjustable block I, substantially as described.

8. In a machine of the character described, the combination, with the standards A and reciprocating bar C, carrying clamps or holders, of the swinging frame consisting of arms N and bar M, substantially as and for the purpose specified.

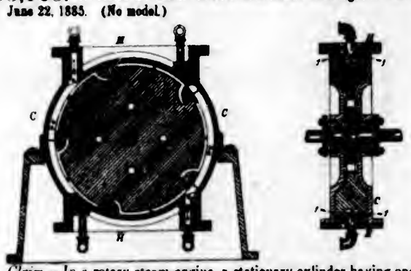
335,119. **FOLDING LUNCH-BOX.** WILLIAM W. FLINT, Chicago, Ill., assignor to the Chicago Stamping Company, same place. Filed Nov. 27, 1885. (No model.)



Claim.—1. A lunch-box consisting of the rigid sheet-metal frame A, having the cover and collapsible sectional sides hinged thereto, the lower sections of said sides being in turn hinged to the bottom of said box, and hinged folding ends, all combined substantially as shown and described.

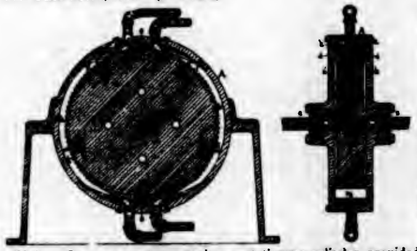
2. In a folding lunch-box, the combination of the sheet-metal frame A, provided with a hinged cover, collapsible sectional sides D D D' D', provided with the tongues d^2, hinged folding ends C C, and bottom E, substantially as and for the purposes set forth.

335,120. ROTARY ENGINE. JOSEPH FORSYTHE, Pittsburg, Pa. Filed June 22, 1885. (No model.)



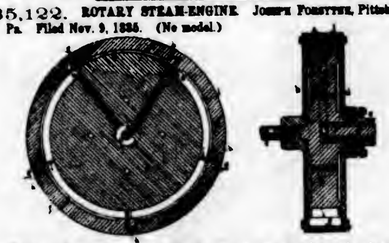
Claim.—In a rotary steam-engine, a stationary cylinder having one or more fixed heads, each head having inclines and influent and effluent ways, in combination with a rotating piston provided with three or more concentric segmental slots in its convex surface, so arranged as to admit steam first to valve-recesses to drive out valves, and then into valve-circle between fixed head and valves; also, to transmit steam exhausting back from valve-recess, substantially as described and shown.

335,121. ROTARY STEAM-ENGINE. JOSEPH FORSYTHE, Pittsburg, Pa. Filed Nov. 9, 1885. (No model.)



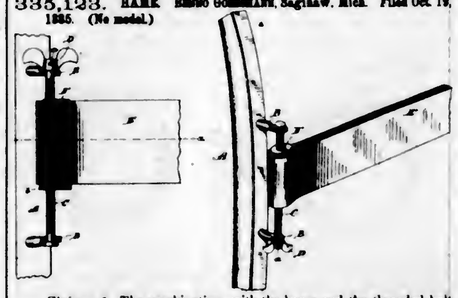
Claim.—In a rotary steam-engine, a stationary cylinder provided with two endless curved grooves in the inner sides of its heads exactly opposite each other, and one or more fixed abutments projecting inwardly from its concave surface opposite the shorter radius or radii of said curved grooves, each abutment having inclines and influent and effluent ways, in combination with a rotating piston having three or more radial valve-recesses, each provided with a plate-valve having short arms with anti-friction rollers, and an auxiliary ball-valve, so arranged that steam admitted pressing on one side of said plate-valves starts the piston into revolution, carrying all the other valves with it, and the plate-valves on their rollers are successively borne up the inclines of said curved grooves to the front of said fixed abutments, along the levels and down the other inclines of said grooves, to pass under said fixed abutments, thence to emerge in the manner aforesaid.

335,122. ROTARY STEAM-ENGINE. JOSEPH FORSYTHE, Pittsburg, Pa. Filed Nov. 9, 1885. (No model.)



Claim.—In a rotary steam-engine, a stationary piston having one or more fixed heads, each head having inclines and influent and effluent ways, in combination with a rotating cylinder provided with three or more concentric segmental slots or grooves in its concave surface, so arranged as to admit steam first into valve-recesses to drive out valves, and then into valve-circle between fixed head and valves, also to transmit steam exhausting back from valve-recess, substantially as described and shown.

335,123. HAME. RUDOLPH GOSSMANN, Saginaw, Mich. Filed Oct. 19, 1885. (No model.)

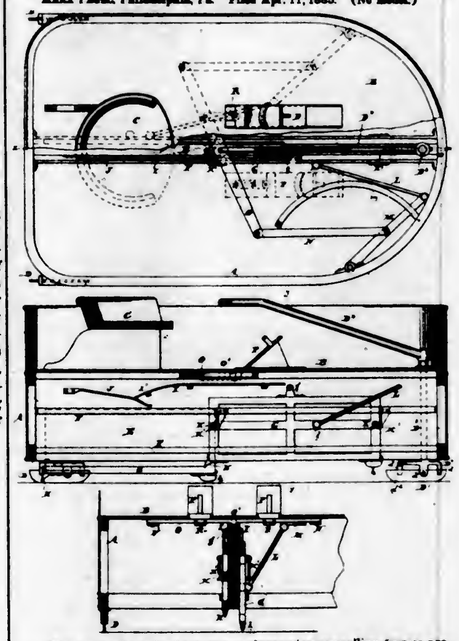


Claim.—1. The combination, with the hame and the threaded bolt attached thereto, of the leather trace provided at its forward end with a vertical opening or passage, and a metallic bushing seated in the opening and provided with a threaded perforation for the passage of the bolt, as set forth.

2. The combination, with the hame and the threaded bolt attached thereto, of the leather trace provided at its forward end with a vertical opening or passage, a metallic bushing seated in the opening and constructed substantially oval in cross-section, and a threaded perforation provided in the bushing for the passage of the bolt, as set forth.

3. The combination, with the hame, of the threaded bolt attached thereto, the trace having the bushing seated in its front end, said bushing being constructed substantially oval in cross-section, and provided with a vertical threaded opening for the passage of the bolt, and a flange provided at the lower end of the bushing, for the purpose set forth.

335,124. ICE-BOAT. RAPHAEL S. GREEN, THEODORE S. EDEL, and MARX PAGEL, Philadelphia, Pa. Filed Apr. 11, 1885. (No model.)



Claim.—1. In an ice-boat, two reciprocating propelling-frames provided with picks or prongs to catch into the ice, in combination with guides and suitable mechanism for reciprocating said frames, the said frames being located close to the central line of the ice-boat, by which their power is exerted in practically the same resultant line, substantially as and for the purpose specified.

2. In an ice-boat, a vertically and horizontally reciprocating propelling-frame, provided with picks or prongs to catch into the ice, in combination with stationary cam devices to raise said frame clear of the ice in its forward movement, and suitable foot-power-lever mechanism to reciprocate said frame horizontally, substantially as and for the purpose specified.

3. In an ice-boat, a vertically and horizontally reciprocating propelling-frame, provided with picks or prongs to catch into the ice, in combination with cam devices to raise said frame clear of the ice in its forward movement, supporting mechanism, substantially as set forth, to support said frame clear of the ice at the two extreme terminations of its horizontal movements, and suitable mechanism to reciprocate said frame horizontally, substantially as and for the purpose specified.

4. In an ice-boat, a vertically and horizontally reciprocating propelling-frame, provided with a prong or pick to catch into the ice, and guides by which said frame may be free to move horizontally fore and aft or vertically, in combination with levers O M and links N and L, substantially as and for the purpose specified.

5. A runner for an ice-boat, consisting of the frame or plate D^2, having vertically-bifurcated guides d, in combination with the flat runner d^2, rounded on its end and pivoted at d', between the guides d and in advance of its center, whereby the runner tends to lie parallel with the line of movement of the boat, substantially as and for the purpose specified.

6. The propelling-frame G, having the forward end provided with a smooth shoe, A, and its rear end with a pick or prong, H, substantially as and for the purpose specified.

7. In an ice-boat, the combination of the reciprocating frame G, having prong H and roller g, with guides, spring J, and guide-rail I, substantially as and for the purpose specified.

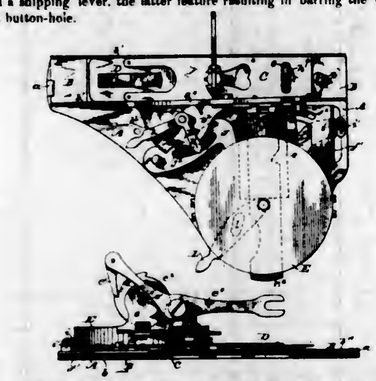
8. In an ice-boat, the combination of the reciprocating frame G, having prong H, rollers K, and rollers g, with supports K', guides, spring J, and guide-rail I, substantially as and for the purpose specified.

9. In an ice-boat, the central frame, E, in combination with the propelling-frames G, located one on each side and provided with prongs H, and suitable power mechanism, consisting of levers O M and links N and L, to reciprocate said frames alternately in opposite directions, substantially as and for the purpose specified.

10. In an ice-boat, the combination of frames G, adapted to be reciprocated in the line of movement of the boat, and having picks to catch into the ice, with horizontal levers M O, connected together and with the frames by links N and L, the two foot-pedals, links R, connecting said pedals with the lever O on each side of its pivotal point or fulcrum, and a seat, C, for the operator to sit in while operating the pedals, substantially as and for the purpose specified.

335,125. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. JAMES G. GREENE and PHILIP DIEHL, Elizabeth, N. J., assignors to the Singer Manufacturing Company of New Jersey. Filed Sept. 29, 1885. (No model.)

Brief.—The cam-wheel immediately connected with the levers actuating the vibrator and the feed-plate is continuously vibrated by the cam-wheel on the bracket. The speed of rotation of the cam-wheel to make the stitches nearer to or farther from each other lengthwise of the button-hole is varied by changing the position of the adjusting-lever having the inclined slot therein. The extent of vibratory movement imparted to the cloth-clamp may be varied by means of a slotted lever with adjustable connection device, the lever serving both as a vibrating and a shipping lever, the latter feature resulting in barring the ends of the button-hole.



Claim.—1. In a button-hole attachment for sewing-machines, the combination, with a feed-plate and work-clamp, of an intermittingly-rotated cam-wheel, a slide reciprocated by said wheel, a feeding and cam wheel movable with said slide, and feeding and vibrating levers connected with said feeding and cam wheel and said feed-plate, and adapted to transmit motion from the former to the latter, whereby said feed-plate will be moved longitudinally to feed the button-hole beneath the needle and be reciprocated laterally to form overedge-stitches, substantially as set forth.

2. In a button-hole attachment for sewing-machines, the combination, with the feed-plate and cloth-clamp, of a stationary bracket or standard, an operating pawl-carrying lever pivoted to said bracket, cam and ratchet wheels also supported by said bracket, a slide reciprocated by said cam-wheel, a feeding and cam wheel movable with said slide, a feeding-lever operated by said feeding and cam wheel and loosely connected with said feed-plate, and a vibrating and shipping lever also operated by said cam-wheel and connected with said feed-plate, substantially as set forth.

3. In a button-hole attachment for sewing-machines, the combination, with the base-plate, of a vibrator pivoted thereto, a feed-plate guided longitudinally of said vibrator and carrying a work-clamp, a reciprocating and intermittingly-rotating feeding and cam wheel, and feeding and vibrating-levers connected with said wheel and feed-plate and adapted to transmit motion from the former to the latter, substantially as set forth.

4. In a button-hole attachment, the combination, with a feed-plate and work-clamp, of a feeding and cam-wheel, a reciprocating slide for moving said wheel laterally, mechanism comprising a lever having a pin or roller and connections for intermittingly rotating said wheel, and a normally stationary but adjustable lever having an inclined slot in which said pin or roller works to vibrate said lever, substantially as set forth.

5. In a button-hole attachment, the combination, with a feed-plate and work-clamp, of an intermittingly-rotating feeding and cam wheel, a reciprocating slide for moving said wheel laterally, a sliding plate by which said wheel is carried, a feeding-lever connected with said wheel and feed-plate, and an adjustable fulcrum for said lever movable with said sliding plate, substantially as set forth.

6. In a button-hole attachment, the combination, with the feed-plate and work-clamp, of a reciprocating and intermittingly-rotating feeding and cam wheel, a sliding plate by which said wheel is carried, and a feeding-lever connected with said wheel and feed-plate and also having a pin-and-slot connection with said sliding plate, whereby said feeding-lever will be caused to reciprocate with said wheel and sliding plate, substantially as set forth.

7. In a button-hole attachment, the combination, with the feed-plate and a vibrator in which said plate moves longitudinally, of a single vibrating and shipping lever having an adjustable connection with said vibrator, and a reciprocating and intermittingly-rotating feeding and cam wheel for operating said lever, substantially as set forth.

8. In a button-hole attachment, the combination, with the feed-plate and work-clamp, of a single lever connected with said feed-plate, and serving the double purpose of moving the feed-plate laterally to form the overedge-stitches, and of shifting said plate to bar the end of the button-hole and to bring the second side thereof beneath the needle when the first side has been worked, said lever having an adjustable fulcrum for varying the lateral throw of said plate, substantially as set forth.

9. In a button-hole attachment, the combination, with the base-plate, the feed-plate, and the work-clamp, of a cap or housing attached to said base-plate, an operating-lever, ratchet and cam wheels, and a slide, all supported by said cap, a feeding and cam wheel reciprocated by said slide, mechanism comprising a lever having a pin or roller, and connections for intermittingly rotating said feeding and cam wheel, an adjusting-lever pivoted to said cap and having an inclined slot engaged by said pin or roller, and feeding and vibrating levers connected with said feeding and cam wheel and said feed-plate, substantially as set forth.

10. The combination, with the feed-plate, the work-clamp, and the vibrator B, having the projection b^3, of the reciprocating and intermittingly-rotating feeding and cam wheel G, having the cam-grooves g and g', the feeding-lever H, and the vibrating and shipping lever J, having a slot, j^3, and the adjusting-lever K k, pivoted to the projection b^3 and having a pin or roller engaging said slot, substantially as set forth.

11. The combination, with the base-plate, of the vibrator B, pivoted at its rear end to said base-plate, and the overhanging integral projection or hook a on the latter for holding down the forward end of the said vibrator, substantially as set forth.

335,126. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. JOHN M. GERRY, Chicago, Ill., assignor to the Singer Manufacturing Company of New Jersey. Filed Sept. 29, 1885. (No model.)



Claim.—1. In a button-hole attachment for sewing-machines, the combination, with the feed-bar and its cloth-clamp, of a cam connected with said bar to vibrate the same laterally, a double screw rotating independently of said cam and connected with said bar, for feeding the

latter longitudinally, and mechanism for intermittingly rotating said cam and screw.

2. In a button-hole attachment, the combination, with the feed-bar and its cloth-clamp, of a shaft having a cam and a ratchet-wheel, a sliding yoke connected with said feed-bar, in which said cam works, a double screw connected with said feed-bar and adapted to rotate independently of the cam-shaft, a ratchet-wheel for operating said double screw, pawls for rotating said ratchet-wheels, an operating-lever, and two levers connected with the said operating-lever for actuating said pawls, as set forth.

3. In a button-hole attachment, the combination, with the feed-bar and its cloth-clamp, of the cam and screw shafts connected with said feed-bar and provided with ratchet-wheels, pawls for intermittingly rotating said wheels, an operating-lever, and two levers connected with the said operating-lever, but adapted to spring horizontally as they vibrate vertically, substantially as set forth.

4. In a button-hole attachment, the combination, with the feed-bar, cloth-clamp, screw and cam shafts connected with the feed-bar, and ratchet-wheels on said shafts, of two pawls having teeth, two actuating-levers having teeth engaging the teeth of the pawls, and an operating-lever for vibrating the pawl-actuating levers, substantially as set forth.

5. In a button-hole attachment, the combination, with the laterally-vibrating feed-bar and its cloth-clamp, of a screw for feeding said bar longitudinally, a ratchet-wheel attached to said screw, a pawl, an operating-lever, and a lever for actuating said pawl, adapted to impart variable movements to the latter from the uniformly-vibrating operating-lever, substantially as set forth.

6. In a button-hole attachment, the combination, with the laterally-vibrating feed-bar and its cloth-clamp, of an intermittingly-rotating double screw and a yoke connected with said feed-bar and embracing said screw, said yoke being laterally adjustable to bring its opposite sides into engagement with the opposite sides of said double screw, substantially as set forth.

7. In a button-hole attachment, the combination, with the slotted base-plate and the feed-bar having a central longitudinal slot, of an adjustable arm or slide carrying a pivot-pin for said feed-bar, said pin passing through the said slot in the latter and entering a steadying-slot in the said base-plate, substantially as set forth.

8. In a button-hole attachment, the combination, with the slotted base-plate, the vibrating feed-bar, and its cloth-clamp, of a slide having a pin or lug passing through a lateral slot in the feed-bar into a steadying-slot in the base-plate, said slide having also a yoke, and an intermittingly-rotating double screw embraced by said yoke, substantially as set forth.

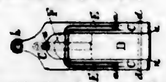
9. In a button-hole attachment, the combination, with the laterally-vibrating feed-bar and its cloth-clamp, of an intermittingly-rotating double screw, a slide having a yoke loosely embracing said screw, a spring, as k^2, and a spring-tongue having a stud, a bar having a series of notches of varying heights, and a regulator having an incline for lifting said tongue, substantially as set forth.

10. In a button-hole attachment, the combination, with the feed-bar having the communicating shipping-slots b^1 b^2, and mechanism for vibrating and longitudinally reciprocating said feed-bar, of a shipper-lever having an arm connected with said feed-bar, and a second arm provided with a stud adapted to traverse said slots, substantially as set forth.

11. In a button-hole attachment, the combination, with the feed-bar having the shipping-slots b^1 b^2, communicating at one of their ends, and mechanism for operating said feed-bar, of a shipper-lever connected with said feed-bar and engaging said shipping-slots, and a regulator grooved to form a switch-connection for the other ends of said slots, and adjustable to vary the working length thereof to adapt them for different lengths of button-holes, substantially as set forth.

12. In a button-hole attachment, the combination, with the vibrating and longitudinally-reciprocating feed-bar having communicating shipping-slots, of a shipper-lever having two arms, one of which is adjustably connected with said feed-bar, and the other of which engages said slots, substantially as set forth.

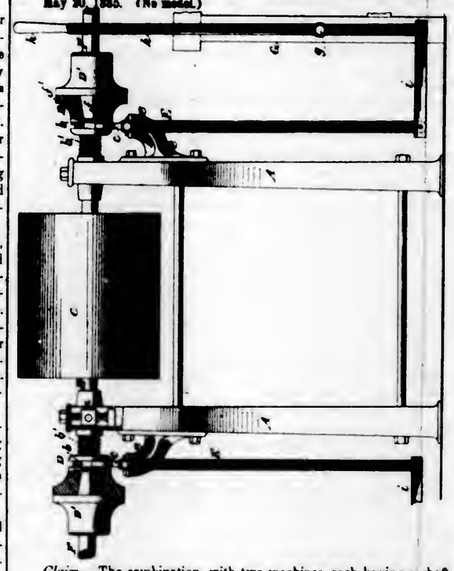
335,127. WINDOW-SASH FASTENER. CALVIN D. HAYWARD, New York, N. Y. Filed Oct. 6, 1884. (No model.)



Claim.—1. The combination of the plate C, recessed or slotted at the front, the foot-piece D, hinged to the lower part of the plate, and adapted to fold upward into the slotted or recessed plate, so as to present a flat face, and a brace, E, hinged to one of said parts and engaging with a shoulder on the other part, to hold the foot-piece in a horizontal position, substantially as herein described.

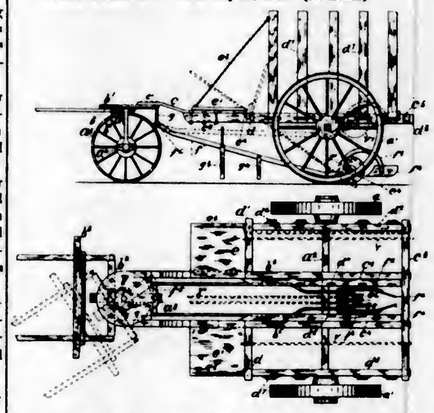
2. The combination of the plate C, recessed or slotted at the front, the hinged foot-piece D, adapted to fold into the recessed or slotted plate, so as to present a flat face, the hinged brace E, a spring, F, for throwing the foot-piece forward into an operative position, and a catch, *e*, for holding said foot-piece in an inoperative position, substantially as herein described.

335,128. POWER-STAND. J. S. HETHERINGTON, Dallas, TEX. Filed May 20, 1885. (No model.)



Claim.—The combination, with two machines, each having a shaft and one-half of a clutch at the end of said shaft, of a power-stand placed between said machines, having a power-shaft, a pulley, and a half-clutch at each end of the shaft outside of the stand, and shifting devices, whereby the parts of the clutches may be engaged or disengaged, substantially as set forth.

335,129. SUGAR-CANE PLANTER. EDWARD HOLMES and BRITAIN HOLMES, Buffalo, N. Y. Filed May 22, 1885. (No model.)



Claim.—1. A cane-carrying cart or wagon, substantially as described, provided with a pivoted wheel, a^3, in front of the vehicle, adapting it for turning short corners, a means for carrying the cane consisting of the platform or platforms upon which it is laid, and a series of vertical bars for keeping it in position, a platform for the operators, and a long narrow unobstructed longitudinal central opening through which long lengths of cane can be dropped into the furrow in continuous rows, substantially as specified.

2. A cane-carrying cart or wagon, substantially as above specified, provided with the pivoted frame *f*, having a planting-roller provided with grooves on its periphery, so that as the cane is planted it is pressed into place and straightened by the roller in the position in the furrow in which it can be covered with the earth by the covering device.

3. A three-wheeled carrying cart or wagon having a central longitudinal opening through the floor, through which the cane may be passed and laid into the furrow, the front wheel being adapted to run in the furrow in which the cane is planted.

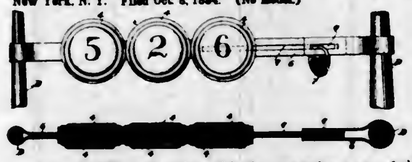
4. A cane-carrying cart or wagon having a longitudinal opening, in combination with a pivoted roller and covering device frame provided with loosely-hanging guide-arms, so that cane of various lengths dropped or falling lengthwise of the wagon will be guided in a line with it and form a continuous line or row of cane, as described.

5. A sugar-cane-planting machine consisting of a wagon or cart having a central longitudinal opening through the frame, a platform for the operators to stand on, and a double series of posts on each side of the longitudinal opening, in combination with a pivoted frame, *f*, having a planting-roller and a covering device, for the purposes described.

6. In a sugar-cane planter, the combination of a three-wheeled vehicle or wagon having a longitudinal opening through the center with a pivoted frame, *f*, having one or more pivoted guiding-bars, g^2 g^4, and a planting-roller and covering device, as and for the purposes described.

7. In a wagon or cart for planting sugar-cane, substantially as specified, the combination of the pivoted frame *f*, carrying the planting-roller and the covering device, with a rope and pulley, *g g'*, secured to the upright posts, as described, for raising and lowering the planting wheel or roller and the covering device, substantially as specified.

335,130. DEVICE FOR NUMBERING HOUSES. MARY P. C. HOOPER, New York, N. Y. Filed Oct. 8, 1884. (No model.)

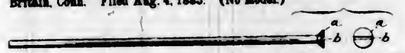


Claim.—1. The combination, with the supporting parts, of the band 6, extending between these parts and the removable disk or disks 4, substantially as described.

2. The combination, with the band 6, of the two sets of removable disks 4, arranged back to back, substantially as described.

3. The combination, with the supporting parts, of the slotted adjustable band 6, and the removable disk or disks 4, substantially as described.

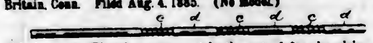
335,131. MANUFACTURE OF SCREW-NAILS. HORACE K. JONES, Hartford, assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn. Filed Aug. 4, 1885. (No model.)



Claim.—1. That improvement in the art of forming screw-nails which consists in forming the head on the end of the rod or wire by upsetting, then slotting said head, and then cutting the nail from said rod or wire and pointing it, substantially as described, and for the purpose specified.

2. That improvement in the art of forming screw-nails which consists in forming the head on the end of a rod or wire by upsetting, then slotting said head, then cutting the nail from said rod or wire and pointing it, and then forming the screw or barb thereon, substantially as described, and for the purpose specified.

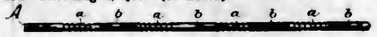
335,132. MANUFACTURE OF DRIVE-SCREWS. HORACE K. JONES, Hartford, assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn. Filed Aug. 4, 1885. (No model.)



Claim.—1. That improvement in the art of forming drive-screws from a metal rod or wire which consists in first forming a screw-thread on a portion of the wire contiguous to the point designed for forming the small end of the nail upward toward the head end, leaving thereon a contiguous plain portion, then upsetting to form a head on the end of said plain portion, and finally cutting the wire and forming a point thereon at that end of the barbed portion which is farthest from the head, substantially as described, and for the purpose specified.

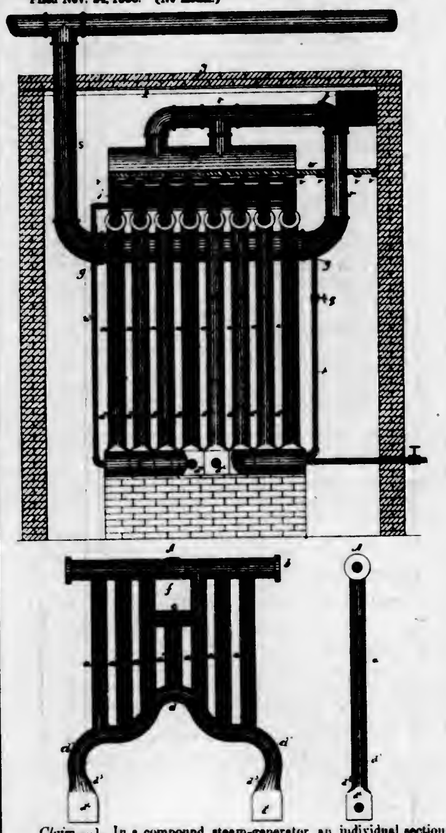
2. That improvement in the art of forming drive screws or nails from a metal rod or wire which consists in first barbing a portion of the wire contiguous to the point designed for forming the small end of the nail upward toward the head end and leaving thereon a contiguous plain portion, then upsetting to form a head on the end of said plain portion, then forming the slot in said head, and finally cutting the wire at that end of the barbed portion which is farthest from the head and forming a point thereon, substantially as described, and for the purpose specified.

335,133. WIRE STOCK FOR NAILS. HORACE K. JONES, Hartford, assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn. Filed Aug. 4, 1885. (No model.)



Claim.—The within-described nail-stock, consisting of a continuous metallic round rod or wire having the alternate barbed and smooth portions, the former having sunken grooves extending around the stock, and the latter being unwrought portions of the original round wire or rod from which said stock is formed, substantially as described, and for the purpose specified.

335,134. STEAM-GENERATOR. ORLANDO KELLEY, Philadelphia, Pa. Filed Nov. 24, 1885. (No model.)



Claim.—1. In a compound steam-generator, an individual section consisting of upright tubular columns *a a'*, cross connecting-tubes *b c d*, one or more inclosed spaces, *f*, for the regenerator, said cross connecting-tube *d* being provided with turned-down portions or water-legs d', which are bent or curved and have greater water capacity in the bottom portions, d^2, than in the neck portions d^3 thereof, substantially as set forth.

2. In a steam-generator composed of individual sections, the combination of such sections with the steam-drum *h*, the connecting-tubes *j* and *j'*, proceeding from opposite sides of the sections and extending outside of the inclosing masonry, the regenerator consisting of the chamber *g* or the connected chambers *g* and *g'*, located within the body of the sections, the supply-pipe *r*, and the delivery-pipe *s*, each of these pipes being less in diameter or cross-sectional area than the chamber or respective chambers of the regenerator, substantially as set forth.

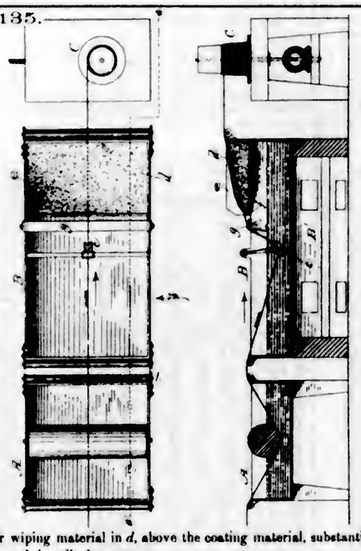
3. In a steam-generator composed of individual sections, the combination, with two or more sections, A, of the pipe *p*, controlled by a cock, the manifold *k* or *k'*, and the regenerator consisting of the chamber *g* or connected chambers *g* and *g'*, located within the body of the sections, whereby the regenerator is charged with water and utilized in the generation of steam when the apparatus is first put into operation, substantially as set forth.

335,135. APPARATUS FOR COATING WIRE. JAS. J. LEE, Worcester, Mass. Filed Oct. 30, 1885. (No model.)

Claim.—1. In an apparatus for coating wire, a wiping rod or bar interposed between the usual wire-holding foot of the coating-tank and the usual wet wiping material contained in the forward end of said tank, said rod or bar being stretched from side to side across the tank, substantially as shown and described.

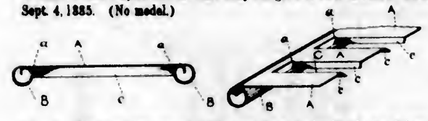
2. The combination of the wiping rod or bar *g* with the coating-tank B, its wire-holding foot *c*, and the box *e*, for holding the wet said

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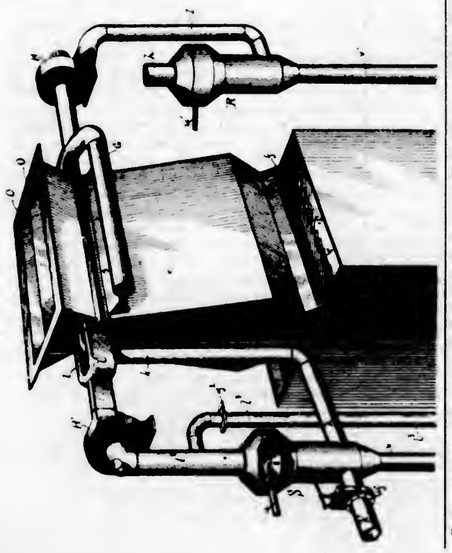
or similar wiping material in *d*, above the coating material, substantially as shown and described.

335,136. REFRIGERATOR-SHELF. CHAS. H. LEONARD and CHAS. G. GRAY, Grand Rapids, Mich.; said Gray assignor to said Leonard. Filed Sept. 4, 1885. (No model.)



Claim.—The refrigerator-shelf formed from a single piece of sheet metal, having the flanges *c c c* formed on the edges of the cross-pieces A A A, and having the side pieces, B B, rolled under and brought in contact with the flanges at the points *a a a*, the flanges and side pieces mutually supporting and strengthening each other, substantially as and for the purposes described.

335,137. PROCESS OF AND APPARATUS FOR DRYING BONE-BLACK. S. MORRIS LILLIE, Philadelphia, Pa. Filed Sept. 23, 1884. (No model.)



Claim.—1. The combination, with the bone-black revivifying-kilns of sugar-refineries, of surface-heaters in which the gaseous products of combustion from the kilns are used in heating air or other gases, a suitably-arranged drier or receptacles for holding the black to be dried, and means for drawing or forcing the heated gases from the surface-heater over or through the black in the drier, substantially as and for the purpose specified.

2. In apparatus for drying bone-black, the combination of vertical or properly-inclined plates, downward over which the black to be dried is made to pass, horizontal re-entrant angles or depressions in the said plates, over which the black flows, but does not enter, passages opening into said re-entrant angles or depressions and connecting with supplies of air or gases to be used in drying the black, and means for forcing or drawing the said air or gases into the re-entrant angles or depressions, and thence through or over the black, substantially as specified.

3. The combination of the perforated mains N, extending underneath the kiln near the upper extremities of the cooler-tubes T, and serving to receive the heated air which collects round the upper ends of the cooler-tubes, a suitably-constructed receptacle or drier for holding bone-black to be dried, and exhausting fans or apparatus with connections to the mains N and to the drier, and operating to exhaust the heated air from around the cooler-tubes through the mains N, and to force it or draw it, as the case may be, through or over the mass of the black in the drier to dry the same, substantially as specified.

4. In a surface-heater for heating and cooling gases, projections *n*, extending from the walls separating adjacent flues in the heater into one or both of the said flues, the projections serving to conduct the heat to or from the gases in one flue to the heating or cooling agent, as the case may be, in the adjacent flue, substantially as and for the purpose specified.

5. The combination, with a char-drier in which the char is subjected to currents of heated air or other gases for drying the same, of a condenser connected with the drier by suitable mains and having proper water induction and eduction connections, and of means for causing the vapor-ladened gases as they pass from the black to flow from the drier to and through the condenser, the condenser operating to condense the vapors and to transfer their latent and sensible heats to the cold water, or other liquid, for that matter, passing through the condenser, substantially as specified.

6. In a condenser used in connection with a bone-black drier for condensing the water-vapors from the air or other permanent gases passed through the black in the drier for drying the same, the combination of an induction-port for the vapor-ladened gases, connected with the drier by suitable mains, an eduction-port for the escape of uncondensed air or gases, induction or eduction ports for condensing water or other liquids, and suitable internal devices for utilizing the liquid for the condensation of the vapors from the gases during their passage through the condenser, substantially as specified.

7. A condenser for condensing water-vapors contained in permanent gases drawn through the black in a bone-black drier, consisting of a vertical chamber having an induction-port for the vapor-ladened gases at or near its lower extremity, an eduction-port for the escape of the gases at or near the upper end of the chamber, and a rose or equivalent showering device located in the vertical chamber at or near its upper end, the said showering device having suitable connections with a supply of water or other condensing liquid, and operating, when the condenser is in use, to project a shower of the liquid downward through the vertical chamber against the ascending current of gases, substantially as and for the purpose specified.

8. The combination, with the bone-black drier in which gaseous products of combustion are drawn through or over the black for the drying of the same, of a scrubber—such as S, for example—connected with the drier, through which scrubber the gases pass on their way to the drier, and which operates to purify the gases by removing the dust, sulphurous acid, and the like from them, substantially as specified.

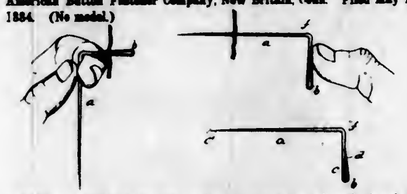
9. The within-described apparatus for utilizing the heat in the gaseous products of combustion from the furnaces of boilers, kilns, &c., in heating water or other liquid, consisting of a water-scrubber, such as S, connected with the said furnaces by suitable conduits, a condenser connected with the scrubber by proper conduits, and means for causing the flow of the gases from the furnaces, first through the scrubber and then through the condenser, the scrubber operating to free the gases of objectionable matters, and the condenser operating to cool and transfer the latent and sensible heats of the vapor-ladened gases to the cold water or other liquid passing through the condenser, substantially as and for the purpose specified.

10. The combination, with the scrubber in which the gaseous products of combustion from the furnaces of boilers, kilns, &c., are washed by means of water, of a surface-heater which receives the hot scrubbing-water from the scrubber and utilizes it in heating or evaporating fresh water or other liquid passing through the surface-heater, substantially as specified.

11. The process of utilizing the heat in the gaseous products of combustion from the furnaces of boilers, kilns, &c., consisting in passing the same through a scrubber to free them of mechanical impurities and other objectionable matters, then through a suitable apparatus for heating them, and finally through moist bone-black or other material to be dried, substantially as specified.

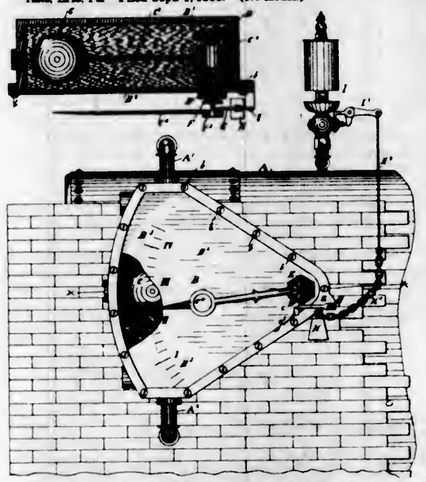
12. The within-described process of passing the gaseous products of combustion from the furnaces of boilers, kilns, &c., through a suitable water-scrubber preparatory to their further use, and of using the heated water flowing from the scrubber for heating or evaporating purposes in a suitable surface-heater or evaporator, substantially as specified.

335,138. NEEDLE. OLIVER H. MERRILL, Manchester, assignor to the American Button Fastener Company, New Britain, Conn. Filed May 1, 1884. (No model.)



Claim.—A needle, *a*, having a point, *c'*, an open eye, *b*, and a bend, *f*, between the point and eye, such that the eye-section lies in a plane substantially at right angles to the point-section of the needle, all substantially as described.

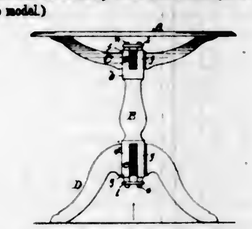
335,139. WATER-INDICATOR FOR STEAM-BOILERS. LOUIS METTEN, Erie, Pa. Filed Sept. 1, 1885. (No model.)



Claim.—1. In a water-indicator for steam-boilers, the combination, substantially as set forth, of the float-chamber B, the pivoted float C, the protruding stem C^3, connected with the pivot of said float, the index C^4, attached to said stem, the arm *c*, attached to said stem, and an alarm device arranged, substantially as shown, to be sprung by said arm *c*.

2. In a water-indicator for steam-boilers, the combination, substantially as set forth, of the float-chamber B, the cover B^2, with frame D, attached thereto, and a float pivoted in said frame D, and having a stem extending through the said cover B^2.

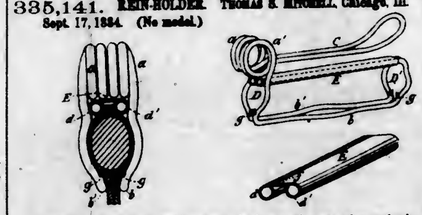
335,140. KNOCKDOWN TABLE. ELISHA METZ, Rochester, N. Y., assignor of one-half to Anthony P. De Nova, same place. Filed May 23, 1885. (No model.)



Claim.—1. The legs, supporting-column, and arms of a table, said column being formed with a head at its upper and lower ends, respectively, and divided into branches, said arms resting in the openings between the branches of said upper head, and said legs resting in the openings between the branches of said lower head, said branches of the heads being made conical or tapering at their free ends, in combination with clamping-rings placed upon said branches, substantially as and for the purpose set forth.

2. The combination, in tables, of supporting-arms halved together and legs halved together, as shown, a supporting-column formed at either end with a divided conical head, said arms placed in the slots of the upper head of said column, and said legs placed in the slots of the lower head of the column, and clamping-ring placed to encircle said respective heads, substantially as shown and described.

335,141. REIN-HOLDER. THOMAS S. MITCHELL, Chicago, Ill. Filed Sept. 17, 1884. (No model.)

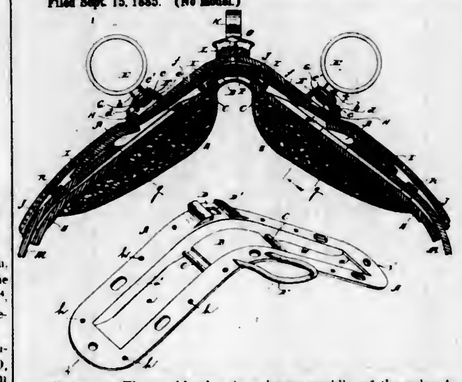


Claim.—1. A rein-holder formed of a continuous piece of wire bent in substantially parallel lines to form torsion spring-jaws D D', spiral-spring elbows *a a*, and a curved spring-guard, C, arranged to bear opposite the ends of the wire, substantially as and for the purpose described.

2. A rein-holder formed of a continuous piece of wire bent in substantially parallel lines to form torsion spring-jaws D D', and curved spring-guard C, in combination with a sheet-metal strap, E, adapted to envelop the free ends of the torsion spring-jaws, substantially as described.

3. A rein-holder formed of a continuous piece of wire bent to form torsion spring-jaws D D', and spring-guard C, provided with trimmed barbs or spurs formed upon said wire spring-jaws, in the manner and for the purpose substantially as specified.

335,142. HARNESS-SADDLE. ANDREW ORTHAYER, Chicago, Ill. Filed Sept. 15, 1885. (No model.)



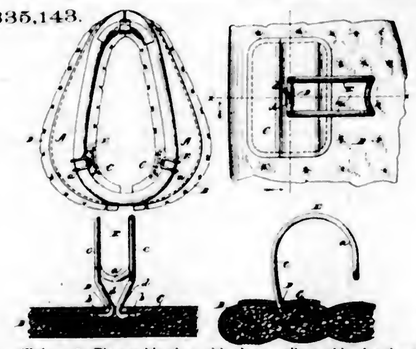
Claim.—1. The combination, in a harness-saddle, of the yoke A, having therein the opening *a*, and also having depending flanges *a' a'* along the longitudinal edges of the said opening or channel, and having also a center plate, B, connecting the lower edges of the said flanges, the pins or rollers C C turning in the said yoke and arranged at the ends of the said plate, and a back-band passing freely through the said channel and over the said plate and rollers, substantially as and for the purposes specified.

2. The combination, with the yoke of a harness-saddle having a sliding or slipping back-band, of the side loops, F F, provided with the revolving pins or rollers H H, and adapted, substantially as described, to receive the terrets and terret-nuts, for the purposes set forth.

3. The combination, in a harness-saddle, of a pad provided with loops R R, the side loops, F F, the skirts M M, passing through the loops R R, the yoke, the jockey, the nuts Q Q, located in the said pad, and the screws or bolts *d d*, passing down through the loops F F and through the jockey, yoke, and skirts into the said nuts, substantially as and for the purposes specified.

335,143. HORSE-COLLAR PAD. ANDREW ORTHAYER, Chicago, Ill. Filed Nov. 16, 1885. (No model.)

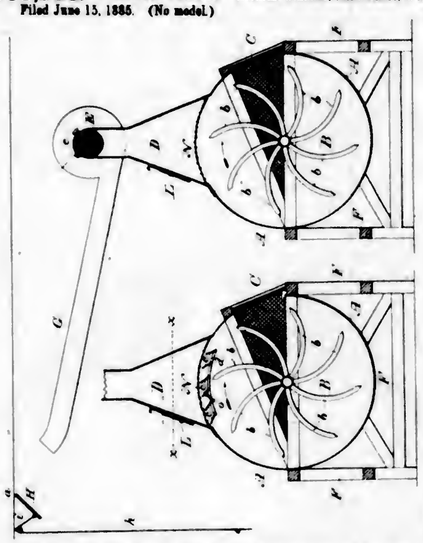
335,143.



Claim.—1. The combination, with a horse-collar pad having therein the slots D D, of the laterally-yielding wire clasps E E, bent to clasp the roll of a horse-collar, the said clasps having the arms *b b*, adapted and arranged to enter the said slot, substantially as and for the purposes specified.

2. The combination, with a horse-collar, of a pad having therein the slots D D and provided with the laterally-yielding wire clasps E E, bent to clasp the roll of the collar, and having lateral arms *b b*, entering the said slots, substantially as and for the purposes specified.

335,144. FEATHER-SORTER. HERMAN PENNER, Milwaukee, Wis. Filed June 15, 1885. (No model.)



Claim.—1. The combination, in a feather-sorter, of the case A, provided with an air-supply opening, C, agitator B, hood D, mounted upon and communicating at its base with the interior of said case, and blower E, connected with the upper part of said hood, so as to produce an upward draft through the same, substantially as and for the purposes set forth.

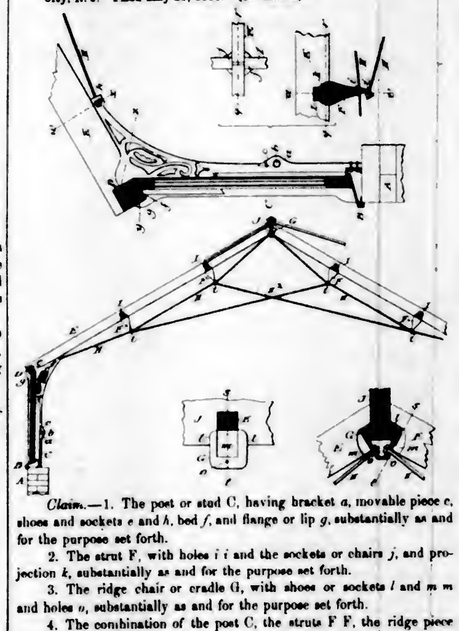
2. The combination, in a feather-sorter, of the case A, having an air-supply opening, C, agitator B, hood D, mounted upon and communicating with the interior of said case, blower E, connected with the upper part of said hood, so as to produce an upward draft through the same, and screen N, interposed between said case and blower, substantially as and for the purposes set forth.

3. The combination, with a feather-receptacle having opening or openings C and an agitator, B, of the hood D, mounted thereon over an opening therein, screen N, slats e e, blower E, and discharge pipe or opening, substantially as and for the purposes set forth.

4. The combination, in a feather-sorter, of the case A, having an air-supply opening, C, agitator B, hood D, mounted upon and communicating with the interior of said case, blower E, connected with the upper part of said hood, so as to produce an upward draft through the same, and the regulating slide or shutter L, substantially as and for the purposes set forth.

5. The combination, with a feather-receptacle, A, having opening or openings C, of the hood D, mounted thereon and communicating therewith, blower E, blast-pipe G, and leaf H, substantially as and for the purposes set forth.

335,145. HORTICULTURAL BUILDING. JOSEPHUS PLENTY, Jersey City, N. J. Filed May 29, 1885. (No model.)



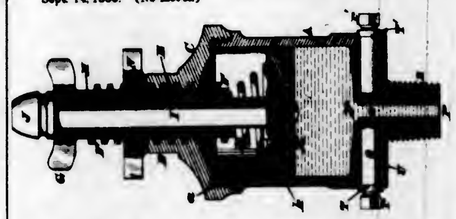
Claim.—1. The post or stud C, having bracket *a*, movable piece *c*, shoes and sockets *e* and *h*, bed *f*, and flange or lip *g*, substantially as and for the purpose set forth.

2. The strut F, with holes *i i* and the sockets or chairs *j*, and projection *k*, substantially as and for the purpose set forth.

3. The ridge chair or cradle G, with shoes or sockets *l* and *m m* and holes *n*, substantially as and for the purpose set forth.

4. The combination of the post C, the struts F F, the ridge piece or cradle G, and rods H and H^b, substantially as and for the purpose set forth.

335,146. LUBRICATOR. JAMES POWELL, Cincinnati, Ohio. Filed Sept. 14, 1885. (No model.)



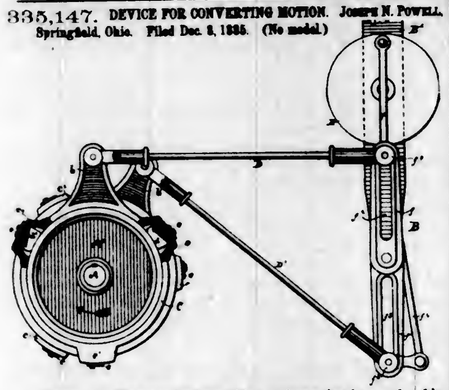
Claim.—1. An improved grease-cup, consisting of a cylindrical fount provided with a discharge-passage and traversed by a piston whose rod passes freely through a tube, which latter is screw-threaded externally to engage with the cap of said fount, a spring being interposed between said piston and the externally-threaded tube, in combination with a cut-off located transversely of said passage in the base of said fount for the purpose of enlarging or contracting the area of the same, and thereby controlling the speed of said piston, as set forth.

2. An improved grease-cup, consisting of the cylindrical fount A, having a discharge-passage, P, and being traversed by a piston, K, whose rod or stem I passes freely through the externally-threaded tube F, which latter engages with the internal screw, E, of cap C, and carries a jam-nut, N, for the purpose specified, a conical volute spring, M, being interposed between said piston and tube, and the upper end of the piston-rod I being furnished with a stop, as J, in combination with a cut-off located transversely of said passage in the base of said fount, for the purpose of enlarging or contracting the area of the same, and thereby controlling the speed of said piston, as set forth, for the object stated.

3. The channeled rod O *o*, secured within the bore U of the grease-cup A by means of collars, as T, upset on said rod, for the purpose described.

4. In a grease-cup, the channeled rod O *o*, having turning devices, as R R', at opposite ends of the same, for the purpose specified.

335,147. DEVICE FOR CONVERTING MOTION. JOSEPH N. POWELL, Springfield, Ohio. Filed Dec. 8, 1885. (No model.)



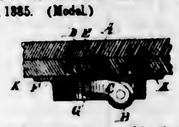
Claim.—1. The combination, with a reciprocating lever, of a friction-wheel having two independent clutch-rings thereon, each of said clutch-rings being provided with a series of clutches around the face of said wheel, and means for connecting said clutch-rings to said lever, so that a motion of the lever in either direction will produce a backward motion of one ring and a forward motion of the other, substantially as set forth.

2. The combination, with a revolving wheel, of clutching devices on said wheel, said clutching devices being respectively connected by suitable means to a lever on either side of the center thereof, and means for uniformly varying the respective points at which the connections are made to said lever to or from the center of oscillation thereof, substantially as specified.

3. The combination, with a revolving wheel, of two independent clutch-rings journaled on said wheel, each of said clutch-rings being provided with three or more wedge-shaped clutches adapted to engage the periphery of the said wheel when moved in a forward direction, and means for alternately moving said clutch-rings simultaneously in opposite directions, substantially as and for the purpose set forth.

4. The combination, with the clutch-rings journaled on the revolving wheel, and provided with wedge-shaped clutches adapted to engage the periphery of the said wheel when the clutch-ring is moved in a forward direction, of a lever provided with slotted openings on each side of its center of oscillation, wrist-pins in said slotted openings, connecting-rods from said wrist-pins to the said clutch-rings, respectively, a crank-wheel on said lever, and pitman-connections from said wrist-pins to opposite sides of said crank-wheel, substantially as specified.

335,148. CASTER FOR TRUNKS. ANTON V. ROMADKA, Milwaukee, Wis. Filed Apr. 3, 1885. (Model.)



Claim.—In casters for trunks, the combination, with the shank or swivel A, provided with roller B and roller-arms C, formed eccentric to said shank, of the fastening-plate F, provided with a vertical aperture for the reception of said shank, and a downward-projecting flange or shield, G, substantially as and for the purpose set forth.

335,149. CASTER FOR TRUNKS. ANTON V. ROMADKA, Milwaukee, Wis. Filed Apr. 3, 1885. (Model.)



Claim.—The combination of the caster, consisting of rigid shank and eccentric roller-arms provided with a roller, with the receptacle D, provided with a vertical tubular aperture located in a boss for the reception of said shank, said receptacle being adapted to be fitted up into a retaining-recess in the bottom of a trunk, substantially as and for the purpose set forth.

335,150. WHIP-SOCKET FASTENER. AMBON SEARLS, Newark, N. J., assignor to the Searls Manufacturing Company, same place. Filed Nov. 2, 1885. (No model.)

Claim.—1. A jaw of a whip-socket clamp, made in one piece with two bars spread to form a double bearing on either the socket or dash-rail, for the purpose set forth.

335,150.



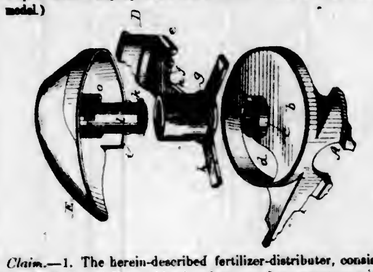
2. The jaw of a whip-socket clamp, provided with a slot adapted to fit a dash-bem and clamp the edge of a dash-rail without crushing the bem, substantially as and for the purpose set forth.

335,151. SLEIGH-BELL ATTACHMENT. DEMING W. SEXTON, East Hampton, Conn. Filed Apr. 4, 1883. (Model.)



Claim.—The combination, with a vehicle-shaft, *a*, of a metallic strap, *b*, with its side next to the shaft shaped to fit the latter and adapted to be secured to the side of the shaft, and provided with a plural number of lugs, *c*, projecting laterally beneath the shaft and bearing below the shaft the bells *d*, all substantially as described.

335,152. FERTILIZER-DISTRIBUTER. RICHARD B. SHELDON, Shortsville, N. Y., and AARON R. PATTERSON, Orangeville, Pa., assignors to the Empire Drill Company, Shortsville, N. Y. Filed Nov. 6, 1885. (No model.)



Claim.—1. The herein-described fertilizer-distributer, consisting of parts A, B, C, D, and E, combined and arranged to operate as set forth, the part A being formed with four notches, *j*, and part E having its stem *l* provided with cross-pin *k*.

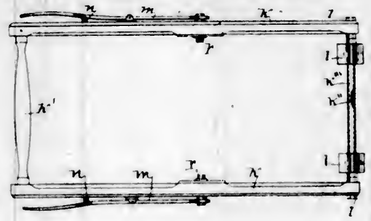
2. In a fertilizer-distributer, the combination of a supporting-bed, as A, provided with an outlet, as *d*, a rotary shell or feeder, as D, a cap or guard, as E, adapted to cover the outlet of the supporting-bed, provided with an opening to permit material to pass beneath it, and adapted to be set and secured at different working adjustments relative to the outlet of the bed, whereby the device is adapted for use on level ground and on hillsides.

3. The combination, with a supporting-bed having an outlet-opening, and with a rotary shell or feeder, of a dome-shaped cap above said feeder, having an inlet at one side to permit passage of material beneath the cap, said cap being adapted to be turned about its center and secured in different positions, whereby the passage for material from the feeder to the outlet may be made more or less direct, as required.

4. The combination of bed A, having outlet-opening *d*, and tubular boss *c*, provided with four slots, *j*, rotary shell D, and cap E, having stem *l*, provided with four wings, *o*, and cross-pin *k*.

5. The combination, with bed A, having outlet *d*, and tubular boss *c*, having slots *j*, shaft B, gear-wheel C, rotary plate D, provided with upwardly-extending hub *g*, and cap E, provided with stem *l*, pins *k*, and wings *o*, all arranged as shown.

335,153. DEVICE FOR INVERTING BEE-HIVES. JOHN M. SHUCK, Des Moines, Iowa. Filed June 24, 1885. (No model.)

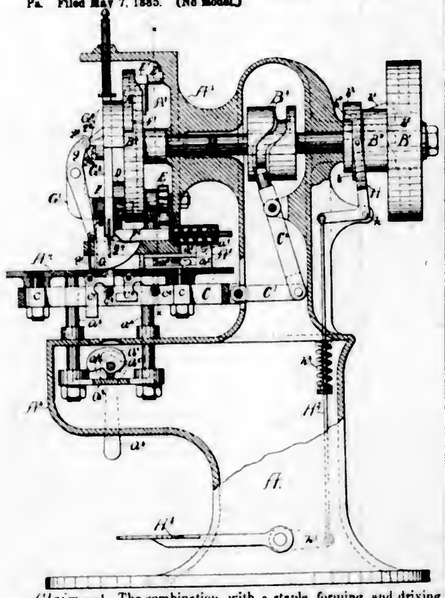


Claim.—1. A device for lifting and inverting bee-hives, composed of an oblong frame having pins projecting inward from the central portions of the side bars of the frame, means for moving the pins longitudinally, and shoes or fulcrums at the lower end of the frame, for the purposes stated.

2. In a device for lifting and inverting bee-hives, the combination of two parallel side bars, *k k*, having end pieces, *k' k''*, the latter of which is an iron rod, blocks or shoes *l l*, loosely mounted thereon, two levers, *m m*, pivoted to the faces of the side bars, and having pins *r r* upon their short arms projecting through holes in the side bars, and springs *n n*, fixed to the side bars and pressing against the long arms of the levers, substantially as described.

3. In a device for lifting and inverting bee-hives, the combination of the side bars, *k k*, the cross-piece *k'*, iron rod *k''*, tube *k'''*, and blocks or shoes *l l*, mounted thereon and held in position by nuts *l'*, the levers *m m*, pivoted to the side bars, having pins *r* upon their short arms, and the springs *n*, fixed to the side bars and pressing against the long arms to force the pins through holes in the side bars, substantially as described.

335,154. **STAPLING-MACHINE.** A. BEVERLY SMITH, Philadelphia, Pa. Filed May 7, 1885. (No model.)



Claim.—1. The combination, with a staple forming and driving mechanism, substantially as described, of a feeding mechanism consisting substantially of a feed-wheel and pawls, a hollow ratchet-wheel containing a spring by which it is actuated in one direction, a fixed shaft, and a rack and pinion, all arranged substantially as and for the purpose set forth and shown.

2. In a wire-stapling machine, the combination of a feeding mechanism consisting of a feed-wheel, a ratchet and pawls, a fixed shaft, and a rack and pinion, with a pin, E^3, and wheel B^4, all arranged substantially as shown, and for the purpose specified.

3. In a machine for making and inserting wire staples, the combination of a feeding mechanism substantially as described, lugs a^2 a^4, and an adjustable knife-carrier, all arranged as and for the purpose set forth and shown.

4. In a machine for making and inserting wire staples, the combination of a feeding mechanism substantially as described, an adjustable knife-carrier connected therewith and controlling said feeding mechanism, and means, substantially as described, whereby they both may be adjustable by a single movement, all arranged substantially as and for the purpose set forth and shown.

5. The combination, with a staple forming and driving mechanism substantially as described, of geared centering-fingers constructed and arranged substantially as described to positively grasp the loose end of the wire so that it is guided and held in position to enter the grooves in the bending-fork after passing through the staple-forming mechanism, substantially as shown and specified.

6. The combination, with a staple forming and driving mechanism, of geared centering-fingers carrying a lug, and a cam engaging therewith, operating substantially as shown, and for the purpose specified.

7. The combination, with a staple forming and driving mechanism substantially as described, of a curved staple-supporter so arranged as to support and sustain the legs of the staple while being driven, substantially as shown and described.

8. In a machine for forming and inserting wire staples, the combination of a bending-fork carrying a curved staple-supporter with a driving-rod working within and in connection with same, substantially as shown, and for the purpose described.

9. In a wire-stapling machine, the combination of a staple-supporter with a lever and swinging cam, arranged substantially as and for the purpose set forth and shown.

10. In a machine for forming and inserting wire staples, the combination of a staple-former, a driving-rod, and a swinging cam with a lever and a curved staple-supporter, arranged substantially as shown, and for the purpose specified.

11. The combination, with a staple forming and driving mechanism substantially as described, of a curved staple-supporting device, substantially as described, so arranged as to support and sustain the legs of the staple while being driven, and means whereby a positive motion is imparted to same, substantially as and for the purpose set forth and shown.

12. The combination, with a staple forming and driving mechanism substantially as described, and an adjustable work-table, of an expanding and compressible work-guide, arranged substantially as shown and described.

13. The combination, with a staple forming and driving mechanism substantially as described, of a table supported by springs, a cam and lever to actuate said table, and an expanding and compressible work-guide, all arranged substantially as shown, and for the purpose specified.

14. The combination, with a staple forming and driving mechanism, substantially as described, of a clinching device consisting of a clinching-block and hammer, substantially as shown and described.

15. In a wire-stapling machine, the combination of a clinching-block and hammer with a reciprocating slide and rollers, arranged substantially as shown and described.

16. In a wire-stapling machine, the combination of a clinching-block, a hammer, and a reciprocating slide actuating the same, with means, substantially as described, whereby the proper motion is imparted to said slide, all arranged substantially as and for the purpose set forth and shown.

335,155. **DEVICE FOR TIGHTENING BOLTING-CLOTH.** GEORGE T. SMITH, Jackson, Mich. Filed May 9, 1885. (No model.)



Claim.—1. As a means for tightening a bolting-cloth, the combination of a ring having one edge of the bolting-cloth attached thereto, means for moving the ring and the attached end of the bolting-cloth toward one end of the reel, and a flexible connection between the movable ring and the end of the reel to prevent the escape of material, substantially as set forth.

2. The combination, with the reel-head and the bolt-cloth, of the movable ring H, the tightening-bolts, and the folding strip, substantially as set forth.

3. The combination, with the reel-heads, the stay-rods, and the bolt-cloth, of the movable rings supported upon the stay-rods, and the folding strip, substantially as set forth.

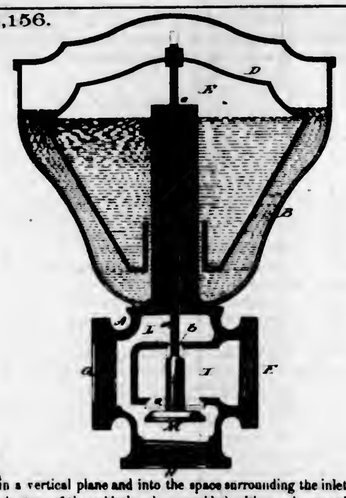
4. In a bolt-cloth tightener, the combination, with the wooden ring I, of the metal rim H, provided with screw-threaded seats for the tightening-bolts, substantially as set forth.

335,156. **GAS-REGULATOR.** NATHANIEL SLEEMAN, Birmingham, assignor, by mesne assignments, to the Sleeman Gas Saving Company, Waterbury, Conn. Filed June 8, 1885. (No model.)

Claim.—1. In a gas-regulator, the valve-casing constructed with an internal chamber, with an inlet-opening to said internal chamber, a passage surrounding said chamber with an exit-opening therefrom, an opening from the bottom of said chamber into said surrounding space, and an opening of smaller diameter in the top of the chamber, a valve arranged through said chamber, adapted to close or open both said openings, a tank in substantial connection with said valve-casing, a tube leading from the passage surrounding the inlet-chamber into said tank, said tank provided with a suitable fluid surrounding said tube, a float in said tank and into which said tube opens, the valve connected to said float by a spindle supported in guides above the inlet-chamber, substantially as described.

2. A valve-casing constructed with an inlet, F, chamber I within the casing, into which said inlet opens, the shell constructed with a space, L, surrounding said inlet-chamber and from which the exit G opens, the said inlet and outlet openings being in a horizontal plane, a third opening, H, below the chamber in a vertical plane and into the space surrounding the inlet-chamber, the bottom of the said chamber provided with a valve-opening less in diameter than said opening H in the shell and the top with a valve-opening of smaller diameter than that in the bottom of the chamber, a tank adapted to contain fluid, a tube leading from said surrounding chamber up into said tank and above the fluid, a float in said tank and into which the said tube opens from the surrounding chamber, a valve supported in guides above the inlet-chamber and connected to the float, the said valve constructed with two differential surfaces corresponding to the differential openings in the bottom and top of the inlet-chamber, substantially as described.

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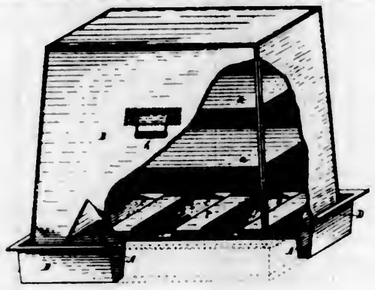


ing, H, in a vertical plane and into the space surrounding the inlet-chamber, the bottom of the said chamber provided with a valve-opening and the top with a valve-opening of smaller diameter than that in the bottom, a tank adapted to contain a fluid, a tube leading from said surrounding chamber up into said tank and above the fluid, a float in said tank, and into which the said tube opens from the surrounding chamber, a valve supported in guides above the inlet-chamber and connected to the float, the said valve constructed with two differential surfaces corresponding to the differential openings in the bottom and top of the inlet-chamber and arranged in line therewith, substantially as described.

3. A valve-casing constructed with an inlet, F, chamber I within the casing, into which said inlet opens, the shell constructed with a space, L, surrounding said inlet-chamber and from which the exit G opens, the said inlet and outlet openings being in a horizontal plane, a third opening, H, below the chamber in a vertical plane and into the space surrounding the inlet-chamber, the bottom of the said chamber provided with a valve-opening less in diameter than said opening H in the shell and the top with a valve-opening of smaller diameter than that in the bottom of the chamber, a tank adapted to contain fluid, a tube leading from said surrounding chamber up into said tank and above the fluid, a float in said tank and into which the said tube opens from the surrounding chamber, a valve supported in guides above the inlet-chamber and connected to the float, the said valve constructed with two differential surfaces corresponding to the differential openings in the bottom and top of the inlet-chamber, substantially as described.

4. In a gas-regulator, the valve-casing constructed with an internal chamber, with an inlet-opening to said internal chamber, a passage surrounding said chamber with an exit-opening therefrom, an opening from the bottom of said chamber into said surrounding space, a valve arranged to move toward and from said opening in the bottom of the chamber, a tank in substantial connection with said valve-casing, a tube leading from the passage surrounding the inlet-chamber into said tank, said tank provided with a suitable fluid surrounding said tube, a float in said tank and into which said tube opens, a spindle extending from said valve through the top of the inlet-chamber and connected to said float, substantially as described, and whereby the guide for the movement of said valve is made above the gas-inlet.

335,157. **REFRIGERATOR-SAFE FOR BREAD, CAKE, &c.** HENRY D. STRATOR, Galesburg, Mich. Filed June 1, 1885. (No model.)

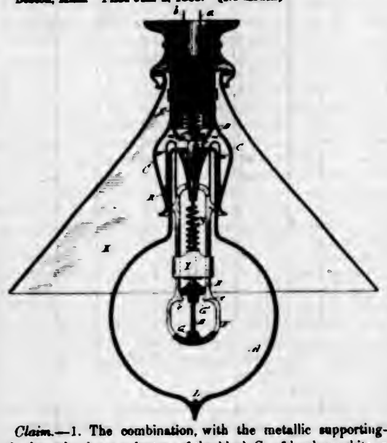


Claim.—1. A food-preserver consisting of a basin having a central struck-up or raised portion, depressions in the top of said raised portion forming water-trays, and an outer casing for sitting over the raised portion, substantially as set forth.

2. The combination of a basin for holding water, a case having an open bottom adapted to sit into said basin and the water therein, and a fabric covering to said case, all substantially as set forth.

3. The combination of the water-basin, the case sitting into said basin and into the water therein, and a fabric covering to the case hanging into the water, whereby the covering is kept moistened by capillary attraction, substantially as set forth.

335,158. **INCANDESCENT ELECTRIC LAMP.** ELIHU THOMSON, New Britain, Conn., assignor to the Thomson-Houston Electric Company, Boston, Mass. Filed Jan. 2, 1883. (No model.)



Claim.—1. The combination, with the metallic supporting-frame for the incandescing conductor, of the block G, of hard graphite, resting directly in or on said frame, and electrically united therewith by plating, said block itself forming a holder for the end of the incandescing conductor.

2. The combination, with the reciprocating holder H, bearing against the end of the carbon pencil, for making electrical connection to said pencil, of a spring forcing said holder against the carbon pencil and a contact in the path of the holder, as and for the purpose described.

3. The combination of a holder, H, bearing directly on the end of the carbon pencil, a guide-frame therefor supporting the pencil at its lower end, a spring, S, above the holder, and a contact in the path of the holder H, as and for the purpose described.

4. The combination of frame F, holder G, rod B, holder H, and contact *e*, as and for the purpose described.

5. The combination, with the inverted conical neck for the globe, of the conical entering conductor V.

6. The combination of the incandescent lamp having projecting conductor, a spring-actuated and reciprocating contact in the bottom of the lamp-socket, and a spring arranged in the path of said contact and connected to one of the circuit-wires, all as set forth, so that the act of inserting the lamp into its socket will actuate the contact and break the connection between said contact and the spring.

7. The combination of the incandescent lamp having spring-socket, the reciprocating contact-block D, conductor V, and springs *m*, arranged in the path of the block D and connected to one of the circuit-wires.

8. The combination of insulating-block E, plug D, spring-clips C, and lamp provided with a conducting-ring forming one terminal, and a conductor, V, projecting from the lamp proper, forming the other terminal and adapted to make contact with plug D.

9. The combination, with the lamp, of springs C, contact-springs *m*, and spring-actuated plug D.

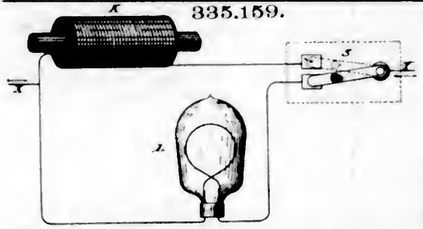
10. The combination, with the globe A, of the frame F, lower holder, G, supported by said frame, supporting-wires W, yoke Y, holder H, spring S, and entering conductor connected therewith.

11. The combination, with the frame F, of the electrode or holder G, of any suitable material, the longitudinally-reciprocating support H, carried by the frame, and the incandescing-rod B.

335,159. **SYSTEM OF ELECTRIC DISTRIBUTION.** ELIHU THOMSON, New Britain, Conn., assignor to the Thomson-Houston Electric Company, Boston, Mass. Filed Mar. 19, 1883. (No model.)

Claim.—1. The combination, with an electric lamp or other translating device included in a circuit with a source of rapidly alternating or reversed currents, of an electro-magnetic self-inductive reaction device, or its described equivalent, normally out of action, and having a definite

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or determinate counter electro-motive capacity adapted or adjusted, as described, to permit it, when substituted for the lamp or other device, to oppose or check the passage of the alternating or reversed currents to a degree corresponding to the opposing effects arising from the electric resistance in the translating device.

2. The combination, with an incandescent electric lamp arranged in a multiple-arc branch from a main supplied with rapidly alternating or reversed currents, of an electro-magnetic self-inductive reaction device, or its described equivalent, normally out of action, and having a determinate or definite counter electro-motive tendency when exposed to the alternating currents, its capacity in such respect being adjusted or adapted, as set forth, to give to it when substituted for the lamp a checking or opposing influence corresponding to that due in the case of the incandescent lamp to the electric resistance of its filament and other parts in the electric circuit.

3. The combination, with an electric lamp or other translating device fed with alternating or reversed currents, of an electric reaction device normally out of action, and consisting of a coil and magnetic core adjusted or constructed in the proportions described, to give to said coil when thrown into action in place of the translating device a reactive tendency whose checking or opposing effect shall correspond to that due, in the case of the lamp or other apparatus, to the presence of electric resistance.

4. The combination, with an electric lamp or other working-resistance on an alternating or reversed current-circuit, of an adjustable reactive coil and core normally out of action and constructed in the manner or proportions stated, to permit it, when thrown into action in place of a lamp, to have a counter electro-motive tendency the equivalent of a resistance equal to that of the lamp or other working-resistance.

5. The combination, with an incandescent electric lamp on an alternating or reversed current-circuit, of an electro-reactive coil and core placed in a normally-open branch around the lamp, and having a determinate counter electro-motive capacity, whereby its opposing or checking influence on the alternating currents may be the equivalent of that due in the lamp to the presence of electric resistance, and an electric switch for switching out the lamp and switching in the reactive coil.

6. The combination, with the lamps or other working-resistances in a series multiple-arc system supplied with alternating currents, of an electro-magnetic reactive device, or its described equivalent, normally out of action and arranged and adjusted in the manner described to act as substitute for any lamp or lamps that may be removed from operation, and means for throwing said reactive device into action in the circuit when the resistance of the lamp or other device is removed from circuit.

7. The combination, with an electric lamp or other working-resistance, of an electro-reactive device in a branch, and having a determinate counter electro-motive capacity, and adapted to be used as the equivalent of a substituted resistance, a similar electro-reactive device in circuit with said lamp, and means for varying the power of the latter device, as and for the purpose set forth.

8. The combination, upon an alternating current-circuit, of a working-resistance, the two reactive coils in separate branches of said circuit, the differentially-movable core or cores, and means for adjusting said cores so as to vary the flow of current by varying the reactive effects of the coils.

9. The combination, with a series multiple-arc system of electric lighting supplied by alternating currents, and with the lamps of said system, of reactive coils normally out of action, and constructed to have a capacity described, and means for substituting said coils for lamps, whereby they may by their reactive tendency act as substituted resistances equivalent to lamp-resistances.

10. The combination, with incandescent electric lamps arranged in multiple arc, of a branch around each lamp normally open and containing an equivalent of the lamp, a contact-closing switch normally open and controlling said branch, and electro-responsive devices connected with each multiple-arc wire and governing the action of the switch, in the manner described, to close the switch on an undue access of current to a lamp, all as set forth, whereby said lamp may be automatically and individually switched out of circuit without disturbing the normal flow of current to lamps in other multiple-arc wires or branches.

335,160. INCANDESCENT ELECTRIC LAMP. ELIHU THOMSON, New Britain, Conn., assignor to the Thomson-Houston Electric Company, Boston, Mass. Filed Mar. 19, 1883. (No model.)



Claim.—1. In an electric lamp, an entering conductor fused in an admixture of glass or other vitreous material and fine dust of platinum, iron, copper, or the like, as and for the purpose described.

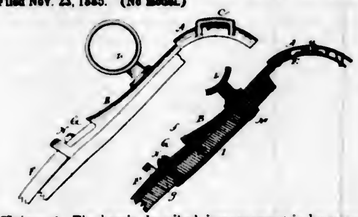
2. In an incandescent electric lamp, a spring-clamp formed of a conducting-wire, bent as described, to leave a side opening for the insertion of the end of the incandescent conductor.

3. The combination, substantially as described, in a switch or incandescent lamp, of a spring, *a*, bent at its end, as shown, and a connecting-spring, Z, also bent and movable vertically to and from the former, the spring *a* being inclined to the line of movements of Z, so that when the latter is forced upward beyond the angle *a* it will be held in place.

4. The combination, with the incandescing illuminating-conductor of an electric lamp, of a resistance-equalizing clip upon said conductor, as and for the purpose described.

5. The combination, with carbon filament forming the light-giving body in an electric lamp, of an adjustable resistance-equalizing clip, as and for the purpose described.

335,161. HARNESS-SADDLE. JOHN THOMAS, Cedar Rapids, Iowa. Filed Nov. 23, 1885. (No model.)



Claim.—1. The herein-described improvement in harness-saddles, consisting of the saddle-tree plate A, constructed upon its under side near each end with cavities *b b*, combined with the side pieces or jockeys, B, each constructed at its upper end to enter beneath the plate, and with trunnions *d d*, corresponding to the cavities *b* in the plate, and an underlying plate, E, arranged upon the under side of the plate A and secured over said trunnions, and whereby said side pieces are hinged to the tree-plate, the said side pieces constructed with a recess upon their under side and with an opening, G, through into said recess, and also constructed with the bar *g* across said recess under said opening, the said piece also constructed with an inwardly-projecting spur, *f*, above said opening, and substantially as described.

2. The combination of the saddle-tree plate A, the jockeys B, hinged thereto, each constructed with a recess upon its under side and with an opening, G, into said recess near the lower end, and also constructed with an inwardly-projecting spur, *f*, above said opening, the clip-piece H, and the clip I, with the tarret L through said side piece and clip-piece into said clip, and with the pad-screw N through said recess, skirt, and clip-piece into that end of the clip, substantially as described.

335,162. BUTTON-FASTENER. JOSEPH F. THORNTON, Providence, R. I., assignor to the Union Eyelet Company, same place. Filed June 12, 1885. (No model.)



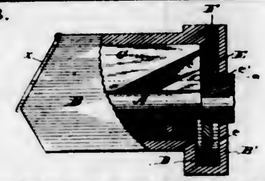
Claim.—A flat bifurcated button-fastener, A, provided with two slightly-divergent arms, A' A^2, one of which, A', is slightly longer than the other and crimped or bent to form a loop, A^4, adapted to engage the eye of the button for retaining purposes, all as herein specified.

335,163. CAR-AXLE LUBRICATOR. MILTON R. THURBER and RICHARD B. BROCKWAY, Scranton, Pa. Filed Nov. 3, 1885. (No model.)

Claim.—1. The combination, with the axle and the plate mounted thereon, having the arms and the depressions or recesses therein, of the bearing-block having the grooves in its sides extending from about the middle of one end to the lower side, substantially as described.

2. The combination, with the axles having the grooves, the plate

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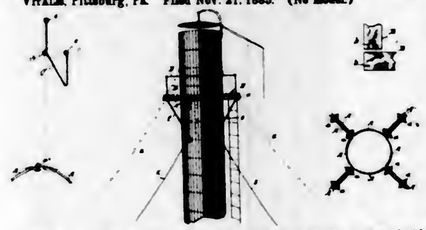


mounted thereon having the projections corresponding to the grooves in the axle, and the arms provided with the depressions or recesses in their ends, of the bearing-block having the grooves in its sides, substantially as described.

3. The combination, with the box or receptacle, and the chamber D at its end, having the opening and door in its upper side, of the axle, the removable plate or wiper mounted on the axle, and the bearing-block provided with the grooves in its sides, substantially as described.

4. The improved bearing-block for car-axles, having the inclined grooves on its sides extending from about the middle of one end to the lower side of the block, substantially as described.

335,164. PORTABLE PLATFORM FOR SMOKE-STACKS. BAPTISTE VITALIS, Pittsburg, Pa. Filed Nov. 21, 1885. (No model.)



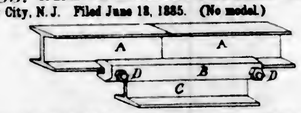
Claim.—1. The combination, with a platform made of detachable pieces, of a clamp for embracing a smoke-pipe, spire, or other object, said clamp having arms extending laterally for supporting the platform, the parts being arranged substantially as described.

2. The combination, with a platform made of detachable pieces, of a clamp for embracing a smoke-pipe, spire, or other object, said clamp consisting of segmental bands, the ends of said bands extending laterally, forming arms for supporting the platform, adjacent arms being secured by bolts, the parts being arranged substantially as described.

3. The combination, with a platform, of a clamp for embracing a smoke-pipe, spire, or other object, said clamp consisting, essentially, of a band composed of segmental bars or plates, securing-bolts, and lateral arms, and extension-joint made in one or more of the segments of the band, substantially as described.

4. The combination, with a platform, a clamp for embracing a smoke-pipe, spire, or other object, said clamp having lateral arms for supporting the platform, of braces consisting, essentially, respectively, of a single rod, with loops engaging the bolts of the lateral arms, said rod being bent to rest against the smoke-pipe or other object being clamped, said braces extending above the platform, with loops for supporting a guard-rail, the parts being arranged substantially as set forth.

335,165. SPLICE FOR METAL BEAMS OR RAILS. JOHN F. WARD, Jersey City, N. J. Filed June 18, 1885. (No model.)



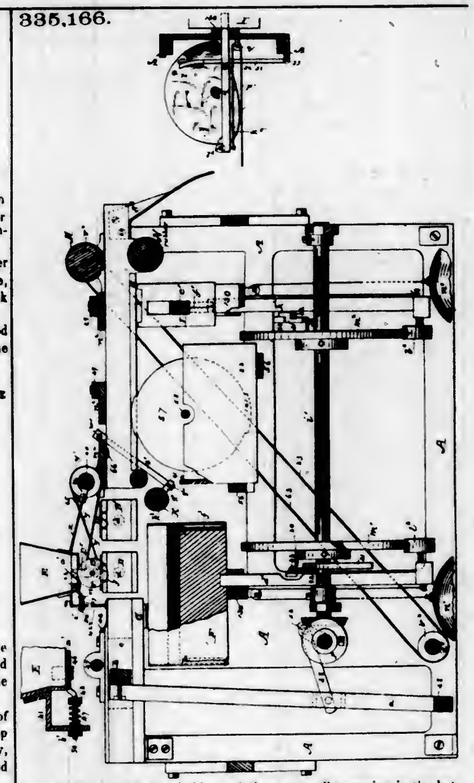
Claim.—The splice for metal beams or rails, consisting of the short piece of metal or section of beam or rail placed beneath the extremities of the parts to be spliced, and the clamping-irons B, provided with the perforations near each extremity and fitting over each flange and the short section therebeneath, the whole secured together by the straight bolts D, passing through the perforations in the clamps beyond the ends of the short section, as shown and described.

335,166. MACHINE FOR ATTACHING LABELS TO PACKAGES. PHILIP W. WILEY, Raleigh, N. C. Filed Sept. 11, 1884. (No model.)

Claim.—1. In a machine for attaching labels to packages of squared or irregular form, the combination, with the rotatory holders constructed to receive the package, of a paste box or holder fixed at the end of a pivoted arm, and adapted to rest by its own weight upon the package in said holder, conforming to the irregular outline of the latter as it revolves, substantially as described.

2. In a machine for attaching labels to packages of a squared or irregular form, the combination, with the rotatory holders for said pack-

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ages, of the paste box or holder and the paste-roller turning in the bottom thereof, said holder being supported by said roller, so as to rise and fall freely as the package revolves, keeping the roller always in contact therewith, substantially as described.

3. In a labeling-machine, and in combination with the rotatory package-holding appliances, the mechanism described for applying a band of paste to the package, said mechanism comprising a paste box or holder supported at the end of a lever-arm, and a paste-roller turning in the bottom of said box or holder and adapted to rest upon the package, substantially as set forth.

4. The combination, with the holders and means for rotating the same, of the paste-roller for applying a band of paste to the package, and connections for revolving said roller, substantially as described.

5. The combination of the holders for the package, gearing for rotating the same at intervals, the paste-box having a roller turning in the bottom thereof and resting upon the package in said holders, and mechanism—such as a belt and pulleys—for revolving said roller simultaneously with said holders, substantially as described.

6. The paste box or holder carried at the end of an arm, said arm being secured to a strap which loosely encircles a shaft crossing the machine, said strap, arm, and paste-box being adjustable longitudinally on said shaft, substantially as described.

7. The combination of the stationary table, holders at the end thereof, pivoted feed-block working through an opening in said table, and a cover over said table to assist in guiding the packages into said holders, substantially as described.

8. The combination of the holders constructed to receive and hold the packages, gearing for revolving said holders at intervals, and mechanism—such, for example, as the notched disks, toothed bars, spring, and releasing-pin—for automatically locking said holders in place after each revolution as soon as they have reached the proper position to receive and discharge a package, substantially as described.

9. The combination of the holders supported on shafts journaled in the frame of the machine, gearing for imparting to said shafts an intermittent rotation, and automatic locking devices—such, for example, as the notched disks, toothed bars, spring, and releasing-pin—for locking said shafts in position after each revolution, substantially as described.

10. The combination, with the intermittently-rotating shafts and the package-holders mounted thereon, of notched disks on said shafts,

and pivoted locking-bars, each carrying a tooth adapted to enter the notches in said disks when the proper point in their revolution has been reached, substantially as described.

11. The combination, with the package-holders, the intermittently-rotating holder-shafts, and the locking bar or bars for holding the same stationary, of mechanism, as described, for releasing said bar or bars from said shafts before the latter begin to revolve, substantially as set forth.

12. The combination, with the package-holders and the holder-shafts, of mutilated gears for rotating said shafts at intervals, an automatic locking-bar for engaging a notched disk on one of said shafts, and a pin on the face of one of said mutilated gears, adapted by contact with a projection of said locking-bar to release the same at the proper moment from engagement with said notched disk, substantially as described.

13. The combination, with package-holders, the holder-shafts, and gearing for rotating the same at intervals, of another shaft journaled on both sides of the machine, and carrying at its ends gears which mesh with the gears on the holder-shafts, said shafts and its gears acting as a connection between the intermittently-moving parts on both sides of the machine, substantially as described.

14. The combination, with the rotatory holders, of the spring-arms for steadying the packages therein, substantially as described.

15. The combination, with mechanism for feeding a series of packages and for applying labels thereto, of a passage-way for the packages provided with toothed holding-fingers for preventing their movement backward, substantially as described.

16. The combination, with the reciprocating label-box and the cam for controlling its upward movement, of the lever and the revolving pin for engaging said lever to lower the said box, substantially as described.

17. The combination, with the label-box, supporting-bar, cam controlling the movements of said box, and pin on the face of said cam, of the lever extending between the cam and supporting-bar, and having an offset, so as to be struck by said pin on its descent, but to be clear thereof on its ascent, substantially as described.

18. The combination, with the rotatory holders and label-applying mechanism, of the pressure-roller carried by a pivoted frame, a spring for holding the roller with yielding pressure against the package in said holder while the same is revolving, and means, as set forth, for withdrawing the roller, substantially as described.

19. The combination of the rotatory holders, pressure-roller, frame carrying the same and secured to a shaft, spring tending to press said roller against the package in said holders, and a projection on the end of said shaft in the path of a pin on one of the intermittently-rotating wheels, whereby the roller is held clear of the packages during the time the feed operates, substantially as described.

20. The combination, with the intermittent feed, the package-supports, and the reciprocatory box for face-labels, of the paste-cylinder and paste-well for applying paste to said packages preparatory to applying the face-labels, said well being fixed on the machine-frame, and the paste-cylinder turning in stationary bearings, so that the paste is applied by the feed of the packages in contact with the cylinder, substantially as described.

21. The combination, with the intermittent feed and the driving-shaft for giving an advance movement to the feed at each revolution of said shaft, of the paste-well, cylinder turning therein and having on its surface alternate raised segments and depressions, and the shaft for said cylinder connected with a driving-shaft, so as to rotate said cylinder once for as many revolutions of said driving-shaft as there are raised segments on said cylinder, substantially as described.

22. In a labeling-machine of the character described, and in combination with the mechanism for pasting a strip-label around a package, the pressure and delivery rollers, the upper roller being cut away or grooved in the middle, so as not to act upon the strip-label, substantially as and for the purpose described.

23. The combination, with the paste and label applying mechanism and the pressure-rollers acting on the packages after the labels have been applied, of additional pressure-rollers for pressing the packages after an interval sufficient to permit the paste to soak, substantially as described.

24. The combination, with the paste and label applying mechanism and the pressure-rollers, of an endless belt or apron upon which the packages are delivered by said rollers, additional rollers for receiving the packages from said belt or apron, and connections—such as a belt and pulleys—for turning said rollers, substantially as described.

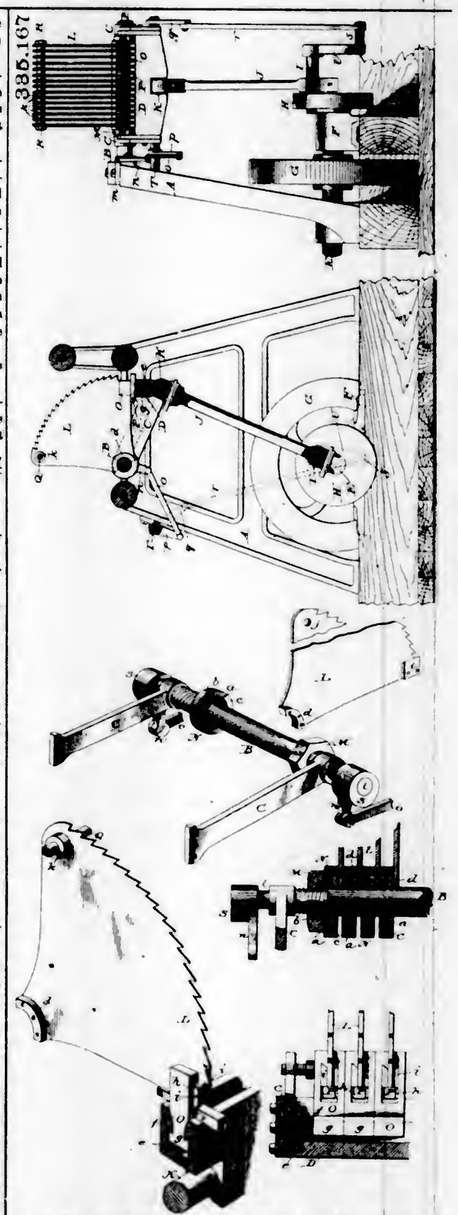
335,167. GANG-SAW MILL. THEODORE S. WILKIN, Milwaukee, Wis. Filed June 4, 1885. (No model.)

Claim.—1. In a gang-saw mill, a series of sector-shaped blades, toothed on their peripheries, secured to a rock-shaft or arbor, and bound together at their outer corners, substantially as shown and described.

2. A blade for gang-saw mills, made in the form of a sector and provided with teeth on its periphery, substantially as shown and described.

3. A blade for gang-saw mills, made substantially in the form of a sector, but having its toothed circumference made slightly eccentric, to cause the blade to advance in cutting.

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4. The herein-described saw for gang-saw mills, consisting of a sector-shaped blade, as L, having teeth on its periphery, a curved tab, as *d*, near the meeting-point of its upper and lower edges, and tabs, as *i i*, at its outer lower corner.

5. In a gang-saw mill, the combination of a supporting-frame, an arbor journaled in said frame, a series of saws of sector shape mounted upon said arbor, a girt connecting said saws near their peripheries, a crank-shaft, and a pitman connecting the crank-pin and the girt, all substantially as described and shown.

6. In combination with a rock-shaft, a saw-blade secured thereto in a radial plane at right angles to the axis of the arbor, a crank, and a pitman connecting the saw-blade and the crank, substantially as set forth and shown, whereby rotation of the crank is caused to impart a reciprocatory movement to the saw about the axis of the arbor.

7. The combination of a frame, as A, an arbor, as B, journaled in said frame and threaded near its end, collars, as N, mounted upon said arbor and formed with a cavity, as *a*, in one face, sector-shaped saws, as L, each provided with a tab, as *d*, to enter the cavity of one of the collars, and with tabs, as *i*, near the periphery, a girt, as D, provided with a longitudinal groove, as *e*, blocks, as O, connecting the saws and girt, wedges, as P, passing through the blocks between the saws and girt, a crank-shaft, as E, and a pitman, as J, connecting the girt and the pin of the crank of said crank-shaft.

8. The combination, substantially as shown and described, of a frame, A, a rock-shaft, B, journaled therein and provided with radial arms, as C C, a girt, D, secured to the outer ends of said arms, saws L, secured upon the arbor and connected with the girt, a shaft, E, journaled in frame A and provided with a crank-wheel, H, and a pitman connecting the crank-pin and the girt.

9. The combination of a supporting-frame, A, rock-shaft B, journaled therein and provided with arms C C, girt D, connecting said arms, saws L, secured to the rock-shaft and girt, the rod Q, extending through the upper corners of the saws, spacing blocks or collars between the saws, a crank-shaft, E, and a pitman connecting the crank-pin and the girt.

10. A saw-gang consisting of arbor B, journaled in a suitable supporting-frame and provided with a threaded portion at one end, a series of collars, N, mounted upon said arbor and formed with recesses *a* in their side faces, saws L, having tabs *d*, seated in the recess *a*, nut M, secured upon the threaded portion of the arbor and pressing the saws and collars firmly together, tie-bolt Q, passing through the upper extremities of the saws, spacing-collars encircling said bolt and serving to separate the saws, arms C C, secured upon the arbor B, girt D, connecting said arms, and blocks O, connecting the saws and girt and serving to space the saws, all substantially as described and shown.

11. In combination with rock-shaft B and a supporting-frame, saws L, secured to said rock-shaft and provided with tabs *i* near the outer lower extremities, arms C C, keyed to the rock-shaft, girt D, secured to said arms and provided with groove or slot *e*, block O, having T-heads *g*, seated in groove *e* and slotted at their upper ends to receive the tabs *i* of the saws, and wedges P, extending through the blocks O between the saws and the girt.

12. In combination with a frame, a rock-shaft or arbor mounted therein, sector-shaped saws secured to said arbor, eccentric sleeves encircling the journals of said arbor, to advance the same as the saws reciprocate about the axis of the arbor, and mechanism for reciprocating the saws.

13. In combination with frame A and arbor B, having journals *l*, sleeves S, encircling the journals *l*, journaled in frame A, and provided with arms *n*, saws L, secured upon arbor B and connected by girt D, shaft E, provided with crank H, pitman J, connecting crank-pin I and girt D, rock-shaft T, provided with arms *p* and *q*, links *o*, connecting the arms *n* and *p* of the sleeves and rock-shaft, an eccentric crank-arm, U, secured upon the shaft E, and a pitman, *r*, connecting the arm *q* of the rock-shaft and the eccentric crank-arm.

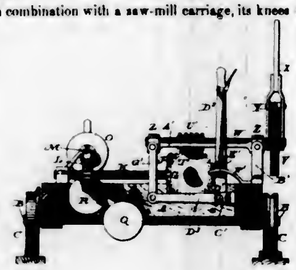
14. In combination with a frame, a rock-shaft or arbor mounted therein, a gang of sector-shaped saws secured to said arbor, mechanism for reciprocating said saws about the axis of the arbor, and a device, substantially such as shown and described, for advancing the gang and arbor on the cutting stroke and receding them on the return stroke.

335,168. SAW-MILL SET-WORKS. THEODORE S. WILKIN, Milwaukee, Wis. Filed Aug. 4, 1885. (No model.)

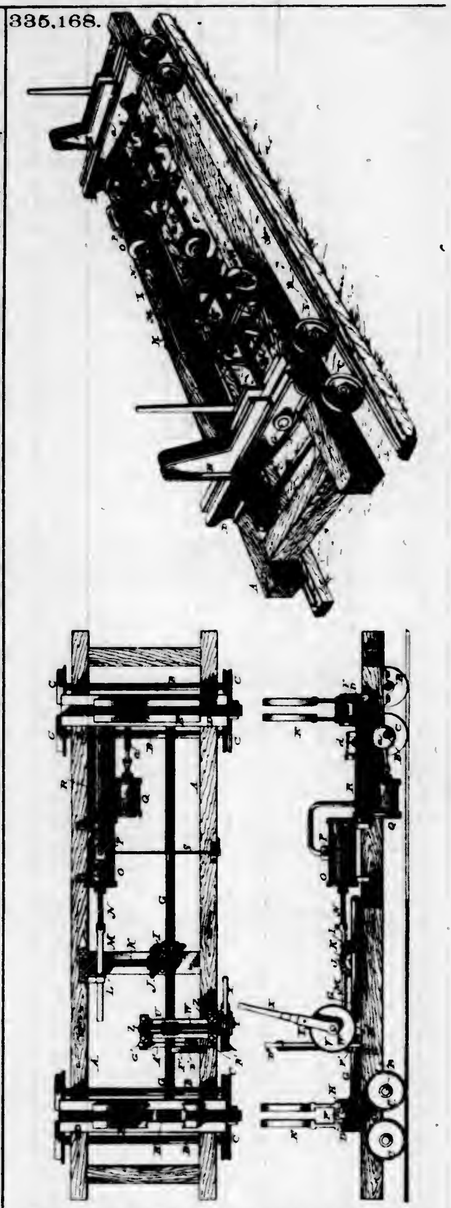
Claim.—1. In combination with a saw-mill carriage, an air-compressor mounted wholly upon the carriage and bodily movable therewith, said compressor being adapted and arranged to be operated through or by reason of the travel of the carriage and to furnish air to mechanism on the carriage.

2. In combination with a saw-mill carriage, and with log-handling mechanism thereon, an air-compressor driven by connection with a truck of the carriage, a cylinder, a piston within said cylinder connected with the log mechanism of the carriage, and a valve between the air-compressor and the cylinder, to cause the air to enter upon either side of the piston at will.

3. In combination with a saw-mill carriage, its knees and set-shaft,



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an air-compressor mounted wholly upon and operated by the travel of the carriage, a cylinder receiving air from the compressor, a piston within said cylinder, and intermediate connecting devices between the piston and the set-shaft, whereby the travel of the carriage is caused to compress air, and the compressed air is in turn caused to actuate the set-shaft and move the knees.

4. The combination, substantially as described and shown, of carriage A, axles B, supporting said carriage, an eccentric, *a*, secured upon one of the axles B, an air-compressor, Q, carried by the carriage and operated by the eccentric *a*, a cylinder, O, receiving air from compressor Q, a valve, P, controlling the inlet and outlet of air to and from said cylinder, a piston, N, within said cylinder, a rack-bar, M, connected with said piston, a set-shaft, G, provided with pinions H, a series of sliding knees, E, mounted upon the carriage and having racks F, meshing with

the set-shaft pinions, a shaft carrying a bevel-pinion, J, meshing with a like pinion, I, on the set-shaft, and a pinion, L, meshing with the rack-bar M, a worm-wheel, T, keyed fast upon the set-shaft, a worm, U, meshing with said worm-wheel, and a lever for rotating the worm.

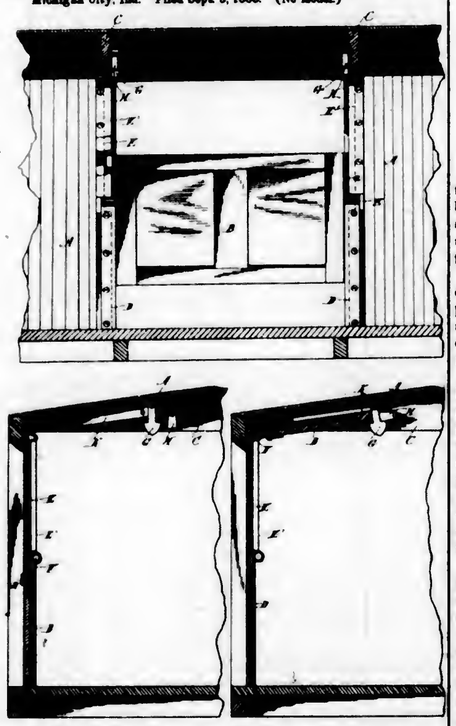
5. In combination with a saw-mill carriage and its sliding knees, and an air-compressor mounted upon and operated through the travel of the carriage, a cylinder receiving air therefrom, a piston within said cylinder connected through intermediate gearing with the set-shaft, a worm-wheel mounted upon the set-shaft, and a worm meshing with said worm-wheel and serving to regulate or control its rotation.

6. In combination with the set-shaft of a saw-mill carriage, and with mechanism for rotating said shaft, a worm-wheel secured upon said shaft, and a worm meshing with the worm-wheel, and adapted to be rotated manually to permit and control the rotation of the set-shaft.

7. In combination with a saw-mill carriage and its sliding knees, and an air-compressor mounted upon and operated through the travel of the carriage, a cylinder receiving air therefrom, a piston within said cylinder connected with the set-shaft, a worm-wheel mounted on the latter, and a worm meshing with said worm-wheel and adapted to be disengaged therefrom at will.

8. In combination with the set-shaft of a saw-mill carriage, and with mechanism for rotating said shaft, a worm-wheel secured upon said shaft, a worm meshing with the worm-wheel adapted to be rotated manually to permit and control the rotation of the set-shaft, a pivotal box or bearing for said worm-shaft, a hand-lever journaled upon the frame, and a link connecting the hand-lever and the free end of the worm-shaft.

335,169. CAR-DOOR. HENRY C. WILLIAMSON and FREDRICK PRIES, Michigan City, Ind. Filed Sept. 3, 1885. (No model.)



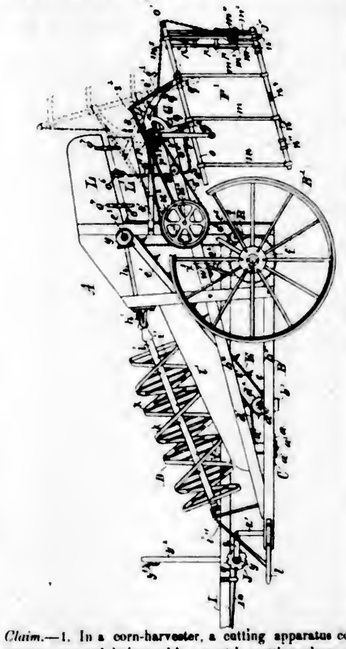
Claim.—1. The combination, with door B and cross-piece F, the latter having flat protruding ends, of guide-strips E, bent outwardly and then inwardly with a curve near their upper ends, as and for the purpose set forth.

2. The combination, with door B and cross-piece F, of guide-strips D E, the former rounded on their upper ends, as set forth.

3. The combination, with door B, cross-piece F, and guides E, of catches G and locks H, as set forth.

4. The combination, with door B, cross-piece F, and guide-strips D E, strips D rounded at their upper ends, and strips E bent outwardly and inwardly at their upper ends, of swinging catches G and locks H, as set forth.

335,170. CORN-HARVESTER. JOHN I. WOLF, Springfield, Ohio. Filed June 11, 1884. (No model.)



Claim.—1. In a corn-harvester, a cutting apparatus consisting of the rotary segmental knives with eccentric cutting-edges, said knives being secured upon a pivoted horizontal disk, a fixed knife extended across the latter, with which said rotary knives engage, and a guide-bar attached to the guideway-rail and extending therefrom in line with said fixed knife and overlapping the same, as set forth.

2. In a cutting apparatus for a corn-harvester, a rotary disk, a pair of segmental knives thereon, their upper or cutting edges in the same plane therewith, and a stationary knife extending across the same at an angle of about forty-five degrees to the line of the guideway, the edges of said rotary knives being eccentric to the peripheral line of the disk, for the purpose set forth.

3. In a cutting apparatus for a corn-harvester, the segmental rotary knives with the front or entering angles of their blades rounded, and the lines of the cutting-edges being eccentric to their center of rotation, in combination with a stationary knife extending obliquely forward across the top surface of said rotary knives, and a guide-bar in line with said stationary knife and lapping onto the point of the same, as and for the purpose hereinbefore set forth.

4. In a cutting apparatus for a corn-harvester, the eccentric segmental knives *a a*, disk *a'*, the oblique stationary knife *b*, extending forward from the guide-rail at an angle of about forty-five degrees, and the guide-bar b^2, as and for the purpose set forth.

5. The combination, with the fixed and movable frame-sections of the cutting apparatus, the endless-chain carriers, and spiral reels, of the system of gearing, the main drive-wheels, and pivoted truck, arranged and operated as set forth.

6. In a corn-harvester, the combination of a cutting apparatus consisting of the fixed and the rotary knives, elevating devices consisting of endless-chain belts with toothed carrier-bars thereon, and the shocking devices consisting of pivoted separable frames provided with devices for compressing and rotating the shock, releasing and dropping the same, and means in connection with the frame and the several operative devices thereon for regulating the height of the cut and the distance through which the shock is dropped to the ground.

7. In a corn-harvester, the longitudinal coupling-rails, the pivoted truck, the main drive-wheels provided with spur-gears, the cutting apparatus, the elevating and shocking devices, and the system of gearing connecting said drive-wheels with said cutting and elevating devices, and operated as set forth.

8. In a corn-harvester, the combination of cutting, elevating, and shocking devices, all being supported and operated upon a movable frame, provided with means for raising and lowering and tilting the same to regulate the cut and the height from which the shock is dropped to the ground.

9. In a corn-harvester, the combination, with the main frame, the adjustable frame, the vertical toothed rack-bars, and guards attached thereto, of the rotary axle provided with pinions engaging said rack-bars and having a winding-drum thereon, the hollow shaft and inclosed solid shaft journaled in the main frame and provided with the notched wheels, the jointed levers connecting said adjustable frame with the said solid shaft, the chain connecting the winding-drum of the axle with the said hollow shaft, and a hand-lever pivoted on said solid shaft having an endwise movement, and provided with a lug and latch-rod engaging said notched wheels, to raise and lower and secure the frame, as set forth.

10. In combination, the main axle having pinions and a winding-drum thereon, the drive-wheels rotating on said axle, the longitudinal coupling-rails having bearings in which the axle may be rotated, the truck supporting the front ends of the coupling-rails, the pivotally-suspended frame provided with vertical toothed racks engaging said pinions, guards attached to said racks and frame to retain said racks and pinions in engagement, a transverse hollow shaft containing a solid shaft and pinions in engagement, a transverse hollow shaft containing a solid shaft and journaled on said coupling-rails, a chain connecting said hollow shaft and said winding-drum on the axle, and an adjustable pivoted hand-lever adapted to operate the hollow shaft and its connections to raise and lower the frame and to operate the inside shaft to tilt the frame, as set forth.

11. In a corn-harvester, the combination, with the system of cutting, elevating, and shocking devices and means for operating the same, of the adjustable frame, means for pivotally suspending said frame at the front end, means for supporting it adjustably at the rear end, and means for raising, lowering, and tilting the same, as set forth.

12. In a corn-harvester, the combination of a stationary frame, an adjustable frame carrying the devices for cutting, elevating, and shocking the corn, a transverse shaft journaled on the front of the stationary frame, a hand-lever adjustably pivoted on said shaft and adapted to be operated from the driver's seat, and means connected therewith by which the adjustable frame may be raised, lowered, and tilted, as set forth.

13. In a corn-harvester, the combination of the longitudinal bed-rails, the axle, the bearings on the rear ends of said bed-rails for said axle, the drive-wheels rotating on said axle, the pivoted truck supporting the front ends of said bed-rails, the adjustable frame, and the adjustably-pivoted hand-lever and its auxiliary connections operated thereby, as described, whereby said frame may be raised, lowered, and tilted from the driver's seat.

14. In a corn-harvester, the combination of the bed-frame consisting of the longitudinal coupling-rails extending from end to end of the machine, bearings on the rear ends (on the under side) of said coupling-rails, an axle adapted to rotate in said bearings and provided with pinions and a winding-drum, drive-wheels rotating on the ends of said axle, a pivoted truck supporting the front ends of said coupling-rails, an adjustable frame having guideway-rails at the front and provided with racks intermediate its side bars engaging said pinions and supporting the rear end of said adjustable frame, a transverse shaft on said coupling-rails, jointed levers connecting the inner guideway-rails with the ends of said transverse shaft, a chain connecting the latter with the drum on said axle in the central longitudinal line of the machine, a hand-lever pivotally attached to said shaft, and means connected therewith for raising and lowering said adjustable frame for tilting the same and for adjusting it at any desired height or angle in cutting the corn, as set forth.

15. In combination, guideway C', guide-rail b^4, knives *a a*, the fixed knife *b*, angle-plate *c*, and brace *b'*, as and for the purpose set forth.

16. In combination, the guideway C', having rails b^3 and b^4, the rotary knives *a a*, the fixed knife *b*, and the guide-bar b^2, as and for the purpose hereinbefore set forth.

17. In combination with the cutting and elevating devices and the main drive-gears *f''*, pinions *f*, shafts e^2, sprocket-wheels e^4, chain belts *e'*, and sprocket-wheels e^3, connecting said main drive-gears with said cutting and elevating devices, whereby both are simultaneously operated, as set forth.

18. In a corn-harvester, the combination of the two longitudinal coupling-rails, the pivoted truck, the main drive-wheels provided with spur-gears attached to the hubs of the same, the axle having the fixed pinions thereon, the pivotally-suspended adjustable frame provided with toothed racks and jointed lever-connections, the pivoted adjustable hand-lever, the auxiliary connecting devices of said hand-lever, axle, and frame, whereby said hand-lever is adapted to perform the double function of vertically adjusting and tilting said frame, and the foot-levers by which said frame and its cutting apparatus and shocking devices are retained at the proper height and angle when adjusted, as set forth.

19. In a corn-harvester, a movable frame carrying the cutting, elevating, and shocking devices thereon, and pivotally suspended at the front end by jointed levers, and at its rear end by racks and pinions, in combination with means connected to said supporting devices, whereby said frame is vertically adjusted, substantially as hereinbefore set forth.

20. In a corn-harvester, the combination of an adjustable frame and mechanism for adjusting said frame, consisting of a compound shaft in two sections, one section being a hollow shaft having a notched wheel on one end, a solid shaft extending through and journaled in said hollow shaft, provided with a notched wheel on each end, an adjusting hand-lever pivotally attached to the inside shaft between the notched wheel on the latter and the notched wheel on the outside shaft, and provided with a fixed lug engaging the notches of the latter inner wheel, and a latch-rod adapted to engage the notches of the outer wheel, and mechanism, as described, connecting said frame and said shafts, substantially as set forth.

21. In a device for operating the adjustable frame of a corn-harvester to raise, lower, or tilt the same, the combination of the hollow shaft, the solid shaft passing through the hollow shaft, a toothed wheel on one end of the hollow shaft, a toothed wheel on each end of the inside shaft, a hand-lever pivoted between a toothed wheel of the inside shaft and the toothed wheel of the outside shaft, and having a lateral movement, means attached to said lever for engaging the toothed wheel on each side of the same, intermediate devices to operate the said frame, the foot-levers, and the latch-rods connected with the latter—one on each side of the bed-rails—and adapted to be operated to engage the toothed wheel of each shaft, as and for the purpose set forth.

22. In a corn-harvester, the combination, with the adjustable frame, of the guideway-rails having outwardly-curved front ends, the cutting apparatus consisting of the rotary segmental knives and the fixed oblique knife, the guide-bar adapted to guide the stalks to said cutting apparatus, the chain belts and toothed carrier-bars, the spiral reels, and means for operating the same, whereby the stalks are guided to the knives, cut, and elevated, as set forth.

23. In a corn-harvester, the combination, with the adjustable frame, of the guideway-rails having outwardly-curved front ends, the cutting apparatus consisting of the horizontal rotary knives and a fixed oblique knife, said knives being attached to the inner guideway-rail, a guide-bar attached to the outer guideway-rail extending rearward in line with said fixed knife, the endless-chain belts and toothed carrier-bars, the spiral reels, the system of driving mechanism for operating the same, and the shocking devices consisting of a shock-holder in two sections for receiving the cut corn, compressing devices, and a spring-frame, means for detaching said compressing devices, and mechanism for rotating the shock and releasing and dropping the same.

24. In a corn-harvester, the combination of the elevating-belts provided with toothed carriers, the spiral reels, a holder for receiving the cut corn preparatory to compressing and tying the same, the apron-boards L', hinged at one edge to the rear top boards, L, over said holder, and devices for rotating the shock adapted also to elevate the said apron-boards, substantially as set forth.

25. In combination, the hinged apron-boards L', provided with the projecting arm o^2, the chains *o''*, the pulleys o^3, the shock-turners G and G', the transverse shaft connecting the latter, the long rod-levers, the sprocket-wheels and chain belts, and the crank-lever and its attachments adapted to operate said shock-turners, substantially as and for the purpose set forth.

26. In a shocking device for corn-harvesters, the combination of the hinged separable frames provided with automatic latching devices, the pivoted shock-turners, the transverse shaft having a sprocket-wheel at one end and crank-lever at the other, the long jointed levers, chain-gearing, and the pivoted crank-lever provided with pawls and adapted to engage alternately with the ratchet-wheels on the opposite sides of the same, substantially as and for the purpose set forth.

27. In a shocking device for corn-harvesters, the combination of pivoted separable frames provided with automatic latching devices, chain-clamps provided with a hook, means for disengaging the same, a spring-frame, the winding-drum, the pivoted crank-lever, the ratchet-wheels, and the pawls adapted to engage the latter when operated, substantially as set forth.

28. In a corn-harvester, the combination of the shock-turner pivoted at the rear of the machine—one on each side—a shock-holder composed of two pivoted separable rectangular frames suspended from said shock-turner frame, latching devices to connect said frames, the compressing devices, and a crank-lever pivotally attached to the shaft of one of said shock-turners and provided with loosely-pivoted pawls—one on each side—adapted to engage alternately with a fixed and a loose ratchet-wheel when the lever is rotated in opposite directions, said lever being adapted to operate the compressing devices when rotated in one direction, and to operate the shock-turning devices when rotated in the opposite direction, as set forth.

29. In a corn-harvester, the combination of the two apron-boards, the two pivoted rectangular shock-holder frames, shock-turner frames pivoted one to each side of the frame of the machine, from which said frames the shock-holder frames are suspended, automatic latching devices to connect the frames, means for releasing the same, compressing-chains provided with a hook, a spring-frame adapted to disengage the latter, and a crank-lever provided with a loosely-pivoted pawl on each side, one of said pawls adapted to engage a ratchet-wheel on one side of said lever to operate the compressing-chains, and the other pawl adapted to engage the ratchet-wheel on the other side of said lever (when the latter is rotated in the opposite direction) to operate the devices for rotating the shock and for elevating the apron-boards, as set forth.

30. In a shocking device, the combination, with the shock-turner G, of the compressing devices, the chain m^3, the shaft *r*, drum *r'*, crank-

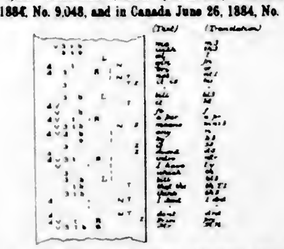
lever *v*, provided with the loosely-pivoted pawl *v'*, ratchet-wheel r^3, pawl r^4, and ratchet-wheel r^4, whereby the chain m^3 is wound up and the compressing devices operated, as set forth.

31. In a shocking device, the combination of the pivoted separable frames F' and F^2, provided with automatic latching devices, the compressing devices, the pivoted shock-turners G and G', the transverse shaft u^2, the long jointed levers *u*, sprocket-wheels *u''* and u^2, chain belt S^2, crank-lever *v*, having pawl *v''*, and ratchet-wheel *u'*, formed in one piece with the sprocket-wheel *u''*, whereby the shock is rotated and dropped in an erect position, as set forth.

32. The combination, with the shock-holder and the auxiliary devices described, of a single crank-lever and means connected therewith whereby the shock is compressed when said lever is operated from right to left, and is rotated to an erect position for dropping when said lever is operated from left to right, as set forth.

33. The combination, with the adjustable frame and means for raising, lowering, and tilting the same, of a shocking device consisting of a shock-holder having two separable pivoted frames, devices for compressing the shock, and means for rotating the same and for releasing said shock and dropping it erect upon the ground, as set forth.

335,171. METHOD OF RECORDING SPEECH. GEORGE K. ANDERSON, Memphis, Tenn. Filed Mar. 8, 1884. (No model.) Patented in England June 17, 1884, No. 9,048, and in Canada June 26, 1884, No. 19,673.



Claim.—1. The method of grouping characters for stenographic printing, which consists in arranging different printing-characters representing consonant and vowel sounds in two groups, those of one group representing the vowels and consonants of the ordinary alphabet combinations of consonants and numerals, those of the other group representing the letter or sounds of S or Z preceding the first group, and R, L, N, T or D, and S or Z, following the same, substantially in the order named, and combinations of the same, whereby the several sounds are represented by different characters and combinations thereof, and the impressions of said characters and combinations occupy fixed positions in substantially the order specified.

2. The hereinbefore-described method of phonetically recording words, which consists in providing a set of characters which singly and by combination shall represent the letter S preceding the consonants, vowels, and combinations of consonants of the ordinary alphabet and the sounds or letters R, L, N, T or D, and S or Z following the same, and then, by simultaneously impressing single characters or combinations thereof, record a whole syllable, word, or more at a single operation.

3. The hereinbefore-described method of arranging the printing-characters in a phonetic recording-machine, which consists in dividing said printing-characters into three groups, one group showing the class to which the accented or other selected vowel of each word belongs, another group containing characters combining with those of the first group and with each other to represent vowels, numerals, consonants, and combinations of consonants, and the third group representing as independent letters or sounds the letter S preceding the second group, and the letters R, L, N, T, and Z following the second group, substantially in the order named, so that when impressions are made from two or more groups simultaneously the record of characters and combinations will appear in the order named in a single line, substantially as described.

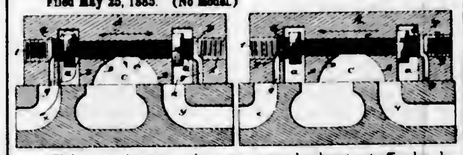
4. The hereinbefore-described method of recording words, which consists in providing a set of characters which singly and by combinations shall represent the accented or other selected vowel-sound of each word, numerals, vowel-sounds, consonant-sounds, combinations of consonant-sounds, and in addition thereto the sounds or letters C or S, R, L, N, T or D, and S or Z, together with the various combinations thereof, and then, by impressing single characters or combinations thereof, record a whole syllable or more at a single operation.

5. The hereinbefore-described method of designating the accented or other selected vowel of a word, and at the same time showing the beginning of a new word, thereby rendering an extra stroke for spacing unnecessary as between words, which consists in striking a special key at the beginning of a word, and thereby producing an arbitrary mark, to show both the accented vowel and the beginning of a word.

6. The hereinbefore-described method of phonetically recording with certainty a number of words equal to and generally in excess of the number of strokes required to make them, which consists, first, in indicating, as described, to which of three prearranged classes the accented or other selected vowel of each word belongs by means of two characters, one of which represents one class, the other another class, and the absence of both the remaining class, thus leaving the two characters to be used jointly as one independent letter; second, in combining the two vowel-marks (used jointly) and one or more of four other characters to represent by their arbitrary combinations numerals, vowels, consonants, and combinations of consonants, and, third, in the selection and arrangement relatively to each other and to the letters or characters formed, as last explained, of the letters C or S, R, L, N, T or D, and S or Z.

7. The hereinbefore-described method of arranging the printing-characters in a phonetic recording-machine, which consists in placing them substantially in the following order: first, the letter C or S; second, numerals, vowels, consonants, and combinations of consonants formed by the arbitrary combinations of the two vowel-marks used jointly, and four additional letters or characters; third, the letters or characters R, L, N, T or D, and S or Z, and their various combinations, substantially as described, so that when impressions are made from two or more characters simultaneously the record of characters and combinations will appear in the order named in a single line, substantially as described.

335,172. CUT-OFF VALVE. GEORGE W. ANDERSON, Westport, Ind. Filed May 25, 1885. (No model.)



Claim.—1. An automatic steam-actuated exhaust cut-off valve, located within the exhaust-chamber of a sliding valve, substantially as set forth.

2. The combination, with a sliding valve having a depending projection in its exhaust-chamber, of a pair of sliding blocks seated in said projection and adapted to alternately open and close an exhaust, substantially as set forth.

3. The combination, with a sliding valve, of a pair of steam-actuated sliding blocks located within the exhaust-chamber of the valve, and adapted to open and close an exhaust-port, substantially as set forth.

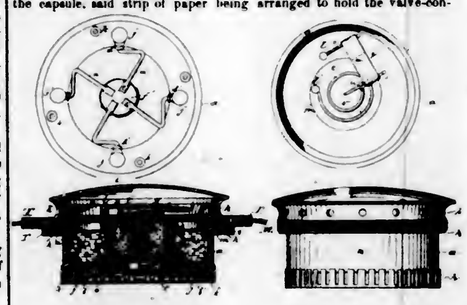
4. The combination, with a cylinder provided with one exhaust and two steam ports, and a sliding valve, of blocks operated by steam and adapted to alternately form a steam-joint and an exhaust-space, substantially as set forth.

5. The combination, with a sliding valve having a depending projection located within its exhaust-chamber and provided with an exhaust-port extending through the projection, of a pair of blocks connected by bars or rods seated within the said port and adapted to open and close the port, substantially as set forth.

6. The combination, with a sliding valve having a depending projection within its exhaust-chamber and a pair of sliding-blocks connected by bars or rods seated in the said projection, of piston projections secured to the backs of the blocks and adapted to work in sockets formed in the ends of the valve, and steam-ports connecting the sockets with the face of the valve, substantially as set forth.

335,173. LIFE-PRESERVER. JOSEPH S. BADIA, Philadelphia, Pa. Filed Sept. 3, 1884. Renewed Aug. 3, 1885. (No model.)

Claim.—1. The combination, with a capsule containing materials for the production of gas and a gas bag or receptacle connected therewith and adapted to become buoyant when charged with gas, of a valve or valves normally closing the opening through which the gas escapes into the bag, valve-controlling mechanism, and a spring for operating the same when released, and a strip of paper or other material connected to the valve-controlling mechanism and to a stationary holder fastened to the capsule, said strip of paper being arranged to hold the valve-controlling mechanism in check and adapted to release the same and allow the valve to be automatically opened when said strip is ruptured by coming in contact with water, substantially as described.



2. A capsule for use substantially as hereinbefore described, the same comprising a casing subdivided into separate compartments for gas and powder, respectively, and provided with mechanism held in check by a strip of paper or its equivalent, which will break or become ruptured when moistened and release said mechanism, so that the gas will be generated and at the same time heat produced, as and for the purpose set forth.

3. The combination of a capsule containing gas-producing chemicals and valve-closing mechanism held in check by a strip of paper or its equivalent, which when moistened will liberate said mechanism and allow the gas to escape, with a life-preserving jacket having an inflatable compartment for the reception of gas issuing from the capsule, and a helmet for bathers or swimmers comprising an automatic valve for the protection of the mouth and nostrils, and a collapsible chamber connected by tubes with said valve and with the capsule, substantially as shown and described.

4. The combination, with a gas-bag, of a capsule adapted to contain liquefied or compressed gas and combustible powder and frictionally-ignitible paste or composition, said capsule consisting of a casing subdivided into separate compartments for the gas and powder, respectively, and provided with the following instrumentalities, viz: a curved brim or guard and a perforated cap inclosing the same, a series of nipples communicating with the gas-space, and a series of valves for closing said nipples and attached to a metallic disk by solder of a low point of fusion, a protecting-cover for said valves and disk, a rod or spindle packed with a cylinder of soft wood passing through a central boss in the powder-compartment, and armed with cranks one of which holds a frictional device for igniting the phosphoric paste, a spring bearing against the other crank to cause its rotation, and a strip of paper or other suitable material holding the rod in check and capable of being ruptured when moistened, all substantially as and for the purposes set forth.

335,174. TIME-LOCK. AQUILLA O. BESEL, Rockford, Ill., assignor to Jackson B. Young, Sioux Falls, Dak. Filed May 1, 1884. (No model.)

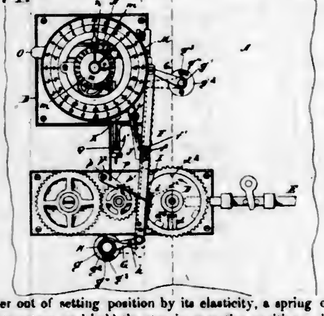
Claim.—1. In a time-lock, a permutation-tumbler provided with a stop projection, in combination with an elastic or yielding stop arranged to throw the tumbler out of setting position by its elastic force, a holder arranged to arrest and hold the stop out of operative position, and a time-movement arranged to release, when running, the holder and permit the stop to return to its operative position, substantially as and for the purposes set forth.

2. In a time-lock, a permutation-tumbler provided with a stop projection, in combination with an elastic or yielding stop arranged to throw

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the tumbler out of setting position by its elasticity, a spring or springs operating to return and hold the stop in operative position, a holder arranged to arrest and hold the stop in an inoperative position when displaced by the tumbler, and a time-movement arranged to release the holder when the timer is running, substantially as and for the purposes set forth.

3. In a time-lock, a permutation-tumbler provided with a stop projection, in combination with an elastic or yielding stop arranged to throw the tumber out of setting position by its elasticity, a dog or pawl arranged to arrest and hold the stop in an inoperative position, a wheel arranged to operate the dog or pawl to release the stop, and a time-movement arranged to drive said wheel, substantially as and for the purposes set forth.

4. The tumbler D, provided with pin d^2, in combination with the movable bar F and the spring I, attached to the latter, substantially as and for the purposes set forth.

5. In a time-lock, the tumbler D, provided with a pin, d^2, in combination with the reciprocating bar F, the spring H, arranged to hold the bar in operative position, and the stop-spring I, attached to the bar, substantially as and for the purposes set forth.

6. The bar F, in combination with the stop-spring I, attached thereto, the spring-arms G G', carrying the bar, the spring H, arranged to hold the bar in operative position, and the tumbler D, provided with the pin d^2, substantially as and for the purposes set forth.

7. The time-movement, in combination with the tumbler D, provided with a pin, d^2, the reciprocating bar F, provided with a stop-pin, *f*, the stop-spring I, carried by the bar, the lever J, the wheel C, driven by the time-movement, and the spring H, arranged to throw the bar into operative position when released from the lever, substantially as and for the purposes set forth.

8. The time-movement, in combination with the wheel C, driven thereby, the lever J, the pivoted support K, to which the lever is attached, the adjustable retracting-spring *k*, the bar F, and the actuating-spring H, arranged to throw the bar into operative position, substantially as and for the purposes set forth.

9. In a time-lock, the time-movement, in combination with the notched disk *m*, the stop-lever N, provided with a pin, *n*, and the arm n^2, the gear-wheel *c*, and the actuating-wheel C, substantially as and for the purposes set forth.

10. In a time-lock, the notched disk *m*, provided with a pin, m^2, in combination with the stop-lever N, provided with pin *n*, and the stop-slide O, constructed and arranged to operate substantially as and for the purposes set forth.

11. The notched disk *m*, in combination with the stop-lever N, the pivoted spring P, the connecting-rod Q, and the tumbler D, provided with pin d^2, substantially as and for the purposes set forth.

12. The bar F, carrying the stop-spring I, in combination with the swinging arms G G' on which the bar is mounted, and the disks g^2, to which the arms are attached, slotted as described, and whereby the pivots of the arms may be adjusted, substantially as and for the purposes set forth.

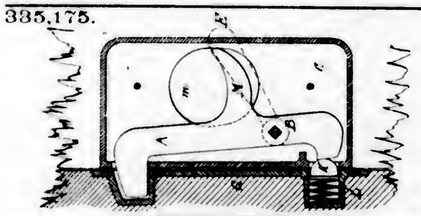
13. In a time-lock, the movable bar F, carrying the stop-spring I, in combination with its actuating-spring H, the plate *l*, and the adjustable stops L L', within the limit of which the bar is permitted to move, substantially as and for the purposes set forth.

335,175. LATCH FOR DOORS, WINDOWS, &c. CHARLES R. BLATHWAYT, Chelmarsh, Bridgenorth, County of Salop, England. Filed Nov. 9, 1885. (No model.)

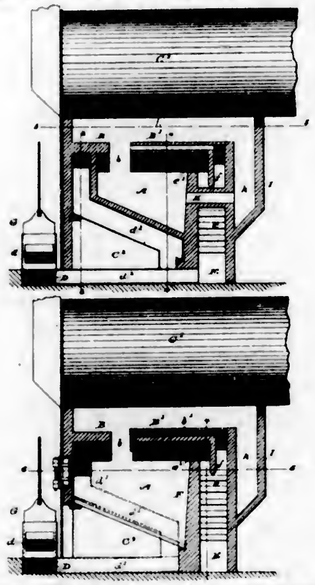
Claim.—1. A self-fastening door-latch, comprising, in combination, a lever-latch which normally remains flush with the latch-plate, a spring-knob which projects said lever-latch in the act of closing the door, and a handle for retracting said lever-latch, substantially as herein specified.

2. In a latch, the combination of a face-plate, a lever latch or latches therein maintained normally flush by a spring or weight, a spring actuating-knob either on the latch or on the opposite jamb, and a handle-spindle fitted with a pinion gearing into a rack, substantially as set forth.

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335,176. FURNACE. JEAN B. BOULICAULT and JOSEPH LEHMBEUTER, St. Louis, Mo. Filed Mar. 2, 1883. (No model.)



Claim.—1. The combination, in a furnace, of a combustion-chamber, a close arch crowning it, a draft-opening through said arch near the front of the chamber, and air-ports supplying external air to said chamber at the front and rear of the arch immediately beneath its crown, said air-ports being fed from a flue or flues traversing the length of the furnace and exposed to the heat-rays.

2. The combination, in a furnace, of a combustion-chamber, a close arch which covers it, a draft-opening through said arch, and air-ports supplying fresh air to the chamber immediately beneath the crown of said arch at front and rear, and also at each side of the chamber, said air-ports being fed from a flue or flues traversing the length of the furnace and exposed to the heat-rays therefrom.

3. The combination, in a furnace, of a combustion-chamber, a close arch which covers it, a draft-opening through said arch, air-ports opening immediately beneath the crown of the arch at front and rear, air-ports opening at the side of the chamber, and air-flues supplying external air immediately at and transversely along the draft-opening through the arch.

4. The combination, in a furnace, of a combustion-chamber, a close or imperforate arch which covers it, a draft-opening through said arch near the front of said chamber, air-flues passing longitudinally through the rear section of said arch and discharging immediately into the draft-opening, and an air-tronk traversing the length of the furnace, and heated thereby, to a connection with the rear of said flues.

5. The combination, in a furnace, of a combustion-chamber, a close or imperforate arch which covers it, a draft-opening through said arch near the front of said chamber, air-flues passing longitudinally through the rear section of said arch and discharging immediately into said draft-opening, and an ascending air-duct in the bridge-wall at the rear of the chamber, supplying said flues at its head, and having a connection at its foot with the external air.

6. The combination, in a furnace, of a combustion-chamber, a close or imperforate arch which covers it, a draft-opening through said arch near the front of said chamber, air-flues passing longitudinally through the rear section of said arch and discharging immediately into said draft-opening, and ascending air-duct in the bridge-wall at the rear of the chamber and supplying said flues at its head, and a connection at its foot with the external air, and transverse bars interrupting said duct to retard the air-current as it rises to the flues in the arch.

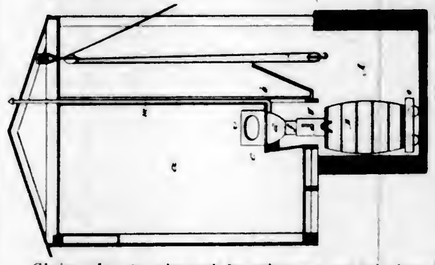
7. The combination, in a furnace, of a combustion-chamber, an arch covering it, a draft-opening through said arch, an air duct or compartment in the rear wall, an opening from said duct into the combustion-chamber immediately beneath the rear of the arch, and air-flues from said duct leading through the corresponding section of the arch to the draft-opening.

8. The combination, in a furnace, of an air-trunk laid transversely along the front of the ash-pit, and an air-flue leading therefrom centrally beneath the ash-pit, and returning upward to a discharge-port at the top and front of the combustion-chamber.

9. The combination, in a furnace, of an air-trunk laid transversely along the front of the ash-pit, a horizontal air-flue leading therefrom beneath the ash-pit to a vertical duct in the rear wall of the combustion-chamber, an air-port from said duct opening into the upper rear part of said chamber, and air-flues leading from said duct to the draft-opening or ventage.

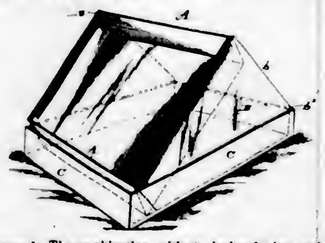
10. The combination, substantially as hereinbefore set forth, of the transverse air-trunk, its damper, the side and central flues, the rear air-duct, and the flues through the fire-arch.

335,177. CONSTRUCTION OF PRIVY-VAULTS AND APPARATUS FOR USE THEREWITH. THOMAS W. CARRICO, San Antonio, Tex. Filed Aug. 25, 1824. (No model.)



Claim.—In a dry privy-vault for outhouses, a seat and a hopper suspended therefrom and provided with a lug, in combination with a barrel and a sleeve telescopically secured over the lower portion of the hopper and provided with an L-shaped slot, which fits over and surrounds the lug on the hopper, and also having handles on the outside of the sleeve, all constructed and combined to operate substantially as described, whereby the sleeve may be raised or lowered as the barrels are removed and replaced, substantially as set forth.

335,178. PAPER BOX. HOMER W. CASE and JAMES DURHAM, South Bend, Ind. Filed June 8, 1885. (No model.)



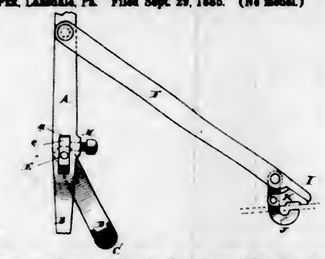
Claim.—1. The combination, with the body of a box and its cover, of a flap adapted to fold over the contents when adjusted for shipment, and support the body in an inclined position within the cover when adjusted for exhibition, substantially as set forth.

2. The combination, with the body portion of a box, of flaps hinged to the upper edges of its sides and adapted to fold over the contents when adjusted for shipment, and to fold over into contact with the outer faces of the sides and support the box in an inclined position for exhibiting the goods, substantially as set forth.

3. The combination, with the body of the box and its cover, of flaps hinged to the upper edges of its sides, the free edges of the flaps being inclined and the corners of the broad ends of the flaps cut off, whereby the body may be secured against displacement in an oblique position within the cover, substantially as set forth.

4. The combination, with the body of a box and its cover, of a flap adapted to support the body in an inclined position within the cover when adjusted for exhibition, and adapted to rest on the contents of the box when the latter is adjusted for shipment, substantially as set forth.

335,179. STRAP CLAMPING AND STRETCHING DEVICE. JORDON COOPER, Lansdale, Pa. Filed Sept. 29, 1885. (No model.)



Claim.—1. A strap-tightening device consisting of a lever having its end provided with a clamping-jaw, in combination with a hinged arm connected to the lever above the clamp and provided with a pin or finger, substantially as and for the purpose specified.

2. A strap-tightening device consisting of a lever having its end provided with a detachable clamping-jaw, in combination with a hinged arm connected to the lever above the clamp and provided with a pin or finger, substantially as and for the purpose specified.

3. The combination of lever A, hinged clamping-jaw C, and hinged arm F, having the pin or finger G, substantially as and for the purpose specified.

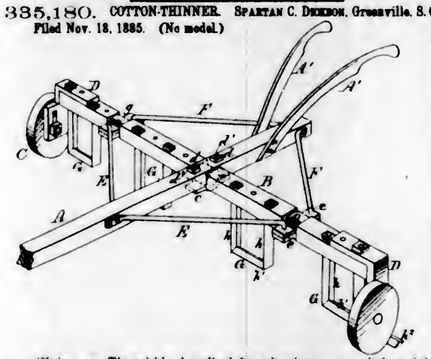
4. The combination of lever A, having the widened end B, forming a jaw, hinged clamping-jaw C, having the depression D, and hinged arm F, having the pin or finger G, substantially as and for the purpose specified.

5. The combination of lever A, having pin E, hinged clamping-jaw C, having hooks c, and hinged arm F, having the pin or finger G, substantially as and for the purpose specified.

6. A strap-tightening device consisting of a lever combined with a hinged arm, the lower free ends of which are provided with suitable means, substantially as described, for attachment to the strap ends, substantially as and for the purpose specified.

7. The combination of the lever A, having slot *a*, with the hinged jaw C, sliding block *c*, pin E, set-screw H, and hinged arm F, having means, substantially as described, for attachment to a strip, substantially as and for the purpose specified.

335,180. COTTON-THINNER. SPARTAN C. DERRON, Greenville, S. C. Filed Nov. 18, 1885. (No model.)

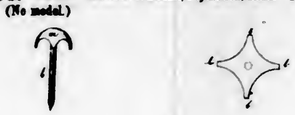


Claim.—1. The within-described farm implement, consisting of the longitudinal beam A, the cross-beam B, the front and rear braces, and the adjustable clamping-bearings, all combined and constructed as shown and described.

2. The combination of the longitudinal beam A, the cross-beam B, adjustably connected to this beam by the clamping-bearings, the front and rear braces, the reversible or double-cutting thinners, and the adjustably-connected supporting-wheels, as described.

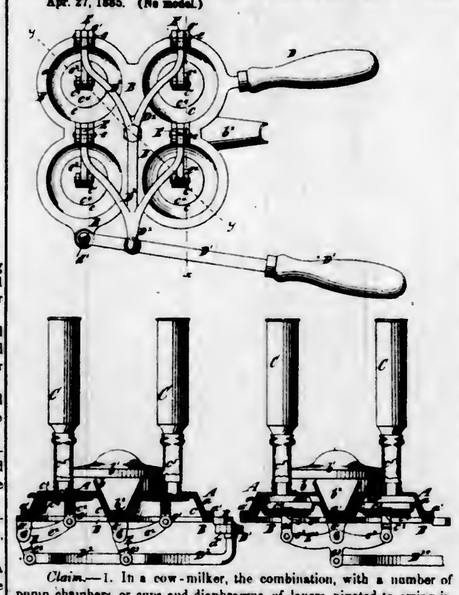
3. In combination with the beams A and B, their clamps and braces, the end thinners having their cutting-blades extended out across the tracks of the supporting-wheels C, as and for the purposes described.

335,181. NAIL. CHARLES C. DOTEN, Plymouth, Mass. Filed Aug. 27, 1885. (No model.)



Claim.—A nail having the head provided with four points turned down parallel with the shank.

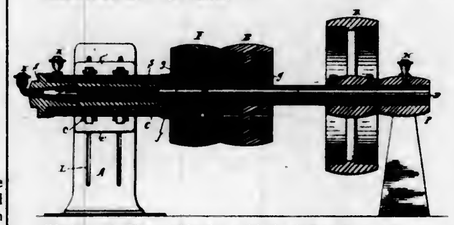
335,182. COW-MILKER. ALBERT A. DURAND, New York, N. Y. Filed Apr. 27, 1885. (No model.)



Claim.—1. In a cow-milker, the combination, with a number of pump chambers or cups and diaphragms, of levers pivoted to swing in planes transverse to the plane in which the pumps are arranged, a fixed handle attached to the apparatus, a pivoted lever-handle arranged to move in a plane parallel to the plane in which the pumps are arranged, and connections between the pivoted lever-handle and the said levers, by which the said levers will be caused to operate the diaphragms with a direct pull, substantially as herein described.

2. In a cow-milker, the combination, with a number of pump chambers or cups provided with teat-sockets, and diaphragms fitting said chambers or cups, of bell-crank levers E, pivoted to swing in planes transverse to the plane in which the pumps are arranged, a fixed handle, D, attached to the apparatus, and a movable handle, D', and connection D^2, whereby the several bell-crank levers will be operated to move the diaphragms with which they are connected, substantially as herein described.

335,183. LOOSE PULLEY. GARDNER T. EAMES, Cincinnati, Ohio. Filed Dec. 29, 1885. (No model.)



Claim.—1. The combination, with the hollow journal G and recessed box C, of the adjustable hanger A, as set forth.

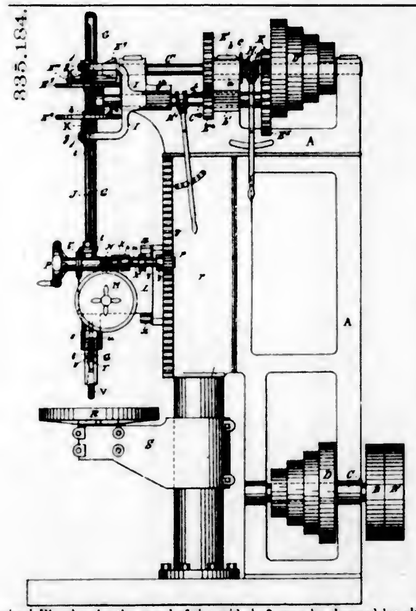
2. The combination, with the box C and bearing S, of the hollow journal G and shaft D, as set forth.

335,184. DRILLING-MACHINE. WILLIAM EVANS, Philadelphia, Pa. Filed Nov. 23, 1885. (No model.)

Claim.—1. The combination of the cone-pulley D', having the pinion E, both loose on the shaft C', with the wheel E^3, connected to the pinion E^4, and wheel E', connected by sleeve *a* to collar *c*, the shaft C^2, having a spline, whereby by means of the lugs of the clutch H being caused to engage with either pinion E or collar *c* of wheel E to tighten the same upon the shaft C', the velocity of the same may be changed, substantially as herein shown and described.

2. The clutch H on the shaft C', between the pinion E and gear-

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wheel E', whereby the speed of the said shaft may be changed by alternating the connection of the clutch with either pinion or gear-wheel, substantially as shown and described.

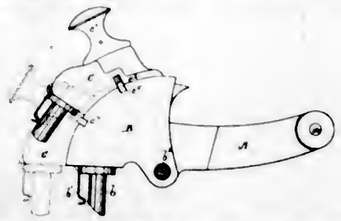
3. The counter-shaft C², operated by suitable mechanism and provided with the friction-wheel E⁸, in combination with the feed-shaft J, having disk-wheels E⁷ E⁸, supported in bearings of the arms *g g* of the bracket I, which are caused to bear on the circumference of the friction wheel E by the pressure of the helical springs K, substantially in the manner herein described, and for the purpose set forth.

4. The stud-shaft *k'*, having a pinion, *p*, in combination with the coupling *n*, and shaft *k* (both shafts having spline *m*) for imparting rotary motion to the shaft *k'* by means of the wheel P, substantially as herein shown and described.

5. The stud-shaft *k'*, having pinion *p* on the head l, rotated by means of its connection with the shaft *k*, through the spline *m*, and coupling *n*, in combination with rack *q* of column *r*, whereby the head L and feed-shaft J may be raised or lowered simultaneously, substantially as herein shown and described.

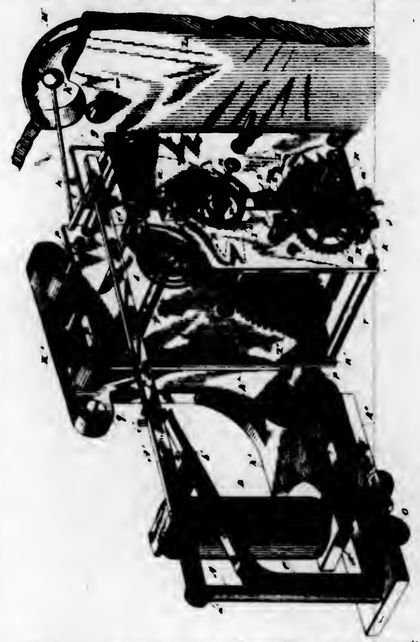
6. A drift-pin, T, constructed with a cylindrical or bolt-shaped head throughout its length of greater diameter than its parallel sides, and with an arched or curved recess, in combination with a corresponding-shaped slot in the drill-spindle, and pin *s*, having inverted cone *v*, actuated by the spring *t*, whereby the cone is caused to engage in a depression in the head of the drift-pin, substantially as herein shown and described.

335,185. **BURNISHING-TOOL HOLDER.** GEORGE A. FULLERTON, Boston, Mass., assignor of one-half to George H. P. Flagg, same place. Filed Aug. 23, 1882. (No model.)



Claim.—The combination of the main tool-holder provided with notches upon its outer surface, the auxiliary tool-holder, its shank *c*, pivoted to the main tool-holder, the stop c^3, the spring adapted to act on the stop, and the knob for operating the stop to let it into a notch in the main holder to lock the auxiliary tool in its operative or inoperative position, substantially as hereinbefore set forth.

335,186. **TIME CONTROLLING AND CORRECTING SYSTEM.** WM. F. GARDNER, Washington, D. C. Filed Mar. 31, 1885. (No model.)



Claim.—1. In a time correcting and controlling system, a controlled clock in a main line or local circuit provided with a magnet, armature-lever, and error-correcting mechanism for the hands, said lever acting, through the intervention of suitable mechanism, to give an audible signal at the instant of the control, substantially as set forth.

2. In a time controlling and correcting system, a controlled clock provided with mechanism for correcting the clock error, said clock being provided with an audible signal actuated by the correcting mechanism, so as to be automatically sounded at the instant of control, substantially as set forth.

3. In a time controlling and correcting system, a clock one or more of the hands' arbors of which are provided with a cam and are cut away to form a flat striking-surface for a lip or ledge on the cam push-point, substantially as set forth.

4. In a time controlling and correcting system, a controlled clock the hands' arbors of which have a flat striking-surface, and a cam secured to arbor in front or rear of said striking-surface, substantially as set forth.

5. In a controlled clock in a time controlling and correcting system, the combination, with the dial-frame and cam-actuating mechanism, of the hands' arbors, one or more of which are provided with a flat striking-surface, and a cam in front or rear of said flat surface, whereby the cam push-point simultaneously strikes the cam and arbor, and thereby prevents any backward or forward movement of the arbors and hands at the instant of correction, substantially as set forth.

6. A controlled clock in a time controlling and correcting system, one or more of the hands' arbors of which are provided with a sleeve, Q, having a flange, *n*, against which the friction-spring M comes in contact, substantially as set forth.

7. In a time-controlling system in which the hand of the controlled clock is set by means of a cam on its arbor actuated by a push-bar, the combination, with the front plate, of a bridge-plate in rear thereof, in which is placed the friction-spring which connects the cam to the arbor, substantially as and for the purpose se forth.

8. In a time controlling system, a clock provided with an auxiliary supporting-plate for the clock-movement, said plate having an extension provided with a slotted table to support the magnet, substantially as and for the purposeset forth.

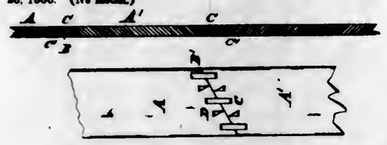
9. In a time controlling and correcting system, the combination, with the clock-movement, of the controlling and correcting mechanism, and means of simultaneously adjusting the distance of the magnet from the armature and the vertical movement of the armature-lever, substantially as and for the purpose set forth.

10. In a time controlling and correcting system, the combination, with the clock-movement, of the adjustable maguet, armature-lever, and adjustable secondary transmitter, substantially as and for the purpose set forth.

11. In a time controlling and correcting system, the combination, with the clock-movement having a hands' correcting mechanism, of an audible signal actuated by the vertical movement of the cam-bar, as set forth.

12. In a time controlling and correcting system, a clock provided with means for correcting its error, and an audible signal actuated through the intervention of suitable mechanism by the armature-lever of the correcting mechanism, as set forth.

335,187. **BELTING.** TIMOTHY GRIERAN, Buffalo, N. Y. Filed Sept. 28, 1885. (No model.)



Claim.—The combination of the belt A A', having the oblique abutting joint B B', and the staple-fastenings C, consisting of strips of metal having oblique points adapted to fold and pass each other, as described, said staple-fastenings lapping the oblique belt-joint and being placed on alternate sides of the belt, whereby an even strain is effected on the parts, substantially as and for the purposes set forth.

335,188. **BALANCED ROTARY VALVE.** JOHN S. GLENN, Chicago, Ill. Filed Nov. 6, 1885. (No model.)



Claim.—1. The combination, with casing A, having ports *g g'* and cavities *h h'*, of valve B, having ports *i i* and *j j* and cavities *q*, substantially as described, for the purpose specified.

2. The combination, with conically-bored casing A, having ports *g g'* and cavities *h h'*, of valve B, having shoulder *o*, ports *i i* and *j j*, and cavities *q*, as described.

3. The combination, with casing A, having ports *g g'* and cavities *h h'*, and with valve B, having ports *i i j j* and cavities *q*, of intermediate bearing-strips, *r*, in either casing A or valve B, all substantially as and for the purpose described.

4. The combination, with conically-bored casing A, having ports *g g'* and cavities *h h'*, of valve B, having chamfered end *p*, ports *i i* and *j j*, and cavities *q*, as described.

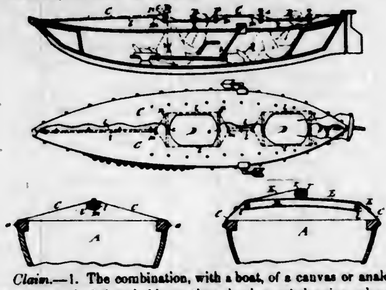
5. The combination, with casing A, of valve B, having ports *i* and *j* and cavities *q*, each pair of diametrically-opposite cavities communicating through channels *s*, all substantially as and for the purpose set forth.

335,189. **HAT AND COAT RACK.** HENRY F. GRAY, Columbus, Ohio, assignor, by direct and mesne assignments, to Levi T. Strader and Frederick W. Hawkes, both of same place. Filed June 9, 1884. (No model.)



Claim.—As a new article of manufacture, a portable hat or coat rack consisting of a rack-strip provided with means for its removable attachment to a wall or other support, and furnished with a series of vertical slots each terminating at its lower end in an inclined bottom on the rear side of the rack-strip, and removable hooks provided with side flanges the rear surfaces of which are supported throughout their entire length against the front side of the rack-strip, said hooks being each provided with a rearwardly-projecting shank constructed with a wedge-shaped slot in its lower end, substantially as set forth.

335,190. **HUNTING-BOAT.** HENRY A. HANDUM, Canandaigua, N. Y. Filed July 17, 1883. (No model.)



Claim.—1. The combination, with a boat, of a canvas or analogous cover composed of detachable sections having overlapping edges and fastening devices attached, respectively, to the inner and outer edges of the cover-sections and to the sides of the boat.

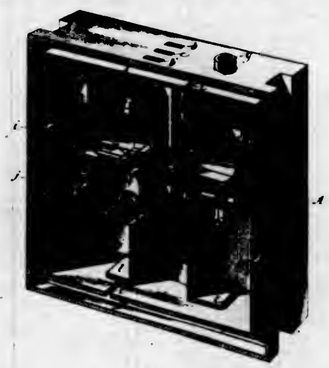
2. The combination, with a boat, of a canvas or analogous cover composed of detachable sections having overlapping edges and formed with an opening for the accommodation of the occupant of the boat, and fastening devices applied, respectively, to the inner and outer edges of the cover-sections and to the sides of the boat, substantially as set forth.

3. The combination, with a boat, of a canvas cover divided longitudinally and having overlapping edges, fastening devices applied, respectively, to the inner and outer edges of the cover-sections and to the sides of the boat, and a rope extended longitudinally through the center of the boat and fastened to the opposite ends thereof, to support the central portion of the cover, substantially as set forth.

4. The combination, with a boat, of a flexible cover divided longitudinally and having overlapping edges formed with one or more openings, fastening devices applied, respectively, to the inner and outer edges of the cover-sections and to the sides of the boat, and a rope extended under the cover and running on a fastening at one end of the boat, and having its two extremities adjustably secured to the opposite end of the boat, substantially as and for the purpose shown and set forth.

5. The combination, with a boat, of a canvas cover divided longitudinally and provided at its adjacent edges with one or more excisions and with fastening devices, two ropes extended the length of the boat underneath the cover thereof, rings encompassing the ropes and adapted to slide thereon, and spread-bars for separating the ropes at the openings of the cover, substantially as described and shown.

335,191. **STEAM-ENGINE.** LEWIS W. HARDY, Chicago, Ill., assignor to Walter C. GUNN, same place. Filed Apr. 25, 1885. (No model.)



Claim.—1. An improved steam-engine, consisting in its essential principle of an outside shell or box, A, having the steam-chambers I I', exhaust-chamber M, steam-ports *b b* and *b' b'*, *i i* and *i' i'*, and exhaust-ports c and *y*, or their equivalents, and having straight interior surfaces, on which the outer ends of the cylinders of the engine reciprocate, and being provided with heads or side plates, B B, having the bearings R R for the shaft C, the pistons F F, rigidly connected together and centrally swung on the crank-pin D within said shell A, the center lines of said pistons always being radial to the crank-pin, and the cylinders E E, having the flanges *l l*, made to slide upon the inner surfaces of the shell A, and the lugs *m m*, made to slide upon the slide-bars *e e*, said cylinders being confined between said slide-bars and said interior surfaces of the shell, and having a reciprocating motion parallel with said slide-bars and

interior surfaces and at right angles to the bore of said cylinders, caused by the compound or gyratory motion of the pistons, all constructed and arranged in manner substantially as and for the uses and purposes specified.

2. In a steam-engine, the cylinders E E, having a reciprocating motion at right angles to the bore of said cylinders, the central lines of which are always radial to the crank-pin.

3. In a steam-engine, the cylinders E E, open at both ends, and having the terminal exhaust-ports *j j*, and provided at their outer ends with flanges *l l*, having smooth sliding surfaces adapted to reciprocate on the straight interior surfaces of the shell A and operate as valves in opening and closing the ports *i i* and *i' i'*.

4. In a steam-engine, the pistons F F, rigidly connected together and centrally swung on the crank-pin D, when used in connection with the reciprocating cylinders E E, and shell A, having smooth interior surfaces, substantially as and for the uses and purposes specified.

5. In a steam-engine, the outside shell or box, A, having smooth interior surfaces, on which the outer ends of the cylinders reciprocate, said shell being provided with heads or side plates, B B, steam-chamber I I, exhaust-chamber M, and ports *i i i i*, *i' i' i' i'*, *b b'*, and *c*, substantially as and for the uses and purposes specified.

6. In a steam-engine, the combination of the cylinders E E, having a reciprocating motion at right angles to the bore of said cylinders, with the pistons F F, swung upon the crank-pin and having a compound or gyratory motion caused by the movement of the crank, substantially as specified.

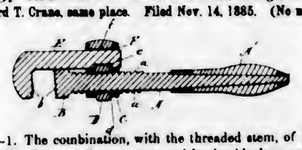
7. In a steam-engine having reciprocating cylinders and pistons therein centrally swung on a crank-pin and operating thereon within an outside shell, the adjustable slide-bars *e e*, for the uses and purposes specified.

335,192. **WRENCH.** WILLIAM A. HATHAWAY, North Kingstown, assignor to Charles H. Atwood, Apponaug, R. I. Filed June 18, 1885. (No model.)



Claim.—In a wrench, a block adapted to slide on the screw-threaded shank of the stationary jaw, and provided with a curved socket, in combination with a movable jaw connected to the block by pivoted links, and having a lug seated in the socket, and a shank provided with a spring, substantially as described.

335,193. **PIPE-WRENCH.** JAMES T. HAYDEN, Chicago, Ill., assignor to Richard T. Crane, same place. Filed Nov. 14, 1885. (No model.)



Claim.—1. The combination, with the threaded stem, of the block mounted to slide thereon, the nut mounted in the block to operate the same, and the vibrating jaw fulcrumed in the block and provided with a notch or recess to receive the nut, whereby it is held in position, substantially as and for the purposes specified.

2. The combination, with the threaded stem A, of the block F, mounted to slide thereon, the nut D, mounted on the threaded stem and arranged in a slot in the block, said nut being provided with a curved periphery, and the vibrating jaw E, arranged in a recess in the block, which recess has a rounded wall, *f*, at one side, the said jaw being provided with a notch, *e*, to receive the nut D on the opposite side, substantially as and for the purposes specified.

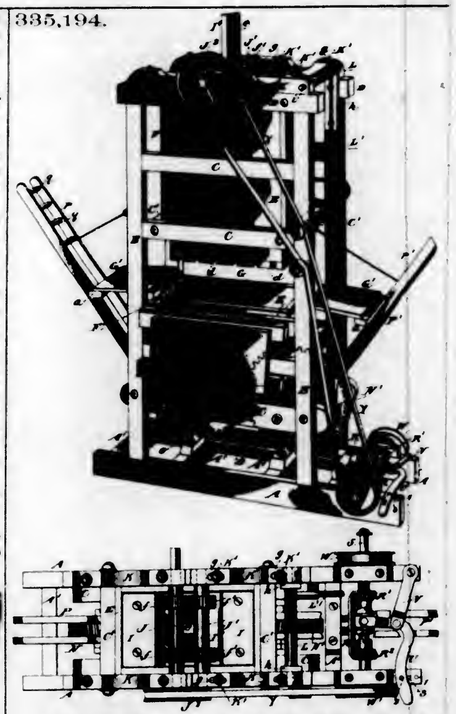
335,194. **COTTON-PRESS.** CONSTANTINE A. HEGE, Salem, N. C. Filed Oct. 14, 1885. (No model.)

Claim.—1. The combination, with the trough, of two followers therein movable toward each other, and levers for moving said followers and varying the extent of pressure, so that one will have a more extended pressure than the other, substantially as described.

2. The combination, with the trough, of a follower and an adjustable lever for adjusting the extent of pressure of said follower, substantially as described.

3. The combination of the trough, the follower, the rotating wheels, and levers P P', jointed at one end to said wheels and adapted to be detachably connected at their other end with the follower, substantially as described.

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4. The combination, with the trough and the followers therein, of the rotating wheels, levers P P', connected at one end with said wheels and adapted to have the other end connected with one of the followers, and levers M M', connected to said wheels at one end and at the opposite end with the other of said followers, substantially as described.

5. The combination, with wheels N N', of levers P P', adjustably connected therewith, and a follower, substantially as described.

6. The combination, with wheels N N', of levers M M', adjustably connected therewith at one end, and at the other end connected to follower I', substantially as described.

7. The combination, with the trough, of the wheels N N', levers P P', connected thereto, and a bar, Q, connecting the upper ends of said levers, substantially as described.

8. The combination, with the trough, of the follower I, provided with a slotted shaft, I', levers P P', and a bar, Q, passed through slots in the trough and the slot in the shaft and connecting the ends of the two levers, and means for moving said levers, substantially as described.

9. The combination, with the trough and the follower provided with the shaft I', of the friction-roller J, provided with cogs *f f*, friction-rollers J', provided with cogs *f' f'*, meshing with cogs *f f*, blocks K and K', sliding on the top sills, D, and carrying roller J', and means for moving said blocks back and forth, substantially as described.

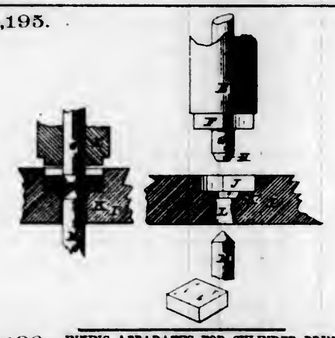
10. The combination, with the trough having therein a follower provided with a shaft, having a portion thereof reduced in size, of rollers bearing against said shaft to raise and lower the same, the said rollers on the upstroke of the follower filling in the reduced portion of the shaft, so as to be free to revolve without moving the shaft, substantially as described.

11. The combination, with the wheels N N' and levers M M' P P', connected thereto, of a worm-shaft the worm of which meshes with the teeth of said wheels, a gear-wheel to said shaft, pinions meshing with said gear-wheel, and a clutch for locking either of said pinions to regulate the direction of rotation of the shaft, substantially as described.

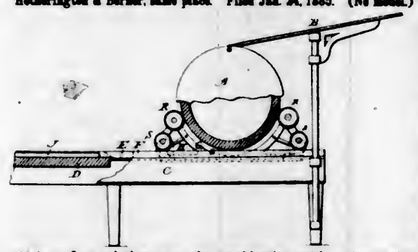
335,195. **DEVICE FOR MAKING NUTS.** WILLIAM HEBER, Buffalo, N. Y. Filed Oct. 5, 1883. (No model.)

Claim.—The male punch E, having angular section F on its under side, said section F being provided on its under side with the finger-punch G, having a tapering point, H, in combination with the die I, having angular recess J, depression K, and an aperture, L, and the punch M, having a tapering upper end, the punch M being located immediately under the aperture L, the parts being arranged and operated substantially as described, and for the purposes set forth.

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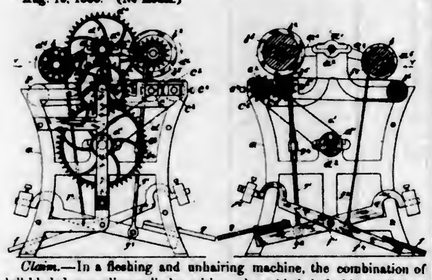


335,196. **INKING APPARATUS FOR CYLINDER PRINTING-MACHINES.** FREDERICK A. HUTHERSTON, Indianapolis, Ind., assignor to Hetherington & Berner, same place. Filed Jan. 24, 1885. (No model.)



Claim.—In a printing-press, the combination, with an impression-cylinder and inker-carriage, of propelling wheels or rollers which transmit motion to the inker-carriage from the cylinder, substantially as set forth.

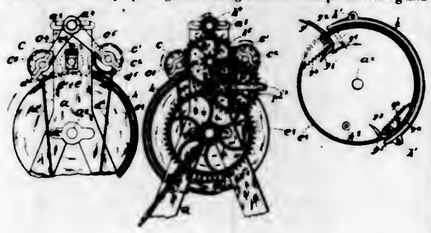
335,197. **FLESHING AND UNHAIRING MACHINE.** WILLIAM M. HOFFMAN, Buffalo, N. Y., assignor to Farrar & Trefts, same place. Filed Aug. 15, 1885. (No model.)



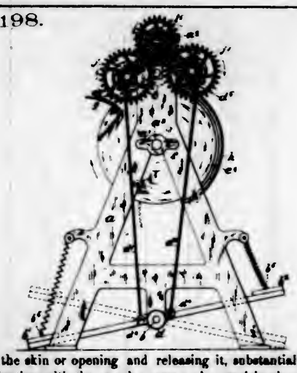
Claim.—In a fleshing and unhairing machine, the combination of a dull-bladed spreading-cylinder with a sharp-bladed fleshing-cylinder, an endless apron and feeding-rollers located below them, the gearing for giving them their rotary movements, and independent foot-steps and connections for operating the spreading and fleshing cylinders, substantially as described.

335,198. **PUTTING-OUT AND STRIKING-OUT MACHINE FOR HIDES OR SKINS.** WILLIAM M. HOFFMAN, Buffalo, N. Y., assignor to Farrar & Trefts, same place. Filed Aug. 27, 1885. (No model.)

Claim.—1. In a petting-out and striking-out machine, a hollow drum provided with two openings to receive the skin to be operated on, and two automatically opening and closing doors or clamps for closing and



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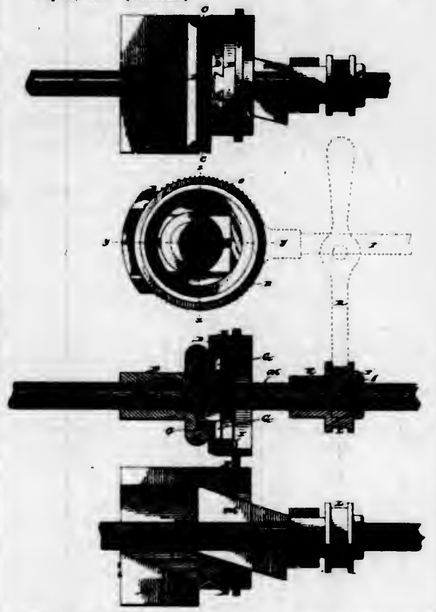


holding the skin or opening and releasing it, substantially as specified, in combination with the angular arms and a semicircular rim for closing the doors at the proper times, and a spring for opening the same, and the putting-out cylinders and operating-gearing, substantially as and for the purpose specified.

2. In a putting-out and striking-out machine, the combination of a hollow drum set in suitable bearings in the frame and having an opening to receive a portion of the skin, and a pivoted door provided with an angular arm and a spring for holding said door open, in combination with a semicircular ring or bar, A, for closing it at the required times, substantially as described.

3. In a putting-out and striking-out machine, a hollow drum having an automatically opening and closing door pivoted to the drum, and provided with an angular arm, g^2 g^3, and a spring, g^4, in combination with the semicircular bar secured rigidly to the frame, a squeezing-roller, one or more putting-out cylinders, and mechanism, substantially as specified, for moving them to or from the drum, for the purposes described.

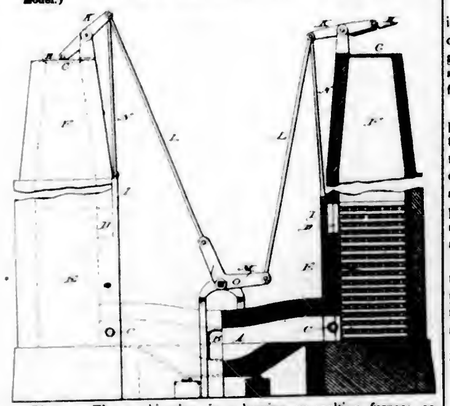
335,199. **VALVE-GEAR.** GEORGE L. HOLMES, Holloway, Mich. Filed May 16, 1885. (No model.)



Claim.—The combination of the crank-shaft, the head secured thereto and having the grooved way C across its face, the eccentric collar D, having a tongue fitting in way C, to permit the collar to slide across the head, and the grooved ways G on its outer face, at right angles to way C, the ring E, for the eccentric strap, having tongues F, that work in ways G, to permit the ring to slide across the collar, and screws I, bearing in ways G, to clamp the ring to the collar, and the sliding collar K on the shaft, having arms M, provided with parallel diagonal outer

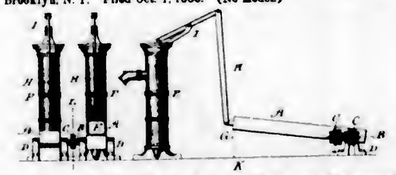
edges, and working in openings in the head and collar D, to shift the collar on the head, substantially as described.

335,200. HEATING AND MELTING FURNACE. THOMAS JAMES and CHARLES M. SCHWAB, Braddock, Pa. Filed Mar. 11, 1885. (No model.)



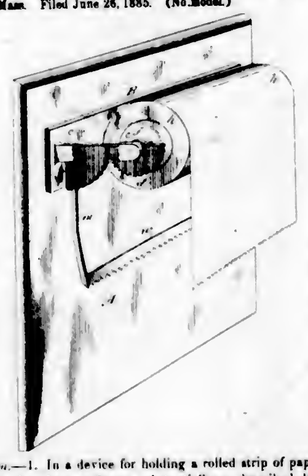
Claim.—The combination, in a heating or melting furnace, as shown, with a working-hearth, A, of gas-pipes C C', regenerators E E, located in side chimneys F F, doors I I, covers H H, and connecting mechanism, as described, whereby the air and products of combustion may be reversed in their passage through the regenerators and furnace-hearth A.

335,201. GEARING FOR OPERATING PUMPS. ALFRED JEFFERY, Brooklyn, N. Y. Filed Oct. 1, 1885. (No model.)



Claim.—The combination of two oscillating treadles connected through the medium of the shafts B B and gear-wheels C C, substantially as set forth.

335,202. PAPER-ROLL HOLDER AND CUTTER. CHARLES C. JOHNSON, Springfield, Vt., assignor to the Morgan Envelope Company, Springfield, Mass. Filed June 26, 1885. (No model.)



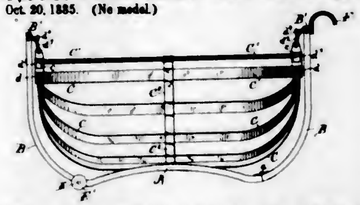
Claim.—1. In a device for holding a rolled strip of paper and cutting pieces therefrom, a frame, substantially as described, having arms thereon, a roll of paper hung to rotate between said arms, a knife having a pivotal connection between the latter, and mechanism, substantially as described, connecting said arms and knife with said roll, whereby by pulling the end of said strip and turning the roll the knife is swung against the roll, and by the return gravity movement of the knife the roll is given a rotary movement, combined and operating substantially as set forth.

2. The frame B, having the arms *e e'*, the geared segment *d*, having the projections *e* and *o* thereon, the removable pivot *x*, the knife *w*, connected to arms, having a pivotal connection with said frame, and the geared segment *y*, attached to one of said arms and engaging with the segment *d*, combined with a rolled strip of paper, substantially as set forth.

3. A roll-holder and paper-severing device for cutting or tearing pieces from a strip of paper, consisting of a frame having two horizontally-projecting arms thereon, on one of which is pivoted a geared segment having thereon a center to engage with the center piece of a roll of paper, and having on its second arm a removable locking-pivot, substantially as described, to support one end of said roll, combined with a paper-cutting knife pivoted to vibrate between said arms, having thereon a geared segment engaging with said first-named segment, substantially as set forth.

4. A roll-holding frame, substantially as described, having arms thereon, between which a roll of paper is pivoted, combined with a paper-severing knife having a geared connection with said roll, whereby the rotary motion of the roll imparts a vibratory motion to the knife, and vice versa, substantially as set forth.

335,203. FOLDING CRADLE. CHAS. P. KIMBA, Chicago, Ill. Filed Oct. 20, 1885. (No model.)



Claim.—1. A cradle-body consisting in a series of folding longitudinal ribs or slats pivoted together at their ends, adapted to fold together and to form a cradle-shaped body when extended, substantially as specified.

2. The combination of end or suspension pieces D with two series of folding longitudinal slats, C, pivoted to said end pieces at two different points, substantially as specified.

3. The combination of end pieces, D, with a series of folding longitudinal ribs or slats, C, and two folding frame-ribs, C', pivoted to said end pieces, substantially as specified.

4. The combination, with a cradle-body consisting of a series of folding longitudinal ribs or slats, C, pivoted together at their ends, of a folding frame or support therefor, consisting of a bottom and folding uprights pivoted thereto, substantially as specified.

5. The combination, with suitable end or suspension pieces, of a series of folding longitudinal bent ribs or slats pivoted to said end pieces and a flexible connection or strap between said folding ribs or slats, substantially as specified.

6. A cradle-body consisting of a series of folding longitudinal ribs or slats pivoted together at their ends, and having a flexible connection or strap between them, substantially as specified.

7. The combination of end pieces, D, with a series of folding longitudinal ribs or slats, C, folding frame-ribs C', and a flexible connection between said frame-ribs C' and ribs C, to support the latter from the former, substantially as specified.

8. The combination, with a cradle-body consisting in a series of folding longitudinal bent ribs or slats pivoted together at their ends, said slats or ribs being adapted to shut or fold one inside another, of a folding frame or support therefor, consisting of a bottom and folding uprights pivoted thereto within the line of support at each end of said cradle-body, so that the weight of the cradle will hold the folding uprights extended, substantially as specified.

9. The combination, with a cradle-body and a frame or support therefor provided with a jointed or folding upright, the joint between said frame or support and its folding upright being provided with a recess for attaching the wheels by simply opening or extending the upright, substantially as specified.

10. The combination, with frame-piece A and upright B, pivoted thereto, of the wheels and a socket or bearing at the joint between said upright and frame-piece for the axle of the wheels, said socket or bearing being adapted to be closed to secure the axle in place by opening or extending said upright, substantially as specified.

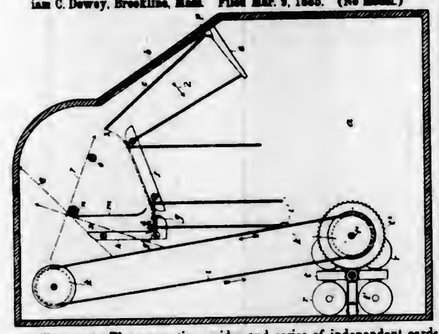
11. A folding cradle-frame having wheels removably attached thereto at the joint between the folding parts of said frame by opening or closing the same, the socket or recess for attachment of said wheels being in part formed in or secured to each of the folding parts of said frame, substantially as specified.

12. The combination, with end pieces, D, provided with arms *d d²*, of two series folding longitudinal bent or curved ribs C and folding frame-ribs C', said ribs C' being pivoted to said arms *d²*, and said series of ribs C being pivoted to said arms *d*, said ribs C and C' being adapted to fold upward together, substantially as specified.

13. The combination, with end pieces, D, provided with arms *d* and *d²*, of folding longitudinal bent or curved ribs C, and folding frame-ribs C', and a flexible strap, C², or connection between said slats C and frame-ribs C', substantially as specified.

14. The combination, with a cradle-body, of a folding supporting-frame therefor, consisting of the bottom rails, A A, folding uprights B B B' B', said parts B B' being hinged or pivoted together at their upper ends, and a folding spreader or brace, *b*, made in two parts pivoted together, substantially as specified.

335,204. CARD OR SHEET TRANSFERRING APPARATUS. THOS. M. KIMBLY, Cambridge, assignor to Walter S. Hayward, Lynn, and William C. Dewey, Brookline, Mass. Filed Mar. 9, 1885. (No model.)



Claim.—1. The supporting-guides and series of independent cards or sheets supported thereon, combined with a transferring device, whereby the cards are consecutively transferred from one to the other end of the series, substantially as described.

2. The box or frame-work provided with inclined guides, combined with a series of cards or sheets supported on the said guides and a transferring device, whereby the cards are consecutively transferred from the lower to the higher end of the said guides, substantially as described.

3. The box or frame-work provided with inclined guides to receive the lower edges of cards or sheets, and guides to receive projections from the upper edges of the said cards or sheets, combined with the transferring device to raise a card or sheet from the said guides and supports to receive a card when thus raised and direct the same to the opposite end of the guides from which it was raised, substantially as described.

4. The box or frame-work provided with supporting-guides for cards or sheets, combined with a transferring device, consisting of an endless belt provided with a card-engaging projection, and supports *n* and *o*, which receive the card or sheet from the engaging device, substantially as described.

5. The box or frame-work provided with guides *e*, *f*, *g*, and *m*, and supports *n* and *o*, combined with the cards or sheets having projections at their ends and the transferring device co-operating therewith, substantially as described.

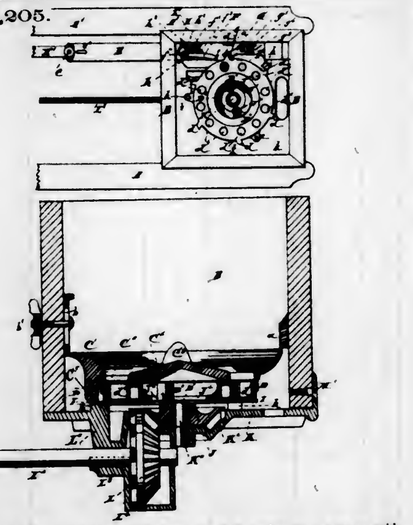
6. The box or frame-work provided with card or sheet supporting guides, combined with the transferring device, whereby the cards or sheets are engaged and lifted, one at a time, and the supports over which the said cards are turned and dropped from the transferring device, and the banter upon which the cards strike as they fall from the said support, substantially as described.

7. A series of cards provided with projections at their corners, combined with guides to receive the said projections and support the cards, and a transferring device to remove a card from one end of the series and transfer it to the other end, substantially as described.

335,205. CORN-PLANTER. LEONARD B. BERRIEN, Peoria, Ill., assignor to the Avery Planter Company, same place. Filed July 31, 1885. (No model.)

Claim.—1. The combination, with a dropper-plate, D, of a corn-planter, of the sliding bar E, carrying the three pivoted pawls, the pawl F, advancing the dropper-plate, the pawl H, acting as a stop to the plate in the advance movement of the sliding bar, and the pawl G, acting as a stop to the plate when the said bar is retracted, substantially as described.

2. The combination, with the dropper-plate D and a beveled pinion, J, located below the said plate and connected therewith, of a sliding bar carrying three pivoted pawls, the pawl F, advancing the dropper-plate



when the sliding bar is advanced, the pawl H, acting as a stop on said dropper-plate when the latter is so advanced, and the pawl G, acting as a stop on said dropper-plate when the bar is retracted, substantially as described.

3. The combination, with the dropper-plate D, having notches or projections *d* on its periphery, of a stationary plate, I, thereunder, a beveled pinion, J, located below the stationary plate and provided with a vertical pin extending through the latter and engaging the dropper-plate, and the sliding bar having a pawl for engaging the periphery of the dropper-plate, substantially as described.

4. The combination, with the dropper-plate D, having notches or projections *d* on its periphery, of a beveled pinion located beneath and connected with the dropper-plate and a sliding bar having a pawl for engaging the periphery of the dropper-plate, to rotate the latter and transmit motion to the pinion, substantially as described.

5. The combination of two seed-boxes, a dropper-plate in each seed-box, beveled pinions located beneath and connected with the seed-plates, respectively, a shaft having a beveled gear at each end, respectively, engaging the pinions, and a sliding pawl-bar rotating the dropper-plate, so that both droppers are simultaneously advanced when the sliding bar is moved to advance one of the said plates, substantially as described.

6. A cross-shaft running from seed-box to seed-box, and intermediate devices connecting the drop-plate in each seed-box with a cross-shaft, and a sliding bar for operating the drop-plates simultaneously, substantially as and for the purpose specified.

7. A sliding bar carrying at each end actuating-pawls arranged to engage the periphery of and move the drop-plates alternately, one at a time, substantially as specified.

8. The sliding bar E, carrying three pivoted pawls, F, G, and H, in combination with the dropper-plate D, having notches or projections *d* on its periphery, substantially as described.

335,206. BORING-TOOL. JOHN BERKENPAD, Mansfield, Mass. Filed Nov. 2, 1885. (No model.)



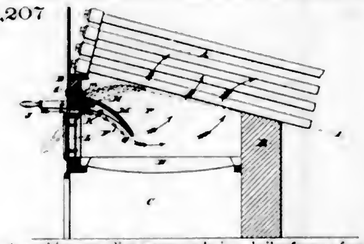
Claim.—The combination of the stock A, provided with the hole *e* and the two dovetailed grooves *a* opening into it, as described, with the dovetailed blades or cutters B, arranged in such grooves, and with the screw C, the beveled nut D, and washer E, disposed within the said hole, and with respect to the cutters, as set forth, all being substantially as represented.

335,207. BOILER-FURNACE. ETIENNE BOILEAU, St. Louis, Mo. Filed Apr. 6, 1885. (No model.)

Claim.—1. A partition extending transversely in a boiler-furnace from side to side thereof, hinged at the front edge, so that the free edge may be thrown upward, for the purpose set forth.

2. A partition extending transversely in a boiler-furnace from side to side thereof, secured to a pintle-bar turned by an arm extending from the boiler-setting.

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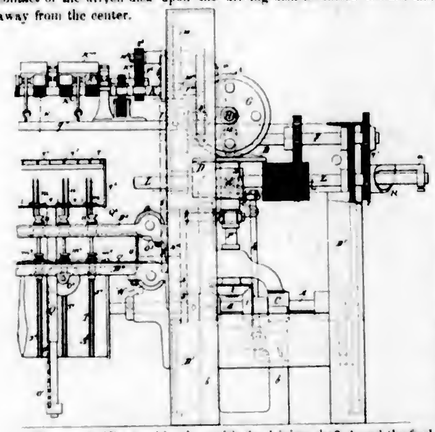


3. A partition extending transversely in a boiler-furnace from side to side thereof, with aperture between the partition and the furnace bottom or grate, and having ribs upon its front side, substantially as and for the purposes set forth.

4. The combination of two hinged partition-plates extending transversely in a boiler-furnace and an overlapping hinged plate breaking the joint or gap between the plates, substantially as and for the purpose set forth.

335,208. SPINNING-MACHINE. JEAN J. BOURCART, Zurich, Switzerland. Filed Nov. 20, 1879. Patented in France Feb. 25, 1879, No. 129,299; in England Mar. 4, 1879; No. 870; in Belgium Apr. 11, 1879, No. 47,911; in Italy Sept. 30, 1879, XXII, 198, and in Austria May 24, 1880, No. 34,745.

Brief.—To secure uniform tension of the thread during spinning, a variable motion is imparted to the drawing-roll shaft to correspond with the traverse of the ring-rail by means of a differential gear and a pair of friction-disks, one of which is carried on a swinging frame and rests against a cam, by which, during the formation of the cop, the point of contact of the driven disk upon the driving-disk is shifted toward and away from the center.



Claim.—1. The combination, with the driving-shaft A and the feed-roller shaft, of a differential wheel upon said feed-roll shaft, consisting of the gear a^3, shell a', intermediate gears, i^3, and sleeve for carrying said intermediate gears, a swinging frame, a shaft, P', carried thereby, a disk, B, on shaft P', gears between the shaft P' and shaft A, a worm-shaft, H, provided with a worm and a disk in frictional contact with the disk B, a worm-gear upon the sleeve carrying said intermediate gears, and a train of gears between the shaft A and the shell of the differential wheel, substantially as set forth.

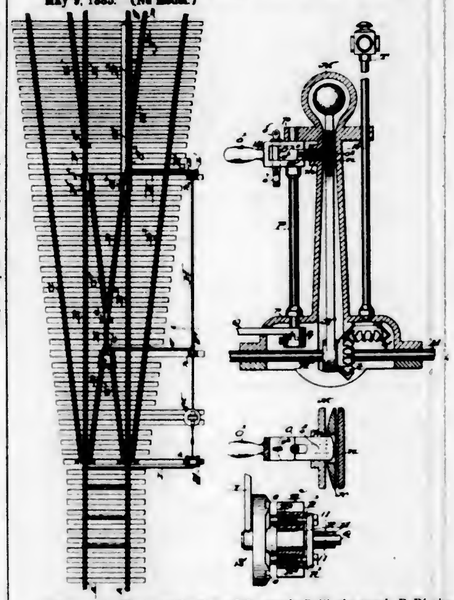
2. The combination, with the feed-roll shaft and the driving-shaft, of a differential wheel, V, consisting of a shell, the gear a^3, gears intermediate said shell and gear a^3, and sleeve a^3, carrying said intermediate gears, gearing between the shell and the driving-shaft, and the swinging frame C, shaft P', gears 1 2, shaft H, friction-disks, and gear-connections, substantially as described, between the shaft H and the sleeve a^3 of the wheel, substantially as set forth.

3. The combination, with the driving-shaft A, spindles and spindle-driving appliances, substantially as described, ring-rail, and vertical guides and supports and feed-rolls, of a cam, D, devices, substantially as described, for rotating it, lever *h*, connected to the ring-rail supports, differential wheel V, having a shell, sleeve, and intermediate gears, gears between the shell of the wheel and the shaft A, swinging frame C, bearing upon the cam D, and carrying a shaft provided with a friction-disk, B, and worm-shaft H, gearing with the sleeve of the differential wheel and carrying a disk in frictional contact with the disk B, substantially as set forth.

4. The combination, with the drawing-roll shaft, the movable ring-rail, and shaft A, of a cam, D, and devices for turning the same, lever bearing on the end of said cam, swinging frame C, bearing on the periphery of the cam, and connections, substantially as described, between the lever and the ring-rail supports and between the shaft A and the drawing-roll shaft, substantially as set forth.

5. The combination of the movable ring-rail, lever A, and intermediate connections, whereby the rail is raised and lowered by the movements of the lever, and sliding shaft L, arm *a*, cam D, shaft F, devices for rotating said shaft, cam-sleeve R, and gears 14 15 r r', substantially as set forth.

335,209. RAILWAY-SWITCH. ANGUS BOYD, Moberly, Mo. Filed May 9, 1885. (No model.)



Claim.—1. The combination of the track C C', the track B B', the switch-rails A A, the movable rail F, the rods K L, the rock-shaft H, the switch-stand M, open at its sides *m' m'*, and the lever N, substantially as described.

2. The switch-stand M, open at its sides *m' m'*, in combination with the rock-shaft H and the lever N, substantially as described.

3. The combination of the switch-stand M, the rock-shaft H, the lever N, and the locking-bar O, substantially as described.

4. The combination of the switch-stand M, the lever N, the locking-bar O, having the shoulder *o'*, and the pivoted lever O', having the shoulder *o*, substantially as described.

5. The combination of the lever O', the switch-stand M, the shaft P, the shoulder *p'*, the tie-rod Q, the bolts R', the rock-shaft H, and the slotted disk S, substantially as described.

6. The combination of the rock-shaft H, the box R^3, the bolts R', the springs R^3, and the slotted disk S, substantially as described.

335,210. BOOK-SEWING MACHINE. AUGUST BEHRENS, Leipsic, Germany. Filed Dec. 17, 1884. (No model.)

Claim.—1. The combination of grooved lever 6, adapted to receive vibrating motion, with rods 14, having noses which enter the groove of lever, and with the knives 4 5, which receive reciprocating motion from rods 14, substantially as specified.

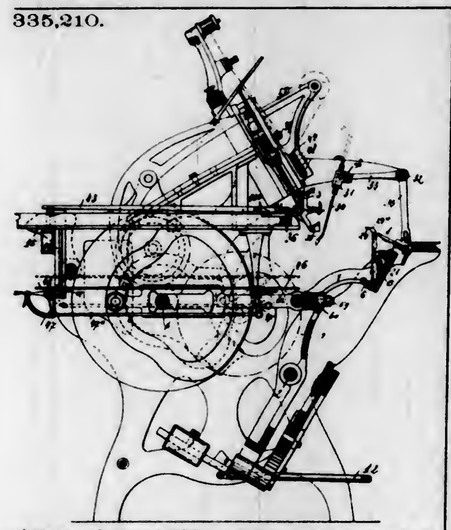
2. In combination with the needles 16 of a book-binding machine, the guiding-plates 16^a, with guide-holes 17, tapering on their upper ends, and contracted openings 18 at the side next the shuttle-way, in the manner and for the purpose substantially as described.

3. The combination of the levers 21, lever 20, with roller 20^x, and projection 19 on disk 10, with the needles 16 of a book-binding machine, in the manner and for the purpose substantially as set forth.

4. The combination of hook 29, having projection 29^x, with knife 4, lifter 28, and swinging arm 1, constructed substantially as described, so that the hook holds the thread tight during the cutting operation, as set forth.

5. The combination of the swinging arm 1, bell-crank 33, rod or shaft 30^x, lever 30, lever 33^x, lever 39, with cam-shaped groove 33^a,

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rod 57, eccentric 51, and driving-shaft *a*, arranged to operate in the manner and for the purpose substantially as described.

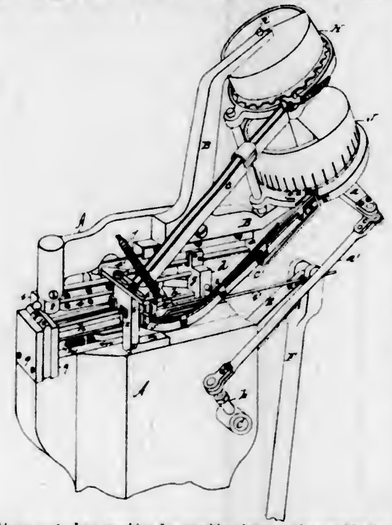
6. The combination of rod 37, pivoted to links 37^x, with the lever 39, having projection 38, adapted to move the rod 37 in one direction, and with spring 40, adapted to move the rod in the opposite direction substantially as specified.

7. In combination with the lever 39, the lever 41, with hook 41^x on its end, and the treadle 42, in the manner and for the purpose substantially as set forth.

8. The combination of blocks 36, levers 43, and weight 44 with disk-plate 45, rod 52, and lever 39, arranged to operate in the manner and for the purpose substantially as described.

9. In combination with the swinging-arm 1, the abutment-pieces 58, attached to the main frame, and the spring-bolt 59 in the end of the connecting-rod 62, in the manner and for the purpose substantially as described and set forth.

335,211. MACHINE FOR ATTACHING BUTTONS. CORNELIUS J. BROSNAN, Springfield, Mass., assignor of two-thirds to H. A. Gibbs and W. E. Wright, both of same place. Filed Nov. 9, 1885. (No model.)



Claim.—1. In a machine for attaching buttons, the combination, with the button-reservoir H and the button-chute *c* leading therefrom, of the wheel *y*, located at the end of said chute and having radial slots in its periphery to engage with the shanks of the buttons as they escape from said chute, the button-trough *i*, to receive the buttons from said wheel, and a reciprocating pawl-carrier having a pawl thereon engaging with said wheel, whereby the latter is intermittently rotated, substantially as set forth.

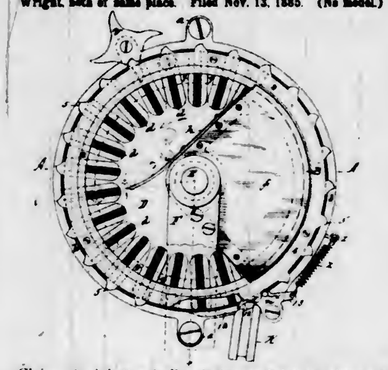
2. The button-carrying wheel *y'*, provided with ratchet-teeth, substantially as described, and having the pins 2 in its periphery, the pawl-carrier *f*, having the pawl 4 pivoted thereto, the bar *e'*, having a reciprocating movement at the end of said carrier, the spring 7, and the pivoted stop-arm *w*, combined and operating substantially as set forth.

3. In combination, the button-reservoir H, the chute *c*, to convey buttons from the latter, the wheel *y*, located at the end of said chute and having radial slots in its periphery to engage with the shanks of the buttons as they escape from said chute, the button-trough *i*, to receive buttons from said wheel, the button-plunger g^8, having a reciprocating motion in said trough *i*, and the reciprocating pawl-carrier *f*, having a pawl thereon engaging with said wheel, substantially as set forth.

4. The tack-trough *h*, the chute *c'*, connected to the side of the latter, the separator *o*, having on its opposite edges, substantially as described, a short arm and a hook, and pivoted to the slide *n*, the spring *m*, bearing on said arm, the pin 23, fixed in the side of the trough *h* in the path of the movement of said hook, and means, substantially as described, for imparting a horizontal reciprocating movement to said slide, combined and operating substantially as set forth.

5. The button-trough *i*, the laterally-moving button-holder 15, passing through said trough opposite the side of the anvil, the spring 16, to press the holder toward the latter, and the anvil 8, combined and operating substantially as set forth.

335,212. BUTTON-FEEDING DEVICE. CORNELIUS J. BROSNAN, Springfield, Mass., assignor of two-thirds to H. A. Gibbs and W. E. Wright, both of same place. Filed Nov. 13, 1885. (No model.)



Claim.—1. A button-feeding device consisting of a hopper having a bottom of disk form and cylindrical sides, said bottom having the ring *c* on its upper side near its border, having therethrough in the direction of the plane of the bottom a series of openings, *o*, and having in its periphery, partly under said openings, a series of radial slots whose borders are depressed and inclined from their inner ends to the edge of the bottom, a button-guide, *k*, fixed in a pending position in the hopper at right angles to the bottom thereof and terminating above the latter, and the shaft E, on which the hopper is supported and rotates, combined with the circular base A, provided with the upstanding border *b*, within which the hopper rotates, having an opening therein for the exit of the buttons, substantially as set forth.

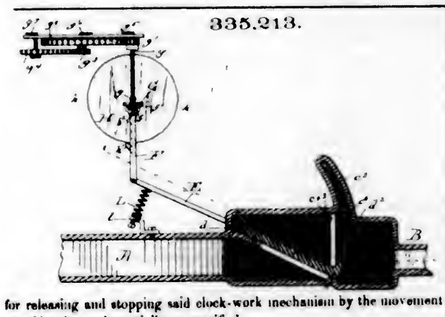
2. In combination with the circular rotating button-hopper, substantially as described, having the groove *c* in the periphery of the bottom thereof, and the series of teeth 5, projecting from its outer side, the base A', within which the hopper rotates, the button-ejector *n*, pivoted to said base, and having a vibratory motion in said slot by its engagement with said teeth and by the action of a retracting-spring, substantially as described, all as set forth.

3. In combination with the circular rotating button-hopper having the radial slots *d* in the bottom thereof around its border, and the series of openings *o* over said slots, the base A, within which the hopper rotates, and the clearer-wheel *r*, pivoted on said base and having arms thereon engaging with said openings *o*, substantially as set forth.

335,213. REGISTERING-VALVE FOR WATER-SUPPLY PIPES. HAROLD P. BROWN, Chicago, Ill. Filed Jan. 20, 1885. (No model.)

Claim.—1. The combination, with enlarged valve-chamber C, of registering-valve D, mounted therein, a clock-work mechanism, a moving surface operated by said clock-work mechanism, different parts of which move at different speeds, a wheel or roller reciprocated by the movement of said valve in contact with said moving surface, and means

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for releasing and stopping said clock-work mechanism by the movement of said valve, substantially as specified.

2. The measuring device consisting of a wheel or roller reciprocated in contact with a surface different parts of which move at different speeds, and means for stopping and releasing said moving surface, substantially as specified.

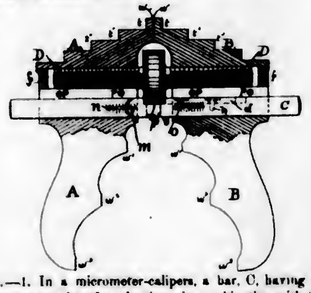
3. The combination of pipe A, outlet B, enlarged chamber C, valve D, operating-stem E, rod F, wheel G, reciprocating on shaft *g*, revolving disk H, teeth h, and gears g^4 g^5 g^7, substantially as specified.

4. The combination of pipe A, outlet B, enlarged valve-chamber C, having inclined valve-seat *c*, valve D, provided with extension d^2, and extension c^2 on said valve-chamber, substantially as specified.

5. The combination of pipe A, outlet B, enlarged valve-chamber C, having inclined valve-seat *c*, valve D, provided with extension d^2, and extension c^2 on said valve-chamber, and mechanism for registering the product of the factors, the extent to which and time during which said valve is raised, substantially as specified.

6. The combination of a reciprocating wheel or roller operated by a valve with a revolving disk over the surface of which said wheel is reciprocated, and mechanism for registering the number of revolutions of said wheel, and means for stopping and releasing said revolving disk by the movement of the valve, substantially as specified.

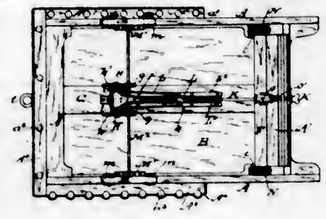
335,214. MICROMETER-CALIPERS. EDWARD S. COBB, Terre Haute, Ind. Filed Feb. 24, 1885. (No model.)



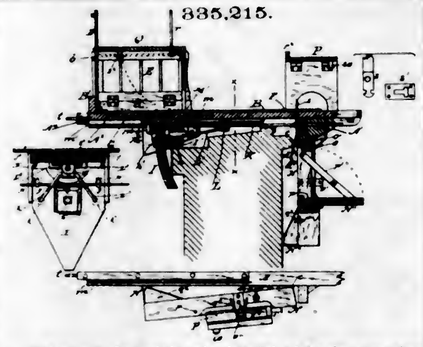
Claim.—1. In a micrometer-calipers, a bar, C, having upon its surface one or more series of graduations, in combination with the graduated thumb-wheel F on the actuating-screw D, and the slide *d*, as shown and described.

2. In a micrometer-calipers, the combination of the screw D, having graduated thumb-wheel F, the bar C, having graduations *o*, for external dimensions, and graduations *n*, for internal dimensions, with the legs A and B, having surfaces between which external dimensions may be measured, and surfaces between which internal dimensions may be measured, as and for the purpose set forth.

335,215. WINDOW-CLEANING CHAIR. ANNA DORNTZER, New York, N. Y. Filed Jan. 21, 1885. (No model.)



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Claim.—1. In a window-cleaning chair of the character substantially as herein specified, the combination, with an adjustable clamp or clamping-block, as I, adapted and arranged to bear against the outer edge of a window-sill, of a stop, as I', fixed on said clamp, and stop-adjusting devices, substantially as and for the purpose set forth.

2. In a window-cleaning chair, the combination, with an adjustable sliding clamping-block, as I, and grooved bar, as G, of a clamp-frame, as H H, having channeled head adapted to clamp the edges of said bar, all arranged and operating as set forth.

3. In a window-cleaning chair of the character substantially as herein specified, the combination, with the sliding clamp, as I, clamp-adjusting screw, as K, and guide-bars, as L^3, of a transversely-perforated traveling nut, as L, bent rod, as L', and having side flanges, K^3, and nuts, as *k'*, substantially as herein shown and described, whereby said clamp and screw are connected, as set forth.

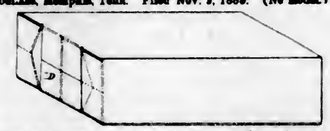
4. In a window-cleaning chair of the character substantially as herein shown and described, and provided with mortise-plates *s'*, of auxiliary step, as P, having legs hinged thereto, and provided with tenon-plates, as *s*, substantially as and for the purpose described.

5. In a window-cleaning chair of the character substantially as herein specified, the combination, with a step, as N', and step-frame, as N, provided with rigid perforated lug, as *v'*, elastic perforated lug, as v^2, and rigid stop, as v^3, of auxiliary step, as P, provided with pins *v*, and fastening device, as *w*, substantially as herein shown and described, whereby said frame and steps may be held packed together, as set forth.

6. The combination, with a central clamp adapted to traverse upon the under side of a window-cleaning chair in a direction from front to rear, and to engage against the outer face of a window-sill, and which is provided with mechanism adapted to produce an adjustment of said clamp, of inclined-faced sliding blocks provided with attached racks traversing longitudinally upon the sides of the chair-platform to rest upon the window-sill, and a transverse connecting-rod connecting said blocks with each other and the central clamp, so that the blocks may be adjusted forward or rearward relatively to the clamp, and so that the three shall move in unison, substantially in the manner and for the purpose herein set forth.

7. The combination, with the chair-platform and side and rear guards, of an auxiliary step adapted to be fixed on the rear portion of said platform, as and for the purposes substantially as set forth.

335,216. METALLIC WRAPPING FOR COTTON, &c. ADDISON H. DOUGLASS, Memphis, Tenn. Filed Nov. 9, 1885. (No model.)

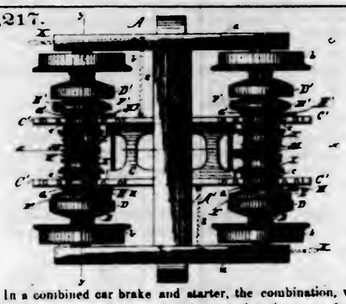


Claim.—A wrapper for bales of cotton or other substances, consisting of sheet-iron or other metallic substances, made into slips, as herein described.

335,217. CAR STARTER AND BRAKE. JOHN C. ELLIOTT, Rittman, Ohio. Filed Apr. 9, 1885. (No model.)

Claim.—1. In a combined car brake and starter, the combination, with an axle, two collars turning freely and sliding together thereon, a frame lying between the wheels and provided with bearings in which the collars rotate, and detents connected to said frame and which when acting allow the collars to rotate in opposite directions only, of a coiled spring uniting the inner ends of the collars, and two brake-clutches adapted to lock the outer ends of the collars with the axle, the one clutch being disengaged by the same motion that engages the other, substantially as specified.

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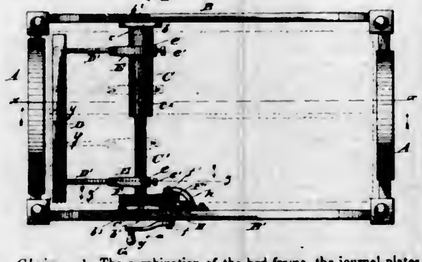


2. In a combined car brake and starter, the combination, with an axle, two collars turning freely and sliding together thereon, a frame lying between the wheels and provided with bearings in which the collars rotate, and detents connected to said frame and which when acting allow the collars to rotate in opposite directions only, of a coiled spring uniting the inner ends of the collars, two brake-disks, one on the outer end of each collar, and mechanism, substantially as described, by which one brake-disk is engaged against a disk secured to the axle by the same motion that disengages the other brake-disk from another disk secured to the axle, substantially as specified.

3. In a combined car brake and starter, the combination, with the axle B, wheels *b*, and disks D D', of the frame C, coiled spring M, collars E E', arranged to turn freely on the axle in bearings secured to the frame C, and to slide with said frame upon the axle, and controlled by detents attached to said frame, which detents when acting permit them to rotate in opposite directions only, and the disks F F', respectively secured to the outer ends of the collars E E', substantially as specified.

4. In a combined car starter and brake, the combination, with the truck A and the frame C, moving laterally thereon and having the pawl-arms H H' pivoted upon it, of the axles B B, wheels *b b*, disks D D', springs M M, and collars E E', provided, respectively, with the disks F F', and ratchet-wheels G G', substantially as specified.

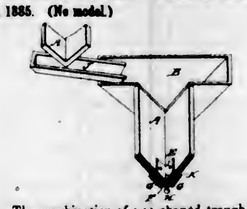
335,218. INVALID-BEDSTEAD. LUTHER W. FILLEBROWN, Piqua, Ohio, and FRANK B. CHANDLER, Wayne, Me. Filed Nov. 14, 1885. (No model.)



Claim.—1. The combination of the bed-frame, the journal-plates secured to the inner surface of the side rails thereof, the shafts C C', having their journals in the bearings of said plates, the adjustable crank-arms connected with said shafts, the rail D, secured to the under surface of the mattress, the connecting-arms D', and means, substantially as described, for rotating the shafts.

2. The combination of the bed-frame having the journal-plates *b b'* secured to their side rails, shafts C C', crank-arms E, adjustably connected with said shafts, and connecting-arms D', and the rail D, secured to the ends of said crank-arms, substantially as described.

335,219. ORE CONCENTRATOR. WILLIAM A. FRANK, Pinal, Ariz. Filed Oct. 20, 1885. (No model.)



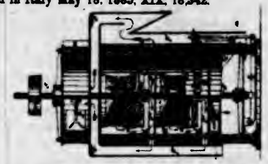
Claim.—1. The combination of a V-shaped trough and a series of plates, E, fixed at intervals in the bottom thereof, each plate being perforated with a series of fine holes in a line along the inner angle of the trough, the finest of the holes bearing the relation described to the fineness of the pulverized ore to be operated upon, substantially as shown and described.

2. The combination of a V-shaped trough, a series of metallic plates fixed at intervals therein, each plate being perforated with fine holes in a line along the inner angle of the trough, and gates fitted to slide beneath the said perforations along the trough, substantially as shown and described, whereby one or more of the holes in each plate may be closed, as set forth.

3. The combination of a V-shaped trough, placed with its lower angle opening upward and provided with traps, as described, and an angular box secured to one end of the trough, the trough opening into the side of the said box at some distance above the bottom of the latter, substantially as shown and described.

4. The combination of a series of V-shaped troughs placed slantingly one above the other, with the lower angle of each opening upward, a series of angular boxes, one secured to the upper end of each trough, the troughs communicating one with another by means of the boxes, and both troughs and boxes provided with outlet-traps, substantially as shown and described, for the purpose specified

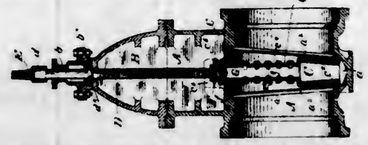
335,220. WHEAT CLEANING AND POLISHING MACHINE. EMIL FRITZSCH, Leipsic, Saxony, Germany. Filed July 15, 1885. (No model.) Patented in Italy May 18, 1885, XIX, 16,342.



Claim.—1. The combination of casing H with shaft S, stones A, brushes B, plates E, tubes F', flues F, and suction-pan P, substantially as specified.

2. The combination of perforated casing H with shaft S, stones A, brushes B, plates E, tubes F', flues F, and sliding perforated rings G, substantially as specified.

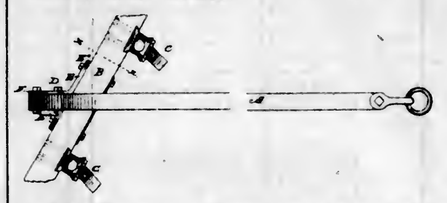
335,221. VALVE. ERNST A. C. GIESELER, Berlin, Germany, assignor to Joseph J. De Kinder, Philadelphia, Pa. Filed May 20, 1885. (No model.) Patented in Germany May 6, 1884, No. 29,373.



Claim.—1. The combination of a valve-body, a valve-seat in said body, a valve-disk adapted to said seat and provided with slots or openings through it, a valve-stem, a slotted slide or register contrivance for closing the slots in the valve-disk, a nut threaded upon the valve-stem and connected with the register contrivance for closing the slots in the disk, and a housing connected with a valve-disk for containing and permitting a limited movement to said nut upon the rotation of said stem, substantially as shown and described.

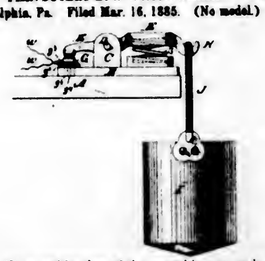
2. The combination of the valve-body provided with the valve-seat, the valve-disk provided with a slotted enlargement and with the nut-housing, a threaded valve-stem, a nut threaded upon the valve-stem, a slotted sleeve connected from said nut and having a movement within the slotted enlargement of the valve-disk, and a suitable cap or kindred fitting for containing a boxing for the stem.

335,222. CULTIVATOR. FRANCIS M. HELMS, Vandersburg, Ind. Filed Nov. 16, 1885. (No model.)



Claim.—The combination of the tooth-bar, the beam provided with a series of bolt-holes in its lower end, and the angle-iron secured to the bottom of the beam, consisting of a bearing-plate and a wing made integral with said plate and placed midway its ends and at an angle thereto, substantially as set forth.

335,223. **FIRE-BUCKET LOW-WATER ALARM.** CHARLES J. HEXAMER, Philadelphia, Pa. Filed Mar. 16, 1885. (No model.)



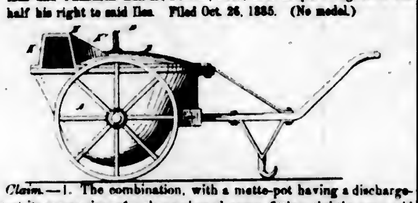
Claim.—1. The combination of the movable arm or lever, the water-containing fire-bucket sustained thereby, and a suitable alarm or sounder adapted to be operated by the movement of said arm or lever in the manner, under the circumstances, and for the purpose substantially as set forth.

2. The combination of the spring-controlled pivoted lever, the bucket suspended therefrom, and a suitable alarm or sounder, all constructed and adapted to operate substantially as and for the purpose set forth.

3. The combination of the pivoted spring-controlled lever, the bucket attached thereto, the insulated boss, the circuit-wires and the electrical alarm-bell, all constructed and adapted to operate substantially as and for the purpose recited.

4. The combination of the series of plates B, insulated bosses G pivoted levers provided with hooks adapted to secure the bails of the buckets, the spring S, the common circuit-wires *w*, and the common alarm-bell, substantially as and for the purpose described.

335,224. **MATTE-POT FOR SMELTING-FURNACES.** MALVERN W. ILES and FREDERICK KEIPER, Denver, Colo.; said Keiper assignor of one-half his right to said Iles. Filed Oct. 26, 1885. (No model.)



Claim.—1. The combination, with a matte-pot having a discharge-spout at its upper rim, of a dome-shaped cover fitting tightly over said pot, and a horizontal opening in said cover, substantially as described, into which the discharge-spout of the furnace fits closely.

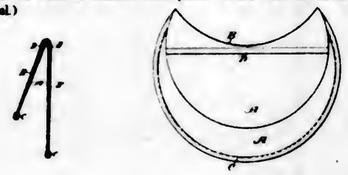
2. The combination, with the matte-pot A, having a discharge-spout, F, at its upper rim, of the dome-shaped cover B, fitting tightly over said pot, the flat portion H, with the beveled side walls; K K', forming a horizontal opening in said cover, fitting over the discharge-spout of the furnace, the poke-hole E in the flat surface of said cover, and the opening G over the spout F, for opening and closing said discharge-spout.

3. In a matte-pot, the combination, with the cover B, of the poke-hole E, whereby access is obtained to the interior of the matte-pot.

4. The combination, substantially as hereinbefore described, with the matte-pot A, provided with a discharge-spout, F, at its upper rim, of the dome-shaped cover B and the slot or opening G at the edge of said cover and over said discharge-spout, whereby the same may be opened and closed at pleasure.

5. The combination, substantially as hereinbefore described, with the matte-pot A, having a discharge-spout, F, at its upper rim, whereby its contents may be drawn off, of the dome-shaped cover B, with the interior flange, I, fitting tightly over said pot, the flat surface H, with the beveled side walls, K K', forming a horizontal opening in said cover and fitting over the discharge-spout of the furnace, the poke-hole E in the flat surface of said cover, and the opening G over the spout F, for opening and closing said discharge-spout.

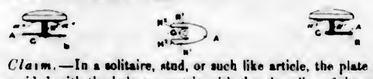
335,225. **DRESS-SHIELD.** JULIUS JANOWITZ, New York, N. Y., assignor to Isaac B. Kleinert, same place. Filed June 23, 1885. (No model.)



Claim.—1. A dress-shield provided with a seamless piece of waterproofed fabric, A, having a curved fold, a seamless layer of pervious material, also having a curved fold, and a separate stay interposed between the two seamless sections, to prevent change of curve, substantially as described.

2. The dress-shield herein described, consisting of a seamless piece of rubber-coated fabric, A, having a curved fold, and provided with a separate straight stay, D, to prevent the loss of curve, and a seamless piece of fabric, B, also having a curved fold, free from the body of said rubber-coated fabric, and united to the edges thereof by binding, substantially as described.

335,226. **BUTTON.** JOHN C. W. JEFFERYS, Holloway, County of Middlesex, England. Filed July 6, 1885. (No model.) Patented in England Nov. 19, 1884, No. 15,213.



Claim.—In a solitaire, stud, or such like article, the plate or foot A, provided with the hole concentric with the pivot-line of the stud, the supports H', having shoulders H^1, and heel G, the heel and plate or foot A being constructed integrally, as shown, and combined with the central pillar, K, of the stud, carrying the arm B, said pillar K being riveted at F, to the spring-finger plate *a a' b*, operating in combination with the plate H, having holes H^2, said spring-plate being attached to the head of the stud, solitaire, button, or other article, substantially as at *b'*, or forming part of said head, the whole constructed, combined, and operating as and for the purpose herein set forth.

335,227. **INJECTOR.** FRANKLIN W. KRESSER, Wadsworth, Ohio. Filed June 11, 1885. (Model.)



Claim.—1. In an injector having steam and water inlets and an outlet, the tubular screw-spindle *h*, provided with a steam-inlet port, h^2, and a collar, h^3, on the same, and a threaded bonnet, *f*, in which said spindle is moved longitudinally to open and wholly close the inlet, combined with the suction-chamber separated from the steam-inlet by the diaphragm *i*, and the packing-gland *j*, surrounding said spindle and bearing upon the diaphragm, substantially as shown and described.

2. The combining-tube provided with a valvular base interposed between the suction and exhaust chambers, a superposed lifting-tube, a longitudinally-adjustable steam-inlet spindle provided with a steam-inlet port, and a collar on said spindle co-operating with the bonnet, in which said spindle is adjustable to open and close said port by the longitudinal movement of said spindle in said bonnet, combined to control the flow of water commensurately with the steam pressure, substantially as described.

3. In an injector, the combination, with the steam and water inlets, the suction-chamber, and the outlet, of the screw-threaded steam-spindle *h*, having a longitudinal steam-passage, h^4, an inlet-port, h^2, and a collar, h^3, arranged below said port, the screw-threaded bonnet *f*, in which the said spindle is adjustable, and against the bottom of which it is seated to wholly shut off the supply of steam, and a hand-wheel to operate said spindle, substantially as described.

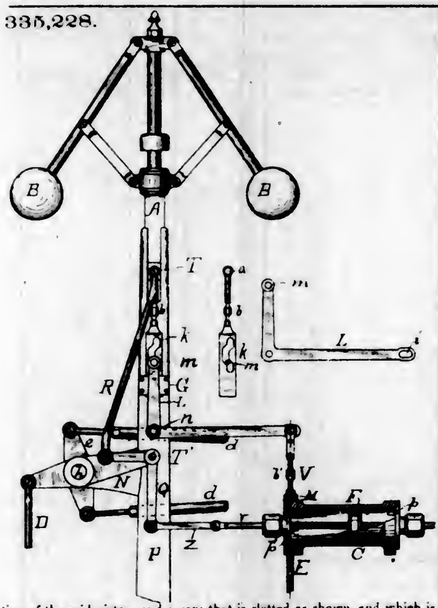
4. The tube *m*, forming a chamber above the combining-tube, combined with such combining-tube, parts therein, a check-valve co-operating automatically with said ports, a delivery-chamber having an automatically-operated check-valve in its overflow, and a steam-induction spindle provided with a valvular port and operable by longitudinal adjustment to automatically start and maintain the flow of water, and to re-establish it after accidental cessation, substantially as described.

335,228. **SPEED-GOVERNOR.** ALVIN LAWRENCE, Lowell, Mass., assignor of one-half to Channing Whitaker and Charles H. Fisher, same place. Filed Sept. 9, 1885. (No model.)

Claim.—1. A centrifugal regulator, in combination with a cylinder having a piston that is driven by fluid-pressure, a valve that controls the motion of the said piston, and a cam that is connected with the said centrifugal regulator and which fixes the position of the said valve, substantially as described, and for the purposes specified.

2. A centrifugal regulator, in combination with a cylinder having a piston that is driven by fluid-pressure, a valve that controls the motion

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tion of the said piston, and a cam that is slotted as shown, and which is connected with the said centrifugal regulator and which fixes the position of the said valve, substantially as described, and for the purposes set forth.

3. A centrifugal regulator, in combination with a cylinder having a piston that is driven by fluid-pressure, a valve that controls the motion of the said piston, a cam that fixes the position of the said valve and that is connected with the said centrifugal regulator, a power-regulator of a motor, and an equalizing-lever that is connected with the said piston, the said centrifugal regulator, and the said power-regulator, substantially as described, and for the purposes specified.

4. A centrifugal regulator, in combination with a cylinder having a piston that is driven by fluid-pressure, a valve that controls the motion of the said piston, a cam that is slotted as shown, and that fixes the position of the said valve and which is connected with the said centrifugal regulator, a power-regulator of a motor, and an equalizing-lever that is connected with the said centrifugal regulator, the said piston, and the said power-regulator, substantially as described, and for the purposes set forth.

5. A centrifugal regulator, in combination with a cam that is connected thereto, a cylinder having a piston that is driven by fluid-pressure, a valve that controls the motion of the said piston and whose position is fixed by the said cam, and a motor power-regulator which is connected with the said piston, substantially as described, and for the purposes set forth.

6. A cylinder having a piston that is driven in both directions by fluid-pressure, a valve that controls the motion of the said piston, a centrifugal regulator that is connected with the said valve and which actuates the same, a power-regulator of a motor, and an equalizing-lever that is connected with the said piston, the said power-regulator, and the said centrifugal regulator, substantially as described, and for the purposes specified.

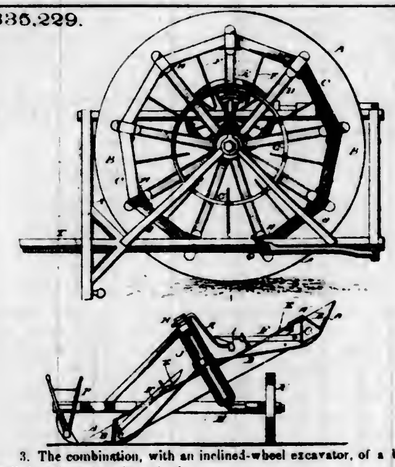
7. A cylinder having a piston that is driven by fluid-pressure, in combination with a valve that controls the motion of the said piston, a centrifugal regulator, a cam that is connected with the said centrifugal regulator and that fixes the position of the said valve, an adjustable means of regulating the supply of fluid that drives the said piston, a power-regulator of a motor, and an equalizing-lever that is connected to the said power-regulator, the said piston, and the said centrifugal regulator, substantially as described, and for the purposes specified.

335,229. **INCLINED-WHEEL EARTH-EXCAVATOR.** SAMUEL M. LOCKWOOD, New York, N. Y. Filed Mar. 27, 1885. (No model.)

Claim.—1. The combination, with an inclined-wheel excavator and its plow, of the frame, and the stiff tongue, and the supporting-wheel, and the crooked axle forming an axle for both wheels, and a brake adapted to be applied to the supporting-wheel, substantially as and for the purposes set forth.

2. The described self-adjusting latches and dirt-gates, and the circle on which the latches are fastened or caught, and the mechanism for working the same.

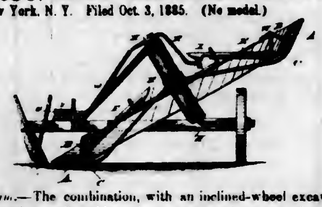
335,229.



3. The combination, with an inclined-wheel excavator, of a brake applied to the supporting-wheel.

4. The combination, with an inclined-wheel excavator, of a stiff tongue, which tongue is attached directly to the frame and may form part of the frame, as in the drawings, which frame runs continuously around the entire machine, and which frame is no part of plow-beam, nor is plow-beam part of it.

335,230. **INCLINED-WHEEL EXCAVATOR.** SAMUEL M. LOCKWOOD, New York, N. Y. Filed Oct. 3, 1885. (No model.)



Claim.—The combination, with an inclined-wheel excavator, of a trigger or tripper adjustable to dump or not to dump at option, the object of which is to make the excavator a combined excavator and cart for carrying dirt or other substances.

335,231. **CARTRIDGE DECAPPER, RECAPPER, AND RELOADER.** SOLOMON MCNEILL, Burlington, Iowa, assignor of one-half to O. H. Denison, same place. Filed July 2, 1885. (No model.)

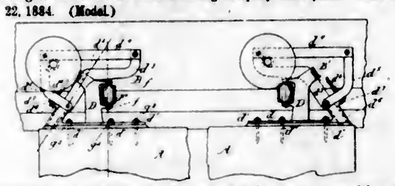


Claim.—1. A cartridge implement consisting of the shell-holder and handles pivoted thereto, one of said handles having a ramrod provided with a self-adjusting piston-head, as set forth.

2. In a cartridge implement, the combination of the shell-holder and the handles pivoted thereto with the piston-head and ramrod, the former

pivoted to the latter and the latter to one of the handles, and the springs I I, located one on each side of the ramrod and bearing on the self-adjusting piston-head, and the spring L, located at the pivoted end of the ramrod and normally retaining it closed against the handle, as set forth.

335,232. **DOOR-HANGER.** HENRY T. MOODY, Newburyport, Mass., assignor to the Victor Manufacturing Company, same place. Filed Dec. 22, 1884. (Model.)



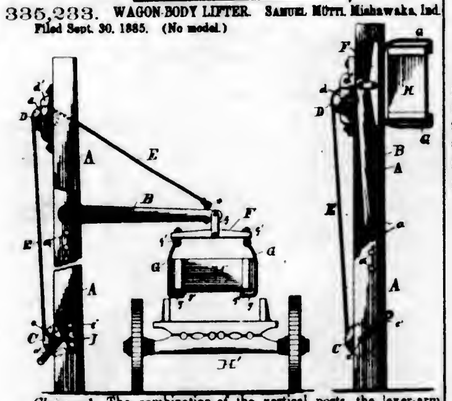
Claim.—1. A hanger for house and other doors, comprising the foot or base *d*, the bracket or post D, centrally arranged thereon and having the inclined hold d^2, with the rider-bar d^4, having the inclined arm d^3, which extends through the hole d^3, lug d^6, and the adjusting-screw d^7, all substantially as and for the purposes set forth.

2. The combination of the bracket D, having the base or foot *d*, a lug, d^6, the bar d^3, supported or held by the bracket and carrying the rider bar or rail d^4, the connecting-arm d^5, and nut d^8, with the adjusting-screws d^7, and rolls E, all substantially as and for the purposes described.

3. In a door-hanger, the combination of the bracket or post D, shaped as described, having the foot or post *d*, and the inclined hole d^2, formed in the upper end of the post D, the rider-bar d^4, having the arm d^3 extending through the hole d^2, the lug d^6 at the end of the foot *d*, having the screw d^7, the arms *f*, extending horizontally from the bracket D, and the roller F, supported by said arms, all substantially as described.

4. In a door-hanger, the metal rider bar or rail d^4, covered upon its lower edge with wood or other similar material, all substantially as and for the purposes described.

335,233. **WAGON-BODY LIFTER.** SAMUEL MÜTH, Mishawaka, Ind. Filed Sept. 30, 1885. (No model.)

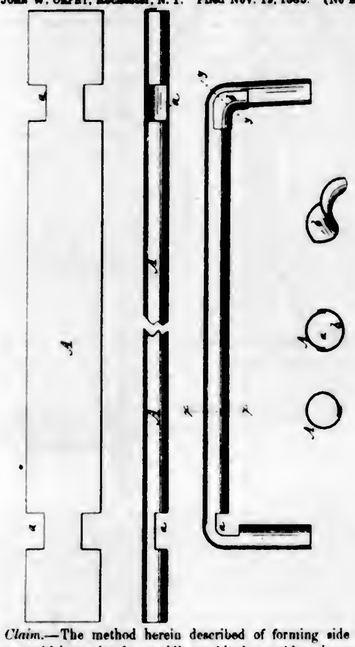


Claim.—1. The combination of the vertical posts, the lever-arm having its inner end pivoted thereon, the drum and pulley, each secured to shafts turning in bearings in or secured to the vertical posts, the rope having one end secured to the drum passing over the pulley, and with the other end secured to the lever-arm, and mechanism, substantially as described, attached to the outer end of the lever-arm, and adapted to grapple and hold a wagon-body while being lifted, substantially as specified.

2. The combination of the vertical posts, the lever-arm having its inner end pivoted thereon, the grappling device composed of the V-shaped grappling-hooks G, provided with the points *g'*, the beam F, having said hooks swung to its ends, and the links *f*, pivoted on the outer end of the lever-arm, and lifting mechanism, substantially as described, attached to the vertical posts and adapted to lift and hold the lever-arm with the wagon-body against the vertical posts, substantially as specified.

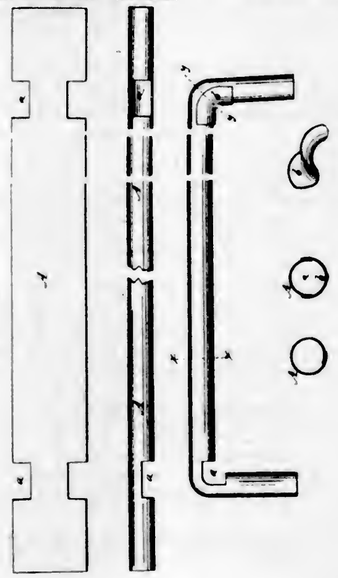
3. In a wagon-body lifter, the combination of the vertical post A, the pulleys D, secured to a shaft turning in bearings secured to the posts A, the drum C, secured to a shaft having bearings in said posts and having the ratchet-wheel I on one end, and the pawl *i* pivoted on a post A and commanding the ratchet-wheel, with the arm B, having its inner end pivoted to and between the posts A, and made adjustable thereon by means of the holes *a* and a proper pin, and the grappling device pivoted to the outer end of the lever-arm B, and composed of the links *f*, beam F, and grappling-hooks G, all constructed and arranged substantially as and for the purpose specified.

335,234. **METHOD OF MAKING SIDE TUBES FOR LANTERNS.** JOHN W. ORPHY, Rochester, N. Y. Filed Nov. 19, 1885. (No model.)



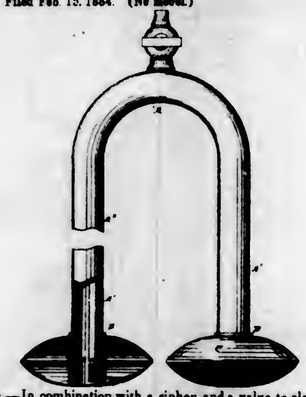
Claim.—The method herein described of forming side tubes for lanterns, which consists in providing a blank, notching the same where the elbow-bends are to be made, then rolling said blank in the form of a tube, then bending the elbows, then applying patches over the notches, and finally dipping the tube in melted tin, soldering, or otherwise preparing it to close the seams, as set forth.

335,235. **TUBE FOR LANTERNS.** JOHN W. ORPHY, Rochester, N. Y. Filed Nov. 19, 1885. (No model.)



Claim.—A side tube for a lantern, made from a single strip of metal rolled over to form a tube, notched at the elbows to allow bending, and the notches covered by patches, as herein shown and described.

335,236. **HYDROMETRIC CONVEYER.** WILLIAM C. PARSONS, Akron, Ohio. Filed Feb. 15, 1884. (No model.)



Claim.—In combination with a siphon and a valve to close one arm thereof, a float connected with said valve and of a specific gravity to float in a fluid of a certain density and sink if the density varies or becomes less, substantially as and for the purpose set forth.

335,237. **CLOTHES-HOOK.** EMMELINE W. PHILBROOK, Boston, Mass. Filed Nov. 12, 1885. (No model.)

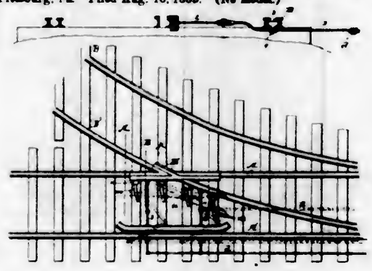


Claim.—1. A clothes-hook or device for hanging garments, comprising a horizontal arm or arms provided in its upper edge with a series of two or more depressions properly shaped and spaced, so that several articles may be hung upon the said hook or device without crowding against each other, substantially as described.

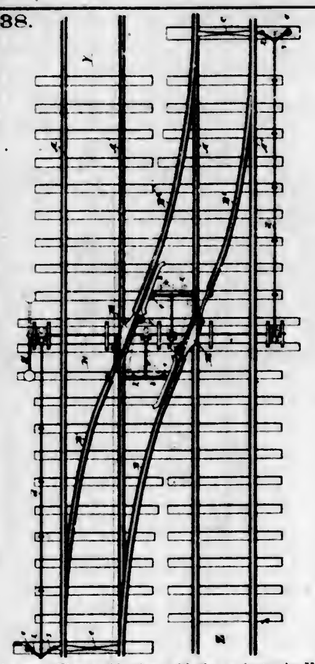
2. A clothes-hook provided upon the back plate with a series of small hooks or similar devices for the attachment of a cloth cover, substantially as described.

3. The combination, with the clothes-hook, of the cloth cover open in front and having thereat a flap, as specified, and provided with a gathering-cord around the top, substantially as described.

335,238. **SWITCHING DEVICE FOR RAILWAYS.** CHARLES B. PRICE, Pittsburg, Pa. Filed Aug. 10, 1885. (No model.)



335,288.



Claim.—1. The combination, with the main tracks Y Z, having continuous rails, of cross-over switch-rails and movable frogs provided with wings, and each constructed to form a communication between the sections of the cross-over rail over the main-track rail without obstructing the latter, and connected to be carried to and from the main-track rail, substantially as set forth.

2. The combination of the main tracks Y Z, having continuous rails, cross-over switch-rails connected to form movable switches, movable bridge-frogs provided with wings and constructed to transfer cars over the continuous main rails, and a switch handle or lever and connections for operating simultaneously therefrom both frogs and both switches, substantially as set forth.

3. The combination, with movable frogs and switches of a cross-over switch, of joint-links connected in pairs to the switches and frogs and operating-rods *d*, connected to the links, the links connected to the switches being arranged to assume positions at angles to each other when the switch-rails are set for siding and when the links connected to the frogs are in line, substantially as and for the purpose set forth.

4. The combination, with the rails and frog of a railway, of two pairs of links and an operating-rod, substantially as described, whereby the frog is carried back and forth by the action of the links, substantially as set forth.

5. The combination of the main and siding rails and a frog guided to slide bodily to and from the unbroken main rail and constructed to overlap the latter, and operating devices for carrying the frog back and forth, substantially as described.

6. The combination of the main and siding rails, a sliding frog, and guides inclined substantially as and for the purpose described.

7. The combination, with the switch-rails a and frog, of a sliding rod, a crank-shaft, and jointed levers or links connected at their joint to the rod, to operate substantially as set forth.

8. The combination of jointed links connected to the movable portion of a switch or frog and a pivot connected to one of the links and supported by and below the rails of the track, substantially as set forth.

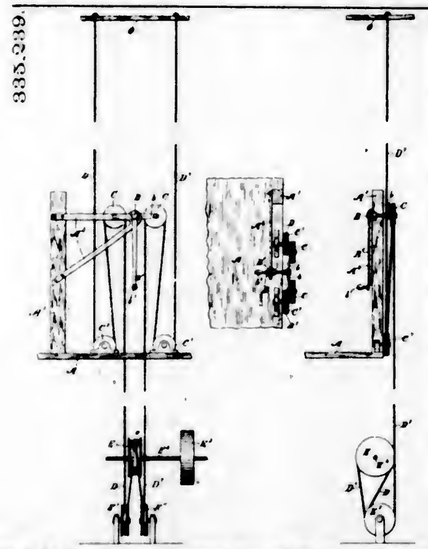
9. The combination of jointed links connected to the movable portion of a switch or frog, and a pivot for one of the links, and a block supporting the said pivot and clamped between the track-rail and guard-rail, substantially as set forth.

10. The combination, with the movable switch-rails and frogs, of jointed links connected to said movable parts and pivoted to stationary pins, and sliding operating-rods connecting the links, substantially as set forth.

335,239. **ELEVATOR.** FREDERICK H. PRINCE, Chicago, Ill. Filed Oct. 9, 1885. (No model.)

Claim.—1. The combination, with the car and valve-cables, of the devices for keeping a running hold on and operating said cables, consist-

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ing of the movable sheaves mounted on a rocking arm, and the operator's lever for actuating said arm, and the stationary sheaves C', substantially as specified.

2. The combination, with the valve-cables and car, of a pivoted T-lever, the sheaves mounted on the lever, and the stationary sheaves C', the lever and sheaves being mounted on the car, substantially as specified.

3. The combination, in an elevator, of lever B', pivot B, arms *b'*, and sheaves C with cables D and D', substantially as specified.

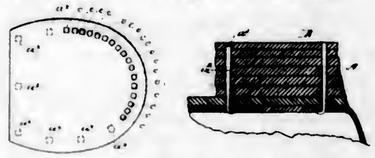
335,240. **PREPARING AND TREATING SIRUPS AND MOLASSES.** ADRIEN RALU, Fils, Paris, France, assignor to himself, Horace Alfred Browne, New Brighton, and Joseph Grathvohl, Paris, France. Filed Aug. 24, 1885. (No specimens.) Patented in France May 9, 1885, No. 156,218, and in England July 23, 1885, No. 8,924.

Claim.—1. Preparing or treating sirups or molasses for transport by mixing them with a solidifying substance or substances adapted for distilling and forming the compound into masses or blocks, substantially as hereinbefore described.

2. As a new manufacture, masses or blocks made by mixing sirups or molassee with a solidifying substance adapted for distilling, substantially as hereinbefore described.

3. The manufacture of alcohol by taking compounds, masses, or blocks, prepared as hereinbefore described and claimed, and treating the same by means of a liquid and distillation, substantially as hereinbefore described.

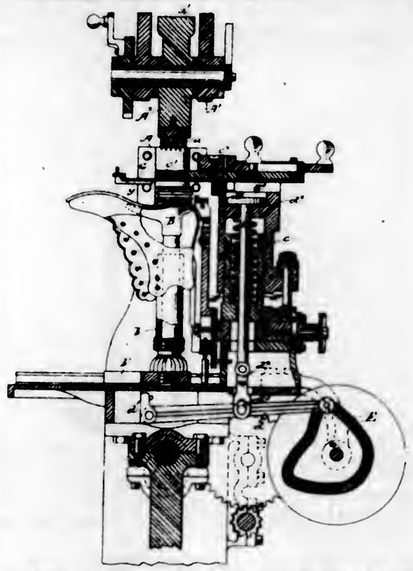
335,241. **METHOD OF ATTACHING HEELS.** FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed Aug. 14, 1885. (No model.)



Claim.—1. The method or process of attaching heels to the soles of boots or shoes, consisting, first, in fastening or securing the heel-blank to the soles of boots or shoes by a series of nails driven in the front portions thereof, leaving the heads or butts projecting; second, in applying the top lift to said projecting heads or butts; and, third, in finishing the attachment of the heel by driving into and through the top lift and heel-blank an additional gang or group of nails, all substantially as described.

2. That improvement in the method of fastening heels consisting in attaching the front portion of the heel to the soles of boots or shoes by a gang or group of nails simultaneously driven, leaving their heads or butts projecting, applying the top lift on the projecting heads or butts, and attaching the rear portions of the heel to the soles of the boot or shoe and the top lift to the heel-blank by an additional gang or group of fastenings, all substantially as described.

335,242. **HEEL-NAILING MACHINE.** FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed Nov. 18, 1885. (No model.)



Claim.—1. The combination of the last or work-support, the table or carriage C, supporting the templet, the templet *c'*, the cam E, and mechanism connecting it with the table, whereby the templet is adapted to be moved downward and held in a depressed position, all substantially as described.

2. The combination of the last or work-support, the post *c*, the table or carriage C, the templet *c'*, supported thereby, and the nail-holder *c²*, with the cam E, rod D, and lever *d*, all substantially as described

3. The combination of the last or work-support, the post or support *c*, the table C, carrying or supporting the top-lift holder, and a templet, with the cam E, lever *d*, and rod D, all substantially as described.

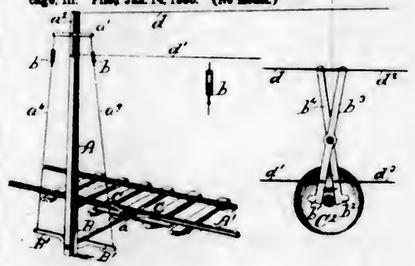
4. The combination of the last or work-support, the post or support *c*, and the table or carriage C, supporting the templet, with the cam E, lever *d*, and the positively-actuated rod D, having a loose connection with the table or carriage C, as and for the purposes described.

5. The combination of the last or work-support, the post or support *c*, the carriage C, supporting the templet, the rod D, having a loose connection with the carriage or table, and the spring *d'*, as and for the purposes described.

6. In a heel-nailing machine, the combination of the last or work-support, the post or support *c*, the carriage or table C, and the rod D, positively actuated to draw the table downwardly, with a reciprocating block arranged to further move the templet downward, all substantially as and for the purposes described.

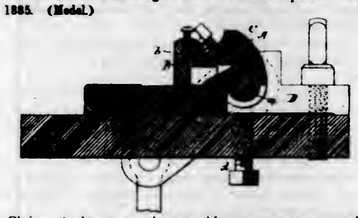
7. The combination, in a heel-nailing machine, of a last or work-support, a carriage or table supporting a templet, and a cam connected with the table, constructed, substantially as described, and adapted first to move the templet to compress the heel-blank and then to lift or allow the lifting thereof, and then to again depress or move the templet to apply a top lift to the attached heel-blank, all substantially as set forth.

335,243. **RAILWAY-SIGNAL.** NATHAN M. REYNOLDS, South Chicago, Ill. Filed Jan. 14, 1885. (No model.)



Claim.—In an automatic alarm-signal for railways, the combination, with a rock-shaft, of a rocker-arm, a lever-arm adapted to have a corresponding movement with said rocker-arm, the vertical wires a^3 a^4, the turn buckle or buckles *b*, the cross-arm *a'*, the companion cross-arm a^2, the wires *d d'*, the striking-hammers *b' b²*, having crossed handles, as described, and the signal-gong C^2, all constructed, combined, and arranged to operate as set forth.

335,244. **PRESSER FOR ENVELOPE-MACHINES.** ABRAM A. RHEUTAN, Worcester, Mass., assignor to W. H. Hill, same place. Filed Mar. 12, 1885. (Model.)



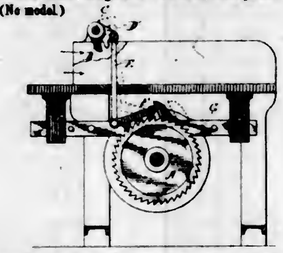
Claim.—1. In an envelope-machine, a presser mounted upon a rocking carrier, and in hinged or swinging connection therewith, whereby the presser is adapted to swing toward or away from its carrying part, and thereby adjust itself to variations in the thickness of the work, all substantially as set forth.

2. In an envelope-machine, the combination of a presser in hinged or swinging connection with its carrier and a folder rigidly attached to its carrying-shaft, all substantially as set forth.

3. In an envelope-machine, the combination of a presser in hinged or swinging connection with its carrier and a folder rigidly attached to its carrying-shaft, the said presser-carrier and folder-shaft being arranged to rotate around the same axial line, substantially as set forth.

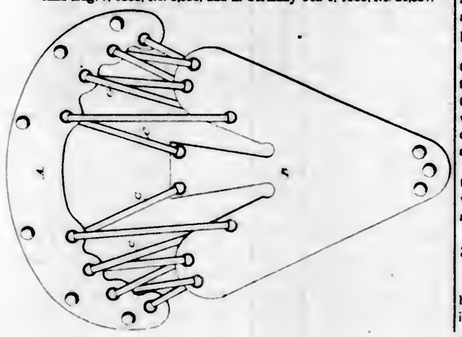
4. In an envelope-machine, the combination of the presser, its carrier, the folder, and its shaft, journaled on and supported by the presser-carrier, and adjustable standards or supports, in which the presser-carrier is journaled, all substantially as set forth.

335,245. **ENVELOPE-COUNTING MACHINERY.** ABRAM A. RHEUTAN, Worcester, Mass., assignor to W. H. Hill, same place. Filed June 22, 1885. (No model.)



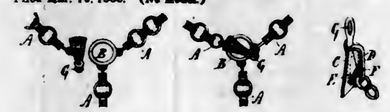
Claim.—In a machine for counting and packing envelopes, the combination of the counting-wheel A, the finger B, rock-shaft C, arm or crank D, connecting-rod E, pawl F, and a slider, G, having a constant reciprocating motion and adapted to move the counting-wheel A one tooth through the intervention of the pawl F, when operated by means of the devices described and in the manner set forth.

335,246. **BICYCLE-SADDLE.** GEORG ROTHERMUND, Bielefeld, Westphalia, Germany. Filed Aug. 4, 1885. (No model.) Patented in England Aug. 7, 1883, No. 3,833, and in Germany Oct. 6, 1883, No. 26,537.



Claim.—A suspension saddle-seat composed of two distinct and separated pieces of leather, *a b*, fixed, respectively, to the fore and rear parts of the saddle-frame, and united by means of a flat leather or other-shaped lace, *c*, passed alternately through the eyelet-holes in each portion of the leather.

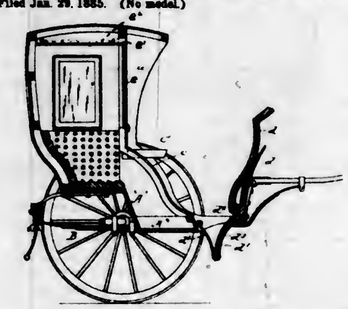
335,247. **CLASP FOR CHAINS.** CHARLES SCHLAG, New York, N. Y. Filed Mar. 16, 1885. (No model.)



Claim.—1. In combination with a chain, A, provided with a ring, B, at or near one end of the same, the clasp-bar C, attached to the other end of chain A by a loop-bar, D, at its back, forming part of the clasp-bar C, and adapted to fit or sit into the ring B when the clasp-bar C has been passed through the ring B, with its back resting against the outside thereof, substantially as shown and described.

2. A clasp-bar for chains, having at its back a loop-bar, D, and an eye, F, formed substantially as shown and described.

335,248. **TWO-WHEELED VEHICLE.** HENRY C. SEARS, Boston, Mass. Filed Jan. 29, 1885. (No model.)



Claim.—1. A cab or two-wheel vehicle having the body A, the seat A', the section C, forming a portion of the front wall of the vehicle and shaped substantially as specified, and the driver's seat *c'*, supported by the section or wall C in relation to the seat A', as shown, all substantially as and for the purposes described.

2. In a cab or other similar vehicle, the combination of the body A, having the seat A', the section C, forming a portion of the front wall of the vehicle, and shaped as described, the driver's seat *c'*, supported by the said section C and bearing the relation to the seat A' indicated, and the movable section or door *d*, all substantially as described.

3. The combination, in a cab or other similar vehicle, of the body A and the movable section or door *d*, hinged at its lower end, as described, to be movable bodily away from the front wall of the vehicle, all substantially as specified.

4. The combination of the section *d* and rods or arms *d'*, hinged or pivoted to brackets d^3, and the slots d^4 in the flooring, all substantially as and for the purposes described.

5. The combination of the movable section *d* of a Hansom cab or other similar vehicle with the seat E, all substantially as and for the purposes described.

6. A cab or other similar two-wheel vehicle having the driver's seat *c'*, and arranged as described, and the hood or roof of the cab cut away from immediately over the seat, all substantially as and for the purposes described.

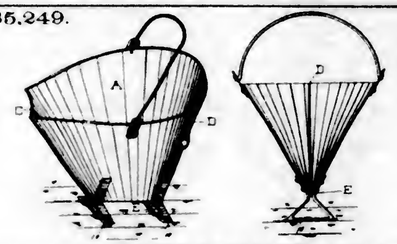
7. In a two-wheel vehicle, the combination of the body A, having the driver's seat disposed upon one side thereof, substantially as described, the running-gear, the axle F, made in one piece and arranged to carry the wheel upon the side of the driver's seat in advance of the other wheel, whereby the balance of the vehicle-body, when occupied by the driver, or driver and two passengers, is made even or maintained, all substantially as and for the purposes described.

8. In a cab or other similar vehicle having the body A, the seat A', the flooring A^2, arranged below the flooring in front of the door of the vehicle, the sections C D, and the driver's seat C', all substantially as and for the purposes described.

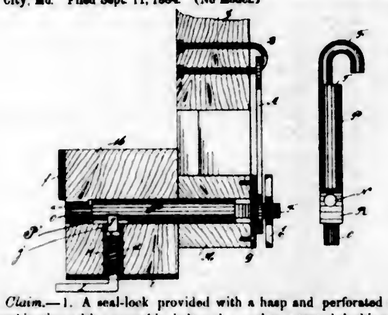
335,249. **COAL-BUCKET.** JOHN SMITH, Kansas City, Mo. Filed Nov 14, 1885. (Model.)

Claim.—A bucket having a wedge-shaped body formed of the blank A, having triangular recesses at each end bent on line E, and having the edges C C and D D united, substantially as shown and described.

335,249.



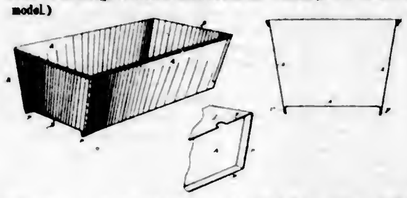
335,250. SEAL-LOCK FOR CAR-DOORS. JOHN M. SMITH, Kansas City, Mo. Filed Sept. 11, 1884. (No model.)



Claim.—1. A seal-lock provided with a hasp and perforated seal, in combination with a movable bolt and a spring-actuated locking-bolt engaging therewith, said movable bolt having its outer end bent in such a manner as to enter the hasp and perforation of the seal when pushed inwardly, whereby the car is locked, substantially as specified.

2. In a seal-lock, a movable bolt having its outer end bent in the form of a hook and inner part provided with a recess and flattened place, in combination with a bearing, locking-bolt, metal plate, hasp, and seal, for the purposes substantially as shown and described.

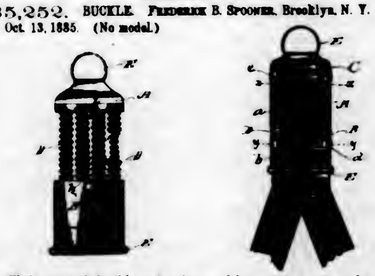
335,251. BAKING-PAN. ALPHONSO B. SPARROW, Malden, assignor of one half to George A. Russell, Newton, Mass. Filed Apr. 22, 1885. (No model.)



Claim.—1. A baking-pan constructed of three pieces of sheet metal, the bottom, two of the sides, and the supports being of one integral piece, and the other two sides being seamed thereto, substantially as shown.

2. A baking-pan constructed of the end pieces, B B, and the side-and-bottom sheet, A, provided with the supports F F, formed by a fold in the sheet A, projecting below the bottom A' of the pan, substantially as described.

335,252. BUCKLE. FREDERICK B. SPOONER, Brooklyn, N. Y. Filed Oct. 13, 1885. (No model.)



Claim.—1. A buckle or band comprising two or more springs, each consisting of two coils of unequal sizes, one within the other, and plates connected together by a rivet and slot, substantially as set forth.

2. In a buckle or band, two or more coiled springs held in position by two overlapping sliding plates having continuous vertical front edges which engage with said coils, substantially as set forth.

3. A buckle comprising two or more coiled springs and plates A, B, and C, constructed and operating substantially as set forth.

4. The plates A and B, connected by a rivet and slot, in combination with the plate C, and two or more coiled springs, as D, substantially as set forth.

5. The plate A, provided with ears *e*, and plate C, having ears cooperating with the ears *e*, in combination with two or more coiled springs, as D, substantially as set forth.

6. The plates A and B, and two or more coiled springs, as D, combined with the plate C, having a cut-away portion at *e'*, substantially as set forth.

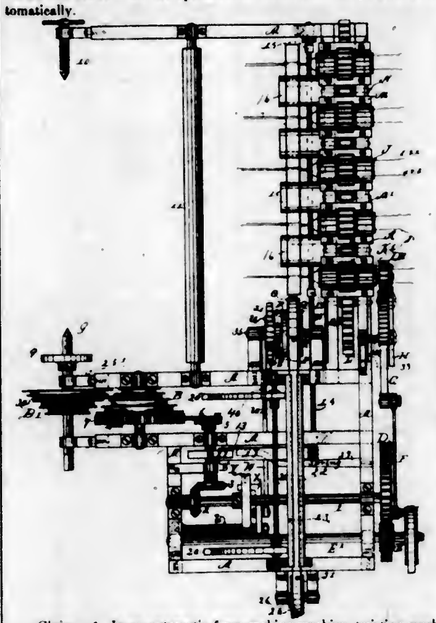
7. The plates A and B, the latter provided with ears *d*, and having its front end bent over upon itself in such manner as to form an unbroken upright edge, as at *d'*, combined with two or more coiled springs, as D, substantially as set forth.

8. The plates A and B, in combination with the plate C, and two or more coiled springs, as D, the turned-over end of plate B and the plate C each having a cut-away portion at the edge of its unbroken vertical portion, substantially as set forth.

9. In a buckle or band, two or more coiled springs, as D, combined with the sliding plates A and B, said plates being connected together by a rivet and slot joint, so that they may be readily distended or contracted, and deflected from a vertical line, substantially as set forth.

335,253. MACHINE FOR MANUFACTURING FENCES. ROBERT B. STAFF, Denver, Colo. Filed July 17, 1885. (No model.)

Brief.—The pickets are placed on inclined arms and slide down by their own weight to the lower ends of the arms. The lowest picket is struck by a pin on an intermittingly-moving belt and carried forward between the wires, where it rests during the twisting on adjustable blocks. Beater-arms force the picket to its place. The twisters then revolve. After the twisting is completed the finished fabric is drawn forward by and wound on an intermittingly-rotated reel made to move more slowly as the fencing accumulates on it by two threaded cones relatively inverted and belted. All the operations of the machine are performed automatically.



Claim.—1. In an automatic fence-making machine, twisting mechanism consisting of twisters having gears on their central portion operated by a rack, L, extending beneath the same, a pinion, I, upon the end of the first twister operated through mechanism intermediate between said pinion and the driving-shaft, whereby motion is communicated through said pinion I to the twister J', and from thence through the rack L to the other twister, all substantially as described.

2. In an automatic fence-making machine, the combination, with twisting mechanism, receiving-brackets 16, having rounded faces, and feeding mechanism, substantially as described, of discharging mechanism consisting of a shaft, 14, having a spring-arm, 13, operated by a cam, 12, to rotate the said shaft 14, arms 15 on said shaft at each end thereof arranged, in the movement of the shaft 14, to discharge the picket from the table, substantially as described.

3. In an automatic fence-making machine, the combination, with twisting mechanism, feeding mechanism, and discharging mechanism, of a roller for taking up the finished fence, and mechanism connected with said roller, consisting of screw-threaded cones placed in reverse position and connected by a band for causing the roller to move more slowly as the roll of fencing increases in size, substantially as described.

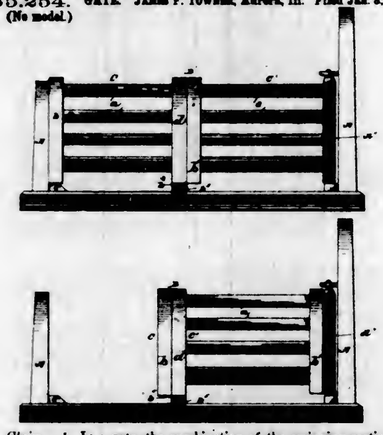
4. In an automatic fence-making machine, the combination, with the twister J and the mechanism for driving the same, of the pinion I, having the projection I' arranged to be operated upon by the plates H H, secured to the segment G, whereby the twisters are held from moving continuously, substantially as described.

5. In an automatic fence-making machine, the combination of the twisters supported in adjustable boxes M, pinions upon the center of each twister, means for operating the first twister, a rack, L, beneath the twister-pinions, arranged to receive motion from the first twister and communicate motion to the rest of the series, and supporting-rollers for said rack, substantially as described.

6. In an automatic fence-making machine, the combination of the adjustable holding-arms for the pickets, the traveling belt operated by mechanism substantially as described, the said belt having pins projecting from its face at intervals, adapted to strike against the end of the pickets as they are fed to the moving belt, and thus carried along by the said belt and deposited in proximity to the twisters.

7. In a fence-making machine, the combination, with a roller for taking up the finished fence, of means for proportioning the speed of said roller, said means consisting of screw-threaded cones placed reversely and connected by a band, one of said cones being fixed upon the shaft to which the roller is secured, and mechanism for operating said cones, consisting of a pawl and gear-wheel, said pawl being operated from a shaft, B², all substantially as described.

335,254. GATE. JAMES F. TOWNER, Aurora, Ill. Filed Jan. 8, 1885. (No model.)



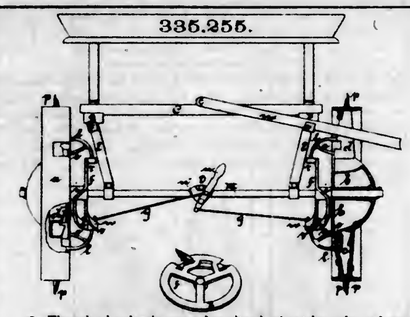
Claim.—1. In a gate, the combination of the swinging section C', composed of the posts *d d'* and the bars *e*, the posts *d* having a series of openings, *f*, alongside the bars *e*, and the sliding section C, composed of the posts *b b'* and the bars *a*, the post *b'* having openings *b²* alongside the bars *a* for the reception of the bars *e* of section C', and the bars *a* passing through the openings *f* of the post *d* of section C', whereby the bars of the sections are arranged alongside and parallel to each other, but out of frictional contact, substantially as described.

2. In a gate, the combination of the pivoted swinging section C', composed of the posts *d d'* and the bars *e*, the post *d* having a series of openings, *f*, alongside the bars *e*, and a roller, *g*, in the lower end of the upper of said openings, and the sliding section C, composed of the posts *b b'* and the bars *a*, the post *b'* having openings *b²* alongside the bars *a* for the reception of the bars *e* of section C', and a roller, *c*, bearing on one of said bars *e*, the bars *a* passing through the openings *f*, one of said bars being supported on roller *g*, substantially as described.

335,255. CORN-PLANTER. CHARLES R. TOWNLEY, South Lansing, N. Y. Filed Mar. 27, 1885. (No model.)

Claim.—1. The lever *l*, pivoted to arm *d* and forming with it a seed-tube, said lever having as a part of or attached to it a feeding-valve, *e*, and a stop-valve, *c*, whereby when the lever is rocked the seed is fed from cavity *b* through the tube and into the ground, substantially as described.

335,255.



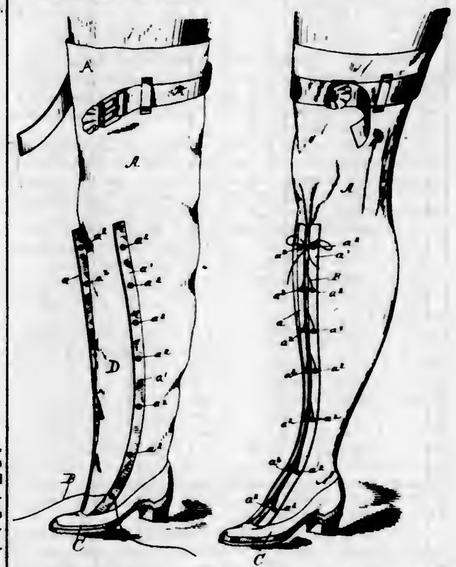
2. The wheel *a*, having a seed-cavity, *b*, about its axis, and grooved arms *d*, in combination with levers *l*, pivoted to said arms, said levers having as a part of or attached to them feeding-valves *e* and stop-valves *c*, and being rocked by cam *f*, substantially as and for the purpose set forth.

3. The cam *f*, rigidly attached to the axle, and having the inclined surface *i'*, and hinged wing *w*, in combination with lever *l*, substantially as and for the purpose set forth.

4. The wing *w*, hinged to cam *f*, in combination with connecting-rod *g* and lever *n*, whereby the planter can be thrown in and out of operation, substantially as described.

5. The marker *m*, provided with a double-pointed tooth and pivoted to reversible arm *m'*, which is pivoted to the central part of the sulky and supported by hook *i*, substantially as and for the purpose set forth.

335,256. RUBBER BOOT. JAMES L. TYLER, Jr., Boston, Mass. Filed July 6, 1885. (No model.)



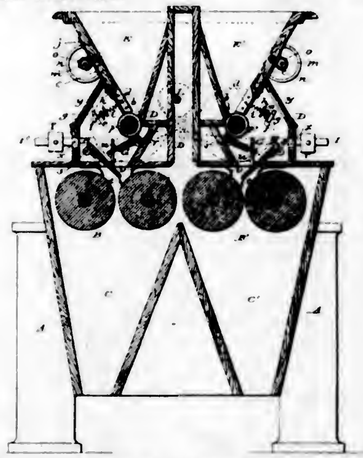
Claim.—1. As an improved article of manufacture, a rubber boot having a foot portion formed or constructed of material of ordinary form and thickness, and a leg portion of gossamer or other similar material of uniform thickness throughout, made full at and above the ankle, and having the two lines of lacing devices attached or secured to the outer surface of the leg, from the instep upward above the ankle, adapted to be drawn or secured together after the boot has been put on, to gather in the fullness and fit it to the leg of the wearer, all substantially as and for the purposes described.

2. A rubber boot having the foot portion C, a leg portion, A, of gossamer or other similar fabric, united to the foot and made full at the ankle and immediately above, as described, the stays *a a'*, fastened to the leg of the boot, and supporting lacing devices, and the cord or lacing device B, all substantially as described.

3. The rubber boot having the foot portion C, the leg A, of gossamer or other thin fabric of similar nature, made full at the ankle and

section above, two lines of devices attached to the leg for reducing, taking in, or gathering its fullness and fitting it to the leg of the wearer, the section A', and the strap A^2, substantially as described.

335,257. **FEED MECHANISM FOR ROLLER GRINDING-MILLS, &c.** PIETER VAN GELDER, Sowerby Bridge, County of York, England. Original application filed Dec. 9, 1884, Serial No. 149,282. Divided and this application filed Mar. 31, 1885. (No model.) Patented in England Oct 29, 1884, No. 14,277; in France Nov. 26, 1884, No. 165,607; in Belgium Nov. 28, 1884, No. 67,041, and in Austria-Hungary Mar. 7, 1885, No 44,891 and No. 11,345.



Claim.—1. In combination with a hopper having a discharge-opening, a feed-roll, a roller seated in the face of the hopper, a vertically-moving slide or gate moving over said roller, and a shaft journaled in brackets upon the hopper and carrying a friction-wheel to bear upon the gate and raise and lower the same.

2. In combination with the hopper having a discharge-opening, a feed-roll, a roller seated in the face of the hopper, a vertically-moving slide or gate, a shaft journaled in bearings on the hopper and carrying a friction-wheel to bear upon the gate to raise and lower the same, and a set-screw adapted to secure said gate in any desired position.

3. In combination with hopper E, roll F, flanged rollers *k*, gate *c*, provided with arms *j*, brackets *l l'*, shafts *m*, provided with hand-wheels *n* and elastic wheels *o*, and set-screws *p*, all arranged as shown.

4. In a feeding mechanism, the combination of hopper E, feed-roll F, sliding gate *c*, hinged gate *d*, stud *e*, screw *f*, and spring *i*, all arranged as shown.

5. In a feeding mechanism, the combination of a hopper, a feed-roll, a gear-wheel mounted on the hopper, a shaking-board below the feed-roll, and an arm carried by or attached to said board and bearing upon the gear-wheel, whereby said arm and its board may receive motion from the wheel, as shown.

6. In combination with a hopper, a feed-roll provided with a driving-wheel, a shaft journaled in the hopper and carrying a gear-wheel adapted to impart motion to the feed-roll, a shaking-board below the feed-roll provided with a counterweighted lever, one end of which bears against and receives motion from the gear-wheel on the shaft, and a second board below and connected with the first one and adapted to receive motion therefrom, as set forth.

7. In combination with hopper E, feed-roll F, provided with wheel R, shaft L, wheel K, carried by said shaft and meshing with wheel R, lever I', provided with wheel J, and board G, as and for the purpose set forth.

8. In combination with hopper E, roll F, provided with wheel R, shaft L, provided with wheel K, shaking-board G, provided with lever I', roll J, carried thereby, board H, and link or bar *u*, connecting-boards G H, as set forth.

9. In a feeding mechanism, the combination of hopper E, feed-rolls F, provided with wheels Q R, shaft L, provided with wheels K M, band P, boards G H, and levers I I', the former provided with roller *w* and the latter with wheel J, as and for the purpose set forth.

10. In combination with a hopper having a discharge-opening, a feed-roll mounted therein and having its surface uniformly pitted, a shaking-board below said feed-roll, and mechanism for imparting motion to the roll and the shaking-board.

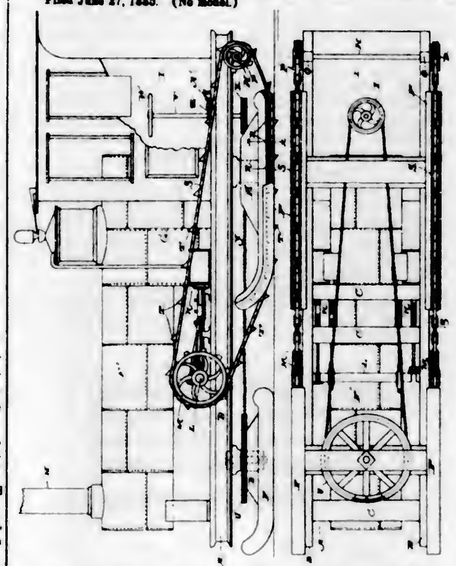
11. In a roller grinding-mill and in combination with a feeding mechanism, substantially such as shown and described, the shaking-board H, provided at its edge with a strip, *t*, of india-rubber, and resting upon one of the rolls, as shown.

12. In a feeding mechanism, the combination of a hopper, a slide or gate, a friction device for operating said gate, a feed-roll, a gear-wheel mounted upon the hopper, a shaking-board below the feed-roll, and an arm attached to said board and bearing against the gear-wheel, as and for the purpose set forth.

13. In a feeding mechanism, the combination, with a hopper, of a feed-roll, a slide or gate, a shaking-board below said feed-roll independent of the slide or gate, and mechanism, substantially such as described, for causing a rotation of the roll and a reciprocation of the board.

14. In combination with a double hopper having discharge-openings, a feed-roll located in each of said hoppers, a cut-off or gate for controlling the feed, a shaking-board below each of the feed-rolls, and an arm attached to one of said boards and serving to operate the other one.

335,258. **LOGGING-MOTOR.** WALTER M. VICTOR, Marinette, Wis. Filed June 27, 1885. (No model.)



Claim.—1. The combination, with the grooved runners, of the endless traction-chains passing under said runners and means for driving the chains, substantially as described.

2. The combination, with the sled or truck having the runners, of the endless traction-chains having the projecting teeth engaging with the snow or ice and means for moving the traction-chains, substantially as described.

3. The combination, with the grooved runners having the anti-friction rollers, of the endless traction-chains passing under said runners and bearing on the rollers and means for driving the chains, substantially as described.

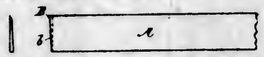
4. The combination of the frame, the engines, the trucks, and the steering devices for one of the trucks with the shaft L, connected to the engines and having the sprocket-wheels M, the shaft N, having the sprocket-wheels P, and the endless traction-chains having the projecting teeth, said chains connecting the sprocket-wheels M and P and passing under the grooved runners of one of the trucks, substantially as described.

335,259. **HORSESHOE-CALK.** B. HOWARD WARREN, Quincy, assignor to the Neverslip Horseshoe Company, Boston, Mass. Filed May 11, 1885. (No model.)



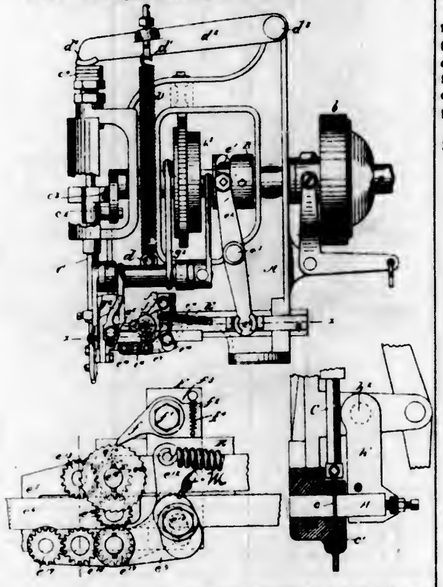
Claim.—As a new article of manufacture, a removable horseshoe-calk having a socket opening toward the point of the calk, with a lateral enlargement at the bottom of the socket, and a core with its inner end expanded into such enlargement, all substantially as described.

335,260. **ART OF MAKING CUT NAILS.** HORACE WEBER, Boston, Mass. Filed Sept. 22, 1885. (No model.)



Claim.—The process of making nails from nail plates or strips, consisting, first, in shaping the end of the nail plate or strip by the removal of a waste section therefrom to form one edge and the head of the nail by a suitable punching or cutting device, and then completing the nail thus partially formed by severing it from the end of the strip by a straight cut extending across the strip from edge to edge, all substantially as and for the purposes described.

335,261. **NAILING-MACHINE.** HORACE WEBER, Boston, and ERASTUS WOODWARD, Somerville, Mass.; said Woodward assignor to said Weber. Filed Sept. 22, 1885. (No model.)



Claim.—1. The combination, in a nailing-machine, of a nail-driver, a reciprocating nail-strip-feed carriage or block carrying a strip-clamping device, and reciprocating nail cutting or severing devices for cutting nails in successive order from the end of the strip, all substantially as and for the purposes described.

2. The combination, in a nail-machine, of the reciprocating driver and the horizontally-reciprocating nail plate or strip feed carriage or block carrying strip clamping and feeding devices, all substantially as and for the purposes described.

3. The combination, in a nailing-machine, of nail-driving devices, a reciprocating nail plate or strip feed carriage or block carrying strip clamping and feeding devices, and two cutters or nail-forming devices, the first of which partially shapes the nails and the second of which completes the nail by severing it from the strip, all substantially as and for the purposes described.

4. The combination, in a nailing-machine, of the nail-driver, two nail cutting or forming devices, a reciprocating nail plate or strip feed carriage or block carrying strip-clamping devices adapted to advance the nail plate or strip from one cutter to the other, and the nail plate or strip feeding device adapted to automatically advance the plate or strip in the holder a distance equivalent to the width of the nail severed therefrom, all substantially as and for the purposes described.

5. In a nailing-machine, a reciprocating nail strip or plate holding device, comprising the abutment c^6, roll c^7, and the supporting-roll c^8, arranged in relation to each other as described, all substantially as and for the purposes set forth.

6. In a nailing-machine, the nail plate or strip holding and feeding device, comprising a reciprocating block having the abutment c^6, and supporting the feed-rolls c^7 c^8, the ratchet-wheel c^{20}, connected with the feed-rolls, and the pawl or detent *f*, all substantially as described.

7. The combination of the abutment or projection c^6, having the surface c^6, the roll c^7, and the movable roll c^8, all substantially as described.

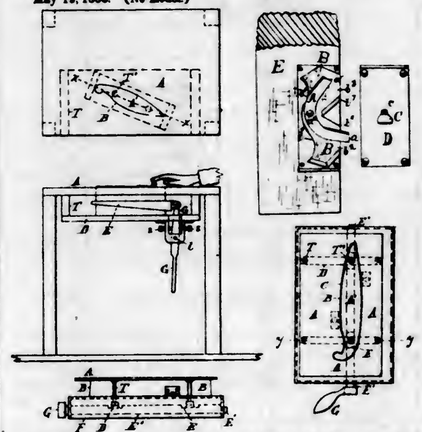
8. The combination of the reciprocating block having a feedway and the abutment or projection c^6, having the surface c^6, the roll c^7, and the roll c^8, supported by the yielding lever c^9, all substantially as described.

9. The combination of the block having the abutment or projection c^6, having the surface or shoulder c^6, the roll c^7, with the roll c^8, and means for moving it vertically and locking or holding it so removed, all substantially as described.

10. The combination, in a nailing-machine, of a reciprocating nail-driver and the two reciprocating cutters or severing devices, arranged in relation to each other, as specified, mechanism for operating the same, and suitable strip-feeding devices, whereby in operation one of the cutters is reciprocated across the line of the feed to partially form the nail upon the nail plate or strip, the nail plate or strip fed, and the second cutter reciprocated across the end of the feedway to complete the nail by severing it from the plate or strip, and to carry it from the feedway to the driver, all substantially as described.

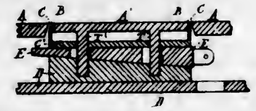
11. The combination, in a nailing-machine, of a nail-driver, its throat having a lateral opening at right angle to the line of the feed of the nail strip or plate, and a reciprocating cutter, and mechanism for operating the same, whereby it is caused to be moved across the line of the feed into the lateral opening of the throat and to form one of the walls of the throat while the nail is being driven, all substantially as and for the purposes described.

335,262. **SASH-HOLDER.** JAMES H. WHITLOCK, Brunson, Tex. Filed May 19, 1885. (No model.)



Claim.—In a window-stop, the combination of a bow-shaped catch, A, having ends *a a'* and a hole, a^2, of a plate, D, pivot thumb-piece C, and a sash, E, having a mortise, B, with openings b^2 b^2, shoulders b^4 b^4, and points b^5 b^5, all constructed and arranged substantially as and for the purpose set forth.

335,263. **COMBINED CIGAR-ROLLING TABLE AND WRAPPER-CUTTER.** JOHN R. WILLIAMS, Newark, N. J. Filed Mar. 8, 1884. (No model.)



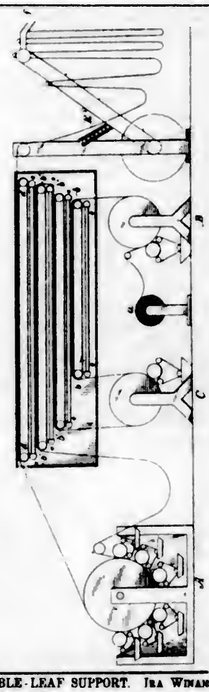
Claim.—In a device for cutting cigar-wrappers, the combination of the cutter, the lateral table external to the cutter, the stationary central table or platen located in the same plane as the lateral table, and the mechanism, substantially as described, for adjusting the cutter, as and for the purpose set forth.

335,264. **METHOD OF MANUFACTURING WALL-PAPER.** WILLIAM WILSON, Edgewater, N. J. Filed Oct. 30, 1885. (No model.)

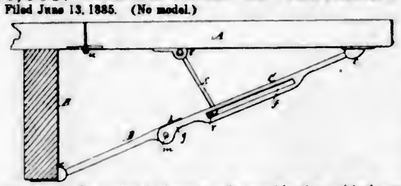
Claim.—1. The herein-described method or process, in the manufacture of wall-paper, of backing the paper with a back-coating of prepared backing, and of grounding, printing, and drying in one continuous operation, in the manner and for the purposes substantially as hereinbefore set forth.

2. The combination of the backing-machine B, the drying-aprons *b* and *b'*, the grounding or blotching machine C, and the printing-machine A.

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335,265. TABLE-LEAF SUPPORT. IRA WINANS, Rochester, N. Y. Filed June 13, 1885. (No model.)



Claim.—1. In a table-leaf support, the combination, with the two jointed arms C D, of the inclined brace E, jointed at one end to the leaf, and provided at the other end with a cross-head, *r*, that runs in side slots, *f f*, of the arm C, as shown and described, and for the purpose specified.

2. In a table-leaf support, the combination of the two jointed arms C D and the inclined brace E, the brace provided with a cross-head at its lower end, that runs in side slots of the arm C, and the arm D provided with a hook, *p*, that engages with a cross-bar, *h*, on arm C, as shown and described, and for the purpose specified.

335,266. MACHINE FOR POLISHING THE INTERIOR OF METAL TUBES. SAMUEL W. ADAMS, Chicago, Ill. Filed Dec. 16, 1884. (No model.)

Claim.—1. The combination, in a machine for polishing the interior of tubes, of a revolving shaft carrying a polishing head or disk at one end with the clamp composed of the sleeve I, having a split end provided with screw-threads and a tapering nut, J, for clamping the split end of the sleeve on the tube being interiorly polished, substantially as described.

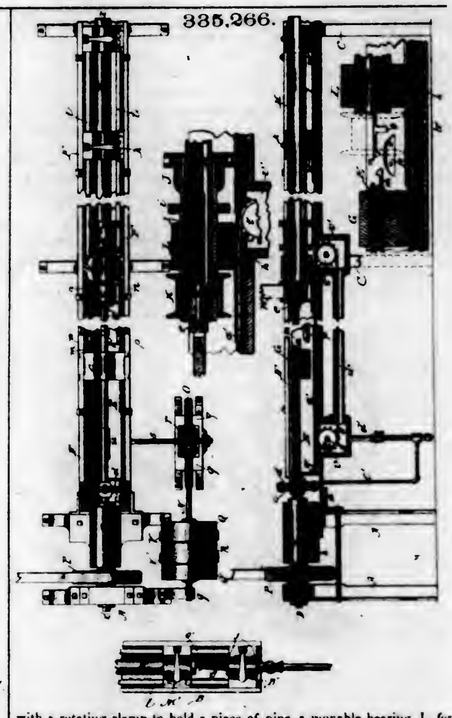
2. In a machine for polishing the interior of metal tubes, a revolving shaft provided at one end with a polishing disk or head, in combination with a plank to receive and hold a piece of pipe while being polished, and traveling bearings for the revolving shaft and pipe, and supports on which such bearings travel, substantially as and for the purposes specified.

3. In a machine for polishing the interior of metal tubes, a clamping-sleeve, I, provided with a pulley, K, in combination with a movable bearing, L, in which the sleeve rotates, substantially as and for the purpose specified.

4. In a machine for polishing the interior of metal tubes, a revolving shaft provided with a polishing disk or head at one end, in combination with a rotating movable clamp to receive and hold a piece of pipe while being polished and an endless chain to move the clamp and pipe forward, substantially as specified.

5. In a machine for polishing the interior of metal tubes, a revolving shaft provided with polishing devices at one end, in combination

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with a rotating clamp to hold a piece of pipe, a movable bearing, L, for the clamp, a trough, B, provided with chambers *v v'*, connected with each other by a passage, *w*, and chain *a'*, substantially as and for the purposes specified.

6. In a machine for polishing the interior of metal tubes, the combination of a shaft, E, movable bearing G, hooks *m*, sleeve I, hooks *n*, trough B, and cams *p*, substantially as and for the purposes specified.

7. In a machine for polishing the interior of metal tubes, the combination of a revolving shaft, E, trough B, provided with chambers *v v'*, and connecting-passage *w*, movable bearing L, chain *a'*, sprocket-wheels *t t'*, shaft *s*, shaft N, worm-screw *r*, and gear-wheel O, substantially as and for the purposes specified.

8. The combination, in a machine for polishing the interior of tubes, of a shaft carrying at one end a polishing head or disk, a traveling clamp for holding the tube to be polished, a traveling bearing, M', for the tube, a traveling bearing, B', connected with said bearing M', the hose C', supported by and traveling with the bearing B', and supports on which said bearings travel, substantially as described.

9. The combination of a hose, C', having a nozzle supported in a movable bearing, B', wheel E', wheel *u'*, and weight W', substantially as and for the purposes specified.

10. The combination, in a machine for polishing the interior of tubes, of a rotating shaft composed of two sections, D and E, coupled together at their adjoining ends, and a polishing head or disk carried by the section E, with a clamp for holding the tube being polished by the head or disk, substantially as described.

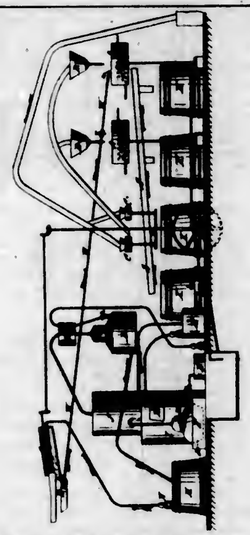
335,267. PROCESS OF MAKING WHISKY. MARSHALL J. ALLEN, New York, N. Y., and WILLIAM E. BRADLEY, Frankfort, Ky., assignors to the Frankfort Whisky Process Company. Filed Feb. 20, 1885. (No model.)

Claim.—1. In the manufacture of whisky, the process described, which consists in using back the slop in the mash-tubs, and in artificially cooling this slop for the first time by mechanical means, together with the mash, before fermentation, substantially as described.

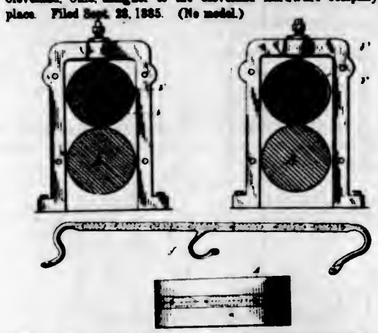
2. In the manufacture of whisky, the process described, which consists in separating the coarse particles from the spent beer, and in using back said slop in the mash-tubs, and in artificially cooling this slop for the first time by mechanical means, together with the mash, before fermentation, substantially as described.

3. In the manufacture of whisky, the process described, which consists in mechanically separating the coarse particles from the spent beer, and in using back said slop in the mash-tubs, and in artificially cooling this slop for the first time by mechanical means, together with the mash, before fermentation, substantially as described.

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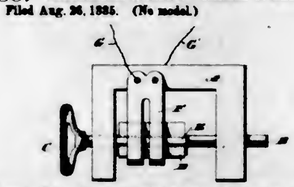


335,268. ROLLS FOR ROLLING TOE-RAILS. SAMUEL E. BROWN, Cleveland, Ohio, assignor to the Cleveland Hardware Company, same place. Filed Sept. 28, 1885. (No model.)



Claim.—The combination, with roll B, grooved substantially as set forth, of roll A, provided with prick-punches *a*, substantially as set forth.

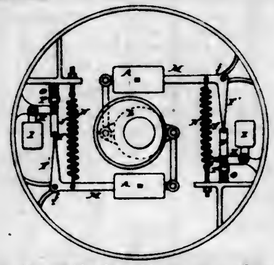
335,269. ELECTRICAL SWITCH. CHARLES F. BRUSH, Cleveland, Ohio. Filed Aug. 26, 1885. (No model.)



Claim.—1. In an electrical switch or current-breaker, an insulating-block made angular in cross-section, and an electric conductor projecting outwardly from the two opposite plane surfaces of the block, said conductor being of less width than said plane surfaces to insure plane surfaces of insulating material adjacent to and on opposite sides of each end of the conductor, in combination with a pair of spring contact-arms arranged to press on opposite sides of the insulating block or conductor, whereby imperfect contacts are avoided and the switch positively retained in its open or closed position, substantially as set forth.

2. In an electric switch or circuit-breaker, the combination, with a block of insulating material secured to a rotary shaft, and an electric conductor insulated from the shaft and projecting outwardly from opposite sides of the block, of a pair of spring-arms arranged to press on opposite sides of the block or conductor, substantially as set forth.

335,270. GOVERNOR. JOSEPH CASSO, Thurlow, Pa. Filed May 9, 1885. (No model.)



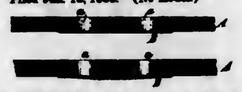
Claim.—1. The combination, with a governor, of auxiliary weight-and-lever mechanism, substantially as set forth, and an eccentric by which the action of the governor to vary the angular advance of the eccentric is assisted or opposed according as the speed of the engine is increased or decreased, the said weight-and-lever mechanism always acting with the tendency of the governor, substantially as and for the purpose specified.

2. The combination, with a governor, of auxiliary weight-and-lever mechanism, substantially as set forth, and an eccentric by which the action of the governor to move the eccentric is assisted or opposed, according as the speed of the engine is increased or decreased, the said weight-and-lever mechanism always acting with the tendency of the governor, substantially as and for the purpose specified.

3. A governor combined with lever F', link J, spring O, lever H, and weight I, combined and arranged substantially in the manner and for the purpose set forth.

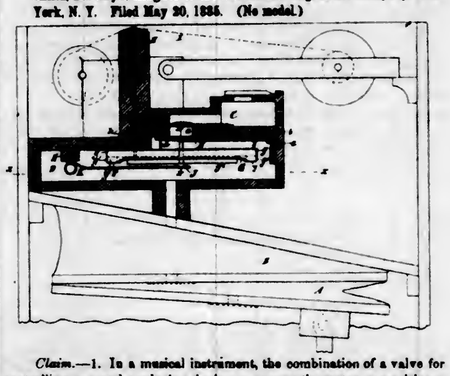
4. A governor combined with lever F', link J, spring O, nut P, lever H, and weight I, combined and arranged substantially in the manner and for the purpose set forth.

335,271. VALVE FOR MUSICAL INSTRUMENTS. J. HERBERT CHASE, Brooklyn, assignor to the Mechanical Orguinette Company, New York, N. Y. Filed Jan. 13, 1885. (No model.)



Claim.—The combination, with a board or like part provided with a series of openings, of a valve made of flexible material, in annular form, of such size that it can cover the series of openings, and secured at the outer edge directly to the board or like part, substantially as specified.

335,272. MECHANICAL MUSICAL INSTRUMENT. J. HERBERT CHASE, Brooklyn, assignor to the Mechanical Orguinette Company, New York, N. Y. Filed May 30, 1885. (No model.)

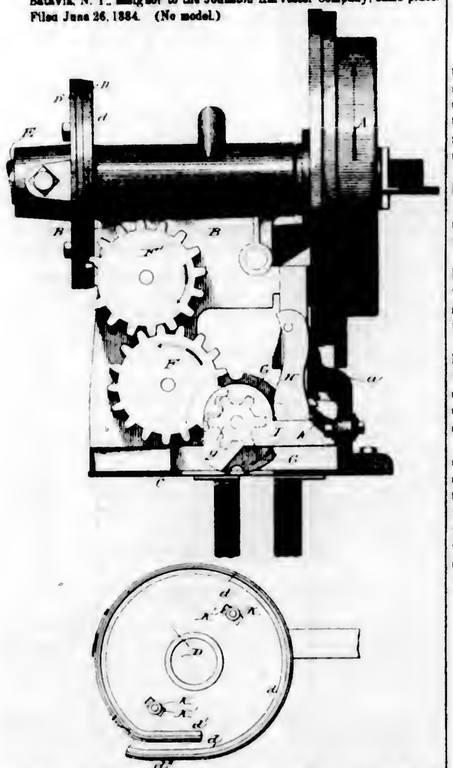


Claim.—1. In a musical instrument, the combination of a valve for controlling a sound-producing device, a pneumatic motor comprising a fixed portion and a strip bodily movable in one plane, a pin passing entirely through the motor and impinging against the valve, and a spring bearing directly on the pin, so that it may through it exert a force against the valve, substantially as specified.

2. In a musical instrument, the combination of a valve for controlling a sound-producing device, a pneumatic motor comprising a fixed portion and a strip bodily movable in one plane, and a pin engaged with the movable strip and drawn away thereby to cause the opening of the valve, substantially as specified.

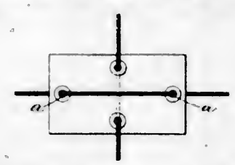
3. A pneumatic motor consisting of the fixed strip g, having projections g' secured thereto near the ends on one side, a strip of wood g^2, shorter than the distance between the projections g', united to the strip g by flexible material g^3, secured to the sides of the strip g, the sides of the projections g' across the under sides of said projections, and the side of the strip g^2, substantially as specified.

335,273. **CORD-HOLDER FOR GRAIN-BINDERS.** ORVILLE COOLEY, Batavia, N. Y., assignor to the Johnston Harvester Company, same place. Filed June 26, 1884. (No model.)



Claim.—In combination with the clamping-disk and gear-wheels, the plate D', the ribbed wheel or scroll-cam plate D, having the slots K', and the securing-bolts K, substantially as and for the purpose set forth.

335,274. **MERCHANDISE-TAG.** HENRY C. DANIELS, Somerville, assignor to Carter, Rice & Co., Boston, Mass. Filed Nov. 13, 1884. (No model.)

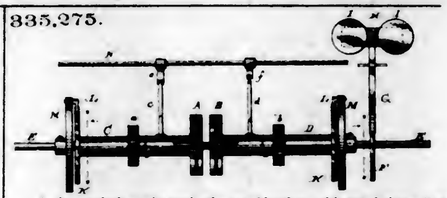


Claim.—As an improved article of manufacture, the merchandise-tag made of paper or other fibrous material, having side and end corresponding perforations for the reception of a fastening string or cord, all substantially as and for the purposes set forth.

335,275. **PRINTING-TELEGRAPH.** RICHARD N. DYER, New York, N. Y., assignor to the Commercial Telegram Company, same place. Filed Oct. 15, 1885. (No model.)

Claim.—1. In a printing-telegraph, the combination, with two independent type-wheel shafts projecting in opposite directions from the type-wheels and separate power-connections with such shafts, of a single pallet and single escape-wheel connected with both of such shafts and controlling their movements, substantially as set forth.

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2. In a printing-telegraph, the combination, with two independent type-wheel shafts projecting in opposite directions from the type-wheels and separate power-connections with such shafts, of a single pallet and single escape-wheel connected with both of such shafts and controlling their movements, a single vibrating armature to which said pallet is connected, and means for stopping said type-wheel shafts at the blank or unison points, substantially as set forth.

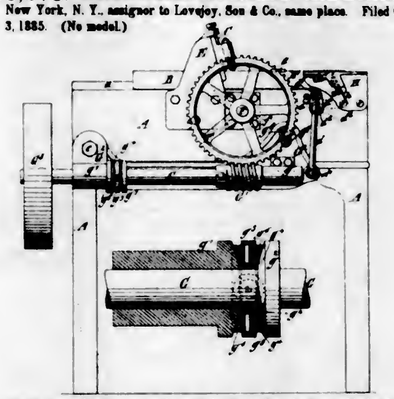
3. In a printing-telegraph, the combination, with two independent hollow type-wheel shafts projecting in opposite directions from the type-wheels and separate power-connections with such shafts, of an escapement-shaft passing centrally through the type-wheel shafts and coupled with them, substantially as set forth.

4. In a printing-telegraph, the combination, with two independent hollow type-wheel shafts projecting in opposite directions from the type-wheels, of an escapement-shaft passing centrally through the type-wheel shafts and pawls and ratchets connecting the escapement-shaft with the type-wheel shafts, substantially as set forth.

5. In a printing-telegraph, the combination, with two independent hollow type-wheel shafts projecting in opposite directions from the type-wheels, of an escapement-shaft passing centrally through the type-wheel shafts and coupled therewith by pawls and ratchets, an escape-wheel on such escapement-shaft, and a single pallet engaging said escape-wheel, substantially as set forth.

6. In a printing-telegraph, the combination, with two type-wheel shafts revolved in the same direction by power applied separately thereto, such shafts being hollow and projecting in opposite directions from the type-wheels, of an escapement-shaft passing centrally through the type-wheel shafts and coupled therewith by pawls and ratchets, an escape-wheel on said escapement-shaft, a single pallet engaging said escape-wheel, and means for stopping said type-wheel shafts at the blank or unison points, substantially as set forth.

335,276. **STEREOTYPE-SHAVING MACHINE.** JAMES H. FERGUSON, New York, N. Y., assignor to Lovejoy, Son & Co., same place. Filed Oct. 3, 1885. (No model.)



Claim.—1. The combination of the traveling bed provided with a rack, b, the transverse shaft F, carrying a pinion, f, gearing with said rack, and a worm-gear, F'', the driving-shaft G, furnished with an endless screw, G', gearing with said worm-gear and having a collar, g^2, the bearing g' for said driving-shaft, and the ring g^3 g^4, furnished with anti-friction rollers g^4, working between said collar and bearing, all substantially as and for the purpose herein described.

2. The combination, with the traveling bed and the shaft F, geared therewith and furnished with a worm-gear, F', the driving-shaft G, supported in a pivoted frame, G^2, and furnished with an endless screw, G', gearing with said worm-gear, the shaft d^2, furnished with a crank-arm, d', connected with said pivoted frame and with a lever for operating it, and the stop d^3, all substantially as and for the purpose herein set forth.

3. The combination, with the main frame of the shaving-machine, of the stationery inverted beveling-plane arranged on said frame at the front end thereof, substantially as and for the purpose herein described.

4. The combination, with stationary ways and a stationary plane extending transversely thereto, of a traveling bed on which a plate may be placed, and by which it will be carried beneath the stationary plane, and a bar or abutment, e, for the edge of a plate secured to the bed between its ends, the bed having a bearing on the ways both forward and rearward of the said bar or abutment, substantially as herein described.

5. The traveling bed B B', a portion of which on the opposite side of the head to that against which the plates to be shaved are placed made with a concave face, substantially as and for the purpose herein set forth.

335,277. **NOSE-GUARD FOR EYEGLASSES.** WILLIAM FREEMAN, Southbridge, Mass. Filed Oct. 29, 1885. (No model.)

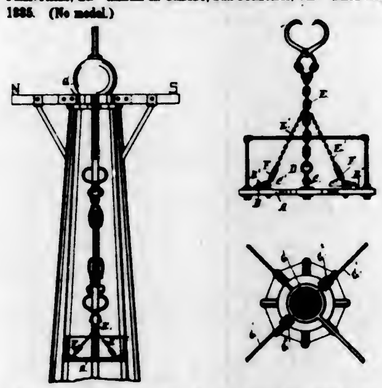


Claim.—1. The combination of the frames, a spring secured to and connecting the frames and having free ends, and nose-guards yieldingly secured at their upper and lower ends to the spring and the frames, and having the free ends of the springs loosely connected thereto, whereby the nose-guards are permitted to move throughout their whole length independently of the frames, substantially as described.

2. The combination of the frames, the connecting-spring, the nose-guards loosely connected at their upper ends to the spring, and links pivotally connected to the frames and loosely secured to the lower ends of the nose-guards, substantially as described.

3. In an eyeglass, the combination of the frames, the spring rigidly secured to and connecting the frames and having free slotted ends, nose-guards having bent lips d, to which the free ends of the spring are connected, and having a slotted arm, f, embracing the spring, and links F, pivotally secured to the frames, and having their free ends slotted and engaging the lower bent tongues e of the nose-guards, substantially as described.

335,278. **PROGRESSIVE CLIMBING DEVICE FOR THE USE OF PAINTERS, &c.** ELIJAH H. GADSBY, San Francisco, Cal. Filed July 25, 1885. (No model.)



Claim.—1. In a progressive climbing device for building, &c., and in combination with a cage or platform and falls H, the interchangeable tackles E, provided with hooks or grapples so as to be alternately and progressively connected to the structure and cage in making the ascent, constructed, arranged, and operating substantially in the manner as herein set forth and specified.

2. The cage or platform A, provided with a circular rabbet and extension-arms, in combination with the tackle E, provided with side chains, E', and take-up screws F, constructed, arranged, and operating in the manner and for the purpose specified.

335,279. **SEWER-GAS-TRAP MOLD.** CHARLES W. GARLAND, Oakland, Cal. Filed Sept. 20, 1884. (No model.)

Claim.—1. In sewer-gas traps, the combination of the cores J K, having the dovetailed connection and threaded lower ends, and the threaded bearing P, substantially as set forth.

2. The combination of the cores J K and the vent-screw ring E' thereon, as set forth.

3. The combination of the cores J K, having the dovetailed connection and threaded ends, the bearing P, and the vent-screw E, as set forth.

4. The combination of the cores J K, having the vent-screw ring E', the cores H N, and the curved cores I L, as set forth.

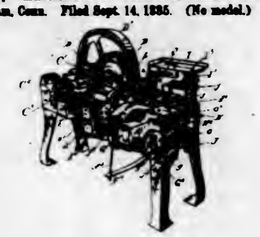
5. The combination of the cores J K, having threaded lower ends,

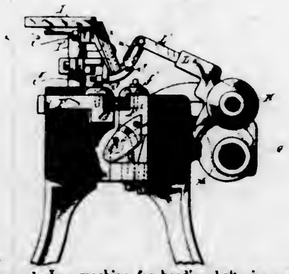
335,279.



the bearing P, the vent-screw ring E', the cores H N, and the curved cores I L, as set forth.

335,280. **MACHINE FOR HEADING BOLTS.** ALBION B. GLOVER, Birmingham, Conn. Filed Sept. 14, 1885. (No model.)





Claim.—1. In a machine for heading bolts, in combination, the horizontal table I, the stationary straight inclined guides i, for holding a series of unheaded bolt-blanks longitudinally one over the other and feeding them continuously, a vibrating device adapted to select successively the lower one of such blanks and transfer it to another part of the machine for a further operation, all substantially as shown and described.

2. In a machine for heading bolts, in combination, the stationary straight inclined guides i, for holding a series of unheaded bolt-blanks longitudinally one over the other and feeding them continuously, a vibrating device adapted to select successively the lower one of such blanks and carry it forward, and the nippers m, attached to a pivoted and extensible arm, for taking up said blank and placing it in the dies, all substantially as shown and described.

3. In a machine for heading bolts, the combination of the vibrating device i^4 i^5 i^6, link j', rod j, lever J, and revolving cam G^2, all operating substantially as described, and for the purpose set forth.

4. In a machine for heading bolts, the combination of the arm L, nippers m, wedge m^2, springs m^6, and its right-angled piece m^3, stud m^4, and revolving cam K', the mechanism described serving to open and close the nippers, substantially as described.

5. In a machine for heading bolts, the combination of the arm L, the movable device l', stud l^3, and revolving cam K, the mechanism described serving to extend and draw back the nippers, substantially as described.

6. In a machine for heading bolts, the combination of the arm L, the movable device l', stud l^3, cam K, and shaft H, with the cam K', stud m^4, right-angled piece m^3, wedge m^2, and nippers m, and springs m^6, all operating substantially as described.

7. In a machine for heading bolts, the devices for holding the hammer securely in the carriage and for adjusting said hammer in the same, consisting of the blocks b' and b^2, adjusting-screws b^3, and vertical guide 1, all combined and operating substantially as shown and described.

8. In a machine for heading bolts, in combination, the stationary

inclined guides i, for holding a series of bolt-blanks longitudinally one over the other and feeding them continuously, a vibrating device adapted to select successively the lower one of such blanks and carry it forward, the extensible arm L L', nippers *m*, the means for opening and closing said nippers, and means for conducting them to and away from the dies, all substantially as shown and described.

9. In a machine for heading bolts, the combination of the vibrating device, link *j'*, rod *j*, lever J, cam G^2, cam M', shaft G', gears *h'* and h^2, shaft H, arm L and its toe *l*, movable device *l'*, right-angled piece m^2, wedge m^2, and cams K and K', all operating substantially as shown and described.

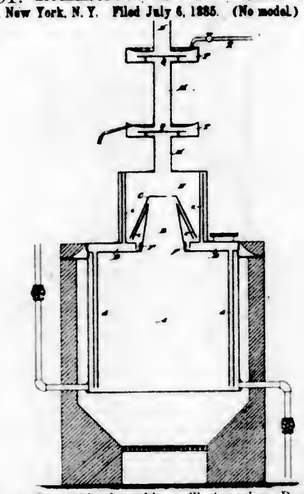
10. In a machine for heading bolts, the combination of the vibrating device, link *j'*, rod *j*, lever J, shaft G', and cams G^2, G, and M on said shaft, gears *h'* and h^2, shaft H, arm L and its toe-piece *l*, movable device *l'*, right-angled piece m^2, wedge m^2, cams K and K', and the pivoted die-holder F', adapted to be operated by the cam G, the combination being and operating substantially as described.

11. In a machine for heading bolts, the combination of the dies *f f'*, holders F F', cam G, and shaft G', gears *h' h²*, shaft H, miter-gears C^2 C^2, shaft C, cam C', sliding carriage B, and hammer *b*, with the plunger N, coiled spring o^4, yoked lever O, and cam G^2, and stud g^4, all operating substantially as shown and described.

12. In a machine for heading bolts, the combination of the arm L and its toe-piece *l*, movable device *l'*, right-angled piece m^2, wedge m^2, cams K and K', shaft H, gears *h' h²*, shaft G', cams G, M, and G^2, dies *f f'*, holders F F', miter-gears C^2 C^2, shaft C, cam C', sliding carriage B, hammer *b*, plunger N, coiled spring o^4, yoked lever O, and stud g^4 on cam G, all operating substantially as shown and described.

13. In a machine for heading bolts, the combination of the vibrating device i^4 i^3 i^2, link *j'*, rod *j*, lever J, cam G^2, shaft G', cams G and M, arm L, with its nippers *m*, and the toe-piece *l*, right-angled piece m^2, wedge m^2, cams K and K', shaft H, gears *h' h²*, dies and die-holders, miter-gears C^2 C^2, shaft C, cam C', sliding carriage B, hammer *b*, plunger N, coiled spring o^4, yoked lever O, and stud g^4 on cam G, all operating substantially as shown and described.

335,281. APPARATUS FOR VAPORIZING LIQUIDS. HENRY GOLDWATER, New York, N. Y. Filed July 6, 1885. (No model.)



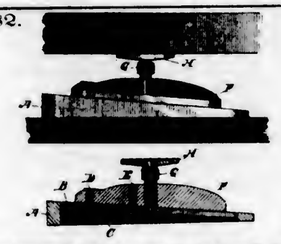
Claim.—1. In combination with a still, A, casings D and E, and means, as B C *c*, for arresting the current of vapor and projecting it with its contents downward, the pipes *e*, leading from the casing D above the retort, and communicating with the upper portion of the chamber E, as herein specified.

2. In a petroleum-distilling apparatus, in combination with the retort A, and means, as C *c* D *d* E *e*, for arresting the principal portion of the heavy vapors and unevaporated liquid, the trap or traps P Q, having each a concave top and a level rim arranged in a series in the ascending portion of the delivery-pipe, and with provisions for flowing cold water on the upper trap and taking away the same from the lower trap, substantially as herein specified.

335,282. PRINTER'S QUOIN. FRANCIS C. GRAVES, Hartford, Conn. Filed Oct. 10, 1885. (No model.)

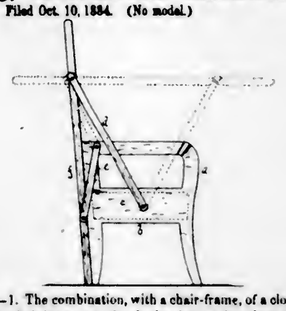
Claim.—1. The combination of the wedge A, the plate F, and the screw G, the screw operating at right angles to the most distant side of the wedge and at an oblique angle to the base of the plate F, all substantially as described.

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2. The combination of the wedge A, the plate F, the screw G, and the plate H, all operating together substantially as hereinbefore set forth.

335,283. CONVERTIBLE CHAIR. CATHARINE M. HAMILTON, Decatur, Ill. Filed Oct. 10, 1884. (No model.)



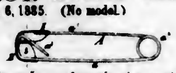
Claim.—1. The combination, with a chair-frame, of a clothes-rack, *f*, secured to the chair by means of swinging braces *d e*, adapted to act as a back for the chair, and also adapted to be elevated to a horizontal position above the chair-frame, as and for the purpose set forth.

2. The combination of frame *a*, rack *f*, swinging braces *d e'*, and table-top *k*, as and for the purpose set forth.

3. The combination, with a frame, *a*, and swinging supports *d e*, of rack *f g h i*, adapted to be expanded, as set forth.

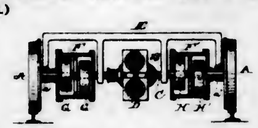
4. The combination, with frame *a* and rack *f*, of board *k*, provided with folding legs *l*, hook *n*, hole *p*, and connecting-pin *p'*, as and for the purpose set forth.

335,284. SAFETY-PIN. WILLIAM F. HYATT, Brooklyn, N. Y. Filed Aug. 6, 1885. (No model.)



Claim.—In a safety-pin, the combination of a shield and a pin having a sharpened or pointed limb and an unsharpened limb bent at the end over away from the main portion and then back toward the main portion to form a guide, substantially as specified.

335,285. DEVICE FOR TRANSMITTING POWER FROM ELECTRIC MOTORS. EDWARD H. JOHNSON, New York, N. Y. Filed Apr. 7, 1885. (No model.)



Claim.—1. The combination, with an electric motor and the driven machine, of a double-acting spring mechanism intermediate between the motor and said machine, and gradually applying the power of the motor when revolved in either direction to such machine, substantially as set forth.

2. The combination, with an electric motor, of a mechanism intermediate between it and the driven machine automatically applying the power of the motor to such machine by impulses, substantially as set forth.

3. The combination, with an electric motor and the machine driven thereby, of an intermediate mechanism permitting the motor to turn independent of the said machine when the safe maximum power of the motor is reached, such mechanism being constructed to retard or momentarily stop such independent movement at intervals and to permit an acceleration of the motor speed at other times, substantially as set forth.

4. The combination, with an electric motor and the machine driven thereby, of an intermediate coiled spring held frictionally at one end, substantially as set forth.

5. The combination, with an electric motor and the machine driven thereby, of an intermediate coiled spring connecting the driving and driven parts, said spring being held frictionally at its outer end to one part, and a clutch, cam, or ratchet acting in one direction and connecting the inner end of the spring to the other part, substantially as set forth.

6. The combination, with an electric motor and the machine driven thereby, of an intermediate coiled spring held frictionally at one end and an adjustment for varying such friction, substantially as set forth.

7. The combination, with an electric motor and the machine driven thereby, of an intermediate coiled spring connecting the driving and driven parts and held frictionally to one part, and an uneven friction-surface upon which the free end of the spring bears for producing a retardation and acceleration of the movement, substantially as set forth.

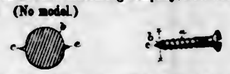
8. The combination, with an electric motor and the machine driven thereby, of an intermediate coiled spring, an inclosing-drum upon which the outer end of the spring bears frictionally, and an adjustable shoe carried by said drum and projecting beyond the friction-surface of the drum, substantially as set forth.

9. The combination, with an electric motor and the machine driven thereby, of intermediate oppositely-acting coiled springs and oppositely-arranged clutches, cams, or ratchets, each releasing in one direction and locking in the other direction and bringing the springs into action for opposite movements of the motor, substantially as set forth.

10. The combination, with an electric motor and the machine driven thereby, of an intermediate spring mechanism connecting the motor and said machine directly without reduction of speed and serving to gradually apply the power of the motor to such machine, substantially as set forth.

11. The combination, with an electric motor and the machine driven thereby, of a double-acting spring mechanism connecting the motor and said machine directly without reduction of speed and gradually applying the power of the motor when revolved in either direction to such machine, substantially as set forth.

335,286. DRIVE-SCREW. HORACE K. JONES, Hartford, assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn. Filed Dec. 10, 1885. (No model.)



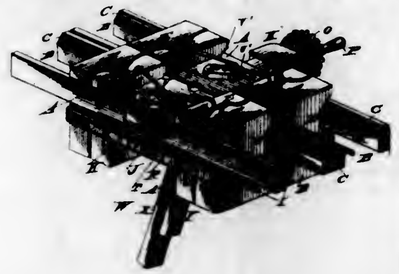
Claim.—As a new article of manufacture, a screw having a continuous ratchet-thread and a tapering point extending from the end of the thread and provided on opposite sides with the webs *c c*, substantially as described, and for the purpose specified.

335,287. MILKING-MACHINE. JOB H. KIRBY, Lawler, Iowa. Filed Apr. 24, 1885. (No model.)

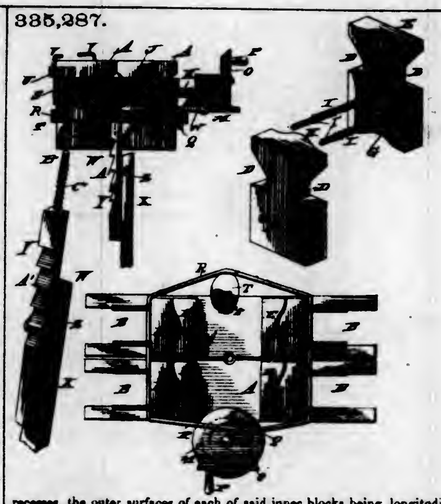
Claim.—1. In a milking-machine, the combination, with a lateral cross-bar, of two cross-pieces adjustably secured thereon, a pair of clamping-blocks sliding upon each end of each of said cross-pieces, the inner block of each pair being laterally adjustable, and means, substantially as described, for forcing the outer blocks against the inner blocks, substantially as and for the purpose set forth.

2. In a milking-machine, the combination, with a lateral cross-bar, of two cross-pieces secured thereon, the outer cross-piece being rigidly secured and the inner one being adjustable by means of a pin passing through it and through holes in the cross-bar, and each end of each of said cross-pieces being provided with longitudinal recess, a pair of clamping-blocks fitting and sliding within each of said recesses, the inner block of each pair being adjustably secured therein, and means, substantially as described, for securing said inner blocks, an elastic band passing around said blocks, and means, substantially as described, for alternately stretching and relaxing said elastic band, substantially as and for the purpose set forth.

3. In a milking-machine, the combination, with a lateral cross-bar, of two cross-pieces secured thereon having recesses in their ends, a pair of clamping-blocks having notches in their sides and fitting within said



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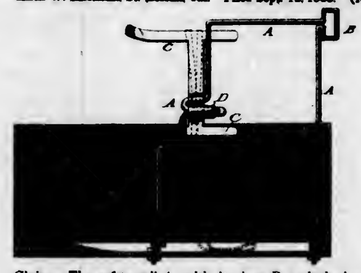


recesses, the outer surfaces of each of said inner blocks being longitudinally concave and the inner surfaces of said outer blocks being longitudinally convex, a pair of guide-rods projecting outwardly from each of said inner blocks through perforations in each of the outer blocks, a spring upon each of said rods between said blocks, an elastic band passing around said blocks, and means, substantially as described, for alternately stretching and relaxing said band, substantially as and for the purpose set forth.

4. The combination, with the inner blocks of each of the cross-pieces of the above-described milking-machine, of a cross-head pivotally secured to said cross-pieces, rods connecting said blocks with the ends of said cross-heads, respectively, an eccentric cam below the outer cross-piece, a shaft connecting said cam with the outer cross-head, a pin passing through each of said cross-heads and engaging with a row of perforations in each of the cross-pieces, an elastic band passing around said eccentric cam and around the blocks of said machine, and means, substantially as described, for alternately stretching and relaxing said elastic band, substantially as and for the purpose set forth.

5. The combination, with the cross-bar of a milking-machine, of a revolving wheel secured to the end thereof, an eccentric pin secured upon said wheel, two cross-pieces adjustably secured upon said cross-bar, having recesses in their ends, a pair of clamping-blocks having notches in their sides and operating within each of said recesses, an elastic band passing around said blocks and said eccentric pin, means for operating said revolving wheel, substantially as described, and a suitable support for said machine, substantially as and for the purpose set forth.

335,288. SAFETY-RAIL AND REIN-GRIP FOR VEHICLES. FREDERICK W. KROMER, St. Helena, Cal. Filed Sept. 12, 1885. (No model.)

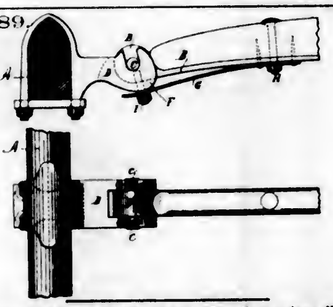


Claim.—The safety-rail A, with its loop B, and the lever attachment rein grip or lock C, with thimble D, the entire apparatus secured to the body of the vehicle with half-staples and bolts and nuts, as shown and described.

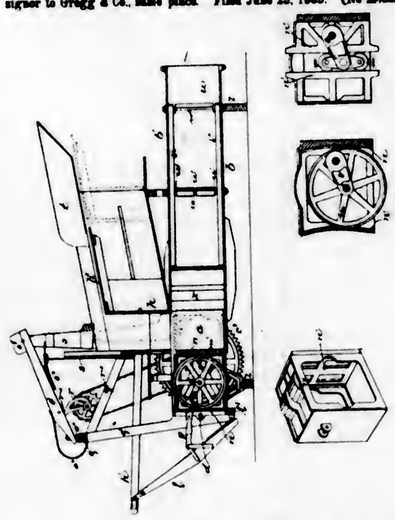
335,289. THILL-COUPLING. GEORGE W. LA RAW, Rahway, N. J. Filed Nov. 9, 1885. (No model.)

Claim.—The open-slotted jaws having cam-shaped surfaces on their lower sides, in combination with the thill-iron and cylindrical cross-pin received into such jaws, the spring acting against the cam portion of the jaws, and the bolt for limiting the movement and preventing injury to the spring, substantially as set forth.

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335,290. BALING-PRESS. JOHN LA DOW, Tramansburg, N. Y., assignor to Gregg & Co., same place. Filed June 25, 1885. (No model.)



Claim.—1. A baling-press frame consisting of vertical parallel metallic sides provided with bearings and guides for the reciprocating mechanism, and forming the walls of the compressing-chamber, in combination with horizontal metallic arms which lap by and are securely bolted to the top and bottom edges of said sides, and which, by projecting beyond the ends of said sides, form the top and bottom of the bale-chamber and support the machine, substantially as hereinbefore described.

2. In a baling-press, the combination, with a follower or division board provided with a series of narrow grooves through which the tying-wires may be passed, of rollers hung at the sides of the bale-chamber, so as to roll closely against the formed bale, and provided with a like series of narrow grooves, each of which lies in the same longitudinal plane as the corresponding groove in the follower-board, whereby wires passed through the grooves in the follower-board are received by the corresponding grooves in the rollers and held in position for tying as the bale is forced along the bale-chamber, substantially as hereinbefore described.

3. In a baling-press, the combination of a bale-chamber having open sides with wings hinged to the ends of arms forming the said bale-chamber, said wings being connected at their ends by threaded bolts, whereby the surfaces they present to the bale may be more or less inclined to each other, thus causing and affording means of adjusting the frictional resistance to the movement of the bale, substantially as hereinbefore described.

4. In a baling-press, the driving-wheel *g* and pinion *c'*, both hung loosely on the crank-shaft, which revolves in the same direction, but at less velocity, whereby the loss by friction is reduced, said pinion and driving-wheel being provided with a claw or friction-clutch in combination with a shifting-lever, whereby the press can be thrown in or out of operation, substantially as hereinbefore described.

5. The train of gearing, consisting of pinion *c'*, hung loosely on the crank-shaft, gears d' d^2, rigidly attached to counter-shaft *d*, and gear *d*, rigidly attached to the crank-shaft, in combination with said counter and crank shafts, substantially as and for the purpose set forth.

6. The hollow follower *s*, having ends provided with tracks for anti-friction wheel *m*, and sides provided with openings for shaft *c*, whereby said shaft can operate within and in conjunction with said follower, substantially as described.

7. In a baling-press, an anti-friction wheel hung loosely on the crank-pin and carried in a circular course by the main crank, in combination with a follower restrained to move in a rectilinear or circular course by guides or their equivalent, and provided with tracks or surfaces for said anti-friction wheels to roll upon, whereby said wheel imparts a reciprocating motion to said follower, substantially as hereinbefore described.

8. In a baling-press, a crank-shaft provided with a crank carrying an anti-friction wheel hung loosely on the crank-pin, in combination with an open follower provided with tracks or surfaces for said anti-friction wheel to roll upon, whereby said crank can operate within and actuate said follower, substantially as hereinbefore set forth.

9. In a baling-press, a two-parted crank-shaft connected by a double crank carrying a loose anti-friction wheel upon the crank-pin, in combination with a follower adapted to reciprocate by being paired with guides, and provided with tracks for said anti-friction wheel to roll upon, substantially as and for the purpose hereinbefore set forth.

10. In a baling-press, the combination of a condenser and follower with an intermediate lever hung to the press-frame, said lever being connected by separate connecting-rods with said condenser and follower, the former being connected to the lever at a more distant point from the fulcrum than the latter, whereby the motion of the follower is augmented as it is transmitted through said lever to the condenser, substantially as hereinbefore described.

11. In a baling-press, an oscillating lever fulcrumed to the press-frame and having a feeder for transferring the partially-compressed charge from the condensing-chamber to the compressing-chamber hung to its free end, and being provided with one or more anti-friction rollers or their equivalent, in combination with a single or double cam-wheel securely attached to a shaft hung to the press-frame, and which is adapted to act upon said roller or rollers or their equivalent and actuate said lever and feeder, substantially as hereinbefore described.

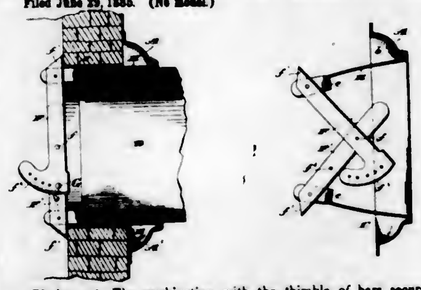
12. In a baling-press, an oscillating lever fulcrumed to the press-frame and having a feeder hung to its free end, in combination with a spring securely attached to the press-frame and acting upon said lever and accelerating its downward stroke, substantially as hereinbefore described.

13. In a baling-press, an oscillating lever fulcrumed to the press-frame and having a feeder hung to its free end, in combination with one or more detent-levers hung to the condensing-chamber head and adapted to retain the feeder at the upper end of its stroke, substantially as hereinbefore described.

14. In a baling-press, an oscillating lever fulcrumed to the press-frame and having a feeder hung to its free end, in combination with two detent-levers connected so that a movement of one imparts an opposite movement to the other, and adapted, by being thrown toward each other, to retain the feeder at the top of its stroke, substantially as described.

15. In a baling-press, a hopper for receiving the material to be pressed, located above and back of the condensing-chamber, in which operates a condenser provided with a shield for preventing the material from falling back of the condenser-head, all of which are constructed so as to be inclined to the baling-chamber, thus providing a sloping hopper and trough, whereby the material is more easily fed from the hopper into the condensing-chamber, substantially as hereinbefore described.

335,291. STOVE-PIPE THIMBLE. OTTO C. MCDANNELL, Lowell, Mich. Filed June 29, 1885. (No model.)



Claim.—1. The combination, with the thimble, of bars secured thereto and arranged to extend within the flue, of a jointed lever pivoted to the bars for locking the thimble to the wall of the flue, and devices for locking the sections against movement.

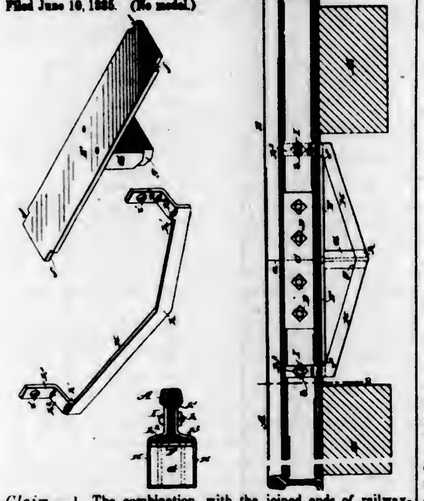
2. The combination, with the thimble and the receding spring-bars secured thereto, of the levers pivoted to the inner ends of the bars and to each other, substantially as set forth.

3. The combination, with the thimble and the spring-bars secured thereto, provided with a series of openings, of the connected levers secured to pins passing through one of the openings in each bar, to secure different adjustments to suit different depths of pipe-flue, substantially as set forth.

4. The combination, with rim of the thimble, of receding shouldered bars secured thereto and a hinged connection between the inner ends of the bars, substantially as set forth.

5. The spring-bars consisting of thin strips of metal bent and folded into shape to form shoulders, and having their inner section turned at right angles to the outer section, in combination with a thimble secured in the outer ends of the spring-bars, and jointed lever, substantially as described, secured to the inner ends of said bars, substantially as set forth.

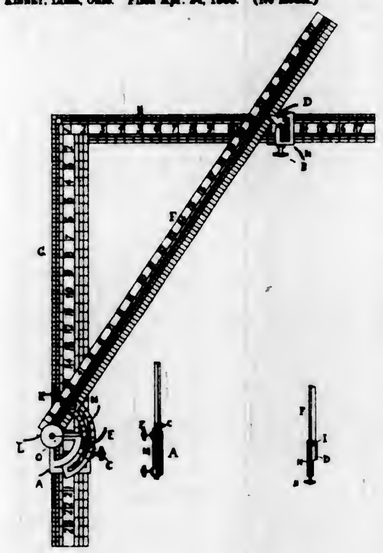
335,292. RAIL-JOINT TRUSS. JOHN MCEWEN, Lawrence, Kans. Filed June 10, 1885. (No model.)



Claim.—1. The combination, with the joined ends of railway-rails, of a truss applied beneath the rails across the joint, said truss consisting of a base-plate, F, a block, G, and opposite truss-bars H H, secured to the rails by bolts I, substantially as herein set forth.

2. A rail-joint truss comprising a base-plate, F, having notches *f*, a block, G, having notches *g*, and opposite truss-bars H H, fitting the notches *g f*, and bolted at I I through their upturned inwardly-bent ends to the joined rails, substantially as herein set forth.

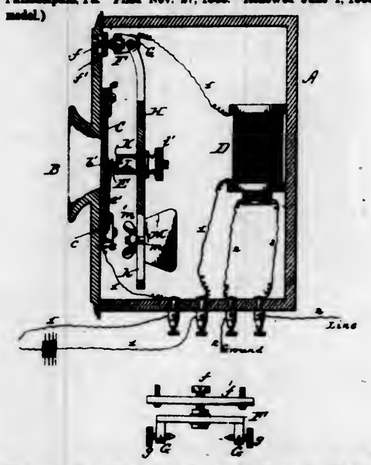
335,298. BEVEL ATTACHMENT FOR SQUARES. JAMES M. MCKENNEY, Lima, Ohio. Filed Apr. 24, 1885. (No model.)



Claim.—1. The graduated bar F, having groove P, slides A and N, and quadrant M, to attach to the ordinary carpenter's square, as and for the purpose set forth.

2. The combination, with graduated piece F and square G H, of the pointer D and the slide N, as and for the purpose set forth.

335,294. TELEPHONIC TRANSMITTER. JAMES F. MCLAUGHLIN, Philadelphia, Pa. Filed Nov. 27, 1882. Renewed June 1, 1885. (No model.)



Claim.—1. In a transmitter, the combination of a diaphragm, a swinging or pendent bar carrying an adjustable block, and a freely-supported button or block, E, interposed between and in contact with said diaphragm and adjustable block, substantially as shown and described.

2. In a transmitter, the combination of a diaphragm having an electrode, a pivoted or swinging bar provided with an adjustable block faced with zinc, and a interposed button between said electrode and block, substantially as shown and described.

3. In a transmitter, the combination of a diaphragm, a freely-supported bar having an attached zinc plate, and a button interposed between said diaphragm and plate, substantially as shown and described.

4. In a transmitter, the combination of a diaphragm, a swinging or pivotal bar, and a freely-supported button, and a zinc plate interposed between the diaphragm and bar, substantially as shown and described.

5. The combination of diaphragm C, bar H, pivoted upon bracket F, means for adjusting the latter, adjustable block I, faced with zinc, and the freely-supported button E, substantially as shown and described.

6. The combination of diaphragm C, having electrode *b'*, the swinging adjustable bar H, having block I, means for adjusting the latter and weight M, the button E, and plate K, interposed between said electrode and block I, substantially as shown and described.

7. In combination with diaphragm C, the freely-supported and adjustable bar H, having weight M and block I, and the button E, interposed between and in the same plane as said diaphragm and block, substantially as shown and described.

8. The combination of diaphragm C, the adjustable swinging bar H, carrying an adjustable block and weight, and the button E, interposed between and in contact with said diaphragm and block, substantially as as shown and described.

9. The combination of diaphragm C, having electrode *b'*, the button E, having spring-support *c'*, the pendent bar H, having adjustable block I, and zinc plate K, substantially as shown and described.

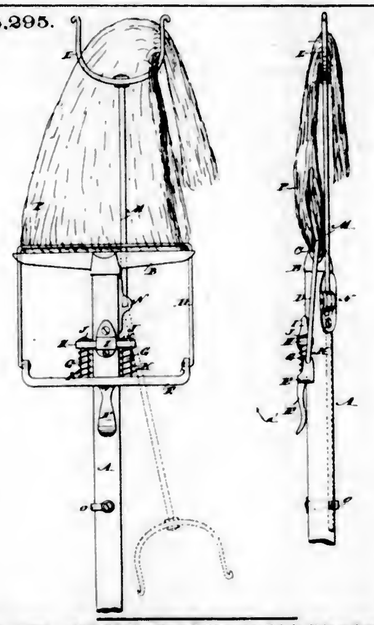
10. The combination of diaphragm C, freely-supported bar H, block K, button E in contact with said diaphragm and block, and means for regulating the force of contact between said parts, substantially as shown and described.

335,295. MOP-HOLDER. JOHN MCWILLIAMS, New Lebanon, N. Y. Filed June 16, 1885. (No model.)

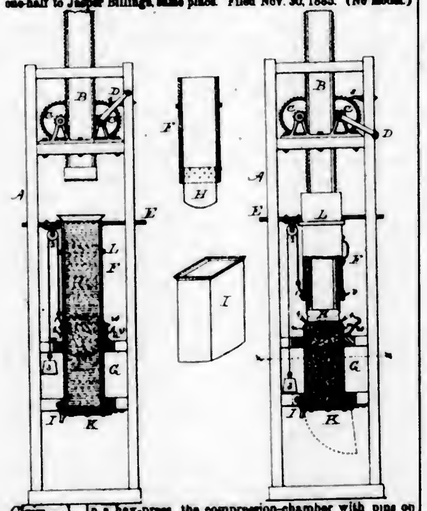
Claim.—1. The combination, with the pole or stick A, of the cross-piece B, the U-shaped wire D, the cross-bar E, having its ends connected with the ends of the wire D, the pins G, projecting from the cross-piece E, the piece H, pivoted on the stick, and through which piece the pins G are passed, and of springs K, surrounding the pins G, between the piece H and the cross-piece E, substantially as herein shown and described.

2. The combination, with a stick, of a mop-holding device on the stick, a rod hinged on the stick, and a U-shaped piece swiveled on the free end of the rod, substantially as herein shown and described.

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335,296. HAY-PRESS. JOHN H. MEREDITH, Toledo, Ohio, assignor of one-half to Jasper Billings, same place. Filed Nov. 30, 1885. (No model.)



Claim.—1. In a hay-press, the compression-chamber with pins on which to support a sack within said chamber, and a pivotal bottom for the discharge of said sack when filled, substantially as set forth.

2. The movable supply-box with iron guards, and with collar L to arrest the upward movement, said box supported in an orifice of the floor or part corresponding therewith and suspended by a counter-weight, substantially as set forth.

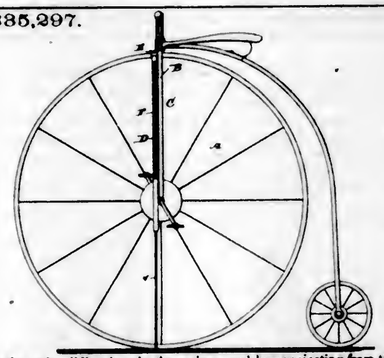
3. The combination of the ratchet-wheels C, pawls *s*, crank D, pinion, and plunger B, in their relation to the supply-box and compression-chamber of a hay-press, substantially as described.

4. The combination of the movable supply-box, the compression-chamber, and the plunger operated by crank and pinion, substantially as set forth.

335,297. BICYCLE-LEG. JOHN F. MORGAN, Lynn, Mass. Filed Aug. 6, 1885. (Model.)

Claim.—1. The combination, with a bicycle, of tubular casings on the shanks of the fork, which casings have longitudinal slots with notches

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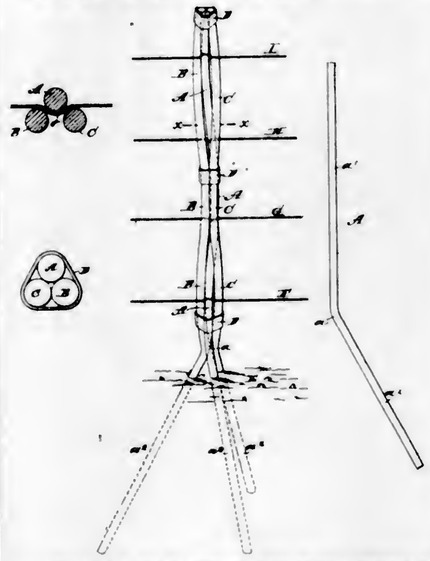


at the ends, sliding legs in the casings, and lugs projecting from the legs through the slots in the casing, substantially as herein shown and described.

2. The combination, with a bicycle, of a tubular casing on each shank of the fork, a squared rod held in and extending through each casing, a spring surrounding the rod, and a tubular leg sliding in the casing and on the said rod, substantially as herein shown and described.

3. The combination, with a bicycle, of the casings D on the fork, the caps E, the squared rods K, held to the same and passed through the casings D, the tubular leg H, sliding in the casings, and the springs L, substantially as herein shown and described.

335,298. FENCE-POST. WILLIAM H. MYERS and LOUIS ANDERSON, Oregon, Wis. Filed June 12, 1884. (No model.)



Claim.—1. A post for fences and other purposes, composed of a group of rods, A B C, the lower ends of which are bent so as to form a triangular base to be set in the ground, and the rod A above the ground interlaced back and forth between the rods B C, and the group held firmly together by bands D, substantially as described

2. A post for fences and other purposes, consisting of a group of rods, A B C, interlaced with each other, substantially as described, so as to form outwardly-bent sections, and bound together at the apex of these bent sections by bands D, as set forth.

335,299. CLOTHES-PIN. JAMES K. P. NOURSE, West Medway, Mass., assignor to William Crabb, Newark, N. J. Filed Oct. 22, 1883. (No model.)



Claim.—A clamp consisting of a single piece of wire, of which the middle portion is bent into an elongated loop to form the limbs upon one

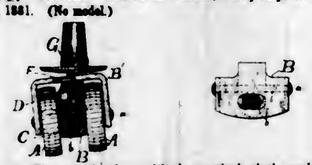
side of the clamp, and the free ends are doubled and twisted together to form the opposing intervening limb, substantially in the manner and for the purpose described.

335,300. HEAD-COVERING. MOSES OVERU and WOLF FRENKEL, STEIN, Chicago, Ill. Filed May 12, 1885. (No model.)



Claim.—The combination, with a head-covering, A, of extensions B B', the former provided with mouth-opening C, as and for the purpose set forth.

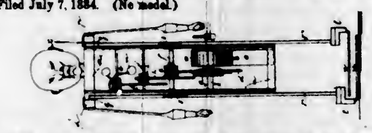
335,301. CASTER. GEORGE M. PATTEN, Jersey City, N. J. Filed July 21, 1881. (No model.)



Claim.—1. The combination, with the vertical pintle and the two caster-wheels and axles, of a frame between the wheels, into which said vertical pintle passes, and which also receives the axles of the caster-wheels, and a roller upon a vertical axis between the caster-wheels, and bearing against one side of the vertical pintle, substantially as specified.

2. The combination, with the vertical pintle and the two caster-wheels and axles, of a frame between the wheels, into which said vertical pintle passes, and which also receives the axles of the caster-wheels, and a roller upon a vertical axis between the caster-wheels and bearing against one side of the vertical pintle, and a collar around said pintle, to prevent the floor-wheels and frame dropping and separating from the pintle, substantially as specified.

335,302. WALKING DOLL. FRANCIS W. PELOUBET, Newark, N. J. Filed July 7, 1884. (No model.)



Claim.—A doll combining therein a body, footed levers fulcrumed on said body and rigid, or of parts immovable in their relations to one another from the points of bearing on the ground to the fulcrumal ends, cranks adapted to give a reciprocating motion to said levers, and clock-work to actuate said cranks, lateral projections *u* extending from the feet across the center of gravity of the doll, the said doll working its feet automatically, so that they come down alternately, first on the heel, then rock over to the toe, then rise and move forward, substantially as set forth.

335,303. SYSTEM OF WATER-WORKS. PAUL B. PERKINS, North Springfield, Mo. Filed May 21, 1885. (No model.)

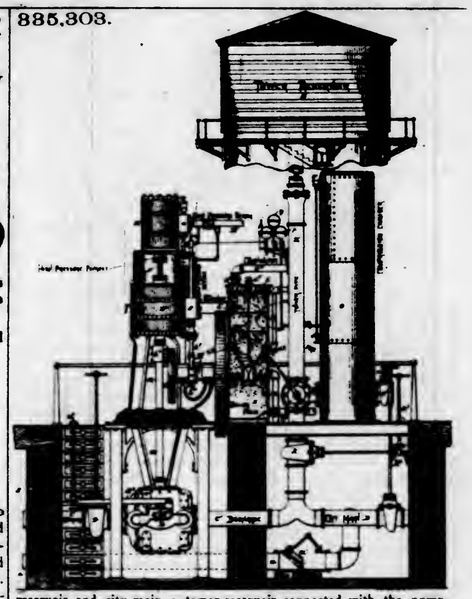
Claim.—1. The combination, with a city main, of supply-pipes leading therefrom to a low-service reservoir, a tower-reservoir, and a force-pump, and valves connected therewith adapted to open and close communication between the city main and any one or more of the supplies, at the will of the operator, substantially as set forth.

2. The combination, with a distributing-main, of a low-service reservoir, a tower-reservoir, a force-pump, and a compression-chamber, and valved pipes connecting the same with the city main, whereby the pressure from one or more of the above-named sources may be applied to the water in the city main at the will of the operator, substantially as set forth.

3. In a system of water-works, the combination, with a city main, a low-service reservoir, and a supply-conduit connecting the two, and provided with a check-valve, of a force-pump connected with the said reservoir and city main for increasing the pressure therein, and a weighted valve located between the suction and discharge of the pump for determining the limit of pressure without waste of water, substantially as set forth.

4. In a system of water-works, the combination, with a city main, a low-service reservoir, and a supply-conduit connecting the two and provided with a check-valve, of a force-pump connected with the said

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reservoir and city main, a tower-reservoir connected with the pump-discharge and city main, and a weighted valve located between the suction and discharge of the pump, for determining the limit of pressure without waste of water, substantially as set forth.

5. In a system of water-works, the combination, with the force-pump connecting the low-service reservoir with the city main, of a tower-reservoir connected with the city main and pump-discharge, and a relief-valve located between the suction and discharge of the pump, for the purpose substantially as set forth.

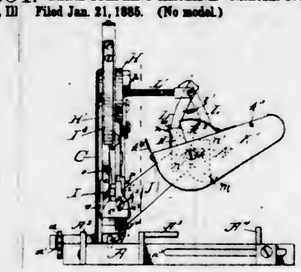
6. In a system of water-works, the combination, with the main water-supply, the city main, a tower-reservoir, and means for forcing the water from the main supply into the tower-reservoir, of a stand-pipe leading from the tower-reservoir to the city main, a compression-chamber connected with the stand-pipe, and a two-way valve located at the juncture of the compression-chamber and stand-pipe, for the purpose substantially as set forth.

7. In a system of water-works, the combination, with the city main and a force-pump connecting the main with the low-service reservoir, of the compression-chamber in communication with the main, said compression-chamber being provided with an air-inlet valve and water-gate, whereby the air-cushion may be maintained at a uniform tension, substantially as set forth.

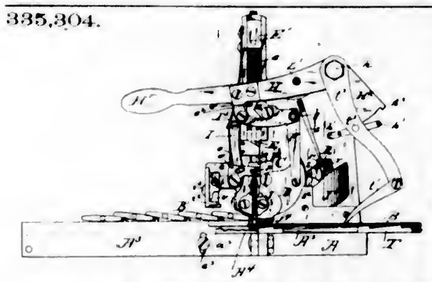
8. In a system of water-works, the combination, with a low-service supply, and a force-pump connected therewith for increasing the pressure in the city mains, of a tower-reservoir of great capacity connected with the pump-discharge and city main by a stand-pipe of small diameter, substantially as set forth.

9. In a system of water-works, the combination, with the city main, and the low-service reservoir connected therewith by the conduit with its self opening and closing valve, of the force-pump connected with the said reservoir and city main, the stand-pipe, tower-reservoir, compression-chamber, and the valves, the whole constructed and arranged substantially as set forth.

335,304. BLIND-STAPLING MACHINE. NICHOLAS P. PETERSON, Chicago, Ill. Filed Jan. 21, 1885. (No model.)



335,304.



Claim.—1. In a blind-stapling machine, the driving-arms for driving a staple into the slat and a staple into the rod, the rod-staple interlocking with the slat-staple, an operating-lever connected to said driving-arms, a staple-guiding track for each driving-arm, and feeding devices above said tracks connected to said operating-lever, whereby by the return-stroke of the lever a staple is automatically fed to each driving-arm, all combined and operating substantially as specified.

2. In a blind-stapling machine, the combination of staple hopper or hoppers, of track or tracks from said hoppers to each driving-arm, of an intermittently-rotated disk mounted in said hoppers near the end of said track or tracks, and the staple-driving arms, said disk being provided with proper hooks and being operated by the driving-arm operating-lever, substantially as specified.

3. In a blind-stapling machine, the combination, with the driving-arms, of tracks for conveying staples from the hoppers to the tracks, of the hoppers for holding the staples, of an intermittently-revolving shaft mounted in said hoppers having a stirring-arm and a hooked disk secured thereon, and of pawl-and-ratchet or equivalent mechanism for intermittently rotating said shaft from the operating-lever, arranged and operating substantially as specified.

4. The combination of a hopper of a blind-stapling machine with a revolving disk or stirrer-arms or both secured to a shaft mounted therein a hood hinged to said hopper, and a pawl-and-ratchet or other mechanism for operating said shaft from the operating-lever of the machine, substantially as and for the purpose set forth.

5. In a blind-stapling machine, the combination, with the driving-arm and a track leading thereto, of an automatic feeding device consisting of the separator R, pivoted above said track, said separator having one end bent or fork-shaped, as at r^2 r^2, of a cam for moving said separator in one direction, and a spring for moving it in the opposite direction, substantially as and for the purpose specified.

6. The combination of the track J' of a blind-stapling machine, separator R, pivoted to the machine above said track and provided at its lower end with forked or bent portions r^2 r^2, and at its upper end with roller r', with the spring s and swinging cam s', pivoted to the machine so as to pass between the frame and the roller r', the rocking finger s^2, secured to the pinion s^3 and operated from the lever H through the segmental gear s^3 and links s^4 s^5, bar I^3, and arm I^2, substantially as specified.

7. In a blind-stapling machine, the track J', leading from the staple-hopper to the driving-arm D, having its upper edge tapered so as to permit a staple to straddle it and slide thereon, and having its lower end, j^4, shaped to receive the staple from the edge of the track and form a guideway for said staple and arm D, substantially as specified.

8. In a blind-stapling machine, the combination, with a driving-arm, E, and a staple-guiding track, J, leading thereto, of the separating-plate P, said plate having a beveled pointed end, p', and a pin, p, said pin p engaging the slot in the lever O, whereby said plate P is raised and lowered with each stroke of the driving-arm so as to present but one staple at a time to said arm, substantially as specified.

9. In a blind-stapling machine, the combination, with a vertical driving-arm and a staple-track leading thereto, of a pin or stop, j^3, mounted in the track and having a rounded or tapered end, and a spring also mounted in said track and pressing said stop j^3 into or partially into the guideway e of said driving-arm, whereby a staple may be retained in position for the next stroke of the driving-arm, substantially as specified.

10. In a blind-stapling machine, the combination of the vertical driving-arm E and lever H with means for operating said arm from said lever, consisting of the cam-lever G, pivoted to the frame of the machine, and the link F', secured at one end to the lever H and at the other to the lever G, and having a hook, f'', to engage the projection or roller e^2 on the arm E, substantially as specified.

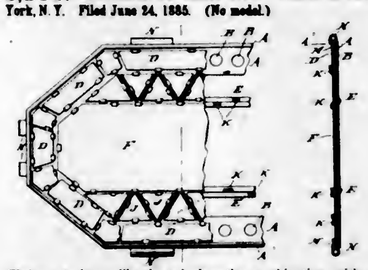
11. In a blind-stapling machine, the combination, with the operating-lever H, of the link F', cam-lever G, vertical driving-arm E, and a spring-stop, E', secured in the upper end of the guideway e, substantially as and for the purpose specified.

12. In a blind-stapling machine, the slat-clamping device i i^2, adjustable by means of the screws i' i^2, in combination with the driving-arm and the operating-lever, and means for connecting said device to said lever, whereby the slat is clamped in position when the arm drives the staple, substantially as specified.

13. In a blind-stapling machine, the combination of the pivoted driving-arm D and the operating-lever H with means for operating said arm from said lever, consisting of the cam-lever G, pivoted to the frame of the machine, the link F, secured at one end to the driving-arm D and at the other end to said cam-lever G, the link F', secured at one end to the lever H and at the other end also secured to said lever G at or near the same points with said link F, and a spring, g, secured to the frame of the machine and operating as a stop for the lever G, substantially as and for the purpose specified.

14. In a blind-stapling machine, the combination of the slat-clamping device i i^2, and a stationary stripper, v, adjustably secured to the machine by means of the screw v' passing through a slot in said stripper, whereby the slats are caused to clear the said clamping device when released thereby, substantially as specified.

335,305. ILLUMINATED GLASS SIGN. FRANCIS L. PECK, New York, N. Y. Filed June 24, 1885. (No model.)



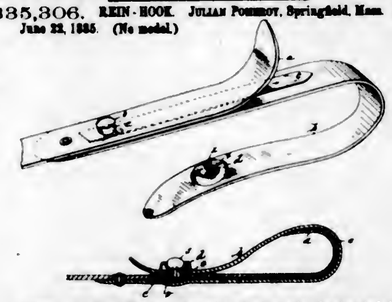
Claim.—1. In an illuminated sign, the combination, with a metal frame, of bars on the same a short distance from the inner edge of the frame, bars uniting the frame and the above-mentioned bars, flexible tongues projecting from the inner sides of the frame and bars, and panes of glass held by the said clips or tongues, substantially as herein shown and described.

2. In an illuminated sign, the combination, with the frame A, having apertures B, of the glass panes or strips D, held on the back of the frame A, bars held in the frame, and panes of glass held on the frame and bars, substantially as herein shown and described.

3. In an illuminated sign, the combination, with the frame A, having the flange A', of the stiffening-wire M, the bars E and G, and glass panes held on the said frame and bars, substantially as herein shown and described.

4. In an illuminated sign, the combination, with the frame A, of the bars E and G, having strengthening-ribs, and of glass panes held on the frame and bars by clips, substantially as herein shown and described.

335,306. REIN-HOOK. JULIAN POMEROY, Springfield, Mass. Filed June 22, 1885. (No model.)



Claim.—1. In rein-hook fastening devices, the flat-headed key o, attached to a metallic plate between the rein parts, the loose washer e, and the concave washer d, having the slots x therein, combined with the rein parts a and b, substantially as set forth.

2. In combination, the rein parts a and b, the flat metallic hook c, the key o, attached to the latter, the loose washer e, and the concave washer d, having the slots x therein, substantially as set forth.

3. In combination, the rein parts a and b, the flat metallic hook c, the key o, attached to the latter, the loose washer e, and the concave washer d, having the slots x and the depressions z therein, substantially as set forth.

335,307. BAG OR SATCHEL FASTENING. LOUIS B. FRAHAR, Brooklyn, N. Y., assignor to himself and Charles S. Shepard, same place. Filed Dec. 2, 1885. (No model.)

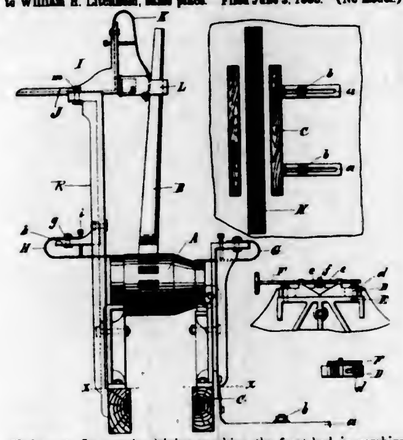
Claim.—In a pocket-book or hand-bag fastening, the combination,

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with the parts A B of the frame, the socket C, attached to one part of the frame, the cap D, fitted upon the said socket, the catch E, attached to the said cap, and the spring l, placed upon the catch-stem and interposed between the bottom of the said socket and the said cap, of the catch-plates F G, having recesses to receive the said clasp, substantially as herein shown and described, whereby the parts of the frame when closed will be securely fastened and held from lateral movement upon each other, as set forth.

335,308. SPOKE-DRIVER. LOUIS RAEDW, Elmhurst, Ill., assignor to William H. Litchfield, same place. Filed June 3, 1885. (No model.)



Claim.—1. In a spoke-driving machine, the front bed, in combination with the adjustable blocks D, beveled or V-shaped on their inner faces, substantially as and for the purposes set forth.

2. In a spoke-driving machine, the bed E, in combination with the movable V-shaped blocks D, provided with slots, fastening-bolts d, and an adjusting device, whereby the blocks are set to and from each other, substantially as and for the purposes set forth.

3. In a spoke-driving machine, the bed E, provided with lugs e, in combination with V-shaped blocks D, mounted and movable thereon, and the adjusting-screw F, running in eyes on the block and provided with a collar, f, held between the lugs e, substantially as and for the purposes set forth.

4. In a spoke-driving machine, the front bed provided with a seat for the front end of the hub, in combination with the bent spring G, arranged in line with the hub and at one end attached to the frame while the free end rests upon the end of the hub, substantially as and for the purposes set forth.

5. In a spoke-driving machine, the front bed-piece provided with a seat for the nose of the hub, in combination with the bent spring G, arranged in line with the hub, and having its free end resting on the latter, and the set-screw i, substantially as and for the purposes set forth.

6. In a spoke-driving machine, upright supports for the ends of the hub, provided with seats for the latter, in combination with the bent springs G and H, arranged in line with the hub and with their free ends resting on the latter, and the set-screws i, bearing upon said springs, substantially as and for the purposes set forth.

7. In a spoke-driving machine, the upright bed-supports for the hub, provided with suitable seats, in combination with the bent springs G and H, arranged in line with the hub, vertically-adjustable brackets to which the springs are respectively attached at one end, and the set-screws i, bearing upon said springs, substantially as and for the purposes set forth.

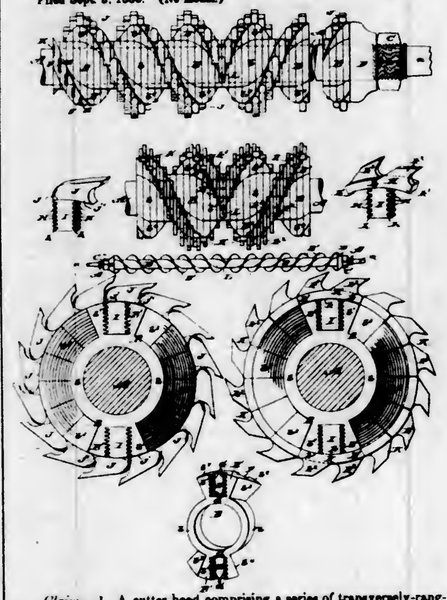
8. In a spoke-driving machine, an adjustable spoke support or holder, in combination with a spoke-clasp hinged to said holder, and a holding-spring attached at one end to said holder also, while the other end is arranged to press against the spoke, whereby both clasp and spring are made adjustable with the holder, substantially as and for the purposes set forth.

9. In a spoke-driving machine, the upright post R, in combination with the slotted bracket J, mounted adjustably thereon, the spoke-clasp L, pivoted to the bracket, and the spoke-holding spring K, fastened at one end to the bracket, while the other is arranged to press the spoke against the clasp, substantially as and for the purposes set forth.

10. In a spoke-driving machine, the horizontally-adjustable bracket J, in combination with the support R, the spoke-clasp L, pivoted thereto, holding-spring K, attached at one end thereto, and the set-screw mounted in the bracket and working against the spring, substantially as and for the purposes set forth.

11. In a spoke-driving machine, the bed-support, in combination with the vertically-adjustable post R, the bracket attached thereto, the spring H, mounted on the bracket, the bracket J, mounted on the post and horizontally adjustable thereon, and the spoke-clasp L and holding-spring K, both attached to bracket J, substantially as and for the purposes set forth.

335,309. CUTTER-HEAD. WILLIAM G. RENDALL, Portland, Oreg. Filed Sept. 3, 1885. (No model.)



Claim.—1. A cutter-head comprising a series of transversely-ranging sections having end wings or parts which form a spiral web around and along the cutter-head when the sections are clamped together face to face, and said wings or end parts of the sections formed with recesses in their opposite faces coinciding with recesses in the faces of the wings or end parts of the next adjacent sections when the sections are disposed to form the spiral web, and teeth or cutters having tangs fitting the sockets formed by these coinciding-face recesses of the sections, said tangs forming dowels to preserve the integrity of the spiral web when the sections are clamped together, substantially as herein set forth.

2. A cutter-head comprising a series of transversely-ranging sections having end wings or parts radiating from a central ring or collar, and adapted to form a spiral web around and along the cutter-head when the sections are clamped together face to face, a shaft passing through the rings, clamping devices on the shaft for binding the cutter-head sections together, and teeth or cutters on the spiral web, substantially as herein set forth.

3. A cutter-head comprising a series of transversely-ranging sections having end wings or parts radiating from a central ring or collar, and adapted to form a spiral web around and along the cutter-head when the sections are clamped together face to face, and said wings or end parts formed with recesses in their opposite faces coinciding with recesses in the faces of the wings or end parts of the next adjacent sections when the sections are disposed to form the spiral web, teeth or cutters having tangs fitting the sockets formed by the coinciding recesses and forming dowels to preserve the integrity of the spiral web, a shaft passing through the rings of the cutter-head sections, and clamping devices for binding the cutter-head sections together on the shaft, substantially as herein set forth.

4. A cutter-head comprising a series of transversely-ranging sections having end wings or parts, which, when the sections are clamped together face to face, form oppositely-ranging or right and left hand spirals meeting about at the center of the cutter-head, and said wings or parts of the sections formed with recesses in their opposite faces coinciding with recesses in the faces of the wings or end parts of the next adjacent sections when the sections are disposed to form the reverse spiral webs, and teeth or cutters having tangs fitting the sockets formed by the coinciding recesses and forming dowels to preserve the integrity of the re-

verse spiral webs when the cutter-head sections are clamped together, substantially as herein set forth.

5. A cutter-head comprising a series of transversely-ranging sections having end wings or parts radiating from a central ring or collar, and adapted, when the sections are clamped together face to face, to form oppositely-ranging or right and left hand spirals meeting about at the center of the cutter-head, and said wings or end parts formed with recesses in their opposite faces coinciding with recesses in the faces of the wings or end parts of the next adjacent sections when the sections are disposed to form the reverse spiral webs, teeth or cutters having tangs fitting the sockets formed by the coinciding-face recesses, said tangs forming dowels to preserve the integrity of the reverse spiral webs, a shaft passing through the rings of the cutter-head sections, and clamping devices for binding the sections together on the shaft, substantially as herein set forth.

6. In sectional spiral cutter-heads, the combination, with the sections B, having end wings or parts adapted to form a spiral web when the sections are clamped together face to face, and provided with coinciding-face recesses E F, substantially as specified, of teeth or cutters having tangs fitting sockets formed by said coinciding recesses, and also having body portions which overlap and mutually support each other laterally, substantially as herein set forth.

7. In sectional spiral cutter-heads, the sections B, formed with a central ring, *b*, opposite end wings or parts, B' B', having beveled edges b^3 b^4, and formed with recesses E F in their opposite faces b' b^3, and said recesses having notches G, adapted to interlock with projections on the cutters, substantially as herein set forth.

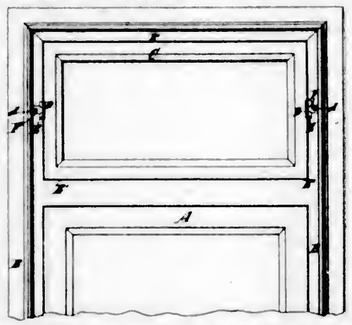
8. In sectional spiral cutter-heads, the combination, with the sections B, having end wings or parts, B', recessed at E F and notched at G, of the insertible cutters or teeth having tangs I, provided with teeth or projections H, adapted to the notched recesses E F G, substantially as described, whereby the cutters will be retained in place against centrifugal force and may be projected when worn, as set forth.

9. A spiral cutter-head composed of sections B, formed with a central ring, *b*, opposite end wings or parts B' B', having beveled edges b^3 b^4, and formed with recesses E F in their opposite faces, adapted to receive tangs on the cutters, substantially as herein set forth.

10. A sectional spiral cutter-head the teeth of which at the periphery of each section are formed with diagonally-positioned front and rear cutters, as at I^2 I^3, substantially as herein set forth.

11. A sectional spiral cutter-head the teeth of which are formed with tangs adapted to sockets in the cutter-head sections, and with body portions provided with diagonally-positioned front and rear cutters, I^2 I^3, substantially as herein set forth.

335,310. TRANSOM-PIVOT. FRED C. ROBINSON, New York, N. Y. Filed Sept. 25, 1885. (No model.)



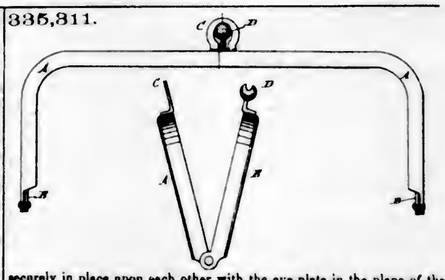
Claim.—1. The combination, with the plate D, to be secured to the sash and provided with an integral pivot-stud, *a*, of the plate E, to be secured to the frame or casing, and having a U-shaped bearing, *b*, open at the inner edge of the plate for the reception of the stud *a*, and a cap closing the U-shaped bearing in the plate E, for securing the pivot-stud *a* therein, substantially as herein described.

2. The combination, with the plate D, provided with a headed or flanged stud, *a*, of the plate E, channeled or recessed upon its inner face to receive the flange of said stud, and having a U-shaped bearing for the body of the stud, and a cap for closing the bearing at the inner edge of the bearing-plate, substantially as herein described.

335,311. FASTENING FOR HAND-BAGS AND OTHER ARTICLES. LOUIS SANDERS, Brooklyn, N. Y., assignor to Eliza Sanders, same place. Filed Dec. 8, 1885. (No model.)

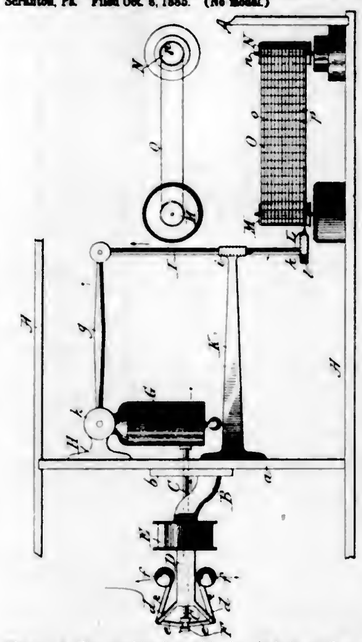
Claim.—The combination, with the slotted eye-plate C, attached to one part of the frame of the stem D, having a flaring notch in its top, and attached to the other part of the frame, substantially as herein shown and described, whereby the said eye-plate and stem will be held

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securely in place upon each other with the eye-plate in the plane of the central line of the stem, as set forth.

335,312. SPEED AND TIME RECORDER. CHRISTIAN H. SCHARAR, Scranton, Pa. Filed Oct. 6, 1885. (No model.)



Claim.—1. The combination, with the angle-lever G *g*, provided with the weighted arm, as shown, a reciprocating rod, C, and means for operating the same, and a pencil attached to the outer end of the lever, of a recording-blank in contact with the point of the pencil, substantially as described.

2. The combination, with the reciprocating rod C, actuated by means of a governor, and the angle-lever G *g*, provided with a weighted arm, and pivoted in bracket H and adapted to be rocked by means of the rod C, of the sliding rod I, loosely secured to one arm of the rocking lever, and the pencil L, secured in the outer end of the sliding rod I, substantially as set forth.

3. The combination, with the recording-blank O, provided with the speed-lines *o* and the time-lines *p*, and adapted to be moved at a uniform rate of speed, of the pencil L, secured in the outer end of the sliding rod I and held in constant contact therewith, and adapted to be moved transversely to the movement of the recording-blank by the governor connected with the engine or fan whose speed is to be indicated, and the weighted lever G *g*, whereby when pressure is removed the pencil will automatically return to its normal position, substantially as shown.

335,313. TONGUE-SUPPORT FOR VEHICLES. ISRAEL SCHLESEL, Topeka, Kans., assignor of one-half to Thomas Parkinson, same place. Filed Oct. 30, 1885. (No model.)



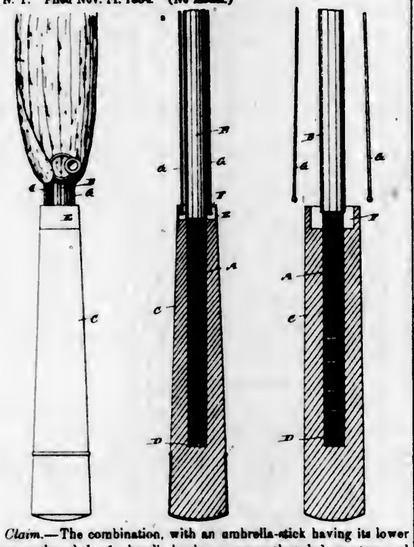
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Claim.—1. In a wagon-tongue supporter substantially as herein shown and described, a supporter-shaft pivotally secured at its lower end to a retaining-plate fastened to the wagon-axle, and having its upper end supported by a knee-brace secured to the under side of the tongue, said supporting-shaft being bent down at about a right angle and upward, substantially as shown, and for the purposes specified.

2. The combination of the tongue, the knee-brace secured to the under side thereof, the axle, the retaining-plate fastened thereto, the tongue-supporter shaft pivotally secured at its lower end to the retaining-plate and loosely supported at its upper end by the knee-brace, coiled springs placed around the shaft on the opposite sides of the depending arm of the knee-brace, and a nut and jam-nut for regulating the tension of the larger spring, substantially as specified.

335,314. UMBRELLA-HANDLE. ALBERT T. SCHLICHTING, New York, N. Y. Filed Nov. 11, 1884. (No model.)



Claim.—The combination, with an umbrella-stick having its lower end screw-threaded, of a handle having a screw-threaded aperture and provided with a cavity for receiving the free ends of the umbrella-ribs, which handle is screwed on the screw-threaded end of the stick and by turning it in either direction can be moved toward or from the ends of the ribs for the purpose of holding or releasing them.

335,315. CHENILLE ORNAMENT. CHRISTIAN A. SCHMIDT, Hoboken, N. J. Filed May 14, 1885. (No model.)



Claim.—1. Chenille ornaments composed of two or more strands of chenille, which strands have varying diameters and which strands are twisted together spirally, and are bound together to prevent uncoiling, substantially as herein shown and described.

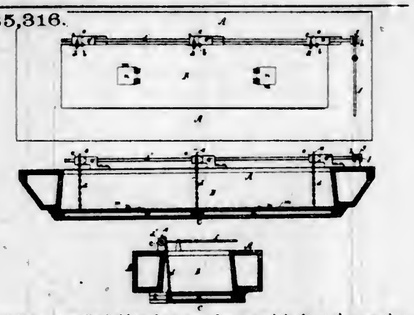
2. The combination, with a core, of two or more strands of shaped chenille twisted around the same, substantially as herein shown and described.

335,316. DUMPING-SCOW. FRANK SCRIPTURE, Rockport, Mass., assignor, by mesne assignments, to himself and James Swift Rogers, same place. Filed Nov. 23, 1885. (No model.)

Claim.—1. A dumping-scow having to the open bottom of its hold a door hinged to the scow-body, and provided with one or more air-tight chambers to cause it when the scow is afloat and on a load being dumped therefrom to rise in the water and close the bottom of the hold, as set forth.

2. The combination, with the scow-body, of the floatable door, substantially as described, hinged at one edge to such body at the open bottom of its hold, and provided at its opposite edge with notches arranged in it, and with chains fixed to it immediately in rear of and close to such notches, all being substantially as set forth.

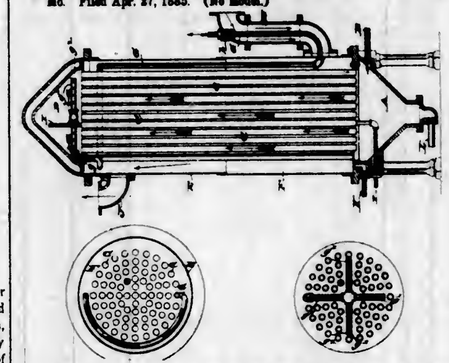
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3. The combination of the rotary and sliding shaft supported in boxes, and provided with hooks and one or more clutches, as described, with the dumping-scow body and with the floatable door, essentially as described, of the hold thereof, hinged to such body, and provided with notches arranged in it, as represented, and with chains to engage with the said hooks, all being substantially as set forth.

4. A dumping-scow having to the open bottom of its hold a door provided with means to render it floatable, and hinged to the scow-body in order to cause such door when the scow is afloat, and on a load being dumped therefrom, to rise in the water and close the bottom of the hold, all being substantially as set forth

335,317. FEED-WATER HEATER. FREDERICK SHICKLE, St. Louis, Mo. Filed Apr. 27, 1885. (No model.)



Claim.—1. The combination of the tubes C, the chamber D, the pipe G, the shell E, and the steam-inlet H, said water-discharge pipe passing out through said steam-inlet, substantially as described.

2. The combination of the chambers A D, the tubes C, the pipe G, the shell E, and the steam-inlet H, said water-discharge pipe passing out through said steam-inlet, substantially as described.

3. The combination of the tubes C, the chamber D, and the pipe G, said pipe being wound partially or wholly around the tubes before being carried out of the heater, substantially as described.

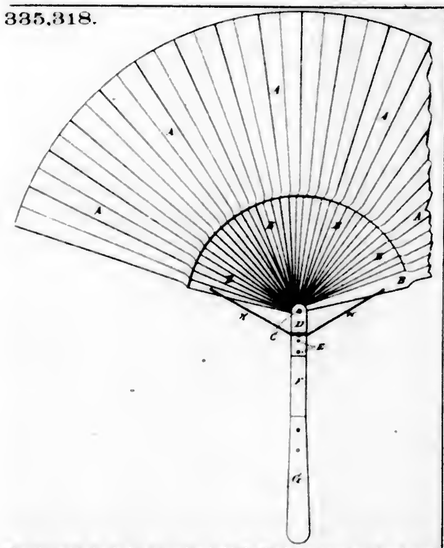
4. The combination of the tubes C, the steam-space F, the chamber D, and the pipe G, said pipe being extended from the chamber D downward through the steam-space toward the lower end thereof, substantially as described.

335,318. TOILET-FAN. JOSEPH SILBERMIK, New York, N. Y. Filed Mar. 19, 1885. (No model.)

Claim.—1. The combination, with the holder, a series of fan-sticks pivoted thereto, and a shoulder on the outside of the holder below the pivot of the fan-sticks, of an elastic, H, secured at its ends to the outer fan-sticks above their pivotal points, and free of connection with the fan between its ends, whereby said elastic will hold the fan open when it is brought into engagement with the shoulder, and will hold the fan closed when released from the shoulder, substantially as set forth.

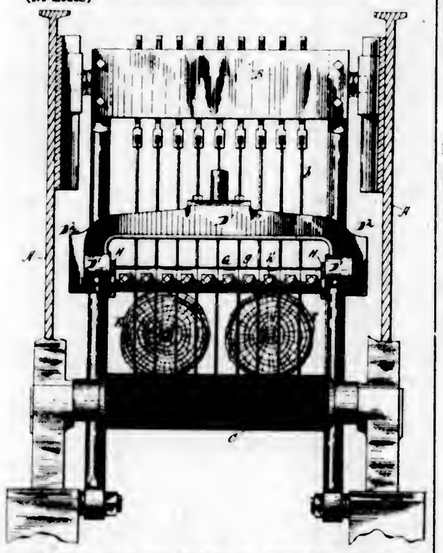
2. As an improved article of manufacture, a fan comprising a holder, D, having an offset or shoulder, a handle, G, and a spring, F, connecting the holder and handle, the fan A B, pivoted within the holder above the offset or shoulder, and the elastic H, secured at its ends to the outer fan-sticks above their pivotal points, and free of the fan between its ends,

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whereby said elastic is adapted to hold the fan in an open or closed position, substantially as set forth.

335,319. GANG-SAW MILL. JOHN C. SLOCUM, Marinetta, Wis., assignor of one-half to Edward Scofield, same place. Filed May 21, 1885. (No model.)



Claim.—1. In a gang-saw mill, the combination, with the saws and the pressure-roller, of the guides embracing the saws and mounted upon the yoke or arm which carries the pressure-roller, substantially as and for the purposes specified.

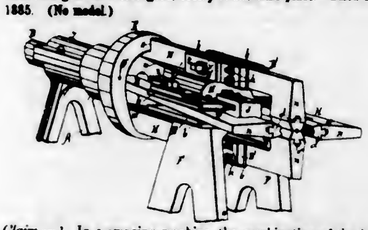
2. The combination, with the saws of a reciprocating gang-saw mill, of a bar extending across the line of travel of the article to be operated upon immediately above the same and adjacent to the saws, and guides attached to the said bar and embracing the saws, substantially as and for the purposes specified.

3. The combination, with the pressure-roller yoke D, having brackets D^2, of the bar F, mounted in said brackets, and the guides G, mounted upon the said bar, substantially as and for the purposes specified.

4. The combination, with the bar F, of the guides G, having sleeves *g*, through which the said bar passes, the set-screws *h'*, by means of which the guides may be independently connected to the bar, and the nuts H, mounted upon the threaded portions of the said bar to clamp said guides in position, substantially as and for the purposes specified.

5. The combination, with the bar F, of the guides G, having sleeves *g*, through which the said bar passes, and set-screws *h'*, by means of which the said guides may be independently adjusted, substantially as and for the purposes specified.

335,320. SWAGING-MACHINE. ALEXANDER G. SMITH, Jackson, Mich., assignor to Withington, Cooley & Co., same place. Filed Aug. 13, 1885. (No model.)



Claim.—1. In a swaging-machine, the combination of the horizontal drive-shaft, the loose drive-pulley, the friction-clutch, the mechanism for operating said clutch, the cam-wheel, the series of hammers, the arms of which work on pivot-bearings, said arms engaging with the cam, the springs for operating said hammers adjustably attached to the head, their free ends pressing the rear ends of the hammer-arms, as set forth.

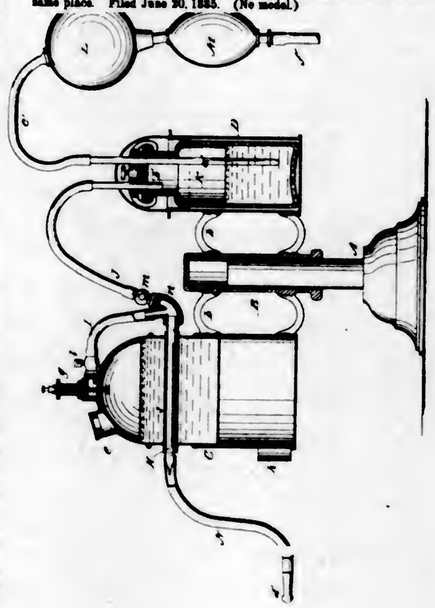
2. The combination of the horizontal shaft, the cam-wheel, the pair of hammers swinging vertically, the pair of hammers swinging horizontally, the arms of which work on adjustable bearings within the four-way support D', engaging with the cam C^2, the springs attached to the head J, and wedges for adjusting said springs, substantially as specified.

3. In a swaging-machine substantially as set forth, the combination of the supports F, the head N, mounted thereon, said head having the four-way supports D', the hammer-arms journaled between said supports, the brass adjusting-plates *b*, located between the supports D' and hammer-arms H, the set-screws *h*, working against said brass plates, and the hammers *n*, having adjustable dies *d*, as and for the purposes specified.

335,321. MECHANICAL-TELEPHONE DIAPHRAGM. WILLIAM TAYLOR, Niles, Mich. Filed Aug. 1, 1885. (No model.)

Claim.—A diaphragm consisting of alternate layers of pressed pulp and cloth united by cement, substantially as described.

335,322. COMBINED INHALER AND ATOMIZER. HUGH THOMAS, New York, N. Y., assignor of one-half to himself and James M. Henley, same place. Filed June 20, 1885. (No model.)



Claim.—1. In a combined atomizer and vaporizer for inhaling and other purposes, the combination, with the atomizing-vessel and its pump and atomizing devices, of a steam-boiler and a spray or discharge tube connected by tubes and valves both with the steam-boiler and the atomizing devices, whereby either steam or atomized medicated material, or the two combined, may be discharged through the spray-tube, substantially as specified.

2. In a combined atomizer and vaporizer for inhaling and other purposes, the combination, with the steam-boiler C, having a sleeve, *s*, through it, of the spray-tube H, arranged to pass through said sleeve, essentially as and for the purpose herein described.

3. The combination, with the atomizing-vessel, its pump and atomizing devices, of the steam-boiler C, having a sleeve, *s*, through it, the tubes I J, connection *n*, and valves *l m*, and the spray-tube H, arranged to pass through said sleeve, substantially as and for the purposes herein set forth.

4. The combination, with the atomizing-vessel, its pump and atomizing devices, of the bowl O, having a perforated upper cup, *s'*, substantially as and for the purpose herein set forth.

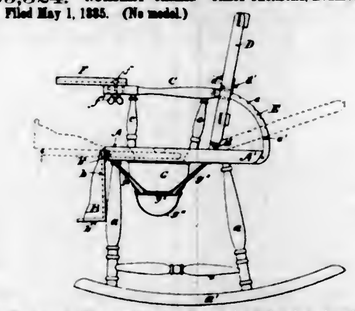
335,323. PROCESS OF APPLYING WEAR-POINTS TO RUBBER BOOTS AND SHOES. JUDSON L. THOMSON, Syracuse, N. Y. Filed Nov. 13, 1885. (No model.)



Claim.—1. The process of applying rivets and wear-plates to the soles and heels of rubber boots and shoes, consisting in cutting or stamping the sole and heel in one piece out of a sheet of unvulcanized rubber, then forcing the attaching-prongs of the rivets or wear-plates through said sole and heel from the under side thereof, and clinching them on the upper side of the same, then cementing the combined sole and heel to the bottom edges of the upper and to the usual inner cloth lining of the rubber boot or shoe while on the last, and subsequently vulcanizing the same, substantially as set forth.

2. The process of applying rivets and wear-plates to the soles and heels of rubber boots and shoes, consisting in cutting or stamping the sole and heel in one piece out of a sheet of unvulcanized rubber, then cementing onto the upper side thereof a lining of canvas or other suitable material, then forcing the attaching-prongs of the rivets or wear-plates through the said sole and heel and through the lining and clinching them upon the latter, then cementing the lined side of the sole and heel to the usual inner cloth lining of the boot or shoe, and subsequently vulcanizing the latter, substantially as specified.

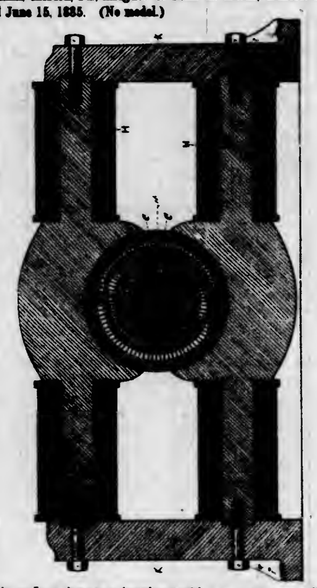
335,324. NURSERY-CHAIR. JAMES THOMSON, Evansville, Miss. Filed May 1, 1885. (No model.)



Claim.—1. The combination, in a chair of the class described, with the seat A, having holes extending into said seat from its forward edge, and the rods b^2 fitting in said holes, of the rest B, having its board *v* of less thickness than the seat A, said rest being hinged to the seat above the rods b^2, whereby when the rest is turned to a horizontal position its upper surface will be flush with the surface of the seat, and rods b^2 may be drawn out under the rest, all substantially as described.

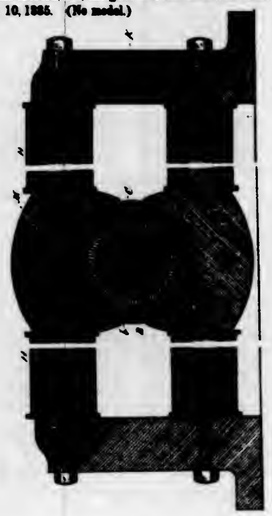
2. The combination, with the seat A, having extensions A' back of the seat, and arms C, slotted at their rear ends, of the back D, hinged at its lower end to the rear of the seat, and having slotted standards d^2, the ratchets E, extending through the slots in the standards d^2 and secured at their lower ends to extensions A' and at their upper ends to arms C inside of their slots, and the spring-pawls *d'*, secured to standards d^2 and engaging with the ratchets E, substantially as described.

335,325. DYNAMO-ELECTRIC MACHINE OR MOTOR. WILLIAM L. VOELKER, Merion, Pa., assignor to John H. Irwin, trustee, same place. Filed June 15, 1885. (No model.)



Claim.—In a dynamo-electric machine or motor, a cylindrical armature made up, as set forth, from sheet-iron plates or disks having an electrical or mechanical plating of diamagnetic material, as described, and held or secured together upon their shaft by suitable clamping devices, the whole constituting an armature-body made up of separate or individual plates in contact with one another, so that the armature shall be mechanically subdivided or laminated in planes coinciding with the lines of magnetic force, and magnetically subdivided by films of diamagnetic metal, each united on one side with a disk or plate of iron, and having its other side constituting a plane surface resting in contact with a separate plane surface to make a plane of subdivision.

335,326. DYNAMO-ELECTRIC MACHINE AND MOTOR. WILLIAM L. VOELKER, Merion, Pa., assignor to John H. Irwin, trustee, same place. Filed Oct. 10, 1885. (No model.)



Claim.—1. In a dynamo-electric machine or motor having a cylindrical armature or its equivalent, as described, the combination, with each individual section of armature-conductor that passes transversely through the magnetic field, of a sheath or envelope of magnetic material surrounding the same entirely, as and for the purpose described.

2. In a dynamo-electric machine or motor having all of its inductor-wire arranged, as described, to pass transversely through the magnetic lines of force emanating from the field-of-force pole-piece, the combination, with each said inductor-wire, of a sheath of magnetic material entirely surrounding the same, as and for the purpose described.

3. In a dynamo-electric machine or motor, the combination, with the individual portions of armature-conductor located between a body of iron and a field-of-force pole-piece, of a surrounding sheath or envelope of iron for each individual portion, as and for the purpose described.

4. In a dynamo-electric machine or motor, the combination, with an armature-conductor upon the exterior of a magnetic body, and between the same and a field-of-force pole-piece, of a surrounding sheath of magnetic material subdivided in planes substantially parallel with the lines of force emanating from the field-of-force pole-piece.

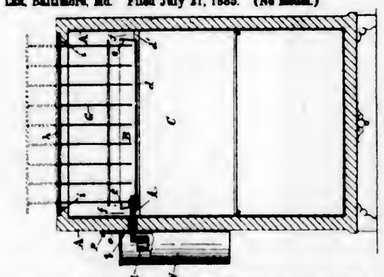
5. The combination, in a dynamo-electric machine or motor, of an armature carrier or body of magnetic material, and armature-conductors lying between said body and the field-of-force pole-piece, so as to intercept the lines of force passing from the pole-piece to the body, and individually sheathed or enveloped in a magnetic material, as and for the purpose described.

6. In a dynamo-electric machine or motor, the combination of an armature body or carrier of magnetic material, an armature-conductor applied to the same between said body and the field-of-force pole-piece, and an iron spiral surrounding said conductor.

7. In a dynamo-electric machine or motor, a field-of-force magnet whose cores and pole-pieces are formed of a number of separate sheet-iron plates having mechanically or electrically plated surfaces plated with a diamagnetic metal, the whole being held or pressed together with their plane surfaces in contact, and forming a compact mass of separate or individual plates, which mass is both mechanically and magnetically subdivided, as described.

8. In a dynamo-electric machine or motor, a field-magnet whose pole-pieces are formed of a series of separate tinned iron plates held together with their separate plane surfaces in contact with one another, as and for the purpose described.

335,327. **REFRIGERATOR.** WILLIAM H. WALTON and JOHN H. KELLER, Baltimore, Md. Filed July 21, 1885. (No model.)



Claim.—A refrigerator having in combination an ice-pan, B, supported on cross-bars *d*, with an air-space, *f*, all around between the walls of the ice-pan and the walls of the refrigerator, and a removable wire guard, G, supported by its upper part resting on the top of the refrigerator-walls and hanging therefrom with its lower part within the walls of the ice-pan, as set forth.

335,328. **MINING-MACHINE.** GEORGE D. WHITCOMB, Chicago, Ill. Filed Nov. 12, 1884. (No model.)

Claim.—1. In a mining-machine, the combination, with the piston D, of the cylinder C, having inlet-ports F, and outlet-ports G, consisting of slot *g* and cylindrical transverse passage *g'*, and tubular slotted valve H, capable of rotation therein, and having a suitable handle-lever locking device therefor, substantially as and for the purposes specified.

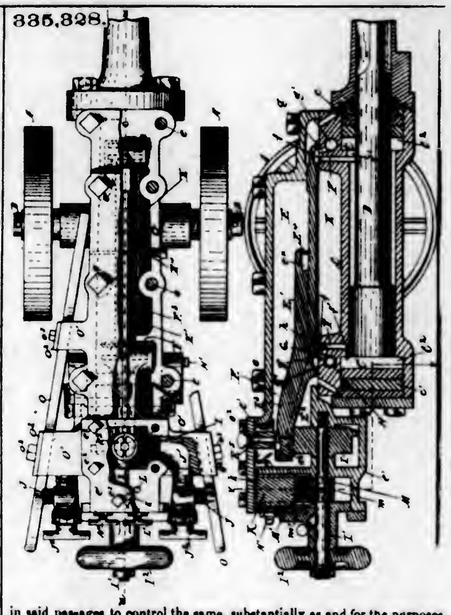
2. In a mining-machine, the combination, with cam I, of slide-valve E', having arm E^2 extending over said cam and adapted to engage the same, substantially as and for the purposes specified.

3. In a mining-machine, the combination, with cam I, of slide-valve E', having arm E^2 extending over and engaging with said cam, and rib E^3, having slot *e'* to receive rod F^4, attached to air-chest E, substantially as and for the purposes specified.

4. In a mining-machine, the combination, with air-chest E, of air-inlets arranged at each side thereof below the top and valves controlling said inlets, substantially as and for the purposes specified.

5. In a mining-machine, the combination, with air-chest E, of nozzles J and passages J', and tubular slotted valves J^2, capable of rotation

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in said passages to control the same, substantially as and for the purposes specified.

6. In a mining-machine of the character described, the main air-inlets, and inlet and exhaust ports L and N of the valve-motor having their valves arranged at the rear face of the machine below the top thereof, substantially as and for the purposes specified.

7. In a mining-machine, the combination, with the handles O, of the socket-pieces O', having grooves *o* and projections o' o^2, one of which is substantially equal in thickness to the handles and the other of less thickness, strap O^3, and screws o^3, substantially as and for the purposes specified.

8. In a mining-machine, the combination, with the main cylinder and the air-chest mounted thereon, of the valve-motor attached to the rear end of the air-chest and overhanging the rear of the main cylinder clear of the cylinder-head, to permit access to the same and allow the machine a greater vertical range, substantially as and for the purposes specified.

9. In a mining-machine, the combination, with the main cylinder and its piston and rod, of the cushions *c c'*, arranged at the ends of the cylinder, the inlet and outlet ports, and a valve to open and close the same, and a valve to regulate the escape of air at the rear exhaust-port, substantially as and for the purposes specified.

335,329. **MUCILAGE-BOTTLE.** GEORGE R. WEST, New York, N.Y. Filed Nov. 6, 1885. (No model.)



Claim.—The combination, with a mucilage-bottle comprising a mouth portion with an internal circumferential shoulder and a cavity above the shoulder of less diameter at the top than at the bottom, of a seat composed of cork or analogous material within the cavity, considerably below the top thereof and resting upon the shoulder, said seat being provided with a central longitudinal opening, and a sponge arranged upon the seat and secured thereto by pins or tacks, substantially as specified.

335,330. **FRUIT-JAR.** HARVEY WILCOX, Los Gatos, Cal. Filed Nov. 23, 1885. (No model.)

Claim.—1. A fastening for the covers of fruit-jars, comprising a bail or clamp secured to the top or neck of the jar and passing over the cover, and the convexed U-shaped spring-wire E, seated between the cover and the bail or clamp, substantially as herein described.

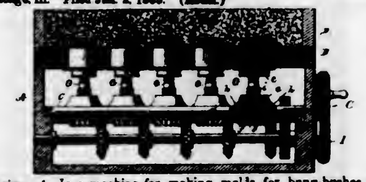
2. A fastening for the covers of fruit-jars, comprising the bail or clamp D, having its ends secured to the top or neck of the jar, and its body passing over the cover and provided with a central elevation at *d*, forming a groove or guide, and the convexed U-shaped spring-wire E, seated in said groove or guide between the cover and the bail or clamp, substantially as herein described.

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3. The fruit-jar A, having a collar or flange, *a*, at its top, the cover B of said jar, and the washer C, in combination with the bail or clamp D, having its ends bent to bear under the collar or flange *a*, and its top provided with a central elevation, *d*, forming a groove or guide, and the convexed U-shaped spring-wire E, seated in said groove or guide between the top or cover B of the jar and the bail or clamp, substantially as herein described.

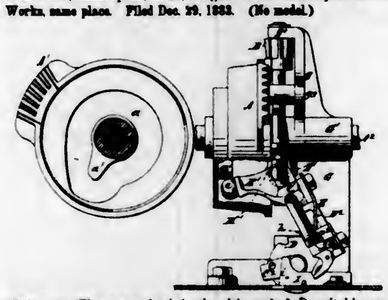
335,331. **BUNG-BUSH-MOLDING MACHINE.** ANTON G. ANDERSON, Chicago, Ill. Filed Jan. 2, 1885. (Model.)



Claim.—1. In a machine for making molds for bung-bushes, the combination, with the screw-threaded shaft supporting the pattern, of a removable pattern having its upper side socketed to receive a securing-nut at that side and a securing-nut engaging and supporting the pattern at its under side, as shown.

2. In a machine for making molds for the exterior of bung or other bushes, the combination, with the shaft supporting the bush-pattern, having its lower portion threaded and made with a feather or spline, of the boss threaded to correspond with the threaded portion of the shaft, and a gear centrally bored and provided with a longitudinal groove to engage the feather or spline on the shaft, the said boss and gear being removably secured in the frame of the machine by means of removable pins, which engage the boss and gear, to hold fixed the boss and permit the gear to turn, as set forth.

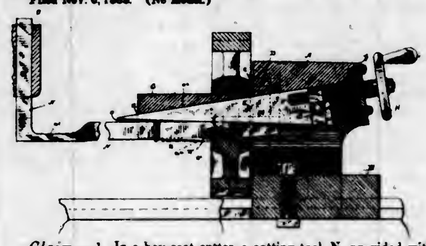
335,332. **KNOTTING MECHANISM FOR GRAIN-BINDERS.** JOHN F. APPLEBY, Minneapolis, Minn., assignor to the Minneapolis Harvester Works, same place. Filed Dec. 29, 1883. (No model.)



Claim.—1. The cam-wheel A, the driver-shaft B, suitably geared to a segment-gear upon the cam-wheel, and the knotter-shaft H, mounted in the oscillating frame E, provided with a laterally-projecting arm, E', in combination with a suitable cam-groove formed in the cam-wheel A, for engaging the end of the arm E' and imparting oscillatory motion to the frame E, substantially as described.

2. In knotting mechanism for grain-binders, a cord-gripping device and a knotter, and means for simultaneously swinging the gripping device and the knotter bodily in the same direction during each knotting operation, in combination with a knife for severing the binding-cord during the said swaying movement of the gripping device and the knotter.

335,333. **KEY-SEAT CUTTER.** ARZA M. BENSON, Cleveland, Ohio. Filed Nov. 6, 1885. (No model.)



Claim.—1. In a key-seat cutter, a cutting-tool, N, provided with portion n^3, of less vertical dimension than the main longitudinal body portion of the tool, substantially as set forth.

2. In a key-seat cutter, a cutting-tool, N, provided with flattened portion n^3, of less vertical and greater horizontal dimensions than the main longitudinal body portion of the tool, substantially as set forth.

3. In a key-seat cutter, a cutting-tool, N, provided with flattened portion n^3 in its longitudinal body, and with angular shank O, substantially as set forth.

4. In a key-seat cutter, a cutting-tool, N, having a head, *n*, of greater vertical dimension than the main longitudinal body portion of the tool, substantially as set forth.

5. In a key-seat cutter, the combination of the slotted mandrel-wedge, and cutting-tool, said wedge having bearing on the cutting-tool only on the latter's head in a vertical plane substantially with the cutting-edge, the remaining longitudinal body of the cutting-tool being clear of the wedge, substantially as set forth.

6. In a key-seat cutter, the combination, with a mandrel-holder, A, having its face provided with chambered socket D, of a mandrel, C, having its rear extremity provided with eccentric flange *c*, fitting in said socket, substantially as set forth.

7. In a key-seat cutter, the combination, with the mandrel-holder A, having its front end face provided with chambered socket D, of mandrel C, having its rear extremity provided with the vertically and laterally eccentric flange *c*, and fastening devices *a*, which secure said flange to the socket, substantially as set forth.

8. In a key-seat cutter, the combination, with a mandrel formed with a longitudinal and inclined slot, and a wedge adjustably movable in said slot, of a cutting-tool working in said slot, and having its cutting-head of both horizontal and vertical increased dimensions over the other immediately-adjacent portions of said tool, substantially as set forth.

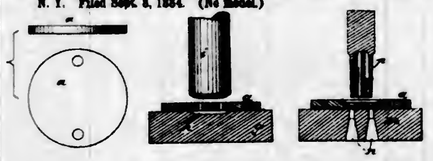
9. In a key-seat cutter, the combination, with a mandrel formed with a longitudinal slot, of a cutting-tool working in said slot and having its head of greater horizontal dimension than the remaining portion of the tool that works in the slot, whereby said head only has bearing against the walls of the slot, substantially as set forth.

10. In a key-seat cutter, the combination, with a mandrel-holder having a chambered socket on its inner face, of a mandrel provided with a flange detachably fitting in said socket, substantially as set forth.

11. In a key-seat cutter, the combination, with mandrel-holder A, provided with rear recess, I, of wedge E, fitted in said recess, and provided with lug *e*, and pinching-screw F, working in and through said lug, substantially as set forth.

12. In a key-seat cutter, the combination, with mandrel-holder A, provided with rear recess, I, of wedge E, fitting in said recess, and provided with lug *e'*, and pinching-screw F, working through said lug, and perforated face-plate G, through which the shank of said screw works, substantially as set forth.

335,334. **METHOD OF MAKING DIES.** JAMES BRADY, Brooklyn, N.Y. Filed Sept. 3, 1884. (No model.)



Claim.—1. The method of making character or figure dies, the same consisting in first perforating the die-plate with a punch of a form corresponding to the desired character, then hardening and finishing said die by a series of punches corresponding in form to the shape of the apertare, substantially as and for the purpose set forth.

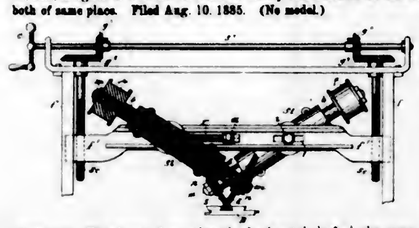
2. The described process of die-making, consisting in first perforat-

ing the die-blank with a punch of the form corresponding to the desired character forced through from the top or right side of the blank, thence denting the blank on the reverse side, and bulging it up around the character-aperture on the right side, and subsequently grinding off the said bulge, substantially as and for the purpose set forth.

3. A method of die-making combining the following operations: first, punching the die-blank from the upper or right side with a punch having a form corresponding to the desired character, and thus forming an aperture corresponding to said character; secondly, denting or swaging the blank on the reverse side and thereby bulging the die on the right side around the character-aperture; third, grinding or cutting off the said bulge; and, finally, enlarging the aperture to its finished size by compressing the walls thereof by means of a long gradually-tapering drift or punch of section similar to the first forced through the said aperture, substantially as and for the purpose set forth.

4. A method of die-making combining the following operations: first, perforating the die with the desired character-aperture by a punch forced through from the top or right side, bulging the die around the said aperture on the top side, grinding or cutting off the bulge, flaring or freeing the character-aperture on the under side by a widely-tapering punch or swage forced partly through the same, and, finally enlarging the aperture to its finished size by a long gradually-tapering drift or punch forced through the same, so as to compress, smooth, and toughen the metal at the cutting-edges of the aperture, substantially as herein set forth.

335,335. DOVETAILING-MACHINE. EDWIN M. BYRKIT, Indianapolis, Ind., assignor of one-half to John H. Murry and Addison A. Adair, both of same place. Filed Aug. 10, 1885. (No model.)

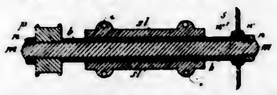


Claim.—1. The frame *f*, carrying the horizontal shaft *s'*, the cross-piece *f''*, threaded to receive the screw-rods *sc* on either end, the geared wheels *g' g²*, mounted so as to engage with each other and operate the screw-rods *sc* when the shaft *s'* is revolved, whereby the cross-piece *f''* and the mechanism connected therewith may be raised and lowered in a vertical plane, the mandrels *m*, inclined toward each other and adjustably connected to such central cross-piece by means of a screw, 2, operating in a slot, 1, all combined substantially as described.

2. The mandrels *m*, having boxing *b*, the sleeve *l*, inclosing such boxing, the driving-pulley *p*, mounted upon the upper end thereof, the saws *s*, mounted on the lower end thereof and adjustably connected with the cross-piece *f''*, in combination with a similar mandrel mounted upon the opposite end of the same cross-piece and also adjustable, the frame *f*, and mechanism for lowering and raising the cross-piece *f''* in a vertical plane, all combined substantially as described.

3. The frame-work *f*, provided with bearings for the shaft *s'*, upon which is mounted the gear-wheels *g'*, meshing with the gear-wheels *g²*, secured to the upper end of the vertical rods *sc*, the cross-piece *f''*, carrying the mandrels *m*, inclined toward each other, the mandrel and cross-piece having a movement in a vertical plane and operated by the screw-rods *sc*, the mandrel connected with such cross-piece, so as to be adjustable thereon in the line of its length, the screw-rods *r*, working in the neck of such mandrels to regulate such adjustment, all combined substantially as described.

335,336. SAW-MANDREL. EDWIN M. BYRKIT, Indianapolis, Ind., assignor of one-half to John H. Murry and Addison A. Adair, both of same place. Filed Dec. 23, 1885. (No model.)



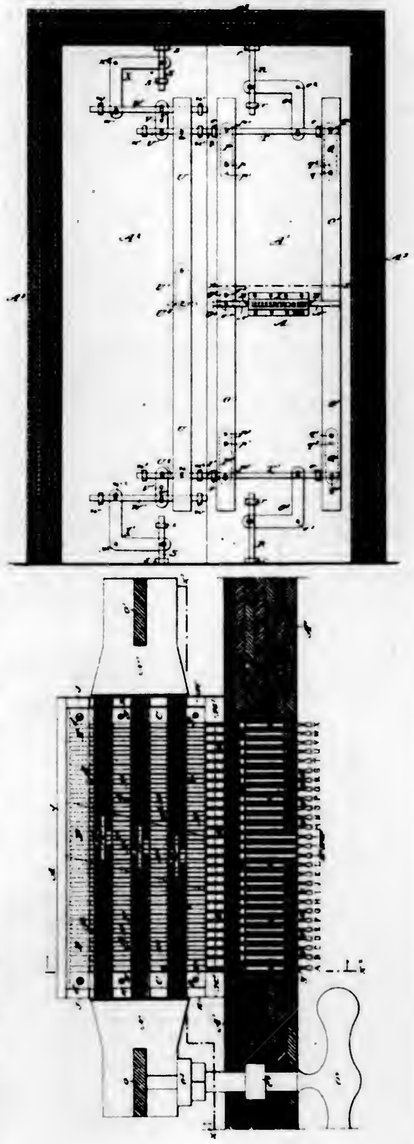
Claim.—1. The mandrel *m*, inclosed in the box *b*, the sleeve *s'* clamped upon such boxing and secured by suitable means, the driving-pulley *p*, mounted on one end of the mandrel, the tool *s*, mounted upon the other end of such mandrel, and the nuts *n*, working upon the threaded end of such mandrel, all combined substantially as described.

2. A mandrel inclosed in a suitable boxing and adapted to revolve therein, the boxing clamped by a suitable sleeve formed in halves, the two parts secured together by suitable screws or bolts, the loosening of which will allow the mandrel and its boxing to be adjusted along the line of such sleeve, substantially as described.

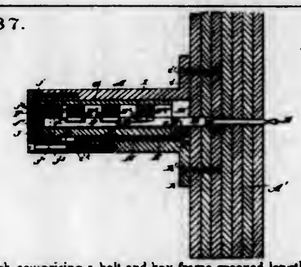
3. A mandrel having a driving-pulley mounted upon one end and a revolving tool upon the other, inclosed in a suitable boxing in which the mandrel revolves, the boxing confined in a sleeve provided with means of clamping the sleeve upon the mandrel without interfering with the revolution of the mandrel in its boxing, all combined substantially as described.

335,337. COMBINATION-LOCK. ANDREW J. CALHOUN, Socorro, N. Mex. Filed May 2, 1885. (Model.)

Claim.—1. A lock comprising a bolt and key-frame grooved lengthwise and transversely, a bolt or series of bolts fitted to slide in the lengthwise grooves, and having transverse notches adapted to line with the transverse grooves of the frame, a series of keys fitted to slide in the transverse grooves of the frame and in the bolt-notches, and said keys having notches adapted to be lined with the lengthwise bolt-grooves of the frame, connections from the bolt or bolts to a key or keys, and means for moving the keys lengthwise, substantially as herein set forth.



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2. A lock comprising a bolt and key-frame grooved lengthwise and transversely, one or more bolts fitted to slide in the lengthwise grooves, and having transverse notches adapted to line with the transverse grooves of the frame, a series of blank and combination keys fitted to slide in the transverse grooves of the frame and in the bolt-notches, and said keys having notches adapted to be lined with the lengthwise bolt-grooves of the frame, connections from the bolt or bolts to a sliding notched bolt key or keys, and means for moving the keys lengthwise, substantially as herein set forth.

3. A lock comprising a bolt and key-frame grooved lengthwise and transversely, one or more aligned pairs of bolts fitted to slide in the lengthwise grooves, and having transverse notches adapted to line with the transverse grooves of the frame, a series of keys fitted to slide in the transverse grooves of the frame and in the bolt-notches, and said keys having notches adapted to be lined with the lengthwise bolt-grooves of the frame, connections from each aligned pair of bolts to one of the sliding keys, and means for moving the keys lengthwise, substantially as herein set forth.

4. A lock comprising a bolt and key-frame grooved lengthwise and transversely, one or more aligned pairs of bolts fitted to slide in the lengthwise grooves, and having transverse notches adapted to line with the transverse grooves of the frame, a series of blank and combination keys fitted to slide in the transverse grooves of the frame and in the bolt-notches, and said keys having notches adapted to be lined with the lengthwise bolt-grooves of the frame, connections from each aligned pair of bolts to a notched bolt-key sliding in the frame, and means for moving the keys lengthwise, substantially as herein set forth.

5. A lock comprising a bolt and key-frame, C, grooved at *c' c²*, one or more bolts or aligned pairs of bolts, B, notched at *b*, and fitted in a groove or grooves, *c'*, a series of keys, D, fitted in grooves *c²*, and comprising blank keys, whose notches *d* correspond with the bolt-grooves *c'* when said keys are fully pushed in or drawn out, one or more combination-keys having notches *d*, positioned to locate the tongues between them in the path of the bolt or bolts when said keys are fully pushed in, and a bolt-key connected to each bolt for projecting the bolt or bolts, a series of key-stems, E, fitted to slide in the door to which the lock is applied, and connected to the keys for operating them, and said key-stems having a series of marks or notches to indicate at the face of the door the extent of withdrawal of the combination-keys to permit the bolts to slide, substantially as herein set forth.

6. In a lock, the combination, with the grooved key-frame C, a series of blank and combination keys, D, notched at *d*, and a pair or pairs of aligned bolts, B, notched at *b*, substantially as specified, of the toggle-levers connecting each pair of aligned bolts to one notched bolt-key, substantially as herein set forth.

7. In a lock, the combination with the grooved key-frame C, a series of keys, D, notched at *d*, one or more bolts, B, notched at *b*, and connections from the bolts to the bolt-keys, of the cap-plates G G, substantially as herein set forth.

8. In a lock, the bolt and key-frame C, made with lengthwise grooves *c'*, and with transverse grooves *c²*, opening along one side of the frame, and the bar F, rabbeted at the under side and forming a stop, *f'*, in combination with the bolts and keys B D, placed in grooves *c' c²*, respectively, and means for connecting the bolts and keys, substantially as herein set forth.

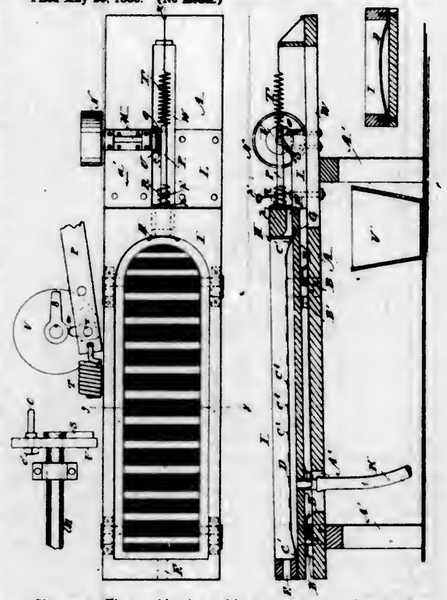
9. A lock constructed with a key-frame, C, grooved at *c' c²*, one or more bolts, B, notched at *b*, and placed in a groove or grooves, *c'*, a series of keys, D, notched, as at *d*, and placed in grooves *c²*, and a casing for the key-frame, bolts, and keys, in combination with key-stems E, held to slide in the door to which the lock is applied, and adapted to connect detachably with the forward ends of the keys D, substantially as herein set forth.

10. A lock constructed with a key-frame, C, grooved at *c' c²*, one or more bolts, B, notched at *b*, and placed in a groove or grooves, *c'*, a series of keys, D, notched, as at *d*, and placed in grooves *c²*, and a casing for the key-frame, bolts, and keys, in combination with key-stems E, held to slide to a stop in the door to which the lock is applied, and adapted to connect detachably with the forward ends of the keys D, and a key connecting and disconnecting plate K, substantially as herein set forth.

11. In a lock, the combination of the key-frame C, grooved at *c' c²*, the notched bolts B, and keys D, fitted to slide therein, a casing for the key-frame, bolts, and keys, the key-stems E, held to slide to a stop in the door to which the lock is applied, and adapted to connect detachably with the keys D, the key connecting and disconnecting plate K, and the key-connecting guide-bar L, substantially as herein set forth.

12. In a lock, the combination, with the notched key-frame C, notched bolts B, and keys D, fitted to slide therein, of a casing for the key-frame and its bolts and keys, said casing consisting of a bottom plate, H, having front end lugs, H', an upper plate, I, and a back plate, J, secured detachably to plates H I, to permit removal of the key-frame, substantially as herein set forth.

335,338. ORE-SEPARATOR. ALONZO C. CAMPBELL, Nashville, Tenn. Filed May 20, 1885. (No model.)



Claim.—1. The combination, with a pan or receptacle, of a covering secured over the bottom of the recess or cavity of the pan, and which covering is pervious to air and water, and has parts made impervious, and of a tube for conducting air or water into the pan below the covering, substantially as herein shown and described.

2. The combination, with the reciprocating pan I, having the outlet F, of the gate H, the pervious covering D, having impervious strips C' C², and a tube for conducting water or air into the pan below the covering, substantially as herein shown and described.

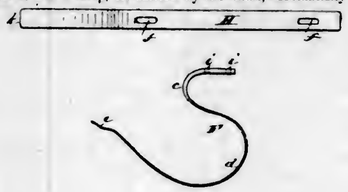
3. The combination, with the pan I, of the bar P, the pin O in the same, the shaft M, the loose disk U on the same, in which disk the pin O is also held, and the arm S on the end of the shaft, substantially as herein shown and described.

4. The combination, with the pan I, of the bar P, the pin O, the shaft M, the arm S, the disk U, and the spring T, substantially as herein shown and described.

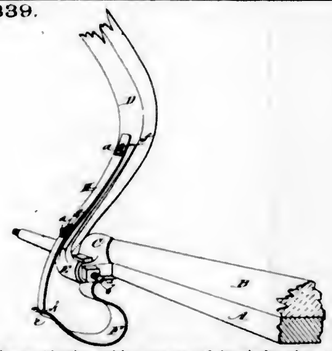
5. The combination, with the pan I, of the bumper L, the bar P, the spring T, the shaft M, the disk U, the pin O, and the arm S, substantially as herein shown and described.

335,339. SHAFT-SUPPORT FOR VEHICLES. FRANK P. CHAMBERLIN, Carlisle, Ohio. Filed Aug. 3, 1885. (No model.)

Claim.—1. The combination, with a wagon and its shafts, of a spring, F, secured beneath the shaft-clip, and bent to have the loop *d* and notch *e*, and a strip, H, carried by the shaft, substantially as described.

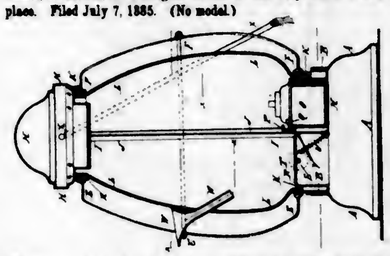


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2. The combination, with a wagon and its shafts, of a spring, F, secured beneath the shaft-clip, and bent to have the curve *c*, loop *d* and notch *e*, and a strip, H, formed with slots *f f*, substantially as described.

335,340. COMBINED FARE-BOX AND LANTERN. HENRY D. CLARK, Rochester, N. Y., assignor to himself and Benjamin P. Ward, same place. Filed July 7, 1885. (No model.)



Claim.—1. A combined fare-box and lantern, constructed substantially as herein shown and described, and consisting of the base A, the frame made in two parts, one, E, stationary and attached at its lower end to a hand, B, engaging with the base A, and at its upper end to the head H, and the other hinted at its upper end to the said head, the globe L, made in two parts and secured to the two parts of the frame, the strips I, covering the joints of the globe and provided with a wire-gauze partition, J, dividing the interior of the lantern into two compartments, the perforated bottom M, provided with the lamp-receiving socket N, and attached to the band B at one side of the partition J, and the spring-held tilting plate R, pivoted to the said band B, and the inclined chute W, passing through the part of the globe attached to the stationary part of the frame, as set forth.

2. In a combined fare-box and lantern, the globe and its guard-frame made in two parts and provided with a partition in the plane of division, substantially as herein shown and described, whereby one part can be opened without giving access to the interior of the other part, as set forth.

3. In a combined fare-box and lantern, the globe and its guide-frame made in two parts and provided with a partition in the plane of division, in combination with the inclined chute passing through the globe, and the spring-actuated plate having an operating-rod and arranged in the base-chamber of the lantern, substantially as and for the purpose set forth.

335,341. SPRING-RAIL FROG FOR RAILWAYS. JOSEPH E. CLIFTON, Geneseo, Ill. Filed May 3, 1884. (No model.)

Brief.—A railroad-frog in which spring-actuated pistons mounted in screw-capped barrels are provided with heads which fit against the side of the rail between the head and flange. The tie-plates are provided with clips for holding the fixed and movable rails, and the movable rail is provided with a guard.

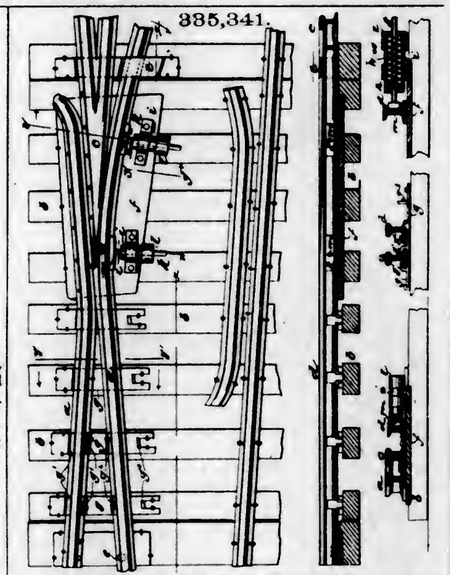
Claim.—1. In a spring rail frog, the tie-plates *g*, provided with clips *g' g²*, combined with the moving rail *d* and fixed outer rail, *a*, substantially as described.

2. In a spring-rail frog, the guard *t*, combined with the moving rail, substantially as shown and described.

3. The combination of the barrels *i*, screw-caps *l*, spring *h*, and pistons *k*, with the supporting-plate *f* and moving rail *d* of a railway-frog, substantially as described.

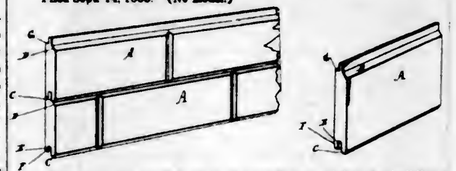
4. The combination, with the yielding rail of a railroad-frog, of a fixed bearing at one side of the rail, a plunger working in the same, and a spring for actuating the plunger, as set forth.

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5. In a spring railroad-frog, the combination, with the movable rail, of the spring-actuated piston *k*, provided with the head *m*, constructed to fit the side of the rail, to prevent upward movement of said rail, substantially as herein shown and described.

335,342. SIDING FOR BUILDINGS. ALBERT C. DAUGHERTY, North Belle Vernon, Pa., assignor to himself and John J. Jones, same place. Filed Sept. 14, 1885. (No model.)



Claim.—1. As a new article of manufacture, siding for buildings, tongued and grooved substantially in the manner and for the purpose herein described, consisting of an inclined shoulder on one side of the tongue and a V-shaped lip on one side of the groove to correspond therewith, as set forth.

2. As a new article of manufacture, siding for buildings, tongued and grooved substantially as and for the purpose herein set forth, whereby a V-shaped horizontal groove is formed, in combination with a series of grooves perpendicular and crosswise on the boards to complete the imitation of blocks of stone, substantially as described.

335,343. LEMON HOLDER AND SQUEEZER. EDWARD G. DAY, Riverside, Conn. Filed Oct. 6, 1885. (No model.)



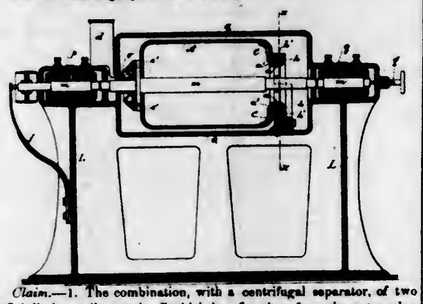
Claim.—1. As a new article of manufacture, a squeezer composed of pivoted handles A B and opposing compressors, the faces or squeezing-surfaces of which are in opposite curves and arranged to close past each other and to form the receptacle C, substantially as and for the purposes described.

2. The combination of the handles A B, pivoted together, and a series of rings, *a b*, secured to each handle and arranged to close together one above the other, substantially as herein shown and described.

3. The combination of the pivoted handles A B and a series of rings attached alternately to the said handles, the lower ring being provided with an apertured bottom plate, substantially as described.

4. The combination of the pivoted handles A B and the rings *a b*, secured alternately to the said handles and having their inner edges rounded, as at *f*, substantially as and for the purpose set forth.

335,344. CENTRIFUGAL CREAMER. GUSTAF DE LAVAL, Stockholm, Sweden. Filed June 27, 1884. (No model.) Patented in England Mar. 29, 1884, No. 5,633; in Belgium Apr. 2, 1884, No. 64,717; in France Apr. 2, 1884, No. 161,337; in Germany Apr. 4, 1884, No. 29,218, and in Luxemburg Apr. 4, 1884, No. 378.

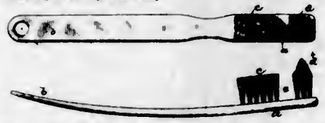


Claim.—1. The combination, with a centrifugal separator, of two parallel discharge-lips, each of which is a flat ring, from the outer edge of which the liquid is delivered, two stationary receiving-rings surrounding and in close proximity to such lips and pipes connected with the same, and mechanism, substantially as specified, for adjusting the parts axially of the separator to vary the discharge-opening between the annular discharge-lips and the receiving-rings, substantially as set forth.

2. The combination, in a centrifugal separator, of a rotative vessel, tubular axis for the same, bearings for supporting the axis, and means for rotating the vessel, a supply-pipe to one of the tubular axes, two parallel circular lips, each of which is a flat ring, from the edge of which the liquid is delivered, two recessed ring-receivers, one at each of the discharge-lips, and a pipe extending from one of the discharge-lips to near the interior of the centrifugal separator, and means, substantially as specified, for adjusting the parts to vary the discharge-openings, substantially as set forth.

3. A centrifugal separator having a discharge-lip in the form of a flat ring, in combination with a stationary receiving-ring the inner surface of which is a similarly-shaped groove, and a pipe passing off from such groove, the inner surface of the receiving-ring being sufficiently near to the annular discharge-lip for the liquid in such groove to receive a revolving motion and be projected by the centrifugal action through the pipe, substantially as specified.

335,345. DENTAL-PLATE BRUSH. ALANSON C. EDWARDS, Florence, Mass., assignor to the Florence Manufacturing Company, same place. Filed June 13, 1885. (No model.)



Claim.—1. A dental-plate brush composed of masses of tufts of bristles separated by clearing-spaces, substantially as described, whereby any two masses of bristles may co-operate in simultaneously cleansing two sides of a plate or the teeth thereon.

2. A dental-plate brush having masses of tufts of bristles separated by a clearing-space, one of said masses being composed of bristles longer than those in the remainder of the brush, substantially as described.

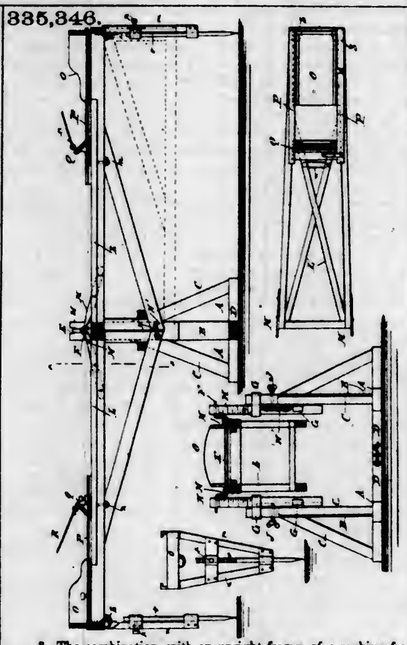
3. A dental-plate brush having main masses of bristle tufts and a tapered mass of longer tufts, each mass separated from the other by a clearing-space, substantially as described.

335,346. ADJUSTABLE AND BALANCING SEESAW. ARTHUR B. FLACH, New York, N. Y., assignor, by mesne assignments, to Theresa L. Flach, same place. Filed Jan. 2, 1885. (No model.)

Claim.—1. The combination, with an upright frame, of a rocking frame on the same, a sliding seat on each end of the rocking frame, and a sliding board independent of the seat on each end of the frame, which seat and board can be locked in the desired positions on the frame, substantially as herein shown and described.

2. The combination, with an upright frame, of the two triangular frames L, having hooks M, for hanging the same on a shaft on the upright frame, substantially as herein shown and described.

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3. The combination, with an upright frame, of a rocking frame on the same formed of two sections, each provided at the base end with hooks for hanging the sections on a shaft on the upright frame, and of hooks and eyes for locking the sections together, substantially as herein shown and described.

4. The combination, with the upright B, secured on a base, a rocking frame thereon, and suitably braced, of the guides G, the toothed sliding piece H on the upright, and the set-screw J, substantially as herein shown and described.

5. The combination, with the bases A and the cross-piece D, having their inner ends united by hooks and eyes, of the uprights B, the shaft F, and a rocking frame mounted on the shaft F and formed of two triangular sections, substantially as herein shown and described.

6. The combination, with an upright, of a rocking frame on the same, and brace-frames hinged to the ends of the rocking frame, and constructed to hold the said rocking frame in a horizontal position, substantially as herein shown and described.

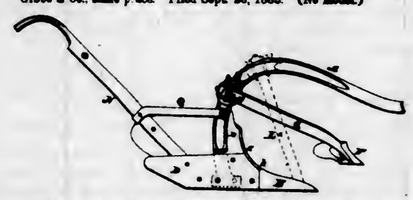
7. The combination, with an upright, of a rocking frame on the same, brace-frames hinged to the rocking frame, and extension-bars on the brace-frames, substantially as herein shown and described.

335,347. NURSING-BOTTLE. FERDINAND E. FORSTER, New York, N. Y. Filed July 20, 1885. (No model.)



Claim.—The grooved or roughened ball H A, in combination with a nursing-bottle, arranged within the exit-tube thereof, substantially as herein specified.

335,348. PLOW. LEWIS GIBBS, Canton, Ohio, assignor to Bucher, Gibbs & Co., same place. Filed Sept. 26, 1885. (No model.)



Claim.—1. A plow-standard having the lugs *g g*, formed at the upper end thereof and located one above the other, the outward and

backward projecting wing near the lower end thereof for the support of the mold-board, the downward and forward projecting wing, forming a support for the plowshare, the shoulder located between said wings and forming an abutment for the mold-board, the bosses located above the shoulder, and the wing M, for the attachment of the landside, all of the above parts formed integral, substantially as set forth.

2. The combination, with a plow-standard having wings for the support of the mold-board, plowshare, and landside, and the curved bearings against which the plow-beam rests, of a plow-beam having a groove within which the curved bearings of the standard rest, and bolts for securing the beam to the standard.

3. The combination of the beam A, as described, with the standard B, the lugs *g g*, the wing L, the raised bosses *b b*, the shoulder O, and wings L' and M, substantially as described, and for the purpose set forth.

4. The serrated disk K', having lugs *p p*, in combination with the serrated disk K, having ribs *r r* and annular socket *s*, substantially as described, and for the purpose set forth.

5. The combination of the serrated disk K', having lugs *p p*, the clip *m*, disk K, having an annular tube or socket, *s*, and the bent shank *t*, substantially as described, and for the purpose set forth.

6. The combination, with the side plates, J, secured to the front end of the beam and projecting in front thereof, and provided with the notches *q*, and perforations located in front of the plow-beam, of the draft-bar y, having a rib adapted to engage the notches *q*, and a bolt for securing the draft-bar to the side plates, substantially as set forth.

7. The combination of the herein-described plow-standard, comprising the perpendicular section B, the mold-board-supporting wing L, having the perforated bosses *b b*, the wing L', as a support for the share and forming the shoulder O, the projection *d* and *d'*, the head T, having perforation *l* and lugs *g g*, and the beam A, substantially as set forth, and for the purpose specified.

8. The combination of the beam A, the wheel W, shank w^1, and clamping-plate W', as described, and for the purpose set forth.

335,349. DOOR-KNOB AND ESCUTCHEON. ORVELLAS H. GILBERT, Newark, N. J. Filed July 19, 1884. (Model.)



Claim.—1. In door-furniture, the combination, with a rose-plate provided with slots therein, of a reversible plate adapted to hold a latch-actuating lever in pivotal relation therewith, said lever extending through either of the slots in said rose-plate, for the purpose set forth.

2. In door-furniture, the combination, with a rose-plate provided with a slot on each side of the shank, of a reversible plate adapted to close up one of the slots in the rose-plate and to hold a latch-actuating lever extending through the other of said slots in the rose-plate in pivotal relation with the said reversible plate, for the purposes set forth.

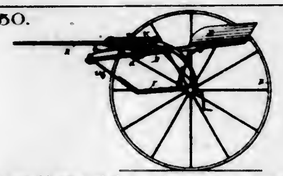
3. In door-furniture, in combination, a slotted rose-plate and knob-shank cast integrally, a knob, a reversible plate adapted to hold a lever extending through a slot in said rose-plate in pivotal relation therewith, a latch-actuating lever, a bolt passing through said knob, knob-shank, rose, and reversible plate, and a nut-lock arranged in connection with the bolt and nut and adapted to be turned up against said nut, for the purposes set forth.

4. In door-furniture, in combination, a slotted rose-plate and knob-shank cast integrally, a knob, a reversible plate having a depressed portion, c^2, adapted to close one of the slots in the rose-plate, and a slot corresponding with the other slot in the said rose-plate, having lugs c^3 on each side thereof, a latch-actuating lever pivotally arranged in the slot in the reversible plate, as set forth, and extending through the other of the slots in the rose-plate, a bolt passing through said knob, knob-shank, rose, and reversible plate, and a nut-lock arranged upon the bolt, having an arm extending into the depression c^2 and adapted to be turned up against the nut, all said parts being arranged and operating for the purpose herein set forth.

5. In door-furniture, the combination, with a knob, knob-shank, bolt, and nut, arranged substantially as herein specified, of a nut-lock, for the purposes herein set forth.

6. The combination, in door-furniture, with a knob, knob-shank, bolt, and nut, of a nut-lock having a bolt-perforation therein and an arm, and adapted to be turned up against the nut, for the purpose specified.

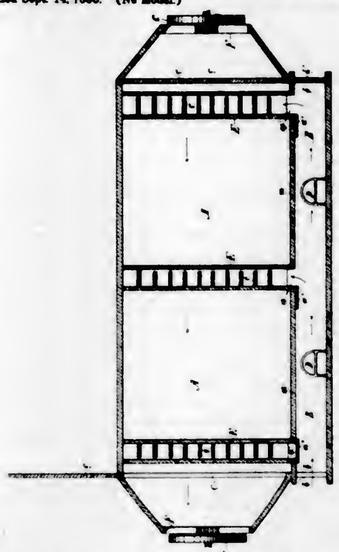
335,350. TWO-WHEELED VEHICLE. CHARLES H. GLEASON, Kalamazoo, Mich. Filed Oct. 24, 1885. (No model.)



Claim.—1. In a two-wheeled vehicle, the combination of the thills, the seat-supporting bars, bails hinged to the thills and forming a swinging fulcrum to the seat-bars, and the springs—one on each side—secured to the thills and having their free ends pivotally connected with the forward ends of the seat-bars, substantially as set forth.

2. The combination of the seat-bars, springs secured to the thills, the forward end thereof being pivotally connected with the end of the seat-bars, and springs connecting the under side of the seat-bars, and bails hinged to the thill-bar, the lower bar of said bails connecting with the latter-named springs, substantially as set forth.

335,351. FRUIT-DRIER. ANDREW J. HATCH, San Francisco, Cal. Filed Sept. 14, 1885. (No model.)



Claim.—1. In a fruit-drier having a drying-chamber, in which the fruit is contained, and a heating-chamber below, apertures connecting said chambers, apertures in each end of the heating-chamber, controlled by gates or slides, apertures in the ends of the drying-chamber, controlled by gates or slides, and a means for creating a draft through said chamber, substantially as herein described.

2. In a fruit-drier, the combination of the drying-chamber A, having apertures *c* in each end, controlled by gates *c'*, the heating-chamber B below, having apertures *b* at each end, controlled by slides or gates *b'*, the apertures *a'*, having gates a^2 between the two chambers, and an exhaust for each end of the drying-chamber, substantially as herein described.

3. In a fruit-drier, the drying-chamber A and the underlying heating-chamber B, communicating with the drying-chamber by means of apertures *a'*, in combination with stationary tubes or hollow columns placed over said apertures and arranged in line transversely of the drying-chamber, and tubes or hollow shelves, upon which the trays are placed, provided with apertures or openings, and connecting the tubes or hollow columns, substantially as herein described.

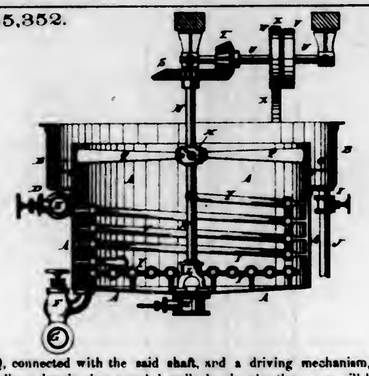
4. In a fruit-drier, the drying-chamber A and an underlying heating-chamber extending its entire length, and communicating with the drying-chamber through apertures *a'*, in combination with an air-distributer consisting of a series of upright tubes or hollow columns over the apertures, and hollow perforated shelves, upon which the trays are placed, and connecting the tubes or hollow columns, substantially as herein described.

335,352. DEFECATOR FOR CANE-JUICE. LEON F. HAUSTRAM, New Orleans, La. Filed Oct. 20, 1885. (No model.)

Claim.—1. In a defecator, the metallic vessel A, constructed substantially as herein shown and described, with a circular trough around its top and with a concave bottom, as set forth.

2. In a defecator, the combination, with the vessel A, having an annular trough, B, around its top, of the vertical shaft M, the radial paddles Q, connected with the said shaft, and a driving mechanism, substantially as herein shown and described, whereby the scum will be removed from the said vessel automatically, as set forth.

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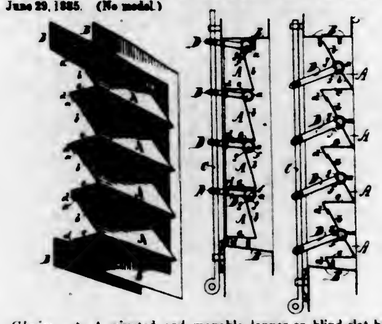


3. In a defecator, the combination, with the scum-receiving trough B, connected with the top of the vessel A, of the screen C, substantially as herein shown and described, whereby the liquid carried into the said trough will be separated from the said scum, as set forth.

4. The combination, with a series of large defecating-vessels, of a series of similar small defecating-vessels, substantially as herein shown and described, to receive and defecate the liquid separated from the scum and the liquid drawn off with the heavy imparities, as set forth.

5. In a defecator, the combination, with the vertical shaft M and the paddles Q, having round tenons P, of the hub N, having radial sockets O, to receive the tenons of the said paddles, and the set-screws R, for securing the said tenons in place, substantially as herein shown and described, whereby the said paddles can be readily adjusted, as set forth.

335,353. BLIND-SLAT, &c. GEORGE HAYES, New York, N. Y. Filed June 29, 1885. (No model.)



Claim.—1. A pivoted and movable louver or blind slat having water and ray shed *b*, and at an angle therewith an apertured ventilating-flange, *c*, substantially as shown and described.

2. In combination, a series of pivoted and movable louver or blind slats having ray and water shed *b*, and at an angle therewith, extending inward, an apertured ventilating-flange, *c*, each arranged to cover and protect the slat beneath it from leakage and driftage, substantially as shown and described.

3. The operating device comprising rod C and lever D, of stamped or cast metal, having aperture *f*, with key *g*, arranged to fit over the pivots *a*, substantially as shown and described.

335,354. SLAT FOR LOUVERS AND BLINDS. GEORGE HAYES, New York, N. Y. Filed July 22, 1885. (No model.)



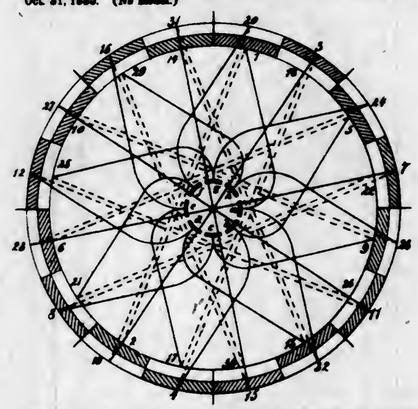
Claim.—1. A louver or blind slat formed of two portions or wings, *b* and *c*, one apertured and the other plain, and the slat bent or otherwise shaped centrally to constitute the plain wing *b*, a protector for the apertured wing *c*, and the slat provided with a pivot centrally located at each end, essentially as shown and described.

2. The pivoted and movable louver or blind slat A, formed with pivot-roll *a*, centrally located and extending therefrom, the plain flange *b* on one side and the apertured flange *c* on the other side, substantially as shown and described.

3. Two or more pivoted and movable slats in combination, each having a ray and water-shed wing, *b*, and apertured wing *c*, and also pivots *a'*, forming a ventilating-panel, substantially as shown and described.

4. In combination with slats A, formed as set forth, the sliding plate C, the arms or levers *d*, attached to pivots *a'* and adapted to fit over and engage with projections or lugs of plate C, substantially as shown and described.

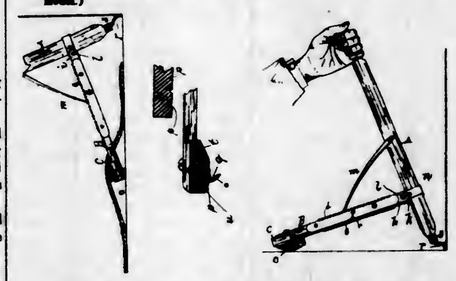
335,355. DYNAMO-ELECTRIC MACHINE. CARL HERING, Philadelphia, Pa., assignor of one-half to Charles H. Bazen, same place. Filed Oct. 31, 1885. (No model.)



Claim.—1. In a dynamo-electric machine, a cylindrical armature, each of whose coils is divided into two equal parts and placed on the armature in planes parallel to each other alternately as the inner and outer layers of wire wound thereon, substantially as described and specified.

2. In a dynamo-electric machine in which each of the armature-coils is divided into two equal parts, placed alternately as the inner and outer layers of wire thereon, an armature in which a greater equality of the length of the wire in the separate coils thereof is obtained by winding the separate halves of the coils thereon in planes parallel to each other.

335,356. CARPET-STRETCHER. MASON A. HIGGINS, Aurora, Ill., assignor to H. Ambrose Higgins, same place. Filed Oct. 16, 1885. (No model.)



Claim.—1. In a carpet-stretcher, in combination with a cross-bar, headed stretcher-hooks extending entirely through the bar, and bent backward upon the under side of said bar, and then bent forward to complete the hook shape, substantially as shown as described.

2. In a carpet-stretcher, a cross-bar which carries the stretching-hooks as made with transverse grooves *p*, extending backward from the holes made for the insertion of the hooks.

3. A carpet-stretcher having a cross-bar provided with stretching-hooks on one side only of such bar, but adapted to be readily reversed and used with its hooks either above or below the bar, for the purpose of seizing either the under or upper side of the carpet, at option.

4. In a carpet-stretcher, the combination, with the operating-lever, of the reversible bar B and its attached hook-bar, substantially as set forth.

5. In combination, with the lever A and its pawl, the lever-bar B,

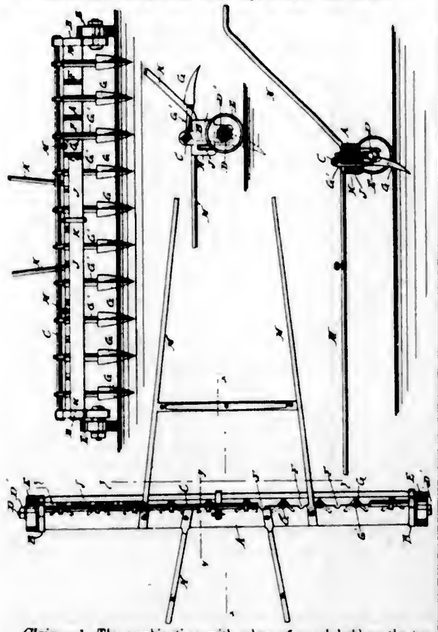
provided with a rack, both on its upper and on its under side, and secured to the toothed cross-bar C.

6. The reversible bar B, provided with projecting ears *h i*, combined with the yoke *n*, spanning the lever A, and with a removable bolt or pin serving to connect and disconnect the bar and lever, all as set forth.

7. In combination with the reversible bar and its attached cross-bar having the transverse grooves therein, the headed hooks extending entirely through the cross-bar, all as shown and described.

8. In combination with the operating-lever A, the hooked tooth *r*, inserted in its lower end and bent into the shape substantially as and for the purposes described.

335,357. **UNIVERSAL MARKER.** ELMER J. HILDRETH and THOMAS R. MILLER, New Haven, Conn. Filed Sept. 8, 1885. (No model.)



Claim.—1. The combination, with a bar, of a rod held on the top of the same parallel with said bar, and of a series of shovel-shanks held on said rod and extending down in front of the bar, substantially as herein shown and described.

2. The combination, with a bar having vertical grooves in its front, of a rod held on the top of the same parallel with the bar, and of shovel-shanks hung on said rod and extending down through the grooves in the bar, substantially as herein shown and described.

3. The combination, with a bar, of end pieces on the same, a rod held above the bar parallel with the same, and having its ends held on said end pieces, rollers mounted on the end pieces, and of shovel-shanks mounted to slide and swing on said rod, and hanging down in front of the above-mentioned bar, substantially as herein shown and described.

4. The combination, with a bar, of a rod on the same, shovel-shanks on the rod, and of a bar held in front of the shanks and serving to hold the shanks in place, substantially as herein shown and described.

5. The combination, with the bar A, of the rod C on the same, the end pieces, B, having the prongs H, and of the bar J, substantially as herein shown and described.

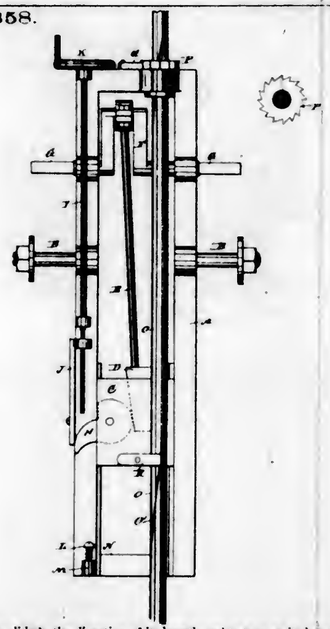
6. The combination, with the bar A, of the rod C, held on the same, the shovels G on the same, the end pieces, B, having the prongs H, the bar J, and the hasp K on the bar A, substantially as herein shown and described.

7. The combination, with the bar A, having the grooves F, of the rod C, the shovels G on the same, the end pieces, B, the locking-bar J, and devices for holding the same on the bar A, substantially as herein shown and described.

335,358. **ROCK-DRILLING MACHINE.** WILLARD S. IRHAM, Burlington, Vt. Filed May 18, 1885. (No model.)

Claim.—1. In a drill, which is to be used for drilling rocks or any other material that can be drilled, the combination, with a frame, A, to which the parts hereinafter to be mentioned are held, of the block C, which is mounted to slide in the above-mentioned frame A, the shaft O,

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mounted to slide in the direction of its length and to turn on its longitudinal axis in the above-mentioned frame A, the wedge D in the block C, the cam H, which is pivoted in the above-mentioned block C, and of projections on the frame A, on which projections the cam can strike, substantially as herein shown and described.

2. In a drill for drilling rock or other material that can be drilled, the combination, with the frame A, of a block, C, mounted to slide in said frame, the rod O, mounted in said frame to slide in the direction of its length and to turn on its longitudinal axis, the wedge D in the above-mentioned sliding block C, the rod E, connected with said wedge D, the crank-shaft G, journaled in the frame A and connected with that end of the rod E opposite the one that is connected to the wedge D, the cam H, pivoted on the sliding block, the pin L, held on the frame A in such a manner that it can be struck by the cam, and of the tripping-piece J, held adjustably on the above-mentioned frame A, substantially as herein shown and described.

3. In a drill for drilling rock or other material that can be drilled, the combination, with the frame A, of the block C, mounted to slide in said frame A, the rod O, mounted in the frame A, to slide in the direction of its length and turn on its longitudinal axis, the wedge D in the block C, the rod E, connected with the wedge D, the crank-shaft G, journaled in the above-mentioned frame A and connected with that end of the rod E opposite the one with which the wedge D is connected, the cam H, pivoted on the sliding block, the pin L, held on the frame A in such a manner that it can be struck by the wedge, the tripping-piece J on the frame A, the screw-rod I, mounted to turn on its longitudinal axis on the frame A, and the hand-wheel K, which is held on one end of the screw-rod I and is used for turning the same, substantially as herein shown and described.

4. The combination, with the frame A, of the grooved block C, mounted to reciprocate in the same, the rod O, mounted in the frame A, to slide in the direction of its length and to revolve on its central longitudinal axis, and the latch R, secured to the block C and projecting over the rod O, to hold it in the groove of the said block, substantially as herein shown and described.

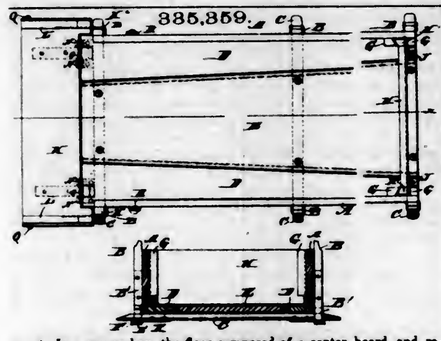
335,359. **WAGON-BOX.** HENRY JACOBS, Evansville, Ind. Filed June 9, 1885. (No model.)

Claim.—1. A wagon-box floor formed of three wedge-shaped pieces, substantially as herein shown and described.

2. In a wagon-box, the combination, with a floor, of the cross-bar C, the clips F, having their outer ends bent down, the side pieces, A, the stakes B, and the loops B' on the lower ends of the same, substantially as herein shown and described.

3. In a wagon-box, the combination, with a floor, of the cross-bars C, having the tops of their projecting ends beveled, the side pieces, A, the stakes B on the same, the loops B' on the stakes, and the clips F, secured on the bars C, and having bent ends F', substantially as herein shown and described.

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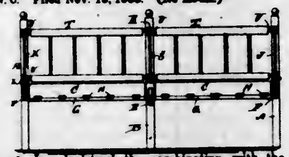


4. In a wagon-box, the floor composed of a center board, and removable boards on opposite sides thereof, and cross-bars secured to the under side of the central board and supporting the removable boards, in combination with the sides having loops on their lower edges to receive the ends of the cross-bars, and the end gates constructed to hold the sides in an upright position, substantially as set forth.

5. The combination, with the floor D E, of the side pieces, A, having cleats G, the front end gate, H, and the angle-pieces J, substantially as herein shown and described.

6. The combination, with the floor D E, the side pieces, A, and stakes B, of the rear end gate, K, having ends L, and of the hooks K' on the same, substantially as herein shown and described.

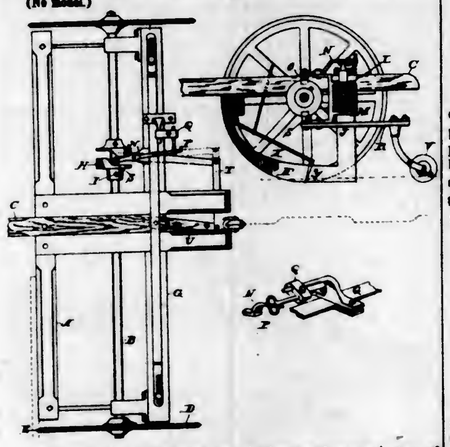
335,360. **ADJUSTABLE BEDSTEAD.** CHARLES A. JENKINS, New-Berne, N. C. Filed Nov. 12, 1885. (No model.)



Claim.—1. In a bedstead, the combination, with the corner-posts A, united by cross-pieces, of the intermediate posts, B, united by the cross-piece E, the rails C, hung on the posts A and B, the extensions R on the posts B, and the railing S, uniting them, substantially as herein shown and described.

2. In a bedstead, the combination, with the corner-posts A, united by the end pieces, F, of the intermediate posts, B, united by the cross-piece E, the extensions R, united by the railing S, the head and foot pieces J and K, and the railings T, hung on the corner-posts A and the extensions R, substantially as herein shown and described.

335,361. **CHECK-ROWER FOR CORN-PLANTERS.** GUSTAVUS W. JEWELL and ROBERT M. DERBOW, Earl Park, Ind. Filed Sept. 12, 1885. (No model.)

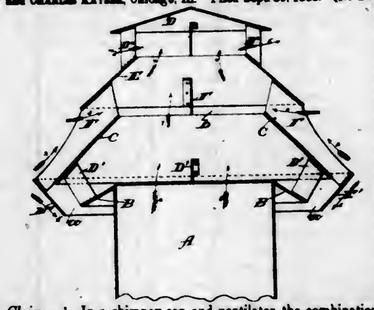


Claim.—1. The combination, in a check-rower for corn-planters, of a pair of levers, one connecting with the feed-bar and the other with the trailing wheel, with a swivel cam-wheel on the axle-shaft, whereby one lever operates the feed-bar while the other diverts the trailing wheel to form a mark diverted laterally at regular intervals.

2. The combination of the frame A, the wings L and M, carrying thereon the levers N and R, the keeper P, the feed-bar attachment Q, the trailing wheel V, and leveling-scraper Y, substantially as herein described.

3. The combination of the frame A, the pole C, the axle B, and the colter-wheels E, with the feed-bar G, the cam H, the friction-rollers O and S, the levers N and R, the trailing wheel V, and the scraper Y, the whole arranged and operated substantially as herein described and set forth.

335,362. **CHIMNEY CAP AND VENTILATOR.** WILLIAM J. KAYSER and CHARLES KAYSER, Chicago, Ill. Filed Sept. 29, 1885. (No model.)



Claim.—1. In a chimney cap and ventilator, the combination, with the chimney-pipe, of a truncated cone closely secured thereto and extending downward and outward with its greatest diameter below the top of said chimney-pipe, and an open truncated cone supported above the top of the first-named cone and above the top of the chimney-pipe, and an outwardly and upwardly flaring conical band extending below and above the bases of the cones named and adapted to divide any air-currents striking against it, whereby a downward as well as upward draft is insured, substantially as set forth.

2. In a chimney cap and ventilator, the combination, with the chimney-pipe, of a truncated cone closely secured to the top thereof and extending downward and outward, an open truncated cone supported above said chimney-pipe top, another open truncated cone of lesser diameter supported above the last-named cone by brackets constituting air shields or partitions and forming air-spaces between them, an outwardly and upwardly flaring conical band extending above and below the bases of the first and second cones named, and a cap or cover supported on brackets rising from the uppermost cone of the ventilator, substantially as set forth.

335,363. **DIRT COLLECTOR AND REMOVER FOR WASH-BASINS.** THOMAS KERR, New York, N. Y. Filed Aug. 10, 1885. (No model.)



Claim.—A dirt collector and remover composed of a spring-like or compressible strainer-like portion, formed or provided with a handle-like portion and adapted to rest upon a suitable seat within the discharge-pipe of the basin, and to be easily compressed when the plug of the basin shall be inserted, and to automatically spring up when the plug shall be removed, (so that the handle portion shall be easy of access,) all substantially as hereinbefore set forth.

335,364. **TELEPHONE-TRANSMITTER.** ALBERT E. KELLER, Boston, and EDWARD H. LYON, Chelsea, assignors to the American Bell Telephone Company, Boston, Mass. Filed Sept. 14, 1885. (No model.)



Claim.—1. In a telephone-transmitter, a stationary or non-vibratory electrode provided, as described, with internal and circumferential chambers, the said chambers being connected by lateral channels and adapted to be independently supported in the containing-chamber with its lower surface opposite and near to the vibratory electrode.

2. In a telephone-transmitter, a stationary or non-vibratory elec-

trode constructed, as described, with internal and circumferential reservoirs or chambers, and independently supported in a non-conducting case or containing-chamber with its lower surface opposite and near to the vibratory electrode.

3. In a battery-telephone substantially of the character and class herein described, a stationary electrode provided with an internal chamber or reservoir in the form of an inverted cone extending vertically through its substance, a circumferential chamber or groove formed between the upper and lower flanges and connecting by lateral channels with the inner chamber, and a face of carbon, the whole supported in a containing-chamber, so that the carbon face is held opposite and near to a diaphragm which constitutes the vibratory electrode.

4. In a transmitting-telephone, a stationary or non-vibratory electrode provided, as herein described, with cord-pulley flanges, the upper flange being wider than the lower, having also an internal chamber formed like an inverted cone and continuing vertically through the substance of the said electrode, and an external circumferential reservoir formed by the groove between the upper and lower flange, the said internal and external chamber being connected by lateral channels, and the whole being supported by the upper and wider flange, so that the lower surface is permanently placed near and opposite the vibratory electrode or diaphragm, whereby a granular substance placed between the electrodes and vibrated by sound-waves is enabled to circulate freely through the several chambers, so as to prevent the packing or conglomerating of the same.

5. The combination, substantially as hereinbefore described, in a telephone-transmitter, of a horizontal diaphragm constituting one electrode, a metallic or carbonaceous stationary complementary electrode, in form and character as described herein, a containing-vessel having non-conducting walls, closed on one side by the diaphragm containing the stationary electrode and supporting the same upon its upper edge, and a mass of granulated or finely-divided particles in a loose and free state surrounding and adapted to circulate through the stationary electrode, the said particles being also inclosed within the containing-chamber and resting upon the diaphragm, by which they may be put into vibration.

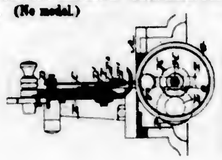
6. In a telephone-transmitter, a stationary or non-vibratory grooved electrode having an interior funnel-shaped reservoir extending through its substance vertically and provided with flanged sides, the upper of said flanges being larger in diameter and the lower flange smaller in diameter than the containing-chamber of the transmitter, whereby, by making the electrodes of proper thickness, it may be supported by the upper flange in said containing-chamber, with its lower face opposite and near to the diaphragm, leaving a circular aperture between the lower flange and the side of the said containing-chamber, substantially as described.

7. In a battery-telephone, the combination of a horizontal diaphragm or vibratory electrode, a mass of granulated carbon or like material resting thereon, an inclosing-chamber for the said granular carbon, having non-conducting walls and closed in front by the diaphragm, and a stationary complementary electrode depending from the upper edge of the said inclosing-chamber thereinto and into the said granular mass, the said electrode having, as described, grooved chambers communicating with one another, and having a flat or concave surface opposing the vibratory diaphragm a short distance therefrom, whereby the said granular carbon particles, when vibrated by the diaphragm, may circulate freely through and between the several grooves and chambers of the complementary electrode, varying their contact resistance and maintaining their loose and free condition.

8. In a battery-telephone, the combination of the horizontal diaphragm *d*, constituting the first electrode, the non-conducting inclosing-ring B, forming a closed chamber upon the said diaphragm, the dependent and stationary complementary electrode E, supported by and projecting into the said inclosing-ring and provided with the inner and outer chambers, communicating by channels, as described, the granulated and loose conducting material G, serving as a variable-resistance medium resting upon the diaphragm within the inclosing-ring and partly burying the fixed electrode, and the mouth-piece M, by which sound-waves may be directed upon the diaphragm, as described herein.

9. A telephone-transmitter consisting of the following elements in combination: the horizontal diaphragm *d*, the inclosing-ring B, the dependent and stationary electrode E, formed and perforated as described, and the granulated and finely-divided conducting-particles G, substantially as specified.

335,365. **SEWING-MACHINE.** THOS. LAMB, Philadelphia, Pa. Filed Sept. 3, 1885. (No model.)



Claim.—1. A sewing-machine having the driving-shaft B, with worm-gearing U thereon, a counter-shaft, R, having a worm-wheel, T, meshing with said worm U, and a bevel-wheel, Q, meshing with the bevel-wheel P, mounted on a shaft, M, which shaft has a pinion, L, the shaft H having pinion K and feed-wheel G, the said pinion K meshing with said pinion L, all of said parts operating so as to impart a continuous rotary motion to said wheel G, substantially as described.

2. The feed-wheel G and means, substantially as described, for imparting a continuous rotary motion thereto, in combination with guide F, having the slot F′ and a yielding needle, substantially as described.

3. A sewing-machine having a feed-wheel, with means, substantially as described, for imparting a continuous rotary motion thereto, a yielding needle and a spring adapted to control said needle in one direction, substantially as and for the purpose set forth.

4. A yielding needle, C, in combination with the guide F, having slot F′, spring D′, and wheel G, having means, substantially as described, for imparting a continuous rotary motion thereto, substantially as described.

335,366. **COMBINED STRAINER AND TRAP FOR WATER-PIPES, &c.** THOMAS LEE, Cincinnati, Ohio. Filed Nov. 27, 1885. (No model.)



Claim.—1. In a combined strainer and trap, the main casing provided with a deflecting-grating and a trap, the latter having a secondary removable trap, for the purposes stated.

2. In a combined strainer and trap, the main casing provided with a deflecting-grating and screen, in combination with a trap below said deflector and a secondary removable trap, all constructed and combined to operate substantially as and for the purposes hereinbefore stated.

3. In a combined strainer and trap, the main casing provided with an inclined grating or deflector, and also having a screen below said deflector, in combination with the removable trap, the main trap, and the perforated lower conductor-connection, substantially as described.

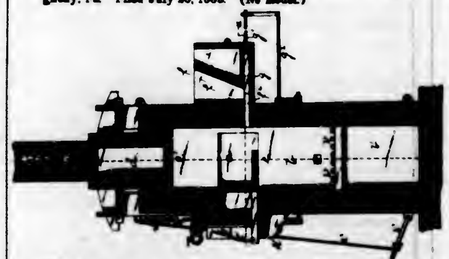
4. In a combined strainer and trap, the screen secured between the upper and lower connection, said lower connection provided with the flange F, in combination with the main casing, the secondary removable trap, and the wedge, substantially as and for the purposes hereinbefore stated.

5. In a combined strainer and trap, the main casing provided with a screen, and a trap attached to one side of the strainer out of the main water-line, in combination with the perforated lower conductor-connection below the screen and at the base of the secondary trap, whereby the water which may be deposited in the trap is allowed to flow out of said trap, substantially as described.

6. In a combined strainer and trap, the main casing provided with the screen and deflecting-grating, in combination with the perforated lower conductor-connection and the trap, said trap secured to the lower conductor-connection below the perforations *b* in the lower conductor-connection of the main water-spout, substantially as described, whereby the water may flow from the trap without coming into contact with and defacing the outside of the filter or joint, as set forth.

7. In a combined strainer and trap, the combination of the main casing and the screen with the perforated lower conductor-connection, the trap, and the perforated secondary removable trap, substantially as and for the purposes stated.

335,367. **FURNACE.** ANDREW J. LEHNOX and JOHN KEEFF, Allegheny, Pa. Filed July 30, 1885. (No model.)



Claim.—1. A furnace for heating metal articles, having a furnace-chamber provided with a sill-plate and a fire-pot at the base of the furnace-chamber, in combination with a supporting-bar adapted to press upon the upper surface of the article where it extends beyond the furnace, substantially as and for the purposes set forth.

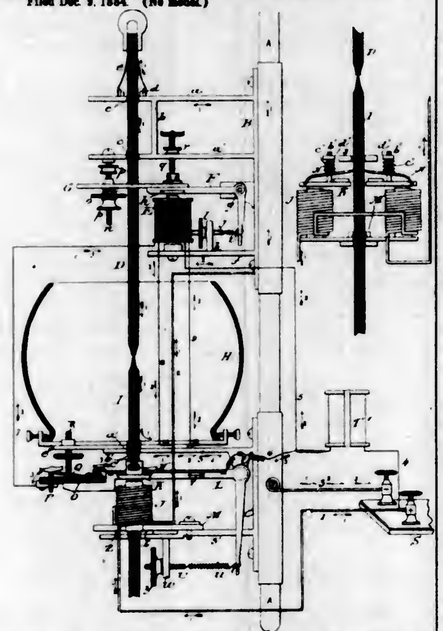
2. The combination, with the furnace having the sill-plate *h*, the finger-bar *l*, swinging above the sill-plate and adapted to press upon the article to be supported, substantially as and for the purposes set forth.

3. In combination with the furnace having the fuel-pot *b*, furnace-chamber *c* above it, stack-flue *d*, leading from the top of the furnace-chamber, and sill-plate *h*, the finger-bar depending above the sill-plate and adapted to press upon the article to be supported, substantially as and for the purposes set forth.

4. In combination with the furnace having the fuel-pot *b*, working-chamber *c* above it, sill-plate *h*, and door *k*, the blast-pipe *m*, adapted to induce an air-current under the door into the working-chamber, substantially as and for the purposes set forth.

5. In combination with the furnace having the working-chamber *c* and sill-plate *h*, the depending finger-bar *l*′, having the depression *l*³ therein, substantially as and for the purposes set forth.

335,368. **ELECTRIC LAMP.** W. GOULD LEVISON, Brooklyn, N. Y. Filed Dec. 9, 1884. (No model.)



Claim.—1. In an electric lamp, the combination, in carbon-feeding mechanism constructed as herein specified, of a differential shunt electro-magnet having one part thereof in a constant shunt-circuit around the arc, the other part of the shunt electro-magnet being variable by the main-circuit magnet, substantially as shown and described.

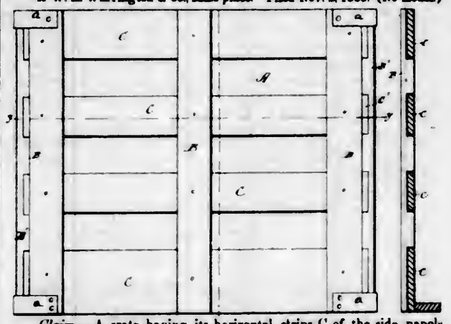
2. The combination, in an electric lamp, of a variable branch of the differential shunt-magnet, and a contact-breaker worked by the main-circuit magnet and adapted to interrupt or vary the current flowing through the variable branch of the shunt-magnet, substantially as and for the purpose herein specified.

3. In the lower-carbon-feeding mechanism of an electric lamp, the combination of the forked clutch M, pivoted to a fixed support and having angled inner edges for engaging the carbon rod, and a plain-faced spoke, *z*, serving as a support to the free ends of the clutch-arms, substantially as herein shown and described.

4. In an electric lamp constructed as herein described, the combination of an armature-lever, L, adjustable spring *u*, armature K, carried by the lever L, electro-magnet J, arranged to act upon the armature K, the insulating-block O, carried by the armature-lever L, the spring Q, secured to the block O, the threaded block U, secured to the insulating-block O, and the platinum or carbon faced screw P, fitted to the block U and adapted to be touched by the spring Q to form a variable-contact or circuit breaker in the shunt 6 7, as herein specified.

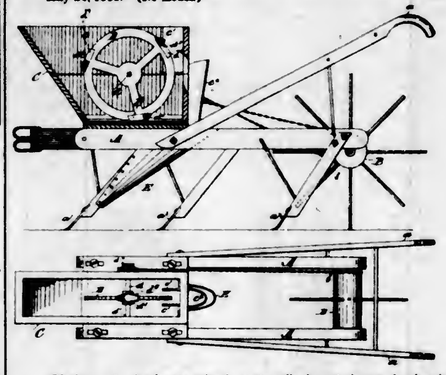
5. The combination, in an electric lamp, of a differential magnet, a divided shunt including the said magnet, a variable-contact or circuit breaker placed in and controlling one branch of the said divided shunt, and means for operating the circuit-breaker, as specified.

335,369. **FRUIT-CRATE.** CYRUS W. LLOYD, Salisbury, Md., assignor to W. A. Warrington & Co., same place. Filed Nov. 2, 1885. (No model.)



Claim.—A crate having its horizontal strips C of the side panels let into the vertical strips B of said side panels, and its horizontal strips C′ of the end panels let into the strips B′ of said end panels, and its two sets of panels fastened together with the ends of one set flush with the outer sides of the other, and angle-irons *a* for securing them, substantially as shown and described.

335,370. **SEED-PLANTER.** GEORGE LOVICK, Temple, Tex. Filed May 26, 1885. (No model.)

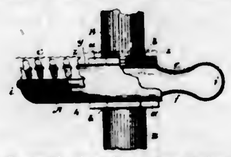


Claim.—1. A planter-wheel, as described and shown, having its periphery provided with pockets, and with guard-flanges projected forward from the opposite sides of the mouth of the pockets, substantially as set forth.

2. In a planter, a seed-box having a discharge-opening through its rear side, combined with a wheel journaled therein, and having its periphery provided with pockets arranged to deliver seed through the opening in the box, and having guard-flanges projected forward from the opposite sides of the mouth of the pockets, substantially as set forth.

3. A seed-box having a discharge-opening through its rear side, and provided with guide-plates projected rearwardly from each rear side above and on opposite sides of the said opening, combined with a planter-wheel revolving in said box, and adapted to discharge seed between the guide-plates and through the discharge-opening, substantially as and for the purposes specified.

335,371. **ELASTIC COUPLING FOR STEAM-PIPES.** EMANUEL MAJOR, Rochester, N. Y. Filed Sept. 28, 1885. (No model.)

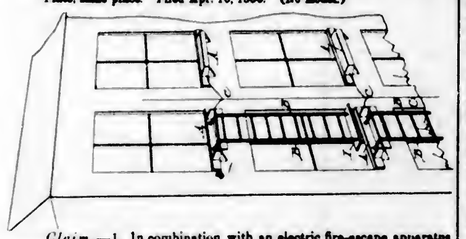


Claim.—1. In combination with sections of pipe, an elastic coupling for the same, forming a flattened circular inclosure with opposing sides provided, respectively, with central longitudinal orifices internally threaded to receive said pipes, said orifices being surrounded with beads or masses formed to receive a wrench, said sides of the coupling being formed with opposing depressions or valleys, causing the longitudinal distance thereat between said sides to be less than that at points nearer the periphery of

the coupling, the peripheral curve of the coupling measuring more than a semicircle on a radial line, substantially as shown.

2. In combination with sections of pipe, an elastic coupling forming a circular inclosure, with opposing sides provided, respectively, with axial longitudinal orifices internally threaded to receive said pipes, said orifices being surrounded with masses formed to receive a wrench, side depressions being formed causing the peripheral curve of the coupling to measure more than a semicircle on a radial line, substantially as shown and described.

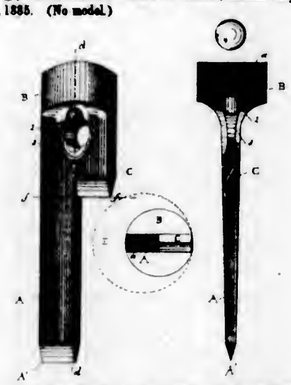
335,372. ELECTRIC FIRE-ESCAPE. MICHAELIS D. MARCUS and NATHAN H. EPSTEIN, Portland, Oreg., assignors of one-fifth to Arthur M Plato, same place. Filed Apr. 10, 1885. (No model.)



Claim.—1. In combination with an electric fire-escape apparatus, the case or box A, for the purpose of retaining flexible ladder when not in use, and constructed to serve as case-platform and ladder-guard, substantially as described and set forth.

2. In combination with an electric fire-escape apparatus, the mechanism of latch N and spring H, connected with and attached to case A, for purpose of holding, also releasing, cover I of case A, therewith precipitating said laddar attached thereto by force of electric shock and spring force, substantially as set forth and described, making ladder instantly ready for use.

335,373. ROCK-DRILL. RUFUS G. MARDY, Kansas City, Mo. Filed Nov. 16, 1885. (No model.)



Claim.—1. A drill having a cutting-bit, C, formed upon one side of its main body and occupying one-half the diameter of said body, and having another bit, A, formed integral with the first mentioned upon the opposite side of the main body and extending below it a sufficient distance to drill an independent hole and guide the stroke of the entire drill, substantially as set forth.

2. As a new article of manufacture, a drill having the upper portion of its main body provided with a screw-threaded socket, a transverse hole, 3, and a vertical aperture, 2, which intersects said transverse hole, and having a cutting-bit, C, formed upon one side of the body and occupying one-half the diameter thereof, and having another bit, A, formed integral with the first mentioned, but occupying the remaining half of the diameter of the main body and being located opposite the bit C, and extending below it a sufficient distance to drill an independent hole and to guide the stroke of the entire drill, substantially as set forth.

335,374. ADDING-MACHINE. THOMAS W. MAXEY, Nevada, Mo. Filed May 12, 1885. (No model.)

Claim.—1. The combination of an adding-machine frame having sides and a cross-piece with holes in it, a shaft fixed therein, a series of wheels journaled on the shaft, each wheel divided on its circumference into ten equal spaces and marked with figures, and provided with a ten-toothed ratchet-wheel on each face, a series of finger-levers each pivoted midway in the frame opposite to one of the wheels, a spring for returning each finger-lever, a spring-pawl on each lever fitted to engage one of the

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two sets of ratchet-teeth on the corresponding wheel, a carrying hook hung between each two adjacent wheels to engage the other of the two sets of ratchet-teeth referred to, and provided with a shank fitted to slide in one of the said holes in the cross-piece of the frame, a radial pin projecting from the rim of each wheel, a pin projecting from the side of the carrier-hook in the path of said radial pin, a spring to force the carrier-hook into engagement, and a spring to return the carrier-hook, substantially as shown and described.

2. The combination, with two wheels journaled on the same shaft, the one wheel provided with a pin projecting radially from its circumference and the other provided with a series of ratchet-teeth, of a carrier-hook hung between the two wheels to engage the said ratchet-teeth, and provided with a pin on one side crossing the path of the said radial pin, a shank for the said hook extending from the wheel in a tangent direction, a free bearing in the frame for said shank, and a spring acting against the end of the hook to return it, substantially as shown and described.

335,375. HAME-FASTENER. HARRY C. NESTOR, Dayton, Ohio, assignor of one-half to Thomas Staniland, same place. Filed Nov. 23, 1885. (No model.)



Claim.—1. In an improved hame-fastener, the chain-lock B, connected to one side of the hame, constructed in two parts, and adapted to receive and retain one end of a chain, in combination with an eccentric lever and hook connecting with the chain and other side of the hame, substantially as described.

2. The hook, its eccentric lever, the fastener, and the chain-lock, as herein set forth, connected and combined, substantially as herein described.

335,376. DEVICE FOR RAISING BARRELS. JOHN K. MITCHELL, Fowler, Ind. Filed Dec. 23, 1885. (No model.)



Claim.—1. In a device for raising barrels or similar articles, the combination of two sills, a platform, parallel arms pivoted to the sills and to the platform at their ends, and levers pivoted at their lower ends to the sills and to the platform parallel to the arms, as and for the purpose shown and set forth.

2. In a device for raising barrels or similar articles, the combination of two sills, a platform, parallel arms pivoted to the sills and to the platform, and having the pivotal bolts passing through perforations at opposite sides of the central line of the arms at opposite ends of the same, and levers pivoted to the sills and to the platform parallel with the arms, as and for the purpose shown and set forth.

3. In a device for raising barrels and similar articles, the combination of two parallel sills connected by a cross-piece, a platform consisting of side pieces and cross-pieces secured to their upper edges, one of the said cross-pieces registering with the cross-piece of the sills, two arms pivoted at their ends to the sills and to the platform having their pivotal bolts passing through perforations at opposite sides of the central lines at opposite ends of the arms, and two levers pivoted at their lower ends to the sills and near the said ends to the platform parallel with the arms, and having a handle connecting their upper ends, as and for the purpose shown and set forth.

335,377. AUTOMATIC CAR-BRAKE. FRANKLIN H. D. NEWHARD, Hokendaqua, Pa. Filed Nov. 11, 1885. (No model.)

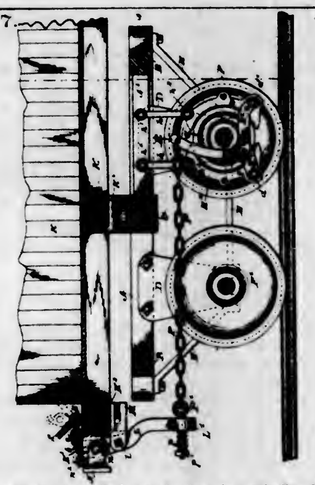
Claim.—1. The combination of the brake-shoe suspended from the bearing-beam of the truck-frame and provided with arms, as shown, the brake-shoe-operating lever and the friction-disks on the truck-axles, as and for the purpose set forth.

2. In combination with the brake-shoe lever and brake-shoe suspended from the bearing-beam of the truck, the sliding buffer-bar, the lever suspended vertically from the pulling-beam of the car, as shown, and the chain connecting said lever with the shoe-operating lever and arranged to operate the brake-shoes, as and for the purpose set forth.

3. The transverse pin in the upper end of the brake-shoe-operating lever, and the bifurcated stud affixed to the bearing-beam of the truck-frame, in combination with said lever, as and for the purpose set forth.

4. The combination, in a car-brake, of the sliding buffer-bar with the vertical adjustable buffer-head pivotally secured thereto, substantially as and for the purpose specified.

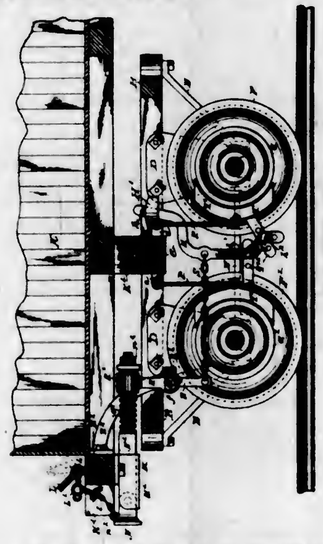
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2. In an automatic car-brake mechanism, the vertically-adjustable buffer, in combination with the vertical brake-operating lever arranged to operate the brake-shoes, as and for the purpose set forth.

3. In an automatic car-brake mechanism, the shifting-rod, in combination with the vertically-adjustable buffer when arranged to operate the same from the top and sides of the car, as specified.

335,378. CAR-BRAKE. FRANKLIN H. D. NEWHARD, Hokendaqua, Pa. Filed Nov. 11, 1885. (No model.)



Claim.—1. The combination of the brake-shoe suspended from the bearing-beam of the truck-frame and provided with arms, as shown, the brake-shoe-operating lever and the friction-disks on the truck-axles, as and for the purpose set forth.

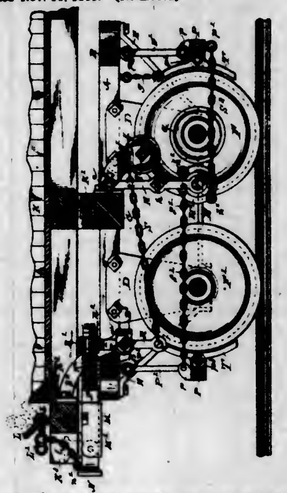
2. In combination with the brake-shoe lever and brake-shoe suspended from the bearing-beam of the truck, the sliding buffer-bar, the lever suspended vertically from the pulling-beam of the car, as shown, and the chain connecting said lever with the shoe-operating lever and arranged to operate the brake-shoes, as and for the purpose set forth.

3. The transverse pin in the upper end of the brake-shoe-operating lever, and the bifurcated stud affixed to the bearing-beam of the truck-frame, in combination with said lever, as and for the purpose set forth.

4. The combination, in a car-brake, of the sliding buffer-bar with the vertical adjustable buffer-head pivotally secured thereto, substantially as and for the purpose specified.

5. The sliding buffer-bar-supporting bracket provided with projection open at the top, as and for the purpose set forth.

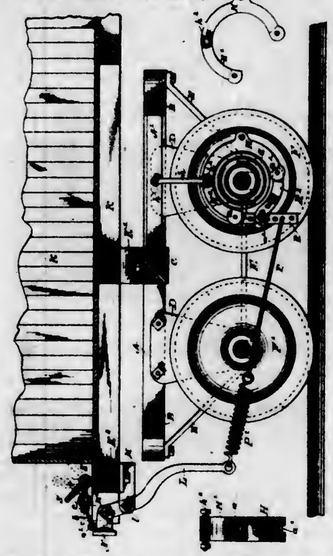
335,379. CAR-BRAKE. FRANKLIN H. D. NEWHARD, Hokendaqua, Pa. Filed Nov. 11, 1885. (No model.)



Claim.—1. The combination of the roller suspended from the bearing-beam of the truck by vertical hangers and connected over and under the truck-axles with the shoe-supporting beams by chains in the manner shown, the friction-disk on the truck-axle, the sliding buffer-bar, and the intermediate mechanism, arranged to operate as specified, for forcing the roller against the friction-disk on the truck-axle and applying the brake-shoes to the truck-wheels, as and for the purpose set forth.

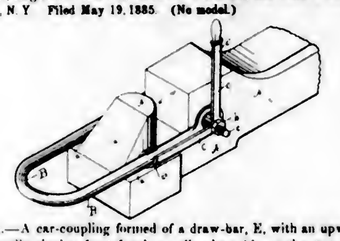
2. The roller suspended from the bearing-beam of the truck by vertical hangers and connected over and under the truck-axles with the shoe-supporting beams by chains in the manner shown, in combination with the friction-disk on the truck-axle, as and for the purpose set forth.

335,380. CAR-BRAKE. FRANKLIN H. D. NEWHARD, Hokendaqua, Pa. Filed Nov. 11, 1885. (No model.)



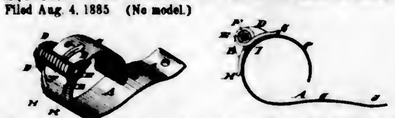
Claim.—The brake-shoes articulated to each other and to hangers suspending them from the truck-frame, and connected to each other substantially in the manner shown, in combination with the friction-disk on the axle, and the rod, spring, and lever affixed to the pulling-beam of the car, as and for the purpose set forth.

335,381. CAR-COUPLING. JAMES O'RIORDAN, Ulster, assignor to Luke R. Ford, Patrick Casey, William Ryan, Mathew Larkin, Jr., Eugene O'Riordan, James Cummings, and William Lawton, Kingston, N. Y., and James O'Riordan, Sr., Ellen O'Riordan, Daniel O'Riordan, James O'Riordan, Jr., Angelina O'Riordan, Columbia O'Riordan, and John O'Riordan, Ulster, N. Y. Filed May 19, 1885. (No model.)



Claim.—A car-coupling formed of a draw-bar, E, with an upwardly and inwardly sloping front faced coupling-lug, A', on the top front end of the said draw-bar, and an abutting lug also formed on the top face of the draw-bar and terminating at its front end in a vertical abutting face, a^2, which rises higher than the lug A', so as to stop the incoming link and cause it to drop into the vertical notch a^1, and, in combination with the said draw-bar with its lug A' and abutting face a^2, a coupling-link, B, and link-raising lever C, coupled to the draw-head by a transverse pin, *b*, substantially as shown and described.

335,382. HORSE-COLLAR PAD. WILLIAM H. OSBER, St. Louis, Mo. Filed Aug. 4, 1885. (No model.)



Claim.—1. As an attachment to a horse-collar pad, a jointed metal hook consisting of a curved shank, A, adapted to be secured to a collar-pad, and a clamping-arm, C, pivotally united by a pin, E, and actuated by a spring, F, all substantially as and for the purpose specified.

2. A jointed hook for horse-collar pads, having a curved shank, A, adapted to be secured to a collar-pad, and a clamping-arm, C, in combination with a separate independent compression-spring adapted to compress said jointed parts, substantially as and for the purpose described.

3. In a hook for horse-collar pads, the jointed part A, adapted to be secured to a collar-pad and provided with ears B, and the clamping-arm C, having ears D, in combination with a pivot, E, and compression-spring F, all substantially as and for the purpose specified.

4. In combination with a horse-collar and collar-pad, a metallic hook consisting of the part A, adapted to be secured to a collar-pad, and the clamping-arm C, jointed in the circle of the clasp, and provided with the pin E, spring F, and detent I, all substantially as and for the purpose set forth.

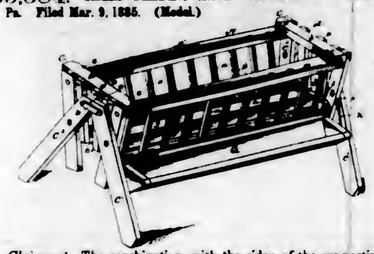
335,383. STRETCHER-FRAME FOR PAINTINGS. FRANK P. PYLE, Joliet, Ill. Filed Sept. 26, 1885. (No model.)



Claim.—1. In a stretcher-frame, the combination of the bars R and R', each having a tenon, P, at each end at one side from the center and a mortise, B, adjacent thereto, opposite said center line, and having the mitered portions E F, the said tenons and mortises on one end of said bars being reversed from those at the opposite end, so the side and end bars may be interchangeably united and reversed and either side up, as and for the purpose set forth.

2. In a stretcher-frame, the bars R and R', each having a tenon, P, at each end at one side from the center and a mortise, B, adjacent thereto opposite said center line, and having the mitered portions E F, the said tenons and mortises at one end of said bars being reversed from those at their opposite end, in combination with the double wedge K, as and for the purpose set forth.

335,384. SHEEP-FEEDING RACK. DANIEL PHILLIPS, Cochranton, Pa. Filed Mar. 9, 1885. (Model.)



Claim.—1. The combination, with the sides, of the supporting-legs pivoted to the end rails thereof, plates pivotally connecting the upper ends of said legs, the removable ends, and the removable bottom, substantially as set forth.

2. The combination, in a feed-rack, with the folding sides, supporting-legs pivoted to the end rails thereof, and plates pivotally connecting the supporting-legs at the upper ends thereof, of the removable ends and bottom, and the pivoted or hinged troughs arranged along the sides of the rack and adapted to be supported in a horizontal position, substantially as set forth.

3. The combination, with the sides having the extended end rails, and the troughs pivoted between the same, of the supporting-legs pivoted to said rails and pivotally connected at their upper ends by metal plates, and the removable ends and bottom, substantially as set forth.

4. In a feed-rack, the combination, with the sides, of removable ends located between the same, and a trough resting on the sides and bearing against the inner sides of the ends to hold the same in place, as set forth.

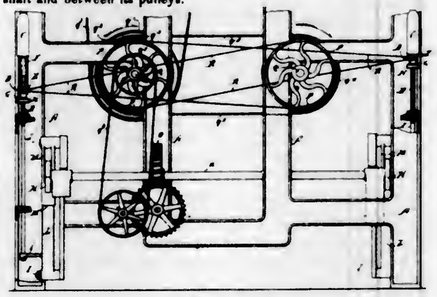
5. In a feed-rack, the combination, with the sides having upwardly-projecting pins on their top rails and inwardly-extending pins on their end rails, of the ends consisting of the top and bottom strips connected by bars, said top and bottom strips being provided with notches to engage the pins, and a bottom, as set forth.

6. The combination, in a feed-rack, with the sides, of the inverted-V-shaped trough supported upon the lower rails of the same, downwardly-extending blocks A at the ends of the trough, and the removable ends, substantially as set forth.

7. The combination, with the sides and the pivoted supporting-legs pivotally connected at their upper ends by metal plates, of the removable inverted-V-shaped trough, the pins *e f*, and the removable ends having notches to engage the same, substantially as set forth.

335,385. CAP SPINNING AND TWISTING MACHINE. WALKER RILEY, Lowell, Mass. Filed Oct. 1, 1885. (No model.)

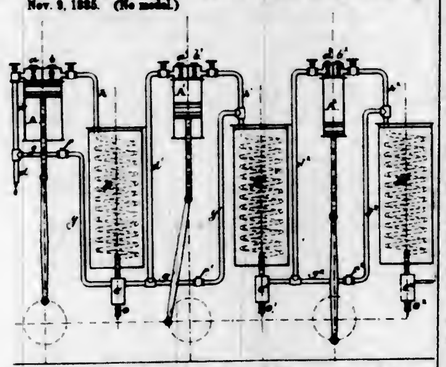
Brief.—To permit of the use of longer belts, and so reduce the strain and wear caused by the traverse, the machine is provided with two bobbin-driving shafts, each provided with a series of narrow driving-pulleys alternately arranged with reference to the other series. Each series of whirls is belted to the series of pulleys at the opposite side of the machine, and the belt is passed above and below the other driving-shaft and between its pulleys.





Claim.—A spinning-machine having two parallel rows of dead-spindles on opposite sides thereof, whirls free to turn on said spindles and to rise and fall thereon, and to engage with and to rotate spools or bobbins surrounding said spindles, two series of band-pulleys, two parallel shafts arranged between said rows of spindles, to each of which shafts is secured one of said series of pulleys and two series of driving-bands, each series of such bands passing around the whirls of one row and around the band-pulleys of the series farthest from each whirl, and above and below the shaft of the series of band-pulleys nearest such whirl, and between the pulleys of said last-named series, as and for the purpose specified

335,386. ICE-MACHINE. GOTTLOB O. REHMAN, Cincinnati, Ohio. Filed Nov. 9, 1885. (No model.)



Claim.—1. The process of serial or gradual compression of the gas or air in successive condensers or chambers containing gas under different degrees of pressure, substantially as and for the purposes specified.

2. The process of serial or gradual compression of the gas or air by successive pumps and successive condensers or chambers containing gas under different degrees of pressure, substantially as and for the purposes specified.

3. The combination of two or more pumps and two or more condensers, each provided with receiver C, substantially as and for the purposes specified.

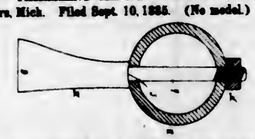
4. The combination of two or more pumps and condensers and pipes, as *g g'*, and check-valve *f*, substantially as and for the purposes specified.

5. The combination of two or more pumps of different areas and condensers and pipes, as *g g' g²*, and check-valve *f*, substantially as and for the purposes specified.

6. The combination of pumps A A' A² and condensers B B' B², and pipes *g' g²*, and check-valve *f*, substantially as and for the purposes specified.

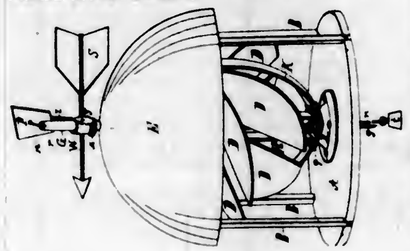
7. The combination of the condenser, receiver, and valve, as *s*, substantially as and for the purposes specified.

335,387. THRASHING-MACHINE TOOTH. GEORGE A. ROBERTS, Three Rivers, Mich. Filed Sept. 10, 1885. (No model.)



Claim.—The combination, in a thrashing-machine cylinder, of a round bar for carrying the teeth, a flat-bladed tooth having a shank and a concave shoulder, such shank being provided with a thread having a pitch or lead a little greater than the pitch of the curvature of the bar, and a concave-faced nut adapted to secure and lock such tooth in position, substantially as specified.

335,388. WIND-ENGINE. JOHN SHEDDEKO, New Braunfels, Tex. Filed Mar. 20, 1885. (No model.)



Claim.—1. In a circular wind-engine, the combination of the circular vertical frame K, with its parallel vertical bars H H, the horizontal journaled shaft J, wind-blades D D, and crank *s*, and the tube G, having its bearings in roof E and the plate R, upon which said frame bears, and the projecting tube *q*, around which said frame horizontally revolves, substantially as described and shown.

2. In a wind-engine, the combination of a support, a frame journaled vertically thereto, a wind-wheel journaled horizontally in said frame, and a combined roof and shield fitted over the upper end of said wheel, and extended down to approximately the plane of the axis of said wheel, such shield being independent of the wheel-supporting frame, substantially as set forth.

3. The combination of the vertical tube G of the frame K, having bearing in roof E, the rigid horizontal cog-wheel *x*, the loose collar W, with its vane S, and the pivoted arms *z* of the wing P, one of said pivoted arms having a vertical cog-wheel, *y*, which engages into the cog-wheel *x*, substantially as described and shown.

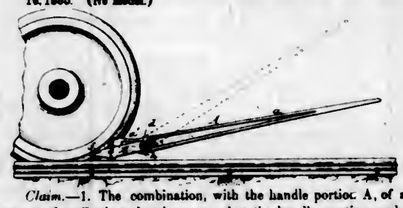
4. In a wind-engine, the combination of a support, a frame journaled vertically thereto, a wind-wheel journaled horizontally to said frame, a shield, a wind sail or wing, and connections between said sail or wing and the frame, substantially as set forth.

5. In a wind-engine, the combination of a support, a frame, K, journaled vertically therein, a wind-wheel having its shaft journaled horizontally to said frame, a semi-spherical roof and shield, E, fitted over said frame and wheel, and extended down on all sides to and terminating in approximately the plane of the shaft of the wheel, substantially as set forth.

6. In a wind-engine, the combination of a support, a frame, K, journaled thereto, a shaft, J, journaled within said frame, and the blades D, secured on said shaft within the frame K, substantially as set forth.

7. The combination of a support, a frame, K, journaled therein and inclosing a wind-wheel, a projection, G, extended from said frame K, and provided with a cog, *x*, a tube, W, provided with a vane and fitted over the projection G, and an arm, *z*, pivoted to the tube W, and provided with a toothed part, *y*, meshed with the cog *x*, and with a wing, P, all arranged and adapted to be operated substantially as set forth.

335,389. PINCH-BAR. MARK A. SHELDON, Corry, Pa. Filed Nov. 16, 1885. (No model.)



Claim.—1. The combination, with the handle portion A, of a fulcrum portion, C, pivoted at its rear end to the handle portion, and provided at its under side with a fulcrum adapted to rest on the rail, substantially as set forth.

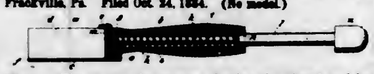
2. The combination, with the handle portion A, provided with a working-nose, *a'*, of a fulcrum portion, C, pivoted to the handle portion and provided with a working-nose, *f*, both noses being adapted to bear against the wheel simultaneously, substantially as set forth.

3. The combination, with the handle portion A, provided with a working-nose, *a'*, of the fulcrum portion C, provided with a working-nose, *f*, and rearwardly-extending arms *i*, straddling the nose *a'* and pivoted to the handle portion above said nose, substantially as set forth.

4. The combination, with the handle portion A, provided with a working-nose, *a'*, and lugs or ears *h*, of the fulcrum portion C, pivoted to the handle portion A, and adapted to be supported by said ears, substantially as set forth.

5. The combination, with the handle portion A, having a working-nose, *a'*, provided with a removable wear-plate, *b*, of a fulcrum portion, C, pivoted to the handle portion A, and having a working-nose, *f*, provided with a removable wear-plate, *g*, substantially as set forth.

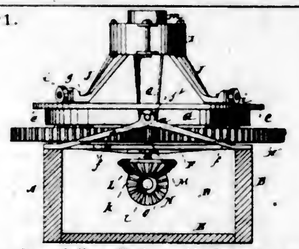
335,390. SCOOP. JOHN A. SILBERNAGEL and JACOB G. RODEHAN, Pinckville, Pa. Filed Oct. 24, 1884. (No model.)



Claim.—The rectangular scoop *a*, having the chambered handle *b*, the push-plate *m*, working in the scoop and having the transverse flange *v*, the spring *s* in the chamber of the handle, and the push-rod *l*, shouldered at *n*, and having the enlargement longer than the scoop, and the knob-stop adapted to prevent the push-plate from leaving the lip of the scoop, substantially as specified.

335,391. GRINDING-MILL. GEORGE K. SMITH, Chicago, Ill. Filed Oct. 13, 1885. (No model.)

335,391.



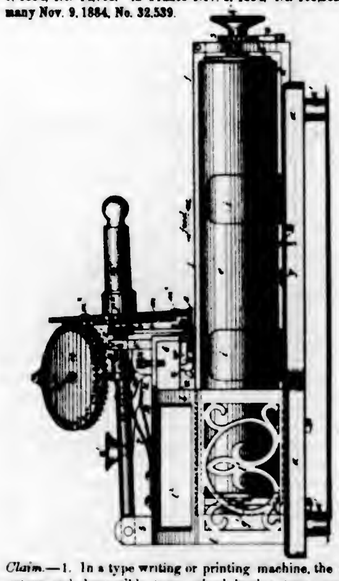
Claim.—1. In a grinding-mill, the combination, with a main frame or spider, F, shaft L, and pinion *m*, of an internally-geared open master-wheel, gears for transmitting motion from said wheel to said pinion, arms J, and a case, I, containing grinding-burrs and supported by said arms J centrally above said master-wheel, substantially as described.

2. In a grinding-mill, the combination of spider F, arms J, pins *d*, connecting said spider and arms, master-wheel G, shaft L, and pinion *m*, spur-wheels H, meshing with pinion *m*, pinions *f*, connected with said spur-wheels and engaging the master-wheel, and case I, supported on arms J and containing a stationary and a movable grinding-disk, substantially as described.

3. In a grinding-mill, the combination of master-wheel G, case I, containing a stationary and movable grinding-disk, and arms J, having their lower ends turned outwardly and provided with rollers *i*, bearing against the master-wheel, and at their upper ends supporting the case I, substantially as described.

4. A grinding-mill comprising a master-wheel, arms J, a case, I, supported by said arms and containing a stationary and a movable grinding-disk, a shaft, L, provided with pinion *m*, spur-wheels H, meshing with said pinion, pinions *f*, connected with said spur-wheels and actuated from the master-wheel, and a delivery-spout leading from the case I down between two of the spur-wheels to discharge into a receptacle below the master-wheel, substantially as described.

335,392. TYPE-WRITING MACHINE. CHARLES SPIRO, New York, N. Y. Filed Sept. 26, 1884. (No model.) Patented in England Nov. 8, 1884, No. 14,768; in France Nov. 8, 1884, No. 165,263, and in Germany Nov. 9, 1884, No. 32,539.



Claim.—1. In a type writing or printing machine, the combination of a rotary and depressible type-wheel having types around its periphery and recesses of varying depth between the types, and with a sliding feed-carriage provided with a ratchet-rack, and a feed-pawl reciprocated thereon to and from the type-wheel by the rise and fall of the type-wheel, the tail of said pawl being adapted to enter the recesses in the type-wheel at each reciprocation, substantially as set forth, whereby the active feed motions of the pawl are made to vary in accordance with the width of the letter printed, and in correspondence with the depth of the recess representing the same, substantially as herein shown and described.

2. The combination, with the sliding carriage and its rack *f*, and the depressible bar *n* and its rotary type-wheel *m*, of the feed-lever *u* and pawl *v*, and the stop-lever *w* and its stop *w'*, with the pin 19, engaging the levers *u w* with the bar *n*, substantially as shown and described.

3. In a type writing or printing machine, the combination, with the type-wheel, of an inking-disk revolving against the periphery of the type-wheel in a plane at right angles thereto, and pivoted on a pendulous arm pivoted at or near the axis of the wheel, substantially as shown and described.

4. The combination, with a rotary and depressible type-wheel, of an inking-disk revolving against the periphery thereof and hung on a gravitating pendulous arm, with a connection between the axis of the wheel, the pendulous arm, and the fixed frame, whereby the pendulous arm and its disk are swung partly around the type-wheel and back again at each depression of the wheel, substantially as herein set forth.

5. The combination, with a rotary and depressible type-wheel, of the inking-disk *s*, revolving against the periphery thereof in a plane at right angles thereto with the pendulous arm *r*, on which said disk is mounted, pivoted near the axis of the type-wheel, and having a slotted radial arm, *r'*, engaged with a point, *r²*, on the fixed frame, substantially as and for the purpose set forth.

6. The combination, with the depressible lever *n*, formed with the journal *n'*, of the toothed locking-wheel *p*, having the bearing-sleeve *p'*, fitted on said journal, with the type-wheel *m*, slipped over said sleeve and engaged with the locking-wheel, and the twirling-handle *m'*, fastened over said sleeve up against the type-wheel.

7. The combination, with the frame of the paper-carriage and the roller *s*, of the pintles *g g'*, the bearings *d' d'*, the enlarged and slotted bearing-socket *b*, and the operating-knob *h*, having a shank to enter said socket *b* and screw upon the pintle *g*, substantially as and for the purpose set forth.

335,393. BUTTON-FASTENER. EDWARD D. STEELE, Waterbury, Conn. Filed May 19, 1885. (No model.)

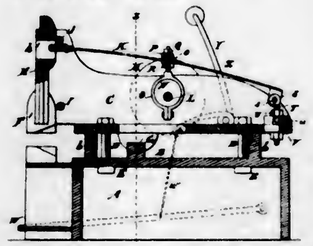


Claim.—1. A metallic button-fastener composed of a head bar or table, *a*, and three or more prongs, *b*, projecting from said table in the same general direction, the central or intermediate prong being longer than the others and bent backward from said table to form the eye or loop *c*, substantially as and for the purpose specified.

2. A button-fastener composed of a head-bar and three or more prongs integral therewith projecting in the same direction from one side or edge thereof, and the central or intermediate prong being of an increased length to provide an eye or loop, *c*, thereon, substantially as described.

3. The metallic blank A, composed of the head bar or table *a* and prongs *b*, integral therewith and projecting in the same direction, the central or intermediate prong being of an increased length to that of the side prongs, substantially as and for the purpose specified.

335,394. POWER-HAMMER. HENRY ST. LAWRENCE, Northampton, Mass. Filed Aug. 6, 1885. (No model.)



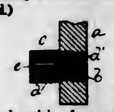
Claim.—1. In power-hammers, the helve K, working freely in a vertical slot at its front end and having a movable fulcrum at its rear end, in combination with intermediate mechanism adapted to vertically reciprocate, as and for the purpose set forth.

2. The helve K, provided at its rear end with straps and gudgeon, an eye screw-bolt pivoted on said gudgeon, and a nut having trunnions arranged in bearings on frame C, as and for the purpose described.

3. The helve K, drive-shaft, and fast eccentric, in combination with a yoke having screw-arms, two intermediate rubbers, pressure-plate, and compressing-screws provided with nuts, substantially as shown and described.

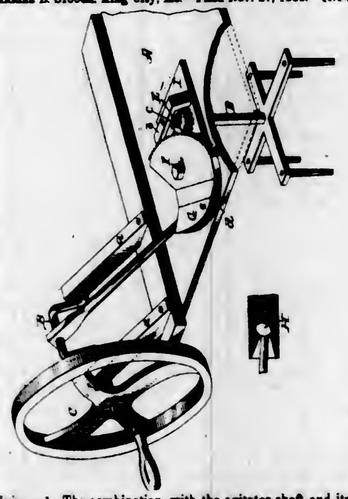
4. The hammer-frame C, made laterally adjustable on ways, in combination with set-screws F F, stop G, and the clamp-screws D, carrying nuts E, for the purpose specified.

335,395. HORSESHOE-CALK. SAMUEL STORR, North Manchester, Conn., assignor to the Novelty Horse-Shoe Company, Boston, Mass. Filed Feb. 27, 1885. (No model.)



Claim.—As an improved article of manufacture, a horseshoe-calk consisting of a metallic body or shell having a threaded shank and a plug of harder metal, as steel, secured in a socket in the wearing-face of the calk, the core being inclosed laterally by the shell, but terminating at a short distance from the plane of the under face of the shoe when the calk is screwed up to place in a horseshoe, all substantially as described.

335,396. MECHANICAL MOTOR. LOUIS P. JORDAN, Stanberry, and CHARLES B. STOUGH, King City, Mo. Filed Nov. 27, 1885. (No model.)

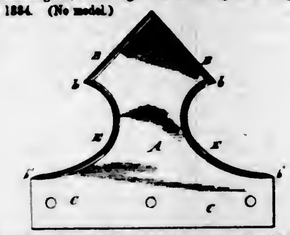


Claim.—1. The combination, with the agitator-shaft and its pinion, of the toothed segment having the socket-extension and devices for oscillating the said segment, substantially as specified.

2. The combination, with the agitator-shaft carrying a fixed pinion, of the oscillating toothed segment engaging the said pinion and provided with a socket-extension, and the pitman having a ball-extension at one end to bear in the said socket, substantially as specified.

3. The combination, with the cover having the bracket-arms, of the crank-shaft supported therein and provided with the drive-wheel, the pitman connected with the crank-shaft, the oscillating toothed segment, and the agitator-shaft carrying the fixed pinion, substantially as specified.

335,397. RECIPROCATING HARVESTER-KNIFE. WILLIAM S. TAYLOR, Huntingdon, Pa., assignor to M. S. Tayler, same place. Filed July 10, 1884. (No model.)

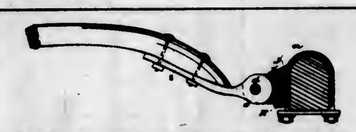


Claim.—A harvester-knife having the sharp edge E hooked at *b* and running in the form of a part of an ellipse from said hook to the end *b'*, the same being arranged between the shank C and the front cutter, B, substantially as shown and described.

335,398. THILL-COUPLING. WILLIAM P. THEO, Livingston, assignor of one-half to Charles I. Hedden, Newark, N. J. Filed May 2, 1885. (No model.)

Claim.—In combination, the clip having ears *a' a'* and lugs or projections *j k* at the top and bottom of the rubber block, said rubber block placed between said ears and projections and a thill-iron having an eccentric head bearing against said rubber, all said parts being arranged and operating substantially as and for the purpose set forth.

335,398.



335,399. FENCE-MAKING MACHINE. JOHN B. THEIS, Dayton, Ohio. Filed Oct. 24, 1885. (No model.)



Claim.—1. A twister-head for a machine for making wire and picket fences, consisting of a tube having a twister having oppositely-situated apertures upon one end and an adjustable cap upon the other, said cap having two oppositely-situated diverging apertures, and means for rotating said head, substantially as and for the purpose set forth.

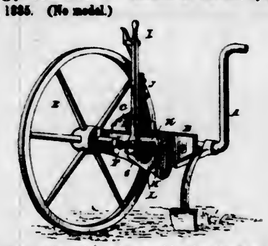
2. A twister-head for a machine for making wire and picket fences, consisting of a tube having a twister having oppositely-situated apertures upon one end and an adjustable cap upon the other, said cap having two oppositely-situated flaring diverging apertures, and means for rotating said head, substantially as and for the purpose set forth.

3. A twister-head for a machine for making wire and picket fences, consisting of a tube having a twister secured thereto, said twister being of a larger diameter at its middle portion, and having two diverging apertures at its rear part, and a rounded head between said apertures, and means for rotating said head, substantially as and for the purpose set forth.

4. A twister-head for a machine for making wire and picket fences, consisting of a tube having a twister secured thereto, said twister having apertures G, communicating with the tube, being of a larger diameter at its middle portion, and having its front part bifurcated, forming arms, the outer sides of which are grooved and the inner sides rounded, and means for rotating said head, substantially as and for the purpose set forth.

5. A twister-head for a machine for making wire and picket fences, consisting of a tube having a twister secured thereto, said twister being of a larger diameter at its middle portion than at either end, and having diverging apertures at its rear end, and being bifurcated at its front end, forming arms, the outer sides of which arms are grooved, the bottoms of said grooves being two inclined planes forming an angle at their intersection, and means for rotating said head, substantially as and for the purpose set forth.

335,400. SULKY-PLOW. CHARLES R. THOMAS, Lyons, Mich. Filed Nov. 13, 1885. (No model.)

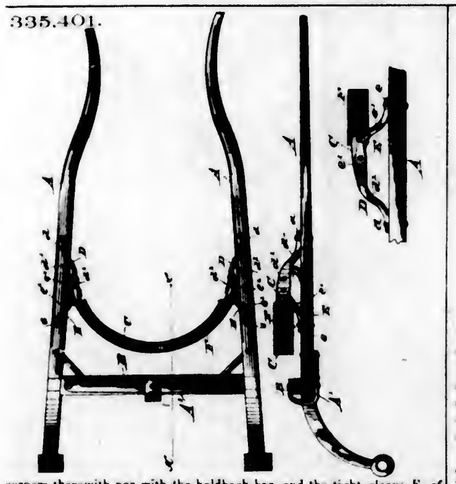


Claim.—In a sulky-plow, the combination of the axle, a plate secured upon the side of the furrow end of the axle and formed with a cogged segment upon the outer end of the upper edge, a spindle for the furrow-wheel having an open arm or frame at its inner end formed with an inwardly-facing concave cogged segment at the wide inner end and pivoted at its middle upon the plate of the axle at the end of the same, and a hand-lever having a spring-latch engaging the segment upon the plate upon the axle, pivoted at the center of the said segment, and provided with a laterally-projecting arm at its pivotal point formed with a cogged segment at its end meshing with the segment of the spindle-arm, as and for the purpose shown and set forth.

335,401. BREECHING ATTACHMENT FOR THILLS. CHARLES I. TINDLEY and WILLIAM P. ROSE, Baltimore, Md. Filed July 14, 1885. (No model.)

Claim.—1. The combination, with the thills of a vehicle, of the rigid semi-elliptic boldback-bar C, secured to the thills in such manner that it will be horizontal when the horse is in place, and at its ends only, by curved bars that incline inward from the thills and form no angular

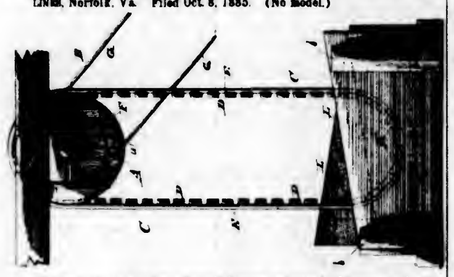
335,401.



corners therewith nor with the holdback-bar, and the tight sleeve F, of soft material, surrounding and padding the whole length of the holdback-bar, substantially as specified.

2. The combination, with the thills A A and the standard-supports D and E, respectively provided with the feet d and e for the attachment to the thills, and the plates d^2 and e^2 for attachment to the holdback-bar and inclining inwardly from the thills, of the rigid semi-elliptic holdback-bar C, having its end beveled to prevent forming shoulders with the plates d^2 and e^2, and the tight sleeve F, covering the holdback-bar, all constructed and arranged substantially as and for the purpose specified.

335,402. MACHINE FOR CLEANING PEANUTS. BENTON H. VELINES, Norfolk, Va. Filed Oct. 8, 1885. (No model.)



Claim.—1. An endless slatted cleaner composed of transversely-extending slats separated to provide interstices for the passage of dirt, and a series of belts, in combination with a roller, over which said cleaner passes, and suitable means for retaining the nuts upon the belt, substantially as specified.

2. The combination, with an endless slatted cleaner and its roller, of the end boards having inclined edges, substantially as specified.

3. A peanut-cleaner consisting in the combination, with end boards, of a vertically-suspended endless moving belt having interstices, substantially as specified.

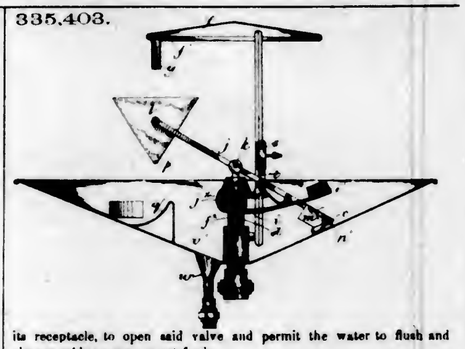
335,403. AIR-MOISTENING APPARATUS FOR FACTORIES. WM. V. WALLACE, Boston, Mass. Filed July 25, 1885. (No model.)

Claim.—1. A water-discharging nozzle having a valve-seat and a valve normally bearing against said seat, and spray-forming grooves formed either in the valve or its seat, the valve being adapted to be separated from its seat to permit said grooves to be flushed by the escaping water, as set forth.

2. A water-discharging nozzle having a normally-closed valve, and spray-forming grooves in said valve or in its seat, combined with means, substantially as described, whereby said valve may be opened to permit the water to flush and cleanse said grooves.

3. The combination of a water-discharging nozzle having a normally-closed valve, and spray-forming grooves formed either in the valve or in its seat, a spray-collecting roof over said nozzle, a pivoted lever having a receptacle which is normally raised by the lever and receives the water from said roof, and devices, substantially as described, operated by the tilting movement of the lever, caused by the accumulation of water in

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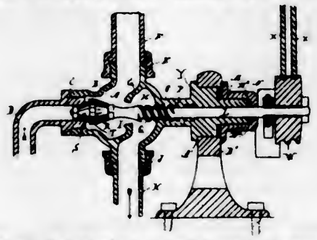
its receptacle, to open said valve and permit the water to flush and cleanse said grooves, as set forth.

4. The combination of a nozzle having a normally-closed valve and spray-forming grooves, a lever pivoted to a fixed support and formed to strike and open said valve when displaced from its normal position, and automatic means, substantially as described, for displacing said lever, as set forth.

5. A series of water-discharge nozzles, each having a normally-closed valve, and spray-forming grooves in said valve or in its seat, combined with an inclined track, a ball adapted to roll on said track, and means, substantially as described, whereby said ball is automatically caused to roll along the track, the nozzles being arranged so that the movement of the ball along the track will open the valves successively, as set forth.

6. The combination of a series of nozzles, each having a normally-closed valve and spray-forming grooves, a roof over said nozzles, a pivoted lever having at one end a water-receptacle arranged to receive water from the roof, and at the other end a carrier, an inclined track arranged, as described, with relation to said nozzles and to the carrier, and a ball adapted to run upon the track and open the valves of the nozzles, said ball being received by the carrier when it reaches the lower end of the track, and raised and discharged onto the upper end of the track by the depression of the water-receptacle, as set forth.

335,404. CUT-OFF OR WASTE VALVE. RICHARD WALSH and STEPHEN J. MARTIN, Detroit, Mich. Filed June 25, 1885. (No model.)



Claim.—1. In a cut-off or waste valve constructed substantially as described, the combination, with the standard B', having rectangular recess A', of the shell B, having prolongation upon which is formed a rectangular body engaging said recess, and the cap N, engaging the threaded portion M of the shell and securing the packing in place, as set forth.

2. The combination of the shell B, having ports or pipe connections D, F, and K, having a chamber subdivided to form a valve-seat at the passage I, and having a valve-seat at the junction of the inlet-pipe with such chamber, combined with a double valve, as R S, having a stem provided with a quick-screw of such pitch that a half-revolution of the stem will throw the valve the distance between its two seats, a seat for said screw, and a weighted lever, as U V, secured directly to the valve-stem, all constructed and adapted to operate as set forth.

335,405. APPARATUS FOR MAKING GAS. JOHN C. WANDS, St. Louis, Mo. Filed Oct. 24, 1885. (No model.)

Brief.—Gas is made from oil, water, and hot air. The oil and water are supplied simultaneously to a retort, and the resulting vapors or gases are passed with hot air into a separate heated mixing-retort, to be combined and fixed.

Claim.—1. The combination of the retort to volatilize the oil and water, the oil and water supply pipes extending into the retort, the mixing-chamber having communication therewith near its front end, and the hot-air coil taking its current of air from a blower and delivering the same into the front end of and through the mixing-chamber, thereby

335,405.



causing the volatilized oil and water to be drawn up and mixed with the hot air, forming gas, substantially as specified.

2. In an apparatus to form gas from hot air, water, and oil, the combination of the mixing-chamber, the air-pipe connecting with the said chamber, the retort communicating therewith, the pipes for mixed oil and water entering the retort and having outside of the same the traps and upwardly-extending arms, and apparatus, substantially as described, to feed the mixed oil and water into said upwardly-extending arms and thence into the retort, substantially as specified.

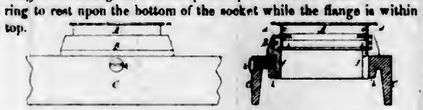
3. In an apparatus to make gas from oil, water, and hot air, the combination, with the retort, substantially as described, to volatilize mixed oil and water, of the pipe j', having its front end secured around an opening in the head of the retort and its rear end closed, and the pyrometer-tube J, sliding in the tube j', and carrying the dial j on its front end, substantially as specified.

4. The combination of the retort, the mixing-chamber having its front end connected with the front end of the retort, the pipes for mixed oil and water running into the retort and trapped and connected with the glass tubes on the outside of the same, the oil and water tank, substantially as described, each feeding into one arm, g, of a pipe, G, connecting with a transverse pipe, g', which feeds at both ends into the glass tubes, and a cooling-tank, substantially as described, connected to the rear end of the mixing-chamber by the pipe d, substantially as specified.

5. In an apparatus for making gas from oil, water, and hot air, the combination of the retort to volatilize mixed oil and water, the pipes to feed mixed oil and water trapped on the outside of the retort and provided with the vertical glass tubes, the feeding-pipes g' and G, the water-tank F', provided with the valve f'', the oil-tank F, provided with the valve f, the flexible tubing H, connected by a cord to the cross-bar h', the sliding tube h^2, having said cross-bar on its upper end and the float h^3 on its lower end, and the vertical rod h^4, having its foot secured to the floor of the oil-tank, and upon which the tube h^2 slides, substantially as specified.

335,406. SPINNING-FRAME RING AND HOLDER. JOSEPH W. WATTLES, Canton, Mass. Filed Aug. 17, 1885. (No model.) Patented in England Mar. 25, 1878, No. 1,173.

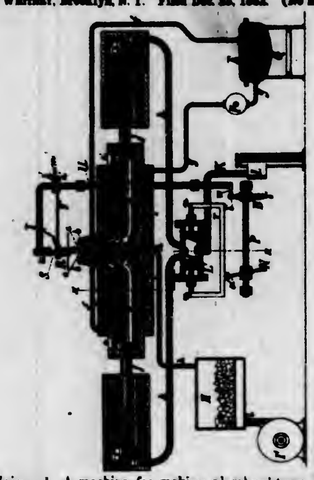
Brief.—The duplex race-ring has midway between its races an eccentric circular flange. The holder is crescent, has an annular shank, and above the shank an eccentric circular socket of a diameter to receive the flange of the ring and of a depth to permit the lowermost race of the ring to rest upon the bottom of the socket while the flange is within the top.



Claim.—1. The combination of a spinning-frame ring having two races connected at their middles by a cylindrical annulus, and also having midway between such races a flange having a circular periphery arranged eccentrically with respect to each race, with a ring-holder having an annular shank and above such shank an annular socket or rabbet having in its upper part a diameter corresponding to that of the periphery of the flange of the ring, and a depth for it (the said rabbet) to receive the flange in said upper part when either race may be resting on the bottom of the rabbet, such holder having a cross-cut, and such rabbet being eccentric relatively to the bore of the shank, as set forth.

2. The duplex race-ring holder, substantially as described, provided with an annular shank, in combination with a ring-rail having a socket corresponding to said shank, the said holder also having arranged above and eccentrically relatively to the cylindrical bore of such shank an annular rabbet or socket to receive a ring, said rabbet having in its upper part a diameter corresponding with that of the periphery of the eccentric flange of the duplex race-ring, and also having a depth for the flange to enter such upper part when either race may be resting on the bottom of such rabbet, and such holder being cross-cut, so as to be contracted, as set forth, the whole being so as to admit of the ring being removed from the holder without the necessity of first detaching the latter from the ring-rail, all being substantially as set forth.

335,407. APPARATUS FOR MAKING PLUMBERS' TRAPS. JAMES A. WHITNEY, Brooklyn, N. Y. Filed Dec. 26, 1882. (No model.)



Claim.—1. A machine for making plumbers' traps, curved pipes, tubes, &c., comprising the following elements in combination, viz: an annular die, devices for forcing the material in variable quantities from opposite sides of said die, and mechanism for automatically controlling the said devices, all substantially as and for the purpose herein set forth.

2. The method of making soft-metal traps, tubes, &c., which consists in forcing the metal, softened by a surrounding temperature slightly below its fusing-point, from and through a tubular die, and subjecting the same as it issues from the die to a cooling medium to stiffen and set the formed tube, said cooling medium being supplied through the body of the die around and from which the tube issues, substantially as described.

3. The combination of the annular die c, passages A', cylinders A, plungers C, hydraulic apparatus J, valve M, and means, substantially as described, for automatically actuating said valve, substantially as and for the purpose herein set forth.

4. The combination, with the annular die c, of means, substantially as described, for directing a blast or forcibly-impelled current of air upon or against the surface of the hot metal immediately after it issues from the die in the direction of movement of the forming-tube, substantially as and for the purpose herein set forth.

5. The combination of the annular die c, having a tubular core, means, substantially as described, for directing a blast or current of air through said core away from the mouth of the die, and means, substantially as described, for cooling the air, all substantially as and for the purpose herein set forth.

6. The combination, with the annular die c, having a tubular core, of a blower for forcing air in due relation thereto and a refrigerator for cooling the air, substantially as and for the purpose herein set forth.

7. The combination, with a machine for forming soft metal substantially as described, of a cutting device arranged to sever the pipe into lengths during the process of its formation and its movement from the die.

8. The combination, with a reservoir having an annular pipe-forming die and a surrounding chamber for receiving a heated circulating liquid, of a pump for impelling said liquid to and through said chamber and pistons for impelling soft metal from said reservoir through the said pipe-forming die, substantially as described, for the purpose specified.

9. The combination, with the annular pipe-forming die, of a cutting implement arranged and supported to be moved to and from the metal issuing from said die to sever said pipe during its projection from said die, substantially as described, for the purpose specified.

10. The combination, with the pipe-forming die and the pistons for forcing the metal from said die, of a circular saw for severing the pipe during the process of its formation, having a rotary motion and a sliding movement in the direction of the moving pipe, whereby the saw yields in a direction with the moving pipe simultaneously with its passage through the same.

11. The combination, with a seamless-pipe-forming die substantially such as described, of a pipe-cutting implement having a rotary motion, a movement in the direction of the length of the pipe being severed, and a movement to and from the pipe, a reservoir containing the soft metal, and piston for forcing it therefrom through said die, substantially as described.

12. The combination of the annular die c, partition B, cylinders A,

plungers C, hydraulic apparatus J, and means, substantially as described, for automatically varying the action of the hydraulic apparatus to give a variable movement to the plungers, all substantially as and for the purpose herein set forth.

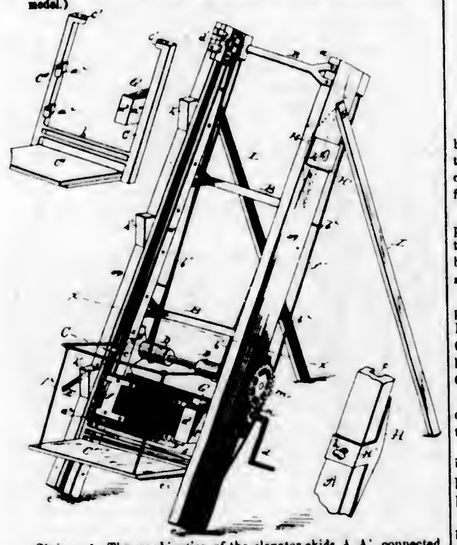
13. The combination of the annular die *c*, passages A', cylinders A, plungers C, hydraulic apparatus J, and the valve M, arranged to control the hydraulic apparatus in its action upon the plungers, substantially as and for the purpose herein set forth.

14. The combination, with the annular die *c*, in a machine for making soft-metal pipes, traps, &c., of a saw arranged to sever the pipe in a plane substantially parallel with the face of the said die, substantially as and for the purpose herein set forth.

15. In an apparatus for making curved pipes, traps, &c., the combination of the following elements, to wit: an annular die, *c*, a saw for severing the pipe or tube as the same issues from the die, means for varying the flow of metal at opposite sides of the die, and means for automatically feeding the saw at intervals to sever the pipe or tube, all substantially as and for the purpose herein set forth

16. In a machine for making plumbers' traps, curved pipes, tubes, &c., from soft metal, the combination of the following elements, viz: a cylinder or reservoir for containing the soft metal, an annular die through which the metal from the reservoir may be forced, devices for causing a variable flow of the material at opposite sides of said die, a hydraulic press for actuating said devices, and mechanism, substantially as described, for automatically controlling the hydraulic pressure to automatically regulate the variable flow of the material through the die, substantially as and for the purpose herein set forth.

335,408. **ELEVATOR.** JACOB H. WHEELEART, Chico, assignor of one-half to Joseph Asbury Bruner, San Rafael, Cal. Filed Dec. 15, 1885. (No model.)

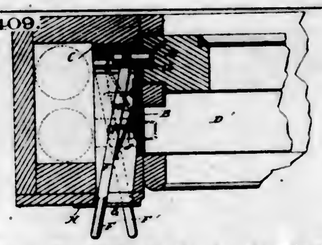


Claim.—1. The combination of the elevator-skids A A', connected by ties B, and provided with carriage-ways, the carriage adapted to run in the ways between the skids, and provided with the platform C', the hinged fly F, and means, as set forth, for automatically opening, closing, and fastening the fly, and means, as set forth, for hoisting and lowering the carriage, substantially as and for the purposes described.

2. The combination of the elevator-skids A A', connected by cross-ties B, and provided with the carriage-ways c and the ladder-steps h', the carriage adapted to run in the ways between the skids and provided with the platform C', the hinged fly F, and means, as set forth, for automatically opening, closing, and fastening the fly, and means for hoisting and lowering the carriage, substantially as and for the purposes described.

3. The combination of the skids A A', connected by cross-ties B, and provided with the carriage-ways c, the carriage adapted to run in the ways between the skids, and provided with the platform C' and the guard-rails f^2, the hinged fly F, and means, as set forth, for closing and fastening the fly, and means for hoisting and lowering the carriage, substantially as and for the purposes described.

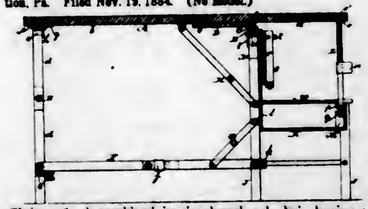
335,409. **SASH-FASTENER.** CHARLES WITKEL, Brooklyn, N. Y. Filed Nov. 6, 1885. (No model.)



Claim.—1. The combination, with a plate, of two longitudinally-slotted necks projecting from the same, sliding bolts in the necks, the levers F F', pivoted on the shackles J, pivoted on the said plate and connected with the sliding bolts, and of springs on the said plate and acting on the levers, substantially as herein shown and described.

2. The combination, with a window-casing, of the plate B, countersunk in the jamb-piece, the necks C C' on said plate, the sliding bolts E E', the levers F F', the springs K, and the slotted plate H on the face of the casing, substantially as herein shown and described.

335,410. **CONVERTIBLE CHAIR.** ALBIN P. YARNALL, Eagle Station, Pa. Filed Nov. 19, 1884. (No model.)



Claim.—1. A combined ironing-board and chair having a folding board composed of two sections hinged together and pivotally secured to the back uprights of the chair, and provided with means, consisting of bars pivotally connected together and with the end of the said board, for supporting the same, substantially as described.

2. A combined ironing-board and chair having a folding board composed of two sections, one of which has a detachable support, substantially as described, while the other section has a support composed of bars pivotally connected together and to the said section, substantially as described.

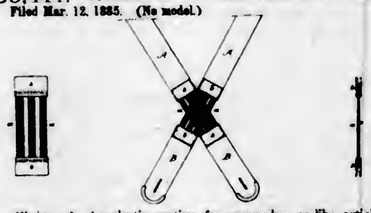
3. In a combined ironing-board and chair, the folding board A, composed of sections *a* and *b* hinged together, in combination with the frame E, pivotally secured to the outer end of said section *b*, bars F, and braces G and H, and back uprights, J, having cross-piece B, the said section *b* having secured thereto the pieces D, and the cross-piece B, having guide C, substantially as described.

4. In a combined ironing-board and chair, the folding board A, in combination with the cross-piece B, the guide C, and pieces D, substantially as described.

5. The folding board composed of sections *a* and *b*, the latter having pieces D, in combination with back uprights, J, having cross-piece B and guide C, seat K, and slotted bar L, having block *n*, the said bar L being pivotally secured to said seat K, substantially as described.

6. A chair having its back uprights, J, provided with the back N, having the hinged portion *r*, with border-strengthening pieces *s*, said pieces forming a continuation of said uprights, and the folding board A, pivotally secured to the cross-piece B, secured to said uprights, said parts being combined substantially as described.

335,411. **SUSPENDERS.** J. ARTHUR ADAMSON, Philadelphia, Pa. Filed Mar. 12, 1885. (No model.)

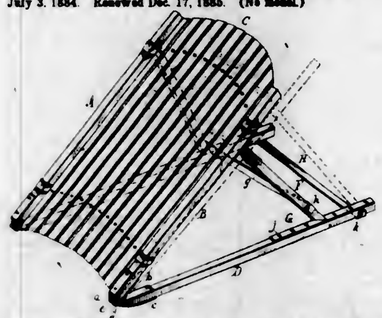


Claim.—1. An elastic section for suspenders or like articles, consisting of a series of narrow webs of elastic fabric, in combination with tabs *b*, secured to and projecting beyond the opposite ends of said webs, so as to provide a ready means of attaching the webs to the straps of suspenders or like articles, all substantially as set forth.

2. Suspenders each of the crossing straps of which has an elastic section composed of a series of narrow webs of elastic fabric, those of one strap being interwoven with those of the other strap, as set forth.

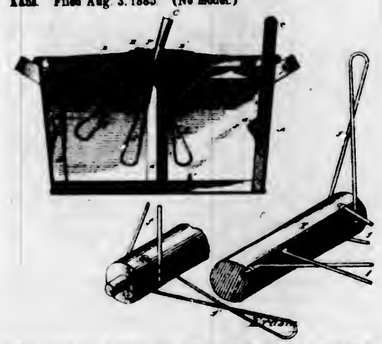
3. An elastic section for suspenders, consisting of two sets of narrow elastic webs having attaching-tabs at the ends, one set of webs being interwoven with the other set, as specified.

335,412. **BED-REST.** WM. H. ALDRICH, Whitinsville, Mass. Filed July 3, 1884. Renewed Dec. 17, 1885. (No model.)



Claim.—The combination, in an independent adjustable head-section for beds, of the head-section proper, composed of parallel slats and side bars, A B, the parallel bars D, hinged at their front ends to the front ends of the side bars, A B, by pivoted straps *b c*, bars F, pivotally attached on the under side of the bars A B, beveled at their lower edges, provided with projecting pins, a plate secured on the upper face of the bars D, near their rear portions, and provided with a series of perforations for the engagement of said projections, a series of brace-bars, *g h*, having their ends bent, substantially as set forth.

335,413. **WASHING APPARATUS.** ERASMUS W. ALLEN, Seneca Kans. Filed Aug. 3, 1885. (No model.)



Claim.—1. In combination with a shaft capable of oscillating, the loops or fingers *f*, twisted as described.

2. In combination with a shaft capable of oscillating, the loops or fingers *f*, twisted as described, bent at their free ends, applied to the shaft by insertion of their ends therein, and one secured there by staples, substantially as described.

3. In combination with a suds-box having horizontal and vertical projections and ridges on its inside, an oscillating shaft carrying twisted loops or fingers, whereby the material or articles to be washed may be agitated or circulated, and will be rubbed against the projections, substantially as described.

335,414. **FIRE-ESCAPE.** WM. H. BAILEY, New York, N. Y. Filed Aug. 24, 1883. (No model.)

Claim.—1. A fire-escape composed of a continuous vertical hollow shaft made of metal drawn or rolled in the direction of the length of the shaft, in combination with supports at the upper and lower ends of the shaft, to maintain it in its vertical position, whereby is formed an escape free from obstructions between its upper and lower supports, substantially as described

2. A fire-escape composed of a vertical hollow metal shaft that at its lower end is adapted to have a water hose or pipe attached to it, and at its upper end provided with means to deflect the water there escaping from it downward, in combination with supports to maintain said shaft in its vertical position, substantially as described, for the purpose specified.

335,414.

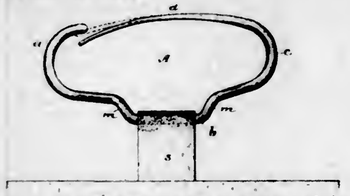


3. A fire-escape composed of a vertical hollow metal shaft with supports at its upper and lower ends and free from projections between its supports, in combination with a platform or landing at its lower portion, substantially as described.

4. A fire-escape composed of a vertical hollow metal shaft that at its lower end is adapted to have a water hose or pipe attached to it, and at its upper end provided with means to deflect the water there escaping from it downward, and of supports to maintain said shaft in its vertical position, in combination with a platform or landing at its lower portion, substantially as described, for the purpose specified.

5. A fire-escape composed of a vertical shaft, in combination with supports at each end, the lower of which is rigidly attached to and the upper is loose about said shaft, substantially as and for the purposes described.

335,415. **DEVICE FOR PULLING ON BOOTS.** JOHN A. BRALL, New York, and CHARLES W. SLOANE, Sands Point, N. Y., (executors of Henry W. Benham, deceased,) assignors to Henry H. Benham, U. S. Army. Filed Sept. 19, 1885. (No model.)



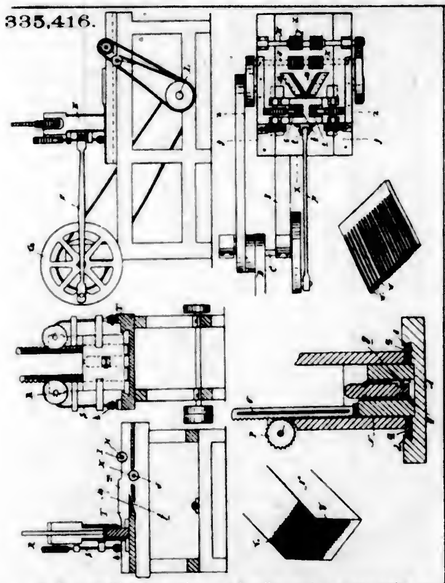
Claim.—1. A boot-pull or implement for pulling on boots, composed of a single piece, and having a severance or opening through which the strap of the boot may be passed, and also a depression in which the said strap may be seated during the operation of the pulling on the boot, all substantially as hereinbefore set forth.

2. An implement for pulling on boots, composed of a single piece formed with a severance through which the boot-strap may be passed, and having the portion *d* made yielding under the strain applied in the operation of pulling on the boot, and arranged to underlie the end of the rigid hook portion *a*, and to come to a bearing against the latter when subjected to such strain, all as hereinbefore set forth.

335,416. **MATCH-MACHINE.** PETER BEER, Detroit, Mich. Filed Apr. 29, 1885. (No model.)

Claim.—1. In a machine for cutting match-splint card, a reciprocating carriage provided with one or more compartments, and a table having a higher and lower plane, in combination with a series of rotary saws operating against the under side of the block or blocks, a series of rotary saws operating against one end of the block or blocks, and a stationary knife or knives to cut off the cards, all substantially as described.

335,416.



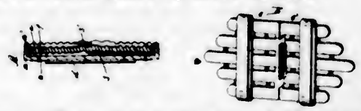
2. In a machine for cutting match-splint card, a reciprocating carriage having one or more compartments, and a table having a higher and lower plane, in combination with a series of rotary saws operating against one end of the block and a stationary knife between the higher and lower plane of the table for shaving off the cards, and a block-feeder, all substantially as described.

3. In a machine for cutting match-splint card, a reciprocating carriage having one or more compartments, and a table having a higher and lower plane, in combination with a series of rotary saws operating against the lower face of the block, a series of rotary saws operating against one end of the block, a stationary knife secured to the table for shaving off the cards, a spring for holding the block in its compartment, and a block-feeder, all substantially as described.

4. In a machine for cutting match-splint card, the combination of the reciprocating carriage E, having one or more compartments, *c c*, the table A, arranged beneath said carriage, and having a higher and lower plane, the rotary saws K, carried by the shaft J and operating against the under side of the block, the rotary saws I, carried by the shaft H and operating against the rear side of the block, the knife M, arranged between the higher and lower plane of the table, the feed-pawl S, supported in brackets, ratchet *r*, and spur-gear P, carried by a suitable shaft, feed-rack O, and guide-track T, secured to the table A, all substantially as described.

5. In a machine for cutting match-splint card, the combination of the reciprocating carriage E, having two compartments, *c c*, the table A, arranged beneath said carriage and having a higher and lower plane, the rotary saws K and I, carried by the arbors H J, journaled in said table, the stationary knives M, obliquely and inversely secured between the higher and lower planes of the table, the springs *g*, holding the blocks in their compartments, the feed-racks O, operating on said blocks, gear-wheels P, ratchet-wheels R, operating on said racks, feed-pawls S, operating on said ratchet-wheels, and guide-tracks T, secured to said table and having raised portions *m*, all substantially as described.

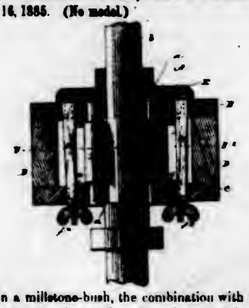
335,417. GALVANIC BELT. HENRY M. BENDLER, Texarkana, Ark. Filed Dec. 16, 1884. Renewed July 21, 1885. (No model.)



Claim.—1. The combination, with the battery inclosed in a casing which is adjustable upon a belt and one of the walls of which forms a body-electrode, of the adjustable opposite electrode mounted upon the same belt and electrically connected with the pole of the battery opposite that which is connected with its said body-electrode, substantially as described.

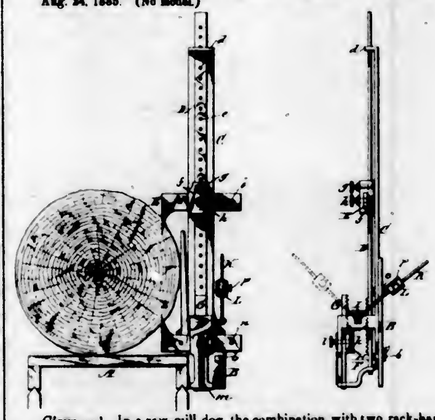
2. The combination, with a battery inclosed in a flat casing adjustable upon a belt, as described, and having one of its side walls formed of non-conducting material and the other of corrugated sheet metal forming a body-electrode, of the flexible electrode mounted upon the same belt and connected with the battery, as set forth.

335,418. MILLSTONE-BUSH. DANIEL A. BELLOWS, Mulberry, Ga. Filed July 14, 1885. (No model.)



Claim.—In a millstone-bush, the combination with a frame and the spindle C, journaled therein, of the rollers journaled in the frame and bearing against the spindle, said rollers having reduced ends, the adjusting-blocks having flanges *f*, wedges bearing against the outer sides of the blocks, and nuts to engage the threaded ends of the wedges, substantially as set forth.

335,419. SAW-MILL DOG. WILLIAM H. BENNETT, Paris, Ind. Filed Aug. 24, 1885. (No model.)

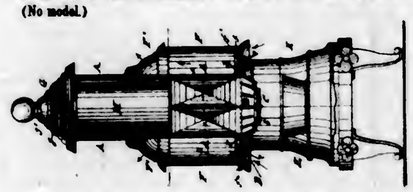


Claim.—1. In a saw-mill dog, the combination, with two rack-bars, each carrying adjustable dogs, of a pinion which gears with and operates said rack-bars, and a lever for operating it, provided with a weight, substantially as and for the purpose specified.

2. In a saw-mill dog, the combination of two rack-bars carrying dogs, a pinion for operating them in opposite directions, and a lever connected to said pinion and provided with an adjustable weight, substantially as and for the purpose described.

3. In a saw-mill dog, an adjustable standard provided with a slotted guide at its upper end, and at its lower end terminating in a frame having guide-slots, in combination with two opposite moving rack-bars, each carrying a dog, a pinion for operating them, and a lever provided with an adjustable weight connected to said pinion, substantially as and for the purpose specified.

335,420. HEATING-STOVE. GEORGE BENDE, Chicago, Ill., assignor of one-half to John J. Mitchell, New York, N. Y. Filed Apr. 18, 1885. (No model.)



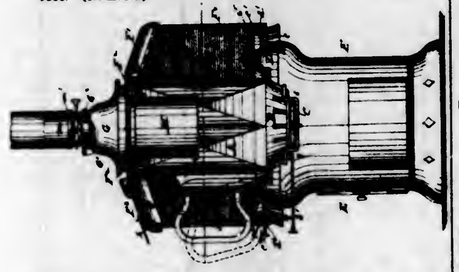
Claim.—1. In a heating-stove, the combination of an ash-pit, a ring-shaped bottom resting upon the wall thereof, a fire-pot above said ring-shaped bottom, a basket at the lower end thereof, and a grate below said basket, said fire-pot, basket, and grate being supported by said ring-shaped bottom, substantially as described.

2. In a heating-stove, the combination of an ash-pit, a ring-shaped bottom resting upon the wall thereof, a fire-pot above said ring-shaped bottom, a basket at the lower end thereof, a grate below said basket, said fire-pot, basket, and grate being supported by said ring-shaped bottom, and a jacket surrounding said fire-pot, supported by said ring-shaped bottom, and provided with exterior air admission and exit openings, substantially as described.

3. In a heating-stove, the combination of an ash-pit, a ring-shaped bottom resting upon the wall thereof and provided with openings outside said wall, a fire-pot above said ring-shaped bottom, a basket at the lower end thereof, a grate below said basket, said fire-pot, basket, and grate being supported by said ring-shaped bottom, a jacket surrounding said fire-pot and supported by said ring-shaped bottom, and a perforated top ring connecting the upper end of said jacket with the fire-pot, substantially as described.

4. In a heating-stove, the combination of an ash-pit, a ring-shaped bottom resting upon the wall thereof and provided with openings outside said wall, a fire-pot above said ring-shaped bottom, a basket at the lower end thereof, a grate below said basket, said fire-pot, basket, and grate being supported by said ring-shaped bottom, a jacket surrounding said fire-pot and supported by said ring-shaped bottom, a perforated top ring connecting the upper end of said jacket with the fire-pot, a ring resting upon said ring-shaped bottom and provided with openings corresponding with the openings therein, and means for shifting said ring to open or close said openings, substantially as described.

335,421. FLAT-IRON HEATER. GEORGE BENDE, Chicago, Ill., assignor of one-half to John J. Mitchell, New York, N. Y. Filed Apr. 18, 1885. (No model.)



Claim.—1. The combination of a polygonal fire-pot, a ring-shaped bottom surrounding said fire-pot and having a raised convex ring therein, an exterior cylindrical jacket having vertical slots, and a movable top ring having openings with hinged doors, substantially as described.

2. The combination of a polygonal fire-pot, a cylindrical jacket surrounding the same and having vertical slots for the handles of flat-irons, a ring-shaped bottom for said jacket, a top ring having openings with hinged doors, an angular collar resting on the top of the fire-pot and having downwardly-extending lugs, and top stays rigidly attached to said jacket and having lugs embracing said downwardly-extending lugs, whereby vertical expansion of the fire-pot is permitted, substantially as described.

3. The combination of a fire-pot, an exterior jacket formed of sections separated by vertical slots, a ring-shaped bottom for said jacket, a movable top ring having openings with hinged doors, and detachable filling-strips for closing said slots, substantially as described.

4. The combination of a fire-pot, an angular collar resting thereon, said collar having downwardly-extending lugs, an exterior jacket, radial partitions, and top stays within said jacket provided with side and end lugs, said stays being secured to the jacket at one end, their side lugs supporting said partitions, and the lugs at their other ends engaging said downwardly-extending lugs of the collar, substantially as described.

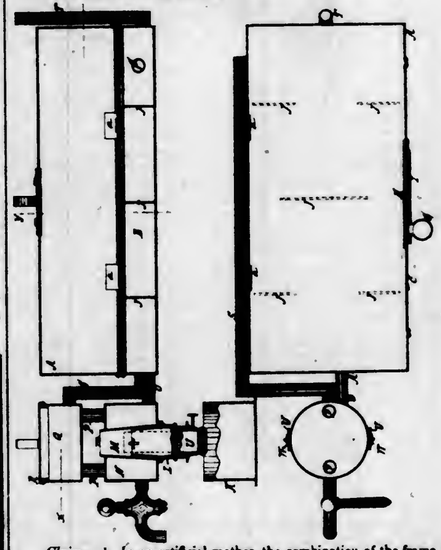
5. The combination of a fire-pot, an exterior jacket having vertical slots, radial partitions within said jacket, a ring-shaped bottom for said jacket, a movable top ring having openings with hinged doors, and downwardly-extending stop-pins for limiting the motion of the top ring in either direction, substantially as described.

6. The combination of a fire-pot, an exterior jacket formed of sections separated by vertical slots, a ring-shaped bottom for said jacket, a movable top ring having openings with hinged doors, detachable filling-strips for closing said slots, and fastening devices for said filling-strips, substantially as described.

7. The fire-pot A, exterior jacket, F, formed of sections separated by vertical slots, the ring-shaped bottom D for said jacket, and movable top ring, F', provided with hinged doors, in combination with the strips F^4, provided with the lug i', having shoulder i^2 and perforated ear i^3, the locking-plate *i*, and the wedge i^4, for clamping said locking-plate against said shoulder, as and for the purpose specified.

8. The fire-pot A, exterior jacket, F, formed of sections separated by vertical slots, the ring-shaped bottom D for said jacket, and movable top ring, F', provided with hinged doors, in combination with the strips F^4, provided near its lower end with an L-shaped piece, i^5, and near its upper end with the lug i', having the shoulder i^2 and perforated ear i^3, the locking-plate *i*, and the wedge i^4, for clamping said locking-plate against said shoulder, as and for the purpose specified.

335,422. ARTIFICIAL MOTHER. PETER BEUKELAER, Newtown, N. Y. Filed Sept. 3, 1885. (No model.)



Claim.—1. In an artificial mother, the combination of the frame A and the door C, constituting the house of shelter, with the water-chamber B, and hinges *a a* and *b b* for connecting the frame and door to the chamber, substantially as described.

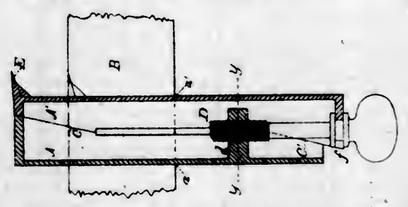
2. The combination of the water-chamber B, the connected vessels N and Q, the pipes O S, and the open pipe T, with the house A and door C, substantially as described.

3. In an artificial mother, the combination of the frame A and the hinged downwardly-swinging door C, constituting the house of shelter, with the chamber B, the horizontal bar D, arranged across the upper portion of the door-opening, and the curtain Y, hung freely from the bar, substantially as and for the purpose described.

4. In an artificial mother, the combination of the chamber B with the frame A, and the door C, constituting the house of shelter, and connected with the chamber, said frame and door being each provided with perforations H and a slide, I, substantially as described.

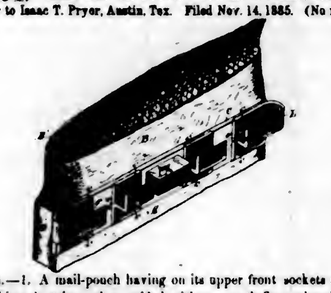
5. The water-vessel N, having the opening M formed in it, and provided with the side catches, W W, in combination with the lamp K, lamp-chimney L, and the suspension-bars U U, substantially as described.

335,423. BENCH-HOOK. JOSEPH B. BOYCE, Lockport, N. Y. Filed Nov. 12, 1885. (No model.)



Claim.—An adjustable bench pin or book constructed in two parts, A and A', resting in contact on inclined planes C and C', or their equivalents, connected by screw D, which is retained by the slot *f* in the part A', and threaded nut *d* in the part A, the slot *f*, providing for the different widths due to different positions of the parts A and A', all substantially as described.

335,424. MAIL BAG OR POUCH. PARKER CAMPBELL, Denton, assignor to Isaac T. Pryor, Austin, Tex. Filed Nov. 14, 1885. (No model.)



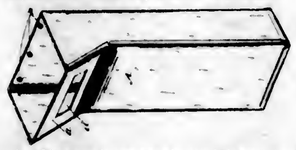
Claim.—1. A mail-pouch having on its upper front sockets and at its rear a hinged strip, and provided with a mouth-flap, whereby the mouth of the pouch can be covered and the folded top portion placed in the sockets and secured, substantially as described

2. The combination, in a mail-pouch as described, of the sockets D, strips C, and staple *s*, with the hinged strips F, having hinges *f*, and the clasp G, whereby the sockets are adapted to hold the said strip and its hinges come alternately between each socket, substantially as set forth.

3. The socket D, having the upward bent front side, *d*, and seat d^3, as and for the purposes set forth.

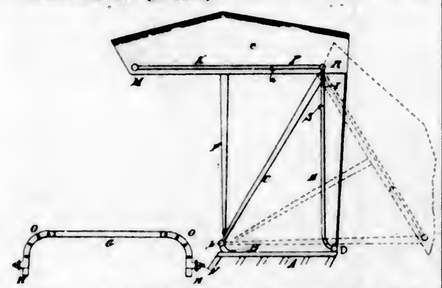
4. The combination of the hinged strip F with the pouch having a top flap or cover, as set forth, whereby when the top of the pouch is folded upon itself the said strip will come on the edge, as and for the purposes described.

335,425. ICE-RECEPTACLE FOR REFRIGERATORS. JAMES CASTELL, Blue Rapids, Kans. Filed July 3, 1885. (No model.)



Claim.—A refrigerator ice-receptacle consisting of the front side having its upper end flared and provided with an oblong aperture or opening therein, the rear side having nail-apertures, the bars or rods secured at the lower inner end, and the braces secured at intervals along its inner side, substantially as shown and described.

335,426. CARRIAGE-TOP. SAMUEL M. CHESTER, Cincinnati, Ohio. Filed Nov. 2, 1885. (No model.)

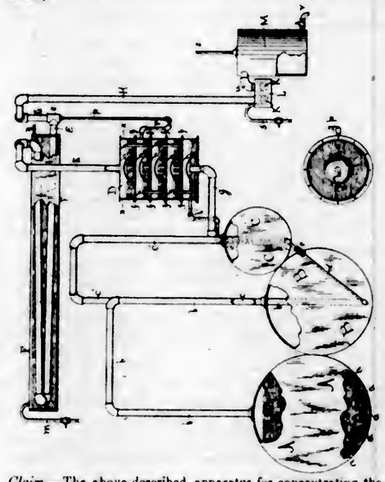


Claim.—1. In a folding carriage-top, the combination, with the rear and center bows and horizontal top-props, of a short front bow having terminal straps O, provided with short laterally-projecting arms H, for attachment of the horizontal props, substantially as described.

2. In a folding carriage-top, the combination of the inclined rear bow, C, hinged to the front of the seat, the vertical bow F, hinged upon the bow C, the horizontal top-props K P, having a single joint, *a*, and the vertical rear props, I E, having a single joint, S, said jointed props being hinged to the top upon a transverse shaft, R, substantially as described.

3. A folding carriage-top comprising the rear inclined bows, C, hinged to the front of the seat, the central vertical bows, F, hinged upon the bows C, the short front bow, G, the transverse shaft R, the rear vertical props, I E, each having a single joint and hinged to the rear of the seat and to said transverse shaft, and the horizontal top-props K P, each having a single joint, and also hinged to said transverse shaft, substantially as described.

335,427. APPARATUS FOR DISTILLING AMMONIACAL WATERS. BELA P. CLAPP, Pawtucket, R. I. Filed Sept. 24, 1885. (No model.)



Claim.—The above-described apparatus for concentrating the ammonia and its compounds from the waters of gas-works, consisting of the vaporizing-chamber A, supplied with the coiled steam-pipes *a a*, the receiving-chambers B C, compartment column D, furnished with the dome-shaped caps *h* and connecting-pipes *i k*, the coudensing devices E F K L, together with the conducting-pipes *a b c g* G H, and the means for returning and discharging the exhausted liquids, (shown by *p e l d e* N,) all constructed in the manner and used for the purposes substantially as set forth.

335,428. ROCKING-CHAIR. ROBERT G. CLAYTON, near Chicago, assignor of one-half to R. G. Hill, Lebanon, Ky., A. K. Russell administrator of said Clayton, deceased. Filed Feb. 18, 1884. (No model.)



Claim.—In a rocking-chair, the runners provided near their upper end with a bend and extending from the rockers upwardly and backwardly, as described, in combination with the seat, the back, the rockers, the upper rounds, the foot-rounds, and the braces I and J, as and for the purposes specified.

335,429. BOX COVERING AND TRIMMING MACHINE. CHARLES E. CLUTE, Waterford, N. Y. Filed May 14, 1885. (No model.)

Claim.—1. A transverse shaft having arms g'' h' and a stop, *g*, on arm g'', in combination with a shaft, U, carrying the box-support and having a collar carrying the pin g', said arm h' being connected with a treadle mechanism, as shown and described.

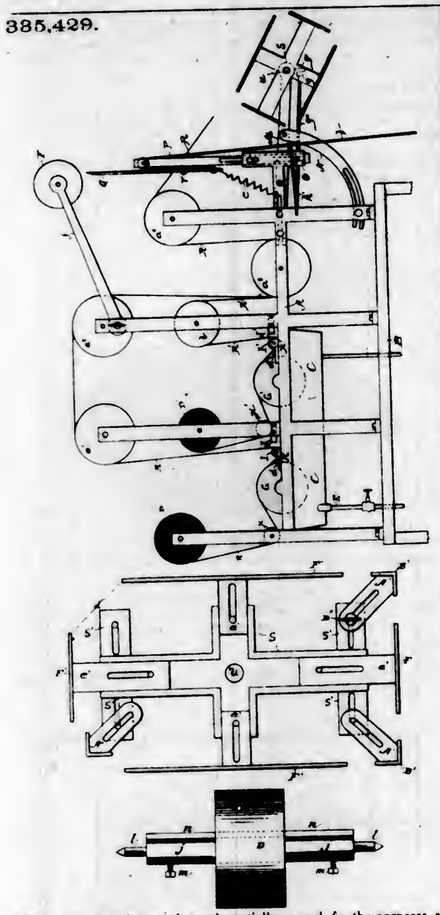
2. The combination, with the roll a^4 and box-support S, of the arm *f*, made radially adjustable, and carrying end roll, F, as and for the purpose set forth.

3. In a box-covering machine, a post or standard provided with a knife for severing the covering-strip vertically adjustable upon an arm horizontally adjustable upon a fixed support, substantially as and for the purposes set forth.

4. An adjustable box support or form having adjustable end and side rests adapted to receive rectangular-shaped boxes of different sizes, in combination with adjustable corner-supports, for the purpose of supporting the corners of different-sized boxes, substantially as described.

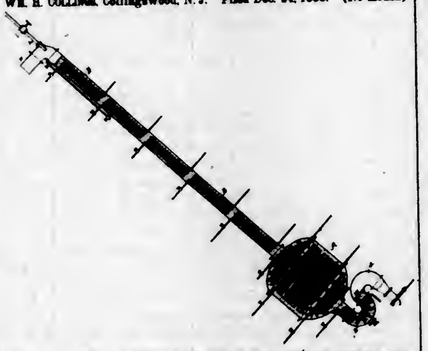
5. In a box-covering machine, a box support or form composed of shaft U, arms S, slotted arms S' S', slotted arms A', and corner-supports

335,429.



B', organized and operating substantially as and for the purposes set forth.

335,430. CONSTRUCTION AND OPERATION OF VACUUM-PANS. WM. H. COLLINGS, Collingswood, N. J. Filed Dec. 24, 1885. (No model.)



Claim.—1. The mode herein described of operating a vacuum-pan, said mode consisting in maintaining a column of liquid in the pan by atmospheric pressure, all substantially as specified.

2. The mode herein described of operating a vacuum-pan, said mode consisting in maintaining a column of liquid in the pan by atmospheric pressure, and feeding fresh liquid to the column, so as to disturb the equilibrium and cause a discharge sufficient to restore the same, all substantially as specified.

3. A vacuum-pan having an upward extension wherein a column of liquid can be maintained by atmospheric pressure upon the surface of the liquid at the discharge, all substantially as specified.

4. A vacuum-pan having an upward extension, B, and a trapped discharge-pipe, all substantially as specified.

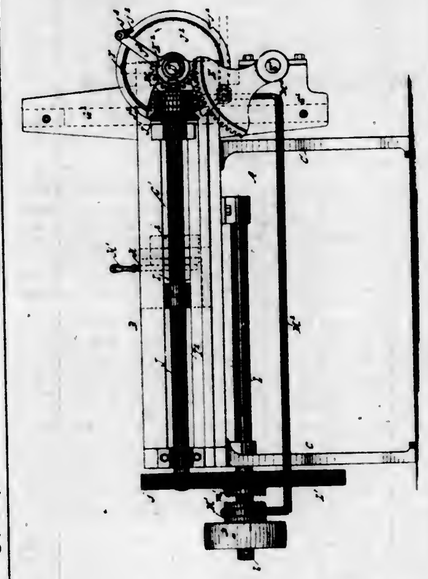
5. The combination of a vacuum-pan having an upward extension, B, a supply-pipe at the upper end of the latter, and an outlet-pipe having a trap, all substantially as specified.

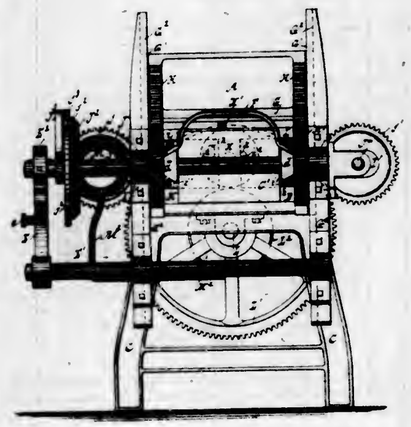
6. The combination of a vacuum-pan having an upper extension, B, with heating-coils in said pan and extension, all substantially as specified.

7. The combination of a vacuum-pan having a trapped discharge-pipe with heating-coils in said pan and discharge-pipe, all substantially as specified.

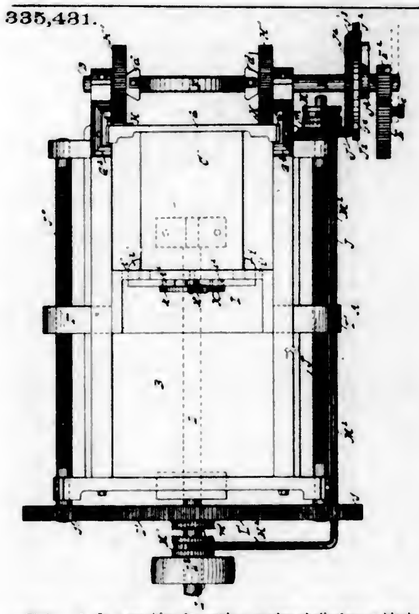
8. The combination of a vacuum-pan and its heating coil or coils with a supplementary vacuum-pan containing a heating coil or coils receiving the waste from the coil or coils of the main pan, all substantially as specified.

335,431. MACHINE FOR CUTTING OVAL-SHELL DISHES. STEPHEN R. CONOVER, New York, N. Y., assignor to himself and Lorana Bedell, same place. Filed June 11, 1885. (No model.)





335,431.



Claim.—1. In a machine for cutting wooden shells from a block of wood, the combination of the frame A, the vertical guides G', rigidly connected with the opposite side of the frame, the facing-knife G, reciprocating in a right line on said vertical guides, the rocking shaft D, journaled on the frame, and a curved knife, F, rigidly connected with the shaft, said knives simultaneously cutting the block, but the facing-knife leading the curved knife in cutting the block and following the curved knife in leaving the block, substantially as described.

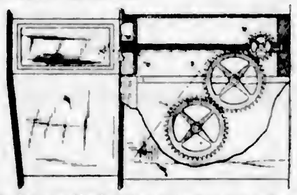
2. In a machine for cutting wooden shells from a block of wood, the combination of the frame A, the vertical guides G', rigidly connected with the opposite sides of the frame, the facing-knife G, having a rack and reciprocating in a right line on said guides, the rocking knife-shaft having a gear engaging said rack, and a curved knife, F, rigidly secured to the knife-shaft, substantially as described.

3. The combination, with a suitable frame, the vibrating curved knife, the facing-knife, and the follower, of the feed-screws journaled to the frame and suitably geared together, a bevel-gear mounted loosely on the knife-shaft, which engages a bevel-gear on one of the feed-screws, the arms on the knife-shaft, and the pawl thereof constructed to intermittently engage the bevel-wheel on the knife-shaft, substantially as shown and described.

4. The combination, with the knife-shaft, the feed-screws, and the rotary shaft, of the loose gear on the said shaft, which meshes into gear on the feed-screws, the clutch thereof, the bevel-gear on one of the feed-screws, the clutch thereof, and the connected clutch-collars on the shaft and feed-screws, substantially as shown and described.

5. The combination of the vibrating curved knife secured to the knife-shaft, the facing-knife, the rack thereof, the gears on the knife-shaft which engage the rack on the facing-knife, the gear on the knife-shaft, and the vibrating segment which engages the gear on the knife-shaft and imparts a reciprocating rocking motion to the same, substantially as shown and described.

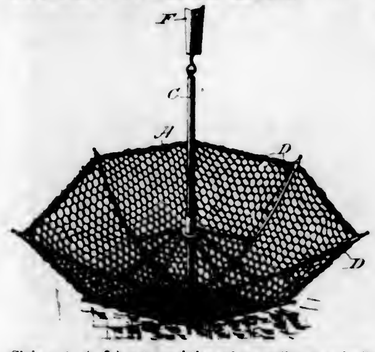
335,432. OFFICE-DESK. CHARLES N. DALSELL, Waddington, N. Y. Filed Nov. 18, 1885. (No model.)



Claim.—1. In a combined cabinet and adjustable desk, the combination, with a frame or low desk, of a cabinet adapted to slide vertically therein, and a supplemental desk-leaf, so hinged to the cabinet as to form an elevated desk when the cabinet is raised, and a desk-top when the cabinet is lowered, substantially as and for the purpose specified.

2. In a combined cabinet and adjustable desk, the combination, with a cabinet adapted to slide vertically in the frame, of rest or support panels, catches for detachably connecting the panels with the cabinet, a supplemental leaf adapted to be supported by the panels, and mechanism, substantially as described, for raising and lowering the cabinet and panels.

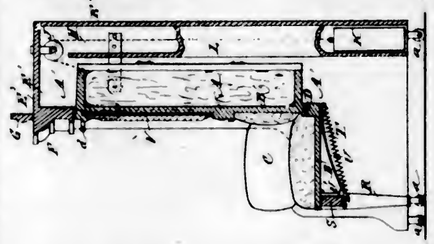
335,433. COMBINED FISH-NET AND UMBRELLA. EMORY Q. DARR, Shelbyville, Ind. Filed Oct. 2, 1885. (No model.)



Claim.—1. A fish-net consisting of an ordinary umbrella-frame having the netting secured thereon, and adapted to be opened and closed like an umbrella, substantially as shown and described.

2. A fish-net consisting of an ordinary umbrella-frame, upon which the netting is secured, in combination with a pole, F, by means of which the net may be placed in or taken from the water, substantially as shown and described.

335,434. FOLDING BED. WILLIAM H. DELL, New York, N. Y. Filed Aug. 26, 1885. (No model.)



Claim.—1. A folding bed consisting of a casing, a hinged bed-support having a sofa-back formed on the lower part of its under surface and provided with a mirror above said back, a sofa-seat secured to the lower end of the bed-support, and a hinged support for the outer edge of the sofa-seat, as specified.

2. The combination, with a case, of a bed-support, A, pivoted in the same, the sofa-seat B, secured to and projecting from the bed-support, and of the legs R, hinged to the outer edge of the sofa-seat, substantially as herein shown and described.

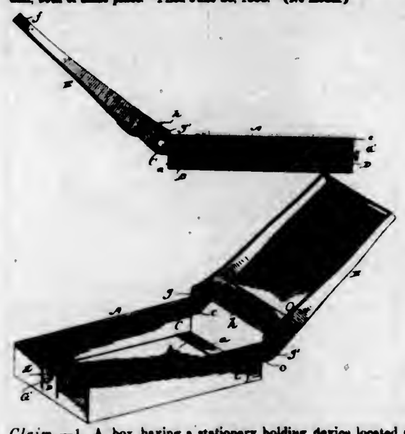
3. The combination, with a case, of the bed-support A, pivoted in the same, the sofa-seat B on the bed-support, the legs R, hinged to the sofa-seat, the bar S, uniting them, and the spring T, secured to the sofa-seat and the bar S, substantially as herein shown and described.

4. The combination, with a case, of the pivoted bed-support A, the sofa-seat B on the same, the legs R, hinged on the sofa-seat, the bar S, uniting the legs, the spring T, secured to the bar S and the seat, and of the locking-spring U, substantially as herein shown and described.

5. The combination, with a case, of the bed-support A, pivoted in the same, the sofa-seat B, formed on the bed-support, and the latch O on the inner surface of one side of the case, substantially as herein shown and described.

6. The combination, with the case E, of the bed-support A, pivoted in the same, the sofa-seat B, formed on the bed-support, the sofa-back B', formed on the under side of the bed-support, the mirror V, secured on the under side of the bed-support, and of the side pieces, W, hinged on the under side of the bed-support at the ends of the mirrors, substantially as herein shown and described.

335,435. COMBINED TOBACCO BOX AND CUTTER. DWIGHT H. DA SILVA, Corning, N. Y., assignor to Marvin Olcott and Hugh H. Kendall, both of same place. Filed June 26, 1886. (No model.)



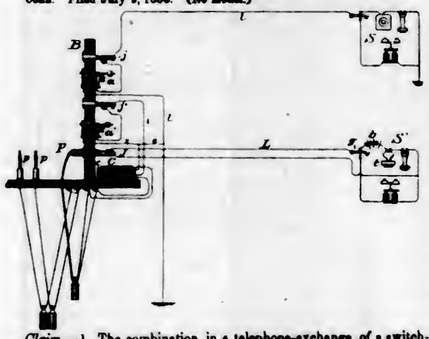
Claim.—1. A box having a stationary holding device located at the bottom for the tobacco plug placed thereon, in combination with the hinged or pivoted cover or lid carrying a blade or cutter, as set forth.

2. The box having a holding-plate located across the bottom thereof, in combination with the hinged or pivoted cover or lid carrying a blade or cutter, for the purpose set forth.

3. The box having one end left open and provided near its open end with a holding device on its bottom for the tobacco, in combination with the hinged cover or lid carrying a depending blade or cutter adjacent to its pivotal point, as set forth.

4. The box, in combination with the hinged or pivoted cover provided with a depending blade or cutter, the lower sharpened edge of which is curved forward or outward, as set forth.

335,436. TELEPHONE-CIRCUIT. THOS. B. DOOLITTLE, Bridgeport, Conn. Filed July 9, 1885. (No model.)



Claim.—1. The combination, in a telephone-exchange, of a switch-board containing the terminals of one or more single lines and one or more metallic circuits with an inductorium having the opposite terminals of both coils respectively connected to switching devices, whereby any one of the said single lines and any one of the metallic circuits may be made to include one coil of the inductorium each.

2. In a telephone-exchange, the combination of a main-line metallic circuit containing the first coil of an inductorium located at the central station, a spring-jack or switching device connected to the opposite terminals of the second coil, and one or more ground-return main lines having their terminals in switch-connections at the central station.

3. The combination of a main-line metallic circuit containing one coil of an inductorium located at the central station with a spring-jack and annunciator-magnet located at the central station and connected with a local circuit with the second coil of the said inductorium.

335,437. COMBINATION WASH-SINK. NILES C. ELDER, Fergus Falls, Minn. Filed Jan. 24, 1885. Renewed Dec. 12, 1885. (No model.)

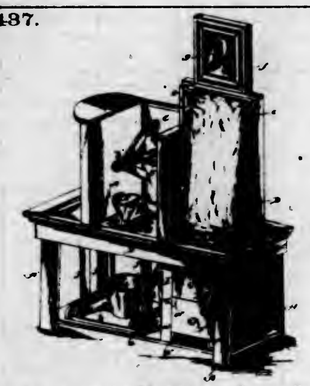
Claim.—1. In a kitchen-cabinet, the combination, with a sink, of a reversible splasher-board, substantially as set forth.

2. In a kitchen-cabinet, the combination, with a sink having splasher-boards, of a splasher-board having inwardly-extending strips pivoted to said boards, substantially as set forth.

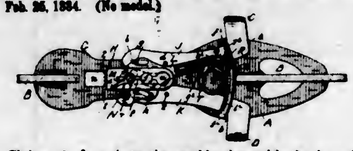
3. In a kitchen-cabinet, the combination, with a frame, of a rack or platform pivotally suspended by two strips, and a lever for operating the same, the lever being pivoted at the upper end and pivotally connected by two arms to the said suspendary strips, substantially as set forth.

4. In a kitchen-cabinet, the combination, with a frame, of a pivoted rack or shelf suspended below the same, arms pivoted to the strips connecting the platform and frame, a lever pivoted to said arms, and stops on said arms, substantially as set forth.

335,437.



335,438. SKATE. ANDREW ENGELBRETSON, Worcester, Mass. Filed Feb. 26, 1884. (No model.)

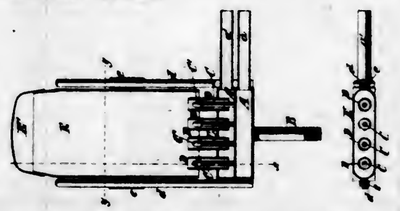


Claim.—1. In a skate, the combination, with the jaws C D, having arms J K, pivoted to the bed-plate by pivots *d e*, and provided with slots *l m*, of a pivoted lever, L, having pins *g h*, engaging with the slots *l m* of the jaws J K, a spring-bolt, Q, secured in lever L, and a ratchet-bar, R, secured to the bed-plate, with which said spring-bolt engages, substantially as described.

2. In a skate, the combination, with the jaws C D, with the levers or arms J K, pivoted to the bed-plate A by pivots *d e*, and provided with slots *l m*, of the pivoted lever L, having slot *x*, the pins *g h*, engaging with slots *l m*, and the adjustable jaw H, provided with pin N, engaging with slot *x*, substantially as described.

3. In a skate, the combination, with the jaw H, and its plate-arm M, having longitudinal slot *p*, of the operating-lever L, having slot *x*, the pin N, having head *w*, engaging with slot *x*, and screw-threaded at its lower end to engage with screw-thread in the plate M, substantially as described.

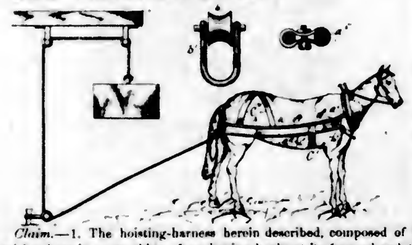
335,439. GAS-BURNER. JOHN C. ENGLISH, New York, N. Y. Filed Nov. 13, 1885. (No model.)



Claim.—1. The combination, with two or more burner-tubes arranged in line side by side for supplying two or more jets of combined gas and air or steam, of a chimney of flattened transverse section arranged above the burner-tubes, with its longer diameter parallel with the line of tubes and its shorter diameter transverse to the line of tubes, and having a surmounting cap of material which will become incandescent by heat, and supports on which the chimney is vertically adjustable to regulate the quantity of atmospheric air admitted to mingle with the gas, substantially as herein described.

2. The combination, with the compressed-air chamber A and two or more air-tubes, C, projecting upward therefrom and arranged in line side by side, of the gas-chamber A' and the gas-tubes D, projecting upward therefrom around the air-tubes C, the chimney E, surmounted by a cap, E', of a material which will become incandescent by heat, and having a flattened transverse section the longer diameter of which is parallel with the line of burner-tubes and the shorter diameter of which is transverse thereto, and supports on which the chimney is vertically adjustable to regulate the quantity of atmospheric air admitted to mingle with the gas, substantially as herein described.

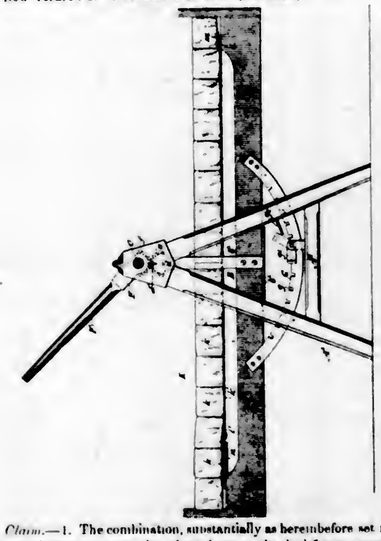
335,440. HARNESS. FRANK FANTO and WILLIAM H. WRIGHT, Watseka, Ill. Filed Nov. 20, 1885. (No model.)



Claim.—1. The hoisting-harness herein described, composed of a metal bar bent in ovate-oblong form having hooks at its forward end to connect with the ring of the hames, and a second metal bar bent in ovate-oblong form having its forward end struck up and secured to the hooked bar, said bars being connected together at their back or curved parts by a clamp and adapted to have connected therein the rope leading from the weight and provided with straps to adjust and secure the frame to a draft-animal, substantially as described.

2. The hoisting-harness herein described, composed of a metal bar bent in ovate-oblong form, hooks adjustably secured to the forward ends of said bars to connect it to the hames, a second metal bar bent in ovate-oblong form secured to the first said bar and provided with a sheave and clevis, an adjustable clamp to hold said bars together at their rear, and straps to adjust and secure the frame to an animal, substantially as described.

335,441. ADJUSTABLE BED FOR INVALIDS. MOSES G. FARMER, New York, N. Y. Filed June 15, 1885. (No model.)

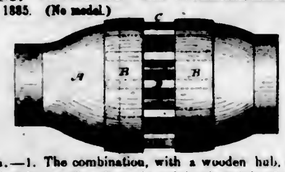


Claim.—1. The combination, substantially as hereinbefore set forth, of the stationary supports, the pivoted arms, the bed-frame secured to said arms, the lever and gear segments, means, substantially such as described, for rocking said bed-frame, and means for locking it in any of its positions.

2. The combination, substantially as hereinbefore set forth, with a pivoted bed-frame, of a stationary support, a lever pivoted to said support, a gear-connection between said lever and bed-frame, whereby the position of said frame may be modified by the movements of said lever, and a locking device for securing said frame in any desired position.

3. The combination, substantially as hereinbefore set forth, with stationary supports, of two links, pivots uniting these to said supports, a stud projecting from each link, a bed-frame supported by said studs, means for locking one of said links at will, whereby they are prevented from turning upon said pivots, a pivoted lever, and a connection between said lever and frame, whereby the latter may be turned upon said studs.

335,442. VEHICLE-HUB. CHAS. W. FILLMORE, Marengo, Ill. Filed Oct. 19, 1885. (No model.)



Claim.—1. The combination, with a wooden hub, of a series of spokes set therein, a series of metal retaining-bars lying between and in close contact with said spokes, and having their ends embedded in the hub on opposite sides of the series of spokes, and two metal bands encircling the hub and the ends of the retaining-bars and in contact with the edges of the spokes.

2. The combination, with a wooden hub, of a series of spokes set therein, a series of metal retaining-bars between and in close contact with said spokes, and having their ends embedded in the hub on opposite sides of the series of spokes, two metal bands encircling the hub and the ends of the retaining-bars, and in contact with the edges of the spokes, and metal plates lying between the spokes and superposed upon the bars, and having a thickness approximately the same as that of the bands.

3. The combination, with the wooden hub A, the series of spokes set therein, and the bands B, encircling the hub and in contact with the edges of the spokes, of the series of retaining-bars between and in close contact therewith, and having their ends embedded in the hub within the bands B, each of said bars having an integrally-formed central plate, D'', of the approximate thickness of the bands B, substantially as shown and described, and for the purpose set forth.

4. The combination, with the hub A and the spokes set therein and widest at the tenon-shoulder, of the retaining-bars D' between said spokes, and adapted to prevent the withdrawal thereof from the hub, and means, substantially as shown and described, for holding said bars in connection with the hub.

335,443. LUBRICATING COMPOUND. CATHARINE FINK, Baltimore, Md. Filed Nov. 28, 1885. (No specimens.)

Claim.—1. A lubricating compound composed of animal, vegetable, or mineral oil, mixed with compound such as described, and in essentially the proportions set forth.

2. A lubricating compound composed of crude petroleum-oil and lard-oil combined with the mixture herein described, and in the proportions set forth.

3. The mixture herein described for lubricating purposes, consisting of oil and a compound of lime-water, French chalk, muriate of ammonia, carbonate of ammonia, carbonate of potash, borate of soda, and sulphur, as set forth.

335,444. PRESERVE-JAR FASTENING. HENRY M. GUILD, Woodbury, N. J. Filed June 26, 1885. (No model.)



Claim.—1. A jar having spiral lugs and a lid having a vent and a recess in its upper face, in combination with a button, pin, and clamp, said button resting in said recess, and being pivoted to the clamp by the said pin, substantially as described.

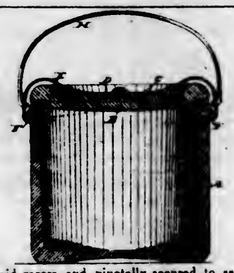
2. The jar A, having spiral lugs, in combination with the lid B, having vent C and recess L, button G, having convex upper face, clamp D, having lips E, and pin H, pivoted to said disk, substantially as and for the purpose set forth.

3. The jar A, having spiral lugs, in combination with the lid B, having vent C and recess L, clamp D, having lips E, button G, resting in recess L and having rim K on under face, packing J and gasket M, and pin H, pivoted to said button, substantially as described.

335,445. JAR-FASTENING. HENRY M. GUILD, Woodbury, N. J. Filed July 1, 1885. (No model.)

Claim.—1. A jar or can having spiral lugs or threads, and a lid thereof provided with a central recess in the upper face thereof, in combination with a clamp with lips engaging with the lugs or threads and

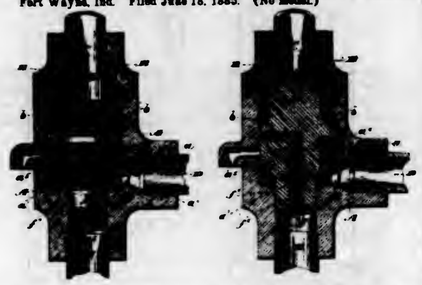
335,445.



a disk resting in said recess and pivotally secured to said clamp, substantially as described.

2. The jar A, having spiral lugs and a lid, in combination with clamp E, extending across the lid and having lips F and bail H secured to said clamp E, substantially as described.

335,446. VALVE FOR AIR-BRAKES. THEODORE H. HABERKORN, Fort Wayne, Ind. Filed June 18, 1885. (No model.)



Claim.—1. In combination with the main pipe, auxiliary reservoir, and the brake-cylinder, the valve operated by variation in pressure in the pipe and reservoir, having all its parts rigidly connected together, and adapted as it is moved by excess of pressure in the reservoir to first close the communication between the pipe and reservoir and between the brake-cylinder and the open air, and then to open communication between the reservoir and such cylinder, substantially as and for the purpose described.

2. In combination with the main pipe, auxiliary reservoir, and the brake-cylinder, the valve having all its parts rigidly connected together, and adapted by its longitudinal movement in one direction to cut off communication between the brake-cylinder and the auxiliary reservoir, to open communication between the brake-cylinder and the open air, and to open communication between the main pipe and the auxiliary reservoir, substantially as and for the purpose described.

3. In combination with the main pipe, auxiliary reservoir, and the brake-cylinder, a valve-casing provided with ports connecting with each pipe, reservoir, and brake-cylinder and with the open air, a valve having all its parts rigidly connected, provided with a piston-head acted upon on opposite sides by pressure in the main pipe and the reservoir, said valve being adapted as it is moved in one direction by the pressure in the reservoir to first shut off communication between the reservoir and the pipe and between the brake-cylinder and the open air, and then to open communication between the reservoir and the brake-cylinder, substantially as and for the purpose described.

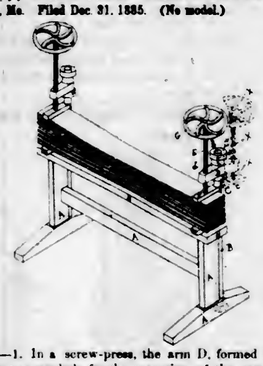
4. In combination with the casing connecting at one end with the main pipe and at the other with the brake-cylinder, on one side with the auxiliary reservoir and on the other with the atmosphere, and provided with the by passage or port a^6, the reciprocating valve within the casing having the enlarged fixed head adapted to close the connection with the main pipe, the fixed head to close the connection with the brake-cylinder when the main-pipe connection is open, and provided with the passage adapted to put the brake-cylinder and the opening into the air in connection after the valve closes the connection of the brake-cylinder with the valve-chamber in the casing, substantially as and for the purpose described.

5. In combination with the reciprocating valve F, having the enlarged valve-head f cut away, substantially as shown and described, and the valve-head f^5, of smaller diameter, and the passage f^6, the valve-casing provided with the passage for connecting it with the main pipe, and a valve-seat for the head f, a passage for connecting with the brake mechanism, and a valve-seat for head f^5, a passage for connecting with the auxiliary chamber, a port or passage adapted to connect the main pipe with auxiliary chamber when the valve is in position, so that head f closes the passage to the brake mechanism, and the exhaust-port a^4, adapted to communicate with passage f^6 when the valve is in said position, substantially as and for the purpose described.

6. In combination with the valve-chamber A, having the end openings, the lateral opening a^2, the exhaust-port a^3, and the by pass or port a^6, the valve-seat b, and the valve-seat a^5, the valve F, having the enlarged portion f, forming a valve-head, cut away, substantially as shown, and the head f^5, of smaller diameter, and provided with the passage f^6, substantially as and for the purpose described.

7. The hereinbefore-described apparatus, in which the casing A, provided with the upper axial opening, a', lateral opening a^2, lower axial opening a^4, valve-seat a^5, exhaust-port a^6, and recess a^8, the coupling-nut B, having the valve-seat b, and the valve F, having the pistons f and f', valve-faces f^3 and f^4, and exhaust-port f^6, are combined and adapted for use in connection with an air-compressing mechanism and with a brake-cylinder, substantially as and for the purpose shown.

335,447. SCREW-PRESS. FRANCIS P. HALL and JAMES H. SMITH, Brewer, Me. Filed Dec 31, 1885. (No model.)



Claim.—1. In a screw-press, the arm D, formed at its outer extremity with a screw-hole for the reception of the screw of the press, and at its inner extremity with a box or hub adapted to fit and swivel upon the standard, cheek, or upright of the press, substantially as described.

2. In a screw-press, the combination of the frame A, standard B, rigidly secured to said frame, arm D, swiveled upon said standard, collars C C', and means of adjusting the same upon said standard, screw E, lever G, follower F, and bed-plate H, substantially as described.

335,448. VENTILATOR FOR RAILWAY-CARS. ABARIAH B. HARRIS, Springfield, Mass. Filed Nov. 30, 1885. (No model.)



Claim.—1. A railway-car having a second roof above its main roof, and having an open passage between the two roofs from front to rear, to secure a draft through the same, and a ventilator-opening through the main roof, substantially as described.

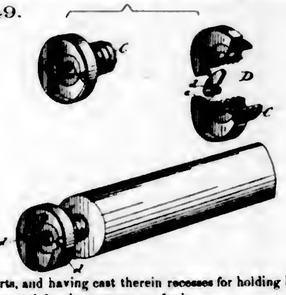
2. The combination, with the main roof of a car, of a supplementary roof above the same, the passage between the two roofs being open from front to rear, a box in the open space between the roofs, having hinged covers opening outward at each end, and a ventilating-pipe leading from said box through the main roof, substantially as described.

335,449. SPRING SHADE-ROLLER. STEWART HARTSHORN, Millburn, N. J. Filed July 16, 1885. (No model.)

Claim.—1. In spring shade-rollers, an end plate or disk cast in two or more sections or parts, and having cast therein recesses or orifices for attaching and securing the pawls, substantially as and for the purposes set forth.

2. In spring shade-rollers, an end plate or disk cast in two or more

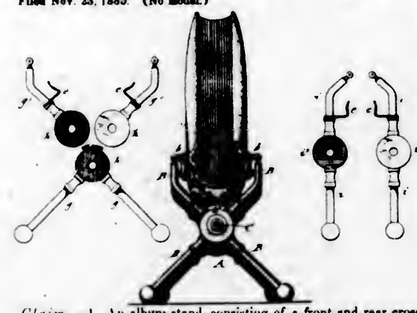
335,449.



sections or parts, and having cast therein recesses for holding loose pawls, substantially as and for the purpose set forth.

3. In spring shade-rollers, an end plate or disk cast in two or more sections or parts, and having cast therein recesses or orifices for attaching the pawls, and a collar for entering the bore of the roller, substantially as and for the purposes set forth.

335,450. ALBUM-STAND. THEODORE M. HASS, New York, N. Y. Filed Nov. 23, 1885. (No model.)



Claim.—1. An album-stand consisting of a front and rear cross-frame, a longitudinal pivot-rod connecting the cross-frames, longitudinal tubes supported by pivot-links at the upper ends of said cross-frames, and adjustable clasps for attaching the stand to the album-cover, substantially as set forth.

2. The combination of a front and rear cross-frame connected by a longitudinal pivot-rod, longitudinal tubes applied by pivot-links to the upper ends of the cross-frames, and extension-rods guided in said tubes and provided with clasps having fastening-screws, substantially as set forth.

3. The combination of a rear cross-frame consisting of an inverted-V-shaped lower part and pivoted upper arms, a front cross-frame composed of two intersecting cross-pieces, a longitudinal pivot-rod connecting said cross-frames, longitudinal supporting-tubes connected by pivot-links to the upper ends of the cross-frames, adjustable extension-rods, and clasps attached to said extension-rods and provided with fastening-screws, substantially as set forth.

4. An album-stand consisting of a front and rear cross-frame connected by a longitudinal pivot-rod, longitudinal supporting-tubes connected by pivot-links to the upper ends of the cross-frames, and provided with adjustable clasps for attachment to the album-cover, the front cross-frame being adapted to be spread apart to a greater extent than the rear cross-frame, so as to support the album in inclined position when open, substantially as set forth.

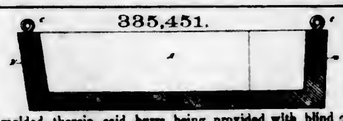
5. The combination of a front cross-frame, a rear cross-frame, both provided with rests at their upper parts, a longitudinal pivot-rod connecting said cross-frames, pivot-links at the upper ends of the cross-frames, longitudinal tubes applied by said links, and extension-rods having clasps for attaching the stand to albums of different sizes, substantially as set forth.

6. The combination of a front cross-frame made of two pivoted cross-pieces, a rear cross-frame made of a V-shaped lower part, and two pivoted upper arms, the lower part having a central abutment, and arms and longitudinal pivot-rod connecting said cross-frames, pivot-links at the upper ends of said cross-frames, longitudinal tubes applied to said links, and extension-rods guided in said tubes, and provided with clasps and fastening-screws, substantially as set forth.

335,451. COFFIN. WILLIAM R. HAMMARD, Union, N. J. Filed Dec. 10, 1885. (No model.)

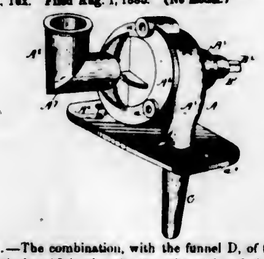
Claim.—A burial-case constructed of plastic material, substantially as described, both the body and the cover of said case having metallic

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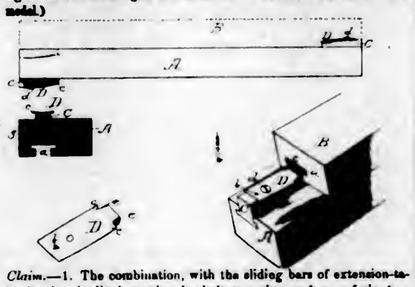
burrs molded therein, said burrs being provided with blind openings, whereby I am enabled to use removable eyebolts in the placing of the case and guard against the entrance of air, as herein specified.

335,452. FUNNEL FOR FORCING MOLASSES, &c. HENRY HEIDER, Houston, Tex. Filed Aug. 1, 1885. (No model.)



Claim.—The combination, with the funnel D, of the vertical pipe A^2, horizontal pipe A^1, having the face-plate A^3, and chambered casting A, having the base-plate A^4, integral therewith, the spout C, under said base-plate, and the forcing-wheel, substantially as and for the purpose described.

335,458. EXTENSION-TABLE. THOMAS B. HERSHEY, Chicago, assignor to Samuel Dingee, Wilmette, Ill. Filed Nov. 24, 1884. (No model.)



Claim.—1. The combination, with the sliding bars of extension-tables having longitudinal mortises in their engaging surfaces, of the tenons adapted to enter said mortises, and the metallic spring-plate D, said plate having the corners of its advanced or inner end slightly curved upward.

2. The combination, with the sliding bars of extension-tables having longitudinal mortises in their engaging surfaces, of a tenon having its inner end tapered or beveled, and the metallic spring-plate D, secured to said tenon.

3. The combination, with the sliding bars of extension-tables having longitudinal mortises in their engaging surfaces, of the tenons adapted to enter said mortises, and the metallic spring-plate D, substantially as set forth.

4. The combination, with the sliding bars of extension-tables having longitudinal grooves in their engaging surfaces, of the tenon C, metallic spring-plate D, and screw *d*, said plate D having a V-cut therein, forming a brad, which is driven into said tenon to prevent the plate D from oscillating.

5. The combination, with the sliding bars of extension-tables having longitudinal mortises in their engaging surfaces, of the tenon C, metallic plate D, having the downwardly-turned leaves *e e*, and means for securing said plate to said tenon.

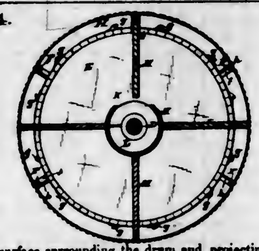
335,454. FLOUR-BOLT. NOAH W. HOLT, Jackson, Mich., assignor to the George T. Smith Middlings Purifier Company, same place. Filed May 9, 1885. (No model.)

Claim.—1. In a flour-bolt, the combination of a central closed drum, a concentric series of longitudinal ribs supported upon the cylindrical drum, cloth-rings supported upon the longitudinal ribs, the bolting-surface, reel-heads attached to the ends of the ribs, and longitudinal partitions dividing the space between the drum and the cloth-ring, substantially as and for the purpose set forth.

2. In a flour-bolt, the combination of a central cylindrical closed drum, a concentric series of longitudinal ribs supported upon the cylindrical drum, cloth-rings supported upon the longitudinal ribs, the bolting-surface, and the elevators *g g*, substantially as set forth.

3. In a flour-bolt, the combination of a central closed drum, an

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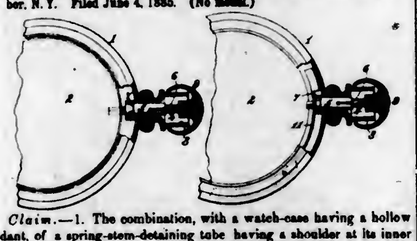


outer bolting-surface surrounding the drum and projecting beyond both ends of the drum, longitudinal partitions dividing the space between the bolting-surface and the periphery of the drum into sections, and reel-heads at the ends of the bolting-surface, substantially as set forth.

4. In a flour-bolt, the combination of a central drum closed at the head end, an outer bolting-surface attached to and carried by the rotating shell, the longitudinal partitions, a centrally-open head attached to and rotating with the bolting-surface, a feeding-shell concentric to the bolting-surface and projecting through the centrally-open head, and means for delivering material through the feeding-shell, substantially as set forth.

5. In a flour-bolt, the combination of a central shaft, a central closed drum mounted on the shaft, an outer bolting-surface mounted upon the drum and projecting at both ends beyond the drum, the longitudinal partitions, means for delivering material to the annular space between the drum and the bolting-surface, a centrally-open head at the tail end of the bolt attached to and carried by the bolting-surface, and means for discharging the tailings through the centrally-open head, substantially as set forth.

335,455. WATCH-CASE PENDANT. BENJAMIN F. HOPE, Sag Harbor, N. Y. Filed June 4, 1885. (No model.)

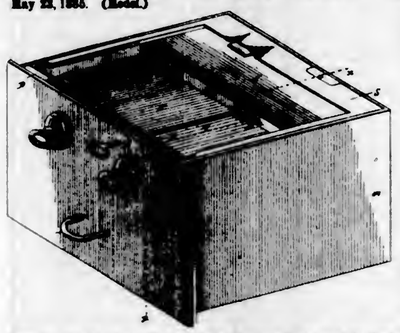


Claim.—1. The combination, with a watch-case having a hollow pendant, of a spring-stem-detaining tube having a shoulder at its inner end bearing against the inside of the case-center about or around the inner end of the opening through the pendant, substantially as described.

2. The combination, with a watch-case having a hollow pendant, of a split tube having a shoulder at its inner end bearing against the inside of the case-center, and a stem sliding in the tube, substantially as described.

3. The combination, with a watch-case having a hollow pendant, of a split tube having an interior ledge or flange, and provided at its inner end with a shoulder bearing against the inside of the case-center, and a sliding stem having a shoulder intermediate its ends and adapted to strike said ledge or flange, substantially as described.

335,456. TILL-LOCK. CARL B. HOPKINS, Louisville, Ky. Filed May 23, 1885. (Model.)



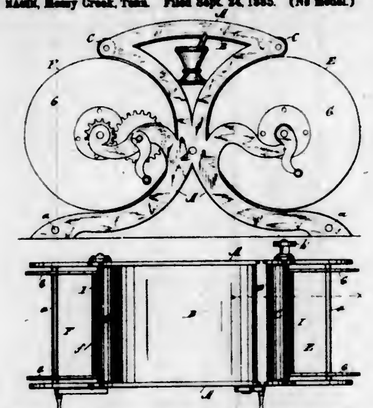
Claim.—1. The combination of the drawer A, having the locks C and D, with a dead-bolt adapted to engage alternately with the bolts of said locks, and a key or means for moving the dead-bolt out of engagement with one of the locks when the bolt of the other lock has been withdrawn, substantially as described.

2. The combination of the outer case having the locks C and D with the dead-bolt adapted to engage alternately the bolts of said locks, an inner case adapted to be placed in the outer case and provided with a lid or cover, and means for securing said lid or cover in place, and operating the dead-bolt, whereby when the lid is not closed the dead-bolt will be in engagement with the bolt of one of the locks C or D and prevent said bolt from being withdrawn, substantially as described.

3. The combination of the outer case or drawer having a lock for securing it in place with the inner case adapted to be placed in the outer case and provided with a cover or lid, a lock for securing said cover, and a lock for securing the inner case while in the outer case, substantially as described.

4. The combination of the outer case having the lock or locks and dead-bolt with the inner case having the cover, and a lock for securing said cover in place, and means for locking the inner case while in the outer case and operating the dead-bolt, substantially as set forth.

335,457. MACHINE FOR FILING PRESCRIPTIONS. JOHN S. JARMAIN, Honey Creek, Tenn. Filed Sept. 24, 1885. (No model.)

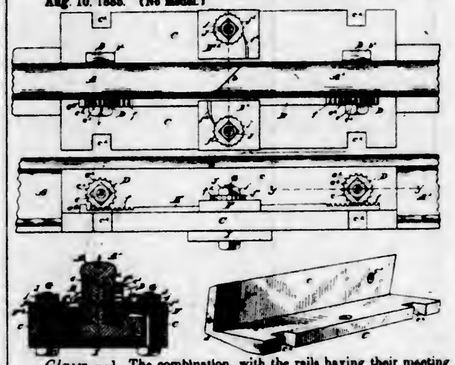


Claim.—1. A machine for filing prescriptions comprising a main frame having a pasting-table, and a reel journaled to said frame and provided with a detachable spool, substantially as set forth.

2. In a machine for filing prescriptions, the combination, with the main frame provided with a pasting-table and a reel journaled to said frame, of the keeper extended transversely over and in close proximity to the pasting-table, substantially as set forth.

3. In a machine for filing prescriptions, the combination of the main frame, the end plates, G, journaled in said frame, the shaft H, turned loosely through one and threaded into the other of plates G, and the spool I, placed on shaft H and clamped between the end plates, G, all arranged and operating substantially as and for the purposes specified.

335,458. RAILWAY-JOINT. JOS. KELLOW, Pen Argyl, Pa. Filed Aug. 10, 1885. (No model.)



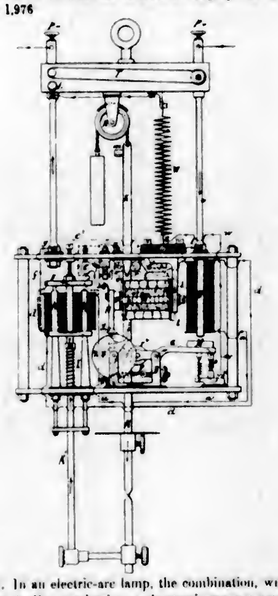
Claim.—1. The combination, with the rails having their meeting edges beveled or cut away in an oblique line and the webs slotted longitudinally, of angular fish-plates, through-bolts having serrated nuts, a bar, E, having its ends serrated to engage the nuts, clamping-plates

bearing on the fish-plates and the bar E, and securing-bolts G, to clamp said plates to the fish-plates, substantially as described.

2. The combination of the longitudinally-slotted rails having their meeting ends beveled in an oblique line, angular fish-plates fitted over said rails and bearing against the foot and web thereof, through-bolts securing said rails and fish-plates together and having serrated nuts, a bar, E, having its ends serrated and arranged below the nuts to engage the serrations thereof, a plate or bar, I, clamping-bolts F F', bearing on the fish-plates and bar E, and carrying pawls f', securing-bolts G, to clamp the plate I, the fish-plates, and clamping-plates together, and serrated nuts J, fitted on the bolts G and adapted to engage the pawls f', substantially as described.

3. The combination of the longitudinally-slotted rails having their meeting ends beveled in an oblique line, angular fish-plates bearing against the web and foot of the rails and secured to the ties at their outer ends, through-bolts passing through the rails and the upper angle of the fish-plates and having serrated nuts, and a bar, E, having its ends serrated and arranged on one of the fish-plates beneath the serrated nuts to engage the latter, substantially as described.

335,459. ELECTRIC-ARC LAMP. FRIEDRICH KLOSTERMANN, Vienna, Austria-Hungary. Filed July 9, 1885. (No model.) Patented in France July 26, 1882, No. 150,322, and in Austria-Hungary Oct. 15, 1883, No. 33 and No. 1,976.



Claim.—1. In an electric-arc lamp, the combination, with the carbon-holders, of a feeding mechanism, a rheotomic magnet actuating said mechanism, a normal shunt-circuit around the arc traversing the exciting-coil of said magnet and the rheotomic contacts, a demagnetizing shunt-circuit traversing a coil of said magnet in the opposite direction to said normal shunt-circuit, and electrical connections, substantially as described, whereby on the rheotomic breaking of said normal shunt-circuit a reverse current is caused to pass through said demagnetizing-circuit, and the core of said magnet is thereby demagnetized and its retraction is accelerated.

2. In an electric-arc lamp, the combination, with a feeding mechanism, of a rheotomic electro-magnet actuating said mechanism and wound with two coils in opposite directions, a derived circuit normally traversing one only of said coils, and commutating contacts and connections, substantially as set forth, whereby, when the movable member of said magnet is attracted, the current is shunted through both of said oppositely-wound coils, thereby demagnetizing the magnet and effecting the retraction of the moving member, as set forth.

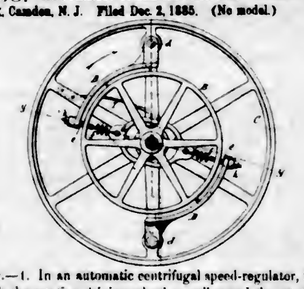
3. In an electric-arc lamp, the combination, with the feeding mechanism, of a rheotomic electro-magnet, E, having two coils oppositely wound, a shunt-circuit around the arc traversing normally one of said coils while the other is normally short-circuited, the armature-lever H, the commutator-lever C, and circuit-breaking contacts in connection with said levers, substantially as set forth, whereby the feeding movement of said armature-lever is terminated by the depolarization of said magnet and consequent retraction of said lever.

4. In an electric-arc lamp, the combination, with the carbon-holding rod, of a friction-roller, a ratchet-wheel in connection therewith, a vibrating pawl for advancing said wheel, a rheotomic electro-magnet for vibrating said pawl, another friction-roller journaled on the end of a distinct armature-lever, the said lever and the electro-magnet thereof, with its coil arranged in the arc circuit, whereby when the current passes this magnet forces said latter roller against the carbon-holding rod and prevents its moving from its own weight, substantially as set forth.

5. In an electric-arc lamp, the combination of the carbon-holder K, friction-rollers V and r'', armature-lever G, electro-magnet B, ratchet-wheel Z, pawl S, armature-lever H, and rheotomic feeding-magnet E, substantially as set forth.

6. In an electric-arc lamp, the combination of the positive-carbon holder, a feeding mechanism therefor, a rheotomic electro-magnet actuating said mechanism, arranged in a derived circuit, an electro-magnet arranged in the arc-circuit and adapted, when excited, to separate the carbons, a pair of contacts arranged to be closed by the downward movement of the positive-carbon holder before the complete consumption of the carbons, and a shunt-circuit traversing said contacts and the electro-magnet for separating the carbons, substantially as set forth.

335,460. AUTOMATIC SPEED-REGULATOR. CHARLES W. A. KOELLNER, Camden, N. J. Filed Dec. 2, 1885. (No model.)



Claim.—1. In an automatic centrifugal speed-regulator, the combination, with the rotating driving wheel or pulley and the rotating driven wheel or pulley, of coupling devices pivoted to the driven wheel on opposite sides of the driving-wheel, and extending from their pivots in the same direction around the driving-wheel, compared with the direction in which the wheel revolves, substantially as set forth.

2. The combination, with the rotating driving wheel or pulley and the rotating driven wheel or pulley, of coupling devices pivoted to the driven wheel diametrically opposite each other, and a spring-connection arranged diametrically between the free ends of the coupling devices, substantially as set forth.

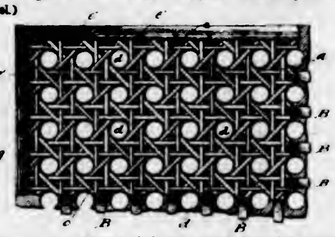
3. The combination, with the driving wheel or pulley and the driven wheel or pulley, of coupling devices pivoted to the driven wheel diametrically opposite each other, springs attached to the coupling devices and arranged on the inner sides of the same, and a link whereby the springs are connected, substantially as set forth.

4. The combination, with the driving wheel or pulley and the driven wheel or pulley and an automatic coupling device which is thrown out of engagement when the speed is excessive, of an alarm which is rendered audible when the speed falls below the normal, substantially as set forth.

5. The combination, with the wheel or pulley, of a rotating alarm which is thrown out of its operative position by centrifugal force and returned to its operative position when the effect of the centrifugal force is diminished by a reduction of the speed, substantially as set forth.

6. The combination, with a wheel or pulley, of a spring-arm, l, rotating therewith, and a fixed tooth, *i*, which latter is touched by the spring-arm when the speed of the wheel or pulley is abnormal, substantially as set forth.

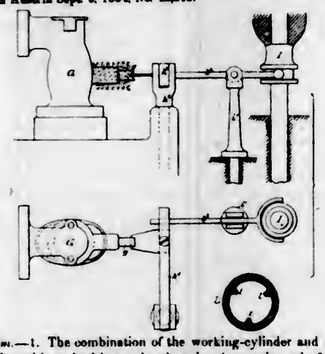
335,461. CHAIR SEAT AND BACK. FREDERICK LATULIP, Syracuse, N. Y., assignor to R. E. Hover, same place. Filed May 6, 1885. (No model.)



Claim.—1. A perforated chair seat or back formed of a caoutchouc, rubber, or like material, provided on its upper surface with raised longitudinal, transverse, and diagonal ribs, and having metallic ribs embedded in its under surface, substantially as described.

2. A perforated chair seat or back formed of caoutchouc, rubber, or like material, provided on its upper surface with raised longitudinal, transverse, and diagonal ribs, and having embedded in its under surface series of metallic ribs, which lie in longitudinal and transverse paths, substantially as described.

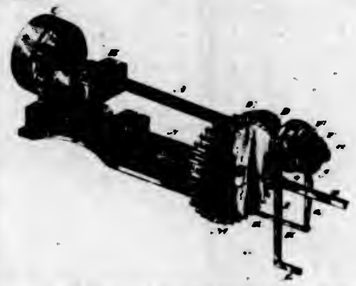
335,462. GAS-ENGINE. JEAN J. E. LENOIR, Paris, France. Filed Dec. 10, 1883. (No model.) Patented in France Oct. 27, 1883, No. 150,259; in Belgium Nov. 7, 1883, No. 63,141; in England Nov. 10, 1883, No. 5,315, and in Austria Sept. 6, 1884, No. 42,213.



Claim.—1. The combination of the working-cylinder and piston of a gas-engine with an ignition or heating chamber at the end of said cylinder, and having internal ribs, as and for the purpose set forth.

2. The combination of the cylinder and piston of a gas-engine and gas-controlling valve G, with an arm, A^2, pivoted to a rock-shaft, A^3, and a governor, I, controlling said arm with reference to the stem of the valve G, substantially as set forth.

335,463. FRICTION-CLUTCH. JAMES R. LITTLE, Quincy, Ill., assignor to the Quincy Metal Wheel Company, same place. Filed Dec. 10, 1885. (No model.)



Claim.—1. The pinion D, which is journaled upon the shaft A, and is provided at each end with a concave face, *d*, the disks E, that are arranged at opposite ends of said pinion and adapted to be moved lengthwise of said shaft, and are each provided with a convex face, *e*, in combination with means, substantially as shown, whereby said disks may be simultaneously moved inward into engagement with said pinion or outward from engagement with the same, substantially as and for the purpose specified.

2. As a means for moving the friction-disks E and E simultaneously into or out of engagement with the pinion D, the pivoted levers G, having their upper ends engaged with said disks, the vertically-movable bar I, and the connecting-bars K, all combined to operate substantially as shown.

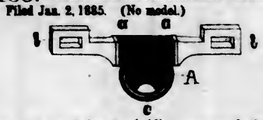
3. The pinion D, journaled upon the shaft A and provided within its ends with concave faces *d*, the disk E, adapted to slide lengthwise of said shaft and having each a convex inner end, the pivoted levers having their upper ends in engagement with said disks, the vertically-arranged and longitudinally-movable bar I, and the connecting-bars K, in combination with each other and with means whereby said bar I may be moved longitudinally, substantially as and for the purpose set forth.

335,464. MANUFACTURE OF COMPOUND PROJECTILES. WILHELM LORENZ, Carlsruhe, Germany. Filed Aug. 13, 1885. (No specimens.) Patented in Germany May 12, 1884, No. 31,145; in France May 23, 1884, No. 163,430; in Belgium June 23, 1884, No. 65,556; in England June 30, 1884, No. 9,577; in Italy June 30, 1884, No. 17,069; in Sweden Aug. 30, 1884; in Austria-Hungary Oct. 3, 1884, No. 21,963 and No. 45,065; in Norway Oct. 10, 1884, and in Spain Oct. 27, 1884, No. 6,325.

Claim.—1. The method herein described of making compound projectiles, which consists in uniting the cores and shells by melting them together, substantially as set forth.

2. The method herein described of making compound projectiles, which consists in tinning the inner surface of the shells and then uniting the cores with the shells by melting them together, substantially as set forth.

335,465. CHECK-BAR FOR BRIDLES. HARRY LOWE, Montpelier, Vt. Filed Jan. 2, 1885. (No model.)

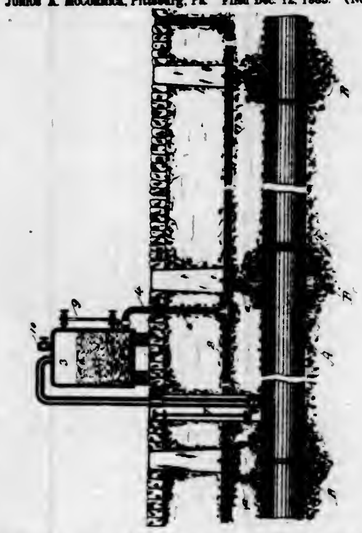


Claim.—A check-bar for bridles, composed of a metal bar with a slot near each end for a check-rein, having a ring in the center attached to or formed on the shank of the bar, such ring and shank provided with a covering of soft rubber, and an elastic rubber tongue within the ring, attached to one side of the rubber covering of the ring and free at the other side, substantially as shown and described.

335,466. PROCESS OF MAKING PAPER-PULP. FRANCIS J. MCCORMICK, Dayton, Ohio. Filed July 16, 1885. (No specimens.)

Claim.—The herein-described process of making paper-pulp, which consists in cooking cotton-seed hulls in a solution of soda-ash, and then grinding the stock, whereby its fibers are torn apart without cutting, substantially as described.

335,467. SYSTEM FOR CONVEYING GAS UNDER PRESSURE. JUNIUS A. MCCORMICK, Pittsburg, Pa. Filed Dec. 12, 1885. (No model.)



Claim.—1. In systems for the conveyance of gas or other fluids under pressure, the combination, with the main or conduit having chambered joints or joint-casings adapted to contain a sealing-fluid, of feed or supply pipes communicating with said joint-chambers, a fluid-supply tank for the supply of fluids under pressure to said joints, and a pipe leading from said conduit or main and adapted to communicate with said tank, whereby the sealing-fluid will be conveyed to the joint-chambers under the pressure of the fluid passing through the main.

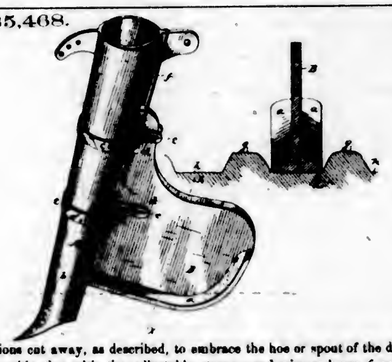
2. In systems for the conveyance of fluids under pressure, the combination, with the main or conduit having chambered joint-casings adapted to contain a sealing-fluid, of a fluid-supply pipe connected to two or more casings, a fluid-supply tank in communication with said supply-pipe and with the main, and a gage attached to said tank to indicate the height of the fluid contents thereof, substantially as described.

335,468. ATTACHMENT FOR GRAIN-DRILLS. JOHN MCLAIN, Indiana, Pa. Filed June 22, 1885. (No model.)

Claim.—1. In a grain-drill, a shoe or drag adjustably secured to the hoe or spout of the drill, as described, said shoe being provided with the wings or side extensions, *a*, having their upper surfaces beveled, whereby the earth is compacted on the grain and ridges formed between the rows, as set forth.

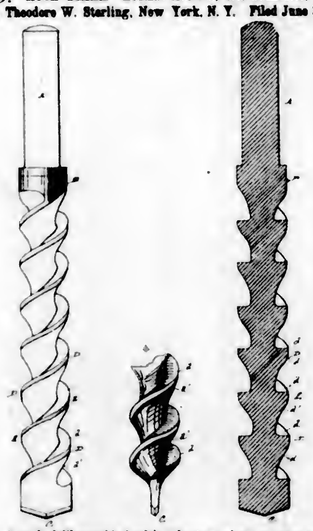
2. The drag or shoe B, having the front ends of the wings or ex-

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tensions cut away, as described, to embrace the hoe or spout of the drill, in combination with the adjustable straps c and wire or brace *f*, as set forth.

335,469. ROCK-DRILL. EUGENE MOREAU, San Francisco, Cal., assignor to Theodore W. Starling, New York, N. Y. Filed June 3, 1885. (Model.)



Claim.—A rock-drill provided with a double spiral groove or thread, of which the upper surface is at right angles with the axis of the tool and the under surface slopes gradually to the core, and said tool having a chisel-like point of the full width of the tool, its cutting-edge being in a vertical plane passing through the principal axis of the tool, substantially as shown and described.

335,470. ROCK-DRILL. EUGENE MOREAU, San Francisco, Cal., assignor to Theodore W. Starling, New York, N. Y. Filed Aug. 5, 1885. (No model.)



Claim.—A rock-drill constructed of one solid piece of metal with a point having its cutting-edge in a plane passing through the axial line of the tool, and the shank or body of the drill surrounded by a single spiral thread, its upper surface at right angles to the axial line of the drill, and uniting itself to the body of the drill by a sloping under surface, all substantially as described, and for the purpose set forth.

335,471. WATCH-WINDING MECHANISM. CHARLES MOERLE, New York, N. Y., assignor to himself and Prosper Nordmann, same place. Filed June 7, 1884. (No model.)

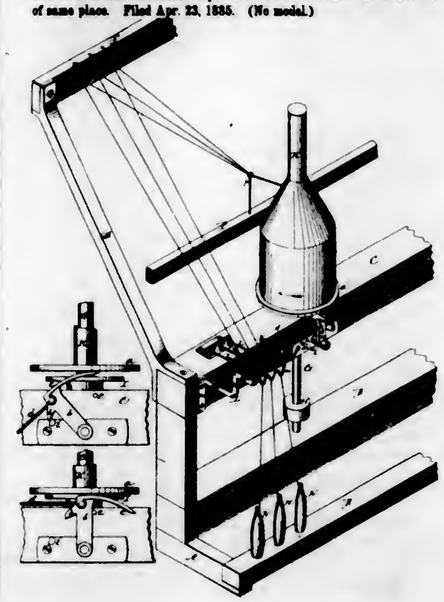
Claim.—In a stem-winding watch, the combination of the spring-barrel, mainspring, winding-arbor, and winding-up mechanism of a safety attachment consisting of a ratchet-wheel on the transmitting-gear, of the winding-up mechanism, a disk keyed to the winding-arbor, a spring-pawl fulcrumed to said disk, a dog, also fulcrumed to said disk, and a recessed disk turned by the winding-arbor and provided with a pin for engaging the dog, so as to throw the spring-pawl out of or into engagement with the ratchet-wheel of the winding-gear, substantially as set forth.

335,472. CAR-STARTER. AXEL M. MÜLLER and JOHAN S. RÜTER, Copenhagen, Denmark. Filed Sept. 28, 1885. (No model.)



Claim.—In a car brake and starter, the combination of the axle of the car, a sleeve turning with and sliding upon the axle and having means for sliding it and provided with bevel-wheels at its ends, a shaft secured rigidly at a right angle to the axle, a sleeve turning upon and sliding upon the shaft and provided with a bevel-wheel at its outer end and with ratchet-wheels having their teeth facing in opposite directions, pawls engaging the said ratchet-wheels, a drum secured to the sleeve at its inner end, and coiled springs secured at one end to the shaft and at the other ends to the inside of the drum, as and for the purpose shown and set forth.

335,473. SPOOLING-MACHINE. ALFRED NELSON (administrator of J. Nelson, deceased) and ALFRED NELSON, Rockford, Ill., assignors to Alfred Nelson, administrator, Ralph Emerson, and William A. Talcott, all of same place. Filed Apr. 23, 1885. (No model.)



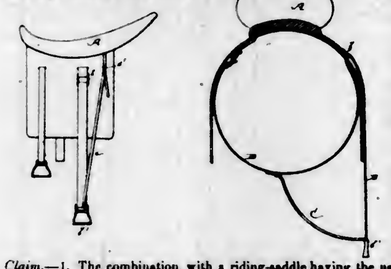
Brief.—The spindle is provided with a collar on which the bobbin rests. In the vertical plane of the spindle and below the bobbin a tripping-lever consisting of an eccentric segmental arm and a tripping-bar is pivoted the said tripping-bar extending under a series of drop-wires pivoted to the spindle-beam. On the breakage of a thread the drop-wire thereby set free falls on the tripping-bar, causing the segmental arm to take against the bottom of the bobbin and lift said bobbin clear of the disk on the spindle, thus stopping the revolution of the bobbin.

Claim.—1. The combination, with a spindle provided with a collar, of a trip-lever having an eccentric segmental arm and a tripping-bar and pivotally secured in the vertical plane of the spindle, and a drop thread-guide for throwing said segmental arm into contact with the head of a bobbin arranged upon the spindle, substantially as described.

2. The combination, with a spindle having a collar, as described, and with a fixed thread-guide and a drop thread-guide, of a trip-lever consisting of a pivoted radial arm formed with a hook, an eccentric segment-arm, and a tripping-bar, and stops for supporting said radial arm in either its vertical or inclined position, substantially as described.

3. The combination, with the spindle provided with a collar to support a bobbin, of a fixed thread-guide, a pivoted drop thread-guide, a tripping-lever having a tripping-bar which is operated by said pivoted drop-guide when a thread is broken, and an eccentric segmental arm which is adapted to raise the bobbin by contact with the bobbin-head, substantially as described.

335,474. RIDING-SADDLE. JAMES W. NEWMAN, Fayetteville, Tenn.; George H. Newman administrator of said James W. Newman, deceased. Filed Apr. 14, 1885. (No model.)



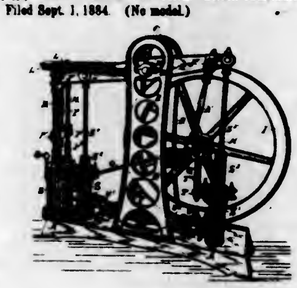
Claim.—1. The combination, with a riding-saddle having the usual girth and stirrup, of an auxiliary step or stirrup hung from one side, below the usual one, whereby the rider is enabled to mount more easily, substantially as shown and described.

2. The combination, with a riding-saddle, of an auxiliary step or stirrup hung upon one side below the usual one, and connected to the saddle by a hinged brace, whereby the step may be folded when not in use, substantially as and for the purpose set forth.

3. The combination, with a riding-saddle of the usual form, of an auxiliary girth secured to one side of the saddle, passed through an eye or loop on the opposite side, and having a step or stirrup upon its end hanging below the usual stirrup, a brace connected to said step and hinged to the girth below the animal, and a strap or cord attached to the step and carried up to the saddle for folding it, substantially as and for the purpose set forth.

4. The saddle A, made, as usual, with securing-girth and stirrups, in combination with the auxiliary girth B, secured at one side of the saddle and passed loosely through a loop, *b*, on the opposite side, a step or stirrup, *b'*, on the end of this girth, and connected to it by a hinged brace, C, curved to conform to the shape of the animal, and the lifting-strap *c*, secured to the auxiliary step and passed through the buckle *c'*, all constructed and arranged for operation substantially as and for the purpose set forth.

335,475. BEAM PUMPING-ENGINE. BRIDE OSBORNE, Springfield, Ohio. Filed Sept. 1, 1884. (No model.)



Claim.—In a beam pumping-engine, the vertical plunger-pumps S S', each having two projecting internally-screw-threaded bosses, preferably parallel to each other, as shown in the drawings, and each boss having a longitudinal opening communicating with the interior of the pump to which it belongs, in combination with the check-valves V', screwed into said bosses, the two series of horizontal pipe-sections U', having externally-screw-threaded ends and connecting the valves of one pump with the valves of the other pump through which they communicate with the pumps, as set forth, and the inlet and discharge ports U², one for each series of pipe-sections with which they are connected, said ports being located preferably midway between the pumps, all constructed and arranged substantially as shown and described.

335,476. HORSESHOE. HENRY H. OLIVER, Newark, N. J., assignor of one-half to Thomas Oliver, same place. Filed Jan. 7, 1885. (No model.)



Claim.—1. The combination, with a horseshoe provided with a V-shaped groove in the toe and heels thereof, having a straight perforation or socket in the bottom of said groove extending upward and backward into the body of the shoe, of removable heel and toe calks having a wedge-shaped top adapted to fit in said groove in the shoe, and provided with a straight arm which enters the socket in the bottom of the groove, and means, substantially as described, for holding said calk in the groove, for the purposes set forth.

2. The combination, with a horseshoe provided with a V-shaped groove in the toe and heels thereof, having a straight perforation or socket in the bottom of said groove extending upward and backward into the body of the shoe in a line with one of the inclined sides of the groove, the said side being provided with a mortise therein, of toe and heel calks having a wedge-shaped top adapted to fit in said grooves in the shoe, and provided with a straight arm which enters the socket in the groove, said arm being a continuation of one of the inclined sides of the top, the said side being provided with a tenon thereon, which engages with the mortise in the groove, and a pin, *p*, which extends through a perforation in the shoe and the calks, substantially as and for the purposes set forth.

335,477. HARNESS-PAD. JOHN PRUDENHAFT, Franklin, Mass. Filed Sept. 4, 1885. (No model.)



Claim.—1. A pad or cushion, A, for harness, made of felt, and an open and elastic knitted covering, B, surrounding and inclosing all sides of the felt, substantially as described, for the purposes specified.

2. A pad or cushion, A, for a harness, made of felt, provided with an open elastic covering, B, surrounding and inclosing all sides of the felt, and having shoulders E at opposite points seated between the felt body and its covering and projecting from the outer surface of the pad for confining the harness between but without attachment to said shoulders, substantially as described.

3. A pad or cushion, A, for harness, made of felt, and an open and elastic knitted covering, B, surrounding and inclosing all sides of the felt, and provided with shoulders or abutments E E at opposite points, and projecting from one surface thereof, for confining the harness between but without attachment to them, substantially as described, for the purposes specified.

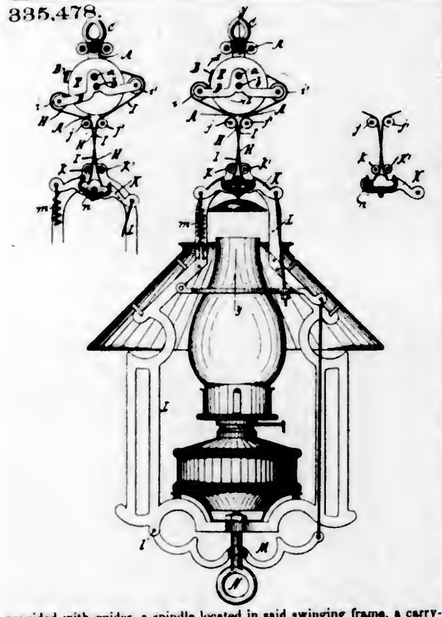
335,478. SUSPENSION DEVICE. CHARLES J. PETERSEN, Port Chester, N. Y. Filed Sept. 18, 1885. (No model.)

Claim.—1. The combination of the main frame provided with guides and an attached brake-shoe, a swinging frame pivoted to the main frame and provided with guides, a rotating spring-drum carried by said swinging frame, a frame for carrying the object to be suspended, a lever, K, pivoted to said carrying-frame, and suspension-cords passing around said drum and connected to the lever K at different points, substantially as described.

2. The combination of the main frame provided with guides and an attached brake-shoe, a swinging frame pivoted to the main frame and provided with guides, a spindle located below the pivoted attachment of the swinging frame, a spring-drum mounted on said spindle, a frame for carrying the object to be suspended, a lever pivoted to the carrying-frame, suspension-cords passing around the drum and connected to the pivoted lever at different points, and an auxiliary lever mounted on the carrying-frame and connected with the pivoted lever on the latter, substantially as described.

3. The combination of a main frame provided with guides and an attached brake-shoe, a swinging frame pivoted to the main frame and

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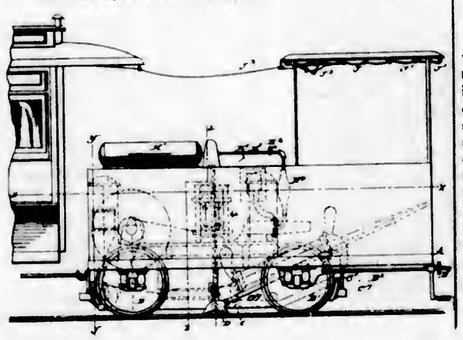
provided with guides, a spindle located in said swinging frame, a carrying-frame, a clearing-lever pivoted to the carrying-frame, and suspension-cords passing around said drum and connected to said clearing-lever at different points, substantially as described.

4. The combination of a main frame having an attached brake-shoe, a swinging pivoted frame, a spring-drum journaled in the swinging frame, a carrying-frame, guides for the suspension-cords, suspension-cords passing aroond the drum and engaging said guides, and a clearing-lever mounted on the carrying-frame and connected, at different points with the suspension-cords, substantially as described.

5. The combination of a main frame provided with guides and an attached brake-shoe, a swinging pivoted frame provided with guides, a spring-drum journaled in the swinging frame, a carrying-frame, a lever pivoted at or adjacent to its center, a spring connecting one end of said lever with the carrying-frame, an auxiliary lever on the carrying-frame connected with the other end of the pivoted lever, and suspension-cords passing around the drum and connected to the pivoted lever at different points, substantially as described.

6. The combination of the main frame provided with guides and an attached brake-shoe, a swinging frame pivoted to said main frame and provided with guides and a spindle, a drum journaled on the spindle of the swinging frame and containing a spring, an adjustable wrench engaging the spindle to adjust the tension of the spring, a carrying-frame, a lever pivoted thereon, and suspension-cords passing around the drum and connected with said pivoted lever at different points, substantially as described.

335,479. DUPLEX LOCOMOTIVE. BENJAMIN C. POLK, Philadelphia, Pa. Filed Apr. 25, 1882. (No model.)



Claim.—1. In a locomotive or other motor, the hydrocarbon-engine H, in combination with the air and water pumps G' and I, reservoirs K K and F, and cylinders C and E⁴, for operating the foot mechanism D, substantially as and for the purpose specified.

2. In a locomotive or other motor, the diagonally-arranged hydraulic cylinder C and upright cylinder E⁴, in combination with the foot mechanism D and the operating-power, substantially as and for the purpose specified.

3. In a locomotive or other motor, the hydraulic cylinder C, for propelling, and the double-acting pneumatic cylinder E⁴, for raising and lowering the foot mechanism D, substantially as and for the purpose specified.

4. In a locomotive or other motor, the combination, with the cylinder E⁴, of the couplers O O', valve F², and couplers P⁷ and P⁸, for lifting and holding up the foot mechanism D, substantially as and for the purpose specified.

5. In a locomotive or other motor, the combination, with the reservoirs K, of the automatic safety-valve L, provided with the weight L', ball-tap L³, and lever L⁴, substantially as and for the purpose specified.

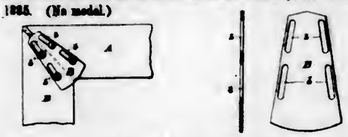
6. In a locomotive or other motor, the lever M, in combination with rods N N', rod M³, right-angle action M⁸, and valve M⁹, substantially as and for the purpose specified.

7. In a locomotive or other motor, the combination of the compressed-gas receiver H', pipe H³, provided with the gas-regulator, and elastic gas-bag H⁴, with the gas-engine H, substantially as and for the purpose specified.

8. In a motor, the compressed-gas receiver H', pipe H³, provided with a gas-regulator to reduce high-pressure gas to city pressure to supply a gas-engine, and the elastic bags H⁴ filled with city-pressure gas to supply a gas-engine, which is the motive power of a motor, substantially as and for the purpose set forth.

9. In a motor, a gas-engine as the motive power for the movement of the motor, said gas-engine supplied with gas through a system of regulators from a compressed-gas tank of high-pressure gas, substantially as and for the purpose set forth.

335,480. KEYLESS CANVAS-STRETCHER. JOSEPH L. RAWBONE, Toronto, Ontario, Canada, assignor of two-thirds to William George Rawbone and Charles Merrick Edwards, both of same place. Filed June 22, 1885. (No model.)



Claim.—An artist's stretcher consisting of the frame A, having separable miter-joints, and the keyless metallic plate B, having converging slots *b b*, and adjustably secured to said frame by set-screws *b' b'*, as set forth.

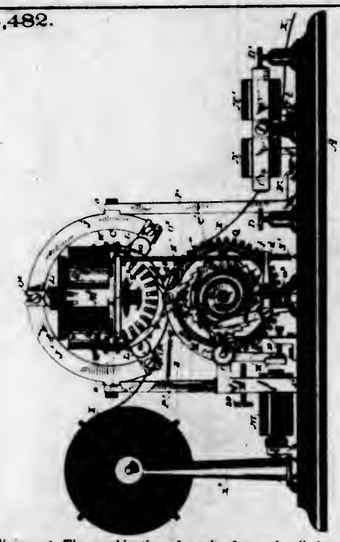
335,481. WRENCH. ERNEST F. REITZEIG and CHARLES C. ELLIS, San Antonio, Tex. Filed Oct. 12, 1885. (No model.)



Claim.—In a ratchet-wrench, the combination of a handle formed with two plates at its upper ends having circular perforations and connected by means of a flange at their upper edges, a cylindrical head turning in the apertures in the plates and having a washer secured at one end bearing against the outer side of one plate and having a rigid jaw at its other end and a dovetailed recess, and formed with ratchet-teeth at its middle, a jaw having a dovetailed inner end sliding in the said recess and having a screw-threaded perforation, a screw turning in a perforation in the rigid jaw and in the perforation of the sliding jaw, pawls pivoted between the edges of the inner ends of the plates and having a spring forcing their lower ends apart, and a sleeve turning upon the handle and having a flange upon its upper edge increasing in thickness toward its middle for engaging the lower ends of the pawls and forcing them in, as and for the purpose shown and set forth.

335,482. PRINTING-TELEGRAPH. ARTHUR C. ROBBINS, Buffalo, assignor of one-half to Edward C. Cole, Albion, and John D. Larkin, Buffalo, N. Y. Filed Oct. 8, 1884. (No model.)

335,482.



Claim.—1. The combination of a pair of geared cylinders provided with movable and fixed type, respectively, an axis passing through and supporting one of said cylinders, and a frame provided with inwardly-projecting friction-rollers, between which the other cylinder is supported, substantially as described.

2. In a recording-telegraph, the combination, with a pair of geared cylinders carrying movable and fixed type, respectively, of an axis passing through and supporting the cylinder having the fixed type, and a frame carrying adjustably-mounted frictional rollers, between which the other cylinder is mounted, substantially as described.

3. The combination, with a pair of geared cylinders provided with movable and fixed type, respectively, of an axis upon which one of the pair is mounted, a ratchet, also on said axis, a pivoted lever and pawl adapted to engage the teeth of the ratchet, an armature attached to said lever, and a magnet for imparting a to-and-fro movement to said lever, and thereby rotating the cylinders, and a spring pawl or brake, also engaging said ratchet and adapted to prevent the cylinders acquiring any momentum sufficient to move them independently of their driving mechanism, substantially as set forth.

4. In a recording-telegraph, the combination, with an exteriorly-supported type-cylinder provided with a series of type, the pins of which extend toward the center, of a printing-lever extending into said cylinder and resting normally in position to depress said type, and a magnet for operating said lever, substantially as described.

5. In a recording-telegraph, the cylinder C, having radial type-apertures, and the adjustable supporting-rollers L, in combination with the cylinder C', formed with groove W', the depressions or type-dies T', the gearing Q, a suitable axis or bearing, Z, and means, substantially as described, for rotating said cylinders.

6. In a recording-telegraph, the cylinder C, provided with adjustable supporting-rollers, radial type and paper-feed apertures, type T, mounted on inwardly-extending type-pins T⁹, paper-feeding pins W, suitable stop, V, and retracting-spring S⁹, in combination with the cylinder C', formed with depressions or type-dies T', adapted to receive the type T, a groove, W', adapted to receive the pins W, and gearing intermeshing with that on cylinder C, substantially as described.

7. The combination, with a pair of geared cylinders provided with movable and fixed type, respectively, of an axis upon which one of the pair is mounted, a ratchet, also on said axis, a pivoted lever and pawl engaging the teeth of said ratchet, an armature attached to said lever, and a magnet for imparting a to-and-fro movement to said lever, thereby rotating the cylinders, substantially as described.

8. The printing-lever Y, provided with the laterally-movable end piece, Y¹, suitable retracting-spring, and an armature and magnet, substantially as described.

9. The combination, with a type-cylinder, C, and impression-cylinder C', of the printing-lever Y, provided with laterally-moving end piece, Y¹, suitably recessed at its lower side, a retracting-spring, S⁷, and an armature and magnet, substantially as described.

10. The combination, with an electro-magnet having a polarized armature, of a stationary paper-carrying roller, a pivoted claw carried on the armature and adapted to be moved over said roller, and a stop for raising said claw on its rearward movement, substantially as described.

11. The combination, with an electro-magnet having a polarized armature, of a paper-carrying roller, a pivoted claw carried on the armature and adapted to be moved over said roller, a stop for raising said claw on its rearward movement, and a switch and shunt circuit including a portion of said armature and operating by the movement thereof to cut out the type-feeding devices, whereby the paper is moved forward and the type remains stationary and in position to repeat the previous character, substantially as described.

12. The combination of magnet N N', polarized armature E⁸, pivoted claw *g*, having an arm, *a*, suitable retracting-spring connecting said arm and armature with the roller *l*, and stop *n*, attached to the roller-supporting frame, substantially as described.

13. The combination, with magnet N N', polarized armature, and independent spacing mechanism, of the switch F, type-feeding or cylinder-rotating magnet M M', of comparatively high resistance, and connections between said switch and magnet, whereby the magnet M M' is cut out of circuit when the spacing mechanism is operated, substantially as described.

14. The combination, with a pair of cylinders, an electro-magnet, its armature, and a pivoted lever and pawl for rotating the same, of an electro-magnet having a polarized armature, a switch in the path of said armature, and connections whereby the cylinder-rotating magnet is cut out of circuit by reversing the polarity of and thereby operating the switching-magnet, substantially as described.

15. The combination, with a pair of cylinders carrying movable and fixed type, respectively, an electro-magnet, its armature, a pivoted lever and pawl, and connections operating to transmit its oscillations to the cylinders, of an electro-magnet having a polarized armature provided with means for feeding a message-strip forward, step by step, at each reversal of its magnet, a switch in the path of said armature, and connections between said switch and the rotation-magnet M M', whereby the latter will be cut out and motion of the cylinders prevented at each movement of said armature, substantially as described.

16. In a recording-telegraph, the combination, with a pair of positively-rotated geared cylinders carrying fixed and movable type, respectively, of a unison-stop for automatically arresting the motion thereof at a predetermined point, a printing-magnet, its armature, a lever actuated by said magnet to depress the type, and a connecting-rod and system of levers extending from said armature to the unison-stop and actuated by the printing movement of said armature to withdraw the unison-stop and liberate the cylinders, substantially as set forth.

17. The combination, with the axis Z and cylinder or ratchet wheel formed with the spiral groove u^4, of the lever *u*, provided with rider u^3, adapted to travel in said groove, a spring for returning said lever to the source of said groove, a rock-shaft, to one end of which said lever is pivoted, an arm projecting from said shaft, and a rod connecting said arm with the armature of the printing-magnet, by the movement of which the rock-shaft will be turned, the lever *u* moved outwardly, and the rider withdrawn from the groove, thereby releasing the axis Z and mechanism mounted thereon, substantially as described.

18. In a recording-telegraph, the combination, with a pair of geared cylinders, a magnet, and mechanism operated thereby to rotate said cylinders, a printing-magnet, and electrical connections between said printing-magnet and the cylinder-rotating magnet, substantially as described, of a unison-stop provided with a switch and contacts, whereby when the instrument is at zero the rotating-magnet is cut out and the printing-magnet is in circuit, and when the unison-stop is removed from its stopping-place both magnets are continuously in circuit, substantially as described.

19. In an automatic telegraph, the combination of a cylinder, a series of type provided with feed-pins and supported by and movable beyond the periphery of said cylinder, a hammer or lever adapted to engage and actuate said type and pins, and a magnet whereby to operate said hammer or lever, substantially as set forth.

335,483. TRANSFER-TRUCK AND TURN-TABLE. EDWARD SAMUEL, Philadelphia, Pa. Filed Oct. 26, 1885. (No model.)

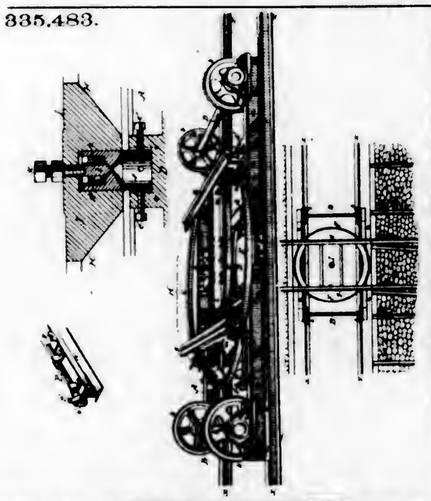
Claim.—1. The truck mounted upon wheels, and composed of longitudinal and transverse beams and a frame, D, in combination with the turn-table, also composed of longitudinal and transverse beams and a frame, I, and with bearings carried by said frames, as set forth.

2. The combination of the truck mounted upon wheels and having longitudinal and transverse beams bearing frame D and ring F, and the turn-table mounted upon the truck and having longitudinal and transverse beams bearing frame and wheels, which bear upon the ring F when the turn-table is deflected, as set forth.

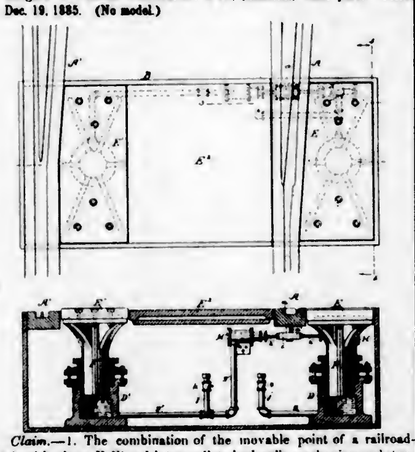
3. The combination of the truck and a turn-table carried thereby with a latch or latches on said truck for locking the turn-table to the truck when the rails of the turn-table are in a suitable position to allow a car to pass onto or from the turn-table, all substantially as set forth.

4. The combination of the truck and a turn-table carried thereby with a latch or latches on said truck, said latch consisting of an arm, *p*, and a counterbalance-weight tending to maintain said arm in the locking position, all substantially as specified.

335,483.



335,484. RAILWAY-SWITCH. EDWARD SAMUEL, Philadelphia, Pa., assignor to William Wharton, Jr., & Co., (Limited,) same place. Filed Dec. 19, 1885. (No model.)



Claim.—1. The combination of the movable point of a railroad-switch with plates E E' and intermediate hydraulic mechanism, substantially as set forth.

2. The combination of the movable point of a railroad-switch with plates E E', carrying plungers F F', the hydraulic cylinders D D', and the cylinders H H', having pistons connected together and to the switch-point, substantially as specified.

3. The combination of the movable point with the cylinders H H', carrying pistons and piston-rods, and the block *i*, attached to both piston-rods and connected to the switch-point, substantially as set forth.

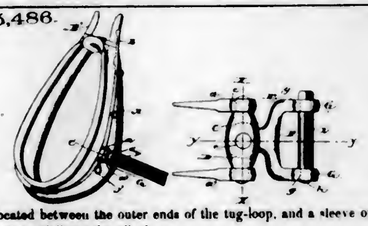
335,485. MANUFACTURE OF RESIN-ACID ETHERS. EUGEN SCHAAL, Stuttgart, Würtemberg, Germany. Filed Oct. 11, 1884. (Specimens.) Patented in England Sept. 25, 1884, No. 12,907.

Claim.—The method of preparing resin-acid ethers by freeing raw resin-acids in the first instance from volatile or soft constituents by distillation or extraction, the hard resin-acid residues being then condensed to ether by treatment with alcohols or phenol in the presence of heat, with or without pressure, and with or without addition of substances favoring the reaction, and, lastly, by separating the resin-acid ether into softer and harder resin-like bodies by distilling them *in vacuo*.

335,486. HAME-TUG ATTACHMENT. WILLIS S. SHERMAN, Marinette, Wis., assignor of one-third to August Witmeyer, same place. Filed June 15, 1885. (No model.)

Claim.—1. The combination, with a hame-section, of staples secured thereto and projecting outwardly therefrom, a bar pivoted between said staples, a tug-loop pivoted to said bar so as to move vertically, a

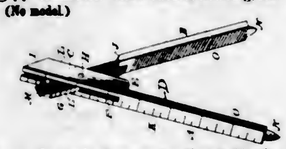
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bar located between the outer ends of the tug-loop, and a sleeve on said bar, substantially as described.

2. The combination, with the hame-section having the outwardly-projecting staples, of a bar pivoted between said staples, a tug-loop pivoted in a slot of said bar and consisting of the bar F, having the outwardly-projecting arms G, and the bolt connecting the arms and the head, substantially as described.

335,487. CALIPERS. SIMON TAYLOR, Newburg, Ind. Filed Oct. 17, 1885. (No model.)

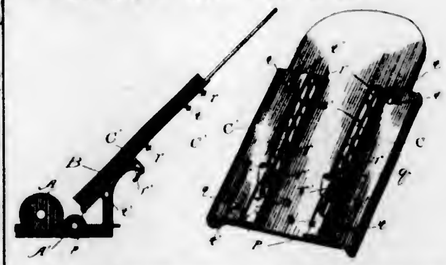


Claim.—1. In a pair of compasses, the combination of a leg having a longitudinally-slotted head of a width twice the width of the outer portion, having its outer edges graduated and the inner edges of the head, and having the end of the head cut off obliquely, with a leg having a flat head of twice the width of the outer portion and pivoted in the slotted head of the other leg, having the outer edge of the outer portion graduated, and having the upper end of the said outer portion formed into oblique shoulders fitting against the oblique end of the slotted head when the legs are straightened, as and for the purpose shown and set forth.

2. In a pair of compasses, the combination of a leg having a longitudinally-slotted head formed with an oblique upper end, having the inner face of its narrower outer portion roughened to form a file, having a point at its outer end, and having its outer edge and the inner edge of the head graduated, with a leg having a flat wide head pivoted in the slotted head and formed with an edge at its upper end, having the upper end of its narrower outer portion formed with oblique shoulders, having its outer end provided with a point, and having its outer edges graduated, as and for the purpose shown and set forth.

3. In a pair of compasses, the combination of the leg having a longitudinally-slotted head formed with an oblique upper end, having the inner face of its narrower outer portion roughened to form a file, having a point at its outer end, and having its outer edge and the edge of the head graduated, with a leg having a flat wide head pivoted in the slotted head and formed with an edge at its upper end, having the upper end of its narrow outer portion formed with oblique shoulders, having the inner face of its narrower portion roughened to form a file, having its outer end provided with a point, and having its outer edges graduated, as and for the purpose shown and set forth.

335,488. FEED-GUIDE FOR TYPE-WRITING MACHINES. ADDISON C. THOMAS, Chicago, Ill. Filed July 3, 1885. (No model.)



Claim.—1. The combination of a bed-plate, C, having lateral guides C', and forming a feed-guide for type-writing machines, and means, substantially as described, for attaching the device to the machine, substantially as set forth.

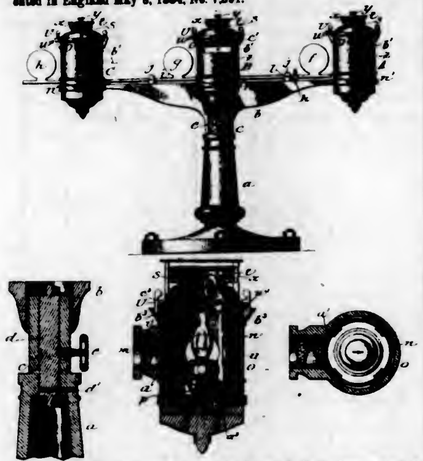
2. The combination of a bed-plate, C, having adjustable lateral guides C', and forming a feed-guide for type-writing machines, and means, substantially as described, for detachably securing the device upon the machine, substantially as set forth.

3. The combination, in a feed-guide for a type-writing machine, with a bed-plate provided with lateral guides, of clamping mechanism, substantially as described, for detachably adjusting the feed-guide upon the plate B of the machine, as and for the purpose set forth.

4. The combination, in a feed-guide for a type-writing machine, with a bed-plate provided with lateral guides, of the hooked strips *s* and adjustable clamps *q*, substantially as and for the purpose set forth.

5. In a feed-guide for type-writing machines, the combination of a bed-plate, C, lateral adjustable flanges C', adjustable hooked strips *s*, and adjustable clamps *q*, substantially as and for the purpose set forth.

335,489. NIGHT SIGNALING APPARATUS. JOSEPH WALL, Beetle, County of Lancaster, England. Filed Mar. 23, 1885. (No model.) Patented in England May 8, 1884, No. 7,291.



Claim.—1. In combination with the lamps A B C, the support *a*, table *b*, with its sockets for the reception of the lamps, and the sliding rod *i*, with its obscuring-disks *f g h*, as herein set forth.

2. In combination, the lamps A, B, and C, each having an inner cylinder, *n*, and an outer cylinder, *o*, provided with a shoulder-spring, U, as set forth.

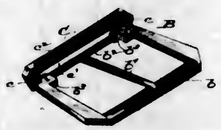
3. In combination, the lamps A, B, and C, having outer and inner cylinders, *o n*, provided with holding-pins and formed with holes therefor, as set forth.

4. The lamps A B C, having outer and inner cylinders, in combination with arrows *y*, attached to the inner cylinders, as set forth.

5. The combination, with the outer cylinders, *o*, each provided with an aperture, *m*, and a lens, of the inner cylinders, *n*, rotatable within the outer, and having the colored glasses, wire-gauze, and opaque part, as set forth.

6. The lamps A C, in combination with the middle lamp, B, having on the rear side the direction-plate *c'*, as set forth.

335,490. BUCKLE. BENJAMIN S. WASH, St. Louis, Mo., assignor of one-half to John M. Wash, same place. Filed Nov. 16, 1885. (No model.)



Claim.—The herein-described buckle B, having the cross-bar C fastened to and extending above the tongue-bar, as and for the purposes described.

335,491. FISHING-FLY BOOK. HENRY P. WELLS, Brooklyn, assignor to Thomas J. Conroy, New York, N. Y. Filed Aug. 26, 1885. (No model.)

Claim.—1. In a fly-book, the combination, with a leaf of said book, of retainers to hold the fish-hooks upon which the flies are made, and helical springs opposed to said retainers, as and for the purpose described.

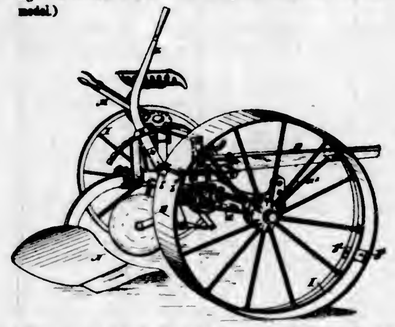


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2. The combination of retainers for fish-hooks, with helical springs opposed to said retainers, retaining said fish-hooks in position and stretching the gut or snell attached to said fish-hooks.

335,492. WHEEL-PLOW. JESSE WHEELER, Brownsville, Md., assignor of one-half to E. S. West, same place. Filed June 18, 1885. (No model.)



Claim.—1. A wheel plow or cultivator having an axle provided with a sleeve and braces, the inner ends of said braces secured to the frame and tongue of the plow, the outer ends of which are connected to the end of the axle by means of a clip and slide, whereby said axle is extensible and adjustable, as shown and described.

2. The combination, with a sulky plow or cultivator, of the adjustable axle, the band on the rim of the wheel, and the sliding braces on the axle, as shown and described, and for the purpose set forth.

3. The combination, with a sulky plow or cultivator, of an axle having the sliding braces connected thereto and to the tongue and frame, a sleeve for extending the axle, and a band on the rim of the wheel provided with slots, bolts, and cleats, as shown and described, and for the purpose set forth.

4. The combination, with a wheel plow or cultivator having a wheel provided on its rim or tire with an adjustable broad band or rim, of a supplementary axle, whereby said wheel, with its band, is rendered adjustable, as shown and described, and for the purpose set forth.

335,493. ROPE-JAR. LAWRENCE WHEELER, Allentown, N. Y., assignor to Lizzie Wheeler, same place. Filed Dec. 4, 1885. (No model.)

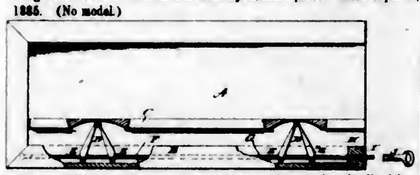


Claim.—1. In a drill-jar, the combination of a jar having a loop of wire rope secured in it, with a socket for the drill having a slot at its upper end formed with a concave upper portion provided with a packing of soft material retained by a transverse pin, as and for the purpose shown and set forth.

2. In a drill-jar, the combination, with a socket for the drill having a slot at its upper end and grooves extending from the slot to the upper end, and a jar having inclined perforations extending from its lower end out through its sides, of a loop of wire rope provided with a covering at the lower doubled end consisting of a soft and lasting material laid into the rope and wrapped around the same, as and for the purpose shown and set forth.

3. In a drill-jar, the combination of a slotted drill-socket, a jar having inclined perforations extending from the lower end through the sides of the jar, a loop of wire rope passed through the slot in the socket and having its ends inserted through the inclined perforations, and provided with strands of hemp or similar material laid into the ends at their lower doubled ends and laid around the ends of the loop, and tapering pins inserted into the ends of the loop, spreading the same, as and for the purpose shown and set forth.

335,494. PRINTER'S GALLEY. DAVID W. WHITAKER, Durham, N.C., assignor of one-half to James Edwin Lyon, same place. Filed Sept. 19, 1885. (No model.)

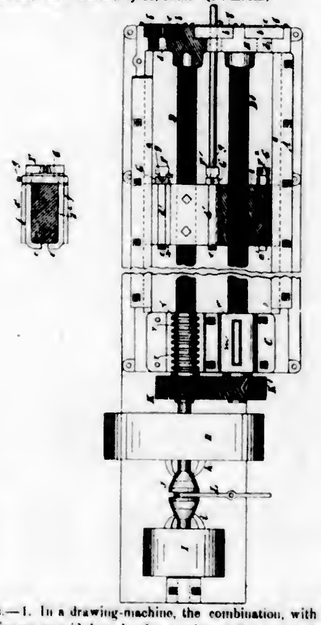


Claim.—The combination of a printer's galley, a longitudinal bar sliding transversely in the same parallel to the sides, arms hinged in pairs to the outside of said bar and having heads at their outer ends formed with right-and-left-handed threaded perforations, each pair of arms having a right and a left hand perforation, and a bar journaled longitudinally in the side of the galley, and having right-and-left-hand screw-threads for the perforations of the arms, as and for the purpose shown and set forth.

335,495. COMPOSITION OF MATTER FOR INSULATING MATERIAL. JAMES B. WILLIAMS, San Francisco, Cal. Filed Jan. 4, 1886. (No specimens.)

Claim.—An electrical insulating compound composed of guttapercha, india-rubber, colophony, gum-dammar, and asphalt, all in solution, and anhydrous paraffine-oil with or without powdered silica, in about the proportions stated.

335,496. MACHINE FOR DRAWING METAL BARS. LEVI D. YORK, Portsmouth, Ohio. Filed July 11, 1885. (No model.)



Claim.—1. In a drawing-machine, the combination, with a draw-head, of grippers on said draw-head, a number of dies arranged opposite the grippers, and two shafts for imparting motion to the draw-head, one of which shafts is provided with a right-handed screw-thread, and the other with a left-handed screw-thread, said shafts being geared directly together and operating in unison, substantially as specified.

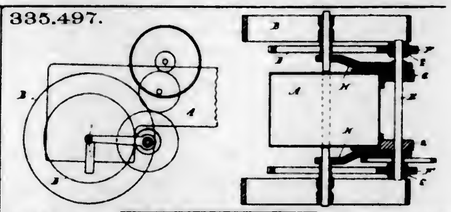
2. The combination, with the screw-shafts D D', of the draw-head E and the grippers F F' F², substantially as specified

335,497. TRACTION-ENGINE. BION J. ARNOLD, Hillsdale, Mich. Filed Dec. 3, 1885. (No model.)

Claim.—1. In a traction-engine having the rear end of the boiler supported upon elastic bearings upon the rear axle, the draw-bars H H, pivotally connecting the rear axle with the counter-shaft of the drive-pinions and surrounding said axle and shaft, in combination with a ball-and-socket joint in the drive-pinions, substantially as described.

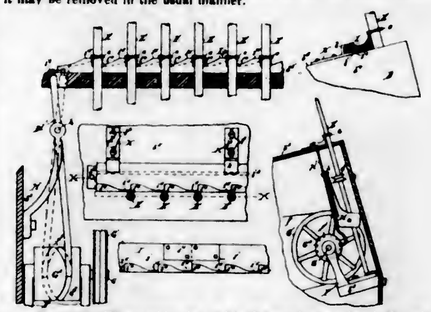
2. In a traction-engine, the combination of the springs G G, rear axle, C, draw-bars H H, counter-shaft E, pinions F F, provided with ball-and-socket joint, and the segmental projections *d*, arranged and combined substantially as described.

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335,498. APPARATUS FOR CLEARING WASTE FROM THE SPINDLES OF SPINNING-MULES. PHILIP AUBIN, Lowell, Mass., assignor, by mesne assignments, to Webster M. Green, same place. Filed Apr. 19, 1884. (No model.)

Brief.—On top of the carriage a notched bar having a roughened face slides in grooved brackets as close to the spindles as possible without touching. The bar is reciprocated by a lever and grooved cam on the drum-shaft, and in its movement wears away the waste around the spindle below the collars, allowing it to drop on the top board, whence it may be removed in the usual manner.

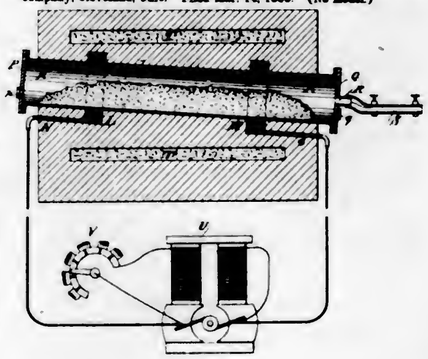


Claim.—1. The combination, with the carriage and spindles of a mule, of the clearer having a roughened face, the grooved cam, the cam-shaft, the pulley secured thereto, the band-cylinder, the band connecting said cylinder and pulley, and the lever connecting said clearer and cam, as and for the purpose specified.

2. The combination, with the carriage and spindles of a mule, of the clearer having notches and a roughened face, the fulcrum-bracket secured to said carriage, the lever pivoted to said bracket, the upper end of said lever connected to said clearer, the cam provided with a groove to receive the lower end of said lever, the cam-shaft, the pulley secured thereto, the band-cylinder, and the band, as and for the purpose specified.

3. The clearer formed in sections united by ties, and having a groove to admit the faller-wire, and having notches and a roughened face, in combination with the carriage and spindles, and the band, the grooved cam, cam-shaft, the pulley secured thereto, the band connecting said cylinder and pulley, and the lever connecting said clearer and cam, whereby the clearer is given a reciprocating motion by the revolution of the band-cylinder, as and for the purpose specified.

335,499. PROCESS OF HEATING AND REDUCING ORES BY ELECTRICITY. CHARLES S. BRADLEY, Yonkers, and FRANCIS B. CROCKER, New York, N. Y., assignors to the Cowles Electric Smelting and Aluminium Company, Cleveland, Ohio. Filed Mar. 14, 1885. (No model.)



Claim.—1. The electrical heating process hereinbefore described, which consists in passing an electric current along the walls of a retort, which are composed of a conducting material, and are in superficial contact with a mixture of conducting material and material to be heated, which mixture is thereby included in the circuit, so that the walls of the retort and the mixture will constitute the greater portion of the resistance of the circuit, substantially as and for the purpose set forth.

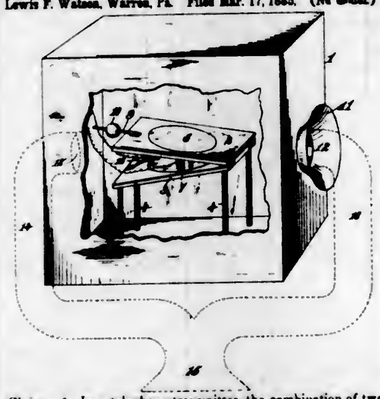
2. The electrical heating process hereinbefore described, which consists in placing a mixture of charcoal and the material to be heated in a cylindrical iron retort surrounded by material which is a bad conductor of heat, and passing an electric current through the walls of the retort, so that the mixture in contact with them is included in the circuit, and so that the walls of the retort and the mixture will constitute the greater portion of the resistance of the circuit, substantially as and for the purpose set forth.

335,500. VEGETABLE-CUTTER. DE FOREST BULLOCK, Sumner, Wash. Filed July 23, 1885. (No model.)



Claim.—In a vegetable-cutter constructed substantially as described, the bottomless hopper A, having an end piece, *b*, with a depending portion, *b'*, in combination with the reciprocating slide E, having grooved sides receiving and retaining a bottom board, F, of the same thickness as the thickness of the side pieces of said slide, the lower end of said board being beveled and provided with a knife, and a board, F', also located in said grooves, and of less thickness than the side pieces of the slide, the parts being organized substantially as shown, and for the purpose set forth.

335,501. TELEPHONE-TRANSMITTER. WILLIAM BURNLEY, North East, Pa., assignor of two-thirds to Charles A. Hitchcock, same place, and Lewis F. Watson, Warren, Pa. Filed Mar. 17, 1885. (No model.)



Claim.—1. In a telephone-transmitter, the combination of two diaphragms each supported or carried by a base, the two bases hinged together at an angle to each other, and a packing or filling of non-vibratory material between the bases, substantially as described.

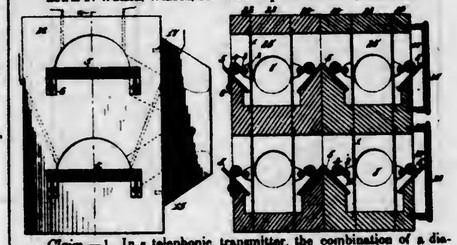
2. In a telephone-transmitter, the combination of two bases, two diaphragms, one mounted or secured on each base, two electrodes, one on each diaphragm and both in the same circuit, a spring tending normally to force the bases apart, and an adjusting device for regulating the degree of contact of the electrodes, substantially as and for the purpose set forth.

3. The combination, with the containing box or case, the hinged bases carrying diaphragms, and the electrodes 7 on the latter, of the double tube 13 14, entering such containing box or case on opposite sides, whereby the force of the vibrations is equalized and the vibrations equally distributed within the box or case, substantially as and for the purpose set forth.

4. In a telephone-transmitter, the combination of the bases 2 3, hinged together at one end, diaphragms 5 6, electrodes 7, spring 16, normally forcing them apart, and an adjusting device, 9 10, controlling the degree of contact, substantially as and for the purpose set forth.

5. In a telephone-transmitter, the combination of the case 1, the two bases, diaphragms, and electrodes secured therein, and arranged as shown, mouth-piece 15, and tubes 13 14, leading thence to and leading on opposite sides into close proximity to the diaphragms within the case or box, substantially as and for the purpose set forth.

335,502. TELEPHONE-TRANSMITTER. WILLIAM BURNLEY, North East, Pa., assignor of two-thirds to Charles A. Hitchcock, same place, and Lewis F. Watson, Warren, Pa. Filed Apr. 11, 1885. (No model.)



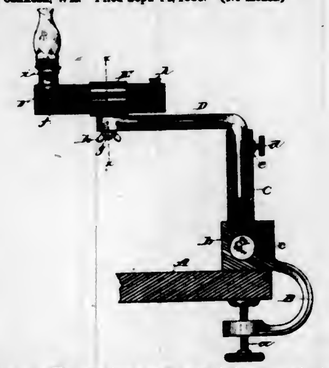
Claim.—1. In a telephonic transmitter, the combination of a diaphragm, a carbon rod secured thereto by a rubber block, an inclined metallic plate, a loose carbon rod lying thereon and normally contacting with the first-mentioned rod, a weight or ballast of rubber for lying upon these rod-electrodes, and formed with a hook, whereby it is attached to one of the electrodes, substantially as described.

2. In a telephonic transmitter, the combination of the section 23, having the sound-chamber 25 formed therein, the sections 22 and 24, carrying the plates 5, supporting the electrodes 4, two diaphragms secured upon opposite sides of the chamber, and circuit-connections, substantially as described.

3. In a telephonic transmitter, the combination of a diaphragm, a carbon-rod electrode secured thereto, a plate, 5, having lugs or arms 6 for its attachment to a supporting-base, and a rod-electrode, 4, lying thereon, substantially as described.

4. In a telephonic transmitter, the combination of a diaphragm, a carbon-rod electrode secured thereto, a loose rod-electrode, the two lying parallel, an inclined plate supporting the loose electrode, and a platinum connection between the plate and loose electrode, substantially as described.

335,503. ADJUSTABLE LAMP-BRACKET. JOHN R. BUTLER, Milwaukee, assignor, by mesne assignments, of one-half to John C. Zimmerman, Oshkosh, Wis. Filed Sept. 14, 1885. (No model.)

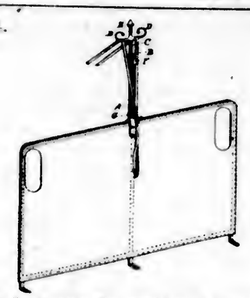


Claim.—1. The combination of a suitable bracket and a lamp having a horizontally-extended reservoir, with a bearing having its head portion in the form of a sleeve adapted to entirely encircle the lamp-reservoir, and constructed upon its interior to conform with the contour of said reservoir, and provided with a depending pin designed to pivotally engage the bracket-arm, and a set-nut adapted to operate upon the lower end of said pin, substantially as and for the purpose set forth.

2. An adjustable bracket and a lamp having a horizontally-extended reservoir provided with an external feather, in combination with a bearing having a depending pin adapted to pivotally engage the bracket and its head portion internally constructed to encircle the lamp-reservoir, and provided with a groove to engage the feather on said reservoir, and a set-nut adapted to operate on the depending pin of the bearing, substantially as and for the purpose set forth.

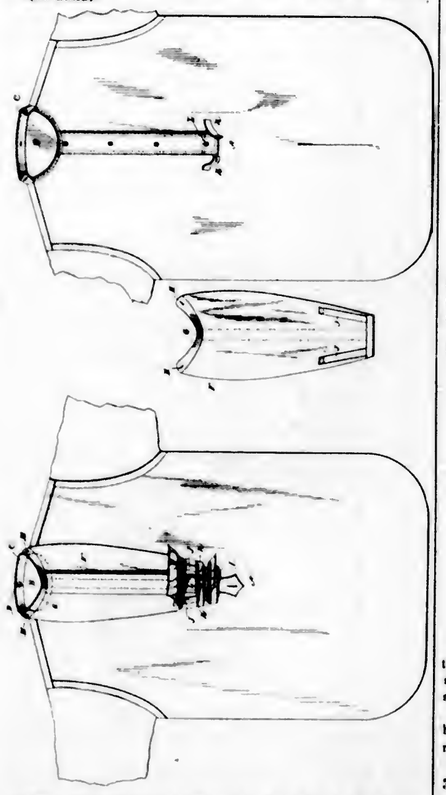
335,504. REIN-HOLDER. THOMAS O. BUTLER, Chicago, Ill. Filed Aug. 6, 1884. Renewed Sept. 1, 1885. (No model.)

335,504.



Claim.—In line-supports, the round-bored standard A, provided with square-holed cap B, the adjusting-screw F I, holding the cap on the standard, and the forked plate H, holding the set-screw in place, in combination with the square shank C and line-supports D D E, as and for the purpose specified.

335,505. SHIRT. SAMUEL BUTZ, Easton, Pa. Filed Aug. 20, 1885. (No model.)

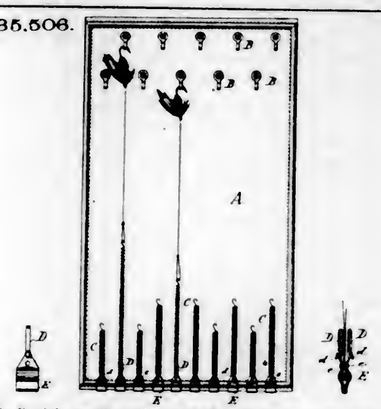


Claim.—The combination, with a shirt the back of which is provided with a half-neckband of a certain fixed measure, and the front with a button near its waist portion, and a tab secured upon each side of said button, the free ends of which are provided with button-holes, of a detachable adjustable bosom, the top of which is provided with a half-neckband, the size and slope of which correspond with each other, and the bottom with two strips secured thereto forming loops upon the under side, and a fly-tab secured to the lower end, said half-neckbands being secured together, substantially as and for the purpose set forth.

335,506. FISHING-FLY BOOK. THOMAS J. CONROY, New York, N. Y. Filed Aug. 26, 1885. (No model.)

Claim.—The combination, with the springs C and leaf A, having

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hooks B, of the metal couplings secured to the leaf by rivets *e*, and having each a flat plate, E, doubled over the edge of the leaf, and each end doubled upon itself to form a core, D, with projection *d*, as and for the purpose set forth.

335,507. COTTON-SCRAPER. RICHARD COOPER, Greenville, Tex. Filed Oct. 3, 1883. Renewed Nov. 11, 1885. (No model.)



Claim.—The combination of the scraper A and landside B, the former extending across and projecting forward of the latter, with beam-post C, having upturned curved end D and the angle-brace F, all constructed substantially as specified, for the purpose set forth.

335,508. SCHOOL DESK AND SEAT. JOSEPH F. COULTER, Burlington, Iowa. Filed Aug. 10, 1885. (No model.)



Claim.—1. In a school seat or desk, (or like article of furniture,) the combination, with the slats, of the metal rods for connecting said slats, said rods having barbs or projections on the surface thereof, substantially as described.

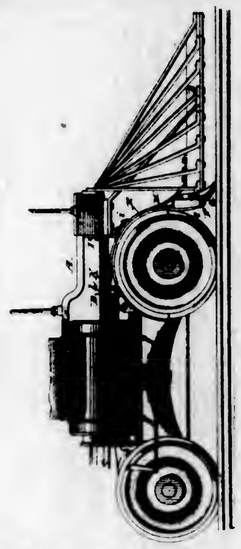
2. In a school seat or desk, (or like article of furniture,) the combination, with the slats, of the long pointed and headed barbed metallic rods for connecting said slats, substantially as described.

335,509. TRACK-CLEARER FOR LOCOMOTIVES. JOB A. CYPERT, Willow Springs, Mo., assignor of one-half to John Kelley, same place. Filed Nov. 12, 1885. (No model.)

Claim.—1. An improved track-clearing device for locomotives, consisting of a frame which is rigidly attached to the locomotive-frame above the truck-wheel, said frame having attached at its lower forward end a box for the reception of the upper end of a curved rubber block, in combination with such curved block, substantially as shown, and for the purpose set forth.

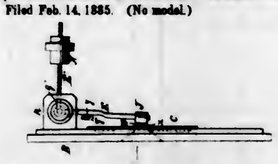
2. In combination with the frame of a locomotive, a track-clearing device adapted to be attached thereto, consisting of a curved bar, E, which extends over the tread of the truck-wheel, a bar, H, attached thereto and to the frame of the locomotive and pilot, braces I and K, and box F, carrying a forwardly-curved rubber block, substantially as shown, and for the purpose set forth.

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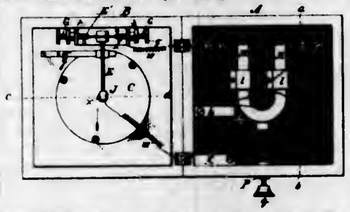
3. In combination with a locomotive, a frame consisting of the bars E, H, I, and K, the bar E having attached at its lower end a box, F, for the reception of a rubber block, so that said rubber block may be carried by the frame and will be at an angle with the track, so as to remove and throw small objects from the track to one side of the same, substantially as shown, and for the purpose set forth.

335,510. TELEPHONE-TRANSMITTER. NORTH DOWLING, Philadelphia, Pa. Filed Feb. 14, 1885. (No model.)



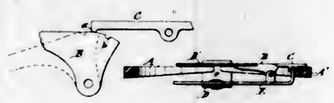
Claim.—The combination, in a telephonic transmitter, of the diaphragm, the platinum point, the pivoted carbon-bearing lever and its counterpoise, the spring *y*, and elastic rubber sleeve *y'*, substantially as and for the purpose specified.

335,511. TELEPHONE-TRANSMITTER. NORTH DOWLING, Philadelphia, Pa. Filed Feb. 14, 1885. (No model.)



Claim.—The combination, in a telephone-transmitter, of the diaphragm and platinum point, the carbon-bearing lever, and the armature-arm, the permanent sliding magnet and adjusting-screw, and the flat spring bearing against the carbon-bearing lever, the whole arranged as described, whereby the mechanism may be accurately adjusted, substantially as specified.

335,512. ANIMAL-TRAP. LEONARD F. DUNN, Community, N. Y. Filed Oct. 6, 1885. (No model.)



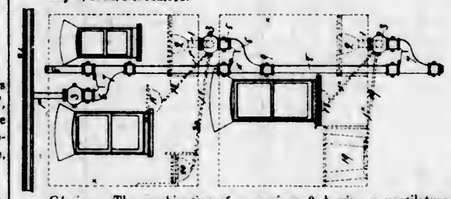
Claim.—1. In combination with the spring-actuated jaw A' and pivoted tripping-lever B, the latch C, pivoted between the set position of the jaw and pivot of the tripping-lever, and having one end extending across the top of said jaw and the opposite end bearing on the pivoted end of the lever B, and holding the same in its set position, substantially as set forth and shown.

2. In combination with the spring-actuated jaw A', the tripping-lever B, and latch C, having their engaging bearings curved in the shape of an arc described from the pivot of the tripping-lever, substantially as and for the purpose set forth.

3. In combination with the spring-actuated jaw A' and the pivoted tripping-lever B, the latch C, pivoted between the set position of the jaw and pivot of the lever B, and having one end extended across the top of the set-jaw and the opposite end extended over the pivoted end of the lever B, and provided with an elongated bearing on the same, all constructed and combined to permit of adjusting the action of the tripping-lever to different degrees of sensitiveness, substantially as set forth.

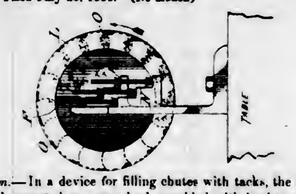
4. In combination with the spring-actuated jaw A' and the tripping-lever B, the latch C, pivoted between the set position of the jaw and pivot of the lever B, and having one end bearing on the jaw and the opposite end extended over the pivoted end of the tripping-lever B, and provided with an elongated bearing on the same, and with a guard-catch on said bearing to partially restrain the tripping of the lever B, substantially as set forth.

335,513. MEANS FOR CONNECTING WATER APPARATUS WITH SOIL-PIPES. THOMAS DURRANS, London, England. Filed June 10, 1884. (No model.) Patented in England Apr. 8, 1884, No. 6,127, and in France May 9, 1884, No. 162,013.



Claim.—The combination of a receiver, 3, having a ventilating-opening at its upper end and a discharge-outlet at its lower end, with sections of soil-pipe 8, and a union-casting, 7, containing a flap-valve, 10, and a direct fall, 9, into the soil-pipe without water seal or trap, substantially as described.

335,514. TACK FILLING MACHINE. MARTIN V. B. ETHRIDGE, Boston, Mass., assignor to the Ethridge Lasting Machine Company, Kittery, Me. Filed July 29, 1885. (No model.)



Claim.—In a device for filling chutes with tacks, the drum L, open at one end, mounted on a standard, provided with buckets O O, attached to its interior surface, and driven by a wheel, M, within which drum the chutes are placed upon a frame, N, the whole arranged and operating as shown and described.

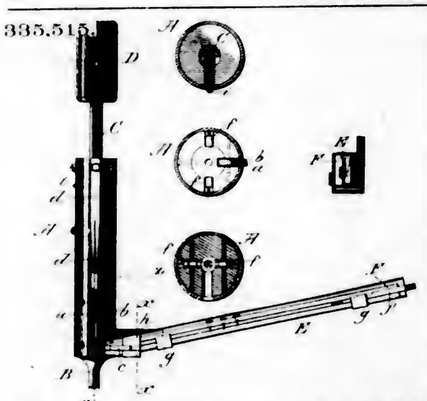
335,515. TACK-DRIVING MACHINE. MARTIN V. B. ETHRIDGE, Boston, Mass., assignor to the Ethridge Lasting Machine Company, Kittery, Me. Filed Nov. 20, 1885. (No model.)

Claim.—1. An automatic tack-driving machine consisting, essentially, of the slotted cylinder A, provided with upper head, G, and lower tapering head, B, the plunger C, cam-shaped disk I, levers *a b*, the chute-piece F, provided with spring *c*, and the levers *f f*, situated within the head B, all arranged and operating substantially in the manner shown and described.

2. In an automatic tack-driving machine, the lower head, B, consisting of an elongated portion containing guides *j k'* for the plunger C, and slots within which the levers *a b* operate, at right angles to which slots are other slots for the working of levers *f f* and springs bearing upon them, said head consisting also of a tapering tubular portion, substantially as shown and described.

3. In a hand tack-driving machine, the combination, with a cylinder, A, constructed substantially as described, of a frame, E, having projecting piece *m*, spring *c*, and guides *g g*, and adapted to receive a detachable sliding chute-piece, F, substantially in the manner shown and described.

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4. In a tack-driving machine, the cylinder A, slotted longitudinally to receive the levers *a b* and the pin *i*, and provided with perforated upper head, G, perforated and recessed interior head, H, and the lower head, B, perforated to receive the plunger, and slotted to receive the levers *a b* and also the levers *f f*, substantially as shown and described.

5. In a tack-driving machine, the combination of the cylinder A, having heads G, H, and B, and the plunger or piston C, carrying a weight, D, grooved at *e*, and provided with a cam-shaped disk I, substantially as and for the purpose shown and described.

6. In a hand tack-driving machine, the combination of the cylinder A, slotted longitudinally, the levers *a b*, pivoted in one of the slots, the piston C, guided by a pin, *i*, working in another slot, and provided with a cam-shaped disk, I, the bifurcated spring *d*, and the levers *f f*, substantially as and for the purposes shown and described.

7. In a tack-driving machine, the combination, with a cylinder, A, of the lever *a*, having a beveled lug at one end and a straight lug at the other, and the lever *b*, having a beveled lug at one end and a curved recess at the other, both of which levers are pivoted within a longitudinal slot of the said cylinder and adapted to be operated by means substantially as described, and in the manner shown and set forth.

8. In a tack-driving machine, the combination of the cylinder A, the frame E, attached thereto by a band, *h*, and provided with a spring-catch, *k*, and the detachable chute F, adapted to slide within the frame E and provided with a spring, *j*, substantially as shown and described.

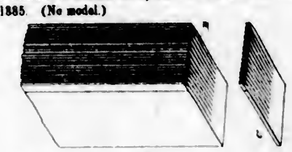
9. In a tack-driving machine, the combination of the cylinder A, lower head, B, having levers *f f* and springs bearing upon them, the plunger C, frame E, provided with projecting arm *m* and spring *e*, and the chute F, substantially as shown and described.

10. In a tack-driving machine, the combination of the cylinder A, heads G, H, and B, levers *a b*, bifurcated spring *d*, and plunger C, having pin *i* and cam I, substantially as shown and described.

11. In a tack-driving machine, the tack-supplying chute F, having an end slot, *l*, substantially as shown and described.

12. In a tack-driving machine, the combination, with means, substantially as described, for driving the tacks, of a chute, F, having an indentation, *l*, and a frame, E, inclosing said chute, and provided with a spring, *e*, which works within the said indentation or slot *l*, substantially as shown and described.

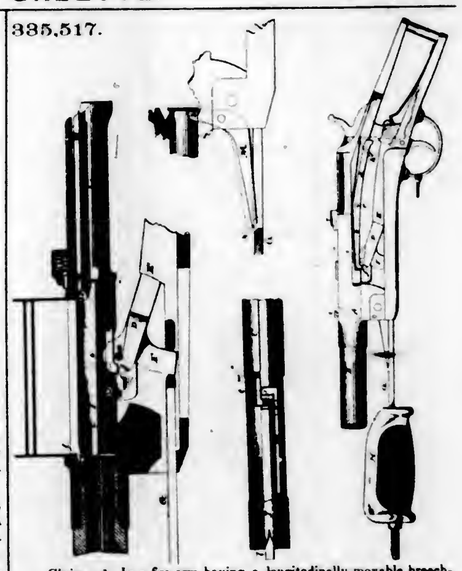
335,516. PROCESS OF MAKING MATCHES. GILFORD FLEWWELLING and GILBERT J. HARRIS, Hampton, New Brunswick, Canada. Filed Aug. 3, 1885. (No model.)



Claim.—The process of making match-cards, which consists in first forming the sides of the splints by grooving the sides of an elongated block of stock and partially slitting the end of the same in parallel lines by cutters projecting at right angles to the line of feed and operating in the direction of the grain, and, secondly, completing the match-card by splitting off the end portion or layer, which forms as it is thus split off a card of match-splints connected by the unslit portion, substantially as specified.

335,517. MAGAZINE FIRE-ARM. WILLIAM B. FRANKLIN and CARL J. EBBETS, Hartford, Conn., assignors to the Colts Patent Fire Arms Manufacturing Company, same place. Filed Aug. 31, 1885. (No model.)

335,517.



Claim.—1. In a fire-arm having a longitudinally-movable breech-piece and a hammer hung at the rear, adapted to strike the rear end of the firing-pin in the breech-piece, with a locking-brace hinged to the breech-piece, adapted to engage a shoulder in the receiver when the breech-piece is in its closed position, the combination therewith of a lever hung in the receiver forward of the hammer, arranged to swing in substantially a vertical plane, one arm of the lever extending toward the hammer, constructed to be moved into the path of the hammer when the hammer is in its cocked position, and so as to form a stop for the hammer in such cocked position, and mechanism between the breech-piece and said lever, substantially as described, whereby in the opening movement of the breech-piece the rear end of said lever is turned into the path of the hammer at full-cock, and so as to form a stop for the hammer at full-cock, and on the extreme forward movement said lever is turned from the path of and so as to release said hammer.

2. In a fire-arm having a longitudinally-movable breech-piece, a locking-brace hung near the forward end of the breech-piece, said locking-brace adapted to engage an abutment in the receiver when the breech-piece is in its closed position, and a longitudinally-sliding handle beneath the barrel in connection with said brace, whereby the brace may be engaged or disengaged and the longitudinal movement imparted to the breech-piece, with a hammer hung at the rear of the breech-piece, the combination therewith of a lever, *b d*, hung in the receiver forward of the hammer, and so as to swing in a vertical plane, the rear arm, *d*, constructed and arranged to be turned into or from the path of the hammer when the hammer is in the full-cocked position, the brace provided with a cam arranged to engage the forward arm of the lever, substantially as described, and whereby in the opening movement of the breech-piece the said rear arm will be turned upward into the path of the hammer at full-cock, and on the return of the breech-piece the locking movement of the brace will return said lever.

3. In a magazine fire-arm having a longitudinally-movable breech-piece, a locking-brace hinged to the breech-piece, and arranged to engage an abutment in the receiver when the breech-piece is in its closed position, and with a magazine arranged over the mouth of the receiver, from which cartridges may successively pass to a position forward of the front face of the breech-piece in its open position, the combination therewith of the shield I on the breech-piece, and adapted to move with the breech-piece, a latch, *m*, arranged to engage the shield with the breech-piece when the breech-piece is in its extreme closed position, the stud *r* in the receiver in the path of the said latch, arranged to disengage the latch from the shield before the breech-piece reaches its extreme open position, a second latch, *l*, hung in the receiver in the path of the stud *r* on the receiver, the said latch *l* constructed with a shoulder, *w*, adapted to engage the shield when the breech-piece is in its extreme rear position, and the cam 3 in the path of the said latch *l*, adapted to disengage the said latch from the shield after the breech-piece commences its forward movement, and a cam on the brace, arranged to throw the latch *m* into engagement with the shield when the breech-piece is in its extreme closed position, substantially as described.

4. In a magazine fire-arm having a longitudinally-movable breech-piece, a locking-brace hinged to the breech-piece and arranged to engage

an abutment in the receiver when the breech-piece is in its closed position, and with a magazine arranged over the mouth of the receiver, from which cartridges may successively pass to a position forward of the front face of the breech-piece in its open position, the combination therewith of a shield concavo-convex in transverse section, arranged upon the upper side of the breech-piece, and so as to be moved with the breech-piece, the said shield constructed to engage the walls of the receiver with greater friction than between the shield and the breech-piece, a latch, *m*, on the breech-piece, and a cam on the locking-brace arranged to engage the said latch with the shield in the extreme closed position of the breech-piece, a trip in the receiver in the path of movement of said latch, and arranged to disengage the latch from the shield as the breech-piece approaches its extreme rear position, and whereby the movement of the shield will be arrested before the movement of the breech-piece is completed, a second latch on the breech-piece arranged to engage the shield before the breech-piece commences its forward movement, and a cam in the receiver in the path of said second latch, arranged to disengage said second latch after the forward movement of the breech-piece and shield has commenced, substantially as and for the purpose described.

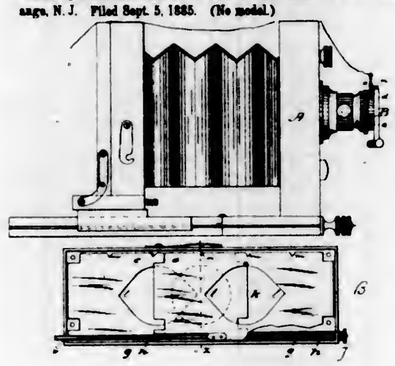
5. In a magazine fire-arm having a longitudinally-movable breech-piece, a locking-brace hinged to the breech-piece and arranged to engage an abutment in the receiver when the breech-piece is in its closed position, and with a magazine arranged over the mouth of the receiver, from which cartridges may successively pass to a position forward of the front face of the breech-piece in its open position, the combination therewith of a concavo-convex shield, I arranged on the breech-piece, and so as to move with it, the latches *m l* in the breech-piece, adapted to respectively engage or disengage the said shield, and mechanism, substantially such as described, for operating such latches, the face end of the shield constructed with a V-shaped notch, substantially as and for the purpose described.

6. In a fire-arm in which the breech-piece is arranged to move longitudinally backward and forward in opening and closing, and in which a handle is arranged forward of the receiver beneath the barrel, with a slide extending from said handle into connection with the operative mechanism of the breech-piece, whereby longitudinal movement of the handle will be imparted to the breech-piece, the combination therewith of a bell-crank lever hung in the forward end of the receiver, one arm extending up to a position forward of that occupied by the front face of the head of the cartridge in the barrel, the other arm extending forward into the path of an incline on the slide, substantially as described, and whereby in the first part of the rear movement of the slide the said lever will be turned to start the shell from its place in the barrel.

7. In a magazine fire-arm in which the magazine is arranged above the receiver, with its mouth opening into a recess in the top of the receiver, with a flange on each end of the magazine at its mouth adapted to engage corresponding undercut flanges at each end of the opening in the receiver, the said flanges on the magazine constructed each in the segment of a circle from a common center, the said center nearer one end than the other, and the undercut flanges on the receiver of corresponding segment shape from the same center, substantially as and for the purpose described.

8. In a magazine fire-arm in which the magazine is arranged upon the top of the receiver, and with its mouth opening into the receiver, the said magazine constructed with a flange at its forward and rear ends, combined with corresponding undercut flanges on the receiver, the rear flange of the magazine constructed with a notch, and a spring-bolt arranged on the receiver in rear of the magazine-opening adapted to engage said notch in the magazine, substantially as described.

335,518. SHUTTER FOR PHOTOGRAPHIC CAMERAS. SAMUEL W. GEERY, Newark, and FRANCIS W. JACKSON and CHARLES B. DAY, East Orange, N. J. Filed Sept. 5, 1885. (No model.)

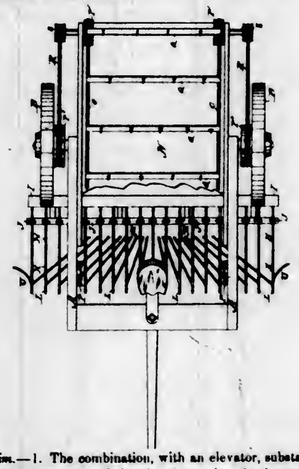


Claim.—1. The combination, in a camera, with the tube and lens, of a shutter-receptacle having a collar to engage said tube, and a perforation, *f*, to allow the transmission of the light-rays to the lens, and oppositely-sliding plates each provided at the outer end thereof with a draw-bar and spring, said plates being provided with an aperture with converging and diverging edges, substantially as and for the purposes set forth.

2. In combination, a plate-receptacle having the opposite end walls perforated, spring-actuated plates having draw-bars extending oppositely through the perforations in said opposite end walls, and stopping or holding devices to hold the said plates open or stationary against the action of the spring, substantially as set forth.

3. In combination, the shutter-receptacle having the perforations *f* and *i s*, the notched and oppositely-moving shutter-plates, each having therein apertures with angular opposite ends, draw rods or bars, and springs arranged on said rods and abutting against said plates and the end walls of said receptacles, and a pawl, all said parts being arranged and combined substantially as set forth.

335,519. HAY RAKE AND LOADER. EDWARD A. GERRARD, Columbus, Nebr., assignor to himself and Charles W. Zeigler, same place. Filed Sept. 11, 1884. (No model.)



Claim.—1. The combination, with an elevator, substantially as described, and a cross-beam below it, of a series of rake-teeth, each having a nearly horizontal portion and a branch extending upward and rearward therefrom, the said branches converging toward a common center, substantially as shown and described.

2. The combination, with an elevator, substantially as described, mounted on wheels, and having the slideway N and the cross-bar I, the former narrower than the latter and narrower than the space between the bind wheels, of the teeth H, extending forward parallel from their points of attachment to the bar I and converging to their field of delivery in the said slideway, as shown and described.

335,520. OIL-CAN. JOHN HESS and GOODMAND JENSEN, Newark, N. J. Filed Aug. 1, 1885. (No model.)



Claim.—1. As an improved article of manufacture, the oil-can herein shown and described, consisting, essentially, of a body, *a*, having its upper edge inwardly turned, as at *e*, below which is a bearing for a threaded diaphragm, *c*, the body metal above and below the said shoulder, and the metal of the inwardly-turned part being of one piece, a threaded diaphragm to receive the threaded spout, and said spout threaded to engage the diaphragm and having a cup-shaped cover, the convexed under side of which is presented to and engages the turned edge of the body metal bearing outwardly thereon, as set forth.

2. In combination with the body having a threaded diaphragm secured below the upper edge thereof to form a drip-receptacle, a spout having a concavo-convex or cup-shaped and perforated cover, the convexity on the under side of said cover entering the mouth of the said receptacle and bearing outwardly against the said body, as shown and described, for the purposes stated.

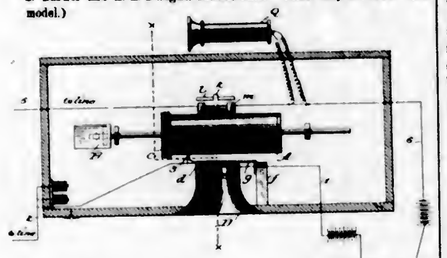
335,521. CAR-BRAKE. GEORGE T. HORTON, Winnipeg, Manitoba, Canada, assignor of one-half to G. D. Lockhart, same place. Filed Sept 23, 1885. (No model.)



Claim.—1. The combination, with the axle having pulleys thereon, of the springs approximately U shape in form, the brake-shoes secured to the inner sides of the springs to bear against opposite sides of the pulleys, said springs being connected to the truck at one end, and means for applying the brake-shoes connected with the other ends of the springs, substantially as set forth.

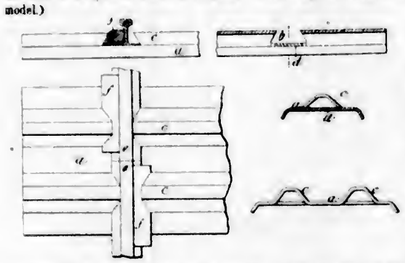
2. The combination, with the axles having the pulleys thereon, of the springs having the brake-shoes on their inner faces, and secured at one end of a sliding rod connected with the free ends of the springs, and a sleeve on the rod or shaft between the rear ends of the springs, as set forth.

335,522. TELEPHONY. JAMES HOULEHAN, Toledo, Ohio, assignor of one-half to William A. Bunton, Boston, Mass., and seven-sixteenths to J. S. Barker and E. E. Dwight, Toledo, Ohio. Filed May 27, 1885. (No model.)



Claim.—The cylinder of a phonograph, the mouth-piece, diaphragm *d*, carbon button *e*, and spring *g*, having the insulating-point, the spring and diaphragm being in telephone-circuit 1 and 2, and arranged on one side of the cylinder, in combination with the spring K, having a point bearing on the opposite side of the cylinder, and an armature, *l*, the electro-magnet *m*, the coil of which is in circuit of the receiving-telephone Q, and transmitter of the distant station, all substantially as described.

335,523. RAILWAY SLEEPER AND CHAIR. JAMES HOWARD and EDWARD T. BOUSFIELD, Bedford, England. Filed Aug. 12, 1885. (No model.)



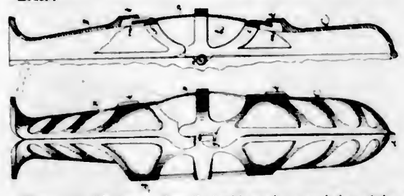
Claim.—1. A sleeper formed of a corrugated plate, strip, or sheet of metal with rail receptacles or chairs *b*, which have solid or undivided surfaces at *d*, level with the body of the sleeper, and extending across the same for the rails to rest upon, substantially as and for the purposes set forth.

2. A sleeper which in its tranverse section has a continuous plane or flat surface across the rail-seats, which are level with the body of the sleeper, the latter being corrugated in its intermediate and end portions, substantially as set forth.

3. A corrugated sleeper having solidly-formed or undivided seats or bottoms for the chairs, said seats being level with and extending across the body of the sleeper, and adapted to support and joint the rails, substantially as described.

4. A corrugated metal sleeper having rail chairs or receptacles provided with solid or undivided bottoms *d*, which, in adjacent corrugations at each end of the sleeper, are slightly out of alignment, in combination with a tightening key or wedge inserted in one chair on one side of the rail, and an adjacent key inserted on the opposite side, substantially as and for the purposes set forth.

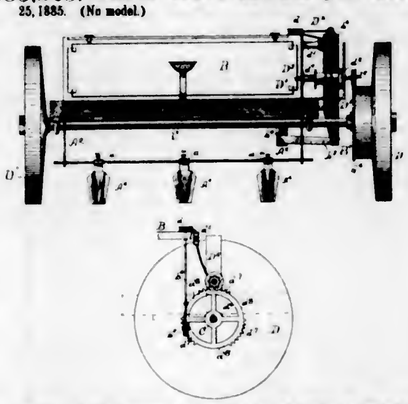
335,524. WHIP-SOCKET. GEORGE M. HUBBARD, New Haven, Conn., assignor to W. and E. T. Fitch, same place. Filed Nov. 9, 1885. (No model.)



Claim.—1. The herein-described whip-socket, consisting of the part A, forming one vertical half of the socket, and constructed with a notch, *a*, in each edge, and with a lug, *b*, on each side below the said notches, combined with the part B, forming the upper portion of the other half, constructed with trunnions *c*, set into the notches *a*, and the part C, forming the lower portion of said other half secured to the part A, and constructed with a hook, *g*, on each side, to engage the lugs *b*, its upper sides extended over the notches *a*, and the trunnions therein, and the spring D, arranged to bear the part B against the part A, but yield to allow the introduction of a whip, substantially as described.

2. In a whip-socket divided vertically, the parts adapted to swing the one from the other, said swinging part, constructed with a seat to receive the spring and with a bridge over said seat, combined with a spring, its working end resting on said seat and extending beneath said bridge, substantially as described.

335,525. PLANTER. ARTHUR J. JONES, Middleburg, Va. Filed Sept. 25, 1885. (No model.)



Claim.—1. In a planter, the combination of a slide, an angle-lever having one end connected with the slide, the box having the pulleys, the drum and shaft having the pinion, a mutilated gear, and a cable connecting the upper end of the angle-lever and the drum, substantially as described.

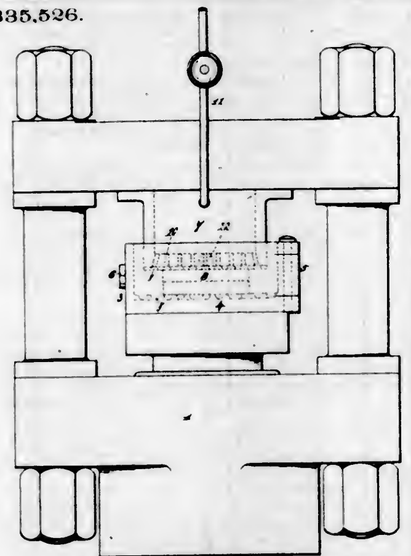
2. In a planter, the combination of a box having a seed-slide, the spring, and the pulleys, an angle-lever connected by one end with a pendent arm of the seed-slide, a drum and shaft having a pinion, a mutilated gear, and a cable connecting the one arm of the lever with the drum, substantially as described.

335,526. METHOD OF PRESSING AND MOLDING ARTICLES OF PLASTIC MATERIAL. EMIL KIPPER, Adams, Mass. Filed Sept. 4, 1883. (No model.)

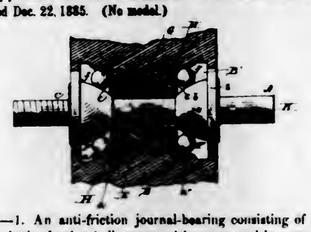
Claim.—1. The process herein described of manufacturing articles from pyroxyline and other plastic materials, which consists in first heating the material and the die outside of and apart from a press, then introducing the heated die into a press-box, then applying pressure, and finally introducing a body of water into the press-box into direct contact with the surfaces of the die or mold, substantially as described.

2. The process herein described of manufacturing articles from pyroxyline and other plastic compounds, which consists in first separately heating the material and a die outside of and apart from a press, then introducing such heated die and material into the press-box and applying pressure, and finally flowing a body of cooling-fluid through the press-box around and in direct contact with all the surfaces of the die, substantially as described.

335,526.



335,527. ANTI-FRICTION BEARING. WAYNE KRATHER, Allentown, Pa. Filed Dec. 22, 1885. (No model.)



Claim.—1. An anti-friction journal-bearing consisting of a fixed and revoluble device having balls arranged between and in contact with them, the points of contact being formed convex, as set forth.

2. In combination, the hub, its bushing having rounded ends, the shaft, and the balls, as and for the purpose set forth.

3. In combination, the hub, its bushing, the shaft having convex bearing-points, and the balls, as set forth.

4. In combination, the hub having inward-projecting convex or curved ribs *a''*, its bushing, the shaft, and the balls, as and for the purpose set forth.

5. In combination, the hub having inward-projecting convex or curved ribs *a''*, its bushing having curved ends, the balls, and the shaft having convex points of contact, as set forth.

6. In combination, the shaft having inward-projecting convex ribs, the bushing having curved ends, balls, the shaft having curved points of contact, and the sleeve or thimble, for the purpose set forth.

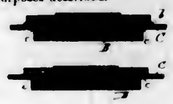
7. In combination, the shaft, its bushing, the balls, the shaft, and the thimble or sleeve having slitted ends, as and for the purpose set forth.

8. In combination with the stationary and movable parts and the balls of a ball-bearing, a ring of rubber or other similar material inserted and secured in position to be in contact with the balls, for the purpose set forth.

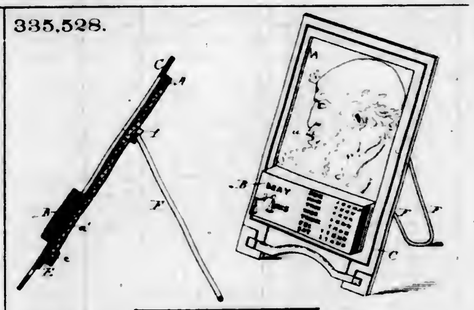
9. In combination, the hub, the bushing, the balls, the shaft, and the two nuts with bearing-surfaces, as and for the purpose set forth.

335,528. PLASTIC ARTICLE. JOHN G. LOW and HERBERT E. STREETER, Chelsea, Mass. Filed July 8, 1885. (No model.)

Claim.—An improved article of manufacture comprising a molded plastic sketch or design having a section, *a'*, adapted to bear or support blocks or stacks of slips or sheets of the character indicated, all substantially as and for the purposes described.

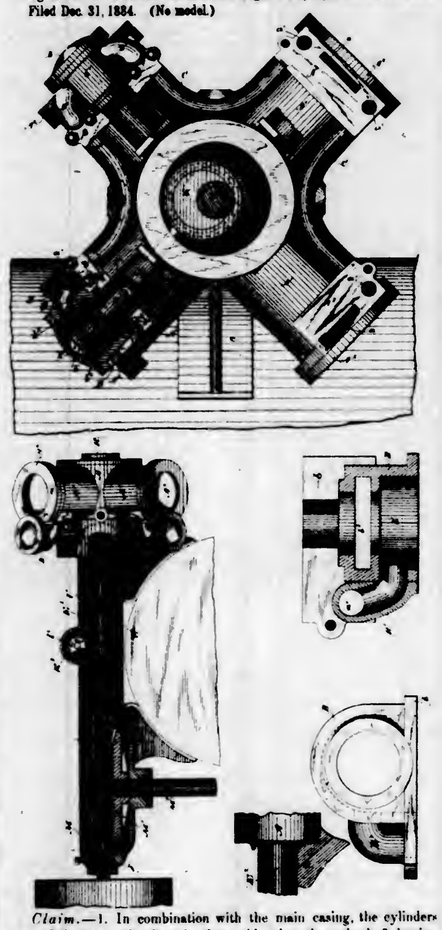


335,528.



335,529. WITHDRAWN.

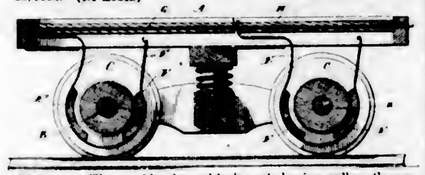
335,530. STEAM-ENGINE. MIRABEAU N. LYNN, Rising Sun, assignor to the American Electric Headlight Company, Indianapolis, Ind. Filed Dec. 31, 1884. (No model.)



Claim.—1. In combination with the main casing, the cylinders mounted thereon, and exhausting into said casing, the main shaft having bearings therein, and the reversing mechanism and driving-gears located in the supplemental casing applied to the main casing, and communicating therewith, as described, whereby all the working mechanism is protected and subjected to the lubricating action of the exhaust-steam and oil, substantially as described.

2. In combination with the main and supplemental casing connected and mounted upon the boiler, as described, the driving-shaft extending

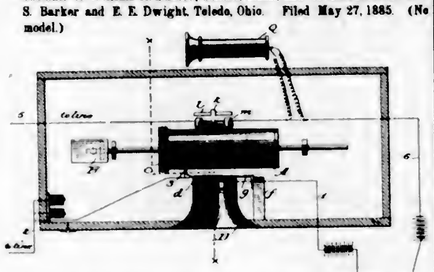
335,521. CAR-BRAKE. GEORGE T. HORTON, Winnipeg, Manitoba, Canada, assignor of one-half to G. D. Lockhart, same place. Filed Sept. 23, 1885. (No model.)



Claim.—1. The combination, with the axle having pulleys thereon, of the springs approximately U shape in form, the brake-shoes secured to the inner sides of the springs to bear against opposite sides of the pulleys, said springs being connected to the truck at one end, and means for applying the brake-shoes connected with the other ends of the springs, substantially as set forth.

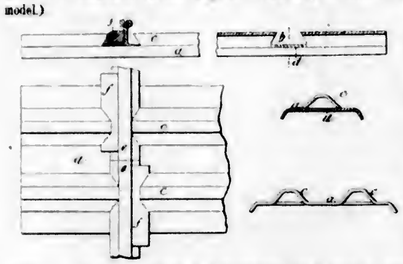
2. The combination, with the axles having the pulleys thereon, of the springs having the brake-shoes on their inner faces, and secured at one end of a sliding rod connected with the free ends of the springs, and a sleeve on the rod or shaft between the rear ends of the springs, as set forth.

335,522. TELEPHONY. JAMES HOULEHAN, Toledo, Ohio, assignor of one-half to William A. Barton, Boston, Mass., and seven-sixteenths to J. S. Barker and E. E. Dwight, Toledo, Ohio. Filed May 27, 1885. (No model.)



Claim.—The cylinder of a phonograph, the mouth-piece, diaphragm *d*, carbon button *e*, and spring *g*, having the insulating-point, the spring and diaphragm being in telephone-circuit 1 and 2, and arranged on one side of the cylinder, in combination with the spring K, having a point bearing on the opposite side of the cylinder, and an armature, *l*, the electro-magnet *m*, the coil of which is in circuit of the receiving-telephone Q, and transmitter of the distant station, all substantially as described.

335,523. RAILWAY SLEEPER AND CHAIR. JAMES HOWARD and EDWARD T. BOUSFIELD, Bedford, England. Filed Aug. 12, 1885. (No model.)



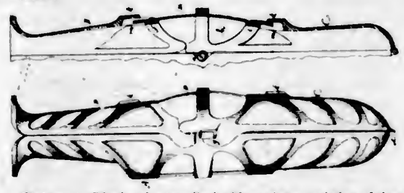
Claim.—1. A sleeper formed of a corrugated plate, strip, or sheet of metal with rail receptacles or chairs *b*, which have solid or undivided surfaces at *d*, level with the body of the sleeper, and extending across the same for the rails to rest upon, substantially as and for the purposes set forth.

2. A sleeper which in its tranverse section has a continuous plane or flat surface across the rail-seats, which are level with the body of the sleeper, the latter being corrugated in its intermediate and end portions, substantially as set forth.

3. A corrugated sleeper having solidly-formed or undivided seats or bottoms for the chairs, said seats being level with and extending across the body of the sleeper, and adapted to support and joint the rails, substantially as described.

4. A corrugated metal sleeper having rail chairs or receptacles provided with solid or undivided bottoms *d*, which, in adjacent corrugations at each end of the sleeper, are slightly out of alignment, in combination with a tightening key or wedge inserted in one chair on one side of the rail, and an adjacent key inserted on the opposite side, substantially as and for the purposes set forth.

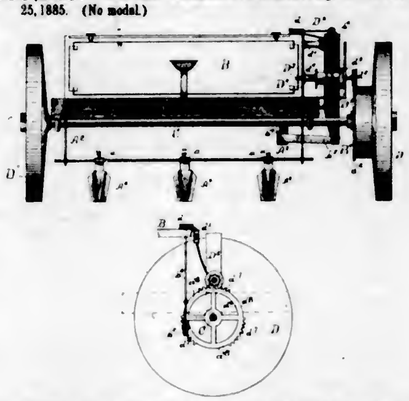
335,524. WHIP-SOCKET. GEORGE M. HUBBARD, New Haven, Conn., assignor to W. and E. T. Fitch, same place. Filed Nov. 9, 1885. (No model.)



Claim.—1. The herein-described whip-socket, consisting of the part A, forming one vertical half of the socket, and constructed with a notch, *a*, in each edge, and with a lug, *b*, on each side below the said notches, combined with the part B, forming the upper portion of the other half, constructed with trunnions *e*, set into the notches *a*, and the part C, forming the lower portion of said other half secured to the part A, and constructed with a hook, *g*, on each side, to engage the lugs *b*, its upper sides extended over the notches *a*, and the trunnions therein, and the spring D, arranged to bear the part B against the part A, but yield to allow the introduction of a whip, substantially as described.

2. In a whip-socket divided vertically, the parts adapted to swing the one from the other, said swinging part, constructed with a seat to receive the spring and with a bridge over said seat, combined with a spring, its working end resting on said seat and extending beneath said bridge, substantially as described.

335,525. PLANTER. ARTHUR J. JONES, Middleburg, Va. Filed Sept. 25, 1885. (No model.)



Claim.—1. In a planter, the combination of a slide, an angle-lever having one end connected with the slide, the box having the pulleys, the drum and shaft having the pinion, a mutilated gear, and a cable connecting the upper end of the angle-lever and the drum, substantially as described.

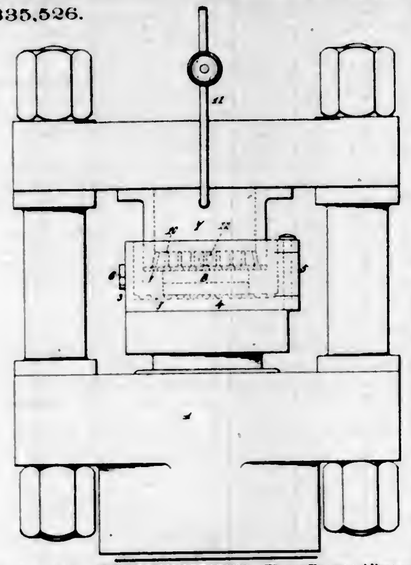
2. In a planter, the combination of a box having a seed-slide, the spring, and the pulleys, an angle-lever connected by one end with a pendent arm of the seed-slide, a drum and shaft having a pinion, a mutilated gear, and a cable connecting the one arm of the lever with the drum, substantially as described.

335,526. METHOD OF PRESSING AND MOLDING ARTICLES OF PLASTIC MATERIAL. EMIL KIPPER, Adams, Mass. Filed Sept. 4, 1883. (No model.)

Claim.—1. The process herein described of manufacturing articles from pyroxyline and other plastic materials, which consists in first heating the material and the die outside of and apart from a press, then introducing the heated die into a press-box, then applying pressure, and finally introducing a body of water into the press-box into direct contact with the surfaces of the die or mold, substantially as described.

2. The process herein described of manufacturing articles from pyroxyline and other plastic compounds, which consists in first separately heating the material and a die outside of and apart from a press, then introducing such heated die and material into the press-box and applying pressure, and finally flowing a body of cooling-fluid through the press-box around and in direct contact with all the surfaces of the die, substantially as described.

335,526.



335,527. ANTI-FRICTION BEARING. WAYNE KRATZER, Allentown, Pa. Filed Dec. 22, 1885. (No model.)



Claim.—1. An anti-friction journal-bearing consisting of a fixed and revoluble device having balls arranged between and in contact with them, the points of contact being formed convex, as set forth.

2. In combination, the hub, its bushing having rounded ends, the shaft, and the balls, as and for the purpose set forth.

3. In combination, the hub, its bushing, the shaft having convex bearing-points, and the balls, as set forth.

4. In combination, the hub having inward-projecting convex or curved ribs *a''*, its bushing, the shaft, and the balls, as and for the purpose set forth.

5. In combination, the hub having inward-projecting convex or curved ribs *a''*, its bushing having curved ends, the balls, and the shaft having convex points of contact, as set forth.

6. In combination, the shaft having inward-projecting convex ribs, the bushing having curved ends, balls, the shaft having curved points of contact, and the sleeve or thimble, for the purpose set forth.

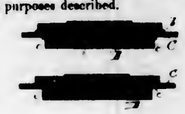
7. In combination, the shaft, its bushing, the balls, the shaft, and the thimble or sleeve having slitted ends, as and for the purpose set forth.

8. In combination with the stationary and movable parts and the balls of a ball-bearing, a ring of rubber or other similar material inserted and secured in position to be in contact with the balls, for the purpose set forth.

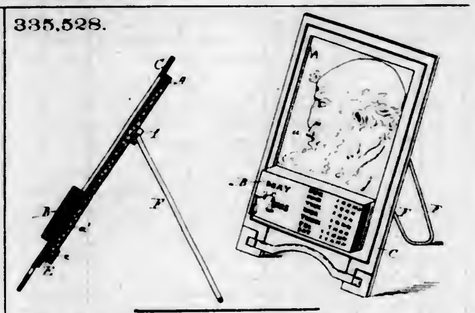
9. In combination, the hub, the bushing, the balls, the shaft, and the two nuts with bearing-surfaces, as and for the purpose set forth.

335,528. PLASTIC ARTICLE. JOHN G. LOW and HERBERT E. STRENT, Chelsea, Mass. Filed July 8, 1885. (No model.)

Claim.—An improved article of manufacture comprising a molded plastic sketch or design having a section, *a'*, adapted to bear or support blocks or stacks of slips or sheets of the character indicated, all substantially as and for the purposes described.

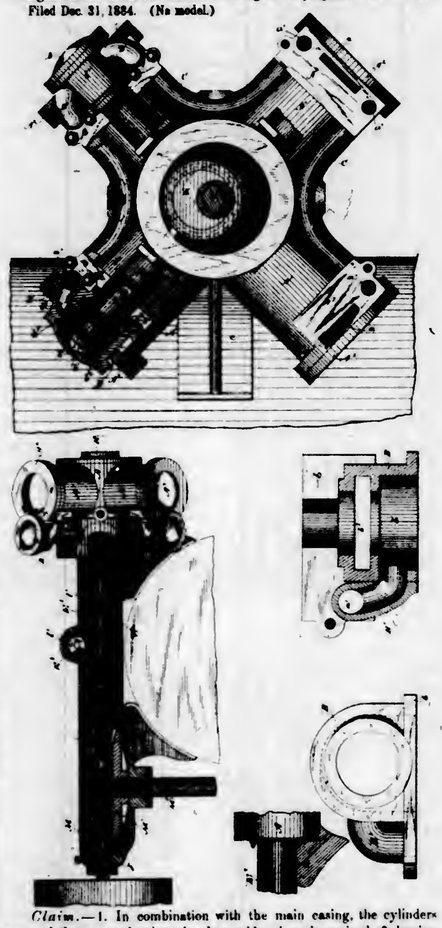


335,528.



335,529. WITHDRAWN.

335,530. STEAM-ENGINE. MIRABEAU N. LYNN, Rising Sun, assignor to the American Electric Headlight Company, Indianapolis, Ind. Filed Dec. 31, 1884. (No model.)



Claim.—1. In combination with the main casing, the cylinders mounted thereon, and exhausting into said casing, the main shaft having bearings therein, and the reversing mechanism and driving-gears located in the supplemental casing applied to the main casing, and communicating therewith, as described, whereby all the working mechanism is protected and subjected to the lubricating action of the exhaust-steam and oil, substantially as described.

2. In combination with the main and supplemental casing connected and mounted upon the boiler, as described, the driving-shaft extending

through said casing and supported in bearings therein, the crank-pitman and cylinders located at one end, and the driving-gear at the opposite end and within the said casing, substantially as and for the purpose set forth.

3. In combination with the main shaft, the crank located at one end, and the driving-gears at the other, the eccentric and shifting mechanism located intermediate the crank and driving-gear, and the casing inclosing the shaft and the operating mechanism, substantially as described.

4. In a direct-acting steam-engine, a frame for the actuating mechanism, consisting, essentially, of a main casing, to which are applied the piston and valve cylinders, as described, and provided with bearings for the main shaft, and the supplemental casing applied to and forming an extension of the main casing, said supplemental casing being provided with bearings for the main shaft and counter-shaft, substantially as and for the purpose set forth.

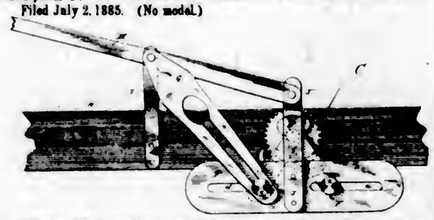
5. In a direct-acting steam-engine, the main frame having the main casing carrying the piston and valve cylinders, and adapted to inclose the crank on the driving-shaft, and the supplemental casing applied to the end and forming a continuation of the main casing, said supplemental casing being adapted to receive the devices for shifting the eccentric, and both of said casings with bearings to support the shaft, and a flange or bracket, *e*, for application to the boiler, substantially as described.

6. The combination, in a direct-acting steam-engine, of the main casing carrying the radial piston and valve cylinders, the supplemental casing applied to and forming an extension of the main casing, a driving-shaft extending through both of said casings and supported in bearings therein, devices, such as described, mounted upon the driving-shaft, for reversing the valve-eccentric, and located within the supplemental casing, and a crank to which the pistons are connected, located within the main casing, substantially as described.

7. In a direct-acting steam-engine, the combination, with the main casing carrying the radial piston and valve cylinders, and the supplemental casing applied to and forming an extension of the main casing, of the crank-shaft extending through both of said casings, and carrying the adjustable valve-eccentric, said shaft having its bearings in the ends or heads of the two casings, with a third bearing intermediate the crank and valve eccentric, substantially as described.

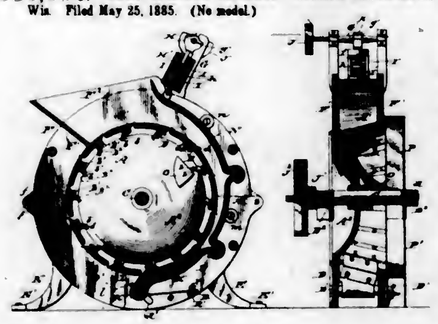
8. In a direct-acting steam-engine wherein the operating parts are inclosed, the combination of the main and supplemental casings, the piston and valve cylinders applied to the main casing, the main shaft extending through both casings, the crank and valve-eccentric applied to the said shaft at one end and within the main casing, the driving-gear applied to the opposite end, and within the supplemental casing, and the valve-adjusting mechanism applied intermediate the said crank and gear, substantially as described.

335,531. **MECHANICAL MOVEMENT.** FRANCIS M NIXON, Lena, Ill. Filed July 2, 1885. (No model.)



Claim.—The combination of a frame, a shaft having bearing in the same, a ratchet-wheel, two levers carrying pawls, a slotted plate connected to the levers, a guide for the plate, a connecting-bar, and an actuating-lever, all substantially as and for the purpose set forth.

335,532. **BARK-SHAVING MACHINE.** BENEDICT OTT, La Crosse, Wis. Filed May 25, 1885. (No model.)



Claim.—1. The combination of the cylindrical rim having knives, and the revolving carrier operating within said rim and consisting of a base-plate adapted to support the material being cut, a shaft, and wings secured at their inner edges to and extended outwardly from said shaft, and having their outer edges arranged to move close to the edges of the knives, substantially as set forth.

2. The combination of the rim having cutters, and the carrier arranged within said rim and comprising a shaft and wings G, secured at one end to and extended outwardly from said shaft and curved rearwardly toward their outer ends with reference to the line of motion, substantially as set forth.

3. The combination, with the framing, the carrier, and the cutting mechanism, of the case-sections pivotally supported at one end, whereby their other ends may be moved outward, and provided at such movable ends with latches, substantially as set forth.

4. The combination of the rim having knives C, the carrier having wings G, and breakers G', projected from said wings, and the spider having depending breakers D', substantially as set forth.

5. The combination, with the rim having cutters C, and the carrier having wings G, of the case-sections H H', pivotally supported at one end, whereby their outer ends may be moved outward, and provided at said movable ends with latches, whereby they may be secured in normal position, substantially as set forth.

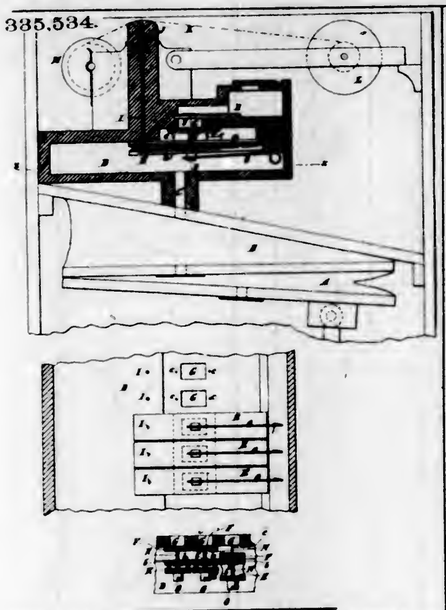
335,533. **BARK-SHAVING MACHINE.** BENEDICT OTT, La Crosse, Wis. Filed May 25, 1885. (No model.)



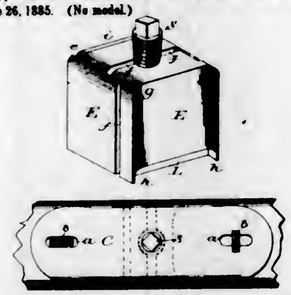
335,534. **MECHANICAL MUSICAL INSTRUMENT.** ROBERT W PAIN, New York, N. Y., assignor, by mesne assignments, to the Mechanical Organette Company, same place. Filed Apr. 30, 1885. (No model.)

Claim.—In a musical instrument, the combination of valves for controlling the speaking of sound-producing devices, pneumatic motors having air-vents lined with metal, and metal pins extending through the air-vents from inside the motors to the valves, substantially as specified.

335,534.



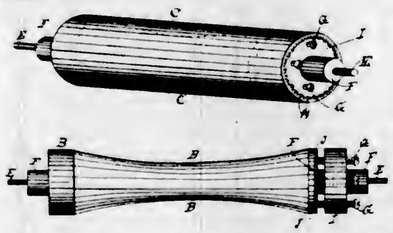
335,535. **TIRE-TIGHTENER.** JAMES H. PLOCK, Waresville, Tex. Filed June 26, 1885. (No model.)



Claim.—1. The tire-tightener consisting of the parts E, having flanges overlapping the ends of the fellies, the tapering screw-threaded plug S, for separating the parts E, and the fender L.

2. The combination of the tire-tightener consisting of the parts E, and the tapering screw S, with the cover C, formed with slots *a*, for the passage of the button-screws *b*.

335,536. **TILE-MACHINE TABLE.** JOSEPH M. POWELL, Tipton, assignor to Parnella H. Young, Kokomo, Ind. Filed Sept. 7, 1885. (No model.)



Claim.—1. In a tile-table for tile-mills, the concaved rollers B, covered with cloth C, adjustably secured to the said rollers, as and for the purpose set forth.

2. In a tile-table for tile-mills, the roller B, having pins E, in combination with cloth C, movable head I, screws G, and plate J, all for the purpose set forth.

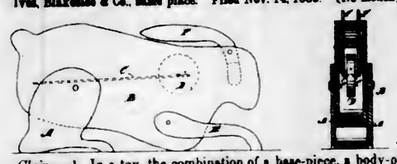
335,537. **PLOW.** JOHN H. PUTNAM, Daingerfield, Tex. Filed Nov. 6, 1885. (No model.)



Claim.—1. The combination, with the plow-beam, of two similar oppositely-diverging bars, the rear portion of each of which is doubled back upon itself, the end of the fold forming a standard, to which a shovel is adjustably secured, a standard secured at the front end of each doubled portion and secured between it and the bar, said standard being shorter than the rear standard, and having a scraper or gopher-blade secured thereto, and a suitable adjusting device and handles secured to said bars, as shown and described.

2. The combination, with a plow-beam, of two side bars, the rear portion of each of which is folded back upon itself, forming a standard, a shorter standard, a handle the front end of which and the end of the doubled portion are secured to the said bar by means of a single bolt, and the downturned end of one-half of the adjusting device and a brace for said handle being secured by a single bolt at another place, as shown and described.

335,538. **TOY.** CHARLES F. RITCHEL, Bridgeport, Conn., assignor to Ives, Blakeslee & Co., same place. Filed Nov. 14, 1885. (No model.)



Claim.—1. In a toy, the combination of a base-piece, a body-piece pivotally connected to the base-piece, and a weight adapted to travel along the body-piece and rock the same, substantially as specified.

2. In a toy, the combination of a base-piece, a body-piece pivotally connected to the base-piece and provided with a track, and a roller adapted to travel along the track and rock the body-piece, substantially as specified.

3. In a toy, the combination of a base-piece, a body-piece pivotally connected to the base-piece, a weight adapted to travel along the body-piece and rock the same, and movable parts pivotally connected to and supported by the body-piece, substantially as specified.

335,539. **SOAP-HOLDER.** ARTHUR E. ROBINSON, St. Paul, Minn. Filed Oct. 21, 1885. (No model.)

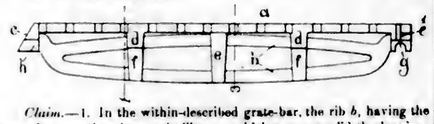


Claim.—1. A soap-holder consisting of a perforated receptacle composed of pliable material and provided with an elastic suspensory attachment, substantially as described.

2. A soap-holder consisting of a pliable receptacle provided with perforations, and having a suspensory attachment adapted to close the mouth of said receptacle and serve as a means of suspending the same above a wash-bowl, substantially as described.

3. In a soap-holder, the combination of a perforated receptacle, A, provided with flaps *a b*, having button-holes *c d*, and the elastic tube or cord B, passed through said button-holes and having a fastening, *e*, at one end and a loop or ring, *f*, at the other end, substantially as described.

335,540. GRATE-BAR. LEONARD ROLL, Wilkes-Barre, Pa. Filed Nov. 19, 1885. (No model.)

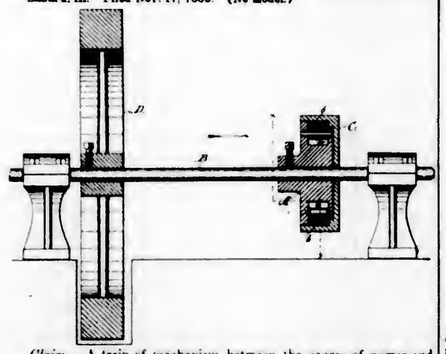


Claim.—1. In the within-described grate-bar, the rib *b*, having the form of an annular elongated ellipse to which are cast solid the bearing-heads *g* and *h*, as described.

2. In the within-described grate-bar, the brackets *f* and *e* to form struts in the rib *b*, and supports for the top plate, *a*, in combination with the rib *b* and bearing-heads *g* and *h*, as described.

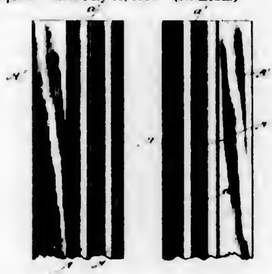
3. In the within-described grate-bar, the combination, with a top plate, *a*, of a rib, *b*, bearing-heads *g* and *h*, and brackets *f* and lugs *d*, substantially as described.

335,541. POWER AND SPEED REGULATOR. CHRISTIAN ROWLAND, Lanark, Ill. Filed Nov. 17, 1885. (No model.)



Claim.—A train of mechanism between the source of power and point of utilization, consisting of a shaft, B, a driving-wheel, C, loose on the shaft, a clutch-hub fixed rigidly on the shaft and connected to the drive-wheel by ratchet and pawls, and a fly-wheel rigidly fixed on the shaft between the clutch and the point of utilization of the power, substantially as described.

335,542. MODE OF FASTENING BED BOTTOMS. WILLIAM S. SEYMOUR, Kenosha, Wis., assignor to the Northwestern Wire Mattress Company, same place. Filed July 13, 1885. (No model.)



Claim.—1. In coiled-wire bed-bottoms, the combination of the end rails provided with grooves and beveled edges, the battens having corresponding grooves and beveled edges, and ridges fitting said grooves, as set forth.

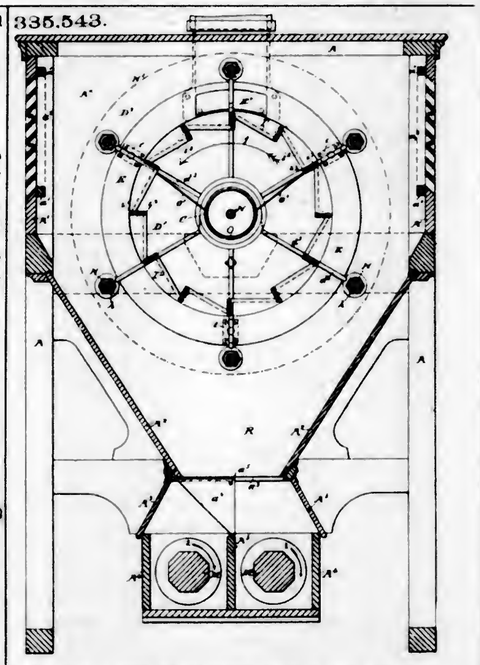
2. In wire bed-bottoms, the combination of the end rails, A', having grooves and beveled edges, battens A'', having corresponding grooves and beveled edges, and rods *a''*, all so constructed that when the battens and end rails are united spaces *a'* will be formed, as and for the purpose set forth.

335,543. FLOUR-BOLT. GEORGE T. SMITH, Jackson, Mich. Filed May 22, 1884. (No model.)

Claim.—1. In a flour-bolt, the combination of the outer reel, the inner reel rotating in the same direction, a feeding mechanism adapted to deliver flour to the space between the reels, and a conveyer for withdrawing from the inner reel the material which has passed through its bolting-surface, substantially as set forth.

2. In a flour-bolt, the combination of the outer reel provided with a head having a central circular rotating section, an outer circular rotating section, and an intermediate stationary section, an elevating-reel mounted within the rotating reel and rotating in the same direction, and a feeding mechanism which delivers the material through the stationary section to the space between the outer bolting-surface and the elevating-reel, substantially as set forth.

335,543.



3. In a flour-bolt, the combination of the outer reel provided with a head having a central circular rotating section, an outer circular rotating section, and an intermediate stationary section, an inner elevating-reel supported at one end upon the central circular rotating section of the reel-head, and a feeder which is connected with the stationary section of the reel-head and delivers material into the space between the outer bolting-surface and the elevating-reel, substantially as set forth.

4. In a flour-bolt, the combination of the outer reel provided with a head having a central circular rotating section, an outer circular rotating section, and an intermediate stationary section, an inner elevating and bolting reel supported at one end upon the central circular rotating section of the reel-head, a conveyer mounted within the inner elevating and bolting reel and adapted to deliver material therefrom, and a feeding mechanism which delivers material into the space between the outer bolting-surface and the elevating and bolting reel, substantially as set forth.

5. In a flour-bolt, the combination of an outer reel, a central sleeve, a circular section attached to and rotating with the sleeve, an outer circular rotating section on which is mounted the outer bolting-surface, an intermediate stationary section, and an inner elevating-reel supported at one end upon the circular central rotating section, substantially as set forth.

6. In a flour-bolt, the combination of the outer reel, an inner reel, a feeding mechanism adapted to deliver material into the space between the two reels, and a conveyer which withdraws the material which has sifted into the interior of the inner reel, the head at the tail end of the inner reel being arranged at some distance from the head of the outer reel and connected thereto by interposed supports, substantially as set forth.

7. In a flour-bolt, the combination of the outer reel, an inner reel, a feeding mechanism adapted to deliver material to the space between the two said reels, and a conveyer mounted within the inner reel and extending beyond the end of the outer reel and adapted to deliver the material which has sifted into the interior of the inner reel, substantially as set forth.

8. In a flour-bolt, the combination of the outer reel, an inner reel, a feeding mechanism adapted to deliver material into the space between the two reels, a conveyer which delivers out of the inner reel the material which has sifted into it, and a conveyer-trough having its opposite edges situated in close proximity to the bolting-cloth on opposite sides of the inner reel, substantially as set forth.

9. In a flour-bolt, the combination of the outer reel, an inner reel, a feeding mechanism adapted to deliver material into the space between the two reels, a conveyer which delivers out of the inner reel the material which is sifted thereinto, and a conveyer-trough having its opposite edges situated in close proximity to the bolting-surface on the opposite sides of the inner reel above the axis thereof, substantially as and for the purposes set forth.

10. In a flour-bolt, the combination of a central supporting hollow trunnion, an outer reel supported upon said trunnion, an inner reel also supported upon said trunnion, and a conveyer which withdraws the material from said inner reel, said conveyer being mounted in said trunnion, substantially as set forth.

11. In a flour-bolt, the combination of an outer reel, an inner reel, a centrally-arranged hollow trunnion upon which both are mounted at the discharging end of the bolt, a delivery-spout at the end of said trunnion, and a conveyer mounted within the inner bolt which withdraws material therefrom and delivers it through said trunnion to the delivery-spout, substantially as set forth.

12. In a flour-bolt, the combination of an outer reel, an inner reel, feeding mechanism which delivers material into the space between them, hollow trunnions which support them at each end, and a conveyer mounted within the inner reel and which delivers material therefrom, it being supported at its opposite ends in said trunnions, substantially as set forth.

13. In a flour-bolt, the combination of an outer reel, an inner reel, feeding mechanism which delivers material into the space between them, a conveyer mounted within said inner reel and adapted to deliver material therefrom, a conveyer-trough consisting of the wing portions O' O' and the central circular portion, O, in which works the conveyer, and a central trunnion, said trunnion forming a continuation of the conveyer-trough, substantially as set forth.

14. In a flour-bolt, a bolting-reel having at its receiving end a reel-head consisting of a central circular rotating section, an outer rotating section, and an intermediate stationary section, in combination with strips i^2 i^2, attached to the circular rotating section, and a concentric series of cloth-bars, each attached at one end to the central rotating section to support the cloth, substantially as set forth.

15. In a flour-bolt, the combination, with the outer bolting-surface and the inner reel, of a reel-head at the receiving end of the bolt which closes the annular space between the outer bolting-surface and the inner reel, and a feeder which delivers the material to be bolted through the reel-head into said annular space, substantially as set forth.

16. In a flour-bolt, the combination, with the outer bolting-surface and the inner reel, of a trunnion at the receiving end, and a reel-head formed in three concentric sections, the outer and inner of which rotate, and the intermediate one is stationary, said reel-head being connected directly to the outer bolting-surface and to the inner reel at the receiving end of the bolt, substantially as set forth.

17. In a flour-bolt, the combination, with the inner reel, of an outer reel having at its receiving end a head formed in three sections, of which the outer and inner sections rotate, the intermediate section being stationary and provided with a feed-opening through which material may be delivered to the upper surface of the inner reel, substantially as set forth.

18. In a flour-bolt, the combination, with the outer reel, of the inner reel having its surface formed on planes which intersect each other to form re-entering angles, whereby there are formed elevating-buckets, substantially as set forth.

19. In a flour-bolt, the combination, with the outer bolting-surface and the reel-head at the receiving end of the reel, of the inner reel attached at one end to the said reel-head, and the flange to which is attached the outer bolting-surface at the tail end of the reel, the spokes projecting inward from the flange, the head I of the inner reel, and the standards which connect the said reel-head with the spokes, substantially as set forth.

20. In a flour-bolt, the combination, with the outer bolting-surface, and the reel-head at the receiving end of the reel having a stationary ring provided with a feed-opening in its upper part, of the inner reel attached at one end to the reel-head between the stationary ring and the axis of the reel, and the support *e'*, connecting the stationary ring with the casing A^x, substantially as set forth.

21. In a flour-bolt, the combination of the outer reel and the inner elevating and bolting reel rotating in the same direction, and provided with buckets which catch the material elevated by the upward-moving part of the outer reel and deliver it to the opposite side thereof, substantially as set forth.

22. In a flour-bolt, the combination of the outer reel, the inner elevating and bolting reel having its outer surface formed on planes which intersect each other to form re-entering angles, whereby are formed elevating-buckets, and a feeding mechanism which delivers material into the space between the bolting-cloths, substantially as set forth.

23. In a flour-bolt, the combination of the outer reel, the inner elevating and bolting reel having its surface formed on intersecting planes which are arranged alternately on planes substantially radial to the axis of the bolt and on planes substantially tangential to the axis of the bolt, and a feeding mechanism which delivers material into the space between the bolting-cloths, substantially as set forth.

24. In a flour-bolt, a reel-head having a central sleeve, radial arms projecting therefrom, a ring or circular flange at the ends of the arms, a deflector having a flaring flange mounted at the inner side of the radial arms, and a deflector having a flaring flange and mounted upon the reel-head outside of the radial arms, substantially as set forth.

25. In a flour-bolt, the combination, with the reel-head at the tail end of the reel, of the gears G^2 J', and the deflector Q Q', projecting beyond the reel-head and adapted to prevent offal from falling upon the gears, substantially as set forth.

26. In a flour-bolt, the combination, with the inner elevating reel, of the outer bolting-reel provided at its tail end with a reel-head having an outer flange and inward-projecting spokes, whereby there is formed a peripheral tailings-discharge having a diameter greater than the diameter of the inner reel, substantially as set forth.

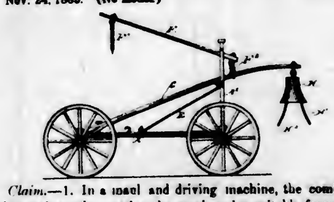
27. In a flour-bolt, the combination, with the inner elevating-reel, of the outer bolting-reel provided at its tail end with a reel-head having an outer flange and inward-projecting spokes, and having both the bolting-cloth and the inner reel attached thereto, and having also a peripheral tailings-discharge of greater diameter than the inner reel, substantially as set forth.

28. In a flour-bolt, the combination, with the outer bolting-reel having a spoked reel-head at its tail end, of an inner elevating-reel which is shorter than the outer bolting-reel, and brackets connecting the inner reel with the spokes of the reel-head, substantially as set forth.

29. In a flour-bolt, the combination, with the outer bolting-reel having a spoked reel-head at its tail end, of an inner elevating-reel which is shorter than the outer-reel and is attached to the spoked reel-head, and a flange projecting inward from the spoked reel-head and adapted to receive the tailings and direct them between the spokes, substantially as set forth.

30. In a flour-bolt, the combination of the outer bolting-reel having at its tail end a reel-head provided with spokes and a hollow trunnion, the inner elevating-reel, a stationary sleeve supporting the hollow trunnion at the tail end of the bolt, a toothed rim on the tail-end reel-head inside the casing, the shaft J and pinion J' inside the casing, and the belt-pulley K outside the casing, substantially as set forth.

335,544. MAUL AND FENCE-POST DRIVER. HARMAN H. SMITH, Navarre, assignor of one-half to David P. Parks, Bolivar, Ohio. Filed Nov. 24, 1885. (No model.)

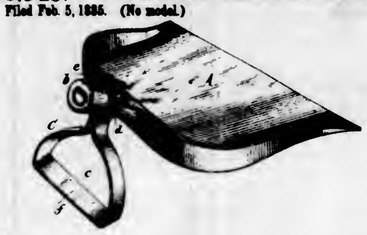


Claim.—1. In a maul and driving machine, the combination of a maul, a spring-pole carrying the maul, and a suitable frame or running-gear supporting the spring-pole, substantially as described and shown.

2. The combination of the frame or running-gear, the spring-pole supported on and carried thereby, the maul secured upon the free end of the spring-pole, and the shifting-lever, substantially as and for the purposes set forth.

3. The herein-described maul, consisting of a running-gear having a frame erected at its rear end and suitably braced, a spring-pole supported on and carried by the running-gear and projecting through the frame at the rear end thereof, a maul secured upon the free end of the spring-pole, and a shifting-lever having its end connected with the spring-pole and carried by a collar mounted on a cross-rod of the frame erected at the end of the running-gear, substantially as specified.

335,545. DUST-PAN HOLDER. WALTER W. SQUIER, Buffalo, N. Y. Filed Feb. 5, 1885. (No model.)



Claim.—1. A dust-pan holder composed of a stirrup in which the foot is inserted, and clamping-jaws which embrace the handle of the dust-pan, substantially as set forth.

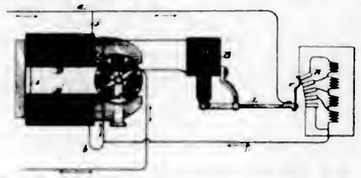
2. A dust-pan holder composed of a stirrup, *c*, having its bottom *f* inclined or raised forwardly, and clamping-jaws *d d*, extending upwardly from the stirrup, substantially as set forth.

3. The combination, with a dust-pan, A, having a handle, *b*, of a stirrup, *c*, provided with clamping-jaws *d d*, which embrace the handle *b* of the pan, substantially as set forth.

335,546. LUBRICATING COMPOUND. COLUMBUS E. THOMPSON, Baltimore, Md. Filed Oct. 28, 1885. (No specimens.)

Claim.—As a lubricant, the combination of tallow, castor-oil, and plumbago or graphite, in substantially the proportions herein named.

335,547. ELECTRIC MOTOR. ELIHU THOMSON, Lynn, Mass. Filed Jan. 15, 1885. (No model.)



Claim.—1. The combination, with an electric motor, of a field-magnet-energizing coil in circuit with the armature, a variable resistance in a branch around said coil and controlling the flow of current in said coil, and an automatic controlling mechanism operated or controlled by variations in the speed of rotation of the motor for setting or adjusting said resistance, as and for the purpose described.

2. The combination, with an electric motor, of a field-magnet-charging coil, a variable resistance in a branch around the same, and a mechanism controlled by variations in the speed of rotation of the motor for controlling the set or adjustment of the resistance, so as to gradually and directly vary the magnetic field in which the armature revolves in accordance with changes in the load of the motor when operated upon a constant current line.

3. The combination, with an electric motor on a circuit conveying current from any suitable source, of a variable resistance in a branch around a field-magnet coil, and an electro-magnet responsive to changes in the counter electro-motive force of the armature as determined by variation of load or speed for setting or controlling the adjustment of said variable resistance.

4. The combination, with an electric motor having its armature and field coils arranged in series, of a variable resistance in a derived circuit around the field only, and a controlling electro-magnet in a derived circuit around the armature only, substantially as shown and described.

335,548. SWITCH OR TURN-OFF FOR ELECTRIC CIRCUITS. ELIHU THOMSON, Lynn, Mass. Filed Mar. 5, 1885. (No model.)



Claim.—1. The combination, in an electric switch, of two bent wires, A A^2, bent as described to have a circuit-closing portion, *a*, and secured at their ends in a suitable support, and an intermediate reciprocating block or piece of metal mounted on a spindle, F, as and for the purpose described.

2. The combination, with the springs A A^2, bent to form two sides or legs and a loop or connecting portion, *a*, of a circuit-closing block, B, having depressions at its sides to receive the portions *a* of the springs.

3. The combination, in an electric switch, of two circuit-closing springs having a bias toward one another, and an intermediate reciprocating contact-piece having a rounded or inclined surface upon its end and depressions in its sides, as and for the purpose described.

4. The combination of two spring-wires, A A^2, of different heights, with the intermediate reciprocating block, B, as and for the purpose described.

5. The combination, with the pipe or conduit having perforated plug or stopper D in its side, of a reciprocating rod or spindle provided with a contact-making enlargement and fitted into and guided by the perforation in said stopper, and the two bent spring-wires A A^2, secured to the plug or stopper and having a bias toward one another in a direction transverse to the line in which the rod reciprocates, as and for the purpose described.

6. In an electric switch, the combination, with the two circuit-closing springs of different heights having a bias toward one another, of a reciprocating circuit-closing piece located between the springs and movable on a line transverse to the line joining said springs.

7. The combination, with a section of pipe or conduit for electric conductors, of an electric switch having its operative and wire-connecting portions all mounted on one side of said section, and an opening over said switch, and the wire-connecting devices on the opposite side of the conduit from that in which the said devices are mounted, so as to permit access for attaching the electric conductors in the pipe without disturbing any portion of the switch.

8. The combination, with a section of conduits for electric conductors having extensions *m m*, of a reciprocating switch-spindle, F, transverse to the axis of the conduit and mounted in a plug or stopper, D, and a plug or stopper, H, in the opposite side of the conduit provided with a guide opening or cavity for the end of the spindle.

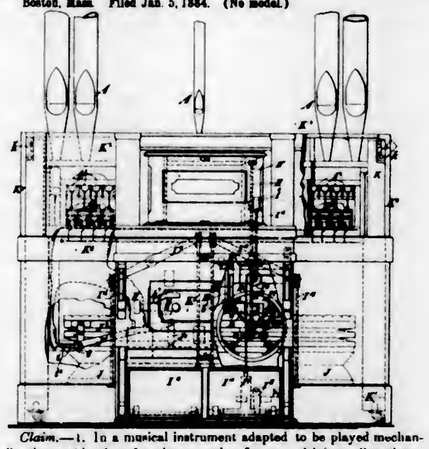
9. An electric switch having two sets of circuit closing and breaking surfaces or electrodes connected in series and arranged as described to make contact one set before the other.

10. In an electric switch, the combination, with two circuit-closing springs arranged side by side, of an intermediate reciprocating connecting-piece moving on a line transverse to the line joining said springs and making contact with one spring before it makes connection with the other.

11. A section of conduit for electric conductors having transverse extensions or enlargements *m m*, as described, in combination with an electric switch for the circuit of said conduit mounted in a removable end piece or cover for one extension *m*, and a removable cover for the other extension *m*, whereby access may be had to the switch for making connection thereto.

12. The combination, with an electric conduit having transverse extensions or enlargements *m m*, of a reciprocating switch for the circuit of said conduit mounted on a plug or cover for one extension *m*, and guiding devices for the switch carried by the cover or plug for the opposite extension.

335,549. MECHANICAL MUSICAL INSTRUMENT. JAS. E. TREAT, Boston, Mass. Filed Jan. 5, 1884. (No model.)



Claim.—1. In a musical instrument adapted to be played mechanically, the combination of readers or spring-fingers, a driving-roller whereby a traveling music-sheet will be moved past the ends of the readers or spring-fingers, a pressure-roller and levers whereby the readers or spring-fingers will be forced forward and the pressure-roller moved toward the driving-roller, substantially as specified.

2. In a musical instrument adapted to be played mechanically, the combination of a comb, readers or spring-fingers secured in place so that they will not normally protrude through the comb, and a presser-bar whereby they may be made to protrude through the comb, substantially as specified.

3. In a mechanical musical instrument adapted to be played mechanically, the combination of readers or fingers automatically movable in one direction, a presser-bar for moving them in the other direction, a traveling music-sheet controlling the movements of the said readers or fingers, and a driving-roller whereby a traveling music-sheet will be moved past them, substantially as specified.

4. The combination of the readers or spring-fingers D, the comb F, the bar G, and the adjustable standard G′, substantially as specified.

5. The combination of the readers or spring-fingers D, the comb F, the bar G, the adjustable standard G′, the levers G^7, and the rods G^6, substantially as specified.

6. The combination of the arms G^3, the roller G^2, the rods G^6, and the levers G^7, substantially as specified.

7. The combination of the readers or spring-fingers D, the bar G, the adjustable standard G′, the arms G^3, the rollers G^2, the rods G^6, and the levers G^7, substantially as specified.

8. The combination of a comb, F, whereby readers or spring-fingers D are maintained in their proper relative positions, and rails G^{10}, connected to the same support as the said comb, and serving to guide a traveling music sheet, card, or tablet, whereby the readers or spring-fingers are controlled, substantially as specified.

9. In a musical instrument, the combination of the roller G^2, provided with a worm-gear, G^{11}, of a removable shaft, H, provided with a worm, H′, and the shaft H^3, substantially as specified.

10. In a musical instrument, the combination of a shaft, H, means for driving the same, a shaft, H, and a connection between these shafts, whereby the former will impart rotary motion to the latter when moved in one direction only, substantially as specified.

11. In a musical instrument, the combination of a shaft, H, a shaft, H^4, bevel-wheels H^2 and H^4, and a connection between the shaft H^3 and its bevel-wheel H^4, whereby this shaft will impart motion to its bevel-wheel when moved in one direction only, and whereby its bevel-wheel may be rotated without imparting motion to it, substantially as specified.

12. The combination of a pedal, I^{16}, for operating bellows, a lever, I^9, whereby a traveling music sheet, card, or tablet may be propelled, and a button, I^{11}, substantially as specified.

13. The combination of a pedal, I^{16}, for operating bellows, a lever, I^9, whereby a traveling music sheet, card, or tablet may be propelled, a button, I^{11}, and stops I^{17}, substantially as specified.

14. In a musical instrument, the combination of a pedal, a lever or rocking beam for imparting motion to bellows, a block fitted to said beam, a pin passing transversely through the beam and block, and a strap having a loop surrounding the block and securing the pin in place, substantially as specified.

15. In a musical instrument, the combination of a pedal, a lever or rocking beam for imparting motion to bellows, a block fitted to said beam, a pin passing transversely through the beam and block, and a strap having hinged to it a loop, which surrounds the block and secures the pin in place, substantially as specified.

16. In a musical instrument adapted to be played mechanically, the combination of a rotary shaft, a clutch upon said shaft adapted when rotating in one direction to impart motion to the shaft and to run free of the shaft when rotating in the other direction, a spring-motor connected with said clutch and serving to rotate the clutch in such direction that the latter will impart motion to the shaft, and a lever for intermittently operating the spring-motor to store up power therein, substantially as specified.

17. In a musical instrument, the combination of a driving-shaft, I, a clutch-wheel, I^2, adapted when moved in one direction to impart motion to the driving-shaft and to move free of the shaft in the reverse direction, a lever, I^9, a strap, I^8, connecting the lever I^9 to the clutch-wheel I^2, a spring-barrel, I, and a strap, I^6, connecting the spring-barrel with the clutch-wheel, substantially as specified.

18. In a musical instrument, the combination, with the shaft I^5 of the spring-barrel I^4, of the worm-wheel I^{18} on the shaft I^5, and the shaft I^3, provided with the worm *f*, substantially as specified.

19. In a musical instrument, the combination, with the spring-barrel I^4 and the shaft I^5, whereby the shaft of the spring-barrel may be turned to vary the force of the spring in the spring-barrel, of the tape-measure I^{20} and a case, I^{19}, containing a spring-actuated roller, to which the tape-measure is attached, substantially as specified.

20. In a musical instrument, the combination of a shaft whereby the propulsion of the traveling music sheet, card, or tablet will be effected, a brake-block provided with a hole flaring from the middle toward each end and fitting said shaft, a lever for operating said brake-block in one direction to grip said shaft and retard its motion, and a drawer-pull for actuating the lever, substantially as specified.

21. In a musical instrument, the combination of the shaft H^3, whereby the propulsion of the traveling music sheet, card, or tablet will be effected, the brake-block L, provided with the leg L′, the fixed block L^2, the slotted hanger L^3, receiving the brake-block, the lever L^4, provided with a pin extending into the brake-block, the spring *l*, extending from the brake-block, and upon which one end of the lever L^4 bears, and the drawer-pull L^5, substantially as specified.

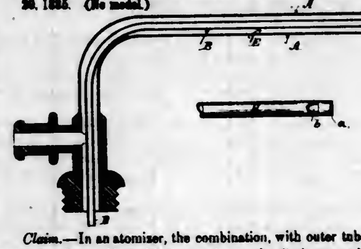
22. In a mechanical musical instrument, the combination, with electric circuit-wires, of contact plates or pieces *i i*′, an extensible and contractible reservoir, and a rod or projection for separating the said contact plates or pieces when the reservoir is collapsed, substantially as specified.

23. In the case of a musical instrument, the combination of the corner posts, K, the front panels, K^9, the pins and latches *k k*′, and the side panels, K^8, substantially as specified.

24. The combination, with the key-board section K^5, of a hinged cover, the rail k^9, the plates k^{11}, and the pins k^{10}, substantially as specified.

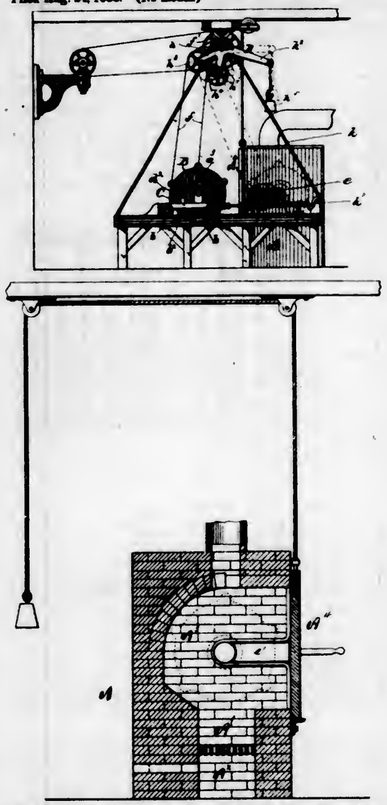
25. The combination, with the key-board section of a musical instrument, of a reader-box secured thereto so that it can be moved forward and a detachable shaft extending into the reader-box, substantially as specified.

335,550. ATOMIZER. WILLIAM A. TURNER, Providence, R. I., assignor to the Hillard Manufacturing Company, same place. Filed July 20, 1885. (No model.)



Claim.—In an atomizer, the combination, with outer tube, A, of the inner tube, B, provided with the cut *b* near the discharge end, said tubes being united at their ends, substantially as described.

335,551. TEMPERING-MACHINE. JOHN F. WEBSTER, Springfield, Ohio, assignor to the Champion Bar and Knife Company, same place. Filed Aug. 24, 1885. (No model.)



Claim.—1. The combination, with a heating-chamber, of a case or holder mounted on a traveling carriage, said case being adapted to be revolved on said carriage and be moved into and out of said chamber as stated, substantially as and for the purpose set forth.

2. The combination, with the heating-chamber and the traveling carriage, of a revolving case or holder mounted on said carriage and partly filled with sand or other suitable material, said case being adapted to be drawn into or out of said chamber and be revolved therein, substantially as specified.

3. The combination, with the furnace having a heating-chamber therein, of the revolving case or holder mounted upon a traveling carriage and adapted to be moved into and revolved within said chamber, a door in said chamber, and a central opening in said case, said opening being adapted to come opposite said door when the holder is in the said chamber, substantially as set forth.

4. The combination, with a revolving holder mounted upon a traveling carriage, of a removable cover for said holder, provided with an opening therein at or near the center of rotation of said case, substantially as set forth.

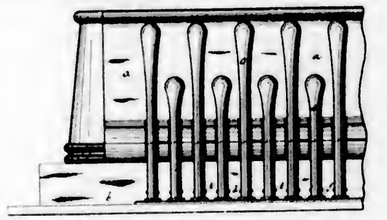
5. The combination, with a heating-furnace, of a revolving holder mounted upon a traveling carriage, by which it is adapted to be run into or out of said furnace during the operation of heating, and means for revolving said holder in any position of the said carriage, substantially as specified.

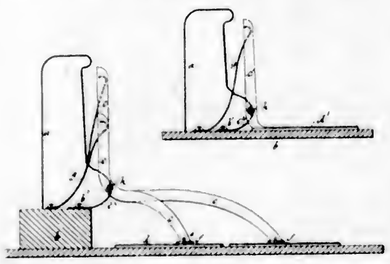
6. The combination, with the furnace and revolving holder, of a traveling carriage for supporting said holder, mechanism on said carriage for revolving said holder, a belt adapted to connect the said mechanism with a counter-shaft, and a tightener device for said belt, substantially as specified.

7. The combination, with a traveling carriage, of a shaft journaled thereon, a case or holder secured on the end of said shaft and provided with a central opening therein, a counter-shaft over said carriage, and means for transmitting motion from said shaft to the holder, whereby the holder may be revolved in any position of the said carriage, substantially as set forth.

8. The combination of a furnace having a heating-chamber therein, said chamber being provided at the front with a door, *o*, and at the rear end with a slotted opening, *e*, a carriage adapted to run on suitable tracks behind said furnace, a revolving shaft journaled on said carriage and at one end extended out beyond the frame of said carriage, a case or holder secured on the extended end of said shaft and provided with a removable cover having an opening therein concentric with the said shaft, said holder being adapted to enter the chamber of the furnace, thus bringing the central opening in the cover thereof opposite the door *o* and the holder-supporting shaft into the slotted opening *e*, a sliding door for closing said chamber around said holder, and a movable stop for closing said opening around said shaft, substantially as specified.

335,552. ACCORDION. FRIEDRICH WITTSTADT, Würzburg, Bavaria, Germany. Filed May 28, 1884. (No model.)



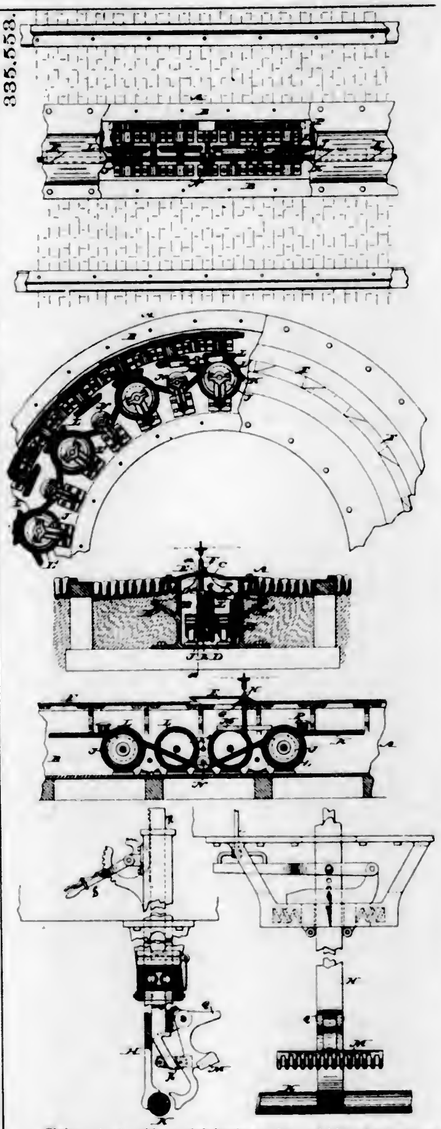


Claim.—1. An accordion or other similar instrument having a sheet-metal key-board provided with suitable vertical openings to receive the keys and at its lower portion with outwardly-projecting knee-shaped portions, a series of keys and key-valves, also formed of sheet metal, said keys being pivotally connected to the knee-shaped portions of the key-board, and a series of springs connected at their lower ends to the lid of the instrument and at their upper ends rest against the rear faces of the keys, substantially as set forth.

2. In an accordion or similar musical instrument, the combination with the lid and a key-board having knee-shaped projections, of sheet-metal keys of semicircular shape in cross-section and a series of springs connected at their lower ends to the lid of the instrument and at their upper ends resting within the inner recessed face of the keys, substantially as shown.

335,553. CABLE-CONDUIT. WILLIAM A. WRIGHT, Centreton, N. J., assignor of one-half to J. McC. Creighton and R. K. Jamison, both of Philadelphia, Pa. Filed July 7, 1885. (No model.)

335,553.



Claim.—1. A cable-conduit having a slot, and hinged doors having diagonal ends closing the same, substantially as and for the purpose set forth.

2. A cable-conduit having a slot, and hinged doors having diagonal ends, in combination with a grip provided with a shoe, substantially as and for the purpose set forth.

3. In a cable-conduit, the bevel gear-wheel L and pulleys, in combination with cable K and grip H, having rack M, substantially as and for the purpose set forth.

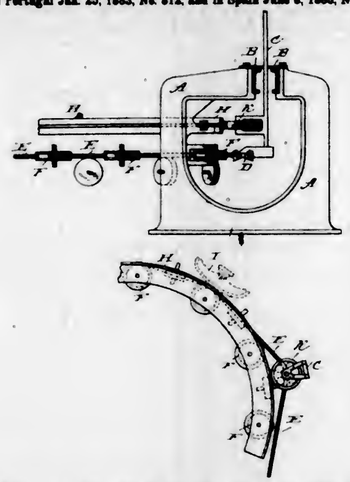
4. The pulleys J and bevel gear-wheel L, in combination with cable K, pulley N, grip H, having a pivoted jaw carrying rack M, substantially as and for the purpose set forth.

5. In a cable-conduit, an inner horizontal arm, P, in combination with grip H, having a pivoted jaw, the latter having a projection, Q, and rack M, substantially as and for the purpose set forth.

6. The grip H, having a movable jaw with a slotted attachment, and a slide in said grip having a rack operated by a lever, the said slide being provided with an inclined portion working in the said slotted attachment and adapted to operate the said movable jaw, substantially as and for the purpose set forth.

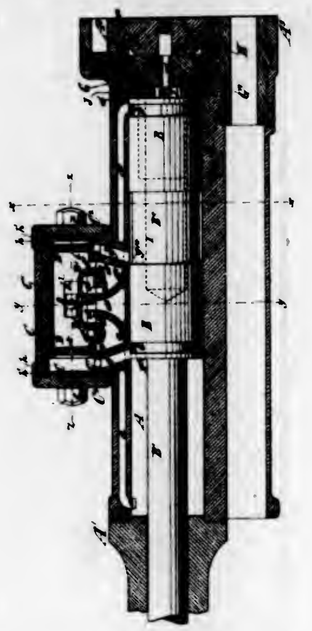
REISSUES.

10,681. TRAMWAY FOR CURVES AND CABLE-GRIPS. ANDREW S. HALLIDIE, San Francisco, Cal. Filed Jan. 7, 1886. Original No. 330,976, dated Nov. 24, 1885. Patented in England Dec. 13, 1879, No. 5,107; in Victoria July 10, 1880, No. 2,863; in New South Wales Oct. 19, 1880, No. 880; in Queensland Nov. 12, 1880, No. 323; in New Zealand Nov. 19, 1880; in Belgium Dec. 5, 1882, No. 59,750; in Italy Dec. 27, 1882, No. 14,903; in Portugal Jan. 25, 1883, No. 812, and in Spain June 8, 1883, No. 4,979.

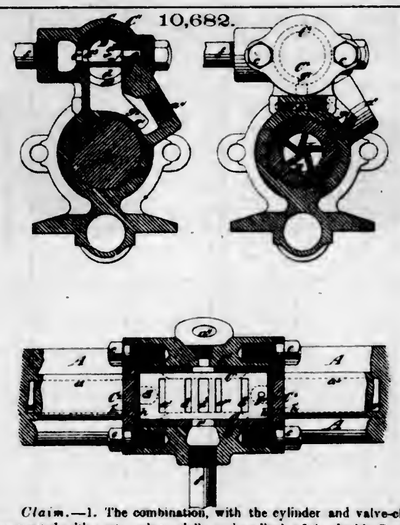


Claim.—In a cable railway, the main curve of the track and slot, in combination with the guide-rail beneath and the cable-carrying sheaves for carrying the cable around the curves, and a grip, as set forth.

10,682. STEAM-ACTUATED VALVE. HENRY C. SERGEANT, New York, N. Y. Filed Dec. 12, 1885. Original No. 330,068, dated Nov. 10, 1885.



10,682.



Claim.—1. The combination, with the cylinder and valve-chest, constructed with ports, substantially as described, of the double D-valve working as a piston within the chest, and having its two exhaust coves or cavities open on the under side of the valve only, and the main piston having a circumferential groove, whereby the ends of the valve-chest are alternately opened to the exhaust, substantially as herein described.

2. The combination, with the cylinder and valve-chest, constructed with ports, substantially as described, of the double D-valve and hollow auxiliary piston, having a supply-slot in its side, through which the motive fluid enters its interior, and the main piston having a circumferential groove, whereby the ends of the valve-chest are alternately opened to the exhaust, substantially as herein set forth.

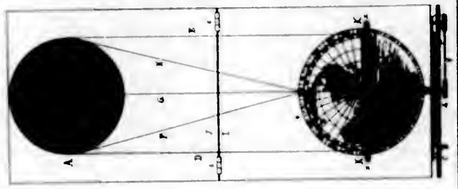
3. In a direct-acting engine, the combination, with a main cylinder and an auxiliary cylinder, constructed with ports and passages, substantially as herein described, and the auxiliary cylinder having a supply-opening between its ends, of a main piston, whereby the ends of the auxiliary cylinder will alternately be placed in communication with the main exhaust, and the auxiliary piston and main valve comprised in a single hollow structure having a slot in its side, which registers with the supply-opening in the auxiliary cylinder, and through which motive fluid is admitted into the interior of the auxiliary piston and main valve, and having apertures in its ends, through which the motive fluid may pass from the interior of the auxiliary piston and main valve into the opposite ends of the auxiliary cylinder, in order to move the valve when the pressure upon either end of the auxiliary piston is relieved, substantially as herein set forth.

4. In a direct-acting engine, the combination, with a main cylinder and an auxiliary cylinder, constructed with ports and passages, substantially as described, of a lining or bushing fitted to the auxiliary cylinder, and having formed in it ports which correspond with those of the cylinder, a reciprocating main piston serving to place the ends of the auxiliary cylinder alternately in communication with the main exhaust, and an auxiliary piston and main valve consisting of a hollow structure, to the interior of which motive-fluid is admitted, and in the ends of which are holes or apertures for the passage of motive fluid to the ends of the auxiliary cylinder, for the purpose of moving the auxiliary piston and main valve, substantially as set forth.

5. In a direct-acting engine, the combination, with a main cylinder and auxiliary cylinder, constructed with ports and passages, substantially as herein described, and a lining having a supply-slot in its side, of a main piston, B, and an auxiliary piston and main valve, D D, forming a single hollow structure, in the side of which is an opening or slot, d^3, through which motive fluid enters its interior, and in the ends of which are openings ^{a} through which motive fluid passes into the ends of the auxiliary cylinder, substantially as herein set forth.

6. The combination, with the main and auxiliary cylinders A C, constructed with supply and exhaust ports and passages, as described, of the passages $g\ g^a$, leading direct from the ends of the auxiliary cylinder C to the main cylinder, and passages $g'\ g'^a$, leading to the exhaust, and arranged in the same planes transversely to the cylinder as the passages $g\ g^a$, the main piston having a portion of reduced diameter, B^a, and the auxiliary piston and main valve D D′ forming a single hollow structure, provided with exhaust coves or cavities d, and with ports d', and having in its side a supply-slot, d^3, for motive fluid, and in its ends holes or apertures ^{a}, substantially as herein set forth.

10,683. **EDUCATIONAL DEVICE FOR THE ILLUSTRATION OF LONGITUDE AND TIME.** DANIEL C. YOUNG, Hanover, Kans. Filed Jan. 6, 1886. Original No. 328,629, dated Oct. 20, 1885.



Claim.—1. An instrument for the illustration of the longitude of places on the earth's surface, and the comparative time-tables for all parts thereof, consisting of a rotatable disk representing a hemisphere, either northern or southern, having around it the representation in numerals of the hours and minutes of the day, and a diagram of the sun with the lines of sunrise, meridian, and sunset rays delineated thereon, substantially as and for the purpose described.

2. An instrument for the illustration of longitude and comparative time of places on the earth's surface, consisting of a reversible rotatable disk having the opposite hemispheres delineated on opposite sides and having an hour-dial and a diagram of the sun, said devices relatively arranged and coacting substantially as and for the purposes specified.

3. An educational device composed of folding leaves, one leaf provided with a diagram to represent the sun and the other with a rotatable disk to represent the earth, substantially as and for the purposes specified.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

SUPREME COURT OF THE UNITED STATES.

FIELD, Appellant, v. DE COMEAU *et al.*

Decided January 4, 1886.

1. Letters Patent No. 155,077, granted to J. F. Field, September 15, 1874, for improvements in glove-fastenings, does not cover, broadly, the use of springs to close the wrists of gloves, but only his style of spring.
2. The patent is for a spring shaped to hold together the parts of the wrist of the glove, and is not infringed by a device consisting of two stiff arms with a spring on one operating on the cam-shaped end of the other to hold them tight when closed a certain distance.
3. Decision of United States Circuit Court, Southern District of New York, in *Field* v. *De Comeau et al.* (17 O. G., 568) affirmed.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

Mr. E. N. Eliot for the appellant.

Mr. Justice MATTHEWS delivered the opinion of the Court.

The appellant, who was complainant below, filed his bill in equity to restrain an alleged infringement by the appellees of Letters Patent No. 155,077, for an improvement in glove-fastenings issued to him September 15, 1874. The bill was dismissed at the hearing on the ground that the defendants had not infringed.

The material part of the specification forming part of the letters patent is as follows:

The drawings referred to are annexed.

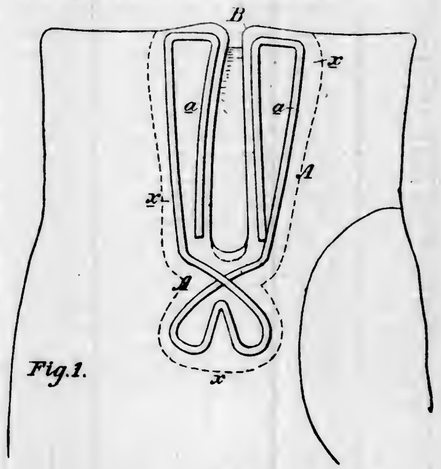


Fig. 1.

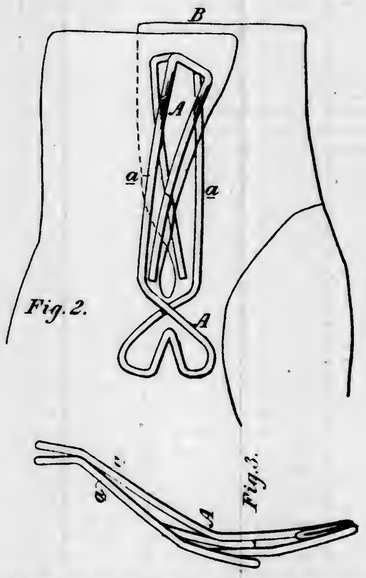


Fig. 2.

Fig. 3.

The object of my invention is to cause a glove to fit closely to the hand and wrist of the wearer without the use of buttons or other fastenings; and I attain this object by extending a spring, A, entirely around the split portion B of the glove, in the manner plainly shown in Figure 1 of the accompanying drawing, so that when released the ends *a a* of the said spring shall overlap, as shown in Fig. 2, and thus close the glove upon the wrist.

The spring is entirely concealed within the material of the glove, and may be secured to the latter in any suitable manner; but I prefer to simply stitch it in place, as indicated by the dotted lines *x* in Fig. 1.

The spring may also be variously shaped; but I prefer to construct it of a single piece of wire, bent to the form shown, as I have ascertained, by experiment, that a spring of this form is most suitable for the purpose, while it possesses the further advantage of presenting no sharp or abrupt ends, which would be apt to force their way through the material of the glove.

The edge view, Fig. 3, shows the method of bending the spring to conform to the shape of the hand of the wearer of the glove.

I am aware that springs have been combined with the wristlets of gloves; but they have always extended entirely around the latter, thus rendering it impossible to fold the glove, which was consequently clumsy and inconvenient to carry in the pocket. This objection, it will be evident, is entirely overcome by my invention.

I claim—

The combination, substantially as described, of a spring, A, with the split portion B of a glove, for the purpose specified.

Judge Wheeler, holding the circuit court, in deciding the case, stated the grounds of his action in dis-

missing the bill in an opinion contained in the transcript, as follows:

The orator has a patent, No. 155,077, dated September 15, 1874, for an improvement in glove-fastenings, consisting of the combination of a spring inserted in the material of the glove, and extending around the edges of the slit, which permits drawing the wrist of the glove over the hand, and adjusted so as to spring open by the insertion of the hand and to close automatically and overlap itself, and cause the edges of the slit to overlap each other when the glove is on. The defendants deny infringement. They make and sell for use springs for gloves to be inserted into the material, and with arms extending along each edge of the slit, jointed at the apex, working together, like the blade and handle of a jack-knife. The only question is whether the use of such springs is an infringement. The plaintiff stated in the specification of his patent that springs had been combined before with the wrists of gloves, but of a different form. So his patent is not, and could not be, maintained as a patent for the combination of springs in every form with the wrists of gloves to close them. It proposes to be and is a patent of his style of spring combined with the wrists of gloves for that purpose. The question is whether the defendants' spring is substantially like his. His is a spring throughout, and pulls constantly upon the parts of the material until they come together and overlap. The defendants' has stiff arms, and pulls the parts together only when closed far enough to have the spring on one arm operate in the opposite direction upon the cam-shaped end of the other, and it pulls the edges apart until the arms are at right angles to each other when opened far enough to cause the spring to act the other way on the cam. When so opened, it will not close itself as the orator's will, but has as much tendency to remain open as it has to remain closed after being closed. It is said by an expert called by the orator that if the edge of the cam which throws the arms apart was removed the spring would become more like the orator's in its operation; but he probably failed to notice that the spring operates on the same edge of the cam, although on different sides of its pivot, both in opening and closing the spring, and that if this edge were removed the spring would not move arms together or either way at all. The form of the defendants' spring is different from the orator's; its mode of operation is different, and the result of its operation is somewhat different. It cannot be said to be the same as the orator's, or to be substantially like the orator's. Each got the idea of closing the wrists of gloves by means of springs from others. The orator carries out the idea in his mode and the defendants in theirs, and as neither has control of anything but the particular mode neither can justly say that the other uses his mode.

For these reasons, which we cannot restate in a more satisfactory manner, the decree of the circuit court is affirmed.

U. S. Circuit Court—Southern District of New York.

WOOSTER *v.* THORNTON.

This suit is brought upon Reissued Letters Patent No. 5,180, dated December 10, 1872, and granted to the orator, as assignee of Alexander Douglass, for an improved folding-guide for turning in the edges of cloth or other material preparatory to sewing for binding and other purposes. The defendant offered no evidence, and did not appear at the hearing.

1. The patent had been several times adjudged to be valid. The evidence of the orator showed infringement by the defendant, and a decree was entered adjudging that the patent was valid, that the defendant had infringed, and that an account be taken, by a master appointed, of the profits and damages due to the infringement. The original patent was not put in evidence for the hearing in chief. The defendant offered it in evidence before the master for the purpose of showing that there was no infringement of the reissue upon any construction of it that would be valid on comparison with the original. The master rejected this evidence, and took an account of the damages due to the extent of what was shown by the orator's evidence in chief, and adjudged by the decree to be an infringement. The question is as to the propriety of this ruling by the master, raised by exceptions to his report. The argument is that the question is one of infringement, and that such questions are always open before the master. *Held*: "If there was something claimed to be an infringement which had not been passed upon by the decree, then the question concerning that would be open before the master to be passed upon by him. Here there was nothing before the master that was substantially different from the device covered by the decree. The question whether these things were infringements or not could not be passed upon by the master without reviewing the decree in that respect. This was not within his province, and his decision that he would not enter upon it appears to be correct."
2. There was infringement before any license-fee or royalty had been established. The orator insists that the amount of the license-fee should be applied as a rule of damages to that infringement, as it does not appear but that the value was the same then as afterward. The master has found the profits of that infringement to the defendant's firm, and has not found damages otherwise. *Held*: "It is understood that an established royalty or license-fee is evidence and not an absolute test of value. Whether the situation was such that the value was equal to the license-fee before the latter became established was a question of fact for the master. The weight of the evidence was for him. The court cannot say, as a matter of law, that the license-fee, which did not become established until afterward, should govern." (*Suffolk Co.* v. *Hayden*, 3 Wall., 315; *Packet Co.* v. *Sickles*, 19 Wall., 611; *Birdsall* v. *Coolidge*, 93 U. S., 64.)
3. Exceptions overruled, report accepted and confirmed, and decree to be entered accordingly.

Mr. Frederic H. Betts for the orator.

Mr. Joseph C. Fraley for the defendant.

WHEELER, *J.*:

This suit is brought upon Reissued Letters Patent No. 5,180, dated December 10, 1872, and granted to the orator, as assignee of Alexander Douglass, for an improved folding-guide for turning in the edges of cloth or other material preparatory to sewing for binding and other purposes. The defendant offered no evidence, and did not appear at the hearing. The patent had been several times adjudged to be valid. The evidence of the orator showed infringement by the defendant, and a decree was entered adjudging that the patent was valid, that the defendant had infringed, and that an account be taken, by a master appointed, of the profits and damages due to the infringement. The original patent was not put in evidence for the hearing in chief. The defendant offered it in evidence before the master for the purpose of showing that there was no infringement of the reissue upon any construction of it that would be valid on comparison with the original. The master rejected this evidence, and took an account of the damages due to the extent of what was shown by the orator's evidence in chief, and adjudged by the decree to be an infringement. The most important question now arising is as to the propriety of this ruling by the master, raised by exceptions to his report. The later decisions upon reissued patents are relied upon largely in support of these exceptions. (*Wooster* v. *Handy*, 21 Fed. Rep., 51; *Spill* v. *Celluloid Manufacturing Co.*, Ib., 622; *American Diamond Drill Co.* v. *Sullivan Machine Co.*, Ib., 74; *American Diamond Rock Boring Co.* v. *Gilson*, 24 Fed. Rep., 374.) The question here is, however, different from the one in any of those cases, or in any similar cases which have been noticed. In those cases the interlocutory decrees were made on comparison of the reissued patents with the originals upon the application of the principles of law bearing upon that subject as they were understood at the time. Before final decrees were made that understanding was changed by the later decisions of the Supreme Court, and the final decrees were adapted to the later view. This interlocutory decree was made before that change, but the change would not affect the decree as it was made on the case presented. There was nothing in the case touching the validity of the reissue to be considered. The reissue was granted to the orator, and would stand valid until overthrown by competent proof. The interlocutory decree was right when made, and is right now, both as to validity of the patent and as to infringement, as the case is now made to appear and is understood. The argument is that the question is one of infringement, and that such questions are always open before the master; but the decree as to the fact of infringement and that what was adjudged to be an infringement is an infringement is as conclusive upon the parties and upon the master as it is with reference to anything else covered by it. (*Thomson* v. *Wooster*, 114 U. S., 104.) This extends to everything that is substantially like the infringement decreed against for which the defendant is responsible. If there was something claimed to be an infringement which had not been passed upon by the decree, then the question concerning that would be open before the master to be passed upon by him. Here there was nothing before the master that was substantially different from the device covered by the decree. The question whether these things were infringements or not could not be passed upon by the master without reviewing the decree in that respect. This was not within his province, and his decision that he would not enter upon it appears to be correct. The evidence as to the extent of the infringement was quite conflicting. It was sufficient to warrant a finding either way according to what should be believed and disbelieved. The question of belief or disbelief was for the master, and no reason for disturbing his conclusions is made apparent. (*Bridges* v. *Sheldon*, 18 Blatchf., 295, 7 Fed. Rep., 17.) There was infringement before any license-fee or royalty had been established. The orator insists that the amount of the license-fee should be applied as a rule of damages to that infringement, as it does not appear but that the value was the same then as afterward. The master has found the profits of that infringement to the defendant's firm, and has not found damages otherwise. It is understood that an established royalty or license-fee is evidence and not an absolute test of value. Whether the situation was such that the value was equal to the license-fee before the latter became established was a question of fact for the master. The weight of the evidence was for him. The court cannot say, as a matter of law, that the license-fee, which did not become established until afterward, should govern. (*Suffolk Co.* v. *Hayden*, 3 Wall., 315; *Packet Co.* v. *Sickles*, 19 Wall., 611; *Birdsall* v. *Coolidge*, 93 U. S., 64.) As the master has not found any damages for that infringement beyond the profits, it does not appear that anything more than the profits can be allowed. These considerations dispose of all the exceptions.

Exceptions overruled, report accepted and confirmed, and decree to be entered accordingly.

U. S. Circuit Court—Southern District of New York.

AMERICAN BELL TELEPHONE COMPANY *v.* PEOPLE'S TELEPHONE COMPANY *et al.*

1. EVIDENCE—PRIOR USE.
   Where the evidence of new witnesses (as to a prior use) introduced on rehearing was merely cumulative and less persuasive than the evidence to the same point on the former trial, *Held* that the decree should not be disturbed.
2. REDUCTION TO PRACTICAL USE.
   The testimony of witnesses as to the practicability of alleged prior devices incredible where a test of reproductions of those devices showed them to be practically inoperative.
3. FAILURE TO MAKE PRACTICABLE MACHINE.
   Where the alleged prior inventor was shown to be very near the realization of the invention, but could not, at a period long subsequent, make a practical machine embodying the invention, it was *Held* that his operations were not sufficient to defeat a patent, although witnesses testified that they were successful.
4. BELL TELEPHONE.
   Drawbaugh's talking-machine, *Held* insufficient as a prior use.

Mr. E. N. Dickerson and *Mr. E. J. Stower* for the complainants.

Mr. Henry C. Andrews and *Mr. Lysander Hill* for the defendants.

WALLACE, *J.*:

Since the decision of this case in December last additional proofs have been taken on the part of the defendants, and by consent of complainants have been presented for the further consideration of the court after argument of counsel. All the new evidence is cumulative merely. Such as consists of the testimony of new witnesses to knowledge of the existence of Drawbaugh's talking-machine prior to the date of Bell's patent is far less persuasive than much which has already been considered and rejected as incredible. Such as is intended to show that the earlier instruments made by Drawbaugh were capable of practical use in transmitting articulate speech is more important. The instruments which were introduced as reproductions of lost originals, representing Exhibits B, F, and C, and which were constructed by Drawbaugh, or under his supervision, as accurate reproductions of the originals, were shown to be practically inoperative. After they had been introduced in evidence, and the expert witness for the defendants had testified that he had found them to be good practical instruments, a test of their efficiency was made at the request of counsel for the complainants, which took place in the presence of the experts and of the counsel for both parties. This test, which was made in 1882, indicated decisively that the testimony of a large number of witnesses respecting experiments with Drawbaugh's earlier instruments on various occasions in the years 1869 to 1876 was unreliable. While, according to the testimony of these witnesses, the instruments invariably operated satisfactorily upon the occasions of which the witnesses spoke, and no difficulty was experienced or observed by them in the transmission of the messages sent over or heard through the instruments, it was demonstrated by the experiment in 1882 that under more favorable conditions speech could only be occasionally transmitted by the reproduced instruments, and that, generally, what was spoken, if transmitted at all, was transmitted in a fragmentary or incoherent form. Whether these instruments were, in fact, reproductions of original instruments was a question which depended solely upon the testimony of Drawbaugh; but assuming that his testimony was true, and that they were reproductions, it was impossible to doubt that they were the best that Drawbaugh knew how to construct after he had become a much more accomplished electrician than he was when, according to his testimony, he made the originals. Since the former decision new reproductions of these alleged originals have been made from the remnants of the originals, supplemented by drawings verified as correct by Drawbaugh from memory, and it now appears that these reproductions are practical instruments, and fully capable of transmitting

articulate speech successfully. It does not appear that Drawbaugh made them, or who made them; and no testimony has been introduced to explain the reason of the failure of the instruments made by Drawbaugh to operate satisfactorily. It appears from the testimony of the only witnesses adduced to the point that, upon a comparison of the former and the recent reproductions, the recent ones are improved in finish and detail of mechanism in respects calculated to improve the efficiency of the apparatus; and it also seems probable that the increased efficiency of Exhibit F—the more important of the reproductions—is due to the employment of a new conducting material between the back plate of the cell and the diaphragm of the transmitter, adapted for the adjustment in a mode never practiced by Drawbaugh, and made the subject of a patent to Henry Hunnings of the date of August 30, 1881. The legitimate effect of the evidence is to show that Drawbaugh was very near the realization of the invention if he had really constructed instruments like the Exhibits F, B, and C prior to the date of Bell's patent. It does not, however, alter the fact that he was unable to make such instruments at a period long subsequent to the time when he claims to have made them; and in view of this fact the evidence does not tend to materially fortify the testimony of the witnesses who think, or profess to think, that they heard or saw efficient practical instruments in operation at Drawbaugh's shop on the occasions to which they refer.

The conclusions which were reached at the former hearing have not been modified, and the decree ordered should not be disturbed.

U. S. Circuit Court—District of Maryland.

ANHEUSER-BUSCH BREWING ASSOCIATION *v.* CLARKE.

1. The rule "that if a manufacturer has applied a peculiar and distinctive label to designate his goods, and has so used it that his goods are identified by it, a court of equity will restrain another party from adopting and using one so similar that its use is likely to lead to confusion by purchasers exercising the ordinary degree of caution, which purchasers are in the habit of exercising with respect to such goods," (*McLean* v. *Fleming*, 96 U. S., 245,) affirmed.
2. Complainant "was the first to use for beer a label with a diagonal red band, with the name of the kind of beer appearing in white letters on the red band." Respondent used "diagonal red label." *Held* "that it is a strong case of similarity likely to deceive," and injunction granted.

ON MOTION for preliminary injunction.

Mr. Rowland Cox for the motion.
Hon. William Pinkney Whyte for the defendant.

MORRIS, *J.*:

The general rule of law applicable to this case is that if a manufacturer has applied a peculiar and distinctive label to designate his goods, and has so used it that his goods are identified by it, a court of equity will restrain another party from adopting and using one so similar that its use is likely to lead to confusion by purchasers exercising the ordinary degree of caution, which purchasers are in the habit of exercising with respect to such goods. (*McLean* v. *Fleming*, 96 U. S., 245.)

The complainant's affidavits go to show that the complainant was the first to use for beer a label with a diagonal red band, with the name of the kind of beer appearing in white letters on the red band, and that he has been habitually using this label for two years. The label is a very noticeable and distinctive one, by reason of the diagonal red band. The result of the effect upon the eye from seeing a number of bottles is that it is a beer labeled with a diagonal red band, and the more frequently one sees it the more this one effect is deepened. It does appear altogether probable that a consumer who had been used to getting bottles labeled with complainant's label would more and more rely on the diagonal red band as its distinctive mark, and would be likely to accept the respondent's beer with his diagonal red label on it as supplying what he was in the habit of getting. There is nothing in the differences in the labels calculated to counteract this, and I think it is a strong case of a similarity likely to deceive.

The respondent's statements and explanations of how he came to hit upon this label for his own use are not satisfactory. It appears that it was suggested to him by a bottler in Washington named Christian Abner, who was a rival of a bottler of complainant's beer and using complainant's label in that same city named Edward Abner. Nothing is shown by the affidavits to repel the suspicion, which naturally arises, that the subsequent adoption of such a very similar label by one of the two rivals in the same city could not be accidental, but must have been for the purpose of confusion.

On the case as shown by the affidavits I think the complainant is entitled to the injunction as prayed.

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Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth $10 00

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Bound half-turkey 2 50
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Trade-Marks	28	No. 13,002 to No. 13,029,	inclusive.
Labels	10	No. 4,719 to No. 4,728,	inclusive.
Reissues	4	No. 10,684 to No. 10,687,	inclusive.
Total issue	577		

TO CITIZENS OF THE UNITED STATES.

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Alabama	.....	.....	Nebraska	2	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	2	.....	New Hampshire	2	2
California	13	.....	New Jersey	27	2
Colorado	3	.....	New Mexico Territ'y	1	.....
Connecticut	23	.....	New York	114	12
Dakota Territory	4	.....	North Carolina	1	.....
Delaware	.....	.....	Ohio	37	4
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Florida	1	.....	Pennsylvania	35	1
Georgia	3	.....	Rhode Island	7	.....
Idaho Territory	.....	.....	South Carolina	.....	.....
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Iowa	14	.....	Vermont	1	.....
Kansas	3	.....	Virginia	.....	2
Kentucky	10	.....	Washington Territ'y	1	.....
Louisiana	1	.....	West Virginia	1	.....
Maine	3	.....	Wisconsin	8	1
Maryland	6	2	Wyoming Territory	1	.....
Massachusetts	48	4	United States Army	.....	.....
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Mississippi	3	.....	Total to citizens of the United States	490	38
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Austria-Hungary	2	.....	Holland	.....	.....
Barbadoes	.....	.....	Ireland	.....	.....
Belgium	.....	.....	Italy	1	.....
Bermuda	.....	.....	Norway	.....	.....
British Columbia	.....	.....	Russia	.....	.....
Canada	6	.....	South Australia	.....	.....
Chili	.....	.....	Sweden	1	.....
Colombia, U. S. of	.....	.....	Switzerland	.....	.....
Corea	1	.....	West Indies	.....	.....
Denmark	1	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	45	.....
England	21	.....			
France	3	.....			

DESIGNS.

16,505.—TRUNK-IRON.—*James H. Alexander*, Philadelphia, Pa., assignor to *Thomas Devlin & Co.*, same place. Application filed December 19, 1885. Serial No. 186,235. Term of patent 7 years.

16,506.—HANDLE FOR SPOONS, &c.—*Charles Casper*, Meriden, Conn. Application filed October 13, 1885. Serial No. 179,821. Term of patent 7 years.

16,507.—SASH-FASTENER.—*William Huttig, Sr.*, and *Nicklas Bast*, Muscatine, Iowa. Application filed December 29, 1885. Serial No. 187,071. Term of patent 7 years.

16,508.—FONT OF PRINTING-TYPE.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *The MacKellar, Smiths & Jordan Company*, same place. Application filed November 6, 1885. Serial No. 182,061. Term of patent 14 years.

16,509.—LAMP OR GAS GLOBE.—*Harrison G. McFaddin*, Brooklyn, N. Y. Application filed June 27, 1885. Serial No. 170,013. Term of patent 7 years.

16,510.—CARPET.—*David G. Melville*, Medford, assignor to *The Roxbury Carpet Company*, Boston, Mass. Application filed December 12, 1885. Serial No. 186,093. Term of patent 3½ years.

16,511.—EASEL.—*Francis H. Tobias*, New York, N. Y. Application filed November 9, 1885. Serial No. 182,311. Term of patent 7 years.

16,512.—PERFUMERY-BOTTLE.—*Daniel R. Bradley*, New York, N. Y. Application filed January 4, 1886. Serial No. 187,024. Term of patent 3½ years.

16,513.—BADGE.—*Charles S. Crossman*, New York, N. Y. Application filed December 18, 1885. Serial No. 186,095. Term of patent 14 years.

16,514.—FONT OF TYPE.—*Julius Guildenstine*, New York, N. Y., assignor to *Arthur M.* and *Alson E. Barnhart*, Chicago, Ill. Application filed January 11, 1886. Serial No. 188,264. Term of patent 14 years.

16,515.—KNOB.—*Zachary T. Hall*, Philadelphia, Pa. Application filed September 10, 1885. Serial No. 176,746. Term of patent 7 years.

16,516.—FONT OF TYPE.—*Charles E. Heyer*, Chicago, Ill., assignor to *Arthur M.* and *Alson E. Barnhart*, same place. Application filed June 15, 1885. Serial No. 168,825. Term of patent 14 years.

16,517.—FIRE-PLACE PLATE.—*Abram C. Mott*, Philadelphia, Pa. Application filed December 30, 1885. Serial No. 187,189. Term of patent 3½ years.

16,518.—RANGE.—*Dwight S. Richardson*, Brooklyn, N. Y. Application filed December 15, 1885. Serial No. 185,773. Term of patent 7 years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

13,002.—WOOD AND SHINGLE STAINS.—*Samuel Cabot*, Boston, Mass. Application filed December 18, 1885. Used since May, 1882.
"The word 'CREOSOTE.'"

13,003.—HEATING AND COOKING STOVES AND RANGES AND GASOLINE AND OIL STOVES.—*Western Stove Manufacturing Company*, St. Louis, Mo. Application filed January 2, 1886. Used since August 1, 1884.
"A figure in the form of a cross, having the horizontal arms longer than the perpendicular arms, which are rounded at the ends."

13,004.—CHEWING-TOBACCO IN PLUG OR OTHER FORM, SMOKING-TOBACCO, CIGARS, AND CIGARETTES.—*Joseph G. Dill*, Richmond, Va. Application filed December 10, 1885. Used since 1869.
"The word-symbol 'LOOK OUT.'"

13,005.—AWNING-STRIPES—A WOVEN COTTON FABRIC.—*The Gary Manufacturing Company*, Baltimore, Md. Application filed December 30, 1885. Used since May 1, 1875.
"The word 'CHAMPION.'"

13,006.—ALE, PORTER, AND STOUT.—*The Greenway Brewing Company*, Syracuse, N. Y. Application filed January 13, 1886. Used since January 1, 1883.
"The representation of a griffin's head."

13,007.—HOG-RINGS.—*Hessen Brothers & Co.*, Tecumseh, Mich. Application filed July 6, 1885. Used since January, 1872.
"The word 'WOLVERINE.'"

13,008.—CERTAIN-NAMED PROPRIETARY MEDICINES.—*Adolph C. Meyer*, Baltimore, Md. Application filed January 13, 1886. Used since September 6, 1882.
"The fac-simile signatures of 'A. C. MEYER & CO.' and 'JOHN W. BULL.'"

13,009.—POCKET AND TABLE CUTLERY.—*New York Knife Company*, Walden, N. Y. Application filed December 15, 1885. Used since May 15, 1882.
"The words 'HAMMER BRAND.'"

13,010.—SOAP FOR LAUNDRY AND GENERAL PURPOSES.—*Oberne, Hosick & Co.*, Chicago, Ill. Application filed January 6, 1886. Used since August 1, 1881.
"The words 'GENERAL JACKSON' and the representation of the bust of General Jackson."

13,011.—VELVETEENS, CORDUROYS, AND COTTON-VELVET FABRICS.—*William Openhym & Sons*, New York, N. Y. Application filed January 13, 1886. Used since January, 1882.
"The word 'ELBERON.'"

13,012.—ALL KINDS OF VEILINGS AND TULLE.—*William Openhym & Sons*, New York, N. Y. Application filed January 13, 1886. Used since January, 1871.
"The representation of an eagle."

13,013.—BAREGES AND PARISINAS.—*William Openhym & Sons*, New York, N. Y. Application filed January 13, 1886. Used since January, 1884.
"The word 'TARGET' and the representation of a target."

13,014.—SEWING-SILK VEILING.—*William Openhym & Sons*, New York, N. Y. Application filed January 13, 1886. Used since December 1, 1885.
"The word 'PURITAN.'"

13,015.—GRENADINE VEILING.—*William Openhym & Sons*, New York, N. Y. Application filed January 13, 1886. Used since January 2, 1885.
"The word MARABOU.'"

13,016.—CASHMERES.—*William Openhym & Sons*, New York, N. Y. Application filed January 13, 1886. Used since January, 1884.
"The words 'WEST END.'"

13,017.—SILK, VELVET, AND SILK PLUSHES.—*William Openhym & Sons*, New York, N. Y. Application filed January 13, 1886. Used since January, 1860.
"The word 'DRAGON' and a representation of St. George and the dragon."

13,018.—GRINDING-MILLS.—*R. L. Orr & Co.*, (*Limited.*) Pittsburg, Pa. Application filed November 6, 1885. Used since August, 1880.
"The word 'STANDARD.'"

13,019.—REMEDY FOR CUTANEOUS DISEASES.—*David Palmer*, Lodi, Ohio. Application filed December 23, 1885. Used since September 1, 1885.
"The pictorial representation of the head of Dr. PALMER."

13,020.—SILICA CLEANING AND POLISHING PREPARATIONS.—*Plymouth Silica Company*, Plymouth, Mass. Application filed January 6, 1886. Used since January 10, 1885.
"The word 'GLACIAL.'"

13,021.—METAL, ELECTROPLATED, AND SILVER WARE OF ALL KINDS.—*Reed & Barton*, Taunton, Mass. Application filed January 20, 1886. Used since August 26, 1840.
"The words 'REED & BARTON.'"

13,022.—METAL, ELECTROPLATED, AND SILVER WARE OF ALL KINDS.—*Reed & Barton*, Taunton, Mass. Application filed January 20, 1886. Used since January 6, 1877.
"The picture of a globe, in the rear of which is a caduceus or Mercury's wand."

13,023.—TONIC.—*Oliver M. Stiger*, New York, N. Y. Application filed January 9, 1886. Used since January 1, 1886.
"The word 'COCA-MALTA.'"

13,024.—HATS FOR MEN AND BOYS.—*Straus & Ellsworth Manufacturing Company*, Milwaukee, Wis. Application filed January 9, 1886. Used since November 23, 1883.
"The arbitrary word-symbol 'H. J. STETSON.'"

13,025.—LIQUID TONICS.—*Strickland & Co.*, Chicago, Ill. Application filed September 25, 1885. Used since January 9, 1882.
"The words 'WINE OF LIFE.'"

13,026.—METAL FOR BOXES AND JOURNAL-BEARINGS.—*Richard Taylor*, Detroit, Mich. Application filed December 31, 1885. Used since October 14, 1885.
"The words 'TAYLOR'S ARCTIC.'"

13,027.—BAKING-POWDER.—*Toledo Spice Company*, Toledo, Ohio. Application filed September 29, 1885. Used since March 1, 1868.
"The words 'COOK'S FAVORITE,' printed in block letters in curved lines, on a green label, the word 'COOK'S' being above the word 'FAVORITE.'"

13,028.—FLOUR.—*Samuel W. Weidler* and *Thomas W. Allen*, Cincinnati, Ohio. Application filed January 16, 1886. Used since January, 1880.
"The words 'JUNO MILLS.'"

13,029.—FLOUR.—*Samuel W. Weidler* and *Thomas W. Allen*, Cincinnati, Ohio. Application filed January 16, 1886. Used since January, 1880.
"The words 'LEGAL TENDER.'"

LABELS.

4,719.—Title: "KALAMAZOO CELERY BITTERS."—*Perley L. Abbey* and *William O. Tuthill*, Kalamazoo, Mich. Application filed December 24, 1885.

4,720.—Title: "BOLTON'S BURN WATER AND BURN SALVE, A QUICK CURE FOR BURNS AND INFLAMMATORY SORES, ON MAN AND BEAST."—*Valentine F. Bolton*, Glen Gardner, N. J. Application filed January 16, 1886.

4,721.—Title: "SHAKER SARSAPARILLA LOZENGES."—*Canterbury Society of Shakers*, Shaker Village, N. H. Application filed January 2, 1886.

4,722.—Title: "CORBETT'S SHAKERS' COMPOUND."—*Canterbury Society of Shakers*, Shaker Village, N. H. Application filed January 2, 1886.

4,723.—Title: "ROSE-SANDAL" (FOR PERFUMES.)—*Thomas J. France*, Brooklyn, N. Y. Application filed January 14, 1886.

4,724.—Title: "MOSCHCOWITZ IMPROVED BUSTLE SPRINGS."—*Moschcowitz Brothers*, New York, N. Y. Application filed January 15, 1886.

4,725.—Title: "ALL HAVANA" (FOR CIGARS.)—*J. A. Runalduc & Son*, Norfolk, Va. Application filed January 16, 1886.

4,726.—Title: "GINGER CHAMPAGNE" (FOR GINGER ALE.)—*Thomas J. West*, *Lucius B. West*, and *Albert Cronk*, Detroit, Mich. Application filed January 15, 1886.

4,727.—Title: "BACON'S CANADIAN EMOLLIENT."—*Theodore Angelo*, New York, N. Y. Application filed January 18, 1886.

4,728.—Title: "BUBBIN'S GREAT FRENCH OIL."—*John B. Bubbins*, Chicago, Ill. Application filed December 14, 1885.

PATENTS

GRANTED FEB. 9, 1886.

335,554. HEAD-REST. CHARLES E. ANDERSON, London, Ontario, Canada. Filed May 26, 1885. (No model.)

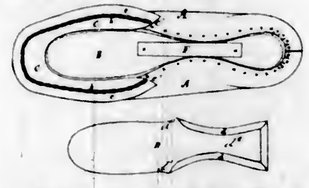


Claim.—1. The pivotal cap I^w, provided with flange P, lug r, and dog r^2, and ratchet r^4, in combination with the head-rest A^4, pivotally connected to the back A, substantially as shown and described, and for the purpose specified.

2. The pivotal caps I^w I^w, provided with flanges P, lugs r, and dogs r' r^3, and ratchets r^2 r^4, respectively, in combination with the head-rest A^4, pivotally connected to the back A, or its equivalent, substantially as shown and described, and for the purpose specified.

3. The back A, formed with an adjustable part, A^4, to form a head-rest, said head-rest being capable of adjustment and held at any angle to the back A to which it may be adjusted by means of suitable supporting devices, substantially as shown and described.

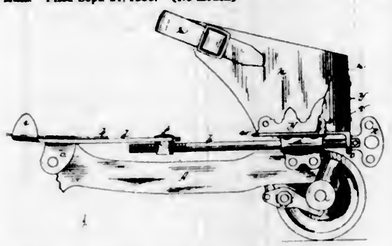
335,555. BOOT OR SHOE. WILLIAM B. ARNOLD, North Abington, Mass. Filed May 13, 1885. (No model.)



Claim.—1. In a boot or shoe, the partial welt C, having the legs c c, with the convex curves c' c', in combination with the filling-piece D, fitting snugly within the welt and having concave curves d' d', corresponding with and resting against curves c' c', whereby the welt and filling-piece are firmly held together, as and for the purpose described.

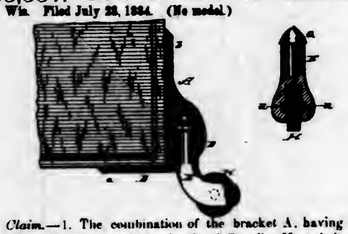
2. In a boot or shoe, the partial welt C and the filling-piece D, snugly fitting within such welt at the front and extending back of the welt at the instep, in combination with the stiffener F, located at such instep and at such rear extension of the filling-piece, as set forth.

335,556. SKATE-FASTENING. EVERETT H. BARNEY, Springfield, Mass. Filed Sept. 21, 1885. (No model.)



Claim.—In combination with the skate-body having a bracket, i, at each side thereof, the heel-plate supported on said bracket, the heel-strap on said heel-plate having ankle-strap attached thereto, the pending lip on said heel-plate, and the clamping-rod swiveled in said pending lip passing between the brackets which support the heel-plate, and having screw engagement with the toe-clamping mechanism, all substantially as described.

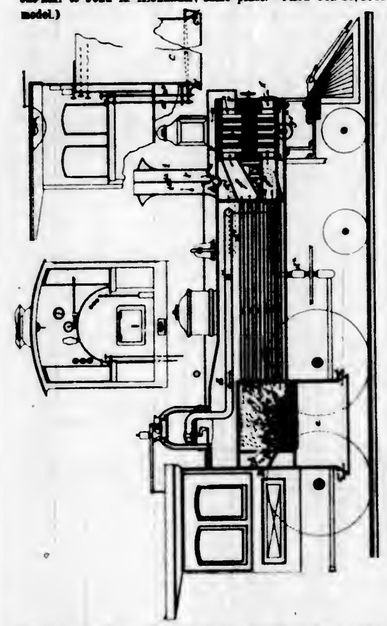
335,557. CASTER FOR TRUNKS. PAUL C. BIERBACH, Milwaukee, Wis. Filed July 28, 1884. (No model.)



Claim.—1. The combination of the bracket A, having retaining-plates B and C C, shank E, having head G, roller H, and the shank-retaining block I, substantially as and for the purpose specified.

2. In roller-casters, the shank E, having the walls of its roller-retaining recess extend over the outer face and in front of the caster-roller, in combination with the caster-roller, substantially as and for the purpose specified.

335,558. FURNACE. SIMON BISSELL, Pittsburg, Pa., assignor of one-half to John R. Alexander, same place. Filed Oct. 25, 1883. (No model.)



Claim.—1. The combination, in a locomotive-engine, of a regenerator situate in the smoke-box, means of admitting air to a portion of the regenerator, gas-producing fire-box, and a flue-boiler interposed between the regenerator and the fire-box, one part of the flues of which conduct air from the inlet-chamber of the regenerator to the fire-box, and the other part convey the waste gases from the fire-box to the outlet-chamber of the regenerator, substantially as and for the purposes described.

2. In combination with a gas-producer and revoluble regenerator, an interposed flue-boiler, one portion of the flues of which conduct the waste gases to the outlet-chamber of the regenerator, and the other the air from the inlet-chamber of the regenerator to the furnace, substantially as and for the purposes described.

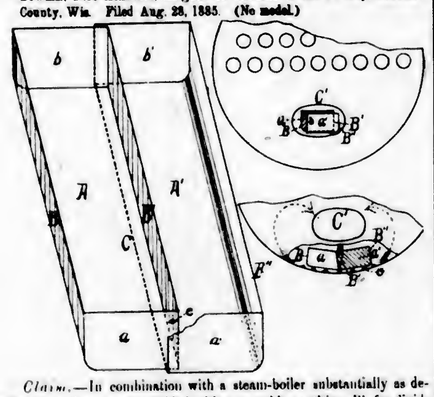
3. In combination with a gas-producer and regenerator, an interposed flue-boiler or other part, and a combustion chamber or flue placed between the boiler and the regenerator, wherein combustion of gases from the furnace is caused to take place by means of a current of heated air entering through the inlet-chamber of the regenerator, substantially as and for the purposes described.

4. In a locomotive-engine, the combination of a gas-producing fire-box, a revoluble regenerator in the smoke-box, an interposed flue-boiler, one part of whose flues admit air from the inlet-chamber of the regenerator to the fire-box, and the other convey the waste gases from the fire-box to the outlet-chamber of the regenerator, and means of admitting air to the waste gases as they pass from the boiler to the regenerator substantially as and for the purposes described.

5. In a boiler-furnace, the combination of the boiler, a revoluble regenerator heated by the waste products of combustion, and a feed-water heater interposed between such boiler and regenerator, substantially as and for the purposes described.

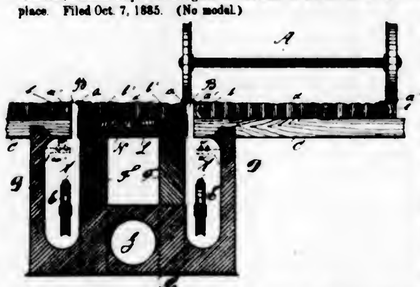
6. The method herein described of utilizing waste gases of combustion in furnaces and other places where they are caused to pass over or in contact with cooler surfaces, which consists in reigniting them by mingling the same with a volume of highly-heated air in a revoluble regenerator after they have passed such cooler surfaces, whereby the bricks in the revoluble regenerator are kept at a high temperature for heating the air in its passage to the combustion or fuel chamber, as set forth.

335,559. SEDIMENT-RECEIVER FOR STEAM-BOILERS. CILE W. BOWERS, Fort Atkinson, assignor of one-half to Eli P. May, Jefferson County, Wis. Filed Aug. 28, 1885. (No model.)

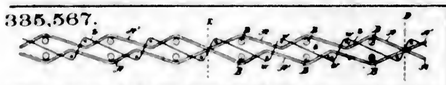


Claim.—In combination with a steam-boiler substantially as described, a sediment-pan provided with a movable partition, B', for dividing the sediment to avoid spilling the same when more than one section is used, substantially as and for the purpose specified.

335,560. DOUBLE-TRACK CABLE OR ELECTRIC ROAD. CHESTER BULLOCK, Kansas City, Mo., assignor of one-half to Robert Gillham, same place. Filed Oct. 7, 1885. (No model.)

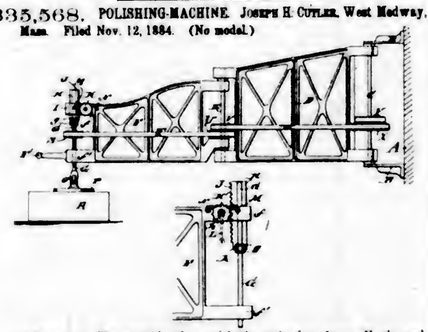

A
B
B'
a
a'
a
a'
C
C
g
g
f
f
f

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with ribs on both of its faces formed by the same face-warps bent about the stuffer or cord weft, the ribs at opposite picks of the fabric being substantially opposite each other, the face-warps being bound down at each side of each stuffer or cord weft by the binder-warp and binder-weft, two picks of the latter lying between each two picks of the stuffer or cord weft, the binder-warp separating each two alternate picks of stuffer or cord weft, substantially as described.

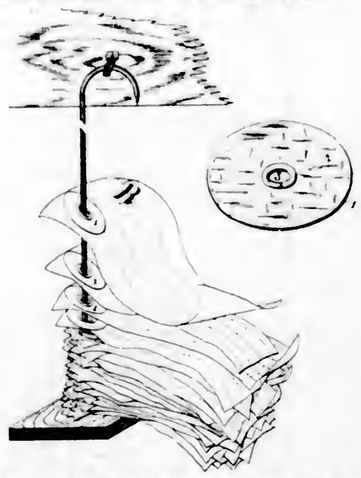
335,568. POLISHING-MACHINE. JOSEPH H. CUTLER, West Medway, Mass. Filed Nov. 12, 1884. (No model.)



Claim.—1. The combination, with the swinging frame F, the polishing-head P, and its rotating shaft G, of the rack-plate H, pinion K, means for turning said pinion, the pinion K', and pawls M N, for holding the pinion K', substantially as herein set forth.

2. A polishing-machine constructed with a frame, D, swinging on a shaft, C, held rigidly in suitable supports, and the shaft E, held rigidly in the outer end of frame D, the frame F, swinging on the shaft E and carrying a rotating shaft, G, the polishing-head P, held by a universal joint, O, to the shaft G, the rack-plate H, engaging the shaft, the shaft *k*, the pinions K K', pawls M N, and the driving-belts T W Z, running over a pulley, S, splined to shaft G, and pulleys U V X Y, running loosely on the shafts E C, all combined and operating substantially as herein set forth.

335,569. ADHESIVE RE-ENFORCE WASHER. FREDERICK A. DALPÉ, Philadelphia, Pa. Filed June 16, 1885. (No model.)



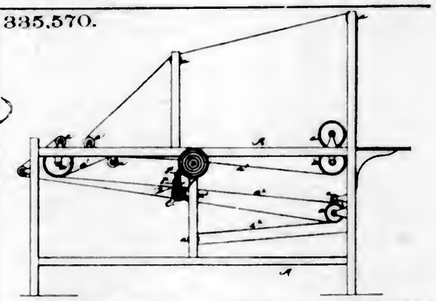
Claim.—1. An adhesive re-enforcing washer constructed with a perforated body, 1, and an adhesive surface, 2, as herein described.

2. A re-enforcing washer constructed, as herein described, of a perforated body, 1, of paper or other fabric, an adhesive surface, 2, and a strengthening-eyelet, 4.

335,570. PERFORATING ATTACHMENT FOR RULING-MACHINES. EDWARD P. DONNELL, Chicago, Ill. Filed Apr. 24, 1884. (No model.)

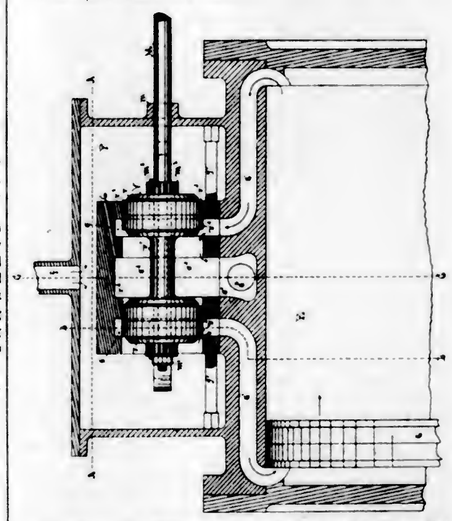
Claim.—In a paper-ruling machine, the combination, with the endless aprons or tapes for carrying the paper away, of a rotary perforating

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and cutting disk, beneath or past which the paper is carried, substantially as shown and described.

335,571. ENGINE-VALVE. JAMES FERGUSON, Bridgewater, Mass. Filed Sept. 14, 1885. (No model.)



Claim.—1. In combination with the valve-cylinder G, provided with passage *o*, formed around and opening through the side of the cylinder-bore, the piston-valve head *v*, provided with the packing-pieces v^2 v^2 v^2, having attachments v^4, co-operating together, respectively, and provided with springs v^3 v^3, pressing outwardly against said packing-pieces, substantially as described.

2. In combination with the valve-cylinder G, provided with a cylindrical bore, the piston-valve V, having its piston-rod M adjustably secured through its longitudinal center, and each of its valve-heads *v* provided with the packing-pieces v^2 v^2 v^2 v^2, having attachments v^4, simultaneously moving outward, and provided with springs v^3 v^3, pressing outwardly against said packing-pieces, substantially as described.

3. The combination of the steam-engine cylinder E, provided with steam-ports e' e', the valve-cylinder G, provided with a longitudinal bore having unobstructed passages *o o* formed within it, each of which expands transversely outward from its shallowest part on one side of the bore around the same and leads into the steam-port e' on the other side, and the balanced valve V, formed with a connecting-stem, *v'*, and two heads, *v v*, of the length to cover said passages and uncover the same simultaneously by its reciprocation, substantially as described.

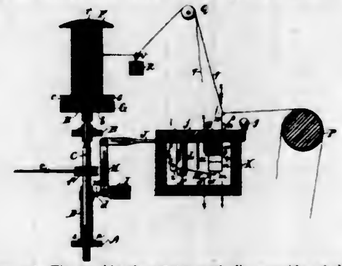
4. The combination of the steam-engine cylinder E, provided with steam-ports e' e' and exhaust-port o', the valve-cylinder G, provided with a longitudinal bore having unobstructed passages *o o*, and an intermediate passage, o^2, formed within it, each of which expands transversely outward from its shallowest part on one side of the bore around the same and leads into its engine-cylinder port on the other side, and the balanced valve V, formed with a connecting-stem, *v'*, and two heads, *v v*, of the length to cover the passages *o o* and uncover the same simultaneously by its reciprocation, substantially as described.

5. The combination of the valve-cylinder G, the valve V, and one or more supporting sliding bars, *n'*, attached to the ends of said valve and seated in a groove or grooves, *n*, in said cylinder, substantially as described.

6. The combination of the steam-engine cylinder E, provided with ports e' e', the steam-chest F, and the valve-cylinder G, provided with bolts *g g*, and set-screws *g' g'*, adapted to adjust and secure the latter inside the steam-chest against the end-thrust of the valve-piston, substantially as described.

335,572. STOP-MOTION FOR SPOOLING-MACHINES. JOHN W. FOSTER, Central Falls, assignor to himself and John T. Willmarth, Pawtucket, R. I. Filed April 22, 1885. (No model.)

Brief.—The revoluble spindle is mounted in a vertical moving step, and revolves the bobbin by means of a friction-disk, on which said bobbin rests when the spindle is elevated. A bell-crank lever operated by a handle holds the spindle in raised position. On breakage of a thread the drop-wire falls onto a pan, tilts the same, thus withdrawing a lug from contact with the handle of the bell-crank lever and allowing the step and spindle on the same to fall. The bobbin then rests on a stationary seat provided with rubber friction-legs, and is stopped revolving.

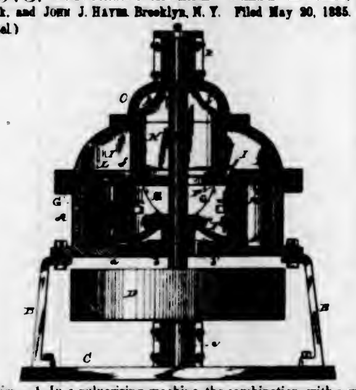


Claim.—1. The combination of the vertically-movable spindle provided with a spool-holding carrier adapted to impart a rotary movement to the spool upon the proper elevation of the spindle, and the stationary spool-rest adapted to cause the stopping of the rotary movement of the spool upon the proper depression of the spindle at the breaking of a thread, and means for raising the spindle and spool-holding carrier, whereby the spool will be taken from its rest and set in revolution, substantially as described.

2. The combination of the stationary spool-rest, vertically-movable spindle provided with a spool-holding carrier, locking mechanism adapted to hold the spindle and its spool-holding carrier at their highest position, and drop-wires adapted to trip the locking mechanism upon the breaking of a thread, and to cause the fall of the spindle and its spool-holding carrier, substantially as described.

3. The combination of the stationary spool-rest, vertically-movable spindle provided with a spool-holding carrier, movable spindle-step, bell-crank lever engaging with the step, the arm pivoted to the bell-crank lever and provided with a catch, the locking-bolt, tilting pan, stop for the same, and the drop-wires, all arranged and operating substantially as described.

335,573. PULVERIZING-MACHINE. WILLARD M. FULLER, New York, and JOHN J. HAYES, Brooklyn, N. Y. Filed May 20, 1885. (No model.)



Claim.—1. In a pulverizing-machine, the combination, with a grinding-cylinder and a revolving center therein for pulverizing by attrition of masses of the material, of an exhaust-chamber connected with the grinding-cylinder by an annular exhaust-passage extending entirely around the grinding-cylinder, through which the pulverulent material is withdrawn from the grinding-cylinder, substantially as set forth.

2. In a pulverizing-machine, the combination, with the grinding-cylinder and the revolving center therein, of the annular exhaust-chamber above the grinding cylinder, connected therewith by an annular passage extending entirely around the top of the grinding-cylinder, and a central feed-passage formed by the inner walls of such annular exhaust-chamber, substantially as set forth.

3. In a pulverizing-machine, the combination, with the grinding-cylinder and a revolving center therein composed of a bottom disk, a top ring, and connecting radial wings, of an annular exhaust-chamber surmounting the grinding-cylinder and connected therewith by an annular exhaust-passage extending entirely around the grinding-cylinder and connecting such chamber with the grinding-cylinder around the top ring of the revolving center, substantially as set forth.

4. In a pulverizing-machine, the combination, with the grinding-cylinder and the revolving center therein, of an annular exhaust-chamber surmounting the grinding-cylinder and connected therewith by an annular passage, the inner walls of the annular exhaust-chamber forming a central top feeding-passage, and the grinding-cylinder having a central bottom opening for admitting air into the grinding-cylinder, substantially as set forth.

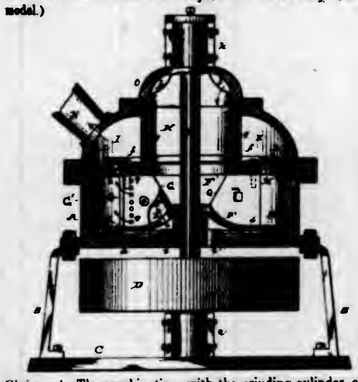
5. In a pulverizing-machine, a chamber provided with grinding mechanism therein for pulverizing the material, and air inlet and outlet openings, the latter being connected with an exhaust-chamber for withdrawing the pulverulent material, in combination with oblique blades moving in or across one or more of such openings, substantially as and for the purpose set forth.

6. In a pulverizing-machine, the combination, with the grinding-cylinder and the revolving center therein, of the exhaust-chamber above the grinding-cylinder, and connected therewith by an annular air and dust passage extending around the revolving center, and oblique blades carried by such revolving center and moving over such air and dust passage, substantially as set forth.

7. In a pulverizing-machine, the combination of the grinding-cylinder and revolving center therein, the former having a central bottom opening forming an air-inlet and oblique blades carried by the revolving center and preventing escape of material through such opening, substantially as set forth.

8. In a pulverizing-machine, the combination, with the grinding-cylinder, of the revolving center therein, composed of a bottom disk, a top ring, and radial wings, and removable wearing-plates Q on the front sides of such wings, said wearing-plates having turned ends *n*, extending over the outer ends of the radial wings and beveled to an edge, *o*, at their inner ends, substantially as set forth.

335,574. PULVERIZING-MACHINE. WILLARD M. FULLER, New York, and JOHN J. HAYES, Brooklyn, N. Y. Filed July 9, 1885. (No model.)



Claim.—1. The combination, with the grinding-cylinder, of the revolving distributing-center having hollow wings forming air-pockets, and provided each with an inlet from the exterior of the machine and an outlet to the interior of the machine for delivering air to and from such pockets, substantially as and for the purpose set forth.

2. The combination, with the grinding-cylinder having a central opening in its bottom, of the revolving distributing-center having hollow wings forming air-pockets, such pockets having bottom openings communicating with the external air through said central opening, and with air-outlets to the interior of the machine, substantially as set forth.

3. The combination, with the grinding-cylinder, of the revolving center having hollow wings communicating with the external air and provided with openings on the rear sides of the wings for delivering air to the machine, substantially as set forth.

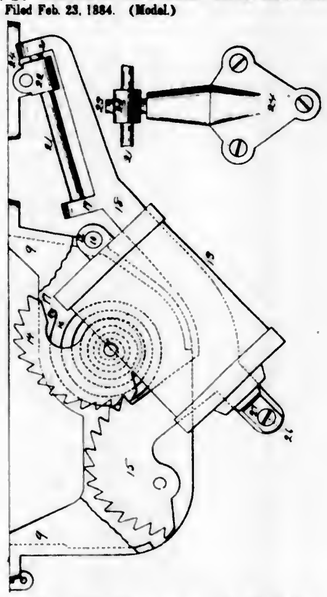
4. The combination, with the grinding-cylinder having a central opening in its bottom, of the revolving center having hollow wings provided with openings on their rear sides delivering air to the machine

and bottom openings communicating with the external air through the central opening in the bottom of the grinding-cylinder, substantially as set forth.

5. The combination, with the grinding-cylinder, of the revolving distributing-center turning therein, composed of bottom disk, top ring, and radial wings, said bottom disk traveling over the floor of the grinding-cylinder, so that a horizontal air-passage is formed between them, and an upwardly-projecting shoulder on the bottom of the grinding-cylinder surrounding the bottom disk of the revolving center for protecting its edge and the air-opening thereunder, substantially as set forth.

6. The combination, with the grinding-cylinder, of the revolving distributing-center turning therein, composed of bottom disk, top ring, and radial wings, and a removable ring on the bottom of the grinding-cylinder surrounding the edge of the bottom disk of the revolving center, substantially as set forth.

335,575. **PNEUMATIC DOOR-CHECK.** GEORGE GEER, Peterborough, N. H. Filed Feb. 23, 1884. (Model.)



Claim.—1. The combination of the casing 9, spring 16, the eccentric gears 14 and 15, the arm 18, turning on the same axis with the gear 15, the cylinder, and the piston, the latter being pivoted to the arm 18 at a point between the axis of said arm and the end which is connected or designed to be connected with the door, substantially as described, and for the purpose specified.

2. The combination of the spring-pressed angular arm 18, pivoted upon an axis, as that of the gear 15, the cylinder set parallel to the longest end of said angular arm when in their normal position, the piston-rod with its end pivoted directly to the angle of said arm, and means for connecting said parts with a door, substantially as described, and for the purpose specified.

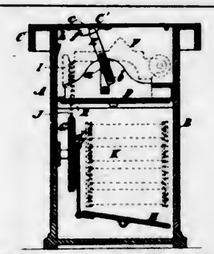
3. In a pneumatic door-check, the combination of a cylinder and piston-rod having the longitudinal grooves with means for operatively connecting them to a door and its jamb, and a piston which fills the cylinder, having an annular shoulder in its axial bore and fitted upon the grooved end of the piston-rod, with the latter having a slight longitudinal play thereon, said grooves and axial bore forming an air-passage through the piston when the door is being opened and the piston is drawn backward, which passage is closed on the return movement of the door and piston by the end of the piston-rod acting against the annular shoulder in the piston, substantially as described, and for the purpose specified.

4. The combination of the spring, the eccentric gears 14 and 15, the arm 18, connected to one of said gears, and having the rod 21, the bracket 24, traveler 22, pivoted to said bracket and fitted upon the rod 21, the piston-rod cylinder, and means for pivoting the cylinder, substantially as described.

335,576. **CABINET-STAND.** AMOS F. GERALD, Fairfield, Me. Filed Feb. 4, 1884. (No model.)

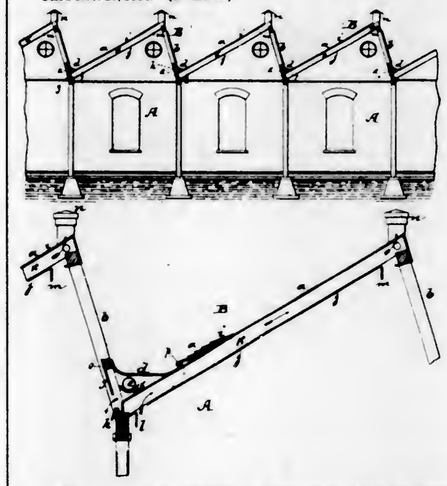
Claim.—In a stand, the combination of a body, a leaf-like top portion hinged at one of its side edges to said body, a movable shelf, and links

335,576.



or rods having a slotted connection with said movable shelf, substantially as specified.

335,577. **SHED CONSTRUCTION.** CHARLES GOLDE, Union, N. J. Filed Nov. 27, 1885. (No model.)



Claim.—1. In a shed-structure, the combination of the roof-gutter *d* and adjoining roof parts *a b* with the steam-pipe *e*, placed beneath said gutter, as specified.

2. The combination of the roof-gutter *d* and converging roof parts *a b* with the steam-pipe *e*, boarding *g*, and door *h*, as specified.

3. The combination of the converging roof parts *a b* and their gutter *d* with the pipe *e*, placed beneath said gutter, and with the gutter *f*, placed beneath said pipe, as specified.

4. The combination of the converging roof parts *a b* with the gutter *d*, rigidly secured along one edge, and with the cleats *p p*, which overlap its hook-shaped other edge, as specified.

5. The roof portion *a*, having outer covering, *i*, and inner covering, *j*, and intermediate air-space, *k*, in combination with the door *l* in the lower part of the inner covering, and with the ventilator-outlet *n*, as set forth.

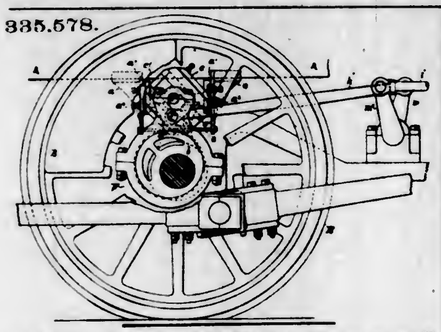
6. The roof portion *a*, having outer covering, *i*, and inner covering, *j*, in combination with the doors *l* and *m* in the inner covering, *j*, and with the outlet *n*, as specified.

336,578. **VALVE-GEAR FOR ENGINES.** JOHN GRIER, Minneapolis, Minn. Filed Nov. 12, 1885. (No model.)

Claim.—1. In a valve-gear, the combination, with the driver-axle of a locomotive, of an eccentric on said axle, a standard boxed to said axle, a rock-shaft supported by said standard and carrying a guide, a slide-block operated in said guide by said eccentric, and guides for said standard supported independently of said axle, for permitting up and down movement corresponding with said axle and preventing lateral movement of said standard, substantially as and for the purpose set forth.

2. In a locomotive valve-gear, the combination, with the driver-axle, of a standard boxed thereon, guides for preventing lateral displacement of said standard, a rocker-shaft supported by said standard, a guide and slide-block carried by said rock-shaft, an eccentric on said driver-axle and connected to said slide-block, a rocker having arms set at an angle to each other, a rod connecting said eccentric with one of said arms, and a rod connecting the other of said arms with the valves, substantially as described.

335,578.

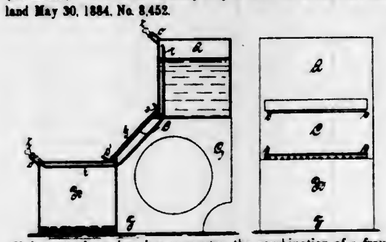


335,579. **FIELD-GAME MARKER.** AUGUST GUTHLOH, Chicago, Ill. Filed Oct. 27, 1885. (No model.)



Claim.—The device herein described for producing boundary or dividing lines upon a field or lawn for outdoor games, which consists in metal strips having bent edges that are inserted into the ground, substantially as set forth.

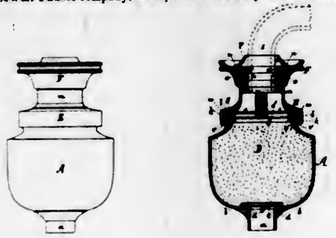
335,580. **APPARATUS FOR MOISTENING STAMPS, &c.** BERNHARD GRÜNDLER, Petersdorf, Prussia, Germany. Filed Sept. 23, 1884. (No model.) Patented in Germany May 3, 1884, No. 28,467, and in England May 30, 1884, No. 8,452.



Claim.—1. In moistening apparatus, the combination of a frame or stand having two alternative bases, F and G, placed at an angle to each other, with a pair of liquid-receptacles, A and B, placed at a distance apart and provided with openings *a*, and a sheet of porous material, *f*, between the openings and connecting the receptacles, substantially as described.

2. In moistening apparatus, the combination of a stand or frame having two alternative bases, F and G, with a pair of liquid-receptacles, A and B, a sheet, *f*, and a pipe, *o*, open at both ends and connecting the top of the air-space of one receptacle with the top of the air-space of the other, substantially as described.

335,581. **FILTER.** ALBERT HALLOWELL, Lowell, Mass., assignor to the Lowell Faucet Company, same place. Filed July 6, 1885. (No model.)

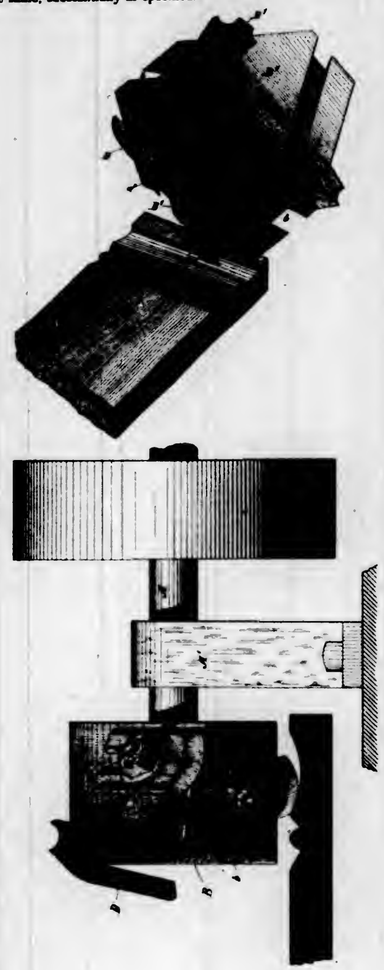


Claim.—1. The combination of the filter with the faucet-nose connection, substantially as described, consisting of the part E, with its elastic packing *r*, and slitted connection-screw *s*, and the tubular nut or cap F, having the female screw *o*, and tapering mouth *p*, directly over such screw, such part E having within its base or lower part a female screw for connecting it with the neck of the filter, and all being essentially as represented.

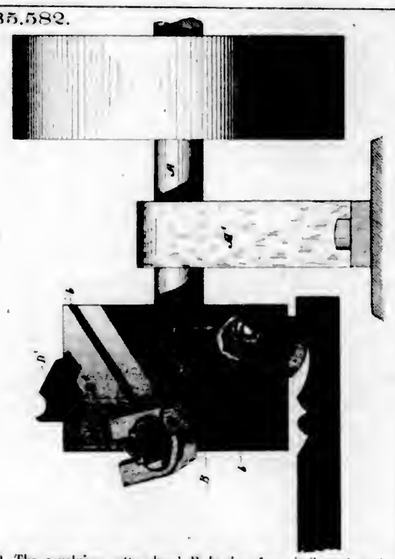
2. The faucet-nose connection, substantially as described, consisting of the part E, with its elastic packing and slotted connecting-screw, and the tubular nut or cap F, having the female screw and tapering mouth directly over such screw, such part E having within its base or lower part a female screw for connecting it with the neck of the filter, and all being essentially as represented.

335,582. **CUTTER-HEAD.** RUDOLPH HEINRICH, South Chicago, Ill. Filed Oct. 6, 1885. (No model.)

Claim.—1. The device for cutting grooves or moldings across the grain of the wood, consisting in a symmetrical-shaped revolving head, B, having four similar inclined faces, B' B' B² B², arranged at right angles to each other circumferentially around the axis of said head, one diametrically-opposite pair of said faces, B' B', being inclined to the left toward the axis of said head, and the other opposite faces, B² B², being inclined to the right toward the axis of said head, and knives or cutters secured to said inclined faces, whereby both sides or walls of the groove or molding may be cut inward and downward from the higher or marginal portion of the groove or molding toward the deeper and central portion of the same, substantially as specified.



335,582.



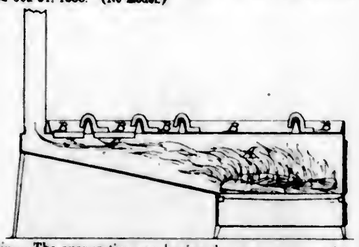
2. The revolving cutter-head B, having four similar triangular-shaped faces, B' B' B² B², inclined to the axis of said head, the opposite faces B' B' being inclined in the opposite direction to the two opposite faces B² B², whereby a symmetrical-shaped head is produced, substantially as specified.

3. The revolving cutter-head B, having similar triangular-shaped inclined faces, B' B², provided with grooves or guides *b*, extending parallel to the edges of said faces, and knives or cutters secured to said faces by set screws or bolts adjustable in said grooves or guides *b*, substantially as specified.

4. The revolving cutter-head B, having faces B' B² inclined toward the axis of said head, provided with grooves or guides *b*, extending parallel to the edges of said faces, and knives or cutters secured to said faces by set screws or bolts adjustable in said grooves or guides *b*, the edges of said faces or said grooves lying in a plane parallel to the axis of said head, so that the adjustment of the knife to different positions in said groove will not affect the depth of cut or the distance the knife projects beyond the edge of said inclined face, substantially as specified.

5. A revolving head, as B, having a face, as B', inclined to the axis of said head, and a knife, as D, secured to said face, whereby the edge or side of said knife which cuts the higher or marginal portion of the groove is presented to the work in advance of the other edge or side of said knife which cuts the deeper or central portion of said groove, said inclined face B' having also an edge which lies in a plane parallel to the axis of said head, so that said knife may be adjusted in different positions longitudinally with the axis of said head without affecting the depth of the cut or the distance the knife projects beyond the supporting-edge of said inclined face, substantially as specified.

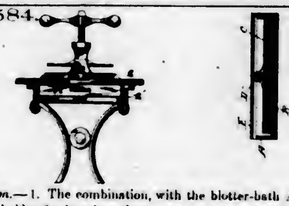
335,583. EVAPORATING-PAN. HENRY W. HEBCOCK, Hubbard, Ohio. Filed Oct. 31, 1885. (No model.)



Claim.—The evaporating-pan having the transverse curved bottom flues, C C, the upper edge of one of the sides B having a turned-over flange to join onto the top edge of an adjoining pan, all constructed as specified.

335,584. BLOTTER-BATH. BENJAMIN B. HILL, Philadelphia, Pa. Filed Sept. 7, 1885. (No model.)

335,584.



Claim.—1. The combination, with the blotter-bath A, of a presser, C, and a holder for keeping the presser in contact with the pads contained in the bath, substantially as described.

2. The combination, with the bath A, of a presser, C, and a holder consisting of the top of the stand, and means, as *c'*, for holding the presser in contact with the under side of the top of the stand, substantially as described.

3. The combination, with a blotter-bath and the presser thereof, of a presser-stand having an opening between the top and the leg to receive the bath, substantially as described.

335,585. BLOTTER-BATH. BENJAMIN B. HILL, Philadelphia, Pa. Filed Sept. 7, 1885. (No model.)

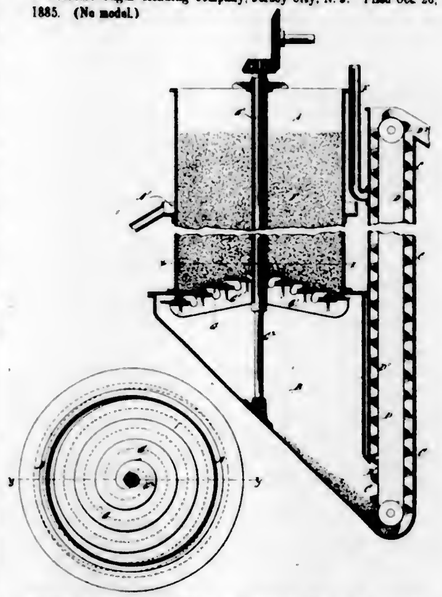


Claim.—1. A blotter-bath having its presser forced down upon the sheets or pads by spring-pressure, substantially as described.

2. A blotter-bath and a spring-presser therefor, in combination with a holder constructed to receive the bath and press on the spring, substantially as described.

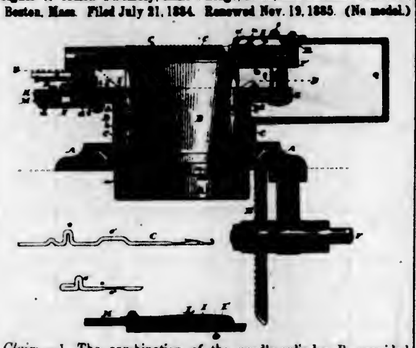
3. A blotter-bath and cover therefor, in combination with a hollow platen of a copying-press forming a holder for the same, substantially as described.

335,586. BONE-BLACK DISCHARGER FOR CONTINUOUS FILTERS. ROBERT C HOWES, East Orange, assignor to the F. O. Matthiessen & Wiechers Sugar Refining Company, Jersey City, N. J. Filed Oct. 26, 1885. (No model.)



Claim.—In a continuous filter, a bone-black discharger consisting of a shearing-blade arranged in the form of a conical helix, the convolutions of which overlap and are separated from each other to a prescribed extent, a suitable frame for supporting the shearing-blade, and means for imparting rotary motion to the discharger upon its vertical axis, as and for the purpose set forth.

335,587. KNITTING-MACHINE. WARREN D. HUBS, Laconia, assignor to Orison Twombly, Lake Village, N. H., and Thomas S. Newell, Boston, Mass. Filed July 21, 1884. Renewed Nov. 19, 1885. (No model.)



Claim.—1. The combination of the needle-cylinder B, provided with the fixed sinkers *c' c*, the needles C, the cast-off fingers *o*, and the cam-ring P, provided with the path *p*, having the throw *p'*, and the cam-cylinder D, all arranged and adapted to operate substantially as described.

2. The combination of the needle-cylinder B, provided with the fixed sinkers *c' c*, the cast-off fingers *o*, the cam-ring P, provided with the path *p*, having the throw *p'*, and the pressure segmental rib T, all arranged and adapted to operate substantially as and for the purposes described.

3. The combination of a needle-cylinder provided with a series of longitudinal grooves in its periphery, made deeper at the middle of their lengths than at their ends, a series of needles located in said grooves, and a reciprocating segment arranged to press against the middle of said needles and bend them into the hollows of said grooves, substantially as shown and described.

4. The combination of the needle-cylinder B, provided with the longitudinal grooves *b*, having a greater depth at their centers than at their ends, and with the circumferential groove *f*, a series of needles in said longitudinal grooves, the cam-cylinder D, provided with a needle-operating cam-path, *d*, the flange or plate G, firmly secured upon said cam-cylinder, and provided with the recess *h*, having the parallel portions of its sides dovetailed, the reciprocating plate H, fitted to slide in said dovetailed recess, the segments I and I', and the crank-lever M and the connecting rod or link N, connecting said flange G and plate H, whereby one-half of the needles may be thrown out of action by a single movement of said crank-lever, substantially as described.

5. In combination with the flange or plate G, provided with the recess *h*, the plate H, and the segments I and I', the springs L and L', each secured at one end to the plate H and having its opposite end bent down over the inner ends of the segments, substantially as and for the purposes described.

6. The combination of the cylinder B, provided with the series of longitudinal grooves *b b*, having a greater depth at the center of their lengths than at their ends, and with the circumferential groove *f*, the flange or plate G, the plate H, the crank-lever M, the connecting-rod N, the cam-segments I and I', fitted to the inner end of said plate H and provided with teeth or notches in their outer edges, the lever J, the double-acting pawls *i* and *i'*, the T-shaped arm K, provided with the detent-notches *l*, *l'*, and *l²*, and the spring-arm *j*, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

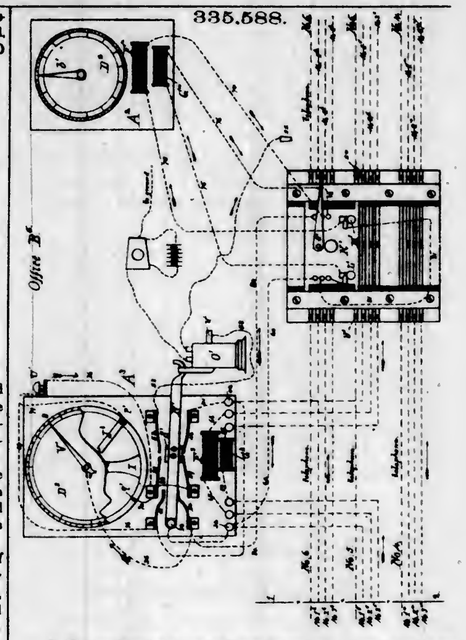
7. The combination of the needle-cylinder B, the needles C, the needle-operating cam-cylinder D, the radially-grooved plate O, the cast-off fingers *o*, the cam-ring P, the adjustable stops r^2 and r^3, mounted upon the cam-ring P, and the U-shaped arm Q, all arranged and adapted to operate substantially as described.

8. The combination, with the U-shaped arm Q, of the yarn-guide S, made in two parts pivoted together and adjustably secured upon the upper branch of the U-shaped arm Q, substantially as and for the purposes described.

335,588. TELEPHONE SYSTEM. CHARLES A. JACKSON, Lawrence, Mass., assignor to David F. Robinson, same place. Filed Aug. 11, 1885. (No model.)

Claim.—1. The combination of a dial, an indicator-hand, a spur-wheel turning with said hand, longitudinally-movable rods for actuating and locking said wheel, and an electro-magnet for operating said rods, all constituting an individual-call indicator, with electrical connections making circuit directly between the several subscribers' stations without the intervention of a central station, and apparatus at each subscriber's station simultaneously operated by the movement of said indicator-hand, and attached devices to give corresponding indications, substantially as set forth.

335,588.



2. The combination of an indicator-finger and a spur-wheel with which it turns, with a longitudinally-movable actuating-rod for turning said wheel, a second longitudinally-movable rod for locking said wheel, an electro-magnet and springs for actuating said rods, and a series of apparatus electrically connected upon any given circuit, which are similarly and synchronously actuated by the movement of said finger in order that any subscriber may be called by any other on a different circuit, substantially as herein set forth.

3. In an individual-call-indicator apparatus, the combination, with the shaft C, hand *b*, and spur-wheel E, mounted thereupon, of the rod *c* and pivoted arm *e*, operating laterally to engage and advance the wheel by the action of the lever *i* and electro-magnet F, substantially as herein described.

4. The combination, with the locked spur-wheel E and actuating-rod *c*, pivoted arm *e*, and spur *g*, of the rod *d* and its spur *h*, adapted to engage with each other upon the advance movement of the rod *c*, induced by an electro-magnet, whereby the two rods advance simultaneously to release and advance the wheel E, substantially as and for the purposes herein described.

5. The combination, with the spur-wheel E and its spring 5, shaft C, and indicator-hand *b*, of the reciprocating locking-rod *d*, spur *h*, lever *m*, and electro-magnet G, whereby activity of the magnet actuates the lever to release and reverse the wheel by means of the spring 5 in order to restore the hand to normal or zero position, substantially as set forth.

6. In a telephonic system, the combination, with a movable switch-board and call-tapper or key operating the individual-call-indicator apparatus and located in one subscriber's office, of a series of individual-alarm-indicator apparatus electrically connected and operated similarly and synchronously upon any given circuit, by which any subscriber desired may be rung up, substantially as herein described.

7. In combination with electric conductors making a series of circuits, and a movable switch-board through which they pass, an individual-call-indicator apparatus, a series of individual-alarm-indicator instruments at other stations synchronously operated by said call-indicator, a tapper on the switch-board, and additional mechanism operated thereby for restoring all the indicator-alarm hands of that system simultaneously to zero or normal, substantially as set forth.

8. The indicator-alarm apparatus as herein described, located in one subscriber's office, similarly and synchronously operated by an indicator-call instrument located in a second subscriber's office, each instrument being provided with a rotary hand, a spur-wheel, an actuating-rod with pivoted arm, an incline for forcing said arm downward, and an electro-magnet for actuating said rod, the two co-operating substantially as herein set forth, whereby the subscriber's attention may be attracted.

9. In an indicator-alarm apparatus, the combination, with the fixed dial D', rotary hand V, and the spur-wheel E', affixed to the shaft C', which is operated by an electro-magnet upon a lever, *i'*, and rod *c'*,

engaging with the spur-wheel, of the fixed insulated switch-plate I and the switch-hand J, traveling thereon, the latter actuated by the shaft C', substantially as described.

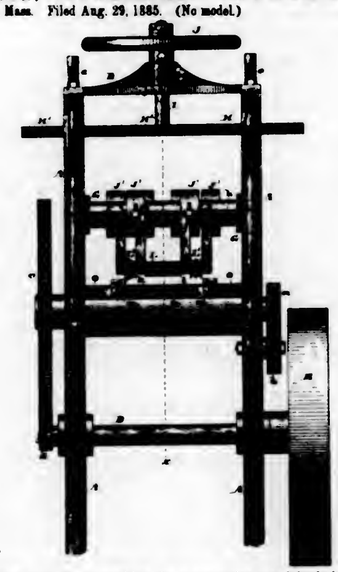
10. In combination with the individual-alarm apparatus A', as herein described, the switch-lever N, provided with the insulated offset piece S and the contact-plates 23 27 28 43 45 46, arranged as stated, whereby movement of the lever effects change in two distinct circuits, substantially as and for purposes set forth.

11. The combination, with the individual-alarm apparatus A' and its pivoted switch-lever N, provided with the insulated offset S, of the series of circuit-closers 43 23, co-operating with the lever N proper, and the closers 45 46 27 28, which co-operate with the offset S, substantially as and for purposes herein described.

12. The combination, with a series of wires forming a series of systems, of the spring-plates and the movable switch-board K, having the circuit-breakers *t t t u u u*, whereby the currents from any system may be directed through the instruments A A' of any calling subscriber, and operating substantially as herein set forth.

13. The combination of an electro-magnet and its armature with the rotary toothed wheel E, the yielding actuating-rod *e*, which is connected to the aforesaid armature, the locking-bar *d*, the shaft on which said wheel is mounted, the electrical conductors making circuit through the helix of said magnet, a second magnet, conductors making circuit through the helix thereof, and an armature actuated by said second magnet and operating with relation to rod *d*, substantially as set forth.

335,589. **WOOD ORNAMENTATION.** JOHN P. JAWSON, Cambridgeport, Mass. Filed Aug. 29, 1885. (No model.)



Claim.—1. In a machine for ornamenting wood in imitation of carving, the combination of a bed-roll, mechanism for imparting to said roll a rotary motion, a vertically-movable but non-revolving shaft or bar extending across the machine parallel with said bed-roll, a pair of pendent arms mounted upon said non-revolvible shaft or bar, and a cylindrical die mounted upon a spindle set in bearings in the lower ends of said arms, and having its lower side below the extreme lower ends of said arms, substantially as described.

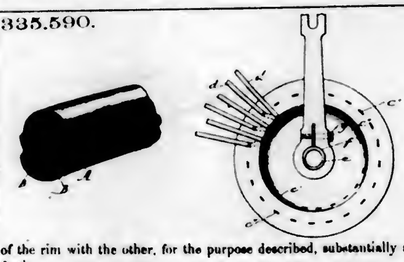
2. The combination of the non-revolving shaft I'', provided with the spline-groove *h*, a pair of pendent arms, J' J', the gibs or keys *i i*, the set-screws *j j*, the non-revolving spindle *k*, and a cylindrical die mounted upon and revolvible about said spindle, substantially as described.

3. In a machine for ornamenting wood, a pair of bed-rolls, a pair of non-revolving shafts or bars, a pair of pendent arms adjustably mounted upon each of said shafts or bars, and a cylindrical die or pressure shaping-roll mounted between and supported by bearings in the lower ends of each pair of pendent arms, substantially as described.

335,590. **VELOCIPEDE.** THOS. B. JEFFERY, Ravenswood, Ill. Filed July 31, 1885. (No model.)

Claim.—1. A metallic wheel-rim having the material at the side of its center and between such center and its edge thickened into a web or bridge which by crossing the space above such center connects one side

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of the rim with the other, for the purpose described, substantially as set forth.

2. The metallic wheel-rim having a longitudinal ridge or ridges on one or both sides of its center and between its center and its edge forming a base for the rubber tire and a web to unite the two opposite sides, substantially as set forth.

3. In combination with a series of spokes placed against the outer face of the hub, a double series of holes, one of which is concentric with the other, substantially as and for the purpose described.

4. In a velocipede-axle provided with longitudinal ridges and grooves, and cranks similarly provided with grooves and ridges, means for clamping one to the other, for the purpose described, substantially as set forth.

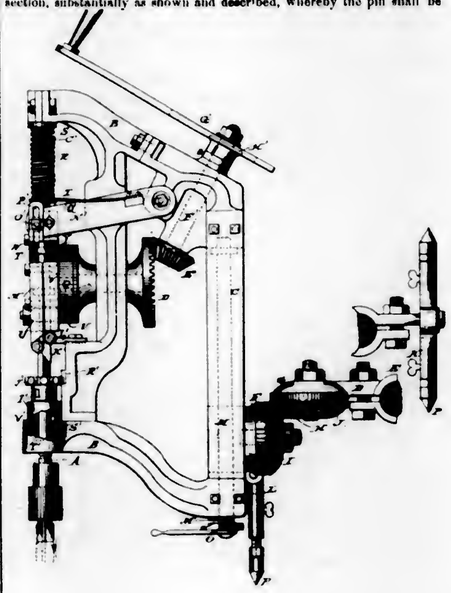
5. A metallic wheel-rim of practically a U-shaped section, produced from a strip whose edges form the two upper terminations of the U, and a portion about midway between its edges or terminations and its base formed into a rib or ribs projecting inward and connected to the opposite side of the U, substantially as and for the purpose described.

335,591. **MINING-DRILL.** WILLIAM H. JENKINS, Irwin, Colo. Filed Aug. 22, 1885. (No model.)

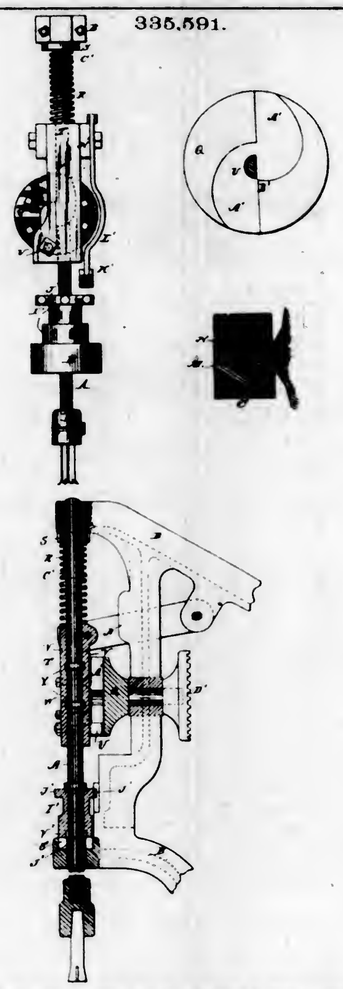
Claim.—1. The combination, with a drill-rod, of a cam for operating the same, which cam is provided with grooves forming an unobstructed way across its face leading through its center, one side of each of which grooves is curved with a gradually-increasing curvature from the periphery to the center of the cam, substantially as shown and described, and for the purpose set forth.

2. The combination, with a drill-rod having a lifting-pin, of a cam for operating the same, which cam is provided with grooves A' A', meeting at the center and forming an unobstructed way across its face from opposite points on or near its periphery, and having said grooves formed each with a radial side and a curved side of gradually-increasing curvature from its periphery toward its center, substantially as shown and described, and for the purpose set forth.

3. The combination, with a cam having means for lifting from its periphery toward its center, of a spring-actuated drill-rod, or similar device, having a lifting-pin of approximately semicircular form in cross-section, substantially as shown and described, whereby the pin shall be



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released by the cam instantly when the rod begins to strike, as set forth.

4. The combination, with the cam having meeting grooves A', each formed with a radial and a curved side, of the spring-actuated drill-rod having a pin attached thereto, which pin is approximately semicircular in cross-section, substantially as shown and described.

5. The combination, with the drill rod and the actuating-spring arranged thereon, of the threaded sleeve C', attached to the supporting-frame of the drill-rod and arranged between the said rod and spring, and the collar S, screwing on the said sleeve and bearing against the upper or outer end of the spring, substantially as shown and described.

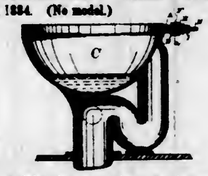
6. The combination, with the drill-rod having the collar provided with radial pins, of the cam pivoted to a stationary part and arranged to engage said pins, and the slotted bar loosely connecting the cam with a projection on the cross-head on the drill-rod, and the spring placed in engagement with said bar, substantially as specified.

7. In a mining-drill, the combination of the frame, the drill-rod, and the cross-head having the guide-arms N' pivoted thereto and connected to the frame by a sliding joint, substantially as shown and described, and for the purpose specified.

8. The combination, with the drill-rod, of the collar I', having the circular flange V', the rubber cushion S', and the tube T', arranged between the rod and cushion, substantially as shown and described.

9. The combination, with a stationary column, of the bar D, supported near its center on said column, as shown, and adapted to be rotated thereon, means for supporting a drill-rod at one end of said bar, the arm K, pivoted at its center to the opposite end of the bar D and adapted to bear at both ends against the walls of a shaft, and the pivoted arm L, connected to the said bar near the end supporting the drill-rod, substantially as shown and described.

335,592. **PACKING-JOINT.** THOMAS KEYWORTH, Brooklyn, N. Y. Filed July 19, 1884. (No model.)

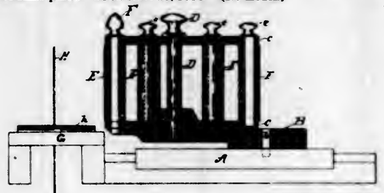


Claim.—1. A joint for porcelain and other tubes comprising the following elements, to wit: a divided collar, D, composed of the overlapping parts A' B', a tube, A, having a circumferential flange, *a*, a sleeve, E, having a flange, *e*, a packing-ring, F, and bolts G, for connecting the said parts, all substantially as and for the purpose herein set forth.

2. The combination of the collar D, composed of the separable parts A' B', rabbeted and overlapped at their ends, and constructed with internally-threaded bolt-holes *b'*, a tube, A, having a circumferential flange, *a*, a sleeve, E, having a circumferential flange, *e*, a packing-ring, F, interposed between the two flanges aforesaid, and bolts G, constructed to be passed through the flanges and packing-ring and to be screwed into the internally-threaded bolt-hole *b'* of the collar D, all substantially as and for the purpose herein set forth.

3. The combination of the collar D, composed of the separable parts A' B', rabbeted and overlapped at their ends and constructed with internally-threaded bolt-holes *b'*, a tube, A, having a circumferential flange, *a*, a sleeve, E, having a circumferential flange, *e*, a thimble, *d*, and externally-threaded thimble *f*, a packing-ring, F, interposed between the two flanges aforesaid, and bolts G, constructed to be passed through the flanges and packing-ring and to be screwed into the internally-threaded bolt-hole *b'* of the collar D, all substantially as and for the purpose herein set forth.

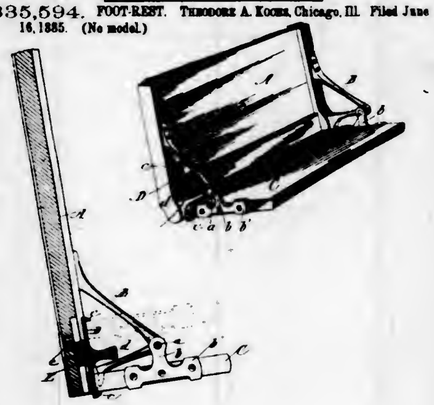
335,593. **PRESSER-ROLL.** ROBT. C. KILLAM, Moncton, New Brunswick, Canada, assignor to Alexander L. Wright and Alston Cushing, both of same place. Filed Nov. 23, 1884. (No model.)



Claim.—1. The combination, in a press-roller machine, of two or more vertical rollers contained in a rotating roller-case, C C', pivoted on the table B by the pin *b*, all substantially as set forth.

2. The combination, in a press-roller machine, of the rotating roller-case C C' with the locking-pin F and the table B, pivoted on the frame A at the point *b*, all substantially as described.

335,594. **FOOT-REST.** THEODORE A. KOCH, Chicago, Ill. Filed June 16, 1885. (No model.)



Claim.—1. The combination, with the foot-rest A C, of latch D, provided with heads *c*, as set forth.

2. The combination, with foot-rest A C, of latch D, provided with heads *c*, and arm *d*, as set forth.

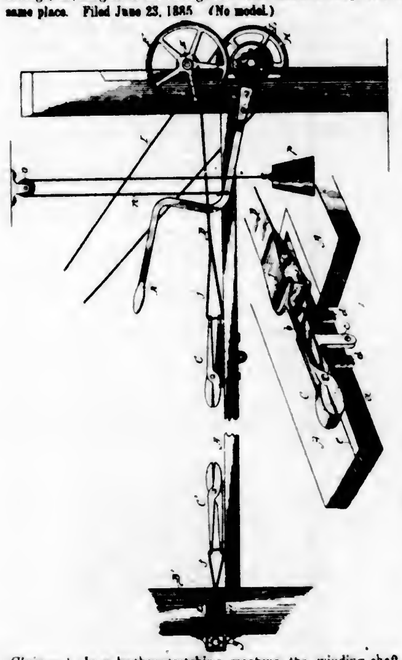
3. The combination, with foot-rest A C, of latch D, provided with heads *c*, and spring E, as set forth.

4. The combination, with foot-rest A C, of latch D, provided with heads *c*, and arm *d* and leaf-spring E, as set forth.

5. The combination, with foot-rest A C, of latch D and stud *e*, as set forth.

6. The combination, with foot-rest A C, of latch D, stud *e*, and spring E, as set forth.

335,595. **LEATHER-STRETCHING MACHINE.** AUGUST C. KRUEGER, Chicago, Ill., assignor to the Chicago Raw-Hide Manufacturing Company, same place. Filed June 23, 1885. (No model.)



Claim.—1. In a leather-stretching machine, the winding shaft or drum, a friction or gear wheel thereon, a drive-shaft, and a friction or gear wheel thereon, in combination with a shifting mechanism for connecting and disconnecting the winding and drive shafts, all arranged substantially as set forth.

2. The winding-drum, the friction-pulley thereon, the drive-shaft, and the friction-pulley thereof, in combination with an eccentric hub, constituting a bearing for the drive-shaft, and a lever for actuating said eccentric, all arranged as and for the purpose described.

3. In a leather-stretching machine, a pair of opposing tongs, in combination with a spring-seating device, substantially as described, for one of said tongs.

335,596. **SAW-SETTING MACHINE.** CASPER LANDGRAF, Chicago, Ill. Filed Dec. 11, 1885. (No model.)

Claim.—1. In a saw-setting machine, the combination, with rigid vise-jaw F and pivoted vise-jaw G, the latter provided with arm *d* and roller *e*, of cam *b*, as set forth.

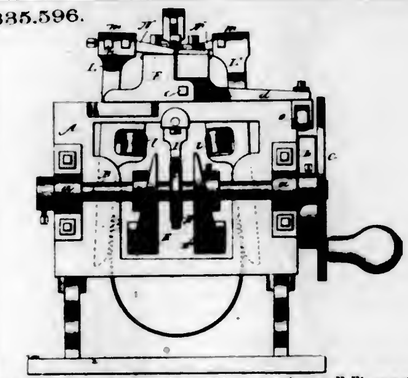
2. In a saw-setting machine, the combination, with rigid vise-jaw F, adjusting-screws *f*, and pivoted vise-jaw G, the latter provided with arm *d* and roller *e*, of cam *b*, as set forth.

3. In a saw-setting machine, the combination, with automatic saw-holding device and automatically-operating teeth-setting punches, of pawl J, lever H, eccentric D, strap I, and adjustable plate K, all substantially as described, to operate as specified.

4. In a saw-setting machine, the combination, with an automatic clamping-vise for holding the saw and provided with swage-plates *t*, of two tooth-setting punches arranged to strike two consecutive teeth simultaneously from opposite sides, substantially in the manner set forth.

5. In a saw-setting machine, the combination, with arms L L' and punches N N', mounted in the heads thereof, of spring M, connecting

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such arms, rollers *l*, mounted on said arms, and cams E E', operating such rollers, as set forth

6. In a saw-setting machine, the combination, with levers L L', punches N N', mounted in the heads thereof, and spring M, connecting the tail ends thereof, of rubber cushions P, rollers *l*, mounted in levers or arms L L', and cams E E', operating such rollers, as set forth.

335,597. **EXERCISING-MACHINE.** HOSEA W. LIBBEY, Boston, Mass. Filed Apr. 24, 1885. (No model.)



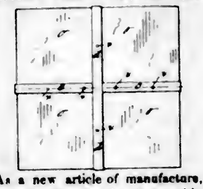
Claim.—1. The combination, with the boat E, of the springs D, truck B, wheels C, and track A, substantially as shown and described.

2. The combination, with the boat or vessel A, of the friction-rollers G and ways F, supported on standards F', as shown and described.

3. In combination with the boat E, the oars I I, provided with corrugated or serrated ends, and the ways H H, provided with corrugated or serrated surfaces, substantially as shown and described.

4. The combination of the boat E, the truck B, and means for connecting the boat with said truck, the rollers C, and the tracks or ways A, provided with a surface or covering of india-rubber, as and for the purpose described.

335,598. **MANUFACTURE OF COMPOUND MICA SHEETS.** HIRAM S. LUCAS, Chester, Mass. Filed Nov. 26, 1883. (No model.)

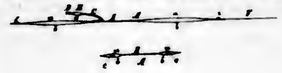


Claim.—1. As a new article of manufacture, a compound plate of mica consisting of a plurality of mica sheets with overlapping edges, the lap being covered by strips of flexible metal and the strips and sheets united by rivets, substantially as described.

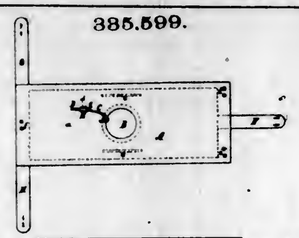
2. As a new article of manufacture, a compound plate of mica sheets consisting of a plurality of plane sheets of mica united at their proximate edges by strips of flexible metal covering the joint and secured together, substantially as described.

335,599. **LIFE-PRESERVER.** WILLIAM C. MACDONALD, Reading, Mass., assignor, by mesne assignments, to himself and Augustus Frederic Petree, same place. Filed Oct. 14, 1885. (No model.)

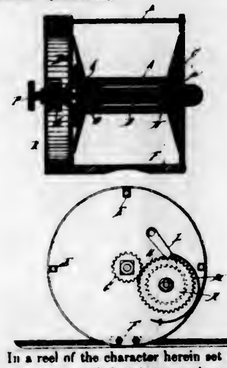
Claim.—The combination, with the life-preserver consisting of the water-proof bag open through its middle, and of the straps and buttons, inflation-tube, and its clamp, arranged as set forth, of the flexible tubes placed within the bag at the middle of it and arranged with its neck opening, so as when the life-preserver is in use to extend across the shoulders of the wearer, all being substantially as and for the purpose specified.



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335,600. **FISH-LINE REEL.** MICHAEL MAGUIRE, New York, N. Y. Filed May 6, 1885. (No model.)

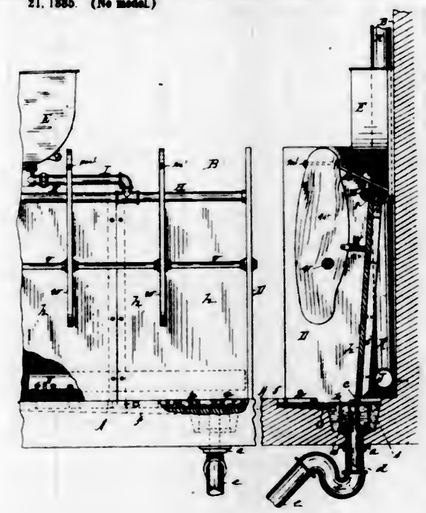


Claim.—1. In a reel of the character herein set forth, the drum or spool supported upon the central shaft between the two friction-collars, and made movable or adjustable upon said shaft, one of said collars being made adjustable, and both mounted upon and combined with the the shaft, substantially as and for the purposes set forth

2. In combination with the central shaft and the spool or drum supported thereon, the adjustable friction-collar having the cross pin or key, and a screw bearing against said pin, adapted to move the same, or permit the same to move within the slot provided for it in the shaft, substantially as and for the purposes set forth.

3. The herein-described reel, composed of the drum mounted and made movable upon a central shaft, the central shaft, the friction-collars, mechanism for regulating the friction between said drum and collars, the crank, the connecting gear-wheels, and a detent operating to prevent backward or reverse movement of the shaft, substantially as and for the purposes set forth.

335,601. **URINAL.** THOMAS W. MANN, Holyoke, Mass. Filed Sept. 21, 1885. (No model.)

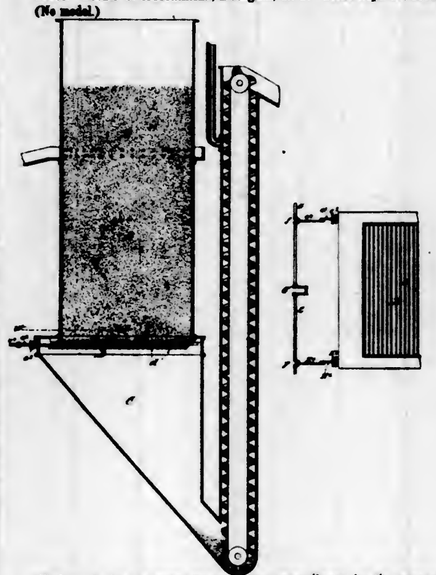


Claim.—1. The within-described urinal, consisting of the inclined wall A, the shields *w*, hung on bracket-supports in front of the latter and not in contact therewith, the trough C, located under said wall and having the foot-blocks *n* therein, with a water-passage entirely around the latter, the perforated ventilating-pipe J, located behind the wall A, and means, substantially as described, for conveying water onto the latter and to said trough, and for drawing the water and the urinary discharges from the latter, combined and operating substantially as set forth.

2. In a urinal construction substantially as described, the trough C, the inclined wall A, having its lower edge supported over the latter and above the normal water-line thereof, the perforated ventilating-pipe J, the flushing-pipe H, to discharge water against said wall, a suitable water-supply for said pipe, the drain-pipe *e*, connected to the bottom of said trough, the siphon-pipe *d*, adjustably secured to the interior of said drain-pipe, and the siphon-cap *b*, having air-passages and side openings therethrough, combined and operating substantially as set forth.

3. In a urinal construction substantially as described, the urinary wall A, the shields *w*, hung on bracket-supports, substantially as described, in front of the latter and not in contact therewith, and the rod *v*, passing transversely through said shields and suitably secured thereto, all combined and arranged substantially as set forth.

335,602. **BONE-BLACK DISCHARGER FOR CONTINUOUS FILTERS.** FRANK O. MATTHIESSEN, Irvington, N. Y. Filed Sept. 18, 1885. (No model.)



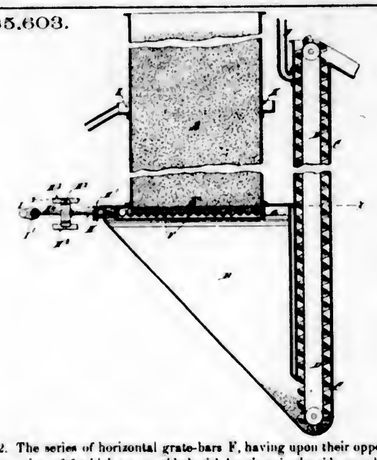
Claim.—1. In apparatus for purifying sugar-liquor by the process of upward filtration through a body of bone-black, the combination of a filtering-chamber surmounting a receiving-chamber, with a discharger at the bottom of said filtering-chamber in the form of a grate provided with rocking slats or grate-bars, and means for rocking said slats or grate-bars from positions in which they support and hold up the bone-black in said filtering-chamber to positions in which they permit the bone-black to be discharged from the said filtering-chamber through the spaces between the slats or grate-bars into said receiving-chamber, substantially as set forth.

2. In a bone-black discharger substantially such as described, the rocking slats or grate-bars *d d*, &c., provided, respectively, with the longitudinal slots *d' d'*, &c., as set forth.

335,603. **BONE-BLACK DISCHARGER FOR CONTINUOUS FILTERS.** FRANK O. MATTHIESSEN, Irvington, N. Y. Filed Oct. 2, 1885. (No model.)

Claim.—1. In apparatus for purifying sugar-liquor by the process of upward filtration through bone-black, the combination, as herein set forth, of a filtering-chamber surmounting a receiving-chamber, a bone-black discharger consisting of a grate provided with grate-bars having the capacity of rotation upon their longitudinal axes, means for reciprocating the said grate in a horizontal path and for rotating the said grate-bars for the purpose of effecting when required the discharge into the said receiving-chamber of the exhausted bone-black from the bottom of the column of bone-black supported upon the said grate, and means for removing the said exhausted bone-black from the said receiving-chamber.

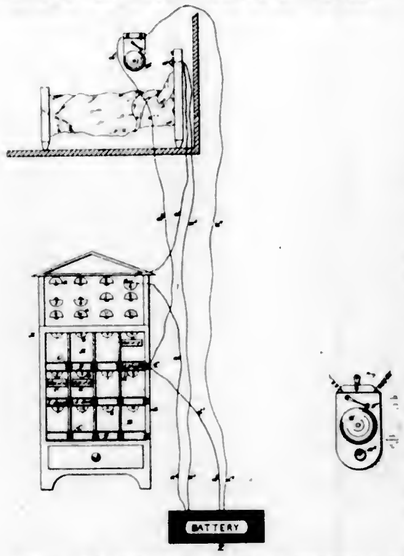
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2. The series of horizontal grate-bars F, having upon their opposite ends trunnions *f f*, which are provided with bearings in the side members, *e e*, of the grate-frame, each of which trunnions has affixed to it the toothed wheel *f'*, in combination with the horizontal racks G *g*, and means for imparting reciprocating movement to the grate-frame, and thereby causing the rotation of the grate-bars, as and for the purpose set forth.

3. In combination with a filtering-chamber for containing a column of bone-black, a device for supporting the said column and for effecting when required the gradual removal of bone-black from the bottom thereof, consisting of a reciprocating grate provided with a series of horizontal grate-bars in the form of troughs having the capacity of rotation upon their longitudinal axes, and means for causing the said grate-bars to turn upon their longitudinal axes during the movements of the reciprocating grate, as and for the purpose set forth.

335,604. ELECTRICAL CALL SYSTEM FOR HOTELS. JAMES C. MCLAUGHLIN, Cincinnati, Ohio. Filed Nov. 28, 1882. (No model.)



Claim.—1. The combination, with a bell and push-button in each room, of an office-box having an annunciator and key compartment for each room, each compartment having an adjustable name and time index, and a call-button and electric circuits between the rooms and office-box, substantially as described.

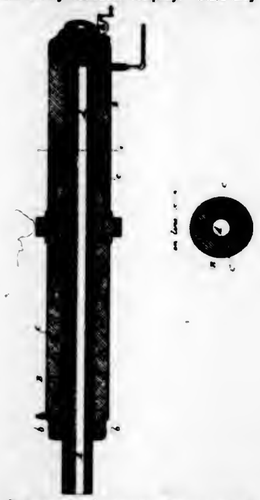
2. The office-box consisting of a frame containing a series of key-compartments, each compartment having an adjustable name and time index and an individual push-button and a series of annunciators corresponding to the compartments, combined with a series of electric circuits, including a bell and push-button, one for each room, substantially as described.

335,605. AUTOMATIC CIRCUIT-CLOSER FOR TELEGRAPH-KEYS. ANDREW C. MCNEAL, Georgetown, Ky., assignor of one-half to William H. Tyree, same place. Filed Aug. 30, 1885. (No model.)



Claim.—The combination, with a telegraph-key, of the lever E, fulcrumed in the standard *e*, secured to the upper side of the key proper, and having one end provided with a knob, F, projecting through the key-button, and the other end operating a vertical sliding rod, H, the lower end, *k*, of which forms a sliding contact with the recess *d* of the insulated anvil D, as set forth.

335,606. ORDNANCE. DAVID M. MEFFORD, Toledo, Ohio, assignor to the National Heavy Ordnance Company. Filed May 9, 1885. (No model.)



Claim.—1. In a cannon, the combination of a barrel, an encircling re-enforce or jacket closely joined at its ends to the barrel, and adapted to slide at one end thereon, and a fluid medium closely confined between the re-enforce and barrel and surrounding the latter, substantially as described, whereby the internal strains are transmitted through the fluid medium to the re-enforce.

2. The combination of the thin barrel or gun-tube, the relatively thick re-enforce joined at one end rigidly to the barrel and connected thereto at the opposite end by a tapered sliding joint, and an incompressible fluid closely confined between the re-enforce and barrel, whereby the internal strains and pressure are transmitted through the fluid medium to the re-enforce, and the barrel permitted to expand and contract without danger of rupturing the gun.

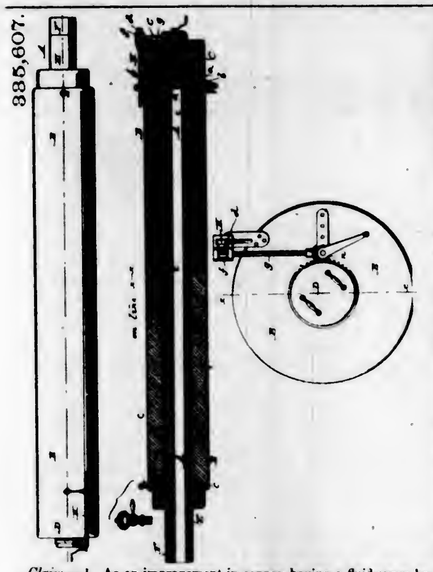
3. The barrel in combination with the re-enforce applied thereto to leave the fluid-receiving space between them, the re-enforce being tightly secured to the barrel at one end by a screw-connection and closely united thereto at the opposite end by a sliding connection, whereby they are adapted to closely confine the fluid between them, but the two parts permitted to expand and contract independently.

4. In a cannon, the barrel threaded externally at the breech and provided with the conical seat *b*, in combination with the external re-enforce tightly seated at its ends upon the thread and the seat, respectively, and adapted to leave an intervening annular space for the reception of fluid medium, as described and shown.

5. In a cannon, the combination of a barrel, an external re-enforce applied thereto to leave an intervening fluid-space and joined tightly thereto at the ends, and cocks for the admission and release of the fluid, whereby the fluid may be confined in position during the firing of the cannon, in order to transmit the strains from the barrel to the re-enforce, and subsequently discharged to prevent the transmission of heat to the re-enforce.

335,607. ORDNANCE. DAVID M. MEFFORD, Toledo, Ohio, assignor to the National Heavy Ordnance Company. Filed Oct. 9, 1885. (No model.)

335,607.



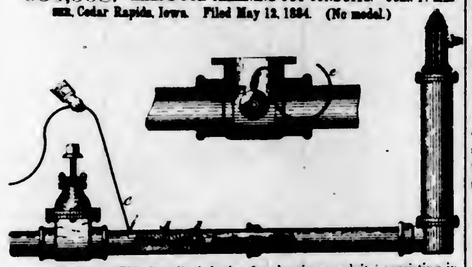
Claim.—1. As an improvement in cannon having a fluid-space between the barrel and re-enforce, the internally flanged and threaded re-enforce, in combination with the externally-flanged barrel and the externally-threaded tube seated in the re-enforce against the breech end of the barrel, as described.

2. As an improvement in cannon having a re-enforced or jacketed barrel and an intermediate fluid-confining chamber, the combination of the central barrel, the surrounding jacket having at the forward end a conical mouth increasing in diameter toward the front, the conical ring E, fitted tightly to the exterior of the barrel and to the interior of the conical mouth, and the ring or collar F, applied to the barrel, as shown, whereby a tight joint is maintained as the barrel expands and contracts.

3. In a cannon having its barrel surrounded by a fluid-confining jacket, the combination of a movable breech-closing mechanism, a cock communicating with the fluid-chamber, and devices, substantially as shown, connecting the breech mechanism and the cock to cause them to open and close in unison.

4. In combination with a cannon having a fluid-confining chamber between its barrel and a re-enforce, the fluid-receiving vessel connected with said chamber, and the intermediate cock, whereby the fluid may be confined within the chamber or permitted to pass into the vessel and return thence into the chamber.

335,608. MEANS FOR CLEANING OUT CONDUITS. JOHN P. MEEKER, Cedar Rapids, Iowa. Filed May 12, 1884. (No model.)

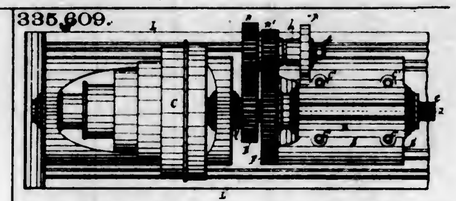


Claim.—The described device for cleaning conduits, consisting in a ball somewhat smaller than the inside of the pipe, and practically spherical in form, whereby it is adapted to follow all the sinuosities of the pipe, in combination with a cord, whereby the movements of the ball may be regulated from the outside of the pipe, substantially as set forth.

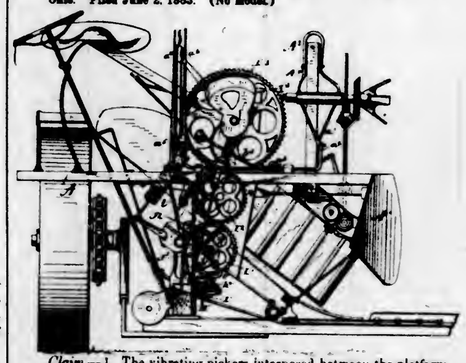
335,609. LATHE ATTACHMENT. WALTER MIDDLEDITCH, Detroit, Mich. Filed Oct. 12, 1885. (No model.)

Claim.—A lathe attachment comprising a support removably mounted upon a lathe-bed, a rotatable shaft in said support, carrying a gear-wheel at one end and threaded at the other to receive face-plates of different sizes, a gear-wheel mounted on the spindle of the lathe in the position of the ordinary face-plate, and gears intermediate the last-mentioned gear-wheel and that on the shaft of the removable support, all combined and arranged substantially as set forth.

335,609.



335,610. GRAIN-BINDING HARVESTER. LEWIS MILLER, Akron, Ohio. Filed June 2, 1883. (No model.)



Claim.—1. The vibrating pickers interposed between the platform-carrier and the packers, in combination with the swinging links and the swiveling blocks, and springs interposed between the heel ends of the pickers and the supports for the swinging links, substantially as described.

2. The vibrating pickers connected with adjustable stands or brackets, in combination with yielding connections between said pickers and adjustable brackets, substantially as described.

3. The picker crank-shaft supported in pendent bearing-brackets attached to the longitudinal bar supporting the reel-post, in combination with means, substantially as described, for adjusting the pickers for changing their path.

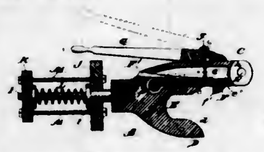
4. In a grain-binder, the combination, with the binding mechanism, of the automatic tripping mechanism, and an independent tripping-lever adapted to be operated at will by the driver for setting the binding mechanism in operation, substantially as described.

5. The combination, with the binder mechanism, of an automatic trip adapting said binder mechanism to be automatically connected with and disconnected from its actuating-shaft, and a foot-lever operating independently of said automatic trip for enabling the driver to set the binder mechanism in operation at will, substantially as described.

6. The combination, with the foot-lever for tripping and setting in motion the binder mechanism, of the rock-shaft, and the pivoted and yielding arm connected with the grain-compressor, substantially as described.

7. The needle operating from beneath the binder-table and secured to the end of the actuating-shaft outside of the bearing of the latter, in combination with a cord-guide located in line or nearly in line with said shaft, and arranged to leave a space between it and the end of said shaft for the passage of the cord, and an eye in the heel of the needle whence the cord passes to the point of the needle, substantially as described.

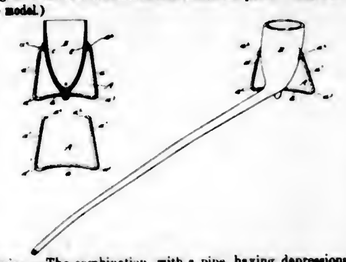
335,611. CAR-COUPLING. JAMES F. MOORMAN, Ohio, Iowa. Filed Nov. 14, 1885. (No model.)



Claim.—In a car-coupling, the combination of a draw-head having a socket, E, a curved retaining-arm, D, at one side thereof, and a coupling-arm located on the opposite side of the draw-head and having a chamber, *c*, and a slot, *c'*, an inclined abutment, *c*, formed on the inner

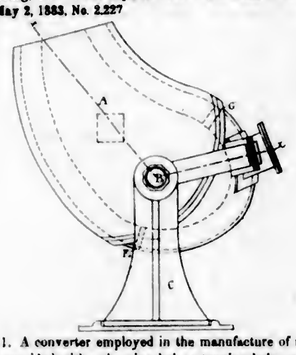
face of the coupling-arm in rear of the slot *e'*, a coupling-hook located and pivoted in the chamber *e*, and having its hook projected through the said slot *e'*, a spring for normally holding the hook extended through the slot, and a lever, G, connected with the coupling-hook by a link, *g*, substantially as described.

335,612. TOBACCO-PIPE SUPPORT. JAMES H. MORRIS, Albany, N. Y., assignor of one-half to James H. Simonson, same place. Filed Dec. 1, 1884. (No model.)



Claim.—The combination, with a pipe having depressions or recesses *c* made in the opposite sides of the bowl or stem, of the pipe-supporter described, consisting of the wire piece A, having base-bar *a*, which is connected by elastic arms *a' a'* with pivot-arms *a² a²*, which engage with said depressions or recesses, substantially as and for the purposes set forth.

335,613. CONVERTER. WM. M. MURDOCK, Gilwern, County of Brecon, England, assignor to Henry W. Oliver, Jr., and James Porter Witherow, Pittsburg, Pa. Filed Sept. 8, 1883. (No model.) Patented in England May 2, 1883, No. 2,227.



Claim.—1. A converter employed in the manufacture of malleable iron and steel, provided with a charging-hole, a tapping-hole, and a slagging-hole, each separate from the others, substantially as and for the purposes described.

2. A tipping converter provided with a slagging-hole, substantially as and for the purposes described.

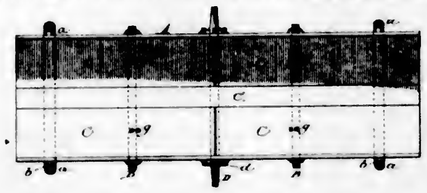
3. A tipping converter provided with a wind-box and tuyeres, a hollow trunnion connected with and supplying the blast to the wind-box, and a slagging-hole arranged above the tuyeres, substantially as and for the purposes described.

4. A tipping converter having a slagging-hole and a tapping-hole said holes being arranged on opposite sides, substantially as and for the purposes described.

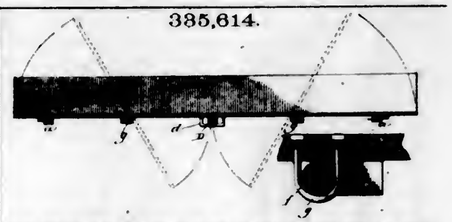
5. A tipping converter having tuyeres and a slagging-hole arranged on one side and a tapping-hole on the other, substantially as described.

335,614. DUMPING-WAGON. SAMPSON H. NOTT, Holland, N. Y. Filed Aug. 24, 1885. (No model.)

Claim.—1. In a dumping-wagon, the hinged bottom pieces, C C C C, meeting in the center, in combination with the dumping-bar D, the



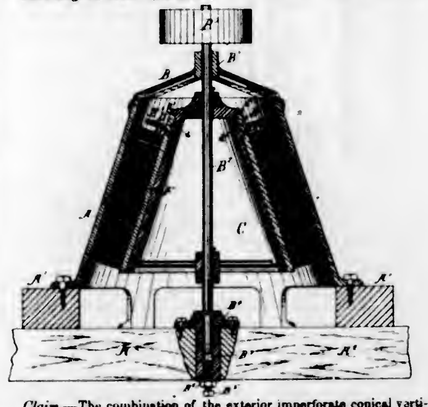
335,614.



wide side stirrups, *d d*, the pivot pins or bolts *p p*, and hole *h* in bar D, all arranged and operating substantially as specified.

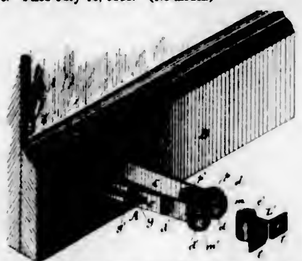
2. In a dumping-wagon, the combination of the four bottom pieces, the central piece, C', the two cross-bars B B, hinged to the bottoms C, the ends resting in side clips *c c*, the double-pivoted dumping-bar D, the stirrups *d d*, bolts *p p*, and side-boards A A, all substantially as and for the purpose specified.

335,615. DISINTEGRATOR. JOHN W. PARMELEE, Englewood, Ill. Filed Aug. 21, 1884. (No model.)



Claim.—The combination of the exterior imperforate conical vertical shell, open at the top and bottom, and a concentric revolving brush-cone provided with long flexible wire bristles, adapted to whip instead of cutting the gravel, &c., and driving mechanism for operating the cone, substantially as specified.

335,616. BUMPER FOR DOORS. BENJAMIN D. PATRICK, Appleton City, Mo. Filed July 10, 1885. (No model.)



Claim.—1. Metal spring-plates C C' for a door-bumper, and a combined bumper and holdback provided with a hinged fastening-plate, and a slot and clamp, by which the bumper and the bumper and holdback combined can be adjusted to any desired angle with respect to a door, substantially as described.

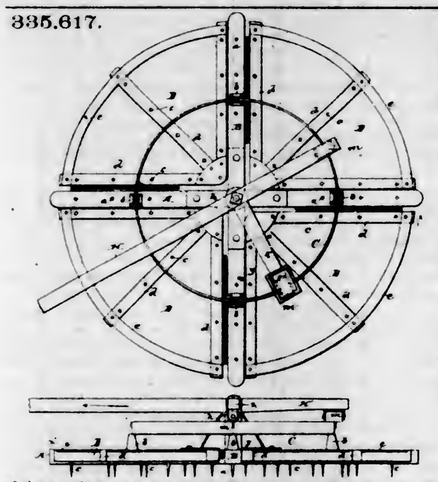
2. The combination of india-rubber bumping-rollers *m m'*, or their equivalent, with the hinged and adjustable hinged plates C C', substantially as described.

3. The combination of the hinged and adjustable spring-plates provided with an expansible loop, *e*, and the bumper-catch L, substantially as and for the purpose described.

335,617. HARROW. JOHN M. PEARSON, Neoga, Ill. Filed Sept. 15, 1885. (No model.)

Claim.—1. The combination, in a rotary harrow, of the main frame consisting of cross-bars A B, and frames D, each pivoted to one

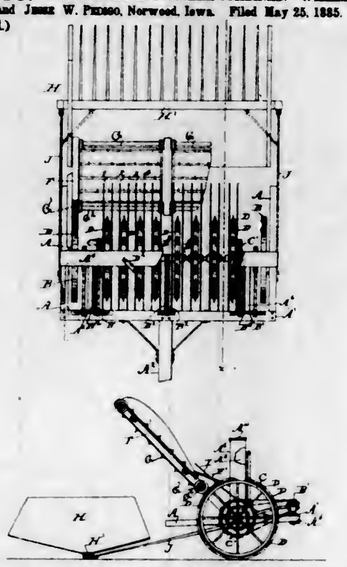
335,617.



of the cross-bars at right angles to the line upon which the adjacent frame is pivoted, for the purpose set forth.

2. The combination of a rotary harrow consisting of a main frame, and supplemental frames pivoted so as to rise and fall in respect to the main frame, a centrally-pivoted draft-bar, H, and a ring, C, secured to elevated supports and constituting a bearing for the main frame, substantially as specified.

335,618. HAY TEDDER AND COCKER COMBINED. WILLIAM PEDRO and JESSE W. PEDRO, Norwood, Iowa. Filed May 25, 1885. (No model.)



Claim.—1. The carriage composed of the side pieces, A, the cross-pieces A' and A⁴, the parallel uprights A³ and A⁵, and the wheels B, the hinged frames B', carrying axles B², and fixed wheels C, having teeth D, extending tangentially from their peripheries, arranged and combined to operate in the manner set forth, for the purposes stated.

2. The combination of a carriage having traction-wheels at its sides, and an arch extending above and between the two wheels, and a hinged frame carrying a rotating axle having a series of fixed wheels having teeth D, extending tangentially from their peripheries, and mechanism to transmit motion from the carriage-wheels to the rotating axle suspended in the hinged frame, for the purposes stated.

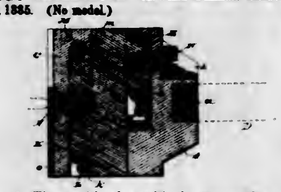
3. The carriage-frame A A' A³ A⁴ A⁵, the wheels B, fixed to short axles, two chain-wheels of different diameters fixed to the axles of the wheels B, one or two suspended frames carrying axles B², and wheels C, having teeth D, shafts B', having fixed chain-wheels, and chains connecting the chain-wheels, as the carriage-axles with the shafts B, substantially as and for the purposes stated.

4. The series of tines 1 2 3 4, in combination with the cross-piece A' of the carriage-frame, and the wheels C, having teeth D, extending tangentially from their peripheries, substantially as and for the purposes stated.

5. The hay-carrier and dump H H, having arms J, in combination with a carriage having hinged frames B², carrying axles B³, having fixed wheels C, provided with teeth D, and the elevator G F, substantially as and for the the purposes stated.

6. The hay-making machine composed of a carriage having an arched frame, hinged frames carrying rotating axles, and fixed wheels having tangential teeth on their peripheries, a series of tines projecting from the front of the carriage-frame rearward and upward between the wheels and their tangential teeth, a detachable elevator, and an adjustable and detachable hay carrier and cocker, substantially as shown and described, to operate in the manner set forth.

335,619. LATHE-CHUCK. EDWARD PERROT, Elmwood, Dak. Filed Oct. 30, 1885. (No model.)



Claim.—1. The combination, with the rear section and the middle section adjustably secured thereto and provided on its front face with a circular projection having worm-teeth on the periphery thereof, of the front section having a split collar on its rear face, a screw-bolt for adjusting the split collar, and worm-shaft journaled in the front section and engaging the teeth on the circular projection of the middle section.

2. The combination, with the front section, the rear section having an eccentric recess therein, and the middle section having an eccentric projection constructed to rest within the recess of the rear section, of the screw passing through the rear section into the eccentric projection of the middle section.

3. The combination, with the front section, the rear section having an eccentric recess in the front face thereof, a split collar located within said recess, and a bolt for adjusting said collar, of the middle section having an eccentric projection on its rear face, and a screw passing through the recess in the rear section into the eccentric projection of the middle section.

4. The combination of the rear section having an eccentric recess therein, a split collar located within the recess, a screw for adjusting the split collar, the middle section having an eccentric projection on its rear face and a concentric projection on its front face, the latter having screw-threads in the periphery thereof, a screw passing through the rear section into the eccentric projection of middle section, the front section having a split collar adapted to embrace the projection on the front face of the middle section, a screw for adjusting the split collar, and a worm passing through the front section and engaging the teeth on the projection of the middle section, substantially as set forth.

5. The combination, with one section provided with a recess eccentrically located thereon, another section provided with a projection located eccentrically thereon, and a front section, of a threaded rod or bolt adapted to engage the free ends of a split collar located within the said recess, and a screw adapted to extend longitudinally through the recessed section into engagement with the said projection, substantially as set forth.

6. The combined face-plate and chuck, consisting, essentially, of the rear section with its eccentrically-located split collar, the middle section with its eccentrically-located projection adapted to be clamped by the said collar, the outer section adapted to be secured to the middle section in rotary adjustment, and the longitudinal screws for locking the sections against separation, substantially as set forth.

335,620. PLOW. JOHN PETERSON, Watson, Mich. Filed June 2, 1885. (No model.)



Claim.—1. The combination of the plow-beam support having the open series of recesses, with the rounded rear enlargement in the front side of the upper end of said support, and the jointer-beam provided with a share, the rear end of said beam being adapted to enter said recess and form a detachable socket-joint, and a support to the jointer-beam adjustably connecting it with the plow-beam, substantially as set forth.

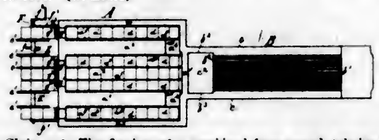
2. The plow provided with the adjustable colter forming part of the landside, and having slotted lugs at its lower and rear side for adjustably connecting it with the plow-standard and mold-board base, substantially as set forth.

3. The combination of the plow-point having the tenoned securing end, V-shoulders each side where the tenon joins the point, and a like shoulder at the free end of the tenon, the latter transversely slotted, a plow having a nose-recess adapted to receive and conform to the shape of the tenon and shoulders of the point, and a securing-bolt having a hooked end to lock in the tenon-slot, whereby the point may be shifted either side up and held secure in either position, substantially as set forth.

4. The plow provided with the landside pivoted at its forward end, and provided with the curved slot in which the vertical bolt is passed, and the curved securing-bolt and beveled blocks, all arranged substantially as set forth.

5. A plow-jointer provided on its mold-board side with a mold-board reversible end for end, one end thereof being curved or thrown outward, for the purpose stated, and provided on its landside with the reversible colter-plate having the slanting cutting-edges, the distance from the securing-bolt of said plate to said cutting-edges being greater on one side than the other, substantially as set forth.

335,621. **FURNACE.** TOWNSEND POORE, Scranton, Pa. Filed May 18, 1885. (No model.)

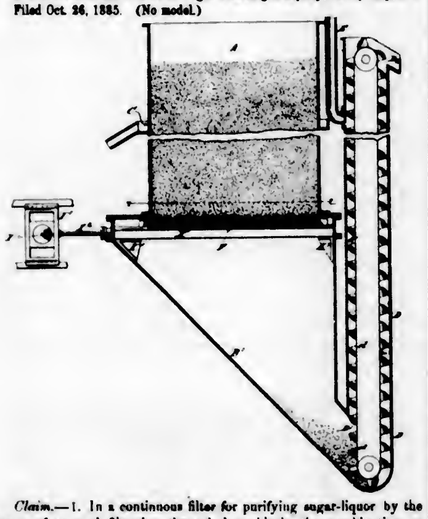


Claim.—1. The fire-box of a combined furnace and tubular boiler having parallel longitudinal fire-boxes a' a^2 a^3 and four water-legs, the intermediate two of which are shorter than the outer ones, and a transverse fire-box of a length equal to the width of all the fire-boxes a' a^2 a^3, and serving to unite said fire-boxes in rear of the bridge-wall, substantially as and for the purpose described.

2. A boiler-furnace comprising separated parallel longitudinal fire-boxes a' a^2 a^3, a transverse uniting fire-box, a^4, extending from one outer water-leg a^2 to another, a bridge-wall, c', and a combustion-chamber, c^3, substantially as and for the purpose described.

3. The combination of the furnace A, having four water-legs, a^2, two of which are short and two long, longitudinal fire-boxes a' a^2 a^3, the uniting transverse fire-box a^4, extending from one outer water-leg a^2 to another outer one, endless traveling grates d, extending from outside the fire-boxes to near the bridge-wall c', and a boiler, B, substantially as and for the purpose described.

335,622. **CONTINUOUS FILTER FOR PURIFYING SUGAR-LIQUORS BY BONE-BLACK.** EDWARD E. QUIMBY, Orange, assignor to the F. O. Matthiessen & Wiechers Sugar Refining Company, Jersey City, N. J. Filed Oct. 26, 1885. (No model.)



Claim.—1. In a continuous filter for purifying sugar-liquor by the process of upward filtration through bone-black, the combination, as herein set forth, of the filtering-chamber A, provided at the bottom with a series of horizontal rocking grate-bars mounted in bearings formed in a stationary frame, or in stationary girders, means for imparting to the grate-bars a sufficient range of rocking movement to enable them, during their oscillation in either direction, to progressively remove the support from all parts of the bottom of the column of bone-black in the filtering-chamber, a receiving-chamber beneath the filtering-chamber, means for removing the exhausted bone-black from the receiving-chamber, and means for introducing into the receiving-chamber the sugar-liquor which is to be purified, under sufficient head to enable it to make its way upward through the column of bone-black contained in the filtering-chamber to the level of the outlets through which it is discharged from the filtering-chamber.

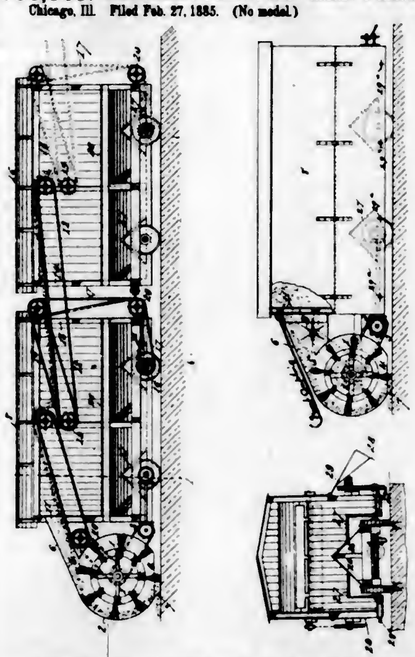
2. The combination of the filtering-chamber A and the receiving-chamber B with the grate composed of the horizontal rocking grate-bars F F, &c., each of the upper edges of each of which grate-bars is, at the conclusion of the rocking motion of the bar in one direction, carried against the grate-bar which adjoins it, and at the conclusion of the rocking motion in the other direction is brought to rest in the vertical plane of its axis of oscillation.

3. The combination, as herein set forth, of the filtering-chamber A, the receiving-chamber B, the system of horizontal grate-bars F F, &c., pivoted in stationary bearings, one or more connecting-rods, F^3, linked, respectively, to one or more horizontal slide-rods provided with suitable bearings in the side wall of the receiving-chamber, and means for applying power to the said slide-rods for the purpose of imparting a rocking motion to the grate-bars.

4. The combination of the filtering-chamber A and the receiving-chamber B with the system of horizontal rocking grate-bars F F, &c., journaled at their ends in stationary bearings, and also supported in one or more half-bearings formed in one or more intermediate girders, K K, &c., as and for the purpose set forth.

5. The intermediate transversely-grooved horizontal girders, K K, rounded or beveled at the top, in combination with the system of rocking grate-bars F F, &c., the filtering-chamber A, and the receiving-chamber B.

335,623. **SELF-LOADING DUMPING-CAR.** ANDREW J. REYNOLDS, Chicago, Ill. Filed Feb. 27, 1885. (No model.)



Claim.—1. The combination, with a rotary broom, of an inclosing-drum concentric therewith and fitting closely thereto at the front and top, an opening in the bottom of said drum for the admission of the dirt and air, and a chute leading from the rear, through which the dirt and air are discharged by the centrifugal action of the said broom, as set forth.

2. The combination, with a rotary broom, of an inclosing-drum concentric therewith and fitting closely thereto on all sides, an opening in the bottom of said drum for the admission of the dirt and air, and a second opening in the rear portion, through which said dirt and air are discharged by the centrifugal action of the broom.

3. The combination, with a rotary broom, of an inclosing-case concentric therewith and fitting closely thereto at the front and top, a flexible apron depending from the lower edge of the front wall of the case, and a chute leading from the rear, through which the dirt and air are discharged, as set forth.

4. In a dumping-car, the combination, with the stationary floor of inverted-V shape, of the hinged sides or doors and the movable sections of the floor secured thereto, substantially as set forth.

5. The combination, in a car, of the floor of inverted-V shape extending below the tops of the wheels, and having the transverse boxes of inverted-V shape, for the purpose set forth.

6. The combination, with a rotary broom, of a concentric drum inclosing said broom and fitting closely thereto, an opening in the bottom of said drum for the admission of the dirt and air, a flexible apron depending from the front edge of said opening, and a second opening in the upper rear portion of said casing, through which the dirt is discharged rearwardly by the centrifugal action of said broom, as set forth.

7. The combination, with a train of two (or more) cars, of a self-loading device attached to the foremost car of the train, and an endless conveyer arranged between the cars of the train, for receiving the material as it is delivered from the loading device and conveying it rearward through the train, substantially as set forth.

8. The combination, with a train of cars, of an endless conveyer arranged between each two cars of the train, and a connection between said conveyer and the running-gear of the car, whereby it is operated, substantially as set forth.

9. The combination, with a train of cars, of a series of overlapping endless conveyers extending throughout the train, and independent mechanism for operating each at the will of the operator, substantially as set forth.

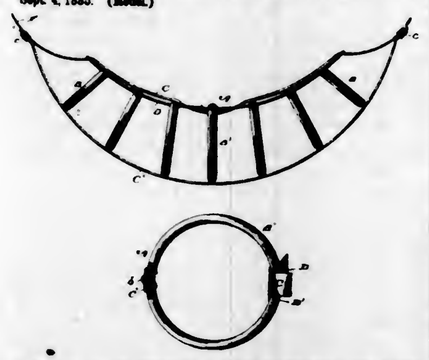
10. The combination, with the truck, of a loading device located between the front and rear axles of said truck, a vertically-adjustable frame, by which said loading device is supported, and gearing between said loading device and one of the axles of the truck, as and for the purpose set forth.

11. The combination, with a rotary broom and a casing therefor, of a flexible apron depending from said casing immediately in front of said broom, as and for the purpose set forth.

335,624. **PROCESS OF REDUCING MAGNETIC OXIDE-OF-IRON ORES.** DEXTER REYNOLDS, Albany, N. Y. Filed Sept. 19, 1884. (No specimens.)

Claim.—The process above described of deoxidizing magnetic oxide-of-iron ores and magnetic iron sands and carbonizing and reducing to a pasty or fused state the metal so produced without the admixture with solid carbonaceous substances or fluxes, which consists in subjecting in a suitable chamber an extensive but thin layer of the above-described fine-granulated pure oxide-of-iron particles, mechanically separated from such ores or sands, to the action of the vapor or gases of petroleum burned with timely and suitably-adjusted measures of air, as above described, passed over, upon, and in contact with the upper exposed surface of the thin layer thereof, occasionally stirred, all substantially as and for the purposes set forth.

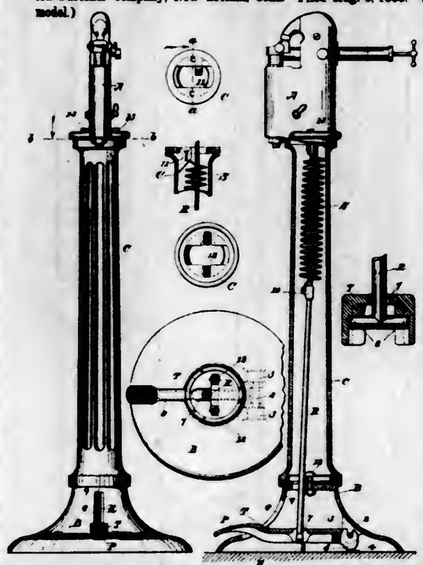
335,625. **BUSTLE.** KEZIER F. RICE, Eureka Springs, Ark. Filed Sept. 4, 1885. (Model.)



Claim.—1. As an improved article of manufacture, a bustle comprising a series of graduated flexible rings of rubber or like material, the curved rods D D', passing through the body of the rings and connected at their ends beyond the end rings of the bustle, a waistband, C, passed through the connected ends of the rods and one or more of the bustle-rings, and a flexible strap, C', secured to the rear ends of the rings and the waistband C, substantially as described.

2. As an improved article of manufacture, a bustle comprising a series of graduated flexible rings of rubber or like material, the curved rods D D', passed through the body of the rings at the front sides of said rings, said rods being connected at their ends, the waistband C, passed through the connected ends of the rods and one or more of the bustle-rings, a flexible band or strap, C', riveted at its ends to the waistband, and staples b to secure the strap C' and rings together at the rear ends of the latter, substantially as described.

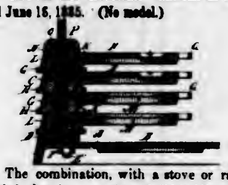
335,626. **STAND AND TREADLE MECHANISM FOR MACHINERY.** FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Aug. 6, 1885. (No model.)



Claim.—1. The combination of column C, the spring S, within the column and at one end connected thereto, and a treadle-rod connected to and passing through said spring, substantially as set forth, and for the purpose specified.

2. The combination, in a stand of the specified class, of a base, B, having a fixed pin, 2, underneath it, and a treadle, T, having an upper notch fitting over said pin, and a downwardly-projecting part, as 5, preventing the displacement of said treadle while said base stands on a support, as floor F, substantially as set forth.

335,627. **STOVE-LID HOLDER.** SAMUEL H. RICHMOND, Norwalk, Conn. Filed June 16, 1885. (No model.)



Claim.—1. The combination, with a stove or range, of a vertical standard, P, carried thereby, a series of lid-holding rings, M, pivoted upon the standard one above the other, and a series of flanged collars, G, interposed between the rings, substantially as set forth.

2. The combination, with a stove or range, of a vertical standard, P, carried thereby, a series of lid-holding rings, M, pivoted upon the standard one above the other, and a series of flanged collars, G, interposed between the rings, said collars being thicker than the rings and bearing against each other to relieve the rings of pressure, substantially as set forth.

335,628. **MOLDER'S FACING.** JOHN J. RIDDLE, Madisonville, Ohio. Filed July 2, 1884. Renewed July 10, 1885. (No specimens.)

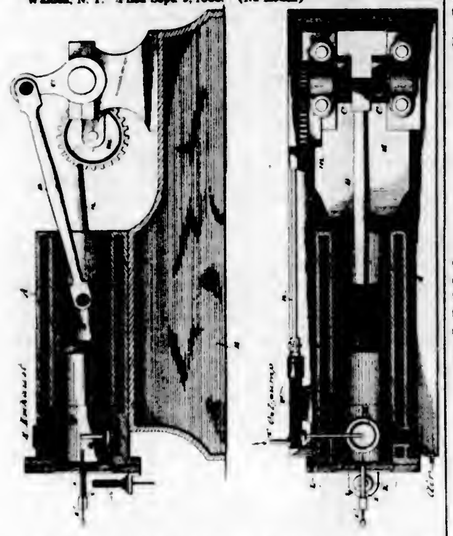
Claim.—1. A molding-facing consisting, essentially, of silica and oxide of iron, substantially as described.

2. A molding-facing consisting of silica, oxide of iron, carbon, and quicklime, substantially as described.

3. A molding-facing composed of silica, black oxide of iron, quicklime, charcoal, and soda, finely pulverized and mixed, substantially as described.

4. A molding-facing composed of silica, black oxide of iron, quicklime, rosin, charcoal, and soda, finely pulverized and mixed, substantially as described.

335,629. **HYDROCARBON-VAPOR ENGINE.** ALEXANDER K. RIDER, Walden, N. Y. Filed Sept. 9, 1885. (No model.)



Claim.—1. In a hydrocarbon-vapor engine, the combination, with a vaporizer, consisting, essentially, of a block or piece of porous material constructed to receive the oil and adapted to be heated by the explosive charges, of a pipe for discharging oil onto the block, an opening for admitting air, and a device for igniting the combined air and vapor.

2. The combination, with an engine-cylinder and a combustion-chamber forming a continuation of the latter, of a vaporizer, consisting, essentially, of a block or piece of porous material constructed to receive the oil and adapted to be heated by the explosive charges located within the combustion-chamber, a pipe for discharging oil into the vaporizer, an air-opening for admitting air, and an igniter located above the vaporizer.

3. The combination, with a cylinder, a combustion-chamber, and a vaporizer located within the combustion-chamber, the said vaporizer consisting, essentially, of a block or piece of porous material constructed to receive the oil and adapted to be heated by the explosive charge, of a pipe for discharging oil onto the vaporizer, an air-inlet pipe, and an escape-outlet for the products of combustion.

4. The combination, with a cylinder and combustion-chamber, and a vaporizer consisting, essentially, of a porous or absorbent material formed with a concave surface, located within the combustion-chamber, of a pipe for discharging oil onto the vaporizer, an air-inlet, and an igniter located above the vaporizer, substantially as set forth.

5. The vaporizer located within the cylinder or combustion-chamber connected therewith, and an oil-pump for delivering oil upon the vaporizer, substantially as set forth.

6. A vaporizer consisting of porous or absorbent material formed with a cupped or concave surface, substantially as set forth.

7. A vaporizer consisting of a porous or absorbent material adapted to be heated by the explosive charge, located in a recess formed in the engine-cylinder or combustion-chamber connected therewith, substantially as set forth.

8. A vaporizer located in the lower portion of the engine-cylinder or combustion-chamber, an air-inlet at the side of the cylinder, and an outlet at the upper end of the cylinder, substantially as set forth.

9. In a hydrocarbon-vapor engine, the combination, with a combustion-chamber, a vaporizer, substantially as described, located therein, a pipe for supplying oil to the vaporizer, and an air-inlet, of an igniter, consisting, essentially, of a tube of refractory material adapted to be heated, and a wire adapted to be moved in and out of said tube.

10. In a hydrocarbon-vapor engine, the combination, with a combustion-chamber, a vaporizer, substantially as described, located therein, a pipe for discharging oil with said vaporizer, and an air-inlet, of a tube made of refractory material, serving as a medium for conveying heated substance or material to the explosive mixture, and a burner for heating said tube, substantially as set forth.

11. In a hydrocarbon-engine, the vaporizer located within the cylinder or combustion-chamber, an oil-pump for delivering oil upon the vaporizer, and a supplemental oil-reservoir communicating with the oil-inlet pipe, substantially as set forth.

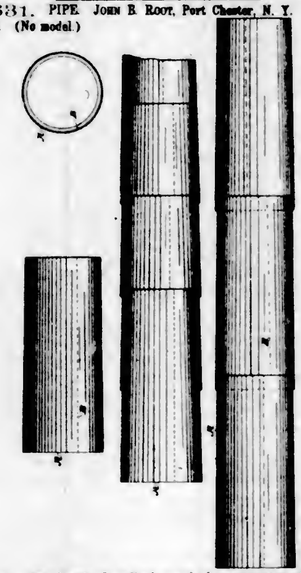
12. In a hydrocarbon-engine, the vaporizer located within the cylinder or combustion-chamber, a pump for forcing oil to the vaporizer, and a governor for automatically controlling the supply of oil delivered to the pump, substantially as set forth.

335,630. **GATE.** PETER ROBINSON, Farmland, Ind. Filed Oct. 21, 1885. (No model.)



Claim.—The combination, with a folding gate of the class described, of a toothed brace constructed of two pieces arranged on opposite sides of the bars, and provided with a handle, and a clasp secured to one of the bars, the lower ends of the pieces composing the brace pivoted to the gate, and the upper ends embraced by and engaging with the clasp, substantially as described, and for the purpose stated.

335,631. **PIPE.** JOHN B. ROOT, Port Chester, N. Y. Filed Oct. 5 1885. (No model.)



Claim.—The herein described metal pipe composed of conical sections connected by the small end of each section being forced into the large end of an adjoining section, such conical sections being formed from blanks whose longitudinal edges are welded together so that the sections are circular in cross-section, whereby the sections when inserted in each other will fit closely and form tight joints, substantially as set forth.

335,632. **COAL-TIPPLE.** WILLIAM W. ROSENSTEEL, Pittsburg, Pa. Filed July 1, 1885. (No model.)

Claim.—1. In a coal-tipple having a dumping device, *a*, and provided with screens for separating the large and small coal, a bin, *s*, provided with a chute, *t*, at the bottom, and flap *v* for closing the same, a door, *w*, and latch *x*, and an inclined bottom, *u*, for discharging its contents, substantially as described.

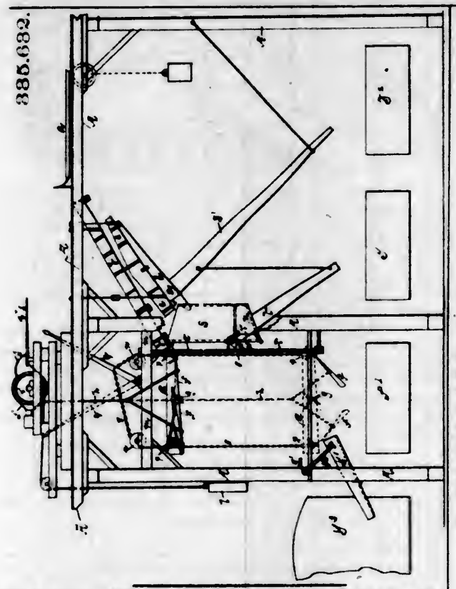
2. In combination with a coal-tipple of the character described, a traveling carriage, *e*, suspended on a drum, *i*, provided with a brake, *j*, and counter-weight *l*, and having hinged bottoms *f*, and latch *g*, and vertical guides *r*, operated as described.

3. In combination with a coal-tipple of the character described, a traveling carriage, *e*, suspended to a drum, *i*, and balanced by counter-weight, *l*, a chain, *b*, secured at each end *p* of the carriage *e*, pulleys *n*, and lever *q*, operated substantially as described.

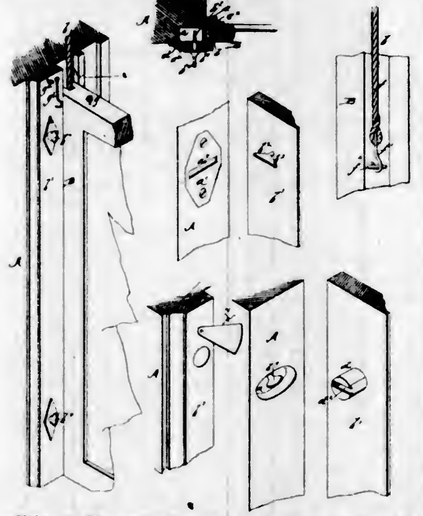
4. In combination with a coal-tipple such as described, the chutes *b c d*, bin *s*, carriage *e*, and drum *i* for operating the same, brake *j*, and counter-weight *l*, substantially as and for the purpose herein described.

5. In combination with a coal-tipple such as described having a bin, *s*, with inclined bottom *u*, trap-door *w*, with vertical sides, and latch *x*, that when dropped forms a chute adapted to be operated by a vertically-moving carriage or way-pan *s*, substantially as set forth.

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335,633. **WINDOW FRAME AND SASH.** NILS F. SANDELIN, Chicago, Ill. Filed Mar. 16, 1885. (No model.)



Claim.—1. The combination, with a window-frame having its parting-strip cut on a bevel near its center, of a lower sash having on its rear side one or more angular pieces of metal overlapping the parting-strip to hold it in place, substantially as and for the purpose set forth.

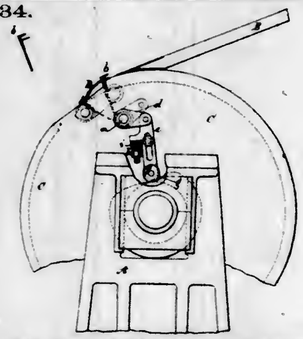
2. The combination, with a window-sash provided with an eye, *g*, in its upper edge, of a hook, *g'*, upon an adjacent part of the frame, for engagement therewith to act as a hinge, substantially as and for the purpose set forth.

335,634. **SHEET-GAGE FOR PRINTING-MACHINES.** WALTER SCOTT, Plainfield, N. J. Filed Dec. 15, 1884. (No model.)

Claim.—1. The combination, with the impression-cylinder, of gage-fingers, a rock-shaft for the same in bearings upon the impression-cylinder, a spring to turn the rock-shaft in one direction, and a crank-arm to move the rock-shaft and fingers in the other direction, and an adjustable screw-stop upon the side of the impression-cylinder, by which the position of the gage-fingers can be varied, substantially as set forth.

2. The combination, with the impression-cylinder and grippers, of

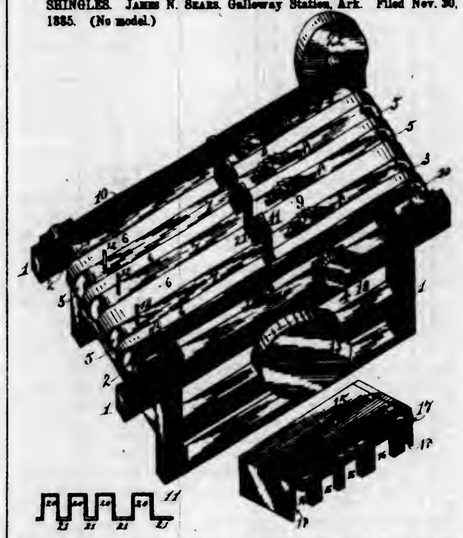
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swinging gage-fingers, a rock-shaft, and mechanism, substantially as described, for operating the same, said gage-fingers having jaws at their outer ends, the inner portions of the jaws being formed of sheet metal angle-pieces that extend out and rest upon the surface of the cylinder, allowing for adjustment and acting to prevent the sheet passing in between the edge of the cylinder and the gage, substantially as set forth.

3. The combination, with the impression-cylinder, of the gage-fingers *b*, the rock-shaft *a*, spring *k*, crank-arm *d*, slide-link *e*, roller *f*, and cam *g*, substantially as set forth.

335,635. **ATTACHMENT FOR SHINGLE-MACHINES FOR EDGING SHINGLES.** JAMES N. SEARS, Galloway Station, Ark. Filed Nov. 30, 1885. (No model.)



Claim.—1. The combination of frame 1, spacing-strips 7, having slots 8, pins 12, secured in the rear ends of said strips, saws 9, secured on shaft 4, belts 6, or equivalent device, working on pulleys 5, and carriers 11, secured to the said belts, all constructed and arranged substantially as shown and described, and for the purposes set forth.

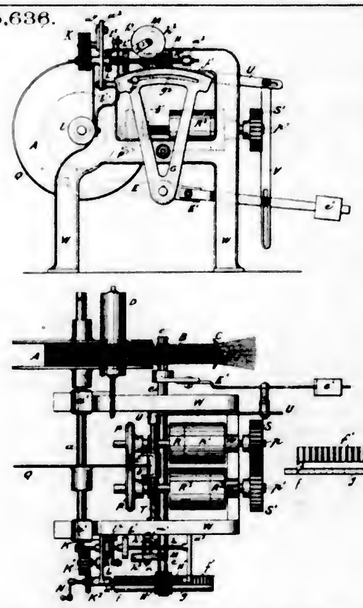
2. In the shingle-machine attachment, as shown and described, the box or cover 15, having slotted sides 17, being hinged to the top of said box, and shoulders 18, substantially as shown and described.

3. In a shingle-machine attachment, as shown and described, the carrier 11, having arches 20 and intervening parts 21, substantially as shown and described, and for the purposes set forth.

335,636. **SECTIONAL WARPING AND BEAMING MACHINE.** JOHN C. SEWELL, EUSTACE HULTON, and JOHN BETHEL, Manchester, England. Filed May 24, 1883. (No model.) Patented in England Dec. 14, 1880, No. 5,234, Dec. 13, 1881, No. 5,440, and Apr. 12, 1882, No. 1,732.

Brief.—A movable presser adapted to be kept in contact with the circumference of the section by a weight or spring is mounted on the same axle as a pair of sectors, one of said sectors being rigidly connected to the presser, while the other is loose on the axle and provided with means for attaching it to the fixed sector at various angles, one of said sectors being also provided with a graduated scale to show the angular

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motion relatively to each other. Mechanism is also provided for transmitting the motion of the section-shaft to the loose sector, which comprises means for varying the rate of transmission and for disconnecting the said sector from the section when desired.

Claim.—1. The combination of a section-shaft and drum with a presser consisting of a lever adapted to be held in contact with the yarn wound on the drum, and a pair of sectors adapted to turn on the same axis as the presser, one of the said sectors being rigidly connected with the presser while the other is mounted loose on its axle and provided with means for attaching it to the fixed sector at various angles, one of the sectors being also provided with a graduated scale for measuring their angular motion relatively to each other, substantially as described.

2. The combination of a section-shaft and drum with a presser consisting of a lever adapted to be held in contact with the yarn wound on the drum, a pair of sectors adapted to turn on the same axis as the presser, one of the said sectors being rigidly connected with the presser while the other is mounted loose on its axle and provided with means for attaching it to the fixed sector at various angles, one of the sectors being also provided with a graduated scale for measuring their angular motion relatively to each other, and a train of change-wheels with devices intermediate the section-shaft and change-wheels and intermediate the change-wheels and the loose sector, substantially as described.

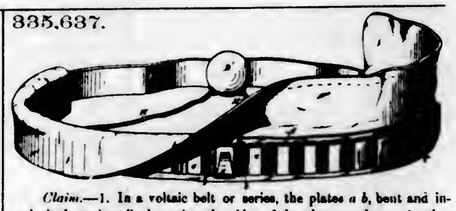
3. The combination of section-shaft *a* and section-drum A with presser E and weighted lever E', sector-shaft *e*, sectors F G, the latter provided with graduated scale and the former with the toothed rim *f'*, means for securing the two sectors together at various angles, worm H, and shaft H', change-wheels K K' K², ratchet-wheel L, pawl l^2, and ratchet-shaft *h*, and mechanism intermediate the section-shaft and the pawl, substantially as described.

4. The combination of a section-shaft and drum with a movable weighted presser and presser-shaft, a pair of sectors, one of which is provided with a toothed rim, a worm gearing into such toothed rim, a train of change-wheels, a shaft for supporting said worm, mechanism for transmitting the rotary motion of the section-shaft to the change-wheels, a face-plate adapted to transmit motion to the section-shaft, a pair of friction-rollers adapted to move along their axes parallel to the face-plate, and mechanism for transmitting motion from the presser to the friction-rollers, substantially as and for the purposes described.

335,637. VOLTAIC BELT. ANDREW T. SHERWOOD, San Francisco, Cal. Filed Feb. 9, 1885. (No model.)



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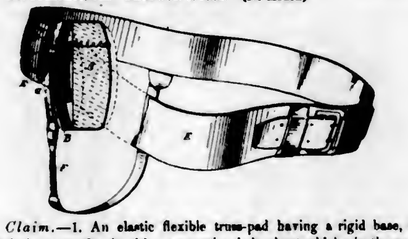


Claim.—1. In a voltaic belt or series, the plates *a b*, bent and interlocked, as described, so that the sides of the plate overlap each other and the ends of each are inclosed between the two sides of the adjacent plate, both plates having their opposite ends bent in the form of a hook, to receive the links by which the sections are united, together with a strip of porous material folded so as to lie between the adjacent portions of the plates, to prevent metallic contact, substantially as herein described.

2. The combination of a circular convex plate having a flat plate united to its upper and lower rear edges, the sides of this plate being cut away so as to form openings through which the belt may pass, and a hook or clasp fixed to the flat plate, whereby connection therewith may be made or broken with the belting which supports the plate in the flexible connections H H, and the voltaic series, substantially as herein described.

3. A voltaic belt composed of two sections so arranged that the currents pass from the outer ends to the center, and a plate through which they are transmitted, a secondary belt having a series of hooks or clasps by which the metallic belt may be supported, a flexible non-porous cover attached to said belt so that it may be folded over it, and an elastic connecting-piece by which the ends of the belt may be united, having adjusting-clasps at each end and a central plate with clasps to which the ends of the voltaic belt may be connected, substantially as herein described.

335,638. ELECTRIC BELT AND TRUSS. ANDREW T. SHERWOOD, San Francisco, Cal. Filed Feb. 9, 1885. (No model.)



Claim.—1. An elastic flexible truss-pad having a rigid base, a swivel-pin connecting it with a supporting-belt, about which pin the pad may be turned and adjusted, as shown, in combination with a hook or connection loosely swiveled to the pin, and to which the leg-strap may be attached, substantially as herein described.

2. An elastic flexible pad with a rigid back and swivel-pin connecting with the supporting-belt, so that it may be adjusted upon the pin, and a swivel-hook loosely attached to said pin, in combination with a metallic plate fixed in the anterior portion of the pad, a flexible elastic conductor between said plate and the swivel-hook, and a voltaic belt or battery having one of its poles applied to the person and the other so formed as to be connected to or detached from the swivel-hook, so that the voltaic current may be used or cut off, substantially as herein described.

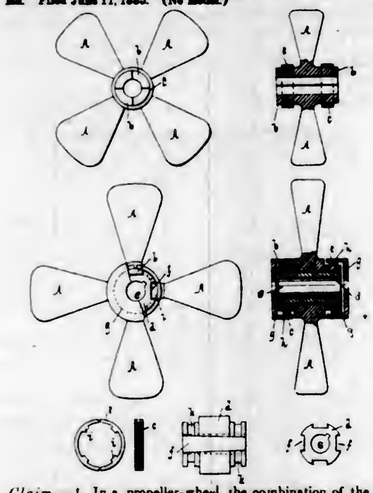
3. A plate having an extension by which it is connected with a voltaic belt, and a curved hook or loop forming a recess between the plate and voltaic belt to allow its being passed over the truss-belt without removing or disturbing the latter, substantially as herein shown and described.

335,639. ELECTRIC TRUSS-PAD. ANDREW T. SHERWOOD, San Francisco, Cal. Filed Jan. 17, 1883. Renewed Nov. 17, 1885. (No model.)



Claim.—In combination with an electric truss-pad, the galvanic battery connected with its back plate, and connected by flexible conductors with the poles or plates in the face of the pad, substantially as herein described.

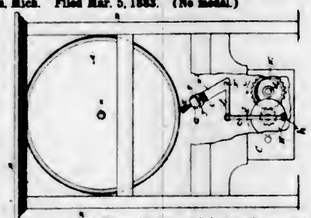
335,640. PROPELLER-WHEEL. JAMES W. L. SIMMONS, Baltimore, Md. Filed June 11, 1885. (No model.)



Claim.—1. In a propeller-wheel, the combination of the hub *d*, provided with the longitudinal slots *f*, in which are placed the wing-bases, and the annular grooves *k*, in which the projections *i* of the rings *c* fit, the wings A, provided with bases corresponding to the slots *f* in the hub, the rings *c*, made in two parts, by which they press and firmly hold the wing-bases to the hub when the caps *g* are screwed on, and the caps *g*, provided with threads, by which they screw on the rings *c*, whereby the several parts are held together, and by which the wheel may be quickly taken apart and parts replaced, when desired, as herein specified.

2. In a propeller-wheel, the wings A, provided with projecting base-plates, the hub *d*, provided with the slots *f*, in which the wing-bases fit, and the caps *g*, provided with threads and arranged to be screwed over the projections of the base-plates, whereby the wings and hub are securely held together when the caps are screwed on, and the same quickly and conveniently taken apart by unscrewing the caps, as herein specified.

335,641. BRUSHING MECHANISM FOR REELS. GEORGE T. SMITH, Jackson, Mich. Filed Mar. 5, 1885. (No model.)



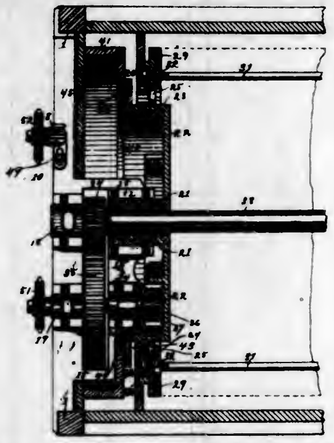
Claim.—1. In combination with a revolving reel, a conveyer below the reel, a vibrating brush arranged on a line parallel with the axis of the reel, a rock-shaft, also arranged on a line parallel with the axis of the reel and carrying the brush, a rotating wheel arranged within the casing and driven by the conveyer, and means, connected to the rock-shaft and actuated by the rotating wheel, for vibrating the brush, substantially as set forth.

2. In combination with a revolving reel, a conveyer below the reel, a vibrating brush arranged on a line parallel with the axis of the reel, a rock-shaft, also arranged on a line parallel with the axis of the reel and carrying the brush, the crank-wheel arranged inside the casing and connected by gearing with the conveyer-shaft, and a pitman connecting the crank-wheel with the rock-shaft, substantially as set forth.

3. In combination with a revolving reel, a conveyer below the reel, a vibrating brush arranged on a line parallel with the axis of the reel, a rock-shaft, also arranged on a line parallel with the axis of the reel, a gear-wheel mounted on the conveyer-shaft, a crank-wheel provided with a gear and mounted upon a stud-shaft projecting from the conveyer-box and meshing with the gear of the conveyer-shaft, and a pitman connecting the crank-wheel with a rock-shaft, substantially as set forth.

4. In combination with a revolving reel, a pivoted brush arranged on a line parallel with the axis of the reel, and means for adjusting the brush toward and from its pivotal support, substantially as set forth.

335,642. FLOUR-BOLT. GEORGE T. SMITH, Jackson, Mich. Filed June 1, 1885. (No model.)



Claim.—1. In a flour-bolt, the combination of the beater-shaft, a bearing for the outer end of the beater-shaft, the reel-head provided with a trunnion surrounding the beater-shaft, the driving-gears connecting the beater-shaft with the trunnion and arranged between the beater-shaft bearing and the reel-head, and a casing surrounding the gearing to prevent the tailings from entering the gearing, substantially as set forth.

2. In a flour-bolt, the combination of the beater-shaft, a bearing for the outer end of the beater-shaft, the reel-head provided with a trunnion surrounding the beater-shaft, gearing arranged between the beater-shaft bearing and the reel-head, and the casing below the gearing, adapted to receive the oil dropping from the bearings and prevent said oil from mingling with the tailings, substantially as set forth.

3. In a flour-bolt, the combination of the beater-shaft, the reel-head provided with a trunnion surrounding the beater-shaft, gearing connecting the beater-shaft with the reel-head, and a shell surrounding the gearing and made in two parts, of which one part is attached to the casing, and the other part is attached to and revolves with the reel-head, substantially as set forth.

4. In a flour-bolt, the combination of the beater-shaft, the reel-head provided with a trunnion surrounding the beater-shaft, gears connecting the beater-shaft and the reel-head, and a casing surrounding the gearing and made in two parts, of which one part is attached to the casing, and the other part is of less diameter and attached to and revolves with the reel-head, substantially as set forth.

5. In a flour-bolt, the combination of the beater-shaft, the reel-head provided with a trunnion surrounding the beater-shaft, gearing connecting the beater-shaft with the reel-head, the casing at the tail end of the bolt, a partition arranged parallel with said casing and a short distance inside thereof, a flange projecting rearward from the reel-head and fitting closely a circular opening in the partition, openings through the reel-head for the passage of the tailings, and a casing between the partition and the tail-end casing of the bolt, to prevent material from contact with the casing, substantially as set forth.

6. In a flour-bolt, the herein-described reel-head consisting of the trunnion, the circular plate 22, the casing-flange 23, the peripheral flange 28, the flour-guard 26, and the spokes connecting the peripheral flange with the casing-flange, substantially as set forth.

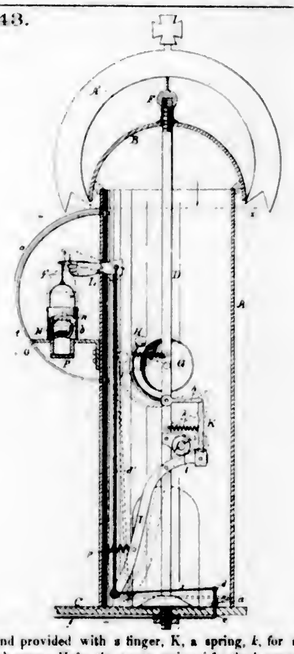
7. In a flour-bolt, the combination, with the beater-shaft and the reel-head provided with a trunnion which surrounds the beater-shaft, of a metal bridge-tree provided with bearings for the beater-shaft, the trunnions, and their connecting-gears, the bridge-tree and the lower portions of the bearings being in one piece of metal, substantially as set forth.

8. In a flour-bolt, the combination, with the beater-shaft and the reel-head provided with a trunnion which surrounds the beater-shaft, of a metal bridge-tree provided with bearings for the beater-shaft, the trunnions and their connecting-gears, the bearings for the trunnions, and the bearings for the inner ends of the gear-shafts projecting inward beyond the vertical plane of the outer face of the reel-head and having supporting-brackets, the bearings and the brackets being all formed in one piece of metal, substantially as set forth.

335,643. ALARM-SIGNAL FOR RAILROAD-CROSSINGS. GEORGE SMITH, Rochester, N. Y., assignor of one-half to William H. O'Kane, same place. Filed Sept. 25, 1885. (No model.)

Claim.—1. In an alarm device for railroad-crossings, in combination with a rocker-arm and a support, D, a lever, I, connected with said

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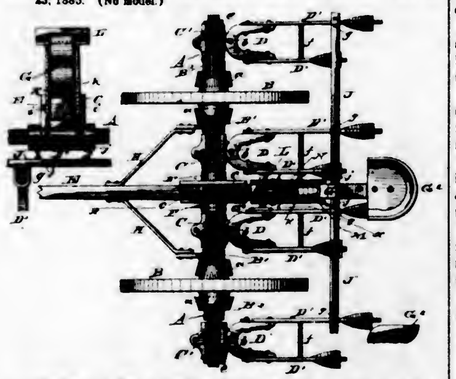
rocker-arm and provided with a finger, K, a spring, *k*, for said finger, gong G, and hammer H for the gong, spring *i* for the hammer, and projecting part *h* from the hammer, to be encountered by the finger K, substantially as shown and described.

2. In railway-signals, the combination of an inclosure or house, A, and contained central post or support, D, a rocking arm or lever, I, pivoted to said post, a rocking lever, L, resting partly within and partly without said inclosure and pivoted to the wall thereof, a lamp with its support, a tie, *d'*, for said levers I and L, and jacket *b* for said lamp connected with said lever L, substantially as described.

3. In an alarm device for railroad-crossings, a floor or base-piece, inclosure A, and a cover for said inclosure, in combination with a central tie-bolt for the whole, substantially as described.

4. In a railroad alarm device, a support, D, in combination with a lever, I, buffer *l* for said lever, finger K connected with the lever, springs *k* for said finger, gong G, and hammer H for the gong, with actuating-rod for said lever I, substantially as described.

335,644. CULTIVATOR. JAMES F. SMITH, Danville, Ill. Filed Oct. 23, 1885. (No model.)



Claim.—1. The combination, with the axle A, of the coupling-boxes, their U-shaped couplings, and the shovel-beams, the transporting-wheels, the flanged spacing hub-caps, the pole-box and its draft-pole, and the pole-braces connected to the inner hub-caps, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. The combination, in the machine described, of the curved levers K K, the lifting-bar J, flexibly connected thereto and secured to the shovel-beams, the foot-piece L, having a shoulder, F, and the pivoted locking-loop M and stop N, as shown and described.

335,645. VEHICLE-SPRING. STEPHEN G. SMITH, Hannibal, Mo. Filed Oct. 30, 1885. (No model.)

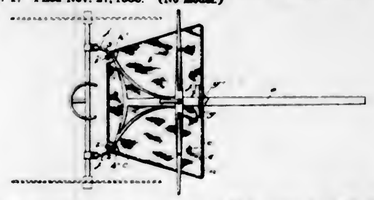


Claim.—1. The combination, with a locking or bearing plate secured to the body of the vehicle and having two or more thicker portions, of a return-bend spring secured to the plate in contact with two at least of the thicker portions, thereby leaving an open space between the spring and plate, for the purpose substantially as set forth.

2. A return-bend spring having its heavy end somewhat reduced and resting on the bearing-plate in contact with two thicker portions of the same, for the purpose substantially as set forth.

3. The combination, with a pair of return-bend springs secured to the bearing-plate at their extreme ends, and having a bearing on the plate at their bends, of clips secured in the plate and provided with yokes in engagement with the bites of the springs, substantially as set forth.

335,646. FENDER FOR VEHICLES. SAML. F. SNIFFEN, New York, N. Y. Filed Nov. 27, 1885. (No model.)



Claim.—1. A fender consisting of a rigid frame-work or rim having an obstructing-surface firmly secured thereto, and provided with fastening devices at its front and rear for attachment of the same to the pole of a conveyance, whereby objects thrown by the horses' feet may be prevented from striking the front of the body portion of the conveyance and marring the same, and from flying into the conveyance and soiling or injuring the occupant thereof, as set forth.

2. In combination with the pole of a conveyance, a fender composed of a rigid frame-work or rim having an obstructing-surface firmly secured thereto, whereby objects thrown by the horses' feet are prevented from striking the front of the body portion of the conveyance and marring the same, and from flying into the conveyance and soiling or injuring the occupant thereof, as set forth.

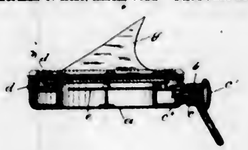
3. A fender consisting of a rigid frame-work or rim having an obstructing-surface of wire-cloth firmly secured thereto by a spirally-wound binding-wire, and provided with fastening devices for its attachment to the pole of a conveyance, as and for the purpose set forth.

4. A fender consisting of a rigid frame-work or rim having an obstructing-surface firmly secured thereto, and provided with a fastening means at its front side and at each of its rear corners, whereby the same may be attached to the pole of a conveyance, as set forth.

5. A fender consisting of a rigid frame-work or rim depressed at its front for the accommodation of the under side of the pole, having an obstructing-surface firmly secured to said rim, and provided with devices for its attachment to the pole of a conveyance, as set forth.

6. A fender consisting of a rigid frame-work or rim having an upright slotted extension, and an obstructing-surface firmly secured to said frame-work or rim and to said upright slotted extension, and provided with devices for its attachment to the pole of a conveyance, as set forth.

335,647. SUN-DIAL. RALPH L. SPENCER, Hartford, assignor of one-half to Herman O. Reed, Essex, Conn. Filed June 16, 1884. (No model.)



Claim.—1. The combination of a case, *a*, bearing a rotary stem terminating in a pinion within the case and a handle without, a dial-card having annular gear in mesh with the pinion and bearing an adjustable gnomon, and a magnetic needle arranged within the case, all substantially as described.

2. The combination, with a case bearing a rotary stem terminating in a pinion within the case and a handle without, of a dial-card having an annular gear in mesh with the pinion and bearing an adjustable gnomon, substantially as described.

3. As an improved article of manufacture, the herein-described combined compass and sun-dial, comprising the case *a*, a magnetic needle pivoted centrally therein, a dial-card provided with the annular gear, the handled pinion meshing with the annular gear and adapted to rotate the same, the adjustable gnomon, and marks and figures upon the several parts, substantially as shown, and for the purposes described.

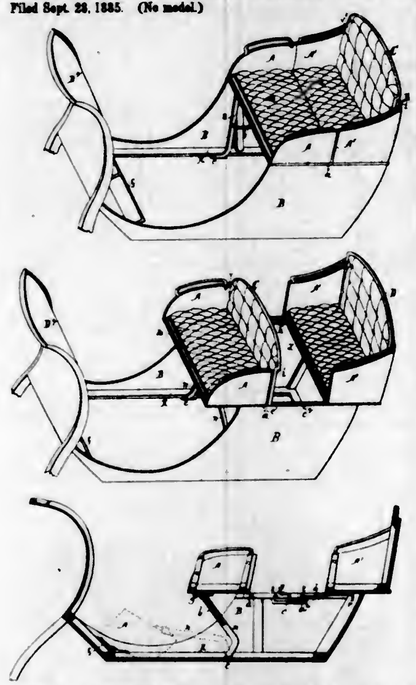
335,648. LOCK. WILLIAM D. SPENCER, Middletown, assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn. Filed June 27, 1885. (No model.)



Claim.—1. In a lock of the class described, the combination of the tumbler-shoe having the side projection, the set of tumblers upon which said shoe rests, a spring bearing upon the shoe, and the cylinder having a slot to receive said side projection, substantially as described, and for the purpose specified.

2. In a lock of the class described, the combination of the cylinder having a transverse slot, a set of tumblers lying side by side within said slot, a rocking shoe bearing upon all of said tumblers, and a spring bearing upon said shoe, substantially as described, and for the purpose specified.

335,649. COMBINED DOUBLE AND SINGLE SEATED SLEIGH. WILLIAM H. STEINBRENNER and CHARLES STEINBRENNER, Detroit, Mich. Filed Sept. 28, 1885. (No model.)

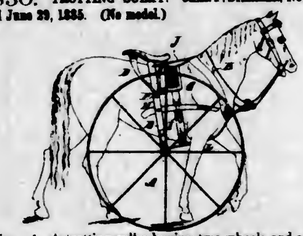


Claim.—1. In combination with the body of a sleigh, a seat mounted thereon having a central longitudinal division, one part adapted to be moved rearward over the back of the box, the other part adapted to be moved forward, forming two seats, said parts also adapted to be moved toward each other, joining as a single seat, as and for the purposes set forth.

2. In combination with the box of a sleigh, a two-part seat mounted thereon, the rear part carrying arms with downward projections and engaging pins working in the slotted plates P P, as specified, the forward part journaled on the shaft B^2, having braces and legs formed integrally therewith, said legs pivoted at the lower end to the body of the sleigh, and means for engaging or locking said seat when shifted, substantially as specified.

3. In combination with the body of a sleigh, a two-part seat mounted thereon, said parts adapted to be shifted, as specified, the back D, and detachable back C, as and for the purposes set forth.

335,650. TROTTING-SULKY. CHAS. F. STILLMAN, New York, N. Y. Filed June 29, 1885. (No model.)



Claim.—1. A trotting-sulky having two wheels and an axle arched over the back of the horse, and provided with shafts loosely pivoted to the side of said axles, whereby the motion of the horse up and down is not communicated to the driver's seat arranged on said axle, substantially as described.

2. The combination, in a trotting-sulky, of an axle having short horizontal arms at its extremities to receive the wheels, and arched to pass over the back of the horse, shafts loosely pivoted to said axle, and a driver's seat arranged on the top of said axle, substantially as described.

3. The combination, in a trotting-sulky, of an axle arched to pass over the back of a horse, traction-shafts loosely pivoted to each side of the axle of said sulky, and the means, substantially as described, for attaching the sulky to the horse.

4. In a trotting-sulky, the combination of the wheels A, axle B, and movable shafts G, substantially as described.

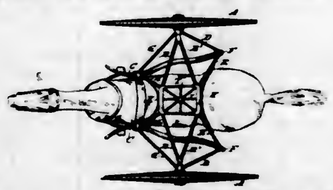
5. In a trotting-sulky, the combination of the axle B, shafts G, seat C, and braces D and E, substantially as described.

6. In combination with a trotting-sulky, a harness consisting of loops or a fastening device attached to the saddle and adapted to secure the shafts, and a breast-collar forming a part of said harness, provided with a strap or straps and connected with the axle of said sulky, substantially as described.

7. In combination with a trotting-sulky, a harness consisting of a saddle provided with the adjustable loops I, a collar, K, straps J, straps L, and strap M, all arranged substantially as and for the purpose set forth.

8. In a trotting-sulky, an axle arched to pass over the body of the horse, and divided so that its body or central portion shall be vertically adjustable relatively to its horizontal arms, substantially as and for the purpose set forth.

335,651. TROTTING-SULKY. CHAS. F. STILLMAN, New York, N. Y. Filed May 17, 1883. Renewed June 29, 1885. (No model.)



Claim.—In a trotting-sulky, the combination of the double axle B B, shafts C, braces D, braces E, braces G, braces H, and seat-frame I, substantially as described.

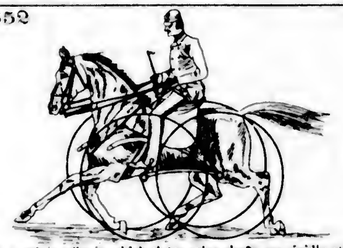
335,652. TROTTING-SULKY. CHAS. F. STILLMAN, New York, N. Y. Filed June 29, 1885. (No model.)

Claim.—1. A trotting-sulky having four wheels and two axles, said axles arched to pass over the body of the horse and secured together by means of braces, substantially as described.

2. In a trotting-sulky, axles having short horizontal arms at the extremities to receive the wheels, and their bodies arched to pass over the back of the horse and be secured together by means of braces, substantially as described.

3. A trotting-sulky in which the driver's seat consists of a saddle arranged upon the top of two axles arched to pass over the body of the horse, substantially as described.

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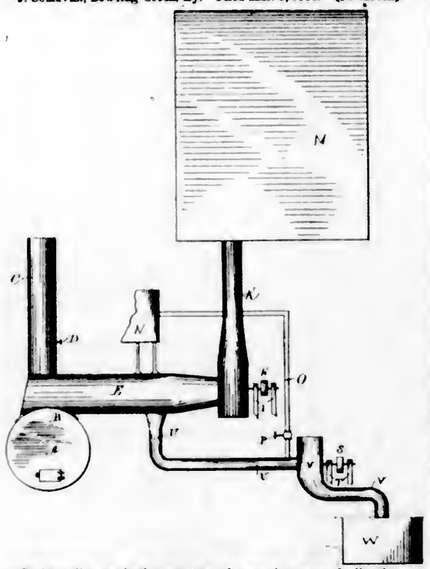


4. A trotting-sulky in which the traction-shafts are rigidly attached to the body of the sulky and are jointed near their forward ends in such a manner as to allow an up-and-down or lateral movement of the ends of the shafts, substantially as described.

5. In a trotting-sulky, the combination of the two axles C C, braces D, braces E, braces G, shafts H, joint I, and saddle K, substantially as described.

6. In a trotting-sulky, the combination of the axles C C, shafts H, joint I, braces D, braces E, braces G, saddle K, and removable stirrup J, substantially as described.

335,653. ART OF TREATING SMOKE ECONOMICALLY. TIMOTHY J. SULLIVAN, Bowling Green, Ky. Filed Mar. 3, 1885. (No model.)



Claim.—For use in the art of treating smoke economically, the passage E, having a series of tubes in direct atmospheric communication at one end, and at the other end open to the point of utilization, whereon contained heat in the deflected products of combustion from an ordinary furnace is deposited, to be abstracted by the air-current within them, and a superposed tank, N, whose pipe O, discharging near the fan R, sprays water on the smoke to condense the same, in combination with the means, as herein shown and described, for utilizing such heated air, and the devices specified and illustrated for reclaiming residual carbonaceous substances in said smoke.

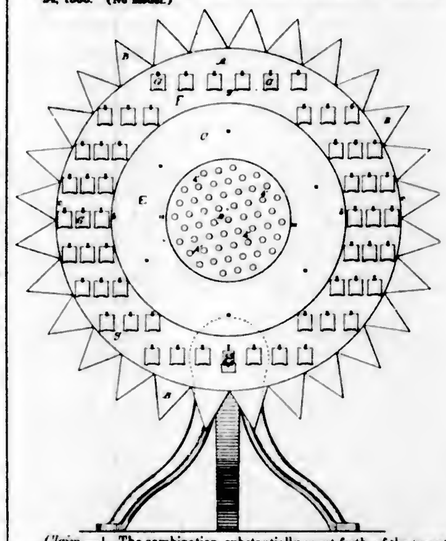
335,654. FRICTION-PULLEY FOR LAMPS. ALVIN TAPLIN, Forestville, assignor to the Bristol Brass and Clock Company, Bristol, Conn. Filed Oct. 3, 1885. (No model.)



Claim.—1. In a hanging lamp, the combination of the pulley-frame, the non-rotating axles secured thereto, elastic pulleys having their elastic bodies bearing directly upon said axles, and chains running over the peripheries of said elastic pulleys, substantially as described, and for the purpose specified.

2. In a hanging lamp, the combination of the pulley-frame, the axles *a a*, secured thereon, and the pulleys, each consisting of an elastic body and two metal flanges slipped loosely upon said axles, all substantially as described, and for the purpose specified.

335,655. TARGET. ELBERT C. TAYLOR, Stockton, Ma. Filed Aug. 24, 1885. (No model.)



Claim.—1. The combination, substantially as set forth, of the target-body having a perforated center, a stray-shot ring surrounding the perforated center, a ring outside the stray-shot ring, indicators arranged in said outside ring, the sliding pins arranged in the perforated center, and connections between the pins and indicators.

2. The combination, substantially as set forth, of the target-body, the numbered cards arranged in the target-body, the shutters that normally cover the cards, and the springs that hold the cards in place and also open the shutters.

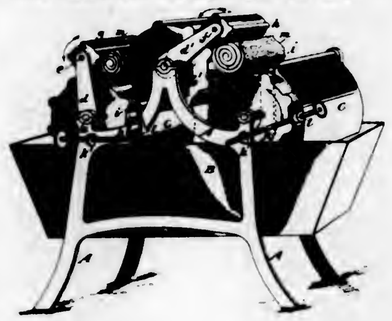
3. The combination, substantially as set forth, of the perforated target-body, the sliding pins, the springs that return the pins to their normal position, the rods K, attached to and moving with the pins, the cords attached to the outer ends of the rods, the pulleys over which the cords pass, and the indicators to which the cords are attached.

335,656. TENNIS-RACKET. FREDERICK W. TAYLOR, Philadelphia, Pa. Filed July 29, 1885. (No model.)



Claim.—A tennis-racket in which the center line or axis of the handle is set at an angle with the center plane of the net-work of the head, substantially as set forth.

335,657. HAT SCALDING AND FELTING MACHINE. JAMES S. TAYLOR, Danbury, Conn. Filed Aug. 31, 1885. (No model.)



Claim.—1. The combination, in a hat-felting machine, of a vat, B, rollers *a' b' c'*, workers *g h*, and curved guards C, substantially as set forth.

2. The combination, in a hat-felting machine, of rollers *a' c'*, vat B, and curved adjustable guards C, substantially as set forth.

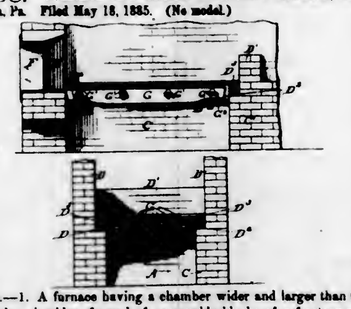
3. The combination, in a hat-felting machine, of the vat B, a roller, and a curved guard for carrying the water up from the vat to the goods in the direction of the movement of the roller, substantially as set forth.

4. In a hat-felting machine, the combination of a vat, a roller, and an adjustable curved guard, substantially as set forth.

5. The combination, in a hat-felting machine, of a vat, a main roller, a curved guard, and a worker, substantially as set forth.

6. The combination, in a hat-felting machine, of a vat, curved guards, main rollers, workers mounted upon links or bars supported by the shafts of the main rollers, and ropes or chains for imparting rotation from the main rollers to the workers, substantially as set forth.

335,658. FURNACE AND GRATE. WILLIAM P. THOMPSON, Philadelphia, Pa. Filed May 18, 1885. (No model.)



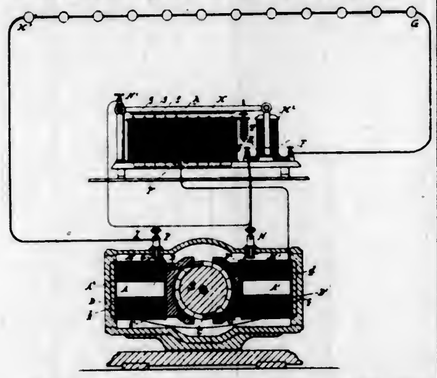
Claim.—1. A furnace having a chamber wider and larger than the ash-pit, having shoulders formed of removable blocks of refractory material contiguous to the grate-surface, with a grate formed of separate bars, each free to expand independently lengthwise and secured closely to the dead-plate, substantially as shown, and for the purpose set forth.

2. An improved reversible furnace-grate consisting of bars having upon their sides in one-half of their length on each side and from opposite ends lateral projections adapted to interlock with corresponding projections upon the opposing sides of the adjacent bars as set in a furnace, so that the lateral projections of any bar, when reversed in the direction of its length in relation to the other bars, will properly engage with the projections upon the other bars, substantially as and for the purpose set forth.

3. The combination of bearing-bars B and B, grate-bars G G, provided with projections G', and hooks G^2, with a dead-plate, E, arranged substantially as set forth and described.

4. In a furnace having a combustion-chamber wider and longer than the grate-surface, the combination of shoulders level with or slightly above the grate-surface, formed of removable blocks of refractory material, substantially as and for the purpose set forth.

335,659. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. C. J. VAN DEPOELE, Chicago, Ill. Filed Nov. 3, 1882. (No model.)

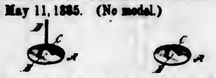


Claim.—1. In a dynamo-electric machine, a separate helix supplementary to the main helix of the field-magnet, the separate helix being so wound and connected that the machine working normally will not be influenced thereby, but on the current becoming abnormally strong said supplementary helix will be brought into action and tend to diminish the magnetism of the field-magnet, and automatically regulate the strength thereof to accommodate the outside work, substantially as set forth.

2. The combination, with the field-magnets of a dynamo-electric machine, of two series of opposing helices, one series serving to excite the field-magnets and the other series serving as regulating-helices for the same, a branch circuit, including the regulating-helices, a variable resistance, also included in the branch, and means for controlling the resistance in the branch, whereby the field-magnets may be regulated as required.

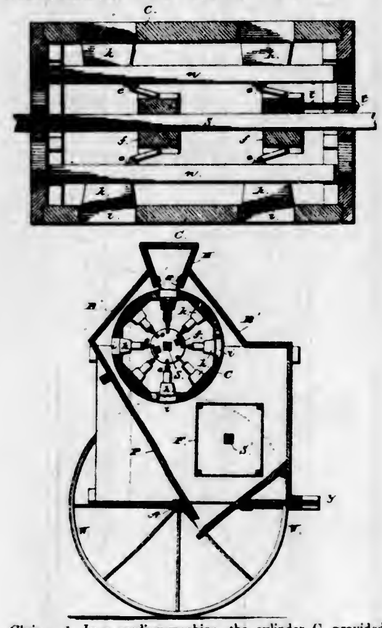
3. In a dynamo-electric generator, a separate helix supplementary to and wound differentially upon the cores of the field-magnet and included in a normally-open circuit, also including variable-resistance coils having a movable contact operated by the moving core of an electro-magnet located in the main circuit, to successively make or break contact with one or more of the coils of the regulator and to close or partially close the differential circuit by the action of the varying resistance of the main circuit operating upon the electro-magnet and resistance-coils, and thereby demagnetizing to a greater or less extent the field-magnet, and automatically regulating the electro-motive force of the machine, substantially as set forth.

335,660. ARTIFICIAL EAR-DRUM. HARRY A. WALES, Bridgeport, Conn. Filed May 11, 1885. (No model.)



Claim.—An artificial ear-drum consisting solely of a thin flexible disk of rubber provided with a device made integral therewith—for example, a flexible loop—whereby it may be inserted or removed.

335,661. BROADCAST SEEDER. DANIEL W. WEBSTER and RUBEN J. SMITH, Osceola, Iowa. Filed July 21, 1885. (No model.)



Claim.—1. In a seeding-machine, the cylinder C, provided with shaft S, on which are adjustably mounted heads *f*, connected with bars *n* by knees *e*, for graduating the orifices *r* in the cylinder, substantially as shown and described.

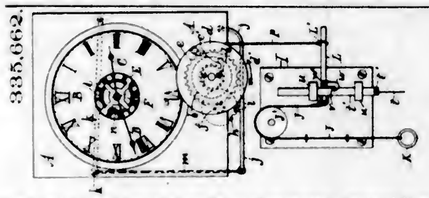
2. In a seeding-machine, the cylinder C, shaft S, adjustable heads *f*, knees *e*, bars *n*, and blocks *k*, in combination with the fan F and inclined scatterers P P', substantially as shown and described.

3. In a seeding-machine, the hopper H, cylinder C, shaft S, heads *f*, knees *e*, bars *n*, and blocks *k*, in combination with the scatterers P P', substantially as shown and described.

335,662. AUTOMATIC DAMPER-REGULATOR. SOLOMON WEINBERG, Newark, N. J., assignor to Harry I. Weinberg, Rochester, N. Y. Filed May 15, 1885. (No model.)

Claim.—1. In a damper-regulator, the means for uncatching the bolt at a specified time, consisting in the combination, with a clock-movement, of the auxiliary train provided with a pulley, a spring, a stop-

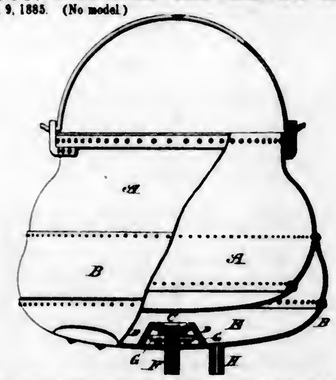
335,662.



wheel, and a pawl controlled by the clock-movement, substantially as shown and described.

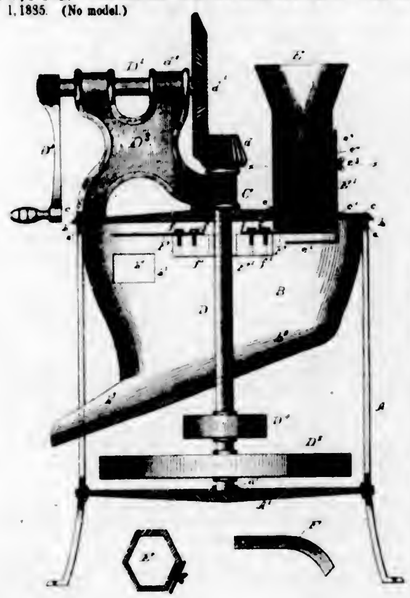
2. In a damper-regulator, the combination, with the hand-connection *t*, of the bolt *t'* and catch *w*, operating as described, the spring N and cord *r'*, attached to the damper, and means, substantially as described, for moving the catch and releasing the bolt at a specified time, substantially as shown and described.

335,663. STEAM-KETTLE. HENRY WERNET, Canton, Ohio. Filed Mar. 9, 1885. (No model.)



Claim.—The combination, with the kettle A and steam-jacket B, of the diaphragm C, located in the chamber E, the supports D, attached to the bottom of the jacket B and the diaphragm C and supporting said diaphragm centrally over the steam-inlet, the inlet-pipe F, having the branches or arms G, connected to and communicating therewith, and the outlet-pipe H, substantially as described.

335,664. CORN-SLICER. JOHN C. WEXER, Danville, Ill. Filed Oct. 1, 1885. (No model.)

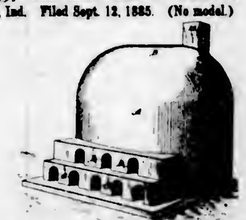


Claim.—1. In a vegetable-slicer, the combination of the box having the cover provided with an opening for the hopper, the hopper carrying the gage, and the shaft carrying the knives, substantially as described.

2. In a vegetable-slicer, the combination of a box, a shaft carrying knives below the cover of said box, and the hopper having the gage adjustable from the outside of the box, substantially as described.

3. In a vegetable-slicer, the combination of a box, the shaft having the knives, and the hopper extending through the top of the box, and having the gage provided with parts *c'* and *c²*, the part *c²* projecting outside of the body and attached to the hopper by a set-screw, substantially as described.

335,665. TILE-KILN. LEWIS F. WICKERS and BARNEY C. WICKERS, Lebanon, Ind. Filed Sept. 12, 1885. (No model.)

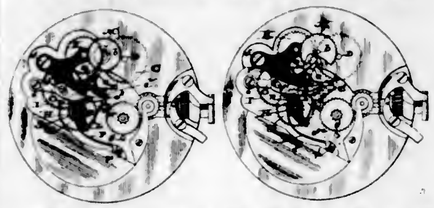


Claim.—1. In a kiln, the combination, with the body, of two series of furnaces arranged one above the other, flues F, communicating with the upper series of furnaces and conveying the heat to the dome of the kiln, a series of flues, E, communicating with the lower tier of furnaces and conveying a counter-current of heat to the current of the flues F, and an exit-chimney, substantially as described.

2. In a kiln, the combination, with the body A, of two series of furnaces arranged one above the other and having a series of flues adapted to convey currents of heat and products of combustion in opposite directions, a series of transverse partitions, G, an escape-chamber, L, communicating with the chimney, and a regulating valve or damper, substantially as described.

3. In a kiln, the combination of the following elements, namely: a body, A, a series of furnaces, C, having longitudinal flues E, a series of furnaces, D, arranged above the furnaces C and having upwardly-extending flues F, isolated from the flues E by partitions *d*, a series of horizontal partitions, G, arranged transversely of the flues E, an escape-chamber, L, a chimney with which the chamber L communicates, bridge-walls I K, a series of radial partitions, M, arranged in the plane of the partitions G, and a damper or valve pivoted in the middle one of the flues E and having an operating-rod, substantially as described.

335,666. WINDING-INDICATOR FOR WATCHES. ARTHUR G. WEEMAN, Webster Groves, Mo. Filed Sept. 25, 1885. (No model.)



Claim.—1. The combination of the swinging frame F, carrying the train G H I J K, with the wheels M C N, and the arm *e*, substantially as described.

2. The combination of the swinging frame F, carrying the train G H I J K, with the wheels M C N, the bell-crank E, having the projection e^2, the arm O, having the slot *o'*, the shoulder o^2, and the extension o^3, the pin *f''*, and the spring P, substantially as described.

3. The combination of the swinging frame F, the dog L, and the pinion N, substantially as and for the purpose set forth.

4. The combination of the swinging frame F, having the pin *f''*, the pivoted and slotted arm O, and the spring P, substantially as described.

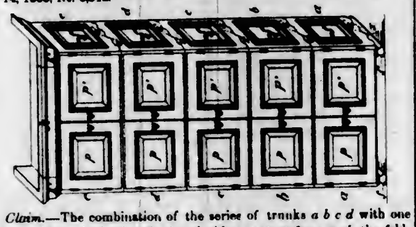
5. The combination of the swinging frame F, the wheel C, and the pivoted arm *e*, substantially as described.

6. In combination with the indicator-wheel M and the pinion N, the swinging frame F, having a train of gearing adapted when engaged with the pinion N to transmit the movement of said pinion N to said indicator-wheel M, substantially as described.

7. The combination of the swinging frame F, the bell-crank E, the spring Q, and the pivoted arm O, substantially as described.

8. The combination of the swinging frame F, carrying the train G H I J K, with the wheels M C N, the bell-crank E, having the arms $e e^2$ and projection e^3, the spring Q, the arm O, having the slot *o'*, the shoulder o^2, and the extension o^3, the pin *f''*, and the spring P, substantially as described.

335,667. ARTICLE OF FURNITURE. JOS. G. WOLFF, Paris, France. Filed Aug. 11, 1885. (No model.) Patented in France June 25, 1885, No. 169,783; in Belgium July 10, 1885, No. 69,551, and in England July 14, 1885, No. 8,512.



Claim.—The combination of the series of trunks *a b c d* with one another, said trunks having the interlocking contact-faces *x x'*, the folding front doors, *p p'*, and upright rods *s*, so as to be adapted to constitute a single article of furniture, substantially as herein shown and described.

335,668. CABINET FOR FILE-HOLDERS. EDMUND W. WOODRUFF, Washington, D. C. Filed Oct. 20, 1885. (No model.)



Claim.—1. In a cabinet or case provided with shelves D and adapted to receive file holders or boxes to hold papers, &c., a semi-cylinder locking-strip, C, fitted to rotate in a groove, *d*, combined with a segment-gear, *g*, and rack-bar *i*, whereby the longitudinal movement of said rack-bar causes the locking-strip to rotate into or out of position of action.

2. In a cabinet or case, A, provided with shelves D and adapted to receive file holders or boxes to hold paper, &c., a series of half-cylinder locking-strips, C, fitted to rotate in semi-cylindric grooves *d*, combined with the segment-gears *g* and rack-bars *i*, whereby the longitudinal movement of said rack-bars causes a simultaneous movement of all the locking-strips of the series, as set forth.

3. In a cabinet or case, A, provided with shelves D, adapted to hold file holders or boxes to hold papers, &c., a series of semi-cylindrical locking-strips, C, fitted to rotate in grooves *d*, and provided with segment-gears *g* and a reciprocating rack-bar, *i*, in mesh therewith, combined with a reciprocating cam in engagement with said rack-bar, for the purpose of actuating the same and the strips C, as set forth.

4. In a cabinet or case, A, provided with shelves D, and adapted to receive file holders or boxes for holding papers or other articles, a series of locking-strips, C, substantially as set forth, segment-gears *g*, and reciprocating rack-bars *i*, combined with the eccentric cam-segment K and the falling leaf J, substantially as set forth.

335,669. TYPE-WRITING MACHINE. THOMAS D. WORRALL, Washington, D. C. Filed Mar. 30, 1885. (No model.)

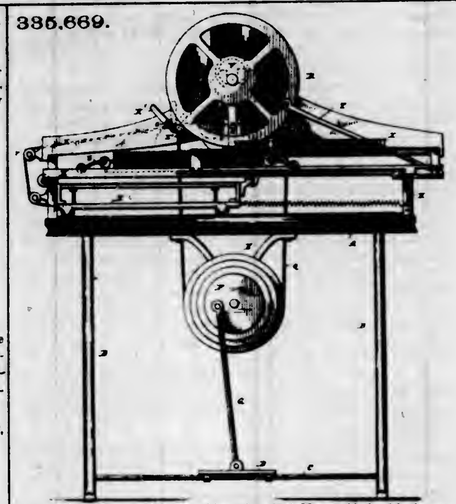
Claim.—1. In a type-writing machine, the combination of a reciprocating type-carrier, a continuously-rotating shaft, and intermediate mechanism, such as described, for moving the type-carrier in one direction, and springs for drawing it back to the printing or impression point, as set forth.

2. In a type-writing machine, the combination, with a reciprocating type-carrier, of a power-driven cross-head for moving it in one direction, springs for returning it, and a plate carrying stop-pins, as described, whereby the type-carriage is stopped with the proper letter or type at the printing point or center, as set forth.

3. In a type-writing machine, a reciprocating type-carrier operated by a power-driven shaft, as described, and an impression bar or piston for depressing the type-pins, operated from the same shaft, as set forth.

4. In a type-writing machine, the combination, with a reciprocating type-carrier, of a power-driven cross-head for moving it in one direction, springs for returning it, a plate carrying stop-pins, and an impression bar or piston, C, driven from the main power-shaft, as set forth.

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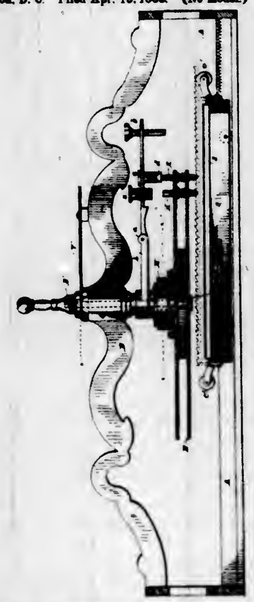
5. In a type-writing machine, the shaft N, provided with the eccentric A', secured to the sliding bar *i*, as described, in combination with the lever F', disk E', having pawl *m*, ratchet D', secured to the shaft B', carriage K, and cord H', whereby the shaft B' is moved one or more notches at each revolution of the shaft N, as set forth.

6. The adjustable shaft B', carrying the disk E' and lever F', in combination with the reciprocating bar *i*, and spring *p*, whereby the rotary movement of the shaft is regulated by the distance of said shaft from the sliding bar.

7. In a type-writing machine, the adjustable shaft B', provided with the drum G', and operated by devices, substantially such as described, in combination with the cord or chain H' and paper-carriage K.

8. In a type-writing machine, the shaft B', fitted to receive hollow drums or thimbles of varying diameter, and operated as described, in combination with the paper-carriage and cord, as and for the purpose set forth.

335,670. TYPE-WRITING MACHINE. THOMAS D. WORRALL, Washington, D. C. Filed Apr. 18, 1885. (No model.)



Claim.—1. In a type-writing machine, a type-carrying disk carrying fonts or batteries of different kinds of type suspended over the paper-

bed, and adapted to be rotated to bring the proper letter or character to the printing center, said disk being operated upon by a spring to return it to a given point after the type-pin has been released from contact with the impression-key, as set forth.

2. In a type-writing machine, the combination of a type-carrying disk suspended over the paper-bed, with the supporting-bracket having a slot therein in which the axis of the disk is adjustable, as set forth.

3. In a type-writing machine, the hub C, provided with the slot *e*, and adapted to receive the supporting-pin of the type-carrying disk, in combination with said type-carrying disk and bifurcated lever V, as set forth.

4. In a type-writing machine, the combination of the paper-carriage having a rack-bar, and a pivoted lever carrying a pawl adapted to engage said rack, with an impression-key having an adjustable pin adapted to impinge more or less, as the case may be, on the pawl-operating lever to move the paper-carriage the proper distance before the type are brought into printing contact with the paper, as set forth.

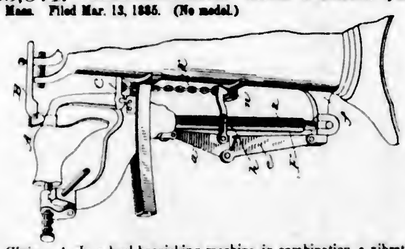
5. In a type-writing machine, the type-carrying disk or segment thereof carrying type-holding pins of different lengths, as described, in combination with an impression-key having a pin to impinge on and operate the pawl-lever, as set forth.

6. In a type-writing machine, a type-carrying disk or segment thereof having a plurality of rows of type provided with jointed or pivoted impression-keys adapted to be brought into contact with the type-pins of either row of type, as set forth.

7. In a type-writing machine, a type-holding disk carrying fonts or batteries of type, in combination with an impression-key and a stop-pin and pawl-operating lever, whereby the proper type is brought to the printing center, the paper-carriage moved the requisite distance, and the type brought into printing contact with the paper, as set forth.

8. The combination, with the type-carrier, of the jointed impression-key journaled on the shaft of the type-carrier, and directly engaging the type-pins to rotate the carrier and make the impression.

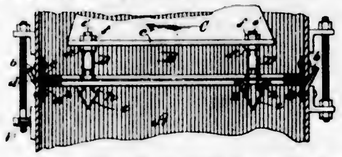
335,671. **BURNISHING-MACHINE.** WILLIAM G. ANTHONY, Lynn, Mass. Filed Mar. 13, 1885. (No model.)



Claim.—1. In a heel-burnishing machine, in combination, a vibrating shaft carrying a burnishing-tool, a shoe-carrying jack mounted upon a loosely-journaled post, said jack having movement in the plane at right angles to the plane of movement of the burnisher, and mechanism consisting of toggle-levers adapted to impart positively-reciprocating vertical movement to the jack, substantially as described.

2. In a burnishing-machine, the combination of a burnisher-tool, the shoe-carrying jack carried upon a loosely-journaled post, the toggle-arms *a e*, and latch *h*, arranged to operate substantially as and for the purposes stated.

335,672. **BURIAL-CASKET.** WILLIAM C. ARMSTRONG, Springfield, Ohio. Filed Apr. 27, 1885. (No model.)

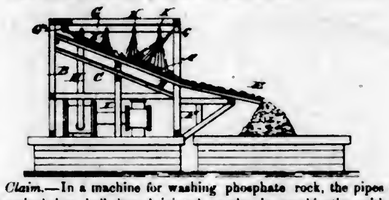


Claim.—1. In an automatically-locking grave-vault, the arrow-head spring-catches formed of a single piece of steel bent as described and having both ends secured to a bolt or bar, said catch being adapted to engage retaining-pieces, substantially as set forth.

2. The combination, with the arrow-head spring-catches formed of a single piece of steel, as described, and secured in the top or cover of the vault, of the angle-iron flange secured in the lower part of the vault and provided with openings therein having depending lips, substantially as specified.

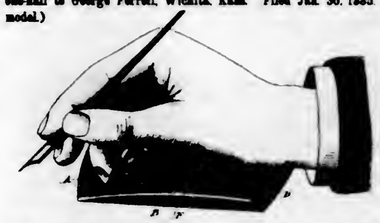
3. The combination, with the metallic case composed of two parts adapted to fit one into the other, so as to form a channel around the joint thereof, of angle-iron flanges above and below said joint, one of said flanges being provided with openings therein having depending lips, an elastic gasket between said flanges, arrow-shaped spring-catches adapted to engage in said openings, clamping devices on the outside of said casing, and a water-proof cement in the channel about said joint, substantially as set forth.

335,673. **MACHINE FOR WASHING PHOSPHATE ROCK.** EARLE C. BACON, New York, N. Y., assignor to the Sea Island Chemical Company, Beaufort, S. C. Filed May 20, 1885. (No model.)



Claim.—In a machine for washing phosphate rock, the pipes and their swiveled or ball-shaped jointed nozzles, in combination with inclined screening-bars, the frame supporting the said bars, and an inclined floor, said pipes being located on the four sides of the frame, substantially as and for the purpose set forth.

335,674. **BLOTTER.** JAMES H. BARLEY, Sedalia, Mo., assignor of one-half to George Ferrell, Wichita, Kans. Filed Jan. 30, 1885. (No model.)



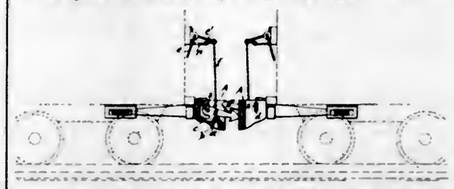
Claim.—1. The paper shield A, in combination with the thimble or ring C, formed integral therewith or connected to the upper suface of shield A at or near the front part thereof, as shown, for attaching said shield to the fingers of the writing-hand, as described.

2. As a new article of manufacture, the shield A, having the blotter-pads D, in combination with the thimble or ring C for the finger, connected to the upper surface of the shield at or near the front part thereof, as shown, for attaching said shield with the writing-hand, substantially as described.

3. In a paper shield and blotter, the combination of the shield A, having the blotter-pad D detachably connected to its bottom surface, and the thimble or ring C, attached to the upper surface of said shield at or near the front part thereof, through which a finger or fingers of the writing-hand is inserted in attaching shield or blotter thereto, substantially as described.

4. As new articles of manufacture and sale, the blotting-pads D, having perforations G formed therein for the purpose specified, in combination with the shield A, having the finger thimble or ring C connected to the front part of the upper surface thereof, substantially as and for the purpose described.

335,675. **CAR-COUPLING.** CHARLES O. BARNES and LUCIEN BARNES, Sr., Syracuse, N. Y. Filed July 27, 1885. (No model.)

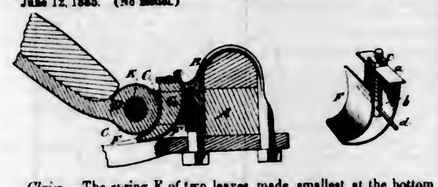


Claim.—1. In a car-coupler, the coupling-hook B, provided with the extra hook *c*, for engaging a coupling-link, and an abutment on the draw-head arranged to encounter and brace the hook *c* when subjected to the draft of the link, substantially as set forth.

2. The combination, with the draw-head A, of the coupling-hook B, provided with the rigid extra hook *c* and shoulder *b*, and pivoted on the draw-head, and the abutment *a*, affixed to the draw-head and facing inward to engage the shoulder *b*, substantially as described and shown.

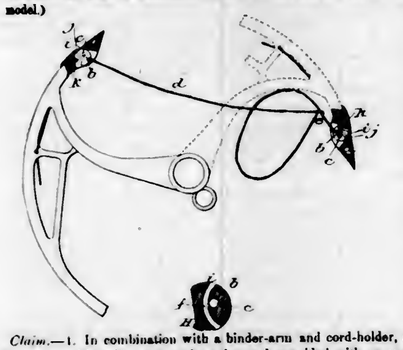
3. The combination of the draw-head A, provided with the vertical slots *s s* and abutment *a*, the coupling-hook B, provided with the extra hook *c* and shoulder *b*, and the hinge-pin *d*, projecting into the slots *s s*, all constructed and combined substantially in the manner described and shown.

335,676. **THILL-COUPLING.** GEORGE W. BLAIR, Wabash, Ind. Filed June 12, 1885. (No model.)



Claim.—The spring F of two leaves made smallest at the bottom and with its bottom portion curved to the front, re-enforced by the strip *a*, and adapted to receive the rubber block G or the clamping device *b c d*, substantially as described.

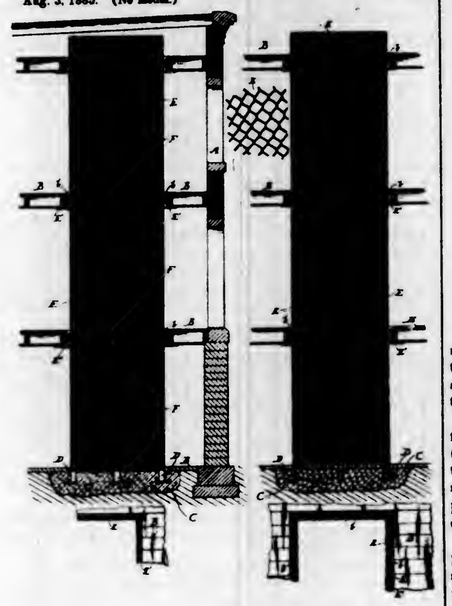
335,677. **TENSION DEVICE FOR GRAIN-BINDERS.** GEORGE C. BLAKELY and JOHN B. GILPATRICK, Plano, Ill. Filed Feb. 9, 1885. (No model.)



Claim.—1. In combination with a binder-arm and cord-holder, an eccentric pivoted in said arm near its point and provided with an aperture through which the binding-twine passes, whereby tension is automatically applied to the twine during the process of binding a bundle, substantially as described.

2. In combination with the binder-arm and eccentric, as described, the set-screw *k*, whereby the tension on the twine may be regulated, substantially as set forth.

335,678. **ELEVATOR-SHAFT.** EDWIN L. BROWN, Chicago, Ill. Filed Aug. 3, 1885. (No model.)



Claim.—1. An elevator-shaft incased in slashed metallic screening, wire-gauze, or equivalent material, substantially as and for the purposes specified.

2. An elevator-shaft covered and lined with slashed metallic screening, wire-gauze, or equivalent material, and having an air-space between said covering and lining, substantially as set forth.

3. An elevator-shaft having its base embedded in concrete or other fire-proof material, and incased with one or more thicknesses of wire-gauze, substantially as described.

4. The combination, with an elevator-shaft consisting of a continuous metallic frame extending from the bottom to the top of the building, of a complete metallic-gauze casing, substantially as set forth, and for the purposes specified.

5. An elevator-shaft having its base embedded in concrete or other fire-proof material, the frame-work of which is constructed of metal and supported independently of the floors, except laterally, and is incased in one or more thicknesses of wire-gauze, with means for preventing the passage of flame around said elevator at said floors, respectively, substantially as described.

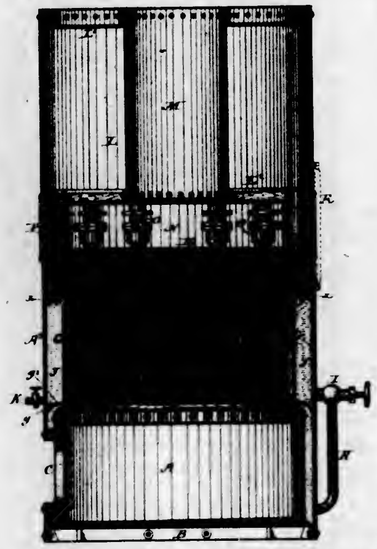
335,679. **RING FOR CABLE-COVERINGS.** CHESTER BULLOCK, Kansas City, Mo. Filed Sept. 24, 1885. (No model.)



Claim.—1. A loose ring or rings with a single seam or joint placed on and covering portions of an endless traction-cable, as described, and for the purpose set forth.

2. A ring of a single seam or joint, covering portions of an endless traction-cable, in combination with seamless rings, as shown, and for the purpose set forth.

335,680. **STEAM-BOILER.** THEODORE E. BUTTON, Waterford, N. Y. Filed Sept. 27, 1884. (No model.)



Claim.—1. The combination of a steam-generator and a steam-receiver above the latter with pipes O and O', screw-threaded with threads of identical diameter at both ends and relatively continuous, and a lock-nut upon said pipes at the joint thereof, substantially as and for the purpose described.

2. A boiler consisting of a steam-generator having a series of screw-tapped holes in the top plate thereof, and a steam-receiver having screw-tapped holes of the same diameter in the bottom plate thereof as in the top plate of the generator, with pipes O and O', having relatively the same continuous thread cut upon each end thereof and upon a lock-nut placed upon them at their joints, substantially as and for the purpose described.

3. The combination of an upright steam-generator having a crown-plate and a series of flues secured thereto, a steam-receiver of about the same diameter placed over it, and pipes secured to both and projecting within the receiver, with an intermediate smoke-chamber between the

steam-generator and the steam-receiver, substantially as and for the purpose described.

4. The combination of an upright steam-generator having a crown-plate and a series of flues secured thereto, a steam-receiver of about the same diameter placed over it, and pipes secured to both and projecting within the receiver, with jacket P, resting upon the steam-generator and the receiver, and a smoke-chamber located between said steam-generator and the steam-receiver, substantially as and for the purpose described.

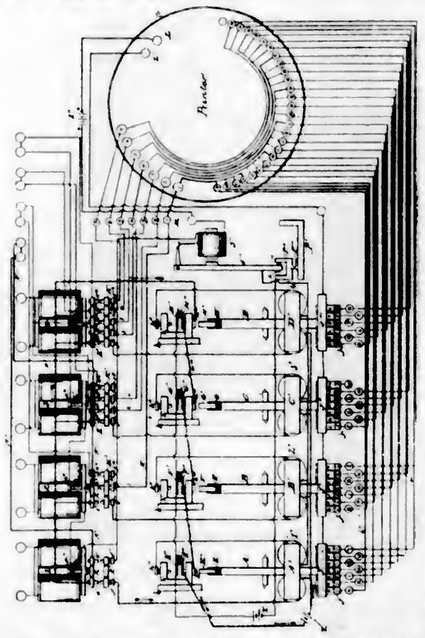
5. In combination with the shell of an upright tubular boiler and the flues thereof, the impermeable diaphragm G, surrounding said flues within the shell of the boiler and secured to the latter, whereby the water surrounding said diaphragm is, when desired, kept from communicating with the water within said diaphragm, substantially as and for the purpose described.

6. In combination with the shell of an upright tubular boiler and the series of vertical fire-flues thereof, the impermeable diaphragm G, surrounding said flues, and valve K, communicating with a space between said diaphragm and shell, substantially as and for the purpose described.

7. In combination with the shell of an upright boiler and the series of vertical fire-flues thereof, the diaphragm G, surrounding said flues, and pipe H, communicating with the space between said diaphragm and shell at one end and with the water-leg at the other, substantially as and for the purpose described.

8. In combination with the shell of an upright boiler and the series of vertical fire-flues thereof, the diaphragm G, surrounding said flues, the pipe H, and valve I thereon, substantially as and for the purpose described.

335,681. **MULTIPLE HARMONIC PRINTING-TELEGRAPH.** GEO. A. CARDWELL, Brooklyn, N. Y., assignor of two-thirds to Frederick K. Fitch, New York, N. Y., and Joseph T. Murray, Newark, N. J.; said Murray assignor of one-half of his right to William Philip Arnold, Elizabeth, N. J. Filed Dec. 17, 1884. (No model.)



Claim.—1. In a receiving and distributing instrument for that class of multiplex printing-telegraphs wherein the transmission of electric signals is effected by the conjoint action of two different electric currents, the combination of the following instrumentalities, viz: first, receiving-relays and printing-circuit relays which partially complete the printing-circuit under the action of the first electrical impulse of the sending-key; second, a supplementary electro-magnetic device which temporarily maintains the preparatory closure or completion of said printing-circuit; third, a series of circuits, batteries, and contacts, which, when two impulses are sent by the key, fully completes said printing-circuit to the exclusion of all others.

2. In a current-distributor or switching apparatus, the combination, with receiving-relays and means, substantially as described, for controlling the action of the same separately and conjointly by currents of various characteristics transmitted through a main or trunk line, of one or more electro-magnetic devices constructed and adapted to relay circuits through diverging or radiating lines and operate printing, sounding, or recording magnets in response to special combinations of the transmitted currents on the main line.

3. In a current-distributor or switching device, the combination, with receiving-relays which respond to currents of various characteristics sent over a main or trunk line and conjointly establish normally-open circuits, of an electro-magnetic device or devices constructed and adapted to complete radiating or diverging circuits through given radiating or diverging lines in response to permutations or conjoint operations of the receiving-relays.

4. In a current-distributor or switching apparatus, the combination of permutable receiving-relays and electro-magnetic translating devices, from which lines proceed to printing, recording, or sounding magnets, substantially as described, said translating devices being constructed and adapted to respond to initial or preparatory currents relayed by one of the receiving-relays, and close and maintain closed normally-open contacts in the printing, recording, or sounding lines during the conjoint action of two relays in completing the working-circuit.

5. In a current-distributor or switching apparatus, the combination of three or more permutable receiving-relays constructed and adapted to close normally-open circuits through any two of said relays in response to currents of different characteristics passing simultaneously through a main or trunk line, and to effect the relaying of different circuits in response to the different combinations of permutations of the receiving-relays.

6. In a current-distributor or switching apparatus, the combination of receiving-relays and electro-magnetic circuiting or translating devices, the latter being constructed and adapted to respond to initial or preparatory currents completed by any one of said relays, and close contacts between a conductor common to all the translators and given outgoing lines in circuit with printing or working magnets, substantially as described.

7. In a current-distributor or switching device, the combination, with permutable receiving-relays and electro-magnetic translating devices for directing currents into different diverging or radiating lines, and means, substantially as described, whereby the translating-magnets are energized through one local circuit, and such energization maintained through a different circuit, of a supplementary electro-magnetic device, substantially as described, for restoring the translating devices to normal condition after each printing, recording, or sounding operation.

8. The combination, with a current-distributor or switching device constructed and adapted to respond to combined currents and complete a separate local circuit for different permutations, of a transmitter comprising a series of keys adapted to control the transmission of two or more currents of different characteristics, one of said currents being initial or preparatory, substantially as described.

335,682. **TRANSMITTER FOR HARMONIC PRINTING-TELEGRAPHS.** GEORGE A. CARDWELL, Brooklyn, and FREDERICK K. FITCH, New York, N. Y., assignors of one-third to Joseph T. MURRAY, Newark, N. J. Filed Dec. 17, 1884. (No model.)



Claim.—1. In a telegraphic transmitting apparatus, the combination of a series of electro-magnets adapted to close circuits over a main or trunk line or lines, a local battery or generator in circuit with said magnets, and a series of keys in branch circuits of the battery, each of said electro-magnets having circuit-wires branched or subdivided and leading to different keys, and each of said keys being provided with contact-closing devices constructed and arranged substantially as described, whereby when a key is depressed it will close a circuit from said battery through two or more of said electro-magnets, as set forth.

2. A telegraphic key having two or more pairs of contact-points related to different circuit-lines, and means, substantially as described, for momentarily closing one circuit in advance of the other or others when the key is depressed, and for maintaining the break in the open circuit until the key assumes its normal position, as set forth.

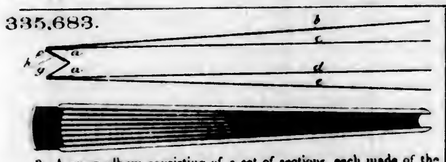
3. The combination of the key A, stem A', spring-plate F, bell-crank lever G^3, cam H^4, and contact-springs I, I', substantially as described.

335,683. **SCRAP-ALBUM.** GEORGE R. CHAPMAN, London, England. Filed Aug. 10, 1885. (No model.)

Claim.—1. In a scrap-album, the combination of the fourfold guard, with the four album leaves attached to the two outer folds of the guard, as shown and described.

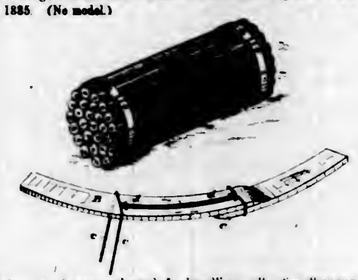
2. A scrap-album having the fourfold guard, the four leaves attached to the outer folds of the same, and the splint or strengthener *h*, applied between the folds *f* and *g*, all substantially as shown and described.

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3. A scrap-album consisting of a set of sections, each made of the fourfold guards having doubled leaves attached on their outer folds, as hereinbefore described, and having other similar fourfold guards connecting such sections together, all substantially as shown and described.

335,684. **BUNDLING WALL-PAPER.** FRANK E. CLARK, Brooklyn, N. Y., assignor of one-half to James P. Barnett, same place. Filed Sept. 25, 1885. (No model.)

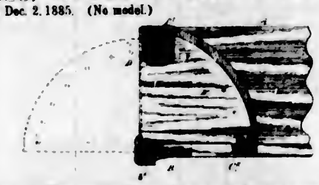


Claim.—1. A hoop adapted for bundling rolls of wall-paper, consisting of a flat wooden body having a wire fastening attached to one end thereof arranged to secure the ends of the wooden body together when overlapped.

2. A hoop adapted for bundling rolls of wall-paper, consisting of a flat body part and a fastening attached to one end thereof, the said fastening consisting of a loop through which the opposite end of the body part can be slipped, and means for securing the ends of the body part together when overlapped.

3. A bundle composed of several rolls of wall-paper brought into approximately cylindrical shape and secured in place by flat rigid hoops, substantially as and for the purpose set forth.

335,685. **WAGON END-GATE.** HAMILTON S. CRABTREE, Anna, Ill. Filed Dec. 2, 1885. (No model.)



Claim.—1. The combination of the end-gate having a quadrangular side plate provided with a series of perforations near its curved edge and a slot in its lower corner in the line of radius of the said plate, the wagon-body provided with a keeper-frame having two keepers, within which the quadrangular plate works, and a spring secured on one of the keepers, provided with a pin which engages the perforations in the quadrangular plate, substantially as set forth.

2. The combination of the wagon-body, having guide-supports for the end-gate secured at its lower rear corners, provided with inwardly-projected flanges, and the end-gate provided with a supporting-plate having pins secured at their lower edges, which rest upon the flanges of the guide-supports, substantially as specified.

335,686. **REFRIGERATOR ATTACHMENT FOR WELLS.** WILLIAM R. DINGMAN, Niantic, Ill. Filed June 29, 1885. (No model.)

Claim.—1. The combined refrigerator and well-ventilator herein set forth, consisting in the combination of casing *a b*, inclosed at its upper end, with the exception of lateral aperture *i*, and having said aperture net-covered, a suitable door, a pendulous receptacle, and suitable means of raising and lowering said receptacle, as set forth.

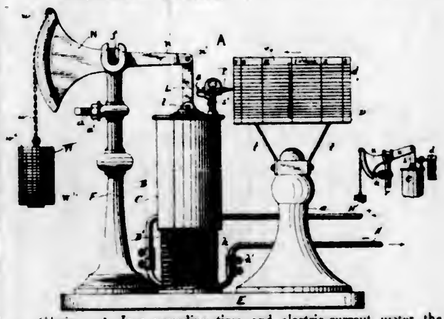
2. Casing *a b*, having a top with a projecting ledge, and a net-covered aperture under the projecting ledge, door *d*, pendulous receptacle *c*, and suitable means for lowering and raising said receptacle, as set forth.

3. Casing *a c*, having a top with a projecting ledge, and a net-covered aperture under the ledge, a lateral door, a pendulous receptacle in the casing, and a winch, also in the casing, by means of which the receptacle is raised and lowered, as set forth.

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335,687. **ELECTRIC METER.** JOHN I. DRAKE, Providence, R. I. Filed May 15, 1885. (No model.)



Claim.—1. In a recording time and electric-current meter, the combination, with the helix and its armature, having a pencil or tracer adapted to move in unison with the armature, of a suitably-mounted lever having one end thereof connected with said armature, and the other end having a flexible connection carrying counter-weights, substantially as shown, and for the purpose set forth.

2. In a recording electric meter, the standard F, having an adjustable stop, *a*, in combination with the weighted beam N, fulcrumed to the standard F, and the cup-armature C, connected with the beam, substantially as shown and described.

3. The paper-carrying cylinder D, adjustably secured to the center moving spindle, *m*, of a clock-train, and completely incasing said train, the latter being supported by means of the standard *e*, substantially as shown and set forth.

4. In combination with a base, E, standards F *e*, and helix B', all secured to said base, the counterweighted lever N, pivoted to the standard F, a cup-armature, C, carrying a pencil or tracer, P, connected with said lever, and the clock-train T, operating the paper-carrying drum or barrel D, the whole constructed and arranged substantially as shown, and for the purpose hereinbefore set forth.

5. In a self-recording electric meter, the combination, with a helix or solenoid connected in an electric circuit, an armature having a pencil or tracer, and mechanism for moving a piece of paper, *d*, against the point of said tracer, of the suitably-mounted lever N, having its inner end, *n*, connected with said armature, the outer portion of the lever having a series of counter-weights connected therewith adapted to move in a straight line or parallel with the vertical axis of the standard or other support in which the lever is mounted, all constructed and arranged substantially as shown and set forth.

335,688. **OAT-HULLING MACHINE.** JAMES E. FENNER and DAN BRUNSON, Kansas City, Mo. Filed Aug. 13, 1885. (No model.)

Claim.—1. The combination, with the feed-hopper A, composed of the sides *a a*, pieces *c b*, strips C, and the bolts B B', of the body D, provided with top board, D', having tongues E E, substantially as described.

2. The hopper A, composed of the sides *a a*, strips C, and triangu-

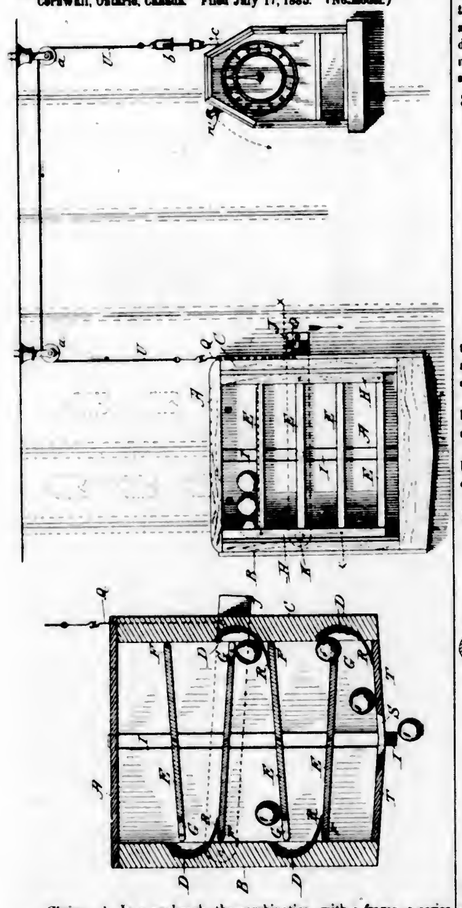
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lar and rectangular pieces *c b*, in combination with the body D, having top board, D', provided with a series of tongues, E E, and the rollers G H, as set forth.

3. The hopper A, composed of the sides *a a*, strips C, and triangular and rectangular pieces *c b*, in combination with the body D, having top board, D', provided with a series of funnels, F F, and tongues E E, and the rollers G H, as set forth.

335,689. POOL-RACK AND GAME-COUNTER. ERNEST LISTE FERRON, Cornwall, Ontario, Canada. Filed July 17, 1885. (No model.)



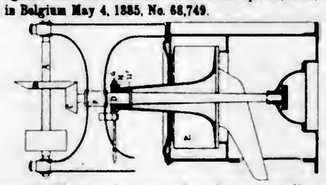
Claim.—1. In a pool-rack, the combination, with a frame, a series of ball supports or shelves, E, each pivoted at one end to one side of the frame, a series of shelves, E, each pivoted at one end to the opposite sides of the frame and alternating with the first-mentioned series of shelves, and the two upright strips H, secured to the free ends of the shelves E in close proximity to the sides of the frame, of a sliding rod, I, located within a recess or guide formed in the back of the frame A and pivotally connected to the rear edges of the shelves E, and a lever, J, pivoted to the rear of the frame, the free end being movably secured in the slot L by means of the plate M, and connected with the sliding rod I with the free end projecting from the back of the frame, substantially as and for the purpose set forth.

2. In a pool-rack, the combination, with a frame, the shelves E, pivoted to said frame, as shown, and the upright strips H, connecting the free ends of the shelves, as shown, of the sliding rod I, located behind the shelves and pivoted to the rear edges thereof, the operating-lever J, pivoted to the back of the frame and to the sliding rod I, and a spring, N, secured to the frame and connected with the lever J, for yieldingly holding the shelves in their elevated position, substantially as and for the purpose set forth.

3. In a pool-rack, the combination, with a frame having grooved or recessed sides, the shelves pivoted to the sides of said frame, as shown, and provided with recessed or cut-away ends, and the upright strips H, secured to the free ends of the shelves E, of the sliding rod I, located within a groove or guideway formed in the back of the frame, and a lever, J, pivoted to the back of the frame and to the rod I, all of the above parts combined and operating substantially as shown.

4. The combination, with a frame, a series of shelves pivoted in the sides thereof, as described, a centrally-located sliding rod, I, located in the back of the frame and connected to the rear edges of the shelves, an operating-lever, J, pivotally connected to the back of the frame and to the sliding rod I, and a spring for yieldingly holding the lever J in an elevated position, of a game-counter, and mechanism, substantially as described, connecting the counter and the operating-lever J, whereby all movements of the latter are transmitted to the former, substantially as set forth.

335,690. CENTRIFUGAL MACHINE. GEORGE FLETCHER, Litchurch County of Derby, England. Filed May 26, 1885. (No model.) Patented in England Feb. 4, 1885, No. 1,541; in France Apr. 28, 1885, No. 168,543, and in Belgium May 4, 1885, No. 68,749.

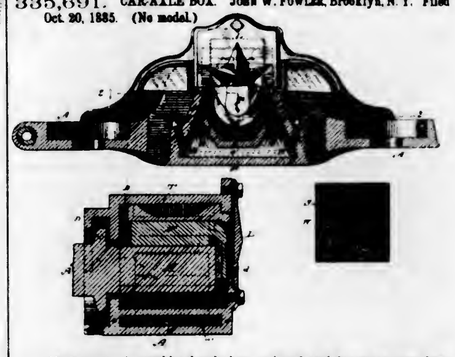


Claim.—1. The combination, with an internal spindle supported at top and bottom in fixed bearings, of a basket hung or suspended thereon and provided with elastic bearings or springs at the point or points of suspension, substantially as shown and described.

2. In combination with the spindle having unyielding bearings, the basket E, having the hollow shaft or sleeve, as set forth, fixed to such shaft by a yielding or elastic connection, as set forth.

3. The described method of carrying or supporting the suspended basket off the non-yielding spindle, consisting in hanging it thereon by elastic or yielding bearings, all as set forth.

335,691. CAR-AXLE BOX. JOHN W. FOWLER, Brooklyn, N. Y. Filed Oct. 20, 1885. (No model.)



Claim.—1. A combined axle box and pedestal for street-cars, having a central box-chamber, and constructed with an imperforate bottom for said chamber, downwardly flaring and extended side walls connected with said bottom by horizontal shelves, laterally-projecting oil-chambers formed in part by said extended side walls and inner ports in said shelves, substantially as herein specified, for the purpose set forth.

2. In a combined axle box and pedestal for street-cars, having a central box-chamber, the combination of an imperforate box-bottom and sub-bottom, downwardly flaring and extended side walls, both provided with filling-ports, and horizontal shelves above the upper level of said filling-ports provided with inner ports, substantially as herein specified, for the purpose set forth.

3. In combination with an axle-spindle, its saddle, and its box, a pair of laterally-arranged oil-chambers external to the box-chamber, inner ports communicating therewith, and a pair of wicks extending through said ports and having their upper ends split and distended to embrace the sides of said spindle below said saddle, substantially as herein specified, for the purposes set forth.

4. In combination with an axle-spindle, its saddle, and its box, a pair of laterally-arranged oil-chambers external to the box-chamber, formed in part by an imperforate box-bottom and downwardly flaring and extended side walls, horizontal shelves connecting said bottom and side walls, and having ports therein adjacent to the latter, and a pair of wicks having unbent lower ends tightly fitted to said ports and extending obliquely therethrough, substantially as herein specified, for the purposes set forth.

5. In combination with an axle-spindle, its saddle, and its box, a pair of laterally-arranged oil-chambers external to the box-chamber, formed in part by downwardly flaring and extended side walls, horizontal shelves having ports therein adjacent to said flaring side walls, and a pair of wicks having unbent lower ends extending obliquely downward through said ports, in contact with said side walls, to the bottom of said oil-chambers, the upper ends of the wicks resting against the periphery of said spindle below said saddle, substantially as herein specified, for the purposes set forth.

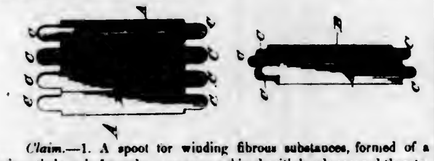
6. In combination with an axle-spindle, its saddle, its box, an oil-chamber external to said box, and a horizontal shelf having an inner port therein, a wick extending through said port and having an effective portion of its upper end in contact with the lower half of the periphery of said spindle, and an elastic wick-supporter having a pair of pins inserted in the wick, stops at the upper ends of said pins, and a main upper portion flexed over the inner edge of said shell and pressing upward against said effective portion of the wick, substantially as herein specified, for the purposes set forth.

7. In combination with an axle-spindle, its saddle, its box, a laterally-arranged oil-chamber external to the box-chamber, formed in part by an outwardly-inclined side wall, a shelf having a port therein adjacent to said inclined side wall, a wick having an unbent lower end extending through said port, in contact with said side wall, to the bottom of said oil-chamber, and an elastic supporter attached to said wick, flexed over the inner edge of said shelf, and having a downwardly-projecting portion which holds said lower end of the wick against said side wall, substantially as herein specified, for the purposes set forth.

8. The within-described wick-supporter, having attaching-pins, stop-bends, and a central downwardly-projecting portion, the whole formed by a single piece of spring-wire suitably bent, substantially as herein specified, for the purposes set forth.

335,692. SPOOL. WILLIAM A. FRIES, Brooklyn, assignor to the H. W. Johns Manufacturing Company, New York, N. Y. Filed Jan. 31, 1883. Renewed July 17, 1885. (No model.)

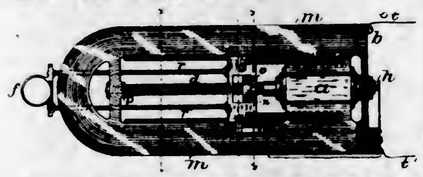
Brief.—The barrel of the spool is formed of a wooden veneer scored longitudinally and folded on the scorings in prismatic form. Tenons are formed on the ends before scoring, and the barrel is secured to the heads by entering said tenons in slots in the heads and securing them by staples, rivets, or cementing, &c.



Claim.—1. A spool for winding fibrous substances, formed of a prismatic barrel of wooden veneer, combined with heads secured thereto, in the manner set forth, shown, and described.

2. A blank for a barrel for spools for winding fibrous substances, consisting of wooden veneer scored on the desired lines and bent into shape, substantially as and for the purposes set forth.

335,693. ELECTRIC CALL-GENERATOR. EZRA T. GILLILAND, Boston, Mass. Filed Oct. 31, 1885. (No model.)



Claim.—1. An electric generator consisting of the combination of field-magnets, an armature-coil fixed to a rotating screw-threaded bar, a nut traveling in the thread of said screw, and means for moving the said nut along upon the screw-threaded bar to rotate the armature.

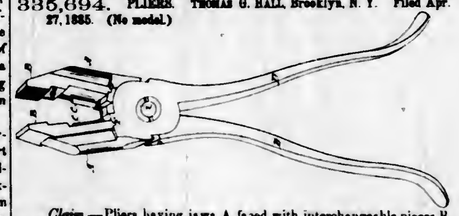
2. An electric generator consisting of the combination of an exciting-magnet, an armature-coil fixed to a rotating screw, a nut traveling in the thread of said screw, and an actuator having a reciprocating motion for removing said nut back and forth upon the said screw, whereby the armature is rotated.

3. The combination, in an electric generator, of an exciting-magnet, an armature-coil fixed to a rotating screw-threaded bar, a nut traveling in the thread of said screw, and a reciprocating actuator, which locks with and holds said nut while moving in one direction only, whereby the armature is rotated to generate electric impulses.

4. The combination, in an electric generator, of an exciting-magnet, an armature-coil fixed to a rotating screw-threaded bar, a nut traveling in the thread of said bar, and a spring-retracted reciprocating actuator in position to engage with and hold said nut while moving in one direction, and to release said nut upon its return-movement, whereby electric impulses are generated, substantially as described.

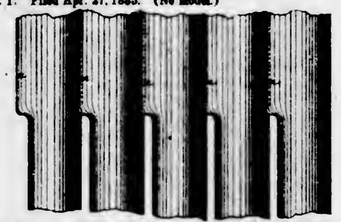
5. In an electric generator, the combination of an armature-coil fixed to a rotating screw-threaded bar, an actuator having a reciprocating motion, a nut carried thereby and adapted to rotate said armature-coil by engagement with said screw-threaded bar, and a short circuit around said coil, including contacts, one of which is carried by said actuator, whereby the short circuit is broken when the actuator is moved to rotate the armature and closed when it is at rest, substantially as described.

335,694. PLIERS. THOMAS G. HALL, Brooklyn, N. Y. Filed Apr. 27, 1885. (No model.)



Claim.—Pliers having jaws A faced with interchangeable pieces B, tongued and grooved in the jaws, said pieces being held in place by a screw and provided with cutting-edges and gripping-surfaces, substantially as described.

335,695. WATER-TUBE FOR BOILERS. JAMES HARTLEY, Brooklyn, N. Y. Filed Apr. 27, 1885. (No model.)



Claim.—1. The herein-described wrought-metal water-tube for boilers or heaters, the same being provided with an offset or extended part between the circular or cylindrical ends, and being twisted so as to vary the location or direction of the offset between its extremities, substantially as shown, and for the purposes set forth.

2. The combination of two or more water-tubes of the character herein set forth, each made of wrought metal and secured in place by expanding the ends, said tubes being constructed, substantially as shown, with cylindrical ends of unequal lengths and arranged so that the offset upon one shall bear against the material of the one next adjacent for a portion of its length, leaving open spaces between the tubes for the remaining portion, for the purposes and objects named.

3. In a wrought-metal water-tube of the character herein set forth, having an offset between the ends, the cylindrical ends made of unequal lengths and arranged to be inserted and secured in the end boxes by expanding the ends of the tube therein, and without disturbing any of the other tubes, substantially as and for the purposes herein set forth.

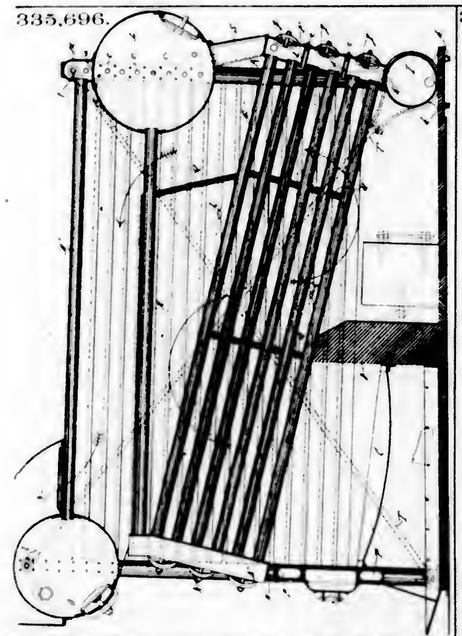
335,696. STEAM-BOILER. JAMES HARTLEY, Brooklyn, N. Y. Filed May 18, 1885. (No model.)

Claim.—1. In a boiler of the character herein set forth, the four corner columns supporting the steam and water drums and the side and top tubes, substantially as and for the purposes set forth.

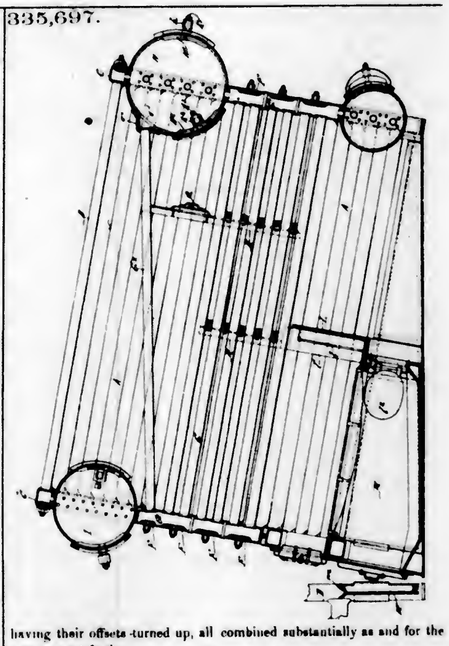
2. In a boiler of the character herein set forth, the combination, with the corner columns, of a drum supported thereon and secured thereto, said drum having its heads indented, thereby affording recesses to receive the said columns, substantially in the manner and for the purposes set forth.

3. In a boiler of the character herein set forth, the sectional part having the upright wrought-metal end boxes extending from top to bottom of the sectional part, arranged side by side and made removable,

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as explained, said boxes being connected by tubes arranged one above the other, and the front end boxes communicating by suitable tubes with the water-drum, located at the rear of the boiler, the parts being made detachable, substantially in the manner and for the purposes set forth.

4. In a boiler of the character herein set forth, the front and end upright wrought-metal boxes sustaining the tubes of the sectional part, said tubes having offsets and being turned or arranged, as explained, so that one pair of tubes shall lie above the open space between two pairs in the row below, substantially as shown, and for the purposes set forth.

5. In combination with the front corner columns sustaining one end of the side tubes and the drum, the connecting and bracing pipes above and below the location of the fire-door, substantially as and for the purposes set forth.

6. In a boiler of the character herein set forth, the series of rear end boxes abutting against each other and forming the rear wall of the sectional part, the shorter boxes being connected with the adjacent longer boxes by nipples, substantially as and for the purposes set forth.

7. In a boiler of the character herein set forth, the four wrought-metal corner columns, the side tubes having offsets, as explained, said tubes being connected with the corner columns and arranged to form the close side walls, and the top tubes similarly provided with offsets and forming the closed top of the boiler, all combined substantially as shown and described.

8. In a boiler of the character herein set forth, the top tubes having offsets and arranged to form the close top of the boiler, said tubes being combined with the steam-canal and the steam-drum, substantially as shown and described.

9. In combination with the boiler, the diagonal braces or tie-rods, provided with slip-joints and arranged to secure the structure and permit contraction of the parts thereof, substantially as and for the purposes set forth.

10. The herein-described boiler, composed of the wrought-metal corner columns, side tubes, sectional part having wrought-metal end boxes, drums, and top tubes, all combined and arranged substantially as shown and described.

11. In a boiler of the character herein set forth, the side tubes having the indentations therein, substantially as shown, and for the purposes set forth.

335,697. STEAM-BOILER. JAMES HARTLEY, Brooklyn, N. Y. Filed Aug. 21, 1885. (No model.)

Claim.—1. In a boiler of the character herein described, having tubes provided with offsets between their cylindrical ends for forming side walls or barriers, the tubes which contain water being arranged, as explained, with the offset turned down below the upper part of the cylindrical portion of the tube, so as to obviate trapping of steam within the offset, the tube having the double offset and the remaining tubes having their offsets turned up, all combined substantially as and for the purposes set forth.

2. In a boiler of the character herein described, having side walls and top and interior sectional part, the tubes of the sectional part having offsets between their cylindrical ends, said tubes being secured in the separate vertical end boxes, and being arranged, as explained, so that the offsets shall lie below the upper portion of the cylindrical part of the bodies of the tubes, substantially as and for the purposes set forth.

3. In a steam-boiler, the combination, with the water-drum provided with two man-holes, of the two man-hole plates and the securing devices, the securing device for one plate being located outside of the drum, and that for the other plate located inside of the drum, for the purposes and objects set forth.

4. In a steam-boiler, the combination, with the steam-drum provided with two man-holes, of the two man-hole plates and the securing devices, the securing device for one plate being located outside of the drum, and that for the other plate located inside of the drum, for the purposes and objects set forth.

5. In a sectional boiler, the combination, with the tubes, of the sectional part of the fire-walls or divisions formed of separate blocks or pieces locked in place upon the tubes by means of bolts and plates secured to the blocks or pieces, substantially as shown and described.

6. In a steam-boiler of which the side walls are made up of a series of tubes, the walls of the ash-pit provided with troughs to receive the lowermost tubes of the boiler-walls and form joints therewith, substantially as and for the purposes set forth.

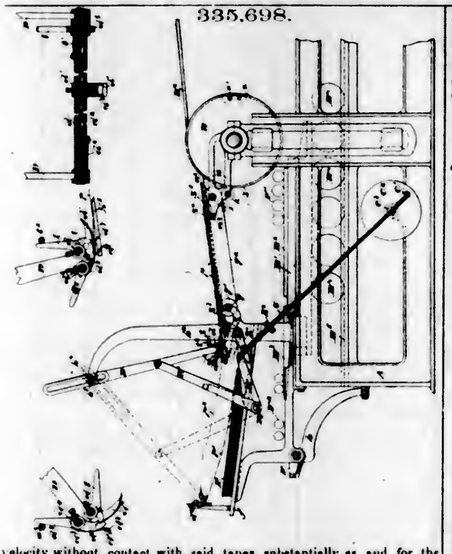
7. In a steam-boiler, a drum provided with an offset for receiving the ends of the inclined pipes communicating with said drum, and the interior stay-pieces combined with said drum, substantially as and for the purposes set forth.

8. In a sectional boiler, the tubes of the sectional part having offsets and cylindrical ends, said tubes being arranged, substantially as shown, so that clearing-space shall be afforded between consecutive tubes, and so that the apices of the offsets upon the tubes shall lie in or below the horizontal lines through the centers of the cylindrical ends, for the objects explained.

335,698. SHEET-DELIVERY FOR PRINTING-MACHINES. JOHN T. HAWKINS, Taunton, Mass. Filed May 6, 1885. (No model.)

Claim.—1. In a sheet-delivery for a cylinder printing-press, in combination with the impression-cylinder, a series of stripper-fingers, as S^9, and a series of conveying-tapes, as g^2, each series constructed, relatively arranged, and adapted to the other so that said stripper-fingers may project below the level of said tapes until the entire length of the sheet shall have been stripped from said cylinder, and thereafter said fingers project above the level of said tapes to partially arrest the further motion of the sheet, whereby said sheet may be further conveyed away from said stripper-fingers by any suitable means and at any desired velocity without contact with said tapes, substantially as and for the purposes set forth.

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2. In a sheet-delivery for a cylinder printing-press, in combination with the impression-cylinder, a series of movable stripper-fingers, as S^9, a series of conveying-tapes, as g^2, and mechanism, substantially as described, for projecting said fingers below the level of the tapes while said tapes are receiving the sheet from said cylinder, and for projecting said fingers above the level of the tapes after said tapes have received the entire sheet from said cylinder, substantially as and for the purposes set forth.

3. In a sheet-delivery for a cylinder printing-press, in combination with the impression-cylinder, a series of stripper-fingers, as S^9, a series of conveying-tapes, as g^2, each series constructed, relatively arranged, and adapted to the other so that said fingers may project below the level of the tapes while said tapes are receiving the sheet from said cylinder and above the level of said tapes after the entire sheet has left said cylinder, a series of traveling grippers, as d^3, and a receiving-board, as f, whereby the sheet is received upon said tapes, partially arrested by said stripper-fingers, and drawn away from said fingers by said traveling grippers, and dropped upon said receiving-board, substantially as and for the purposes set forth.

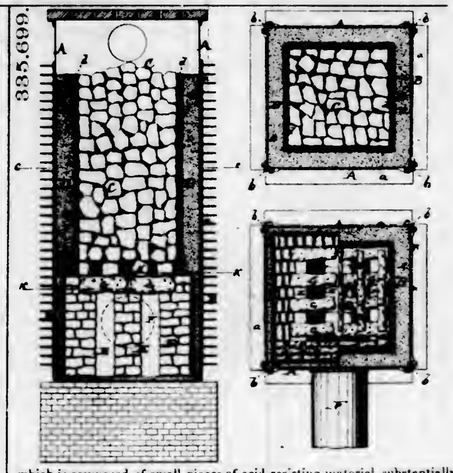
4. In a sheet-delivery for a cylinder printing-press, in combination with the impression-cylinder, a series of stripper-fingers, as S^9, a series of conveying-tapes, as g^2, each series constructed, relatively arranged, and adapted to the other so that said fingers shall project below the level of the tapes while said tapes are receiving the sheet from the impression-cylinder and above the level of said tapes after the entire sheet has left said cylinder, a series of traveling forked sheet-stops, as d', and a series of traveling grippers, as d^3, whereby the sheet is received from the impression-cylinder upon and conveyed by said tapes until entirely stripped from said cylinder, and then partially arrested by frictional contact with the stripper-fingers, the exact position of the sheet being limited by said forked sheet-stops to determine the amount of gripper hold to be taken by the grippers, and being then drawn off from said fingers by a slow and easy motion of said grippers without contact with the tapes, substantially as and for the purposes set forth.

5. In a sheet-delivery for a cylinder printing-press, in combination with the impression-cylinder, and mechanism, substantially as described, for stripping the sheet from said cylinder, a series of traveling grippers, as d^3, for seizing the sheets as stripped or delivered from said cylinder, and a parallel-motion mechanism consisting, substantially, of a pair of sliding radius-levers, as D, carrying said grippers on their free ends and articulated to a second pair of radius-levers, as R' R^4, oscillating upon a fixed axis, as R, and operated by any suitable moving part of the machine, whereby said grippers are caused to move in an approximately-rectilinear or slightly-curved path, as desired, substantially as and for the purposes set forth.

335,699. SULPHURIC-ACID TOWER. JOHN B. F. HERRESHOFF, Brooklyn, N. Y., assignor to himself, George H. Nichols, and William H. Nichols all of same place. Filed Oct. 17, 1885. (No model.)

Claim.—1. In a sulphuric-acid tower, the acid-resisting inner filling, C, of large blocks, combined with a surrounding loose lining, D,

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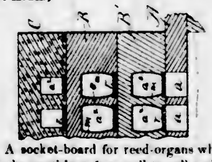
which is composed of small pieces of acid-resisting material, substantially as described.

2. In a sulphuric-acid tower, the combination of the inner acid-resisting filling, C, with the surrounding lining D, of loose reduced acid-resisting material, and with the lead sheathing A and outer wall, B, all arranged to maintain the loose lining D in position, as specified.

3. The combination of the central filling, C, with the layer *d*, of coarsely-ground quartz, and the outer layer, *e*, of finely-ground quartz, and with the sheathing A, substantially as herein shown and described.

4. In a sulphuric-acid tower, the combination of the quartz posts E and upper blocks, G and H, of quartz, with the quartz filling C, all contained within the sheathing A, as specified.

335,700. REED-BOARD. JACOB HESSLER, Chicago, Ill. Filed June 2, 1884. (No model.)



Claim.—1. A socket-board for reed-organs wherein the fiber of the wood runs across the partitions from cell to cell and the exposed ends of the fiber are coated with shellac or similar material, substantially as and for the purpose set forth.

2. In a reed-organ, a socket-board wherein the walls of the reed-cells are rendered smooth throughout by a coating of shellac or similar material, substantially as and for the purpose set forth.

335,701. DISTRICT-TELEGRAPH SIGNAL-BOX. FRED A. HOLCOMB, Grand Rapids, Mich. Filed Aug. 10, 1885. (No model.)



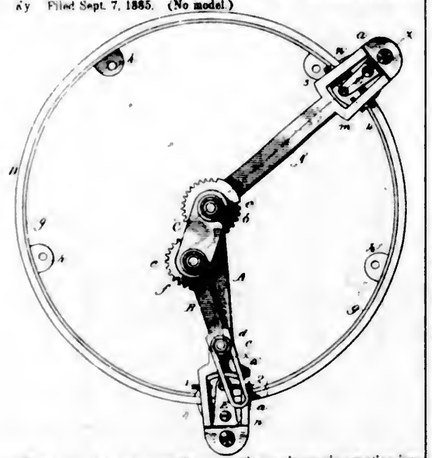
Claim.—1. The combination, with the handle of a signal-box, and a stop adapted to be detachably secured to the box for the purpose of arresting the handle opposite any call on said box, of a stop for preventing the handle from being turned backwardly, substantially as set forth.

2. The combination, with the handle of a signal-box, of a movable stop journaled on the shaft of said handle, and adapted to be detachably secured at its free end to the box opposite any call thereon and arrest the movement of the handle at any desired point.

3. The combination, with a signal-box having a series of calls and a movable handle or crank, of a stationary pin for limiting the movement of the handle in one direction, and a movable stop connected to the handle-shaft for limiting the movement of the handle in the opposite direction, substantially as set forth.

4. The combination, with a signal-box having a series of calls thereon and a movable handle, of a spring-arm journaled on said crank-shaft and provided at its outer end with a stop for limiting the movement of the handle in one direction, substantially as set forth.

335,702. DEVICE FOR CONVERTING RECIPROCATING INTO ROTARY MOTION. ROBERT B. HOLT and ISAAC N. WALTON, Allensville, Ky. Filed Sept. 7, 1885. (No model.)



Claim.—1. In mechanism for converting reciprocating motion into rotary motion, the combination of a pair of pivoted arms, an auxiliary arm, a friction-clutch at the end of each main arm, and an adjustable link, substantially as described.

2. In mechanism for converting motion, the combination, with a band or wheel, of a pair of arms pivoted to the axle thereof, an auxiliary arm and intermediate connections, friction-clutches at the end of each main arm, and devices for regulating said clutches, substantially as described.

3. In mechanism for converting reciprocating motion into rotary motion, the combination of a band for attachment to a wheel, two main arms pivoted to the shaft of such wheel, an auxiliary arm, intermediate motion-transmitting devices, friction-clutches attached to the main arms and embracing the band, and adjusting mechanism for regulating the clutches, substantially as described.

4. The combination, with a band having lugs for attachment to a driving-wheel, and formed with an inner continuous bead, of centrally-pivoted arms, an auxiliary arm and motion-transmitting devices, a friction-clutch at the end of each main arm, constituted of two jaws conforming to and embracing the band-adjusting devices, and a pivoted connecting-link by which each pair of jaws is operated successively to clutch the band in the manner and for the purpose described.

5. The combination, with the main arms and auxiliary arm, of a pair of jaws of the end of each main arm, a connecting-link for each pair, and set-screws for limiting the movement of the links, substantially as described.

6. The combination, with the band having the inner bead, of the main arms and auxiliary arm, the outer jaws, the inner jaws grooved to fit the bead, the connecting-link, and adjusting-screws, substantially as described.

7. The combination, with the main arms formed with slots in their outer ends, one of which arms is provided with a stud, of the auxiliary arm having its outer end slotted to fit over the stud, the engaging pinions, the friction-clutches, the pivoted connecting-links, and adjusting-screws, substantially as described.

8. The combination, with the main arms, constructed as described, of the friction-jaws, intermediate motion-transmitting devices, the connecting-links, and adjusting-screws, substantially as described.

9. The combination, with the band and the main arms and auxiliary arm, of two pairs of jaws embracing the band and the link connecting each pair, substantially as described.

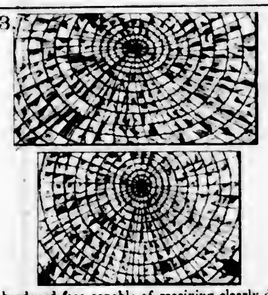
10. The combination of the band having inner flange, the two main arms formed with slots in their outer ends, the auxiliary arm, pivoted as described, and slotted at its outer end to fit a stud on one of the main arms, the pinions *e* and *e'*, the links pivoted to the outer end of the main arms, the jaws formed to fit the band on opposite sides, the same being pivoted to the links, and the set-screws for adjusting the links to regulate the jaws, substantially as shown and set forth.

335,703. WOODEN CARD FOR BUSINESS AND OTHER PURPOSES. ROBERTS B. HODGE, Lowville, N. Y. Filed Sept. 27, 1884. (Specimens.)

Claim.—1. As a new article of manufacture, a flexible card composed of wood having its impression-receiving face formed of the cross-grain of the wood, substantially as described.

2. A card composed of a flexible cross-section of wood having a

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smooth and hardened face capable of receiving clearly-defined lines imparted to it by pen or type, and permitting the transmission of rays of light, substantially as described.

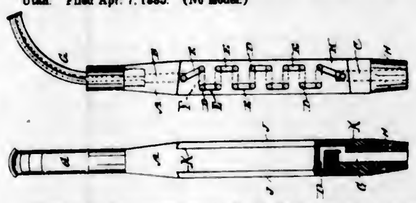
3. The process described of forming flexible wooden cards, the same consisting in cutting the card from the block while the same is in a green state and across the grain of the latter, and subsequently placing the cut cards between the absorbent material and subjecting them to pressure, substantially as described.

335,704. ELASTIC HOSE. CYRUS HOULT, Chicago, Ill., assignor to Andrew H. Parker, same place. Filed Sept. 15, 1885. (No model.)



Claim.—The improved elastic hose herein described, composed of a leg-piece having one edge curved and the other edge substantially straight, and also having an extension, *e*, in combination with a foot-piece, *a*, the parts being united substantially as and for the purposes specified.

335,705. TOBACCO-PIPE STEM. WILLIAM B. KENNEDY, Silver Reef, Utah. Filed Apr. 7, 1885. (No model.)



Claim.—1. A pipe-stem provided with the transverse grooves at intervals through the body, with short longitudinal grooves on one side, and with transverse grooves on the other side, said side grooves communicating with the grooves through the body, and being closed at their sides by means substantially as set forth, substantially as and for the purpose described.

2. A pipe-stem provided with the transverse grooves at intervals through the body, with short longitudinal grooves on one side, and with transverse grooves on the other side, said side grooves communicating with the grooves through the body, said stem also having in its opposite sides plates covering the said side openings, substantially as and for the purpose set forth.

3. The combination, with a pipe-stem having the transverse grooves D, transverse and longitudinal grooves E F in the sides uniting the ends of the channels and the recesses K in the sides, of the side pieces, J, in the recesses K, substantially as herein shown and described.

335,706. SELF COOLER AND STRAINER FOR SIRUP AND SUGAR. THOS. W. LANIER, Guyton, Ga. Filed Dec. 24, 1885. (No model.)

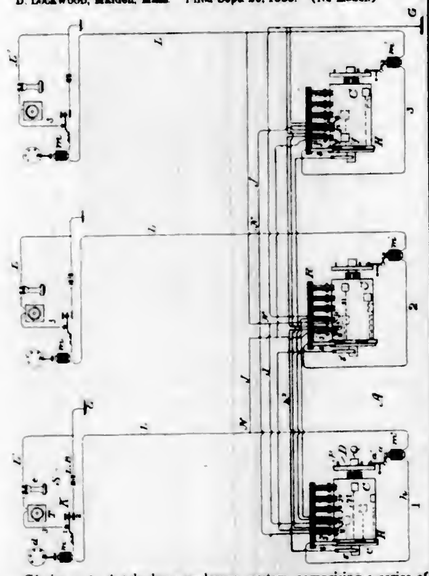


Claim.—A self cooling and straining attachment to sugar and sirup boilers, consisting of a perforated sheet-metal cover having a suitable rim and a segmental spout or goose-neck, and a sieve having a frame and a straining-cloth placed over the frame to receive the juice and scum from the spout, substantially as and for the purpose set forth.

335,707. MANUFACTURING ARTIFICIAL STONE. GUSTAV LILIENTHAL, Melbourne, Australia. Filed Oct. 27, 1885. (No specimens.)

Claim.—The within-described composition of matter for the manufacture of artificial stones and the like, consisting of slaked lime, Keene's cement, and curdled milk, in substantially the proportions set forth.

335,708. AUTOMATIC TELEPHONE-EXCHANGE SYSTEM. THOS. D. LOCKWOOD, Malden, Mass. Filed Sept. 26, 1885. (No model.)



Claim.—1. A telephone-exchange system comprising a series of sub-stations, a central or connecting station, electric lines or circuits connecting the several sub-stations with the connecting station, means, as indicated, comprising a rotatable cylindrical circuit-changer actuated by clock-work for each of the said lines, each circuit-changer being controlled by an electro-magnet in its own line-circuit, and provided with a series of conducting-cams, a series of contact-springs, each constituting a portion of another line, and each placed within the reach of one of said cams, but beyond the reach of the others, an indicator at each sub-station adapted to rotate synchronously with the cylindrical circuit-changer of its own line, and current-sending devices at each sub-station, whereby each said sub-station is enabled to operate its own circuit-changer at the connecting-station, and thereby connect its own line with any other desired line by stopping the circuit-changer at the moment when a conducting-cam is in contact with the desired line-spring, and at the same time by means of the indicator be enabled to intelligently govern the movements of said circuit-changer, substantially as hereinbefore described.

2. In a system of telephone-circuits, the combination of a main-line circuit extending between a sub-station and a central or connecting station, a central-station extension thereof passing through an electro-magnet adjusted to respond only to strong electric currents of uniform direction, and a series of successive spring-contacts, each being adapted to be controlled by one other of the lines comprising the system, an automatic connecting apparatus of the character herein described, actuated by clock-work, controlled by the electro-magnet in the said main circuit, and adapted to be operated from a distant station of the said circuit to disconnect the said circuit from its normal earth-terminal, to select any other desired circuit, and to connect the said original circuit thereto by means of the spring-contact of the second circuit, a branch circuit at the sub-station, including a battery or equivalent source of current electricity of uniform direction, an indicator included or adapted for inclusion in the main line to indicate the movements of the distant connecting apparatus, a second branch circuit, including the telephones, a polarized call-bell, and a generator of electricity adapted to develop and transmit rapidly-alternating electric currents, whereby a distant bell may be rung without affecting the intermediate controlling electro-magnets, and a key connected permanently with the main line and having its back contact connected with the bell and telephone branch, and its front contact or anvil connected with the battery branch, as and for the purpose specified.

3. An automatic telephone-exchange consisting of a series of telephone-lines extending from a series of sub-stations to a central point or connecting-station, each of the said lines being provided at the central point with a rotating cylindrical circuit-changer actuated by a clock-train or other suitable motor, and governed from the sub-stations by an electro-magnet in the main circuit, the said circuit-changer being provided with a number of conducting-cams, and being always electrically united with the said main line, and adapted to control, by means of said conducting-cams, a contact-spring of each other line of the system and its own ground contact-spring simultaneously, whereby each sub-station may at will operate its own circuit-changer to disconnect its own ground-terminal, and to connect itself with any other line, as may be desired, as herein specified.

4. An automatic telephone-exchange consisting of two or more lines or main circuits, each extending between a central or connecting station and one or more sub-stations, an automatic connecting mechanism at the central station for each line, comprising a rotatory circuit-changer in permanent electric connection with said line, actuated by a clock-motor and controlled by an electro-magnet in its own line-circuit operated from the sub-stations, and a series of spring-contacts, one for each additional circuit or line entering the central station, the rotatory circuit-changer being provided with conducting-cams, which engage successively the several contacts of the several lines, maintaining the engagement and contact with the spring representing any desired line as long as required, a normally-open branch for each line, adapted to be closed by the cam effecting the connection and shunting the electro-magnet and intermediate contacts of the line, a battery or other source of electricity supplying a current of uniform direction, and an electro-magnetic indicator at each sub-station, an alternating current-generator, and a call-bell in a separate branch circuit, also at each sub-station, and a key which when at rest connects the call-bell branch, and when depressed the battery branch, with the main line, substantially as described.

5. In an automatic telephone-exchange system, a telephone main circuit extending between a central or connecting station and one or more sub-stations, and provided at each sub-station with two branches, one including an alternating current-generator, a bell, and telephones, the other including a battery or straight-current generator, and a key or switch for connecting either branch at will with the main line, and at the central station with an extension passing through the controlling electro-magnet of a rotatory connecting apparatus, and placed in permanent electric connection with the said apparatus, and then passing successively through a series of spring-contacts, each of which is controlled by a connecting apparatus of another circuit, and also with a normally-open branch connected with the main line at a point external to the controlling-magnet, and branching to a series of twin or complementary contact-springs, one of which is fixed in close proximity to each of the main spring-contacts of the same circuit, substantially as and for the purposes described.

6. In an automatic telephone-exchange system, two or more lines or main circuits, each extending between a central or connecting station and one or more sub-stations, an automatic connecting mechanism at the central station for each line, the said mechanism being actuated by a clock-train controlled by an electro-magnet in its own circuit and operated from the distant sub-station to connect the said line with any other line, as may be desired, a normally-open branch circuit for each line adapted to be closed by the act of connecting any two lines and operating to prevent interference from a third line, means, substantially as indicated, at each sub-station for directing a steady battery-current to line to operate the automatic connecting mechanism and for arresting the same at the moment when any desired line is connected, and other means, as described, for sending call-signals over the connected lines, which call-signals shall not affect the intermediate controlling-magnets.

7. The combination of two or more telephone-line circuits converging to a central station, a rotary clock-actuated cylindrical circuit-changer for each line, a series of conducting-cams on each cylinder, a controlling electro-magnet for each line adapted to respond to steady currents of one direction, a series of line contact-springs at each cylinder, one for each additional circuit, said springs resting normally on a back contact leading to ground, but each adapted to be raised therefrom by one of said cams, a contact-spring at each circuit-changer forming part of the circuit to which the latter belongs, a conducting-disk carried by the cylinder and normally in contact with said spring, said disk being also in connection with the ground, a series of conducting projections carried by said cylinder, each connected by a cross-wire with one of said cams, said projections being arranged to act successively upon said last-named spring at the same time that the corresponding cam acts upon its line-spring, and means, as specified, for stopping each circuit-changer at any desired point, whereby the operator at any station can connect his line with any desired line through a cam, cross-wire, and projection, and simultaneously disconnect each line from its normal earth-terminal, each sub-station being provided with a constant source of current electricity,

a key to direct the same to the line, a magneto-generator adapted to send rapidly-alternating pulsations to line, whereby the distant bell may be rung without affecting the immediate controlling electro-magnet, and transmitting and receiving telephones, substantially as specified.

8. The combination of a main electric circuit with a rotatory circuit-changer or commutator, having permanent electrical connection by means of contact and friction springs with the said electric circuit, and driven by a suitable motor governed as to its motion or rest by an electro-magnet included also in the said circuit, and a series of separate and independent electric circuits, each of which is controlled by the said rotatory circuit-changer by means of a series of spring-contacts, one for each of the said circuits, the said springs being within range of and adapted to be engaged by a series of cams on the cylindrical surface of the rotatory circuit-changer, and to be thereby transferred from their normal contact into contact with the circuit of the electro-magnet controlling the rotatory circuit-changer, substantially as hereinbefore described, and for the purpose of uniting the said circuit with any predetermined one of the series represented by the several contact-springs.

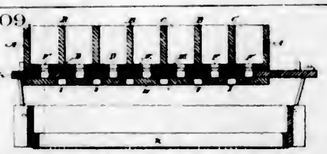
9. The combination, substantially as hereinbefore described, of a rotatory circuit changer or commutator having permanent electrical connection by means of contact and friction springs with an electric circuit, and driven by a suitable motor governed as to its motion or rest by an electro-magnet included in the said circuit, with a series of spring-contacts, each included in a separate electric circuit, all of the said spring-contacts being controlled by the said rotatory circuit-changer, each in its own time, by means of cams adapted to lift the said springs, the said cams being regularly arranged round the cylindrical surface of the said circuit-changer, for the purposes specified.

10. The combination, with a series of rotating cylindrical circuit-changing apparatuses, (each normally at rest and each driven by a clock-train or other suitable motor,) the said motor being controlled as to its arrest and release by an electro-magnet, with a series of electric circuits, (one for each of the said circuit-changers,) each circuit extending from one or more distant stations through the electro-magnet, and one or more spring-contacts of its own rotatory circuit-changer, and through one spring-contact at each other rotatory circuit-changer, and a normally-open branch circuit for each main circuit extending from a point on the said main circuit external to the electro-magnet and branching to a series of twin contact-springs, one of which is in close proximity to but insulated from each main-circuit contact-spring at every rotatory circuit-changer, with the exception of the one controlled over that special line, all substantially as and for the purposes described.

11. An automatic connecting device for telephone-circuits, comprising the following elements in combination: a commutating-cylinder having at one end a conducting-disk and a non-conducting disk with conducting projections on its rim, having also a series of conducting-cams ranged spirally or otherwise regularly round its surface, each cam being united by a cross-wire with one of the projections on the non-conducting disk, a face-plate at the other end of said cylinder, having a series of stop-pins equal in number to the said conducting-cams plus a unison-pin, an electro-magnet, armature, and bell-crank lever adapted to engage with the said pins and to control the movement of the cylinder, a clock-motor to actuate the said cylinder when released from the control of the said pins, a contact-spring bearing normally upon the edge or rim of the conducting-disk, but adapted to be raised therefrom by the action of the projections of the non-conducting disk, a second contact-spring bearing upon the cylinder-axis and in permanent electric connection with the said conducting-disk, a series of contact-springs, one included in each other electric circuit of the system, supported at one side of the cylinder, in the path of the cams thereof, and adapted to be engaged and held thereby, and a series of supplementary springs connected with branch circuits of the several lines, one of the said supplementary springs being placed side by side with its own main-circuit spring and in immediate proximity thereto, so as to be raised and brought into contact by and with the same cam that raises the said main-circuit spring, substantially as herein described.

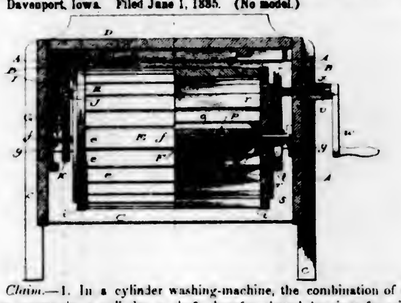
12. The combination, substantially as hereinbefore described, of three or more main-line circuits, each extending at a central station through an electro-magnet controlling the movement of a rotatory circuit-changer, and through a series of spring-contacts controlled by the rotatory circuit-changer of every other line, and a branch circuit (normally open at its extremity) extending from a point on the main line outside of the electro-magnet and branching to series of twin or supplementary contact-springs, one of the said series being placed in close proximity to the main-circuit contact-spring at every rotatory circuit-changer except that of its own line, so that when any two lines are united through the said circuit-changers a double route of union will be provided, the branch circuit being caused to shunt the electro-magnet and intervening spring-contacts, whereby continuity is improved, and whereby a third sub-station line is prevented from interfering with any connection already formed.

335,709. SEEDER. WILLIAM M. LOVIN, Greenville, Tex. Filed Oct. 21, 1885. (No model.)



Claim.—The combination, in a seeder, of the seed-hopper, the reciprocating seed-slide, and the sieve or screen suspended from the seed-slide below the hopper, substantially as described.

335,710. CYLINDER WASHING-MACHINE. HENRY F. MOELLER, Davenport, Iowa. Filed June 1, 1885. (No model.)

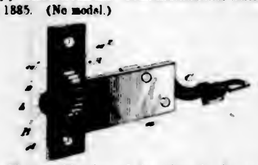


Claim.—1. In a cylinder washing-machine, the combination of a tub or receptacle, a cylinder, a shaft therefor, slotted bearings for said shaft, a gear-wheel mounted upon the cylinder, and a pinion meshing with said gear and movable longitudinally out of mesh with the gear, as set forth.

2. In a cylinder washing-machine, the combination of a tub or receptacle, cylinder E, shaft *f* therefor, slotted bearings *g*, gear-wheel *t*, shaft *v*, provided with handle *w* and pinion *u*, and pivoted dog *y*, all arranged as shown.

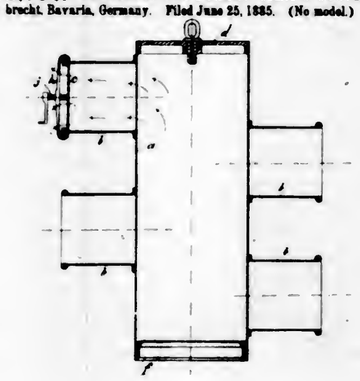
3. In a washing-machine, the combination of a tub or receptacle, cylinder E, provided with shaft H and gears I J, shaft *f*, provided with roller F and gear K, and stationary gear-plate G, all arranged as shown.

335,711. SASH-HOLDER. JOHN H. NEWBORY, Waterford, Conn. Filed Nov. 14, 1885. (No model.)



Claim.—The combination of the plate A, the rock-shaft B, journaled on the rear side of the plate, the serrated cam-lever arm on the said shaft, the face of which extends through a slotted opening in the plate A, the arm C, for partly rotating the rock-shaft to move the cam-lever arm, and the coiled spring E on the said shaft, one end of the said spring bearing against the rear side of the cam-lever arm, and the other end of said spring bearing against the rear side of the plate, substantially as described.

335,712. APPARATUS FOR DYEING. JULIUS O. OBERMAIER, Lambrecht, Bavaria, Germany. Filed June 25, 1885. (No model.)



Claim.—1. An apparatus for treating textile fibers, &c., consisting of a simple hollow perforated casing, the independent radiating perforated receptacles supported by and communicating directly with the casing through said perforations, each adapted to hold a quantity of material to be treated, and the perforated adjustable cap for confining the material in place, substantially as described.

2. The combination of the central perforated upright cylinder, series of radiating perforated supports, each communicating with one of the perforations of the casing, and tubular perforated bobbins adapted to support the material to be treated and to be applied to the said radiating supports, substantially as described.

335,713. WATER-WHEEL. RUSSELL R. OSDEN, Bradford, Pa. Filed June 9, 1885. (No model.)

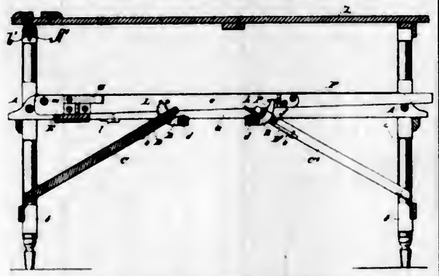


Claim.—1. A water-wheel having around its periphery a series of buckets of transversely-extending oval or elliptical shape in cross-section.

2. A bucket for a water-wheel, having a transversely-extending elliptical or oval shaped mouth and curved sides and top and bottom gradually tapering from the mouth to the rear end.

3. The bucket herein described having a transversely-extending oval or elliptical shaped mouth and curved sides and top and bottom walls and downwardly-extending flanges to permit of their ready attachment to water-wheels, substantially as set forth.

335,714. COMBINED STEP-LADDER AND IRONING-BOARD. HORACE D. PARKS, Syracuse, N. Y. Filed Nov. 15, 1884. (Model.)



Claim.—1. The combination, with the main frame constituting the intermediate section of the ladder, of the pivoted leg-sections composing the upper and lower sections of the ladder, and means, substantially as described, for bracing the same, and the leg-section pivoted at one end to the main frame and adapted to be thrown outward to brace the ladder, substantially as shown and described.

2. The combination, with the main frame *a*, of the pivoted legs *b*, the pivoted braces C C, having the apertured castings D D, respectively adapted to engage the hooks B on the rounds or bars of the said frame *a*, substantially as specified, the leg-section *c*, having a cross-bar, *s*, and the stud *i*, projecting from the cross-bar to engage an eye, A, extending from the casting D, substantially as for the purposes set forth.

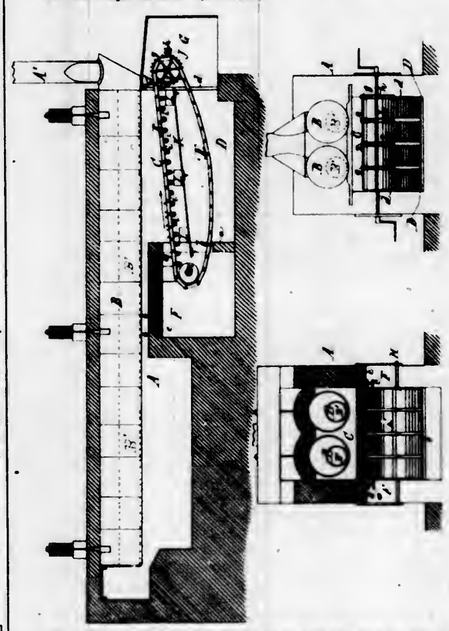
3. The combination, with the main frame, of the leg-sections *b*, the section *c*, having the brace-arms H and *n*, arranged to operate substantially as specified, and the brace C, pivoted to one of the leg-sections and provided with a catch to engage the brace-section *c*, as and for the purposes set forth.

4. The combination, with the ladder-section, of the brace-section *c*, consisting of the legs F, the arm *n*, hinged to the inner side of one of the legs F, and provided at its opposite end with an aperture to engage the lug on the opposite leg, and the oblique brace-arms H, hinged to the said arm *n* and provided at its outer end with an aperture to engage a stud on the opposite leg F, all adapted to operate substantially as specified.

5. The main frame having the braces C C, provided with the castings D D, having lateral flanges to engage the opposite ends of the said braces and hold the same folded, substantially as specified.

6. The combination, with the main frame having its intermediate rounds provided with the hooks or lugs B, having a lateral shoulder, of the pivoted legs, and the braces pivotally connected at one end to the legs and at their other ends with apertured castings D D, respectively, said castings having a spring, as L, located to one side of the aperture in each, to cause an automatic locking of the hooks and castings, substantially as shown and described.

335,715. FIRE-BOX FOR BOILERS. TOWNSEND POORE, Scranton, Pa. Filed Apr. 15, 1885. (No model.)



Claim.—1. A furnace provided with a feed archway or channel beneath the boilers from side to side of the furnace-wall, in rear of the ash-pit chamber and in communication with said chamber, substantially as described.

2. An endless-chain grate supported at its feed end in a feed archway or channel, passed through the ash-pit chamber, and supported and driven at its discharging end near the front of said chamber, substantially as described.

3. The combination, with a fire-box having a feed-archway in rear of its ash-pit chamber, of an endless-chain grate moving toward the front of the fire-box, an ash platform and screen, K, and side doors, I I, for admission of draft and cleaning implements, substantially as described.

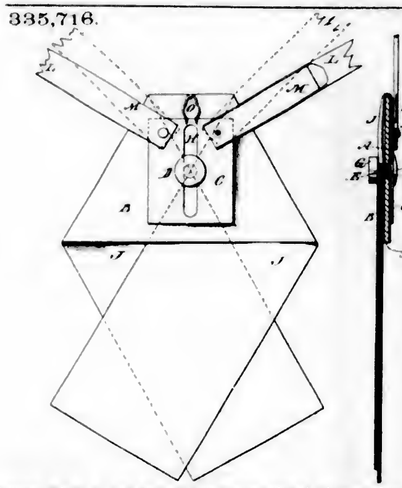
4. The combination of the endless-chain grate moving against the draft of the fire-box, the fire-chamber provided with the pivoted doors or plates *e f*, and the feed archway or channel, substantially as described.

335,716. NECKTIE-FASTENER. JOHN F. POPE, Ottumwa, Iowa. Filed May 14, 1885. (No model.)

Claim.—1. The combination, with an interior shield, A, or foundation of a scarf for neck-wear, of an independent exterior slotted plate, C, and clamping device constructed, substantially as described, so that the interior plate, with the scarf thereon, may be adjusted upon the independent exterior plate and clamped, as set forth.

2. The combination, with the interior shield or foundation of a scarf for neck-wear, of an independent exterior slotted plate, C, and detachable clamping device, substantially as described, which passes through the

335,716.

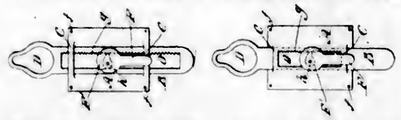


interior shield, A, and through the exterior slotted plate, to clamp the whole together, as set forth.

3. The combination, with the plate A, of the slotted plate C, adapted to be attached to a collar-button, and of the button D, having internally-threaded stem F, and the stud G, having a threaded shank, as set forth.

4. In a scarf for neck-wear, in combination with the plate C, the bands L, having metal stiffeners M, substantially as described.

335,717. ADJUSTABLE HOLDER FOR SCARFS FOR NECK-WEAR. WILLIAM B. POPE, New York, N. Y. Filed May 16, 1885. (No model.)



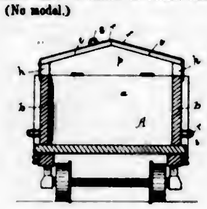
Claim.—1. In combination with a holder, A, and bar B, adapted to be attached to and detached from a collar-button, substantially as described, the revolving locking-plate F', with a suitable device secured thereto, for adjustably connecting and disconnecting the holder A and bar B, constructed and operating as set forth.

2. In combination with a slotted bar, B, having notches on the slotted edge thereof, and adapted to be attached to and detached from a collar-button, substantially as described, the revolving locking-plate F' and handle F, pivoted to the holder A, and a pawl-tooth, *h*, secured to the revolving locking-plate F', to engage and disengage with the notches *g* in the slotted edge of the bar B by the swinging movement of the handle F of the plate F', as set forth.

3. In a necktie, a holder constructed and operating substantially as described, consisting of a slotted plate, A, having notches *g* in its slotted edge, a sliding bar, B, with the button-loop D, adapted to be attached to and detached from a collar-button, in combination with a revolving locking-plate, F', handle F, and pawl-tooth *h*, secured to the revolving locking-plate F', the bar B placed on one side of the plate A and the revolving locking-plate F' placed on the opposite side, with the pawl *h* between them in the slot O, to be engaged and disengaged with the notches *g* by the movement of the swinging handle F, to adjust the scarf, as set forth.

4. In combination with the plate A and bar B, having a loop, D, to be attached to and detached from a collar-button, the spring I and ornament J, substantially as herein described.

335,718. CAR-COVER. WILLIAM H. PRICE, Columbus, Ohio. Filed Sept. 25, 1885. (No model.)



Claim.—1. An adjustable car-covering formed of sections *c d e f*, each of said sections having overlapping strips *m* and *n*, substantially as and for the purpose specified.

2. In a car-covering, the combination of the sections *c d e f*, having overlapping strips *m* and *n*, with the hinged side layers, *g h i k*, and hinged end layers, *p p*, substantially as and for the purpose specified.

3. In a car-covering, the combination of the sections *c d e f*, having overlapping strips *m* and *n*, with the hinged side layers, *g h i k*, and hinged end layers, *p p*, the latter having upwardly-projecting staples *t t*, adapted to pass through holes in the end sections, substantially as and for the purpose specified.

335,719. VAPORIZER FOR GASOLINE AND OIL STOVES. BERNARD REIN, Urbana, assignor to John Foos, Springfield, Ohio. Filed Oct. 27, 1884. (No model.)

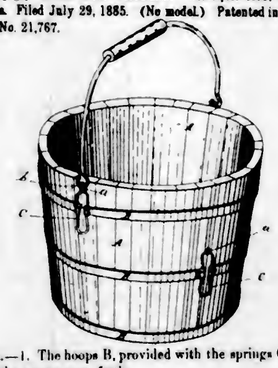


Claim.—1. In a hydrocarbon-burner the combination, with the generator, of the pipe connected therewith and provided with a jet-orifice, and a valve in such pipe, the valve-plug being provided with tapered grooves having the smaller portion or point of one approximately on a line with the larger or deeper portion of the other, substantially as and for the purpose set forth.

2. In a vapor-burner, the combination, with the cup-formed vaporizer, of a shell surrounding said vaporizer, said shell being made in two parts, the parts, when brought together around the vaporizer, forming a shell conforming to the shape of the vaporizer and leaving spaces between the two of substantially the same size throughout, as and for the purpose set forth.

3. In a hydrocarbon-burner, the combination, with the generator, of a pipe connected therewith and provided with a jet-orifice, and a valve in such pipe, the valve-plug of the same being provided with tapered grooves having the smaller portion or point of one approximately on a line with the larger or deeper portion of the other, with openings *h* and exterior tapering grooves, substantially as and for the purpose set forth.

335,720. HOOP FOR VESSELS. FRANÇOIS ROY, Aylmer, Quebec, Canada. Filed July 29, 1885. (No model.) Patented in Canada May 29, 1885, No. 21,767.



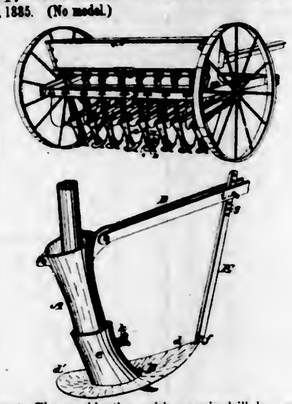
Claim.—1. The hoops B, provided with the springs C, substantially as and for the purpose set forth.

2. The combination, in a vessel, of the staves A with the hoops B, provided with the springs C, substantially as shown and described.

3. In a wooden tank or vessel, the combination of the staves A with the hoops B, attached to the springs C, and the pins or staples *a*, arranged to hold said hoops against the staves A, substantially as and for the purpose set forth.

4. In a wooden pail or vessel, the combination of the hoops B, provided with the springs C, with the lugs *b*, for the attachment of the bail, substantially as shown and described.

335,721. GRAIN-DRILL. CLEMENT RUSSELL, Massillon, Ohio. Filed Nov. 12, 1885. (No model.)



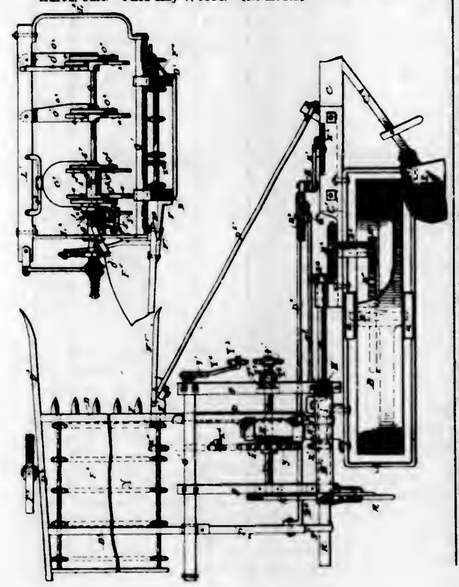
Claim.—1. The combination, with a grain-drill hoe, of a supporting-shoe having a perforated bottom through which the point of the hoe may be passed, a section projected from the rear of said perforation, a section projected forward of said perforation, and an upwardly-projected sleeve, substantially as described, and for the purpose set forth.

2. The combination, with a grain-drill hoe, of a supporting-shoe having a bottom perforation through which the point of the hoe may be passed, front and rear projecting sections, and an upwardly-projecting section provided with means for adjusting and securing the shoe in said adjustment with the hoe, substantially as described, and for the purpose set forth.

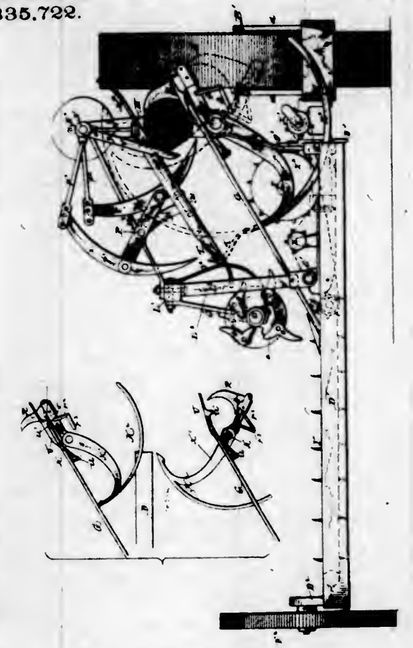
3. The combination, with a grain-drill hoe, of a supporting-shoe having a bottom perforation, an upwardly-projecting sleeve about said perforation, through which the hoe may be passed, means for adjusting the shoe on the shank of the hoe so as to allow the point of the hoe to drop below the bottom of the shoe, and a connecting-link by which the shoe is connected to the draft-cord, substantially as described and set forth.

4. The combination, with a drill-hoe, of a shoe having an opening therein for the passage of the hoe, and an upwardly-projecting sleeve adapted to embrace the hoe, substantially as set forth.

335,722. GRAIN-BINDING HARVESTER. JOHN F. SEIBERLING, Akron, Ohio. Filed May 7, 1884. (No model.)



335,722.



Claim.—1. In a grain-binding harvester, the combination of the inclined binder-table arranged between the grain-platform and the inner plane of the drive-wheel, the knotter mechanism arranged vertically above the extreme upper end of the binder-table, and an ejector-arm secured to the knotter-actuating shaft, and arranged to swing in rear of and across the plane of the drive-wheel, substantially as described.

2. The combination, with the main harvester-frame, of the inclined binder-table arranged between the inner end of the platform-carrier and the vertical plane of the inner face of the drive-wheel, and extended to a plane in rear of said wheel, a binding apparatus arranged near the upper end of said inclined table near the vertical plane of the inner face of the drive-wheel, and the needle-arm and compressor arranged to move in a plane in rear of said drive-wheel, substantially as described.

3. The combination, with the grain-platform, of the inclined table arranged between the platform-carrier and the vertical plane of the inner face of the drive-wheel, and extending to a plane back of said wheel, a band-securing mechanism located above the upper end of said table, and adapted to bind the grain after it has been elevated upon the incline thereof, a discharging device arranged in respect to the drive-wheel to eject the bundles back of said wheel, and means, substantially as described, for adjusting said table and binding apparatus forward and backward in relation to the grain-platform to accommodate the same to different lengths of grain.

4. The combination, with the drive-wheel, wheel-frame, and tongue, of the main frame pivoted to the rear inner corner of the wheel-frame, the grain-platform carried by said main frame, and the inclined binder-table supported on said main frame and arranged between the grain-platform and the vertical plane of the inner face of the drive-wheel, and extending to a plane in rear of said wheel, whereby said platform and binder-table are adapted to oscillate or be tilted independently of the wheel-frame and clear of the wheel, substantially as described.

5. The combination, with the wheel-frame, of the main frame and platform hinged thereto, the adjustable binder-table, the brace extending from the main frame to the forward end of the wheel-frame, the adjusting-lever mounted upon said brace, and the connecting-rod, all arranged for joint operation, substantially as described.

6. In a grain-binding harvester, the combination, with the low-down inclined elevating binder-table arranged between the grain-platform and the inner side of the drive-wheel, and extended to a plane back of the drive-wheel, of the band-securing mechanism above the table, a needle arranged to swing beneath the inclined table in a plane back of the drive-wheel, the toothed conveyer arranged above the foot of the table, the vibrating packers arranged above the table, the compressor against which the grain is packed, and the discharge-arm arranged to eject the bundle back of the drive-wheel, substantially as described.

7. The combination of a grain-platform with the inclined binder-table arranged between the grain-platform and drive-wheel, the binder-gear standard, the needle arranged to swing beneath the table, and the packers suspended from revolving crank-arms arranged above the binder-table and adjustably connected to the upper sleeve of the binder-gear standard, substantially as described.

8. The adjustable binder-gear standard and binder-table, in combination with a support or bearing on the frame, and the extended needle-shaft adapted to slide in said support, substantially as described.

9. In a grain-binding harvester, the combination, with the platform-frame, of the inclined binder-table adjustable thereon, the binder-gear standard, and the extended needle-shaft supported in bearings secured to the main platform-frame, substantially as described.

10. The combination, with the main platform-frame, of the sill G', the inclined binder-frame, the binder-gear standard, the extended needle-shaft, the bracket-support g^3, upon which said shaft is adapted to slide, and the supporting-bar upon which the gear-standard is supported and slides, substantially as described.

11. The combination of the inclined binder-table, the cut-off T, rock-shaft t, the connecting-rod t^2, and a crank secured to the needle-shaft for operating the cut-off while the needle is rising, substantially as described.

12. The combination, with the inclined binder-table arranged between the grain-platform and the drive-wheel, of the supporting-sill G', the beam L', and the posts L^3 L^4, substantially as described.

13. The combination, with the inclined binder-table arranged between the grain-platform and the drive-wheel, of the beam L', posts L^4 L^3, pendent brackets O', and a conveyer-shaft supported upon the post L^3 and brackets O', above the foot of the inclined binder-table, substantially as described.

14. In a grain-binding harvester, the combination, with an inclined binder-table arranged between the grain-platform and the drive-wheel and made adjustable upon the main frame, of the conveyer-shaft arranged above said platform to move the grain on said table toward the needle, and provided with two series of revolving fingers, and means, substantially as described, whereby one series is made stationary with relation to the grain-platform, while the other series moves with the binder-table, substantially as described.

15. The combination of the inclined binder-table adjustable upon the main frame, the conveyer-shaft suspended in bearings from a beam, the revolving conveyer-fingers made stationary with relation to the main frame, and a tooth-guard connected to the hub of the revolving fingers and supported by a sliding connection with the beam, substantially as described.

16. The combination, with the grain-platform, of the inclined binder-table and the butter arranged upon the forward end of said table, connected at its lower end by intermediate devices with the main frame, and suspended at its upper end by a linked connection with the binder-frame, substantially as described.

17. The combination, with the grain-platform, of the inclined binder-table, the butter arranged upon the forward end of said table, the conveyer-shaft, the butter-gear frame, the supporting-bar, the butter-board, and the link suspended from the binder-frame, substantially as described.

18. The combination, with the grain-platform, of the inclined binder-table, the butter arranged upon the forward end of said table, a butter-supporting bar secured at one end rigidly to the butter-gear frame and at the other end to a swinging link from the binder-stand, and a coupling forming sliding connection between the upper end of the butter and the supporting-bar, substantially as described.

19. The combination, with the grain-platform, of the inclined binder-table, the conveyer-shaft, the butter, the sleeve S^6 of the butter-gear frame, the link s^2, and the inner divider-board, P^3, substantially as described.

20. The combination, with the grain-platform frame, of the inclined binder-table adjustable upon said frame, the conveyer-shaft, the butter, the butter-gear frame connected to the platform-frame, the sleeves S^7, arranged to revolve with and slide longitudinally upon the conveyer-shaft, and the conveyer toothed wheel or fingers secured to said sleeve, substantially as described.

21. In a grain-binding harvester, the combination, with the main frame, of the inclined binder-frame, the binder-gear stand, the beam L', the hinged yoke W^2, the frame W', sleeved in said yoke, the reel-shaft supported in said frame, and means for adjusting the reel both vertically and horizontally, substantially as described.

22. In a grain-binding harvester, the combination, with the main or platform frame, of the inclined binder-frame, the binder-gear standard, the beam L', the supporting-sill G', the posts L^3 L^2 between said beam and sill, and the double-hinged adjustable reel-support having one of its stands hinged to the binder-gear stand and the other hinged upon said beam, substantially as described.

23. In a grain-binder, the combination, with the inclined binder-table, of the main binder-gear shaft arranged beneath the table, a conveyer-shaft and a packer-shaft arranged above the table, said shafts being provided with sprocket-wheels, and a chain-belt for gearing said shafts together, substantially as described.

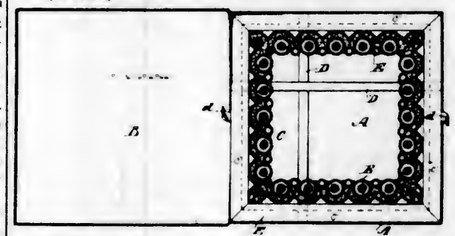
24. The combination, with the inclined binder-table, of the main binder-gear shaft, the packer-shaft, the conveyer-shaft, the sprocket-wheels secured to said shafts, the chain-belt, the adjustable vibrating lever Y^4, and pulley Y^2, substantially as described.

25. The combination, with the main frame, of the wheel-frame, the adjustable binder-table, the main driving-shaft arranged in line with the tongue and supported upon the wheel-frame, and provided with a sprocket-wheel, the main binder-gear shaft supported in bearings upon the binder-frame and adjustable therewith, a sprocket-wheel splined to revolve with but slide upon the main binder-gear shaft, and a belt connecting said wheel with the wheel upon the driving-shaft, substantially as described.

26. In a grain-binding harvester, the combination, with the main frame, of the inclined binder-table arranged between the grain-platform and the drive-wheel, the knotter arranged above the upper end of the table, the compressor, the compressor-guard hinged to the upper end of the binder-table, and means, substantially as described, for operating said guard, substantially as and for the purpose set forth.

27. In a grain-binder, the combination of the inclined binder-table, the vibrating compressor-guard hinged to the upper end of the table, and the compressor constructed and arranged to operate the compressor-guard and press it against the under side of the bundle while the bundle is being bound, substantially as described.

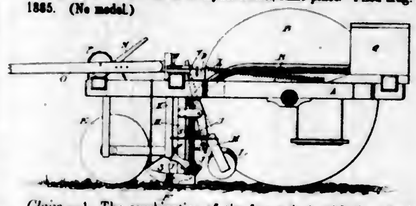
335,723. HANDKERCHIEF-BOX. LOUIS P. SHULER-SHUTE, New York, N. Y., assignor to Shuler-Shute & Co., same place. Filed Apr. 17, 1885. (No model.)



Claim.—1. The combination, with the box A, of the removable frame C, provided with ribbons or tapes D, substantially as and for the purposes set forth.

2. The frame C, composed of flange c and inwardly-projecting flange c', and provided with cross tapes or ribbons D D, in combination with box A, substantially as described.

335,724. TOBACCO-TRANSPLANTER. MAURER SMITH, Janesville, Wis., assignor of one-half to A. Hyatt Smith, same place. Filed Aug. 28, 1885. (No model.)



Claim.—1. The combination of the frame A A with the wheels B B, roller E, standard H, the plow 3, the roller I, scraper J, and roller L, substantially as described, and for the uses and purposes herein set forth.

2. In a machine for transplanting plants, the combination of a water-tank, Q, mounted thereon, with a pipe or hose, R, standard H, valve S, lever T, lever V, slide-bar D, spiral spring X, and lugs or cams C C on the wheel B, to irrigate the plants when being set, substantially as described, and for the uses and purposes herein set forth.

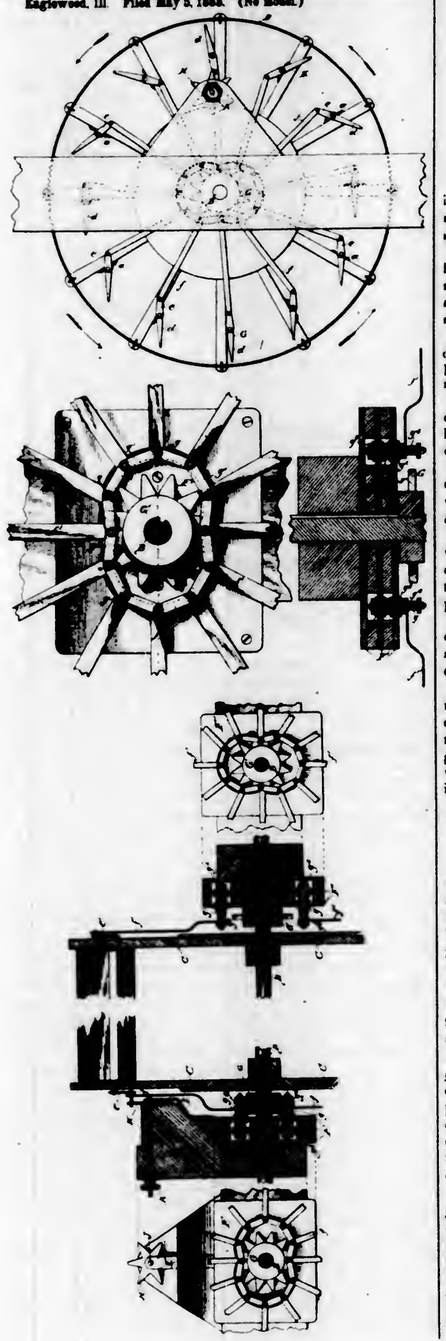
335,725. PROCESS OF MANUFACTURING WALL-PAPER. SILAS E. TROUT, Philadelphia, Pa., assignor to Horace S. Wendell, same place. Filed Apr. 23, 1885. (No specimens.)

Claim.—1. The use of silicate of soda as an adhesive liquid or vehicle, combined with and for the application of bronze-powder in the manufacture of wall-paper, substantially as and for the purposes and in the manner above described.

2. Wall-paper as an article of manufacture, produced by the employment of silicate of soda, combined with bronze-powder, as an adhesive liquid or vehicle for applying said bronzes, pigments, or other materials to the surface thereof, substantially as and for the purposes hereinbefore described.

3. In the manufacture of wall-paper, the combination of bronze-powder or other substance for the ornamentation of the paper with silicate of soda or any adhesive liquid possessing similar qualities, and the application of the compound thus formed to the paper in the manner and for the purposes hereinbefore described.

335,726. FEATHERING PADDLE-WHEEL. THOMAS P. TURNBULL, Englewood, Ill. Filed May 5, 1885. (No model.)





Claim.—1. The pivoted paddles and the fixed cam way or ways, in combination with rods connecting said paddles and camways, and a connection between the inner ends of said rods, substantially as described.

2. The wheel, the opposing camways forming a double eccentric having an axis common to both and the axis of the wheel, and arranged at a right angle to each other, in combination with the pivoted paddles and the rods connecting said paddles and camways, substantially as described.

3. The pivoted paddles, the camways, the link-chains having a double eccentric movement in said camways, in combination with rods pivoted to and constituting a connection between said paddles and chains, substantially as described.

4. The camways and the pivoted paddles, in combination with the connecting-rod, a shaft forming a bearing for said rod, and grooved pulleys working on said shaft and engaging the camways, substantially as described.

5. The camways, the link-chain moving therein, the pivoted paddles, the crank-arms thereof, and the connecting-rods, in combination with a stop upon a fixed portion of the wheel-frame, substantially as described.

6. The wheel-spokes, the paddles pivoted thereon, the fixed camways, the link-chains moving in said camways, the rod connecting said chains with the paddles, and an adjustable stop on some fixed portion of the frame, adapted to connect with and actuate the paddles upon their pivoted bearings, substantially as described.

7. The paddles, the pivoted shaft thereof provided with reverse crank-arms, the double-eccentric camways having a common axis and arranged at a right angle to each other, and the connection between said camways and the paddles, substantially as described.

8. The double eccentric camways, the pivoted paddles, and the connecting-rods having a pivoted connection with the paddles and with the camways, said paddles having one side wider than the opposite side with reference to their pivot-bearings, whereby when said paddles are at the greatest depth in the water and on a dead-center the pressure of the water will tend to force the lower end of the paddle backward and off its dead-centers, substantially as described.

335,727. MACHINE FOR MAKING THREADS ON SHEET-METAL PIPES. FERDINAND F. VOGT, Walla Walla, Wash. Filed Sept. 9, 1885. (No model.)

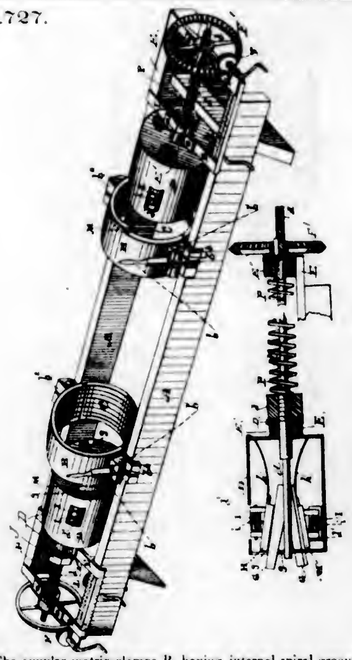
Brief.—A section of pipe is placed in the machine with its ends resting in the matrix-clamps flush with the offsets. The matrix-clamps are then closed and locked by the levers. The adjusting-nuts are now turned to draw back the shafts and force outward the beaded rollers. The followers are then rotated, and advance, bending the metal into the grooves in the matrix-clamps.

Claim.—1. The annular matrix-clamps B, having the spiral groove C on their inner surfaces, in combination with the followers D, the expanding beaded die-rollers mounted therein, the inclined planes and roller-frames, and the means described for giving longitudinal and rotary movement to the followers, substantially as herein described.

2. The hollow cylindrical casings or followers D, having radial slots g in their inner ends, and the spring-frames H, within said followers, carrying the beaded die-rollers I, projecting through openings in the periphery of the followers, in combination with the rotating axial stems d, extending through the followers, and having radial-inclined planes G on their inner ends bearing against the roller-frames H, and the nuts J, mounted upon said stems and adapted to move them longitudinally to expand the beaded die-rollers, substantially as herein described.

3. The hollow cylindrical casings or followers D, having radial slots g in their inner ends, and the spring-frames H, within said followers, carrying the beaded die-rollers I, projecting through openings in the periphery of the followers, in combination with the axial stems d, extending through the followers, and having radial inclined planes G on their inner ends bearing against the roller-frames H, the nuts J, by which said stems are moved longitudinally, the springs P, and the gears F, by which the stems and followers are rotated, substantially as herein described.

335,727.



4. The annular matrix-clamps B, having internal spiral groove, C, of the desired pitch, said clamp having an offset, M, on its side, having the inclination or pitch of the groove C, and joining therewith, in combination with the longitudinally-adjustable rotating followers D, having the expanding beaded die-rollers I, substantially as and for the purpose herein described.

5. The frame A and the two-part annular matrix-clamps B, having internal spiral groove, C, in combination with the sliding frames E, the followers D, having the spring-frames H, with beaded die-rollers I, the rotating axial stems *d*, carrying said followers and mounted in the sliding frames, said stems having the radial-inclined planes G, adapted to expand the spring-frames H and the die-roller, and the nuts J, by which the stems are adjusted, all arranged to operate substantially as and for the purpose herein described.

335,728. DUPLEX RACE-RING HOLDER. JOSEPH W. WATTLES, Canton, Mass. Filed Aug. 17, 1885. (No model.) Patented in England Mar. 25, 1878, No. 1,173.

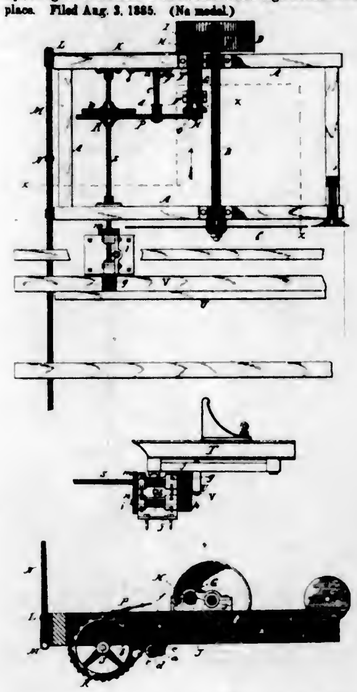
Brief.—The duplex race-ring has an eccentric flange midway between its races. The holder is cross-cut and has an exterior shoulder to support it in the rail. It has also an interior eccentric rabbet to receive and hold the flange of the ring, and is of sufficient interior diameter to receive the lower race of the ring.



Claim.—1. The combination, with a duplex race-ring provided with an eccentric flange extending from it midway between its two races, and with a ring-rail socketed and having a set-screw screwed laterally into it and to such socket, of the ring-holder, substantially as described, arranged in such socket, and consisting of an annulus cross-cut through one part of its periphery, and having at its upper part a shoulder or flange to sustain it in the rail, and also having in such upper part an annular eccentric rabbet to receive and encircle the eccentric flange of the ring and project underneath and against the bottom thereof, such holder also having a bore of sufficient diameter to receive the lower race and the part of the ring between it and the eccentric flange, as set forth.

2. The combination, with a duplex race-ring, substantially as represented, of a holder therefor, essentially as described, consisting of an annulus cross-cut through one part of its periphery and having at its upper part a shoulder or flange, and within such upper part an annular eccentric rabbet, and also having a bore of sufficient diameter to receive the lower race and part of the ring between such race and the eccentric flange of the ring, when such flange may be resting within and fitting the said eccentric rabbet, all being essentially as set forth.

335,729. CIRCULAR-SAW MILL. HARVEY R. WOLFE, Louisville, Ky., assignor to Brennan & Co. Southwestern Agricultural Works, same place. Filed Aug. 3, 1885. (No model.)



Claim.—1. The combination, with the saw-table-feeding mechanism of a saw-mill, of the main driving-pulley having a friction-pulley located between its hub and its inner periphery, said friction-pulley being connected to the saw-table-feeding mechanism, and so arranged that it may be made to engage with the hub of the driving-pulley to cause the travel of the table in one direction, and with the inner rim of said pulley to cause its travel in an opposite direction.

2. The combination, with the saw-table-feeding mechanism of a saw-mill, of the main driving-pulley having its inner periphery and its hub made true and smooth, and having located between said periphery and hub a friction-pulley which actuates the saw-table mechanism, and is so arranged that it may be made to engage with the hub of the driving-pulley to cause the travel of the table in one direction, and with the inner rim of said pulley to cause its travel in an opposite direction.

3. The combination, with the main driving-pulley having its hub and inner rim made true and smooth, of a friction paper pulley located between said hub and inner rim, and connected to the saw-table-feeding mechanism, substantially as and for the purpose specified.

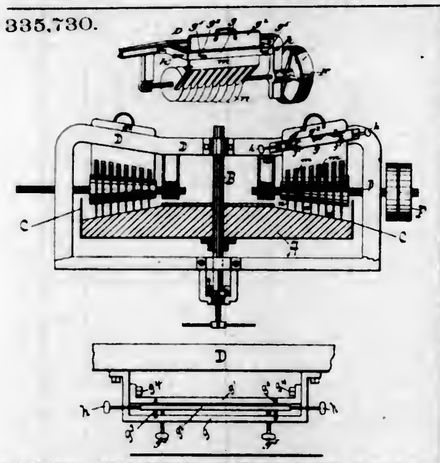
4. The combination, with the main driving-pulley D, of the oscillating sleeve G, the eccentrically-set shaft H, journaled in the sleeve G, the pulley I upon the end of the shaft H, and arranged between the inner periphery and hub of the pulley D, the driving-wheel O upon the shaft H, and connected to and actuating the feed-table mechanism, the crank J, secured to the shaft H, the link K, extending from the lower end of the crank J, and leverage, substantially as described, for operating said link K to cause the oscillation of the sleeve G, for the purpose specified.

5. In a saw-mill, and in combination with the feed-table and its driving counter-shaft S, the adjustable boxes *j*, made adjustable to and from each other by the right-and-left-hand screw *l*, engaging with said boxes, the short shaft *i*, journaled in one of said boxes, the pulleys *g h*, secured the one upon the end of the shaft S and the other upon the end of the short shaft *i*, the pinions *m n*, meshing with each other and secured, respectively, upon the shafts S and *i*, and the feeding-plate V, confined between the pulleys *g h*, substantially as described.

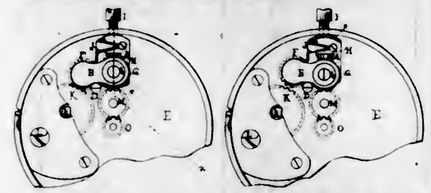
335,730. MEAT-CUTTER. CHARLES ZIM, Baltimore, Md. Filed Nov. 26, 1884. (No model.)

Claim.—In a meat-cutter, the combination of frame *g*, bar *g'*, cross-beam D, scrapers *m*, knives *n*, plate g^3, having the pins g^3, and the screws g^4 and *h*, all arranged as herein shown and described, substantially in the manner as and for the purposes set forth.

335,730.



335,731. STEM WINDING AND SETTING WATCH. HENRY ABBOTT, Newark, N. J. Filed July 2, 1885. (Model.)



Claim.—1. As an improvement in stem winding and setting watches, a stem winding and setting train arranged and combined upon a separable plate in such manner that the said plate may be attached to or detached from the main plate or plates of a watch-movement without disarranging or separating the parts of said train from each other, said separable plate being adapted to be moved in the watch in such a manner as to engage at will said train with either the main winding-wheel or the dial-wheels, substantially as described, and for the purpose stated.

2. As an improvement in stem winding and setting watches, a separable plate upon which are combined and arranged a train of wheels and pinion actuated by a stem, said separable plate being adapted to be moved in the plane of the watch-plate, whereby said train may be placed in engagement with the barrel-arbor wheel for the purpose of winding the watch, or with the dial-wheels for the purpose of setting the hands, substantially as specified.

3. As an improvement in stem winding and setting watches, a stem-actuated train attached to a separable plate, said plate being adapted to be moved upon the main plate of a watch in a direction substantially parallel with said stem, in such manner as to engage or disengage said train with either the main winding or the hand-setting wheels, substantially as described, and for the purpose specified.

4. As an improvement in stem-winding and hand-setting watches, a stem-driven train combined and arranged upon a separable plate, said plate being pivotally connected with the main plate of a watch, and adapted to swing in the plane of said watch-plate toward the pendant, whereby said train is connected with the barrel-arbor wheel, and to swing toward the center of the watch, whereby said train is disconnected from the barrel-arbor wheel and is connected with the dial-wheels, substantially as described, and for the purpose specified.

5. As an improvement in stem-winding and hand-setting watches, a winding and setting train combined and arranged upon a separable plate, said separable plate being adapted to be moved upon and in the plane of the main plate of a watch by means of the end-thrust of the stem, whereby said train is connected alternately with wheels for actuating the mainspring or hand, substantially as and for the purpose shown and described.

6. As an improvement in stem-winding and hand-setting watches, a separable plate having attached to it a stem-winding and hand-setting train, said plate being attached to and adapted to be moved upon and in the plane of the main plate of a watch, and arranged to be held by means of a cam or lever in such position that said train shall be in gear with the barrel-arbor wheel, and when released by said cam or lever to be moved by means of a spring out of gear with said barrel-arbor wheel and into gear with the dial-wheels, substantially as described, and for the purpose specified.

7. As an improvement in stem-winding and hand-setting watches, a separable plate carrying a stem winding and setting train, said plate being attached to and adapted to be moved upon and in the plane of the main plate of a watch, and arranged to be held in position to engage the said train with the barrel-arbor wheel by means of a spring, and to be moved out of engagement with said barrel-arbor wheel and into engagement with the dial-wheels by means of a cam or lever, substantially as and for the purpose specified.

8. As an improvement in stem-winding and hand-setting watches, a winding and setting train combined and arranged upon a plate that is separable from the main plate of a watch, and is adapted to be moved thereon by means of the end-thrust of the stem, and is so arranged that when the stem is pushed in to the inner limit of its motion the said train will be held in engagement with the barrel-arbor wheel, when said stem is withdrawn to the outer limit of its motion said train will go out of engagement with the barrel-arbor wheel and into engagement with the dial-wheels, and when said stem is removed entirely from the watch said train will return and remain in engagement with the barrel-arbor wheel, substantially as described and shown, and for the purpose specified.

9. As an improvement in stem-winding and hand-setting watches, a pinion, crown-wheel, yoke, and intermediate wheel, all combined and arranged upon a plate that is separable from the main plate of a watch, and is adapted to be moved thereon in the plane of said main plate, said separable plate being actuated in its movements by the end-thrust of the stem, whereby when said stem is pushed in toward the center of the watch the said separable plate will move outward, and thus place the said intermediate wheel into engagement with the barrel-arbor wheel, and when said stem is moved outward said separable plate will move inward toward the center of the watch, and thus disengage said intermediate wheel from the barrel-arbor wheel and engage the said crown-wheel with the dial-wheels, substantially as described, and for the purpose specified.

10. The screw or stud D, in combination with the main plate of a watch, and a movable plate or disk carrying a stem-winding train and pivoted yoke, said screw or stud being adapted as a stop to insure the proper depth between the intermediate wheel of said train and the barrel-arbor wheel, and also as a fulcrum, whereby, on the movement of said plate or disk, the said wheels are disengaged from each other, substantially as shown and described.

11. The plate A, carrying a stem-winding train, and having its parallel edges grooved, flanged, rounded, or made V-shaped, and adapted to slide radially upon the main plate of a watch, substantially as described, and for the purpose specified.

12. The plate A, carrying a stem-winding train, said plate being pivoted, as at *a*, upon the main plate of a watch, and adapted to swing substantially in the manner and for the purpose specified.

13. The double cam C, having a lifting periphery on either side of its crescent *c'*, substantially as described, in combination with the stem and winding-train of a stem-winding watch, for the purpose specified.

14. The cam C, in combination with the plate A, main plate E, plunger P, spring T, and stud S, substantially as described, and for the purpose specified.

15. The plunger P, having its outer end reduced in size to permit it to pass freely through the square portion of the pinion H, in combination with the plate A, pinion H, stem I, cam C, stud S, spring T, and main plate E, substantially as shown and described.

16. The spring T, adapted to move both the cam C and the plate A, in combination with said cam C, plate A, and main plate E, substantially in the manner and for the purpose specified

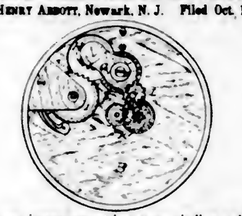
335,732. STEM WINDING AND SETTING MECHANISM FOR WATCHES. HENRY ABBOTT, Newark, N. J. Filed July 2, 1885. (No model.)



Claim.—1. As an improvement in a stem-winding and hand-setting watch having a pivoted yoke that is shiftable by the movement endwise of the stem, the cam O and spring P, adapted to automatically disengage the stem-train from the dial-wheels upon removing the watch-movement from its case, substantially as described, and for the purpose stated.

2. As an improvement in a stem-winding and hand-setting watch, the combination of the cam O, case A, plate B, spring P, and yoke G, substantially as and for the purpose specified

335,733. **STEM WINDING AND SETTING ATTACHMENT FOR WATCHES** HENRY ABBOTT, Newark, N. J. Filed Oct. 1, 1885. (No model.)



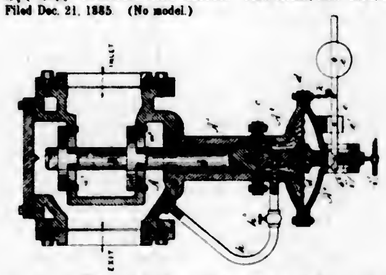
Claim.—1. As an improvement in a stem-winding and hand-setting watch provided with a stem that is shiftable endwise, and an intermediate wheel that is shiftable in a line perpendicular to its plane of rotation, a pivoted yoke that is adapted, upon the removal of the stem from the watch, to take such position automatically as will disconnect the stem-driven train from both the dial-wheels and the barrel-arbor wheel, substantially as and for the purpose specified.

2. As an improvement in a stem-winding and hand-setting watch provided with a stem that is shiftable endwise, and a pivoted yoke, an intermediate wheel that is shiftable in a line perpendicular to its plane of rotation by means of the movement of said yoke on its pivot, and that is adapted to be automatically disengaged from the dial-wheels of said watch by the act of removing said stem from the watch, substantially as and for the purpose specified.

3. As an improvement in stem-winding and hand-setting watches, the combination of a stem that is adjustable endwise, a pivoted yoke, and a stem-driven train having an intermediate wheel that is shiftable in a direction perpendicular to its plane of rotation, said parts being so arranged that when said stem is placed at the inner limit of its motion said train will be in engagement with the barrel-arbor wheel, when said stem is placed at the outer limit of its motion said train will be in engagement with the dial-wheels, and when said stem is removed entirely from the watch said train will be disengaged from both dial-wheels and barrel-arbor wheel, substantially as and for the purpose specified.

4. The sliding bar R, having its outer end reduced, as at *r*, in combination with the pinion D, stem C, spring-lever N, yoke G, and intermediate wheel L, substantially as described, and for the purpose specified.

335,734. **PRESSURE-REGULATOR.** JOHN ACTON, New York, N. Y. Filed Dec. 21, 1885. (No model.)



Claim.—1. The combination, in a pressure-regulator, with the valves *a a'* and weight and lever *e*, of the stem *b b' b²*, the liquid-sealed diaphragms *c d*, and a connection from the chamber *f* to the steam-chamber A, substantially as set forth.

2. In a pressure-regulator, the valves *a a'* and weight and lever *e*, in combination with the stem *b b' b²*, the liquid-sealed diaphragm *c d*, a pipe, *h*, and valve *h'*, the parts being so constructed that there is a liquid-chamber around the stem *b* above the diaphragm *c*, and a liquid-chamber, *f*, around the stem *b'*, and above the diaphragm *d*, and communicating by the pipe *h* with the chamber A, for the purposes and substantially as set forth.

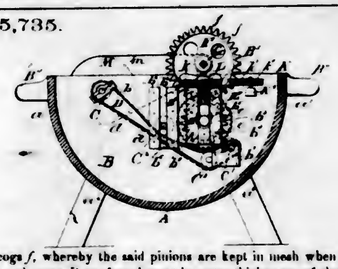
3. In a pressure-regulator, the valves *a a'* and stems *b b' b²*, in combination with a weight and lever, *e*, and hook and chain *k*, whereby the lever can be hooked up and the valves *a a'* closed, substantially as set forth.

335,735. **WASHING-MACHINE.** LOUIS BALDAUF, Mequon, Wis. Filed June 6, 1884. (No model.)

Claim.—1. In a washing-machine, the combination of the wash-box with the rollers C C', idlers C² C³, apron D, corrugated rubbing-cylinder E, shaft G, crank H, pinions E' F, pulleys I M, and belt *m*, substantially as set forth.

2. In a washing-machine, the combination, with the wash-box having guide-strips *b³ b³*, apron D, rollers C C', and rubbing-cylinder E, having pinion E', with long cogs *e*, of the shaft G, having pinion F, with

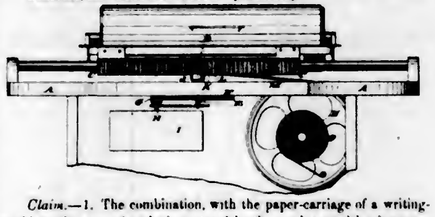
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long cogs *f*, whereby the said pinions are kept in mesh when the cylinder E and apron D are forced apart by extra thicknesses of clothing, substantially as set forth.

3. In a washing-machine, the combination, with the wash-box having guide-strips *b³ b³*, apron D, rollers C C', and rubbing-cylinder E, having pinion E', with long cogs *e*, of the shaft G, having pinion F, with long cogs *f*, strip L, pivoted lever K, with notches *k' k'*, and weight K', substantially as shown and described, and for the purpose set forth.

335,736. **TYPE-WRITING MACHINE.** MILES M. BARTHOLOMEW, Belleville, Ill. Filed Dec. 4, 1884. (No model.)



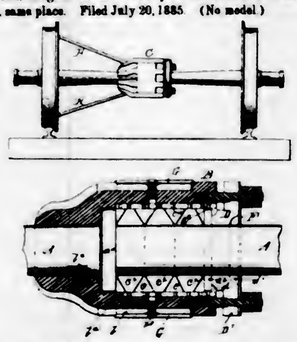
Claim.—1. The combination, with the paper-carriage of a writing-machine, of a governing device rotated by the carriage and having arms or wings limiting the speed of movement of the carriage.

2. The combination, with the paper-carriage having means to impart forward movement thereto, of a governing device for retarding the forward movement of said carriage, and connections, substantially as described, between said governing device and said carriage.

3. The combination, with the paper-carriage of a writing-machine, of rotating arms or wings limiting the speed of movement of the carriage, and connections, substantially as described, between the carriage and the arms.

4. The combination, in a writing-machine, of a cog-rack on the carriage, and a shaft rotated by cog-connection with the cog-rack, and wings or arms on the rotating shaft, for the purpose set forth.

335,737. **DIVIDED CAR-AXLE.** GEORGE W. BEDBURY, San Francisco, Cal., assignor to the Bedbury Divided Car Axle Company of California, same place. Filed July 20, 1885. (No model.)



Claim.—1. A divided car-axle having adjustable packing rings or sleeves divided, as described, and held circularly immovable, and means, substantially as described, for tightening or compressing them longitudinally, as set forth.

2. A divided car-axle having adjustable rings or sleeves divided, as described, and held circularly immovable, and a gland resting directly or indirectly upon the packing, and means, substantially as described, for adjusting said gland.

3. In a divided car-axle, the combination, with the coupling-box having the longitudinal slits or ways described, of the ring or sleeve packing having the projections for lying in said ways.

4. In a divided car-axle, the combination, with the coupling-box and parts of the axle, of the solid hard-metal rings or bands described, and divided packing rings or sleeves held circularly immovable and lying between said hard-metal rings or bands, and means, substantially as described, for adjusting said packing longitudinally.

5. The combination, in a divided car-axle, of the divided V-shaped rings, each alternate ring being set in reverse direction, so that one set of said rings shall form the wearing-surface for the axle and the other the tightening-wedges, said rings being held circularly immovable, and means, substantially as described, for adjusting said packing longitudinally.

6. In a divided axle, the combination of the two parts of the axle, the coupling-box having the oil-reservoir, the semicircular packing rings or pieces, and an opening or openings connecting the oil-reservoir with the space or spaces between the ends of the packing rings or pieces.

7. In a divided car-axle, a coupling-box having a continuous annular lubricant-chamber surrounding the entire axle, and an opening or openings from said chamber into the packing-chamber, whereby said chamber is given an automatic feed, as set forth.

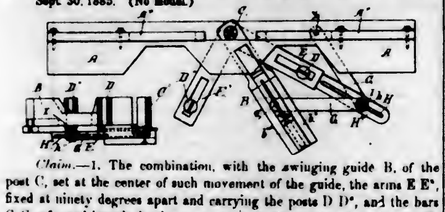
8. In a divided car-axle, the combination, with the coupling-box and parts of the axle, of the packing rings or pieces and the gland having the packing at *d*, as shown and set forth.

9. In a divided car-axle, the combination, with the two parts of the axle, the coupling-box, metallic packing, and gland, of the packing at *d'* and securing plate or plates F, substantially as set forth.

10. In a divided car-axle, the combination, with the coupling-box having the lubricator-chamber, of the channels or tubes for filling said chamber, passing out through the wheel of the car and having suitable covers thereon, as set forth.

11. In a divided car-axle, the combination, with the coupling-box having a packing-space around the axle in its gland or outer face, of a plate or plates, as described, for holding and compressing the packing in said space.

335,738. **MITER-BOX.** WILLIAM L. BOOTH, San Francisco, Cal. Filed Sept. 30, 1885. (No model.)



Claim.—1. The combination, with the swinging guide B, of the post C, set at the center of such movement of the guide, the arms E E', fixed at ninety degrees apart and carrying the posts D D', and the bars G G, of equal length, having a common attachment in a slotted plate, H, and at the outer ends pivoted the one to a fixed point, *g*, and the other to the swinging guide, both said points of attachment being equidistant from the center C, substantially as described.

2. The herein-described miter-box, consisting of the bed A with guide A', the swinging guide B, having movement about the guide-post C as a center, the swinging posts D D', fixed at ninety degrees apart, and having movement in such position about the stationary post C, the pivoted bars G G, the slotted connection H, and the clamp I, combined for operation substantially as set forth.

335,739. **CHURN.** HENRY F. BRANDER and E. HUGO SCHMIDT, Davenport, Iowa. Filed Oct. 27, 1885. (No model.)

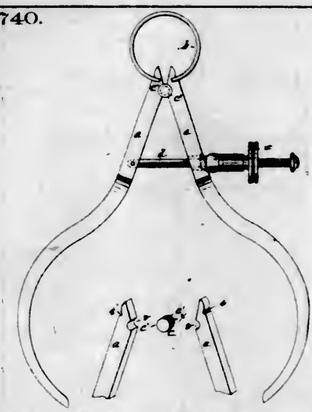


Claim.—1. The herein-described churn dash and cover, consisting of the dash-block A, formed with the central hub, *c*, tapering shank *c'*, provided with grooves *d*, bolt E, having nut *i* and washer *i'*, pinion B, provided with projections *e*, pinion F, provided with a suitable handle, and the lid or cover C, provided with the central bushing, *g*, and arch or frame D *h*, having openings *h' h²*, the parts being combined substantially as and for the purpose specified.

2. The dash-block A, provided upon its lower surface with a series of holes, *a*, and upon its upper surface with the hub *c*, shank *c'*, having grooves *d*, and bolt E, having nut *i* and washer *i'*, in combination with the pinions B and F, substantially as and for the purpose specified.

335,740. **CALIPERS.** JAMES H. BULLARD, Springfield, Mass., assignor to Charles P. Fay, same place. Filed Sept. 21, 1885. (No model.)

335,740.

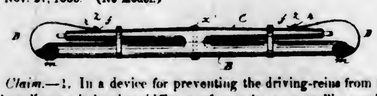


Claim.—1. In calipers or similar implement, the combination of two legs having each a transverse groove in its inner side, a fulcrum-pin fitting in said grooves, and a curved spring having notches in its ends engaging with notches in the outer sides of the legs, substantially as set forth.

2. In calipers or similar implement, the combination of two legs having each a transverse groove in its inner side, a curved spring having notches in its ends engaging with notches in the legs, a pin fitting in said grooves in the latter, and means, substantially as described, for preventing endwise movement of said pin, all as set forth.

3. In calipers or similar implement, the combination of two legs having each a transverse groove in its inner side, a curved spring having notches in its ends engaging with notches in the outer sides of the legs, and a pin fitting in said grooves in the legs having laterally-projecting heads thereon, substantially as set forth.

335,741. **CARRIAGE.** JOHN BURKE, Newburyport, Mass. Filed Nov. 27, 1885. (No model.)



Claim.—1. In a device for preventing the driving-reins from being accidentally caught by the whiffletree of a carriage, a metallic guard having one of its ends attached to the shaft or to the cross-bar of the shafts and the other to the whiffletree, said guard passing upwardly over the outer end of the whiffletree and being adapted to prevent the reins from passing under the same, substantially as described.

2. In a device for preventing the driving-reins from being accidentally caught by the whiffletree of a carriage, a spring-guard having one of its ends rigidly attached to the shaft or cross-bar of the shafts and the other jointed to the whiffletree, or vice versa, said guard passing upwardly over the outer end of the whiffletree and being adapted to prevent the reins from passing under the same, substantially as set forth.

335,742. **HOG-SCRAPING MACHINE.** CHARLES F. BUSH, Erie, Pa. Filed June 18, 1885. (No model.)

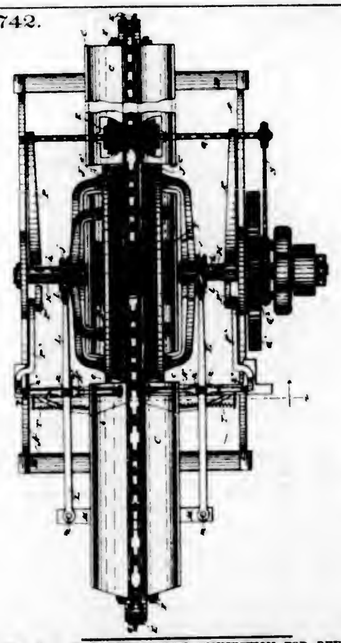
Claim.—1. The combination, in a hog-scraping machine, of a series of rotary wire brushes, so arranged with relation to each other that they will scrape the body of a hog being conveyed between them, with a conveyer mechanism consisting, substantially, of a conveyer-trough extending between said rotary brushes, and an endless conveyer-chain operating in said conveyer-trough, substantially as and for the purpose set forth.

2. In a hog-scraping machine, the combination of a fixed rotary wire brush and movable rotary wire brushes with a conveyer mechanism consisting, substantially, of a stationary trough extending between said rotary brushes, and an endless conveyer-chain operating in said conveyer-trough, substantially as and for the purpose set forth.

3. In a hog-scraping machine, the combination of a fixed rotary wire brush with automatically-adjustable rotary wire brushes adapted to adjust themselves to the body of a hog being passed between them, and conveyer mechanism consisting, substantially, of a stationary trough extending from a scalding-tank between said rotary wire brushes, and an endless conveyer-chain operating in said trough, substantially as and for the purpose set forth.

4. In a hog-scraping machine, the combination of the fixed rotary brush I, the movable vertical brush-wheels J J, the levers L L, the sliding arms N N, and springs T T, with the movable rotary brush R, the lever mechanism P P' P², the conveyer-trough C, belt E, gears G G', and intermediate connections, substantially as and for the purpose set forth.

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335,743. TAP AND FAUCET CONNECTION FOR BEER AND OTHER BARRELS. WILLIAM E. CURTIS and JOHN H. CURTIS, Taunton, Mass. Filed Aug. 1, 1885. (No model.)

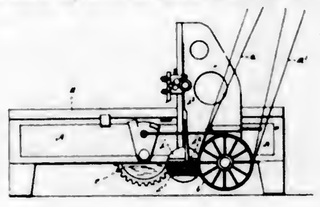


Claim.—1. The bushing A, provided with the valve-seat *d'* and female screw-thread *e*, in combination with the valve F, the valve-stem F', provided with the male screw-thread *f* and the slot *g'*, and having the middle portion thereof reduced in diameter and threadless, and the perforated nut C, provided with male and female screw-threads of the same pitch, all arranged and adapted to operate substantially as and for the purposes described.

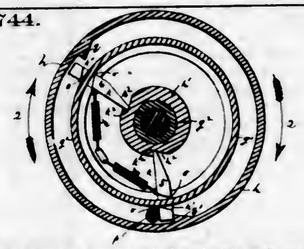
2. The bushing A, provided with the valve-seat *d'* and female screw-thread *e*, in combination with a valve having a screw-threaded stem provided with a slot in its end, a perforated nut provided with male and female screw-threads of the same pitch and a radial slot, and a faucet or cock provided with a male screw-thread to fit the female screw-thread in the bushing, and with two lugs to engage with the slot in the nut, substantially as and for the purposes described.

335,744. METAL-PLANING MACHINE. FRED F. DURFEE, Worcester, Mass. Filed May 4, 1885. (No model.)

Claim.—1. The combination, with one of the shafts of a metal-planing machine to which a rotary motion is alternately given in opposite directions by the action of the driving mechanism, substantially as described, of a wheel attached to said shaft and having an annular flange on its side, a shell turning loosely and concentrically about said shaft, two



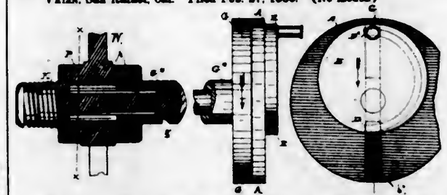
335,744.



dogs with their inner ends recessed in the hub of the shell, and having transverse slots forming corners adapted to engage the annular flange, and a pin attached to the frame of the machine and entering the shell in the path of the outer ends of said dogs as they are carried around said shaft, all arranged and operating substantially as described, whereby the shell is given a rotary motion alternately in opposite directions, but of limited extent, and means, substantially as described, whereby said shell is connected with the feeding mechanism, as and for the purpose set forth.

2. The combination, with the shaft *f*, carrying a wheel, *g*, having a flange, *g'*, of a shell, *h*, dogs *k k*, adapted to engage the flange *g'*, fixed pin *p*, and shell *h*, having projections *q* and *q'*, as and for the purpose set forth.

335,745. VARIABLE CRANK AND ECCENTRIC. WILLIAM H. DE VALIN, San Rafael, Cal. Filed Feb. 27, 1885. (No model.)



Claim.—1. The combination of a rotating shaft, the guide-disk A, fixed on the shaft, the disk E, confined to the face of the guide-disk, but movable diametrically across the face thereof, the grooved disk G, loose on the shaft and engaging with a projection on the back of the movable disk E, and a hub connected with the disk G, and operating means therefor, substantially as described, for rotating said grooved disk, whereby the movement thereof on the shaft will cause the disk E to slide diametrically, substantially as and for the purpose set forth.

2. In a variable crank, the combination, with a slotted wrist-plate, as A, fixed on the shaft, and having a wrist-pin carrier, $D^{\times}$, movable radially in a guide-slot, $b^{\times}$, of the disk E, set against the face of the wrist-plate and fixed to the carrier $D^{\times}$ and to a point, D, diametrically opposite, which is also held in and is movable along a guide-slot, $b^{\times}$, in the wrist-plate, substantially as described.

3. The combination, with the wrist-plate A, having the guide-slot $b^{\times}$, of the ring or disk E, the sliding blocks $D^{\times}$ D, the projection I, the independently-turning disk G, having a cam-groove, A, to engage with said projection, and mechanism, substantially as described, applied to said disk G to rotate it in either direction, substantially as herein described.

4. In a variable crank or eccentric, the combination, with parts A and E, constructed substantially as described, and the independently-turning disk G, of the wheel R, loose on the shaft and fixed to the disk G, substantially as described, for operation as set forth.

5. In a variable crank or eccentric, the combination, with the independently-turning disk G, adapted to engage with and operate on the sliding disk E, as described, of the wheel R, loose on the shaft and fixed to the disk G, and the spring S, applied to operate substantially as set forth.

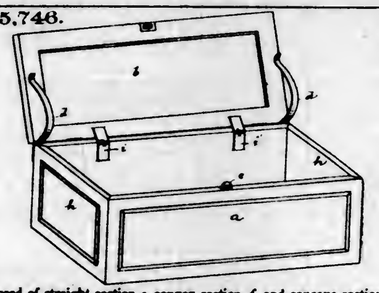
6. In a variable crank wherein the crank-pin is movable to and from the center of rotation by being mounted on a sliding block held in a radial guide-slot in the wrist-plate, the combination, with this block, of the ring or disk E, which is attached both to the block and to the face of the disk at a point diametrically opposite, beyond the shaft, which point is also movable across the disk in line with the sliding crank-pin block $D^{\times}$, substantially as described, for the purpose set forth.

335,746. JEWELER'S BOX. JOHN F. DURFEE, Brooklyn, N. Y. Filed Sept. 22, 1885. (No model.)

Claim.—1. The combination of box *a*, having lid *b* and sides *h*, with band-springs *d* between the lid and the upper edge of the sides *h*, all being so constructed that when the lid is closed the springs are flattened and concealed between the lid and sides, substantially as specified.

2. The combination of box *a*, having lid *b* and sides *h*, with band-springs *d*, interposed between the lid and the upper edge of sides *h*, and

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composed of straight section *e*, convex section *f*, and concave section *g*, substantially as and for the purpose specified.

335,747. RUBBER-DAM CLAMP. WALTER S. ELLIOTT, Brooklyn, N. Y., assignor to the S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Mar. 22, 1884. (No model.)

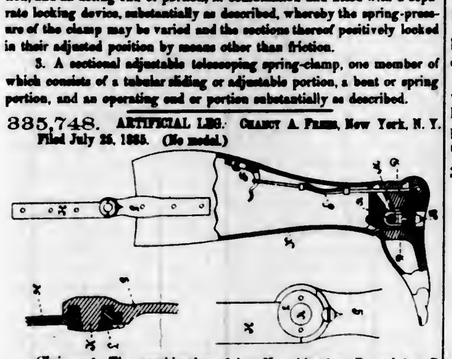


Claim.—1. A spring-clamp consisting of adjustable telescoping sections, each of said sections having an adjustable telescoping portion, a spring portion, and an acting end or portion, substantially as described.

2. The spring-clamp consisting of two adjustable telescoping sections, each of which has an adjustable telescoping portion, a spring portion, and an acting end or portion, in combination and fitted with a separate locking device, substantially as described, whereby the spring-pressure of the clamp may be varied and the sections thereof positively locked in their adjusted position by means other than friction.

3. A sectional adjustable telescoping spring-clamp, one member of which consists of a tubular sliding or adjustable portion, a bent or spring portion, and an operating end or portion substantially as described.

335,748. ARTIFICIAL LEG. CHANCY A. FREES, New York, N. Y. Filed July 25, 1885. (No model.)



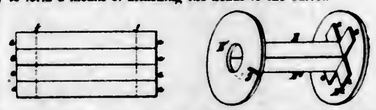
Claim.—1. The combination of leg N, ankle-piece D, and foot P with bolt A, having rounded ends, and with staple M, pivot C, and screw-bolt B, the bolt A being arranged at right angles to pivot C, substantially as specified.

2. The combination of an artificial leg having a heel-tendon with spring E, having curved body and rolled-up ends to embrace the heel-tendon, substantially as described.

3. The combination of leg N and side rod, G, having conical head K, with the thigh-bar H, having a tapering ring, and with a nut, L, substantially as specified.

335,749. SPOOL. WILLIAM A. FREES, Philadelphia, Pa., assignor to the H. W. Johns Manufacturing Company, New York, N. Y. Filed Sept. 9, 1882. (No model.)

Brief.—The barrel of the spool is formed by scoring lengthwise a piece of pasteboard, whereby it may be folded in prismatic form, and then scoring it crosswise, whereby flange-like ears may be bent outwardly to form a means of attaching the heads to the barrel.



Claim.—1. The spool E, consisting of disks of pasteboard, E' and E², or other equivalent sheet material, united by a prismatic barrel, E³, constructed and attached thereto substantially as shown and described.

2. The barrel for a winding-spool, consisting of a piece of pasteboard or other equivalent material scored lengthwise, whereby the barrel may be folded in prismatic form, and also scored crosswise, whereby the flange-like ears may be bent outwardly to unite the band to the head thereof, substantially as and for the purposes set forth.

335,750. STEAM-BOILER. JOHN L. GILL, Jr., Philadelphia, Pa. Filed Oct. 26, 1885. (No model.)



Claim.—1. As an improvement in steam-boilers, the end chamber, as described, having a series of openings therein for the reception of a corresponding number of water-tubes, and provided with one or more bridges, for the purposes set forth.

2. As an improvement in steam-boilers, the header, as described, provided with bridges, which allow of a free circulation thereunder and strengthen said header, and when two or more covers are required on a box one or more of the bridges form supports for making a steam-tight joint thereon.

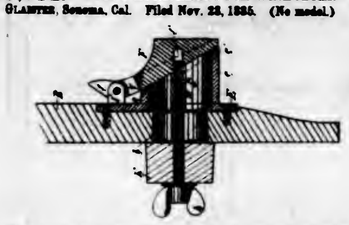
3. As an improvement in steam-boilers, a curved pipe for connecting a header or box directly with the cylindrical surface of a longitudinal steam-drum, substantially as and for the purposes described.

4. The combination, in a water-tube boiler, of the tubes B, header or box D, having openings at the top and bottom thereof for the reception of nipples, of the bridges H, with openings h^2, and recesses h', for holding the bolts R, substantially as and for the purposes set forth.

5. The combination, in a sectional steam-boiler, of the tubes B, header or box D, of the bridges H, openings h^2, of the cap I, and tap or stud bolts S, substantially as and for the purposes set forth.

6. The combination, in a sectional boiler, of the header provided with one or more bridges, the curved pipe leading directly from each header of a series to the longitudinal steam-drum, and a central straight pipe leading directly to said drum, when one, three, or five headers are used, substantially as described.

335,751. VALVE ATTACHMENT FOR WINE-CASKS. THOMAS S. GLANTZER, Sonoma, Cal. Filed Nov. 23, 1885. (No model.)



Claim.—1. The combination, with an annular valve-seat secured within a wine-cask behind the bung-hole, of a gravity-valve provided with a threaded socket, and a spindle adapted to engage the socket and securely hold the valve against its seat, substantially as herein described.

2. The swinging or gravity valve F on the inner surface of the door of a wine-cask, and controlling its bung-hole, in combination with the means for positively holding said valve closed, consisting of the threaded spindle H, screwed into a socket in said valve, and the flange or cork *K'* on said spindle, bearing against the outer surface of the door, substantially as described.

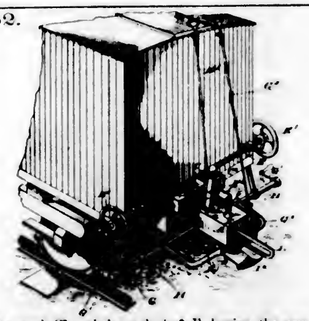
335,752. CAR-COUPLING. CHRISTIAN GOOD and SOLOMON GOOD, Wanguriswa, Ohio. Filed Dec. 2, 1885. (No model.)

Claim.—1. The combination, in a pin-and-link car-coupling, of the rock-shaft G, having the cranks and the yoke-arm, with the lifter having the counterpoise inwardly-extending end, and movable longitudinally on the rock-shaft and its yoke-arm, and a spring bearing against the lifter to move it normally forward, substantially as described.

2. The combination, in a pin-and-link car-coupling, of the rock-shaft G, having the cranks, the slotted yoke-arm G^2, and the keeper or loop G^3, with the lifter I, having the extending end 'I' passed through the slotted yoke-arm and the loop, and the coiled spring K on the shank of the lifter, and bearing between a shoulder formed thereon and the rock-shaft G, substantially as described.

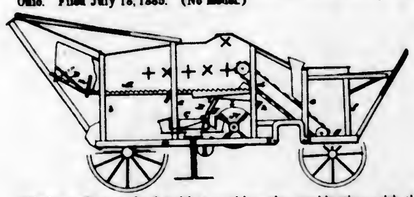
3. The combination, in a pin-and-link car-coupling, of the detent

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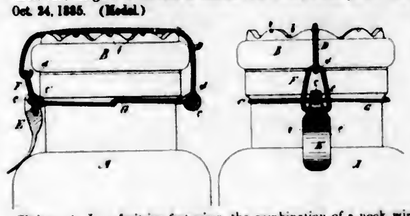
C, having the notch C^2, and the rock-shaft E, having the arm E^2, connected to the coupling-pin and provided with the stud *e*, for engaging with the notch in the detent when the arm and link are raised, substantially as described.

335,753. GRAIN-THRASHING MACHINE. JACOB HAWK, Canton, Ohio. Filed July 18, 1885. (No model.)



Claim.—In a grain-thrashing machine, the combination, with the frame, the links *m*, pivoted to the sides of the frame and to the vibrator suspended from the links, of the coiled springs, substantially as described, secured to the machine-frame at a point above and in rear of the point of attachment of the links, and to the links at or near the attachment of the latter to the vibrator, whereby the downward and end movement of the vibrating parts is resisted by the springs, substantially as set forth.

335,754. FRUIT-JAR FASTENING. GEORGE V. HENRIE, San Francisco, Cal., assignor of one-half to Martin V. B. Watson, same place. Filed Oct. 24, 1885. (Model.)



Claim.—1. In a fruit-jar fastening, the combination of a neck-wire and a swinging bail hinged thereto at one end and passing over the cover or lid, with a thumb-piece or lever pivoted to the neck-wire, and a connection between the free end of the bail and the lever, at a point between the end and the pivotal center of said lever, said connection being detachable from the bail, substantially as described.

2. In a fruit-jar fastening, the neck-wire C and the swinging bail D, hinged at one end thereto, and having a hook, *d'*, at its other end, in combination with the thumb-piece or lever E, pivoted to the neck-wire, and the link F, pivoted to the lever, between the end and the pivotal center of said lever, and effecting with its top a detachable engagement with the hook *d'*, substantially as herein described.

3. In a fruit-jar fastening, the neck-wire C and the swinging bail D, hinged at one end thereto and having a hook, *d'*, at its other end, in combination with the thumb-piece or lever E, pivoted to the neck-wire, and the link F, pivoted in the lever, between the end and the pivotal center of said lever, and engaging with its top the hook of the bail, said link being free to move on its pivot in one direction, but limited by the lever in the other direction, whereby its disengagement with the hook is effected by the movement of the lever, substantially as herein described.

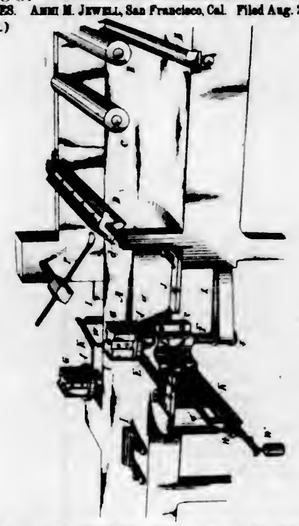
4. In a fruit-jar fastening, the loop G, for securing and tightening the ends of the neck-wire, consisting of a wire bent at its middle into the eye *g*, at its sides into loops *g'*, and having its ends brought back, the one above and the other under the central eye, whereby they and the eye may be twisted together, substantially as herein described.

5. In a fruit-jar fastening, the cover or lid B, having notches *b* of different depths, in combination with the neck-wire C, the lever E, pivoted thereto, the link F, pivoted to the lever, and the bail D, hinged to the neck-wire, bearing in the notches and engaging the link, substantially as described.

335,755. METHOD OF MAKING PICTURES. DAVID ISAACSON, Providence, R. I. Filed July 30, 1885. (No specimens.)

Claim.—The improved method of making a picture herein described, the same consisting, essentially, in coating a positive unvarnished albumen print with the albumen compound and partially drying the same, coating one side of a glass with the albumen compound and partially drying the same, uniting the coated surfaces of the glass and print, and rubbing down the print smoothly, saturating and removing the paper of the print, varnishing the film on the glass with the carbon varnish, and then painting the film in colors, substantially as specified.

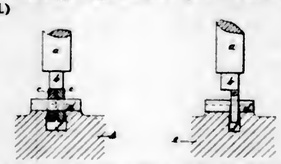
335,756. STAVE-JOINTING ATTACHMENT FOR MOLDING-MACHINES. ANNE M. JEWELL, San Francisco, Cal. Filed Aug. 24, 1885. (No model.)



Claim.—1. The arbor F, having guide-disks *f* and cutter-head G, and the rectilinearly-adjustable carriage E, having a box, *e*, in which the arbor is journaled, in combination with the pivoted lever K, having a weight, W, on its long arm, and its short arm adapted to bear against the box *e*, whereby the cutter-head is held to a positive and continuous engagement with its work, substantially as and for the purpose herein described.

2. The arbor F of a molding-machine, having guide-disk *f* and cutter-head G, and the rectilinearly-adjustable carriage E, having box *e*, in which the arbor is mounted, in combination with the pivoted bent or curved lever K, having the weight W on its long arm, and the regulating-screw L through its short arm, bearing against the box *e* of the arbor, substantially as herein described.

335,757. DEVICE FOR TAKING UP END-PRESSURE OF ROTATING SHAFTS. CARL A. JOHANSSON, Stockholm, Sweden, assignor to the Company Aktiebolaget Separator, same place. Filed Aug. 31, 1885. (No model.)



Claim.—1. The combination, with a rotative shaft having an endwise weight or pressure, of one or more disks and a supporting-shaft for the same, the end of the rotative shaft resting against the edge of such disk or disks, substantially as specified.

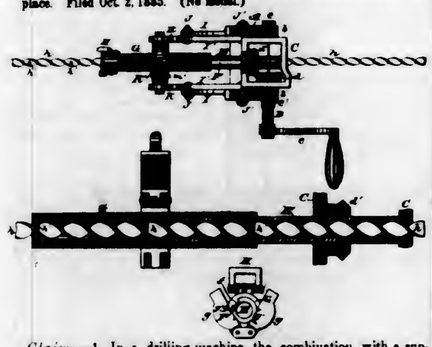
2. The combination of a rotating shaft and two disks running loose on a shaft, and against which the end of the rotating shaft rests, substantially as and for the purposes set forth.

3. The combination of a rotating shaft and a disk running loose on a shaft, and against which the rotating shaft rests, substantially as and for the purposes set forth.

4. The combination of a rotating shaft and a disk fixed on a movable shaft, and against which the rotating shaft rests, substantially as and for the purposes set forth.

5. The combination of a rotating shaft and one or two movable disks against which the end of the shaft is resting, and a receptacle for the lubricant, which receptacle partially surrounds the movable disks, substantially as and for the purposes set forth.

335,758. DRILLING-MACHINE. AUGUST JOHN, Massillon, Ohio, assignor of two-thirds to Frank Kramer and August Kramer, both of same place. Filed Oct. 2, 1885. (No model.)



Claim.—1. In a drilling-machine, the combination, with a supporting-frame and a screw-clamp supported thereby, of a hollow screw embraced by said clamp, a guide located and working in said hollow screw, a drill located within said guide, and gearing secured to the guide for operating the same, substantially as described.

2. In a drilling-machine, the combination, with the frame C and arms I' I', secured to post A, and a screw-clamp, K', supported thereby, of the hollow screw G, embraced by said clamp, the hollow guide E, located within said hollow screw, the drill *h*, working in guide E, and provided with adjusting-pins *h'*, and the clamping-jaws *g g* and latch H on the end of the hollow screw, substantially as described.

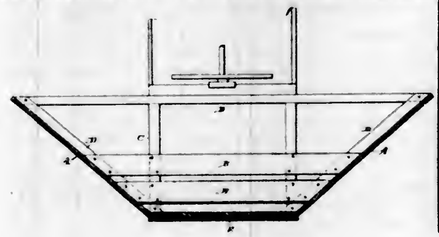
3. In a drilling-machine, the combination of the segments I I, secured to post A and provided with slots L, the arms I' I', secured to post A and provided with slots L' and recesses K, the screw-clamps K', supported in said recesses, the clamping-bolts J, the hollow screw G, embraced by said clamps, the clamping-jaws *g g* and latch H on the end of said screw, the hollow guide E, located in the hollow screw, and the drill *h*, working in the guide E, said drill being provided with adjusting-pins *h'* and engaging with the clamping-jaws *g*, substantially as described.

4. In a drilling-machine, the combination, with a supporting-frame and a screw-clamp supported thereby, of a hollow screw embraced by said clamp and provided at one end with hinged clamping-jaws and a latch therefor, a hollow guide engaged with and working in said hollow screw, and a drill located within said guide and engaged with the clamping-jaws at the end of the hollow screw, substantially as described.

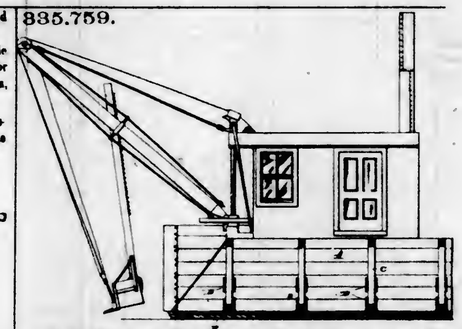
5. In a drilling-machine, the combination of a supporting-frame, a screw-clamp, K', a hollow screw supported by said clamp and provided with an internal longitudinal rib, *f*, hinged clamping-jaws *g g*, attached to one end of said screw, and provided with recesses *g' g'*, a latch, H, for securing said jaws, a hollow guide, E, having a longitudinal groove, F, engaged in the hollow screw, a drill located in said hollow guide and having adjusting-pins *h'*, said drill being engaged with the recesses of the hinged clamping-jaws, and gearing attached to the hollow guide for actuating the drill through the intermediate connections, substantially as described.

335,759. SUPPORTER FOR DITCHING-MACHINES. GEORGE W. KING, Marion, Ohio. Filed Oct. 15, 1885. (No model.)

Claim.—1. The combination, with a hollow frame constructed substantially as described, and having flaring sides and a sled or runner bottom, of an excavator mounted on said frame, substantially as set forth.



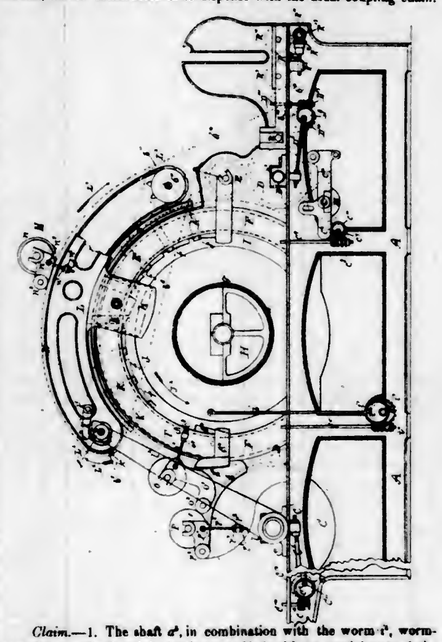
335,759.



2. A support for ditching-machines, consisting, essentially, of a frame-work provided with a sled or runner bottom and flaring sides adapted to fit within the ditch, and cutters secured to the front edges, substantially as set forth.

335,760. CARDING-ENGINE. EVAN A. LEIGH, Manchester, County of Lancaster, England. Filed Apr. 10, 1884. (No model.) Patented in England Feb. 28, 1872, No. 738.

Brief.—Simultaneous and uniform adjustment of the traveling top-flats is secured by resting the supporting pillars of the flats upon tangential steps on the periphery of circular plates supported concentrically with the main cylinder, one at each end, which are partially revolved by eccentrics and rods from a single shaft. The doffer and licker-in are likewise adjusted on both sides of the engine simultaneously by eccentrics and rods operated by a single shaft. The top-flats, carrying grooves and wheels, are so constructed as to dispense with the usual coupling-chain.



Claim.—1. The shaft a^4, in combination with the worm i^3, worm-gear i^2, eccentric i^1, rod *i*, wheel J, provided with tangential steps *f*, the pillars K K', &c., the flexible bends supported by said pillars, the flats traveling in said bends, and the carding-cylinder, to or from which the flats are adjusted simultaneously on both sides of the engine, substantially as set forth.

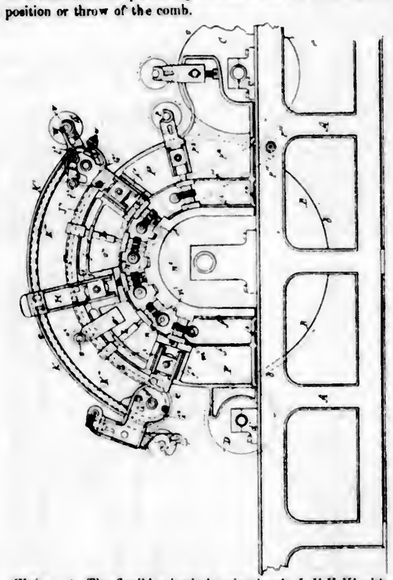
2. The combination, with the carding-cylinder B, of the flexible bends J', the plates L, having V-grooves *h'*, fitting the main bend F, semicircular flanges L^2, the series of flats moving therein as an endless belt, the actuating sprocket-wheels b^2 b^3 b^4 b^5, the posts K, the wheel J, with its tangential steps *f f*, the actuating-rod *i*, and devices whereby said rod is operated to adjust the entire series of flats toward or from said carding-cylinder, substantially as set forth.

3. The plate L, having a leg, *h*, provided with inclined planes h^1, in combination with wheels or disks J, which are provided with tangential steps *f'*, that turn under said planes to raise or lower said plates L, and the flats traveling in said plates and adjustable by means of said wheels, legs, and plates, substantially as set forth.

4. The wheels J and their tangential steps *f*, in combination with the grooved pillars K, which are raised or lowered by said steps, the flexible bends J', supported by said pillars, and having tongue-and-groove connection therewith, the flats which travel above said bend, and the plate L, which incloses said flats, substantially as set forth.

335,761. CARDING-MACHINE. EVAN A. LEIGH, Manchester, County of Lancaster, England. Filed Apr. 10, 1884. (No model.) Patented in England Aug. 13, 1878, No. 3,195.

Brief.—The top-flats, having convex surfaces, are caused to travel continuously above the main cylinder in grooves in flexible bends and end brackets supported upon pillars and adjusted simultaneously on both sides of the cylinder by screw and worm-gears and chain-wheels, all actuated by chains from a single shaft. The stripping-comb for the flats is driven from the stripping-brush, and the actuating devices of the comb are so constructed as to permit adjustment of the brush without altering the position or throw of the comb.



Claim.—1. The flexible elastic bearing-bends J J' K K' with their grooves, end and center adjusting-brackets, G, G', and H, with their grooves, in combination with the adjusting rods or pillars L L' and their grooves, and main bends F F', substantially as and for the purposes set forth.

2. The end brackets, G G', &c., provided with grooves G^2 G^2, in combination with the main bends F F', the intermediate connecting devices, the supporting-bends J J' K K', the carding-cylinder, the top-flats, and means for causing the latter to return in the guideway formed by said grooves, substantially as set forth.

3. A series of flats, E E', having a convex face and arranged in the form of an endless belt, in combination with grooved bends and brackets, forming guideways, in which they travel, the carding-cylinder, supports for said cylinder and guideways, and means for causing their continuous motion above the carding-cylinder, substantially as set forth.

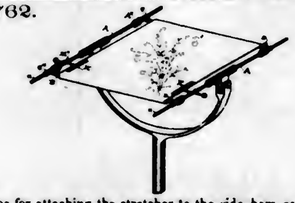
4. The stripping-brush and its axle having a crank, as stated, and means, as described, for adjusting said stripping-brush, in combination with the slotted link t^6, lever *t*, rock-shaft t^5, and the stripping-comb oscillated by said link, substantially as set forth.

335,762. EMBROIDERY-FRAME. JOHN LEVINSON, San Francisco, Cal. Filed July 22, 1885. (No model.)

Claim.—1. The revoluble end rollers, B, having the longitudinal groove A, with bottom holes, f^x, and the transverse openings *i* at the ends of groove, and the clamping-bar G, having the points *g* and the turned-down ends to extend into and be engaged by stops in openings *i*, all constructed and combined, as and for the purpose set forth.

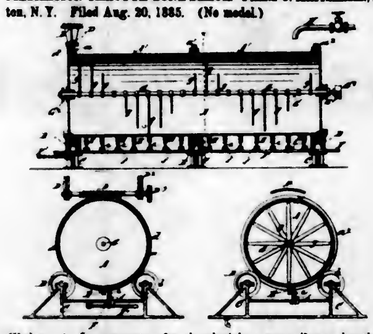
2. The combination of the stretcher-plate K, having hooks *k*, and the attached rod L, and sliding socket M, with set-screw *m*, and clasp M^x,

335,762.



as a means for attaching the stretcher to the side bars, as a fixed point from which to draw the stretcher-plate, and for holding the plate when set, substantially as described.

335,763. APPARATUS FOR DECOLORIZING SUGAR-LIQUOR BY FILTRATION THROUGH BONE-BLACK. FRANZ O. MATTHIESSEN, Irvington, N. Y. Filed Aug. 20, 1885. (No model.)

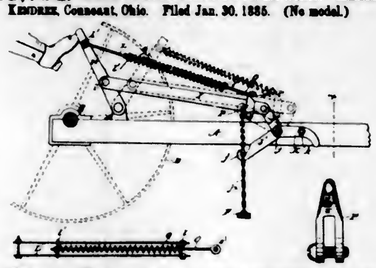


Claim.—1. In apparatus for decolorizing sugar-liquor by the process of filtration through bone-black, a rotatable cylindrical filtering-chamber supported in horizontal bearings and provided with an opening in its surface through which bone-black can be introduced into and discharged from it, and also provided with a series of drain-cocks arranged in a line parallel with its axis, in combination with a stirrer and means for operating the same for stirring the bone-black contained in the filtering-chamber during the progress of the operation of decolorizing sugar-liquor which has been introduced into the filtering-chamber.

2. The filtering-cylinder A, containing a stirrer, G, and provided with an opening, A', in its surface and with suitable drain-cocks, and provided with two or more circumferential flanges, in combination with two parallel series of rollers mounted in horizontal bearings, and having grooved faces for engaging the said flanges, and means for rotating the filtering-cylinder, as and for the purpose set forth.

3. The filtering-cylinder A, containing the stirrer G, and provided with the series E of drain-cocks, each having an operating-lever, *e*, in combination with the reciprocating bar F, provided with the teeth *f f*, &c., as and for the purpose set forth.

335,764. LIFTING ATTACHMENT FOR MOWERS. ALBERT C. McKENDREE, Conneaut, Ohio. Filed Jan. 30, 1885. (No model.)

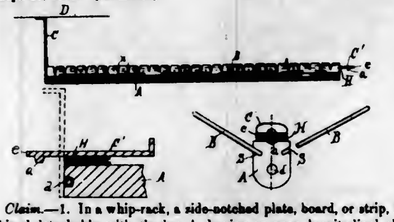


Claim.—1. The combination, in a mowing-machine, of a foot-lever and a bell-crank lever with a push-bar connecting the foot and bell-crank levers and spring mechanism operating between the foot-lever and bell-crank lever, substantially as set forth.

2. The combination, with the coupling-bar of a mowing-machine, of a bell-crank lever, J J', and connecting-chain j^3, a push-bar, I, a foot-lever, H, and a retracting-spring mechanism, substantially as and for the purpose set forth.

3. The combination, in a mowing-machine, of the bell-crank lever J J', the push-bar I, and hook P thereon, and the spring mechanism L O Q with the foot-lever H, all operating together substantially as and for the purpose set forth.

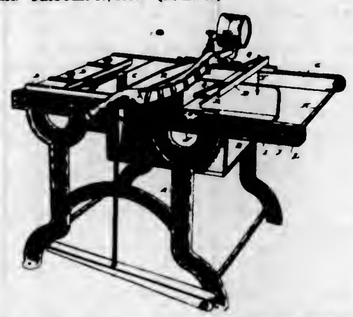
335,765. WHIP-RACK. JAS. A. MCPHERSON, Brunswick, N. Y. Filed Sept. 29, 1885. (No model.)



Claim.—1. In a whip-rack, a side-notched plate, board, or strip, B, combined detachably with the bar A, having an open longitudinal slot or groove extending inwardly and downwardly on an incline, said bar being provided with means of support, substantially as shown and described.

2. The combination, with a whip-rack, substantially as described, of a hanger having the spur *a* and the projecting end *a*, as and for the purpose specified.

335,766. GAGE FOR PAPER-CUTTERS. MARTIN L. MEYSENBURG and ALBERT COOPER, Harrisburg, Pa., assignors to William O. Hickok, same place. Filed June 17, 1885. (No model.)



Claim.—1. In a paper-cutter, the combination, with the main frame having ways and the gage constructed to fit and slide upon said ways, of the screw-threaded rods connected to the gage, one at either end, and the transverse shaft geared with said rods, whereby motion imparted to the shaft is imparted equally to the respective rods.

2. In a paper-cutter, the combination, with the main frame having the side pieces provided with ways on their upper surfaces and recesses on the outer faces of the ends, and the gage adapted to slide to and fro from the shear upon said ways and provided with a threaded sleeve at either end, of the screw-threaded rod mounted at the sides of the machine, engaging, respectively, with the said sleeves and having beveled pinions, and the transverse shaft having like pinions which intergear, respectively, with those on the rod and the hand-wheel, whereby motion imparted to the said shaft is equally applied to either of the rods.

3. In a paper-cutter, the combination, with the main frame having ways and the shear, of the gage constructed to fit and slide upon said ways, and the screw-threaded rods connected to the gage, one at either end, and a transverse shaft geared with the said rods, whereby motion imparted to the shaft is imparted equally to the respective rods.

4. In a paper-cutter, the combination, with the main frame having the side pieces provided with ways on their upper surfaces and recessed on their outer faces near the ends, and the shear, of the gage adapted to slide to and from the shear upon said ways and provided with a threaded sleeve at either end, and the screw-threaded rods mounted at the sides of the machine, engaging, respectively, with said sleeves and having beveled pinions, and the transverse shaft having like pinions which intergear, respectively, with those on the rods and the hand-wheel, whereby motion imparted to the shaft is equally applied to either of the rods.

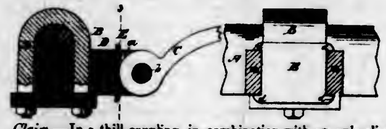
5. In a paper-cutter, the combination, with the auxiliary gage mounted upon a slide, of the screw-threaded rods connected with said slide and the transverse shaft geared with said rods, whereby motion imparted to the shaft is equally applied to either of said rods.

6. In a paper-cutter, the combination, with the gage and the auxiliary gage mounted thereon so as to recede from the shear, of the screw-threaded rods provided with beveled pinions, the threaded sleeves connecting the rods with the gage, and the transverse shaft having pinions to intergear with those on the rods.

7. In a paper-cutter, the combination, with the shear, of the gage constructed to slide, the auxiliary gage hinged thereto, the chain connected therewith and adapted to be connected with the shear, the screw-threaded rods having pinions, the threaded sleeves connecting them with the gage, and the transverse shaft having like pinions which gear with pinions on the rods, and a hand-wheel.

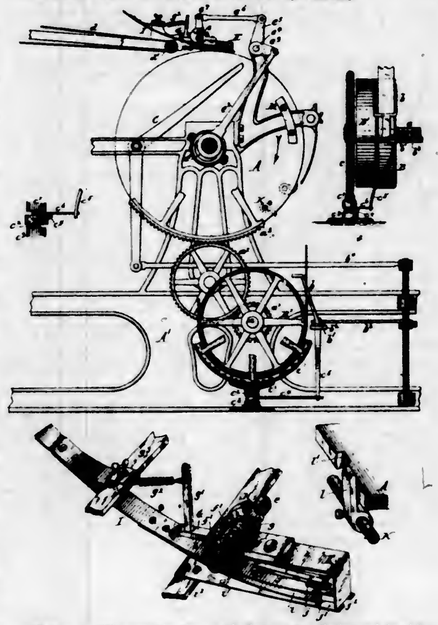
8. In a paper-cutter, the combination, with the gage proper, of the auxiliary gage having hinged arms, one portion of each of which is slotted and adjustably connected with the gage proper, and a chain connecting the auxiliary gage with the shear, the chain being adapted to play in the aperture in the arm.

335,767. THILL-COUPLING. GEORGE MORSE, Gloucester, assignor to himself and Charles A. Boynton, Boston, Mass. Filed Dec. 4, 1884. (No model.)



Claim.—In a thill-coupling, in combination with an axle-clip having ear-pieces *a a*, and a thill-iron swiveled thereto, and a block or cushion of rubber or gutta-percha between them, a metal plate having plane or flat sides or faces between said cushion and the thill-iron, said plate being provided with ear-pieces or projections *d d d d*, adapted to overlap the ear-pieces *a a* of the clip, substantially as described.

335,768. STOP-MOTION FOR PRINTING-MACHINES. JAMES NAYLOR, Jr., Poughkeepsie, assignor, by mesne assignments, to David H. Burrell, Little Falls, N. Y. Filed Feb. 20, 1885. (No model.)



Claim.—1. The combination, with the press-cylinder and its driving-shaft, provided with a tight and loose pulley, and a belt-shipper, of a stop which moves out of its normal position when not supported by the paper, and a shifter which is attached to the press-cylinder and rotates therewith, and which is moved by the stop when the latter is out of its normal position, and which in turn moves the belt-shipper and brings the driving-belt on the loose pulley, substantially as set forth.

2. The combination, with the press-cylinder, its driving-shaft *a*, provided with tight and loose pulleys B B', and the belt-shifter *b*, of the movable stop J, shifting-rod K, attached to the press-cylinder, lever C, and rods and levers connecting the lever C with the belt-shifter *b*, substantially as set forth.

3. The combination, with the press-cylinder and its driving-shaft, provided with a tight and loose pulley, and a belt-shipper, of a stop which moves out of its normal position when not supported by the paper, a shifter which is attached to the press-cylinder and rotates therewith, and which is moved by the stop when the latter is out of its normal position to shift the belt to the loose pulley, and a brake which is

connected with the belt-shipper and applied by the shifter attached to the cylinder simultaneously with shifting the belt to the loose pulley, substantially as set forth.

4. The combination, with the press-cylinder, its driving-shaft *a*, provided with tight and loose pulleys B B', and fly-wheel *c*, and the belt-shifter *b*, provided with arm c^2, of the movable stop J, shifting-rod K lever C, rods and levers connecting the lever C with the belt-shifter *b*, and the brake *c'*, provided with the arm c^4, substantially as set forth.

5. The combination, with the press-cylinder and its feed mechanism, substantially as described, of the pressure-springs I, provided with auxiliary springs *i*, substantially as set forth.

6. The combination, with the press-cylinder, of the pressure-springs I, provided with auxiliary springs *i*, a gage, E, and an arm, H, whereby the gage is actuated, substantially as set forth.

7. The combination, with the rock-shaft *e*, of the gage E and pressure-arm G, mounted loosely on the rock-shaft, and the actuating-arm H, whereby the gage and pressure-arm are alternately actuated, substantially as set forth.

8. The combination, with the rock-shaft *e*, of the gage E, provided with a shoulder, *f'*, the pressure-arm G, provided with a shoulder, *g*, and the actuating-arm H, secured to the shaft *e* and provided with a pin, *h*, projecting between the shoulders *f' g*, substantially as set forth.

9. The combination, with the pressure-spring I, of the rock-shaft *e*, the pressure-arm G, adapted to bear upon the spring I, and the actuating-arm H, whereby the arm G is alternately applied and released, substantially as set forth.

10. The combination, with the press-cylinder and the feed-tapes, of a gage which arrests the movement of the paper, a light spring which bears continually upon the paper and guides the paper in its movement toward the gage, and a pressure-spring which holds the paper when the gage is raised until the nippers seize the paper, substantially as set forth.

11. The combination, with the pressure-spring I, of a stop, J, pivoted to said spring and adapted to be supported by the paper, substantially as set forth.

12. The combination, with the movable stop J, supported by the paper, of the press-cylinder, a shifting-rod, K, provided with an arm, *k*, locking device *l l'*, and spring *l²*, and the lever C, connected with the belt-shifter, substantially as set forth.

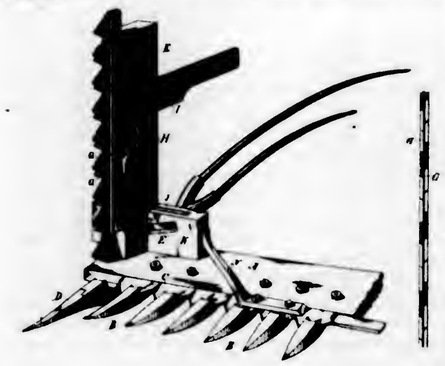
13. The combination, with the press-cylinder having a notch, *l'*, and the shifting-rod K, provided with a locking-arm, *l*, and spring *l²*, of the incline M, whereby the shifting-rod is returned to its retracted position, substantially as set forth.

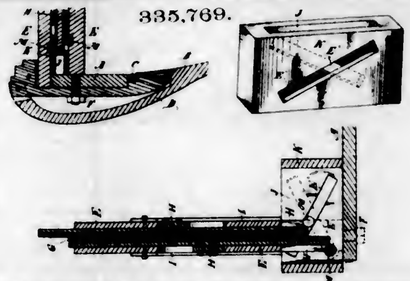
14. The combination, with the press-cylinder provided with a notch, *l'*, of the shifting-rod K, an arm, *l*, attached thereto and adapted to engage in the notch *l'*, and a twisted and compressed spring, *l²*, whereby the shifting-rod is both turned and moved lengthwise, substantially as set forth.

15. The combination, with the gage E, of the spring I and a movable stop, J, attached thereto, whereby the stop is raised before the paper is fed against the gage and lowered upon the paper after it has been fed against the gage, substantially as set forth.

335,769. TRACK-CLEARER FOR MOWERS. JAMES M. PATTERSON and ELI A. HIMEBAUGH, Tipton, Cal. Filed Aug. 7, 1885. (No model.)

Claim.—1. In a mowing-machine, a horizontal finger-bar with reciprocating sickle, and a vertical standard secured at its outer end and having two sickles or cutters guided to move vertically upon its front edge, in combination with pitmen secured centrally to said cutters extending downward through guides in the standard, and the horizontal sliding block having oppositely-inclined diagonal grooves upon its opposite sides, into which pins from the lower ends of the pitmen project, substantially as herein described.





2. A horizontal finger-bar, with its reciprocating sickle, in combination with the vertically-reciprocating sickles and a horizontally-sliding slotted block with a diagonal bar or rod connecting said block with the horizontal sickle, substantially as herein described.

3. A horizontal sliding block having a vertical slot made through it to receive and guide the two pitmen by which the vertical sickles are driven, said block having diagonal slots made upon each side of the vertical channel and inclined in opposite directions, substantially as herein described.

4. The horizontal finger-bar and reciprocating sickle of a mowing-machine, and the vertical standard having sickles or cutters guided to reciprocate in opposite directions upon its forward edge, with channels made in its opposite sides to receive and guide the pitmen by which the sickles are reciprocated, in combination with swinging plates or covers by which these channels are inclosed and protected, substantially as herein described.

5. The vertical reciprocating cutters moving in close proximity with each other, the blades of said cutters having one edge beveled and sharpened, and the edge which passes and opposes the beveled edge of the opposite cutter made straight, substantially as herein described.

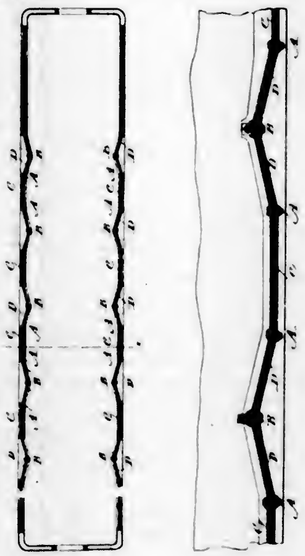
335,770. PASSENGER-CAR. BRUCE PRICE, New York, N. Y. Filed Dec. 9, 1884. (No model.)

Claim.—1. A passenger-car having the diagonally-placed windows D and intermediate windows or panels, C, forming curved or bay windows, substantially as described.

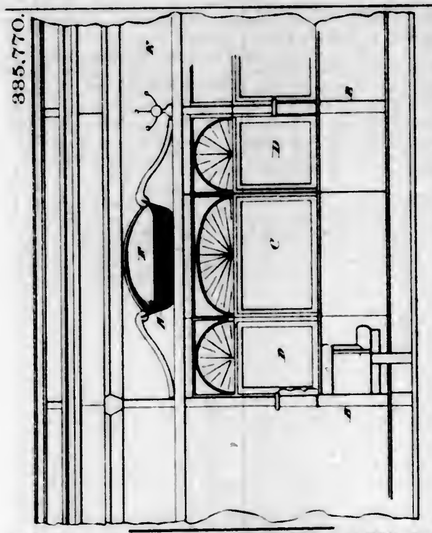
2. In the frame of a car, the posts B, set out of line with the posts A and sheathed upon the inside against the post B, thus forming the spaces G for receiving the recesses or coves F, substantially as and for the purposes set forth.

3. The coves or recesses F, set in the wall of the car, substantially as shown and described.

4. The recesses or coves F, set in the wall of the car, in combination with the fenders or baskets H, arranged substantially as and for the purposes set forth.



335,770.



335,771. MACHINE FOR DRYING VARNISHED LABELS. CARL RASMUSSOFF, San Francisco, Cal., assignor to the Schmidt Label and Lithographic Company, same place. Filed May 4, 1885. (No model.)



Claim.—1. The carrier having transverse bars A', adapted to receive the wet or newly-varnished prints, sheets, or labels, means for driving the carrier, and a tripping mechanism comprising a pivoted lever, K, a lever, J, engaging the lever K, and a spring-lever, L, operated by the press-roll for imparting to said carrier a periodical movement when a bar has received its complement, whereby a fresh bar is presented, substantially as herein described.

2. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, means for driving the carrier, a press through which the labels, &c., are passed, provided with suitable advancing devices and a fly, in combination with a carrier consisting of endless side chains mounted and traveling in a serpentine course, and transverse spaced bars adapted to receive the labels, &c., from the fly of the press, a driving mechanism consisting of a shaft with a series of pinions meshing with pinions on the bars connected with the carrier, and a clutch mechanism, substantially as described, operated and controlled by the press, whereby the power or driving mechanism is alternately thrown into or out of gear to impart a periodical movement to the carrier, substantially as and for the purpose herein described.

3. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, a carrier consisting of side chains, A, mounted and adapted to travel in a serpentine course over suitable pulleys, and transverse bars carried by said chains, in combination with the side shaft, F, carrying a series of beveled pinions, *f'*, and driving-pinions *f*, the series of pinions *g*, meshing with pinions *f'*, and the chain-pulleys *a* on the shafts of pinions *g*, and engaging the chains of the carrier, the transverse shaft *e*, having pinions *e'*, meshing with pinions *f*, and devices for transmitting power to shaft *e*, whereby the carrier is driven, substantially as herein described.

4. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the combination of a press, an endless carrier to which the press feeds the labels, &c., power mechanism for driving the carrier, a clutch mechanism operating intermittently to impart a periodical movement to the carrier for the purpose described, and a tripping mechanism on and operated by the press for controlling and operating the clutch periodically, and comprising a pivoted lever, K, a lever, J, engaging the lever K, a spring-lever, L, and a connection between the lever L and the roll of the press, substantially as herein described.

5. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the carrier consisting of endless side chains and transverse bars, and a press adapted to treat and feed the labels, &c., to the bars of the carrier, in combination with a mechanism by which power is transmitted to the carrier, consisting of a main driving-shaft, a feathered clutch thereon actuated by a spring, and a loose pinion engaged by the clutch, a gear meshing with the pinion, and power-transmitting devices connecting said gear with the carrier, and a mechanism controlled by the press by which the clutch is disengaged and allowed to re-engage to impart a periodical movement to the carrier, consisting of a series of pivoted levers connected with the clutch and with a tripping mechanism on the press roller or cylinder, whereby the clutch is released and the carrier driven, and a lug on the gear adapted to throw the clutch out again and into engagement with the lever mechanism, by which the carrier is stopped and is held in a state of rest, substantially as herein described.

6. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the clutch mechanism consisting of the disk H, feathered on the driving-shaft and having clutch h^2, and the actuating-spring I and the loose pinion *c'* for transmitting power, and having a clutch, c^2, in combination with the mechanism by which the clutches are disengaged, consisting of the collar *h*, encircling the disk H, and having a projection, h^3, and a pivoted lever-extension, J, the beveled lug d^2 on a gear rotated by the pinion *c'*, said lug being adapted to engage the projection h^3, whereby the clutch h^2 is moved out, and the lever K, having notch *k*, engaging lever J, whereby the clutch remains disengaged, substantially as herein described.

7. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, an endless carrier, and a press adapted to feed the labels, &c., thereto, in combination with a power mechanism automatically operated by the press-roll for driving the carrier, a clutch mechanism for making the power intermittent, whereby a periodical movement is given the carrier for the purpose described, a clutch-operating mechanism, and a mechanism by which the clutch mechanism is operated, consisting of the pin n^2 on the cylinder or roll of the press, the toothed wheel O, carrying lever *o* with pins *o'*, the pivoted lever H, with pin *m*, and the cord *l'*, connecting lever M with the clutch-operating mechanism, substantially as herein described.

8. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, an endless traveling carrier having transverse bars A', in combination with an independent double belt extending across the front of the carrier and adapted to receive the labels, &c., directly from the fly of the press and hold them above the bar of the carrier, whereby said bar in rising passes between the belts and picks up the labels, substantially as herein described.

9. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the cross-belt X, adapted to receive the labels from the fly of the press, in combination with a fast and loose pulley, and power mechanism comprising a segmental gear and intermediate devices controlled and operated by the press, whereby said belt is held stationary to receive a label, and then moved to present a fresh place for a succeeding label, substantially as herein described.

10. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the cross-belt X, in combination with the mechanism for periodically driving it, as described, consisting of the loose pulley *x*, having pawl *x'*, the ratchet-wheel Y, engaging the pawl, and the pinion *y*, the segmental gear *y'*, and lever y^2, crank y^3 on a rotating shaft on the press, pivoted lever y^4, and connecting-bars y^5 and y^6, substantially as herein described.

11. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, oppositely-located and vertically-swinging flies adapted to receive the labels upon them, in combination with an intervening belt upon which the belt is hung as the flies move down, substantially as herein described.

12. In a machine for handling and drying wet or newly-varnished

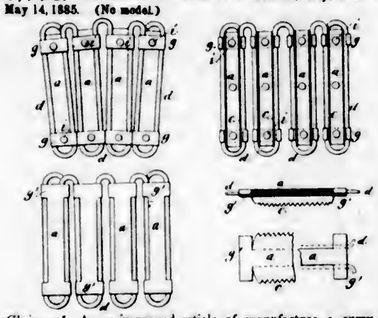
prints, sheets, or labels, a vertically-swinging fly operated by the press through which the labels, &c., pass, and an oppositely-located fly operated by said press to swing approximately simultaneously with the first fly, said flies being adapted to receive the labels, &c., between them, in combination with a traveling belt between the two flies and adapted to hang or suspend successive labels as the flies move down, substantially as herein described.

13. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the combination of the oppositely-located and swinging flies P R, the intervening periodically-moving cross-belt X, and the periodically-moving main carrier having bars A', adapted to rise up under and past the belt, all arranged and adapted to operate substantially as herein described.

14. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the swinging fly P and the cross-belt X, in combination with the opposite swinging fly R, and the adjustable stops b', by which the position of the label on the flies is defined, substantially as herein described.

15. A machine for handling and drying wet or newly-varnished prints, sheets, or labels, comprising the press N, provided with suitable advancing-cords, Q, the oppositely-located and swinging flies P R, operated by the press and adapted to receive the labels between them, the cross-belt X between the two flies and adapted to receive and suspend the labels as the flies move down, and mechanism controlled and operated by the press for imparting to said belt a periodical movement, adapting it to receive successive labels, the endless carrier consisting of side chains, A, and transverse bars A', said bars being adapted by the movement of the carrier to rise up under the labels on the belt and pick them up, a power mechanism for driving the carrier, and a clutch and tripping mechanism operated and controlled by the press for effecting an intermittent power transmission to impart a periodical movement to the carrier, whereby the labels are taken from the belt when it has received a stated number, substantially as herein described.

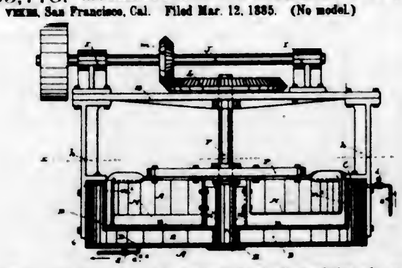
335,772. **CURRY-COMB.** CHARLES D. RANDEL, Troy, N. Y. Filed May 14, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a curry-comb consisting of a wire frame having yielding flexible loops and comb-bars attached to said frame longitudinally of said loops, substantially as described.

2. A curry-comb bar made of sheet metal and provided with clips integral therewith and projecting laterally from opposite sides thereof, in combination with a supporting-frame around which said clips are bent, substantially as and for the purposes set forth.

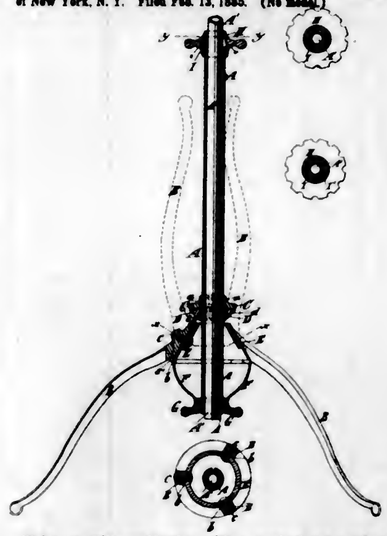
335,773. **APPARATUS FOR COOLING WHITE LEAD.** DAVID RAVERET, San Francisco, Cal. Filed Mar. 12, 1885. (No model.)



Claim.—1. An apparatus for cooling white lead, consisting of a pan or receptacle having a hollow space beneath its bottom and behind its walls connected together to form a single chamber, and an inlet and an outlet aperture, and connections for passage and circulation of a cooling medium, as water, a rotating shaft set upright in said receptacle and provided with a scraping device the edges of which are set to run against the surfaces of the said receptacle, and mechanism, substantially as specified, for imparting rotation to said shaft, as set forth.

2. A white-lead cooler having flat bottom and perpendicular sides with a hollow space or chamber surrounding the bottom and sides of said cooler to contain a cooling medium, as water, an inlet and an outlet in the said space or chamber, with connections having cocks to control the flow of the cooling medium, and a scraping device on which are scraping-edges set to work against the interior surfaces of the receptacle, and mechanism for imparting motion to said scraping device, substantially as herein specified, to operate as set forth.

335,774. **TRIPOD-STANDARD.** JOHN D. RICHARDSON, Brooklyn, assignor to himself and Frank L. Manchester and Joseph W. Sullings, both of New York, N. Y. Filed Feb. 13, 1885. (No model.)



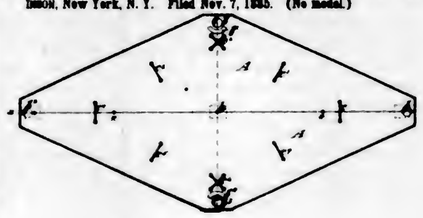
Claim.—1. The combination, with a standard and a collar fitting thereon, of a conical hub or center loosely fitting the standard below the collar, legs each pivoted to the conical hub or center and having their ends s and shoulders s' presented above the hub or center and bearing against the collar, and a nut applied to the bottom of the standard and serving to clamp or force the ends or shoulders of the legs upon the collar, substantially as herein described.

2. The combination, with a standard and a collar, D, thereon having a conical lower surface, of a conical hub or center fitting the standard below the collar, legs B, each pivoted to the hub or center, and having ends and shoulders s s', on which the conical face of the collar acts to clamp them in place, and a nut applied to the standard for clamping the legs and collar together, substantially as herein described.

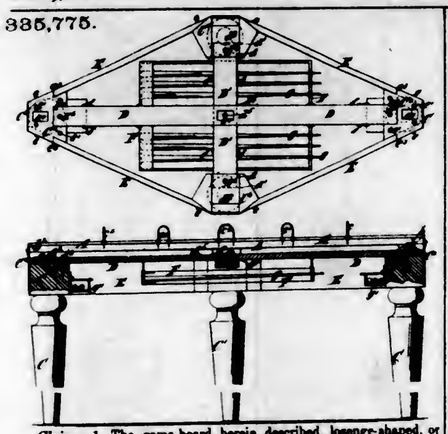
3. The combination, with the standard and a collar fast thereon, of a loose collar, D, having a conical lower face, a spring, d, interposed between said collars, a conical hub or center, and legs pivoted thereto and having ends and shoulders s s', on which the collar D acts, and a nut for clamping the legs and collar D together, substantially as herein described.

4. The combination, with the fixed standard A and adjustable standard A', of the upwardly-tapering wedge I, having a bearing upon the upper end of the standard A, and curved to fit the standard A', and the nut or gland H, screwed upon the standard A and having its interior conical, with an upward taper to fit said wedge, whereby provision is afforded for tightening the wedge upon the standard A' by screwing up the nut or gland, substantially as herein described.

335,775. **GAME-BOARD AND SECTIONAL STAND.** FRED. C. ROBINSON, New York, N. Y. Filed Nov. 7, 1885. (No model.)



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Claim.—1. The game-board herein described, lozenge-shaped, or in the form of two triangles united at their bases, having at the ends the pockets b b^3, and at the sides the pockets b' b^3, protected by guards b^6, and also having wickets, arranged substantially as and for the purpose herein set forth.

2. The folding game-board herein described, divided longitudinally, and provided on its under side with the pieces A' A^3, to which hinges are applied, and having on its surface end pockets, b b^3, and side pockets, b' b^3, protected by guards b^6, and also having wickets, arranged substantially as and for the purpose herein set forth.

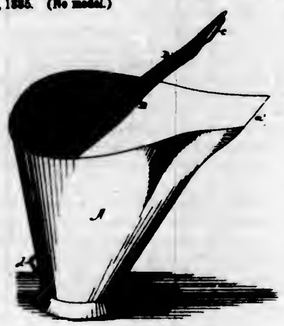
3. In a sectional stand, the combination of end legs, C C, and side legs, C' C', the longitudinal and transverse stretchers D D', respectively connecting the legs C C and the legs C' C', and detachably secured to said legs and to each other at their point of intersection, the four straight side pieces, E, secured to the outer sides of and connecting the legs, and the top or board A, supported upon and made separate from the side pieces, E, substantially as herein described.

4. The combination of the end legs, C, the side legs, C', having mortises d', the cross-bar D', having at the ends tenons d, fitting the mortises, and secured therein by screws d^2, the longitudinal bar or stretcher D, secured to the cross-bar, and having its ends secured by screws d^2 to the end legs, and the side pieces, E, secured by screws to the legs and connecting them together, substantially as herein described.

5. The combination of the side legs, C', mortised at d', the cross-bar D', notched at d^5, and provided with tenons d, fitting said mortises, and secured therein by screws d^2, the end legs, C, the longitudinal bar D, secured by a screw, d^2, to the bar D', and by screws d^2 to the tops of the end legs, the side pieces, E, secured to the outer sides of the legs, and reduced in width at their ends, and the blocks C^2, secured to the tops of the end legs, C, and notched at c^2 c^2, to receive the ends of the bar D, and to fit the corresponding ends of the side pieces, E, substantially as herein described.

6. The combination, with the end and side legs, C C', the latter being grooved or recessed across their tops at d^3, and the stretchers D D' and side pieces, E, connecting the legs, of a game-board corresponding in shape to the stand or frame and provided at the bottom with a batten or cross-bar, A', the ends of which are received in the grooves or recesses d^3, and securing devices for holding the board upon the stand or frame, substantially as herein described.

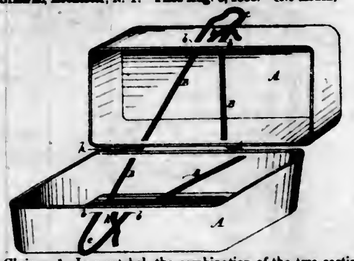
335,776. **COAL-HOD.** ANDREW J. ROCK, Washington, D. C. Filed Oct. 31, 1885. (No model.)



Claim.—1. A coal-hod provided with a fixed and a hinged screen, the frame of the latter forming a handle for the hod proper, as set forth.

2. The combination, with the hod A, having handle d, of the rigid screen B and hinged screen C, having frame D, provided with handle c, as set forth.

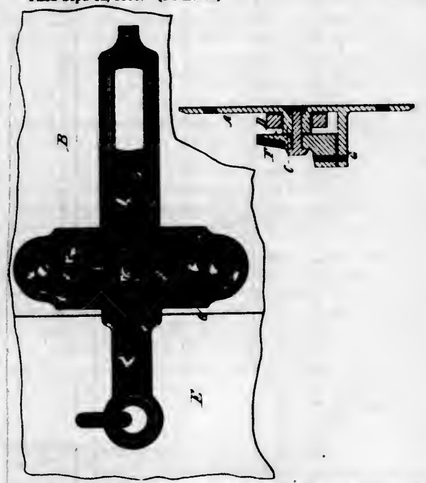
335,777. **PAPER SATCHEL.** JOHN T. SCHAFFER and BARNARD L. SHEWEL, Rochester, N. Y. Filed Aug. 5, 1885. (No model.)



Claim.—1. In a satchel, the combination of the two sections made of paper, paper-board, or papier-mache, and the cords connecting said sections together, said cords passing through slits or eyelets formed in the edges of the sections, forming a loose joint to the sections, and provided with hand-loops at the top, as and for the purpose specified.

2. In a satchel, the combination of the two sections made of paper, paper-board, or papier-mache, the cords connecting said sections, as described, and stops on the cords resting under the upper edges of the sections, whereby when the satchel is suspended the upper and lower edges of the sections are kept at uniform distances apart, as herein shown and described.

335,778. **CAR-DOOR LOCK.** ROBERT C. SCHENCK, Jr., Dayton, Ohio. Filed Sept. 12, 1885. (No model.)



Claim.—1. The combination, with a hasp, of a staple over which the hasp fits and with which it engages, and a gravitating latch pivoted to the staple and arranged to automatically swing across the hasp to hold the same locked, substantially as described.

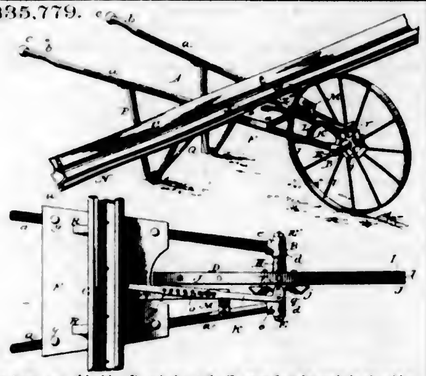
2. The herein-described car-door fastening, consisting of the perforated hasp D, staple-plate A, having a staple, C, secured thereto, a gravitating latch, F, pivoted to the staple C, and a bracket, G, projecting from the plate A, said latch and bracket being coincidently perforated to enable a locking-wire or padlock to be passed therethrough, the whole constructed in the manner and for the purpose specified.

335,779. **SEEDING-MACHINE.** REMARD B. SHELDON and JOSEPH V. PEACOCK, Shortsville, assignors to the Crown Manufacturing Company, Phelps, N. Y. Filed Mar. 6, 1885. (No model.)

Claim.—1. In a seeding-machine of the character herein described, the combination of a wheel having a tubular hub, a tubular axle passing through said hub, thimbles recessed to receive the ends of the axle and provided with oblique tubular necks, side bars inserted and secured in said oblique necks, and a bolt passing through the axle and thimbles and binding the parts together, substantially as shown and described.

2. The herein-described frame for a seeding-machine, consisting of

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side bars, *a a*, thimbles B, tubular axle C, seated at its ends in the thimbles, and tie-bolt E, passing through the thimbles and axle and serving to bind the parts together, as shown and described.

3. In combination with wheel D and recessed thimbles B B, tubular axle C, passing through the hub of said wheel and seated at its ends in the thimbles, and tie-bolt E, passing through the thimbles and axle, all substantially as described and shown, whereby the axle C is caused to prevent the thimbles from being drawn against the ends of the hub.

4. In a seeding-machine substantially such as described and shown, the wheel D, consisting of hub H, provided with perforated overhanging band *i* and radial cam-plate *j*, rim or felly J, and spokes I, headed in the rim and screwed into the band *i*, all substantially as shown and described.

5. The combination, substantially as described and shown, of frame A, carrying-wheel D, provided with cam-plate *j*, hopper G, wire feed-slide O, and vibrating lever K, connected at one end with the slide O and straddling the cam-plate *j* at its opposite end, as set forth.

6. In combination with wheeled frame A, having supporting-blocks P, hopper G, bolt S, and nut T.

7. In a seeding-machine substantially such as described and shown, a seed-discharging slide composed of wire twisted or corrugated, substantially as described and shown.

8. In combination with frame A, wheel D, having cam *j*, hopper G, grooved strip N, wire slide O, provided with loop *v*, sliding block *x*, lever K, straddling the cam *j* at its forward end, and link *y*, connecting the rear end of the lever and the slide *x*, all substantially as shown and described.

9. In a seeding-machine, the combination of a feed or discharge device, a cam-wheel, an intermediate vibratory lever, and a support for said lever, the lever and support being both provided with a series of holes to receive an adjustable pivot-pin, and one of said series of holes being numbered, substantially as explained, to indicate the quantity of seed that will be sown under each adjustment of the pivot-pin.

335,780. **DENTAL TOOL.** JOHN W. SMITH, Newport, R. I. Filed June 17, 1884. (No model.)



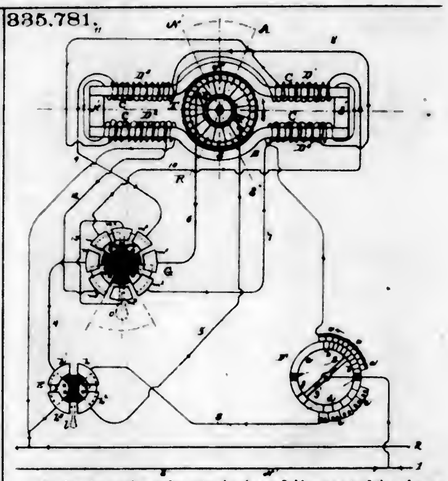
Claim.—In a dental-disk holder, the combination of the split chuck and face-plate, with spurs and the clamping-sleeve, with a pin fitted to be adjustably clamped in the split chuck, and having a head suitably recessed to inclose the spurs of the split face-plate, all serving to clamp and retain a dental disk, substantially as described.

335,781. **ELECTRO-DYNAMIC MOTOR.** FRANK J. SPRAGUE, New York, N. Y. Filed Sept. 26, 1885. (No model.)

Claim.—1. An electro-dynamic motor having a field-magnet whose main poles are formed by cores extending in opposite directions, having a set of shunt-coils wound evenly on all said cores, and a set of series coils, also wound evenly thereon, said sets being arranged to form polar lines at right angles to each other, substantially as set forth.

2. An electro-dynamic motor having a set of shunt field-coils, and a set of series field-coils arranged to form polar lines at right angles to each other, in combination with means for modifying the action of the series coils, substantially as set forth.

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3. An electro-dynamic motor having a field-magnet of the character described, and having shunt field-coils wound evenly on all the cores of said magnet, and series field-coils also evenly wound, such coils being normally differential to the shunt-coils in two diagonally-situated cores and normally cumulative thereto on the other two cores, substantially as set forth.

4. An electro-dynamic motor having shunt field-coils and series field-coils arranged to form polar lines at right angles to each other, and said series coils being part differential and part cumulative with relation to the shunt-coils, in combination with means for reversing the effect either of said cumulative or said differential series coils, substantially as set forth.

5. An electro-dynamic motor having shunt field-coils and series field-coils arranged to produce polar lines at right angles with each other, in combination with a circuit-reverser in the armature-circuit, substantially as set forth.

6. An electro-dynamic motor having series and shunt field-coils wound to maintain the non-sparking points on the commutator at a fixed position, in combination with means for reversing the armature-circuit, substantially as set forth.

7. An electro-dynamic motor having series and shunt field-coils arranged to produce polar lines at right angles with each other, in combination with means for regulating the armature-current, substantially as set forth.

8. An electro-dynamic motor having series and shunt field-coils arranged to produce polar lines at right angles with each other, in combination with means for regulating the magnetizing effect of the shunt field-coils, substantially as set forth.

9. An electro-dynamic motor having series and shunt field-coils arranged to produce polar lines at right angles with each other, in combination with an adjustable resistance and a circuit-reverser in the armature-circuit, substantially as set forth.

10. An electro-dynamic motor having series and shunt field-coils arranged to produce polar lines at right angles to each other, in combination with an adjustable resistance in the shunt field-circuit, substantially as set forth.

11. An electro-dynamic motor having series and shunt field-coils arranged to produce polar lines at right angles to each other, in combination with an adjustable resistance in the armature-circuit and an adjustable resistance in the shunt field-circuit, substantially as set forth.

12. An electro-dynamic motor having series and shunt field-coils arranged to produce polar lines at right angles to each other, in combination with an adjustable resistance and a circuit-reverser in the armature-circuit, and an adjustable resistance in the shunt field-circuit, substantially as set forth.

13. An electro-dynamic motor having series and shunt field-coils wound so that the series coils distort the poles set up by the shunt-coils, in combination with means for reversing the direction of distortion, substantially as set forth.

335,782. **BOX FOR RECEIVING AND HOLDING PAPERS.** ELIAL M. STAPLES, Springfield, Mass. Filed Dec. 8, 1883. (No model.)

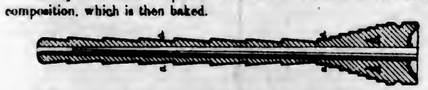
Claim.—A mail-box for papers, consisting of the shell or box *b*, having a closed upper end and an open lower end, and a holding-spring, *e*, having its lower end secured to the lower inner face of the shell and its free end arranged to project toward the opposite side of the shell, substantially as and for the purpose stated.

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335,783. **SPOOL AND BOBBIN.** LORENZO STONE, Providence, R. I. Filed May 11, 1885. (No model.)

Brief.—A wooden spool or bobbin is coated with an enameling composition, which is then baked.



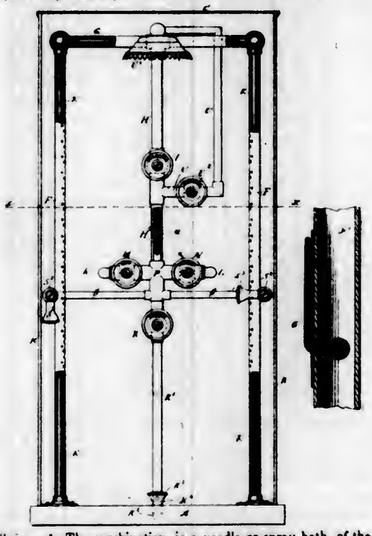
Claim.—A wooden spool or bobbin having a baked enameled surface, substantially as and for the purpose described.

335,784. **STOCKING-SUPPORTER.** JEWETT B. SWEETSER, Danvers Mass. Filed Oct. 31, 1885. (No model.)



Claim.—As an improved article of manufacture, a stocking-supporter comprising an elastic metallic plate or strip composed of a single piece, and constructed substantially as described, and having a clasp at one end to engage with the top of the stocking and another clasp at the other end adapted to be secured to the top of the shoe, substantially as described.

335,785. **NEEDLE OR SPRAY BATH.** GEORGE TAYLOR, Jersey City, N. J., assignor to the J. L. Mott Iron Works, New York, N. Y. Filed Aug. 17, 1885. (No model.)



Claim.—1. The combination, in a needle or spray bath, of the hot and cold water pipes K L, the coupling or branch pipe P, connecting the same, the hot and cold water cocks M N in the hot and cold water pipes, the mixing-column H' above the coupling P, the cock I and supply-pipe H, the vertical perforated columns E E F F and the pipes G, forming a top frame and connecting the columns to the supply-pipe H, substantially as specified.

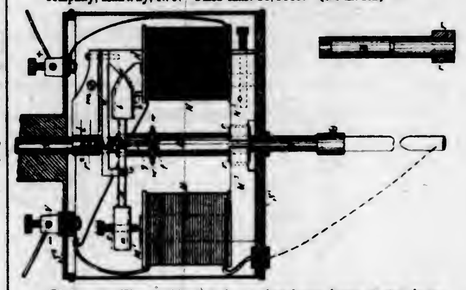
2. The combination, in a needle and spray bath, of the hot and cold water pipes K L, the coupling or branch pipe P, connecting the same, the hot and cold water cocks M N in the hot and cold water pipes, the mixing-column H' above the coupling P, and a thermometer, Q, upon the surface of the column H', its stem passing through the column with the bulb inside, the cock I and supply-pipe H, the vertical perforated columns E E F F, and the pipes G, forming a top frame and connecting the columns to the supply-pipe H, substantially as specified.

3. The combination, in a needle-spray bath, of the hot and cold water pipe K L, the coupling or branch pipe P, connecting the same, the hot and cold water cocks M N in the hot and cold water pipes, the mixing-column H' above the coupling P, the cock I and supply-pipe H, the vertical perforated columns E E F F, the pipes G, forming a top frame and connecting the columns to the supply-pipe H, and the lateral pipes S, connected to the coupling P and extending out horizontally, the plugs S', and the movable barrels S², and spray-roses S³, substantially as specified.

4. The combination, in a needle-spray bath, of the hot and cold water pipes K L, the coupling or branch pipe P, connecting the same, the hot and cold water cocks M N in the hot and cold water pipes, the mixing-column H' above the coupling P, the cock I and supply-pipe H, the vertical perforated columns E E F F, the pipes G, forming a top frame and connecting the columns to the supply-pipe H, and the cock R, descending pipe R', pipe R², and douche, substantially as specified.

5. The combination, in a needle or spray bath, of the hot and cold water pipes K L, the coupling or branch pipe P, connecting the same, the hot and cold water cocks M N in the hot and cold water pipes, the mixing-column H' above the coupling P, the cock I and supply-pipe H, the vertical perforated columns E E F F, the pipes G, forming a top frame and connecting the columns to the supply-pipe H, and the branch pipe U, extending upwardly from the mixing-column H', the cock U², and shower U', substantially as specified.

335,786. **ELECTRIC-ARC LAMP.** NIKOLA TESLA, Smiljan Lika, Austria-Hungary, assignor to the Tesla Electric Light and Manufacturing Company, Rahway, N. J. Filed Mar. 30, 1885. (No model.)



Claim.—1. The combination, in an electric-arc lamp, of the electro-magnets in the main and shunt circuits, respectively, an armature-lever and connection to the movable carbon-holder, the core of the shunt-magnet passing across the end of the armature-lever, substantially as set forth, so that the two magnets act in conjunction on the armature-lever in moving the carbon to form the arc and in opposition to each other beyond the normal position of the armature-lever, substantially as specified.

2. The combination, with the carbon-holders, of two magnets, one in the main circuit and the other in a shunt-circuit, and an armature-lever to draw the arc, and a feeding mechanism and pole-pieces upon the electro-magnets to act upon the feeding mechanism, substantially as specified.

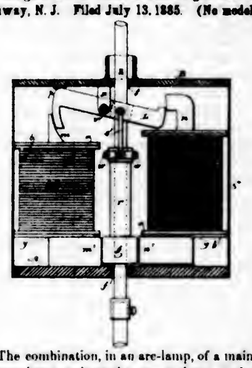
3. The combination, with the carbon-holders, of two magnets, one in the main circuit and the other in a shunt-circuit, and an armature-lever between two poles of such electro-magnets to draw the arc, and a feeding mechanism and pole-pieces upon the other two poles of the electro-magnets to act upon the feeding mechanism, substantially as specified.

4. The combination, with the carbon-holding rod in an electric-arc lamp, of the clamp R, lever *t*, spring r², armature-lever A, and electro-magnets M N in the main and shunt circuits, respectively, the pole-pieces M³ N³, and armature-segments *r*, substantially as set forth.

5. The combination, with the carbon-holder, of a tubular clamp surrounding the same, an armature-lever connected to said tubular clamp, and electro-magnets in the main and shunt circuits, respectively, and armature-segments upon the tubular clamp adjacent to the lateral poles of the electro-magnets, substantially as set forth.

6. In an electric-arc lamp, the combination, with the carbon-holding rod, of a clamp, two armatures upon the clamp, and electro-magnets in the main and shunt circuits, respectively, the poles of which act upon the armatures of the clamp for bringing the same into action or releasing it, substantially as set forth.

335,787. ELECTRIC-ARC LAMP. NIKOLA TESLA, Smiljan Lika, Austria-Hungary, assignor to the Tesla Electric Light and Manufacturing Company, Rahway, N. J. Filed July 13, 1885. (No model.)



Claim.—1. The combination, in an arc-lamp, of a main and a shunt magnet, an armature-lever to draw the arc, a clamp, and an armature to act upon the clamp, a clamping-pole and a releasing-pole upon the respective cores, the cores, poles, armature-lever, and clamping-armature forming a compound electro-magnet, substantially as set forth.

2. The combination, in an electric-arc lamp, of a carbon-holder and its rod, a clamp for such carbon-holder, a clamping-armature connected to the clamp, a compound electro-magnet controlling the action of the clamping-armature, and electric-circuit connections, substantially as set forth, for lessening the magnetism of the compound magnet when the arc between the carbons lengthens and augmenting the magnetism of the same when the arc is shortened, substantially as described.

3. The combination, with the carbon-holders in an electric lamp, of a clamp around the rod of the upper-carbon holder, the clamping-armature connected with said clamp, the armature-lever and connection from the same to the clamp, the main and shunt magnets, and the respective poles of the same to act upon the clamping-armature and armature-lever, respectively, substantially as set forth.

4. In an electric-arc lamp, a cut-out consisting of a main magnet, an armature, and a shunt-magnet having an insulated pole-piece, and the cut-out circuit-connections through the pole-piece and armature, substantially as set forth.

5. In an electric-arc lamp, the combination, with the carbon-holder and magnets, of the armatures L and *g*, link *e'*, clamp *r*, and lever *t*, and the spring *s'*, for the purpose set forth.

6. In an electric-arc lamp, the combination, with two upright magnets in the main and shunt circuits, respectively, having curved pole-pieces on one end and converging pole-pieces on the other end, of a flat Z-shaped armature-lever between the curved pole-pieces and a clamping-armature between the convergent pole-pieces, substantially as described.

7. The combination, in an electric-arc lamp, of an electro-magnet in the main circuit and an electro-magnet in the shunt-circuit, an armature under the influence of the poles of the respective magnets, and circuit-connections controlled by such armature to cut out or shunt the lamp, substantially as specified, whereby the branch circuit is closed by the magnetism of the shunt-magnet, and then kept closed by induced magnetism from the main magnet, substantially as set forth.

8. The combination, with the carbon-holder and rod and the main and shunt magnets, of a feeding-clamp, an armature for the same, clamping and releasing poles upon the cores of the respective magnets, and circuit-connections through the clamping-armature, substantially as specified, for shunting the current when the electric arc between the carbons becomes abnormally long, substantially as set forth.

9. The combination, with the carbon-holding rod and a clamp for the same, of an armature upon the clamp, a shunt-magnet the pole of which acts to release the clamp, and a main magnet with a two-part helix, one portion being in the main circuit and the other portion in a shunt or cut-out circuit, the clamping-armature acting to close said cut-out circuit when the arc becomes too long and to break the shunt-circuit when the carbons come together, substantially as set forth.

335,788. HOLDER FOR SHADES AND REFLECTORS. ADDISON F. VESTAL and CHARLES A. VESTAL, Savoy, Tex. Filed July 3, 1885. (No model.)

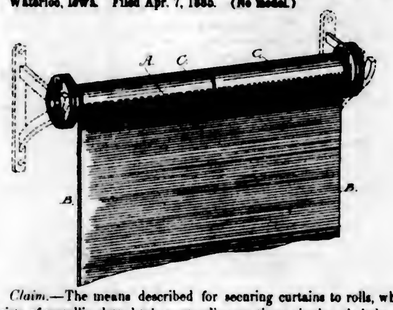
Claim.—The combination, with a lamp-burner and its reflector, of

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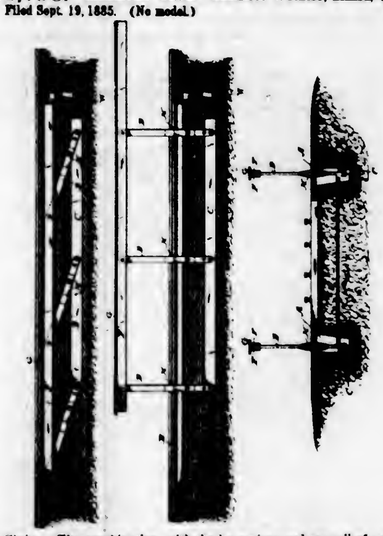
a collar, F, having the female threads *f*, the radial arms E, correspondingly threaded at the inner end, and having eyes at the outer end, and the spring-wire or cut ring *d*, carrying the reflector on one end, as and for the purpose specified.

335,789. CURTAIN-FIXTURE. JOHN E. WYANT and ELI M. WYANT, Waterloo, Iowa. Filed Apr. 7, 1885. (No model.)



Claim.—The means described for securing curtains to rolls, which consists of metallic slotted tubes extending continuously the whole length of the rod, and adapted to engage the roll and secure the curtain independent of other fastening devices, substantially as herein described.

335,790. RAILROAD-GATE. ARCALOUS WYCKOFF, Elmira, N. Y. Filed Sept. 19, 1885. (No model.)



Claim.—The combination, with the base-piece and top rail of a gate arranged to operate in a trench, of the standards connecting the base-piece and rail, and provided with filling-pieces to bear against the edges of the trench, substantially as described.

335,791. TELEPHONE-TRANSMITTER. HENRY ALABASTER and TOM E. GATEHOUSE, London, England. Filed May 14, 1885. (No model.) Patented in England Jan. 11, 1883, No. 179, and in France July 10, 1883, No. 156,510.

Claim.—In a telephone-transmitter, the combination of the follow-

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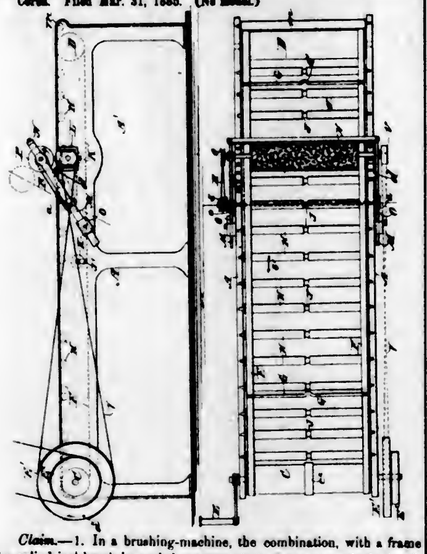
ing elements: the two carbon electrodes B and C, buried in the insulating substance A, the carbon bridge D, resting upon both electrodes, the surfaces of contact between the electrodes and bridge being plane and smooth to the point of polish, and the ring F, secured to A, and surrounding the bridge D, substantially as described.

335,792. ORNAMENTAL FABRIC. LOUIS BAER and DAVID KRAMER, New York, N. Y. Filed Aug. 27, 1885. (Specimen.)



Claim.—An improved article of manufacture consisting of wall-paper having a design the surface of which is entirely coated with crystal beads or glass beads, substantially as and for the purpose herein described.

335,793. BRUSHING-MACHINE. VLADIMIR S. BENOFSKY, Jonchuar, Corea. Filed Mar. 31, 1885. (No model.)



Claim.—1. In a brushing-machine, the combination, with a frame of a cylindrical brush journaled transversely in the same, and of a brush journaled in a swinging frame pivoted on the main frame, substantially as herein shown and described.

2. In a brushing-machine, the combination, with a frame, of revolving brushes, endless belts united by cross-rods, and intermediate rollers, each provided with an annular groove in the middle, substantially as herein shown and described.

3. In a brushing-machine, the combination, with a frame, of revolving brushes, endless belts united by rods having bends or crooks at the middle, and intermediate rollers, each having an annular groove at or near the middle, substantially as herein shown and described.

4. In a brushing-machine, the combination, with the frame A', of the revolving brush L, the pivoted levers M, the revolving brush P, the weights O, and a belt for driving the brush P from the brush L, substantially as herein shown and described.
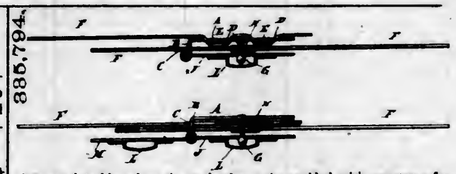
5. In a brushing-machine, the combination, with the frame A', of the drums C D, the belts F, the brushes L P, the levers M, the weights O, the pulley T on the shaft of the brush L, the pulleys S, and the pulley Q on the shaft of the brush P, substantially as herein shown and described.

6. In a brushing-machine, the combination, with the belt F, having cross-rods G, provided with crooks G', of a clothes-holder provided with a hook, *l*, substantially as shown and described.

335,794. BUCKLE. SAMUEL BENTEFIELD, New York, N. Y. Filed Nov. 14, 1885. (No model.)

Claim.—1. In a belt fastening or buckle, the combination, with a plate having a projection, of headed studs projecting from said plate, a

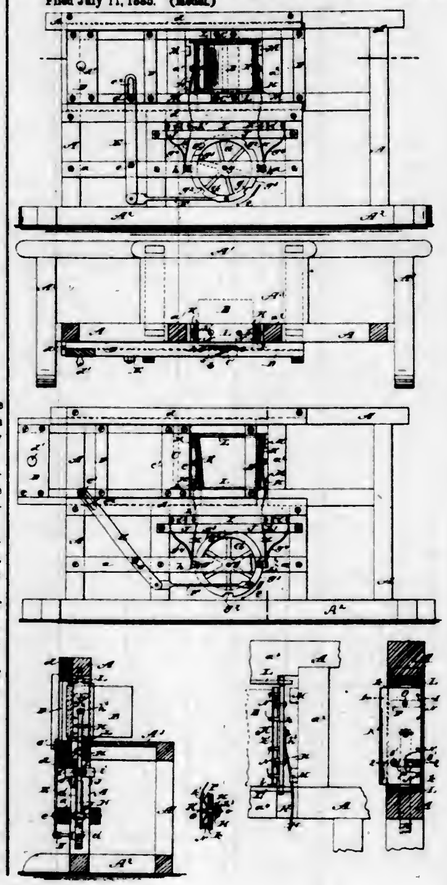
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clasp or plate hinged on the projection and provided with apertures for receiving the headed studs, and a hollow relief-plate on the outer surface of the hinged plate, the cavity formed by the said relief-plate serving to receive the heads on the studs on the plate provided with the projection, said studs serving to hold the end of the belt by being passed through apertures in the same, and also serving to hold the clasp or hinged plate over the belt as the heads of the studs pass through the apertures in the said hinged plate or clasp, substantially as herein shown and described.

2. The combination, with a plate provided with a projection, and also with a series of slots forming bars, through which slots one end of the belt can be passed, of the headed studs on one end of said bars, a plate or clasp hinged on the projection of the above-mentioned plate and provided with apertures through which the heads of the studs can be passed, and a hollow relief-plate on the face of the hinged plate for the purpose of receiving the heads of the studs passed through the apertures in the clasp, the said studs serving to hold that end of the belt opposite the one passed through the slots in the plate by passing the headed studs through apertures in the said end of the belt, the headed studs also serving to lock the clasp over the belt by being passed through the apertures of said clasp, substantially as herein shown and described.

335,795. RIVING-MACHINE. GEORGE E. COOKE, Clarksville, Tenn. Filed July 11, 1885. (Model.)



Claim.—1. A riving-machine comprising a frame, a riving-knife, bolt-holding clamp-heads connected to the one ends of arms pivoted in the frame, a notched wheel adapted to be oscillated in the frame, and on which wheel the other ends of the pivoted arms act so as to fall into and be lifted from the notches as the clamps open and close, and springs pressing the arms to the notched periphery of said wheel, substantially as herein set forth.

2. A riving-machine comprising a frame, a riving-knife, bolt-holding clamp-heads connected to the one ends of arms pivoted to a bar or frame adapted to slide in the main frame to allow bodily movement of the clamp-heads by the action of the riving-knife on the bolt, a notched wheel adapted to be oscillated in the frame, and on which wheel the other ends of the pivoted arms act so as to fall into and be lifted from the notches as the clamps open and close, and springs pressing the arms to the notched periphery of said wheel, substantially as herein set forth.

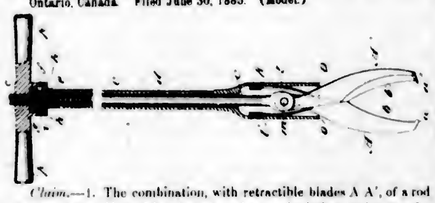
3. The combination, in a riving-machine, of a supporting-frame, a reciprocating sash, D, riving-knife C, lever E, rod F, notched wheel G, opposite arms H H, bearing on wheel G, springs g^4, and clamp-heads attached to arms H H and adapted to hold the bolt to be rived, substantially as herein set forth.

4. The combination, in a riving-machine, of a supporting-frame, a reciprocating sash, D, riving-knife C, lever E, rod F, notched wheel G, opposite arms H H, bearing on wheel G, and pivoted to a bar or frame, I, adapted to slide in the main frame, springs g^4, and clamp-heads attached to the arms H H and adapted to hold the bolt to be rived, substantially as herein set forth.

5. In a riving-machine, the combination, with a reciprocating sash carrying a riving-knife, and mechanism, substantially as described, for operating said sash, of the clamp-heads K, made with a main plate, *k*, guided in the frame and provided with pins N, a face-plate, *k'*, held to plate *k*, so as to be movable to and from said plate, and springs interposed between the plates *k k'*, substantially as herein set forth.

6. In a riving-machine, the combination of a supporting-frame, a reciprocating sash, D, riving-knife C, lever E, rod F, notched wheel G, opposite arms H H, bearing on the wheel G, and pivoted to a bar or frame, I, adapted to slide in the main frame, springs g^4, and clamp-heads attached to arms H H and consisting of main plates *k*, having pins N, face-plates *k'*, and springs interposed between the plates, substantially as herein set forth.

335,796. PARTURITION-SHEARS. ALEXANDER CULLON, Lindsay, Ontario, Canada. Filed June 30, 1885. (Model.)



Claim.—1. The combination, with retractible blades A A', of a rod, *c*, a tube, *d*, provided with a box, *k*, and a manipulating device, consisting of a nut, *g*, formed with a flange, *h*, carrying a pin, *i*, arranged to ride in a groove, *f*, substantially as described.

2. The combination, with retractible blades A A', a rod, *c*, a tube, *d*, provided with a box, *k*, and a manipulating device, of a pair of springs, *l l'*, substantially as described.

3. The combination, with the retractible blades A A', formed with the knobs *a a'*, of a tube, *d*, formed with a box, *k*, a manipulating device, and a pair of springs, *l l'*, substantially as described.

335,797. FISHING ROD AND REEL. ABRAM H. DAILEY, Brooklyn, N. Y. Filed Dec. 26, 1884. (No model.)

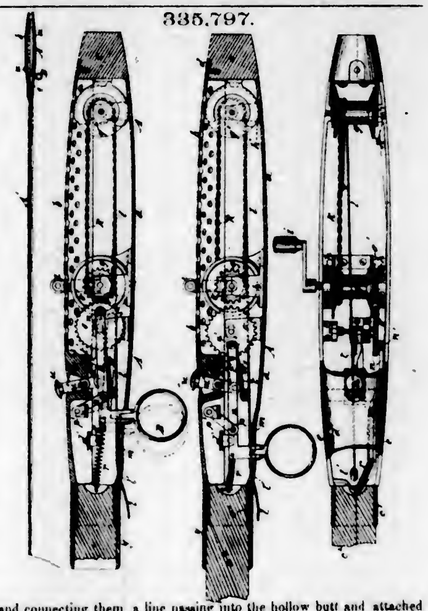
Claim.—1. The combination, with a rotary fish-line reel, of a digital reciprocating device adapted to be manipulated by the thumb or finger without removing the grasp of the hand on the pole, with a suitable mechanical connection between the digital reciprocating device and the reel for converting the reciprocating motion of one into rotary motion of the other, substantially as herein set forth.

2. The combination, with a fishing-rod having a hollow section or butt with a reel inclosed in said section, of a mechanical movement or mechanism connected with said reel for changing reciprocating into rotary motion, and a digital reciprocating device connected with said mechanism and protruding on the exterior of the pole, whereby the reel may be operated within the pole by the movement of the finger or thumb of the hand which grasps the pole.

3. A reel made of two distinct drums or bobbins connected by an endless chain or band to which the end of the line may be attached, whereby the line will become wound about both bobbins in the manner of a skein when the bobbins are revolved, substantially as set forth.

4. The combination, with a fishing-rod having a hollow section or butt with two reel bobbins arranged in said butt, of an endless chain or

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band connecting them, a line passing into the hollow butt and attached at one end to the chain, and means for revolving said bobbins and thus winding the line skein-like about the bobbins within the said hollow butt, substantially as herein set forth.

5. The combination, with the rotary reel and its driving-pinion *o'*, of the multiplying-wheel *o*, having a play to and from the pinion, with the reciprocating bar *t* and stop-lever *u*, and a spring-catch for holding said lever and bar in either of two positions, substantially as shown and described.

6. In combination with a fish-line reel, mechanism for revolving the same, consisting of a crank, such as *n'*, operatively connected with said reel, a reciprocating bar, *n*, connected to said crank, link *p*, jointed to said bar, and a spring, *r*, arranged to produce return motion of the parts, with a manipulating device, B, attached to said bar for operating the same by digital reciprocation, substantially as shown and described.

7. The combination, with a fish-line reel and multiplying-gearing actuating the same, of the bar *t*, arranged to throw said mechanism into or out of gear, the stop-lever *u*, connected with said bar, with the spring *w* and locking-tooth *t'*, and notches 3 4, arranged and operating substantially as set forth.

335,798. FISH-LINE REEL. ABRAM H. DAILEY, Brooklyn, N. Y. Filed Feb. 20, 1885. (No model.)

Claim.—1. The combination, with a reel and the ratchet *g*, of the oppositely-yielding rack-bars *h h*, engaging the ratchet, and the reciprocating frame *k k*, on which said racks are mounted, substantially as and for the purpose set forth.

2. The combination, with a reel and the ratchet *g*, of the rack-bars *h h*, engaging the ratchet on opposite sides, a reciprocating frame carrying said rack-bars, and a spreading device connected with said bars for spreading and disconnecting said bars from engagement with said ratchet, substantially as and for the purpose set forth.

3. The combination, with the hollow section of a fish-pole, of a reel inclosed therein, a ratchet, *g*, on said reel, two racks, *h h*, engaging said ratchet, a reciprocating frame, *k*, carrying said racks, with a digital reciprocating device on the exterior of the pole connected with said reciprocating frame, and a spring to produce the return motion of the frame, substantially as herein set forth.

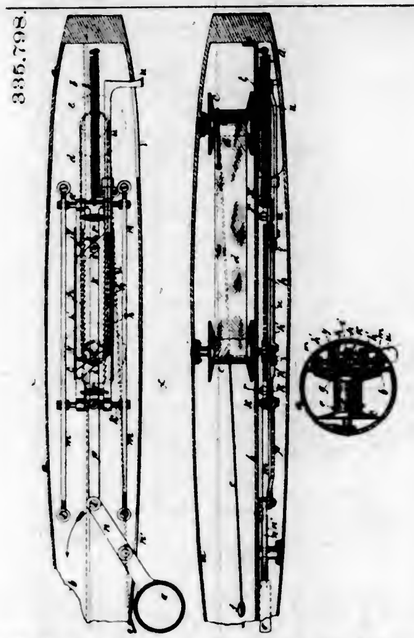
4. The combination, with the reel *c* and ratchet *g*, of the reciprocating frame *k*, racks *h h*, and springs *r r*, arranged and operating substantially as and for the purpose set forth.

5. The combination, with a reel, of the ratchet *g*, racks *h h*, frame *k*, spring *t*, finger-lever *n*, and connection *p*.

6. The combination, with the reel *c* and the ratchet *g*, of the sliding frame *k*, with the racks *h h* and springs *r r*, and the spring *t*, with the lever *n*, connected to the frame *k*.

7. The combination, with a fish-pole having a hollow section, and a reel inclosed therein having a ratchet, *g*, with a sliding frame carrying rack-bars *h h*, engaging said ratchets, with a spreading device for spreading said rack-bars, and a manipulating stop connected with said

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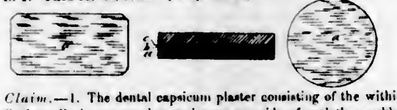
spreading device and projecting on the exterior of said hollow section, substantially as herein set forth.

8. The combination, with the reel and its ratchet *g*, of the sliding rack-bars *h h*, toggle-links *i i*, and sliding stop-bar *u w*, substantially as shown and described.

9. The combination, with the reel *c* and ratchet *g*, and the guides *m* and frame *k*, of the racks *h h* and springs *r r*, arranged and operating substantially as and for the purpose set forth.

10. The combination, with the reel *c* and ratchet *g*, of the sliding frame *k*, a manipulating device for advancing the same, and spring *t* for returning it, with the racks *h h* and springs *r r*, links *i i*, and bar *u*, arranged and operating substantially as and for the purpose set forth.

335,799. DENTAL CAPSICUM PLASTER. FRANK B. DARBY, Elmira, N. Y. Filed Oct. 26, 1885. (No specimens.)



Claim.—1. The dental capsicum plaster consisting of the within-described medical compound spread upon one side of a cloth, a rubber or gum tissue or disk upon the opposite side of said cloth, and felt or other analogous material upon the aforesaid tissue or disk, substantially as described.

2. A dental capsicum plaster having a cushioned back and an elastic impervious disk interposed between the plaster proper and its aforesaid cushioned back, substantially as set forth.

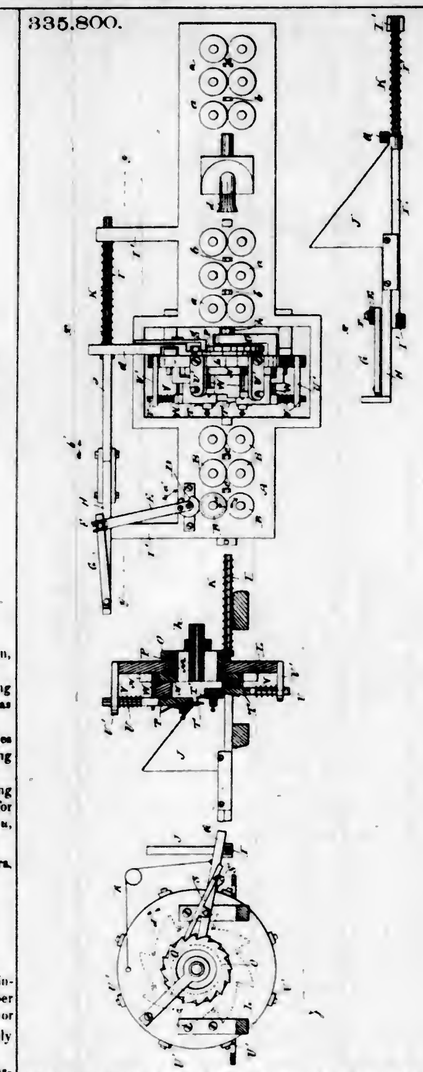
335,800. MACHINE FOR SCRAPING RATTAN. JAMES M. DEVANT, Hoboken, N. J. Filed Nov. 24, 1885. (No model.)

Claim.—1. In a rattan-scraper, the combination, with a table having feed rollers or pulleys and a frame provided with radially-movable knife-holders, of a cam-piece operated by one of the feed-rollers, and a lever for moving the knife-holders from each other, on which lever the cam-piece acts, substantially as herein shown and described.

2. In a rattan-scraper, the combination, with a table having feed rollers or pulleys and a frame provided with radially-movable knife-holders, of a sliding bar operated from one of the feed rollers or pulleys, a cam-piece on said sliding bar, and a rocking lever for moving the knife-holders, on which lever the cam-piece acts, substantially as herein shown and described.

3. In a rattan-scraper, the combination, with a table having feed rollers or pulleys and a frame provided with radially-movable knife-holders, of a sliding bar operated by one of the feed rollers or pulleys, a cam-piece on said sliding bar, a spring acting on the sliding bar, a rocking lever on the frame carrying the blade-holders, a pawl on said lever, and a ratchet-wheel on the frame and connected with a wheel for moving the blade-holders from each other, substantially as herein shown and described.

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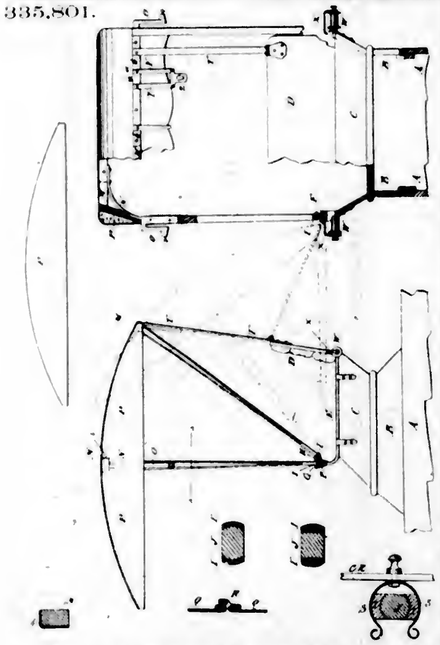


4. In rattan-scraper, the combination, with a table, of the feed rollers or pulleys B, the wheel or disk D, engaging with one of them, the bar E on said disk D, the connecting-bar G, connected with the end of the bar E, the sliding bar I, connected with the bar G, the cam-piece J on said sliding bar, the spiral spring K, acting on the bar I, the rocking lever Q, and a device for separating radially-movable knives, which device is operated by the rocking lever Q, substantially as herein shown and described.

5. In a rattan-scraper, the combination, with a table, feed-rollers on the same, and the frame L, of the radially-moving knife-holders T, the pins W on the same, the sleeve M in the frame L, the cam-wheel N and the ratchet-wheel O on the ends of said sleeve, the pins W of the knife-holders resting on the edge of the cam-wheel, the rocking lever Q, the cam-lever S on the same, the sliding bar I, operated from one of the feed rollers or pulleys, and the cam-piece J on said sliding bar, the said cam-piece acting on the rocking lever Q, substantially as herein shown and described.

335,801. CARRIAGE-TOP. RASSELAS E. EARL, Dunkirk, N. Y. Filed Apr. 2, 1885. (No model.)

335,801.



Claim.—1. In a carriage-top, a bow-arm eye made substantially as herein shown and described, and consisting of a bar bent to form the eye, and having arms of equal or unequal length, as set forth.

2. In a carriage-top, the bow-arms made substantially as herein shown and described, and consisting of the bar I, bent to form the eye, the tapered wooden bar J, interposed between the arms of the eye-bar, and the wire ferrule K, whereby a strong and light bow-arm is produced, as set forth.

3. In a carriage-top, the combination, with the arm and the top or middle part of a bow, of the brace N and the drop-prop O, made in one piece, with a space between their lower parts, as set forth.

4. In a carriage-top, the combination, with the arm and the top part of a bow and the brace N, of the side plate, P, having straight lower edge and a curved upper edge, substantially as herein shown and described, whereby form is given to the top cover and a support is provided for the side stuffing, as set forth.

5. In a carriage-top, the combination, with a curtain, of the clasp S, secured to the curtain upon the inside and adapted to embrace the top-support, substantially as herein shown and described, whereby the said curtain can be readily connected with its support, as set forth.

6. In a carriage-top, the combination, with the lazy-back D and the top frame of the carriage-top, of the spring or elastic hinged support T, substantially as herein shown and described, whereby the bow-arms, when the top is turned down, are supported out of contact with the back prop, as set forth.

7. In a carriage-top, the combination, with the rear end of the top frame, of the steel strap Y, having loop Z and the knob *a*, substantially as herein shown and described, whereby the said strap, when released, will be held out of contact with the back curtain, as set forth.

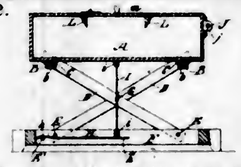
8. In a carriage-top, the combination, with the solid filling and the edges of the bow-arm cover Q, of the metal coupling R, placed between the cover and the solid filling, substantially as herein shown and described, and formed in two pieces of metal, as shown in Fig. 11, whereby the said edges are securely and neatly connected, as set forth.

9. In a carriage-top, the combination, with the top or middle parts, M, of the bows, of stiffening-plates *b*, bent at right angles in cross-section, substantially as herein shown and described, whereby the said bows will be held in shape and strengthened, as set forth.

335,802. CHURN. ALMER FARLEY, Coomer, N. Y. Filed June 11, 1884. (No model.)

Claim.—1. The combination, with rock-bars pivoted at their lower ends to a base and having their upper ends connected by rods, of a box provided with transverse cleats on its bottom, near the ends thereof, for engaging the rods of the rock-bars, to hold the box on the said rock-bars, substantially as described.

335,802.



2. In a churn, the combination, with a suitable base and cross-bars pivoted thereto and having their upper ends connected by rods, of a churn-body provided with cleats on its bottom having grooves in their inner upper edges, substantially as herein shown and described.

3. In a churn, the combination, with a base, cross-bars pivoted thereto and having their upper ends connected by rods, and a churn-body provided with grooved cleats on its bottom, of a spring connected to the said base and churn-body, substantially as herein shown and described.

4. In a churn, the combination, with a base, cross-bars pivoted to said base and having their upper ends connected by rods, and a churn-body having grooved cleats on its bottom, of a spring secured to the base, and a connecting-rod secured to the free end of the spring and to the churn-body, substantially as herein shown and described

335,803. BUTTON. BENJAMIN S. FREEMAN, Jr., Attleborough Falls, Mass. Filed Aug. 18, 1885. (No model.)



Claim.—1. In a button, the combination of the laterally-sliding shoe, the rack and pinion for operating the same, the guide for the shoe, the post, the rotary head, and the shaft, substantially as described.

2. In a button, the combination of the laterally-sliding shoe, the rack and pinion for operating the same, the guide for the shoe, the hollow post, the shaft extending through the same, and means for rotating the said shaft, substantially as described.

335,804. RAILWAY-TIE AND MEANS FOR SECURING GUARDS AND RAILS TO THE SAME. EDWIN P. J. FREEMAN, Roslyn, N. Y. Filed Nov. 18, 1885. (No model.)



Claim.—1. The combination, with a railway-tie and a rail, of a spike passed vertically into said tie, and a set-screw inserted in said tie at right angles to said spike, and bearing against the side thereof, substantially as and for the purpose specified.

2. The combination, with a railway-tie, a rail, and a block within said tie beneath the rail, of a spike or bolt passing through said tie and block, and a set-screw passed into said tie and block at substantially right angles to said spike, and bearing against the side thereof, substantially as and for the purpose specified.

3. The combination, with the tie having openings *b b*, a guard having brace-arm provided with projections adapted to engage said holes, and a central aperture, *c*, and flange, as shown, of a rail resting on said flange, and a bolt or spike passed into said tie, with its head projecting through the aperture in the guard, and bearing against its flange and that of the rail, substantially as described.

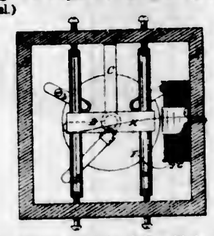
335,805. RAILWAY-TIE AND RAIL-FASTENING. EDWIN P. J. FREEMAN, Roslyn, N. Y. Filed Nov. 18, 1885. (No model.)



Claim.—1. The combination, with a hollow metallic tie, a rail, and a block within said tie beneath the rail, and provided with inclined openings, of a bifurcated spike, the forks of which engage said openings, thus securing said rail, block, and tie rigidly together, as set forth.

2. The combination, with a hollow metallic tie having hole *a* and holes *b'*, a rail, and a block within said tie beneath the rail and provided with inclined openings, as shown, of a bifurcated spike passed through said hole *a*, with its head bearing against the flange of said rail, and its branches passing through the openings in the block and into the holes *b'* of the tie, substantially as and for the purposes set forth.

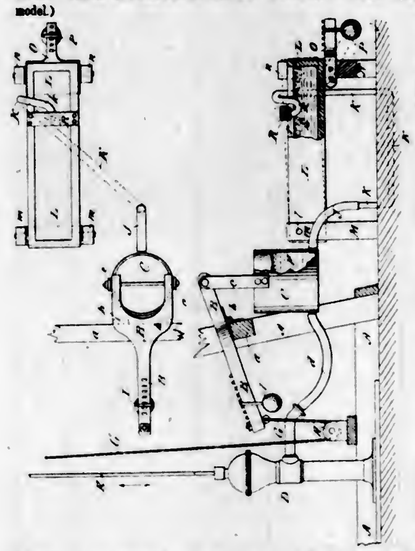
335,806. TELEPHONE-TRANSMITTER. WARREN P. FREEMAN, New York, N. Y., assignor to Benjamin S. Clark, same place. Filed Feb. 29, 1884. (No model.)



Claim.—1. The elastic strap or band D, with its opposite ends attached to and wound around the friction-rollers D' D^2, and its central part between the said rollers drawn under and resting against the metallic base of the central carbon electrode of a telephone-transmitter, in combination with said central electrode, so as to adjust the said electrode to more or less proximity to the telephone-diaphragm by tightening or loosening the said band between the said rollers by turning one or both of them.

2. In a telephone-transmitter, a flexible metallic spring, C, having one of its ends fixed to the telephone-case, and the other attached to and supporting a central electrode, b^3, in combination with a transverse elastic strap or band, D, and means whereby it may be adjusted to more or less tension, so as to delicately adjust the position of the central electrode.

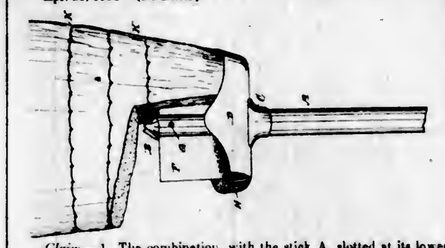
335,807. AUTOMATIC WATER-SERVICE SYSTEM FOR WIND MILLS. CALVIN G. FREEMOUR, La Gro, Ind. Filed Nov. 27, 1885. (No model.)



Claim.—1. An automatic water-service system for windmills, comprising a pump adapted to be operated by the wind-wheel, a tank, C, hung to a lever, as at B, and receiving the water from the pump, a cord, as at U, connected to the lever and adapted to stop the wind-wheel when the tank falls, a pivoted trough, L, a lever, as at O, supporting the free end of said trough, a cross-piece or valve, as at R, on the trough, and a pipe, K, connecting the tank C and trough L, and adapted to be closed by the valve R as the trough falls, substantially as herein set forth.

2. In an automatic water-service system for windmills, the combination, with a water-supply tank, of a trough, as at L, pivoted at one end, a lever, as at O, supporting the other end of the trough, a pipe, as at K, connecting said trough with the supply-tank, and a cross-piece or valve, R, fixed to the trough and adapted to close the end of the pipe to cut off the water-supply to the trough when the trough falls by the weight of water filled into it, substantially as herein set forth.

335,808. BROOM. RICHARD D. GALLAGHER, Plattsmouth, Nebr. Filed Apr. 21, 1884. (No model.)

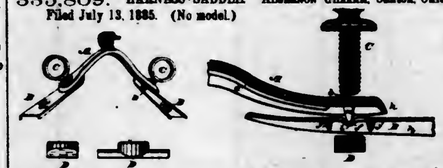


Claim.—1. The combination, with the stick A, slotted at its lower end and provided with a shoulder, *a*, of the collar C, resting against said shoulder, elongated cup D, resting against said collar, a wire passed through the stick adjacent to the under face of the cup, the plate F, passed through the slotted end of the stick, and a nail, G, passed through the stick and plate, substantially as set forth.

2. In a broom, the combination, with the stick A, reduced at its lower end to form a shoulder, *a*, of the collar C, resting against said shoulder and recessed on its lower face, and the independent elongated cup D, having a rounded top fitting into the said recess of the collar, substantially as set forth.

3. In a broom, the combination, with the stick slotted at its lower end, of the elongated cup D, the plate F, secured in the slotted end of the stick, and the wire H, passed through the stick within the cup and having its ends bent, for the purpose set forth.

335,809. HARNESS-SADDLE. ALGERNON GILLIAM, Canton, Ohio. Filed July 13, 1885. (No model.)



Claim.—1. The combination, with the yoke having the depending projections, and the jockey-plates having depressions in which the free ends of projections on the yoke rest, of screws and nuts for adjustably securing the jockey-plates to the yoke, substantially as set forth.

2. The combination, with the yoke having depending projections, and the jockey-plates having depressions on their upper faces and projections on their lower faces corresponding to the projections on the yoke, of the nuts having side wings, and the terrets for locking the jockey-plates to the yoke.

3. The combination, with the yoke, having projections *a* and openings *b*, and the jockey-plates each having the depressions *f* and projections *i*, of the nuts having side wings, and the terrets C, all of the above parts combined substantially as set forth.

335,810. HAND-TRUCK. JOHN GRAVES, Green Point, and JULES R. DREYFUS, New York, N. Y.; said Graves assignor to said Dreyfus. Filed Oct. 20, 1885. (No model.)



Claim.—1. A truck made of sheet metal, iron, or steel, in channel form, said channels provided with one or more corrugations in direction of their length, substantially as described, as and for the purpose intended.

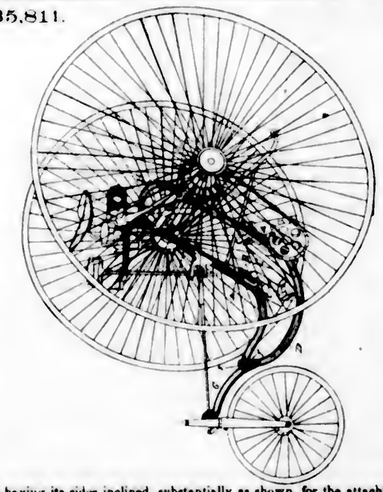
2. A truck having a forward nose, E, provided with side bars *f*, extending at about right angles from the end *e*, said bars *f* being bent downwardly to form hanger-bars *g*, braces *i*, and wheel-axle bearing A, substantially as described.

3. In a metallic truck having its frame made of channeled form, said channels corrugated or ribbed in direction of their length, in combination with cross-bars G, and braces also ribbed or corrugated in direction of their length, substantially as described.

335,811. LOOP-FRAME FOR TRICYCLES. CHARLES F. HADLEY, Chicopee, Mass., assignor to the Overman Wheel Company, same place. Filed Nov. 28, 1884. (No model.)

Claim.—1. A loop-frame for tricycles, constructed on elevated lines

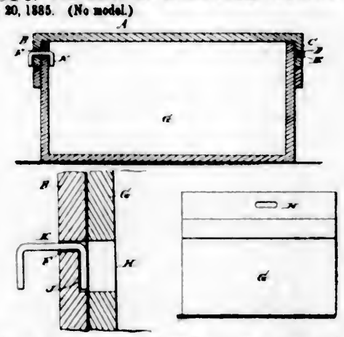
335,811.



and having its sides inclined, substantially as shown, for the attachment of the crank of the vehicle to their under faces and in position to locate it well toward or under the seat of the vehicle, and its loop shaped substantially as shown and carried below the bearings of the crank and upturned at its forward end to the elevation required for the foot-rest, substantially as set forth.

2. A loop-frame for tricycles, constructed on elevated lines and having its sides inclined, substantially as shown, for the attachment of the crank of the vehicle to their under faces and in position to locate it well toward or under the seat of the vehicle, and its loop shaped substantially as shown and carried below the bearings of the crank, and upturned at its forward end, and having a short reach and provided with a foot-rest consisting of a rod attached directly to the upturned end of the loop, substantially as set forth.

335,812. BOX-FASTENER. EDWARD HARRIS, Cambria, Wis. Filed May 30, 1885. (No model.)



Claim.—1. The combination, with the box G, having a slot, H, in one end piece, of the cover A, having an end piece, B, provided with the aperture F, groove or recess J, and the U-shaped key K, held in the said end piece B, substantially as herein shown and described.

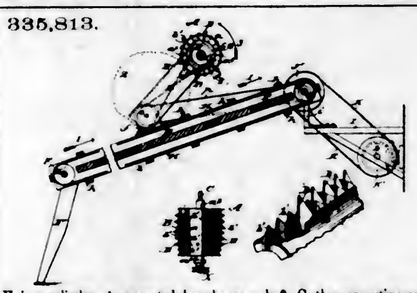
2. The combination, with the box G, having the slot H in one end piece and the pin K on the other, of the cover A, having an aperture, D, in its end piece C, and an aperture, F, and groove or recess J in its end piece B, and the U-shaped key K, held in the end piece B, substantially as herein shown and described.

335,813. BAND-CUTTER. JOHN HENRY, Ardoch, Dak., assignor to himself, William T. Sheppard and James E. Bellamy, all of same place. Filed Sept. 30, 1885. (No model.)

Claim.—1. The combination, in a band-cutter, of the frame, arms pivoted thereto, a carrier for the grain bundles, a cylinder journaled above and across the carrier in said arms, knives supported in the cylinder and operating transversely of the carrier, and a cam revolving inside the knife-cylinder and engaging the knives to operate them, substantially as herein set forth.

2. The combination, in a band-cutter, of the carrier-frame, a carrier,

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H A, a cylinder, A, mounted loosely on a shaft, C, the supporting-arms E E', shafts *e e'*, knives B, fitted in cylinder A, and having studs *b*, a cam, D *d*, fixed to shaft C and engaging knife-studs *b*, pulleys and belt U V *u*, driving the cylinder, pulleys and belt W X *x*, driving the cam-shaft, pulleys and belts S T *p r*, the carrier-shaft J, and driving-gearing operating said shaft, substantially as herein set forth.

3. The combination, with the carrier-frame, carrier F H A, and the cylinder A, carrying knives B, and arms E E', pivoted to the carrier-frame, substantially as specified, of the feet Y on the arms, substantially as herein set forth.

4. In a band-cutter, the knife-cylinder A, constructed with heads *a'*, staves *a*, having outwardly turned and notched edge flanges *b'*, and secured to heads *a'*, and the knives B, fitted between the staves, substantially as herein set forth.

5. In a band-cutter, the knife-cylinder A, constructed with staves *a*, having notched edge flanges *b'*, heads *a'*, sleeves a^2, shaft C, knives B, projecting between the edges of the staves, and the cam D *d* on shaft C, substantially as herein set forth.

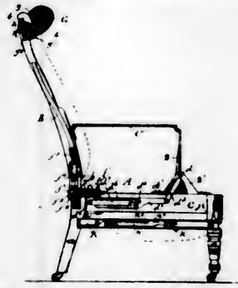
335,814. ENGRAVED PLATE. JOHN R. HILL, Washington, D. C. Filed Nov. 26, 1884. (No model.)



Claim.—1. An engraved plate for printing purposes, having a coating of zinc exterior of the printing-lines, for the purposes set forth.

2. An engraved plate for printing purposes, having a zinc coating exterior of the printing-lines, and said printing-lines filled with a material having an affinity for printing-ink, substantially as described.

335,815. RECLINING-CHAIR. JOHN HOGAN, St. Louis, Mo. Filed Sept. 19, 1885. (No model.)



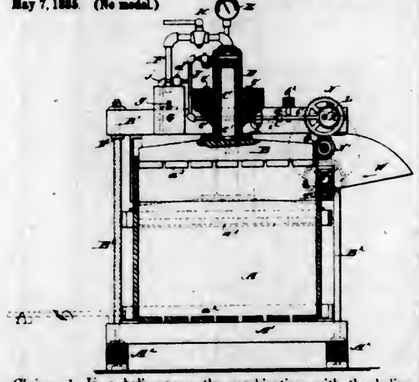
Claim.—1. In a reclining-chair, the combination, with a chair-back, B, arms C', and brackets D, pivoted or journaled in boxes D', of the boxes D', top of the chair-seat frame having brace sides and flanges *d'*, arms d^3, extending at an angle to the brackets D, down from the hubs d^2, sliding ratchets d^5, provided with the slot d^6, pin d^4, gravitating pawl d^7 on the rod d^8, and knobs d^9, substantially as herein shown, and described, and for the purpose set forth.

2. The combination, with a chair-back and rear of a chair-seat frame, of a righting-spring, constructed substantially of the coil-spring F, washer *f*, nut *f''*, bolt f^2, bracket f^3, and long and short armed lever f^4 f^5, and operating as shown and described, and for the purpose set forth.

3. In a reclining-chair, the combination, with the brackets D, of the stationary triangular boxes D', secured to the top of the seat-frame, which serve as journals for the brackets, for the purpose of raising said fulcrums high above the seat, whereby a short bracket is required for a high arm, substantially as and for the purpose set forth.

4. In a reclining-chair, the combination, with the bracket D, having wood casing *e*, beveled off at e^2, of a box, D', having wood casings e^3, substantially as and for the purpose set forth.

335,816. PRESS. JULIUS H. HOLMBERG, San Antonio, Tex. Filed May 7, 1885. (No model.)



Claim.—1. In a baling-press, the combination, with the baling-chamber having in one side or wall an inlet or feeding channel, of the follower, the feed-hopper, and the compressing-rollers arranged at the lower end of said hopper, and with the feed-passage between them in alignment with the feeding or inlet channel, which channel also extends to the compressing-rolls, substantially as and for the purpose set forth.

2. In a baling-press, the combination, with the box A, of the rollers R and S, the box T, the journal-boxes *w*, the spring *u*, the inlet-channel *t*, extending outward from the inner wall of the box T to the rollers R and S, and of the apron W, substantially as herein shown and described.

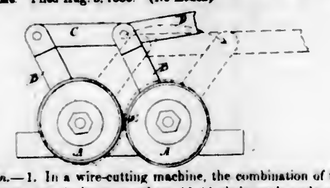
3. In a baling-press, the combination, with the pump I, operating the hydraulic piston C, and follower B, of the gear-wheels N N', the clutch *p*, the gear-wheels Q *q*, and the compressing-rollers R and S, substantially as herein shown and described.

335,817. INSECT-POWDER DISTRIBUTER. THOMAS W. HOUGHS, CHARLES B. RICHS, and WALDO P. HOUGHS, New York, N. Y. Filed Oct. 3, 1885. (No model.)



Claim.—The combination of the bellows having receptacle D, tube C, connecting said bellows and receptacle, and tube *a*, having a funnel shape, *b'*, all substantially as described, and for the purposes set forth.

335,818. WIRE-CUTTING MACHINE. DARIUS HOUGHTON, Skowhegan, Me. Filed Aug. 3, 1885. (No model.)



Claim.—1. In a wire-cutting machine, the combination of the two eccentric cutters A A, hung on arbors A' A', their cutting-edges in line with each other, and so adjusted that when revolved in the same direction their edges will come together and separate at regular intervals, substantially as shown.

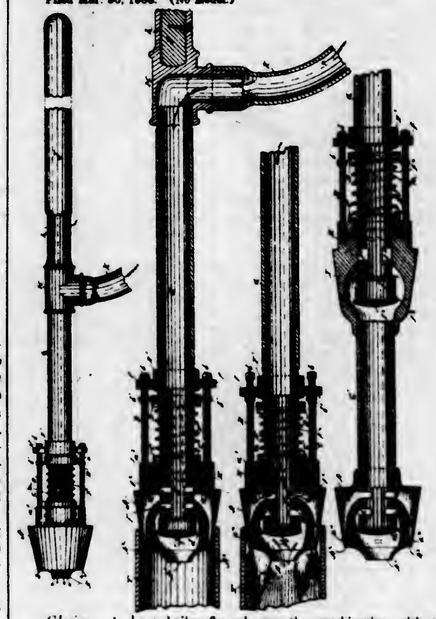
2. In a wire-cutting machine, the eccentric cutters A A, hung on arbors A' A', the levers B B, connecting-rod C, and sweep D, all combined substantially as set forth and described.

335,819. PENCIL-SHARPENER. JOEL JENKINS, Montclair, N. J. Filed May 6, 1884. (No model.)



Claim.—As an improved article of manufacture, the pencil-sharpener A, having a hook-shaped end, *c*, file-shank *b*, and projection B, the ferrule C to receive the pencil, and the sheath D, connected by a bayonet-joint recess with the projection of the sharpener and provided with a rubber, substantially as described.

335,820. BOILER-FLUE CLEANER. JOHN L. KELLEY, Erie, Pa. Filed Mar. 30, 1885. (No model.)

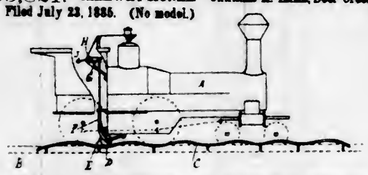


Claim.—1. In a boiler-flue cleaner, the combination, with the conical head A, constructed with an annular chamber, *a*, and a central chamber, *a'*, substantially as shown, of the hollow valve F, provided with double ports *f'* and f^2 in the sides thereof, substantially as and for the purpose set forth.

2. In a boiler-flue cleaner, the combination, with the movable conical head A, provided with the rods B B, of the steam-pipe F, having openings or ports *f' f²* therein, and thimble F'' and arms *f f* thereon, and the spiral spring *m*, substantially as and for the purpose set forth.

3. In a boiler-flue cleaner, the combination, with the movable conical head A, provided with the rods B B and their adjusting-nuts *b b'*, of the steam-pipe F, provided with openings or ports *f' f²*, and screw-thread f^3, thimble F'', and arms *f f* thereon, the packing E, gland C, spiral spring *m*, adjusting-collar D, steam-supply pipe G, elbow H, hose K, and handle J, all operating substantially as and for the purpose set forth.

335,821. RAILWAY-SIGNAL. CHARLES A. LAMB, Deer Creek, Mich. Filed July 23, 1885. (No model.)



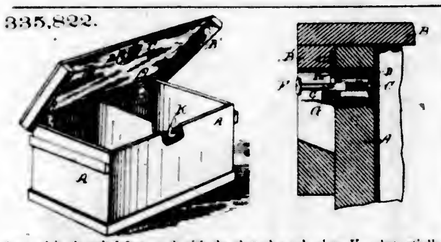
Claim.—1. The combination, with the stationary undulating rail C, of the hanger E, the grooved wheel D, journaled therein, the spring F, arranged on said hanger and adapted to keep said wheel in contact with the rail C, the rock-shaft H, levers G, and cord I, all substantially as and for the purpose specified.

2. The combination, with the undulating rail C, of the locomotive A, hanger E, supported thereon, roller or wheel D, carried by said hanger, the rock-shaft H, journaled in bearings within reach of the cab, levers G, connecting said hanger and rock-shaft, and the cord I, connecting said rock-shaft with the whistle of the locomotive, said rock-shaft being provided with a hand-lever, J, substantially as and for the purposes specified.

335,822. BOX-FASTENING. GEOFFREY B. LEEY, Boston, Mass. Filed Mar. 27, 1885. (No model.)

Claim.—1. The case A and cover B, in combination with the spring-bolt having a projecting stem and push-button extending axially outward

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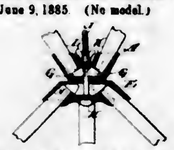


beyond its beveled face, and with the slotted catch-plate K, substantially as and for the purpose set forth.

2. The case A and cover B, in combination with the spring-bolt C, having a beveled face and projecting stem and push-button, and with the catch-plate K, and lug G, substantially as and for the purpose set forth.

3. The threaded cylindrical casing D, having the lug G, cast integral therewith, in combination with the slotted catch-plate K and with the bevel-face spring-bolt C, provided with a push-button and stem integral therewith, substantially as set forth.

335,823. FOLDING CAMP-STOOL. CHARLES VON DER LINDEN, Rhinebeck, N. Y. Filed June 9, 1885. (No model.)



Claim.—1. In a folding camp-stool, the following elements combined, namely: two socket-pieces for receiving the ends of the legs, two holding-pieces for holding the legs in the sockets, a screw and nut for holding the socket-pieces and pressing-pieces together, and legs, substantially as herein shown and described.

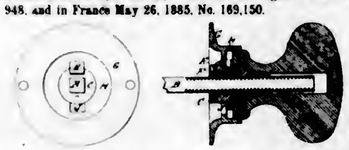
2. In a folding camp-stool, the following elements combined, namely: two socket-pieces for receiving the ends of the legs, holding-pieces for holding the ends of the legs in the sockets, a screw and nut for holding the socket-pieces and holding-pieces together, legs, headed studs or screws on the upper ends of the upper legs, and of a seat-frame formed of strips pivoted together, substantially as herein shown and described.

3. In a folding camp-stool, the combination, with two sockets for receiving legs, of legs, devices for holding the legs in the sockets, headed studs or screws on the upper ends of the upper legs, and of the metal strips S, pivoted together and provided at their outer ends with slots Q and apertures R, substantially as herein shown and described.

4. In a folding camp-stool, the combination, with the socket-pieces A E, having pockets D, of the legs F, having heads G, the holding-pieces K H, having concavities or depressions M and projections N, a screw passed through the socket-pieces and the pieces K H, and a nut on the screw, substantially as herein shown and described.

5. In a folding camp-stool, the combination, with the socket-pieces A E, having pockets D, and flat bottoms B, of the legs F, having heads G, which are beveled to fit the flat bottoms of the sockets, the holding-pieces H K, having projections N, the screw J, and the nut L, substantially as herein shown and described.

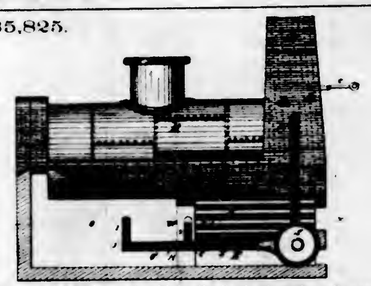
335,824. DEVICE FOR SECURING DOOR-KNOBS TO THEIR SPINDLES. CHRISTOPHER LONGBOTTOM, Bradford, County of York, England. Filed June 4, 1885. (No model.) Patented in England Jan. 22, 1885, No. 948, and in France May 26, 1885, No. 169,150.



Claim.—The described devices for securing door-knobs to their spindles, which consists in the combination, with a square screw-threaded spindle and a door-knob provided with a key, E, and having an axial socket square in cross-section, of the interiorly-threaded and flanged nut F, having a keyway in its flange, and a rose flanged interiorly, in which flange is formed a corresponding keyway, substantially as and for the purpose specified.

335,825. BOILER-FURNACE. JOHN S. LOOMIS, Brooklyn, N. Y. Filed Oct. 15, 1885. (No model.)

Claim.—1. In a furnace, the smoke-stack A, provided with damper C, air-apertures *b*, flue-chamber and pipe R, said pipe having air-apertures *n n*, and fan-blower S, with its distributing branches, all constructed and arranged in the manner set forth and described.

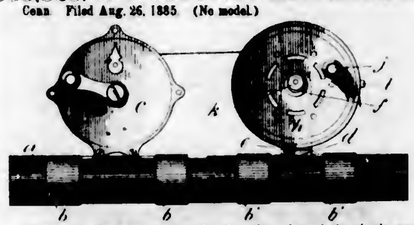


2. In a furnace, the combination of the smoke-stack A, provided with a damper, C, apertures *b*, and smoke, gas, and air mixing chamber located between the suction-pipe R and damper C, the fan-blower S, and distributing branches H 1′ 2′ 3′ and 1, 2, and 3, with the grate-bridge wall and rear combustion-chamber, substantially as described.

3. In a furnace adapted for burning soft fuel—such as sawdust, tan-bark, bagasse, &c.—consisting of the smoke-stack A, fan-blower S, pipe R, and air and gas distributing pipes H 1′ 2′ 3 and jet-pipes 1 2 3, with perforated bridge-wall and the basket-formed grate F, said jet-pipes 3 being arranged within the grate, by which the combined air and gas are thrown near the surface of the burning fuel, in the manner shown and specified.

4. The pipe R, provided with openings *n n*, in combination with pipe H, perforated pipe 2, and the bridge-wall, all constructed, arranged, and operated as set forth.

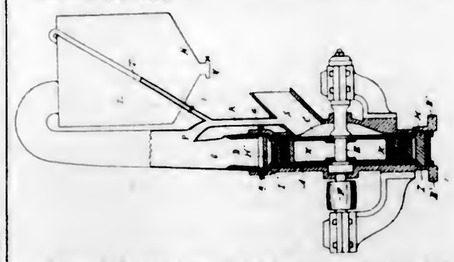
335,826. REEL FOR FISHING-RODS. ELISHA J. MARTIN, Rockville, Conn. Filed Aug. 26, 1885. (No model.)



Claim.—1. In combination, the clamping-plate *d*, the single standard *e*, the shaft *f*, supported on such single standard, the winding-drum, and the locking-eccentric *k*, all substantially as described, and for the purpose set forth.

2. In combination, the winding-stick *a*, the common reel *c*, the two sets of clamping-rings, and the transferring-reel, composed of plate *d*, single standard *e*, shaft *f*, bearing removable winding-drum, and locking-eccentric *k*, all substantially as described, and for the purpose set forth.

335,827. PULVERIZER. GEORGE MEAD, Detroit, Mich. Filed Oct. 29, 1885. (No model.)



Claim.—1. In a pulverizer, a vertical separator-trunk, into which the reduced material is carried by the air-blast and conducted into a settling-chamber, in combination with a settling-chamber, the independent return-flue R of the separator-trunk, and the return-flue T of the independent settling-chamber connecting the same with the pulverizer-case, substantially as described.

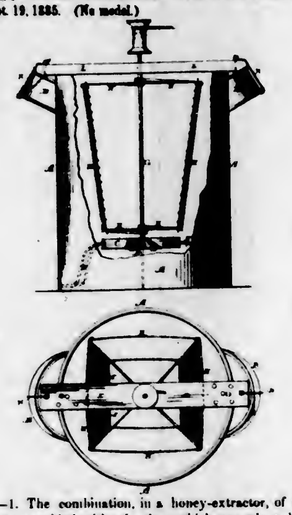
2. In a pulverizer, a pulverizer proper, a vertical separator-trunk connecting the pulverizer proper directly with a settling-chamber, a settling-chamber having an independent return-flue of restricted area, an offset in the separator-trunk, and a separate return-flue of restricted area connected with said offset and the flue from the settling-chamber, all arranged and operating in connection with a blast of air, which carries the reduced material into the separator-trunk and settling-chamber, substantially as described.

3. In a pulverizer, the settling-chamber L, provided with the return-flue T, having valve U, the pulverizer proper having inlet-opening C, the vertical separator-trunk O, having offset P and connecting the pulverizer with the settling-chamber, and the return-flue R, connecting the inlet-opening C with the offset in the separator-trunk, all arranged, combined, and operating substantially as described.

4. The case A, having inlet C and outlet D, revolving beaters within said case, settling-chamber L, and separator-trunk O, connecting the settling-chamber directly with the outlet D, combined with the offset P, hopper S, pipe T, connecting the settling-chamber with the flue R, and the flue R, connecting the hopper with said offset, substantially as described.

5. In combination, a stationary cylindrical reducing-surface partly perforated, revolving beaters or paddles, a cylindrical case having a central inlet-opening and a circumferential outlet-opening opposite the perforated stationary reducing-surface, a vertical separator-trunk communicating directly with the outlet-opening, and into which the reduced material is carried by the blast created by the revolving beaters, a settling-chamber connecting with the separator-trunk, a return-flue from the separator-trunk connecting with the inlet-opening, and a return-flue from the settling-chamber communicating with the return-flue from the separator-trunk, substantially as described.

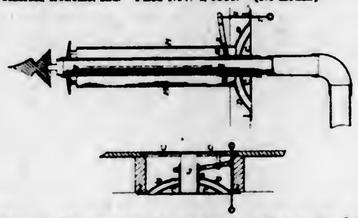
335,828. HONEY-EXTRACTOR. JOHN C. MELCHER, O'Quinn, Tex. Filed Sept. 19, 1885. (No model.)



Claim.—1. The combination, in a honey-extractor, of the pail, a suitable support provided with wire legs which are adapted to be bent for the revolving frame, a revolving frame which is made widest at its top, a perforated cross-piece which extends across the pail, and a spool or drum which is attached to the top of the vertical shaft, substantially as described.

2. A stool or support for a revolving honey-extractor, consisting of a wooden body or support and the wire legs which are adapted to be bent so as to fit pails of different sizes, substantially as specified.

335,829. VENTILATOR FOR HOUSES. WILLIAM MOORE and JOHN B. CARTER, Kokomo, Ind. Filed Nov. 4, 1885. (No model.)

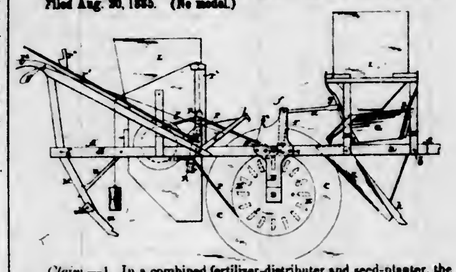


Claim.—1. In a ventilator for houses, the ceiling or the floor between the rooms provided with an opening, the perforated metallic casting D, which is placed in the opening, the disk-valve located in the lower end of the opening and acting in conjunction with the casting, the guide upon which the disk-valve moves, and a mechanism for moving the valve, whereby it can be closed from the lower room, the parts being combined substantially as shown.

2. In a ventilator for houses, the ceiling or the floor between two rooms provided with an opening, the perforated metallic frame D, which is placed therein, and a disk-valve placed in the lower end of the opening beneath the frame D, and which is moved vertically for the purpose of opening and closing the opening in the floor, the parts being combined to operate as described.

3. In a ventilator for houses, the flue D, placed in an opening between two rooms, the grating O, the guide J, connected thereto, the valve C, provided with the flange and moving upon said guide, the lever for moving the valve, and the rod connected to the lever, the parts being combined to operate substantially as specified.

335,830. SEED-PLANTER AND FERTILIZER-DISTRIBUTER. JOSEPH K. MORGAN, Columbus, N. C., and TERAH C. MORGAN, Kinderhook, Ark. Filed Aug. 20, 1885. (No model.)



Claim.—1. In a combined fertilizer-distributer and seed-planter, the combination, with a frame having a drive-wheel journaled in its rear part, of a second frame hinged thereto, and provided with means for locking the same in a raised or lowered position, substantially as herein shown and described.

2. In a combined fertilizer-distributer, the combination, with the frames A A′, hinged together, of a drive-wheel journaled in one of the said frames, a fertilizer-shoe and seed-cylinder in the frames, respectively, and means for vibrating the shoe and rotating the seed-cylinder from the drive-wheel slot, substantially as herein shown and described.

3. In a combined seed-planter and fertilizer-distributer, the combination, with the frame A and the hangers B, projecting above the frame, and provided with upwardly-projecting lugs, of the frame A′, hinged to the frame A, and the catches pivoted on the frame A′ and engaging the lugs of the hangers, substantially as herein shown and described.

4. In a combined fertilizer-distributer, the combination, with the frame A and the hangers B, provided with the lugs b^2 and the shoulders b^3, of the catches *l*, having hooked ends, and cords *l*, substantially as herein shown and described.

5. In a seed-planter and fertilizer-distributer, the combination, with the frames A A′, the shoe G, the seed-cylinder O, and the drive-wheel C, of the pulley E, provided with pins *e*, the bell-crank lever F, the belt P, the pulleys o' o^2, having grooves in their flanges, and a belt-shifter, R, substantially as herein shown and described.

335,831. MANUFACTURE OF INCANDESCENT ELECTRIC LAMPS. OTTO A. MOSES, New York, N. Y. Filed Sept. 2, 1885. (No model.)

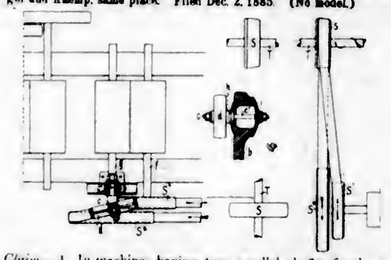


Claim.—1. The hereinbefore-described process of sealing in leading-in wires for incandescent electric lamps, which consists in inserting the same in a glass tube, expelling a portion of the air therefrom by heating the tube and closing the glass about the wires while the tube is allowed to cool, thereby creating a partial vacuum within the tube while the wires are heated.

2. The hereinbefore-described process of sealing leading-in wires into the glass neck of an incandescent electric light, which consists in inserting them in an inclosed chamber, attenuating the air therein, and closing the glass about the wires while the air is so attenuated while maintaining the wires at a high temperature, substantially as described.

3. The hereinbefore-described process of sealing wires into a glass wall, which consists in inserting them through an opening in the wall, producing a partial vacuum upon one side of the wall, softening the glass about the wires, and causing the same to close about the wires by atmospheric pressure.

335,832. DRIVING-GEAR. AUGUST C. NAGEL, REINHOLD H. KAEMP, and ADOLF W. F. G. LINNENBRÜGGE, Hamburg, Germany, assignors to Nagel and Kaemp, same place. Filed Dec. 2, 1885. (No model.)



Claim.—1. In machines having two parallel shafts *f* and *g*, provided at the like ends, respectively, with the pulleys S and S^2, arranged in different planes, the combination, with the said pulleys and a driving-pulley, S, of a tension and guiding pulley, *d*, placed obliquely to the pulleys S' and S^2, and a strap or its described equivalent running from the driving-pulley S over the pulleys S' and S^2 and the pulley *d*, substantially as and for the purpose described.

2. The combination, with the parallel shafts *f* and *g*, provided with the pulleys S' and S^2, arranged in different planes, the driving-pulley S, and a strap or its described equivalent, of a tension and guiding pulley, *d*, rotating on an axle that forms an angle with the shafts *f* and *g*, the said axle being mounted on a rotatively-adjustable carrier, *b*, substantially as specified.

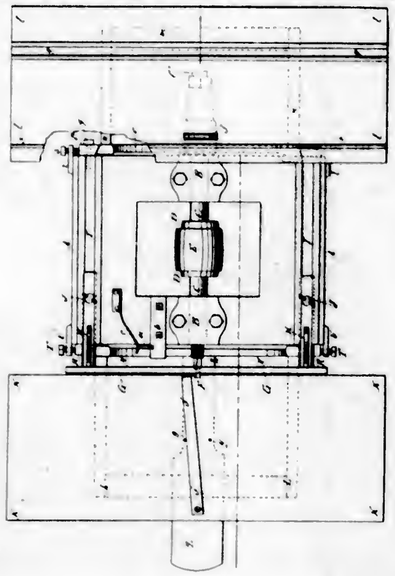
3. The combination, with the parallel shafts *f* and *g*, provided with the pulleys S' and S^2, arranged in different planes, a tension and guiding pulley, *d*, placed obliquely to the pulley S' and S^2, and a strap running over the said pulleys, of a conical driving-pulley, S, as and for the purpose set forth.

335,833. DOVETAILING-MACHINE. JOHN G. OETZEL, Brooklyn, N. Y. Filed Nov. 7, 1885. (No model.)

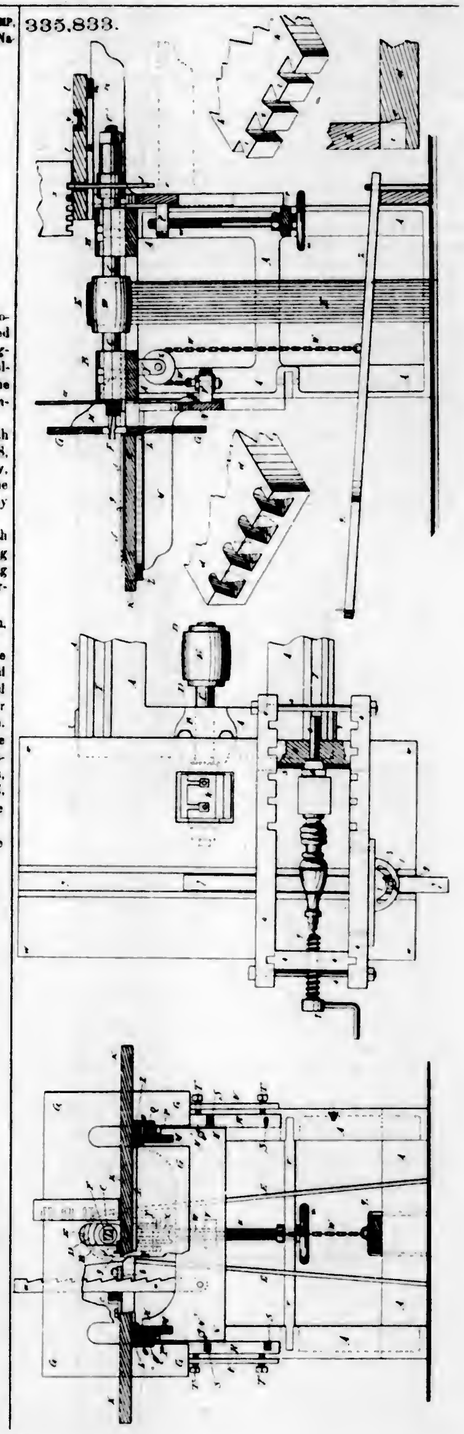
Claim.—1. In a wood-working machine, the combination, with the frame A, shaft C, and cutter F, of the vertical guide-plate G, apertured to receive the said cutter, and provided with brackets adjustably held on the table, substantially as described, whereby provision is made for allowing the cutter to enter the work at any desired depth, as set forth.

2. In a wood-working machine, the combination, with the frame A, the shaft C, and the cutter F, of the vertically-adjustable bracket-arms M, connected by plate N, the feed-table K on said bracket-arms, the chain W, secured to the plate N, guide-pulley X, and treadle Z, substantially as herein shown and described, whereby the said feed-table can be readily raised and lowered, as set forth.

3. In a wood-working machine, the combination, with the frame



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A and the plate N, connecting the bracket-arms that carry the feed-table, of the ratchet-bar *a*, pivoted to the said bracket-plate, its catch-plate *b*, secured to the table, and holding-spring *c*, having its free end resting against said catch-plate, substantially as herein shown and described, whereby the said feed-table can be readily raised or lowered through uniform spaces, and will be securely held in place when adjusted, as set forth.

4. In a wood-working machine, the combination, with the bracket-arms M, having flanges Q, and the feed-table K, of the frame L, to which the feed-table is attached, provided with angular flanges O, for the reception of the flanges of the bracket-arms, and the set-screw P, passing through the flanges O and bearing against the flanges Q, substantially as described, whereby the table can be readily adjusted and will be firmly held in place, as set forth.

5. In a wood-working machine, the combination, with the frame A and the plate N, connecting the bracket-arms M that carry the feed-table, of the slotted cleats R, the screws S, for securing the cleats to the frame, the frame-flanges U, and the set-screws T, for preventing outward movement of the cleats, substantially as herein shown and described, whereby the said plate will be held in place and the wear can be taken up, as set forth.

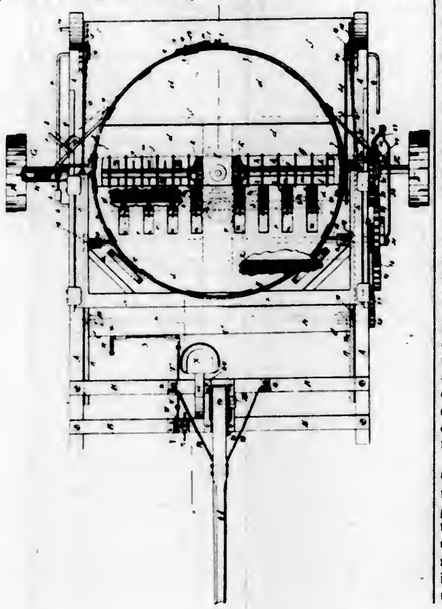
6. In a wood-working machine, the combination, with the feed-table *w*, of the frame 4, having adjustable inner end bar, the facing-plate *r*, attached to the said end bar and having square perforation, the clutch-head 6, having tapered square neck and cylindrical stem, and the crank-screw 7, substantially as herein shown and described, whereby the work to be squared can be readily clamped and carried to the cutter-head and turned through exactly one-quarter of a revolution, as set forth.

7. In a wood-working machine, the feed-table having a groove, *y*, and the sliding bar *z* in said groove, in combination with the work-carrying frame above the table, provided with the plate 2, having a curved slot, 3, and the clamping-screw 1, secured to the sliding bar and working in the slot of the plate 2, substantially as herein shown and described, whereby provision is made for moving the said frame squarely up to the cutter-head, as specified.

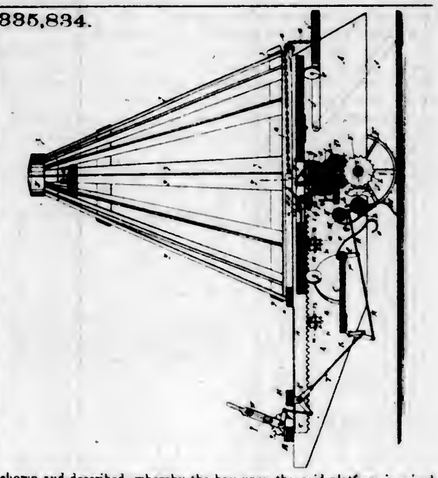
335,834. COMBINED HAY RAKE AND COCKER. SAMUEL OLSON, Cyrus, Minn. Filed Apr. 1, 1885. (No model.)

Claim.—1. In a combined hay rake and cocker, the combination, with the frame A B C D, the axle E, and the drive-wheels F, of the rake-teeth, guide-fingers, and toothed shafts M O K, the guide-fingers and toothed shafts *h i j j*, the gear-wheels I J and *b c l k*, and the rotary platform *d*, having radial slots, substantially as herein shown and described, whereby the hay will be collected and raised above the said platform, as set forth.

2. In a combined hay rake and cocker, the combination, with the wheels and axle F E, and the rotating platform *d*, having parallel slots *u*, of the gear-wheels *b c*, the beveled gear-wheel *n*, the gear-wheels *o q r*, the crank-shaft *s*, and the pivoted levers *t*, substantially as herein



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shown and described, whereby the hay upon the said platform is raised to admit more hay, as set forth.

3. In a combined hay rake and cocker, the combination, with the frame A B C D, the wheels and axles F E, and the rotary platform *d*, of the basket *y z*, the sliding frame *x* and its driving mechanism, substantially as herein shown and described, whereby the hay will be formed into a cock and discharged from the machine, as set forth.

4. In a combined hay rake and cocker, the combination, with the frame A B C D, the sliding frame *x*, and the rotary platform *d*, having hinged section, of the hinged platform *f*, the chains 15, and the guide-pulleys 16, substantially as herein shown and described, whereby the discharged cock is allowed to slide easily to the ground, as set forth.

5. In a combined hay rake and cocker, the combination, with the frame A B C D, the hinged parts of the basket *y z*, and the latch and spring 1 13, of the brackets 3, the hinged and pivoted connections 4 5, the guide-rods 6, the pivoted trip-arm 7, the connecting-wire 9, and the stop-arm 14, substantially as herein shown and described, whereby the said hinged parts of the basket will be opened and closed automatically as the said basket is moved back and forward, as set forth.

6. In a combined hay rake and cocker, the combination, with the wheels and axle F E, the frame A B C D, and the sliding frame *x*, of the rack-bars 17, the gear-wheels and shafts 18 19 20 21, the gear-wheels 24 25 27, the mutilated gear-wheel 26, the gear-wheels 28 29 30 31, and the spring-pawl 32, and ratchet-wheel 33, substantially as herein shown and described, whereby the said sliding frame will be operated from the said wheels and axle, as set forth.

7. In a combined hay rake and cocker, the combination, with the basket *y z*, the frame A B C D, the rotary platform *d*, and the spring-pawl 32, of the lever 41, the connecting-rod 40, the guide-rod 38, the crank-arm 37, the rock-lever 36, the spring-pressed swinging catch-bar 35, the connecting-bars 42 44 and the levers 43 45, and the gearing between the spring-pawl and the sliding frame, substantially as herein shown and described.

8. In a combined hay rake and cocker, the combination, with the swinging catch-bar 35, the spring 46, and the large gear-wheel 29, of the swinging bar 48, and the connecting-bar 50, together with the spring-pawl, and additional gear-wheels connecting the sliding frame and the aforesaid gear-wheel, substantially as herein shown and described, whereby the tension of the said spring is automatically varied, as set forth.

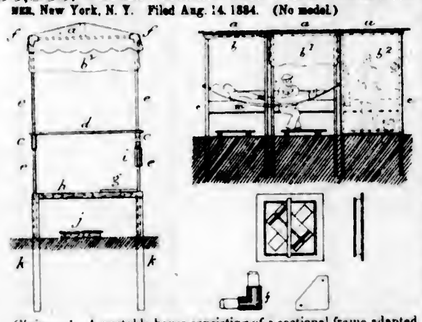
9. In a combined hay rake and cocker, the combination, with the large gear-wheel 29, the frame A B C D, the axle E, and the gear-wheel *b*, that drives the mechanism that operates the rotary platform *d*, the upper toothed shafts, *j*, and the lifting-levers *t*, of the recessed wheel 52, the lever 53 engaging therewith, the connecting-rods 54 56, the crank-shaft 55, and the clutch and spring 57 58, substantially as herein shown and described, whereby the said mechanism will be thrown out of and into gear by the revolution of the said large gear-wheel, as set forth.

10. In a combined hay rake and cocker, the combination, with the axle E, the gear-wheel *b*, that drives the mechanism that operates the rotary platform, the upper toothed shafts, and the lifting-levers, and the gear-wheels that operate the lower toothed shaft, of the clutches 57 62, the springs 58 63, the connecting-rods 59 61 64, the lever 60, the crank-shaft 65, the connecting-rod 66, and the rigid arm 67, attached to the rake-shaft N, together with means, substantially as described, for rocking said shaft, substantially as herein shown and described, whereby the movement of the said shaft, when turned to raise the rake-teeth from

the ground, will withdraw the said clutches from their gear-wheels, and thus throw the said gear-wheels out of gear, as set forth.

11. In a combined hay rake and cocker, the combination, with the frame A B C D, and the rock-shafts N P, carrying the rake-teeth M and the guide-fingers O, of the elbow-levers W U, the connecting-rods V T R, the crank-shaft S, and the rigid arms Q Q, attached to the said rock-shaft, substantially as herein shown and described, whereby the said rock-shafts can be readily turned to raise the said rake-teeth and guide-fingers from the ground, as set forth.

335,835. SUMMER-HOUSE AND BATH-HOUSE. FRANCIS I. PALMER, New York, N. Y. Filed Aug. 14, 1884. (No model.)



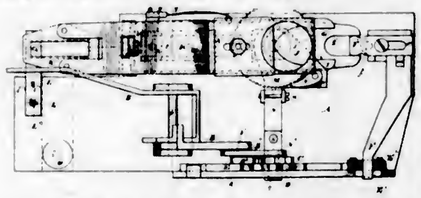
Claim.—1. A portable house consisting of a sectional frame adapted to be set up and taken down, provided with an independent attachable and detachable roof, in combination with a single curtain inclosing the house on all sides, to be lowered to form an inclosed bathing apartment and raised to convert the bathing apartment into an open summer-house, substantially as herein described.

2. A portable house in detachable sections, constructed and arranged substantially as herein described and shown, consisting of a number of independent frames placed side by side, a single roof covering all of the frames, and a separate curtain inclosing each frame, so that each frame may be formed into a separate and independent bath-room, or the several curtains raised and the separate bath-houses converted into an open summer-house, as set forth.

3. A portable summer and bath house combined, consisting of the sectional uprights *e*, provided with couplings *c*, elbows *f*, and detachable roof *a*, the lower ends of the uprights supported in recessed posts K, and an inclosing-curtain, *b*, substantially as herein described.

335,836. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. JOHN H. PALMER, Philadelphia, Pa. Filed Apr. 28, 1885. (No model.)

Brief.—A two-part lever having a common fulcrum, by means of a pawl, actuates a ratchet-wheel, and thereby a cam-wheel, to reciprocate a slide-bar, which latter connects with levers for giving the vibrating and longitudinal movements to the cloth-clamp.



Claim.—1. In a button-hole attachment for sewing-machines, the combination of the reciprocating plate E with the cloth-clamp levers, the oscillating lever F, arranged to vibrate said cloth-clamp levers, and an adjustable connection between said plate E and lever F, substantially as and for the purpose specified.

2. In a button-hole attachment for sewing-machines, the combination of the reciprocating plate E with the cloth-clamp levers, the oscillating lever F, arranged to vibrate said cloth-clamp levers, and an adjustable connection between said plate E and lever F, consisting of the plate E^2, adjustably secured to plate E, substantially as and for the purpose specified.

3. In a button-hole attachment, the cloth-carrying clamp and the base-plate A, in combination with the needle-plate L, having slot l^2 and large hole L^2, and pin *l* and clamp-screw L', substantially as and for the purpose specified.

4. In a button-hole attachment for sewing-machines, the combination of the reciprocating plate E with the cloth-clamp levers, the cloth-clamp, the oscillating lever F, arranged to vibrate said cloth-clamp levers, and an adjustable connection between said plate E and lever F with an adjustable needle-plate, whereby the said plate and cloth-clamp may both be adjusted with respect to the needle, substantially as and for the purpose specified.

5. The combination of the vibrating lever G and mechanism for vibrating said lever, substantially as shown, with base-plate A, pin H, and an anchor-plate under which a part of the said lever G works and by which it is held down upon plate A, substantially as and for the purpose specified.

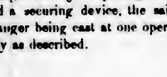
6. The combination of the cloth-clamp lever I, having slot I', hinge-blocks R P, and vibrating lever G, having slot G', with means, substantially as described, to vibrate said lever G, base-plate A, pin H, and an anchor-plate under which a part of the said lever G works and by which it is held down upon plate A, substantially as and for the purpose specified.

7. The combination of lever G, having ratchet I and slot G', means, substantially described, to vibrate said lever G, with pin H, lever I, having slot I' and a cloth-clamp carried by said lever, and hinge-blocks P R, provided with the adjusting-spring S, substantially as and for the purpose specified.

8. The lever I, having the slots I' *i* and plate I^3, in combination with piece I^3 and adjusting-screw I^4, substantially as and for the purpose specified.

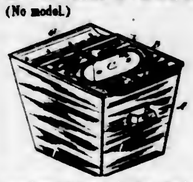
9. The lever I, having piece I^3, provided with the lower jaw, K^2, and notch *i'*, in combination with spring-plate K, carrying upper jaw, K', and having its rear end, *k'*, placed in the notch *i'*, and clamping-lever *k*, substantially as and for the purpose specified.

335,837. EDUCATIONAL DEVICE. PETER W. PEEKHAM, New York, N. Y. Filed June 24, 1885. (No model.)



Claim.—The within-described educational device, constructed of a series of disks or tablets strung upon a ring or loop, each bearing upon one face one or more interrogative suggestions or interrogations, and upon its reverse face one or more characters indicating the answer to the corresponding interrogation upon its obverse face, substantially in the manner and for the purpose herein set forth.

335,838. FOOT-TUB. ALFRED H. PERKINS, Leominster, Mass. Filed Mar. 30, 1885. (No model.)

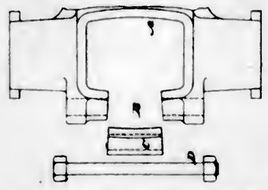


Claim.—1. As an improvement in foot bath-tubs, the upper foot-rest, G, provided with perforations, for the purpose specified.

2. A foot-tub consisting of the receptacle A, having covers B B, provided with openings *e e*, the upper perforated foot-rest, G, and the lower foot-rest, D, as and for the purpose described.

3. A foot rest and scraper combined, consisting of side pieces, *r*, with their cross-bars *s* and cross-strips *t*, when constructed for use in a foot-tub A, having covers B B, substantially as described.

335,839. SHAFT-HANGER. ANTONIO C. PESSANO, Philadelphia, Pa., assignor to George V. Cresson, same place. Filed Dec. 31, 1885. (No model.)

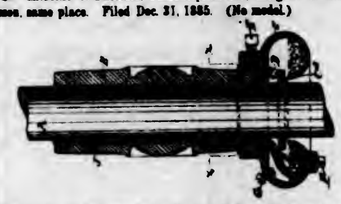


Claim.—1. A post-hanger having an opening in front and a filling-piece closing the same secured in position, substantially as described.

2. A post-hanger having a front piece cast therewith and detached therefrom, in combination with a securing bolt or screw connecting said piece in position, substantially as described.

3. A post-hanger having an opening in front and a filling-piece closing the same, and a securing device, the said filling-piece and the remainder of the hanger being cast at one operation, separated from each other, substantially as described.

335,840. DRIP-CUP AND SELF-OILING ATTACHMENT FOR BEARINGS. ANTONIO C. PESSANO, Philadelphia, Pa., assignor to George V. Cresson, same place. Filed Dec. 31, 1885. (No model.)



Claim.—1. A drip-cup encircling a shaft and adapted to collect waste oil from said shaft, substantially as described.

2. A drip-cup encircling a shaft below the bearing thereof and provided with a mouth on the side toward the shaft, so as to collect the waste oil therefrom, substantially as described.

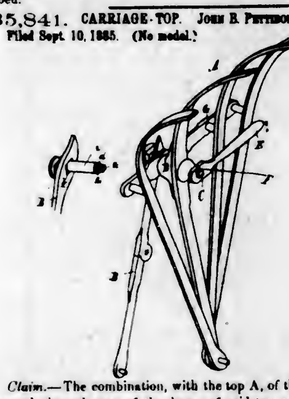
3. A collar connected with a rotary shaft, in combination with a drip-cup which encircles said shaft, the collar being located adjacent to the mouth of the drip-cup, so as to direct waste oil from the shaft into the cup, substantially as described.

4. A drip-cup, in combination with a collar which is fixed to a rotary shaft and projects into said cup, substantially as described.

5. A shaft provided with a drip-cup, in combination with a bearing having a groove on its inner face, and a piece of absorbent material, whereby the shaft is lubricated, substantially as described.

6. A shaft provided with a drip-cup of the form of a segment of a circle in cross-section, leaving a mouth or inlet on the side toward the shaft, and containing a piece of absorbent material, which is passed to the shaft, forming a combined drip-cup and feed, substantially as described.

335,841. CARRIAGE-TOP. JOHN B. PETTEBONE, Farmington, Mich. Filed Sept. 10, 1885. (No model.)



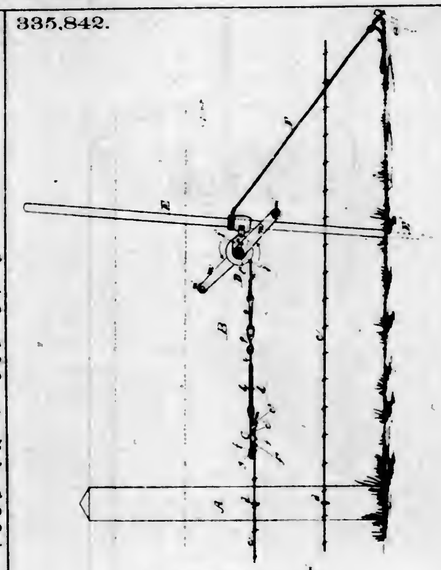
Claim.—The combination, with the top A, of the brace B, the shaft C, passed through one of the bows of said top and brace, the bar G, sleeved on said shaft and connected to the said bows, and means for rocking said shaft, substantially as and for the purpose specified.

335,842. FENCE-WIRE STRETCHER. THOMAS V. PHELPS, Worcester, Mass. Filed Aug. 3, 1885. (No model.)

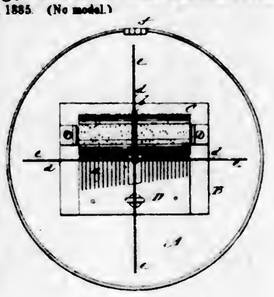
Claim.—1. The combination of the gripping device C, consisting of the hinged angular parts *f f*, having the gripping-jaws $f^* f^*$, wire-bearing parts $f^3 f^3$, and supporting part f^4, the link-sections *h h*, hinged at their outer ends to the inner ends or arms of the parts *f f*, and link-section *i*, hinged at one end to the inner ends of the link-sections *h h* aforesaid, with means for connecting said link-section *i* with the tightening device D, and said tightening device D, consisting of the journal *l*, frame *j*, cranks *m m*, provided with handles *m' m'*, ratchet-wheel *q*, its pawl *r*, supporting and holding rod E, its set-screw *k'*, and the holding rope or chain F, adapted to be fastened at its outer end to a stationary part near the ground, whereby a line of fence-wire may be stretched independent of the line of fence-posts, substantially as shown and described.

2. The combination of the gripping device C, consisting of the hinged angular parts *f f*, having the gripping-jaws $f^* f^*$, wire-bearing parts $f^3 f^3$, and supporting part f^4, the link-sections *h h*, hinged at their outer ends to the inner ends or arms of the parts *f f*, and link-section *i*, hinged at one end to the inner ends of the link-sections *h h* aforesaid, with means for connecting said link-section *i* with the tightening device D, said tightening device D consisting of the journal *l*, frame *j*, cranks *m m*, having handles *m' m'*, ratchet-wheel *q*, its pawl *r*, having the holding-hook *t*, spring *s*, set-screw *k'*, and rod E, substantially as shown and described.

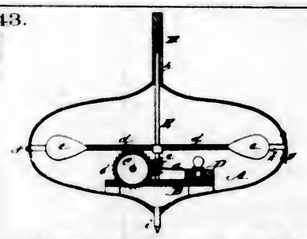
335,842.



335,843. MUSICAL TOP. ROBT. RICHARDSON, Detroit, Mich. Filed Nov. 13, 1885. (No model.)



335,843.



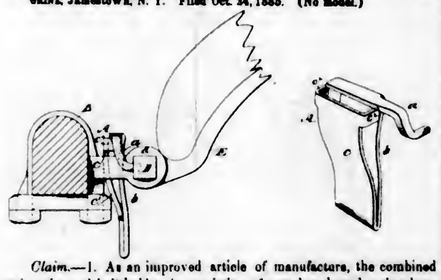
Claim.—1. In a musical top, the combination, with the toothed cylinder C and worm-wheel *b*, attached thereto, of the worm *c*, spindle E, and wings *e*, carried thereby, substantially as herein specified.

2. In a musical top, the combination, with the toothed cylinder C and worm-wheel *b*, attached thereto, of the worm *c*, the spindle E, wings *e*, and shell A, formed of two parts hinged together and provided with a fastener, substantially as herein specified.

3. In a musical top, the shell A, provided with a stem, F, having an opening, *h*, in the side thereof, the spindle journaled in the stem, the wings *e*, carried by the spindle, the worm *c*, toothed cylinder C, and worm-wheel *b*, attached thereto, substantially as described.

4. In a musical top, the combination of the shell A, the toothed cylinder C, provided with a worm-wheel, *b*, the comb D, and spindle E, provided with a worm, *c*, and the wings *e*, substantially as herein shown and described.

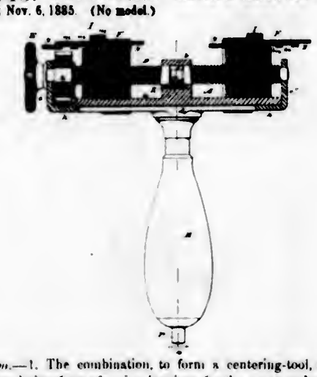
335,844. THILL-COUPLING. ARIJAH L. ROMANS and JOHN M. PEREGRINE, Jamestown, N. Y. Filed Oct. 24, 1885. (No model.)



Claim.—1. As an improved article of manufacture, the combined anti-rattler and bolt-holder A, consisting of a wedge-shaped spring having its front plate, *b*, provided with bolt-holding arm *a*, projecting from the upper edge of said plate, then bent downward, and its extremity bent forward to adapt it to enter a recess in the thill-bolt, and its rear plate, *c*, provided with the guide-arms c^2, projecting forward and embracing the edges of the plate *b*, as set forth.

2. The combination, with the clip B, the thill-iron E, and bolt D, recessed at *e*, of the wedge-shaped spring A, provided with the arm *a*, projecting downwardly and forward and entering the recess of the said bolt, and the guide-arms c^2, projecting from the rear plate and embracing the edges of the front plate, substantially as herein shown and described.

335,845. CENTERING-TOOL. CHARLES A. SINGER, New York, N. Y. Filed Nov. 6, 1885. (No model.)



Claim.—1. The combination, to form a centering-tool, of a rigid base or foundation frame forming bearings for the screw and punch, the centering-punch arranged in said bearing and movable longitudinally therein, a right-and-left screw having bearings in said base, two parallel bars engaged by said screw, and angularly notched centering-jaws attached to and moving with said parallel bars, substantially as and for the purposes set forth.

2. A convertible vise and centering-tool, comprising a rigid base, A, having sockets *d* and *d'*, a handle, B, capable of being united rigidly to either of said sockets, and bored through longitudinally to form a bearing for the centering-punch, the said punch P capable of sliding in said handle, the right-and-left screw D, having bearings in said base, the parallel bars C C, formed with vise-jaws J J, and engaged by said screw, and centering-jaws F F, fastened removably to the bars C C, substantially as set forth.

3. The combination of the body A, formed with a guideway, *i*, the handle B, the right-and-left screws D D', and the parallel bars C C, provided with the projections *j j*, engaging said way, whereby the bars C C are guided in their movement toward or from each other, substantially as set forth.

4. The combination of the body or foundation-frame A, consisting of plate *a* and flanges *c'* and *c''*, and forming bearings for the screws, with the right-and-left screws D D', the parallel bars C C, resting on said plate *a* and engaged by said screws, and gearing for driving said screws simultaneously, substantially as set forth.

5. The combination, in a centering-tool, of a base or foundation frame, A, consisting of plate *a*, having flanges *c*, *c'*, and *c''*, bearings *b b* for the screws, and sockets *d* and *d'* for the handle, with the handle B, capable of engagement with either of said sockets, the screws D D', having bearings in said base A, the gearing connecting said screws together, the parallel bars C C, engaged by said screws, and the punch P, having a bearing through said handle B, substantially as set forth.

6. The combination, to form a centering-tool, of a centering-punch, P, and the base or frame A, forming a bearing therefor, and comprising a flat plate, *a*, with its surface in a plane perpendicular to the axis of the punch-bearing, and bearings *b b* for the screws, with the right-and-left screws D D', mounted in said bearings, the parallel bars C C, and the centering-jaws F F, substantially as set forth.

7. The combination, to form a centering-tool, of a centering-punch, P, the base or frame A, forming a bearing therefor, and comprising a flat plate *a*, with its surface in a plane perpendicular to the axis of the punch-bearing, and bearings for the screws above said plate, the screws D D' and parallel bars C C, arranged above said plate, and the centering-jaws F F, attached to said bars, whereby the work to be centered may be brought against said plate *a* between the screws D D', and between the bars C C, as described.

8. The combination, in a centering-tool, of a centering-punch, a right-and-left screw, a rigid base, forming bearings for said punch and screw, parallel bars engaged by said screw, angularly-notched centering-jaws attached adjustably to said bars, and interlocking provisions on said jaws and bars, respectively, whereby the correct adjustment of said jaws relatively to said bars is insured, substantially as set forth.

9. The combination, in a centering-tool, of parallel bars engaged by a right-and-left screw to move them equally toward and from a common center, the said screw, angularly-notched centering-jaws attached adjustably to said bars and a series of interlocking provisions on said bars and jaws, respectively, whereby the jaws may be set to different positions on said bars, nearer to or farther from the common center, substantially as set forth.

10. The combination, in a centering-tool, of parallel bars engaged by a right-and-left screw to move them equally toward and from a common center, the said screw, reversible centering-jaws having angular notches on opposite sides attached to said bars, and interlocking provisions on said jaws and bars, respectively, whereby the correct readjustment of the jaws after their reversal is insured, substantially as set forth.

11. The combination, with parallel bars C C, having ribs *l l*, and right-and-left screw for operating said bars, of centering-jaws F F, having grooves *m m*, and the screws I I, substantially as set forth.

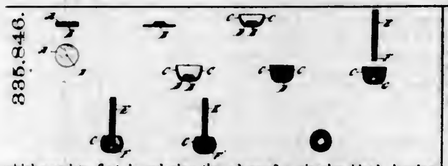
12. The combination, with the parallel bars C C and right-and-left screw for operating them, of centering-jaws F F, interlocking provisions on said bars and jaws, respectively, whereby the correct adjustment of said jaws relatively to said bars is insured, the fastening-screws I I, and the removable filling-pieces G G, adapted to be entered between the bars and jaws, and having provisions on their opposite sides interlocking with said provisions on the bars and jaws, respectively, substantially as set forth.

13. In a centering-tool, the combination, with a right-and-left screw having an annular groove, and the bearing for said screw formed with a keyway with parallel sides, of a key having parallel portions tightly fitting said keyway, and an inclined portion entering said groove in the screw and bearing against the sides thereof, substantially as and to the effect set forth.

335,846. MANUFACTURE OF WATCH-CROWNS. EVELYN L. SMITH, New Haven, and EDWARD A. HITCHCOCK, Waterbury, Conn. Filed July 2, 1885. (No model.)

Claim.—1. The improvement in the art of making watch-crowns,

335,846.



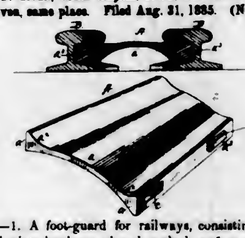
which consists, first, in reducing the edges of a circular blank, leaving the center the full thickness of the blank to form a base at the center of the crown; secondly, in drawing out said edges and curving them upward to form the sides of the crown; thirdly, in corrugating the sides of the crown; fourthly, in drilling a hole in the base to receive a tenon on the winding-arbor, and, fifthly, in closing the metal of the base about the tenon, whereby the crown is firmly secured upon the arbor.

2. The improvement in the art of making watch-crowns, which consists in blanking out a disk of metal of suitable size, pricking or indenting it upon its under side, whereby it is centered in the dies, reducing said blank at its edges, leaving the center to form a base, then drawing said edges, curving them upward, and corrugating them, then drilling the base to receive a tenon on the winding-arbor, and, finally, closing the metal of the base upon the tenon, whereby the crown is secured upon the arbor.

3. The method of making watch-crowns, which consists in reducing the edge of a metallic disk in dies, leaving the center to form a base, drawing, curving, and corrugating said edge, drilling the base to receive a tenon on the winding-arbor, closing the metal of the base upon the tenon, and at the same time closing the edge inward and milling out the center to fit the watch-stem.

4. The method of making watch-crowns, which consists in pricking or indenting a suitable disk of metal as a means of centering it, then drawing, curving, and corrugating the edge to form the crown, leaving the center of the blank as a base, then drilling the base to receive a tenon on the winding-arbor, and closing the metal of the base upon the tenon and the metal of the edge inward and milling the center to complete the crown.

335,847. FOOT-GUARD FOR RAILWAYS. BUREN M. SOULE and PHILOMEO F. GIVEN, Cedar Rapids, Iowa; said P. F. Given assignor to Carl E. Given, same place. Filed Aug. 31, 1885. (No model.)



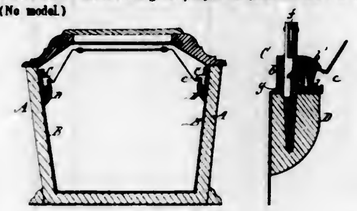
Claim.—1. A foot-guard for railways, consisting of a convexo-concave metal plate having a planed arched surface, and side flanges formed to set between the flanges and against the stem of the rails, and adapted to be held in position by the resiliency of the arch of the plate, substantially as described.

2. A foot-guard for railways, consisting of a spring-metal plate of plane-arched shape in cross-section, and having side flanges to set between the rails, whereby the guard is held in position by the force of the spring-plate, substantially as described.

3. A foot-guard for railways, consisting of a plane-faced convexo-concave metal plate formed with recessed side flanges to set between the rails and provided with side springs resting in the recesses in the side faces of the side flanges, substantially as described.

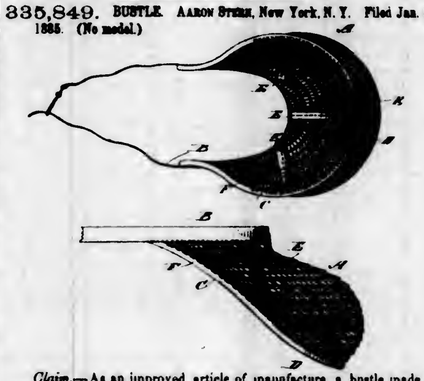
4. A foot-guard for railways, consisting of a convexo-concave metal plate formed with supporting side flanges to set between the rails and having mortises formed in the side flanges and rubber springs fitted in the mortises, substantially as described, and for the purpose stated.

335,848. COFFIN. WILLIAM A. SPARKS, Rochester, N. Y., assignor to the Stein Manufacturing Company, same place. Filed Dec. 22, 1885. (No model.)



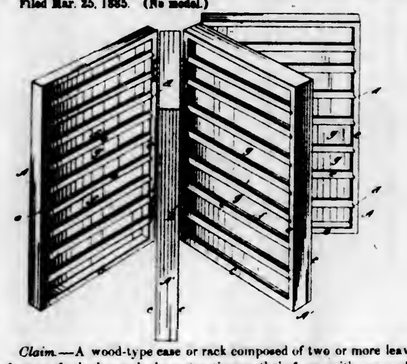
Claim.—A burial-casket herein described, consisting of the threaded post, the clamp fitted on the post and having free movement thereon, the eccentric pivoted to the post above the clamp and bearing on the clamp, and the packing-block around the post, below the clamp, all combined to operate in the manner and for the purpose specified.

335,849. BUSTLE. AARON STERN, New York, N. Y. Filed Jan. 10, 1885. (No model.)



Claim.—As an improved article of manufacture, a bustle made of plaited or braided straw, reed, rattan, or other vegetable fiber of a similar nature, which straw bustle is provided with a stiffening-strip sewed to the bustle along the bottom edge, and independent stiffening-strips extending from the top edge to the bottom edge, substantially as herein shown and described.

335,850. WOOD-TYPE CASE. JAMES O. STEWART, Spirit Lake, Iowa. Filed Mar. 25, 1885. (No model.)



Claim.—A wood-type case or rack composed of two or more leaves or frames of raised marginal construction on their faces, with removable shelves having raised front guards or ledges, said leaves being hinged to close together, the one leaf upon the other, substantially as specified.

335,851. RAILROAD SUPPLY-TANK. JOHN STOWE, Plattsburg, Mo. Filed Sept. 29, 1885. (No model.)

Claim.—1. The combination, with a pump and railroad-rails, of the long upwardly-curved spring-levers H H, arranged parallel to the track-rails, having their ends free, and the transverse bar I, to which said levers are rigidly attached at their middles, all as shown and described, to operate as specified.

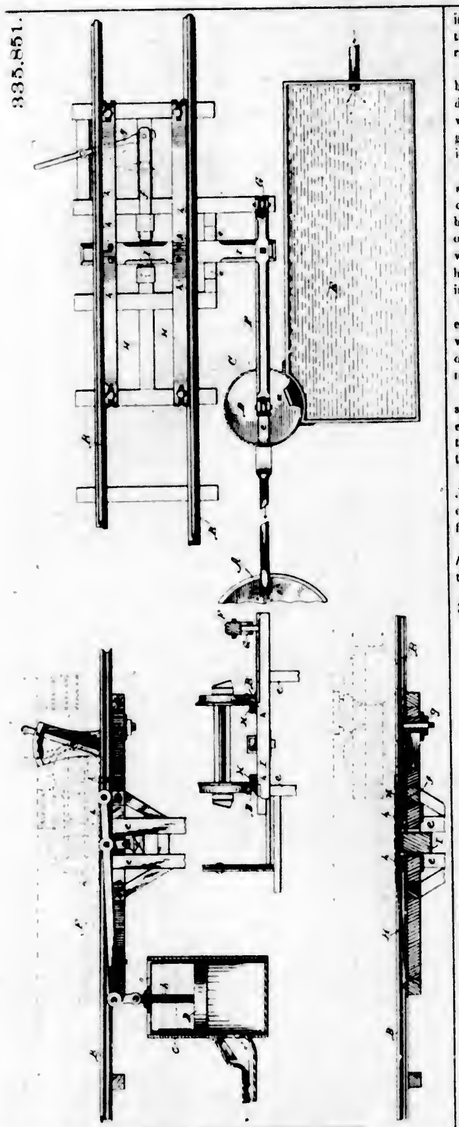
2. The combination of the long upwardly-curved spring-levers H H, the transverse bar I, rigidly attached to them, and the lever F, beneath which said bar projects and to which it is linked, the piston-rod, the piston, cylinder, and tank, all as shown and described.

3. The combination, with the rails, springs, and pumping apparatus proper, of the lever F and bar I, the latter being attached to the springs and to the lever at a point between its fulcrum and the point of connection with the piston, as shown and described, whereby the downward movement of the bar causes a like but greater deflection of the lever, as specified.

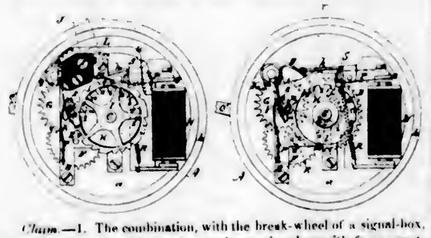
4. The combination of the sliding locking-bar and its pivoted lever, with the transverse bar I, the springs H, and pumping apparatus, all as shown and described.

5. The springs H H, provided with a series of short angle-iron guard-plates, *h*, which are riveted thereto and project vertically, as herein shown and described.

335,851.



335,852. ELECTRICAL SIGNALING APPARATUS. HENRY THAU, New York, N. Y. Filed Feb 12, 1884. (No model.)



Claim.—1. The combination, with the break-wheel of a signal-box, of a mutilated ratchet-wheel and a pawl engaging therewith for preventing the return of the break-wheel to the point of starting, except from the beginning of a complete signal, when the pawl is reversed and the ratchet-wheel allowed to escape, as described.

2. In an electrical signaling apparatus, the combination, with the break-wheel and spring contacting therewith, of a notched wheel having deep and shallow notches and pawl-lever operated thereby, as specified, whereby the contact-spring is lifted from the contact-wheel by the engagement of the notched wheel with the pawl-lever when the said wheel is turned preparatory to sending a signal.

3. In an electrical signaling apparatus, a break-wheel for sending a series of signals, a ratchet-wheel provided with two sets of notches, one deep set corresponding to the beginning of each signal represented by the break-wheel, a pawl-lever capable of engaging the shallow notches of ratchet-wheel and of being turned by the deep notches of the ratchet-wheel, and a contact-spring touching the break-wheel and capable of being lifted therefrom by the eccentric-pawl lever when the pawl falls into a deep notch, all combined and operating as specified.

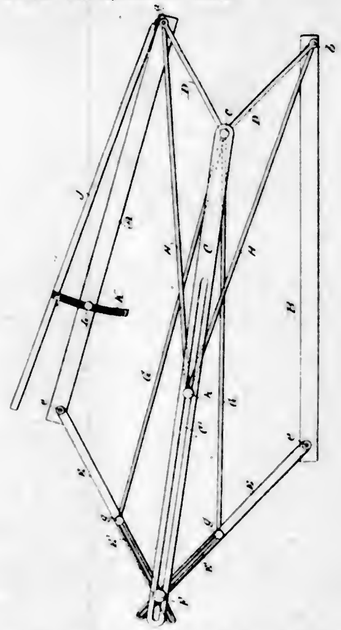
4. In an electrical signaling apparatus, the combination, with the escapement, of an electro-magnet in a normally-open branch and a break-wheel provided with a pin to close said branch on reaching a fixed point of its revolution, thus energizing the magnet stopping the signaling mechanism, as specified.

5. The combination, with the break-wheel I and escapement of the spring-motor, of the pin *l*, contact-spring M, electro-magnet N, and the electrical connections whereby an electric current may be sent through the said magnet while the current in the signaling-circuit is broken by the break-wheel, as specified.

6. In electrical signaling apparatus, the combination, with the crank J and casing A, having formed in it holes *a'*, opposite the names of the calls, of a pin, *b'*, placed in any one of the said holes, as may be required, for limiting the motion of the said crank, as specified.

7. The combination, with the arbor C, of the stop-pin *k*, stop-arm *l*, pivoted to the motor-frame, and two pins for limiting the motion of the stop-arm, as described.

335,853. PLOTTER FOR DRAFTING. MILTON E. THOMPSON, Bartow, Fla. Filed Sept. 14, 1885. (Model.)



Claim.—1. The combination, with the rules A B C, of the rods D, connecting the rules A B C, and the adjustable rods E, connecting rules A B C at the opposite ends, substantially as shown and described.

2. The combination, with the rules A B C, of the rods D, pivoted to the rules A B C, and the slotted rods E, connecting the rules A B C at the opposite ends, substantially as herein shown and described.

3. The combination, with the rules A B C, the latter having the slot C', of the rods D, connecting the rules A B C, the slotted rods E, pivoted to the rules A B, and the pivot F, passed through the slots C' and F in the rule C and rods E, respectively, substantially as herein shown and described.

4. The combination, with the rules A B C, the latter having the longitudinal slot C', of the rods D, connecting the rules A B C, the slotted rods E, pivot F, the rods G, pivoted to the rule C, and the pivots *g* on the ends of the rods G, passed through the slots F', substantially as herein shown and described.

5. The combination, with the rules A B C, the latter having the slot C', of the rods D, connecting the rules A B C, the slotted rods E, pivoted to the rules A B, the pivot F, the rods H, pivoted to the ends of the rules A B, and the pivot *h*, passed through the ends of the rods H and the slot C', substantially as herein shown and described.

6. The combination, with the rules A B C, the latter having the slot C', of the rods D, E, G, and H, substantially as herein shown and described.

7. The combination, with the rules A B C, of the rods D E, connecting them, the rule J, hinged on the rule A, the slotted arm K on the rule J, and the binding-screw L, substantially as herein shown and described.

335,854. DOOR-SADDLE. HENRY TINDELL, Harrison, N. J. Filed Oct. 6, 1885. (No model.)



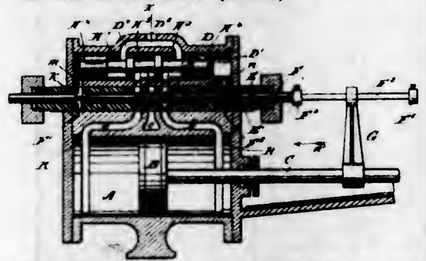
Claim.—1. In combination, the saddle, separable cleat, weather-strip, and protecting-rod, substantially as set forth.

2. In combination, a saddle, a weather-strip, and a metallic rod to protect said weather-strip, substantially as set forth.

3. In combination, a saddle, a grooved cleat, and a protecting-rod.

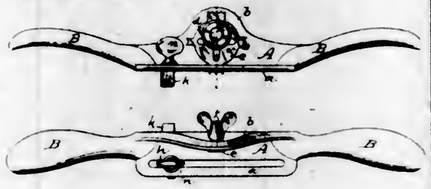
4. A door-saddle having a shoulder, *g*, a rubber strip projecting above said shoulder to engage the door, and a separable cleat, *d*, co-operating with said shoulder to hold the strip in position, and projecting above said shoulder to resist the pressure of the door, substantially as set forth.

335,855. STEAM-ACTUATED VALVE. JOHN T. TOOLE, East Saginaw, Mich. Filed Nov. 12, 1885. (No model.)



Claim.—The steam-valve gear herein described, the same consisting of the steam-cylinder A, having exhaust-port *c* and ports *a b* leading from the ends of the cylinder to the center of the top, the piston B, the auxiliary steam-chest E, resting on the cylinder A and having central ports, *d e f*, registering with the ports *a c b*, and end ports, *k l*, leading through passages *o p*, between the cylinder and chest, to the exhaust *c*, the auxiliary valve or piston F, having annular spaces F' F², to register with ports *k l*, and intermittently operated from the piston B, the chest D on the chest E, having ports *g h i* in alignment with the ports *d e f a c b*, end ports, *m n*, in alignment with the ports *k l*, inlet-port D², and a sliding valve in the chest D, adapted to close the ports *m g h* on one stroke and open the ports *e l*, and vice versa, substantially as set forth.

335,856. BEADING-TOOL. JOSIUS A. TRAUT, New Britain, Conn., assignor to the Stanley Rule and Level Company, same place. Filed Sept. 24, 1885. (No model.)



335,856.



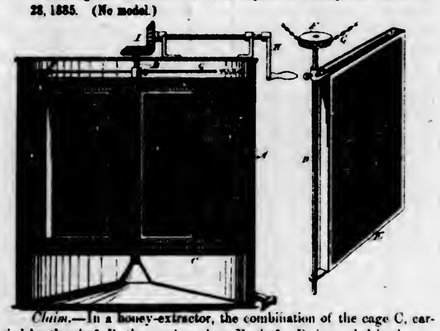
Claim.—1. The herein-described stock for a beading-tool, which consists of the handles B B and the intermediate middle portion, A, having the horizontal bed-plate *a* and the cutter-supporting plate *b* projecting upwardly from the rear edge thereof and slanting forward partially over the bed-plate, the seat for the cutter-blade being upon that side of the plate *b* which faces forward and downward, substantially as described, and for the purpose specified.

2. In a beading-tool, the combination of the upwardly-projecting cutter-plate *b*, slanting forward, as described, the bed-plate *a*, having the opening through which the cutter projects, and the longitudinal slot extending through the middle of the length of said bed-plate in front of the said opening for the cutter, the gage *k* at the under side of said bed-plate, the screw *n* upon the upper side of said bed-plate, for holding said gage, and the cutter-blade secured to that side of the cutter-plate which faces forward and downward, substantially as described, and for the purpose specified.

3. In a beading-tool, the bed-plate *a*, having the cutter-opening formed therein, and the upwardly-projecting cutter-supporting plate *b*, made integral therewith and slanting forward, as described, while its forward lower corner at the rear of said cutter-opening is cut away, in combination with a spring cutter-blade, *c*, made flat or straight, substantially as described, and for the purpose specified.

4. In a beading-tool, the combination of the stock having bed-plate *a*, slotted longitudinally through the middle of its length, the cutter-blade secured to said stock, and adapted to have its end project below the under face of said bed-plate, the gage extending transversely to said bed-plate, and having the slot or notch on its upper side at the point which is in longitudinal alignment with the cutter, and mechanism for holding the gage and adjusting it to various points along the longitudinal slot of the bed-plate, substantially as described, and for the purpose specified.

335,857. HONEY-EXTRACTOR. WM. B. TREADWELL, New York, N. Y., assignor to himself and John Aspinwall, same place. Filed Oct. 28, 1885. (No model.)



Claim.—In a honey-extractor, the combination of the cage C, carried by the shaft B, the comb-pockets E, shafts D, journaled in the angles of the cage C, and carrying the comb-pockets, the chain-wheels F, secured to the upper ends of the shafts D, and the chain G, positively engaging the chain-wheels, as herein specified.

335,858. VEHICLE-AXLE AND AXLE-NUT. GEORGE C. VAN KEUREN, Duquoin, Ill. Filed Oct. 8, 1885. (No model.)

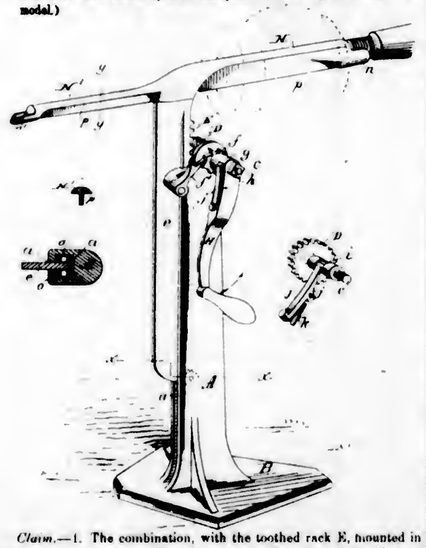


Claim.—1. The combination, with a vehicle-axle provided with an eccentric groove or grooves in the end thereof, of an axle-nut provided with a lug or lugs operating in such eccentric groove or grooves, substantially as and for the purpose set forth.

2. The combination of a vehicle-axle provided with both a longitudinal groove or grooves and with an eccentric groove or grooves in the end of the spindle thereof, of an axle-nut having a lug or lugs therein operating in said longitudinal and eccentric grooves, substantially as and for the purpose set forth.

3. The combination, with the vehicle-axle B, having the shoulder C and projection A, provided with the longitudinal groove D and eccentric groove E, of the nut F, provided with the lug G, substantially as and for the purpose set forth.

335,859. LIFTING-JACK. HENRY WALTHER, Clinton, Ind., assignor to himself and Isaac Joyner, same place. Filed Sept. 19, 1885. (No model.)



Claim.—1. The combination, with the toothed rack E, mounted in a standard, A, of a pinion, D, and crank-arm H, secured to the shaft of the pinion, said shaft carrying a ratchet, *f*, arranged to engage with a pawl, *f'*, and said rack E carrying two arms, N N', formed with sockets *n n'*, substantially as described, and for the purpose specified.

2. In a lifting-jack, the combination of the following elements, viz: standard A, toothed rack E, arm N, formed with socket *n*, pinion D, shaft C, ratchets *f* and *i* and their pawls, and a crank-handle, H, substantially as described, and for the purpose specified.

3. The combination, with the rack E and its standard, of the rollers *o o*, arms N N', formed with scoop-shaped sockets *n n'*, respectively, pinion D, shaft C, and crank-arm H, substantially as described.

335,860. ELECTRIC-CLOCK SYSTEM. CHARLES D. WARNER, Ansonia, Conn. Filed Sept. 23, 1885. (No model.)

Brief.—The system involves a master clock controlling impulses to a series of secondary clocks, means for switching in an auxiliary or relief master clock, a gage for the current employed, an indicator at central station to show the condition of the secondary clocks, means for grounding the line at secondary clocks when required, and means for inserting a test-battery to conveniently locate breaks in the line.

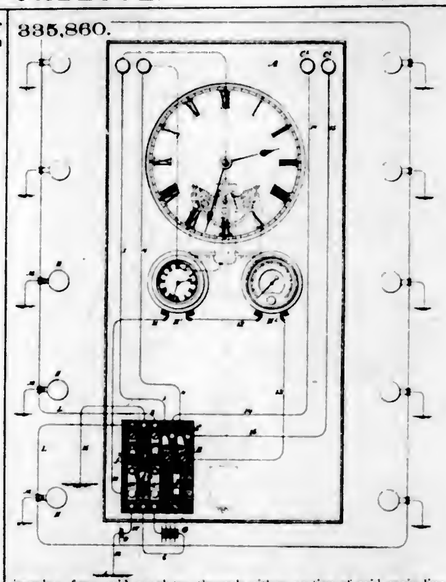
Claim.—1. The combination, substantially as hereinbefore set forth, of a battery, a regulator, means controlled by said regulator for making and interrupting the connections of said battery, a series of secondary clocks included in the circuit of said battery, a circuit-closing device applied to each secondary clock, consisting of two insulated contact-plates respectively connected with the conductors leading to and from that clock, and an intervening contact-plate connected with the earth, and means for grounding one pole of said battery.

2. The combination, substantially as hereinbefore set forth, of a regulator, a circuit-controller operated thereby, a battery, a series of clocks included in the circuit of the battery, means for grounding said circuit at a distant point, means for grounding either pole of said battery, a second battery, and a switch for connecting said second battery in circuit with a portion of said clocks.

3. The combination, substantially as hereinbefore set forth, of a battery, a regulator, an indicator, secondary clocks, and an electric gage, all included in the circuit of said battery, a circuit-controller operated by said regulator, means for substituting a second regulator for the first independently of the remaining devices in circuit, means for connecting either pole of the battery with the earth, means for connecting the main line with the earth at any one of several points, a second battery, and means for connecting the last-named battery in an earth-circuit with a portion of the main line.

4. The combination, substantially as hereinbefore set forth, of a regulator, a main line, secondary electric clocks included in the same, means controlled by said regulator for transmitting impulses through said main line, a key for completing the circuit-connections through said main line independently of the operation of said regulator, means for grounding said main line at any of several distant points, and means for transmitting

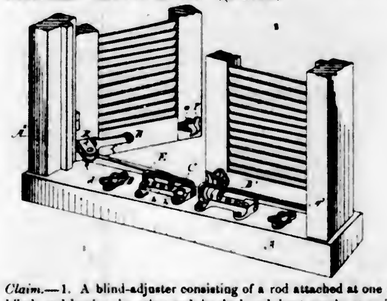
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impulses from said regulator through either portion of said main line when so grounded.

5. The combination, substantially as hereinbefore set forth, of the battery O, the regulator, means controlled thereby for completing circuit-connections of said battery, the switch B, the key K', the switches F' and F², the plates *e'*, *e²*, and *e³*, the main line L, and the circuit-connections, substantially such as described.

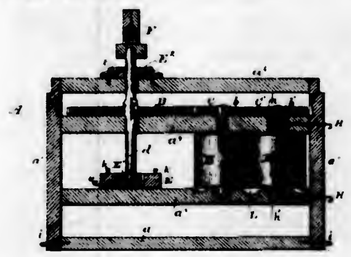
335,861. BLIND-ADJUSTING DEVICE. BENJAMIN D. WASHBURN, Boston, Mass. Filed Nov. 13, 1885. (No model.)



Claim.—1. A blind-adjuster consisting of a rod attached at one end to a blind, and having its other end hooked and bent nearly at a right angle, in combination with a sill-catch provided with a locking-staple, substantially as described.

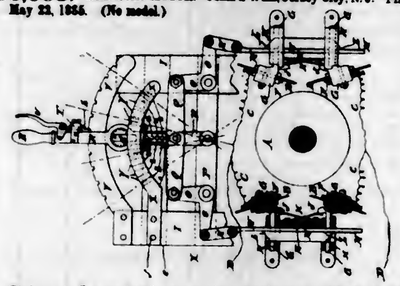
2. The combination of automatic drop-catch P and a sill-catch provided with a notch or hole to receive the spur of the drop-catch, and also provided with a locking-staple, substantially as described.

335,862. CANE-MILL. JOHN T. WEBB, Courtney, Tex. Filed Aug. 11, 1885. (No model.)



Claim.—A cane-mill consisting of the frame A, composed of bed-piece *a*, vertical standards *a'*, and horizontal pieces *a²* *a³* *a⁴*, the piece *a³* having trough L, the vertical shaft *d*, horizontally movable, as described, and provided with the gear D, the roller B, having stationary shaft *b*, provided with pinion C, the roller B', having shaft *b'*, provided with pinion C', boxes A A', and screw-threaded rods H H, all constituted and arranged in the manner and for the purposes described.

335,863. ELECTRIC MOTOR. JOSEPH WEIR, Jersey City, N. J. Filed May 22, 1885. (No model.)



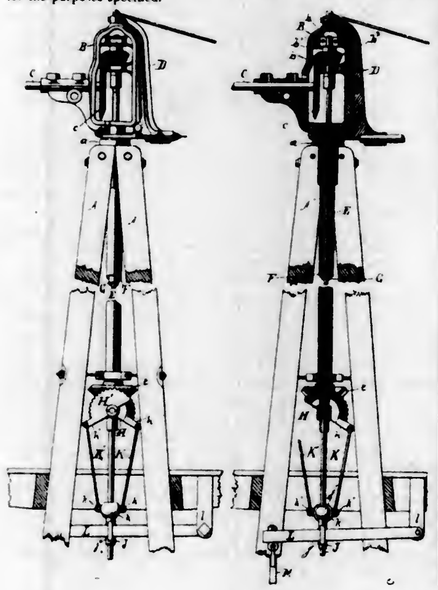
Claim.—1. In an electric motor, the combination, with the brush-holders G and their supporting-frames H, of the springs K, the slides M, having inclined shoulders L, and the slide-operating lever R, substantially as herein shown and described, whereby the brushes can be readily adjusted, as set forth.

2. In an electric motor, the combination, with the brush-operating lever R, of the metallic quadrant W, the contact-pieces Y, the graded resistance-coils *a*, and the contact-springs *d*, substantially as herein shown and described, whereby the electric current can be subjected to any desired amount of resistance, as set forth.

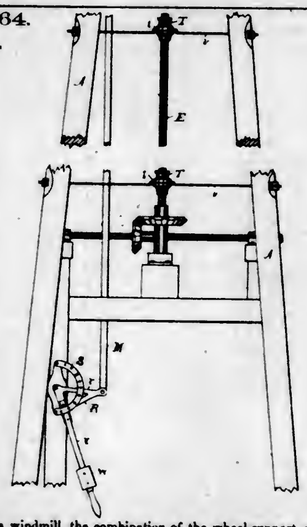
335,864. WINDMILL. WILLIAM H. WHEELER, Beloit, Wis. Filed Apr. 3, 1885. (No model.)

Claim.—1. In a windmill, the combination of the wheel-support and vane-support with a vertical shaft, and means for transmitting the rotary motion of the wind-wheel thereto, and two concentric tubes attached, respectively, to said wheel-support and vane-support, and surrounding said shaft, and means applied to said tubes below the mill-head supports for revolving said tubes relative to each other, for the purpose specified.

2. In a windmill, the combination, with the wheel-support and tail-vane support, and two concentric tubes rigidly attached thereto, respectively, of a beveled gear rigidly attached to one tube and gear-segments pivoted to the other tube, and means for revolving said gear-segments, for the purposes specified.



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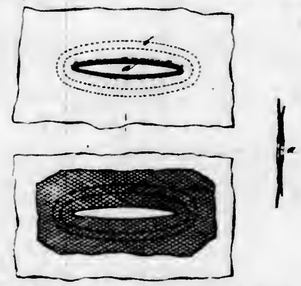
3. In a windmill, the combination of the wheel-support and vane-support with a vertical shaft, and means for transmitting the rotary motion of the wind-wheel thereto, two concentric tubes attached, respectively, to said wheel-support and vane-support, a beveled gear attached to one tube and beveled gear-segments pivoted to the other tube, a loose collar surrounding said shaft, with a ball-and-socket joint on one end thereof, rods connecting said ball-and-socket joint with said segments, and means for imparting a vertical motion to said collar, for the purpose specified.

4. The combination of the wheel-support and vane-support and two concentric tubes attached, respectively, thereto, with a weight of varying resistance connected with said tubes below the mill-head supports, for the purpose specified.

5. In a windmill, the combination, with the wheel-support, tail-vane support, and two concentric tubes attached, respectively, thereto, of a beveled gear attached to one tube, beveled-gear segments pivoted to the other tube, a vertically-moving collar having a ball-and-socket joint on one end, rods connecting said segments and said ball-and-socket joint, a lever for imparting a vertical motion to said collar, a rod pivotally connected to said lever, and a two-armed lever having a weight applied to its lower arm, substantially as and for the purpose set forth.

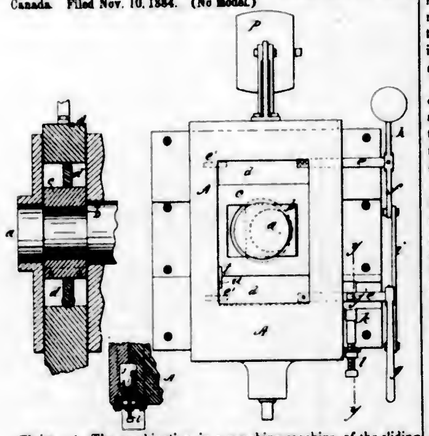
6. In a windmill, the combination, with the wheel-support and vane-support, of two concentric tubes, one tube being rigidly attached to the wheel-support, and means for revolving said tubes relative to each other, and an arm attached to the other tube and to the vane-support, substantially as and for the purpose set forth.

335,865. METHOD OF MAKING BUTTON-HOLES IN LEATHER GLOVES. JOSEPH WHITE, Yeovil, County of Somerset, England. Filed Sept. 19, 1885. (No model.) Patented in England Nov. 13, 1884, No. 14,983.



Claim.—The method of making button-holes which consists in turning the edge of the material of the article at the button-hole inward, then turning in the binding and backing piece at the edge of the button-hole to lie upon the turned-in portion of the article, then stitching through the two turned-in portions, and, finally, stitching the binding and backing piece to the inner face of the article beyond the button-hole, substantially as shown and described.

335,866. PUNCHING-MACHINE. WILLIS WETTED, Lachine, Quebec, Canada. Filed Nov. 10, 1884. (No model.)



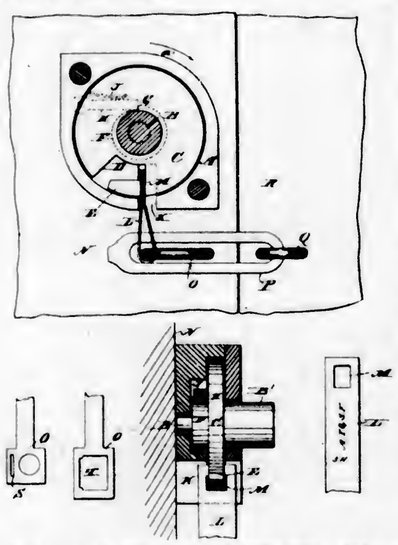
Claim.—1. The combination, in a punching-machine, of the sliding head A, the operating-block *c*, the pivoted devices *d*, and the levers *f* and handle *g* for moving the devices, substantially as described.

2. In a punching-machine, the combination, with an adjustable stop, *k*, of the shaft *e*, having projection *j*, the devices *d*, fitted for movement by operation of the shaft *e*, the operating-block *c*, and the sliding head A, substantially as described.

3. The combination, in a punching-machine, with the sliding head A and its operating-block *c*, of adjustable devices hung so as to be thrown in and out of contact with the block *c*, the lever mechanism connected to the devices *d* for their operation, and an adjustable stop for arresting the downward movement of the head, substantially as described.

4. The combination, with the operating-block *c*, the lower devices *d*, rabbeted at *u*, to form the point *u'*, and the sliding head A, of the projection *t* on block *c*, substantially as shown and described.

335,867. SEAL-LOCK. GEORGE B. WILLIAMS, Las Vegas, N. Mex. Filed Apr. 14, 1885. (No model.)



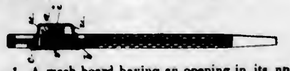
Claim.—1. As an improved article of manufacture, a keyless seal-lock comprising a casing having an opening, a rotary hook journaled in said casing and adapted to be rotated through a complete revolution therein, and means for locking the said hook against reverse movement when its free end is at the opening in said casing, substantially as set forth.

2. In a keyless seal-lock, the combination, with a casing having an opening therein, of a hook journaled in said casing and adapted to be rotated through a complete revolution therein, an offset or shoulder connected with the hook, and a pawl or dog pivoted to the case and adapted to engage said shoulder when the free end of the hook is at the opening in the casing, thereby preventing a reverse movement of the hook, substantially as set forth.

3. In a keyless seal-lock, the combination, with a casing having an opening therein, of a rotary hook journaled in said casing and a stop-shoulder connected therewith, the journal projecting through the casing to serve as a handle, a pawl or dog pivoted to the casing and adapted to engage said shoulder or offset and prevent the reverse movement of the hook, as and for the purpose set forth.

4. The combination, with the casing having a circular recess therein and an opening leading from the outside of the case to said recess, a rotary disk fitting snugly within said circular recess capable of a complete revolution therein and provided with a peripheral hook adapted to cross said opening, and a locking pawl or dog adapted to prevent a reverse movement of the disk when its hook is at the opening in the casing, substantially as set forth.

335,868. WASH-BOARD. JAMES W. WILLIAMS and IRVINE H. EDDY, Louisville, Ky. Filed Jan. 2, 1885. (No model.)



Claim.—1. A wash-board having an opening in its upper part, in combination with a box seated therein having a removable open-barred slide or cover, and containing a spring-follower adapted to hold a cake of soap against the open-barred face of said cover for contact with the wet clothes, substantially as herein set forth.

2. The combination, with a wash-board having an opening in its upper part, of a removable flanged box seated in said opening, having a removable open-barred slide or cover for inclosing a cake of soap upon a follower contained within said box, substantially as herein set forth, for the purpose specified.

3. A soap-containing box having a grated or barred cover describing the space occupied by the contained soap, a spring-follower, and a seat or flange by which said box is removably seated in an opening provided in the upper part of a wash-board, substantially as herein set forth.

4. A wash-board having an opening at or near its top and an open-top soap-retaining box seated therein containing a follower and a spring for maintaining the soap in position at the open top of said box on a plane with the rubbing-surface of the board, substantially as described, for the purpose specified.

335,869. WASH-BOARD. JAMES W. WILLIAMS and IRVINE H. EDDY, Louisville, Ky. Filed May 26, 1885. (No model.)



Claim.—A wash-board having a hole or opening in its upper part, in combination with a soap-retaining box open at its side, having an open-barred top, and containing a spring-follower, whereby the box and its barred top are made fixed parts, and the soap inserted at the open side, as shown and described.

335,870. MACHINE FOR WINDING FABRICS. HERMANN WILHELM WIMMER, Offenbach-on-the-Main, Germany. Filed Feb. 10, 1885. (No model.) Patented in Germany July 6, 1877, No. 282.

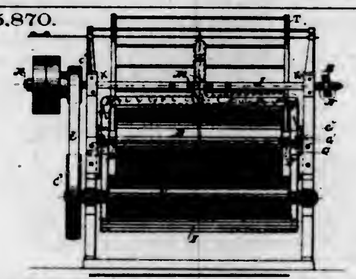
Brief.—The winding-roll rests upon the driving-roll and is journaled in a frame connected to a reciprocating bar actuated by means of a cam on the driving-shaft, to alternately tilt the opposite ends of the frame and winding-roll. Before passing to the winding-roll the fabric passes around adjustable tension-regulating rollers.

Claim.—1. The combination of the winding-roll upon which the material is wound with the driving-roll supporting the winding-roll and mechanism, substantially as described, for alternately lifting and lowering the ends of the winding-roll, as and for the purpose set forth.

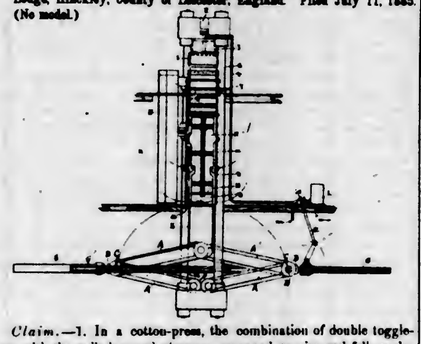
2. The combination of the winding-roll upon which the material is wound with the driving-roll supporting the winding-roll, mechanism, substantially as described, for alternately lifting and lowering the ends of the winding-roll, and the tension-regulating rolls, as and for the purpose set forth.

3. The combination of the winding-roll E, the driving-roll C, the bearings G, the frame H, the angular axis F, removably journaled in bearings G on the frame H, the bar J, and the cam-shaft A, having cam B, all substantially as described.

335,870.



335,871. LEVER COTTON-PRESS. WILLIAM P. ARELL, Kirkby Lodge, Hinckley, County of Leicester, England. Filed July 11, 1885. (No model.)



Claim.—1. In a cotton-press, the combination of double toggle-levers with the cylinders and plungers, arranged to rise and fall, as described, whereby the direction of the applied force always coincides with a straight line passing through the centers of the cylinders and the intersection of the levers with one another at the sides, substantially as hereinbefore described.

2. The rising and falling cylinders, braced together and having their pistons severally connected to a pair of toggle-levers, as shown and described.

3. The rising and falling cylinders, in combination with the bars or braces D, substantially as and for the purpose described.

4. In combination with rising and falling cylinders, and with the levers A A and A' A', the plungers bearing at their ends on the joints of such levers at B B' and giving pressure in the direction, as set forth.

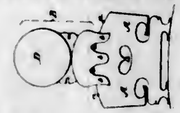
5. The rising and falling toggle-levers, in combination with a single cylinder-bar, I, and weight J, substantially as and for the purpose set forth.

6. In combination with the toggle-levers, the pistons, and rising and falling cylinders, an auxiliary weighted receptacle containing elastic matter or gas, as and for the purpose set forth.

7. The combination, with the toggle-levers, of steam-cylinder, weights, and casing, whereby the potential energy of the levers is utilized, as described.

8. The automatic catches for holding and releasing the ends of the box, enabling the levers to enter the same, substantially as described.

335,872. MUTE FOR STRINGED INSTRUMENTS. CHARLES F. ALBERT, Philadelphia, Pa. Filed Oct. 19, 1885. (No model.)



Claim.—1. A mute for a violin or other instrument, having its portion which extends above the bridge equal or nearly equal in length to the height of the bridge.

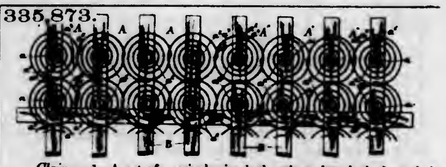
2. A mute for a violin or similar instrument, having the bottom of the slot between the legs which embrace the bridge on a curve corresponding with the top of said bridge.

3. A mute for a violin or similar instrument, having a detachable piece, D, substantially as and for the purpose set forth.

4. A mute for a violin or similar instrument, having in its upper part a gage for the strings of the instrument, substantially as set forth.

335,873. SPRING BED-BOTTOM. IRVIN W. AMES, Bethel, Me. Filed Apr. 8, 1885. (No model.)

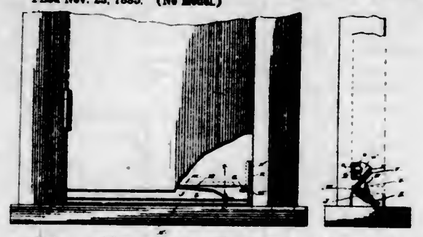
335,873.



Claim.—1. A set of conical wire bed-springs interlocked at their top ends, each spring having a practically circular top or end coil having short vertical parts a^4 a^5 at its interlocking points formed by two opposite right-angled bends in the wire of the coil, said vertical parts a^4 a^5 being adapted to engage the horizontal parts of the top coils of the adjacent springs, whereby the top coils of the several interlocked springs will remain practically in the same plane, substantially as described.

2. A set of conical wire bed-springs interlocked at their top ends, each spring being provided with practically circular top coils having two double bends forming short vertical parts a^4 and a^5, adapted to engage the horizontal parts of the top coil of an adjacent spring, and having the terminal of its wire secured at one end to one of the said two bends, substantially as and for the purpose set forth.

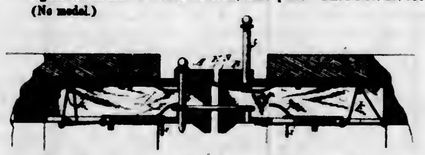
335,874. WEATHER-STRIP. NATHANIEL ARON, Sandy Lake, Pa. Filed Nov. 23, 1885. (No model.)



Claim.—1. The combination, with a door having a grooved recess across its bottom, of a rod pivoted in said recess, a longitudinal folded strip secured at its doubled edge around said rod, and having an elastic strip clamped between its outer edges, a spring-rod secured in the groove of the recess and to the strip, the outer end of said hinge-rod being bent at an angle and moved in a sector-shaped recess in the edge of the door, and an inclined stop secured to the side of the jamb of the door against which the bent end of said rod operates, as shown and described

2. The combination of a door having a recess in its lower edge formed with a groove, and having a sector-shaped recess in the lower end of one edge, a rod rocking in staples in the inner side of the recess, and having an arm at one end rocking in the sector-shaped recess, a longitudinally-doubled metallic strip secured at its doubled edge to the rod, and having an elastic strip clamped between its flanges, a spring-rod secured in the groove of the recess and to the strip, and a plate having a vertical slot and a vertical flange bearing against the abutment of the jamb and an oblique flange at its lower outer corner, the said plate sliding adjustably upon a screw entering the door-jamb, as and for the purpose shown and set forth.

335,875. CAR-COUPLING. JOHN C. BALLENTINE, Thornton, Tex., assignor of one-half to James R. Mills, same place. Filed Nov. 27, 1885. (No model.)



Claim.—1. In a car-coupling, an upper sliding supporting-plate for the pin provided with a tripping device, in combination with a lower sliding supporting-plate for the link, said plate being connected to a spring, and a latch for holding the plate in operative position, substantially as and for the purpose specified.

2. In a car-coupling, the combination of two sliding draw-heads, each provided with a shank having coiled around it a spring and a nut secured thereto, an upper sliding supporting-plate for the pin, having a tripping device, a lower sliding supporting-plate for the link, having a catch, a latch with a trip-arm for holding and releasing said plate, and a spring for drawing it back to its normal position, substantially as and for the purpose set forth.

335,876. BRUSH. JAMES F. BARTLETT, Cleveland, Ohio. Filed May 1, 1884. (No model.)

335,876.



Claim.—1. The bottom piece, B, provided with a tapering opening in one face thereof, substantially as described.

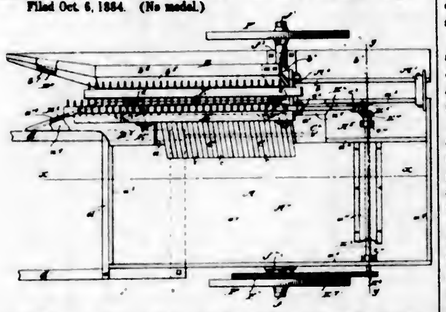
2. A bottom piece having a tapering opening countersunk in one face and provided with an encircling band, leaving a short projecting rim, as and for the purpose set forth.

3. The combination, with a wedge, tapering plug, or bell, of a band encircling and permanently holding a bottom piece or seat, provided with an opening countersunk from within, and of a shape suitable to receive the body of the wedge, plug, or bell, substantially as and for the purpose set forth.

4. A brush made up of a band, A, encircling and holding a bottom piece, B, inserted in such manner as to leave a projecting rim on said band, and provided with a tapering excavation from within, a wedge or plug capable of entering bodily into the excavation, and suitable bristles having their upper ends against the bottom piece and interposed between the plug and the band.

5. In combination with a band encircling a bottom piece or seat provided with an opening countersunk from within and of suitable shape, a wedge, plug, or bell adapted to enter the opening, and provided with a shank, and a handle fitting upon the shank, arranged and operating as described.

335,877. CORN-HARVESTER. CHARLES F. BASSETT, Chicago, Ill. Filed Oct. 6, 1884. (No model.)



Claim.—1. In a corn-harvester, the combination, with the machine-frame, of a longitudinal guide and a series of transversely-located independently-movable cutters arranged with their cutting-edges parallel with and in opposition to the said guide, substantially as and for the purpose set forth.

2. In a corn-harvester, the combination, with the machine-frame, of a longitudinal guide, a series of transversely-located independently-movable cutters arranged with their cutting-edges parallel with and opposed to the said guide, and a series of springs applied to hold the said cutters at the backward limit of their movement, substantially as and for the purpose set forth.

3. In a corn-harvester, the combination, with the machine-frame and an upwardly and rearwardly inclined guide, of a series of transversely-located and independently-movable cutters arranged parallel with the said guide and adapted to operate in opposition thereto, substantially as and for the purpose set forth.

4. In a corn-harvester, the combination, with the machine-frame and a longitudinal guide thereon, of a series of transversely-located independently-movable cutters arranged with their cutting-edges parallel with the said guide and pivotally supported upon the machine-frame with their axes of oscillation below and at the rear of the said cutting-edges, whereby a downward pressure upon the said cutting-edges will cause a forward movement of the cutters toward the opposing surface of the guide, substantially as and for the purpose set forth.

5. In a corn-harvester, the combination, with the machine-frame and a longitudinal guide thereon, of a series of transversely-located independently-movable cutters arranged with and in opposition to their cutting-edges parallel with the said guide and pivotally supported upon the machine with their axes of oscillation below and at the rear of the said cutting-edges, and a series of springs adapted to retain the cutters normally at the backward limit of their movement, substantially as and for the purpose set forth.

6. In a corn-harvester, the combination, with the machine-frame and a longitudinal guide thereon, of a series of transversely-located independently-movable cutters arranged with their cutting-edges parallel with and in opposition to said guide, a series of supporting-arms, C', attached to and sustaining the cutters, a pivot-rod, C^2, affording pivotal bearings for the several arms C', and a series of springs acting separately upon the said arms for holding the cutters at the rearward limit of their movement, substantially as and for the purpose set forth.

7. In a corn-harvester, the combination, with the machine-frame and a longitudinal guide thereon, of a series of transversely-located independently-movable cutters arranged with their cutting-edges parallel with and in opposition to said guide, a series of centrally-apertured supporting-arms, C', attached to and sustaining said cutters, a pivot-rod, C^2, affording pivotal bearings for the several arms C', a fixed bar, C^4, extending through the apertures of the arms and operating as a stop to limit the rearward and forward movement of the cutters, and a series of springs, C^3, attached to said bar and acting at their free ends upon the said arms C' so as to retain the cutters at the rearward limit of their movement, substantially as and for the purpose set forth.

8. In a corn-harvester, the combination, with the machine-frame and a longitudinal guide, B', of a series of transversely-located and independently-movable cutters arranged with their cutting-edges parallel with and in opposition to the said guide, and a second guide, B', arranged parallel with the guide B' and the said cutting-edges, substantially as and for the purpose set forth.

9. In a corn-harvester, the combination, with the machine-frame and a series of transversely-arranged cutters, C, of a guide, B', arranged parallel with the cutting-edges of the cutters and having a vertical bearing-surface opposed to the cutters, substantially as and for the purpose set forth.

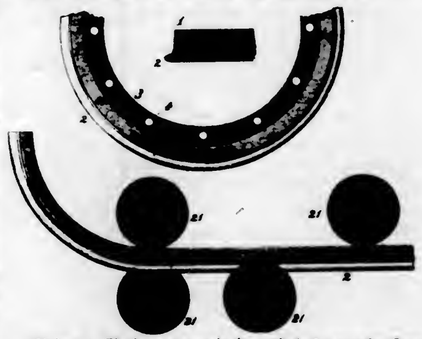
10. In a corn-harvester, the combination, with the machine-frame and a longitudinal guide thereon, of a series of transversely-arranged independently-movable cutters, C, provided with depending side flanges, c', downwardly and rearwardly inclined upon their forward ends, substantially as and for the purpose set forth.

11. In a corn-harvester, the combination, with the machine-frame and a longitudinal guide thereon, of a series of transversely-arranged independently-movable cutters, C, provided with depending side flanges, c', having cutting-edges upon their forward ends, substantially as and for the purpose set forth.

12. In a corn-harvester, the combination, with the machine-frame and a guide thereon, of a series of transversely-located independently-movable cutters arranged with their cutting-edges in opposition to the guide, rotatory crank-shafts E' E^2, rotatably mounted upon said frame, and rakes E, supported upon said crank-shafts, substantially as and for the purpose set forth.

13. In a corn-harvester, the combination, with a series of transversely-arranged cutters, C, supported upon the main part or body A of the machine-frame, and an opposing longitudinal guide, B', arranged at one side of the frame, of metal yokes A' A^2 for supporting said guide from the said main part of the frame, substantially as and for the purpose set forth.

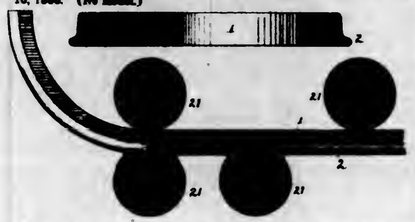
335,878. METHOD OF UTILIZING OLD WHEEL-TIRES. CLIFTON B. BEACH, Cleveland, Ohio. Filed July 18, 1884. (No model.)



Claim.—1. The improvement in the method of converting flanged steel tires into billets or bars, which consists in first eliminating therefrom all openings which are surrounded by a continuous wall of metal, reducing the tire thereafter to rectangular section by rolling in roughing-rolls having supporting-grooves suited to prevent the folding over or buckling of its flange or flanges in the operation, and finally reducing the section so formed to a billet or bar by rolling in finishing-rolls, substantially as set forth.

2. The improvement in the method of converting flanged steel tires into billets or bars, which consists in detaching from the tire any desired proportion of the metal of its inner flange, reducing the tire thereafter to rectangular section by rolling in roughing-rolls having supporting-grooves suited to prevent the folding over or buckling of its flange or flanges in the operation, and reducing the section so formed to a billet or bar by rolling in finishing-rolls, substantially as set forth.

335,879. APPARATUS FOR CONVERTING STEEL TIRES INTO BARS OR BILLETS. CLIFTON B. BEACH, Cleveland, Ohio. Filed July 10, 1885. (No model.)



Claim.—1. An apparatus or plant for converting flanged steel tires into billets or bars, in which are combined the following elements, to wit: an anvil having a cylindrical recess, and a table or bearing adapted to support a tire at the top of said recess, a steam-hammer located above and concentric with said recess, a tire-supporting table, and a saw or cutter for severing a tire resting thereon, roughing-rolls having supporting grooves or channels for the reception and reduction of tire-flanges, and finishing-rolls grooved to reduce the quadrangular section produced by the roughing-rolls to a billet or bar of desired section, substantially as set forth.

2. In an apparatus or plant for converting flanged steel tires into billets or bars, the combination of a tire-supporting table and a saw or cutter for severing a tire resting thereon, roughing-rolls having supporting grooves or channels for the reception and reduction of tire-flanges, and finishing-rolls grooved to reduce the quadrangular section produced by the roughing-rolls to a billet or bar of desired section, substantially as set forth.

3. In an apparatus or plant for converting flanged steel tires into billets or bars, the combination of a table for supporting a railroad-tire and a saw or cutter for severing said tire radially while supported upon the table preparatory to effecting the reduction and change of form of its transverse section, substantially as set forth.

4. In an apparatus or plant for converting flanged steel tires into billets or bars, the combination of a table for supporting a railroad-tire, a saw or cutter for severing said tire radially while supported upon the table, and a series of straightening-rolls, substantially as set forth.

5. In an apparatus or plant for converting flanged steel tires into billets or bars, the combination of a table for supporting a railroad-tire, a saw or cutter for severing said tire radially while supported upon the table, and gearing for rotating the table and tire, these members being combined for joint operation, to divide the tire into a series of segmental blooms preparatory to effecting the reduction and change of form of its transverse section, substantially as set forth.

6. In an apparatus or plant for converting flanged steel tires into billets or bars, the combination of an anvil having a cylindrical recess, and a table or bearing adapted to support a railroad-tire at the top of said recess, and a steam-hammer located above and concentric with said recess and table, and adapted to detach the whole or a portion of the inner flange of the tire preparatory to effecting the reduction and change of form of its transverse section, substantially as set forth.

7. In an apparatus or plant for converting flanged steel tires into billets or bars, the combination of an anvil having a cylindrical recess, and a table or bearing adapted to support a railroad-tire at the top of said recess, a steam-hammer located above and concentric with said recess and table, roughing-rolls having supporting grooves or channels for the reception and reduction of tire-flanges, and finishing-rolls grooved to reduce the quadrangular section produced by the roughing-rolls to a billet or bar of desired section, substantially as set forth.

8. In an apparatus or plant for converting flanged steel tires into billets or bars, the combination of a recessed anvil having a tire-supporting table or bearing at the top of its recess, a steam-hammer located above and concentric with said recess and table, and a hammer-block adapted to fit within a tire supported upon said table, substantially as set forth.

9. In an apparatus or plant for converting flanged steel tires into billets or bars, the combination of a recessed anvil having a tire-supporting table at the top of its recess, a steam-hammer located above and concentric with said recess and table, connecting-hooks coupled to said hammer, and a hammer-block fitting within the recess of the anvil, and having pins or catches to engage the connecting-hooks, substantially as set forth.

10. In an apparatus or plant for converting flanged steel tires into billets or bars, a pair of roughing-rolls for rolling tire-sections, said rolls having supporting grooves or channels for the reception and reduction of the flanges of the tires, substantially as set forth.

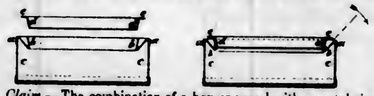
11. In an apparatus or plant for converting flanged steel tires into billets or bars, the combination of roughing-rolls having supporting grooves or channels for the reception and reduction of tire-flanges and finishing-rolls grooved to reduce the quadrangular section produced by the roughing-rolls to a billet or bar of desired section, substantially as set forth.

335,880. WASHING-MACHINE. JOHN B. BELL, Pittsburg, Pa. Filed Sept. 20, 1884. (No model.)



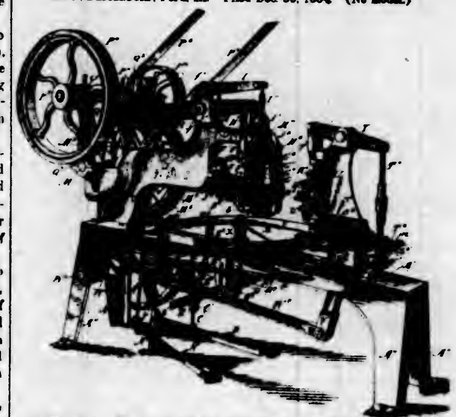
Claim.—The combination of the heater comprising the pieces having suitable bearings, and provided with the journal-pin above said bearings, the side pieces being connected by the handle-bar at their top, and provided with extensions above said bar, the weights fitted upon these extensions, the crank-wheel, and the pitman extending from the crank-wheel, and provided with the elongated bearing receiving the journal-pin upon the heater, substantially as and for the purpose set forth.

335,881. BOX FOR ALIMENTARY AND OTHER SUBSTANCES. JOHN BENTLEY, Manchester, County of Lancaster, England. Filed Oct. 7 1885. (No model.) Patented in England June 24, 1885, No. 7,663.



Claim.—The combination of a box or vessel with a metal ring, a b, of a Z shape, and a lid having a depressed body, and a conical rim above its body, adapted to said Z-shaped ring, substantially as described.

335,882. MACHINE FOR SECURING SPOKES IN WHEELS. WILLIAM P. BETTENDORF, Peru, Ill. Filed Dec. 30, 1884. (No model.)



Claim.—1. The combination of a movable spindle having a bearing-surface at its upper portion to receive and support a wheel-hub, with a device for entering the hub and operating to form a rivet-head on the inner end of the spoke, substantially as described.

2. A tire-carrier on which the tire is supported, and on which it is moved around to have the spokes secured therein, substantially as specified.

3. The spindle D, having the centering-pin D', and devices for raising and lowering the spindle for carrying a hub in position, substantially as and for the purpose specified.

4. The foot-treadle B, and lever C, operated from the foot-treadle, in combination with a spindle, D, having a centering-pin, D', for carrying a hub in position to have the spokes secured therein, substantially as specified.

5. The lever or foot-treadle B, and lever C^2, operated from the foot-treadle, in combination with a spindle, D, centering-pin D', and guide or holder D^2, for raising and holding a hub in position to have the spokes secured therein, substantially as specified.

6. The spindle D and devices for operating the same, in combination with a tire-supporting device supported from said spindle and moving therewith, for simultaneously raising the hub and tire to have spokes secured in position, substantially as specified.

7. The combination of bars E, yoke E', bars or supports E'' and E^3, and anti-friction rollers a^3, for forming a support for the tire, by which the tire can be raised and turned or rotated, substantially as and for the purpose specified.

8. The combination of a hub-supporting device and a tire supporting and carrying device operating in unison to simultaneously raise a hub and tire for securing the spokes therein, substantially as specified.

9. The combination, with gripping-jaws, of a lever to enter the interior of the hub and engage a spoke end and form thereon a rivet-head, substantially as described.

10. The combination of jaws for clamping a spoke immediately outside a hub, with a device to enter the interior of said hub, and by its end impinge upon the end of the spoke to form thereon a rivet-head, substantially as described.

11. In combination with gripping-jaws, a lever having a long and short arm and pivotally supported to have the short arms act and engage a spoke end on the interior of a hub, and thus co-operate to form a rivet or head, substantially as described.

12. In combination with gripping-jaws, the projection *b*, carried by the arm *b'* of a lever, F, for entering the interior of a hub, and thus co-operate to form a rivet or head on the spoke end, substantially as described.

13. The lever F, having an arm, *b'*, with a projection, *b*, in combination with a slide or block connected with the lever F, and devices for operating the slide or block, substantially as and for the purpose specified.

14. The lever F, having an arm, *b'*, with an end, *b*, connecting-rod F', slide or box F''', and guide-rod F^3, in combination with a lever, H, and links or straps H', for operating the lever F and producing the pressure to form a rivet or head on a spoke end, substantially as and for the purpose specified.

15. A die or clamp movable toward the hub, provided with a hole to receive the body of the spoke, and operating to bite the spoke on the outside of the hub to form a bead or flange thereon, substantially as described.

16. A die or clamp, G, movable toward the hub, formed of two blocks or beads, each having an inclined semicircular opening, and adapted to be opened and closed to receive and firmly bite the body of a spoke on the exterior of the hub and move to form a bead or flange thereon, substantially as specified.

17. The sectional die or clamp G, having an inclined opening, in combination with the toggle-levers G' G'' and slide or box G^2, for opening and closing the die or clamp, substantially as and for the purpose specified.

18. The die or clamp G, toggle-levers G' G'', and slide or box G^2, in combination with a lever, I, straps I', and connecting-rod I'', for opening and closing the die or clamp and producing a firm bite on the spoke, substantially as and for the purpose specified.

19. The die or clamp G, toggle-levers G' G'', slide or box G^2, lever I, straps I', and connection I'', in combination with a cam-trackway, M^3 and M^4, for allowing the die or clamp to open and causing it to firmly bite the spoke, substantially as and for the purpose specified.

20. The reciprocating box or support K, carrying the die or clamp G, substantially as described.

21. The sliding box or support K, carrying the die or clamp G and operating devices therefor, in combination with the levers H^2, links H'', and lever H, for advancing the box or support, substantially as and for the purpose specified.

22. The lever F, having an arm, *b'*, with end or projection *b* and die or clamp G, in combination with the lever H and box or support K, and devices for operating the lever F and box or support K simultaneously, substantially as and for the purpose specified.

23. The die or clamp R, in combination with the toggle-levers R' R'' and slide or box R^2, for opening and closing the die or clamp and biting the body of the spoke, substantially as and for the purpose specified.

24. The die or clamp R, toggle-levers R' R'', and slide or block R^2, in combination with the lever T, straps T', and connecting-rod and operating mechanism for opening and closing the jaws and causing them to act on the spoke, substantially as and for the purpose specified.

25. An upsetter, S, in combination with a guide, S', to fit around the end of a spoke sufficiently close to brace the spoke to prevent the upsetter in its advance from bending or breaking down the projecting end of the spoke while a bead or flange is being formed inside a tire, substantially as described.

26. The combination of an upsetter, S, a guide, S', to brace a spoke to prevent the same from being bent or broken down, a support carrying the guide, and means for advancing the guide around a spoke while a bead is being formed thereon inside a tire, and withdrawing the guide after the formation of said bead to permit an outer bead or rivet to be formed on the spoke, substantially as described.

27. The punch S, guide S', sliding frame S'', S^3, and S^4, in combination with the spring S^4, roller *n*, and inclines *n'* *n''*, for advancing and retracting the guide, substantially as and for the purpose specified.

28. The combination of a die or clamp operating to bite a spoke inside of a tire, a guide to brace a spoke to prevent it being broken down outside the tire and an upsetter acting on the projecting end of the spoke, substantially as described.

29. The combination, with a die or clamp operating to bite a spoke adjacent to the exterior of the hub, of a lever acting to force down the end of the spoke on the interior of the hub, and punch operated to force down the end of the spoke projecting beyond the tire for securing the spoke in the hub and tire, substantially as set forth.

30. The combination, with dies or clamps acting to bite a spoke adjacent to the exterior of the hub and interior face of the tire, of a lever engaging the end of the spoke within the hub and a punch engaging the end of the spoke outside of the tire for securing spokes in the hub and tire by flanges or beads and rivets or beads, substantially as specified.

335,883. AUTOMATIC FAN FOR FURNITURE. HERMANN M. BIEN, Vicksburg, Miss. Filed Apr. 30, 1885. (No model.)



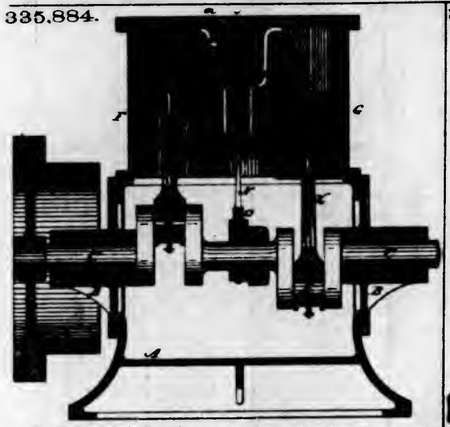
Claim.—A portable knockdown frame for furniture attachment, consisting of a series of vertical uprights, C, horizontal bars E and D, and braces H, adapted to interlock and compose a quadrangular frame, in combination with a series of oscillatory fans, G, depending from rods F, provided with fastening devices adapted to loosely mesh with hooks upon the cross-bars D of the device, substantially as described.

335,884. DIRECT-ACTING ENGINE. GEORGE W. BISHLOW, New Haven, Conn. Filed Sept. 15, 1884. (No model.)

Claim.—1. In a pair of single-acting engines, the combination of the two cylinders, a cylindrical valve-chamber between them, an annular steam-chamber in said valve-chamber, a passage opening from the valve-chamber from above the steam-chamber to one of the cylinders, and a like passage from below the steam-chamber to the other cylinder, an annular exhaust-chamber below the steam-chamber, and a valve consisting of three connected pistons—one above the steam-chamber, one below the exhaust-chamber, and one between the steam and exhaust chambers—the said valve open at its upper end and downward, closed at its lower end, and constructed with apertures opening from between the lower piston and the intermediate piston into the exhaust-chamber, substantially as described.

2. In a direct-acting steam-engine, a cylindrical valve-chamber constructed with an annular eccentric recess around the inside of said chamber, the said recess forming the steam-chamber P, with a passage leading direct from the said valve-chamber to the cylinder, and a cylindrical valve adapted to work in said valve-chamber and to open and cut off communication between said recess and the said passage, substantially as described.

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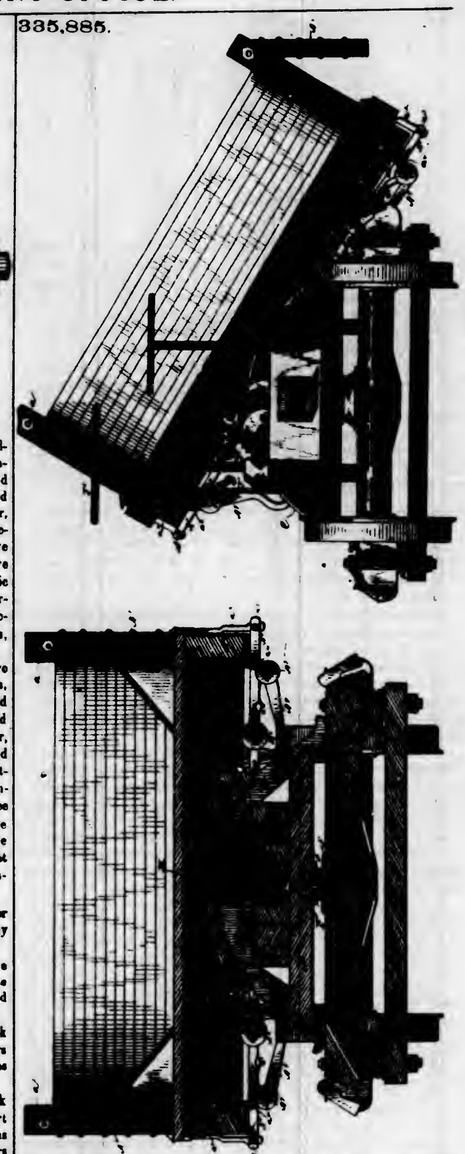


3. In a pair of single-acting engines, the combination of the two cylinders, a cylindrical valve-chamber between the two cylinders, and an annular eccentric recess around the inside of said valve-chamber, the said recess forming the steam-chamber P, with a passage opening from said valve-chamber above the said eccentric steam-chamber to one cylinder, and a like passage opening from said valve-chamber below the said eccentric steam-chamber to the other cylinder, with a cylindrical valve adapted to work in the said cylindrical valve-chamber, the said valve consisting of two connected pistons, the one above the said eccentric steam-chamber and the other below said eccentric steam-chamber, arranged and operating to close and open communication between said eccentric steam-chamber and the said passages to the respective cylinders, substantially as described.

4. In a pair of single-acting engines, the combination of the two cylinders, a cylindrical valve-chamber between the said two cylinders, an annular eccentric recess around the inside of said chamber, the said recess forming the steam-chamber P, with a passage opening from said valve-chamber above the said eccentric steam-chamber to one cylinder, and a like passage opening from the said valve-chamber below the said eccentric steam-chamber to the other cylinder, and an annular exhaust-chamber around the inside of the valve-chamber below the steam-chamber, with a cylindrical valve in said valve-chamber, consisting of three connected pistons—one piston above the steam-chamber, one below the exhaust-chamber, and one between the steam and exhaust chambers—the said valve being of tubular shape, open at the upper end and closed at the lower end, with apertures between the lower and intermediate pistons, substantially as described.

335,885. DUMPING-CAR. GEORGE E. BLAINE, Dayton, Ohio, assignor to the Blaine Car and Manufacturing Company, same place. Filed July 25, 1885. (No model.)

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Claim.—1. In combination, the tilting body, the dependent concave rack carried thereby, the anti-friction rollers carried by the rack, the main or stationary body of the car, and the curved guideways mounted thereon provided with upturned ends, for the purpose set forth.

2. In combination, the tilting body, the dependent concave rack carried thereby, the pin passing through said rack, the hooked hangers on the ends of said pins, and the curved guideways having side flanges with which said hangers engage, for the purpose set forth.

3. In combination, the tilting car-body, the dependent concave rack carried thereby, the main body, a pair of curved guideways held apart by shouldered bolts, and having upturned ends and side flanges, the pins in the ends of the rack, the rollers on said pins, and the hooked hangers on said pins to engage said flanges, as set forth.

4. In combination, the tilting car-body having its sides pivoted at their tops, the latches normally held in their highest position, the operating-levers A^2, and the main body of the car having stirrups through which said operating-levers pass, and by which they are automatically elevated or depressed, as set forth.

5. In combination, the tilting car-body, its pivoted sides, the latches normally held in their highest position, the weighted levers secured thereto, the operating-lever A^2, and the main body having stirrups to operate said lever, as set forth.

6. In combination, the tilting car-body, the pivoted sides, the normally-upheld latches, the pivoted lever engaging said latches at one end and provided with adjustable weight at the other, the operating-lever A^2, and the main body having stirrups for actuating said lever, as set forth and described.

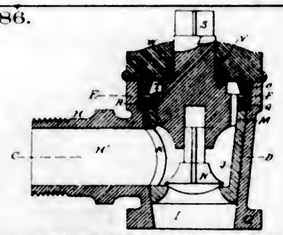
7. In combination, the tilting car-body, the normally-upheld latches, the operating-lever A^2, provided with bend a^{10} a^2 a^{11}, and the main body having stirrups with cross-bar to operate on said bend in the operating-lever as the car-body is tilted, as set forth.

8. In combination, the tilting car-body, the flanged and perforated cylinder bolted thereto, the spring within said cylinder, the eyebolt and nut in said cylinder and engaging said spring, the main car-body, and chains connecting said main body with said eyebolts, as set forth.

335,886. STOP AND CHECK VALVE. JOSEPH E. BOTT, Manchester, County of Lancaster, England, assignor of one-half to James Heward, Nicetown, Pa. Filed Mar. 23, 1885. (No model.)

Claim.—1. The combination of the valve-casing having an end inlet and lateral discharge, an open-ended plug adapted to a seat in said casing and having a lateral opening of such area that on turning the plug the discharge is cut off, a nut whereby the plug is retained in position in the casing, a check-valve adapted to a seat around the open end of the plug, and an operating-stem connected to the plug and projecting above the retaining-nut, all substantially as specified.

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2. The combination of the casing having an end inlet and a lateral discharge, an open-ended plug adapted to a seat in the casing and having a lateral opening of such area that on turning the plug the discharge is cut off, a check-valve adapted to a seat around the open end of the plug, a nut whereby the plug is retained in its seat in the casing, a cap, W, above said nut, and an operating-stem connected to the plug and projecting through said cap, all substantially as specified.

3. The combination of the casing, the hollow plug J and check-valve, the nut R, the turning-plug L, and the key M, whereby the plug J and the nut are caused to rotate with said turning-plug, all substantially as specified.

4. The combination of the casing, the hollow plug J and check-valve N, the confining-nut R for said plug, and the turning-plug L, keyed to the plug J and nut R, and having a lug, T, whereby its descent is prevented, all substantially as specified.

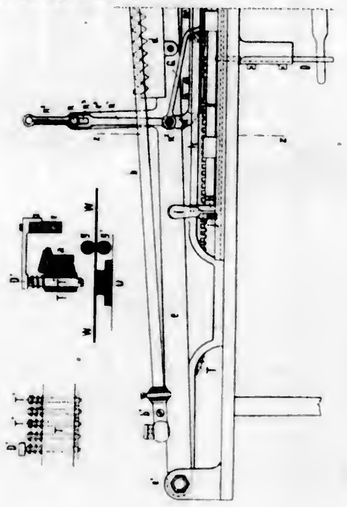
335,887. **TYPE-WRITING MACHINE.** ERNST W. BRACKELSBERG, Hagen, Prussia, Germany. Filed Oct. 19, 1885. (No model.) Patented in Germany Dec. 16, 1884, No. 31,965; in Belgium Feb. 20, 1885, No. 67,945; in France Feb. 21, 1885, No. 167,305; in England Feb. 27, 1885, No. 2,668, and in Austria-Hungary June 27, 1885, XXXV, 1,116, and XIX, 1,114.

Claim.—1. The sliding type-carrier T, with types, the rod *b*, flexibly connected thereto and provided with beak c^3, the lever *e*, carrying a register of the characters of the types, arranged to correspond with the types, as described, guides d^2, for guiding the beak c^3 in respect to the characters on lever *e*, and means, substantially as described, in connection with *e*, for producing contact between the type being in printing position and the material to be printed upon, all combined and co-operating substantially as specified.

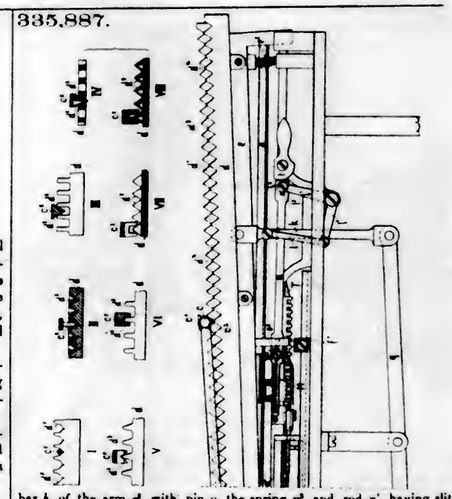
2. The sliding type-carrier T, with types, the rod *b*, flexibly connected thereto and carrying beak c^3, the lever *e*, guides d^2, and the printing-bar D, connected to lever *e* so as to be pressed against the type in printing position when *e* is depressed, all combined and co-operating substantially as hereinbefore set forth.

3. The combination, with the type-carrier T, rod *b*, beak c^3, lever *e*, guides d^2, of the carriage H, connected to the lever *e*, substantially as specified, so that it shall be shifted forward when the said lever is depressed, substantially as and for the purpose described.

4. The combination, with the type-carrier T, rod *b*, beak c^3, lever *e*, guides d^2, carriage H, having the bar *h*, and feed-pawl G, acting on



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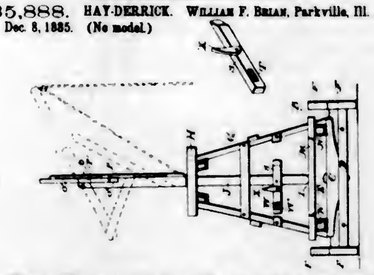


bar *h*, of the arm e^2, with pin *n*, the spring n^2, and rod *n'*, having slit n^4, the link m^3, united bars *m'* and *m*, having the slit l^3, elbow-lever *l'*, with pin l^2, and link *l*, substantially as hereinbefore described, and for the purpose set forth.

5. The combination, with the type-carrier T, having recesses *p'* between the types, the rod *b*, beak c^3, lever *e*, guides d^2, carriage H, and a feed-pawl, arranged and operating substantially as described, to shift the carriage when *e* is depressed, of a gage-lever, M, and means, substantially as described, for pressing the lever M laterally against the types and into the recesses *p'*, for moving the same lengthwise, together with the feed-pawl, for allowing it to stop when it has traveled to the end of a recess, *p'*, and for limiting its retrograde motion, substantially as and for the purpose specified.

6. The combination, with the type-carrier T, having recesses *p'*, the rod *b*, beak c^3, lever *e*, guides d^2, carriage H, with bar *h*, pawl G, and means, substantially as described, in connection with *e*, for depressing and raising the outer end of G, of the gage-lever M, spring *o'*, curved finger o^2, bar *m'*, with pin m^3, spring m^4, bar *m*, with slits m^5 and l^3, elbow-lever *l'*, with pin l^2, links *l* and m^3, and stop *t*, substantially as and for the purpose set forth.

335,888. **HAY-DERRICK.** WILLIAM F. BRIAN, Parkville, Ill. Filed Dec. 8, 1885. (No model.)



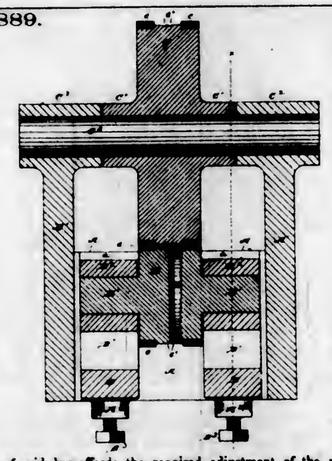
Claim.—The combination, with the truck and derrick-frame, of the derrick-pole having the inclined bar at its upper end and the slotted horizontal bar near its lower end, the pulleys P^2, Q, and R, and the hoisting-rope having the portions V and U, the latter being knotted at its end, substantially as specified.

335,889. **FEEDING DEVICE FOR WIRE-COILING AND OTHER MACHINES.** ORLANDO P. BRIGGS, Chicago, Ill., assignor to Ames & Frost, same place. Filed July 23, 1883. Renewed July 13, 1885. Again renewed Aug. 13, 1885. (No model.)

Claim.—1. A device for simultaneously feeding two wires side by side to a wire-coiling or other machine, comprising a stationary roller, C, and two separately and self adjusting rollers, E E, substantially as and for the purpose set forth.

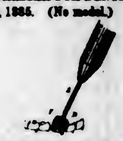
2. In a device for simultaneously feeding two wires side by side to a wire-coiling or other machine, the combination, with the frame A A', which supports the stationary roller, of the open removable frame composed of the bars B B and connecting parts B', and having the adjustable roller E, mounted on the bar B between its ends, whereby the

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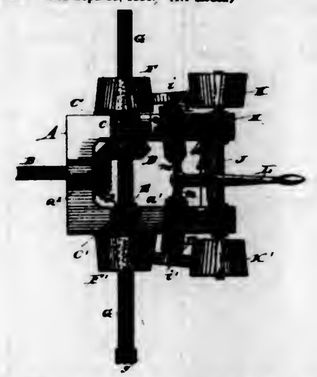
elasticity of said bar affords the required adjustment of the roller E when the machine is in operation, substantially as described.

335,890. **ROOT-DRESSER FOR DENTISTS.** EDWARD B. CALL, Peoria, Ill. Filed Feb. 9, 1885. (No model.)



Claim.—In a root-dresser, the shaft S, in combination with the flanged disk D and the screw W, for terminally securing said disk to said shaft, as and for the purpose herein described.

335,891. **FEED MECHANISM FOR ROCK-DRILLS.** GEORGE F. CASE, Denver, Colo. Filed Sept. 15, 1885. (No model.)



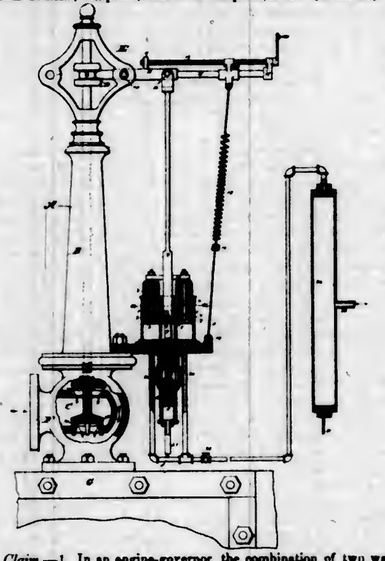
Claim.—1. The combination, with a supporting-frame and the drill-rod, of a revolving nut and differential friction feed mechanism, substantially as set forth.

2. The combination, with the supporting-frame and drill-rod, of a revolving sleeve and a revolving nut supported in bearings of said frame, cone-gearing arranged upon said sleeve and nut, and shifting rollers and the auxiliary cone-wheels for varying the feed of the drill-rod, substantially as set forth.

3. The combination, with the supporting-frame and the drill-rod, of a revolving sleeve and revolving nut, each provided with a cone-wheel, and said sleeve being geared to a driving-shaft, a shaft arranged parallel to the drill-rod, and cone-wheels mounted thereon, friction-rollers mounted upon independent shafts between the two sets of cone-wheels, and a lever for shifting said friction-rollers, substantially as set forth.

4. The combination, with the supporting-frame, the drill-rod, and cone-gearing, of sliding bearings for the friction-rollers, said bearings being secured by a link-connection to a shifting-lever, substantially as set forth.

335,892. **STEAM-ENGINE GOVERNOR.** JOSEPH C. COMFORD and JOHN P. KERR, Marquette, Mich. Filed Sept. 15, 1885. (No model.)



Claim.—1. In an engine-governor, the combination of two water-pistons, 3 3, connected to a common cross-bar and cross-head, 17, and operated upon by water-pressure from pumps connected with engine, the connecting-rod 7, firmly attached to the cross-head and guide 8 and the cross-head 17, with the metallic piston 4, operated upon by steam-pressure from boiler, with the fork connection-rod 9, attached to the cross-head and guide 8 and to the lever 15 15, to engage the spindle B at the point D with the spindle B of the column A, with the cut-off or throttle C of the globe-valve F, attached to steam-chest, as and for the purposes substantially as described.

2. In an engine-governor, the combination of the water-cylinders 1 1 with the pistons or plungers 3 3, with metal shoulder-caps and leather self-packing 5 5, with the crown-head screws or bolts passing through the center of said pistons, with their common cross-bar 17, having a rod-connection downward, 7, between said cylinders, to engage the steam-piston 4 of the cylinder 2 with the cross-head 8, with the fork connection-rod 9, with the lever 15 15, to engage the spindle B of the cut-off or throttle C, as and for the purposes substantially as described.

3. In an engine-governor, the combination of the pistons 3 3, operating in the cylinders 1 1, with the steam-cylinder 2, with the metal piston 4, having its upper end cone-shaped and adapted to engage the spindle or connection-rod 7 with the cross-head 8, the fork connection-rod 9, with the lever 15 15, the tension-spring 12 12, the extension-rod 11, the lower pin-connection for extension-rod 19, its cross-head connections 14 and 16, with the tension-screw 13 and its bearings 18 18, with the combined movable slide 14 upon the lever 15 15, serving also as upper cross-head to tension-springs, and as a movable nut, through which the tension-screw operates, the spindle B of the cut-off or throttle C, with the column A, as and for the purpose substantially as described.

4. In an engine-governor, the combination of the cylinders 1 1 and 2 with the respective pistons 3 3 and 4, the water-cylinders 1 1 being secured to the bed-plate 6 above, and connected to and with the steam-cylinder through the bed-plate, in the manner substantially as shown, with the sand-trap 20, the drip-port 21, with the water-supply ports from the pumps connected with the engine 22, the globe check-valve to regulate the pressure of the water, to prevent the governor from acting too sensitive, 23, with the water-pressure feed 24 24, the pistons 3 3, with the cross-bar 17, the steam metal piston 4, with the steam-port 25, the piston-rod 7, the cross-head 8, the fork connection-rod 9, with the lever 15 15, with the spindle B of the cut-off or throttle C, as and for the purposes substantially as shown and described.

5. In an engine-governor, the combination of the bell-mouth cylinders 1 1 with the pistons 3 3, the leather self-packing 5 5, the guide-plate and cross-head 17, with the connection-rod 7 downward between said cylinders and through the cross-head and guide 8, through the bed-plate 6, to engage the metallic piston 4, the steam-cylinder 2, the fork connection-rod 9, with the cross-head 8, and the lever 15 15, with the tension-springs 12 12, with the tension-screw 13, the bearings 18 18, and the spindle B of the cut-off or throttle C, as and for the purposes substantially as shown.

6. In an engine-governor, the combination of the pressure from the boiler through the steam-port 25 on the metal piston 4 in the cylinder 2, with the connection-rod 7, the cross-head and guide 8, with the pressure of the water upon the pistons 3 3 in the cylinders 1 1, the feed-pipes 24 24, the globe check-valve 23, the supply-pipes from the pumps, 22, the sand-trap 20, the drip-port 21, the cross-bar 17, with the connection-rod 7, the cross-head and guide 8, the fork connection-rod 9, with the lever 15 15, with the tension-springs 12 12, the tension-screw 13, and the spindle B of the cut-off or throttle C, as and for the purposes substantially as set forth.

7. In an engine-governor, the combination of a single steam-cylinder attached to the under side of a bed-plate and secured thereto by a tubular fitting coming down through a hole in the bed-plate from two water-cylinders standing side by side and attached by the same fitting to the bed-plate above, the steam-cylinder having a metal piston therein adapted to operate by direct boiler-pressure, the head of the piston having a conical-shape bearing adapted to engage a end of a connection-rod attached to a cross-head and guide coming down from above the bed-plate through the tubular connection, the cross-head being free to move up and down in the guide between the water-cylinders, and being attached to a lever by means of a fork connection-rod, with two water-cylinders having pistons connected at their tops by a common cross-bar and acting in unison, being adapted to receive water-pressure from a common feed-pipe for pumps connected with the engine, their common cross-bar being connected by a connection-rod and a fork connection-rod to a lever, the steam-piston and the water-pistons being adapted to impart upward pressure upon said lever, with two tension-springs attached to the lever, and adapted to draw down the end of the lever and to overcome the upward pressure of the steam and water, the short arm of said lever being adapted to open or close the cut-off or throttle, as and for the purposes as described.

8. In an engine-governor constructed substantially as shown, the combination of two tension-springs attached to the long arm of a lever by means of a sliding cross-head, their opposite ends being securely fastened to a cross-head and extension-rod to a fixed point below, the sliding cross-head also forming a movable nut, through which passes an endless screw with suitable bearing, and adapted to change the position of the sliding cross-head upon the lever, so as to make the springs engage said lever with more or less power when desired, with two water-cylinders standing side by side upon and being firmly and securely attached to a bed-plate, and through a bed-plate to a steam-cylinder below, which is provided with square shoulders, and is also securely fastened to the bed-plate and the cylinders above by means of a thread cut on the inside of the upper extension of the steam-cylinder, and adapted to engage the tubular portion of the shoulders of the two water-cylinders above coming down through a hole in the bed-plate, the water-cylinders being provided with wooden pistons or plungers having metal shoulder-caps at both ends and a leather self-packing adapted to work in said cylinders, both pistons having crown-head screws or bolts running through their centers from end to end, with suitable nuts, and being connected at their top by a common cross-bar, which allows of their free movement up and down in the cylinders, the cross-bar having a connection-rod extending downward through a cross-head and guide between said cylinders and through a tube in the bed-plate on a line with and to engage the metallic piston of the steam-cylinder below, the cross-head and guide above being connected to a lever by means of fork connection-rod, the water-pistons being adapted to impart motion to the lever from the pressure of the water through a supply-port from pumps connected with the engine, the steam-piston being also adapted to impart motion to the lever from the pressure of the steam from the boiler through a steam-port, the lever being adapted to open or close a cut-off or throttle, substantially as described.

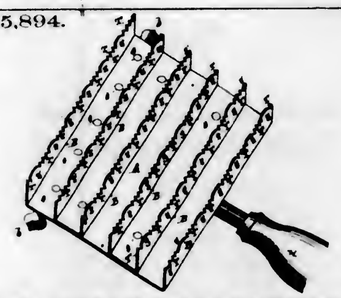
335,893. PROCESS OF CARBON PHOTOGRAPHY FOR COLORED IMPRESSIONS. LOUIS J. H. CELLERIER, Paris, France. Filed May 9, 1885. (No specimens.) Patented in France Apr. 21, 1885, No. 166,414.

Claim.—The herein-described process of carbon photography for colored impressions, the same consisting of the following steps, to wit: first, in arranging a positive photograph of the object to be produced so that it appears either by transparency or reflection in faint outlines on a sheet of ordinary photographic sensitive paper, and then applying colors thereto in plain or flat stains or tints by hand with a brush or otherwise; second, printing the object (irrespective of the first step) from a negative photographic plate upon a sheet of carbon paper prepared substantially in the manner described, then transferring the object thus produced onto a collodion film, and then applying a layer of gelatine thereto; and, third, in applying the colored copy of the first step upon the gelatine film of the second step, so that the outlines of the two exactly coincide, substantially as described.

335,894. CURRY-COMB. WARREN G. CLARK, Troy, N. Y. Filed Sept. 14, 1885. (No model.)

Claim.—1. A curry-comb blade provided with combing-teeth arranged on its outer edge, said blade having scraping portions on said outer edge between said combing portions, substantially as and for the purposes set forth.

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2. The combination, with the frame A, of the blades B, each of said blades being constructed with the alternatingly-arranged scraping portions S and combing parts T on their outer edges, and with the said blades placed with reference to each other so as to bring the combing and scraping parts of the blades horizontally opposite each other, substantially in the manner as and for the purposes set forth.

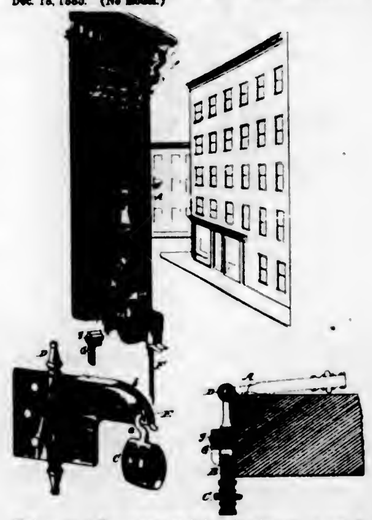
335,895. WATER-CLOSET. JOHN CLIFFORD, Chicago, Ill., assignor to the L. Wolf Manufacturing Company, same place. Filed Dec. 12, 1885. (No model.)



Claim.—1. In combination with the metallic trunk formed or provided with a projecting stand, *b*, having a groove, *f*, the bowl-neck provided with a bead or circumferential rib, A, and the half-collar C, preferably grooved at *g*, the whole constructed to operate substantially as and for the purpose hereinbefore set forth.

2. In combination with the trunk B, formed with the usual lugs for the attachment of the cover, a cover, H, the lugs of which have cut-outs *r* and projections *s*, and screw-bolts *o*, the whole arranged and operating together substantially as and for the purposes set forth.

335,896. FIRE-ESCAPE. JOSEPH H. CLIFTON, Weston, W. Va. Filed Dec. 18, 1885. (No model.)



Claim.—1. A fire-escape consisting of a plate, A, an arm, B, hinged at its inner edge to the plate A, and provided near its outer end with a pulley, substantially as set forth.

2. The combination, in a fire-escape, of a plate, A, a plate, B, hinged to plate A, and having an extension, *b*, provided near its outer end with an opening, E, and the pulley-block having a hook engaged in opening E, substantially as set forth.

3. The combination, with a support, of the arm B, pivotally supported, and a button, G, pivoted to the support and movable into and out of engagement with the arm B, substantially as and for the purposes specified.

335,897. INDENTED EMBOSSING-CUTTER. WILLIAM A. COMPTON, Liberty Corner, N. J. Filed Nov. 23, 1885. (No model.)



Claim.—The combination, with the surface of an embossing-tool, of rows or lines of projecting points arranged at the margin of the projections or depressions upon the surface of the tool, and adapted to sever the depressed from the undepressed part of the woody surface to which the roller may be applied.

335,898. RECESSED EMBOSSING-TOOL. WILLIAM A. COMPTON, Liberty Corner, N. J. Filed Dec. 17, 1885. (Model.)



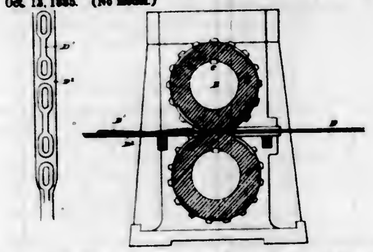
Claim.—1. The combined cutting and pressing tool having an embossing-surface formed thereon, one or more recesses formed in said embossing-surface, and a projecting cutting-edge affixed at the margin of such recess, between the edge of the recess and the adjacent embossing-surface, as and for the purpose set forth.

2. An embossing-tool having a recess formed in its surface and provided around the entire margin of such recess with a projecting cutting-edge affixed to the tool at the margin of such recess.

3. An embossing-roller having a recess formed in its surface, a projecting cutting-edge affixed at the margin of such recess, and one or more cutting-edges projected from the bottom of such recess within the margin.

4. An embossing-roller having a convex embossing-surface in longitudinal section, a recess formed in said surface and provided with a projecting cutting edge or edges affixed at the margin of such recess.

335,899. MANUFACTURE OF WELDLESS CHAINS. AUGUSTIN O. DAVID, Paris, France, assignor to Eugene Mizaray, Elizabeth, N. J. Filed Oct. 13, 1885. (No model.)



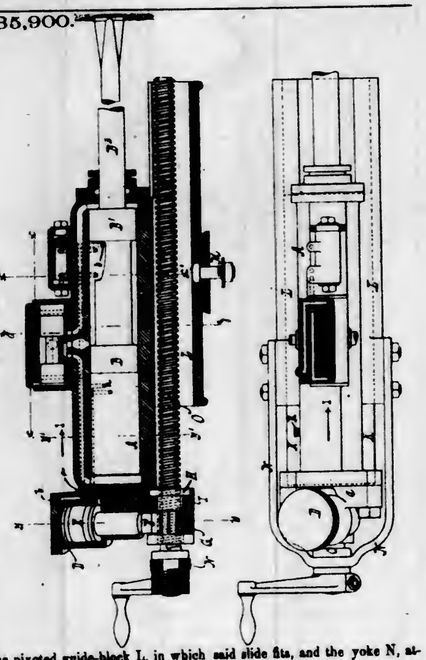
Claim.—1. The herein-described method of making weldless chains, consisting in first forming the link-blanks in a strip, bar, or sheet of metal, leaving a web of thinner material surrounding the embryo links, and joining the contiguous ones; second, removing the web, and, third beading, linking, and folding the chains.

2. The herein-described method of making links, consisting in forming the link-blanks in a strip, bar, or sheet of metal, leaving a thin web surrounding each link and joining contiguous links, removing the web, and beading the links preparatory to linking and folding them, substantially as set forth.

335,900. ROCK-DRILL. JAMES E. DENTON, Hoboken, N. J. Filed Oct. 15, 1885. (No model.)

Claim.—1. The piston-rod carrying the drill in line therewith, and provided with two piston-heads, B B', connected by a bar, B^2, to provide an intervening annular space, the main cylinder having the secondary cylinder D attached directly to its cylinder-head C, and containing the secondary piston E, the steam-passages *a b*, extending through said main cylinder and communicating with opposite ends of the secondary piston, and the pawl F, carried by the latter, in combination with the nut H, journaled in a lug, I, on the main cylinder-head, the ratchet-wheel G, fixed to the nut, the feed-screws O, the slide K on the main cylinder,

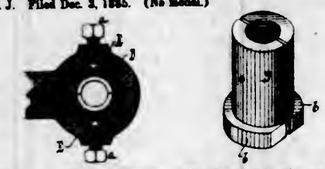
335,900.



the pivoted guide-block L, in which said slide fits, and the yoke N, attached to the guide-block and in which the feed-screws are mounted, substantially as described.

2. The combination of the main cylinder A, the piston-heads B B', connected to form a steam-space between them, the secondary cylinder D, the steam-passages *a* and *b*, for conducting steam from the main cylinder to the secondary cylinder, the non-rotating feed-screw O, the nut H, journaled in the main cylinder-head, the ratchet-wheel G, connected with said nut, and the secondary piston provided with a pawl, F, to turn the ratchet-wheel and nut, and with a stop, J, to engage said wheel and prevent the nut from turning more than the required distance, substantially as described.

335,901. FOOT FOR ROCK-DRILLS. JAMES E. DENTON, Hoboken, N. J. Filed Dec. 3, 1885. (No model.)



Claim.—1. The combination, with the foot A of a rock-drill with the end sockets formed therein, and with the adjusting-screws C C, of split nuts D, made to fit said sockets, and of set-screws *a a*, extending through the sides of the end sockets of the foot to engage with and hold the split nuts in said sockets, substantially as shown and described.

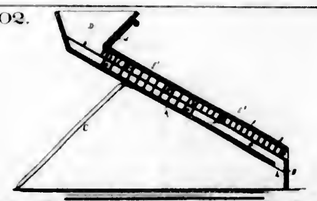
2. The combination, with the foot A of a rock-drill with the end sockets formed therein, and with the adjusting-screws C C, of split nuts D, made to fit said sockets, the flanges *b b*, formed on the bottom ends of the split nuts and flattened on one side, the projections *c c*, formed on the foot, and set-screws *a a*, extending through the end sockets, substantially as shown and described.

3. The combination, with the foot A of a rock-drill with the end sockets formed therein, and with the adjusting-screws C C, of split nuts D, made to fit said sockets, set-screws *a a*, cavities formed in the end sockets, and nuts E E, placed into said cavities, substantially as shown and described.

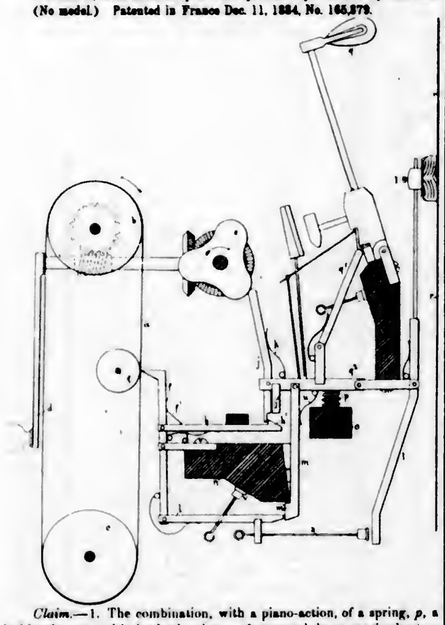
335,902. COCKLE-SEPARATING MACHINE. CHARLES D. EDWARDS, Albert Lea, Minn. Filed Mar. 30, 1885. (No model.)

Claim.—A cockle-separator comprising a casing, A, having a foot, B, adjustable support C, hopper D, and cover or covers E' E², a perforated screen, F, suspended within the said casing and leaving spaces *a b* above and below it, and pegs *g g*, substantially as and for the purpose herein specified.

335,902.



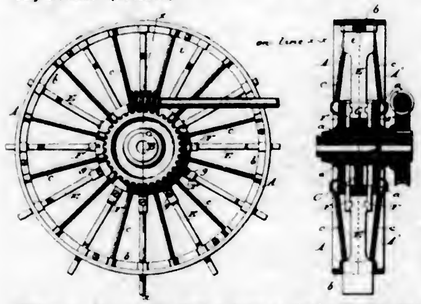
335,903. MECHANICAL MUSICAL INSTRUMENT. FRIEDRICH E. P. EHRLICH, Gohlis, near Leipsic, Saxony, Germany. Filed July 11, 1885. (No model.) Patented in France Dec. 11, 1884, No. 165,879.



Claim.—1. The combination, with a piano-action, of a spring, *p*, a locking-bar, *m*, with heel *m'*, a lever, *f*, operated by a music-sheet or its described equivalent, intermediate devices whereby said lever by its oscillation in one direction disengages the locking-bar, and a rotative cam-disk, *e*, and mechanism operated thereby to return the piano-action to its position of rest, substantially as and for the purpose described.

2. The combination, with a piano-action actuated by a spring, *p*, of a locking-bar, *m*, having the heels *m'* and m^2, a lever, *f*, operated by a music-sheet or its described equivalent, and carrying the disengaging-bar *l* and collar *s'*, and a bar, *i'*, with projection i^2, pivoted to an oscillating frame, *a' i*, operated by a cam or cams, *e*, and a spring or springs, *p'*, substantially as hereinbefore set forth.

335,904. TRACTION-WHEEL. JOSEPH ELDER, Peoria, Ill. Filed July 24, 1885. (No model.)



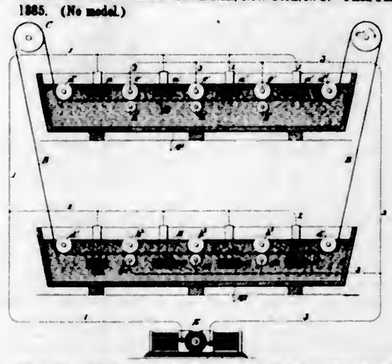
Claim.—1. In a traction-wheel, a frame or wheel proper, in combination with a non-rotating eccentric having peripheral lips or flanges and rigid radial sliding blades mounted in the wheel and having their inner ends engaged directly with and arranged to travel around the periphery of the eccentric, as described and shown, whereby the blades are moved positively inward and outward by the direct action of the eccentric.

2. A traction-wheel consisting of the two circular halves recessed in their proximate faces, the grooved eccentric and its shaft, and the blades provided with lips engaging the eccentric, said members constructed and combined for joint operation substantially as described and shown.

3. In a traction-wheel, the combination of a circular body or wheel proper, a non-rotating eccentric at the center thereof, and radial or substantially radial blades having their opposite ends seated in guiding-slots in the rim and hub, respectively, and their inner ends engaged directly with the eccentric, so as to be both projected and retracted in a positive manner thereby.

4. In combination with a traction-wheel, a central non-rotating eccentric and a series of radially-movable blades seated in the wheel, each blade consisting of a continuous piece having at the inner end lips to engage the eccentric that the blades may be retracted thereby.

335,905. APPARATUS FOR FORMING SHEET METAL BY ELECTRO-DEPOSITION. MOSES G. FARMER, New York, N. Y. Filed June 13, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a source of electricity, of an endless-band cathode, an electrolytic vat, means for causing said cathode to pass, a portion at a time, through the vat in a horizontal direction, a series of anode-plates located upon one side of the band and connected with the positive pole of the generator, and contact-rollers resting against the surface of the cathode presented to the anode-plates and connected with the remaining pole of the battery.

2. The combination, substantially as hereinbefore set forth, with a continuous-band cathode, of one or more electro-deposition vats, means for passing said band cathode, a portion at a time, continuously through said vat or vats in a horizontal direction, and means for depositing metal upon said cathode during its passage, substantially as described.

3. The combination, substantially as hereinbefore set forth, with a source of electricity and a constantly-advancing cathode consisting of a continuous belt of flexible conducting metal, of one or more deposition-vats, a series of contact-rollers in each vat connected with one pole of said generator, and resting against said band, and causing the same to pass continuously through the vat a portion at a time, and a series of anode-plates extending across said vat or vats and connected with the other pole of said generator.

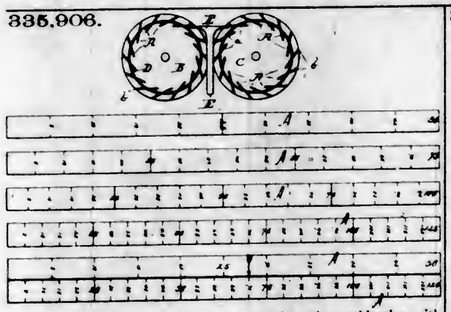
4. The combination, substantially as hereinbefore set forth, with a a cathode consisting of an endless band of conducting material having one side coated with a non-conducting material, of one or more electro-deposition vats, means for passing said band, a portion at a time, horizontally through said vats, a source of electricity, means for connecting one pole of said source with said band, and a series of anodes placed in each vat and connected with the other pole of said source of electricity.

5. The combination, substantially as hereinbefore set forth, with two deposition-vats and a series of anodes in each vat, of a band-cathode coated upon one side with a non-conducting material, and means for passing said cathode through said vats above the anodes in one vat and below the anodes in the other vat, and with its conducting-surface toward the anodes in each vat, substantially as described.

335,906. APPARATUS FOR COMPUTING PROPORTIONS. E. W. FARNHAM, Chicago, Ill. Filed Apr. 30, 1885. (No model.)

Claim.—1. In an apparatus for computing proportions, the combination, with the graduated bars A, of the rollers B and C, placed parallel with each other, having longitudinal grooves in their peripheries for the reception of said bars.

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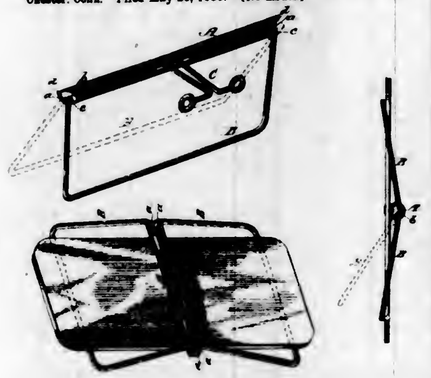
2. In an apparatus for computing proportions, the combination, with the bars A, of the rollers B and C, having longitudinal grooves in their periphery made oblique thereto for the reception of said bars.

3. In an apparatus for computing proportions, the combination, with bars A, of the rollers B and C, placed parallel and conterminous with each other, having longitudinal grooves in their periphery and standards, as described, placed between the same, for the purpose set forth.

4. In an apparatus for computing proportions, the combination, with bars A, of the rollers B and C, parallel to and conterminous with each other and having longitudinal grooves in their periphery, in which said bars are placed, so that the ends extend beyond the ends of said rolls, band D, and standards E, as and for the purpose set forth.

5. In an apparatus for computing proportions, the combination, with bars A, of the rolls B and C, parallel to and conterminous with each other and having longitudinal grooves in their periphery, in which said bars are placed, so that the ends extend beyond the ends of said rolls B and C, band D, and standard E, said standard supporting a rack or shelf, on which the bars A may be placed for purposes of comparison and computation.

335,907. BILL-HOLDER. JAMES R. FERGUSON and JOHN FERGUSON, Chester, Conn. Filed May 20, 1885. (No model.)



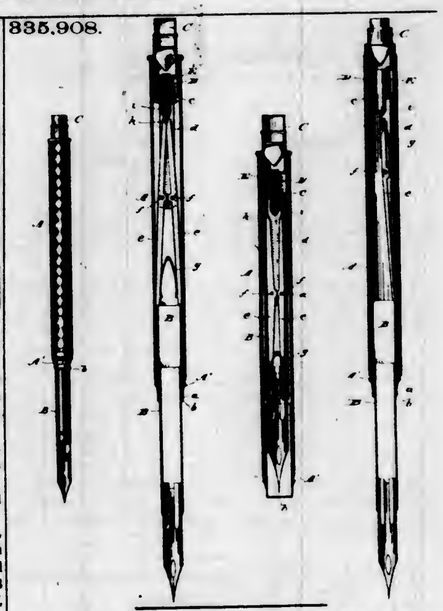
Claim.—1. A device for holding book-leaves, bills, papers, and other articles, consisting of a suitable bracket adapted to be attached to a suitable support and having cams at its ends, and a spring-wire clamp with ends bent to engage with the ends of the bracket and operating in connection with the cams, substantially as and for the purpose set forth.

2. A device for holding book-leaves, bills, papers, and other articles, consisting of a pivoted bracket having cam ends, in combination with a spring-wire clamp engaging with the ends of the bracket and operating in connection with the cams, substantially as and for the purpose specified.

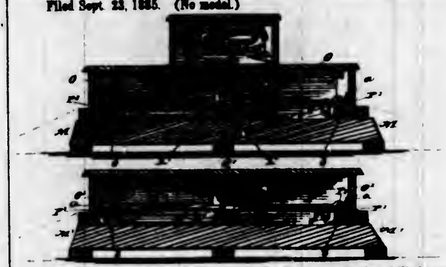
335,908. PENCIL OR CRAYON HOLDER. FREDERICK J. W. FISCHER, Jersey City, N. J., assignor to the Eagle Pencil Company, New York, N. Y. Filed Dec. 28, 1885. (No model.)

Claim.—The combination of the sheath, the sliding tubular stem or holder, the stop for arresting the forward movement of the holder, the vibratory spring-controlled jaw or jaws arranged so that their acting end or ends stand normally outward or apart in position to meet or engage the said holder, the pressure-cap, the pusher connected to or actuated by said pressure-cap, and the retracting-spring, these elements being combined and having the mode of operation substantially as hereinbefore shown and set forth.

335,908.



335,909. WEIGHING-SCALE. HARVEY L. FISHER, Toledo, Iowa. Filed Sept. 23, 1885. (No model.)



Claim.—1. The combination, with the incasements, the chilled cast end bearings, the slotted middle bearings, and the hooks secured to the covers of the incasements, of the main levers with supporting-links near their outer ends and knife-edge points at their inner ends, the hook-blocks, the long connecting-lever, the short connecting-lever, the tie-rods connecting the platform-sills, and the supporting-hooks secured to said platform-sills, substantially as specified.

2. The combination, with the incasements, the chilled end bearings, the slotted middle bearings, and the hook-blocks connected to the covers of the incasements, of the main levers with knife-edge bearings and supporting-links, the short connecting-lever, the long connecting-lever, the scale-beam, the rod connecting the long and short levers, and the platform with supporting-hooks, substantially as specified.

335,910. ROLL FOR FORMING TOE-CALKS. JOHN W. FOULKS, Brooklyn, N. Y. Filed Dec. 5, 1885. (No model.)



Claim.—The combination, with a plain-surfaced roll, A, of the roll B, having a broad circumferential groove, *a*, consisting of the conical frustrums *b c*, of unequal diameters, and arranged end to end in reverse position, one of said frustrums being conterminous with the plain periph-

ery of the roll, while the other is throughout of less diameter, substantially as described.

335,911. EYE FOR CORSET-CLASPS. MARSHALL GARDNER, Aurora, Ill., assignor of one-half to James Stone, same place. Filed Dec. 5, 1885. (No model.)



Claim.—1. A metal eyelet having an elongated opening made narrow in its outer part and split or severed at a point adjacent to the outer end of the opening, the severed ends of the metal being overlapped, substantially as described.

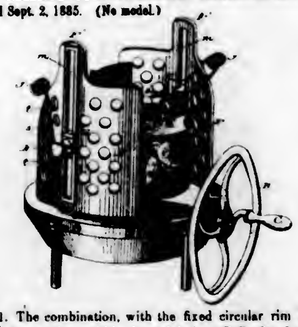
2. A metal eyelet having an elongated opening made narrow in its outer part and split or severed at a point adjacent to the outer end of the opening, the severed ends of the metal being overlapped with their flat faces in contact, substantially as described.

3. A metal eyelet having an elongated opening made narrow at its outer part, and provided in said outer part with projections a^5 a^5, said eyelet being split or severed at the outer end of the opening and having its severed ends overlapped, substantially as described.

4. A blank for making an eyelet of the character described, provided with arms a^2, having inwardly-curved parts a^4, adapted to overlap when the arms are bent toward each other, substantially as described.

5. A blank for making the eyelet described, provided with arms a^2, having inwardly-curved parts a^4, adapted to overlap when the arms are bent inwardly, said blank being provided with a central narrow neck, a^3, whereby the arms may be brought together without change in the form thereof, substantially as described.

335,912. CABBAGE-CUTTING MACHINE. GEORGE GEYER, Brooklyn, N. Y. Filed Sept. 2, 1885. (No model.)



Claim.—1. The combination, with the fixed circular rim E, the horizontal table A, rotating within it, and knives D D, fitted to said table over corresponding slots therein, of the wide longitudinally-slotted vertical standards F F, secured at opposite points of said rim, provided with blocks G G, sliding in the slots, and spring-actuated followers H H, projecting therefrom over the table, substantially in the manner and for the purpose herein set forth.

2. The combination, with the horizontal spring-actuated follower H, of the vertical hinged spring-actuated retaining-plate L, swinging against the edge of the follower, substantially in the manner and for the purpose herein set forth.

335,913. GANG-PLOW. LEWIS GIBBS, Canton, Ohio, assignor to Bucher, Gibbs & Co., same place. Filed Oct. 9, 1885. (No model.)

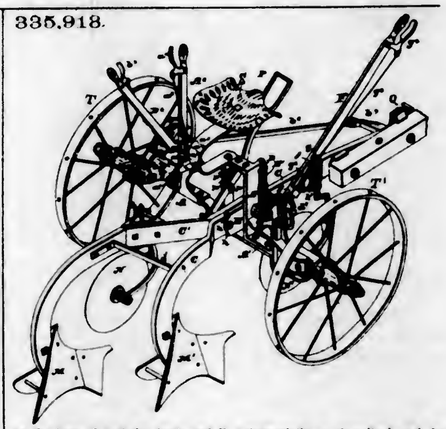
Claim.—1. The combination of the guide-bolt D, formed on the front edge of the vertical section of the frame, as described, and the beam-supporting plate E, having a vertical open cylinder, E', integral therewith, adapted to rotate about the guide-bolt D and for vertical adjustment thereon, substantially as described, and for the purpose set forth.

2. The combination of the guide-bolt D, beam-supporting plate E, having a vertical open cylinder integral therewith, adapted to rotate about the guide-bolt D, and means to adjust it vertically thereon, substantially as described and set forth.

3. In a gang-plow, the combination, with the main supporting guide-frame and a plow-beam having a laterally-projecting roller, of a foot-lever, P, pivoted to the main supporting guide-frame, and the hand-lever F, the said levers acting together to raise the plow from the ground, substantially as set forth.

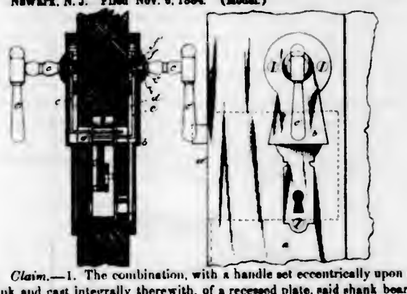
4. The combination of the coupling-plate Q, the serrated disk q^3, the loop q^7, the intermediate block having serrations on its front and rear sides adapted for engagement with the serrated disk q^3 and the serrations

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on the loop q^7, and the draft-cord R, substantially as described, and for the purpose set forth.

335,914. LATCH-OPERATING DEVICE. ORVELLAS H. GILBERT, Newark, N. J. Filed Nov. 6, 1884. (Model.)



Claim.—1. The combination, with a handle set eccentrically upon a shank and cast integrally therewith, of a recessed plate, said shank bearing and working pivotally in said plate, an arm secured to the shank and extending down within the recess or chamber in said recessed plate parallel with and in the same direction as the handle, and provided with a bent end adapted to engage with and actuate a latch, substantially as set forth.

2. The combination, with a door having latching mechanism arranged therein, and a recess or recesses, r, of a recessed plate, a shank bearing and working pivotally in said recessed plate and provided with a handle set eccentrically thereon and cast integrally therewith, and a lever or arm extending downward within the recess in the same direction as and parallel with the eccentric handle and secured to said shank within the recess in said plate, provided with a bent arm or finger-piece adapted to enter the said recess r in the door and engage with and actuate the latch, substantially as and for the purposes herein set forth.

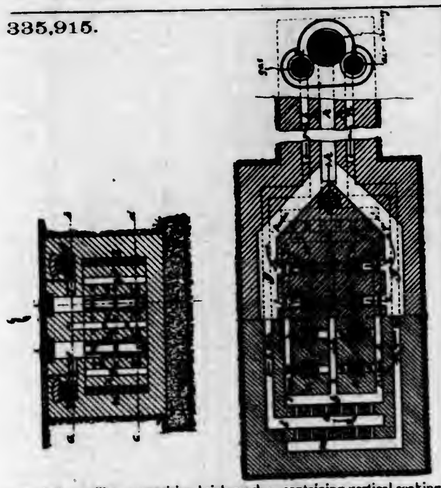
335,915. SOAKING-PIT FOR STEEL INGOTS. JOHN GJERS, Middlesbrough-on-Tees, England. Filed Mar. 27, 1885. (No model.) Patented in England Feb. 20, 1885, No. 2,333; in France Feb. 21, 1885, No. 167,216; in Belgium Feb. 21, 1885, No. 67,968; in Sweden Feb. 28, 1885, No. 85; in Luxemburg Mar. 1, 1885, No. 505, and in Austria Mar. 13, 1885, No. 47,144.

Claim.—1. Apparatus for treating steel ingots to equalize their temperature before rolling, comprising a soaking pit or pits and apparatus for heating the same by means of solid or other fuel, the said apparatus connected with the pits by flues having valves or dampers, and the arrangement being such that the flames or products of cumbustion are directed both to the exterior and to the interior of the walls of the soaking-pits, substantially as described.

2. Apparatus for treating steel ingots to equalize their temperature before rolling, comprising vertical soaking pits or chambers, surrounding flues or combustion-chambers, other flues connecting said surrounding flues with the interior of the pits, and dampers or valves, the whole so arranged that the flames or products of combustion resulting from the combustion of gas and air in the apparatus, as specified, or from the combustion of solid or liquid fuel in a combustion-chamber in connection with said flues, can be directed upon the internal as well as the external surfaces of the walls of said soaking pits or chambers, substantially as described, and for the purpose specified.

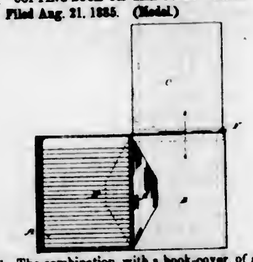
3. The apparatus for treating steel ingots to equalize their tempera-

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ture before rolling, comprising brick-work a, containing vertical soaking-pits, flues b, openings e and f, valves c c, flues g, main chimney-flue h, valve k, flue l, valve m, flue n, and openings o, the whole arranged and operating substantially as described and shown.

335,916. COPYING-BOOK OR THE LIKE. DAVID W. GLASS, Baltimore, Md. Filed Aug. 21, 1885. (Model.)

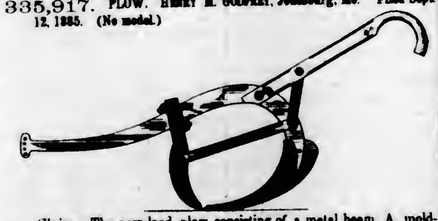


Claim.—1. The combination, with a book-cover, of a blotter hinged to the margin of one part of the cover between the folds which form a a pocket, and adapted to fold into the book, so as to blot both sides of every sheet with equal facility, substantially as set forth.

2. The combination of the cover, made of a single piece and having a pocket, with the pen or pencil holder, formed of a folded strip secured between the folds of the cover, substantially as set forth.

3. An improved copy-book composed of the cover, made of one piece and having a pocket on each side, the blotter, hinged to the margin, so as to blot both sides of every sheet, and a pen or pencil holder, attached between the leaves of the cover which form the pocket, substantially as set forth.

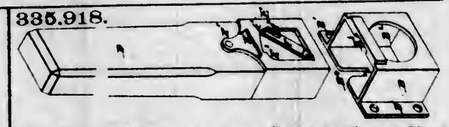
335,917. PLOW. HENRY H. GODFREY, Jonesburg, Mo. Filed Sept. 12, 1885. (No model.)



Claim.—The new-land plow consisting of a metal beam, A, mold-board and share under which the beam curves, a cutter, D, angling back from its point of attachment to the beam to the point of the share, handles, braces F, bolted to the beam and supporting the handles thereon, bolt G, bracing the handles, and a brace, E, extending forward from the curve of the beam to the central portion of the cutter, substantially as shown and described.

335,918. VEHICLE-STAKE. CHARLES A. GOULD, St. Louis, Mo., assignor of one-half to George A. Gould, same place. Filed Nov. 3, 1884. (Model.)

335,918.



Claim.—1. The wagon-stake socket B, formed with recess B^2 and an opening, B^3, in combination with a stake having a catch, F, provided with a projection, f^2, the catch adapted to pass through the recess, and the projection adapted to engage the side of the opening, substantially as set forth.

2. The wagon-stake D, having a ferrule, E, provided with an opening, E^3, and a catch, F, formed with a projection, f^2, in combination with a socket having an opening with which the projection engages, substantially as set forth.

3. The socket B, formed with recess B^2 and opening B^3 on one side and notch B^4 on another side, in combination with a stake provided with a catch having a projection to pass through the recess and engage the side of the opening, or to enter and seat in the notch, substantially as set forth.

4. A stake-socket, B, formed integral with lugs B', opening B^3, recess B^2, and open notch B^4, substantially as set forth.

5. A stake provided with a ferrule, E, formed integral with lug E', lip E^2, aperture E^3, and recesses e e', and the catch F, having thin ends f f and projection f^2, substantially as set forth.

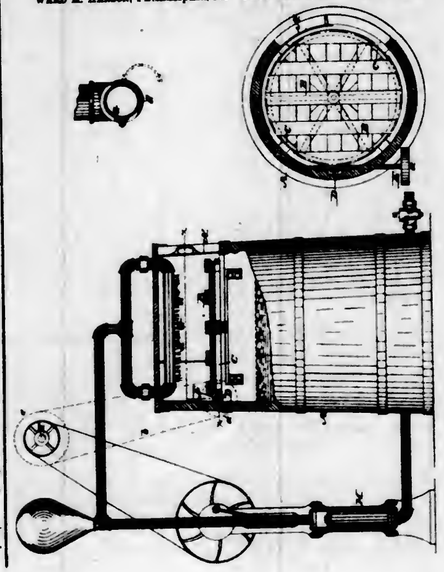
6. The combination of socket B, having opening B^3, recess B^2, and notch B^4, the metal ferrule E, having lug E', lip E^2, aperture E^3, and recesses e e', and the catch F, having thin ends f f and projection f^2, substantially as set forth.

335,919. PATTERN-LINING. RICHARD F. HALLEK, New York, N. Y. Filed Dec. 12, 1884. (No model.)



Claim.—The combination, with a dress-lining composed of cloth and constituting a pattern for a dress of a certain style, of pattern attachments applied to said lining, and constituting, in connection therewith, a dress-pattern of a different style, substantially as described, whereby the dress-lining may be altered at will from a dress-pattern of one style to a dress-pattern of another style.

335,920. MACHINE FOR WASHING ELECTROTYPE-MOLDS. EDWARD H. HARRON, Philadelphia, Pa. Filed Nov. 4, 1884. (No model.)



Claim.—1. A tank provided with a rotary table for holding an electrotype-mold, and a sprinkler for directing water against the said mold.

2. A tank provided with a mold-supporting table, gearing for rotating the same, a sprinkler within the casing above the table, and a pumping device for discharging water into the sprinkler, said parts being combined and arranged as described, forming a machine for washing electrotype-molds, as stated.

3. A tank having an inlet and an outlet pipe, in combination with a table located within the said tank and provided with the toothed wheel C, and the shaft E, having worm D and pulley *a* thereon, substantially as and for the purpose set forth.

4. A tank having inlet and outlet pipes and provided with a table and a sprinkler located above said table, both sprinkler and table being inclosed within said tank, substantially as and for the purpose set forth.

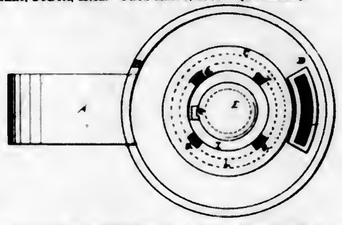
335,921. **KITCHEN-SAFE.** HENRY D. HARDENBERGH, Unies City, assignor of one-half to Wilkison Schaeffer and Warren J. Baker, Jamton, Ohio. Filed Mar. 3, 1884. Renewed Oct. 22, 1885. (No model.)



Claim.—1. The combination, with the body or main frame of a kitchen-cabinet, of a meal-chest or other receptacle having a recess formed in the bottom of the same, and independent slotted plate C, secured to the frame of the cabinet by screws passing through said slots to enter said recess and act as a bearing for tilting the chest, substantially as described.

2. The combination, with the main frame or body of a kitchen-cabinet, of a meal-chest or other receptacle having a recess formed in the bottom of the same, and independent plate C, adjustably secured to the cabinet-frame to enter said recess and act as a bearing for said chest, substantially as described.

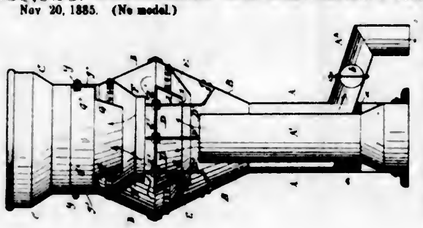
335,922. **WASH-BOWL AND PUMP FOR SLEEPING-CARS.** HENRY C. HART, Detroit, Mich. Filed Mar. 6, 1885. (No model.)



Claim.—1. The combination, with a wash-bowl and a covering-slab, of marble or other suitable material, of a water-chamber connected, with said bowl at a point below the surface of the covering-slab, and having an opening adapted to receive the cylinder of a pump, and a pump fitting in said opening and delivering water to said chamber instead of directly to the wash-bowl, substantially as described.

2. In combination with the covering-slab W and wash-bowl S, the water-chamber B, sunk in said slab and having a flange, P, thereon, resting upon the frame which supports the slab and bowl, and also having a spout, A, leading to bowl S at a point below the surface of the slab W, and the pump-barrel I, having thereon the flange C J, overlapping the upper edge of chamber B, and the piston and rod N M and lever F, substantially as shown and described.

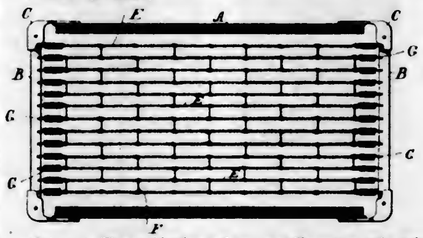
335,923. **SPARK-ARRESTER.** HENRY HENNIG, Paterson, N. J. Filed Nov 20, 1885. (No model.)



Claim.—1. A spark-arrester for smoke-stacks, consisting of a smoke-stack having an enlarged portion, an interior diaphragm having a downwardly-inclined flange, bracket-arms for supporting the diaphragm, a conical flange below the diaphragm, a fixed and an adjustable conical flange above the same, and an enlarged head, substantially as set forth.

2. A spark-arrester for smoke-stacks, consisting of a smoke-stack having an enlarged portion, an interior smoke and steam pipe, an inclined discharge-pipe, a diaphragm having a downwardly-inclined flange in the enlarged portion, bracket-arms for supporting the diaphragm, a conical flange below the diaphragm, a fixed conical flange above the same, and an adjustable conical flange of smaller diameter above the fixed flange, and an enlarged head, substantially as set forth.

335,924. **METALLIC-SPRING MATTRESS.** WILLIAM HEWITT, Trenton, N. J., assignor to the Trenton Iron Company, same place. Filed Oct. 21, 1885. (No model.)



Claim.—1. The combination, to form a metallic mattress, of a series of twisted wire cables provided with eyes formed by partially separating the strands of the cables with a series of link-bars hooked into the eyes, substantially as set forth.

2. The combination, to form a metallic mattress, of a series of twisted wire cables provided with eyes formed by partially separating the strands of the cables, a series of link-bars hooked into the eyes, and spiral springs applied to the extremities of the cables, substantially as set forth.

3. The combination, to form a metallic mattress, of a series of twisted wire cables provided with eyes formed by partially separating the strands of the cables, a series of link-bars hooked into the eyes, and a frame with which the cables are connected by means of springs, substantially as set forth.

4. The combination, to form a metallic mattress, of a series of twisted wire cables having eyes formed in them by partially separating the strands of the cables with a series of alternately disposed or staggered link-bars hooked into the said eyes, substantially as set forth.

335,925. **CARPET-FASTENER.** ERNST HOHNECK and ELISE HOHNECK, St. Paul, Minn. Filed May 16, 1884. Renewed Jan. 16, 1886. (No model.)



Claim.—1. In a carpet-fastener, the combination, with hooks movably secured to the base-board or floor, of a cord, wire, or chain situated between the hooks and the floor and adapted to disengage the hooks from a carpet, substantially as set forth.

2. In a carpet-fastener, the combination, with a rod secured to a floor or base-board and hooks movably secured to said rod, of a cord, wire, or chain situated beneath the hooks and adapted to lift said hooks from engagement with a carpet, substantially as described.

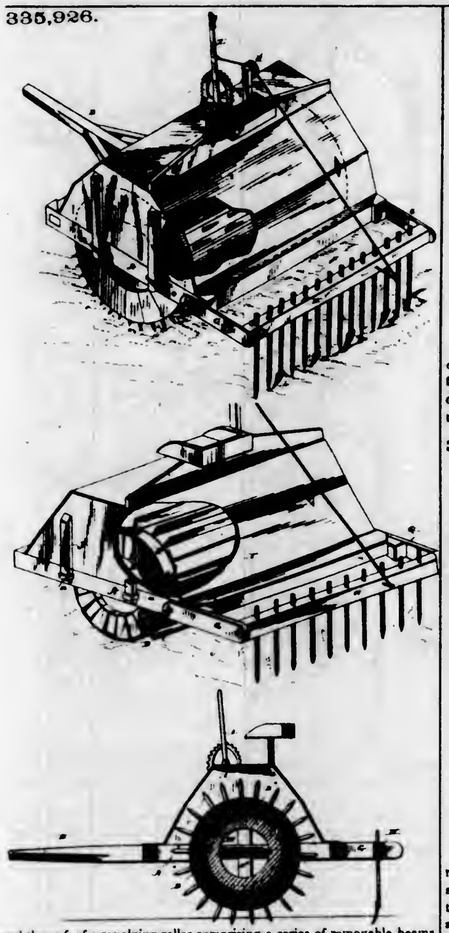
3. In a carpet-fastener, the combination, with a rod provided with annular grooves and secured to a floor or base-board, of hooks movably secured in said grooves, and adapted to penetrate and secure a carpet, and cords or chains placed between the hooks and carpet, whereby the said hooks may be disengaged from the carpet, substantially as set forth.

335,926. **COMBINED CLOD-CRUSHER, STALK-CUTTER, MARKER, AND RAKE.** ALBERT HOLLINGSWORTH, Shawnee, Wyandotte County, Kans. Filed Sept. 7, 1885. (No model.)

Claim.—1. The combination, with a frame, of a shaft carrying wheels at its ends, dovetailed beams fitting around the peripheries of said wheels, and bands fitting around the ends of the beams to hold them in place, substantially as set forth.

2. The combination, with a frame and a rake pivoted to the rear

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end thereof, of a revolving roller comprising a series of removable beams and a series of knives removably secured between the beams, substantially as set forth.

3. The combination, with a frame, of a journaled shaft carrying wheels at its ends, dovetailed beams fitted on the peripheries of the wheels, the ends of said beams overlapping the wheels to prevent lengthwise movement of the beams, and bands for securing the latter in place, substantially as set forth.

4. The combination, with a frame, of a revolving roller, a cover for the latter removably attached to the frame, a rake pivoted at the rear end of the frame, a rope or chain connected therewith, a lever journaled to the upper side of the cover and connected with the rope or chain, and a guide-pulley over which the rope passes, substantially as set forth.

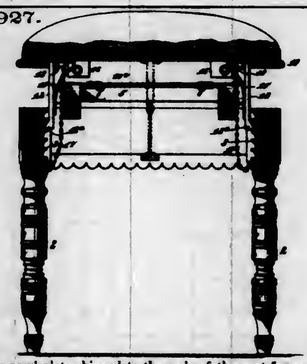
335,927. **STOOL AND SEAT.** WILLIAM HOLDEN, Baldwinsville, Mass. Filed Nov. 27, 1885. (No model.)

Claim.—1. The combination of the base-frame having rack-surfaces on its end walls and the supplementary frame pivoted to one side of said base-frame, with the seat-frame hinged to the free end of the supplementary frame and having pivoted pawl-plates or props engaging with the rack-surfaces on the end walls of the base-frame, substantially as described.

2. The combination of the base-frame having rack-surfaces on the inner sides of its end walls, the supplementary frame hinged to one side of said base-frame, and the seat-frame hinged to the opposite side of the supplementary frame and having hinged to each end a depending spring-pressed pawl-plate, substantially as described.

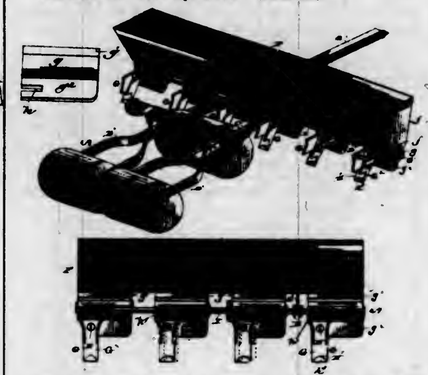
3. The combination of a base-frame provided at its ends with rack-surfaces, a supplementary frame hinged to one side of said base-frame, a seat-frame hinged to the opposite side of the supplementary frame,

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depending pawl-plates hinged to the ends of the seat-frame, springs attached to the under side of the seat-frame and pressing against the under sides of the pawl-plates, and means for limiting the upward movement of the seat-frame, substantially as described.

335,928. **SEEDING-MACHINE.** JOHN HOBBY and CAMFIELD MARSH, Rosendale, Wis. Filed Sept. 1, 1885. (No model.)



Claim.—1. In a seeding-machine, the combination of a frame, a roller, C', having a sprocket-wheel, a hopper secured directly to the frame and removable therefrom, a series of sectional feed-cups suspended from the hopper, and each provided with a bearing in its head *g*, a rotating shaft journaled in the bearings of the feed-cups, and having feed-wheels located therein, each of the feed-cups having a downwardly-inclined delivery-spout laterally adjustable thereon independent of the feed-wheel shaft, and a sprocket-chain adapted to transmit motion from the roller C' to the rotating shaft, substantially as described.

2. A seed-cup comprising a slotted casing having an inclined slotted flange, a downwardly-projecting delivery-spout, and a bolt and nut for detachably and adjustably securing the delivery-spout to the slotted flange of the casing, substantially as described.

3. A sectional feed-cup, each section of which is cast in one piece, comprising a slotted casing, G', having a head, *g*, and an inclined slotted flange, g^3, an inclined delivery-spout, G^3, having converging side walls and a scattering-shoulder, A^3, and a bolt and nut for detachably and adjustably connecting the delivery-spout to the flange g^3 of the casing, substantially as described.

4. The combination of a hopper, a series of sectional feed-cups suspended therefrom, and a rotating shaft journaled in said cups and having feed-wheels located therein, each of said feed-cups comprising a casing, a downwardly-inclined delivery-spout, and a bolt and nut for detachably and adjustably connecting the casing and spout together, substantially as described.

335,929. **TELEGRAPHIC CODE.** ABRAM G. HOYT, Kingston, Pa., assignor of one-half to George E. Headley, New Haven, Conn. Filed July 20, 1885. (No model.)

Claim.—In a printed telegraphic code consisting of a series of code-words printed in one column and a corresponding series of expressions printed in a parallel column, each expression adjacent to its code-word, the combination therewith of the same series of code-words printed upon a strip independent of the page or printed column of words and expressions, the said strip adapted to be applied in a column parallel with the

335,929.

CLO-COA

I	Case No.	Case Name	GLOBE
Antrim	3101	Antrim	
Belem	3102	Belem	
Bristol	3103	Bristol	
Clinton	3104	Clinton	
Elkton	3105	Elkton	
Elkton	3106	Elkton	
Excel	3107	Excel	COAL
Excelsior	3108	Excelsior	
Excelsior	3109	Excelsior	
Fairfield	3110	Fairfield	
Flushing	3111	Flushing	
Flushing	3112	Flushing	
Flushing	3113	Flushing	
Hamilton	3114	Hamilton	
Hanover	3115	Hanover	
Hanover	3116	Hanover	

said column of expressions, substantially as and for the purpose described.

335,930. ADJUSTABLE FILING-BLOCK. FERDINAND F. IDE, Springfield, Ill. Filed Apr. 7, 1885. (No model.)

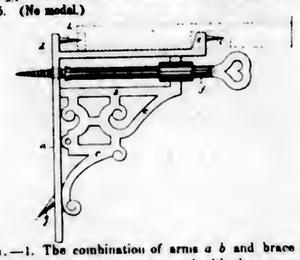


Claim.—1. A cylindrical or round filing-block having peripheral longitudinal groove-bearings of varied sectional contour, in combination with an elastic bearing, substantially as specified.

2. A cylindrical or round filing-block adapted to turn and be adjusted on an elastic bearing, the same consisting of a slotted cylinder and a conical plug, substantially as specified.

3. A cylindrical or round adjustable filing-block having peripheral longitudinal groove-bearings, and a pivot in engagement with an elastic binder having lips governing the pivot-bearing, and adapted to engage the jaws of a vise, substantially as specified.

335,931. BRACKET. DAVID JACOBSEN, Norwich, Conn. Filed Nov 18, 1885. (No model.)

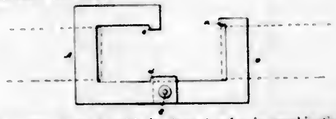


Claim.—1. The combination of arms *a b* and brace *c* with the screw-bolt *f*, passing through parts *a c*, and with the prong *g*, substantially as specified.

2. The combination of arms *a b*, connected by diagonal brace *c*, with lugs *d e*, projecting above arm *b*, and provided with the forwardly-projecting prongs *h i*, and with the board *j*, mortised to receive lugs *d e*, substantially as specified.

3. The combination of arm *a*, perforated at *v*, and of arm *b*, with brace *c*, perforated at *w*, in line with perforation *v*; and with lugs *d e*, prongs *g h i*, screw-bolt *f*, and board *j*, having mortises *k m*, substantially as specified.

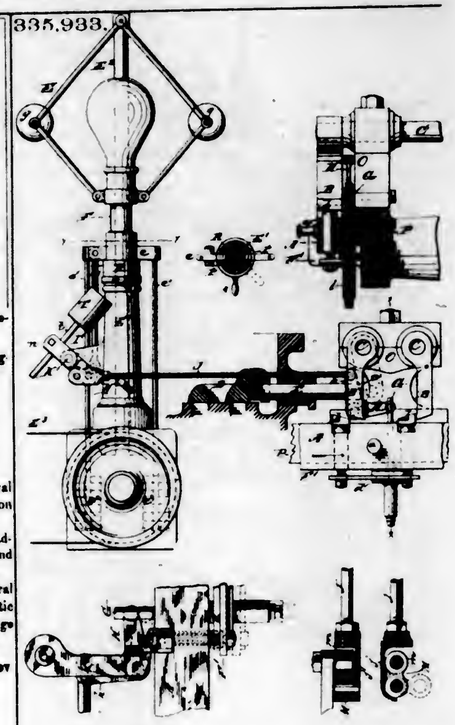
335,932. BALE-TIE. WILLIAM M. JINKINS, Redding, Miss. Filed Dec. 9, 1885. (No model.)



Claim.—The body A, with its lugs *d* and *e*, in combination with the hinged extension-piece B, with its lug *a*, substantially as and for the purpose set forth.

335,933. MECHANISM FOR REGULATING STEAM-ENGINES. H. J. JOHNSON, Providence, R. I., assignor to the Providence Steam Engine Company, same place. Filed Oct. 6, 1885. (No model.)

Claim.—1. The combination, substantially as before set forth, of the governor-slide, the tappets which operate the steam-valves of the steam-engine, with the intervening connecting-rod, and the shifting link of that rod.



2. The combination, substantially as before set forth, of the governor-slide with the vibrating arm, the connecting-rod which is operated by the vibrating arm, and the shifting link which connects the vibrating arm with the said connecting-rod.

3. The combination, substantially as before set forth, of the governor-slide, the vibrating arm, the connecting-rod operated by said vibrating arm, the shifting link which connects the vibrating arm and said connecting-rod, and the shifting-pin which effects the change in position of the shifting link automatically.

4. The combination, substantially as before set forth, of the governor-slide, the shifting link, the shifting-pin, and the movable stop, whereby the excessive descent of the governor-slide may be prevented when the shifting link has been shifted by the action of the governor-slide and shifting-pin.

5. The combination, substantially as before set forth, of the sliding bar which carries the tappets, the gage-rod for moving the tappets, the sleeve of the gage-rod, and the spring thereof.

335,934. SIGNAL SYSTEM FOR TELEPHONE-EXCHANGES. WARREN S. JOHNSON, Whitewater, and CHARLES L. PORTER, Milwaukee, Wis. Filed May 8, 1885. (No model.)

Claim.—1. In a system for signaling, the combination, with the central magneto-electric-machine armature, of a train of gearing, a compressed-air reservoir connected therewith, a valve, and a key-lever for operating the valve, as set forth.

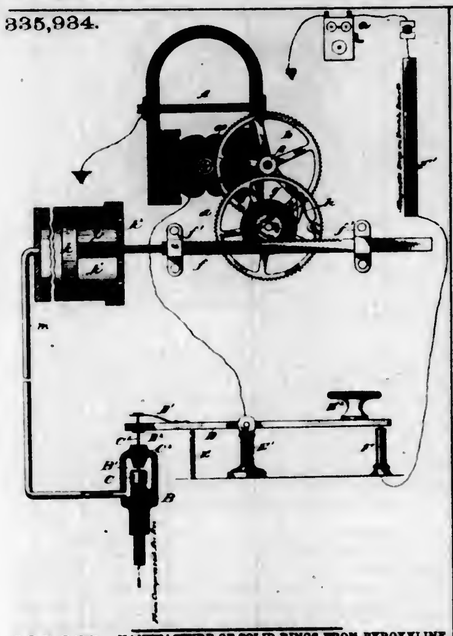
2. The combination, with the compressed-air reservoir and its valve, of the cylinder, piston, retracting-spring, intermediate gearing, and the magneto-electric machine, as set forth.

3. The combination, with the reservoir, cylinder, and piston, of the stand having double-seated valve-chamber and exhaust-outlet, the valve, key-lever, and its springs and electrical connections, as set forth.

4. In a system for ringing magneto-bells, the combination, with a central magneto-electric-machine armature, of an expansible chamber connected therewith, and a connection for admitting fluid under pressure into the expansible chamber.

5. A chamber adapted for expansion under fluid-pressure, and to contract when the pressure is removed, in combination with a magneto-electric machine and intermediate gearing connecting one of the walls of the expansible chamber with the magneto-electric-machine armature, whereby the expansion of the chamber will cause the armature to revolve, as and for the purpose set forth.

335,934.



335,935. MANUFACTURE OF SOLID RINGS FROM PYROXYLINE COMPOUNDS AND OTHER PLASTIC MATERIALS. EMIL KIPPER, Adams, Mass. Filed Oct. 5, 1885. (No specimens.)



Claim.—1. The process or method herein described of making solid rings from pyroxyline compounds or other plastic materials, which consists in first producing a series of connected annular curved ribs or projections alternating with depressed lines on the outer surface of a body of the material, and severing such material on the depressed lines to form rings having squared or angular interior and curved exterior surfaces, substantially as described.

2. The process or method herein described of making solid rings from pyroxyline compounds or other plastic materials, which consists in first producing a series of connected annular curved ribs or projections alternating with depressed lines on the outer surface of a body of the material, severing such material on the depressed lines to form rings having squared or angular interior and curved exterior surfaces, and finally removing such squared or angular interior surfaces to form complete rings circular in cross-section, substantially as described.

3. The process or method herein described of making solid rings from pyroxyline compounds or other plastic materials, which consists in placing a tube, sheet, or other body of the material upon or about a smooth-faced mandrel, then forming on such material in a die or mold a series of concentric annular ribs or projections connected by lines of depression, severing such material on the lines of depression into detached rings, and finally turning off the squared or angular interior surfaces to form rings circular in cross-section, substantially as described.

4. In an apparatus for the manufacture of articles from pyroxyline compounds or other plastic material, a two-part mold or die, a smooth-faced mandrel, against the surface of which the material is placed, and a detachable end washer or washers engaging the mandrel, substantially as described

335,936. CUTTING-SHARE FOR PLOWS. EDOUARD A. KOCH, Waterloo, La., assignor of one-half to George Stambaugh, same place. Filed May 23, 1885. (No model.)

Claim.—1. In a cutting or soil-tilling implement, the matrix or share provided at its lower edge with a groove or channel, the lips or sides of which nearly or quite meet when the cutting strip or blade is removed, thus constituting a spring-clasp which clings closely to the

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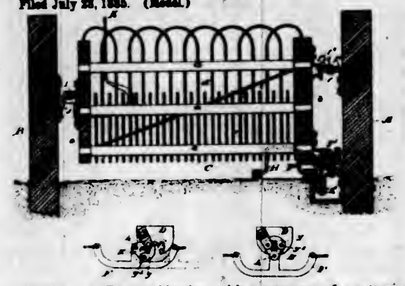
strip or blade when inserted, in combination with the cutting strip or blade of uniform thickness in the direction of its width, and having slots or holes for retention and adjustment, and the fastening device whereby the blade is held, but is capable of being moved outward and forward as the edge and point wear away, all as described.

2. The combination, with the share or matrix having the groove or channel and the spring-pins, of the blade having the holes for the reception of the spring-pins, whereby the blade is secured and position regulated.

3. The combination, with the share having the groove or channel and provided with the spring-pins, of the cutting-blade provided with a series of holes for the reception of the spring-pins, whereby the blade is retained in place and its position regulated.

4. The cutting-blade for a plow or cultivator, having its body of uniform thickness in the direction of its width, and having its end or point turned up to form a colter, substantially as described.

335,937. SWINGING GATE. JEREMIAH LANDIS, Brookville, Ohio. Filed July 22, 1885. (Model.)



Claim.—1. The combination, with a gate-post, of a gate pivoted thereto at its upper end, an outwardly-extending plate at the lower end of said post, notches in said plate, arms *g g'*, pivoted to the upper and under sides of the said plate, plates E E', pivotally connected with said arms, an angular pin projecting from the end bar of the gate and engaging openings in the plates E E', and operating mechanism for opening and closing the gate and connected with the plates E E', as set forth.

2. The combination, with a gate-post, of a gate pivoted thereto at its upper end, an outwardly-extending plate near the lower end of the post, notches in said plate, arms *g g'*, pivoted to the upper and lower sides of the same, plates E E', pivotally connected with said arms, an angular pin projecting from the inner vertical bar of the gate and engaging openings in the plates E E', a double bell-crank lever pivoted between plates E E', looped crank-operating levers located at suitable distances from the post A, and rods connecting said levers with the bell-crank lever, as set forth.

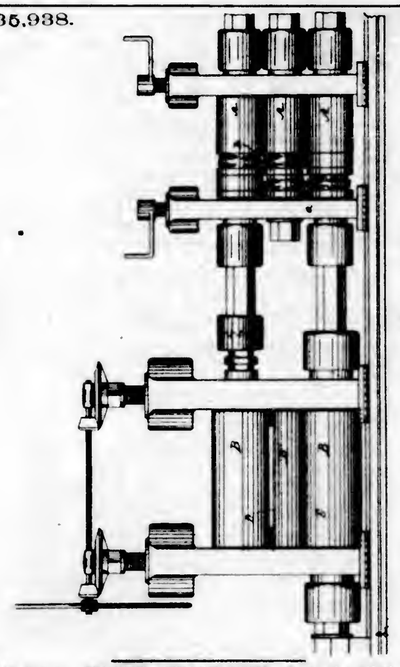
3. The gate-post provided with a plate or projection, D, in combination with arms *g g'*, pivoted to said plate or projection, plates E E', pivotally connected with said arms, the gate supported at its lower end upon the plates E E', and operating mechanism connecting with the said plates, for the purpose set forth.

4. The gate-post provided with a plate or projection, D, in combination with the plates E E', secured together, devices for pivotally connecting plate E to one side of plate D and plate E' to the opposite side thereof, the operating mechanism for the gate connecting directly with the plates E E', and the gate having a pivot-pin on its lower end passing through an opening of the plates, as set forth.

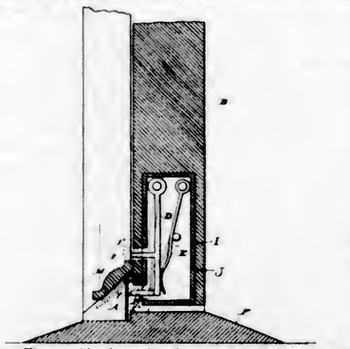
335,938. METHOD OF REDUCING OLD STEEL RAILROAD-RAILS TO STEEL PLATES. BERNARD LAUTH, Howard, Pa. Filed Aug. 27, 1885. (No model.)

Claim.—The method, substantially as hereinbefore described, of reducing railroad-rails to plate metal, the same consisting in the presentation of a section of an old rail to grooved rolls in order to reduce to a limited extent the head and the flange thereof, then presenting said section sidewise to plain-surfaced rolls of unequal diameters and giving to it a succession of passes accompanied by reversals of the section so as to present to the rolls first one edge and then the other, and to the small roll first one side and then the other, until, finally, after so rolling until the proper width of plate has been attained, passing said plate endwise through the rolls to reduce it to the desired thickness, as set forth.

335,938.



335,939. WEATHER-STRIP FOR DOORS. THOMAS LAW, Manhattan, Kans. Filed Oct. 17, 1885. (No model.)



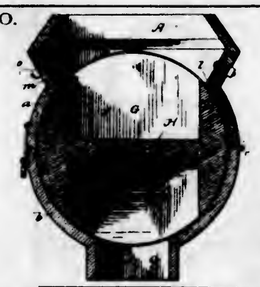
Claim.—The combination, with the door having the lock-casing arranged in the recess I thereof, and having the apertures I′ and I², of the lever D, pivoted at its upper end in the said casing, and provided with two horizontal branches at its lower end, passing through the said apertures, the lower one of which engages the pivoted strip A and the upper one the rabbet of the door-casing, and the flat spring E, engaging the inner side of the said lever D, substantially as shown and described.

335,940. GRAIN-MEASURING APPARATUS AND SACK-HOLDER. REASON C. LIVINGSTON, Spring Valley, Minn. Filed Sept. 17, 1885. (No model.)

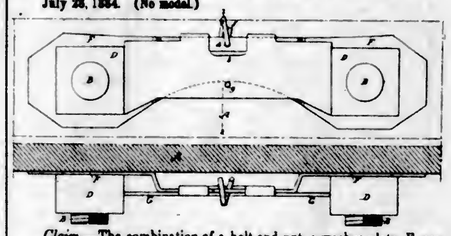
Claim.—1. The combination, in a grain-measuring device, of a casing provided with a circular portion, and shaft centrally piercing said circular portion and provided with a drum containing grain-measuring receptacles, the end portions of which are formed by arc-sections I I′, and adjustable rubber strips *l l′*, clamped at each end of the hopper, substantially as set forth.

2. The combination, in a grain-measuring device, of a casing composed of upper and lower sections, *a b*, hinged together at one side and provided at the other with a locking device, a shaft passing transversely through said casing and carrying a drum having grain-measuring receptacles, and an operating-crank for said shaft, substantially as set forth.

335,940.

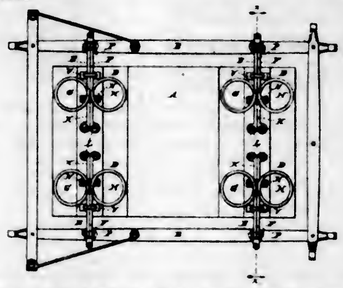


335,941. NUT-LOCK. THOMAS LOVELIDGE, Philadelphia, Pa. Filed July 28, 1884. (No model.)



Claim.—The combination of a bolt and nut, a washer-plate, F, confined by the nut and bent outward adjacent thereto, a locking-plate, G, carried by the bent portion of the plate, a slotted pocket formed on one of the plates for the reception of the other, and a retainer, *f*, contained within the slot of the pocket and adapted to an opening in that portion of the plate within the said pocket, as set forth.

335,942. VEHICLE-SPRING. THOMAS J. MAGNER, Harmellville, assignor, by direct and mesne assignments, of a part of his right to Job King and G. W. Rockwell, both of Buffalo, N. Y. Filed Nov. 5, 1885. (No model.)



Claim.—1. The double coil and torsion spring consisting of isometric branches having opposite coils formed upon vertical axes, and having their inner and outer arms parallel and extending in the same vertical plane in opposite directions, substantially as specified.

2. The double torsion and coil spring consisting of two single-coil branches, having their upper and lower portions extended to form parallel arms, which are firmly clipped together to brace each other, substantially as specified.

3. An isometric double torsion and coil spring, consisting of the coil-branches having their upper arms extending inward and parallel, for attachment to the body, and their lower arms extending outward and parallel and turned upward in their outer portions, for shackle-connection to the running-gear, substantially as specified.

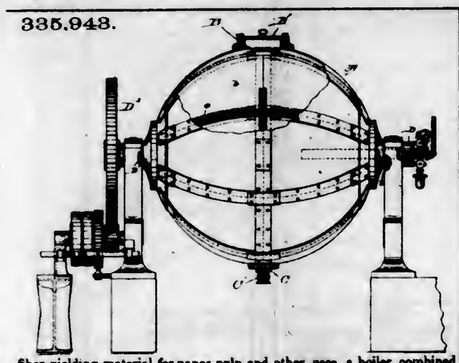
4. An isometric double torsion-spring, consisting of two vertically-coiled branches having their upper ends securely braced together for connection to the body, and their lower ends firmly braced together and extended outward for the shackle-connection, substantially as specified.

5. A vehicle-spring consisting of single laterally-opposite coils having parallel attachment-arms extending in opposite directions from the higher and lower portions of said single coils, substantially as specified.

335,943. BOILER FOR TREATING WOOD, &c., FOR PAPER-PULP. JOHN MAKIN, Glossop, County of Derby, England, assignor to Charles Chesley Springer, Boston, Mass. Filed July 29, 1885. (No model.)

Claim.—1. In an apparatus for the treatment of wood and other

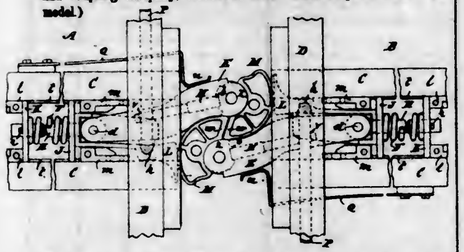
335,943.



fiber-yielding material for paper-pulp and other uses, a boiler combined with a compound lining composed of two metals having different rates of expansion or contraction, the metal having the least expansion constituting the foundation-plate for the compound lining, the metal of greatest expansion or least contraction constituting the sides or faces of the compound lining, and being composed of lead or equivalent acid-resisting or non-corrosive material, the latter metal being tied or anchored to the foundation-plate at frequent intervals, to thus obviate the objectionable creeping of the metal of greatest expansion, substantially as described.

2. In an apparatus for the production of paper-pulp, the combination, with a boiler, of a compound lining composed of a foundation-plate of hard metal or iron and a soft or more easily fused acid-resisting metallic face applied to the foundation-plate and anchored or tied to it at frequent intervals, to neutralize or overcome the creeping of the lining within the boiler, substantially as described.

335,944. CAR-COUPLING. JOHN W. MARDEN, Waltham, and REMBRANDT R. LITTLEFIELD, Somerville, Mass., assignors to the Cowell Platform and Coupling Company, Cleveland, Ohio. Filed July 22, 1885. (No model.)



Claim.—1. In a car-coupling, a draw-bar provided with a lateral hook at its outer end, a cushioning-spring at the inner end of said draw-bar, and an independent buffer resting against said spring and adapted to resist the longitudinal thrust of a companion draw-bar, substantially as described.

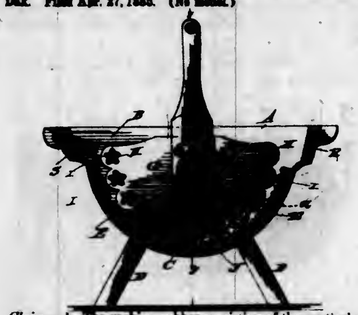
2. In a car-coupling, a draw-bar provided with a lateral hook at its outer end, forming an acute angle therewith, a cushioning-spring at the inner end of said draw-bar, and an independent buffer adapted to rest against said spring and against the hook of a companion draw-bar when the hooks are engaged, substantially and described.

3. In a car-coupling, the combination of a draw-bar, a lateral hook pivoted to the outer end thereof, a cushioning-spring for said draw-bar, an independent buffer adapted to rest against said spring and against the hook of a companion draw-bar when the hooks are engaged, a locking-bar for locking said hook, and a lever for operating said locking-bar, substantially as described.

4. In a car-coupling, the combination of two pivoted laterally-swinging draw-bars, cushioning-springs for said draw-bars, oscillating interlocking hooks pivoted to the front ends of said draw-bars, spring-buffers independent of and adjacent to said draw-bars, said buffers being adapted for contact with said hooks when the cars are coupled, and locks for retaining said hooks in coupled positions, substantially as described.

5. In a car-coupling, the combination of two pivoted laterally-swinging draw-bars, cushioning-springs for said draw-bars, laterally-oscillating segments pivoted in the front ends of said draw-bars, the adjacent radial or inclined faces of said segments constituting meeting hooks, spring-buffers independent of and adjacent to said draw-bars, adapted for contact with the curved faces of said segments when the draw-bars are coupled together, and locks for holding said segments in coupled positions, substantially as described.

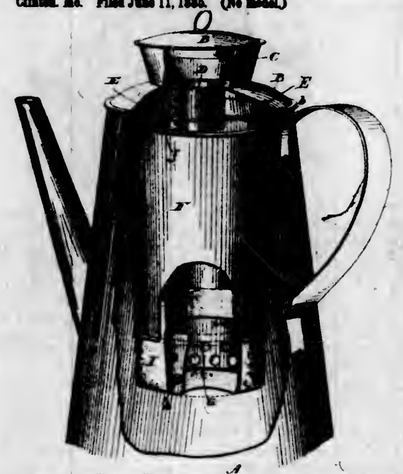
335,945. WASHING-MACHINE. CHARLES C. MAXWELL, Watertown, Dak. Filed Apr. 27, 1885. (No model.)



Claim.—1. The rocking rubber consisting of the vertical walls provided with the scalloped edges, and with castings J, having perforations H, and the corrugated cross-bars connecting the said sides and secured by screws, as set forth, whereby the said corrugated bars may be turned to present new rubbing-surfaces, substantially as specified.

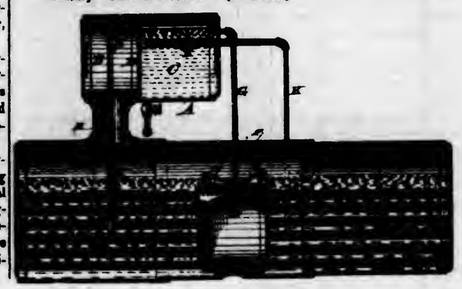
2. The combination, with the tub, of the rocking rubber consisting of the sides having scalloped opposite edges and curvilinear lower edge, the castings secured to the said sides of the rubber and provided with inner scalloped flanges and with perforations H, and the corrugated bars secured to said sides, substantially as shown and described.

335,946. PERCOLATOR FOR COFFEE-POTS. SAMUEL A. HELTON, Clinton, Mo. Filed June 11, 1885. (No model.)



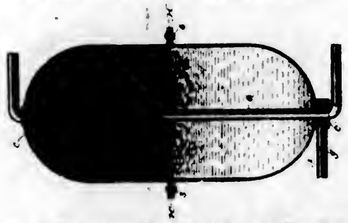
Claim.—The combination, with the pot A, the cover B, having the hooks E, extension C, opening D, and tube D′, and the supplemental lid B′, of the inverted conical portion F, having ears *s*, the perforated conical band G, the straining fabric I, and the half-cover *f*, as described, and for the purposes set forth.

335,947. STEAM-BOILER ATTACHMENT. JOHN MITCHELL, Louisville, Ky. Filed Dec. 5, 1885. (No model.)



Claim.—The combination, with the boiler and cylindrical drum A, divided into two compartments, B and C, by flanged sheet D, of the pipes G F and funnels E E, and the blow-off pipe J, substantially as specified.

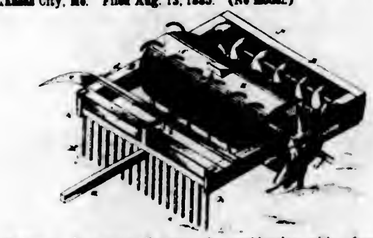
335,948. **STEAM-BOILER FILTER.** JOHN NIKKLE and ALLEN NELSON, Grand Forks, Dak. Filed Nov. 7, 1885. (No model.)



Claim.—1. The combination, with a boiler, of a filter divided into sections by a perforated plate having an imperforate central portion and pipes connecting the filter and the boiler, substantially as set forth.

2. The combination, with a boiler, of a filter divided into two sections by a perforated plate having an imperforate raised central portion, a pipe having its end located adjacent to said plate and leading to the upper end of the boiler, and a pipe leading from the lower end of the boiler to the upper end of the filter, substantially as set forth.

335,949. **CORNSTALK-CUTTER.** HOLDER OLSON and JOHN HOGLAND, Kansas City, Mo. Filed Aug. 13, 1885. (No model.)



Claim.—1. In a cornstalk-cutter, the combination, with a frame, of a revolving shaft or roller, a series of curved arms or fingers attached to said roller, a shaft in rear of the roller, and a series of circular cutting wheels or disks on said shaft, said wheels or disks being revolved by contact with the arms or fingers, substantially as set forth.

2. In a cornstalk-cutting machine, the combination, with a frame, of a revolving roller having a series of gathering arms or fingers, a series of rotary cutting-knives, and a rake at the front of the frame adapted to be automatically raised and lowered at intervals, for the purpose set forth, substantially as described.

3. In a cornstalk-cutting machine, the combination, with a frame of a revolving roller having gathering-fingers, and a series of blocks with beveled faces secured to said roller, a series of rotary cutters, a rake attached to the front of the frame, so that it may move vertically, and a pivoted arm connected with said rake and adapted to be struck by said blocks, substantially as set forth.

4. In a cornstalk-cutting machine, the combination, with a frame, of a revolving roller having a series of curved fingers, a series of circular disks adapted to be revolved by said fingers, a wheel on the axle of the roller, and having a series of arms and a depending cutting-knife, substantially as set forth.

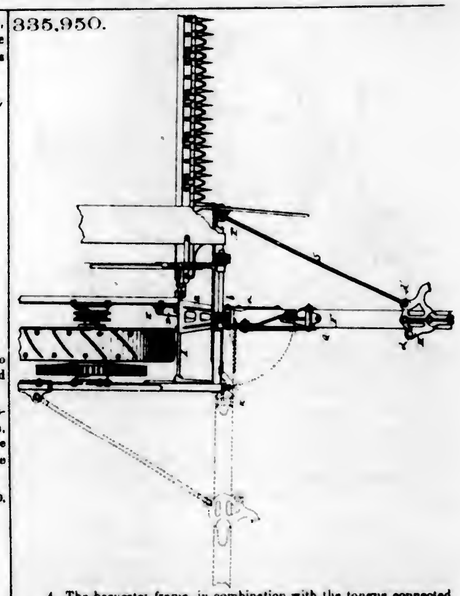
335,950. **GRAIN HARVESTING AND BINDING MACHINE.** DAVID M. OSBORNE, Auburn, N. Y. Filed Jan 24, 1885. (No model.)

Claim.—1. In combination with the frame of a grain binding and harvesting machine, a draft-pole pivotally attached thereto so that it may be placed at right angles to or parallel with the cutter-bar, and means, substantially as described, for locking said pole firmly in the one or the other of said positions at will, whereby the tongue may be employed for guiding the machine when in operation, and also when being drawn endwise.

2. In combination with the frame of a harvesting and binding machine, having detachably carrying or truck wheels at right angles to the main or road wheel, a draft-pole or tongue pivotally attached thereto so that it may be placed either at a right angle to or parallel with the cutter-bar and locking devices, substantially as described, to secure the pole rigidly in either of the two positions.

3. In combination with the harvester-frame and the horizontally-swinging pole pivoted thereto, the eye-plate on the pole, the two eye-plates on the frame, and the changeable braces adapted to connect the tongue with one or the other of said frame-plates, as described.

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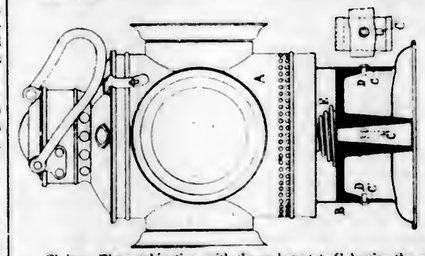


4. The harvester-frame, in combination with the tongue connected thereto by both horizontal and vertical pivots, substantially as described, means, substantially as described, for locking the tongue parallel with or at right angles to the cutter-bar, and adjustable devices connecting the tongue and frame to change the inclination of the latter.

5. In combination with the harvester-frame provided with the stud, the draft-pole provided with the slotted plate to engage the stud.

6. In combination with the main frame provided with the stud, the swinging pole jointed thereto, and the pole-plate provided with the slot to receive the stud, and with the eye to connect with the tilting devices.

335,951. **SWITCH-LAMP.** THEODORE B. OSBORNE, Plainfield, N. J., assignor to Alfred Osterhoudt, Brooklyn, N. Y., Robert J. Armour, Orange, N. J., and Lawson D. Huntington, New York, N. Y. Filed June 15, 1885. (No model.)



Claim.—The combination, with the socket-plate C, having the outer depending flange provided with slots C' therein, of the body A, having skirt or base B, provided with projections D, and the spring E, the whole combined and arranged substantially as shown and described.

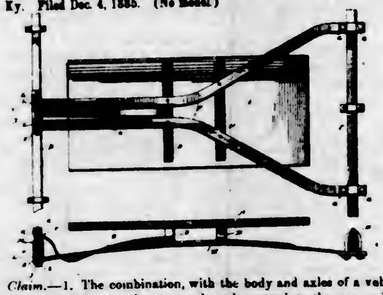
335,952. **FERRATED CAKE OF CHOCOLATE.** EDWARD A. PARNELL, Swansea, County of Glamorgan, England. Filed Aug. 1, 1885. (No specimens.) Patented in England Oct. 15, 1884, No. 13,604.

Claim.—1. The process, substantially as herein described, for making medicinal chocolate cakes or tablets containing a magnetic oxide of iron, which consists in adding glycerine to the fresh precipitated oxide, evaporating the water, adding hot solution of gelatine, and then warm chocolate paste with flavoring, and when thorough incorporation has taken place running it into molds.

2. The improvement in the process of making medicinal chocolate cakes or tablets containing a magnetic oxide of iron, which consists in adding glycerine to the fresh precipitated oxide and evaporating the water, whereby a mud of glycerine magnetic oxide in a very finely divided condition is obtained without aqueous matter and without the aggregation of particles consequent in drying the original precipitate without glycerine.

3. As a new article of manufacture, a chocolate cake containing glycerine and magnetic oxide of iron in a very fine state of subdivision, substantially in the proportions specified.

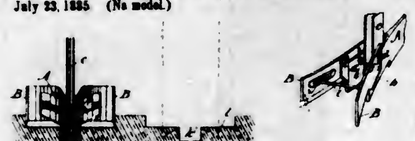
335,953. **VEHICLE-SPRING.** JOHN W. PATTERSON, Madisonville, Ky. Filed Dec. 4, 1885. (No model.)



Claim.—1. The combination, with the body and axles of a vehicle, of springs diverging at the rear ends and secured to the rear axle at their rear ends and at their middles to bails upon the bottom of the vehicle-body, a king-bolt pivotally secured to the forward ends of the springs, and a brace-spring secured to the forward bail of the vehicle-body and bent upward and forward at its forward end, and secured to the upper end of the king-bolts, as and for the purpose shown and set forth.

2. The combination, with the body and axles of a vehicle, of downwardly-bulging bails or straps secured transversely at the middle of the bottom of the body, two flat springs secured at their middles to the bails, and having their diverging rear portions secured at the ends to the rear axle, and having their parallel forward portions formed with transverse eyes at their ends, a king-bolt having a transverse yoke at its lower end formed with downwardly-projecting perforated lips at its ends, a transverse bolt passing through the lips and through the eyes of the springs, and a brace-spring secured at its rear end to the forward bail, upon the bottom of the vehicle-body, and having its forward portion bent upward and forward and secured upon the king-bolt with a perforation, as and for the purpose shown and set forth.

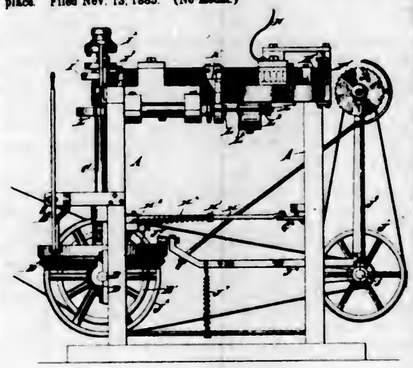
335,954. **CORN-PLANTER.** JOSEPH B. PEDRICK, Columbus, Ind. Filed July 23, 1885. (No model.)



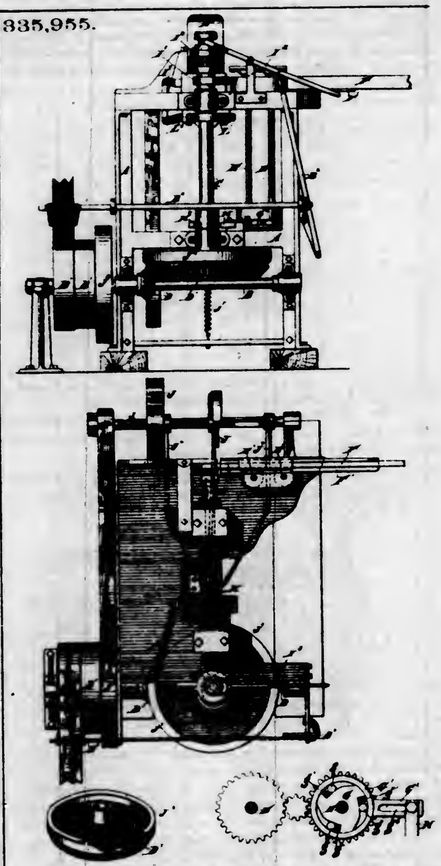
Claim.—1. In a corn-planter, the combination, with the runner A, of the plates B B, each having the series of holes *f* and a cleat, *k*, and secured to the runner by a bolt, *d*, all substantially as and for the purpose specified.

2. The combination, with the runner A, plates B B, and bolts securing the plates at one end to the runner, of the rod i, hinged to one of said plates and arranged to engage a series of notches, *j*, in the other plate, substantially as and for the purpose specified.

335,955. **MACHINE FOR MAKING BUNGS.** JOHN PETZ, Detroit, Mich., assignor to himself, John Phillips, and Edward W. Rowley, same place. Filed Nov. 13, 1885. (No model.)



335,955.



Claim.—1. In a machine for making bungs, the combination, with a saw mounted in an intermittently-oscillating frame, a tubular reciprocating punch, and a frame for supporting and guiding the strip or blank, of rollers for feeding the strip forward, rotary shafts for carrying said rollers, said shafts being connected by pinion-gearing, a pawl-and-ratchet mechanism mounted on one of said shafts and provided with a sleeve, G', and lever (G^2, a push-bar having an adjustable connection with said lever, and a rotary shaft carrying a lug for actuating said push-bar, and a cam for actuating the saw-frame, substantially as described.

2. In a machine for making bungs, the combination of a reciprocating tubular punch, a rotary shaft carrying a fixed clutch, and a loosely-engaged cam for actuating said punch, a spring for retracting the punch, a saw mounted in an oscillating frame, and rollers for intermittently feeding the bung-strip, substantially as described.

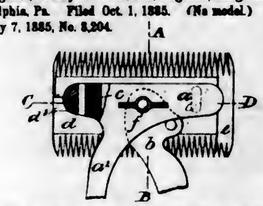
3. In a machine for making bungs, the combination, with a saw mounted in an oscillating frame, a tubular reciprocating punch, a frame for supporting and guiding the bung-strip, and rollers for feeding said strip forward, of a hopper for receiving the cut bungs from the punch, a compressing-die, a plunger for forcing the bungs from the hopper into said die, and a follower for ejecting them from the die, substantially as described.

4. In a machine for making bungs, the combination, with a supporting and guiding frame and rollers for feeding the bung-strip, of a saw mounted in an oscillating frame, a tubular reciprocating punch, a rotary shaft carrying a fixed clutch, and a punch-actuating cam loosely mounted on said shaft in proximity to the said clutch, whereby the punch may be thrown into and out of operation independently of the feed to permit a defective portion of the strip to be fed past the punch, substantially as described.

5. In a machine for making bungs, the combination of the frame A, having guide F' for supporting the bung-strip, the intermittent feed-rollers E' E', the rotary shaft C, carrying cam J^3, the saw J, an oscillating saw-frame carrying a roller, J^5, for engaging said cam, the reciprocating tubular punch I, the cam I', mounted loosely on the shaft C and

adapted to be engaged with a clutch fixed to said shaft, the hopper K, for receiving the bungs from the punch, a compressing-die, L^2, a reciprocating punch, L, to force the bungs from the hopper and into said die, springs for retracting the punch and plunger, and a follower, L^3, for ejecting the bungs from the die, said follower being actuated by rods L^4 from a cam, L', on the shaft C, substantially as described.

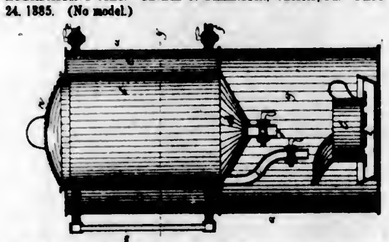
335,956. HAIR-CLIPPER. THOMAS L. PHIPPS and WILLIAM BURMAN, Birmingham, County of Warwick, England, assignors to Louis S. Lee, Philadelphia, Pa. Filed Oct. 1, 1885. (No model.) Patented in England July 7, 1885, No. 8,204.



Claim.—1. The cap *a*, formed with or having the hanging hollow bush or cylinder a^2, and a surrounding collar, in combination with the handle *b* and the binding-screw *f*, substantially as described.

2. The cap-plate *a*, provided with the sockets a^4, in combination with the rollers *c*, the sides of said sockets being drawn or bent partially around said rollers, substantially as described.

335,957. APPARATUS FOR REFINING TALLOW AND OTHER LUBRICATING OILS. GEORGE J. PILKINGTON, Chester, Pa. Filed Oct. 24, 1885. (No model.)



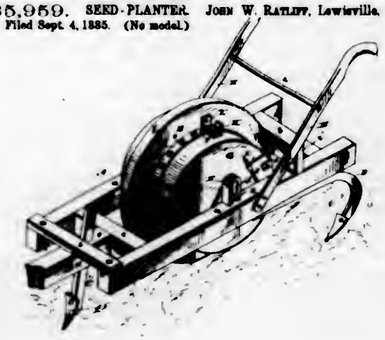
Claim.—1. A cylinder-oil heater consisting of an exterior vessel, *a*, an interior vessel, *b*, and an inclosed heating-space, *c*, with a pipe, *e*, for the admission of steam, and a pipe, *f*, for the escape of condensed steam, the vessel *b* being provided with a depressed bottom, *d*, to receive grit and other settlings, and provided also with an aperture at or near the lowest part of said bottom *d*, for drawing off settlings, and with an aperture at or near the top level of said bottom for drawing off the clear heated oil, substantially as set forth.

2. An exterior vessel, *a*, an interior vessel, *b*, and an inclosed steam-space, *c*, an inlet-pipe, *e*, and an outlet-pipe, *f*, the vessel *b* being provided with an aperture in or immediately above its bottom for drawing off sediment, and an aperture operative at a higher level for drawing clear heated oil, substantially as set forth.

335,958. PROCESS OF SEPARATING THE FIBER OF COCOONS. HENRY R. RANDALL, Brooklyn, N. Y. Filed Oct. 12, 1885. (No specimens.)

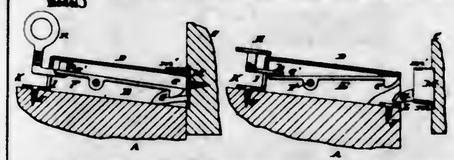
Claim.—The process herein described of preparing cocoons for the mechanical separation of their fibers, consisting in subjecting the cocoons to the action of a solution of hydrochloric acid at a temperature of or approximating 150° Fahrenheit, substantially as specified.

335,959. SEED-PLANTER. JOHN W. RATLIFF, Lewisville, Tex. Filed Sept. 4, 1885. (No model.)



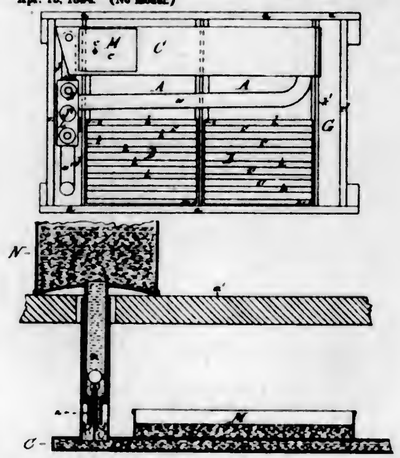
Claim.—A seed-planter comprising in its construction a supporting-frame, a rotatable hopper mounted and adapted to vertical movement in bearings of said frame, a circumferential flange on the hopper, said hopper having openings of varying sizes, a slide having openings to correspond to those of the hopper, said slide having recesses and guided by brackets L, pins fitting said recesses, and the finger-piece K on the slide, substantially as set forth.

335,960. SHUTTER-FASTENER. MATTHEW H. REAMER, JOSEPH G. REAMER, and ENOS N. REAMER, St. Louis, Mo. Filed Mar. 14, 1885. (No model.)



Claim.—The combination, with the window-sill A, the pivoted latch E, and the case D, covering said latch and having lugs K and L, for the purpose set forth, of the sash B, adapted when closed to cover the lug K, and the shutter C, having the lugs *m* for covering the lugs L, as and for the purpose set forth.

335,961. INCUBATOR. EDWARD S. RENWICK, Millburn, N. J. Filed Apr. 15, 1884. (No model.)



Claim.—1. The combination, substantially as before set forth, of the incubating-chamber, the heater, and the evaporating-tray in connection with the heater, whereby the evaporating-tray in the incubating-chamber is supplied with warmed water from the heater.

2. The combination, substantially as before set forth, of the incubating-chamber, the air-supply pipe arranged at the end of said chamber and delivering air to the upper part thereof, the heater arranged within said air-supply pipe, the circulator extended through the incubating-chamber, and the evaporator arranged in the upper part of said chamber and in connection with said heater.

3. The combination, substantially as before set forth, of the egg-trays fitted with egg-supports having spaces between them for the passage of chickens, the chicken-chamber beneath for the reception of chickens which pass downward from said trays, and the body of the incubator having flap-holes for the removal of said chickens.

4. The combination, substantially as before set forth, of the egg-trays fitted with egg-supports having spaces between them for the passage of chickens, the chicken-chamber beneath, and the chicken-tray for holding the chickens.

5. The combination, substantially as before set forth, of the incubating-chamber, the ventilating-chimney connected with said chamber below the egg-trays, the top of said chamber having the supplementary ventilating-opening, and the valve for said supplementary opening.

6. The combination, substantially as before set forth, of the central heater, the two lateral circulators, the direct pipes which are coincident in said circulators and lead from the upper end of the heater to the farther ends of the circulators, and the return-pipes leading from the nearer ends of the lateral circulators to the lower part of the heater.

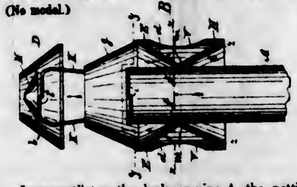
7. The combination, substantially as before set forth, of the incubating-chamber, the central heater arranged at the end thereof, the lateral circulator, the direct-flow pipe, which is outside the lateral circulator and leads from the upper end of the heater to the farther end of the lateral circulator, and the return-pipe leading from the nearer end of the lateral circulator to the lower end of the heater.

335,962. CONVERTING PETROLEUM AND SIMILAR HYDROCARBONS INTO ACIDS. ERNST SCHAAL, Stuttgart, Wurtemberg, Germany. Filed Oct. 11, 1884. (Specimens.)

Claim.—1. The process of converting petroleum or hydrocarbons of the series C_nH_{n+2} into organic acids, which process consists in subjecting the above-named hydrocarbons in the presence of an excess of alkaline substances—such as caustic alkalies, alkaline earths, or their carbonates—to the action of an oxidizing agent, then separating from the liquid the resulting alkaline salts, and, finally, extracting from these salts the mixture of organic acids.

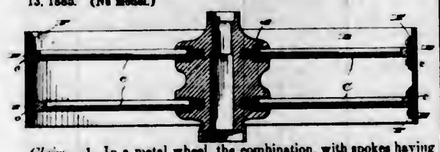
2. The process of converting petroleum and other hydrocarbons of the series C_nH_{n+2} into organic acids, which process consists in subjecting the above-named hydrocarbons in the presence of alkaline substances—such as caustic alkalies, alkaline earths, or their carbonates—to the action of an oxidizing agent, then separating from the liquid the resulting alkaline salts, then from these salts the mixture of organic acids, then liberating from these salts the organic acids by decomposition with a mineral acid, and, finally, separating the said organic acids into liquid acids and solid acids by distillation, as herein described.

335,963. VENTILATOR. BENJAMIN SCARLES, Clinton, Mass., assignor to himself and Charles Swinnea, same place. Filed July 20, 1885. (No model.)



Claim.—In a ventilator, the body or pipe A, the petticoat C, disposed near the top of said body and provided with openings *m*, the inverted cone-shaped guard E, disposed above said petticoat and provided with openings coinciding with the openings *m*, the case H, surrounding said petticoat and guard and provided with the openings *v*, conical top *g*, and partitions J, the conical cap or hood D, supported above the conical top *g*, and the guard N, disposed within said cap or hood, combined and arranged to operate substantially as described.

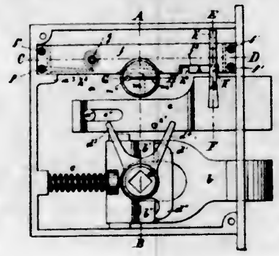
335,964. WHEEL. REINHARD SCHEIDLER, Newark, Ohio. Filed Oct. 13, 1885. (No model.)



Claim.—1. In a metal wheel, the combination, with spokes having tenons on the outer end for supporting the rim of the wheel, and screws arranged to extend through the rim of the wheel and screwing into threaded holes in the end of said tenons, and arranged substantially as described, whereby the rim and spokes are drawn and held together by the draft of said screws, of the hub having spoke-mortises, and a filling introduced with said mortises around the spokes, substantially as set forth.

2. In a metal wheel, the combination, with spokes screwed into the hub, the holes in said hub near the periphery being larger than the spokes, of filling introduced into said holes around the spokes and arranged substantially as described, whereby the spokes are supported outside of the threaded part thereof.

335,965. LOCK. SUMNER SHAW, Boston, Mass. Filed Mar. 14, 1885. (Model.)



Claim.—1. In a tumbler-lock, the movable tumblers *h*, having upper notches, *h'*, and lower notches, *h''* h^4, and the intermediate stationary division-plates, *f*, having lower recesses, f^4, as described, combined with the bolt *e*, its yoke *k*, and locking-ribs *k' k''*, as and for the purpose set forth.

2. In a tumbler-lock, the bolt *e*, with its yoke *k*, having upper and lower locking ribs, *k'* and *k''*, in combination with the movable tumblers *h h* and their respective upper and lower locking-notches, *h'* and *h''*, as and for the purpose set forth.

3. In a tumbler-lock, the tumbler-cylinder *m* and movable tumblers *h*, having locking-recesses *h' h''* h^4, in combination with the bolt *e*, having yoke *k*, and locking-ribs *k' k''*, the projection *e'* on said bolt *e*, and the latch-cylinder *d*, having arms d^2 d^3, for operating the bolt *e* after its yoke has been relieved from the locking-recesses in the tumblers, substantially as and for the purpose set forth.

4. In a tumbler-lock, the tumbler-cylinder having solid portion *m*, connecting the end ribs, *m' m'*, the perforation $m^{\prime\prime}$, passing through the solid part *m* from end to end of said cylinder, and slit m^2, made through the ribs *m' m'*, combined with the key *l*, having a flat body adapted to fit into the slit m^2, and enlarged back l^2, adapted to fit into the perforation $m^{\prime\prime}$, and limited in its position therein by the stop projection or offset l^4 on the key *l*, as and for the purpose set forth and described.

335,966. PULVERIZER AND SEEDER. SUMNER SHAW, Boston, Mass. Filed Sept. 26, 1885. (No model.)

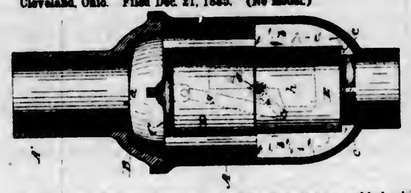


Claim.—1. The combination, with the frame *a*, of the front and rear rollers, F F', inclosed within said frame, and the pulverizers or harrows E, journaled in separate bearings located in the frame and independently adjustable, substantially as described.

2. The combination, with the frame *a* and the independently-adjustable harrows E, of the shaft *b*, supported in bearings *b' b'*, and provided with cleaners *b''* $b^{\prime\prime}$, made separate and secured to said shaft so as to intermesh with the harrow-teeth, substantially as described.

3. The combination of the frame *a*, the front roller, F, and rear roller, F', both inclosed by said frame, the independently-adjustable harrows E, located between said rollers, the cleaners *b''* $b^{\prime\prime}$, located between the harrows, the seed-receptacle G, supported on the frame between the rear harrow and rear roller, the rake *d* in front of the seed-receptacle, and the continuous scraper *h* at the rear of said receptacle, substantially as described.

335,967. SEWER GAS AND STENCH TRAP. THOMAS SHEHAN, Cleveland, Ohio. Filed Dec. 21, 1885. (No model.)



Claim.—1. The combination, with the trap-body provided with a valve-seat and inlet and outlet openings, of the longitudinally-extensible chamber, the valve carried thereby, and the valve-counterweighting mechanism mounted and contained therein, substantially as and for the purposes hereinbefore set forth.

2. The trap-body provided with a valve-seat and inlet and outlet openings, in combination with the stationary barrel, the sliding sleeve mounted thereon, and the valve mounted on and carried by said sleeve, substantially as and for the purposes hereinbefore set forth.

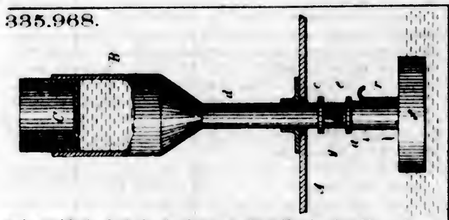
3. The combination, with the body of the trap and the valve-seat contained therein, of the extensible chamber consisting of the stationary barrel and the sliding sleeve mounted thereon, the valve carried by said sliding sleeve, the counter-weight, and the rock-shaft mounted within the stationary barrel, and connected on the one hand to the valve-carrying sleeve and on the other hand to the counter-weight, substantially as and for the purposes hereinbefore set forth.

4. The trap-body formed with a removable upper section provided with a valve-seat, in combination with the valve, the valve-movement, and the extensible chamber carrying said valve containing the valve-movement, and detachably connected to the interior of the trap-body substantially as and for the purposes hereinbefore set forth.

335,968. FEED-WATER APPARATUS. ABRAHAM A. SHOOK, Jerseyville, Ill. Filed Oct. 31, 1885. (No model.)

Claim.—1. In a feed-water apparatus for steam-boilers, the combi-

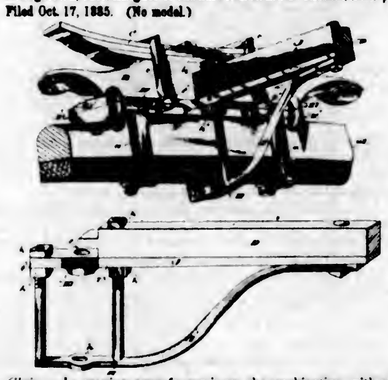
335,968.



nation, with the feed-pipe having an outlet-orifice in the side and provided with a longitudinally-sliding sleeve actuated by a float, of the collars c and e, the former secured to the feed-pipe and the latter to the upper end of the sleeve, as and for the purpose set forth.

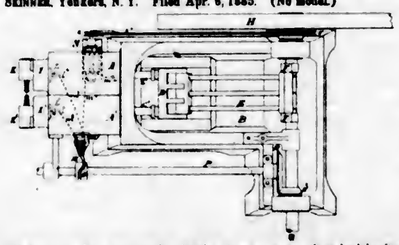
2. In a feed-water apparatus for steam-boilers, the combination, with the induction-pipe d, provided with a collar, c, and having an outlet-orifice, g, closed and opened by a sleeve, a, actuated by a float, of a supply-tank provided with a gravity force-piston, substantially as and for the purpose set forth.

335,969. RUNNING-GEAR FOR CARRIAGES. GEORGE W. SIMMONS, Youngstown, Ohio, assignor of one-half to Edward F. Thomas, same place. Filed Oct. 17, 1885. (No model.)



Claim.—In running-gears for carriages, the combination, with plates made male and female at the center of each, said plates being attached, respectively, to the head-block and axle, so as to engage each other and perform the functions of a fifth-wheel, a plate attached to the bottom of the axle, said plate having a depending lug or trunnion in line with the axis of the aforesaid plates above, in combination with a yoke consisting, essentially, of a horizontal section and two vertical sections formed integral, substantially as shown, said yoke being attached to the reach and to laterally-projecting ears of the said plates of the head-block, the parts being arranged substantially as described.

335,970. ELECTRICAL IGNITER FOR GAS-ENGINES. CHARLES E. SKINNER, Yonkers, N. Y. Filed Apr. 6, 1885. (No model.)



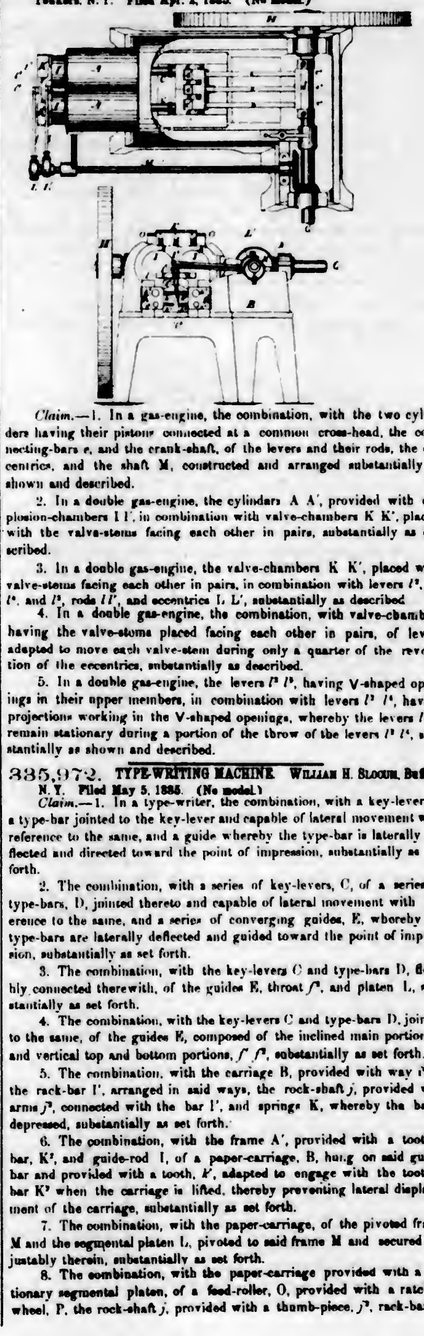
Claim.—1. In a gas-engine having two or more electrical igniters, a crank vibrating on a stud and operated by a cam on the longitudinal shaft of the engine, whereby the electric current is furnished to each igniter successively, substantially as described.

2. In a gas-engine, a crank operated by a cam on shaft of the engine, in combination with the frame M, having pins m^3 m^3, surrounded by insulating material, m' m', and the wires m^7 m^8, the whole so arranged as to throw one or more electrical igniters in or out of circuit, substantially as described.

3. In combination with a gas-engine having more than one electrical igniter, the stand M, insulated pins m^3 m^3, lever M', having insulated end, and cam O, substantially as described.

4. In combination with a gas-engine, the dynamo S, having one pole connected with engine, the other connected with pin m^3 in insulated end of lever M', and insulated pins m^7 m^8 in connection with igniters I, I', substantially as described.

335,971. GAS-ENGINE. HALCYON SKINNER and CHARLES E. SKINNER, Yonkers, N. Y. Filed Apr. 2, 1885. (No model.)



Claim.—1. In a gas-engine, the combination, with the two cylinders having their pistons connected at a common cross-head, the connecting-bars e, and the crank-shaft, of the levers and their rods, the eccentrics, and the shaft M, constructed and arranged substantially as shown and described.

2. In a double gas-engine, the cylinders A A', provided with explosion-chambers I I', in combination with valve-chambers K K', placed with the valve-stems facing each other in pairs, substantially as described.

3. In a double gas-engine, the valve-chambers K K', placed with valve-stems facing each other in pairs, in combination with levers l^2, l^5 l^6, and l^3, rods $l'l'$, and eccentrics L L', substantially as described.

4. In a double gas-engine, the combination, with valve-chambers having the valve-stems placed facing each other in pairs, of levers adapted to move each valve-stem during only a quarter of the revolution of the eccentrics, substantially as described.

5. In a double gas-engine, the levers l^3 l^3, having V-shaped openings in their upper members, in combination with levers l^2 l^4, having projections working in the V-shaped openings, whereby the levers l^3 l^3 remain stationary during a portion of the throw of the levers l^2 l^4, substantially as shown and described.

335,972. TYPE-WRITING MACHINE. WILLIAM H. SLOCUM, Buffalo, N. Y. Filed May 5, 1885. (No model.)

Claim.—1. In a type-writer, the combination, with a key-lever, of a type-bar jointed to the key-lever and capable of lateral movement with reference to the same, and a guide whereby the type-bar is laterally deflected and directed toward the point of impression, substantially as set forth.

2. The combination, with a series of key-levers, C, of a series of type-bars, D, jointed thereto and capable of lateral movement with reference to the same, and a series of converging guides, E, whereby the type-bars are laterally deflected and guided toward the point of impression, substantially as set forth.

3. The combination, with the key-levers C and type-bars D, flexibly connected therewith, of the guides E, throat f^3, and platen L, substantially as set forth.

4. The combination, with the key-levers C and type-bars D, jointed to the same, of the guides E, composed of the inclined main portions f and vertical top and bottom portions, f' f^2, substantially as set forth.

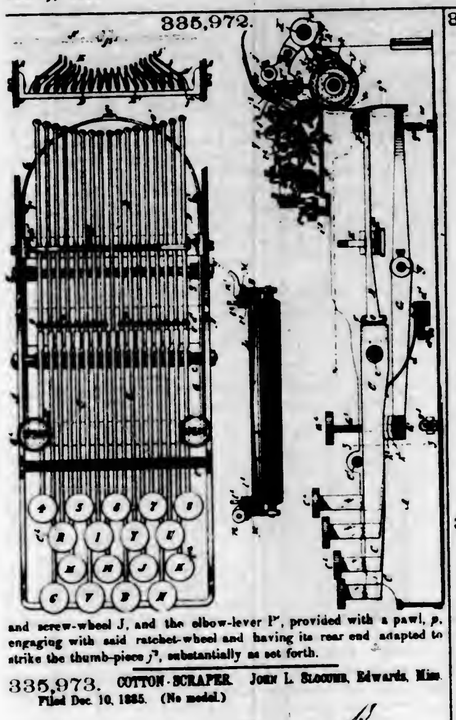
5. The combination, with the carriage B, provided with way i^3, of the rack-bar I', arranged in said ways, the rock-shaft j, provided with arms j^3, connected with the bar I', and springs K, whereby the bar is depressed, substantially as set forth.

6. The combination, with the frame A', provided with a toothed bar, K^2, and guide-rod I, of a paper-carriage, B, hung on said guide-bar and provided with a tooth, k', adapted to engage with the toothed bar K^2 when the carriage is lifted, thereby preventing lateral displacement of the carriage, substantially as set forth.

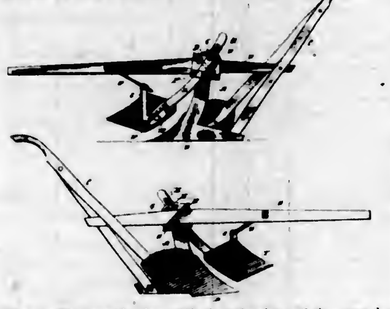
7. The combination, with the paper-carriage, of the pivoted frame M and the segmental platen L, pivoted to said frame M and secured adjustably therein, substantially as set forth.

8. The combination, with the paper-carriage provided with a stationary segmental platen, of a feed-roller, O, provided with a ratchet-wheel, P, the rock-shaft j, provided with a thumb-piece, j^3, rack-bar I', and screw-wheel J, and the elbow-lever l^{10}, provided with a pawl, p, engaging with said ratchet-wheel and having its rear end adapted to strike the thumb-piece j^3, substantially as set forth.

335,972.



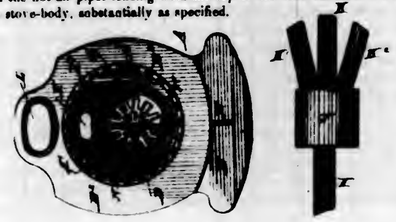
335,973. COTTON-SCRAPER. JOHN L. SLOCUM, Edwards, Miss. Filed Dec. 10, 1885. (No model.)



Claim.—The combination, with the clip-plate, of the curved arm slotted at its upper end and adjustably secured to said plate, the socketed projection through which the arm passes, the angle-plate having a recessed socket, into which the lower end of the curved bar projects, the set-screw, the scraper-blade, and the eyebolt, whereby the angle-plate and scraper may be adjusted, substantially as specified.

335,974. STOVE. GEORGE A. TAYLOR, New Hampton, Iowa. Filed June 27, 1885. (No model.)

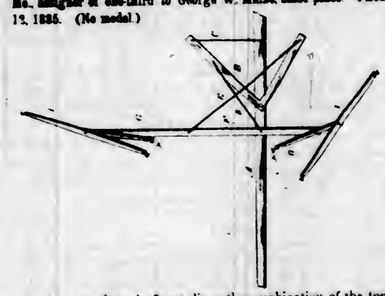
Claim.—The combination, with a stove, of the chamber J, arranged therein above the fire-box, and having a deflector, J', the cold-air pipe leading from beneath the stove through the fire-box to the chamber J, and the hot-air pipes leading from the top of the said chamber through the stove-body, substantially as specified.



335,974.



335,975. DRAFT-EQUALIZER. ROBERT A. THOMPSON, Woodbine, Me., assignor of one-third to George W. Maine, same place. Filed Nov. 12, 1885. (No model.)



Claim.—1. In a draft-equalizer, the combination of the tongue, a frame secured upon the inner end of the tongue and projecting to both sides of the same, a double-tree, a short and a long rod pivoted at their rear ends to the frame at both sides of the tongue and crossing each other and having their forward ends pivoted to the double-tree in such a manner as to bring the center of the double-tree in a line with the inner pivotal point of the short rod, short double-trees pivoted upon the ends of the double-tree and having their inner ends formed into hooks, and single-trees pivoted upon the ends of the short double-trees, as and for the purpose shown and set forth.

2. In a three-horse-draft equalizer, the combination of the tongue, a V-shaped frame secured at its apex upon the tongue and having one of its rearwardly-projecting legs connected to the tongue by means of a brace, a double-tree, a short and a long rod pivoted at their rear ends to the legs of the frame and at their forward ends to the double-tree, crossing each other and bringing the center of the double-tree in a line with the rear pivotal point of the short rod, short double-trees pivoted at the ends of the double-trees and having their inner ends formed into hooks, and single-trees pivoted to the outer ends of the short double-trees, as and for the purpose shown and set forth.

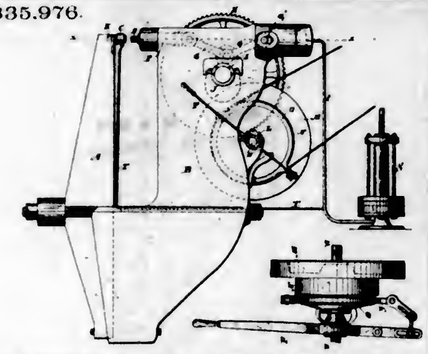
335,976. RIVETING-MACHINE. ALEXANDER THOMSON, Fitchburg, Mass. Filed Mar. 29, 1883. (No model.)

Claim.—1. In a power riveting-machine such as described, the combination, with the toggle for actuating the movable die and the weighted accumulator, of the piston attached to one member of the toggle and receiving the thrust of the latter, substantially as described.

2. In a riveting-machine, the combination of the friction-clutch O, brake Y, and lever P with pinions L, gear K, cam J, and toggle-joint G, substantially as described.

3. In a power riveting-machine such as described, the combination, with the riveting-dies and the toggle and driving mechanism for actuating one of said dies, of the holding-sleeve and the piston applied to one member of the toggle, said sleeve and piston being actuated by a liquid maintained under pressure in a weighted accumulator, substantially as described.

335,976.

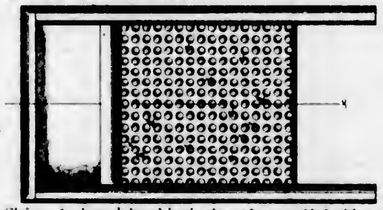


4. In a power riveting-machine such as described, the combination of the stationary die mounted in the stake, the chambered sleeve fitting over the annular piston surrounding said die, and the weighted accumulator containing a liquid maintained under pressure and communicating through a pipe with the chamber in said sleeve, with the opposing movable plunger or die and the power devices for actuating said plunger, substantially as described.

5. The combination, with the stationary die mounted in the stake, the chambered sleeve and piston working therein, and also supported upon the stake, and with the movable plunger, its toggle, and the driving mechanism applied to the toggle, of the piston connected to the toggle, the cylinder, and the weighted accumulator communicating with both the said cylinder and the chamber in the sleeve, substantially as and for the purpose set forth.

6. In a power riveting-machine such as described, the combination, with the riveting-dies, the toggle applied to one of said dies, and the driving mechanism for actuating the toggle, of the piston connected to and supporting one member of the toggle, the cylinder in which said piston operates, the holding-sleeve, its piston and chamber, the accumulator communicating with said cylinder and chamber, and the pulley, clutch, and brake applied to the shaft of the driving mechanism, substantially as and for the purpose set forth.

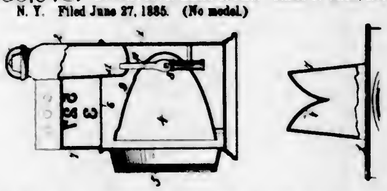
335,977. WASH-BOARD. CHARLES L. TRAVIS, Minneapolis, Minn. Filed Dec. 17, 1884. (No model.)



Claim.—1. A wash-board having its surface provided with a series of hemispheric elevations or protuberances and with intermediate cavities or cells closed at the bottom, substantially as described and shown.

2. The wash-board having the otherwise plain surface provided with the series of rounded protuberances and the intermediate rounded cavities or cells closed at their bases, substantially as and for the purpose described.

335,978. LOCOMOTIVE HEAD-LIGHT. PLATT B. VIELE, Rochester, N. Y. Filed June 27, 1885. (No model.)



Claim.—1. The combination, with a locomotive head-light case having an opening in its top and provided with a reflector having a slot in its upper portion, of a hood placed over the opening in the top of said case, and having reflectors and openings for displaying signals or numbers, or both, substantially as described.

2. The combination, with a locomotive head-light case having an opening in its top and provided with a reflector having a longitudinal slot in its upper portion, of an open-bottomed hood secured to the top of said case and having the form of a double wedge, with openings for displaying numbers or signals, and reflectors arranged longitudinally in the center of said hood, substantially as described.

3. The combination, with a locomotive head-light case having an upper opening and provided with a reflector having a longitudinal slot in its upper portion, of a hood located over the opening in the top of said case and provided with openings for displaying signals or numbers, or both, and a double concave reflector placed centrally beneath the top of said hood, substantially as described.

4. In a locomotive head-light, the combination of the casing 1, having an opening, 6, in its top, the lamp 3, the main reflector 4, having a slot, 9, in its upper portion, and the hood 7, placed over the opening in the top of the head-light case, and provided with reflectors 8, and front and side openings for displaying signals and numbers, substantially as described

5. The combination, with a locomotive head-light case having an opening in its top and provided with a reflector having a longitudinal slot in its upper portion, of a hood placed over the opening in the top of said case, and having openings for displaying signals or numbers, or both, substantially as described.

335,979. LOCOMOTIVE HEAD-LIGHT. PLATT B. VIELE, Rochester, N. Y. Filed Aug. 25, 1885. (No model.)



Claim.—1. In a locomotive head-light, the combination, with a casing having side numbers or signals, of a reflector provided on each side with a series of vertical openings for the passage of light to said numbers or signals, substantially as described

2. In a locomotive head-light, the combination, with a casing having numbers or signals displayed on its sides, of a main reflector provided on each side with a series of vertical slots for the passage of light to said numbers or signals, and supplemental reflectors placed between said reflector and the sides of the casing, and adapted to throw light toward said numbers or signals, substantially as described.

3. In a locomotive head-light, the combination, with the casing 1, having side numbers or signals, of the reflector 3, provided on each side with narrow slotted openings 5, having wings 6, substantially as described.

335,980. MECHANISM FOR SUPPORTING AND LUBRICATING THE SPINDLES OF RING-SPINNING FRAMES. JOSEPH W. WATTLES, Canton, Mass. Filed Oct. 19, 1885. (No model.)

Brief.—The spindle-supporting post, tubular above the bottom of the oil-reservoir and provided with a wicking-covered rod, has applied to its top and to each other a flanged metallic cap and a spindle-pivot bearing.



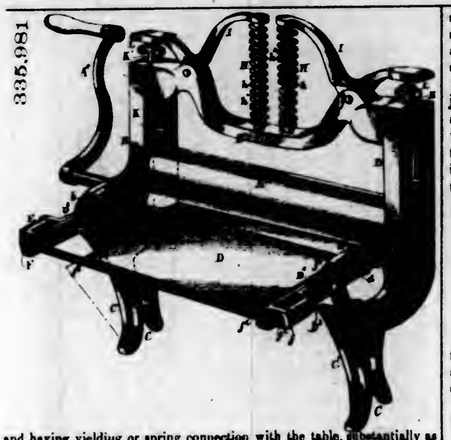
Claim.—1. The combination of the spindle-supporting post, tubular where above the bottom of the oil-reservoir, and provided with oil-ducts, as described, and at its upper part with a cap and pivot-bearing, as specified, with the spindle and oil-reservoir and with the rod and the capillary wick or oil-elevator arranged within the bore of the said post and extended up to the foot of the spindle-pivot, all being substantially as represented.

2. The combination of the separate flanged metallic cap and spindle-pivot bearing, applied to each other and to the wooden post at its upper end, essentially as set forth, with the spindle and the said post, and with the rod and the wick or capillary oil-elevator, arranged within the said post and relatively to its oil-inducts and to the oil-reservoir and the spindle-pivot, substantially as represented.

335,981. WRINGER. JOHN W. WEBER, Chicago, Ill. Filed Nov. 28, 1884. (No model.)

Claim.—1. The combination, with the clamping-jaws of a wringer, of a pivoted table and means for actuating said jaws from the table, comprising a movable part or slide upon the table engaged with the jaws and having yielding or spring connection with the table, substantially as and for the purpose set forth.

335,981



2. The combination, with the wringer-frame provided with rigid jaws and movable jaws pivoted to said frame, of a pivoted table and spring-controlled slides carried by the said table, said movable jaws being provided with cam-surfaces engaging the said slides, substantially as and for the purpose set forth.

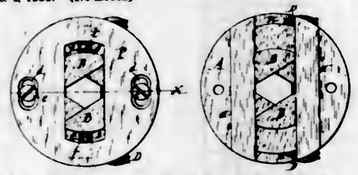
3. The combination, with the wringer-frame provided with rigid jaws and movable jaws pivoted to said frame, of a pivoted table and spring-controlled slides carried by the said table, said movable jaws being provided with cam-surfaces approaching nearest to the pivoted axis of the table at their parts c^2, which are engaged by the slides when the table is above the lower limit of its movement, substantially as described.

4. The combination, with the wringer-frame provided with fixed jaws and movable jaws pivoted to said frame, each provided above its pivotal point with a yoke having an inner cam-surface, of a pivoted table and spring-controlled slides carried by the table, and constructed to engage the cam-surface of the yokes, substantially as and for the purpose set forth.

5. The combination, with the wringer-frame provided with rear extensions, *b*, having recesses *b'*, and with fixed jaws C', of the pivoted jaws *c*, having their upper ends located within said recesses, and provided with cam-surfaces, a pivoted table, and spring-controlled slides upon the table engaged with the cam-surfaces of the pivoted jaws, substantially as described.

6. The combination, with the frame and rollers, of levers I I, pivoted upon the frame, springs interposed between the inner ends of the levers and the frame, bearings for the upper rollers, provided with screw-threaded apertures, and vertical rods K K, screw-threaded upon their lower ends for engagement with the said bearings, engaged at their upper ends with the outer ends of the levers, and provided with thumb-nuts L upon their parts between the frame and the levers, substantially as described.

335,982. LATHE-CHUCK. JOHN H. WESTCOTT, Oneida, N. Y. Filed Dec. 4, 1885. (No model.)



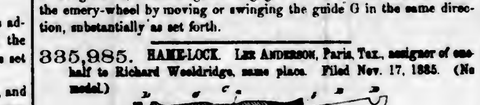
Claim.—1. The combination, with the chuck-head, and jaws adjustably connected therewith, of extra stays applied to the back of the jaws, to sustain the same independently of their adjusting devices, as set forth.

2. The combination, with the chuck-head having radial grooves, and jaws in said grooves, of a plate secured to the chuck-head, movable parallel with the jaw-guiding grooves, and extending across said grooves back of the jaws, and adjustable stays interposed between the back of the jaws and adjacent parts of the plate, substantially as and for the purpose specified.

3. The combination of the chuck-head having radial grooves, and jaws in said grooves, and the shoulders *a a* at opposite sides of and parallel with the said grooves, the plate P, mounted movably on the chuck-head, and having parallel shoulders *b b*, embracing between them the shoulders *a a*, and provided with the slot *s*, terminating with ties *t t*, and abutting with the sides of the slot against the sides of the jaws, and adjustable stays interposed between said ties and back of the jaws, substantially as described and shown.

4. The combination of the chuck-head having radial grooves, and jaws in said grooves, and the shoulders *a a* at opposite sides of and parallel with the grooves thereof, the plate P, having the slot *s*, terminating with ties *t t*, and provided with slots *d d* and with shoulders *b b*, the attaching-screws *e e*, passing through the slots *d d*, and the set-screws *f f*, inserted in the ties and bearing against the back of the jaws, substantially as described and shown.

335,983. NAIL. FRANK W. WEBBER, Richford, Vt. Filed Dec. 29, 1885. (No model.)



Claim.—A brad or nail having the round, square, or otherwise formed stem provided with the point D, slightly wider than the stem, and having the upper bevels, E F, the side bevels, G H, and the two end bevels, I J, substantially as specified.

335,984. GRINDING APPARATUS. FREDERICK S. WHITE, Cleveland, Ohio. Filed June 30, 1885. (No model.)



Claim.—1. In a grinding-machine, the combination, with a rest consisting of a flat plate lying in a horizontal plane, and mechanism, substantially as shown, for adjusting the rest vertically and laterally and at any desired angle to the plane of the emery-wheel, of a guide placed upon said rest, said guide having lateral slots and bolts for adjustably securing the guide to the rest, an incline arranged on one end and rear of the guide, a thumb-screw for engaging said incline to swing the guide laterally toward the emery-wheel, one of the fastening-bolts serving as a pivot for the guide to turn upon, substantially as set forth.

2. In a grinding-machine, the combination, with an adjustable rest and guide, substantially as indicated, of the rods E and F, adjustably secured to the rest, the rod E having the adjustable head *e*, and having the flanged roller E' mounted thereon, and the rods F having screw-bolts *f* passing laterally through them, substantially as set forth.

3. The combination, with the rest C', the guide G, adjustably secured to the rest, as indicated, and having its end inclined, of the block H, adjustably secured to the rest, said block having a thumb-screw, *h'*, attached for engaging the inclined end of the guide, and a rod, I, for limiting the advance of the thumb-screw, substantially as set forth.

4. In a grinding-machine, the combination, with the rest C' and guide G, and means, substantially as indicated, for adjusting the parts and swinging the guide toward the emery-wheel, of the rod E and head *e*, the latter having a round upper surface serving as a rest for the edge portion of the knife or tool, said rod being adjustably secured to the rest C' in such a manner that the head *e* may be arranged to support the tool directly under the point where the grinding is done, substantially as set forth.

5. The combination, with the rod E, the head *e*, and flanged roller E', arranged substantially as indicated, of the rod J, adjustably secured to the guide G, and arranged to engage the roller E' and feed it toward the emery-wheel by moving or swinging the guide G in the same direction, substantially as set forth.

335,985. HAME-LOCK. LEE ANDERSON, Paris, Tex., assignor of one-half to Richard Wooldridge, same place. Filed Nov. 17, 1885. (No model.)



Claim.—As an improved article of manufacture, the hame-fastener described, consisting of the coupling branches B and C, the latter being composed of the two pivoted sections forming the bell-mouth *b*, the section H, having the slot *c*, and the spring K, secured to its opposite end and pressing against the under side of the section G, and the branch B, having the catch-tooth E, adapted to enter the bell-mouth and engage the slot *c*, substantially as specified.

335,986. **WRENCH.** FRANK ARMSTRONG and NATHANIEL W. VANDEGRIFT, Bridgeport, Conn.; said Vandegrift assignor to said Armstrong. Filed June 24, 1885. (No model.)



Claim.—1. The stationary jaw B and shank A, constructed as described, in combination with the movable jaw C, recessed as shown, and the angular clamping-block D, pivoted at one end and held in position by a suitable spring, and adapted to be released by a latch-lever, E, substantially as hereinbefore set forth.

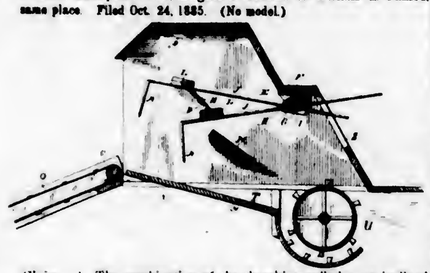
2. The clamping-block D, pivoted at one end within the jaw C, as shown, and provided at the opposite end with a shoulder or projection, in combination with a rocking latch-lever, E, and suitable spring, G, substantially as and for the purpose set forth.

335,987. **METHOD OF FINISHING GLASS ARTICLES.** WILLIAM H. BARR, Steubenville, Ohio, assignor of one-half to A. J. Beatty & Sons, same place. Filed July 25, 1885. (No model.)



Claim.—The method of finishing molded glass articles which consists in slightly compressing their reheated inner and outer side walls simultaneously all around between an interior cylindrical former and an interior tubular former, and at the same time rotating one or the other of the inclosing devices, substantially as set forth.

335,988. **FEEDER FOR THRASHING-MACHINES.** CORNELIUS W. BENHAM, Enterprise, Kans., assignor of one-half to William E. Fasson, same place. Filed Oct. 24, 1885. (No model.)



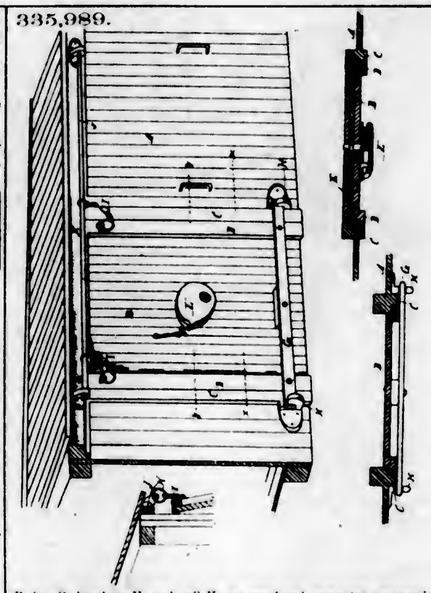
Claim.—1. The combination of the thrashing-cylinder, an inclined feed-board, a hood, the rear portion of which has vertical slots, a crank-shaft journaled in the hood over the feed-board, downwardly-extending lugs secured inside of said hood, nearly over the cylinder, and tubular blocks pivoted in said lugs, and rods carrying forks K at their front ends and secured to said crank-shaft near one end, and with their rear portions passing through said blocks and vertical slots, as shown and described.

2. The combination of the thrashing-cylinder, the inclined feed-board, the hood, a crank-shaft journaled in the forward part of said hood, downwardly-projecting lugs having tubular blocks secured inside of said hood, nearly over the cylinder, rods having forks at their front ends and secured to said crank-shaft and sliding in said blocks, and a downwardly and rearwardly inclined deflecting-board secured within said hood below and in the rear of said crank-shaft, as shown and described.

335,989. **FREIGHT-CAR DOOR.** PERRY BROWN, Louisville, Ky. Filed July 23, 1885. (No model.)

Claim.—1. In a car-door, and as a means for securing such door in a suitable opening in the side of the car, the combination of the door

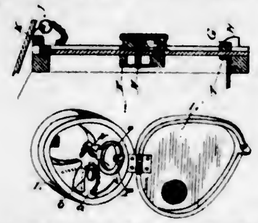
335,989.



B, bar G, brackets H, and rail K, arranged and operating substantially as and for the purposes described.

2. The combination, with the car having bar K, rod J, and brackets H, of the door B, having bar G, and supported when not in use by the chains I, mounted loosely on said rod J, as set forth.
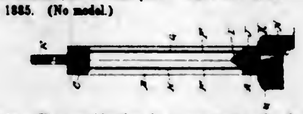
335,990. **LOCK.** PERRY BROWN, Louisville, Ky. Filed Oct. 8, 1885. (Model.)



Claim.—1. In combination with a car-door, locking-bolts adapted to be simultaneously projected or retracted by a shaft common to both, such shaft being provided with a folding handle, a spring-latch for securing the handle, and a seal within a lock-case for covering said latch, substantially as described.

2. The combination, with a car-door, of the shaft N, bolts M, pivotally connected thereto, the folding handle O, hinged to said shaft, the hook P in the outer portion of said handle, and the case provided with recess *b* and opening *a*, and a spring-latch, as and for the purposes specified.

335,991. **MONUMENT.** JOHN H. BRUBAKER, Shamokin, Pa., assignor, by direct and mesne assignments, to Georg W. Noy, John P. Reedy, and P. C. Breimier, all of same place. Filed Jan. 9, 1885. Renewed Sept. 12, 1885. (No model.)

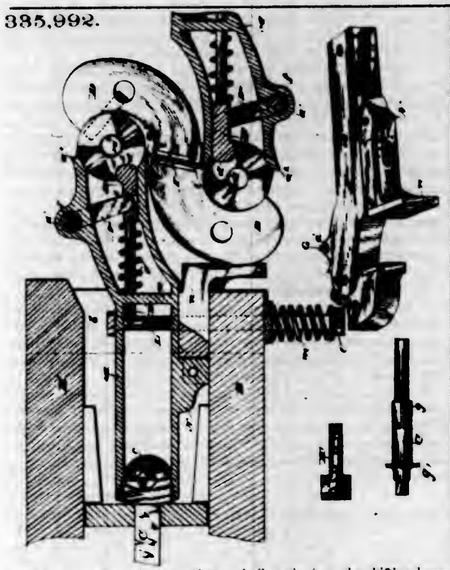


Claim.—The combination, in a monument, of a frame, the sill of which is provided with a ridge and with vertical perforations, a base having a vertical slot registering with the said perforations, and a transverse perforation, substantially as and for the purpose herein set forth.

335,992. **CAR-COUPLING.** NEWELL P. COWELL and JOSEPH W. PINKHAM, Cleveland, Ohio, assignors to the Cowell Platform and Coupling Company, same place. Filed June 20, 1885. (No model.)

Claim.—1. In a car-coupler, the combination, with a hollow draw-bar and a head pivoted thereto and provided with a shouldered inner surface, of the sliding key adapted to engage the shoulder and hold the

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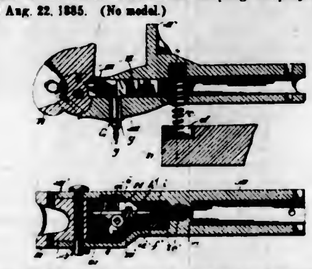


head in a closed position, a spring encircling the key, the shifting-lever engaging the key, and the spindle for operating the shifting-lever, substantially as set forth.

2. The combination, with a draw-bar, a pivoted head forming a hook-coupler, and provided with an elongated pocket and with a shouldered inner surface, of the sliding key, the spring, the shifting-lever, and the spindle for operating the shifting-lever, substantially as set forth.

3. The combination, with a draw-bar, a coupling-head pivoted thereto, and a lug, N, on one side of said draw-bar, of the buffer *n*, secured to said lug, substantially as set forth.

335,993. **CAR-COUPLING.** REMSELAER A. COWELL, Cleveland, Ohio, assignor to the Cowell Platform and Coupling Company, same place. Filed Aug. 22, 1885. (No model.)



Claim.—1. In a hook car-coupler, the combination, with a pivoted draw-head having a suitable recess or depression for engaging the lock-bolt, of a gravity-bolt, said bolt having an incline arranged to engage a corresponding incline on the draw-bar for moving the bolt forward by gravity, and a block for locking the bolt in the depressed or forward position of the latter, substantially as set forth.

2. In a hook car-coupler having a pivoted draw-head, the latter having a suitable recess or depression for engaging the locking-bolt, the combination, with a gravity locking-bolt operating within and lengthwise of the draw-bar, of a tumbler and lever attached for withdrawing the bolt, and a block for locking the bolt in its forward position, said bolt being operated automatically by the said tumbler, substantially as set forth.

3. In a hook car-coupler having a pivoted draw-head, the latter having a suitable depression for engaging a lock-bolt, a locking device consisting of a bolt operating by gravity in its forward movement, a sliding block arranged to ride on the bolt and lock the latter in its position engaging the draw-head, and a tumbler and lever attached for withdrawing the bolt and block, substantially as set forth.

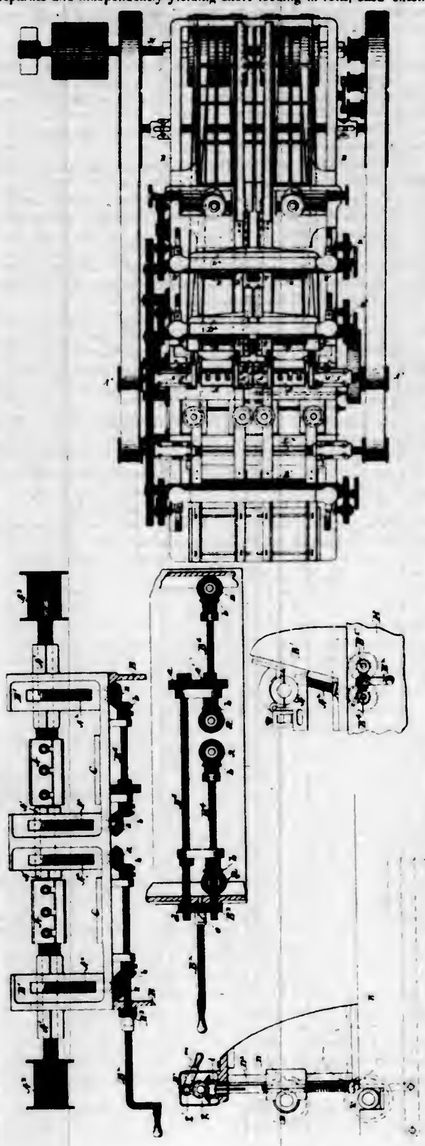
4. In a hook car-coupler having a pivoted draw-head, the combination, with a bolt for locking the draw-head in its closed position, said bolt being arranged to move forward by gravity, and provided with suitable mechanism for withdrawing the bolt, of a spring arranged to cushion the bolt at the end of its rear movement, and to aid in shooting the bolt quickly, substantially as set forth.

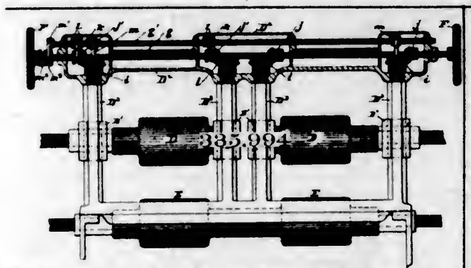
5. In a hook car-coupler, the combination, with the draw-bar having a socket, C', flaring outward, of the spring *c*, and the metal-lined recess *d* in the opposing draw-timber, the parts arranged substantially as set forth.

335,994. **PLANING AND MATCHING MACHINE.** WILLIAM H. DOANE, Cincinnati, Ohio. Filed Nov. 7, 1885. (No model.)

Claim.—1. The combination, in a planing and matching machine, of two single planing-cylinders, each extending part way across the lumber-supporting bed from opposite sides of the machine, with adjusting mechanism whereby they may be simultaneously or independently adjusted to suit the thickness of material, so that two pieces of lumber, whether of equal or unequal thickness, may be operated upon at the same time, substantially as set forth.

2. The combination, in a planing and matching machine, of two separate and independently-yielding short feeding-in rolls, each extend-





ing part way across the lumber-supporting surface from opposite sides of the machine, two single planing-cylinders corresponding therewith, each acting upon a single board, and two pairs of matcher-heads, with suitable power-driving mechanism, substantially as set forth.

3. The combination, in a planing and matching machine, of two separate and independently yielding short feeding-in rolls, extending from opposite sides of the lumber-supporting surface for feeding two boards simultaneously to the cutters, two single planing-cylinders extending part way across the lumber-supporting surface, two pairs of matcher-heads, and a set of feeding-out rolls, with suitable power-driving mechanism, substantially as set forth.

4. The combination, in a planing and matching machine, of two separate sets of independently adjustable and yielding short upper feeding-in rolls extending part way across the lumber-supporting surface, lower feed-rolls acting in conjunction therewith, two single planing-cylinders corresponding with the feeding-in rolls, and two pairs of matcher-heads for simultaneously working two pieces of flooring, with suitable power-driving mechanism whereby the two boards, whether of equal or unequal thickness, are surfaced and tongued and grooved at their edges at the same operation, substantially as set forth.

5. In a duplex planing and matching machine, two planing-cylinders, each extending part way across the bed of the machine, mounted upon bearings vertically adjustable by screw-shafts, and provided with actuating mechanism for adjusting either independently or both simultaneously, in combination with power-driving mechanism, substantially as set forth.

6. In a planing and matching machine, the combination of the two planing-cylinders A, provided with their journal-boxes, the screw-shafts A^1, provided with gears *a*, and the counter-shafts B^4 B^5 B^6, provided with gears *b c c'*, arranged and operating substantially as set forth, to adjust either planing-cylinder independently or both simultaneously.

7. In a planing and matching machine, the combination of a fixed or adjustable guide-rail, a power-driven laterally adjustable and yielding guide-roller, and driving mechanism arranged below the platen-surface, said roller being arranged to act upon the edge of the board, retain the same against the guide-rail, and carry the board forward in proper alignment until uncontrolled by the feed-rolls, substantially as set forth.

8. In a duplex planing and matching machine, in combination with duplicated cutting-cylinders and feed-rolls, and with two guide-surfaces extending longitudinally upon the bed-plate, two independently-adjustable side feed-rolls mounted upon vertical spindles extending beneath the platen-surface, and geared to receive power from a common shaft journaled in the bed-frame, substantially as set forth.

9. In a planing and matching machine, in combination with the guide-rail Q, a side feed-roller, O, journaled vertically in a block, R, held and guided in a suitable slot or depression of the platen, and adjustable by screws P', substantially as set forth.

10. In a planing and matching machine, in combination with the cutting and feeding mechanism, a platen or bed having a crosswise opening or depression adapted to receive a bearing-block carrying a power-driven side roll, and guide-wing whereby said roll may be adjusted laterally in relation to the bed to the width of the material to be worked, substantially as set forth.

11. In a planing and matching machine, the combination of two guide-bars, Q Q, two side feed-rollers, O O, adjustable bearing-blocks R R, adjusting-screws P' P', bevel-gears P^2 P^3, and shaft O, arranged and operating substantially as set forth, to act simultaneously upon two boards while permitting an independent adjustment of each.

12. The combination, in a planing and matching machine, of the guide-bar Q, side feed-roll, O, guide-wing R', and platen-surface block R, substantially as set forth, for guiding the end of the board into proper alignment and carrying the same forward to the regular feed-rolls.

13. The combination, in a planing and matching machine, of the guide-bar Q, roller O, block R, screw *p*, and spring R, for obtaining a fixed and automatic adjustment of the side roll to accommodate various widths of lumber and varying widths of a single board, substantially as set forth.

14. The combination of the guide-bar Q, secured to the platen, vertical roller O, block R, adjusting-screw P', with a spring for the pressure, gears P^2 P^3, for actuating feed-roll, engaging-finger *h*, and roll-shaft O', whereby the position of the rolls may be adjusted without interference with the driving-power, substantially as set forth.

15. The combination, in a planing and matching machine, of two separate sets of cutting and feeding mechanism, each set embracing an adjustable cutting-cylinder, adjustable feeding-in and feeding-out rolls, and a pair of matcher-heads, the two sets being arranged side by side and adapted to be adjusted and used either simultaneously or independently, with suitable power-driving mechanism for treating and finishing one board or two, as may be required, whether of the same or different dimensions, at the same operation, substantially as set forth.

16. In a planing and matching machine, the combination of two upper feed-rolls, D D, their vertically-adjustable bearings, and adjusting-screw spindles provided with the bevel-gears *i*, with the cross-shaft *g*, provided with fixed gears *j j* and movable gears *j' j'*, and the longitudinally-adjustable shaft *g*, provided with shifting-yokes *k k*, substantially as and for the purpose set forth.

17. In combination with the screw-spindles D^4, and pinions *i*, and the shaft *g*, provided with fixed gears *j j* and sliding gears *j' j'*, the shifting bar or shaft *g'*, provided with yokes *k k* and with fixed manipulating-handles or catch-levers *m*, adapted to engage in rack-recesses to retain the shifting-bar in ultimate positions, as set forth.

18. In a planing and matching machine, in combination with the adjustable feed-rolls D, and their elevating screws, shafts, and gears, the shafts *g' g*, their connecting-gears, and the manipulating-handles *m*, the double-grooved collar upon the shaft *g'*, and the lifting-dog *m'* upon the shaft *g'*, arranged and operating substantially as and for the purposes set forth.

19. In a planing and matching machine, in combination with a power-driven set of feeding-in and feeding-out rolls, planing-cylinder, and a horizontal guide-bar, a power-driven guide-roll arranged upon the platen-surface to act upon the lateral edge of the board and retain the same against the guide-bar in entering the feed-rolls, substantially as set forth.

20. In a planing and matching machine, the combination of two independent upper-cutting cylinders, for operating upon two boards at the same time, whether of equal or unequal thickness, a long under-cutting cylinder for surfacing the under sides of said boards, and matcher-heads for tonguing and grooving the lateral edges of said two boards, with suitable driving mechanism, whereby the various operations are attained during a single passage of the board through the machine, substantially as set forth.

335,995. CUT-OFF VALVE. DELANO H. DUGAR, Cedartown, Ga. Filed Nov. 13, 1885. (No model.)



Claim.—1. The combination of a cylindrical valve-casing having the distributing-ports at one side, and having a channel communicating with the live-steam chamber at the diametrically-opposite side, a hollow cylindrical-valve fitting within the casing and having distributing-ports registering with the ports of the casing, and having perforations registering with the channel communicating with its interior, and a cut-off valve having a semi-cylindrical face formed with distributing channels or apertures registering with the apertures in the hollow valve and bearing against the apertured inner surface of the said valve, as and for the purpose shown and set forth.

2. The combination of a live-steam chamber, an exhaust-chamber, a cylindrical valve-casing placed between the chambers, and having at its lower side a live-steam port and an exhaust-port and a steam-port into the cylinder, and having at its upper side a live-steam channel, a hollow cylindrical valve fitting in the casing, and having two steam-ports and an exhaust-aperture registering, respectively, with the steam-port and the live-steam port of the valve-casing and with the steam-port and exhaust-port in its lower portion, and having in its upper portion apertures registering with the live-steam channel, and a cut-off valve having a semi-cylindrical face formed with a steam-channel and with an exhaust-recess, and rocking against the apertured lower portion of the inner surface of the hollow valve, as and for the purpose shown and set forth.

3. The combination of a valve-casing cylindrical in shape, and having a steam-port and a live-steam port and exhaust-port in its lower side, and a live-steam channel in its upper side, with a cylindrical valve having ports registering with the ports of the valve-casing, and having a groove or recess in the space between the ports registering with the live-steam port and the steam-port of the casing, as and for the purpose shown and set forth.

4. The combination of a cylindrical valve-chamber having steam-port and live-steam port and exhaust-port in its lower side, and having a live-steam channel in its upper side, a hollow cylindrical valve fitting in the valve-chamber, and having steam and exhaust ports registering with the ports of the valve-chamber, and having apertures in its upper side registering with the live-steam channel, an axial valve-stem having a wing at one side formed with a groove in its outer edge provided with springs, and a semi-cylindrical cut-off valve having channels in its cylindrical face registering with the ports of the hollow valve, and having a recess in its back receiving the wing of the valve-stem, with the springs bearing against its bottom, as and for the purpose shown and set forth.

5. The combination of a live-steam chamber, an exhaust-chamber, a cylindrical valve-casing placed between the chambers and having a steam-port into the steam-cylinder and a live-steam port and an exhaust-port at the sides of the steam-port, and provided with a live-steam channel at a point opposite to the steam-port, a hollow cylindrical valve fitting in the casing and having steam-ports registering with the steam-port and with the live-steam port, and having an exhaust-aperture registering with the steam-port and with the exhaust-port, and formed with apertures registering with the live-steam channel, and with a longitudinal groove or recess in the space between the steam-ports, an axial cut-off-valve stem having a laterally projecting wing formed with a longitudinal groove in its outer edge provided with springs, and a semi-cylindrical cut-off valve having a curved steam-channel registering at its apertures with the steam-ports of the hollow valve, and an exhaust-recess registering with the exhaust-aperture of the hollow cylinder, and having a longitudinal recess in its back for the wing of the valve-stem, with the springs bearing against the bottom of the same, as and for the purpose shown and set forth.

335,996. MACHINE FOR CUTTING CLOTH. FRANCIS L. EDENBACH, New York, N. Y. Filed Apr. 3, 1885. (No model.)

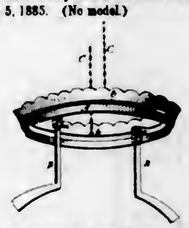


Claim.—1. In a machine for cutting cloth-patterns in bulk, the combination, with a frame or shoe adapted to be moved over the surface of the cloth, and which is made in two adjustable sections hinged together, of a rotary cutting-tool journaled to one of said sections and relatively adjustable with respect to the other section, a motor mounted on and supported by said shoe and coupled to said cutter, and means, substantially as described, for adjusting the cutter to different thicknesses of cloth, as set forth.

2. In a machine for cutting cloth-patterns, the combination of the frame or shoe adapted to move over the cloth and made in two sections, C *d*, hinged together and relatively adjustable, with the rollers L L, handle M, rotary cutter A, adjusting-screw I, and a suitable motor supported upon and by the shoe and coupled to the cutter, substantially as described.

3. In a machine for cutting cloth-patterns, the combination, with the frame or shoe adapted to move over the cloth and made in two sections hinged together and relatively adjustable, of the rollers L L, handle M, having a circuit-closer, rotary cutter A, and an electromotor supported upon and by the shoe and coupled to the cutter, substantially as described.

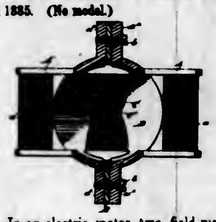
335,997. EXTENSION LAMP-FIXTURE. JOHN A. EVARTS, Meriden, Conn., assignor to the Bradley & Hubbard Manufacturing Company, same place. Filed Oct. 5, 1885. (No model.)



Claim.—1. In an extension lamp-fixture, the combination therewith of an evener interposed between the suspending device and the lamp-holder, the said evener constructed with four points of connection, two diametrically opposite each other, to which the suspending-chains are attached, and two others diametrically opposite each other, but in a plane at right angles to the plane of the first two-mentioned suspending-points, and to which last two suspending points the lamp-holder is hung, the said four points of connection being substantially an integral part of the evener and rigidly fixed with relation to each other, substantially as described.

2. In an extension lamp-fixture, a ring having the lamp-holder hinged thereto at diametrically opposite points, the pintles of the hinge being in an axial line the one with the other, the two suspending-chains attached to said ring at points diametrically opposite each other and in a plane at right angles to the plane of the axial line of the said hinges, substantially as described.

335,998. ELECTRIC MOTOR. FRANK E. FISHER, Detroit, Mich. Filed Apr. 30, 1885. (No model.)



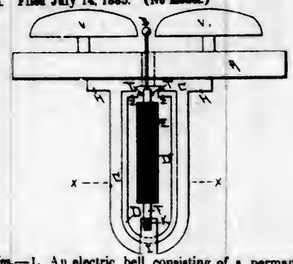
Claim.—1. In an electric motor, two field-magnets brought together upon interposed pieces of diamagnetic material and fastened by diamagnetic fastenings, substantially as and for the purpose described.

2. In an electric motor, two field-magnets brought together upon diamagnetic material, in connection with two heads supporting the shaft of the armature, said heads being likewise of diamagnetic material, substantially as described.

3. In an electric motor, two U-shaped magnets wound about their loops and provided with outwardly-projecting flanges at their extremities, said magnets brought together upon interposed diamagnetic metal and fastened together by diamagnetic screws passed through the flanges, substantially as described.

4. An electric motor consisting of two pieces of soft iron of substantially U form, fastened together at their extremities upon interposed pieces of diamagnetic metal, and in connection therewith an armature journaled in diamagnetic heads, said magnets arranged with respect to the armature, substantially as described, so as to leave large open spaces for free circulation of air, substantially as set forth.

335,999. MAGNETO-ELECTRIC BELL. FRANK E. FISHER, Detroit, Mich. Filed July 14, 1885. (No model.)



Claim.—1. An electric bell consisting of a permanent magnet of U form rigidly held in a surrounding frame of soft metal cast around said magnet, a vibrating armature pivoted between lugs formed on said frame, a helix of insulated wire wound upon said armature, and bells between which the end of the armature vibrates, substantially as described.

2. An electric bell consisting of a permanent magnet of U form, having its ends turned inward and its body rigidly held in a surrounding frame of soft metal cast around said magnet, a vibrating armature consisting of an electro-magnet having one pole pivoted between lugs formed on said frame, and having its other pole free to vibrate between the inwardly-turned ends of the permanent magnet, a helix of insulated wire wound upon said electro-magnet, and bells between which a striker upon its free end vibrates, substantially as described.

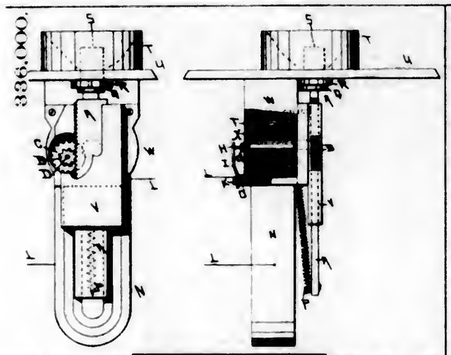
336,000. MAGNETO-ELECTRIC MACHINE. FRANK E. FISHER, Detroit, Mich. Filed July 14, 1885. (No model.)

Claim.—1. A magneto-electric machine consisting of a U-shaped permanent soft-metal frame cast around the poles of the magnet, and an armature journaled in the frame, substantially as shown and described.

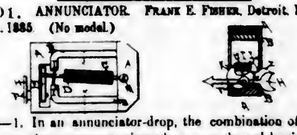
2. In a magneto-electric machine, a permanent magnet having its poles embedded in a soft-metal casting, an armature journaled upon said casting, and a rack gearing with a pinion upon the shaft of said armature, substantially as described.

3. The combination of the push-button S, rack A, spring P, and spring *d*, whereby the force of the spring P is checked gradually, substantially as shown and described.

336,000.



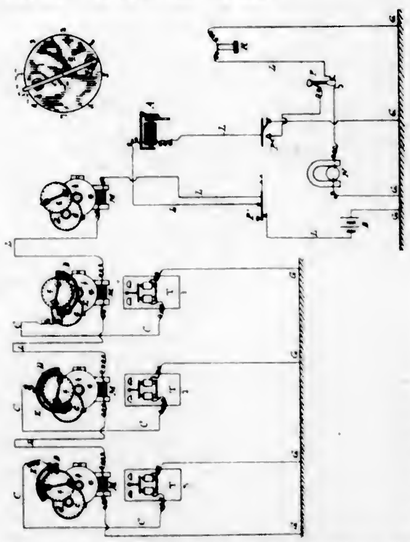
336,001. ANNUNCIATOR. FRANK E. FISHER, Detroit, Mich. Filed July 14, 1885. (No model.)



Claim.—1. In an annunciator-drop, the combination of a permanent magnet, an electro-magnet pivoted at one pole and having its other pole within the field of force of the poles of the permanent magnet, a weighted catch hung on a movable shaft, and adapted to engage with the movable pole of the electro-magnet, and a needle secured to the shaft which carries the catch, substantially as shown and described.

2. The combination of the permanent magnet B, soft-metal frame A, electro-magnet C D, pivoted at one pole by the screws M, diamagnetic pin I, passing through the electro-magnet, and the pivoted catch E, substantially as shown and described.

336,002. TELEPHONE-CALL-BELL SYSTEM. FRANK E. FISHER, Detroit, Mich. Filed Aug. 14, 1885. (No model.)



Claim.—1. In a telephonic call apparatus, the combination, with the main line and local signaling-circuit, of an electric motor, an indication-dial adapted to be moved by said motor, and devices carried by said dial for closing the signaling-circuit, substantially as herein set forth.

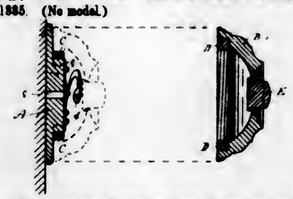
2. In a telephonic call apparatus, the combination, with two or more telephonic-station apparatus having each a signaling-circuit terminating in an insulated contact-piece, of an electric motor located in the main-line circuit, the rotary armature of said motor, and the movable circuit-closing device set in action by said armature and co-operating with the insulated contact-piece of the signaling-circuit, substantially as herein set forth.

3. In combination with a telephonic call-bell circuit normally disconnected with the main line, an electromotor located in said main line and a movable contact-piece connected with the armature of said motor in electrical connection with said main line, and adapted to come in contact, when moved by said motor, with said call-bell circuit, substantially as described.

4. In a telephone system, the combination of the following elements, viz: a single circuit, a continuous-current and an alternating-current generator and means for connecting either with said circuit, two or more telephones located in said circuit, each having its bell-circuit disconnected from the main circuit and terminating in a spring-catch, a motor adapted to work with a continuous current located in and forming a part of the circuit at each telephone, a train of wheel-work connected with the armature of each motor, a pivoted lever attached to the last wheel on each motor, each adapted to come in contact with the terminal spring-catch of the bell-circuit of the adjacent telephone at a different point in the rotation of the wheel, a clock-spring connected with the wheel-work on each motor and constantly tending to restore said wheel-work to its original position, and an inclined spring adapted to disengage said pivoted lever from said spring-catch, substantially as shown and described.

5. In combination with the telephone-circuit I, and telephone T, having the open bell-circuit C, the electric motor M, having connected therewith the pinions *b d* and gear-wheels *c e*, clock-spring *i*, secured to wheel *e*, the lever *f*, pivoted to wheel *e* at *g*, the spring *i*, secured to wheel *e* and engaging with slot *j* in lever *f*, the insulator D, secured to the motor, the spring E, secured to the insulator D, in electrical connection with the bell-circuit C, and having its free end V-shaped, and the inclined spring F, also secured to the insulator D, substantially as shown and described.

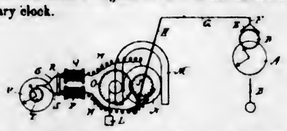
336,003. PUSH-BUTTON. FRANK E. FISHER, Detroit, Mich. Filed Oct. 6, 1885. (No model.)



Claim.—As an improved article of manufacture, a push-button consisting of a base, A, having a raised center, F, encircled by a screw-threaded band of soft metal, C, cast thereon, and having the lugs *a* formed in the casting, and a top, B, having therein the screw-threaded ring D, of soft metal, cast therein, and having the lugs *b* formed thereon in casting, substantially as described.

336,004. ELECTRIC-CLOCK SYSTEM. FRANK E. FISHER, Detroit, Mich. Filed Oct. 6, 1885. (No model.)

Brief.—A magneto-electric generator is controlled by a central clock, so as to send alternating currents through a continuous closed circuit to a polarized electro-magnet, which vibrates an armature to actuate the secondary clock.



Claim.—1. The combination, with the pendulum of a regulator, of a magneto-electric machine, suitable power to drive said magneto, a pallet connected with the pendulum of the regulator and adapted to operate upon a tooth on the armature of the magneto, and a clock having therein an electro-magnet connected with the poles of the magneto by a continuously-closed circuit, substantially as shown and described.

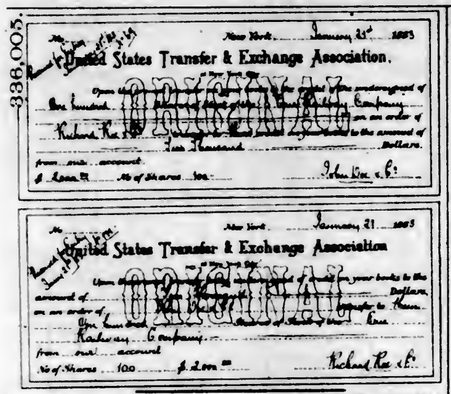
2. In combination with the pendulum B and pallet E of the regulator A, the rod F, connecting-rod G, lever H, pallet I, and magneto M N, having the tooth K on its armature, substantially as shown and described.

3. In an electrical clock, the combination of the ratchet-wheel T, electro-magnet P Q, connected with a magneto-electric machine, and pivoted armature R, having thereon the pawls S S, adapted to operate said wheel T, substantially as shown and described.

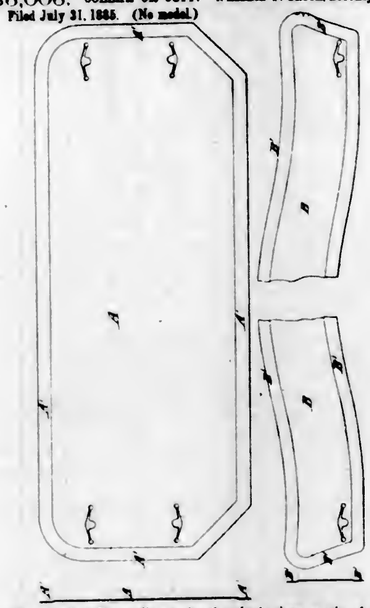
336,005. SET OF BLANKS FOR EFFECTING THE INTERTRANSFER OF OWNERSHIP OF PROPERTY. WALLACE P. GROOM, Brooklyn, N. Y. Filed June 30, 1884. (No model.)

Claim.—A set of blanks or orders for effecting the intertransfer of ownership of property, each order of the set bearing instructions to transfer the ownership in certain specified property of the maker simultaneously with or upon acquiring the ownership of property to be received in exchange therefor.

336,005.



336,006. COLLAR OR CUFF. WALLACE P. GROOM, Brooklyn, N. Y. Filed July 31, 1885. (No model.)



Claim.—A cuff or collar made of a single sheet or ply of material of approximately uniform thickness throughout its entire extent, and having its marginal or edge portion offset or deflected from the plane of the article continuously around the entire perimeter, including the corners and other portions which are in proximity to the button-holes, substantially as herein described.

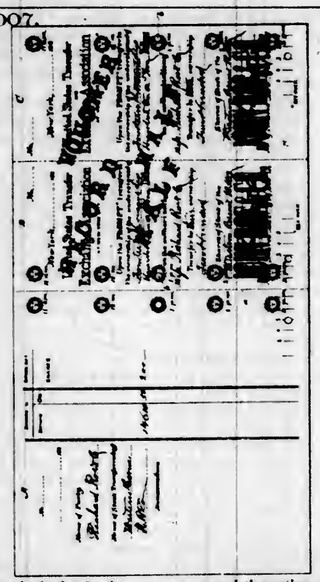
336,007. BUSINESS-BLANK. WALLACE P. GROOM, Brooklyn, N. Y. Filed Nov. 3, 1885. (No model.)

Claim.—1. The herein-described blank for use by transfer and exchange or trust associations and the like, and for persons, firms, or corporations transacting business through or by them, consisting of the three parts A, B, and C, the part A being the stub and to contain data for the future information of the maker of the instrument, the part B to contain the order or authorization for the company or association acting as custodian to make the intertransfer or interchange, and the part C to be a duplicate of said order or authorization, for evidence to the appropriate party that the order for interchange or transfer has been entered by the custodian of the property, each of the said parts A, B, and C containing marks or signs with hour-designation marks to be punched to indicate within what time of day the transaction is to be completed, as set forth.

2. The herein-described blank for use by transfer and exchange or trust associations and the like, and for persons, firms, or corporations transacting business through or by them, consisting of the three parts A, B, and C, the part A being the stub and to contain data for the future information of the maker of the instrument, the part B to contain the order or authorization for the company or association acting as custodian to make the intertransfer or interchange, and the part C to be a duplicate of said order or authorization, for evidence, when stamped, to the appropriate party that the order for interchange or transfer has been entered by the custodian of the property, each of the said parts A, B, and C containing marks or signs with hour-designation marks to be punched to indicate within what time of day the transaction is to be completed, and also figures to indicate how many days the time is or may be advanced or set forward from the date of the instrument.

3. The herein-described blank for use by transfer and exchange or trust associations and the like, and for persons, firms, or corporations transacting business through or by them, consisting of the three parts A, B, and C, the part A being the stub and to contain data for the future information of the maker of the instrument, the part B to contain the order or authorization for the person, company, or association acting as custodian to make the intertransfer or interchange, and the part C to be a duplicate or voucher of said order or authorization, for evidence, when stamped or otherwise marked, to the appropriate party that the order for interchange or transfer has been entered by the custodian of the property.

336,007.



336,008. STEP-LADDER. JAMES W. HOOVER and CHARLES F. BASSETT, Chicago, Ill. Filed July 6, 1885. (No model.)



Claim.—1. The combination, with the part A, provided with a strap, C, and a part, B, provided with rungs *g*, of a hook, D, comprising two connected parts, *o*, having bearings in the side pieces of the part A, and a step, E, or equivalent stationary part or surface upon the part A, sustaining said hook in position to engage the rungs of the part B, substantially as described.

2. The combination, with the part A, having steps F, and a strap, C, and the part B, provided with rungs *g*, of a hook, D, comprising two

connected parts, *o*, having bearings in the side pieces of the part A, and provided with a handle, *d*, whereby said hook may be rotated, and a step, E, or an equivalent stationary part or surface upon the part A, sustaining said hook in position to engage the rungs of the part B, substantially as described.

3. The combination, with the parts A and B, of a hook, D, pivoted upon the part A, and a stop, *s*, adapted to engage the said hook, said hook being laterally movable upon the part A, substantially as and for the purpose set forth.

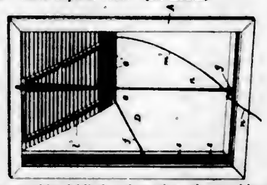
4. The combination, with the part A, having side pieces *a*, provided with a stop, *s*, and with apertures *p*, and the part B, provided with rungs *g*, of a laterally-movable pivoted hook, D, having bearings in the apertures *p*, and provided with a handle, *d*, whereby it may be shifted laterally and rotated, substantially as described.

5. A ladder comprising two parts, A and B, adapted for mutual support and having their side pieces arranged edge to edge, and a strap, C, rigidly secured thereto and engaging the upper end of the part B, to hold the upper ends of said parts together, said part A being provided with notches H H, formed in its side pieces adjacent to and above the said strap, and constructed to receive the upper ends of the part B when the parts are placed at an angle with each other, and the other of said parts B being provided with stops *l l*, adapted for engagement with said strap, substantially as described.

6. The combination, with the part A, provided with a strap, C, and notches H H, formed in its side pieces above the strap, of a part, B, having its side pieces arranged edge to edge with the side pieces of the part A, and constructed to engage said notches at its upper end, said part B being provided with stops *l l*, engaging the strap, and with notches I I', to receive the strap when the parts A and B are spread apart at their lower ends, substantially as described.

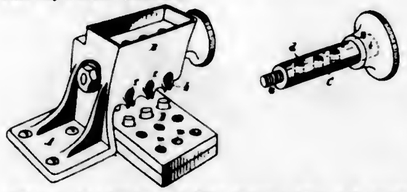
7. The combination, with the part A, comprising side pieces *a*, and steps E F F, of the part B, fitted to slide upon the part A, and having side pieces *b*, arranged edge to edge with the side pieces *a*, said steps E F F being extended rearwardly beyond the side pieces *a*, and notched to fit the side pieces *b*, so as to form guides for the said part B, substantially as described.

336,009. COMBINED AWNING AND BLIND. WILLIAM H. JOLLIFFE, Baltimore, Md. Filed Sept. 9, 1885. (No model.)



Claim.—In a combined blind and awning, the combination of slats suitably connected together by tapes or equivalent means, each slat provided with rings, and the whole suspended, a stretcher-bar having two parallel ends pivoted to the sides of the window-frame, side cords, *l*, attached to the cross-bar of the stretcher, passed up through the rings on the slats, through pulleys at the frame-top and then down, and a center cord, *m*, having its end made fast to the lowermost slat, passed up and through a pulley at the top and then down, as set forth.

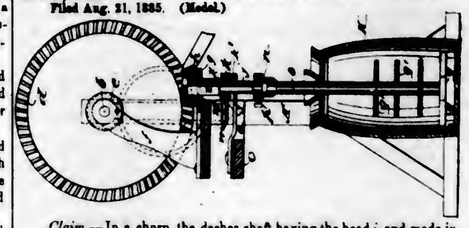
336,010. CAPSULE-FILLING MACHINE. JOHN KREMMEL, Detroit, Mich., assignor to the Globe Drug and Capsule Company, same place. Filed July 9, 1885. (No model.)



Claim.—1. In a liquid-capsule-filling device, a body, A B, having a cylindrical bearing, with connected feed-orifices and corresponding discharge-ducts, combined with a plug having holes to correspond with the orifices in the body, and arranged to be brought coincident with the feed and discharge orifices successively, and to receive and discharge the medicine from the opposite ends of the holes in the plug, as set forth.

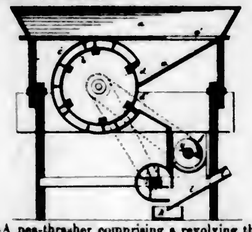
2. In a liquid-capsule-filling machine, a body, A B, having a cylindrical bearing, with connected feed-orifices and corresponding air-passages and discharge-orifices, combined with a cylinder having passages to correspond with the said orifices, and arranged to register with the vents and discharge-orifices simultaneously, but to be closed at the bottom by the bearing when in communication with the feed-orifices, as set forth.

336,011. CHURN. ROBERT LUCAS and WILLIAM DOOTSON, Athens, Ga. Filed Aug. 21, 1885. (Model.)



Claim.—In a churn, the dasher-shaft having the head *i*, and made in two parts, connected together by a sliding coupling, *p n*, in combination with the shaft *b*, carrying gear *d*, and crank-head *e*, pinion A, fitted upon the dasher-shaft head *i*, the pitman H, connected to said crank-head, and the collar *k*, provided with an arm, *m*, having connection with the pitman H, said collar acting upon the lower end of the dasher-shaft head *i*, substantially as and for the purpose set forth.

336,012. PEA-THRASHER. GEORGE E. LOCKEY, Paris, Tenn. Filed Aug. 15, 1885. (No model.)



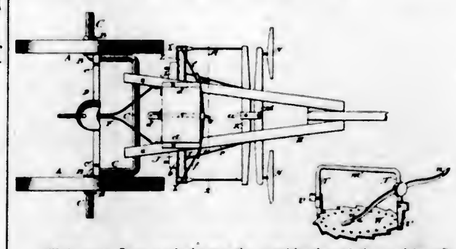
Claim.—A pea-thrasher comprising a revolving thrashing-cylinder having rows of teeth, an inclined slatted feed-chute having its lower end contiguous to the thrashing-cylinder, and with its slats between the teeth of said cylinder, a stationary casing having interior teeth and extending nearly around the revolving cylinder, the perforated receiving-trough, the conveyer, the fan-casing, fan, and receiving-box, as described and shown.

336,013. SIZING PAPER. ALEXANDER MITSCHERLICH, Freiburg, Baden, Germany. Filed Oct. 2, 1884. (No specimens.)

Claim.—1. The method of sizing paper materials herein described, said method consisting in precipitating into aqueous fiber-pulp, resin soap, or glue by means of solutions of tanning materials, substantially as and for the purpose set forth.

2. As a new article, sized paper sized with animal glue or resin soap, in combination with tanning materials, and soluble in a large quantity of water, substantially as set forth.

336,014. PLANTER AND CULTIVATOR. EDWARD P. NOYES, Seville, Ohio. Filed July 26, 1884. (No model.)



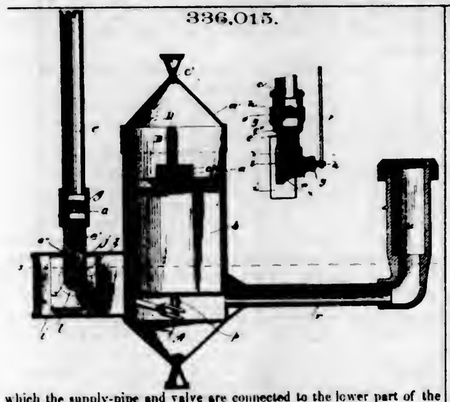
Claim.—1. In a seed-planter, the combination of the seed-box S, revolving seed-plate W, provided with peripheral teeth, shaft *m'*, and vibratory arms T, having pivoted in the ends thereof a catch, V, adapted to engage the said teeth for rotating the seed-plate, and lever U for operating said arms, all constructed and arranged to operate in the manner substantially as described, and for the purpose specified.

2. The arrangement of the tongue H, cross-bar J, conductor-spouts L, and plow-coupling Y, as herein shown and described.

336,015. FLOAT FOR WATER-CLOSETS. JOHN LEE, Baltimore, Md. Filed Dec. 15, 1885. (No model.)

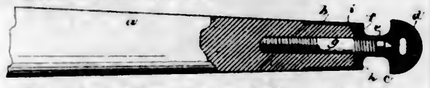
Claim.—The combination, with the frame A B, the stem C, attached to one part of the said frame and having the recess D, the hollow rotary thumb-piece F, mounted upon and pivoted to the said stem, and the spiral spring I, attached to the said stem and thumb-piece, of the spring-latch E, secured to the other part of the said frame, and engaging with the said stem and thumb-piece, substantially as herein shown and described, whereby the said fastening can be readily fastened and unfastened, and will hold the frame securely closed, as set forth.

336,015.



which the supply-pipe and valve are connected to the lower part of the float, the whole arranged to operate substantially as specified.

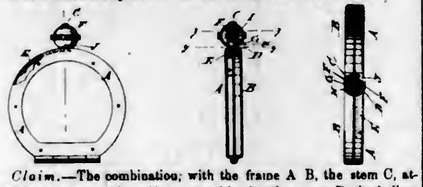
336,016. WHIFFLETREE-IRON. HENRY K. PORTER, Boston, Mass. Filed Feb. 16, 1884. (No model.)



Claim.—1. A whiffletree-staff formed with a wrought-metal shank, *g*, and a cast-metal head, *d*, rigidly secured together, said head having a neck, *e*, to receive and support the trace, a shoulder, *f*, and a socket in said shoulder and neck to receive the end of the shank, substantially as specified.

2. The combination, with a whiffletree-staff formed with a head, *d*, neck *e*, shoulder *f*, and shank *g*, of a ring, *b*, having an end, *h*, with an opening to freely admit shank *g*, and an annular recess surrounding said passage to receive flush with the end of the ring the shoulder *f*, substantially as specified.

336,017. BAG OR SATCHEL CATCH. LOUIS B. PRAHAR and CHARLES S. SHEPARD, Brooklyn, N. Y. Filed Dec. 15, 1885. (No model.)



Claim.—The combination, with the frame A B, the stem C, attached to one part of the said frame and having the recess D, the hollow rotary thumb-piece F, mounted upon and pivoted to the said stem, and the spiral spring I, attached to the said stem and thumb-piece, of the spring-latch E, secured to the other part of the said frame, and engaging with the said stem and thumb-piece, substantially as herein shown and described, whereby the said fastening can be readily fastened and unfastened, and will hold the frame securely closed, as set forth.

336,018. COMPOSITION FOR INSULATING ELECTRIC WIRES. W. J. RUSHTON, Brooklyn, N. Y., and JUSTUS WOLFF, Hoboken, N. J., assignors to Holmes, Booth & Haydens, Waterbury, Conn. Filed Aug. 15, 1885. (No specimens.)

Claim.—1. The combination, with an object to be coated, of an outer coating of balata, or of a mixture containing balata, and an inner coating or layer of substance or material between the balata and the object to be coated, forming a bond, substantially as described.

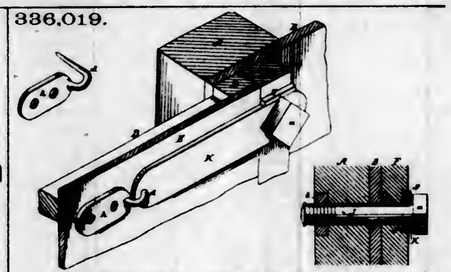
2. The combination, with an object to be coated, of an outer coating of balata, or of a mixture containing balata, and an inner coating or a layer of adhesive material between the balata and the object to be coated, forming a bond, substantially as described.

3. The combination, with an object to be coated, of an outer coating of balata, or of a mixture containing balata, and an inner coating of tuns joining the balata to the object to be coated.

336,019. CAR-DOOR RETAINER. ANTHONY ROBLOFS, Philadelphia, Pa. Filed Nov. 21, 1885. (No model.)

Claim.—1. The combination of a car-door and door-frame with a bolt and nut carried by one of said parts and a hasp carried by the other part, and so constructed as to be clamped by the bolt-head or nut, all substantially as specified.

336,019.

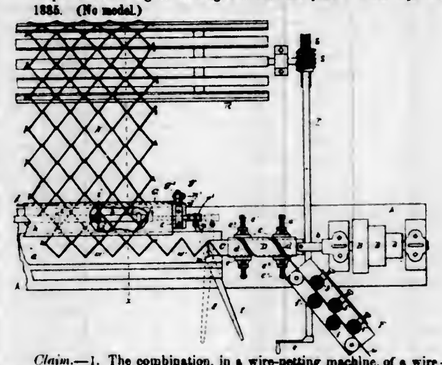


3. The combination of a car-door and door-frame, a bolt and nut carried by one of said parts, a hasp carried by the other part, and so constructed as to be clamped by the bolt-head or nut, and a catch-lug, whereby the release of the hasp is prevented until the bolt or nut has been partially or wholly unscrewed, all substantially as specified.

3. The combination of a car-door and door-frame, a bolt and nut carried by one of said parts, and a hasp carried by the other part, slotted for adaptation to the bolt, and clamped by the head or nut of said bolt, all substantially as specified.

4. The combination of a car-door and door-frame, a bolt and nut carried by one of said parts, a hasp carried by the other part, and a plate between which and the head or nut of the bolt the hasp is confined, said plate having a lug, whereby the removal of the hasp is prevented until the bolt or nut is partly or wholly unscrewed, all substantially as specified.

336,020. WIRE-NETTING MACHINE. FREDERICK SCHILLING, Minneapolis, Minn., assignor to Cargill & Co., same place. Filed Apr. 24, 1885. (No model.)



Claim.—1. The combination, in a wire-netting machine, of a wire-straightener, a spiral tube, and rotary blade, operating as described, with a holding and guiding device, constructed and arranged substantially as described.

2. The combination, in a wire-netting machine, of a rotating blade and a spiral tube, arranged to bend the wire into zigzags, with the laterally and vertically adjustable holding and guiding device, arranged to hold the meshes of the netting in place and to direct the moving wire into them, substantially as described.

3. The combination, with a rotating blade and a spiral tube constructed and arranged to bend wire into zigzag form, and a table to support the end of the finished netting and the moving zigzag wire, of an adjustable holding and guiding device, substantially as described, and means, substantially as described, for shifting and adjusting the netting.

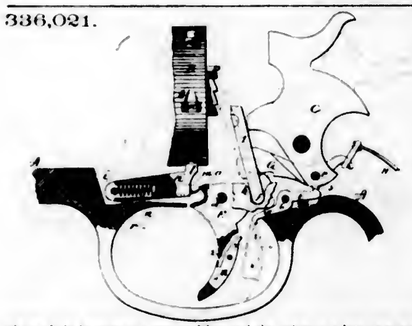
4. The combination of the wire-straightener F, blade C, spiral tube D, and table *a* with the holding and guiding device G, the rod *h*, arranged to slide and rotate, and provided with fingers *i*, the lever *l*, and the reel R, constructed and arranged substantially as described.

5. The combination of the wire-straightener F, the rotating blade C, spiral tube D, and the standards e^2, clamping-pieces *e*, and set-screws *e'*, substantially as and for the purpose set forth.

336,021. LOCK FOR REVOLVERS. JOHN T. SMITH, Rockfall, Conn. Filed May 4, 1885. (No model.)

Claim.—1. In a revolver, the combination of the hammer, the principal trigger E, hung in the receiver, and in the usual connection with the hammer for self-cocking, the sear L, hung beneath the hammer, one arm adapted to engage the full-cock notch of the hammer, the other arm extended forward, and the pawl I, hung to the trigger in rear of its pivot and adapted to engage the ratchet of the cylinder, with an auxiliary trigger hung in the principal trigger, one arm of which projects beyond the front face of the principal trigger when said principal

336,021.



trigger is in its extreme rear position and the other arm into engagement with the sear, substantially as described.

2. In a revolver, the combination of the hammer, the principal trigger E, hung in the receiver, and in the usual connection with the hammer for self-cocking, the sear L, hung beneath the hammer, one arm adapted to engage the full-cock notch of the hammer, the other arm extended forward, and the pawl I, hung to the trigger in rear of its pivot and adapted to engage the ratchet of the cylinder, with an auxiliary trigger hung in the principal trigger, one arm, 3, extending upward to engage the forward arm of the sear, the other arm, 4, extending downward and so as to project beyond the front face of the principal trigger, substantially as described.

3. The combination of the cylinder B, constructed with the notches *a* upon its periphery corresponding to the respective chambers in the cylinder, and with a corresponding ratchet, D, at its rear end, the dog K, arranged beneath the cylinder, its nose *l* adapted to engage a corresponding notch in the cylinder, spring-trip *m* in said dog, the trigger E, hung in rear of said dog and constructed with a forward projection, *o*, adapted to engage said trip, and the pawl I, hung to the trigger in rear of its pivot and adapted to engage the ratchet on the cylinder, with the auxiliary trigger 3 4, hung in the principal trigger and sear between said auxiliary trigger and hammer, substantially as described.

4. The combination of the hammer, the cylinder constructed with the ratchet at its rear end, the trigger E, the pawl I, hung thereto in rear of its pivot, the trigger-plate constructed with the recess *g*, into which the hinged end of the pawl may pass, the said recess constructed with a cam, *h*, to act upon said pawl, the cylinder-dog K, hung forward of the trigger, and trip *m* in said dog, the trigger constructed with a projection, *o*, extending toward said trip, and so as to act thereon in its downward movement, substantially as described.

5. The combination of the cylinder B, constructed with notches *a*, corresponding to the chambers in the cylinder, and with a corresponding ratchet, D, at its rear end, the principal trigger E, cylinder-dog K, trip *m* in said dog, the trigger constructed with a projection, *o*, adapted to act upon said trip, cylinder-pawl I, hung to the principal trigger in rear of its pivot, the trigger-plate constructed with a recess, *g*, into which the hinged end of said pawl will pass, said recess constructed with a cam, *h*, forward of said pawl, the auxiliary trigger 3 4, hung in the principal trigger, and the sear L, between said auxiliary trigger and the hammer, substantially as described.

6. The combination, in a revolver, of the cylinder, the hammer, the cylinder-dog, trigger, and sear, the said dog, trigger, and sear all hung in the trigger-guard plate, independent of the frame, and the said plate made detachable from the frame, substantially as described.

336,032. **STEREOTYPE-PLATE AND BLOCK OR BED FOR THE SAME.** William T. Smith, London, England, assignor to Harmon Lee Ensign, New York, N. Y. Filed July 29, 1885. (No model.) Patented in England Oct. 23, 1879, No. 4,321.



Claim.—1. As an improved article of manufacture, a stereotype-plate, *a*, having an undercut retaining-shoulder, *b*, formed on its under side, substantially as shown, whereby it may be placed on the block after the latter has been placed between the column-rules, substantially as set forth.

2. As an improved article of manufacture, a block, *d*, to receive a stereotype-plate having an undercut retaining-shoulder, *c*, formed on its upper face, substantially as and for the purposes set forth.

3. As an improved article of manufacture, a stereotype-plate, *a*, having a single undercut retaining-shoulder, *b*, formed on its under side, the plane of which shoulder extends crosswise of the lines of type on the face of the plate, substantially as set forth.

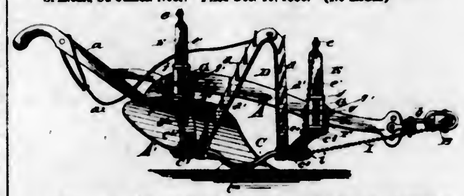
4. As an improved article of manufacture, a block, *d*, for a stereotype-plate having formed on its upper surface a single undercut retaining-shoulder, *c*, the plane of which extends lengthwise of the column, substantially as set forth.

5. The combination of the block *d*, having formed on its upper side a single undercut retaining-shoulder, *c*, and a stereotype-plate, *a*, having formed on its under side a single undercut retaining-shoulder, *b*, and the under side of the plate *a* constructed to fit and conform to the upper side of the block *d*, substantially as set forth.

6. As an improved article of manufacture, a stereotype-plate, *a*, having its under side formed of two parallel planes joined together by a shoulder, *b*, which forms with said planes angles less than right angles, substantially as described, the plane of said shoulder extending crosswise of the lines of type on the face of the plate, substantially as described.

7. As an improved article of manufacture, a block, *d*, for a stereotype-plate, having its upper surface formed of two parallel planes joined together by a shoulder, *c*, which forms with said planes angles less than right angles, substantially as and for the purposes set forth.

336,023. **HARROW-ATTACHMENT FOR PLOWS.** George W. Spencer, St. James, Nebr. Filed Dec. 19, 1885. (No model.)



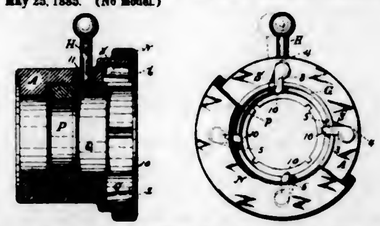
Claim.—1. The combination, in a plow, of the plow-beam, the supporting-frame vertically adjustable thereon, the harrow-frame pivoted on the outer end of the supporting-frame, and the rod c^3, having the central curve, which is turned downward when the harrow-frame is turned upward, and supports the attachment and prevents the same from dragging, substantially as specified.

2. The combination, in a plow, of the plow-beam, the supporting-frame C, the harrow-frame pivoted to the outer end thereof, the standards E, and plates F, constructed substantially as described, the rods G, pivoted in the extensions *f f* of said plates, the horizontal rods *g*, and the bifurcated upturned ends H of the arms *c c'*, all constructed and arranged substantially as and for the purpose described.

3. In a plow, the combination of the plow-beam, the supporting-frame C, the harrow-frame D, pivoted thereon, the standards E, secured to the plow-beam, and the chains *e'*, connecting the upper ends of said standards with the supporting-frame, so that the said frame can be raised or lowered at will, substantially as specified.

4. In a plow, the combination of the plow-beam, the supporting-frame having a backward-and-forward and up-and-down motion thereon, the curved bar c^3, forming part of said frame, the harrow-frame pivoted upon said bar, the standards E and chains *e'*, the draw-bar B, the chain I, connecting the end of said draw-bar and the supporting-frame, and the rope d^3, by means of which the harrow-frame can be raised on the supporting-frame, all constructed and arranged substantially as shown and described.

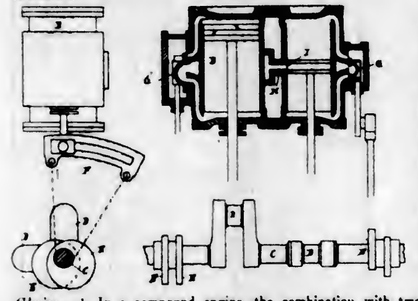
336,024. **SCREW-THREADING TOOL.** George D. Tucker, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. Filed May 25, 1885. (No model.)



Claim.—1. The combination, in a threading-tool body, having chaser-sockets inclined to its axis, oscillating chasers in said sockets, a guard covering said sockets and having slots through which project the said chasers, and means, substantially as described, for effecting the longitudinal adjustment of the chasers in said sockets, substantially as set forth.

2. The combination, in a threading-tool, of a body, A, which has chaser-sockets inclined to its axis, and is threaded for an adjusting-nut, oscillating chasers fitted to slide in said sockets, an adjusting-nut fitted to said thread and constructed to bear against one end of the chasers, and means, substantially as described, for keeping the chasers against said nut, substantially as set forth.

336,025. **STEAM-ENGINE.** Isaac A. Turner, Detroit, Mich., assignor of one-half to Chester B. Turner, same place. Filed Oct. 8, 1885. (No model.)

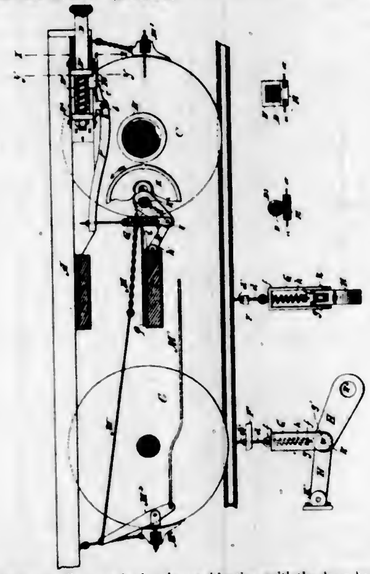


Claim.—1. In a compound engine, the combination, with two three-ported slide-valve engines, arranged as described, of a single steam-passage connecting the high-pressure cylinder with the steam-chest of the low-pressure cylinder, substantially as specified.

2. In a compound engine, the combination of two three-ported slide-valve engines, arranged as described, a steam-eduction port in the high-pressure cylinder near the middle of its length, and a single steam-passage connecting said port with the steam-chest of the low-pressure cylinder, substantially as specified.

3. In a compound engine, two three-ported slide-valve engines, arranged as described, with a steam-port connecting the cylinder of the high-pressure engine with the steam-chest of the low-pressure cylinder, and forming a steam-port in the cylindrical wall of the high-pressure cylinder, substantially as and for the purpose specified.

336,026. **CAR-BRAKE.** William B. Turner, New York, N. Y., assignor to the Turner Beard Automatic Brake Company, same place. Filed Oct. 19, 1885. (No model.)



Claim.—1. In a car-brake, the combination, with the draw-bar and front follower-plate, of the follower-plate attachment E and transmitting-lever F, having oppositely-inclined planes or bevels on their contiguous ends, substantially as herein shown and described, said attachment and lever being arranged to transmit the inward movement of the draw-bar to the brake mechanism, as set forth.

2. In a car-brake, as a means for bringing the friction-wheel in contact with the axle-collar, the combination, with the lever F, arranged to transmit the inward motion of the draw-bar, and the toggle-lever H, of a device, G, connecting said levers and adapted to be adjustable as to length and spring-power, as and for the purposes set forth.

3. In a car-brake wherein the power to apply the brake is derived from a collar fixed on a car-axle, the combination, with the shaft I, of the follower-plate attachment E, transmitting-lever F, lever-connecting device G, and toggle-lever H, arranged in relation with each other and with the draw-bar D and friction-wheel K, to force the said friction-wheel in contact with the axle-collar, for the purpose of applying the brake.

4. In a car-brake of the character substantially as herein described, as a means for transmitting vertical motion from the transmitting-lever F to the toggle-lever H, a lever-connecting device, G, adapted to be adjusted as to length and spring-tension, as set forth.

5. In a car-brake, the combination, with the toggle-levers H and lever F, of the lever-connecting device G, consisting of the eyebolts *d* and *f*, connected by their eyes, nuts d' f' on the ends of said bolts opposite their eyes, yoke *g*, and spring *h*, all constructed, arranged, and operating substantially as and for the purposes specified.

6. In a car-brake of the character substantially as herein specified, the combination, with a shaft and a loose sleeve thereon for winding up the brake-chain for applying the brake, of a lever-operated clutch, O, constructed substantially as herein shown and described, consisting of a cylindrical block, *n*, flattened on one face and having two parallel grooves, n^2, recessed beveled bolts n^3, springs n^4, and double bell-crank *o'*, provided with stud o^3, and of a cylindrical shell, *p*, inclosing said block, and provided with a cam-groove, *p'*, for reception of the bell-crank stud, and also with a flanged hub, p^2, for reception of the moving lever, said block being fixed on the shaft aforesaid, and said shell being movable on said block by said lever, all arranged to operate substantially as set forth.

7. In a car-brake wherein the power to apply the brake is derived from a collar fixed on a car-axle and transmitted to a friction-wheel and shaft, a lever-operated reversible clutch, O, and loose sleeve L, set on the friction-wheel shaft, said clutch being distinct from said loose sleeve and adapted and arranged to hold or release said sleeve for the purpose of applying or throwing off the brake, as set forth.

8. In a car-brake, the combination, with the friction-wheel shaft I and brake-chain M, of a loose sleeve, L, set on said shaft and provided with face-bar m^2, and of a lever-operated clutch, O, provided with two spring-actuated bolts, n^3, which are adapted to engage, one at a time, against opposite sides of said bar, and to hold the said sleeve fast for winding up the chain when the shaft is turning in one direction, while permitting said sleeve to be loose when the shaft turns in the opposite direction, as set forth.

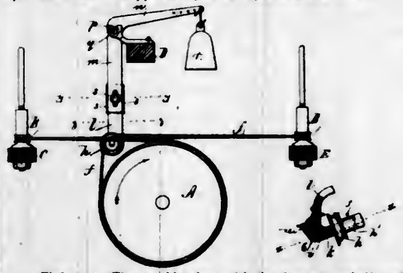
9. In a car-brake of the character substantially as herein specified, the combination, with a loose sleeve on the friction-wheel shaft, of a clutch, O, provided with two beveled bolts, n^3, adapted and arranged to be alternately projected to engage the said sleeve.

10. In a car-brake of the character substantially as herein specified, the combination, with a loose sleeve on the friction-wheel shaft, of a single clutch fast on the shaft, arranged in relation to the said sleeve to hold it fast, in whichever direction the car is pulled, and to let it run loose when the car is backed, as set forth.

11. In a car-brake of the character substantially as herein specified, the combination, with a loose sleeve connected with the brake-chain and held from sidewise motion, of a fixed clutch provided with reversible teeth to connect with the loose sleeve, substantially as described.

336,027. **BELT-TIGHTENER FOR SPINNING-MACHINES, &c.** Joseph E. Tynan, Paterson, N. J. Filed Nov. 24, 1884. (No model.)

Brief.—The pulley has a conical surface, and is held in an inclined tubular socket containing an oil-chamber connected by a groove in the socket with the upper end of the bearing to return the oil which works up. The socket is supported upon an adjustable bent lever.



Claim.—1. The combination, with the drum A, spindle-pulleys B, and belt *f*, of a tightening-pulley, the axle of which is inclined downwardly, a socket for receiving such axle and containing an oil-chamber, and a stock and lever, substantially as set forth.

2. The combination, with the drum, spindle-pulleys, and belt, of a tightening-pulley having a conical surface, an inclined axle for the tightening-pulley, and a socket containing an oil-chamber, and a support for said socket, substantially as set forth.

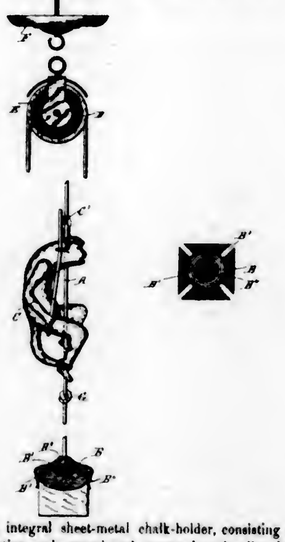
3. The combination, with the tightening-pulley and its axle, of an

inclined socket containing an oil-chamber for the axle, a stock, and a bent lever having a trapezoidal bearing, upon the surface of which the stock is bolted, substantially as set forth.

4. The combination, with the driving-drum, spindle, and belt, of the pulley, its axle, and a sleeve to connect the pulley and axle, a tubular inclined socket containing an oil-chamber and forming a bearing for the axle, and a support for holding the socket and axle in an inclined position, substantially as set forth.

5. The combination, with the driving-drum, spindle, and belt, of the pulley and its axle, a tubular inclined socket, forming a bearing for the axle, with an oil-chamber in said socket, and a longitudinal groove, 7, for receiving the oil upon the axle and returning the same into the oil-chamber, and a support for holding the socket and axle in an inclined position, substantially as set forth.

336,028. BILLIARD-CHALK HOLDER. HIRAM A. TYLER, Stamford, and BERNARD MCGOVERN, Bridgeport, Conn. Filed Dec. 30, 1884. (No model.)



Claim.—1. An integral sheet-metal chalk-holder, consisting of a bottom or main portion and curved and recurved spring-lips joined thereto on all of its sides, said lips being separated from or independent of each other, substantially as set forth.

2. An integral sheet-metal chalk-holder, consisting of a bottom or main portion, B, and curved spring-lips joined thereto on all of its sides, said main portion or bottom having slots at its corners to increase the elasticity of the said spring-lips, substantially as set forth.

3. An integral sheet-metal chalk-holder, consisting of a bottom or main portion, B, and curved spring-lips joined thereto on all of its sides, said main portion or bottom having slots at its corners to increase the elasticity of the said spring-lips, combined with a weight, a pulley, and a cord, the latter being attached to the holder and being provided with a knot to serve as a stop for the latter, substantially as set forth.

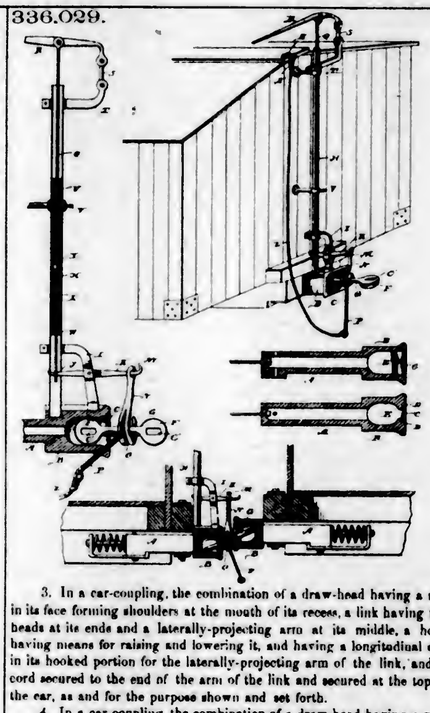
4. The combination, with a billiard-chalk holder, of a weight, a pulley, and a cord, said cord being attached to said weight and holder, and being provided between the latter and the weight with a knot to serve as a stop for the said holder, substantially as set forth.

336,029. CAR-COUPLING. FERDINAND WINDLER, Keokuk, Iowa. Filed Dec. 12, 1885. (No model.)

Claim.—1. In a car-coupling, the combination of a vertical tube secured to the front of the car, a tube secured adjustably within the outer tube and having a collar at its lower end, a rod sliding within the tubes and having an operating-lever at its upper end and a collar at its middle, a lever pivoted at the lower end of the tube, rocking in a vertical plane, and pivotally connected to the lower end of the vertical rod with its inner end, a hook supported with its upper eyed end upon the outer end of the lever, and a coupling-link resting in the hook, as and for the purpose shown and set forth.

2. In a car-coupling, the combination, of the draw-head having a slot in its face, a link having flat heads and a laterally-projecting arm at its middle, and a hook having a longitudinal slot at its hooked portion for the laterally-projecting arm, and having means for raising and lowering it, as and for the purpose shown and set forth.

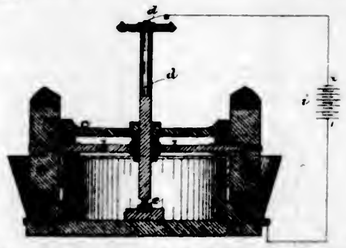
336,029.



3. In a car-coupling, the combination of a draw-head having a slot in its face forming shoulders at the mouth of its recess, a link having flat heads at its ends and a laterally-projecting arm at its middle, a hook having means for raising and lowering it, and having a longitudinal slot in its hooked portion for the laterally-projecting arm of the link, and a cord secured to the end of the arm of the link and secured at the top of the car, as and for the purpose shown and set forth.

4. In a car-coupling, the combination of a draw-head having a vertical slot in its face forming shoulders at the mouth of its recess, a link having flat disk-shaped heads at its ends and an arm projecting from its middle at a right angle to the plane of the disks, a hook for supporting and forming a bearing for the link, and a cord attached to the end of the arm of the link and to the top of the car, as and for the purpose shown and set forth.

336,030. APPARATUS FOR TREATING ORES. JACOB C. WISWELL, Medford, Mass., assignor to the Wiswell Electric Mining Machinery Company, Portland, Me. Filed Oct. 23, 1884. Renewed Aug. 29, 1885. (No model.)

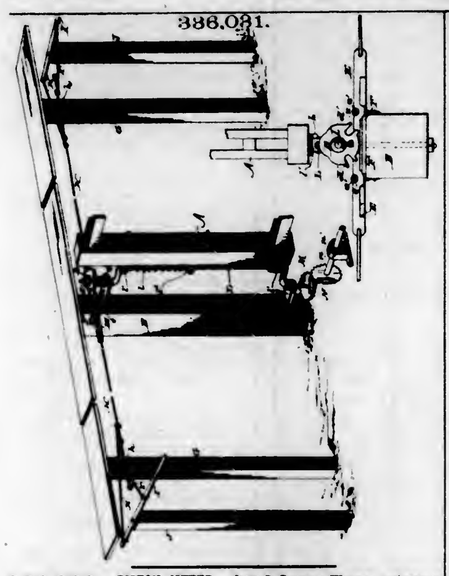


Claim.—The combination, in an amalgamating and ore-crushing machine, of a bed for holding the ore and mercury, a shaft having arms, crushing-rolls upon said arms working directly upon the ore and mercury in said bed, and electrical connections through said bed and rollers, whereby the former becomes a cathode and the latter anodes, and the electric circuit is continuous through the ore and mercury between the anodes and cathode.

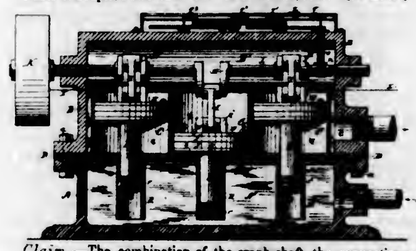
336,031. GATE. JOSIAH AUSTIN and ROSCOE CHAMBERLAIN, East Liberty, Ohio. Filed Apr. 7, 1885. (No model.)

Claim.—The combination, with the gate A, having the bearings *l'*, the cranked rod L, passed loosely through said bearings and provided with collar *l*, the spring *l'* on said rod, and secured at its ends to the collar and to one of the bearings *l'*, the hinge-sections C, pivotally connecting the rod L to the gate-post, a recessed plate secured rigidly to one end of the rod L, and mechanism for operating the recessed plate from opposite sides of the gate, substantially as set forth.

336,031.

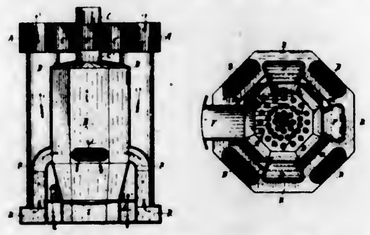


336,032. PISTON-METER. JOHN S. BARDEN, Warren, assignor to James O. Draper, Pawtucket, R. I. Filed Oct. 26, 1885. (No model.)



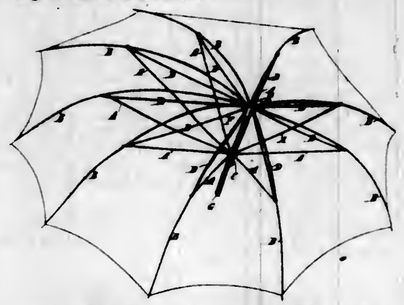
Claim.—The combination of the crank-shaft, the connecting-rod lever pivoted to the piston, the valve adapted to reciprocate over the ports of the piston, the tubular extension of the piston, the upper and lower sections of the outer case, and the intervening plate provided at one side with the piston-cylinder and at the other with a tube adapted to receive the tubular extension of the piston through which the fluid passes, substantially as described.

336,033. HOT-AIR FURNACE. SIMON D. BURLINGAME, Berrien Springs, Mich. Filed Mar. 2, 1885. (No model.)



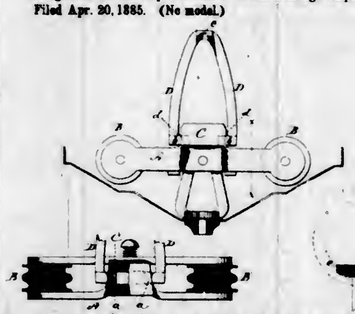
Claim.—In an air-heating furnace composed of a fire-box, radiating-chambers, and radiating-pipes, the combination of the fire-box, the upper and lower radiating-chambers, the elbowed pipes which connect the fire-box with the lower chamber alternating around the fire-box with the pipes which connect the chambers, the elbowed pipes being in a concentric plane nearer the fire-box than the plane of the chamber-connecting pipes, the elbow of the elbowed pipes being directly over each alternating air-passage through the lower chamber, to deflect the rising air-currents and central vertical partitions in the lower portion of said elbowed pipes, to divide the passing fire and heat, all substantially as set forth.

336,034. UMBRELLA. CHARLES H. BUTLIN, Camborne, County of Cornwall, England. Filed July 15, 1885. (No model.) Patented in England June 15, 1885, No. 7,273.



Claim.—In an umbrella, the combination, with the ordinary ribs and stretchers, of auxiliary stretchers extending from the union of the ordinary ribs and stretchers to a fixed ring near the pivotal points of the ribs, substantially as and for the purposes hereinbefore set forth.

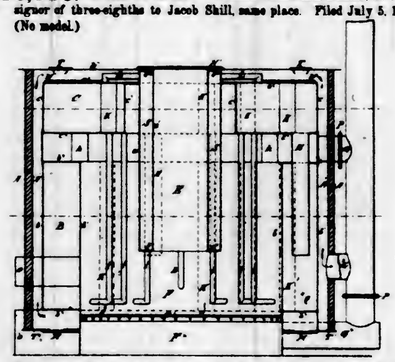
336,035. HANGING LAMP. ANTONY P. BUXTON, Meriden, Conn., assignor to the Bradley & Hubbard Manufacturing Company, same place. Filed Apr. 20, 1885. (No model.)



Claim.—1. In a lamp-hanger, the body constructed with bearings to receive corresponding trunnions on the loop with one or more transverse recesses, *d*, combined with a loop, D, constructed with trunnions adapted to work in said bearings, and with a transverse projection, *b*, corresponding to and adapted to engage said recess in the body, substantially as and for the purpose described.

2. In a lamp-hanger, the loop on the hanger and by which the hanger is suspended, the said loop constructed with a transverse projection, *e*, on each side at its apex and at right angles to the plane of the loop, the said projections curved upward upon their under side, and the under curved surface constructed with a concave groove at right angles to the plane of the loop and so as to form a concave segment-shaped groove at the apex of the loop, substantially as described.

336,036. STEAM-BOILER. WILLIAM CALDWELL, Buffalo, N. Y., assignor of three-eighths to Jacob Shill, same place. Filed July 5, 1884. (No model.)



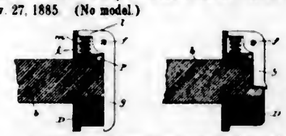
Claim.—1. The combination, with the sand-packed shell A A' *a* and the boiler B and steam-drum C, having the flues K and K', respect-

ively, and arranged, as shown, relatively to the flue or chamber D, of the partitions K, arranged in the space between the drums and the shell, and the exit-flue having connections G G' G², all constructed and arranged as and for the purposes specified.

2. In a boiler-furnace, as described, the boiler B, having flues K, and the steam-drum C, having flues K', arranged, as shown, to form chamber D, in combination with the pipes I, connecting the lower parts of the boiler and drum and projecting into the fire-box, the short pipes *h*, and the longer pipes H, all arranged and operating as set forth.

3. In a boiler-furnace, as described, the combination, with the boiler B and steam-drum C, and with the fire-box F, of the magazine comprising a cylindrical water-chamber, pipes L, connecting the interior thereof with the lower part of the boiler and projecting into the fire-box, and the pipes L', connecting the said water-chamber at the top with the steam-drum C, as set forth.

336,037. NUT-LOCK. JESSE CONWAY, Baltimore, Md., assignor of two-thirds to John N. Conway and John S. Bullock, both of same place. Filed Nov. 27, 1885. (No model.)



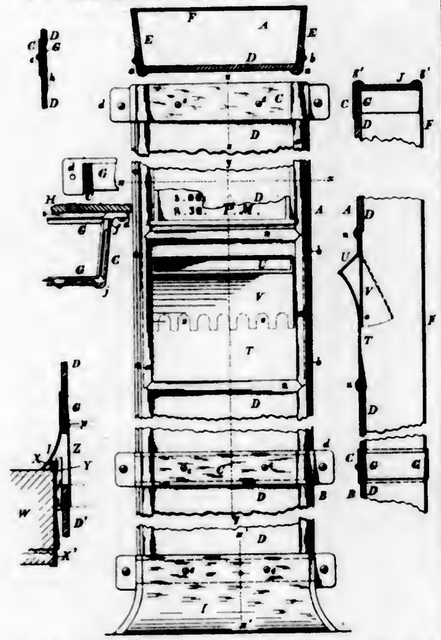
Claim.—1. A vehicle-axle having a notch at the end of its arm, in combination with a nut having a pivoted dog for engagement with said notch, as set forth.

2. A vehicle-axle having a notch at the end of its rim, in combination with a nut having a pivoted dog for engagement with said notch and a spring for keeping the dog in such engagement, as set forth.

3. The combination of an axle-arm having a notch at its end, a nut having a recess, *k*, a dog pivoted to the nut and having at one end a right-angled extension, *l*, which covers the recess, and a spring, *m*, in the recess bearing upon the said extension end, as set forth.

4. The combination of an axle-arm having a notch at its end, a nut, a dog, and a pin pivoting the dog to the nut and long enough to slide endwise in the pivot-hole, and provided at one end with a curved and bent-back part, *f'*, to take under the dog, as set forth.

336,038. LETTER-BOX CONNECTION. JAMES G. CUTLER, Rochester, N. Y. Filed June 11, 1884. (No model.)



Claim.—1. The mailing-tube consisting of a series of the herein-described independently-removable sections or lengths, substantially as set forth.

2. In a mailing-tube, the combination, substantially as hereinbefore described, of the series of independently-removable lengths or sections and the interposed fixed collars, substantially as described.

3. A mailing-tube formed of removable sections having interposed collars consisting of the bracket G and band C, substantially as described.

4. In an apparatus for the delivery of mail-matter from the upper floors of a building, the combination of a box or receptacle at the base with the stationary upright mailing-tube having substantially its entire front composed of glass, and provided with a metallic perforated protective covering, substantially as described.

5. The combination, with a mailing-tube passing through one or more floors of a building, of the base I, substantially as described.

6. The combination, with a mailing-tube consisting of glass in whole or in part, of the perforated protective covering R and the bars S S, substantially as described.

7. In combination with a closed box or receptacle at its base, a mailing-tube consisting of tubular glass sections constructed and united end to end, substantially as described and shown.

8. The mailing-tube consisting of the glass front D, side walls, E E, back A, and the moldings *a*, applied to the side walls and overlapping the edges of the glass, in the manner described and shown.

9. In combination with the tubular sections of a mailing-tube, the collar or bracket G, having its inner edges beveled, substantially as and for the purposes described.

10. In combination with the body of the mailing-tube, the independently-removable section T, having the orifice U therein, as described.

11. The combination, with the mailing-section T, provided with orifice U, of the hinged flap V, having notches or perforations *o*, substantially as described.

12. The combination, in a mailing-tube, of the floor W, base I, tubular sections D D', and tubular connection Z, substantially as described.

13. The combination, in a mailing-tube, of the tubular sections D D, bracket or collar G, and sheet-metal collar *h*, substantially as described.

14. In combination with a mailing-tube adapted for the delivery of gravitating postal matter, a receiving-box at its base, and a yielding bottom, whereby injury to the mail-matter is prevented.

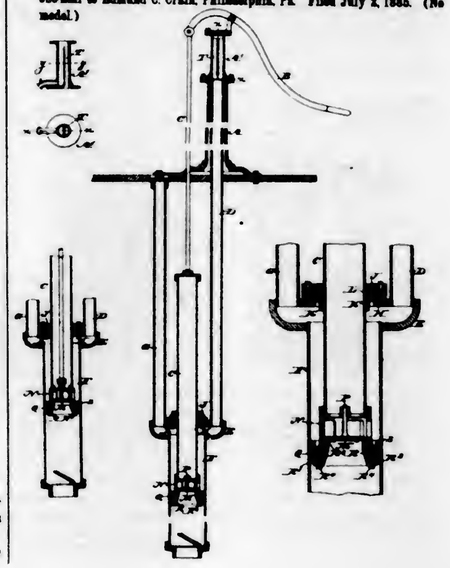
15. A mailing-tube having a transparent or perforated cap or cover, J, substantially as and for the purposes set forth.

16. In combination with a box or receptacle at its base, an upright mailing-tube having its front and side walls composed of a single piece of glass, whereby a smooth surface is presented for the guidance of the mail-matter, and an inspection of the interior of the tube permitted.

17. A mailing-tube formed of sections consisting partially of glass and partially of metal, and having its metal portions lacquered or japanned, substantially as and for the purposes set forth.

18. The combination, with a mailing-tube, of the receiving-box E'', hinged deflector H'', and door *r'*, provided with arm *s'*, substantially as described.

336,039. PUMP. DAVID K. DARNELL, Moorestown, N. J., assignor of one-half to Edmund C. Crain, Philadelphia, Pa. Filed July 2, 1885. (No model.)



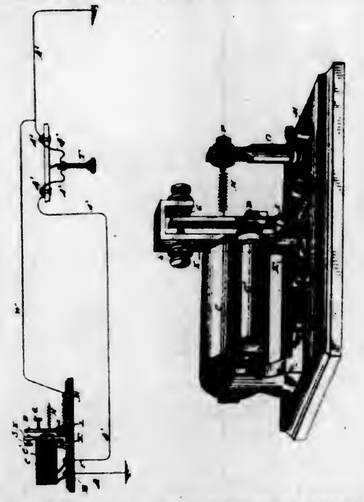
Claim.—1. A spear-rod, in combination with a cage having a packing secured thereto by a nut, a barrel having two pipes connected to the same, one of said pipes having an air-chamber, in which is a slotted diaphragm, and a handle attached to said spear-rod, substantially as described.

2. A pump having a barrel, F, air-chamber G, discharge-pipe D, air-chamber A', having slotted diaphragm T, rod C, and handle, and cage N, secured to the rod C and having a valve within the same, said parts being arranged, combined, and operating substantially as described.

3. The spear or pump rod C, in combination with casting E, nut H, having a beveled face, packing K, and box J, having a rib, L, substantially as described.

4. A pump-standard having in its discharge portion a slotted partition or diaphragm, the same dividing the standard into chambers, one of which is in communication with the discharge-pipe, substantially as and for the purpose set forth.

336,040. TELEGRAPH AND TELEPHONE PROTECTOR. CHARLES C. DRAKE, Trenton, N. J. Filed Oct. 24, 1883.



Claim.—1. The combination of an electric circuit and electrical instruments included therein, through which a path of high resistance is always maintained, with an automatic electro-magnetic device consisting of high and low resistance magnets, and connections constructed to automatically close a path of low resistance around said instruments when the current traversing the main line exceeds the normal amount.

2. The combination of an electric circuit and electrical instruments included therein with a pivoted armature, two electro-magnets, one of high and the other of low resistance, both of which are in the main-line circuit, and the means controlled by the armature to divert through a path of low resistance around the electrical instruments any excess of current above that normal to the line.

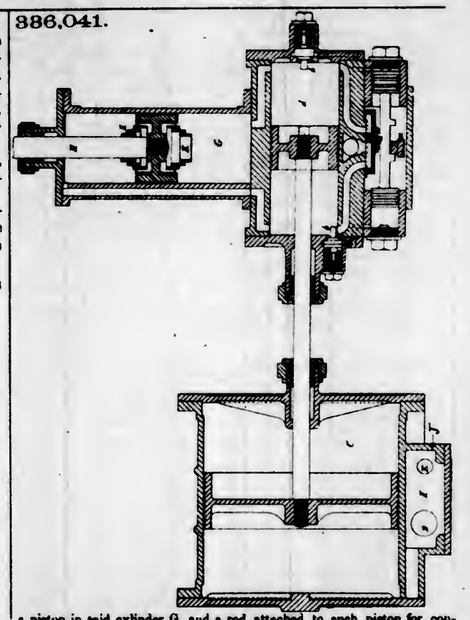
3. The combination of an electric circuit and electrical instruments included therein, through which a path of high resistance is always maintained, with an automatic electro-magnetic device consisting of a magnet having high and low resistance helices, and connections, substantially as described, constructed and connected to automatically close a shunt-circuit of low resistance around the receiving-instrument when the main line is overcharged, and mechanism, substantially as set forth, to retract the armature to its normal position when current in the main line again becomes normal.

4. The combination, with an electric circuit and the electrical instruments included therein, of the means whereby excessive currents are divided and caused to traverse two paths of unequal resistance, consisting of two electro-magnets, one of high and the other of low resistance, a pivoted armature and its connections, and a conductor of low resistance connected to the return main-line conductor, substantially as described.

336,041. APPARATUS FOR EFFECTING INTERMITTENT ACTION OF FOG AND OTHER SIGNALS. FREDERICK W. DURHAM and JAMES D CRUTCHELL, London, England. Filed July 10, 1884. (No model.) Patented in England Dec. 31, 1883, No. 5,906.

Claim.—The combination of the steam-cylinder A, its piston, the movable slide-valve B, the cataract-cylinder C, having its ends in communication, the adjustable valve or valves controlling the communication between the ends of the cataract-cylinder, the cylinder G, supported upon and in communication with the opposite ends of the steam-cylinder A,

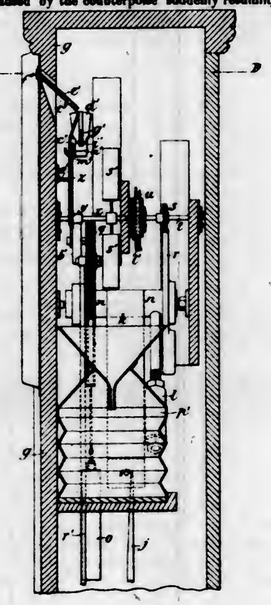
336,041.



a piston in said cylinder G, and a rod attached to such piston for connecting with a signal, substantially as described.

336,042. WEIGHING-MACHINE. PERCIVAL EVERITT, London, England. Filed Mar. 31, 1885. (No model.) Patented in England Dec. 13, 1884, No. 15,432; in France Mar. 26, 1885, No. 167,904; in Germany Mar. 28, 1885, No. 33,900; in Belgium Apr. 4, 1885, No. 68,436; in Victoria May 4, 1885, No. 4,845; in South Australia May 8, 1885, No. 554; in Tasmania May 9, 1885, No. 256; in New Zealand May 14, 1885, No. 1,436; in Queensland June 2, 1885, No. 30; in India June 26, 1885, No. 79; in Italy June 30, 1885, XIX, 16,206, and XXXVI, 194; in New South Wales July 7, 1885, No. 6,567; in Austria-Hungary July 14, 1885, No. 14,162 and No. 36,568; in Spain Aug. 3, 1885, No. 1,933/4,906, and in Luxemburg Oct. 26, 1885, No. 569.

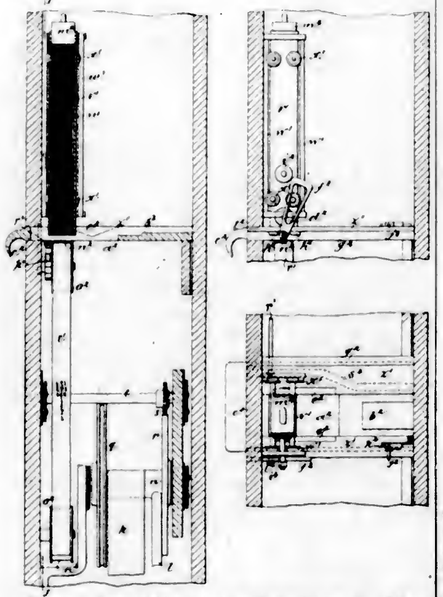
Brief.—Uses a fly-escapement or an air or other cushion to counteract the shock caused by the counterpoise suddenly resuming its normal position.



Claim.—1. A weighing-machine for having an aperture for receiving a coin, a weighted lever, a dial and index-hand, and intermediate mechanism connected with the same and whereby the coin, when deposited in the receiver, shall operate the lever and cause the hand to indicate the weight of the person or body being weighed.

2. In combination with a weighing-machine, substantially as described, the quadrant *r*, shaft *t*, pinion *s*, bar *u*, receptacle *d'* and its movable bottom, weighted arm *c'*, quadrant *z*, shaft *x*, pinion *y*, stop *l'*, dial *w*, and index *v*, substantially as shown and described.

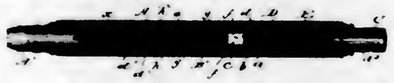
336,043. RECORDER FOR WEIGHING-MACHINES. PERCIVAL EVERITT, London, England. Filed Nov. 4, 1885. (No model.) Patented in England Dec. 13, 1884, No. 16,433; in France Mar. 26, 1885, No. 167,904; in Belgium Apr. 4, 1885, No. 68,426; in Victoria May 4, 1885, No. 4,045; in South Australia May 8, 1885, No. 554; in Tasmania May 9, 1885, No. 358; in New Zealand May 14, 1885, No. 1,436; in Queensland June 2, 1885, No. 20; in India June 26, 1885, No. 70; in Italy June 30, 1885, XIX. 18,206, and XXXVI, 124; in New South Wales July 7, 1885, No. 6,567; in Austria-Hungary July 14, 1885, No. 14,102 and No. 36,568; in Spain Aug 3, 1885, No. 1,032/4,966, and in Luxemburg Oct. 28, 1885, No 589



Claim.—1. In a weighing-machine, the combination of a slide or drawer, a movable ticket or card box, a rotatory printing-wheel, and a carbon paper or the like, the combination being such that the pulling out of the slide or drawer will cause the weight of the person or body being weighed to be imprinted or impressed upon a card or ticket, and will deliver it outside of the apparatus.

2. In combination with a weighing-machine, a weighted arm, *l*, or equivalent counterpoise, quadrant *r*, pinion *s*, arbor *t*, type-printing wheel or disk *t'*, card-box for holding a set of gravitating cards or tickets, and a carbon or similar paper, whereby the weight of the person or body being weighed may be printed or impressed, substantially as set forth.

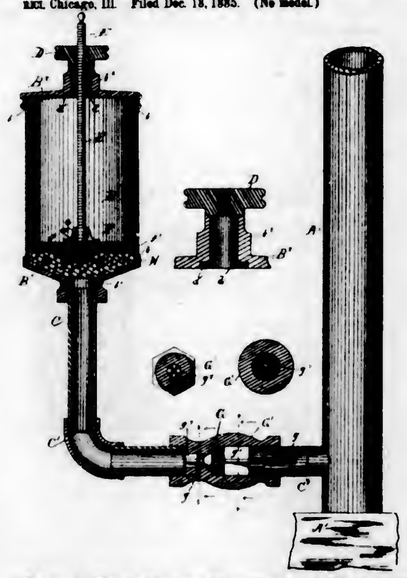
336,044. LEAD OR CRAYON HOLDER. FREDERICK J. W. FISCHER, Jersey City, N. J., assignor to the Eagle Pencil Company, New York, N. Y. Filed Apr. 29, 1885. (No model.)



Claim.—1. The combination, with the sheath, the pressure-cap, the retracting-spring, the grasping-jaws extending beyond the front end of the sheath, and a stop for limiting the extent to which the pencil can protrude from the sheath, of a propeller drop-pencil longitudinally movable as a whole in said sheath, having the inner one of the tubes of which it is composed free to revolve independently of the sheath, and terminating at the front in a propeller-tip, and the other of said tubes connected to said sheath, so as to be incapable of rotation independently thereof, and provided at or near the point where it meets the propeller-tip with a recess or groove for reception of the acting ends of the grasping-jaws, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the sheath, the pressure-cap, the retracting-spring, the jaw-carrying stem, and the grasping-jaws projecting beyond the sheath, of the tube *h*, internally screw-threaded and provided with a lug to enter a longitudinal slot in the jaw-carrying stem, and with a groove or recess, h^3, for the jaws, the inner rotatable longitudinally-slotted lead-tube *d*, provided with a propeller-tip, *d'*, projecting beyond the front end of tube *h*, and the follower or propeller contained in said tube *d*, and screw-threaded to engage the tube *h*, intending to claim none of these parts separately, but only the combination of all of them, when constructed, arranged, and operating as hereinbefore set forth.

336,045. LUBRICATOR FOR STEAM-ENGINES. CHARLES FRIEDRICH, Chicago, Ill. Filed Dec. 18, 1885. (No model.)



Claim.—1. The combination, with valve-chamber G', of valve G, having stem *g* and guides *g' g²*, lubricant-pipes C, lubricant cylinder or vessel B, bearing heads B' B^2, the former secured to said pipe C, piston F, screw-stem E, and revolving nut D, journaled in said head B^2, substantially as specified.

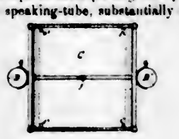
2. The combination, with a check-valve, of a lubricant-pipe and a lubricant-vessel provided with a piston having a screw-stem and revolving threaded nut journaled in the head of said lubricant-vessel for operating said screw, whereby said piston may be forced up or down without communicating any revolving motion thereto or to the operating-screw, substantially as specified.

3. The combination, with a lubricant vessel or cylinder, B, a piston therefor, and a screw-stem secured to said piston, of a revolving threaded nut journaled in the head of said cylinder for operating said screw-stem, whereby said piston may be forced up or down without revolving the piston in the cylinder or the screw in the piston, substantially as specified.

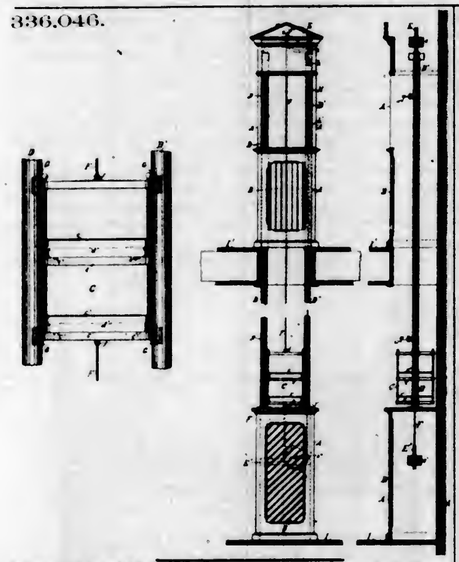
4. The combination, with cylinder B, having heads B' B^2, said head B^2 having a hub, b^2, of piston F, screw-stem E, revolving nut D, having sleeve *d*, journaled in said hub, and collar *d'*, secured to said sleeve *d*, substantially as specified.

336,046. DUMB-WAITER. FREDERICK FRIEDERS, Philadelphia, Pa. Filed Dec. 24, 1885. (No model.)

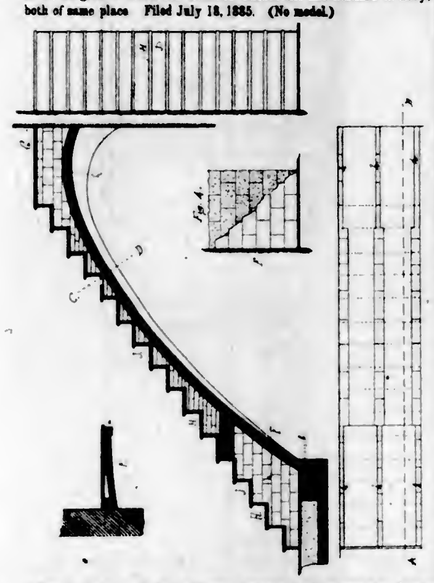
Claim.—As an improvement in dumb-waiters, a car, substantially such as described, provided with curved guides fitting partially around the cylindrical surfaces of two tubes secured within the main casing, through one of which tubes the counter-weight attached at its respective ends to an endless rope or cable passing over pulleys travels, while the other is used as a speaking-tube, substantially as and for the purposes set forth.



336,046.



336,047. FIRE-PROOF BUILDING. RAFAEL GUASTAVINO, New York, N. Y., assignor to Francesca Ramirez Guastavino and Bernard S. Levy, both of same place. Filed July 18, 1885. (No model.)



Claim.—1. A vault for stairways, composed of two or more layers of brick tile united together by cement or plaster-of-paris, substantially as set forth.

2. A vault for stairways, composed of two or more layers of brick tile united together so as to break joints by cement or plaster-of-paris, substantially as set forth.

3. A staircase having a supporting-vault composed of two or more layers of brick tile, and step-supports, also composed of two or more layers of brick tile, the tile in both cases being united together by cement or plaster-of-paris, substantially as set forth.

4. A staircase consisting of a vault composed of two or more layers of brick tile, step-supports, also of two or more layers of brick tile, the tile in both cases being united together by cement or plaster-of-paris, and arranged so as to break joints, substantially as set forth.

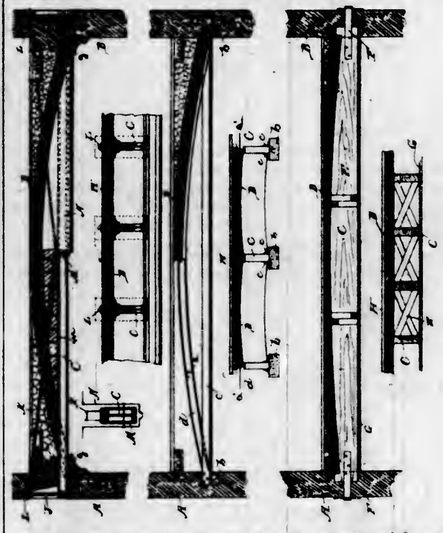
5. A vault for stairways, composed of two or more layers of brick tile united together by cement or plaster-of-paris, in combination with the angle-iron *a*, substantially as set forth.

6. A vault for stairways, composed of two or more layers of brick tile united together by cement or plaster-of-paris, in combination with a foundation, E, also composed of brick tile united together by cement or plaster-of-paris, substantially as set forth.

7. A vault for stairways, composed of two or more layers of brick tile united together by cement or plaster-of-paris, in combination with a foundation of brick tile, likewise united together by cement or plaster-of-paris, and an angle-iron, *a*, substantially as set forth.

8. A vault for stairways, composed of two or more layers of brick tile united together by cement or plaster-of-paris, in combination with the angle-iron *b*, substantially as set forth.

336,048. CONSTRUCTION OF FIRE-PROOF BUILDINGS. RAFAEL GUASTAVINO, New York, N. Y., assignor to Francesca Ramirez Guastavino and Bernard S. Levy, both of same place. Filed Sept. 16, 1885. (No model.)



Claim.—1. In the construction of the ceilings, roofs, and floors of dwelling-houses and other buildings, a vault composed of two or more layers or rings of brick tiles set in cement or plaster-of-paris which operates to resist pressure by compression and cohesion, substantially as set forth.

2. A ceiling, roof, or floor embodying a vault composed of two or more layers or rings of brick tiles arranged to break joints, and set in cement or plaster-of-paris, substantially as set forth.

3. In a ceiling, roof, or floor, a vault composed of two or more layers or rings of brick tiles set in cement or plaster-of-paris, in combination with beams between wall and wall, the said vault arranged to resist pressure by compression and the beams to resist by tension, substantially as set forth.

4. In a ceiling, roof, or floor, a vault composed of two or more layers or rings of brick tiles set in cement or plaster-of-paris, in combination with tie-rods between wall and wall, the said vault arranged to resist pressure by compression and the tie-rods to resist by tension, substantially as set forth.

5. In a ceiling, roof, or floor, a vault composed of two or more layers or rings of brick tiles set in cement or plaster-of-paris, in combination with tie-rods between wall and wall, and pieces of terra-cotta arranged beneath the vault, substantially as and for the purpose set forth.

6. In a ceiling, roof, or floor, a vault composed of two or more layers or rings of brick tiles set in cement or plaster-of-paris, in combination with beams and tie-rods between wall and wall, and pieces of terra-cotta beneath the vault, substantially as set forth.

7. In a ceiling, roof, or floor, a vault composed of two or more layers or rings of brick tiles set in cement or plaster-of-paris, in combination with beams between wall and wall, and concrete or Portland cement between the top of the vault and the covering for the latter, substantially as set forth.

8. In a ceiling, roof, or floor, a vault composed of two or more layers of brick tiles set in cement or plaster-of-paris, and constructed with arches or risers in two opposed directions, substantially as set forth.

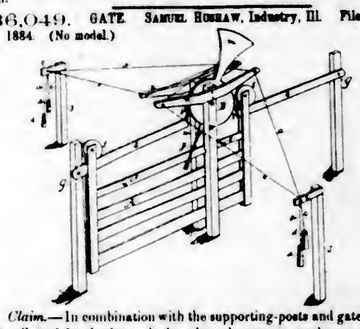
9. In a ceiling, roof, or floor, a vault composed of brick tiles, in

combination with beams C, tie-rods K, anchor-plates J, and rings M, substantially as set forth.

10. In a ceiling, roof, or floor, a vault composed of brick tiles, in combination with beams C, tie-rods K, anchor-plates J, terra-cotta pieces *m*, and rings M, substantially as set forth.

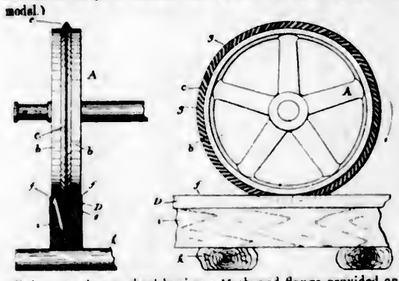
11. In a ceiling, roof, or floor, a vault of brick tiles, in combination with tension-beams C and the enveloping-boxes N, substantially as set forth.

336,049. GATE. SAMUEL HOSHAW, Industry, Ill. Filed Jan. 21, 1884. (No model.)



Claim.—In combination with the supporting-posts and gate provided with rollers *f f* and pins *e e'*, the pivoted ways or tracks *s s*, wheel B, connected with said tracks by flexible straps *i i'*, and carrying weighted arm *m* and spring-arm *y*, cords *o o*, attached to said weighted arm and provided with handles *d d*, and guide-supports for said cords, substantially as described.

336,050. CAR-WHEEL. SAMUEL JACOBS, Baltimore, Md., assignor of one-half to Joseph F. Matthai, same place. Filed Oct. 15, 1885. (No model.)



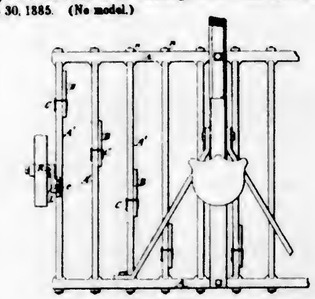
Claim.—1. A car-wheel having a V-shaped flange provided on its sides with crosswise serrations and a tread or face on each side of the said flange, in combination with a rail having two tread-surfaces, *f*, a V-shaped groove between the surfaces, and a metal base below the said groove solidly connecting the two surfaces, the said rail-groove having its sides pitched at an angle different from that of the sides of the wheel-flange, as set forth.

2. A car-wheel having a tread or face and a flange projecting therefrom provided on its sides with crosswise serrations, as set forth.

3. A car-wheel having a tread or face and a flange projecting therefrom provided on its sides with serrations which extend obliquely across, as set forth.

4. A car-wheel having a tread or face, and at the center of said tread a projecting flange provided on its sides with crosswise serrations, as set forth.

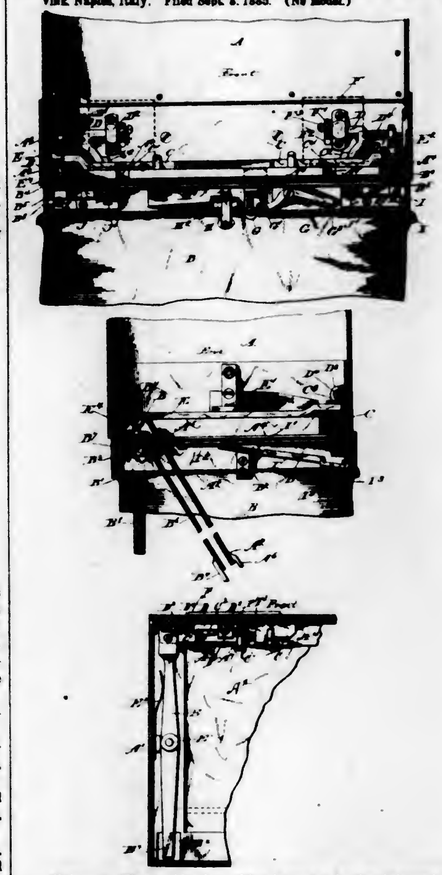
336,051. HARROW AND CULTIVATOR. PIERSON JACOBUS, Variek, assignor of one-third to A. Baldridge & Co., McDougalls, N. Y. Filed June 30, 1885. (No model.)



Claim.—1. A harrow or cultivator frame consisting of two parallel cross-bars, one at each end standing at right angles to the line of draft and provided with a series of horizontal transverse orifices and with projecting braces extending from the plane of the cross-bars on opposite sides of the orifices facing those of the other bar, and a series of longitudinal bars on the line of draft, having their ends extending through the orifices of the cross-bars and their shoulders resting on the plane of the bar between the projecting braces, said longitudinal bars carrying adjustable teeth, as and for the purpose set forth.

2. The combination of a harrow or cultivator frame, constructed as described, having teeth adjustable upon the bars of said frame, with a lever and roller and securing device for raising and lowering the implement and fixing it in any desired position, as and for the purpose described.

336,052. LETTER-BOX AND COLLECTING-POUCH. GIUSEPPE JOVINE, Naples, Italy. Filed Sept. 8, 1885. (No model.)



Claim.—1. The combination, with a letter-box having independent locking mechanisms at each of its ends for the door thereof, independent levers pivoted centrally at and parallel with each end of the box, of a pouch-frame adapted to come into contact with the free end of the lever near the rear corners of the box, whereby a complete insertion of the frame is required to open the door of the box and a slight withdrawal of the frame locks the doors of the box and pouch, substantially as specified.

2. A letter-box provided with indicator-doors having arms projecting into the box, and independent bolts normally held in a locked position by springs, and extending into connection with and removed from the locking position by a movement of the bolts which unlock the door of the box, substantially as specified.

3. The combination of the box-frame and the pouch-frame, and a vertically-operating bolt passing from the latter into the former, a spring-operated lever pivoted to the pouch-frame and pivotally connected with the bolt, and arranged to withdraw the bolt when the pouch-door is closed, substantially as specified.

4. The combination, with a pouch, of a frame arranged at its mouth and carrying a door pivoted at one edge, and provided with handles on its pivoted rod and with a projection at its free edge, a vertically-sliding bolt, a pivoted spring-pressed lever the free end of which is projected into the path of the projection on the door, a spring-supported lever having a hook at its free end arranged to project into the path of the pouch-locking mechanism in its unlocking movement, and having an upward projection between said hook and the fixed end of the lever, in combination with a letter-box having a groove for the reception of the frame of the pouch and a mortise for receiving the vertical bolt on the pouch-frame, substantially as specified.

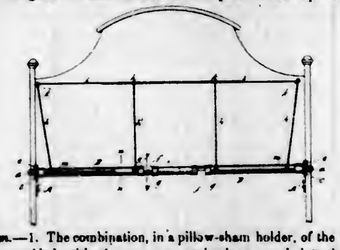
5. In a letter-box, the combination of the flange A^4, the lever E, pivoted thereon and having the depending lug B^4, the spring E^2, the bolt C, slotted, as at C', and having the projection, as at C^2, the bolt D, the arm, the segment F', the indicator-door F, and the door A^2, provided with the projections A^6, substantially as shown and described.

6. The combination, with the letter-box A, having the internal flange, A^4, provided with a vertical mortise, of the pouch B, having the vertical bolt G, the slotted lever G', and spring G^2, and door B^6, provided with the projection B^5, substantially as shown and described.

7. The combination, with the pouch B, having the independent locking-latches J, the yieldingly-mounted levers I, having hook I^2, located nominally in front of the latches, and having projection I', of the box A, having the flange A^4, adapted to receive the flange B^4 of the pouch-frame B^3, and having a projection, K^2, on the flange A^4, adapted to abut against said latches, substantially as shown and described.

8. The combination, with the doors F, having the segments F', provided with the stop-screws F^2, the bolt D, having the arm D', spring D^4, the bolt C, having the projection C^2, the lever E, and the door A^2, having the projection A^5, substantially as shown and described.

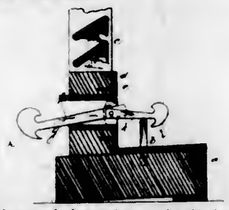
336,053. PILLOW-SHAM HOLDER. JOHN A. KNIGHT, New York, N. Y., assignor to Warren N. Abbott, same place. Filed Apr. 21, 1885.



Claim.—1. The combination, in a pillow-sham holder, of the brackets A A', provided with the spurs or projections *c*, and slots *d*, as described, the washer *c*, and screw-pins *a a*, and roller B, carrying the frame, as and for the purpose set forth.

2. The bars *h h'*, each composed of a single piece of wire doubled to form a loop, *k*, at its outer end, and its inner ends, *l l'*, attached to the roller B, as described, one of said ends being let or driven into said roller, and the other formed into a ring, *m*, and attached to the roller by a nail, *n*, as shown and described.

336,054. SHUTTER-FASTENER. JACOB W. KOHN, Newark, N. J. Filed May 7, 1885. (No model.)

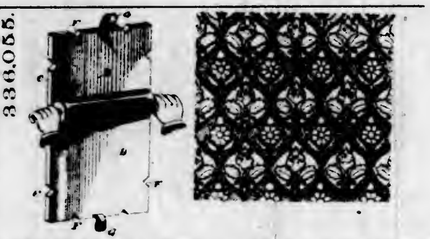


Claim.—The improved shutter-fastener herein described, combining therein a shutter-plate, a lever, *g*, extending through said plate and providing an outer catch at one end and a finger-piece at the other, a second catch, *k*, extending to project from the inner side of the shutter, and a pivotal pin, *i*, fastened in said plate and extending through and holding both of said parts *g* and *k* in their respective positions.

336,055. MANUFACTURE OF BAS-RELIEFS FOR CEILINGS, WALLS, &c. EDWARD KEMPE, Chicago, Ill. Filed June 15, 1885. (No model.)

Claim.—1. A flexible mold composed of glue, shellac, glycerine, turpentine, and sawdust mixed to form a plastic mass, and having a suitable pattern in its upper face.

2. A flexible mold for producing bas-relief for ceilings, walls, &c., the same being composed of glue, shellac, glycerine, turpentine, and



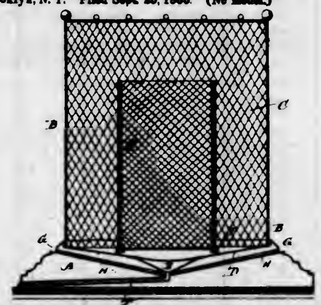
sawdust mixed to form a plastic mass, and having an intaglio pattern in its upper face.

3. A flexible mold for producing bas-relief for ceilings, walls, &c., the same consisting of glue, shellac, glycerine, turpentine, and sawdust mixed upon a piece of textile fabric which forms a backing for the said plastic mass, and having an intaglio pattern in its upper face.

4. The combination of flexible molds provided at their edges with notches and tongues arranged to engage with each other in the manner and for the purpose shown and set forth.

5. The combination of the herein-described flexible molds, consisting each of a flexible mass of glue, shellac, glycerine, turpentine, and sawdust mixed upon a piece of textile fabric, and having intaglio patterns in their upper face, the said molds being provided at their edges with notches and tongues arranged to engage with each other in the manner and for the purpose herein specified.

336,056. REFRIGERATOR FOR OYSTERS. ALEXIUS T. LUDQVIST, Brooklyn, N. Y. Filed Sept. 25, 1885. (No model.)

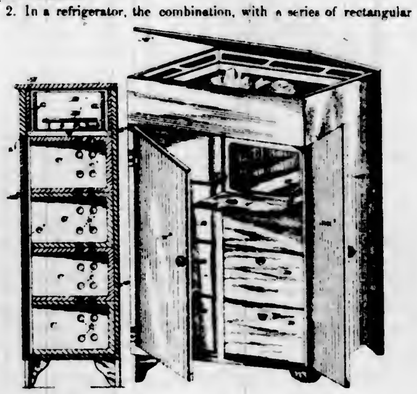


Claim.—A refrigerator for oysters, &c., consisting of a wire-netting casing or frame placed on a base provided with a groove, an interior wire-netting frame resting on the floor formed on the base, which floor is provided below the inner frame with a funnel, a tube for conducting the water from said funnel, and tubes for conducting the water from the grooves in the base to the tube that conducts the water from the funnel, substantially as herein shown and described.

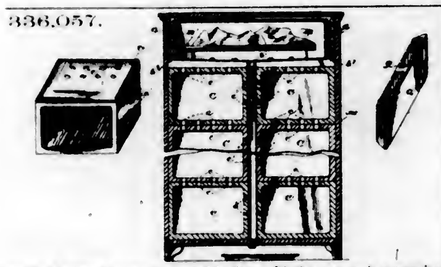
336,057. REFRIGERATOR. CHARLES W. MONROE, Bay City, Mich. Filed July 31, 1885. (No model.)

Claim.—1. In a refrigerator, the combination, with suitable outside casing, of the cells or receptacles C, of glazed pottery, arranged substantially as described.

2. In a refrigerator, the combination, with a series of rectangular



336,057.



vessels of glazed pottery arranged in tiers, with the open ends presenting outward, of doors for each cell, said doors being pivoted at the bottom, and provided with curved arms arranged to engage the casing to hold the doors in a horizontal position, substantially as described.

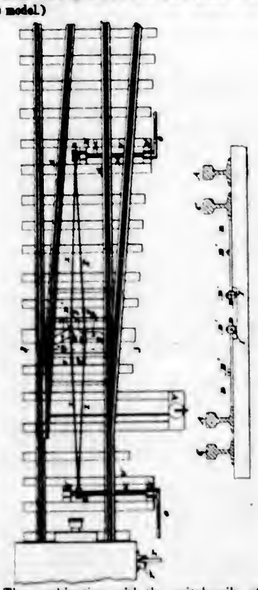
3. In a refrigerator, the combination, with a series of cells of glazed pottery arranged substantially as indicated, forming the body of the refrigerator, of an ice-box above, said ice-box having a lining of hollow tile, the chambers in the tiles being in open relation with the passage-ways that connect with the cells, substantially as set forth.

4. In a refrigerator, the combination, with the cells C, of glazed pottery, arranged substantially as indicated, and openings connecting the adjacent cells, of a vertical air-duct, E, and suitable openings connecting the duct with each cell, substantially as set forth.

5. In a refrigerator, the combination, with the cells C, arranged substantially as indicated, of the ice-box B, provided with the hollow-tile lining G, air-ducts in open relation with the chambers of said lining-tile, and leading from the bottom of the refrigerator to the upper portion of the ice-box, substantially as set forth.

6. A refrigerator consisting, essentially, of a casing, an ice-box lined with hollow tiles, cells arranged in tiers through the body of the refrigerator, said cells consisting of rectangular vessels of glazed pottery, the parts being arranged substantially as indicated.

336,058. AUTOMATIC RAILWAY-SWITCH. IVANHO W. NEWLAND, WILLIAM J. IRSDALE, and ALONZO H. NEWLAND, Boulder, Colo. Filed June 8, 1885. (No model.)



Claim.—1. The combination, with the switch-rails, of a pair of alternately-engaging switch-locks, a rope or chain connected to each of said locks, and a pair of rock-shafts with which said ropes or chains engage, whereby the parts connected to the respective locks are moved in opposite directions, as set forth.

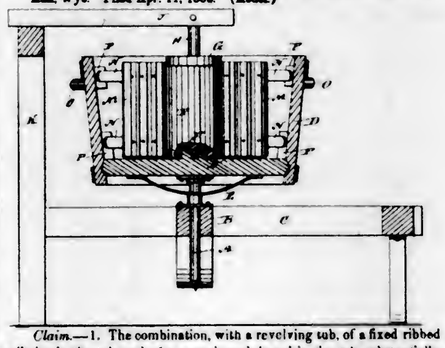
2. The combination, with the alternately-engaging switch-locks B B, of an endless rope or chain, I, to which said locks are connected, as shown and described, a rock-shaft with which said endless rope or chain engages, and a lever for rocking said shaft.

3. The combination of the switch, locks, rock-shafts, connection between the locks and shafts, bifurcated levers, trips, and rubber bumpers on the arms of the levers, substantially as set forth.

4. The combination of the switch, locks, rock-shafts, sprocket wheels or pulleys on the shafts, connection between the pulleys and the locks, levers on the shafts, and trip, substantially as set forth.

5. The combination of the switch, locks, pivoted arms connected to the locks, ropes or chains connected to the arms, rock-shafts provided with pulleys, around which said ropes or chains pass, levers on the shafts, and trip, substantially as set forth.

336,059. WASHING-MACHINE. JOHN W. OVERMAN, Fort Fetterman, Wyo. Filed Apr. 11, 1885. (Model.)



Claim.—1. The combination, with a revolving tub, of a fixed ribbed cylinder in the tub, and of a curved wash-board in the tub, substantially as herein shown and described.

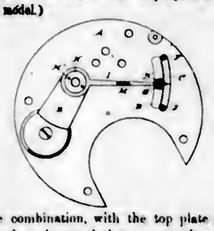
2. The combination, with the revolving tub having a boss, D', on its bottom, of the fixed central ribbed cylinder having a recess in its lower end to receive the bars, and a curved wash-board adjacent to the vertical face of the fixed cylinder, substantially as set forth.

3. The combination, with the frame C, of the spindle A, the cross-frame E, the tub D on the spindle, the fixed ribbed cylinder F in the tub, and a wash-board held in the tub, substantially as herein shown and described.

4. The combination, with the revolving tub D, of the fixed ribbed cylinder F in the same, the spring-strips N, and the slots M, secured to the same, substantially as herein shown and described.

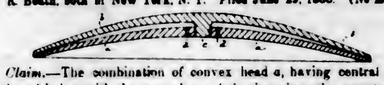
5. The combination, with a tub, of the springs N, the slots M, secured to the same, cleats M' on the ends of the upper spring, N, the lugs P, secured to the inside of the tub, and a vertically-ribbed cylinder in the middle of the tub, substantially as herein shown and described.

336,060. WATCH-REGULATOR. WALTER W. OWEN, Columbus, Ohio, assignor to the Columbus Watch Company, same place. Filed Aug. 27, 1885. (No model.)



Claim.—The combination, with the top plate of a watch, of an arc-shaped plate having elongated slots at opposite ends and an inner toothed edge, a plain plate arranged beneath the toothed plate and extended to form a bearing for the pinion, the pivoted regulator-arm, and the pinion having an integral post or stem passing through the outer end of the regulator-arm, and provided with means at its upper end whereby the said pinion may be turned, substantially as specified.

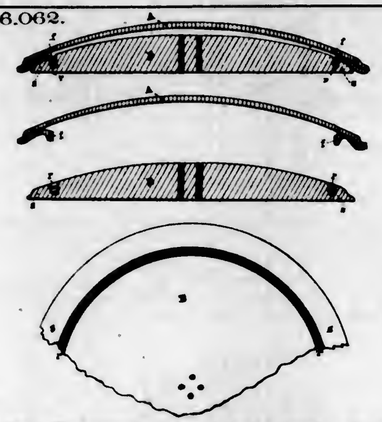
336,061. BUTTON. NOYES F. PALMER, Jamaica, assignor, by direct and mesne assignments, of two-thirds to Charles S. Goodwin and Henry R. Heath, both of New York, N. Y. Filed June 29, 1885. (No model.)



Claim.—The combination of convex head *a*, having central bore and thread-holes, with the curved cap *b*, having pin *c*, the curvature of cap *b* being less than that of head *a*, substantially as specified.

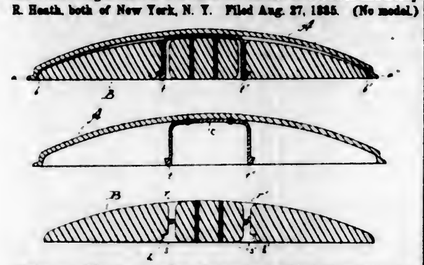
336,062. BUTTON. NOYES F. PALMER, Jamaica, assignor, by direct and mesne assignments, of two-thirds to Charles S. Goodwin and Henry R. Heath, both of New York, N. Y. Filed Aug. 19, 1885. (No model.)

336,062.



Claim.—The combination of cap A, having flange *f*, with head B, having recess *r* and shoulder *s*, substantially as already described.

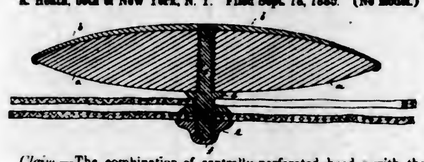
336,063. BUTTON. NOYES F. PALMER, Jamaica, assignor, by direct and mesne assignments, of two-thirds to Charles S. Goodwin and Henry R. Heath, both of New York, N. Y. Filed Aug. 27, 1885. (No model.)



Claim.—1. The combination of cap A, provided with hooks *t t'*, with head B, provided with apertures D D', said apertures being enlarged to form shoulders A A', substantially as specified.

2. The combination of cap A, provided with hooks *t t'*, with head B, provided with apertures D D', said apertures being enlarged at their upper and lower ends, substantially as specified.

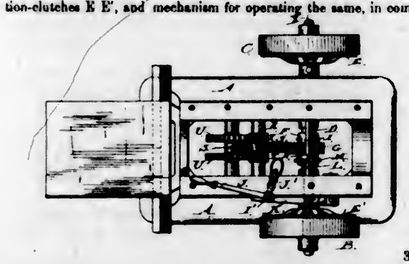
336,064. BUTTON. NOYES F. PALMER, Jamaica, assignor, by direct and mesne assignments, of two-thirds to Charles S. Goodwin and Henry R. Heath, both of New York, N. Y. Filed Sept. 18, 1885. (No model.)



Claim.—The combination of centrally-perforated head *a* with the centrally-perforated cap *b*, lapped over the edge of head *a*, and covering one face thereof, and with the shank *c* and its securing or attaching means, the whole constructed to constitute a reversible button, substantially as specified.

336,065. METAL-PLANING MACHINE. SALMON W. PUTNAM, Fitchburg, Mass. Filed Dec. 24, 1885. (No model.)

Claim.—1. In a metal-planing machine, the hollow shaft D, friction-clutches E E', and mechanism for operating the same, in combination with the inner shaft, H, and pulleys B and C, substantially as and for the purpose set forth.



2. In a metal-planing machine, the hollow shaft D, provided with the friction-clutches E E', and the inner shaft, H, provided with the pulleys B and C, in combination with the sleeve F, rigidly attached to the rod L, and provided with an annular groove, the plate M, the rod L, and the lever K, all constructed to operate substantially as and for the purpose set forth.

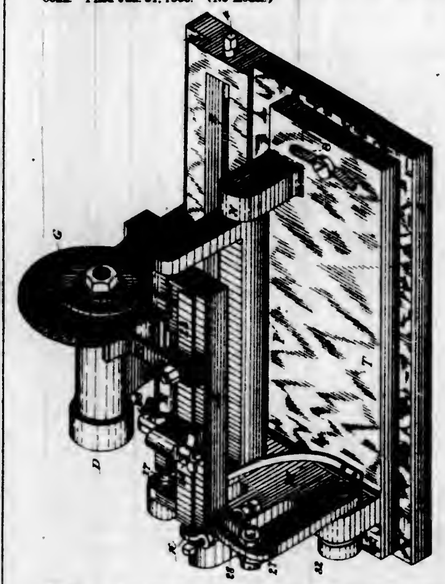
3. The rod L and lever K, in combination with the shipper I', provided with the arms J J' and crank-arm I'', and the shipper-dogs P, substantially as and for the purpose set forth.

4. The shaft provided with the spiral pinion G, and suitable mechanism for operating the same, in combination with the spiral gear S, arranged to give a lateral thrust to the shaft, substantially as herein set forth.

5. The spiral gear S and pinions T, in combination with the cog-gearing U, substantially as herein described.

6. In a metal-planing machine, the two trains of cog-gearing U, in combination with the double-rack bars W, with the cogs on one train overlapping those on the other, substantially as and for the purpose herein set forth.

336,066. REAMER-RELIEVING MACHINE. FRANCIS H. RICHARDS, Springfield, Mass., assignors to the Pratt & Whitney Company, Hartford, Conn. Filed Jan. 31, 1885. (No model.)



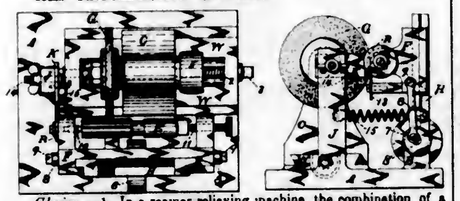
Claim.—1. The combination of a grinding device, a laterally-movable frame, an oscillating reamer-holding fixture carried by said frame, mechanism, substantially as described, for oscillating said fixture, and a pattern for controlling the motion of said frame and fixture toward and from said grinding device, substantially as set forth.

2. The combination of a bed-plate having ways for a carriage, a carriage adapted to be traveled on said ways, a grinding-wheel supported on said carriage, a laterally-adjustable table placed at one side of said carriage on said bed-plate, a laterally-movable frame carried on said table, an oscillating tool-holding fixture carried by said frame, means, substantially as described, for oscillating said fixture, and a pattern for controlling the motion of said frame and fixture toward and from said grinding-wheel, substantially as set forth.

3. The combination of frame F, fixture R, cam K, pin 33, and mechanism, substantially as described, for operating said frame and fixture, substantially as set forth.

4. The combination, in a relieving-machine, of a grinding device, a reamer-holding fixture, and means, substantially as described, for imparting to said fixture an oscillating movement and a movement to and from said grinding device, substantially as set forth.

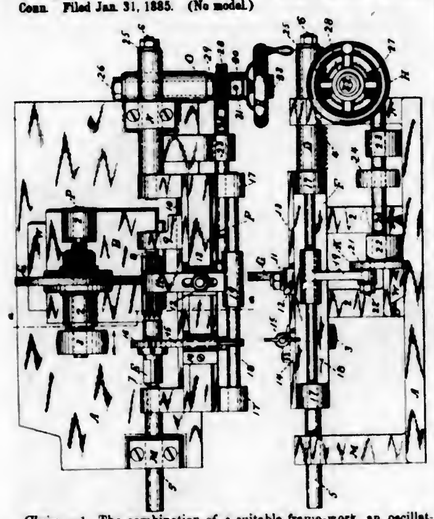
336,067. **REAMER-RELIEVING MACHINE.** FRANCIS H. RICHARDS, Springfield, Mass., assignor to the Pratt & Whitney Company, Hartford, Conn. Filed Jan. 31, 1885. (No model.)



Claim.—1. In a reamer-relieving machine, the combination of a suitable frame-work, a laterally-movable frame, a reamer-holding fixture, a grinding device, mechanism, substantially as described, for reciprocating said fixture on said frame, and a pattern for controlling the lateral movement of said frame toward said grinding device, combined and arranged substantially as described, and for the purpose set forth.

2. The combination of a frame-work, as A, having post J and bearings B, shaft S, having cranks 7, frame H, fixture F, connections from the cranks to said fixture, cam K, spring 15, and a grinding device, substantially as described.

336,068. **REAMER-RELIEVING MACHINE.** FRANCIS H. RICHARDS, Springfield, Mass., assignor to the Pratt & Whitney Company, Hartford, Conn. Filed Jan. 31, 1885. (No model.)



Claim.—1. The combination of a suitable frame-work, an oscillating tool-holding fixture, a carriage having a reciprocating motion toward and from said fixture, and carrying thereon a grinding device, a cam for imparting the relief movement to said carriage, and mechanism, substantially as described, for operating said cam, and for reciprocating said fixture, substantially as set forth.

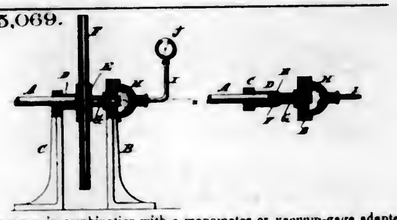
2. The combination of a suitable frame-work, a carriage having thereon a grinding device, an oscillating tool-holding fixture having a longitudinal and a rotary reciprocating movement, a cam or pattern for imparting the relief movement to said grinding device, and mechanism, substantially as described, for operating said cam, and for reciprocating and for feeding said fixture, substantially as set forth.

3. In a reamer-relieving machine, the combination of a supporting frame-work, fixture F, having journal 6, slide D, shaft 20, connecting mechanism, substantially as described, between said shaft and said fixture, and feed mechanism between said shaft and slide D, substantially as set forth.

335,069. **PNEUMATIC SPEED-INDICATOR.** GEORG A. RUNG, Copenhagen, Denmark. Filed Oct. 30, 1885. (No model.)

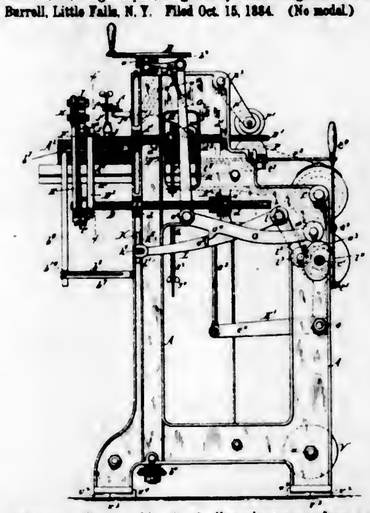
Claim.—A pneumatic device or speed-indicator for measuring the speed of revolving shafts, consisting, essentially, of one or more tubes fixed transversely upon the shaft, and radiating in a plane at right angles

335,069.



to the same, in combination with a manometer or vacuum-gage adapted to register the vacuum created within the said tube or tubes by the centrifugal force, substantially as and for the purpose set forth.

336,070. **PAPER-FEEDING MACHINE.** ALONZO SEDGWICK and JAMES NAYLOR, Jr., Poughkeepsie, assignors, by mesne assignments, to David H. Burrell, Little Falls, N. Y. Filed Oct. 15, 1884. (No model.)



Claim.—1. In a machine for feeding sheet-paper from a pile, the combination, with the pile-supporting table, of a buckling-finger whereby the top sheet is loosened, an arm carrying a feed-roller, which is provided with a stop whereby the feed-roller is held rigidly during its feeding movements and permitted to rotate during its return movement, and mechanism, substantially as described, whereby a rectilinear reciprocating motion is imparted to the feed-roller, substantially as set forth.

2. In a machine for feeding sheet-paper, the combination, with a vertically-movable table supporting the pile, of a buckling-finger whereby the top sheet is loosened, a horizontal shaft arranged above the pile, a feeding-finger connected with said shaft and provided with a feed-roller having a stop, whereby the roller is held rigidly during its feeding movement and permitted to rotate during its return movement, and mechanism, substantially as described, whereby a rocking motion is imparted to said horizontal shaft and a rectilinear reciprocating motion to the feed-roller, substantially as set forth.

3. In a machine for feeding paper, the combination, with the stationary frame A and a vertically-movable table working in said frame, of a horizontal rock-shaft, M^2, supported in bearings in said frame above the table, rock-levers M' M', made lengthwise adjustable on said shaft, feeding-fingers M M, pivoted to said levers, and mechanism, substantially as described, whereby a reciprocating movement is imparted to said fingers, substantially as set forth.

4. In a machine for feeding paper, the combination, with the rock-shaft M^2, levers M' M', and feeding-fingers M M, of a lever, m^6, connecting-rod m^3, elbow-lever N, roller n^7, and cam-disk N', substantially as set forth.

5. In a machine for feeding sheet-paper from a pile, the combination, with the rock-shaft M^2 and feeding-fingers M M, of the supporting-levers M' M', provided with springs m^8, whereby said fingers can be held in an elevated position, substantially as set forth.

6. The combination, with the adjustable feed-table and gage J, of a socket, j, in which said gage is seated, screw-stem j'', slotted arm j^2, radially-adjustable arm j^4, vertical rod K, lever L, and cam l^4, substantially as set forth.

7. The combination, with the adjustable feed-table, of a gage, J, resting on the pile, a support, j^3, in which the gage is made vertically

adjustable, a radially-adjustable arm, j^4, and a gage-rod, K, to which the arm j^4 is adjustably attached, substantially as set forth.

8. The combination, with the feed-table, of the holding-finger F, resting upon the edge of the pile, a tension-rod, G, which increases the pressure of the finger F upon the pile after the top sheet has been withdrawn from under the finger, and mechanism, substantially as described, whereby the tension-rod G is alternately raised or lowered, substantially as set forth.

9. The combination, with the feed-table A', of the holding-finger F, secured to a horizontal shaft, D', and bearing upon the edge of the pile, an auxiliary tension-rod, G, whereby the pressure of the finger F upon the pile is increased after the top sheet has been withdrawn from under the finger F, elbow-lever G', and cam g^3, whereby the pressure of the rod G is removed from the finger F during the operation of buckling the top sheet from under the finger F, substantially as set forth.

10. The combination, with the feed-table, of the holding-finger F, horizontal rock-shaft D', arm F', spring f^2, rod G, spring g^2, elbow-lever G', and cam g^3, substantially as set forth.

11. The combination, with the stationary frame and feed-table, of a rock-shaft, D', arranged in bearings d' d', secured to the frame and provided with a holding-finger, F, an arm, F', secured to the shaft D', and sleeves d^2 d^2, arranged on said shaft between the bearings d' d' and arm F', whereby the shaft and arm F' are held from lateral movement, substantially as set forth.

12. The combination, with the holding-finger F, of the buckling-finger H, provided with a roller, i^2, above the finger F, and the finger I, provided with an adjustable foot, i^3, above the finger H, substantially as set forth.

13. In a paper-feeding machine, the combination, with a movable feed-table, of a shipper device, a reciprocating feeding-finger, a pawl attached to the feeding-finger, and mechanism, substantially as described, whereby the pawl of the feeding-finger actuates the shipper device automatically and arrests the movement of the machine when the last sheet of paper has been delivered, substantially as set forth.

14. In a paper-feeding machine, the combination, with a movable feed-table, of a shipper device, a shifting plate arranged underneath said table, a feed-finger arranged above the feed-table, a pawl attached to said feed-finger and actuating the shifting plate when all the paper has been delivered, and mechanism, substantially as described, whereby the shifting plate is connected with said shipper device, substantially as set forth.

15. The combination, with a vertically-movable feed-table, of a shifting plate, R, a vertical rock-lever, r^2, operating in a slot in said table, an elbow-lever, r^3, pivoted to said table and connected at one end to the lever r^2, and at its opposite end to the shifting plate R, a pawl, u, arranged above said table and engaging against the lever r^3 when the last sheet of paper has been fed from the table, and a shipper connected with the plate R, substantially as set forth.

16. The combination, with a vertically-movable feed-table, of a shifting plate, R, arranged underneath said table, a pawl-lever, r^3, extending through a slot, r^4, in the table, an elbow-lever, r^5, connecting the lever r^3 with the plate R, a lever, t^4, connected with the hand-lever t^4 and engaging with the plate R, shipper-bar T, and clutch c^3, substantially as set forth.

17. The combination, with the side frames, A A, and screw-threaded rod v, of a screw-threaded hand-wheel, V, working on the rod a, and supporting-plates, one of which is provided with lugs or shoulders bearing against the wheel V, substantially as set forth.

18. In a paper-feeding machine, the combination, with the stationary frame, movable table, and buckling mechanism, of the slotted arms b^7, secured to the stationary frame underneath the buckling mechanism, and the guide-bar b^9, adjustably secured to said arms, substantially as set forth.

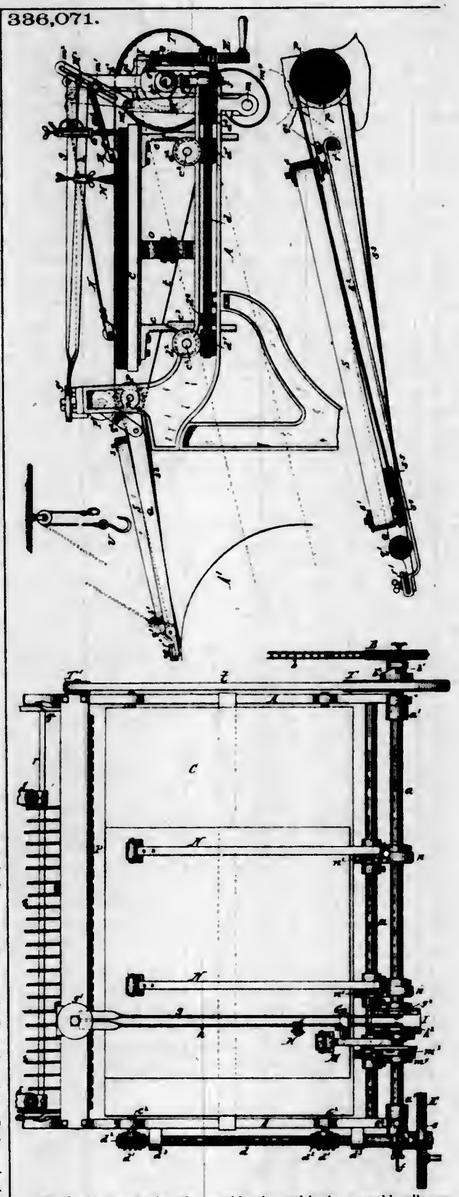
19. In a paper-feeding machine, the combination, with the pile-supporting table, of an arm or finger bearing upon the pile and composed of two parts connected by a swivel-joint, whereby said arm or finger is enabled to adjust itself to inequalities of the surface of the pile, substantially as set forth.

20. The combination, with a paper-feeding machine, of a sheet-carrying frame, I^{∞}, provided with carrying-tapes, said frame being pivoted to the main frame of the machine, and provided with an arm which is adjustably secured to the main frame, whereby the carrying-frame can be raised and lowered and secured in the desired position, substantially as set forth.

336,071. **PAPER-FEEDER.** ALONZO SEDGWICK and JAMES NAYLOR, Jr., Poughkeepsie, assignors, by mesne assignments, to David H. Burrell, Little Falls, N. Y. Filed Feb. 20, 1885. (No model.)

Claim.—1. In a paper-feeder, the combination, with the movable pile-supporting table, of a gage adapted to rest on the pile and resist its upward movement, a feed mechanism connected with the table, and a feed-spring, which causes the feed mechanism to feed the table with the pile against the gage, and a cam which works against the feed-spring, substantially as set forth.

336,071.



2. In a paper-feeder, the combination, with the movable pile-supporting table, and the feed-shaft d and connecting mechanism, of the ratchet-wheel E, a pawl and arm, e e', a feed-spring, f, a driving-shaft, a, provided with a cam, e^3, and a gage, H, substantially as set forth.

3. The combination, with the table C, provided with rack-bars c, shafts c^2, provided with gear-wheels c', meshing with said rack-bars, a shaft, d, connected with the shafts c^2 by worms d' and worm-wheels d^2, a ratchet-wheel, E, mounted on the shaft d, a pawl and arm, e e', a feed-spring, f, a driving-shaft, a, provided with a cam, e^3, and a gage, H, substantially as set forth.

4. In a paper-feeder, the combination, with the main frame A, the movable pile-supporting table C, and feed-shaft d, provided with a ratchet-wheel, E, of the pawl e and the arm e', mounted loosely on the shaft d, a feed-spring, f, attached with one end to the arm e', and a supporting-rod,

f', to which the other end of the feed-spring is adjustably attached, substantially as set forth.

5. The combination, with the main frame A, movable pile-supporting table C, and the feed mechanism, whereby the table is raised, of the compensating-spring O, which supports the table and relieves the latter and the feed mechanism from the weight of the pile, substantially as set forth.

6. The combination, with the holding-down finger G, of a supporting-spring bar, *g*, which tends to raise the finger, and a cam, g^2, whereby the finger is lowered, substantially as set forth.

7. The combination, with the pile-supporting table, of a holding-down finger, G, a support, *k*, to which the finger is pivoted by a rearwardly-yielding joint, and a supporting-bar, *g*, substantially as set forth.

8. The combination, with the holding-down finger G, of a carrier, K, bearing upon the finger and applying a heavy pressure to the same, and a movable support, *k*, which permits the finger to rest on the paper with a light pressure when the carrier K is raised, substantially as set forth.

9. The combination, with the carrier K, provided with a set-screw, k^2, of the finger G, attached to a supporting-rod, *k*, which is movable in the carrier, and a spring, *k'*, substantially as set forth.

10. The combination, with the gage H, of a supporting-spring bar, *h*, which tends to raise the gage, and a cam, h^2, whereby the gage is lowered, substantially as set forth.

11. In a paper-feeder, the gage H, composed of a shank and a foot connected by a spherical joint, substantially as set forth.

12. In a paper-feeder, the combination, with the shank and foot of the gage H, connected by a spherical joint, of a surrounding flexible sleeve, l^2, substantially as set forth.

13. The combination, with the holding-down finger G, and its supporting-spring bar *g*, and the gage H, and its supporting-spring bar *h*, of the driving-shaft *a*, cams g^2 h^2, connecting-rods g^3 h^3, provided with open heads g^4 h^4, and a guide-block, I, substantially as set forth.

14. In a paper-feeder, a movable finger bearing upon the paper, and having its body composed of a coiled spring, whereby the finger is enabled to adjust itself to the surface of the paper, substantially as set forth.

15. The combination, with the buckling-finger M, of the actuating rock-arm M', provided with an adjustable extension, M^2, to which the buckling-finger is attached, substantially as set forth.

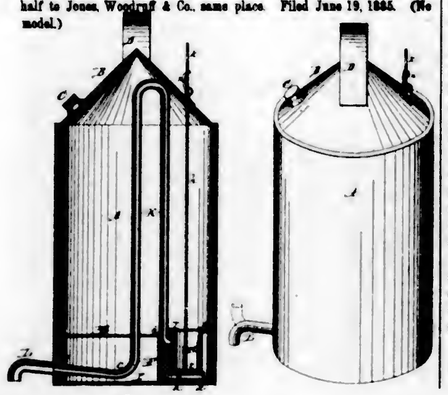
16. The combination, with a movable finger, M, of an actuating rock-arm, M', adjustable stop m^3, spring m^4, cam m^2, and stationary frame A, substantially as set forth.

17. The combination, with the pile-supporting table and the feed-rollers, of a gage and a holding-down finger bearing upon the pile, a buckling-finger, whereby the top sheet is separated, and feed-fingers whereby the separated top sheet is moved between the feed-rollers, said buckling-finger and feed-fingers having a rectilinear reciprocating motion on the paper in the same direction, whereby lateral displacement of the sheet is avoided, substantially as set forth.

18. The combination, with the feeding-machine provided with a roller, P, of a supporting-frame, Q, hung to swing concentric with the roller P, and provided with a tape, *q*, and a tape-roller, *q'*, rollers *s s'*, mounted on the frame Q, an endless side guide, S, running around the rollers *s s'*, and a driving-band, s^2, whereby the endless side guide is driven from the roller P, substantially as set forth.

19. The combination, in a paper-feeder, of the buckling and feed fingers, a driving-shaft, *a*, provided with a ratchet-wheel, b^2, having a single tooth, and a chain-wheel, B, having a spring-bolt, *b'*, substantially as set forth.

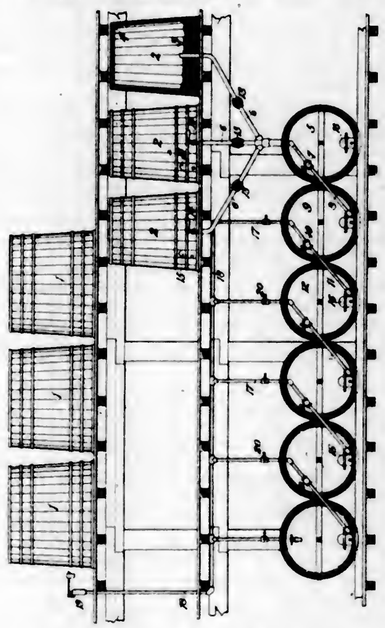
336,072. CAN. CHARLES H. SHAFFER, Rockford, Ill., assignor of one-half to Jones, Woodruff & Co., same place. Filed June 19, 1885. (No model.)



Claim.—1. The combination of the liquid-containing vessel having its bottom proper located at a distance above the lower end of the vessel, a well fitted in said bottom and extending below the same, and a siphon-tube located entirely within the vessel and connected at its shorter side with a charging and discharging cylinder located in said well, substantially as described, the discharging end leading to the exterior of the vessel, as set forth.

2. The combination of the liquid-containing vessel having its bottom located at a distance above the lower end of the vessel, a well fitted in said bottom and extending below the same, and a siphon-tube connected at its shorter side with a charging and discharging cylinder located in said well, the longer side leading to the exterior of the vessel and provided with a curved movable discharging-nozzle, substantially as and for the purpose set forth.

336,073. METHOD OF CLARIFYING BEER AND CHARGING THE SAME WITH CARBONIC-ACID GAS. THEODORE F. STRAUB, Allegheny, Pa. Filed Oct. 14, 1885. (No model.)



Claim.—1. As an improvement in the art of treating beer and other malt-liquors while undergoing fermentation and clarification in separate but connected receptacles, the herein-described method, which consists in causing a hydrostatic pressure from the fermenting-receptacle to act on the previously-fermented contents of one or more clarifying-receptacles in the direction of onflow or discharge from the latter, substantially as set forth.

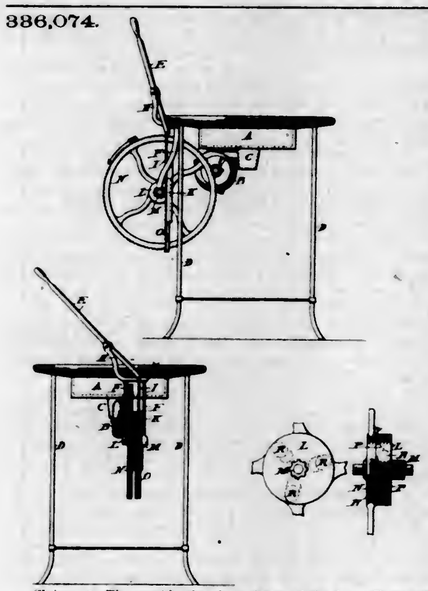
2. In the art of clarifying beer and other malt-liquors while inclosed in a series of two or more separate but communicating clarifying-receptacles, the herein-described method, which consists in causing a fluid-pressure to act continuously on the contents of the first in the series, and thereby effect the through flow of the contents of all from one to another as and only as the finally clarified liquor is racked or drawn off from the last of the series, substantially as set forth.

3. In the art of clarifying beer and other malt-liquors while inclosed at different specific gravities in a series of two or more separate but communicating clarifying-receptacles, the herein-described method, which consists in causing the higher-specific-gravity liquor of the first receptacle to displace the lower-specific-gravity liquor of the next receptacle, substantially as set forth.

4. As an improvement in the art of treating beer, the herein-described method, which consists in effecting the second fermentation in one or more vats and clarifying and refining the same in separate casks while subjected to a constant hydrostatic pressure, substantially as set forth.

336,074. FORGE. CHARLES WEBER, Cleveland, Ohio, assignor to Joseph F. Pond, same place. Filed Mar. 30, 1885. (No model.)

336,074.

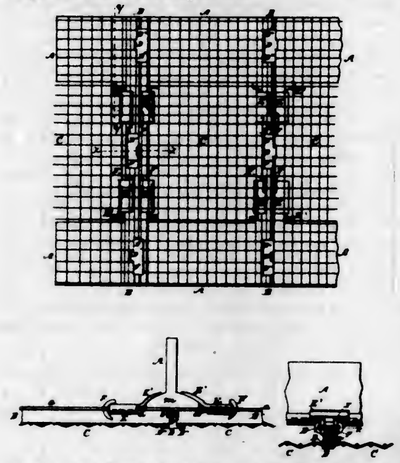


Claim.—1. The combination, in a forge, of the lever E, arm H, connecting-rod I, and rack O with the guard or way K, pinion M, and hanger F, substantially as set forth.

2. The combination, in a forge, of the hanger F, arm H, way K, and rack O with pinion M, friction-plate L, and a driving-wheel, as described and set forth.

REISSUES.

10,684. FASTENING WIRE LATHING TO IRON FRAMES OF BUILDINGS. ROBT. T. BROWN, Boston, assignor, by mesne assignments, to the Clinton Wire Cloth Company, Clinton, Mass. Filed May 24, 1882. Original No. 245,992, dated Aug. 23, 1881.



Claim.—1. The furring B and hangers E, in combination with the beam A, substantially as specified.

2. The furring B, hangers E, and stops F, in combination with the beam A, substantially as set forth.

3. In a device for attaching wire lathing to the iron frames of buildings, the furring B, provided with the holes *b* and a clamp or hanger, D, in combination with the lathing C, substantially as described.

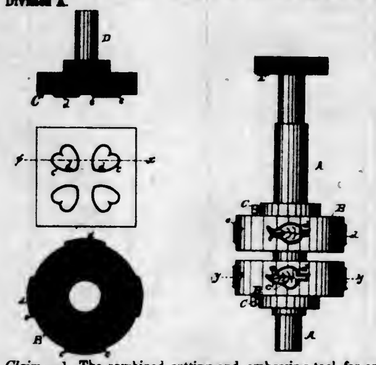
4. In a device for attaching wire lathing to the iron frames of buildings, the furring B, clamps or hangers E D, stops F, and lathing C, in combination with the beam A, substantially as specified.

5. The combination of a furring-strip provided with holes, wire lathing, and a T-shaped fastener, the shank of which is passed through the lathing on one side of the furring-strip, through the hole in said strip, and bent down on the opposite side of said strip, the head of said fastener being bent at an angle to the shank against the outer face of the lathing, substantially as described.

6. The combination of the beam A, the furring B, provided with the holes *b*, the clamps E, the lathing C, and the hangers D, the shanks of which are passed through the holes in the furring, substantially as described

7. The combination of the beam A, the furring B, provided with holes *b*, the clamps E, stops F, the lathing C, and the hangers D, the shanks of which are passed through the holes in the furring, substantially as described.

10,685. EMBOSSING WOOD. WILLIAM A. COMPTON, Liberty Corner, N. J. Filed Dec. 21, 1885. Original No. 331,770, dated Dec. 8, 1885. Division A.

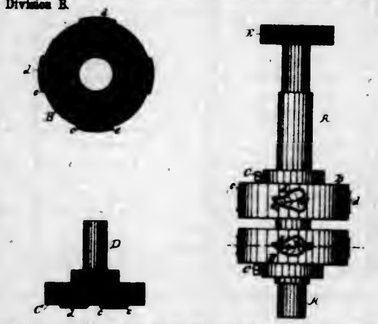


Claim.—1. The combined cutting and embossing tool for embossing wood, constructed with the cutters c applied to the margin of the embossing-surfaces, and operated substantially as and for the purpose set forth.

2. The combined cutting and embossing tool for embossing wood, constructed with a raised embossing-surface and a projecting cutting-edge affixed to the tool around the entire margin of such raised surface.

3. The combined cutting and embossing tool for embossing wood, having an embossing-surface provided with a projecting cutting-edge around its margin and upon a line or lines within the said margin.

10,686. EMBOSSING WOOD. WILLIAM A. COMPTON, Liberty Corner, N. J. Filed Jan. 16, 1886. Original No. 331,770, dated Dec. 8, 1885. Division B.

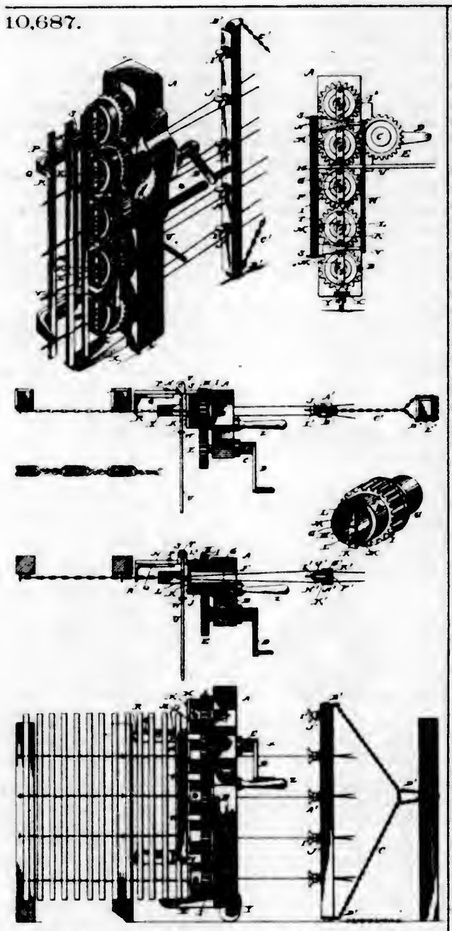


Claim.—1. The combined cutting and pressing tool for embossing wood, constructed with the cutters c and raised embossing-surfaces *d*, arranged and operated substantially as and for the purpose set forth.

2. The rotary embossing-tool consisting in the roller provided with the cutters *c* and raised embossing-surfaces *d*, and adapted to emboss the wood without the removal of any of the woody fiber, substantially as set forth.

10,687. PORTABLE FENCE-MACHINE. JACOB MIDDAUGH and CHARLES M. WILCOX, New Paris, Ohio. Filed Nov. 12, 1885. Original No. 309,724, dated Dec. 23, 1884.

10,687.



upon the same and geared together, and a step arranged near the lower end of the said frame-bar, for the purpose of supporting the palings or pickets while being operated upon, substantially as set forth.

5. In a portable fencing-machine, the combination of a frame-bar having a series of twisting-wheels, and provided with forwardly-extending slotted arms, with gage-plates secured adjustably to the said arms and provided with laterally-extending fingers, substantially as and for the purpose set forth.

6. In a portable fencing-machine, the combination of a frame-bar having a series of twisting-wheels, and provided with forwardly-extending arms having laterally-extending lugs, with a rock-shaft mounted in the said lugs and having a suitable handle, and a pair of arms connected by a frame-bar, substantially as and for the purpose set forth.

7. In a portable fencing-machine, the herein-described frame-bar having a series of perforations and tubular spindles, the twisting-wheels mounted upon the same and geared together, a spur-wheel mounted upon a crank-shaft and meshing with one of the twisting-wheels, a step at the lower end of said frame-bar, arms extending forwardly from the said frame-bar and having adjustable gage-plates, and legs supporting a pivoted tightening-frame, and a wheel or caster at the lower end of the said frame-bar, all arranged and operating substantially in the manner and for the purpose herein shown and specified.

8. In a portable fencing-machine, the combination, with the twisting apparatus constructed substantially as described, of a tension-bar provided at its upper and lower ends with swiveled plates connected by a rope or chain, whereby the said tension-bar may be connected securely to a fixed point during operation, substantially as and for the purpose set forth.

9. In a portable fencing-machine, the herein-described tension-bar having a series of screw-threaded perforations countersunk at their outer ends, smaller orifices adjoining the said perforations and terminating in the countersinks of the latter, conical washers fitting in the said countersinks, set-screws working in the screw-threaded perforations, and coiled springs interposed between the washers and the heads of the set-screws, substantially as and for the purpose set forth.

10. A portable fencing-machine comprising a twisting device having a series of twisting-wheels mounted upon tubular spindles, and constructed and meshed together as described, a supporting-step, an adjustable gage and a pivoted tightening-frame, and a tension-bar having countersunk perforations, conical washers, orifices for the passage of the fence-wires, tightening-screws, and springs bearing against the washers, all constructed, combined, and operating substantially in the manner and for the purposes herein shown and specified.

11. In a portable fencing-machine, the combination, with a fixed post and a vertical series of horizontal wires leading from a tension-post and secured to said fixed post, of a twister movable relatively to the fixed post and tension-post, and having a vertical series of twisting-heads geared together and operating on the wires between the post and the tension device, substantially as before set forth.

12. In a portable fencing-machine, the combination, with a series of spools or coils of wire, of a tension-bar secured at a fixed point during operation, and provided with adjustable tensions for controlling the movement of said wires, a fixed post to which the wires are attached in pairs, and a frame-bar having a series of twisting-wheels geared together and moving along said wires and guided thereby, substantially as set forth.

13. In a portable fence-machine, the combination of a fixed post, wire reels or spools, the tension-bar, the twister movable with relation to the fixed post and tension-bar and having a series of twisting-heads geared together, and the wires passing from the spools or coils first through the tension device, thence in pairs through the twisting-heads, and secured in pairs to the post, substantially as described.

14. A twisting-head for fence-machines, consisting, substantially as before set forth, of a tubular spindle, a twisting-wheel mounted to turn thereon, and a wire-holder upon the face of the twisting-wheel having open wire-holding notches or depressions arranged in pairs at different distances from the axial center of said wheel.

15. A twisting-head for fence-machines, consisting of a tubular spindle, a twisting-wheel mounted to rotate thereon, and a wire-holder upon the face of the twisting-wheel having two or more wire-holding notches or devices, substantially as set forth.

Claim.—1. A portable machine for constructing wire and picket fences, comprising a frame-bar mounted upon a single wheel or caster, and having a series of twisting-wheels geared together, and adapted to be operated by means of a spur-wheel meshing with one of the said twisting-wheels, substantially as and for the purpose set forth.

2. In a portable machine for constructing wire and picket fences, the combination, with a frame-bar having a series of tubular spindles, of a series of twisting-wheels geared together and mounted upon the said spindles, substantially as and for the purpose set forth.

3. In a portable fencing-machine, the combination, with a frame-bar having tubular spindles, of the twisting-wheels mounted upon the same and provided at their front ends with cross-bars having perforations or orifices, from which slits extend to the edges of the said bars, substantially as and for the purpose set forth.

4. In a portable fencing-machine, the combination of a frame-bar provided with tubular spindles, a series of twisting-wheels mounted

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Northern District of New York.

JENKS *et al.* v. SWIFT.

Decided November 26, 1885.

INFRINGEMENT—LUBRICATOR.

The second claim of Letters Patent No. 187,964, granted to William A. Clark, March 6, 1877, for an improvement in lubricators, in view of the prior state of the art, must be limited to a drip-tube with one side at its end cut off slanting, and located with its slanting end so near the side of the glass cylinder that the drops of condensed water will be delivered against the side of the glass, or so near it as to practically displace the oil between the end of the tube and the glass; and when so construed it is not infringed by defendant.

Messrs. Joyce & Spear and *Mr. Neri Pine* for the complainants.

Messrs. Duell & Hey for the defendant.

WALLACE, *J.*:

Infringement is alleged of the second claim of the patent granted March 6, 1877, No. 187,964, to William A. Clark, for an improvement in lubricators. The claim in controversy is as follows:

A drip-tube, P, constructed and arranged to operate substantially as described, whereby the water from the condenser shall be delivered against, or close to, the side of the glass, in order that it may be seen as it enters the oil or passes through the same.

In his preliminary statement of the nature of the invention the patentee says that—

the invention consists in certain details of construction whereby it is rendered more efficient in its operation, as hereinafter more fully described.

The general object of the improvement was to provide means by which to indicate to the operator of displacement-lubricators the rapidity of the feed of oil. In such lubricators a reservoir of metal or glass is provided to contain the oil, which is attached to the steam-pipe of the engine in such a way that steam may be taken from the pipe, condensed, and delivered as water into the oil-reservoir, and the oil, being lighter than the water, is thereby forced out of the reservoir through suitable channels and delivered to the parts to be lubricated by suitable appliances. It is important that the operator should know how fast the oil is being fed, and the object of the invention, as of several others which preceded it, was to afford the requisite means. In the present patent the rate of feed of oil is indicated by the drops of water passing out of the drip-tube through a glass reservoir or gage containing oil.

The prior state of the art is sufficiently disclosed by a reference to the patent to John Gates, No. 107,478, granted September 20, 1870, and the patent to John J. Renchard and J. Vincent Renchard, No. 184,426, granted November 14, 1876. The patent to Gates shows a displacement-lubricator provided with a drip-tube through which drops of water pass down into a receptacle containing oil, the drops thereby forcing the oil into the parts to be lubricated. The oil is contained in part in a glass cylinder, into which the water drops through a tube and indicates the rate of feed. The principle of the apparatus is in all respects like that of the patent in suit, and it is stated in the specification that—

This method of feeding admits of observing the quantity and regularity of the feed, as the water dropping into the oil and falling to the bottom may be distinctly seen through the glass.

If the tube were located close to the side of the glass, and were of the shape of the tube of the present patent, the Gates device would completely anticipate the claim in controversy. As, however, the tube enters the glass cylinder as near the middle as at the side of the cylinder, if the oil is dark or thick the drops of water may not be as distinctly seen as though they were delivered from the tube close against or upon the side of the cylinder. The Renchard patent discloses apparatus similar in all respects to that of the patent, except that the tube through which the drops of water are conveyed into the glass cylinder is in the form of a siphon. The description states that—

The water drops from the siphon *c* close to the wall of the cup, and each drop of water is clearly visible as it settles down through the oil into the bottom of the cup.

Without reference to other evidence bearing upon the prior state of the art, it is apparent that the claim in controversy must be limited to a drip-tube having those details of construction and arrangement which are pointed out in the specification as essential to its efficacy, and which distinguish it from pre-existing devices. The specification describes the tube as one "which has one side at its end cut off slanting," the object being "to deliver the drops of condensed water at or against the side of the gage-glass." The only difference between the drip-tube described and the drip-tube of the Gates and Renchard patents, which contributes to the end in view, consists in its peculiar shape and in its proximity to the side of the gage glass or cylinder. Both the peculiar shape of the tube and its proximity to the side of the glass contribute to the result sought. The result could not be effected by the shape of the tube alone if it were located as the tube is shown to be located in the patent of Gates. Neither could it be effected by the mere location of the tube, although the location selected were such that the water would drop close to the wall of the glass, as was pointed out in the patent to the Renchards. The claim must be limited to a drip-tube with one side at its end cut off slanting, and located with its slanting end so near the side of the glass cylinder that the drops of condensed water will be delivered against the side of the glass, or so near it as to practically displace the oil between the

end of the tube and the glass. Unless this very limited construction is given to the claim, the improvement is destitute of patentable novelty. Any substantial change in the shape of the drip-tube or in its proximity to the side of the gage-glass would bring it within the class of devices disclosed in the patents of Gates and of the Renchards.

Adopting this construction, it is plain that the defendant does not infringe. It is not altogether clear that his device contains a drip-tube at all; but, conceding that his horizontal channel is substantially a drip-tube, it is not such a one as is covered by the claim. It is doubtful whether the end is located in such proximity to the glass as to distinguish it from the drip tube of the Gates or of the Renchard patent. Its end is not cut off slanting, but is cut off square, like the ends of the tubes in the Gates and Renchard patents. There is no room in a case like this to apply the doctrine of equivalents.

The defendant's device differs so much in details of construction from any drip-tube shown in the earlier patents, or in the complainants' patent, that it may fairly be deemed a patentable improvement. Such seems to have been the opinion of the Patent Office, as is evidenced by the patent granted to defendant July 1, 1884. The bill is dismissed, with costs.

U. S. Circuit Court---Southern District of New York.

ARNHEIM v. FINSTER *et al.*

Decided February 1, 1886.

The complainant is the owner of letters patent granted to Marcus Marks for an improvement in caps. The original patent (No. 166,395) is dated August 3, 1875. It was reissued July 24, 1877, in two divisions, A and B, Nos. 7,807 and 7,808. The application for the reissue was filed May 14, 1877—one year nine months and ten days from the date of the original. Division B of the reissue is alone to be considered. Division A is substantially a reproduction of the original patent. The first clause of the reissue is alone in controversy.

1. After stating the precise difference between the original and reissue claim, the court *Held*: "That the reissue is broadened is too clear for controversy. It was broadened with full knowledge on the part of the inventor that after his patent had been issued caps in large numbers had been put upon the market having an improved swinging protector which did not infringe his patent. His solicitor, to whom he had given a full and ample power of attorney to represent him in all matters before the Commissioner, knew that the broad claim had been rejected, and the claim, including the band C, allowed. No appeal was taken. No murmur of disapprobation for nearly two years was heard. Upon what theory, therefore, can this reissue be upheld? Every argument in its favor is met and answered by some controlling authority. At every turn the complainant is confronted by a decision of the Supreme Court. It is said that there was a mistake in not allowing the broad claim, but the proof shows that the matter was clearly understood and the ruling of the Examiner, including the band C, acquiesced in by the solicitors." *Leggett* v. *Avery*, (101 U. S., 256;) *Mahn* v. *Harwood*, (112 U. S., 354,) cited.
2. But it is urged that the inventor did not acquiesce. He knew nothing of the rejection, for the reason that he never examined the letters patent from the time he received them until the spring of 1877. *Held*: This will not do. The law will not permit a party to relieve himself from the charge of negligence by asserting that he closed his eyes and ears at the time when he was required to keep his faculties awake. The inquiry is not what the inventor knew, but what he ought to have known—what he could have ascertained by the exercise of ordinary care and diligence. To hold otherwise would be to place a premium upon carelessness, stupidity, and fraud." (*Mahn* v. *Harwood*, *supra*; *Wollensak* v. *Reiher*, 115 U. S., 96; *Eachus* v. *Broomall*, decided November 16, 1885.)
3. "To paraphrase the language of *Coon* v. *Wilson*, (113 U. S., 268,) although this reissue was applied for a little over twenty-one months after the original patent was granted, the case is one where it is sought merely to enlarge the claim of the original patent by expanding that claim and adding others; where no mistake or inadvertence, such as the law recognizes, is shown, so far as the forward band and the tape are concerned; where the patentee waited until others had produced caps without the forward band and with the continuous interlining, and then applied for such enlarged claims as to embrace the defendants' cap, which was not covered by the claim of the original patent, and where it is apparent from a comparison of the two patents that the reissue was made to enlarge the scope of the original." The bill should be dismissed.

Mr. Frederic H. Betts and *Mr. C. Wyllys Betts* for the complainant.

Mr. Gilbert M. Plympton for the defendant.

COXE, *J.*:

The complainant is the owner of letters patent granted to Marcus Marks for an improvement in caps. The original patent (No. 166,395) is dated August 3, 1875. It was reissued July 24, 1877, in two divisions, A and B, Nos. 7,807 and 7,808. The application for the reissue was filed May 14, 1877—one year nine months and ten days from the date of the original. Division B of the reissue is alone to be considered. Division A is substantially a reproduction of the original patent. The description is as follows—the words in brackets are not in the original patent, the words in italics are not in the reissue:

To all whom it may concern:

Be it known that I, MARCUS MARKS, of the city, county, and State of New York, have invented a new and useful Improvement in Caps, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a side view when the [swinging] ear and neck protector is pulled down. Fig. 2 is a vertical central section when the ear and neck protector is up.

Similar letters indicate corresponding parts.

This invention consists in an ear and neck protector connected to the back part of the crown of a hat or cap by a tape, [or cloth,] and to the sides [or near the front of the hat or cap] by loops and buttons, or other equivalent fastenings, in such a manner that, whenever it may be desirable, said protector can be drawn down to cover the ears and the neck of the person wearing the cap, and when no such protection is needed said protector can be raised, when it serves to impart to a cap a finished appearance.

In the drawing, the letter A designates a cap, to the rear part of which is attached my ear and neck protector B. The protector is held in place by a tape, [or cloth,] *a, in its middle,* [at the back,] and by loops *b*, which are fastened to its ends and catch over buttons *c*, secured to the body or crown of the cap, [at the sides or near the front,] said fastenings being so constructed that the protector swings up and down as far as the tape [or cloth] *a* will allow, the buttons *c* forming the centers on which the swinging motion takes place.

It is obvious that for loops and buttons other devices may be substituted without deviating from my invention. *My cap is ornamented in front by a band,* C, *and if the protector* B *is raised it forms a similar band on the back part of the cap, and thereby a finished appearance is imparted to the article.*

In cold or inclement weather the person wearing my cap can draw down the protector B to the position shown in Fig. 1. In this position the lower edge of said protector hugs the neck of the person wearing my cap with a close fit, and at the same time the ears of said person are covered, so that those parts are fully protected against cold air, wind, rain, or snow.

My cap is exceedingly simple in its construction, it can be made and sold at a low cost, and it is of great convenience, particularly to persons compelled to spend much of their time in the open air.

The claim of the original and the claims of the Reissue No. 7,808 (Division B) are placed below side by side.

Original.	*Reissue.*
As a new article of manufacture, the head-covering consisting of the crown or body A, band C, ear and neck protector B, tape *a*, and fastenings *b c*, said protector being arranged upon the exterior of the article, substantially as described, and adapted to move up and down thereon.	1. As a new article of manufacture, the head-covering A, with a swinging ear and neck protector, B, attached near the front by buttons and loops, or other equivalent devices, upon which the neck-protector swings as an axis, and attached at the rear by a tape or cloth, which prevents the upper edge of the protector from swinging below the lower edge of the hat or cap, the said several parts being constructed and combined substantially as described. 2. The swinging or sliding neck-protector B, constructed, substantially as described, so as to swing or slide on fastenings at the sides or near the front of the cap. 3. The swinging or sliding neck-protector B, constructed, substantially as described, so as to swing or slide on fastenings at the sides or near the front of the cap, and connected with the cap at the back by a tape or cloth, to prevent it from swinging or sliding below the lower edge of the hat or cap.

The first claim of the reissue is alone in controversy. It will be observed that in the original description the ear and neck protector was held in place by a piece of tape attached to the middle of the protector. In the reissue, by substituting the words "at the back" for the words "in its middle" and adding the words "or cloth" the inventor covers every method of fastening the protector to the cap by means of cloth, even though it be an interlining extending the entire length of the protector. In the original the band C was described and claimed as one of the component parts of the combination. All reference to it has been expunged from this reissue. It is, however, described and claimed with great particularity in Division A, a fact hardly consistent with the contention that the band C was no part of the invention, and was inserted in the claim through "inadvertence, accident, or mistake." There are other changes, but they are less significant. The proof also shows that between the dates of the original and the reissue caps similar to the defendants' cap were put upon the market in large quantities. These caps infringe the claims of the reissue, but not of the original.

In June, 1885, a motion having been made for an injunction, Judge Wheeler, upon substantially the same record now before the court, following *Mahn* v. *Harwood*, (112 U. S., 354,) intimated that the reissue was invalid for the reason that the claim, originally presented, for a combination without the band C was rejected, and the rejection being acquiesced in, the broad claim was surrendered to the public. The mistake, if any, lay between the inventor and his solicitor in not taking an appeal, and was not the mistake contemplated by the statute. (24 Fed. Rep., 276.) That the court would then have decided the reissue invalid had it been necessary for the purposes of the motion is beyond cavil. Such a decision would, it is thought, have been in entire harmony with the adjudications of the Supreme Court since January, 1882. That the reissue is broadened is too clear for controversy. It was broadened with full knowledge on the part of the inventor that after his patent had been issued caps in large numbers had been put upon the market having an improved swinging protector which did not infringe his patent. His solicitor, to whom he had given a full and ample power of attorney to represent him in all matters before the Commissioner, knew that the broad claim had been rejected, and the claim, including the band C, allowed. No appeal was taken. No murmur of disapprobation for nearly two years was heard. Upon what theory, therefore, can this reissue be upheld? Every argument in its favor is met and answered by some controlling authority. At every turn the complainant is confronted by a decision of the Supreme Court. It is said that there was a mistake in not allowing the broad claim, but the proof shows that the matter was clearly understood and the ruling of the Examiner, including the band C, acquiesced in by the solicitors.

Under such circumstances the rejection of the claim can in no just sense be regarded as a matter of inadvertence or mistake. Even though it was such, the applicant should seem to be estopped from setting it up on an application for a reissue. (*Leggett* v. *Avery*, 101 U. S., 256.)

Again, in *Mahn* v. *Harwood*, *supra*, the Court say:

It was apparent, therefore, that the omission of that claim in the original was not, and could not have been, the result of inadvertence, accident, or mistake, but was the result of design on the part of the Commissioner and acquiescence on the part of the patentee; and so far as that claim was concerned the reissued patent was properly held to be void. The proper remedy of the patentee when a claim applied for is rejected is an appeal, and not an application for a reissue.

But it is urged that the inventor did not acquiesce. He knew nothing of the rejection, for the reason that he never examined the letters patent from the time he received them until the spring of 1877. This will not do. The law will not permit a party to relieve himself from the charge of negligence by asserting that he closed his eyes and ears at the time when he was required to keep his faculties awake. The inquiry is not what the inventor knew, but what he ought to have known—what he could have ascertained by the exercise of ordinary care and diligence. To hold otherwise would be to place a premium upon carelessness, stupidity, and fraud.

There is nothing intricate or ambiguous about this patent. It does not deal with complex machinery or abstruse terms of art. The moment it was opened and read its character was disclosed. No intelligent person could have been deceived, much less the inventor himself.

To quote again from *Mahn* v. *Harwood*:

The public has the undoubted right to use, and it is to be presumed does use, what is not specifically claimed in the patent. Every day that passes after the issue of the patent adds to the strength of this right and increases the barrier against subsequent expansion of the claim by a reissue under a pretense of inadvertence and mistake. If any such inadvertence or mistake has really occurred, it is generally easily discernible by an inspection of the patent itself, and any unreasonable delay in applying to have it corrected by a surrender and a reissue is a just bar to such correction. If the specification is complicated and the claim is ambiguous or involved, the patentee may be entitled to greater indulgence, and of this the court can rightfully judge in each case. * *

* There was no ambiguity, and nothing to prevent the patentee from seeing at once, on inspecting his patent, whether his whole invention was claimed or not. We can see no possible excuse, and none has been attempted to have been shown, for allowing the patent to stand the length of time it did without any attempt to have it amended.

Again, in *Wollensak* v. *Reiher* (115 U. S., 96) the Court say:

If at the date of the issue of the original patent the patentee had been conscious of the nature and extent of his invention, an inspection of the patent when issued and an examination of its terms, made with that reasonable degree of care which is habitual to and expected of men in the management of their own interests in the ordinary affairs of life, would have immediately informed him that the patent had failed fully to cover the area of his invention. And this must be deemed to be notice to him of the fact, for the law imputes knowledge when opportunity and interest, combined with reasonable care, would necessarily impart it.

(See also the recent case of *Eachus* v. *Broomall*, decided November 16, 1885.)

To paraphrase the language of *Coon* v. *Wilson*, (113 U. S., 268,) although this reissue was applied for a little over twenty-one months after the original patent was granted, the case is one where it is sought merely to enlarge the claim of the original patent by expanding that claim and adding others; where no mistake or inadvertence, such as the law recognizes, is shown, so far as the forward band and the tape are

concerned; where the patentee waited until others had produced caps without the forward band and with the continuous interlining, and then applied for such enlarged claims as to embrace the defendants' cap, which was not covered by the claim of the original patent, and where it is apparent from a comparison of the two patents that the reissue was made to enlarge the scope of the original.

The bill should be dismissed.

U. S. Circuit Court—Eastern District of Pennsylvania.

DORLAN *v.* GUIE.

Decided November 10, 1885.

INFRINGEMENT—LETTERS PATENT No. 127,858.

When, from the evidence, it appears that the defendant is simply pursuing the same process of manufacturing which he followed before the patent in question was issued, the court will not restrain him from continuing to use the same means.

Messrs. Farley & Hollingsworth for the complainant.

Messrs. MacVeagh & Bispham for the respondent.

BUTLER, *J.*:

The plaintiff's patent is, in substance, for the use of chloride of lime ("in large or small quantities") as a sizing ingredient (in combination with other materials ordinarily employed for sizing) in the manufacture of pulp-size paper.

The several claims read as follows:

1. As a sizing ingredient, chloride of lime, or its equivalent, substantially as and for the purpose set forth.

2. Chloride of lime, or its equivalent, in quantities large or small, as a new and essential sizing ingredient or material, and as a basis or principle in any composition of other sizing ingredients in and for sizing paper-stock materials, or paper pulps to make pulp-sized papers, and for sizing any other article that has required or may require any degree of a poreless gum-size, or of a water-proof character, imparted thereto or therein, substantially as and for the purpose described.

3. The process of sizing paper-stock materials and paper pulps to make pulp-sized papers when chloride of lime, or its equivalent, shall compose a constituent part of the composition or mass of other sizing ingredients or materials, substantially as and for the purpose described.

4. Chloride of lime as a sizing ingredient, in combination with the resins, soaps, starches, oils, tallows, and alums, separately or collectively, substantially as and for the purpose set forth.

The common method pursued in the manufacture of pulp-size paper at the date of the patent, and for many years previous, embraced the use of chloride of lime. Its work in the process was bleaching. The common opinion being adverse to its retention after this work was performed, (in consequence of a belief that its presence was detrimental to the sizing,) the usual, if not universal, practice was to wash it out before the sizing materials were applied. Of course it was not all removed. To get rid of it entirely by the ordinary method of washing was impossible. More or less remained, depending upon the use for which the paper was designed and the amount of care bestowed in the washing. Mr. Dorlan having discovered, as he believed, that this common opinion was erroneous—that the presence of chloride of lime was not only not injurious to the sizing, but highly beneficial—applied for and obtained his patent. Under it he asserts the right to compel manufacturers of such paper to remove the chloride of lime introduced for bleaching before the application of ordinary sizing ingredients. Can the patent, if valid, be accorded such a scope? If such is the right intended to be conferred, is the patent valid? The use of chloride of lime in the manufacture of pulp-sized paper is not objected to, and could not be, for the use is probably as old as the art itself. The objection is that it is not extracted from the pulp and excluded at a particular stage in the process, so as to avoid combination with the sizing ingredients. The objection is, not that something is done which should not be, but that something is omitted, whereby the patent is infringed. This certainly is a novel proposition. Of course the objection to retaining the chloride of lime does not extend to the quantity formerly retained. It would be difficult, therefore, to ascertain and fix the limit if no other difficulties existed. Notwithstanding the novelty of the position, however, it may possibly be sound. As it is unnecessary to pass upon it at present we should not do so.

The defendant's answer asserts, substantially, that long before the date of the patent he and other paper-manufacturers pursued the method of manufacturing pulp-size paper here complained of, allowing the chloride of lime, introduced for bleaching, to remain. If the defendant pursued this method, it is unnecessary to inquire into the methods of others. Equity will not interfere to restrain a continuance of the defendant's business or manufacture as pursued anterior to the patent. It is immaterial why he allowed the chloride of lime to remain in, if he did so. Whether he believed it to be beneficial or injurious to the sizing, or without effect either way in this respect, is of no consequence. If it was beneficial he got the benefit, and is entitled to such as may arise from a continuance of his method of manufacture, notwithstanding the plaintiff's patent. That he was unaware of the benefit, and that it, consequently, was accidental, argues nothing against his right to pursue his business as he had been accustomed to do in the past. The cases cited respecting accidental prior use and accidental effect bear no relation to such a case as this. Did the defendant pursue this method, as he alleges, prior to the patent? A good deal of testimony was taken to meet and determine this question. While the truth respecting it is not free from doubt, the weight of the evidence is, in my judgment, with the defendant. The circumstance that a different conclusion cannot be reached without imputing perjury, or something much like it, to witnesses who, so far as appears, are respectable men, is entitled to great, if not controlling, influence. The force of the criticism to which the testimony of these witnesses was subjected by the learned counsel has not been overlooked. It is not sufficient, however, to justify a disregard of their sworn statements—a conclusion that they are untruthful and corrupt. Nor have I overlooked the circumstance that Speakman and Stott, employés of Guie for a time, testify that the chloride of lime was washed out, and the consequent difficulty of reconciling this testimony with that of the defendant's witnesses. Nevertheless, as it was customary to wash the chloride out in manufacturing certain descriptions of paper, it is certainly possible that Speakman and Stott have gotten their present impressions from this circumstance. It is clear that their knowledge respecting the subject is much less than that of several witnesses who testify otherwise, and the probability that they are mistaken is consequently much greater. Indeed, it is quite clear that some of the defendant's witnesses cannot be mistaken. Their testimony can only be rejected upon the hypothesis that they are willfully and corruptly untruthful. It would be unprofitable to discuss the question at greater length. While the truth respecting it is involved in doubt, the preponderance of evidence is with the defendant.

This finding of fact is fatal to the plaintiff, and a decree must be entered accordingly.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872 (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

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Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Issue of February 16, 1886.

Patents	466	No. 336,075 to No. 336,540, inclusive.
Designs	18	No. 16,519 to No. 16,536, inclusive.
Trade-Marks	14	No. 13,030 to No. 13,043, inclusive.
Labels	8	No. 4,729 to No. 4,736, inclusive.
Reissues	3	No. 10,688 to No. 10,690, inclusive.
Total issue	509	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Montana Territory		
Arizona Territory	1		Nebraska	3	
Arkansas	1		New Hampshire	2	
California	10		New Jersey	14	1
Colorado	1		New Mexico Territ'y		
Connecticut	17		New York	87	8
Dakota Territory	5		North Carolina	4	
Delaware			Ohio	35	2
District of Columbia	10		Oregon		
Florida			Pennsylvania	59	1
Georgia	2		Rhode Island	5	
Idaho Territory			South Carolina		
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Indiana	16		Utah Territory	3	
Iowa	14		Vermont	3	
Kansas	5		Virginia	1	5
Kentucky	1	1	Washington Territ'y		
Louisiana	2		West Virginia	1	
Maine	3		Wisconsin	3	
Maryland	5		Wyoming Territory		
Massachusetts	46	1	United States Army		
Michigan	17		United States Navy		
Minnesota	9	1			
Mississippi	3		Total to citizens of the United States	445	21
Missouri	16				

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria	2		Germany	5	
Barbadoes			Hawaii		
Belgium	1		Holland		
Bermuda			Iceland		
Brazil			Mexico		
Canada	10		New South Wales		
Central America			Russia		
Colombia, U. S. of			Scotland	1	
Cuba			Sweden	1	
Denmark			Switzerland	1	
Egypt					
England	12	1	Total to citizens of foreign countries	39	1
France	6				

DESIGNS.

16,519.—HEATING STOVE.—*Charles H. Bradley*, Pittsburg, Pa. Application filed September 3, 1885. Serial No. 176,120. Term of patent 7 years.

16,520.—BOTTLE.—*David F. Davids*, New York, N. Y., assignor to *The Thaddeus Davids Company*, same place. Application filed December 18, 1885. Serial No. 186,074. Term of patent 7 years.

16,521.—CHEEK OR SIDE PIECE FOR BRIDLE-BITS.—*Jose M. Espinosa*, San Francisco, Cal., assignor to *William Davis*, same place. Application filed December 23, 1885. Serial No. 186,581. Term of patent 7 years.

16,522.—COMBINATION TYPE ORNAMENT.—*John Graham*, Chicago, Ill. Application filed November 13, 1885. Serial No. 182,702. Term of patent 3½ years.

16,523.—MOLDING.—*Frederick Mankey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,723. Term of patent 7 years.

16,524.—MOLDING.—*Frederick Mankey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,711. Term of patent 7 years.

16,525.—MOLDING.—*Frederick Mankey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,713. Term of patent 7 years.

16,526.—MOLDING.—*Frederick Mankey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,715. Term of patent 7 years.

16,527.—MOLDING.—*Frederick Mankey*, Williamsport, Pa. Application filed November 13, 1885. Serial No. 182,754. Term of patent 7 years.

16,528.—SURFACE ORNAMENTATION OF WALLS, &c.—*Frederick Mankey*, Williamsport, Pa. Application filed November 13, 1885. Serial No. 182,760. Term of patent 7 years.

16,529.—SURFACE ORNAMENTATION OF WALLS.—*Frederick Mankey*, Williamsport, Pa. Application filed November 13, 1885. Serial No. 182,761. Term of patent 7 years.

16,530.—SURFACE ORNAMENTATION OF WALLS, &c.—*Frederick Mankey*, Williamsport, Pa. Application filed November 13, 1885. Serial No. 182,769. Term of patent 7 years.

16,531.—SURFACE ORNAMENTATION OF WALLS.—*Frederick Mankey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,721. Term of patent 7 years.

16,532.—CLOTH.—*Frederick S. Pinkus*, New York, N. Y. Application filed May 26, 1885. Serial No. 166,794. Term of patent 7 years.

16,533.—WIRE STAND.—*William R. Warner*, Philadelphia, Pa. Application filed December 24, 1885. Serial No. 186,661. Term of patent 14 years.

16,534.—TABLE-WARE.—*Joseph Willets* and *Walter S. Lenox*, Trenton, N. J. Application filed December 19, 1885. Serial No. 186,221. Term of patent 3½ years.

16,535.—CAKE SOAP.—*Elly Zacharie*, New York, N. Y., assignor to *Bazin & Sargent*, same place. Application filed September 16, 1885. Serial No. 177,309. Term of patent 14 years.

16,536.—FONT OF PRINTING-TYPE.—*William W. Jackson*, Philadelphia, Pa., assignor to *Arthur M.* and *Alson E. Barnhart*, Chicago, Ill. Application filed July 16, 1885. Serial No. 171,812. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

13,030.—WHISKY.—*Aug. Coddecey*, Louisville, Ky. Application filed January 14, 1886. Used since 1869.
"The words 'MAMMOTH CAVE.'"

13,031.—LAMPS, CANDLE-HOLDERS, CANDLES, AND NIGHT-LIGHTS. *Samuel Clarke*, Pyramid Works, London, England. Application filed January 19, 1886. Used since April 11, 1885.
"The word 'FAIRY.'"

13,032.—CANDY.—*Martin Dawson*, Chicago, Ill. Application filed December 17, 1885. Used since September 1, 1885.
"Black spots of larger and smaller size, arranged alternately, the smaller ones surrounded by the words 'SUPERIOR CONFECTIONERY,' all printed on pink colored paper."

13,033.—PIPES, PIPE-STEMS, AND CIGAR-HOLDERS.—*William Demuth & Co.*, New York, N. Y. Application filed January 18, 1886. Used since 1880.
"The figure of a triangle."

13,034.—WHEAT-FLOUR.—*Dunlop & McCance*, Richmond, Va. Application filed December 26, 1885. Used since July 9, 1859.
"The word 'MCCANCE.'"

13,035.—WHEAT-FLOUR.—*Dunlop & McCance*, Richmond, Va. Application filed December 26, 1885. Used since July 19, 1866.
"The name 'DUNLOP.'"

13,036.—WHEAT-FLOUR.—*Dunlop & McCance*, Richmond, Va. Application filed December 26, 1885. Used since October 1, 1883.
"The name 'DUNLOP,' in connection with a circle formed by the words 'DUNLOP & MCCANCE, ROLLER MILLS, RICHMOND, VA.'"

13,037.—WHEAT-FLOUR.—*Dunlop & McCance*, Richmond, Va. Application filed December 26, 1885. Used since May 6, 1885.
"The word 'PETROPOLIS,' forming the upper half of a circle, the lower half of which consists of the words 'RICHMOND, VA.,' the initial and final letters of the word 'Family' also entering the circle."

13,038.—GARDEN AND OTHER SEEDS.—*Peter Henderson & Co.*, New York, N. Y. Application filed January 21, 1886. Used since December 15, 1885.
"The representation of an eagle."

13,039.—DIGESTIVE LOZENGES OR TROCHES.—*Joseph A. Newhall*, Saugus, Mass. Application filed January 13, 1886. Used since December 25, 1885.
"The word 'PEPTONIX.'"

13,040.—LUBRICANTS FOR VEHICLES AND OTHER LIKE PURPOSES.—*Henry T. Schafer*, Syracuse, N. Y. Application filed July 19, 1884. Used since May, 1884.
"The word 'AXLENE.'"

13,041.—SALVE.—*West India Manufacturing Company*, New York, N. Y. Application filed January 19, 1886. Used since about June 1, 1883.
"The word-symbol 'EPIDERMIALINE.'"

13,042.—FLOUR.—*Samuel W. Weidler* and *Thomas W. Allen*, Cincinnati, Ohio. Application filed January 16, 1886. Used since January, 1880.
"The words 'SNOW KING.'"

13,043.—FLOUR.—*Samuel W. Weidler* and *Thomas W. Allen*, Cincinnati, Ohio. Application filed January 16, 1886. Used since January, 1880.
"The words 'SILVER LAKE.'"

LABELS.

4,729.—Title: "HOWARD'S COMPOUND SOAP."—*Hiram G. Fay*, Albany, N. Y. Application filed January 25, 1886.

4,730.—Title: "DE KALB'S PENNYROYAL PILLS."—*W. Scott Taylor*, Trenton, N. J. Application filed January 21, 1886.

4,731.—Title: "WILSON'S VEGETABLE OIL."—*D. G. Wilson & Co.*, Theresa, N. Y. Application filed January 20, 1886.

4,732.—Title: "WILLIAMS' EMULSION OF COD LIVER OIL WITH HYPOPHOSPHITE OF LIME."—*Jenks & Jefferis*, Philadelphia, Pa. Application filed January 26, 1886.

4,733.—Title: "DR. WOOLSON'S UNIVERSAL SALVE."—*L. B. Woolson*, Atwater, Minn. Application filed January 26, 1886.

4,734.—Title: "D'ALTON & BAIN" (FOR GINGER ALE, SODA WATER, AND SARSAPARILLA.)—*D'Alton & Bain*, Petersburg, Va. Application filed December 31, 1885.

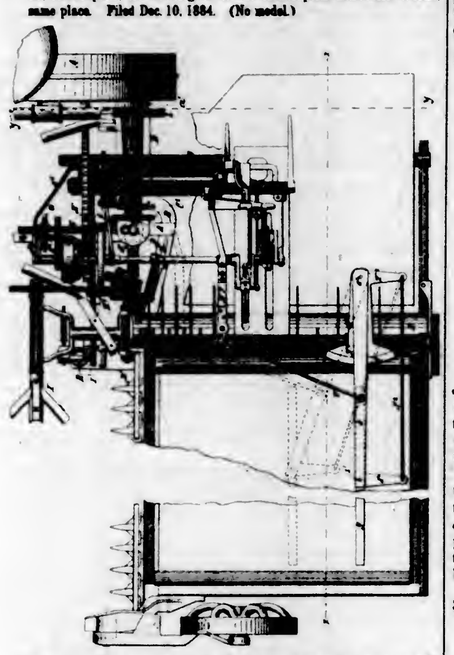
4,735.—Title: "RUDOLPH'S SOLUBLE IRON PILLS."—*Hegeman & Co.*, New York, N. Y. Application filed January 23, 1886.

4,736.—Title: "CHAMPAGNE POP" (FOR A BEVERAGE.)—*Trowbridge & Huxley*, Brooklyn, N. Y. Application filed January 11, 1886.

PATENTS

GRANTED FEB. 16, 1886.

336,075. COMBINED HARVESTER AND BINDER. JOHN F. APPLEBY, Minneapolis, Minn., assignor to the Minneapolis Harvester Works, same place. Filed Dec. 10, 1884. (No model.)



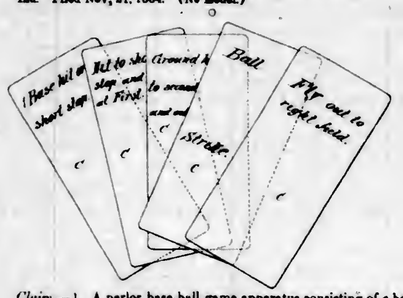
Claim.—1. The combination, as herein set forth, of the prime shaft C', provided with the bevel-wheel C², the vertical shaft D, provided with the bevel-wheel *d*, driven by the bevel-wheel C², and provided with a crank connected by means of a pitman with the sickle-bar, and the horizontal counter-shaft E, provided with the bevel-pinion *e*, likewise engaging the bevel-wheel C², for transmitting from the prime shaft the power to drive the binding apparatus of the machine.

2. The adjustable vertical back board, S, provided with the horizontally-projecting arm S', and suspended over the rear part of the platform by means of the vertical pivot *s'*, from the free end of the horizontal supporting and adjusting lever *s*, and means for swaying the said lever *s* upon its fixed axis *s²*, in combination with the parallel link S², having a fixed axis at one end, and having its other end linked to the arm S', for the purpose of preserving the parallelism of the said back board with the finger-bar, as shown and described.

3. An adjustable binder-frame and means for adjusting the same, and a back board supported independently of the binder-frame, in combination with a suitable pitman connecting the said back board with the said binder-frame.

4. An adjustable vertical back board suspended by means of a vertical pivot from the free end of a horizontally-swaying supporting and adjusting lever, and means, substantially such as described, for preserving the parallelism of the said back board with the finger-bar, in combination with an adjustable binder-frame, and a pitman connecting the said binder-frame with a part of the adjusting and supporting lever between its fixed axis and its connection with the back board, for the purpose of causing the back board when the binder-frame is adjusted to move faster than the binder-frame, and thereby possess a greater range of adjusting movement.

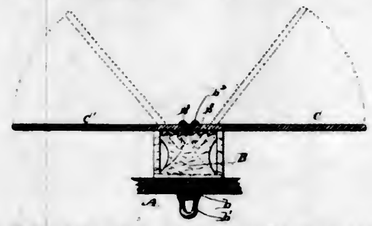
336,076. PARLOR BASE-BALL GAME. JACOB S. AYDELOTT, Xenia, Ind. Filed Nov. 21, 1884. (No model.)



Claim.—1. A parlor base-ball game apparatus consisting of a board or table provided with the representation of a base-ball ground, and a number of cards comprising a plurality of series, one of which represents the several plays of which the batter is capable, and another the technical phrases representing the disposition that may be made of the batter, substantially as set forth.

2. A base-ball game apparatus comprising a game-board having marked thereon the representation of a base-ball field, such representation operating to denote the positions of the various players, a number of cards having words or characters whereby to represent the several plays which may be made, and a number of sets of cards which decide the fate of the players, said cards, when placed at proper points on the board, also operating to represent the players, substantially as set forth.

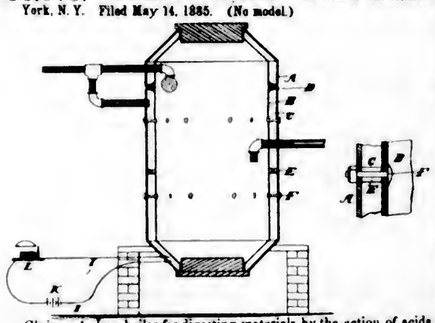
336,077. IRONING-TABLE. MATTIE J. BAKER, San José, Cal. Filed Dec. 5, 1884. (No model.)



Claim.—1. In an ironing-table, the ironing-board bracket having semicircular-shaped recessed cross-bars connected to the center of the upper edges of its side plates and with the upper edges of its end plates arranged in a plane below the said bars, as specified, in combination with the ironing-boards having tenons and upwardly-projecting lugs on their inner ends that engage the recesses in said cross-bars, said bracket being attached to the table by means of a nutted bolt secured to its bottom connecting-piece, substantially as shown and described.

2. In an ironing-table, the ironing-board bracket with its bottom connecting-piece provided with a securing-bolt fitted with a nut, said bracket also having semicircular-shaped cross-bars provided with recesses, as described, and the upper edges of its end plates disposed below the plane of said bars, substantially as and for the purpose set forth.

336,078. DIGESTER FOR PAPER-PULP. CHARLES E. BALL, New York, N. Y. Filed May 14, 1885. (No model.)

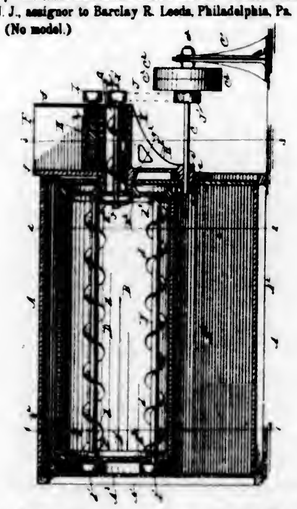


Claim.—1. In a boiler for digesting materials by the action of acids, the combination, with an exterior casing and an interior lining separated from said casing by a space, of steam-pipes leading into the interior of the boiler and into the space between the lining and the casing, whereby an equable steam-pressure may be maintained on each side of said lining, substantially as described.

2. In a boiler for digesting by the action of an acid solution or vapor, the combination, with an exterior casing and a lining separated from said casing by a space, of an electric signaling apparatus whose circuit-terminals project into said space, substantially as described.

3. In a boiler for digesting materials by the action of acids, the combination, with the exterior casing and an interior lining, of an electric signaling apparatus adapted to be automatically operated upon the escape of acid through the lining, substantially as set forth.

336,079. MIXING-MACHINE FOR PAINTS. NATHAN BASSETT, Haddonfield, N. J., assignor to Barclay R. Leeds, Philadelphia, Pa. Filed Dec. 16, 1884. (No model.)



Claim.—1. In a mixing-machine, the combination of a revolving drum, shafts extending through said drum and provided with pulleys, and a journal plate or bracket, against which the pulleys bear, as and for the purpose set forth.

2. In a mixing-machine, the combination of a mixing cylinder or drum, means for revolving said drum, and two or more conveyer-shafts located within said drum around the circumference thereof, one of said shafts having its blade arranged in a reverse direction to the blades of its fellow shaft or shafts, substantially as and for the purpose set forth.

3. In a mixing-machine, the combination of a drum provided with mixing-shafts arranged equidistant apart around the circumference thereof and provided with bearing-rollers, a journal-plate, and a hopper having a bottom provided with a cylindrical extension fitting in the head of said cylinder or drum, whereby the same is supported without the aid of independent bearings, substantially as shown and described.

4. In a mixing-machine, the combination of a cylinder or drum, means for revolving said drum, mixing-shafts arranged within the drum, and a hopper and a conveyer for feeding the material from the hopper to the drum, substantially as shown and described.

5. In a mixing-machine, the combination of a drum or cylinder having a toothed rim, a driving-shaft having a pinion, mixing-shafts located within the drum, a hopper having a brush-shaft and a sieve, and a conveyer-shaft, substantially as and for the purpose set forth.

6. In a mixing and sifting machine, the combination of a drum or cylinder, a driving-shaft geared to said drum, mixing-shafts located within the drum and having pulleys, a journal-plate secured to the supporting-frame, a hopper having sieves and brush-shafts, and a conveyer for carrying the materials from the hopper to the mixing-cylinder, substantially as shown and described.

7. In a mixing and sifting machine, the combination of a mixing drum or cylinder, a driving-shaft geared to said drum, mixing-shafts located within the drum, a hopper divided into compartments, each of which is provided with a screen and a brush-shaft, and a conveyer located beneath the hopper, substantially as and for the purpose set forth.

8. In a mixing-machine, the combination of a drum or cylinder having mixing-shafts, means, substantially as described, for revolving said shafts and drum, a hopper divided into compartments by a partition, each compartment having a sieve and a revolving brush-shaft, a chamber located below said hopper, and a screw-conveyer located within said chamber, said conveyer and shafts having pulleys driven by a belt from the driving-shaft, substantially as and for the purpose set forth.

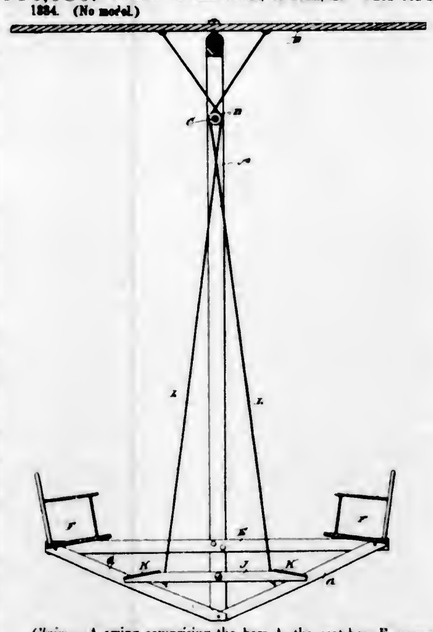
9. In a mixing-machine, the combination of a mixing cylinder or drum, B, having a gate or door, b^2, mixing-shafts D D D', having pulleys d', journal-plate E, secured to the supporting-frame, and driving-shaft C, geared to the drum, as and for the purpose set forth.

10. In a mixing and sifting machine, the combination of a revolving cylinder or drum, B, having mixing-shafts D D D', provided with pulleys, a journal-plate, E, and a hopper, F, having a bottom, g^2, projecting into one of the heads of the drum B, and providing a bearing therefor, substantially as shown and described.

11. The combination of the drum or cylinder B, mixing-shafts D D D', having blades d and pulleys d', driving-shaft C, geared to said drum, as at c, hopper F, having screens G G', brush-shafts H H', and a conveyer, K, substantially as and for the purpose set forth.

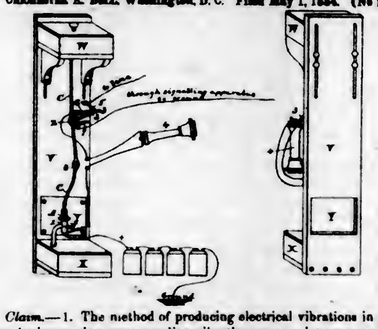
12. The combination of a drum or cylinder, B, having a toothed rim, b, driving-shaft C, having a pinion, c, gearing with the toothed rim of the drum B, mixing-shafts D D D', journaled in and revolving with the drum, and provided with bearing-pulleys d', secured thereon exteriorly to the said drum, journal-plate E, having rim d^2, hopper F, having screens G G', brush-shafts H H', having pulleys I, chamber F', located beneath the hopper, screw-conveyer K, having pulley k', and located in the chamber F', and driving-belt J, all arranged substantially as shown and described, and for the purpose set forth.

336,080. SWING. GEORGE BAUER, St. Louis, Mo. Filed Oct. 21, 1884. (No model.)



Claim.—A swing comprising the bars A, the seat-bars E, secured to the lower ends of bars A, the seats F F at opposite ends of the seat-bars, the bars J, pivoted to the bars A below the bar E and between the two seats, the foot-pieces K on opposite ends of the pivoted bars J, the rods C, connecting the bars A near their upper ends, and the ropes L, secured to the pivoted frame J K, and extending upward over the rod C, as shown and described.

336,081. TRANSMITTER FOR ELECTRIC-TELEPHONE LINES. CHICHESTER A. BELL, Washington, D. C. Filed May 1, 1884. (No model.)



Claim.—1. The method of producing electrical vibrations in a conductor by impressing corresponding vibrations upon a jet connected with the charged conductor, and by the variations in the electrical condition of the jet altering the current or charge in the conductor connected with it, substantially as described.

2. The method of producing electrical vibrations similar in form to sound-waves, by impressing the sonorous vibrations upon a conducting-jet having the continuous portion thereof included in a charged conductor, and thereby varying the current or electrical charge in said conductor, substantially as described.

3. The method of producing electrical vibrations in a conductor by producing a jet of a liquid adapted to serve as the excitant in a galvanic couple, causing said liquid to complete the circuit between the elements of a galvanic couple connected with said conductor, impressing the vibrations upon said jet, and thereby varying the current charging said conductor, substantially as described.

4. The method of producing undulations in an electric current by causing a jet of conducting-liquid to play upon a body in the path of the jet, so as to spread the jet-liquid into a film, and communicating the vibrations to the current from the vibrations in the film, substantially as described.

5. The method of producing undulations in an electric current by impressing vibrations upon a jet of conducting-liquid at a suitable point, and communicating similar vibrations to the current directly from the jet-fluid at a part of the jet farther removed from the orifice, substantially as described.

6. In combination with means for producing a jet, electrodes for including a portion of the jet so produced in an electric circuit, substantially as described.

7. In combination with means for producing a sensitive vibratory jet, electrodes for including a continuous portion of said jet in an electric circuit, substantially as described.

8. In combination with means for producing a vibratory jet, electrodes arranged both at a distance from the jet-orifice for including a portion of said jet in an electric circuit, substantially as described.

9. In combination with means for producing a jet, a body arranged in the path of said jet, and means for including in circuit the film which spreads out over said body, substantially as described.

10. Electrodes constituting elements of a voltaic couple, in combination with means for producing and directing a jet of an excitant liquid, so as to complete the circuit between the electrodes through a portion of the jet, substantially as described.

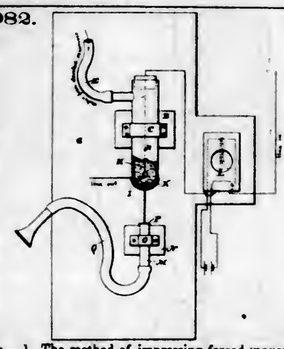
11. In combination with means for producing a jet, a solid conductor or electrode in electrical connection through a body of liquid with the jet-liquid, substantially as described.

12. The combination, with means for producing a jet, of the conductors or electrodes embedded in a plug of insulating material, and arranged to be connected through the jet, substantially as described.

13. In an electric speaking-telephone transmitter, the variable-resistance medium composed of a conducting-fluid in constant flow, in combination with electrodes for including such fluid in circuit, substantially as described.

14. The combination, with a telephone-transmitter having a conducting-fluid in constant flow as the variable-resistance medium, of a battery, a receiving-telephone, and a telephone-line, substantially as described.

336,082. JET MICROPHONE OR APPARATUS FOR TRANSMITTING SOUNDS BY MEANS OF JETS. CHICHESTER A. BELL, Washington, D. C. Filed May 1, 1884. (No model.)



Claim.—1. The method of impressing forced movements upon jets by subjecting the jet-fluid to the direct action of an imponderable medium, such as hereinbefore named, substantially as described.

2. The method of impressing forced vibrations upon a jet by subjecting the jet-fluid to the direct action of an imponderable vibratory medium upon which the desired vibrations have been impressed, substantially as described.

3. The improvement in transmitting speech and other sounds and signals consisting in causing an imponderable medium to act directly upon the fluid composing a jet, and thereby impressing upon said jet forced movements representing the intelligence to be conveyed, substantially as described.

4. The improvement in transmitting or transferring forced movements from an imponderable medium to another medium consisting in impressing said movements upon a jet composed of a liquid by the direct action of said imponderable medium upon the jet-liquid, and causing the jet to act upon the second or receiving medium, substantially as described.

5. The method of impressing forced movements or vibrations upon a jet by electrifying the jet-fluid in a variable manner, substantially as described.

6. The method of transferring forced movements or vibrations from one medium to another, consisting in producing a jet with a liquid and electrifying in a variable manner the jet-liquid, substantially as described.

7. The method of impressing forced movements or vibrations on a jet by discharging a variable current of electricity through the jet-fluid, substantially as described.

8. The method of impressing forced movements or vibrations on a jet by vibrating a device or devices immersed in the jet-fluid, substantially as described.

9. The method of impressing forced movements or vibrations on a jet by variably electrifying the jet-fluid, and at the same time and in a corresponding manner vibrating a device or devices immersed in the jet-fluid, substantially as described.

10. In transmitting speech and other intelligence by jets, the improvement consisting in subjecting the jet-fluid, near the jet-orifice, to the direct action of an imponderable vibratory medium, such as specified, and causing the jet to act upon the receiving medium at a distance from the jet-orifice, substantially as described.

11. In a jet translating apparatus, the combination, with means for producing a jet, of means for subjecting the jet-fluid to the direct action of an imponderable vibratory medium, substantially as described.

12. In a jet translating apparatus, one or more electrodes included in circuit with a transmitter of vibrations, in combination with means for producing a jet, said electrodes being in contact with the jet-fluid, substantially as described.

13. The combination, with the jet-tube, of a vibratory device or devices placed in said tube for communicating vibrations to the jet-fluid, substantially as described.

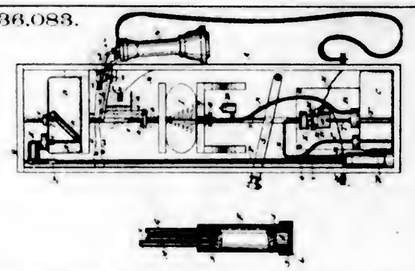
14. The combination, with the jet-tube, of one or more electrodes placed in said tube, substantially as described.

15. The combination, with the jet-tube and supply-tube, of one or more electrodes arranged to be in contact with the jet-fluid, the line or circuit connected therewith, and a transmitter in the said line or circuit, said electrodes operating to impress vibrations upon the jet from said tube, according to the variations in potential on the electrodes, substantially as described.

336,083. TELEPHONE-TRANSMITTER. CHICHESTER A. BELL, Washington, D. C. Filed Apr. 7, 1885. (No model.)

Claim.—1. The combination, with the jet-tube, the upper and lower reservoirs, and the air and liquid pipes, of the compressor for forcing the liquid from the lower into the upper reservoir, the hydrostatic column between the reservoirs giving the pressure required to force the liquid through said jet-tube, substantially as described.

336,083.



2. The combination, with the jet-tube and the upper and lower reservoirs, of the liquid-pipes connecting the upper and lower reservoirs, and the compressor and air-pipe, one of said liquid-pipes being arranged to act as an overflow to return any excess of liquid to the lower reservoir when the pressure is relieved, substantially as described

3. The combination, with the jet-tube and the upper reservoir, of a jet-supply pipe in the form of a siphon, and a movable cap or its specified equivalent for sealing and unsealing said siphon to control the flow to the jet, substantially as described.

4. The combination, with the upper and lower reservoirs, the liquid-pipe leading from the lower reservoir, the compressor, the jet-tube, and the siphon-pipe for supplying liquid to said jet-tube, of the movable cap or its specified equivalent for sealing and unsealing said siphon, and the stop removable in the act of operating said compressor, substantially as described.

5. The combination, with the reservoirs, the connecting pipe or pipes for conveying the liquid from the lower to the upper reservoir, the compressor, the jet-tube, and the device for controlling the flow to said jet-tube, of the stop for preventing the movement of said device, removable in the act of operating said compressor, substantially as described.

6. The combination, with the upper and lower reservoirs, the compressor, the pipes, and the jet-tube, of the device for controlling the flow of liquid to said jet-tube, and the movable telephone-support connected with said device for operating the same automatically, substantially as described.

7. The combination of the upper and lower reservoirs, the pipes, the compressor, the jet-tube, the device for controlling the flow to the jet-tube, the movable telephone-support, and the removable stop, substantially as described.

8. The combination, with the movable telephone-support, the compressor, and the removable stop, of the lock for preventing the removal of the hand-telephone from its support until the latter has been shifted, substantially as described.

9. The combination, with the reservoirs, pipes, compressor, and jet-tube, of the device for stopping the flow to the jet-tube, the telephone-support, the removable stop, and the lock for retaining the telephone on its support, substantially as described.

10. The combination, with the jet-tube and the upper and lower reservoirs, of the compressor, the upright pipe leading from the lower reservoir and communicating with the upper reservoir through a contracted opening, and the siphon forming a continuation of said upright tube and serving to supply the liquid to the jet-tube, substantially as described.

11. The combination, with the jet-tube and the upper and lower reservoirs and the compressor, of the siphon for supplying the liquid to the jet-tube, and the pipe leading from the lower reservoir and communicating with the descending leg of said siphon, substantially as described.

12. The filter composed of an upright cylinder filled with filtering material, in combination with the upper reservoir, the pipe descending therefrom and opening into the filter, the jet-tube, and the pipe between the jet-tube and the filter, said pipes being sealed into the top of said cylinder and opening into said filter, one at the top and the other, after passing through the filtering material in the cylinder, opening into the bottom thereof, substantially as described.

13. The combination, with the jet-tube, the upper and lower reservoirs, and the pipes, of the compressor formed of a compressible bag, and provided with a check-valve in a branch of the air-pipe outside of said bag, substantially as described.

14. The combination, with the jet-tube and its flanged carrier, of the screw-cap for retaining the jet-tube in place by clamping said flange, substantially as described.

15. The combination, with the jet-tube, of a plug having electrodes set therein and adjustable at right angles to the tube, substantially as described.

16. The screw-plug having the electrodes set therein, substantially as described.

17. The plug having the electrodes set therein, said electrodes passing through a hollow in the plug which is filled with cement, substantially as described.

18. The combination, with the upper reservoir, the jet-tube, and the siphon-pipe for supplying liquid to said tube, of the cap free to turn on the end of said pipe and provided with a lateral pipe which forms the ascending leg of the siphon, substantially as described.

336,084. WIRE BALE-TIE. DARIUS F. BOUGHTON, Chicago, Ill., assignor to Henry W. Hartman, Beaver Falls, Pa. Filed Dec. 28, 1885. (No model.)



Claim.—1. In a wire bale-tie, the holding coil or head B, formed by two or more coils made concentric to central eye, *b*, and having loop *c*, re-enforcing the rearward coil in said head, substantially as described, for the purposes and operations set forth.

2. In a wire bale-tie, the loop *c*, made continuous with the two neighboring rear coils of a series forming a holding-head and operating to hold the rearward coil at its point of union with neck *a'* from shifting in relation to its neighboring coil, substantially as and for the purposes and operations set forth.

3. In a bale-tie, the combination, with holding-head B, having eye *b* in direction of its axis, and loop *c*, re-enforcing the rearward coil at its point of union with neck *a'*, of the plain opposite wire end, *a*, operating with the holding-head and its neck substantially as by a hitch, for the purposes set forth.

4. In a bale-tie, the combination, with the holding-coil B, having its rearward coil re-enforced by loop *c*, and provided with eye *b* in direction of its axis, of the Blackwall hitch made from the opposite end wire portion of the tie, all substantially as and for the purposes and operations set forth.

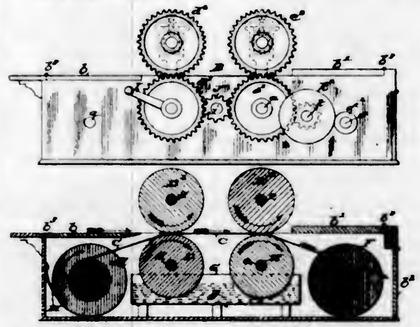
336,085. COMPOSITION FOR COATING THE INSIDE OF VESSELS FOR HOLDING OIL, &c. LEO E. BOWKER and DANIEL F. BOWKER, Keene, N. H. Filed Nov. 18, 1885. (No specimens.)

Claim.—1. The process of rendering vessels or packages for holding oils, pickles, preserved fruits, jellies, and other kindred articles of food proof against the penetration or action of the same by applying to the inside of said vessels a coating consisting of a compound of glue, water, diluted potash, raw linseed-oil, gum-copal, and alcohol, prepared in the proportions and in the manner as set forth.

2. A vessel or package provided with an inside coating of glue, water, diluted potash, linseed-oil, gum-copal, and alcohol, when prepared in the proportions and manner set forth, for the purpose of rendering said vessel impervious to the action of oils, water, jellies, preserved fruits, and other kindred articles of food.

3. The process of preparing and applying a compound for lining the inside of vessels or packages, so as to render the same impervious to the action of oils, water, jellies, preserved fruits, and other kindred articles of food, which consists, first, in applying to the inside of said vessels or packages a compound consisting of glue, water, diluted potash, and linseed-oil, and, second, a compound consisting of gum-copal, alcohol, and linseed-oil, all prepared in the proportions and applied in the manner as set forth.

336,086. COPYING-PRESS. TRUSTIN B. BOYD, St. Louis, Mo. Filed May 13, 1884. (No model.)



Claim.—1. The herein-described copying-press, the same consisting of the frame B, the reel A, the pressure-rolls D D', the tank G, and the reel F.

2. The combination of the frame B, the reels A F, the pressure-rolls D D' E E', and the tank G, as described.

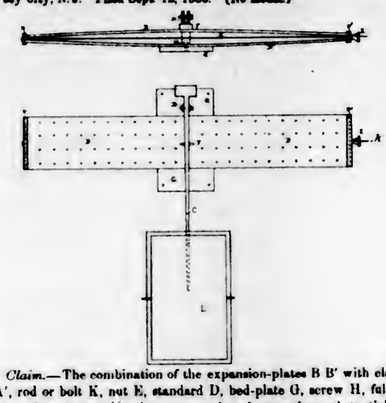
3. The combination, as described, of the frame B, the reels A F, the rolls D D' E E', the gears d' d^2, the pinion J, the gears e' e^2, the pinion K, and the pulleys k' f'.

336,087. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. CHAS. F. BRUSH, Cleveland, Ohio. Filed May 13, 1884. (No model.)



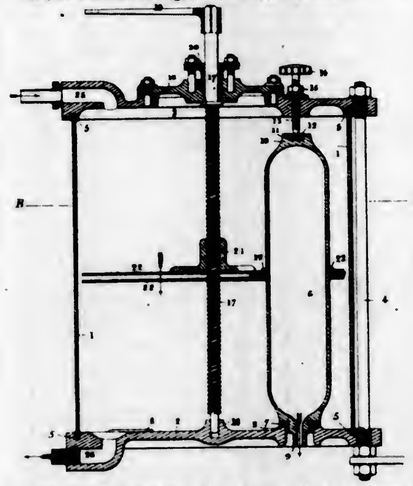
Claim.—An armature composed of superposed layers of band-iron wound one upon another, the opposite faces of which are provided with radial grooves situated directly opposite one another and extending the entire width of the ring, the side walls of the grooves being made integral with the layers of the band, substantially as set forth.

336,088. HEAT-REGULATING DEVICE. JAMES S. BURNHAM, Jersey City, N. J. Filed Sept. 12, 1885. (No model.)



Claim.—The combination of the expansion-plates B B' with clamps A A', rod or bolt K, nut E, standard D, bed-plate G, screw H, fulcrum F, lever C, and door L, when arranged and operating substantially as shown and described.

336,089. FILTER. CHARLES E. CHAMBERLAND, Paris, France. Filed June 15, 1885. (No model.) Patented in France May 15, 1885, No. 168,917; in Germany May 24, 1885, No. 34,056; in England June 2, 1885, No. 6,646, and in Belgium June 2, 1885, No. 67,095.



Claim.—1. A filtering-body, 6, having an offset at its lower portion for bearing against an elastic washer, 7, and having a projection, 10, at its upper portion, for forming therein a recess which receives one or more disks, 11 12, in combination with a pressing-screw, 13, passing through a plate, 3, operated by a head, 14, and set by a check-nut, 15, substantially as described and shown.

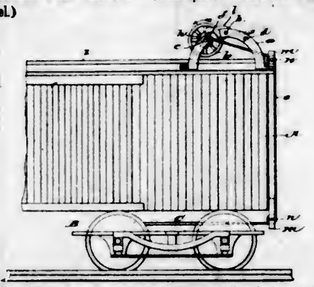
2. A filtering-body, 6, having an offset at its lower portion, for bearing against an elastic washer, 7, resting on a raised portion, 8, of a plate, 2, and having a projection, 10, at its upper portion, for forming therein a recess which receives one or more disks, 11 12, in combination with a pressing-screw, 13, passing through a plate, 3, operated by a head, 14, and set by a check-nut, 15, substantially as described and shown.

3. A series of filtering-bodies, 6, arranged equidistantly in a circle, each with its projection 10, washers 11, 12, and 7, and pressing-screw 13, in combination with a central screw, 17, operated from the outside by a handle, 19, and having thereon a nut, 21, carrying disks 22 22, between which are held washers 23, acting as a cleansing medium against the outer surface of the said filtering-bodies 6, substantially as described and shown.

4. A cylinder, 1, closed by heads 2 3 and bolts 4, and having an inlet, 25, and an outlet, 26, in combination with a cleansing device comprising a central screw, 17, nut 21, disks 22 22, the said device acting, by means of a rubbing medium, 23, to cleanse a series of filtering-bodies, 6, substantially as described and shown.

5. The hereinbefore-described apparatus for filtering liquids and simultaneously cleansing the filtering-bodies of the same, consisting of a cylinder, 1, closed by ends 2 3, with packing 5 and bolts 4, a number of filtering-bodies, 6, an inlet, 25, for the liquid to be filtered, outlets 9 for the filtered liquid, an outlet, 26, for the discharge, as described, and a cleansing device comprising screw 17, crank 19, nut 21, disks or plates 22 22, and cleansing washers or material 23, substantially as described and shown.

336,090. CAR-BRAKE. JOHN P. CHAMPION, Gainesville, Ga., assignor of one-half to R. C. Little & Co., same place. Filed Nov. 23, 1885. (No model.)



Claim.—In a freight-car brake, the combination of the sides *a*, secured on the top of the car at a distance from the end thereof, and having the cross-bar and the openings *d* and *e*, the shaft journaled in either of the said openings, and having the drum, the ratchet-wheel, and the brake-lever wheel, the pawl pivoted on the cross-bar and engaging with the ratchet-wheel, the brackets attached to the end of the car and carrying the sheaves, and the chain attached to the drum, passed over the sheaves, and connected to the brake-lever, substantially as described.

336,091. CAR-COUPLING. ROSCOE COOK, JOHN H. HEDGES, and WILLIAM M. BERNARD, San Francisco, Cal. Filed July 9, 1884. (No model.)



Claim.—1. The combination, with a draw-head having an opening in its upper side, of a pivoted latch-bolt having a cap secured to its upper side and projecting beyond the edges of the opening, whereby when the latch-bolt is lowered a close joint will be formed, said draw-head having an inclined passage, *a*, as set forth.

2. The combination, with a draw-head, of a pivoted latch-bolt having an opening in its side, a sliding catch-bar working in an opening in the draw-head, and a pivoted lever pivotally connected with the catch-bar and having a head, said latch-bolt having an extended journal, which is adapted to be engaged by a key operating substantially as described, and for the purpose set forth.

3. The combination, with a draw-head, of a pivoted latch-bolt having one of its journals extended beyond the side of the draw-head, a key to engage said extended journal, and means for holding the latch-bolt locked, and adapted to be operated to unlock the latch-bolt when the key is placed upon the journal of the same, as set forth.

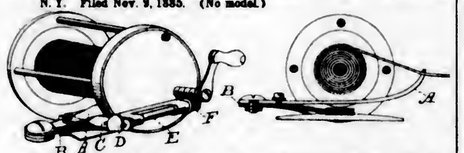
4. The combination, with a draw-head, of a pivoted latch-bolt hav-

ing an opening in its side, a sliding catch-bar to engage said opening, and means, substantially as described, adapted to be operated by the link to force the catch-bar from engagement with said opening, substantially as set forth.

5. The combination, with a draw-head, of a sliding catch-bar to engage an opening in the side of the latch-bolt, a releasing-lever sliding in an opening in the latch-bolt, and a pivoted latch to engage the releasing-lever, substantially as set forth.

6. The combination, with a draw-head, of a pivoted latch-bolt having an opening in its side, a sliding catch-bar to engage said opening, a releasing-lever sliding in an opening in the latch-bolt and having inclined faces, and the latch to engage the lower inclined face of the releasing-lever, substantially as set forth.

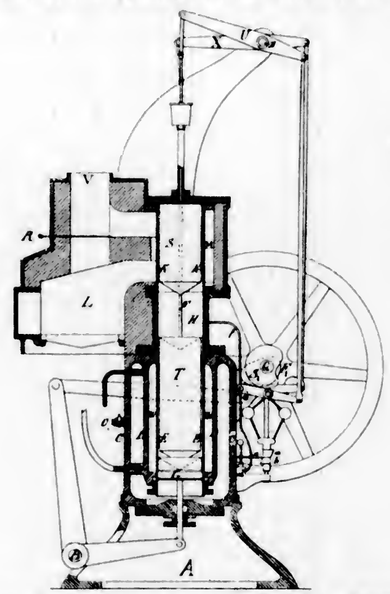
336,092. FISHING-LINE REEL. GEORGE L. CRANDAL, Binghamton, N. Y. Filed Nov. 9, 1885. (No model.)



Claim.—1. A fishing-line reel, in combination with the swinging arm A, connecting-bar C, reciprocating cam D, and worm and worm-wheel F, substantially as shown and described.

2. A fishing-line reel, in combination with the swinging arm A and supporting-arm B, substantially as shown and described.

336,093. CALORIC-ENGINE. LAMBERT A. DAELEN, Cologne, Prussia, Germany, assignor, by mesne assignments, to Joshua Merrill, George Patten, and James A. Woodbury, Boston, Mass. Filed Nov. 8, 1875.



Claim.—1. The combination, in an air-engine, of a cylinder, a tight-working piston arranged and adapted to be reciprocated in said cylinder, a reservoir for containing air under pressure, connected with the interior of said cylinder upon one side of said piston, and a heating apparatus and a cooling-chamber, both connected with said cylinder upon the other side of said piston, whereby the same body of air is alternately heated and cooled upon one side of the working-piston, while the air upon the opposite side of said piston remains at its normal temperature without exhausting the air from either side of said piston, substantially as described.

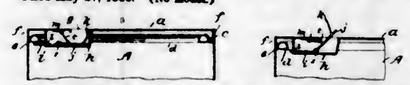
2. The combination of separate heating and cooling chambers, two separate displacers, and a working-piston arranged to use the same body of compressed air over and over again and pass it twice between said chambers and the displacers at each double stroke of the piston, substantially as described.

3. In an engine adapted to contain air under pressure upon both sides of its piston, and to be operated by alternately heating and cooling said air, the combination of the pipe *f*, connecting the chambers above and below the working-piston, a valve, *d*, connected therewith, the rocker-shaft *e*, the cam *a*, and a governor, all arranged and adapted to operate substantially as and for the purposes described.

4. In an air-engine, a pipe connecting the chambers at the opposite ends of the working-piston, in combination with a valve adapted to close the passage through said pipe and to be opened, as a means of equalizing the pressure upon the two ends of the piston, as set forth.

5. In an air-engine, a pipe connecting the chambers at the opposite end of the working-piston, in combination with a valve adapted to close the passage through said pipe, and a governor connected to and adapted to open said valve, as a means of regulating the engine, substantially as described.

336,094. CAN OR BOX. FRED. E. DE JEAN, Newburyport, Mass. Filed May 27, 1885. (No model.)



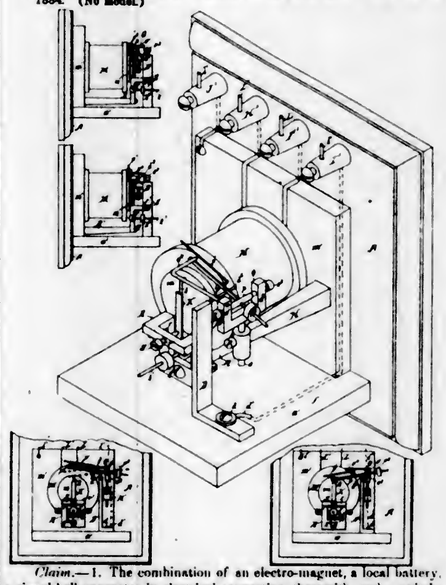
Claim.—1. In a locking device for sheet-metal cans, the combination of a pivoted lever having a raising-loop for the purpose described, and a sliding locking-bolt attached to the under side of the cover, and an abutment or bolt-keeper on the body of the can, substantially as described.

2. In a locking device for sheet-metal cans, the combination of a pivoted lever having a raising-loop adapted to be raised and depressed through an opening in the cover, and a sliding locking-bolt attached to the under side of the cover, and a bolt-keeper on the body of the can, substantially as and for the purposes described.

3. In a locking device for sheet-metal cans, the lever *j*, (having a loop, *k*, for the purpose described,) pivoted at *m*, combined with the sliding locking-bolt *i*, as described, and the abutment or bolt-keeper *d*, substantially as described.

4. In a locking device for sheet-metal cans, the lever *j*, (having a loop, *k*, adapted to be raised and depressed through an opening, *g*, in the cover *a*,) and a sliding locking-bolt, *i*, attached to the under side of the cover *a*, and the abutment or bolt-keeper *d*, substantially as and for the purposes described.

336,095. INDIVIDUAL ELECTRIC SIGNAL. ARTHUR W. S. DAVIS, Lowell, Mass., assignor to Frederick Taylor, same place. Filed Oct. 18, 1884. (No model.)



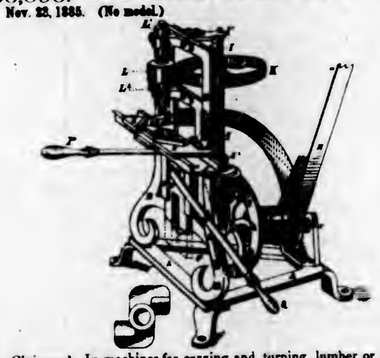
Claim.—1. The combination of an electro-magnet, a local battery, a signal-bell apparatus in electrical connection therewith, and a switch-armature adapted to be operated by said magnet to close said local signal-circuit, and a stop-armature placed nearer to the pole-cheek of said magnet and adapted to be operated only by a greater current than is necessary to operate said switch-armature, and arranged to swing in a plane at right angles to the plane in which said switch-armature moves, so as, when operated, to be swung in the path of said switch-armature

and between said switch-armature and said pole-cheek, and to arrest the motion of the same and to prevent the closing of said local circuit, as and for the purpose specified.

2. The combination of the main line and battery, an electro-magnet in said line, a signal-bell apparatus included in a local line, said local line having at one end a metallic post provided with a metallic arm and having at the other end a pivoted switch-armature adapted to be brought by the attraction of said magnet into contact with said arm of said post, and a stop-armature adapted by the attraction of said magnet to be brought into the path of said switch-armature and to arrest the motion thereof, said armatures being each provided with an adjustable weight, whereby said armatures may be so adjusted relatively to each other that a slighter current will operate said switch-armature than is required to operate said stop-armature, and means, substantially as described, whereby a greater or less portion of said battery may at will be thrown into the main line, as and for the purpose specified.

3. In an electric signaling system, the combination of a main line, a main battery, a series of switches arranged to throw successively greater portions of said battery into the main line, with a series of signaling-instruments, each consisting, substantially, of an electro-magnet in the main line, a local circuit including a signal-bell apparatus and a local battery and ending in a metallic post, and a switch-armature adapted by the attraction of said magnet to close said local circuit by contact with said post, a stop-armature adapted by the attraction of said magnet to swing into the path of said switch-armature and to prevent the closing of said local circuit, said armatures being pivoted and provided with adjustable weights, and being so arranged and adjusted that the switch-armature of each signaling-instrument will be operated by a smaller portion of said battery than the stop-armature of the same instrument, and so that a portion of the battery sufficient to operate any stop-armature will be sufficient to operate the switch-armature of the instrument next farther from said main battery, all as and for the purpose specified.

336,096. CARVING-MACHINE. JOHN DAVIS, Albany, N. Y. Filed Nov. 23, 1885. (No model.)



Claim.—1. In machines for carving and turning lumber or metal, a knife, M, attached to the spindle or shaft L', in combination with a vise provided with jaws N N, meshing with the cog wheel or pinion N^2, operated by the lever P, for the purpose of retaining the piece of wood or metal to be carved or turned in contact with the knife M during the process of carving or turning, and also provided with the upright piece O', moving in grooves O^2 O^2, connected with lever Q, having a movable fulcrum, Q', for the purpose of raising and lowering the vise, all substantially as described, and for the purpose set forth.

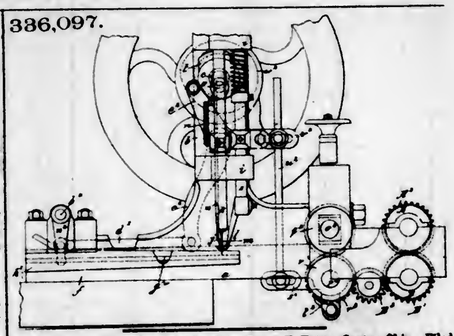
2. In machines for turning or carving lumber or metal, the combination of a vise with notched racks N' N', meshing with a cog-wheel, N^2, provided with means for lowering and raising it, with a knife, M, friction-wheel L, in connection with the wheel K, with the beveled friction-wheel J, and beveled wheel G, all substantially as described, and for the purpose set forth.

336,097. MACHINE FOR MANUFACTURING BOTTLE-COVERS. THEODORE A. DODGE, Brooklina, Mass. Filed Aug. 20, 1885. (No model.)

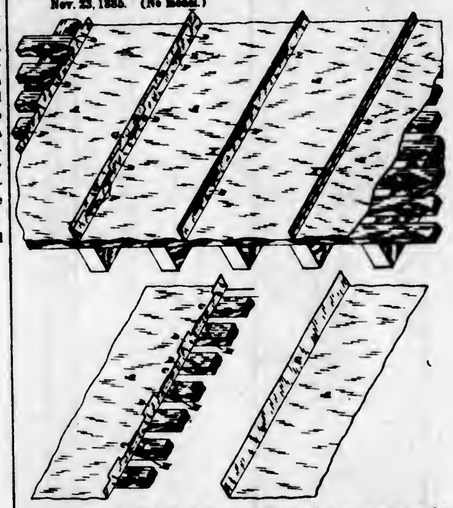
Claim.—1. A guide to fold a strip of paper or other material into a tube and stitch-forming mechanism to unite the said material to form a tube, combined with tube-feeding and tube-cutting mechanism by which to feed the said tube and cut it into short lengths, the said guide being arranged in front of the said stitch-forming mechanism, and the said feeding and cutting mechanism rearward thereof, substantially as described.

2. A guide to fold a strip of material into tubular form and stitch-forming mechanism to unite the said material to form a tube, combined with tube-feeding and with tube-cutting mechanism to slit the tube longitudinally at 2 2, and to cut it off transversely, the said guide being arranged in front of the said stitch-forming mechanism, and the said feeding and cutting mechanism rearward thereof, substantially as described.

336,097.



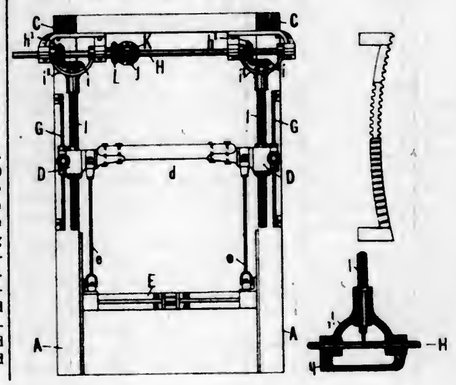
336,098. METAL ROOFING. JAMES H. ELLEN, Canton, Ohio. Filed Nov. 23, 1885. (No model.)



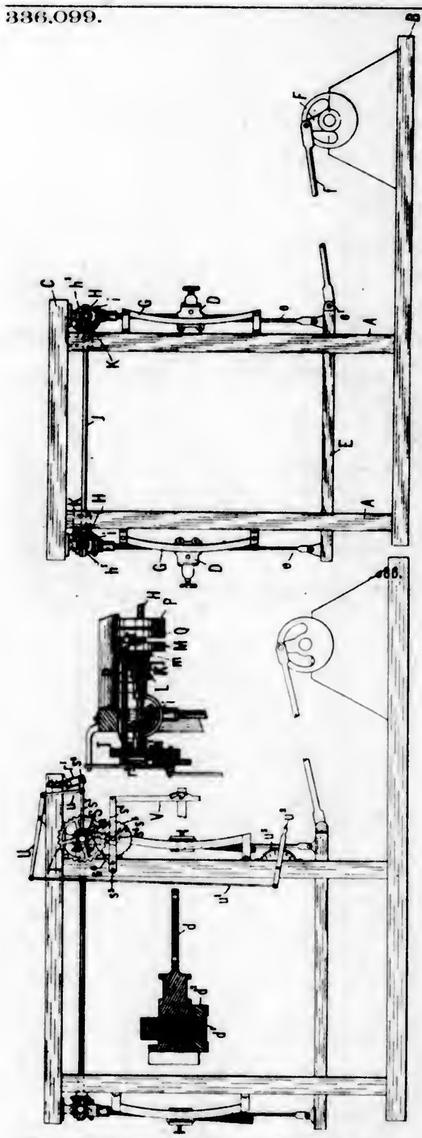
Claim.—1. The sheet A, provided with the bent or tongued-up portion B, the spaces C, and the projections D, substantially as and for the purpose specified.

2. The combination of the bent or tongued-up portion B, provided with the spaces C and extensions D, of the cleats or anchors E, provided with the hooks F, of the portion B, bent or folded over the extensions D, and above the anchors E, and said fold finally bent over and embracing the top or upper part of the portion B, substantially as and for the purpose specified.

336,099. STONE-SAWING MACHINE. JOHN H. PRENTER, Rutland, Vt. Filed Nov. 21, 1883. (No model.)



336,099.



Claim.—1. The combination, broadly, of the following elements: a reciprocating saw-frame having a varying longitudinal position relatively to a normal vertical line, according to its vertical position relatively to the crank and pitman, vertically-adjustable cross-heads having suspension bearings and rods for supporting the saw-frame, and curved guides upon the main frame, substantially as described, adapted in the vertical movement of the cross-head suspension-bearings and the frame to give to the bearings a longitudinal movement coincident with the longitudinal movement of the frame.

2. In combination with the curved guides, substantially as described, adapted in the vertical movement of the cross-head suspension-bearings and the frame to give the bearings a longitudinal movement coincident with the longitudinal movement of the frame, the cross-heads D D, the vertical feeding shafts or screws I I, and the system of gearing for actuating the same.

3. In combination with the curved guides, substantially as described, adapted in the vertical movement of the cross-head suspension-bearings and the frame to give the bearings a longitudinal movement coincident with the longitudinal movement of the frame, the feeding mechanism, substantially as and for the purpose described.

4. In combination with a slotted crank, substantially as described, a crank-pin adapted for adjustment in the slot of the crank, as described.

5. In combination with the rock-shaft R, having a slotted crank, the rod s^2 and adjustable crank-pin s^3, the lever S, with pawl s^5, and frame s', having the ratchet-wheels s^4, and pinion s^6, engaging with the gear-wheel T, substantially as described.

6. The combination, with a reciprocating saw-frame suspended by rods *e e*, all set above said saw-frame and arranged to impart a rising motion at each end of the stroke, of curved guides set and arranged in the main frame, substantially as described, and the means, substantially as described, connected to the cross heads D D and connected with and operated by the shaft H, for imparting to said cross-heads a positive movement up or down, and arranged to swing on shaft H when said cross-heads move up or down on the curved guides, substantially as described.

7. The combination of a reciprocating saw-frame having a varying longitudinal position relatively to a normal vertical line, according to its vertical position relatively the crank and pitman, of curved guides upon the main frame, substantially as described, adapted to impart to the saw-frame-supporting mechanism a longitudinal movement coincident with the longitudinal movement of the saw-frame, as described.

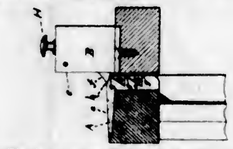
8. In combination with a slotted crank, an adjustable crank-pin, a pawl-carrying lever, substantially as described, and lever mechanism, substantially as described, for adjusting the crank-pin in the slot.

9. In a feed mechanism for stone-sawing machines, the combination, with a rocking slotted crank, of an adjustable crank-pin adapted to move in the slot of the crank, and a stationary index for indicating the rapidity of the downward feed of the saw-frame.

10. In combination with a slotted crank, an adjustable crank-pin, and a pawl-lever and ratchet-wheel having their length of movement determined by the position of the crank-pin in the slot, substantially as described.

11. In combination with a slotted crank and adjustable crank-pin, a pawl-lever, and ratchet-wheel, having their length of movement determined by the position of the crank-pin in the slot, and a stationary index-plate with lever-handle indicating the length of the feed-movement, substantially as described.

336,100. SASH-FASTENER. EDWIN R. FERRY, New Haven, Conn. Filed Oct. 10, 1885. (No model.)

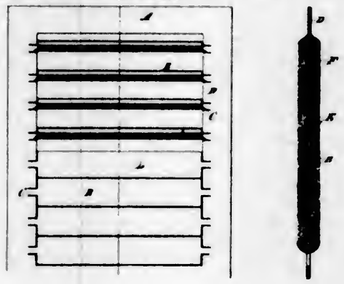


Claim.—The herein-described sash-fastener, consisting of the part A, provided with notches *b*, the case B, and cam-shaped piece C, having a projection, *f*, to engage the notches *b*, and hinged to the case B, the set-screw H, having a projection, *i*, working in a slot in the said case B, all as and for the purpose specified.

336,101. COMPOSITION FOR SECONDARY-BATTERY ELECTRODES. ERNEST M. GARDNER, Brookline, assignor to James L. Little, Jr., Boston, Mass. Filed May 25, 1885. (No specimens.)

Claim.—A composition for secondary-battery electrodes, consisting in an active material—such as lead oxide—a conducting material, calcined magnesia, and the mother-liquor from salt manufacture, the said ingredients being mingled and combined to form first a plastic mass and on setting and drying a hard body, substantially as described.

336,102. ELECTRODE FOR SECONDARY BATTERIES. ERNEST M. GARDNER, Brookline, assignor to James L. Little, Jr., Boston, Mass. Filed May 25, 1885. (No model.)



Claim.—1. In an electrode for secondary batteries, a metal supporting-plate containing an opening, and in said opening a series of shelves or ledges formed of the material of and integral with said plate, disposed one above the other, and each shelf or ledge extending in width beyond the thickness of the plate on both sides, substantially as described.

2. In an electrode for secondary batteries, a solid metal rim or frame and a series of troughs integral therewith and having upwardly-turned edges disposed within said rim, substantially as described.

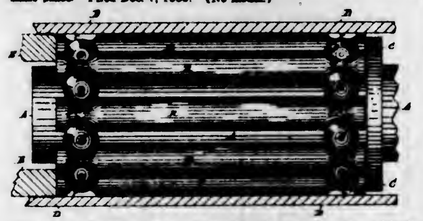
3. In an electrode for secondary batteries, a solid metal rim or frame and a series of troughs integral therewith disposed within said rim, and having a curved or arch-shaped transverse cross-section, substantially as described.

4. In an electrode for secondary batteries, a supporting-plate containing an opening, and a series of troughs integral with said plate and extending across said opening, and a material active in the storage-battery contained in said troughs, substantially as described.

5. In an electrode for secondary batteries, a supporting-plate containing an opening, and a series of troughs integral with said plate and extending across said opening, and a material active in the storage-battery contained in said troughs and completely filling the intervening spaces between them, substantially as described.

6. In an electrode for secondary batteries, a supporting-plate containing an opening, and a series of troughs extending across said opening, integral with said plate, and cut therefrom and turned in a horizontal position in the manner set forth, substantially as described.

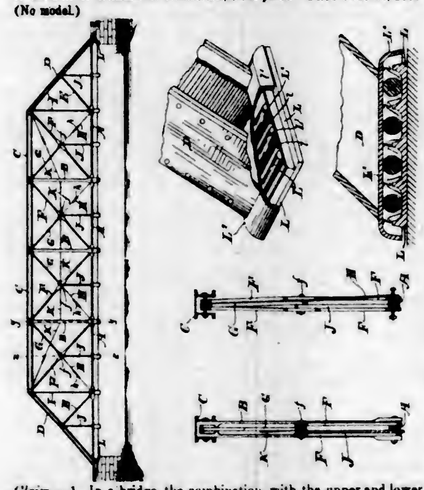
336,103. ROLLER-BEARING FOR SHAFTS AND AXLES. JOHN GIBSON, West Troy, N. Y., assignor to the Menesly Hardware Company, same place. Filed Dec. 7, 1885. (No model.)



Claim.—1. In an axle or shaft bearing, the combination, with the rollers R, made with the recesses *r* in revolution thereon, of the balls B, having the same diameter as the rollers, and placed between said rollers within the grooved recesses relatively to the axle-box and axle or shaft, substantially as and for the purposes set forth.

2. In an axle or shaft bearing, the combination of the rollers R, made with the recesses *r* in revolution therein, of the balls B, having the same diameter as the rollers, and arranged within the grooved recesses, as shown, and a collar on the axle or shaft, and a threaded cap on the box, substantially as and for the purposes set forth.

336,104. BRIDGE. SOLOMON H. GODMAN, Indianapolis, Ind., assignor of one-half to William C. Whitehead, same place. Filed June 12, 1885. (No model.)



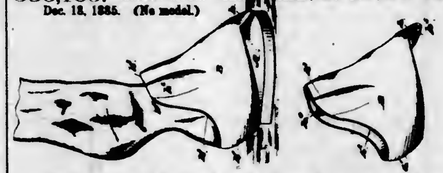
Claim.—1. In a bridge, the combination, with the upper and lower chords and end posts thereof, of diagonal struts extending from said end posts to the lower chord, the upright struts, long truss-rods extending from the corners formed by the connection of the end posts and top chord, or from the top of the vertical struts to the foot of the next vertical strut, the short truss-rods connecting the central portions of said long truss-rods to the top chord or top end of the vertical strut nearest it, and suspension-rods supporting the floor-beams, substantially as set forth.

2. In a bridge, the combination, with the lower chord, A, upright struts B, top chord, C, and end posts, D, of the diagonal struts E, long truss-rods F, short truss-rods G, counter-rods H, long suspension-rods I, and short suspension-rods J, all arranged and operating substantially as described, and for the purposes specified.

3. The combination, with the upper and lower chords, upright struts, and end posts of a bridge, of the long double truss-rods F, having pin-holes provided in the center thereof, the short truss-rods G, secured at one end to said central portion and at its other end to the top chord at the top of the next strut, and the counter-rod H, connected at one end to the central portion of said long truss-rods, and at its other to the lower chord at the foot of the next strut, all substantially as set forth.

4. The combination, with a bridge, of the supports L, for carrying the ends of said bridge, consisting of the bed-plate provided with transverse grooves, the rollers L', mounted loosely in said grooves, and the top piece, L^2, mounted on top and bearing on said rollers, substantially as set forth.

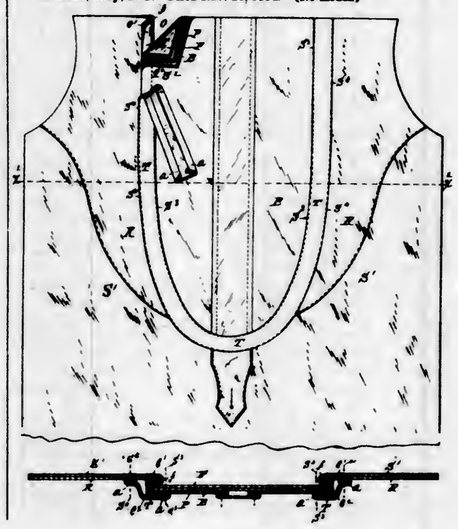
336,105. HORSE-BOOT. THOMAS GOLDEN, New York, N. Y. Filed Dec. 18, 1885. (No model.)



Claim.—1. As an improved article of manufacture, an elastic horse-boot molded in one piece of rubber or other analogous material, and adapted to be drawn over the foot of the animal, having a projection covering a securing-hook and the central part of the toe, from thence extending back on a slight incline to the rear of the foot, where a cup-shaped heel-covering is formed, and provided with an upwardly-projecting fluted extension covering the coronet, substantially as described, and for the purposes specified.

2. An elastic horse-boot adapted to be drawn over the foot of the animal, consisting of the portion B, having a projection, *b*, in the front portion of the boot inclosing a securing-hook, b^3, a cup-shaped heel-covering, *b'*, in the rear thereof, and a fluted extension or coronet-covering, b^2, in the forward upper part, substantially as described, and for the purposes specified.

336,106. METHOD OF SECURING BOSOMS TO SHIRT-BODIES. W. L. HALL, Troy, N. Y. Filed Nov. 28, 1884. (No model.)



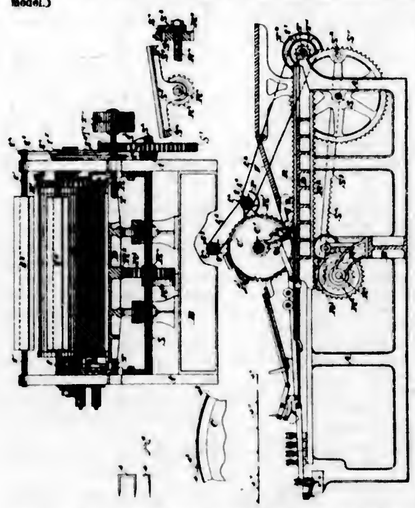
Claim.—The method herein described of securing the bosom to the shirt-opening, which consists in uniting the edges of the bosom and the edges of the shirt-opening by a common seam line of stitches, then turning the seam-edges of the united bosom and shirt-opening outward onto the shirt-front, then stitching one edge of a bias strip of material having turned-in edges to the bosom inside of the line of union to the shirt-opening, and finally securing the outer and other edge of said bias strip to the shirt-front by a line of stitches arranged outside of the edge of the folded seam and outside of the edge of the bosom.

336,107. **KNIFE-BOLSTER.** GEORGE HAVELL, Newark, N. J. Filed Oct. 8, 1885. (No model.)



Claim.—The combined knife-bolster and ferrule formed of sheet metal, in two parts, soldered together, as herein shown and described, and adapted for use with a sheet-metal blade having an integral tang, the construction being provided with the slot c^2, to receive the neck of the blade, and the ferrule f being provided with a neck, l, and with a sheet-metal guide, g', slotted to receive the tang of the blade and fitted within the ferrule against the neck l, substantially as set forth.

336,108. **SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES.** JOHN T. HAWKINS, Taunton, Mass. Filed May 6, 1885. (No model.)



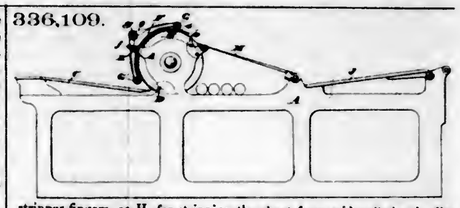
Claim.—1. In a printing-press in which the sheets are delivered from the top of the cylinder, in combination with said cylinder, means for projecting currents of air against the sheet upon it, to insure frictional contact between the sheet and cylinder during delivery, consisting of a rotating fan or fans, as i^2 i^2, arranged between the points of feed and delivery, and suitably driven by any rotary member of the machine, substantially as set forth.

2. In an oscillating-cylinder printing-press in which the sheets are delivered tail first from the impression-cylinder, the combination, with said cylinder, of sheet-supports, as s s^2, for supporting the tail margin of the sheet away from contact with the impression-cylinder, and rotating fans, as i^2 i^2, for projecting currents of air against the sheet, to insure frictional contact between the sheet and cylinder during the process of delivery, substantially as set forth.

3. In the sheet-delivery apparatus of an oscillating-cylinder printing-press in which the sheets are delivered tail first from the cylinder, the combination, with said cylinder, of sheet-supports, as s s^2, for supporting the tail margin of the sheet from contact with the cylinder, rotating fans, as i^2 i^2, for projecting currents of air against the sheet, to insure frictional contact between the sheet and cylinder during the process of delivery, and a series of stripper-fingers, as i', for stripping the sheets from the cylinder, substantially as set forth.

336,109. **SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES.** JOHN T. HAWKINS, Taunton, Mass. Filed Aug. 24, 1885. (No model.)

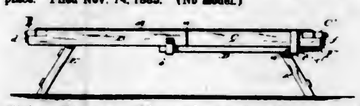
Claim.—1. In an oscillating-cylinder printing-machine, in combination with an oscillating impression-cylinder delivering the sheet tail first,



stripper-fingers, as H, for stripping the sheet from said cylinder, leading and tightening pulleys, as G g, and a series of endless tapes, as t, running in contact with a portion of said cylinder's circumference, and thence over said pulleys, whereby the sheets are delivered to and upon said stripper-fingers, substantially as and for the purposes set forth.

2. In an oscillating-cylinder printing-machine delivering the sheet from its impression-cylinder tail first, in combination with said cylinder, leading and tightening pulleys, as G g, a series of endless tapes, as t, running in contact with a portion of the circumference of said cylinder, and thence over said pulleys, elastic sheet-supports, as b, and stripper-fingers, as H, all arranged and operating substantially as described, whereby sheets of varying sizes are held in frictional contact with the surface of said cylinder during its delivery rotation and the delivery of said sheets upon said stripper-fingers insured, substantially as and for the purposes set forth.

336,110. **FOLDING WOVEN-WIRE COT AND MATTRESS.** FREDERICK B. HEMINGWAY, Clinton, Iowa, assignor to Hemingway & Kelley, same place. Filed Nov. 14, 1885. (No model.)



Claim.—The convertible cot, hammock, and lounge, consisting of the combination of the wire mattress A, the hinged sections B C of the frame, having their ends attached to the ends of the mattress, the fixed stirrups b and movable collars c, the lock-bars D, and the spring F, all constructed and arranged substantially as and for the purpose described.

336,111. **HAME-FASTENER.** JUSTIN H. HILL, Chicago, Ill. Filed Jan. 8, 1885. (No model.)



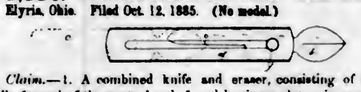
Claim.—1. In a hame-fastener, a slotted plate provided with a lug near one end, in combination with a perforated plate carrying a swivel-button near one end, said plates having means for attaching them to the hames, substantially as and for the purpose specified.

2. In a hame-fastener, a plate having a slot with corrugated sides and provided with a lug at one end, in combination with a perforated plate carrying a swivel-button near one end, said plates having means for attaching them to the hames, substantially as and for the purpose specified.

3. A hame-fastener consisting of a slotted plate with a hook at one end and a lug and slotted curved continuation at the other, and a plate provided with perforations, said plate having at one end a hook carrying a permanent button, and at the other a swivel-button with a slotted head, and a strap secured over the permanent button and extending through the slotted continuation and the slotted button, substantially as and for the purpose specified.

4. An improved hame-fastener consisting of a longitudinally-slotted top plate having a short transverse slot at one end, a hook for its attachment to one of the hames at the other end, and a hook on its under side, in combination with a perforated bottom plate having a hook for its attachment to the other hame, a strap fastened to the hooked end of the bottom plate, and a swiveled button having a slotted head for the reception of the free end of the strap, the whole constructed and combined substantially as and for the purpose specified.

336,112. **COMBINED ERASER AND KNIFE.** THOMAS HOLDSWORTH, Elyria, Ohio. Filed Oct. 12, 1885. (No model.)



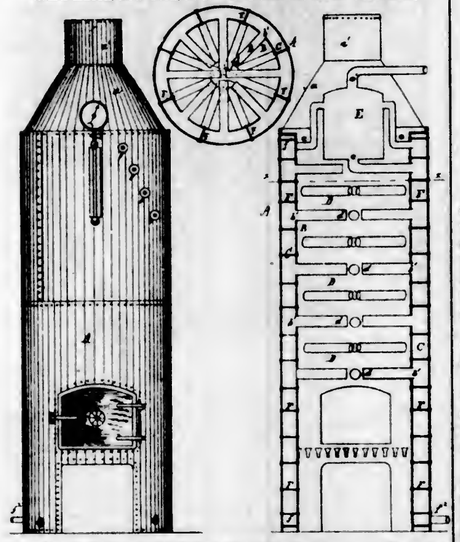
Claim.—1. A combined knife and eraser, consisting of a hollow handle formed of the parts d and f, and having a slot, o, in combination with a body, a, constructed to slide within the handle, and having blades b c and finger-piece j, substantially as shown.

2. The hollow handle, in combination with sliding blades, flat spring g, arranged to bear against the side of the blade, and finger-piece j, substantially as shown.

3. The combination of the sliding blades having a finger-piece and locking-pin with a handle having open ends and a locking-pin recess or opening, substantially as shown.

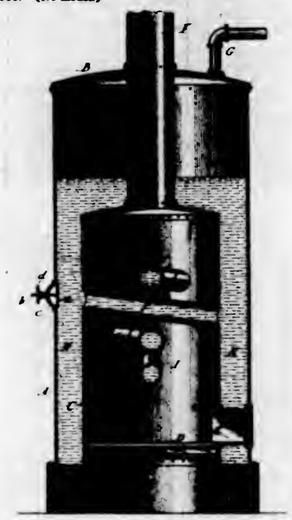
4. A body, a, having two blades made integral therewith, in combination with an open-ended handle and finger-piece and locking means, and a flat spring fixed to handle and arranged to bear against the part a, substantially as shown.

336,113. **PORTABLE STEAM-BOILER.** PHILIP HOLTZMANN and RUDOLPH MAYER, New York, N. Y. Filed June 23, 1885. (No model.)



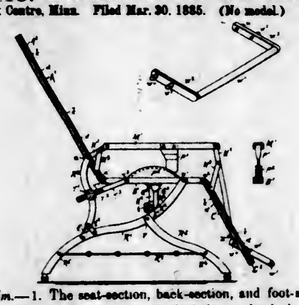
Claim.—The portable boiler consisting of the outer shell, A, the conical top a, and smoke-jack a', the inner shell, B, the top and bottom annular plates f f', and supply-pipe f^2, the radial tubes D within the shell B, having their inner ends closed and their outer ends open and screwed into the shell B, and the steam-dome E, having an induct and educt, all substantially as and for the purpose described.

336,114. **STEAM-GENERATOR.** ADOLPH HORN, Chicago, Ill. Filed Dec. 8, 1885. (No model.)



Claim.—In a steam-generator, the combination, with the fire-box and with an annular water-space surrounding the same, of a series of flues passing through the fire-box and communicating with the water-space, each flue passing diagonally through the fire-box, and at a different angle to all the remaining flues, as set forth.

336,115. **ADJUSTABLE RECLINING-CHAIR.** ARTHUR O. HUBBARD, Sauk Centre, Minn. Filed Mar. 30, 1885. (No model.)



Claim.—1. The seat-section, back-section, and foot-section hinged together and having the web D, attached thereto by lacings b, and provided with brackets N' N^2 and arm-rests M' M^2, connecting said brackets, in combination with a folding supporting-frame consisting of legs R' R^2, pivoted to said seat-section, bracing-legs R^3 R^4, flexible connections R^7, and arms R^5 R^6, attached by one end to said legs R' R^2, and pivoted to said back-section by their other ends, substantially as and for the purpose set forth.

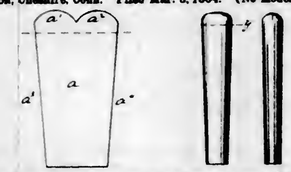
2. In a reclining-chair, the back-section, foot-section, and seat-section hinged together, and having the web D, attached thereto by lacings b, said seat-section having re-enforcing web E, substantially as set forth.

3. In a reclining-chair, the back-section, foot-section, and seat-section hinged together, and having the web attached thereto by lacings b, said seat-section having sockets G' G^2, bracing-arms H' H^2, fitting into said sockets, and provided with clamping-plates K' K^2, substantially as and for the purpose set forth.

4. The seat-section, back-section, and foot-section hinged together, and having the web attached thereto by lacings, and provided with brackets N' N^2 and arm-rests M' M^2, connecting said brackets, in combination with a folding supporting-frame consisting of legs R' R^2, pivoted to said seat-section, bracing-legs R^3 R^4, flexible connections R^7, and arms R^5 R^6, attached by one end to said legs R' R^2, and pivoted to said back-section by their other ends, and a brake consisting of rod T', having cam-wheel T^2, slotted arm T^3, and cam-plate T^4, substantially as set forth.

5. A back-section, a seat-section, and a foot-section hinged together, and having the web attached thereto by lacings b, and provided with brackets N' N^2, arm-rests M' M^2, connecting said brackets, and provided with stops P', and grooved guides P^2, attached to said seat-section, substantially as and for the purpose set forth.

336,116. **HANDLE FOR CUTLERY.** SILAS E. JERALDS and EDWIN R. LAWTON, Cheshire, Conn. Filed Mar. 8, 1884. (No model.)



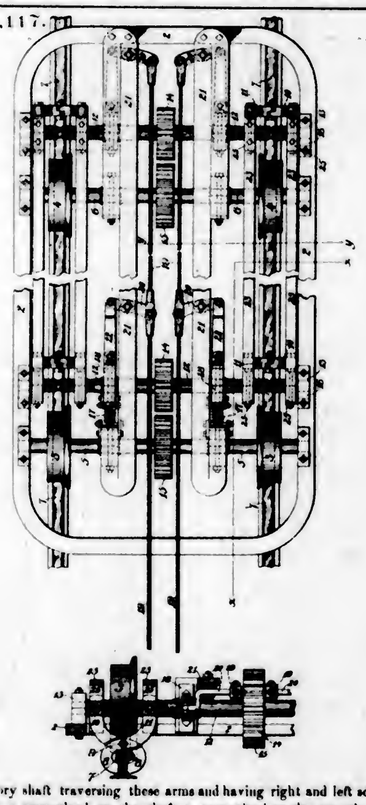
Claim.—As an improved article of manufacture, a handle for cutlery and like articles, consisting of a hollow shell with one end open, and the other closed and rounded, composed of a single piece of metal with its edges united in one seam running from the open end of the handle along one side, across the center of the rounded end, and terminating at the point where the rounded end meets the opposite side, all substantially as described.

336,117. **SAFETY DEVICE FOR INCLINED RAILWAYS.** GEORGE W. JESSOP, Pittsburg, Pa. Filed June 22, 1885. (No model.)

Claim.—1. The combination, in a lift-car, of the rod extending longitudinally with the car-track, a clamp for engaging the rod, a rotatory shaft connected with the clamp and threaded so as to cause the same to be clamped by rotation of the shaft, gearing for connecting the car-axle with said shaft, the latter being connected with the traction-cable and capable of being held out of gear with the axle by tension of the cable, and mechanism for moving the same into gear when the tension of the cable ceases, substantially as described.

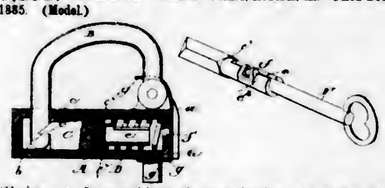
2. The combination of the gripping-levers 8, having arms 10 and 11,

336,117.



a rotatory shaft traversing these arms and having right and left screw-threads, a gear-wheel on the shaft, a gear-wheel on the car-axle, said gear-wheels being movable toward each other, a spring for so moving the same, and a traction-cable connected with the shaft and capable of keeping the same out of gear from the axle by its tension, substantially as described.

336,118. SEAL-LOCK. JOSEPH V. KING, Roberta, Ill. Filed Dec. 11, 1885. (Model.)

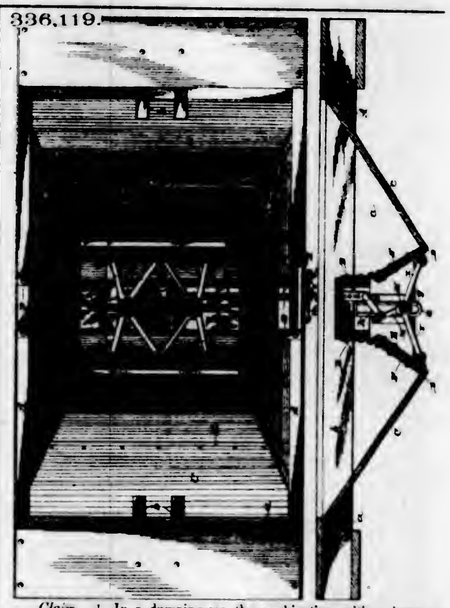


Claim.—1. In a seal-lock, the combination of a casing, a hasp pivoted thereto, a sliding locking-bolt normally held in engagement with the hasp to lock the same and having a socket, a slot opening into the same, and a retaining-lug, and a seal secured over the key-opening of the lock-casing, substantially as described.

2. A seal-lock comprising a casing having lugs *a*, a hasp pivoted thereto, a sliding locking-bolt having a longitudinal socket and slot, and a retaining-lug, a spring for impelling the bolt, a seal secured over the key-opening of the casing, and a key having a web to engage the slot and retaining-lug of the locking-bolt, substantially as described.

3. As an improved article of manufacture, a seal-lock comprising a casing having lugs *a* and a shoulder-catch, *g'*, a hasp pivoted to the lugs, a locking-bolt arranged in the casing and having a longitudinal socket, *e*, a slot, *e'*, opening into the socket, and a retaining-lug, e^2, a spring, D, for impelling the bolt, a seal secured to the hasp, and the catch *g'* over the key-opening of the casing, and a key having a curved web to engage the stop e^2, to withdraw the bolt from engagement with the hasp, substantially as described.

336,119. DUMPING-CAR. SIDNEY D. KING, Pittston, Pa. Filed Oct. 19, 1885. (No model.)



Claim.—1. In a dumping-car, the combination, with a hopper, a swinging door adapted to close its month, a movable pintle, and operating-arms connecting the pintle and door, of a crank-shaft connected with the movable pintle, and locking devices connected with the crank-shaft, substantially as set forth.

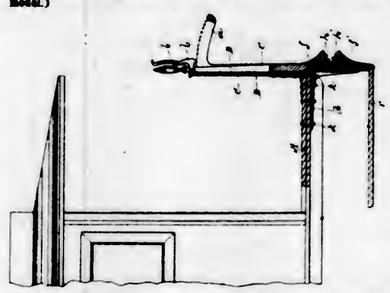
2. In a dumping-car, the combination, with a hopper divided into two sections by a cross-partition, a pair of doors hinged to the cross-partition, a vertically-movable pintle on which the door-operating arms are hinged, and a rock-shaft provided with a crank and a spur-wheel, of a rigid bar or link connecting the crank and movable pintle, and locking-dogs adapted to engage the spur-wheels, substantially as set forth.

3. The combination, with the vertically-movable pintle and locking devices connected therewith, of one or more sets of branched operating-arms hinged on the pintle and pivotally secured to the doors, substantially as set forth.

4. The combination, with the car-frame consisting, essentially, of the side rails, end beams, central cross-girders, and central longitudinal girders, of the hopper-bottom, with its inclined sides and ends held together and to the frame-work by the metalic bands, and the doors hinged to the cross-girders and adapted to automatically open by the weight of the load and close by the weight of the movable pintle and operating-arm, substantially as set forth.

5. In a dumping-car, the combination, with a hopper, a door, and a crank connected with said door, of a spur-wheel connected with said crank, and devices engaging the spur-wheel for locking the door in open or closed adjustment.

336,120. CAR-BRAKE. DANIEL C. KNOWLTON and JAMES E. HARRIS, Boston, Mass. Filed May 21, 1884. Renewed July 31, 1885. (No model.)

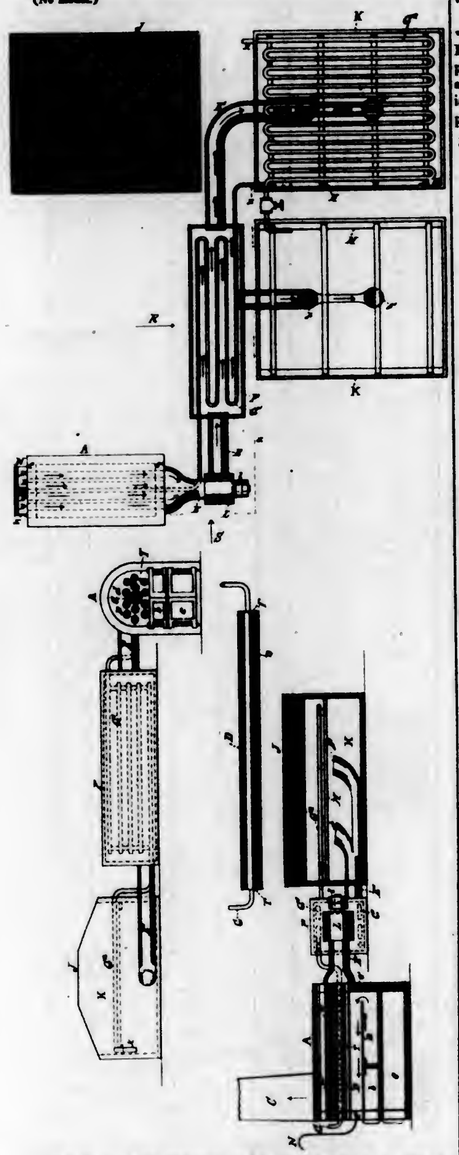


Claim.—1. The combination, with the car-platform, of standard C, serrated arm *a*, pawl *b*, operating-lever D, and sectors *h h'*, substantially as described.

2. The brake-frame and connection *r*, in combination with the pivoted sectors *h h'*, and means for operating the same, substantially as described.

3. The brake-frame and connection *r*, in combination with the geared sectors *h h'*, rod D, and handle, pawl *b*, serrated arm *a*, and standard C, as and for the purposes described.

336,121. APPARATUS FOR CARBONIZING AND DESTROYING VEGETABLE MATTER IN WOOL. JAMES P. LAND, Philadelphia, Pa., assignor of one-half to Charles P. Ring, same place. Filed May 22, 1885. (No model.)



Claim.—1. The furnace A, having the chamber *d*, in which are arranged the tubes D, with their front ends exposed to the atmosphere for supplying and heating pure air, and the drum T, surrounding the central tube of the series, conveying superheated steam to the coils of pipes G' G^2, substantially as herein shown and described, for the purpose set forth.

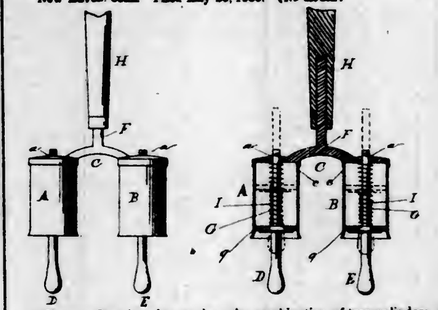
2. In apparatus for carbonizing and destroying vegetable matter in wool, the furnace A, constructed as described, having the steam-drum T, arranged within a tube of the series D, for containing steam to be superheated, substantially as shown and described.

3. In apparatus for carbonizing and destroying vegetable matter in wool, the furnace A, in combination with the tubes D and drum T, for supplying heated air and superheated steam, substantially in the manner described.

4. In apparatus for carbonizing and destroying vegetable matter in wool, the hot-air drying-chamber K, having the coil of pipe G^2, and wire screen J, substantially as shown and described.

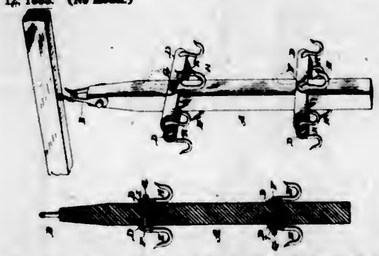
5. In apparatus for carbonizing and destroying vegetable matter in wool, the furnace A, constructed as described, in combination with flue E, having fan L, heating-chamber F, having coils of pipe G', flue F', provided with outlets *f f'*, and hot-air chamber K, having the coil G^2, and wire screen, whereby a current of pure highly-heated air is forced into and through the wool, substantially in the manner described, for the purpose specified.

336,122. LAUNDRY FORK OR WASHER. ARTHUR B. LAWRENCE, New Haven, Conn. Filed May 25, 1885. (No model.)



Claim.—In a laundry washer, the combination of two cylinders, A B, connected by a cross-bar, C, provided with a tang, F, the pistons I, and spiral springs G, the stems of said pistons extending below the cylinders to form a fork, all as and for the purpose specified.

336,123. MEAT-HOOK. JOHN W. LIBERTY, Sharon, Miss. Filed Oct. 12, 1885. (No model.)



Claim.—1. The combination of the standard, the hooks E, having the horizontal shank passed through the standard, and the hook H, secured on the projecting end of the shank, whereby the said hooks E and H may be reversed, substantially as described.

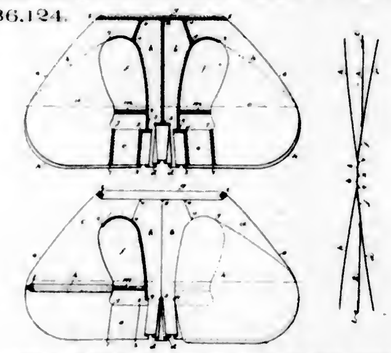
2. The combination of the standard, the cross-bars, the hooks E, having horizontal shanks passed through the cross-bars and standard, and the hooks H, having eyes fitting on the ends of the shanks, substantially as described.

3. The combination of the standard, the cross-bars, the hooks E, having horizontal shanks with threaded ends passed through the cross-bars and standard, and the hooks H, having threaded eyes screwed onto the threaded ends of the shanks, substantially as described.

336,124. COMBINED CAPE AND JACKET. BERNARD LEVY, New York, N. Y. Filed July 2, 1885. (No model.)

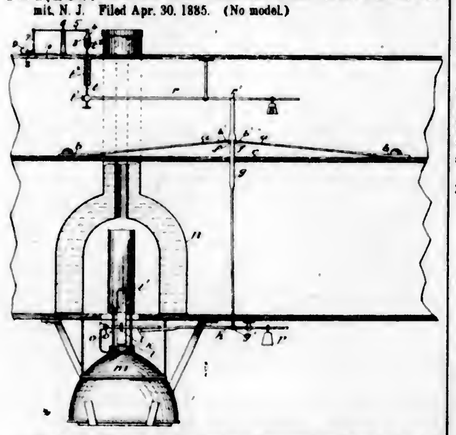


336,124.



Claim.—The herein-described combined cape and jacket, consisting of the body portion, the back of which has a close or approximately close or jacket fit, while its sides and fronts are adapted to hang freely from the shoulders in the form of a cape or be fastened snugly around the waist in the form of a jacket, said body portion being provided with the side armholes, *f*, and the cape-pieces *h*, joined at their upper and rear edges to the upper and rear or shoulder and back edges of the armholes, but having their front and lower edges unattached to the body portion, substantially as described.

336,125. THERMOSTAT FOR INCUBATORS. JACOB C. LOSEE, Summit, N. J. Filed Apr. 30, 1885. (No model.)



Claim.—1. In combination with an incubator, two strips of metal secured to the floor within the incubator, one end of each engaging with the rod connected with the device adapted to smother the flame from the oil-reservoir when operated, substantially as shown and described.

2. In an incubator, the combination, substantially as shown and described, consisting of the metallic strips *a*, vertical rod *g*, main horizontal rod *h*, fork or prongs *i*, ears *k*, the sliding tube *l*, wick-tube *l'* of the oil-reservoir *m*, uprights *o*, hinges *o'*, balance-weight *p*, and boiler *n*, the whole forming a complete device for regulating the temperature within the incubator.

3. The heat-regulating device of an incubator, consisting of the suspended lever *r*, the vertical rod *g*, supporting or connected with said lever *r*, the balance-weight *s*, adjustable ventilator-rod *t*, sleeve t^2, hook t^3, link 4, horizontal arm 5, fulcrum 6, link 7, arm 8, strip 9, and sheet of mica 10, substantially as shown and described.

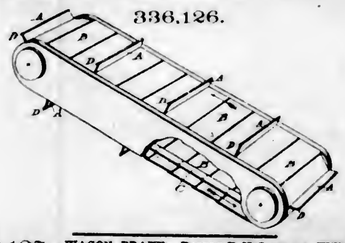
336,126. CONVEYER AND ELEVATOR FOR STRAW, HAY, &c. WILLIAM LUDLUM, Marion, Ind. Filed Sept. 8, 1885. (No model.)

Claim.—1. The combination of belts C and rectangular metal slats B, secured to the belts, and uprights or flanges A, placed at intervals, all substantially as set forth.

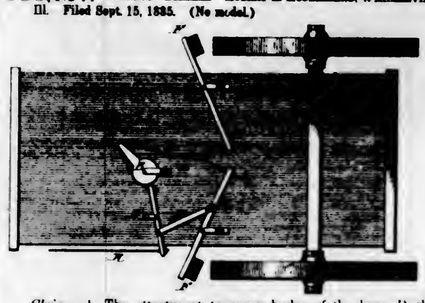
2. The combination of metal slats B, secured to belts C, with uprights or flanges A at intervals, as an improvement in butt-boards for self-binding harvesters, all substantially as set forth.

3. The combination of metal slats B, secured to belts C, with uprights or flanges A at intervals, all substantially as set forth, as an improvement in self-binding harvesters.

336,126.



336,127. WAGON-BRAKE. ROBERT E. MCCLELLAND, Williamsville, Ill. Filed Sept. 15, 1885. (No model.)

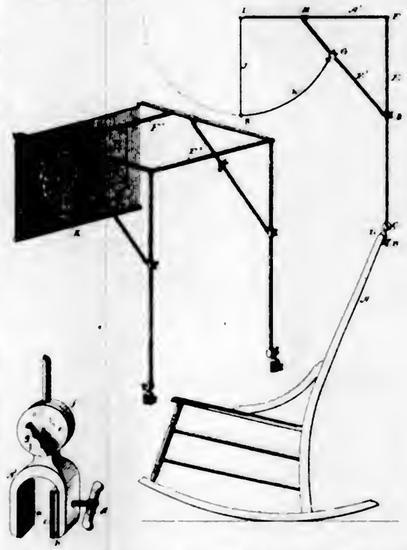


Claim.—1. The attachment to wagon-brakes of the lever D, the chain C, connecting it with the brake-arms A A, and the lever pivot-wheel B, substantially as set forth.

2. The attachment to wagon-brakes of the lever D', the bar E, and the chain *e'*, substantially as described.

3. The combination of the chain C, the pivot-wheel B, the angle-irons *d d'*, the lever D', the bar E', and the chain *e'*, as an attachment to wagon-brakes, all substantially as described, and for the purposes specified.

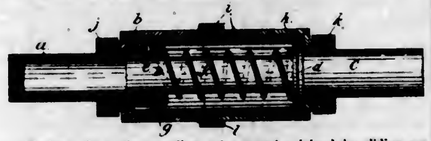
336,128. FAN ATTACHMENT FOR ROCKING FURNITURE. ARTHUR W. MCCOMAS and HENRY A. FITZHUGH, Austin, Tex. Filed May 23, 1885. (No model.)



Claim.—1. The combination, with the fan-frame and fan, sleeve G, cord *h*, and the rocker, of the double clamping device for uniting the fan-frame to the rocker, substantially as and for the purpose set forth.

2. The combination, with the frame forming the fan-support, of the fan J, sliding sleeve G, and the connecting cord or wire *h*, as and for the purpose set forth.

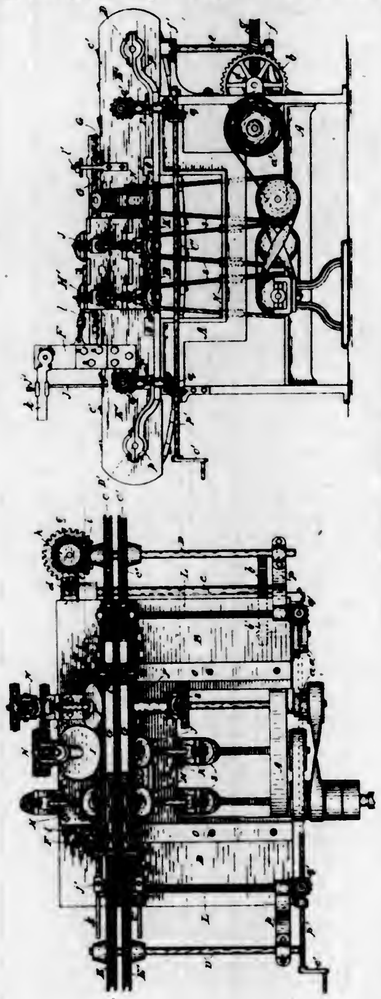
336,129. PIPE-COUPLING. FRED L. MCGAHAN, Indianapolis, Ind. Filed May 16, 1884. (No model.)



Claim.—In a pipe-coupling, tubes *a* and *c*, joined by sliding one within the other, stuffing-box *e*, closing said joint, spiral spring *f*, arranged to abut against the gland of said stuffing-box and against flange *d* on tube *c*, whereby said spring is compressed and the stuffing-box tightened by the sliding of the tubes together, and case *i*, inclosing said stuffing-box and spring, all combined and arranged to co-operate substantially as and for the purpose specified.

336,130. DOVETAILING-MACHINE. GEORGE H. MILLEN and ALFRED DESROUIN, Hull, Quebec, Canada. Filed Sept. 29, 1885. (No model.) Patented in Canada Oct. 7, 1885, No. 22,600.

Claim.—1. In a machine for producing box-stuff tenoned at one end and grooved at the other, the combination of the main frame, endless carrying-chains C C', the saws H, I, and I', located at one side of the chains in the relative positions described and shown, to bevel the end of the stock and form the groove therein, and the saws H', J, and



J', located on the opposite side of the carriers in the particular relations described and shown, to bevel the opposite end of the stock and form the dovetail tenon thereon.

2. In a machine for forming box-stuff, the two groups of saws located at opposite sides thereof to operate on opposite ends of the lumber, one group embracing the beveling-saw H and the adjacent obliquely-arranged saws I I', acting beyond the plane of the inner face of saw H to groove the bevel-face produced thereby, and the second group consisting of the beveling-saw H' and the two obliquely-arranged saws J J', acting within the plane of the saw H' to form a tenon on the beveled face produced thereby.

3. In a machine for producing box-stuff, the combination of a guide or support for the lumber, a saw, H', arranged in a plane oblique thereto to effect the beveling of the end of the lumber, a second oblique saw, J, to form a rabbet or shoulder on the beveled end, and a third saw, J', inclined in the opposite direction, as described, to form a second shoulder or rabbet on the opposite edge of the bevel end, whereby the lumber is finished with a bevel end having a dovetailed tenon thereon.

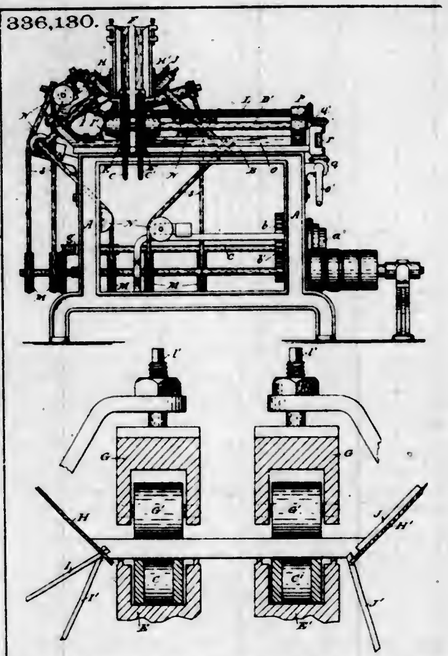
4. In a machine for preparing box-stuff, the combination of a guide or support for the lumber, and the three saws H' I I', the first acting in advance of the others and in a plane oblique to the surface of the lumber to bevel its end, and the last two acting in planes oblique to each other and to the plane of the first saw, their edges projecting inward beyond the plane of the first saw to groove the beveled end of the lumber, as described and shown.

5. In a machine for making box-stuff, the combination, with the main frame, of the three beveling and grooving saws H, I, and I', arranged in the peculiar relations described and shown, the beveling and tenoning saws H', J, and J' in the peculiar relations described and shown, the two feed-chains and their driving-pulleys, and a laterally-movable supporting-frame, K, having the last-named saws and the guide for one of the carrier-chains attached thereto, whereby the distance between the two sets of saws and the two guides may be varied at will.

6. In combination with the feed-chains C C' and their respective guides E E', one of said chains and guides movable laterally with respect to the other, as described, the stock-holder F, consisting of the two parts or sides connected with the respective chain-guides, substantially as described, whereby the width of the receptacle is varied to correspond with the changes in the distance between the chains.

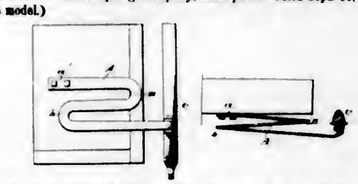
7. The main frame, the series of saws mounted in stationary bearings thereon, the feed-chain C, and the supporting-pulleys for said chain, also mounted in stationary bearings, in combination with the sliding frame K, the series of saws mounted thereon, the second feed-chain, C', the supporting-pulleys for said chain, arranged to slide upon their driving-shafts, and the guide for said chain, connected to and movable with the frame K.

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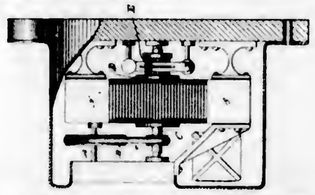
8. The feed-chains and their guides, adjustable to and from one another, in combination with the two-part stock-receptacle F, having its parts connected to the respective chain-guides, and the two stock-confining arms *k*, attached to the respective sides of the receptacle, whereby they are caused to retain their positions in relation to the receptacle, and thus adapted to act upon lumber of different lengths.

336,131. **CARRIAGE-SPRING.** HOLLIS W. MOORE, Olean, N. Y., assignor to the Hollis Spring Company, same place. Filed Sept. 16, 1885. (No model.)



Claim.—A wagon-spring having the form of two or more semi-coils, substantially as shown and described, one of its ends being adapted to be firmly secured to the wagon-body and the other to the side bar, at a point in front or back of a vertical plane passing through the point of its attachment to the wagon-body, transversely to the wagon-body, substantially as set forth.

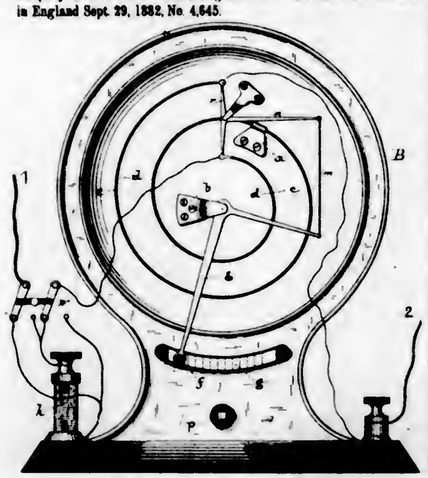
336,132. **ELECTRIC METER.** SAMUEL D. MOTT, New York, N. Y., assignor, by direct and mesne assignments, to the Schuyler Electric Light Company of New York. Filed Aug. 24, 1883. (No model.) Patented in England Sept. 29, 1882, No. 4,646.



Claim.—1. The combination, for an electric meter, with an electric motor driven by the current to be measured, and having a magnetic field for its armature, maintained constant despite changes in the current, of a register-train operated by said motor, and constituting by itself the load for said motor.

2. The combination, substantially as described, in an electric meter, of an electric motor having a constant field for its armature, or an equivalent motor, as herein described, a registering-train operated by said motor, and intermediate speed-reducing mechanism, the resistance of said train and mechanism to revolution constituting the only load for said motor.

336,133. **ELECTRIC METER.** SAMUEL D. MOTT, New York, N. Y., assignor, by direct and mesne assignments, to the Schuyler Electric Light Company of New York. Filed Aug. 24, 1883. (No model.) Patented in England Sept. 29, 1882, No. 4,645.



Claim.—1. The combination, for an electric meter, of a recording surface and stylus and a thermometric actuating device for said stylus, heated by the passage of the current to be measured through an electric resistance.

2. The combination, substantially as described, of a recording-stylus and an actuating metallic thermometer forming a portion of an electric circuit.

3. The combination, substantially as described, in an electric meter, of a recording-stylus and an actuator therefor consisting of a compound metallic strip heated by the passage of the current to be measured through an electric resistance.

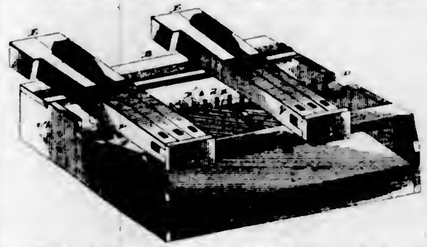
4. The combination, for an electric meter, of a moving recording-surface, a stylus or marker, and a compound metallic strip connected to said marker and forming a portion of an electric circuit.

5. The combination of a compound metallic strip heated by the passage of an electric current, a recording-stylus, and a compensating conductor connected to the electric circuit for compensating for changes of atmospheric temperature, as and for the purpose described.

6. The combination, with a recording-stylus and thermometric actuating device therefor, of an electric resistance forming a portion of an electric circuit, the heating effects in which resistance serve to move the stylus, and a compensating conductor, whereby the effects of atmospheric changes in temperature upon the apparatus may be compensated by changing the flow of current in the resistance.

7. In an electric meter, a resistance heated by the passage of the currents to be measured, and registering or controlling devices controlled thereby, in combination with a compensating conductor, for the purpose described.

336,134. **OCTAVE-COUPLER FOR ORGANS.** WILLIAM MURPHY, St. John, New Brunswick, Canada. Filed Sept. 3, 1885. (No model.)



Claim.—1. The combination, in an organ-action, of the hinged or pivoted board F, the tracker-pin rods, and the bearing-plates secured to the board, and having the tongues bent around the tracker-pin rods to form journals or bearings therefor, substantially as described.

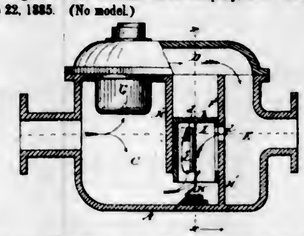
2. The combination, in an organ-action, of the hinged or pivoted board F, the tracker-pin rods, and the bearing-plates secured to the board, and having the tongues bent around the tracker-pin rods to form bearings therefor, one of said bearing-plates having the bearings *l* formed with it to hinge or pivot the board, substantially as described.

3. The combination, in an organ-action, of the hinged or pivoted board F, the sliding rod for operating said board, the tracker-pin rods, and the bearing-plates secured to the board, and having the tongues bent around the tracker-pin rods to form bearings therefor, one of said bearing-plates having the pivotal lug *l* for the attachment of the sliding rod, substantially as described.

4. The bearing-plates having the tongues bent to form bearings for the tracker-pin rods, substantially as described.

5. The bearing-plates having the tongues bent to form bearings for the tracker-pin rods, and the bushing in said bearings surrounding the tracker-pin rods to prevent metallic sounds from the latter, substantially as described.

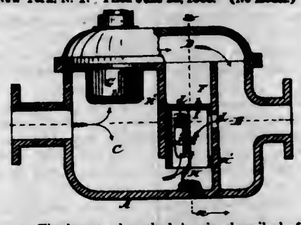
336,135. **PROPORTIONAL WATER-METER.** LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed June 22, 1885. (No model.)



Claim.—1. The combination, in a water-meter, of an inclosing-case having chambers dividing the influent volume into separate streams, and an indicating device operated by the direct flow of one of said streams to effect its measurement, with a piston-valve having ports *d'* in its cylindrical walls, formed and arranged to control the discharge from the other chamber by wall-ports *d*, and a sectional weight suspended from the closed end of said valve, operating to increase the resistance to the movement of the latter under the pressure of the water in the chamber C, to balance the difference in pressure between the influent and the effluent passages, substantially as described.

2. The combination, in a water-measuring device having separate chambers receiving the inflow in separate streams and discharging it in a single volume, of the meter G, containing the indicating operating parts for measuring one of said streams, with a piston-valve having wall-ports *d'* of irregular form, regulating discharge-ports *d* of regular form in the division of said chambers, and a sectional weight carried by said piston, substantially as described, for the purpose specified.

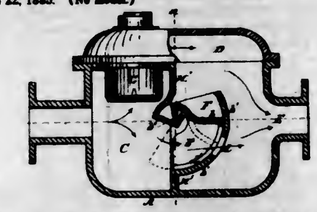
336,136. **METHOD OF OPERATING PROPORTIONAL WATER-METERS.** LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed June 22, 1885. (No model.)



Claim.—1. The improved method herein described of controlling the relative discharge of a volume of water flowing in separate streams in a proportional water-meter, which consists in measuring one of said streams, passing each stream through one or more orifices in which the quantity of the flow is determined by differences in pressure on the opposite sides of the discharge-orifices, and controlling the exact relative proportional discharge of the streams by varying the relative size of the discharge-orifices by the variations of pressure, substantially as described, for the purpose specified.

2. The method, substantially hereinbefore described, of measuring water flowing through separate chambers, which consists in varying the size of the discharge-orifices from one chamber by a controlling-port having an irregular form, according to different rates of flow, whereby to give an unchanging proportion to the separate flowing streams, and measuring the flow through the other chamber, whereby the measurement of streams having unchanging proportions is effected under different rates of flow, substantially as described.

336,137. **PROPORTIONAL WATER-METER.** LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed June 22, 1885. (No model.)



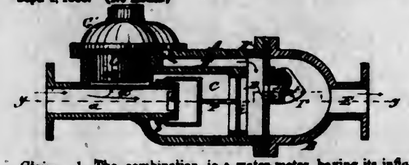
Claim.—1. The combination, in a water-measuring device, of an inclosing-case having chambers dividing the influent volume into separate streams, and an indicating device operated by the direct flow of one of said streams to effect its measurement, with a swinging valve having a port, and arranged to control the discharge of the other stream, whereby the two streams are caused to bear an unchanging proportion to each other under all conditions or different rates of flow.

2. The combination, in a water-measuring device having separate chambers receiving the inflow in separate streams and discharging it in a single volume, of the meter G, containing the indicating operating parts for measuring one of said streams, with a valve hung upon a knife-edge bearing dividing said chambers, and having a port formed and arranged to regulate the discharge-port to control the discharge of the other stream, substantially as described, for the purpose specified.

3. The combination, in a water-meter, the indicating parts of which are operated by a division of the volume to be measured, of an inclosing-case having chambers receiving the inflow in separate streams, divided by a partition having a segmental valve-seat, F, provided with a discharge-port, *d*, of regular form, with a segmental valve having a port, *d'* of irregular form in its segmental part, hung within said segmental valve-seat to operate the discharge-port, substantially as described, for the purpose described.

4. The combination of the case having an interior segmental valve-seat in the division thereof, open at both ends, having a port, *d*, communicating with the receiving and discharging chambers, with a segmental valve, F, having the port *d'*, the radial closed end *b*, the knife-edge bearing b^1, and the side walls, b^2, substantially as described, for the purpose specified.

336,138. **PROPORTIONAL WATER-METER.** LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Sept. 4, 1885. (No model.)



Claim.—1. The combination, in a water-meter having its influent volume divided into two streams, of outlet-ports of irregular form and of different area, with coacting swinging valves operating to vary the proportional areas of said ports for every rate of flow, substantially as described.

2. The combination, in a water-meter having its influent volume divided into separate streams and its effluent ports of irregular form and of unequal area, of coacting swinging valves of unequal area arranged to open outward over said ports, substantially as described, for the purpose specified.

3. The two valves rigidly connected, of unequal size, suspended upon knife-edge bearings in separate chambers having bottom discharge-openings of irregular form and of unequal area, in combination with a water-meter having its influent volume divided into separate streams, one of which is measured, substantially as described.

4. The combination, in a water-meter having its influent volume divided into separate streams, of a meter containing the register-operating parts with a screen placed in the influent passage at the dividing-point for the separate streams, and having its under surface washed by the flow of the non-metered stream, substantially as described, for the purpose specified.

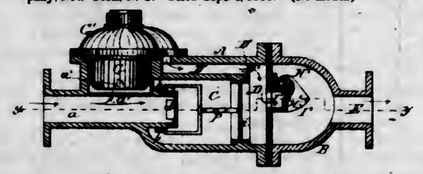
5. The combination, in a water-meter having its influent volume divided into separate streams, one of which is measured, of a dividing partition for said separate streams, capable of yielding or moving under pressure, and a valve operated by said movable division to control the inflow of the volume of the non-metered stream by any difference of pressure which may exist in the chambers of the separate streams to equalize said pressure, with coacting swinging valves for varying the relative sizes of the discharge-openings for every rate of flow, substantially as described, for the purpose specified.

6. The combination, in a proportional water-meter, of coacting swinging valves operating from a horizontal axis to control the flow of the separate streams, substantially as described.

7. The combination, in a proportional water-meter, of coacting swinging valves arranged to open into the discharge-chamber for both streams and to operate by gravity, whereby the said valves are controlled by the differences of pressure in the inlet and outlet chambers, substantially as described.

8. The combination, in a proportional water-meter, of outlet-ports of irregular form, having projecting side walls, with coacting swinging valves operating from a horizontal axis and forming contact-joints with the side walls, substantially as described.

336,139. **METHOD OF OPERATING PROPORTIONAL WATER-METERS.** LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Sept. 4, 1885. (No model.)

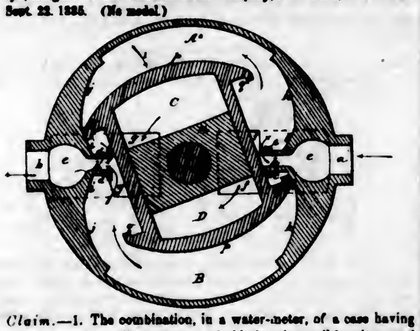


Claim.—1. The improved method herein described of measuring water flowing in divided streams, which consists in varying the proportional areas of the discharge-orifices for each rate of flow to control the proportional delivery of the divided streams, substantially as described.

2. The method herein described of measuring water flowing in divided streams, which consists in causing a stream to pass through a metered passage equalizing the pressure of the two streams at their respective discharge-openings by means of the difference of pressure in the

two passages, and controlling the relative area of the said discharge-openings by coacting valves operated by the differences of flow, substantially as described.

336,140. OSCILLATING WATER-METER. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Sept. 22, 1885. (No model.)



Claim.—1. The combination, in a water-meter, of a case having two interior opposite wall-abutments, suitable interior wall-bearings, and inlet and outlet ports, and an abutment-piston pivoted within the case-chamber between the said abutments, with a piston having the form of a hollow rectangle adapted to divide the case-chamber, and to receive and be divided by said abutment-piston into receiving and discharging spaces by the movement of said piston, substantially as described, for the purpose specified.

2. The combination, in a water-meter, of a piston having the form of a hollow rectangle having a movement substantially as described, with a case having a pivoted abutment-piston, and suitable interior wall joint-forming bearings, and inlet and outlet ports, substantially as described, and for the purpose specified.

3. The combination, in a water-meter, of a piston having the form of a hollow rectangle, and having corner joint-forming projections *q*, with a case having joint-forming interior wall-abutments, *c* and *d*, forming the inlet and outlet ports *h h'*, straight and curved interior wall conformation, *k* and *l*, and a central stud, *m*, and abutment-piston *n*, pivoted within the said piston for operation, substantially as described, in connection with inlet and outlet top and bottom case-ports *f* and *g*, and said inlet and outlet abutment-ports.

4. The combination, in a water-meter, of a piston having the form of a hollow rectangle adapted to divide the case-chamber into alternately enlarging and contracting receiving and discharging spaces, with an abutment-piston pivoted within said piston-closure, dividing the latter into receiving and discharging spaces, and controlled in such division by the movements of said piston, in connection with the inlet and the outlet case-ports, substantially as described.

5. The meter-case having the top and bottom ports, *f* and *g*, and the abutments *c* and *d*, having inlet and outlet ports extending from head to head of the case, in combination with a piston having the form of a hollow rectangle, and an abutment-piston pivoted to the case within said piston-closure, controlled by the movements of the latter, which describe a path defined by a rectilinear line between said abutments, terminating in a swinging movement upon said abutment-piston as a fulcrum, substantially as described.

6. In a water-meter, the combination, with a chamber-dividing piston having a hollow rectangular form, of an abutment-piston, forming a pivoted fulcrum for said hollow piston, and dividing the interior of the latter in the manner and for the purpose specified.

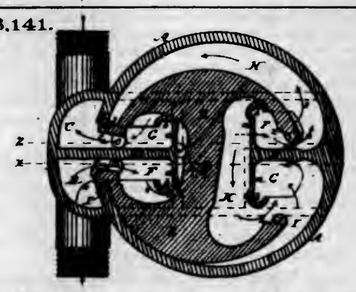
7. The combination, in a water-meter, of a piston having the form of a hollow rectangle operating to divide the case-chamber, as described, with an abutment-piston pivoted to the case within the piston-closure to divide it as described, with suitable register-connecting mechanism connected with and operated by the swiveling movements of said pivoted abutment-piston, as stated.

336,141. OSCILLATING WATER-METER. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Sept. 22, 1885. (No model.)

Claim.—1. The combination, in a water-meter, of a case having two or more radial abutments separating the inlet and the discharge ports with a piston having a revolving oscillating movement, adapted to operate to divide the case-chamber into receiving and discharging spaces and having an interior chamber open at the side and for each abutment which divides it into receiving and discharging spaces, the walls of said chamber-openings having a form and relation to co-operate with case-wall bearings to make instant contact and separation, and thereby prevent the confining of the water within the measuring-chambers and the consequent locking or retarding of the piston, substantially as described.

2. The combination, in a water-meter, of a case having two or

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more radial abutments extending into the case-chamber, and having inlet and outlet ports at the top and bottom of said chamber, with a piston having a revolving oscillating movement and having an interior chamber open at the side for each abutment which divides it into receiving and discharging spaces, the said piston being adapted to divide the case-chamber into enlarging and diminishing receiving and discharging spaces.

3. The combination, in a water-meter, of a case having two or more radial abutments extending into the case-chamber and having joint-forming bearing ends *b*, formed with ports open at their ends and along their sides extending from head to head of the case, with a piston having a revolving oscillating movement and having an interior chamber open at the side for each abutment, and the case inlet and outlet ports F and G, whereby the several enlarging and diminishing spaces of the case-chamber and of the piston-chambers are freely supplied along the open sides of said abutment-ports, substantially as herein set forth.

4. In a water-meter having a piston having a revolving oscillating movement, the center whereof describes a curved orbit about the center of the case, the said casing having two or more abutments formed with side surface-bearings, *z z*, and the said piston having two or more interior chambers formed with bearing-arms *d d'*, adapted to form joint contact with the abutment-bearing ends *b* and with the said side surface-bearings, the said abutments from *b* to *z* being formed with recesses which constitute port-openings, whereby the said piston-arms are caused to break contact with said bearings *z z* and open communication with the case-chambers when the latter are at their greatest capacity, and also to break contact with the abutment-bearing ends when the piston-chambers are at their greatest capacity.

5. In a water-meter, the case having the interior wall-bearings *b*, *z z*, and *g g*, and the opposite inlet and discharge ports F and G, in combination with a piston having a revolving oscillating movement the center whereof describes a curved orbit about the center of the case, having interior chambers open at the side and terminating in bearings *d d²* and *f f²*, substantially as described, and for the purpose specified.

336,142. WATER-METER WITH REVOLVING PISTON. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Oct. 16, 1885. (No model.)



Claim.—1. The combination, in a water-meter, of a revolving non-rotating piston having the bearing-points *h h'*, &c., and recesses *f' f²*, &c., with a case having an equal number of coacting bearing-points and corresponding recesses, and the inlet and exhaust ports *a* and *b*, bounded by and having the edges *k k* and *i i'*, &c., whereby the piston-points are caused to open communication between the measuring-spaces the instant communication is closed with the inlet-ports *a*, to effect the free inlet and discharge of the water into and from the measuring-spaces, substantially as described.

2. In a water-meter, the combination of a revolving non-rotating piston having projections formed with bearing-points *h h'*, &c., connected by a convex surface, *s'*, &c., and having the concave bearing-surfaces *r*, with a case having an equal number of projections having coacting bearing-points *i i'*, &c., connected by the convex bearing-surface *n*, case-

recesses corresponding to the convex formation of the piston projections *s'*, and suitable inlet and exhaust ports, substantially as described.

3. In a water-meter, the combination of a revolving non-rotating piston having projections formed with bearing-points *h h'*, &c., connected by a convex surface, *s'*, &c., and having concave bearing-surfaces *r*, with a case having an equal number of projections having coacting bearing-points *i i'*, connected by the convex bearing-surfaces *n*, and inlet and exhaust ports *a* and *b*, bounded by and having the edges *k k* and *i i'*, &c., and the case-recesses corresponding to the convex formation of the piston projections *s'*, &c., substantially as herein set forth.

4. The combination of a revolving non-rotating piston having bearing projections *h h'*, &c., and *s s'*, &c., and concave bearing-surfaces *r*, with a case having bearing projections *i i'*, &c., *n*, and *k k*, the inlet and exhaust ports *a* and *b*, the inlet bottom passage, H, communicating with the ports *a*, and the outlet top passage, E, communicating with the ports *b*, substantially as herein set forth.

336,143. WATER-METER WITH REVOLVING PISTON. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York N. Y. Filed Oct. 19, 1885. (No model.)



Claim.—1. The combination, in a water-meter, of a revolving non-rotating piston having circumferential projecting points and inlet and discharge ports concentric with each other, with a case having an equal number of joint-forming points and head-ports operated by the concentric inlet and outlet valve-ports of the piston, substantially as described, for the purpose specified.

2. In a water-meter, the piston and its inclosing-case chamber, both having an equal number of coacting projections adapted to divide said chamber into receiving and discharging measuring-chambers, the combination of such pistons having bearing-points with the case projections having wall-recess spaces *m*, whereby to provide for free communication and equal pressure between adjacent measuring-chambers at the inlet and outlet sides of said piston, substantially as described.

3. The combination, in a water-meter, of a revolving non-rotating piston having projecting bearing-points and inlet and outlet ports concentric with each other, with a case having an equal number of joint-forming bearing-points having recesses *m* in the vertical walls on one side of each projection, and case head-ports *c' c²*, and operated by said concentric valve-ports, substantially as described, for the purpose specified.

4. In a water-meter, the case and the piston, each having an equal number of joint-forming bearing-points dividing the case-chamber into receiving and discharging measuring-spaces, the wall-recess spaces *m*, connecting the said measuring-spaces, in the manner and for the purpose stated.

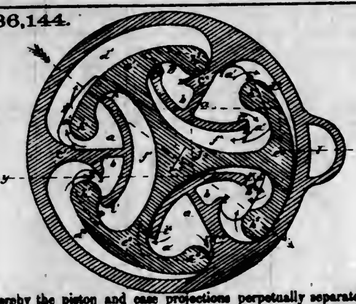
5. In a water-meter, the piston having projecting bearing-points and concentric ports, in combination with a case having an equal number of projecting bearing-points, the said bearing-points of the piston and case carved in opposite directions and lapping in the operation of the meter by a movement upon each other without crowding the water in the space which they close, whereby to avoid retarding the movement of the piston, as herein set forth.

336,144. WATER-METER WITH REVOLVING PISTON. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York N. Y. Filed Nov. 3, 1885. (No model.)

Claim.—1. In a water-meter, the case-heads A' and C, each having the inlet-ports *a' a²* and the outlet-ports *b' b²* outside of the bearing-points of the case projections, in combination with a case and the piston having equal number of bearing projections making perpetual joint forming contact with corresponding recesses in both piston and case, whereby the piston and case projections operate to separate the inlet from the outlet ports in all positions of the piston.

2. In a water-meter, the case-heads A' and C, each having the inlet-ports *a*, prolonged to form the ports *a'*, and the outlet-ports *b*, prolonged to form the ports *b'*, in combination with a case having the wall bearing projections containing the ports *a* and *b*, and a piston having equal number of bearing projections corresponding with case-recesses,

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whereby the piston and case projections perpetually separate the inlet from the outlet ports.

3. The combination, with the case and the piston having equal number of bearing projections making perpetual joint forming contact with corresponding recesses in both piston and case, of the inlet-ports *a a'* and the outlet-ports *b b'*, the inlet-ports being located and formed to admit the water to the measuring-chamber after the latter begins to contract, and the outlet-ports located and formed to open the instant the inlet-ports close.

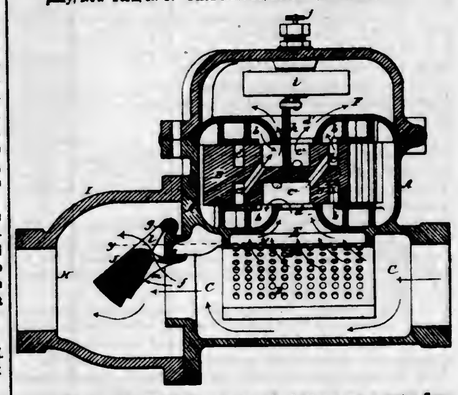
4. In a water-meter, the case having the extended inlet-ports *a'* and the correspondingly-contracted outlet-ports *b'*, and the ports *a b*, formed in the case projections, in combination with the piston having equal number of projections making perpetual contact with the case, substantially as described, for the purpose specified.

5. In a water-meter, the case having the inlet-ports *a* of greater width of opening than the outlet-ports *b* in the case-wall projections, in combination with a piston having equal number of projections making perpetual contact with the case, substantially as described, for the purpose specified.

6. In a water-meter, the case having the inlet-ports *a a'* of greater width of opening than the outlet-ports *b b'*, in combination with the piston having equal number of projections making perpetual contact with the case, substantially as described, for the purpose specified.

7. In a water-meter, the case having the vertical inlet-ports *a* and *b*, bounded by the bearing-points *i' i²*, &c., and *z z*, and the head port edges *z² z²*, the said bearing-points *z z* being of unequal projection, in combination with the piston having equal number of projections making perpetual contact with the case, substantially as described, for the purpose specified.

336,145. METHOD OF OPERATING PROPORTIONAL WATER-METERS. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Nov. 30, 1885. (No model.)



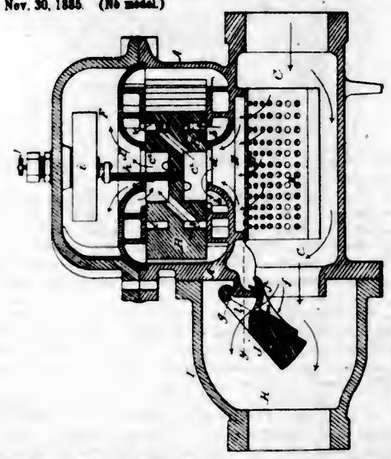
Claim.—1. The method herein described of measuring water flowing in divided streams, which consists in varying the proportional areas of the discharge-orifices of a water-meter for every rate of flow, and controlling such variation by coacting weighted valves, substantially as described.

2. The method herein described of measuring water flowing in divided streams, which consists in providing an equal resistance to the flow of each stream, and regulating the proportion of the flow of each stream by varying the proportional areas of the discharge-orifices to control the proportional delivery of the streams under every rate of flow, substantially as herein described.

3. The method herein described of measuring water flowing in di-

vided streams, which consists in providing a definite resistance to the flow of each stream for every rate of flow, and utilizing such resisting element for varying the proportional areas of said orifices to control the proportional delivery of the streams under every rate of flow, as set forth.

336,146. PROPORTIONAL WATER-METER. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Nov. 30, 1885. (No model.)



Claim.—1. The combination, in a water-meter in which the influent volume is divided into two streams, one of which is measured, of a case having a separate outflow-port for each stream, with a swinging valve having a determined weight to offer a definite and unchanging resistance to the flow of each stream, substantially as described, for the purpose specified.

2. The combination, in a proportional water-meter, of a swinging weighted valve for resisting the flow of both streams, with means, substantially such as described, for varying the proportional areas of the discharge-orifices to regulate the proportional quantity of the water flowing in each stream for every rate of delivery of the meter.

3. The combination, in a proportional water-meter, of the swinging weighted valve J J′, the knife-edge bearing for said valves, and means for varying the proportional areas of the discharge-openings for each stream, substantially as described.

4. The combination, in a proportional water-meter, of a swinging weighted valve, pivoted horizontally, with the internally-projecting wings or lip-piece for regulating the proportional area of the discharge-orifices of the streams, substantially as described.

5. In a proportional water-meter, the combined valve J J′, the knife-edge bearing *g*, and the wing or lip J^3, operating substantially as described, for the purpose stated.

6. The combination, with the outlet-ports *e f*, of a proportional water-meter, of a swinging weighted valve having an opening, *l*, and an inwardly-projecting face-wing having a flaring opening, *z*, joining that in the valve, and the outlet-port wall *z*, substantially as described, for the purpose specified.

7. The weighted swinging valve J, having the opening *l*, the side wing, J′, the inwardly-projecting curved wings J^2 J^2, and the angled sides *m m*, in combination with the case-port walls *e*, the chamber H, and the ports *e* and *f*, substantially as described, for the purpose specified.

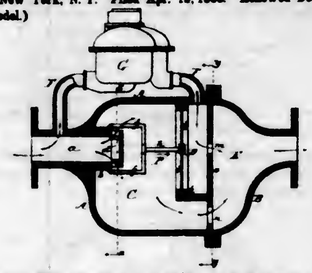
8. The combination, in a proportional water-meter, of discharge-ports of unequal area, with coacting swinging valves therefor, one of which is adapted to permit the outflow under and over it from the port of greatest area, substantially as described, for the purpose specified.

9. The combination, in a water-meter in which the influent volume is divided into two streams, one of which passes through the operating-meter device, of a case having a separate outflow for each stream, with a fixed segmental screen arranged to form an extended screening-surface for the metered passage, substantially as described.

10. The combination, in a water-meter in which a divided influent volume is measured by the measurement of one division thereof, of a case having a separate outflow-orifice for each stream, with a fixed inverted segmental screen having a free-flow space formed by said case around and over said screen, communicating with the metered passage, substantially as described.

11. The combination, with the meter-case having the flow-passage C, and the meter-operating device arranged in a chamber communicating with said passage, of the segmental screen D, arranged to form the upper walls of said flow-passage having a surrounding flow-space, E, communicating with said meter-operating device, whereby to give a free flow to the meter device and exclude foreign substances therefrom, substantially as described.

336,147. METHOD OF OPERATING PROPORTIONAL WATER-METERS. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Apr. 13, 1885. Renewed Dec. 9, 1885. (No model.)

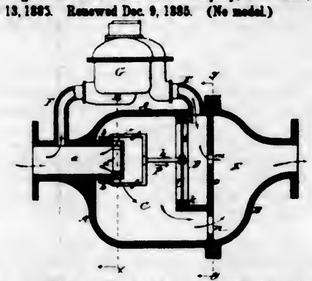


Claim.—1. The improved method herein described of measuring water flowing through a pipe and indicating the quantity of such flow, which consists in dividing the flowing volume into two streams, causing one stream to pass through a metered passage into a receiving and discharging chamber, and controlling the flow of the other stream into a separate chamber by automatically and consecutively regulating the pressure in the said separate chambers, substantially as herein set forth, for the purpose stated.

2. The method herein described of measuring flowing water by causing its discharge through separate orifices under the same conditions of pressure, which consists in dividing the stream into two volumes, equalizing the pressure of each volume at its outlet orifices by means of any variation in such pressure of the streams at said orifices, and measuring the flow of one of these streams by an indicating device.

3. The method herein described of measuring water flowing through a pipe and registering the quantity of such flow, which consists in dividing the flowing volume into two streams, one of which is measured, the other passing through a separate channel, controlling the proportion of both streams by passing them through given-sized orifices under the same conditions of pressure, and automatically regulating the pressure in said separate streams at the outlet-orifices, substantially as described.

336,148. PROPORTIONAL WATER-METER. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Apr. 13, 1885. Renewed Dec. 9, 1885. (No model.)



Claim.—1. The combination, in a water-measuring device, of independent receiving-chambers, with a dividing-partition for said chambers capable of moving or yielding under pressure, a valve operated by said division to control the supply to one of said chambers by any difference of pressure which may exist therein, and suitable indicating mechanism connecting with one of the chambers, substantially as described, for the purpose specified.

2. The combination, in a water-measuring device having independent receiving and discharging chambers, with a flexible dividing-diaphragm, a valve connected therewith for controlling the supply to one of said chambers, and suitable indicating mechanism operated by the flow through the other of said chambers, substantially as described, for the purpose specified.

3. The combination, with the shell A and the end cover, B, of flexible diaphragm *i*, forming the receiving and discharging shell, chambers C and D, the valve *b*, and the metered passage F, the said valve arranged and controlled by the movement of said chamber-forming diaphragm, in the manner herein set forth.

4. The combination, in a water-measuring device, of a shell having a receiving and discharging chamber with a partition forming said

chambers capable of moving or yielding under the pressure, and a valve controlled by said partition, one chamber being supplied through a metered passage, and the other supplied through a valve operated by the difference of pressure within said chambers, substantially as described, for the purpose stated.

5. The combination, in a water-meter, of two chambers having separate inlet and outlet orifices, with an indicating device operated by the flow through one inlet, a valve placed in the other inlet, and a partition dividing said chambers, connected with said valve and operated to control it to equalize the pressure in said chambers whenever unequal pressure is produced therein, substantially as described.

336,149. RUCHING FOR DECORATIVE PURPOSES. BENJAMIN NOYES, Boston, Mass. Filed Feb. 21, 1881. (Model.)



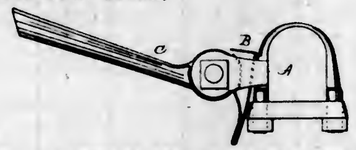
Claim.—1. The fringed ruching or garland trimming consisting of numerous strips or folds of paper secured together by stitches and a strengthening strand or tape, and cut nearly across from their edges into filaments, forming fringe, which is raised, opened, and spread into a light fluffy form, producing a full, bushy, and feathery effect, as described.

2. As a new article of manufacture, for decorative purposes, the ruching or garland trimming composed of manifold strips of paper having their edges cut into filaments or fringe, the folds and different lengths thereof being united together into suitable lengths, and having the cut filaments opened and spread into a bushy or fluffy form to produce a garland, as described.

3. The herein-described process of manufacturing the fringed ruching or garland trimming, which consists in cutting manifold sheets of paper into strips of the desired width, then cutting the folds into filaments, so as to leave a longitudinal uncut portion, securing the folds and different lengths thereof together, then opening and spreading filaments of the fringed portion, whereby the ruching is given a fluffy or feathery rounded appearance.

4. The method herein described of producing a ruching of paper, consisting of first cutting the required number of sheets of paper into numerous strips, then superposing a number of said strips, then cutting the combined strips into filaments to near their center, then uniting the sections formed by the strips by means of stitching them to flexible material, such as fabric, and then loosening them to give the same a fluffy or feathery appearance until it approaches a circular form, as described.

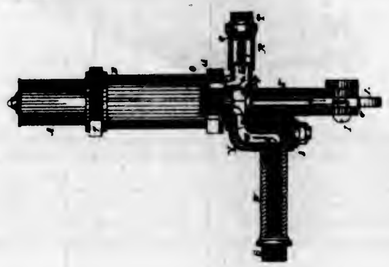
336,150. ANTI-RATTLER FOR THILL-COUPLINGS. JOHN C. NULL, Dayton, Ohio, assignor of one-half to Charles F. Bryant, same place. Filed Oct. 23, 1885. (No model.)



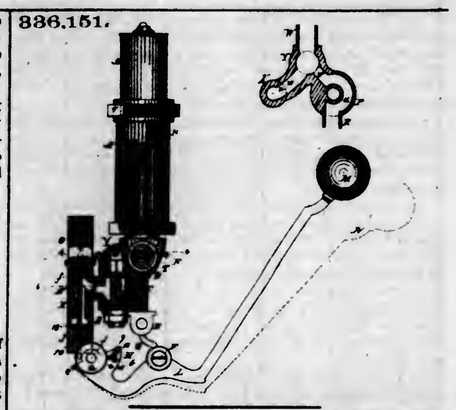
Claim.—An anti-rattler for thill-couplings formed of steel plate of uniform width bent upon itself, with double curves on its front face and a backward curve or projection at the top, and from this point a forward projection, substantially as shown and described.

336,151. SIRUP-GAGE. PETER PALM, Chicago, Ill., assignor to William E. Haffner and Herman Will, both of same place. Filed Oct. 12, 1885. (No model.)

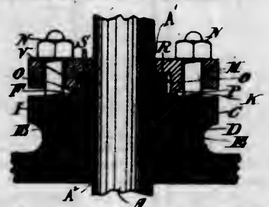
Claim.—The vertical cylinder B, supported on top of the diverting-chamber P, and said chamber having a central bearing for guiding the rod C of piston A, in combination with the lever L and connecting-rod G, as specified.



336,151.

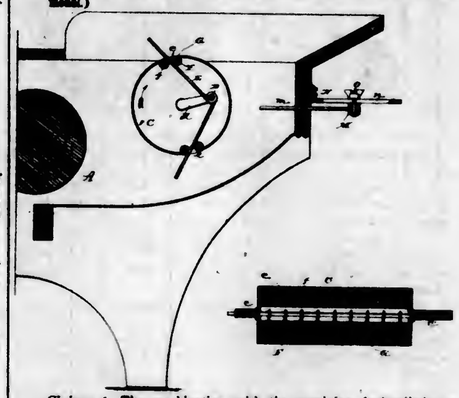


336,152. PACKING FOR RODS. JOHN PARTINGTON, Winnipeg, Manitoba, Canada. Filed Dec. 7, 1885. (No model.)



Claim.—The combination of the end and neck B C, bush E, having recesses H and springs I, follower K, constructed and arranged with the rod A to form the space A^2, rings S, having springs V attached thereon, as described, gland M, having recess O and surface R, and space A′ between it and the rod A, the whole substantially as and for the purposes set forth.

336,153. FEEDER FOR THRASHING AND OTHER MACHINES. MERRICK E. PERKINS, Berrien Springs, Mich. Filed Sept. 4, 1885. (No model.)



Claim.—1. The combination, with the revolving feed-cylinder, a shaft journaled in the ends of said cylinder, and a series of rake-teeth mounted on said shaft eccentrically to the axis of the cylinder, and adapted to project through slots in the face of the cylinder, of a series of cut-off fingers secured to the cylinder-frame in horizontal adjustment.

2. The combination, with a revolving feed-cylinder having oblong slots in the face thereof, of a crank-shaft journaled at the centers of the ends of the cylinder, a regulator secured to said shaft and adapted to lock it against movement, and a series of cut-off fingers, substantially as set forth.

3. The combination, with the stationary shaft, the rake-teeth eccentrically mounted thereon, and the cylinder adapted to revolve about the shaft, of a pair of anti-friction rollers journaled in the ends of the cylinder near the periphery thereof, and adapted to guide the teeth in their reciprocating motion, substantially as set forth.

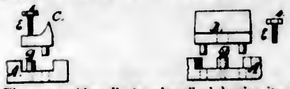
4. The combination, with the stationary shaft, the rake-teeth eccentrically mounted thereon, and the cylinder adapted to revolve about the shaft, of a grooved anti-friction roller and a smooth anti-friction roller, said rollers being journaled in the ends of the cylinder near the periphery thereof, and adapted to loosely embrace the opposite sides of a set of rake-teeth, substantially as set forth.

5. The combination, with the stationary crank-shaft, and means for locking it in different rotary adjustments, the revolving cylinder, and two sets of rake-teeth loosely mounted on the crank-shaft, of a pair of anti-friction rollers adapted to embrace the opposite sides of each set of teeth, substantially as set forth.

6. The combination, with a revolving cylinder and sets of feed-teeth adapted to advance and recede through slots in the face of the cylinder, of the set of cut-off fingers and the slotted bracket and clamp-screw adapted to lock the cut-off fingers in the desired horizontal adjustments, for the purpose substantially as set forth.

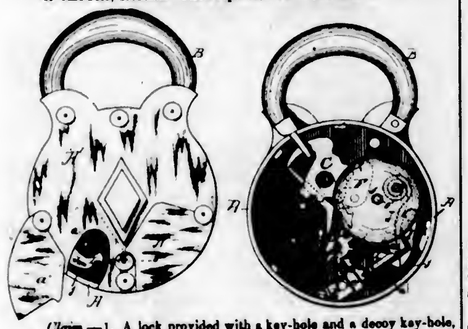
7. The combination, with a shaft and a cylinder mounted thereon, of guides located within slots in the face of the cylinder, and journaled in the ends of said cylinder, and teeth mounted on the shaft eccentrically to the axis of the cylinder and passing through the guide, substantially as set forth.

336,154. HORSESHOE. THOMAS PHILLIPS, ELI BOUSHARD, and TREFLÉ CHARBONNEAU, Worcester, Mass. Filed Jan. 6, 1886. (No model.)



Claim.—The removable-calk shoe described, having its calks fitting in recesses, and provided with one or more studs fitting holes in the shoe, and an opening fitting over the thimble or nut on the shoe, with a bolt or screw holding them firmly in place, all constructed and operating substantially as and for the purposes as above set forth.

336,155. ALARM-LOCK. MARIA PIOR, Chicago, Ill., administratrix of Carl Pior, deceased. Filed Sept. 29, 1885. (No model.)



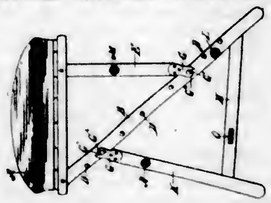
Claim.—1. A lock provided with a key-hole and a decoy key-hole, and mechanism for sounding an alarm when an attempt is made to open the lock through the decoy key-hole, substantially as specified.

2. A lock provided with a key-hole and a decoy key-hole, and a spring-actuated hammer I, nipple *j*, hook K, spring L, and wheel H, arranged and operating substantially as specified.

3. A lock having an alarm mechanism therein, and provided with an opening or hole therein to permit the sound of the alarm to escape, and a lid or cover hinged to the lock to conceal said hole or opening, substantially as described.

4. In a lock having an alarm or signal mechanism therein, a hole or opening in the shell of said lock, a cover pivotally secured thereto to conceal said hole or opening, and mechanism, substantially as described, to automatically release said cover, substantially as and for the purpose specified.

336,156. FOLDING ADJUSTABLE MUSIC-STOOL. JOHN PURNELL Sr., Thomaston, Conn. Filed Oct. 29, 1885. (No model.)

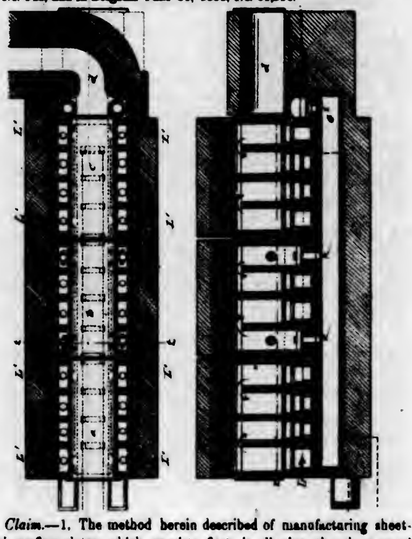


Claim.—1. Part A, the side braces, and legs B, having pins arranged diagonally, as shown, in combination with supports E, pivoted to the table, and legs K, pivoted to the side braces, both of said parts having at their inner ends metallic plates slotted to engage the pins in legs B, and having legs G^2, whereby the pins and plates are held in engagement when the device is lifted.

2. Part A, the side braces, and legs B, having pins D, in combination with supports E and legs K, both of which are provided with plates having slots G', guarded by legs G^2, so that pins B will not escape when the device is lifted, but the plates may be readily removed to fold it.

3. Part A and the side braces, in combination with legs B, having plates D', with pins D, supports E, and legs K, both of which are provided at their ends with plates having slots to engage said pins, and legs G^2, by which they are held in place when the device is lifted.

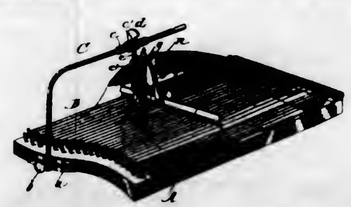
336,157. METHOD OF ENAMELING METALLIC ROOFING-PLATES. EDUARD PÜTTMANN and JOSEF FLINDR, Hagen, Prussia, Germany. Filed Dec. 16, 1885. (No specimens.) Patented in Luxemburg June 24, 1885, No. 542, and in Belgium June 30, 1885, No. 69,250.



Claim.—1. The method herein described of manufacturing sheet-metal roofing-plates, which consists, first, in dipping the sheet-metal plates into liquid enamel, then removing the surplus enamel by centrifugal action, and finally baking the same in baking-muffles, substantially as set forth.

2. The method herein described of manufacturing enameled sheet-metal roofing-plates, which consists of the following successive steps: first, dipping the sheet-metal plates into liquid enamel; second, removing the surplus enamel by centrifugal action; third, baking the plates; fourth, tempering the same, and, finally, cooling the same, substantially as set forth.

336,158. ZITHER. CARL H. RAHN, Chicago, Ill. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a zither, the combination, with the strings thereof, of rubber strip *t* and angle-iron *s*, the former held removably in the latter and horizontally and vertically adjustable with respect to the strings, as set forth.

2. In a zither, the combination, with vertical rod D, provided on its upper end with circular plate *w*, perforated, as described, of stem *x*, provided with adjustable plate *y*, the latter provided with a bracket, *x'*, horizontal rod *y'*, vertical rod *p'*, strip *t*, and angle-iron *s*, as set forth.

336,159. FAUCET. ROBERT M. REILLY and FRANCIS KIRK, Baltimore, Md., assignees of one-third to Thomas M. Dukehart, same place. Filed June 16, 1885. (No model.)



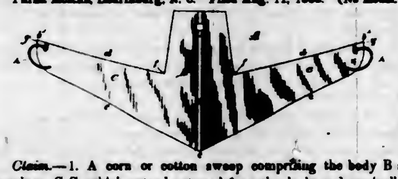
Claim.—1. A bung provided with a freely-sliding valve having an inner and an outer flange to fit the opening into the bung, and an interior seat for the reception of the end of a faucet freely sliding within the bushing, whereby the valve may be instantaneously opened by direct pressure upon the faucet, substantially as and for the purpose set forth.

2. A bung provided with a valve having an upper flange extending outwardly beyond the inner edge of the valve-seat *b'* of the bung, a flange forming a seat for a gasket, and a flange to fit the opening into the bung, substantially as and for the purpose set forth.

3. The combination, with a bung provided with a cone-shaped valve having an interior beveled seat, of the faucet provided with locking-lugs to hold it in position, a flange to limit its entrance into the bung, and lower beveled edge adapted to fit the beveled seat of the valve, substantially as and for the purpose set forth.

4. The combination, with a faucet, of a bung provided with a shouldered recess, *b*, and internal flange, *b'*, a cone-shaped valve and a gasket therefor, the valve being opened by the direct pressure of the faucet, a ring for holding said gasket in place and forming a seat for an auxiliary gasket, a flanged ring adapted to hold the said gasket in place, and a flanged locking-plate, substantially as and for the purpose set forth.

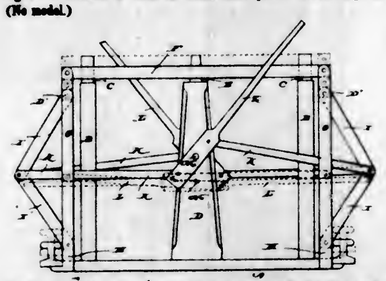
336,160. COTTON AND CORN SWEEP. NELSON MCK. REESE and PETER MCRAE, Laurinburg, N. C. Filed Aug. 11, 1885. (No model.)



Claim.—1. A corn or cotton sweep comprising the body B and side wings, C C, which extend outward from the body and are inclined downward and backward from the central line thereof, the front or lower edge, *c*, of the wings being sharpened and extending at an angle of about thirty degrees from the point *e* of the body B, the edge *c* of the wings being rounded at the ends thereof to form corners *b'*, which are made blunt, so as not to cut or otherwise injure the plants, as set forth.

2. A corn or cotton sweep comprising the body B, the side wings, C C, and curved spring-bars secured to the outer ends of the wings, said bars being arranged and operating for the purpose set forth.

336,161. TRACK-RAISER. GEORGE W. ROSBURGH, Elms, Tex., assignor of one-half to John E. Polk, same place. Filed Aug. 4, 1885. (No model.)

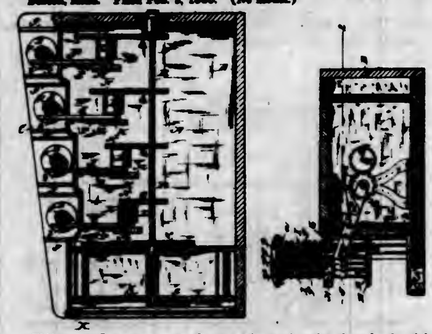


Claim.—1. The combination of the base and the standards with the beam F, adjustable on the ends of the standards, the toggle-jointed levers connecting the beam F with the base A, the hooks O, suspended from the beam F, and the levers for moving the toggle-levers, and thereby raising and lowering the beam F, substantially as described.

2. The combination of the base A, having the standards B D, the beam F, working on the upper ends of said standards, the toggle-levers connecting the beam F with the base A, the hooks suspended from the beam F, the levers L, (one or more,) fulcrumed to the standard D, and the rods K, connecting the joints of the toggle-levers with the levers L on oppositely diametrical sides of the fulcrum of said levers, substantially as described.

3. The beam F, in combination with the hooks O, suspended from the beam, the toggle-jointed levers I, connecting with the beam F, and the handles or levers for moving the toggle-jointed levers, as set forth.

336,162. REGISTERING TICKET-STAMP. BENJAMIN P. ROGERS, Boston, Mass. Filed Feb. 9, 1885. (No model.)



Claim.—1. In an apparatus for stamping and registering checks, tickets, &c., a reciprocating hand-stamp, D, connected by an arm carrying a spring-pawl, P, with a shaft, K, having a ratchet-wheel, M, and a gear-wheel, N, in combination with shaft R, having a gear-wheel, Q, meshing with said gear-wheel N, and connected to a registering mechanism, substantially as described, for the purpose specified.

2. In an apparatus for stamping and registering checks, tickets, &c., a series of reciprocating hand-stamps, D, each connected by an arm, J, carrying a spring-pawl, P, with separate shafts K, each having a ratchet-wheel, M, of equal size, and gear-wheels N, of unequal size, in combination with a shaft, R, having gear-wheels Q of equal size, each meshing with a gear-wheel, N, and connected to a registering mechanism, substantially as described, for the purpose specified.

336,163. WHEEL CULTIVATOR AND FERTILIZER-DISTRIBUTER. WILLIAM RUFFIN and ROBERT RUFFIN, Como, Miss. Filed Sept. 21, 1885. (No model.)



Claim.—1. The combination of the vertical standards having the horizontal connecting-arms and the supporting-wheels, the trailing plows or cultivators attached to the standards, the draft-bar secured at its rear end to the horizontal connecting-arms and adapted to be shifted laterally thereon, and the extensible rods connecting the front end of the draft-bar and the standards, substantially as described.

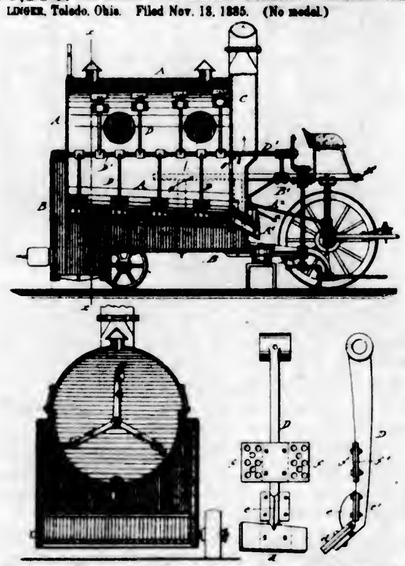
2. The combination of the wheel-standards having a series of horizontally-disposed openings, G, and the supporting-wheels provided with

lateral cutting-edges, and having their axles journaled in said openings either at right angles to the line of draft or obliquely thereto, substantially as and for the purpose described.

3. The combination of a plow or cultivator having the lugs Y, and a fender having a horizontal arm, *z*, notched on its under side and secured in openings in the lugs, substantially as described.

4. The combination of a plow or cultivator beam, perforated lugs Y, secured thereon, a fender-supporting arm mounted in the lugs and adapted to be adjusted vertically and laterally therein, and a fender adjustably secured to the free end of the arm, substantially as described.

336,164. MACHINE FOR MIXING ASPHALT. FREDERIK SCHILLINGER, Toledo, Ohio. Filed Nov. 18, 1885. (No model.)



Claim.—1. In a machine for mixing asphalt, the combination of a boiler with a furnace surrounding the lower part of the boiler, the bottom of the boiler being covered at the outside and the walls of the furnace at the inside with a lining of fire-brick, substantially as set forth.

2. The combination, in a machine for mixing asphalt, of a boiler having an inclined bottom and an inclined discharge-spout at the lower front end, a furnace surrounding the lower part of the boiler, and a rotary mixer-shaft having radial stirrer-arms of different length, substantially as set forth.

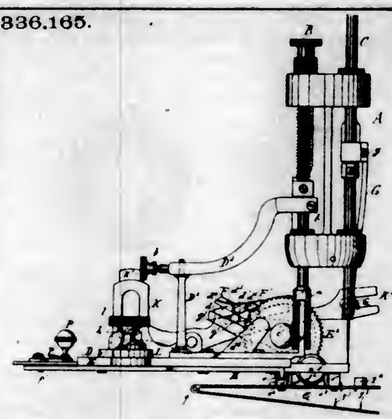
3. The combination, in a machine for mixing asphalt, of a boiler having an inclined bottom and an inclined discharge-spout, a vertically-guided gate for said discharge-spout, a furnace surrounding the lower part of the boiler, a rotary mixer-shaft having radial stirrer-arms increasing in length, said arms having inclined paddles at the outer ends, substantially as set forth.

4. In a machine for mixing asphalt, the combination of a boiler having an inclined discharge-spout, a mixer-shaft, and radial stirrer-arms attached to the shaft, and provided with paddles, and with cutting-knives above and at right angles to said paddles, substantially as set forth.

5. In a machine for mixing asphalt, the combination of a boiler having an inclined discharge-spout, a rotary mixer-shaft, radial stirrer-arms attached to said mixer-shaft, and provided with inclined paddles at the outer ends, cutting-knives above and at right angles to the paddles, and perforated breaking-up plates above the knives, substantially as set forth.

6. The combination of a boiler having an inclined discharge-spout, a furnace surrounding the lower part of the boiler, a rotary mixer-shaft, and radial arms of different lengths attached to said mixer-shaft, and provided with inclined paddles at the outer ends, cutting-knives at right angles thereto, and perforated cutting-up plates above the knives, substantially as set forth.

336,165. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. WILLIAM SCHOTT, New York, N. Y., assignor to the Schott Button Hole Attachment Company, same place. Filed May 21, 1885. (No model.)



Claim.—1. In a button-hole attachment for a sewing-machine of the character herein specified, the combination, with the mechanism for transmitting the motion of the needle-bar to the button-hole form-plate, and with the form-plate, of right and left worms fixed on a revolving shaft, and means for shifting the form-plate to bring the worms successively into engagement with the toothed jaws thereon, whereby said plate may be moved longitudinally back and forth without reversing the shaft of the worm-wheels, as specified.

2. In a button-hole attachment for a sewing-machine, substantially as herein shown and described, the movable barring-plate M, provided with lip o, combined with the button-hole form-plate, the clamp, and bar *s*, having recess s^4, substantially as and for the purposes described.

3. The combination, with the barring-plate M, movably secured on the reciprocating foot, the form-plate, and cloth-clamp, of the lever P, for moving the same, the worms, and gears, all arranged and operated as set forth.

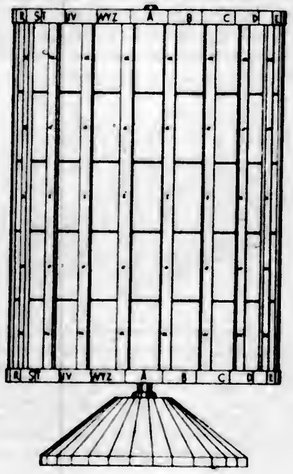
4. The button-hole form-plate, constructed substantially as herein shown and described, consisting of two bars, *s s'*, fixed parallel and apart from each other on the cloth-clamp, each provided with a toothed jaw, s^2 s^3, set so as to face a blank space on the opposite bar, combined with the right and left worms f^3 f^3 and connections, substantially as shown and described.

5. In a button-hole attachment for a sewing-machine, a button-hole form-plate provided with removable toothed jaws, combined with the gears, the worms f^3 f^3, lever P, and connections, substantially as herein shown and described.

6. In a button-hole attachment for a sewing-machine, a button-hole form-plate provided with a longitudinal groove for the engagement therein of a barring device, as M, for moving the said form-plate transversely, for the purpose of barring the ends of a button-hole, combined with said barring device, as set forth.

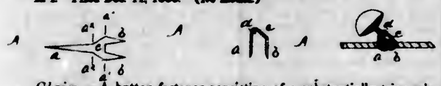
7. The combination, with the cloth-clamp Q, of the button-hole form-plate *s s'* and jaws s^2 s^3, combined with the worms f^3 f^3 and operating-connections, all constructed and arranged substantially as set forth.

336,166. REVOLVING OR STATIONARY RACK OR CASE. JOHN H. SHERRARD, Delphos, Ohio. Filed July 3, 1885. (No model.)



Claim.—A case or rack for filing papers or books in, having openings or pigeon-holes arranged in rows both horizontally and vertically, the holes lettered one way with the letters of the alphabet consecutively, and the other way with the vowels, as shown and for the purpose set forth.

336,167. BUTTON-FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Dec. 11, 1885. (No model.)



Claim.—A button-fastener consisting of a substantially-triangular table having one prong at the apex thereof, and another prong or prongs on the base, said prongs being bent in parallel planes and so as to form an inclined table, substantially as set forth.

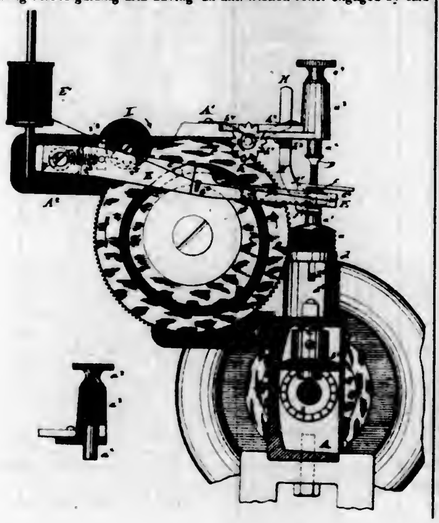
336,168. MACHINE FOR WINDING BOBBINS FOR SEWING-MACHINES, &c. OTTO SORGAN, New York, N. Y. Filed Apr. 25, 1885. (No model.)

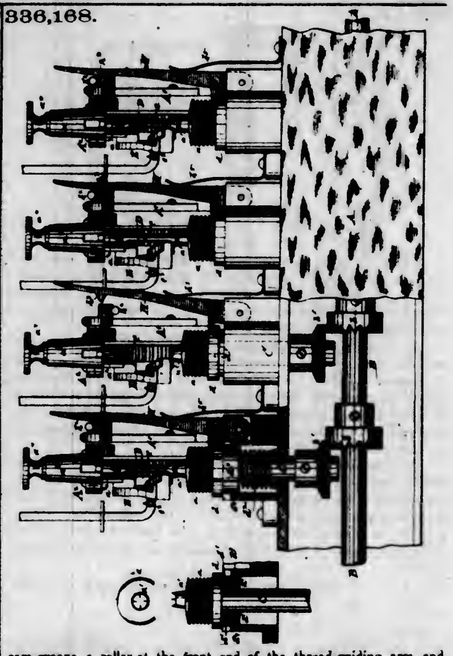
Brief.—Each winding mechanism consists of an axially-turning spindle having a knife-edge clutch for supporting the lower end of the bobbin, the upper end of which is supported by a spring-actuated and sliding clutch device. A worm on the rotating spindle meshes with worm-wheel having a cam-groove, which actuates a thread-guiding arm so as to reciprocate the same and throw the arm up and down while it is being wound on the spool. A pin of the grooved worm-wheel meshes with the star-wheel, the crank-shaft of which releases a latch-lever, which throws the spool-holding spindle out of gear with the driving-shaft. To provide for the winding of the conical ends of the spool, the thread-guiding arm is gradually shifted on its pivot by means of a second pin of the transmitting worm-wheel, which meshes with a star-wheel, the shaft of which engages an involute cam which bears on lug on guide-arm.

Claim.—1. The combination of a spindle and means for supporting, guiding, and operating the same, said spindle having a fixed clutch device, a spring-actuated friction-clutch vertically above the spindle, an oscillating thread-guiding arm, a band-spring attached at its inner end to said arm, its outer or free end being forked, a roller in the forked end of said spring adapted to bear against the yarn being wound, and means, substantially as described, for imparting motion to said arm.

2. The combination of the spindle and means for supporting and operating the same, clutches for supporting the spool in line with the spindle, an oscillating thread-guiding arm having a roller and springs for pressing the same against the yarn being wound, a worm on the spindle, a transmitting gear-wheel engaging said worm, and having a fixed pin, a star-wheel operated by said pin, a shaft upon which said star-wheel is mounted, said shaft being provided with a crank-arm, and a spring-pressed latch-lever having a beel for locking the spindle and a nose at the upper end, said nose being engaged by said crank-arm of the star-wheel shaft, so as to release the latch-lever from the spindle, substantially as set forth.

3. The combination of a spindle and means for supporting and operating the same, a collar and guide-sleeve on said spindle, a guide for the spindle, clutches for holding the spool, a worm on the spindle, a gear-wheel meshing with the worm and having a cam-groove, an oscillating thread-guiding arm having an anti-friction roller engaged by said



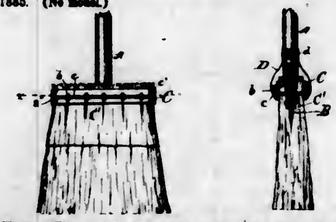


cam-groove, a roller at the front end of the thread-guiding arm, and springs for pressing the same against the yarn being wound, a star-wheel, a crank-shaft keyed to the star-wheel, a latch-lever having a nose at its upper end and a heel at the lower end engaging the collar of the spindle, and a spring for actuating said lever, so that the spindle will be released and the winding of the bobbin interrupted by the throwing of the spindle out of gear by said nose, substantially as set forth.

4. The combination of a spindle and means for supporting and operating the same, clutches to support the spool in line with the spindle, an oscillating thread-guiding arm, and mechanism, substantially as described, whereby the thread-guiding arm is shifted longitudinally on its pivot, so as to enlarge its oscillating motion, substantially as set forth.

5. The combination of a spindle and means for supporting and operating the same, said spindle being provided with a worm, a gear-wheel engaging said worm and having a cam-groove and pin, an oscillating thread-guiding arm having a slot at its inner end, a pin engaging said slot, a lug on said arm, an expansive spring between said lug and pin, an anti-friction roller upon said arm engaging said cam-groove, a star-wheel engaged and turned intermittently by said pin of the gear-wheel, and an involute scroll on the shaft of the star-wheel engaging said lug, so as to shift the arm longitudinally on its pivot and gradually enlarge the oscillations of its outer end.

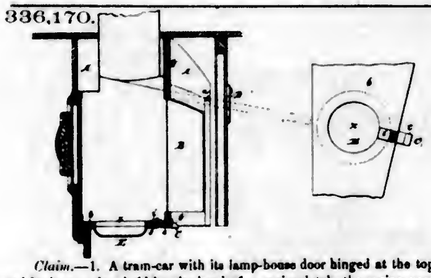
336,169. BROOM. ANDREW STEPHEN, Clinton, Iowa. Filed Apr. 3, 1885. (No model.)



Claim.—The combination, with a broom handle and head, of the plate B, fastened to the handle and inserted in the head of the broom, the band C, placed around the broom-head, the wire *c*, extended through and along the sides of the band and having its ends bent inwardly and inserted through holes in the band, and the rivets *b*, inserted through the band and plate and having their ends bent and clinched over the wire *c*, substantially as and for the purpose described.

336,170. LAMP-DOOR LATCH FOR CARS. JOHN STEPHENSON, New York, N. Y. Filed Dec. 23, 1885. (No model.)

336,170.



Claim.—1. A tram-car with its lamp-house door hinged at the top, and its lower edge held by the head of a spring-latch, the spring passing inward and under the floor of the lamp-house, and then rising up through the floor and thereto secured near the tail end of the spring, as and for the purposes set forth.

2. A tram-car with its lamp-house door hinged at the top, the door held shut by the head of a latch located beneath the house-floor, while the fastened end of the latch-spring is above the house-floor, the lower edge of the door when unlatched swinging upward, and the end stile of the door contacting a hook, which automatically catches and holds up the door until it is released, and then in falling is automatically secured by the latch, as and for the purpose described.

3. A tram-car with its lamp-house door held shut by a spring-latch, with its head or operating end below the house-floor, while its tail end, contributing to the elasticity of the spring, is secured to the upper side of the floor, and is in combination with a drip-cap under the floor, having a broad rim crossing the latch-spring, which limits the motion of the spring and prevents it from being carelessly bent, as and for the purposes set forth.

336,171. VAULT-LIGHT. HENRY F. STROUK, Cincinnati, Ohio. Filed Nov. 16, 1885. (No model.)

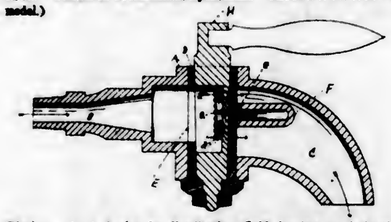


Claim.—1. A holder for prisms, bull's-eyes, and other lights, which holder consists of a cup and a detachable locking-piece united by a set of interlocking flanges, which locking-piece serves as a bearing for the lower margin of the prism, substantially as described.

2. The combination, in a holder for prisms, &c., of the cup C, having flanges F, and the detachable locking-piece I, having sockets J and inclined flanges K, whereby the said holder is clamped to the vault-cover and a bearing afforded for the margin of the prism, as herein described.

3. The cup C, having a rim, D, outwardly-projecting flanges F, and an annular enlargement, G, the bore or opening of said cup being of greater diameter at bottom than at top for the twofold purpose of clamping the holder in place and securing the prism within said holder, as herein described.

336,172. PROPORTIONAL MEASURING ATTACHMENT FOR FAUCETS. DANIEL A. SUTHERLAND, Lynn, Mass. Filed Nov. 17, 1884. (No model.)



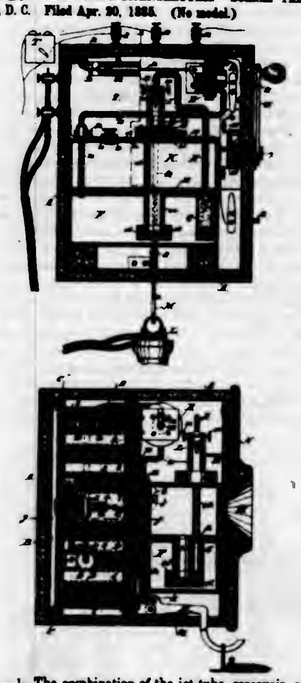
Claim.—1. A device for distributing fluid, having an induction-port to receive fluid and eduction-ports of equal size adapted to discharge the fluid under conditions of passage substantially equal, as described, in combination with means for varying equally the size of all the discharge-ports or for closing them altogether, and a measuring device connected with one of the eduction-ports and adapted to measure the quantity of fluid discharged therefrom, substantially as described.

2. A device for distributing fluid, having an interior chamber and an induction-port leading to the same, and a series of eduction-ports leading from the chamber and adapted to discharge fluid under conditions of passage substantially equal, as described, and means located within said interior chamber having openings corresponding to the eduction-ports and registering therewith and adapted to be operated to stop the flow of fluid through the eduction-ports simultaneously in whole or in part by being moved entirely or partly out of alignment with said eduction-ports, said means being under the direct control and subject to the will of the operator, substantially as and for the purposes described.

3. A device for distributing fluid, having an interior chamber and an induction-port leading to the same, and two or more eduction-ports of equal size leading therefrom and adapted to discharge fluids under conditions of passage substantially equal, as described, and means located within said interior chamber and adapted to be operated to stop the flow of fluid through the eduction-ports in whole or in part simultaneously, as described, said means being under the direct control of the operator, and a measuring device communicating with one of said eduction-ports and adapted to measure the quantity of liquid discharged therefrom, substantially as described.

4. The combination, in a device for distributing fluid, of an interior chamber having an induction-port leading thereto and a discharge-passage leading therefrom, the said chamber being separated by a dividing-wall having eduction-ports therein, one of said ports leading to a measuring device, and all being of equal size and adapted to discharge fluid under the same conditions of passage, and a device for regulating the flow of the liquid through the said ports or shutting it off altogether, the said device having perforations corresponding to the eduction-ports and adapted to register therewith, to allow the liquid to flow, and to be moved out of register therewith to stop the flow of the liquid, substantially as described.

336,173. TELEPHONE-TRANSMITTER. SUMNER TAINTER, Washington, D. C. Filed Apr. 20, 1885. (No model.)



Claim.—1. The combination of the jet-tube, reservoir, and supply-pipe of the spring-actuated air-compressor, and the pipe connecting the same with the said reservoir, substantially as described.

2. The combination of the spring-actuated air-compressor, the pressure-governor, and the connected pipes with the liquid-reservoir, the jet-tube, and the jet-supply pipe, substantially as described.

3. The combination, with the reservoir, the jet-tube, the jet-supply pipe, and the means for impressing vibrations on the jet, of a source of compressed air communicating with the said reservoir to force the liquid through the jet-tube, substantially as described.

4. The combination of a source of compressed air and the liquid-reservoir with the filter, the jet-supply pipe, and the jet-tube, through which the liquid in said reservoir is forced, and the means for impressing vibrations upon the jet, substantially as described.

5. The combination of the reservoir, the jet-supply pipe, and the jet-tube, and the source of compressed air with a receiver for the liquid after it has formed the jet communicating with the aforesaid reservoir through a check-valve, substantially as described.

6. The combination, with the electrodes, the jet-tube, and the jet-supply pipe, of a reservoir for containing the jet-liquid, and a source of compressed air for forcing it through the jet-tube, substantially as described.

7. The combination, with the jet-tube for producing a sensitive vibratory jet, and the reservoir and pipe for supplying liquid to said jet, of a source of compressed air for forcing the liquid through the jet-tube, and a valve for letting out said air, when desired, to stop the jet, substantially as described.

8. The combination, in a jet-translating apparatus, with the source of compressed air for producing the jet, of the telephone-support and the valve controlled thereby for releasing the air when opened, substantially as described.

9. The combination, with the spring-actuated air-compressor, of an electrical switch connected with the same, substantially as described.

10. The combination, with the air-compressor and the electrical switch connected therewith, of the movable telephone-support and the valve controlled thereby, for releasing the compressed air and causing the switch to be shifted on replacing the hand-telephone, substantially as described.

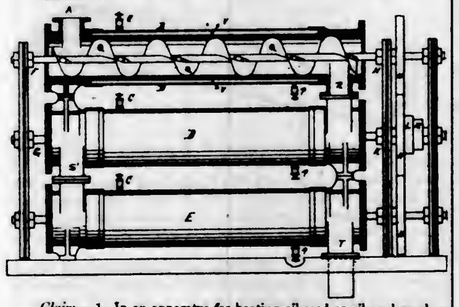
11. The combination, with the jet-tube and its holder or cup, of the set-screw bearing against the sides of said tube for adjusting the position of the same, substantially as described.

12. A telephone-station apparatus comprising, in combination with the hand-telephone, the automatic electrical switch, and the telephone-support, a transmitting instrument composed of a diaphragm or vibrating plate, a jet-tube to which the vibrations of said plate are communicated, electrodes arranged in the jet, a spring-actuated air-compressor, a reservoir for the jet-liquid, a receiver for the liquid after it has passed through the jet, and the connecting pipes and valves, substantially as described.

336,174. FAUCET FOR SHIPPING AND SERVICE CANS. JOHN TILTON, San Francisco, Cal. Filed Jan. 23, 1885. (No model.)

Claim.—In a faucet, the combination, with the body A, flange W, and sleeve w', of the valve D, rod C, and spring E, having one end inserted in the sleeve, and the other connected with the lower end of the rod C, as set forth.

336,175. OIL-SEED-MEAL-HEATING MACHINERY. DANIEL A. TOMPKINS and FREDERICK OLIVER, Charlotte, N. C. Filed Oct. 18, 1884. (No model.)

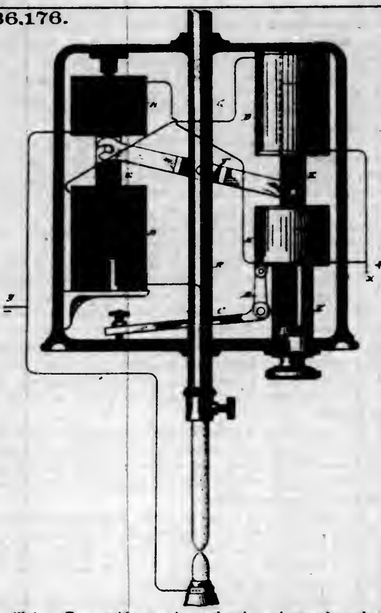


Claim.—1. In an apparatus for heating oil-seed or oil-seed meal, a series of connected but independently jacketed conveyers adapted to feed the material operated upon from one to another and alternately in opposite directions, and to discharge the same continuously, in combination with means, substantially as described, whereby any one or all of the jackets of said conveyers can be supplied with steam or its equivalent for heating said material, substantially as described.

2. In an apparatus for heating oil-seed, the combination of the independently-jacketed screw-conveyers, geared together to be rotated in alternately opposite directions, and means for supplying steam to any one or all of the jackets of said conveyers independently each of the others, substantially as described.

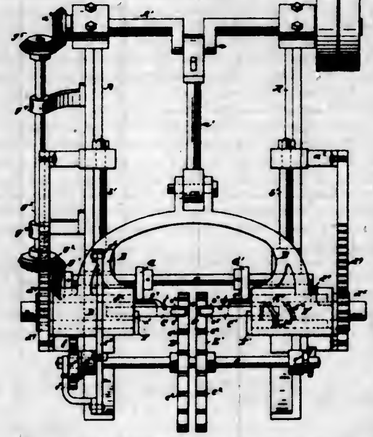
336,176. ELECTRIC-ARC LAMP. JOHN THOMSON, Brooklyn, N. Y., assignor to the Schuyler Electric Light Company of New York. Filed Jan. 11, 1884. (No model.)

336,176.



Claim.—The combination, in an electric-arc lamp, of a main-circuit coil or helix, a movable core therefor, feed-regulating mechanism connected with said core, and a high-resistance derived-circuit coil carried and wound upon a portion of the core extending outside of the main-circuit coil or helix, as and for the purpose described.

336,177. CAPSULE-JOINING MACHINE. WILLIAM A. TUCKER, New York, N. Y. Filed Apr. 27, 1885. (No model.)



Claim.—1. In a capsule-joining machine, the combination of the half-capsule-gripping jaws opposed to each other and arranged on a common longitudinal axial line, and devices, substantially as described, whereby one or both have a longitudinal reciprocating motion and a reciprocating rotary motion, as and for the purpose specified.

2. In a capsule-joining machine, the combination, with the half-capsule-gripping jaws arranged oppositely on a common longitudinal axial line, and feed-wheels, one for each pair of jaws, peripherally notched to receive and carry the half-capsules, of devices, substantially as described, whereby said jaws—one or both—have a longitudinal reciprocatory and reciprocatory rotary motion, and said feed-wheels have an intermittent rotary motion, as and for the purpose set forth.

3. In a capsule-joining machine, the combination, with the peripherally-notched feed-wheels and the opposed gripping-jaws, of devices,

subtantially as described, whereby said wheels are intermittently rotated, and said jaws have a longitudinal reciprocatory and reciprocatory rotary motion, and open to take up a half-capsule at the limit of their motions in one direction, and to release the completed capsule at the limit of their motions in the opposite direction, and are maintained closed during more or less of their motions in either direction, as described, and for the purpose specified.

4. In a capsule-joining machine, the combination, with a carriage having a reciprocal traverse of the machine, and the half-capsule-gripping jaws mounted oppossdly and on a common longitudinal axial line on the carriage, of devices, substantially as described, intermediate the carriage and the gripping-jaws, whereby the reciprocation of the carriage gives the jaws—one or both—a longitudinal reciprocatory and a reciprocatory rotary motion, as and for the purpose specified.

5. In a capsule-joining machine, the combination, with a carriage having a reciprocal traverse of the machine, and the half-capsule-gripping jaws mounted oppossdly and on a common longitudinal axial line on the carriage, and the peripherally-notched half-capsule feed-wheels, of devices, substantially as described, intermediate the carriage and the gripping-jaws and the feed-wheels, respectively, whereby the reciprocation of the carriage gives, respectively, the jaws—one or both—a longitudinal reciprocatory and a reciprocatory rotary motion, and the feed-wheels intermittent rotary motion concurrent therewith, as and for the purpose specified.

6. The combination, in a capsule-joining machine, of the reciprocating carriage B, carrying the opposed arms C C', having the capsule-gripping jaws, said arms being—one or both—provided with a shaft, D and D', having worm-grooves d^{10}, sleeve d^9, pin d^{11}, pinion d^8, and rack d^2, as and for the purpose specified.

7. The combination, in a capsule-joining machine, of arm C, carrying capsule-gripping jaws, and detachably seated in socket d in shaft D, which has worm-groove d^{10}, sleeve d^9, carrying pin d^{11}, and seated in recess b^2 in carriage B, pin d^4, pinion d^8, having annular groove d^7, and ring d^6, as and for the purpose specified.

8. In a capsule-joining machine, the combination, with the reciprocating carriage B, carrying the capsule-gripping jaws having a longitudinal reciprocatory and reciprocatory rotary motion, of the peripherally-notched feed-wheels E and E' on shaft e, ratchet e^2, lever e^4, pawls e^3, and rod e^5, pivoted to the carriage at e^6, as and for the purpose specified.

9. In a capsule-joining machine, the capsule-gripping jaws c^3 c^3 and c^4 c^4, carried by arms C and C', and having levers c^7 and springs c^8, as and for the purpose specified.

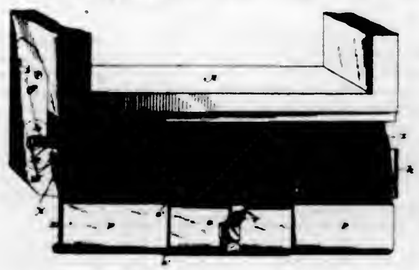
10. In a capsule-joining machine, the combination, with the reciprocating carriage carrying the capsule-gripping jaws—one or both—having a longitudinal reciprocatory and reciprocatory rotary motion, and provided with levers c^7, of the cams F and F'—one or both—having bearing-face f', as and for the purpose specified.

11. In a capsule-joining machine, the combination, with the reciprocating carriage carrying the capsule-gripping jaws—one or both—having a longitudinal reciprocatory and reciprocatory rotary motion, and provided with spring-levers c^7, of the rotating cams G and G'—one or both—having the bearing-face g^6, as and for the purpose specified.

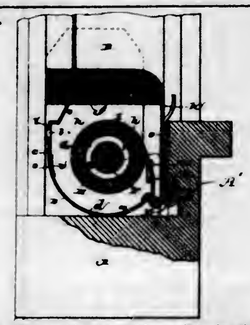
12. In a capsule-joining machine, the combination, with the reciprocating carriage B, operated by rod a' and crank a on main shaft A', and carrying the gripping-jaws—one or both—having the described reciprocatory motion and controlled by the spring-levers c^7, of the cams G and G'—one or both—having faces g^6, and mounted on shaft g and driven by pinion g', pinion g^3, shaft g^3, pinion g^4, and pinion a^4, as and for the purpose specified.

13. In a capsule-joining machine, the combination, with the reciprocating carriage B, carrying the arms C and C', bearing the capsule-gripping-jaws, having—one or both—the described reciprocatory motions, and provided with levers c^7, of the cam-blocks F and F', one or both, secured to the inward face of the carriage-frame, as and for the purpose specified.

336,178. WINDOW-SCREEN. SAMUEL J. VANCE, Macomb, Ill. Filed Aug. 7, 1885. (No model.)



336,178.



Claim.—1. The combination, with a sash having the oblique groove in its lower side, of the case D, having the oblique tongue adapted to fit in the groove and secured to the sash, the spring-roller in the case, and the screen on the roller, substantially as described.

2. The combination, with a window-sash, of the case D, secured thereto, and having the vertical slots w in its end walls or brackets, the spring-roller in the case, the rod z in the slots w, and the screen on the roller and passed over the said rod, substantially as described.

3. The combination, with a window-sash, of the case D, secured thereto, and having the open inner side, and the outwardly-extending conical tubes t on its outer side, and the spring-roller in the case, and the screen on said roller, substantially as described.

4. The combination of the window-frame having the flange A' on the inner side of the sill, and the recess 8 opening on the outer side of the flange, with the sash having the case D, having the open side, and secured to the lower side of the sash, said case fitting behind flange A' when the sash is lowered, to hide the case from sight, the spring-roller in the case, the screen on the roller, a plate, K, attached to the lower edge of the screen, and adapted to close the open side of the case when the screen is rolled, and the hook r, attached to plate K, adapted to secure said plate to the lower side of the window-frame by entering recess 8, substantially as described.

5. The combination of the window-frame having the flange A' on the sill, with the sash provided with the case D on its lower side, said case having its open side facing the flange A', and fitting behind the flange when the sash is lowered, to hide the case from view, the spring-roller and screen within the case, a vertical plate, K, attached to the lower edge of the screen, and closing the open side of the case when the screen is rolled, and means, substantially as described, for securing the plate K to the inner side of the flange A', as and for the purposes set forth.

336,179. GAME APPARATUS. A. F. ALEXANDER VOORHAAR, Philadelphia, Pa. Filed Nov. 22, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a smooth, polished, and flexible game-surface adapted to be rolled up, and when spread out suitable for sliding blocks to travel over, in combination with end rollers or bars, upon which it may be rolled to prevent crushing and creasing, and adjustable side rails, by which the end rollers may be held apart and the game-surface stretched, substantially as and for the purpose specified.

2. The combination of the smooth flexible game-surface D with end rollers or bars, C', and adjustable side rails or stretchers, C, substantially as and for the purpose specified.

3. The combination of the smooth flexible game-surface D with end rollers or bars, C', and adjustable side rails or stretchers, C, formed in sections hinged together, substantially as and for the purpose specified.

4. A smooth polished game-surface having a geometrical figure marked thereon at one or both ends, and which figure consists of two main divisions, one of which is subdivided into adjacent divisions separated by lines only, and the said divisions having figures of different magnitude marked thereon, and the other of which is marked with the word "off," or its equivalent, and a figure of any desired magnitude, substantially as and for the purpose specified.

336,180. DRAFT-POLE FOR VEHICLES. WILLIAM L. WALKER, Brooks, Cal. Filed Oct. 2, 1885. (No model.)

Claim.—1. In a sectional draft-pole, the combination of springs secured to one section of the pole, a threaded bolt secured in the other

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section of said pole, and vertically-adjustable sleeves on said bolt, to which the free ends of the springs are connected, substantially as described.

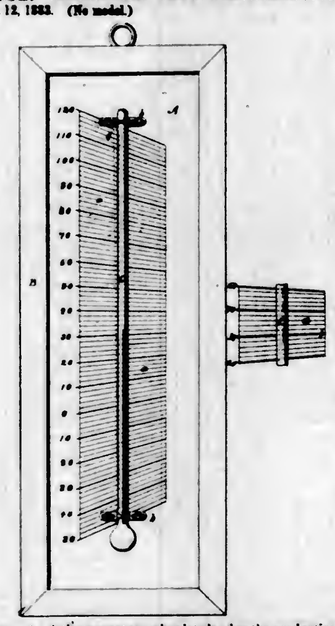
2. The combination of the rear pole-section, A^2, the front section, A', pivoted thereto, bent springs secured to the section A', exteriorly thereto, on its upper and lower sides, and a retaining-bolt secured in the section A^2, and having the free ends of the springs connected thereto, substantially as described.

3. The combination of the section A^2, having a convex socket in its end, the section A', seated in the socket and pivoted to the said section A^2, exterior springs secured at one end thereof to one of the sections above and below the same, and a retaining-bolt secured in the other section, and having the free ends of the springs detachably connected thereto, substantially as described.

4. The combination of the draft-pole sections pivotally connected together, a threaded bolt, D, secured in one of the sections, vertically-adjustable sleeves mounted on the bolt and provided with squared portions, and springs secured to one of the sections, and having their free notched ends engaging the squared portions of the sleeves, substantially as described.

5. In a draft-pole or shaft, the combination of the section A^2, adapted to be connected to a vehicle, a front section having a rounded or convex end fitting in a concavity in the rear section, A^2, plates C C', connected to the pole-sections, springs E, having notched ends, a cross-bolt, D, having a collar, d^2, and shoulder d', a sleeve, G, having collars g', and plates F, having lugs f f and pin f', all arranged and adapted to serve as set forth.

336,181. THERMOMETER. JOHN D. WARD, Rochester, N. Y. Filed Sept. 12, 1885. (No model.)



Claim.—1. A thermometer scale-plate having the graduation-marks thereon formed so as to include spaces that are wider at one end than at the other, in combination with a tube secured across the scale in an inclined position, substantially as and for the purpose set forth.

2. A scale-plate for thermometers, having the graduation-marks thereon made radial or so as to include spaces that are wider at one end than at the other, said spaces being arranged in vertical series, substantially as and for the purpose set forth.

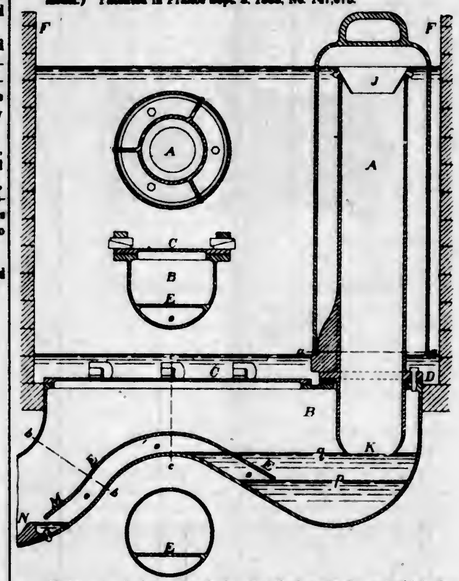
3. A scale-plate for thermometers, having the graduation-marks made so as to include spaces that are wider at one end than at the other, said lines being made of contrasting colors, substantially as and for the purpose set forth.

4. In combination with a thermometer-tube, a scale-plate which is attached thereto to complete the thermometer, said scale-plate having a trapezoidal area divided by lines joining the major and minor bases thereof, said lines dividing the said bases into equal parts, substantially as shown.

5. A thermometer scale-plate having the graduation-marks thereon formed so as to include spaces that are wider at one end than at the other, said spaces being arranged one above another in vertical series, in combination with a tube secured thereto across said spaces, substantially as shown and set forth.

6. A thermometer scale-plate having the graduation-marks thereon formed so as to include spaces that are wider at one end than at the other, in combination with a tube secured thereto by fastenings admitting of lateral adjustments of the tube, substantially as and for the purpose set forth.

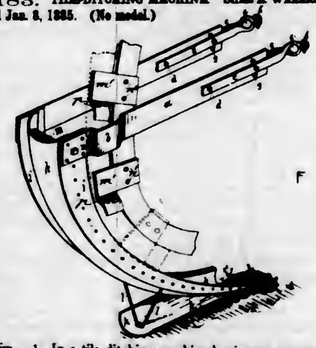
336,182. SIPHON AND OUTLET OR WEIR CHAMBER FOR FLUSH-TANKS. GEORGE E. WARING, Jr., Newport, R. I., assignor to the Drainage Construction Company, Boston, Mass. Filed Feb. 10, 1885. (No model.) Patented in France Sept. 3, 1883, No. 147,675.



Claim.—1. A siphon for discharging flush-tanks &c., of which the discharging-limb is provided with a funnel at the top, and the bottom of which is contracted, substantially as shown, and for the purpose described.

2. The combination of a siphon for discharging a flush-tank with an outlet or weir chamber provided with a subsidiary siphon and a dam or obstruction near the lower end of said subsidiary siphon, substantially as shown, and for the purpose described.

336,183. TILE-DITCHING MACHINE. SILAS E. WARREN, Macon, Ill. Filed Jan. 8, 1885. (No model.)

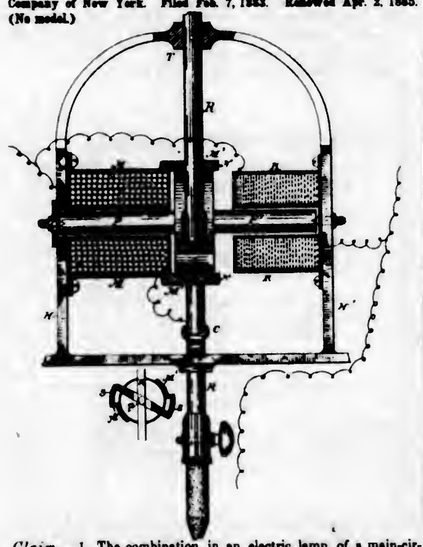


Claim.—1. In a tile-ditching machine having an excavating-wheel, the combination, with a curved spout having a shoe, k, of draw-bars a a, having slots g g, for the purpose of adjusting the lower end of the curved spout to the proper position in the bottom of the ditch, and draw-heads e e, with openings e e, for the axle of the excavating-wheel to

pass through, for the purpose of drawing the curved spout behind the excavating-wheel as the ditching-machine moves forward, substantially as has been described, and for the purpose specified.

2. In a tile-ditching machine having an excavating-wheel, the combination, with a curved spout, of draw-bars *a a*, one having a projection, *b*, said draw-bar secured to its upper end by means of bolts, and said draw-bars having draw-heads *c c* to reach the axle of the excavating-wheel, for the purpose of drawing said curved spout, all substantially as and for the purpose specified.

336,184. ELECTRIC-ARC LAMP. ADDISON G. WATERHOUSE, New York, assignor, by mesne assignments, to the Schuyler Electric Light Company of New York. Filed Feb. 7, 1883. Renewed Apr. 2, 1885. (No model.)



Claim.—1. The combination, in an electric lamp, of a main-circuit coil or helix, a rocking core for the same, provided at one end with a polar extension or extensions which move in magnetic proximity to pole-pieces oppositely magnetized by connection with the opposite end of the core, and an opposing derived-circuit helix wound, as described, and acting in magnetic opposition to the main-circuit helix.

2. The combination, in an electric lamp, of a main-circuit helix, a rocking core having a polar extension of one polarity, a pole-piece of the opposite polarity magnetized by induction from the core and arranged in suitable proximity to the movable pole-piece, and an opposing derived-circuit helix acting upon the core in magnetic opposition to the main-circuit helix on said core, and tending to diminish the magnetic intensity of both poles.

3. The combination, in an electric lamp, of the main-circuit helix M, core P, rocking on its longitudinal axis, exterior cylinder or bar of magnetizable material having a pole piece or pieces, M' M', acting in conjunction with the opposite pole of the core, and an opposing derived-circuit coil or helix applied, as described, to a coil of the main-circuit helix.

4. The combination, in an electric lamp, of the rocking bar P, rocking on its longitudinal axis, having a polar extension or extensions, S, pole-pieces M' M', magnetized inductively from said core, and derived-circuit coil K, substantially as and for the purpose set forth.

5. The combination of the rocking core P, the pole-pieces M', magnetized by the helix for core P, and polar extensions for said core working over the outside of the pole-pieces.

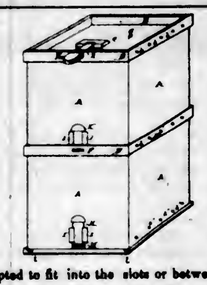
6. The combination, with the main-circuit coil, of core P, rocking on its longitudinal axis and having the right angle polar extensions S, the pole-pieces, the carbon-carrying rod, and a clutch engaging with said rod and connected with the rocking core.

336,185. BEE-HIVE. URIAH M. WHEDBEE, Brooklyn, N. Y., assignor to Edward C. Watson, same place. Filed Sept. 23, 1884. (Model.)

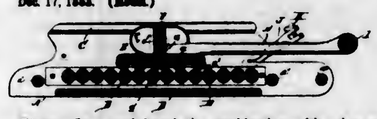
Claim.—1. A bee-hive provided with a removable bottom, a vertical slot, D, in the top, vertical and horizontal slots E and F in the rim B on the top of the hive, a notch in the bottom of one of the sides corresponding to the slots, and a slide which is adapted to fit in the slots or over the notch, as set forth.

2. A bee-hive consisting of the vertical sides A, top S, having vertical slot D, rim B, having horizontal and vertical slots F and E, one of the sides being provided with a notch, H, and guides I, and a slide, K, which is adapted to fit into the slots or between the guides, as set forth.

336,185.

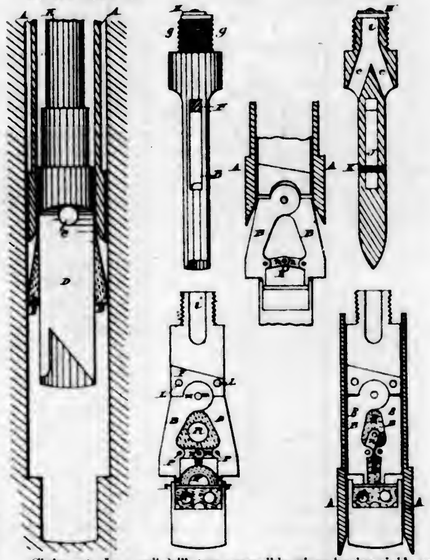


336,186. WASH-BOARD. CLINTON W. WELLS, Lacon, Iowa. Filed Dec. 17, 1883. (Model.)



Claim.—In a wash-board, the combination, with a base or frame provided with rollers as a rubbing-surface, and with side pieces provided with flanges C, forming guideways, substantially as described, of a rubber provided with a yielding cross-bar, whose ends are provided with anti-friction rollers to travel in the guideways of the frame, substantially as described.

336,187. WELL-DRILL. WILLET C. WELLS, Tiffin, Ohio. Filed Apr. 10, 1885. (Model.)



Claim.—1. In a well-drill, two expansible wings having rigid vertical supports in bearings, in which they oscillate, and united by a toggle-joint, by which they are rigidly supported against lateral pressure when out of contact with the drilling-tube, substantially as described.

2. In combination with the expansible wing of a drill, connected by a toggle-joint and rigidly supported against vertical strains, a spring interposed between said wings and serving to force said wing or wings apart, for the purpose described.

3. In combination with a drill, an expansible wing formed with a projecting boss fitting into a corresponding socket-bearing, in which it oscillates, and provided with a shoulder which rigidly abuts against a corresponding shoulder when the wing is in its expanded position, for the purpose described.

4. The combination of the wing or wings having a projecting boss or bearing-surface with a key or removable socket-plate having corresponding faces, in which said bosses are received and confined and in which they oscillate, substantially as described.

5. The combination of the wings having abutting shoulders, a toggle-joint uniting the wings, and an expansible spring serving to press the wings apart, for the purpose described.

6. The combination of an oscillating wing rigidly supported at its bearings against vertical strains, a bar pivotally connected to said wing below the center of oscillation of said wing and rigidly supporting the same in the expanded position when said wings are out of contact with the tube, and a trip mounted on the fixed part of said drill for upsetting said joint when said wing is contracted, substantially for the purpose described.

7. The combination, with the pivoted wings united by a toggle-joint, of a trip mounted on the fixed part of said drill, whereby the joint is automatically upset by the downward pressure of said wings forcing the toggle-joint against said trip when the wings are drawn upward through the tube, for the purpose described.

8. In combination with an expansible wing or wings, an elastic packing serving at once to force the wings to the expanded position and to exclude detritus or sediment from the interior, substantially as described.

9. The wings pivoted and connected by a toggle-joint normally held straight by means of outwardly-pressing springs interposed between and bearing against said wings, as described, when said wings have rigid vertical support at their bearings and sloping outer faces, whereby a diagonal pressure is applied through their contact with the interior tubing when being withdrawn, for the purpose described.

10. An oscillating wing for a well-drill, having projected from the upper part thereof a boss adapted to oscillate in a corresponding socket, and abutting shoulder adjacent to said boss, and a cutting-edge at the lower end thereof, substantially as described.

11. The combination of socket-plate, wings having projecting bosses fitting into the sockets of said plate and oscillating therein, and shoulders abutting against the shoulders of said plate, a jointed connection between the wings, whereby they are rigidly supported against lateral strains, a trip for upsetting the joint, and spring for restoring the wings to their expanded position, substantially as described.

12. The combination of the drill having an expanding wing normally held in expanded position without external agency, and rigidly held in said position by a jointed support below the pivot of oscillation, with a hollow drill-stock, to which said drill is rigidly connected, said drill being provided with perforations, which communicate with the interior of said drill-stock, substantially as and for the purpose described.

336,188. COMBINATION-LOCK. SAMFORD K. WEYMOUTH, Gardiner, Me. Filed Apr. 28, 1885. (Model.)



Claim.—1. The combination of the inclosing-case, the bolt, the lever E, slotted part F, having the reduced end f^3, notch f^4, and shoulder f^5, the slotted part G, having the shouldered end g^2 and the projection G^2, the spring bearing against said part, the spindle journaled in the case, the cam secured thereto, and the dial fixed to the outer end of the spindle, the sleeve on the spindle, the knob, and the arm secured to the sleeve at opposite ends thereof, and the rod connecting the arm of the sleeve with the part F, substantially as described.

2. The combination of the inclosing-case, the bolt, the lever E, slotted part F, having the reduced end f^3, notch f^4, and shoulder f^5, the slotted part G, having the shouldered end g^2 and the projection g^3, the spring bearing against said part, the cam, the spindle journaled in the case to which the cam is secured, the dial fixed to the outer end of the spindle, the sleeve on the spindle, the knob, and the arm secured to the sleeve at opposite ends thereof, the rod connecting the arm of the sleeve with the part F, the pivoted pawl O, the spring bearing against said pawl, the pivoted detent R, having arms r' and r^2, said detent engaging with part F, and a spring bearing against the detent and the pivoted pawl T, substantially as described.

3. The combination of the inclosing-case, the slotted part F, having the reduced end f^3, notch f^4, and shoulder f^5, the slotted part G, having the shouldered end g^2 and the projection g^3, the spring bearing against said part, the spindle journaled in the case, the cam secured to the spindle, the dial fixed to the outer end of the spindle, the sleeve on the spindle, the knob, and the arm secured to the sleeve at opposite ends thereof, the rod connecting the arm of the sleeve with the part F, and the bolt with which the end of the arm of the sleeve engages, substantially as described.

4. The combination, in a lock, of the spindle, the cam, the screw for securing the cam to the spindle, the bracket, and the screw passing through the same into the case, for holding the cam while the combination is being changed, substantially as described.

5. The combination of the inclosing-case, the bolt, the lever E, the slotted part F, the slotted part G, adapted to engage with the part F, the spring bearing against part G, the spindle journaled in the case, the dial fixed to the outer end of the spindle, the sleeve on the spindle, the knob, and the arm secured to the sleeve, the rod connecting the arm of the sleeve with the part F, and means for disengaging parts F and G by turning the spindle, whereby the bolt may be then withdrawn by turning the knob, substantially as described.

336,189. LEVER AND FULCRUM. NICHOLAS WHITE, Chicago, Ill. Filed Aug. 5, 1885. (No model.)



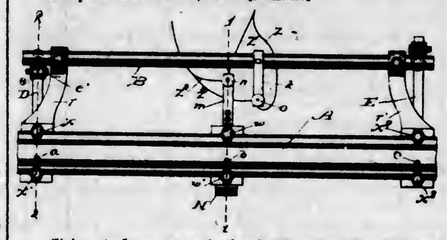
Claim.—1. In a fulcrum for levers, a standard or support, in combination with a rest for the lever swiveled on the standard, and provided with a clamping device for securing the lever at any point, substantially as and for the purpose set forth.

2. The combination, with a lifting-lever, of a ratchet-drum secured upon it, and a tackle having one end secured to the end of the lever, and the other passed over guide-pulleys thereon to the drum, substantially as and for the purpose set forth.

3. The combination, with the standard *a*, having a spindle, *a'*, of the socketed fulcrum-head *b* thereon, the pivoted rest or plate *c'*, and the clamping-yokes c^2, substantially as and for the purpose set forth.

4. The combination, with the fulcrum-standard *a*, swiveled head *b*, and the bearing-plate *c'*, of the lever *c*, provided with a hook, *d*, the rope *d''*, and ratchet-drum *s*, all constructed and arranged to operate substantially as and for the purpose set forth.

336,190. AUTOMATIC RAILWAY-TRACK KEY. CHARLES W. WHEDBEE, Battle Creek, Mich., assignor of one-half to W. H. Pettibone, same place. Filed June 11, 1884. (No model.)



Claim.—1. In an automatic electric railway-track key, the combination, with a signaling-circuit having double sets of separable terminals, of the track-rail, a circuit-breaker for the first set of terminals, a circuit-breaker and automatic closer for the second set of terminals, and a circuit-closer for the first set of terminals, located consecutively along the track, and operated by the passing train-wheels, whereby a signal will be given by the passage of the train in one direction only, substantially as shown and described.

2. In an automatic electric railway-track key, the combination with an electric signaling-circuit having double sets of separable terminals, of the track-rail, a rock-shaft bearing one of the first set of terminals, two depressible standards, the upper ends of which are in line with the tread of the car-wheels, and whose lower ends connect by reverse systems of levers with the rock-shaft, a depressible standard intermediate between the first two, and a spring-lever connected with said latter standard and bearing one of the remaining set of terminals, whereby upon the passage of a wheel over the track in one direction the first set of terminals will separate, then the second set separate, and again contact with each, and finally the first set contact with each other, substantially as shown and described.

3. In an automatic electric railway-track key, the combination, with the track-rail, of depressible standards, the upper ends of which are in line with the tread of the passing train-wheels, a rock-shaft bearing one terminal of an electric circuit, and reverse systems of levers connecting the lower ends of the separate standards with the rock-shaft, whereby the passage of a wheel over the track will rock the shaft alternately in

opposite directions, separating and approaching the terminals, substantially as shown and described.

4. In an automatic electric railway-track key, the combination, with the track-rail, of supporting-arms attached to said rail, a rock-shaft loosely journaled within said arms, reverse systems of levers attached to opposite ends of the shaft, depressible standards extending above the track-rail and resting, respectively, upon the free end of each set of levers, and a closed electric circuit having separable terminals, one of said terminals being fixed and the other connected with an arm depending from the rock-shaft, substantially as shown and described.

5. In an automatic electric railway-track key, the combination, with the track-rail, of a signaling-circuit, a circuit-breaker, a circuit-closer, and an intermediate automatic signal-key, the operating-levers of the three devices extending within the range of the passing train-wheels, substantially as shown and described.

6. The combination, in an electric automatic track-key, of the rail A, the standard *b*, the lever C, the fulcrum *h*, the spring N, the screws *w*, *w'*, and *s'*, the secondary arm *m*, the binding-post *n*, the button *n'*, the electrodes *u* and *u'*, and the circuit-wires z^2 and z^3, all arranged substantially as described, and for the purpose specified.

336,191. SWITCH AND HOLDER FOR INCANDESCENT LAMPS.

MERLE J. WIGHTMAN, Hartford, Conn., assignor to the Schuyler Electric Light Company of New York. Filed July 8, 1885. (No model.)



Claim.—1. In an incandescent lamp switch and holder, the combination, with the frame having the two uprights or standards and supporting the terminals by which connection is made with the lamp terminals, of a switch-lever mounted in said standards, and turning in a vertical plane between them.

2. The combination, with the standards mounted on the non-conducting base-plate, of the vertical switch-lever mounted between, and a spring secured to the base and bearing upon the lever, as described.

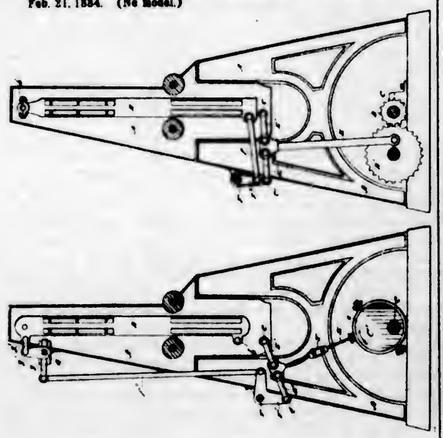
3. In an incandescent lamp switch and holder, the combination, with the plate carrying the terminals for connection with the lamp terminals, of the supporting-standards carrying an intermediate pivoted switch-lever vibrating on the plane between them and a horizontal spindle provided with a cam for operating said lever.

4. In an incandescent lamp switch and holder having the plates B C, the intermediate frame, D, the switch-lever E, pivoted between the two standards of the frame and provided with the projections *f f*, in combination with the spindle N, carrying a cam for operating said lever, as and for the purpose described.

5. In an incandescent lamp switch and holder, the combination, with the two insulating-plates B C, of the intermediate conducting-frame having the two standards and in electrical connection with a connecting-plate or terminal in the top of the upper insulating-plate, a switch-lever mounted between the standards and in electrical connection therewith, and a contact for the lever mounted on the base-plate B, as described.

336,192. GANG-SAW MILL.

WILLIAM M. WILKIN, Erie, Pa. Filed Feb. 21, 1884. (No model.)



Claim.—1. In a reciprocating-saw mill, the combination, with the pivoted cheek-pieces, which carry the guides for the saw-frame, of gearing for rocking the said cheek-pieces from the action of the main shaft, having a toggle, E' E', pivoted at one end to the frame, and at the other to the rock-bar, and the center piece provided with means for operating the toggles, substantially as shown, whereby the rocking movement given to said cheek-pieces will vary in rapidity at different points in their arc of vibration.

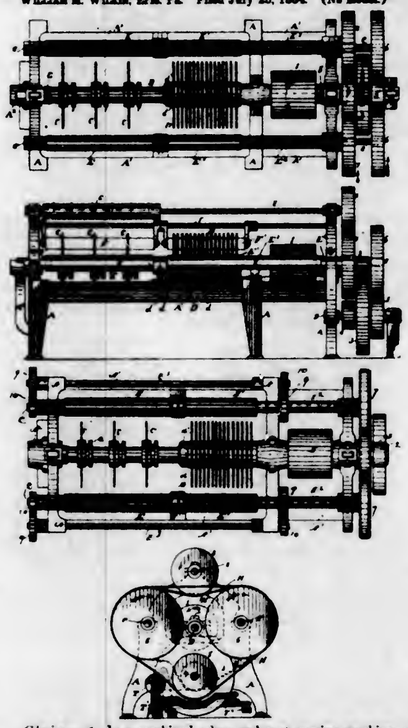
2. In a reciprocating-saw mill, the combination of pivoted cheek-pieces carrying the guides for the saw-frame, a rocking shaft for rocking said cheek-pieces, a toggle for moving said rocking shaft, and gearing, substantially as shown, for moving said toggle from the action of the main shaft from which the saw-frame is operated.

3. In a reciprocating-saw mill, the combination of the pivoted cheek-pieces B, rock-shaft F, gearing, substantially as shown, for operating said cheek-pieces from said rock-shaft, a toggle, E' E', for operating said rock-shaft, and gearing, substantially as shown, for operating said toggle from the main shaft C.

4. In a reciprocating-saw mill, the combination of the pivoted cheek-pieces B, rock-shaft F, toggles E' E', extensible connecting-rod E, and the gearing by which said connecting-rod is operated from the main shaft.

336,193. COMBINED EDGER AND CANT SAWING MACHINE.

WILLIAM M. WILKIN, Erie, Pa. Filed July 25, 1884. (No model.)



Claim.—1. In a combined edger and cant sawing machine, substantially as shown, the combination of two sets of saws, separate feeding mechanism for each set of saws, the feeding mechanism of one set being geared for the purpose of giving a greater speed to one feed mechanism than to the other, and gearing for operating said feed mechanism, substantially as described.

2. In a combined edger and cant sawing machine, substantially as shown, the combination of two sets of saws for the purposes named, mounted on a common arbor, and separate feeding devices for each of said sets of saws, which are simultaneously operated at differing speed by gearing which is actuated from the said common arbor, substantially as shown.

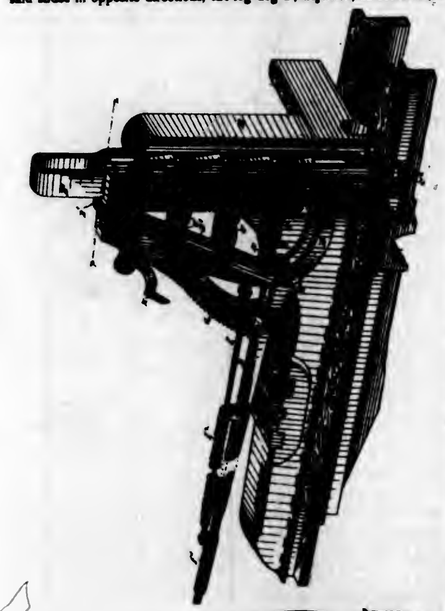
3. In a combined edger and cant sawing machine, substantially as shown, the combination, with the arbor B, saws C C C, and saw-battery D, feed-rollers E E and E' E', and shafts *e e* and E^2 E^2, of the friction-pulleys 2 and 3 and the belt-pulleys 5 6 6 and 4 7 7, and the belts H and H', said parts being constructed, arranged, and operating as shown, and for the purposes mentioned.

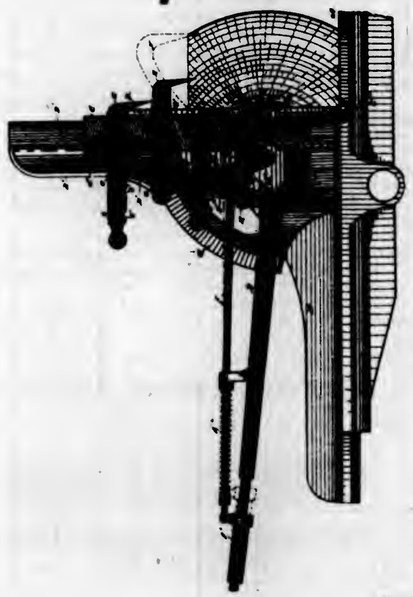
336,194. SAW-MILL DOG.

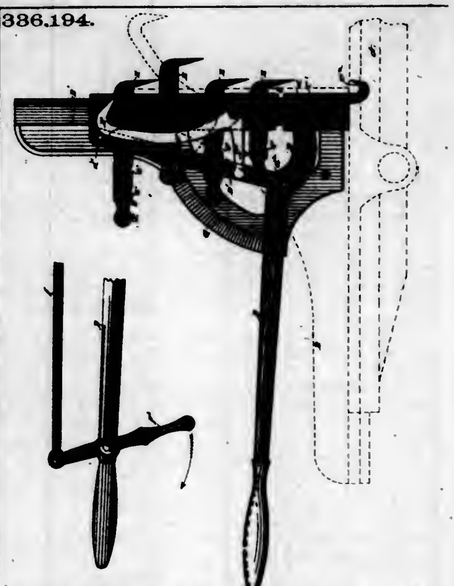
WILLIAM M. WILKIN, Erie, Pa. Filed Mar. 14, 1885. (No model.)

Claim.—1. In a saw-mill dog, the combination, substantially as set forth, of the following elements: a vertical guide-bar on the side of the knee, two slides or sleeves mounted on said guide-bar and movable vertically thereon, a lever connected with both of said slides and acting to move the same in opposite directions, dog-bits adjusted on each side of said slides in position to engage a cant on the upper and lower sides, and a log-dog, F, adjusted, substantially as set forth, to move in conjunction with the upper slide.

2. In a saw-mill dog, the combination, substantially as set forth, of the following elements: the vertical guide-bar B' on the side of the knee, the slides C and C', mounted and movable on said guide-bar, dog-bits carried by each of said slides, the lever D and link D', for moving said slides in opposite directions, the log-dog F, adjusted, as set forth, to







move in conjunction with the upper slide, C, and means, substantially as set forth, for throwing the said log-dog out beyond the face of the knee and drawing it back out of use.

3. In a saw-mill dog, the combination of the guide-bar B', the slides C and C', carrying dog-bits, the lever D and link D', for moving said slides in opposite directions, the log-dog F, adjusted to move in conjunction with the upper slide, C, and the rod *f*, sleeve *f''*, and spring f^6, for throwing said log-dog into or withdrawing it from action, substantially as and for the purposes set forth.

4. In a saw-mill dog, the combination of a vertical guide-bar independent of the knee, and having the notch on the under side, two slides mounted and movable on said guide-bar, a dog-bit on the lower of said slides for engaging with the under side of a cant, a series of dog-bits, E E E, arranged one above the other in mortises through the upper slide, in which they are movable freely at right angles to the face of the knee, and a lever for moving said slides in opposite directions, substantially as and for the purposes set forth.

5. In a saw-mill dog, the combination of a guide-bar independent of the knee, and having the notch on the under side, a vertically-movable slide provided with a series of mortises, one above the other, which pass through it at right angles to the face of the knee, and a series of dog-bits, E E E, which set loosely in said mortises, and may be pushed independently of each other in or out, as set forth.

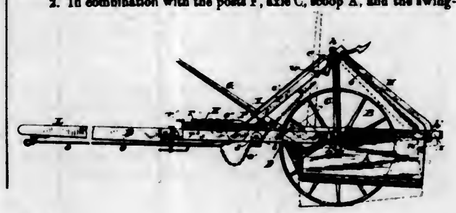
6. In a saw-mill dog, the combination of a guide-bar back of the face of the knee, a vertically-movable slide with a mortise through the same, as shown, and catches *c* in the lower wall of said mortise, and a dog-bit, E, with notches *e'*, loosely adjusted in said mortise and adapted, as set forth, to be moved back of the face of the knee by an abutting cant, and to slide out beyond the face of the knee automatically when left free to move.

336,195. WHEELED DIRT-SCRAPER.

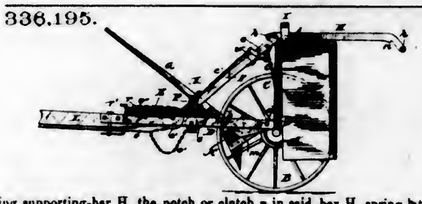
JOHN R. WILLIAMS, Kansas City, Mo. Filed Apr. 6, 1885. (No model.)

Claim.—1. In combination with the posts F, axle C, and scoop A, the supporting-bar H, pivoted at its upper end to the posts F, and provided with a limiting-stop at its lower end, and a loop, I, on the rear end of the scraper-scoop, substantially as shown, for the purpose specified.

2. In combination with the posts F, axle C, scoop A, and the swing-



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ing supporting-bar H, the notch or clutch *n* in said bar H, spring-latch V, chain *c*, bell-crank *e*, rod or chain *c'*, and treadle P, substantially as shown, for the purpose specified.

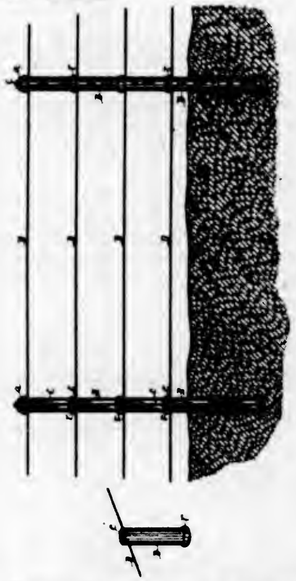
3. In combination with the platform E and arched axle C, the supporting-posts F, arranged as a pair, with a space between them suitable for the working of the lever G and latch X, thereby serving as guides to limit the lateral movement of said lever, substantially as shown, for the purposes specified.

4. In combination with the posts F and the lifting-lever G, the spring-latch X and treadle-lever P, substantially as shown, for the purpose specified.

5. In combination with the tongue-bar D and platform E, bifurcated lever G, arranged, as herein shown, and pivots *d*, the end-gate K, having swinging arms *m*, rigidly attached thereto, which arms are pivoted in common with the fulcrum of said lifting-lever, and the limiting-hooks *b*, all substantially as shown, for the purpose specified.

6. In combination with the tongue L, platform E, and lever G, the rods *o*, chains *o'* and *o''*, pulleys *s* and *s'*, spring *r''*, stud *r'*, and pin *r*, all substantially as shown, for the purposes specified.

336,196. FENCE-POST. HENRY B. WILSON, Paw Paw, Mich. Filed June 15, 1885. (No model.)

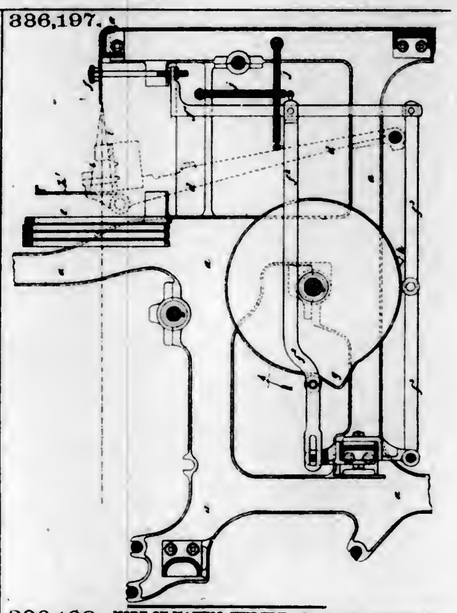


Claim.—A section of tile for fence-post building, consisting of a hollow tile having a closed end with a central perforation, a guide-flange immediately joining and projecting from said closed end, and vertical slots on opposite sides in the upper end, substantially as set forth.

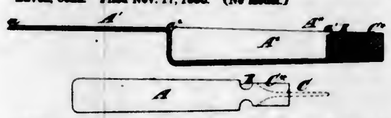
336,197. LOOM FOR WEAVING CHENILLE OR FUR PILE FABRICS. WILLIAM ADAM, Kidderminster, County of Worcester, England. Filed Feb. 7, 1883. (No model.) Patented in England Dec. 11, 1883, No. 5,926.

Claim.—The combination, substantially as before set forth, of the healds for controlling the ground-warps, the needles for controlling the catcher-warps, the lathe for beating up the chenille, and the comb for combing the chenille after its insertion in the shed of warp-threads, with mechanical means, substantially as described, which move said comb backward and forward in the loom independently of the lathe of the loom.

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336,198. MODE OF MAKING CUTLERY. CHARLES O. APPLEBY, New Haven, Conn. Filed Nov. 17, 1885. (No model.)



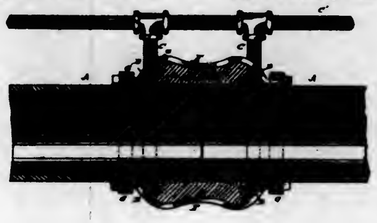
Claim.—1. The improvement in the method of producing a hollow forged handle for a knife or other article of table-cutlery, consisting in first producing, by forging, a blank recessed or concaved upon one side and having a portion or stem projecting from one end at the open side of the blank, and in then folding over and welding the said portion or stem upon the open side of the blank to form the closed hollow handle, substantially as herein described.

2. The improvement in the method of producing a knife having a hollow handle, consisting in first drawing out from one end of a blank or bar a portion or stem which is folded over upon the blank and welded to form a closed hollow handle, and in then drawing out the other end of the blank to form a blade, substantially as herein described.

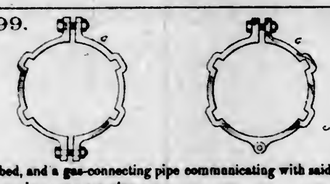
3. The improvement in the method of producing a table-knife having a hollow forged handle and blade formed integral therewith, consisting in first producing a blank recessed or concaved upon one side and having a portion or stem projecting from one end at the open side of the blank, in then folding over and welding the said portion or stem upon the open side of the blank, and in then forging or drawing out a bolster and blade from the opposite end of the blank, substantially as herein described.

336,199. MEANS FOR COLLECTING WASTE GAS FROM LEAKS AT THE JOINTS OF GAS-CONDUITS. LEMUEL BARRETTE, Philadelphia, Pa. Filed Nov. 23, 1885. (No model.)

Claim.—1. The combination, substantially as set forth, of the two pipe-sections, the enlarged bell-mouth of one section or its equivalent, the coupling-sleeve, and the annular tube or cover for forming a gas-receiving chamber around the joint of the pipe, substantially as shown



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and described, and a gas-connecting pipe communicating with said chamber for conveying away escaping gas.

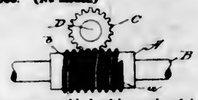
2. The combination of the joined sections of pipe, an annular tube or cover, which fits in the right-angular recess formed by the bell-shaped mouth of one of the pipe-sections or by a coupling-sleeve, whereby a gas-collecting chamber is formed, clamping devices for clamping said tube or cover firmly in place, and a gas-conveying pipe which conducts the escape-gas from said chamber.

3. The combination of the two pipe-sections, the annular ring or cover for forming a gas-collecting chamber in the annular recess formed by the bell-shaped mouth of one section of the pipe or by the coupling-sleeve, means for clamping said pipe or cover in position, a packing or cement or other suitable material around said cover, and a gas-conveying pipe for conveying escape-gas from said chamber.

4. The combination of the pipe-sections, the annular tube or ring for forming the gas-collecting chamber, the clamp-rings, and the retaining-bars, substantially as set forth.

5. The combination of the pipe-sections, the perforated annular ring for forming a gas-collecting chamber, as described, the T-shaped connecting-piece, the tube for conveying away the escaping gas, the clamp devices for holding the perforated ring in place.

336,200. WORM-GEARING. WILLIAM F. BEARDSLEE, Boston, Mass., assignor to the Manufacturers' Special Machine Company, Danbury, Conn. Filed Apr. 27, 1885. (No model.)



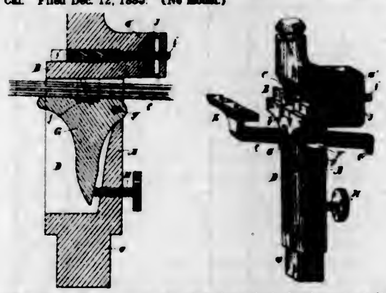
Claim.—1. A worm provided with teeth of irregular or different pitch, substantially as described.

2. A worm provided at a portion of its periphery with threads having a regular established pitch, the said threads about another portion of the periphery of the said worm being uniform, but of a pitch differing from the portions of the threads of greatest pitch, substantially as described.

3. A worm having portions of its teeth substantially at right angles to its axis of rotation, and other portions set to a pitch or to form pitch-teeth, substantially as described.

4. The herein-described worm-gearing, consisting of a rotating shaft, B, provided with a worm having annular teeth *a* and pitch-teeth *b*, combined with a worm-gear and the shaft to which it is attached, substantially as described.

336,201. SAW-SETTING DEVICE. DANIEL BEEBER, Santa Rosa, Cal. Filed Dec. 12, 1885. (No model.)



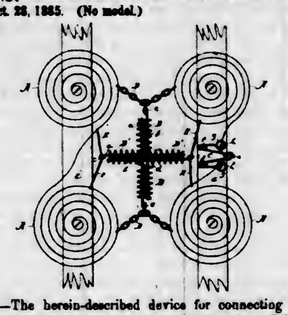
Claim.—1. In a saw-set, the slotted stock A, having an anvil and a hammer, in combination with the saw-blade rest E, having a stem, *e*, passing through the slotted stock, and the means by which said rest is adjusted to any desired angle, consisting of the bell-crank or cam lever G, pivoted in said slotted stock, and bearing with its upper arm under the stem of the rest, and the thumb-screw H, bearing against the lower arm of the lever, substantially as herein described.

2. In a saw-set, the slotted stock A, having an anvil and a hammer, in combination with the saw-blade rest E, having a stem passing loosely through said slotted stock, whereby it can be adjusted to and from the stock, the set-screw F, for holding said rest in the position to which it is adjusted, the pivoted bell-crank or cam lever G in said stock supporting the rest and bearing with its upper arm under its stem, and the thumb-screw H, bearing against the lower arm of the lever, whereby said lever is caused to raise or lower the rest to any angle desired, substantially as herein described.

3. The combination, with the stock A, having the slot D, anvil *b*, hammer C, and tail-piece *a'*, of the rest E, having lip *e'*, and stem *e*, the set-screw F, and plate *f*, the bell-crank G, having pivot *g*, the adjusting-screw H, and the gage I, having feet *i*, screw-stem *i'*, and nut J, all constructed and arranged to operate as described.

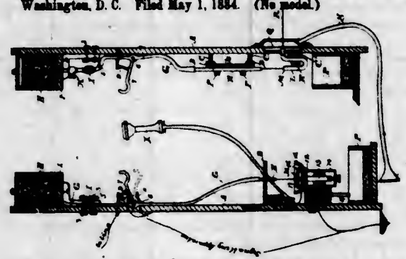
4. In a saw-set, the slotted stock A, having an anvil and a hammer, in combination with the saw-blade rest E, having a stem, *e*, passing through the upper edge of its slot, and the lip *e'* on the rear end of the stem, the bell-crank or cam lever G, bearing with its upper arm under the stem *e*, the pin *g*, by which said lever is pivoted, and the thumb-screw H, for operating the lever, substantially as herein described.

336,202. SPRING BED-BOTTOM. ALONZO BELL, Philadelphia, Pa. Filed Oct. 28, 1885. (No model.)



Claim.—The herein-described device for connecting the tops of helical bed-springs A together, consisting of two springs, B B', intersecting each other at right angles at their centers and furnished with rods *a b*, passing through their coils, one end of said rods being secured to the said springs, and the other to the rods or chains D E, substantially as and for the purposes set forth.

336,203. METHOD OF AND APPARATUS FOR TRANSMITTING, REPRODUCING, AND RECORDING SPEECH. CHICHESTER A. BELL, Washington, D. C. Filed May 1, 1884. (No model.)



Claim.—1. In the reproduction of speech, the improvement consisting in translating from one vibratory medium to another, through a jet, sonorous vibrations similar in form to the sound-waves of the spoken words, substantially as described.

2. The method of translating from one medium to another vibrations similar in form to sound-waves, by impressing the vibrations of the former upon a jet, and causing the jet to impress the same without destruction of their form upon the second medium, substantially as described.

3. In the reproduction of speech and other sounds, the improvement consisting in translating or transferring the sonorous vibrations of one medium into another through a fluid jet, substantially as described.

4. The method of transmitting speech and other sounds by throwing upon a line sonorous vibrations corresponding in form to the speech or other sound-waves, and causing the sonorous vibrations transmitted to impress themselves through a jet upon a vibratory receiving medium, substantially as described.

5. The improvement in transmitting speech and other sounds consisting in causing a sensitive jet to impress upon the medium constituting the line vibrations similar in form to the sound-waves, substantially as described.

6. The improvement in transmitting speech and other sounds consisting in transferring the sonorous vibrations of one line to another through a vibratory jet, substantially as described.

7. The method of reproducing speech and other sounds by impressing corresponding vibrations upon a jet, and causing the latter to im-

press upon the atmosphere vibrations similar in form thereto, whereby the vibrations are rendered audible, substantially as described.

8. The method of impressing vibrations similar in form to sound-waves upon a vibratory medium through a jet, by impressing the vibrations upon the jet-fluid near the jet-orifice, and causing the continuous portion of the jet at its outer part to act upon said medium, substantially as described.

9. The method of transferring the vibrations of a jet to a vibratory medium, whereby the same may be made evident by receiving the impact of the continuous portion of the jet upon a vibratory body constituting or connected with said medium, substantially as described.

10. The method of throwing a jet into vibrations corresponding to sound-waves by impressing similar vibrations upon the device or material in which the jet-orifice is formed, substantially as described

11. The improvement in transmitting intelligence consisting in impressing upon a jet vibrations representing the message or signal to be transmitted, and causing the said jet to act upon a vibratory medium connected with or forming part of the line, substantially as described.

12. The improvement in transmitting intelligence consisting in throwing upon a line vibrations representing the message or signal to be transmitted, and causing the said vibrations to impress themselves upon a jet, which acts upon the receiving medium, substantially as described.

13. The improvement in transmitting intelligence consisting in throwing upon a line vibrations representing the message or signal to be transmitted, causing the said vibrations to impress themselves upon a jet, and causing the said jet to act upon a vibratory medium connected with or forming part of a second line or constituting a continuation of the former, substantially as described.

14. The improvement in transmitting intelligence consisting in acting over one line upon the fluid of a jet and causing the latter to act upon another line or continuation of the former line, substantially as described.

15. The combination, with a line for the transmission of intelligence, of a jet-translating apparatus—that is to say, provided with a jet-orifice, and a passage or chamber for supplying fluid under pressure to said orifice, and further provided with means for varying or responding to variations in said jet—substantially as described.

16. The combination, with a line for the transmission of speech and other sounds, of a jet-translating apparatus comprising means for translating or transferring from one substance to another through the intermediary of a jet vibrations similar in form to sound-waves, substantially as described.

17. The combination, with the jet-producing means, of a device arranged in the path of said jet and means for transferring to a second device or confined medium the movements of said former device under the varying impact of the jet, substantially as described.

18. The combination, with jet-producing means, of a vibratory plate or sounding-board adapted to copy the vibrations of sound-waves and forming a support to the device provided with the jet-orifice, substantially as described.

19. The combination, with jet-producing means and means for impressing vibrations similar in form to sound-waves on the jet, of means for subjecting a receiving medium to the action of the continuous portion of the jet produced, substantially as described.

20. In an apparatus or system for transmitting speech and other sounds, a small stretched membrane of flexible elastic and extensible material—such as soft vulcanized thin sheet-rubber —in combination with means for concentrating the impressing vibrations in the center of such membrane, substantially as described.

21. A jet-translating apparatus provided with a jet-orifice, a passage or chamber for supplying fluid under pressure to said orifice, and means for subjecting a vibratory medium to the action of the jet from said orifice, said apparatus having the parts arranged, as explained, so that the vibratory medium to be impressed will be acted upon by the continuous portion of the jet, substantially as described.

22. The combination, with devices for producing a jet and impressing vibrations thereupon, of isolating means for excluding the influence of foreign vibrations on said jet, substantially as described.

23. In a jet-translating apparatus, the jet-tube, in combination with a vibratory support by which the same is carried, substantially as described.

24. The combination, with a vibratory plate or diaphragm, of a jet-tube carried thereby, substantially as described.

25. The combination, with the means for producing a jet and imparting vibrations thereto, of a sound-conveying tube and a membrane or diaphragm at one end of said tube in the path of the jet, substantially as described.

26. The combination, with the means for producing a jet and imparting vibration thereto, of the sound-conveying tube and the membrane or diaphragm at the end of the tube, said membrane or diaphragm being arranged, as explained, so as to be acted upon by the continuous portion of the jet, substantially as described.

27. In a system or apparatus for producing, reproducing, transmitting, recording, or rendering visible sonorous vibrations, the combination of a vibratory plate or diaphragm and the jet-tube carried thereby with the means for receiving and conveying the vibrations of said jet, substantially as described.

28. The combination, with the jet-tube and means for supplying fluid thereto, of an automatic cock in the supply-pipe provided with retracting means, such as a spring, for actuating the same when released, substantially as described.

29. The combination of a vibratory plate, a jet-tube carried thereby, a sound-conveying tube, and a membrane or diaphragm at the end of said tube in the path of the jet, substantially as described.

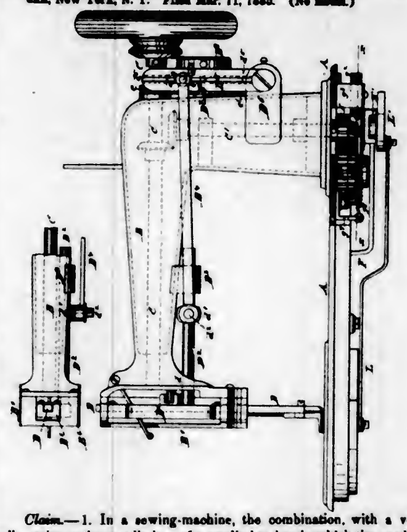
30. The sound-conveying tube having a thin membrane of elastic material—such as a sheet of rubber—stretched over the end, in combination with means for causing a sensitive jet to play on said membrane, substantially as described.

31. A transmitter of sonorous vibrations containing a fluid jet for amplifying the same without substantial loss of character, as set forth.

32. In an apparatus for transmitting sonorous vibrations by means of a fluid jet, the combination, with the jet-tube of such apparatus and the tube for supplying liquid to said jet-tube, of a filter for removing bubbles or solid particles from the jet-liquid, substantially as described.

33. The automatic cock and switch comprising, in combination, a cock or valve, an operating-arm provided with a hook or fork at the end, a retractile spring, and electrical contacts, substantially as described.

336,204. SWEAT-BAND SEWING-MACHINE. JOSEPH A. BRAUTIGAM, New York, N. Y. Filed Mar. 11, 1885. (No model.)



Claim.—1. In a sewing-machine, the combination, with a vertically-reciprocating needle-bar, of a needle-bar box in which the needle is guided vertically, a main or needle-bar-operating shaft, a primary gear-wheel thereon, a second gear-wheel meshing with said primary gear-wheel, but having three times as many teeth as the latter, a cam rotating coincidently with said second gear-wheel, and connections between said cam and needle-bar box, whereby the former may move the latter horizontally to cause the needle-bar to reciprocate twice in one vertical plane and once in another, substantially as set forth.

2. In a sewing-machine, the combination, with a needle-bar, of a main shaft, and connections for reciprocating said bar vertically, a primary gear-wheel on said main shaft, a second gear-wheel meshing with said primary gear-wheel, but having three times as many teeth as the latter, a grooved cam rotating coincidently with said second gear-wheel, a movable box in which the said needle-bar is guided vertically, a horizontal guide rod or arm rigidly attached to said needle-bar box, a grooved oscillating arm or lever having an adjusting slide-piece and an anti-friction roller, the latter engaging said grooved cam, and a connecting-rod pivotally attached to said guide-rod and oscillatory arm, whereby the said needle-bar will be reciprocated vertically and horizontally and will be retained at one end of its horizontal movement the proper time to make two stitches and will make one stitch at the opposite end of said movement, substantially as set forth.

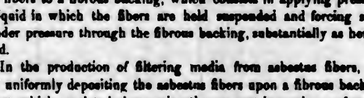
3. The combination, with a vertically-reciprocating needle-bar, of mechanism—as a grooved cam geared to rotate once to three rotations of the main or needle-bar-operating shaft, and connections between said cam and needle-bar—for imparting horizontal reciprocating movements to the latter so that the needle may take two stitches at one end of the horizontal movement and one at the other end thereof alternately, and a feeding mechanism comprising a cam or eccentric and gearing to rotate the latter once while the needle makes three stitches for moving the work only between the two stitches which occur at the one end of the said horizontal movement of the needle-bar, substantially as set forth.

4. A feed mechanism for sewing-machines, consisting of a transmitting-gearing operated from the main shaft, a mutilated gear-wheel, a cam-segment on said mutilated gear-wheel, a loose feed-pinion adapted to mesh with the mutilated pinion, a laterally-reciprocating ring-guide having teeth interlocking with the teeth of the feed-pinion, an eccentric keyed to said feed-pinion, and a feed-lever and feed device operated by said eccentric, substantially as set forth.

5. The combination, with a transmitting-gearing operated from the main shaft, a mutilated gear-wheel having teeth along one-third of its circumference, a loose feed-pinion, a cam-segment attached to the mutilated gear, a laterally-reciprocating and spring-actuated ring-guide actuated by said cam-segment and having teeth interlocking with the loose feed-pinion, an eccentric keyed to the loose pinion, and a feed-lever actuated by said eccentric and operated once for every third rotation of the main shaft, substantially as set forth.

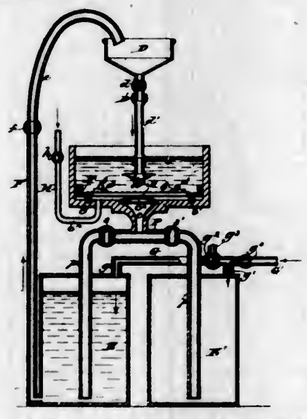
336,205. FILTERING MATERIAL. FRIEDRICH BERTH, Vienna, Austria-Hungary. Filed June 4, 1885. (No model.) Patented in Belgium May 4, 1885, No. 68,753; in France May 5, 1885, No. 162,364; in Italy May 7, 1885, XIX, 18,234, and XXXVI, 343; in England May 12, 1885, No. 5,864, and in Austria-Hungary Aug. 29, 1885, No. 15,098 and No. 45,354.

Brief.—A filtering material made by felting finely-divided asbestos fibers to a fibrous backing.



Claim.—The herein-described filtering medium composed of a fibrous backing and a coating or lining of asbestos fibers felted thereto, as described.

336,206. PROCESS OF PRODUCING FILTERING MEDIA. FRIEDRICH BERTH, Vienna, Austria-Hungary. Filed Oct. 26, 1885. (No specimens.) Patented in Belgium May 4, 1885, No. 68,753; in France May 5, 1885, No. 162,364; in Italy May 7, 1885, XIX, 18,234, and XXXVI, 343; in England May 12, 1885, No. 5,864, and in Austria-Hungary Aug. 29, 1885, No. 15,098 and No. 45,354.



Claim.—1. In the production of filtering media from asbestos fibers, the mode of reduction described, which consists in mixing with the coarsely-subdivided asbestos fibers a crystalline carbonate (or shells) soluble in acids, and triturating or grinding the mixture, substantially as set forth.

2. In the production of filtering media from asbestos fibers, the mode of eliminating the crystalline carbonate from the asbestos fibers, which consists in treating a mixture of triturated or ground asbestos fibers and carbonate with an acid that will not affect the asbestos fibers but dissolve the carbonate and produce effervescence by reaction, as described.

3. In the production of filtering media, the mode of felting the asbestos fibers to a fibrous backing, which consists in applying pressure to the liquid in which the fibers are held suspended and forcing such liquid under pressure through the fibrous backing, substantially as herein described.

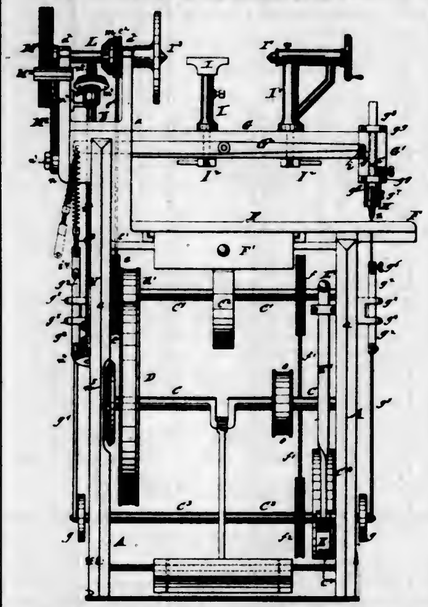
4. In the production of filtering media from asbestos fibers, the mode of uniformly depositing the asbestos fibers upon a fibrous backing or support, which consists in immersing the support in a volume of water in which asbestos fibers are held in suspension, exhausting the water through the fibrous support by suction, and repeating the operation of depositing with fresh charges of water and asbestos fibers, as described.

336,207. WHEEL FOR VEHICLES. GRANVILLE BROOK, Sparta, Ky. Filed Aug. 17, 1885. (No model.)

Claim.—1. The combination, with the hub-sections having the caps C at each end and projecting studs a' at one end only, of the interior thimble, K, provided at one end with a circular integral head, k, which fits over the end of the hub closely within the cap C, and is notched or perforated at k', to receive the studs a' and prevent the rotation of the hub on the spindle, the other end of the latter being exteriorly threaded, and a circular clamping-nut, k^2, fitting closely within the cap C and screwing over the threaded end of the thimble, and having an extension which is received in an enlarged recess of the hub, as set forth.

2. The combination, with the hub-sections A B, each provided at their inner ends with flanged clamping-rings D, the ring D of section B being set back at some distance from the inner end to leave a shoulder, E, and recesses F, provided in the latter, of the spokes G, having reduced oblong portion g, fitting in the recesses F, and the shoulders g' beyond the reduced portions, bearing on the shoulders E, bolts I, connecting the rings D of the sections, the felly or rim provided with circular recesses h, and the reduced circular portion g^2, provided on the ends of the spokes, as and for the purpose set forth.

336,208. COMBINED SCROLL-SAW AND LATHE. FRANZ J. BRUCKNER, New York, N. Y. Filed Oct. 22, 1885. (No model.)



Claim.—1. The combination of vertically-reciprocating guide-pieces having clamping devices for the saw-blade, a fulcrumed tension-lever connected at one end to the upper guide-piece, and automatic unhitching device connected to the other end of said tension-lever, a rotary shaft having crank-disks at each end, and pivot-rods connecting the lower guide-pieces and said unhitching device with the crank-disk of said shaft, substantially as described.

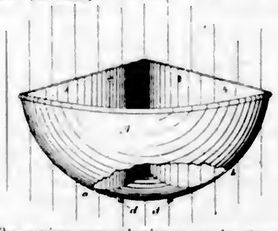
2. The combination of vertically-reciprocating guide-pieces having clamping devices for the saw-blade, a fulcrumed tension-lever connected at one end to the upper guide-piece, a rotary shaft having crank-disks at each end, an unhitching device connected to the other end of said tension-lever and composed of a spiral spring, a screw-eye, a link, and vertically-reciprocating rod having a hook shaped end, and pivot-rods con

necting the lower guide-piece and the hook-rod with the crank-disks of said shaft, substantially as set forth.

3. The combination of a scroll-saw-supporting frame having a fixed horizontal arm made of two parallel pieces, an adjustable tail-stock supported by said arm, a clamping device for said adjustable tail-stock, an adjustable tool-rest, also supported on said arm, a clamping device for said tool-rest, and a rotary lathe-shaft supported in bearings above the horizontal arm, and having a tail-stock in line with the adjustable lathe-center, substantially as set forth.

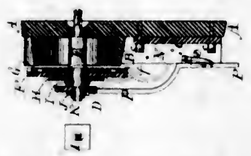
4. The combination of a scroll-saw-supporting frame having a horizontal arm made of two parallel pieces, an adjustable tail-stock, an adjustable tool-rest, both supported on said arm, clamping devices for securing the tail-stock and tool-rest to said arm, a head-stock supported in bearings above said arm and having a tail-stock in line with the adjustable center, and an inclined shaft having bevel-wheels meshing with bevel-gears on the lathe-shaft and driving-shaft, said inclined shaft being adapted to be shifted in its bearings for throwing the bevel-wheels in or out of gear with the driving-shaft, substantially as set forth.

336,209. MANGER. WILLIAM BURROWS, Brooklyn, N. Y. Filed Dec. 15, 1884. (No model.)



Claim.—The cast-iron manger having an opening through the bottom and a flange around said opening jointly with the removable sections filling the opening and resting on the flanges, so as to be flush, or nearly so, with the interior of the manger, substantially as and for the purposes set forth.

336,210. MUSICAL BOX. LOUIS CAMPICHE, St. Croix, Switzerland, assignor to Marmod Freres, same place. Filed May 18, 1885. (No model.)



Claim.—1. In a musical box, the combination of the plate A, the cylinder Z and the musical tongues, and a barrel, B, forming part of the plate, with an opening turned upward and provided with two pillars, *b*, and the mainspring, the whole constructed so as to allow of the removal of the mainspring without removing the cylinder.

2. The cap F of the barrel with a lower range of teeth engaging directly with the pinion of the cylinder, in combination with the axis and the mainspring, and a click-spring, G, substantially as described and shown.

3. The bridge D for the mainspring axis, affixed on the pillars *b b*, in combination with the stationary barrel, the spring, and the gearing, substantially as specified.

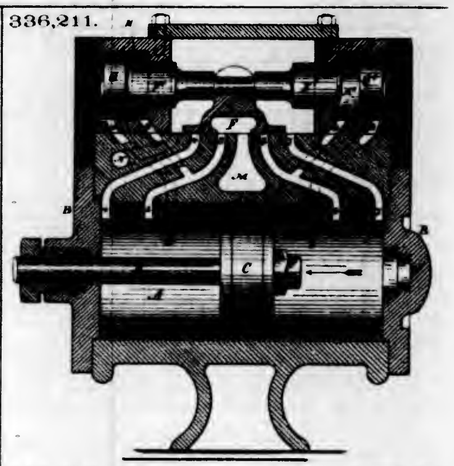
336,211. STEAM-ACTUATED VALVE. LEON B. CARREDABURU, New York, N. Y. Filed Nov. 16, 1885. (No model.)

Claim.—1. The combination, with the cylinder A, valve-chest and valve-moving cylinders, and ports 4, 5, 6, 7, 8, 9, 10, and 11, of the valve F, pistons G G', and valve-rod, that is connected with the valves and passes at its ends into the valve-moving cylinders, but is not connected to the pistons, substantially as specified.

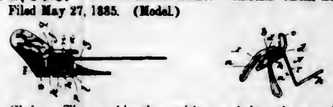
2. The combination, with the ports, valve, and valve-moving pistons, of a valve-rod connected to the valve and separate from the valve-moving pistons, and passing at its ends into the cylinders of the valve-moving pistons, substantially as set forth.

3. The combination, with the steam-engine cylinder, piston, valve, and ports, substantially as set forth, of cylinders into which the steam is admitted to move the valve-pistons within such cylinders, a valve-rod connected to the valve and having its ends within such valve-moving cylinders, whereby the steam that moves the valve acts upon the valve-moving pistons and afterward upon the end of the valve-rod, substantially as set forth.

336,211.



336,212. NECKTIE-FASTENER. ANDREW CUPER, Haverhill, Mass. Filed May 27, 1885. (Model.)



Claim.—The combination, with a necktie and secured thereto, substantially as described, of a metal fastener, A, made with two legs or arms, *a a'*, each having an end prong, *h*, and both forming an acute angle, *b*, and each thence bent and continued at right angle, making a portion, *d*, and a loop, *c*, the portions *d* to act as rests for the fastener upon the upper edge of the collar and neckbands, and otherwise to secure the placing of both legs inside of the neckband and straddling the shank of the collar-button and the loop c and prongs *h*, to serve as means of attaching the fastener to the necktie, all as described, for the purpose specified.

336,213. HAT-TIP. HORACE COCHRANE, Philadelphia, Pa. Filed Oct. 5, 1885. (No model.)

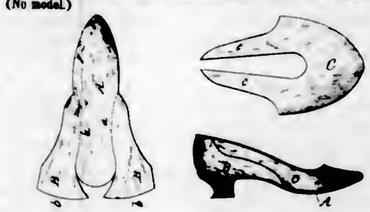


Claim.—1. The combination, with a hat, of a false crown located therein and a series of single supports fixedly secured to and depending from said crown, and having their free ends inserted between the hat-body and the sweat-band, to support and secure the crown in place, substantially as set forth.

2. The combination, with a hat, of a false crown located therein and a series of single supports fixedly secured to and depending from said crown, and having their free ends inserted between the hat-body and the sweat-band when in use, said supports having a hinge-joint close to the crown, to permit their folding when not in use, substantially as and for the purposes set forth.

3. A hat-tip consisting of an oval-shaped crown-piece notched at each end and on each side, in combination with two U-shaped wires diagonally arranged and secured to the crown, and having their legs project from the crown between the notches, substantially as shown and described.

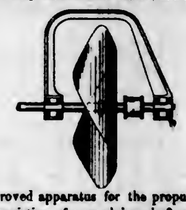
336,214. SHOE. JOHN H. COMART, Lyons, N. Y. Filed Aug. 13, 1885. (No model.)



Claim.—1. The herein-described pattern for low-cut shoes, consisting of a sole portion provided with expanding wings, as shown, and a vamp portion provided with corresponding contracted wings adapted to overlap and to connect with the sole wing portion, substantially as shown.

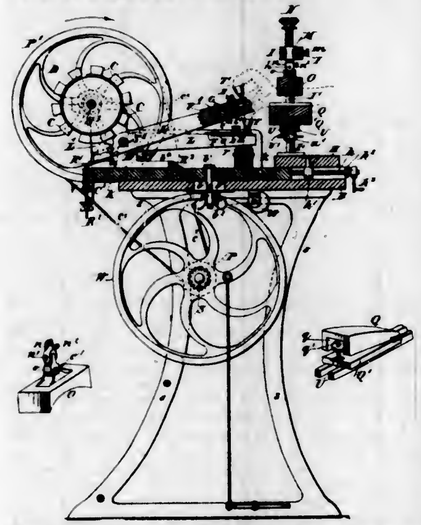
2. A shoe consisting of a sole integrally provided with expanding quarters, in combination with a vamp having integral correspondingly-contracted wings, united to the combined sole and quarter, bound, and heeled, substantially as shown and described.

336,215. APPARATUS FOR THE PROPULSION, MOVEMENT, AND SUCTION OF AIR, FLUIDS, AND GASES. CLARENCE W. CROSSLEY, London, County of Middlesex, England. Filed June 12, 1885. (No model.) Patented in England July 14, 1884, No. 10,108, and in Belgium May 22, 1885.



Claim.—The improved apparatus for the propulsion or movement of air or other fluids, consisting of a revolving shaft and a plate of sheet metal that is affixed to said shaft, and is longer in one direction than the other, and having the two portions or blades at an obtuse angle to each other, the line of the angle between the blades being diagonal to the plate, and the end portions of each blade curved toward each other, substantially as specified.

336,216. FINGER-EXERCISING DEVICE. CARL DEBOUTEVILLE, Stuttgart, Wirtemberg, Germany. Filed Dec. 22, 1884. (No model.) Patented in France Dec. 3, 1884, No. 165,741; in Germany Dec. 4, 1884, No. 31,763, and in England Apr. 11, 1885, No. 4,501.



Claim.—1. In a finger-exercising apparatus, the combination, substantially as described, of a series of levers provided with a retaining device for the finger ends, a cam-shaft for oscillating said levers, and a driving-wheel for rotating the cam-shaft.

2. In a finger-exercising apparatus, the combination, substantially as described, of a series of levers provided with a retaining device for the finger ends, a cam-shaft for oscillating the levers, a driving-wheel for rotating the cam-shaft, and a rest or support for the hand arranged in front of the levers.

3. In a finger-exercising apparatus, the combination, substantially as described, of a series of levers provided with a retaining device for the finger ends, a cam-shaft for oscillating the levers, a driving-wheel for rotating the cam-shaft, and a rest or support for the hand, arranged in front of the levers, and adapted for adjustment toward or from the lever ends.

4. In a finger-exercising apparatus, the combination, substantially as described, of a series of levers provided with a retaining device for the finger ends, a cam-shaft for oscillating the levers, a driving-wheel for rotating the cam-shaft, and a rest or support for the hand, arranged in front of the levers, and adapted for adjustment in the plane of the longitudinal axis of the levers, and in planes at right angles thereto.

5. In a finger-exercising apparatus, the combination, substantially as described, of the driving-pulley P, with the cam-shaft S', its driven pulley P', and the board K, on which said shaft is mounted, said board being adapted for adjustment toward and from the axis of rotation of said driving-pulley.

6. In a finger-exercising apparatus, the combination, substantially as described, of the board K, the levers L, and their shaft S², with the dummies or spacing-blocks B'.

7. In a finger-exercising apparatus, the combination, substantially as described, with the levers L, of hinged thimbles T, adapted to be adjusted longitudinally of the levers for the purpose specified.

8. In a finger-exercising apparatus, the combination, substantially as described, with the levers L, of the removable blocks L'.

9. In a finger-exercising apparatus, the combination, substantially as described, with the levers L, of the drum D, provided with concentric rows of slots, and teeth or cam projections transferable in said slots, on the periphery of the drum, for the purpose specified.

10. In a finger-exercising apparatus, the combination, substantially as described, with the levers L, of the drum D, provided with peripheral slots D', and the cams C, provided on their under side with a double-T projection, C', and at one end with a spring, c^3.

11. In a finger-exercising apparatus, the combination, substantially as described, with the levers L, of the hand-support, consisting of the vertically, longitudinally, and laterally adjustable blocks O Q.

12. In a finger-exercising apparatus, the combination, substantially as described, with the lever-support K, of the plate H, the rods I', the rails I U, set-screws i u, the carriages M Q', the blocks O Q, and the clamping-screws m U', said parts being constructed and arranged for operation for the purpose specified.

13. In a finger-exercising apparatus, the combination, substantially as described, with the lever-support K, of the plate H, the rods I', rails I U, carriages M Q', blocks O Q, and the adjusting-screws N q', said parts being constructed and arranged for operation, as described.

14. In a finger-exercising apparatus, the combination, substantially as described, with the lever-support K, of the plate H, the hand-rests supported thereupon, the threaded sleeve A', and the screw-spindle A, said parts being constructed and arranged for operation for the purpose stated.

15. In a finger-exercising apparatus, the combination, substantially as herein described, with the stand or table, its top B, and the driving-pulley mounted on said stand, of the lever-support K and the hand-rest support H, adjustable jointly on the stand-top toward and from the axis of rotation of the driving-pulley, and mechanism for adjusting the hand-rest support independently of the lever-support, for the purpose specified.

336,217. CHURN. WILLIAM W. DELANO, Jr., Waterbury, Vt. Filed Jan. 8, 1885. (No model.)



Claim.—In a working-body churn having its sides arranged at angles to each other and divided longitudinally through two of these angles, whereby a section of the churn-body is separated and formed into a lid, the combination of said lid hinged at one side to the main portion of the body, the hook C on one part of the body, the staple or strap D, arranged on the other part of the body, a link, *a*, extended across and bearing upon the angular edge or corner made by the meeting edges, and the lever E, pivoted to the free end of the link, and provided with the extension or part *e*, arranged to engage under the hook C, substantially as set forth.

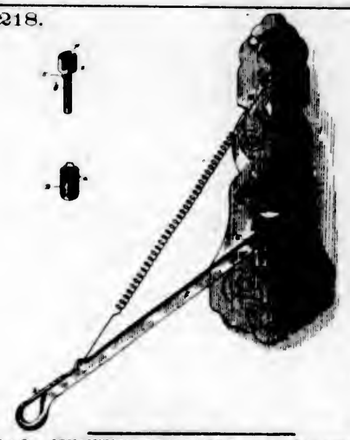
336,218. BIRD-CAGE BRACKET. SCOTT B. DEBIT, Utica, Nebr. Filed Oct. 27, 1885. (No model.)

Claim.—1. The combination, in a bracket, of the bearing having its upper edge notched, the pivoted arm supported in said bearing, and the button pivoted above the said arm and bearing, substantially as specified.

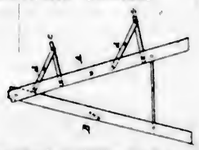
2. A bracket having a hinged spring-supported arm provided with a stop to limit its downward movement and a removable stop to prevent the said arm from accidentally leaving its bearing, substantially as specified.

3. The combination, with the base-plate having the socket-bearing provided with the notched edge, of the pivot-pin having the slotted head and the under lug, the pivoted arm having its inner end notched, the turn-button, and the spring connecting the pivoted arm with the base-plate, substantially as specified.

336,218.



336,219. ORNAMENTAL STEP-LADDER. ANNA DORMITZER, New York, N. Y. Filed Dec. 30, 1885. (No model.)



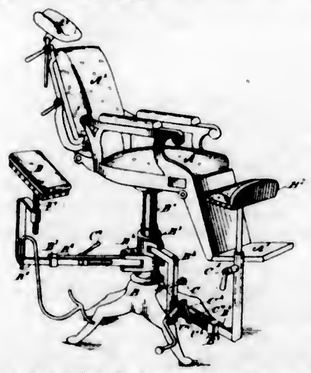
Claim.—1. An ornamental step-ladder, constructed substantially as herein shown and described, consisting of frame-sections A B, pivoted together, folding steps c, braces d, and ornamental panel C, all arranged and adapted for use as and for the purposes described.

2. The combination, with a step-ladder of the character substantially as herein described, of an ornamental or decorative panel forming part thereof, as set forth.

3. The combination, with the step-ladder A B C, of handle D and supporting-rod E, all arranged and adapted to operate substantially as herein described, and for the purposes set forth.

4. A step-ladder constructed substantially as herein shown and described, devoid of a step on top, the front section having one or more folding steps, and the rear section arranged to fold within the front section, substantially as herein shown and described.

336,220. DENTIST'S CHAIR. JOHN N. FARRAR, New York, N. Y. Filed Apr. 13, 1885. (No model.)



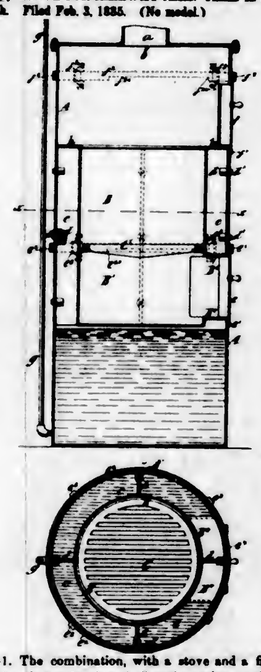
Claim.—1. In a chair for dentists and barbers, the combination of a supporting-column, B', the sockets B², revolving upon said column, supporting-arms B², pivoted within these sockets by pivots B³, and capable of being locked by the pivoted levers B⁴, and horizontally and vertically adjustable seats, substantially as and for the purposes set forth.

2. In a chair for the use of dentists and barbers, the combination, with a supporting-column, B', provided with revolving sockets B², of bent supporting-bars B², to the outer ends of which are attached by means of sockets B⁷ the horizontally-sliding seat-rests B⁶, carrying the seats B⁴, substantially as shown and described.

3. In a chair for the use of dentists and barbers, the combination of a supporting-column, B', slotted supporting-bar B², connected with said column and provided at its extremity with a socket, B⁷, through which slides a horizontal seat-rest, B⁶, provided with stud C³, which has nut C⁴ and connecting-link C², the latter attached to the arm C', connected with the shaft C, whereby the seat B⁶ is rendered horizontally adjustable, substantially as shown and described.

4. In a dentist's or barber's chair, the combination of the foot-rests C, arm C', connecting-link C², stud C³, having nut C⁴, slotted bar B², socket B⁷, and sliding rest B⁶, substantially as and for the purposes described.

336,221. STOVE FOR RAILWAY-CARS. JAMES A. FARNE, Salt Lake City, Utah. Filed Feb. 3, 1885. (No model.)



Claim.—1. The combination, with a stove and a fire-door hinged at one edge, of a ring or band encircling the stove, overlapping the opposite edge of the door, and having in its edge a gap or recess through which the door may be opened and closed, the said ring or band being capable of being turned to change the position of its gap or recess relatively to the door, substantially as herein described.

2. The combination, with the approximately-cylindric casing or jacket A, made water-tight in its lower portion to form a water-chamber, of an inner shell closed at the bottom, containing the fire-box D and ash-pan D', and constructed with radial wings or ribs d, extending lengthwise of it, whereby it is connected with and suspended in the casing or jacket A, so as to form an annular space, c, for the passage of water between the casing or jacket and inner shell when the stove is overturned, substantially as herein described.

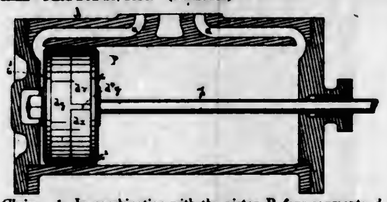
336,222. EDGE-GUARD FOR PLANES. JAMES H. FIRMSTON, Brooklyn, assignor to Lovejoy, Sen & Co., New York, N. Y. Filed Oct. 3, 1885. (No model.)



Claim.—1. The combination, with the body and knife of a plane, of an edge-guard forming the edge of the throat of the cutting-edge, and a spring for projecting the guard from the body so that it will shield the cutting-edge, substantially as herein described.

2. The combination, with the body and knife of a plane, of an edge-guard forming the edge of the throat in front of the cutting-edge and hinged at its side which is most distant from the cutting-edge, and a spring for projecting the guard from the body so that it will shield the cutting-edge, substantially as herein described.

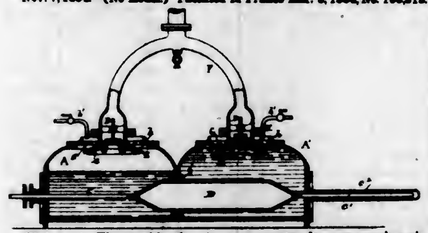
336,223. PACKING FOR PISTONS. JAMES FERGUSON, Bridgewater, Mass. Filed Dec. 26, 1885. (No model.)



Claim.—1. In combination with the piston P, four segments, d, arranged around its head and forming an expansible packing, each provided with a laterally-projecting part, d^4, extending under the ends of two adjacent segments, substantially as described.

2. The combination of the piston-head formed of flange c^2 and flange-follower c^3, four segments, d, arranged between the flanges and forming an expansible packing, each provided with a laterally-projecting part, d^4, extending under the ends of two adjacent segments, and the springs c^4 c^4 between the segments and the hub of the piston-head, substantially as described.

336,224. APPARATUS FOR COMPRESSING AIR. CLAUDE M. FEYBOT, Lyons, France, assignor to Wanner & Perret, St. Paul, Minn. Filed Nov. 7, 1884. (No model.) Patented in France Mar. 8, 1884, No. 160,315.

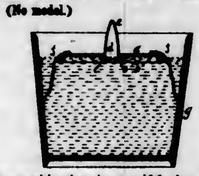


Claim.—1. The combination, in an apparatus for compressing air, of the water-holding vessels A A', placed end to end, and having a common dividing-partition, a cylindrical hollow piston pointed at each end and passing through said partition, a piston-rod and guide-rod connected to the respective ends of said piston, a circular perforated cap-piece to each of said water-vessels, a convex disk, c, and pipe F, connected to each of said cap-pieces, and the valves E and D, substantially as specified.

2. In an air-compressing apparatus, two water-holding vessels, with an opening between them, a plunger in the said opening, with a rod by which it is reciprocated, an arched top to each vessel, with inlet air-openings in said arched top, a flexible valve in each vessel beneath said openings and closing upwardly, a central discharge-opening, a pipe above the same, and a valve closing downwardly over the said opening, whereby the inlet and discharge of the air are at the highest point of each vessel and agitation of the water is prevented, substantially as specified.

3. The combination, with a water-holding vessel and piston in an air-compressing apparatus, of an arched top, a circular range of openings through the level portion of the top, a valve below the said openings closing upwardly, a rim around the openings, and a pipe for supplying water, whereby the water reaches all portions of the openings with uniformity, and a central opening, pipe, and valve for the discharge of the compressed air, substantially as specified.

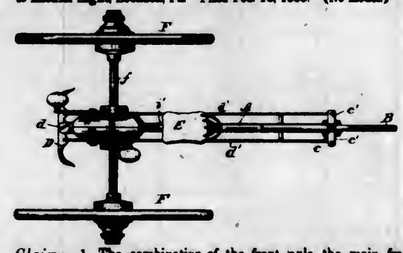
336,225. CALF-FEEDER. EDWARD F. FORE, Decatur, Ill. Filed Apr. 18, 1885. (No model.)



Claim.—1. The combination, in a calf-feeder, of a float concaved on its lower side and provided with a tubular central downward extension, a nipple extended through the float and through the tubular extension, and cross-bars that pass through the tubular extension and the nipple, substantially as and for the purpose set forth.

2. The combination, in a calf-feeder, of a receptacle for the milk, a float, a nipple, and chains extending from the float to the vertical center of the milk-receptacle, substantially as and for the purpose set forth.

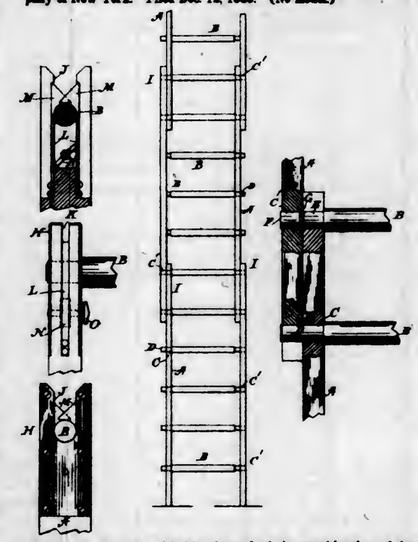
336,226. TRICYCLE. JOHN B. FUNK, Columbia, assignor of one-half to Enoktal Light, Lebanon, Pa. Filed Feb. 13, 1885. (No model.)



Claim.—1. The combination of the front axle, the main frame passing over it and forming its upper bearing, the casings H H', the sprocket-wheels G G', and the chain g, all arranged as shown and described, whereby the relative position of the axle and main frame is maintained by the chain, as set forth.

2. In combination, the main frame, the elbow-lever carrying the brake, the connecting-rod i, and the lever L, pivoted in a slot in the main frame between the casing H H' and the saddle E, as set forth.

336,227. SECTIONAL LADDER. FRANK W. GATES, New York, N. Y., assignor to the Emery-Gates Sectional Ladder and Manufacturing Company of New York. Filed Dec. 12, 1885. (No model.)



Claim.—1. A sectional ladder formed of the combination of duplicate sections having parallel side rails, rungs projecting beyond one of the side rails of each section, grooves upon the opposite ends of the said rungs and adjacent to the other of the side rails of each section, and slots in the ends of said side rails, the said rungs fitting into the said slots.

2. In a sectional ladder, the combination of duplicate sections having parallel side rails, projections along the outer side of one of said side rails, notched pieces along the inner side of the other of said side rails, and slots in the ends of said rails and fitting over said projections and upon said notched pieces, substantially as described.

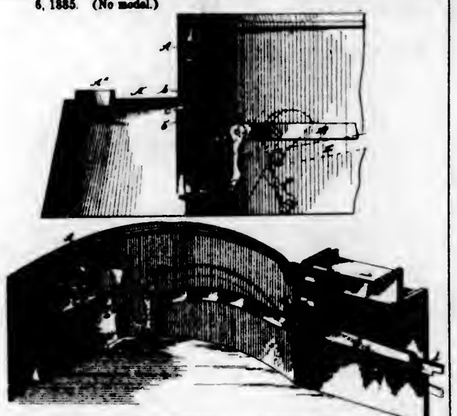
3. In sectional ladders, a section consisting of the combination of side rails, holes in said side rails, and rungs to said ladder, each rung having upon one end a smaller portion fitting into the holes in one side rail and projecting beyond the same, and having upon the outer end two smaller portions—an inner and an outer—separated by a beveled collar, said outer smaller portion and said collar fitting into the holes in the other side rail, substantially as described.

4. In sectional ladders, the combination of side rails, slots in the ends of said side rails, projections upon one side of said side rails, said rungs and their projections fitting into said slots, and an automatic locking device in said slots, substantially as described.

5. In sectional ladders, a joint consisting of side rails, slots in said

side rails, rungs fitting into said slots, hooked springs sprung over said rungs, and an operating device consisting of a rotatable lever between said springs, substantially as described.

336,228. DAMPER. ALBERT L. GOODENOW, Utica, N. Y. Filed Aug. 6, 1885. (No model.)



Claim.—1. The combination, with a furnace having a flue-opening in a wall thereof, of a damper-casing fitting such opening and having a projecting flange, and a bracket removably connected to said wall and extending over the said flange, as and for the purpose set forth.

2. The combination, with a furnace having a flue-opening in a wall thereof, of a damper-casing having a top, bottom, and two inclined sides and a projecting flange, and a bracket removably attached to said wall and extending over said flange, substantially as and for the purpose set forth.

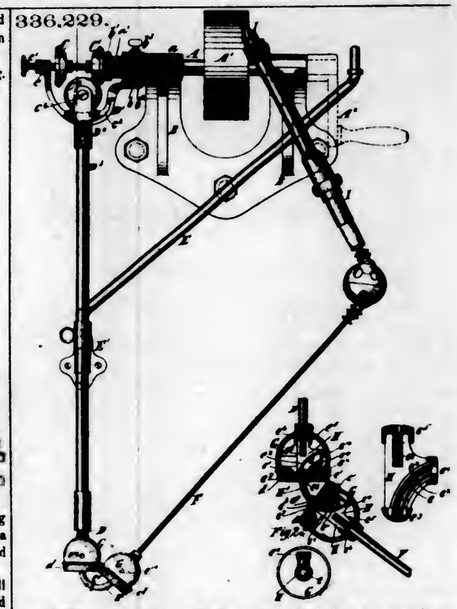
3. The combination, with a furnace having a flue-opening in a wall thereof, of a damper-casing having a top, bottom, and two inclined sides, a damper pivoted in said casing, and a bracket removably attached to said wall and engaging said casing, substantially as and for the purpose described.

4. The combination, with a damper in the ash-pit of a furnace, of a pivoted actuating-lever, the inner end of which is bent to conform to the curvature of the furnace-base and pivotally attached to an arm secured to a rod on the damper-door, substantially as and for the purpose set forth.

5. The combination, with a furnace-damper, of an actuating-lever pivotally secured thereto, said lever having a recess adapted to engage with a support secured to one side of the interior of the wall of the fire-box, substantially as and for the purpose set forth.

6. The combination, with a furnace-base, the smoke-exit chamber, a damper in the ash-pit, and an actuating-lever therefor, of a bracket, G, secured to said base and having a pivot-seat for said lever, substantially as and for the purpose set forth.

336,229. DENTAL ENGINE. CHARLES P. GROUT, New York, N. Y. Filed June 23, 1883. (No model.)



Claim.—1. The combination, with a driving-shaft and reversely-set wheels secured thereon, of a second shaft provided with a wheel or sphere and a yoke supporting said second shaft, and adapted to turn about the driving-shaft and to slide lengthwise thereof, so as to bring the wheel or sphere on the second shaft in engagement with either of the wheels on said driving-shaft, substantially as and for the purpose described.

2. The combination, with the driving-shaft and reversely-set wheels thereon, of a second shaft provided with a wheel or sphere, a yoke adapted to turn about the driving-shaft and to slide lengthwise thereof, and a second yoke having a bearing for said second shaft and pivoted or fulcrumed to the first-mentioned yoke, so as to provide for swinging the second shaft in a plane parallel with said driving-shaft, substantially as and for the purpose described.

3. The combination, with the driving-shaft A and reversely-set wheels C C', of the fixed tube a', surrounding said shaft, the rotary sleeve b, the yoke D', adapted to be secured to and to be adjusted lengthwise of said sleeve, and the shaft D and sphere or wheel C^2, substantially as described.

4. The combination, with the driving-shaft A and reversely-set wheels C C', and the fixed tube a', surrounding said shaft, of the yoke D', comprising the eye b^2, fitting said sleeve and adapted to be adjusted lengthwise thereof, and the eye c, fitting the outer end of the shaft A, the pivot-screw c', and the shaft D and wheel or sphere C^2, substantially as described.

5. The combination, with the driving-shaft A and reversely-set wheels C C', of the fixed tube a', the sleeve b, the yoke D', adapted to be adjusted on said sleeve lengthwise thereof, the shaft D and its wheel or sphere C^2, and the second yoke, D^2, fulcrumed by pivots or trunnions c^2 to the yoke D', and containing a bearing for the shaft D, substantially as described.

6. The combination, with two shafts and shells fixed to the adjacent ends thereof and geared together, of non-rotary body-pieces contained within said shells, and a curved or arc-shaped bar or rod adapted to slide in corresponding bores or sockets in said body-pieces and holding the said shells in contact, substantially as and for the purpose described.

7. The combination, with two shafts and shells fixed to their adjacent ends and geared together, of non-rotary body-pieces within the shells, the opposite ends of which bear against seats in the shells, and which are provided with means for taking up wear between them and the shells, and a curved or arc-shaped rod or bar adapted to slide in corresponding bores or sockets in said body-pieces and holding said shells in contact, substantially as and for the purpose described.

8. The combination of the shafts D F, the shells G G, each composed of separate sections and geared together, and the body-pieces H, and curved or arc-shaped rod or stem H', connecting and sliding in said body-pieces, substantially as described.

9. The combination of the shafts D F, the shells G, geared together, the body-pieces H, bearing against seats d^3 d^3 in said shells, and provided with nuts d^5 for taking up wear, and the curved or arc-shaped rod or stem H', substantially as described.

10. The combination of the shafts D F, the shells G, geared together, the divided body-pieces H, each composed of two sections held together by caps d^3 d^4, and a nut, d^5, and constructed with grooved bores or sockets s, and the curved or arc-shaped rod or stem H', provided with lugs or ears s', fitting the grooves in said bores or sockets s, substantially as described.

11. The combination, with two shafts provided with driving-wheels at their adjacent ends, of a shell or yoke containing said wheels and into which said shafts project, swiveled connections between said shafts and the shell or yoke, and devices connecting the ends of said shafts to hold the wheels in engagement, substantially as described.

12. The combination, with two shafts provided with driving-wheels at their adjacent ends, of a shell or yoke into which said shafts project and which contains said wheels, swivel-connections between said shafts and the shell or yoke, and a ball-and-socket connection between the ends of said shafts, substantially as described.

13. The combination, with two shafts provided with driving-wheels at their adjacent ends, of a shell or yoke into which said shafts project and which contains said wheels, swival-connections between said shafts and the shell or yoke, and rods seated on springs in the ends of said shafts so that they may slide in said shafts and connected by a ball-and-socket joint, substantially as described.

14. The combination, with two shafts and wheels sliding upon but adapted to turn with their adjacent ends, of a shell or yoke into which said shafts project and which contain the wheels, swivel-connections between said shafts and shell or yoke, and a connection between the ends of said shafts for holding said wheels in contact, substantially as described.

336,230. ARTIFICIAL TOOTH. CHARLES P. GROUT, New York, N. Y. Filed July 9, 1885. (No model.)



Claim.—1. The combination of two metal tooth-crowns adapted to be secured to two tooth roots or stumps, and a detachable connection between the crowns to provide for separately placing them on and removing them from their roots or stumps, substantially as herein described.

2. The combination, with a dental bridge and a tooth-crown at one end thereof, both forming one integral structure, of another tooth-crown, upon which the other or free end of the bridge is supported and capable of self-adjustment as the bridge expands or contracts, substantially as herein described.

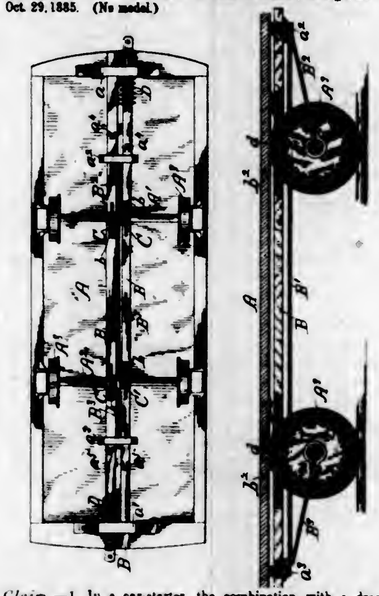
336,231. APPLYING ARTIFICIAL TOOTH-CROWNS. CHARLES P. GROUT, New York, N. Y. Filed Sept. 1, 1885. (No model.)



Claim.—1. The improvement in the method of applying artificial tooth-crowns, consisting in constructing the crown with a hole or opening in its upper portion, in then placing the empty crown in position on the tooth root or stump, and in injecting into the crown through the said hole or opening, and while it is on the root or stump, a quantity of cement sufficient to fill it, substantially as herein described.

2. The improvement in the method of applying tooth-crowns, consisting in preparing the tooth root or stump with an inwardly-extending hole or cavity, in constructing the tooth-crown with a screw-threaded hole, b^2, in its top, in then placing the empty crown in position on the tooth root or stump, and injecting through the said hole a sufficient quantity of cement to fill the crown, and in finally inserting a pin through the hole in the crown and downward into the hole or socket in the tooth-root, and tightly screwing such pin into the threaded hole in the top of the crown, substantially as herein described.

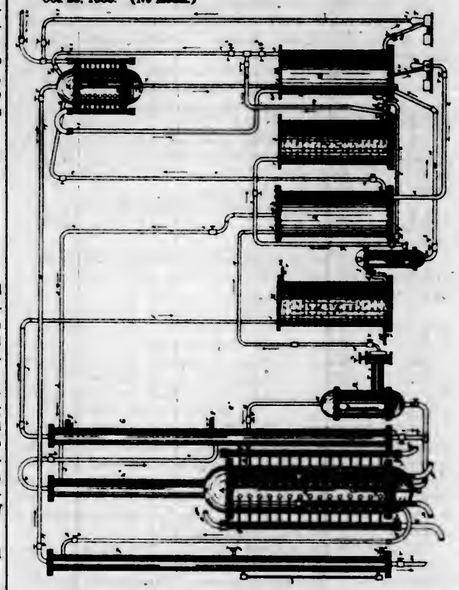
336,232. CAR-STARTER. GEORGE B. HARRIS, Chicago, Ill. Filed Oct. 29, 1885. (No model.)



Claim.—1. In a car-starter, the combination, with a draw-bar adapted to have an independent endwise movement relative to the car proper, of the cleat-brackets a a', the bearing-blocks a^2 a^3, the brace-rod connecting said blocks, and the brace-rods B^2 B^3, having one end of each attached to said blocks and the opposite ends to the car-axles, whereby said draw-bar is supported in position, substantially as set forth.

2. In a car-starter, the combination, with a draw-bar extending the whole length of and adapted to have a limited independent endwise movement of the car, said draw-bar being constructed in three parts and hinged together, as described, of the means for returning said draw-bar to a normal position, the pawl or pawls b^3, the springs d, the ratchet-wheels C C', the axles A' A^3, and the truck-wheels, all constructed, combined, and arranged to operate substantially as and for the purpose set forth.

336,233. MACHINE FOR THE MANUFACTURE OF ICE AND FOR REFRIGERATING PURPOSES. ELI E. HENDRIX, Carbondale, Pa. Filed Oct. 23, 1885. (No model.)



Claim.—1. The combination, substantially as before set forth, of the primary still with the secondary still by pipes, whereby the ammonia which has been treated in the primary still may be treated at a lower pressure in the secondary still.

2. The combination, substantially as before set forth, of a still provided with internal heating-pipes, and a distributer for distributing the liquid thereon, with a regulator, whereby the collected liquid is prevented from rising into contact with the heating-pipes.

3. The combination, substantially as before set forth, of the condenser for the gaseous ammonia with a reservoir (for the condensed ammonia) provided with two exit-pipes at different levels, whereby the aqua-ammonia may be drawn off separately from the anhydrous ammonia.

4. The combination, substantially as before set forth, of the absorber with a secondary absorber (arranged at a lower level than the absorber) and an ammonia-receiver by means of pipes, whereby the flow of ammonia from the absorber to the secondary absorber and ammonia-receiver is utilized, substantially as set forth.

5. The combination, substantially as before set forth, of the still-body with a series of internal superimposed coils and steam supply and waste manifolds.

6. The combination, substantially as before set forth, of the still-body with a series of internal superimposed coils and steam supply and waste manifolds, and a distributer for distributing liquid upon said coils.

7. The combination, substantially as before set forth, of the still-body with a series of internal superimposed coils, steam supply and waste manifolds, and valves in the connections between the said coils and said manifolds, whereby the said coils may be operated independently.

8. The combination, substantially as before set forth, of the still-body with a series of superimposed coils, two steam-supply manifolds, two waste-manifolds, and valves in the connections between said coils and said manifolds, whereby the said coils may be independently supplied with steam of different tensions.

9. The combination, substantially as before set forth, of the still-body, the internal coil having its supply and exit pipes extended through

said body, and the stuffing-boxes fitted with soft-metal packings, through which said supply and exit pipes pass.

10. The combination, substantially as before set forth, of the lower still-section provided with a series of internal superimposed coils with an upper still-section provided with a series of superimposed drip-pans.

11. The combination, substantially as before set forth, of the lower still-section, provided with a series of superimposed coils, with an upper still-section which is provided with a series of superimposed drip-pans and communicates directly with said lower still-section, so that the liquid from said series of pans passes directly downward to said series of coils.

12. The spiral coil having supply and waste pipes extended laterally from the inner and outer ends of said coil beyond the periphery thereof, the whole being constructed without joints.

13. The combination, substantially as before set forth, of a still-body with a series of drip-pans constructed, as described, with a series of holes, whereby the descending liquid and ascending gas pass in opposite directions through the same holes.

14. The combination, substantially as before set forth, of one absorber with the secondary still and with the primary still through intervening devices, whereby the same absorber operates to absorb the ammoniacal gas liberated in both stills.

15. The absorber constructed, substantially as before set forth, with an inlet-passage for the ammoniacal gas, an outlet-passage for the liquid ammonia, a distributer, and a series of superimposed coils which are connected with water supply and exit pipes.

16. The interchanger constructed substantially as before set forth, and consisting of a tank fitted with two independent internal coils whose whirls alternate.

17. The combination, substantially as before set forth, of the receiver for strong ammonia with the surrounding tank and with a coil of pipe arranged within said tank.

18. The combination, substantially as before set forth, of the receiver for strong ammonia with the surrounding tank and with two independent coils of pipe arranged within said tank.

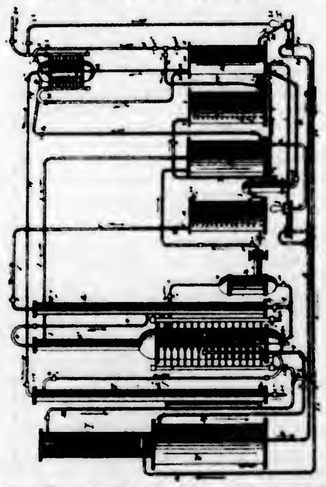
19. The combination, substantially as before set forth, of a primary absorber with a secondary absorber consisting of a tank fitted internally with the coil for the aqua-ammonia which is delivered from the said primary absorber.

20. The combination, substantially as before set forth, of the ammonia-still with a trap which is separate from said still, and has its upper portion fitted internally with a coil for the circulation of water.

21. The combination, substantially as before set forth, of the absorber with the strong-ammonia receiver arranged at a distance below the said absorber, whereby the flow of ammonia from the said absorber to the said receiver is utilized, as before set forth.

22. A still provided with internal coil or coils of pipe for steam-circulation, so arranged within the still as not to be submerged in the liquid introduced therein, and that the liquid to be distilled shall be introduced above said coil or coils, so as to pass over and be brought in direct contact with the surfaces thereof, substantially as and for the purposes described.

336,234. PROCESS OF REDUCING TEMPERATURE. ELI E. HENDRICK, Carbondale, Pa. Filed Jan. 2, 1886. (No model.)



Claim.—1. The process, substantially as before set forth, of producing anhydrous liquid ammonia from aqua-ammonia by the heat of steam and pressure, which consists in subjecting the aqua-ammonia under pressure to the heat of steam of low tension and in increasing the strength of the aqua-ammonia as the pressure under which the ammoniacal gas is liberated is increased.

2. The process, substantially as before set forth, of producing anhydrous liquid ammonia from aqua-ammonia in confinement by the heat of steam and by condensation, which consists in subjecting the aqua-ammonia in confinement to the heat of steam, in cooling the ammoniacal gas by water, and in increasing the strength of the aqua-ammonia as the temperature of the cooling-water is increased.

3. The process, substantially as before set forth, consisting of the following three operations, viz: first, the conversion of water into steam of a tension suitable for use in a steam-engine; second, the passage of the steam through an engine, whereby the tension of the steam is mainly utilized for the production of power; third, the passage of the spent or exhaust steam from the engine to the still, whereby the heat of the exhaust-steam is utilized for the separation of gas from the liquor in said still.

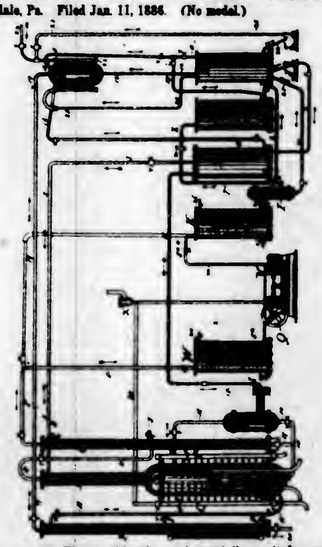
4. The process, substantially as before set forth, consisting of the following four operations: first, the conversion of water into steam of a tension suitable for use in a steam-engine; second, the passage of the steam through an engine, whereby the tension of the steam is mainly utilized for the production of power; third, the superheating of the exhaust-steam from the engine; fourth, the passage of the superheated exhaust-steam to the still, whereby the inherent heat of the superheated exhaust-steam is utilized for the separation of gas from the liquor in said still.

5. The combination, substantially as before set forth, of the steam-generator, the steam-engine, and the still by pipes which connect the steam-generator with the still through the intervention of the steam-engine, whereby the tension of the steam is mainly utilized in the said engine, and the inherent heat of the exhaust-steam from said engine is utilized in the liberation of gas from the liquor in said still.

6. The combination, substantially as before set forth, of the steam-generator, the steam-engine, the superheater, and the still by pipes, whereby the tension of the steam is mainly utilized in the said engine, and the inherent heat of the superheated exhaust-steam is utilized in the liberation of gas from the liquor in said still.

7. The combination, substantially as before set forth, of the steam-generator, the steam-engine, and the still by means of pipes which not only connect the said still with the steam-generator through the intervention of the steam-engine, but also connect said still directly with said generator, whereby the contents of said still may be heated in part by the heat inherent in the exhaust-steam and in part by the heat of steam taken directly from the steam-generator.

336,235. MACHINE FOR COOLING LIQUIDS AND OTHER ARTICLES, COMMONLY CALLED "ICE-MACHINES." ELI E. HENDRICK, Carbondale, Pa. Filed Jan. 11, 1886. (No model.)



Claim.—1. The combination, substantially as before set forth, of the still fitted with steam-heating devices, the compressing-pump, and the steam-engine that drives it, by connections whereby the exhaust-steam from the steam-engine that drives the compressing-pump is supplied to the steam-heating devices of the still and the gas liberated in the still is conducted to and compressed by the compressing-pump.

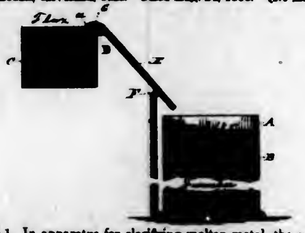
2. The combination, substantially as before set forth, of the still fitted with steam-heating devices, the compressing-pump, the steam-engine, the condenser, and the reservoir of liquefied gas, by means of connections, whereby the exhaust-steam from the steam-engine that drives the compressing-pump is supplied to the steam-heating devices of the still, the gas liberated in the still is conducted to the compressing-pump, the compressed gas is conducted to the condenser, and the liquefied gas is conducted to the said reservoir.

3. The combination, substantially as before set forth, of the still fitted with steam-heating devices, the compressing-pump, the steam-engine that drives it, the condenser, the reservoir of liquefied gas, the refrigerator, and the absorber, by means of connections, whereby the exhaust-steam from the said steam-engine is supplied to the steam-heating devices of the said still, the gas liberated from the said still is compressed by the compressing-pump driven by the said engine, the compressed gas is condensed into the said reservoir, the liquefied gas from said reservoir is conducted to the refrigerator, the gas from the refrigerator is conducted to the absorber, and is therein absorbed by the spent liquid from the still.

4. The process of refrigerating an article substantially as before set forth, consisting of the following operations, viz: the liberation by heat of gas from a solution of gas in a liquid under confinement, so that the gas is partially compressed to the required degree by its accumulated tension, the reduction of the partially-compressed gas to the liquefied condition by mechanical force and by cooling it, the cooling of the article by the evaporation of the liquefied gas, and the absorption by a liquid of the gas resulting from the evaporation.

5. The method, substantially as before set forth, of preventing the violent ebullition of liquid in the still by causing the liquid to flow over the heating-pipes of the still, and by maintaining the level of liquid below some of said heating-pipes.

336,236. APPARATUS FOR CLARIFYING MOLTEN METAL. ANDREW C. HOGUE, Cleveland, Ohio. Filed Aug. 24, 1885. (No model.)



Claim.—1. In apparatus for clarifying molten metal, the combination, with a molten-metal pot and a liquid-flux reservoir, of drip-feeding means, substantially as described, operatively connecting said pot and reservoir together, substantially as set forth.

2. In apparatus for clarifying molten metal, the combination, with molten-metal pot and a liquid-flux reservoir, of automatic drip-feeding means, substantially as described, operatively connecting said pot and reservoir together, substantially as set forth.

3. The combination, with a molten-metal pot and a liquid-flux reservoir, of one or more spouts and one or more wicks, said wicks, respectively, having one extremity fitted in a spout and the opposite extremity lapping over into the reservoir, said spouts having their discharge extremities operatively connecting with the pot, substantially as set forth.

4. The combination, with pot A and reservoir C, of yoke D, detachably fitted upon said reservoir, and provided with a series of spouts, E, pendent over said pot, said spouts provided each with a wick, G, said series of wicks lapping over into said reservoir, substantially as set forth.

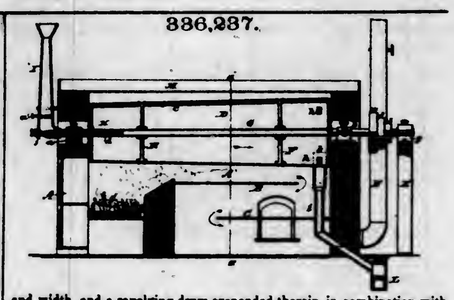
5. The combination, with metal-dipping pot A and liquid-flux reservoir C, of spout E, having its discharge end pendent over the surface of the pot, and a wick, G, having one of its ends inserted in said spout and its other end lapping over into said reservoir, substantially as set forth.

336,237. CORN-ROASTER. FRANK P. HOKE, Avon, Pa. Filed Dec. 22, 1885. (No model.)

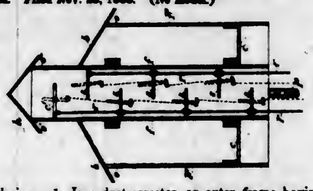
Claim.—1. A corn-roaster consisting of a tapering drum having a series of radial projections on its inner surface extending throughout its length, and a series of openings in the circumference of the large end, in combination with a hollow shaft passing through the drum, supporting a series of spiders and carrying a screw feeding device attached to a partition in the shaft, and supported at its free end in a removable cap, a series of openings in the shaft through which the grain is fed into the drum, and a discharge-pipe having an enlarged mouth fitting around the outer circumference of the drum, substantially as described.

2. A corn-roaster consisting of a furnace formed of masonry and provided with a combustion-chamber extending throughout its length and width, and a revolving drum suspended therein, in combination with a drying-pan supported by the masonry and exposed directly to the heat of the combustion-chamber, substantially as described.

336,287.



336,288. DUST-ARRESTER. LEWIS W. HOLLOWAY, Indianapolis, Ind. Filed Nov. 23, 1885. (No model.)



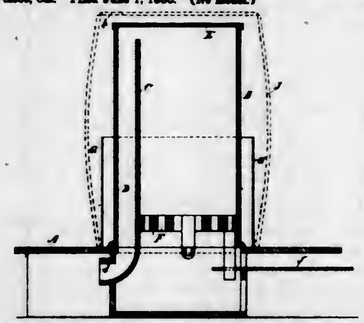
Claim.—1. In a dust-arrester, an outer frame having an interior flue provided with a hood, and having openings on either side near the top, and oscillating slats secured in the sides for arresting and lodging the matter passing up through the flue, with rods connected to such slats for moving the same so as to dislodge the matter deposited thereon, all combined substantially as described.

2. In a dust-arrester, the frame F, provided with roofing-boards *b*, with openings *c* on the sides, the flue *f*, passing up through the frame F and its roof, the hood *h*, the openings in the sides of the flue beneath the hood, the slats *s*, journaled in the sides of the flue, the rods connected therewith for oscillating the slats, all combined substantially as described.

3. In a dust-arrester, the frame F, the flue *f*, passing up through such frame and out beyond its roof, and provided with a hood, and openings *c'* in the sides of the flue below such hood, the slats *s*, adapted to oscillate upon bearings in the sides of the flue, the rods *r*, connected to such slats for rotating them, the steam-pipe *p*, secured across the bottom of the flue *f*, and connected with the exhaust-pipe of the engine, all combined substantially as described.

4. A dust-arrester composed of a flue leading from the interior of the building to the open air above the roof, provided with a series of slats journaled in the sides of the flue, and arranged alternately the one above the other, as shown, connected with rods for moving the slats to dislodge the dust that collects thereon, in combination with a steam-pipe for injecting steam into the flue for wetting the dust so that it will be deposited upon such slats instead of being carried into the open air, all combined substantially as described.

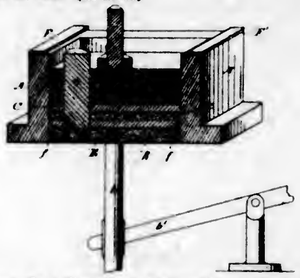
336,289. HEATER FOR BARRELS. JOHN L. KOSTER, San Francisco, Cal. Filed June 1, 1885. (No model.)



Claim.—A heater for barrels, comprising the combination of the base A, on which the barrel rests, the cylinder B, supported by the base and having a cover, E, the smoke-flue D, formed by a diaphragm within the cylinder, the grate F within the cylinder, and the encircling case

G, extending but part of the height of the cylinder, substantially as herein described.

336,240. TILE-MAKING MACHINE. JOHN G. LOW, Chelsea, Mass. Filed Oct. 20, 1885. (No model.)

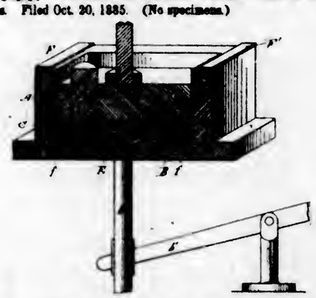


Claim.—1. In a tile-making machine, the combination of a die-box, the tile-forming dies or plates or diaphragms B C, and one or more posts, plugs, or forms extending across the die-space, and adapted to be withdrawn from the die-cavity after the forming of the tile, either by the movement of the dies or plates in relation to it, or its movement in relation to them, all substantially as described.

2. The combination, in a tile-making machine, of a die-box, the die-plates or diaphragms B C, having the perforation or perforations for the reception of one or more plugs or posts, for forming holes or perforations in the tiles, and means for compressing the two dies, plates, or diaphragms together, and for moving them vertically in relation to the post or posts, all substantially as and for the purposes described.

3. The combination, in a tile-making machine, of the die-box A, the dies, plates, or diaphragms B C, having one or more perforations or holes for the reception of one or more posts, plugs, or formers, as described, means for moving the two plates, dies, or diaphragms within the die-box, and devices for supporting the dies above the post or posts and while the tile is being removed, all substantially as and for the purposes described.

336,241. PROCESS OF MAKING TILES. JOHN G. LOW, Chelsea, Mass. Filed Oct. 20, 1885. (No specimens.)



Claim.—1. The process of making perforated tiles or tiles having one or more holes extending through them, consisting in arranging one or more posts, plugs, or formers to extend across the die-cavity, compressing the tile-dust or tile-making material between the die-plates and about said post or posts, and then removing the post or posts from the die-cavity before the tile is stripped from the die, all substantially as and for the purposes described.

2. The step in the process of manufacturing perforated tiles or tiles having holes extending completely through them, consisting in arranging one or more posts, plugs, or formers to extend across the die-cavity into holes in the dies, and then compressing or solidifying the tile-forming material in said cavity about said post or posts, all substantially as and for the purposes described.

336,242. TILE DECORATION. JOHN G. LOW, Chelsea, Mass. Filed Nov. 30, 1885. (No model.)

Claim.—An improvement in the art of decorating surfaces to be ornamented, consisting in applying thereto, by pins or screws passing through holes in the tile, ornamental tiles of appropriate patterns and glazed to their bases, substantially as and for the purpose described.



336,242.

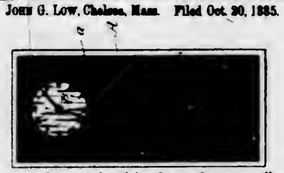


336,243. TILE DECORATION. JOHN G. LOW, Chelsea, Mass. Filed Nov. 30, 1885. (No model.)



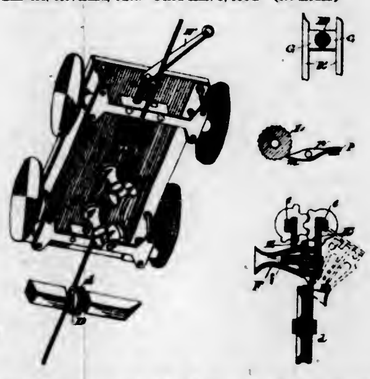
Claim.—As an improvement in the art of decorating metallic or other surfaces, a medallion-tile formed with a rabbet upon its edge, and glazed into the rabbet, in combination with a perforated plate suited to the contour of the projecting medallion, and with suitable backing to the tile attached to said perforated plate, substantially as and for the purposes described.

336,244. TILE WITH HOLES TO SERVE AS FRAMES OR SUPPORTS. JOHN G. LOW, Chelsea, Mass. Filed Oct. 20, 1885. (No model.)



Claim.—As an improved article of manufacture, a tile made of tile dust or material having one or more holes or perforations formed therein, substantially as specified, all substantially as described.

336,245. GRIPPING DEVICE FOR CABLE RAILWAYS. CHARLES LEAVITT, Cleveland, Ohio. Filed Mar. 3, 1884. (No model.)



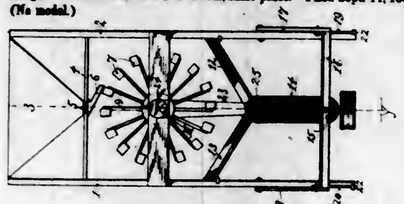
Claim.—1. The curved rollers F, provided with the groove H, and arranged and operated substantially as described.

2. The pendent swinging parallel plates E, intergeared so that they will simultaneously move in opposite directions toward or from each other, and provided on their inner faces, respectively, with the blocks G, adapted to form a clamp for grasping the cable, substantially as set forth.

3. The combination of the plates E, the blocks G, and the rollers F, so arranged that the cable, when lifted by the rollers so as to engage the groove H, will be in position to be grasped by the blocks G, forming the clutch, and that when the cable is released from the clutch it may still be held by the rollers and travel in the groove H and in position for re-engagement with the clutch, substantially as set forth.

4. The combination, with clutch, drum I, and rollers F, as aforesaid, and suitable connecting mechanism by means of which the clutch and attachments may be operated by a hand when on the platform of the car, of the ratchet L, the pawl *m*, provided with the lever *n*, and the stops P, located at or near the commencement of curves of the track, and by means of which the cable may automatically be dropped as the car approaches the curves, substantially as set forth.

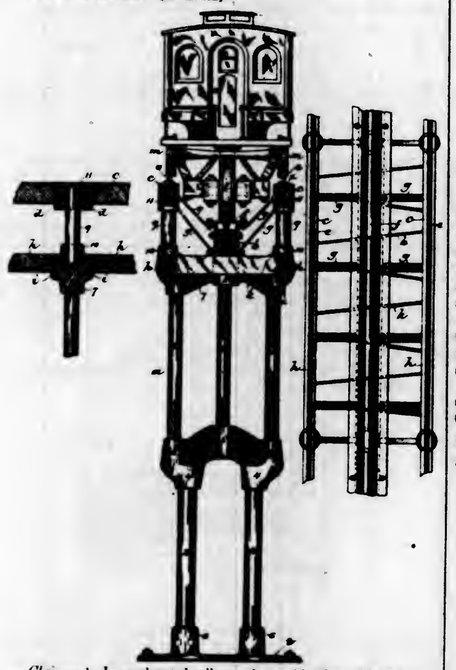
336,246. GRAIN-SEPARATOR. ADDISON LEET, Sleepy Eye, Minn., assignor of one-half to Leroy G. Davis, same place. Filed Sept. 11, 1885. (No model.)



Claim.—1. In a grain-separator, the combination of the upright pieces 1 and 2, board 4, hopper 3, chute 6, cups 7, arms 9, hub 8, pulley 24, rigidly secured on shaft M, belt 23, pulley 25, shaft 15, screen 14, and the double-inclined hopper, all constructed and arranged substantially as shown and described, and for the purposes set forth.

2. In a grain-separator, the combination of the uprights 1 and 2, the side bars, 17 and 18, having their upper ends pivoted to the said uprights, the cross-bar 16, attached to the lower ends of said side bars, the shaft 15, bearing in the center of cross-bar 16 and suitably supported at its rear end, the screen 14, the bars 19 and 20, having their upper ends pivoted to bars 17 and 18, and bars 22, having notches 21, substantially as shown and described, and for the purposes set forth.

336,247. ELEVATED RAILWAY. WILLIAM B. MACK, Boston, Mass. Filed Dec. 26, 1885. (No model.)



Claim.—1. In an elevated railway, the combination, with the base-plate and the vertical pillars supported thereby, of the socketed tie-beams for connecting the upper ends of the said pillars, substantially as set forth.

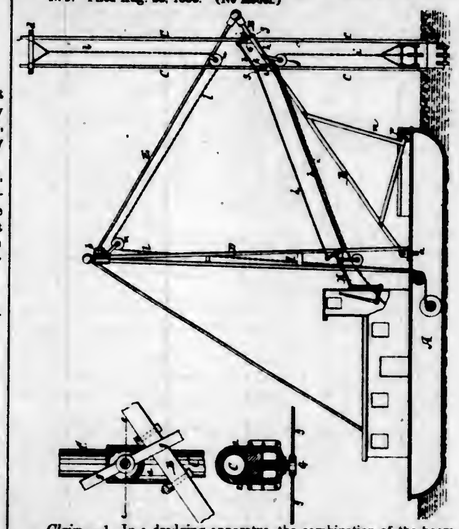
2. In an elevated railway, the combination, with the side rails, *e e*, and the central rails, *f*, located below the said side rails, of the supporting-structure consisting of the longitudinal stringers for the said rails, vertical supports beneath each of said stringers, and tie-beams for the said vertical supports, substantially as set forth.

3. In an elevated railway, the supports, composed of the vertical tubular posts and the tie-beams socketed to receive the posts, combined with the longitudinal stringers secured at their ends to the tie-beams, the latter having sockets to receive the ends of the stringers, as set forth.

4. In an elevated railway, the combination of the vertical pillars, the tie-beams connecting said pillars, the longitudinal beams *h*, the stringers *b*, *c*, and *c*, and the track-rails supported thereby, as set forth.

5. In an elevated railway, the combination, with the vertical supports, the side rails, *e e*, the central rail, *f*, located below the said side rails, and the stringers for all of the said rails, of the inclined or diagonal braces *g g*, connecting the side stringers with the central stringer, and thereby securing and bracing the upper ends of the outer vertical supports, substantially as set forth.

336,248. DREDGING-MACHINE. JAMES MCCULLOUGH, Jersey City, N. J. Filed Aug. 25, 1885. (No model.)



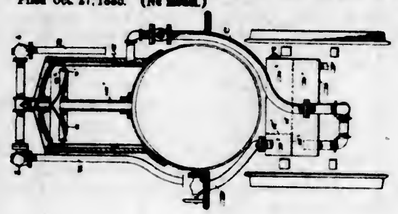
Claim.—1. In a dredging apparatus, the combination of the boom B with the sleeves *e*, followers *f*, screws G, bucket-frame C, and bucket F, substantially as and for the purpose herein shown and described.

2. In a dredging apparatus, the combination of the boom B with the sleeves *e*, followers *f*, screws G, bucket-frame C, bucket F, rods *h*, and actuating-lever H, substantially as and for the purpose herein shown and described.

3. In a dredging apparatus, the combination of the boom B with the bucket-frame C, which is carried by said boom, and with the downwardly-projecting brace *n*, hook *o*, and fixed semi-annular lip *p*, substantially as herein shown and described.

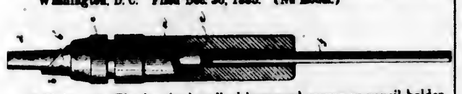
4. In a dredging apparatus, the combination of the swivel-boom B and its brace E with the sleeves *e*, followers *f*, screws G, bucket-frame C, holding-down chain *l*, hoisting-chain *i*, and locking-brace *n o* and lip *p*, all substantially as herein shown and described.

336,249. FEED-WATER PURIFIER. JOHN T. MEAD and JOHN THOMSON, Cleveland, Ohio, assignors to George P. McKay, trustee, same place. Filed Oct. 27, 1885. (No model.)



Claim.—The combination, with a locomotive-engine, of a heater located above the boiler, a steam-pipe connected with the boiler and located within and terminating near the top of the heater, a purifier located below the boiler, and pipes connecting the several parts and arranged substantially as shown, whereby the feed-water is conducted through the heater and purifier and from the latter to the boiler, substantially as set forth.

336,250. CRAYON OR PENCIL HOLDER. MONTGOMERY C. MEIGS, Washington, D. C. Filed Dec. 30, 1885. (No model.)

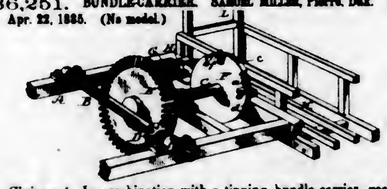


Claim.—1. The herein-described improved crayon or pencil holder, consisting of a tubular crayon or pencil receiving portion having one end provided with elastic clamping-jaws of different lengths, a compressing sheath or ring for said jaws, and the other end of the holder provided with an interior shoulder and opening, substantially as described.

2. In a pencil-holder, the tubular crayon or pencil container provided at one end with elastic clamping-jaws of different lengths, and a sheath for compressing said clamping-jaws, substantially as described.

3. In a pencil-holder, the tubular pencil or crayon container provided with clamping-jaws at one end, and an internal shoulder and an opening at its other end, substantially as shown and described.

336,251. BUNDLE-CARRIER. SAMUEL MILLER, Pierre, Dak. Filed Apr. 22, 1885. (No model.)



Claim.—1. In combination with a tipping bundle-carrier, gearing, substantially such as shown, adapted to positively tip the carrier, hold it at rest for a short period, and bring it back positively to receiving position, substantially as explained.

2. The combination, substantially as described and shown, of a pivoted carrying-frame, a rotary shaft provided with a crank-arm and stop-pinion, a link connecting the carrying-frame and crank-arm, and a mutilated gear wheel or disk adapted to partially rotate the stop-pinion, then to hold the same at rest for a short period, and to complete the revolution of the shaft and hold the pinion at rest while the bundles are collected in the carrier.

3. In combination with shaft C and mutilated gear-wheel F, secured thereon, shaft G, provided with stop-pinion H and crank-arm I, tipping carrier K, and link J, connecting the crank-arm and the carrier, substantially as described and shown.

4. In combination with a tipping bundle-carrier and an ejector therefor, gearing, substantially as shown, connected to the carrier, adapted to tip the latter, hold it at rest for a short period, and bring it back to receiving position, the carrier and ejector being actuated positively by the gearing, as described.

5. In combination with a tipping carrier having its sides closed and open at one end, a swinging end gate or ejector pivoted to the frame, occupying the other end of the carrier, and adapted to swing into the latter toward the delivery end as the carrier tips to discharge its load.

6. In combination with tipping carrier K, gate or ejector L, suspended, substantially as shown, and link M, connecting said carrier and gate, whereby the gate is caused to swing inward into the carrier as the latter tips.

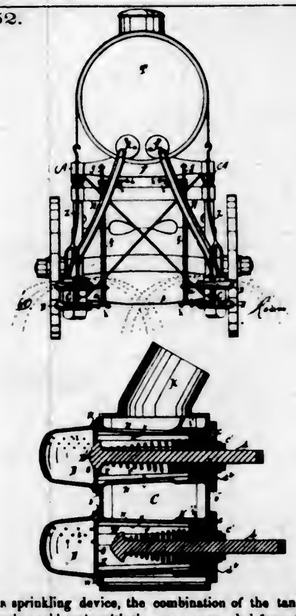
7. In combination with tipping carrier K, mechanism, substantially such as shown, for tipping said carrier, holding it at rest and returning it to its normal position, the end gate or ejector, L, pivoted at its upper end to the frame of the machine, extending into the end of the carrier, and connected to the latter at its rear end by a link, M, as shown.

8. The combination, substantially as described and shown, of rotary shaft C, provided with disk F, having toothed portions *a b*, smoothed portions *c d*, and fingers *e f*, shaft G, provided with crank-arm I, and with pinion H, having smooth faces *g h*, toothed spaces *k l*, and pins *i j*, tipping carrier K, link J, connecting crank-arm I, and carrier K, swinging ejector L, and link M, connecting the ejector and carrier.

336,252. STREET-SPRINKLER. WILLIAM H. MILLER, South Bend, Ind. Filed Nov. 2, 1885. (No model.)

Claim.—1. In a sprinkling device, and in combination, the tank, the hose-pipes connecting the tank with the metal cases C C, suspended from the rear corners of the tank-frame, the distributers passing through said cases, the valves and ports located in the sleeves of each distributer, and means for operating said valves.

336,252.



2. In a sprinkling device, the combination of the tank, the hose-pipes connecting said tank with the cases suspended from the rear corners of the tank-frame, said cases each containing a set of valves and arc-shaped distributers having perforations, the sleeves formed integral with the distributers, having port-holes therein, and screw-threaded caps securing said distributers to the case.

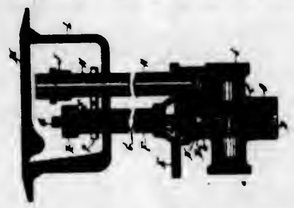
3. In combination with the case, the hose-pipe connecting said case with the tank, a set of arc-shaped distributers having perforations and sleeves with ports formed therein, the partition and valve-port located in each distributer, the valve-stem, its valve, and coiled wire housed within each sleeve, and screw-caps connecting said distributer to the case, as and for the purposes specified.

4. In a sprinkling device, the combination of the cases C C, each having an independent pipe-connection with the tanks, the set of distributers mounted on each case, one having fine the other coarse perforations, as specified, and a discharge-valve located in the end of each distributer, a valve-port and valve located in each distributer, the valve-stem and its stuffing-box, the coiled wire for actuating said valves, and intermediate parts connecting said valve-stems with an independent foot-lever, substantially as specified.

5. The combination of the case C, having port-holes through its front and rear walls, the arc-shaped distributer having sleeve N, formed integral therewith, the port-holes *n n*, the series of perforations, the flange W, the cap C, screw-threaded to the sleeve, and packing-rings, as and for the purposes specified.

6. In combination with the tank, the hose-pipes, the metal cases C C, supporting in duplicate the distributers, the ports, and valves located in the sleeves of said distributers, the discharge-valves at the free ends of said distributers, as and for the purposes specified.

336,253. HOUSE-SERVICE AND STREET-WASHER CONNECTION. JOHN MOSS, Brooklyn, N. Y. Filed July 10, 1885. (No model.)



Claim.—1. In a device of the character herein set forth, the combination, with the shell or casing containing the revolving plug and having the water-ways, as explained, and the guard-disk E, applied upon said casing, of the tubular guard O, formed integrally with the casing, said guard being open at bottom and arranged to project the projecting

end of the plug and to afford access thereto, substantially as shown and described.

2. In a device of the character herein set forth, the combination, with the casing B, containing the plug and the water-ways, of the removable guard plate or disk E, secured upon the top of the casing, as by bolts *g*, projecting beyond the casing and perforated to receive pipes F H and rod G, the pipe F being threaded into the disk, substantially as shown and described.

3. The combination, with the water-pipe H and independent guard-pipe F, of the guard-plate E and box L, the plate E being removably connected with the plug-casing and threaded upon the lower end of the guard-pipe, and the box L being made movable upon both pipes at top, substantially as shown and described.

336,254. HORSE-TAIL HOLDER. ROBERT T. MOSS, Cambridge, Ohio, assignor of one-half to W. L. Haller, Buffalo, N. Y. Filed June 12, 1885. (No model.)



Claim.—1. A horse-tail holder consisting of the following elements in combination: a plate longitudinally slotted to within a short distance of each end, a strap connected with one of said ends and loosely passed through a keeper or loop carried by the other end, said strap being adapted to pass within said slot, substantially as and for the purposes specified.

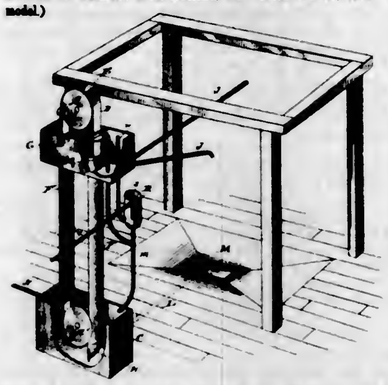
2. The hereinbefore-described horse-tail holder, consisting of a curved metal plate provided with a longitudinal slot and having one end provided with an extension bent upon itself, a loop or keeper held by the bent extension, and a retaining-strap passed through the loop or keeper and secured to the opposite ends of the plate, substantially as shown, and for the purposes set forth.

336,255. WHIP-STOCK. BENJAMIN F. NICHOLS, Brookline, assignor of one-half to Edward E. Allen, Watertown, Mass. Filed Dec. 7, 1885. (No model.)



Claim.—An elastic whip-stock or other analogous article composed of a series of longitudinally-disposed concentric strands of wood of different kinds and varying degrees of elasticity, substantially as and for the purpose set forth.

336,256. MACHINE FOR CUTTING STONE. AARON E. NORTH and WILLIAM E. SHELDON, West Rutland, Vt. Filed Oct. 28, 1885. (No model.)



Claim.—1. The combination, in an elevator, of the conveyers at one side of the band, tube, endless traveling band, and bearings arranged to prevent the contact of the band and tube, substantially as described.

2. The combination of the tube, conveyers, and band supporting the conveyers and consisting of a material practically impermeable to sand, substantially as described.

3. The combination of a flat band and conveyers attached to and projecting beyond the faces and edges of the same, substantially as described.

4. The combination of the elevator-tube, endless band, and conveyers adapted to the tube supported at one side of the band, and constructed to prevent the contact of the band and tube, substantially as described.

5. An elevator consisting of a traveling band, pulleys supporting the same, lower and upper reservoirs, a tube extending between the reservoirs, conveyers adapted to the tube arranged upon the band, and bearings arranged to maintain the band free from contact with the tube, substantially as described.

6. The combination of the band and conveyers, each supported at one side of the band and provided with cheeks *i i*, projecting beyond the edges and back of the band, substantially as described.

7. The conveyers consisting of plates *c*, provided with flanges *c* and cheeks *i i*, substantially as described.

8. The combination of the traveling band, conveyers, and tube provided with rails or ribs, constituting bearings for projections on the band, substantially as described.

9. The tube consisting of a flat section, *g*, and curved or arched section *h*, and provided with rails *b b*, substantially as described.

10. The combination, with the traveling band, conveyers, and tube, of a guide block or shield, H, substantially as and for the purpose described.

11. The combination, with the elevated tank, of a regulator provided with a float-valve and two discharge-ports, the float and valve connected to open the lower and upper port when the supply in the tank is unduly increased, substantially as described.

12. The combination, with the tanks C G, pulleys A A', endless band, conveyers, and tube, of adjustable bearings for one of the pulleys, substantially as described.

13. The combination of an elevated tank receiving the overflow and provided with an upper and a lower discharge-opening and with a valve closing the lower opening, and connected to be operated by a float, substantially as described.

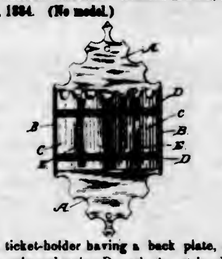
336,257. GLASS SLIDE FOR MICROSCOPES. CHARLES W. PALMER, Cleveland, Ohio. Filed June 8, 1885. (No model.)



Claim.—1. A glass slide for microscopes, having its opposite side edges beveled, substantially as described, for the purpose set forth.

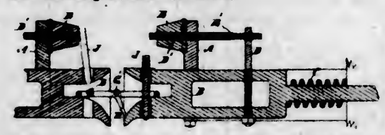
2. As a new article of manufacture, a slide for microscopes, made of glass and provided with beveled ends and sides, substantially as set forth.

336,258. TICKET-HOLDER. WARREN L. PERT, Maple Rapids, Mich. Filed Dec. 11, 1884. (No model.)



Claim.—A ticket-holder having a back plate, A, the ticket-supporting wings, the crimped stripe D, and the stripe E, substantially as set forth.

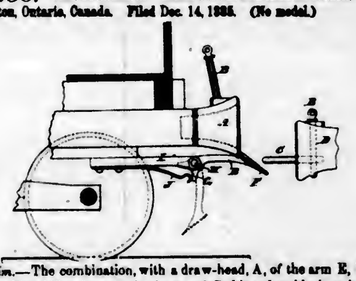
336,259. CAR-COUPLING. MILES PETTIT, Wellington, Ontario, Canada. Filed Aug. 26, 1885. (No model.)



Claim.—1. The combination, with the draw-head B, of the post and arm D D' and boss E, for hanging a coupling-pin, J, and releasing the same by an endwise movement of the draw-head, as set forth.

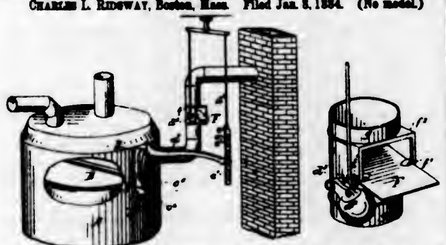
2. The coupling-link G, having a cross-bar, G', near its middle, and provided with a prop, H, as set forth.

336,260. CAR-COUPLING. MILES PRITCHY and SAMUEL NOXON, Wellington, Ontario, Canada. Filed Dec. 14, 1885. (No model.)



Claim.—The combination, with a draw-head, A, of the arm E, having inclined head F and anglewise bent end G, hinged to block or bar I, secured below or to the under side of the draw-head, and spring J, supporting arm E horizontally to upwardly guide the link C of an annexing car into the draw-head for coupling, and whereby arm E will drop pendently when the inclined head is struck by the draw-head of the annexing car, to allow the draw-heads to come together in coupling, as set forth.

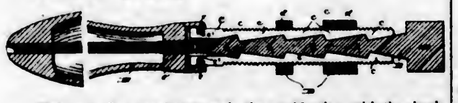
336,261. AUTOMATIC DAMPER FOR STOVES AND FURNACES. CHARLES L. RIDGWAY, Boston, Mass. Filed Jan. 8, 1884. (No model.)



Claim.—1. The combination, with the plate b', having the ears c^3 and projection b^2, of the tube B, attached at one end to the plate b', rod c, located within said tube and engaging the end opposite plate b', lever c^3, pivoted to the ears c^3, connected with the rod c, and lever d, provided with bearing d^4, substantially as described.

2. The combination, with the plate b', having ears c^3 and projections b^2, of the tube B, attached at one end to the plate b', the rod c, located within said tube and engaging the end opposite the plate b', having the screw-thread c', the nut c^3, lever c^3, pivoted to ears c^3, connected with the rod c, and lever d, provided with the bearing d^3, substantially as described.

336,262. WRENCH. CHARLES C. RUNYAN, Mansfield, Ohio. Filed Oct. 13, 1885. (No model.)



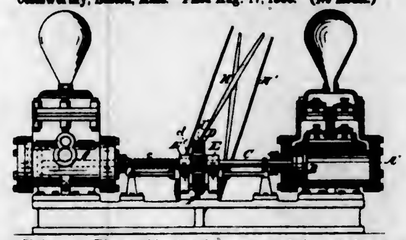
Claim.—1. In a monkey-wrench, the combination, with the shank of the wrench, having one or more series of inclines along the face thereof, and a movable jaw having internal teeth, of one or more push-bars, the latter having teeth for engaging the teeth of the movable jaw and inclines for engaging the inclines of the shank, and a screw-threaded handle or thumb-nut, as the case may be, for actuating the push-bars, the parts being arranged substantially as set forth.

2. In a monkey-wrench, the combination, with the shank of the wrench, the same having a series of inclines on opposite sides of the shank, said inclines having their bases presenting toward the head of the wrench, and a movable jaw arranged to slide on the shank, said jaw having internal teeth, of push-bars having inclines corresponding with and engaging the inclines of the shank, and having teeth for engaging the teeth of the movable jaw, and a screw-threaded handle or nut for actuating the push-bars, the parts being arranged substantially as set forth.

3. In a monkey-wrench, the combination, with inclines on the shank of the wrench, and a movable jaw with internal teeth, of push-bars provided with inclines and teeth, and suitable mechanism, preferably a screw-threaded handle, for operating the push-bars, with the parts arranged substantially as indicated, whereby the end movement of the push-bars that distend the latter forces the movable jaw toward the work, substantially as set forth.

4. In a monkey-wrench, the combination, with one or more inclines on the shank, and a movable jaw operating on said shank said movable jaw having internal teeth, of one or more push-bars having teeth to engage the teeth of the movable jaw, and having one or more inclines to engage the incline or inclines of the shank, substantially as set forth.

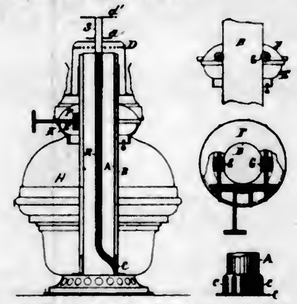
336,263. PUMP. MANUEL RUSSELL, Boston, assignor of one-half to Edward H. Palmer, Reading, Franklin H. Collins, Revere, and Charles W. Colesworthy, Boston, Mass. Filed Aug. 17, 1885. (No model.)



Claim.—1. The combination, in a pump, of the cylinders A A', a piston, b, in each cylinder, connected with each other by the piston-rod C, the said piston-rod having a worm, c, formed thereon, a worm-wheel having an interior thread adapted to engage the worm or screw of the piston-rod, the bearings E E', for revolving the worm-wheel, and a reversing device for automatically reversing the movement of the mechanism operating the worm-wheel at the end of each movement of the piston-rod, all substantially as described.

2. The combination, in a pump, of a cylinder and piston-rod having the worm or screw thread c formed thereon, the worm-wheel D, having an interior screw-thread adapted to engage the thread upon the piston-shaft, the bearings E E', the shaft F', connected with the wheel D and carrying the pulleys G G^2 G^3, the belts H H', and the belt-shifter operated at the end of the movement in each direction of the piston, all substantially as described.

336,264. LAMP. LOUIS SIPULOSKI, Herstal, Belgium. Filed Feb. 19, 1883. (No model.) Patented in Germany Aug. 13, 1880, No. 15,420; in France Nov. 22, 1880, No. 139,765; in Belgium Jan. 31, 1881, No. 53,517; in Austria-Hungary July 22, 1881, No. 17,901 and No. 38,596, and in England Dec. 12, 1881, No. 5,423.



Claim.—1. The combination of two concentric wick-tubes, A and B, with an annular stay, C, fitting between the said wick-tubes and provided with grooves for the admission of oil to the wick-chamber, substantially as and for the purpose described.

2. The combination, with an oil-reservoir provided with funnel K, of the removable wick-tube B and the box E F, attached thereto and adapted to fit into and close the said funnel when in position for use, substantially as described.

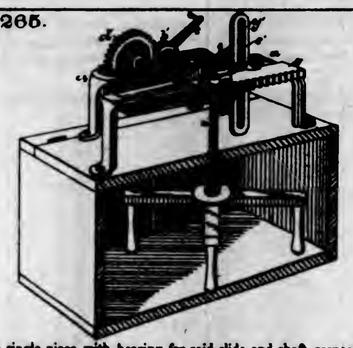
336,265. POWER-CONVERTER. JONAS S. SHIRK, Columbus, Kans. Filed Dec. 17, 1885. (No model.)

Claim.—1. The combination, with a driving-shaft adapted to be revolved in a constant direction, of a crank on said shaft, a reciprocating slide connected to said crank, and a driven shaft connected to said reciprocating slide and adapted to be alternately revolved thereby in opposite directions, substantially as set forth.

2. The combination, with the driving-shaft having the revolving crank thereon, of the reciprocating slide provided with the slotted arm or yoke, in which said crank is adapted to engage, a rack on said shaft, and a pinion on the driven shaft adapted to engage said rack, substantially as specified.

3. The combination, with a driving-shaft, the crank thereon, the slide and rack adapted to be reciprocated by said crank, and a driven shaft provided with a pinion engaged by said rack, of the main frame

336,265.

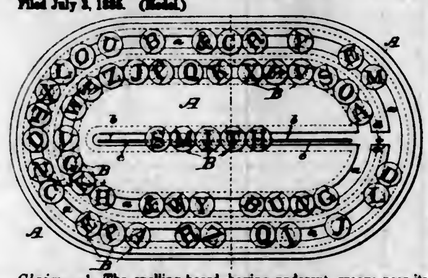


cast in a single piece with bearing for said slide and shaft, respectively, substantially as and for the purpose set forth.

4. The combination, with the revolving crank and the reciprocating slide connected thereto, said slide being provided with the hooked-shaped projections on the under side thereof, of the bearings on the main frame, provided with the openings A A therein, substantially as set forth.

5. The combination of the handle c, shafts b and d, gears b' and d', crank e, roller e', slide g, having slotted arm g', rack k, pinion l, and shaft n, substantially as specified.

336,266. SPELLING-BOARD. ALONZO F. SMITH, Milwaukee, Wis. Filed July 3, 1885. (Model.)

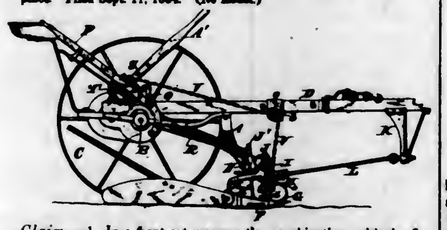


Claim.—1. The spelling-board having undercut groove near its periphery and a transverse groove connecting therewith, combined with a series of lettered blocks in the groove, each block having a cylindrical stem entering the groove, so that the blocks are free to be moved in the grooves and to rotate in the peripheral groove, substantially as shown and described.

2. As an improved article of manufacture, a spelling-board composed of the tablet A, a continuous curved groove, a, and an offset groove, b, communicating therewith, said grooves a and b being inverted-T-shaped in cross-section, and blocks B B, having cylindrical heads and bases and central cylindrical connecting-posts, said blocks being retained by their cylindrical bases in said grooves and capable of being variously grouped therein, substantially as and for the purposes set forth.

3. As an improved article of manufacture, a spelling-board composed of the tablet A, having the continuous curved groove a and the offset groove b communicating therewith, and provided with the eccentric rib c, and the interchangeable cylindrical blocks B B, having eccentric grooves c c formed in their bases, substantially as and for the purposes set forth.

336,267. MOWING-MACHINE. E. FOWLER STODDARD and JAMES McD. ROSSELL, Dayton, Ohio, assignors to J. W. Stoddard & Co., same place. Filed Sept. 11, 1884. (No model.)



Claim.—1. In a front-cut mower, the combination, with the finger-bar and its inner shoe, of the coupling-arm secured to the main frame by a universal joint, and provided with a yoke to which said shoe is hinged, and a draft-link loosely embracing the coupling-arm and directly connecting the latter to the pole or tongue, substantially as described.

2. In a front-cut mower, the combination of the finger-bar and its inner shoe, the coupling-arm secured to the main frame by a universal joint, and provided with a yoke to which said shoe is hinged, having a rearwardly-projecting arm, a draft-link connected to the tongue or pole at one end, and provided with a bearing at the other embracing the coupling-arm, and a lever and link connecting said coupling-arm to the main frame, whereby the finger-bar is held rigidly in a constant draft-line, and is adapted to tip upward upon falling into a depression or dead furrow, substantially as described.

3. In a front-cut mower, the combination of the finger-bar and its inner shoe, the coupling-arm connected to the main frame by a universal joint, and provided with a yoke to which the shoe is hinged, the front member of said yoke being arranged in substantially the plane of the coupling-arm, and a draft-link attached at one end to the pole or tongue, and provided at the other end with a ring or bearing embracing the coupling-arm, substantially as described.

4. In a front-cut mower, the combination of the coupling-arm connected to the main frame by a universal joint, and provided with a yoke to which the inner shoe is hinged, one arm of said yoke projecting in rear of the coupling-arm, a draft-link directly connecting the coupling-arm to the tongue or pole, and a lifting-chain connected to the shoe forward of the yoke on the coupling-arm, substantially as described

5. In a front-cut mower, the combination, with the finger-bar and its inner shoe, the coupling-arm connected to the main frame by a universal joint, and provided with a yoke to which the shoe is hinged, having a rearwardly-projecting arm, a draft-link embracing the coupling-arm and connecting the latter directly to the tongue or pole, and the tilting lever mounted on the main frame and connected by a link to a lever applied to and projecting in rear of the coupling-arm, substantially as described.

6. In combination with the loosely-pivoted ratchet-sheave, its locking-dog, and operating-lever, the curved spring fastened at one end to the pivot supporting the said sheave, and provided with a hooked end to receive a pin on the side of the sheave, substantially as and for the purpose set forth.

7. The combination, with the loosely-pivoted ratchet-sheave, of a locking-dog, and an operating-lever provided with tripping-shoulders, substantially as described.

8. The combination of the locking-dog U, provided with a pedal, m, the hand-lever A', having the engaging-shoulder g and tripping-shoulders h i, the ratchet-sheave T, and the lifting-chain V, the parts constructed and arranged substantially as and for the purpose described.

9. The combination of the locking-dog U, provided with a pedal, m, a hand-lever, A', having the engaging-shoulder g, and tripping-shoulders h i, the spring ratchet-sheave T, and the lifting-chain V, the parts constructed and arranged substantially as and for the purpose specified.

10. The coupling-arm I, formed with the yoke H, and connected to the main frame by a universal joint, J, in combination with the adjustable draft-link L, lever-arm N, lock-lever P, and link R, substantially as described.

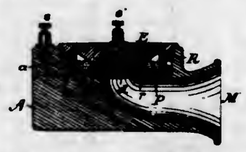
11. The ring-coupling M, in combination with the draft-link L, to which it is rigidly attached, the pole D, and coupling-arm I, substantially as described.

12. The ring-coupling M, having a curved slot, o, in combination with the draft-link L, and coupling-arm I, provided with a pin engaging said slot, substantially as described.

13. The ring-coupling M, in combination with the adjustable draft-link L and coupling-arm I, substantially as described.

14. The ring-coupling M, in combination with the coupling-arm I, draft-link L, tongue D, and bracket K, substantially as described.

336,268. TELEPHONE-TRANSMITTER. HENRY S. THORNBERRY, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Aug. 12, 1885. (No model.)



Claim.—1. The combination, in a telephone-transmitter, of a flexible diaphragm, a mass of finely-divided conducting material in a loose and free state in contact with the diaphragm, and a rigid back plate having a pendent projecting into said conducting material, substantially as described.

2. The combination, in a telephone-transmitter, of a horizontal diaphragm forming one electrode, a mass of finely-divided conducting parti-

cles resting thereon, and a cell or chamber of conducting material confining said particles and constituting the complementary electrode.

3. The combination, in a telephone-transmitter, of a horizontal diaphragm controlling one electrode, a mass of finely-divided conducting material resting thereon, and a rigidly-supported complementary electrode having a convex surface in contact with said particles.

4. In a telephone-transmitter, the combination of a horizontal diaphragm forming one electrode of the circuit, a mass of finely-divided conducting material confined and resting thereon, and a convex complementary electrode.

5. In a telephone-transmitter, the combination of a horizontal diaphragm forming one electrode, and a mass of finely-divided conducting material resting thereon and confined by an insulated cell of conducting material, the interior surface of which is extended by one or more projections forming the complementary electrode.

6. In a transmitter, the combination of a fixed horizontal diaphragm forming one electrode of a circuit, and a mass of finely-divided conducting particles resting thereon and confined by an inclosing-cell the interior of which is furnished with one or more carved or pointed projections forming the complementary electrode.

7. In a telephone-transmitter, the combination of a fixed horizontal diaphragm forming one electrode of a circuit, and a mass of finely-divided conducting material resting thereon and confined by an insulated cell or inclosure of conducting material, having a convex projection forming the second electrode of said circuit.

8. In a telephone-transmitter, the combination of a horizontal diaphragm forming one electrode, a mass of finely-divided conducting material resting thereon, and an inclosing-cell therefor forming the complementary electrode having walls of conducting material, that portion opposite the diaphragm being in the form of a convex arc.

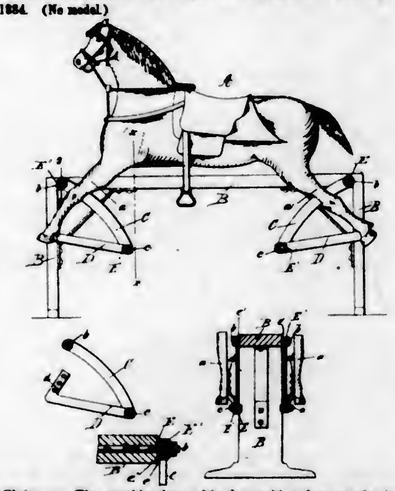
9. The combination, in a telephone, of a horizontal diaphragm forming one electrode, a quantity of finely-divided conducting material resting thereon, an inclosing-cell therefor having a convex projection, and one or more supplementary rings or projections forming the complementary electrode.

10. The combination, in a telephone, of a fixed horizontal diaphragm, a quantity of finely-divided carbon particles resting thereon, and a metal inclosing-cell therefor, the interior surface of which is extended by one or more projections.

11. The combination, in a telephone-transmitter, of a horizontal diaphragm, a mass of finely-divided conducting material resting thereon, and a rigid back plate having a projection therefrom immersed in the said divided conducting material.

12. The combination, in a telephone-transmitter, of a flexible metallic diaphragm forming one electrode, and a complementary electrode consisting of a fixed plate of metal having one or more pendants projecting into the mass of finely-divided carbon, which forms the current varying medium, substantially as described.

336,269. ROCKING-HORSE. CONRAD UEBELE, Chicago, Ill.; JESSIE M. UEBELE executrix of said Conrad Uebele, deceased. Filed Aug. 23, 1884. (No model.)



Claim.—1. The combination, with the rocking-horse body A, of the independent inwardly-projecting arms D, connected to the legs thereof, a base arranged between the legs of the horse, and links hung loosely on transverse bolts through said base and independently pivoted to the bars D, substantially as and for the purposes specified.

2. In a rocking-horse, the combination, with the links supporting the body, of the base having bolts *b*, provided with thimbles E, consisting of sleeve *c* and disk *c'*, substantially as and for the purposes specified.

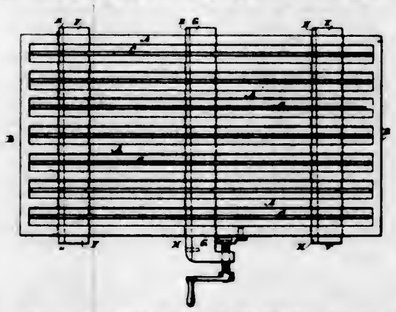
336,270. PRUNING-KNIFE. JAMES P. VANSYCK and JOHN P. BAIRD, Anderson, Ind. Filed Aug. 1, 1885. (No model.)



Claim.—1. A pruning-knife having a blade turning backward from the handle and then carving and turning away nearly in a straight line in the reverse direction, and formed at its edge by means of a bevel on one side only of the blade, as shown and described.

2. The described pruning-knife as made with its cutting-edge formed by a plane, *y*, and single bevel *x*, and the contour of such edge being shaped as described, with the portions *g f i j k h*, and the blade being applied to its handle in substantially the position and relation as set forth.

336,271. SCREEN FOR COAL AND OTHER MATERIALS. SAMUEL T. VARIAN, East Orange, N. J. Filed July 27, 1885. (No model.)



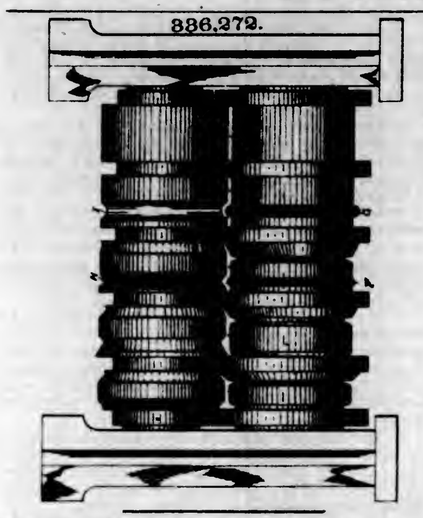
Claim.—1. The combination, with the stationary bars A and the end bars, B, of the bars C, between the bars A, and the connecting-bars F G, passing through mortises in the bars A and C, and to which bars F G the bars C are permanently connected, substantially as specified.

2. The combination, with the stationary bars A A, of the intermediate movable bars, C, the notched bars F F and G, and the keys H, connecting the bars C, said bars F F and G passing through mortises in the bars A and C, substantially as set forth.

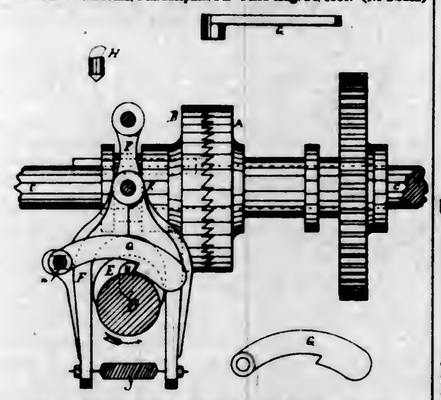
336,272. ROLL FOR REROLLING OLD RAILS. EDWIN D. WASSELL, Pittsburg, Pa., assignor to Ann Isabella Wassell, same place. Filed Sept. 7, 1885. (No model.)

Claim.—In a mill for the reduction of old and worn-out rails, rolls having grooves A, B, C, D, and E of the contour shown, the projections F and G, and corresponding supplementary grooves, H I, substantially as herein described.

336,272.



336,273. CLUTCH FOR MACHINERY. WILLIAM WHITEHEAD and FRANK W. MAGUIRE, Philadelphia, Pa. Filed Aug. 24, 1885. (No model.)



Claim.—The combination of sliding clutch B, yoke F, locking-arm G, mounted on a stud fixed in one of the arms of the yoke F, cam-catch H, and shaft D, as shown, described, and for the purpose specified.

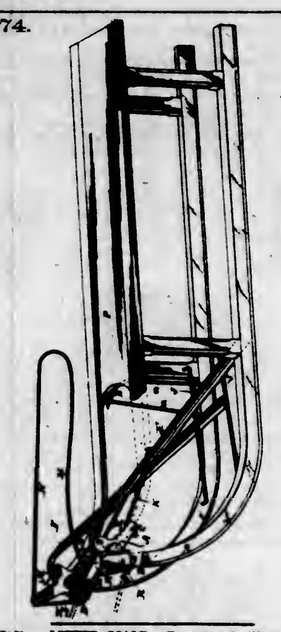
336,274. SLED. LEWIS D. WHITING, Southington, Conn., assignor of one-half to Edson L. Frost, same place. Filed Aug. 4, 1885. (No model.)

Claim.—1. The combination, with the front round or cross-bar of a sled, of two independent heads pivoted thereon inside of the runners, two brakes or steering-arms attached at their upper ends to said heads and connected with the lower arms of the latter, a cord or rope for depressing the said steering-arms, a spring or springs for automatically lifting them after they have been depressed, and loops or frames inside of the runners for loosely confining said steering-arms in place, substantially as set forth.

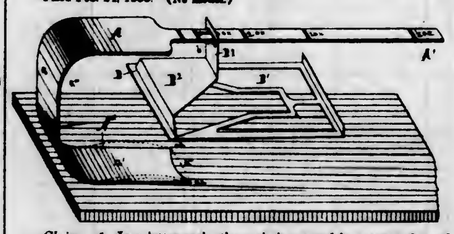
2. A sled having two independent heads fulcrumed upon its round, and provided with depending arms, lugs, and slotted arms, as shown and described, two inclined steering-arms respectively having flexible connection with the depending arms and lugs of the heads, and arranged to be depressed when the heads are turned toward the sled, a rope connected with the lugs of the heads and engaged with the slotted arms thereof, for turning the heads, as described, and spring-connection with the arms for normally supporting them and lifting them after depression, substantially as set forth.

3. A sled having two independent heads fulcrumed upon its round, two steering-arms respectively connected with the heads, means for turning the heads for depressing the arms, and for normally supporting the arms and lifting them after depression, and brackets in which the round is mounted, removably attached to the inner faces of the sides of the sled, substantially as set forth.

336,274.



336,275. LETTER-SCALE. THEODORE B. WILLSON, Chicago, Ill. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a letter-scale, the scale-beam and its support, formed as integral and adapted to be sustained upon a supporting-surface, the support having its bearings upon such supporting-surface in vertical planes inclosing the center of gravity of the entire beam and support, and having as part of such bearing an edge adapted to serve as the pivot over which the scale-beam and support may rock bodily when overbalanced, substantially as set forth.

2. In a letter-scale, the scale-beam and its support, formed as integral, the said support having below the pivotal edge, over which the beam rocks, and recessed between said pivotal edge and said overhanging scale-beam, in combination with the letter pan or tray, suspended freely on the scale-beam and adjustable thereon at will, and adapted to enter said recess.

3. In a letter-scale, the scale-beam and its support, formed as integral and comprising the horizontal scale-beam, the horizontal foot, and the upright, joining their ends and leaving a recess between them, in combination with the letter pan or tray suspended and adjustable on the scale-beam and extended toward and adapted to enter said recess.

4. In a letter-scale, the scale-beam and its support, formed integrally from a continuous strip of metal, having the ends bent to form parallel arms, the one longer than the other, the said longer arm being narrowed to diminish its weight, and the said shorter arm having the pivotal edge over which the device rocks when overbalanced.

5. In a letter-scale, the letter pan or tray adapted to be suspended below the scale-beam, and formed as integral from a single piece of sheet metal by having its suspension loop and arm struck up out of the bottom, substantially as set forth.

6. In a letter-scale, the combination of the scale-beam A', foot-piece *a'*, and upright *a*, formed as integral and bounding the recess *a'''*, and the letter-pan suspended below the scale-beam and substantially balanced under its point of suspension and extending horizontally toward said recess, substantially as set forth.

7. In a letter-scale, the scale-beam and its support formed of one

piece and narrowed at the portion which constitutes the scale-beam, substantially as set forth.

8. In a letter-scale, the scale-beam and its support formed of one piece of sheet metal and narrowed at the portion which constitutes the scale-beam, said narrowed portion and the remaining wider portion being of substantially equal length.

336,276. INSULATOR FOR TELEGRAPH-WIRES. JOHN WILSON, New York, N. Y. Filed May 14, 1885. (No model.)



Claim.—1. The improved telegraph-wire insulator, having a transverse notch in the upper end, the walls of which notch are offset and form shoulders, as described, for seating and insulating two or more wires of different sizes one above another, substantially as described.

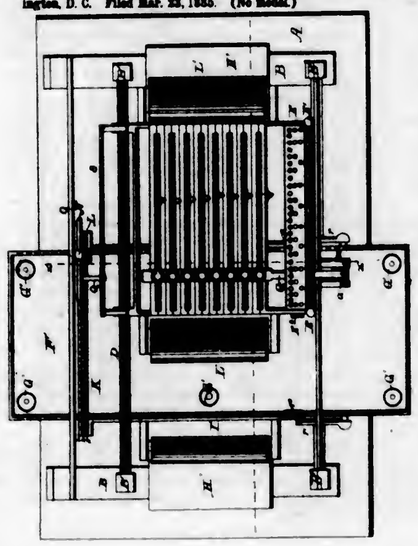
2. The improvement in telegraph-wire insulators, consisting of a transverse notch in the upper end for the wire to lie in, and having a contracted portion of less breadth than the diameter of the wire forming shoulders *j*, in combination with a wire having a corresponding flattened section, substantially as described.

336,277. PEDAL FOR VELOCIPEDES. JOHN WOOD, Jr., Beverly, and ANDREW J. PHILBRICK, Salem, Mass. Filed July 6, 1885. (No model.)



Claim.—In a pedal, the central bearing-sleeve, *a*, having end pieces, *c c*, and holding-bolts *d d*, combined with the rat-trap attachment, as described, composed of metal plates *e e*, riveted together and having concave inner lips, *e'' e''*, adapted to rest on and embrace the bearing-sleeve *a*, and outer curved and serrated portions *e³ e⁴*, with intermediate V-shaped groove or channel, E, adapted to receive the holding-bolt *d*, substantially as and for the purpose set forth.

336,278. TYPE-WRITING MACHINE. THOMAS D. WORRALL, Washington, D. C. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination, with the type-carriage pivoted so as to be capable of a rocking or swinging motion, and having spring-seated type, of an impression-key fixed at the printing-point, the whole being constructed and arranged substantially as described, so that the impression-key is depressed and the impression made on the downward movement of the type-carriage.

2. The combination, with the type-carriage pivoted so as to be capable of rocking or swinging motion, of the paper-carriage, an impression-key, and mechanism, substantially as described, for operating the paper-carriage and impression-key by the rocking or swinging motion of the type-carriage.

3. In a type-writing machine, a pivoted type-holding carriage capable of a horizontal reciprocating motion, and having a part projecting beyond the pivot engaging a projection from the feed-pawl, in combination with a swinging pawl, the rack-bar, and the paper-carriage, whereby the paper-bed is moved the proper spacing distance by the upward-swinging motion of the type-carriage, as set forth.

4. In a type-writing machine, a type-holding carriage adapted to slide back and forth and have a rocking movement on the guide-bar, in combination with devices, substantially such as described, for moving the paper-bed, and an impression-key whereby the paper-carriage is moved by the upward motion of the type-carrying frame, and the impression-key depressed to bring the type into printing contact with the paper by the downward motion of said frame.

5. The combination, with a type-carriage capable of horizontal reciprocation to bring any desired type of a given font to the printing-point, of a plurality of independent type-holders, each having a different font, and capable of being adjusted in the carriage to bring the proper font into printing position.

6. In a type-writing machine, a swinging or reversible type-battery composed of a plurality of fonts of type set in opposite directions, whereby the desired style or size of type can be brought into the proper position by swinging or turning the battery on its trunnions or pivoted centers, as set forth.

7. In a type-writing machine, a font or battery of type mounted in a sliding and swinging frame, as described, in combination with a stationary impression key or hammer operated by the swinging type-carrying frame, as set forth.

8. In a type-writing machine, a type-carrying frame having removable fonts or batteries of type, and an index-plate adjustably secured in said frame by set-screws, and provided with graduated apertures to correspond to the type in the font or battery, in combination with the impression-key G and pin or point *m*, as set forth.

9. In a type-writing machine, a series of movable fonts or batteries of type and a stationary impression-key having a plurality of adjustable pins for depressing the type, in combination with a centering pin or stud, and an index-plate secured to the type-carrying frame and having a series of holes corresponding with the series of fonts of type.

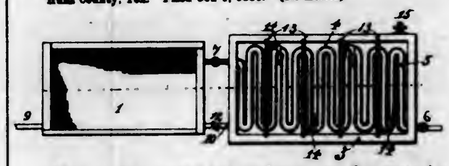
10. In a type-writing machine, a paper-carriage adapted to slide in suitable guides, and provided with the toothed rack or ratchet bar K, having fine and coarse teeth, in combination with the movable pawl L, and devices, substantially such as described, for operating said pawl, whereby the movement of the paper-carriage is regulated to produce proper spacing of type of different or varying size, as set forth.

11. The swinging arm or lever N, provided with the pin I, and adjustable pawl L, in combination with the swinging type-carrying frame E, bar S, paper-carriage 4, and rack-bar K, whereby the pawl is operated to move the paper-carriage by the upward movement of the type-frame, as set forth.

12. In a type-writing machine of the character described, the paper-carriage H, provided with the inking-rollers I', in combination with the inking-tables H' and distributing-rolls L', whereby the type are supplied with ink and the printing effected without the use of an inking-ribbon.

13. In a type-writing machine, the combination, with the paper-bed, of the plate F' and screws G', for vertically adjusting said plate, as set forth.

336,279. SORGHUM BOILER AND EVAPORATOR. JOHN G. WYNN, Hunt County, Tex. Filed Oct. 1, 1885. (No model.)



Claim.—1. In a sorghum boiler and evaporator, the evaporating-pan 3, having the partition-walls 13, the elbow-tubes 14, pivoted in the lower edge of said partitions, and capable of being turned parallel to the bottom of said pan at any angle or perpendicular thereto, copper coil 5, laid in a serpentine groove, 4, made in the bottom of said pan, one end passing through one end of said pan and connecting with a steam-generator, and having a valve, 6, to regulate the flow of steam, the other end of said coil passing through the other end of said pan, and connecting with a coil, 8, laid in the bottom of the condenser 2, and having the valve 7, to regulate the flow of steam into the condenser, substantially as shown and described, and for the purposes set forth.

2. In a sorghum boiler and evaporator, the combination of the evaporating-pan 3, having partition-walls 13, elbow-tubes 14, and copper coil 5, as above described, with condenser 2, having coil 8 laid on the bottom of said condenser, the said pipe being surrounded by some non-heat-conducting material, with warming-pan 1, set on the top of said condenser, having the incline bottom 11, pipe 10, for the flow of the liquid from said pan to evaporating-pan 3, and stop-cock 12, controlling the flow of the liquid, all substantially as shown and described, and for the purposes set forth.

336,280. TERRESTRO-SIDEREAL GLOBE. FRANKLIN H. BAILEY, Hillsdale, assignor of one-half to the Michigan School Furniture Company, Northville, Mich. Filed Oct. 12, 1885. (No model.)



Claim.—1. The combination, with a skeleton globe, of a transparent covering supporting non-transparent characters representing the constellations, substantially as set forth.

2. The combination, with a skeleton globe, of a transparent covering supporting non-transparent characters representing the constellations of the star figures being formed by perforations through the non-transparent characters, as and for the purposes specified.

3. The combination, with a skeleton globe, of a sectional detachable transparent covering supporting non-transparent characters having the stars cut therein, as and for the purposes set forth.

4. The combination of the crank-axles journaled in suitable bearings carrying the arms *n n*, the shaft adjustably attached to said arms, said shaft carrying a terrestrial globe, and disk D, bisecting the celestial globe, said parts located within the celestial or skeleton globe, substantially as specified.

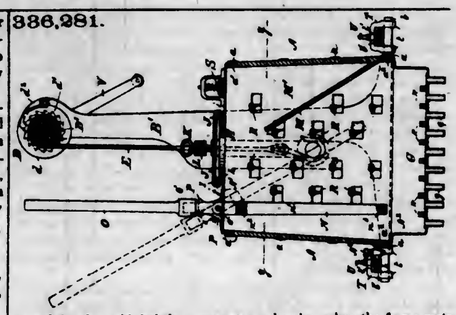
5. The combination of the crank-axles journaled in suitable bearings carrying the curved slotted arms, the shaft adjustably attached to said arms, said shaft carrying a terrestrial globe, said parts located and adapted to be revolved within the celestial or skeleton globe, as and for the purposes herein described.

6. The combination of the shaft A, carrying the terrestrial globe, the ring *m*, encircling and pivoted to said globe, the plumb-rods attached to said ring, the wires supporting the disk, the disk mounted thereon, the circular bar attached to the ring *m*, passing through the shaft, and the set-screw, as and for the purposes specified.

7. In combination with the base-supports, the curved arm J, the boxes mounted on its free ends, the sleeves journaled in said boxes, carrying the disks *h h*, the series of wires V, forming the celestial globe, attached to said disks, the transparent covering mounted on said globe, the disk *h'*, journaled on the sleeve, carrying the wires *o*, the twenty-four-hour dial mounted on said wires, and located around the northern axis and over the celestial globe, the belt F, representing the ecliptic, mounted on said cover, and the sun mounted on said belt, substantially as and for the purposes set forth.

336,281. WASHING-MACHINE. JOHN BARR, St. Louis, Mo. Filed July 22, 1884. (No model.)

Claim.—1. The combination, in a washing-machine, of a frame and a hoisting apparatus mounted thereon, with a revolving wash-boiler supported by the said hoisting apparatus, whereby, when the frame rests over the stove, the boiler may be lowered to rest on the stove or raised therefrom by said apparatus and revolved in its bearing on said apparatus, substantially as set forth.



2. The combination, in a washing-machine, of the frame comprising a base and standards, the windlass D, journaled in the upper ends of said standards, the ropes E, having hooks *e e*, and the boiler having trunnions mounted in the hooks, whereby, when raised by the drum and ropes, the boiler may be revolved on said hooks, substantially as set forth.

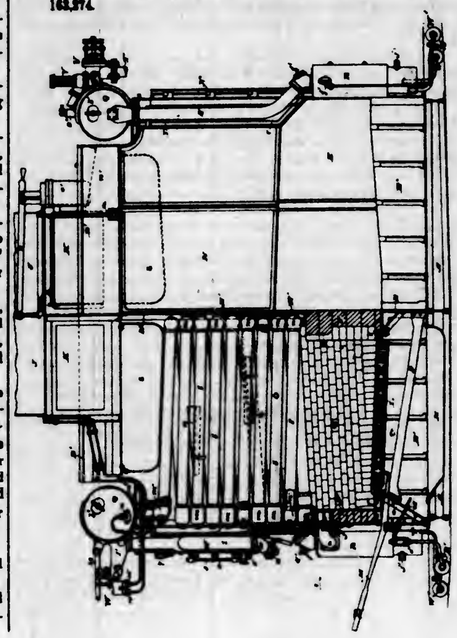
3. In a washing-machine, the boiler having lugs on its top part, a frame within the boiler having arms pivoted to the said lugs and extending through the top of the boiler, and the elastic necks P, surrounding said arms, to allow them to rock freely and prevent the escape of water, substantially as set forth.

4. The combination, in a washing-machine, of a frame comprising a base, two standards having vertical slots B', open at their lower ends, the windlass D, ropes E, and hooks *e e*, with the revolving boiler A, having side trunnions guided within the vertical slots, and supported by the hooks, substantially as set forth.

5. The combination, with the boiler A, provided with the swinging frame N, and partition M, of the pins R, substantially as shown and described.

6. The combination, in a washing-machine, and with the windlass-supporting standards, of the clamp-frame B, constructed with crossed bars *b b'*, yokes T, having loops *t t* and cross-bar *t'*, and the set-screws U, substantially as shown and described.

336,282. STEAM-GENERATOR. JULES F. BELLEVILLE, Paris, France. Filed Feb. 5, 1885. (No model.) Patented in France July 13, 1884, No. 163,874.



Claim.—1. A steam-generator wherein the generating element is formed of connected tubes arranged within a sheet-metal fire-box, as described, and the refractory walls F of the furnace are constructed with an inwardly-projecting cornice, f', to deflect the hot gases from the sheet-metal walls of the fire-box, substantially as set forth.

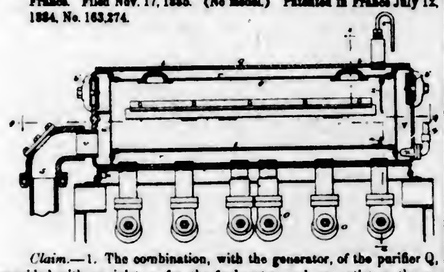
2. A steam-generator wherein the generator element is formed of connected tubes arranged within a sheet-metal fire-box arranged above the furnace, and wherein the sheet-metal walls of said fire-box are provided with deflecting-strips of metal *k*, to interrupt the flow of the heated gases upward in close contact with said walls, substantially as described.

3. A steam-generator wherein the generator element is formed of connected tubes arranged within a fire-box, whereof the sides and back are of sheet metal, and wherein the front of the fire-box is formed of doors N, whereby, when said doors are thrown open, free access may be had to the whole interior of the fire-box and the generating elements, substantially as described.

4. The combination, to form the envelope of a tubular steam-generator, of the iron plates B and B', forming the back and side walls of the ash-box C, and provided with cap-plates for the masonry, the masonry F, forming the walls of the furnace G, the longitudinal and transverse sheet-metal partitions E' and E, mounted on the masonry, the double-arched roof D', and the facade or fire-front and its several doors, all constructed and arranged substantially as shown and described.

5. A marine boiler comprising a group of generators constructed substantially as described, placed back to back, as shown, with their charging-fronts placed toward the sides of the vessel, and the base J, to support the chimney mounted thereon, substantially as and for the purposes set forth.

336,283. FEED-WATER HEATER. JULIEN F. BELLEVILLE, Paris, France. Filed Nov. 17, 1885. (No model.) Patented in France July 12, 1884, No. 163,274.



Claim.—1. The combination, with the generator, of the purifier Q, provided with an inlet, *x*, for the feed-water, and an outlet, *v*, the return-pipe S, leading to the dejecteur, the dejecteur R, constructed substantially as described, and the pipe o, connecting the dejecteur with the collector P of the generator, all arranged to operate substantially as described.
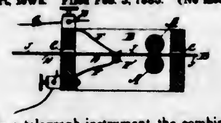
2. The purifier Q, provided with a party-cylindrical diaphragm, Q', pipes *u*, to lead off the steam, and an outlet, *v*, to lead off the water separated from the steam, substantially as and for the purposes set forth.

3. The cylindrical purifier Q, provided with an inner party-cylindrical diaphragm, Q', a chamber, *y*, and a feed-water inlet, *x*, at one end, an outlet, *v*, for the feed-water at the opposite end, a cup, *t*, in diaphragm Q', to receive the end of the steam-outlet pipe *u*, and an inlet for the steam from the generator, said inlet being arranged to admit the steam to the annular space *r*, substantially as set forth.

4. The combination, with a tubular steam-generator, of the drum-like purifier Q, arranged horizontally over the generator, and connected at its bottom side with the upper ends of the generator-tubes, and provided with a diaphragm forming a flat surface or floor, *s*, for the feed-water to flow over, also with a feed-water inlet at one end and a feed-water outlet at the other end, and also with a steam-outlet separated from the steam-inlet by said diaphragm, whereby the incoming steam impinges directly upon the bottom of floor *s* before it passes to the steam-outlet, substantially as described.

5. The dejecteur R, provided with the prolongation or extension *o''* at its outlet *o'*, and the feed-water injector *f'*, all constructed and arranged to operate substantially as and for the purposes set forth.

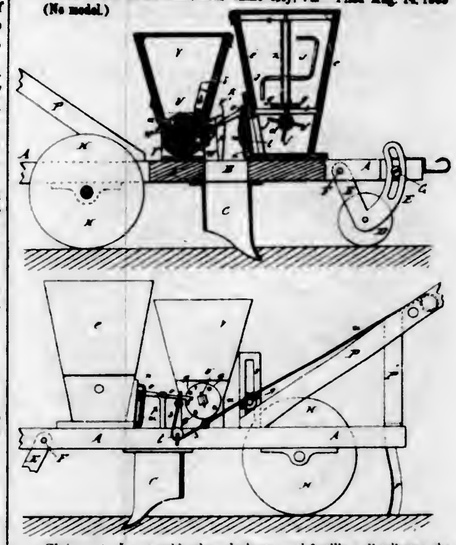
336,284. LEARNER'S TELEGRAPHIC INSTRUMENT. ERNST BOSSALL, Davenport, Iowa. Filed Feb. 3, 1885. (No model.)



Claim.—1. In a telegraph-instrument, the combination, with a perforated pattern-strip of conducting material and its feeding-rolls, of the spring-arms connected to the line-wire binding-posts, and having their free ends or points arranged to stand out of contact as an aperture or perforation of said strip is brought into coincidence with said points or ends of arms, the circuit being completed by the conductivity of the said strip and spring-arms, substantially as set forth.

2. In a telegraph-instrument, the combination, with a perforated pattern-strip of conducting material and its feeding-rolls, of the spring-arms connected to the line-wire binding-posts, and having their free ends or points, one of which is provided with a roll, arranged to stand out of contact as an aperture or perforation of said pattern-strip is brought into coincidence with said points or ends of arms, substantially as and for the purpose set forth.

336,285. COMBINED SEED-PLANTER AND FERTILIZER-DISTRIBUTER. JOHN I. BOSWELL, near Chase City, Va. Filed Aug. 14, 1885. (No model.)



Claim.—1. In a combined seed-planter and fertilizer-distributer, the combination, with the beam A, the adjustable gage-wheel and its bracket D E, the drive-wheel H, and the two hoppers V *e*, of the chain-wheels R T *c*, the endless chain S, the seed-dropping cylinder U, and the agitator *d f g h j*, substantially as herein shown and described.

2. In a combined seed-planter and fertilizer-distributer, the combination, with the hopper V and the seed-dropping cylinder U, having seed-receiving recesses W in its opposite sides, of the sliding rod X, the plates Y, attached to the ends of the said rod, and the roller and spring *Z a*, substantially as herein shown and described, whereby the seed will be discharged with certainty at the proper time, as set forth.

3. In a combined seed-planter and fertilizer-distributer, the combination, with the hopper *e*, the hopper V, and the seed-dropping cylinder U, of the vertically-sliding gate *m*, the crank-shaft *o*, and the wheel *r*, having pins *q*, substantially as herein shown and described, whereby the said gate will be opened to discharge the fertilizer by the revolution of the said seed-dropping cylinder, as set forth.

4. In a seed-planter and fertilizer-distributer, the combination, with a seed-hopper, a seed-cylinder therein, and a fertilizer-hopper, of a gate for closing an opening in the fertilizer-hopper, and intermediate mechanism for operating the said gate from the seed-cylinder, substantially as herein shown and described.

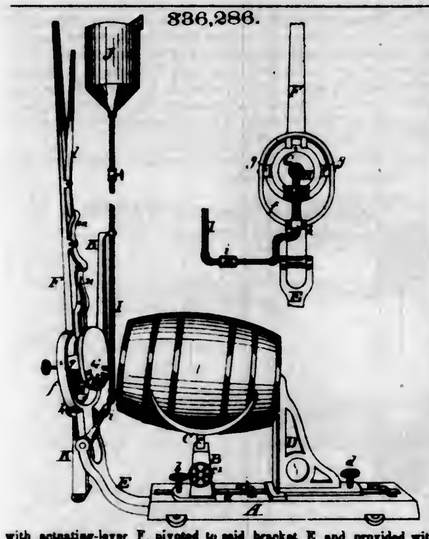
336,286. BRANDING IMPLEMENT. ENOCH BOSWORTH and JOSEPH SCHMIDT, Cleveland, Ohio. Filed July 11, 1885. (No model.)

Claim.—1. In a branding implement, the combination, with an actuating-lever having a vapor-burner secured thereto, of a branding-die pivoted to said lever in front of and heated by said burner, substantially as described, whereby said burning-die may be tilted or rocked to accommodate it to the surface to be branded, substantially as set forth.

2. In a branding implement, the combination, with an actuating-lever having a vapor-burner secured thereto, and provided with the lever *l m n*, of a burning-die pivoted to said actuating-lever in front of and heated by said burner, substantially as described, whereby said branding-die may be tilted or rocked to press or force the face of the die over the surface of the barrel-head or package, substantially as set forth.

3. In a branding implement, the base A, having longitudinal slot *a*, and provided with the horizontally-adjustable post B, having vertically-adjustable barrel or package support C and the horizontally-adjustable bearing-post D, and provided with bracket E, in combination

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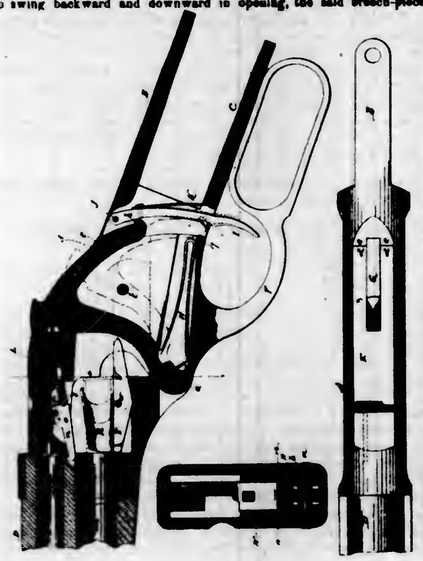


with actuating-lever F, pivoted to said bracket E, and provided with branding-die G, heated by burner H, the movements of said lever bringing the die in contact with the head of the barrel, substantially in the manner and for the purpose set forth.

336,287. MAGAZINE FIRE-ARM. JOHN M. BROWNING and MATTHEW S. BROWNING, Ogden City, Utah, assignors to the Winchester Repeating Arms Company, New Haven, Conn. Filed June 15, 1885. (No model.)

Claim.—1. In a fire-arm, the combination of the barrel open at its rear end, a breech-piece hung in the receiver in rear of said barrel, upon an axis at right angles to the barrel, and so as to swing downward and backward in opening, and a lever extending from said breech-piece below the receiver as a handle by which the breech-piece may be opened and closed, the breech-piece constructed with a slot inclined upward and backward from its pivot when the breech-piece is in its closed condition, the breech-piece also constructed with a shoulder, *d*, and the receiver with a corresponding shoulder, *c*, against which said shoulder *d* will abut, when the breech-piece is in its closed position, to resist recoil, substantially as described.

2. The combination of the barrel open at its rear end, a breech-piece hung upon a pivot in the receiver in rear of the barrel and so as to swing backward and downward in opening, the said breech-piece



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constructed with a lever extending beneath the receiver, and by which the breech-piece may be turned upon its pivot, the breech-piece also constructed with a slot at the pivot, inclined upward and rearward when the breech-piece is in its closed position, and also constructed with a shoulder, *d*, and the receiver with a corresponding shoulder, *c*, against which said shoulder *d* will abut, when the breech-piece is in its closed position, to resist recoil, a hammer hung within the breech-piece and upon the same pivot as the breech-piece, a mainspring also arranged within the said breech-piece and adapted to bear said hammer upon the striking-face of the breech-piece, with a firing-pin extending longitudinally through the breech-piece from its striking-face forward, and a trigger hung in rear of the hammer and adapted to engage a shoulder thereon when the hammer is in the cocked position, substantially as described.

3. The combination of the barrel open at its rear end, a breech-piece hung in rear of the barrel adapted to swing backward and downward in opening, constructed with a lever extending beneath the receiver, by which the breech-piece may be turned upon its pivot, a hammer hung within the breech-piece upon the same pivot as the breech-piece, a mainspring adapted to bear the said hammer against the striking-face of the breech-piece, a trigger arranged to engage the hammer in its cocked position, a firing-pin extending longitudinally through the breech-piece from the striking-face forward, and the extractor-lever *n*, hung in the breech-piece and adapted to swing in a vertical plane, with a spring arranged to bear the nose of the extractor upward and toward the barrel, substantially as described.

4. The combination of a barrel open at its rear end, a breech-piece hung upon the pivot in rear of the barrel and arranged to swing backward and downward in opening, constructed with a lever extending therefrom beneath the receiver, and by which it may be turned upon its pivot, said breech-piece also constructed with a slot at the pivot, inclined upward and rearward therefrom when the breech-piece is in its closed position, the breech-piece also constructed with a shoulder adapted to engage a corresponding shoulder in the receiver when the breech-piece is in its closed position, a hammer hung within the breech-piece and upon the same pivot as the breech-piece, the mainspring adapted to force said hammer against the striking-face of the breech-piece, a firing-pin extending longitudinally through the breech-piece, extending from its striking-face forward, the hammer constructed with a notch below its striking-point upon the firing-pin, and a trigger arranged to engage the hammer when in its cocked position, substantially as described.

5. In a fire-arm, the combination of the barrel open at the rear, a magazine beneath the barrel, open also to the rear, a breech-piece hung in the receiver at the rear of the barrel and below the magazine, adapted to swing backward and downward in opening, said breech-piece constructed with an arm extending below the receiver, and by which it may be turned upon its pivot, a hammer arranged in said breech-piece and hung upon the same pivot as the breech-piece, a mainspring adapted to force said hammer against the striking-face of the breech-piece, a firing-pin extending longitudinally through the breech-piece from its striking-face forward, a trigger arranged to engage the hammer in its cocked position, and a carrier hung in the receiver to move upward and downward to deliver a cartridge from the magazine to a position forward of the front face of the open breech-piece, substantially as described.

6. In a fire-arm, the combination of the barrel open at the rear, a magazine beneath the barrel, open also to the rear, a breech-piece hung in the receiver at the rear of the barrel and below the magazine, adapted to swing backward and downward in opening, said breech-piece constructed with an arm extending below the receiver, and by which it may be turned upon its pivot, the breech-piece also constructed with a slot inclined from the pivot upward and rearward, and also constructed with a locking-shoulder arranged to engage a corresponding shoulder on the receiver when the breech-piece is in its closed position, a hammer arranged in said breech-piece and hung upon the same pivot as the breech-piece, a mainspring adapted to force said hammer against the striking-

face of the breech-piece, a firing-pin extending longitudinally through the breech-piece from its striking-face forward, a trigger arranged to engage the hammer in its cocked position, and a carrier hung in the receiver to move upward and downward to deliver a cartridge from the magazine to a position forward of the front face of the open breech-piece, substantially as described.

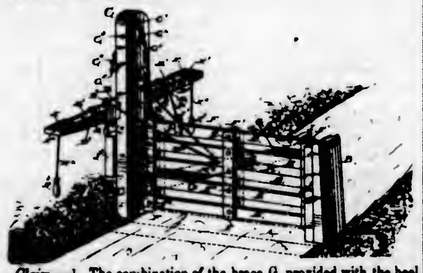
7. The combination of the barrel D, magazine N, breech-piece E, hung below the barrel upon a pivot, *a*, the breech-piece constructed with a lever, F, extending downward beneath the receiver, hammer G, hung within the breech-piece and upon the same pivot as the breech-piece, a mainspring adapted to bear the hammer against the striking-face of the breech-piece, a firing-pin extending longitudinally through the breech-piece, a trigger arranged to engage the hammer when in its cocked position, the spring-extractor lever *n*, hung upon the under side of the breech-piece, the carrier hung at the rear, its two sides at the forward end turned upward to form wings P R, and the lever T U, hung in the bottom of the carrier at its forward end, the forward arm, T, of the lever constructed with a transverse projection, 2, and a fixed stud, 3, in the receiver, against which the forward arm of said lever will strike as the carrier completes its forward movement, and so as to turn said lever on its pivot to elevate the rear end of the cartridge, substantially as and for the purpose described.

8. The combination of the barrel D, magazine N, breech-piece E, hung upon a pivot, *a*, and adapted to swing backward and downward in opening, the breech-piece constructed with a lever, F, extending below the receiver, a hammer, G, hung within the breech-piece and upon the same pivot as the breech-piece, a mainspring arranged to force said hammer against the striking-face of the breech-piece, a firing-pin extending longitudinally through the breech-piece from its striking-face forward, a trigger arranged to engage the hammer when in its cocked position, a carrier hung at the rear and so as to swing upward and downward within the receiver, the carrier provided at its forward end with wings P R, one of said wings fixed to the carrier, the other hung upon pivots and adapted to rock transversely toward the other wing, the breech-piece constructed with an inclined shoulder, 8, and the arm of said wing R constructed with a corresponding incline, whereby the inward-rocking movement of the wing is imparted as the breech-piece approaches its extreme open position, substantially as described.

9. The combination of a barrel open at the rear, a breech-piece hung in the receiver below the barrel and arranged to swing backward and downward in opening, and constructed with a lever extending beneath the receiver, by which the breech-piece may be turned upon its pivot, the said breech-piece also constructed with a slot at the pivot inclined upward and backward when the breech-piece is in its closed position, a locking-shoulder, *d*, on said breech-piece, corresponding shoulder, *s*, on the receiver, a hammer hung in the breech-piece and upon the same pivot as the breech-piece, a V-shaped mainspring arranged in said breech-piece, one arm supported upon the pivot of the hammer, the other arm bearing directly upon the hammer, and a stud, 17, in the breech-piece adapted to bear against the heel of the mainspring when the breech-piece is in its closed position, with a trigger arranged to engage the hammer when in its cocked position, substantially as described.

10. In a magazine fire-arm, the combination of the breech-piece and trigger-guard lever, through which movement is imparted to said breech-piece, a carrier arranged to receive a cartridge from the magazine and present it to the barrel above, the hub of said lever constructed with a cam-surface, 5, and the under side of the carrier constructed with a corresponding bearing-surface, 6, substantially as described, and whereby in the first part of the opening movement of the lever said cam-surface raises the carrier to form a stop at the mouth of the magazine.

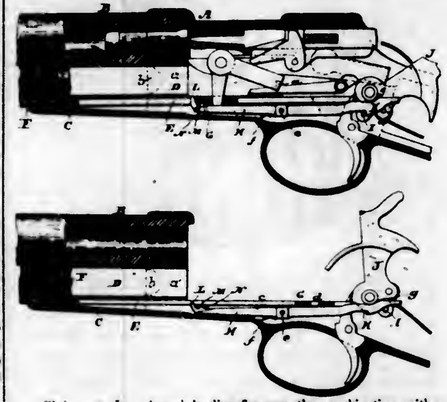
336,288. GATE. ISAAC BURKHOLDER, Farmersville, Pa. Filed May 25, 1885. (Model.)



Claim.—1. The combination of the brace G, provided with the heel plate G', having sleeve G^2 at its lower end, a gate provided with uprights F^*, having notches F^2 therein, in which the said brace may slide, the lever I, having a can-shaped end for raising one end of the gate, and the hinge-rod L, securely attached to the main gate-post and forming a pivot for the said gate, substantially as and for the purpose set forth.

2. The combination of the main gate-post C, a gate hinged to the said main gate-post and provided with the sliding bolt H and spring R, the cross-arm D, provided with the eyes D^2 and the sheaves O' and N, the cords H^2, for drawing back the spring-bolt, the weight J^2, provided with the cord J^3, passing over the pulley M, for opening the gate, the spring S, for closing the gate when the weight J^2 is raised, and the cords N^2, passing over the said pulleys O' and N, for raising the said weight, substantially as and for the purpose set forth.

336,289. MAGAZINE FIRE-ARM. ARTHUR R. BYRKETT, Troy, Ohio. Filed June 13, 1885. (No model.)

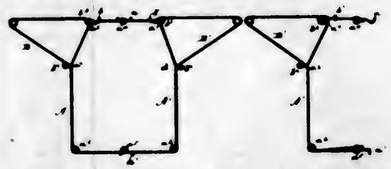


Claim.—1. In a breech-loading fire-arm, the combination, with a lever or handle for operating the breech mechanism and a hammer having at its lower portion an outwardly-projecting pin or shoulder, of a strap connected at one end to said lever or handle and having a notch or recess in its under face, and a pivotal lever adapted at its rear end to engage the pin on and lock the hammer in cocked position, and at its front to engage the notch in the under face of the strap connected to the breech-lever or handle when its forward position and lock said handle and parts connected therewith, substantially as and for the purpose set forth.

2. In a breech-loading fire-arm, a hammer provided with the usual mainspring and trigger and having an outwardly-extending pin or shoulder, a pawl or lever having pivotal bearing within the arm and having near its rear end a notched or hook-shaped portion, the rear end of said pawl or lever extending rearwardly beyond said pin or shoulder and at its front end having a notched projection, and a handle having a strap or slide provided on its under face with a slot or recess to receive the notched projection on the forward end of the pawl or lever, substantially as and for the purpose set forth.

3. In a breech-loading fire-arm, the combination, with a hammer having a pin or projection on its lower portion, of a lever having at its rear portion and on its under face a recess to engage the pin, and a rearwardly-extending portion, and on its upper rear face a recessed or curved portion, and at its front end an upwardly-extending notched lug or projection, and a lever or handle for operating the breech mechanism, and a strap connected to said lever and having in its under face a notch or recess to receive the lower portion of said notched lug or projection, substantially as and for the purpose set forth.

336,290. SHIRT BOARD OR HANGER. EZRA W. CARTER, Cohoes, N. Y. Filed Mar. 20, 1885. (No model.)



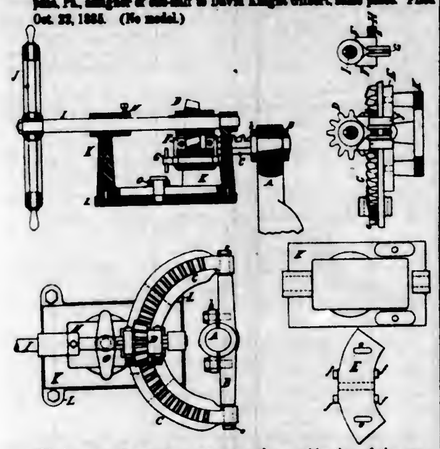
Claim.—1. A folding shirt or drawer board made in the form of the garment to which it is to be applied, and constructed in sections hinged or linked together, for the purpose and substantially as described.

2. A folding shirt or drawer board frame made to conform to the shape of the garment to which it is to be applied, and made in sections hinged or linked together, whereby said frame is adapted to be folded into compact form, in the manner substantially as described.

3. A shirt or drawer board frame constructed from several pieces of wire, and made in the form of the garment to which it is to be applied, said pieces of wire or sections of the frame being linked together, whereby the frame is adapted to be folded into compact form, for the purpose and substantially as described.

4. A folding shirt or drawer board constructed entirely of wire, and conforming, substantially, to the shape of the garment to which it is to be applied, and adapted, when opened out for use, to be locked in such position, in the manner substantially as described.

336,291. STEERING APPARATUS. THADDEUS CRAMMOND, Philadelphia, Pa., assignor of one-half to David Knight Gilbert, same place. Filed Oct. 22, 1885. (No model.)

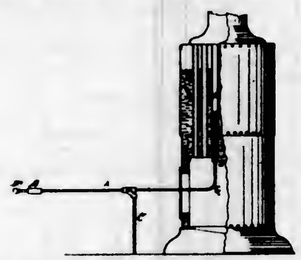


Claim.—1. In steering apparatus, the combination of the cross-head B, attached to the rudder-head, the segmental gear C, hinged to the said cross-head at its extremities, the pinion D, meshing with the segmental gear, the hand-wheel shaft I, stand K, and collar N, the plate E, the friction-wedges F, with screw H, spring *s*, and cam G, all substantially as and for the purpose herein specified.

2. In steering apparatus, the combination of the frame K, and turn-button O, the latter being either attached to the bed-plate L, or, in the absence of such a plate, to the deck of the vessel direct, all substantially as and in the manner herein specified.

3. In steering apparatus where a segmental gear connected to the rudder-post is used, the combination of the said segmental gear, a cross-head attached to the rudder-post, and two bolts screwed in the ends of the said cross-head and passing through vertical slots in the extremities of the segmental gear, all substantially as and for the purpose herein specified.

336,292. BOILER-TUBE CLEANER. FRANK M. CLARK, Tilton, N. H., and FRED. R. LOW, Chelsea, Mass. Filed Feb. 20, 1885. (No model.)

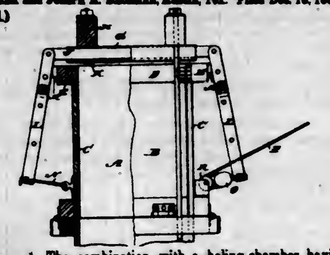


Claim.—1. In a tube-cleaning device, the combination of a curved tubular guide, suitably supported outside the fire-box and longitudinally slotted near its outer end, with an internal flexible connecting-rod carrying a scraper at its end, and with an external sleeve fastened to said connecting-rod through said slot, and adapted to be reciprocated longitudinally on said guide-tube and to reciprocate the connecting-rod longitudinally of said tube, substantially as described.

2. The combination of the curved guide-tube and the interior flexible connecting-rod carrying at one end the scraper H, and attached at the other end to a handle, whereby said connecting rod may be reciprocated to and fro along the axis of said guide-tube, substantially as described.

3. The combination of a curved guide-tube, the ribbon connecting-rod, the tube-scraper, the handle for actuating the connecting-rod and scraper, and the foot for supporting the guide-tube, all substantially as described.

336,293. LOCKING DEVICE FOR BALING-PRESS DOORS. FRANK S. CLARK and JOSEPH A. RADEMAR, Austin, Tex. Filed Dec. 18, 1885. (No model.)



Claim.—1. The combination, with a baling-chamber having side doors, of sliding bars in the platen and of locking-frames pivoted to said sliding bars, substantially as herein shown and described.

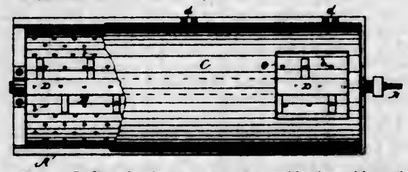
2. The combination, with a baling-chamber having two side doors, of sliding bars in the platen, locking-frames pivoted to both ends of the said bars, and a rope and pulleys secured to one door and its locking-frame, substantially as herein shown and described.

3. The combination, with a baling-chamber having side and end doors, of sliding bars in the platen, locking-frames pivoted to the ends of the sliding bars, battens on the end doors, and catches on the ends of the battens on the side doors, substantially as herein shown and described.

4. The combination, with a baling-chamber provided with two side doors, of sliding bars in the platen, locking-frames pivoted to the ends of the sliding bars, the hook N on one door for holding the locking-frame of said door, and a rope and pulleys connected with the other door and with its locking-frame, substantially as herein shown and described.

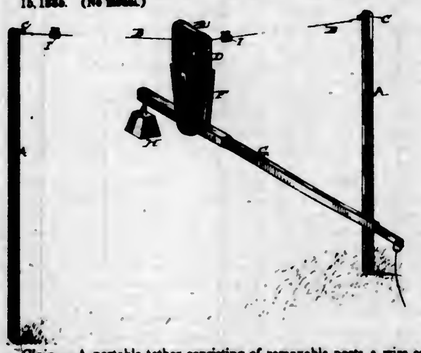
5. The combination, with a baling-chamber, of sliding bars above the same, and of locking-frames pivoted to the ends of said sliding bars and serving to lock the doors, substantially as herein shown and described.

336,294. FIBER-CLEANING SEPARATOR. REUBEN COLE, Sandy Hill, N. Y., assignor to Allen Brothers, same place. Filed May 20, 1885. (No model.)



Claim.—In fiber-cleaning separators, the combination, with a reticulated cylinder, semi-cylinder, or sieve, of a rotary or oscillating shaft provided with arms, each of which is placed opposite to a space between two arms on the opposite side, whereby the fiber will be tossed from arm to arm until dust and other foreign substances shall have separated therefrom, as described.

336,295. TETHER. HENRY G. COLEMAN, Gardenton, N. C. Filed Sept. 15, 1885. (No model.)

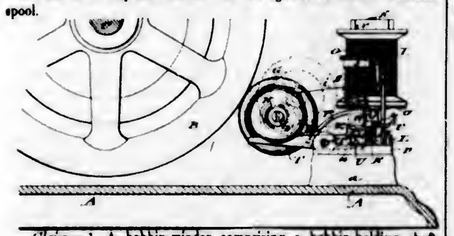


Claim.—A portable tether consisting of removable posts, a wire or rod rigidly connected at its respective ends to said posts and serving as a way along which the tether slides, a link or eye having at its upper portion a spool or roller to rest upon and slide along said post-connect-

ing wire, a link swivelly connected to the lower portion of said traveling link, spools adjustably attached to said rod or way to limit the movement along said way of the tethering device, and a lever or arm pivotally connected to the swiveled link and having a weighted rear end, and a rope, chain, or cord at its front end, substantially as and for the purpose set forth.

336,296. BOBBIN-WINDER. WILLIAM CONNOLLY, South Norwalk Conn. Filed Jan. 20, 1885. (No model.)

Brief.—Upon the completion of the winding of the bobbin the rotation of the bobbin and of the thread-spool is automatically stopped, the friction-wheel being released from its engagement with the driving-wheel and thrown up into contact with the edge of one end of the thread-spool.



Claim.—1. A bobbin-winder comprising a bobbin-holding shaft provided with a drive-wheel, a swinging arm in which said shaft is journaled, a tail-piece fixed to said arm, a post slotted for the passage of the tail-piece, and a collar fitted loosely on the post and provided with slots to receive the tail-piece, and said slots being formed with cam-faces to turn the collar and shoulders to support the tail-piece, and thereby hold the bobbin drive-wheel to the sewing-machine drive-wheel, substantially as herein set forth.

2. A bobbin-winder comprising a bobbin-holding shaft provided with a drive-wheel, a swinging arm in which said shaft is journaled, a tail-piece fixed to said arm, a post slotted for the passage of the tail-piece, a collar fitted loosely on the post and provided with slots to receive the tail-piece, and said slots being formed with cam-faces to turn the collar and shoulders to support the tail-piece and hold the bobbin drive-wheel to the sewing-machine drive-wheel, and a spring acting on the tripped tail-piece to separate said drive-wheels, substantially as herein set forth.

3. A bobbin-winder comprising a bobbin-holding shaft provided with a drive-wheel, a swinging arm in which said shaft is journaled, means for setting the arm to hold the bobbin and sewing-machine drive-wheels in contact, a spool-holding post, and a spring for swinging the bobbin drive-wheel into contact with the spool, to simultaneously stop the rotation of both bobbin and spool when the bobbin is filled, substantially as herein set forth.

4. A bobbin-winder comprising a bobbin-holding shaft provided with a drive-wheel, a swinging arm in which said shaft is journaled, a tail-piece fixed to said arm, a post slotted for the passage of the tail-piece, a collar fitted loosely on the post and provided with slots to receive the tail-piece, said slots being shaped to form cams and shoulders to turn the collar and support the tail-piece, a spool-holding post, and a spring for swinging the bobbin drive-wheel into contact with the spool when the tail-piece is tripped, substantially as herein set forth.

5. The combination, in a bobbin-winder, of the swinging arm E, having a tail-piece, P, the shaft F, drive-wheel G, post O, slotted at *o*, collar R, slotted at *r r'*, and spring S, substantially as herein set forth.

6. The combination, in a bobbin-winder, of the swinging arm E, having tail-piece P, the shaft F, drive-wheel G, post O, slotted at *o*, collar R, slotted at *r r'*, spring S, the spool-post K, located to allow the wheel G to strike the spool, and the thread eye or guide M, substantially as herein set forth.

7. The combination, in a bobbin-winder, of a swinging arm, E, shaft F, drive-wheel G, a spool-post having an elastic spool-support adjustable on the post and placed in the described relation to the drive-wheel G, and the thread eye or guide M, substantially as herein set forth.

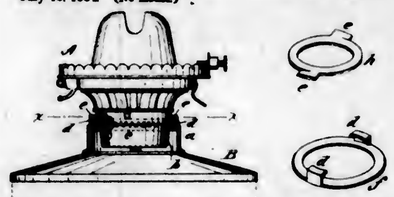
8. A bobbin-winder comprising a bobbin-holding shaft provided with a drive-wheel, a swinging arm in which said shaft is journaled, means for setting the swinging arm for holding the bobbin drive-wheel into contact with the sewing-machine drive-wheel, and a lever positioned to be operated by the thread reeled on the bobbin, and connected with the setting devices of the swinging arm, so as to release said arm automatically when the bobbin is filled, substantially as herein set forth.

9. A bobbin-winder comprising a bobbin-holding shaft provided with a drive-wheel and journaled in a swinging arm, E, carrying a tail-piece, P, a post, O, slotted for the passage of the tail-piece, a collar, R, fitted loosely on the post O and slotted at *r*, *r'*, and *u*, and the lever T, provided with a pin, U, entering inclined slot *u* at one end, and said lever extending to the bobbin, so as to be operated by the thread reeled thereon, substantially as herein set forth

10. The combination, in a bobbin-winder, of the swinging arm E, having a tail-piece, P, the shaft F, drive-wheel G, post O, slotted at *o*, collar R, slotted at *r r'* and inclinedly at *u*, a spring bearing on the tail-piece to carry the wheel G from the sewing-machine drive-wheel, and the lever T, having a pin, U, entering the collar-slot *u* and extending to the thread wound on the bobbin, substantially as herein set forth.

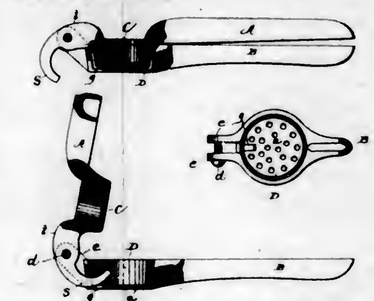
11. The combination, in a bobbin-winder, of the arm E, having a tail-piece, P, the shaft F, drive-wheel G, post O, slotted at *o*, collar R, slotted at *r*, *r'*, and *u*, spring S, lever T, having a pin, U, entering slot *u* and extending to the thread wound on the bobbin, and a spool-post located to allow the drive-wheel G to swing into contact with the spool I, when the lever T trips arm E as the bobbin fills, substantially as herein set forth.

336,297. LAMP-BURNER. JOH A. COULTAER, Brooklyn, N. Y. Filed July 10, 1884. (No model.)



Claim.—A lamp-burner consisting of a tapered cone, *c*, a fountain-cap, B, provided with apertures *g*, collar *a*, and return cone-seat *b*, smaller in diameter than the cone *c*, a ring, A, with wedge-shaped projections *e* thereon to wedge the cone *c* downward into its seat, and a ring, *f*, with hook-shaped catches *d*, substantially as described.

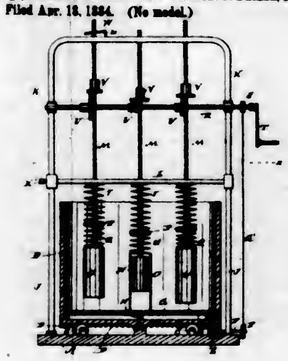
336,298. LEMON-SQUEEZER. THOMAS CURLEY, Troy, N. Y. Filed Oct. 15, 1885. (No model.)



Claim.—1. In a lemon-squeezer having two fulcrumed members, the combination of a curved spur projecting from one member, with a lemon-receiving cup in the other member, provided with an aperture adapted to receive said spur, substantially as described, and for the purposes set forth.

2. The combination, in a lemon-squeezer, of plunger C, provided with handle A, tongue *t*, and spur S, with pivot *d*, and cup D, provided with handle B, lips *e*, and apertures *g* and *a*, substantially as described, and for the purposes set forth.

336,299. WASHING-MACHINE. CHARLES F. DUDLEY, Salt Lake City Utah. Filed Apr. 13, 1884. (No model.)



Claim.—1. In a washing-machine, the combination, with a tub, of a series of vertical shafts, M, provided with plungers N on their lower ends, open-ended cylinders surrounding the plungers, the springs Q, connecting the cylinders to the shafts, the springs I, for forcing the shafts downward, and means, substantially as described, for raising said shafts, substantially as herein shown and described.

2. In a washing-machine, the combination, with the tub B, of the vertical shafts M, provided with the plungers N and disks P V, the open-ended cylinders O, the springs I Q, and the crank-shaft R, provided with tappets U, substantially as herein shown and described.

3. In a washing-machine, the combination, with a supporting-base and a tub pivoted thereon, of the vertical shafts M, provided with the plungers N and disks P V, the open-ended cylinders O, surrounding the plungers, the springs I Q, the shaft R, and means, substantially as described, for revolving the tub from the shaft R, substantially as herein shown and described.

4. In a washing-machine, the combination, with the frame K, of the plunger or stamper shafts M, and of the catches W, substantially as herein shown and described.

336,300. SPINDLE-STEP FOR SPINNING-MACHINES. WILLIAM A. DELEARD, Lowell, Mass., assignor of one-half to Alvin A. Hanscom, same place. Filed June 24, 1884. (No model.)

Brief.—Improvement on the step for which Letters Patent No. 263,688 were granted September 5, 1882. To facilitate oiling when the spindle cannot readily be raised, an annular depression is provided in the top of the air-chamber and around the spindle.

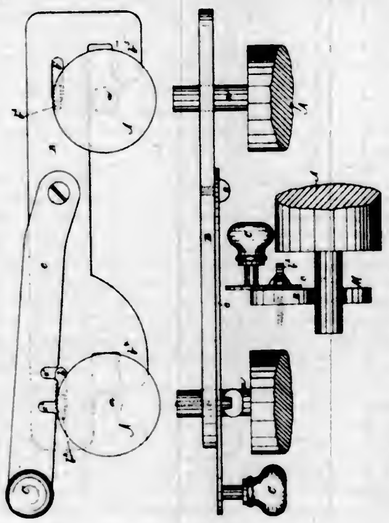


Claim.—1. The spindle-step having an air-chamber, *e*, in combination with a cap, *f*, for closing said chamber, said cap being provided with vent-holes and formed with a recess or depression for retaining oil, substantially as described.

2. The sheet-metal cap and the cap *f*, combined with step A, the bottom of said cap forming a diaphragm separating the oil and the air chambers, substantially as described.

336,301. DEVICE FOR SUPPORTING THE DROP-ROLLS OF WARPING-MACHINES. GEORGE R. DEXTER and ELBRIDGE J. PATTERSON, Waltham, Mass. Filed May 9, 1884. (No model.)

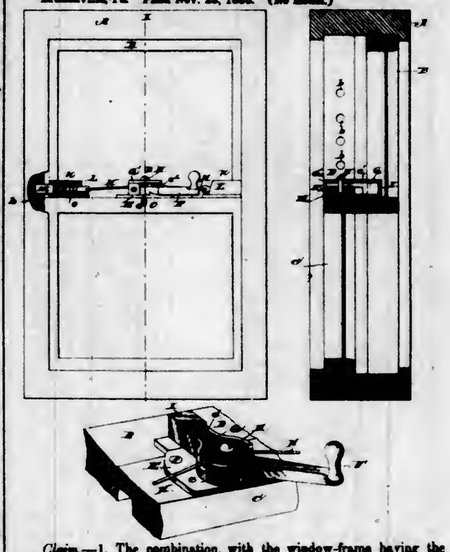
Brief.—A bar provided with bearings or projections to support the drop-rolls is adapted to slide on the side of the machine-frame to bring said bearings across the guides in said frame in which the drop-rolls work. The said bar is provided with a handle, by which it may be moved back and forth across the drop-roll guides, and locked in position by recesses in said handle, which take on pins or lugs in the side of the machine-frame. When tying in spools the bar is moved across the drop-roll guides. Thereby, when the warp slackens, the drop-rolls are supported.



Claim.—1. The combination, with the drop-roll of a warping-machine, of supports for its journals, a slide-bar carrying these supports, and a handle for reciprocating the slide-bar, arranged and operating substantially as set forth.

2. The combination, with the supports for the journals of the drop-roll of a warping-machine, the slide-bar to which the supports are secured, and the handle for reciprocating the slide-bar, of the notches and screw for locking the bar at either end of its stroke, substantially as and for the purpose set forth.

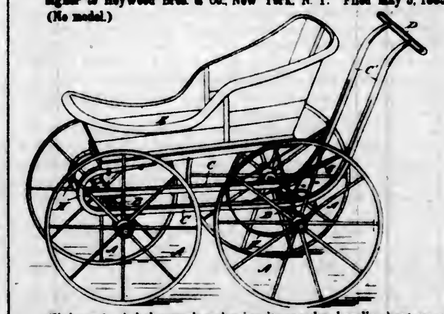
336,302. WINDOW-FASTENING DEVICE. ADOLPHUS DUDDEN, Brodesville, Pa. Filed Nov. 25, 1885. (No model.)



Claim.—1. The combination, with the window-frame having the openings *b*, and the sash having the keeper I, of the sash having the bolt G to enter the keeper and the bolts M to enter the openings and thereby lock the sashes together and to the frame, and the lever connected to the said bolts to withdraw them simultaneously, substantially as described.

2. The combination, with the window-frame having the openings *b*, and the sash having the keeper I, of the sash having the spring-actuated bolts M to enter the openings, the bolt G to enter the keeper, and the pivoted lever connected to the said bolts for withdrawing them simultaneously, substantially as described.

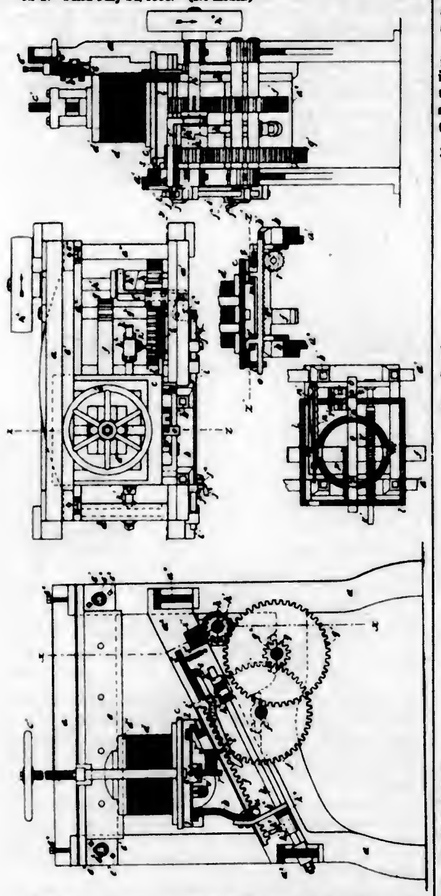
336,303. BABY-CARRIAGE. GEORGE A. ELLIS, Gardner, Mass., assignor to Heywood Bros. & Co., New York, N. Y. Filed May 5, 1885. (No model.)



Claim.—1. A baby-carriage having its wooden handles bent up at their front ends on a semicircular line, the ends of said bent parts being secured directly to the front part of the bottom of the carriage-body, whereby said carriage-body is supported by said spring-bars at its front end only, substantially as herein shown and described.

2. In a baby-carriage, the combination, with the axles and wheels, of the side or handle bars, C, having their ends bent up to form springs fastened to the front of the body, and of the spring F, secured to the body at the rear end and to the rear axle, substantially as herein shown and described.

336,304. BOOK-CUTTING MACHINE. WILLIAM F. ELLIS, New York, N. Y. Filed July 24, 1885. (No model.)



Claim.—1. In a book-cutting machine in which the book-carrying bed is moved to and from a stationary knife, in combination, the inclined guides of the main frame, the bed sliding thereon, operating-gearing for moving the bed up the inclined guides, and a shipping device consisting of a sliding bar connected to the clutch on the driving-shaft of the operating-gear, and provided with adjustable blocks, against which a projection on the bed comes in contact when in its two extreme positions, substantially as and for the purpose set forth.

2. In a book-cutting machine, in combination, a longitudinally-moving bed, a fixed knife, a transversely-moving frame carried by the bed, a rotating table carried by the frame, and operating devices, substantially as described, whereby the frame is moved away from the face of the knife and the table partly rotated as the bed moves away from the cutting-edge of the knife.

3. In a book-cutting machine, in combination, the rotating table *c*, having bearing *m* and ratchet-teeth *m'*, the frame *l*, the locking-bar *o*, the sliding bed *b*, and the spring-acting ratchet-rack *n*, substantially as set forth.

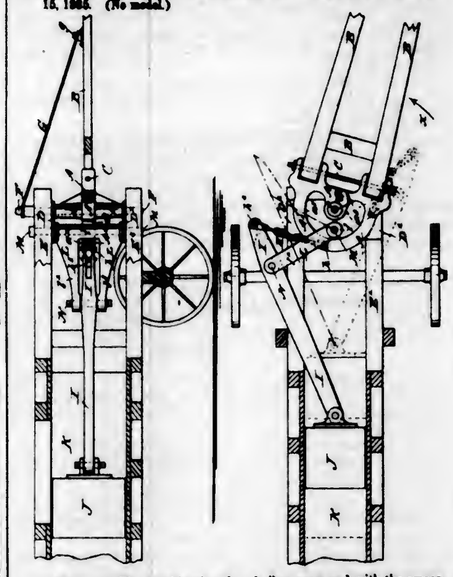
4. In a book-cutting machine, in combination, the table *c*, the frame *l*, the locking-bar *o*, provided with teeth o^2, the pinion *r*, the sliding bed *b*, and means, substantially as described, for actuating the locking-bar *o* through the medium of the pinion *r*, as and for the purpose set forth.

5. In a book-cutting machine, in combination, the sliding bed *b*, the weighted latch *u*, carried thereby, the lever *t*, the vertically-movable rack *s*, with inclined teeth, the bevel-wheel *r'*, with correspondingly-inclined teeth, the pinion *r*, and the rack-teeth o^2, carried by the transversely-sliding frame *l*, substantially as and for the purpose set forth.

6. In a book-cutting machine, in combination, the rotating table *c*, provided with ratchet-wheel *m'*, the frame *l*, the spring-acting locking-bar *o*, provided with teeth o^2, the sliding bed *b*, the spring-acting ratchet-rack *n*, pivoted to the bed *b*, the pinion *r*, bevel-wheel *r'*, rack *s*, lever *t*, weighted latch *u*, carried by the bed, and the spring *v*, substantially as set forth.

7. In a book-cutting machine, in combination, the sliding bed *b* and its inclined guides, the actuating-gearing provided with a clutch for raising the bed up the inclined guides, the bar *i*, connected to the clutch-bar, the adjustable block *j*, and adjustable block *j'*, provided with a latch-stop, j^3, and arm j^3, projecting from the bed *b*, substantially as and for the purpose set forth.

336,305. BALING-PRESS. GEORGE ESTES, Quincy, Ill. Filed Dec. 15, 1885. (No model.)



Claim.—1. The combination, in a baling-press and with the sweep-head A, pivoted at F to the press-frame and provided with the semi-annular opening a^3, the pitman I, and the chain H, connected to the sweep-head at A and to the beam at A', substantially as specified, of the yoke L, pivoted on a pin, M, passing through the opening a^3 of the sweep-head and pivoted at N to the pitman, substantially as and for the purposes set forth.

2. In a baling-press, the pivoted sweep-head A, provided with an opening, a^3, in combination with the yoke L, formed in one piece with a hub, *l*, pivoted on a bolt, M, passing through the head-opening a^3, and with arms l' l^2 and connections, substantially as specified, between the sweep-head, pitman, and yoke, as and for the purposes herein set forth.

3. In a baling-press, the combination, with the sweep-head A, pivoted to the press-frame and provided with an opening, a^3, of the yoke L, pivoted by its hub *l* on a pin, M, passing through the sweep-head opening a^3, and said hub *l* fitting between the top and bottom parts of the press-frame, and connections, substantially as specified, between the sweep-head, pitman, and yoke, as and for the purposes set forth.

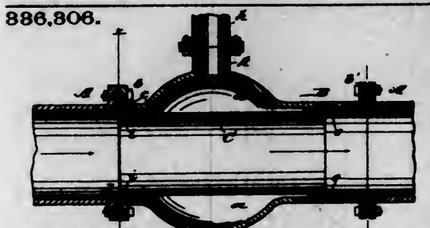
4. In a baling-press, the combination of the sweep-head A, formed in one piece and pivoted on a pin, F, to the press-frame, and made with bosses *a a* fitting between the top and bottom parts of the press-frame, and provided with an opening, a^3, the yoke L, formed in one piece with a hub, *l*, fitting between the top and bottom parts of the press-frame, and pivoted on a pin, M, passing through the head-opening a^3, and having arms l' l^2, the pitman I, a pin, N, pivoting the yoke to the beam, and a chain, H, connected at A to the sweep-head and at A' to the pitman, substantially as and for the purposes herein set forth.

336,306. CONDENSER. AUGUSTUS FLETCHER, Manheim, Pa., assignor to himself and Robert R. Carter, Jr., same place. Filed Oct. 22, 1885. (No model.)

Claim.—1. An improved condenser, consisting of a section of pipe formed with a globe-shaped enlargement, *a*, and a central imperforate cylindrical tube fitting within said pipe, and provided with induction and eduction ports at its ends, the area of the induction-ports being less than that of the eduction-ports, substantially as shown and described.

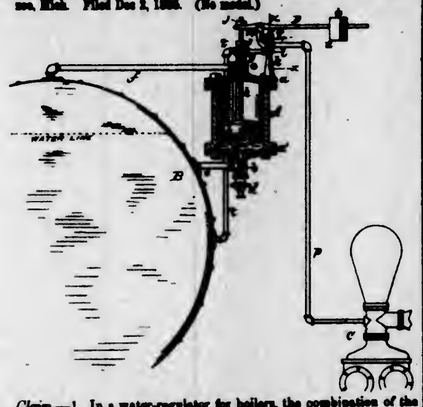
2. The herein-described condenser, consisting of a section of pipe formed with a chamber, *a*, into which the exhaust-steam is led, and through which a cylinder, C, is passed, said cylinder being formed with

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a flange, *d*, having ports *i i*, and with lugs *e e*, between which there are ports *n n*, the combined area of the ports *n* being in excess of that of the ports *i i*, substantially as described.

336,307. FEED-WATER REGULATOR. LEONARD P. FOX, Kalamazoo, Mich. Filed Dec 2, 1885. (No model.)



Claim.—1. In a water-regulator for boilers, the combination of the float-chamber A, connected with the steam and water spaces of the boiler, the float *i*, rod A, provided with nuts *j*, weighted lever *d*, valve *q*, valve-casing *l*, pipes *p* and *t*, and means for supplying water under pressure to the regulating-valve, as herein specified.

2. The combination, in a water-feed regulator for boilers, of the float-chamber A, having the heads *a* and *a'*, T's *e b*, pipes *f c*, the float *i*, rod A, provided with nuts *j*, the valve-casing *l*, lever D, provided with the adjustable weight *u*, the valve *q*, pipe *t*, communicating between the valve-casing and the water-space of the boiler, and means for supplying water under pressure to the valve, substantially as herein specified.

336,308. ROLLER-SKATE. ALLAN E. FRASER, Cleveland, Ohio. Filed Apr. 15, 1885. (No model.)



Claim.—1. The sliding blocks D, having their lower ends bifurcated and provided with the hook *f f* and lugs *e e*, in combination with the brackets and springs G G, and adapted to be pushed by the lugs *e e* on the axle-sleeves B, as and for the purpose specified.

2. The coil-springs G G, in combination with the brackets of the frame A, having the lugs *g g*, and the sliding blocks D, substantially as and for the purpose specified.

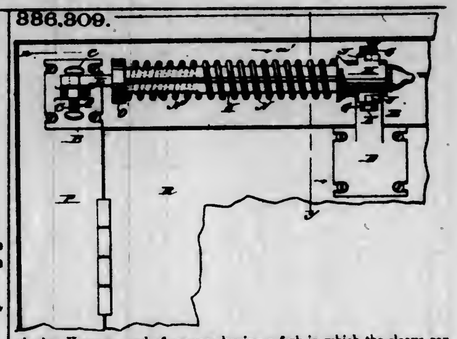
3. The adjusting-screws H H, provided with hooked nuts I, in combination with the coil-springs G G, and the frame A, the sliding block D, and vibrating axle B, substantially as and for the purpose specified.

4. In combination with the frame A, provided with the brackets adapted to hold the axle-sleeves B on their pintles *b*, and provided with the heel-plate *a* and toe-plate *a'*, the springs G G, sliding blocks D, and adjusting-screws H H, having hooked nuts I, all constructed substantially as specified.

336,309. DOOR-SPRING. DANIEL W. FROST, Keokuk, Iowa. Filed May 29, 1885. (Model.)

Claim.—1. The combination, with the bar K, having a notch, M, in one end, of the arm A, having a pin, C, which can be passed into the notch M, the spring N, surrounding the bar K, the sleeve through which

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the bar K passes, and of an arm having a fork in which the sleeve can turn, substantially as herein shown and described.

2. The combination, with the bar K, having a notch, M, in one end, of the plate B, having an arm, A, provided with a pin, C, the nut O on the bar K, the spring N, surrounding the bar K, the sleeve H, having grooved or recessed lugs J, the plate D, having the curved arm E, provided with a fork, F, and of the pins G, substantially as herein shown and described.

336,310. WHEEL-CULTIVATOR. JOHN H. GILMAN, Ottawa, Ill., assignor to the King & Hamilton Company, same place. Filed Sept. 21, 1885. (No model.)

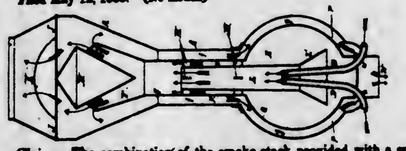


Claim.—1. In a wheel-cultivator, the independent wheel-frame A, in combination with the wheel-standards B, depending therefrom and provided with axles for the wheels C, a stiff tongue, *a*, attached to said wheel-frame, the independent shovel-frame E, of triangular form, arranged underneath the wheel-frame, the shovel-standards F, rigidly attached to the frame E and of such length as to raise the latter up within the arch and between the wheel-standards of the wheel-frame, the long tapering blade shovels G, rigidly fastened to the standards F, and the stiff tongue *e*, attached to the shovel-frame, and coupled to the tongue *a* near its forward end by a universal-joint connection, all constructed and arranged substantially as and for the purposes set forth.

2. The independent wheel-frame A, provided with the stiff tongue *a*, in combination with the independent shovel-frame E, arranged underneath the former and provided with the stiff tongue *e*, the slotted bracket H, and the rod I, connected to the front end of the tongue *e* by a universal joint, substantially as and for the purposes set forth.

3. The independent wheel-frame A, in combination with the supports D, adjustably connected thereto, the independent shovel-frame E, the side bars of which are adjustable laterally, and the suspension-hooks L, attached to said side bars, substantially as and for the purposes set forth.

336,311. SPARK-ARRESTER. FRED GORDON, Sioux Falls, Dak. Filed May 12, 1885. (No model.)

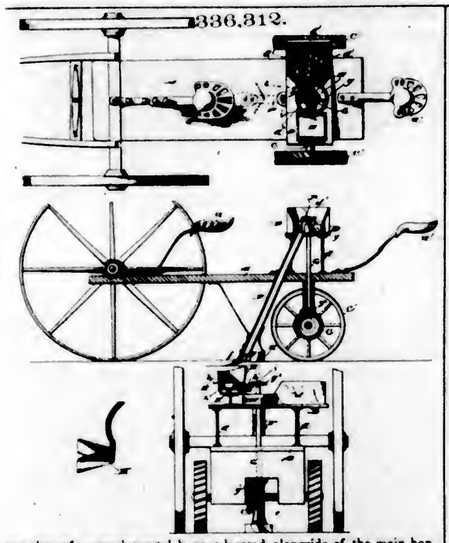


Claim.—The combination of the smoke-stack provided with a suspended cone having an upper and lower conical surface, the same being located in the enlarged portion of the stack, a domed netting placed above the cone and having an imperforate exterior annular flange, a continuous shell within the stack surrounding by its expanded upper portion the conical deflector, and forming with the stack an annular cinder-space, communicating at its lower part with an annular space formed by an inner shell, and the boiler-extension, which cinder-space has an exit for the cinders at its lower part, substantially as specified.

336,312. POTATO-PLANTER. SAMUEL E. HAKE, Niles, Ohio. Filed Nov. 4, 1885. (No model.)

Claim.—1. In a potato-planter, the combination, with a main hopper having curved side walls, and provided with an opening in the bot-

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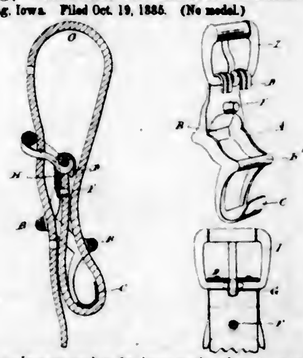
tom thereof, a supplemental hopper located alongside of the main hopper and communicating therewith, a tube located under the opening in the main hopper, and a tooth or implement secured to said tube for making a furrow, of a horizontal arm operating in the main hopper, a spindle supporting said arm, and mechanism for rotating the spindle by power transmitted from the traction-wheel of the machine, substantially as set forth.

2. In a potato-planter, the combination, with the main and supplemental hoppers located in the same planes and in open communication with each other, the main hopper having the opening d^2 in the bottom thereof, and the tube F, of the horizontal arm located within the main hopper, the spindle supporting said arm, and means for revolving the spindle and arm.

3. The combination, with a potato-planter arranged substantially as indicated, of a hopper for fertilizing material, said hopper having a conveyer arranged to discharge into the hopper E, substantially as set forth.

4. The combination, with a hopper, E, a curved arm, a spindle for operating said arm, and a dropping-tube communicating with said hopper, of a hopper for fertilizing material, and a conveyer intergeared with the spindle G, and adapted to convey the fertilizing material to the hopper E, substantially as set forth.

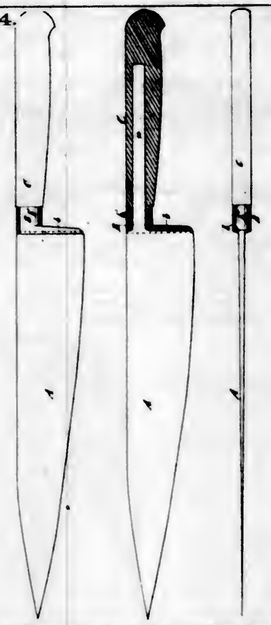
336,313. WEAR-PLATE FOR HARNESS. LA FAYETTE HARTSOM, Wyoming, Iowa. Filed Oct. 19, 1885. (No model.)



Claim.—In a wear-plate for harness, the plate A, provided with the usual keepers, B, and wear-hook C, and having a projecting drawstud, F, and hook D, arranged adjacent to each other, so that the end of the strap may be passed beneath the ends of the hook D to retain the buckle I in position therein and to keep the strap upon the drawstud F, substantially as herein shown and described.

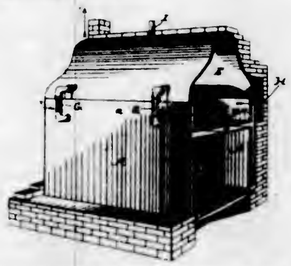
336,314. KNIFE. WILLIAM B. HATFIELD, Sheffield, England, assignor to Joseph Rodgers & Sons, (Limited,) same place. Filed Dec. 3, 1885. (No model.)

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Claim.—The combination, with a knife-blade having an integral flat tang and an upset heel portion, of a metal bolster grooved and pressed to firmly embrace said upset portion of the heel of the blade, and provided with a collar fitting the tang, and a handle receiving the tang and the collar of the bolster, substantially as specified.

336,315. STEAM-BOILER. MICHEAL E. HERBERT, St. Joseph, Mo. Filed Dec. 4, 1885. (No model.)



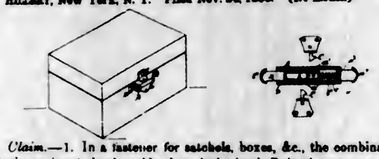
Claim.—1. A boiler formed of a base portion having a crown-sheet water-chamber and leg-chambers located at the side and rear end of such portion, a top portion supported on the base portion and having a main water-chamber, and a leg-chamber depending from the rear end of said chamber, and pipe-connections between base and top portions, substantially as set forth.

2. A boiler substantially as described and shown, consisting of a base portion formed in two sections, each having crown-sheet and side and end leg-chambers, the top portion resting on the base portion and having a crown-sheet, end leg water-chambers, and pipe-connections, substantially as set forth.

3. A boiler comprising a base portion formed in two sections, each having a crown-sheet and end and side water-chambers, plates projected from one of said sections over and lapping the joints between the two, and a top portion and pipe-connections, substantially as set forth.

4. The improved boiler herein described, consisting of the base-sections, each formed with vertical side and end chambers, a horizontal crown-sheet chamber communicating with the side chamber at a point below its upper end, plates connected with one of said sections and projected over and lapping the joint between the same, the top portion having a crown-sheet chamber and a depending chamber at its rear end and supported on the base portion, and pipe-connections between such base and top portions, substantially as set forth.

336,316. FASTENING FOR BOXES, SATCHELS, &c. BENJAMIN F. HILLERY, New York, N. Y. Filed Nov. 24, 1885. (No model.)

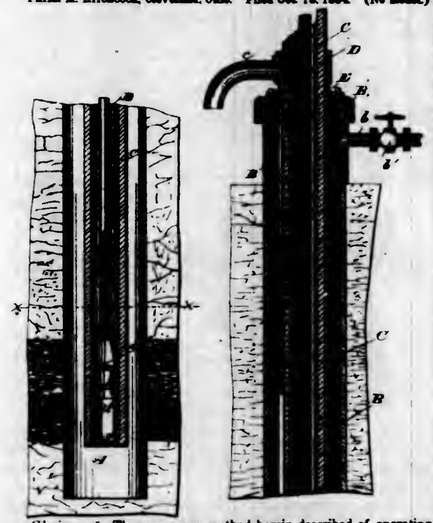


Claim.—1. In a fastener for satchels, boxes, &c., the combination, with the casing A, having side slot, a', the latch B, having pressure-button b^3 and lock-edge s, adapted to slide within the said casing A, and the end spring, c, interposed between the said latch and casing, of the catch C, substantially as hereinbefore set forth.

2. In a fastener for satchels, boxes, &c., the combination of the casing A, having side slot, a', guide-hole a^2, and end button, a^4, the latch B, having pressure-button b^3, lock-edge s, and prong b^2, and fitted to slide within the said casing A with the said prong through the said guide-hole, the end spring, c, interposed upon the said prong between the said latch and casing, and the catch C, substantially as hereinbefore set forth.

3. In a fastener for satchels, boxes, &c., the combination of the casing A, having at opposite sides slots a', the latch B, having opposite flaps, b, and through the said flaps slots b', corresponding to the slots a' of the casing, an end spring, c, interposed between the said latch and casing, and a suitable button, b^3, to move the said latch against the action of the said spring, and suitable catches, C, entering the said slots a' and interlocking with the said latch, substantially as hereinbefore set forth.

336,317. PROCESS OR METHOD OF OPERATING GAS-WELLS. PETER M. HITCHCOCK, Cleveland, Ohio. Filed Oct. 12, 1884. (No model.)



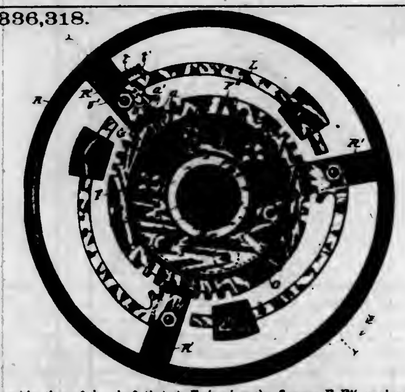
Claim.—1. The process or method herein described of operating gas-wells, and consisting, essentially, first, in providing different passage-ways or tubes from the well for the discharge, respectively, of gas and water, the passage for the water terminating a distance below the gas-passage; second, in regulating the discharge of gas from the well to retain as far as possible the initial pressure of the gas, so that when the water within the well covers the lower end of the water-passage the pressure of gas within the well above the water aids in forcing the water up in the water passage-way, substantially as set forth.

2. The process or method herein described of operating gas-wells, and consisting, essentially, in providing separate passage-ways, respectively, for gas and water, and providing the gas passage-way with suitable valve mechanism for controlling the escape of gas, and providing the water passage-way, which terminates below the gas passage-way, with suitable pumping mechanism, and connecting the passage-ways for gas and water in such a manner that the gas and water are separated in and preferably near the bottom of the well, and that any pressure of gas had in the well is utilized to aid in discharging water from the well, substantially as set forth.

336,318. GOVERNOR. JOSEPH D. HOSER, Joliet, Ill. Filed July 6, 1885. (No model.)

Claim.—1. The governor described and shown, consisting of the

336,318.

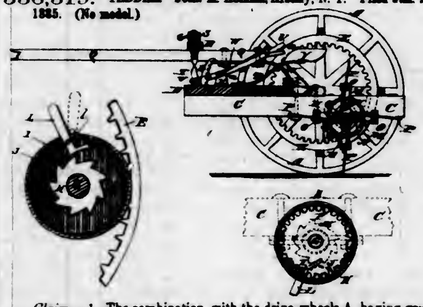


combination of the shaft S, hub E, having the flanges F F'', spokes R', and rim R, rolls P P', wedge-shaped brake-shoes Z, having the arms B B', boxes O, annular toothed plates C C, toothed segments V, having the arms L, and weights W, adapted to be adjustable thereon, annular plate F', and stationary hub H, all arranged to operate substantially as and for the purpose set forth.

2. In the speed-governor shown and described, the combination of the toothed segments V, having the arms L and adjustable weights W, annular toothed plates C C, brake-shoes Z, having the arms B B', connecting them with said plates, rolls P and P', and stationary hub H, all arranged to operate substantially as and for the purpose set forth.

3. In the speed-governor shown and described, the combination of the wedge-shaped brake-shoes with the stationary hub, the hub fixed on the shaft passing through said stationary hub, and the means, substantially as shown and described, for operating said brake-shoes, for the purpose set forth.

336,319. TEDDER. JOHN M. HOLLIS, Albany, N. Y. Filed Jan. 29, 1885. (No model.)



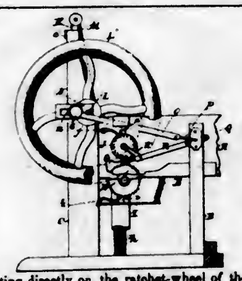
Claim.—1. The combination, with the drive-wheels A, having gear-wheels E on their inner sides, of the tedder-shaft G, the loose gears F F at opposite ends of said shaft, meshing with the gears E, and having ratchets H secured to their inner faces, the casings K, secured to the shaft G to turn therewith, and inclosing the ratchets, the pawls I, secured to the inner faces of the said casings, springs J, also secured to said casings, and acting to hold the pawls in engagement with the ratchets, apertured arms L, secured to or formed on the pawls and extending through slots in the casings, and pins for engaging said apertures, substantially as set forth.

2. The combination, with the fixed axle B, platform D, and the drive-wheels, of the shafts Q, having a cross-bar, R, downward-curved plates W, secured to the shafts and pivotally connected to the axle at X, the standard V on the platform, the toothed segment b, the lever U, pivoted between its ends to the standard V, the link T, pivotally connecting the front end of the lever to the cross-bar R, and a spring pawl or bolt, a, on the said lever engaging the toothed segment, substantially as set forth.

336,320. FEED-CUTTER. JAMES O. HOLTSMAN, Beaver Creek, Md. Filed June 12, 1885. (No model.)

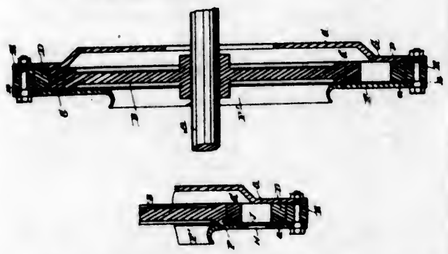
Claim.—In a feed-cutter, the combination of a vertically-reciprocating knife, a crank-shaft suitably connected therewith to actuate the same, a pair of feed-rollers, the one mounted in fixed the other in movable bearings, ratchet-disks keyed to said rollers, the one on the movable roller having the teeth formed on the side thereof, a rock-shaft actuated from the crank-shaft, the pawl Q, pivoted to a crank-arm of the

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rock-shaft and acting directly on the ratchet-wheel of the fixed roller, the pawl R', having one end sleeved on the journal of the movable roller and provided with a side lug, *r*, to engage the teeth on the side of the ratchet-disk of the movable roller, and the link R, pivoted to the free end of the pawl R' and to the pawl Q and extending in the same direction as the pawl Q, whereby the force applied to each feed-roller is nearly equal, substantially as set forth.

336,321. PULVERIZER. WILLIAM H. HOWLAND, Englewood, N. J. Filed May 25, 1885. (No model.)



Claim.—1. The herein-described pulverizer, consisting of a disk mounted rigidly on the shaft, to revolve with the same, and a ring larger than the disk, surrounding said disk and resting on the rim of said disk at the top, whereby the ring is suspended from the disk, said ring being provided with side plates, substantially as set forth.

2. The combination, with a shaft, of a disk mounted rigidly on the same, to revolve with said shaft, said disk having a steel rim, a ring surrounding the rim of the disk eccentrically, said ring having a steel lining resting on the rim of the disk at the top, and side plates secured to the ring, substantially as herein shown and described.

3. In a pulverizer, the combination, with a disk mounted rigidly on a shaft, to revolve with the same, of a ring surrounding said disk eccentrically and resting on the same at the top, whereby said ring is supported, annular side pieces secured to the sides of the surrounding ring and overlapping part of the disk, one of said side pieces being secured to the side of the ring to leave a very small discharge-space between the adjacent surfaces of the ring and the said side piece, substantially as herein shown and described.

336,322. CAR-COUPLING. CHARLES M. INGERSOLL, Summit Hill, Pa. Filed Aug. 12, 1885. (No model.)

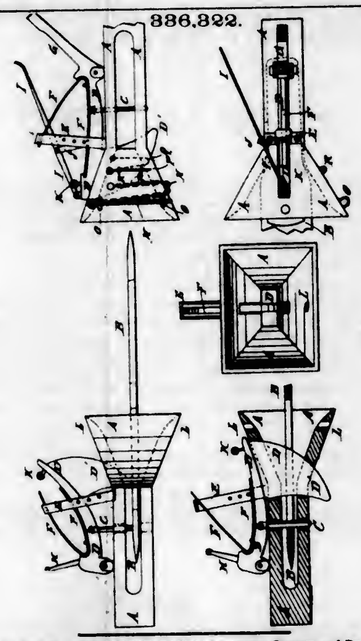
Claim.—1. In a car-coupling, the combination, with the draw-head A, the coupling-pin C, and the coupling-bar B, of the latch D, carrying the said coupling-pin, and provided with a hook-shape downward projection, D', the keeper E, to guide the said latch, and the spring F, to hold the latch down to its place, substantially as herein shown and described, whereby the cars will be coupled automatically when run together, as set forth.

2. In a car-coupling, the combination, with the draw-head A, the latch D, carrying the coupling-pin C, the guide-keeper E, and the spring F, of the arm G, substantially as herein shown and described, whereby the said latch and coupling-pin can be readily raised to uncouple the cars, as set forth.

3. In a car-coupling, the coupling-bar B, made, substantially as herein shown and described, with solid tapered ends, with a solid center, and with its middle part widened and beveled at the ends of the said widened middle part, substantially as herein shown and described.



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336,328. COFFEE-POT HANDLE. AUGUST JAHANT and DE FOREST PARKER, Akron, Ohio. Filed May 7, 1885. (No model.)



Claim.—1. The combination, with a pot, of a curved metal arm secured to the pot and having an upper open end, a handle secured within said open end, and a support for connecting the upper end of the handle to the pot, substantially as set forth.

2. The combination, with a pot, a handle-support, and the handle seated at its lower end in said support, of the socketed plate E, the arm C, and the screw passing through the socketed plate and arm and entering the handle, substantially as described.

336,324. APPARATUS FOR EFFECTING EMULSIONS OF FATS WITH MILK, &c. CARL ADOLF JOHANSSON, Stockholm, Sweden. Filed Nov. 27, 1885. (No model.)

Claim.—1. An apparatus for making emulsions, consisting of a vessel mounted on a shaft and provided with a slot or narrow vent, substantially as herein shown and described.

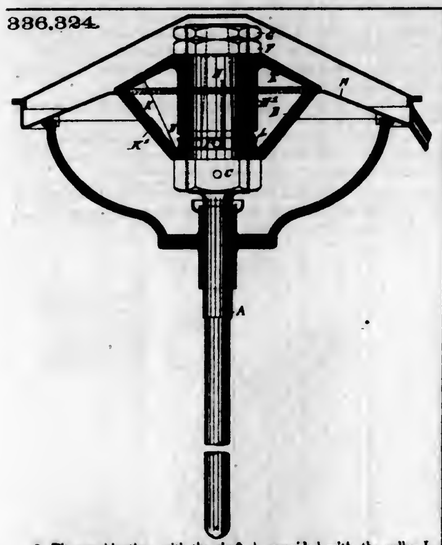
2. An apparatus for making emulsions, consisting of two conical cups mounted on a shaft, so that the larger openings face each other and a narrow vent is formed between the edges of said cups, substantially as herein shown and described.

3. The combination, with the shaft A, of the two cups B and E, the former having the wings K, substantially as herein shown and described.

4. The combination, with the shaft A, provided with the collar L, of the cup B, the cup E, provided with the neck H', and of the packing L, between the edge of said neck and the collar L, substantially as herein shown and described.

5. The combination, with the shaft A, of the cups B and E, the collar L on the shaft, and the nuts C and F, substantially as herein shown and described.

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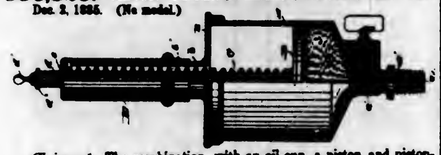


6. The combination, with the shaft A, provided with the collar L, and the ducts or channels H and I, of the two cups B and E, substantially as herein shown and described.

7. The combination, with the shaft A, of the cup B, provided with the wings K, having the slots K', and of the cup E, substantially as herein shown and described.

8. The combination, with the shaft A, of the two cups B and E, between the edges of which a vent is formed, and of the apron M, surrounding the said cups, substantially as herein shown and described.

336,325. OIL-CUP. HERBERT A. KIMBLEY, Cleveland, Ohio. Filed Dec. 2, 1885. (No model.)



Claim.—1. The combination, with an oil-cup, a piston and piston-rod, the latter extending out through the cover of the cup, of a cover having an outwardly-projecting hollow hub, a sleeve arranged to slide on the hub, and means for securing the sleeve in its depressed position, said sleeve having an internal flange or reduced bore at the outer end, a spring arranged around the piston-rod and abutting the piston and flange of the sleeve, the parts being arranged substantially as set forth.

2. In an oil-cup, the combination, with a spring-actuated piston, of a cover having a hub and sleeve arranged to slide the one on the other for compressing the spring, and a valve for controlling the discharge of oil from the cup, the parts being arranged substantially as set forth.

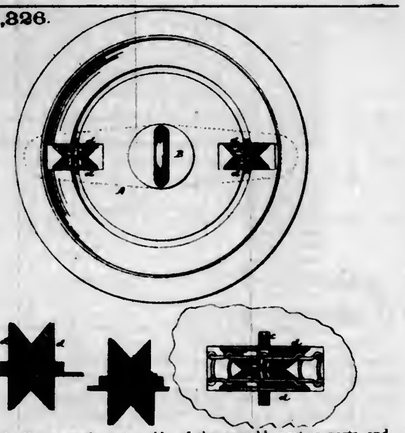
3. In an oil-cup, the combination, with a cover, hub, and longitudinally-movable sleeve, arranged substantially as indicated, of a piston operating in the cup, the piston-rod extending out through the hub and sleeve, the parts being arranged substantially as described, whereby the displacement of oil from the cup is indicated by the movement of the piston-rod, as seen from the outside of the cup.

4. In an oil-cup, the combination, with the piston, spring, cover, hub, and the longitudinally-movable sleeve, arranged substantially as described, of a piston-rod extending out through the hub and sleeve, said rod having an enlarged part or flange for engaging the outer end of the sleeve, the parts being arranged substantially as indicated, whereby the proximity of the enlarged part of the rod to the end of the sleeve indicates the quantity of oil remaining in the cup.

336,326. LAMP-HANGER. CHARLES A. KIMBEY, Meriden, Conn., assignor to Edward Miller & Co., same place. Filed Aug. 21, 1885. (No model.)

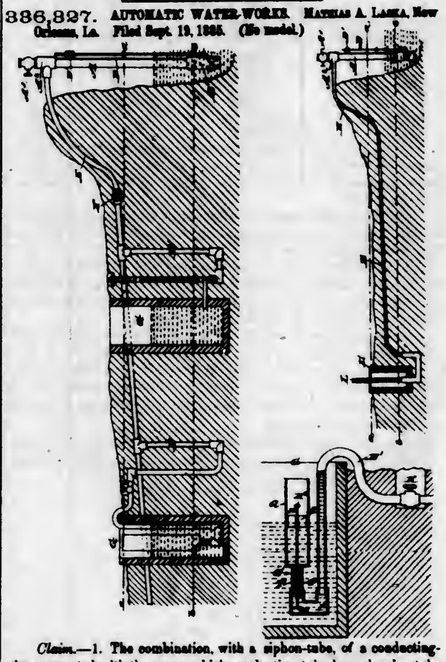
Claim.—In a lamp-hanger, one or more pulleys adapted to carry the suspending-chains, and constructed in two parts, each part of substantially frustrum-of-cone shape, the smaller diameter toward each other to form a groove around the pulley adapted to receive the suspending-chain, one or both the parts loose upon the axle and free for movement in an axial direction, combined with corresponding sheaks parallel

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with and adjacent to the outer side of the movable part or parts, and against which said part or parts may be forced, substantially as described.

336,327. AUTOMATIC WATER-WORKS. MATHIAS A. LASKA, New Orleans, La. Filed Sept. 19, 1885. (No model.)



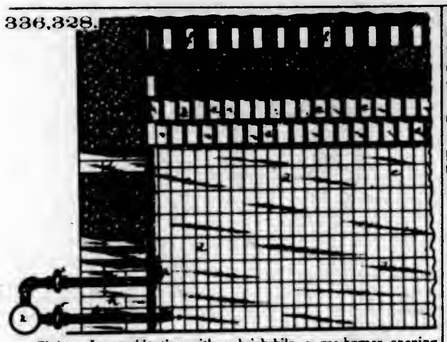
Claim.—1. The combination, with a siphon-tube, of a conducting-pipe connected with the same, which conducting-tube has a bend, a tube extending from the bend down below the low-water line and a pipe extending from the lower end of such tube up to the surface of the earth, substantially as herein shown and described.

2. The combination, with a siphon-tube, of a conducting-tube having one end connected with said tube, and having a vertical gage-tube on the other end, the said gage-tube being in a suitable receptacle, substantially as herein shown and described.

3. The combination, with a siphon-tube, of a water-conducting pipe connected with the same, a cistern into which the water-conducting pipe passes from the top downward, a cylinder in the cistern and on the end of the water-conducting pipe, a float in said tube, and a valve in the water-conducting pipe, the valve being on a rod operated by the float, substantially as herein shown and described.

336,328. BRICK-KILN. CHARLES LAMB, Pittsburg, Pa. Filed Sept. 21, 1885. (No model.)

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Claim.—In combination with a brick-kiln, a gas-burner opening horizontally therein and a gas-burner opening vertically therein near the side wall, substantially as and for the purposes set forth.

336,329. MOUTH-PIECE FOR TELEPHONE-TRANSMITTERS. G. L. LAVERY, East Boston, Mass. Filed Apr. 6, 1885. (No model.)



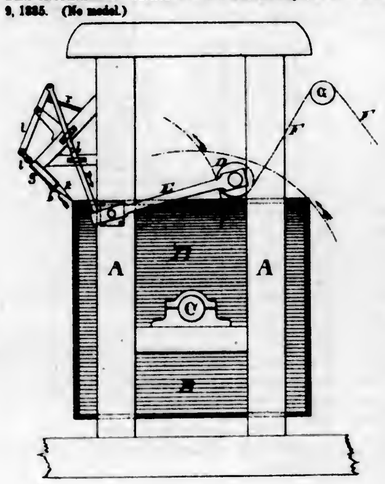
Claim.—1. The telephonic-transmitter mouth-piece open at its opposite ends, and formed independently of the transmitter-case, and expanded between its ends nearer to the larger or outer than to the lesser or inner thereof.

2. The telephonic mouth-piece open at its opposite ends and formed independently of the transmitter-case, and composed of two hollow conic frusta united at their larger bases.

3. The mouth-piece provided externally with a cylindrical projection extending entirely around it and having its periphery screw-threaded, in combination with and to screw into the annular cap of the case of the transmitter, all being substantially as set forth.

4. The combination, with the telephonic-transmitter case provided with a mouth arranged in front of the diaphragm and open at its outer end to the atmosphere, with a separate mouth-piece, substantially as described, applied to the case by screws, by which such mouth-piece on being revolved may be adjusted nearer to or farther from the diaphragm as circumstances may require.

336,330. MANUFACTURE OF VULCANIZED FIBER AND SIMILAR MATERIALS. Gurdon C. LAWRENCE, Brooklyn, N. Y. Filed Jan 9, 1885. (No model.)

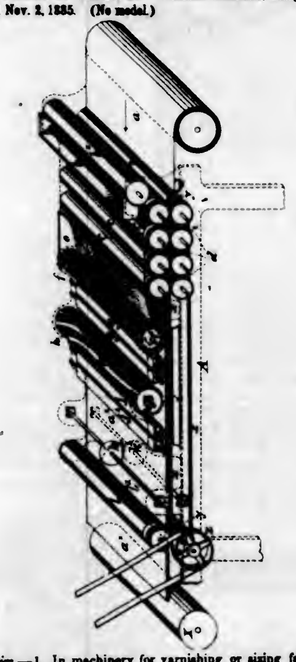


Claim.—1. In a machine for the manufacture of vulcanized fiber and similar goods, the combination of a flat-sided reel, adapted to the manifolding of the successive convolutions of the web, with a roller of sufficient weight to exclude the air from between the rolls, or of greater weight, substantially as described.

2. The knife or puncturing-instrument *k*, in combination with a flat-sided reel, B, substantially as described.

3. In combination with a flat-sided reel, B, a feeding device, G, placed at such a position as to bring the web gradually in contact with the reel, substantially as and for the purpose described.

336,331. MACHINE FOR VARNISHING OR SIZING AND APPLYING COLORS TO PAPER, &c. WILLIAM MACBOUR, Glasgow, Scotland. Filed Nov. 2, 1885. (No model.)



Claim.—1. In machinery for varnishing or sizing fabrics and for applying dry colors thereto, the combination of a fluted revolving roller and a color-holding receptacle, as and for the purpose described.

2. In machinery for varnishing or sizing fabrics and for applying dry colors thereto, the special arrangement and combination of the series of flexible distributing-rollers and the pressure-rollers, for the purpose of securing uniform deposit of the size or varnish on the fabric, and for preventing sliding or skidding of the flexible rollers, as described and shown.

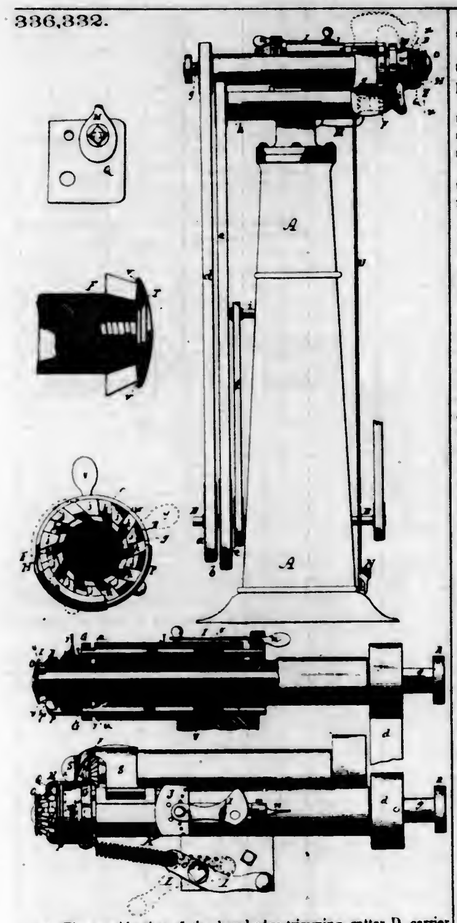
3. The gripper consisting of two portions forming jaws between which the fabric is held, and means for connecting the jaws in their closed position, as described and shown, and for the purposes set forth.

4. The improved machinery for effecting successively the combined operations of varnishing or sizing paper and other fabrics and applying dry colors thereto, as set forth, consisting of a series of rigid pressure-rollers and a series of flexible distributing-rollers operating relatively to each other, a ductor for holding the varnish or size, and a roller for distributing the varnish or size to the flexible rollers, a color-holding receptacle provided with a lip, and a fluted roller revolving in said receptacle brushes for charging the sized surface of the fabric with the color, a revolving spiral brush for sweeping away excess color from the fabric, pads for setting and hardening the combined varnish and color and imparting gloss, tension-rollers for drawing the decorated fabric through the machine, and mechanism for operating the said devices, substantially as herein described.

336,332. BOOT OR SHOE EDGE TRIMMING MACHINE. WILLIAM HAMLEY, Rochester, N. Y. Filed Oct. 17, 1885. (No model.)

Claim.—1. In a sole-edge-trimming machine, the combination of a square and feather edge trimming cutter, E, a bevel-edge-trimming cutter, D, having a movement outward and inward on its driving-shaft, means, as the springs *o o* and K, for automatically moving the cutter either outward or inward, and means, as the reversing-lever L, for changing the automatic movement to either an outward or inward direction, for the purposes herein specified.

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2. The combination of the bevel-edge-trimming cutter D, carrier G, provided with guide-pins *m m*, having a sliding movement in ways of the main head of the machine in lines parallel with the cutter-shaft, springs *o o* and K, for moving the carrier and cutter either outward or inward, and an adjustable gage, I J, for holding the carrier and cutter in a fixed or positive position, for the purpose herein specified.

3. The combination of the bevel-edge-trimming cutter D, the knives of which have a telescopic movement between the knives of the square-edge cutter E, the carrier G, having guide-pins *m m* sliding in bearings, springs *o o*, for pushing the guide-pins, carrier, and cutter outward, and adjustable spring K, for moving the parts inward, substantially as and for the purpose herein set forth.

4. The combination of the knife-carrier G, provided with one or more guide-pins, *m m*, one pin being provided with a suitable projection, *n*, an adjustable gage lever or bar, I, and a graduated index, J, substantially as and for the purpose herein specified.

5. In combination with the bevel-edge cutter D and carrier G, the loose pin M, spring *r*, treadle N, and connecting-rod between the treadle and lever, substantially as and for the purpose herein specified.

6. In combination with the carrier G, having a replaceable washer in its interior chamber for the purpose specified, a sleeve, *w*, surrounding the same, a clutch, H, attached to the said sleeve, and the cutter D, provided with a clutch-groove, substantially as and for the purpose herein specified.

7. A bevel-edge-trimming cutter-guard, P, attached to the carrier-sleeve *w*, in combination with the bevel-edge-trimming cutter, substantially as and for the purpose herein set forth.

8. A square-edge-trimming cutter-guard, Q, attached to the carrier-sleeve *w*, in combination with the square-edge-trimming cutter, substantially as and for the purpose herein specified.

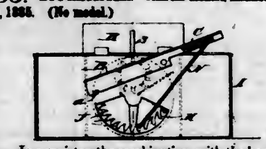
9. The combination of the guards P Q, the carrier G, the sleeve *w*, and set-screw *y*, substantially as and for the purpose herein specified.

10. The combination of the guard Q, sleeve *w*, and clutch H, attached to and adjustable on the said guard, substantially as and for the purpose herein specified.

11. The combination of the cutters D E, having their knives intermeshing telescopically, and having their hubs recessed within the knives at their adjacent ends, and a spring, *p*, located in the said recesses, substantially as and for the purpose herein specified.

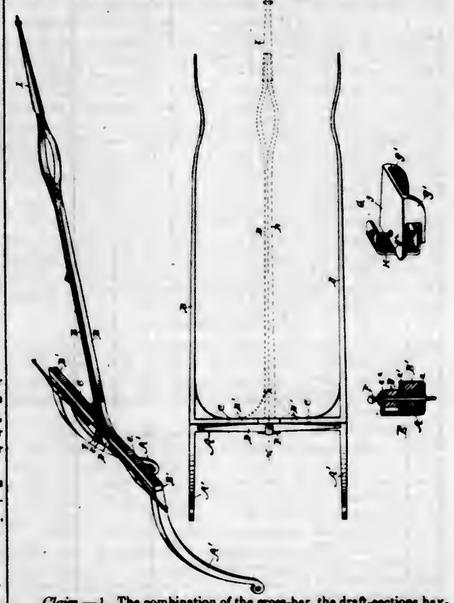
12. The swinging shield and rest S, in combination with the edge-trimming cutters D E and shank-trimming cutter F, substantially as and for the purpose herein specified.

336,333. EGG-REGISTER. CASPER MARTI, Minneapolis, Minn. Filed June 9, 1885. (No model.)



Claim.—In a register, the combination, with the box containing registering mechanism, of the inclined tilting platform having at one end receiving-apertures and resting at its opposite end, in its tilted or inclined position, upon a pin projecting from the inside of the box, said platform also having a rod connected to its upper end, said rod having its lower end engaging a toothed wheel of the registering mechanism, substantially as and for the purpose specified.

336,334. COMBINED POLE AND SHAFTS FOR VEHICLES. AARON J. MARTIN, Evansville, Ind. Filed Aug. 21, 1885. (No model.)



Claim.—1. The combination of the cross-bar, the draft-sections having right-angled arms at their rear ends, horizontal pivots connecting such arms to the cross-bar midway their ends, whereby said arms may turn in a vertical plane, and a clamp arranged and constructed to engage the inner ends of said arms when the draft-sections are adjusted for use as a pole and the outer ends of said arms when the sections are adjusted for use as thills, substantially as set forth.

2. The combination of the cross-bar and the draft-sections having at their rear ends right-angled arms, and pivots connecting said arms to the cross-bar, such pivots being located midway the ends of the arms and at points equidistant from the center of the cross-bar, and a distance apart equal the length of one of the arms, whereby the inner ends of said arms will abut when such sections are adjusted for use as a pole, and their outer ends will abut when the sections are adjusted for use as thills, and a clamp whereby to engage the abutting ends of the arms and connect same to the cross-bar in the different adjustments of the sections, substantially as and for the purposes specified.

336,335. COMBINED PUNCHING AND SHEARING DEVICE. GILBERT MCDONALD, Augusta, Kans. Filed Dec. 10, 1885. (No model.)



Claim.—1. In a metal-worker's punch and shears, the combination of the frame having forwardly-projecting arms at its upper end, and having the upper edge of one of the arms formed into the rigid blade of a pair of shears, a main lever pivoted at its middle in the frame, a hand-lever pivoted at its end between the ends of the arms, arms pivoted to the forward end of the main lever and to near the fulcrum of the hand-lever, a lever pivoted between the upper ends of the frame and formed at its forward end with a shear-blade operating against the rigid shear-blade, and arms pivoted to the rear end of the said lever and to the rear end of the main lever, as and for the purpose shown and set forth.

2. In a metal-worker's punch and shears, the combination of a frame having horizontal lips near the forward edges of its side pieces, and having horizontal sleeves near the rear edges of the same, a vertically-sliding punch, means for operating the punch, and bails having their doubled ends bearing against the outer side of the punch, and their arms passing between the lips and through the sleeves, and having nuts at their rear ends, as and for the purpose shown and set forth.

3. In a metal-worker's punch and shears, the combination of a frame having arms projecting forward from the upper ends of its side pieces, a main lever pivoted between the side pieces and having a rounded recess immediately forward of its fulcrum, and formed with downwardly-projecting lips at the ends of the recess, a hand-lever pivoted between the forward ends of the arms of the frame, arms pivoted to the forward end of the main lever and to the hand-lever near its fulcrum, an arm having a rounded head pivoted between the lips in the recess of the main lever, and a punch having a rounded recess provided with lips for the pivotal connecting of the arm, as and for the purpose shown and set forth.

4. In a metal-worker's punch and shears, a punch-block sliding under the punch in the frame, and having a series of different-sized perforations and a longitudinal slot at its rear end, a stripper having a slot for the passage of the punch at its forward end and a longitudinal slot at its rear end, an upright bolt projecting into the slots of the punch-block and stripper, and a nut upon the bolt bearing against the stripper, combined to operate as shown and set forth.

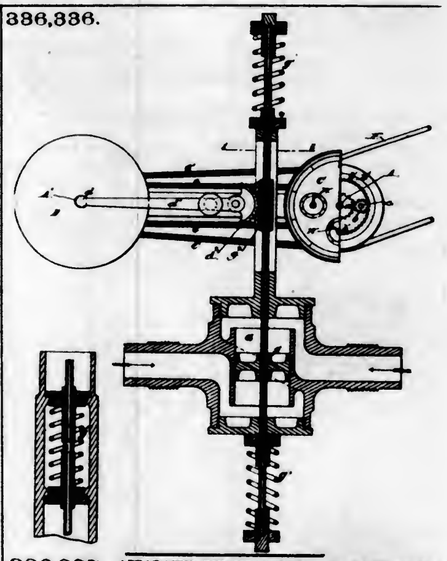
336,336. APPARATUS FOR MEASURING AND CONTINUOUSLY REGISTERING PHYSICAL POWER. ARTHUR G. MEEK, Redhill, County of Surrey, England. Filed July 30, 1885. (No model.) Patented in England Dec. 29, 1883, No. 5,909; in France June 27, 1884, No. 162,999, and in Belgium Apr. 5, 1885, No. 63,407.

Claim.—1. The dynamical integrating device hereinabove described, comprising a main spindle, A, a counting device, C, an epicyclic train, *a b b'*, pulleys B B', geared to each other and to the main spindle by said epicyclic train, a secondary spindle, A', from which the power for the functions to be integrated is derived, and elastic extensile belts *e e'*, connecting the spindle A with the pulleys B and B', respectively, all substantially in the manner and for the purpose herein set forth.

2. A main spindle, A, a counter, C, geared thereto, an epicyclic train, *a b b'*, pulleys B B', geared to each other and to the spindle A by said epicyclic train, a secondary spindle, A', elastic extensile bel's *e e'*, connecting, respectively, the pulleys B' and B to said secondary spindle, a friction disk or cone, D, carried by the secondary spindle A', and a spring-actuated friction-piece, *d*, moving to and from the center of the disk or cone, so as to retard and control the velocity of the secondary spindle, all combined and operating substantially in the manner and for the purpose herein set forth.

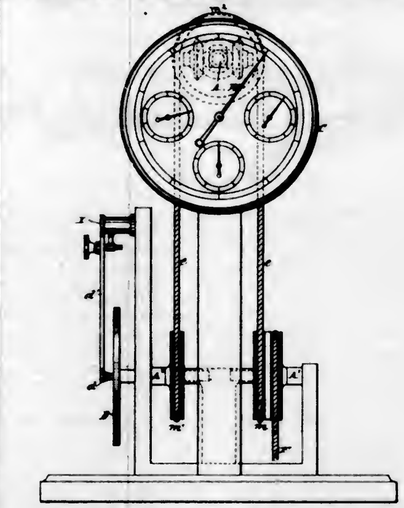
3. The combination, with a main spindle, A, a counter, C, an epicyclic train, *a b b'*, pulleys B B', geared to each other and to the spindle by said epicyclic train, a secondary spindle, A', pulleys B' B, elastic extensile belts *e* and *e'*, gearing said pulley to said spindle A', a friction disk or cone, D, carried by the secondary spindle A', and a spring-actuated friction-piece, *d*, moving to and from the center of the disk or cone, of a steam-piston, *g*, working in a chamber made to communicate on each side of the piston with the two ends of the cylinder of the engine whose power is to be measured, a spring, *g'*, governing the piston, and an arm, *d''*, coupling the piston with the friction-piece, all substantially in the manner and for the purpose herein set forth.

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336,337. APPARATUS FOR MEASURING AND CONTINUOUSLY REGISTERING PHYSICAL POWER. ARTHUR G. MEEK, Redhill, County of Surrey, England. Filed July 30, 1885. (No model.) Patented in England Dec. 29, 1883, No. 5,909; in France June 27, 1884, No. 162,999, and in Belgium Apr. 5, 1885, No. 63,407.

Brief.—The physical power to be measured and registered may be that of a steam-engine, the wind, a current of water, or electrical energy. Might use clock-work instead of an electric motor, and drive or control the clock-work electrically.



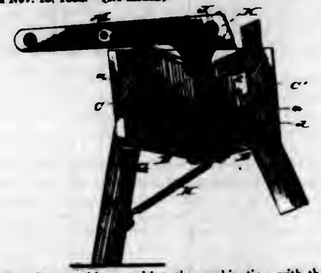
Claim.—1. The dynamical integrating device hereinabove described, comprising a spindle, A, an indicating and counting device, C, geared thereto, a differential gear, *i i' j j*, and pulleys m^2 m^3, mounted upon said spindle, a main driving shaft or spindle, A', a pulley, *m*, fitted thereon, a secondary shaft or spindle, A^2, a pulley, *m'*, thereon, and a single elastic extensile belt, *e*, carried over the pulleys *m m'* and diverted over the pulleys m^2 and m^3, all substantially in the manner and for the purpose herein set forth.

2. The combination, with two independent shafts, A' and A^2, geared the one, A', to a prime motor, and the other, A^2, to the machinery to be driven, and with the shaft or spindle A, and an indicating and counting device, C, mounted thereon at right angles to said shafts A' and A^2, of pulleys *m* and *m'*, secured, respectively, to the shafts A' and A^2, loose pulleys m^2 and m^3, revolving upon the spindle A, and bevel-pinions *i i*, revolving upon stud-axles projecting from said spindle A at diametrically-opposite points and geared to said loose pulleys m^2 and m^3, and an endless elastic extensile belt, *e*, led over the pulleys *m*, *m'*, m^2, and m^3, all substantially in the manner and for the purpose herein set forth.

3. The combination, with a counting device, C, and a spindle, A, geared thereto, and with a differential gear, *i i' j j*, and pulleys m^2 m^3, mounted upon said spindle, a driving shaft or spindle, A', a pulley, *m*, fitted thereon, a secondary spindle, A^2, a pulley, *m'*, thereon, and a single elastic extensile belt, *e*, carried over the pulleys *m*, *m'*, m^2, and m^3, of a friction disk or cone, D, carried by the secondary spindle A^2, and a spring-actuated friction-piece, *d*, moving to and from the center of the disk or cone, so as to retard and control the velocity of the secondary spindle, substantially in the manner and for the purpose herein set forth.

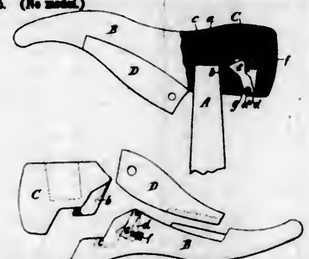
4. The combination, with a counting device, C, a spindle, A, geared thereto, a differential gear, *i i' j j*, and pulleys m^2 m^3, mounted upon said spindle, a driving shaft or spindle, A', an electromotor to drive said shaft A', a pulley, *m*, fitted on the shaft, a secondary spindle, A^2, a pulley, *m'*, thereon, a single elastic extensile belt, *e*, carried over the pulleys *m*, *m'*, m^2, and m^3, a friction disk or cone, D, carried by the secondary spindle A^2, and a spring-actuated friction-piece, *d*, moving to and from the center of the disk or cone, so as to retard and control the velocity of the secondary spindle, of an electric motor, K, actuating the shaft A, a movable core, L, playing within the coils of a solenoid, L', through which a portion of the electric current is carried, a counterbalanced pivoted beam, J, from which said core L is suspended, and an arm, *d'*, carrying the friction-piece *d* and coupled to the beam J, so that the movement of the core shall cause the friction-piece to move, all substantially in the manner and for the purpose herein set forth.

336,338. WASHING-MACHINE. LEVI M. S. MILLER, Findlay, Ohio. Filed Nov. 13, 1882. (No model.)



Claim.—In a washing-machine, the combination, with the suds-box A, provided with a bottom of lapping boards B B', of one median front outwardly-obliqued leg, F, ribbed at G, two outwardly-obliqued and longer rear legs, I I, and the brace-rod H, connecting said leg F with the under lapping board, B', whereby the suds-box is supported, as shown and described.

336,339. LAST FOR BOOTS OR SHOES. HARRY W. MORRIS and ALFRED LEWIS, Kettering, County of Northampton, England. Filed Nov. 23, 1885. (No model.)

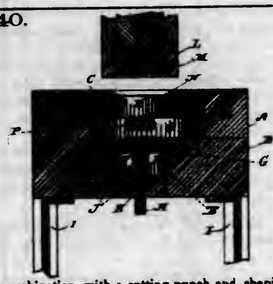


Claim.—A boot-last constructed substantially as shown and described—that is to say, with a foot-piece, B, and a heel-piece, C, the said pieces B and C being formed with inclined faces, and provided the one with a hooked portion, *a*, and a recess, *b*, and the other with a recess, *c*, to receive the hooked portion *a*, and a catch, *e*, to enter the recess *b*, said catch being pivoted in a recess and pressed outward by a spring, as set forth.

336,340. MACHINE FOR MANUFACTURING BOXES. ALBERT F. MORSE, Milford, Conn. Filed Oct. 4, 1884. (No model.) Patented in Canada Aug. 31, 1885, No. 23,315.

Claim.—1. In a machine for making boxes from paste or straw board, the combination, with a cutting-punch and shaping-die arranged interior thereof, of a plate having therein a seat for the punch, and an opening through which the said die passes, and a spring-actuated lower die adapted to reciprocate within a corresponding opening and seat within the standard, substantially as set forth.

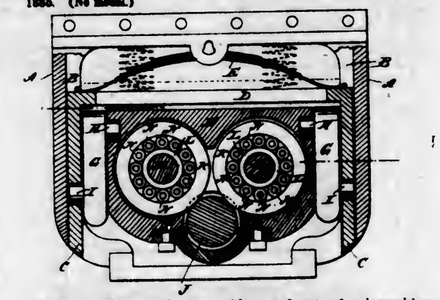
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2. In a machine for making boxes from straw or paste board, the combination, with the forming and capping dies, of means, substantially as described, by which an air-blast is supplied to discharge the box.

3. The combination of the platform having therein at the lower central portion thereof an internal recess, O, communicating directly with an air-blast, plate C, secured to the platform immediately over said recess, and having seat N and central opening, D, punch L, having interior thereof the capping-die M, said punch and die adapted to have a separate and independent vertical reciprocation, ring E, seated within the standard B, and containing the lower die, G, spindle H, secured at its upper end to said die, and spring K, arranged around said spindle and confined between recesses in said die and standard, substantially as shown, and for the purpose set forth.

336,341. JOURNAL-BOX. CHARLES L. MORRISON, Brooklyn, N. Y., assignor to Mary E. Morgan and George L. Garrigues. Filed Aug. 13, 1885. (No model.)



Claim.—1. The combination, with a pedestal, of a journal-box mounted to swing laterally in the same, substantially as herein shown and described.

2. The combination, with a pedestal, of a journal-box mounted to slide vertically and swing laterally in the same, substantially as herein shown and described.

3. The combination, with a pedestal, of bars pivoted in the same and a journal-box pivoted on said bars, substantially as herein shown and described.

4. The combination, with a pedestal, of a vertically-sliding frame in the same, a spring or springs pressing said frame downward, and a journal-box pivoted on the said frame, substantially as herein shown and described.

5. The combination, with a pedestal, of a vertically-sliding frame in the same, bars pivoted on the frame, and a journal-box pivoted on said bars, substantially as herein shown and described.

6. The combination, with the pedestal A, having grooves B in the side pieces, of the bars G, having the pivots H I, and of the journal-box F, substantially as herein shown and described.

7. The combination, with a box, of two pivots, rollers surrounding the pivots and rings surrounding the rollers, against which rings the axle-journal rests, substantially as herein shown and described.

8. The combination, with a box, of pivots on the same, sleeves surrounding the pivots, rollers surrounding the sleeves, and rings surrounding the rollers, against which rings the axle-journal rests, substantially as herein shown and described.

9. The combination, with a pivot, of a sleeve surrounding it, and provided with external annular grooves, rollers surrounding the sleeve, and a ring provided with internal annular grooves and surrounding the rollers, substantially as herein shown and described.

10. The combination, with a pivot, of a sleeve surrounding it and having external annular grooves, rollers surrounding the sleeve and having external collars, and of a ring surrounding the rollers and having internal annular grooves, substantially as herein shown and described.

11. The combination, with a pivot, of a sleeve surrounding it, tubular apertured rollers surrounding the sleeve, and a ring surrounding the rollers, substantially as herein shown and described.

12. The combination, with a pivot, of a sleeve surrounding it and having internal annular grooves, rollers surrounding the sleeve, and of a ring surrounding the rollers and having internal annular grooves, substantially as herein shown and described.

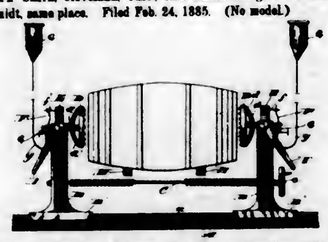
336,342. BUNG-LIFTER. WILLIAM NARBURG, Brooklyn, assignor to August Kronsberg, New York, N. Y. Filed Sept. 2, 1885. (No model.)



Claim.—1. In a bung-lifter, the combination, with the stand A, having central perforation, of the stem B, having screw D, and the pivoted handle E F, having cam G, substantially as herein shown and described, whereby a bung can be readily lifted from its seat in a bung-hole, as set forth.

2. In a bung-lifter, the combination, with the stem B, having screw D and a recess, J, in its upper end, and the handle E F, having perforation in its lower end, of the spiral spring H and the pin I, placed in the said perforation, substantially as herein shown and described, whereby the said stem and handle will be held in line while the screw D is being screwed into the bung, as set forth.

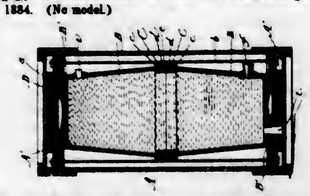
336,343. BRANDING APPARATUS. ANDREW W. OPPMANN and JOSEPH SMITH, Cleveland, Ohio; said Smith assignor to Bosworth & Schmidt, same place. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a branding-machine, the combination, with movable standards and mechanism for operating the same simultaneously to or from each other, of branding-irons pivotally attached to the standards, and springs arranged to yieldingly support the branding-irons in position presenting their faces toward the package, and vapor-burners arranged to move with the branding-irons and heat the same, substantially as set forth.

2. In a branding-machine, the combination, with the bed-plate, standards, and screw-rods arranged and operated as described, of branding-irons pivoted to the standards, vapor-burners for heating the branding-irons, a spring and lever for presenting the face of the branding-iron toward the package and distributing the pressure as may be required, substantially as set forth.

336,344. GLASS BARREL. WILLIAM V. PERRY, Chicago, Ill. Filed Dec. 8, 1884. (No model.)



Claim.—1. The described barrel, consisting of the two equal and like parts jointed together at its short axis by means of rings C and *a*, adapted to prevent lateral motion of the parts with respect to each other, substantially as described.

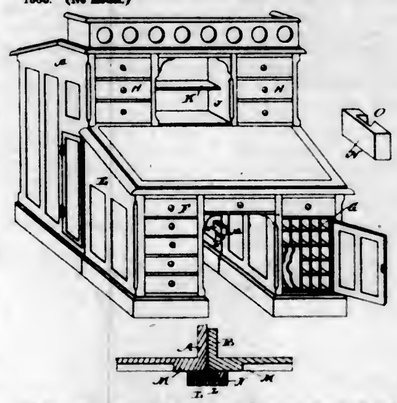
2. The combination of the two rings C, provided with grooves *c* and *d*, and the ring *e*, adapted to serve as a frame for the materials for an elastic and fluid-tight joint between the half-barrels, substantially as described.

3. The described half-barrels having cemented thereto the rings C, having grooves *c* and *e*, substantially as and for the purpose described.

4. The barrel composed of two parts having rings C, provided with grooves *d*, cemented thereto and connected together by means of ring *e*, the bearings of which are rendered elastic and fluid-tight by means of rubber and beeswax, substantially as described.

5. The described barrel, composed of two similar half-barrels, each provided with a ring, C, having a groove, *d*, in it, in combination with the described rubber and beeswax packing, adapted to render the joint between the half-barrels both elastic and fluid-tight, substantially as described.

336,345. DESK. HENRY U. POHL, Hiawatha, Kans. Filed Sept. 26, 1885. (No model.)



Claim.—As a means of uniting two desks together back to back, the half-wedges having their longer ends at the bottom, each wedge being located on each desk, so that its outer edge will be flush with the back of said desk, and dovetailed keys adapted to fit on said wedges when in contact, and thereby securely hold the two desks together, substantially as set forth.

336,346. FURNITURE-PAD. PHILIP W. PRATT, Abington, Mass. Filed Mar. 2, 1885. (No model.)



Claim.—1. The plate or washer *d*, having the socket *e*, prongs *h*, and holes *i*, combined with the shank *a*, having the head *c*, to fit in said socket, and the rubber pad *b*, cast and vulcanized over and about said washer and through its holes, substantially as described.

2. The plate or washer *d*, having the socket *e*, notches *g*, holes *i*, and prongs *h*, combined with the shank *a*, having the head *c*, and projections *f* engaging said notched socket, and the rubber pad cast and vulcanized about said washer, substantially as described.

3. The washer *d*, having the socket *e*, and the alternate sharp and dovetail projections *h*, combined with the shank *a*, having the head *c*, to fit in said socket, and the rubber pad *b*, cast about and vulcanized upon said washer and its prongs, substantially as and for the purpose described.

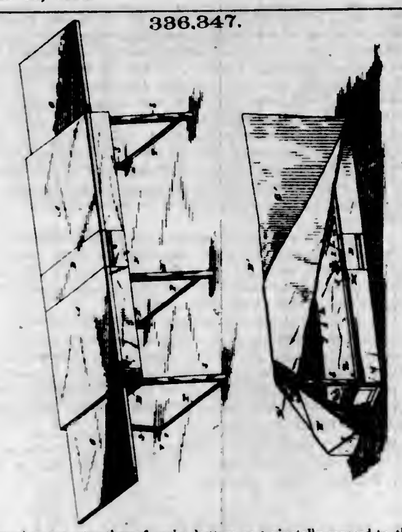
336,347. CAMPING-CHEST. CALVIN B. REED, East Oakland, Cal. Filed Nov. 2, 1885. (Model.)

Claim.—1. The combination of a common end piece, a top part pivotally secured to one edge thereof, and a bottom part pivotally secured to the other edge, each of said parts being provided with two side pieces and only one end piece, as shown and described.

2. The combination of a common end piece, a top part pivotally secured to one edge thereof, a bottom part pivotally secured to the other edge, each of said parts being provided with two side pieces and only one end piece, the inner ends of two of the side pieces being provided with a brace-piece pivotally secured thereto, each of said brace-pieces being provided with a sliding bolt, and the inner ends of the other two side pieces being provided with a staple or catch, as shown and described.

3. The combination of a common end piece, a top part pivotally

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secured to one edge thereof, and a bottom part pivotally secured to the other edge, each of said parts being provided with two side pieces and only one end piece, said end piece being narrower than the side pieces and forming a slot across each end, an extension-piece having pins at its inner end sliding in said slots, and suitable supporting-legs, as shown and described.

4. The combination of a common end piece, a top part pivotally secured to one edge thereof, and a bottom part pivotally secured to the other edge, each of said parts being provided with two side pieces and only one end piece, a brace-piece pivotally secured to the side pieces of one of said parts and engaging with the ends of the side pieces of the other part, said side pieces being also provided with outwardly-flaring notches upon their inner sides, a supporting-leg pivotally secured at each of said notches and fitting therein, the outer ends of half of said legs being provided with brace-rods, the opposite ends of which are each provided with an aperture, and the outer ends of the other half of said legs being provided with pins, as shown and described.

5. The combination of a common end piece, a top part pivotally secured to one edge thereof, and a bottom part pivotally secured to the other edge, each of said parts being provided with two side pieces and only one end piece, a brace-piece pivotally secured to the ends of the side pieces of one of said parts and engaging with the side pieces of the other part, each of said end pieces being provided with a pin and a series of hooks, one side of each of said parts being provided with a pivoted leg and brace-rod secured to the outer end thereof, a tent-cover secured thereon, said cover being provided with two side flaps and two triangular end pieces, and a hammock swung upon said hooks in said end pieces, as shown and described.

336,348. RAILWAY-SWITCH. JOHN T. RIMER, South Oil City, Pa. Filed June 12, 1885. (No model.)

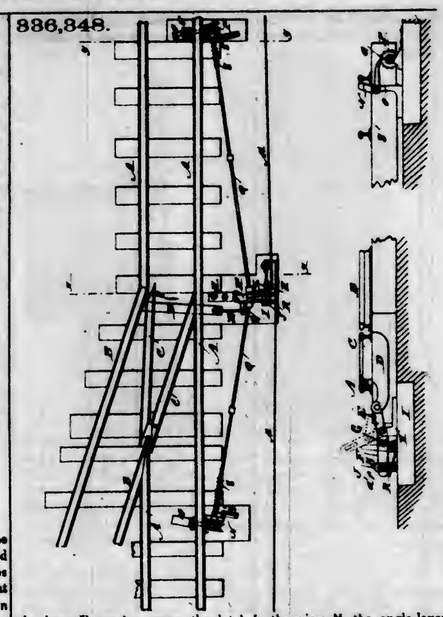
Claim.—1. The combination, with railway main-line and siding rails, the switch-tongues, a bar connecting them, and a switch-lever connected with the said bar, of rods having arms upon which the switch-lever can be folded, springs acting on the rods, dogs adjacent to main-line rails, and means for holding or releasing said rods by the action of the dogs, substantially as herein shown and described.

2. The combination, with railway main-line and siding rails, the switch-tongues, a bar connecting them, and a switch-lever connected with said bar, of rods having arms upon which the switch-lever can be folded, springs acting on the said rods to turn them on their longitudinal axis, a ratchet-wheel on the outer end of each rod, and an angular dog pivoted adjacent to the rail and engaged with the ratchet-wheels on the ends of the rods, substantially as herein shown and described.

3. The combination, with railway main-line and siding rails, switch-tongues, a bar uniting them, and a switch-lever connected with the bar, of a forked piece into which the switch-lever can be swung, a latch pivoted at the sides of the forked piece for locking the switch-lever in the same, a wire secured to each latch, and an angle-lever connected with the outer end of each wire some distance from the switch, substantially as herein shown and described.

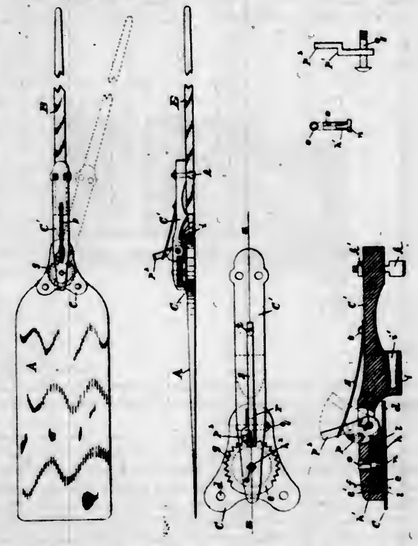
4. The combination, with the railway main-line rails A, the siding-rails B, the switch-tongues C, the bar D, uniting them, and the switch-lever F, connected with the bar D, of the forked piece J, into which

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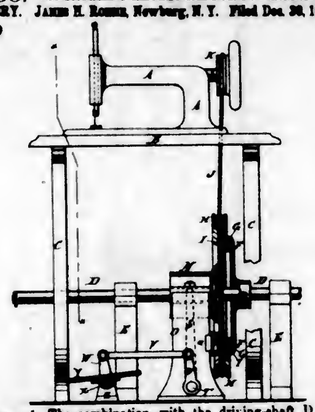
the lever F can be swung, the latch L, the wires M, the angle-levers W, to which the outer ends of the wires M are fastened, the rods Q, having arms R within the forked piece J, the ratchet-wheels P on the outer ends of the rods Q, the angle-dogs N, pivoted adjacent to the rails and engaging with the ratchet-wheels P, substantially as herein shown and described.

336,349. OVEN-PEEL. E. NELSON RITTASE, Baltimore, Md. Filed July 9, 1885. (No model.)



Claim.—An oven-peel having in combination a blade, a handle, a circular hub provided with a rim having ratchet-teeth *g*, and an annular groove, *f*, under the said rim and attached to the blade, a handle part, C, having a pivot-bolt hole and two lugs, *l*, one either side of said hole and diametrically opposite each other and attached to the handle, a pivot-bolt connecting the hub and handle part, and a dog, *p*, pivoted on the handle part to engage with the ratchet-teeth, as set forth.

336,350. CONTROLLING MECHANISM FOR POWER-DRIVEN MACHINERY. JAMES H. ROBBS, Newburg, N. Y. Filed Dec. 30, 1885. (No model.)

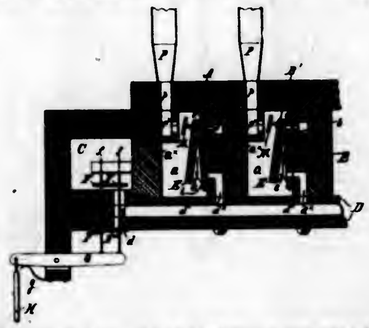


Claim.—1. The combination, with the driving-shaft D and the drive-wheel F, rigidly attached thereto, of the driving-pulley H, placed loosely upon the said driving-shaft and having an annular rib, P, upon its projecting hub L, the sliding hub-bearing M, having an interior annular groove, Q, to receive the rib of the said hub, and a shifting mechanism, substantially as herein shown and described, whereby the said driving-pulley can be thrown into and out of contact with the said drive-wheel by moving the said bearing, as set forth.

2. The combination, with the sliding bearing M, carrying the driving-pulley H, of the rock-shaft T, having arms S U, the connecting-rod V, and the treadle W X Y, substantially as herein shown and described, whereby the said bearing can be moved to throw the driving-pulley into and out of gear by rocking the said treadle, as set forth.

3. The combination, with the standards O, that support the bearing M and the driving-pulley H, of the stationary brake-bar *a* and the brake-shoe *b*, substantially as herein shown and described, whereby the said brake will come in contact with the said driving-pulley when drawn out of contact with the drive-wheel, as set forth.

336,351. PNEUMATIC ACTION FOR ORGANS. HILBORNE L. ROOSEVELT, New York, N. Y., and CHARLES S. HASKELL, Philadelphia, Pa.; said Haskell assignor to said Roosevelt. Filed July 24, 1884. (No model.)



Claim.—1. As a new article of manufacture, a pneumatic bellows for the wind-chest of an organ, having two opposite compartments, one of greater area than the other, and the movable board of which is equipped with a pallet, substantially as set forth.

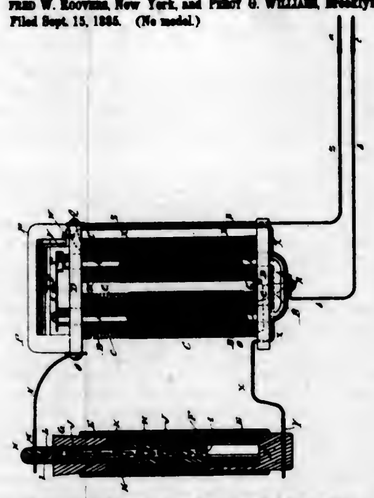
2. The combination of the wind-chest of an organ, the chambers of which are equipped with pipes and supplied with compressed air, pneumatic bellows placed within said chamber, and having two opposite compartments, one of greater area than the other, and the movable boards of which are equipped with pallets respectively adapted, in the movement of said boards, to control the throats of the pipes, a pallet-box the pallets of which are controlled by the action, and which is supplied with wind, channels of communication between said pallet-box and the large compartments of the bellows, and channels of communication between a source of wind-supply and the small compartments of the bellows, substantially as set forth.

3. The combination, with the wind-chest of an organ, the chambers of which are equipped with pipes and supplied with compressed air, pneumatic bellows placed within said chambers, having two compartments, one of greater area than the other, and having that portion of their movable boards which inclosse their small compartments equipped with pallets respectively adapted, in the movement of said boards, to control the throats of the pipes, a pallet-box the pallets of which are controlled by the action, and which is supplied with wind, channels of communication between said pallet-box and the large compartments of the bellows, and channels of communication between a source of wind-supply and the small compartments of the bellows, whereby, in the absence of wind within the large compartments of said bellows the air in the air-chamber, acts against the greater areas of the movable boards covering the large compartments, collapses said compartments, and causes the seating of the pallets upon the throats of the pipes, substantially as set forth.

4. As a new article of manufacture, a pneumatic bellows for the wind-chest of an organ, having two opposite compartments inclosed by the same movable board, and one of greater area than the other, each portion of the movable board as inclosse the small compartment being supplied with a pallet, substantially as described.

5. As a new article of manufacture, a pneumatic bellows for the wind-chest of an organ, one of the boards of which is provided with two inclines, one of greater area than the other, and the movable board of which is hinged upon the crest between said inclines and equipped with a pallet, the boards being united by two bellows-flaps applied with respect to the two inclined surfaces so as to form a bellows having a large and a small compartment, substantially as described.

336,352. GALVANIC BATTERY. ALEXANDER H. ROOVERS and ALFRED W. ROOVERS, New York, and PERCY G. WILLIAMS, Brooklyn, N. Y. Filed Sept. 15, 1885. (No model.)



Claim.—1. The zinc electrode H, made, substantially as herein shown and described, with a longitudinal perforation, I, provided with an asbestos packing and with small side perforations, K L, within and without the battery, whereby the generated gas is allowed to escape, as set forth.

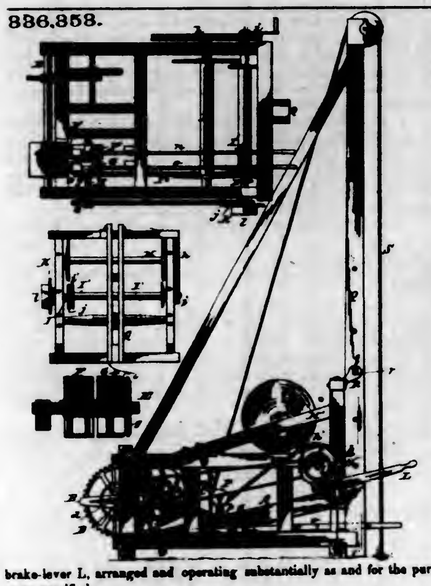
2. The zinc electrode made with a longitudinal perforation, and provided with a packing and with small side perforations within and without the battery, in combination with the inclosing-case and the carbon cup in one end of said case and the rubber or other non-corrosive stopper in the other end of said case, substantially as and for the purpose set forth.

336,353. WELL-DRILLING MACHINE. OSCAR RISH, Ithaca, N. Y. Filed Nov. 11, 1885. (No model.)

Claim.—1. The combination, with the rope-drum and the shaft I, geared therewith, of the slush-pump spool journaled on the shaft I and pulleys connected one with the shaft I and the other with spool thereon, the drive-shaft and gearing whereby motion may be transmitted to either the slush-pump spool, the shaft I, or to both of such parts, substantially as set forth.

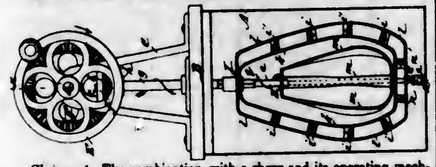
2. The combination of the drive-shaft having a friction-drum, the intermediate shaft, the rope-drum geared with said shaft, a pulley fixed on the intermediate shaft, a pulley sleeved on such shaft, the slush-pump spool geared with such sleeved pulley, and idlers movable into contact with the friction-drum and the pulleys of the intermediate shaft, substantially as set forth.

3. The rope-drum and the shaft I, geared with such drum, and having ratchet K and brake-pulley *l*, combined with the pawl *k* and the brake-lever L, arranged and operating substantially as and for the purposes specified.



4. The combination of the shaft D, the shaft E, having pulleys F and G, the rope-drum and the slush-pump spool geared with the shaft E, and pulley G, of gearing whereby either of pulleys F or G may be geared with the shaft D, all arranged and operating substantially as set forth.

336,354. CHURN. JAMES E. SHAW and JAMES T. SIMPSON, Holden, Mo. Filed June 30, 1885. (No model.)

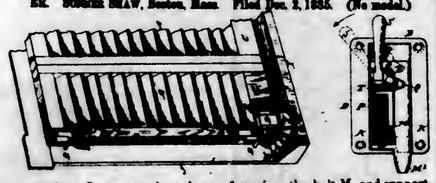


Claim.—1. The combination, with a churn and its operating mechanism, of an outer dasher-frame carrying fixed dasher-blades arranged in pairs, one blade of each pair being mounted on either side of the central shaft, and both blades being mounted in substantially the same diagonal plane, substantially as set forth.

2. The combination, with a churn and its operating mechanism, of an outer dasher-frame, carrying dasher-blades arranged in pairs, one blade of each pair being mounted on either side of the central shaft, and both blades being mounted in substantially the same diagonal plane, and an inner series of dasher-blades, the forward edges of said blades being bent inward toward the central shaft, substantially as described.

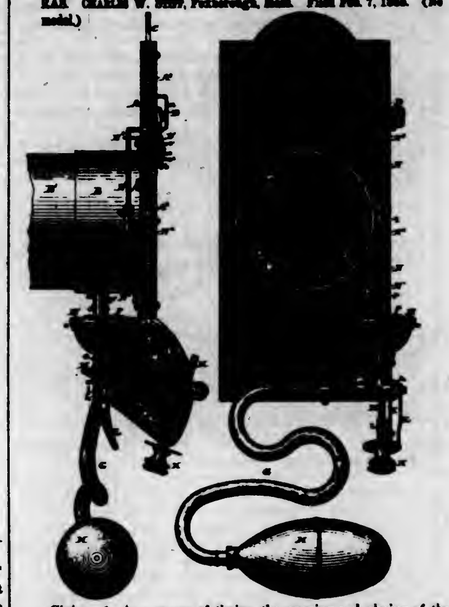
3. The combination, with a churn and its operating mechanism, of two dasher-frames, as H and I, said frame I being provided with diagonally-mounted dasher-blades, as *i i'*, and said frame H being composed of blades, as *m m*, bent so that their leading edge will approach the central shaft, substantially as described.

336,355. COMBINED SHUTTER-FASTENER AND SHUTTER-BOWER. SUMNER SHAW, Boston, Mass. Filed Dec. 2, 1885. (No model.)



Claim.—In an organized shutter-fastening, the bolt M, and supporting-arms N O, the recess Q, and rocker-key R, operating in combination with a sill-plate, F, having legs U, substantially as and for the purpose set forth.

336,356. TIMING ATTACHMENT FOR PHOTOGRAPHIC CAMERAS. CHARLES W. SEELY, Foxborough, Mass. Filed Feb. 7, 1885. (No model.)



Claim.—1. As a means of timing the opening and closing of the shutters of a camera and thus determining the length of the exposure, the air-chamber E E', passage *d'*, sleeve d^2, the taper plug-valve F, provided with the passages *f* and *g*, the flat surface *f'*, and the tapered peripheral groove f^2, the flexible tube G, and the collapsible bulb H, all combined and arranged to operate substantially as and for the purposes described.

2. The combination of the expansible chamber E E', the passage *d'*, and sleeve d^2, the valve F, provided with the passages *f* and *g'*, the cut-away or flat surface *f'*, and the tapered peripheral groove f^2, the flexible tube G, the bulb H, the disk *p*, the rod N, the lever D, provided with the pendent arm D', terminating in the double hook *b*, the shutter C, provided with the pins *c* and *c'*, and the shutter C', provided with the pin c^2, all arranged and adapted to operate substantially as described.

3. The combination of the expansible chamber E E', provided with the passage *d'*, the valve F, provided with the passage *f g*, the cut-away *f'*, the tapered groove f^2, and the arm *n'*, the hook-lever M, the spring *m*, the lever L, and the adjustable stop-pin *j*, all arranged and adapted to operate substantially as and for the purposes described.

4. The combination of the expansible chamber E E', provided with the passage *d'*, the valve F, provided with the arm *n'*, the spring *m*, the hook-lever M, the lever L, secured upon said valve, the adjustable lever J, provided with the pointer *i*, and the stop-pin *j*, and the index-plate I, all arranged and adapted to operate substantially as described.

5. The combination of the valve F, provided with the arm *n'*, and lever L rigidly secured thereto, the spring *m*, the hook-lever M, the plate I, provided with the graduated scale I', the lever J, provided with the index-pointer *i*, and the stop-pin *j*, the nut *k*, pivoted to said lever J, the adjusting-screw K, and the bearing *l*, pivoted to the plate I, substantially as described.

6. The combination of an expansible air-chamber provided with an inlet and discharge passage, a device for forcing air into said chamber, and a valve provided with a tapered exhaust-passage and arranged to be automatically moved a greater or less distance to regulate the exhaust of air from said chamber, substantially as described.

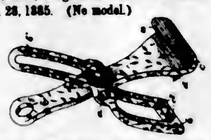
7. In combination with a photographic camera, a pair of shutter-plates arranged one above the other and to be moved vertically in suitable guides and provided with supporting-pins, and a pivoted lever provided with a double hook to engage said pins and hold said shutters in an elevated position, and arranged to be vibrated in one direction to release the lower shutter-plate, and in the opposite direction to release the upper shutter-plate, substantially as described.

8. In combination with a lens-tube of a photographic camera, two shutters or lids arranged to be moved transversely across the end of said tube to open or close it, a device for locking and retaining said shutters in position with one shutter closing said tube, a device for releasing one of the shutters and causing it to uncover the lens-tube, and a timing

mechanism arranged to be set in motion by said shutter-releasing device, and adapted to release the other shutter and cause it to cover the lens-tube at the end of any predetermined interval of exposure, substantially as described.

9. The combination of an expansible air-chamber provided with an inlet and discharge passage, and a valve provided with a tapered exhaust-passage and arranged and adapted to be moved a greater or less distance to regulate the exhaust of air from said chamber, substantially as described.

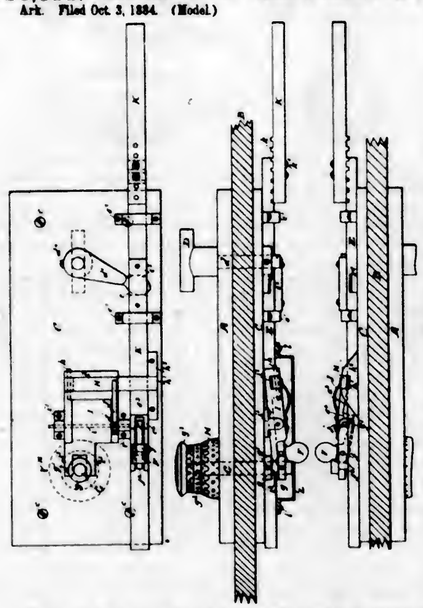
336,357. COMBINED BARREL CLAMP AND HOOK. EDWARD E. TAYLOR, Newport, R. I., assignor of one-half to James S. Hazard, same place. Filed Oct. 28, 1885. (No model.)



Claim.—1. A device for hoisting purposes, comprising the clamping-jaws *b c*, having serrated, roughened, or toothed faces, and a hook, *e*, as set forth.

2. A combined barrel clamp and hook for hoisting purposes, consisting of two arms, one of which terminates in a hook, *e*, pivotally connected to form clamping-jaws *b c* and handle portions *b' c'*, said clamping-jaws having serrated, roughened, or toothed faces, as set forth.

336,358. PERMUTATION-LOCK. WILLIAM B. TURMAN, Waldron, Ark. Filed Oct. 3, 1884. (Model.)



Claim.—1. The combination of the bolt E, provided with the slot e^4, the locking-bar H, locking-bar lever I, provided with slot i^2 and end i^3, spring J, and draw-bar G, provided with the key M, and with a series of combination-rings, substantially as described and shown, and for the purpose set forth.

2. The draw-bar G, provided with the key M and with the loose collars *g*, attached to said draw-bar by the screws *g'*, in combination with the lever I, having an end, i^3, engaging with said washers, and a series of combination-rings, substantially as described and shown.

3. The combination of the bolt E, provided with the inclined plane e^3 and slot e^4, the locking-bar H, the catch F, formed with a toe, *f'*, and heel f^3, the locking-bar lever I, provided with slot i^2 and end i^3, spring J, and draw-bar G, provided with the key M, and with a series of combination-rings, substantially as shown and specified.

4. The combination of the bolt E, provided with the inclined plane e^3 and slot e^4, the extension-piece K, formed with projections *k*, engaging with grooves in bolt E, the locking-bar H, catch F, formed with a toe, *f'*, and heel f^3, locking-bar lever I, provided with the slot i^2 and end i^3, spring J, and draw-bar G, provided with the key M, and with a series of combination-rings, substantially as shown and described.

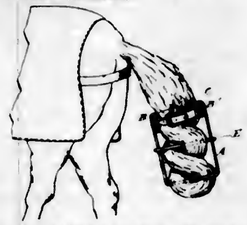
5. The combination of the handle D, having the stem *d*, the latch *d'*, adjustable on said stem, bolt E, having slots *e* and e^4 and inclined plane e^3, locking-bar H, catch F, formed with a toe, *f'*, and heel f^3, locking-bar lever I, provided with slot i^2 and end i^3, spring J, and draw-bar G, provided with the key M, and with a series of combination-rings, substantially as described and shown.

6. The combination of the draw-bar G, having the key M and head g^3, the disk g^3, connected to said head by the pins g^4 and g^5, the tumbler N, the plate A, having the index-letter *n*, inner ring, O, provided with the slot *o'*, spring *p*, middle ring, R, having slot *r'* and finger r^3, stationary ring S, provided with slot *s'*, and the outer ring, T, provided with the slot *t'* and stop *t*, substantially as described and shown.

7. The combination of the draw-bar G, having the key M and head g^3, the tumbler N, plate A, having index-letter *n*, and recess P, spring *p*, washer Q, and a series of combination-rings, O R S T, having the slots *o' r' s' t'*, the finger r^3, and stop *t*, substantially as shown and described.

8. The combination of handle D, latch *d'*, bolt E, having inclined plane e^3 and slots *e* and e^4, catch F, locking-bar H, locking-bar lever I, having end i^3, spring J, draw-bar G, provided with the key M and head g^3, the tumbler N, plate A, having index-letter *n* and recess P, spring *p*, washer Q, and a series of combination-rings, O R S T, having the slots *o' r' s' t'*, the finger r^3, and stop *t*, substantially as described and shown, and for the purpose set forth.

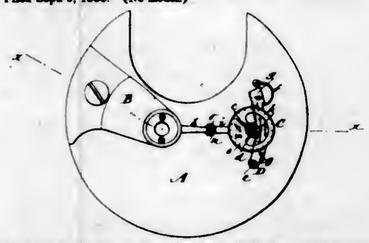
336,359. HORSE-TAIL HOLDER. FRANK H. TURNER, Graham, Mo. Filed Nov. 27, 1885. (No model.)



Claim.—1. In a tail-holder for horses and other animals, the wire frame A, having parallel arms and loops B B' formed on the ends thereof, a cross-bar, E, and the strap C, in combination, as herein specified.

2. As an improved article of manufacture, a horse-tail holder consisting of a wire frame, A, having parallel arms with oblong loops formed on the ends thereof, a cross-bar, E, arranged to slide upon the parallel arms of the frame, and a strap, C, provided with an eye, *a*, and having upon one end a buckle, D, as herein specified.

336,360. WATCH-REGULATOR. GEORGE I. TUTTLE, Aurora, Ill. Filed Sept. 9, 1885. (No model.)



Claim.—1. In a watch-regulator in which the regulator-arm carries a supplementary scale composed of a graduated dial provided with a pointer and pinion for operation with a rack on the watch-plate, as described, the combination, with the shortened regulator-arm *b*, of the dial C, with its attached pointer and pinion, adjustable in or out along the regulator-arm, substantially as and for the purposes specified.

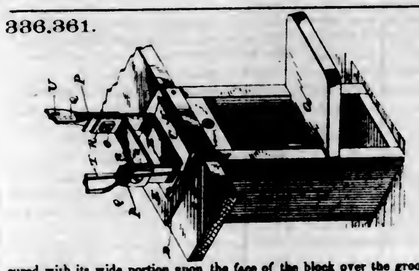
2. The combination, with the rack D and shortened regulator-arm, *b*, of the dial C, having a pointer and pinion on its arbor, the stub or arm *i*, carrying said dial and adjustable on or along the regulator-arm, and the binding-collar *n*, essentially as shown and described.

3. In combination with the shortened regulator-arm *b*, the stub or arm *i* of the attached dial, grooved, as at *k*, and having an aperture, *l*, and slit *m*, substantially as and for the purpose described.

336,361. WIRE-BENDING MACHINE. WARREN R. VAN VLIET, East Stroudsburg, Pa. Filed Sept. 22, 1885. (No model.)

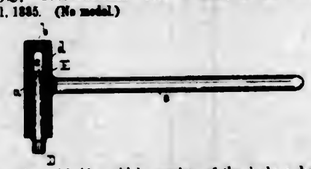
Claim.—1. In a machine for making wire bails, the combination of a table having a rectangular aperture and two uprights under the table, a block sliding through the aperture between the uprights and having a groove in its upper face beveled to one side, a U-shaped frame secured with its wide portion upon the face of the block over the groove, and means for depressing and raising the block, as and for the purpose shown and set forth.

336,361.



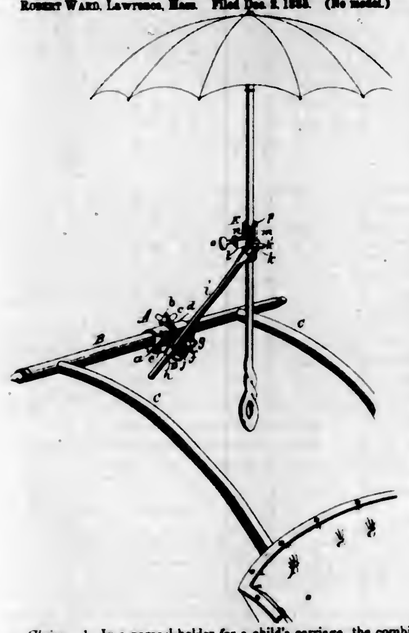
2. In a machine for making wire bails, the combination of a table having a rectangular aperture and two uprights under the table, a block sliding through the aperture between the uprights and having a groove in its upper face beveled to one side, and having a treadle for depressing it and a spring for raising it, a U-shaped frame secured upon the face of the block overhanging the groove and having the upper ends of its arms slotted longitudinally, arms having their upper ends twisted at right angles to their lower portions and having nutted bolts at their lower ends sliding in the slots, and a U-shaped bar having the bolts passing through its ends and connecting the bolts, as and for the purpose shown and set forth.

336,362. TOOL-HOLDER. JOHN WALKER, Cleveland, Ohio. Filed Sept. 21, 1885. (No model.)



Claim.—A tool-holder which consists of the body *a*, having the tapering hole to receive the tool, the drift-slot *c*, the conical depression *b*, and the handle *e*, substantially as specified.

336,363. PARASOL-HOLDER FOR CHILDREN'S CARRIAGES. ROBERT WARD, Lawrence, Mass. Filed Dec. 2, 1885. (No model.)

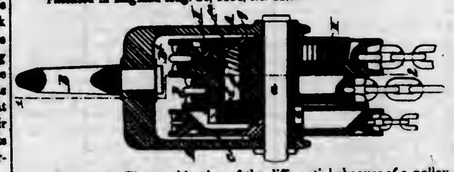


Claim.—1. In a parasol-holder for a child's carriage, the combination of the sleeve A, adjustably secured to the handle of the carriage, and provided with an adjustable arm, D, the rod *i*, held in a socket, *k*, of the arm D, and an adjustable clamp, E, substantially as shown and described.

2. In a parasol-holder for a child's carriage, the combination of the sleeve A, having a plane side, *a*, and slotted transversely, as described, the arm D, pivoted to the sleeve, and provided with a slotted end for receiving the clamping-stud *f*, and carrying a socket, A, the rod *i*, inserted in the socket A, and the clamp E, formed of two adjustable semi-cylindrical halves, and provided with a clamping-screw, *o*, substantially as herein specified.

3. In a parasol-holder for a child's carriage, the combination of the slotted sleeve A, clamping-bolt *b*, adjustable arm D, having a socket, *k*, provided with a set-screw, *j*, the rod *i*, adjustable clamp E, formed of two parts, *m n*, the part *m* having a right-angled arm, *l*, and carrying the screw *o*, which is pivoted to the movable part *n*, substantially as shown and described.

336,364. DIFFERENTIAL PULLEY-BLOCK. THOMAS HENRY WARD Tipton, County of Stafford, England. Filed July 2, 1885. (No model.) Patented in England Aug. 26, 1884, No. 11,672.

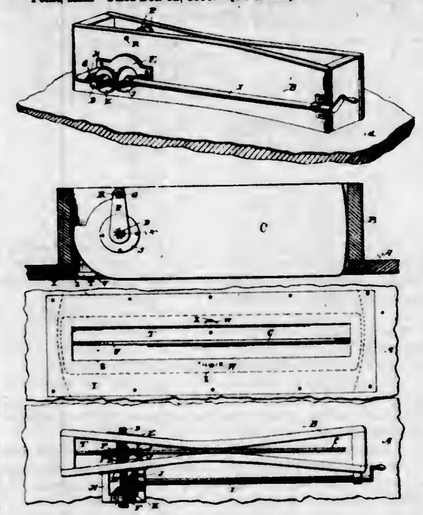


Claim.—1. The combination of the differential sheaves of a pulley-block or hoisting-gear and a wheel to which the power is applied, with a stationary internally-tooth rack and a shaft having its bearing in and passing through the said differential sheaves, the said shaft being provided at one end with a gear engaging with a pinion which turns with the said power-wheel, and at the other end with a gear engaging with said stationary rack, substantially as set forth.

2. The combination of the differential sheaves of a pulley-block or hoisting-gear, a wheel to which the power is applied, and a stationary rack, with a shaft passing through the sheaves and geared at one end to the power-wheel and at the other end to the said rack, a sleeve on the shaft, and a retaining device for the sleeve, the said shaft being screwed to receive one of the gear-wheels, all substantially as set forth.

3. The combination of the differential sheaves of a pulley-block or hoisting-gear with a power-wheel on one side and a circular rack on the other side of the sheaves, and a shaft having its bearings in the said differential sheaves and gearing at one side into the power-wheel and at the other into the circular rack, all substantially as described.

336,365. CENTER-BOARD FOR VESSELS. WILLIAM WELCH, Mass Point, Miss. Filed Dec. 12, 1885. (No model.)



Claim.—1. In a sailing-vessel, the combination of a casing opening through the bottom of the vessel and having the middles of its sides contracted and the ends diverging, a longitudinally-slotted plate sliding over the bottom aperture of the casing, a center-board fitting in the casing and passing through the slot in the sliding plate, and means for setting the

center-board at different angles to the center line of the vessel, as and for the purpose shown and set forth.

2. In a sailing-vessel, the combination of a casing or well opening through the bottom of the vessel and having the middles of its sides contracted and the ends diverging, a center-board fitting in the casing and having means for placing it at different angles to the center line of the vessel within the casing, a longitudinally-slotted plate sliding over the open lower end of the casing and having flanges at the edges of the slot bearing against the sides of the board, and a covering-plate confining the sliding plate and having an aperture or slot, allowing free movement for the center-board, as and for the purpose shown and set forth.

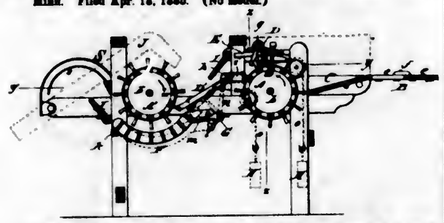
3. In a sailing-vessel, the combination of a center-board having means for setting it at different angles to the center line of the vessel and a longitudinally-slotted plate having the board projecting through its slot, and having segmental slots at its middle at both sides of the slot sliding with the slots upon bolts in the bottom of the vessel, as and for the purpose shown and set forth.

4. In a sailing-vessel, the combination of a casing opening through the bottom of the vessel and having its sides contracted at their middles and diverging at their ends, a center-board fitting in the casing and having means for setting it at different angles to the center line of the vessel, a longitudinally-slotted plate having the edges of the slot bent upward, bearing against the sides of the board, and having segmental slots at its middle at both sides of the slot, sliding upon bolts in the bottom of the vessel, and a covering-plate confining the sliding plate between it and the bottom of the vessel, and having an aperture allowing free play for the board, as and for the purpose shown and set forth.

5. In a sailing-vessel, the combination of a casing having the middles of its sides contracted and the ends diverging and opening through the bottom of the vessel, a screw journaled at its ends in the sides of one end of the casing and having suitable means for revolving it, a nut fitting upon the screw and having two upwardly-projecting perforated arms at its ends, a center-board pivoted at its forward end upon the nut between the arms, and a guide-bolt at the upper edges of the casing for the perforated ends of the arms, as and for the purpose shown and set forth.

6. In a sailing-vessel, the combination of a casing having its sides contracted at the middles and diverging at the ends and opening through the bottom of the vessel, a screw journaled in the sides of the casing at their forward ends and having reduced or shouldered portions at its ends journaled in brackets upon the sides of the casing, a nut fitting upon the screw and having upwardly-projecting arms at its ends, perforated at the upper ends, a center-board having its forward end pivoted with a perforation upon the nut, washers interposed between the board and the arms of the nut, a guide-bolt at the upper edges of the casing for the perforated ends of the arms, and means for revolving the screw, as and for the purpose shown and set forth.

336,366. THRASHING-MACHINE. HORACE A. WHEELI, Tracy, Minn. Filed Apr. 18, 1885. (No model.)



Claim.—1. The combination, with the frame and two thrashing-cylinders arranged thereon in approximately the same horizontal plane, of a grid over the forward cylinder and a grid intermediate of the two cylinders, substantially as set forth.

2. The combination, with the thrashing-cylinders, of a grid over the forward cylinder, a clearer therefor, an intermediate grid, a downwardly-projecting guide over the forward end of the intermediate grid, and a concave below the rear cylinder, substantially as set forth.

3. The combination, with the thrashing-cylinders and a grid over the forward cylinder, of an intermediate grid pivoted at its forward end in adjustable bearings, and a concave below the rear cylinder, substantially as set forth.

4. The combination, with the thrashing-cylinders and a grid over the forward cylinder, of a concave pivoted at its rear end below the rear cylinder, a rock-shaft between the two cylinders on which the free end of the concave rests, and an intermediate grid pivoted at its forward end and resting at its rear end on the forward end of the concave, substantially as set forth.

5. The combination of the thrashing-cylinders in approximately the same horizontal plane, a grid over the forward cylinder, of the counter-balanced rock-shaft between said cylinders, the pivoted concave below the rear cylinder and resting at its free end on said rock-shaft, and the intermediate inclined pivoted grid resting at its rear lower end on the concave, and longitudinally-adjustable bearings for the upper forward end of said grid, substantially as set forth.

6. The combination, with the thrashing-cylinders, of a yielding grid above and in rear of the axis of the forward cylinder, a guide or deflector in rear of said grid, an intermediate yielding grid below the said guide or deflector, and a yielding concave below the rear cylinder, substantially as set forth.

7. The combination, with the rear thrashing-cylinder, of the concave below the same, the upwardly and outwardly inclined guide or deflector adjacent to the rear end of the concave, a rear hood above the guide, and curved elastic fingers secured at their forward ends above the said guide, substantially as set forth.

8. The combination, with the thrashing-cylinders and a grid and a concave therefor, of an intermediate adjustable grid constructed to be thrown out of operative position with relation to said cylinders, substantially as set forth.

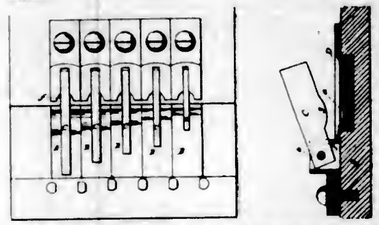
336,367. HARNESS. JOHN H. WHITAKER, Davenport, Iowa. Filed Nov. 9, 1885. (No model.)



Claim.—1. A harness for causing the hind legs of a horse to be spread apart, consisting of two lines, *a a*, connected to and combined with a brace, *b*, adapted to be secured under the belly of the horse, while the ends of the lines are secured, respectively, to the ends of the shaft and the body of the vehicle, and pass between the horse's hind legs, as shown and described.

2. The combination, with the vehicle and its shafts, of the brace *b*, arranged beneath the belly of the horse, and the lines *a a*, fastened at their front ends to the shafts outside of the fore legs, connected to the brace *b*, and then extended between the hind legs and fastened to the vehicle, substantially as and for the purpose described.

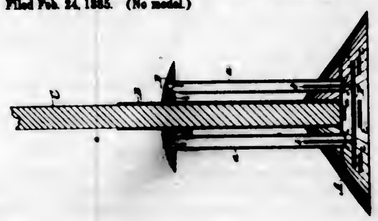
336,368. APPARATUS FOR BENDING AND VOICING MUSICAL REEDS. EDWARD H. WHITE, Meriden, Conn. Filed Oct. 5, 1885. (No model.)



Claim.—1. In an apparatus for bending and voicing reeds of musical instruments, the combination of a series of dies adapted to receive and support a corresponding series of reeds, with a corresponding series of benders arranged over said dies, said benders corresponding to the tongues of the reeds to be bent or voiced, and said benders adapted to be forced toward their respective dies, each of said benders and dies constructed, the one with a recess, *a*, and the other with a corresponding projection, *g*, substantially as described.

2. A device for voicing reeds, consisting of a die adapted to receive a reed and expose the tongue thereon, combined with a beader hung to swing in a plane toward and from the die, the one constructed with a projection, *g*, and the other with a corresponding recess, *a*, the said bender adapted to enter the openings in the reed and give to the tongue a bend, substantially as described.

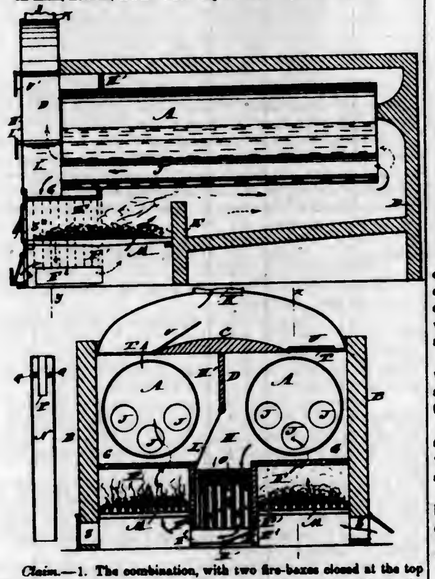
336,369. CLOTHES-WASHER. HENRY WRIGHT, Sigourney, Iowa. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination, with a funnel-shaped plunger having a central tubular socket for the handle, of the parallel side tubes, *a*, open at their upper ends and connected to the central tube by an overhanging cap, and opening into the funnel below, and the valve F and retaining-bars *c*, the said valve being arranged between the lower ends of the tubes and retaining-bars, and having guide-stems extending up into the tube, as and for the purpose described.

2. The combination, with a funnel-shaped plunger having a central tubular socket for the handle, and a crown-sheet, E, of the parallel side tubes, *a*, open at their upper ends and connected to the central tube by an overhanging cap, and opening into the funnel below the crown-sheet, and the valve F and retaining-bars *c*, the said valve being arranged between the lower ends of the tubes and retaining-bars, and having guide-stems extending up into the tubes, as and for the purpose described.

336,370. BOILER-FURNACE. JOHN ESSE, JOSEPH ESSE, and FRANCIS ESSE, Keokuk, Iowa. Filed May 27, 1885. (No model.)



Claim.—1. The combination, with two fire-boxes closed at the top and sides, of a smoke-box above the two fire-boxes, a partition in the smoke-box, which partition divides the smoke-box into two compartments, and a hinged door or gate in said partition, substantially as herein shown and described.

2. The combination, with two fire-boxes closed at the top and sides, of a smoke-box above them, and a gate between the fire-boxes and within the smoke-box, substantially as herein shown and described.

3. The combination, with two fire-boxes and a smoke-box above them, which smoke-box has two openings in its top, of a gate for each opening, and a gate in the smoke-box and between the two fire-boxes, substantially as herein shown and described.

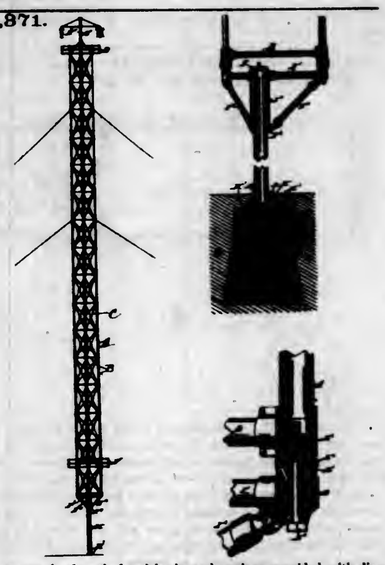
4. The combination, with two fire-boxes, of a smoke-box above them, which smoke-box has two openings in its top, gates for closing said openings, a gate between the fire-boxes, and smoke-conducting tubes between the two fire-boxes, substantially as herein shown and described.

5. The combination, with two fire-boxes, of a smoke-box having two openings provided with gates, a gate between the fuel-boxes, smoke-mixing tubes between the fire-boxes, and gates below the mixing-tubes, substantially as herein shown and described.

6. The combination, with two fuel places, of the tubes N between them, which tubes N have apertures Q, the tubes P, projecting down into the tubes N at the upper ends, and the gate L between the fire-boxes, substantially as herein shown and described.

7. The combination, with the fire-boxes F, having openings F^2 in the lower parts, of their inner side walls, F', the tubes N between the fire-boxes, the gate L above the tubes, and the gates R, held at an angle to each other on a rod, R', below the tubes N, substantially as herein shown and described.

336,371. SKELETON TOWER FOR ELECTRIC LIGHTS. JOHN S ADAMS, Detroit, Mich., assignor to the Detroit Iron Tower Company same place. Filed Oct. 13, 1884. (No model.)



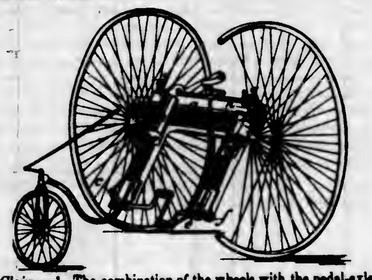
Claim.—1. A skeleton iron electric-light tower, consisting of an open frame-work of vertical and horizontal sections provided with diagonal braces, said tower being triangular in cross-section and of similar or substantially similar sectional dimensions from base to top, and provided with a mast having projecting arms for supporting electric lamps, and with or without an interior elevator, substantially as described.

2. As a means for supporting a skeleton iron tower, a pillar provided with bracket-arms for receiving the lower ends of the uprights, said arms provided with braces extending beneath the arms to a point upon the pillar, substantially as described.

3. A skeleton iron tower supported by a single pillar at its base, said tower provided at the base of two or more of its upright elements with adjusting mechanism for slightly elevating or depressing either of said corner elements, substantially as described.

4. The combination, with a skeleton iron tower, of a single supporting-pillar at its base, said pillar resting upon a foundation and anchored down through the same by anchor-bolts, substantially as described.

336,372. VELOCIPEDE. ARTHUR HENRY ALLDRIDGE, Birmingham, County of Warwick, England, assignor of one-half to Samuel John Davis, same place. Filed Oct. 20, 1885. (No model.) Patented in England March 24, 1884, No. 5,264.

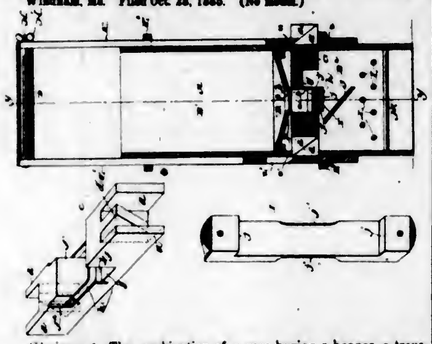


Claim.—1. The combination of the wheels with the pedal-axle provided with treadles, cranks *c e*, the eccentric *f*, the air-pump *b*, the connecting-rod between the piston of said air-pump and crank *c*, the driving-cylinder *d*, the connecting-rod between the piston of said driving-cylinder and crank *e*, the slide-valve, the connecting-rod between said slide-valve and the eccentric *f*, the reservoir *a*, in which air is compressed by pump *b*, the pipe *g*, through which the air passes from said reservoir to said driving-cylinder, and the cock *h* in said pipe, which regulates the passage of air through the same, for the purpose set forth.

2. The wheels and pedal-axle of a tricycle or bicycle, in combination with a reservoir for compressed air carried thereby, a pump operated by said pedal-axle for supplying air to said reservoir, a driving-cylinder the piston of which is connected to said pedal-axle, and a pipe allowing compressed air to pass from said reservoir to said driving-cylinder, the vehicle being arranged and adapted to be propelled either by

the rider's feet or by the driving-cylinder at will, substantially as set forth.

336,373. FERTILIZER-DISTRIBUTER. THOMAS L. ALLEN, East Windham, Me. Filed Oct. 23, 1885. (No model.)



Claim.—1. The combination of a case having a hopper, a transverse slide arranged beneath the same, and vertically-moving handle-bars loosely mounted on the case and adapted to reciprocate the slide when they are moved up and down, substantially as described.

2. The combination of a case having a hopper, a reciprocating slide mounted in the case and arranged beneath the discharge-opening of the hopper-bottom, said slide having guide and cam arms at its ends, and slotted handle-bars alternately engaging the cam-arms of the slide to reciprocate the same, substantially as described.

3. The combination of a case having a hopper, a transversely-moving slide having limiting shoulders or stops, vertically-moving handle-bars to operate said slide, and a transverse stop-bar adapted to engage the shoulders of the slide to limit the movement thereof, substantially as described.

4. The combination of a case having a hopper, a reciprocating slide having limiting-shoulders, vertically-moving handle-bars to operate the slide, and a reversible stop-bar to limit the movement of the slide and vary the quantity of material discharged, substantially as described.

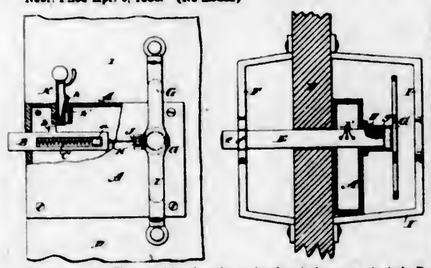
5. The combination of a case having a hopper, a reciprocating slide a removable band, A, secured thereto, vertically-moving handle-bar to operate the slide, and a stop-bar to limit the movements of the slide, substantially as described.

6. The combination of the case having a hopper, a reciprocating slide, handle-bars for operating the same, a removable band, A, secured to and surrounding the discharge-opening of the slide, and a reversible stop-bar adapted to limit the movement of the slide, substantially as described.

7. The combination of the case having a hopper, a horizontally-movable slide, vertically-movable handle-bars connected with the slide and adapted to reciprocate the same, a transverse bar for limiting the movement of the slide, an inclined discharge-board located beneath the slide and supported on or near the middle of the case, and separating-bars arranged below the discharge-board, substantially as described.

8. The combination of the case having a hopper, a movable slide having an opening, and a detachable band, A, surrounding said opening, a reversible transverse bar for limiting the movement of the slide and having offsets at its ends, vertically-movable handle-bars for operating the slide, an inclined discharge-board, and separating-bars located below the discharge-board, substantially as described.

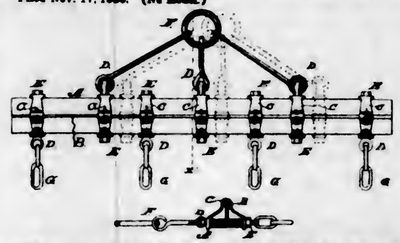
336,374. DOOR-LATCH. THEODORE C. H. BATTENFELD, Rising City, Nebr. Filed Apr. 9, 1885. (No model.)



Claim.—1. The combination, in a latch, of the case A, bolt B, spindle E, roller J, chain or cord H, and pull-piece G, substantially as herein set forth.

2. The combination, with a door, of a latch consisting of a case, A, bolt B, spindle E, chain or cord H, connecting the bolt with the spindle, the pull-piece G, fast on the spindle, and the hand-grasp F, fixed to the door and having a bearing, *f*, for the projecting end *e* of spindle E, substantially as herein set forth.

336,375. HARROW DRAFT-BAR. JOSEPH E. BEEBE, Adair, Iowa. Filed Nov. 17, 1885. (No model.)



Claim.—1. A drag-bar for harrows, composed of flat metal plates placed at right angles relative to their longitudinal length and held together by adjustable clamps, substantially as described and shown.

2. The combination of the two metal plates placed at right angles, clips placed over the said plates and conforming to the cross-sectional outline of the same, and eyebolts passed through the depending ends of the clips in alternately-opposite directions, whereby they are adapted to receive the hitching devices and be connected to the harrow-sections, substantially as specified.

336,376. PROCESS OF MANUFACTURING TEXTILE FIBERS FROM THE YUCCA OR OTHER CACTI. JOHN C. BELL, Tombstone, Ariz., assignor of one-half to Roderick Ferdinand Hafford, same place. Filed Oct. 30, 1884. (Specimens.)

Claim.—1. The process herein described of producing commercial fiber from the leaves of the plants known as the *Yucca baccata*, *Yucca constricta*, and *Dasylirion Wheeleri*, said process consisting in first removing the skin of the leaves, and then freeing the fibers from their surrounding glutinous matter, substantially as set forth.

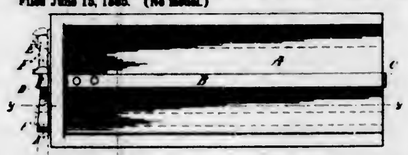
2. The process of producing commercial fibers from the leaves of the plants described, said process consisting in first removing the skin of the leaves by pressure, and, secondly, freeing the fibers from their glutinous covering by steeping in an alkaline solution, substantially as set forth.

3. The process of producing commercial fibers from the plants described, said process consisting in first soaking the leaves in hot water, then subjecting them to pressure and removing the skins, then subjecting the fibers to an alkaline solution, and finally washing the treated fibers, all substantially as set forth.

4. The process of producing commercial fibers from the leaves of the plants herein described, said process consisting in first removing the outer skin, then subjecting the fibers with their glutinous covering to the action of a heated alkaline solution to free the fibers from the said covering, and removing said covering, all substantially as specified.

5. As a new article of manufacture, the herein-described long commercial fiber produced from the leaves of the plants known as the *Yucca baccata*, *Yucca constricta*, and *Dasylirion Wheeleri*.

336,377. TYPE-GALLEY. WILLIAM F. BELLROOD, Madison, Dak. Filed June 15, 1885. (No model.)

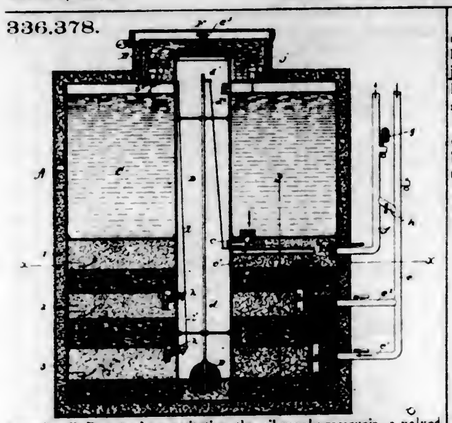


Claim.—In a printer's galley, the combination, with the galley having a slotted end piece, of the side-stick having a hook to engage the galley-bottom at its open end and provided at its other end with a locking-hoop, and the key inserted through the loop, substantially as shown and described.

336,378. AUTOMATIC GAS-GENERATOR. ORSON W. BARRETT, Washington, D. C., assignor of one-half to John Sherman, same place. Filed Oct. 24, 1885. (No model.)

Claim.—1. The herein-described improved gas-generator, comprising the vessel A, having a central well or tube, B, extending the entire depth of the vessel, whereby easy access is had to the interior thereof, horizontal partitions dividing the lower portion of the vessel into generating chambers or compartments, the upper portion, through which the

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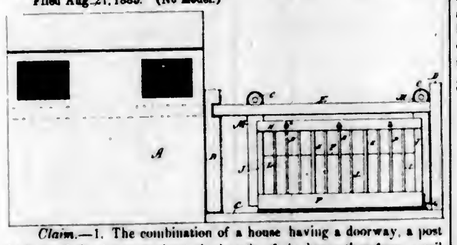
central well, B, extends, constituting the oil-supply reservoir, a valved outlet from said reservoir into the upper part of said generating chambers or compartments, and automatically-operating devices located in said well for controlling the supply of oil to the chambers, as set forth.

2. A gas-generator, substantially as described, comprising the vessel A, having the central well with automatic oil-supply-regulating devices located therein, and its upper portion constituting the oil-reservoir and its lower portion constituting the generator, divided by partitions into horizontal chambers or compartments, the tubes *b* in said partitions, extending above and below the same, the vertical walls *a*, extending from top to bottom of the chambers or compartments and from the wall of the well B to the wall of the vessel A, provided with openings occurring alternately at the walls of the well and vessel, for the purposes described, the solid portion *a'* in said compartment, an inlet upon one side and an outlet upon the other, and pipes leading to and from said compartments outside of the vessel and central well, substantially as shown and described.

3. The combination, with the vessel having the central well or tube, B, provided with a removable and adjustable gas-tight cover, and the reservoir C, with vents provided with suitable stop-cocks and strainer, of the wall *j*, surrounding and inclosing the space occupied by the said stop-cocks and the upper end of the well or tube, the said inclosed space to receive water or other air and gas sealing liquid to submerge the stop-cocks and the upper end of the well-tube, substantially as and for the purpose described

4. In a gas-generator comprising the vessel A, well B, and generating-chambers, the partitions forming said generating-chambers, provided with openings to permit the flow of the liquid residuum of hydrocarbon from said chambers, combined with valves arranged to close said openings, connected with and operated by rods in the well-tube B, substantially as and for the purpose set forth.

336,379. CHICKEN-HOUSE. RICHARD BENTLEY, Corning, Iowa. Filed Aug. 21, 1885. (No model.)



Claim.—1. The combination of a house having a doorway, a post in front of the doorway about the length of the house therefrom, a rail extending from the post through the doorway to the farther end of the house, and a coop hung to travel on the rail, substantially as shown and described.

2. The combination of a house, double doors hung thereto, a rail supported within the house and extending out at the doorway, a support for the outer end of the rail, and a coop hung to travel on the rail, one of the doors being notched to pass the rail in closing, substantially as shown and described.

3. The combination of a house, a floor thereof extending beyond its end a distance nearly equal to the length of the house, a post secured upon the outer end of the said floor, a rail supported at one end upon the post and at the other end within the house, and a coop hung to travel on the rail, substantially as shown and described.

4. The combination of a house having a doorway, a rail secured at one end within the house and passing out at the doorway, a coop hung upon the rail by hangers passing up at one side thereof, rollers journaled upon the hangers to roll on the rail, and a hook hung to the house over the doorway, its hooking end engaging and supporting the said rail, substantially as shown and described.

5. The combination, with a house, a rail, and a support for the outer end of the rail, of a chicken-coop suspended therefrom, and hooked braces Q, for engaging the coop to hold it steady on the rail, substantially as herein shown and described.

336,380. SAW. ALEXANDER BERTRAM, Toronto, Ontario, Canada. Filed June 20, 1885. (No model.) Patented in Canada July 14, 1885, No. 22,074.



Claim.—1. In a saw, a series of mortise or plowing teeth, B, having their cutting-edges substantially at right angles to the surface of the saw, the mortise-teeth being separated by two or more chisel-shaped teeth, A, substantially as and for the purpose specified.

2. In a saw, a series of mortise or plowing teeth, B, the cutting-edges of which are substantially at right angles to the surface of the saw, each mortise or plowing tooth being preceded by two or more chisel-shaped teeth, A, the cutting-edges of which are alternately formed on the opposite sides of the surface of the saw and beveled in the opposite direction to the bevel of the mortise-teeth, substantially as and for the purposes specified.

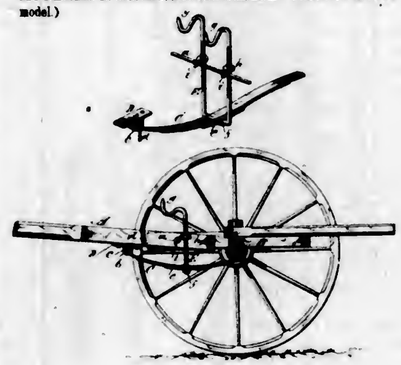
336,381. CARPET-FASTENER. DANIEL BINGHAM, Hawley, Pa. Filed Nov. 25, 1885. (No model.)



Claim.—1. The fastening device for carpets, consisting of a strip, B, having a horizontal projecting portion provided with vertical perforations, said strip being rigidly attached to the base-board, in combination with a covering-strip, E, substantially as shown, and for the purpose set forth.

2. In a device for fastening carpets, the strip B, which is rigidly attached to the base-board, and provided at its lower outer edge with a semicircular recess and at its upper edge with a vertical recess, the lower recess being intersected by the securing-nails, while the upper recess retains in place a covering-strip, substantially as shown, and for the purpose set forth.

336,382. TONGUE-SUPPORT FOR VEHICLES. JACOB H. CASSIDY and BENJAMIN H. OLDFIELD, Leavenworth, Kans. Filed Nov. 9, 1885. (No model.)



Claim.—In a tongue-support, a suitable spring pivoted at its front end to the tongue of the vehicle, in combination with a stirrup pivoted to the spring, terminating at its upper ends in suitable bandles, and having adjusting-nuts carrying fingers, to hook over the transverse rod which pivots the tongue, substantially as and for the purpose set forth.

336,383. **PRUNING IMPLEMENT.** GEORGE C. CASTERLIN and FRANK D. MOSHER, Dalton, Pa. Filed Nov. 6, 1885. (Model.)



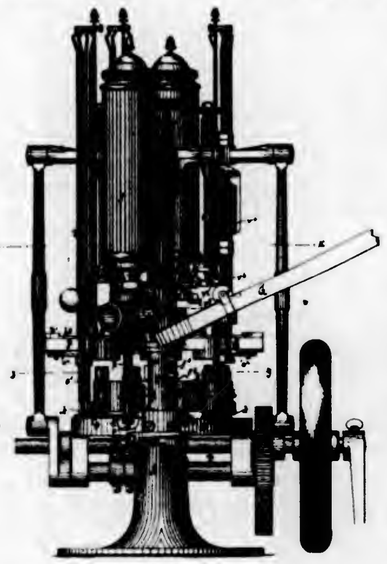
Claim.—As an improved article of manufacture, a pruning-shears comprising a rigid handle-bar, A, having a cutting-jaw, *a*, an operating handle-bar, B, pivoted to the handle A at a point below the jaw *a*, and having a longitudinal slot, *e*, at its upper end, a movable cutter-bar, C, having a slot, *d*, at a point below its jaw *c*, a headed pin, *d'*, passing through the slot of the bar C to connect the same with the bar A, a headed pin, *f*, rigidly secured in the lower end of the bar C, and sliding in the slot *e* of the handle B when the handles are operated, and a stop-pin, E, secured to the bar A, and against which the bar C abuts when the jaws *a c* are closed together, substantially as and for the purpose described.

336,384. **CARTRIDGE-LOADING MACHINE.** FRANKLIN L. CHAMBERLIN, Cleveland, Ohio. Filed May 28, 1885. (No model.)

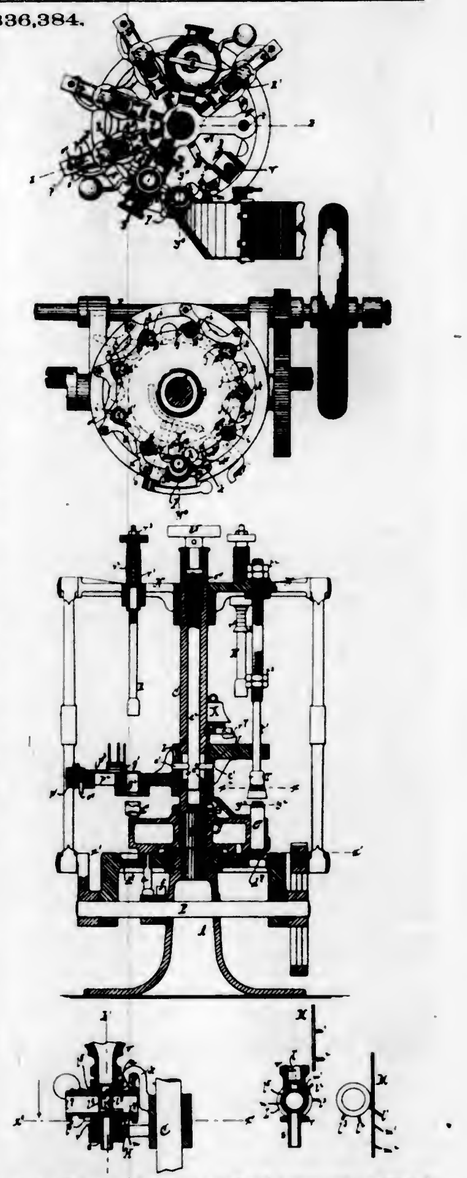
Claim.—1. The combination, substantially as hereinbefore described, of the intermittently-rotating carrier D, the powder-feeder having a rotating powder-discharge provided with radiating pins, and a vertically-reciprocating plate or bar having slots which are adapted to engage said pins and rotate the powder-discharge, one of said slots being elongated, whereby a period of rest is allowed the discharge to insure the complete delivery of the powder to the shell, substantially as described.

2. The combination, substantially as hereinbefore described, of the intermittently-rotating carrier, the powder-feeder communicating with a rotating powder-discharge, a lever rigidly mounted on the axis of a gear meshing with a segment-gear upon the powder-discharge tube, said lever lying in the path of the shells as they are advanced by the carrier, pins radiating from the powder-discharge, and a vertically-reciprocating plate having slots which engage with said pins when the latter are turned into position by the action of the shell upon the lever.

3. The combination, substantially as hereinbefore described, with the intermittently-rotating carrier, of the wad-feeder, a sleeve tapped through a thimble in the cross-head, a rammer mounted in said sleeve,



336,384.



a spring coiled on the diminished end of said rammer, and a nut turned upon the projecting end of the latter, whereby the tension of the spring may be adjusted, suitable graduations being marked upon the rammer-spindle as a guide in making such adjustment.

4. The combination, substantially as hereinbefore described, with the intermittently-rotating carrier, of the wad-holders, the wad-pushers, the radial arms upon which the wad-pushers are mounted, the curved and slotted levers engaging with pins upon said carriages, the spindles upon which said slotted levers are mounted, and the operating-levers O, which are moved by the advance of the shells.

5. The combination, substantially as described, with the intermittently-rotating carrier, of the vertically-moving non-rotating crimper having ribs upon its inner face, the cross-head in which the threaded spindle of the crimper is supported, and stops adjustable upon said spindle above and below the cross-head, substantially as described.

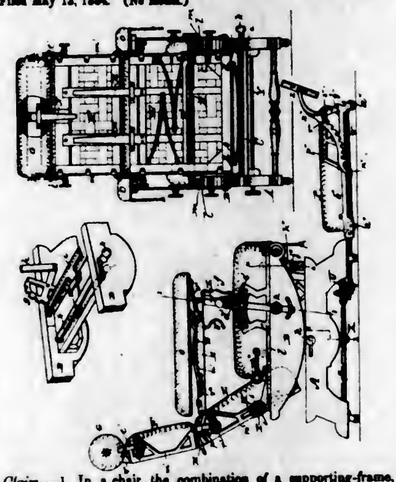
336,385. **FILTERING COMPOUND.** CHARLES E. CHAMBERLAND, Paris, France. Filed May 11, 1885. (No specimens.) Patented in England Mar. 17, 1885, No. 3,433.

Claim.—A filtering compound formed of porcelain-earth baked and reduced to a powder and pipe-clay, combined in the proportions set forth, the said compound being baked, substantially as set forth.

336,386. **FILTERING COMPOUND.** CHARLES E. CHAMBERLAND, Paris, France. Filed Jan. 13, 1886. (No specimens.) Patented in England Mar. 17, 1885, No. 3,433.

Claim.—A filtering compound formed of earthenware-clay and biscuit of the said clay, as hereinbefore described, combined as and in the proportions set forth, the said compound being baked, substantially as herein set forth.

336,387. **ADJUSTABLE CHAIR.** GEORGE F. CHILD, Springfield, Ohio. Filed May 13, 1884. (No model.)



Claim.—1. In a chair, the combination of a supporting-frame, a seat movable forward and backward thereon, a back-rest hinged to the rear of the seat, and means, substantially as described, for securing the back at different inclinations regardless of the position of the seat and without moving the latter, whereby the back may be changed in inclination at will, while the seat is secured firmly in any position.

2. In a chair, a supporting-frame, a seat arranged to slide forward and backward thereon, a back hinged to the rear of the seat, and independently-adjustable back-supporting devices, whereby the back may be sustained in the various positions required independently of the position of the seat.

3. In a chair, the combination of a base-frame, a rocker-frame thereon, a seat-frame arranged to slide forward and backward on the rocker-frame, a back hinged to and carried by the seat-frame, a locking device to hold the seat in different places, and an independently-adjustable locking device to hold the back in position, whereby the weight may be balanced upon the rockers with the back in either of its various positions.

4. In a chair, the combination of a base-frame, a rocker-frame thereon, locking devices to hold the rocker-frame in different positions, a seat movable forward and backward on the rockers, a locking device to secure the seat in place, and a back attached to the seat, whereby the weight may be balanced upon the rockers and the seat secured at any inclination demanded.

5. In a chair, the combination of a base-frame, a rocker-frame thereon, a locking device to hold the rocker-frame in different positions, a seat movable forward and backward on the rocker-frame, a locking device to hold the seat in position, a back hinged to the seat and provided with locking devices, and a leg-rest hinged to the seat and provided with locking devices, whereby the several supporting-surfaces may be placed in various relative positions, shifted forward and backward in unison to place the weight centrally on the rockers, and placed at any inclination required without changing the relative positions or disturbing the occupant.

6. In a chair, the combination, with a seat and a supporting-frame therefor, of a back the solid portion of which is movable, substantially as described, upward and downward past the rear edge of the seat in close proximity thereto, whereby the seat and back may be caused to produce jointly a continuous supporting-surface of greater or less length, as occasion may require.

7. The combination of the seat, the back-sustaining rod, and the back slotted longitudinally and transversely between its upper and lower edges to receive the rod, whereby it is permitted to slide upward and downward, and also to tip forward and backward upon said rod as an axis.

8. In a chair, the base-frame, the rocker-frame thereon, the sliding seat-frame, the rod H, carried by the rear end of the seat-frame, the slotted back seated on said rod, and clamping devices acting in connection with the rod, said members combined for joint operation, substantially as described and shown.

9. In combination with the sliding seat-frame and its sustaining-frame, the back hinged to the seat-frame, the arms L, pivoted to the sustaining-frame and connected with the back, and springs, substantially as described, acting upon the arms to resist the rearward swinging motion of the back.

10. In combination with the hinged back, the pivoted arms L, the links K, and the springs connected to the arms below their pivots, and locking devices to hold the parts in position.

11. In combination with the base-frame and the rocker-frame, the notched sector-plates pivoted to the base-frame, the transverse locking-bar mounted in the base-frame and engaging at its two ends the sector-plate, and the links pivoted to the sector-plate and to the rocker-frame, as described, whereby the rocker-frame may be securely locked at both sides.

12. In combination with the horizontal rod or axis, the slotted back arranged to slide and swing thereon, and a spring mounted in the back to urge the same upward in an endwise direction.

13. In combination with a chair-back having both a swinging and an endwise sliding motion, a spring-connection, substantially as described, acting to lift the back bodily, and a second spring-connection, substantially as described, acting to swing the back forward.

14. In combination with the slotted back and its sustaining-rod H, the lifting-spring mounted therein and sustained by the rod, whereby they are permitted to act without impeding the swinging or tipping motion of the back.

15. A chair-back composed of a plurality of transverse sections having their horizontal edges united and maintained in close proximity by hinges, whereby they are adapted to produce jointly a flat, a concave, or a convex surface for the occupants, as may be demanded.

16. A sliding seat, in combination with a hip-rest hinged thereto, an upper rest hinged to the hip-rest, and independently-locking devices to hold said parts in different relative positions.

17. In combination with a chair-back composed of sections united by horizontal joints or hinges, intermediate springs tending to tip the sections in a forward direction.

18. In a chair, the combination of a seat, a hip-rest hinged thereto, a shoulder-rest hinged to the upper edge of the hip-rest, a head-rest hinged to the top of the shoulder-rest, and independent mechanism, substantially as described, for locking the respective sections in different relative positions.

19. In a chair, a back-section provided with slotted side frames, in combination with a second section having side frames jointed to those of the first and provided with clamping-screws to enter their slots, whereby the sections may be secured in different relative positions.

20. The sustaining-rod H, its support, and the clamping-nut at its end, in combination with the slotted back mounted thereon, the plates *a'*, and the tube J, to sustain the parts against the compressive action.

21. In combination with sustaining bars or links K, the arm-rest O, the intermediate supporting-links, the fastening-link W, and a locking device, substantially as described, for holding the latter against motion in either direction, whereby the arm-rest may be prevented from either rising or falling.

22. The bar K, the arm-rest, and the two connecting-links, one of which has a sliding connection with the bar, in combination with the fastening-link W and the locking device for the latter.

23. The seat, the pivoted tipping back, the links K, extending forward at the sides of the seat, the levers or arms L, extending downward from the links, the springs acting upon the arms, and the locking devices also applied to the arms, said members combined and arranged as described, whereby the occupant of the chair is enabled to conveniently adjust the back.

24. In combination with a rocker-frame, a seat arranged to slide forward and backward thereon, a leg-rest hinged to the forward edge of said seat, to partake of its sliding motion, a brace or support attached to said rest, and a fastening device attached to the seat-frame for securing said brace in different positions, whereby the poise of the weight upon the rockers may be at all times maintained irrespective of the leg-rest.

25. A leg-rest for a chair, provided, substantially as described, with sustaining-wheels at its front and rear, with means for detachably hinging it to the chair-seat, and with a brace or rod, a^3, for connection with the chair, whereby said rest may be used with one edge hinged to the seat and the other edge upon the floor, with its entire weight sustained upon the floor, or with one edge hinged to the seat and the opposite edge sustained in the air.

26. In a chair having a back arranged to pass behind and beneath the seat, the seat-sustaining frame having its sides united, as in Fig. 16, by a central cross-bar, whereby space is afforded for the passage of the back beneath the seat proper.

27. The seat, the leg-rest hinged thereto, and the rest-sustaining rod, in combination with the contractile clamp to secure said rod, and the eccentric and shaft for actuating the clamp.

28. The seat-frame consisting, essentially, of the side bars and the relatively depressed cross-bars, of metal, with end flanges for attachment to the side bars, whereby the upholstery and springs are permitted to extend to the extreme front and rear edges.

29. The seat-frame having the side bars, the depressed metallic cross-bars at the front and rear, and the wooden bars or facings applied to the cross-bars, substantially as and for the purpose described.

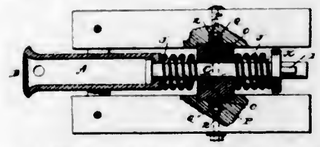
30. In a seat-frame for a rocking-chair, the metallic front cross-bar adapted, as described, to serve as a counter-balance, and provided with bearings for the support of the leg-rest, as shown.

31. In combination with the leg-rest provided with eyes or sockets, the seat-frame and the spring-actuated pivot-bolts *f*, movable transversely of the chair to engage the eyes or sockets of the leg-rest.

32. In combination with the swinging chair-back, the links extending forward therefrom, the upright arms or levers to which the links are attached, and the laterally-projecting handles or hand-pieces *f'*, whereby the attendant is enabled to adjust the back of the chair as to the inclination while seated therein.

33. In combination with a base-frame, a rocker-frame thereon, a seat-frame arranged to slide forward and backward on said rocker-frame, the leg-rest hinged to the front of the seat-frame, and the back-rest hinged to the rear of the seat-frame, whereby the weight may be brought in the desired relation to the rockers regardless of the position of the rests.

336,388. **DRAW-BAR.** JOSEPH N. CHILSON, Streator, Ill. Filed Dec. 30, 1885. (No model.)



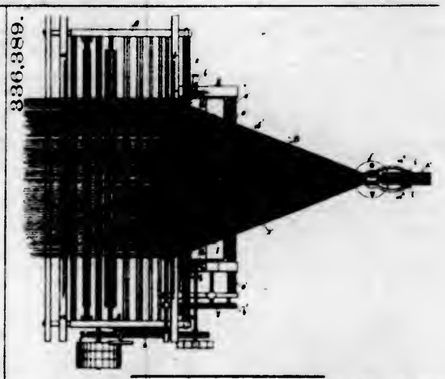
Claim.—1. A bearing for the draw-bar of a railway-car, consisting of a longitudinally-perforated body having the upper and lower sides cut away to form cylinder-surfaces at the middles of the same concentric to the perforation, and vertical ribs at the ends having their outer edges grooved to form sharp edges, the body and ribs having transverse perforations above and below the longitudinal bearing perforation, as and for the purpose shown and set forth.

2. In combination with a draw-bar of the usual construction and having two coils of springs placed around its reduced inner portion, the draw-timbers connected at their forward ends by means of a yoke or bar and having vertical recesses in their inner faces near the rear ends, formed with vertical grooves in their bottoms, and a casting having a longitudinal perforation for the reduced end of the draw-bar and having the springs bearing against its faces, having its ends fitting in the recesses in the draw-timbers and formed with ribs having vertical grooves in their outer edges fitting into the grooves in the bottoms of the recesses, and having transverse perforations above and below the longitudinal perforation registering with perforations in the timbers, and having nutted bolts passing through them, as and for the purpose shown and set forth.

336,389. **MACHINE FOR BALLING YARN.** FRANK A. CLARK, Lawrence, Mass. Filed July 13, 1885. (No model.)

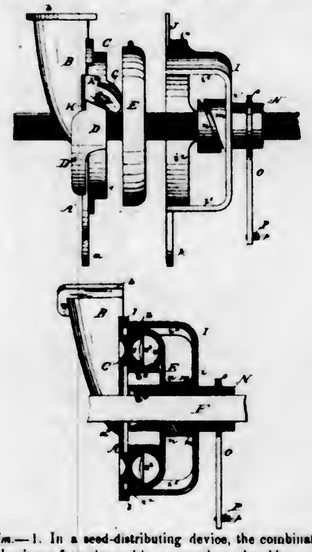
Brief.—Two tubular guides are arranged, one above the other, on a rod which is adjustable up and down in a fixed hollow base, and such rod is held in any adjusted position by means of a thumb-screw. On same rod, and in front of the two guides, is a grooved pulley. The warps pass from a creel through a reed and are condensed as they pass to the upper of the tubular guides. In such condensed form they pass around the grooved pulley, then through the lower of the tubular guides to and through a guide having reciprocating motion in front of the warp-beam, on which they are then wound.

Claim.—The combination, with the beam G, tubular guide F, warper-frame A, and the mechanism for revolving the winding-beam G and imparting a reciprocating traverse to the yarn-guide F thereof, of the two tubular guides C and D and the grooved wheel E in advance thereof, provided with mechanism for adjusting them vertically, the warp-yarns being led from the warper to and through the upper guide, and thence partly around the wheel and to and through the lower of such guides, all being substantially as set forth.



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336,390. **SEED OR GRAIN DISTRIBUTING DEVICE.** H. KARL COLE, Allegheny City, Pa. Filed Sept. 9, 1885. (Model.)



Claim.—1. In a seed-distributing device, the combination, with a seed-cup having a face-plate with a grooved annular ridge, and a revolving disk provided with concentric flanges adapted to embrace said ridge, and thereby form a throat for the passage of the material to be distributed, of means, substantially as described, for adjusting the disk horizontally upon the said ridge, and thereby regulating the size of the throat, substantially as described.

2. In a device for distributing seed or grain, the combination, with a casing comprising a seed-cup, a face-plate, and a ridge thereon, of a revolving disk having annular flanges adapted to embrace said ridge, and thereby form a throat for the passage of the material from the hopper, substantially as described.

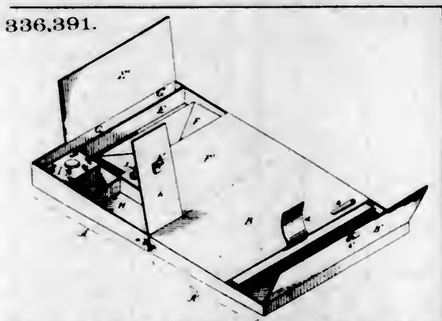
3. In a distributing device, the combination, with a face-plate and a ridge thereon having a concave face communicating with a seed-cup, of a disk having annular flanges adapted to embrace said ridge and a concave bottom to the space between said flanges, forming a circular or nearly circular throat between said disk and ridge, substantially as described.

4. In a seed or grain distributer, the combination, with a casing, A, having a seed-cup, B, and a ridge, C, of the flanged disk E, embracing said ridge, the spider I, having the inclined ways *m m*, and the bush N, also provided with inclined ways *n n*, all constructed and arranged substantially as described, whereby when the said bush is turned the disk will be caused to approach toward or recede from the casing, as set forth.

336,391. **WRITING-CASE.** JOHAN D. COLONY, Philadelphia, Pa. Filed Sept. 8, 1885. (No model.)

Claim.—1. A writing-case consisting of two parts, A and A', hinged together, one part having a compartment for writing-paper, a permanent

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cover, B, partially closing the same, and a hinged cover, B', while the other part contains a compartment for envelopes, a permanent cover, F', partially closing the same, and a hinged cover, E'.

2. A writing-case having a compartment for envelopes, and a compartment for writing implements, and a hinged lid partially closing both said compartments, substantially as specified.

3. A writing-case consisting of two parts, A and A', hinged together, one containing a compartment for writing-paper, and a permanent cover, B, and hinged cover B', to close the compartment, while the other part contains a compartment for envelopes and pen-holders, and a permanent cover, F', and hinged cover E', partially closing the compartment, and a compartment, H, for stamps, provided with a hinged cover, A, all substantially as set forth.

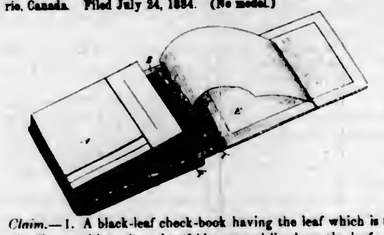
336,392. **AIR-HEATER FOR STOVES.** LYMAN P. CONVERSE, New York, N. Y. Filed Aug. 22, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the upper chamber, A, having the opening O at its top, the lower chamber, B, having the inlet-openings *b*, and the interior plate or partition, C, having the projections *c*, substantially as described.

2. The combination, substantially as hereinbefore set forth, with the chambers A and B, of the interior plate, C, having the concentric projections or partitions *c*, said projections or partitions having the openings *x*, arranged in alternate order, substantially as set forth.

336,393. **MEMORANDUM-BOOK.** THOMAS G. COOPER, Jarvis, Ontario, Canada. Filed July 24, 1884. (No model.)



Claim.—1. A black-leaf check-book having the leaf which is to receive the direct writing adapted to fold over and lie above the leaf which is to receive the transcription, and having a carbon leaf secured in said book and adapted to fold over between said leaves in a direction at right angles to their movement, as and for the purposes set forth.

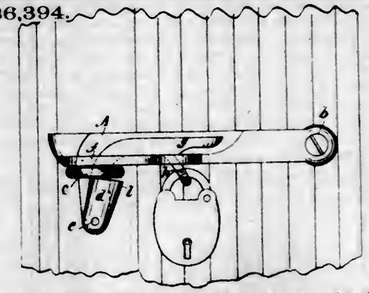
2. In combination with the cover E, a clamp, F, arranged to grasp the said cover, and a plate, *f*, hinged to said clamp and provided with a heel, *b*, arranged and operating as and for the purpose specified.

336,394. **HASP-LOCK.** JOHN S. DARE, Sr., Bloomingdale, Ind., assignor of one-half to Allen Conner, same place. Filed May 28, 1885. (No model.)

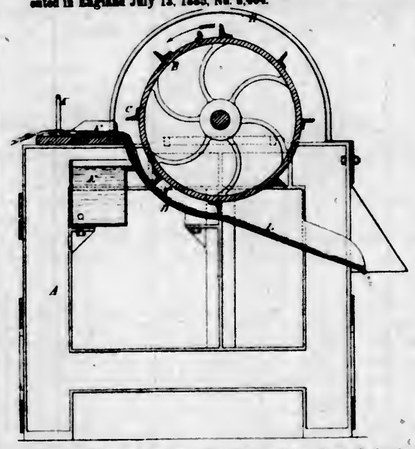
Claim.—1. The combination, with the hook-shaped hasp A and the staple *c*, of the swinging latch *d*, pivoted to the hook of the hasp and arranged to pass through and engage the under side of the staple, substantially as and for the purpose specified.

2. The combination, with a hasp having a guard formed integral with or secured thereto and having a latch pivoted upon the free end thereof, said latch formed with a lip at one end and a stirrup at the other end, of a staple adapted to engage said hasp, whereby, when the parts are in an assembled position, the latch-lip will engage the staple and the stirrup will project through and below said guard and the parts be secured by a padlock engaging the end of the stirrup, substantially as and for the purpose specified.

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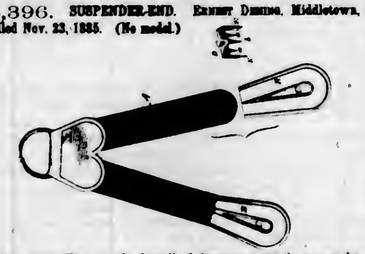


336,395. **APPARATUS FOR SCUTCHING AND CLEANSING FIBROUS STEMS, LEAVES, AND THE LIKE.** WILLIAM E. DUNTH, Brixton, County of Surrey, England. Filed Sept. 21, 1885. (No model.) Patented in England July 13, 1885, No. 8,464.



Claim.—The combination, with the revolving drum B, having attached beaters C, the feed-table G, and the curved shield D, of the water-tank E, supported at the upper edge of the shield and having communication therewith, for causing a current of water to flow down the shield and buoy up the fibers thereon, substantially as described.

336,396. **SUSPENDER-END.** ERNEST DIMMIG, Middletown, Conn. Filed Nov. 23, 1885. (No model.)



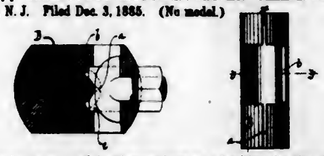
Claim.—1. The herein-described improvement in suspender-ends, consisting of the fabric strap A, the button-hole portion B, made separate from the said strap, combined with the clip D, the said clip constructed with a central portion corresponding to the width of the strap, and with an extension-wing, E, at each end, with spurs *a a* upon one edge, and a spur, *b*, upon the opposite edge, the said spurs turned at right angles to the body of the clip, the said parts A B lapped one upon the other, the spurs passed through them and turned down upon the opposite side, and the wings E E turned over said spurs, substantially as described.

2. A suspender-end consisting of the strap A, made from braid

doubled at its lower end and returned upon itself, the button-hole portion B made separate from said strap and lapped upon the said doubled end, combined with a metal clip constructed with spurs to pass through the strap and button-hole portion and bent down upon the opposite side, and the clip closed upon the two parts, substantially as described.

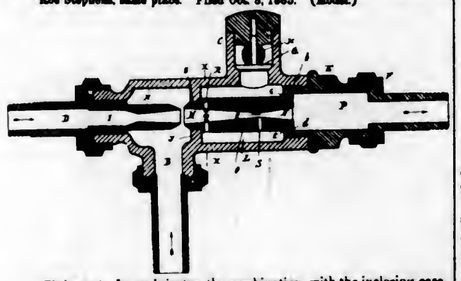
3. A suspender-end consisting of the strap A, made from braid doubled at its lower end and returned upon itself, the button-hole portion made separate from said strap and lapped upon the said doubled end, combined with a metal clip adapted to embrace the lapping portions of the said two parts, substantially as described.

336,397. **BUSHING FOR ROCK-DRILL CHUCKS.** JAMES E. DENTON, Hoboken, N. J. Filed Dec. 3, 1885. (No model.)



Claim.—As a new article of manufacture, a bushing for the chucks of rock-drills, consisting of a tubular sheet of metal having a split extending from end to end, and each edge formed by said split provided with a recess intermediate the ends of the bushing to receive a key for retaining the bushing in place, substantially as and for the purpose described.

336,398. **INJECTOR.** JOHN DESMOND, Detroit, Mich., assignor to Roe Stephens, same place. Filed Oct. 8, 1885. (Model.)



Claim.—1. In an injector, the combination, with the inclosing-case, of a diaphragm-partition forming a division-wall between the water-inlet chamber and the overflow-chamber, and combining and discharge cones made in one piece, and having relief-passages R and S within the overflow-chamber, substantially as and for the purposes specified.

2. In an injector, the combination, with the inclosing-case having the diaphragm-partition J, provided with a central opening, of combining and discharging cones made in one piece, and provided with the necks *a b* of the plug E, having flanged bushing *d*, all arranged substantially as described.

3. In an injector, the combination of the main casting A, having inlet and discharge openings and lateral branches B C, of a diaphragm-plate forming a water-inlet chamber at one end and an overflow-chamber at the other end, of a steam-nozzle secured in the water-chamber, of combining and discharge cones made in one piece, and provided with relief-passages R and S, of the plug E, having the flanged bushing *d*, and of the overflow-valve G, all arranged substantially as shown and described.

336,399. **THRASHING-MACHINE.** JOHN ELLIS, East Coventry, Pa., assignor to George B. Ellis, same place. Filed Jan. 27, 1885. (No model.)

Claim.—1. A thrashing-machine cylinder having bars *b'*, with depressed front edges and hollow rear ribs integral with the bars, as set forth.

2. A thrashing-machine cylinder having bars bent at the rear edges, said bent edges forming hollow ribs integral with the bars, as specified.

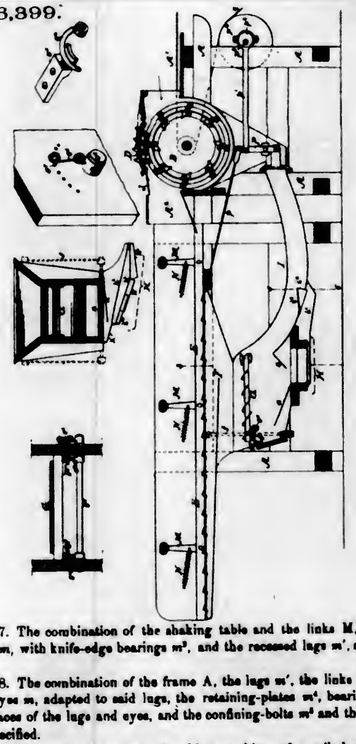
3. The combination of the teeth of the concave with the concave-bar having inclined projecting lugs forming beveled seats for said teeth, as specified.

4. The combination of the ribbed teeth of the concave with the concave-bar having projecting lugs forming seats for the teeth and ribbed to correspond therewith, as set forth.

5. The combination of the cylinder, casing, and concave of the machine with the pivoted regulating-plate J, serving as a support for the edge of the concave, as set forth.

6. The combination of the shaking table of a thrashing-machine with hanging devices, each comprising a supporting-lug, *m'*, and a suspending-link, M, having an eye, *m*, with knife-edge bearing on the top of the lug, and segmental lower bearing for the under side of the lug, as set forth.

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7. The combination of the shaking table and the links M, having eyes *m*, with knife-edge bearings m^3, and the recessed lugs *m'*, as specified.

8. The combination of the frame A, the lugs *m'*, the links M, having eyes *m*, adapted to said lugs, the retaining-plates m^4, bearing upon the faces of the lugs and eyes, and the confining-bolts m^2 and their nuts, as specified.

9. The combination, in a thrashing-machine, of a cylinder having fan-blades at the end, a fan-box, a grain-bottom and blast-shoe forming one structure communicating with said fan-box, and means for suspending and reciprocating said structure, as set forth

10. The combination of the cylinder having fan-blades at the end, a fan-box, a grain-bottom, riddle, and blast-shoe, all forming one structure communicating with the fan-box, and reciprocating and suspending devices for said structure, as specified.

11. The riddle G, having bars, each comprising a table, *g*, downwardly and rearwardly inclined wing *g'*, and upwardly-projecting and forwardly-bent lip g^3, as set forth.

12. The riddle-bar consisting of a single strip of sheet metal bent so as to form the table *g*, double wing *g'*, and projecting lip g^3, as specified.

13. The combination of the grain-bottom, riddle, and blast-shoe with the supplementary cleaner H, the tapping-spout, and the tapping-valve in the blast-shoe, as specified.

14. The combination of the grain-bottom, riddle, and blast-shoe, the supplementary cleaner H, the tapping-spout, and the tapping-valve having side wings, i^3, as set forth.

15. The combination, in the cleaner H, of the fan, the blast-shoe, the tapping-spout, the screen h^2, box h^3, chute h^4, and blast-box h^5, as set forth.

16. The combination, in the cleaner H, of the fan, the blast-shoe, the tapping-spout, the screen h^2, box h^3, with side openings, h^6, chute h^4, and blast-box h^5, as set forth.

17. The combination of the end plates of the cylinder, the cylinder-bars adapted to recesses therein, the confining-bands, and the fan-blades secured to said bands, as set forth.

18. The combination of the riddle, the rock-shaft g^4, the cam-levers g^4, and the brackets g^5, carved for adaptation to said levers, as set forth.

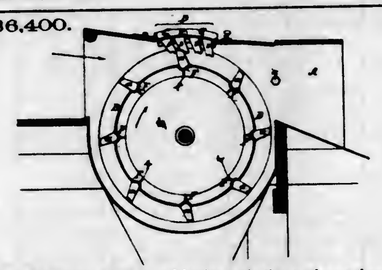
336,400. **THRASHING-MACHINE.** JOHN ELLIS, East Coventry, Pa., assignor to George B. Ellis, same place. Filed June 20, 1885. (No model.)

Claim.—1. The combination of the cylinder of a thrashing-machine, a concave, arms carrying the said concave and pivoted below and in the rear of the same, and springs acting upon said arms and tending to depress them, as set forth.

2. The within-described cylinder-bar, consisting of a web presenting reverse curves *g* and *h*, and having projecting teeth, as set forth.

3. The within-described cylinder-bar, consisting of a web presenting reverse curves *g* and *h*, and having projecting teeth cast therewith, and forming transverse braces therefor, as specified.

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336,401. **STEAM ROCK-DRILL.** HENRY FISHER, New York, N. Y. Filed Nov. 27, 1885. (No model.)



Claim.—1. The combination, with the cylinder, the valve-chest, the admission-port E, the channel E', the ports *a a'*, leading from the cylinder to the valve-chest, the passages *b b'*, leading from the ends of the valve-chest to the cylinder, the exhaust-ports *c c'*, opening into said channel, and exhaust-passages *e e'*, of the steam-moved valve D, having three pistons, *d d' d^2*, the one, *d'*, controlling the steam-admission port E, the other, *d*, controlling the exhaust-port *c*, and the other, d^2, controlling the exhaust-port *c'*, substantially as described.

2. The combination, substantially as shown and described, of the steam-ports *a a'*, leading from the valve-chest to the cylinder, the admission-port E, the exhaust-ports *c c'*, properly aligned in the valve-chest, the steam-actuated piston-valve D, the exhaust-passages *e e'*, leading from the ends of the valve-chest to the exhaust-port, and the valves F F', governing the exhaust-ports and actuated by the valve D, substantially as shown and described.

3. The combination, with the main cylinder, the piston, the feed-screw I, and housing H, of the toothed nut J, engaging the feed-screw, the auxiliary cylinder L in steam-connection with the main cylinder by a port, *l*, the plunger *l'* in said cylinder L, the spring-pressed lever M, engaged by the plunger, and the pawl *m'*, hinged to the lever to engage the teeth on the nut, substantially as shown and described.

4. The combination, with the main cylinder, the piston, the feed-screw I, and housing H, of the toothed nut J, engaging the feed-screw, the auxiliary cylinder L, the port *l*, leading from the main cylinder to the same, the plunger *l'* in the auxiliary cylinder, the spring-pressed lever M, the pawl *m'* thereof, the stop m^3, and regulating-screw l^3, substantially as shown and described.

336,402. **MECHANISM FOR EXTRACTING STEEL AND IRON FRAGMENTS FROM GRAIN.** FRANK E. FISHER, Detroit, Mich. Filed June 20, 1885. (No model.)



Claim.—1. The combination of a revolving magnetic cylinder composed of magnets extending longitudinally the full length of the cylinder, a dynamo for producing a current through the helices of the magnets, and means, substantially as described, for successively breaking the circuit of the magnets, with a hopper located above and extending partially around the magnetic cylinder, as and for the purposes set forth.

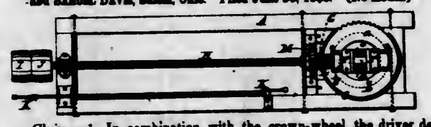
2. The combination of a revolving magnetic cylinder composed of magnets extending longitudinally the full length of the cylinder, and arranged parallel to and annularly around the shaft of the cylinder, a dynamo for producing a current through the helices of the magnets, and means, substantially as described, for successively breaking the circuit of the magnets, with a hopper located above and extending partially around the magnetic cylinder, as and for the purposes set forth.

3. The combination of the hopper A, the spout A^2, and the chute A' with the magnetic cylinder located between the hopper and chute and partially surrounded by the hopper, and composed of magnets extending longitudinally the length of the cylinder, a dynamo for producing a current through the helices of the magnets, and means, substantially as described, for successively breaking the circuit of the magnets as they pass over the chute, as and for the purposes described.

4. The combination of a magnetic cylinder comprising electro-magnets composed of the loops *b*, poles *b'*, and insulators or diamagnetic metal b^2, with the arms wound from end to end, a dynamo for producing a current through the helices of the magnets, a hopper located above and partially surrounding the cylinder, a spout and a chute below the cylinder, and means, substantially as described, for successively breaking the circuit of the magnets as they pass over the chute, as and for the purposes described.

5. The combination of a magnetic cylinder comprising electro-magnets extending the full length of the cylinder, and composed of loops *b*, poles *b'*, and insulator or diamagnetic metal b^2, a dynamo for producing a current through the helices of the magnets, and means, substantially as described, for intermittently breaking the circuit of the magnets, substantially as described.

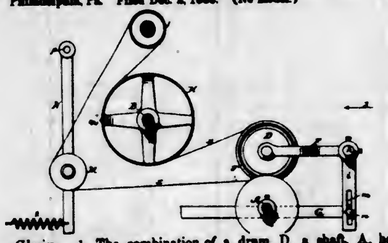
336,403. **MACHINE FOR BORING WELLS.** NORMAN B. GARRISON and SAMUEL DAVIS, Salem, Ohio. Filed June 20, 1885. (No model.)



Claim.—1. In combination with the crown-wheel, the driver detachably connected therewith and provided with the rollers *e e*, arranged, respectively, on each side of the opening therein, for the purpose specified, and substantially as described.

2. In a machine for boring Artesian wells and other similar wells, the frame A, crown-wheel and bearing-ring B, driving-pinion, and roller adapted to run upon the verge of said wheel, detachable driver provided with rollers *e e*, and a rod or shaft, N, constructed and arranged to operate in the manner substantially as described, and for the purpose specified.

336,404. **DEVICE FOR TRANSMITTING POWER.** WM. G. GAM, Philadelphia, Pa. Filed Dec. 2, 1885. (No model.)



Claim.—1. The combination of a drum, D, a shaft, A, having friction-disks for clamping the sides of said drum, a shaft, B, having a pulley, H, and a belt adapted to said pulley and to the drum D, whereby said single drum serves as the medium for transmitting power of the shaft A to the shaft B, all substantially as specified.

2. The combination of the shaft A and its clamping-disks, the drum D, confined between said disks, but adjustable from and toward the shaft, the shaft B, having a pulley, H, and a belt adapted to said pulley and to the drum D, whereby said single drum serves as a medium for transmitting the power of the shaft A to the shaft B, all substantially as specified.

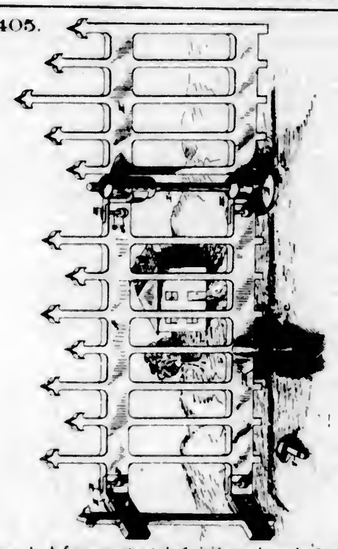
3. The combination of the shaft A and its friction-disks *a a'*, the drum D, the shaft B and its pulley H, the belt *x*, adapted to said pulley and to the drum, the rock-shaft h, and the arm F, carrying the drum, the slotted arm *i*, and the rod G, having a pin adjustable in the slot of said arm, all substantially as specified.

4. The combination of the shaft A and its friction-disks *a' a''*, the drum D, confined between said disks and adjustable from and toward the shaft, the shaft B, having a pulley, H, the idler-pulley J, the tightening-pulley M, the arm N and its spring *i*, and the belt *x*, adapted to said pulleys and to the drum D, all substantially as specified.

5. The combination of the drum D, having on each side a narrow projecting ring of leather or like frictional material, with the shaft A, having clamping-disks bearing upon said narrow projecting friction-rings, one of said disks being under the influence of a spring, all substantially as specified.

336,405. **FENCE.** HENRY S. GRIFFIN, Bridgeport, Ill. Filed Mar. 24, 1885. (No model.)

336,405.



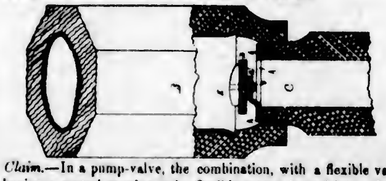
Claim.—1. A fence constructed of rigid panels, each of which is mounted upon a central pivot, said panels being connected one to the other by removable keys, substantially as and for the purpose specified.

2. A fence constructed of panels, each of which is pivoted centrally and supported by said pivot, the ends of each panel being rabbeted and there normally overlapping, and removable wedges passing through the overlapping portions, substantially as and for the purpose specified.

3. A panel for a fence having a central pivotal support consisting of a bearing-plate or disk secured to the panel and having a pin projecting from its under side, and a block in which the pin normally rests, substantially as and for the purpose specified.

4. A fence consisting of centrally-pivoted panels having contiguous overlapping rabbeted ends keyed together and rabbeted angle-pieces securing the panels together at the angles of the fence, substantially as and for the purpose specified.

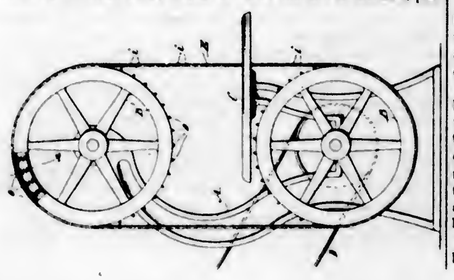
336,406. VALVE FOR PUMPS, &c. WASHINGTON Z. HAIGHT, Winnebago City, Minn. Filed Oct. 20, 1883. (No model.)



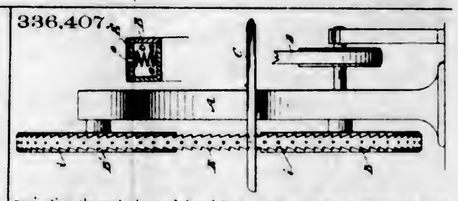
Claim.—In a pump-valve, the combination, with a flexible valve-seat having a central opening and a flexible tongue formed integral with the valve-seat and projecting into said opening, of a flexible valve greater in diameter than the opening in the seat secured to the upper side of the tongue at a point in or approximately in a line with the vertical center of the opening in said valve-seat, substantially as set forth.

336,407. BAND-SAW MILL. FRANCIS M. HANES and HORACE N. SIDLEY, Midway, La. Filed Oct. 1, 1885. (No model.)

Claim.—1. The combination, with a band-saw having a longitudinal series of holes, of the wheels on which the saw is mounted, pins



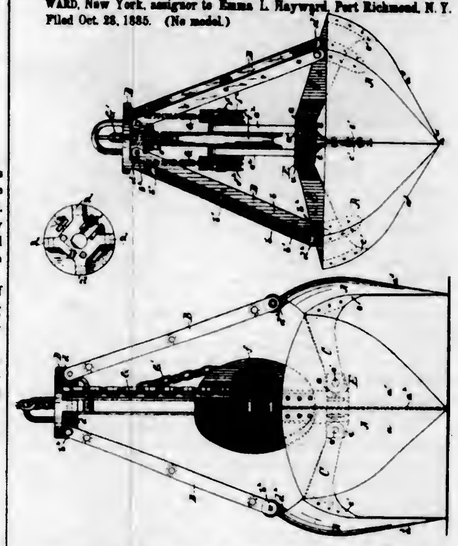
336,407.



projecting through the peripheral faces of said wheels to engage the said holes, and springs for affording a yielding movement to the said pins, substantially as set forth.

2. The combination, with a band-saw having a longitudinal series of holes, of the band-wheels having hollow rims, the outer faces of which have perforations therein, posts *a a* within the rims, in alignment with the holes therein, pins projecting through said holes and provided with collars *c*, and the spiral springs on the posts *a* and bearing against the said collars, substantially as set forth.

336,408. GRAPPLING AND DREDGING BUCKET. JOHN H. HAYWARD, New York, assignor to Emma L. Hayward, Port Richmond, N. Y. Filed Oct. 28, 1885. (No model.)



Claim.—1. A dredging-bucket composed of three or more equal sections of an inverted hollow cone, the apex of which is the center of the bucket-bottom, together with mechanism, substantially as described, whereby the several sections when opened downward will extend vertically toward the substance to be penetrated and collected, as and for the purpose specified.

2. A dredging-bucket composed of equal sections of an inverted hollow cone with their edges opposed and in contact, in combination with operating-arms, all of equal length and pivoted in one and the same plane to a movable block, E, said plane being, when the sections constitute the closed bucket, above the plane in which the extended ends of the arms are jointed to the bucket-sections, whereby when the bucket is opened by the descent of the said block the sections will separate at their rim-line, as specified, and for the purpose set forth.

3. A dredging-bucket composed of equal sections of an inverted hollow cone with their side edges opposedly in contact, in combination with the operating-arms and movable block, substantially as described, and having the described flanges at their upper or rim corners, whereby contact-surfaces are there constituted, as and for the purpose described.

4. A dredging-bucket composed of equal sections of an inverted hollow cone with their side edges opposedly in contact, in combination with a movable block suspended to a stationary block, and arms pivoted to said movable block in one and the same plane and jointed at their extended ends to the bucket-sections in a lower plane, together with connecting-rods intermediate the rim of the bucket-sections and the stationary block and pivoted to each, whereby when the bucket-sections are opened downward the adjacent corners of the bucket-sections will be oppositely in contact, as and for the purpose specified.

5. In a dredging-bucket composed of equal sections of an inverted hollow cone, the side edges of which are oppositely in contact, the said

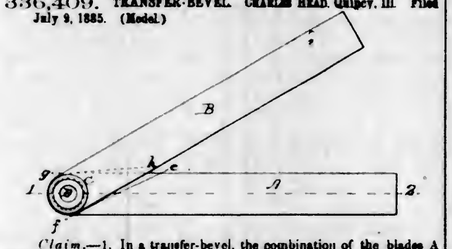
sections, composed of two halves with longitudinal flanges riveted together, as and for the purpose specified.

6. In a dredging-bucket composed of equal sections of an inverted hollow cone, the side edges of which are oppositely in contact, the combination, with such sections, of the arms C, composed of the branches *c*, parallel at their inward ends, and there engaging and pivoted to lugs on the block E, and having divergent outward ends extending and rigidly attached to the flanges a^3 of the bucket-sections, as and for the purpose specified.

7. In combination with the equal sections of a dredging-bucket, in the form of an inverted hollow cone with oppositely-meeting side edges, and a stationary block, D, the connecting-rods B, composed of two parallel strips, *b*, cross-pieces *b'*, and having pivotal bolts b^2, uniting them at opposite ends to the block and bucket-sections, respectively, as and for the purpose specified.

8. In a dredging-bucket composed of equal sections of an inverted hollow cone with side edges oppositely in contact, the combination therewith of operating-arms and connecting-rods, substantially as described, together with the block D and the block E, the pillars e^2, shaft *f*, pulley *f'*, pulleys f^2, and chains G and G', all constructed and arranged to operate as and for the purpose specified.

336,409. TRANSFER-BEVEL. CHARLES HEAD, Quincy, Ill. Filed July 9, 1885. (Model.)



Claim.—1. In a transfer-bevel, the combination of the blades A and B, rabbeted to half their thickness to the lines *e f* and *g h* at their united ends, so as to bring their sides in the same plane, as set forth.

2. In a transfer-bevel, the rabbeted blade A, having the screw *d*, secured in its rabbeted end, in combination with the rabbeted blade B and the nut C, as described.

3. A transfer-bevel consisting of two blades oppositely rabbeted at their connected ends and connected by a screw and nut, as shown, so as to hold their faces in a common plane.

336,410. FARE-RECEIVER. ELWOOD HEADLEY, New York, N. Y. Filed June 23, 1885. (No model.)



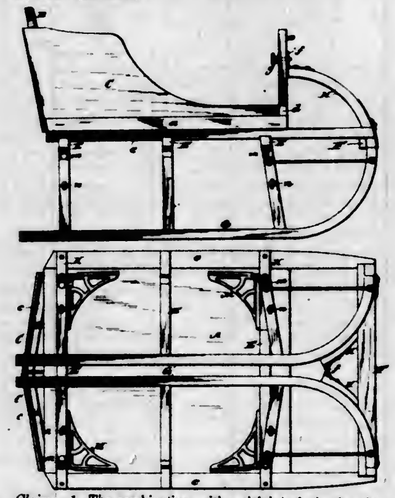
Claim.—1. In a fare-receiving device, the combination, with a delivering apparatus and tubes leading thereto, of a receptacle connected to said tubes and provided with slotted racks adapted and arranged so that balls of different sizes will be automatically separated and delivered to different tubes, substantially as described.

2. In a fare-receiving apparatus, the combination, with a tube for the reception of a series of balls, of a delivering and recording apparatus consisting of a pocket or valve adapted to discharge but one ball at a time, means, substantially as described, for operating the same, and a registering device operated by the movement of said pocket, substantially as set forth.

3. In a fare-receiving apparatus comprising arch-shaped tube or tubes for the reception of balls, the combination with a delivery-box connected therewith, and a receptacle for the deposition of the balls, connected with said tubes, of a piston by the movement of which said balls are transferred from one section or leg of the tube to the other, substantially as described.

4. In a fare-receiving apparatus comprising arched tube or tubes for the reception of balls, having a piston in one end, by the movement of which the balls are shifted, the combination, with said tube, of a valve for closing and opening the inlet from the receiving-box, and a valve to prevent the return of shifted balls, substantially as described.

336,411. SLEIGH. SILAS F. HEWITT, New York, N. Y. Filed Dec. 23, 1885. (No model.)



Claim.—1. The combination, with a sleigh-body having the cross-beams E, the front cross-bar, F, and the raves *e*, connected with the beams and cross-bar, of the runners G, hinged at their front ends to said cross-bar, the knees L, having a hinged connection with the cross-beams, the braces M, also having a hinged connection with the cross-beams, and screws *w* and *n*, for locking the knees and braces, respectively, in their unfolded position, substantially as described.

2. The combination, with the raves *e*, cross-beams E, and front cross-bar, F, of a sleigh-body, of the runners G, hinged at their forward extremities to said front cross-bar, the knees L, having a hinged connection with the cross-beams, and the braces M, also having a hinged connection with the cross-beams, and fastening device for locking the knees and braces, respectively, in their unfolded position, substantially as described.

3. The combination, with the raves *e* and cross-beams E of a sleigh-body, of the runners G, hinged at their forward ends, the knees L, having a hinged connection with the cross-beams, and each provided with the box N, outside its hinged point, to receive the upper ends of the runner-standards, and the braces M, also having a hinged connection with the cross-beams, substantially as described.

4. The combination, with a sleigh-body having a folding back, B, and folding sides C, of a rearwardly-folding dash-board, D, adapted to fold down upon the forward ends of the sides, substantially as described.

5. The combination, with a sleigh body and runners, of a folding back, folding sides, a folding dash-board, and braces hinged to the raves on their connecting cross-bar and having a detachable connection with the folding dash-board, substantially as described.

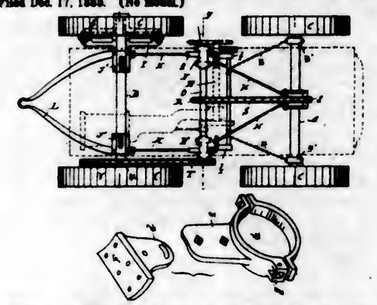
6. The combination of the cross-beams E E, floor A, having side strips, *a a*, and cross-bar *d*, the folding back B, folding sides C C, folding dash-board D, raves *e e*, cross-bar F, hinged braces H H, and a fastening for connecting said dash-board and braces, substantially as described.

7. The combination of the strip K, hinged knee L, hinged brace M, and fastenings for securing said knee and brace in an unfolded position, substantially as described.

8. The combination of the cross-beams E E, folding knees L L,

hinged braces M M, runners G G, and fastenings for securing the knees and braces, thereby securely supporting the runners in an unfolded position, substantially as described.

336,412. TRACTION-ENGINE. SAMUEL R. JARVIS, Lansing, Mich. Filed Dec. 17, 1885. (No model.)



Claim.—1. In a traction-engine, the combination of the front support of the boiler having a ball-and-socket pivot, with the front axle, of the brace-rods H H, pivotally connected to said front support, of the hangers M, secured to the boiler between its front and rear supports, and having the rear ends of the brace-rods H H adjustably connected thereto, of the braces K K, secured at one end to the brackets M, and of the rear supports of the boiler terminating in boxes in which the rear axle is journaled and to which the rear ends of the braces K and the front ends of the draw-bar are connected, all arranged substantially as described.

2. In a traction-engine, a front support consisting of a saddle rigidly secured to the boiler, and a journal-box secured to said saddle and adjustable thereon in the arc of a circle, substantially as described.

3. In a traction-engine, a front support consisting of a saddle stationarily secured to the boiler and having two downwardly-projecting flanges, and of two boxes secured thereto and adjustable thereon in the arc of a circle, said boxes forming the journals for a sprocket-wheel to which motion is conveyed by means of a chain, substantially as described.

4. In a traction-engine, in combination, the front saddle, F, having downwardly-projecting flanges *d*, the adjustable boxes G, having upwardly-projecting flanges *c*, the bolts *e e'*, adjustably securing the parts together, the sprocket-wheel *f*, journaled in the boxes G, the gears *g'* on the boxes G, the brace-rods H, and the hangers M, all arranged substantially as described.

5. In a traction-engine, substantially as described, the sliding boxes N, in which the counter-shaft O is journaled, which transmits the tractive power by means of chains and sprocket-wheels, substantially as described, in combination with the braces K, which run parallel to each other and form longitudinal supports upon which the sliding boxes N are sleeved and adjustably secured thereon, all combined substantially as and for the purposes described.

6. In a traction-engine, the combination of the braces K, arranged parallel to each other and forming a longitudinal support for the sliding boxes N, of the brackets M, having the inner ends of the braces K secured thereto vertically adjustable, of the sliding box N, adjustably sleeved upon said braces K, and of the counter-shaft O, which transmits the tractive power from the crank-shaft by means of sprocket-wheels and chains, all arranged for the purpose of forming proper means for adjusting the drive-chains, substantially as described.

7. In a traction-engine, the combination of the saddle J, upon which the rear end of the boiler is supported upon the rear axle, of the boxes J', in which the rear axles are journaled, of the shoulders A, upon the lower side of said boxes, of the draw-bar L, provided with hooked inner ends, engaging with the aforesaid shoulders, and of the system of brace-rods H H, connecting the rear supports of the boiler with the front support on the same general plane, all substantially as and for the purposes described.

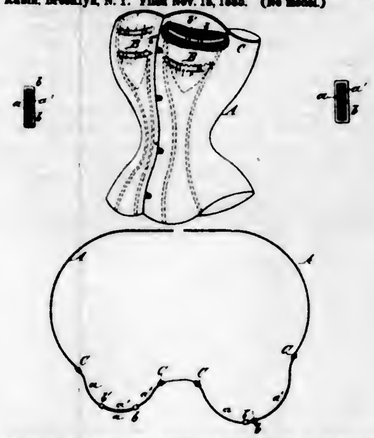
8. In a traction-engine, a ball-shaped epicyclic train of gear forming one member of a ball-and-socket pivot of the front axle, substantially as described.

9. The combination, with the front axle, of a ball-shaped epicyclic train of gear in the center of a front axle, of a sprocket-wheel having a central ball-socket, of the pin Q, engaging into a segmental recess in the ball-socket, of the hollow shafts *u*, and of the front wheels engaging with the outer ends of the hollow shafts, substantially as described.

10. The combination, with the front axle having a recessed ball formed thereon, of an epicyclic train of gear concealed within the recesses of said ball and completing its ball form, of a sprocket-wheel journaled in the front support and having a central ball-socket, of the pin Q, engaging into a segmental recess in said ball-socket, and of the hollow shafts *u*, which transmit the motion from the epicyclic train to the front wheels, all arranged substantially as described.

11. The combination of the front axle and front wheels with the hollow shafts *u*, said hollow shafts being provided upon their inner ends with gear-wheels forming part of a ball-faced epicyclic train of gear arranged to transmit motion and forming the ball of a ball-and-socket pivot, substantially as described.

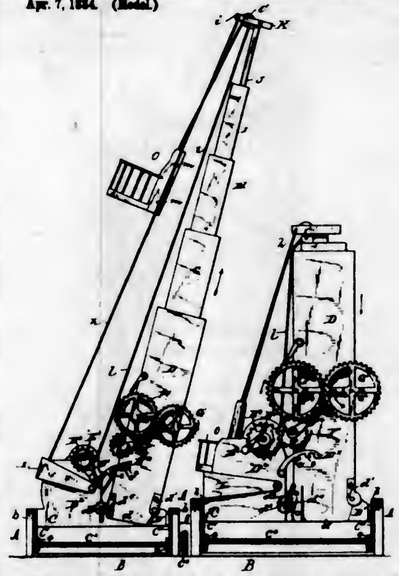
336,413. CORSET. IDA KARP, New York, assignor to herself and MAX RABIN, Brooklyn, N. Y. Filed Nov. 18, 1885. (No model.)



Claim.—1. A corset the breast-swells of which are provided with one or more transverse extensible springs, substantially as set forth.

2. In a corset, the combination, with the breast-swells and stays adjoining said breast-swells, of one or more transverse extensible springs made of two sections attached to said stays and guided along each other by loops at the overlapping ends, substantially as set forth.

336,414. FIRE-ESCAPE. WILLIAM A. KERR, Vienna, N. J. Filed Apr. 7, 1884. (Model.)



Claim.—1. The combination, in a fire-escape, of a series of telescopic sections, devices for elevating the same, a car with means for elevating and lowering the same and adapted to be thrown into and out of engagement with the devices for elevating the telescopic sections, and a rack-bar or its equivalent for locking said means in an engaged or disengaged position, substantially as set forth.

2. The combination, in a fire-escape, of a series of telescopic sections, pinions and rack-bar attached thereto for elevating and lowering the same in unison, substantially as shown, and for the purpose set forth.

3. The combination, in a fire-escape, of a series of sections which slide one within the other, pinions and rack-bars, arranged substantially as shown, for elevating and lowering the same simultaneously, said sections being supported upon a pivoted base, with segmental rack-plates which are operated by a shaft with pinions, and devices for inclining the sections at right angles therewith, for the purpose set forth.

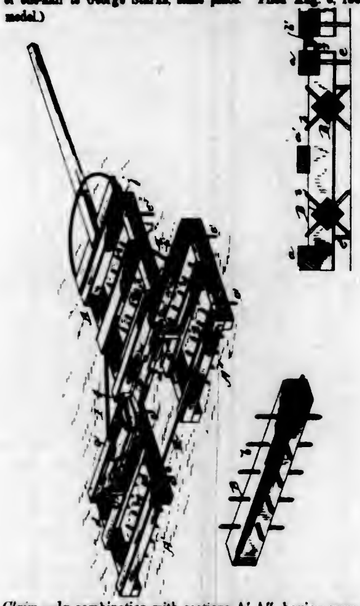
4. A fire-escape consisting of a series of telescopic sections, each section carrying two independent rack-bars and a pinion, the parts being organized so that when one of the sections is moved the adjacent sections will be similarly actuated, substantially as shown, and for the purpose set forth.

5. In a fire-escape, a series of telescopic sections geared to each other so as to move in unison, the operating-shaft having attached thereto a drum around which passes a guide-cord, said guide-cord being attached to the upper section so that the same will be paid out as the sections are elevated, and a pivoted spring-section with guide-rollers, substantially as shown, and for the purpose set forth.

6. In a fire-escape, constructed substantially as shown, a pivoted yoke-bar, L, which serves as a spring-stop for the car and takes up the slack of the guide-ropes for the car, substantially as and for the purpose set forth.

7. In a fire-escape, the combination of the adjustable and extensible telescopic sections with a guide-rope, *h*, attached to a roller which is geared to the operating mechanism of the telescopic sections, a car mounted thereon and provided with a rope for elevating and lowering the same, a spring yoke-bar which serves as a stop for the car and takes up the slack of the rope *h*, the parts being organized substantially as shown.

336,415. HARROW. CHARLES LAMBIE, Minneapolis, Minn., assignor of one-half to George Starks, same place. Filed Aug. 6, 1885. (No model.)



Claim.—In combination with sections A' A'', having cross-bars *a'* upward-projecting standards which are bifurcated at their upper ends, the recessed cross-bar D, adapted to rest within said standards and provided with a seat, the hooks and staples *e f f''* and connecting-rod E, the front section, A, having a removable draft-tongue attached thereto, staples *b' b'*, and brace-bars I I, the parts being organized substantially as shown.

336,416. COFFIN. WILLIAM C. LAUTNER, Detroit, Mich. Filed Sept. 14, 1885. (No model.)



Claim.—1. The combination, with a casket having an outer metallic shell, of wooden pieces arranged within said shell and abutting against the side walls thereof to receive the handle-attaching screws, said wooden pieces being incased in metallic housings secured to the interior of the shell, substantially as described.

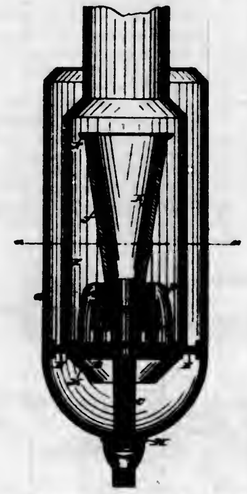
2. The combination, with a casket having an outer metallic shell, of a bottom board connected with the metallic bottom, wooden blocks abutting against the side walls of the shell, and having metallic housings within which said blocks are contained, and wooden stiffening-strips resting against the sides of the shell and interposed between the top and bottom, and the housings for the wooden blocks, substantially as described.

336,417. SCHOOL-DESK. GEORGE MARCHA, Cincinnati, Ohio. Filed July 20, 1885. (No model.)



Claim.—A desk having two lids, E and F, pivoted on a common center, one above the other, and adapted to be raised or lowered separately or simultaneously, the inner or adjacent faces of said lids having slates L M inlaid therein, substantially as described.

336,418. GAS-BURNER. OSCAR D. MCCLELLAN, Philadelphia, Pa., assignor to Adolph Wasserman, same place. Filed May 19, 1885. (No model.)

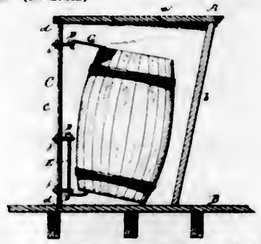


Claim.—1. The burner A, consisting of a circular row of tubes, in combination with arms B, supporting said burners A, supports E, deflector M, secured to said supports E, pipe C, and globe G, substantially as and for the purpose set forth.

2. The gas-burner A, in combination with the globe G, having an opening in the top smaller than the body thereof, and the inner chimney, F, having a neck, and the deflector M, extending below the said chimney, the said globe extending above the body of the said chimney and resting on a shoulder of the supply-gas pipe, substantially as described.

3. An inlet-pipe, in combination with a circular row of burners, a shell surrounding said burners, a chimney, a globe closed at the bottom and encircling said chimney, and a central deflector within said row of burners and extending above the same, and a deflector extending below the said burners within said globe, substantially as and for the purpose set forth.

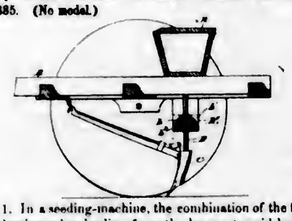
336,419. BARREL-HOLDER. ALBERT MCQUISTON, Elsie, Mich. Filed Dec. 10, 1885. (No model.)



Claim.—1. In combination with a vertical pivoted rod having eyes attached thereto, a hook, G, secured to the upper eye, and a bent bar pivotally attached to the lower eyes, substantially as shown, and for the purpose set forth.

2. In a barrel-support, a vertical pivoted bar provided with a hook which is adapted to engage with the upper edge of a barrel, a bent bar attached near the lower end of the same, and provided with a disk or plate with upwardly-projecting pins, the same being adapted to hold a barrel in an inclined position, substantially as shown, and for the purpose set forth.

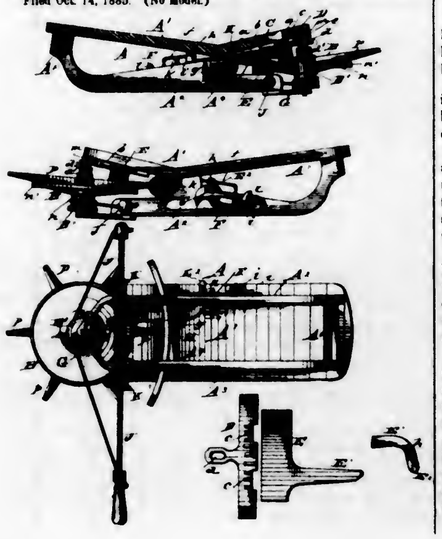
336,420. GRAIN-DRILL. CHARLES L. MERCIER, Pitt, Ohio. Filed Oct. 21, 1885. (No model.)



Claim.—1. In a seeding-machine, the combination of the frame, the boots, the conducting-tubes leading from the hopper to said boots, and a guide-bar secured to the frame above the boots and having guides that engage the conducting-tubes to hold them normally in proper position within the boots, substantially as described.

2. In a seeding-machine, the combination of the frame, the adjustable boots thereof, the flexible conducting-tubes leading from the hopper to said boots, and a guide-bar arranged above the boots and detachably bolted to the frame and having a series of openings, b^3, through which the flexible conducting-tubes are passed and normally held by said bar in proper position within the boots, substantially as described.

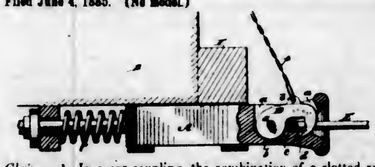
336,421. BROADCAST SEED-SOWER. THOMAS J. MILLER, North Manchester, Ind., assignor of one-half to George W. Heary, same place. Filed Oct. 14, 1885. (No model.)



Claim.—1. The combination of the frame A, throated, as described, the scattering-wheel, the bow and cord, the ribbed agitator and actuating mechanism, and the plate E, its angular arm, spring, staple-guide, and slotted gage provided with a thumb-screw and gage-marks, the whole constructed and combined as shown and described.

2. In the broadcast seed-sower described, the combination of the spring-actuated bow, its movable flanged tubes, and seed-scattering wheel, as specified.

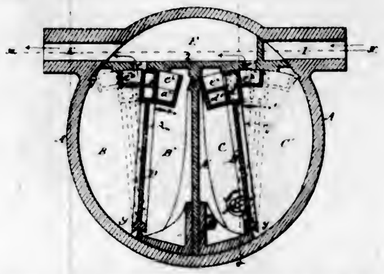
336,422. CAR-COUPLING. CHAUNCEY W. MILLS, Rochester, N. Y. Filed June 4, 1885. (No model.)



Claim.—1. In a car-coupling, the combination of a slotted and recessed draw-head the mouth of which is contracted beneath the forward end of the slot and in front of the recess to form a guard, *c*, a coupling-hook pivoted in said draw-head with its pivotal end at the rear of said guard, and provided at its outer end with an externally curved hook having straight inner faces, *f g*, and a slotted link for engaging said hook, substantially as described.

2. In a car-coupling, the combination of a draw-head having a longitudinal slot, *a*, and recesses *b d*, said draw-head being contracted beneath the slot and between the recesses *b d* to form a guard, *c*, the coupling-hook D, pivoted in said draw-head behind the guard *c*, and provided with a hooked end having a curved outer surface, point *h*, and straight inner faces, *f g*, and a coupling-link, E, substantially as described.

336,423. OSCILLATING METER. LEWIS H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Sept. 23, 1885. (No model.)



Claim.—1. The combination, with the case having inlet and outlet ports and passages, of coacting rocking or swinging pistons having valve-ports formed in their swinging ends operating to control the said case-ports, substantially as described, for the purpose specified.

2. The combination, with rocking pistons each having a valve at its swinging end and supported upon a bearing at its other end, of a case having ports and passages operating in connection with the valved ends of said pistons, substantially as described, for the purpose specified.

3. The combination, with a case divided into measuring-chambers and having inlet and outlet ports and passages communicating with said measuring-chambers, of two coacting rocking pistons having valve-ports formed in their swinging ends operating with said case ports and passages, whereby each piston forms the operating-valve for the other piston, substantially as described, for the purpose specified.

4. The combination, in a water-meter, of rocking-plate pistons each having a knife-edge bearing support at one edge upon the case and a valved head at its other edge, with a case having ports and passages coacting with said valved piston-heads, the joint-forming contact of said valved surface being relieved of the weight of said pistons, substantially as described, for the purpose specified.

5. The two rocking-plate pistons each having a series of valve-ports at its swinging end, each having a knife-edge bearing at its other end, sustaining the weight of said piston, in combination with a case divided at its diameter into two measuring-chambers and having ports and passages corresponding with the valve-ports of the pistons, whereby each piston forms the operating-valve for the other and divides its chamber into receiving and discharging chambers, whereby both pistons swing upon separate line-joint bearings and carry their coacting valves free of frictional contact with the case-ports, substantially as described, for the purpose specified.

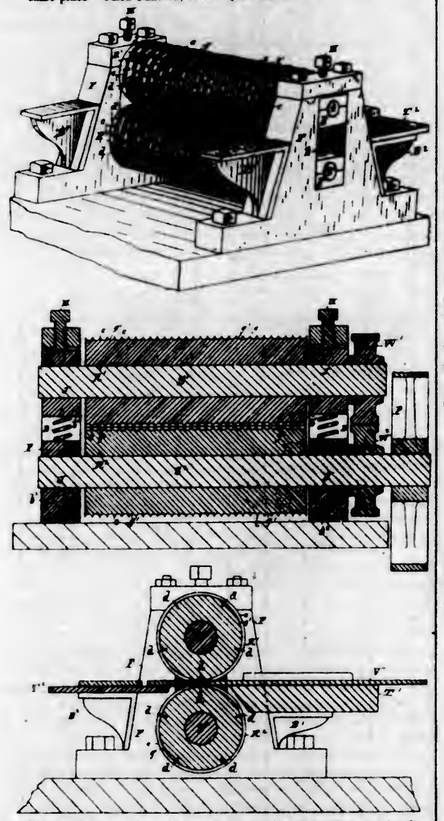
6. The combination, with the meter-case having inlet and outlet ports and the independent swinging coacting valved pistons having the movements of their free ends controlled and limited for co-operation with said case-ports, of means directly connected with one of said pistons for transmitting its motion to the registering mechanism controlled and limited in such transmitting function by the controlling provision for the said pistons, substantially as described.

7. The combination, with the meter-case having inlet and outlet ports and the independent coacting swinging valved pistons, limited in their movements by interior wall-stops, 6 7, for co-operation with said case-ports, of the lever-arm *f*, the flexible case-bearing joint for said lever-arm, and the register-operating connections, substantially as described.

8. The meter-case divided vertically and horizontally and having inlet and outlet ports in its horizontal division, arranged substantially as described, combined with the independent coacting swinging pistons having valve-ports in their swinging ends, each piston controlled and limited in its swinging movements by the interior stops, 6 and 7, whereby the pistons are caused to operate independently of each other and their ports to register with the case-ports.

9. The combination, in a water-meter having separate measuring-chambers, of two coacting rocking pistons, each rocking upon a knife-edge, and an inclosing-case having ports and passages connecting each measuring-chamber with valves for each piston, whereby each piston operates the valve for the other piston, substantially as described.

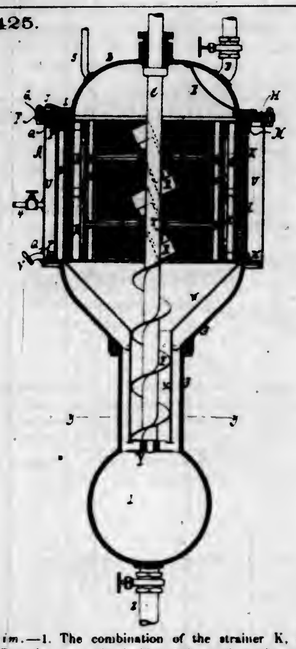
336,424. MATCH-MAKING MACHINE. GEORGE E. NORRIS and WILLIAM E. HAGAN, Troy, N. Y., assignors to the Citizens Match Company, same place. Filed June 12, 1885. (No model.)



Claim.—In a machine for making match-splints, the combination of the guide-platform T', of the rollers R' and R^2, constructed to be rotated together and with the same speed, and each roller having the coincidently-opposite circumferentially-arranged grooves *g'*, with coincident cutting-edges *e* and cross-cutting blades *d*, substantially in the manner as and for the purposes set forth.

336,425. LIQUID-STRAINER FOR PURIFYING SUGAR, &c. JOHN H. OCKERHAUSEN, Greenwich, Conn. Filed Sept. 24, 1885. (No model.)

336,425.



Claim.—1. The combination of the strainer K, the revolving brushes R, acting upon the inside of the strainer, the cylinder A, and the annular chamber U, formed between it and the strainer and provided with a discharge-pipe, V, substantially as shown and described.

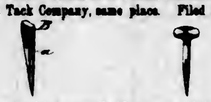
2. The combination of the strainer K, the revolving brushes R, the spiral conveyer Z, and the receiver 1, substantially as described.

3. The combination of the strainer K, the cylinder A, inclosing the strainer, the annular chamber U, formed between them, and the pipe 4, for injecting steam into the annular chamber, substantially as described.

4. The combination of the strainer K, the revolving brushes R, the receiver 1, the supply-pipe D, and means for exposing the liquid in the strainer to pressure, substantially as described.

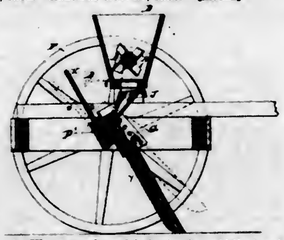
5. The strainer K, when made in divisions, in combination with the guides O and openings H, substantially as shown and described.

336,426. TACK. ELBRIDGE G. PAUL, Fairhaven, Mass., assignor to the American Tack Company, same place. Filed Nov. 11, 1885. (No model.)



Claim.—A tack with flattened sides, one straight and rounded edge, and one edge plain and straight, extending diagonally from one side of the head end to the other or rounded side at the point end, substantially as described.

336,427. GRAIN-DRILL. WORDEN P. PERIN, St. Louis, Mo. Filed Nov. 13, 1882. Renewed Nov. 27, 1885. (Model.)



Claim.—1. The stay-pin and holes in the middle longitudinal beam or tongue extension, in combination with lever K, pivoted beam D', grain-drill hoes Y, and grain-drill frame, substantially as shown and described, for the purpose of holding the hoes Y to the inclined position desired.

2. The combination of hoes Y, holders G, pivoted beam D', and

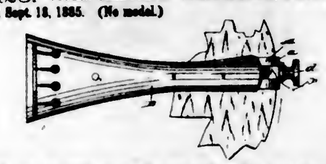
grain-drill frame, substantially as shown, for the purpose specified.

3. The combination of wood pins and iron bolts or pins, holders G, and grain-drill hoes Y, for the purpose of securing the hoes Y to the holders G, substantially as specified.

4. The combination of intermediate or second wood pins with the holders G and hoes Y, for the purpose of limiting or confining the hoes Y in their upward movement or tendency when operating in the ground, substantially as specified.

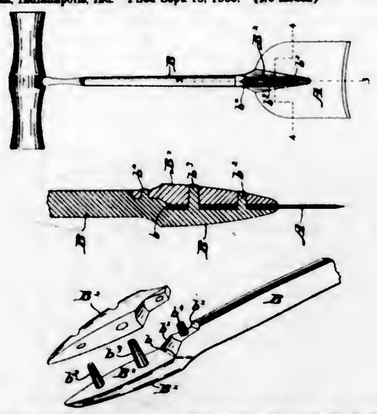
5. The combination of funnels J, holders G, and hoes Y, for the purpose specified.

336,428. VIOLIN TAIL-PIECE. JOSEPH R. PERRY, Wilkes-Barre, Pa. Filed Sept. 18, 1885. (No model.)



Claim.—A tail-piece for violins, consisting of the bent metallic plate curved or waved at the angle of its bend, and having a longitudinal slot for connection with the peg or pin of the violin, and connected by screws to the wooden tail-piece, substantially as shown and described.

336,429. HANDLE FOR TOBACCO-KNIVES. ROBERT E. POINDEXTER, Indianapolis, Ind. Filed Sept. 18, 1885. (No model.)



Claim.—1. The combination, in a tobacco-knife, of the blade A and handle B, said handle B being provided with a clamp on its lower end, consisting of the part B', formed integrally therewith and having rivets formed thereon, and the part B^2, provided with holes adapted to receive said rivets, said blade being interposed between said parts, whereby said blade and handle are rigidly secured together, substantially as set forth.

2. The combination of the blade A, handle B, having the part B' formed thereon, said part B' provided with a shoulder for the end of said blade to bear against, and rivets b^2 b^2 b^4, and the part B^2, having holes to receive said rivets, said blade being mounted on the rivets between said parts, whereby said handle is secured thereto, substantially as set forth.

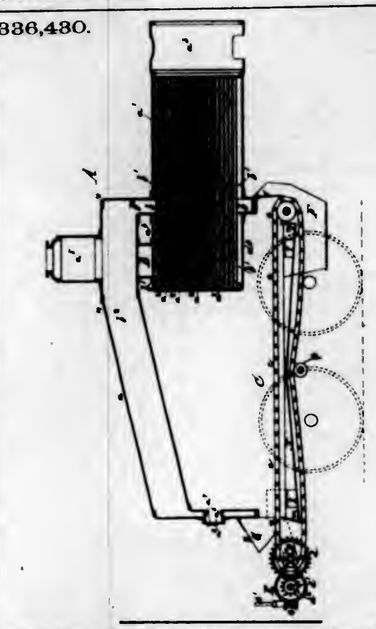
3. The combination, in a tobacco-knife, of the blade and handle, said handle being provided with a clamp, a part of which is formed to fit to each side of said blade, each of which parts is formed tapering from the top to a pointed thin edge at the bottom and has a longitudinal ridge formed on its back, and means for securing said parts together, substantially as set forth.

336,430. STEAM-BOILER. TOWNSEND POOLE, Scranton, Pa. Filed Apr. 30, 1885. (No model.)

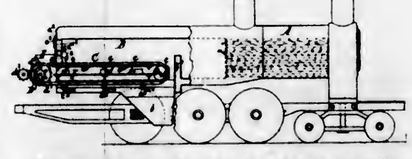
Claim.—1. The combination, with the locomotive-boiler furnace having its front portion extended, as at *x x*, of a cylinder applied partly inside and partly outside the furnace and attached to the front end of the same, below the water-line, and containing the usual boiler-flues, and of suitable water and steam connections between the furnace and cylinder, substantially as and for the purpose described.

2. The combined boiler-furnace comprising a furnace having the extended front portion, as *x x*, flue-cylinder *a' a²*, steam and water way *d*, and steam and water connection B between the cylinder portion a^2 and the top portion of the furnace, substantially as and for the purpose described.

336,430.



336,431. BOILER. TOWNSEND POOLE, Scranton, Pa. Filed May 25, 1885. (No model.)



Claim.—1. In a locomotive-boiler, the endless-chain traveling grate C, arranged over and above, applied upon a drum, D, and revolving spider D', in combination with a fire-box, B, which extends laterally over the locomotive-wheels and forms a portion of the boiler A, and is provided with doors *e* e^3, platform F, side openings, *f*, suitable supporting-girders and rollers for the grate and platform, and a bridge-wall, *b'*, between which and the rear end of the endless grate a space, *w*, for the dump or discharge of ashes, is formed, substantially as described.

2. The grate formed of a series of endless traveling chains arranged over and above the locomotive-wheels, in combination with revolving drums D, spiders D', fire-box B, which extends laterally over the locomotive-wheels and forms part of the boiler A, and has its bridge-wall *b'* some distance forward of the endless-chain grate, so that ashes may be dumped freely, substantially as described.

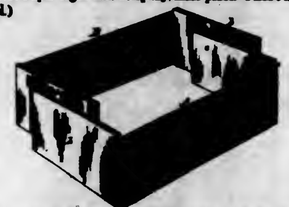
3. The combination of the endless-chain traveling grate C, arranged over and above the locomotive-wheels, with the fire-box B, which extends laterally over the locomotive-wheels and forms a part of the boiler A, and has an ash-discharging space, *w*, between its bridge-wall and the forward end of the traveling fire-bed, substantially as and for the purpose described.

4. The combination of the boiler A, fire-box B, having bridge *b'* and ash-pan *b*, endless traveling chain grate C, arranged over and above the locomotive-wheels partly outside the fire-box, and hopper E, substantially as and for the purpose described.

5. The combination of a sectional endless-chain grate C, arranged over and above the locomotive-wheels, with a fire-box which laterally extends beyond the wheels of a locomotive and has its bridge-wall set some distance forward of the front ends of the grate, so as to form a free dump-passage, *w*, for the ashes, substantially as described.

6. The combination, in a locomotive-boiler, of an endless traveling-chain grate arranged over and above the locomotive-wheels, and a fire-box, which extends laterally beyond the said wheels, substantially as and for the purpose described.

336,432. CIGAR-BOX. DANIEL B. POWERS, New York, N. Y., assignor to the Patent Paper Cigar Box Company, same place. Filed July 10, 1885. (No model.)



Claim.—1. A rectangular cigar-box having ends of double thickness, the sides and ends of said box being composed of two similar blanks, each blank comprising a side and one layer of each end, one end layer of each of said blanks and the other end layer of the same blank being respectively outside and inside the adjacent-end layers of the other blank, substantially as described.

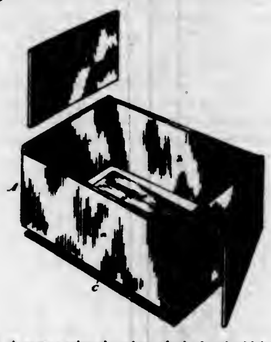
2. A cigar-box having ends of double thickness, the sides and ends of said box being composed of two similar blanks, each blank comprising a side and two end layers, one end layer of each of the blanks being shorter by the thickness of the material than the other end layer of the same blank, substantially as described.

3. A cigar-box having ends of double thickness, the sides and ends of said box being composed of two similar blanks, each blank comprising one side and one layer of each end, and each of said blanks being recessed between its end layers or flaps, substantially as described.

4. A blank for cigar-boxes, consisting of a rectangular strip provided with two transverse scores, and comprising a rectangular side section and two rectangular end sections at opposite ends of said side section, said side section being recessed at one edge between said scores, substantially as described.

5. A cigar-box having ends of double thickness, the sides and ends of said box being composed of two similar blanks, each blank comprising a side and one layer of each end, one end layer of each of the blanks being shorter by the thickness of the material than the other end layer of the same blank, and the sides being recessed the thickness of the cover between the ends, substantially as described.

336,433. CIGAR-BOX. DANIEL B. POWERS, New York, N. Y., assignor to the Patent Paper Cigar Box Company, same place. Filed July 10, 1885. (No model.)



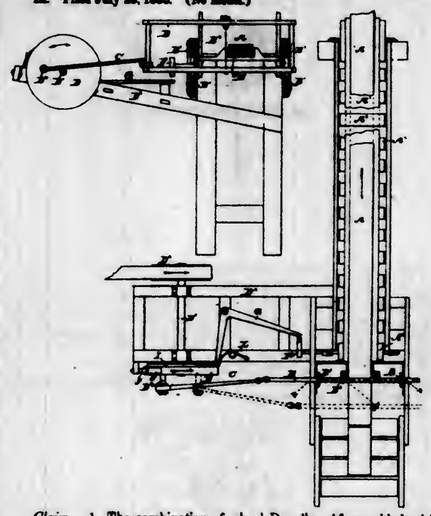
Claim.—1. A rectangular cigar-box, the body of which is composed of a blank comprising the two opposite sides, a single end, and a double end, and an auxiliary blank placed against said single end and forming therewith a double end, the said ends being the thickness of the cover above the sides.

2. A blank for the body of a cigar-box, consisting of a strip having transverse scores *w x y z*, and comprising rectangular recessed side sections, *a b*, an intermediate rectangular end section, *c*, and rectangular end flaps, *d e*, of corresponding shape, and being the thickness of the cover higher than the recessed sides, substantially as described.

3. A blank for the body of a cigar-box, consisting of a strip having transverse scores *w x y z*, and comprising rectangular side sections, *a b*, an intermediate rectangular end section, *c*, and rectangular end flaps, *d e*, of corresponding shape, said blank being recessed at one edge between the scores *w* and *x* and also between the scores *y* and *z*, substantially as described.

4. A blank for the body of a cigar-box, consisting of a strip having transverse scores *w x y z*, and comprising rectangular side sections, *a b*, an intermediate rectangular end section, *c*, and rectangular end flaps, *d e*, of corresponding shape, the end flap, *d*, being the thickness of the material shorter than the end flap, *e*, substantially as described.

336,434. TILE AND BRICK MACHINE. DANIEL B. RAYMOND, Dixon, Ill. Filed July 20, 1885. (No model.)



Claim.—1. The combination of wheel D, roller A^3, provided with a gear-rack on one side thereof, and the frame E, having gear-racks projecting inwardly from the upper and lower side plates of the frame, as and for the purpose set forth.

2. The combination of the roller A^3, provided with the gear-rack A^3, and the frame E, provided on the lower face of the upper side plate and the upper face of the lower side plate, respectively, with the gear-racks E', substantially as shown, and for the purpose mentioned.

3. The combination of the wheel D, yoke I, provided with recess *b*, and the ratchet-wheel H, seated on shaft D', substantially as shown, and for the purpose described.

4. The combination of the roller A^3, provided with the actuating-cam F, the trip-lever G, spring L, wheel D, yoke I, and ratchet-wheel H, substantially as shown, and for the purpose described.

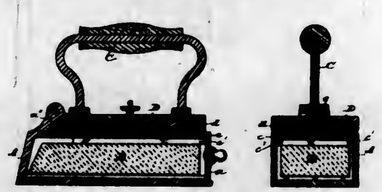
5. The combination of the roller A^3, provided with cam F, trip-lever G, spring L, and yoke I, substantially as shown, and for the purpose named.

6. The combination of the laterally and transversely reciprocating gate B, cutting-edge or wire B^3, pitman C, crank-wrist D^4, and means for driving the same, wheel D, and frame E, reciprocating in the line of movement of the tile or brick material, substantially as set forth.

7. The combination of the transversely-reciprocating frame E, means for reciprocating said frame, the laterally and transversely reciprocating gate B, provided with the cutting-edge or wire, and means for actuating said gate during the outward movement of the frame, substantially as shown, and for the purpose specified.

8. The combination of the rubber belt A', roller A^3, gear-rack A^3, frame E, wire B^3, gear-racks E', cam F, lever G, ratchet H, yoke I, wheel D, pitman C, and spring L, whereby the material is cut into lengths corresponding to the circumference of such roller, substantially as shown, and for the purpose mentioned.

339,435. COMBINED FLUTING AND SMOOTHING IRON. HEINRICH REUTER, Hanover, Hanover, Germany. Filed July 2, 1885. (No model.)



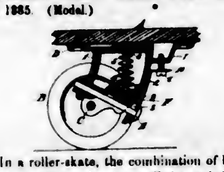
Claim.—The fluting and smoothing iron herein described, consisting of the base A, the plug B, and part D, hinged to said base A, and the corrugated removable plates *c* and *d*, having dovetailed sides that engage corresponding grooves in base A and part D, and are secured in place by the door *a* and set-screw *e*, all constructed and arranged substantially as shown and specified.

336,436. BED-PAN. JOSEPH G. REYNOLDS, Providence, R. I. Filed July 10, 1884. (No model.)



Claim.—In a bed-pan having an overflow-protector, the combination of a rigid tube extending from the rear lower corner of the pan obliquely upward to near the upper edge at the side of the same, a flexible tube attached to the outer end of the rigid tube, and the elastic bulb adapted to start the siphon for the discharge of the fluid contents of the pan, substantially as described.

336,437. ROLLER-SKATE. MILLARD F. RICHARDSON, Liberty, Ind. Filed Apr. 22, 1885. (Model.)



Claim.—1. In a roller-skate, the combination of bracket D, formed with pendent arms 1 and 2, rocker-frame F, journaled on said arms by means of axis E, having a vertical play in arm 2, and the separate adjusting tension-arm 9, having an opening for the passage and support of one end of the axis E, and provided with means for its adjustment, substantially as described.

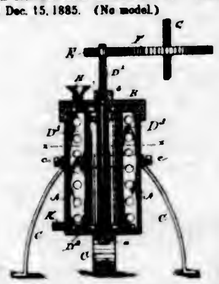
2. A hanger device for a roller-skate, consisting, substantially, of the bracket D, rocker-frame F, springs 5, tension-arm 9, and set-screw 8, substantially as herein specified.

3. In combination with the bracket D, rocker-frame F, springs 5, tension-arm 9, provided with slot 12, and the pendent arm 2, provided with the slot 3, substantially as herein specified.

4. In combination with the bracket D, having the slotted pendent arm 2, the slotted tension-arm 9, engaging with the axis E, and the set-screw 8, for adjusting the springs 5, substantially as herein specified.

5. In combination with bracket D, having pendent arms 1 and 2, rocker-frame F, journaled between said arms, and formed with lugs *l* on its under face on opposite sides of arm 2, to permit movement of the latter, and coiled springs 5, fitting in bracket D, and frame F, substantially as and for the purposes described.

336,438. OIL MIXER AND EMULSIFIER. GEORGE WM. SAMPLE, York, Pa. Filed Dec. 15, 1885. (No model.)

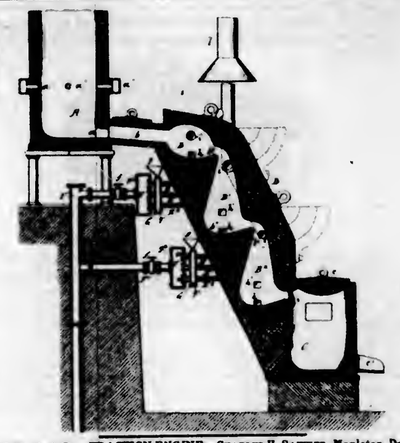


Claim.—In an oil mixer and emulsifier, the combination of the shaft provided with radial arms bifurcated at their ends, the agitating-blades adjustably secured thereto, as shown, and the receiver, substantially as and for the purpose set forth.

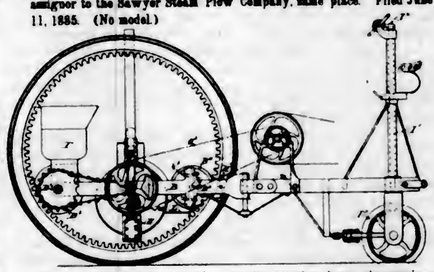
336,439. METHOD OF TREATING METALS. EDWARD SAMUEL, Philadelphia, Pa. Filed Apr. 20, 1885. (No model.)

Claim.—The method herein described of treating molten metals to convert, refine, or purify them, said method consisting in causing the molten metal to fall in a thin sheet through an unobstructed chamber, and directing against the front or rear face of this sheet of falling molten metal divided blasts of air or gases, substantially as described.

336,439.



336,440. TRACTION-ENGINE. CHARLES H. SAWYER, Mapleton, Dak., assignor to the Sawyer Steam Plow Company, same place. Filed June 11, 1885. (No model.)



Claim.—1. The combination of the traction-drum, the carriage arranged therein, the engines, drive-gearing connecting said engines with the drum, a frame, I, arranged in the rear of said drum, bars H, loosely connecting said frame with the carriage, and guiding means arranged on said frame, as and for the purpose set forth.

2. The combination of the sectional drum A A, the carriage arranged therein, the engines mounted on said carriage, driving means connecting said engines with the drum, the frame I, connecting-bars H, carrying the brake-shoes, the flanged guiding-wheel, and means for operating said wheel, as and for the purpose set forth.

3. The combination of the drum, the engines, the carriage having its rear axle provided with projecting ends, the frame I, having the guiding-wheel, the connecting-bars H, having grooves into which the ends of the axle extend, and the pins h^4, as and for the purpose set forth.

4. The combination, with the drum and means for driving the same, of the frame I, tube I', rod I^2, wheel I^3, gear-segment i, worm-shaft i', and handles i^2, as and for the purpose set forth.

5. The combination, with the sectional drum A A, having racks a^3, of the shaft or axle B', having hub F^2, with pinions *f*, mounted therein, the sleeves F, having gears F', the gears B^4, meshing with racks a^3, and means for driving the shaft B', as and for the purpose set forth.

6. The combination, with the drum and carriage arranged therein, of the boiler having heads C' and frame C^2, mounted on trunnions in said carriage, and the driving-engines mounted on said heads C', and means connecting said engines with the drum, substantially as described.

7. The combination, with the carriage, of the boiler having heads C' and frame C^2, mounted by hollow trunnions on the carriage, of the engines supported on said heads and having their crank-shafts passing through said trunnions, as and for the purpose set forth.

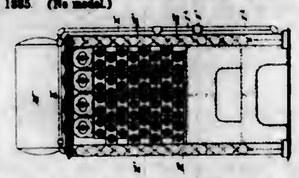
8. The combination, with the carriage having slots B^5, of the boiler having trunnions *c*, boxes C^3, and adjusting-screws S S, as and for the purpose set forth.

9. The combination, with the drum and carriage, of the bars H, connected to the carriage by the ball-and-socket joints, the frame I, joined to said bars H, and the guide-wheel, and means for operating the same, as and for the purpose set forth.

10. The combination, with the sectional traction-drum, of a carriage mounted therein, engines pivotally mounted on said carriage, and means connecting said engine with said drum for driving the latter, as and for the purpose set forth.

11. The sectional drum having its sections united at the edges, with each section free to revolve independently of the other, in combination with the carriage resting on the interior of said drum, the engines mounted on said carriage, and driving means connecting said engines with said drum, as and for the purpose set forth.

336,441. STEAM-BOILER. FREDERICK SCHERR, Brooklyn, N. Y. Filed Apr. 11, 1885. (No model.)



Claim.—1. In a steam-boiler, the side chambers, E, of corrugated sheets, having the throats a little open, so that there may be a sufficient passage for steam to rise directly when such is generated, in combination with the chambered columns $E' E^2$, for allowing an active circulation through the horizontal channels, and suitable tubes, headers, and cross-connection, all arranged for joint operation, substantially as herein specified.

2. The pipe K and controlling-valve I', in combination with the sections A B C D and cross-connection M, and with the branch feed-pipe K' and its controlling-valve K^2, mud-drum I, and blow-off passage I^2, all arranged to serve as herein specified.

3. The side chambers, E, composed of corrugated metal arranged to form channels, in combination with the chambered columns $E' E^2$, connected as shown, and with the inclined tubes C, their connections A B D, and a furnace inclosed in the space between said side chambers, all arranged for joint operation, as herein specified.

4. In a steam-boiler, the side chambers, E, constructed of corrugated metal, having the throats braced apart, so that there may be a limited circulation across from one channel into the next, the chambered columns $E' E^2$, connections for receiving and delivering water, and the tubes A C, headers B D, and suitable steam-connection, M, all arranged for joint operation, substantially as herein specified.

336,442. SAFETY-VENT. GUSTAV SCHMIDT, New York, N. Y. Filed Nov. 24, 1885. (No model.)



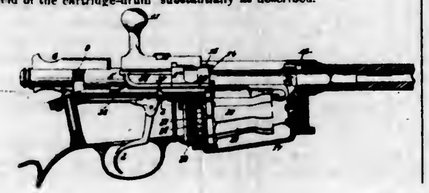
Claim.—1. A safety device or attachment for receptacles containing liquids or gases under pressure, whose bursting disk or plate consists of the mineral mica, substantially as set forth.

2. The body A, provided with the perforated seat *c*, and with ball C, in combination with the bursting disk D, secured to said body, substantially as set forth.

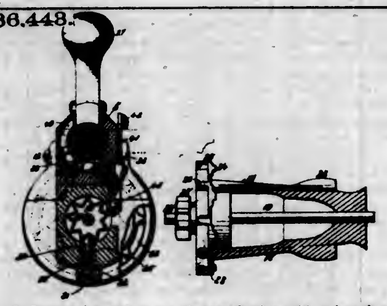
336,443. MAGAZINE FIRE-ARM. OTTO SCHOENAUER, Steyr, Austria-Hungary. Filed Aug. 30, 1884. (No model.) Patented in Germany Feb. 1, 1884, No. 28,433; in Italy Mar. 10, 1884, XVII, 16,488, XXXII, 470; in Austria-Hungary Mar. 28, 1884, No. 2,442 and No. 13,738; in England Apr. 1, 1884, No. 5,793; in Belgium Apr. 30, 1884, No. 64,359, and in France May 10, 1884, No 160,200.

Claim.—1. In a repeating fire-arm, the combination, with a cartridge-drum having a series of loading-chambers and provided with a shield at its end having lugs with beveled angles, of a sliding and revolving breech-bolt having a beveled lug which engages the lugs upon the shield and rotates the drum as the breech-bolt is brought into position for firing, substantially as described.

2. In a repeating fire-arm, the combination, with a revolving cartridge-drum having a shield at its rear end provided with beveled lugs, of a toothed wheel rigid on the shaft of the drum, a spring-actuated pin having a wedge-shaped head engaging said wheel, and a breech-bolt having a beveled lug which is adapted to engage with the lugs upon the shield of the cartridge-drum substantially as described.



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3. In a repeating fire-arm, the combination, with a breech-piece having a groove or recess in one wall and a shoulder upon the opposite wall, of a breech-bolt having a lever, the heel of which engages with the said shoulder, and lugs which lie in the opposite recess when the piece is fired, substantially as described.

4. In a repeating fire-arm, the combination, with a revolving cartridge-drum having beveled lugs upon its shield, of a wheel rigid on the shaft of the drum and having wedging teeth, a spring-actuated pin having a wedging head engaging with said wheel, a breech-bolt having a beveled lug adapted to engage with the lugs of the wheel, and a lever pivoted upon the breech-piece and having a beveled projection upon its end adapted to engage with the wheel on the drum-shaft and throw the drum out of operative position, substantially as described.

5. In a repeating fire-arm, the combination, with a cartridge-drum having a notched wheel on its shaft, of a spring-actuated pin having a wedging head engaging with said wheel, a shield on the end of the drum having beveled lugs, a breech-bolt having a lug which engages with the lugs of the shield, and an extractor-block having a groove in the side which registers successively with two parallel grooves in the breech-bolt, substantially as described.

336,444. FRAME FOR WOVEN MATTRESSES. JAMES F. SLOAN, Toronto, Ontario, Canada. Filed Oct. 1, 1885. (No model.) Patented in Canada Nov. 30, 1885, No. 22,917.



Claim.—The combination, with the divided side bars, C, pivoted together at the adjacent ends of the two parts thereof, of the braces I, the bolts J, securing said braces to the side bars, and the removable bolts K, securing the two parts of the side bars together, substantially as and for the purposes specified.

336,445. TRACK-CLEARER. FRANK B. SMITH, North Springfield, Me., assignor of one-half to Edwin B. Loveland, same place. Filed Dec. 5, 1885. (No model.)





Claim.—1. In a track-cleaner, the combination, with a supporting-frame mounted on wheels, a frame pivotally attached to said supporting-frame, and devices for vibrating said latter frame, of wings and brushes secured to said vibrating frame, substantially as set forth.

2. In a track-cleaner, the combination, with a plow and brush frame secured to the truck-frame in vertically-rocking and laterally-vibrating adjustment, of a cam secured on the axle of the truck and adapted to vibrate the said frame, substantially as set forth.

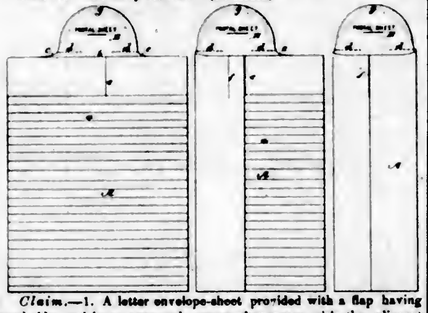
3. In a track-cleaner, the combination, with a skeleton frame having a pair of plow-wings secured to its front end and hinged to the truck-frame at its rear end, of a cam-disk secured to the truck-axle and adapted to engage the branches of the skeleton frame, and thereby vibrate the frame transversely to the track, substantially as set forth.

4. In a track-cleaner, the combination, with a skeleton frame provided with a pair of anti-friction rollers suitably mounted thereon, the frame being secured at its rear end to the truck-frame in laterally-vibrating and vertically-swinging adjustment, and having plow-wings and brushes secured to its front end, of a cam secured to the axle and adapted to engage the anti-friction rollers and vibrate the frame, and means for elevating the frame, substantially as set forth.

5. In a track-cleaner, the combination, with a transversely-vibrating frame, of plow-wings and brushes removably secured thereto, substantially as set forth.

6. In a track-cleaner, the combination, with a cam-disk secured on the truck-axle and adapted to vibrate a plow-frame hinged to the truck-frame, of an operating rod or rope adapted to lift the front end of the plow-frame from the truck and simultaneously lift the same out of engagement with the cam-disk, substantially as set forth.

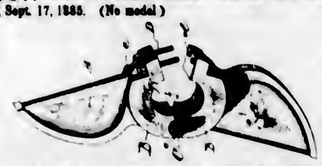
336,446. LETTER ENVELOPE-SHEET. THOMAS W. TERRY, Baltimore, Md. Filed May 23, 1885. (No model.)



Claim.—1. A letter envelope-sheet provided with a flap having curved sides and inner concaved corners that merge with the adjacent straight edge of the sheet without forming sharp angles, said flap being provided with a transverse line of perforations near but not at the line of junction between the sheet and flap, substantially as described.

2. A letter envelope-sheet provided with a flap having curved sides and inner concaved corners that merge with the adjacent transverse straight edge of the sheet body, said flap having a transverse line of perforations above or beyond its junction with the sheet-body, to indicate a line of fold, and the body of said sheet being provided on opposite sides with vertical lines differing in color from the sheet and from each other, to indicate the distance to which the opposite side edges of the sheet-body are to be folded, the back of said sheet and its flap being provided with a postage-stamp that is disposed across the transverse line of perforations, substantially as described.

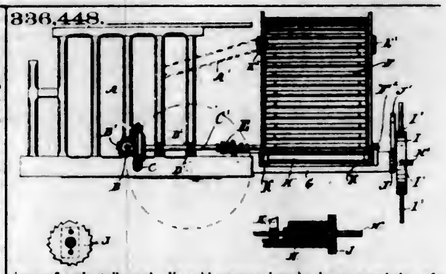
336,447. CAM FOR STAMP-MILLS. CARL A. THUM, Concord, N. C. Filed Sept. 17, 1885. (No model.)



Claim.—A cam for the purpose set forth, having a hub made in two sections and adapted to embrace a shaft, said sections being permanently connected together at one side by a hinge-joint, C, and provided at the opposite side with parallel perforated portions, securing-bolts passing through said perforations, a recess, *f*, in one of said sections, and cam-wings A, formed integral with said sections, substantially as set forth.

336,448. STRAW-CARRIER. HENRY THOMAS, Lecsville Cross Roads, Ohio. Filed May 12, 1885. (No model.)

Claim.—1. The combination of a thresher, a straw-carrier, and



means for pivotally and adjustably supporting the latter, consisting of a bearing-bar removably attached to the frame of the thresher, a ratchet fast to one end of said bar, a shaft passing through and supported by said bar, a pawl carried by said shaft and arranged to engage the ratchet on the bearing-bar, and bars keyed to said shaft and arranged to adjustably support the carrier-frame, substantially as shown.

2. The combination of a thresher and straw-carrier with a removable bar, the eyes for supporting the same, a shaft having bearings in said bar, the ratchet and pawl, supporting-bars carried by said shaft and arranged to engage the carrier, removable bars supporting the carrier driving-shaft, and means for imparting motion to said shaft, all arranged and operating substantially as shown and described.

336,449. BURGLAR-ALARM. ALLEN W. THOMAS and GEORGE W. WAY, Portland, Me. Filed Dec. 17, 1885. (No model.)



Claim.—1. The combination, substantially as set forth, of a segmental plate actuated by a knob-spindle, a slide-plate engaged by said segmental plate, and a cam for disengaging said segmental plate from said slide-plate.

2. The combination, substantially as set forth, of a segmental plate actuated by a knob-spindle, a slide-plate engaged by said segmental plate, a cam for disengaging said segmental plate from said slide-plate, and a spring for holding said segmental plate in contact with said slide-plate.

3. The combination, substantially as set forth, of a bell, a striking mechanism therefor, a rectilinear reciprocatory slide for retracting said mechanism, an oscillatory plate engaging said slide and actuated by the knob-spindle, cams for disengaging said plate from said slide during the turning of the knob, and a spring for returning said slide to its normal position after disengagement.

4. The combination, substantially as set forth, of a bell, a pivoted hammer-lever, a spring connected to said hammer-lever for actuating it, a reciprocatory slide for drawing back said hammer-lever against the tension of the actuating-spring, an arm connecting said hammer-lever with said slide, and an oscillatory plate engaging said slide and actuated by the knob-spindle.

5. The combination, substantially as set forth, of an attaching-plate, a slide-plate guided thereon and provided with lugs, an oscillatory plate actuated by the knob-spindle and adapted to engage one of said lugs when the knob is turned in either direction, a bell, and a striking mechanism therefor connected with said slide.

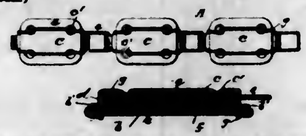
6. The combination, substantially as set forth, of a supporting-plate provided with beveled guideways, a slide reciprocating in said guideways, an oscillating plate engaging said slide and actuated by the knob-spindle, a bracket attached to said plate, a bell supported by said bracket, and a bell-striking mechanism connected with said slide.

7. The combination, substantially as set forth, of the attaching-plate 5, the bracket 10, provided with the ring 12, having a raised rim, 16, and a gong-bell resting on said raised rim.

8. The combination, substantially as set forth, of a segmental plate actuated by a knob-spindle, a slide-plate provided with lugs, and an adjustable fork carrying cams, the position of which limits the duration of

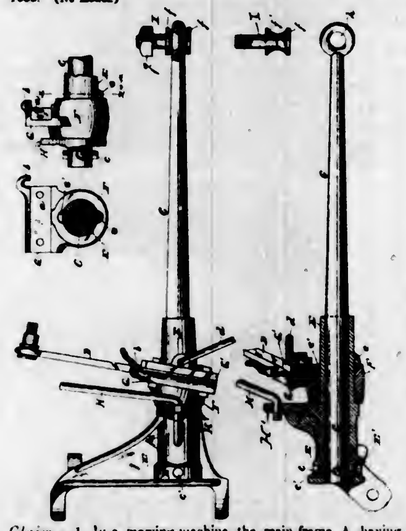
or completely prevents the engagement of said segmental plate with said lugs.

336,450. ELECTRIC BELT. PLACIDO F. VALLIANT, Jefferson, Iowa, assignor of one-half to Gilbert S. Tolliver, same place. Filed Oct. 1, 1885. (No model.)



Claim.—An electric belt consisting of a series of elements which are connected to each other, each of said elements consisting of a positive and negative plate, between which is interposed an absorbent material, the negative element being provided with perforations, through which a wire forming a connecting-loop passes, and a textile loop for holding the bent bar *f* in place and against the positive plate, in combination with the terminal buttons B C, having members engaging with the end links of the chain, and a belt having a pocket provided with a waterproofing lining, for the reception of said chain, substantially as shown and described.

336,451. MOWING-MACHINE. EULALIE H. VANDEWATER, Whitewater, Wis., administratrix of Joseph Vandewater, (deceased,) assignor to the Esterly Harvesting Machine Company, same place. Filed Mar. 25, 1885. (No model.)



Claim.—1. In a mowing-machine, the main frame A, having a crank-shield, B, in combination with the front brace, C, the retaining-bolt I, having the concave head *f*, the concave washer *f'*, and nut *g*.

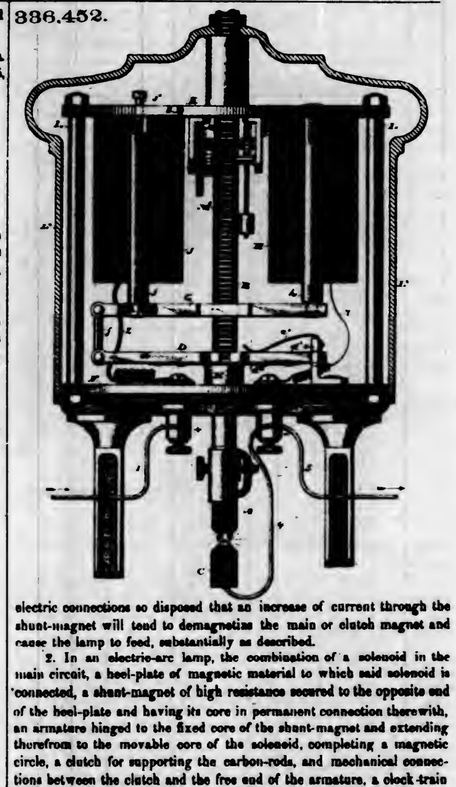
2. The combination of the main frame, the brace C, its pin *e*, the casting E, its groove E', lever-standard H', and lug *e*, and the tubular bracket F, the slot *e'*, with the brace D, and the rod H and its lever, in the form and for the purposes described.

3. In combination with a brace, C, and the finger-bar, the casting E, connecting the brace and the finger-bar, as described, and provided with a stud, *e*, in combination with the tubular support F, provided with the groove *e'*, to permit the insertion of the casting therethrough in an inverted position and prevent its displacement when in an operative position.

4. The brace-arm C, the rocking casting E, and its lug *e*, secured thereon, combined with the brace-bracket F, its slot *e'*, and brace D, as shown and described.

336,452. ELECTRIC-ARC LAMP. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Aug. 1, 1885. (No model.)

Claim.—1. In an electric-arc lamp, the combination of a solenoid in the main circuit, a heel-plate of magnetic material to which said solenoid is connected, a shunt-magnet of high resistance secured to the opposite end of the heel-plate and having its core in permanent connection therewith, an armature hinged to the fixed core of the shunt-magnet and extending therefrom to the movable core of the solenoid, completing a magnetic circle, a clutch for supporting the carbon-rods, and mechanical connections between the clutch and the free end of the armature, and



electric connections so disposed that an increase of current through the shunt-magnet will tend to demagnetize the main or clutch magnet and cause the lamp to feed, substantially as described.

2. In an electric-arc lamp, the combination of a solenoid in the main circuit, a heel-plate of magnetic material to which said solenoid is connected, a shunt-magnet of high resistance secured to the opposite end of the heel-plate and having its core in permanent connection therewith, an armature hinged to the fixed core of the shunt-magnet and extending therefrom to the movable core of the solenoid, completing a magnetic circle, a clutch for supporting the carbon-rods, and mechanical connections between the clutch and the free end of the armature, a clock-train operated by the descent of the carbon-rod for retarding the same, and electric connections so disposed that an increase of current through the shunt-magnet will tend to demagnetize the main or clutch-supporting magnet and cause the lamp to feed, substantially as described.

3. In an electric-arc lamp, the combination of a solenoid, J, in the main circuit, heel-plate K, electro-magnet H, in a shunt around the arc and having core *h* permanently secured to the heel-plate, an armature, G, pivotally attached to the extremity of the fixed core *h* and loosely attached to the vertically-moving core *j* of the solenoid, the upper end of which is provided with an adjusting-screw, *j''*, a suitable clutch and connections extending from the armature thereto, and the clock-train M m, connected to and adapted to retard the descent of the carbon-rod, substantially as shown and described.

336,453. OVERHEAD CONDUCTOR FOR ELECTRIC RAILWAYS. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Jan. 9, 1886. (No model.)

Claim.—1. In an electric railway system, the combination, with suitable track, and poles B, provided at their upper end with protecting-caps B^2, of the supporting-frame B^2 B^4, secured to said caps and provided with straps C', and the conductor C, provided with supporting-bails D, secured to said straps, substantially as described.

2. In an electric railway system, the combination, with the continuous conductor C, of the traction-cables E', and a suitable anchor, E, substantially as described.

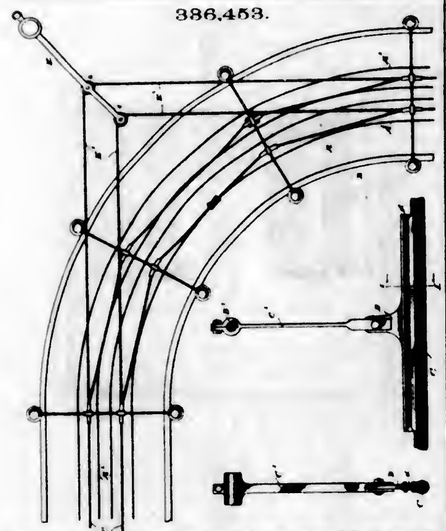
3. The combination, with the continuous conductor C, of the traction-cables E' and anchor E, provided with sheaves or rollers *s*, over which said cables pass and whereby the conductor C is kept taut, of a portion of the conductor C, extending between the terminals of the cables E', and relieved from longitudinal strain thereby, substantially as described.

4. The combination, with the cables E' and support therefor, of the bails D', connected thereto, and the conductor C, to which said bails are permanently secured, substantially as described.

5. The combination, with the conductor C, of the longitudinally-grooved bails D, permanently attached thereto, and a suitable suspending-strap, C', substantially as described.

6. In electric railway systems, a contact-carriage consisting of the combination of the frames F, hinge-plates F' F^2, rollers G, mounted thereon, a spindle, H, uniting said hinge-plates, and a sleeve, H', ex-

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tending between said hinges and provided with springs I I, substantially as described.

7. In electric railway systems, a contact-carriage consisting of the combination, with suitable supporting-frames, of a pair of hinges uniting said frames, and rollers mounted upon said hinges and provided with oil-chambers G', substantially as described.

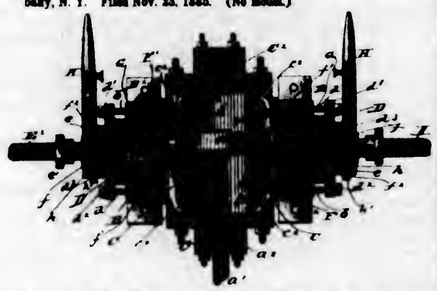
8. In electric railway systems, a switching device consisting of a box slitted at its lower side and formed with passages therethrough conforming in the direction of the track, said passages being provided at their extremities with ears or bails to which are secured the ends of the main conductor, as set forth

9. In electric railway systems, a switch-box open at its under side and provided with fixed terminals of the main conductor at each opening thereinto, substantially as described.

10. In electric railway systems, the combination, with a switch-box formed with passages extending therethrough and conforming to the direction of the track, said passages being slitted along their under sides and provided with a suspended terminal of the main conductor at the extremity of each passage, of a contact-carriage adapted to pass through said box, as set forth.

11. In electric railway systems, a switching device consisting of a metallic box slitted at its lower side and formed with passages therethrough conforming to the direction of the track, said passages being provided at their extremities with ears or bails to which are secured the ends of the main conductor, and a movable gate adapted to close one of said passages in one direction, substantially as set forth.

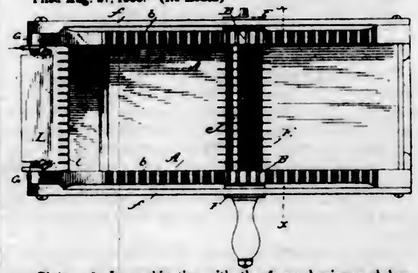
336,454. OSCILLATING ENGINE. AARON VAN GUTFELDE, West Albany, N. Y. Filed Nov. 23, 1885. (No model.)



Claim.—1. The combination of the oscillating cylinder and piston moving therein, the hollow trunnions on opposite sides of the cylinder, the valve-blocks fitting and turning within the trunnion, and having the ports G G' G², the plates secured within the trunnions and provided with the ports b^2 b^2, and the handles H on the outer ends of the rotary blocks, for the purpose of turning the same and causing the engine to reverse, substantially as specified.

2. In an oscillating steam-engine, the combination of the cylinder A, the piston *a*, the trunnions B, turning in the bearings B' B', and provided with the chambers *c c'*, and plates *b'*, having the ports b^2 b^2, the blocks D, secured, as described, to the trunnions, the valve-blocks E, provided with the chambers F, having the ports G G' G² on their inner walls, the disks or plates F', and the handles H, removably attached to the stems *e* of the valve-blocks, all constructed and arranged substantially as and for the purposes described.

336,455. MEAT-TENDERER. DAVID R. VAN HORN, Elkhart, Ind. Filed Aug. 27, 1885. (No model.)



Claim.—1. In combination with the frame having rack-bars, the supporting-bed and revolving cutter, its pinions and guide-pieces, and the guide-bars *f*, pivoted at one end and having guiding-slots at the opposite end, substantially as described.

2. In a meat-tenderer, the combination of the bed having a cut-away portion at one end, the rack-bars terminating at said cut-away portion, the guide-bars, the cutting-roller journaled in the guiding-pieces F, pinions on said roller gearing with the rack-bars, and the comb *l*, supported beyond the end of the rack-bars, substantially as described.

336,456. OSCILLATING HOOK FOR SEWING-MACHINES. JASPER VANNETT, Tiffin, Ohio, assignor of one-third to George S. Yingling, same place. Filed Feb. 14, 1884. (Model.)



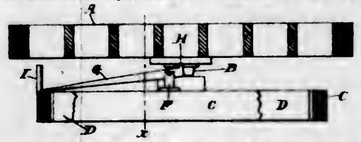
Claim.—1. Combined with the actuating-shaft, a loop-hook and bobbin-holder mounted eccentrically thereon, and having a rotary adjustment on the point of connection, substantially as specified.

2. Combined with the actuating-shaft, a loop-hook having its axis eccentric to the axis of the said shaft, and having a rotary adjustment on said eccentric axis, substantially as specified.

3. A cylindrical frame connected integrally at one edge and at a single point to an edge of a disk, and having an exterior projecting hook and a mouth leading to its interior, combined with a bobbin loosely contained in said case, substantially as specified.

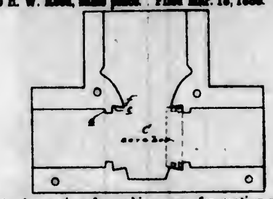
4. Combined with the actuating-shaft, a disk fixed to said shaft eccentric to its axis, a cylindrical frame attached to one edge thereof and having an exterior loop-hook, and a mouth leading to the interior, and a door with a spring-retained pivot or hinge on one side said case, the whole arranged substantially as and for the purposes specified.

336,457. APPARATUS FOR INDICATING THE LOAD ON RAILWAY-CARS. DAVID H. WARREN, Montreal, Quebec, Canada, assignor of one-half to James Baylis, same place. Filed Oct. 17, 1885. (No model.)



Claim.—The combination of the body of the car A, truck-frame C, bolster D, springs E, bracket F, removable needle bar or lever G, and graduated scale I, the whole constructed and arranged substantially as and for the purposes set forth.

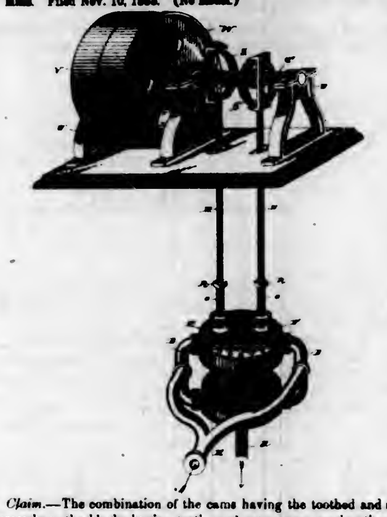
336,458. CORE-BOX. ADOLPH WEBER, Detroit, Mich., assignor of one-half to H. W. Reed, same place. Filed Mar. 16, 1885. (No model.)



Claim.—1. A core-box for making cores for casting valve-seats in composite valve-cases, having a dovetailed recess, as c, with its two sides arranged to firmly hold one side and the periphery of the ring, leaving the opposite side free and extending inward beyond the wall of the box, substantially as described.

2. A core-box for making cores from which to cast composite straight-way-valve cases, in which the brass seats B, having dovetail grooves *a b*, are to be held in one piece with the core, said core-box having recess c, whose sides are arranged to cover both grooves of the brasses, and to protect said grooves from the core material forced in the box, as set forth.

336,459. DOUBLE-ACTING PUMP. FRANK L. WHEELER, Westfield, Mass. Filed Nov. 10, 1885. (No model.)



Claim.—The combination of the cams having the toothed and slotted cross-bars, the blocks having teeth, and set-screws passing through the slots to secure the blocks to the cross-bars, said blocks being adapted to be secured to a shaft, substantially as described.

336,460. AUXILIARY GOVERNING-SPRING FOR TIME-PIECES. MARSHAL WHEELER, Washington, D.C. Filed Oct. 27, 1885. (No model.)



Claim.—1. In a time-piece, the combination of the mainspring with an auxiliary spring, which serves to retard the motion of the main one, the two being geared together so as to be made to wind and unwind at the same time, substantially as shown.

2. The combination, in a time-piece, of the mainspring, the auxiliary spring coiled in the same direction, the two barrels which contain the springs which are geared together so as to revolve in opposite directions, and a mechanism which is operated by the barrel of the mainspring for unwinding the auxiliary spring as the main one unwinds, substantially as described.

3. In a time-piece, the combination of the mainspring, the auxiliary spring coiled in the same direction, and the barrels for the springs, geared together so as to revolve in opposite directions, with a mechanism which is connected to the winding-post, whereby both springs are wound up together, and a mechanism connected to the barrel of the mainspring for unwinding the auxiliary spring, substantially as set forth.

4. The combination of the two winding-posts and a mechanism for connecting them together, the two springs which are connected at their inner ends to the posts and coiled in the same direction, the two barrels to which the springs are connected at their outer ends, and which barrels are placed loosely on the posts, and geared together so as to revolve in opposite directions, and a mechanism connected to the auxiliary spring, for causing it to unwind with the main one, substantially as specified.

5. The combination of the two winding-posts A A', the two springs I, F, connected thereto and coiled in the same direction, the two barrels placed loosely on the posts and geared together so as to revolve in opposite directions, and a mechanism, substantially as shown, connecting the two parts together so that both springs are wound at the same time, substantially as described.

6. The combination of the two winding-posts, the springs connected thereto and coiled in opposite directions, the barrels having the outer ends of the springs connected thereto, and placed loosely on the posts and geared together so as to revolve in opposite directions, a winding mechanism connected to both posts, and a mechanism for unwinding the auxiliary spring faster at its inner end than it is wound up at its outer end by the barrel of the mainspring, substantially as set forth.

336,461. CAR-WHEEL LUBRICATOR. PATRICK F. WHITE, Western Port, Md. Filed Dec. 19, 1885. (No model.)

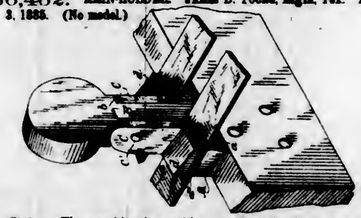


Claim.—1. A car-wheel having its hub provided with an oval-shaped oil-recess, *a*, surrounding the central bearing portion or axle-shell, *b*, said recess *a* being provided with an inner flange, *f*, and with openings in the front wall thereof for the reception of the plugs *d*, having central orifices, as shown, and the central bearing portion or axle-shell, *b*, having one or more oil-orifices, *e*, substantially as and for the purpose specified.

2. A car-wheel having its hub provided with an oval-shaped oil-recess, *a*, the front wall whereof is provided with openings for the reception of centrally-perforated plugs *d*, the inner ends of which project into said oil-recess, substantially as and for the purpose specified.

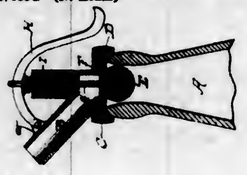
3. A car-wheel provided with an oval-shaped oil-recess in its hub having an inner flange, *f*, arranged in juxtaposition to the oil-orifice *e* in the axle-shell for arresting the centrifugal flow of oil in said recess and conducting it to said oil-orifice, substantially as shown, and for the purpose specified.

336,462. REIN-HOLDER. JAMES D. YOUNG, Elgin, Tex. Filed Oct. 3, 1885. (No model.)



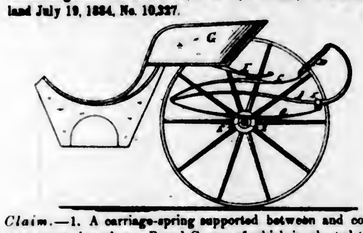
Claim.—The combination, with a standard having a recess or seat to receive the end-board of a wagon, and having oppositely-extending shoulders located above said seat, of the pivoted clamps having the oppositely-extending lateral projections *d*, said projections having serrated engaging faces and having rounded upper ends to fit similarly-shaped recesses in the standard.

336,463. BOTTLE-STOPPER. OTTO ZWIETUSCH, Milwaukee, Wis. Filed Feb. 13, 1884. (No model.)



Claim.—The spring-valve bottle-stopper herein described, consisting of an integrally-formed draft-tube having an internal diameter equal to that of the valve-opening, spring-casing, and supporting-flange, a valve provided with a stem, a thumb-lever fulcrumed to the draft-tube and directly connected to the valve-stem, a spring located, as shown, with its upper end impinging against the thumb-lever, and a washer or packing provided with an opening forming a seat for the valve, all arranged and operating substantially as and for the purpose set forth.

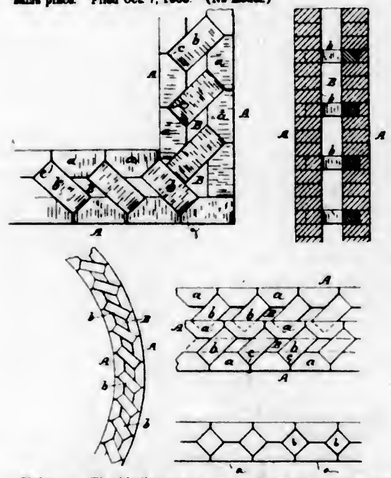
336,464. CARRIAGE-SPRING. JOHN ALLEN, London, County of Middlesex, England. Filed Nov. 10, 1885. (No model.) Patented in England July 19, 1884, No. 10,337.



Claim.—1. A carriage-spring supported between and connected with two supporting-pieces, B and C, one of which is adapted to be secured to a carriage-axle, and is hinged to the spring at one end and shackled thereto, as described, at the opposite end, and the other of which is also hinged to the spring at one end and connected thereto by a loop extending from the opposite end, and adapted to support the carriage upon its upper face, all substantially as and for the purpose specified.

2. A carriage-spring composed of the spring A, springs B and C, and loop D, all constructed, arranged, and combined as and for the purpose specified.

336,465. BUILDING-WALL. WILLIAM P. ANDREWS, Dana, Ind., assignor to himself, Frederick Taylor, James Osborn, and Thomas S. Hood, same place. Filed Oct. 7, 1885. (No model.)



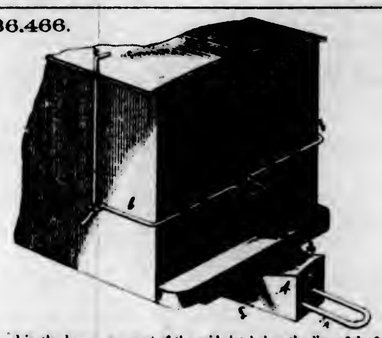
Claim.—1. The binding-course of a wall of brick or other material, of masonry construction, consisting of the combination, with the side stretchers, *a*, placed lengthwise with and on both sides of the wall, and having their inner corners beveled, of the interior rectangular ties, *b*, placed in the recesses between the beveled parts of and entirely inclosed by the stretchers, substantially as and for the purposes described.

2. The binding-course of a wall of brick or other material, of masonry construction, consisting of the combination, with the interior rectangular binders, *b*, placed at any required oblique angle to the line of the wall, of the side stretchers, *a*, placed on both sides of and having their inner corners beveled at the required angles to fit and entirely inclose the rectangular binders, substantially as and for the purposes described.

336,466. CAR-COUPLING. CHESTER M. BALDWIN, Evanson, Mich., assignor of three-fourths to Samuel Holmes, Mary E. Bissell, and Charles H. Warren, all of same place. Filed Aug. 10, 1885. (No model.)

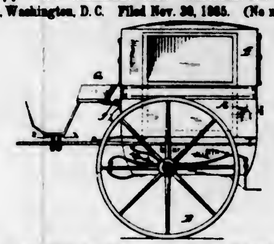
Claim.—As an improvement in car-couplings, the combination, with the draw-head having the vertical slot and formed with the convex block, arranged as described, of the spring-actuated hook pivotally

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secured in the lower rear part of the said slot below the line of draft, and having its point resting against the said convex block above the line of draft, the trip-rod secured in bearings across the front of the car, provided with the central double crank portion, and having its ends bent at right angles to form lever-arms, the chain connecting the double crank of the said trip-rod to the upper front end of the hook in the draw-head, and the foot-rod pivoted at its lower end to one of the lever-arms of the top rod, and adapted to be operated by the foot of the operator from the top of the car, all constructed, combined, and arranged to operate in the manner and for the purpose herein shown and set forth.

336,467. TWO-WHEELED CAB. FREDERICK BEE and EDMUND F. HENDSON, Washington, D. C. Filed Nov. 30, 1885. (No model.)



Claim.—1. In a two-wheel vehicle, the seat flexibly connected to the body and shaft by means of the hinged joint and springs I I, substantially as described.

2. The combination, with the body, of the seat having the bifurcated arm connected to the eye secured to said body, and provided with the rubber bearing upon the pivot-bolt, and the cross-springs secured to the seat and shackled to the shaft, as described and shown.

3. The combination, with the folding top, of the bridge-pieces *a*: sections pivoted to the arms, which latter in turn are pivoted to the top frame of the vehicle, substantially as described.

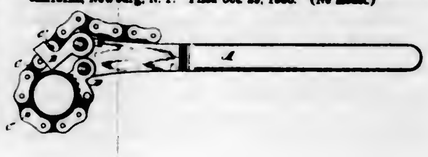
4. The sections or bridge-pieces provided with the grooves, one of which having packing and both having spurs, whereby a water-tight joint is obtained to the top where the two sections meet, as and for the purposes set forth.

5. The two-wheel vehicle described, consisting of the body portion having the laterally-folding top provided with the bridge-pieces, constructed as described, having the spurs and grooves and packing material, the seat flexibly connected to the shafts by cross-springs and to the cab-body by the bifurcated arm pivoted to the eye secured to the body, and provided with the rubber packing, whereby rattling of the joint is prevented, and at the same time preventing jarring to the cab, substantially as described.

6. In a vehicle provided with two folding top sections, the combination therewith of a folding pivoted or hinged bridge piece or pieces adapted to cover or bridge the opening in the top, and rendered water-tight by means substantially as set forth.

7. In a two-wheel vehicle, the driver's seat pivoted to the cab-body and flexibly connected to the shafts or draft-pole, substantially as and for the purpose set forth.

336,468. PIPE-WRENCH. CHRISTIAN BOSSERMAN and MICHAEL R. CRETZRAL, Newburg, N. Y. Filed Oct. 29, 1885. (No model.)



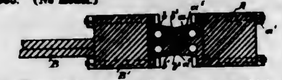
Claim.—1. A handle for pipe-wrenches, having its inner end or head adapted for connection with a gripping-hand, and provided with a spring secured at one end to the said handle and having its other or free end extended over the head thereof, substantially as and for the purposes specified.

2. As a new and improved article of manufacture, the wrench-handle, substantially as herein described and shown, having at its inner end or head perforated lugs *a a'*, arranged one above the other, and having a spring, E, secured at one end and having its other end extended over the lug *a*, as and for the purposes specified.

3. The combination, with a handle having its butt-end provided with perforated lugs arranged one above the other, of a swinging connection pivoted at one end to the upper lug, a gripping-hand connected at one end with the lower lug and having its upper end detachably connected with the swinging connection, and a spring secured at one end to the handle and having its other end arranged to bear against the swinging connection, substantially as set forth.

4. The herein-described wrench, consisting of the handle having its butt-end provided with lugs *a* and *a'*, the swinging connection, having its inner end bifurcated, fitting over and pivoted to the lug *a* and its outer end formed with a base-plate, *b*, and with jaws *b'*, having internal ribs, *b²*, formed with rounded outer and notched inner ends, the serrated links D D, pivoted at their inner ends on opposite sides of the lug *a'*, and the gripping-chain connected at one end to the outer ends of the links D, and having its other end adjustably and detachably engaged by the ribs of the swinging connection, said chain being provided with lateral studs by which to engage such ribs, substantially as set forth.

336,469. GATE-HINGE. CHARLES BORNARTH, Shakopee, Minn. Filed Oct. 13, 1885. (No model.)



Claim.—1. The combination, with a gate-post which is provided with a hinge-rod and with recessed half-hinges, of a gate which is provided with corresponding half-hinges, each of which has a perforation which receives the hinge-rod and a projection which engages the recessed half-hinge upon the gate-post, the half-hinges having coincident flat bearings, whereby when any portion of each half-hinge are in the same horizontal plane the gate is locked against rotary movement upon its hinge-rod.

2. The combination of a gate-post which is provided with recessed half-hinges, with an elevatable gate which has projecting half-hinges which are sleeved upon a vertical hinge-rod, the projections engaging the recesses continuously from top to bottom thereof, whereby the gate is locked against movement in a horizontal plane whenever any portion of one of the half-hinges is opposite to any portion of another half-hinge.

3. A perpendicularly-elevatable gate which upon each end is provided with locking half-hinges, in combination with gate posts or uprights opposite the ends of such gate, which are provided with corresponding locking half-hinges, as described, whereby when the gate has been lowered perpendicularly into its closed position it is at each end locked against movement in a horizontal plane.

4. The combination of a gate-post which is provided with a hinge-rod and with recessed locking half-hinges which have flat bearing-surfaces, a gate post or upright which is unprovided with a hinge-rod and is provided with recessed locked half-hinges which have flat bearing-surfaces, and a perpendicularly-adjustable gate which upon each end has locking-half hinges which are provided with projections and with flat bearing-surfaces which correspond with the recessed and flat surfaces of the locking half-hinges upon the gate posts or uprights, whereby when the gate is in its closed position it is at each end locked against movement in a horizontal plane.

5. The combination with a gate-post which is provided with a vertical hinge-rod and with recessed locking projections, of a gate which is provided with perforated locking projections which are sleeved upon the hinge-rod and which are insertible in a vertical plane within the recessed projections upon the gate-post.

336,470. RATCHET-DRILL. CHARLES L. BERGNER, Johnstown, Pa. Filed Nov. 5, 1885. (No model.)

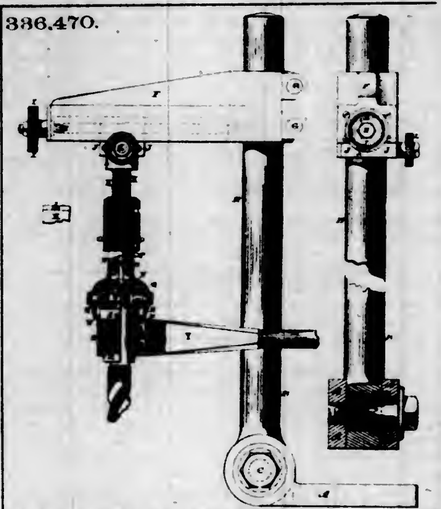
Claim.—1. The combination of the base, the standard, and the clamping-bolt, with the two sleeves connected, respectively, to the base and the standard, and which are provided with ratchet-teeth at their inner ends, substantially as described.

2. The combination of the frame N, the sleeve O, swiveled thereto, the catch P, and the screw K, provided with a groove for a splice upon the frame N to catch in, and thus prevent both the screw and frame from revolving while the ratchet is in operation, substantially as specified.

3. The frame N of a ratchet-drill, made in two parts and secured together on a line with the idler-wheels, substantially as described.

4. The combination of the frame N, the drill-spindle R, having gear V, the sleeve S, provided with a ratchet and gear-teeth, the idler-

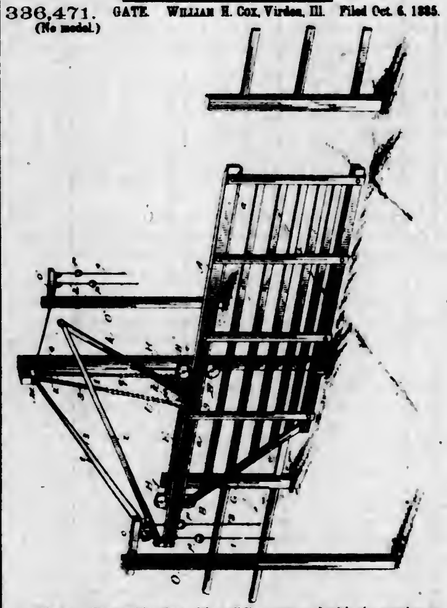
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wheels Q, sleeve X, and lever Y, carrying the spring-actuated dogs Z, substantially as specified.

5. The combination of the frame N, made in two parts, the screw-threaded ring W, placed thereon, and the frame X, formed upon the inner end of the lever Y, and which is secured to the ring, substantially as set forth.

336,471. GATE. WILLIAM H. COX, Virden, Ill. Filed Oct. 6, 1885. (No model.)

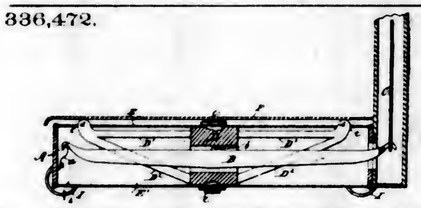


Claim.—In combination with a sliding gate and with the crank-arm moving in the plane of movement of the gate, and with the rod connecting the free end of said crank-arm with the gate, a sprocket-wheel fixed to the shaft of the crank-arm, ropes 1 and 2, connected to one end of the sprocket-chain, and running one to a supporting-block on one side and the other to a supporting-block on the other side of the gate, and ropes 3 and 4, running one to a supporting-block on one side of the gate and the other to a supporting-block on the other side of the gate, all substantially as described.

336,472. WEIGHING-SCALE. GEORGE W. CRAIG, Grimm's Landing, W. Va. Filed Nov. 4, 1885. (No model.)

Claim.—1. In a scale, the combination of a casing provided with

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flexible sheet-metal top and bottom and the weighing lever and table supports connected rigidly to said flexible sheets and moving with the same, as and for the purpose described.

2. A scale comprising a box-casing with a flexible top and bottom, a single lever attached or supported upon the box-casing at one end and connected to the scale-beam rod at the other, and a single frame mounted upon this lever and connected at top and bottom, respectively, to the flexible top and bottom sheets, substantially as and for the purpose described.

3. The combination of the box-casing having a flexible sheet-metal top and bottom, the single lever B, hung at one end upon a projection from the casing and connected at the other to the scale-beam rod, and the single frame consisting of vertical standard D, with a hole through it to receive the lever B, and connected at top and bottom to the flexible sheet at top and bottom, and provided with radial arms D' D^2, substantially as and for the purpose described.

336,473. HARVESTER GUARD-FINGER. JOHN CREST and FRANCIS M. OGLE, Browning, Mo. Filed May 2, 1885. (No model.)



Claim.—1. In a guard-finger, the combination, with the body or main portion, of the detachable plate or blade and the hinged or pivoted fender arranged and adapted to hold said plate in position and allow its removal at will, as set forth.

2. In a guard-finger, the body or main portion, in combination with the fender hinged or pivoted at an intermediate point of its length to the body, the rear end of the fender extending back over the body and held down in position by means substantially as described, as set forth.

3. In a guard-finger, the body or main portion, in combination with the detachable plate resting on the same and the fender hinged or pivoted to the front end of the body and resting on the plate to hold it down in position, as set forth.

4. In a guard-finger, the body or main portion, in combination with the detachable plate, the hinged or pivoted fender arranged to be thrown up out of contact with the plate, and a screw for holding the fender down in position, as set forth.

5. In a guard-finger, the body or main portion provided with a projection, in combination with the steel plate fitting at its rear end around the projection, the fender hinged or pivoted to the body and holding the front end of the plate down in position, and a screw to keep the fender in its normal position, as set forth.

6. In a guard-finger, the body or main portion provided with a projection and a tube or socket, in combination with a steel plate fitting at each end around the projection and tube, respectively, and the hinged or pivoted fender fitting over the tube or socket and bearing upon the front end of the plate, and a screw for holding the fender down, said screw working through the tube or socket, as set forth.

7. In a guard-finger, the body or main portion having at its front and a reduced projecting portion, *a*, and curved surfaces *c*, provided on each side thereof, in combination with a fender having a recess on its under side to receive the portion *a*, the under side of the fender on each side of the recess being shaped to fit over the surfaces *c*, and the screw for holding the fender down in position.

8. In a guard-finger, the body or main portion A, having a projection, F, dovetailed as described, and shoulders *l*, provided near the front end of the body, in combination with the steel plate having a notch at its rear end to fit around the projection, and a recess at its front end to enable it to bear against the shoulders, and the hinged or pivoted fender resting upon the front end of the plate and held down in position by a screw, for the purpose set forth.

336,474. MACHINERY FOR THE MANUFACTURE OF SATCHEL-BOTTOM PAPER BAGS. WILLIAM C. CROSS, Boston, Mass. Filed Oct. 23, 1885. (No model.)

Claim.—1. The combination of the guide-finger, the former-plate, and the plate-knife folder, substantially as and for the purposes herein-before set forth.

2. The combination of the slitting-rolls, the guide-finger, the former-plate, and the plate-knife folder, substantially as and for the purposes hereinbefore set forth.

3. The guide-finger provided with a former-plate, as hereinbefore shown and described.

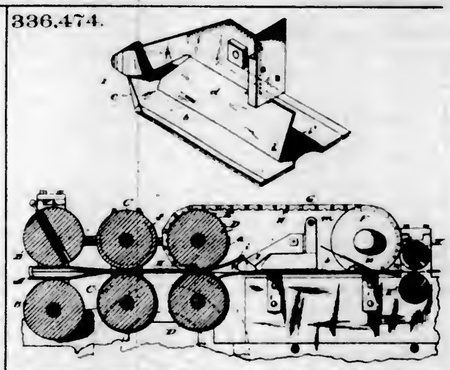
4. The lap-guide, in combination with the guide-finger and former-plate, substantially as and for the purpose hereinbefore set forth.

5. The combination, substantially as hereinbefore set forth, of the slitting-rolls, the guide-finger, the former-plate, the lap-guide, and the plate-knife folder.

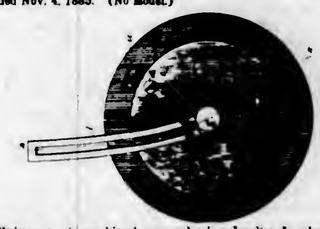
6. The combination, with the former, the plate-knife folder, and the guide-finger, of the feed-rolls C, recessed at the points specified, to break down or crease the side edges of the blank from the front end thereof to a point just in advance of the cross-line of fold determined by the plate-knife folder, substantially as and for the purposes set forth.

7. The combination, with the plate-knife folder, the former-plate, and the guide-finger, of the roll K, recessed at the point specified, to provide a bearing-edge, *n'*, which shall overlap the front edges of the parts *y* of the blank, substantially as and for the purposes hereinbefore set forth.

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336,475. COMBINED GAGE-WHEEL AND COLTER. HARRY A. CROSSLEY, Rockport, Ohio, assignor to Cecelia S. Crossley, same place. Filed Nov. 4, 1885. (No model.)



Claim.—1. A combined gage-wheel and colter for plows, in which the colter is adjustable to different points of the periphery of said gage-wheel to bring said colter into alignment with the landside of the plow, substantially as set forth.

2. A combined colter and gage-wheel for plows, consisting of a cutting-disk and a series of disks of less diameter to form the gage-wheel, and between which last-named disks the cutting-disk is adjustable, a series of bolts passed through said disks and cutter and secured by nuts, a hub, and an axle fitted in said hub, and on which the cutter and series of disks revolve as a whole, substantially as described.

3. The combined rolling colter and gage-wheel, in combination with the axle *f*, having a stud, *k*, and a bracket, *l*, into which said stud enters, and a set-screw, *n*, for permitting the rotary adjustment of the axle on its bracket to bring the gage-wheel and colter into proper position with relation to the plow, substantially as set forth.

336,476. SOIL OR DRAIN PIPE. PATRICK W. DOHERTY, Boston, Mass. Filed Jan. 15, 1885. (No model.)



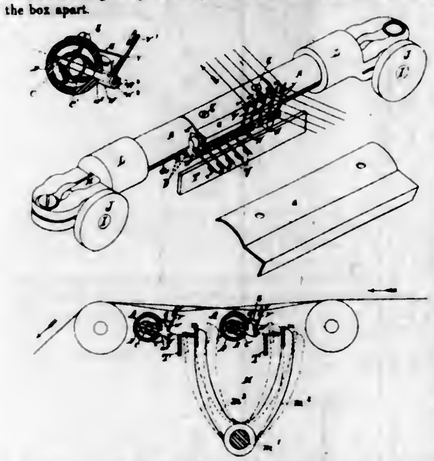
Claim.—1. In a section of waste, soil, and other like pipes, having a hub or enlargement, E, to receive interiorly the end of another section, a hand-hole or clean-out opening, B, through one side of the pipe, and an enlargement or bulge, E, thereof, of the same direction as the inner wall or periphery of said opening, the bulge of larger diameter than the pipe, and it and said opening of unequal diameters, in combination with an attachable and detachable cover to said opening, substantially as described, for the purpose specified.

2. In waste, soil, and other pipes and traps made of cast-iron, a hand-hole or clean-out opening, B; and a cast-iron cover, C, therefor, constructed to be turned onto the pipe, and the contiguous face or faces of a non-corrosive metal—such as brass—separately made and attached, substantially as described, for the purpose specified.

3. In waste, soil, and other pipes and traps made of cast-iron, a hand-hole or clean-out opening, B, and a cast-iron cover, C, therefor, constructed to be turned onto the pipe, and the contiguous face or faces of a non-corrosive metal, in combination with a packing-receiving groove, *g*, and flange K, substantially as described, for the purpose specified.

336,477. WARPING-MACHINE. THOS. C. ENTWISTLE, Melrose, Mass. Filed Mar. 14, 1885. (No model.)

Brief.—The drop-wire box, which consists of a hollow tube having a head at each end and provided with a longitudinal slot in one side, contains the expansion-springs, between the coils of which the dents are held. To the outer end of the dents are detachably connected the small drop-wire brackets carrying the drop-wires. A flange or projection on the upper side of the drop-wire bracket travels against the curved portion of the box, and a guard-plate made fast to the box and having a flange overlapping the projection on the drop-wire bracket serves to retain the bracket in its place on the dent. By this construction, should a bracket or drop-wire become injured, it is only necessary to slide the same from under the guard-plate and put another in its place without taking the box apart.



Claim.—1. The combination, with the drop-wire box, expansion-springs, and dents, of brackets provided with pivoted drop-wires and loosely or detachably engaged with said dents, so that any one of the brackets may be removed from or applied to its dent and the box without disturbing either its own dent or any other dent, substantially as and for the purposes hereinbefore set forth.

2. The combination, with an expansion drop-wire box, of drop-wire brackets resting upon and supported and guided in their movements by said box, drop-wires pivoted to said brackets, and bracket-operating dents separate from and unattached to the brackets, substantially as and for the purposes set forth.

3. The combination, with a slotted expansion drop-wire box, expansion-springs, and dents, of drop-wire brackets loosely or detachably engaged with said dents and provided with shanks which enter and fit the slot in the drop-wire box, substantially as and for the purposes set forth.

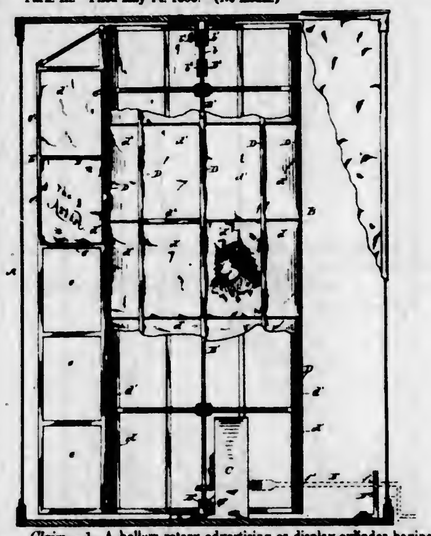
4. The combination, with a slotted drop-wire box, expansion-springs, and dents, of drop-wire brackets loosely or detachably engaged with said dents and provided with shanks which enter and fit the slot in the box, and a guard-plate or holder arranged and operating to retain the brackets in engagement with the dents and the box, as and for the purposes hereinbefore set forth.

5. The combination, with the slotted drop-wire box, expansion-springs, and dents, of drop-wire brackets loosely or detachably engaged with said dents, provided with bearing-faces which rest against the exterior of the box and each side of the slot therein.

6. The combination of a slotted drop-wire box, drop-wire brackets formed with shanks to enter and fit the slot in said box and with projections to bear upon the exterior of the box on each side of the slot, and a guard-plate or holder retaining said bracket in engagement with the box, substantially as and for the purposes hereinbefore set forth.

7. The combination, with a drop-wire box, of a series of drop-wire brackets movable to and from one another and projecting laterally from said box, so as to lie in a horizontal plane, or approximately so, drop-wires pivoted to said brackets and standing at about right angles thereto when raised into working position, and a guard-plate overhanging and covering said brackets, substantially as and for the purposes hereinbefore set forth.

336,478. ADVERTISING APPARATUS. JOSEPH W. FAWKES, Oak Park, Ill. Filed May 14, 1885. (No model.)



Claim.—1. A hollow rotary advertising or display cylinder having its bearings and motor arranged within itself, substantially as shown and described.

2. The combination of the cylinder B, shaft B', center B^2, and adjustable center B^3, substantially as shown and described.

3. The combination of the shaft B', adjustable center shaft, *b*, socket *b'*, and set-screw b^2, substantially as shown and set forth.

4. The combination of the shaft B, adjustable centered shaft *b*, and sleeve b^2, substantially as shown and described.

5. In a hollow rotary advertising or display cylinder having a motor arranged within said cylinder, a hole, *f'*, on the wall of said cylinder, substantially as shown and described.

6. The combination, with the rotary cylinder B, actuated by the motor C, located within said cylinder, of a standard, F', located near the wall of said cylinder, substantially as shown, and for the purposes herein set forth.

7. The combination, with an advertising-cylinder, B, of the cleats D, cards *d'*, and ribbon-springs d^2, arranged substantially as shown and described.

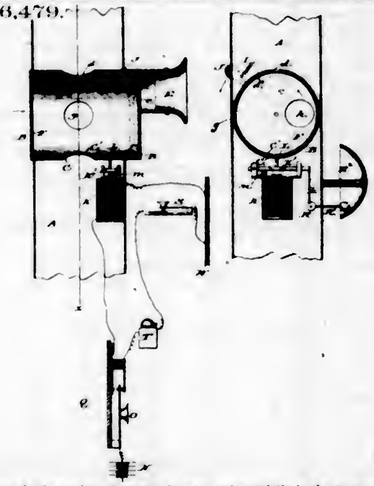
336,479. SPEAKING-TUBE. ALLEN S. FONTAINE, New York, N. Y. Filed Feb. 9, 1885. (No model.)

Claim.—1. The combination, with a single speaking-tube, of a series of independent mouth-pieces or annunciators, a valve closing each mouth-piece, and a second valve closing the tube above or beyond said mouth-piece, and which is coupled with the first to open when the latter closes and close when it opens, substantially in the manner and for the purpose herein set forth.

2. The combination, with the valve closing the mouth-piece or annunciator in a speaking-tube, of a bolt locking said valve, and an electro-magnet actuating said bolt, substantially in the manner and for the purpose herein set forth.

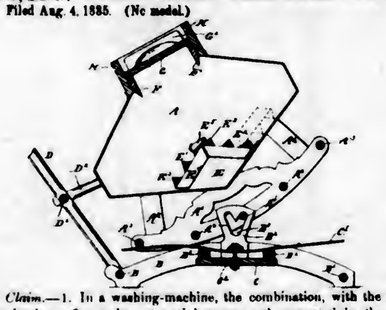
3. The combination, with a speaking-tube, of a cylindrical valve-chamber fitted transversely in said tube, and provided with peripheral openings in register with the tube, a mouth-piece at one end of said valve-chamber opening thereinto, and a hollow valve-piece within the chamber formed to open and close the mouth-piece, and provided with openings registering with both of the peripheral openings in the chamber when the mouth-piece is closed, and with one of said openings and

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the mouth-piece when the latter is open, substantially in the manner and for the purpose herein set forth.

336,480. WASHING-MACHINE. WILLIAM GOFORTH, Windsor, Mo. Filed Aug. 4, 1885. (No model.)

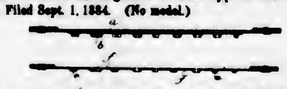


Claim.—1. In a washing-machine, the combination, with the supports having a flat spring secured between and supported by the two middle cross-bars connecting said supports, of the rockers connected to the suds-box and resting upon the supports, and connected by cross-bars which bear upon the ends of the spring, substantially as and for the purposes set forth.

2. The combination, with the suds-box, of a slatted arch placed in the bottom of the suds-box at its center, composed of a rigid section provided with a button, and a swinging section held to the rigid section by the pivoted button, substantially as and for the purposes specified.

3. The hereinbefore-described washing-machine, consisting of a suds-box having rockers A', rigidly connected thereto, and having pins A^4 projected from their inner sides, A, supports B, upon which the rockers A' rest, provided with plates B^3, having slots B^3, within which the pins A^4 work, spring C', suitably sustained between the supports, a handle pivotally secured to the supports and connected with the suds-box by a supplemental lever, and a latch for holding the machine steady when so desired, all arranged and operating substantially as described and shown.

336,481. TYPE-PLATE FOR TYPE-WRITING MACHINES. THOMAS HALL, New York, N. Y., assignor to the Hall Type Writer Company, same place. Filed Sept. 1, 1884. (No model.)

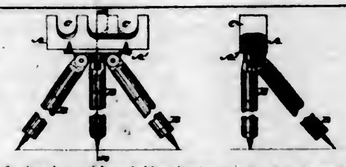


Claim.—A type-plate consisting of a backing of elastic material having hard types fixed upon it, in combination with the frame surrounding and holding the edges of said plate, substantially as described.

336,482. HOSE-BRIDGE. FREDERICK HEIM, Philadelphia, Pa., assignor of one-half to William Robbins, same place. Filed July 9, 1885. (No model.)

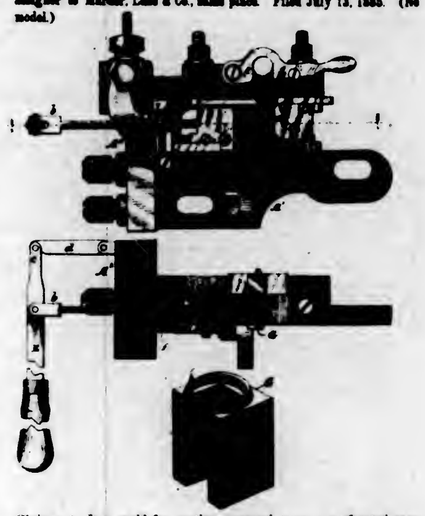
Claim.—1. An elevated hose-bridge having a head, A, in combination with the plate A', having lugs on the under side thereof, and legs B, pivoted in said lugs, substantially as described.

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2. An elevated hose-bridge having the head A, formed with concave grooves having convex bases, plate A', secured to said head, and legs B, pivoted to the said plate, substantially as described.

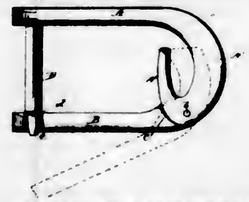
336,483. TYPE-CASTING MOLD. CARL HOSENFELDT, Chicago, Ill., assignor to Marder, Luse & Co., same place. Filed July 13, 1885. (No model.)



Claim.—1. In a mold for casting grooved type, a perforated core firmly fixed in the mold, in combination with a movable rod attached to the mold and adapted to separate the type from the core, substantially as and for the purpose described.

2. In a type-casting mold, the core B, having a longitudinal opening, C, in combination with the movable rod D, extended through the core, and the lever E, pivoted to the mold and the rod, substantially as and for the purposes described.

336,484. CLEVIS. BURTON L. JENNINGS, Manhattan, Kans. Filed Oct. 22, 1885. (No model.)



Claim.—1. The improved clevis herein described, consisting of an upper portion which is bent downwardly at its forward end and again upwardly, as shown, a pivoted section attached to the lower forward end of the same, and provided with an upwardly-extending portion attached thereto, and a pin rigidly attached to the upper member of the clevis and adapted to enter a perforation in the rear end of the pivoted section, substantially as shown, and for the purpose set forth.

2. The improved clevis herein described, consisting of the portion A, which is bent downwardly at its forward end, and provided with upwardly-projecting fingers A'', and at its rear end with a downwardly-projecting pin, in combination with a section, B, pivotally secured to the lower end of the upper portion of the clevis, and provided with a perforation which is adapted to fit over the end of the pin D, substantially as and for the purpose set forth.

336,485. GAS-HEATING FURNACE. ROBERT W. KENNEDY, Pittsburg, Pa., assignor to Jones & Laughlins, (Limited.) Filed Sept. 2, 1885. (No model.)

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Claim.—1. In a heating-furnace, the combination of a combustion-chamber, air-feeding apparatus arranged to impart a rotary or swirling movement to the air within the combustion-chamber, and gas-feeding apparatus arranged to feed the gas at an angle to the line of air-feed, substantially as set forth.

2. In a heating-furnace, the combination of a combustion-chamber, an air-feeding pipe or chamber arranged around the combustion-chamber, said chambers being connected by air-conduits arranged to impart a circular or swirling motion to the air as it is fed into the combustion-chamber, and gas-feeding devices constructed to feed the gas at an angle to the line of air-feed, substantially as set forth.

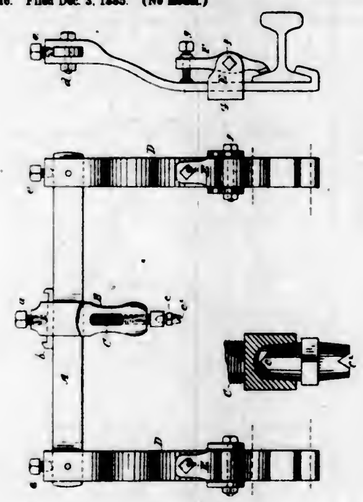
3. In a heating-furnace, the combination of a combustion-chamber, an air-chamber surrounding the same, said chamber being connected by angularly-arranged air-passages, as described, a gas-pipe entering the bottom of the combustion-chamber, and a distributing or spread tile or plate arranged over the mouth of the gas-pipe, substantially as set forth.

336,486. BUNG-PAN. CHARLES E. LAVERTY, Allegheny, assignor to J. C. Dilworth, Pittsburg, Pa. Filed Mar. 11, 1885. (No model.)



Claim.—A bung-pan having a pump-tube formed of an inner cylindrical tube, *e*, and an outer conical tube having perforations at its lower end, united at its lower end to the tube *e*, and at its upper end to the pan, so as to form a space for the passage of the liquid from the pan between the tubes and into the barrel, substantially as and for the purposes specified.

336,487. RAILWAY-TRACK DRILL. AUGUST LOEBNER, St. Louis, Mo. Filed Dec. 3, 1885. (No model.)

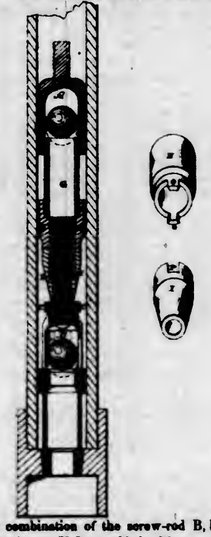


Claim.—1. In combination with bar A of a drill-frame, a housing, B, and an inverted screw entering said housing and provided with a recess to receive a drilling-tool, substantially as and for the purpose described.

2. In combination with bar A and a tool-holding device sliding thereon, a conical tool-holding device having point c' and notch c^1, as set forth and described.

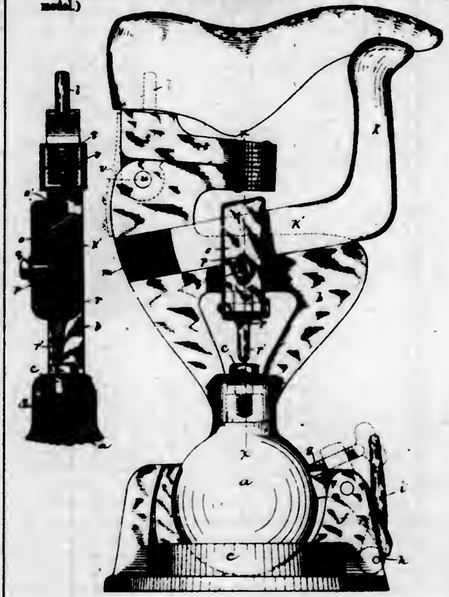
3. In combination with the hook-arms of a track-drill frame, a clamping device provided with a pivoted dog, F, and adjusting-screw *g*, substantially as set forth.

336,488. DEVICE FOR DRAWING STANDING VALVES IN WELLS. JOHN MORAN, Bradford, Pa. Filed Aug. 12, 1885. (No model.)



Claim.—The combination of the screw-rod B, having an enlarged upper end, the two sleeves H I, provided with recesses and projections to cause them to turn together, and the working and standing valves, substantially as shown and described.

336,489. JACK FOR BOOTS AND SHOES. HENRY T. MORSE, Boston, Mass., assignor to R. D. Lee, same place. Filed Nov. 5, 1885. (No model.)



Claim.—1. The combination of the frame *b*, having last-supports at its upper end, the ball swiveled to the lower end of the frame, so that the frame can rotate independently, the fixed socketed base provided with a projection, *e'*, and ears *f*, opposite said projection, open spaces at both sides of the base, which permit the frame to be adjusted in any position from a vertical to a horizontal, and adjustable clamping mechanism connected with the ears *f*, as set forth.

2. The combination of the frame *b*, having last-support at its upper end, the ball swiveled to the lower end of the frame, so that the frame can rotate independently, the fixed socketed base provided with the projection *e'*, open spaces at both sides of the base, which permit the frame to be adjusted in any position from a vertical to a horizontal, and adjustable clamping mechanism, substantially as described, arranged to bear on the ball at a point above its center, as set forth.

3. The combination of the frame having the last-supports, the ball swiveled to the lower end of the frame, so that the frame may rotate independently, the clamping-bolt *c*, whereby the frame may be made fast to the ball, the socketed base, and mechanism, substantially as described, for locking the ball to the base, as set forth.

4. The combination, with the frame *b*, having an inclined groove or guide, *m*, the spindle *l*, supported by said frame, the shank *k'*, having the toe-rest *k*, and fitted to slide in said groove, and thus effect the simultaneous longitudinal and vertical adjustment of the toe-rest, and means for securing said shank in any position to which it may be adjusted, as set forth.

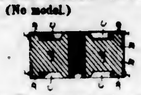
5. The combination of the jack having the last-supports *l k*, and the ball *a*, the socketed base *e*, the pivoted clamping-lever *g*, and the cam *h*, and its lever *i*, as set forth.

336,490. CURRY-COMB. WILLIAM T. NORTON, New Bedford, Mass., assignor of one half to William Marshall Bates, same place. Filed Mar. 19, 1885. (No model.)



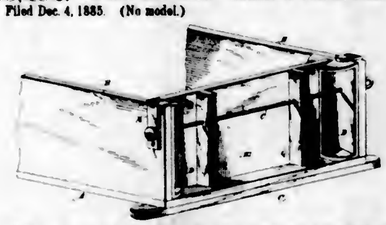
Claim.—A curry-comb consisting of the back or holder 1, provided with transverse oppositely-inclined flanges 2, forming channels 3, having their greatest width next to the holder, and the detachable india-rubber strips or blocks 4, of equal width throughout and provided with a series of longitudinal continuous teeth, said strips or blocks being held within their seats by their inherent elasticity, substantially as described.

336,491. ROLLER FOR SKATES. ALBERT P. ODELL, Bradford, Pa. Filed June 24, 1885. (No model.)



Claim.—A roller for roller-skates, having the grooves B in its rim, the flanges D, and recesses C, in combination with the metallic coverings I, which are fitted over opposite edges of the wheel, substantially as specified.

336,492. WAGON END-GATE. LORENZO H. PRUNER, Deas, Dak. Filed Dec. 4, 1885. (No model.)



Claim.—1. An end-gate-supporting upright having a screw-threaded shank at its lower end provided with a nut having a vertical groove in its inner face, and having laterally-projecting flanges connected at their ends to the ends of the sides of the groove by means of corner flanges or lips, and provided with an outwardly and downwardly bent long lip having a perforation in its end registering with a perforation in the outer flange of the upright, as and for the purpose shown and set forth.

2. The combination of the sides and bottom of a wagon-box, uprights secured with their lower threaded ends through the corners of the bottom by means of nuts and having vertical grooves upon their inner faces, and outwardly and downwardly bent lips at their upper ends having perforations in their ends registering with perforations in the ends of the side pieces and in the uprights, said lips clamping the upper edge of the sides, an end-gate having eyes upon its back registering with the perforations and sliding with its ends in the grooves of the uprights, and a transverse rod passing through the perforations and eyes, as and for the purpose shown and set forth.

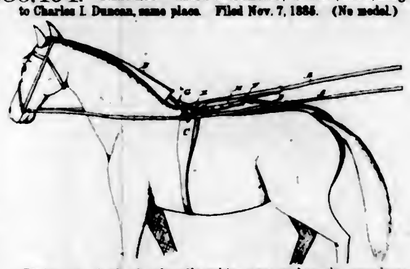
336,493. COMMUTATION-TICKET HOLDER. MATHEW REH, Oakland, Cal. Filed July 23, 1885. (No model.)



Claim.—1. In commutation-ticket holders, the lazy-tongs K, with thumb-knob E, having projections H and spring T, and the card-clamp J, in combination with the commutation-ticket case F, having the slot G and offset O for the purpose of holding the commutation-card D and presenting the same for punching, substantially as and for the purposes set forth.

2. The commutation-ticket holder described, composed of the case F, with slot G and offset O, the lazy-tongs K, with thumb-piece E, and card-clamp J, with projections H, the whole constructed, combined, and operated substantially as and for the purposes set forth.

336,494. HARNESS. HENRY T. REDMOND, Malvern, Iowa, assignor to Charles I. Duncan, same place. Filed Nov. 7, 1885. (No model.)



Claim.—1. A check-rein adjustably connected to the overdraw at one end and the lines at the other, and devices, substantially as described, for adjusting said check-rein, as set forth, said parts being combined substantially as described.

2. The lines A, having perforations, in combination with check-ease D, snap with roller F, check-rein H, overdraw B, connected to bit, and check-fastener E, substantially as described.

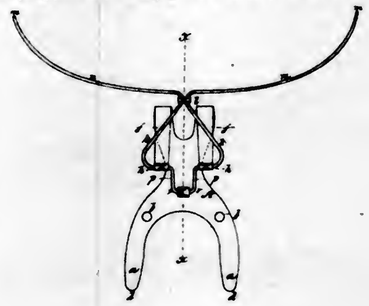
3. An adjustable fastening device, in combination with a check-rein connected to an overdraw, and by means of a snap with roller to a check-ease, the latter being secured to the lines, substantially, as described.

4. The check-fastener E, having a pivoted weighted portion with pin *d*, in combination with check-rein H, secured to the overdraw B and check-ease D, and lines A A, substantially as described.

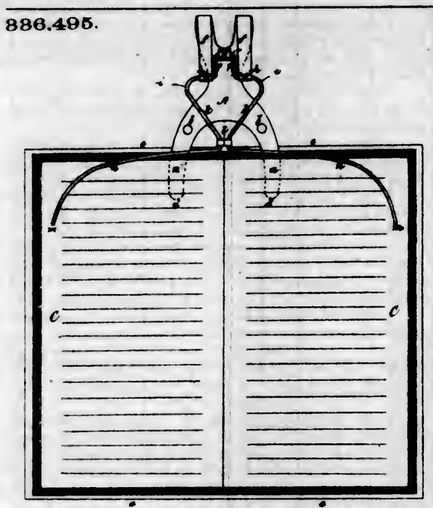
5. The overdraw B, secured to the bit, in combination with check-rein H, detachably secured to the overdraw, and having the check-fastener E, operating therewith, snap with roller F, check-ease D, adjustably secured to lines A A, and lines A A, substantially as and for the purpose set forth.

336,495. BOOK-LEAF HOLDER. FRANK W. SMITH, Leominster, Mass. Filed May 13, 1885. (No model.)

Claim.—1. A book-leaf holder consisting of a device having two pair of spring-jaws, *a a'*, to engage with the covers of the book, a pair



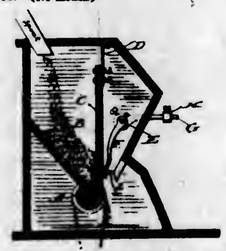
336,495.



of spring-bearings, A A, and a spanner, *s*, pivoted within the latter for exerting pressure on the leaves, the parts being constructed to operate substantially as described.

2. The friction-roll *s*, in combination with two pair of spring-jaws, *a a'*, a pair of spring-bearings, A A, and a spanner, *s*, as and for the purpose set forth.

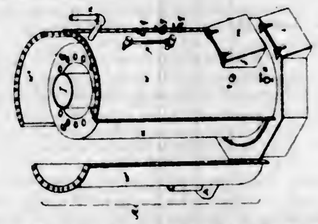
336,496. FEED-REGULATOR. JULES BOSSARD, Beauville, Mo. Filed Nov. 20, 1885. (No model.)



Claim.—1. The combination, with a feed-roll, a stationary hopper, and adjustable feed-board, the straps and set-screws, of a longitudinal shaft, E, suitable arms mounted upon the shaft with their lower ends bearing against the feed-board, and a counter-balance for regulating the discharge from the hopper, substantially as herein described.

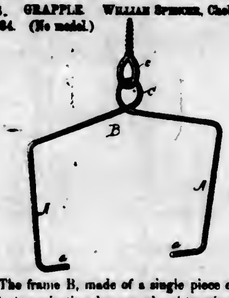
2. An improved feeding device comprising a stationary hopper, a feed-roll, a feed-board suspended within the hopper and forming the front wall of its throat, a longitudinal shaft, E, suitable arms, F, mounted upon the shaft and bearing against the lower part of the feed-board, adjusting-screws *d*, an arm, G, secured to the shaft, and a weight movable upon said arm, substantially as herein described.

336,497. STEAM-BOILER. JACOB C. SOTTER, Pottstown, Pa. Filed Dec. 9, 1885. (No model.)



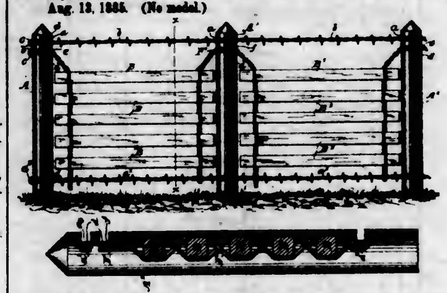
Claim.—The combination of a steam-boiler of the class described with an outer casing consisting of two or more sections and a removable top, one section being fixed for the passage through it of the connections of the usual steam-boiler attachments, and the other section or sections detachable, substantially as set forth.

336,498. GRAPPLE. WILLIAM SPENCER, Cheboygan, Mich. Filed Oct. 16, 1884. (No model.)



Claim.—The frame B, made of a single piece of spring-wire, having the sides A A, projecting downward and terminating in right-angled arms *a a*, and having the link C, provided with the screw-eye *c*, whereby the said frame B will also form a handle for inserting the screw-eye, as set forth.

336,499. FENCE. WILLIAM A. TILLMAN, Grape Vine, Tex. Filed Aug. 13, 1885. (No model.)

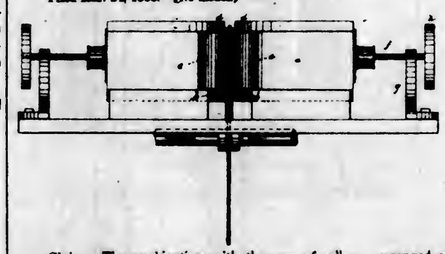


Claim.—1. The combination, with the posts and slats, of the wires secured directly to the posts and twisted between the outer ends of the rails, and the wire tie secured to the central post and extending downwardly therefrom on each side and twisted between the rails at their inner ends, substantially as set forth.

2. The combination, with the post A', of a wire tie consisting of a single piece of wire doubled and secured to said post, and extending downwardly therefrom on each side thereof, and the rails, said wire being twisted between the rails and twisted between its point of attachment to the post and the top rails, substantially as set forth.

3. The combination, with the posts A A' A² and the wire connecting them near their lower ends, of the slats and rails, and the wire tie secured to the post A', and extending downwardly therefrom on each side thereof, said tie being twisted between its point of attachment to the post and the top rails and twisted between the series of rails and secured to the bottom wire, substantially as set forth.

336,500. REEAWING-MACHINE. GEORGE TUTTLE, Newark, N. J. Filed Mar. 24, 1885. (No model.)



Claim.—The combination, with the saw, of rolls *s s*, arranged on each side of the saw, the saw lying between, to bear on the sections of the split board and hold them against the saw, to prevent premature splitting, substantially as set forth.

336,501. REFRIGERATOR. GEORGE S. VAN VOORHIS, Bucyrus, Ohio. Filed Oct. 13, 1885. (No model.)

Claim.—1. A refrigerator comprising the following elements in combination: a casing, partitions or shelves extending from side to side of the casing, leaving a space between their rear edges and the back of the case, and forming compartments, as B, C, and F², and valves located in the space between the edges of the partitions and the back of the cas-

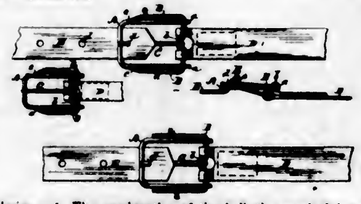
336,501.



ing, to establish or cut off communication between the several compartments formed by the shelves, substantially as and for the purposes set forth.

2. The combination of the case A, shelves D and D', forming compartments B, C, and E', valves F F', perforated pan E, located below shelf D' and set at an incline, pipes E' E², communicating with the bottom of the compartment B and terminating slightly above the pan E, whereby drippings may be conveyed from compartment B to E², and the communication between the several compartments be regulated as desired, substantially as and for the purposes specified.

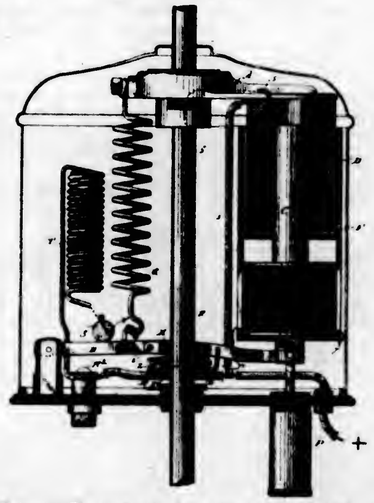
336,502. BUCKLE. WALTER H. WALES, Providence, R. I., assignor to himself and Clarence Eugene Robinson, same place. Filed Aug. 18, 1885. (No model.)



Claim.—1. The combination of the bail, the cranked lever, the tongue secured to the crank, and the strap secured to the crank-lever at each side of the tongue, substantially as described.

2. In a buckle, the combination of the bail, the tongue, and the cranked lever having the crank made adapted for the reception of both the strap and the tongue, and set at an angle with the arms of the lever, substantially as and for the purpose specified.

336,503. ELECTRIC-ARC LAMP. ADDISON G. WATERHOUSE, Hartford, Conn. Filed Jan. 23, 1884. (No model.)



Claim.—1. The combination, in an electric lamp, of a feed-regulating mechanism and a governing electro-magnet consisting of main-circuit coils, a movable core therefor, derived-circuit coils moving with the core, and a bell-extension from the core surrounding the main-circuit coils.

2. The combination, in an electric-arc lamp, of a feed-regulating mechanism, a movable magnet-core actuated in one direction by main-circuit coils and in the other by the weight of the parts, a derived-circuit coil moving with said core, and a bell-extension surrounding the main-circuit coils.

3. The combination, in an electric lamp, of a feed-regulating lever, B, core C, coils D in the main circuit, coils carried by the core and in a derived circuit of high resistance around the carbons, and bell-extension F, as and for the purpose described.

4. The combination, in an electric lamp, of a cut-out switch bearing on a movable portion of the regulating mechanism, and an adjustable cam or eccentric at the point of bearing.

5. The combination, in an electric lamp, of the cut-out switch and the adjustable contact-piece O, arranged in the manner described, so that it may be turned up to prevent closing of the cut-out circuit.

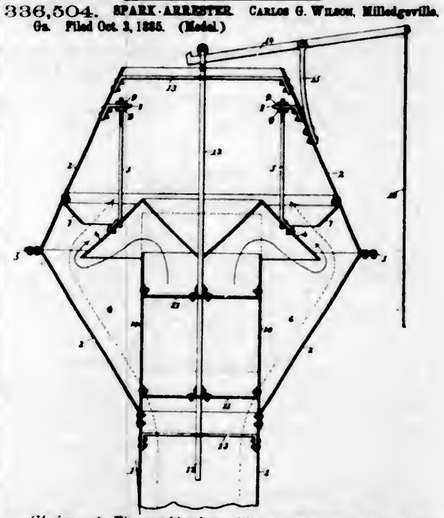
6. The combination, with the feed-regulating lever in an electric lamp, of the spring N, bearing on said lever and having a contact block or hammer, O, through which it may close a cut-out circuit.

7. The combination, in an electric lamp, of the lever B, the core C, connected therewith and carrying derived-circuit coils, main-circuit coils D, jaw H, hung from the lever, and the loose friction dog or block connected with the jaw by a link, as and for the purpose described.

8. The combination, in an electric lamp, of a movable magnet-core, fixed main-circuit coils, movable derived-circuit coils moving with said core, and a clutch or clamp consisting of a pivoted jaw bearing against one side of the carbon or carrier, a loose friction dog or block bearing against the opposite side of the carbon or carrier, and a connecting link or bar, L, as and for the purpose described.

9. The combination, with the carbon-carrier, of a tilting dog or jaw bearing against the carrier at the side opposite from that which the dog or jaw is fulcrumed, a friction block or piece bearing on the carrier on the side opposite to that on which the dog or jaw bears, and a connecting-link between the two parts bearing on the carrier, as and for the purpose described.

336,504. SPARK-ARRESTER. CARLOS G. WILSON, Milledgeville, Ga. Filed Oct. 3, 1885. (Model.)



Claim.—1. The combination, with a smoke-stack having an enlargement or hood and a deflecting-plate fixed to said hood and inclined downwardly and inwardly, of a vertically-adjustable deflecting-cap placed between the top of said stack and said deflecting-plate, the outer part of said cap being inclined downwardly and outwardly, substantially as set forth.

2. In combination with a smoke-stack, hood, and deflecting-plates, a movable section of the stack below said deflecting-plates, substantially as set forth.

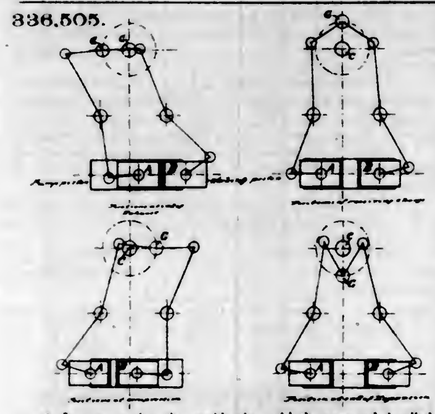
3. In combination with the stack 1 and hood 2, deflecting-plates supported in said hood, a movable section, 10, of the stack, a lifting-rod therefor, and lever and rod or cord for operating said section, substantially as set forth.

4. In combination with the stack 1 and hood 2, deflecting-plates supported in said hood, a movable section of the stack below said plates, a lifting-rod connected with said section and having suitable means of operation, and guide-bars for said lifting-rod, substantially as set forth.

336,505. GAS-ENGINE. JAMES ATKINSON, Hampstead, County of Middlesex, England. Filed May 20, 1885. (No model.) Patented in England Feb. 28, 1885, No. 2,712; in France May 21, 1885, No. 169,071, and in Belgium May 30, 1885, No. 69,074.

Claim.—1. In a gas-engine, the combination, with the open-ended cylinder, of the two pistons and beams connected therewith centrally pivoted and connected to the same crank at their outer ends, as set forth.

336,505.



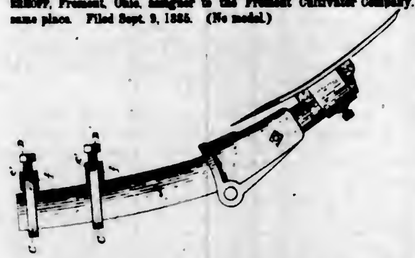
2. In a gas-engine, the combination, with the open-ended cylinder, the two pistons working therein with different relative velocities, but each making the complete stroke in the same time, of the centrally-pivoted beams connected to said pistons and to the same crank at their outer ends, as set forth.

3. In a gas-engine, the combination, with the open-ended cylinder and pistons moving therein at the differential velocities herein set forth, and beams connected to said pistons at one end and to a single crank at the other, of an ignition-tube located and adapted to operate as described.

4. In a gas-engine, the combination, with the cylinder and differentially-moving pistons connected to beams working from the same crank, of the admission-valve constructed and applied to be automatically operated by the movement of the pistons, and an exhaust-valve also constructed and applied to be operated by the pistons.

5. In a gas-engine, the pistons A B, working in a cylinder which is open at both ends, completing their strokes at the same times, connected directly with the crank-pin of the driving-shaft, so as to maintain a certain position in relation to the crank-pin at every part of its revolution and in such a manner as to work with a differential rate of motion to allow the admission, compression, ignition, expansion, and expulsion of the working-fluid to be performed automatically between said pistons, as set forth.

336,506. STANDARD-CLAMP FOR CULTIVATORS. SAML. BRINKERHOFF, Fremont, Ohio, assignor to the Fremont Cultivator Company, same place. Filed Sept. 9, 1885. (No model.)



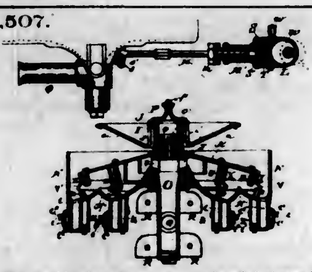
Claim.—1. The combination of the cultivator-standard, the plow-beam, and a pair of clamp-plates, C, each of which has a standard-opening, *c*, larger than the cultivator-standard, and with a boss, *c'*, and set-screw D on the front side of the standard-opening, and the bolts E, for securing the said plates to the upper and lower sides of the said plow-beam, substantially as and for the purpose set forth.

2. A cultivator-standard clamp consisting of a pair of plates, each having an opening, *c*, larger than the standard, a clamp-screw, D, passing through a boss on the front side of the standard-opening, ribs *f*, extending laterally from the said boss, and opening F, together with bolt-holes *e'*, substantially as and for the purpose set forth.

336,507. ORE-SEPARATOR. FRANCIS R. BROWN, Boulder, Colo. Filed Sept. 9, 1885. (No model.)

Claim.—1. The combination of the eccentric, the open-end cylinder S', operated thereby, the piston M' in said cylinder, the cushion T between the end of the piston and the inner end of the cylinder, the pitman M attached to said piston, an oscillating separating-pan, and a ball-and-socket joint connecting said pitman with the latter, substantially as set forth.

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2. The combination of nut m, screw-threaded pitman M, piston M', cylinder S', and cushion T, with the eccentric L, strap w, and separating-pan, the latter being oscillated by the action of the other devices aforesaid, substantially as set forth.

3. The perforated cap P, which serves the double function of holding the removable pulley I in place and admitting oil to the hollow hubs of the pan and diaphragm, in combination with said hubs and said pulley, substantially as set forth.

4. An oscillating separator-pan, in combination with a shaft carrying two eccentrics, a pair of pitmen operated, respectively, by said eccentrics, ball-and-socket joints connecting said pitmen to said separator-pan, yielding connections, consisting in each instance of a piston, cylinder, and interposed elastic cushion, between said pitmen and said eccentrics, and straps connected to said cylinders and extending over said eccentrics, respectively, substantially as set forth.

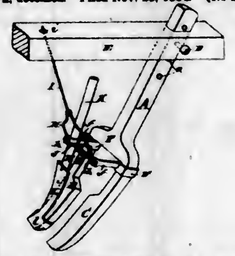
5. The hollow hub O of the separator-pan and the hollow hub of the diaphragm, in combination with the extension *o*, extending from the former into the latter, the perforated cap P, and the pipe *o'*, arranged substantially as set forth.

6. The clamping-hooks v and friction-rings V', in combination with a rotating support to which they are attached, and the pan within which said rings operate, substantially as set forth.

7. A separator-pan provided with pockets *t*, in combination with valves which close and open the outlets of said pockets to regulate the quantity withdrawn.

8. A separator-pan divided into two annular concentric compartments having their bottoms in the same horizontal plane and provided with pockets having adjustable valves for regulating withdrawal of ore, substantially as set forth.

336,508. CULTIVATOR-TOOTH. LEANDER BURK, White Cloud; Charles Burk, Wilcox, Newaygo County, Mich., administrator of said Leander Burk, deceased. Filed Nov. 25, 1884. (No model.)



Claim.—1. A cultivator-tooth made with a standard, A, having end prongs, B C, in combination with a mold-board, L, having a clip, *l*, fitting the end of either prong, substantially as herein set forth.

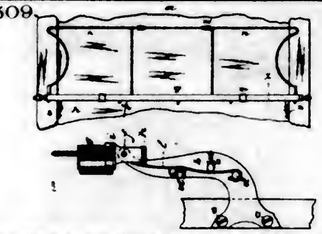
2. A cultivator-tooth made with a standard, A, having prongs B C, clips F *f*, held to the prongs and connected by a rod, G, and a mold-board, L, having a clip, *l*, adapted to the prongs and provided with a bar, K, which passes loosely through a yoke, J, placed loosely on the rod G, substantially as herein set forth.

3. A cultivator-tooth made with a standard, A, having prongs B C, clips F *f*, rod G, mold-board K *l*, bar L, and yoke J, arranged substantially as specified, in combination with the yoke H and a brace-rod connecting the tooth to the cultivator-beam, substantially as herein set forth.

336,509. PILLOW-SHAM HOLDER. WILLIAM T. CHENEY and JACOB W. KOHR, Newark, N. J. Filed May 14, 1885. (No model.)

Claim.—1. In a pillow-sham holder, the combination of a bracket, as *b*, having bearing-lugs formed on the face thereof, a spring arranged between said lugs, two of said lugs bearing against one side of the spring and a third bearing on the other side at a point between said two, and a frame having a turning-rod arranged in said bracket and provided with a bearing to engage said spring, substantially as described.

336,509.



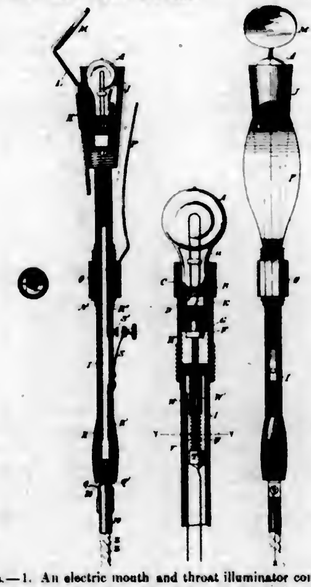
2. In a pillow-sham holder, the combination, with a bracket having a spring thereon, and a turning-rod, of a casting, *i*, projecting laterally from said turning-rod, having at about the center a pivotal bearing to engage a co-operating bearing of the bracket and at its outer end having a laterally-projecting bearing, *h*, to engage the spring, substantially as set forth.

3. In a pillow-sham bolder, the casting *i*, having at one end a socket or seat at which the said casting is secured to the turning-rod so as to project at right angles thereto, and having a central pivotal bearing to co-operate with one on the bracket, and at the other end having a lateral projection or bearing, *h*, to engage the spring on said bracket, substantially as set forth.

4. In a pillow-sham holder, the combination, with suitable brackets, of a turning-rod having beveled overlapping sections, and bands *m m*, free to move on said sections and to abut against the inclined surfaces, to clamp the sections rigidly together and form a rod of any desired length, substantially as set forth.

5. In a pillow-sham holder, the combination of brackets, a turning-rod of overlapping sections having pivotal castings at their outer ends, and having beveled overlapping ends, and bands *m m*, which engage the beveled surfaces and clamp said sections together, substantially as and for the purposes set forth.

336,510. ELECTRIC MOUTH AND THROAT ILLUMINATOR. LOUIS F. CRIADO, Brooklyn, assignor to Stout, Meadowcroft & Co., New York, N. Y. Filed June 20, 1885. (No model.)



Claim.—1. An electric mouth and throat illuminator comprising a handle carrying a circuit-make-and-break device, an incandescent electric lamp, and a longitudinally-adjustable guard or casing surrounding the lamp-globe, substantially as described.

2. An electric mouth and throat illuminator comprising a handle carrying a circuit-make-and-break device, an incandescent electric lamp, and a reflecting guard or casing adjustable in relation to said lamp-globe, substantially as described.

3. In an electric mouth and throat illuminator, an adjustable hood or reflector surrounding the lamp-globe, the end of which is open, and having a general conical form, and provided with a screw-thread upon the smaller end, substantially as described.

4. In an electric mouth and throat illuminator, a hood or reflector surrounding the lamp-globe and adjustable in relation thereto, and provided on its outer surface with a point of attachment for a reflecting-mirror, and a mirror adapted to be attached thereto.

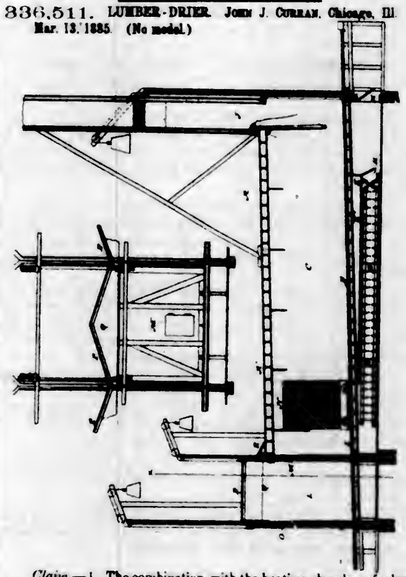
5. The combination, in an electric mouth and throat illuminator, of a handle carrying a circuit-make-and-break device, an incandescent electric lamp, an adjustable guard or casing surrounding said lamp, and an adjustable tongue-depressor upon said handle, substantially as described.

6. In an electric mouth and throat illuminator, a reflecting-hood longitudinally and circumferentially adjustable relative to the lamp in the end thereof.

7. In an electric mouth and throat illuminator, a non-conducting hood longitudinally and circumferentially adjustable relative to the lamp in the end thereof.

8. In an electric mouth and throat illuminator, and in combination with the handle thereof, an electric lamp and a removably-adjustable tongue-depressor.

336,511. LUMBER-DRIER. JOHN J. CURRAN, Chicago, Ill. Filed Mar. 13, 1885. (No model.)



Claim.—1. The combination, with the heating-chamber of a lumber-drier, of two longitudinally-arranged steam-supply headers and transverse gates of steam-pipes leading therefrom, substantially as and for the purposes set forth.

2. The combination, with the heating-chamber of a lumber-drier, of two steam-supply headers arranged longitudinally on opposite sides of the heating-chamber, two correspondingly-arranged discharge-headers, and transverse pipes connected with each other and with said headers in vertical groups or gates, substantially as and for the purposes set forth.

3. The combination, with the heating-chamber of a lumber-drier, of two longitudinally-arranged steam-supply headers placed at the sides of the heating-chamber, and two similarly-arranged discharge-headers, and a series of vertical groups or gates of pipes alternately connected with said headers, substantially as and for the purposes set forth.

4. The combination, with the drying-chamber, of a tempering-chamber located at the exit end of the drying-chamber and communicating therewith by a passage having a door, substantially as described.

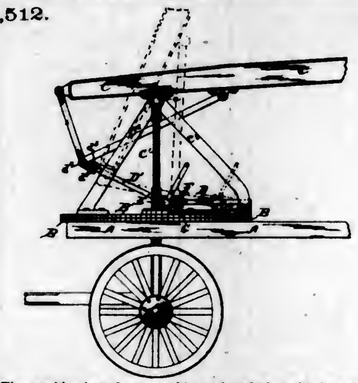
5. The combination, with the drying-chamber having its roof inclined toward the exit end thereof, of a tempering-chamber having a roof more elevated than that of the drying-chamber, a vertically-sliding door between the said chambers and rising above the roof of the drying-chamber, and a foot-board at the lower extremity of said latter roof, substantially as and for the purposes set forth.

336,512. TURN-TABLE EXTENSION-LADDER. LEWIS R. CURTIS, Chicago, Ill., assignor to Everett B. Preston and George E. Preston, both of same place. Filed Dec. 30, 1885. (No model.)

Claim.—1. The combination, with a turn-table truck and a pivoted ladder mounted thereon, of a pair of links, D' D', and an operating-screw, E, and traveling nut, substantially as specified.

2. The combination of a turn-table truck and a pivoted ladder mounted thereon, lazy-tong links D D D' D', pivotally connected to said ladder or turn-table, a screw, E, and traveling nut, substantially as specified.

336,512.



3. The combination of a turn-table truck and pivoted ladder mounted thereon, lazy-tong links D D D' D', pivotally connected to said ladder or turn-table, a screw, E, and traveling nuts and guideway G, substantially as specified.

4. The combination of a turn-table, a pivoted ladder, C, mounted thereon, having braces C^3 C^3 at its pivoted end, a pair of lazy-tongs connected at one end to the turn-table and at the other to said braces, and a screw and traveling nuts for operating said lazy-tongs, substantially as specified.

5. The combination of turn-table B B', ladder C, mounted pivotally thereon, braces C^3 C^3, links D D D' D', guideway G, nuts F F, having projections *f*, fitting in said guideway, and screw E, said links D D being pivoted at one end of the turn-table and at the other to said nuts, and said links D' D' having a double-joint connection at one end to said braces and at the other to said traveling nuts, substantially as specified.

6. The mechanism for raising and lowering a pivoted ladder or other like article, consisting in a pair of lazy-tongs and a screw and traveling nut for operating the same, substantially as specified.

336,513. TWO-WHEELED VEHICLE. JAMES L. DYER and JOHN A. BERRY, Elmira, N. Y. Filed Sept. 12, 1885. (No model.)



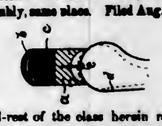
Claim.—1. In a vehicle of the character described, the body A, made octagon and provided with a driver's seat set in the front side above the horizontal plane of the window-sills, substantially as and for the purposes set forth.

2. In a vehicle of the character described, a pair of hinged seats and means for operating the same, substantially as set forth.

3. In a vehicle of the character described, the body A, provided outside on its front below the driver's seat with a box, E^3, for holding a lamp, substantially as described.

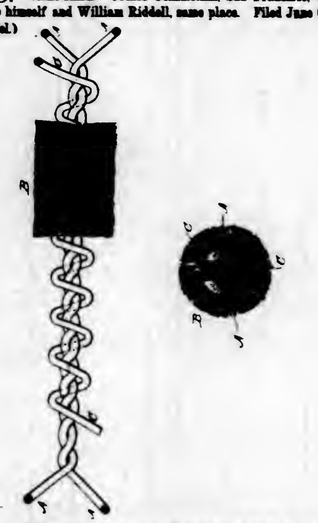
4. In a vehicle of the character described, the combination of a spring mounted between the driver's foot-rest and the shafts, a pair of curved braces extending out from the body and connecting with the front ends of the side springs, and a pair of shafts having loose connection at their rear ends with said braces, substantially as described and shown.

336,514. HEAD-REST. PHILIPP EMBLING, Norwich, Conn., assignor of one-half to John Stumbly, same place. Filed Aug. 12, 1885. (No model.)



Claim.—A head-rest of the class herein referred to, having the usual padded body portion, and having combined therewith and secured thereto a bow-spring whose free ends are adapted to straddle and embrace a pew-back, as described, the bow portion of said spring being secured to the lower grooved edge of the body portion by an adjusting-screw, *e*, as described, so that the free ends of said spring may be adjusted to clasp the pew-back more firmly or to fit pew-backs of different sizes.

336,515. CHENILLE. JULIUS FRELLSEN, San Francisco, Cal., assignor to himself and William Riddell, same place. Filed June 6, 1884. (No model.)



Claim.—1. The combination, with the binding-threads A A, twisted together and the pile-threads held between said binding-threads, of the auxiliary fastening-thread C, wound spirally on the threads A A and B, whereby such threads A A are prevented from untwisting, substantially as set forth.

2. As an improved article of manufacture, chenille constructed of intertwisted strands A A, pile-threads held between and by the twist of said threads A A, and an auxiliary fastening or binding thread wound spirally around the threads A A, and the pile-threads in a direction reversely to the direction of twist of the threads A A, substantially as and for the purposes specified.

336,516. COVER FOR BASKETS. ROBERT H. FRISBEE, Union City, Pa., assignor to Ernest Leslie Frisbee, same place. Filed Nov. 23, 1885. (No model.)



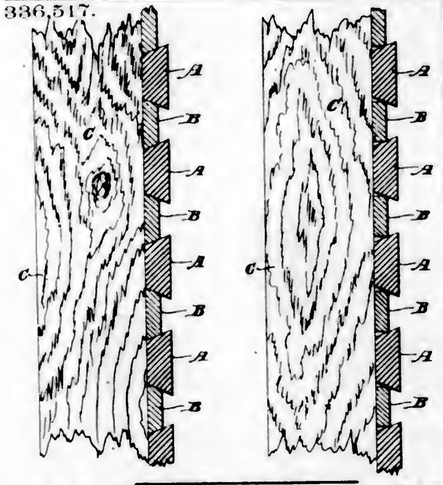
Claim.—The combination, with two side-pieces, each of which is provided with a downwardly-projecting pin near its end, upon its under side, and two nails upon its outer side near its middle, one of said nails having a wire firmly secured thereto and driven in its full length, and the other one being only driven in part of its length, the ends of said side pieces resting upon the rim of the basket, two cross-pieces secured on the tops of said side pieces, and a series of slats secured to said cross-pieces, said slats being longer than the side pieces and having their ends projecting from the cross-pieces, as shown and described.

336,517. LATHING. HARMON H. FULTON, Indianapolis, Ind. Filed Jan. 7, 1886. (No model.)

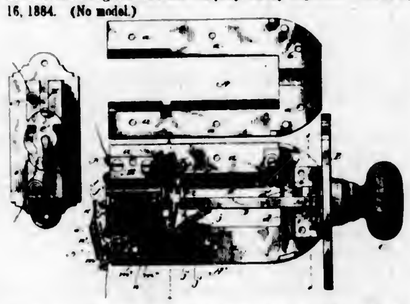
Claim.—1. As a new article of manufacture, lathing consisting of boards having reversely-beveled edges and thinner boards interposed between the same, substantially as shown and described.

2. Lathing consisting of thick boards having one edge beveled in one direction, and the other edge beveled in the other direction, and thin boards interposed and filling the spaces between said thick portions, substantially as shown and described, and for the purposes specified.

336,517.



336,518. MAGNETO-ELECTRIC DOOR-PULL. WILLIAM HUBARD, Cambridgeport, Mass., assignor to Gilman Collamore, Boston, Mass., and the American Magnetic Electric Company, Jersey City, N. J. Filed July 16, 1884. (No model.)



Claim.—1. The combination, in a magneto-electric door-pull, of a magneto-electric machine, spindle D, nut L, worm-shaft H, and wheel K, substantially as set forth.

2. The combination, in a magneto-electric door-pull, of a magneto-electric machine, knob C, spindle D, nut L, worm-shaft H, and cog-wheel K, substantially as set forth.

3. The combination, in a magneto-electric door-pull, of a magneto-electric machine, spindle D, belt or chain *j'*, spring *j*, and post J, substantially as set forth.

4. The combination, in a magneto-electric door-pull, of a magneto-electric machine, spindle D, belt *j'*, spring *j*, post J, worm H, and nut L, substantially as set forth.

5. The combination, in a magneto-electric door-pull, of a magneto-electric machine, spindle D, worm-shaft H, wheel K, and pinion *h'*, substantially as set forth.

6. The combination, in a magneto-electric door-pull, of a spindle, D, worm-shaft H, wheel K, pinion *h'*, pawl k^3, and armature and magnets, substantially as set forth.

7. The combination, in a magneto-electric door-pull, of a spindle, D, nut L, worm-shaft H, gears K *h'*, armature-coil *o*, magnet, and circuit, substantially as set forth.

8. The combination, in a magneto-electric door-pull, of a magneto-electric machine, a spindle, D, circuit-breaker M, spring *n'*, and pivot m^3, substantially as set forth.

9. The combination, in a magneto-electric door-pull, of a magneto-electric machine, spindle D, circuit-breaker M, insulating-block f^2, electrode, and electric-circuit point *f*, substantially as set forth.

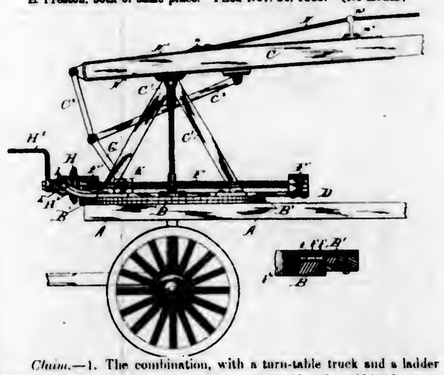
10. The combination, in a magneto-electric door-pull, of a magneto-electric machine, spindle D, nut L, worm-shaft H, bracket *h*, stationary cap, and an adjustable cap, *i*, substantially as set forth.

11. The combination, in a magneto-electric door-pull, of a face-plate, B, spindle D, nut L, worm-shaft H, permanent magnet, armature-coil *o*, and circuit-breaker M, substantially as set forth.

12. The combination, in a magneto-electric door-pull, of the circuit-point *f*, insulating-block f^2, armature-coil *o*, and circuit-breaker M, substantially as set forth.

13. The combination, in a magneto-electric door-pull, of the bell-pull C, face-plate B, lugs *b*, and magnets, armature, and devices for rotating the same upon the movement of the bell-pull, substantially as set forth.

336,519. TURN-TABLE TRUCK FIRE EXTENSION-LADDER. WILLIAM F. HYDE, Chicago, Ill., assignor to Everett S. Preston and George E. Preston, both of same place. Filed Nov. 30, 1885. (No model.)



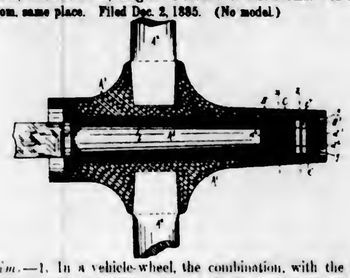
Claim.—1. The combination, with a turn-table truck and a ladder mounted thereon, of a screw for raising and lowering the said ladder, provided with a gear near one end and a crank-shaft having a gear meshing therewith, said crank-shaft extending to the side or at an angle to said screw, said screw and crank-shaft being both mounted on the revolving ring of said turn-table, substantially as specified.

2. The combination, with a turn-table truck and a pivoted ladder mounted thereon, a screw for raising and lowering the ladder, provided with a beveled gear, and a crank-shaft having a beveled gear meshing with the beveled gear on said screw, said screw and crank-shaft being both mounted on the revolving ring of said turn-table, substantially as specified.

3. The combination, with a turn-table truck and a pivoted ladder mounted thereon, of a screw, F, bevel-gear H, secured thereto, crank-shafts *h' h'*, and bevel-gears thereon, *h h*, substantially as specified.

4. The combination, with a turn-table truck and a pivoted ladder mounted thereon, of a screw, F, having a crank, H', on its end, bevel-gear H, shafts *h' h'*, having bevel-gear *h h*, and cranks H' H', substantially as specified.

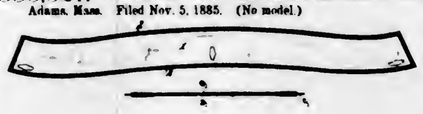
336,520. FASTENING DEVICE FOR VEHICLE-HUBS. CHARLES A. JOHNSON, St. Paul, Minn., assignor of one-half to Carl Herman Von Stockenstrom, same place. Filed Dec. 2, 1885. (No model.)



Claim.—1. In a vehicle-wheel, the combination, with the axle-journal A^3, hub A', and nut C, of a ferrule, B' B^2, supporting an irregular disk or plate, c^2, adapted to be connected to and disconnected from said nut from outside said ferrule, substantially as set forth.

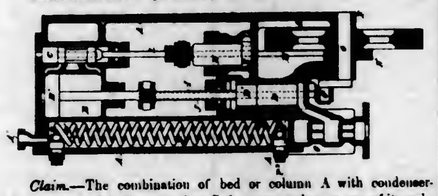
2. The combination of hub A', axle-journal A^3, nut C, having irregular cavity in its outer end, ferrule B' B^2, disk c^2, having irregular periphery corresponding to the irregular cavity in said nut, stud d^2, journaled in said ferrule B' B^2, and means, substantially as described, whereby the revolution of said stud will cause said disk c^2 to be connected to or disconnected from said nut C.

336,521. COLLAR OR CUFF. EMIL KIPPER and JOHN G. JARVIS, Adams, Mass. Filed Nov. 5, 1885. (No model.)



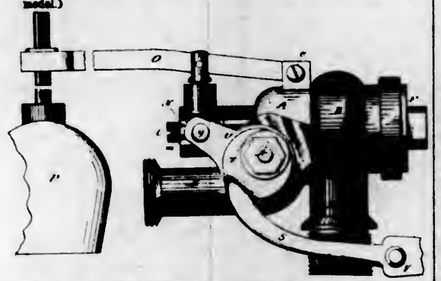
Claim.—A collar or cuff composed in whole or in part of xylonite or other pyroxyline compound having its border or edge composed of a pyroxyline compound of a color differing from that of the body of the article.

336,522. DONKEY-ENGINE PUMP AND CONDENSER. JOHN KIRKALDY, 40 West India Dock Road, Poplar, County of Middlesex, England. Filed Dec. 15, 1885. (No model.)



Claim.—The combination of bed or column A with condenser-tubes led through it, the valve-box C, for pump-valves at one of its ends, the outlet A' at the opposite end, the steam-cylinder B, parallel with the bed or column A at its outlet end, the pump-cylinder D, parallel therewith at its opposite ends, their piston-rods in one piece or secured together and giving motion by a connecting-rod, J, to a crank-shaft, G, and an eccentric, N, on the crank-shaft giving motion to slide-valve rod L, which also serves as pump-rod for the feed-pump F, substantially as hereinbefore described, and illustrated in the drawings annexed.

336,523. WATER-CLOSET VALVE. HIRAM S. LORD, Hartford, Conn., assignor to Robert E. Day, same place. Filed Nov. 16, 1885. (No model.)



Claim.—1. The combination of a valve-casing provided with an inlet, B, and an outlet, E, constructed with the valve-chamber C and the valve-seat D, a tubular valve-stem arranged longitudinally in bearings, and extending longitudinally through said valve-seat into said valve-chamber and carrying the valve I, the said stem constructed with an auxiliary valve-chamber, J, opening into said valve-stem, the spindle K, carrying the auxiliary valve L, adapted to close the passage between said auxiliary chamber and the stem, the said spindle provided with a shoulder, M, adapted to take a bearing upon the valve-stem, but permit longitudinal movement of the spindle independent of said valve-stem, a lever hung upon said case, and in connection with said valve-spindle, whereby, under the turning of the said lever, longitudinal movement is imparted to said spindle and to said valve-stem, with a lever, O, carrying the float P, the said lever adapted to engage said spindle when the valve is in the open position, or release said spindle to permit it to close, according to the position of the float, substantially as described.

2. In a valve for water-closets, the combination of the casing constructed with the inlet B, outlet E, valve-seat D between said inlet and outlet, and also with the valve-chamber C in rear of said valve-seat, the tubular valve-stem G, arranged longitudinally through said seat and supported in bearings for longitudinal movement, the valve I on said stem, between said valve-chamber and said seat, the said valve-stem constructed with a valve-chamber, J, opening from said valve-chamber C into said stem, the valve-spindle K, arranged longitudinally in said stem and carrying the auxiliary valve L in said auxiliary chamber J, adapted to open or close the passage from the chamber C into the stem, the said auxiliary valve provided with a screw-threaded stem, the valve L made adjustable longitudinally with relation to said spindle, the said spindle constructed with a shoulder, M, adapted to engage said stem G, but free for certain longitudinal movement independent of said valve-stem G, collar N, adjustable on said spindle and constructed with a recess, *d*, the lever O, carrying the float P, provided with a stud, R, adapted to engage said recess *d* in said collar N, substantially as described.

3. In a valve for water-closets, the combination of the casing constructed with the inlet B, outlet E, valve-seat D between said inlet and outlet, and also with the valve-chamber C in rear of said valve-seat, the tubular valve-stem G, arranged longitudinally through said seat and supported in bearings for longitudinal movement, the valve I on said stem, between said valve-chamber and said seat, the said valve-stem constructed with a valve-chamber, J, opening from said valve-chamber C into said stem, the valve-spindle K, arranged longitudinally in said stem and carrying the auxiliary valve L in said auxiliary chamber J, adapted to open or close the passage from the chamber C into the stem, the said auxiliary valve provided with a screw-threaded stem, the valve L, made adjustable longitudinally with relation to said spindle, the said spindle constructed with a shoulder, M, adapted to engage said stem G, but free for certain longitudinal movement independent of said valve-stem G, collar N, adjustable on said spindle and constructed with a recess, *d*, the lever O, carrying the float P, provided with a stud, R, adapted to engage said recess *d* in said collar N, substantially as described.

336,524. METHOD OF MAKING RUGS, FRINGE, &c., AND MATERIAL THEREFOR. CHARLES A. LUDLOW, Bridgeport, Conn., assignor of one-half to Albert R. Lacey, same place. Filed Apr. 9, 1885. (No model.)

Brief.—Strips of pasteboard or other fragile material capable of being pierced by the needle of a sewing-machine, and which may vary in length and width, are first wound with worsted or other material to form the tuft of the rug. Such wound strips are then sewed to a suitable backing, after which the wound material is cut by a knife or scissors near the edge of the pasteboard strips. Said strips are then removed, leaving the worsted-forming tufts on the body fabric.



Claim.—1. The improvement in the art of making rugs and analogous articles, consisting in providing strips of pasteboard or other fragile material of approximately uniform width and thickness, in winding such strips with worsted or other material from end to end, in sewing strips so wound to a body fabric by a line or lines of stitching extending lengthwise of the wound strips, and in then severing the winding material at the edges of the strips and removing the portions of the strips on opposite sides of the line of stitching, leaving the wound material in the form of tufts attached to the body fabric, substantially as herein described.

2. As a new article of manufacture, a strip or strips of pasteboard or other fragile material which will be readily pierced by the needle of a sewing-machine, and which are of approximately uniform width and thickness from end to end, wound with worsted or other covering or tufting material, as C, for use in the manufacture of rugs and other articles, substantially as herein described.

3. The improvement in the art of making rugs and other articles, consisting in winding strips of pasteboard or other fragile material with worsted or other covering material, C, in sewing such strips to a body fabric by lines of stitching extending lengthwise of the strips, and in then cutting the covering material at the edges of the strip and removing the portions of the strip remaining on opposite sides of the line of stitching, each strip being inserted under the edge of the strip previously sewed to the body fabric before the material is cut at the outer edge of such previously-sewed strip, substantially as herein described.

336,525. FOLDING BED. FRANK MUNSON, Buchanan, Mich., assignor to the Buchanan Manufacturing Company, same place. Filed Apr. 15, 1885. (Model.)

Claim.—1. In a folding bed, as described, the rail-sections having slots at their central meeting-points, combined with a connecting-piece having pivots engaging said slots, substantially as and for the purpose specified.

2. In a folding bed, substantially as described, the rail-sections having the slots *l* at their central meeting ends, combined with the saddle having pivots fitting in said slots, as set forth.

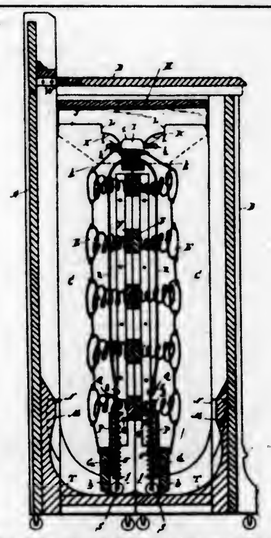
3. In a folding bed of the kind described, the coil-springs O, secured upon opposite ends of the folding-bed bottom, and connected by a tension cord or cable, substantially as described.

4. In a folding bed of the kind described, the coil-springs O, secured upon opposite ends of the folding-bed bottom, and each provided with tension-rods Q, terminating in eyes *e*, and a connecting tension cord or cable, R, detachably secured thereto, substantially as described.

5. The coil-springs O, secured upon opposite ends of the folding-bed bottom and provided with tension-rods Q, connected by a rope or cable, having rollers S secured to their outer ends, in combination with the tracks T, all arranged to steady the head and foot boards in folding, substantially as described.

6. The coil-spring O, secured upon opposite ends of the folding-bed bottom and provided with tension-rods Q, connected by a rope or cable, and having rollers S, secured to their outer ends, in combination with the tracks T, so arranged as to compress the springs at the close of the folding, substantially as described.

336,525.

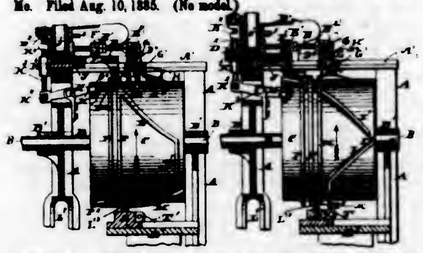


7. In a folding bed, as described, the combination, with the rail-sections having open-ended slots, of an intermediate connecting-rail engaging said slots and detachably connecting the sections together and protecting the joint between the same, substantially as described.

8. The folding rail-sections C, provided with elongated slots at their central meeting-points and terminating at their inner ends in ogee-shaped shoulders K, in combination with the saddles H, pivotally secured in the slots in the inner ends of the rail-sections and provided with the rounding piece I, arranged between the shoulders K, all arranged to guide the parts in folding by frictional contact, substantially as described.

9. The folding rail-sections C, provided with the slots *l*, as described, and terminating at their inner ends in shoulders J, L, and K, arranged as described, in combination with the saddles H, pivotally secured in the slots in the inner ends of the rail-sections and provided with the rounding piece I, having the shoulders *e* formed on it, substantially as described.

336,526. PLUG-TOBACCO MACHINE. TILLMAN PUSEY, Jr., St. Louis, Mo. Filed Aug. 10, 1885. (No model.)



Claim.—1. A sliding charger consisting of longitudinally-moving side pieces, a vertically-moving front piece, and a longitudinally-moving rear piece sliding between the side pieces, in combination with mechanism for operating the said parts, substantially as set forth.

2. A sliding charger consisting of longitudinally-moving side pieces, a longitudinally-moving rear piece, and a front piece, in combination with a longitudinally-moving bottom piece and operating mechanism, substantially as set forth.

3. A sliding charger consisting of side pieces, rear piece, and a vertically-moving front piece, in combination with a longitudinally-moving bottom piece and operating mechanism, substantially as set forth.

4. A sliding charger consisting of longitudinally-moving side pieces, a vertically-moving front piece, and a rear piece, in combination with a discharger forming a bottom piece to the charger, a table on which the material is supported in front of said rear piece and said discharger, a plunger by which the material is pressed into the receptacle in rear of the front piece and in front of the discharger, and operating mechanism, substantially as set forth.

5. A sliding charger consisting of longitudinally-moving side pieces, a vertically-moving front piece, and a longitudinally-moving rear piece sliding between the side pieces, in combination with a longitudinally-moving bottom piece sliding beneath the rear piece, a cross-bar between the side pieces working on the bottom piece, guide-rods working through the cross-bar and secured to the rear piece, and operating mechanism, substantially as set forth.

6. The combination of a table having fixed guides, a charger consisting of side pieces sliding on the table between the guides, a front piece, and a rear piece, a bottom piece sliding on the table between the side pieces, and operating mechanism, substantially as set forth.

7. The combination of a sliding charger having a rear piece, D^2, a cross-bar, F', sliding rods E, screw-threaded on their outer ends, passed through the cross-bar, and secured to the rear piece, a sliding support, G', having a cross-head, G, receiving the outer ends of the rods, pin H, a table in which the support is guided, a driving-shaft, and a drum on the driving-shaft having cams I, I^3, and I', engaging the pin, substantially as set forth.

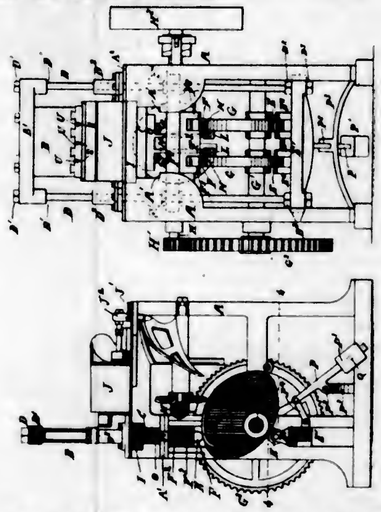
8. The combination of a sliding charger having a vertically-moving front piece, a longitudinally-moving bottom piece or discharger having a downwardly-projecting pin, a table on which the charger and discharger slide alternately, a driving-shaft, and a drum having cams P P, formed with V-shaped projections P^3, substantially as set forth.

9. The combination of a sliding charger having a vertically-moving front piece formed with lugs K^5, a table, a frame, K^2, sliding vertically in front of the table and charger, a rod, K^3, secured to the frame, and means by which the front piece is advanced to engage the lugs with the frame, substantially as set forth.

10. The combination, with the plunger, of the drum C, provided with cams N, N', and M, the sliding block L, toggle-bars L^2, connected to said block, and rods L^3 and L^{11}, operating substantially as and for the purpose set forth.

11. The combination, with the plunger and drum C, provided with cams N, N', and M, of the sliding block L, toggle-bars L^2, connected to the block, rods L^3 and L^{11}, connecting the toggle-bars to the plunger, and the levers T, connected to the sliding block by links T', substantially as and for the purpose set forth.

336,527. PLUG-TOBACCO MACHINE. TILLMAN PUSEY, Jr., St. Louis, Mo. Filed Oct. 13, 1885. (No model.)

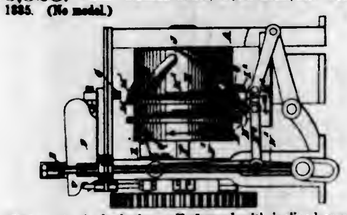


Claim.—1. The combination of the upper cross-head, B', plunger B, secured thereto, lower cross-head, E', having paired projections E^2, provided with friction-rollers E, cross-beam F^2, having projections F^3, provided with a pair of friction-rollers, F, vertical sliding rods D, to which the cross-beam and cross-heads are secured, shaft G, having cams G', provided with auxiliary cams L on their inner sides, lower plunger, C, lower plunger-head, O, having plates N, on which the auxiliary cams bear to elevate the lower plunger, a support, P^3, bar P, pivot P^2, hinging the bar to the support, link P^4, connecting the inner end of the bar to the lower cross-head, and means for pressing down the outer end of the bar, the bar being arranged to oscillate from a horizontal to a vertical position, substantially as set forth.

2. The combination, with the mold having cutters, of the compressing-plunger having recesses in its face, and elastic strips located in the recesses for enabling the cutters to sever the threads or fibers of the material being operated upon, substantially as set forth.

3. The combination, with a mold having cutters, of the lower plunger having recesses in its face and forming the bottom of the mold and discharger, and the compressing-plunger having recesses in its face and elastic strips located in its recesses and bearing on the cutters, substantially as set forth.

336,528. CAM. TILLMAN PUSEY, Jr., St. Louis, Mo. Filed Nov. 14, 1885. (No model.)



Claim.—1. A single drum, E, formed with inclined cam H, cam I, having inclined portion I' and straight portion I^3, and cam M, having inclined portion M' and straight portion M^3, the cams being located on the periphery of the drum, substantially as set forth.

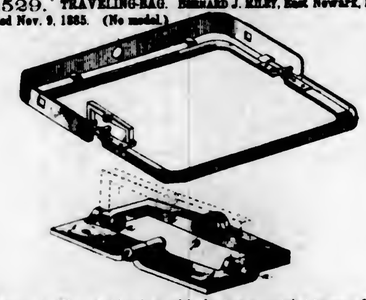
2. A single drum, E, formed with cams H I and M O on the periphery thereof, and a cam-groove, U, in the inner end of the drum, having an offset, S, substantially as set forth.

3. A single drum provided with cams M and O, and the cams having inclines M' and O' and straight portions M^3 and O^3, for the purpose set forth.

4. A single drum provided with cams H and I, as specified, and the cam I having an inclined portion, I', and straight portion I^3, for the purpose set forth.

5. A single drum, E, formed with cams M O and H I on the periphery thereof, the cams H I being elevated above the cams M O, substantially as set forth.

336,529. TRAVELING-BAG. BERNARD J. RILEY, East Newark, N. J. Filed Nov. 9, 1885. (No model.)

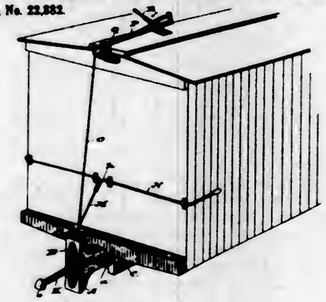


Claim.—1. The combination, with the bag or satchel frame, of the hinge B and the adjustable brace or stay consisting of the L-shaped pieces C C, pivotally connected at their inner ends and hinged to the plates A A, substantially as described.

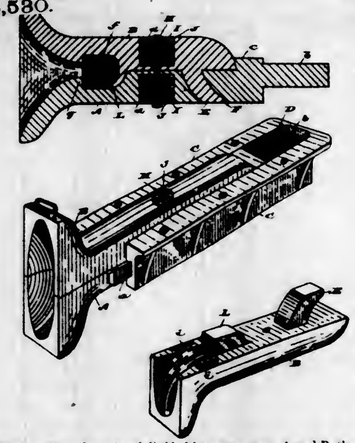
2. A combined hinge and hinge-stay for bags or satchels, consisting of the plates A A, pivotally connected and forming the hinge, and the L-shaped pieces C C, jointed together and hinged to plates A A, substantially as described, so that the brace may be raised or lowered to lock or unlock the hinge.

3. The combination, with the frame of a satchel or bag, of the hinge having the ears *a a*, and L-shaped pieces C C, pivoted to said ears and hinged together at D, substantially as shown and described.

336,530. CAR-COUPLING. JOHN D. RIPSON, Toronto, Ontario, Canada. Filed Nov. 30, 1885. (No model.) Patented in Canada Nov. 26, 1885, No. 22,332.



336,530.



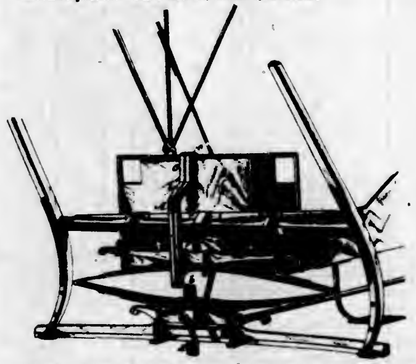
Claim.—1. A draw-head divided into two parts, A and B, the curved lug E, and guides G, designed to fit, respectively, into the hole or recess F and recesses *i*, in combination with the springs I and spindle H, arranged substantially as and for the purpose specified.

2. A draw-head divided into two parts, A and B, connected together by the spindle H, and springs I, in combination with dovetailed projections *a*, designed to fit into corresponding recesses formed in the bracket C, substantially as and for the purpose specified.

3. A draw-head divided into two parts, A and B, the lower part being provided with projections *a*, to fit into recesses made in the bracket C, in combination with the box L, attached to the upper half, B, and designed to fit a recess in the jaw A, below the head *e* of the coupling-pin K.

4. A self-acting car-coupler in which the draw-head is divided into two parts, A and B, and shaped to receive the head *e* of the coupling-pin K, a rod, O, connecting the upper half, B, of the draw-head to the end of the lever P, in combination with a pivoted hand-lever, R, having a pin or projection formed on it to act against the curved end of the lever P.

336,531. SHAFT-SUPPORT FOR VEHICLES. GEORGE F. STATTER, Sioux City, Iowa. Filed Oct. 26, 1885. (No model.)



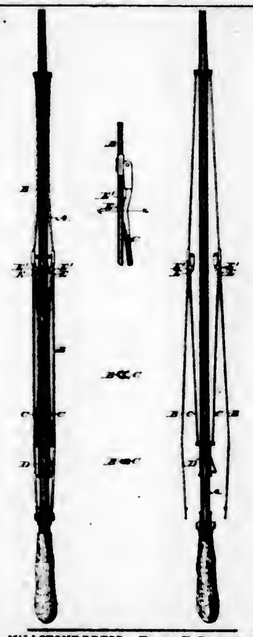
Claim.—A support for the shafts, tongues, or poles of vehicles, consisting of a bar of suitable material rigid throughout its length, said bar bent inwardly at its ends, the lower end from its bent portion having a straight extremity and the upper extremity having a hook thereon, substantially as and for the purpose specified.

336,532. UMBRELLA. URIAH G. STEPHENS, Philadelphia, Pa. Filed Aug. 31, 1885. (No model.)

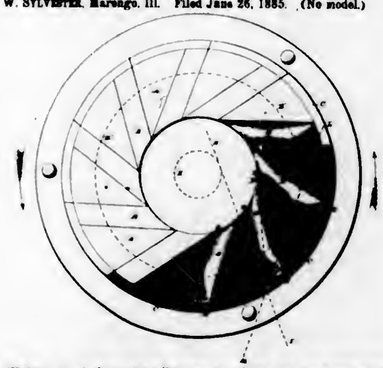
Claim.—1. In an umbrella-frame, the ribs, in combination with stretchers having near their upper or inner ends shoulders against which the ribs abut when folded, said ends of the stretchers being set back from the main length thereof, and the intermediate parts extending diagonally, substantially as and for the purpose set forth.

2. An umbrella-frame having fluted ribs and stretchers, with shoulders near the pivotal ends, said ribs embracing said shoulders when the umbrella is folded, substantially as and for the purpose set forth.

336,532.



336,533. MILLSTONE-DRESS. HENRY E. SYLVESTER and CHARLES W. SYLVESTER, Marengo, Ill. Filed June 26, 1885. (No model.)



Claim.—1. A dress for millstones in which are cross-cuts entirely covering the lands, each cut extending in the general direction of the travel of the grain toward the periphery of the burr, substantially as specified.

2. A millstone-dress having two series of cuts, one series being parallel to a line drawn tangent to a circle one-sixth of the diameter of the burr, and the other series being parallel to a tangent to a circle three-quarters of the diameter of the said burr, substantially as specified.

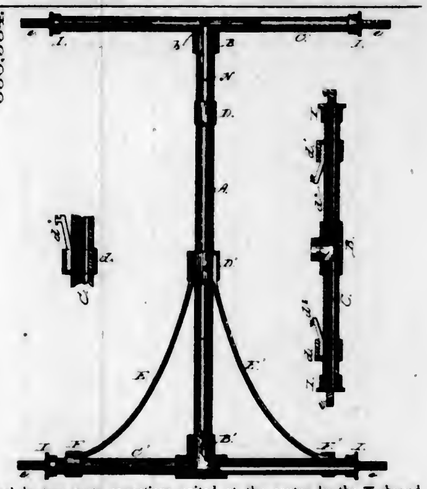
3. A dress for millstones in which are cross-cuts entirely covering the lands and skirt, and deeper at the eye than at the said skirt, said cuts extending in the general direction of the travel of the grain toward the periphery of the burr, substantially as specified.

336,534. VEHICLE RUNNING-GEAR. ALBION W. TOURGEE and LORSON DE F. JENNINGS, Mayville, N. Y., assignors to said Jennings and S. E. Kilbourn, same place, and A. C. Kilbourn, Erie, Pa. Filed June 2, 1885. (No model.)

Claim.—1. The herein-described vehicle running-gear, consisting of the perch or connecting-pole A and axles C C', formed, as described, of drawn or tubular steel, connected together by the steel T-shaped couplings B B', and provided with the braces E E', collar-couplings D D' and F F', brace N, head-block *a*, and king-bolt *b*, all constructed substantially in the manner shown, and for the purpose specified.

2. The axles C C', constructed, as described, of drawn or tubular

336,534.



steel, in two parts or sections united at the center by the T-shaped couplings B B', and provided at their outer ends with the steel screw-caps I, having threaded arms or extensions *e* forged thereon, substantially as described, and for the purpose specified.

3. The T-shaped coupling B, having the head-block *a* and king-bolt *b*, formed solid therewith, in combination with the axle C, perch or connecting-pole A, and metallic strap N, substantially as shown, and for the purpose specified.

4. The threaded collar-couplings *d d'* and traction-lugs d^2, in combination with the axle C, substantially as and for the purpose specified.

336,535. DEVICE FOR PROJECTING MARBLES. F. HERMAN VOIGT, Buffalo, N. Y., assignor of one-half to Bernhard Delitsch, same place. Filed Nov. 23, 1885. (No model.)



Claim.—1. An implement for projecting marbles, composed of two arms and spring-jaws attached thereto, between which the marble is placed, and whereby the marble is projected, substantially as set forth.

2. The combination, with two connected arms, A, of projecting jaws B and springs *c*, whereby the jaws B are attached to the front ends of said arms, substantially as set forth.

336,536. BAG-LOCK. BERNO VON ERMM, Newark, N. J. Filed Dec. 4, 1885. (No model.)



Claim.—1. The combination of the lock-case, recessed bolt, finger-piece *c*, a locking-shaft having a locking projection, a spring for holding the said shaft, and a spring, *i*, for returning the bolt, all substantially as shown and described.

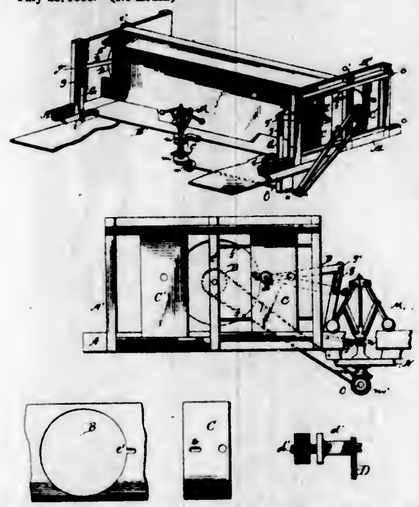
2. The improved bag-lock, combining therein the case *a*, having openings *d d* and *h*, the vertical sleeve or bearing *k*, the barrel *f*, locking-shaft *l*, having projection *p*, and permanently attached finger-piece *s*, the finger-piece *c*, arranged in said barrel and connected with the bolt by a pin or portion, *g'*, a spring, *v*, for holding the shaft, and a spring, *i*, for operating the bolt, all said parts being arranged and combined substantially as set forth.

3. In combination with a lock-case for satchels, a bolt having a recess, *o*, and a shaft for locking said bolt, having at its lower end a locking-projection to engage the end wall of the said recess and projecting vertically through said case, and at the outer or upper end provided with a permanently-secured finger-piece, *s*, substantially as herein set forth.

4. The combination, with the case *a*, sleeve K, and barrel *f*, arranged substantially as shown and described, of a recessed bolt, *b*, working in said case, a finger-piece, *c*, working in said barrel and operating

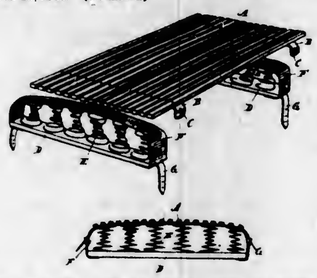
the bolt, and a locking-shaft, *l*, working in said sleeve and locking said bolt, all said parts being arranged and adapted to operate substantially as herein set forth.

336,537. FAN-BLAST REGULATOR. JOHN J. WILSON, Green Precinct, assignor of one-half to Henry H. Wilson, Lincoln, Nebr. Filed July 23, 1885. (No model.)



Claim.—In an automatic fan-blast regulator, the sliding doors C C', having arms D, adjustably secured thereto, a rock-shaft, E, carrying at its ends bars G, and a central projecting arm, *f*, the governor having a movable sleeve, shaft O, pinions *m m'*, for rotating the governor, and a belt for driving said shaft from the fan-shaft, the parts being combined and organized substantially as shown, and for the purpose set forth.

336,538. SPRING BED-BOTTOM. JOHN M. WILSON, Chicago, Ill. Filed Oct. 29, 1885. (No model.)



Claim.—The slats D, having secured thereto the springs E, webbing F, covering said springs and secured to the bottom of said slats, and the straps G, secured to said webbing and slats, combined with the longitudinal slats A, connected together by the straps B, and arranged to rest fairly on said webbing, and provided with buckles C, substantially as and for the purpose described

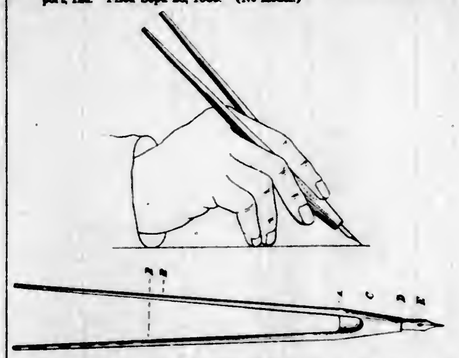
336,539. TACK-STRIP. ERASTUS WOODWARD, Somerville, and GEORGE W. COPELAND, Malden, assignors to I. M. Harmon, Boston, Mass. Filed Dec. 31, 1883. Renewed Jan. 25, 1886. (Model.)



Claim.—1. A tack-strip consisting of the shanks *a*, each provided with its separate laterally-extending head, but connected by a narrow strip of the blank from which the heads are formed and adapted to be separated into single tacks or nails, substantially as shown and described.

2. A flat tack-strip blank having the shanks *a*, the head-connecting portion *a'*, and the notches a^2, formed in the edge of the head-connecting portion to divide the same into separate head-forming portions or sections, all substantially as and for the purposes described.

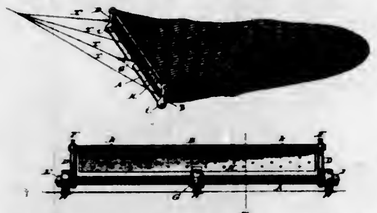
336,540. BIFURCATED PEN-HOLDER. JOHN WYTTENBACH, Rockport, Ind. Filed Sept. 28, 1885. (No model.)



Claim.—A bifurcated pen-holder—that is, a pen-holder divided into two branches a short distance from the end at which the pen is fastened to or into the pen-holder—as herein described, and represented in the annexed drawings.

REISSUES.

10,688. SPONGE-GATHERING NET. RASILIOS K. MOSCOPOULOS, New York, N. Y. Filed June 6, 1885. Original No. 314,047, dated Mar. 17 1885.

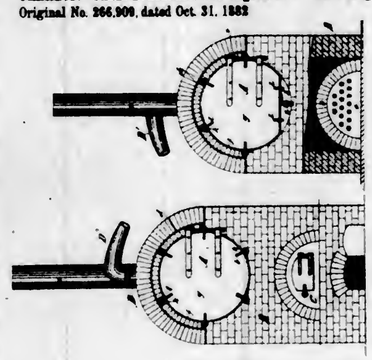


Claim.—1. A net of bag shape for fishing sponges or the like, having attached to the mouth thereof a frame, one portion of which is composed of metal or other weighty material, and the remainder of wood or other buoyant material, substantially as and for the purpose described.

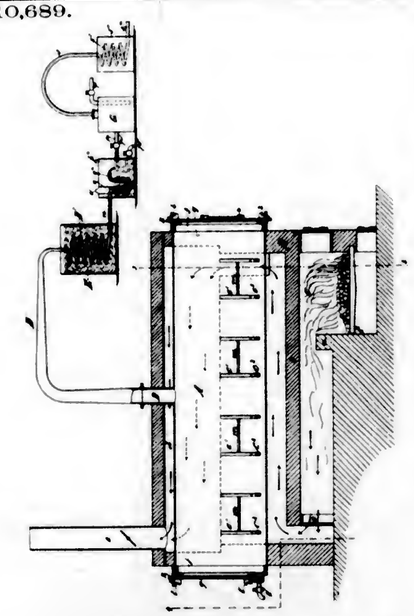
2. The combination, with the heavy lower bar and buoyant upper bar of the frame of a sponge-gathering net, of detachable end pieces embracing and connecting said bars at each end thereof and made fast thereto by detachable fastenings, substantially in the manner and for the purpose herein set forth.

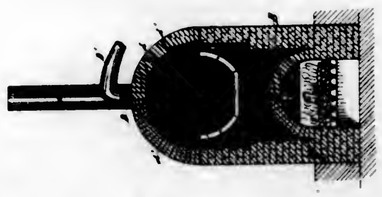
3. The combination, with the frame of a sponge-gathering net, of an inwardly-opening valve or gate hinged loosely to the upper bar of said frame, substantially in the manner and for the purpose herein set forth.

10,689. APPARATUS FOR DISTILLING TURPENTINE AND FOR THE PURIFICATION OF THE CRUDE PRODUCTS OF DISTILLATION THEREOF. JAMES D. STANLEY, Wilmington, N. C. Filed Aug. 10, 1885. Original No. 266,909, dated Oct. 31, 1882



10,689.

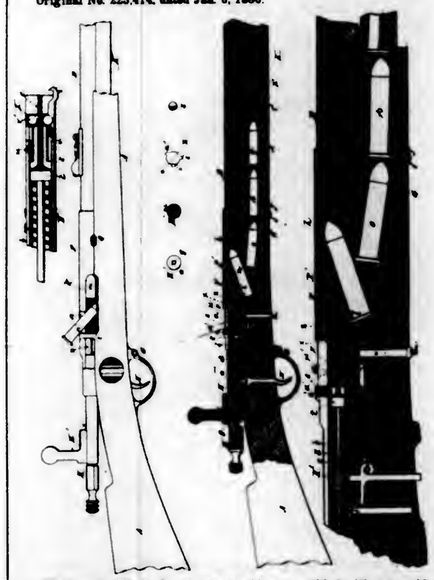




Claim.—1. The combination of the fire-box C, the arch *b*, the retort-chamber above the same, and the retort located therein, with spaces above and below separated for the greater part of the length of the chamber, but connected at one end, as described, and for the purpose specified.

2. In an apparatus for distilling turpentine from wood, the combination of the tank F, trap *o o' o''*, inlet-pipe *n*, outlet-pipe *p*, having cock *p'*, steaming-chamber G, outlet-pipe *s*, and condensing worm and tank *s' s''*, with the retort A, outlet-pipe D, tank E, and worm D', as and for the purpose set forth.

10,690. MAGAZINE FIRE-ARM. WILLIAM TRABUE, Louisville, Ky., assignor to the Trabue Arms Company, same place. Filed Oct. 13, 1883. Original No. 223,414, dated Jan. 6, 1880.



Claim.—1. The inclined spring-guide *w*, provided with a cartridge-stop, *r*, in combination with the magazine located beneath the barrel B, and the bolt-head *z*, with its lug *i*, as and for the purpose herein specified.

2. The bolt-head *z*, with the lug *i*, or its equivalent, and the inclined cartridge-guide *w*, provided with stop *r*, or its equivalent, in combination with the cartridge-magazine E and its spring, or its equivalent, for the purpose specified.

3. In combination with a magazine fire-arm, a spring, I, located in the receiver in a position which will admit of its springing within alignment of the bore of said fire-arm, substantially as and for the purpose specified.

4. The pressure-tube *v*, firing-pin *e*, and mainspring *b*, in combination with the combined lever and extracting-hook *i* and bolt-head *z*, for the purpose described.

5. The frame F, recessed at *h*, in combination with the shoulder *r'* and lug *i*, and bolt-head *z*, as and for the purpose described.

6. The combination, in a repeating fire-arm, of a barrel, a chamber beneath the barrel provided with a spring forcing the cartridges backward, and an inclined guide located in a fixed position at the end of the cartridge-chamber beyond the barrel, for the purpose of elevating the rear of the cartridge when the bolt-head is withdrawn, thereby bringing the rear end of the cartridge before the bolt-head, permitting it to be forced forward and into the barrel, substantially as described.

PHOTO LITH NORRIS PETERS

ANNUAL REPORT

OF THE

COMMISSIONER OF PATENTS

TO CONGRESS,

FOR THE YEAR ENDING DECEMBER 31, 1885.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, January 30, 1886.

To the Senate and House of Representatives of the United States of America in Congress assembled:

Section 494 of the Revised Statutes makes it the duty of the Commissioner of Patents to "lay before Congress" an Annual Report, which shall exhibit, *first*, a detailed statement of all moneys received; *second*, a detailed statement of all expenditures for contingent and miscellaneous expenses; *third*, a list of all patents granted during the preceding year; *fourth*, a list of all patentees with their places of residence; *fifth*, a list of all patents which have been extended during the year; and, *lastly*, such other information of the condition of the Patent Office as may be useful to Congress or the public. Before proceeding with such detailed statements and lists, I desire, in pursuance of the last requirement above referred to, to call the attention of Congress to a few topics relating to the condition of this Office, which, in my judgment, materially affect its interest and prosperity.

ROOM.

My immediate predecessor in his last Annual Report called your attention to the fact of the "utter inadequacy of room and facilities for conducting the business of the Patent Office." The same difficulties which were then pointed out by him still exist. I need hardly advert to the fact that when this building was constructed it was not intended to be occupied by the several bureaus of the Department of the Interior. At the present time about one-half of the room in this building is occupied by the force of the Patent Office. It is not extravagant to assert that every room in the building could be advantageously used to-day by this Bureau. In the first place, each one of the twenty-eight examining divisions ought to have two separate rooms. The reason for this is manifest. The primary examiner is called upon frequently to consult with applicants and their counsel, and to listen to arguments more or less extended, which cannot be properly conducted in the same room where the work of examination is proceeding without seriously retarding such work.

By act of Congress, approved July 7, 1884, the Secretary of the Interior was authorized to rent buildings for the use of the Department. I respectfully suggest that some provision should be made by the present Congress authorizing the rental of a building or buildings for the occupancy of one or more of the bureaus of the Department of the Interior, or some portions thereof, and thereby secure room which seems to be indispensable to the proper conduct of the business of this Office.

The same sanitary condition which was so graphically pointed out by my predecessor in his above-mentioned report still endangers the health of the employés of this office. I cannot refrain from urging upon Congress that it was never intended that this important Bureau, upon which so largely depend the material advancement and prosperity of the country, should be restricted in its facilities for doing business in order that a large sum might be added yearly to the net surplus in the Treasury of the United States standing to the credit of the Patent Office.

OFFICIAL GAZETTE.

On Tuesday of each week the patents are issued. On the same day this Office causes to be published an OFFICIAL GAZETTE, containing, among other things, a list of such patents, accompanied by a transcript of the claims and illustration of the invention, the names and residence of the patentees, a list of designs patented, trade-marks and labels registered, and decisions in patent cases. This publication has become an indispensable adjunct to this Office, and has taken the place of the old Patent Office Report.

On the 18th day of May, 1872, a statute was passed authorizing each Senator and Representative to designate eight public libraries to which the GAZETTE should be sent without charge, and fixing its subscription price at not less than five dollars per year. At that time it was less than one-half its present size and worth less than half its present value. Subsequent legislation leaves it at least very doubtful as to whether this law has not in effect been repealed. If it has been, then while the publication of the GAZETTE has been authorized in the several appropriation acts, its distribution has been for years past and is now without *express* authority of law. I have called attention to the probable repeal of this statute in order that Congress may take such action in relation to the distribution and price of the GAZETTE as, in their judgment, may seem proper.

In this connection I invite the attention of Congress to the fact that there has never been any provision of law by which this Office has been able to secure the report of any court decision. I respectfully submit that some provision should be made by which each of the federal courts should be required to furnish immediately to the Patent Office a certified copy of any judgment, decree, decision, or opinion hereafter made or filed in any patent case. The publication in the GAZETTE of such decisions, in addition to the present contents, would, in my judgment, add materially to its

value and circulation, and would tend much toward securing an intelligent and uniform practice in the Office.

PHOTOLITHOGRAPHY.

A very considerable portion of the amount of money which is appropriated year by year by Congress for the disbursements and expenses of the Patent Office is expended in securing a reproduction and illustration of each invention. At the present time the best known practical method of securing a comparatively cheap and absolutely accurate reproduction and illustration is by the art of photolithograpy. Formerly this result was accomplished by engraving, afterward by photography, and thereafter by the present system of photolithography, which has been built upon and added to little by little until the present high standard has been reached. Each succeeding year, as the law now stands, this work is let to contracting parties. For the purpose of preparing for this work of reproduction the original drawings are transmitted by the Office to the photolithographer. As soon as the proof-sheet is prepared by him it is returned to this Office, together with such original drawing, where a careful comparison is made by the employés of the Office, who are required to make personal inspection of such work. Imperfect proof-sheets must be returned and corrected *immediately*. It is of the utmost importance that this work should be done well and without delay. On Tuesday of each week every inventor in the country has the right to expect that the patent which is to issue to him will be signed and that the GAZETTE will be issued. In case a maximum issue is desired and prepared for by the Office, the contractor must see to it that there is no failure, and his force must be at all times adequate. For manifest reasons this work *must be done* in the city of Washington. It is not enough that the contracting parties should be responsible and solvent, but the work *must not* fail. While at the present time this important work is always faithfully, promptly, and efficiently performed, still under the present system in the hands of any contractor it is liable at any time in any year to fail. A recovery upon the contractor's bond of a sum of money for damages would be wholly inadequate. In my judgment, provision should be made by which the prompt and proper execution of this work should be absolutely secured, and I know of no way to accomplish such result unless the work be assumed and done by the Patent Office. At present the contractor is required to reproduce a large number of additional copies of each patent and illustration, which copies are kept on sale by this Office, and from which a substantial profit is derived. Should the Office assume and hereafter perform this work for itself, undoubtedly at the outset the expense would exceed somewhat the sum which is now paid to the contractor; but, on the other hand, absolute certainty of the permanent, faithful, and proper execution of the work would be secured. I feel no doubt whatever that this important part of the daily and orderly business of this Bureau should become a part of it and be conducted and controlled entirely within this Office.

LABORATORY.

In connection with this subject I desire to call attention briefly to another imperative need of the Office. In view of the rapidly-advancing importance of all inventions pertaining to electricity, it seems absolutely indispensable that suitable provision should be made for the proper testing of apparatus relating to this branch of invention. For this purpose within the court of this building the necessary facilities could be provided. Several times since my incumbency of this Office I have felt compelled to permit, and have permitted, the examiner in charge of this class to leave his Office and go a long distance to witness experiments which could not, for want of room and apparatus, be attempted at home.

INCREASE OF FORCE.

There are no employés in the service of the Government who labor more faithfully and diligently than the examining force of this Office. It is well understood that the Patent Office has never been a burden upon the treasury of the Government. On the contrary, it pays a large excess year by year into the Treasury. The examining corps is wholly insufficient to perform the important duties devolving upon it. For manifest reasons, applications for inventions should be acted upon promptly, speedily, and intelligently. At the same time I cannot safely urge upon examiners the necessity of expedition. Nothing is easier than for an examiner to pass a case without critical examination. Almost daily I am constrained to urge upon the examiners the diligence and labor necessary to keep up as nearly as may be with the rapidly-accumulating work, and at the same time to see to it that no case passes their inspection without critical investigation. The Office needs an addition of two principal examiners, four first, eight second, eleven third, and fifteen fourth assistant examiners. The need of more help in this important work is imperative, and I urgently ask that it be furnished. I respectfully call attention to page 57 of the last printed report of the Secretary of the Interior upon this subject. This Office is also in need of a skilful officer to have charge of the reception of applications, and who might be called an "application clerk." Such clerk should be paid a salary of $2,000. We also need an increase of two clerks of class three and one skilled stenographer at a salary of $1,600 per annum. We also ought to have an increase of two clerks in class two. I think the good of the service further demands the employment of twenty-eight examiners' clerks at $1,200 each, and of one messenger at $840.

No provision of law is made for the employment of messengers in this Office. I respectfully ask that provision be made for the employment of twenty-five messenger-boys at a compensation of $360 per year. Such boys would be very serviceable, and would relieve men receiving much larger salaries from all messenger and errand work, and, indeed, work which is frequently done by the examiners themselves.

INCREASE IN SALARIES.

Nearly forty years ago Congress established the salary of a primary examiner at $2,500. (9 Statutes at Large, 231.) To-day his salary is one hundred dollars less. In 1855 the salaries of the assistant examiners were established as they at present exist. I regard these allowances as inadequate, and the practical result is that many of the most valuable examiners desert their employment every year to enter a more lucrative field. I respectfully recommend that the salary of the primary examiner be again restored to the annual compensation of $2,500. I also call attention to the fact that the salary of the Assistant Commissioner, which at present is $3,000 per year, is quite inadequate, and should be increased at least five hundred dollars. The general law also made provision that the salary of the Chief Clerk should be $2,500. Only $2,250 are appropriated yearly for this purpose. I recommend its reestablishment as it was originally. The law provides a salary of $2,000 per annum for the Law Clerk of this Office. This compensation is too small, and I respectfully recommend that it be increased to $2,500. The duties and responsibilities of the Financial Clerk of this Office are very great. His present compensation is $2,000. In my judgment it should be increased five hundred dollars. I also recommend an increase of one hundred dollars per year in the salaries of the model attendants now receiving $800.

I respectfully call attention to Appendix Q, page 271, of the "Estimates of the Appropriations, 1886-'87," where this subject is presented in a letter to the Secretary of the Interior.

With an ample force of reasonably well paid employés it would certainly follow that fewer errors would occur, much better work would result, important inventions would be acted upon and given to the country more speedily, and the usefulness as well as the revenues of the Office would be greatly enhanced, while many of the results which have brought more or less reproach upon the Patent Office could and would be avoided.

LEGISLATION.

The Revised Statutes, section 4885, in regard to the date which a patent shall bear, section 4887, in regard to its limitation, section 4898, relating to assignments of patents and the record thereof, and section 4936, relating to the reimbursement of persons who have through mistake paid money into the Treasury for fees accruing at this Office, I commend respectively to your careful consideration. Some or all of these sections should probably be carefully amended. Inasmuch, however, as I expect to be able to explain orally to the respective Committees on Patents my views upon these several statutes, I refrain from a further discussion of them here.

There is one other subject to which I wish to invite the especial attention of Congress. At the present time, in addition to his administrative duties, the Commissioner is called upon to hear all cases of appeal from the rejection of a patent by the Examiner-in-Chief, as well as to finally hear and determine all interference cases which may be appealed to him. Aside from the burden which this imposes upon the head of this Office there is a want of uniformity in the decisions which emanate from time to time from the respective Commissioners of Patents, which ought to be corrected. I know of no better way to correct this evil than the establishment of some tribunal, to consist of at least three judges, whose tenure of office shall be fixed, and to whom all appeals shall lie. I have no doubt that the establishment of such a tribunal with such jurisdiction would not only make it possible for the Commissioner to conduct a more successful administration of his Office, but would secure to inventors and to the public a much more intelligent and uniform exposition of the law of patents and of the important questions which now of necessity must be determined so hastily.

CONCLUSION.

Thirty years ago there were but thirteen classes of inventions. To day we have in this Office one hundred and seventy-seven distinct classes. In the year A. D. 1855, 4,435 applications for patents were received, while during the last calendar year this Office received 35,717 applications. The field of invention is widening so rapidly and the distinctions which are constantly required to be made have become so nice in many instances that the greatest care and skill are required to determine accurately what is new and what is old. Each year the history of invention becomes more elaborate and complicated, and no department of the Government more needs the services of men who are not only learned in the sciences, but who have become familiar by constant association month by month and year by year with the histories written and unwritten of invention and the arts. I take no risk in saying that the business as well as the importance of this Office are very little understood throughout the country generally. I feel entire confidence in saying that it needs but to be *understood* to be appreciated and cordially commended.

RECEIPTS.

Detailed statement of all moneys received for patents, for copies of records or drawings, or from any source whatever.

Applications:	
Cash received	$1,023,015 00
Cash refunded	3,600 00
Net cash	1,019,415 00
Certificates of deposit	54,675 00
Total cash and certificates	1,074,090 00
Copies:	
Cash received	74,916 70
Cash refunded	2,123 15
Net cash	72,793 55
Certificates of deposit	623 30
Total cash and certificates	73,416 85
Recording assignments:	
Cash received	25,659 25
Cash refunded	1,604 15
Net cash	24,055 10
Certificates of deposit	312 40
Total cash and certificates	24,367 50
Subscription to Official Gazette:	
Cash received	13,150 45
Cash refunded	76 10
Net cash	13,074 35
Certificates of deposit	67 45
Total cash and certificates	13,141 80
Registration of labels:	
Cash received	4,332 00
Cash refunded	1,326 00
Net cash	3,006 00
Certificates of deposit	36 00
Total cash and certificates	3,042 00
Sale of old iron	31 00
Aggregates.	
Cash received	$1,141,104 40
Cash refunded	8,729 40
Net cash	1,132,375 00
Certificates of deposit	55,714 15
Total cash and certificates	1,188,089 15

EXPENDITURES.

Amount expended by this Office under the several appropriations from January 1, 1885, to December 31, 1885.

Salaries	$593,599 00
Official Gazette	44,833 42
Photolithographing	85,296 95
Scientific library	4,532 19
Transportation of publications to foreign governments	188 80
Total	728,450 36

*Approximate amount expended by the Department of the Interior on account of this Office from January 1, 1885, to December 31, 1885.**

Stationery	$11,416 38
Postage on foreign matter	834 00
Printing and binding	230,861 93
Watch force	16,690 00
Contingent expenses, (including furniture, hardware, carpets, ice, tile-holders, desks, cases, washing towels, keeping of horse, &c., telephone, winding clocks, and sundries)	35,127 18
Total	295,928 49
Aggregate amount of expenditures	1,024,378 85

RECEIPTS OVER EXPENDITURES.

Total receipts	$1,188,089 15
Total expenditures	1,024,378 85
Receipts over expenditures	163,710 30

Statement of balance in the Treasury of the United States on account of the Patent fund.

Amount to the credit of the fund January 1, 1885	$2,781,695 28
Amount of receipts during the year 1885	1,188,089 15
Total	3,969,734 43
Deduct expenditures for year 1885	1,024,378 85
Balance January 1, 1886	2,945,405 58

SUMMARY OF THE BUSINESS OF THE PATENT OFFICE.

Number of applications for patents for inventions	34,697
Number of applications for patents for designs	862
Number of applications for reissues of patents	158
Total number of applications relating to patents	35,717
Number of caveats filed	2,552
Number of applications for registration of trade-marks	1,220
Number of applications for registration of labels	724
Number of disclaimers filed	13
Number of appeals on the merits	792
Total	5,295
Total number of applications requiring investigation and action	41,012
Number of patents issued, including designs	21,104
Number of patents reissued	120
Number of trade-marks registered	1,067
Number of labels registered	391
Total	23,681
Number of patents expired during the year	12,544
Number of patents withheld for non-payment of final fee	3,588

*A literal compliance with the provisions of the statute requiring "a detailed statement of all expenditures for contingent and miscellaneous expenses" is not possible, for the reason that the contingent fund for the several bureaus of this Department was consolidated by the act of March 3, 1883, and hence no part of that fund is disbursed by the Patent Office, and I am furnished only with an approximate sum, supposed to have been so expended on behalf of the Patent Office.

PATENTS ISSUED.

Patents issued to citizens of the United States, with the ratio of population to each patent granted.

States and Territories.	Patents and Designs.	One to every—
Alabama	85	14,853
Arizona Territory	8	5,055
Arkansas	77	10,422
California	588	11,470
Colorado	140	1,388
Connecticut	1,011	615
Dakota Territory	47	2,878
Delaware	31	4,729
District of Columbia	148	1,200
Florida	25	10,779
Georgia	144	10,709
Idaho Territory	6	5,435
Illinois	1,907	1,603
Indiana	777	2,546
Indian Territory	3	.....
Iowa	457	3,554
Kansas	230	4,330
Kentucky	228	7,231
Louisiana	76	12,367
Maine	156	4,159
Maryland	284	3,292
Massachusetts	2,213	794
Michigan	847	1,932
Minnesota	216	3,308
Mississippi	70	16,165
Missouri	705	3,075
Montana Territory	22	1,779
Nebraska	129	3,508
Nevada	10	6,226
New Hampshire	145	2,393
New Jersey	1,115	1,614
New Mexico Territory	12	9,963
New York	4,592	1,121
North Carolina	81	17,280
Ohio	1,837	1,740
Oregon	57	3,066
Pennsylvania	2,454	1,745
Rhode Island	287	963
South Carolina	80	12,444
Tennessee	159	10,147
Texas	277	5,746
Utah Territory	36	3,998
Vermont	115	2,869
Virginia	116	13,089
Washington Territory	22	3,414
West Virginia	70	8,835
Wisconsin	469	2,804
Wyoming Territory	3	6,929
United States Army	2	.....
United States Navy	3	.....
Total	22,553	.....

Patents issued to citizens of foreign countries.

Argentine Republic	1
Australia	1
Austria-Hungary	44
Belgium	24
Brazil	3
British Guiana	1
Canada	284
Cape of Good Hope	1
Central America	1
Chili	3
China	1
Corea	1
Cuba	4
Denmark	20
Egypt	1
England	549
France	138
Germany	294
Ireland	9
Italy	5
Mexico	9
Netherland	10
Newfoundland	4
New South Wales, (Australia)	3
New Zealand	5
Norway	8
Peru	1
Russia	8
Scotland	34
South Australia	1
Spain	8
Sweden	18
Switzerland	44
United States of Columbia	1
Victoria, (Australia)	4
West Indies	2
Total	1,549

Comparative statement of the business of the Office from 1837 to 1885, inclusive.

Year.	Applications.	Caveats filed.	Patents and reissues.	Cash received.	Expended.	Surplus.	Year.	Applications.	Caveats filed.	Patents and reissues.	Cash received.	Expended.	Surplus.
1837	.....	.....	435	$20,220 08	$33,506 98	.....	1862	5,038	824	3,532	215,754 99	182,810 39	32,944 60
1838	.....	.....	520	42,123 54	37,402 10	$4,721 44	1863	6,014	787	4,184	195,503 29	189,414 14	6,179 15
1839	.....	.....	425	37,200 00	34,543 51	2,716 49	1864	6,932	1,063	5,025	240,919 98	229,868 00	11,051 98
1840	735	228	473	36,056 51	39,020 67	.....	1865	10,664	1,937	6,616	348,791 84	274,199 34	74,592 50
1841	847	312	495	40,413 01	52,666 87	.....	1866	15,299	2,723	9,458	495,665 38	361,724 28	133,941 10
1842	761	391	517	36,505 68	31,241 48	5,264 20	1867	21,276	3,597	13,020	646,581 92	639,263 32	7,318 60
1843	819	315	510	35,315 81	30,776 96	4,538 85	1868	20,420	3,705	13,410	681,563 86	628,679 77	52,886 09
1844	1,045	380	495	42,509 26	36,244 73	6,264 53	1869	19,271	3,624	13,997	693,145 81	486,430 78	206,715 03
1845	1,246	452	504	51,076 14	39,395 65	11,680 49	1870	19,171	3,273	13,333	669,456 76	557,149 19	112,307 57
1846	1,272	448	639	50,264 16	46,158 71	4,105 45	1871	19,472	3,366	13,056	678,716 46	560,595 08	118,121 38
1847	1,531	553	569	63,111 19	41,878 35	21,232 84	1872	18,246	3,090	13,613	699,726 39	665,591 36	34,135 03
1848	1,628	607	652	67,576 69	58,905 84	8,670 85	1873	20,414	3,248	12,864	703,191 77	691,178 98	12,012 79
1849	1,955	595	1,068	80,752 98	77,716 44	3,036 54	1874	21,602	3,181	13,599	738,278 17	679,288 41	58,989 76
1850	2,193	602	993	86,927 05	80,100 95	6,826 10	1875	21,638	3,094	14,837	743,453 36	721,657 71	21,795 65
1851	2,258	760	872	95,738 61	86,916 93	8,821 68	1876	21,425	2,697	15,595	757,987 65	652,542 60	105,445 05
1852	2,639	996	1,019	112,656 34	95,916 91	16,739 43	1877	20,308	2,809	14,187	732,342 85	613,152 02	119,190 23
1853	2,673	901	961	121,527 45	132,869 83	.....	1878	20,260	2,755	13,444	725,373 55	593,089 89	132,283 66
1854	3,328	868	1,844	163,789 84	167,146 32	.....	1879	20,059	2,620	13,213	703,931 47	529,938 97	174,292 50
1855	4,435	906	2,012	216,430 35	179,540 33	36,949 02	1880	23,012	2,490	13,947	749,685 29	538,865 17	210,820 15
1856	4,960	1,024	2,506	192,588 02	191,931 02	.....	1881	26,030	2,406	16,584	853,665 98	605,173 28	248,492 61
1857	4,771	1,019	2,896	196,139 01	211,582 09	.....	1882	31,532	2,551	19,267	1,009,219 45	683,867 67	325,351 78
1858	5,364	934	3,695	201,716 16	193,193 74	10,522 42	1883	35,577	2,741	22,383	1,146,210 00	675,214 86	471,005 14
1859	6,225	1,097	4,504	245,942 15	210,278 41	35,663 74	1884	35,600	2,562	20,413	1,075,798 80	870,579 76	205,219 04
1860	7,653	1,084	4,778	256,352 50	252,220 80	3,531 79	1885	35,717	2,552	24,233	1,188,098 15	1,024,378 85	163,710 30
1861	4,643	709	3,323	137,354 44	221,491 91	.....							

Statement showing the number of the first patent, design patent, and reissued patent, and the number of the first certificate of registration of a trade-mark and a label issued in each calendar year since July 28, 1836, when the present series of numbers of letters patent commenced, together with the total number of each issued during the year. The number of patents granted prior to the commencement of this series of numbering (July 28, 1836) was 9,957.

	Number of first patent and certificate issued in each calendar year.					Number of patents and certificates of registration issued during each calendar year.						
Year.	Patents.	Designs.	Reissues.	Trade-marks.	Labels.	Patents.	Designs.	Reissues.	Total patents.	Trade-marks.	Labels.	Total certificates.
1836 July 28-	1	.....	.....	.....	.....	109	.....	.....	.....	.....	.....	.....
1837	110	.....	.....	.....	.....	436	.....	.....	.....	.....	.....	.....
1838	546	.....	1	.....	.....	515	.....	6	.....	.....	.....	.....
1839	1,061	.....	7	.....	.....	494	.....	13	.....	.....	.....	.....
1840	1,465	.....	20	.....	.....	458	.....	10	.....	.....	.....	.....
1841	1,923	.....	30	.....	.....	490	.....	6	.....	.....	.....	.....
1842	2,413	.....	36	.....	.....	488	.....	14	.....	.....	.....	.....
1843	2,901	1	49	.....	.....	494	14	11	510	.....	.....	.....
1844	3,395	15	60	.....	.....	477	12	7	496	.....	.....	.....
1845	3,872	27	67	.....	.....	476	17	11	504	.....	.....	.....
1846	4,348	44	78	.....	.....	566	59	13	638	.....	.....	.....
1847	4,914	104	91	.....	.....	495	60	14	569	.....	.....	.....
1848	5,409	164	105	.....	.....	583	46	23	652	.....	.....	.....
1849	5,992	209	128	.....	.....	909	49	30	1,068	.....	.....	.....
1850	6,981	258	158	.....	.....	884	83	26	993	.....	.....	.....
1851	7,865	341	184	.....	.....	757	90	25	872	.....	.....	.....
1852	8,622	431	209	.....	.....	890	109	20	1,019	.....	.....	.....
1853	9,512	540	229	.....	.....	846	86	29	961	.....	.....	.....
1854	10,358	626	258	.....	.....	1,759	57	28	1,844	.....	.....	.....
1855	12,117	663	286	.....	.....	1,891	70	51	2,012	.....	.....	.....
1856	14,008	753	337	.....	.....	2,316	107	83	2,506	.....	.....	.....
1857	16,324	860	420	.....	.....	2,696	114	97	2,896	.....	.....	.....
1858	19,010	973	517	.....	.....	3,467	102	126	3,695	.....	.....	.....
1859	22,477	1,075	643	.....	.....	4,165	108	231	4,504	.....	.....	.....
1860	26,642	1,183	874	.....	.....	4,363	181	232	4,778	.....	.....	.....
1861	31,005	1,306	1,106	.....	.....	3,040	142	147	3,329	.....	.....	.....
1862	34,045	1,508	1,253	.....	.....	3,221	195	116	3,532	.....	.....	.....
1863	37,266	1,703	1,369	.....	.....	3,781	176	227	4,184	.....	.....	.....
1864	41,047	1,879	1,596	.....	.....	4,638	139	248	5,025	.....	.....	.....
1865	45,685	2,018	1,844	.....	.....	6,009	221	296	6,616	.....	.....	.....
1866	51,784	2,239	2,140	.....	.....	8,874	294	290	9,458	.....	.....	.....
1867	60,658	2,533	2,490	.....	.....	12,301	325	400	13,026	.....	.....	.....
1868	72,959	2,858	2,800	.....	.....	12,544	446	420	13,410	.....	.....	.....
1869	85,501	3,304	3,250	.....	.....	12,957	506	534	13,997	.....	.....	.....
1870	98,460	3,810	3,784	1	.....	12,157	737	439	13,333	121	.....	121
1871	110,617	4,547	4,223	122	.....	11,687	905	464	13,056	486	.....	486
1872	122,304	5,472	4,687	608	.....	12,200	884	529	13,613	491	.....	491
1873	134,504	6,336	5,216	1,099	.....	11,616	747	501	12,864	492	.....	492
1874	146,120	7,083	5,717	1,501	1	12,230	886	483	13,599	557	232	791
1875	158,350	7,969	6,200	2,150	233	13,291	915	631	14,837	1,138	232	1,370
1876	171,641	8,894	6,831	3,288	465	14,172	892	621	15,595	959	472	1,431
1877	185,813	9,686	7,452	4,247	937	12,930	699	558	14,187	1,216	292	1,508
1878	198,733	10,385	8,020	5,403	1,329	12,345	500	569	13,414	1,455	492	1,947
1879	211,078	10,975	8,529	6,918	1,821	12,133	502	488	13,213	872	355	1,227
1880	224,211	11,567	9,017	7,790	2,176	12,926	515	506	13,947	349	203	552
1881	240,137	12,082	9,521	8,139	2,379	15,542	565	471	16,584	836	202	1,038
1882	251,685	12,647	9,904	8,973	2,581	18,135	861	271	19,267	947	304	1,251
1883	269,820	13,508	10,265	9,990	2,885	21,196	1,020	167	22,383	902	906	1,808
1884	291,016	14,528	10,482	10,822	3,791	19,147	1,150	116	20,413	1,021	513	1,534
1885	310,163	15,678	10,548	11,843	4,304	23,331	773	129	24,233	1,067	391	1,458
1886	333,494	16,451	10,677	12,910	4,695	.....	.....	.....	.....	.....	.....	.....

I confidently invoke the careful consideration of Congress to the various matters which are submitted in this imperfect report.

All of which is respectfully submitted.

Very respectfully, your obedient servant,

M. V. MONTGOMERY, *Commissioner.*

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

U. S. Circuit Court---Eastern District of Pennsylvania.

BUZZELL *v.* ANDREWS *et al.*

Decided October 26, 1885.

INFRINGEMENTS.

When a patent has been issued for an invention which consists in a peculiar arrangement of old elements or parts, it must be construed strictly and the monopoly limited substantially to the special character of the parts and the particular organization described. A machine which may be forced to produce a similar result will not be regarded as an infringement if that was not the object of its construction.

Mr. George S. Boutwell for the complainant.

Mr. Charles Howson for the respondent.

BUTLER, *J.*:

The first claim of the patent involved reads as follows:

1. In combination with the abrading-roller G, the bearing-roller K, the pivoted roller-frame I I' I'', the set-screws L, and the springs M, said parts being constructed in the manner and for the purpose substantially as specified.

The charge of infringement relates to this claim alone. The elements or parts named being old, the claim must be confined within narrow limits. The state of the art requires a strict construction, limiting the monopoly, substantially, to the special character of parts and the particular organization described. These parts are—First, the abrading roller; second, the bearing-roller; third, the pivoted bearing-roller frame; fourth, the set-screws; fifth, the springs. The character of the parts and the organization are aptly described in the specification.

The design or purpose of the machine, as stated by the plaintiff, is—

to enable the rough loose fibers upon the inner side of the tanned skins of animals to be easily and quickly removed, so as to leave the surface smooth, and not injure the leather;

And the machine itself is designated an—

improved machine for whitening and shaving leather.

The invention consists, as the plaintiff says—

In the means employed for pressing a skin in front of, and regulating its pressure upon, the abrading-roller, substantially as and for the purpose stated.

The several parts are constructed and combined solely with a view to this end.

The mode of operation is described as follows:

The bearing-roller is moved outward until the skin can be passed over the same, with its inner side toward the abrading-roller, after which the operator's foot is removed from the foot-bar, and the springs move this roller toward the abrading-roller, and press against the latter such portion of the skin as is between their peripheries. The operator now moves the skin so as to bring each portion of its inner surface into contact with the abrading-roller and cause the latter to remove any loose fibers, flesh, &c., from the same.

This mode of operation is only made practicable by placing the bearing-roller "upon a line horizontal with the abrading-roller," as described in the specification, and constructing and combining the pivoted frame in the particular manner designated by and called for in the patent, thus enabling the operator to control the roller by his foot while manipulating the leather with his hands, the roller affording support for the skin. Such being the plaintiff's machine, has the defendant infringed?

His machine contains the abrading and bearing rollers, the set-screws, and the springs. There is, however, a material difference in the relative positions of the rollers; and if it contains a "pivoted bearing-roller frame" at all, it is not the frame described and employed by the plaintiff, is incapable of the uses for which his is designed, and is capable of others to which his is inapplicable. It has no device rendering the bearing-roller subject to control by the operator's foot, but has a device (the pivoted arms, capable of separate independent action) which confers a power over the bearing-roller, such as the plaintiff's frame does not afford. The object of the defendant's machine is to skive leather, as described by him. He states it to be—

for the preparation of stripe or sheets of leather for use in bookbinding, in making pocket-books, &c.,

by shaving down the edges of the strips or sheets, so that when two are joined together the thickness of the leather will be uniform throughout. The organization of the machine and the construction of its parts were designed with a view to this purpose alone. An essential part of the organization is a movable table having apparatus for clamping, by means of which the leather is fed to and withdrawn from the machine. Without this table the structure is of no value—is incapable of use for any purpose.

Without enlarging on the difference in construction and organization of the two machines, it seems plain that they are essentially dissimilar. Designed for different purposes, the parts are, in consequence, differently constructed and combined. The difference in construction and organization, however, is not all. They differ as well in the mode of operation and the result produced.

The difference in the mode of operation is that while with the plaintiff's machine the skin is held in the operator's hands and passed through between the bearing and abrading rollers, the former being controlled by his foot—thus rendering the skin capable of movement in any direction—with the defendant's machine the movement of the leather is controlled by means of the table and its devices alone; and this movement consists simply in being passed a given distance between the rollers and then forcibly withdrawn, the proximity of the rollers to each other being regulated entirely by the springs. The difference in result is that while the contemplated and proper use of the plaintiff's machine will remove the unevenesses and loose fibers of skin, leaving the surface smooth and level, the defendant's will simply skive or shave down the edges to a desired thinness. That the plaintiff's machine may be forced to perform this skiving of the edges is unimportant. It is not adapted to such a use and is of no value for the purpose.

The bill must be dismissed.

THE OFFICIAL GAZETTE
OF THE
United States Patent Office.
[*BY AUTHORITY OF CONGRESS.*]

VOL. 34—No. 8. TUESDAY, FEBRUARY 23, 1886. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth $10 00

INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pp.—

Bound half-turkey	2 50
Bound in cloth	1 25
Paper covers	1 00

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

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Issue of February 23, 1886.

Patents	342	No. 336,541 to No. 336,882,	inclusive.
Designs	15	No. 16,537 to No. 16,551,	inclusive.
Trade-Marks	16	No. 13,044 to No. 13,059,	inclusive.
Labels	6	No. 4,737 to No. 4,742,	inclusive.
Reissues	4	No. 10,691 to No. 10,694,	inclusive.
Total issue	383		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	.....	Nebraska	3	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	.....	.....	New Hampshire	1	.....
California	10	.....	New Jersey	18	.....
Colorado	1	.....	New Mexico Territ'y	.....	.....
Connecticut	12	1	New York	70	7
Dakota Territory	.....	.....	North Carolina	2	.....
Delaware	.....	.....	Ohio	32	1
District of Columbia	4	.....	Oregon	.....	.....
Florida	1	1	Pennsylvania	37	2
Georgia	.....	2	Rhode Island	3	.....
Idaho Territory	.....	.....	South Carolina	.....	.....
Illinois	30	2	Tennessee	3	.....
Indiana	11	.....	Texas	3	1
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	4	.....	Vermont	4	.....
Kansas	4	.....	Virginia	3	.....
Kentucky	3	.....	Washington Territ'y	.....	.....
Louisiana	2	.....	West Virginia	1	.....
Maine	3	.....	Wisconsin	6	1
Maryland	6	.....	Wyoming Territory	.....	.....
Massachusetts	31	1	United States Army	.....	.....
Michigan	10	.....	United States Navy	.....	.....
Minnesota	6	.....			
Mississippi	1	.....	Total to citizens of the United States	340	22
Missouri	13	2			
Montana Territory	.....	1			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	2	.....
Austria-Hungary	.....	.....	Holland	.....	.....
Barbadoes	.....	.....	Ireland	.....	.....
Belgium	.....	.....	Italy	.....	.....
Bermuda	.....	.....	Norway	.....	.....
British Columbia	.....	.....	Russia	.....	.....
Canada	2	.....	Scotland	1	.....
Chili	.....	.....	Sweden	.....	.....
Colombia, U. S. of	.....	.....	Switzerland	1	.....
Corea	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	17	.....
England	5	.....			
France	6	.....			

DESIGNS.

16,537.—WASH-BOARD.—*John T. Arnold*, Hicksville, Ohio. Application filed November 28, 1885. Serial No. 184,226. Term of patent 7 years.

16,538.—PITCHER, &c.—*Henry Berry*, Huntington, Conn. Application filed January 12, 1886. Serial No. 188,369. Term of patent 7 years.

16,539.—GEAR FOR CHILDREN'S CARRIAGES.—*Samuel F. Boylston*, Newark, N. J. Application filed October 24, 1885. Serial No. 180,875. Term of patent 7 years.

16,540.—PANORAMA OR MAP CASE.—*Wallace Bruce*, Poughkeepsie, N. Y. Application filed October 23, 1885. Serial No. 180,770. Term of patent 7 years.

16,541.—BRACKET.—*William I. Bunker*, Chicago, Ill. Application filed January 19, 1886. Serial No. 189,110. Term of patent 14 years.

16,542.—VASE.—*Martin W. Carr*, Somerville, Mass. Application filed October 22, 1885. Serial No. 180,679. Term of patent 3½ years.

16,543.—CURTAIN-LOOP.—*Bernhard Dreyfus*, New York, N. Y. Application filed December 24, 1885. Serial No. 186,657. Term of patent 7 years.

16,544.—BADGE.—*Henry Elleau*, San Francisco, Cal. Application filed October 29, 1885. Serial No. 181,337. Term of patent 3½ years.

16,545.—RUG.—*Henry Finck*, New York, N. Y., assignor to *John Bromley & Sons*, Philadelphia, Pa. Application filed December 11, 1885. Serial No. 185,422. Term of patent 3½ years.

16,546.—TABLE-VESSEL.—*George W. Fry*, Beaver, assignor to *The Rochester Tumbler Company*, Pittsburg, Pa. Application filed December 31, 1885. Serial No. 187,313. Term of patent 14 years.

16,547.—STOVE-PIPE.—*Paul J. Grinberg*, New York, N. Y. Application filed January 21, 1886. Serial No. 189,346. Term of patent 7 years.

16,548.—PAPER-FASTENER.—*George W. McGill*, Riverdale, N. Y. Application filed January 18, 1886. Serial No. 188,987. Term of patent 14 years.

16,549.—BOTTLE.—*Frank Pfahl*, New York, N. Y. Application filed January 13, 1886. Serial No. 188,445. Term of patent 3½ years.

16,550.—PENDANT FOR LAMPS.—*Bennett B. Schneider*, New York, N. Y. Application filed November 21, 1885. Serial No. 183,562. Term of patent 7 years.

16,551.—GIMP.—*James H. Thorp*, Brooklyn, N. Y. Application filed January 11, 1886. Serial No. 188,267. Term of patent 14 years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

13,044.—PREPARED CHAMOIS-SKINS FOR POLISHING METAL.—*Elson Blakeslee* and *John E. Darby*, Cleveland, Ohio. Application filed January 16, 1886. Used since March 1, 1885.

"The words 'ORIENTAL POLISHER, STILROMA,' and a picture of mountains, rising sun, and chamois."

13,045.—BOTANIC BLOOD BALM.—*The Blood Balm Company*, Atlanta, Ga. Application filed February 1, 1886. Used since June 25, 1883.

"A red rectangular frame having nine white panels and the letter 'B' in black inclosed in each."

13,046.—SHOE AND GLOVE LEATHER.—*Booth & Kent*, New York and Gloversville, N. Y. Application filed January 25, 1886. Used since January 2, 1886.

"The word 'DAHLIA.'"

13,047.—BOYS' HATS.—*Peter R. J. Coughlin*, New York, N. Y. Application filed November 19, 1885. Used since November 1, 1885.

"The words 'THE LION.'"

13,048.—LAUNDRY AND OTHER SOAPS.—*Empire Soap Company*, St. Louis, Mo. Application filed January 20, 1886. Used since May 15, 1885.

"The word 'WALNUT.'"

13,049.—LAUNDRY AND OTHER SOAPS.—*Empire Soap Company*, St. Louis, Mo. Application filed January 20, 1886. Used since July 4, 1885.

"The words 'OLD COMMANDER.'"

13,050.—POCKET-KNIVES, SHEARS, SCISSORS, AND RAZORS.—*The Flagg Cutlery Company, (Limited,)* New York, N. Y. Application filed January 23, 1886. Used since January 1, 1886.

"The representation of a gilt-edged book."

13,051.—FRUIT-PRESERVES, LIME-JUICE, FRUIT-SIRUPS, CANNED FISH, OYSTERS, AND TURTLES.—*Guadalupe Stone Valle*, St. Augustine, Fla. Application filed January 16, 1886. Used since April 1, 1878.

"The words 'ANCIENT CITY.'"

13,052.—GLASS-CUTTERS.—*Samuel G. Monce*, Bristol, Conn. Application filed January 28, 1886. Used since November, 1885.

"The word 'DIAMONDIZED.'"

13,053.—COUGH-SIRUP.—*J. W. Newburne & Co.*, Beardstown, Ill. Application filed December 30, 1885. Used since December 1, 1884.

"The picture of a tea-berry plant and the word 'TEA-BERRY.'"

13,054.—CONDENSED MILK.—*New York Condensed Milk Company*, New York, N. Y. Application filed January 30, 1886. Used since January 27, 1886.

"The word 'DAISY.'"

13,055.—LAGER-BEER.—*The Peter Schoenhofen Brewing Company*, Chicago, Ill. Application filed November 16, 1885. Used since May 12, 1884.

"An oval pink label having the word 'SELECT' printed, in black letters, across its major axis."

13,056.—CERTAIN NAMED ARTISTS' AND DRAFTSMEN'S MATERIALS. *E. G. Soltmann*, New York, N. Y. Application filed December 10, 1885. Used since February 1, 1885.

"The word 'CANARY,' inclosed in quotation-marks."

13,057.—TYPE-WRITERS.—*Charles Spiro*, New York, N. Y. Application filed December 16, 1885. Used since December 1, 1885.

"The letters 'C. F. S.'"

13,058.—TYPE-WRITERS.—*Charles Spiro*, New York, N. Y. Application filed December 16, 1885. Used since December 1, 1885.

"The word 'COLUMBIA.'"

13,059.—LUMBER, DOORS, AND SASH.—*Ed. Steves & Sons*, San Antonio, Tex. Application filed January 4, 1886. Used since December 1, 1884.

"The words 'CALCASIEU LUMBER YARD.'"

LABELS.

4,737.—Title: "OREGON GRAPE ROOT BITTERS."—*J. D. Eastman & Co.*, Deer Lodge, Mont. Ter. Application filed January 29, 1886.

4,738.—Title: "BRISTOL MFG. CO" (FOR INGRAIN CARPETS.)—*Hood, Bonbright & Co.*, Philadelphia, Pa. Application filed January 12, 1886.

4,739.—Title: "NICHOLS' DYSPEPSIA SPECIFIC."—*John C. Keefe* and *John B. Nichols*, Milwaukee, Wis. Application filed February 1, 1886.

4,740.—Title: "GEORGIA CLIMATIC TONIC BLOOD PURIFIER."—*A. F. Keily*, Macon, Ga. Application filed January 14, 1886.

4,741.—Title: "SILICA POLISH" (FOR CLEANING AND POLISHING COMPOUNDS.)—*Plymouth Silica Company*, Plymouth and Chiltonville, Mass. Application filed January 6, 1886. (Trade-mark registered.)

4,742.—Title: "THE DURABLE SHOVEL."—*William Wharton, Jr., & Co., (Limited,)* Philadelphia, Pa. Application filed February 2, 1886.

PATENTS

GRANTED FEB. 23, 1886.

336,541. **PURSE, BAG, &c.** GEORGE R. ADAMS, Newark, N. J., assignor of one-half to Charles Campbell, same place. Filed Nov. 17, 1884. (No model.)



Claim.—1. A purse or bag having a flexible mouth, a spring arranged within said purse or bag near the mouth, with a lining above said spring, forming a pouch at the mouth, substantially as set forth, and having the body of said bag extending below said spring, with one or more openings in the side or sides, for the purpose set forth.

2. A purse or bag having a flexible mouth, a spring arranged within said purse or bag near the mouth, the ends of which are secured to the ends of the mouth by clips that bind the ends of said mouth and spring together, substantially as set forth, a lining above said spring forming a pouch at the mouth, and having the body of said bag extending below said spring, with one or more openings in the side or sides, and provided with a handle, substantially as set forth.

336,542. **FELT BOOT.** SAMUEL G. ALEXANDER, Detroit, Mich., assignor to the Marine Shoe Company, Kennebunk, Me. Filed Jan. 27, 1885. (No model.)



Claim.—1. A felt boot provided at its heel or other wearing-points with a section or sections of knitted or woven fabric incorporated integrally with the body of the felt, substantially as described.

2. A felt boot provided at its heel or other wearing-points with a section or sections of knitted or woven fabric incorporated integrally with the felt between its inner and outer surfaces, substantially as described.

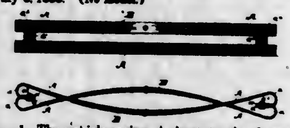
3. A felt boot having a section of fabric felted and felled with the boot in the region of the heel and instep, substantially as described.

336,543. **SPRING FOR VEHICLES.** GEORGE RAMSTER, Warren, Vt. Filed Oct. 10, 1885. (No model.)



Claim.—The combination, with the vehicle-body and the running-gear thereof, of a longitudinally-slotted shell seated in a socket in each corner of the body, and having an annular flange bearing against the lower face thereof, bolts or screws passing through the flange to secure the shell to the body, a coiled spring seated in the shell, a bracket having a head arranged within the shell and bearing on the spring, and a shank projecting through the slot beyond the line of movement of the body and provided with two lateral arms bolted to the running-gear, and a cross pin or bolt removably secured in the open mouth of the shell, to retain the bracket-head and spring therein, all arranged and combined substantially as described.

336,544. **VEHICLE-SPRING.** MICHAEL BARRY, Valparaiso, Ind. Filed July 8, 1885. (No model.)

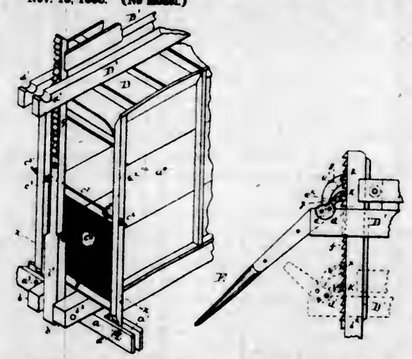


Claim.—1. The vehicle-spring A, bent to the form of an ellipse, and having the loops *a a* at each end, and the lugs *a' a'*, projecting from the ends of the loops at right angles to the spring, substantially as and for the purpose set forth.

2. In a vehicle-spring, the combination of two springs bent to the form of an ellipse, firmly secured together without knuckle or working joint by lugs projecting at right angles from the ends of each of them, so that the said springs have their vertical movements opposite to each other and in separate parallel planes, substantially as and for the purpose set forth.

3. In a vehicle-spring, the combination of two springs, A, bent to the form of an ellipse, and having loops *a a* at each end, and the lugs *a' a'*, projecting from the ends of the loops at right angles to the spring, and the bolts a^2 a^2, for securing the said lugs firmly together, substantially as and for the purpose set forth.

336,545. **PRESS.** BACHUS A. BEARDSLEY, Waterville, N. Y. Filed Nov. 18, 1885. (No model.)



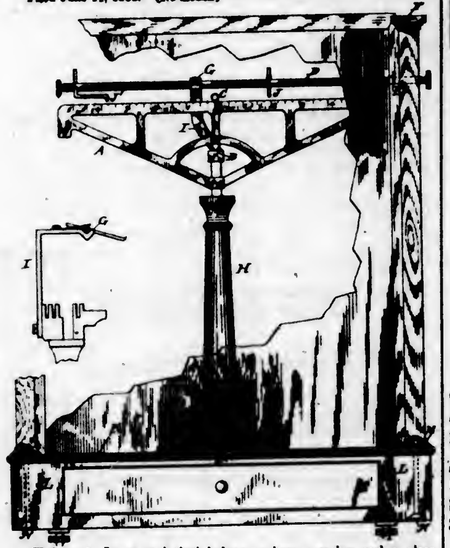
Claim.—1. The combination, in the baling-press of the character described, of the ratchet-post pivoted at the bottom, the projecting ends of the follower for carrying the lever-head, two dogs, each pivoted in the lever-head off the true center, each dog having projecting weights *g g* projecting inward and downward, for holding the dogs by gravity against the teeth on the ratchet-post when the lever is operated, substantially as described.

2. The combination, in a baling-press of the character described, of the ends formed in sections overlapping each other from the bottom section upward, each succeeding movable section constructed to overlap

the preceding section, each movable section guided in a groove in the sides of the press, with means for holding the sides of the press in contact with the movable sections, whereby their movement and position may be controlled, substantially as described.

3. The combination, in a baling-press of the construction described, of the ends formed in sections overlapping each other from the bottom section upward, each succeeding movable section constructed to overlap the preceding section, each movable section guided in grooves in the sides of the press, whereby the movable sections may be moved in the same direction in parallel lines.

336,546. ANALYTICAL BALANCE. ERNST BOEKER, New York, N. Y. Filed June 11, 1885. (No model.)



Claim.—1. In an analytical balance, a base, a casing, and a glass plate secured both to the said base and said casing, substantially as hereinbefore set forth in the annexed specification.

2. In an analytical balance, the combination of a base, a glass plate upon said base, a casing upon said glass plate, and bolts passing through the said base, said glass plate, and the bottom of said casing.

3. In an analytical balance, the combination of a scale-beam graduated from one end to the other, a weight or rider upon said scale-beam, a rod located near said beam, a pillar, H, a casing, F, two bearings for said rod, one of which is upon the pillar H and the other of which is upon the casing, the former bearing being toward one end of said scale-beam, and two lifters for said weight or rider, one of which is attached to said rod upon one side of the bearing which is secured to the pillar, and the other of which is upon the other side of the bearing which is secured to the pillar, substantially as and for the purpose set forth in the annexed specification and shown in the accompanying drawings.

336,547. MACHINE FOR FORMING AND DRIVING COMPOUND PEGS. ELIAKIM C. BENNETT, East Bridgewater, Mass. Filed Aug. 19, 1885. (No model.)

Claim.—1. In a machine for forming and driving pegs, the combination of the horizontal sliding plate C, the vertical sliding plate D, and the awl E with the gage L L', index-plate L^2, rack-slide L^{10}, gear L^{11}, and feed-rolls L^{12} L^{13}, all operating together substantially as described, and for the purposes set forth.

2. The combination of the horizontal sliding plate C, the vertical sliding plate D, and the awl E with the gage L L', index-plate L^2, rack-slide L^{10}, and plunger P^{11}, all operating together substantially as described, and for the purposes set forth.

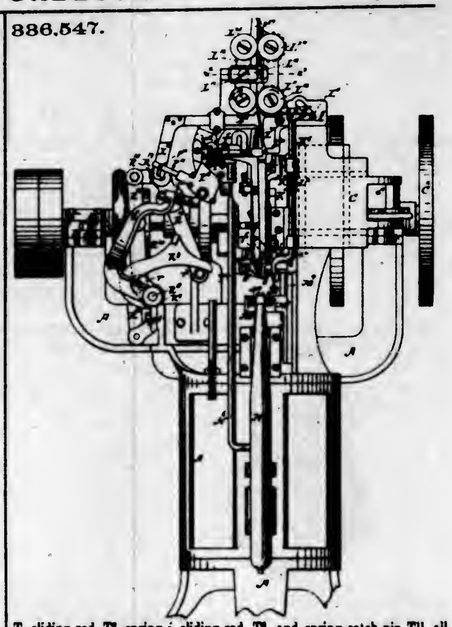
3. The combination of the feed-rolls L^{12} L^{13}, the formers H H', benders M M', and the plate H^2 with the bent N and header N^2, all operating together substantially as described, and for the purposes set forth.

4. The combination of the peg-wood feeding-roll P^1, severing-knife P^3, and pusher P^9 with the cutting-off knife P^{10}, all operating together substantially as described, and for the purposes set forth.

5. The combination of the hammer R', tube R, lever R^4, shaft R^5, and torsion-spring R^7 with the lever R^8, lever R^{16}, link R^{17}, lever R^{18}, and cam R^{19}, adapted to operate in combination with the let-off device R^{20} R^{21} R^{22}, substantially as described, and for the purposes set forth.

6. The combination of the formers H H' with the former-support

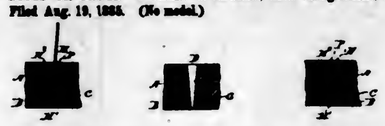
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T, sliding rod T^9, spring i, sliding rod T^9, and spring catch-pin T^{11}, all arranged to operate together substantially as described, and for the purpose set forth.

7. The combination of the cutter-head S^{20}, cutters S S', and their actuating mechanism with the rod S^{26}, rack S^{27}, gear L^{26}, and feed-rolls L^{25} L^{24}, all operating together substantially as described, and for the purpose set forth.

336,548. METHOD OF UNITING THE SOLES AND UPPERS OF BOOTS OR SHOES. ELIAKIM C. BENNETT, East Bridgewater, Mass. Filed Aug. 19, 1885. (No model.)



Claim.—That improvement in uniting the upper and soles of boots and shoes which consists in placing the lasted boot or shoe upon a suitable support, perforating the parts, then inserting a two-part metallic fastening, driving or forcing a core within each fastening, and then cutting off the projecting portions, all substantially as set forth.

336,549. SAFETY FROG AND SWITCH. CASPER BOERER, Cambridge City, Ind. Filed Oct. 12, 1885. (No model.)

Claim.—1. The frog-piece *f*, its inner side parallel with the line of the main-track rail, its outer inclined thereto at an acute angle, provided with the groove *g'*, substantially as described.

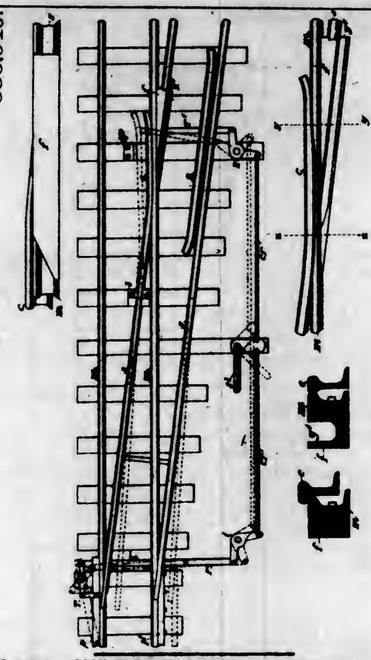
2. The frog-piece *f*, provided with a groove, *g'*, having its inner side parallel with the line of the main-track rail, its outer inclined at an acute angle thereto, bolted to the main-track rail *m*, in combination with such main-track rail, substantially as described.

3. The frog-piece *f*, provided with a groove, *g'*, its inner side parallel with the main-track rail, its outer inclined at an angle thereto, in combination with the main-track rail, to which it is firmly secured, and the movable curved rail *c*, pivoted as shown, substantially as described.

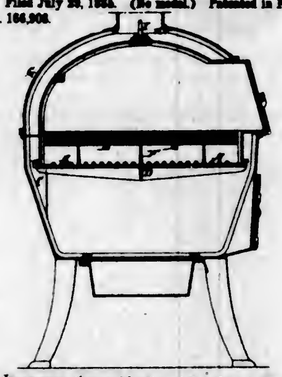
4. The frog-piece *f*, provided with a groove, *g'*, bolted to the main rail *m*, in combination with such main rail, the curved rail *c*, pivoted at one end and its opposite end raised to lift the tread of the wheel over the main rail, and connected by suitable rods and levers to the switch *st*, all combined substantially as described.

5. The switch-lever *st*, connected by suitable rods and levers at one end to the switch-rails *s*, and by means of similar mechanism at the other end to the pivoted curved rail *c*, one end of which is raised, as herein described, in combination with such switch-rails, and the frog-piece *f*, provided with the groove *g'*, bolted to the main rail, substantially as described.

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336,550. PORTABLE BAKING-OVEN. ARMAND CHAPPÉE, Le Mans, France. Filed July 20, 1885. (No model.) Patented in France Feb. 9, 1885, No. 166,908.



Claim.—In an oven, the combination of the plate A, having peripheral flanges and upright ribs, with the upper plate, E, resting on said ribs, removable inner dome, B, which is supported by the plate A, and surrounded by the flange of the same, outer dome, G, chimney, and lower furnace, all arranged substantially as herein shown and described.

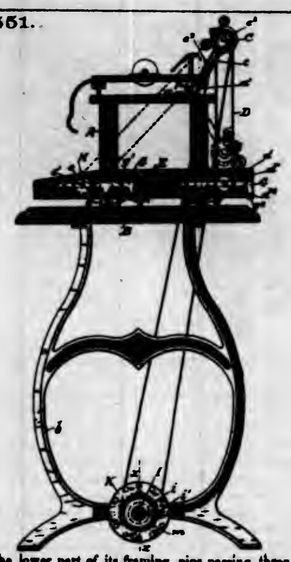
336,551. COPY-HOLDER FOR TYPE-WRITERS. WILLIAM H. CLARKSON, New York, N. Y. Filed Mar. 7, 1885. (No model.)

Claim.—1. The combination of a copy-holder provided with holes in the lower part of its framing, a type-writing machine provided with corresponding holes in the upper back part of its framing, pins passing through the said holes, so that the said copy-holder may turn freely, and a catch for holding the said copy-holder at any desired elevation, substantially as described and shown, and for the purpose set forth.

2. The combination of a copy-holder, a type-writing machine, pins for pivoting the framing of the copy-holder to the framing of the type-writing machine, a spring-catch for holding the copy-holder at any desired elevation, driving-pulleys secured upon the main cylinder-shaft of the copy-holder, and the means for rotating the said driving-pulleys, substantially as described and shown, and for the purpose set forth.

3. The combination of a copy-holder provided with driving-pulleys upon the ends of its main cylinder-shaft, and with holes in the lower part of its framing, a type-writing machine provided with corresponding

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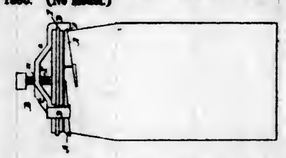


holes in the lower part of its framing, pins passing through said holes, so that said copy-holder may turn freely, a catch for holding said copy-holder at any desired elevation, a table having legs and provided with a cross-bar near the ground, and with a driving-pulley and pin-wheel journaled upon said cross-bar, so that the copy-holder cylinder may be revolved by the foot of the operator, substantially as described and shown.

4. The combination of the copy-holder C, provided with driving-pulleys c^3, and holes in the lower part of its framing c, a type-writing machine provided with corresponding holes in the upper back part of its framing, pins *c'*, passing through said holes, a catch for holding the said copy-holder at any desired elevation, table B, having legs b, bar I, provided with collars *i*, sleeve J, pin-wheel K, having pins *k*, driving-pulley I_1, and foot-rests M, substantially as described and shown, and for the purpose set forth.

5. The combination of the copy-holder C, provided with driving-pulleys c^3, and holes in the lower parts of its frames c, a type-writing machine provided with corresponding holes in the upper back part of its framing, pins *c'*, passing through said holes, a catch for holding the said copy-holder at any desired elevation, grooved pulleys for rotating the driving-pulleys c^3, and brackets G, provided with pins for carrying the said grooved pulleys, and with thimbles *g*, thumb-screws *g'*, and flat hooks g^2, substantially as described and shown, and for the purpose set forth.

336,552. FRUIT-JAR. WILLIAM P. COLDREN, Philadelphia, Pa. Filed Nov. 6, 1885. (No model.)



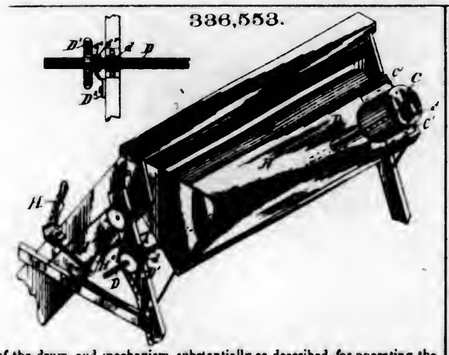
Claim.—In combination with a jar having inclines on its surface and a perforated lid or cover resting on top thereof, a clamp standing clear of the lid in the center, and having arms with horizontal lateral extremities adapted to engage with the side of the lid, and vertical extremities with lugs adapted to engage with the inclines and to hold the lid in place, and having also a threaded hole in the bail and a threaded bolt adapted to engage in said hole, said bolt having on its point a valve adapted to close the perforation in the lid after this has been fastened on by the clamp, substantially as described.

336,553. GRAIN-ADJUSTING DEVICE. HENRY COHEN, Chicago, Ill. Filed Feb. 13, 1885. (No model.)

Claim.—1. The grain-adjusting devices or batter, consisting of a rotary drum provided internally with wings or leaves, and means, substantially as described, to automatically project and withdraw said wings through openings in said drum as the drum revolves, substantially as described.

2. The grain-adjusting device consisting of a rotary drum provided with wings projected and withdrawn automatically through the periphery

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of the drum, and mechanism, substantially as described, for operating the same, as set forth.

3. The drum C, consisting of staves *c* and heads *c'* *c²*, said staves being provided with scrapers *c³*, in combination with the automatically-operating wings or leaves *c'*, substantially as specified.

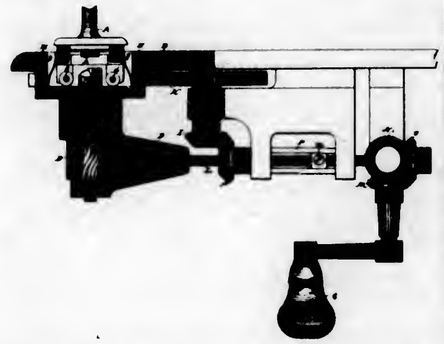
4. The butter C, mounted on the journal fixed in the bearing F, and projected through a slot in the table A, in combination with the longitudinally-movable operating-shaft D, supported in said bearing F, and driving-gear D', substantially as specified.

5. The butter C, revolving upon the stationary journals *c⁴* *c⁵*, formed on the cranked shaft *c⁴* *c⁵* *c⁶*, in combination with the wings *c'*, pivoted on the shaft *c⁶*, whereby by the rotation of the drum upon its axis the wings describe a circle about the shaft *c⁶* as a center, substantially as and for the purpose specified.

6. The bearing F, secured on the shaft D by the pins *d²* *d³*, and provided with flanges *f* *f*, and a hub or bearing, *f'*, substantially as specified.

7. The operating-shaft D, adjustably mounted on the frame of a grain-harvester, in combination with the butter supported on the end of said shaft, and mechanism, substantially as described, for shifting said shaft and butter as desired, substantially as specified.

336,554. FEED-MOTION FOR SEWING OR EMBROIDERING MACHINES. EMIL CORNELY, Paris, France. Filed Aug. 17, 1885. (No model.)



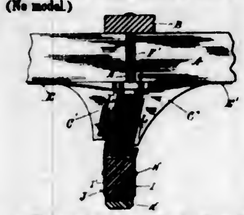
Claim.—1. In combination with the upper feed-surface of a universal-feed sewing or embroidering machine, a lower feed plate or surface movable in all directions to follow the motion of the upper feed-surface by its pressure thereon, and means—such as a spring—for returning the lower feed-surface to a central position, no matter in what direction it may have been moved, substantially as described.

2. In combination with the upper feed-surface and feed-controlling mechanism of a universal-feed sewing or embroidering machine, the wheel connected with said controlling mechanism, and the lower feed plate or surface guided by said wheel, substantially as described.

3. The combination, with the mechanism for controlling the direction of the feed-motion in a universal-feed sewing-machine, of the upper and lower universal-feeding surfaces connected with said controlling mechanism independently of each other, substantially as described.

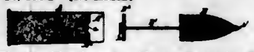
4. The combination, with the needle-plate of the shape shown, of the lower movable feeding-surface having a space in the middle into which the upper part of the needle-plate extends, substantially as described.

336,555. SLEIGH-KNEE. AUGUST DOLL, Lena, Ill. Filed Mar. 5, 1885. (No model.)



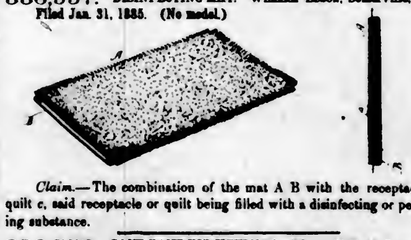
Claim.—The combination, with the knee C, having flanges I I', adapted to embrace a runner, and provided at its upper end with the horizontal flanges E E' O O', of the beam A, resting on said horizontal flanges and formed with vertical grooves A', the rave B, resting on the beam, and the bolts F F', passing through the rave and the flanges O O' and lying in the grooves A' and binding together the knee, the beam, and the rave, substantially as shown and described, and for the purpose set forth.

336,556. PROJECTILE. RICHARD B. DOUGLAS, New York, N. Y. Filed Apr. 12, 1884. (No model.)



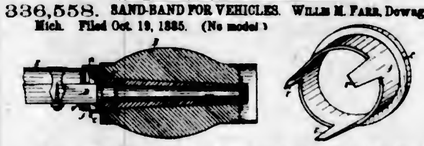
Claim.—The combination of a rifle or gun projectile formed with a sliding and revolving rod or axis, having a flexible burr or feather at its rear extreme, with the metallic cartridge-shell, substantially as and for the purpose specified.

336,557. DISINFECTING-MAT. WILLIAM EDSON, Somerville, Mass. Filed Jan. 31, 1885. (No model.)



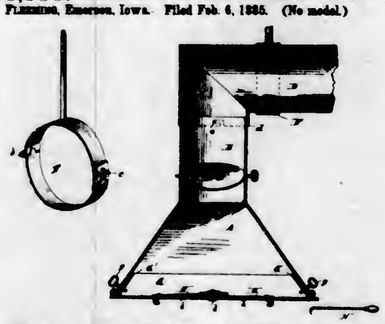
Claim.—The combination of the mat A B with the receptacle or quilt *c*, said receptacle or quilt being filled with a disinfecting or perfuming substance.

336,558. SAND-BAND FOR VEHICLES. WILLIS M. FARR, Dowagiac, Mich. Filed Oct. 19, 1885. (No model.)



Claim.—The described new manufacture—to wit, a sand-band for vehicles, consisting of an annulus, *f*, a flange, *c*, on one end, and prongs or spikes *r* on the other end, the whole formed entire—as specified.

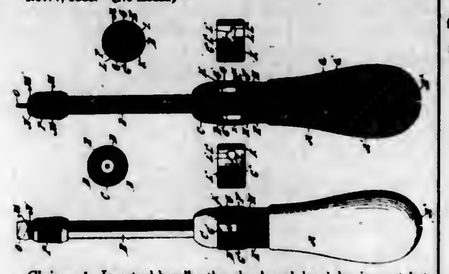
336,559. STOVE-HOOD OR HEAT-COLLECTOR. JOHN G. W. F. FLEMMING, Emerson, Iowa. Filed Feb. 6, 1885. (No model.)



Claim.—1. The combination, with a stove-hood, of a removable bottom provided with openings and independent valves for closing the same, substantially as specified.

2. The combination, with a stove-hood, of a bottom provided with openings and independent valves for closing the same, substantially as specified.

336,560. SCREW-DRIVER. JOHN S. FRAY, Bridgeport, Conn. Filed Nov. 7, 1885. (No model.)



Claim.—1. In a tool-handle, the shank and head having ratchet-teeth upon its under side, in combination with spring-actuated sliding pawls, adapted to engage the ratchet and having pins G^3, and a sleeve having recesses upon its inner side with which said pins engage, said recesses being wide at one end and having a straight portion, incline, and a pocket at the opposite end, as and for the purpose set forth.

2. The shank and head having triangular straight-sided ratchet-teeth upon its under side and spring-actuated sliding pawls having beveled ends and outwardly-projecting pins, in combination with a sleeve having internal recesses widest at one end and provided with inclines L' and pockets L^2, whereby one of the beveled pawls is permitted to engage the ratchet, as described, and the other is held out of engagement.

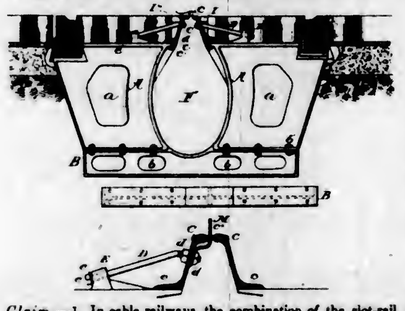
3. The shank and head having straight-sided ratchet-teeth upon its under side and spring-actuated sliding pawls having outwardly-projecting pins, in combination with a sleeve having internal recesses widest at one end, and having straight portions L^3, inclines L', and pockets L^2, whereby one pawl may be held out of engagement to make a ratchet-tool, or both may be thrown into engagement to lock the ratchet.

4. The body of the handle and the ferrule having recesses F, springs H, and the pawls having bevels G', and pins G^3, located in said recesses, in combination with a rotating shank, a head thereon having straight teeth upon its under side, and a sleeve provided with recesses L, widest at one end and having inclines L' and pockets L^2, adapted to be engaged by pins G^3, whereby one of the pawls is permitted to engage the ratchet and the other held out of engagement therewith.

5. In a tool-handle, a rotating shank one end of which carries a tool and the other extends into the body of the handle and is held there by suitable means, as a screw and washer, and a head upon said shank having straight-sided ratchet-teeth upon its under side, in combination with spring-actuated sliding pawls straight upon one side and beveled at the end upon the other, pins upon said pawls, and a sleeve provided with internal recesses widest at one end and having inclines and pockets, whereby one pin is left free and the other held out of engagement with the ratchet.

6. The rotating shank or tool-carrier, means, as a screw and washer, for holding it in the handle, and a head upon said tool-carrier having ratchet-teeth upon its under side, in combination with spring-actuated beveled sliding pawls having pins G^3, and a sleeve having recesses wide at one end, with an incline and a pocket at the other end, whereby one pawl is left free to act and the other held out of engagement, so that turning the handle in one direction will carry the tool-carrier, but when turned in the other direction the operating-pawl will slip over the ratchet.

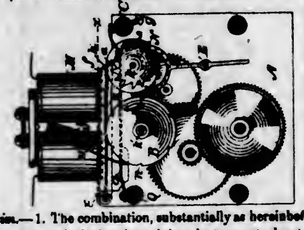
336,561. CABLE RAILWAY. ROBERT GILLHAM, Kansas City, Mo. Original application filed Apr. 27, 1885, Serial No. 163,682. Divided and this application filed Nov. 16, 1885. (No model.)



Claim.—1. In cable railways, the combination of the slot-rail, a lug provided with a countersink, as described, and arranged upon the supporting device for said rails, an adjusting-rod attached to the slot-rails and also to the lug, and suitable nuts on said rod and on opposite sides of the said slot-rail, for the purpose described.

2. The combination, with the slot-rails, of an adjusting-strip, as and for the purpose specified.

336,562. ELECTRIC SIGNALING APPARATUS. EMILE T. GILLIAND, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Oct. 31, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a series of electrical signal-receiving instruments located at separate stations on a main-line circuit connecting with a central station, a normally-closed shunt-circuit round each of the said signal-receivers, a circuit-breaking disk included in said shunt, a series of electric signal-transmitting instruments also located at the separate stations, a normally-open shunt-circuit round each of the said signal-transmitters, and a circuit-closing disk included therein, said disks being mounted on the arbor of a clock-train, at each station actuated from the central station, whereby any one of the said signal-receivers may be brought into the main-line circuit and operated to give the signal, and whereby the signal-transmitting instruments at all the stations are simultaneously shunted during the entire operation, so that no station may interfere while another is being called.

2. In an electric signaling-circuit, a series of electro-magnetic call-receiving instruments, a series of magneto-electric call-generators, a normally-closed shunt-circuit round each call-receiving instrument, including a circuit-breaking disk, a normally-open shunt-circuit round each generator, including a circuit-closing disk, a clock-train normally at rest controlling the condition of both of the said shunt-circuits by means of said disks, and an electro-magnet armature and stop-levers adapted to be actuated from a distant central station, controlling the said clock-train, substantially as specified, and for the purposes set forth.

3. The combination, in an electrical signaling-circuit, of a series of electro-magnetic call-receiving instruments located at different sub-stations on the said circuit, a normally-closed shunt-circuit round each of the said instruments, a circuit-breaker in each shunt-circuit, a series of clock-trains—one for each instrument—controlled by electro-magnets in the main-line circuit, and adapted to operate the several shunt-circuit breakers consecutively, each in its own time, and a secondary or auxiliary stop mechanism, also controlled by the said electro-magnets, whereby the several call-receiving instruments may be consecutively introduced into the main-line circuit, and whereby the clock-trains may be arrested when any selected receiving-instrument is so introduced for the purpose of operating the said instrument, and of giving the call-signal as long as may be desired.

4. In an electric signaling system comprising a series of signaling-instruments at different stations, and a series of clock-trains therefor adapted to introduce each of said instruments into the line once during a complete revolution, the combination, with the controlling electro-magnet at each station, of unison-stop mechanism operated from a fast-moving wheel of said train, whereby all the clock-trains may be synchronized a number of times during each single or complete revolution thereof, substantially as described.

5. The combination, substantially as hereinbefore specified, of a series of electro-magnetic call-bells, each in a normally-closed shunt or derived circuit of an electric main-line circuit, a circuit-breaker for each bell-shunt circuit, a clock-motor controlling each circuit-breaker and adapted to operate the same each at a time differing from the others, to include the said bells in the main-line circuit, one at a time successively, a unison-stop mechanism for each clock-motor, controlled by an electro-magnet in the main line and adapted to release the clock-work and to re-engage and arrest the same at its normal point of arrest after a revolution in which the circuit-breakers of each instrument have been once operated, and an independent and auxiliary stop mechanism for each clock, controlled by the same electro-magnet and arranged and adapted to stop the clocks at each complete revolution of the escapement-arbor, and also at the ringing-point of any desired call-bell, whereby the said clocks may be synchronized a number of times during each period of motion, and whereby any desired bell may be independently rung.

6. The combination, in an individual signaling-instrument controlled by a shunt-circuit of the main line, and a clock-motor to break the said shunt-circuit at the proper time, of the contact-spring *v* and the notched metal disk B, the latter being mounted on a slow-moving arbor of the clock-work, constituting a circuit-breaker of the said shunt-circuit, the

said disk being thus adapted to break the said shunt-circuit a number of times in each revolution thereof, and to perform a portion of a revolution only during a complete period of motion of the clock-motor from unison to unison, as and for the purposes specified.

7. The combination, in an electrical signaling-instrument substantially of the character hereinbefore described, of an electro-magnet call-bell, a normally-closed shunt-circuit, a clock-motor, a circuit-breaker for the said shunt-circuit, consisting of a notched metal disk mounted on a slow-moving arbor of the said clock-motor and a contact-spring resting on the edge of the said disk, an electric call-generator, and a normally-open shunt-circuit therefor, a circuit-closer therefor consisting of a second disk mounted on the same arbor and a contact-spring normally resting opposite a notch of the said disk, adjusted to trail on the edge thereof and close the shunt-circuit during the motion of the said disk, a unison-stop mechanism adapted to hold the clock-motor normally at rest, and when disengaged therefrom to re-engage the same automatically and stop the clock again at the normal resting-point after the elapse of a predetermined period of time, the said mechanism comprising a disk mounted on the escapement or fast-moving arbor of the train and a stud projecting from the edge thereof, together with a fourth notched disk mounted on the same arbor with the circuit breaking and closing disks, a pivoted lever normally engaging the stud on the edge of the escapement-disk and having a projecting arm controlled in one direction by the armature of an electro-magnet and lying in one of the notches of the fourth disk when the clock is at rest, but elevated by riding on the edge thereof when the clock is in motion, and a synchronizing and ringing auxiliary stop mechanism comprising the escapement-arbor disk, the stops A and *i*, carried thereon, and a lever rigidly attached to the electro-magnet armature and adapted to engage the said stops when the armature is operated after long and short intervals, the stop A representing the unison-point and the stop *i* the ringing-point of some one bell, substantially as described.

8. An electric signaling-circuit extending from a central station to a series of sub-stations, in combination with a battery and a key to connect the same in circuit, and at each sub-station an electro-magnetic call-bell adapted to give a continuous ring by shunting its electro-magnet at every stroke, a shunt-circuit normally shunting the said bells, a circuit-breaker for the said shunt-circuit, a clock-work motor normally at rest and adapted, when set in motion, to operate the circuit-breaker at a time different for each bell in the circuit, a normal unison-stop mechanism of the character herein described, and a synchronizing and ringing stop mechanism, substantially as and for the purposes specified.

9. The combination, in an electric circuit, of a battery, a key or circuit-closer to connect the same, a series of electro-magnets controlling clock-trains included in the said circuit, and one or more vibrating bells, each operating by shunting its own electro-magnet, whereby the operation of the bells is prevented from interfering with the clock-train-controlling electro-magnets, as herein specified.

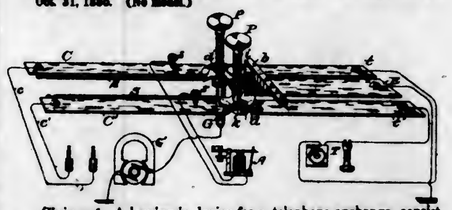
10. The combination, in an individual signaling-instrument, of an electrically-controlled clock-train, with the normal unison stopping and starting mechanism, comprising the escapement-disk *o*, the stop A, carried thereby, the lever *f*, having an arm, *f'*, projecting therefrom at an angle, the armature *a*, and the retaining-disk L, adapted to support the lever *f*, and to prevent its re-engagement during the continuance of a revolution with the stop A, and the synchronizing stop mechanism comprising the stop *i* and lever l^2, all arranged as set forth, and in the manner described.

11. The combination of an electro-magnetic signaling device, a short circuit normally surrounding the same, a clock-motor, a disk mounted on the escapement-arbor of said clock-train, carrying unison and ringing stops, and adapted, when the clock-motor is released, to make six complete revolutions before it automatically comes to rest at unison, a disk mounted on an arbor geared so as to make but one-sixth of a revolution during the time required for six revolutions of the escapement-arbor disk, and having on its edge a number of notches equidistant from one another, and a contact-spring adapted to bear normally on the edge of said disk, constituting a circuit-breaker for the shunt-circuit, but to be passed by one of the said notches in the disk in each sixth part of a revolution of the said disk, whereby the shunt-circuit may be broken, for the purposes specified.

12. The combination of two circuit wheels or disks moving together, both of which are provided with conducting-faces, except at certain points, at equal distances apart, the distance between each two points being a submultiple of the circumference of said disks, with two contact-springs—one for each disk—and two separate shunt-circuits adapted to short-circuit call receiving and transmitting devices, the shunt-circuit round the transmitting device being open when the disks are at rest and closed by the action of one of the said disks and the circuit-spring thereof during the motion of the same, and the shunt-circuit round the receiving device being normally closed and adapted to be opened for a definite period once by the action of the other disk and its contact-spring during each period of motion of the said disk, substantially as hereinbefore described.

13. In an electric signaling apparatus, the combination of two circuit-controlling disks on the same slow-moving arbor of a clock-train, each of which is adapted to close and open a separate shunt-circuit, with a third disk on a fast-moving arbor of the same clock-train, an electro-magnet armature, and stop mechanism controlled thereby, which stop mechanism is adapted to stop the said third disk and the clock-train at a common unison-point at the close of each revolution of the said third disk, or at a ringing-point, as herein specified.

336,568. LOOPING-IN SWITCH. EZRA T. GILLILAND, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Oct. 31, 1885. (No model.)



Claim.—1. A looping-in device for a telephone-exchange, consisting of the combination of two movable contacts in the circuit of a pair of conducting-cords, two movable contacts connected to opposite terminals of a telephone, a movable ground-contact, and two controlling-keys, by the operation of which two or more of said movable contacts may be connected together and to the ground, either or both.

2. A looping-in device consisting of two movable contacts included in the circuit of a pair of conducting-cords, two movable electrical contacts, to which the terminals of a telephone are respectively connected, a movable ground-contact, a fixed generator-contact, and two controlling-keys, whereby two or more of said movable contacts may be connected together, or either of the first-named contacts connected with the generator.

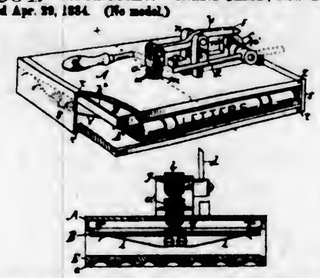
3. The combination, in a telephone-exchange, of two flat spring-contacts in the circuit of a pair of conducting-cords, two similar flat spring-contacts respectively connected to the opposite terminals of a telephone, a flat spring connected to ground, and a pair of controlling-keys, as P P', for inserting the telephone with respect to either or both of two connected circuits.

4. The combination of a pair of spring-contacts in circuit with connecting cords and plugs, a pair of rotatable buttons or keys having each a disk partly cut away, and a cam on said disk, and a grounded generator-post within the circumferential line of both said disks, whereby the normal circuit of either of said springs may be broken and connection made with the generator, substantially as described.

5. A looping-in switch comprising, in combination, a pair of contacts in circuit with conducting cords and plugs, a pair of movable contacts forming terminals of a telephone-circuit, a movable ground-contact, a grounded generator-contact, and a pair of controlling-keys comprising each a spindle having rotary and longitudinal movements, and a conducting disk or plate, all of said contacts being under the control of one, and said ground and generator contacts being under the control of both, said controlling-keys, substantially as described.

6. In a looping-in switch, the combination of a separable electrical contact in the circuit of a conducting cord and plug, an electrical contact connected with a generator, an electrical contact connected with a telephone, and a controlling-key capable of rotation and depression, one movement establishing connection between the cord and generator-contact, and the other establishing connection between the cord and telephone-contact, substantially as described.

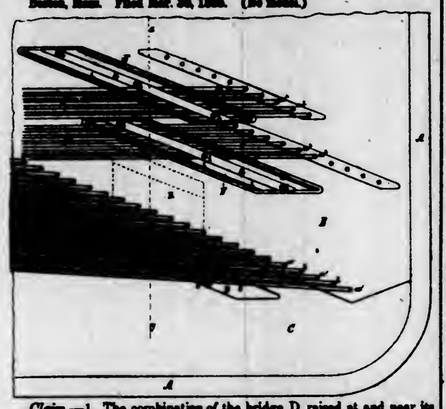
336,564. COPYING-PRESS. HORACE GREEN, New Haven, Conn. Filed Apr. 29, 1884. (No model.)



Claim.—1. In a copying-press, the combination, with the rigid frame-work thereof, comprising a top plate having a central opening, of an adjustable or extensible plunger working through said opening, a platen against which said plunger impinges, and mechanism, substantially as described, for operating said plunger, as set forth.

2. In a copying-press, the combination, with the frame-work thereof and the platen, of an adjustable or extensible plunger consisting of a threaded nut and bolt, a tilting lever to which said plunger is attached, and a cam or eccentric and hand-lever for operating said lever, substantially as set forth.

336,565. PIANO-FORTE. GERMAN H. GUILD and BYRON C. BENEHAN, Boston, Mass. Filed Nov. 30, 1885. (No model.)



Claim.—1. The combination of the bridge D, raised at and near its end out of contact with the sounding-board, with a bracket, E, extending laterally from the part so raised out of contact with the sounding-board and nearly to the next adjacent bridge F, and having a flange or projection to extend down to the sounding-board and fixed thereto, all being substantially as represented.

2. The auxiliary bridge F, having two double flanges, substantially as described, and resting on the sounding-board by the flanges only, in combination with the strings and the bar G, sustained upon the web of the bridge by an adjusting-screw, as and for the purpose described.

336,566. COUNTERSINKING-TOOL. FREDERIK HAFFENBRENDER, Madison, Ind. Filed Aug. 14, 1885. (No model.)



Claim.—1. The tool having its end or face provided with teeth C, inclined and continuous across said face, as shown in Fig. 3, substantially as and for the purposes specified.

2. The tool having a flat face and provided with teeth C, continuous across said face, substantially as and for the purposes specified.

3. The tool having handle A and shank B, provided with teeth C continuous across the face of said shank, substantially as and for the purposes specified.

336,567. FAN FOR GRAIN-SEPARATORS. JACOB HAWK, Canton, Ohio. Filed Sept. 10, 1885. (No model.)



Claim.—In a grain thrashing and separating machine, the combination, with vibrating riddles, of a fan having a larger diameter at its middle section than at its ends, substantially as and for the purpose set forth.

336,568. METHOD OF INSERTING DIAMOND OR CARBON POINTS IN TOOLS. THADDEUS A. JACKSON, New York, N. Y. Filed Nov. 9, 1885. (No model.)

Claim.—The method of securing diamonds or carbon points in metallic holders, consisting of first covering the surface of said diamond or carbon point with a coating of a heat-resisting substance to form a cushion, and afterward placing it in a mold and casting the metal on or around it, substantially as and for the purpose set forth.

336,568.



336,569. COMPOSITION FOR SIZING PAPER. JOSEPH JORDAN, Bridgeport, Pa. Filed Nov. 30, 1885. (No specimens.)

Claim.—1. As a sizing for paper, the compound consisting of the combination of wax, oil, and silicate of soda, substantially as described.

2. As a sizing for paper, a compound consisting of the combination of vegetable wax, oil, and silicate of soda, substantially as described.

3. As a sizing for paper, the compound consisting of the combination of wax, vegetable oil, and silicate of soda, substantially as described.

4. As a sizing for paper, the compound consisting of the combination of vegetable wax, vegetable oil, and silicate of soda, substantially as described.

5. As a sizing for paper, the compound consisting of the combination of wax, oil, and silicate of soda spread upon the surface of paper, substantially as described.

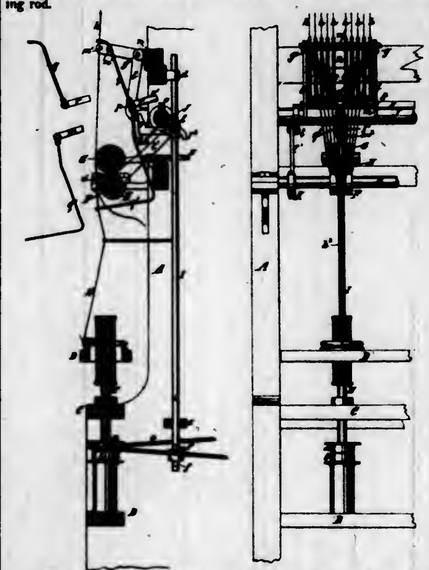
6. As a sizing for paper, the compound consisting of the combination of wax, oil, and silicate of soda, the same having a deodorizing agent incorporated therewith to remove any disagreeable smell, substantially as described.

7. As a sizing for paper, the compound consisting of the combination of wax, oil, and silicate of soda, the same having a perfuming agent incorporated therewith, substantially as described.

8. In sizing paper, saturating it with oil, then treating it with a compound consisting of the combination of wax, oil, and silicate of soda, substantially as described.

336,570. STOP-MOTION MECHANISM FOR MACHINES FOR DOUBLING AND SPINNING SILK, &c. WILLIAM R. LAMPHEAR, Brooklyn, N. Y. Filed May 3, 1884. (No model.)

Brief.—The drop-wire frame is L-shaped, and is pivoted at its angle to the frame of the machine. The drop-wires are pivoted to its lower end both for single and double strands, the tail-pieces of which are heavy enough to slightly overbalance their other end. The drop-wire frame is also provided at said lower end with a detent, which supports the band-shifting rod through an arm from said rod. When a wire falls, its tail-piece comes in the path of a knock-off, which swings the drop-wire frame and its detent outwardly, and thereby releases the band-shifting rod.



Claim.—1. The combination, with the band-shifting rod and an arm projecting laterally therefrom, of a drop-wire frame pivoted to a fixed support and furnished with a detent, which by the swinging movement of said frame may be engaged with or freed from the arm on said rod, drop-wires pivoted in said pivoted frame, and a knock-off for operating,

through said wires on said frame, to swing the frame in a direction to free its detent from the arm on said band-shifting rod, substantially as herein described.

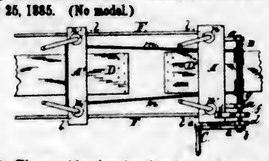
2. The combination, with the band-shifting rod and an arm projecting laterally therefrom, of a drop-wire frame pivoted to a fixed support and furnished with a detent, which by the swinging movement of said frame may be engaged with or freed from the arm on said rod, drop-wires pivoted in said pivoted frame and having overbalancing tail-pieces, a shaft having a projection for acting on said tail-pieces, and means for operating said shaft, whereby on the breaking or giving out of a thread the drop-wires and their pivoted frame are moved together by said shaft to swing the frame in a direction to free the detent from the arm on the band-shifting rod, substantially as herein described.

3. The combination of the pivoted drop-wire frame *l m m' m'*, provided with the hook or detent m^2, and fixed supports for the pivots thereof, the drop-wires *q q*, one for each thread to be doubled, having the overbalancing tail-pieces *r r*, pivoted in said frame, the band-shifting rod I, having an arm to engage with the hook of the drop-wire frame, the shaft J, having a spline, *s*, and means of operating said shaft, all substantially as and for the purpose herein set forth.

4. The combination of the pivoted drop-wire frame *l m m' m'*, provided with the hook or detent m^2, and fixed supports for the pivots thereof, the drop-wire *q'* for the doubled thread, having an overbalancing tail-piece, *r'*, pivoted in said frame, the band-shifting rod having an arm to engage with the hook of the drop-wire frame, the shaft J, having a spline, *s*, and means of operating said shaft, all substantially as herein described.

5. The combination, with the band-shifting rod, the pivoted drop-wire frame having a detent, and an arm provided on the said rod to rest on said detent, and having an inclined surface to act as a wedge upon said detent when not supported thereon, all substantially as herein described.

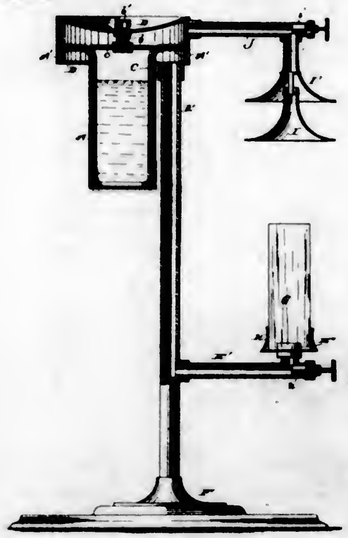
336,571. **BAND-STRETCHER.** JOSEPH A. LAWRENCE, Sherman, Tex. Filed July 25, 1885. (No model.)



Claim.—1. The combination, in a band-stretcher, of a sliding block, A', provided with clamping-plate E, and crank-bolts *l l*, with the guides F F and clamping-block A, all substantially as set forth.

2. In a band-stretcher, the windlass-shaft B, provided with ratchets *d* and *f*, and loose crank C, carrying pawl *e*, said shaft turning in bearings in clamping-block A, in combination with the rope *n* and sliding block A', substantially as described.

336,572. **AUTOMATIC CARBURETING-LAMP.** JULIUS LEEDS, Washington, D. C., assignor to John Lawshe, Colton, Cal. Filed Nov. 10, 1885. (No model.)



Claim.—1. In combination, a burner, a hydrocarbon-reservoir, a plurality of bells located above the burner, and a continuous circuit between the bells and the burner through the reservoir, substantially as described.

2. As a means for producing a draft or pressure in an automatic carbureting-lamp, a pair of bells located over the burner thereof, substantially as shown and described, the said bells being connected by a pipe or pipes with the carbureting-vessel.

3. The combination, with a reservoir containing a hydrocarbon fluid and a wick adapted to rest partly in and out of the fluid, of a cap for the reservoir, and means, adjustably connected with the cap, whereby the wick can be kept in place by pressure, substantially as described.

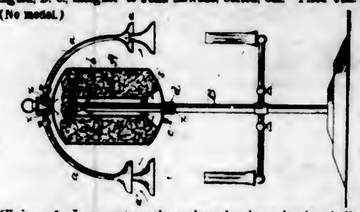
4. The combination, with a hydrocarbon-reservoir provided with a perforated rim or ledge, of a wick adapted to overlap the said rim or ledge and a conduit leading to the lamp-burner, substantially as described.

336,573. **ATTACHMENT FOR GAS-SERVICE CONDUITS.** JULIUS LEEDS, Washington, D. C., and JOHN LAWSHE, Colton, Cal.; said Leeds assignor to said Lawshe. Filed Jan. 6, 1886. (No model.)



Claim.—The combination, with a gas-service conduit, of an interposed bulb or section containing absorbent material for holding odorizing substances, and gauze diaphragms for confining the absorbent and limiting the effects of explosions, and a cap or reservoir, C, for odoriferous liquid, substantially as described.

336,574. **AUTOMATIC CARBURETING-LAMP.** JULIUS LEEDS, Washington, D. C., assignor to JOHN LAWSHE, Colton, Cal. Filed Jan. 8, 1886. (No model.)



Claim.—1. In an automatic carbureting-lamp having bells over a burner, the combination of a reservoir, a siphon or goose-neck leading from near the bottom of the reservoir, and a conduit for maintaining a circulation from and to the burner through the reservoir.

2. In an automatic carbureting-lamp, bells over the burner, and conduits for forcing currents of air from and to the burner through the reservoir, in combination with a siphon for drawing the gas from the lower portion of the reservoir and delivering it to the burner at a constant and equal pressure.

3. In an automatic carbureting-lamp, the combination of a burner, a hydrocarbon-reservoir, a plurality of bells or deflectors located above the burner, a siphon leading from the lower portion of the reservoir, and a continuous circuit from the burner through the bells and reservoir to burner, substantially as described.

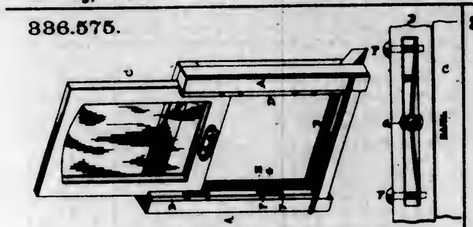
4. In an automatic carbureting-lamp, the combination of bells or deflectors, conduit, a siphon leading from near the bottom of the reservoir, and a guard or fender for the mouth of the same, substantially as described.

336,575. **COMBINED WINDOW-SPRING AND WEATHER-STRIP.** Gamon W. Lewis, Fall River, Mass., assignor of one-fourth to Clothier Pierre Haskins, same place. Filed July 10, 1885. (No model.)

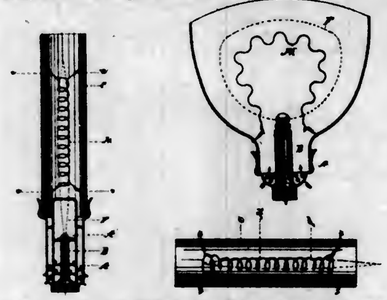
Claim.—1. A combined window-spring and weather-strip consisting of a window-stick mounted upon a window-frame in contact with the sash, and an adjustable spring by which said window-stick has a forcible and regulated bearing throughout its entire length against said sash, substantially as described.

2. The combination of the window-frame A, having the screw G, the window-sash C, and the window-stick D, having the screws F, and the bow-string E, mounted on said screw G, and adjustable by a screw-threaded engagement with the screws F, substantially as described.

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336,576. **INCANDESCENT GAS-LIGHT.** CHARLES M. LUDEMIR, New York, N. Y. Filed Aug. 12, 1885. (No model.)

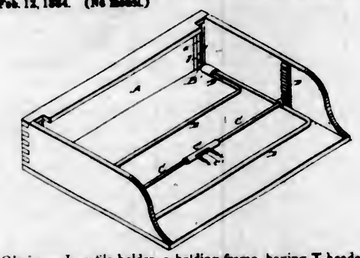


Claim.—1. In an incandescent gas-light apparatus, the combination of a gas-burner, a chimney or globe of glass or other transparent material, and an incandescent filament contained within the chimney and attached to it by wires or other suitable supports, substantially as specified.

2. In an incandescent gas-light apparatus, the combination of a gas-burner, a glass chimney or globe, and an incandescing filament contained within the chimney and attached to it by suitable supports sealed into the glass, substantially as specified.

3. In an incandescent gas-light apparatus, the combination of a gas-burner, a chimney or globe of glass or other transparent material, and an incandescing filament of refractory earth contained within the chimney, and attached to it by wires or other suitable supports, substantially as specified.

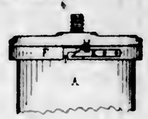
336,577. **FILE-HOLDER.** OSCAR C. MACKENSEN, Chicago, Ill. Filed Feb. 13, 1884. (No model.)



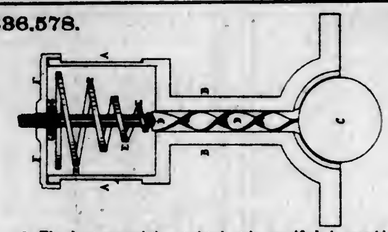
Claim.—In a file-holder, a holding-frame having T-headed arms on its rear side, and provided at its forward part with spring-actuated latch-rods, in combination with a box or case formed with retaining-grooves in its rear side to receive the T-headed arms, and provided on its ends with ratchet-plates to engage the latch-rods, substantially as and for the purpose specified.

336,578. **LUBRICATOR.** SAMUEL M. MAIN, Brooklyn, N. Y., assignor of one-half to Samuel A. Main, Danbury, Conn. Filed Oct. 8, 1885. (Model.)

Claim.—1. The heat-transmitting twisted strip, its width at the lower end bearing upon and in constant contact with a shaft or journal, and its upper end communicating to the lubricant, substantially as described, for the purpose specified.



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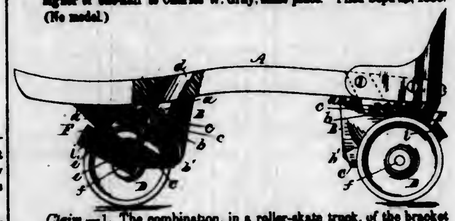
2. The heat-transmitting twisted strip specified, in combination with a heat-transmitting metal coil or spiral or shell within the body of the lubricant, substantially as described, for the purpose specified.

3. The rod extending through the cap, and the nut below the cap or lid adjustable, substantially as described, for the purpose specified.

4. The heat-transmitting twisted strip D and adjustable stop G, in a tube, B, together with the heat-diffusing coil E and grease-cup A, in connection with a shaft or journal, substantially as described, for the purpose specified.

5. The spring-catch K, combined with the slot I and pin H, substantially as described, for the purpose specified.

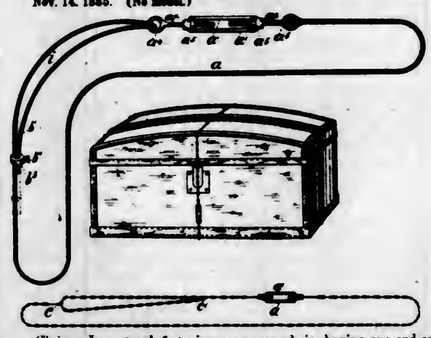
336,579. **ROLLER-SKATE.** JOHN F. MANN, Jeffersonville, Ohio, assignor of one-half to Charles W. Gray, same place. Filed Sept. 29, 1885. (No model.)



Claim.—1. The combination, in a roller-skate truck, of the bracket B, the hanger C, rocking thereon, a post, *a*, secured to the hanger and oscillating in the bracket, a rubber cushion, *b*, surrounding the post, and the cap *c'*, having side walls, to effect, in conjunction with the post, the lateral compression of the cushion, and having openings to permit of a compensating longitudinal expansion of the cushion, substantially as set forth.

2. In a roller-skate, the combination, with the hanger having a bearing for the roller-axle and an oil-duct, *e*, leading to said bearing, of a hollow screw-plug, F, longitudinally adjustable in said duct, and the thick elastic rubber collar *i* at the opening of the duct, and compressible and laterally expansible by the longitudinal adjustment of the plug, substantially as set forth.

336,580. **TRUNK-STRAP.** FRANCIS M. MANN, Buffalo, N. Y. Filed Nov. 14, 1885. (No model.)

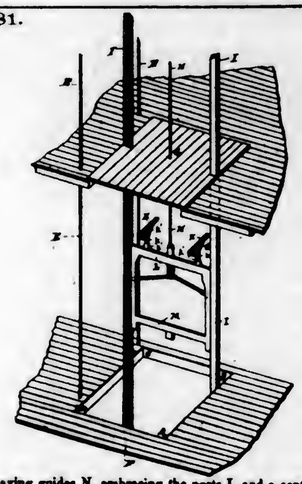


Claim.—In a trunk-fastening, a rope or chain having one end secured to a tightening swivel-screw, and the opposite end having a loop, *i*, adapted to pass through the eye of the screw at the opposite end of the swivel, in combination with a suitable means, substantially as specified, for securing the end *b'* at any point desired, so as to enlarge or shorten the loop, whereby the fastening may be lengthened or shortened, substantially as and for the purposes described.

336,581. **ELEVATOR.** JOHN MCQUAIDE, Staunton, Va. Filed Dec. 10, 1885. (No model.)

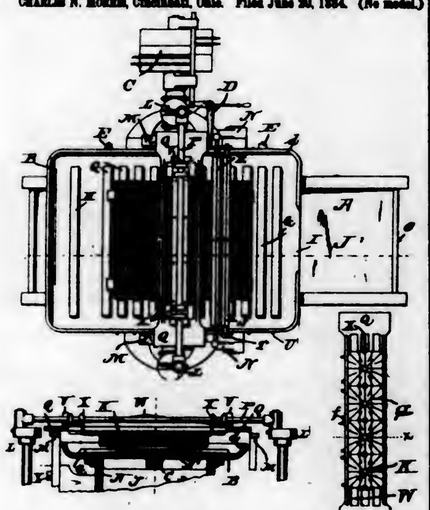
Claim.—In an elevator, a hatch-door, G, somewhat larger than the

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hatchway, having guides N, embracing the posts I, and a central opening for the passage of a wire rope, H, in combination with the arms K, supported by uprights *k*, and braced by the brackets *k'*, and the upper frame, L, of an elevator, as shown and described, and for the purpose set forth.

336,582. MACHINE FOR SURFACING LITHOGRAPHIC STONES. CHARLES N. HORNER, Cincinnati, Ohio. Filed June 20, 1884. (No model.)



Claim.—1. In a machine of the character specified, the combination of a grinder arranged to operate under the pressure due to its weight, and a pair of bearers provided with bearing-surfaces in the form of true planes, and arranged to intercept the descent of the grinder and relieve the surfacing operation of the pressure due to the weight of the grinder.

2. In a machine of the character specified, the combination of a carrier for a grinder or grinders, a pair of bearers arranged to be engaged by said carrier, and a grinder or grinders secured to said carrier, but capable of a limited upward motion with reference thereto.

3. In a machine of the character specified, the combination, with a pair of bearers having truly plane bearing-surfaces, of a grinder provided with a grinding-face and with independent truly plane surfaces fitted to engage said bearers.

4. In a machine of the character specified, the combination of cranks L, carrier W, having lugs V, and rod P, having collars engaging said lugs.

5. In a machine of the character specified, the combination of cranks L, carrier W, lugs V, plate or plates K, rod P, having collars engaging said lugs, and fingers X, engaging said plate.

6. In a machine of the character specified, the table B, having a stone-supporting surface, and provided with the testing-rib H to the rear of said surface.

7. In a machine of the character specified, the table B, having a marginal ledge and a sloping upper surface, and provided with a series of stone-supporting ribs projecting from said sloping surface.

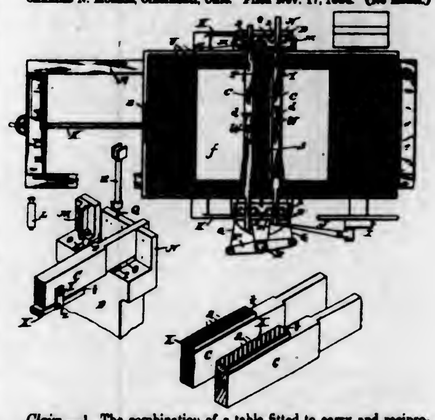
8. In a machine of the character specified, the combination of table B, having ledge *d* and opening I, and bed A, having tank J.

9. In a machine of the character specified, the combination of bed A, table B, carrier W, bearers M, levers N, and adjusting-screw O.

10. In a machine of the character specified, the combination of table B, water-tube R, and tube S, for abrading material, said tubes being disposed across the table and supported in bearings.

11. In a machine of the character specified, the combination of a tube for liquid or abrading material, having a row of perforations in the bottom thereof, with adjustable pistons Z, fitting within the tube.

336,583. MACHINE FOR SURFACING LITHOGRAPHIC STONES. CHARLES N. HORNER, Cincinnati, Ohio. Filed Nov. 17, 1884. (No model.)



Claim.—1. The combination of a table fitted to carry and reciprocate a stone face uppermost, and a grinder consisting of a long flat strip of corundum diagonally grooved on its face and fitted to reciprocate longitudinally across the upwardly-presenting face of the reciprocating stone.

2. In a machine of the character specified, a grinder formed of a long strip of corundum having one of its faces diagonally grooved and its other face plain, and a reciprocating bar disposed above and carrying said grinder, combined substantially as and for the purpose set forth.

3. In a machine of the character specified, the combination of a pair of parallel grinding-strips provided with facial grooves arranged diagonally in opposite directions.

4. In a machine of the character specified, the combination of a table for supporting and reciprocating a stone or plate to be surfaced, a pair of narrow grinders disposed parallel to each other above the table in a direction transverse to the table motion, and a rocker-arm or equivalent means for reciprocating the two grinders simultaneously in opposite directions, and grinding-supports for the grinders for determining their horizontal plane of motion independent of the surface of the stone on which they act.

5. In a machine of the character specified, the combination, with rocker-arm F, links G, and bars C, of blocks W and springs *c*.

6. In a machine of the character specified, the combination of rocker-arm F, having link-eyes at its ends, bars C, having holes to receive link-journals, and the links G, having downwardly-projecting journals *c*.

7. In a machine of the character specified, the combination of bearers D, having channels O, the reciprocating bars C, and the rollers P, free to traverse said channels.

8. In a machine of the character specified, the combination of the bearers D, having vertical slots at their tops, and the bars C, set edgewise vertically into and fitted to reciprocate in said slots.

9. In a machine of the character specified, the combination of the bearers D, the bars C, set edgewise over the same, and the bearings M, secured to the bearers and provided with rollers or other bearing-surfaces to be adjusted against the side faces of the bars.

10. In a machine of the character specified, the combination of the bars C, clamps Y, and grinders X, having side pins, Z.

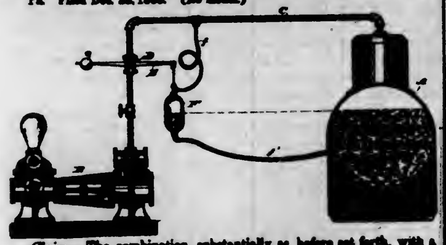
11. In a machine of the character specified, the combination of the bearers D, bars C, crank I, connecting-rod J, lever H, rock-shaft E, rocker-arm F, and links G.

12. In a machine of the character specified, the sand-box T, having flat horizontal slots-bottom and transverse partitions.

13. In a machine of the character specified, the combination of rod S, sand-box T, pins U, hanger V, standards Q, and vertical adjustable bearing-socket R.

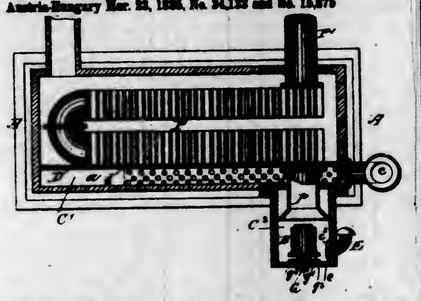
14. In a machine of the character specified, the grinders X, having chamfered edges.

336,584. PRESSURE-REGULATOR. GEORGE F. ORR, Philadelphia, Pa. Filed Dec. 22, 1885. (No model.)



Claim.—The combination, substantially as before set forth, with a shifter, of a weight (or spring) and a suspended float acting antagonistically on the shifter, the said float being partly filled with a liquid flowing into it from an independent fixed vessel, the level (or pressure) of the liquid in which is subject to changes.

336,585. APPARATUS FOR HEATING RAILWAY-CARS WITH GAS. JULIUS PINTSCH, Berlin, Prussia, Germany. Filed Sept. 11, 1884. (No model.) Patented in Belgium Sept. 8, 1884, No. 66,864; in France Sept. 8, 1884, No. 164,176; in England Sept. 8, 1884, No. 12,140, and in Austria-Hungary Mar. 23, 1886, No. 34,133 and No. 15,875



Claim.—1. In a heater for railroad-cars, the combination, substantially as herein described, of a hot-air chamber in communication with the interior of the car, a chamber, O^2, communicating with the outer air, and a burner arranged in said chamber O^2, with a tubular heat-radiator arranged in said hot-air chamber, one end of which radiator communicates with chamber O^2 by a funnel-pipe, *p*, located above the burner, and the other with the outer atmosphere, and a cold-air-admission chamber communicating with the hot-air chamber through a perforated partition-wall, for the purposes specified.

2. In a heater for railroad-cars, the combination, with an inclosing-casing in communication with the car, and a tubular heat-radiator provided with radiating ribs or flanges P' arranged therein, of a cold-air chamber and a perforated air-distributing diaphragm interposed between the radiator and cold-air chamber, having its perforations arranged to register with the spaces between the said ribs P' of the radiator, substantially as and for the purpose specified.

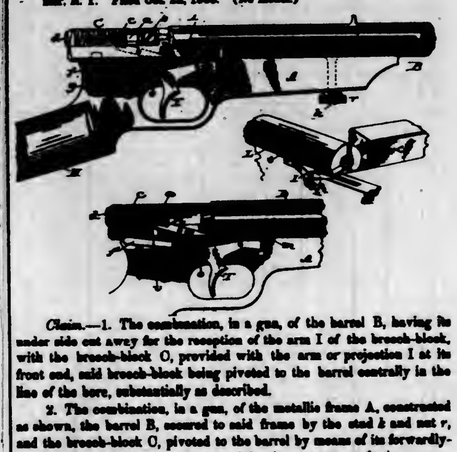
3. In a heater for railroad-cars, the combination, with an inclosing-casing and a heat-radiator arranged therein provided with radiating-ribs P', of a diaphragm provided with perforate and imperforate portions arranged below the radiator, the perforate portions thereof registering with the spaces between the ribs of the radiator, said diaphragm dividing said casing into air-heating and cold-air chambers, respectively, substantially as and for the purpose specified.

4. In a heating apparatus for railroad-cars, the combination, substantially as herein described, with an inclosing case or box in communication with the car, a ribbed tubular air-radiator, P P', arranged in said casing and communicating at one end with the outer atmosphere, a perforated diaphragm interposed between the radiator and one of the walls of the casing, and having its perforations arranged to register with the spaces intermediate of the ribs P' of the said radiator, and a cold-air chamber communicating with the space between the diaphragm and wall of the casing through a perforated partition, of a burner-chamber and burner in communication with the tubular heat-radiator and the atmosphere, for the purpose specified.

5. The combination, substantially as herein described, with the casing A, having a portion of its wall a perforated, the perforated diaphragm D, dividing the casing into two chambers, the heat-radiator P, arranged in one of said chambers, and the chamber O, communicating, through the perforations of wall *a*, with the other chamber, of a burner-chamber and burner communicating with the radiator through funnel-pipe *p*, said parts being constructed and arranged for operation for the purpose specified.

6. In a heater for railroad-cars, the combination, with an inclosing-casing and a heat-radiator provided with radiating-ribs P' arranged therein, of a diaphragm having perforate and imperforate portions arranged below the radiator, the perforate portions thereof registering with the spaces between the ribs of the radiator, said diaphragm dividing the casing into air-heating and cold-air chambers, respectively, and a cold-air-admission chamber in communication with the cold-air chamber of the casing through a perforated partition, substantially as and for the purpose specified.

336,586. BREECH-LOADING GUN. HENRY M. QUACKENBUSH, Herkimer, N. Y. Filed Oct. 22, 1885. (No model.)



Claim.—1. The combination, in a gun, of the barrel B, having its under side cut away for the reception of the arm I of the breech-block, with the breech-block C, provided with the arm or projection I at its front end, said breech-block being pivoted to the barrel centrally in the line of the bore, substantially as described.

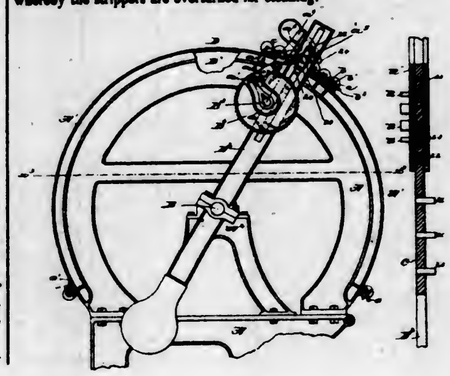
2. The combination, in a gun, of the metallic frame A, constructed as shown, the barrel B, secured to said frame by the stud *k* and nut *r*, and the breech-block C, pivoted to the barrel by means of its forwardly-projecting arm I, substantially as and for the purpose set forth.

3. In combination with the laterally-swinging breech-block C, having the firing-pin *a*, pivoted gear *c*, and spring *c* located therein, the trigger T, provided with the projection *o*, arranged to be thrown up into the slot in the under side of the breech-block, for the twofold purpose of releasing the firing-pin and securely locking the breech-block in position when the arm is fired.

4. The sliding extractor L, provided with the lip *u* and shoulder *t*, in combination with the barrel B, and the laterally-swinging breech-block C, having its arm I projecting beyond its pivot, whereby it is caused to operate the extractor when swung around, substantially as shown.

336,587. CARDING-MACHINE. WILLIAM H. RAMSEY, Lawrence, Mass. Filed Oct. 7, 1885. (No model.)

Brief.—In place of the usual top flats are employed segmental workers having end journal supported in stands on the arches, and having each a disk provided with pins to engage with projections on a sliding carriage on the stripper-arm and actuated by the usual cam-wheel, whereby the strippers are overturned for cleaning.

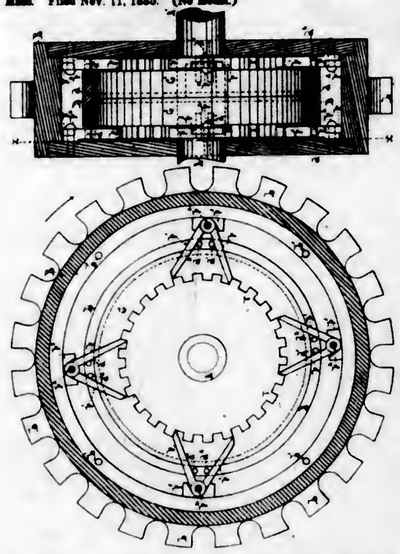


Claim.—1. The swinging frame, the toothed carriage, its toothed shank, and the gear B^4, provided with a cam to reciprocate the said shank and carriage, combined with the arches, the stands or bearings thereon, the segmental card-clothed workers, and the attached disks provided with pins to be engaged by the teeth of the carriage and to be partially rotated or inverted to place the card-clothed surface of the said workers in position to be stripped, substantially as described.

2. The swinging frame, the toothed shank and the toothed carriage, and the gear provided with a cam to reciprocate the said shank and carriage, the arches, the stands or bearings thereon, the segmental card-clothed workers and their attached disks provided with pins to be engaged by the toothed carriages and to be partially rotated positively to invert the said workers, combined with the stripper actuated by the cam of the said gear to strip the workers at the proper time, as and for the purpose set forth.

3. The swinging frame, the toothed shank and toothed carriage, and the gear B^4, provided with a cam to reciprocate the said shank and carriage, the arches, the stands or bearings thereon, the segmental card-clothed workers and their attached disks provided with pins to be engaged by the toothed carriages and to be partially rotated positively to invert the said workers, combined with the stripper actuated by the cam of the said gear B^4, and with the receiving-card to take the waste from the stripper, substantially as described.

336,588. CLUTCH FOR TRICYCLES. DAVID H. REES, Brooklina, Mass. Filed Nov. 11, 1885. (No model.)



Claim.—1. The combination of shaft A, ratchet *r*, box B, carrying two oppositely-inclined pawls, *p p'*, and a pawl-keeper, D, adapted to alternately release one pawl or the other from the ratchet as the box is revolved in one direction and the other, substantially as described.

2. The combination of shaft A, ratchet *r*, box B, carrying two or more pairs of oppositely-inclined pawls, *p p'*, and pawl-keeper D, adapted to release each set of pawls *p* or *p'* alternately from the ratchet as the box is revolved in one direction and the other, substantially as described.

3. The combination of shaft A, ratchet *r*, box B, carrying one or more gravity-pawls, *p*, and a pawl-keeper, D, adapted to move the pawl or pawls out of the path of the ratchet-teeth when brought against the pawl by the rotation of the box, and to revolve with the latter as such rotation is continued, substantially as described.

4. The combination of shaft A, ratchet *r*, box B, carrying two or more oppositely-inclined gravity-pawls, *p p'*, and a pawl-keeper, D, adapted to alternately move the pawls out of the path of the ratchet-teeth when brought against them by the rotation of the box in opposite directions, and to revolve in either direction with the latter as the rotation is continued, substantially as described.

5. The combination of shafts A A', ratchets *r r*, connected to them, respectively, box B, carrying two or more pawls, *p p*, opposite to and engaging with the ratchets, respectively, and the pawl-keeper D, common to the pawls of each ratchet, and adapted to move said pawls out of the paths of their respective ratchet-teeth when brought against them by the rotation of the box, substantially as described.

6. The combination of the shafts A A', ratchets *r r*, connected to them, respectively, box B, carrying two or more pairs of oppositely-inclined pawls, *p p'*, engaging with the ratchets, respectively, and the pawl-keeper D, common to the pawls of each ratchet, and adapted to alternately move said pawls *p* or *p'* out of the paths of their respective ratchet-teeth when brought against them by the rotation of the box in opposite directions, substantially as described.

7. The combination of the shafts A A', disks C C', connected thereto, respectively, and each having a cylindrical portion and attached ratchet *r*, box B, carrying two or more pawls, *p p'*, engaging with the ratchets, respectively, and the common pawl-keeper D, revolving around the peripheries of disks C C', and adapted to move said pawls out of the paths of their respective ratchet-teeth when brought against them by the rotation of the box, substantially as described.

8. The combination of the shafts A A', disks C C', connected thereto, respectively, and each having a cylindrical portion and attached ratchet *r*, box B, carrying two or more pairs of oppositely-inclined pawls, *p p'*, engaging with the ratchet, respectively, and the common pawl-keeper D, revolving around the peripheries of disks C C', and adapted to alternately move said pawls *p* or *p'* out of the paths of their respective ratchet-teeth when brought against them by the rotation of the box in opposite directions, substantially as described.

9. The combination of shafts A A', ratchets *r r*, connected to them, respectively, box B, carrying opposite one of said ratchets one or more pairs of oppositely-inclined engaging-pawls, *p p'*, and opposite the other of said ratchets one or more engaging-pawls, *p*, and the pawl-keeper D, adapted to support the pawl or pawls *p'* out of the path of their ratchet-teeth when brought against them by the rotation of the box, and to be locked in that position by the pawl or pawls *p* of the opposite ratchet, substantially as described.

10. The combination of shafts A A', ratchets *r r*, connected to them, respectively, box B, carrying opposite said ratchets, respectively, two or more pairs of oppositely-inclined engaging-pawls, *p p'*, and the pawl-keeper D, adapted to support alternately the pawls *p* or *p'* out of the path of their respective ratchet-teeth when brought against them by the rotation of the box B, and to be locked in either position by the opposite pawl or pawls, *p'* or *p*, substantially as described.

11. The combination of shafts A A', ratchet *r*, connected to shaft A, box B, carrying opposite said ratchet one or more pairs of oppositely-projecting engaging-pawls, *p p'*, a pawl-keeper, D, adapted to support one of said pawls out of the path of its ratchet-teeth when brought against it by the rotation of the box, and mechanism connected to the opposite shaft, A', and adapted to automatically lock said pawl-keeper in said supporting position, substantially as described.

12. The combination of shafts A A', carrying disk C C', attached thereto, respectively, each provided with ratchet-teeth *r r*, the pawl-keeper D, rotating around and overlapping said disks and having a limited rotary motion within the box B, by which it is carried around, the box B revolving around said disks and pawl-keeper, and pawls *p* or *p'*, governed by the limited motion of said pawl-keeper into or out of engagement with said ratchet-teeth, substantially as described.

13. The combination of the shafts A A', carrying disks C C', attached thereto, respectively, each provided with ratchet-teeth *r r*, and the single box B, adapted to be rotated by mechanism applied to its exterior surface, and carrying two sets of gravity-pawls, *p* or *p'*, adapted to engage with the ratchet-teeth of said disks, substantially as described.

336,589. BUTTON-FASTENER PACKING-CASE. FRANKIE H. REEDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed July 2, 1885. (No model.)



Claim.—1. The improved button-fastener packing-case herein described, it comprising three parallel rods arranged to loosely inclose the fasteners, substantially as shown, and means, substantially as described, for holding together the ends of said rods, substantially as set forth.

2. The improved button-fastener packing-case herein described, it comprising a set of parallel rods all formed of a single piece of wire bent substantially as shown and described, its free ends adapted to interlock with the body portion of the case, substantially as set forth.

336,590. PROCESS OF GRANULATING MOLTEN METAL. DANIEL J. REES, Montclair, N. J., assignor to Samuel Crump, same place. Filed July 2, 1884. (Specimens.)

Claim.—1. The process hereinbefore described of forming a composition consisting of a primary metal or an alloy and mercury, which consists in uniting the said metals and thoroughly and continuously agitating the combined mass until it assumes a powdered or granular form, substantially as and for the purposes set forth.

2. The process hereinbefore described of forming a composition consisting of a primary metal or an alloy and mercury, which consists in uniting the said metals by melting and removing the oxide from the surface and thoroughly and continuously agitating the combined mass until it assumes a powdered or granulated form, substantially as and for the purposes set forth.

336,591. SAD-IRON HEATER. JOHN REESE, St. Louis, Mo. Filed Jan. 17, 1885. (Model.)

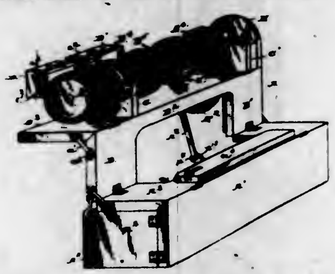


Claim.—1. A sad-iron rest composed of a pyramidal frame having open side faces, an open base to admit the products of combustion to the interior, and a recessed heel at the bottom of each side face, whereby the irons, when in place, close the openings in the side faces, substantially as described.

2. A sad-iron rest composed of a pyramidal frame having inclined open side faces, an open base to admit the products of combustion to the interior, recessed heel-rests at the bottom of the side faces and set at an angle thereto, and having apertures *d'*, and means for allowing the escape of the products of combustion from the interior of the frame, substantially as described.

3. A sad-iron rest composed of a pyramidal frame, A, having inclined open side faces, A', recessed heel-rests having apertures *d'*, and grooves *d* in the side faces, the entire frame being cast in one piece and adapted to be placed upon a stove or other heated surface, substantially as described.

336,592. MACHINE FOR BLACKING BOOTS AND SHOES. ROBERT T. ROGERS, Racine, Wis. Filed Mar. 12, 1885. (No model.)



Claim.—1. In a machine for blacking boots and shoes, the combination of a frame, a revolving shaft mounted therein and carrying a series of brushes, liquid-receptacles arranged above the plane of the brush-shaft and having a discharge-opening, a revolving stirrer-shaft arranged in said receptacles, belt-connections from the brush-shaft to the stirrer-shaft, and brushes *d*, projecting from the liquid-receptacles and adapted to convey the liquid from the exits therein and apply the same to the proper brushes on the revolving brush-shaft, as set forth.

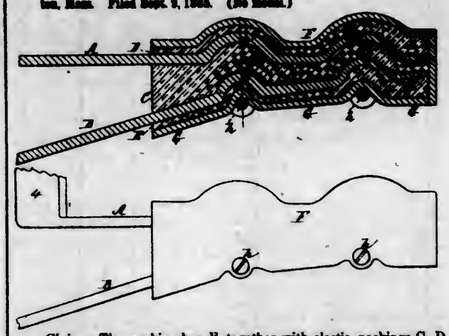
2. In a machine for blacking boots and shoes, the combination, with a frame, of a brush-shaft, a pulley on the end of the same, a pivoted arm carrying a pulley, a treadle, and belt-connections between the pulley on said arm and the treadle and said last-mentioned pulley and that of the brush-shaft, substantially as set forth.

3. In a machine for blacking boots and shoes, the combination, with a frame, of a brush-shaft and brushes, a pulley on one end of said shaft, a pivoted arm carrying a pulley, and a belt connecting said pulleys, substantially as described.

4. In a machine for blacking boots and shoes, the combination, with a frame, of a brush-shaft and brushes and a pulley on one end of said shaft, of a pivoted jointed arm carrying a pulley, a belt connecting said pulleys, and a pin for holding said arm rigid, substantially as set forth.

5. In a machine for blacking boots and shoes, the combination, with a frame comprising a front piece having hinged ends, a hinged top, and hinged supports extending upwardly from said top, of a hinged platform carrying the blacking mechanism, and driving-gearing for operating said mechanism, substantially as set forth.

336,593. ELASTIC SPRING-COUPLING. FREDERICK O. ROGERS, Boston, Mass. Filed Sept. 9, 1885. (No model.)



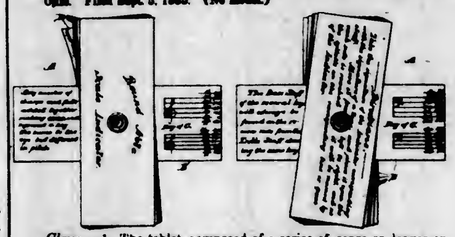
Claim.—The packing-box F, together with elastic packings C, D, and E and the metal bearing G, with curves in it and in the springs and packings to match, all fastened compactly together by the bolts A A, constructed substantially as shown and described, and for the purposes set forth.

336,594. LOOP AND BAR FOR HARNESS. JEROME W. ROFF, Elyria, Ohio. Filed Nov. 9, 1885. (No model.)



Claim.—In a combined rein and neck-strap holder, the raised or arched bar C, provided with the terminal loops, A A, the bottom parts, *a' a'*, of which are constructed to extend beyond the upper part a sufficient distance to admit of being fastened or riveted to the harness by means of the holes *a'' a''*, all as above set forth, and substantially as described.

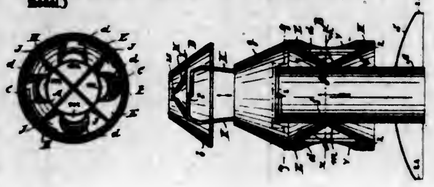
336,595. SCALE-INDICATOR. JAMES H. ROSEBRAUH, Cincinnati, Ohio. Filed Sept. 5, 1885. (No model.)



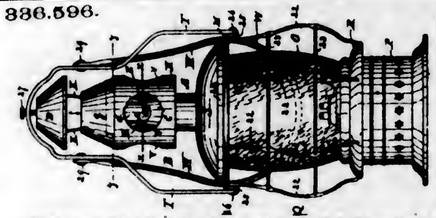
Claim.—1. The tablet composed of a series of cards or leaves arranged to turn independently, said cards being inscribed with staffs having signatures corresponding to the various musical keys, and having the notes designated in the correct places in the staffs by syllables, for the purpose set forth, substantially as described.

2. The tablet composed of a series of cards or leaves, said cards being inscribed on one side with staffs having signatures corresponding to the various keys, and having the notes written in the treble clef designated in the correct places in the staffs by syllables, the reverse sides of the cards or leaves having corresponding staffs in which the notes in the bass clef are similarly designated, substantially as described.

336,596. LANTERN. BENJAMIN SCARLIN, Clinton, Mass., assignor to himself and Charles Swinscoe, same place. Filed Dec. 26, 1885. (No model.)



336,596.



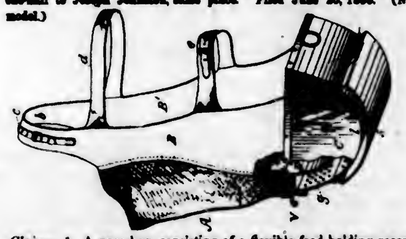
Claim.—1. In a lantern, a lamp and a suitable inclosure for the lamp, in combination with the chimney A, petticoat C, provided with the holes *m*, guard E, provided with the holes *d*, cone H, provided with the holes *c*, and conical top *g*, partitions J, cap D, guard N, and standards K, substantially as described.

2. In a lantern, the chimney A, head B, cap D, and guard N, in combination with the body C, a suitable top for said body, the lamp P, and means for locking or holding the same together or keeping the parts in proper position for use, substantially as described.

3. In a lantern, a lamp, and a suitable inclosure for the lamp, in combination with the base R, top S, chimney A, head B, cap D, and guard N, substantially as described.

4. In a lantern, the top S, chimney A, head B, cap D, guard N, body C, base R, lamp P, yoke T, ring M, rods 22, and screw 27, combined and arranged to operate substantially as set forth.

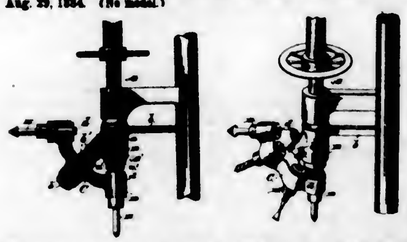
336,597. NOSE-BAG. GEORGE W. SCOVILL, Chicago, Ill., assignor of one-half to Joseph Johnston, same place. Filed June 20, 1885. (No model.)



Claim.—1. A nose-bag consisting of a flexible feed-holding receptacle, a feed box or trough provided with a slide-valve, and a perforated plate hinged to the bottom of the trough below the valve and between the feed-receptacle and the opening communicating with the feed box or trough, substantially as described.

2. A nose-bag or receptacle as described, combined with a feed-trough, C, and cheek-covers B B', as described, said trough provided with a shield or plate, *z*, partition P, gate *g*, and valve V, substantially as shown and described, and for the purpose set forth.

336,598. DRILL-PRESS. OSMELIA SMITH, Bridgeton, N. J. Filed Aug. 29, 1884. (No model.)
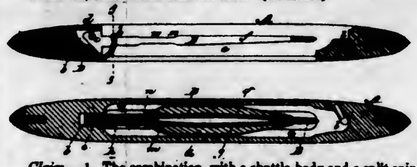


Claim.—1. As an improvement in drill-presses, a head or turret which has journaled therein a number of special drill-spindles, and is in turn journaled upon an obliquely-arranged arm that is secured upon and moves with the end of an ordinary drill-spindle, whereby by the rotative of said head upon its journal either of said special drill-spindles may be brought into line axially with said ordinary drill-spindle, and then caused to engage with and be rotated by the same, substantially as and for the purpose specified.

2. In combination with the spindle A, the sleeve B, journaled thereon and provided with the radial arm *b* and oblique arm *b'*, the head C, journaled upon said arm *b'*, and the special spindles D, journaled within said head at points equidistant from its center and in lines which are relatively oblique to its axis, substantially as and for the purpose shown.

3. In combination with the special spindles D of the obliquely-journaled head C, the spring-actuated bar A', fitted to and adapted to move longitudinally within the lower end of the spindle A and to automatically engage with the upper end, *d*, of each of said spindles D, substantially as and for the purpose specified.

336,599. LOOM-SHUTTLE. ABEL B. TAYLER, Wellesley, and JAMES P. THISSELL, Chelsea, assignors to said Tayler and George F. Fiskham, Wellesley, Mass. Filed Mar. 16, 1885. (No model.)

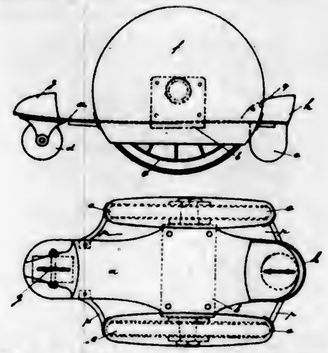


Claim.—1. The combination, with a shuttle-body and a split spindle pivoted therein, of a stationary wedge projecting upward into the cop-chamber near the heel or base of the spindle, in line with the axis thereof, and adapted to enter the split and expand the spindle when the latter is closed down into the shuttle, substantially as set forth.

2. The combination, with the shuttle-body A and its pivoted split spindle B, of the plate D, secured to the under side of the body A, and having at its front turned-up end a wedge, *h*, extending up into the cop-chamber near the heel or base of the spindle, in line with the axis thereof, and adapted to enter the split and expand the spindle when the latter is closed down into the shuttle, substantially as described.

3. The combination, with the shuttle-body A, of the spindle B, split from near the point entirely through the heel or base, and pivoted within the recess *b*, and the stationary expanding-wedge *h*, whereby when the spindle is closed down into the shuttle the sides of the heel will be forced outward against the adjacent walls of the recess *b*, substantially in the manner and for the purpose set forth.

336,600. VELOCIPEDE-SKATE. THOMAS THIERRY, San Francisco, Cal., assignor to Joseph B. Haggin, same place. Filed Apr. 30, 1885. (No model.)



Claim.—1. A velocipede-skate having two large metallic or wood driving-wheels, *c*, as constructed, their periphery surrounded by a rubber band, *o*, in combination with steel axle *i* and axle-strap *b*, and a small metal or wood guide-wheel, *d*, having its periphery surrounded by a rubber band, as hereinbefore described.

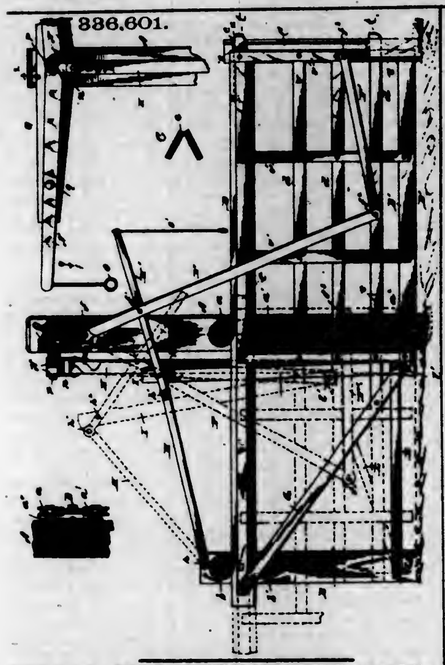
2. In a velocipede-skate, the combination of the metallic casing *f* and braces *p* with the metal or wood driving-wheels *c*, as constructed, as described and set forth.

3. In a velocipede-skate, the foot-plate *a*, adjustable socket *g*, for toe, adjustable heel-piece *h*, dust-shields *k*, and rubber buffer *s*, in combination with the metal or wood driving-wheels *c*, having rubber band *o*, metallic casing *f*, and braces *p*, steel axle *i*, axle-strap *b*, and metal guide-wheel *d*, having rubber band, substantially as described, and for the purposes set forth.

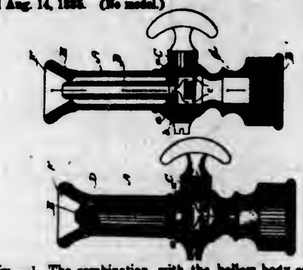
336,601. SLIDING GATE. LYCURGUS THURSTON and EDWIN R. CRANE, Findlay, Ohio. Filed Nov. 18, 1884. (No model.)

Claim.—The combination, with the gate and the posts A B C, of the lifting-bars pivoted to each other and to the bar L at their lower ends, one of said bars, K, being pivotally connected at its upper end with links pivoted to levers N on the main post A, the other lifting-bar, I, being pivoted at its upper end to a lever, H', which in turn is pivoted to a lever, H, secured at one end to post B, the lever H' being also pivoted to a lever, F, one end of which is pivoted to the main post and the opposite end pivoted to a lever, F', secured to the gate, substantially as and for the purpose set forth.

336,601.



336,602. JET AND SPRAY NOZZLE. EDWIN R. THURSTON, Bridgeport, Conn., assignor to the Eaton, Cole & Burnham Company, same place. Filed Aug. 14, 1885. (No model.)



Claim.—1. The combination, with the hollow body of the nozzle choked at its forward extremity and having the two-way cut-off plug, of the jet-pipe arranged axially in the body of the nozzle, contracted and slightly protruding beyond its forward opening, whereby a small annular exit is left for the escape of the water around the jet-pipe, substantially as specified.

2. A jet and spray nozzle having its forward end choked around a contracted jet-pipe arranged axially therein and protruding therefrom, in combination with a two-way cut-off seated in the body of the nozzle, whereby the water may be projected through the jet-pipe in a solid stream or around the latter and cut in diverging spray, substantially as set forth.

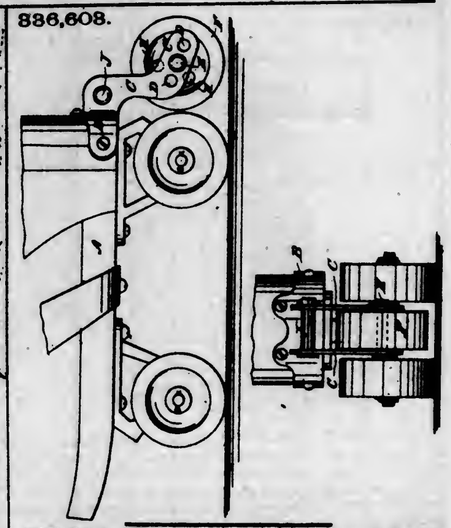
336,603. SAFETY-WHEEL FOR ROLLER-SKATES. ROSSITER I. TOWLE, Gunnison, Colo. Filed May 12, 1885. (Model.)

Claim.—1. The combination, with a roller-skate, of prongs projecting down from the rear end and having a series of apertures for receiving a pin, and of a roller mounted between the prongs on said pin, substantially as herein shown and described.

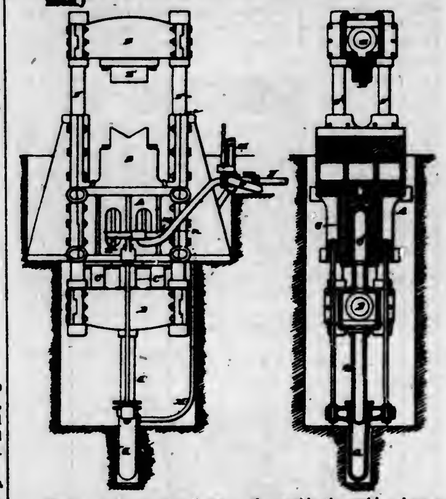
2. The combination, with a roller-skate, of prongs projecting down from the rear end and having a series of apertures, of a pin held in one pair of apertures, and of a roller mounted between the prongs on the said pin and having a series of eccentric apertures, substantially as herein shown and described.

3. The combination, with a roller-skate, of the prongs C, projecting downward from the rear end, the pin E in said prongs, the roller F on the pin, which roller has a series of eccentric apertures, and of the pin J, held in the prongs, substantially as herein shown and described.

336,608.



336,604. HYDRAULIC FORGING-PRESS. RALPH H. TWINNELL, Westminster, County of Middlesex, and JAMES PLANT and JOHN FERGUSON, Gloucester, County of Gloucester, England. Filed Apr. 11, 1885. (No model.)



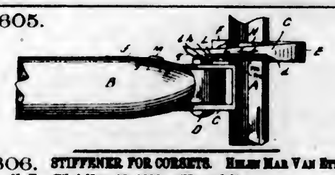
Claim.—1. In a hydraulic press, the combination, with a base or supporting frame, a stationary tool located therein, and a movable tool connected with a cross-head below the base, of a lifting-cylinder located beneath the said cross-head, depressing-cylinders located beneath the base, pipes connected with said depressing-cylinders, and with high and low pressure supply, and valves connected with said pipes, whereby a varying pressure can be exerted upon the movable tool at any part of the stroke, substantially as set forth.

2. In a hydraulic press, the combination, with the base or supporting frame and a stationary tool located thereon, of a movable tool secured to a cross-head above the base, a cross-head located below the base and rigidly connected with the upper cross-head by ties having a sliding motion in the base, a lifting-cylinder, and depressing-cylinders, all located beneath the stationary tool, substantially as set forth.

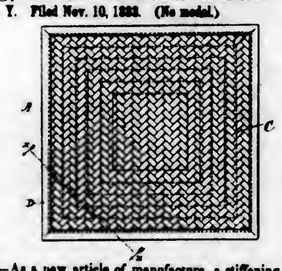
336,605. TONGUE-SUPPORT. ABEL D. TYLER, South Abington, Mass. Filed June 27, 1885. (No model.)

Claim.—In combination with an axle-tree of a buggy or carriage, &c., a spring-arm secured to the axle-tree, having a series of grooves, L, and a shaft hinged to said axle-tree and provided with a projection, M, substantially as and for the purpose specified.

336,605.



336,606. STIFFENER FOR CORSETS. HELEN MAR VAN ETTEN, Moravia, N. Y. Filed Nov. 10, 1883. (No model.)



Claim.—As a new article of manufacture, a stiffening material for corsets and other articles of wearing-apparel, consisting of a body formed of a sheet of phragmites and a facing of flexible material secured thereto by an adhesive substance and the body and facing quilted or sewed together throughout its entire extent, substantially as and for the purpose set forth.

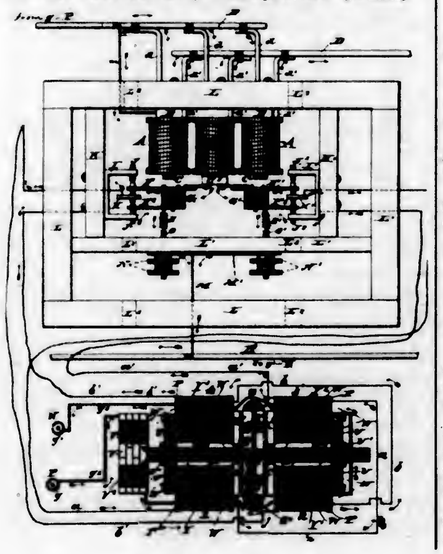
336,607. SEWING-MACHINE. WILLIAM H. WATERMAN, Providence, R. I. Filed June 26, 1885. (No model.)

Brief.—The construction involved is particularly designed for and adapted to the machine known in the market as the "What Cheer" sewing-machine for sewing leather, which is provided with a narrow horizontal work plate or arm containing a shuttle and pinions operated by a reciprocating rack.



Claim.—In a sewing-machine, as described, the combination, with the shuttle-box A, having seats or depressions for the gears and a longitudinal groove for the rack-bar, of said rack-bar working in said groove, shuttle-holder W, having an extended stud, G, pinion C, lying in the depression in box A, and having an extended collar, H, fitting over stud G and extending out past the surface of box A, where it is secured upon said stud, and the idler gear or pinion D, connecting rack E and pinion C, also lying in the depression in box A, substantially as set forth.

336,608. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. JOHN E. WATSON, Louisville, Ky. Filed Sept. 29, 1884. (No model.)



Claim.—1. An automatic current-regulator for dynamo-electric machines, composed of any suitable form of current-breaking, vibrating, and current-reversing mechanism connected in a derived circuit or shunt from the main line or lamp circuit, operated by one or more low-resistance electro-magnets connected in the main line or lamp circuit, having the derived or shunt circuit through the current-breaking, vibrating, and current-reversing mechanism so connected as to pass through a set of fine-wire coils wound on the outside of the coarse wire forming the field-magnet coils of any form of dynamo-electric machine, the fine wire on the outside of the field-magnets being wound in the same direction as the coarse wire and connected together in diagonally-opposite pairs to produce magnets of unlike polarity, but of the same polarity as is produced by the coarse wire, for the purpose of automatically regulating the current induced in the armature of such dynamo-electric machine and supplied to the lamp-circuit, as specified and set forth.

2. The field-magnet coils of a dynamo-electric machine made of a number of turns of coarse insulated copper wire connected in series, so as to make like and unlike poles opposite each other, and having the coarse wire a part of the main or lamp circuit, and having wound on their outside and in the same direction a greater number of turns of fine wire connected together in diagonally-opposite pairs and supplied from a derived or shunt circuit from the main line or lamp circuit through any suitable form of current-breaking, vibrating, and current-reversing mechanism operated by one or more low-resistance electro-magnets connected in the main line or lamp circuit, for the purpose of automatically regulating the current induced in the armature of the dynamo-electric machine and supplied to the lamp-circuit, as specified and set forth.

3. A dynamo-electric machine having its field-magnet coils formed of a number of turns of coarse insulated copper wire connected in series and in the main line or lamp circuit, so as to make the coarse wire a part of the main line or lamp circuit, with a greater number of turns of fine wire wound in the same direction on the outside of the coarse wire, and so connected together as to make the iron cores of the field-magnets the same polarity as the coarse wire, but connected together in diagonally-opposite pairs and supplied from a derived or shunt circuit from the main line or lamp circuit, in combination with any suitable form of current-breaking, vibrating, and current-reversing mechanism composed of one or more low-resistance electro-magnets connected in the main line or lamp circuit operating such mechanism,

336,609. DEVICE FOR MOVING CARS. EDWARD P. WEAVER, Shelbina, Mo., assignor of one-half to Taylor Thompson and R. E. Bodine, both of same place. Filed Jan. 2, 1886. (No model.)



Claim.—1. The lever C, having its end bifurcated to fit on a car-axle and provided with a gripping-jaw, I, and a pivoted eccentric, D, said parts being arranged to operate substantially as described.

2. The lever C, provided with the double-faced serrated jaw I, arranged to bear against the side of a car-wheel, and the double-pivoted eccentric D, arranged to engage with the periphery of the wheel, substantially as and for the purpose set forth.

3. In combination with the lever C, provided with the gripping-jaw I and the pivoted eccentric D, the rod *f f'* and spring *h*, all arranged to operate substantially as shown and described.

4. In combination, the lever C, provided with the jaw I and the pivoted eccentric D, and a rod, *f*, for moving said eccentric, substantially as herein set forth.

336,610. CURTAIN-FIXTURE. LOUIS WEBER, Brooklyn, N. Y. Filed Dec. 2, 1884. (No model.)

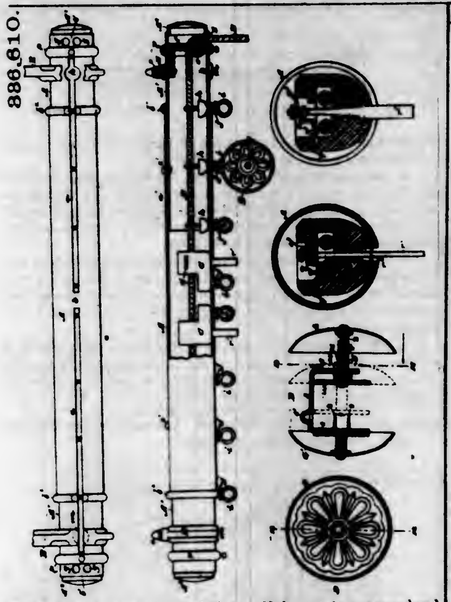
Claim.—1. A bar for a certain-fixture, comprising a tube having a slot, *a*, in its under side, which does not extend to the end of the tube, and an enlargement, *k*, in said slot, substantially as and for the purposes set forth.

2. The combination, with a tubular curtain-bar provided with a slot, *a*, and an enlargement, *k*, of said slot, of a cut-ring bracket, E, arranged to cover said enlargement *k*, all constructed and arranged substantially as and for the purposes set forth.

3. The combination, with a tubular slotted curtain-bar and a cut-ring bracket constructed and arranged substantially as shown, of the frame for the cord-bearing sheave or sheaves, and the said sheaves arranged substantially as shown, whereby the curtain may be drawn beyond the bracket, as set forth.

4. As a means for attaching the master-ball to and detaching it from the operating-cord, a clamp comprising a movable jaw arranged over the cord where the latter passes through the master-ball, and a

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shouldered stem rotatively attached to said jaw at its upper end and depending through an aperture in the ball, and the slot in the curtain-bar, the shoulder on said stem being arranged to engage a shoulder on the master-ball when the stem is drawn down and the clamping effected, substantially as set forth.

5. As a means for attaching the master-ball to and detaching it from the operating-cord, the combination, with the master-ball provided with an aperture for the passage of the said cord and a hole for the passage of the operating-rod provided with lateral enlargements r^2, of the cord-clamp, and the operating-rod connected loosely to said clamp and provided with shoulders r^2, all constructed and arranged to operate substantially as shown and specified.

6. In a curtain-fixture, the combination of the slotted curtain-bar, the operating-cord mounted therein, the master-ball C, provided with an aperture for the passage of the operating-cord, and a hole for the operating-rod that has lateral enlargements r^2, the cord-clamp *q*, provided with teeth, or their specified equivalents, to engage the operating-cord, and the operating-rod coupled to the clamp-lever and provided with shoulders r^2, and arranged to extend down through the slot in the bar, all constructed and adapted to operate substantially as set forth.

7. The curtain-clamp D, comprising the bent plate or frame *s*, provided with prongs *t*, and an elongated bearing, *u*, the pin *x*, the stem *v*, provided with the grooves *y* and *z*, arranged as shown, the disk or plate *w*, mounted on the one end of the stem *v*, and the plate G, secured to the other end of said stem to form a screen for the mechanism and to furnish a convenient means for operating the clamp, all substantially as set forth.

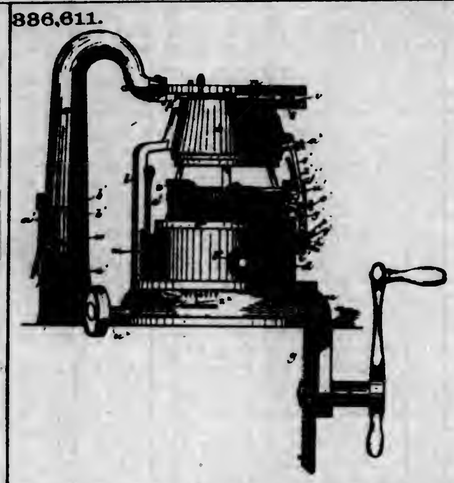
336,611. KNITTING-MACHINE. GEORGE A. WHITE, Boston, Mass. Filed Dec. 22, 1884. (No model.)

Claim.—1. The combination of the upper needle-cylinder, the rotary upper cam-cylinder inclosing and supporting said needle-cylinder, a fixed segmental bar over the needle-cylinder provided with sliding detents engaged with the needle-cylinder, the thread-guide rotating with the needle-cylinder, and cams also rotating with the cam-cylinder, whereby each detent is displaced in advance of the thread and replaced after the thread carried by the thread-guide has passed, as set forth.

2. The combination of the stationary lower needle-cylinder, the lower cam-cylinder rotating thereabout, the upper cam-cylinder, a connecting device, substantially as described, whereby the upper cam-cylinder is detachably connected to and rotated by the lower cam-cylinder, the upper needle-cylinder supported wholly by the upper cam-cylinder and entirely disconnected from the lower needle-cylinder, an independent fixed bar over the upper needle-cylinder, and devices, substantially as described, whereby the upper needle-cylinder is engaged with said bar, and thereby made stationary or prevented from rotating with the cam-cylinder supporting it, as set forth.

3. The combination of the upper needle-cylinder, the segmental bar *n*, having the sliding detents *p*, whereby the upper needle-cylinder may be held stationary, the swiveled standard supporting said bar, the locking

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devices for said standard, and the spring whereby said standard is raised and rotated when unlocked, as set forth.

4. The upper cam-cylinder having the arm or standard *l*, combined with the lower cam-cylinder having the eccentric projection *m*, formed to engage with the lower end of said standard, and the lever *o'*, pivoted to the standard and bearing on the projection *m*, as set forth.

5. The combination, with the lower needle-cylinder and its needles and operating mechanism for the latter, of the cam-cylinder provided with a projection, the lever *g'*, pivoted to said projection and provided with the latch-opener *k'*, which enters the eyes of the needles, the shoe or feeder *m'*, which bears against the front sides of the needles, means, substantially as described, for pressing the lever and its attachments inwardly toward the needles, and means whereby the shoe or feeder may be adjusted toward or from the lever to adjust the latch-opener relatively to the eyes of the needles, as set forth.

6. The combination, with the lower cam-cylinder provided with a projection, the lower needle-cylinder and its needles, of the slotted arm *g'*, pivoted to the projection on the cam-cylinder, and provided at its upper end with the latch-opener *k'*, the spring *l'*, whereby the lever *g'* is pressed upwardly, and the hook *p'*, projecting through the slot in the arm, and the elastic metal strip on said lever engaged with said hook, as set forth.

7. The combination, with the upper needle-cylinder, its needles, and their operative mechanism, of the upper cam-cylinder, the arm *s'*, pivoted thereto, and the latch-opener secured to said arm and consisting of the diagonal finger pointed at its lower end and having the feed *v'* at its upper end, as set forth.

8. The combination, with the upper needle-cylinder, its needles, and their operating mechanism, of the upper cam-cylinder, the lever *s'*, pivoted thereto, the latch-opener *u'*, secured to the lever and composed of the diagonal finger pointed at its lower end and having the feed *v'* at its upper end, and the arm or guard *w'*, also secured to the lever, and having an inclined edge, *y'*, which is substantially parallel with the diagonal latch-opener, as set forth.

9. The combination, with the upper and lower needle-cylinders, their needles and the operating mechanism for said needles, of the upper and lower cam-cylinders, the latch-opener for the lower needles, a lever pivoted to the lower cam-cylinder, supporting said latch-opener, as described, the lever *s'*, pivoted to the upper cam-cylinder, the latch-opener *u'*, formed as described and secured to said lever *s'*, and the arm or guard *w'*, also secured to the lever *s'*, and having the inclined surfaces *y'* and *s'*, as set forth.

10. The combination of the upper needle-cylinder and its needles, the upper cam-cylinder having the fixed ledge or shoulder k^3, the adjustable three-sided block g^3, the fixed incline o^3, co-operating with one side of said block, the short fixed block n^3, whereby the upper needles are depressed after being raised by the incline o^3, the pivoted tongue l^3, and the adjustable block i^3, against which the tongue bears, as set forth.

11. The upper cam-cylinder provided with the fixed ledge or shoulder k^3, the adjustable block g^3, the pivoted bridge f^3, and the adjustable block i^3, all forming continuations of the ledge k^3 when the blocks g^3 i^3 are depressed, as set forth.

12. The combination of the upper needle-cylinder and its needles, the upper cam-cylinder having the externally-toothed vertically-movable ring on its outer surface, and the adjustable block i^3 on its inner surface, the segmental slide s^3, fitted to move in the toothed ring, a

spring, r^3, connecting said slide to the adjustable block i^3, and means, substantially as described, whereby the tongued ring may be raised and lowered, as set forth.

13. The combination of the lower needles, the lower needle-cylinder, and the lower cam-cylinder, provided with slots b^3, and having the needle-path composed of the horizontal groove 3, the inclined grooves 4 5 6 4' 5' 6', and the ledge or shoulder j^3, with the blocks f^3, and the loose blocks or traps resting on said blocks f^3, and on the shoulder j^3, and normally obstructing the grooves 6 6', and provided with pins c^3, entering said slots b^3 in the lower cam-cylinder, whereby said traps are enabled to move or yield upwardly but not laterally, and are permitted to assume their groove-obstructing positions by gravitation, as set forth.

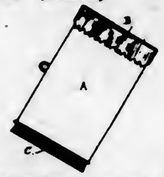
14. The combination of the lower needle-cylinder and the rotating vertically-movable lower cam-cylinder having the grooved ring m^3, attached to its lower edge, with the non-rotating vertically-movable sectional ring n^3 on the lower needle-cylinder, provided with a tongue fitting the groove of the ring m^3, and provided with studs o^3, the band q^3, having inclined slots receiving said studs, and mechanism, substantially as described, whereby said band may be rotated to raise and lower the ring m^3 with the lower cam-cylinder, as set forth.

15. The combination of the lower cam-cylinder having the grooved ring m^3, the lower needle-cylinder having vertical slots p^3, the sectional ring n^3 on the exterior of the needle-cylinder, provided with a tongue fitting the grooved ring m^3, and provided with studs o^3, projecting inwardly through the vertical slots in the needle-cylinder, the rotary band q^3 within the needle-cylinder, having inclined slots receiving the studs o^3, the base a, and the rock-shaft a^3, journaled in the base, and having an arm engaged with the band q^3, as set forth.

16. The combination, with the vertically-movable lower cam-cylinder, e, of the vertically-slotted needle-cylinder, the sectional tongued ring on the outside of said needle-cylinder engaged with the grooved ring of the cam-cylinder, and having studs o^3, the rotary band q^3 within the needle-cylinder, having inclined slots receiving the studs o^3, means, as described, whereby said band may be rotated, an indicating-finger connected with said band, the base a, provided with marks and graduations on the exterior of the base co-operating with said finger to indicate the extent of the vertical adjustment of the cam-cylinder, as set forth.

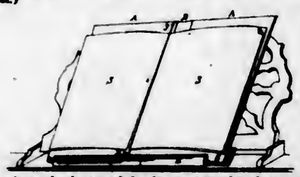
17. The lower needle-cylinder having the needle-holding slots in its periphery, the peripheral enlargement a^3, through which said slots pass, and the continuous internally-grooved ring b^3, secured to said enlargement and crossing the slots therein, as set forth.

336,612. SLATE-CLEANER. FREDERICK WITTRAM, San Francisco, Cal. Filed Nov. 21, 1885. (No model.)



Claim.—The herein-described device, consisting of the water-holding tube A, the porous rubber B in one end, and the non-porous rubber C in the other end, the former constituting a moist rubber, and the latter serving for a harder drying rubber and eraser, substantially as set forth.

336,613. MUSIC SHEET AND BOOK SUPPORTER FOR PIANOS AND ORGANS. HARVEY WORRALL, Topeka, Kans. Filed May 27, 1885. (No model.)



Claim.—A music sheet and book supporter for pianos and organs, consisting of the boards A, connected by the union B, in combination with the channeled ledge C, and the wire i, pivoted at one end and adapted to engage in a catch at the other end, the whole constructed, combined, and operating substantially as and for the purpose hereinbefore described.

336,614. TYPE-WRITING MACHINE. GEORGE W. N. YOST, New York, N. Y., assignor to the American Writing Machine Company, of New York. Filed May 16, 1883. (No model.)

Claim.—1. The combination of a type-writer key-lever, a strap provided with a tongue, a^2, adapted to press upon said key-lever, the stem of a finger-key split lengthwise in its lower end, and a connecting-link



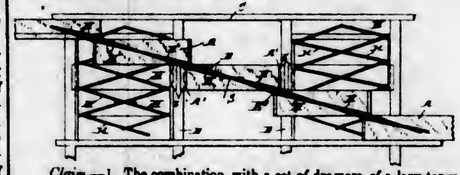
provided with a partition, b^2, and a splint, b^3, therein, and springy branches b^4, substantially as and for the purpose described.

2. The combination of a type-writer key-lever, a strap secured to said lever, the stem of a finger-key having its lower end split lengthwise, and a connecting-link provided with a central partition split lengthwise, and springy branches carrying the two ends of said split partition, substantially as and for the purpose set forth.

3. The combination of the cylindrical stem of a finger-key, a disk, D', secured to the end thereof, and a disk, D^2, having characters printed thereon, with a concave glass cover, D^3, having its bottom recessed, and a cylinder, D^4, having its edges turned in, substantially as and for the purpose described.

4. The combination of a type-writer key-lever, a strap secured to said lever, the stem of a finger-key, and a connecting-link having two springy branches, b^4, adapted to clasp tightly the stem of a finger-key, substantially as and for the purpose set forth.

336,615. EXHIBITION-DRAWER. ABE LINCOLN ADAMS, Bridgeport, Conn. Filed July 5, 1884. (No model.)



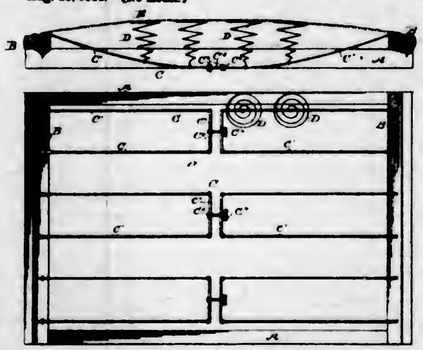
Claim.—1. The combination, with a set of drawers, of a lazy-tongs system of levers at each end thereof, one lever in each pair being secured to its corresponding drawer by nails or screws H, as shown, whereby the drawers are securely held together, but may be opened out until the edge of each drawer rests on the edge of the one behind it.

2. The combination, substantially as hereinbefore set forth, of the drawers, the operating-levers at both ends thereof, one lever in each pair being secured to a drawer, and suitable frame-work in which the drawers are adapted to slide.

3. The drawers, operating-levers at the ends thereof, and slides engaging the middle drawer and having a turn-button, which permits the drawers to be attached or detached, in combination with suitable frame-work to which the slides are secured and into which the drawers are adapted to slide.

4. Drawers A, having pin A^2 and operating-levers secured thereto, as at H, and slide E, having slots E^2 E^3, and turn-button F, in combination with suitable fixtures to which the slides are secured, as shown.

336,616. BED-BOTTOM. CHARLES L. ARMS, Ridgeland, Ill. Filed Aug. 28, 1885. (No model.)

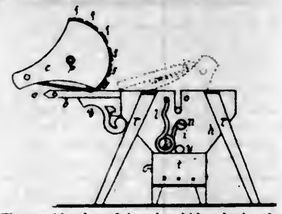


Claim.—1. In a bed-bottom, the combination, with the frame A B A A B, woven-wire fabric E, and springs D, of supports C, composed of sections C', connected by yokes C^2 and adjusting-bolts C^3, substantially as shown and described.

2. In a bed-bottom, the combination, with the frame A B A B, woven-wire fabric E, and springs D, of downwardly-directed supports C, composed of sections C', connected in pairs by yokes C^2, and adjusting-bolts C^3, substantially as shown and described.

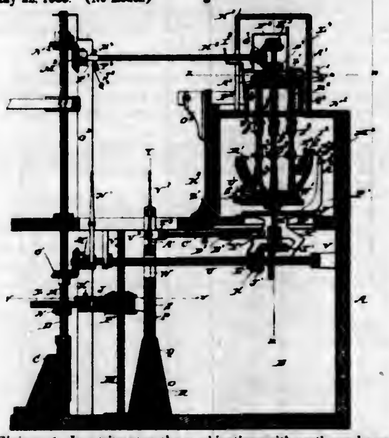
3. In a bed-bottom, the combination, with the frame A B A B, woven-wire fabric E, and springs D, of supports C, composed of sections C', applied by their outer ends to the upper side of the end rails and by their inner ends to the adjustable yokes C^2, substantially as shown and described.

336,617. WASHING-MACHINE. SAMUEL T. ARTHUR, Creek, De Witt County, Ill. Filed Dec. 19, 1884. (No model.)



Claim.—The combination of box A, rubbing device f e, pins p, and springs i, provided with coils n and k, bands l, and cranks m, as and for the pur-pose set forth.

336,618. TRITURATOR. ALBERT BABENDERER, Baltimore, Md., assignor of one-half to Fred L. Babendrier, Washington, D. C. Filed May 22, 1885. (No model.)



Claim.—1. In a triturator, the combination, with pestles and means for revolving the same, of a mortar, mortar-support, and means for revolving and longitudinally reciprocating said mortar-support, as and for the purpose shown and set forth.

2. In a triturator, the combination, with the pestles and means for revolving the same, of a mortar, mortar-support, and means for longitudinally reciprocating said mortar and mortar-support, and means for revolving them in a direction opposite to the direction of the revolution of the pestles, as and for the purpose shown and set forth.

3. In a triturator, the combination of a horizontal revolving shaft, a frame mounted upon the same, means for imparting to said frame a longitudinally-reciprocating motion with relation to the shaft, a shaft journaled vertically in said frame and provided at its upper end with a mortar-supporting disk and at its lower end with a pinion, a bevel-gear meshing with the said pinion mounted upon the horizontal shaft and connected with the sliding frame so as to reciprocate with the latter, a mortar supported upon the disk of the vertical shaft, and pestles projecting into the mortar, as and for the purpose shown and set forth.

4. In a triturator, the combination of a horizontal shaft provided with a pinion rotating therewith and free to slide thereon, a frame sliding upon the shaft, a vertical shaft journaled in the frame and having a pinion at its lower end meshing with the pinion upon the horizontal shaft a vertically-adjustable lever, mechanism for rocking the latter, a pitman connecting the upper end of the lever with the sliding frame, a mortar secured upon the vertical shaft at its upper end, and pestles projecting into the mortar, as and for the purpose shown and set forth.

5. In a triturator, the combination of a mortar, pestles projecting into the mortar, a sliding frame provided with a support for the mortar, means for revolving said support, a vertical oscillating lever, operating mechanism for the latter, and an extensible rod or pitman connecting the said lever with the sliding frame, as and for the purpose shown and set forth.

6. In a triturator, the combination of the mortar, pestles projecting into the mortar, the sliding frame carrying the mortar-supporting disk, means for revolving said disk, the oscillating operating-lever having at its upper end a pivoted arm or lever-handle, the latter carrying at its lower end a pin entering through a slot in the upper end of the operating-lever, and a rod or pitman connecting the operating-lever and the sliding frame and bifurcated and transversely perforated at its rear end for the reception of the connecting-pin, as and for the purpose shown and set forth.

7. In a triturator, the combination of the vertical main shaft, a cam-grooved disk adjustable upon the same, a pair of standards or uprights, a box vertically adjustable upon the same, a slide arranged to reciprocate in the said box and having a pin engaging the cam-grooved disk, a pair of brackets, an oscillating lever vertically adjustable between the same and having a slot connected with the front end of the reciprocating slide, a longitudinally-reciprocating frame having a revolving vertical shaft, a mortar secured upon the said shaft, pestles entering said mortar, and a rod or pitman connecting the lever with the reciprocating frame, as and for the purpose shown and set forth.

8. In a triturator, the combination of a casing or frame, a horizontal revolving shaft mounted in the same, a mortar, pestles projecting into the said mortar, a sliding frame having a vertical shaft supporting the mortar, intermediate gearing whereby it is operated by the horizontal shaft, a plate at the upper end of the reciprocating frame extending through a slot in the top of the outer casing, and supporting slides or tracks for the said plate secured upon the top of the frame, as and for the purpose shown and set forth.

9. The combination, with a mortar and pestles, of a mortar-supporting disk having radial dovetailed slots and clamping devices consisting of dovetailed blocks having laterally-extending flanges, pivoted clamping-levers, wedge-shaped cam-plates having studs at the rear ends of the said blocks, and cam-levers pivoted on the said studs with their wedge-shaped heads and bearing against the under sides of the rear ends of the clamping-levers, as and for the purpose shown and set forth.

10. The combination, with a mortar and pestles, of a mortar-supporting disk having radial dovetailed recesses, dovetailed blocks sliding in the said recesses, clamping-levers pivoted upon the upper faces of the said blocks, and cam devices bearing between the outer ends of the blocks and of the clamping-levers, as and for the purpose shown and set forth.

11. A mortar-scraping device for triturators, consisting of a foot or upright, a vertically-extensible rod, a laterally-extensible arm at the upper end of the latter having an upwardly-extending stud, a pivoted rod at the outer end of the said arm having a scraper-socket at its lower end, a scraper, and a spring interposed between the upper end of the said rod and the stud extending upward from the laterally-extensible arm, as and for the purpose shown and set forth.

12. In a triturator, the combination, with the pestles and mortar and a revolving support for the said mortar, of an upright having a vertically-extensible rod provided with a laterally-extensible arm, a pivoted scraper-socket at the outer end of the latter, a scraper in the socket, and a spring forcing the scraper and socket against the side of the mortar, as and for the purpose shown and set forth.

13. In a triturator, the combination of a mortar and pestles and an inclosing-casing having hinged sides and a door hinged to one of the said sides, all being lined with sheet-rubber, as and for the purpose shown and set forth.

14. In a triturator, the combination, with a mortar, a sliding frame having a mortar-support, means for reciprocating the frame, and means for revolving the mortar-support, of a gang of pestles and means for revolving each upon its own axis in a direction opposite to that in which the mortar revolves, as and for the purpose shown and set forth.

15. In a triturator, the combination, with a mortar and means for revolving the same, of a gang of pestles and means for revolving each upon its own axis, as and for the purpose shown and set forth.

16. In a triturator, the combination, with a mortar and means for reciprocating and revolving the same, of a gang of vertically-sliding pestles having pinions at their upper ends, springs for forcing each of the pestles downward, a pinion centered between the pinions of the pestles and meshing with the same, and means for revolving the said pinion in the same direction as the mortar, as and for the purpose shown and set forth.

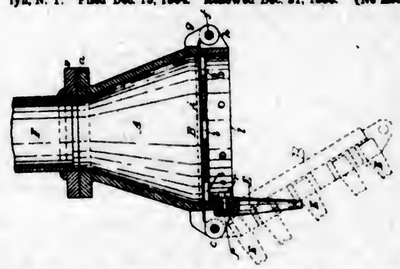
17. In a triturator, the combination of a mortar, a hinged or tilting pestle-carrying frame above the mortar, pestles journaled in the said frame, the pestle-operating shaft extending rearwardly from the said frame and having a miter-gear at its rear end, a vertical operating-shaft provided with a corresponding miter-wheel, a fixed upper half-box for the rear end of the pestle-operating shaft, a pivoted arm or lever forming a lower half-box for the same, and a latch or catch to retain the arm with the box in its raised or operative position, as and for the purpose shown and set forth.

18. In a triturator, the combination of a mortar, a pestle-carrying frame above the mortar, a series of pestles having spindles mounted and arranged to slide vertically in the same and provided with collars, coiled springs within the frame upon the pestle-spindles bearing against the collars and forcing them in a downward direction, gear-wheels sliding upon said spindles and having pins engaging vertical grooves in the lat-

ter, and mechanism for actuating the said gears so as to rotate all of the spindles simultaneously in one direction, as and for the purpose shown and set forth.

19. In a triturator, the combination of a mortar, a pestle-carrying frame above the mortar, pestles having their spindles mounted and arranged to slide vertically in the same, springs arranged to force the pestles downward, collars secured adjustably upon the pestle-spindles below the casing to limit the upward motion of the pestles, and cups at the lower ends of the said collars for catching lubricating material, as and for the purpose shown and set forth.

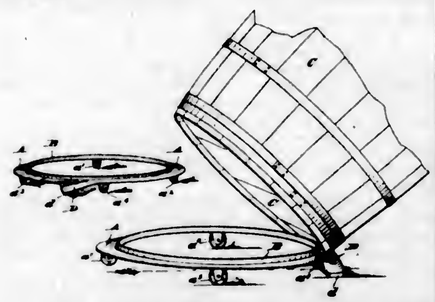
336,619. DREDGING APPARATUS. GARDNER F. BADGER, Brooklyn, N. Y. Filed Dec. 15, 1884. Renewed Dec. 31, 1885. (No model.)



Claim.—1. A combined digger and strainer for excavating or dredging purposes, constructed substantially as herein shown and described, consisting of a hollow metallic shell adapted for attachment to a suction-pipe, and having secured to its lower rim a flanged perforated plate carrying projecting teeth, as set forth.

2. In a dredging or excavating apparatus, the combination, with the suction-pipe of a pump, of a perforated plate carrying removable projecting stirring or digging teeth, substantially as herein shown and described, said plate being secured on the lower end of the pipe, as set forth.

336,620. BARREL-TRUCK. JOHN M. BENNETT, Cincinnati, Ohio, assignor to Samuel C. Tatum & Co., same place. Filed Sept. 7, 1885. (No model.)



Claim.—1. A barrel truck or carriage having a discal or circular frame mounted on wheels and provided with a inclined plane or portion located at the periphery of the truck-carriage, the length of the incline being nearly coincident with the periphery of said carriage, substantially as and for the purposes specified.

2. The platform A, mounted on casters and provided with inclined plane D, provided with frictional portion *d*, substantially as and for the purposes specified.

3. The platform A, provided with casters a' a^3 a^3 a^4 and inclined portion D, substantially as and for the purposes specified.

4. The combination of the platform mounted on wheels and provided with flange B and inclined portion D, substantially as and for the purposes specified.

5. The platform A, mounted on casters a' a^3 a^3 a^4, the casters a^3 a^3 being farther down from the platform than casters a' a^4, caster a^3 being opposite caster a^3, and caster a' being opposite caster a^4, and incline D, the caster a^4 being in the vicinity of the said incline, substantially as and for the purposes specified.

6. The platform mounted on wheels and provided with the double incline, substantially as and for the purposes specified.

7. The combination of the platform A, flange B, casters a' a^3 a^3 a^4, and inclined portion D, with floor-bearing, substantially as and for the purposes specified.

336,621. FILTER. ADOLF BERGER, Duisburg, Prussia, Germany, assignor to E. Matthes & Weber, same place. Filed July 23, 1885. (No model.) Patented in Belgium May 26, 1885, No. 69,021; in France May 26, 1885, No. 169,168, and in England May 26, 1885, No. 6,414.

A soluble and an insoluble substance, which when moistened will set or agglomerate, like hydraulic cement and lime, which being burned produces a porous body.

Claim.—The described mode of producing porous bodies, which consists in combining an insoluble substance or substances that will agglomerate, set by the admixture therewith of a liquid, with a soluble substance or a solution of such, from which latter the soluble substance will separate in the process of agglomeration, or setting, or drying, allowing the compound to agglomerate or set or dry, and then removing the soluble substance by lixiviation, substantially as and for the purpose specified.

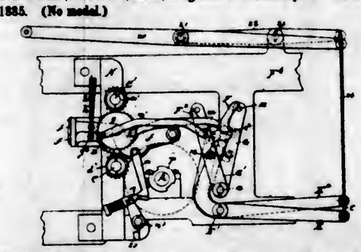
336,622. PURIFYING AND CRYSTALLIZING ESSENTIAL OILS. CHARLES L. COFFIN, Detroit, Mich. Filed Nov. 16, 1885. (No specimens.)

Claim.—1. The process herein described of treating essential oils, consisting in subjecting said oils in a close vessel to air-pressure and the influence of an electric current, as herein set forth.

2. The process herein described of treating essential oils, the same consisting in distilling said oils *in vacuo* while exposed to the influence of an electric current, as herein set forth.

3. The process herein described of treating essential oils, the same consisting in forming an emulsion of said oils with water, subjecting said emulsion to the influence of an electric current, then subjecting the said emulsion to air-pressure in a close vessel, and finally distilling the same *in vacuo*, as herein set forth.

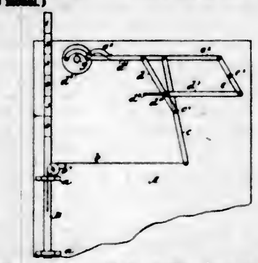
336,623. MECHANICAL MOVEMENT. GEORGE CROMPTON and HORACE WYMAN, Worcester, Mass., assignors to said Crompton. Filed Feb. 24, 1885. (No model.)



Claim.—1. The main lever, a secondary lever fulcrumed thereon, toothed cranks, means, substantially as described, for connecting the said cranks and secondary lever, and means for actuating the said cranks, combined with the prime lever, the fulcrum-lever on which it is pivoted, and actuating mechanism for the fulcrum-lever, and means to connect the main lever to the prime lever, substantially as set forth.

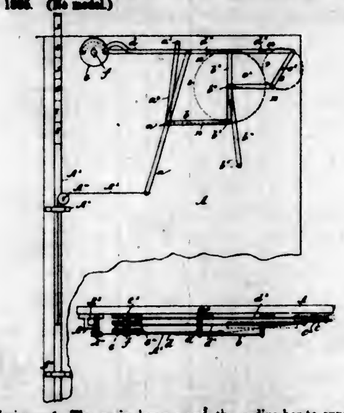
2. The main lever, a secondary lever mounted thereon, an auxiliary main lever, toothed cranks and means to partially rotate them, and mechanism, substantially as described, interposed between said cranks and levers to operate them, combined with the prime lever, the fulcrum-carrying lever on which the prime lever is mounted to turn, and means to connect the prime and fulcrum-carrying levers, respectively, with the main and auxiliary main levers, substantially as described.

336,624. MECHANICAL MOVEMENT. GEORGE CROMPTON and HORACE WYMAN, Worcester, Mass., assignors to said Crompton. Filed Sept. 11, 1885. (No model.)



Claim.—The main lever, and the auxiliary lever on which the main lever has its fulcrum, and the link or slide to move the fulcrum of the said auxiliary lever, combined with means, substantially as described, to move the said link or slide and the said main and auxiliary levers, as and for the purpose set forth.

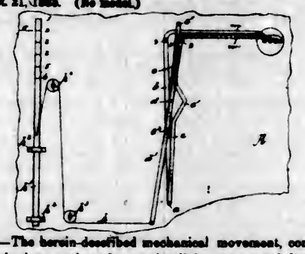
336,625. MECHANICAL MOVEMENT. GEORGE CROMPTON and HORACE WYMAN, Worcester, Mass., assignors to said Crompton. Filed Sept. 11, 1885. (No model.)



Claim.—1. The main lever *a* and the radius-bar to support the pivot for the said main lever, link *b*, the second lever, and the radius-bar to hold the pivot or fulcrum for the second lever, combined with the two connecting-rods joined with the main and second levers, and with means, substantially as described, to move the said connecting-rods, as set forth.

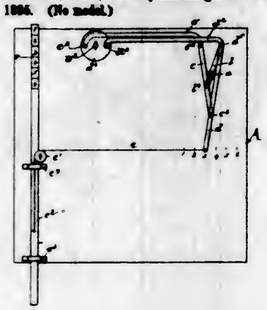
2. The main lever *a* and the radius-bar to support the pivot for the said main lever, link *b*, the second lever, and the radius-bar to hold the pivot or fulcrum for the said second lever, and the third lever or link between it and the radius-bar carrying the pivot for the second lever, combined with the three connecting-rods joined to the main lever and to the second and third levers, and with means, substantially as described, to operate the said connecting-rods, as set forth.

336,626. MECHANICAL MOVEMENT. GEORGE CROMPTON and HORACE WYMAN, Worcester, Mass.; said Wyman assignor to said Crompton. Filed Oct. 21, 1885. (No model.)



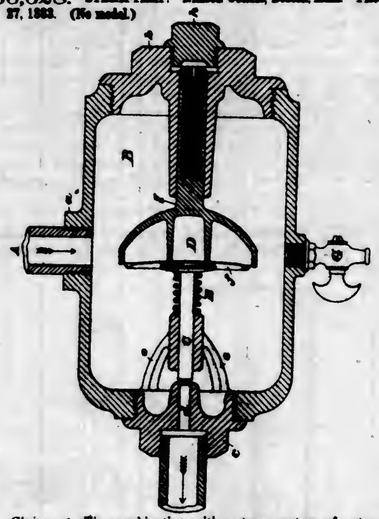
Claim.—The herein-described mechanical movement, consisting of the two carrier-levers pivoted at *a*, the link *e*, connected loosely with the said carrier-levers, and the main lever having its fulcrum on the said link, and three connecting-rods and cranks to move the said carrier and main levers, substantially as described, whereby the free end of the main lever may be moved into any one of six different positions at will, as set forth.

336,627. MECHANICAL MOVEMENT. GEORGE CROMPTON and HORACE WYMAN, Worcester, Mass.; said Wyman assignor to said Crompton. Filed Dec. 7, 1885. (No model.)



Claim.—The herein-described mechanical movement, consisting of the main lever mounted upon a fulcrum, *c*, the auxiliary lever *c*, having its fulcrum upon the main lever, and the prime lever *d*, having its fulcrum upon the auxiliary lever, combined with cranks and connecting-rods to engage the said levers, whereby the free end of the prime lever *d* may be placed in any one of six different positions, substantially as and for the purpose set forth.

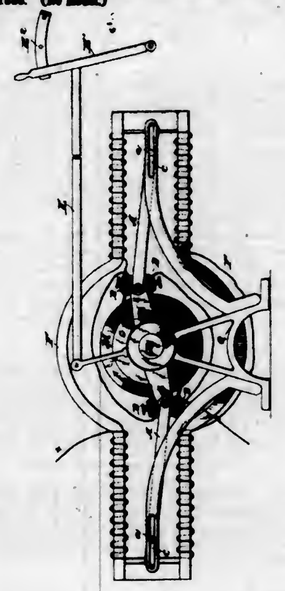
336,628. STEAM-TRAP. NELSON CHEEVER, Boston, Mass. Filed Nov. 27, 1883. (No model.)



Claim.—1. The combination, with a steam system, of a steam-trap consisting of a steam-tight chamber provided with an open or free inlet-passage communicating with said steam system, a valved outlet-passage, and an interior expansion-vessel, the said expansion-vessel controlling the valve of the said valved outlet-passage, substantially as described.

2. A hollow casting or chamber provided with a free inlet-passage and a valved outlet-passage, and containing an expansion-vessel and a spring, the said spring and said expansion-vessel being arranged to work in opposition to each other and govern the valve in said valved outlet-passage, substantially as described.

336,629. ELECTRIC MOTOR. LEO DAFT, Greenville, N. J. Filed May 26, 1885. (No model.)

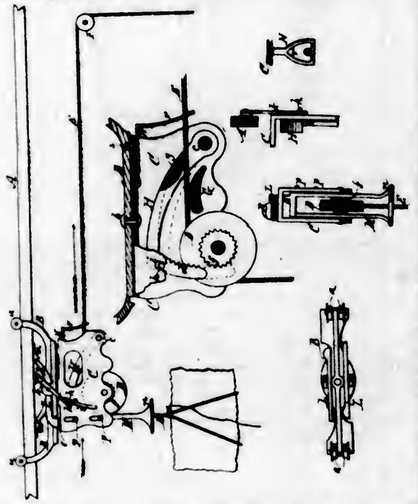


Claim.—1. In an electric motor, a rocking lever having a pair of brushes at each end arranged with their inner ends projecting from each other, one of the brushes of each pair having a common terminal, and mechanism, substantially as described, whereby each diametrically-opposite pair may be brought into contact with the commutator at an angle to the direction of rotation of the commutator, as set forth.

2. The combination, in an electric motor, of a rocking lever, guide-levers secured to the ends of the lever and working in guide-slots, a pair of brushes secured to the rods, and operating devices, substantially as described, whereby either pair of the diametrically-opposite brushes may be brought into contact with the commutator, as set forth.

3. The combination, in an electric motor, of an armature-shaft and commutator secured thereto, a rocking lever on said shaft, guide-levers secured to the ends of said lever and working in slots in the frame of the machine, a pair of brushes secured to the guide-levers, having outwardly-projecting rods, and one brush of each pair having a common terminal, and a hand-lever for changing the position of the brushes, so that they will bear upon the commutator at an angle to the direction of rotation of the same, or so that none of the brushes will touch it, substantially as described.

336,630. HOISTING-MACHINE. BERNARD P. DARLING, Shortsville, N. Y., assignor of one-half to John H. Pettit, same place. Filed Oct. 21, 1885. (No model.)



Claim.—1. In a hoisting-machine, the combination of the yoke or traveler B, provided with friction-wheels that run on the track or way, the car or carriage C, swiveled by a bolt or pivot to the yoke, so that it can be turned and changed end for end, and the spring-loop N, attached to the upper plate of the carriage, and provided with a stud, *s*, which strikes into a socket of the yoke to lock the parts together, the whole so arranged, as described, that the stud can be disconnected and the carriage turned end for end on the yoke by bringing the two ends of the rope to the ground, as set forth.

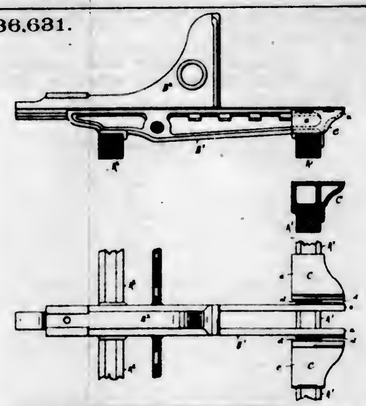
2. In a hoisting-machine, the combination, with the car, of a pulley turning loosely thereon, over which the hoisting-rope passes, a pinion secured to the pulley, a swinging arm provided with a rack that engages with the pinion when the arm is depressed, clamps on the car and the arm, between which the rope passes, and a device for catching and holding the arm in an elevated position while raising the load, as herein set forth.

3. In a hoisting-machine, the combination, with the yoke and car, of latches pivoted to the yoke, standing in opposite directions and engaging with stops on the track to hold the car stationary over the load, and a slide in the car, provided at the bottom with a ring against which the load strikes, when elevated, to operate the slide, and at its top with a pin that rests under the latch on the yoke, as and for the purpose specified.

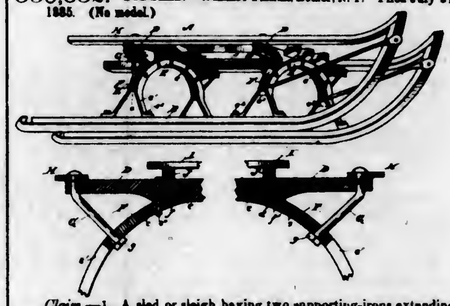
336,631. NOSE-GUARD FOR SAW-MILL HEAD-BLOCKS. CHARLES ESPLIN, Minneapolis, Minn. Filed Apr. 13, 1885. (No model.)

Claim.—The guards C C', secured to a saw-mill carriage, and located at the sides of the nose of the head-block, substantially as and for the purpose herein specified.

336,631.



336,632. BOB-SLED. WILLETT FISHER, Homer, N. Y. Filed July 31, 1885. (No model.)

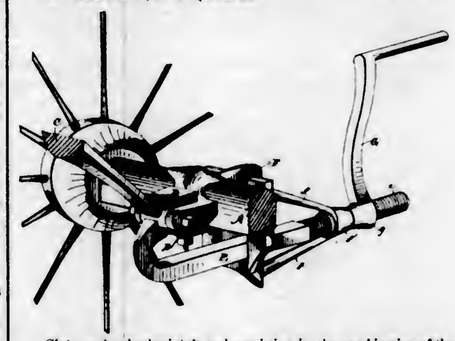


Claim.—1. A sled or sleigh having two supporting-irons extending from one runner to the other and attached to the cross-beam on its front and rear sides, the irons having a part of their depending portions bent forward and backward to form knees, and secured to the runners, as set forth.

2. The combination, with a sled or sleigh having supporting-irons extending across the runners and attached to the cross-beam on its front and rear sides, a part of the depending portion of the irons being bent forward and backward to form knees, of a curved filling-block secured between the depending irons and fastened to the cross-beam, substantially as shown, and for the purpose set forth.

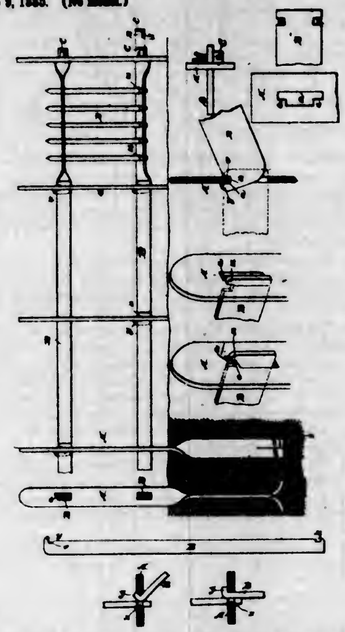
3. The combination, with a sled or sleigh having supporting-irons semicircular in form extending from one runner to the other and secured to the front and rear sides of the cross-beam, and having depending portions bent forward and backward to form bracing-knees, of a curved filling-block secured to the beam and between the supporting-irons, having a brace in its lower portion extending to the outer end of the cross-beam, as set forth.

336,633. WHEELWRIGHT'S CLAMP. LEWIS W. FREE, Cheyney, Pa. Filed Dec. 17, 1885. (No model.)



Claim.—A wheelwright's tool consisting in the combination of the shank E, having a stem, *e*, and the serrated clamping-jaw *e'*, with the clamp F, having braces *f*, and a collar, *f'*, upon the screw-threaded end of the shank, and the lever G, having an eye, *g*, meshing with the screw-threaded end of the shank, in the manner and for the purpose described.

336,634. FENCE. WELLESLEY W. GAGE, New York, N. Y. Filed June 9, 1885. (No model.)



Claim.—1. The combination, in a fence, of posts having openings *a*, contracted each at one side, and rails B, each having a notch at one end and a lip at the other, substantially as set forth.

2. The combination, in a fence, of the posts and connecting-bars, the upper bar bent and perforated for the passage of pickets, and the lower bar bent to form horizontal and vertical flanges and perforated to receive studs upon the lower ends of the pickets, substantially as described.

3. The combination, in a fence, of slotted posts, and bars provided with notches, and lips fitted in the slots in the posts, some of the bars extending through one opening in a post, and the ends of other bars being connected to the said post, substantially as described.

336,635. ELECTRIC-ARC LAMP. JEAN M. A. GERARD-LIBOUTER, Paris, France. Filed Oct. 24, 1885. (No model.) Patented in France June 12, 1882, No. 149,517; in Belgium June 22, 1882, No. 58,988; in England June 23, 1882, No. 2,992; in Italy Aug. 28, 1882, No. 15,308, and in Austria-Hungary Oct. 10, 1883, No. 1,956 and No. 1,943.

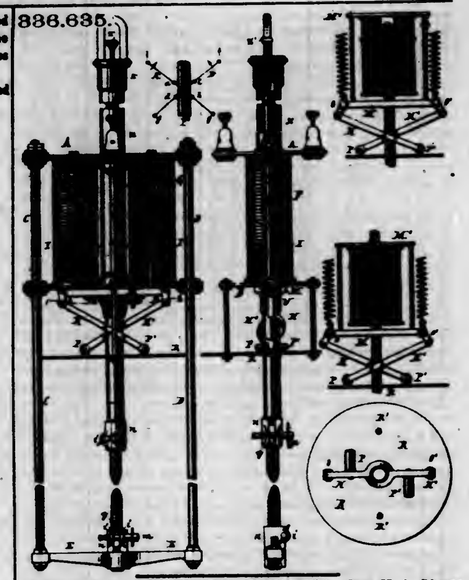
Claim.—1. The combination, with the upper-carbon holder, one or more differential solenoids, and one or more vertically-movable cores sliding in said solenoids, of a brake connected to the lower ends of said cores, said brake being formed of inclined brake-rods having beveled middle portions or jaws encircling the upper-carbon holder, and a fixed stop-disk below the brake-rods, by which the same are released from the carbon-holder, substantially as and for the purpose set forth.

2. The combination of the upper-carbon holder, one or more differential solenoids, F G, vertically-movable interior cores, L L', transverse connecting-plate M, pivot-links O O', inclined brake-rods N N', having beveled middle portions or jaws and anti-friction rollers P P' at their lower ends, and a fixed stop-disk, R, substantially as and for the purpose set forth.

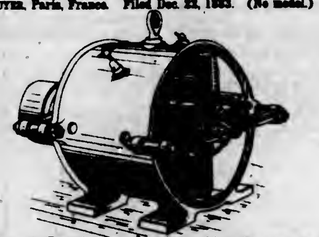
3. The combination of the upper-carbon holder, differential solenoids F and G, interior cores, L L', connecting-plate M, having downwardly-extending spring-wires surrounding the carbon-holder, connecting pivot-links O O', inclined brake-rods N N', having semicircular beveled middle portions and anti-friction rollers P P', and a fixed stop-disk, R, substantially as set forth.

4. In an electric-arc lamp, the combination of the carbon-holder with a slitted sleeve, *n*, having perforated ears *i i* at both sides of the slit, an intermediate tongue, *q*, and a transverse conically-tapering pressure-pin, *m*, substantially as specified.

336,635.



336,636. DYNAMO-ELECTRIC MACHINE. JEAN M. A. GERARD-LIBOUTER, Paris, France. Filed Dec. 22, 1883. (No model.)



Claim.—1. In a dynamo-electric machine, an armature the coils of which are wound in a reverse direction to each other on the core, so as to form a central reversing pole or poles, and terminal poles the polarities of which are similar to each other but opposite to the polarity of the reversing pole or poles, substantially as set forth.

2. In a dynamo-electric machine, the combination of inducing electro-magnets having diametrical poles with similar polarity, an armature the coils of which are wound in a reverse direction to each other on the core, so as to form a central reversing-pole, and terminal poles the polarities of which are similar to each other but opposite to the polarity of the reversing-pole, substantially as set forth.

3. In a dynamo-electric machine, an armature the coils of which are wound in layers at alternately-opposite sides of the reversing-poles, said layers being separated by interposed sheet-iron plates, to prevent or diminish the parasitical magnetic currents, substantially as set forth.

336,637. INCANDESCENT ELECTRIC LAMP. JEAN M. A. GERARD-LIBOUTER, Paris, France. Filed Oct. 24, 1883. Renewed Oct. 22, 1885. (No model.)



Claim.—1. A carbon filament for electric lamps, composed of two carbon pencils and a disk composed of a carbon ring having a filling of carbonaceous cement, through which latter the upper ends of the pencils pass, substantially as described.

2. The combination, in an electric lamp, of a pair of inclined carbon pencils united at their upper ends by a carbon ball or disk, and a similar pair of inclined carbon pencils, also united at their upper ends by a carbon ball or disk, the lower end of one pencil of each pair being connected with the line-wire, and the lower ends of the other pencils of the respective pairs being connected with each other by a conducting-wire, substantially as described.

336,638. SLIDING-DOOR LATCH. JAMES T. GORDON and JOHN H. HAMILTON, Concord, N. H. Filed Nov. 24, 1885. (No model.)

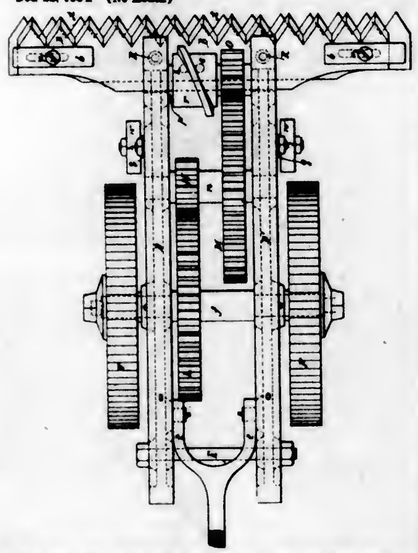


Claim.—1. In a sliding-door fastening, the combination, with an eye-plate secured to said door, of a swiveled plate provided with a finger adapted to automatically enter the eye in said eye-plate while said door is sliding shut, and a dog pivoted to said swiveled plate and adapted to automatically fall against a suitable stop and secure said locking mechanism, substantially as and in the manner specified.

2. The combination, with an eye-plate, of a swiveled plate provided with a finger adapted to automatically enter the eye in said eye-plate by contact with the same, and having a perforation near its end for the reception of the shackle of a padlock, and a dog pivoted to said swivel-plate and adapted to fall against a suitable stop automatically, all constructed and operating substantially as and for the purpose set forth.

3. In a sliding-door fastening, substantially as described, the combination, with a swiveled plate having perforated lugs or projections, of a dog pivoted thereon, having a perforated projection adapted to fit between the projections on said swiveled plate, and a rigid stop against which said dog may rest, all constructed and arranged to operate in the manner and for the purpose set forth.

336,639. LAWN-MOWER. HENRY A. GROUX, Montclair, N. J. Filed Dec. 22, 1884. (No model.)



Claim.—1. The combination, with the cutter-bars A B, of the frames having the foot-pieces at the forward ends and the screws by which the cutter A is secured, the circular revolving cam having spiral groove or rib, the stud or studs on the cutter-bar, and the wheels and gearing for giving motion to the parts, and the adjusting-rollers *w*, stocks *q*, and bolts, substantially as set forth.

2. In a lawn-mower, the frames D D′, adjacent to each other, in combination with the driving-shaft passing through such frames, the driving-wheels outside the frames, the ratchets and spring-pawl connections to the shaft, the gear-wheels L M, pinions N O, and revolving cam between the frames, the cutter A, fastened to the frames D D′, the cutter-bar resting upon the cutter and receiving motion from the cam, and the bolts and fingers for connecting the cutter-bar to the cutter, substantially as set forth.

336,640. MECHANICAL TELEPHONE. A. WILFORD HALL, New York, N. Y. Filed July 6, 1885. (No model.)



Claim.—1. The combination, with a transmitting-wire, of two diaphragms, connections between one diaphragm and the wire, whereby longitudinal vibrations are transmitted to and received from the wire, and connections between the other diaphragm and the wire, whereby lateral vibrations are transmitted to and received from the wire, substantially as herein described.

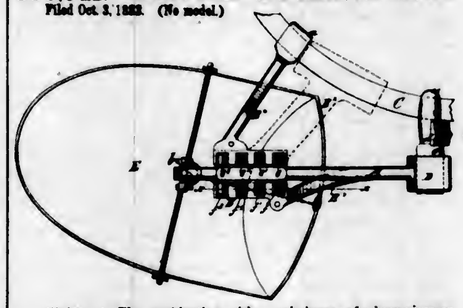
2. The combination, with a transmitting-wire and a diaphragm, to which the end thereof is hitched, of a sound-tube for conducting vibrations to operate on the diaphragm in a direction opposite to the longitudinal tension or pull of the wire, substantially as herein described.

3. The combination, with a transmitting-wire and two diaphragms, to one of which the wire is hitched, and a connection between the other diaphragm and the wire through which lateral vibrations will be transmitted to and received from the wire, whereby the longitudinal and lateral vibrations will be taken up, respectively, by the two diaphragms and sound-tubes, whereby both systems of vibrations, from the sides of the two diaphragms, will be conveyed simultaneously to the listener, substantially as herein described.

4. The combination, with a transmitting-wire and two diaphragms, one serving to receive lateral vibrations and the other longitudinal vibrations from the wire, of sound-tubes arranged to convey the vibrations from both sides of each diaphragm to the listener, substantially as herein described.

5. The combination, with a transmitting-wire and a diaphragm arranged transversely thereto, and to which the wire is hitched, and which is of sufficient thickness and strength to bear the strain, of a second diaphragm, lighter and more flexible than the hitch-diaphragm, and a connection between the lighter diaphragm and the wire, and through which lateral vibrations will be transmitted to and received from the wire, whereby both longitudinal and lateral vibrations will be simultaneously transmitted to and received from the wire, substantially as herein described.

336,641. WEIGHING-SCALE. DAVID HALLOCK, New York, N. Y. Filed Oct. 3, 1882. (No model.)



Claim.—1. The combination, with a scale-beam, of a base-piece or support wherein the beam is fulcrumed, and an arm or arms projecting from the base-piece or support and forked or provided with prongs to fit upon the chine of a barrel or the edge of a box or other article, substantially as described.

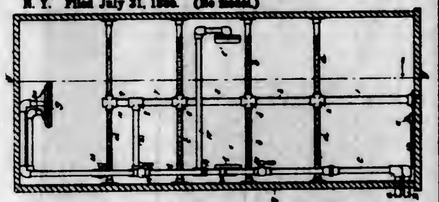
2. The combination, with a scale-beam weighted at one end and provided between its ends with a number of fulcrums consisting of pins projecting transversely from the beam at intervals in the length thereof, and a base-piece or support constructed with bearings for the fulcrums and having on opposite sides of the beam upwardly-diverging beveled surfaces, whereby the beam is centered laterally in the base-piece or support, substantially as herein described.

3. The combination, with a scale-beam weighted at one end and provided between its ends with a number of fulcrums consisting of pins fixed rigidly in the beam at invariable distances apart, of a base-piece or support provided with bearings for the beam-fulcrums and having on opposite sides of the beam upwardly-diverging beveled surfaces, whereby the beam is centered laterally in the base-piece or support, substantially as herein described.

4. The combination, with the scale-beam A, weighted at one end and provided with fulcrums *e e′*, &c., of the base-piece or support B, constructed with bearings for said fulcrums, and the cap or shield B′, serving to protect the bearings and retain the beam in place in the said base-piece or support, substantially as herein described.

5. The combination, with the weighted scale-beam A, provided with fulcrums *e e′*, &c., of the base-piece or support B, constructed with integral bearings *f f′*, &c., adapted to receive said fulcrum and inclined at their ends to prevent friction as the fulcrums enter and leave them in the operation of the beam, substantially as herein described.

336,642. BATHING APPARATUS. VERNON A. HARDER, New York, N. Y. Filed July 31, 1886. (No model.)



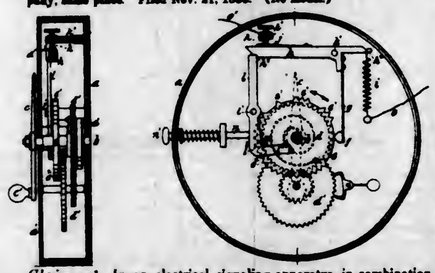
Claim.—1. The combination, with a cold-water-supply pipe provided with a cock, of a hot-water-supply pipe entering said cold-water-supply pipe, and having its discharge controlled by the cock in said last-mentioned pipe, whereby the hot water is compelled to mix with the cold water, as and for the purpose set forth.

2. The combination, with a cold-water-supply pipe provided with a cock, of a hot-water-supply pipe entering said cold-water-supply pipe in rear of its discharging-point, whereby a mixture of hot and cold water is insured.

3. In a bathing apparatus, the combination, with the cold-water-supply pipe having branches leading to devices for giving various baths, said branches being provided with cocks for controlling the supplies, of a hot-water-supply pipe, provided with a cock entering said cold-water-supply pipe in rear of the controlling-cocks, whereby when the hot water is turned on a mixture of hot and cold water is insured, as set forth.

4. The combined arrangement of the cold and hot water supply pipes, provided, respectively, with cocks 24 and 26, the ascending douche device, the liver-spray devices, the descending douche device, the shower-giving device, the vertical series of needle-spray pipes, and the pipes 12, 15, 17, 18, and 21, provided with cocks 13, 16, 19, and 22, all of the said cocks being located at the front and at one side of the apparatus, as and for the purpose set forth.

336,643. ELECTRICAL CALL OR SIGNALING APPARATUS. ALFRED G. HOLCOMBE, New York, N. Y., assignor to the Equitable Electric Company, same place. Filed Nov. 21, 1885. (No model.)



Claim.—1. In an electrical signaling apparatus, in combination, a serrated signaling-disk actuated by a motor, a spring-pawl engaging in the serrations of the disk, a pivoted arm to which the spring of the pawl is attached, a locking-lever for holding the arm stationary, and a handle or pointer connected to the shaft of the disk, substantially as and for the purpose set forth.

2. In an electrical call-box, the combination, with a serrated signaling-disk actuated by a motor, of a pivoted arm provided with a contact-spring, a contact-stop, a locking-lever for holding the arm stationary with its contact-spring against the contact-stop, a spring-pawl connected to the pivoted arm and bearing in a serration of the disk when the arm is locked, and a spring attached to the arm to cause the spring-pawl to bear on the serrated disk when the arm is released, substantially as and for the purpose set forth.

3. In an electrical call-box, in combination, a signaling-disk, a spring-acting pivoted arm, a spring-pawl attached to the arm, a locking-lever for holding the arm stationary, having its lower end bent in toward the shaft of the disk, and a pin projecting from the face of the disk to act as a stop thereto by coming in contact with the bent end of the locking-lever, and also as a means to cause the lever to engage with the pivoted arm by acting against its side just before coming in contact with its bent end, substantially as and for the purpose set forth.

4. In an electrical call-box, in combination, a serrated signaling-disk carried by a motor-shaft, a pivoted arm, a spring-pawl attached to the pivoted arm and bearing against the serrations of the disk, a locking-lever for holding the arm stationary, having its lower end bent in toward the shaft of the disk, and a push-button for acting on the lever to cause it to release the pivoted arm, substantially as and for the purpose set forth.

5. In an electrical call-box, in combination, a serrated signaling-disk, *c*, actuated by a motor, a spring-pawl, *f g*, engaging in the serrations of the disk, a pivoted arm, *h*, to which the spring of the pawl is attached, a locking-lever, *l*, for holding the arm stationary, and a handle or pointer connected to the shaft of the disk *c*, substantially as and for the purpose set forth.

6. In an electrical call box, in combination, a serrated signaling-disk, *c*, actuated by a motor, a pivoted arm, *h*, provided with a contact-spring, *j*, a contact-stop, *k*, a locking-lever, *l*, for holding the arm *h* stationary with its spring *j* locked against the stop *k*, a spring-pawl, *f g*, connected to the arm *h* and bearing in a serration of the disk *c* when the arm is locked, and a spring, *i*, attached to the arm to cause the spring-pawl to bear on the serrated disk when the arm is released, substantially as and for the purpose set forth.

7. In an electrical call-box, in combination, a signaling-disk, *c*, a spring-acting pivoted arm, *h*, a spring-pawl, *f g*, attached to the arm, a locking-lever, *l*, for holding the arm stationary, having its lower end, l^2, bent in toward the shaft of the disk *c*, and a pin, *m*, projecting from the face of the disk *c*, to act as a stop thereto by coming in contact with the bent end l^2 of the locking-lever, and also as a means to cause this lever *l* to engage with the pivoted arm *h* by acting against its side l^2 just before coming in contact with its bent end, substantially as and for the purpose set forth.

8. In an electrical call-box, in combination, a serrated signaling-disk, *c*, carried by a motor-shaft, *b*, a pivoted arm, *h*, a spring-pawl, *f g*, attached to the pivoted arm and bearing against the serrations of the disk, a locking-lever, *l*, for holding the arm stationary, having its lower end, l^2, bent in toward the shaft *h*, and a push-button, *n n′*, for acting on the lever to cause it to release the pivoted arm, substantially as and for the purpose set forth.

336,644. PEN-HOLDER. CHARLES HOLLWEG, St. Louis, Mo., assignor to Charlotte Hollweg, same place. Filed July 21, 1886. (No model.)



Claim.—1. A pen-holder, A, having flat top *e*, and flat right side, *f*, and rounded left side, *g*, and rounded bottom *h*, thumb-leg b^2, and the side wing, *d*, all of the shape substantially as herein shown and described, and for the purpose set forth.

2. The adjustable pieces *a*, *b*, *c*, and *d*, all of the shape shown, fitted together by the pins *a′* and *b′* and screw *c′*, thumb-leg b^2 on the piece *b*, all combined as herein shown and described, to form an improved adjustable pen-holder, for the purpose set forth.

336,645. TYPE-DISTRIBUTING APPARATUS. LOUIS K. JOHNSON and A. ARNHEIM LOW, of Brooklyn, assignors to the Alden Type Machine Company, New York, N. Y. Filed Oct. 9, 1883. (No model.)

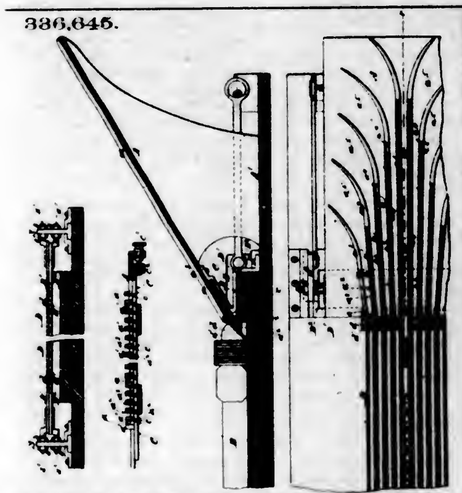
Claim.—1. In a type-distributing apparatus substantially such as herein designated, the adjustable conduit walls or partitions pivoted to the inclined conduit-bed near their upper extremities in such manner that their lower ends may be advanced or retracted with relation to the opposed stationary conduit side walls, for the purpose and substantially in the manner described.

2. In a type-distributing apparatus substantially such as designated, an independently-adjustable slide or plate adapted to receive or connect with movable conduit side walls or partitions, in combination with and for the purpose of controlling the position of the latter with relation to the stationary side walls of the conduits, substantially in the manner and for the purpose described.

3. In a type-distributing apparatus substantially such as designated, a reciprocating type pusher or forwarder formed with pusher teeth or fingers, which are adjustable in width, for the purpose and substantially in the manner described.

4. In a type-distributing apparatus substantially such as herein

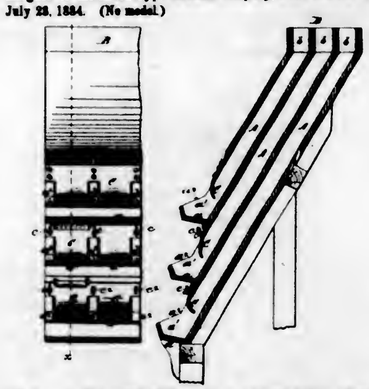
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designated, the reciprocating comb pusher-bar formed of independently-adjustable superimposed slides or plates, each provided with a corresponding series of teeth or pusher-fingers, substantially in the manner and for the purpose described.

5. In a type-distributing apparatus substantially such as designated, a reservoir or containing-channel one side wall of which is formed with a longitudinal groove and the other with a corresponding tongue or projection, which is adjustable within the said groove, for the purpose and substantially in the manner described.

336,646. COMPOSITOR'S TYPE-CASE. LOUIS K. JOHNSON, Brooklyn, assignor to the Alden Type Machine Company, New York, N. Y. Filed July 23, 1884. (No model.)



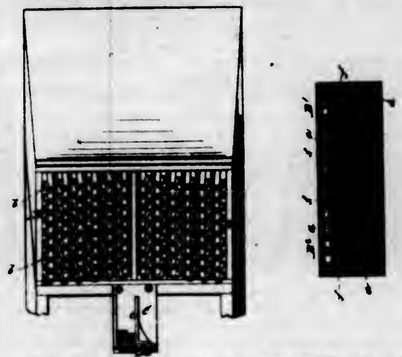
Claim.—1. In combination with an elongated type-storing channel formed with parallel walls and of uniform area in cross-section throughout the greater portion of its length, and provided with a type-supporting shoulder at its lower extremity, substantially in the manner and for the purpose described, a type-guard situated at the lower termination of the front wall of the channel and inclined inward at an obtuse angle thereto above the said type-supporting shoulder, for the purpose and substantially in the manner described.

2. In combination with an elongated inclined type-storing channel formed with a type-supporting shoulder at its lower extremity, substantially as described, an adjustable guard, substantially such as set forth, arranged at the lower extremity of the channel for the purpose of regulating the descent of the type to the said type-supporting shoulder, substantially in the manner described.

3. An inclined type-containing compartment open at both extremities for the purpose described, formed with a type-supporting shoulder at its lower extremity, and with its extreme upper portion formed at an obtuse angle with relation to the body of the compartment, for the purpose described.

4. The combination, with a series of inclined type-containing compartments combined together for the purpose and substantially in the manner designated, of a removable section containing a series of vertical or nearly vertical type-receiving channels arranged above and coinciding with the upper entrances to the inclined type-channels in the compartments below, substantially in the manner and for the purpose described.

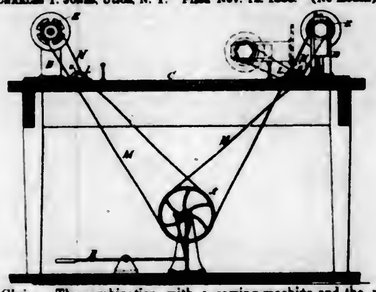
336,647. COMPOSITOR'S TYPE-CASE. LOUIS K. JOHNSON, Brooklyn, assignor to the Alden Type Machine Company, New York, N. Y. Filed May 28, 1885. (No model.)



Claim.—1. A compositor's type-case substantially such as designated, consisting of a series of type-containing channels, seats, &c., upon the right side, which expose the faces of the types toward the left side, and of a series of type-containing channels, seats, &c., upon the left side, which expose the faces of the types toward the right side, substantially in the manner and for the purpose described.

2. A compositor's type-setting compartment formed with a series of permanent channel-supports which incline downward from the rear to the front of the case, and which also incline laterally for the purpose of preserving the alignment of the types in the containing-channels, substantially in the manner and for the purpose described.

336,648. DRIVING MECHANISM FOR SEWING-MACHINES. CHARLES T. JONES, Utica, N. Y. Filed Nov. 12, 1885. (No model.)



Claim.—The combination, with a sewing-machine and the pivots or hinges by which it is connected to the table, of a compound pulley the axis of which is in line with the said pivots, and two endless belts, one passing from the compound pulley to the motive power and the other from the compound pulley to the pulley upon the driving-shaft of the sewing-machine, substantially as set forth.

336,649. TRACTION-WHEEL. OLIVER W. KELLY and LOUIS F. DIETZ, Springfield, Ohio, assignors to the Springfield Engine and Thrasher Company, same place. Filed Sept. 1, 1885. (No model.)

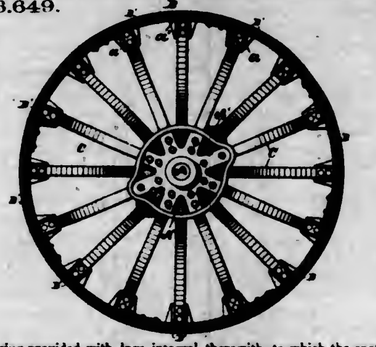
Claim.—1. In a traction-wheel provided with cleats or projections on the periphery thereof, a tire or rim formed of sections joined at their respective ends, said tire or rim being formed of a uniform thickness by having the cleats constructed integral therewith and hollowed or cored out on their under side, substantially as set forth.

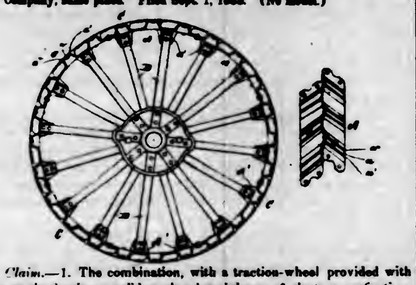
2. The combination, with the hub provided with flanges on either side thereof, of a sectional rim having ears or lugs integral therewith, and spokes riveted at either end to said ears and flanges respectively, substantially as set forth.

3. The combination, with a central hub having flanges on either side thereof, of a rim or tire composed of sections having overlapping ends riveted together, each of said sections being provided with a series of indentations or pockets adapted to form cleats or projections on the outer surface thereof, and having ears or lugs on the inner side adapted to be connected to the spokes, substantially as specified.

4. In a traction-wheel, a rim or tire composed of sections, said sections being provided with lugs integral therewith, to which the spokes of the wheel are adapted to be secured, substantially as set forth.

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336,650. TRACTION-WHEEL. OLIVER W. KELLY and LOUIS F. DIETZ, Springfield, Ohio, assignors to the Springfield Engine and Thrasher Company, same place. Filed Sept. 1, 1885. (No model.)

Claim.—1. The combination, with a traction-wheel provided with a tire or rim having a solid or closed periphery, of cleats or projections on the outer surface or periphery thereof, and auxiliary points or cleats on the outer face of said main cleats or projections, substantially as and for the purpose set forth.

2. In a traction-wheel, a tire or rim composed of sections, said rim being provided with a series of main cleats or projections having auxiliary cleats thereon, said cleats being formed integral with said sections and hollow or open on their under side, so that a uniform thickness of metal is obtained throughout the section, substantially as specified.

3. A cleat for a traction-wheel having the groove or depression *a* and the auxiliary cleats or points, substantially as specified.

336,651. WIND-WHEEL GEARING. LYMAN U. LOOMIS, McPherson, Kans. Filed Sept. 7, 1885. (No model.)

Claim.—1. The combination, in a wind-wheel, of a pivoted vane, a lever pivoted midway of its ends, one of which latter is weighted, an arm pivotally supported at one end, a rod pivoted to the arm midway of its ends and connected to the light end of the weighted lever, a second rod connecting the free end of the arm with the vane, and means, substantially as described, to turn the weighted lever about its pivot, as and for the purposes specified.

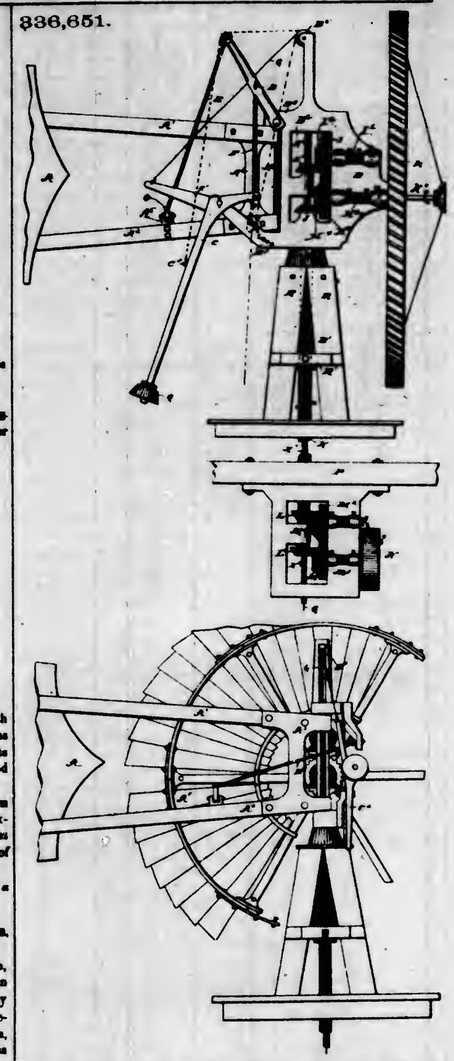
2. The combination, with the shaft of the wheel, the main tubular shaft, and the secondary shaft working in the tubular shaft, of the pinion fixed on the main shaft, the pinion of the secondary shaft, the spur-gearing having a miter-gear on its side and fixed on the shaft of the wheel, and the intermediate gear having a side miter-gear and arranged between the spur-gear and the wheel-shaft, and the miter-pinion on the inner or secondary shaft, substantially as set forth.

3. The combination of the pivoted vane, a lever having arms projected laterally therefrom in opposite directions and pivotally supported at the junction of the arms with the lever, an arm pivoted at one end, rods connecting the latter arm with one arm of the weighted lever and with the vane, respectively, and a cord attached to the free arm of the weighted lever and passed over a pulley in line with the bore of the hollow shaft and down through the hollow shaft, substantially as set forth.

4. In a wind-wheel, the combination, with the pivoted vane, the arm D, and the mechanism for operating the arm D, of the tilting block O, pivoted on the arm of the vane, and the rod E, having one end pivoted to the end of the arm D and the other end held in a bearing in the block O, substantially as set forth.

5. The combination, with the frame B, provided with arms B^4 B^5, and the vane pivoted between the said arms, of the arm D, pivoted to

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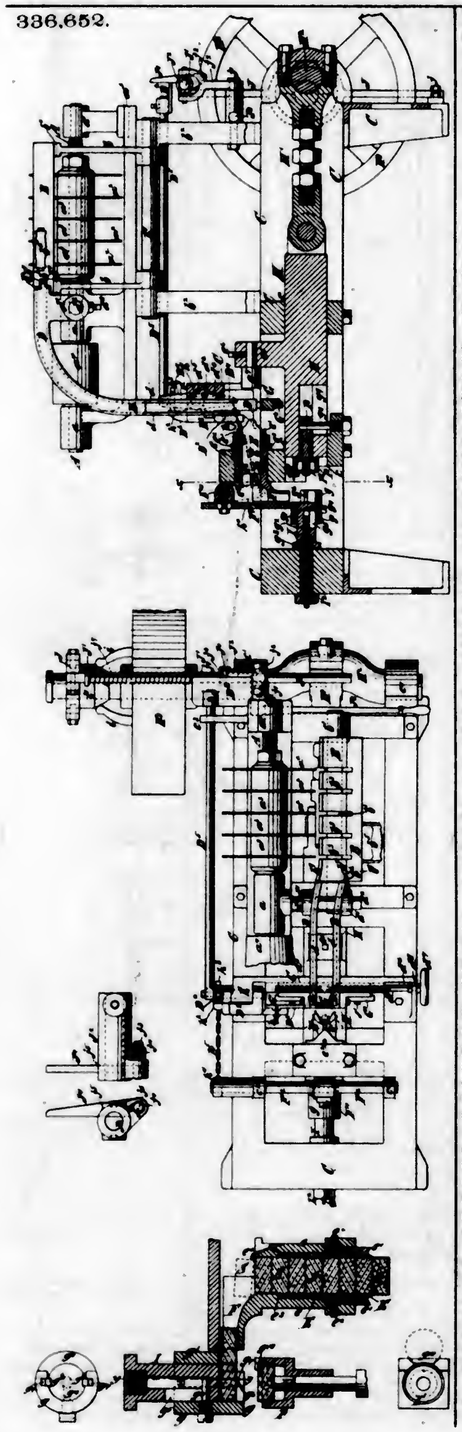
the frame above the vane, the weighted lever pivoted to the frame below the vane, rods for connecting the weighted lever-arm D and vane, and means for operating the weighted lever, substantially as set forth.

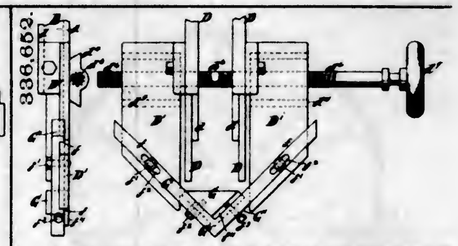
6. The combination, with the wind-wheel shaft, the intermeshing spur-gearing H^3 and I, miter-gears H^4 and I^2, attached, respectively, to the faces of the spur-gears H^3 and I, concentric shafts K K', miter-gears J J', keyed, respectively, to said shafts, and facing upward to mesh with the lower side of the miter-gears H^4 I^2, and miter-gears L L', keyed to the lower portions of the concentric shafts and faced downward to mesh with the upper side of the miter-gears M M', projecting from the face of intermeshing spur-gears M^2 M^3, substantially as and for the purpose specified.

336,652. MACHINE FOR MAKING COMPRESSED BUNGS. EDWARD D. MACKINTOSH, Brooklyn, assignor to Paul Pryibil, New York, N. Y. Filed Dec. 12, 1885. (No model.)

Claim.—1. In a bung-making machine, the combination, with a male die and a yielding receiver for holding a bung-blank in front thereof, of a chute for delivering bung-blanks to the receiver, and a reciprocating female compressing-die having an inclined or wedge-shaped cams-arface which will lift or move aside any blank unduly obtruded in the path of said compressing-die, substantially as herein described.

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2. The combination, with the male die I and spring-actuated yielding receiver *g*, of the chute F for delivering blanks to the receiver *g*, the reciprocating female compressing-die I′, having an inclined cam-surface, g^{10}, and the stationary ejector I², substantially as herein described.

3. The combination, with the male die I and the spring-actuated yielding receiver *g*, having at opposite sides grooves g^7 and retaining-springs g^8, of the chute F for delivering blanks to the receiver, and the reciprocating female compressing-die I′, having an inclined cam-surface, g^{10}, for lifting or moving aside blanks unduly obtruded in its path, substantially as herein described.

4. In a bung-making machine, the combination, with a chute for square blanks, composed of parallel side pieces, and a screw for adjusting them toward and from each other, of a table or blank-rest below the chute, and arms or bearers inclined at opposite angles from the side pieces and supporting the table or rest, whereby the table or rest will be raised when the side pieces are moved toward each other, and lowered when the side pieces are moved away from each other, substantially as herein described.

5. In a bung-making machine, the combination, with a chute for square blanks, composed of two side pieces adjustable toward and from each other, of an angular hanger forming a blank-support extending between the side pieces of their lower ends, and having sliding bearings in the side pieces, whereby the hanger will be raised and lowered as the side pieces are adjusted toward or from each other, substantially as herein described.

6. The combination, with a chute for square blanks, composed of two sides adjustable toward and from each other, of an angular hanger forming a blank-support extending between the side pieces at their lower ends, and having sliding bearings in the side pieces, whereby the hanger will be automatically raised and lowered as the side pieces are moved toward or from each other, and a blank table or rest adjustable upward and downward in the hanger, substantially as herein described.

7. The combination, with the chute for square blanks, having the side pieces, D, and the slides or blocks D′, to which said side pieces are attached, and which are slotted obliquely at *f*, of the screw d^6, for adjusting the slides and attached side pieces, and the angular hanger G′, forming a blank-support and fitting the grooves *f*, and bolts *f*′ passing through slots and holding it in said grooves, substantially as herein described.

8. The combination, with a chute for square blanks composed of side pieces adjustable toward and from each other, of the angular hanger G′, having sliding bearings in the side pieces, and connecting them and the triangular blank table or rest fitting the hanger, and held and supported on one side by a binding or clamping screw, f^3, and on the other side by a set-screw, f^9, substantially as herein described.

9. The combination, with chutes for square and round blanks, having movable front plates, of a clutch through which the machine is driven, a tripping mechanism whereby the clutch is held in operative position, a lever on which the movable front of one chute acts when moved outward, a connection between the movable front of the other chute and the lever, which operates only by tensile force, and a rod connected with the lever, and which serves to throw off the tripping mechanism and release the clutch, substantially as herein described.

10. The combination, with the chute for square blanks, having a swinging front, D^2, and an upwardly-projecting arm, D^4, of a clutch through which the machine is driven, tripping mechanism whereby the clutch is held in operative position, a lever, D^4, on which the arm D^2 acts when the front D^2 is swung outward, and a rod, D^5, connected with said lever and serving to throw off the tripping mechanism, substantially as herein described.

14. The combination, with the chutes D F for square and round blanks, having movable fronts D^2 F′, provided, respectively, with arms D^2 A^4, of a clutch whereby the machine is operated, tripping mechanism for holding the clutch in operative position, the lever D^4 on which the arm D^2 acts, and which is connected with the arm A^4, and a rod, D^5, through which the lever acts to throw off the tripping mechanism when moved by the swinging outward movement of either of the movable chute-fronts, substantially as herein described.

12. The combination, with a chute having a movable front, of a clutch through which the machine is driven, a rod for shifting the clutch, a sleeve on the rod, and a locking and tripping lever pivoted in the sleeve and engaging a notch in the rod, and a rod receiving a longitudinal movement from the movable chute-front and serving to throw out the locking and tripping lever from engagement with the notch in the clutch-shifting rod when the chute-front is moved outward, substantially as herein described.

13. The combination, with a chute having a movable front, of a clutch through which the machine is driven, a notched clutch-shifting rod, a sleeve on the rod, and a locking and tripping lever fulcrumed in the sleeve and engaging the notch in said rod, and a rod receiving a longitudinal movement from the chute-front when the latter is moved outward, and having at the end a bread plate, D^3, for acting upon the locking and tripping lever, substantially as herein described.

14. The combination, with a chute having a movable front, of the clutch and spring-actuated clutch-shifting rod J′, the sleeve J^3, fitting on said rod and having the spring-actuated locking and tripping lever J^4, fulcrumed to it and engaging a notch in the rod J′, the starting-handle J^2, connected with the sleeve J^3, and the rod D^5, receiving longitudinal movement from the movable chute-front and serving to throw off the lever J^4, substantially as herein described.

15. The combination, with the chutes D F for square and round blanks, having movable fronts D^2 F′, and arms D^2 A^4, of the lever D^4 on which the arm D^2 acts, and which is connected with the arm A^4, the clutch-operating rod J′, the sleeve J^3, fitting on said rod and having the locking and tripping lever J^4 fulcrumed in it, the starting-handle J^2, connecting with the sleeve J^3, and the rod D^5, connected with the lever D^4 and serving to throw off the lever J^4, substantially as herein described.

336,653. CONVERTIBLE TELEGRAPH-KEY. JAMES A. MALONEY and ANDREW G. JOHNSON, Washington, D. C.; said Johnson assignor to said Maloney. (No model.) Filed Nov. 25, 1885.



Claim.—1. In a telegraph-key, a lever having a journal formed on one end, whereby it is adapted to revolve and to be operated vertically or horizontally, substantially as described.

2. In a telegraph-key, a lever having a journal formed on one end, in combination with a suitable bearing, whereby the lever is adapted to revolve and to be operated vertically or horizontally in opposite directions, substantially as described.

3. In a telegraph-key, a lever having a journal formed on one end in the plane of its longitudinal axis, in combination with a post having a bearing formed therein, substantially as described.

4. In a telegraph-key, a lever having a journal formed on one end, in combination with a suitable bearing and a retaining device for holding the journal to its seat in the bearing, substantially as described.

5. In a telegraph-key, a lever formed in two sections arranged in the same lineal plane, one of which is fixed and the other free, and provided with an interposed spring connecting the sections, substantially as described.

6. In a telegraph-key, a lever having a journal formed on one end in the plane of its longitudinal axis, and provided with a spring between its fixed and free ends, substantially as described.

7. In a telegraph-key, a lever formed in two sections connected in the same plane, one of which is provided with a journal in the plane of its longitudinal axis and the other with a contact-point, and an interposed spring connecting the sections, in combination with a suitable journal-bearing and an opposite contact-point, substantially as described.

8. In a telegraph-key, a lever having a journal formed on one end thereof in the plane of its longitudinal axis, and provided with a contact-point, in combination with a bearing for the journal and a vertical and horizontal anvil or opposite contact-point, substantially as described.

9. In a telegraph-key, a lever journaled to rotate in the plane of its longitudinal axis, in combination with a horizontal anvil or opposite contact-point secured to a reversible frame whereby a single lever is adapted for right or left hand operation, substantially as described.

10. In a telegraph-key, a lever journaled to rotate in the plane of its longitudinal axis, in combination with a pivoted frame carrying a vertical and a horizontal anvil or opposite contact-point, substantially as described.

11. In a telegraph-key, a lever journaled to rotate in the plane of its longitudinal axis, in combination with an adjustable cushion interposed between the lever and a supporting frame or race, substantially as described.

12. In a telegraph-key, a lever journaled to rotate in the plane of its longitudinal axis, in combination with a cushion interposed between the lever, and a supporting frame or race having projecting arms whereby it is adapted to cushion the lever when operated vertically or horizontally, substantially as described.

13. In a telegraph-key, a flexible lever journaled to rotate in the plane of its longitudinal axis, in combination with an adjustable cushion interposed between the lever and a supporting-frame, substantially as described.

14. In a telegraph-key, a lever journaled to rotate in the plane of its longitudinal axis, in combination with an arc-shaped frame or race, and a spring interposed between the lever and the frame, substantially as described.

15. In a telegraph-key, a lever journaled to rotate in the plane of its longitudinal axis, in combination with an arc-shaped frame or race the ends of which project upward from the key-board, a *stop* connected to the arm, and an inclosed spring which rests upon the frame, substantially as described.

16. In a telegraph-key, the combination of a lever journaled in the plane of its longitudinal axis, a reversible frame carrying an anvil or opposite contact-point, and a cushion interposed between the lever and a supporting frame or race, substantially as described.

17. In a telegraph-key, the combination of a flexible lever journaled in the plane of its longitudinal axis, a frame provided with opposite contact-points, an adjustable cushion, and a supporting frame or race, substantially as described.

18. In a telegraph-key, the combination of a lever journaled in the plane of its longitudinal axis, a post having a corresponding bearing, a retaining-screw, and a set-screw for locking the lever in either of its operative positions, substantially as described.

19. In a telegraph-key, a lever journaled in the plane of its longitudinal axis, in combination with a yoke or frame through which the lever passes, and provided with set-screws on top and both sides to limit the movement of the lever, substantially as described.

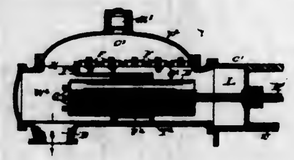
20. In a telegraph-key, a lever journaled in the plane of its longitudinal axis, in combination with a locking device engaging with the journal, a yoke, and adjustable screws to limit the movement of the lever, substantially as described.

21. In a telegraph-key, a lever journaled in the plane of its longitudinal axis, in combination with a locking device, a yoke having vertical and horizontal screws to limit the movement of the lever, and a cushion or pressure spring, substantially as described.

22. In a telegraph-key, a lever journaled in the plane of its longitudinal axis, in combination with a yoke surrounding the lever and provided with screws to limit its movement, a frame carrying opposite contact-points, and a cushioning device between the lever and a frame or race, substantially as described.

23. In a telegraph-key, a lever journaled to rotate in the plane of its longitudinal axis, in combination with vertical and horizontal opposite contact-points, and a switch connected to the binding-posts, whereby the operating parts are short-circuited when the switch is closed, substantially as described.

336,654. PUMP. WILLIAM F. MAYER, Scranton, Pa. Filed Sept. 14, 1885. (No model.)



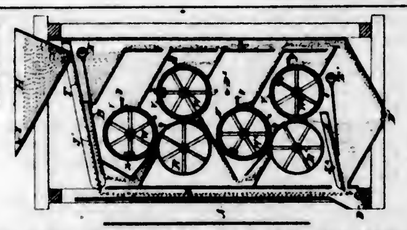
Claim.—1. The combination, with the casing provided with a water-port, diaphragms located within the same and forming an integral part thereof, a sleeve held within the diaphragms, the plunger working in and supported by the diaphragms, a third diaphragm integrally formed with the casing and located above the sleeve in the plane of its bore, and a valve-plate and valves arranged above the latter diaphragm, substantially as shown, and for the purposes set forth.

2. The combination of the casings, having direct communication with each other, plungers working therein, apertured dome-shaped caps inclosing one side of the casings and forming chambers to one side of each casing, a cross-pipe connecting the apertures of the caps and communicating with the chambers, an air-chamber connected with the cross-pipes and a check-valve located within the cross-pipe between the air-vessel and the chamber inclosed by one of the dome-shaped caps, as and for the purposes set forth.

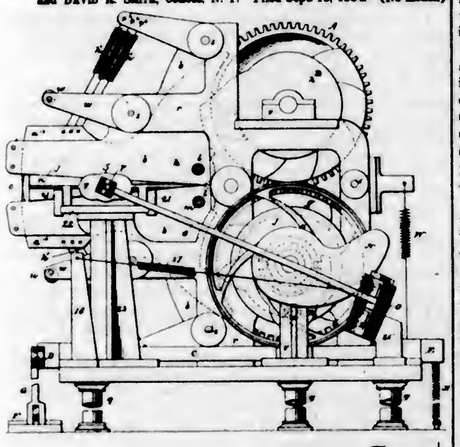
336,655. COCKLE-SEPARATOR. CHARLES A. MCCOLLOM and MILTON PORTER, Dassell, Minn. Filed Mar. 11, 1885. (No model.)

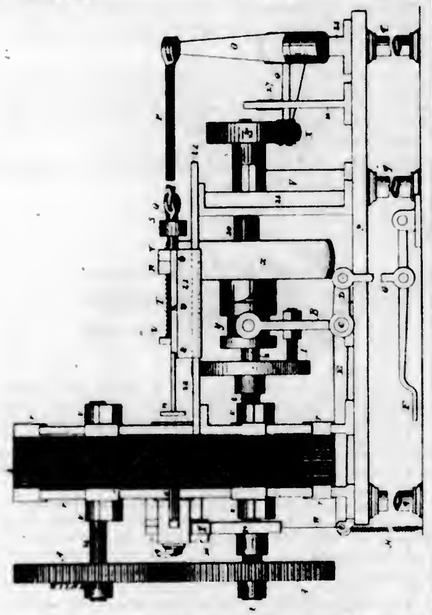
Claim.—The cockle-separator comprising the hard-surfaced roll R, the roll W, having the covering of bass-wood V, and the brushes Y, all substantially as described, and for the purpose set forth.

336,655.



336,656. **MACHINE FOR RADIAL CRIMPING.** JOHN MCCREARY and DAVID R. SMITH, Cohoes, N. Y. Filed Sept. 12, 1884. (No model.)





Claim.—1. In a machine for radial crimping, a series of intermeshing blades arranged to move in parallel planes and to overlap in forming the crimps to correspond with the increasing or diminishing width of fold required in radial crimping.

2. In a machine for radial crimping, a series of intermeshing blades arranged to move in parallel planes and to pass by or interlap in forming the crimps to correspond with the increasing or diminishing width of fold required for radial crimping, in combination with the suitable cams for actuating said blades, arranged to operate first upon the central blades, and thence toward the sides of the series in consecutive order.

3. In a machine for radial crimping, a series of intermeshing blades, all arranged to move in parallel planes and to act alternately and successively against opposite sides of the paper to form the crimps consecutively, the overlap of the intermeshing blades corresponding to the increasing or diminishing width of fold required in radial crimping, in combination with suitable cams for actuating said blades.

4. In a machine for radial crimping, a series of intermeshing blades all arranged to move in parallel planes and to overlap to conform to the increasing or diminishing width of fold required in radial crimping, in combination with cams for operating said blades alternately and successively from opposite sides, forming the crimps consecutively, and stops for holding said blades when withdrawn, substantially as described, whereby a wedge-shaped space, *c*, is formed between the opposing edges, in which space the crimped paper is held.

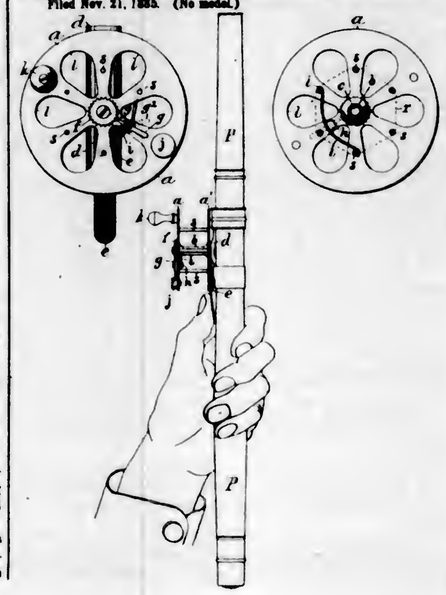
5. In a machine for radial crimping, a series of intermeshing blades, all arranged to move in parallel planes and to overlap to conform to the increasing or diminishing width of fold required for radial crimping, in combination with suitable cams for actuating said blades alternately and successively from opposite sides and to form the crimps consecutively, stops for holding said blades when withdrawn for forming a wedge-shaped space between the opposing edges, and a suitable clamp or presser-plates for compressing the crimped paper in said space, substantially as described.

6. In a machine for radial crimping, a series of intermeshing blades, all arranged to move in parallel planes and to overlap to conform to the increasing or diminishing width of fold required for radial crimping, in combination with cams *g* and *h*, for actuating said blades alternately and successively from opposite sides for forming the crimps consecutively, stops for holding said blades when withdrawn for forming a wedge-shaped space between the opposing edges, and a suitable clamp or presser-plates, *n* and *o*, for compressing the paper in said space, arranged to automatically eject the crimped paper after the same has been compressed.

7. In a machine for radial crimping having a series of intermeshing blades adapted to form, when withdrawn from action on the paper, a wedge-shaped space, *c*, between the opposing edges, the swinging presser-plate *o*, in combination with a suitably-guided sliding presser-plate, *n*, arranged and operating to compress the crimped paper, substantially as described.

8. In a machine for radial crimping having a series of intermeshing blades adapted to form, when withdrawn from the paper, a wedge-shaped space, *c*, between the opposing edges, the combination of the swinging presser-plate *o*, and a suitably-guided sliding presser-plate, *n*, for compressing the crimped paper, and a spring for automatically ejecting the same, substantially as described.

336,657. **FISHING-REEL.** AUGUST F. MESSELBACH, Newark, N. J. Filed Nov. 21, 1885. (No model.)

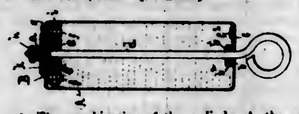


Claim.—1. The combination, with the reel-stud *c* and the reel *a a' b*, mounted thereon, of the spring-drag *e*, affixed to the stud *c* or its foot and formed with a flat face to bear against the flange of the reel at the flat side thereof, the whole arranged and operated as and for the purpose set forth.

2. The combination, with the stud *c*, the reel formed with flanges *a a'* and pins *s*, and the ratchet-wheel *f*, secured to the outer end of the stud, of the click *g*, pivoted upon the flange of the reel, the flattened head *h*, attached to the click, and the spring *i*, having its ends fitted against the pins *s* and its middle pressing against the flattened head, as and for the purpose set forth.

3. The combination, with the stud *c*, of the reel constructed with the side flanges, *a a'*, the flanges being united by a pipe, *b*, fitted to sustain the reel upon the stud and provided with the transverse pins *s*, adapted to sustain the line, and the series of holes *l*, arranged and operated to ventilate the space within the pins *s*, as and for the purpose set forth.

336,658. **HAND FIRE-EXTINGUISHER.** DAVID M. MONROE, Baltimore, Md. Filed Oct. 7, 1885. (No model.)

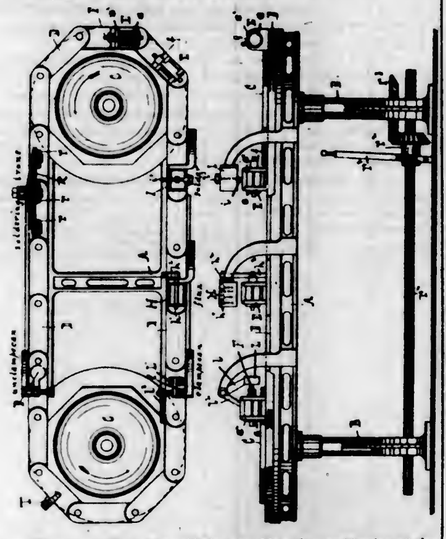


Claim.—1. The combination of the cylinder A, the piston-rod *d*, the plates *e* and *e'*, the intervening elastic ring *i*, the ports or holes *f*, the flexible washer *k*, and the nuts *g* and *h*, the former to secure and bind the plates together and the latter to draw the head against the end of the cylinder, as set forth.

2. The combination of the cylinder A, the piston-head B, the piston-rod *d*, the nut *h*, arranged to draw the piston-head against the cylinder-head, and the relief-valve *c*, as hereby set forth.

3. The combination of the cylinder A, the piston-head B, the piston-rod *d*, and the nut *h*, arranged to draw the piston-head against the head of the cylinder, as and for the purpose specified.

336,659. **CAN-SOLDERING MACHINE.** DAVID M. MONROE, Baltimore, Md. Filed Dec. 3, 1885. (No model.)



Claim.—1. In a can-soldering machine, the combination of the frame A, the chain consisting of links D, means to impart thereto a continuous motion, and the gaging device E, placed on the said chain.

2. In a can-soldering machine, the combination of the endless chain, the gaging device E, mounted on the chain, the wheels C C, means to impart to one of the wheels motion, and the soldering-irons arranged to solder the can-body seam as the said body is passing thereby.

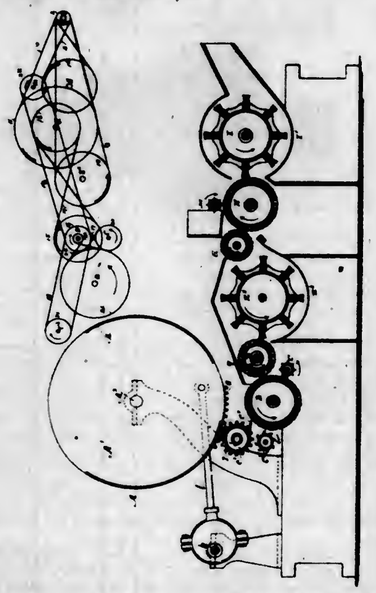
3. The combination of the endless chain, the gaging devices E, mounted on the chain, means to impart to the chain motion, a soldering-iron device arranged to solder the seam as the body is passing by, and the solder-applying device I.

4. The combination of the chain, the gages E, mounted on the chain, means to impart motion to the chain, the soldering-irons arranged to solder the seam as it passes by, the solder-applying device I, and the flux-applying device H.

5. The combination of the chain, the gages E, mounted on the chain, the soldering-irons arranged to solder the seam as it passes by, the solder-applying devices I, and means to operate the gaging devices by which the can-bodies are gaged or released.

336,660. **MACHINE FOR FEEDING, OPENING, AND MIXING WOOL.** SEPTIMUS R. PARKHURST, Montclair, N. J., assignor to Emily R. Parkhurst, same place. Filed July 31, 1886. (No model.)

Brief.—Improvement on the machine shown in Letters Patent No. 323,528. Instead of providing the slot of the hopper with a comb, a roller provided with a comb is placed below the slot and oscillating movement is imparted to said roller. Below this roller, and between it and the toothed cylinder, is placed a toothed roller to assist in opening the wool as it is fed from the hopper.

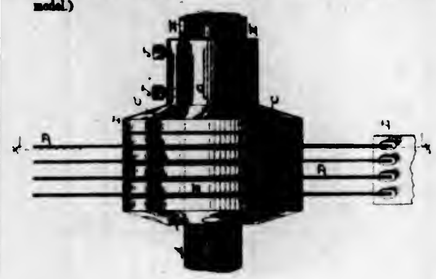


Claim.—1. In combination with the toothed cylinder B, the hopper formed as a partial cylinder upon trunnions, the roller *c'*, comb c^2, and means, substantially as specified, for oscillating the hopper and roller, as set forth.

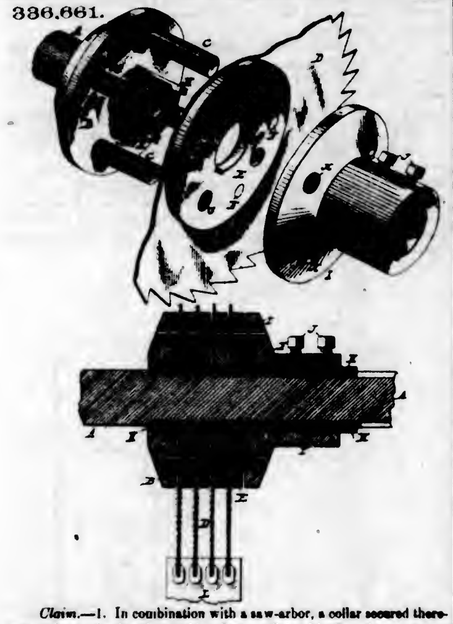
2. The combination, with the hopper formed as a partial cylinder with an opening in the bottom, of the roller *c'*, comb c^2, toothed roller C^3, toothed cylinder B, stripper C, and cylinder D, and means, substantially as described, for operating the moving parts, as specified.

3. The combination, with the hopper formed as a partial cylinder with an opening in the bottom, and supported and oscillated substantially as set forth, of the roller *c'*, comb c^2, toothed cylinders B and D, brush-blower F^2, grate F^3 below the brush, and the toothed cylinder G, to receive the wool from the brush F^2, and means, substantially as described, for operating the moving parts, as specified.

336,661. **SAW-HANGING.** THERON W. PECK, Milwaukee, Wis., assignor to Edw. P. Allis & Co., same place. Filed Dec. 16, 1885. (No model.)



336,661.



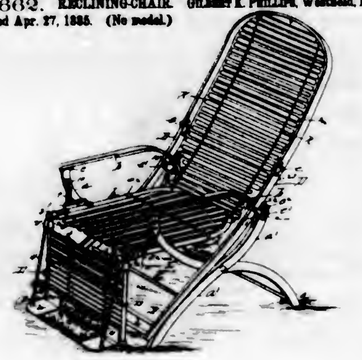
Claim.—1. In combination with a saw-arbor, a collar secured thereupon, pins projecting from said collar parallel with the arbor, a saw, a collar mounted upon the latter, provided with holes to receive the arbor and pins, and a second collar separate from the saw, also mounted upon the arbor, to receive the ends of the pins, and provided with a set-screw.

2. In combination with a saw-arbor, a collar secured thereon, pins projecting from said collar parallel with the arbor, a saw, a collar secured to the latter, provided with holes to receive the arbor and pins, and a second collar, also mounted upon the arbor, to receive the ends of the pins, and provided with a set-screw, the collars upon the arbor being separated a distance greater than the thickness of the saw and its collar.

3. In combination with a saw-arbor, a collar secured rigidly thereupon and provided with pins extending parallel with the arbor, a gang of circular saws mounted loosely on the arbor and pins, a second collar secured to the arbor and separated from the first collar a distance greater than the thickness of the saws, and adapted to receive the ends of the pins, and saw-guides clasping the edges of the saws, substantially as shown and described, whereby the saws, while held rigidly at the periphery, are permitted to vibrate longitudinally upon their arbor between the collars.

4. In combination with arbor A, collars B I, secured thereon, pins C, extending from collar to collar parallel with the arbor, saws D, mounted loosely upon the arbor and pins, a collar, E, around the eye of each saw, a key or spline, H, extending longitudinally of the arbor, and a guide, L, clasping the periphery of the saws, all arranged and operating substantially as shown and described.

336,662. RECLINING-CHAIR. GILBERT K. PHILLIPS, Westfield, Mass. Filed Apr. 27, 1885. (No model.)



Claim.—1. In a reclining and folding chair capable of being folded and having a swinging frame to which the back is attached pivoted at the upper rear ends of the X-frame, the combination, with the latter and with said swinging frame, of the arm of the chair hinged to the upper front end of the X-frame and having an open hook at its rear end engaging with a projecting bolt on the inner side of the upper rear end of the X-frame, substantially as set forth.

2. In a reclining and folding chair, the arm *b* thereof having the groove 15 therein, the strap 14, secured to the arm and partly covering said groove and having the hook 16 thereon, the hinge *c*, connected with the end of said strap and the upper front end of the X-frame, the bolt 17 on the rear upper end of the X-frame engaging with said hook 16, and the hook-piece 19, engaging with said strap, combined and operating substantially as set forth.

3. In combination, the X-frame, the swinging frame D, pivoted to the upper rear ends of the X-frame and having the plate 21 thereon provided with the boss 22, and the springs c^3, secured to the X-frame and extending between the latter and the swinging frame, substantially as set forth.

4. In a reclining-chair, the X-frame, the swinging frame D, pivoted on the latter, the seat of the chair attached near its front end to said X-frame by swinging links adjustably engaging with link-bars on the seat-frame, and the back of the chair consisting of cords attached to the seat, and said swinging frame having transverse slats attached thereto, combined and operating substantially as set forth.

5. In a reclining-chair, the X-frame, the swinging frame D, pivoted on the latter, the seat of the chair attached near its front end to said X-frame by swinging links adjustably engaging with link-bars on the seat-frame, the back of the chair consisting of cords attached to the seat, and said swinging frame having transverse slats attached thereto, the leg-rest hinged to the chair-frame and having its lower end movably attached to the lower end of said swinging frame, combined and operating substantially as set forth.

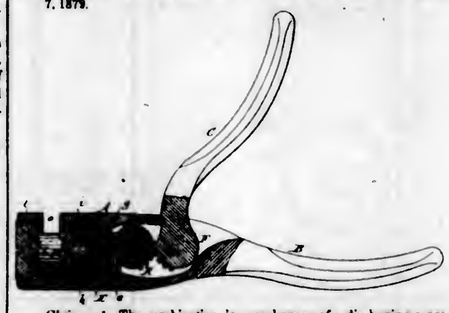
6. In combination with the X-frame and seat of a reclining-chair, the notched link-bars 12, secured to said seat, and the links 8, pivoted to said frame and adjustable for engagement with said bar at different positions thereon, substantially as set forth.

7. In a reclining-chair, the seat thereof consisting of a U-shaped frame open at its front edge, transverse straps secured to each side of said frame and extending thereacross, and flexible slats secured on said straps, whose rear ends extend unsupported beyond the rearmost strap, combined and operating substantially as set forth.

8. In a reclining-chair, the leg-rest, substantially as described, hinged to the seat and connected with the swinging frame D, having the foot-board in two hinged sections, w w^2, the former being connected to the leg-rest by folding hinges, substantially as described, and having the spring-bars 4, rigidly attached by one end to the upper end of the rest, and having a link attachment with the foot-board section w, combined and operating substantially as set forth.

9. The combination of the X-frame, the swinging frame which supports the chair-back pivoted thereto, the seat partly suspended on said swinging frame, and the leg-rest pivoted to the seat and having a sliding connection with the said swinging frame, substantially as described.

336,663. SEAL-PRESS. CHARLES L. POND, Buffalo, N. Y. Filed Mar. 7, 1879.



Claim.—1. The combination, in a seal-press, of a die having a projection and a die having a corresponding depression, said projection and depression being arranged to intersect the direction in which the seal-wire is arranged in the seal placed in the press, whereby the seal and wire are crimped in forming the impression on the seal, substantially as set forth.

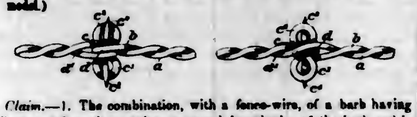
2. In a hand seal-press, the combination, with the stock A, provided with a rigid handle, B, an opening, *o*, and a stationary die, L, of a movable die, D, an actuating-handle, C, provided with an eccentric, F, and an eccentric, E, interposed between the handle-eccentric and the movable die, substantially as set forth.

3. In a hand seal-press, the combination, with the tubular stock A, provided with an opening, *o*, in its side, and a bore or cavity extending to the end of the stock, of a movable die, D, arranged in said cavity on one side of the opening *o*, and a stationary die, L, secured in the outer end of the bore or cavity, whereby the stationary die is applied and removed through the end of the bore of the stock, substantially as set forth.

4. In a hand seal-press, the combination, with the tubular stock A, having a side opening, *o*, and provided with an axial bore extending to the end of the stock, and constructed at its end with an internal screw-thread, of a stationary die, L, provided with an external screw-thread and secured in the end of the bore of the stock, substantially as set forth.

5. In a seal-press, the combination, with a stock provided with an opening for the insertion of the seal and wire, of a stationary die seated in said stock, a movable die, and an actuating-handle, whereby the movable die is closed upon the stationary die, said dies being constructed one with a projection and the other with a corresponding depression which intersect the direction in which the wire is arranged in the seal placed in the press, substantially as set forth

336,664. BARBED WIRE. JAMES POTTER, Chicago, Ill., assignor of one-half to Lemuel H. Flershem, same place. Filed Apr. 26, 1884. (No model.)

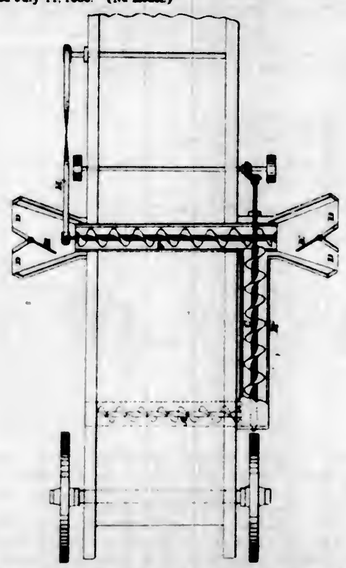


Claim.—1. The combination, with a fence-wire, of a barb having broad eyes and prods or points arranged lengthwise of the bark and in contiguity with the rounded ends of the eyes, which cover all but the extremities thereof, substantially as described.

2. The combination, with a barb having broad eyes and longitudinal points arranged in contiguity with the rounded ends of said eyes, which cover all but the extremities thereof, of the fence-wire wrapped around the narrow neck of the barb between said eyes, substantially as described.

3. A barb for fence-wires consisting of a single piece of metal bent into figure-of-eight form, having two broad eyes, a narrow neck between the eyes, and two points laid against the eyes and protected thereby substantially as described.

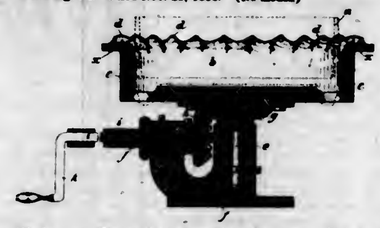
336,665. SACKING ATTACHMENT FOR THRASHING-MACHINES. CHARLES F. PRESTON, LYMAN G. STONE, and HIRAM FISHER, Woodland, Cal. Filed July 11, 1885. (No model.)



Claim.—1. The combination of the spout for receiving the grain from the cleaning-shoe, means for delivering this grain at one side of the separator, an inclined elevator by which the grain is raised to a suitable point to be delivered into sacks, a second horizontal spout into which the grain is delivered from the elevator, and a screw or auger by which the grain may be carried along this spout and delivered at either side of the machine, substantially as herein described.

2. The combination of a horizontal spout into which the grain is received from the cleaning-shoe of the separator, a screw or auger by which it is delivered at one side of the machine, an inclined elevator into which this grain is received and by which it is raised to a sufficient height for sacking, a second horizontal spout into which the grain is delivered from the elevator, and which extends across from one side to the other of the machine, sacking-spouts connected with each end, an auger or conveyer fitted within this horizontal spout, and mechanism by which it may be caused to rotate in either direction, so as to deliver the grain at one side or the other of the machine, substantially as herein described.

336,666. METHOD OF SHAPING GLASSWARE. DANIEL C. RIPLEY, Pittsburg, Pa. Filed Nov. 22, 1885. (No model.)



Claim.—1. The method of making glassware, which consists in first producing a cup-shaped blank and then flaring and forming the same by the effect of centrifugal action and gravity exerted successively thereon, substantially as and for the purposes described.

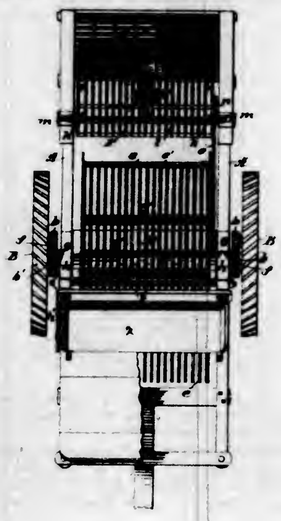
2. The method of making glassware, which consists in first producing a cup-shaped blank and then flaring and spreading the upper or open end by rotating the same at a high speed without external support while in a heated or semi-plastic condition, and finally shaping the flared end by permitting it to settle or drop by its own gravity on a forming-surface of the desired pattern, substantially as and for the purposes described.

3. The method of making glassware, which consists in first producing a cup-shaped blank, then flaring or spreading the upper or open end by rotating the same at a high speed while in a heated or semi-plastic condition, then shaping the flared end by permitting it to drop or settle by its own gravity on a forming-surface, and finally applying pressure thereto, substantially as and for the purposes described.

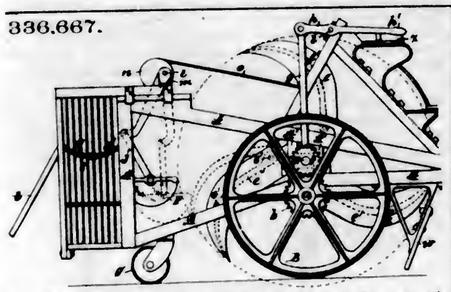
4. The combination, in a machine for shaping glassware by centrifugal action and gravity, of a revoluble holder or chuck for holding the article, with a former surrounding the chuck and extending laterally therefrom, for giving shape to the article as it settles down thereon in a plastic state by gravity, substantially as and for the purposes described.

336,667. POTATO-DIGGER. ROBERT T. ROBERTS, Racine, Wis. Filed June 25, 1885. (No model.)

Claim.—1. The series of fingers *e e e*, affixed to and rotating with a horizontal shaft, E, actuated by the revolving of the machine supporting and carrying wheels B B, in combination with the basket F, suspended on arms *k k*, rigid on axle *l*, said axle *l* being provided with mechanism connected to axle E, whereby when said axle E rotates said



336,667.



basket F is raised and lowered, all being supported on the frame A, and all substantially as described.

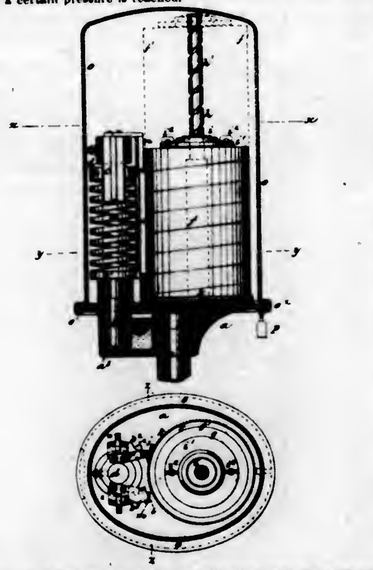
2. In a potato-digging machine, a horizontal rotating axle, E, provided with one or more series of fingers, *e e e*, in combination with a rising and falling basket, F, actuated by mechanism connecting it with the axle E, and a potato-receptacle, G and H, all supported on a frame, A, and all constructed and operating substantially as described.

3. In a potato-digging machine, the finger-carrying axle E, provided with series of fingers *e e e*, and attached to mechanism whereby it is rotated, in combination with the basket F, suspended on arms *k*, rigid on axle *l*, axle *l*, supported and rotating in frame A, segmental lever *n*, rigid on axle *l*, cord *o*, attached at one end to segmental lever *n* and at the other end to lever *p*, lever *p*, pivoted on frame A, and studs *q q*, rigid on axle *e*, all substantially as and for the purpose set forth.

4. In a potato-digging machine, the suspended rising and falling basket F, in combination with the screen *s*, and the potato-receiving boxes H and G, all supported on frame A, and all substantially as and for the purpose set forth.

336,668. **PRESSURE INDICATOR AND RECORDER.** ALFRED SHEDLOCK, Jersey City, N. J., assignor of one-half to Charles G. Singer, New York, N. Y. Filed Aug. 12, 1885. (No model.)

Brief.—The cylinder falling by gravity receives a rotary motion from its connection with the helical groove on its supporting-rod. An escapement mechanism is controlled by a piston receiving steam-pressure and acting against a spring which is strong enough to resist movement until a certain pressure is reached.



Claim.—1. In a pressure-recorder, an indication-receiver constructed substantially as described operated by the force of gravity acting on its mass, as and for the purpose set forth.

2. In a pressure-recorder, in combination, an indication-receiver operated by the force of gravity, a locking device for holding the indication-receiver stationary, an indicating device for marking indications thereon, and means actuated by variable pressures by which the locking device is caused to release the indication-receiver and the indicating device is operated, substantially as and for the purpose set forth.

3. In a pressure-recorder, a cylindrical indication-receiver, in combination with means, substantially as described, by which it is caused by the action of gravity thereon to move helically, as set forth.

4. In a pressure-recorder, in combination, a helically-moving indication-receiver, means for holding and causing it to rotate as it is acted upon by gravity, a locking device for holding the indication-receiver stationary, an indicating device for marking indications thereon, and a pressure-actuated device connected to the locking and indicating devices, substantially as set forth.

5. In a pressure-recorder, in combination, a cylindrical indication-receiver provided with a ratchet-wheel on its lower end, a releasable nut on its upper end, a vertical rod upon which the cylinder is fitted to slide and having a screw-thread or helical groove in which the nut works, and a vertical escapement-pawl arranged to engage in the teeth of the ratchet-wheel, substantially as set forth.

6. In a pressure-recorder, in combination, an indication-receiver, an indicating device composed of a disk having a flat formed thereon and marking-needles in its periphery, vertical guides having inclined recesses and located in front of the receiver, an inclined plate upon which the flat of the disk works when its bearings move into the inclined recesses, and means for imparting vertical motion to the disk, whereby it is first caused to move forward toward the receiver and then to rotate thereon by its marking-needles puncturing the same, substantially as set forth.

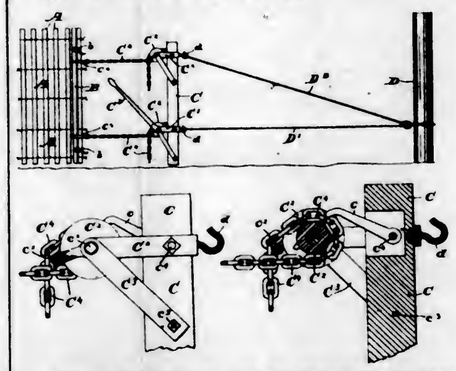
7. In a pressure-recorder, the cylinder *g*, provided with the paper covering *f*, and having the nut *i* clamped on its upper end, in combination with the vertical rod *h*, provided with the helical groove *h'*, substantially as set forth.

8. In a pressure-recorder, the combination, with the cylinder *g*, nut *i*, helically-grooved rod *h*, and ratchet-wheel *k*, secured to the lower end of the cylinder, of the vertically-arranged escapement-pawl *j*, having long retaining-edges adapted to engage with the teeth of the ratchet-wheel *i* in all positions of the cylinder *g* on the rod *h*, substantially as and for the purpose set forth.

9. In a pressure-recorder, in combination, the piston *b*, provided with a groove in an arm projecting therefrom, the escapement-pawl having a flange, j^3, inclined at its lower end and embraced by said groove, the ratchet-wheel *k*, cylinder *g*, and vertical rod *h*, substantially as set forth.

10. In a pressure-recorder, in combination, the cylindrical indication-receiver *g g' f*, the guide-rod *h*, puncturing-disk *l l²*, guides *n n'*, links *m m*, and piston *b*, substantially as set forth.

336,669. **FENCE-STRETCHER.** CHARLES D. SHELLABERGER, Indianapolis, Ind. Filed Apr. 27, 1885. (No model.)



Claim.—1. The combination, with the chain-wheels of a fence-stretcher, over which the chains pass, of a guard or finger extending across in front of said wheels, whereby the free end of said chain is held out of contact therewith, substantially as set forth.

2. The combination, in a fence-stretcher, of a bar, C, stirrups C', carrying the chain-wheels and provided with fingers *c'*, said chain-wheels, chains running therefrom, and pawls for engaging and holding them in position, substantially as shown and specified.

3. The combination, in a fence-stretcher, of a bar, C, mortised and provided with stirrups, chain-wheels mounted in said stirrups, chains running from said wheels to the fence, a lever for operating said wheels, and pawls mounted in said mortises in said bar and adapted to engage directly with said chains as they are drawn along by said wheels through the operation of said lever, substantially as set forth.

4. The combination, in a fence-stretcher, of a bar, C, stirrups C', having the fingers *c'*, wheels C^2, braces C^3, chains C^4, pawls *c*, and a lever, C^5, substantially as shown and specified.

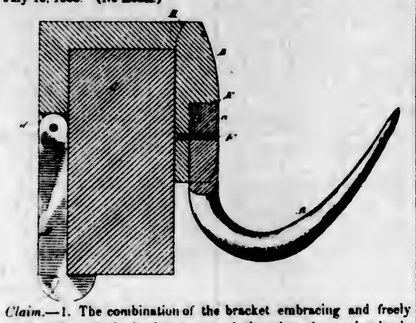
336,670. **CUTTING APPARATUS FOR HARVESTERS.** DAVID SHIELDS, Quincy, Ill. Filed Oct. 18, 1884. (No model.)



Claim.—1. In combination with the finger and cutter bars, the rollers journaled to the finger-bar behind the cutter-bar and located a distance above the finger-bar, leaving a space between their lower parts and the finger-bar, for the purpose set forth.

2. In combination with the finger-bar having the upturned ledge O, and cutter-bar with cutters secured to its under side, the rollers journaled to the finger-bar behind the cutter-bar a distance above the finger-bar, leaving a space between their lower parts and the ledge in front and below, substantially as shown and described, for the purpose set forth.

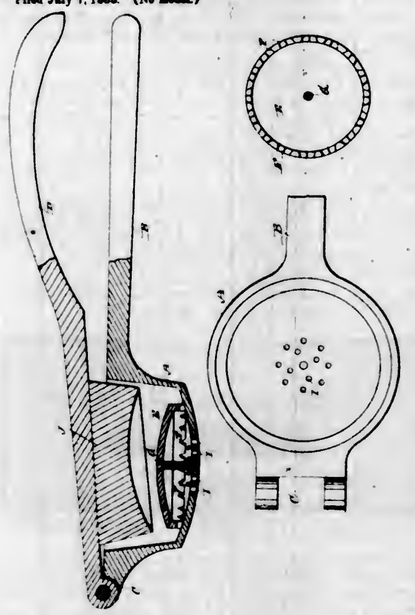
336,671. **HEAT-HOOK.** BENJAMIN A. STEVENS, Toledo, Ohio. Filed July 13, 1885. (No model.)



Claim.—1. The combination of the bracket embracing and freely sliding along the rail, the hook proper, and the pivoted securing-hook, substantially as and for the purpose set forth.

2. The combination of the supporting-bracket having the securing-groove and cross-bar, and the hook proper having the cross-groove in its shank engaging the cross-bar of the supporting-bracket and riveted in place, substantially as and for the purpose set forth.

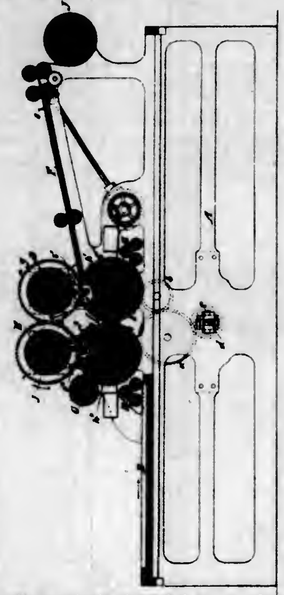
336,672. **LEMON-SQUEEZER.** JACOB J. STUBLA, Memphis, Tenn. Filed July 7, 1885. (No model.)



Claim.—1. A lemon-squeezer consisting of the cup A, having apertures in its bottom, the inverted-cup-shaped plate over said apertures and notched on the lower edge of its rim, and the pivoted lever having a presser block or projection, substantially as set forth.

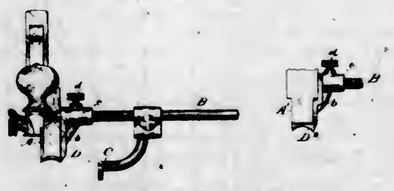
2. The combination, with the cup A, having the handle B and apertures I, of the lever D, pivoted on the cup, the block J, secured on the lever and having its bottom concaved, and of the inverted-cup-shaped plate E, having notches in its edge and held to the bottom of the cup by a screw, substantially as herein shown and described.

336,673. **PRINTING-MACHINE.** GEORGE F. TAYLOR, Brooklyn, N. Y., assignor to Calvert B. Cottrell, Stonington, Conn. Filed Dec. 15, 1884. (No model.)



Claim.—The combination, in a printing-press, of two impression-cylinders geared to rotate in opposite directions, a carrying-cylinder for taking a sheet printed on one side from the first-impression cylinder, a reversing-cylinder for taking the sheet from said carrying-cylinder and delivering it to the second-impression cylinder with the unprinted side outward, and a reciprocating bed having a single form which is carried by the bed past both impression-cylinders and operates in connection with one impression-cylinder to print one side of the sheet during the movement of the bed in one direction, and in connection with the other impression-cylinder to print the other side of the sheet during the movement of the bed in the other direction, substantially as herein described.

336,674. **PLANE.** JUSTUS A. TRAUT, New Britain, Conn. Filed January 29, 1885. (No model.)



Claim.—The combination of the cutter, the main stock having cutter-holding mechanism, the gage-rods B B, projecting laterally from one side of said stock, the attachable and detachable bottom having a throat which coincides with the cutter-seat of the main stock, and having also the upright *b*, extending upward by the side of the main stock to said gage-rods, sockets *c c*, formed on said upright and adapted to receive said gage-rods, and fastening mechanism for holding the sockets in proper position on said rods, and thereby securing the attachable and detachable bottom in place, substantially as described, and for the purpose specified.

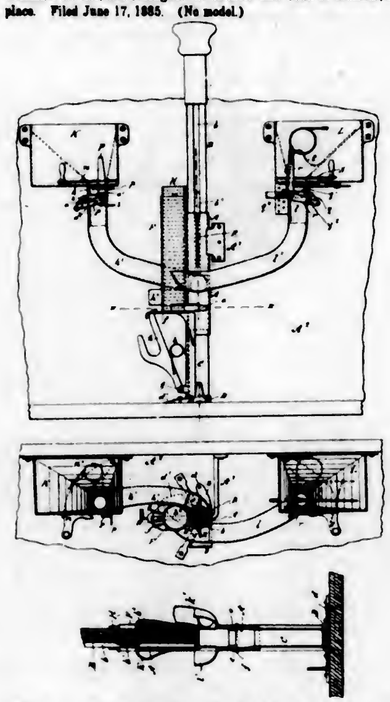
336,675. METHOD OF PRODUCING IMITATION STONE. HIRAM S. UTLEY, Chicago, Ill., assignor of one-half to Henry S. Bowen, same place. Filed Apr. 29, 1885. (Specimens.)

Claim.—1. The herein-described method of producing imitation stone, the same consisting in first coating glass with varnish, then sprinkling on said varnish, while more or less raw, granulated marble naturally or artificially varying in tint, and then applying over the whole one or more coats of varnish.

2. The herein-described method of producing an imitation stone, the same consisting in first coating glass with varnish, and then sprinkling on said varnish, while more or less raw, marble granulated to different degrees and of varying natural or artificial tints, and then applying one or more coats of tinted varnish over the same.

3. The herein-described method of producing imitation stone, the same consisting in first coating glass with varnish, then sprinkling on said varnish, while more or less raw, granulated marble and other stone, the granules of which are of differing size, and then applying over the same one or more coats of white or tinted varnish.

336,676. CARTRIDGE-LOADING MACHINE. LEONIDAS H. VAN STOCKLE, Fort Lee, N. J., assignor to himself and JOHN F. CREAMER, same place. Filed June 17, 1885. (No model.)



Claim.—1. The combination, with the tube A and plunger B, of the swinging base D, having a segmental wedge, *d'*, for raising and holding the cartridge-case C at the lower end of the tube A, substantially as set forth.

2. The combination, with the vertical tube A and plunger B, of the slotted cylinder F, attached to the vertical tube A, the slotted wad-carrier H, the slotted plate *f*, to support the wads, the spring-fingers *e*, attached to the stationary cylinder F, and having their spring ends at opposite sides of the tube A, and the swinging wad-pusher G, substantially as set forth.

3. The combination, with the tube A, plunger B, cylinder F, and pusher G, of the wad-carrier H, made as a slotted spring-tube having projecting finger-pieces *h'* and a closed end, *h²*, substantially as set forth.

4. The combination, with the pusher B and the vertical tube A, open at the lower end for the reception of the cartridge-case, of the slotted cylinder F, attached to the cylinder A, the slotted plate *f*, the wad-pusher G, and the movable wad-carrier H, adapted to being placed within the tube F, substantially as set forth.

5. The combination, with the hopper for powder or shot and the swinging cut-off for the same, of a vertical measuring-tube beneath the hopper, a plate passing through a slot at one side of the measure, a swinging valve upon the said plate, a band around the measure, and the pivot upon which the said plate and valve swing, and a bent lever pivoted upon the band and acted upon by the cut-off for moving the valve, substantially as set forth.

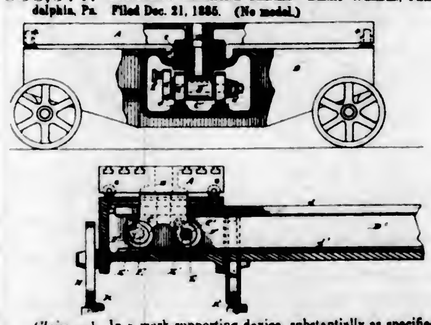
6. The combination, with the tube A and plunger B, of separate hoppers K L, for powder and shot, the separate inclined tubes *k' l'*, leading from the respective hoppers and opening into the tube A at opposite sides thereof, the cut-offs, measures, and valves for the respective hoppers, and the slotted cylinder F, attached to the tube A, the removable wad-holder H, the plate *f*, and pusher G, substantially as specified.

7. The combination, with the vertical tube A and plunger B, of the slotted cylinder F, slotted wad-carrier H, the slotted plate *f*, to support the wad, the spring-fingers *e*, attached to the tube F, the swinging wad-pusher G in the form of a lever, and a pivot for the same at its lowest end, and a spring, *h*, to return said pusher to its normal position, substantially as specified.

8. The combination, with the powder and shot hoppers and the tubes for conveying away the powder and shot, of the pivoted cut-offs, the swinging bent levers and their springs, the plates *o q*, the valves *o q'*, supported by such plates, the measures *k l*, the movable bands *o³ q³* around the measures, and pivots on such bands upon which the plates and valves swing, and means for holding the bands when adjusted to regulate the powder and shot discharged, respectively, substantially as specified.

9. The combination, with the hopper for holding shot and the cut-off slide at the bottom, of the yielding finger *t*, within the hopper with its end adjacent to the delivery-opening in the hopper to prevent the shot obstructing the slide as it is closed, substantially as specified.

336,677. PUNCHING-MACHINE TABLE. HENRY WARDEN, Philadelphia, Pa. Filed Dec. 21, 1885. (No model.)



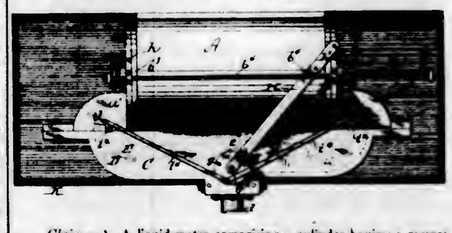
Claim.—1. In a work-supporting device, substantially as specified, a T-shaped main carriage supported and guided upon fixed rails, and having its central arm provided with bearings at right angles to the stationary track.

2. In a work-supporting device, substantially as specified, the combination of a T-shaped main carriage having supporting-wheels H and supporting and guiding wheels H', and the stationary tracks K K'.

3. In a work-supporting device, substantially as specified, the combination of the T-shaped main carriage having tracks *d'* and bearing-surfaces *d*, with the carriage C, having wheels F, connected to it by means of the eccentric shafts E E' E, and means for turning said shaft in its bearing.

4. In a work-supporting device, substantially as specified, the combination of the pivoted table A, the carriage C, having bearing-surfaces *c*, and wheels F, connected with it by eccentric axles E E' E, the carriage D D', having bearings *d* and tracks *d'*, and supported by wheels H H', running on tracks K K'.

336,678. PISTON WATER-METER. HENRY B WHITTAKER, Philadelphia, Pa. Filed Dec. 26, 1884. (No model.)



Claim.—1. A liquid-meter comprising a cylinder having a reciprocating piston, an inlet and an outlet port arranged in pairs at each end of the cylinders, valves common to both ports of a pair, and operating mechanism between said valves and piston, substantially as shown and described.

2. A liquid-meter comprising a cylinder having a reciprocating piston, an inlet and an outlet port arranged in pairs at each end of the cylinder, the outlet-ports leading to a service-pipe, the inlet-ports to a supply-pipe, flap-valves I for said ports, which are in gear with and operated by said piston, substantially as shown and described.

3. A liquid-meter comprising a cylinder having a reciprocating piston, an inlet and an outlet port arranged in pairs at each end of the cylinder, valves common to both ports of a pair, and an oscillating lever in gear with said valves and piston, substantially as shown and described.

4. A liquid-meter comprising a cylinder having a reciprocating piston, a supply-pipe having an oscillating valve, inlet and outlet ports at each end of the cylinder, valves for said ports, and mechanism interposed between all of said valves and the cylinder-piston, substantially as shown and described.

5. A liquid-meter comprising a cylinder having a reciprocating piston, a supply-pipe provided with an oscillating valve, inlet and outlet ports at each end of the cylinder, valves for said ports, mechanism interposed between all of said valves and the cylinder-piston, and a water-tight casing, K, for said parts, substantially as shown and described.

6. The combination of cylinder A, having reciprocating piston B, and duplicate ports D and E, having flap-valves I in gear with and operated by said piston, substantially as shown and described.

7. The combination of cylinder A, having reciprocating piston B, duplicate ports D and E, a service-pipe for ports E, a supply-pipe for ports D, and valves I and *f* in gear with and operated by said piston, substantially as shown and described.

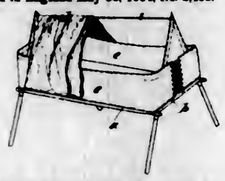
8. The combination of cylinder A, having reciprocating piston B, a supply-pipe having valve *f*, and duplicate ports D and E, having valves I in gear with valve *f*, which in turn is in gear with and operated by said piston, substantially as shown and described.

9. The cylinder A, having reciprocating piston B and duplicate ports D E, valves I for said ports, and cylinder-heads *a*, having chambers *a'* for said valves, substantially as shown and described.

10. In a liquid-meter, the supply-pipe *d*, having valve *f*, combined with a disk, G, having studs *g*, a lever, H, having weight *h'*, and rod *b²*, connected to the piston-rod of the cylinder A, substantially as shown and described.

11. The combination of cylinder A, having reciprocating piston B, cylinder-heads *a*, having extensions or chambers *a'*, chest C, having ports D E, and pipes *e* and *d*, flap-valves I, and valve *f*, connected to the flap-valves and in gear with and operated by said piston, substantially as shown and described.

336,679. BEDSTEAD OR COT. HENRY WILLIAMS, 2 Duke Street, London Bridge, County of Surrey, England. Filed Sept. 3, 1885. (No model.) Patented in England May 30, 1884, No. 8,455.



Claim.—1. The combination, with the frame-work composed of the inclined legs or end frames and side and end bars, of a covering having sheaths or pockets to receive the side bars of the frame and extensions on its bottom having pockets to receive the legs or end frames, the opposite ends of the side pieces being adapted to be secured together, substantially as herein shown and described.

2. The combination, with the frame-work composed of the pairs of side and end bars and inclined legs or end frames united by triple-socketed corner-pieces, of the canvas or covering composed of the bottom and side pieces united by tubular sheaths, and adapted to be stretched along the bottom and sides of the frame and to fold or lap against the ends thereof, the bottom being provided with V-shaped extensions formed with pockets to receive the apexes of the legs or A-shaped end frames, and the sides furnished with means of uniting the ends of the opposite side portions, all substantially as described, and shown in the drawings.

336,680. SHOT-CONCENTRATOR. HENRY E. WHAMS and GEORGE N. WOODEN, Newark, N. J. Filed June 20, 1885. (No model.)

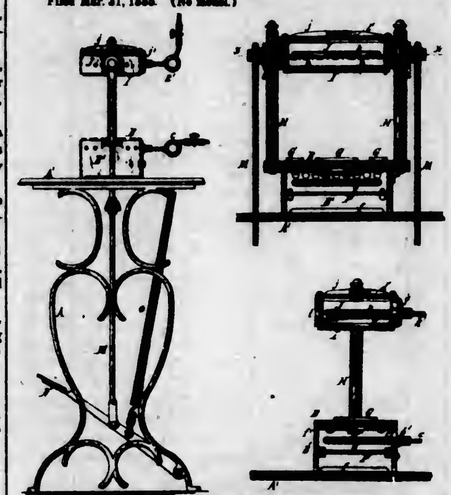


Claim.—1. A shot-concentrating device consisting of an outer casing having one end notched or scalloped, an inner shell arranged within said outer casing, and wires arranged across one end of the inner shell, and extending in between the said inner shell and the outer casing, said device being adapted to be arranged in a shot-cartridge, for the purpose set forth.

2. A shot-concentrating device consisting of an outer casing having one end scalloped, an inner shell arranged within said outer casing, and four wires arranged across the face of said inner shell, dividing the opening therein into spaces of approximately the same area, the ends of said wires extending in between the outer and inner casing, said concentrating device being adapted to be arranged in a shot-cartridge, for the purpose set forth.

3. The combination, with a shot-cartridge, of a shot-concentrating device consisting of an outer casing having one end scalloped, an inner shell arranged within said outer casing, and four wires arranged across the face of said inner shell, dividing the opening therein into spaces of approximately the same area, the ends of said wires extending in between the outer and inner shells, substantially as and for the purposes herein set forth.

336,681. BAKING-MACHINE. CHARLES WEBER, Buffalo, N. Y., assignor, by direct and mesne assignments, to Martin Kauth, same place. Filed Mar. 31, 1885. (No model.)



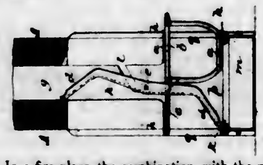
Claim.—1. In a baking-machine, the combination, with the stationary baking-plate B, provided with a gas-burner, *b*, and dies G, of a movable baking-plate, I, provided with a gas-burner, *k*, substantially as set forth.

2. The combination, with the lower baking-plate, B, provided with a gas-burner, *b*, and dies G, of the guide-rods H, and the upper movable baking-plate, I, mounted loosely on said rods and provided with a gas-burner, *k*, substantially as set forth.

3. The combination, with the stationary frame A A' and lower baking-plate, B, provided with a burner, *b*, and guide-rods H, of the upper movable plate, I, mounted loosely on said rods and provided with a burner, *k*, and the connecting-rod M, treadle N, and spring *o*, whereby the movable baking-plate is operated, substantially as set forth.

4. The combination, with the lower baking-plate, B, of the supporting-frame B', provided with an opening, *c'*, having a notch, *c²*, a gas-burner, *b*, provided with a shouldered nipple, and a wedge, D, whereby the burner is secured in place, substantially as set forth.

336,682. FIRE-PLACE. JACOB WESLEY WOLFE, Nashville, Tenn., assignor of one-half to Adelbert L. Ritchey, same place. Filed Feb. 2, 1885. (No model.)

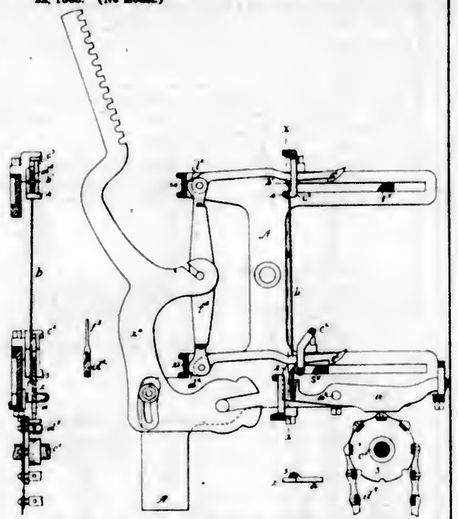


Claim.—1. In a fire-place, the combination, with the wall or chimney A, formed with a single flue, *g*, which terminates at its lower end in a fire-place, *p q*, opening equally into the rooms B and C, and formed with transverse slots *c* and angular slots *l* at each side thereof, of the fire-grate *a*, with end flanges, *b*, and fire-back *h*, having pivots *e* and an-

gular ends *d*, which rest upon seats *k*, substantially as described and shown, for the purposes specified.

2. The combination, in a fire-place, of the single flue *g*, fire-place *p*, with openings *q* to the opposite rooms, B and C, flanges *c* and *l*, formed upon each side of the side walls, grate *a*, with flanges *b*, fire-back *h*, with pivots *s* and angular ends *d*, rest *k*, and ash-pan *m*, extending entirely across said fire-place and removable from either side thereof, as described.

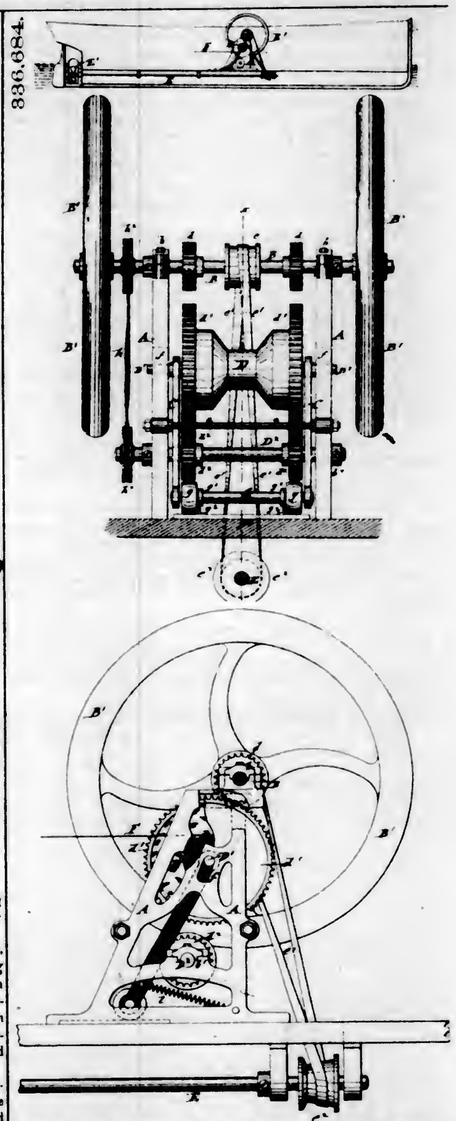
336,683. **SHEDDING MECHANISM FOR LOOMS.** HORACE WYMAN, Worcester, Mass., assignor to George Crompton, same place. Filed Jan. 22, 1883. (No model.)



Claim.—1. The lever, the pattern-surface, the hooked jack d^3, resting on the said lever, the connector, the hooked jack d^4, and the flanged rod to support the latter jack, combined with a harness-lever attached to the connector, and with lifters to engage and move the jacks, substantially as described

2. The pivoted lever provided with the projection 2 and socket or recess 3, and the pattern-surface to operate the said lever, combined with the hooked jacks d^3 d^4, the connector, the grid d^2, the flanged rod to lift the jack d^4, the harness-lever joined with the connector, and lifters to engage and move the said jacks, substantially as described.

336,684. **PROPELLING ATTACHMENT FOR BOATS.** FREDERIK ZECHMEISTER, Hoboken, N. J., assignor of one-third to Gustav Amberg, New York, N. Y. Filed Feb. 23, 1885. (No model.)



Claim.—1. In a propelling attachment for boats, the combination, substantially as set forth, of a reciprocating sliding frame, a shaft having bearings therein, a grooved roller fixed to said shaft, provided with an actuating-band, a gear-wheel attached to said shaft, meshing intermittently with pinions on an auxiliary and fly-wheel shaft, a pulley on said auxiliary shaft connected by a cross-belt with a pulley on the fly-wheel shaft, a drum on said fly-wheel shaft, and a belt connecting said drum with and imparting rotary motion to a propeller shaft and blade.

2. In a propelling attachment for boats, the combination, substantially as set forth, of a reciprocating sliding frame, rollers attached to the lower part thereof, a shaft having bearings in said frame, a grooved roller fixed to said shaft, provided with an actuating-band, a gear-wheel attached to said shaft, meshing intermittently with pinions on an auxiliary and fly-wheel shaft, a pulley on said auxiliary shaft connected by a cross-belt with a pulley on the fly-wheel shaft, and a drum on said fly-wheel shaft having a belt connecting said drum and imparting rotary motion to a propeller shaft and blade.

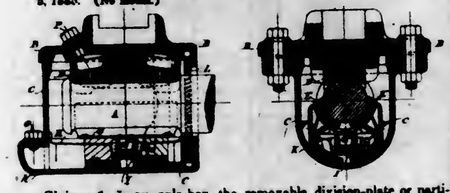
3. In a propelling attachment for boats, the combination, substantially as set forth, of a reciprocating sliding frame, a shaft having bearings therein, a grooved roller fixed to said shaft, an actuating-band attached thereto, a gear-wheel attached to said shaft, meshing intermittently with pinions on an auxiliary shaft, and a fly-wheel shaft provided with fly-wheels, a pinion meshing intermittently with the gear-wheel of the driving-shaft, a pulley receiving a cross-belt, and a drum on said fly-wheel shaft having a belt connecting said drum and imparting rotary motion to a propeller shaft and blade.

4. In a propelling attachment for boats, the combination, substantially as set forth, of the standards, A, a fly-wheel shaft provided with a pinion, drum, and pulley, an auxiliary shaft provided with a pinion and a pulley, a belt connecting the auxiliary and fly-wheel shafting, a reciprocating sliding frame provided with a gear-wheel meshing intermittently with the pinions of the fly-wheels, and auxiliary shaft, mechanism for imparting rotary motion from the fly-wheel shaft to the propeller shaft and blade, and a spiral spring connecting the reciprocating sliding frame to the standards A.

5. In a propelling attachment for boats, the combination, substantially as set forth, of the standards A, the stationary auxiliary shaft with bearings in the lower part thereof, said auxiliary shaft being provided with a pinion and pulley, a stationary fly-wheel shaft with bearings in the upper part of said standards, provided with a pinion, drum, and pulley, the latter connected to said auxiliary shaft by a cross-belt, a driving-belt connecting said drum with a propeller shaft and blade, a reciprocating sliding frame, a driving-shaft having bearings in said frame and moving in an inclined plane in guiding-slots of the standards A, said sliding shaft being provided with a gear-wheel meshing intermittently with the pinions of the auxiliary and fly-wheel shaft, an actuating-roller, and band attached thereto.

6. In a propelling attachment for boats, the combination, substantially as set forth, of a base-plate, g^3, guide-rails g^3, attached thereto, supporting-standards A, a fixed shaft, B, with bearings in said standards provided with the fly-wheel B', the drum *c*, the pinion *d*, and pulley b^2, an auxiliary shaft, D^2, provided with the collar b', pinion d^2, and pulley A', a cross-belt, *h*, connecting the pulleys A' and b^2, the transverse brace *a*, a reciprocating sliding frame, C, provided with the connecting-rod g', rollers working on the guide-rail g^3, a driving-shaft, D', having bearings in the sliding frame C, said shaft D' moving in inclined guide-slots *f* in the standards A, a grooved roller, D, an actuating-band, F, attached thereto, a gear-wheel, d', on the shaft D' meshing intermittently with the pinions *d* and d^2, a driving-belt, *s'*, and a propeller-shaft, E, provided with a pulley, e^2, the driving-belt d', connecting the pulleys, *e* and e^2, and the blade E'.

336,685. **CAR-AXLE BOX.** HARRY KENDRICK AUSTIN, Cars Brea Villa, Washwood Heath Road, County of Warwick, England. Filed Oct. 5, 1885. (No model.)

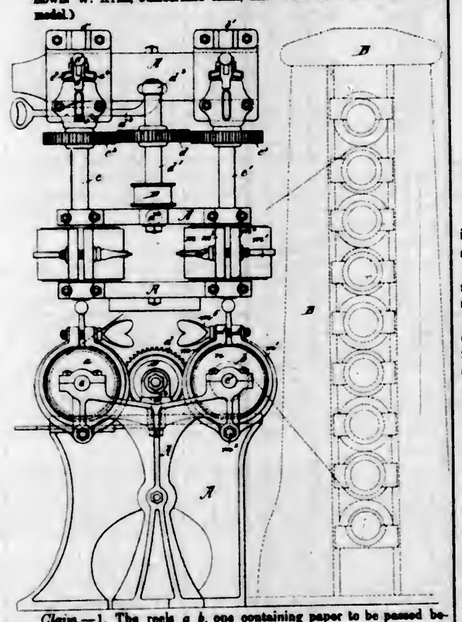


Claim.—1. In an axle-box, the removable division-plate or partition K, closing the oil-chamber below the journal from end to end, and having apertures for the passage of the siphon-wicks F, and a cap, M, serving to receive a spring, I, and also as a receptacle for the oil descending from the journal, substantially as described.

2. In an axle-box, the semi-cylindrical frame G, carrying two side pads, E E, having a space between them beneath the axle, and the siphon-wicks F F, supplying the side pads, substantially as and for the purpose described.

3. The combination, with the axle-box, of the dust-shield consisting of the plates L' L^2 L', of U form, the plate L^2, fixed to the plates L' L^2, the plates L^2 L^2, fixed to the plate L^2, and the spring by the action of which the dust-guard is caused to nip the axle, substantially as and for the purpose set forth.

336,686. **APPARATUS FOR WINDING AND REWINDING PAPER.** EDWIN W. ATEE, Cumberland Mills, Me. Filed Nov. 18, 1885. (No model.)



Claim.—1. The reels *a b*, one containing paper to be passed between calender or other rolls, and the other to take the paper as it is delivered from the said rolls, combined with shafts *c c'*, and clutch mechanism, substantially as described, for engaging the said shafts with their corresponding reels and a movable drive-shaft, and mechanism, substantially as described, operated by the drive-shaft, for rotating the shafts *c c'* alternately, all as set forth.

2. The reels *a b*, one containing paper to be passed between calender or other rolls, and the other to take the paper as it is delivered from the said rolls, combined with shafts *c c'*, and clutch mechanism, substantially as described, for engaging the said shafts with their corresponding reels and a movable drive-shaft, and mechanism, substantially as described, operated by the drive-shaft, for rotating the shafts *c c'* alternately, and tension devices co-operating the shafts *c c'* to restrain their rotation, all as set forth.

3. The combination, substantially as hereinbefore set forth, of parallel shafts *c c'*, toothed gears c^3 c^3 thereon, a movable drive-shaft interposed between the shafts *c c'*, a toothed gear, *d*, carried thereby, means, substantially as described, for engaging the toothed gear *d* alternately with the toothed gears c^3 c^3, the parallel reels *a b*, have their axis of rotation corresponding with the axis of rotation of the parallel shafts *c c'*, and clutch mechanism, substantially as described, for clutching the reels *a b* to the shafts *c c'* when desired.

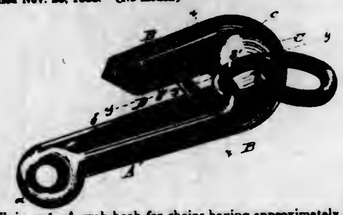
4. The tipping drive-shaft d' and toothed gear *d* thereon, combined with the shafts *c c'*, their toothed gears c^3 c^3, to be engaged alternately by the toothed gear *d*, clutch mechanism, substantially as described, for engaging the shafts *c c'* with the reels *a b*, and the reels, all as set forth.

5. The reels *a b*, shafts *c c'* and toothed gears c^3 c^3 thereon, and clutch mechanism, substantially as described, combined with the drive-shaft d' and toothed gear *d* thereon, said shaft having a swivel or pivotal bearing at one end and a movable or sliding bearing at its opposite end, and means, substantially as described, for moving it on its pivotal bearing to alternately engage its toothed gear with the gears c^3 c^3, carried by the shafts *c c'*, all as set forth.

6. The reels *a b*, shafts *c c'*, and clutch mechanism, substantially as described, and means for rotating the shafts, combined with tension devices consisting of two pivoted semicircular jaws, *m m'*, surrounding a drum, *n*, mounted fast upon the shafts *c* and *c'*, and the adjusting-screw m^3, all as set forth.

7. The reels *a b*, shafts *c c'* and toothed gears c^3 c^3 thereon, and clutch mechanism, substantially as described, combined with the drive-shaft d' and toothed gear *d* thereon, said shaft having a swivel or pivotal bearing at one end and a movable or sliding bearing at its opposite end, the hand-lever connected with the drive-shaft for moving it on its pivotal bearing, and means, substantially as described, for locking the said lever in its different positions, all as set forth.

336,687. **GRAB-HOOK FOR CHAINS.** MATHEW BARR, Aitkin, Minn. Filed Nov. 25, 1885. (No model.)



Claim.—1. A grab-hook for chains having approximately flat bearing-faces *b b'*, to receive the link of the chain without wedging strain, and having a re-enforce, C, as and for the purposes set forth.

2. A grab-hook for chains, consisting of the body A, arm B, and re-enforced junction C, the said parts A B having the flat faces *b b'*, as set forth.

3. The grab-hook described, formed of cast-steel or malleable iron, and composed of the parts A B, having flat faces *b b'*, and the re-enforced junction C, having link-bearings *c*, all arranged, constructed, and adapted to serve as herein set forth.

336,688. **AMMETER.** JOHN A. BARRETT, Brooklyn, N. Y. Filed Feb. 27, 1885. (No model.)



Claim.—1. In an ammeter or galvanometer, the combination, with the disk, needle, or other device movable under the influence of the electric current, of an arm or standard carrying a fan or vane, whereby prolonged vibration of the parts may be prevented.

2. In an ammeter or galvanometer, a disk, D, having a pendulous

weight and provided with a vane or fan located at a considerable distance radially from the center around which the disk vibrates, so as to have an enlarged movement as respects the movement of the disk.

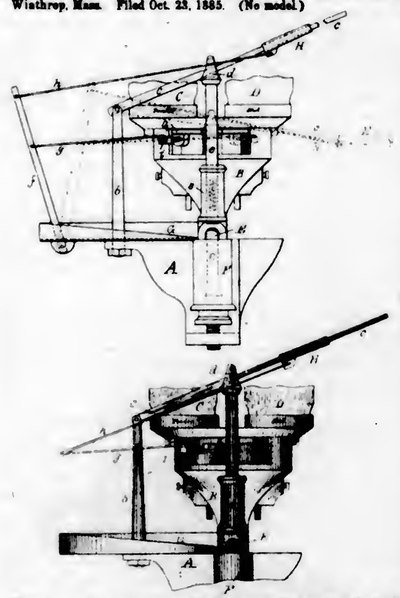
3. In an ammeter or galvanometer, a fan or vane supported on an arm extending from the vibratory parts of the instrument on a line substantially parallel with the plane of vibration.

4. The combination, with the disk or plate, of the cross-bar located above the same, and a pin or lug and opening therefor, one carried by the disk and the other by the cross-bar, whereby the parts may be steadied when the disk is lifted from its bearings.

5. The combination, with the ammeter-disk, of the lifting-pieces N N, arranged beneath the pintles of the disk, and supported by a vertical plate, R, furnished with a set nut or screw passing through the side of the case.

6. The combination, with the lifting-pieces N N, of the yoke M, the plate or rod R, and the set screw or nut, as described.

336,689. CARTRIDGE-LOADING MACHINE. ORLANDO F. BELCHER, Winthrop, Mass. Filed Oct. 23, 1885. (No model.)



Claim.—1. In combination with the measuring-gate and loading-plunger of a cartridge-loading machine, a lever, *c*, actuating said plunger, a sleeve, H, sliding on said lever to operate the gate, and mechanism connecting said sleeve to said gate, substantially as stated.

2. The plunger *e*, having a slotted head, *d*, in combination with an operating-lever, *c*, which passes through said slot, and connections between said lever and the measuring-gate, substantially as set forth.

3. In combination with the measuring-gate and plunger, the standard *b*, the lever *c*, pivoted to said standard and in contact with said plunger, the sleeve H, movable on said lever, the measuring-gate, the upright pivoted rod *f*, and the rods *g h*, respectively connecting said rod *f* with the said sleeve and said gate, substantially as set forth.

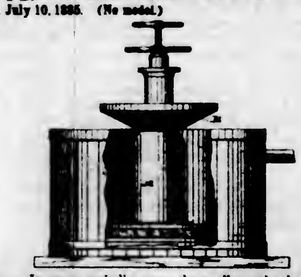
336,690. FOLLOWER FOR PACKING BARRELS. CHARLES T. BELLAMY, Prompton, Pa. Filed Dec. 29, 1885. (No model.)



Claim.—1. The follower herein shown and described, made to enter the interior of a cask or packing-receptacle, and formed or provided with locking-points at one side, and at the other with a pivoted locking brace or lever, substantially as described.

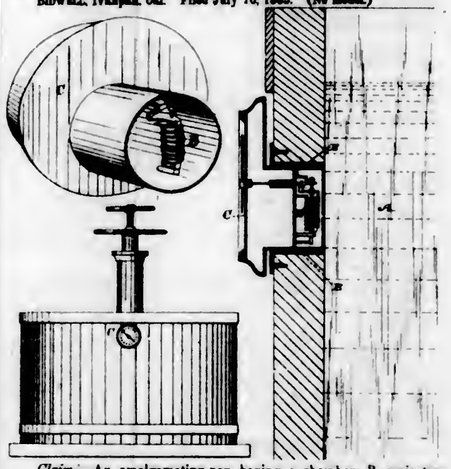
2. The follower B, consisting of the slats *a a' a²* and cross-slats *b b*, the slats *a'* being provided with points *d'*, in combination with the locking-brace C, pivoted between the slats *a'*, below the cross-slats, and provided with the locking-point *d*, substantially as herein shown and described.

336,691. ORE-GRINDING PAN. JULIUS A. BIDWELL, Ivanpah, Cal. Filed July 10, 1885. (No model.)



Claim.—In an ore-grinding pan, the muller and grinding-shoes, in combination with a central well extending upward from the muller, and a funnel-shaped screen at the upper end, substantially as herein described.

336,692. ATTACHMENT FOR AMALGAMATING-PANS. JULIUS A. BIDWELL, Ivanpah, Cal. Filed July 10, 1885. (No model.)



Claim.—An amalgamating-pan having a chamber, B, projecting inwardly from one side, with its outer side opening through the side of the pan, in combination with a thermometer having a projecting casing fitting within said chamber and so constructed as to contain the expanding and contracting coil by which the index-hand is operated, substantially as herein described.

336,693. BAND SAWING-MACHINE. JOHN J. BOWEN, San Francisco, Cal. Filed Dec. 24, 1885. (No model.)

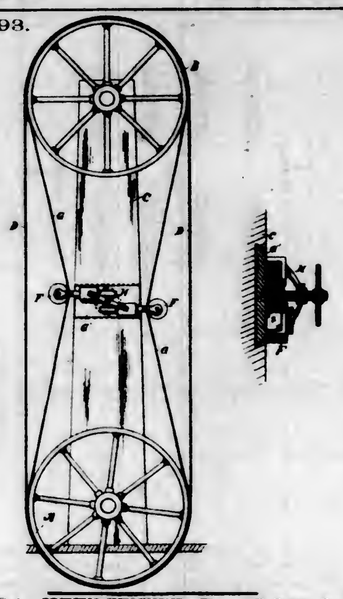
Claim.—1. The pulleys or wheels having a band-saw passing around them, in combination with a supplemental driving-belt passing around the pulleys beneath the saw and having one or both sides deflected or carried away from the saw at points intermediate between the pulleys, substantially as herein described.

2. The pulleys carrying the band-saw and having a supplemental driving-belt passing around them beneath the saw, in combination with secondary pulleys so mounted as to deflect the sides of the belt toward each other between the saw-carrying pulleys, substantially as herein described.

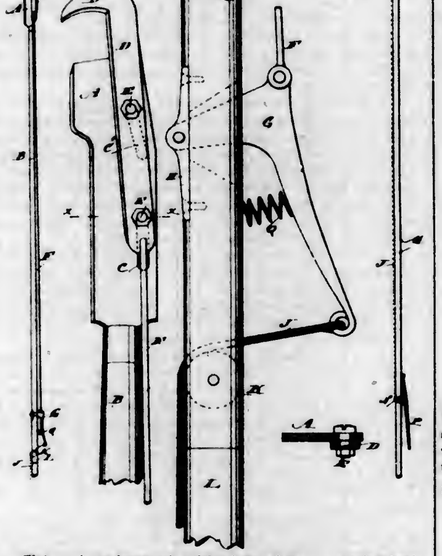
3. In combination with the saw-carrying pulleys, a supplemental belt passing around the pulleys beneath the saw, deflecting-pulleys by which the sides of the supplemental belt are brought toward each other between the main pulleys, and a guide upon which the secondary pulleys are mounted so as to have a traverse motion, substantially as and for the purpose herein described.

4. The main saw-carrying pulleys having a supplemental flexible belt passing around them beneath the saw, deflecting-pulleys by which the sides of the belt are carried inwardly and away from the saw between the main pulleys, a guide or guides upon which the secondary pulleys are supported so as to have a traverse motion, and an adjusting mechanism by which the tension of the belt may be regulated, substantially as herein described.

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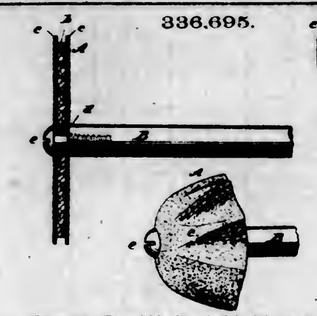
336,694. PRUNING IMPLEMENT. WILLIAM H. BROWN, Dunedin, Fla. Filed Nov. 5, 1885. (No model.)



Claim.—As an improved article of manufacture, a pruning implement consisting of the handle B, the chisel A, rigidly secured to the upper end thereof and having the inclined slot C' and the straight slot C below the same, the sliding hook D, projecting above the chisel-edge, the screws E E, extending through the hook and the slots C' C, the angle-lever G, pivoted at the end of its horizontal arm to the handle, the rod F, pivoted to the angle of the lever and to the lower end of the hook, the pulley K, below the angle-lever, and the operating-cord J, substantially as set forth.

336,695. FLEXIBLE ABRASIVE OR POLISHING DISK. JOSEPH W. BYERS, Charleston, Ill., assignor to himself and Otto Philip Weiss, same place. Filed May 21, 1885. (No model.)

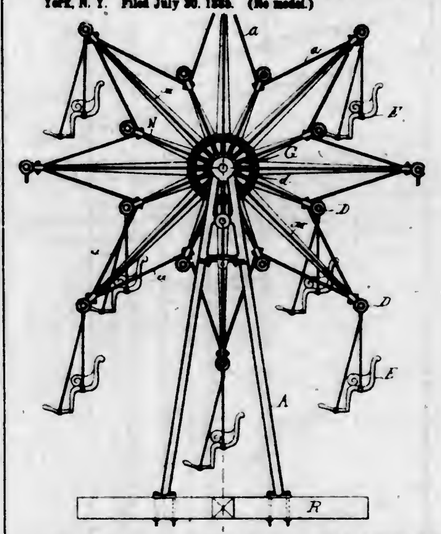
336,695.



Claim.—1. The within-described flexible abrading or polishing disk, composed of a circular body of flexible material and circular layers of flexible abrading material secured to and over said body on its opposite sides or faces, and arranged to extend beyond the outer margin or perimeter of the body, substantially as specified.

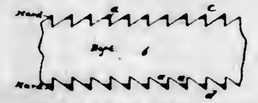
2. The combination, with the mandrel B, of the flexible abrading-disk A, having a flexible circular body, *b*, and flexible layers *c c* of abrading material on and over its opposite sides or faces and of greater diameter than the body, essentially as and for the purposes herein set forth.

336,696. VERTICAL ROTARY SWING. LUCAS M. CARPI, New York, N. Y. Filed July 30, 1885. (No model.)



Claim.—The combination of the horizontal shaft B, mounted in the foundation-pieces G, said shaft being driven by a suitable motor, the long and short arms M and N, secured to said foundation-pieces G, the braces *a*, which connect the extremities of said long and short arms M and N, and the cross-bars *d* and seats E, substantially as set forth.

336,697. SAW. GEORGE N. CLEMSON, Middletown, N. Y. Filed Oct. 27, 1885. (No model.)

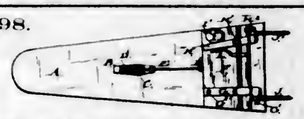


Claim.—As an improved article of manufacture, a saw having a soft untempered body with teeth soft and untempered at their bases and hardened at their extreme points, as herein specified.

336,698. IRONING-BOARD. WILLIAM I. CLOUD, Reading, Pa. Filed July 9, 1885. (No model.)

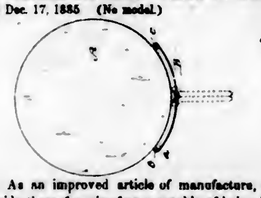
Claim.—As an improved fastener for ironing-boards and analogous articles, a fulcrumed piece, H, provided with a shouldered pivotal end, H², fulcrumed at H' upon the cleat, and releasably locked by contact

336,698.



with the cam I, provided with a thumb-piece, in combination with the spring L, the fixed piece G, its pivotal end G', and the screw-eyes J J', substantially as and for the purpose set forth.

336,699. HANDLE FOR CANS. FRANCIS W. COLEMAN, Rodney, Miss. Filed Dec. 17, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a can having attached to the side thereof a wire frame capable of being bent outward to form a handle, substantially as herein specified.

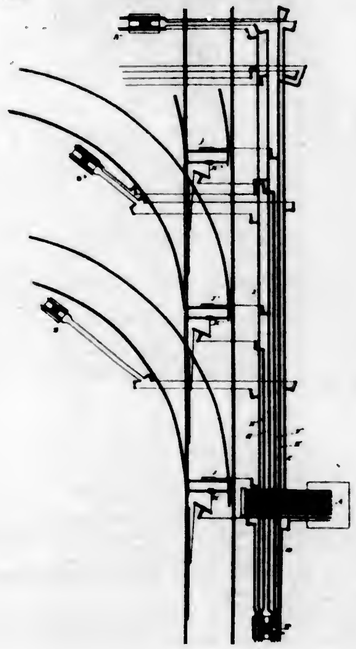
2. The combination, with the can A, of the wire frame in the form of a parallelogram with rounded corners secured to the sides of the can by soldering at the middle of the shorter sides of the frame, substantially as herein described.

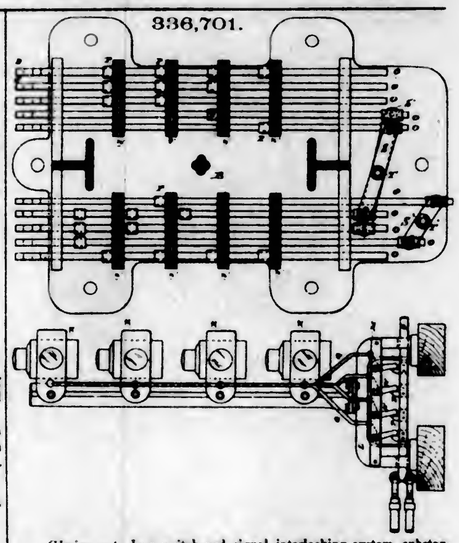
336,700. RULER. FRANK A. COMBS, Cleveland, Ohio. Filed Mar. 6, 1885. (Model.)



Claim.—As a new article of manufacture, a ruler having a forward and downward projecting ledge at its ruling-edge, substantially as described.

336,701. RAILWAY SWITCH AND SIGNAL INTERLOCKING APPARATUS. HENRY F. COX, Philadelphia, Pa. Filed Mar. 25, 1885. (No model.)





Claim.—1. In a switch and signal interlocking system, substantially as described, the combination of separate interlocking frames for each signal-point with connections from each switch or facing-point lock, which forms an element of the route or routes governed by said signal-point, in such a manner that the displacement of any and every element of a route governed by a signal results in locking such signal in its "danger" position.

2. In a switch and signal interlocking system, substantially as described, the combination of separate interlocking frames for each signal-point with connections from each switch or facing-point lock, which forms an element of the route or routes governed by said signal-point, in such a manner that the position of each signal is automatically controlled by the elements of its route.

3. In a switch and signal interlocking system, substantially as described, the combination of separate interlocking frames for each signal-point with connections from each switch or facing-point lock, which forms an element of the route or routes governed by said signal-point, in such a manner that the displacement of any element of its route will lock the governing-signal to "danger," and an additional connection governing locking-dogs for two or more signals relating to routes in the same direction, and by means of which the position of such signals is controlled when the routes governed by them are clear.

4. The combination of locking-dogs connected with and governed by the elements of a route, with devices connected to and actuating the signal relating to the route in the way, substantially as shown and described, whereby the displacement of any element of the route indicated by a clear signal will restore the signal to its "danger" position without the intervention of a special signal connection.

5. In an interlocking system, substantially as described, the combination of a locking-bar attached to a switch-actuating connection and bearing locking-dogs governing the signals relating to routes opened by one position of the switch, with a second locking-bar bearing locking-dogs governing the signals relating to routes opened by the other position of the switch by means of a pivoted lever, whereby the second bar is given a simultaneous and opposite movement to that of the first, so that the unlocking of the signal or signals relating to the routes opened by one position of the switch will lock the signals relating to disconnected routes to "danger."

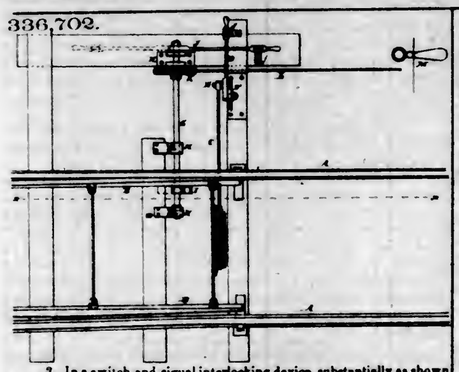
6. The combination of a signal or signals, with a rocker or rockers, N, and locking-dogs P, actuated by the elements of the route governed by the signals in such a way that each signal will remain locked to "danger" until all of its elements are in proper position, and will be at once moved from "safety" to "danger," and locked there by the displacement of any such element.

336,702. RAILWAY SWITCH AND SIGNAL INTERLOCKING. HENRY F. COX, Philadelphia, Pa. Filed May 25, 1885. (No model.)

Claim.—1. In combination with a switch having operating-lever D, the signal-operating rod G, having cam I and operating-lever J, as situated as to cross and lock the lever D when the signal is in its safety position, all substantially as shown and described.

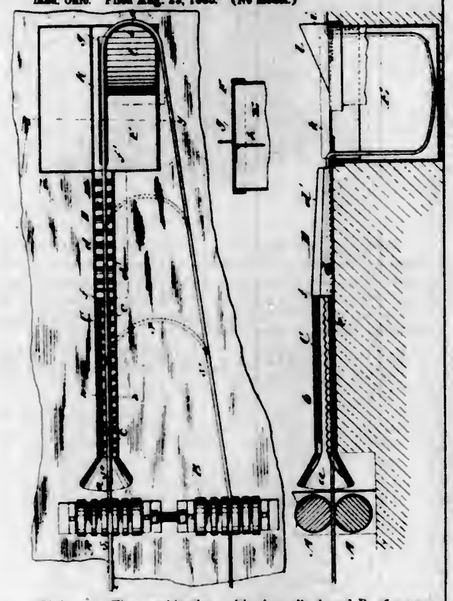
2. In a switch and signal interlocking device, substantially as shown and described, the rod G, having cam I, and bearings H, secured to the tie.

336,702.



3. In a switch and signal interlocking device, substantially as shown and described, the rod G, having cam I, pulley K, and bearings H, secured to the tie.

336,703. ATTACHMENT FOR ROD-ROLLING MILLS. ANDREW J. DAY, Pittsburg, Pa., assignor to himself and William F. Thompson, Cleveland, Ohio. Filed Aug. 29, 1885. (No model.)



Claim.—1. The combination, with the rolls A and B, of a corrugated tube, C, formed with a slot, *b*, substantially as described.

2. The combination, with the rolls A and B, of a corrugated tube, C, and trough D, substantially as described.

3. The combination, with the rolls A and B and a corrugated tube, C, formed with a slot, *b*, of a trough, D, substantially as described.

4. The combination, with the rolls A and B, a corrugated tube, C, formed with slot *b*, and a trough, D, of a pit, E, having a cover, F, provided with a slot, *g*, trap *h*, and incline *l*, substantially as described.

336,704. TOWEL-HOLDER. CHARLES H. DELANOY, Jr., New York, N. Y. Filed July 23, 1885. (Model.)

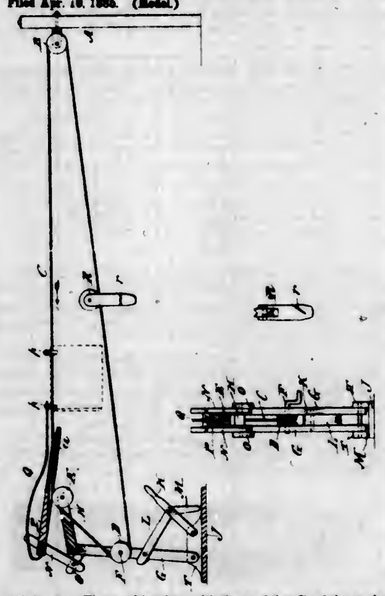


336,704.



Claim.—A towel-holder comprising the flanged drum A, made in two parts and mounted on the shouldered axle B, the coiled spring C within the drum, the ends of said spring being secured, respectively, to the inner surface of the drum and to the axle, the cord D, provided on its end with a hook or clasp, F, the bail E, pivoted in the ends of the axle and provided with a guide-eye for the cord D, and the suspension-bail G, the ends of which pass through holes in the journals of the axle B and are bent over the same to hold it firmly and prevent its turning with the drum, all as shown and described.

336,705. CLOTHES-LINE. ALBERT G. P. DORSEY, Clarksburg, Ind. Filed Apr. 10, 1885. (Model.)



Claim.—1. The combination, with the upright G, of the gathering-arm P, pivotally connected to the upright and the line, as and for the purposes described.

2. The upright G, having the arm P connected to it by connecting-pieces N O, in combination with the line C, means for supporting the outer end of the line, pulleys E D, and crank-shaft F, the arm P having the passage *a* formed in it, substantially as described.

3. The combination, with the gathering-arm P and the line C, of the rod Q, for gathering the clothes-pins, substantially as described.

336,706. WIRE HOOP. JACOB C. DURLING, Marine City, Mich. Filed Dec. 9, 1885. (No model.)

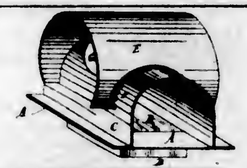


Claim.—As an improved article of manufacture, a hoop formed of the wire A, and the grooved and apertured fastener B, the ends of the wire being riveted in the fastener, substantially as described.

336,707. CHIMNEY-CAP. THOMAS EDWARDS, Amherst, Nova Scotia, Canada. Filed Dec. 26, 1885. (No model.) Patented in Canada June 15, 1885, No. 21,336.

Claim.—An improved chimney-cap, consisting of a flanged base-plate, A, having an opening, D, the arched hood C, secured to the base-plate over the said opening, and having an opening, G, and the arched hood E, notched to receive the hood C, and secured thereto at right angles, substantially as herein shown and described.

336,707.



336,708. **DRAFT-EQUALIZER.** GEORGE C. FLAGG, Columbus, Ill. Filed Aug. 26, 1885. (No model.)



Claim.—In a three-horse equalizer, the combination, with the triple-tree A, of the double-trees B and C, pivoted to the under and upper sides thereof, as specified, and having their respective inner ends turned downward and upward over the contiguous ends of said triple-tree, as and for the purpose specified.

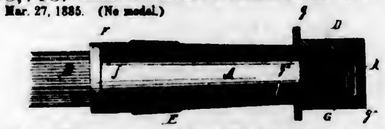
336,709. **AUGER.** BENJAMIN FORSTNER, Salem, Oreg., assignor of one-half to James Walton, same place. Filed Nov. 17, 1885. (No model.)



Claim.—1. In an auger, a circular peripheral cutting-edge formed of two parts, *a a'*, each provided with a cutting-edge, *c*, inclined slots *d*, formed in opposite sides of the cutter, cutting-lips *b*, formed along the inclined slots, and a central cutting-point, *c*, joining the cutting-lips *b*, substantially as herein specified.

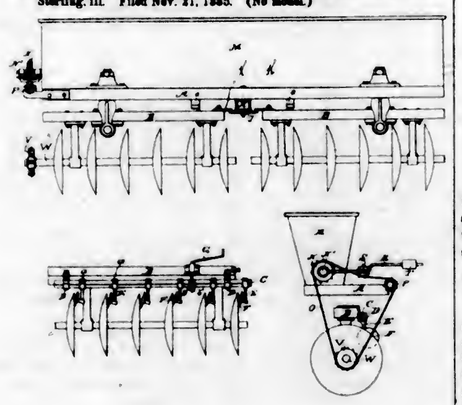
2. As an improved article of manufacture, an auger formed of a shank carrying a slotted disk having on the circumference thereof peripheral cutters *a a'*, provided with cutting-edges *c*, inclined cutters *b*, formed along the sides of the slots of the disk, and the cutting-point *c*, joining the cutters *b*, substantially as herein specified.

336,710. **AXLE-NUT.** MARLON S. FREEMANN, Norristown, Pa. Filed Mar. 27, 1885. (No model.)



Claim.—The combination of the axle B, the gudgeon A, provided with the threaded stem C, the hub or bushing on the gudgeon, the axle-nut D, threaded both internally and externally and provided with external key-seats, *d*, the cap-nut G, threaded internally and provided with internal key-seats, g^3, a key adapted to the said key-seats, and the removable cap g^4 upon the cap-nut, substantially as and for the purpose described.

336,711. **DISK-SEEDER.** THOMAS A. GALT and GEORGE S. TRACY, Sterling, Ill. Filed Nov. 21, 1885. (No model.)



Claim.—1. The combination of the beam B, provided with clips D, the scraper-bar C, seated loosely in such clips parallel with the beam B, scrapers F, arms E, seated adjustably on the bar C, lever G, journaled transversely on the beam B, and having its front end bent upward and its rear end bent downward, and the clip *b*, attached to the bar C, and adapted to receive the rear end of the lever G, substantially as shown, and for the purpose described.

2. The combination of the beam A, provided with the block *e*, the beams B, plates K, and plate J, substantially as shown, and for the purpose specified.

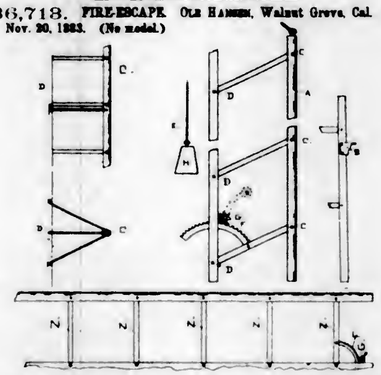
3. The combination of the sprocket-wheel W, rigidly seated on the axle of the disk-gangs, the sprocket-wheel N, rigidly seated on the stirring-shaft N', the fixed pulley P, seated on the rear of the draft-beam A in line with the wheel N, the chain O, passed around the wheels W and N, and the pulley P, the lever R, pivoted at its front end to the shaft N', the pulley S, seated on such lever and imposed on the chain O between the wheel N and pulley P, and the weight T, seated adjustably on the lever R in the rear of the pulley S, whereby the degree of pressure of the pulley S can be adjusted as desired, for the purpose herein specified.

336,712. **HEAD-SCREEN.** HORACE GARST, Council Bluffs, Iowa. Filed Sept. 11, 1885. (No model.)



Claim.—A head-screen, A, made substantially as herein shown and described, with a band, B, at its upper end, to fit upon a hat-body, an elastic or non-elastic band, C, in its lower part, to fit loosely around the neck of the wearer, and with a flexible series of weights, D, at its lower edge, to rest upon the shoulders, breast, and back of the wearer and be supported by the said shoulders, as set forth.

336,713. **FIRE-ESCAPE.** OLE HANSEN, Walnut Grove, Cal. Filed Nov. 20, 1885. (No model.)

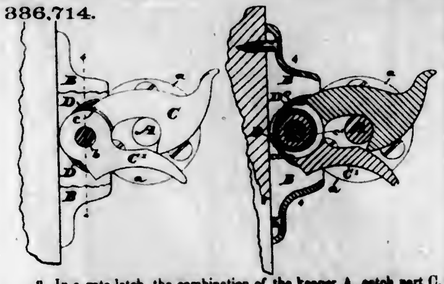


Claim.—The combination, with a building, of rounds pivoted thereto at their inner ends, the rail A, to which the rounds are pivoted at their outer ends, the projection B on rail A, the weighted rope attached to the upper end of the rail A and passing over a pulley, the segmental rack F, and pinion G, substantially as set forth.

336,714. **GATE-LATCH.** HUMPHREY HARRINGTON, Indianapolis, Ind. Filed Sept. 8, 1885. (No model.)

Claim.—1. A gate-latch consisting of a keeper and a two-part catch, said parts being pivoted together at one end in an appropriate housing, one being formed to hook down over the keeper and the other being formed with a smooth top surface and extended out under said keeper, the ends of said two parts being held together by spring force located in said housing, substantially as set forth.

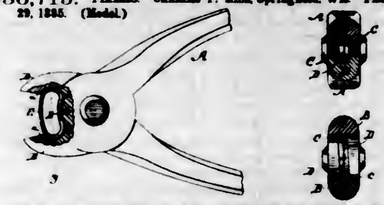
336,714.



2. In a gate-latch, the combination of the keeper A, catch part C, pivoted in an appropriate housing, catch part C', pivoted in the same housing, and a spring, D, passing around the pivot between said two parts, one end of said spring being sprung out upon and bearing against the outside of each, whereby their front ends are held together, substantially as set forth.

3. The combination, in a gate-latch, of the keeper, a catch consisting of the parts C and C', pivoted together in an appropriate housing, one of which is provided with an annular extension, c^3, on its hub, which serves to keep the two parts sufficiently apart to receive the spring between them, and also as a support for said spring, and the spring D, passing around said annular extension, one end of which spring rests upon the outside of each of said parts, whereby their ends are forced together, substantially as set forth.

336,715. **PLIERS.** CHARLES F. HILL, Springfield, Wis. Filed Apr. 29, 1885. (Model.)



Claim.—1. As an improved article of manufacture, pliers having a groove in their jaws inclined to the axis of the pivot of the said jaws and provided with a transverse opening, as set forth.

2. Pliers having a transverse opening, C, and the groove D in their jaws, the said groove being oblique to the pivot of the said jaws and having its forward part beveled, as at *a*, and provided with the protuberance *b* at its rear portion, substantially as herein shown and described.

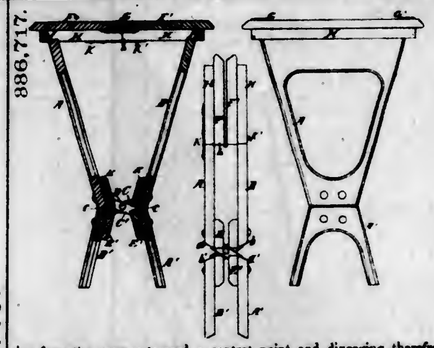
336,716. **RHEOSTAT FOR INCANDESCENT ELECTRIC LIGHTS.** S. AMBROSE HILL, Sunbury, Pa.; George Hill administrator of S. Ambrose Hill, deceased. Filed Nov. 26, 1883. Renewed January 6, 1886. (No model.)

Claim.—1. In a regulator for incandescent electric lights, the combination, with a drum or cylinder, of a series of insulated parallel wires having bare parts, a series of wires connecting the insulated wires, and a contact-spring resting on the bare parts of the insulated wires, substantially as herein shown and described.

2. In a regulator for incandescent electric lights, the combination, with the drum A, the insulated parallel wires E of unequal length, and having bare parts F, and the contact-spring G, of the wires L, wound around the cylinder and connecting the ends of the insulated wires together, substantially as herein shown and described.

336,717. **FOLDING TABLE.** SYLVANUS C. HOPKINS, Boston, Mass. Filed Aug. 25, 1879.

Claim.—1. As a new article of manufacture, a folding table having its top made in two parts hinged centrally, so as to drop downward between the tops of the legs in folding, and its four pivoted legs converging from the corners toward a central point and diverging therefrom, substantially as shown and described.



2. A table having a top made in two parts and adapted to fold centrally downward between crossing permanently pivoted legs, which all converge toward a point beneath the center of the table, for the purpose set forth.

3. In a folding table, the combination of a hinged and folding top with crossing pivoted legs formed each in two sections fastened to a central hinge-bar on opposite sides thereof, so as to bring the upper and lower sections of each leg into different planes, and leave a space between them equal to twice the thickness of the hinged top, into which space the two hinged sections of the table-top fold, substantially as set forth.

4. In a folding table, the centrally-hinged top having marginal rails H H, secured to its under surfaces in lines parallel to the axis of folding, in combination with crossing pivoted legs hinged at their extreme upper outer corners to the lower inner corners of the rail, whereby increased height of the spread table or greater compactness of the folded structure is attained, substantially as set forth.

5. In a folding table, the combination of the hinged top, formed in two parts, F F', the pivoted legs A A' B B', and the connecting-knees C C', with the cross-pieces E E', substantially as and for the purpose set forth.

6. The combination of crossing pivoted legs and top folding between them with an automatic spring lock or catch, adapted to secure the table-top in its spread position and give horizontal support to its parts, substantially as set forth.

7. A metallic surface dowel formed in two parts, as described, adapted to interlock and to each bear upon the other both vertically and laterally, so as to support the abutting edges of the table-top, substantially as set forth.

336,718. **COMPOSITION FOR TREATING CORDAGE.** WILLIAM H. HORNER, New York, and FRANCIS HYDE, Brooklyn, N. Y., assignors to the United States Waterproofing Fiber Company, New York, N. Y. Filed July 2, 1885. (No specimens.)

Claim.—1. The improved cold and self-setting waterproofing and preserving composition for cordage, consisting of resin and paraffine-wax assimilated or mixed with each other and reduced to a proper consistency by a volatile liquid, for the purpose set forth.

2. A cold and self-setting composition for treating cordage, fish-nets, or fabrics, having as a base resin and paraffine-wax, which are assimilated or mixed with each other, residuum or distillant, and benzine for thinning the same, substantially as and in the proportion specified.

3. The improved cold and self-setting composition for treating cordage, fish-nets, and fabrics, consisting of resin, paraffine-wax, and a thinning liquid, to which is added a residuum or distillant and a coloring material, substantially as set forth.

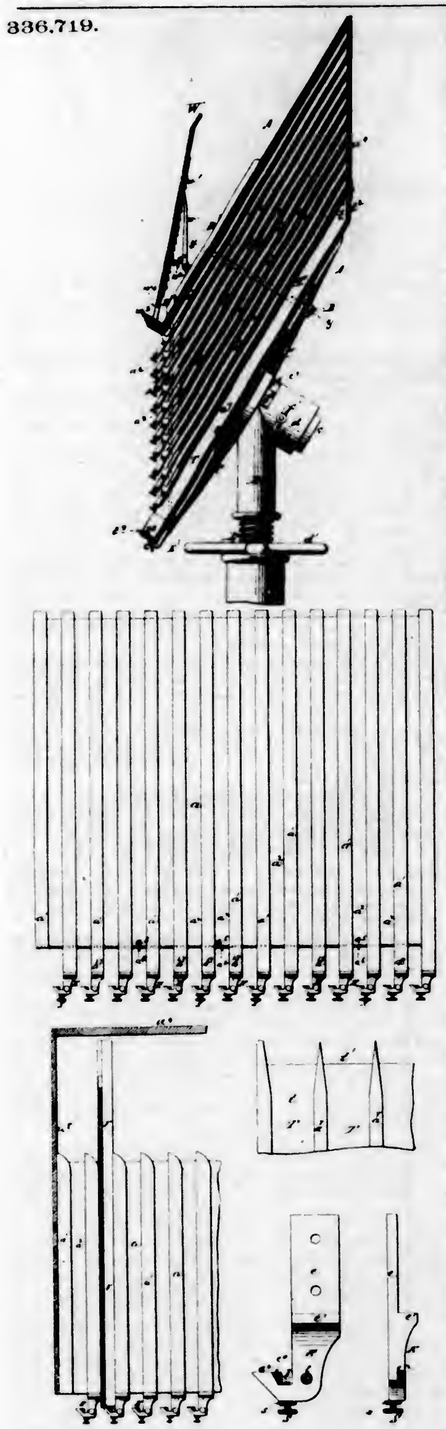
336,719. **COMPOSITOR'S TYPE AND SPACE HOLDER.** LOUIS K. JOHNSON and A. AUGUSTUS LOW, Brooklyn, assignors to the Alden Type Machine Company, New York, N. Y. Filed Apr. 9, 1883. (No model.)

Claim.—1. In a compositor's type-case substantially such as designated, a series of superposed bed-plates provided with division-pieces of a comparatively soft non-metallic substance, the lower ends of the said division-pieces extending beyond the lower front edges of the bed-plates, and being provided with metallic seats for the support of the containing-channels and type-columns, substantially in the manner and for the purpose described.

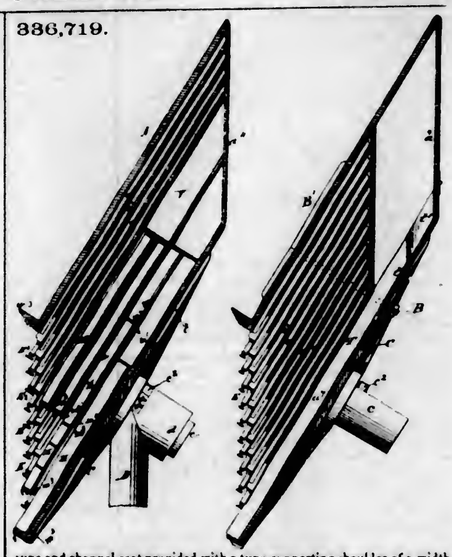
2. In a compositor's type-case substantially such as designated, the combination and arrangement, with the division-pieces *a'*, secured to the bed-pieces *a*, of the finger pieces or seats E, formed with shanks *e*, which project between the adjoining and vertically coinciding outer ends, a^2, of the said division-pieces, and with suitable type and channel supporting seats, substantially in the manner and for the purpose described.

3. In a compositor's type-case substantially such as designated, a

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type and channel seat provided with a type-supporting shoulder of a width equal to that of the largest type to be supported, and with a depression or recess immediately under the position of the foot of the lowest type resting thereon, the edge of the said type-supporting shoulder adjoining the recess being beveled outward at an oblique angle, substantially in the manner and for the purpose described.

4. In a compositor's type-case substantially such as designated, a type-column and channel-supporting seat formed with a suitable hole or recess for the reception of the body of a type or other suitable independent interchangeable piece bearing a denomination-mark, substantially in the manner and for the purpose described.

5. In a compositor's type-case substantially such as designated, the combination, with a type-column and channel-supporting seat formed with a suitable hole or recess for the reception of a piece bearing a denomination-mark, of an independently-interchangeable denomination-mark consisting of a plug or button the stem of which is composed of two or more slightly-elastic segments, for the purpose set forth.

6. In a compositor's type-case substantially such as designated, the combination and arrangement of a series of type-containing channels and supports in which the types are arranged in prescribed positions, as set forth, and one or more inclined space-holding compartments, into the upper end of which spaces may be deposited loosely, and by which they will be conducted downward and exposed for removal at any angle from the front of the case, substantially in the manner and for the purpose set forth.

7. In a compositor's type-case substantially such as designated provided with a series of inclined compartments, into the upper rear ends of which the spaces may be deposited loosely, and by which they will be conducted downward and exposed for removal at any angle from the front of the case, as described, the removable division-pieces or partitions arranged at the lower ends of the said inclined space-compartments, for the purpose and substantially in the manner set forth.

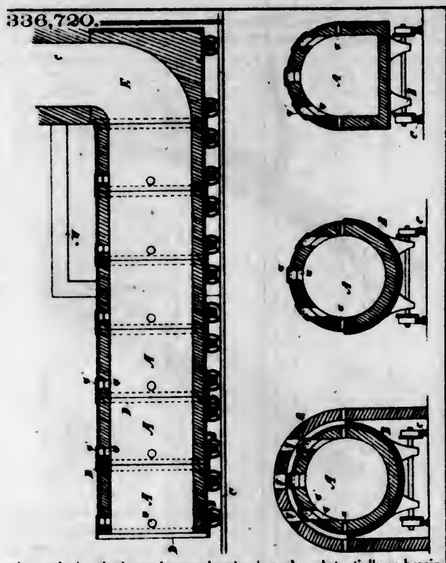
8. In a compositor's type-case substantially such as designated provided with a series of inclined compartments, into the upper rear ends of which the spaces may be deposited loosely, and by which they will be conducted downward and exposed for removal to any angle from the front of the case, as described, a removable end wall or type-supporting shoulder common to all the said compartments, and adapted to be wholly or partially withdrawn from position, for the purpose and substantially in the manner described.

9. The combination and arrangement in a single case of the series of type-containing channels and supports in which the types are arranged in prescribed positions, the series of sliding compartments for holding leads, quads, &c., and the inclined space-receptacles, into the upper ends of which spaces may be loosely deposited, and from the lower ends of which they may be removed at any angle, the whole constructed and operating substantially in the manner and for the purpose described.

336,720. **KILN FOR BURNING BRICK, &c.** WILLIAM JOHNS, San Francisco, Cal. Filed July 11, 1885. (No model.)

Claim.—1. A kiln comprising a number or series of detachable movable and independent sections or parts, within which the material to be burned is placed, the ends of each section being left open, whereby

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when united a single continuous chamber is made, substantially as herein described.

2. A kiln comprising a number or series of movable and independent sections or parts, the ends of each being open, and a temporary joint or connection between the adjacent ends of the sections, whereby they may be united in a single continuous chamber, or disconnected, substantially as herein described.

3. A kiln comprising a number or series of detachable movable and independent sections or parts, the ends of each being open, said sections being united to form a continuous chamber, and each provided with openings or apertures for firing, substantially as herein described.

4. A kiln comprising the independent sections or parts A, having open ends and apertures for firing, said sections being united in a continuous chamber, the wheeled trucks B, on which the sections are mounted, and the bands D, covering the joints of the sections, substantially as herein described.

5. A kiln consisting of the independent movable sections or parts A, having open ends, and adapted to be united to form a continuous chamber, and to be detached, as described, and the movable chimney-section E at the end of the series, substantially as herein described.

6. A kiln consisting of the series of independent movable sections or parts A, joining one another, as described, and adapted to be detached, the movable chimney-section E at the end of the series, and the fixed casing or shell M, substantially as herein described.

7. A kiln consisting of the series of detachable movable sections or parts A, having open ends and adapted to be joined together to form a continuous chamber inclosing the material to be burned, in combination with an encircling tunnel around the kiln, and firing-apertures corresponding in tunnel and kiln, substantially as herein described.

336,721. **FAUCET AND FILLER.** EDWARD KELLS, Cleveland, Ohio. Filed Oct. 12, 1885. (No model.)



Claim.—In combination with an oil-can, a combined filler and faucet consisting of the collar B and cap C, detachably connected to said collar, cylinder E, provided with a flexible lining, tubular stem H, arranged in cylinder E and having opening J, communicating with throat K, leading to the interior of the can, and having at one end a head and handle, L, and gland G, screwed on one end of the tubular stem, substantially as described, and for the purposes specified.

336,722. **EYEGLASS-FRAME.** HENRY E. KREUTER, Rochester, N. Y. Filed Sept. 24, 1885. (No model.)

Claim.—1. The combination, with the eyeglass-frame provided with

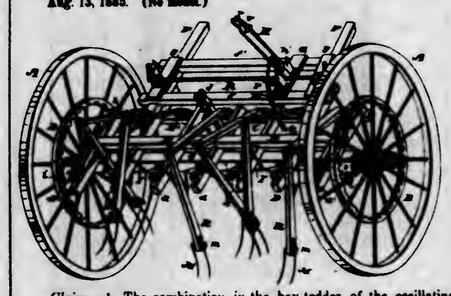
336,722.



a stud, *a*, of an offset arm, C, arranged to engage the stud when the frames are closed, and to separate the two parts of the frame to prevent the contact of the two lenses, substantially as herein described.

2. As an improved article of manufacture, an eyeglass-frame composed of rims A A', connected by a nose-spring, B, a stud, *a*, projecting from the handle of the rim A', and an angled offset arm, C, formed on or attached to the rim A, substantially as described.

336,723. **HAY-TEDDER.** FREDERICK E. KOEHLER, Canton, Ohio. Filed Aug. 13, 1885. (No model.)



Claim.—1. The combination, in the hay-tedder, of the oscillating tedder-forks, the main vibrating frame, hinged thills, links *h*, shaft E, lever H, rod Q, bracket P, and spring *w*, substantially as described, and for the purpose set forth.

2. In a hay-tedder, the combination, with an axle, a main frame pivoted thereto, thills pivotally secured to the main frame, a lever journaled to the thills, and devices, substantially as described, connecting the lever and main frame, of the bracket secured to the thills, a curved rod secured to the lever and passing through the bracket, and a spring encircling the rod and bearing against the bracket, all of the above parts operating substantially as set forth

3. The combination, with the main frame, thills pivotally secured thereto, a lever journaled to the thills, and devices, substantially as described, connecting the lever and main frame, of the curved rod, the spring-bolt for securing the rod to the lever, the bracket secured to the thills, and a spring secured on the rod and bearing against the bracket, substantially as set forth.

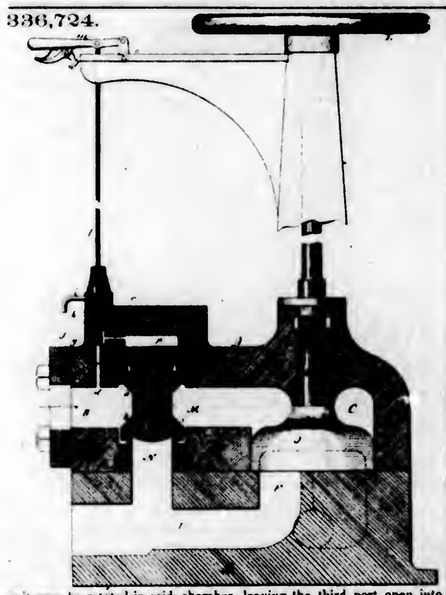
4. The combination, with an axle, the main frame pivoted eccentrically thereon and thills pivotally secured to the main frame, of a lever secured to the axle, a sector secured to the main frame, and devices for locking the axle to the sector, the bracket secured to the thills, the rod secured to the lever and passing through the bracket, and the spring encircling the rod and bearing against the bracket, substantially as set forth.

336,724. **HYDRAULIC VALVE.** GEORGE B. LAMB, Waterbury, Conn., assignor to the Waterbury Farrel Foundry and Machine Company, same place. Filed Jan. 9, 1886. (No model.)

Claim.—1. In a valve mechanism for changing the direction of the flow of water under pressure, the valve-chamber C, having three ports leading therefrom to different passages, with an inlet-passage opening into said chamber, a valve in said chamber constructed with a recess upon its under side, the said valve adapted to be moved to bring the said recess in the face of the valve to register with any two of said ports, leaving the other port open into the chamber, one of said ports communicating with an escape or exhaust passage, a passage between the inlet to the valve-chamber and the said exhaust-passage, with a valve arranged in said connecting-passage between the inlet and exhaust, the said valve adapted to open or close said connecting-passage, and also constructed with a piston working in a corresponding chamber in the valve-casing and with differential surfaces in said inlet-passage, a passage leading from the inlet-passage into the piston-chamber, the said last-named passage also leading outward to the atmosphere, and a valve arranged in said passage adapted to close it between the piston-chamber and the inlet-passage or between the said piston-chamber and the atmosphere, as the case may be, substantially as described.

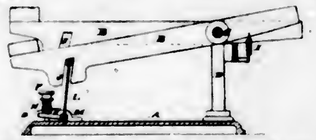
2. A valve-casing having a valve-chamber, C, formed therein, three ports, D E F, in the floor of said chamber, one of said ports leading to an exhaust or exit passage, a valve, J, fixed to a shaft, K, and adapted for rotary movement in said chamber, the under surface of the said valve recessed and working upon the floor of said chamber as a seat, the said under surface of the valve of an area sufficient to cover either two of the said ports, and the valve constructed with a recess or chamber upon its under surface adapted to include either two of the said ports, accordingly

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as it may be rotated in said chamber, leaving the third port open into the chamber, an inlet-passage, B, leading to said valve-chamber, the passage N, connecting the inlet-passage B with the exhaust or outlet passage from the valve-chamber, the said passage N terminating in a valve-seat in said passage B, a valve, M, arranged in said passage and resting upon said valve-seat to close said passage N, the end of the valve M opposite said seat constructed in the form of a piston, and the casing constructed with a corresponding piston-chamber, within which the said piston portion of the valve M may work, the said valve M constructed with a bearing-surface upon which the pressure of the water in the said passage may act in a direction from the seat of said valve, and whereby under such pressure, the valve being free, it will be raised, the casing also constructed with passages *d e*, leading from the said inlet-passage to the piston-chamber above the piston portion of the valve M, the said passage *e* also open to the atmosphere, with a valve-seat in said passages each side the said passage *a*, and a valve, *f*, arranged therein, adapted to close either the passage into the said piston-chamber or the passage therefrom, as the case may be, substantially as described, and whereby the pressure of the water may be applied through said passage *d* to force the said valve M to its seat and close the passage N or the pressure cut-off and the piston-chamber open to the atmosphere.

336,725. **LOCKING DEVICE FOR KEY-BOARDS OF TYPE-WRITING MACHINES.** GODFREY H. LASAR, St. Louis, Mo. Filed Mar. 2, 1885. (No model.)



Claim.—1. The combination of a hinged flap and keys having recesses over said flap.

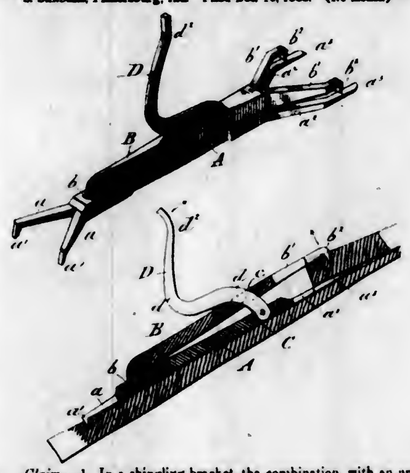
2. The combination of a hinged flap, a spring to return said flap, and keys having recesses over said flap.

3. The combination of the hinged flap having a projection, pin passed through said projection, head adjustable on said pin, spring located between said projection and said head, and keys having recesses over said flap.

336,726. **PLASTIC COMPOUND TO BE USED IN THE MANUFACTURE OF BURIAL-CASKETS, FURNITURE, &c.** THOMAS LAW, Moulton, Iowa. Filed Oct. 16, 1885. (No specimens.)

Claim.—The herein-described plastic mass or composition, consisting of the following ingredients—namely, rosin, black lead, sulphur, and rubber, about in the proportions given, substantially as set forth.

336,727. **SHINGLING-BRACKET.** DAVID T. LIGGETT and WILLIAM S. SANDERS, Fishersburg, Ind. Filed Dec. 16, 1885. (No model.)

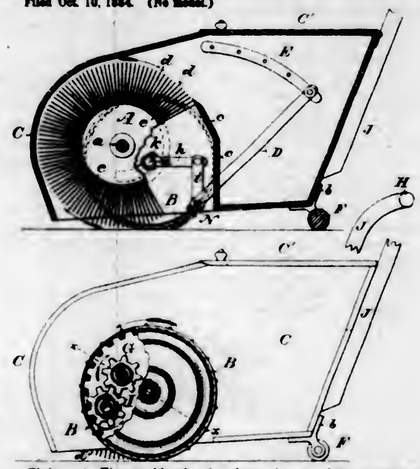


Claim.—1. In a shingling-bracket, the combination, with an under claw-bar and an upper claw-bar hinged thereto, of a curved supporting-arm pivotally secured in the under bar and having an inclined bearing on the upper bar, for the purpose substantially as set forth.

2. The combination, with the under bar having claws on its lower end and the upper bar pivoted to the under bar at its lower end and having claws at its upper end, of the curved supporting-arm pivoted to the under bar and extending through an oblique slot in the upper bar, substantially as set forth.

3. The combination, with the under bar having claws at one end and flattened branches at the other end, of the upper claw-bar hinged to the under bar, and the supporting-arm, curved substantially as shown, and pivotally secured in the under bar and extending through an oblique slot in the upper bar, substantially as set forth.

336,728. **LAWN-CLEANER.** WILLIAM H. MACK, Milwaukee, Wis. Filed Oct. 10, 1884. (No model.)

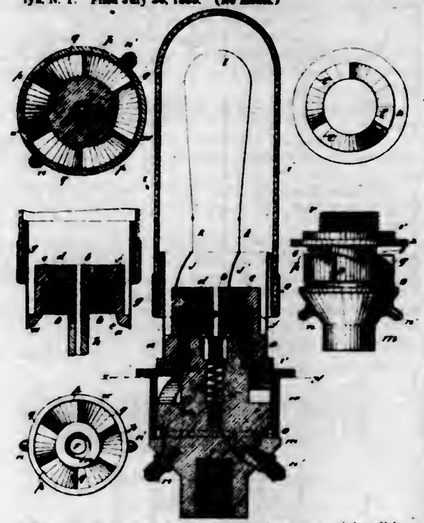


Claim.—1. The combination, in a lawn-cleaner, of the rotary brush A, geared with a driving-wheel, B, casing C, inclosing said brush and forming a receptacle for catching the litter therefrom, wheels B B, and their bearings *o o*, adjustable in arcs of circles concentric with said brush, so as to raise or lower said brush, substantially as and for the purposes set forth.

2. The combination, in a lawn-cleaner, of the rotary brush A, geared with a driving-wheel, B, casing C, inclosing said brush and forming a receptacle for catching the litter therefrom, wheels B B, their bearings *o o* adjustable in arcs of circles concentric with said brush, and lever D, substantially as and for the purposes set forth.

3. The combination, in a lawn-cleaner, of the stiff rotary brush A, casing C, forming a receptacle for catching the litter from said brush, carrying-plates L, having eccentric hubs *l*, which form bearings for the brush-shaft *a*, internally-cog-toothed driving-wheels B, forming, with carrying-plates L, cases for pinions I and gears G, and pinions I and gears G, substantially as and for the purposes set forth.

336,729. **INCANDESCENT ELECTRIC LAMP.** WILLIAM MAIN, Brooklyn, N. Y. Filed July 30, 1885. (No model.)



Claim.—1. In an incandescent electric lamp, a revolving disk set upon the axis of the lamp and intervening between the bottom of the lamp and the holder thereof, said disk being provided with suitable contacts and insulating section coacting in the circuit, said disk rotating independently of the lamp and the holder thereof, by which the current is turned in or out of the lamp by the rotation of said disk about its own axis and the axis of the lamp, substantially as described.

2. In an incandescent electric lamp, a switch for turning the current in and out of the lamp-circuit, consisting of a disk set upon the axis of the lamp and made to rotate continually in one direction about its own axis and the axis of the lamp, the lamp and holder remaining stationary, said disk being fitted with the necessary contact and insulating points or sections, substantially as described.

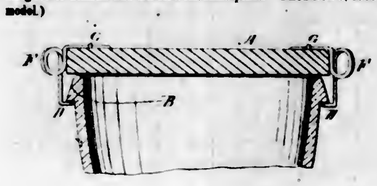
3. In an incandescent electric lamp and forming the illuminating-chamber thereof, the combination of a transparent globe and a metal base consisting of a double convoluted cup, one of which convolutions supports the illuminating-chamber, and the other furnishes an air and radiating chamber around the base of the lamp, substantially as described.

4. A metal base to support the glass chamber of an incandescent electric lamp, consisting of a tube-section having a double convolute spun about it, permitting the metal walls that embrace each side of the glass chamber to expand independently of said tube, substantially as described.

5. A metal base of the illuminating-chamber of an incandescent electric lamp, consisting of the combination of a cup, *g*, cylindrical piece *a*, flanged pipe *b*, and nut *d*, all being connected and combined substantially as described.

6. An electric switch consisting of the combination of a spring contact-rod, *r s r'*, connected with one binding-post, and a revolving metallic disk, *z*, provided with metal springs *t*, and a series of inclines, *p q*, suitably provided with contacts connected with the other binding-post, substantially as described.

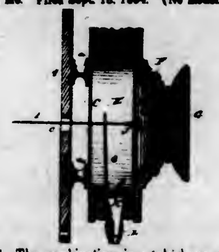
336,730. **JAR-COVER.** WILL F. MCFARLAND, Pleasantville, Ohio, assignor to himself and Eli Rowles, same place. Filed Dec. 3, 1885. (No model.)



Claim.—1. The combination, with the cover A, of spring-fastener D, each formed of a wire looped in the middle, curved to conform to the curvature of the jar, bent outward and upward to pass the rim of the jar, having coils F formed near its ends and secured to the cover A beyond the coils F, as herein specified.

2. As an improved article of manufacture, a spring-fastened jar-cover formed of the cover A and the spring-fastener D, consisting of a wire curved to conform to the curvature of the jar, bent outward in the center to form a loop, E, bent outward at the ends of the curved portion, then upward, having formed near the ends thereof coils F, and having the extremities of the wire bent over the top of the cover A, and downward into the material of the cover, and secured by the staples G, substantially as herein specified.

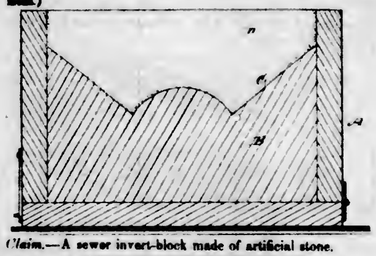
336,731. **MECHANICAL TELEPHONE.** ROBERT O. MIDDLETON, Camden Point, Mo. Filed Sept. 18, 1884. (No model.)



Claim.—1. The combination, in a telephone, of a body portion, an opening therein communicating with a listening-tube, diaphragms C D, suitably secured to the said body portion, a reed secured at one end in said opening, and a line-wire connected to said diaphragm D, substantially as set forth.

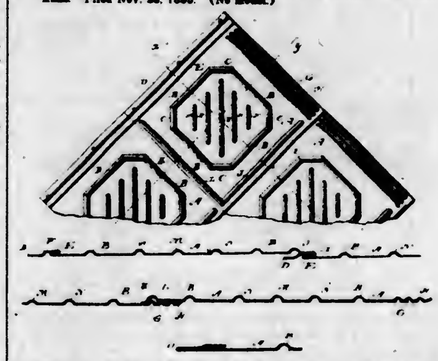
2. The combination, in a telephone, of a body portion, an opening therein communicating with a listening-tube, diaphragms C D, connected to said body to form an air-chamber, a reed located in said air-chamber, and a line-wire connected to diaphragm D by pin *d*, and passing through the reed and diaphragm C, substantially as set forth.

336,732. **COMPOSITION FOR MAKING SEWER INVERT-BLOCKS.** SAMUEL A. MILLER, Philadelphia, Pa. Filed July 24, 1885. (No specimens.)



Claim.—A sewer invert-block made of artificial stone.

336,733. **METALLIC SHINGLE.** ALVIN M. MONTROSE, Clay Centre, Kans. Filed Nov. 23, 1885. (No model.)



Claim.—1. A metallic shingle having corrugations formed at its middle parallel to its edges in the shape of a square, having its corners cut-off by short corner corrugations, and having a diametrical corruga-

gation and shorter corrugations parallel to the same, as and for the purpose shown and set forth.

2. A metallic shingle having one upper nailing-edge and an upwardly and inwardly bent locking-flange parallel to and inside of the nailing-edge, having one upper edge formed with a number of parallel corrugations, and bent upward at the outer edge, having the lower edge opposite to the corrugated edge bent outward in a plane below the plane of the shingle and provided with a corrugation parallel to the said edge, and having the other lower edge bent downward and inward to form a hook-shaped edge and provided with a corrugation parallel to the same, as and for the purpose shown and set forth.

3. A metallic shingle having an upper edge bent slightly upward, and provided with corrugations parallel to the same, having the opposite lower edge formed with a corrugation and bent outward in a plane slightly below the plane of the shingle, and having the other edges formed with locking-flanges, as and for the purpose shown and set forth.

336,734. PLOW. GEORGE M. NEEDLES, Stuart, Nebr., and ERNST G. FISHER, Atlantic, Iowa. Filed Dec. 19, 1885. (No model.)

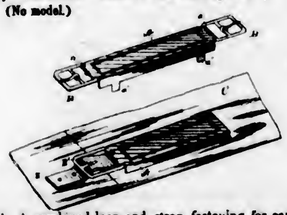


Claim.—1. The combination of a landside, an under cutter projected laterally therefrom, and a colter attached to the landside, and having a cutting-point projected beyond the plane of the under cutter, as and for the purpose specified.

2. The combination, in a plow, of a landside recessed on its bottom side, a rotary cutter journaled vertically to the landside and located within said recess, and a colter attached to the landside and having a cutting-point projected below the plane of the rotary cutter just in advance thereof, substantially as described, and for the purpose specified.

3. The combination of the landside, a bearing removably secured thereto and having a chamber formed in its upper side, a journal vertically mounted in said bearing, and having an enlargement or head partially filling the chamber, which latter surrounds the head, and a cutting-disk keyed to the lower end of the journal, as and for the purposes set forth.

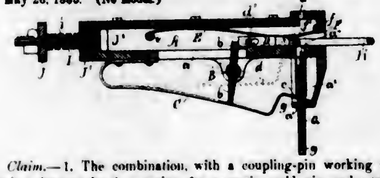
336,735. BOX-LOOP. FRED A. NEIDER, Augusta, Ky. Filed Dec. 14, 1885. (No model.)



Claim.—1. A combined loop and strap fastening for carriage-curtains, struck up or formed as shown, and having a buckle secured to the loop by a tongue or projection integral with the body portion of the loop and extending from the end thereof at the top.

2. In a carriage-curtain loop, the combination, substantially as specified, of the loop A, having the forward extension, *a*, for attaching the buckle, and the attaching-prongs *a'*, with the buckle B, secured to the top of said loop by the clip *a*, turned over the end of the buckle.

336,736. CAR-COUPLING. DANIEL O'ROURKE, Selma, Ala. Filed May 26, 1885. (No model.)



Claim.—1. The combination, with a coupling-pin working vertically in a bumper-head, a spring for operating said pin, and a trigger mounted on a shaft and constructed to depress and release the spring, of a slide operated by the link and arranged to trip the trigger for releasing the spring, substantially as specified.

2. The combination, with a coupling-pin working vertically in a bumper-head, a shaft carrying a trigger, and a spring operated by said trigger to raise and lower the pin, of a slide operated by the link to trip the trigger, and a guide for directing the link to the slide, substantially as set forth.

3. An improved bumper-head having two compartments with suitable openings in their walls, said openings registering one above the other for the passage of the vertically-operated pin, and having a spring-acted link-guide, substantially as and for the purpose described.

4. In a car-coupling, a spring constructed to operate a vertically-moving pin, a shaft carrying a trigger for operating the spring, a spring-pressed slide for tripping the trigger, and a spring-pressed guide for directing the link toward the slide, substantially as specified.

5. In a car-coupling, the combination, with the draw-head, of a double-chambered bumper-head and the operating-spring C, the sliding trip D, the two-armed trigger *b*, and the vertically-operated pin *g*, substantially as described.

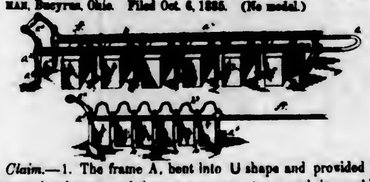
6. The bumper-frame having the head with its extension a^3, as set forth.

7. The combination, with frame A, having the slot *a*, of the spring C, the shaft B, with its trigger *b*, the slide D, with its slot *d*, and the pin *d'*, as set forth.

8. The combination, with the frame A, having the slot *a*, of the spring C, the shaft B, with its trigger *b*, the slide D, and guide F, as specified.

9. The combination, with the frame A, having the head A', with its extension a^3, the slot *a*, and holes a^2 a^4 a^5, and hangers *a'*, of the pin G, having the enlarged and reduced portions and pins *g g'*, the spring C, with its hole *c*, the shaft B, with its trigger *b* and wheel *b'*, the slide D, with its slot *d*, the pin *d'*, the guide F, with its hole *f'*, the pin *f*, and the spring E, all substantially as and for the purposes set forth.

336,737. PICKING UP AND CARRYING BRICKS. AQUILLA G. OSMAN, Bucyrus, Ohio. Filed Oct. 6, 1885. (No model.)

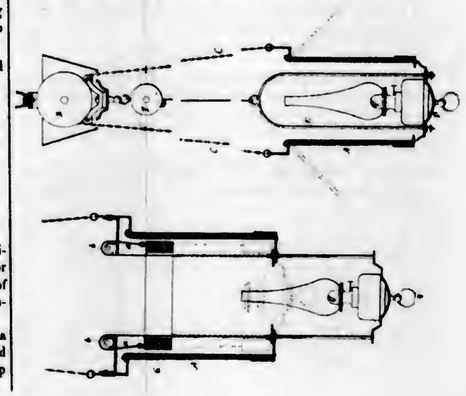


Claim.—1. The frame A, bent into U shape and provided with a stationary hand-grasp and legs or supports at one end, in combination with a number of depending finger-pieces strung loosely on the side bars of the frame, and an end piece arranged to slide on the frame-bars and provided with a hand-grasp, and adjustably connected to the stationary end piece and to the intermediate finger-pieces, substantially as described.

2. The frame A, provided with a stationary hand-grasp at one end, having projections below the line of the side bars of the frame, in combination with a multiple of loose depending finger-pieces arranged to slide on the frame, a movable end piece having a hand-grasp, and flexible connecting-straps uniting the end pieces and the intermediate finger-pieces, substantially as described.

3. The frame A, formed of a single metal bar bent into U shape, and having rigidly secured to its free ends a U-shaped hand-grasp having its side pieces extended below the frame-bar to form supports, a multiple of movable finger-pieces shorter than the end pieces and having the arms of the frame projected through them, movable depending end fingers connected by a hand-bar, and connecting-straps uniting each series of fingers and the stationary end piece, substantially as described.

336,738. EXTENSION-LAMP. DEXTER W. PARKER, Meriden, Conn., assignor to the Chas. Parker Company, same place. Filed Nov. 23, 1885. (No model.)



Claim.—In an extension lamp-fixture, a shade-holding frame, a counter-balance above with connection therefrom to said shade-holding frame, a lamp-support, and a second counter-balance independent of the counter-balance of the shade, the said second counter-balance in connection with the said lamp-frame, substantially as described, and whereby the down-and-up movement of the lamp may be made independent of the shade-holding frame, substantially as described.

336,739. SAW. JOHN J. PARKER, Aitkin, assignor to William P Mitchrack, St. Cloud, Minn. Filed Nov. 23, 1885. (No model.)



Claim.—1. A drag-saw having its cutting-edge provided with a non-cutting or cut-away portion, said portion being arranged in the center of the saw, and of a continuous length approximating one-fourth the length of the saw, serving to separate the cutting portions B' B, for the purpose set forth.

2. A drag-saw having the central portion of its cutting-edge for a distance approximating one-fourth the length of the saw cut away and inoperative, as set forth.

3. A crosscut or drag saw having operating or cutting portions B B' and an intervening cut-away portion, C, the latter being of a length approximating one-fourth that of the blade, and provided with saw-teeth of smaller size, the whole arranged and adapted to operate as and for the purpose set forth.

336,740. SURGICAL SPLINT. HAWLEY PARTRIDGE, Danbury, Conn., assignor of one-half to Frank P. Clark, same place. Filed Nov. 4, 1885. (No model.)



Claim.—1. As a new manufacture, a surgical felt splint adapted to be softened by heat alone and to set and harden quickly, said splint being made of fur and stiffened by a solution of shellac, resin, and gum-thus.

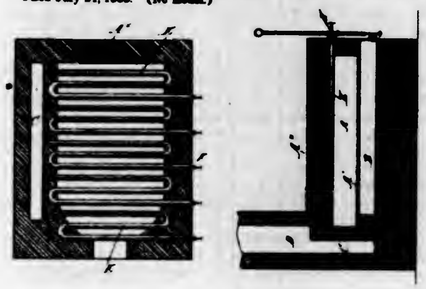
2. As a new manufacture, a surgical splint made of fur and stiffened by a compound of shellac, resin, and gum-thus, in substantially the proportions stated, dissolved in ammonia-water.

3. The method of making surgical splints, which consists in forming, shrinking, and drying the felt in the usual manner, then stiffening by dipping in a solution of shellac, resin, and gum-thus, wringing out and drying again, then subjecting to the action of steam for substantially the time stated, and finally cutting into strips for use.

4. The method of making surgical splints, which consists in forming and shrinking the felt in the usual manner, then stiffening with a compound of shellac, resin, and gum-thus, in substantially the proportions stated, in solution, then subjecting to the action of steam, then cutting to strips of desired shape and size, and finally forming to the desired shape while in a plastic condition.

5. The improvement in the art of making splints, which consists in forming, shrinking, and drying the felt, then dipping in a compound of shellac, resin, and gum-thus, in substantially the proportions stated, dissolved in ammonia-water, then drying again, then subjecting to the action of steam to soften the outside, and finally cutting into strips for use.

336,741. BAKER'S OVEN. EDUARD A. C. PETERSEN, Chicago, Ill. Filed July 21, 1885. (No model.)

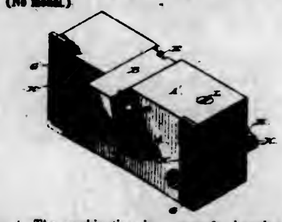


Claim.—1. In a baking-oven, the combination, with a series of tortuous flues situated beneath the baking compartment, of a series of burners, one for each flue, as set forth.

2. In a baking-oven, the combination, with a series of coiled pipes situated within the baking compartment, of a series of burners, one for each pipe, as set forth.

3. In a baking-oven, the combination, with the baking compartment, of flues B, pipes E, and burners F, as set forth.

336,742. GAGE. HENRY PLANTE, New York, N. Y. Filed Dec. 16, 1885. (No model.)

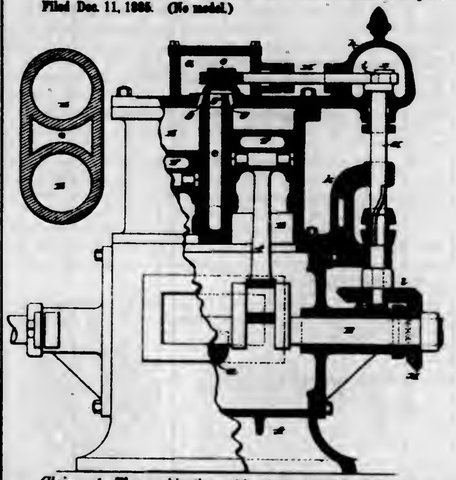


Claim.—1. The combination, in a gage for hanging doors, with a rectangular block, A, constituting the body thereof, of an adjustable gage-piece fitted to slide in a transverse groove or recess in the upper edge or face of the block, and with two parallel marking-blades, C and E, projecting from opposite faces of said gage-piece at a distance apart corresponding to the width of said upper edge or face of the block A, substantially in the manner and for the purpose herein set forth.

2. The combination, with a rectangular block, A, provided with a transversely-adjustable gage, B, carrying marking-blades C and E at either end and on opposite faces thereof, at a distance apart corresponding to the thickness of the block, of a reversible strip fitted in a recess at either end of the block A, upon the edge of that face of the block beyond which the gage B is made to project, and a screw, H, inserted through the strip at a point nearer to the edge of the block upon which the gage is fitted than to the opposite edge, substantially in the manner and for the purpose herein set forth

3. The combination, with a rectangular block, A, provided with a transversely-adjustable gage, B, carrying marking-blades C and E at either end and on opposite faces thereof, at a distance apart corresponding to the thickness of the block, of a gage-piece, K, carrying a marking-point, M, and inserted in a transverse opening in the block, to admit of adjustment to and from its lateral face, for the purpose of marking upon the edges of the door and of the casing the thickness of the hinge, substantially in the manner and for the purpose herein set forth.

336,743. TWIN-CYLINDER SINGLE-ACTING ENGINE. FAWCETT PLUMB, Streator, Ill., assignor of one-half to Albert Bown, same place. Filed Dec. 11, 1885. (No model.)



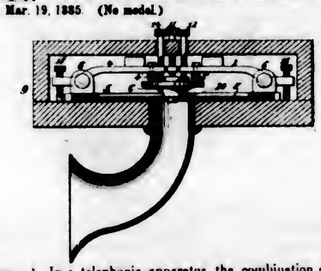
Claim.—1. The combination, with a base, the main shaft journaled therein, cylinders, and a stem-chest communicating with the cylinders, of a valve, a valve-operating rod, the upright shaft connecting the main shaft and valve-rod, and an oil-receptacle encircling the meeting ends of the valve-rod and upright shaft, substantially as set forth.

2. The combination, with the hollow base, the main shaft journaled therein, the upright twin cylinders set thereon, and the steam-chest lo-

cated on their upper ends, of the valve, the valve-operating rod, and the upright connecting-shaft, the valve-operating rod and upright shaft being connected within an oil-receptacle by means of a yoke and crank, and the upright shaft and main shaft being connected by bevel-gear, substantially as set forth.

3. The combination, with the hollow base adapted to form an oil or water receptacle, of an oil or water supply tower or reservoir, communicating with the base and provided with a waste-orifice, substantially as set forth.

336,744. **TELEPHONE.** CHARLES A. RANDALL, New York, N. Y. Filed Mar. 19, 1885. (No model.)



Claim.—1. In a telephonic apparatus, the combination of a main battery divided into sections, a series of independent battery-electrodes, one for each section of battery and connected thereto, and a diaphragm or vibrator carrying a single electrode common to all of the battery-electrodes and connected to the main-line wire, whereby the full effective working-current of the main battery as a whole may be passed to the main line through variable contact-electrodes without detrimental effects from the electric sparks at the electrodes, substantially as described.

2. In a telephonic apparatus, the combination of a main battery divided into sections, a series of independent battery-electrodes, one for each section of the battery and connected thereto, and a diaphragm or other vibrator carrying a single electrode common to all of the battery-electrodes and connected to the return battery-wire through the primary of an inductorium, whereby the full effective working-current of the main battery as a whole may be passed through the primary of the inductorium through variable contact-electrodes without detrimental effects from the electric spark at the electrodes, substantially as described.

3. In a telephone-transmitter, the combination of the diaphragm ring or holder having ears or brackets formed integral therewith, and the independent levers fulcrumed in said ears and carrying adjusting-screws at both extremities, with the casing, and the diaphragm having an electrode made with part of its face non-conductive, substantially as herein set forth.

4. In a telephonic transmitter, the combination of a number of sections of battery, a series of electrodes, one for each section of battery and independently connected thereto, and an electrode capable of being affected by sound-vibrations, and having a continuous or unbroken conductive surface upon which the independent electrodes bear, whereby the current from the sections of battery is made to pass directly or without short-circuiting to the electrode common to all the independent electrodes, and from thence to the line or the return battery-wire, substantially as described.

5. In a telephonic transmitter, the combination of a number of sections of battery, a series of electrodes, one for each section of battery and independently connected thereto, and a diaphragm carrying an electrode having a continuous or unbroken conductive surface upon which the independent electrodes bear, whereby the current from the sections of battery is made to pass directly and without short-circuiting to the diaphragm-electrode, and from thence to the line or the return battery-wire, substantially as described.

336,745. **VAPORIZER AND BURNER FOR GASOLINE AND OIL STOVES.** BERNARD REIN, Urbana, assignor to John Foos, Springfield Ohio. Filed Oct. 18, 1884. (No model.)

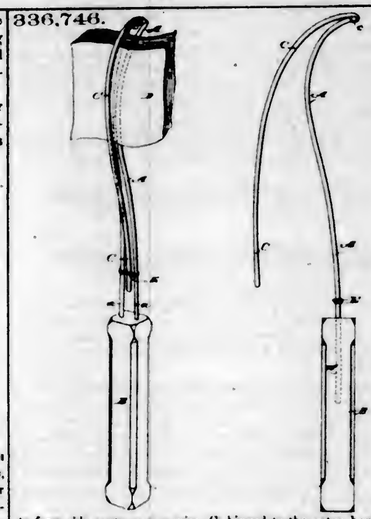


Claim.—A vaporizer for gasoline or oil stoves consisting of the chamber A, having a continuous interior open volute channel, *a*, in combination with the removable cover and an oil supply and delivery pipe, substantially as and for the purpose set forth.

336,746. **LAMP-CHIMNEY CLEANER.** ANDREW S. REESOR, Reisor, La. Filed July 14, 1885. (Model.)

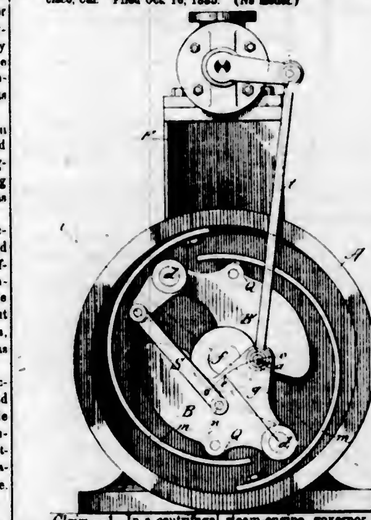
Claim.—A lamp-chimney cleaner comprising a wire, A, bent double

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to form side parts, *a a*, a wire, C, hinged to the outer bend of wire A, and a bar or loop, E, on wire A, adapted to lock the wire C, clamped upon a pad or mop inserted between wires A C, substantially as herein set forth.

336,747. **STEAM-ENGINE GOVERNOR.** JOHN RICHARDS, San Francisco, Cal. Filed Oct. 16, 1885. (No model.)



Claim.—1. In a centrifugal steam-engine governor, the combination of the weights B and B', hinged upon pivots *d d* and connected by an equalizing-link, S, the fly-wheel A, the springs *m m*, and the valve-rod *t*, pivoted directly to and operated by one of the weights, all arranged and operating substantially as shown and described.

2. In a centrifugal steam-engine governor, the combination of the weight B, having projection *g*, and provided with wheel Q, the weight B', provided also with a wheel, Q, the springs *m m*, and the equalizing-rod S, connecting the two weights, substantially as shown and described.

3. In a centrifugal steam-engine governor, the combination of the weight B, having projection *g*, provided with pin *a*, for attaching directly a valve-rod, *t*, and the weight B', connected with weight B by a link, S, substantially as shown and described.

336,748. **BLACKING-BOX.** GEORGE RIDGWAY, Towanda, Pa. Filed Dec. 5, 1885. (No model.)

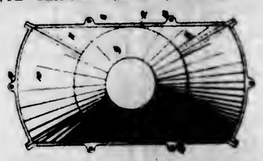
Claim.—As an improved article of manufacture, a blacking-box formed of the box A, provided with the rim *d*, attached to the bottom thereof, and forming, with the body of the box, the compartment e and

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the annular space *f*, and the cover B, having a downwardly-projecting rim, *g*, and indented central portion, *h*, substantially as herein specified.

336,749. **BLAST-FURNACE APPLIANCE.** WILLIAM ROTTHOFF, Pittsburg, Pa. Filed June 27, 1884. (No model.)



Claim.—1. As an improvement in mechanism for charging furnaces, an oblong hopper arranged with a common central discharge therefrom directly over and onto the apex of the bell, and having a receiving-chamber at each end and on opposite sides of the central discharge, in combination with inclined double tracks or skids suitable for the movement of cars thereon, and extending upward one to and over one end of the oblong hopper and the other to and over the other end, substantially as set forth.

2. As an improvement in blast-furnace-charging apparatus, an oblong hopper having a central discharge orifice or funnel, in combination with a receiving-chamber located in the mouth of the furnace, a bell for closing the discharge-opening in the receiving-chamber, and hoisting mechanism arranged to deliver furnace material at opposite ends of the hopper alternately, substantially as set forth.

3. As an improvement in blast-furnace-charging apparatus, a receiving-chamber located in the mouth of the furnace, in combination with a hopper located above the receiving-chamber and adjustable to and from the receiving-chamber, substantially as set forth.

4. A receiving-chamber located in the mouth of a blast-furnace, in combination with a bell arranged in the discharge-orifice of the receiving-chamber, the suspending-rod connecting said bell and its operating-lever, and the protecting sleeve and washer surrounding said rod, substantially as set forth.

5. In a blast-furnace, a receiving-chamber in combination with a hopper located above said chamber and provided with a central discharge orifice or funnel, and a stack arranged centrally above the opening in the hopper and having an internal diameter greater than the diameter of said orifice or funnel, substantially as set forth.

6. In a blast-furnace-filling apparatus, an oblong hopper arranged with a common central discharge therefrom, and having a receiving-chamber at each end and on opposite sides of the central discharge, in combination with inclined double tracks provided with suitable rails and extending from the ore-floor to the top of the furnace, said rails having their upper ends bent so as to project horizontally over the top of the furnace, similarly-inclined auxiliary rails arranged outside of the main rails extending beyond the bent portion of the main rails, a car provided with front and rear wheels, the tread of the rear wheels having a width sufficient to ride upon the auxiliary rails, a bail pivoted to the rear end of the car, and a double receiving-basin, substantially as set forth.

7. As an improvement in blast-furnace-charging apparatus, a receiving-chamber located in the mouth of the furnace and having its walls extending above the top of the furnace, in combination with a hopper supported by such extended walls and provided with a central discharge-orifice, substantially as set forth.

8. As an improvement in blast-furnace-charging apparatus, a receiving-chamber located in the mouth of the furnace and its walls extending above the top of the furnace and composed of partible sections, in combination with a hopper resting upon such extended wall-sections and adjustable to and from the same, substantially as set forth.

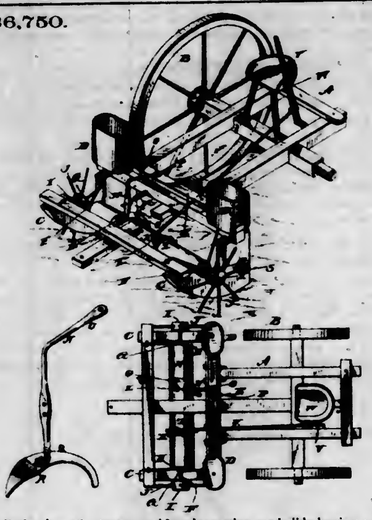
9. As an improvement in blast-furnace-charging apparatus, a receiving-chamber located in the mouth of the furnace and having its walls extending above the top of the furnace, such extended walls being provided with doors, in combination with a hopper supported by the receiving-chamber, substantially as set forth.

336,750. **CORN-PLANTER.** WILLIAM L. RUCKER, Martinsville, Mo. Filed Sept. 8, 1885. (No model.)

Claim.—1. In a corn-planter, the combination of a revolving axle having a cylinder provided with a radially-projecting lug, with a lever pivoted upon the frame and having its upper end connected to the seed-slide, and having its lower end provided with a curved cam pivoted upon the same, and having its forward end wider than where it is pivoted to said lever, and the rear end narrow, as and for the purpose shown and set forth.

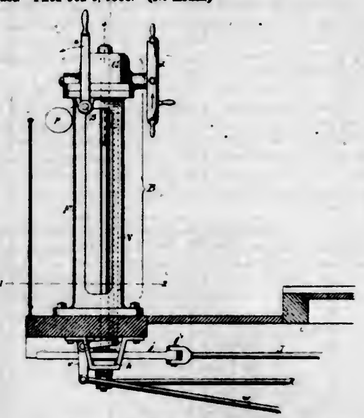
2. In a corn-planter, the combination, with a cylinder provided with

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a radiating lug, of a transversely-reciprocating seed-slide having a staple upon its upper side, a lever pivoted upon the front of the machine in the same vertical plane as the lug upon the cylinder, and having its upper end bent rearward and inserted into the staple upon the seed-slide, and a cam pivoted upon the lower end of the lever curved to correspond with the contour of the cylinder, having its forward end wider than where it is pivoted to said lever, and having its rear end narrowed, as and for the purpose shown and set forth.

336,751. **DEVICE FOR CONTROLLING THE MOTIVE POWER AND BRAKES OF POWER-DRIVEN CARS.** EDWARD SAMUEL, Philadelphia, Pa., assignor to William Wharton, Jr., & Co., (Limited,) same place. Filed Oct. 6, 1885. (No model.)



Claim.—1. The combination of the power-controlling devices of a power-driven car, the brake and brake-operating mechanism, an operating-shaft, N, to which power is applied, and clutches and gearing, whereby the movement of said shaft may be transmitted either to the power-controlling device or brake-operating mechanism, substantially as described.

2. The combination of the power-controlling devices of a power-driven car, the brake and brake-operating mechanism, an operating-shaft, N, to which power is applied, and clutches and gearing, whereby said shaft can be connected either to the power-controlling device or brake-operating mechanism, or disconnected from both, all substantially as specified.

3. The combination of shafts H and I, each having clutching mechanism and worm-wheels L and P, with a worm meshing with both worm-wheels and adapted to be turned, substantially as described.

4. The combination of shafts H and I, the shaft H having a clutch, K, and a loose worm-wheel, L, and the shaft I having a clutch, Q, and

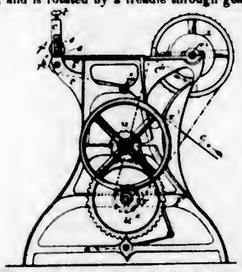
a loose worm-wheel, P, with a worm, M, adapted to turn either the shaft H or I through the medium of the clutches and worm-wheels, substantially as set forth.

5. The combination of the shaft H and cable-grip controlled thereby, and the clutch K, with a lever, W, and shaft V, connected thereto, having an arm, *u*, adapted to release the clutch from the control of the attendant when the said lever strikes an obstruction, substantially as described.

6. The combination of the grip and brakes of a car and shafts H and I, controlling the same, with an operating-shaft, N, common to both said shafts H and I, clutches for the latter, and a shaft, S, having connection with both clutches, to throw one out when the other is thrown in, as set forth.

336,752. **MACHINE FOR SPONGING CLOTH.** ROBERT SCHEIFF, Indianapolis, Ind. Filed Oct. 6, 1884. (No model.)

Brief.—The cloth to be sponged is passed over a guide-roller, then between two rollers, one of which is held in movable bearings and pressed against the other by a spring and regulating-screw, thence over a horizontal bed-plate to a sponging-roll consisting of a perforated cylinder mounted on a hollow perforated shaft connected with a steam-supply pipe. The cylinder is provided on its surface with points for the attachment of the cloth, and is rotated by a treadle through gearing.



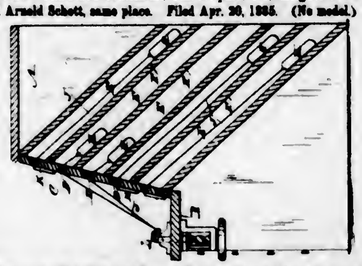
Claim.—1. The combination of a perforated sponging-cylinder provided with teeth or hooks *h*, a horizontal bed-plate, *b*, pressure-rollers, and mechanism for revolving said sponging-cylinder, substantially as and for the purposes set forth.

2. The combination of a frame-work having a horizontal bed-plate, *b*, and brackets *c*, a sponging-cylinder, *i*, a roll, *r*, mounted in bearings in said brackets, a roll, *r'*, mounted in sliding bearings *j*, resting in slots in said bracket, a pressure-spring, and tension-screw, substantially as shown and described.

3. The combination of a frame-work, a sponging-cylinder having teeth or hooks *h*, pressure-rollers, a friction-roller, mechanism for driving said sponging-cylinder, a steam-pipe entering said sponging-cylinder, and a stuffing-box at the point of said entrance, substantially as set forth.

4. The combination of the frame-work, the bed-plate *b*, brackets *c*, rollers *r r' r²*, hollow perforated sponging-cylinder *i*, a hollow perforated shaft, *v*, on which said cylinder is mounted, and steam-pipe *q'*, substantially as set forth.

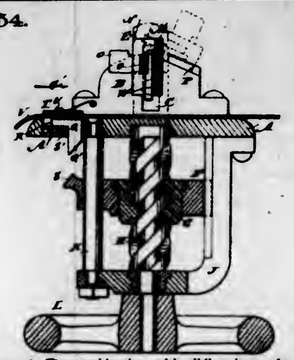
336,753. **TYPE-CASE FOR STEREOTYPE-MATRIX-MAKING MACHINES.** FREDERICK SOUREDER, Philadelphia, Pa., assignor to himself and Arnold Schott, same place. Filed Apr. 20, 1885. (No model.)



Claim.—1. The combination, with a type-case, of types connected to cords, and means, substantially as described, for pulling the types up to the type-case, as set forth.

2. The combination, with a type-case having inclined ways, of sliding weights in the ways, cords or wires secured to the weights and passed through apertures in the front at the upper ends of the ways, and types secured on the outer ends of the cords or wires, substantially as herein shown and described.

336,754. **MACHINE FOR MAKING STEREOTYPE-MATRIX IMPRESSIONS.** FREDERICK SOUREDER, Philadelphia, Pa., assignor to himself and Arnold Schott, same place. Filed Apr. 20, 1885. (No model.)



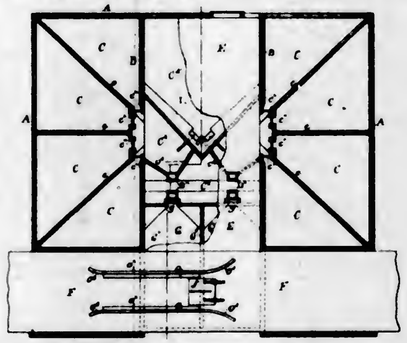
Claim.—1. The combination, with sliding bars, of a type-holder pivoted between the same, and mechanism consisting of a screw acting upon a cross-bar connected to rods secured to said sliding bars for pressing the type against a sheet, substantially as herein shown and described.

2. The combination, with side pieces having grooves upon the outer sides of said side pieces, of bars sliding in said grooves, and a type-holder pivoted to said bars, and guided in recesses in the side pieces, together with a screw acting upon a cross-bar secured to rods connected to the sliding bars, substantially as herein shown and described.

3. The combination, with side pieces, B, of the sliding bars E, the type-holder M, pivoted to the same, the cross-piece F, uniting the bars E, and a screw for working the side pieces up and down, substantially as herein shown and described.

4. In a type-impression-making machine, the type-actuating screw whose nut carries a cross-bar, in combination with the paper-feeding contrivance consisting of the spring-seated toothed bar acted upon by a projection of said cross-bar, and the plate T, substantially as and for the purpose set forth.

336,755. **GRAIN-ELEVATOR.** MARQUIS F. SHELEY, Fremont, Nebr. Filed June 13, 1885. (No model.)



Claim.—1. In a building for storing grain, the combination, with an elevator and storage and receiving bins, of an exhaust-fan or equivalent device applied to remove the light impurities from the grain in its passage from the receiving-bin to the elevating devices of the elevator, substantially as described.

2. In a building for storing grain, the combination, with an elevator and a receiving-bin, of a passage connecting the receiving-bin with the lower end of the elevator-casing, an exhaust-fan, and an air-duct connecting the fan with the said passage, whereby light impurities may be removed from the grain before its delivery to the elevating devices of the elevator, substantially as described.

3. The combination, with an elevator and a receiving-bin, of a passage for grain connecting the receiving-bin with the lower end of the elevator-casing, and an exhaust-fan communicating with said passage, the latter being provided with an air-inlet opening or openings at a point opposite the opening leading to the fan, whereby a current of air may be drawn through the grain in said passage, substantially as described.

4. In a building for storing grain, the combination, with an elevator and a metal shoe for the lower pulley of said elevator, of a foundation for the elevator, said elevator having the lower ends of its legs or casings extended downwardly past the said shoe to the foundation, and constructed to rest upon the latter, substantially as described.

5. In a building for storing grain, the combination, with the elevating devices and storage-bins, of a receiving-bin, G⁴, for ear-corn, and a corn-sheller, M, connected with the discharge-opening of the said bin G⁴, and constructed to discharge to the lower end of the elevating devices, substantially as described.

6. In a building for storing grain provided with elevating devices, an inclined or hopper bottom sloping toward the lower end of the elevating devices, and a working-floor, E, of a receiving-bin, G⁴, located beneath the working-floor, and a corn-sheller, M, located upon the said hopper-bottom beneath the said receiving-bin G⁴, substantially as and for the purpose set forth.

7. In a building for storing grain, the combination, with an elevator and an inclined surface or floor, G', sloping downwardly to the inlet-opening of the elevator, of a corn-sheller having the lower timbers of its supporting-frame inclined to correspond with the inclination of said floor or surface, substantially as and for the purpose set forth.

8. In a building for storing grain, a hopper provided in its part adjacent to its exit-opening with opposite vertical and inclined walls, substantially as described.

9. In a building for storing grain, the combination of a corn-sheller and a hopper discharging into the corn-sheller, and provided in its part adjacent to its exit-opening with two vertical walls, and having its walls opposite said vertical walls inclined, substantially as described.

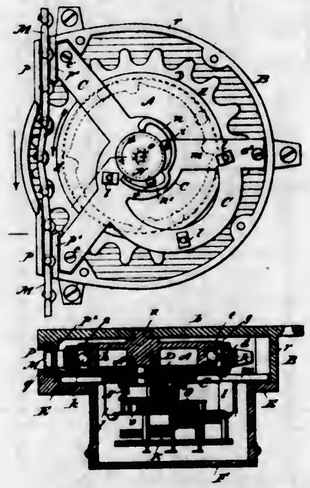
10. In a building for storing grain, the combination, with a corn-sheller, M, and the wooden walls of a hopper, G⁴, of a metal casting, N, provided with vertical side walls, N', substantially as described.

11. The combination, with a driveway-floor and pivoted dump-timbers, of guide-strips O², secured to said floor, substantially as described.

12. The combination, with a driveway-floor and pivoted dump-timbers O, provided with guide-strips O', of guide-strips O², secured to the said floor, substantially as described.

13. The combination, with the floor of the driveway, and pivoted dump-timbers O, of guide-strips O², secured to the said floor at one end of the dump-timbers, and other guide-strips, O², secured to the said floor at the opposite end of said timbers, substantially as described.

336,756. **REGISTER FOR ELEVATORS, &c.** DANIEL SIBUR, Toledo, Ohio. Filed Oct. 15, 1885. (No model.)

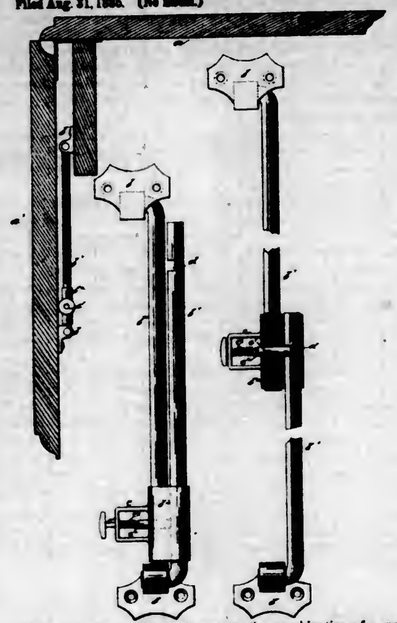


Claim.—1. In a registering-machine, the toothed wheel having a rearward or lateral rim, the hub having recesses and grooves carrying balls, the axis or shaft of said hub carrying at its one end a wheel, in combination with the eccentric ridge or ridges, and additional ball or balls interposed between said latter wheel and ridge, substantially as and for the purpose set forth.

2. In a registering-machine, the chain engaging the toothed wheel having the lateral or rearward rim, the hub having the recesses and grooves carrying the balls, the axis or shaft of said hub carrying at its one end a wheel, in combination with the eccentric ridge or ridges, and the additional ball or balls interposed between said ridge and the latter wheel, and the registering mechanism geared to the said shaft or axis, substantially as and for the purpose set forth.

3. The combination, with a friction-clutch, substantially as described, a toothed wheel and a chain, of a case formed with ridges *p p'*, and a cover having ridges *q q'*, substantially as described.

336,757. **TABLE-LEAF SUPPORT.** WESDELIN SIMS, Chicago, Ill., assignor to August Heuer and Henry Brockschmidt, both of same place. Filed Aug. 31, 1885. (No model.)

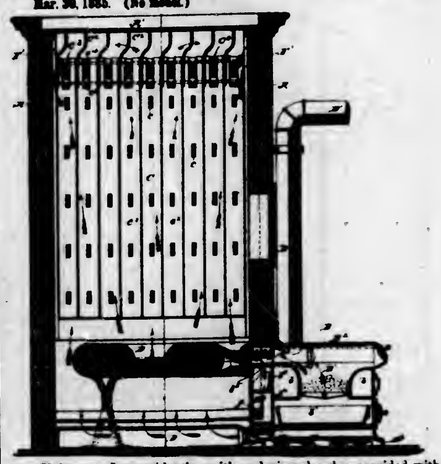


Claim.—1. In a table-leaf support, the combination of a pair of supporting-rods, each hinged in a suitable bracket, and one provided on its inner end with a sleeve and spring latch-pin, and the other formed with a notch, substantially as and for the purpose set forth.

2. In a table-leaf support, the combination of the rods *b'*, having their outer ends turned or bent at right angles and hinged in the brackets *b*, the sleeve b^3, cast with a frame, *c*, the shouldered and headed pin *c'*, the spring c^3, and the notch *d*, substantially as and for the purpose set forth.

3. A casting for table-leaf supports, consisting of a main body, b^2, formed with a socket to receive one part of the support, separated by a web of metal from a passage for the other part of the support, and having a guide-frame for the spring-latch cast or formed with it on one side, substantially as shown and described.

336,758. **LAUNDRY-DRIER.** OSCAR M. SHANNON, Chicago, Ill. Filed Mar. 30, 1885. (No model.)



Claim.—1. In combination with a drying-chamber provided with inlet and outlet air passages and a heating-drum, a heater constructed

with a passage leading from the fire-space to the heating-drum, and a passage connected with the air-outlet and leading into the said passage to the drum, substantially as described.

2. The combination, with a drying-chamber provided with an air-outlet, of a heating-drum located within said chamber, and a broad air-distributing box connected with a suitable air-inlet and located below the heating-drum, and also provided with widely-distributed holes in its upper inclosing-wall, whereby the air is delivered in relatively small streams beneath various and widely-distributed portions of the heating-drum, substantially as described.

3. The combination, with the drying-chamber, of an air-outlet passage terminating at its receiving end in a horizontal passage, F', having several openings at different parts of the drying-chamber, substantially as and for the purpose set forth.

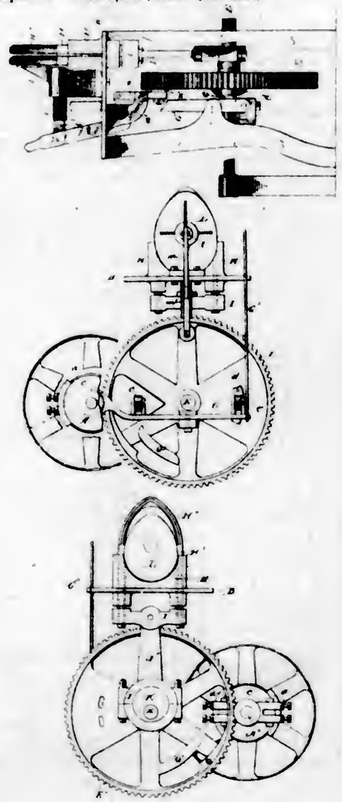
4. The combination, with a drying-chamber provided with a heating-drum and an air-outlet pipe, of a heater provided with a passage, b^3, leading to the heating-drum, and a passage, B^3, connected with the air-outlet of the drier and opening into the passage b^3, and also provided with a damper, b^4, substantially as and for the purpose set forth.

5. A sliding drier-gate provided with a rail extended beyond the front end of the gate, in combination with a stationary pulley supported in front of the drier, and a support arranged within the drier to receive upward pressure from the inner end of the gate, substantially as described.

6. In combination with the drying-chamber having a fixed interior rail and an external pulley, C^7, supported in front of the drier, a sliding gate provided with pulleys c^2 c^4, running on said inner rail, and an elevated rail, C^7, running on the exterior pulley, substantially as described.

7. In combination with the wall of the drying-chamber and a series of sliding gates each provided with a top rail extending beyond the front end of the gate, a rod supported by brackets C^8, and a series of loose pulleys on said rod to receive the said top rails, substantially as described.

336,759. MACHINE FOR BUNDLING KINDLING-WOOD. JAMES E. SHAW, Williamsport, and JOHN F. ELLINGER, Armstrong, Lycoming County, assignors to the Williamsport Kindling Wood Company, (Limited,) Williamsport, Pa. Filed Sept. 12, 1885. (No model.)



Claim.—1. The combination, with the driven gear-wheel having the inclines attached to or formed with the side of the said wheel, of the ejector-plate and the lever connected with the ejector-plate and receiving motion from the inclines, substantially as described, whereby the ejector-plate is moved forward to displace the bundled wood, and then back to its normal position.

2. The combination, with the driven gear-wheel having the projections attached to the side of the said wheel and inclined in opposite directions, of the ejector-plate carried upon a suitable rod, the lever connected to the said rod, and the link provided with a lug or roller which engages the projection on the gear, whereby the ejector-plate is given a positive reciprocative motion.

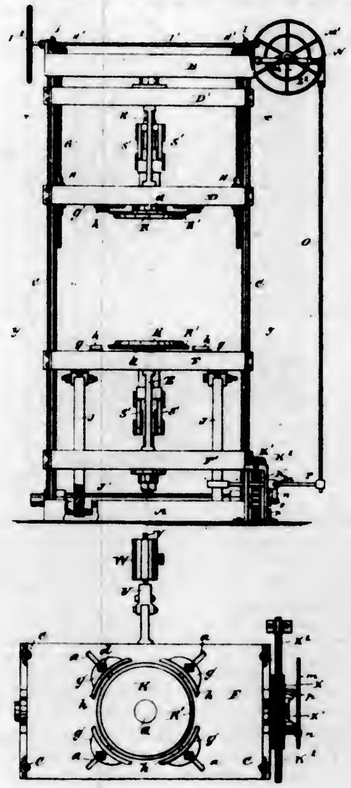
3. The combination, with the driving-shaft provided with the gear and clutch, of the pivoted lever having the two rollers, and the driven gear having the cam projection attached to the side thereof and engaging the rolls on the lever, whereby the clutch is disengaged at each half-revolution of the driven gear.

4. The combination, with the driving-shaft provided with the clutch and pinion, of the driven shaft provided with the eccentric and carrying the gear having the projection attached to its side, the pivoted lever engaging the clutch and provided with the rolls, and the binding-straps connected with the eccentric upon the driven shaft, substantially as described.

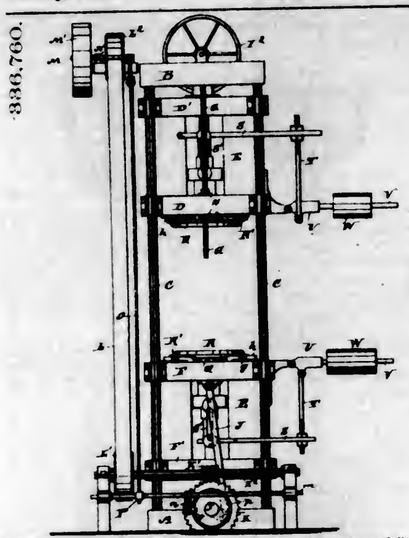
5. The combination, in a machine for bundling wood, of the driving-shaft provided with the gear and clutch, the driven shaft provided with the large gear having the inclines and projection attached to its side, and the eccentric, the binding-straps receiving motion from the eccentric, and the ejector-plate attached to and operated by the bell-crank lever, which receives motion from the inclines on the driven gear.

336,760. BARREL LEVELING AND TRUSSING MACHINE. GUSTAV H. W. SIEMON, St. Louis, Mo., assignor to J. F. Vogt & Brother, same place. Filed Nov. 2, 1885. (No model.)

Claim.—1. In a barrel leveling and trussing machine, the combination, with a frame, of a stationary platform, a movable platform, a movable leveling-disk held on each platform, and a lever pivoted on each platform and carrying a weight, and pivoted arms and rods connected with



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the weighted lever and with the movable leveling-disks, substantially as and for the purpose set forth.

2. In a barrel leveling and trussing machine, the combination, with a frame, of a stationary platform and a movable platform, a movable leveling-disk held on each platform, a weighted lever pivoted on each platform, and pivoted arms and rods, said rods connecting adjustably with said arms, substantially as and for the purpose set forth.

3. In a barrel leveling and trussing machine, the combination, with a frame, of a stationary platform and a movable platform, a crank-shaft and connecting-rods for moving the movable platform toward and from the stationary platform, a movable leveling-disk held on each platform, a lever pivoted on each platform and carrying a weight, pivoted arms and rods connected with the weighted arm and with the movable leveling-disks, and of hoop-drivers on the platforms, substantially as herein shown and described.

4. In a barrel leveling and trussing machine, the combination, with a frame, of a stationary platform and a movable platform, a barrel-leveling disk in each platform, a lever, S, pivoted on each platform, links connecting said levers S with the leveling-disks, the angle-levers U, pivoted on the platforms, the rods T, connecting the same with the levers S, weights W on arms V of the levers U, and of hoop-drivers on the platforms, substantially as herein shown and described.

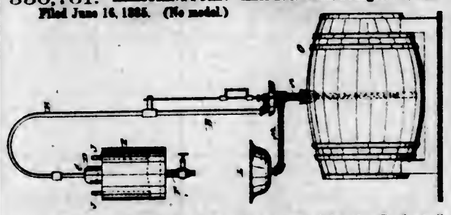
5. In a barrel leveling and trussing machine, the combination, with a vertical frame, of a stationary platform on the same and a movable platform mounted to move toward and from the stationary platform, a crank-shaft connected with the movable platform by connecting-bars, gearing for revolving the crank-shaft, a driving-belt for operating said gearing, a swinging frame on the top of the upright main frame of the machine, a driving-pulley in said swinging frame, over which driving-pulley the driving-belt that operates the gearing of the movable platform passes, and a rod connecting the swinging frame with a treadle at the base of the machine, substantially as herein shown and described.

6. In a barrel leveling and trussing machine, the combination, with a stationary plate or platform and a movable plate or platform which can be moved toward the stationary platform, of a crank-shaft and connecting-rods for moving the adjustable platform, and a worm-wheel on the end of the crank-shaft, a worm engaging with said worm-wheel, a belt-pulley on the shaft carrying the worm, a cam-ring on the end of the crank-shaft, a rocking lever on which the cam acts, a foot-lever mounted on the rocking lever, a rod connected with the foot-lever, a swinging frame on the top of the machine, which swinging frame is connected with a rod connected to the foot-lever, a belt-pulley in the swinging frame, and a belt passed over the pulley in the swinging frame and over the pulley on the shaft carrying the worm, substantially as herein shown and described.

7. In a barrel leveling and trussing machine, the combination, with a vertical frame, of a stationary platform on the same, and a movable platform mounted to move toward and from the stationary platform, a crank-shaft for reciprocating the movable platform, a cam on the crank-shaft, and a belt-tightening device operated from said cam, substantially as herein shown and described.

8. In a barrel leveling and trussing machine, the combination, with a stationary and a movable platform, each having diagonal slots, of hoop-drivers placed on the platforms and held in the desired positions by bolts passed through the above-mentioned slots, movable barrel-leveling disks held on the platforms, and of weights acting on the said leveling-disks, substantially as herein shown and described.

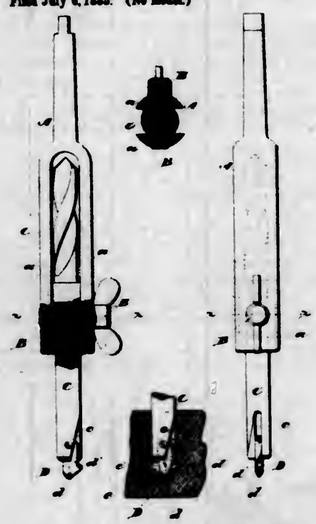
336,761. MEASURING-PUMP. ABEL B. SIMONDS, Youngstown, Ohio. Filed June 16, 1885. (No model.)



Claim.—1. The combination, with a pump, of the pipe B, the ball C, the vessel E, the tube D in the vessel E, and having a socket formed on its top for receiving the ball C, substantially as herein shown and described.

2. The combination, with the pump A, of the pipe B, the vessel E, the tube D, the piston H, the rods J, and the cock F, substantially as herein shown and described.

336,762. TOOL FOR DRILL-PRESSES. OSBELIN SMITH, Bridgeton, N. J. Filed July 6, 1885. (No model.)



Claim.—1. An improved device for use in drill-presses, composed of a forked stock that is adapted to be secured within and revolve with a drill-spindle, and a tool which is pivoted centrally within or between the forks of said stock, and at each end is adapted for use in forming, threading, counterboring, or otherwise operating in connection with a hole, in combination with means, substantially as shown, whereby said tool may be locked in line axially with said stock, substantially as specified.

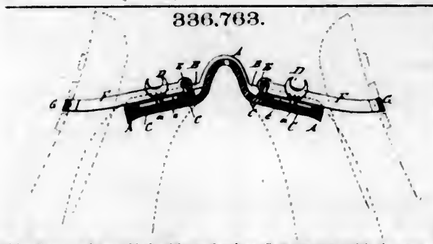
2. As a means for counterboring the inner end of a hole, a tool composed of a bar which is adapted to loosely fill and to be revolved within such hole, and is provided within its lower end at one side with a radial longitudinally-arranged slot, in combination with a flat cutter that is pivoted at or near its upper end within and is adapted to swing outward from said slot, and has its lower projecting end made V-shaped with its point placed at one side of the axis of said bar, substantially as and for the purpose shown.

336,763. HAME-COUPLING. WILLIAM A. SMITH and JOHN H. HUGHES, Woodlawn, Nebr. Filed July 15, 1885. (No model.)

Claim.—1. A hame-coupling constructed substantially as herein shown and described, and consisting of a main plate having arched and apertured middle part and grooved side flanges, and adjustable side plates carrying hinged loops to receive the hames, as set forth.

2. In a hame-coupling, the combination, with the main plate A, having arched and apertured middle part and grooved side flanges, of the adjustable side plates, C, secured in the said grooved flanges by thumb-screws D, the hame-receiving loops F, hinged to the said adjust-

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able plates and provided with projections G, to engage with the strap-loops of the bames, substantially as herein shown and described.

336,764. VEHICLE FOR DELIVERING MAIL. HOBART B. SORTOR, Kalamazoo, Mich. Filed Aug. 7, 1885. (No model.)

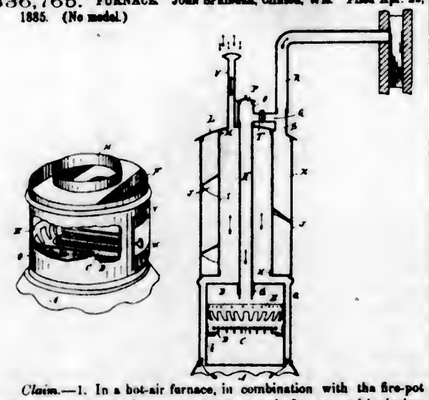


Claim.—1. In a delivery-cart, the combination of a body having a rear entrance-opening, compartments for containing matter to be delivered, a bent axle passing beneath the body, suitable side springs with front cross-connection forward of the body, side hangers pivotally connecting the tops of the springs and the sides of the body, and a front hanger secured to the front end of the body, and pivotally connecting with the said cross-connection of the side springs, all substantially as set forth.

2. A vehicle for delivering mail, consisting of a body having compartments for containing matter to be delivered, passage-way leading into the body among said compartments, suitable running-gear supporting the body near the ground, and suitable hangers pivotally suspending the body at the end and sides, substantially as set forth.

3. A delivery-cart consisting of a body provided with closed compartments, an uncovered passage leading into the body among said compartments, a suitable running-gear, and hangers pivotally suspending said body at the front and sides, substantially as set forth.

336,765. FURNACE. JOHN SPRINGER, Clinton, Wis. Filed Apr. 29, 1885. (No model.)



Claim.—1. In a hot-air furnace, in combination with the fire-pot section provided with air-passages between such fire-pot and its inclosing-jacket, a hollow bridge and internal heating-drum, and an inner drum, N, within said drum, substantially as specified.

2. A furnace provided with air-passages between the walls of the fire-pot section, a hollow bridge, an outer and an inner drum communicating with the combustion-chamber, and an intermediate drum communicating with the hollow bridge, the periphery of such intermediate drum being provided with a spiral flange, substantially as and for the purposes specified.

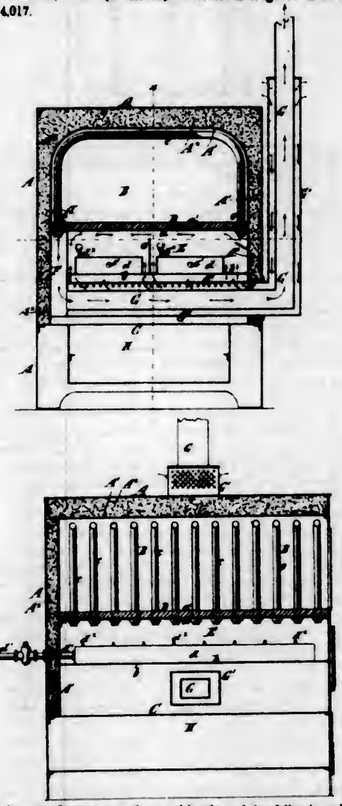
3. In a furnace, the combination of the fire-pot section B, provided with the inner section, *b*, hollow bridge F, drums K and I, provided with suitable discharge-pipes, spiral flange J, and head L, and the inner drum, N, arranged within and concentric to the drum I, all constructed, arranged, and operating substantially in the manner and for the purposes set forth.

336,766. BUNG. WILLIAM TAYLOR, Chicago, Ill. Filed July 25, 1885. (No model.)



Claim.—The combination, in a bung, of the slightly-tapered outer part formed with a recessed outer face and having projections on its inner face, the rounded or beveled inner part also formed with projections which interlock with those of the other part, an elastic packing-ring surrounding the interlocking portions, and a screw passed loosely through one part into the other, for drawing them together, substantially as and for the purpose set forth.

336,767. BAKER'S OVEN. WILLIAM H. THOMPSON, Leeds, County of York, England, assignor to the Thompson Gas Kiln and Oven Company. Filed June 17, 1885. (No model.) Patented in England Mar. 30, 1885, No. 4,017.



Claim.—1. In an oven, the combination of the following elements the baking-chamber B, the heating-chamber E, extending beneath the baking-chamber, and the smoke-box F, arranged at the side of the heating-chamber and beneath the baking-chamber, the U-shaped tubes *c* within the baking-chamber and having their ends terminating in the heating-chamber and smoke-box, gas-boxes *d*, surmounted by burners and arranged in the heating-chamber beneath the floor of the baking-chamber, and the upright partition *e*, extending upward between the gas-boxes nearly to the floor of the baking-chamber, and whereby the burners farthest from the inlet ends of the tubes *c* are made effective in heating the floor D of the baking-chamber, substantially as herein described.

2. The combination, with an oven or baking-chamber and a heating-chamber arranged below the same, of a smoke-box arranged below and at one side of the oven or baking-chamber, the heating-tubes extending across within the oven or baking-chamber and having their end portions extending downward through the floor of the oven or baking-chamber and communicating, respectively, with the heating-chamber and smoke-box, burners in the heating-chamber, a smoke-pipe extending horizontally from the smoke box or chamber through the heating-chamber and thence upward, and a fresh-air jacket or casing surrounding the smoke-pipe, and having its portion which extends horizontally through the heating-chamber perforated for the passage of heated air upward to the burners, substantially as herein described.

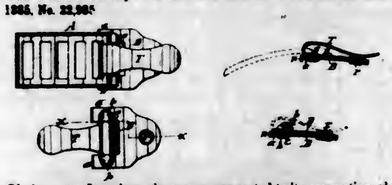
3. The combination, with the oven or baking-chamber B and the heating-chamber E, separated by the floor D, of the smoke-box F at one side of the heating-chamber, the heating-tubes *c*, a perforated partition, *b*, dividing the heating-chamber, gas boxes and burners arranged in the heating-chamber above said partition, the smoke-pipe G, extending horizontally below said partition *b* and thence upward, and the fresh-air jacket or casing surrounding the smoke-pipe and having its horizontally-extending portion perforated for the passage of heated air upward through the partition *b* to supply the burners, substantially as herein described.

336,768. CORSET. ALVA H. TRAVER, Jackson, Mich. Filed Sept. 12, 1885. (No model.)



Claim.—A corset having a row of vertical bones, *p' p'*, parallel to and on both sides of the back-opening and extending its full length, short bones in front extending up to the fulled breast portion, short bones p^3 behind on both sides of the bones *p'*, and diagonal bones p^4, extending from their intersection with the bones p^3 diagonally across the shoulder-blade portion to the armpit, substantially as described.

336,769. SPRING-CLASP. JACOB J. UEBELHOER, Syracuse, N. Y. Filed May 26, 1885. (No model.) Patented in England Sept. 15, 1885, No. 10,930; in France Sept. 15, 1885, No. 171,189, and in Canada Dec. 15, 1885, No. 22,985.



Claim.—1. In a clasp, the tongue connected to its supporting-plate by a pintle, re-enforced substantially as described, whereby an increased thickness is secured, as set forth.

2. In combination with the tongue and its angular or flattened pivot, two plates connected together at one end and provided with forward extensions *a a* at the opposite end, and having in the adjacent sides of said extensions recesses or depressions *b b*, for the reception of the pivot, extending only part way across the extensions, to bring the side portions of the two plates to lie normally contiguous to each other, substantially as described and shown.

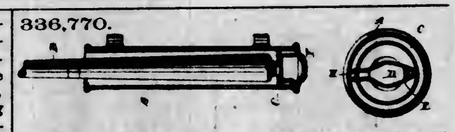
3. In combination with the tongue and its pintle, two plates connected together at one end and having forward extensions provided in their adjacent sides with depressions *b b*, for the reception of the pintle, extending only part way across the extensions, substantially as described and shown.

4. The combination of the tongue provided with the twofold pivot *c c*, and the plates B B, connected together at one end and provided with the forward extensions *a a* at the opposite end, and each having in the adjacent sides of said extensions recesses of a depth equal to the thickness of one-half of the twofold pivot, and extending only part way across the extensions, substantially as described and shown.

5. In combination with the tongue and pintle connected therewith, and flattened or angular in cross-section, the plates B B, provided with extensions *a a* and with recesses *b b* in said extensions, and one of said plates provided with the lip *n* across the end of the other plate, substantially as described and shown, for the purpose set forth.

336,770. WHIP-SOCKET. ADOLPH VIETH, Providence, R. I. Filed Dec. 24, 1885. (No model.)

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Claim.—1. The socket A, having an interior disk, C, provided with a central opening, D, and a locking-spring, E, consisting of two limbs secured on one side of the socket and extending across it with a space between them, in combination with a whip-handle, B, having a stud, F, the whole constructed and operating substantially as described, to hold the whip either locked or unlocked, as may be desired.

2. In a whip-socket, a locking device consisting of an interior disk, C, having a central opening, D, in combination with a bifurcated or double-limbed spring, E, for receiving and clasping the stud F upon the whip-handle, as and for the purposes specified.

336,771. HAY-STACKER. JOHN P. WARNER and FREDERICK COOK, Taylorville, Ill. Filed Aug. 18, 1885. (No model.)



Claim.—1. A hay-stacker comprising a main frame, a carrier-frame pivoted thereto and having one end adjustable as to height, a slotted gathering-hood, and moving tangs projecting through said slots, said hood having a nose for engaging under the hay and carrying it to the tangs, substantially as specified.

2. In combination, a slotted gathering-hood, two parallel shafts under the same and carrying tangs which project through the slots, the tangs of the front shaft being of less length, and an elevating-carrier, substantially as specified.

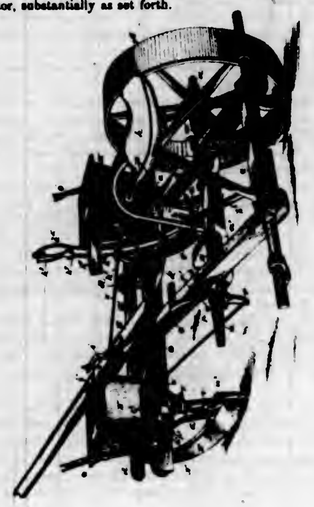
336,772. CORN-PLANTER. LEWIS E. WATERMAN, Moline, Ill. Filed Oct. 26, 1884. (No model.)

Claim.—1. The combination, with a truck and a drill-section hinged thereto, of two levers, one secured to the truck and the other to the drill-section, the short arms of said levers being adapted to act reciprocally upon each other to elevate or depress the drill-section, substantially as set forth.

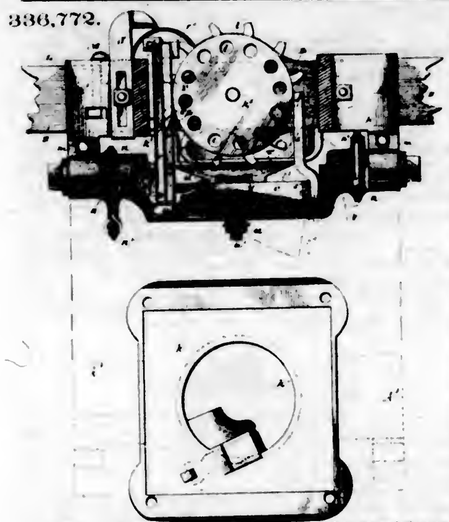
2. The combination, with a truck and a drill-supporting frame hinged thereto, of two levers having their short arms pivotally secured together, one of the levers being pivoted to the truck and the other to the drill-supporting frame, whereby the drills are elevated and depressed, substantially as set forth.

3. The combination, with a truck and a drill-section hinged thereto, of two levers adapted to elevate and depress the drill-section, and a pawl secured to one of the levers, and engaging a sector secured to the drill-section for locking the drill-section in different vertical adjustments, substantially as set forth.

4. The combination, with a drill-section hinged to the truck and provided with a toothed sector located at its rear end, of a lever pivoted to the toothed sector, a lever pivoted to the truck and to the first-named lever, and a pawl pivoted to the first-named lever for engaging the toothed sector, substantially as set forth.



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5. The combination, with a truck, a drill-section hinged thereto, and a lever pivotally secured to the truck, of a combined hand and foot lever pivotally secured to the drill-section and to the first-named lever, whereby the drills may be elevated or depressed either by the hand or foot, substantially as set forth.

6. The combination, with a front or drill section of a planter and a combined foot and hand operating lever, of a combined foot and hand operated pawl pivoted to the lever and engaging a sector rigidly secured to one of said sections, substantially as set forth.

7. The combination, with a seed-box, of a sliding floor-plate having the seed-plate journaled thereon, substantially as set forth.

8. The combination, with a seed-box, of a laterally-swinging floor-plate having the seed-plate journaled thereon, substantially as set forth.

9. The combination, with a seed-box, of a laterally-swinging floor-plate having the seed-plate journaled thereon, and a blank secured to the floor-plate in close proximity to the upper surface of the seed-plate, substantially as set forth.

10. The combination, with a rotary seed-plate constructed to slide from under the seed-box, of a gravity-latch adapted to lock the seed-plate in its working position, substantially as set forth.

11. The combination, with a rotary seed-plate, a rock-shaft, and a pawl operated by said rock-shaft, of a movable stop located alongside of the pawl and adapted to lock the seed-plate against displacement and return the plate to its original position when a partial stroke has been made, substantially as set forth.

12. The combination, with a rotary seed-plate operated by a pawl secured to a rock-shaft, of a stop adapted to lock the seed-plate against displacement, return it when a partial stroke has been made, throw the pawl out of contact with the plate, and limit the return-stroke of the rock-shaft, substantially as set forth.

13. The combination, with a dropping-throat, a rock-shaft, and a gate for opening and closing the dropping-throat, of a gravity-dog attached to the gate and adapted to automatically engage and disengage the rock-shaft during the first part of its forward stroke, thereby opening and closing the gate, substantially as set forth.

14. The combination, with a dropping-throat and a rock-shaft, of a gate for opening and closing the dropping-throat, said gate being operated by the rock-shaft, and adjusting devices connected with the gate, whereby the shaft is caused to close the gate at an earlier or later part of the stroke, substantially as and for the purpose set forth.

15. The combination, with a seed-plate and a dropping-throat gate, of a spring-actuated rock-shaft adapted to operate the plate and gate, substantially as set forth.

16. The combination, with the rock-shaft, of two clutches loosely mounted thereon, one connected with a check-rower fork and the other with a foot-operated lever, constructed as described, so that one clutch automatically remains idle when the other is in use, substantially as set forth.

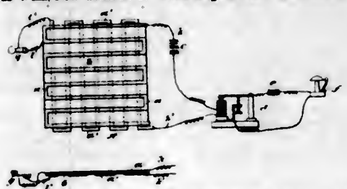
17. The combination, with a seed-box and a laterally-adjustable dropping-throat, of an adjustable broad-mouthed funnel for transferring the seed from the seed-plate to the throat, substantially as set forth.

18. The combination, with a seed box and plate, of a dropping-throat provided with a broad mouth, whereby it may be laterally adjusted while the seed-box remains stationary, substantially as set forth.

19. The combination, with a laterally-adjustable dropping-throat and a gate for opening and closing the lower end of the throat, of a rock-shaft provided with a longitudinal flange or shelf adapted to operate the gate in the different lateral adjustments of the throat, substantially as set forth.

20. The combination, with a tongue and tilting runners, of double-trees secured to the tongue in a reciprocating adjustment, and devices connecting the double-trees with the tilting runners, whereby the latter are forced into the ground with a yielding force, substantially as and for the purpose set forth.

336,773. ALARM FOR DETECTING WATER-OVERFLOW. LEOPOLD WEIL, New York, N. Y. Filed Aug. 5, 1885. (No model.)



Claim.—1. Means for detecting the undesirable presence of water in a structure, consisting of electric conductors arranged in open circuit, including an alarm, and separated from one another by a water-absorbent, which, when wet, serves to establish an electric current in said conductors, and thereby sound the alarm, substantially as described.

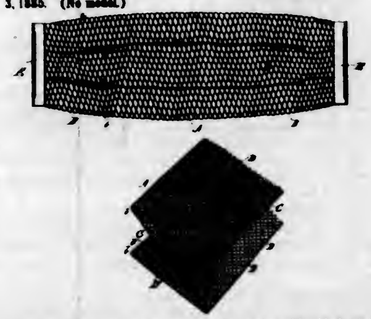
2. In means for detecting the undesirable presence of water in a structure, a series of electric conductors connected to opposite poles of a generator and arranged in open circuit, and including an alarm, combined with an interposed normally-insulating material rendered electrically conductive by absorption of water, to bring the conductors into electric contact, and thereby make a circuit and sound the alarm, substantially as described.

3. The protecting material for detecting aqueous leaks in structures, consisting of the electric conductors *a a*, connected to the opposite poles of a generator and arranged in open circuit, and including an alarm, and porous or bibulous insulating material *b*, separating the said conductors, the said insulating material impregnated with some salt or other substance, which, when dissolved, increases the conductivity of the insulating material, substantially as described.

4. The combination, with the electric conductors *a a'* and porous or bibulous insulator *b*, separating the same, a battery, *c*, relay *d*, alarm *f*, battery *e*, and wires *k k'*, for connecting the whole in circuit, substantially as described.

5. The electric conductor *a*, interwoven with the insulated conductor *a'*, connected in circuit with an alarm, which circuit is rendered operative by the insulation of conductor *a'* absorbing water, and thereby making contact between the conductors *a* and *a'*, substantially as described.

336,774. SPRING. JOSEPH L. WELLS, Philadelphia, Pa. Filed Oct. 3, 1885. (No model.)

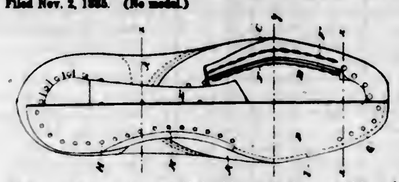


Claim.—1. A spring composed of a series of braided, plaited, or woven wires, each of said wires having divergent bends on opposite sides, said bends following the diagonal course of the wires and being from the outside of the spring toward its longitudinal axis, whereby when pressure perpendicular to said axis is imposed on the spring torsion is produced in the wires thereof, substantially as shown and described.

2. A spring composed of a braided, plaited, or woven wire cylinder or tube having two opposite sides longitudinally grooved or corrugated, whereby the wires thereof have divergent bends or deflections on opposite sides, and pressure on the top of the spring and perpendicular to its longitudinal axis produces torsional action of the wires, substantially as shown and described.

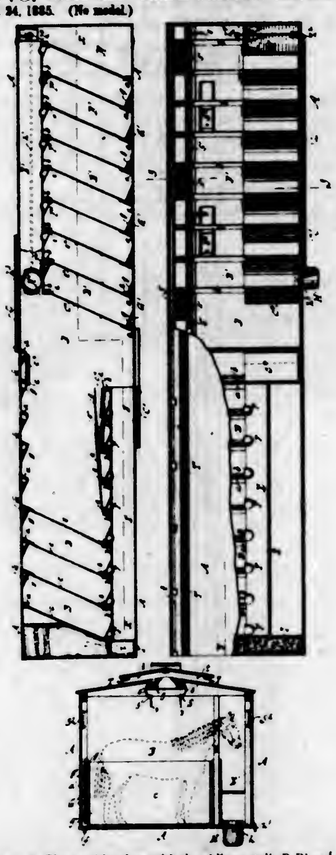
3. A spring seat, back, or support for chairs or other articles of furniture, composed of a series of springs each of which consists of a cylinder or tube of braided, plaited, or woven wire, with their sides longitudinally grooved or corrugated, the course of the wires being diagonal with relation to the longitudinal axis of the cylinder or tube, said springs having their axes parallel or approximately parallel with the plane of the seat or support which they form, substantially as shown and described.

336,775. BOOT OR SHOE. WILLIAM H. WEBBER, Raleigh, N. C. Filed Nov. 2, 1885. (No model.)



Claim.—A boot or shoe provided with a welt of extra width at the toe united to the upper and insole at the ball of the shoe by an inseam in two parts, one on each side of the shoe, and secured at the toe by fastenings which pass through the outsole as well as the welt, upper, and insole and fill the gap between the two parts of the inseam, the fastenings at the shank of the shoe passing through the outsole, upper, and insole, substantially as described.

336,776. STOCK-CAR. JAMES H. WEBER, New York, N. Y. Filed Sept. 24, 1885. (No model.)



Claim.—1. The combination, with the oblique stalls B B' and the entrance-compartment intermediate between the said stalls, of the water-tank H in one end of the car, the water-well H' in the center, connected with the tank, and the feed-box I in the opposite end of the car, substantially as shown and described.

2. The combination, with a stock-car having the clearing-compartments G G', stanchions *a* and *b*, and oblique partitions *c*, hinged to the latter stanchions, of bolts *a'*, slidable within the said clearing-compartments, for engaging the free end of the oblique partitions, substantially as described.

3. The combination, with a stock-car having the clearing-compartments G G' and stanchions *a* and *b*, of the oblique partitions *c*, hinged to the latter stanchions and provided with staples *c'*, extending through apertures in the stanchions *a*, and the vertically-sliding bolts *a'*, located in the clearing-compartments and provided with prongs to engage said staples, substantially as described.

4. The combination, with the clearing-departments, of the oblique partitions hinged at one end to the stanchions, the partitions *c*, folding transversely, and the bolts in the clearing-compartments for locking the partitions, substantially as shown and described.

5. In a stock-car, the oblique hinged partitions *c*, in combination with the partitions C", each composed of several sections hinged to each other, substantially as shown and described.

6. The combination, with the oblique stalls B B' and the middle compartment, D, intermediate between said stalls, of the manger E, common to all stalls B, the manger E', common to all stalls B', the water-tank H in one end of the car, and the water-well H' near the center of the car, connected with the tank, substantially as shown and described.

7. The combination, with the oblique stalls B B' and the entrance-compartment D, of the manger E, common to all the stalls B, the manger E', common to all the stalls B', the water-tank H, the water-well H', connected with the tank, the feed-troughs F F', one for each stall, and the feed-box I, substantially as shown and described.

8. The combination, with the stalls B B' and the entrance-compartment between the said stalls, of the water-tank H in one end of the car, the water-well H' in the center, connected with the tank, and feed-box I in the opposite end of the car, substantially as shown and described.

336,777. DENTAL PLUGGER. RICHARD S. WILLIAMS, New York, N. Y. Filed Feb. 4, 1885. (No model.)



Claim.—1. A dental plugging device having a circular head provided on its leading end with a series of concentric grooves inade substantially V shape to freely enter and leave the filling without adherence thereto, substantially as described.

2. A dental plugging device having a head circular in cross-section and provided with a conical leading or working end, and formed with a series of concentric grooves made of a substantially V shape to freely enter and leave the filling without adherence thereto, and adapted to be operated by a mechanical rotator or dental engine, substantially as described.

336,778. CAR-COUPLING. JOHN T. WILSON, Pittsburg, Pa. Filed Jan. 2, 1886. (No model.)



Claim.—1. In a car-coupling, an eccentric or crank mounted in the draw-head, in combination with a coupling-bar having its rear end connected to said eccentric and provided with a hook and eye, substantially as set forth.

2. In a car-coupling, an eccentric or crank mounted in the draw-head, in combination with a coupling having its rear end connected to said eccentric and provided with a hook and eye, and a spring guiding and retaining apron journaled in the draw-head, substantially as set forth.

336,779. DRIVE-CHAIN. CHAS E. ALDEN, Philadelphia, Pa. Filed Mar. 20, 1885. (No model.)

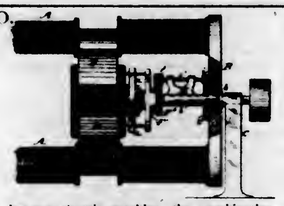


Claim.—A coupling or connection for drive-chains having a V-shaped opening for the insertion and withdrawal of links, said coupling being made in a piece separate from the links and adapted to receive the contiguous end bars of two links, substantially as shown and described.

336,780. DYNAMO-ELECTRIC MACHINE. ROYAL E. BALL, New York, N. Y. Filed May 14, 1885. (No model.)

Claim.—1. In a dynamo-electric machine, a concentrically-movable field-magnet constructed and adapted to revolve under the abnormal attraction of the armature, in combination with current-collectors whose positions relatively to said field-magnet are altered by such revolution.

336,780.



2. In a dynamo-electric machine, the combination, with a revolving field-magnet, of concentrically-movable current-collectors coupled to said field-magnet, substantially as described, so as to be shifted thereby and in the direction of movement of the pole-pieces or poles.

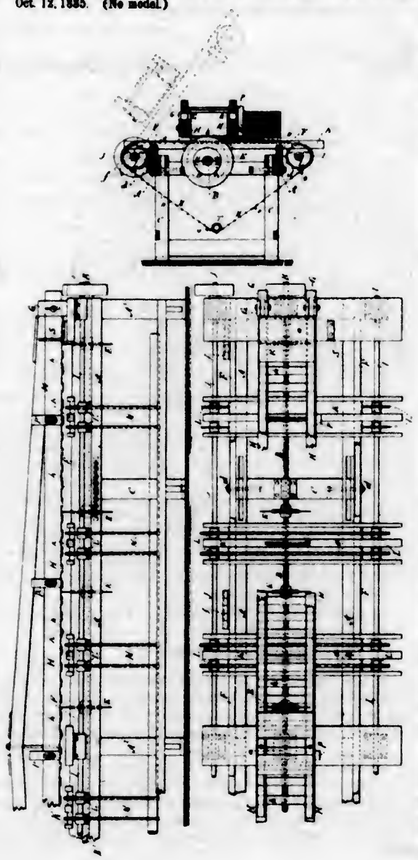
3. In a dynamo-electric machine, the combination, with a concentrically-movable field-magnet and concentrically-movable current-collectors, of intermediate differential gearing or coupling mechanism, substantially as and for the purpose described.

336,781. DENTAL-INSTRUMENT RUBBER COVER. CHARLES K. BARLOW, Poughkeepsie, N. Y. Filed Nov. 13, 1885. (No model.)



Claim.—As an article of manufacture, the combined removable cap and sleeve, of corrugated soft rubber, for dental tools, contracted at its open end and thickened at its outer end for the purpose of forming a cushion for the hand, as set forth.

336,782. GANG-EDGER. ERASTUS H. BARNES, Brooklyn, N. Y. Filed Oct. 12, 1885. (No model.)



Claim.—1. The combination, with a saw-shaft, its frame, journal-boxes, and adjustable gang of saws, of a hinged bed-frame, movable transverse bed-pieces, and a stationary head-piece beneath which the boards to be sawed are moved laterally, substantially as set forth.

2. The combination, with a gang of adjustable saws, their shaft and bearings, of a bed-frame, movable transverse bed-pieces, sprocket-wheels and shaft, and feeding-chains with dogs for supporting and moving a board while being sawed transversely into lengths, substantially as set forth.

3. The combination, with a gang of saws and their shaft, of a hinged bed-frame, movable transverse bed-pieces, sprocket-wheels and their shafts supported upon the hinged bed-frame, the sprocket-wheels being adjustable longitudinally of the shaft, and feeding chains and dogs, substantially as set forth.

4. In a machine for sawing boards transversely, the combination, with a saw-shaft and the gang of adjustable saws, of a hinged bed-frame, movable transverse bed-pieces, feeding chains and dogs, sprocket-wheels and their shafts supported on the hinged bed-frame, the head-piece extending along above the saws, and the supports upon the hinged bed-frame, to which the head-piece is movably connected, substantially as set forth.

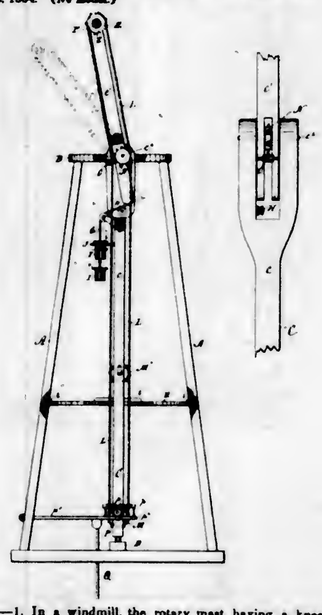
5. The gang of saws and the shaft for the same, a supporting-frame, and journal-boxes for the saw-shaft, a bed-frame hinged to the supporting-frame, movable transverse bed-pieces resting upon the bed-frame, sprocket-wheels and shafts supported by the bed-frame, and feeding chains and dogs, a head-piece above the bed-frame, and supports for the same, and movable gages attached to the head-pieces, substantially as and for the purposes set forth.

336,783. PUMP-ROD COUPLING. CHARLES M. BARTHOLOMEW, Plainwell, Mich. Filed Dec. 8, 1885. (No model.)



Claim.—The combination of sections of pump-rod provided with end extensions constructed to overlap each other and to form when overlapped a tapered coupling portion, the engaging-surfaces of the overlapping extensions being provided with studs and holes adapted to fit into each other, and a coupling-band adapted to detachably slide over said lapping extensions, substantially as set forth.

336,784. WINDMILL. JOSHUA G. BEBSTER, Duncan, Nebr. Filed Mar. 22, 1884. (No model.)



Claim.—1. In a windmill, the rotary mast having a knee-joint thereon at one side of its longitudinal center, in combination with the endless chain and the chain-pulleys supported at the upper and lower ends of the mast, substantially as shown and described.

2. In a windmill, the rotary mast having a knee-joint therein, the pivot of which joint is located to one side of the longitudinal center of the mast, to cause the upper part of the mast to incline slightly from a perpendicular, substantially as shown and described.

3. In a windmill, the rotary mast having a knee-joint therein, and having its upper part, c', slightly inclined from a perpendicular, in combination with one or more weights attached to the lower end of said part c', substantially as shown and described.

4. In a windmill, the rotary mast having a knee-joint therein, and having its upper part, c', slightly inclined from a perpendicular, in combination with a series of weights, a cord on which said weights are strung, and to which the lowest weight is secured, and supports attached to the mast and adapted to support the loose weights when the mast is erect, substantially as shown and described.

5. In a windmill, the rotary mast having a knee-joint therein, and having a pin passed through its upper end to form an axle for the wind-wheel, in combination with the wheel-hub having the chain-pulley secured thereto, the endless chain, the guide-pulleys on opposite sides of the knee-joint, and the chain-pulley at the lower end of the mast, substantially as shown and described.

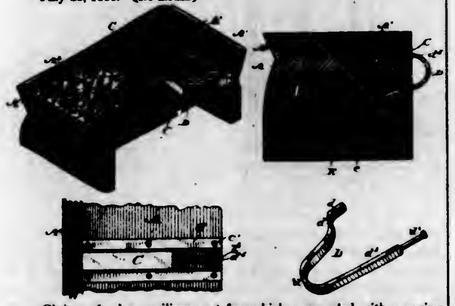
6. In a windmill, the combination of the rotary mast, the chain-pulley supported at the lower end of the mast and mounted on a crank-axle having a roller on the crank, the annular guide-plates for said roller, and the oscillatory arms supporting said plates, substantially as shown and described, whereby the rotary motion of the crank shall be converted into a reciprocatory motion for operating a pump-rod, as specified.

7. In a windmill, the combination of the rotary mast, a crank or equivalent device supported in the mast, and means for operating the same, and a pivoted annular guide for the crank, substantially as shown and described, whereby the crank may be carried around with the mast, and the said pivoted annular guides may be continuously oscillated or reciprocated at the same time.

8. The wheel consisting of the hub E, having flange e^2, the blades e', bolted to the flange, and the brace-hoops e^3 e^4, the hoops e^3 passing through the blades, and the hoops e^4 secured to the edges of the same, substantially as shown and described.

9. In a windmill, the combination, with a supporting-frame, a rotary mast, and means for imparting a reciprocating motion to a pump-rod from the mast, of a table arranged above the pump-rod-operating mechanism and detachably connected to said mast, and a chain-pulley journaled in the mast above the table, substantially as herein shown and described.

336,785. AUXILIARY SEAT FOR VEHICLES. SARAH M. BEVERLY, Rochester, Ind., by marriage now Sarah M. Beverly Millard. Filed July 23, 1885. (No model.)



Claim.—1. An auxiliary seat for vehicles, provided with a spring supporting-bar having a horizontal portion, d, upon which the seat is secured, a curved portion, and a horizontal portion, d^3 rounded at d^4, whereby the seat is firmly supported in or turned to either its upper (or active) or lower (or inactive) positions, as shown.

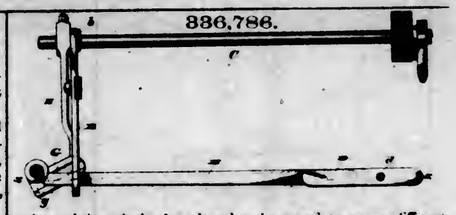
2. The auxiliary seat E, having spring-support D, composed of horizontal portion d, upright portion d', curved portion d^2, and horizontal portion d^3, ending in rounded portion d^4, as set forth.

3. An auxiliary seat for vehicles, mounted on a spring-support having a horizontal end, d^3, in combination with the ordinary seat, provided with a slideway in which said end fits in either its upright or reversed positions, whereby the seat is firmly supported in either of these positions, as set forth.

4. The seat A, having slideway C and groove d^2, with lug d^5, in combination with spring-support D, having horizontal portion d^3, with rounded end d^4, and the auxiliary seat, as set forth.

336,786. FEED MECHANISM FOR SEWING-MACHINES. GEORGE W. BINGHALL, Toledo, Ohio, assignor to the Union Manufacturing Company, same place. Filed Sept. 30, 1884. (No model.)

Claim.—1. In a sewing-machine-feed mechanism, in combination with the swinging bar pivoted to an adjustable block or slide engaging the feed-bar, and adapted to actuate the same directly as it swings, the horizontally-oscillating rocker, and a pivotal connection between the



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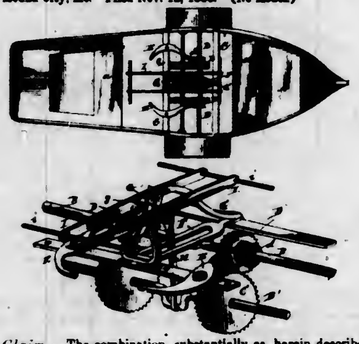
rocker and the swinging bar adapted to be caused to occupy different portions at or near either side of the center of oscillation of the rocker by the longitudinal movement of the swinging bar, substantially as and for the purpose described.

2. In a sewing-machine-feed mechanism, in combination with the feed-bar, and with a swinging longitudinally-adjustable bar connected therewith, a swinging arm or rocker having a groove extending on both sides of its pivotal center, and a pivotal connection between the bar and arm engaging the groove in the latter, substantially as and for the purpose described.

3. In a feed mechanism for sewing-machines, in combination with the feed-bar, the longitudinally-adjustable pivoted swinging bar arranged substantially at right angles to the feed-bar and engaging a portion of the same, the block pivoted on the swinging bar, the horizontally-oscillating rocker having a groove extending past and on both sides of its pivotal center, in which slides such block, and means for adjusting the bar so as to cause the pivoted block thereon to occupy any desired position on either side of the center of oscillation of the rocker, substantially as and for the purpose set forth.

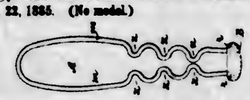
4. In combination with the feed-bar B, the longitudinally-adjustable swinging bar E, pivoted at its rear end, and near its front end engaging a notch in the feed-bar, the block F, pivoted to the front of the swinging bar, the rocker G, provided with the groove g, extending past its pivotal center and receiving the block F, and means, substantially as described, for adjusting the bar E longitudinally, to vary the position of the block F on either side of the center of oscillation of the rocker, substantially as and for the purpose described.

336,787. DEVICE FOR PROPELLING BOATS. JOHN H. BOWERS, Mound City, Mo. Filed Nov. 12, 1885. (No model.)



Claim.—The combination, substantially as herein described, of a crank-shaft having cog-wheels rigidly attached thereto, independent driving-shafts having cog-wheels secured thereon so as to move laterally into and out of operative connection to the other cogs, said shafts carrying paddle-wheels at their outer ends, and an oscillating frame, I, connected to the crank-shaft by pitmen, and levers for throwing the cog-wheels out of gear with each other, substantially as shown, and for the purpose set forth.

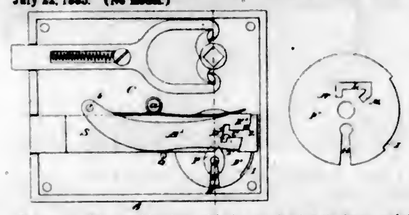
336,788. KEY-FASTENER. CHARLES W. BRADFORD, Thorndike, Me. Filed Oct. 22, 1885. (No model.)



Claim.—1. The key-fastener A, having the legs m, composed of a single piece of elastic wire and provided with depressions x, for receiving the bow of the key, and hooks r, for engaging a guard, substantially as described.

2. The key-fastener A, composed of a single piece of elastic wire and provided with two or more depressions, x, for receiving the bow of a key, and with the eye z, for attaching a chain, substantially as set forth.

336,789. KEY-HOLE GUARD. WILLIAM W. BROSA, Otis, Mass. Filed July 22, 1885. (No model.)

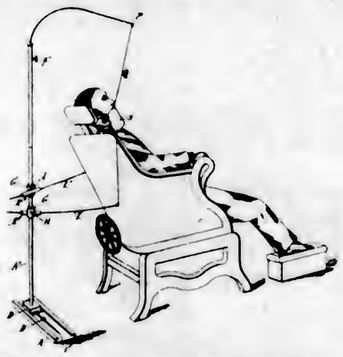


Claim.—1. The combination, with the case having the inner and the outer face, of the sliding bolt, the plate F, pivoted to the case and having the opening H, and the slot L, having the angular arm M, and the arm V, pivoted to the bolt S, and having a stud, W, engaging in the slot of the plate F, whereby said plate is rotated to close the key-hole when the bolt is moved by a key inserted in the inner side of the lock, substantially as described.

2. The combination, with the case, the sliding bolt, the plate F, pivoted to the case and having the opening H, that registers with the key-hole when the bolt is withdrawn, and the slot L, of the arm V, having a stud entering the said slot, substantially as described.

3. The combination, with the lock-case, the bolt having the stud Z, and the tumbler engaging said stud, of arm V, pivoted to the bolt, and the plate F, pivoted to the lock-case and connected to arm V, to close the key-hole when the bolt is moved, substantially as described.

336,790. DENTAL APPLIANCE. CHARLES E. BROOKS, Brooklyn, N. Y. Filed Nov. 17, 1885. (No model.)



Claim.—In a dental apparatus, the post E, having the movable and adjustable foot or shoe D, and provided with the spring P and swiveled spring-rods L and L', substantially as for the purposes set forth.

336,791. CAR-COUPLING. NICHOLAS H. BROUN, Mobile, Ala., assignor of one-fourth to Edward M. Hudson, New Orleans, La. Filed Sept. 30, 1885. (No model.)



Claim.—1. The combination, with a draw-head provided with a slot open at the top and front end of the draw-head, said slot being narrower than the width of the link, of recesses extending from the mouth of the draw-head rearwardly, and adapted to receive the connecting-link and hold the free end of the same at different heights, in the manner and for the purpose substantially as set forth.

2. The draw-head provided with the gravity-tumbler, the gravity-dog, the slot, link-recesses, and the vertical T-pin, substantially as set forth.

3. The combination, with a draw-head and a gravity-tumbler, substantially as described, of the gravity-dog, a shaft for operating the dog, and devices for locking the shaft against rotation, substantially as set forth.

336,792. PROCESS OF SEPARATING PRECIOUS METALS FROM SPEISS. ST. GEORGE T. BRYAN, University of Virginia, Va. Filed Apr. 4, 1885. (No specimens.)

Claim.—The improved process herein described for treating speiss for the extraction of lead and gold and silver, which consists in forcing a blast of air through the molten mass until the arsenic and other oxidizable and mineralizing constituents are burned off and the lead set free, carrying with it the gold and silver, and adding lead to the molten mass, and continuing the blast of air until the lead and gold and silver have all sunk to the bottom.

336,793. LIFTING-JACK. THOMAS L. CHAPMAN, Richmond, Va., assignor of one-half to Clinton Lloyd, Williamsport, Pa. Filed Oct. 27, 1885. (No model.)

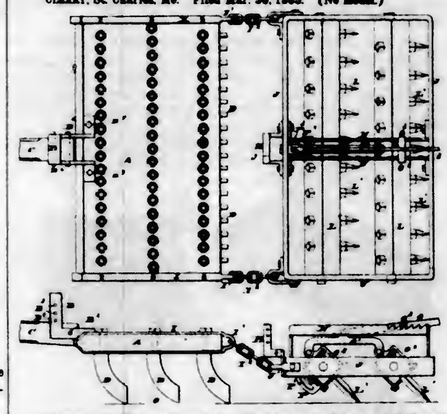


Claim.—1. A lifting-jack of otherwise ordinary construction, provided with a grease or lubricating chamber wherein the lower end of the screw works, substantially as described.

2. A lifting-jack having at its lower part a grease-chamber, F, with a filling-aperture provided with a suitable cover or plug to close it.

3. In a lifting-jack, the body A', having screw hole or socket *b* in its upper part, and a grease-chamber, F, in its lower part, provided with suitable filling-aperture adapted to be opened or closed, and the screw C, the whole constructed and combined in the manner and for the purposes described.

336,794. COMBINED HARROW AND PULVERIZER. RICHARD CLEARY, St. Charles, Mo. Filed Mar. 30, 1885. (No model.)



Claim.—1. The combination, with a frame and tongue, of the clip B, having lugs B^4, formed with bolt-holes B^2 and holes B' and B'', bolts by which the lugs are secured to said frame, and pins B^2 and B^4 by which said tongue is secured to said clip, substantially as set forth.

2. The combination of a frame, beams having teeth and pivoted to said frame, ratchet-bars immovably secured to said frame above said beams, a yoke hinged to said beams beneath the ratchet-bars above the frame, and a handle hinged to said yoke, passing upwardly between the ratchet-bars, and provided with projections engaging the teeth of the bars, for holding said beams in desired position, substantially as set forth.

3. The combination, with a pivoted beam having teeth, of the yoke, ratchet-bars, handle having projections, supporting-frame having a block provided with a pin, and pivoted beam provided with a bracket having a curved slot occupied by said pin, substantially as set forth.

4. In combination with the beams provided with teeth, ratchet-bars secured to the frame of the harrow, a bar or handle connected to the beams by yoke and straps, and having projections fitting in the notches of the ratchet-bars, bracket P, secured to the front beam and having a semicircular slot, P', and the block P^3, having a pin, P^4, fitting in the slot in the bracket, all arranged and operating substantially as shown and described, for the purpose set forth.

3336,795. PROCESS OF EXTRACTING GLYCERINE FROM FATTY SUBSTANCES. JAMES H. CLINTON, St. Louis, Mo. Filed June 22, 1885. (No specimens.)

Claim.—1. The process of extracting glycerine from fatty substances, consisting in placing the fatty substance in a close digester with a zinc bar suspended therein, with the addition of about one per cent.

of lime and a suitable amount of water, forcing steam into the charge for about five and one-half hours, until the saponification of the stock is completed, all substantially as described, and for the purpose set forth.

2. The process of extracting glycerine from fatty substances, consisting in placing the fatty substance and about one per cent. of slaked lime in a close digester in which a zinc bar is centrally suspended, forcing steam into the charge, turning off steam and adding a suitable amount of water, again turning on the steam at a pressure of about one hundred and forty pounds, until the saponification of the stock, all substantially as described, and for the purpose set forth.

3. The process of extracting glycerine from fatty substances, consisting in placing the fatty substance, with a small per cent. of slaked lime, in a digester with a zinc bar suspended therein, turning on steam into the digester, adding a suitable amount of water, retaining a steam-pressure of about one hundred and forty pounds, and confining and condensing the steam within the digester, all substantially as described, and for the purpose set forth, until the saponification of the stock.

4. The process of extracting glycerine from fatty substances, consisting in placing the fatty substance, with about one per cent. of slaked lime with a suitable amount of water, in a digester that has a zinc bar suspended therein, forcing steam through the charge to insure its saponification, condensing steam within the digester, blowing off the glycerine-water into an evaporating-tank, and, lastly, evaporating the glycerine-water to its desired specific gravity, all substantially as described, and for the purpose set forth.

5. The process of extracting glycerine from fatty substances, consisting in placing the fatty substance in a digester in which a zinc bar is suspended, adding about one per cent. of slaked lime and a suitable amount of water, turning on about one hundred and forty pounds of steam-pressure, until the saponification of the charge, and, lastly, blowing off the glycerine-water into an evaporating-tank, and evaporating the superfluous water, all substantially as described, and for the purpose set forth.

6. The process of extracting glycerine from fatty substances for soap-stock, &c., consisting in placing the fatty substance in a digester in which a zinc bar is suspended, bringing the charge under steam-pressure, turning off steam and adding a suitable amount of water, again turning on about one hundred and forty pounds of steam-pressure and retaining it under pressure until the saponification of the stock, and, lastly, blowing off the glycerine-water into an evaporating-tank and evaporating the superfluous water, all substantially as described, and for the purpose set forth.

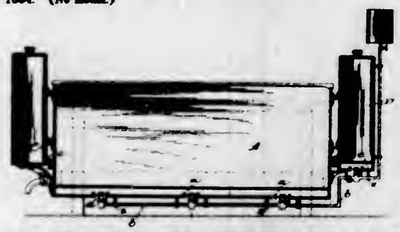
336,796. FRUIT-CAN FASTENER. GEORGE W. CODDINGTON, Middletown, Ohio. Filed July 8, 1885. (No model.)



Claim.—1. The combination of the groove with the circumferential recess in the outer wall to receive therein the cement, with the flanged lid fitting within the groove and provided at its upper edge with a bead to aid in removing the lid from the jar, substantially as herein set forth.

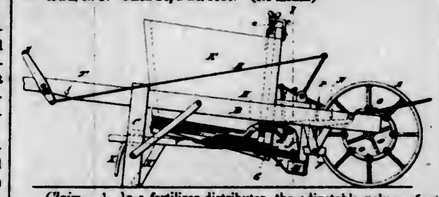
2. The combination of the jar A, the groove B, having therein the recess F, and the lid C, having the bead H, the whole arranged as and for the purpose substantially as herein set forth.

336,797. BATH-TUB. FRANK P. DAY, Jackson, Mich. Filed Oct. 8, 1884. (No model.)



Claim.—The combination of the bath-tub of ordinary internal construction, of an external shell extending beneath the bottom and up the sides of the tub, of burners arranged at intervals at openings in the side external shell, whereby heat is applied directly to the bottom of the bath-tub, pipe-connections from said burners to the reservoir for supplying the fuel, and an auxiliary tank-connection to the bath-tub having a pipe-connection, the said auxiliary tank having a false bottom and a burner placed in the opening thereof and connected to the reservoir, all substantially as described.

336,798. FERTILIZER-DISTRIBUTER. JOSEPH B. DENTON, New town, N. Y. Filed Sept. 24, 1885. (No model.)



Claim.—1. In a fertilizer-distributer, the adjustable valve *a*, for the purpose of arresting the outflow of the fertilizer or manure, in combination with a lever pivoted to the handle of the wheelbarrow, and connections for operating said valve by said lever, substantially as described.

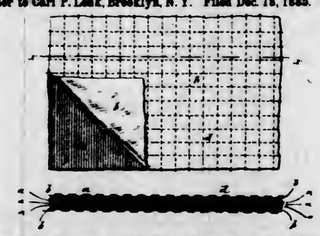
2. In a fertilizer-distributer, the combination of the cross-bar *d*, pivoted to the block W, and adjustable on brackets attached to the legs of the wheelbarrow.

3. In a fertilizer-distributer, the combination, with the hopper having an opening and a slide for regulating the outflow of the fertilizer, of the valve arranged and operating substantially as described.

4. In a fertilizer-distributer, the combination, with the hopper having an outlet-opening, of the slide, the bracket, and the screw for adjusting said slide to regulate the size of said opening, substantially as described.

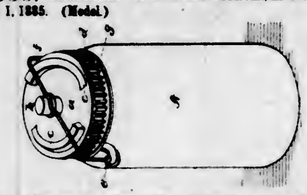
5. In a fertilizer-distributer, the combination, with the distributing devices, of the wide cultivator-teeth placed in the rear thereof, one of said teeth being arranged substantially at right angles to the line of movement of the distributer, and the others arranged obliquely to said line, as set forth.

336,799. FILTERING FABRIC. SAMUEL G. DERHAM, New York, assignor to Carl P. Lenk, Brooklyn, N. Y. Filed Dec. 18, 1885. (No model.)



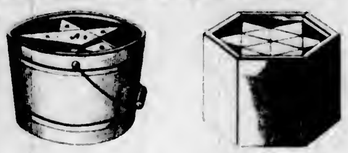
Claim.—As an improved article of manufacture, a filtering fabric formed of intermediate layers of filtering or blotting paper and layers of textile fabric united by stitches over the entire face of the fabric, substantially as set forth.

336,800. FRUIT-JAR. EDWARD A. DE STERKER, La Salle, Ill. Filed Sept. 1, 1885. (Model.)



Claim.—The combination, with a jar having recessed bearings at opposite points, of a cover having a milled periphery, inclined ridges on its upper side, and a central vertical integral stud, and a rod coiled to form an eye to receive the said stud, and having its opposite ends bent downwardly and inwardly to engage the recessed bearings in the jar, whereby the said rod may remain fixed with relation to the jar when the cover is turned to fasten and unfasten the same, substantially as specified.

336,801. TOBACCO-PACKAGE. RICHARD A. EVANS and ALFRED TURNER, Statesville, N. C. Filed July 6, 1885. (No model.)



Claim.—1. A receptacle containing layers of tobacco, each of which is of equal thickness throughout, and each of which is composed of two or more series of plugs, the plugs of one series differing in quantity from those of the other, as and for the purposes set forth.

2. A receptacle or package containing layers of tobacco, each of which is of equal thickness throughout, and each of which is divided into two or more plugs, pieces, or portions, one or more of which belongs to one of two or more differing qualities, as set forth.

3. A receptacle or package containing layers of tobacco, each of which is of equal thickness throughout, and each of which is divided into two or more plugs, pieces, or portions, one or more of which belongs to one of two or more differing sizes or quantities and qualities, as set forth.

4. A receptacle containing layers of tobacco, each of which is divided into two or more series of plugs and a central piece, the plugs of one series differing in size from those of the other, as and for the purposes set forth.

336,802. FEED-WATER HEATER. THADDEUS FAIRBANKS, St. Johnsbury, Vt. Filed Nov. 30, 1885. (No model.)



Claim.—1. The casing A A' A^2, partial partition A^3, pipes D' D^2, and return-bends D, steam-connection C, drip-connection G, and water-connections E' E^2, combined and arranged to serve relatively to each other and to the barrel M of a locomotive, substantially as herein specified.

2. The casting B, having the steam-distributing chambers *b*, passages b^2, distributing-chambers *b'*, receiving-chambers b^3, passages b^4, and discharge-chambers b^5, arranged to serve relatively to the steam-pipes C, drip-pipe G, pipes D' D^2, and provisions for circulating water in the spaces between, substantially as herein specified.

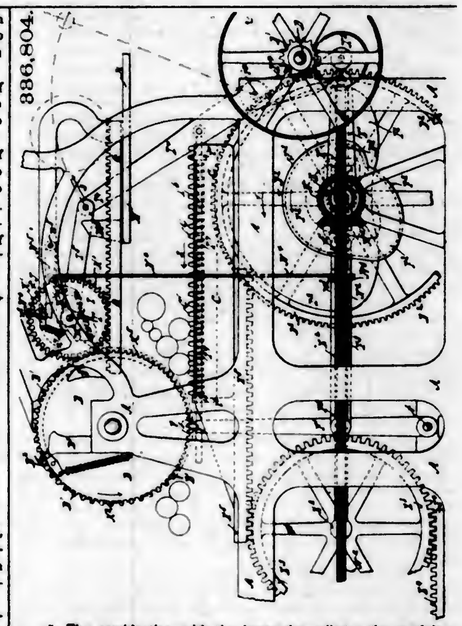
3. The horizontal casing A, steam end plate A', water end plate A^2, partial partition A^3, ring A^4, rivets A^5, and bolts A^6, in combination with each other and with the end casting, B, return-bends D, pipes D' D^2, and pipes C G E' E^2, all arranged for joint operation, as herein specified.

336,803. COTTON-SCRAPER ATTACHMENT. THOS. PHELPS, near Kent's Store, La. Filed Nov. 23, 1885. (No model.)



Claim.—The combination, with a plow, of the scraper D, secured, as at D', to the mold-board, and having the upwardly-projecting wing D^4 and lap D^5, each extending to the top of the share, and the elevated turned point D^6, and bent and curved front edge, D^7, the whole being recessed to fit the plowshare of an ordinary plow, substantially as shown and described.

336,804. SHEET-DELIVERY APPARATUS. GEORGE P. FISHER, New London, Conn. Filed Sept. 3, 1885. (No model.)



Claim.—1. The combination, with the impression-cylinder, of the reel-carriage having an intermittent motion toward and from the cylinder, and a carrier-reel supported by said reel-carriage and adapted to be rotated by the impression-cylinder to receive the sheet, substantially as shown and described.

2. The combination, with the impression-cylinder, of the carrier-reel J and the reciprocating carriage supporting the carrier-reel, substantially as shown and described.

3. The combination, with the impression-cylinder, the receiving-table H, and the trip-cam M^3 thereof, of the reciprocating carrier-reel and the grippers M and web K^4 thereof, for retaining and releasing the paper, substantially as shown and described.

4. The combination, with the impression-cylinder and the receiving table H, of the carrier-reel J, the supporting-carriage, the rotary cam I^3, and the lever-connections of the carriage with the cam for imparting to the carriage a reciprocating motion, substantially as shown and described

5. The combination, with the impression-cylinder, the receiving-table H, the racks G G, and the carrier-reel J, of the gears I I and shaft I', forming the reciprocating carriage, and means, as described, for locking the carrier-reel and carriage, substantially as shown and described.

6. The combination, with the carrier-reel J, of the shaft I' and gears I I thereon, supporting the said carrier-reel, the rotary cam N^3, the rod N^4, engaging the cam-lever N^5, and the lever N^6 on the gear I, adapted to engage with a catch, n^2, on the reel, substantially as shown and described.

7. The combination, with the impression-cylinder, the carrier-reel J, rotary cam I^3, and carriage, of the racks G G, gears I I, engaging the racks, gear K', engaging the impression-cylinder, and spring-pressed lever I^4, connected with the carrier and engaging the cam, substantially as shown and described.

8. The combination, with the reel-carriage, of the disks K^2 K^3, adapted to receive the edges of the sheet, and adjustable on a spindle encompassing the shaft of the reel-carriage, and the grippers for retaining and releasing the sheet, substantially as shown and described.

9. The combination, with the reel-carriage, of the disks K^2 K^3, adjustable on a spindle encompassing the shaft of the reel-carriage, the grippers M on shaft M', and web K, for retaining and releasing the edge of the sheet, and a gear, K', and disks K^3, having bearings for the gripper-shaft, substantially as shown and described.

10. The combination, with the impression-cylinder and the gear K^2 thereof, of the reciprocating carrier-reel J, having a gear, K', adapted to engage with the gear on the impression-cylinder, substantially as shown and described.

11. The carrier-reel J, mounted in a reciprocating carriage and constructed to rotate independently of the carriage, and means for locking the carrier-reel to the carriage, substantially as set forth.

336,805. STENCH-TRAP. JOSEPH P. GALLAGHER, St. Louis, Mo. Filed Nov. 11, 1885. (No model.)

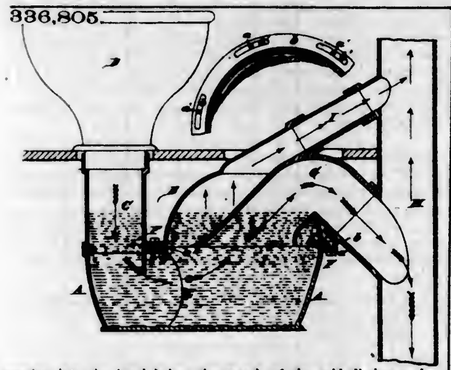
Claim.—1. In a stench-trap, the combination, with a bowl, of a siphonic discharge-pipe of less diameter than said bowl, projecting at one end therein to, and an inlet-passage opening into said bowl below the receiving-mouth of the discharge-pipe, whereby a double seal is formed, substantially as set forth.

2. In a stench-trap, the combination of a bowl, a siphonic discharge-pipe of less diameter than said bowl, projecting therein to and having a flaring mouth, and an inlet-opening into said bowl below the mouth of said discharge-pipe, substantially as set forth.

3. In a stench-trap, the combination, with the base-section A, having the inlet-passage, of the upper section or cap, B, having a siphonic discharge-pipe, G, projecting at one end therein to and formed integrally therewith, substantially as set forth.

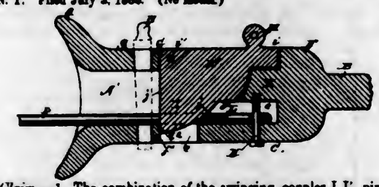
4. In a stench-trap, the combination, with a bowl having a siphonic discharge-pipe projecting at one end therein to, and an inlet-passage

336,805.



opening into the bowl below the mouth of the said discharge-pipe, whereby both are sealed, substantially as set forth, of a vent-pipe opening into the bowl between the said seals, for the purpose described.

336,806. CAR-COUPLING. CORNELIUS HALPIN, North Tarrytown, N. Y. Filed July 3, 1885. (No model.)



Claim.—1. The combination of the swinging coupler I I', pivoted at or near the front upper corner, having the link-engaging portion of its rear edge continuously concentric with the pivot, and having directly back of the pivot the rear prolongation, *i*, and the draw-head having a recess below its upper surface to receive said prolongation, the aperture e^2 in front of said recess, the slot e^3, the aperture *c*, extending entirely through the bottom, and the interior chamber A' *s*, with the flat or horizontal bottom surface and its upper wall inclining downward and inward, substantially as set forth.

2. The combination of the swinging coupler pivoted at its front upper corner with the rear prolongation at *i* directly back of the pivot, and having the link-engaging portion of its rear edge formed on an unbroken arc from the axis with a radius shorter than the said prolongation, and the draw-head having a recess below its upper surface for the said prolongation *i*, the aperture e^2 in front of said recess, the slot e^3, the aperture *c* through the bottom, the aperture *f* in front of said aperture *c*, having the wall D between the apertures *f* and *c*, and the aperture *g* in front of the pivot and vertically over the aperture *f*, whereby the swinging coupler can be supplemented by a sliding pin, substantially as set forth.

3. The combination, with the draw-head, of the coupler I I', seated in a vertical recess in the draw-head and adapted to rest vertically thereon, the coupler being constructed with a recess, f^3, in the rear edge, and the parts of the edge adjacent to the recess being curved, a coupling-link having a cross-bar, *l'*, which bears against the coupler I I', and having a second cross-bar adapted to engage permanently with the draw-head, substantially as set forth.

4. The combination, with the draw-head having the vertically-swinging coupler I I', provided with the curved rear edge, a stop or fastener, N, rigidly secured to the draw-head, and a link formed with two or more apertures, through one of which passes the stop or fastener N, and through another of which passes the aforesaid swinging coupler I I', substantially as set forth.

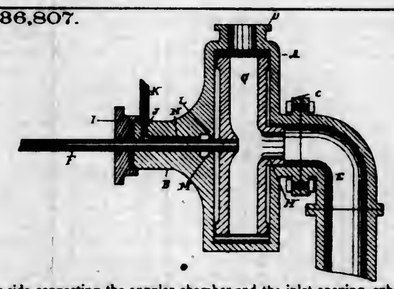
336,807. CENTRIFUGAL PUMP. ELI J. HAWLEY, Manchester, Vt. Filed July 20, 1885. (No model.)

Claim.—1. A centrifugal pump in whose journal are formed a contracted annular opening at the lower or inner end, an annular chamber, larger in diameter than said opening, above and in communication therewith, and a groove on the inner side, as a means for connecting said chamber with an inlet-opening located near to the stuffing-box, substantially as described, and for the purposes set forth.

2. A centrifugal pump in whose journal are formed a contracted annular opening at the lower or inner end, an annular chamber, larger in diameter than said opening, above and in communication therewith, an inlet-opening in one side near its outer end, and a groove on the inner side connecting the annular chamber and the inlet-opening, substantially as described, and for the purposes set forth.

3. A centrifugal pump in whose journal are formed a contracted annular opening in the lower or inner end, an annular chamber, larger in diameter than said opening, above and in communication therewith, and a groove extending the length of the journal above the chamber, the outer or upper end of the journal having a pipe screwed thereon, and said pipe having the stuffing-box fitted in its upper end, and having an inlet-opening formed in one side, near to and below the stuffing-box, substantially as described, and for the purposes set forth.

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336,808. PROP-NUT. HENRY HEBER, Newport, Ky. Filed Feb 25, 1885. (No model.)

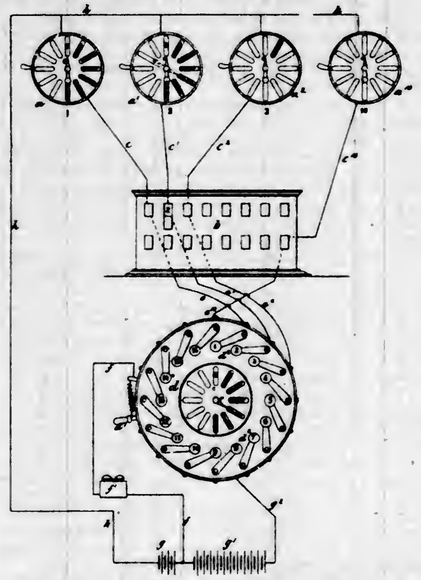


Claim.—1. The combination, in a prop-nut, of the shank 1, having the disk 2, the supporting-plate 3, the finishing-cover 4 thereon, and a leather-covered rim, 6, substantially as described.

2. The combination, in a prop-nut, of the shank 1, having the disk 2, the supporting-plate 3, the finishing-cover 4, and the leather-covered rim 6, turned around the disk and bearing on the cover, substantially as described.

3. A finishing-rim for nuts or other similar articles, composed of the annular ring *b*, covered with leather, the parts being secured together by the eyelet 7, clamped upon the inner peripheral edge, substantially as described.

336,809. ELECTRICAL COMMUNICATING SYSTEM FOR HOTELS. ALFRED G. HOLCOMBE, New York, N. Y., assignor to the Equitable Electric Company, same place. Filed Aug. 15, 1885. (No model.)



Claim.—1. In an electrical communicating system, in combination, an electric circuit comprising one main line from the central station or office to all of the sub-stations or rooms, and individual lines from all of

the sub-stations or rooms to the central station or office, communicators constructed to send any of a set of signals or messages included in the individual lines at the sub-stations or rooms, a calling-instrument to show that a signal is ready for transmission, and a message-receiving indicator connected to all of the individual lines and the main line, and mechanism to simultaneously break all the individual lines, thereby cutting out all the communicators, and to complete the circuit of any of the communicators through its individual line and the main line and increasing strength of current on line, substantially as set forth.

2. In an electrical communicating system, in combination, an electrical circuit comprising one main line from the central station or office to all of the sub-stations or rooms, and individual lines from all of the sub-stations or rooms to the central station or office, communicators constructed to send any one of a set of signals or messages included in the individual lines at the sub-stations or rooms, a message-receiving indicator connected to all of the individual lines and the main line, and provided with mechanism to simultaneously break all the individual lines, thereby cutting out all the communicators, and to complete the circuit of any of the communicators through its individual line and the main line, an annunciator in the individual lines, and a battery included in the main line, the current of which is increased to put the communicator and indicator in action, substantially as set forth.

3. In an electrical communicating system, in combination, an electrical circuit comprising one main line from the central station or office to all of the sub-stations or rooms, and individual lines from all of the sub-stations or rooms to the central station or office, communicators constructed to send any of a set of signals or messages included in the individual lines at the sub-stations or rooms, a message-receiving indicator connected to all of the individual lines and the main line, and provided with mechanism to simultaneously break all the individual lines, thereby cutting out all the communicators, and to complete the circuit of any of the communicators through its individual line, an annunciator in the individual lines, a battery included in the main line, and a call-bell in a line connecting the receiving-indicator and a part of the battery when all the individual lines are closed by the receiving-indicator, substantially as set forth.

4. In an electrical communicating system, in combination, a series of communicators provided each with a pointer adapted to be set opposite any of a set of messages marked thereon, and so held by means of an electro-magnetic device, a message-indicator provided with a pointer and having messages marked thereon similar to those on the communicators, and an electro-magnetic device adapted to move the pointer opposite any of the messages, separate lines between the communicators and indicator, and including an annunciator, a battery and a main line connecting all the communicators thereto, a line from a part of the battery, and a call-bell therein connected to the indicator, another line connecting the end of the battery to the indicator, so as to include the whole of the battery in the main line, and mechanism, substantially as described, in the indicator, whereby all the communicator-circuits and call-bell circuit are broken and any of the communicators put in circuit with the whole of the battery and indicator, as and for the purposes set forth.

5. In an electrical communicating system, a message-receiving indicator comprising the following elements in combination: a series of independent contact-springs, a plate in connection with a line-circuit constructed to make and break contact with the springs simultaneously, push-buttons in connection with another part of the line-circuit corresponding in number to the contact-springs, and arranged to close the respective circuits thereof, an electro-magnetic device in circuit with the push-buttons, and a pointer operated by the electro-magnetic device, substantially as and for the purpose set forth

6. In an electrical communicating system, a communicator having an escapement-wheel, a spring pawl or tooth carried by a pivoted arm and constituting, with a toothed extension of said arm, a retarding-escapement for the wheel, an electro-magnet and its pivoted armature said armature so constructed and arranged as to lock the pivoted arm when away from its magnet and hold the spring-pawl in the escapement-wheel, thereby causing it to act as a spring retention-pawl, substantially as and for the purposes set forth.

7. In combination, the communicators a a' a^2, &c., constructed to send any of a set of signals, the annunciator b, for indicating the room calling, the line-wires c c' c^2, &c., connecting the communicators to the annunciator, the indicator d, constructed to indicate the signal at which any of the communicators may be set, the line-wires e e' e^2, &c., connecting the annunciator to the indicator, the battery g g', the wire g^2, connecting the end g' of battery to the indicator when receiving a signal, the main line h, connecting the other end of the battery to the communicators, the wire f, connecting the part g of the battery to the indicator, when a call is sent from any of the rooms, and the call-bell f', included in the circuit of wire f, substantially as set forth.

8. In combination, the toothed plate m, springs n n' n^2, &c., ratchet-wheel q, shaft q', spring s, armature p, and pawl p^2, electro-magnet o', retention-pawl s', and releasing-pin t on the plate m, substantially as set forth.

9. In combination, the springs n n' n^2, &c., attached to the lines e e' e^2, &c., the toothed plate m, the call-bell f', connected by line f thereto, the push-buttons d^2 d^3, carried by the front plate, d^3, the electro-magnet o', connected to the front plate, d^3, the battery g g', main line, and the communicators connected to the main line on the lines e e' e^2, &c., through the lines c c' c^2, &c., through the annunciator b, substantially as set forth.

10. In combination, the serrated disk k, spring i^2, arm and toothed extension i^2 i^3, spring-pawl k', and armature z, substantially as set forth.

11. In a message-indicator, in combination, a spring-acting pointer and ratchet-wheel, a feeding-pawl actuated by an electro-magnetic device, a retention-pawl for holding the pointer and ratchet-wheel stationary, and a contact device for making and breaking a number of electric circuits, and provided with a pin projecting from its face for moving the feeding and retention pawls clear of the ratchet-wheel, substantially as set forth.

336,810. **DOOR-LATCH.** JOHN A. HOLLENBERGER, Hagerstown, Md., assignor of one-fourth to Tobias Schlosser, same place. Filed Oct. 31, 1885. (No model.)

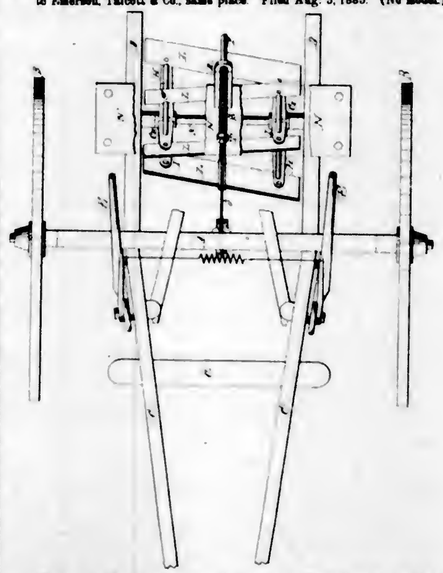


Claim.—1. In a door-latch, the combination, with the face-plate A', having a slot, F, and the plates G and H, having rigidly secured thereto lugs g f, respectively, of the pivoted button carrying a lug at its lower end, and having a journal secured in the said slot of the face-plate A', lug d, secured to plate G, disk B', secured at one end of said journal and carrying a disk-pin, and door-latch E, substantially as shown and described.

2. The combination of button B, having pin A, disk B', having pin e, and stop-lugs f and g, rigidly secured, respectively, to lock-plates H and G, substantially as shown, and for the purpose described.

3. In a door-latch, the pivoted button having a lug secured at one end and pivoted by a journal secured in a recess of plate A', said journal having secured to its inner end a disk, B', in combination with lock-plate G, provided with lug d, and the latch having a tongue formed on its outer face, substantially as shown and described.

336,811. **STALK-CUTTER.** JAMES H. JONES, Rockford, Ill., assignor to Emerson, Talcott & Co., same place. Filed Aug. 5, 1885. (No model.)



Claim.—1. In a stalk-cutter, a cutting-reel with cutter-blades located in the plane of its axis, said cutter-blades having cutting-edges oblique to its axis of rotation, substantially as described.

2. In a stalk-cutter, a cutting-reel having the cutting-edges of its cutter-blades oblique to its axis of rotation, and the cutting-edges of its alternate cutter-blades oppositely oblique to the axis of rotation of the reel, substantially as and for the purpose set forth.

3. In a stalk-cutter, a cutting-reel having the cutting-edges of its radially-opposite cutter-blades parallel and oblique to its axis of rotation, substantially as and for the purpose set forth.

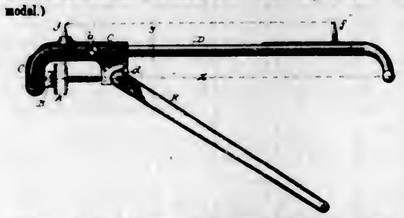
4. In a stalk-cutter, a cutting-reel having the cutting-edges of its radially-opposite cutter-blades parallel and oblique to its axis of rotation, and its alternate pairs of radially-opposite cutters oppositely oblique to the axis of rotation of the reel, substantially as and for the purpose set forth.

5. The combination, with the cutter-supporting frame of a stalk-cutter, of a cutting-reel having the cutting-edges of its cutter-blades oblique to its axis of rotation, and its alternate cutters oppositely oblique to the axis of rotation of the reel, substantially as and for the purpose set forth.

6. The combination, with the cutter-supporting frame of a stalk-cutter, of a cutting-reel provided with a series of long radial arms and a series of short radial arms arranged upon the reel alternately, so that each long arm will be radially opposite a short arm, and cutting-blades secured to said arms, one end of each blade being secured to a short arm, while its opposite end is secured to a long arm, thus bringing the cutting-edges of the blades oblique to the axis of the reel, as set forth.

7. The combination, with the carrying-frame and with the cutter-supporting frame having a hinge-jointed connection with the carrying-frame, of a self-locking lever consisting of a hand portion and a spring sliding portion pivotally attached to the hand portion and adapted to increase the cutting action of the machine.

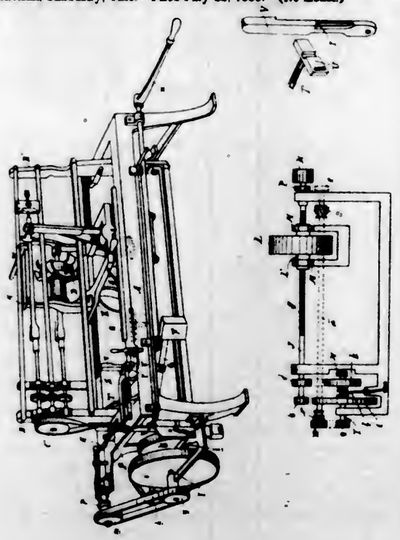
336,812. **INSTRUMENT FOR MEASURING THE MEAN HEIGHT OF STEAM-ENGINE-INDICATOR DIAGRAMS.** ERNEST KIEBEL and EDWARD E. CLAUSSEN, Providence, R. I. Filed Aug. 8, 1884. (No model.)



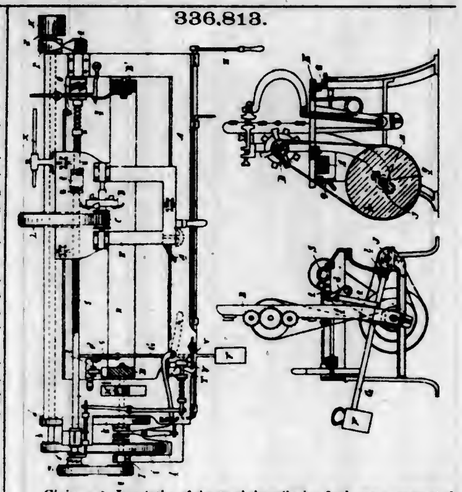
Claim.—1. In an instrument for measuring the mean height of steam-engine-indicator diagrams, the combination, substantially as described, of the fulcrum-bar, the longitudinally-adjustable tracer-bar, the vernier, and the measuring-wheel graduated to indicate its peripheral measurement in linear inches and fractions of an inch.

2. An instrument for measuring the mean height of indicator-diagrams, embodying a measuring-wheel and vernier graduated in inches and fractions thereof, a longitudinally-adjustable tracer-bar, and a fulcrum-bar, and provided with gage-points f f, substantially as described, and for the purpose specified.

336,813. **LATHE FOR TURNING IRREGULAR FORMS.** OTTO KROMER, Sandusky, Ohio. Filed July 23, 1885. (No model.)



336,813.



Claim.—1. In a lathe of the kind described, a feed-screw connected for feeding the carriage, with the counter-shaft which drives the centers, and connected for reversing the carriage with the main shaft of the lathe, substantially as described.

2. In a lathe of the kind described, the combination of a feed-screw, of two drive-connections, one for transmitting motion for feeding from the counter-shaft which drives the centers, and the other for transmitting motion for reversing from the main shaft of the lathe, of two clutches or analogous devices, one for each drive-gear, for throwing them in and out of motion, and of mechanical devices for alternately tripping the clutches by the movement of the carriage, all arranged substantially as described.

3. The combination of the feed-screw S, connected with the carriage, of the clutches N O, one upon each end of said screw, and provided with automatically-operated tripping devices, substantially as described, of the vertical bar V, connected to the weight F, and having the shoulder r, operating in connection with the cross-head U, and of the latch Y, operated by the rocking frame, all combined and operating substantially as set forth.

4. The combination of the feed-screw S, clutch N, spring-latch P, engaging with the movable part of the clutch, the vibrating lever Q, operating said spring-latch, the spring-latch T, operating the vibrating lever Q, and having cross-head U, of the vertical bar V, having shoulder r, and of the weight F, having arm G, all combined and operating substantially as described.

5. The combination of the carriage E, feed-screw S, connected therewith, arm X, secured to the carriage, clutch O, arranged at one end of said feed-screw, for connecting and disconnecting the reversing motion of the feed-screw, vibrating lever W, and the clutch Y, operated by the rocking frame, all arranged and combined substantially as set forth.

6. In combination with the feed-screw S, having two drive-connections, one for feeding and one for reversing, as described, the carriage E, having nut t, secured in a recess of the carriage, and having buffer-springs u, interposed between the ends of the nut and the walls of the recess, substantially as described.

7. In a lathe of the kind described, the combination of the feed-screw, of two drive-connections, one for feeding and one for reversing the screw, of a clutch or analogous device in each drive-connection for throwing in and out of gear, and of an automatically-tripping device alternately actuated for throwing out of gear by the movement of the carriage, and for throwing into gear by the rocking of the vibrating frame, substantially as described.

8. The combination of the feed-screw having two drive-connections, one for feeding and one for reversing, and clutches for throwing these connections alternately in and out of gear, and the nuts t, located in a recess in the carriage, and having a lost motion or end-play within said recess to permit the clutches to fully close when thrown into gear, substantially as described

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336,814. **MACHINE-TABLE GAGE.** CHARLES M. LEVE, Chicago, Ill., assignor of one-half to Alexander Zeese & Co., same place. Filed Oct. 14, 1884. (No model.)

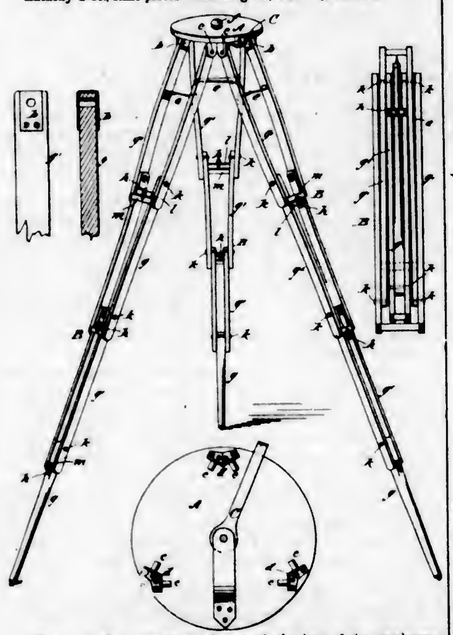
Claim.—In a dovetailing-machine, the combination, with the bed-plate A, provided with transverse groove a and with cutters F L, protruding up through openings formed in such bed-plate, of guide C, consisting of vertical part b and horizontal part b', pin c, secured to part b', slotted plate D, provided with extension f, moving in groove a and sit-

336,814.



uated on a lower plane than the plate proper, regulating-screws *m*, entering the slot of plate D, lever E, pivoted in plate D and secured to pin *c*, slotted arm *n*, secured to the handle end of lever E, and set-screw *p*, passed through the slot in such arm, the parts arranged and adapted to operate as and for the purpose set forth.

336,815. STAND FOR PHOTOGRAPHIC CAMERAS. WILLIAM H. LEWIS and ERASTUS B. BARKER, New York, N. Y., assignors to E. & H. T. Anthony & Co., same place. Filed Aug. 19, 1885. (No model.)

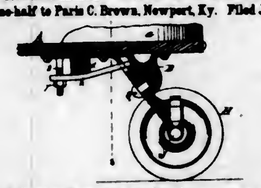


Claim.—1. In a camera or other stand, the legs of the stand composed of three or more folding sections pivoted to each other, each upper section being of greater width than the section next below it, and each of the upper sections being of slotted or open construction to receive its attached lower section within it when the leg is folded and being arranged to work from or around the same axial center on opposite sides, substantially as specified.

2. The combination, with the top board or table portion, A, of the stand, of the detachable legs B, each of which is composed of two or more slotted upper sections, *g'*, of varying width, as described, and of a lower section, *g*, and the several sections being pivoted to each other and adapted to fold one within the other, essentially as shown and described.

3. The combination, with the slotted pivoted and folding sections *g'* of the legs, of varying width, as described, of the plates *l m* and buttons *h*, substantially as specified.

336,816. ROLLER-SKATE. WILLIAM R. MOREN, Cincinnati, Ohio, assignor of one-half to Paris C. Brown, Newport, Ky. Filed June 16, 1885. (No model.)



Claim.—1. A hanger-frame for a roller-skate, composed of the metallic bracket B, having the inclined pendent arm D and mortise C, in combination with the roller-frame E, having the tenon *d*, secured within the mortise by the inclined bolt *g*, substantially as herein specified.

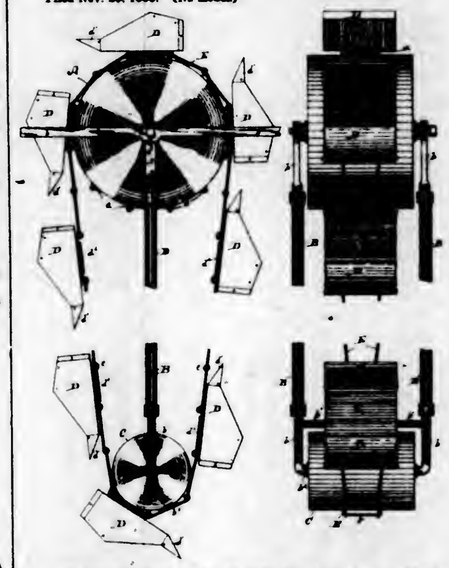
2. The combination of the bracket B and roller-frame E, having the tenon *d* and mortise C, and segmental bearing *h i*, substantially as specified.

3. In combination with the bracket B and roller-frame E, a spring-bar projecting through and under the end of the tenon *d* for cushioning the movement of the rocker-frame, substantially as specified.

4. In combination with the tenon *d* of the roller-frame, the spring-bar adjustably supported upon the cushion, substantially as herein specified.

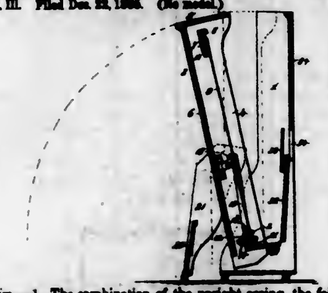
5. In combination with the tenon *d* of the roller-frame, the yielding bar adjustably supported upon the elastic cushion, substantially as specified.

336,817. CHAIN-PUMP. JAMES N. MORRISON, Fort Scott, Kans. Filed Nov. 26, 1885. (No model.)



Claim.—In a chain-pump, the combination of the top roller provided with projections engaging with the pump-chain, and mounted on a revolable spindle, pump-supports B, formed of hollow tubes, the top frame, *b*, having the said top roller-spindle journaled in it, the bottom frame, *b'*, provided with the stationary spindle *b²*, a plain cylindrical bottom roller journaled on the said stationary spindle, the buckets D, each having its back portion considerably longer than the front, and provided with the lip *d'* and sloping sides for delaying the delivery of the water, the plates *d²*, secured to the backs of the said buckets and inclosing a portion of the pump-chain, and the pump-chain K, consisting of a series of links provided with eyes *e* and cross-bars *e'* for coupling them together, substantially as and for the purpose set forth.

336,818. WARDROBE-BEDSTEAD. WILLARD A. MORRISON, Chicago, Ill. Filed Dec. 22, 1885. (No model.)



Claim.—1. The combination of the upright casing, the folding-bed support, and an extensible mattress carried by said support with folding legs traveling on the floor at one end and journaled at the other end to the side rails of the folding support, and crank-connections between the journals of the legs and the end of the extensible mattress, for extending the latter when the legs and bed-support are unfolded, substantially as described.

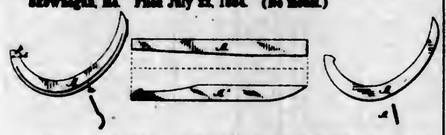
2. The combination of the upright casing, the folding-bed support, and an extensible mattress carried by said support with folding legs connected at one end by a cross-bar, and such ends traveling on the floor, and journaled at the other ends to the side rails of the bed-support, and yielding connections between the journals of the legs and one end of the extensible mattress, for extending the latter when the legs and bed-support are unfolded, substantially as described.

3. In a wardrobe-bedstead, the combination of an upright cabinet, a folding-bed support, an extensible mattress, folding legs provided with fixed trunnions journaled in the side rails and carrying cranks, and sliding levers for connecting the cranks and extensible mattress, substantially as described.

4. In a wardrobe-bedstead, the combination of an upright cabinet, a folding-bed support having folding legs provided with fixed trunnions journaled in the side rails of said support, an extensible mattress, and levers for connecting the said trunnions and mattress, substantially as described.

5. In a wardrobe-bedstead, the combination of an upright cabinet, a folding-bed support having side rails provided with guides, an extensible mattress, folding legs having fixed trunnions journaled in the side rails and provided with cranks, and levers sliding in the guides on the side rails, and connected with the trunnion-cranks at one end and with the extensible mattress at the other end, substantially as described.

336,819. MANUFACTURE OF GRASS-HOOKS. GERVAS NOLIN, Riverhogan, Me. Filed July 22, 1884. (No model.)



Claim.—1. The process, as herein described, of making grass-hooks, consisting in cutting from plate-steel a blank, then shaping said blank by cutting its edges, bending said blank into a curved shape, and finally forming a stiffening groove or corrugation along its back edge, all substantially as described.

2. As a new and improved article of manufacture, a grass-hook blade made of a single piece of metal of uniform thickness, except at its cutting-edge, and bent or curved in the direction of its length in sickle or hook shape, and having a concavo-convex back, all substantially in the manner and for the purposes described.

3. In combination with the blade A, made of a single piece of metal of uniform thickness, except at its cutting-edge, and bent or curved in the direction of its length in sickle or hook shape, and having a concavo-convex back, the tang D, and handle E, substantially as and for the purposes set forth.

336,820. IMPLEMENT FOR EDGING OR TURNING BRICKS. A. G. OSMAN, Bunyan, Ohio. Filed Oct. 14, 1885. (No model.)

Claim.—1. The implement for edging bricks herein described, consisting of a supporting-piece having a number of depending cross-pieces rigidly secured thereto and provided with a handle, substantially as described.

2. The implement for edging bricks, consisting of a support or

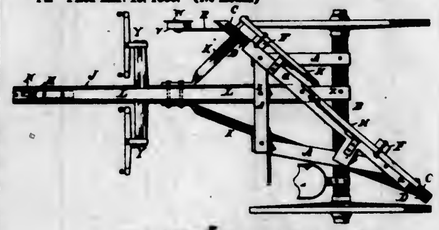
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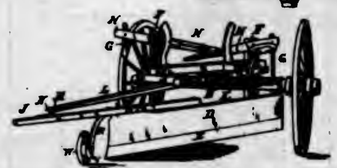


frame, a series of depending cross-pieces adjustably secured thereto, and an adjustable and detachable handle, substantially as described.

3. The frame A, bent into U shape, the depending adjustable cross-pieces A', clamped thereto, the handle B, having a cross-head formed with eyes in the ends, and the adjustable brace-rod *b*, all combined substantially as described, and for the purpose stated.

336,821. ROAD-GRADER. FREDERICK M. PERSON, Kennett Square, Pa. Filed Mar. 16, 1885. (No model.)





Claim.—1. In a road-grader of the class recited, the combination of the diagonally-suspended and vertically-adjustable scraper-bar, the uprights or abutments F, projecting down from the frame-work in the rear of and in proximity to said scraper-bar, the tongue secured to the scraper-bar, the bar L, rigidly attached to and extending forward from the truck of the machine, together with the hook-and-eye connection *a* at a point between the forward end of the tongue and the point of attachment of the double-tree, all constructed and adapted to operate substantially as and for the purpose set forth.

2. In road-graders of the class recited, the tongue attached to the scraper-bar at a point between the middle of its length and its leading end in order to balance or equalize the draft, substantially as set forth.

336,822. ART OF MANUFACTURING NITRO-CELLULOSE. FRANK V. PEEL, Newark, N. J. Filed Aug. 26, 1885. (No specimens.)

Claim.—In the art of manufacturing nitro-cellulose, the process herein described of restoring and purifying a spent bath, consisting in restoring the strength of the bath by the introduction of a suitable quantity of sulphuric acid and a nitrate, effecting the crystallization of the resulting by-product, and finally removing the by-product, substantially as set forth.

336,823. FRUIT-WRAPPING MACHINE. WALLACE E. RICE, Chicago, Ill.; Mary E. Rice, administratrix of said Wallace E. Rice, deceased, assignor to D. Burt Rice, same place. Filed Aug. 6, 1883. (No model.)

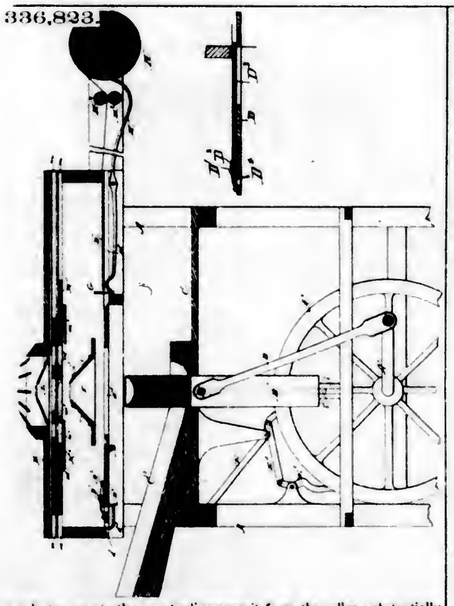
Claim.—1. In a machine for wrapping fruit and similar articles for market, a reciprocating fruit carrier or plunger, and a reciprocating paper-carrier for feeding the paper into the machine, in combination with one or more brushes adapted to press the paper around the fruit, and means, substantially as described, for gathering together the edges of the paper, substantially as shown and described.

2. In a fruit-wrapping machine, a main frame carrying a reciprocating plunger, a sliding clamp adapted at proper intervals to draw the paper into the machine, and a knife adapted to cut the paper into suitable size, in combination with a hollow conical brush through which the fruit and its wrapper are passed, two oppositely-moving reciprocating slides formed with pointed openings by which the ends of the wrapper are closed, and a knife secured to one of said slides to sever the surplus wrapper, substantially as shown and described.

3. In a fruit-wrapping machine, the slide D, having the spring-clamp D', with its arm D^4, and the trigger D^5, in combination with the main frame A, provided with the grooves *d d* and stops d^3, and plate D^6, substantially as and for the purpose set forth.

4. In a fruit-wrapping machine, a roller for carrying the paper, having notches in one end, and an arm adapted to engage with these notches, in combination with a reciprocating slide adapted at proper in-

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tervals to operate the arm to disengage it from the roller, substantially as and for the purpose set forth.

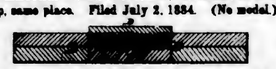
5. In a fruit-wrapping machine, the slides M M', constructed as herein described, and one of them provided with a knife, M^2, in combination with the levers N N', connected upon opposite sides of their pivotal points by a link, N^2, and the wheel A^2, having pin *a'*, substantially as and for the purpose set forth.

6. In a fruit-wrapping machine, the frame A, supporting an endless roll of paper, H, and a reciprocating paper-slide, D, having the metal wedge *g'* and projection g^2, in combination with the knife G, spring *g*, and spring-trigger G', substantially as and for the purpose set forth.

7. In a fruit-wrapping machine, the paper-slide D, constructed as herein described, in combination with the levers E E^2, links E' E^3, and wheel A^2, with pin *a*, substantially as and for the purpose set forth.

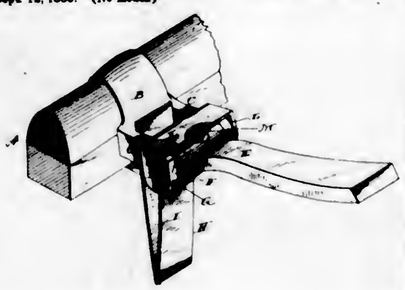
8. In a fruit-wrapping machine, the main frame A, having cranked shaft A', carrying wheels A^3 A^2, provided with the pins *a a'*, and plunger B', with its pitman B, in combination with the paper-slide D, having clamp D', operated by stops upon the frame, the operating-levers E E^2 and their connections, the paper-roll H and its dog or lever H', the conical brush I, gathering-slides M M', with their operating-levers N N', and the brush L, all constructed and arranged to operate substantially as and for the purpose set forth.

336,824. MATRIX. DANIEL J. RIKER, Montclair, N. J., assignor to Samuel Crump, same place. Filed July 2, 1884. (No model.)



Claim.—A matrix consisting of a compressed compound formed of a primary metal and mercury, substantially as described.

336,825. THILL-COUPLING. JOHN G. STAIR, Manteno, Ill. Filed Sept. 13, 1885. (No model.)

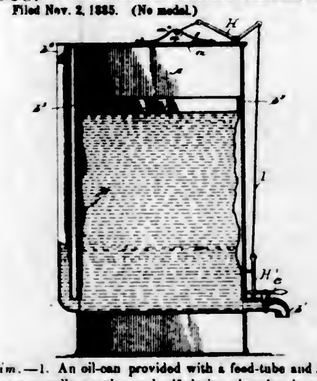


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Claim.—The combination of a vehicle-clip, thill-iron, bolt, and a spring bent at an acute angle, the front part of said spring being provided with a T-head having a notch at its front edge and a downwardly-projecting lip at each side, said spring also having a transverse notch across its front side below said T-head, as shown and described.

336,826. SAFETY OIL-CAN. DIEDRICH STREITBERG, San Antonio, Tex. Filed Nov. 2, 1885. (No model.)



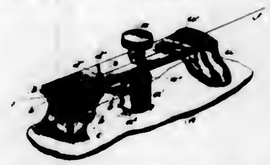
Claim.—1. An oil-can provided with a feed-tube and a delivery-tube and an upwardly-opening and self-closing air-valve, in combination with a flexible diaphragm secured to the inside of the can above the points where the feed-tube and delivery-tube are connected with the can, whereby the contents of the can may be entirely emptied into a fire without danger of explosion, as set forth.

2. In a safety oil-can, the body provided with an outwardly-opening vent-valve, a delivery-spout, and a feed-tube, in combination with an automatically self-adjusting diaphragm situated between the vent-valve and the junctions of the delivery-spout and feed-tube with the can-body, said spout having an outwardly-opening check-valve, as and for the purposes stated.

3. The herein-described safety oil-can having a self-adjusting diaphragm in its body, a feed-tube and a delivery-nozzle opening into the can beneath the diaphragm, and an air-inlet above the diaphragm, which inlet is controlled by a self-closing vent-valve, and means for opening the valve.

4. In a safety oil-can, the body provided with an air-inlet and an automatically self-adjusting diaphragm inside of the can, in combination with a feed-tube and delivery-nozzle opening into the can beneath the diaphragm, said delivery-nozzle having an automatically self-closing check-valve, all constructed and combined to operate substantially as described, whereby the contents of the can are entirely insulated from the air, for the purposes stated.

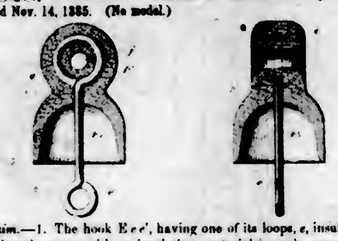
336,827. TENSION FOR SEWING-MACHINES. ROSWELL H. ST. JOHN, Toledo, Ohio, assignor to the Union Manufacturing Company, same place. Filed Oct. 16, 1884. (No model.)



Claim.—1. In combination with the pivoted bearing B, provided with the arm *b'*, the boss *a'*, provided with a notch limiting the up-and-down play of the arm, and so the swing of the bearing in both directions on its pivot, substantially as and for the purpose described.

2. In combination with the spring-plate provided with a suitable thread-opening, the boss *a*, supporting the rear end of the plate, the boss a^2, and the pivoted bearing B thereon, having arm *b'*, the boss *a'*, having notch a^2, engaging the end of such arm, and the thumb-screw passing down through the spring-plate and tapped into the boss *a'*, substantially as and for the purpose described.

336,828. INSULATOR. CHARLES L. TRAVIS, Minneapolis, Minn. Filed Nov. 14, 1885. (No model.)

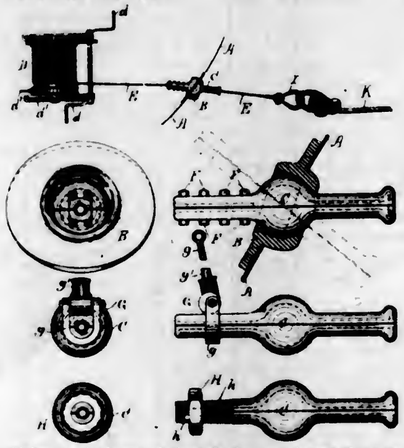


Claim.—1. The hook E *e e'*, having one of its loops, *e*, insulated by surrounding the same with an insulating material in such manner as to form or leave a hole or perforation, *f*, for the attachment of the supporting wire or cord, substantially as described.

2. The hook E *e e'* and the supporting wire or cord passing through the loop or eye *e* thereof, but insulated therefrom by means of glass or other insulating substance, molded or formed around and inclosing said loop or eye *e*, substantially as described.

3. The supporting and adjusting devices described, in combination with the hook E *e e'*, interposed between the lamp and its supporting-cord, said loop being provided with the insulating-body F, having the perforation or hole *f*, all substantially as and for the purpose described.

336,829. APPARATUS FOR TOWING AND SECURING HAWSERS OR LINES OF VESSELS. HERMAN WINTER, Brooklyn, N. Y. Filed Mar. 27, 1885. (No model.)



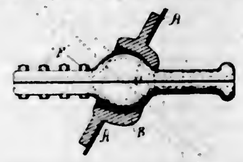
Claim.—1. An improved clamp for hawsers, formed of two parts constructed to surround the hawser, and having an enlargement adapted to work and operate as a universal joint in the hawse-pipe, substantially as described.

2. An improved clamp for hawsers, provided with an enlargement to work and operate as a universal joint in the hawse-hole, and means for holding the parts of the clamp around the hawser, as set forth.

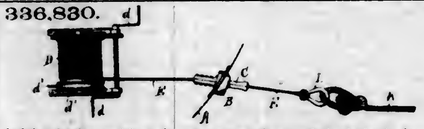
3. The combination, with the windlass, the hawse-hole, and the hawser, of the clamp C, composed of the two parts provided with the enlargements adapted to operate in the hawse-hole as a universal joint, and attachments for drawing the two sections or parts of the clamp together, substantially as specified.

336,830. METHOD OF TOWING VESSELS. HERMAN WINTER, Brooklyn, N. Y. Filed July 16, 1885. (No model.)

Claim.—The improved method of towing vessels herein described, the same consisting in stowing the hawser inboard upon a drum, and

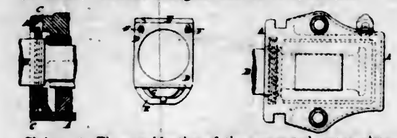


336,830.



holding its free end in a clamp constructed to work freely in the hawse-hole, as described.

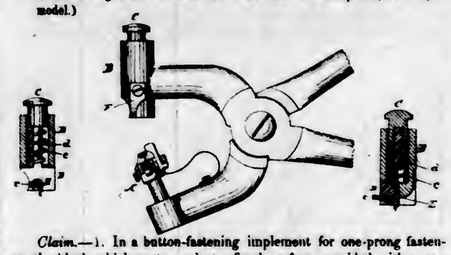
336,831. CAR-AXLE BOX. KENNETH S. AUSTIN, Havelock Cottage, Washwood Heath Road, County of Warwick, England. Filed Oct. 5, 1885. (No model.) Patented in England June 10, 1879, No. 2,299.



Claim.—1. The combination of the connected outer plates, perforated to embrace the axle, the central plate perforated to embrace the axle and having guideway-connection with the outer plates, and the spring or springs acting upon the plates to press them to the axle, substantially as and for the purpose set forth.

2. A dust-shield for railway axle-boxes, consisting of the combination of the plates perforated to embrace the axle, the stud-and-slot guide-connection between the plates, and the spring or springs acting upon the plates and pressing them to the axle, substantially as and for the purpose set forth.

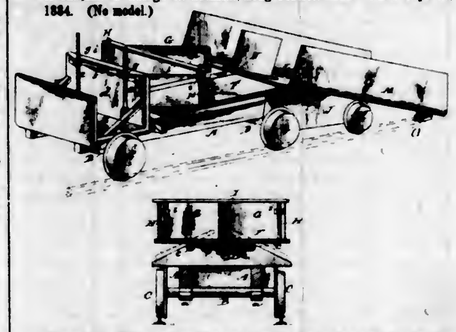
336,832. BUTTON-SETTING INSTRUMENT. JOHN BAIRSTOW and THOMAS E. KEAVY, Zoar, Ohio; said Bairstow assignor, by mesne assignments, to Augustine A. Tillitson, Akron, Ohio. Filed Apr. 23, 1885. (No model.)



Claim.—1. In a button-fastening implement for one-prong fasteners, the block which rests against a fixed surface provided with a segmental channel, with a notch for the entrance of the fastener, the depth of which said channel increases from said notch until it is substantially doubled, a slot for the insertion of the button-eye, and a core in the center of said segmental channel with a longitudinal channel opposite said slot, substantially as and for the purpose described.

2. The herein-described upsetting device for one-prong button-fasteners, consisting of the block D, having the stem *d*, and provided with the segmental channel E, with a slot opening therein, the channeled core *e*, and notch *i*, in combination with the head B, cap C, coiled spring *c*, spring F, and a suitable fastener-holder device, substantially as described.

336,833. SNOW-PLOW. CHARLES D. BATCHELOR, Pillsbury, assignor of one-half to George N. Brussler, Long Prairie, Minn. Filed Sept. 18, 1884. (No model.)



Claim.—1. The combination, in a snow-plow, of a truck having the rear platform, E, and vertical partition *d*, parallel shafts *c*, extending longitudinally and having their rear ends projecting through the said

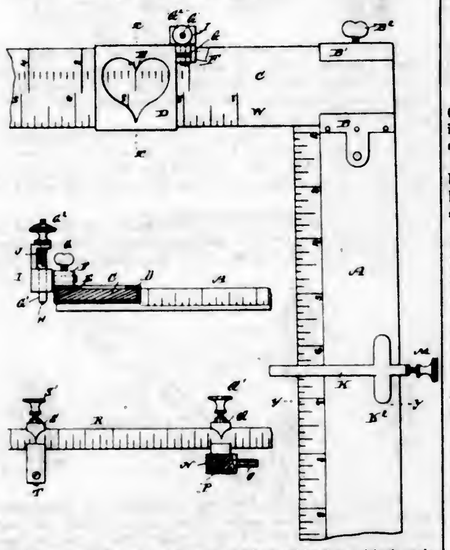
partition, levers connected to said projecting ends, and platforms F, connected to said shafts, to be tilted by the oscillation of the same, substantially as set forth.

2. The combination, in a snow-plow, of a truck, a plow adapted to be operated in advance of said truck and provided with an inclined scoop, and plates J, secured at its rear portion and notched to engage the front axle of the adjacent truck, substantially as set forth.

3. The combination, in a snow-plow, of a supporting carriage or truck and an inclined plate provided with side blocks, J, notched to rest on the forward axle of the supporting-carriage, and having side plates, M, and central plate, N, substantially as set forth.

4. The combination, in a snow-plow, of a truck, parallel shafts *c c*, longitudinally mounted in suitable bearings, a platform, F, mounted on each shaft between its center and inner edge, and devices for operating said shafts to cause them to tilt the platform, substantially as set forth.

336,834. GLASS-CUTTING GAGE. EUGENE O. BOYLE, Champlain, N. Y. Filed Aug. 31, 1885. (No model.)



Claim.—1. In a glass-cutting gage, the combination, with the rule A, of the tongue C, held by a binding-screw on the end of the rule A, substantially as herein shown and described.

2. In a glass-cutting gage, the combination, with the tongue C, of the slide D, the block F on the same, and the diamond-holder held on the said block, substantially as herein shown and described.

3. In a glass-cutting gage, the combination, with the tongue C, of the slide D, the block F on the same, the block I, having a pin passed into an aperture in the block F, and a diamond-holding rod in the block I, substantially as herein shown and described.

4. In a glass-cutting gage, the combination, with the slide D, of the block F on the same, the block I, having a pin, the screw G on the block F, the rod G' in the block I, the spring J, the screw-head G^2, and the diamond H, held in the lower end of the rod G', substantially as herein shown and described.

5. In a glass-cutting gage, the combination, with the sweep R, of the clamp Q, having the pin P, and the block N, having the pin O, substantially as herein shown and described.

6. In a glass-cutting machine, the combination, with the sweep R, of the clamp Q, the block N, and the clamp S, in which the diamond T is held, substantially as herein shown and described.

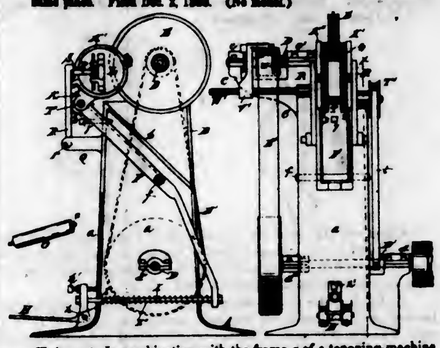
7. In a glass-cutting machine, the combination, with the rule A, of the guard K, having the lug L, provided with a recess, L', on one end, substantially as herein shown and described.

8. In a glass-cutting machine, the combination, with the rule A, of the guard K, the lug L on one end of the guard, and the screw M on the other and of the guard, substantially as herein shown and described.

9. In a glass-cutting machine, the combination, with the rule A, of the guard K, the lug L on one end of the guard, and the screw M on the other end of the guard, substantially as herein shown and described.

10. In a glass-cutting machine, a rule having a scale on its inner edge, which scale begins one inch from the inner edge of a rule at right angles to the first-mentioned rule, substantially as herein shown and described.

336,835. BLIND-SLAT-TENONING MACHINE. GEORGE W. BOSSER and FREDERICK DARNER, Cincinnati, Ohio, assignors to the Egan Company, same place. Filed Dec. 2, 1885. (No model.)



Claim.—1. In combination with the frame *a* of a tenoning-machine the oscillating arm F, pivoted below the table, the bearings K' K'', having chucks to receive the slats, the foot-lever H, and connecting-rod I, substantially as described.

2. In combination with the frame *a*, the stop R, adjustable upon a bracket on said frame, the hook S, the legs P, the chucks to which said legs are attached, and oscillating arms carrying the bearings in which said chucks are journaled, substantially as described.

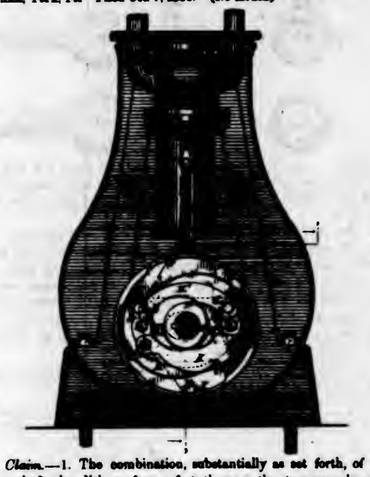
3. In combination with oscillating arm F, carrying the head-block K and chucks L, the driving-shaft T, journaling in the oscillating head-block, and driving-belt *t*, for automatically stopping and starting the chuck with the oscillation of the arm F and tightening and slackening of the belt *t*, substantially as herein specified.

4. In combination with the chucks L, the gage-blocks M M', and right and left adjusting-screw N, journaled on chuck L, and engaging with right and left threads in arms *m m'*, for regulating the distance between the guide-blocks, substantially as herein specified.

5. In combination with a tenoning-machine, the gage U, hung upon the oscillating yielding spring-arm V *y*, substantially as herein specified.

6. In combination with a tenoning-machine, the oscillating weighted arm V W, spring *y*, and gage U, adjustably secured to the arm U', substantially as herein specified.

336,836. GOVERNOR FOR STEAM-ENGINES. NATHAN F. BURNHAM, York, Pa. Filed Oct. 7, 1885. (No model.)



Claim.—1. The combination, substantially as set forth, of the rotating shaft, the disk or frame fast thereon, the transversely-moving slotted eccentric-carrier plate, the slotted eccentric thereon, and the pivoted governor-levers, which are directly pivoted to the eccentric-carrier plate.

2. The combination, substantially as set forth, of the rotating shaft, the disk or frame fast thereon, the slotted transversely-moving eccentric-carrier plate and the slotted eccentric thereon, the pivoted governor-levers arranged immediately opposite the eccentric-carrier plate, and the direct pivotal connection between the governor-levers and the eccentric-carrier plate.

3. The combination of the rotating shaft, the disk or frame fast thereon and having the two slots therein, the eccentric-carrier plate and its eccentric, the bosses on the eccentric-carrier plate, which project through the slots in the frame or disk, the pivoted governor-levers, and a direct pivotal connection between the governor-levers and the bosses on the eccentric-carrier plate.

4. The combination, substantially as set forth, of the shaft, the frame or disk, the pivoted governor-levers arranged to vibrate at right angles to the shaft, the eccentric-carrier plate and eccentric, and the adjustable plate or elliptic springs, which bear directly on the governor-lever.

5. The combination of the shaft, the frame or disk, the slotted eccentric capable of being moved transversely relatively to the shaft, its carrier-plate, the pivoted governor-levers, which effect the movement of the eccentric, and a counterbalancing-link pivoted on the governor-levers, as set forth.

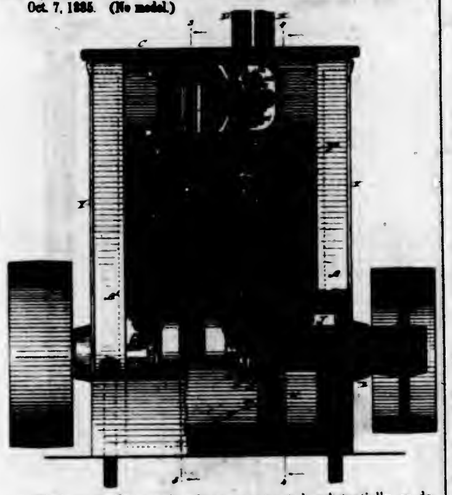
6. The combination of the shaft, the frame or disk, the eccentric, the eccentric-carrier, the governor-levers, the connections between the governor-levers and the eccentric-carrier, and means for adjusting the eccentric on its carrier independently of the governing devices.

7. The combination of the eccentric, the supporting-plate, the groove-and-boss interlocking connection, and securing bolts or devices, substantially as set forth.

8. The combination of the shaft, the frame or disk, the slotted eccentric capable of being moved transversely relatively to the shaft, pivoted governor-levers, by which this movement is effected, and a counterbalancing-link pivoted on the governor-levers, as set forth.

9. The combination of the shaft, the transversely-shifting eccentric-carrier plate, the eccentric thereon, governing devices for automatically shifting the eccentric, and means for adjusting the eccentric on its carrier independently of said governing devices.

336,837. STEAM-ENGINE. NATHAN F. BURNHAM, York, Pa. Filed Oct. 7, 1885. (No model.)



Claim.—1. The engine-frame constructed, substantially as described, with the bowl or trough shaped base, the standards or supports secured thereto, and the cap-plate secured to the standards.

2. The combination, substantially as set forth, of the bowl-shaped base, the standards secured thereto, the cap-plate, and the removable sides or casing.

3. The combination, substantially as set forth, of the base, the standards, the cap-plate, the steam-cylinder suspended from the cap-plate, the driving or crank shaft located between the suspended cylinder and the base, and the removable sides or casing.

4. The combination, substantially as set forth, of the frame, an upright cylinder suspended from the top or cap-plate of the frame, the piston, the slide-head, and a guide in which the slide-head works, suspended from the cylinder.

5. The combination, substantially as set forth, of a vertical steam-cylinder, piston, and piston-rod, the slide-head, and a longitudinally-slotted cylindrical guide in which the slide-head works, suspended from and supported only by the cylinder.

6. The combination, substantially as set forth, of the supporting-frame, the cap-plate secured thereon, the steam-cylinder and valve-chest and their connecting-pipes secured to the cap, the slotted tubular guide secured to the end of the steam-cylinder and constituting an axial prolongation thereof, the slide-head secured to the piston-rod and sliding in the tubular guide, the connecting-rod, and the crank-shaft.

7. The combination, substantially as set forth, of the supporting-frame, its cap-plate, the steam-cylinder and valve-chest secured at one end to the under side of the cap-plate, the tubular guide secured to and constituting an axial prolongation of the steam-cylinder, the slide-head connected with the piston-rod and sliding in the guide, the connecting-rod pivoted on the slide-head, the crank-shaft, the valve-piston, its connecting-rod, and its eccentric on the crank-shaft.

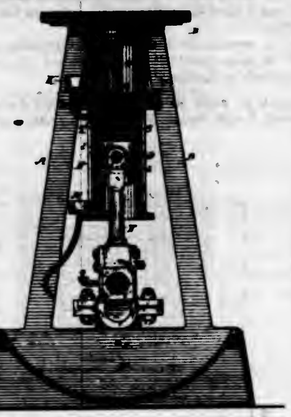
8. The combination, substantially as set forth, of a frame, the flanged vertical depending cylinder, the piston-rod and slide-head, the flanged guide in which the slide-head works, which guide is suspended from and supported by the cylinder, and the diaphragm or cylinder-head bolted between the cylinder and flanged guide.

9. The combination, substantially as set forth, of the cylindrical slotted guide, the slide-head, circular in cross-section and formed with two depending lugs with curved outer faces, which work in contact with the sides of the slotted guide, the piston, and the connecting-rod, which is connected with a cross-pin carried by the two depending lugs.

10. The combination, substantially as set forth, of the frame and cap-plate, the suspended steam-cylinder, the valve-chest, the valve-piston, and the valve-cylinder having turned or ground end edges or lips, *x*, for the purpose described.

11. The combination, substantially as set forth, of the frame and cap-plate, the depending cylinder, the upright valve-piston, and counterbalancing devices, for the purpose described.

336,838. MEANS FOR LUBRICATING STEAM-ENGINES. NATHAN F. BURNHAM, York, Pa. Filed Oct. 7, 1885. (No model.)



Claim.—1. The combination of the slide-head, the oiling-chamber in the top of the slide-head, the oil-apertures *h*, and the oiling-grooves *i*.

2. The combination of the slide-head, the oiling-chamber formed in the top thereof, the apertures *h* leading from said chamber, the oil-tank K, and the distributing-pipe *k*.

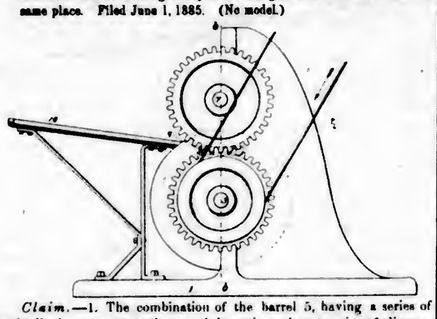
3. The combination of an oil-tube containing a filling of flexible or absorbent material which projects from the end thereof, and an oil-feeding tube carried by some moving part of the engine which sweeps past the end of the relatively stationary tube and scrapes the oil off at each movement of the part.

4. The combination of the slide-head, the main shaft, the connecting-rod, the bearing of the connecting-rod in the slide-head and on the main shaft, an oil-feeding tube carried by the connecting-rod and leading to its upper bearing in the slide-head, a similar oil-feeding tube carried by the connecting-rod or by the crank on the main shaft and leading to the bearing of the connecting-rod on the main shaft, and relatively stationary oil-distributing tubes, having wicks projecting from the ends thereof placed in such relation to said oil-feeding tubes that the latter tubes sweep past the wicks and scrape the oil therefrom at each oscillation of the connecting-rod.

5. The combination of the slide-head, the oil-chamber formed in the top of the slide-head and packed with absorbent material, the oil-tank, a pipe through which oil is fed little by little to said chamber, an oil-pipe communicating with said chamber and leading to the under side of the slide-head and having a wick projecting from the end thereof, and the movable oil-tube carried by the connecting-rod and leading to its bearing in the slide-head.

6. The combination of the main shaft, its bearing and oiling devices, the casing of the engine, the sharp-edged ring interposed between the bearing and the side of the casing, and the oil-channel *s*.

336,839. CANDY-MANUFACTURING MACHINE. GEORGE S. COLLUM, Hartford, Conn., assignor, by mesne assignments, to Sarah A. Collum, same place. Filed June 1, 1885. (No model.)



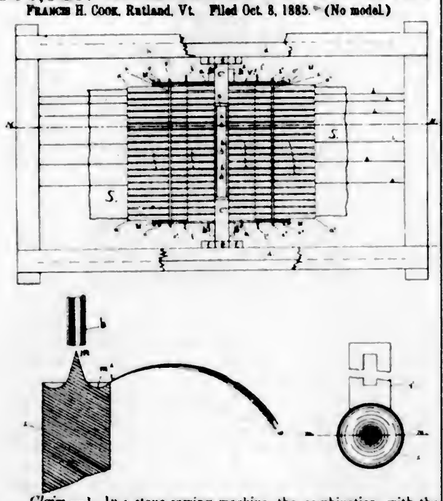
Claim.—1. The combination of the barrel 5, having a series of longitudinal ways arranged around its axis, and two series of dies reciprocating in those ways, with the barrel 8, having a series of semicylindrical concave grooves on its periphery, all substantially as described.

2. The combination of a series of dies arranged to revolve laterally around a common center and to reciprocate longitudinally while revolving with a cam or its equivalent arranged to make those dies to successively reciprocate, all substantially as described.

3. The combination of a hemispherical die-section, a supporting die-bolt, and a spiral spring interposed between the two, all substantially as described.

4. The combination of the hollow reciprocating bolt 14^a, the die-bolt 14^b, the spiral spring 14^c, the cams 15 and 16, and the spring 17, all substantially as described.

336,840. FEED MECHANISM FOR STONE-SAWING MACHINES. FRANCIS H. COOK, Rutland, Vt. Filed Oct. 8, 1885. (No model.)



Claim.—1. In a stone-sawing machine, the combination, with the feed-reservoir and its delivery-tubes, of cone-shaped pins located opposite the outlets of the said tubes and pointed toward the same, whereby the matter ejected from the tubes is spread in all directions upon the stone being worked, substantially as set forth.

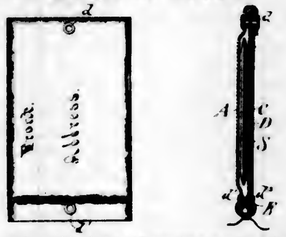
2. In a stone-sawing machine, the combination, with the feed-reservoir and its delivery-tubes, of the adjustably-mounted pins formed with cone-shaped points and concave recesses, and the cups m', said pins being disposed directly below the delivery-tubes and having their apices pointing upward, substantially as set forth.

3. In a stone-sawing machine, the combination, with the saw-racks and saws k k, of a feeding apparatus consisting, essentially, of a feed-reservoir, c, in the bottom of which there are arranged tubes b, pins s s being arranged beneath the tubes and above adjustable distributing-racks, and the cups m', said pins being disposed directly below the delivery-tubes and having their apices pointing upward, substantially as described.

4. In a stone-sawing machine, the combination, with a saw-rack and saws, of a feed-reservoir, c, provided with tubes b, which pass through the bottom of the reservoir, pins s arranged beneath the tubes, and distributing-racks a a' a^2, the racks a' a^2 being arranged beneath the rack a and transverse adjustable deflecting-plates x x, and the cups m', said pins being disposed directly below the delivery-tubes and having their apices pointing upward, substantially as described.

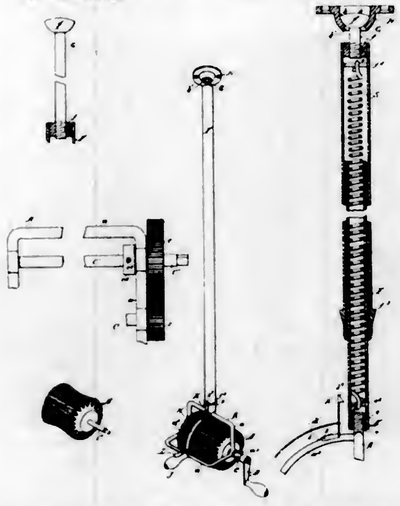
5. In a stone-sawing machine, the combination, with a saw-rack and saws, of a feed-reservoir, c, provided with tubes b b, pins s s, arranged beneath the tubes b, a fixed rack, a, adjustable racks a' a^2, arranged beneath the fixed rack a, and inclined deflecting-plates n n^2, and the cups m', said pins being disposed directly below the delivery-tubes and having their apices pointing upward, substantially as set forth.

336,841. COMBINED TAG AND ENVELOPE. HENRY M. CROUSE, Syracuse, N. Y. Filed Sept. 9, 1885. (No model.)



Claim.—A combined tag and envelope constructed with an open mouth without any cover-flap, provided with coincident eyelets adjacent thereto, through which the cord E is tied to close the mouth, substantially as shown and described.

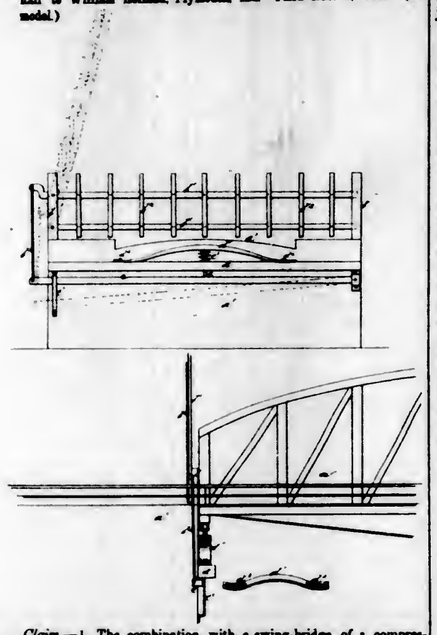
336,842. ROTARY BRUSH. RICHARD J. CURTIN, Lowell, Mass., as signor of one-half to William J. Coughlin, same place. Filed Jan. 28, 1885. (No model.)



Claim.—1. The combination of the frame, the brush supported therein, the supporting-tubes sliding and turning one within the other, the outer one of said tubes being provided at its upper end with a ball-and-socket joint, the socket of which is adapted to be secured to the ceiling of a room, and at its lower end with an annular shoulder, an inner tube sliding and turning within said outer tube and attached at its lower end to said frame, and a spring catch or hook supported upon said frame and adapted to engage with said shoulder, as and for the purpose specified.

2. The combination of the frame, the brush supported therein, the supporting-tubes sliding and turning one within the other, the outer one of said tubes being provided at its upper end with a ball-and-socket joint, the socket of which is adapted to be secured to the ceiling of a room, and at its lower end with an annular shoulder, an inner tube sliding and turning within said outer tube and attached at its lower end to said frame, and a spring catch or hook supported upon said frame and adapted to engage with said shoulder, a handle secured to said frame, a lever pivoted upon said frame, and a rod connecting said catch and lever, as and for the purpose specified.

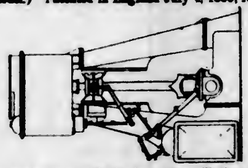
336,843. BRIDGE-GATE. URIAH DODD, South Bend, assignor of one-half to William Holland, Plymouth, Ind. Filed Nov. 4, 1885. (No model.)



Claim.—1. The combination, with a swing-bridge, of a compression-spring on the abutment, a lever connected to said spring and also to the gate, and a gate composed of parallel bars hinged at one end and connected by pickets pivoted thereon, substantially as and for the purpose set forth.

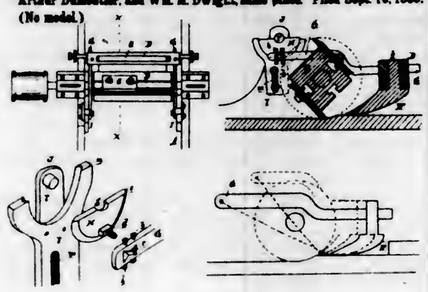
2. The combination, with the bridge a, of the gate b' b^2, the connecting-rod b^3, lever c, springs d' e', and rod e, all constructed and arranged to operate substantially as and for the purpose set forth.

336,844. LINK-MOTION FOR WORKING VALVES. ARCHIBALD D. B. DOUGLAS, Seafield, Ardrossan, County of Ayr, Scotland. Filed Sept. 8, 1885. (No model.) Patented in England July 4, 1885, No. 8,132.



Claim.—In combination, with the lever 1, oscillating on a movable fulcrum in time with the piston and linked to the valve-rod, the curved link 4, fitted with a sliding block which is linked to the fulcrum of the lever 1, and is caused to reciprocate along the link 4 by an eccentric, substantially as described.

336,845. CHIP-BREAKER. ALEXANDER C. DUMONTIER and ARTHUR PLOURDE, Detroit, Mich., assignors of three-fifths to Henry W. Harding, Arthur Dumontier, and Wm. H. Dwight, same place. Filed Sept. 16, 1885. (No model.)



Claim.—1. In a planing-machine, the combination, with arms having a radial movement from a fixed pivotal point, which is also adjustable, of a pressure-bar secured to said arms, and a chip-breaker carried by said pressure-bar, substantially as and for the purpose specified.

2. In a planing-machine, circular or semicircular plates which have a rotary movement around a fixed pivotal point, arms secured at one end to said plates, a pressure-bar secured to the free ends of said arms, and a chip-breaker carried by said pressure-bar, substantially as described.

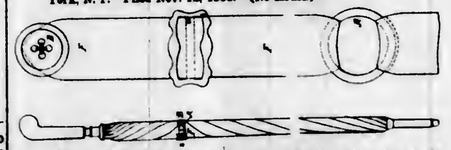
3. In a planing-machine, and in combination with radial arms carrying a pressure-bar and chip-breaker, the standard I, plate H, working in the top of said standard, support for said standard, and bracing r on said support, substantially as and for the purposes set forth.

4. In a planing-machine, and as a means for securing the radial arms which carry the pressure-bar and chip-breaker attachment, the combination of each radial arms, having slots c therein, and provided with adjusting set-screws h, with the plates H, having lugs d, substantially as described.

5. In a planing-machine, and as a means for vertically adjusting the pivotal points of the radial arms which carry the pressure-bar and chip-breaker attachment, the slotted standard I, and standards J, supporting in the same and carrying the pivotal bearings r, in combination with the plates H, working in the standard I, and their connections with such radial arms, substantially as specified.

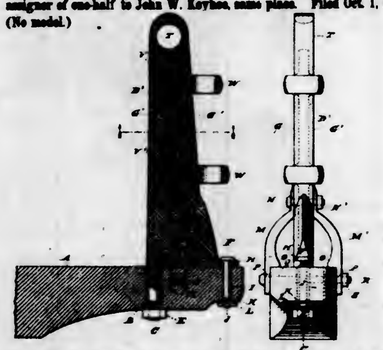
6. In a planing-machine, the combination, with the standard I, having groove n, and support J for said standard, provided with bearing r, of the plates H, having -shaped periphery, and recess S, arms G, connected with said plates, and the chip-breaker K, carried by said arms, substantially as and for the purpose specified.

336,846. RETAINER FOR UMBRELLAS. JEAN BAPTISTE DURAND, St. Chamond, France, assignor to Edmund and Joseph Wright, Charles S. Howe, and George T. Moxey, Philadelphia, Pa., and Harris Filson, New York, N. Y. Filed Nov. 12, 1885. (No model.)



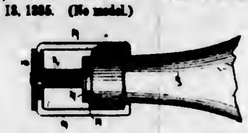
Claim.—The within-described retainer for the folds of umbrellas, said retainer consisting of a ribbon, F, combined with the ring A, button B, and sliding buckle b, all substantially as specified.

336,847. WAGON-STAKE. EMMANUEL M. FOREMAN, Fairmount, Ill., assignor of one-half to John W. Keyhoe, same place. Filed Oct. 1, 1885. (No model.)



Claim.—The combination, with the bolster having the bolt-holes B and I, of the metallic stake having the flange F and integral threaded bolt C, the nut E, bolt J, and nut L, the lateral braces M M', having the shoulders O O, engaging the bolster and perforated at their lower ends, the transverse bolt R, and the upper transverse bolt, N, all arranged substantially as specified.

336,848. BOTTLE-STOPPER. AARON E. FRASER, Lockport, N. Y. Filed Nov. 13, 1885. (No model.)

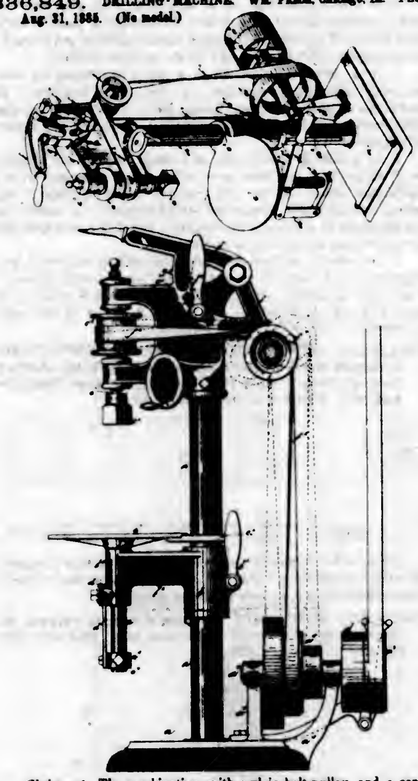


Claim.—1. A bottle-stopper comprising, essentially, a frame having an opening, a spring-actuated rod sliding therein, a stopper on the lower end of the rod, and a swiveled finger-bar on the upper end of the

rod, said bar being adapted to be turned at right angles to the frame, as set forth.

2. The combination, with a bottle, of a frame having lugs to engage a shoulder on the bottle, a rod sliding in an opening of the frame, a stopper on the lower end of the rod, a swiveled finger-bar on the upper end of the rod, adapted to be turned at right angles to the frame, and a spring on said rod between the frame and stopper, as set forth.

336,849. DRILLING-MACHINE. WM. FRENCH, Chicago, Ill. Filed Aug. 31, 1885. (No model.)



Claim.—1. The combination, with a plain belt-pulley, and a cone-pulley placed at right angles thereto and connected by a driving-belt, of an angular lever pivoted at its angle and provided on one arm with a guide-pulley for the belt, and on the other with an enlarged or weighted portion, substantially as described, whereby the weight of the lever-arm regulates the tension of the belt and guides it as well.

2. The combination, with two belt-pulleys situated at an angle, and one or both of which is a cone-pulley, of a guide-pulley between the two, a pivoted arm on which the pulley is carried, a curved slot in said arm through which is passed a set-screw, and a series of indicating-marks to gage the adjustment, substantially as and for the purpose set forth.

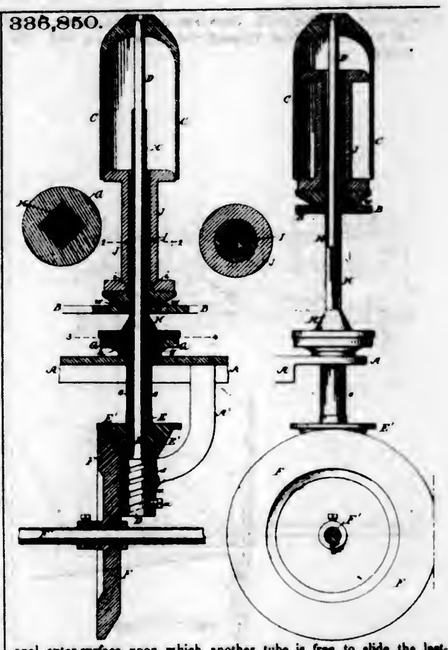
3. In a drilling-machine, the combination, with the main standard and an arm projecting therefrom, of a work-table supported upon a spindle sliding vertically in the end of said arm, and having a collar completely encircling the main standard, substantially as and for the purpose set forth.

4. The combination, in a drilling-machine, of a hollow standard, a table-carrying arm sliding vertically thereon, a screw-rod inclosed within the standard and having a nut connected to and supporting said arm, a hand-wheel geared to the screw-rod for operating it, a drill-spindle having a belt-pulley on it, a driving-cone at right angles thereto, and a guide-pulley supported between them upon a pivoted arm, substantially as and for the purpose set forth.

336,850. SPINNING-MACHINE. JOHN S. FUNK, Philadelphia, Pa., assignor of one-fourth to J. Jones Hudson, same place. Filed Nov. 6, 1885. (No model.)

Brief.—Upon a dead-spindle is a rotary tube driven by bevel friction-wheels and adapted to drive a second tube above it, having a polygonal outer surface, upon which another tube is free to slide, the last-named tube being adapted to carry the bobbin and resting upon the traverse-rail.

336,850.



Claim.—The combination of a fixed rail of a cap-spinning machine carrying a dead-spindle and cap, and a driving-shaft carrying a bevel-wheel, with a rotary tube, E, mounted in the fixed rail, and having a cone engaging with the bevel-wheel, a tube, H, having a polygonal outer surface, a tube, I, free to slide on the surface of the tube H, and adapted to carry the bobbin, and a traverse-rail supporting the said tube I, all substantially as set forth.

336,851. CURTAIN-FIXTURE. JOHN GARNER, East Newark, assignor of one-half to Edwin R. Parell, Newark, N. J. Filed June 3, 1885. (No model.)



Claim.—1. A curtain-holding attachment consisting of metallic plates adapted to be secured to the ends of a roller and provided with projections c on the periphery thereof, having an inclined slot, c^2, therein, and a recess, b^2, for the purposes set forth.

2. In a shade-roller, in combination, a looped curtain, a roller, a cord extending through the loop in said curtain, and end plates having hooks or catches open to the periphery and constructed and arranged to hold the ends of the cord extending through the loop, substantially as specified.

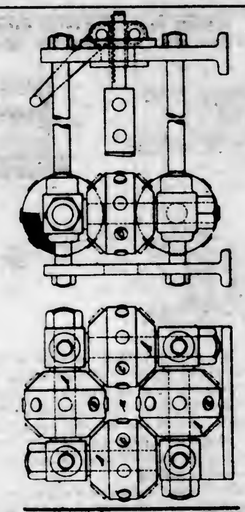
3. In a shade-roller, in combination, a looped curtain, a roller, a cord extending through the loop in said curtain, and end plates having projections c on the peripheries thereof, having inclined slots c^2 and recesses b^2, substantially as and for the purposes set forth.

4. In a shade-roller, in combination, a looped curtain, a roller, a cord extending through the loop in the curtain, end plates having projections c with inclined slots c^2 therein, and metallic bands or ferrules covering the ends of the roller and recessed to receive the projection c, substantially as set forth.

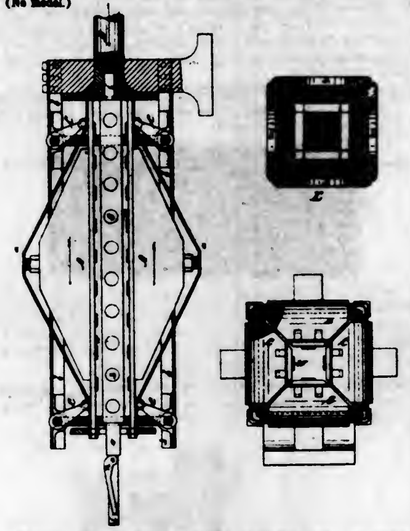
336,852. MACHINE FOR FORMING AND PUNCHING POLYGONAL TUBES. CAMPBELL P. HIGGINS, Philadelphia, Pa. Filed Oct. 10, 1885. (No model.)

Claim.—In a machine for forming and punching polygonal tubes, the combination, with a series of rollers or equivalent devices mounted with their working-faces parallel with their axes and at right angles to each other, of a mandrel for carrying the blank, the working-faces of the rollers being provided with punches and the mandrel with corresponding dies, as set forth.

336,852.



336,853. MACHINE FOR FORMING AND PUNCHING POLYGONAL TUBES. CAMPBELL P. HIGGINS, Philadelphia, Pa. Filed Oct. 10, 1885. (No model.)



Claim.—1. In a machine for forming polygonal tubes, the combination of a mandrel and a series of pressure beams or formers suspended upon vibrating arms or toggles pivoted to a suitable frame-work, with a connected power-follower for producing a longitudinal and resultant radial movement of said formers, for the purpose specified.

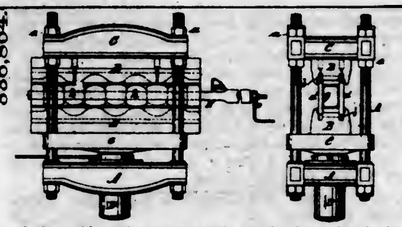
2. In a machine for forming and punching polygonal tubes, the combination of a sectional mandrel having a relaxing core and depressions upon the external faces of the respective sections thereof, with a series of pressure-beams suspended upon vibrating arms or toggles and provided with punches, and a power-follower for producing a longitudinal and resultant radial movement of said pressure-beams, for the purpose specified.

336,854. MACHINE FOR FORMING SERPENTINE TUBES. CAMPBELL P. HIGGINS, Philadelphia, Pa. Filed Oct. 10, 1885. (No model.)

Claim.—1. A machine for forming tubes or blanks of polygonal form in cross-section, consisting of a pair of dies joined together by sliding abutments, in combination with a sectional mandrel.

2. A machine for forming serpentine headers or tubes of polygonal form in cross-section, consisting of a pair of working-dies having their acting faces constructed with transverse depressions, and a mandrel composed of movable sections corresponding to the depressions in the dies, said sections being made in separable parts, substantially as described.

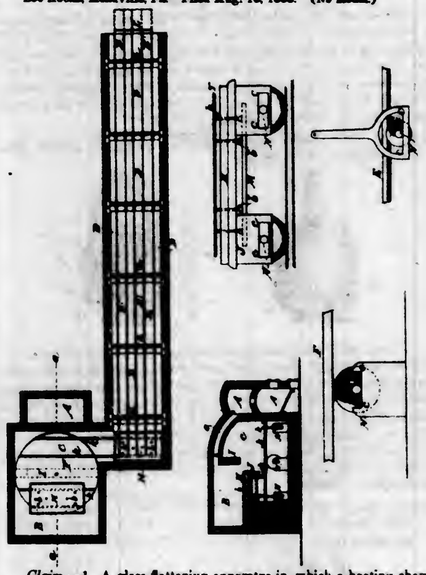
336,854.



3. In a machine for forming serpentine headers or tubes, the combination of a pair of working-dies having their acting faces constructed with transverse depressions, and a sectional mandrel provided with a series of separate blocks corresponding to the depressions in the dies and capable of a transverse movement in the same plane, said mandrel also containing an adjusting device for spreading out against the plain sides of the blank.

4. A sectional mandrel for the purpose set forth, having a series of blocks composed of separable parts constructed with wedging contact-surfaces, whereby said parts are expanded and forced against the adjacent surfaces of the blank by the pressure of the external dies.

336,855. APPARATUS FOR FLATTENING WINDOW-GLASS. LUD HOUSE, Meadville, Pa. Filed Aug. 18, 1883. (No model.)

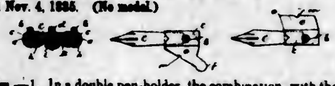


Claim.—1. A glass-flattening apparatus in which a heating-chamber, B, and cooling-chamber C are separated by a hanging wall, I, and have on their floor a turn-table, one-half of which is in each chamber, as and for the purpose set forth.

2. In the loer of a glass-flattening apparatus, the combination of the rods E and rolling cross-shafts G, with lifting mechanism in which spaces e e are provided for the journals of said shafts, substantially as set forth.

3. The flattening-stone H, having holes b and pins b', in combination with a supporting-plate, M, adapted to be raised or lowered, as and for the purpose specified.

336,856. PEN-HOLDER. MARSHALL J. HUGHES, Jersey City, N. J. Filed Nov. 4, 1885. (No model.)



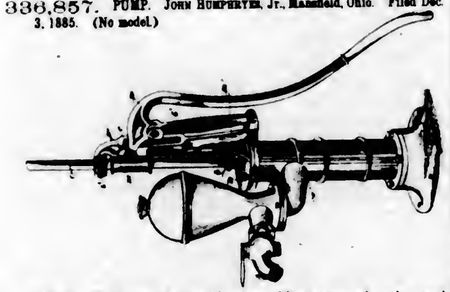
Claim.—1. In a double pen-holder, the combination, with the handle A, provided with a slit, g, of pen-clamps c, having arms e, inserted in the slit of the handle from opposite sides thereof, and the bolt d, for clamping the arms e in the slit of the handle, substantially as herein shown and described.

2. As an improved article of manufacture, a double pen-holder having the handle A, provided with the slit g, the pen-clamps c, formed of

the arms *e*, the semi-cylindrical blocks, the curved plates *h*, and screws clamping the plates *h* and semi-cylindrical blocks inclosed thereby to the arms *e*, substantially as herein shown and described.

3. In a double pen-holder, the combination of two pen-clamps, *c*, provided with arms *e e*, one having the extension *f*, entering the slit of the handle above the bolt *d*, the other having the angle *o*, entering the slit of the handle below the bolt *d*, the handle A, provided with a ferrole, B, and slit *g*, and the clamping-bolt *d*, passing through the slit end of the handle and binding the sides of the handle upon the arms *e*, substantially as herein shown and described.

336,857. **PUMP.** JOHN HUMPHREYS, Jr., Mansfield, Ohio. Filed Dec. 3, 1885. (No model.)



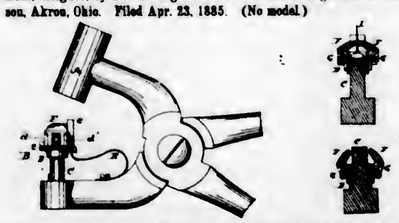
Claim.—In a pump, the combination, with a pump-rod made round in cross-section and of uniform size, of a sleeve formed in a single piece and mounted on the pump-rod, said sleeve having ears for embracing the end of the pump-handle, and an elongated slot, substantially as described, between said ears, the parts arranged substantially as indicated, whereby the sleeve is clamped on the pump-rod by tightening the pivotal bolt that connects the handle, substantially as described.

336,858. **PERMUTATION-PADLOCK.** JOHN H. JULIAN, Troy, Ohio. Filed June 17, 1885. (Model.)



Claim.—The combination, with the lock-case having the open bottom, the vertical side groove with open ends, the top seat, and central rectangular opening in said seat, of the notched cap-plate, the perforated notched tumblers M N, the upper and lower stop-pins, P P', in said tumbler M, tumbler L, with stop-pin P in its upper face and slotted sleeve J J' projecting from its lower face, the interposed washers K, the graduated base-tumbler H', with stop-pin H in its upper face, the grooved journal, the spiral spring, and the hasp with the arm having guards S', substantially as specified.

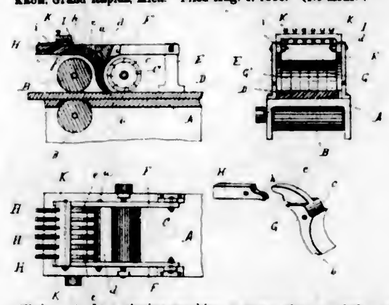
336,859. **BUTTON-SETTING INSTRUMENT.** THOMAS E. KEAVY, Kent, assignor, by mesne assignments, of one-half to Augustine A. Tillitson, Akron, Ohio. Filed Apr. 23, 1885. (No model.)



Claim.—1. In a button-fastener setting-instrument having a fastener-holder and fastener-upsetting devices adapted to act in conjunction with each other, a fastener-holder consisting of a rigid post, a sleeve mounted and sliding thereon, held upward by a spring, fastener clamping and holding jaws pivoted or hinged to said sliding sleeve on opposite sides thereof, and springs acting on said jaws to hold them together above the end of the post, said jaws being separated and swung outward by coming in contact with the end of the post as the sleeve slides thereon, substantially as described.

2. The herein-described fastener-holder, consisting of the post C, sleeve D, spring E, jaws F F, springs G G, and studs, all constructed and arranged substantially as shown, and for the purpose specified.

336,860. **PRESSER-BAR FOR PLANING-MACHINES.** DAVID C. KRUM, Grand Rapids, Mich. Filed Aug. 1, 1885. (No model.)



Claim.—1. In a planing-machine, a presser-bar consisting of a series of independent presser fingers or sections having lever-extensions and mounted on a transverse rod above the bed of the planer, in combination with a corresponding series of levers engaging with the extensions of the presser-fingers and each provided with a spring, all arranged and operating to the end that the springs will hold the levers in engagement with the extensions of the presser-fingers and operate said fingers, substantially as shown and described.

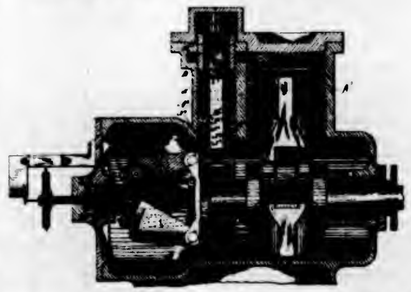
2. In a planing-machine, a presser-bar consisting of a series of independent presser fingers or sections, G, having lever-extensions *e* and shoulders *c*, and mounted on a transverse rod above the bed of the planer, in combination with a corresponding series of levers, H, engaging with the extensions of the presser-fingers, and each provided with a spring, *i*, and set-screw K, and the cross-bar *d*, all arranged and operating to the end that the springs will hold the levers in engagement with the extensions of the presser-fingers and operate said fingers, substantially as shown and described.

336,861. **WOVEN EMBROIDERY FABRIC.** JEAN G. KUHN, Degersheim, Switzerland. Filed July 21, 1885. (No model.) Patented in England Sept. 23, 1884, No. 12,721.



Claim.—As an improved manufacture, a woven embroidery fabric having at some distance from its edges a small woven pocket and a draw cord or string snugly fitting in said pocket, whereby the embroidered strip may be gathered, when desired, and the gathers frictionally held in place by said cord or string, substantially as set forth.

336,862. **CUT-OFF VALVE FOR STEAM-ENGINES.** MIRABEAU N. LYNN, Rising Sun, assignor to the American Electric Headlight Company, Indianapolis, Ind. Filed June 1, 1885. (No model.)



Claim.—1. In combination with the valve-cylinder, the tubular steam-valve having inlet and exhaust ports, as described, the independently-moving cut-off piston located within the tubular steam-valve, intermediate the inlet and exhaust ports, substantially as described.

2. In combination with the tubular steam-valve, its connecting-rod, and actuating-eccentric made fast to the main shaft, the cut-off piston or valve operating within said steam-valve, the pitman and its movable driving eccentric, substantially as described.

3. As a means for connecting the steam-valve and cut-off to the driving-eccentrics, and in combination therewith, the two pitmen pivotally connected to the steam-valve, and the pitman pivoted to the cut-off piston, extending between and beyond the point of attachment of the first-mentioned pitmen, substantially as and for the purpose set forth.

4. In a steam-engine, as a means for pivotally securing the pitman to the valve, and in combination with the latter, the detachable plugs provided with the transverse open socket, and the pitman having the transverse pivot adapted to enter said socket, substantially as described.

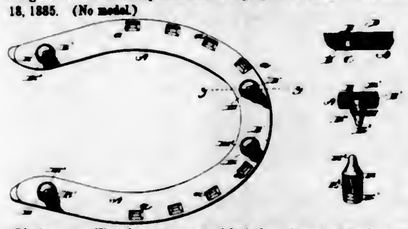
5. In combination with the pitman, its transverse pivot, and the socket-bearing in the valve, as a means for preventing their accidental separation, the soft-metal pin passing through the bearing and engaging a circumferential groove in the pivot, substantially as described.

6. In combination with the tubular valve having diametrically-opposite sockets in its lower end, the two pitmen, each provided with pivot-pin entering one of said sockets, the cut-off piston situated within said valve and above its sockets, and the pitman fastened to said piston and extending between the pivot-pins of the first-mentioned pitmen, whereby the latter are prevented from becoming accidentally displaced, substantially as described.

7. In combination with the valve-cylinder having the steam-chest and collars forming the annular chamber communicating with the engine-cylinder, the perforated tube passing through said collars, and the tubular valve composed, essentially, of the two open-mouth cup-shaped extensions, and the intermediate piston or diaphragm, substantially as and for the purpose set forth.

8. In a steam-engine such as described, the combination, with the tubular steam-valve and its actuating devices, of the piston located within said valve intermediate the inlet and exhaust ports, whereby said piston is adapted to serve as a diaphragm dividing the steam-valve into the two sections, as described, or by the application of actuating and governing mechanism may serve as a cut-off valve, substantially as described.

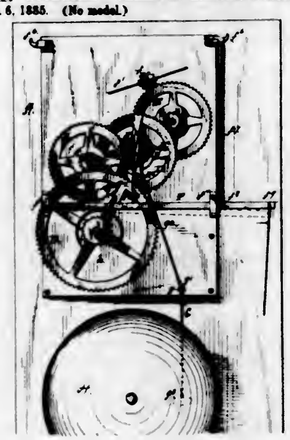
336,863. **HORSESHOE.** WILLIAM S. MCGOWAN, Jr., Boston, Mass., assignor to the Neverslip Horseshoe Company, same place. Filed May 18, 1885. (No model.)



Claim.—1. The shoe provided with holes adapted at their upper ends to receive the fastening ends of detachable calks, and countersunk at their lower ends, so as to leave spaces between the countersunk sides and the calks when the calks are in place, substantially as and for the purpose described.

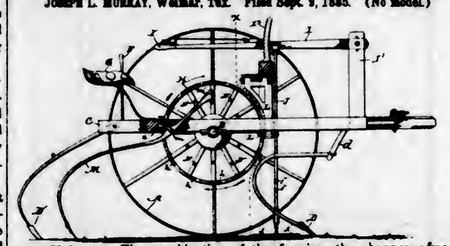
2. In combination with the shoe provided with a threaded hole countersunk on the lower side of the shoe, the removable calk having its upper end screwed into the threaded portion of the hole and its portion situated within the countersink of such size as to leave a space between it and the countersink side, substantially as and for the purpose described.

336,864. **DOOR-BELL.** WILLIAM A. MILLIGAN, Wheeling, W. Va. Filed Oct. 6, 1885. (No model.)



Claim.—In combination with the clock-train and with its wheel D, having pins d^2 projected from its side, and the stop-arm d^3, secured to its arbor to revolve therewith, the spring striking-lever G, arranged substantially as set forth, and the trip-lever F, formed with a stop, f^2, to engage the stop-arm d^3, and provided with a spring to return the lever to its normal position, substantially as described.

336,865. **COTTON CHOPPER AND CULTIVATOR COMBINED.** JOSEPH L. MURRAY, Weimar, Tex. Filed Sept. 9, 1885. (No model.)



Claim.—1. The combination of the framing, the chopper-arms, the cams constructed to engage said arms, one in advance of the other, whereby said arms will be alternately operated, and the blades secured on the chopper-arms and set one in advance of the other, whereby the blade of the arm last operated will cut opposite the space previously chopped by that of the first operated arm, substantially as set forth.

2. In a cotton-chopper, the combination of the cam-wheel, the chopper-arms pivotally supported, the swinging frames, the pins supported in said frames and connected with the chopper-arms, and the retracting-springs, substantially as set forth.

3. In a cotton-chopper, the combination of the drive-wheels, the cam-wheel, and the plow-beam pivoted between its ends, and provided at its forward end with a cam or arm arranged and adapted to be engaged by the cams of the cam-wheel, substantially as described, and for the purpose set forth.

4. In a cotton-chopper, the combination of the cam-wheel, the chopping-arms pivotally supported, pins connected with said arms and extended in position to be engaged by the cam-wheel, and the pivoted plow-beam having its forward end provided with a cam or arm arranged in position to be engaged by the cam-wheel, substantially as set forth.

5. The combination, with the cam-wheel and the chopper-arms, of the swinging frames, and the pin supported in said frames and having one end extended in position to be engaged by the cam-wheel, and their other ends connected with the chopper-arms, substantially as described, whereby such arms may be adjusted longitudinally independent of the pins, as and for the purposes specified.

6. In a cotton-chopper, the combination of the framing, the lever pivoted thereto, rack mechanism whereby to secure such lever, the chopper-arms supported on such lever, the cam-wheel, the swinging frames, the pins supported thereby and connected with the chopper-arms, the retracting-springs, and the plow-beam pivoted between its ends and having its forward end provided with a cam or arm arranged and adapted to be engaged by the cam-wheel, substantially as set forth.

7. A combined chopper and cultivator comprising a supporting-frame, chopping apparatus, a cultivating-plow located in rear of the chopping apparatus and in line with the point at which the chopping apparatus cuts out the row, whereby the cut-out portion will be cultivated, and mechanism whereby the cultivating-plow may be elevated over the stands of plants, substantially as set forth.

336,866. **FAN ATTACHMENT.** PETER MURRAY, Jr., Newark, assignor to himself, and Richard S. T. Cissel and Robert B. Cissel, both of Elizabeth, and Alfred N. Lewis, Newark, N. J. Filed Jan. 13, 1886. (No model.)

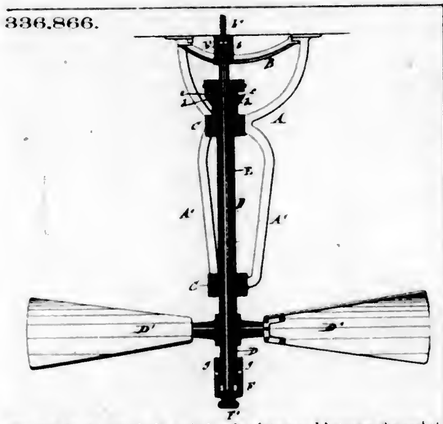
Claim.—1. The combination of a tubular shaft, a fan attached to said shaft, an interior rotary driving-shaft, and a friction-clutch, the members of which are applied, respectively, to the fan-shaft and driving-shaft, said friction-clutch imparting rotary motion to the fan-shaft and fan, substantially as set forth.

2. The combination of a tubular shaft, a fan attached to said shaft, an interior rotary driving-shaft passing through said fan-shaft, a friction-clutch for imparting motion to the tubular fan-shaft, and mechanism for lowering or raising the driving-shaft, so as to establish or interrupt the motion of the fan-shaft, substantially as set forth.

3. The combination of a tubular shaft, a fan attached to the same, a friction-disk at the upper end of the fan-shaft, a rotary driving-shaft passing through said fan-shaft and having also a friction-disk, and an adjusting device applied to the lower end of the fan-shaft, for raising or lowering the interior shaft and throwing the friction-disks in or out of mesh, substantially as set forth.

4. The combination of a tubular shaft, a fan attached to the same, an interior rotary driving-shaft, a guide-socket attached to the ceiling in

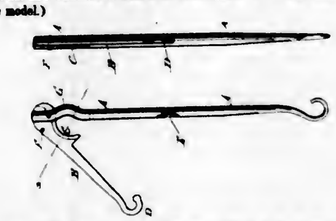
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line with the driving-shaft, a spiral spring interposed between the socket and the upper end of the driving-shaft, a friction-clutch, the members of which are applied to the fan-shaft and driving-shaft, and a device for throwing the friction-clutch in or out of gear, substantially as set forth.

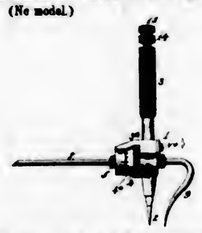
5. The combination of a tubular shaft, a fan attached to said shaft, a rotary driving-shaft passing through the fan-shaft, a friction-clutch for imparting motion to the fan-shaft, and a supporting hanger-frame attached to the ceiling and composed of arms having journal-bearings for the fan-shaft, and a crab having a central guide-socket for the interior driving-shaft, substantially as set forth.

336,867. COMBINED BUTTONER AND CIGAR-CUTTER. LOUIS B. PRAHAR and CHARLES S. SHEPARD, Brooklyn, N. Y. Filed Dec. 30, 1885. (No model.)



Claim.—The combination, with the slotted stem A of a button-hook, of a bar, B, hinged in the said slot and provided with a cutter, C, substantially as herein shown and described, whereby the implement can be used for cutting off the ends of cigars, as set forth.

336,868. DIVIDERS. GEORGE M. PRATT, Middletown, Conn. Filed Nov. 9, 1885. (No model.)



Claim.—1. The combination of the pivotal arm having the center point, 2, an externally-screw-threaded sleeve arranged transversely through the arm, a rotating nut engaging said sleeve to adjust it longitudinally, and a sweep-arm movable with the sleeve in its adjustment, and also capable of longitudinal adjustment in the sleeve independent of any movement of the latter, substantially as described.

2. In a pair of dividers, a sweep-arm, a pivotal staff carrying a bracket having a sleeve supporting said arm, a thumb-nut meshing with said sleeve, and a binding-rod engaging with the adjustable arm and actuated by a nut on the staff, substantially as described.

3. In a pair of dividers, a pivotal staff containing a binding-rod and having a set-screw with interposed spring between it and said rod, a bracket formed or mounted on said staff, a thumb-nut journaled in said bracket, a sleeve having an exterior thread engaging with said nut, and an adjustable sweep-arm having bearing in said sleeve and engaging with said binding-rod through a slot in the sleeve, substantially as described.

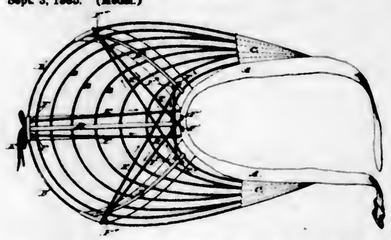
4. In a pair of dividers, the combination, with the staff-arm having a bracket, of a thumb-nut journaled in said bracket, a sweep-arm having bearing in a sleeve meshing with a thumb-nut, and a binding-rod actuated by a set-screw in the staff and engaging with the sweep-arm through a slot in the sleeve, the thumb-nut and adjustable sweep-arm being each graduated, substantially as described.

336,869. HORSE-COLLAR. WILLIAM G. RUSH and OTTO EVERTZ, Washington, Mo. Filed Aug. 7, 1885. (No model.)



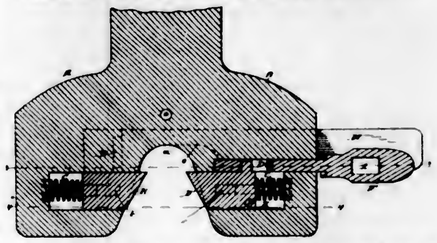
Claim.—A horse-collar or like article having a casing or cover, a resilient facing of granulated cork, and a firm or stable backing of straw or like material, substantially as and for the purposes specified.

336,870. BUSTLE. WILLIAM F. RUSSELL, New York, N. Y. Filed Sept. 3, 1885. (Model.)



Claim.—The combination, with the band and wires of a bustle, of a cord whose two ends are respectively carried from eyelets at the upper ends of the two lateral ribs of the bustle, each diagonally across to the lower end of the opposite lateral rib and through an eyelet near the end thereof, thence back to and through eyelets in the center of the band, and thence to and through eyelets at the center of the lower edge or wire of the bustle, substantially in the manner and for the purpose herein set forth.

336,871. CAR-COUPLING. JAMES A. STORMS and THEODORE A. ARNOLD, North Tarrytown, N. Y. Filed July 2, 1885. (No model.)



Claim.—1. The combination of the draw-head provided with the chambers K, sliding jaws mounted in said chambers, coiled spring situated between the jaws and the rear walls of the chambers, the pins *c*, projecting from the rear walls of the chambers and serving as supports for the springs by which they are surrounded, and a lever connected with said jaws, adapted to simultaneously move them in opposite directions against the springs, the said jaws being provided with sockets *b*, whereby they may slide over pins *c* as they are drawn within the chambers, substantially as set forth.

2. The combination of a draw-head, the sliding jaws, springs which force said jaws into the throat of the draw-head, links or sliding bars connected one with each sliding jaw, and both extending to the same side of the draw-head, and a lever which simultaneously moves said links to force the jaws out of the throat of the draw-head, substantially as set forth.

3. The combination of a draw-head, the sliding jaws, springs which force said jaws into the throat of the draw-head, links or sliding bars connected one with each sliding jaw and both extending to the same side of the draw-head, said links being of different lengths, and a lever situated at the side of the draw-head, and connected with said links and adapted to simultaneously move them and the jaws in opposite directions, substantially as set forth.

4. The combination of a draw-head, the sliding jaws, springs which force said jaws into the throat of the draw-head, links or sliding bars connected one with each jaw and both extending to the same side of the draw-head, the outer end of one of the links being situated directly over the outer end of the other link, and a lever connecting the ends of said links and adapted to simultaneously move them and the jaws in opposite directions, substantially as set forth.

5. The combination of the draw-head, the sliding jaws, the springs which bear against said jaws, links connected with the sliding jaws and extending to one side of the draw-head, one link lying above the other, and a lever connected to said links and adapted to move them and the jaws in opposite directions, substantially as set forth.

6. The combination of the draw-head provided with a throat for the entrance of a coupling-bar, sliding jaws situated upon opposite sides of said throat, springs which bear against said jaws, links connected with said jaws and extending to one side of the draw-head, one of said links passing in rear of the throat in the draw-head, and a lever connected to said links and adapted to move them and the jaws in opposite directions, substantially as set forth.

7. The combination of the draw-head, the sliding jaws B B', said jaws being provided, respectively, with rearwardly-projecting pins D D', link E, which bears against the pin D, link F, which engages with pin D', said links extending to one side of the draw-head, and a lever connected with said links and adapted to move them and the jaws in opposite directions, substantially as set forth.

8. The combination of the draw-head, the sliding jaws, the spring bearing against the jaws, links connected at their inner ends to the jaws and extending to one side of the draw-head, and a lever pivoted to one link and projecting through an aperture in the other link, whereby it is adapted to move said links simultaneously in opposite directions, substantially as set forth.

9. A draw-head having a throat for the entrance of the coupling-bar, chambers K K, situated upon opposite sides of the throat for the reception of the gripping-jaws, and the ways L M, connected, respectively, with the opposite chambers K and extending both to the side of the draw-head, and adapted to receive the jaw-operating levers, substantially as set forth.

10. The combination of a rigid draw-head provided with a throat for the entrance of the coupling-bar, having side guiding-walls, but without top or bottom walls, sliding gripping-jaws mounted within said rigid draw-head, mechanism which operates said jaws, and a coupling-bar which engages with said jaws, and is provided with stops or shoulders which prevent the bar from falling out of engagement with the gripping-jaws, substantially as set forth.

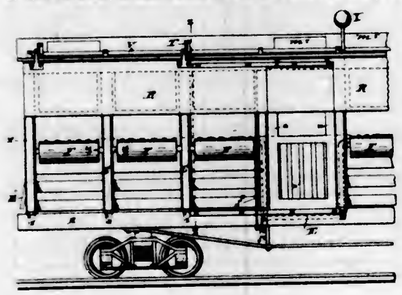
11. The combination, with a rigid draw-head provided with a throat for the entrance of the coupling-bar, having side guiding-walls, but without top or bottom walls, sliding gripping-jaws mounted within said rigid draw-head, and mechanism which operates said jaws, of a coupling-bar adapted to engage with said jaws, provided with stops which prevent the bar from falling out of engagement with the jaws and being of a vertical dimension greater than the thickness of the draw-head, substantially as set forth.

12. A coupling-bar provided at its opposite ends with substantially arrow-shaped heads adapted to engage with gripping-jaws, the bar being of a vertical dimension greater than the gripping-jaws with which it engages, and provided, also, at its upper edge, in proximity to the arrow-shaped heads, with outwardly-projecting shoulders *n' n'*, substantially as and for the purposes set forth.

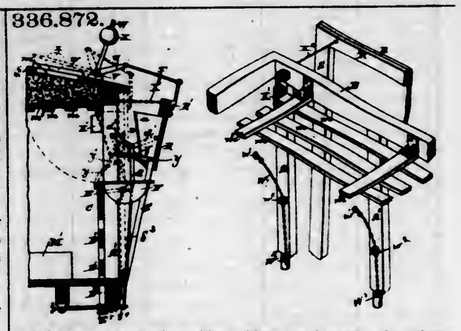
336,872. STOCK-CAR. JOHN W. STREET, Chicago, Ill., assignor of one-half to Sigfried M. Fischer, same place. Filed May 29, 1885. (No model.)

Claim.—1. A stock-car having the upper portions of its side walls attached to hinged bars or uprights which are movably connected to the car-body, substantially as set forth, whereby the upper portion of said body can be expanded or widened, as described.

2. In a stock-car, the combination, with the lower stationary side



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wall fixed permanently in position, with an opening or openings above said stationary wall for the outward passage of animals' heads, of an upper swinging wall held by movable bars supported upon the car at points below the swinging wall, substantially as described.

3. In a stock-car, the combination, with the side wall having an aperture or apertures for the passage of animals' heads, of a door supported and adapted, substantially as set forth, to have both its lower edge and its upper edge move away from the car-side, substantially as described.

4. In a stock-car provided with an aperture or doorway for the outward passage of the animals' heads, the combination of a trough situated entirely outside of the side wall of the car, and a door to close the said aperture or doorway adapted to be moved toward and from the said aperture, and retaining devices, arranged substantially as set forth, to prevent the door from moving entirely away from in front of the aperture, whereby a door or guard is presented to the animals when their heads are passed outward through the said aperture, substantially as set forth.

5. In a stock-car, an aperture or doorway formed in the side wall of the car adapted to permit the outward passage of animals' heads, and a door united to the car, substantially as set forth, whereby it is adapted to move into said aperture to form a part of the side wall and also to move away therefrom, there being, when it is moved away, a free space between the lower edge of the door and the wall of the car, to permit the movements of the animals' heads, and a stop which prevents the door from moving away from in front of the aperture, substantially as set forth.

6. In a stock-car, a doorway or aperture in the side of the car to permit the passage of the animals' heads, a door or gate united by a hinge with the car and adapted to swing away from said doorway or aperture to a distance which is limited, to prevent it from moving away from the horizontal lines of the said door or aperture, and a food-rack secured to the inner side of the door or gate, substantially as set forth.

7. In a stock-car, a side wall formed of uprights A' and slats or rails B', arranged to provide openings for the outward passage of the animals' heads, in combination with vertical bars S, united by hinge-connection with the car, and horizontal bars or boards R, secured to the said vertical bars on lines corresponding to the aforesaid aperture or opening in the side wall, whereby the said vertical bars S and the horizontal bars or boards R, secured thereto, are adapted to swing in to close said aperture and to swing out therefrom, and a holder which prevents the said horizontal bars or boards from moving away from in front of the upper open part of the side wall, substantially as set forth.

8. A stock-car having a side wall formed with a lower slatted or closed portion, vertical studs, and an upper unslatted portion, whereby openings or doorways are left between the studs, and doors or closing devices for the said aperture or doorways, united to the car by hinge-connection at or below the lower parts of the said apertures or doorways and united also by hinge-connection to the car at or above the upper parts of the said apertures or doorways substantially as set forth.

9. A stock-car having an aperture or opening in the side wall for the passage of an animal's head, in combination with a door or closing device having its lower part united by a hinge-connection to the car, and its upper part also united by a hinge-connection with the car, said hinge-connections being arranged, substantially as set forth, to prevent the door or closing device from moving away from in front of the aperture or doorway, substantially as described.

10. The combination, with a stock-car having in the side wall two or more apertures or doorways for the passage of animals' heads, of a door or doors united by a hinge-connection with the car near or below the lower parts of the apertures or doorways, a rock or rotating shaft mounted at or near the top of the car, and flexible connecting devices which unite said shaft at two or more points with the said door or doors, substantially as set forth.

11. The combination, with the stock-car provided with an aperture

or apertures for the outward passage of animals' heads, of a closing device for said aperture or apertures, a weighted rock-shaft, and a flexible connection between the rock-shaft and the closing device, substantially as set forth.

12. In a stock-car having an aperture or opening in the side wall for the outward passage of an animal's head, a water-trough situated entirely outside of the horizontal boards or slats and below said aperture, in combination with a door or gate adapted to close the said aperture and united by a flexible connection with the car, and a retaining device which prevents the door from moving away from in front of the aperture, substantially as set forth.

13. The combination, with a stock-car having a side wall formed with vertical studs, and slats or casing-boards secured to the inner sides of the said studs, of an outward tilting and emptying water-trough mounted at the outer edges of the said studs, whereby the contents of the troughs can be emptied on a vertical line entirely outside of any portion of the side of the car, substantially as set forth.

14. The combination, with the stock-car having an aperture or opening for the outward passage of an animal's head, of an outward tilting and emptying water-trough below the said aperture and mounted upon an axis which is situated upon or inside of the plane of the center of gravity of the trough, whereby the weight of the contents can be utilized to assist in emptying them, substantially as set forth.

15. In a stock-car having an aperture or opening for the outward passage of an animal's head, a tilting water-trough below said aperture adapted to have its outer edge depressed in emptying, and a door or closing device for the aperture flexibly connected with the said water-trough, whereby the latter is operated when the door or closing device is moved, substantially as set forth.

16. The combination, with a tilting water-trough and an outwardly-moving door, of a link flexibly connected with said trough and door, whereby the latter is caused to push and pull the trough, substantially as set forth.

17. The combination, with a tilting water-trough and a movable door, of toggle-arms, one connected to the car and the other to the door, and means uniting the toggle-arms with the water-trough, substantially as set forth.

18. The combination, with the water-trough and the movable door, of the toggle-arms and the link pivoted directly to the trough and connected with the toggle-arms, substantially as set forth.

19. The combination of the tilting water-trough secured to the outside of the car, the door situated above the water-trough, and the supporting-bars secured to the car below the water-trough and arranged to swing in against the side of the car beyond the outer edges of the trough at the ends, substantially as set forth.

20. The combination, with the movable water-trough and a water-pipe connected therewith and extending downward therefrom, of a valve or closing device for said water-pipe situated below the trough, and means for opening said valve or closing device, and adapted to be operated simultaneously therewith, substantially as set forth.

21. The combination, with the car having an aperture and the movable door for closing said aperture, of a water-trough, a water-pipe connected therewith, a valve or closing device which, when open, permits the pipe to be emptied, and means connected with the movable door for operating said valve or closing device, substantially as set forth.

22. The combination, with the water-supply pipe and valve or closing device, whereby the escape of water is permitted from the pipe, of an operating connection, S^p, united with the movable parts of the car, substantially as and for the purposes set forth.

23. In a stock-car, the combination of a trough, a pipe communicating with said trough, said pipe having portions situated in one vertical plane and other portions in another or other vertical planes, a valve seated in one of the lower portions of the pipe, and a spring to hold the valve or closing device in place, the latter being adapted to be thrown out of place when the trough or pipe is to be emptied, substantially as set forth.

24. The combination, with a stock-car, of a trough or troughs secured to the outside of the wall of the car, a supply-pipe situated upon the opposite or inner side of the car-wall, and means, substantially as described, for conveying water from said inside supply-pipe to the outside trough or troughs.

25. The combination, with a stock-car, of a series of tilting water-troughs arranged along the outer side of the car-wall, a main water-supply pipe separate from and independent of the said troughs and situated upon the inside of the car-wall, and branch pipes communicating with the main supply-pipe and also with passages in the ends of the troughs, substantially as set forth.

26. The combination, with a stock-car, of the tilting water-troughs on the outside of the car, the tubular journals or hollow bearings for said troughs, a water-supply pipe separate from and independent of the said bearings or journals of the troughs, and one or more branch pipes connecting the supply-pipe with the tubular journals or bearings, substantially as set forth.

27. The combination, with a stock-car having apertures in the side for the outward passage of animals' heads, and having one or more entrance-doorways extending to the bottom of the car, of water-troughs situated outside of the car and arranged in series, one series on each side of the aforesaid entrance-doorways, and a main supply-pipe separate from and independent of the said troughs and carried down beneath and across the said doorways, whereby the troughs may be moved independently of the said bent or curved main supply-pipe, substantially as set forth.

28. The combination, with a stock-car having a trough or troughs on each side, of a water-supply pipe extending across the ends of the car and connected with the water-troughs on each side, stop-cocks or valves therein, whereby one part of the car can be cut off from the supply independently of the other parts, and means for connecting the end cross-pipes with a water-supply, substantially as set forth.

29. The combination, with a stock-car having doors arranged alternately with respect to the transverse lines of the car, of partitions situated, respectively, opposite the doors, each having the end which is opposite to the door hinged on a vertical axis, whereby it is adapted to swing horizontally, substantially as and for the purposes set forth.

30. The combination, with the partition, of a hinge-connection uniting the partition to the car-body, said hinge-connection having two axes, one axis being vertical and one being horizontal, a lock which prevents the partition from accidentally moving around the vertical axis, and a second lock which prevents it from moving around the horizontal axis after it has been adjusted, substantially as set forth.

31. The combination, with the partition, of a horizontal guide, a support for the partition secured loosely to said guide, whereby it can be moved longitudinally, a perforated board or bar, and a pin adapted to hold the support in one of several positions, substantially as described.

32. The combination, with the partition, of a horizontal guide, a support for the partition hinged to said guide, whereby it is adapted to swing vertically, and the pin or catch secured to the support and adapted to be fastened at one or another of several points longitudinally of the car, substantially as described.

33. The combination, with a stock-car, of hinged interior casings, *m*, adapted to be carried near the roof when the car is laden with stock, and to be swung downwardly to lie against and re-enforce the upper part of the side walls when the car is used for other freight, substantially as set forth.

34. The combination, with a stock-car, of interior hinged door-re-enforces extending to the bottom of the doorway and having the lower part thereof permanently closed, as at *m'*, and the upper part open for the insertion of freight, substantially as set forth.

35. In a compartment stock-car having openings upon both sides for the outward passing of the animals' heads, the combination of the horizontally-swinging transverse partitions, and water-troughs on both sides of the car and situated entirely outside thereof, substantially as set forth.

36. In a compartment stock-car, the combination of the horizontally-swinging transverse partitions forming compartments wherein each animal can face in either direction, a holder or holders for hay arranged along both sides of the car, openings through the sides of the car, and water-troughs upon both sides of the car and situated outside thereof, substantially as set forth.

37. In a compartment stock-car, the combination of one or more transverse hinged horizontally-swinging partitions or gates, whereby the car is divided into compartments, in which each animal can stand in either of two or more positions, a secondary roof below the top roof for holding hay over the animals' heads, openings in the sides of the car, and the watering-troughs attached to the outsides of the car and situated entirely outside of the inclosed space within the car-body, substantially as described.

38. The combination, with a stock-car having a door upon one side and another door on the other side of the car situated on transverse lines other than those of the first aforesaid door, of a partition hinged on a vertical axis opposite or nearly opposite to the first aforesaid door and a second partition similarly hinged opposite or nearly opposite to the second aforesaid door, substantially as set forth.

39. The combination, with a stock-car having a door on each side, said doors being on different lines transversely of the car, of horizontally-swinging hinged partitions respectively opposite or nearly opposite to the said doors and arranged substantially as set forth, whereby the swinging ends are adapted to overlap and to impinge one upon the other, substantially as set forth.

40. The herein-described method of loading live cattle upon a stock-car, said method consisting in first driving a limited number of cattle into the car at a point near one end thereof, then forcing them by a horizontally-swinging gate or barrier into a compartment at the other end of the car, subsequently admitting another limited number to the car and forcing them by another horizontally-swinging gate or barrier into a compartment at the opposite end of the car, and finally filling the central portion of the body of the car, substantially as set forth.

41. In a stock-car, the combination of horizontally-swinging transverse partitions arranged substantially as set forth, whereby several compartments are provided, in which each animal can face in either direction, with hay racks or holders along both sides of the car, and water-troughs upon both sides of the car and outside thereof, the car being provided with openings upon each side for the outward passage of the animals' heads, substantially as set forth.

42. In a stock-car for cattle, the combination of the studs, the permanent wall-slats secured to the insides of the studs and extending part way up toward the top, there being openings in the sides of the car for the outward passage of animals' heads, a series of tilting water-troughs mounted upon axes and constructed substantially as set forth, whereby the inner edges of the troughs are prevented from passing at any time inside of the line of the wall-slats, and a stop which prevents the outer edges of said trough from rocking above the position occupied when the animals are drinking, said outer edges being free to be depressed when the troughs are to be emptied, substantially as described.

43. The combination, with a stock-car, of tilting water-troughs, supply-pipes therefor, the rock-shaft or rotating shaft, the drainage-cocks, and operating mechanism connecting the rock-shaft or rotating shaft with both the troughs and the drainage-cocks, substantially as set forth.

44. The combination, with a stock-car, of the tilting water-troughs, the drainage-cocks, the doors or closing shutters, and the operating mechanism for said troughs, cocks, and doors or shutters, and the rock-shaft or rotating shaft adapted to operate all of said parts simultaneously, substantially as set forth.

45. The combination, with a stock-car for cattle having vertical studs, openings in the sides between said studs for the outward passage of animals' heads, and permanent wall-slats below the said openings, of a series of water-troughs respectively situated in the spaces between the studs and mounted on journals secured to the outer faces of the studs below said openings, said troughs and journals being constructed and arranged substantially as set forth, whereby the inner edges of the troughs are at all times prevented from passing inside of the studs and the outer edges are free to be depressed to empty the contents of the troughs outwardly, substantially as described.

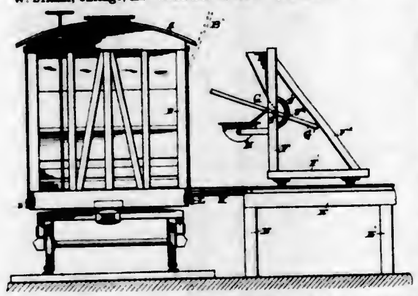
46. The combination, with a stock-car having studs outside, of a trough situated in the space between two of said studs and mounted on an axis above the bottom and between the inner and outer edges, substantially as set forth.

47. The combination, with the stock-car having openings or apertures for the outward passage of animals' heads, of a water-trough on the outside of the car, a door or closing device for the aforesaid apertures or openings, a movable cover for the said water-trough, and means of connecting the cover with the said door or closing device, whereby it is moved by the latter, substantially as set forth.

48. In a stock-car provided with an aperture or opening in the side wall for the outward passage of animals' heads, the combination, with a door adapted to move toward and from the said aperture or opening, of a chain passing over a pulley, and means, substantially as described, attached to the chain for counterbalancing the door, as set forth.

49. In a stock-car provided with an aperture or opening in the side wall for the outward passage of animals' heads, the combination of a water-trough and a counterbalanced cover for said trough adapted to be moved into such position as to lie opposite the open side of the trough when the opening in the car-wall is closed and to be moved away from the trough when the animals are to have access thereto, substantially as set forth.

336,873. APPARATUS FOR FEEDING STOCK ON CARS. JOHN W. STREET, Chicago, Ill. Filed Dec. 2, 1885. (No model.)



Claim.—1. The combination, with the stock-car having an opening in the side wall for the outward passage of animals' heads, and devices, substantially as described, for feeding or watering, of a guard, G, adapted to be situated directly in front of said opening to prevent the escape of the animals, substantially as set forth.

2. The combination, with a stock-car having an opening in the side wall for the outward passage of the animals' heads, and means, substantially as described, for feeding or watering, of a guard, G, supported from the ground independently of the car and situated directly in front of said opening, substantially as and for the purposes set forth.

3. The combination, with a stock-car constructed, substantially as set forth, to permit the animals to be fed or watered outside of the car, of a guard, G, movable toward and from the car, and adapted to close the paths of escape for the animals' heads, substantially as set forth.

4. The combination, with a stock-car having an opening in the sides of the car for the animals' heads, of a guard situated directly in front of said aperture, a support or frame for said guard, and the wheels or rollers, substantially as set forth.

5. The combination, with the stock-car adapted to permit the outward passage of the animals' heads, of a guard, G, arranged substantially as set forth, whereby it can be inclined to the horizon, as described.

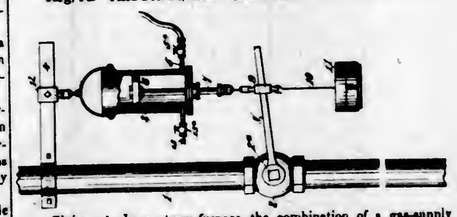
6. The combination, with a stock-car adapted to permit the outward passage of animals' heads, and a stationary platform by the side of the car, of a movable truck mounted upon said platform and provided with troughs or racks secured thereto, substantially as set forth.

7. In an apparatus for unloading and feeding or watering stock, the combination, with the car and the platform, of a gang-plank supported upon the platform substantially as set forth, and supported upon the car at points outside of the doorway, substantially as set forth.

8. In an apparatus for unloading and watering or feeding stock, the combination, with the car and the platform, of the gang-plank hinged to the platform and adapted to be supported upon the car at points outside of the door, substantially as set forth.

9. In an apparatus for unloading and feeding or watering stock, the combination, with the car and the platform, of a gang-plank hinged to the platform and provided with the hooks *k* to permit its engaging with the car, substantially as described.

336,874. FLUID-PRESSURE REGULATOR. STEPHEN STRONG, Pittsburg, Pa. Filed Dec. 14, 1885. (No model.)



Claim.—1. In a steam-furnace, the combination of a gas-supply pipe having a cut-off valve, a steam-boiler, a cylinder supplied with steam from said boiler, a piston moving in said cylinder, a lever mounted on the valve-stem and connected with the piston-rod beneath the cylinder, and a weight suspended from said piston-rod, substantially as described.

2. In a steam-furnace, the combination, with a gas-supply pipe having a cut-off valve and a lever mounted on the stem thereof, of a cylinder having a piston connected with said lever, a pipe connected with said cylinder and with the steam-space of the boiler, a weight attached to the lever and counteracting the action of the piston, and an escape-pipe communicating with the cylinder beneath its piston, substantially as described.

3. In a steam-furnace, the combination, with a gas-supply pipe, of a cut-off valve located therein, a lever mounted on the stem of said valve, a cylinder supplied with live steam from the boiler and having a piston connected with the valve-lever, and a weight connected with and counteracting the piston, the cylinder and its connections being adjustable toward and from the gas-pipe, substantially as described.

4. In a steam-furnace, the combination, with a gas-supply pipe, of a cut-off valve located therein, a vertical cylinder supplied with live steam from the boiler beneath its piston, a jointed lever having an arm rigidly connected with the stem of the supply-valve and the other pivoted to a prolongation of the piston-rod, and a weight attached to the latter and counteracting the steam-pressure, substantially as described.

336,875. CAR-COUPLING. JOHN A. TURLEY, Cog Hill, Texas. Filed Sept. 19, 1885. (No model.)



Claim.—1. The combination, with a pin-supporting slide having an upwardly-projecting lip, of a draw-head having a recess in its face for the reception of the lip, and having a recess or niche extending be-

yond the upper edge of the recess for the insertion of a pin for prying the lip out of the recess, as and for the purpose shown and set forth.

2. The combination of a draw-head having the usual recess and the usual perforations for the pin, a slide sliding in the recess and having a horizontal portion and a downwardly-inclined portion, and having an upwardly-projecting lip at its outer end and perforations in the horizontal portion and in the inclined portion, and a common coupling pin and link, as and for the purpose shown and set forth.

3. The combination of a draw-head having the usual recess and perforation, and having a recess in its face formed with a niche or groove extending beyond its upper edge, a slide in the recess, consisting of a horizontal portion and a downwardly-inclined portion having a downwardly-bent lip at its inner end, and of an upwardly-bent double portion resting in the recess, the inclined and the horizontal portion having perforations registering when the slide is in with the perforations in the draw-head, a pin or lug projecting from the bottom of the recess in the draw-head and limiting the play of the slide bearing against the downwardly-bent lip, and a common coupling link and pin, as and for the purpose shown and set forth.

4. A pin-supporting slide for a common draw-head, consisting of a plate comprising the following elements: a horizontal perforated upper portion, a doubled part at one end of and at right angles to said horizontal portion, a downwardly-inclined part having an aperture registering with the perforation in the upper horizontal part, and a downwardly-projecting lip at the outer end of the inclined part of the plate, substantially as and for the purpose shown and set forth.

336,876. TELEPHONE-TRANSMITTER. WILLIAM C. TURNBULL, Baltimore, Md. Filed July 1, 1885. (No model.)



Claim.—1. The combination of the diaphragm, an elongated electrode-bar having a curved or circular face secured upon the diaphragm and a series of pivoted freely-swinging pendent electrodes having curved or circular contact-faces, and a pivot-bar supported upon the diaphragm which passes through the upper ends of said electrodes, and on which they have their pivotal bearing, said pendent electrodes resting by gravity upon the transverse electrode secured on the diaphragm, substantially as and for the purpose set forth.

2. The combination of the diaphragm, the series of pivoted pendent gravity-electrodes carried by the diaphragm, the opposite electrode or bar secured upon the face of the diaphragm, and adjusting mechanism for simultaneously changing the position of the pivots of all of the pendent electrodes, whereby the force of contact between the opposing electrodes is varied.

3. The combination of the diaphragm, the pivoted gravity-electrode carried by the diaphragm, the opposite electrode secured upon the diaphragm, and adjusting mechanism for changing the position of the pivot of the gravity-electrode, whereby the force of contact between the opposing electrodes is varied.

4. The combination of a rectangular diaphragm, a support in which the diphragm is rigidly connected at its upper edge only and is left free to vibrate at its other edges, one or more pendent gravity-electrodes pivoted upon a support carried by the diaphragm near its upper edge, and an opposite electrode or bar upon which the pendent electrodes rest, secured upon the diaphragm below the support in which the pendent electrodes are mounted.

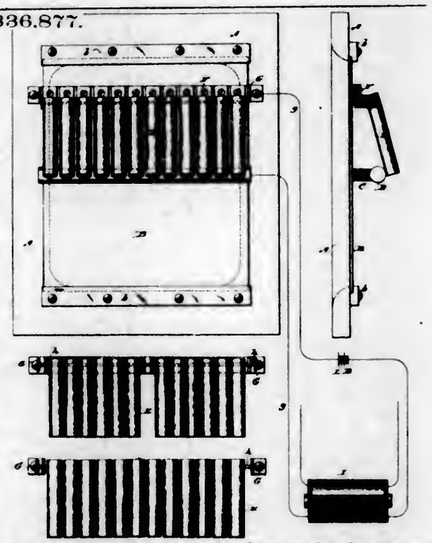
336,877. TELEPHONE-TRANSMITTER. WILLIAM C. TURNBULL, Baltimore, Md. Filed Jan. 23, 1886. (No model.)

Claim.—1. The combination of the diaphragm, the electrode carried thereby, the pivoted pendent carbon electrode or electrodes which make contact with the electrode of the diaphragm, and a carbon pivot or bearing on which said carbon electrodes are mounted.

2. The combination, in a telephone-transmitter, of a swinging, hinged, or pivoted carbon electrode and a carbon pin or bearing on which it is hinged.

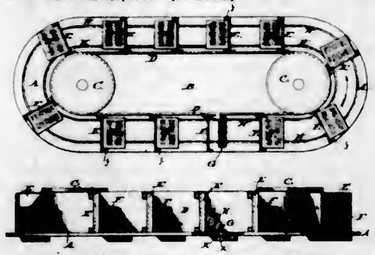
3. The combination of the diaphragm, a series of pivoted pendent swinging electrodes formed of cylindrical pieces of carbon which are bored or perforated at their ends to form their bearings, the carbon rod

336,877.



on which said electrodes are pivoted, and an opposing electrode upon which they rest by gravity.

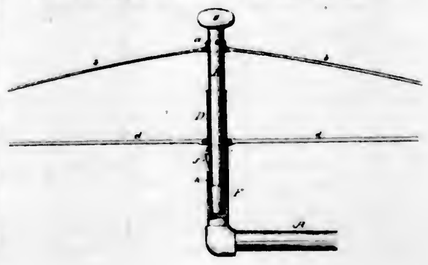
336,878. MACHINE FOR GATHERING THE FOLDED SHEETS OR SIGNATURES OF A BOOK FOR BINDING. FRANCIS WOOD, Brooklyn, N. Y. Filed June 15, 1885. (No model.)



Claim.—1. The combination, with a supporting table or way, of a series of propelling devices, substantially as described, moving longitudinally over the same, and of a series of blades whose front edges project up to and slightly above its level, each in position to engage and divert under it the lowermost sheet of paper in a pile sliding over the table or way, substantially in the manner and for the purpose herein set forth.

2. The combination, with an extended or endless table or way for the support of the loose folded sheets or signatures of a book, of a series of blades or gathering-plates mounted transversely to the length of the table, with their thin front edges projecting slightly above it, and of an endless belt or chain moving longitudinally parallel with the table, and carrying a series of propelling plates or fingers sliding over the same, substantially in the manner and for the purpose herein set forth.

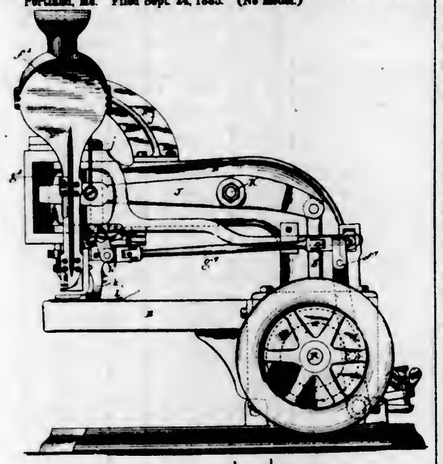
336,879. UMBRELLA FOR CHILDREN'S CARRIAGES. JOSEPH WRIGHT, Philadelphia, Pa. Filed Aug. 10, 1885. (No model.)

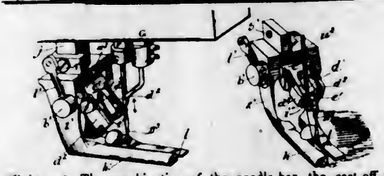


Claim.—1. The combination of the umbrella with a standard having an upwardly-projecting end constructed for the reception of the stick or runner of the umbrella, and a spring-retainer whereby the removal of the latter is prevented, all substantially as set forth.

2. The combination of the umbrella, the stick of which has a spring-retainer, with the standard having a socket constructed for the reception of the lower end of said stick, and slotted for the reception of the spring-retainer carried thereby, all substantially as specified.

336,880. MACHINE FOR SEWING ON BUTTONS. JOSEPH MATHISON, Lynn, Mass., assignor to the Standard Button Fastening Company, Portland, Me. Filed Sept. 24, 1885. (No model.)





Claim.—1. The combination of the needle-bar, its carrier, means, substantially as described, for varying the throw of the carrier to regulate the initial positions of the needle and the length of its feed movement, the oscillatory button-raceway, and mechanism to operate said raceway, and means, substantially as described, whereby the initial position of the raceway may be varied to correspond with the adjustment of the needle, as set forth.

8. In a button-sewing machine, the combination of the button-supplying mechanism, the needle, the cast-off, and their operating mechanism, the loop-spreading devices and their supporting and operating mechanism, the work-supporting arm, the oscillating thread-carrier located in said arm, and the tension-spring, also located in said arm below the work, and serving to keep the thread taut between the thread-carrier and the work, as set forth.

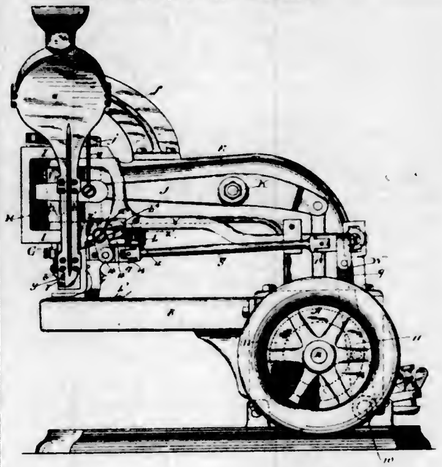
9. The combination, with the presser-foot, of the loop-spreading arm pivoted to the presser-foot, and having the V-shaped triangular hook e' rigidly attached to its swinging end, said hook being formed to enter and spread a loop, as described, and mechanism for oscillating said arm.

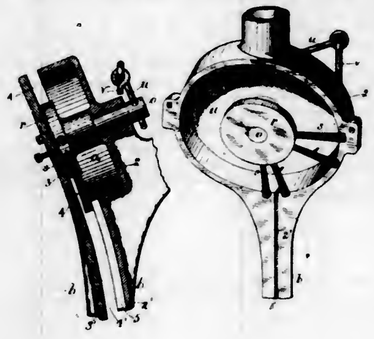
10. The combination of the presser-foot, the loop-spreading arm having a loop-engaging hook rigidly attached to its swinging end, means for oscillating said arm, and the spring-pressed fingers d^2 d^2, pivoted to said arm and provided with backwardly-projecting hooks, as set forth.

11. The combination, with the presser-foot, of the loop-spreading arm having the V-shaped or triangular plate or hook e' and the needle-receiving slot d', and mechanism for oscillating said arm, as set forth.

12. The combination, with the loop throwing or spreading arm having the hook e', and mechanism for oscillating the same, of the plate i' at the rear side of said arm, as and for the purpose specified.

336,881. MACHINE FOR SEWING ON BUTTONS. JOSEPH MATHISON, Lynn, Mass., assignor to the Standard Button Fastening Company, Portland, Me. Filed Sept. 24, 1885. (No model.)





Claim.—1. The combination of the needle-bar, the cast-off bar, means for moving said bars laterally, means, substantially as described, whereby the cast-off bar is positively moved by and with the needle-bar during parts of the vertical movements of the latter, the spring-finger on the needle-bar bearing on the cast-off bar, the shoulder whereby the cast-off is supported above the work during a part of the operation and afterward allowed to be depressed by the spring-finger, and the spring-catch, whereby the cast-off bar is briefly supported in a raised position, as set forth.

2. The combination of the presser-foot, the loop-throwing device composed of the slotted arm c', journaled in the presser-foot, and provided with the hook e', the spring-pressed hooked arms d^2 d^2, pivoted to the arm c', and means, substantially as described, for oscillating said loop-throwing device, as set forth.

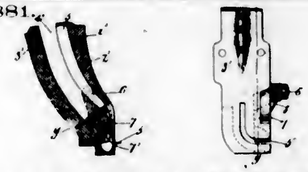
3. In a button-sewing machine, the combination of a work-supporting arm, loop or stitch forming mechanism, substantially as described, located at one end of said arm, button-supplying mechanism, substantially as described, and a gum-cup located in said arm in close proximity to the loop or stitch forming mechanism, whereby the gum is prevented from drying on the thread between the cup and the needle, as set forth.

4. In a button-sewing machine, the combination of the loop-forming devices, including the oscillating loop-spreading devices, with the oscillating thread guide or take-up, whereby the second loop is tightened after it has been thrown over the button-head by the loop-spreader, and the intermittently-operating thread-clamp, whereby the thread is grasped and held while the thread-guide, acting as a take-up, is drawing in said loop, as set forth.

5. In a button-sewing machine, the combination, with the button-supplying mechanism, and the loop or stitch forming mechanism, including the loop-spreading devices, of the presser-foot having the button-arresting elevations, whereby each button is supported while a loop is being thrown over its head, as set forth.

6. The combination of the needle and cast-off bars, and means, substantially as described, for reciprocating them vertically, the carrier H, supporting said bars and provided with the arm V, the pivoted lever W, connected to said arm V and provided with the arm B^4, the connected

336,881.



Claim.—1. In a button-fastening machine, the combination of a work-support button-fastening mechanism, substantially as described, a fixed arm above the work-support, a button reservoir and raceway, a joint or pivotal connection between said fixed arm and the reservoir and raceway over the fastening mechanism, and mechanism, substantially as described, whereby said reservoir and raceway are oscillated, as set forth.

2. In a button-fastening machine, the combination of a work-support button-fastening mechanism, substantially as described, a fixed arm above the work-support, a button reservoir and raceway connected to said arm by a double joint comprising two pivots at right angles to each other, the reservoir and raceway being adapted to oscillate on either or both pivots, and mechanism, substantially as described, whereby said reservoir and raceway are oscillated, as set forth.

3. The combination of the reservoir and raceway connected to a fixed support by a double joint, the jointed connecting-rod secured to said raceway, means, substantially as described, for reciprocating said rod and thus oscillating the raceway, and the two-armed lever pivoted to a fixed support, one arm of said lever bearing against a projection on the connecting-rod, and the other on an attachment to the raceway, as set forth.

4. The reservoir and raceway composed of the body 2 and side piece, 2', formed in one piece, said side piece having a button-eye-guiding slot, 5, and the back plate, 3, and side piece, 3', formed in one piece and separated from the body 2 and side piece, 2', by a continuous slot or opening, 4 4', as set forth.

5. The combination of the raceway connected by a double joint to a fixed support, the loop-forming mechanism, the work-support, the two-armed lever L, the spring 16, and the jointed connecting-rod, and means for reciprocating it, one arm of said lever bearing against an attachment on the rod, and the other against an attachment on the raceway, as set forth.

6. The raceway having the button head and eye guiding slots combined with the rigid or inelastic gate 7, pivoted to the raceway and provided with a spring, 8, whereby it is pressed against a rigid part of the raceway and caused to stand normally across the lower end of the button-head-guiding slot, and with a socket, 7', formed to fit a button-head, the arrangement being such that the heads of the buttons pass into the socket 7' and are positively held thereby in position to receive the needle, as set forth.

7. The combination of the raceway having the button head and eye guiding slots, the rigid or inelastic gate pivoted to the raceway and provided with the socket 7', and with the spring 8, which normally holds the gate with its socket in position to receive the button-heads as they pass down said slot, and the adjustable screw or rigid stop y, which limits the closing movement of the gate and thereby enables the socket to receive buttons of different sizes without interfering with the opening movement of the gate, as set forth.

8. The raceway and reservoir composed of the separate front and back parts combined with the screws, whereby said parts are connected, and the bearing-screws, whereby the width of the button-guiding space between said parts may be raised, as set forth.

9. The combination of the reservoir and raceway mounted to oscillate, as described, a connecting-rod pivotally secured to said raceway, mechanism whereby said rod is reciprocated and the raceway thereby oscillated, and means, substantially as described, whereby the distance between the raceway and the end of the connecting-rod that is connected to the operating mechanism of said rod may be varied, as set forth.

10. The combination of the reservoir and raceway mounted to oscillate as described, and provided with the slotted arm, the connecting-rod adjustably secured to said slotted arm, and means, substantially as described, for operating said connecting-rod, as set forth.

336,882. TOBOGGAN. JOHN R. MCLAREN, Jr., Montreal, Quebec, Canada. Filed Jan. 19, 1886. (No model.) Patented in Canada Dec. 22, 1885, No. 23,039.



336,882.

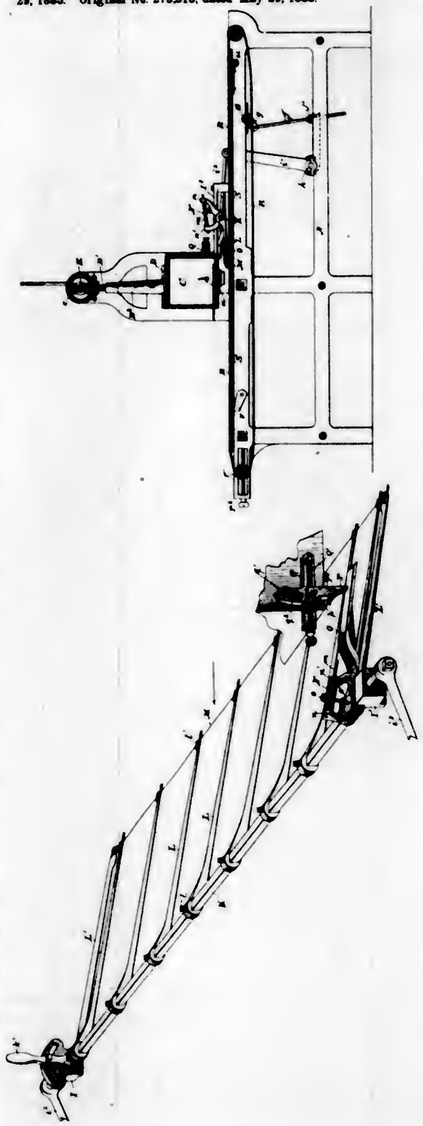


Claim.—1. A means for securing together the parts of a toboggan, consisting of a bolt passing up through the longitudinal and cross bar, and having a threaded end, on which is secured the neck of an eye, carrying the side rod, all substantially as herein set forth.

2. The combination, with the wire or cord F, of the casting D, with slot D' and side rod, C, all as herein described.

REISSUES.

10,691. CAKE, JUMBLE, AND SNAP MACHINE. MARTIN DE TAMBLE, Chicago, Ill., assignor to Roth, McMahon & Co., same place. Filed May 29, 1885. Original No. 278,318, dated May 29, 1883.



Claim.—1. In a soft-dough machine, the combination, with the follower, and devices, substantially as described, for moving the same, of the dough-box, the traveling apron, the single wire knife, and the arms L L', adjustably secured to and projecting from the cross-bar K to a point under the dough-box, and mechanism, substantially as described, for reciprocating the knife, and devices, as set forth, for giving the knife a vertical movement at or near the end of each horizontal movement, substantially as described, and for the purpose set forth.

2. In combination with the frame of a soft-dough machine, having guiding-ways and bearings fitted to said ways, one of said bearings being provided with a projection, n', of a knife-frame pivoted on said bearings and provided with arm n and cam-arm O, a spring interposed between the projection n' and arm n, and dog P P', rigidly attached to the frame of the machine in the line of movement of cam-arm O, substantially as and for the purpose set forth.

3. The frame of a soft-dough machine, provided with guiding-ways and bearings fitted to such ways, a wire-knife frame journaled in such bearings, and a spring connecting such wire-knife frame with the bearings, substantially as described, whereby the knife is kept in an elevated position unless positively depressed, substantially as and for the purpose set forth.

4. The frame of a soft-dough machine, provided with guiding-ways and bearings fitted to such ways, a wire-knife frame journaled in such bearings, and a spring connecting such wire-knife frame with the bearings, substantially as described, whereby the knife is kept in an elevated position unless positively depressed, and devices, substantially as described, for depressing the said knife-frame and knife at or near the beginning of its retrograde movement, and for releasing it on its forward movement, as set forth.

5. In a soft-dough machine, the combination, with the sliding pivoted knife-frame, of a pivoted dog for throwing the knife-frame downward on its return movement, mechanism for adjusting the dog both horizontally and vertically, and mechanism for throwing the knife-frame upwardly on its forward movement, substantially as described and shown.

6. In a soft-dough machine, the combination, with the sliding pivoted knife-frame, of the dog P, pivoted to the block P', the spring *p*, for keeping such dog in a vertical position, the slotted adjustable bar Q, and screw Q', substantially as described and shown.

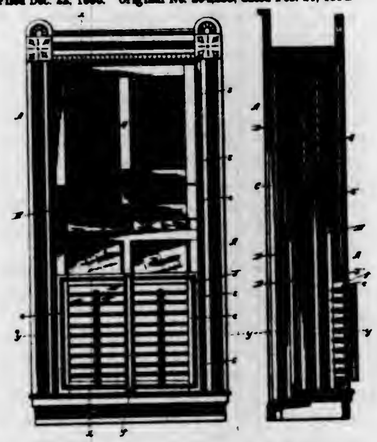
7. In a soft-dough machine, the horizontally-sliding cross-bar K, carrying the knife-arms, in combination with a vertically-adjustable bearing at one end thereof, substantially as and for the purpose set forth.

8. In a soft-dough machine, the combination, with the sliding blocks I I', of the cross-bar K, carrying the knife-arms and journaled in such sliding blocks, and turning eccentric bearing *k* in one of such blocks, substantially as described and shown.

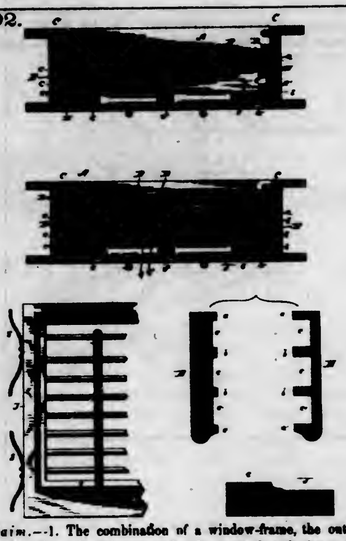
9. In a soft-dough machine, the combination, with a dough-box provided with cap-plates having differently-formed cups, of the knife-arms, an annular cross-bar upon which the arms are mounted, and screws for securing the arms adjustably to the cross-bar, substantially as described and shown.

10. In a soft-dough machine, the combination of a stationary frame, a sliding frame on said stationary frame, a wire knife extending crosswise of the machine and confined at its ends to the sliding frame, and a finger or fingers secured to the sliding frame for supporting such wire at its central or free part and pressing it against the bottoms of the dough-cups at every point, substantially as described.

10,692. WINDOW-BLIND. ALEXANDER H. HILL, Oskaloosa, Iowa. Filed Dec. 22, 1885. Original No. 294,223, dated Feb. 26, 1884.



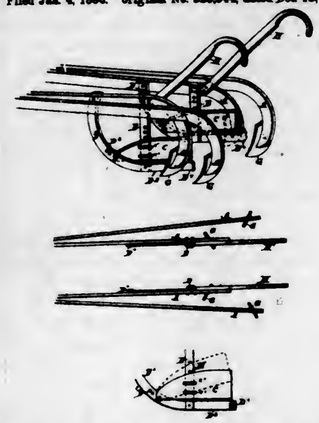
10,692.



Claim.—1. The combination of a window-frame, the outer and parting stops, the sashes, the grooved strips secured to the inner sides of the frame and forming the stops or beads for the inner sash, and a series of blinds mounted to slide in said strips, one of said blinds being equipped with pivoted slats, as set forth.

2. The blind J, having the stiles provided with the beads *e* and center strip, *f*, in combination with the slats pivoted in said beads and center strip, as set forth.

10,693. CORN KNIFE AND SHIELD. GEORGE H. SAWYER, Lamoille, Ill. Filed Jan. 4, 1886. Original No. 333,344, dated Oct. 13, 1885.



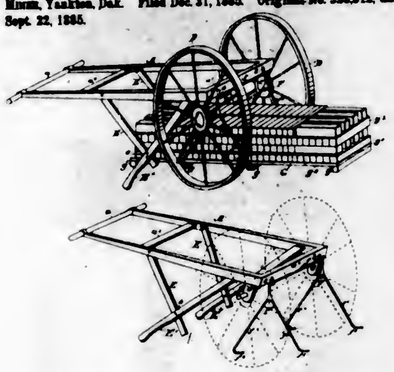
Claim.—1. In combination with a corn-cultivator having shovels G, a long narrow knife or blade, D, set vertically on its cutting-edge throughout its entire operating surface, and provided with the rear lateral curve, D^4, and suitably attached next the corn to such cultivator, so as to be drawn lengthwise parallel with the line of movement of the machine, substantially as shown, and for the purpose described.

2. In combination with a corn-cultivator having shovels G, the long narrow knife D, set vertically on its edge throughout its entire contact with the ground, and provided with the lateral curve D^4, substantially as shown, and for the purpose described.

3. In combination with a corn-cultivator having shovels G, the long narrow knife D, set vertically on its cutting-edge throughout its entire contact with the ground, and provided with the lateral curve D^4, and the shield C, adjustable vertically in relation to said knife, substantially as shown, and for the purpose described.

4. The combination of the knife, the shield pivoted thereto, and the standard provided with a series of bolt-holes, whereby the shield may be adjusted to any desired angle, as and for the purposes specified.

10,694. PORTABLE BRICK-HACK. MALCOM WALKER and EPHRAIM MINER, Yankton, Dak. Filed Dec. 31, 1885. Original No. 326,812, dated Sept. 22, 1885.



Claim.—1. In a brick-carrying device, the combination of the main frame and the eccentric crank-arm with the wheels and suitable supports and supporting-frame for the hack, as set forth.

2. In a brick-carrying device, the combination of the main frame, the wheels, and crank-arms with the hooks *b b* at the front end of the frame, and frame F, having the hooked ends, as set forth.

3. In a brick-carrying device, the frame, the cross-bars *a* and *a'*, the hooks *b b* on the latter forward of the axle-supports or eccentric arms, and the hooked rods F F with the arms *f' f'*, as set forth.

4. In a brick-carrying device, the main frame having side braces or supports, E E', the latter serving the double purpose of a brace and a supplemental handle, the crank-axles C, the hooks *b b*, and the hooked rods F F, all combined in the manner and for the purposes set forth.

5. The brick-hack G, consisting of the longitudinal boards or pieces *g²*, end pieces, *g'*, and cross-pieces *g*, about equidistant from the center and having projecting arms, substantially as and for the purposes described.

6. A brick-hack, substantially as described, having a longitudinal floor and supporting end pieces and provided with side projections, whereby it can be lifted and carried, substantially as described.

7. The combination of the carriage A, as described, and frame F with the hack G, substantially in the manner and for the purposes set forth.

PHOTO-LITH NORRIS PETERS

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

RAILWAY REGISTER MANUFACTURING COMPANY *v.* BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY. SAME *v.* CENTRAL PARK, NORTH AND EAST RIVERS RAILROAD COMPANY.

Decided February 5, 1886.

1. Rehearing of causes before heard and decided. (22 Fed. Rep., 656.)
2. "The defense of abandonment to the public is not confined to reissued patents, but is given generally by the statute to all patents."
3. "The authority to grant a patent appears to depend on an application made and pending for that purpose."
4. Where a division is made, what is not reserved out of an original application to go into a division is left in original application, and if disposed of then, is not left pending anywhere.
5. "Decree that claims 12 to 17 of the Ransom patent are invalid; that the Benton patent is valid and infringed by the defendant."

Mr. Edward N. Dickerson, Jr., for the orator.

Mr. John Dane, Jr., and *Mr. John F. Dillon* for the defendants.

WHEELER, *J.*:

These causes have been once before heard and decided. (22 Fed. Rep., 656.) They have been opened for further proof and now heard again. They are brought upon patents for inventions No. 265,145, granted to Newman A. Ransom, assignor to the orator, for a fare register and recorder, for alleged infringement of claims 12 to 17; and No. 260,526, dated July 4, 1882, granted to John B. Benton, assignor to the orator, for a fare-register, for alleged infringement of all its claims. Ransom made application for a patent on this fare register and recorder with thirty-one claims, July 12, 1879. These claims were all rejected but one on references to prior patents and publications. The specification was amended with eleven new claims, the fifth, sixth, and seventh of which covered means described in the specification for setting partial or trip registering wheels back to zero, a detent or holder for locking a zero-gathering and window-covering plate from forward rotation, and a combination, with a partial or trip register, of a turning-plate for setting it to zero, and mechanism for indicating the number of times it was set at zero. The first four of these claims were rejected on a reference to a prior patent. The fifth, sixth, and seventh were found to interfere with a pending application of Benton, and further action was suspended to await the result of the interference. Thereupon Ransom filed a disclaimer of those things which have been mentioned as covered by the fifth, sixth, and seventh claims, specifying them particularly, and stating that he did not claim them in that application, as such subject-matter were described and claimed in another pending application filed by him August 30, 1879, and designated as Division B, which was filed, specifying and claiming those things on that day. The remainder of the original application was continued as Division A, which resulted in Patent No. 226,626, dated April 20, 1880, having five claims, the first of which was for a combination, in a fare-register, of a trip-register capable of being reset at zero, a total register moving forward concurrently with the trip-register, and mechanism independent of the total register for indicating the number of times the trip-register was reset and the number of fares registered between the times of resetting, and the other four of which were the last four of the eleven remaining after the rejection of the first four, and the transfer of the subjects of the fifth, sixth, and seventh to Division B. This patent had on its face a disclaimer of the things transferred to Division B, specifying them as made the subject-matter of that application. An interference was declared between Division B and Benton's application July 15, 1880, on which priority of invention was awarded to Benton November 13, 1880. Reuben M. Rose made application for a patent for a fare register and recorder February 12, 1881. Ransom amended the specification of Division B March 23, 1881. Patent No. 244,314 was granted to Rose dated July 12, 1881.

The claims of the Ransom patent now in controversy are for various combinations of a trip-register, independent resetter, graduated paper dial, yielding backing for the dial, marker, yielding marking-arm, alarm-actuators, and mechanism whereby the dial will show the aggregate number of fares, and were made by amendment to Division B September 27, 1881, having never been made before. The patent was granted September 26, 1882. The defendants' machines, so far as they may infringe these claims, were made under the Rose patent. Question is now made as to the validity of these five claims, and it is different from any question considered in the cases before. The specific devices which were made parts of the subjects-matter transferred to Division B do not enter into any of the combinations of these claims. Neither is the combination which was a part of those subjects-matter the same as or similar to either of these combinations. The trip-register was an element of that combination and is an element of three of these. It is also an element in the combination of the first claim of Patent No. 226,626, issued upon Division A. All the elements of the combinations of these five claims enter into the structure of the machine which was the subject of the original application, and these combinations were parts of the invention covered by that application. They were not

transferred to Division B, and did not arise upon nor belong with the subjects-matter of that division. What was not transferred to Division B remained in Division A. These combinations arose upon and belonged with the things which so remained. They were not separable from the things which remained in the old application. The things which went to Division B were separable from them and did not take them into that division. When the Patent No. 226,626 was granted upon Division A, what was left of that division not covered by the claims of that patent was in the same situation as if Division B had never been separated from Division A. There was nothing transferred at that time from Division A to Division B. The former went to issue as an application by itself. The application of Rose was not made until between nine and ten months after that patent was granted, and about three months after the interference between Division B and Benton's application had been decided in favor of Benton; and it was made over a month before the specifications of Division B were amended after the decision on the interference, and more than seven months before the claims under consideration were made. Ransom had no claims pending at that time. The field of invention outside of the claims of Ransom's patent was apparently as open to Rose as to Ransom, except so far as Ransom's application might show that Rose was not the first inventor. Rose's patent and the infringement are entirely outside of Division B as it stood at that time. If Rose's patent is for anything outside of the specifications of Division A, he is as to that, so far as these cases show, the original and first inventor of that, and his patent is valid to that extent so far as appears, and a good justification for so much of the infringement of the orator's patent, if there is such infringement of that. This patent is not valid against the patent of Rose unless Ransom could have a valid patent for these combinations, as shown in Division A, not covered by the claims of that patent, and have it upon the application in Division B. The question whether he could or not is not like that as to inventions of distinct parts of machines described in applications for inventions of other parts, and not claimed. (*Battin* v. *Taggart*, 17 How., 74; *Graham* v. *McCormick*, 11 Fed. Rep., 859; *Vermont Farm Machine Co.* v. *Marble*, 19 Fed. Rep., 307.) It is a question as to an integral part of an invention described and made the subject of claims in other forms. The applicant said in the amendment after Rose's application:

> This division is aimed to cover certain new combinations not claimed in my said patent of April 20, 1880, nor omitted therefrom by inadvertence, accident, or mistake.

The elements of the combinations were covered by claims in other forms, and those claims were parts of the same invention that would include the combinations. When these claims were made on Division B, the Patent Office suggested that the proper course would be to apply for a reissue of the patent granted on Division A. The want of inadvertence, accident, or mistake was set up as an answer to that suggestion, because it would leave no ground for a reissue. It is understood that one reason why a patentee cannot have a valid reissue to cover parts of his invention described and not claimed when the omission to make the claim is not caused by inadvertence, accident, or mistake is because the parts of the invention not claimed are by this course abandoned to the public, and the right to claim them is gone. (*Miller* v. *Brass Co.*, 104 U. S., 350; *James* v. *Campbell*, Ibid., 356; *Mahn* v. *Harwood*, 112 U. S., 354; *Coon* v. *Wilson*, 113 U. S., 268.) These claims would appear to have been a proper subject for a reissue of the patent granted on Division A if Ransom was entitled to them when he made them on Division B; and if he was not entitled to them on account of the abandonment shown by his course on Division A, they would not become valid claims by being attached to any other application. The defense of abandonment to the public is not confined to reissued patents, but is given generally by the statute to all patents. (Rev. Stat., Sec. 4920; *Railway Co.* v. *Sayles*, 97 U. S., 554.) The rights of the public had intervened and been followed by the application and patent of Rose before there was any attempt on the part of Ransom to make these claims, and all the grounds on which claims made after taking a patent are held to be invalid appear against them.

The authority to grant a patent appears to depend on an application made and pending for that purpose. (Rev. Stat., Sec. 4886. *Eagleton Manufacturing Company* v. *West, Bradley & Carey Manufacturing Company*, 111 U. S., 390.) It is not very plain where there was any application pending as a ground for these claims. What was not reserved out of the original application to go into Division B was left in Division A, and was disposed of there, and not left pending anywhere. The subject of these claims was left in Division A, and went to issue and appears to have ended with that division.

Upon such consideration as has now been given to these claims they appear to be invalid.

The evidence introduced since the former hearing does not affect the Benton patent at all; but the whole case is open, and that part of it has been reargued, examined, and considered.

The object of these fare-registers is to prevent frauds by those collecting fares. They contain a trip-register, which begins at zero, on which the conductor registers each fare as it is received from the passenger, and who is relied upon to see that the registration is made. This register has a dial with a hand that moves forward and indicates the number of fares which have been registered on that trip. At the beginning of each trip the register is to be set and the trip-hand made to point at zero. If this is not done and the register and hand are left away from that point, opportunity for fraud in accounting for the fares registered on that part of the trip is left open. Benton invented, and his patent is for, a tell-tale hand which, when set with the trip-hand at zero, moves with it, indicating the true number of fares registered, and cannot be set back to zero unless the trip-hand is also set there, and which, when the trip-hand is set only a part of the way back to zero, remains at the place where it is stopped and indicates where the trip-register was started and shows the attempt to cheat. His application for the patent was made October 31, 1881. A hand on a dial to a thermometer to be left to indicate the highest and lowest temperatures was shown in Patent No. 68,681, granted to Martin Ames for a self-registering thermometer, dated September 10, 1867; and one to be left on the dial of a steam-gage, to show the highest pressure, was described in Patent No. 124,816, granted to Thomas C. Hargrave for an improvement in registering steam-gages, dated March 19, 1872. Neither of these has the combinations of such a hand with a trip-register of

fares required to be set to zero at each trip. Such a hand for a similar purpose in a fare-register was patented in England to William Robert Lake, November 14, 1877, and was the subject of Patent No. 245,221, for an indicator for fare-registers, applied for by Reuben M. Rose, April 14, 1881, and dated August 2, 1881, under which this part of the fare-register of the defendants is made. Benton is shown by uncontradicted oral evidence to have made his invention as early as March 22, 1877—before even the provisional specification of Lake was filed—and by written and quite conclusive evidence to have made it before September 22, 1877, which is earlier than Lake's patent was sealed, which is understood to be the time when it became patented within the meaning of the patent laws. Benton is thus clearly shown to be the first inventor. The invention was in use in public for the purpose of ascertaining its completeness more than two years prior to his application; but such public use for that purpose would not defeat the patent. (*Elizabeth* v. *Pavement Co.*, 97 U. S., 126.) Much stress is laid by the defendants upon the question of infringement. The defendants' registers have a tell-tale hand in the combinations of the patent. Moving it forward moves the trip-hand forward with it: but moving the trip-hand forward in registering fares does not move the tell-tale hand forward. The trip-hand is set to zero by moving the tell-tale hand forward, taking the trip-hand with it only. If it is stopped short of zero and the registering of fares begun, the tell-tale hand remains where it is stopped, to indicate the place where it is stopped and the attempt at fraud in commencing the registrations of a trip at that place. The tell-tale hand of the patent is turned backward to or toward zero by the trip-hand, and if that is stopped short of zero and the registering of fares begun the tell-tale hand remains there to show the place where the trip register and hand were stopped, and the attempt at fraud in commencing the registrations of the trip from there. The trip-hand is left in each case to show the wrong place in commencing registration. The difference is only in the means by which it is brought there. When there, they are equivalents in the combinations with the other parts in accomplishing the desired result. The defendants' expert was asked in cross-question 74 if he contended that the defendants' apparatus did not contain the combinations of the patent, and he answered:

> Construing such claims, broadly, as covering usual mechanical equivalents, I consider that the defendants' apparatus does contain such construction.

The other parts of his testimony show that he considered the patent to be limited by the prior patents of Lake and Rose to the differences between it and them; but as priority of invention is awarded to him over them his patent is to be construed as broadly as if their patents had never existed nor their inventions made. His patented invention at the time when it was made is to be construed in view of what then existed. All things are infringements that are brought out by others afterward, if they come within its scope. (*O'Reilly* v. *Morse*, 15 How., 62; *Water Meter Company* v. *Desrer*, 101 U. S., 332; *Mason* v. *Graham*, 23 Wall., 261.) This answer of the expert was understood to substantially admit infringement of this patent, if it was valid when the case was under consideration before, and to obviate the necessity of such extended examination of this part of the case as has been given to it now.

These views lead to a decree for the orator as to the Benton patent and for the defendants as to the Ransom patent. The costs are apparently about equal on each patent, and thus far no costs should be allowed to either party.

Let there be a decree that claims 12 to 17 of the Ransom patent are invalid; that the Benton patent is valid and is infringed by the defendant, and for an injunction and an account in each case, without costs, to the time of this decree.

U. S. Circuit Court—District of Connecticut.

MALLORY MANUFACTURING COMPANY v. HICKOK *et al.*

Decided December 18, 1885.

1. CONSTRUCTION OF CLAIM.

The claim of Letters Patent No. 74,392, of February 11, 1868, was for "the combination of the brim of a hat with a drooping hoop, so that the brim is caused to droop at the front and rear, and to rise at the sides, substantially as described." The definition of the drooping hoop given in *Mallory Manufacturing Co.* v. *Marks*, (11 Fed. Rep., 887, S. C., 20 Blatchf., 32,) adopted, and *held*, that the droop must be imparted by twisting the wire and not by bending.

2. INFRINGEMENT—BURDEN OF PROOF.

Although not free from doubt, the court concluded that the defendants had made their drooping hoops by bending alone, without torsion, and the plaintiff, upon whom is the burden of proof, not having clearly established the fact of infringement, the bill was dismissed.

Mr. Eugene Treadwell for the plaintiff.

Mr. William Edgar Simonds for the defendants.

SHIPMAN, *J.*:

This is a bill in equity, which was brought in January, 1881, to restrain the alleged infringement of Letters Patent No. 74,392, issued to George Mallory, February 11, 1868, for an improvement in hats made from flexible fabrics. The invention is said by the patentee, in his specification, to consist in—

> the combination of the brim of the hat with a drooping spring-hoop, by which I mean a spring-hoop bent or twisted in such manner as to impart a droop to the front and rear of the brim, and an elevation to the sides thereof.

The patent describes the means by which the wire can be properly twisted. The claim is as follows:

> The combination of the brim of a hat with a drooping hoop, so that the brim is caused to droop at the front and rear, and to rise at the sides, substantially as set forth.

The drooping hoop of the claim was defined by Judge BLATCHFORD, in the case of *Mallory Manufacturing Co.* v. *Marks*, (20 Blatchf., 32 S. C., 11 Fed. Rep., 887,) to be

> a spring-hoop bent or twisted in such manner as to impart a droop to the front and rear of the brim, and an elevation to the sides thereof,

and, in view of the state of the art, it was also held that the word "bent" is synonymous with the word "twisted," and that, to constitute infringement, the infringing wire must be twisted. It is also obvious that the droop must be imparted by twisting, and that if a hoop receives its droop by bending alone there is no infringement, although the wire may be in fact twisted to some extent.

The defendants' hoops are made of round wire, by W. B. Curtiss & Co., of Danbury, upon a machine for bending and forming wire, which was the subject of Letters Patent No. 283,327, granted to William B. Curtiss, August 14, 1883. The question of importance in the case is whether twisting was the efficient means of forming the defendants' hoops, or whether the twist-

ing, if any existed, was an immaterial incident in the manufacture, and the "droop" was caused by bending alone.

The Curtiss invention is a very ingenious one, having for its professed object—

To provide such a machine as shall bend or form wire into any desired curve or shape with or without torsion.

An accurate description of this complicated machine would occupy much space, and it is therefore practicable to give only a general outline of the portion which serves to bend the hoops. I quote from the testimony of the inventor as follows:

The wire is received between a pair of feed-rolls, and forced by them through the bending device. Said bending device consists of three small rolls placed in the end of an oscillating sleeve, so that they operate upon the wire in the same manner as tire-bending or tinware-arching rolls. The oscillating sleeve containing said rolls oscillates on a stud or mandrel fixed rigidly to the frame of the machine. In the outer end of such stud are placed two rolls, grooved to receive the wire, and so arranged as to grip the wire, but not so tightly as to prevent the feed-rolls from forcing the wire along. As the feed-rolls revolve the wire is forced through the grip-rolls, and thence through the bending device, where it receives a bend downward. As the wire passes along the bending device is oscillated around the wire, so that when sufficient wire to form one fourth of the hoop has passed through the wire is receiving its bend at one side.

Two of the three small rolls which the inventor styles the "bending device" are called the "guiding-rolls," and the third is the bending-roll. The guide-rolls are so journaled that the lower roll is in advance of the upper one. This construction is used for round wire. It was not intended that these rolls, when thus arranged, should, during their rotation, grip the wire so as to cause it to be twisted. When flat wire is used, it is admitted that the relation of the guide-rolls to each other is so modified as to twist the wire. This is done by placing these rolls one directly above the other, and adjustably securing them so that they will act as grip-rolls. The point in dispute is whether the machine causes twisting when it is used upon round wire.

As torsion of round wire, if it resulted from the operation of the machinery, is not apparent to the eye. Various experiments were tried by the opposing experts for the purpose of determining whether the wire was permanently twisted by the oscillating mechanism. I am inclined to the opinion that, before the wire is bent, it is slightly twisted by the operation of the bending-roll upon it as it is fed through the grip-rolls, when they are tightly adjusted to each other. It seems to me that the natural effect of the mechanism would be to twist the wire somewhat as it was passing through the tightly-adjusted grip-rolls, and before it began to bend. It is conceded by the plaintiff that the chief part of the twisting is done before the bending. Mr. E. S. Renwick says that the torsional strain is applied to the wire before it is bent. Mr. Eickemyer says:

It is my opinion that while most of the effect produced by the rotation of the bending-roll is in that portion of the wire between the grip-rollers when tight, and the guide-rollers, that some of it is, in my opinion, produced in that portion of the wire which is already bent, and is between the bending-roller and the guide-roll.

But, as has been said, the important question is whether the torsion is or is not the efficient cause of the droop. I am of opinion that the twisting is immaterial for these among other reasons: Flat wire, or concavo-convex wire, if twisted and then bent into a hoop, has a permanent droop. Round wire, if twisted and then bent into a hoop, has no droop. If bent and then twisted, it has a droop. The twisting of the round wire, in the Curtiss machine, was done before bending.

Again, the hoops which were formed upon the Curtiss machine with loose grip-rolls, where there could have been no twisting against these rolls, were well-drooped wires for hat-brims. There could have been no twisting except against the feed-rolls, and I do not think that, with loose grip-rolls, permanent twisting could have taken place. It is true that with tight grip-rolls there is a greater droop than when loose grip-rolls are used; but this result is perfectly consistent with the theory that the droop is not produced by twisting, because, if produced by bending, a greater curvature would be produced by steadying the wire near the bending-roll than would be formed if the wire was not grasped at that point, and was not thereby prevented from springing up or undulating back of the guide rolls.

The experiment upon which the plaintiff much relies, that of taking the Curtiss round-wire hoops, unclasping them, fastening them in vises, turning them in the vises, or, as it is styled, "untwisting" them, recurving them with a hoop, reclasping them, and finding them free from a droop, does not satisfy the mind, because the experiment leaves it in doubt whether the various steps do not take out the droop by taking out the bend rather than by taking out the twist.

The question whether the wire is subjected in the machine to permanent torsion, which is efficient in producing the compound curve which is called the "droop," seems to me to be one upon which men's minds will naturally differ. It is a question which cannot be decided by such evidence as to leave the mind free from doubt; but the result of my examination leads me to the conclusion that round wire was bent into the desired shape by the action of the bending mechanism without torsion, and that the plaintiff, upon whom the burden rests, has not clearly established the fact of infringement.

The bill is dismissed.

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[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $6.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth.....$10 00

INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 190 pp.—

Bound half-turkey	2 50
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Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1 1883, to June 30, 1884. One volume 60 pages. In paper covers $1.50.

Vol. 4. Appendix No. 4, July 1, 1884 to June 30, 1885. One volume, 60 pages. In paper covers, $1.50.

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Arizona Territory	1	.....	Nebraska	3	.....
Arkansas	.....	.....	New Hampshire	1	1
California	9	1	New Jersey	22	.....
Colorado	1	.....	New Mexico Territ'y	.....	.....
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Delaware	.....	1	Ohio	37	.....
District of Columbia	5	.....	Oregon	1	.....
Florida	1	.....	Pennsylvania	43	5
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Indiana	16	.....	Utah Territory	1	.....
Iowa	11	.....	Vermont	3	.....
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Kentucky	5	.....	Washington Territ'y	1	.....
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Minnesota	7	.....			
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Colombia, U. S. of	.....	.....	Scotland	1	.....
Cuba	.....	.....	Spain	1	.....
Denmark	.....	.....	Switzerland	2	.....
Egypt	.....	.....			
England	5	.....	Total to citizens of foreign countries	25	2
France	1	1			

DESIGNS.

16,552.—GIMP.—*James P. Bossen*, Hoboken, N. J. Application filed December 7, 1885. Serial No. 185,000. Term of patent 7 years.

16,553.—TYPE.—*Ernst Lauschke*, Chicago, Ill., assignor to *Arthur M.* and *Alson E. Barnhart*, both of same place. Application filed January 15, 1886. Serial No. 188,692. Term of patent 14 years.

16,554.—CARPET.—*David G. Melville*, Medford, assignor to *The Roxbury Carpet Company*, Boston, Mass. Application filed December 18, 1885. Serial No. 186,092. Term of patent 3½ years.

16,555.—RUG.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed December 28, 1885. Serial No. 186,965. Term of patent 3½ years.

16,556.—JEWELRY-RACK.—*Charles Place*, Cambridge, Mass. Application filed January 19, 1886. Serial No. 189,109. Term of patent 3½ years.

16,557.—CARPET.—*Thomas J. Stearns*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed December 18, 1885. Serial No. 186,090. Term of patent 3½ years.

TRADE-MARKS.

(Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.)

13,060.—WIRE NAILS.—*The Albert Nail Company*, New York, N. Y. Application filed January 27, 1886. Used since December 31, 1885.

"The representation of a barbed or notched nail extending diametrically across a terrestrial globe, the head of the nail projecting at one side and the tip or point projecting at the other side of the said globe."

13,061.—SMOKING AND CHEWING TOBACCO.—*Charles W. Allen Company*, Chicago, Ill. Application filed January 20, 1886. Used since October 1, 1885.

"The words or phrase 'LOOK A' ME,' in connection with the picture of a young miss in deshabille."

13,062.—DRESSING, POLISH, OR BLACKING FOR SHOES OR LEATHER.—*Button & Ottley*, New York, N. Y. Application filed February 6, 1886. Used since January 21, 1886.

"The picture of a negro's face and the word 'TOPSY.'"

13,063.—MEDICINE FOR THE CURE OF RHEUMATISM, TO BE TAKEN INTERNALLY.—*William H. Olewiley*, Brooklyn, N. Y. Application filed January 5, 1886. Used since October 1, 1885.

"The word 'MIRACULOUS.'"

13,064.—LAGER-BEER.—*C. Conrad & Co.*, Mainz, Gelsenheim-on-the-Rhine, Germany, and St. Louis, Mo. Application filed February 8, 1886. Used since January, 1876.

"The word 'BUDWEISER,' the monogram composed of the letters and character 'C C & Co.,' and the firm-name, 'C. CONRAD & CO.'"

13,065.—SOAP IN CAKES OR BARS.—*Dillern & Ackermann*, New York, N. Y. Application filed February 4, 1886. Used since January 9, 1886.

"The word 'CARARA.'"

13,066.—ALE.—*Cornelius H. Evans*, Hudson, N. Y. Application filed January 28, 1886. Used since December, 1885.

"The figure of a lion rampant within the horns of a crescent, the horns projecting upward, and the lower portion of the crescent having sheaves of grain and hop-vines thereon."

13,067.—BITTERS.—*Thomas Foulds & Son*, Trevorton, Pa. Application filed January 22, 1886. Used since October 21, 1884.

"The words 'UNCLE TOM'S.'"

13,068.—CIGARS.—*Paul Gelpi & Bro.*, New Orleans, La. Application filed February 2, 1886. Used since October 23, 1885.

"The words 'FLOR DE TRELOAR.'"

13,069.—RUBBER INTERMENT-SACKS.—*Goodyear Rubber Company*, New York, N. Y. Application filed February 8, 1886. Used since January, 1886.

"The word 'ACME.'"

13,070.—HORSE MEDICINE OR CONDITION POWDERS.—*John L. Kreychie*, Iroquois, Dak. Ter. Application filed January 5, 1886. Used since August 1, 1885.

"The word 'EUREKA' and the picture of a horse."

13,071.—WHEAT-FLOUR.—*The William Lea & Sons Company*, Wilmington, Del. Application filed January 30, 1886. Used since 1876.

"The word 'POUTAXAT.'"

13,072.—PRINTING-TYPE.—*The MacKellar, Smiths & Jordan Company*, Philadelphia, Pa. Application filed February 2, 1886. Used since December 1, 1885.

"A circle within which is placed a triangle."

13,073.—CHAMPAGNE-WINE.—*Louise Henriette Lionie Roederer Olry*, Rheims, France. Application filed November 30, 1885. Used since August 1, 1885.

"The script letters 'L R,' arranged in a monogram."

13,074.—WOVEN WOOLEN FABRICS.—*Selwin B. Peabody*, Tilton N. H. Application filed January 30, 1886. Used since January 2, 1848.

"The letter 'T' in a diamond-shaped field."

13,075.—STOVE-POLISH.—*Phœnix Plumbago Mining Company*, Philadelphia, Pa. Application filed January 29, 1886. Used since June 1, 1878.

"The word 'MAGIC.'"

13,076.—HARD SOAP.—*John Reardon & Sons*, Boston, Mass. Application filed December 21, 1885. Used since November 15, 1885.

"The symbol of a cross pattee or formee having upon its arms the letters and character 'J R & S.'"

13,077.—LADIES' JERSEYS.—*G. Schwab & Bros.*, New York, N. Y. Application filed February 6, 1886. Used since December 20, 1885.

"The words 'LAWN TENNIS.'"

13,078.—LADIES' CORSETS.—*Simpson, Crawford & Simpson*, New York, N. Y. Application filed January 30, 1886. Used since September, 1885.

"The word 'JUDIC.'"

13,079.—FLOUR.—*Fred W. Smith*, New York, N. Y. Application filed February 2, 1886. Used since May 1, 1882.

"The words 'POLAR BEAR.'"

13,080.—VELVET CARPETS.—*Stephen Sanford & Sons*, Amsterdam, N. Y. Application filed October 5, 1885. Used since March 3, 1884.

"A series of longitudinal threads in the back of the carpet, imparting color thereto in its entire width and length, and having no reference to the color of the pattern."

13,081.—POCKET-BATTERY USED AS A CURATIVE APPLIANCE FOR DISEASES OF THE EYE, THE EAR, THE NASAL ORGANS, &c.—*William Cotter Wilson*, Philadelphia, Pa. Application filed February 8, 1886. Used since July, 1883.

"The word 'ACTINA.'"

13,082.—HAY, FODDER, AND STRAW CUTTERS.—*Wilson Bros. & Co.*, Harrisburg, Pa. Application filed February 8, 1886. Used since February 16, 1874.

"The word 'TELEGRAPH.'"

LABELS.

4,743.—Title: "ANTI-KALSOMINE IS ALL THE NAME IMPLIES."—*Melvin B. Church*, Grand Rapids, Mich. Application filed January 25, 1886. (Trade-Mark Registered.)

4,744.—Title: "OUR EXTRA" (FOR SKIRTS.)—*L. Dryfoos & Co.*, New York, N. Y. Application filed February 4, 1886.

4,745.—Title: "ABIETENE COUGH BALSAM."—*Derrick F. Fryer*, Oroville, Cal. Application filed November 5, 1885.

4,746.—Title: "OYSTER PLUG" (FOR TOBACCO.)—*Gem City Tobacco Works*, Quincy, Ill. Application filed July 10, 1885. (Trade-Mark Registered.)

4,747.—Title: "SOFT SHOES FOR TENDER FEET."—*Charles S. Grover*, Lynn, Mass. Application filed June 23, 1885.

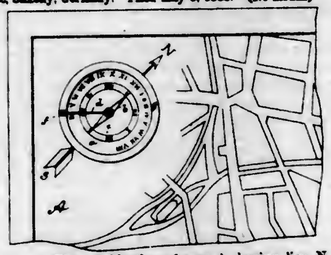
4,748.—Title: "HONEY, HOREHOUND, LICORICE, AND TAR." (FOR COUGHS AND COLDS.)—*Charles G. Pease*, New York, N. Y. Application filed January 20, 1886.

4,749.—Title: "COOPER'S IMPROVED DEVELOPER" (FOR PHOTOGRAPHIC PLATES AND FILMS.)—*The Eastman Dry Plate and Film Company*, Rochester, N. Y. Application filed February 5, 1886.

PATENTS

GRANTED MAR. 2, 1886.

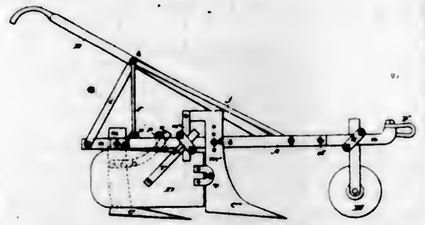
336,883. **COMPASS ATTACHMENT FOR MAPS.** JOSEPH ADLER, Leipsic, Saxony, Germany. Filed May 5, 1886. (No model.)



Claim.—1. The combination of map A, having line N S, and mounted on back B, with the case *a*, sunk into back B and carrying compass-needle *b*, substantially as specified.

2. The combination of case *a*, needle *b*, disk *c*, and gnomon *d*, having projection *e*, with catch *f* and dial *g*, substantially as specified.

336,884. **CULTIVATOR.** FRANKLIN H. AUSTIN, Onomea, Hilo, Hawaii. Filed Sept. 11, 1885. (No model.)

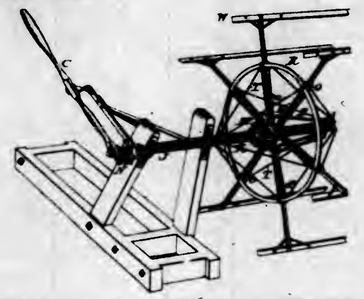


Claim.—1. In combination with the main frame of a cultivator, a flat vertical cutting leg or standard provided with a series of bolt-holes, whereby it may be pivoted at different heights to the main frame, so as to swing forward or back in the line of the draft of the machine, said standard being also provided with an arm extending rearwardly from the upper part thereof, a brace-bar connected to said arm and adapted to be clamped to the main frame to hold the standard in any desired position, and a hoe carried by said standard, substantially as set forth.

2. The main frame of a cultivator, and a flat vertical cutting leg or standard carrying a hoe, said leg or standard being vertically and angularly adjustable on the main frame, and being arranged to cut the earth in the line of the draft of the machine, in combination with a guard-plate secured to the cultivator and arranged behind and in the same line with the said cutting leg or standard, substantially as set forth.

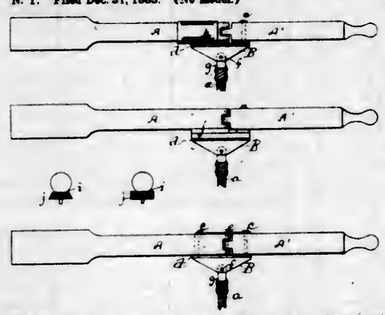
3. A cultivator-frame, flat cutting-hoe standards arranged at one side and at the center of the machine, and arranged to cut in the line of the draft of the machine, and substantially flat hoes carried thereby, said hoe-standards being pivotally secured to said frame, whereby the angle at which the hoes cut the earth may be varied, in combination with a flat cutting-hoe standard on the side of the cultivator which runs next the plants, said standard being provided with a series of bolt-holes, whereby it may be pivoted at different heights to the frame, and with an arm extending rearwardly from the upper part thereof, a brace-bar connected to said arm and adapted to be clamped to the main frame, whereby said standard may be secured at different angular positions, and a substantially flat hoe carried by said standard, substantially as set forth.

336,885. **REEL.** JOHN M. BANNAN, Chetopa, Kans. Filed Dec. 18, 1884. (Model.)



Claim.—In a reel for harvesters, the combination of the jointed arms provided with the perforated lugs, the inclined rods B, passing through said perforations and attached at each end to collars sliding upon the reel-shaft, whereby the arms can be straightened or bent and the reel expanded or contracted, substantially as described.

336,886. **JOINTED BOAT-OAR.** BENJAMIN F. BENNETT, Lockport, N. Y. Filed Dec. 31, 1883. (No model.)



Claim.—1. In a jointed rowing-oar, the part A, which carries the blade, and means, substantially as described, for allowing longitudinal movement of said part, said means being pivoted to the plate *d*, in combination with said plate, the beam B, and handle part A', substantially as set forth.

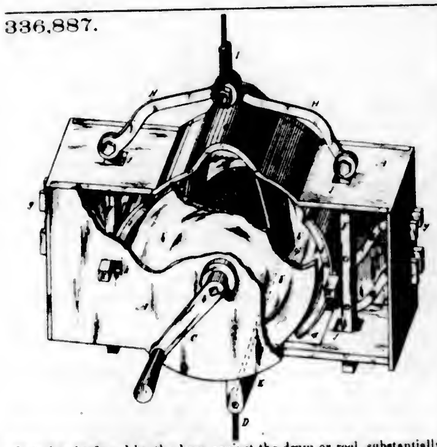
2. In jointed rowing-oars, the part A, pivoted to plate *d* by means of a sleeve, *h*, which is in turn pivoted to transverse beam B by a clip or lugs, and the part A', pivoted to transverse plate *d*, all arranged and operating substantially as specified.

3. In combination with the jointed oars A A' and transverse beam B, the transverse plate *d*, to which the oars are pivoted, and itself pivoted in the center to the transverse beam B, and held in position by a pin or lock, substantially as and for the purpose specified.

336,887. **FIRE-ESCAPE.** JOSEPH BIHN, San Francisco, Cal. Filed Jan. 5, 1885. Renewed July 30, 1885. (No model.)

Claim.—1. In a fire-escape, the casing A, drum or reel B, mounted therein, and the wire rope, cord, or cable D in said drum or reel, in combination with the bars F, loosely passing through the casing, the links G, pivoted to said bars and to the casing A, a connection by which the bars are suspended, and the spring-brakes J, lying within the casing and

336,887.



adapted to be forced by the bars against the drum or reel, substantially as and for the purpose herein described.

2. In a fire-escape, the casing A, drum or reel B, mounted therein, and the wire rope, cord, or cable D on said drum or reel, in combination with the bars F, loosely passing through the casing, the pivoted links G, by which the bars and casing are joined, the pivoted levers H, joining the tops of the bars, the suspension-link I, and the spring-brakes J within the casing and adapted to be forced by the bars against the drum or reel, substantially as and for the purpose herein described.

3. In a fire-escape, the casing A, drum or reel B, having end flanges, *b'*, and adapted to receive a wire rope, cord, or cable between said flanges, in combination with the bars F, pivoted to the casing and adapted to move toward each other, and the spring-brakes J, having rubbers *j'*, adapted to be forced against the rims of the drum-flanges by the movement of the bars F, substantially as and for the purpose herein described.

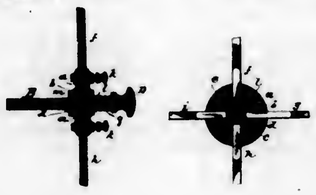
4. In a fire-escape, the casing A, having bottom opening, *a*, and roller E, and the drum or reel B, mounted therein and adapted to receive a wire rope, cord, or cable, one end of which emerges through the bottom opening of the casing, in combination with the bars F, passing through the casing in elongated slots *f*, the pivoted links G, joining the casing and bars, the pivoted levers H, and link I, by which they are suspended, and the spring-brakes J, having lugs K on their backs projecting through slots in the casing and guided thereby, said brakes being adapted to bear against the drum when forced by the movement of the bars F, substantially as and for the purpose herein described.

5. In a fire-escape, the casing A and drum or reel B, adapted to receive a wire rope, cord, or cable, in combination with the light spring M in the top of the casing, and adapted to bear upon and hold the rope, cord, or cable in place, substantially as and for the purpose herein described.

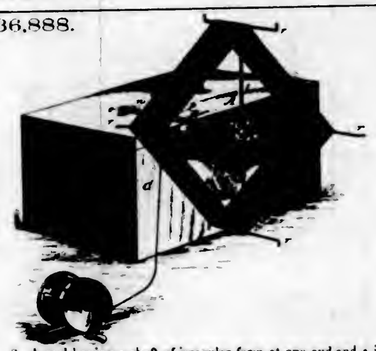
6. A fire-escape consisting of the combination of the casing A, having bottom opening, *a*, and roller E, slots *f* in its bottom and top walls, slots *k* in its side walls, the drum or reel B, having shaft *b*, with crank C, the wire rope, cord, or cable D on the drum, the spring M to hold the rope, cord, or cable to place, the bars F, passing through the slots *f* of the casing, the links G, pivoting the bars to the casing, the pivoted levers H, and link I, by which the bars are suspended, and the spring-brakes J, having lugs K projecting through slots *k* in the casing, all arranged and adapted to operate substantially as and for the purpose herein described.

336,888. REEL FOR DRYING FISHING-LINES. JONATHAN W. BROOKS, Jr., Chicago, Ill. Filed Dec. 14, 1885. (No model.)

Claim.—1. A reel composed of a hub mounted loosely upon a fixed shaft and provided with radial arms, in combination with a tension-spring adapted to bear against the hub and retard the velocity thereof, substantially as described.



336,888.

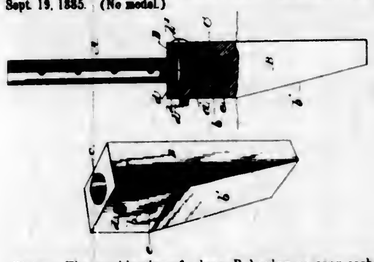


2. A reel having a shaft of irregular form at one end and a journal formed on the opposite end, in combination with a hub provided with radial arms, a tension-spring bearing upon said hub, and an adjusting-nut, substantially as described.

3. A reel having a shaft squared at one end and a journal and collar formed on the opposite end, in combination with a hub consisting of a disk having a series of apertures formed in it, and provided with detachable radial arms secured in the hub by set-screws, an adjusting-nut, and a tension-spring interposed between the hub and the nut, substantially as described.

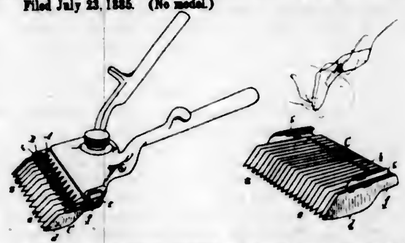
4. A reel consisting of a shaft, a hub, detachable radial arms, screws for securing said arms, a collar formed on the shaft, an adjusting-nut, and a coiled spring interposed between the hub and the nut, all combined substantially as described.

336,889. FENCE-POST. JOSEPH BURNS, Montezuma, Ind. Filed Sept. 19, 1885. (No model.)



Claim.—The combination of a base, B, having an open socket, *c*, in its upper end and a bolt-hole, *d*, a detachable post snugly fitted at its lower end in said socket and made in two longitudinal sections, each section having a curved outer face, and a flat inner face provided with transverse recesses which register and provide a socket for holding the fence-wire therein when the flat faces thereof are brought together, said sections having aligned openings *d'* at their lower ends, which register with the opening *d* of the base, and a transverse bolt, D, passing through the openings *d d'* of the base and post and having a nut for securing them together, substantially as described.

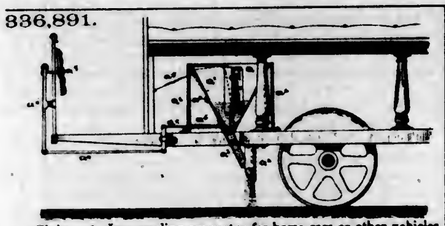
336,890. HAIR-CLIPPER. SAMUEL W. BURWELL, Port Huron, Mich. Filed July 23, 1885. (No model.)



Claim.—A comb-plate adapted to be removably secured to hair-clippers, for the purpose set forth, the teeth of such comb-plate having a cut-away portion between its bearing-edge and its heel, substantially as and for the purpose specified.

336,891. TRACK-SANDING APPARATUS FOR STREET-CARS. W. T. BUTLER, Chelsea, and GEORGE H. HATHAWAY, Fairhaven, Mass. Filed Dec. 26, 1885. (No model.)

336,891.



Claim.—1. In a sanding apparatus for horse-cars or other vehicles running on iron rails, a sand-hopper consisting of two vertically-corresponding parts—one part fixed and the other part made to have a vibrating or oscillating motion—substantially as described, for the purpose specified.

2. In a sanding apparatus for horse-cars and other vehicles moving on iron rails, a chute to guide the sand from the hopper to the rail upon an incline of about sixty degrees, with the uppermost side of it open, with a shield at a little distance from it, all substantially as described, for the purpose specified.

3. In a sanding apparatus for horse-cars or other vehicles running on iron rails, in combination with a hopper having one side movable, the swinging pad a^2 and the levers, cranks, and connecting-rods a^6, all substantially as described, for the purposes specified.

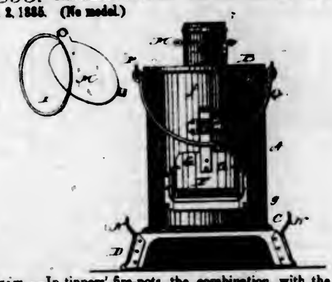
336,892. NUT-LOCK. JAMES H. CALLENDER, Milton, Ohio. Filed Dec. 30, 1885. (No model.)



Claim.—1. A nut-lock formed of a single metallic plate having the bolt-hole *s*, and the ends of the plate doubled or bent over to bring their upper sides in contact with the under side of the nut, substantially as described.

2. A nut-lock formed of a single metallic spring-plate having the bolt-hole *s*, upper and lower depressions, *a'*, opposite each other, and the upper and lower parts, *a a²*, divergent from depressions *a'* to the bolt-hole, substantially as described.

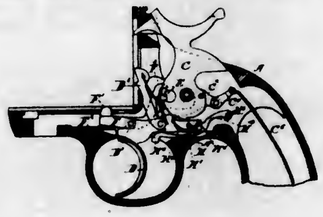
336,893. TINNER'S FIRE-POT. JAS. CARTER, Lockport, N. Y. Filed Feb. 2, 1885. (No model.)



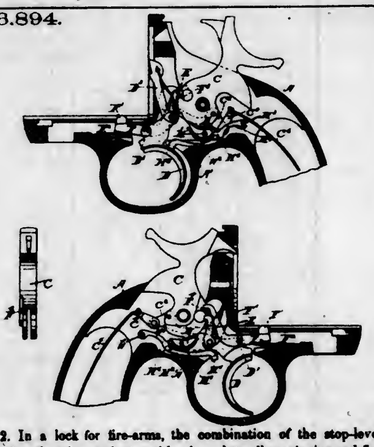
Claim.—In tinners' fire-pots, the combination, with the shell A, having fire-pot opening A', of the spout E, having wired edge, the ends of the wire being formed into curved friction-arms G, and the sliding door F, having a suitable operating-handle, *f*, as stated.

336,894. FIRE-ARM. GEORGE W. CELLEY, Norwich, Conn. Filed Nov. 20, 1885. (No model.)

Claim.—1. In a lock for fire-arms, the combination of the hammer C with the sear H, pivoted centrally, and the sear-lever H^4 H^5, said sear-lever having a boss, H^6, and an attached spring, H^7, and the trigger D, all substantially as described, and for the purpose set forth.



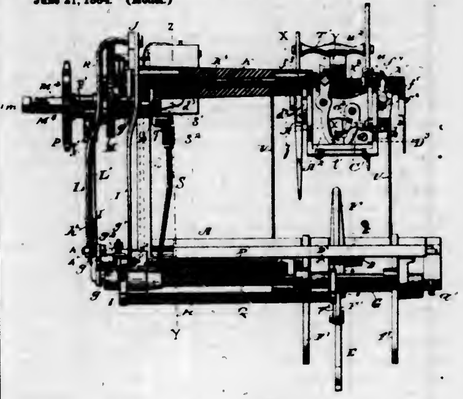
336,894.



2. In a lock for fire-arms, the combination of the stop-lever F, pivoted on the trigger-pivot, and having a laterally-springing and flexible arm, F^5, with the hammer C, said hammer C having a wedge-shaped projection, F^4, all operating together substantially as described, and for the purpose set forth.

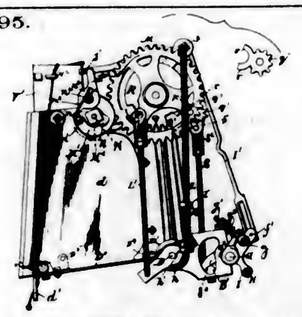
3. In a fire-arm, the combination of the gate K, having a spring-piston, L, with the stationary post K^3, said post having flattened sides K^3 K^4, and being held in position by the screw K', and the lug K^6, all operating together substantially as described, and for the purpose set forth.

336,895. GRAIN BINDER. PETER P. COLER, Clyman, Wis. Filed June 21, 1884. (Model.)





336,895.



Claim.—1. In a grain-binder, the combination, with the packing and binding mechanism, of the curved binder-arm, its supporting-shaft, a tripping-finger loosely mounted on said shaft, a compressor connected with the heel of said tripping-finger, and mechanism connected with the binder-arm shaft and actuated by either the tripping-finger or compressor to throw the packers out of action previous to the binding of the grain, substantially as and for the purposes set forth.

2. In a grain-binder, the combination of the knotter-operating shaft K', gear-wheel M, keyed to its outer end, the needle-arm shaft D, crank A', and rod L', connecting the latter shaft with the gear-wheel, the packer-shaft, a two-part clutch, M^2 M^3, mounted thereon, the former fixedly, the latter loosely, and continuously rotated, a pinion sleeved on the movable part of the clutch so as to slide thereon and revolve therewith and meshing with the gear-wheel M, a pawl, P^3, pivoted on a stud projecting from the side of the pinion, a spring attached to said stud and bearing on the pawl, and lugs *n*, projecting from the clutch within the path of the pawl P^3, substantially as and for the purposes set forth.

3. In a grain-binder, the needle and its shaft connected to the knotter-driving shaft, the latter being intermittently operated from the packer-shaft, in combination with the clutch-trip lever J, sleeved on the hub of the tubular frame inclosing the knotter-driving shaft, its end J', adapted to disengage the clutch between the packer-shaft and the knotter-driving shaft, rods L and L', attached directly to the other end of the clutch-trip lever J, and the lower end of the rod L being yieldingly connected to a crank on the needle-shaft to permit the independent movement of the rod L when the clutch-trip lever is thrown out of the normal or operative position to allow the engagement of the packer and knotter-driving shafts, the lower end of the rod L' being slotted and connected to a crank on the kicker-shaft by a pin passed through said slot to permit the operation of the kickers before the lever J is returned to a normal position, as and for the purposes specified.

4. In a grain-binder, the combination of the needle and its shaft, the knotter-driving shaft, the gear-wheel M, keyed thereto, the packer-shaft, a clutch, M^2 M^3, a pinion, M', sleeved on the part M^2 of the clutch so as to turn therewith and meshing with the wheel M, the lever Q, having one end bearing on the pinion and the other on a cam-flange projecting laterally from the wheel M, a pawl and lug to lock the pinion to the part M^2 of the clutch, a clutch-trip lever, J, to disconnect the pawl and lug, rods L and L', connected directly to said lever and to crank-arms of the needle and kicker shafts, respectively, and a rod, L', connecting the wheel M with a crank of the needle-shaft, substantially as and for the purposes set forth.

5. In a grain-binder, the combination of the knotter-driving shaft, a gear-wheel, M, keyed thereto and having a cam-faced annular flange, p^2, projecting laterally from its side, the packer-shaft, a two-part clutch, M^2 M^3, mounted thereon, the part M^2 fixedly, the latter part, M^3, loosely, to have a longitudinal movement on the packer-shaft only, a spring, M^4, a pinion, M', sleeved on the part M^2 of the clutch so as to turn therewith and meshing with the gear-wheel M, and the lever Q, pivoted midway between its ends to vibrate horizontally, one of its ends carrying a roller to bear against the face of the cam-flange p^2, the other end of said lever being forked and having its arms extended one on either side of the clutch and resting upon the side of the pinion M', as and for the purposes described.

6. In a grain-binder, the combination of the compressor loosely mounted on a shaft beneath the table, the front or outer end of the compressor projecting up through an opening in the table, its inner end connected with the heel of the binder-trip finger by a link slotted at its outer end at its point of connection with the trip-finger to permit a yielding of the latter independent of the compressor, as and for the purposes set forth.

7. In a grain-binder, the combination, with the binder-arm and its shaft, of the compressor linked to the heel of the binder-tripping finger and operated by rollers on said binder-arm, substantially as and for the purposes set forth.

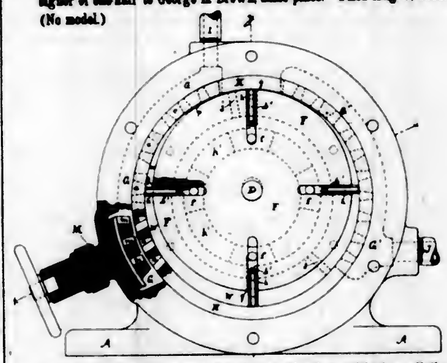
8. The combination, with the knotter-driving shaft having cams F^6 G^3, and the knotter-frame O, of a plate, A^3, carrying the cord holding and cutting devices pivotally connected to the upper outer corners of the frame O by pivots f^5 f^5, an arm, f^6, extended downward outside of the frame O, a spring, f^7, interposed between the end of said arm and a stud on the frame, arms F^5 G', projecting inwardly from the upper ends of the plate and adapted to bear upon the cams F^6 G^3, respectively, as and for the purposes set forth.

9. In a grain-binder, the platform pivoted at its inner side to the harvester-frame and having a rack on its under side, in combination with an adjustable supporting-arm pivoted to the harvester-frame under the binder-table, substantially as and for the purposes set forth.

10. In a grain-binder, the combination of the knotter-driving shaft having cams F^6 G^3, cam-arms B^2, and cam-grooved wheel Y, the latter two forming the cam-groove B^2, the knotter-frame, the knotter mechanism, a plate pivoted to the knotter-frame and having inwardly-projecting arms to engage the cams F^6 G^3, a cord-holding jaw, A', pivoted to the plate and having an extension to project within the cam-groove B^2, a co-operating serrated jaw, C', spring *b*, and the knife D^3, all arranged and operating substantially as described.

11. In a knotting mechanism for grain-binders, the knotter composed of the shafts x' x^2, having cord-holding jaws X x^4, respectively, and guard-arms x^3, the heel of the jaw X of the former shaft having a notch, u^2, into which a projection, u^3, of the latter shaft projects, a spring giving the shaft u^3 an upward thrust to close the jaws, a cam on the knotter-driving shaft to open the jaws, a pinion on the shaft x', a loop-stripper, a spring exerting an upward pressure on the stripper-shaft, a pinion keyed to the upper end of the latter, a wheel, Y, on the knotter-driving shaft and provided with teeth w^2 and projection 1 to actuate the knotter and stripper shafts, respectively, at successive intervals of time, and a cam-arm, 2, located on the knotter-driving shaft on the side of the stripper-shaft opposite the wheel V to return the loop-stripper to its normal position.

336,896. ROTARY ENGINE. THOMAS P. COOMBS, Woburn, Mass., assignor of one half to George E. Brown, same place. Filed Aug. 5, 1885. (No model.)



Claim.—1. In a rotary engine, the combination, with the radially-movable pistons, of the ring H, against the inner face of which the packings of the said pistons impinge, the said ring being formed separate from the casing, and provided with ingress and egress slots *c*, which are oblique or diagonal to the inner face of the said ring, and to the lengths of the ends of the packings of the pistons, whereby the wear of the said packings against said ring is equalized, substantially as set forth.

2. In a rotary engine, the combination, with the cylindrical casing B, the ring H, the piston-disk F, and the radially-movable pistons carried by the said disk, of the heads C, having annular recesses on their inner faces, and the packing-rings arranged in the said recesses opposite the outer portion of the piston-disk and the ends of the pistons, said rings having projections *j*, fitting in grooves in said heads, substantially as set forth.

3. The combination, in a rotary engine, of a cylindrical case cut away interiorly to form a steam-chamber, the slotted ring H, and the plugs *m m*, for the purposes and substantially as described.

336,897. ELECTRICAL BRUSH. JAMES D. CULP, San Felipe, Cal. Filed May 1, 1885. (No model.)



Claim.—1. The combination of an electrical apparatus or generator with a brush having in the brush back or stock a reciprocatory part movable by the mechanical action of using the brush, for giving automatically a succession of discharges, substantially as described.

2. In combination with a brush, an electrical apparatus or generator in the back or stock of said brush, for giving a succession of discharges, and separate points or electrodes included in the discharging-circuit for causing a spark or a series of sparks when a discharge occurs, substantially as described.

3. In combination with the brush, an electrophorus, forming part of the brush-back, for giving a succession of discharges, substantially as described.

4. In combination with the brush, the electrophorus, arranged in the brush-back and having the inducing and induced plates connected with each other by a hinge or pivot, substantially as described.

5. The combination, with the bristles or rubbing portion of the brush, of the sole or ground conductor in electrical connection with said bristles or rubbing portion, the inducing-plate on said sole, and the movable induced plate, substantially as described.

6. The brush having the back in two parts hinged together, in combination with an electrical generator or electrophorus having the inducing means carried by one of said parts and the induced device by the other, substantially as described.

7. The brush having the back in two parts detachably connected and movable with reference to each other when connected, in combination with the electrophorus or electrical generator in said back, substantially as described.

8. The combination of the brush, the electrophorus in the back of said brush, and the separated points or electrodes included in the discharging-circuit of the electrophorus, substantially as described.

9. The combination, with the back or stock, of the electrophorus or electrical generator carried thereby and an exposed conductor on the brush-handle, the same being in electrical connection with the said generator, and serving to establish a ground-connection for the same through the hand of the user, substantially as described.

336,898. ELECTRICAL TORCH FOR LIGHTING GAS. JAMES D. CULP, San Felipe, Cal. Filed May 6, 1885. (No model.)



Claim.—1. In an electric igniting apparatus, and in combination with an electric generator or source of electricity, the electrodes or terminals, between which the electricity is discharged, protected by an envelope to the discharging-points from contact with the gas to be lighted, to prevent dissipation of the charge by the gas, substantially as described.

2. The combination, with discharging electrodes or terminals of an electric igniting device, of an electrophorus having the induced plate carried by a lever, and a wire embedded in a rod of insulating material and forming a constant or permanent electrical connection between said plate and one of said electrodes, substantially as described.

3. The combination, with the discharging electrodes or terminals of an igniting device, and an electrophorus having the induced plate carried by a lever and arranged parallel to the length of the torch, of an electrical connection between one electrode or terminal and the sole or ground conductor of the electrophorus, and a second connection between the other electrode or terminal and the induced plate of the electrophorus, substantially as described.

4. The combination, with the elongated frame having a handle at one end and the electrodes or terminals at the other end of said frame, of the sole and inducing non-conductor, both in the form of plates attached to said frame parallel to the length thereof, the induced conductor, also in the form of a plate placed directly outside said non-conductor, so that it may rest against it, the lever carrying said induced conductor, and the permanent electrical connections between the sole and induced conductor and the respective electrodes or terminals, substantially as described.

5. The combination of the stiff rod provided with a handle, the sole, and the inducing-plate carried thereby, the metal pins or screw connecting said parts and forming a conductor for putting the induced plate in electrical connection with the sole, the lever fulcrumed on said rod, and the induced plate carried by said lever, substantially as described.

6. The combination, in an electric torch or igniter, with the discharging electrodes or terminals and the frame or rods at the end of which said electrodes are placed, of the electrophorus at the opposite end of the implement, formed of a sole and inducing non-conductor, both in the form of plates, and an induced plate carried by a lever, the induced plate being connected electrically with one electrode and the sole or ground conductor with the other electrode, substantially as described.

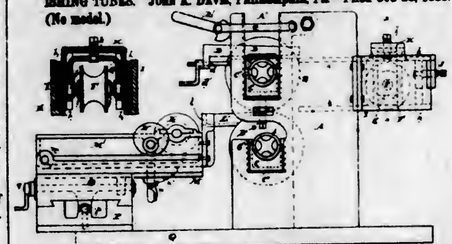
7. The combination, with the electric generator of a gas-lighting torch, of the two bars, the spanner or fork connecting their upper ends, and the discharging-electrodes placed just below the said spanner in the space between said bars, substantially as described.

8. The combination, in an electric torch or igniter, with the discharging electrodes or terminals, of the hood inclosing one side of said electrodes or terminals, substantially as described.

9. The combination, with the electrophorus, of the discharging-electrodes connected therewith and protected by an envelope from contact with the gas to be ignited, except at the discharging-points, substantially as described.

10. The herein-described electric torch or igniter, comprising an elongated frame, an electrophorus at the lower end thereof having an induced plate carried by a lever, a spanner or fork at the upper end, and the discharging electrodes or terminals, also at the upper end, and connected, one electrode with the induced plate, and the other with the sole or ground conductor of the electrophorus, substantially as described.

336,899. MACHINE FOR SIZING, STRAIGHTENING, AND FINISHING TUBES. JOHN K. DAVIS, Philadelphia, Pa. Filed Oct. 20, 1885. (No model.)



Claim.—1. In a machine for straightening and sizing tubes, the combination of two sizing-rolls with two guide-rolls, one being arranged in front and one in the rear of said sizing-rolls, and so located that the tube in passing between said sizing-rolls is bent first out of line and then straightened, substantially as and for the purpose specified.

2. In a machine for straightening and sizing tubes, the combination of two sizing-rolls with two adjustable guide-rolls, one being arranged in front and one in the rear of said sizing-rolls, and so located that the tube in passing between said sizing-rolls is bent first out of line and then straightened, substantially as and for the purpose specified.

3. In a machine for straightening tubes, a series of rolls between which the tube must pass, the said rolls being arranged out of line sufficient to cause the tube to be first abnormally bent and then straightened, substantially as and for the purpose specified.

4. In a machine for straightening and sizing tubes, a pair of sizing-rolls, in combination with a guide-roller so arranged with reference to the sizing-rolls that the tube after leaving the latter is bent by said guide-roller, and means to adjust said guide-roller vertically and to or from said sizing-rolls, the said adjustments being independent of each other, substantially as and for the purpose specified.

5. In a machine for straightening and sizing tubes, a pair of sizing-rolls, in combination with a guide-roller so arranged with reference to the sizing-rolls that the tube after leaving the latter is bent by said guide-roller, and suitable means, substantially as set forth, to adjust said guide-roller vertically and laterally, substantially as and for the purpose specified.

6. In a machine for straightening and sizing tubes, a pair of sizing-rolls, in combination with a guide-roller located at some distance from the sizing-rolls, and so arranged with reference to the sizing-rolls that the tube is held in one lateral direction while it is bent by the action of the sizing-rolls, substantially as and for the purpose specified.

7. In a machine for straightening and sizing tubes, a pair of sizing-rolls, in combination with a guide-roller located at some distance from the sizing-rolls, and so arranged with reference to the sizing-rolls that the tube is held in one lateral direction while it is bent by the action of the sizing-rolls, and suitable means, substantially as set forth, to adjust said guide-roller vertically and to or from the sizing-rolls, substantially as and for the purpose specified.

8. The combination of rolls B B' with rollers F and L, adapted to act on opposite sides of the tube, substantially as and for the purpose specified.

9. In a machine for sizing and straightening tubes, adjustable guide-rollers for the tube, in combination with compressing and bending rolls arranged between said guide-rollers and adapted to cause a reverse bending action on said tube during its passage through said rollers, substantially as and for the purpose specified.

10. The combination of housing A, having bearing-slots with cast-steel cases C', bearings C, adjusting-screw D', wedges D, links *e*, cams E, and rolls B B', substantially as and for the purpose specified.

11. The combination of rolls B B' and their housing with roller F, frames G H and their adjusting-screws *k* J, and roller L, substantially as and for the purpose specified.

12. The combination of rolls B B' and their housing with roller F, frames G H and their adjusting-screws *k* J, roller L, frames M, M', O, and P, and means, substantially as described, to adjust said frames, substantially as and for the purpose specified.

13. The combination of rolls B B' with roller L, longitudinally-adjustable frame M, hinged frame M', carrying said roller L, transversely-

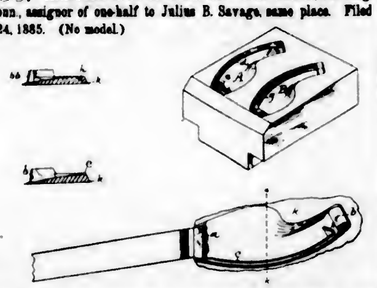
adjustable frame O, and stationary bed-frame P, substantially as and for the purpose specified.

14. The combination of rolls B B' with roller L, longitudinally-adjustable frame M, hinged frame M', carrying said roller L, transversely-adjustable frame O, stationary bed-frame P, and cam devices to adjust the frame M' upon frame M, substantially as and for the purpose specified.

15. In a tube straightening and sizing machine, the combination of two compressing or sizing rolls, one of which is arranged a little to the rear of the other, and a guide to hold the tube while being fed through said rolls, whereby the tube is bent out of line in passing through the same, substantially as and for the purpose specified.

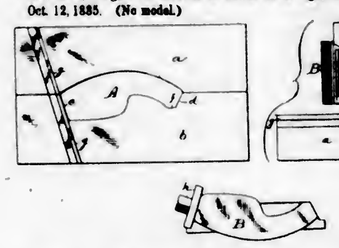
16. The combination of the compressing or sizing rolls with a front guide-roller, L, made adjustable vertically, laterally, and longitudinally, substantially as and for the purpose specified.

336,900. **MANUFACTURE OF OX-SHOES.** JOHN DEERLE, Southington, Conn., assignor of one-half to Julius B. Savage, same place. Filed Aug. 24, 1885. (No model.)



Claim.—That improvement in the manufacture of ox-shoes which consists in throwing the stock into the successive forms shown, namely: first, into a blank having the projecting rib c on the broad under side extending along by the convex edge of said blank, as shown in Figs. 2 and 3, and, secondly, into the general form of a finished shoe having the nail-head-receiving crease, substantially as described, and for the purpose specified.

336,901. **DIE FOR TRIMMING OX-SHOES.** JOHN DEERLE, Southington, Conn., assignor of one-half to Julius B. Savage, same place. Filed Oct. 12, 1885. (No model.)



Claim.—1. The trimming-die A, having a cutting-edge corresponding to the contour of an ox-shoe formed in a block consisting of two parts, and with the part corresponding to the heel end of the shoe extending obliquely across the block, and with the corners corresponding to the outer corners of the toe and heel of the shoe on the dividing-line of said parts, substantially as described, and for the purpose specified.

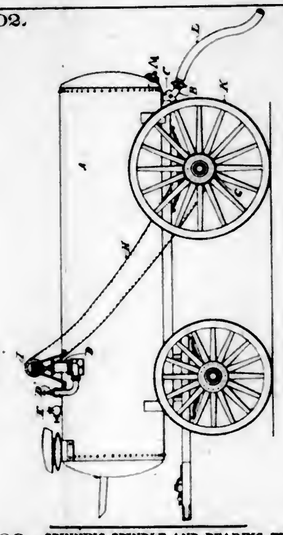
2. The die for trimming ox-shoes, having its cutting-edge of the general form of an ox-shoe with oblique toe-calks, and having also the corner-cutting face *f*, extending longitudinally with said die and obliquely to the toe end thereof, for the purpose of cutting off the inner corner of the toe of the shoe at an oblique angle to the toe-calk, substantially as described.

3. The herein-described die and punch jointly for trimming ox-shoes, said die having the vertical shoulders *g g* at each side of the heel end *e*, and said punch having the blade *h* at the corresponding end, substantially as described, and for the purpose specified.

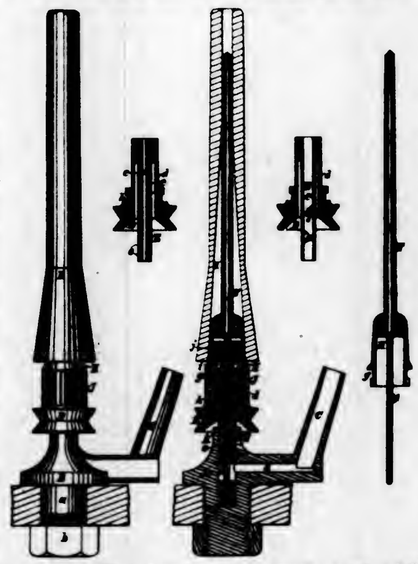
336,902. **ODORLESS EXCAVATING APPARATUS.** PLINNEY F. DEWEY, Minneapolis, Minn., assignor of one-half to Charles L. Dewey, same place. Filed Oct. 16, 1885. (No model.)

Claim.—The combination, with the air-tight tank A, mounted on a carriage having the wheel K, provided with a sprocket-wheel, G, of the air-pump D, sprocket-wheel I, drive-chain H, valve E, pipe B, valve C, and hose L, all substantially as described, and for the purpose set forth.

336,902.



336,903. **SPINNING-SPINDLE AND BEARING THEREFOR.** EDWARD DUNMER, Boston, Mass. Filed Aug. 18, 1882. (No model.)



Claim.—1. The combination of these elements—namely, a hollow shaft having one or more openings in its side or sides, a fixed bearing for said shaft, a spindle extending into said shaft, a fixed step for said spindle, and a yielding connection between said shaft and spindle, substantially as set forth.

2. The combination of these elements—namely, a spindle, a fixed step, a whirl, a tubular whirl-shaft having one or more openings in the side thereof, a tubular bearing for the whirl-shaft, and a yielding connection between said spindle and shaft, there being a space inside of said shaft between this shaft and the spindle, providing an unobstructed passage for oil, substantially as specified.

3. The combination, with a spindle, a whirl, a connection, substantially as described, between the spindle and whirl, and a hollow shaft for said whirl having one or more openings through its side, of a support having an external tubular bearing for said hollow shaft, and a passage at and around the end of said shaft, the shaft having interiorly a clear space between it and the lower end of the spindle, all substantially as described.

4. In combination, these elements—namely, a tubular shaft and bearing for the same, a spindle extending into said shaft, a yielding medium between the shaft and the spindle, and a step for the spindle, there being an annular space for the free and unobstructed flow of oil between the spindle and the inside of said shaft, there being also one or more passages for oil through the side of said shaft, substantially as set forth.

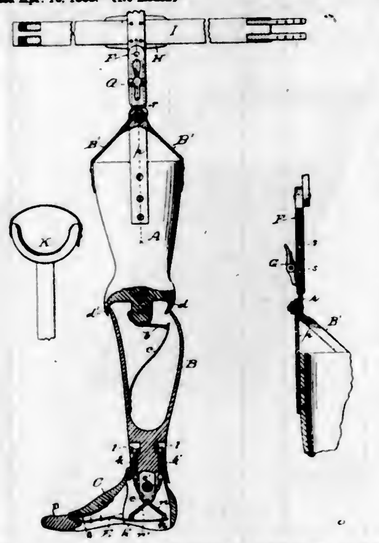
5. The combination of these elements—namely, a spindle, a fixed step, a whirl and whirl-shaft, a fixed external bearing for the whirl-shaft, and a yielding medium between the spindle and whirl, substantially as and for the purpose set forth.

6. In combination, a whirl and shaft therefor, a fixed external bearing for said shaft, a spindle, a step for said spindle, a cap or shell, H, fixed to the spindle, and a yielding medium or connection between said cap or shell and the whirl, substantially as specified.

7. In combination, a fixed support and bearing, A, a whirl, D, a hollow shaft, E, a spindle, F, a step, G, a cap or shell, H, attached to the spindle, and a yielding medium or band, J, substantially as specified.

8. The combination of a fixed tubular support and bearing, A, a whirl, D, a hollow shaft, E, having one or more openings in the side or sides thereof, a spindle, F, a step, G, a cap or shell, H, and a yielding medium between said cap or shell and said whirl, substantially as described.

336,904. **ARTIFICIAL LEG.** RALPH C. DUNHAM, New Britain, Conn. Filed Apr. 16, 1885. (No model.)



Claim.—1. The leg-section B, pivoted in the foot-section, as shown, a spring within the foot-section, and the crossed chains *n n'*, connected at their lower end to the foot-spring and secured adjustably to the leg-section at their upper end, all being combined substantially as and for the purpose specified.

2. The combination of the toe-section having a rabbet on its upper side at a point forward of its pivot or axis, the foot-section C, jointed or pivoted to said toe-section, and the flat sheet-metal spring with one end secured to the foot-section, and having its opposite end resting in the rabbet of the toe-section at a point above and forward of the toe-joint, so as to be deflected by an endwise pressure, substantially as described, and for the purpose specified.

3. Sections A and B, pivotally joined and provided with the strap *d'*, in combination with spring *c*, secured to section B, and the chain *b*, having one end secured to section A and its opposite end to one end of said spring, said parts being so connected to each other that said spring acts to hold the leg in its normal position, substantially as described.

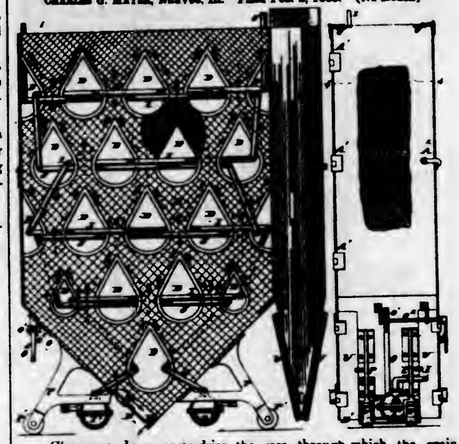
4. In combination with an artificial leg, a metallic strap or brace composed of two or more sections, one of said sections being formed with a series of perforations, the other sections being provided with a spring-pressed latch adapted to engage and interlock with the said perforations, and a suitable flexible strap, by means of which the complete metallic strap may be secured to the body of the wearer, all substantially as and for the object set forth.

5. In combination with an artificial leg, a crutch, a metallic strap or brace connecting said leg and crutch and adapted to be adjusted longitudinally, and a flexible body-encircling strap, by which said crutch and metallic brace are held in a desired position, substantially as described, and for the purpose specified.

6. In an artificial limb, a leg-section, a foot-section, and a connecting rivet or screw having a metallic or otherwise solid core, and a peripheral washer of rubber or other similar yielding material, all being combined as herein described, and for the object specified.

7. In combination with the thigh-section A, metallic strap *p* and one or more strengthening-braces, B', when used, substantially as herein described, and for the purpose specified.

336,905. **GRAIN-DRIER.** CHARLES EHLERMANN, St. Louis, Mo., and CHARLES G. MAYER, Nemvoo, Ill. Filed Feb. 2, 1885. (No model.)



Claim.—1. In a grain-drier, the case through which the grain passes, in combination with the series of upwardly-tapering perforated air-flues, those of one series being arranged to break joints with or lie in vertical planes between those of the series above, as specified.

2. The combination, with the outer case, A, of the inner case, B, the chambers C between said cases, and the perforated air-flues D, connecting said chambers, substantially as set forth.

3. The combination, with the outer case, A, the inner case, B, and the chambers C, of the open-ended tubes D, connecting said chambers, and the heating-pipes I J, passed through said tubes D, as set forth.

4. The combination of the outer case, A, pipes T, inner case, B, chambers C, perforated flues D, connecting said chambers, and the heating-pipes I J, passed through said flues D, substantially as set forth.

5. The combination, with the case through which the grain passes, of a series of perforated air-flues extending across said case and heating-tubes passed through said flues, substantially as set forth.

336,906. **HARROW.** AUSTIN C. EVANS, Springfield, Ohio. Filed Nov. 26, 1884. (No model.)



Claim.—The combination, with a harrow-beam and harrow-tooth having an enlarged head, of the bolder C, with an upper recess, *b*, for receiving and retaining the head of the tooth, bosses *e*, recessed in the beam, an overlapping lip or shoulder, *f*, resting upon the top of the beam, end walls, *c d*, the former of which is vertical and the latter inclined, and whose lower ends are connected by a guide-bar for preventing lateral strain, substantially as described.

336,907. **WEATHER-STRIP.** THOMAS J. FITZPATRICK, Mosticello, Ohio. Filed Dec. 9, 1885. (No model.)

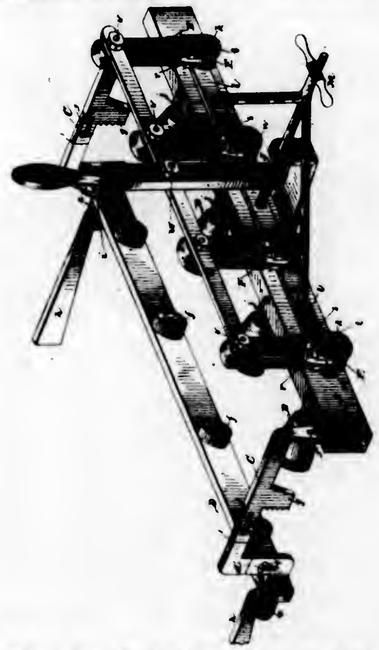
Claim.—1. The combination, with the door, of the weather-strip hinged thereto, and having the tappet-arm, the spring bearing against the weather-strip to raise the latter, and the stud against which the tappet-arm strikes when the door closes to depress the weather-strip, substantially as described.

2. The combination, with the door, of the weather-strip hinged thereto, and having the tappet-arm, the spring bearing against the weather-strip to raise the latter, and the stud against which the tappet-arm strikes when the door closes to depress the weather-strip, and the keeper K, secured to the door-frame at an angle to force the outer edge of the weather-strip against the door-sill, substantially as described.

336,907.



336,908. RAILROAD NUT-WRENCH. ALSTON J. FORBES, Campbell, Tex., assignor of one-half to Vincent H. Henderson, same place. Filed May 15, 1885. (No model.)



Claim.—1. In a railroad nut-wrench, the mechanism for simultaneously screwing a series of bolts or any number thereof, consisting of the bosses *f*, fixed on the frame-work, in combination with the socket-wrenches B B, journaled in frame A and operated by the ratchets on the end of the stem of the sockets, the two pawls *n n*, the spring *q*, the ring F, having two cams, *t u*, one being wider than the other, the cross-piece G, and the handle K, all arranged to operate substantially as set forth.

2. The combination of adjustable bars C C, having the projections *g d d' c*, and the cam-levers *h*, with the frames A and D, bosses *f*, and sockets B, said sockets being operated by the mechanism hereinbefore described.

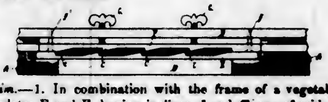
3. The combination of the socket-wrenches with the mechanism for operating the said wrenches, either in whole or in part, consisting of the ratchets, the pawls, the spring, the ring having a slot and two cams of unequal size, cross-piece G, bolted to the ratchet-heads, and the handle-lever, as set forth.

4. In a railroad-wrench, the combination of the sockets provided with stems or shanks and operated either in whole or in part by the ratchets placed on the said stems, the pivoted pawls engaging the teeth of the ratchets, the spring arranged in the recess of the pawls, the concentric ring on the head of the ratchet having a slot and two downwardly-projecting cams of unequal size, the cross-piece, and the handle-lever with the plates A and D, as and for the purpose specified.

5. In a railroad-wrench, the combination of the bifurcated handle which operates the series of sockets to or from the bolt-heads, with the actuating handle-lever, the ratchet mechanism for turning the series of sockets either in whole or in part, and the socket-wrenches, as set forth.

6. In a railroad-wrench, the combination of lug H, which serves as a support for bifurcated handle and lever, the central spindle, J, which regulates the travel of the sockets, and the handle-lever, all arranged to operate as set forth.

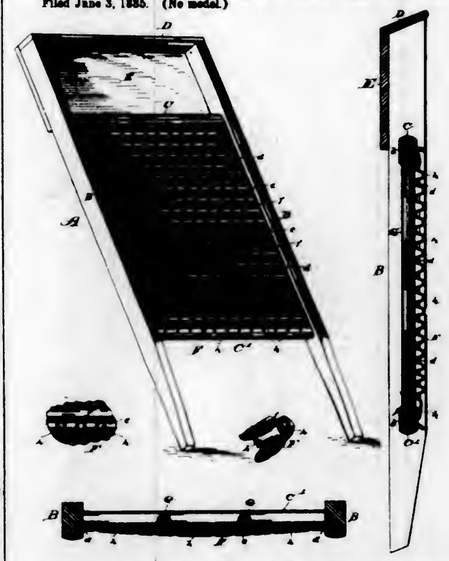
336,909. VEGETABLE-CUTTER. JOHN H. FRAUHAM, Cincinnati, Ohio, assignor of one-half to Andrew P. Dunler, same place. Filed July 27, 1885. (No model.)



Claim.—1. In combination with the frame of a vegetable-cutter, the two plates E and F, having inclines e^2 and f^2, one of said plates being longitudinally and the other vertically adjustable in the frame, and the plate F having pins or projections to enter corresponding depressions in the blades C, with the set-screws G and *e'*, to hold the blades and lower plate in position.

2. The combination, substantially as specified, of the frame A B D, the parts B D being recessed, as shown, with the knives arranged diagonally in said frame and having their ends notched, with the plate E, having inclines e^2 and intervening spaces e^3, the said plates being longitudinally adjustable within the frame, and the plate F, having inclines f^2, intervening spaces f^3, pins f^4, and screws *f'*, said plate F being vertically adjustable with relation to plate E, and the set-screws G, to hold the knives C firmly between the plates E and F, substantially as set forth.

336,910. WASH-BOARD. GEORGE P. FULLER, Minneapolis, Minn. Filed June 3, 1885. (No model.)



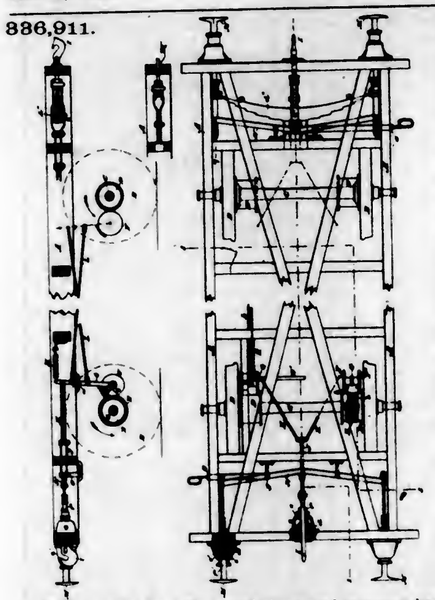
Claim.—A wash-board provided with a corrugated rubbing-surface forming ridges separated by furrows or depressions and holes or perforations provided in the ridges only for the circulation of air, the furrows being imperforate, and thus serving to retain a supply of suds, as set forth.

336,911. CAR-BRAKE. PAUL A. GAMBARO, Paris, France. Filed Dec. 14, 1885. (No model.) Patented in France Feb. 16, 1884, No. 160,373; in Belgium Feb. 23, 1884, No. 64,255; in England Feb. 23, 1884, No. 3,834; in Germany Mar. 9, 1884, No. 29,960; in Luxemburg Mar. 10, 1884, No. 366, and in Austria-Hungary Oct. 10, 1884, No. 29,197 and No. 45,922.

Claim.—1. The combination, with a rotatively-mounted shaft or drum, the speed of which is to be regulated by a brake, of an elastic helicoidal band encompassing such rotatively-mounted part, but having, when not under tension, an internal diameter a little greater than that of the part it encompasses, whereby the said brake may be set by pulling on the ends of said bar, and thus contracting it, as set forth.

2. The combination, with a rotatively-mounted part—as a drum, for example—of an elastic spiral or helicoidal band encompassing said rotating part, and mechanism, substantially as described, for applying a pulling strain to the ends of said elastic band, whereby it is made to contract and tightly embrace the said rotating part, substantially as set forth.

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3. The combination, with a rotatively-mounted part—as a drum, for example—of an elastic spiral or helical band encompassing said rotating part, two friction-wheels fixed on a common shaft and connected, respectively, by chains or other flexible connectors with the ends of said elastic band, and means, substantially as described, for putting said friction-wheels into peripheral contact with the rotating part, substantially as set forth.

4. The combination, in a car-brake, of a drum, D, fixed to the car-wheel, either directly or indirectly, as described, an elastic spiral or helicoidal band, E, encompassing said drum, two friction-wheels on the same axis, connected, respectively, with the ends of band E, a lever, G, which carries the said friction-wheels, and which is fulcrumed on the car-frame, a spring, H, which holds the friction-wheels in peripheral contact with the drum D, and means, substantially as described, whereby the said friction-wheels are moved out of contact with the drum through the medium of the draw-bar, as set forth.

5. The combination, in a car-brake, of the drum D, attached directly or indirectly to the car-wheel, and rotating in unison therewith, the spiral elastic band E, encompassing said drum, the friction-wheels F F', mounted rotatively in the pendent end of a lever, G, and connected, respectively, to the ends of the band E, as described, the said lever G fulcrumed on the car-frame, the spring H, connected to a fixed point at one end and to the lever G, as described, whereby it tends to draw the wheels F F' into peripheral contact with the drum, the draw-bar I, connected directly or indirectly to the lever G, as described, and provided with a collar or shoulder, *f*, the cushion-spring *d*, its box *c*, and the washer-plate *e*, all arranged substantially as described, whereby the draw-bar is caused in its longitudinal movement to act against the tension of spring H, to release the brake before it acts to compress the cushion-spring, substantially as set forth.

6. The combination, with the draw-bar I and the braking mechanism, constructed substantially as described, of shouldered buffer M, the cushion-spring *d'*, its box *c'*, and washer-plate *e'*, and the lever N, fulcrumed at *g*, and provided with slotted connections to the draw-bar and buffer, substantially as and for the purposes set forth.

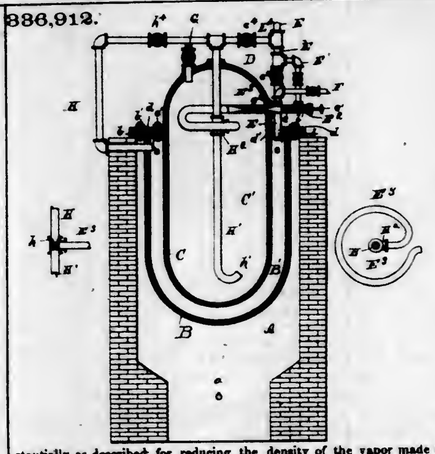
336,912. GAS APPARATUS. GEORGE W. GOSS, Boston, Mass., and GOSSE JONES, Washington, D. C.; said Jones assignor to said Goss. Filed June 17, 1885. (No model.)

Claim.—1. In a gas-generator, the combination of a mixing-chamber, an atomizer, a vapor-pipe connected to said atomizer and within the mixing-chamber, and a steam-conveyer pipe connected with the vapor-pipe, substantially as described.

2. In a gas-generator, the combination of a mixing-chamber, an atomizer, a vapor-pipe connected to said atomizer and inclosed in said chamber, and a steam-conveyer pipe extending to near the bottom of the chamber and connected with the vapor-pipe, substantially as described.

3. In a gas-generator, the combination of a mixing-chamber, an atomizer, a vapor-pipe coiled within said chamber and connected with the atomizer, and a steam-conveyer pipe joined to the vapor-pipe, substantially as described, for reducing the density of the vapor made by the atomizer.

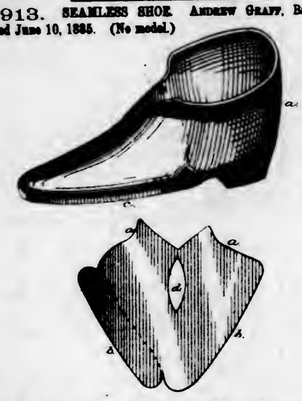
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4. In a gas-generator, the combination of a mixing-chamber, an atomizer, a vapor-pipe within said chamber and connected with the atomizer, and a steam-chamber inclosing the mixing-chamber and having inlet and outlet pipes, said outlet-pipe passing into the mixing-chamber and connected to the vapor-pipe, substantially as described.

5. In a gas-generator, the combination of a mixing-chamber, an atomizer, a vapor-pipe, a steam-chamber, a steam-conveyer pipe having suitable cocks and leading from the steam-chamber, and a steam-supply pipe having branches provided with suitable cocks and connected with the steam-chamber and the steam-conveyer pipe, substantially as described, so that the steam may be passed either into the steam-chamber and then to the steam-conveyer pipe or directly into the steam-conveyer pipe, as set forth.

336,913. SEAMLESS SHOE. ANDREW GRAFF, Brooklyn, N. Y. Filed June 10, 1885. (No model.)



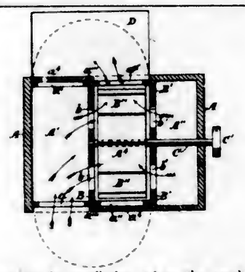
Claim.—The pattern or blank having reversed similarly-shaped edges *b b*, adapted to be united to form a shoe, and having counterpart edges *a*, which complete the shoe when sewed together at the back, as illustrated, in combination with the sole *c*, joined to the finished shoe, the whole co-operating as and for the purpose set forth.

336,914. APPARATUS FOR VENTILATING MINES. LOUIS L. GRAVES and JOHN KANDLES, Streator, Ill. Filed Nov. 24, 1884. Renewed Jan. 23, 1886. (No model.)

Claim.—1. In an apparatus for ventilating mines, the combination of the air-chamber A', having opposite openings *a a'*, air-chamber A''' over the fan-chamber, and air-chamber A'', having openings *b'* into fan-chamber A^4, having a revolving fan, B'', therein, with the doors or valves a^4 a^4, and arranged with relation to the mine-shaft substantially as described.

2. In an apparatus for ventilating mines, the combination of the pivoted doors or valves a^4 a^4, one upon each of the opposite sides of the chamber A', and arranged to cover openings *a* and *a'* of said chamber or to swing to cover openings *a''* and a^x of fan-chamber A^4, or to cover one opening in chamber A' and one opening in chamber A^4, as described.

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3. In an apparatus for ventilating mines, the combination of air-chamber A', having air-openings *a* and *a'* on opposite sides thereof, fan-chamber A⁴, having air-openings *a''* and $a^{\times}$ on opposite sides thereof, and a fan, B'', revolving in one direction only therein, air-chamber A'', and connecting air-chamber A''' to chambers A' and A'', air-openings *b b* from chamber A' into fan-chamber B'', and air-openings *b' b'* from chamber A'' into fan-chamber B'', with the pivoted doors or valves a^4 a^4, to cover openings *a* $a^{\times}$ or *a* and *a''*, substantially as described.

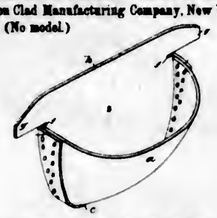
336,915. HOSE-SPANNER. FREDERIC W. GRAY, Leominster, Mass. Filed Apr. 18, 1885. (No model.)



Claim.—1. In a hose spanner or wrench, the hand-piece *a*, semicircular arm *b*, having an eye, *c*, to engage one lug of a coupling, substantially in line with the central line of the hand-piece, combined with a spring-controlled engaging device connected with the hand-piece at the junction of the semicircular arm and hand-piece, and provided with an inclined lip or face, which facilitates the passage of the opposing lug to automatically engage the same, substantially as described.

2. In a hose-spanner, the hand-piece provided with the semicircular arm, having an eye, *c*, and an engaging device, comprising a spring-controlled sliding bolt having a lip or projection, *f*, and stem *g*, slotted to receive the pin *h*, all operating substantially as described.

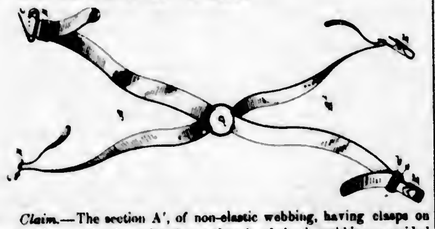
336,916. ELEVATOR-BUCKET. HARRY B. HAIGH, Brooklyn, assignor to the Iron Clad Manufacturing Company, New York, N. Y. Filed June 27, 1885. (No model.)



Claim.—1. An elevator-bucket having its back provided with a forwardly-projecting flange of gradually-increasing width, extending from edge to edge, combined with the front, secured to said flange by rivets, substantially as described.

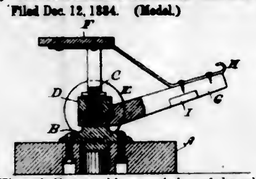
2. An elevator-bucket comprising the back having the forwardly-projecting flange extending from its upper edge down around its bottom and up again to its upper edge on the opposite side, and having the ends *g* and the front portion secured to said flange, with the ends *g* of the back brought around the flange and over the said front, substantially as described.

336,917. STOCKING-SUPPORTER. CHRISTINA J. HALEY, New York, N. Y. Filed Jan. 23, 1886. (No model.)



Claim.—The section A', of non-elastic webbing, having clasps on its ends, in combination with the section A, of elastic webbing, provided with safety-pins on its ends, and a movable ring, D, connecting the sections, as set forth.

336,918. FLOOR-GRINDING MACHINE. JAMES B. HARRIS, Jr., Geneseo, N. Y. Filed Dec. 12, 1884. (Model.)



Claim.—The grinding-machine consisting of the wheel or block A, the axle D, carrying rollers at its ends, the tongue G, and the seat F, combined for operation substantially as described.

2. In a floor-grinding machine, the combination, with the grinding block or wheel, of an axle mounted to rock upon the wheel, and provided with a seat for the operator, substantially as described.

3. In a floor-grinding machine, the combination, with the wheel or block A, provided with the vertical post or stud C, of the axle D, mounted upon said post C, and the rollers E, journaled upon the ends of said axle, substantially as described.

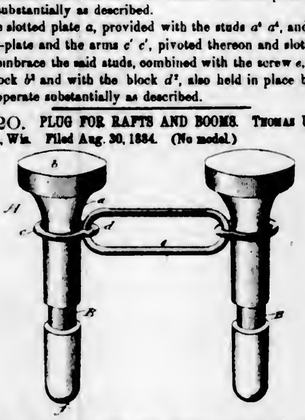
336,919. SKATE. LIVERUS HULL, Boston, Mass. Filed Apr. 18, 1885. (No model.)



Claim.—1. The slotted plate *a*, its studs or screws a^4 a^4, the slide-plate, its block b^2, and the slotted arms or clamps *c' c'*, and the dog and block d^2, combined with the screw to connect the slide-plate and block, to operate substantially as described.

2. The slotted plate *a*, provided with the studs a^4 a^4, and the block b^2, the slide-plate and the arms *c' c'*, pivoted thereon and slotted, as described, to embrace the said studs, combined with the screw *e*, connected with the block b^2 and with the block d^2, also held in place by the said plate *a*, to operate substantially as described.

336,920. PLUG FOR RAFTS AND BOOMS. THOMAS IRVINE, Beef Slough, Wis. Filed Aug. 30, 1884. (No model.)



Claim.—1. A raft or boom plug composed of wood, and provided at a point between its extremities with an annular groove, whereby the log swelling into said groove will lock the plug therein, substantially as described.

2. A raft or boom plug having a shoulder, *a*, and provided at a point between its extremities with one or more depressions in its periphery, for the purpose described, in combination with a link or chain connecting two or more of said plugs, substantially as and for the purpose described.

336,921. DRIVE-CHAIN. JOS. A. JEFFREY, Columbus, Ohio. Filed Aug. 18, 1882. (No model.)

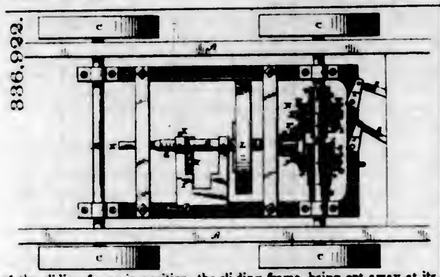


Claim.—In a drive-chain connected at its joints or articulations by pivots, the links and pivots, in combination with rubber rolls around the pivotal joints, which serve as cushions and are adapted to engage with the projections on the sprocket-wheels, substantially as set forth.

336,922. CAR-STARTER. WILLIS H. JOHNSON, Springfield, Ill. Filed July 15, 1885. (No model.)

Claim.—1. A safety-lock for a car-starter, composed of an endwise-moving frame, a spring, a shaft which is provided with a worm-gear, and an arm on the shaft, a suitable means for supporting the outer end

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of the sliding frame in position, the sliding frame being cut away at its center, substantially as set forth.

2. The combination of the shaft provided with a beveled gear upon one of its ends, a suitable safety-lock connected to the shaft, a spring which is wrapped upon the shaft, the two clutches placed upon the axle, and the levers for operating them, substantially as specified.

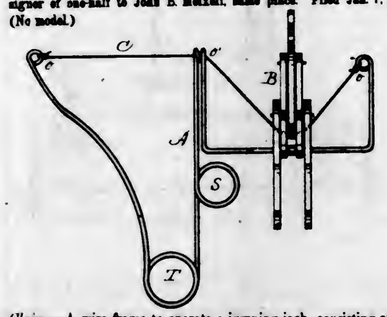
3. The combination of the shaft having a bevel-wheel upon its front end with the two bevel-wheels on the axle, a clutch connected to each wheel, and an operating-lever for each clutch, substantially as shown.

4. The combination of the shaft provided with a bevel-wheel on one end, the two bevel-wheels on the axle, a clutch connected to each wheel, the crank-levers, connecting-rods, the levers for moving the crank-levers and clutches, and a device for locking one of the operating-levers in position.

5. In a car-starter, the combination of the axle, the bevel-wheel Z, carrying the dogs Y, the wheel X, recessed at one end and provided with teeth for the dogs to engage with, the clutch-plate W, an operating-lever, and a device, 5, for locking the operating-lever, substantially as set forth.

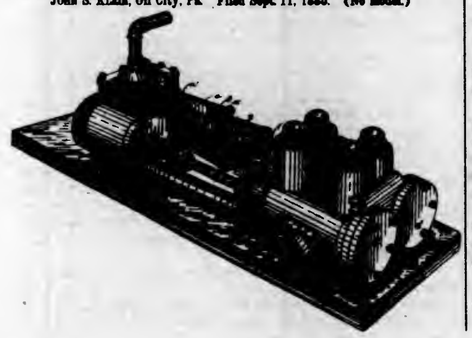
6. The combination of the shaft E, the bevel-wheel F, the bevel-wheel 4 on the axle, the clutch-plate 1, carrying projections 2, the sleeves 3, and the operating-lever, substantially as specified.

336,923. JUMPING-JACK. JOHN A. KIENARDT, Dayton, Ohio, assignor of one-half to John B. Meixell, same place. Filed Jan. 7, 1886. (No model.)



Claim.—A wire frame to operate a jumping-jack, consisting of end loops, O O, and central loop, O', to support the cord, loop T, and the external movable part connected therewith, loop S, the vertical parts, and the horizontal parts on which is held the figure, and the cord C, connected to the arms of the figure, substantially as set forth.

336,924. STEAM-VALVE GEAR FOR DUPLEX STEAM-PUMPS. JOHN S. KLEIN, Oil City, Pa. Filed Sept. 11, 1885. (No model.)

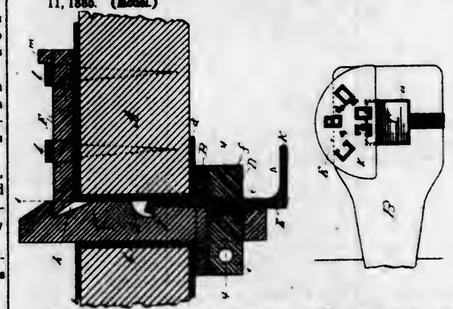


Claim.—1. In a duplex steam-pump, a valve-gear consisting of the combination of a rocking cam which consists of a bar pivoted at its middle and having a cam-slot formed, as shown, with upper and lower cam-faces at each end and a dwell between the ends, arranged adjacent to the piston-stem of each pump, a cam-follower on each piston-stem, by which said cams are rocked as the said piston-stems reciprocate, and rocker-arms connected with the pivot of each of said cams, and with the valve-stem of the opposite pump.

2. In a duplex steam-pump, a valve-gear which consists of the cams D D', journal-sleeves C C', rocker-arms B B', and cam-followers E E', combined and arranged to operate substantially as and for the purposes set forth.

3. In a duplex steam-pump valve-gear, the combination, substantially as shown, of the cam-followers E E', connected with the pistons F' F, respectively, and the two rocking gears formed, respectively, of the cam D, rocking sleeve C, and arm B, and the cam D', journal-sleeve C', and arm B', and journaled on the common pivot I, and operated from the piston-stems F' F, and connected with the valve-stems *a* *a'*, respectively.

336,925. SEAL-LOCK. GEORGE KOCH, Burlington, Iowa. Filed Dec. 11, 1885. (Model.)



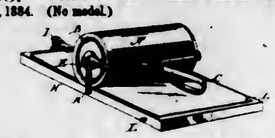
Claim.—1. A seal-lock for freight-cars, substantially as described, and consisting of bolt C, locking-piece E, and gravitating latch F, the whole constructed and arranged to operate as specified.

2. In a seal-lock, the combination of bolt C, having notches *g* and *h*, the locking-piece E, consisting of shank *i*, hook *j*, and head K, and the gravitating latch F, all constructed and arranged, substantially as described, to operate as specified.

3. In a seal-lock, the combination of bolt C, cross-bolt D, locking-piece E, and gravitating latch F, the whole being constructed and arranged, substantially as described, to operate as specified.

4. In a seal-lock, the combination of bolt C, being slotted at its front end, and having notches *g* and *h*, the cross-bolt D, having perforated head *f* and tenon *e*, locking-piece E, consisting of shank *i*, hook *j*, and head K, and the gravitating latch F, the whole being constructed and arranged, substantially as described, to operate as specified.

336,926. COPYING-ROLLER. JAMES B. LECKIE, Chicago, Ill. Filed July 30, 1884. (No model.)



Claim.—1. A copying-roller of the character and for the purpose described, having at one of its ends a stop, in combination with a bail susceptible of being sprung out, so as to allow the stop on the roller to pass the side of the bail, substantially as set forth.

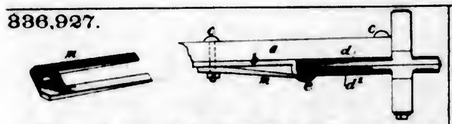
2. A copying-roller of the character and for the purpose described, having at one end a stop, in combination with a spring-bail crossing itself at the side of the roller, substantially as set forth.

3. A copying-roller of the character and for the purpose described, provided with a bail having downward extensions of its sides or legs, in combination with a board or pad adapted to support the copy-sheets, and provided with side stops, against which the said extensions of the bail can be backed when the roller is placed upon the pad or any copy-sheets thereon, substantially as set forth.

4. A copying-roller having a gelatinous or analogous ink-absorbing facing of the character described, and provided with end flanges curving over the face of the roller and serving to cover the ends of the annular facing upon the roller, substantially as set forth.

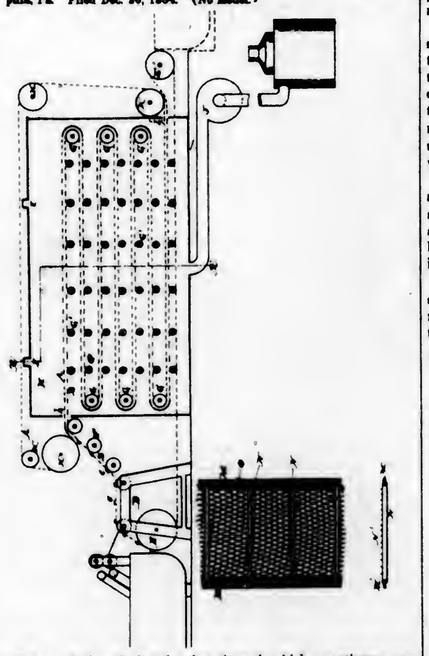
336,927. FIFTH-WHEEL ANTI-RATTLER. JOHN LOWE, Brighton, Iowa. Filed Aug. 20, 1885. (No model.)

336,927.



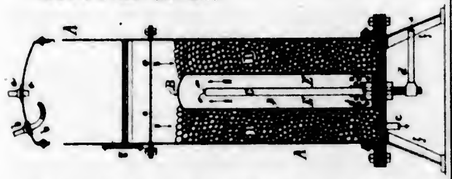
Claim.—An anti-rattler for fifth-wheels of carriages, consisting of either a straight or curved bifurcated spring-plate, which when attached to the reach will press together the upper and lower portions of the fifth-wheel, substantially as shown and described.

336,928. WOOL-DRYING MACHINE. JOHN H. LORIMER, Philadelphia, Pa. Filed Dec. 26, 1884. (No model.)



Claim.—A close drying-chamber through which a continuous vertical column or current of dry air is passed, in combination with two endless aprons of open-work adapted to lie close together to hold the material to be dried, and arranged to pass back and forth through the continuous vertical current of dry air, exposing both sides of the material to be dried in alternation to the said current of dry air, and guiding-rollers for said aprons to guide them back and forth within the chamber and bring them out through openings therein for the feed and discharge, the construction being such that the material is fed into the machine and delivered from it in an atmosphere which is cool and comfortable to work in, and is carried through a hot atmosphere within the close chamber, and in which the dry air is passed directly through both sides of the said material to be dried while in the custody of the aprons, substantially as and for the purpose specified.

336,929. FEED-WATER HEATER. JAS. MAHONY, New York, N. Y. Filed Dec. 2, 1885. (No model.)



Claim.—1. A feed-water heater, purifier, and clarifier formed of an outer shell, an inner tube or inverted pipe closed at the upper end and open at lower end, a filtering-chamber formed or located between said shell and inner pipe, and an internal reservoir within the said inner tube or inverted pipe, into which the water or medium passes for delivery, substantially as shown and described.

2. A feed-water heater, purifier, and clarifier having a vertical shell, a pipe within having its upper portion closed and lower portion open, and provided with perforations, foramina, or wire-gauze, an upright pipe or reservoir into which the feed-water overflows and through which it exits, and an inlet or spray nozzle or pipe through which the entering water is received or supplied, substantially as shown and described.

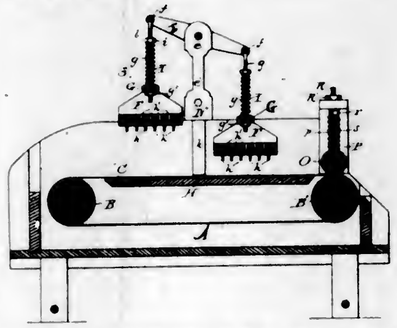
3. In a feed-water heater, purifier, and clarifier, a vertical shell, a pipe within said shell, having its upper portion closed and its lower portion attached to said shell, and having openings, perforations, foramina, or wire-gauze through which the feed-water passes, a filtering-chamber between the said outer shell and inner perforated pipe, an internal stand-pipe or reservoir into which the water overflows, and an inlet or spray nozzle or pipe, substantially as shown and described.

4. In a feed-water heater and clarifier, a vertical shell, a pipe within said shell, having its upper portion closed and its lower portion attached to said shell, and having openings, perforations, foramina, or wire-gauze through which the feed-water passes, a filtering-chamber between said outer shell and inner perforated pipe, a screen or perforated plate or partition above such filtering-chamber for confining the filtering material or medium to its place, and an internal stand-pipe or reservoir within the upright pipe or cylinder, closed at top, into which the heated and clarified water overflows, substantially as and for the purposes specified.

5. In a feed-water heater and clarifier, the combination of an outer shell, A, the inner stand-pipe, B, closed at the top and having openings at the bottom, the filtering chamber or space D between the outer shell and stand-pipe B, the reservoir or delivery-pipe C, located within pipe B, blow-off or cleansing nozzle *c*, water-outlet nozzle *d*, and the perforated inclosing plate or partition *e*, substantially as shown and described.

6. The combination, in a feed-water heater and clarifier, of an outer shell, A, one or more tubes or cylinders, B, chambers D and E, internal reservoir or stand-pipe, C, and perforated plate or partition *e*, substantially as shown and described.

336,930. WASHING-MACHINE. ARCHIBALD MALCOLM, Chicago, Ill. Filed Feb. 7, 1885. (No model.)



Claim.—1. The combination of an endless apron, C, rollers B B', beaters F, pump K, and means, as described, for actuating said beaters and pump.

2. The combination of the endless apron C, rollers B B', gear *a*, pinion *c*, pitman D, beams E and E', pump, and beaters F, said pump and beaters being actuated by said beams, as and for the purpose set forth.

3. In a washing-machine, the combination, with an endless apron, C, of the beams E E', having their extremities connected, the rods *g*, springs I, and beaters F, having vertical perforations therein.

4. In a washing-machine, a beater having a back provided with vertical perforations, and having a series of longitudinal and parallel elastic tongues projecting downward from its under surface.

336,931. COMBINED SHOE SCRAPER AND BRUSH. WILLIAM P. MANNING, Youngstown, Ohio, assignor of one-half to Frank S. Prosbrey, same place. Filed Mar. 23, 1884. (No model.)

Claim.—1. In a combination scraper and brush, an annular base of cast metal upon which the brush rests and provided with lugs for securing the same to the base, and having a perforated platform thickened on its under side for the reception of the scraper, substantially as described.

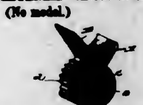
2. The combination scraper and brush consisting of a base having an open ring-section and a brush removably secured thereon and a perforated platform having a scraper detachably secured thereto, substantially as described.

3. The combination, with the base having an annular opening and perforated platform, of a circular brush, C, removably secured above said annular opening, and a horizontal scraper supported in vertical standards secured to the platform, substantially as described.

336,931.

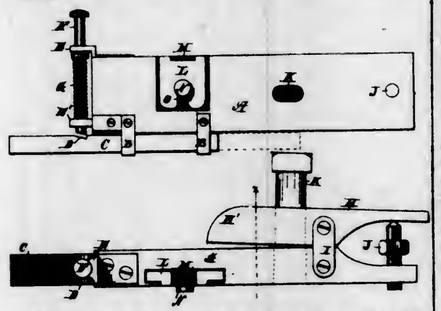


336,932. SASH-FASTENER. ANGUS D. MCCALL, Lauritaburg, N. C. Filed Aug. 31, 1885. (No model.)



Claim.—The centrally-pivoted circular plate *d*, having an enlargement or outwardly-projecting lateral flange, D, arranged around a portion of the rim of plate *d*, a pointed arm, E, at the termination of the flanged rim D, projecting beyond the serrated plate *d* at an angle thereto, and an arm, F, extending outwardly from the rim D at an angle to the arm E, whereby the arm E is adapted to lock the sash and the arm F to serve as a sash-holder when the device is reversed, as set forth.

336,933. COMBINED SAW SETTING AND GUMMING TOOL. DANIEL MCDONOUGH, Eagle River, Wis. Filed Aug. 24, 1885. (No model.)



Claim.—The combined tool consisting of the bar A, provided with a recess for the reception of gage L, the sliding bar C, provided with beveled recess D, the movable punch F, having beveled lower end and a lifting-spring, G, the jaw H, pivoted onto bar A and adapted to be clamped thereto by set-screw J, and the punch K, adapted to move freely in apertures through the jaw H and bar A, respectively, all substantially as described.

336,934. ASH-PAN. JOHN H. MCKNOWN, Barnesville, Ohio, assignor of one-half to Mathew C. McKeown, same place. Filed Oct. 2, 1885. (No model.)



Claim.—As an improvement in ash-pans, the combination of the pan-body A, the centrally-pivoted sections or slats B, having the trunnions c at their ends, each of said sections lying in an inclined position and having their edges lapping the section before and behind it, and provided at one of its edges with the downwardly-extending inclined lug or stud *d*, the transverse ledges *g* and *h*, located at opposite ends of the pan and lying beneath and above the edges of the sections which rest thereon, and adapted to limit the movement of the sections, and retain them in a closed position, the rod or bar E, located exteriorly to the pan and pivotally connected to the lugs *d*, and a pivoted lever, F, having an angular inclined arm, *f*, pivoted at its free end to one end of the rod E, the whole combined and adapted to serve for the purpose set forth, substantially as described.

336,935. DISPLAY-RACK. JOSEPH A. HELLER, Galva, Ill. Filed June 12, 1885. (No model.)



Claim.—1. In a display-rack, a pair of vertical standards arranged at a distance apart, in combination with a series of arms or hooks projected from opposite sides of each standard, said arms gradually increasing in length from top to bottom of the standards, as and for the purpose set forth.

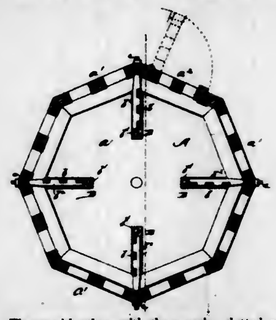
2. The combination, with the vertical standards arranged at a distance apart and united by cross-bars, of two rack-frames pivotally connected to one of the cross-bars, one on each side thereof, and a hook attached to the one and an eye to the other frame, whereby the frames are supported in a raised position, substantially as specified.

3. The rack-frames carrying a series of display-rollers, in combination with the short rack-supporting beams, the cover, and the rod for holding the rack-frames in a raised position, substantially as described and shown.

4. The combination of the display-rollers, the side bars, F, provided with slot J, and the latch or button M, pivoted upon the side bar, F, substantially as shown and described.

5. The hereinbefore-described device for displaying merchandise, consisting of a pair of standards provided with a series of hooks or stock-supports, and supported in a suitable base provided with rollers or casters, suitable braces and cross-bars connecting the standards, beams D, supported by the upper cross-bar, connecting the two standards, and rack-frames pivotally connected to the beams D, provided with means for holding the rack-frames in a raised position, and the cover I, substantially as shown and described.

336,936. CARPET-CLEANING REEL. SAMUEL J. MILLER and MICHAEL J. MCKENNA, Minneapolis, Minn. Filed Dec. 29, 1884. (No model.)

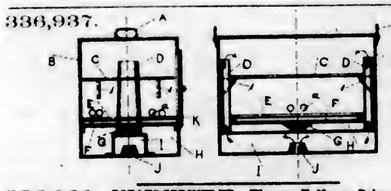


Claim.—The combination, with the angular slatted reel A, of the lifting-wings B at each alternate corner, composed of the bars *b*, secured at their ends to pieces *b'*, bolted through the heads of the reel, and having cross-bars *b²*, the ends of which are reduced to form bolts, which pass through the corner, and are secured by nuts *c* on the outside, substantially as set forth.

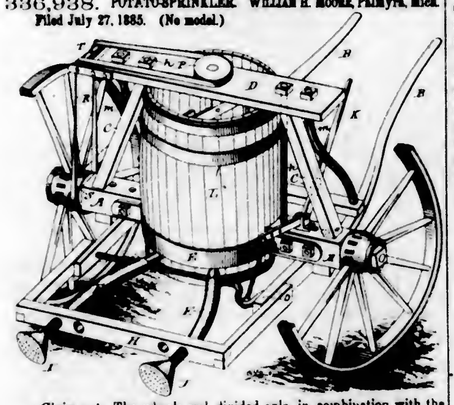
336,937. OVEN. WILLIAM MILLER, Grand Rapids, Mich. Filed Mar 23, 1886. (No model.)

Claim.—The combination, with the oven having the conical opening J and the boxing forming the flue I, of the flues D, communicating with the flue I, and the false bottom having the inverted cone resting on the flue I, as set forth.

336,937.



336,938. POTATO-SPRINKLER. WILLIAM H. MOORE, Palmyra, Mich. Filed July 27, 1885. (No model.)

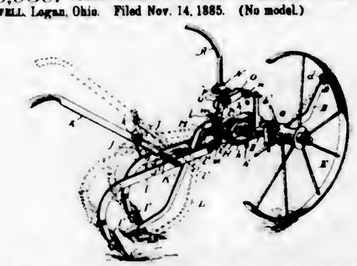


Claim.—1. The wheels and divided axle, in combination with the barrel or reservoir placed between the divided ends of the axle, a curved brace passed around the barrel and having its ends secured to the sections of the axle, the transverse beam D, located across the top of the barrel, and braces for binding the beam in position, as set forth.

2. The main frame carrying the barrel or reservoir, in combination with the supplemental hinged frame connected to the main frame, the sprinklers supported in the latter, and having a flexible connection with the lower end of the barrel or reservoir, and devices for actuating the hinged frame to effect the elevation of the sprinklers, thereby shutting off the supply thereto and allowing any sediment that may have accumulated in the sprinklers to run back in the barrel, as set forth.

3. The main frame carrying the barrel or reservoir, in combination with the cranked rod journaled in the frame, supplemental frame H, immovably fastened to the ends of the cranked rod, sprinkling devices I I, supported in the front end of the supplemental frame and having a flexible connection with the barrel or reservoir, a lever, K, pivoted in the main frame and connecting with the crank of the said rod, as set forth.

336,939. CULTIVATOR. DAVID MOTHERWELL and ROBERT B. MOTHERWELL, Logan, Ohio. Filed Nov. 14, 1885. (No model.)



Claim.—1. The combination of the axle, a gang flexibly connected therewith, a runner pivotally supported on the gang, a rod supported above the horizontal portion of the axle, a coupling sleeved on said rod, its rear end being vertically slotted to receive the upper end of the runner, and having slots formed transversely therethrough, and a bolt passed through the end of the runner and the transverse slots of the coupling, whereby the gang has a vertical movement independent of the runner.

2. In a cultivator, the combination of a gang flexibly connected to the axle to have a free vertical and horizontal movement, a runner swivelly supported on the gang, the forward end of the runner being extended upward from its support, a rod supported above the horizontal portion of the axle, and a coupling having one end sleeved on the rod and its other end pivotally connected with the extended end of the runner, the bore through the sleeve portion of the coupling being enlarged on either side of the central point.

3. In a cultivator, the combination of the axle, a gang flexibly connected therewith to have a free horizontal and vertical movement, a runner pivotally connected with a support swiveled in the gang, the forward end of the runner being extended, a rod projected from the arch of the axle and extending over its horizontal portion, the rod being braced on the outer end by an arm projecting from the axle, a coupling sleeved at one end on said bar, its other end being vertically and transversely slotted, the extended end of the runner being seated in the vertical slot of the coupling, and a bolt passed through the transverse slots thereof and the end of the runner to hold the parts together, the bore through the sleeved end of the coupling being increased in size in opposite directions from a central point, as and for the purpose specified.

4. The combination of the axle, a gang flexibly connected therewith, a casting on the outer end of the axle-arm, an arm integral with and projected upward from the casting parallel with the axle-arch, a clamp adjustably secured to an arm of the arch, a rod supported transversely by the clamp and the arm of the casting, a coupling having one end sleeved on said rod, and a runner pivotally supported on the gang and having its upper end pivotally connected with the free end of the coupling, as and for the purposes set forth.

336,940. PUMP. JOSEPH M. NORMAND, Springfield, Ohio, assignor of one-half to Jacob Kreider Mower, same place. Filed Oct. 20, 1885. (No model.)



Claim.—1. In a pump, the combination, with the water-escape passage, of a cut-off mechanism, including an air-chamber, located in that passage, and constructed to change the direction of the discharge of the water.

2. In a pump, the combination, with the water-escape passage, of a cut-off mechanism including an air-chamber, and constructed to change the direction of the discharge of the water.

3. In a pump, the combination, with the water-escape passage having a lateral discharge, of a cut-off mechanism, including an air-chamber, located in that passage, the cut-off being between the point of principal discharge and the lateral discharge, and constructed to change the direction of the discharge of the water.

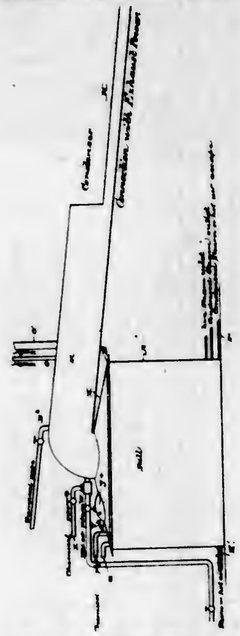
4. In a pump, the combination, with the stock constructed to conduct the escaping water and provided with a main and lateral discharge, of the valve located in that stock above the lateral discharge, and having a tubular or partially-tubular actuating-rod constructed to form an air-chamber and to allow the escape of water around it, and located within the stock.

5. In a pump, the combination, with the stock, an internal shoulder, and a valve-shell secured to that stock and having an inclosed cup with a water-way about it, and a lateral opening, of a valve located within that shell, and an actuating-rod passing up through the stock and adapted to adjust the valve against the shoulder and the cup, respectively.

6. In a pump, the combination, with the stock, an internal shoulder, and a valve-shell secured to that stock and having an inclosed cup with a water-space about it, and a lateral opening, of a valve located within that shell, and an essentially-tubular actuating-rod forming an air-chamber passing up through the stock and adapted to adjust the valve against the cup and the shoulder, respectively.

7. In a pump, the combination, with the stock, a coupling having a shoulder, a valve-shell having a cup therein with a water-space about it, and a lateral opening, of a skeleton valve within the shell and coupling and having a tubular actuating-rod constituting an air-chamber, a threaded stem swiveled thereto, a head, and a discharge-spout having a threaded cap, the stem passing through said cap, and the rod being within the stock.

336,941. PROCESS OF AND APPARATUS FOR DISTILLING OIL. JAMES W. NORTON and FRANKLIN H. ROUSE, Kinsua, Pa., assignors of one-third to Jacob C. Fuller, same place. Filed Apr. 4, 1885. (No model.)



Claim.—1. The oil-still provided with a closed top having an opening, in combination with the condensing-chamber arranged longitudinally above the still and connecting directly with the opening, in which the hot air, gases, and vapors are received, and a reduced portion combined and communicating with the outlet end of the body portion and connecting with an exhaust-power to withdraw the water, gas, and air, and pipes arranged in the enlarged portion, and adapted, respectively, to spray water and liquid chemicals on the hot air and gases, with receptacles for supplying water and liquid chemicals thereto, all substantially as described.

2. The still, in combination with the pipe situated within the same at the upper portion thereof, means for supplying sulphuric acid, muriatic acid, or the like to the said pipe, from whence it is delivered to the interior of the still, above the body of oil, pipes for delivering hot air to the bottom of the still and imparting a lateral motion to the body of oil, and means for supplying hot air to the pipes, part of the chemicals being precipitated downward into the oil, which, being in a state of ebullition or constant motion, will allow the thorough mixing of the oil and chemicals, as and for the purpose set forth.

3. The oil-still, in combination with the drum arranged within the same and communicating with a source of supply for hot air or liquid chemicals, a series of pipes radiating from the drum and extending down within the body of oil, and a pipe arranged across the top of the still adjacent to the drum and supplying liquid chemicals to the still above the oil, whereby part of the chemicals will be precipitated downward into the oil, which, being in a state of ebullition by the air forced therein, will cause the oil and chemicals to be mixed thoroughly, as set forth.

4. The oil-still, in combination with the condenser communicating with the top of the still, a series of pipes for delivering hot air through the body of oil and imparting a lateral motion thereto, a series of heating-pipes arranged across the bottom of the still, below the hot-air-supply pipes, and a pipe for introducing chemicals, part of the latter escaping into the condensing-chamber and the remainder being precipitated downward into the body of oil, as set forth.

5. The oil-still, in combination with the condensing-chamber communicating with the top, so as to receive the hot air and gases arising from the body of oil, horizontal heating-pipes extending within the still across the bottom, and a series of vertical radiating pipes extending down through the body of oil and supplied with hot air alone, or both hot air and liquid chemicals, the said horizontal pipes heating the oil so as to liquefy it, while the air from the vertical pipes gives a lateral motion to the oil and further heating it, these combined actions causing a rapid distillation, as set forth.

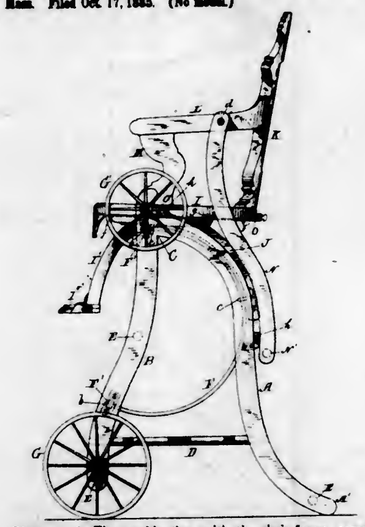
6. The herein-described method of distilling petroleum-oil, consisting of heating the oil at the bottom of the still, forcing hot air downward through the body of oil to give thereto a lateral motion, causing chemicals to be precipitated or mixed thoroughly with the oil by this action of the hot air, subjecting the gases, &c., arising from the body of oil to the combined action of chemicals and water-spray in a condensing-chamber, the water and chemicals thus mingling with the gases, and conveying the same into a receiving-tank, as set forth.

7. The herein-described method of distilling oil, consisting of heating the oil at the bottom of the still, forcing hot air down through the body of oil at different points simultaneously, so as to give a lateral motion to the oil, simultaneously subjecting the oil to the action of sulphuric acid or other suitable chemicals, and finally spraying the hot air, gases, &c., in a condensing-chamber, as set forth.

8. The herein-described method of distilling oil, consisting in heating the oil at the bottom of the still, forcing hot air downward through the oil at different points thereof, so as to give a lateral motion to the oil, passing chemicals—such as sulphuric acid—into the still above the oil, and causing a thorough mixture of the oil and chemicals, and finally treating the gases and hot air arising from the body of oil, to cause the hot air and gases to be condensed, as set forth.

9. The herein-described method of distilling oil, consisting of forcing hot air downward through the body of oil, passing liquid chemicals—such as sulphuric acid—into the still above the oil, and causing a thorough mixture of the oil and chemicals, and finally treating the hot air and gases and hot air arising from the body of oil within the cooling-chamber, to cause the hot air and gases to be condensed, as set forth.

336,942. CHILD'S CHAIR. FREDERICK A. PARKER, West Gardner, Mass. Filed Oct. 17, 1885. (No model.)



Claim.—1. The combination, with the chair-frame, composed of the pieces A and B and chair-seat I, of the curved pieces J, curved rods F, and loops *c*, substantially as and for the purposes set forth.

2. The combination, with the rigid chair-frame A B and adjustable chair-seat I, of rigid guide-pieces J J, stationary rods F F, loops or eyes *c*, and locking device consisting of the stop-pieces A, lever O, stop-rod O′, and spring *g*, substantially as described.

336,943. BUTTON-FASTENER. GEORGE W. PRESTER, Providence, R. I. Filed Dec. 21, 1885. (No model.)

Claim.—1. The triangular blank A, comprising the legs *a* and *b b*, the latter being cut in oblique lines from the point of the former, the

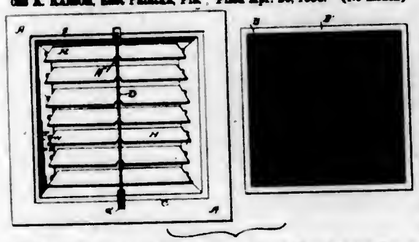
336,943.



space between the legs *b b* being cut in oblique lines to a point at or near the center of said blank, substantially as and for the purpose specified.

2. The herein-described sheet-metal staple, provided with the divergent tapered legs *a* and *b b*, the leg *a* being bent parallel to the legs *b b*, forming the loop *c*, adapted to engage the eye of a button, all the said legs to be passed through the material and be subsequently clinched, substantially as specified.

336,944. COMBINATION OF BLIND AND WIRE SCREEN. FRASIER A. RAMSOM, East Palatka, Fla. Filed Apr. 30, 1885. (No model.)



Claim.—The improved window screen and blind hereinbefore described, composed of the frame A, provided with the rabbet C and notches G' in its lower cross-bar or sill and extended beyond the outer edge of the rabbet, the wire screen B, having its frame B' fitted to the rabbet, the slats H, provided with notches H', and journaled in the frame A and arranged to turn outward with their edges close to the screen, and the rod D, provided with eyes and secured to the slats within the notches H', and having its lower end extended into the notch G' and bent outward under the lower cross-bar of the screen, substantially as shown.

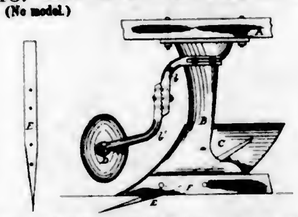
336,945. MUCILAGE-BOTTLE. WILLIAM H. REDINGTON, Chicago, Ill., assignor of one-half to William Rediger, same place. Filed Dec. 29, 1885. (No model.)



Claim.—1. In a cap or top for mucilage-bottles, the combination of an interior-toothed sponge-holding flange and a sponge compressing and holding ring, substantially as described.

2. In a cap or top for mucilage-bottles, the combination of an interior-toothed sponge-holding flange, a distributing-sponge, and a sponge compressing and holding ring, whereby the lower end of the sponge is held against the toothed flange, substantially as described.

336,946. PLOW. FRANCIS REYNER, Lathrop, Cal. Filed July 28, 1885. (No model.)

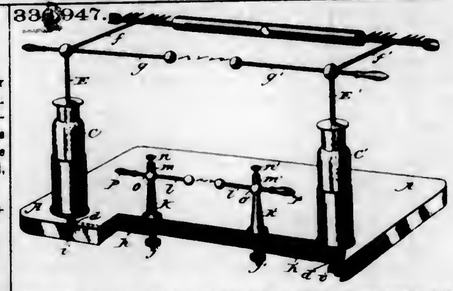


Claim.—1. The combination of the plow with the coltar D, which is placed at an angle in front of the plow, so as to cut off the corner of the land in front of the plow, substantially as shown.

2. The combination of the plow, the adjustable stem *b b'*, and the revolving colter D, which is set obliquely to the plow, substantially as described.

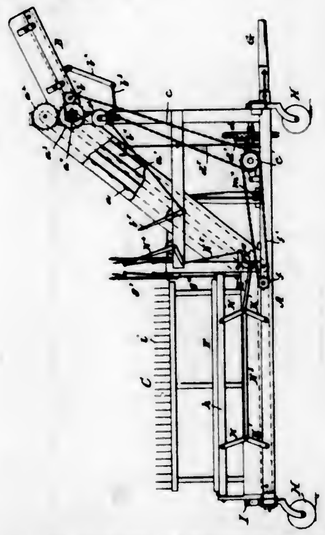
336,947. FRICTIONAL ELECTRICAL MACHINE. ALFRED L. ROBBINS, Chicago, Ill. Filed Mar. 23, 1885. (No model.)

Claim.—In an apparatus for experimenting with and demonstrating the properties of primary and induced electrical currents, the combination of a frictional electrical machine, a bed-plate, A, therefor, main conductors *f f'*, connected, respectively, with the positive and negative brushes of the machine, rods *g g'*, mounted to slide forward and back in said main conductors, whereby their extremities may be moved into and out of proximity with each other, so as to increase or diminish the length of the spark produced by the primary current at will, Leyden jars *c c'*,



standards *k k'*, also erected upon bed-plate A, electrical connections *h h'* between the standards *k k'* and the outer coatings of the Leyden jars *c c'*, respectively, and rods *l l'*, mounted to slide back and forth in the standards *k k'*, whereby their extremities may be thrown into or out of proximity, in order to increase or diminish the length of the spark given off by the induced current, substantially as described and shown.

336,948. HAY-LOADER. LEWIS H. ROBBINS, McCool, Ind. Filed Apr. 25, 1885. (No model.)



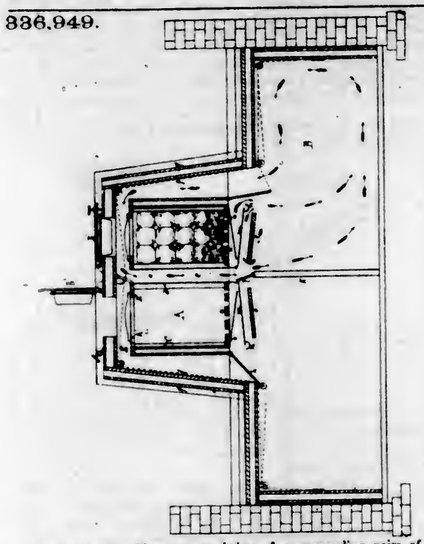
Claim.—1. The combination, with the receiving-platform, a rake pivoted to its front edge, and an adjusting-lever connected therewith, of a tilting frame extending over the rake and supported by the platform, a reel mounted on the outer ends of the tilting frame directly above the rake, and a lever connected with the frame to adjust it independent of the rake correspondingly with the position of the latter, substantially as set forth.

2. The combination, with the endless belts *a* and *a'*, gears a^2 a^3, sprocket-wheel a^4, carrier-belt *b*, supported upon rollers and having a driving-sprocket, *b'*, of the shaft c^2, provided with sprocket-wheel *c'*, and gear d^7, connected by intermediate gearing with the driving-wheel, the driving-chain *c*, and the interposed anti-friction tension-pulley, substantially as set forth.

336,949. COLD-STORAGE CHAMBER OR REFRIGERATOR. GEO. C. ROBBINS, New Haven, Conn. Filed Oct. 26, 1885. (No model.) Patented in Denmark June 17, 1885, No. 158.

Claim.—1. A refrigerator consisting of an inclosed ice and storage chamber, the former with metal cover and surrounded by air-passages from and to the latter, the passages for upward circulation formed with non-conducting walls, and the passages for downward circulation with conducting-walls, whereby circulation around the ice-chamber and throughout the storage-chamber is automatically commenced and maintained without direct contact with the ice, beneath the ice-chamber a series of drip-pans, and outlets arranged for air-circulation, and the communication between the ice and storage chambers and the consequent circulation controlled by valves or dampers, all substantially as specified.

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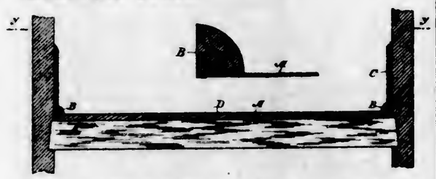
2. A double refrigerator consisting of corresponding pairs of ice and storage chambers, the ice-chambers with metal covers and surrounded by air-passages, between them a single air-passage with conducting-walls for downward circulation, and beneath each of them a series of drip-pans, and outlets arranged for air-circulation, the communication between the ice and storage chambers and the consequent circulation controlled by valves or dampers and divided by partitions, all substantially as specified.

336,950. CAR-COUPLING. FRANÇOIS E. ROUSSEAU and HENRY B. GOODALE, Au Sable, and MIHAEL CÔTÉ, Oscoda, Mich. Filed Apr. 27, 1885. (No model.)



Claim.—In a car-coupling, the draw-head provided with openings and slots, as described, in combination with the hinged cap having a lower downward extension, *c*, slotted pin H, and operating-crank J, all the parts being constructed and arranged for joint operation substantially as specified.

336,951. CARPET-COVER. FREDERICK SANDERSON, Prospect, Ill. Filed Dec. 7, 1885. (No model.)

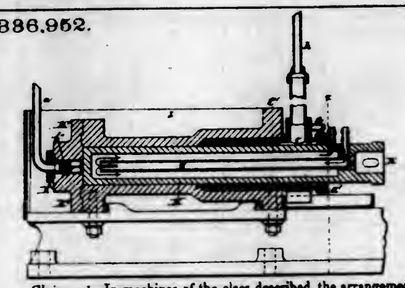


Claim.—1. Nailed to the base-board C, the molding B, constructed to reach the floor D along the inner part of the base of such molding, and having a part cut away from the rest of the base of such molding parallel to such base, so as to admit the margin of a carpet under a part of such molding, substantially as set forth.

2. The molding B, with a cutting made from the outer part of the base of such molding parallel to such base, as and for admitting and covering the edge of a carpet in manner substantially as described.

336,952. PRODUCTION OF COLD AND MANUFACTURE OF ICE AND APPARATUS THEREFOR. ALBERT SCHEUFE, Essen-on-the-Ruhr, assignor to Wilhelm Raydt, Hanover, Prussia, Germany. Filed June 3, 1885. (No model.) Patented in Belgium Nov. 24, 1884, No. 66,986; in France Nov. 24, 1884, No. 165,545; in England Nov. 24, 1884, No. 15,475; in Germany Nov. 25, 1884, No. 33,168; in Italy Dec. 19, 1884, XXXV. 22, XVIII. 17,595; in Austria-Hungary March 8, 1885, No. 44,353 and No. 10,342, and in Spain March 30, 1885, No. 4,658.

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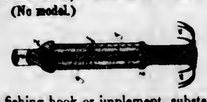
Claim.—1. In machines of the class described, the arrangement for reducing the loss of gases at the stuffing-box of the compressing-pump, which consists in the combination of a lubricating-chamber, c, with the gas-holder E, through pipe *h*, in which gas-holder the gases escaping from the stuffing-box are collected, and from which they are withdrawn through the pump A, either by suction after cutting the refrigerator out of the gas-circuit, or by the use of an injector operated by carbonic acid under high pressure or tension.

2. In machines of the class described, a storage-chamber for storing the working-fluid interposed in the connection between the refrigerator and condenser to cool the stored working-fluid through the medium of the gases as they pass from the refrigerator to the condenser, for the purpose of maintaining the pressure in the apparatus at as low a degree as possible, and thereby reduce the expenditure of power, substantially as described.

3. In machines of the class described, in which carbonic acid is employed as a refrigerant, the arrangement described and shown, and characterized by the compressing-pump A, condenser B, cooler C, refrigerator D, and gas-holder E.

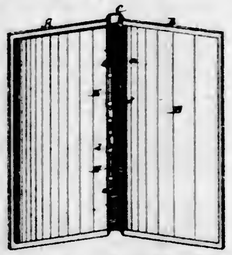
4. In machines of the class described, a cooler and a storage-chamber arranged therein interposed in the connection between the refrigerator and condenser to cool the stored working-fluid through the medium of the gases as they pass from the refrigerator to the condenser, and to cool said gases simultaneously, thereby reducing the pressure in the machine to a minimum and effecting a saving of the motive power, substantially as described.

336,953. FISHING HOOK AND DEVICE FOR CAPTURING FISH. JAMES SCOTLAND and FRANÇOIS GORDON, St. Pierre, near Miquelon. Filed Dec. 29, 1885. (No model.)



Claim.—The fishing hook or implement, substantially as described, consisting of the shouldered shank and its series of curved and pointed prongs and screw-threaded stem, the head screwed upon such stem, and the glass tube surrounding the stem and containing a charge of phosphorus or a light-giving material, all being arranged essentially and for use as set forth.

336,954. TEMPORARY BINDER FOR PAPERS. EDWARD L. SHIPMAN, New York, N. Y., assignor to Asa L. Shipman's Sons, same place. Filed Nov. 23, 1885. (No model.)

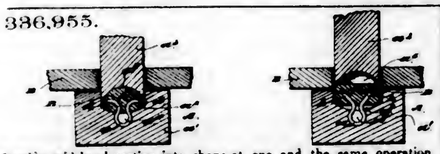


Claim.—The combination of the binder A B C, carrying the flexible tongues E E, with the plate F, having eyelets *e*, adapted to receive said tongue, the said eyelets having slots *s*, which extend to the edge of the plate F, substantially as herein shown and described.

336,955. METHOD OF MAKING BUTTONS. FRANKLIN A. SHERR, Jr., Providence, R. I. Filed Dec. 11, 1885. (No model.)

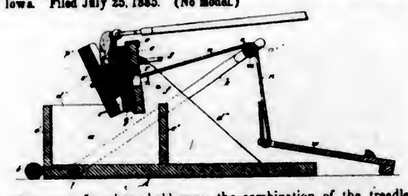
Claim.—The described improvement in the art of making buttons, which consists in forcing the legs of the button-shank in a divergent direction into the blank of which the head portion is to be made, and

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forming said head portion into shape at one and the same operation, substantially as specified.

336,956. HOUSEHOLD PRESS. JOSEPHINE L. SMITH, Davenport, Iowa. Filed July 25, 1885. (No model.)



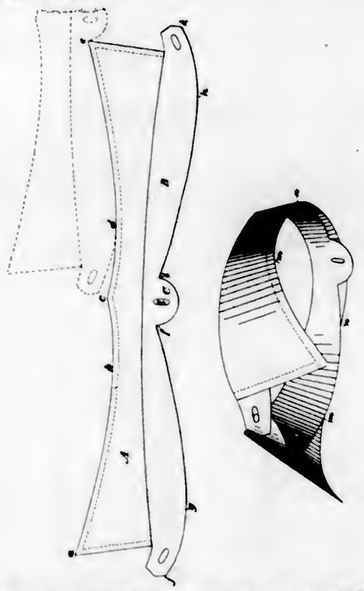
Claim.—1. In a household press, the combination of the treadle, lever, and cords with the press head and frame and changeable pressure-block, substantially as described, and for the purposes set forth.

2. A household press provided with changeable pressure-blocks and press-head attachments, substantially as shown and described, and for the purposes set forth.

3. The changeable attachments for a household press, provided with slots for the cord and flanges for adjustment to the press head and frame, substantially as described and shown, and for the purposes indicated.

4. A household press provided with a water-box or receptacle for a bucket or vessel, and having changeable pressure-blocks and attachments for the press-head, operated by a treadle, cord, and lever, substantially as described, and for the purposes set forth.

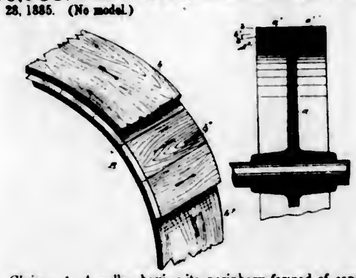
336,957. COLLAR. GEORGE K. SNOW, Watertown, Mass. Filed Aug. 11, 1880. (No model.)



Claim.—1. A collar cut or stamped from a sheet or web of prepared material, and having the edge of its turn-over portion composed of two concave lines meeting each other at an angle in the center of the length of the collar, and the greater part of the lower edge of each half of the band portion convex to the extent of the concavity of the outline of one-half of the top edge of the turn-over portion, substantially as and for the purpose described.

2. A collar cut or stamped from a sheet or web of sized and calendered material having its top edge formed of two concave lines meeting each other at an angle, and its bottom edge formed of two convex lines, the major portion of each of which is the exact counterpart of one of the concave lines, which give shape to the upper edge of the collar, and provided at the center of its length with the downwardly-projecting tongue C, to contain the center button-hole, substantially as described.

336,958. PULLEY. EPHRAIM C. SCOY, Kansas City, Mo. Filed Aug. 28, 1885. (No model.)



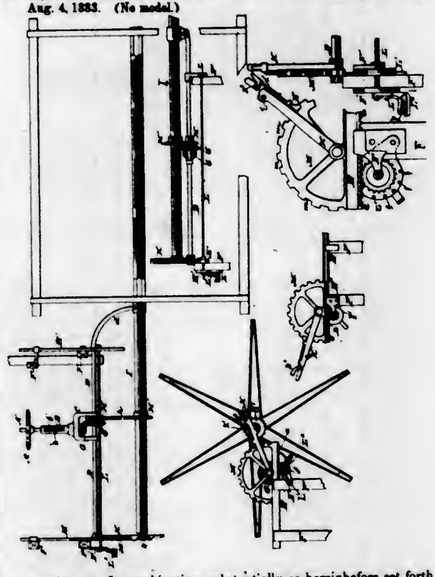
Claim.—1. A pulley having its periphery formed of separate layers of fibrous material composed in one direction, and the fibers or grain of alternate layers of said material composed in a transverse direction, substantially as specified.

2. A pulley having its periphery formed of separate outer and inner layers of fibrous material, the grain of which is composed in one direction, and an intermediate layer in separate parts, the grain of which is composed in a transverse direction, as specified.

3. A pulley having its web constructed with radial arms, and flanges upon said arms, and a periphery formed of separate layers of wood, the grain of which is composed in one direction, and an alternate layer in separable parts, the grain of which is composed in a transverse direction, and all of said layers riveted to said flanges, as specified.

4. A pulley having its web constructed with radial arms, and flanges upon said arms, and a periphery formed of separate layers of wood, the joints of which are formed upon said flanges, and a covering-plate, as and for the purpose specified.

336,959. HARVESTER-REEL. ANDREW STARK, Chicago, Ill. Filed Aug. 4, 1883. (No model.)



Claim.—1. In combination, substantially as hereinbefore set forth, the reel, the reel-shaft, a rock-shaft having arms containing the bearings for the reel-shaft, sliding supports, wherein such rock-shaft is journaled in such manner that it may be rocked through an arc whose chord is horizontal, suitable slide-bearings for said sliding supports, and means for sliding them back and forward on such bearings, whereby the reel may be adjusted vertically by swinging either through the forward or rear half of said horizontal arc, and may be adjusted horizontally by sliding said supports.

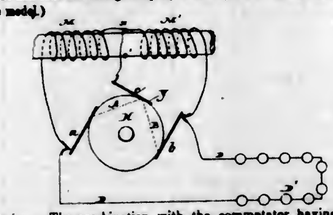
2. The side bars, E and E', having the cog-racks *e e*, and the notched segment M, in combination with the rock-shaft D, lever-arms *d* and K, the reel-shaft supported in said arms, the shaft L, provided with the pinions L', and suitable detents to retain the pinions L' and the lever-arm K in any desired position relative to the cog-racks and the segment, respectively, substantially as and for the purpose set forth.

336,960. WIRE HAT AND COAT HOOK. FREDERICK TAYLOR, Lowell, Mass. Filed Apr. 13, 1884. Renewed Jan. 27, 1886. (No model.)



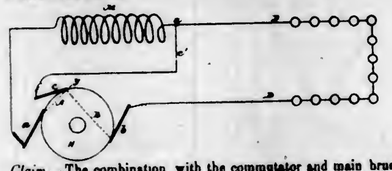
Claim.—A hook formed of a single wire twice doubled upon itself sidewise in opposite directions, and curved to form a hat-hook and a coat-hook, and having its main or longest strand offset, as herein described, and having the ends of said wire bent into attaching-points, where said main strand is offset, as and for the purpose specified.

336,961. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. N. TESLA, Smiljan Lika, Austria-Hungary, assignor to the Tesla Electric Light and Manufacturing Company, Rahway, N. J. Filed May 18, 1885. (No model.)



Claim.—The combination, with the commutator having two or more main brushes and an auxiliary brush, of the field-helices having their ends connected to the main brushes, and a branch or shunt connection from an intermediate point of the field-helices to the auxiliary brush, and means for varying the relative position upon the commutator of the respective brushes, substantially as set forth.

336,962. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. NIKOLA TESLA, Smiljan Lika, Austria-Hungary, assignor to the Tesla Electric Light and Manufacturing Company, Rahway, N. J. Filed June 1, 1885. (No model.)



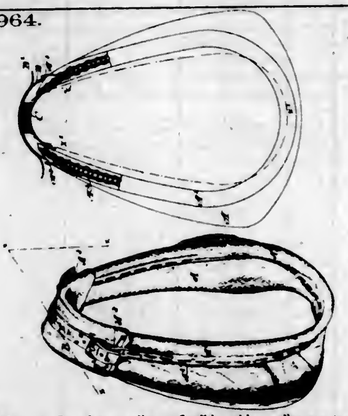
Claim.—The combination, with the commutator and main brushes and one or more auxiliary brushes, of the field-helices in the main circuits and one or more shunt-connections from the field-helices to the auxiliary brushes, the relative positions upon the commutator of the respective brushes being adjustable, for the purpose set forth.

336,963. CYLINDRICAL WOODEN PACKAGE. JAMES TOMLINSON, Detroit, Mich., assignor of one-half to George Maitland, Raimond A. Parker, and Charles F. Burton, all of same place. Filed Nov. 25, 1884. (No model.)



Claim.—A cylindrical-shaped package the walls of which are formed of two thicknesses of wood wound in a continuous coil from one piece, and having interposed between them a cement-saturated piece of cloth or paper.

336,964. HORSE-COLLAR. PETER R. TURNBAUER, Rockford, Ill. Filed Dec. 7, 1885. (No model.)



Claim.—1. In a horse-collar, a flexible rubber collar-cap tree, substantially as described, and for the purpose specified.

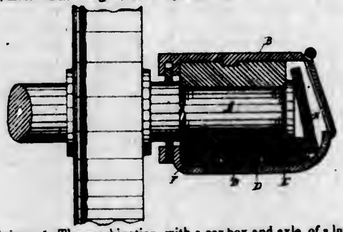
2. The combination, with the flexible collar-cap tree B, of the flexible rubber collar-cap tree C, substantially as set forth.

3. The combination, with the horse-collar composed of the parts A A' A^2, secured together by means of the thong A^3, of the flexible collar-cap B, provided with the straps B' B^2 and the flexible collar-cap tree C, substantially as described.

336,965. PROCESS OF PREPARING FOOD FOR ANIMALS. CARL H. VOGT, Pegau, Saxony, Germany. Filed July 1, 1885. (No specimens.)

Claim.—The process of regaining the nutritious substances contained in the liquid obtained by treating straw or other similar substances with alkalies, which consists in neutralizing such liquids with sulphuric acid, thereby forming alkaline sulphate, and precipitating the organic matters, and in separating the precipitate from the liquid and lixiviating it with water, substantially as specified.

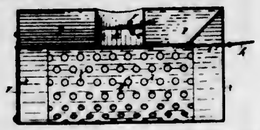
336,966. PACKING FOR CAR-AXLE BOXES. ENOCH WAITE, Franklin, Mass. Filed Aug. 3, 1885. (No model.)



Claim.—1. The combination, with a car box and axle, of a lubricant-packing consisting of a block formed of a series of strips of felted or woven fibrous material laid and secured together, and an intercepting layer filling the rear portion of the box and fitting closely around the axle, for the purposes and substantially as described.

2. The combination, with a car box and axle, of a block for supplying the lubricant to the bearing, consisting of a series of strips of felted or woven fibrous material laid and secured together, and a protecting-piece of the same material laid against the end of the axle, whereby the axle and packing are protected from sand and dust, substantially as shown and described.

336,967. FISHERMAN'S MINNOW-BOAT. FRANK F. WARD, Otsego, Mich., assignor of one-half to C. D. Stuart, same place. Filed Oct. 10, 1885. (No model.)



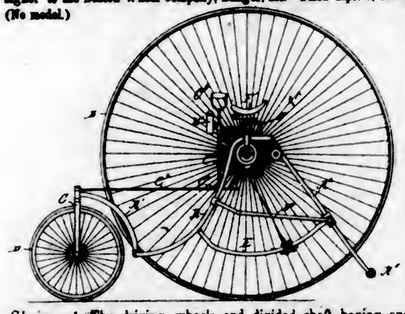
Claim.—1. A minnow-boat consisting of an air-chamber to float on the water, a connected perforated minnow-chamber below, and a walled-up entrance-opening leading down through the air-chamber into the minnow-chamber, substantially as set forth.

2. A minnow-boat consisting of an air-chamber having its end wall at the forward end of the boat slanted, as specified, and a perforated

minnow-chamber below the air-chamber and connected therewith, said air-chamber having a walled-up entrance-opening leading down through it into the minnow-chamber, substantially as set forth.

3. A minnow-boat consisting of an air-chamber, a connected perforated minnow-chamber below, a walled-up entrance-opening down through the air-chamber, and a detachable door in said opening, substantially as set forth.

336,968. TRICYCLE. FREDERICK WHITE, Westborough, Mass., assignor to the Boston Wheel Company, Bangor, Me. Filed Apr. 6, 1885. (No model.)



Claim.—1. The driving-wheels and divided shaft having one portion connected with each wheel and the pinions a' a^3, connected with two portions of the shaft, combined with the intermediate gearing, a^2 a^4 a^5 a^6, between the said pinions, the box inclosing the said pinions, and gearing having bearings for the said gears a^4 a^5 and their connected pinions, and actuating mechanism for the said box, substantially as described.

2. The main shaft and hubs b^3 carried thereby, each hub provided with an annular groove around its periphery, the said groove being intersected by transverse recesses, and rollers placed in the said recesses, combined with rings surrounding the said hubs and rollers, drive chains or bands to engage and operate the said rings and connected with the actuating-levers E^4, the annular groove of each hub affording space for the circulation of oil from one to the other of the said recesses as the hub rotates, substantially as described.

3. The main shaft and hubs b^3 carried thereby, each hub provided with an annular groove around its periphery, the said groove being intersected by transverse recesses, the under faces of which are made eccentric to the axis of the hub, and rollers placed in the said recesses, combined with rings surrounding the said hubs and rollers, drive chains or bands to engage and operate the said rings and connected with the actuating-levers E^4, the annular groove of each hub affording space for the circulation of oil from one to the other of the said recesses as the hub rotates, substantially as described.

4. The levers and drive-chains actuated thereby and the attaching device and frictional locking device for holding it from movement on the said levers, combined with a shifting device, substantially as described, co-operating with the locking and attaching devices, whereby the latter may be first released from engagement and then shifted along the lever, and be again locked in any position thereon, where it may be left, substantially as described.

5. The brake or retarding mechanism consisting of a friction wheel and band and straining device therefor, combined with the longitudinally-movable notched shaft engaging the said straining device, and the locking device for engaging the notches of the said shaft, operated by the rotary movement thereof, substantially as described.

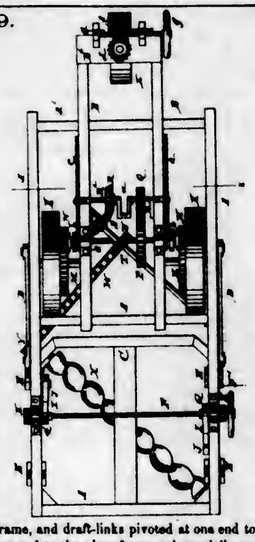
6. The actuating-lever and attaching device movable thereon, provided with inclined surfaces, combined with the locking-rollers and spring co-operating therewith, and the shifting device movable with relation to the said attaching device and provided with projections to engage the said rollers, substantially as and for the purpose described.

7. The combination, with the frame-work, of a bearing for the axle comprising two half-rings hinged together at one side, provided with lugs at the opposite side, and a bushing screwed into one of the said lugs and projecting therefrom and bearing against the other lug to prevent contact of the two lugs, and a bolt passing through the said bushing and lug fastening two half-rings together, substantially as described.

336,969. STEAM-PLOW. GEO. WILLARD, Chicago, Ill. Filed June 6, 1885. (No model.)

Claim.—1. The combination of the main frame, the rectilinear plow-frame, the scroll-plow having its ends journaled to opposite sides of the plow-frame, the guide-plates attached to the plow-frame and provided with vertical slots, the screws or bolts passing laterally through the slots of the plow-frame into the main frame, and draft-connections between the said frames, substantially as described.

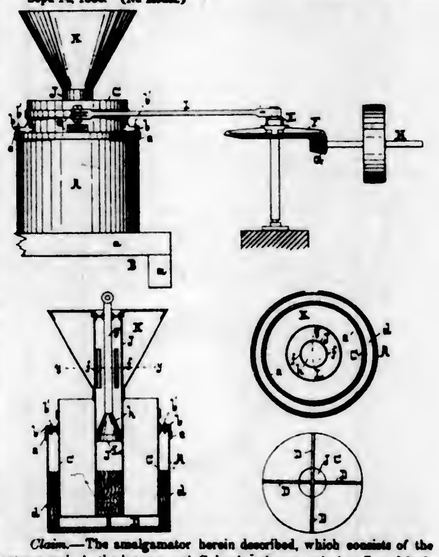
2. The combination of the main frame, the vertically-movable plow-frame, the scroll-plow, the guides secured to the plow-frame and engaging the main frame, and draft-links pivoted at one end to the main frame and at the other end to the plow-frame, substantially as described.



3. The combination of the main frame, the vertically-movable plow-frame, the scroll-plow, the guides on the plow-frame engaging the main frame, and draft-connections between the main frame and the plow-frame, with the secondary frame B, the crank-shaft having the bevel-wheel R, the diagonal shaft T, having the bevel-wheel S and sprocket-wheel U, and the diagonal drive-chain connecting the sprocket-wheel with a wheel on the plow, substantially as described.

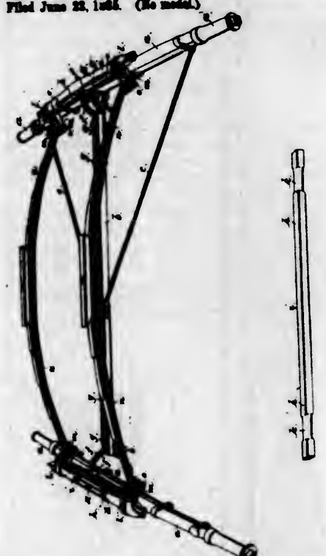
4. The combination of the main frame, the vertically-movable plow-frame, the scroll-plow, the guides on the plow-frame engaging the main frame, and draft-rods pivoting the main frame and plow-frame together, with the crank-shaft having the bevel-wheel R and pinion Q, the shaft O, having the gear-wheel P, the carrying-wheels K, the pinions N, the clutches b c on the shaft O, the diagonal shaft T, having the bevel-wheel S and sprocket-wheel U, and the drive-chain connecting said sprocket-wheel with a wheel on the plow, substantially as described.

336,970. AMALGAMATOR. JOSEPH WILKINS, Baltimore, Md. Filed Sept. 14, 1885. (No model.)



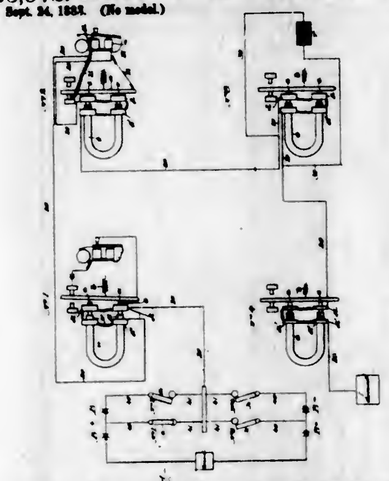
Claim.—The amalgamator herein described, which consists of the outer vessel, A, the inner vessel, C, having the central pipe, J, and feeding-piston L, the said inner vessel being supported from and maintained centrally of the outer one by means of the rollers b, with their flanges b', the arm c, rigidly secured to the vessel C, connecting-rod I, and the rotative crank E, all arranged and combined substantially as and for the purpose specified.

336,971. CARRIAGE-SPRING. ROBERT B. WILLIAMS, Janesville, Wis. Filed June 22, 1885. (No model.)



Claim.—The combination, with the axles, the reach-bar, and brackets connecting the axles and reach-bar, of the torsion-rods, substantially as described, rigidly secured at their centers to said brackets, bearings supporting the outer ends of the torsion-rods, arms rigidly secured to the said rods, and the side springs pivotally secured to said arms, all of the above parts combined and operating substantially as set forth.

336,972. TELEPHONE-CALL. JOHN C. WELSH, Boston, Mass. Filed Sept. 24, 1883. (No model.)



Claim.—1. The combination, with an electric circuit, of a series of electro-magnetic instruments having their cores charged with magnetism of substantially equal amounts in the different instruments and independent of that induced by currents in the said circuit, and electro-magnetic devices in the said circuit which produce a different amount of magnetic change in the different instruments when effected by a given current in the circuit, substantially as described.

2. In an electric circuit, a series of electro-magnetic instruments having their cores charged with magnetism of substantially equal amount and independent of that induced by currents in the said circuit, electro-magnetic devices which produce unequal magnetic changes in the different instruments when the circuit is traversed by a current of given strength, combined with means for transmitting currents of different definite strengths, whereby the desired inductive effect may be produced in any desired one of the said instruments, and in that one only, substantially as described.

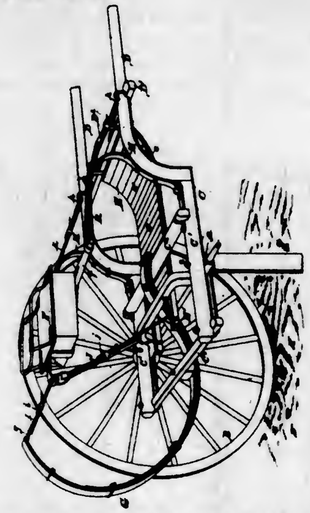
3. An electric circuit and series of electro-magnetic instruments therein having inductive coils of substantially equal capacity, and in a portion of the said instruments a shunt for the said coils of definite resistance, whereby unequal inductive effect is produced in the different instruments by a current of given strength in the circuit, combined with means for transmitting currents of different definite strengths over the said circuit, substantially as described.

4. An electric circuit and series of electro-magnetic instruments therein having their cores charged with magnetism of substantially equal amount, and part of one and part of the other polarity, and having electro-magnetic devices which produce unequal magnetic changes in the different instruments of like polarity, combined with means for transmitting currents of different definite strengths and of either desired polarity, substantially as described.

5. An electric circuit and series of electro-magnetic instruments therein, a part having their cores charged with magnetism of one polarity and a part with the other polarity, and inductive coils on the said cores, and in a portion of the instruments shunts of definite resistance, whereby unequal inductive effect is produced in the different instruments by a current of given strength, combined with means to transmit currents of different strengths and polarity, substantially as and for the purpose described.

6. An electro-magnetic instrument consisting of a permanent steel magnet and soft-iron cores attached to the poles or extremities thereof and magnetized thereby, combined with inductive coils upon the extremities of the steel magnet and upon the soft-iron cores, arranged to produce opposite inductive effect upon the poles of the steel magnet when traversed by a current, substantially as described.

336,973. ROAD-CART. JOHN D. WILSON, Greenleaf, Kans. Filed Dec. 5, 1885. (No model.)



Claim.—1. In a road-cart, the combination of an axle, a frame rigidly supported thereon, the thills rigidly connected to the frame, a seat, a back spring rigidly secured to the frame at one end and having its upper end left free, the front springs rigidly connected to the frame and the thills and having free upper ends, and connections between the free ends of the springs and the seat, whereby the latter is free to move vertically or laterally independent of the frame, substantially as described.

2. The combination of an axle, the springs, a seat, and adjustable connections between the seat and the springs to vary the tension of the latter, substantially as described.

3. The combination of an axle, a frame, springs rigidly secured at one end to the frame, a seat, and adjustable straps connecting the seat and the free ends of the springs to vary the tension of the latter, substantially as described.

4. The combination of the axle, a frame, a rear curved spring secured to the frame, adjusting strap or straps between the upper end of

the said spring and the frame, and a seat yieldingly mounted at its front end and loosely connected to the adjusting-strap, substantially as described.

5. The combination of the axle, a frame, a rear curved spring secured to the frame, a flexible connection between the upper end of the spring and the frame, and a seat supported at its front end and loosely connected at its rear end to the flexible connection of the spring, substantially as described.

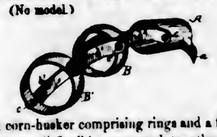
6. The combination of the axle, a frame, a spring secured thereto and arranged in rear of the same, adjusting-straps secured to the upper end of the spring, a bow to which the lower strap is connected, and a seat having an arm or loop loosely connected to the adjusting-strap, substantially as described.

7. In a road-cart, the combination of an axle, a frame rigidly secured thereon, the rigid thills connected to the frame, a seat, a rear spring secured to the frame at one end, the front springs secured to the thills and frame, the adjustable straps I J, having the seat connected thereto, and the straps *k*, secured to the front springs and connected to the thills and seat, substantially as described.

8. The combination of the axle, a frame, an elevated seat, a rear spring secured to the frame, adjusting-straps I J, having a retaining-ring, curved springs H, adjusting-straps K, the thills having loops, and a bow, E', secured to the frame, substantially as described.

9. In a road-cart, the combination of the frame, the thills connected rigidly thereto, springs H, rigidly secured at one end of the frame and thills, a seat, and adjustable straps K, secured to the free ends of the springs and connected loosely with the thills and the seat, substantially as described.

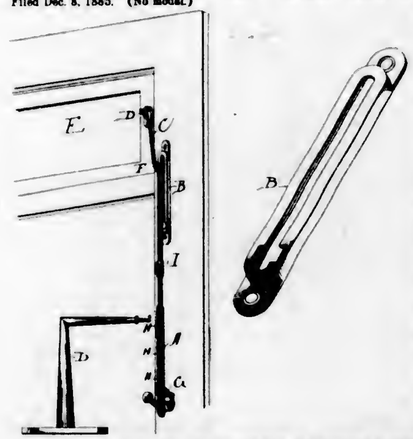
336,974. **CORN-HUSKER.** JESSE P. WITHROW, Kammerer, Pa. Filed July 20, 1885. (No model.)



Claim.—1. A corn-husker comprising rings and a finger tip or thimble formed with a claw, all flexibly connected together, substantially as described and shown.

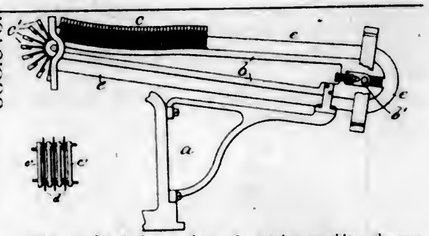
2. In a corn-husking device, the finger tip or thimble A, having the claw *a*, in combination with the rings B and B' and links *b'* and *b*², substantially as described and shown.

336,975. **TRANSOM-LIFTER.** JOHN F. WOLLENSAK, Chicago, Ill. Filed Dec. 8, 1885. (No model.)



Claim.—In a transom-lifter, the combination of a transom-bracket, a lifting-arm, a guiding-piece, a lifting-rod, and locking guide or bracket, the lifting-rod being partially revolubie and of greater diameter in cross-section in one direction than the other, and provided with a notch or notches, and the locking piece or bracket being provided with a hole of greater diameter in one direction than the other, through which the lifting-rod moves up and down, and in which it may be partially revolved whenever its notch or notches are coincident with the edges of the locking-bracket, whereby the transom may be held or locked at any desired degree of openness, substantially as described.

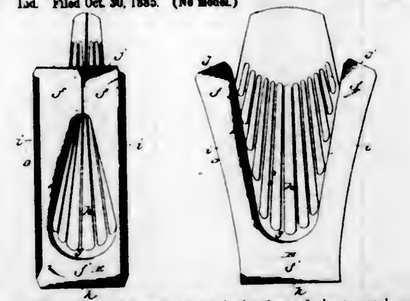
336,976. **DRYING ATTACHMENT FOR ENVELOPE-MACHINES.** EDWIN H. WOODFORD, Rockville, Conn., assignor to the White, Corbin & Company, same place. Filed July 23, 1885. (No model.)



Claim.—1. In a drying attachment for envelope-machines, the combination of a chain-supporting frame with a depression in the way, on which the chain rides, and an endless chain composed of links with parts projecting outward from the base of each link and toward each other, all substantially as described.

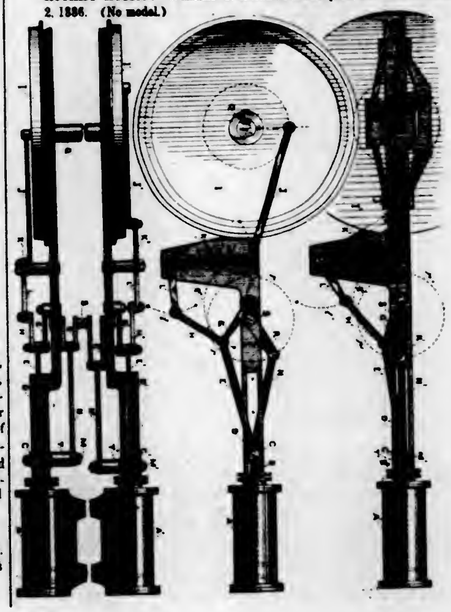
2. In a drying attachment for envelope-machines, in combination, a chain-supporting frame, *b*, with a flange, *b*³, having a depression in part of its length, an endless chain, *c*, made up of links *c'*, having outward-projecting parts bearing pads *c*³, and the pivots *d*, all substantially as described.

336,977. **SPOUT FOR TEA-KETTLES.** JOHN W. YATES, Bourbon, Ind. Filed Oct. 30, 1885. (No model.)



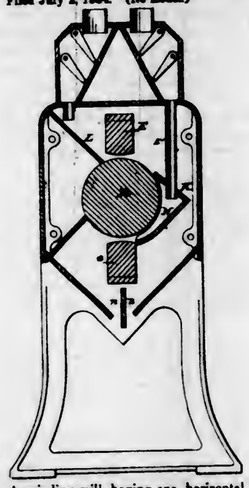
Claim.—A spout formed from a single piece of sheet metal, consisting of a conducting-nozzle and having projecting side, top, and bottom wings arranged on the same plane, in combination with a kettle-body, to which the several wings are secured by double seams, as set forth.

336,978. **DEVICE FOR CONVERTING RECIPROCATING INTO ROTARY MOTION.** WILLIAM G. ADAMS, Philadelphia, Pa. Filed Jan. 2, 1886. (No model.)



Claim.—In a duplicating-engine, the combination, with a pair of cylinders and pistons having suitable duplicating members and devices driven thereby, of a coupling which connects those portions of the machine wherein the motion has been duplicated, and a second coupling which connects those portions of the machine which are between the cylinders and the duplicating member, the whole operating substantially in the manner set forth.

336,979. **GRINDING-MILL.** JAMES R. ALLFREE, Cumberland, Md., assignor of one-half to Harrison Swartzwelder and Robert Shriver, both of same place. Filed July 2, 1884. (No model.)



Claim.—1. A grinding-mill having one horizontal roll and two parallel bars arranged contiguous thereto—one above and one below the said roll—and suitable conduits for conducting the grain to the respective points of reduction.

2. A grinding-mill having one horizontal roll and two parallel bars arranged contiguous thereto and on diametrically-opposite sides of the said roll, whereby two reductions may be accomplished simultaneously, and the friction of the roll-bearings relieved.

3. A grinding-mill having one horizontal roll and two parallel bars arranged contiguous thereto and on diametrically-opposite sides of the said roll, the said bars being provided with elastic means for retaining them in operative position.

4. A grinding-mill having one horizontal roll and two parallel bars situated contiguous thereto, and two cams arranged one at each end of the roll and bearing against the said bars.

5. In a grinding-mill, a horizontal roll and parallel grinding-bars situated contiguous thereto, and elastic yokes situated independent of the frame for retaining said parts in operative position, for the purpose set forth.

6. In a grinding-mill, the combination of a single roll and two parallel grinding-bars, with the yokes having the rods sliding therein and attached to the bars, and the springs bearing at their inner ends against the bars, and at their outer ends against the yokes.

7. The combination, in a grinding-mill, of the roll, the two parallel grinding-bars, the yokes, the hollow movable plugs in the ends of the yokes, the rods passing through the said plugs and attached to the parallel bars, and the springs bearing at one end against the bars, and at the other against the screw-plugs, for the purpose set forth.

8. The combination, in a grinding-mill, of the roll, the bearings made in two parts, one part being permanently secured to the casing, and the other detachable, the yokes connected to the said bearings independent of the frame, the parallel bars, and means for securing them yieldingly in position, substantially as described.

9. In a grinding-mill, the combination of one roll and two grinding-bars arranged contiguous thereto, with the conduit for conducting the grain to the first point of reduction and thence to a point of discharge, consisting of the incline L, covered hopper N, having inclined top, and the discharge-passage *n*, substantially as described.

10. In a grinding-mill, the combination of one roll and two bars arranged contiguous thereto, with the conduit for conducting the grain to the second point of reduction, consisting of the hopper, the depending tubes *k*, the covered hopper N, and the discharge-passage *n*, substantially as described.

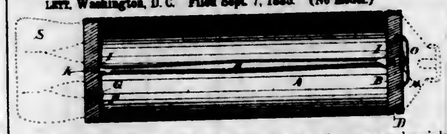
11. In a grinding-mill, the combination of one roll and two grinding-bars with the conduits for conducting the grain to the two points of reduction, consisting of the incline L, the covered hopper N, the tubes leading from the upper hopper to the covered hopper N, and the discharge-passages *n*, substantially as described.

336,980. **SLIDE-VALVE.** CHARLES H. BAKER, Meadville, Pa. Filed Dec. 18, 1885. (No model.)



Claim.—The combination, with a steam-engine slide-valve, of one or more pairs of supporting-rolls running in guide-grooves *b*, journaled at *e* in the sides of valve, and having arc grooves working on studs d^2 of valve, as and for the purpose described.

336,981. **FIRE-EXTINGUISHING PROJECTILE.** WALLACE A. BARTLETT, Washington, D. C. Filed Sept. 7, 1885. (No model.)



Claim.—1. A projectile having its inclosing-casing composed mainly of flexible material and filled with a fire-extinguishing compound, substantially as described.

2. The combination, in a projectile of the character described, of a cylindrical casing of flexible material, end pieces secured thereto, and a fire-extinguishing compound inclosed therein, substantially as described.

3. The combination, in a fire-extinguishing projectile, of a cylindrical casing of flexible material, end pieces secured thereto, and a stiff spreader extending from end to end inside the casing.

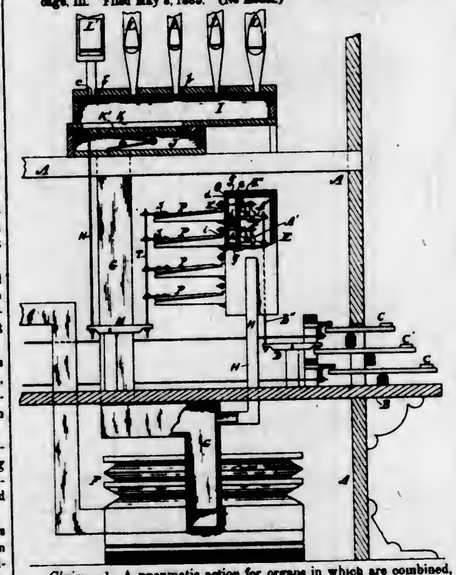
4. The combination, with an elongated projectile filled with a fire-extinguishing compound, of a fulminate cap at the front of said projectile, and a collapsible cover for said cap, as set forth.

5. The combination, with a fire-extinguisher projectile, of a detonator or exploding-cap attached to the outside of the casing in which the fire-extinguishing compound is inclosed.

6. The combination, with the flexible inclosing-casing and stiff end pieces, of the rigid spreader having tenons resting in recesses in said end pieces, as set forth.

7. The combination, with the flexible casing having stiff end pieces and a central rigid spreader between said pieces, of guiding mechanism for the projectile, substantially as described.

336,982. **PNEUMATIC ACTION FOR ORGANS.** IRA BARNEY, Chicago, Ill. Filed May 8, 1885. (No model.)

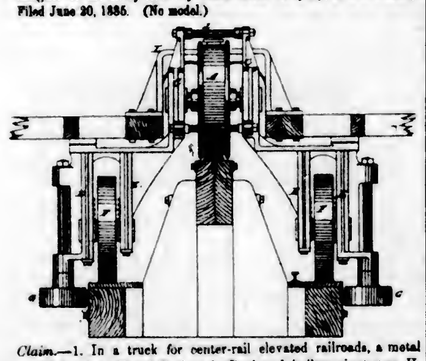


Claim.—1. A pneumatic action for organs in which are combined, substantially as described, the pneumatic wind-chest E, the valves or pallets E' E'', in operative connection with the organ-keys, the channel-board O, divided into separate compartments or small air-chambers A A, each having therein valve-openings *i* and *j*, a series of pneumatic bel-

lows P P, each having in the heel thereof an opening, *k*, coinciding with the openings *i i*, the trackers T T, in operative connection with the said bellows, and the valves in the grand organ-chest, all arranged for operation together, for the purposes set forth.

2. The combination, in a pneumatic action for organs, of a channel-board, the pneumatic bellows, the angle-plates R, having notches *m m* therein, and the headed studs *o o*, substantially as and for the purposes specified.

336,983. CAR-TRUCK. FRANCIS A. BARTHOLOMEW, Bloomfield, N. J., assignor to the Riley Railway Construction Company, of New Jersey. Filed June 20, 1885. (No model.)

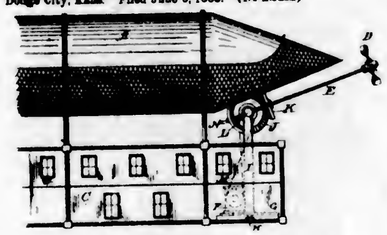


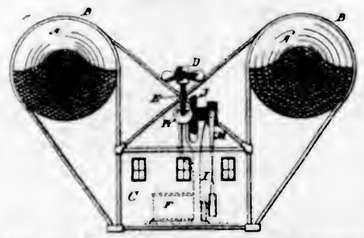
Claim.—1. In a truck for center-rail elevated railroads, a metal frame, with brackets C and E, tie-rods D *d*, and hollow pivot-stem H for the use and purpose substantially as shown and described.

2. The combination, in a truck for center-rail elevated railroads, of the hollow stem H, pivot-pin I, bridge-bracket L, and spring J, when arranged in the manner and for the use and purpose shown and described.

3. A saddle-beg truck-frame for cars of center-rail elevated railroads, said frame supporting the car wholly above the structure, and carrying wheels of varied heights of bearings, said truck-frame being centrally pivoted, so that all the wheels thereon may act in concert, substantially as shown and described.

336,984. SHIP FOR AERIAL NAVIGATION. LEVI A. BEARDSLEY, Dodge City, Kans. Filed June 6, 1885. (No model.)





Claim.—1. In a ship for aerial navigation, two cigar-shaped balloons, both arranged in the same horizontal plane and connected together, substantially as described, in combination with a propeller, mechanism for operating said propeller, and a motor for operating said mechanism, said propeller, said mechanism, and said motor being mounted upon a pivoted support, substantially as described.

2. In a ship for aerial navigation, two cigar-shape balloons arranged in the same horizontal plane, connected together by a suitable frame-work, and a housing for containing passengers, and motors supported from said frame-work, substantially as described, in combination with a propeller, mechanism for operating said propeller, and a motor for operating said mechanism, said propeller, said mechanism, and said motor being mounted upon a pivoted support, substantially as described.

3. In a ship for aerial navigation, a propeller mounted upon a shaft adjustable between the limits of zero and ninety degrees, or thereabout, in two planes at right angles to each other, substantially as described, in combination with the shaft E, supporting said propeller, with the gear-wheel K upon said propeller-shaft, with the gear-wheel J, gearing into the said gear-wheel K, with the auxiliary shaft L, supporting the said propeller-shaft E, with the pillar I, supporting the above-mentioned parts, and with the rotatable platform supporting the said pillar I, and the motor F, substantially as set forth.

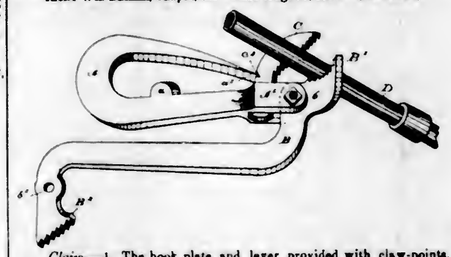
4. In a ship for aerial navigation, a propeller mounted upon a shaft adjustable between the limits of zero and ninety degrees, or thereabout, in a horizontal plane, substantially as described, in combination with the shaft E, supporting said propeller, with the gear-wheel K upon said propeller-shaft, with the gear-wheel J, gearing into the said gear-wheel K, with the auxiliary shaft L, supporting the said propeller-shaft E, with the pillar I, supporting the above-mentioned parts, and with the rotatable platform supporting the said pillar I, and the motor F, substantially as set forth.

5. In a ship for aerial navigation, a propeller mounted upon a shaft adjustable within the limits of zero and ninety degrees, or thereabout, in a vertical plane, substantially as described, in combination with the shaft E, supporting said propeller, with the gear-wheel K upon said propeller-shaft, with the gear-wheel J, gearing into the said gear-wheel K, with the auxiliary shaft L, supporting the said propeller-shaft E, with the pillar I, supporting the above-mentioned parts, and with the rotatable platform supporting the said pillar I, and the motor F, substantially as set forth.

6. In an aerial ship, a propeller, its propelling mechanism, and a motor, all mounted upon a pivoted support, substantially as described.

7. In an aerial ship, the propeller D, the shaft E, supporting said propeller, the gear-wheel K upon said propeller-shaft, the gear-wheel J, gearing into said gear-wheel K, the auxiliary shaft L, supporting the said propeller-shaft E, the pillar I, supporting the above-mentioned parts, and the rotatable platform supporting the said pillar I, and the motor F, substantially as and for the purpose specified.

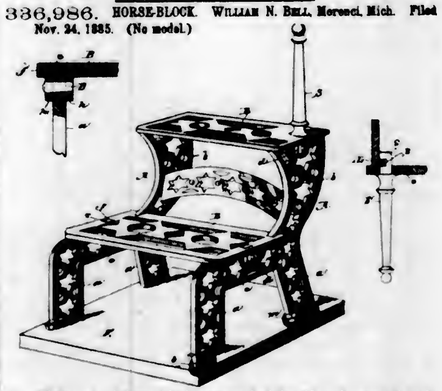
336,985. COMBINED BOLT-HOLDER AND PIPE-WRENCH. ANTHONY WM. BECKER, Chapin, Ill. Filed Aug. 31, 1885. (No model.)



Claim.—1. The hook plate and lever provided with claw-points, and arranged to operate as and for the purpose set forth.

2. The detachable piece C, in combination with the hook plate and lever, as and for the purpose set forth.

336,986. HORSE-BLOCK. WILLIAM N. BELL, Morenci, Mich. Filed Nov. 24, 1885. (No model.)

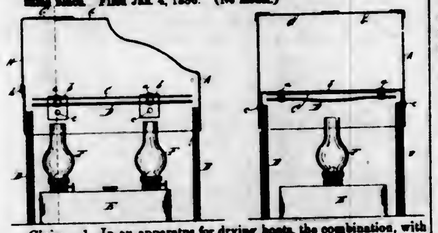


Claim.—1. A horse-block composed of the sides, the steps detachably secured thereto, and the post detachably secured to one of the steps, substantially as described.

2. The combination of the sides having the upwardly-projecting tenons *s*, and the steps having the mortises *f* to receive the tenons, and the depending legs to bear on opposite sides of the side pieces, substantially as described.

3. The combination of the side pieces having the upwardly-projecting tenons *s*, the steps having the depending legs *d* arranged in pairs and adapted to embrace the side pieces, and the keys or wedges passed through openings formed in said legs and side pieces to secure the steps to the side pieces, substantially as described.

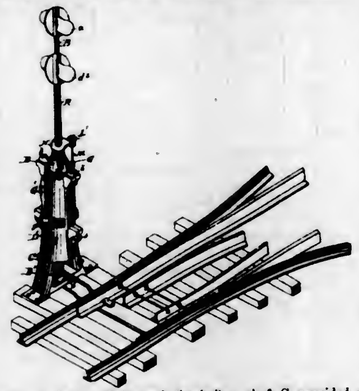
336,987. BOOT-DRIER. SAMUEL W. BREWSTER and LYMAN SHERWOOD, Southeast, N. Y.; said Sherwood assignor to Sarah E. Sherwood same place. Filed Jan. 4, 1886. (No model.)



Claim.—1. In an apparatus for drying boots, the combination, with the shell or casing having the double bottom and the recessed upper portion, of the hinged lid or door correspondingly recessed, substantially as and for the purposes set forth.

2. The herein-described apparatus for drying boots, composed of the shell or casing, having the hinged door or lid, the two plates secured within the shell, the legs or standards, and the oil-reservoir with the burners and chimneys, all arranged and combined for operation substantially as shown and described.

336,988. RAILROAD SWITCH-STAND. THOMAS R. BROWN and WALTER C. HEISLER, Jersey City, N. J. Filed Oct. 7, 1885. (No model.)



Claim.—1. In a switch-stand, the hollow shaft C, provided with the crank C^4 and surrounding shaft B, to which the crank B' is attached, in combination with a railroad-switch stand for moving switch-points, substantially as and for the purpose specified.

2. In a railroad switch-stand, the spring-sleeves J and J', constructed to bear on the springs K and K', respectively, and to work vertically on the rocker-shafts or loose sleeves E and E', and provided with beveled ears *j j* and *j' j'*.

3. In a railroad switch-stand, the spring-sleeve compressors I I, having convex inner bearing-surfaces with outer ends constructed to operate against the beveled ears *j j* of the spring-sleeve J.

4. The rotating shaft or sleeve E, provided with the head F, and rotating cam or square H, the sides of which are concave to fit the convex surfaces of spring-sleeve compressors I I, and operating substantially as and for the purpose specified.

5. In a switch-stand, the caps D and D', secured to the shaft B and hollow shaft C, respectively, said shafts being mounted on the same axial line and in a common combination with the lever G and G', which engage with the heads F and F' by the projections G^2, fitting into the recesses *f f* in the heads F and F', substantially as and for the purpose specified.

6. In a switch-stand, the cap D', provided with the gear engaging with the pinion L, secured to the vertical shaft M, and operating the segment N and signal sleeve or shaft R by the pinion L'.

7. In a railroad switch-stand, the signal sleeve or shaft R, surrounding and rotating around the shaft B, the upper target being attached to the shaft B, and the lower target, d^3, being attached to the sleeve R, and both rotating the full throw of the switch, respectively.

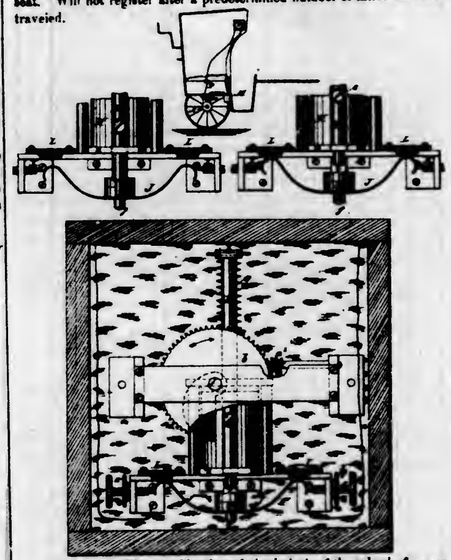
8. In a switch-stand, the case A A, provided with the bars O O, and stops P, of a suitable angle, in combination with the cranks B' and C^4, respectively, substantially as and for the purpose set forth.

9. In a switch-stand, the crank B', provided with an adjustable connecting rod, pin, or sleeve, B^4, having at its upper end projections b^3, fitting the corresponding detents, b^2, and combining the switch-stand and switch-points by a suitable connecting-rod, substantially as and for the purpose specified.

10. In a railroad switch-stand, the crank-shaft B and hollow crank-shaft C, in combination with the operating mechanism which is placed in a suitable frame, A, one above the other, and operating each shaft independently, substantially as shown.

336,989. DISTANCE-REGISTERING DEVICE FOR WHEELED VEHICLES. EDWARD S. BROWNSON, Brooklyn, N. Y. Filed June 18, 1885. (No model.)

Brief.—The circuit is closed by the weight of a passenger on the seat. Will not register after a predetermined number of miles has been traveled.

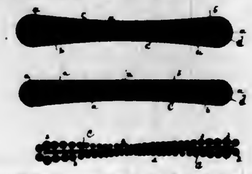


Claim.—1. The combination of the hub A of the wheel of a carriage with the wheel *a*, wheels a^2 *b*, cam *d*, pawl d^3, shaft *f*, pin *e*, rod D, piston-rod F, spring *g*, piston I, and circuit-closing flexible cross-piece J, substantially as herein shown and described.

2. The combination of the reciprocating pistons G and I with the flexible metallic cross-piece J on piston I, insulating-blocks L, and screws X, which are connected to a battery, all arranged substantially as herein shown and described.

3. The combination of the reciprocating spring *g*, screws X X, and insulating-blocks L, with conducting-wires connecting with said screws, electro-magnet m^2, armature-lever n^2, anchor *p*, and clock mechanism controlled by said anchor, substantially as herein shown and described.

336,990. BELTING FOR MACHINERY. RICHARD F. M. CRANE, New York, N. Y. Filed Feb. 2, 1885. (No model.)



Claim.—1. Knit or woven belts or bands having warp-threads of graduated sizes and all of one series, as described, and for the purpose set forth.

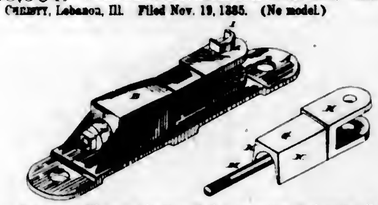
2. Belting for machinery, made of a circular seamless knit or woven tube or tubes, with warps of different sizes graduated to conform to a

crowning or concave pulley, rolled or pressed together in the form of a belt or band.

3. Belting for machinery, made of a circular seamless knit or woven tube or tubes, with warps of varying size graduated to conform to a crowning or concave pulley, in combination with vulcanized rubber or other suitable compound, and rolled or pressed together in the form of a belt or band.

4. Belting for machinery, made of a circular seamless knit or woven tube or tubes, with warps of graduated size, in combination with vulcanized rubber or other suitable material, so placed and pressed or rolled as to make the section of the belt rectangular, or with parallel faces and rounded ends, substantially as shown and described.

336,991. **WHIFFLETREE-EVENER SPRING-CASING.** THOMAS J. CHENEY, Lebanon, Ill. Filed Nov. 19, 1885. (No model.)



Claim.—1. The combination of the case-plate A, housing B, bearing C, dovetail slot E, with the shank G, having head H, bolt M, and spring N, constructed substantially as shown and described.

2. The head-block having shank G, head H, convex surface J, and inclined sides K, as shown and described.

3. The plate A, having the housing B and dovetailed slot E, constructed substantially as shown and described, for the purposes set forth.

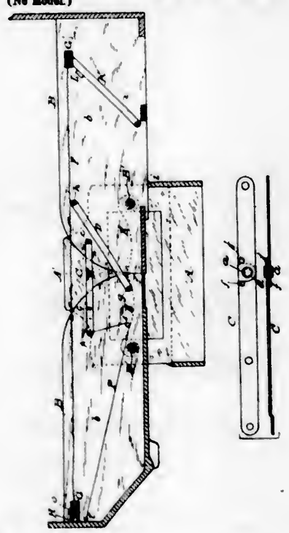
4. The plate A, constructed as shown and described, with housing and dovetail slot, in combination with the head-block having the spring N, bolt M, buffer-block P, and nut O, arranged to operate as shown and described.

336,992. **ELECTRICAL CONDUCTOR.** HENRY A. CLARK, Brookline, assignor, by mesne assignments, to the Eastern Electric Cable Company, Boston, Mass. Filed Feb. 11, 1885. (No specimens.)



Claim.—An electric conductor composed of a longitudinally-grooved core-wire, A, an insulated electric wire or wires, C, in the groove or grooves of the core-wire, an insulating covering material, D, surrounding the whole of the core-wire and retaining the electric wire or wires in the groove or grooves, and an exterior covering of braided fibrous material.

336,993. **CABINET-BEDSTEAD.** JAMES COCHRANE and HENRY F. KIRK, New York, N. Y.; said Kirk assignor to said Cochrane. Filed Jan. 9, 1885. (No model.)



Claim.—1. In a cabinet or folding bedstead, the locking-hinge C C, constructed, substantially as herein shown and described, of two bars of metal pivoted together at their rounded ends, provided with stops *f*, to prevent them from bending below a horizontal plane, and pivoted on the side rails of the bedstead, to lock and hold the bedstead-sections together, as set forth.

2. In a cabinet or folding bedstead, the combination, with the center irons, E' E', of the springs E E, constructed substantially as herein shown and described, and extended between the base standards and side rails from said standards to said rails, as set forth.

3. In a cabinet or folding bedstead, the combination, with the locking-hinges C C, of the cord P, attached to the extremities thereof, and adapted to break the locks, that the bedstead may be closed, as set forth.

336,994. **MACHINE FOR CAPPING NAILS.** JAMES M. ELLIS, New Haven, Conn. Filed Aug. 27, 1885. (No model.)



Claim.—1. In a machine for forming compressed heads on nails or tacks, a die, in combination with the nail-holder adapted in the operation of forming the head to be moved through the die, and to recede so as to be substantially flush with the bottom of the bowl of the die, said holder having an opening to receive the shank of a nail, substantially as and for the purpose described.

2. In a machine for forming compressed heads on nails or tacks, in combination with a die, a nail-holder adapted to receive and hold the shank of a nail or tack, and means, substantially as described, for reciprocating the holder with reference to the die, so as to cause its holding end to project above the bottom of the bowl of the die and descend again until substantially flush with the bottom of the bowl of the die, substantially as and for the purpose described.

3. In a machine for forming compressed heads on nails or tacks, in combination with a die having a cavity to form the head, a movable holder adapted to project at its upper end through and above the bottom of the cavity of the die, and having each end formed to receive the shank of the nail or tack and support the head thereof, a plunger or moving die, and means for raising the holder so that its upper end is above the bottom of the cavity of the stationary die before the moving die descends, substantially as and for the purpose described.

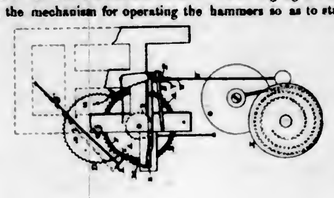
4. In a machine for forming compressed heads on nails or tacks, a holder adapted to receive the shank of a nail or tack, in combination with a concave die, through the bottom of which the holder is adapted to be projected and withdrawn, the die being adapted in connection with the plunger, to support and shape the material placed on the nail or tack head, substantially as and for the purpose described.

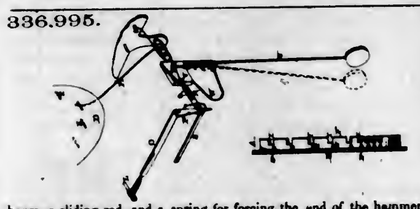
5. In a machine for forming compressed heads on nails or tacks, in combination with a nail-holder for receiving the shank of a nail or tack, a die through which the holder is adapted to be moved, and a moving punch adapted to cut out the piece of material to be used for the compressed head, said punch having its end so shaped as to act in conjunction with the die to form and compress the head, substantially as and for the purpose described.

6. In combination with the revolving die-plate and the series of dies carried thereby, the series of reciprocating nail-holders adapted to be moved to cause their upper nail-holding ends to rise and fall with reference to the bottoms of the dies, the stationary circular cam-track below the nail-holders having the horizontal or plane portions e', e^2, and e^3, with the intervening inclines I' I^2 I^3, the depressing guides r' r', adapted to engage portions of the nail-holders, and the moving head with the two dies or punches, C C C, substantially as and for the purpose described.

336,995. **STRIKING MECHANISM FOR CLOCKS.** AUGUST FISCHER, Whitehall, Ill., assignor of one-half to Jas. F. Potts, same place. Filed Apr. 21, 1884. (Model.)

Claim.—1. The combination of the two bells or gongs, the pivoted hammer, the mechanism for operating the hammers so as to strike the hours, a sliding rod, and a spring for forcing the end of the hammer in and out in relation to the two bells or gongs, substantially as set forth.

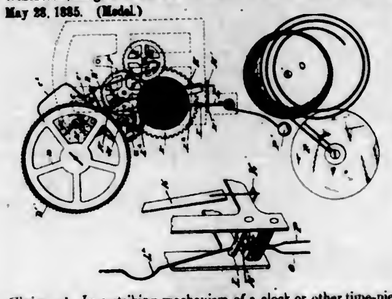




2. The combination of the wheel A, provided with the flange which has both holes for the lever to catch in, and recesses for the arm M to engage with, the partially-rotating spring-actuated shaft, the lever O, provided with the wedge P, the sliding rod, the pivoted spring-actuated hammer, and the two bells or gongs, substantially as specified.

3. The combination of the pivoted hammer, the pivoted plate upon which the hammer is pivoted, a spring which is applied to the plate for the purpose of returning it to position, the arm or lever, and the wheel D, provided with the pins E, and a mechanism for forcing the end of the hammer in or out, substantially as shown and described.

336,996. **STRIKING MECHANISM FOR CLOCKS.** AUGUST FISCHER, Winchester, assignor of one-half to James F. Potts, Whitehall, Ill. Filed May 28, 1885. (Model.)

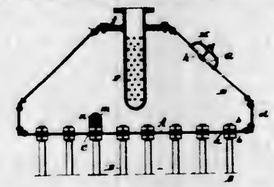


Claim.—1. In a striking mechanism of a clock or other time-piece two bells or sets of bells of different tones, two hammers or sets of hammers, and an oscillating lever engaging the ends of said hammers, and pivotally connected to a revolving shaft, L, and provided with a suitable mechanism for shifting it, substantially as and for the purpose set forth.

2. The combination of the wheel D, lever K, bell-crank K' with disk I, small crank N, pin I', wire L^2, pin L', and hammers O' and P', substantially as described.

3. The combination of the wheel D, wires C^2 and C^3, B^2 and B', lug A', disk I, small crank N, pin I', wire L^2, pin L', lever K, bell-crank K', hammers O' and P', and bells O and P, substantially as set forth and described.

336,997. **WATER-SUPPLY SYSTEM.** CHARLES H. GODFREY, Fremont, Nebr. Filed Nov. 12, 1885. (No model.)



Claim.—1. The combination, with an air-chamber, of a series of drive-well tubes secured to the floor of the air-chamber, and means for exhausting air from the chamber, substantially as set forth.

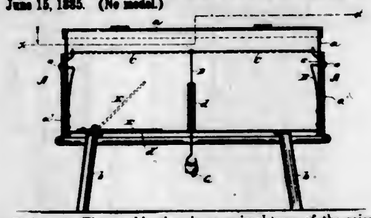
2. The combination, with an air-chamber constructed substantially as described, of a series of drive-well tubes projecting through and secured to the floor of the air-chamber, and a tube leading from an air-chamber and adapted to connect with a lift-pump, substantially as set forth.

3. The combination, with the air-chamber, of the drive-well tubes projecting through and secured to the floor of said chamber, and a strainer-tube adapted to connect the chamber with a pump, substantially as set forth.

4. The combination, with an air-chamber composed of sections united by angle-strips, of a series of drive-well tubes passing through and secured to the floor of the air-chamber, substantially as set forth.

5. The combination, with an air-chamber, a set of well-tuber passing through and secured to the floor of the air-chamber, and a pump adapted to exhaust the air from the chamber, of check-valves located at the upper ends of the drive-well tubes, for the purpose substantially as set forth.

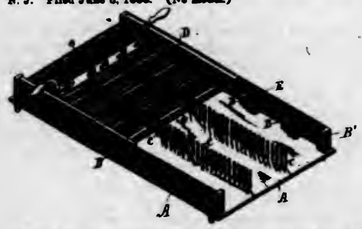
336,998. **ANIMAL-TRAP.** LOUIS J. HAUSBRAND, Chicago, Ill. Filed June 15, 1885. (No model.)



Claim.—1. The combination, in an animal-trap; of the raised part or cage *a*, the gravitating part *a'*, the spring-catches B B, the wire or cord C, and the cord or wire D, substantially as and for the purposes specified.

2. The combination of the raised part or cage *a*, having therein the doors, E and F, the spring-catches B B, projecting through the part *a*, the gravitating part or section *a'*, having therein the groove *c*, and the wires or cords C and D, substantially as and for the purposes specified.

336,999. **PLAITING-MACHINE.** ROBERT W. HENDERSON, Newark, N. J. Filed June 8, 1885. (No model.)



Claim.—1. In a plaiting apparatus, the combination, with a detachable frame of wires, of the bed A, provided with supports B, series of studs *c*, and corner guides, B', arranged and operated as set forth.

2. In a plaiting apparatus, the combination, with the frame of wires, of the knife constructed with the holder F, provided with the handle F', connected thereto by an offset neck, F^2, and with the removable blade G, clamped in the holder by the heads of the screws *h* at its opposite ends, substantially as shown and described.

3. In a plaiting apparatus, the combination, with the flat frame of wires, of two knives constructed with removable blade G, holder F, and offset handle F', the two holders being provided with gage-pins projected, respectively, at opposite sides of the said holders relative to the handles, so as to project in the same direction when the said handles are held at opposite sides of the frame, the construction being adapted to set the knives successively at a regulated distance from one another in the spaces between the wires when applied thereto, as shown and described.

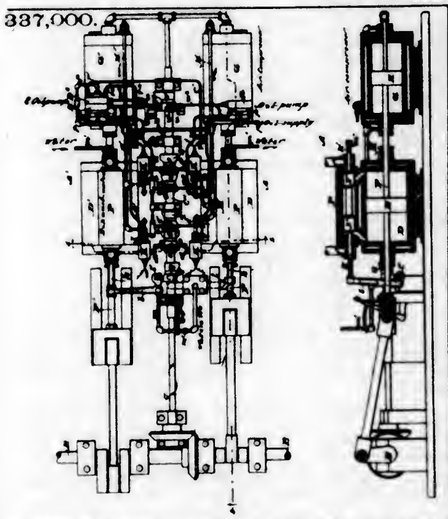
4. In a plaiting apparatus, the combination, with the flat frame of wires, of the knife constructed with the holder F and handle F', and with the removable blade G, clamped in the holder by the heads of the screws *h* at its opposite ends, the screws being projected through the holder to serve as gage-pins, and the screw-thread thereon adapting them to be removed and replaced by others of different length, substantially as herein shown and described.

337,000. **HYDROCARBON-ENGINE.** JOHN P. HOLLAND, Brooklyn, N. Y. Filed Dec. 31, 1884. (No model.)

Claim.—1. In a hydrocarbon-engine, the combination, with the power-cylinder, of a compressed-air passage communicating therewith, means for compressing air into said passage, and an atomizer consisting of a contracted space or opening entering said passage, and means for forcing the charge of combustible through said opening into the compressed-air passage, whereby the combustible is sprayed or finely divided and intimately mingled with the compressed air, substantially as set forth.

2. In a hydrocarbon-engine, the combination, with the power-cylinder, of a compressed-air passage communicating therewith, means for compressing air into said passage, an atomizer consisting of a contracted space or opening entering the compressed-air passage, means for forcing the charge of combustible under pressure through such opening into the compressed-air passage, and a series of foraminous diaphragms arranged

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to obstruct said passage between the atomizer and the entrance to the cylinder, whereby the spray of combustible from the atomizer is carried by the air-current into the diaphragms, and is thereby vaporized, substantially as set forth.

3. In a hydrocarbon-engine, the combination, with the power-cylinder, of a compressed-air passage communicating therewith, means for compressing air into said passage, an atomizer consisting of an opening entering said air-passage, a spring-seated valve closing said opening, and means for forcing the charge of combustible under pressure through said opening against the yielding side of said valve, whereby the valve is forced open and the combustible is discharged in a finely-divided condition into the air in said passage, substantially as set forth.

4. In a hydrocarbon-engine, the combination, with the power-cylinder, of an inlet-port at one end thereof, an ignition-chamber communicating with said port, a compressed-air passage entering said chamber, means for compressing air into said passage, an atomizer consisting of a contracted space or opening entering said compressed-air passage, and means for forcing the combustible under pressure through said opening into the compressed-air passage, and a series of foraminous diaphragms arranged to obstruct said passage between said atomizer and ignition-chamber, substantially as set forth.

5. The combination of power-cylinder having inlet-port *a*, chamber K, having ignition-port *e*, valve *b*, having ports *a'* and *e'*, atomizer 1, and compressed-air-inlet-valve J, substantially as set forth.

6. In a hydrocarbon-engine, the combination, with the power-cylinder, of a cylindrical exhaust-valve chamber formed longitudinally upon one side thereof, with exhaust-ports opening into said chamber from opposite ends of the cylinder, of exhaust-valves consisting of two hollow pistons working in opposite ends of said chamber and connected together by a tubular stem, with a hollow valve-stem passing out through a stuffing-box in the end of the valve-chamber, and means for forcing a stream of water to flow through said stems and pistons, whereby the pistons are kept cool and their expansion and consequent sticking are avoided, substantially as set forth.

7. In a hydrocarbon-engine, the combination, with the power-cylinder, of an exhaust-valve therefor, consisting of a pair of piston-valves adapted to move longitudinally and to seat themselves alternately on fixed seats in the manner of puppet-valves, substantially as set forth.

8. In a hydrocarbon-engine, the combination of the power-cylinder, independent inlet-valves communicating with its opposite ends, the longitudinal exhaust-valve chamber P, and exhaust-ports leading thereto from the opposite ends of the cylinder, an exhaust-valve consisting of balanced pistons N N, adapted to close said exhaust-ports alternately, connected both to one valve-stem and adapted to be moved longitudinally, and mechanism for shifting said valve at each end of the stroke of the piston independently of the inlet-valves, substantially as set forth.

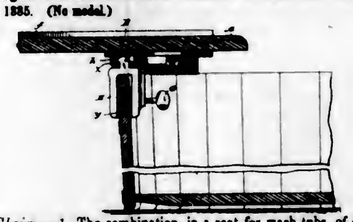
9. In a double-acting hydrocarbon-engine, the combination, with the power-cylinder, of an atomizer at each end thereof, a pump for forcing the hydrocarbon into said atomizers, two delivery-pipes from said pump, one leading to one and the other to the other atomizer, and means for operating said pump synchronously with the strokes of the engine, whereby it forces the hydrocarbon alternately through said pipes to said atomizers, whereby alternate charges of combustible are supplied to opposite ends of the cylinder, substantially as set forth.

10. The combination, with two double-acting hydrocarbon-engines coupled to the same crank-shaft, one in advance of the other, of an atomizer at each end of the cylinder of each engine, two oil-pumps, each arranged to supply on alternate strokes the atomizer of one engine, and a third oil-pump, with its delivery-pipes joining the delivery-pipes from the two other pumps and adapted to supply oil to the respective atomizers during the periods when they are not supplied by the other pumps, substantially as and for the purposes specified.

11. In a hydrocarbon-engine, the combination of the independent inlet-valves communicating with opposite ends of the power-cylinder, the alternately-acting exhaust-valves independent of the inlet-valves, and the pump or pumps for injecting the charges of combustible, with a cam-shaft and the several cams thereon for operating the said valves and pump or pumps, each of said cams being formed with cam projections adapted to operate said valves and pump in proper succession, and the cams for operating the inlet-valves and pump or pumps having projections graduated or tapered from end to end, whereby the longitudinal displacement of the cams alters the throw or duration of opening of the inlet-valves and the stroke of the pump or pumps, and with means under the control of the operator for longitudinally displacing the said cams simultaneously, substantially as set forth, whereby the cut-off and the amount of the combustible charges are varied simultaneously and to like extent for controlling the engine.

12. In a hydrocarbon-engine, the combination of independent inlet-valves communicating with opposite ends of the power-cylinder, the alternately-acting exhaust-valves independent of the inlet-valves, and the pump or pumps for injecting the charges of combustible with the cam-shaft, and the several cams thereon for operating said valves and pump or pumps, each of said cams being formed with diametrically-oppositely-arranged cam projections *w* and *w'*, and a longitudinally-intermediate neutral zone or space, *x*, and all of said cams being capable of simultaneous longitudinal displacement, thereby actuating the several valves and the pump or pumps in opposite succession and causing the engine to reverse its movement, and with a reversing mechanism under the control of the operator for longitudinally displacing the said cams, substantially as set forth.

337,001. SEAT FOR WASH-TUBS. CHARLES H. KELLEY, Revere, assignor of one-half to Francis C. Perkins, Somerville, Mass. Filed Nov. 4, 1885. (No model.)



Claim.—1. The combination, in a seat for wash-tubs, of a clamp adapted to be rigidly secured to the edge of the tub and adjusted thereon, with a seat adjustable on said clamp and supported by it above the edge of the tub, as set forth.

2. The seat A, having a curved groove, *x*, in combination with a clamp adapted for application to the edge of the tub, and having a head adapted to said groove, substantially as described.

3. The combination, with the seat A, of a plate having a rib with a curved groove, and a clamp having a T or dovetailed head adapted to said groove, substantially as set forth.

4. The combination of the seat having a curved groove, the clamp with a head adapted to said groove, and side bearings upon the seat arranged to rest upon the edge of the tub, substantially as set forth.

337,002. BELT-REEL. DAVID B. KUHN, Norwalk, Ohio. Filed June 23, 1885. (No model.)

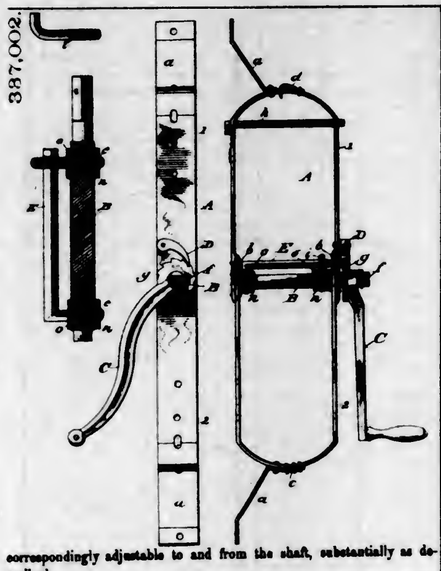
Claim.—1. In a reel, the combination, with the shell constructed of two separate sides or pieces hinged together at one end and at the other end united by a fastening or hook, of the shaft held between the two sides, the sleeve on one end of the shaft having secured thereto the ratchet-wheel and crank, a pawl for engaging the ratchet, and an arm and catch, which are correspondingly adjustable in the shaft, substantially as described.

2. In a reel, the combination of a shell constructed of an upper and lower section with their corresponding ends overlapped and secured, and having arms for attachment to a support, a shaft bearing in the overlapped portions thereof, an arm and catch correspondingly adjustable in the shaft, a pawl and ratchet, and an operating-crank, substantially as described.

3. In a reel, the combination, with a shell or casing, of a shaft held therein, the sleeve having secured thereon the ratchet-wheel and crank, a pawl for engaging the ratchet, and an arm and catch, which are correspondingly adjustable to and from shaft, substantially as described.

4. In a reel, the combination with the shaft, of an arm and catch

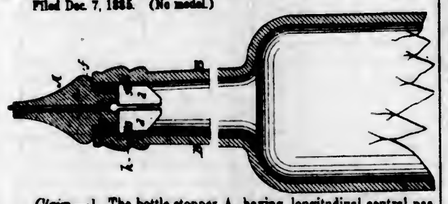
337,002.



correspondingly adjustable to and from the shaft, substantially as described.

5. In a reel, the combination, with the shaft having openings therethrough at or near each end, of an arm having a screw-thread working in one of said openings, and a catch working in the other, and nuts by which each is secured and adjustable, substantially as described.

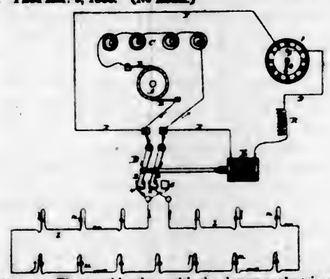
337,003. BOTTLE-STOPPER. ALBERT LUDEMANN, New York, N. Y. Filed Dec. 7, 1885. (No model.)



Claim.—1. The bottle-stopper A, having longitudinal central passage, *a*, and upright incisions *b b* in its body, which form of the body the lower sections, *d d*, which are laterally movable, and a passage between said sections in alignment with the bore *a*, as set forth.

2. The combination of the tubular stopper A, having in the lower part of its body upright incisions *b b*, that form the lower laterally-movable sections, *d d*, and groove *g*, with the bottle B, having inwardly-projecting shoulder *h*, as set forth.

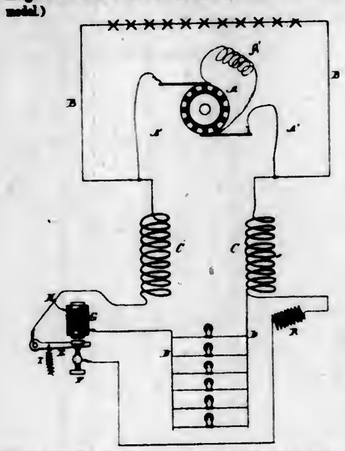
337,004. SYSTEM OF ELECTRIC LIGHTING. ROSS MACKIE, Troy, and NORMAN MCCARTY, Hoosick, assignors to John R. Tibbits, Hoosick, N. Y. Filed Mar. 9, 1885. (No model.)



Claim.—1. The combination, with the dynamo-electric machine and its lamp-circuit containing lamps, of a circuit-changing switch in the lamp-circuit between the dynamo and the external or working circuit, and an automatic mechanism for moving the switch periodically and reversing the flow of current through the external working-circuit, substantially as set forth.

2. The combination, with a dynamo-electric machine and its lamp-circuit containing lamps, of a switch in said lamp-circuit, a shunt-circuit from the dynamo-electric machine, an electro-magnet or solenoid, and a circuit-closing clock in said shunt-circuit, and a connection from the electro-magnet or solenoid for moving the reversing-switch, substantially as set forth.

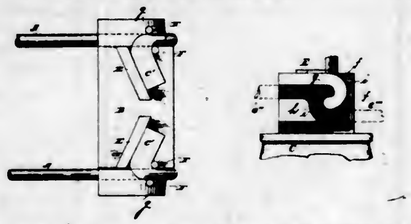
337,005. CIRCUIT FOR ELECTRIC LIGHTING. ROSS MACKIE, Troy, assignor to John R. Tibbits, Hoosick, N. Y. Filed July 2, 1885. (No model.)



Claim.—1. The combination, with the field-helices in a dynamo, of an electro-magnetic switch and a branch circuit containing incandescent lamps, substantially as set forth, for directing the current through the incandescent lamp after the field-helices become energized, substantially as set forth.

2. The combination, with the dynamo-electric machine containing a commutator, armature-coils, and field-helices, of a shunt-circuit having arc-lights in series, a circuit included in the circuit of the field-helices and containing incandescent lights, and an electro-magnetic switch to bring the incandescent lamps into the circuit of the field-helices, substantially as specified.

337,006. BENDING-BLOCK. DAVID C. MARSH and JOHN G. MARSH, Chicago, Ill. Filed Dec. 10, 1885. (No model.)



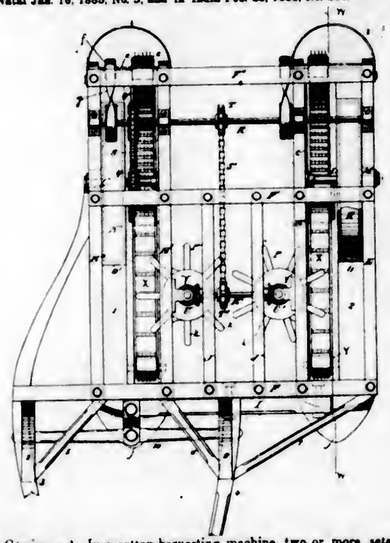
Claim.—1. A bending block or former adapted to receive or hold (at the curvature of the iron) an iron, *c'' c'''*, having a curvature, *c'*, the said block also having a part formed approximately like the curvature *c* of the said iron, in combination with a pin or leg arranged for contact with the said iron in the angle at the junction of the part *c'''* with the flattened portion *c'*, substantially as and for the purposes specified.

2. A bending block or former having thereon one or more projecting parts, *g g*, formed substantially as shown and described, and one or more projecting parts, *h h*, arranged, substantially as shown, with relation to the part or parts *g g*, in combination with one or more pins or lugs, F F, for the purposes set forth.

3. A bending block or former having thereon one or more beveled or tapering projecting parts, *g g*, and one or more beveled or tapering projecting parts, *h h*, in combination with one or more pins or lugs, F F, the said parts *h* and *g* being tapering or smallest at their outer ends or faces, all arranged, substantially as shown and described, with relation to each other, for the purposes set forth.

4. A bending block or former having thereon one or more diagonal or inclined blocks, E E, and also having upon one or both ends projecting parts *g g* and *h h*, both arranged substantially as shown and described, in combination with one or more pins, F F, for the purposes set forth.

337,007. COTTON-HARVESTING MACHINE. CHARLES T. MASON, Jr., Sumter, S. C. Filed Dec. 11, 1883. (No model.) Patented in Turkey Dec. 27, 1884, No. 42; in Cape Colony Jan. 13, 1885, No. 11/104; in Natal Jan. 16, 1885, No. 3, and in India Feb. 28, 1885, No. 210.



Claim.—1. In a cotton-harvesting machine, two or more sets of picker-stems and means for revolving them about a vertical axis, in combination with means for imparting to said stems an independent rotation about their individual axes, first in one direction and then in the other, substantially as described.

2. In a cotton-harvesting machine, a cotton-picker stem projecting radially from a support, a means of rotating said support and thereby giving said stem a circular movement of translation, and a means of simultaneously rotating said stem on its longitudinal axis in alternately-opposite directions, substantially as described.

3. In a cotton-harvesting machine, the combination of a cotton-receiving compartment, a cotton-picker stem projecting radially from a support placed in proximity to said compartment, a means for rotating said support and thereby giving said stem a circular movement of translation into and out of said compartment, and a means for rotating said stem on its individual axis in alternately-opposite directions, whereby said stem is rotated in one direction while in the compartment and in the other direction while out of the same, substantially as described.

4. In a cotton-harvesting machine, the combination of two shafts on opposite sides thereof, means for rotating the same, a space between said shafts for the passage of the cotton-plants, two cotton-receiving compartments on opposite sides of the machine and outside of said shafts, cotton-picker stems radially projecting from and supported on said shafts and having circumferentially-disposed teeth turned with their points in the same direction, means for rotating said stems on their individual axes in one direction with their teeth-points forward to gather the cotton while moving through the plants, and means for rotating them in the opposite direction to release said cotton while moving through said compartments, substantially as described.

5. In a cotton-harvesting machine, a series of cotton-picker stems radially projecting from a support, a second series of cotton-picker stems radially projecting from a second support, the said supports being relatively so disposed that the stems on one support may alternate with or enter the intervals between the stems on the other support, and a means of rotating said supports, substantially as described.

6. In a cotton-harvesting machine, the combination of a shaft, a means of rotating the same, a circular support rigidly secured thereon, a cotton-picker stem having its central rod journaled at one end in said support and projecting radially therefrom, a roller rigidly attached to said central rod near the bearings thereof, and two fixed plates or bearing-surfaces supported one above and the other below said roller and alternately in contact therewith, the said parts being so combined and arranged that the rotation of the shaft shall cause the roller to move along one of said bearing-surfaces and be thereby rotated in one direction, and then along the other of said bearing-surfaces and thereby be rotated in the other direction, thus causing the revolution of the cotton-picker stem on its longitudinal axis in successively-opposite directions, substantially as described.

7. In a cotton-harvesting machine, the combination of a shaft, a means of rotating the same, a series of circular supports rigidly secured to said shaft, each support having journaled in its periphery and radially projecting therefrom one or more cotton-picker stems, and a series of independently-sustained fixed rings not connected to said shaft, but inclosing the same, interposed between said supports, substantially as described.

8. In a cotton-harvesting machine, the combination of the shaft V, a means of rotating the same, the circular support *n*, having rims or flanges *o o'*, and rigidly secured to said shaft, a cotton-picker stem, *k*, journaled in said rims and provided with a roller, *s*, independently-sustained ring *w*, and a bearing plate or surface arranged in contact with said roller and between said roller and ring *w*, substantially as described.

9. In a cotton-harvesting machine, the combination of the shaft V, a means of rotating the same, the circular support *n*, having rims or flanges *o o'*, and rigidly secured to said shaft, a cotton-picker stem, *k*, journaled in said rims and provided with a roller, *s*, the two independently-sustained rings *w w'*, located one above and the other below said roller, and bearing plates or surfaces arranged to come alternately in contact with said roller and between said roller and the rings, substantially as described.

10. In a cotton-harvesting machine, the combination of the shaft V, a means of rotating the same, a circular support, *n*, having rims or flanges *o o'*, and rigidly secured to said shaft, a cotton-picker stem, *k*, journaled in said rims and provided with a roller, *s*, and a spring-supported bearing-plate, *v*, or surface, arranged in contact with said roller, and an independently-fixed support not connected to the shaft, substantially as described.

11. The combination of a roller, *s*, on the central rod of the cotton-picker stem, held in bearings in the support *n*, loose bearing-plate *u* in contact with said roller, spring *n'*, grooved or channeled plate *t*, and an independently-fixed support, *w'*, for said last-mentioned plate, substantially as described.

12. The combination of a conical roller, *s*, on the central rod of the cotton-picker stem, held in bearings in the support, the loose beveled bearing-plate in contact with said roller, the interposed spring, the grooved or channeled plate, and an independent fixed support, *w*, for said last-mentioned plate, substantially as described.

13. In a cotton-harvesting machine, the combination of a rotary shaft, a series of supports rigidly secured thereon, a series of rotary cotton-picker stems journaled in each of said supports and radially projecting therefrom, a series of rings encircling said shaft and interposed between said supports, and a series of bars secured to the frame or body of the machine, said each bar carrying one of said rings, the said bars forming a grating or grid through which the stems pass in entering and leaving the cotton-receiving compartment, substantially as described.

14. In a cotton-harvesting machine, the combination of a rotary shaft, a series of supports rigidly secured thereon, a series of rotary cotton-picker stems journaled in each of said supports and radially projecting therefrom, a series of independently-supported rings encircling said shaft and interposed between said supports, and a series of bars secured to the frame or body of the machine, forming a grating or grid across the opening of the cotton-receiving compartment, through which the stems pass in entering and leaving the same, each bar carrying a doffer or clearing bar for said stems, projecting into the cotton-receiving compartment, substantially as described.

15. In a cotton-harvesting machine, the combination of a rotary shaft, a support rigidly secured thereon, a cotton-picker stem journaled at one end in said support and rotating on its own axis, and a doffing or clearing bar for said stem independently supported, and provided at its edge with a blade or blades, substantially as described.

16. In a cotton-harvesting machine, the combination of an upright rotary shaft, a support rigidly secured thereon, a cotton-picker stem journaled on said support and rotating on its own axis, and a doffer or clearing bar and a cotton-conveying apron beneath the same, the said doffing-bar being independently supported at right angles to said shaft and across the conveying-apron, substantially as described.

17. In a cotton-harvesting machine, the supporting-wheel K', axle L', pulley Q, belt S, pulley Q', shaft R, pulley T, belt S', pulley T', shaft R', bevel-gears U U', and vertical shafts V V', carrying the cotton-gathering devices, substantially as described.

18. In a cotton-harvesting machine, the supporting-wheel K', axle L', pulley Q, belt S, pulley Q', shaft R, belt *g*, pulley *f*, shaft *e*, pulley *d*, apron *c*, roller *b*, roller Y', apron X, roller Y, and a belt, *a*, for transmitting motion between the shafts of the pulleys *b* and Y', substantially as described.

19. In a cotton-harvesting machine, the combination of the shaft V, a means of rotating the same, a series of circular supports, *n*, having rims or flanges *o o'*, and elongated hubs or sleeves *q*, rigidly secured to said shaft with their ends in contact, a cotton-picker stem or stems, *k*, journaled in said rims, and each stem provided with a roller, *s*, independently-sustained rings *w w'*, encircling said hubs between said supports *n*, and one above and the other below said roller, and bearing plates or surfaces arranged to alternately come in contact with said roller, substantially as described.

20. In a cotton-harvesting machine, the combination, with a rotary shaft, of a series of picker-stems radially mounted thereon, means for rotating said stems on their own axes in one direction to gather the cotton, and means for consecutively rotating them in the opposite direction to discharge the gathered cotton, a discharge of the said cotton being effected from said stems on the reverse movement thereof by its inertia or by the centrifugal force of rotation of said stems, substantially as described.

337,008. CLOTH-COVERED MOLDING. JOHN MAXWELL, Oneida, N. Y. Filed July 10, 1885. (No model.)



Claim.—1. A molding formed with a plain surface throughout its longitudinal central portion and scalloped or serpentine on its longitudinal edges, and a textile facing applied to said molding, substantially as set forth and shown.

2. A molding formed with a plain surface throughout its longitudinal central portion, and scalloped or serpentine on its longitudinal edges, and with contours of said edges parallel with each other, and a textile facing applied to said molding, substantially as described and shown.

3. A molding having scalloped or serpentine longitudinal edges, and a strip of textile fabric cut bias and secured to the face of the molding with the warp running diagonally across said molding, substantially as set forth.

337,009. COFFIN. JOHN MAXWELL, Oneida, N. Y. Filed Dec. 18, 1885. (No model.)



Claim.—1. The within-described casket-lid fastener, consisting of the plate A, secured to the top of the side of the casket and provided with the slot *a*, the plate *b*, secured to the lid and provided with the slot *f*, the slide B on said plate, the hook *h*, projecting from the slide and adapted to enter the slot *a* and engage the under side of the plate A, and a manipulating-knob attached to the slide, substantially as described and shown.

2. The combination of the casket provided at the top of its side with the mortise *c*, the plate A, secured to the casket over the aforesaid mortise and provided with the slot *a*, arranged parallel with the side of the casket, the lid L, provided with the mortise *e* and with the slot *s*, extending to the mortise, the plate *b*, secured to the under side of the lid over the mortise *e* and provided with the slot *f*, coinciding with the slot *a*, the slide B upon the plate *b*, the hook *h*, projecting from the slide through the slot *f*, and the knob *l*, having the shank *m*, extending through the slot *s*, and attached to the slide B, all constructed and combined substantially in the manner specified and shown.

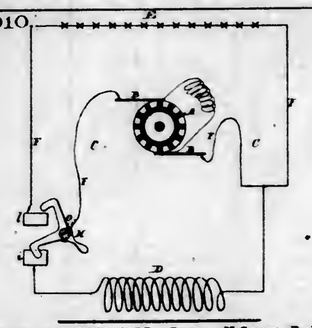
3. The combination, with the casket provided with the mortise *c*, and the plate A, provided with the slot *a*, of the lid L, provided with the mortise *e* and slot *s*, the plate *b*, provided with the slot *f*, the guides *n n*, attached to the plate *b*, the slide B, moving in said guides and provided with the recesses *r r*, the spring *t*, bearing in said recesses, the hook *h*, projecting from the slide through the slot *f*, and the knob *l*, having the shank *m* extending through the slot *s* and attached to the slide, substantially as described and shown.

337,010. CIRCUIT-CONNECTION FOR DYNAMO-ELECTRIC MACHINES. NORMAN MCCARTY, Hoosick, N. Y., assignor to John B. Tibbits, same place. Filed July 3, 1885. (No model.)

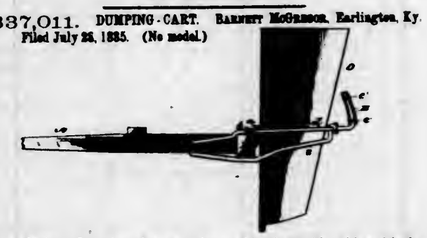
Claim.—1. The combination, with the dynamo-electric machine having an exciting-circuit passing through the field-magnets, of a line-circuit that is a branch of the exciting-circuit and contains the lights or other working devices, a two-part switch and contact-blocks connected at the junction of the external and exciting circuits and arranged to close the exciting-circuit before closing the external circuit, for the purposes and substantially as set forth.

2. The combination, with the dynamo-electric machine having an exciting-circuit passing through the field-magnets, of a line-circuit that is a branch of the exciting-circuit and contains the lights or other other working devices, and a switch and contact for the same arranged to close the line or working circuit after the exciting-circuit has been closed and the dynamo brought up to its maximum capacity, substantially as set forth.

337,010.

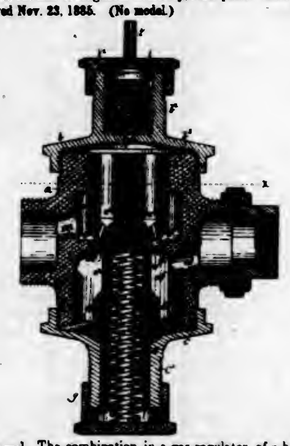


337,011. DUMPING-CART. BARNETT MCGREGOR, Earlington, Ky. Filed July 23, 1885. (No model.)



Claim.—In a dumping-cart, the combination, with a hinged body, an axle, and the shafts, of rearwardly-extending arms *b*, secured at one end to the shafts, and having upturned rear ends, braces *c*, also secured to the shafts and extending beneath the axle and secured to the arms *b* near their rear ends, a tail-board, E, rigidly held in the arms *b*, and curved plates F, secured at each end of the tail-board and having eyes *e'*, projecting beyond the tail-board and fitting the upturned ends of the arms *b*, to detachably connect the tail-board thereto, substantially as described.

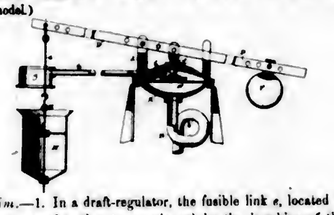
337,012. GAS-REGULATOR. JOHN E. MILLER, Pittsburg, Pa., assignor of one-half to Augustus H. Heisey, same place. Filed Sept. 8, 1884. Renewed Nov. 23, 1885. (No model.)



Claim.—1. The combination, in a gas-regulator, of a hollow casing, the interior of which is divided into chambers by a valve-seat, a valve situate in one of the chambers and having a cylindrical portion fitting within a cylindrical cavity in the casing, a flexible diaphragm situate in the other chamber and connected with the valve, and a spring situate in a tubular stem extending from the valve so as to act thereon, substantially as and for the purpose specified.

2. The combination, in a gas-regulator, of a cylindrical valve having holes which form communication between the outlet-chamber and the dome of the valve-case when the valve is closed, with a port extending between the dome-chamber and an auxiliary valve-chamber, which is closed by a valve capable of being raised by the pressure of gas in the dome-chamber, whereby an outlet is afforded for the escape of leakage of gas in the valve-chamber, substantially as and for the purposes described.

337,013. **SAFETY APPARATUS FOR AUTOMATIC DRAFT-REGULATORS.** CARLETON W. NASON, New York, N. Y. Filed Jan. 16, 1886. (No model.)



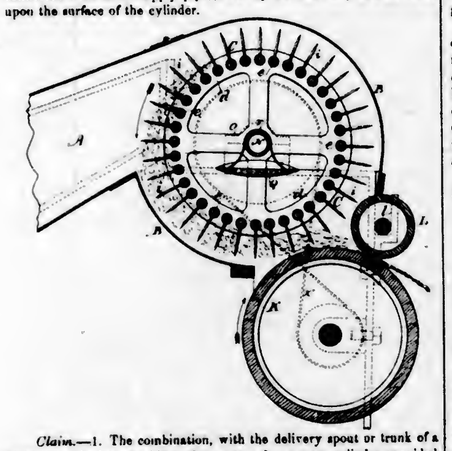
Claim.—1. In a draft-regulator, the fusible link *e*, located in position to be exposed to the steam released by the breaking of the diaphragm of the regulator, substantially as described.

2. The combination, with the diaphragm *a* and lever D, operated by the diaphragm, of the chain or rod E, having the link *e* located in position to be exposed to the steam released by the breaking of the diaphragm, substantially as described.

3. The combination, with the chamber A, diaphragm *a*, and lever D, operated by the diaphragm, of the chain or rod E, having the cup H, and the pipe G, communicating with the chamber and arranged to conduct the water from the chamber to the cup upon the breaking of the diaphragm, substantially as described.

337,014. **DOFFING APPARATUS FOR PICKING OR GINNING MACHINES.** STEPHEN R. PARKHURST, Montclair, N. J., assignor to Emily R. Parkhurst, same place. Filed Nov. 21, 1885. (No model.)

Brief.—The object of the apparatus is to catch the fiber as it is thrown out of the delivery-spout to concentrate it into a lap, and to afford a convenient means for oiling it, if wool. It consists of a cylindrical casing, within which revolves an open-work toothed cylinder, upon which the fiber is thrown and by which it is transferred to delivery and lap-forming rollers. The shaft of the cylinder is hollow and perforated and connected with an oil-supply pipe, whereby the fiber may be oiled while upon the surface of the cylinder.



Claim.—1. The combination, with the delivery spout or trunk of a picking or ginning machine, of a case, and an open cylinder provided with projecting teeth within such case, a delivery-roller below the said cylinder, and a movable roller for drawing the bat of wool, cotton, or other fiber off the teeth, substantially as set forth.

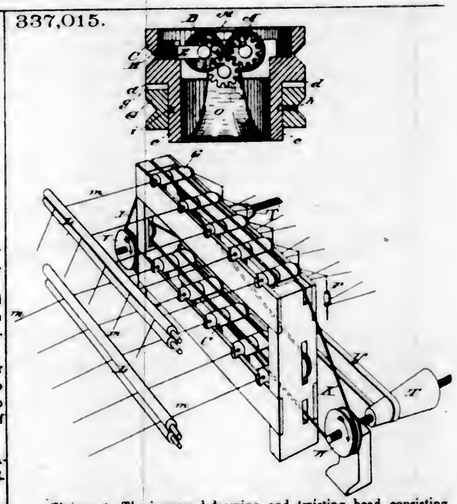
2. The combination, with the delivery-trunk and a case at the end, of the open cylinder provided with projecting teeth for catching the wool, such cylinder being composed of heads, with tubular bars between the heads, and teeth inserted into holes in such tubular bars, substantially as set forth.

3. The cylinder having open heads, with tubular bars between such heads, and teeth in such bars, in combination with a perforated tubular shaft for such cylinder, an oil-supplying pipe, and a distribution-trough within the cylinder, substantially as set forth.

337,015. **HEAD FOR CONTINUOUS DRAWING AND TWISTING.** DURELL O. PEASE, Hampden, Mass. Filed May 14, 1885. (No model.)

Brief.—The head consists of a case adapted to rotate in bearings, two rolls journaled therein, one having a gear on its shaft meshing with a second gear projecting beyond the case and in its turn meshing with a toothed surface on a shell. The case and shell are driven at different speeds by belts from cone-pulleys. Funnel-shaped guards on the ends of the case project inward and protect the rolls and mechanism.

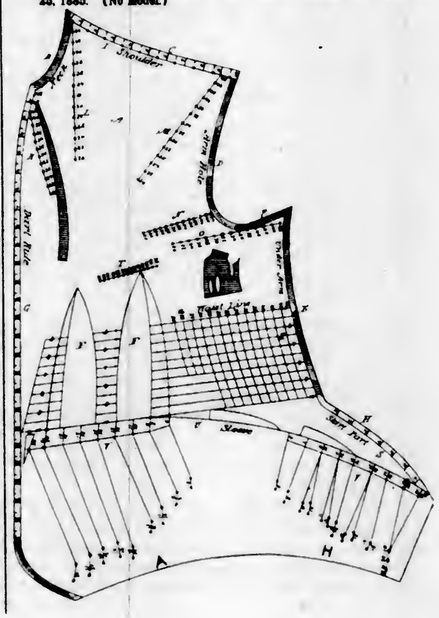
337,015.



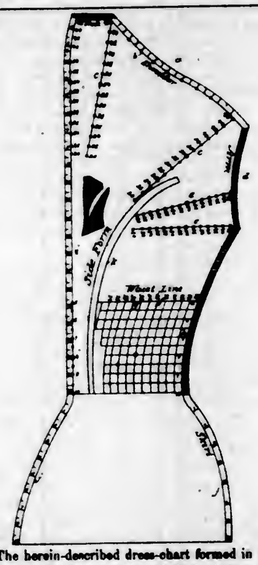
Claim.—1. The improved drawing and twisting head, consisting of a case, C, adapted to rotate in bearings, two rubber-faced friction-rolls journaled in said case, a gear, D, on the axis of one roll, a gear, F, arranged to mesh with gear D and have a part thereof project beyond the case C, funnel-shaped guards M and O, secured to the ends of casing C and projecting inward nearly to the friction-rolls and gears, and the shell G, mounted so as to rotate on case C and having a toothed surface engaging gear F, substantially as described.

2. In combination, a series of drawing-heads each consisting of one cylindrical section carrying a pair of drawing-rolls, and another section rotatively mounted thereon and having a gear adapted to drive the drawing-rolls through intermediates, a frame on which said drawing-heads are supported, two endless belts, I and K, one engaging the roll-carrying sections and the other engaging the roll-driving sections of the drawing-heads, two shafts, each bearing a cone-pulley and a belt-pulley, the belts I and K, passing over the belt-pulleys, respectively, and a belt connecting the cone-pulleys, all substantially as described.

337,016. **DRESS-CHART.** JULIA PERLEY, Bangor, Me. Filed July 25, 1885. (No model.)

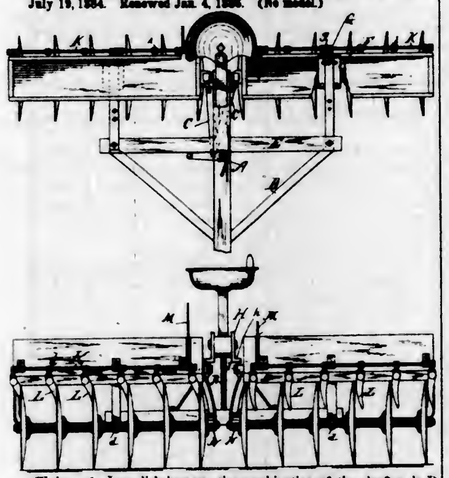


337,016.



Claim.—The herein-described dress-chart formed in two parts, the front part and sleeve being in one piece and the back in a separate piece, the said chart being provided with edge-measures, waist-measures, a side-form measure, and bias-measures, substantially as set forth.

337,017. **DISK-HARROW.** LYMAN R. PHELPS and R. K. SWIFT, Rochelle, Ill., assignors of one-third to J. J. A. Zeller, same place. Filed July 19, 1884. Renewed Jan. 4, 1886. (No model.)



Claim.—1. In a disk-harrow, the combination of the draft-rods D D with the gang-axles and the transverse draft-frame, the draft-rods being loosely connected to the gang-axles by means of vertical bolts passing through slotted holes in the boxes F, substantially as described.

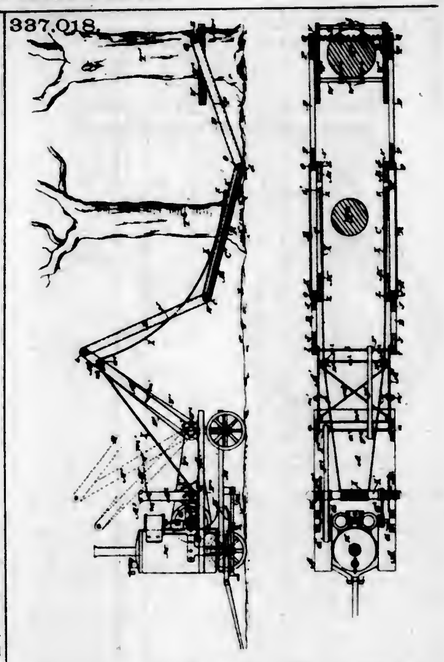
2. In a disk-harrow, the combination, with the tongue, of the adjustable stops H, provided with outwardly-projecting feet extending over the gang-frames to limit the upward movement of the inner ends of the same, and to prevent their coming into contact with each other, substantially as described.

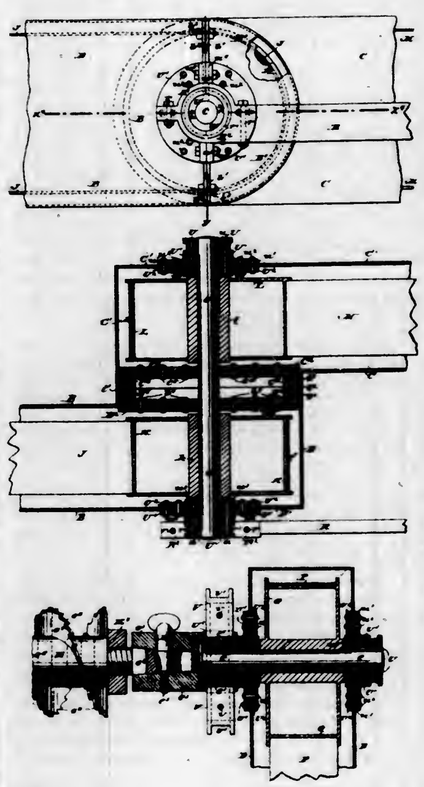
3. In a disk-harrow, the combination of the rock-shaft K, carrying cam devices *k*, operating-lever M, and pivoted scrapers L, said scrapers being adapted to be pressed against the disks by means of said cams, substantially as described.

337,018. **TREE-FELLER AND PILE-CUTTER.** WM. G. RENDALL, Portland, Oreg. Filed June 5, 1885. (No model.)

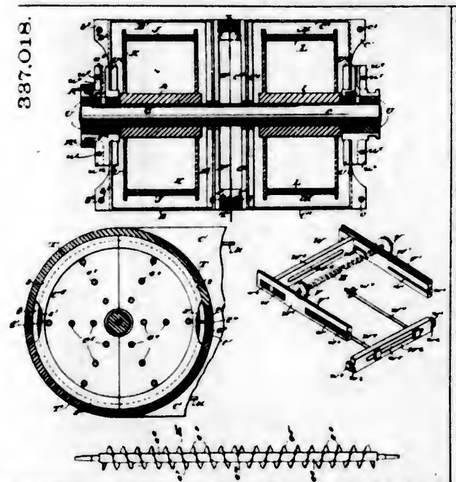
Claim.—1. A tree-feller and pile-cutter comprising a central shaft or arbor provided with oppositely-arranged or right and left spirals with

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their meeting ends forming a cutter, together with belts and shafts and a suitable support, substantially as herein set forth.

2. In a tree-feller and pile-cutter, the central shaft or arbor having oppositely-arranged spirals with their meeting ends forming a cutter, said spirals also having cutters at intervals throughout their lengths, in combination with driving belts and shafts and a suitable support, substantially as herein set forth.

3. A tree-feller and pile-cutter comprising a movable truck or platform-support, a frame, A', pivoted thereto, a driving-shaft, *b*, on said frame, pulleys and belts for imparting motion to said shaft, one or more pairs of arms pivoted to frame A' and to each other, a rotatable cutter journaled at the ends of the outer pair of arms, and a system of pulleys and belts transmitting motion to the cutter from shaft *b*, substantially as herein set forth.

4. A tree-feller and pile-cutter comprising a truck or platform-support, A, a frame, A', pivoted thereto, a driving-shaft, *b*, on said frame, one or more pairs of arms pivoted to said frame and to each other, a rotatable cutter journaled at the ends of the outer pairs of arms, a system of pulleys and belts transmitting motion from shaft *b* to the cutter, and shafts *f*, universally jointed to the ends of shaft *a'*, and provided with supports f^2 f^3 at the outer ends, and pulleys f^4, adapted to receive the driving-belt from a motor, substantially as herein set forth.

5. A tree-feller and pile-cutter comprising a movable truck or platform-support, A, a frame, A', pivoted thereto, a driving-shaft, *b*, on said frame, pulleys and belts for imparting motion to said shaft, one or more pairs of arms pivoted to frame A and to each other, a rotatable cutter journaled at the ends of the outer pair of arms, a system of pulleys and belts transmitting motion from shaft *b* to the cutter, and a windlass fitted to the support A, and ropes leading therefrom to connect with the frame A', and the pivoted arms, substantially as herein set forth.

6. A tree-feller and pile-cutter comprising a support, A, a frame, A', pivoted thereto, pairs of arms pivoted to frame A' and to each other, a rotatable cutter journaled at the ends of the outer pair of arms, a system of pulleys and belts transmitting motion from a shaft, *b*, on frame A' to the cutter, a windlass arranged on the support A, ropes leading from the windlass and provided with snap-hooks x x^2, or equivalent devices, and fixtures on the second pair of arms and on frame A', adapted to be engaged by the hooks x x^2, substantially as herein set forth.

7. In a tree-feller and pile-cutter, the combination, with a series of arms connected to a support and pivoted to each other by short shafts, as at *c d*, and pulleys and belts transmitting power through said shafts from a motor to a rotatable cutter journaled at the ends of the outer pair of arms, of brace or tie rods, as at R, connecting the shafts *c d*, substantially as herein set forth.

8. A tree-feller and pile-cutter comprising a support, A, a frame, A', pivoted thereto, a driving-shaft on said frame, pulleys and belts for rotating said shaft, one or more pairs of tubular or hollow arms, as at B C D, pivoted to support A or frame A' and to each other, a rotatable cutter journaled at the ends of the outer pair of arms, and a system of pulleys and belts operating inside the tubular arms for transmitting motion to the cutter, substantially as herein set forth.

9. The combination, with adjacent arms and a shaft, as at *c*, carrying pulleys K L, and belts for receiving and transmitting motion along said arms, of swiveled plates provided with tongues *s* and grooves *s'*, and a strap, T, having tongues *t t*, adapted to the grooves *s' s'* of opposite swivel-plates, substantially as herein set forth.

10. The combination, with the tubular arms, as at B C, and a shaft, *c*, carrying belted pulleys K L, of caps B' C' at the ends of the arms, semicircular swiveled plates B^3 C^3 and C^3 B^3, provided with tongues *s* and grooves *s'* and fixed to the body parts and caps of the arms, and a strap, T, having tongues *t t*, adapted to the grooves *s'* of the swivel-plates, and half-boxes U' U', fixed to the body parts and caps of the arms for support of shaft *c*, substantially as herein set forth.

11. The combination, with the tubular arms, as at B C, and a shaft, *c*, carrying belted pulleys K L, of caps B' C' at the ends of the arms, semicircular swivel-plates B^3 C^3 and C^3 B^3, provided with hangers *s* and grooves *s'*, and fixed to the body parts and caps of the arms, a strap, T, having tongues *t t*, adapted to grooves *s' s'*, half-boxes U' U', fixed to the body parts and caps of the arms, and half-brasses U U, fitted in the boxes and provided with projecting lugs u^3, entering recesses of the boxes, substantially as herein set forth.

12. The combination, with the tubular arms B D and single-belt pulleys, as at I Q, of semicircular caps fitted to the ends of the arms, and half-boxes U' U', fixed to the body parts and caps of the arms, and with or without re-enforcing plates U^3 U^3, substantially as herein set forth.

13. The combination, with the tubular arms B D and single-belt pulleys, as at I Q, of semicircular caps fitted to the ends of the arms, half-boxes U' U', fixed to the body parts and caps of the arms, and with or without re-enforcing plates U^3 U^3, and half-brasses U U, fitted to the driving-shafts of the pulleys and provided with projecting lugs u^3, entering recesses of the half-boxes U', substantially as herein set forth.

14. In a tree-feller and pile-cutter, the combination, with the extremities of the outer arms, and a rotatable cutter-head, and shafts and pulleys, as at *e* Q, journaled in the arms, of beads e^3 on shafts *e*, said heads having tapering sockets to receive the tapering ends e^3 of the cutter-head shaft, and pins E', crossing said sockets and having conical parts e^4, entering transverse tapering openings in the cutter-head shaft, substantially as herein set forth.

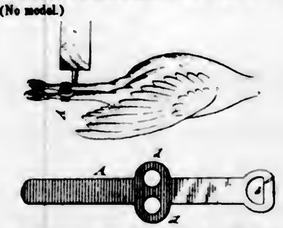
15. In a tree-feller and pile-cutter, the combination, with the cutter-head, arms provided with belt-pulleys and belts, and mechanisms for driving said belts, substantially as specified, of wheels V, journaled to the arms and adapted to travel on a frame fixed to the tree or pile for guiding the cutter-head, substantially as herein set forth.

16. In a tree-feller and pile-cutter, the combination, with a cutter-head journaled at the outer ends of arms, as at D D, of a frame secured to the tree or pile to support and guide the cutter-head, substantially as herein set forth.

17. In a tree-feller and pile-cutter, the combination, with a cutter-head journaled at the outer ends of arms, as at D D, provided with wheels V V, of a frame secured to the tree or pile to support the arms by said wheels for guiding the cutter-head, substantially as herein set forth.

18. In a tree-feller and pile-cutter, the cutter-head guide-frame W, constructed with side bars, W' W', having slots w w^4 w' w^4, and front and rear bars, W^3 W^3, provided with slots w^3 w^3, respectively, and having ⊢-heads w^2 w^2, adapted to the slots of the side bars, in combination with bolts W^4 or W^3, passed through the slots to hold the frame to the tree or pile, substantially as herein set forth.

337,019. SUSPENSION-CLASP FOR POULTRY, GAME, &c. JOHN P. SCHUESLER, Jr., and WILLIAM FREDERICK, New York, N. Y. Filed Nov. 23, 1885. (No model.)



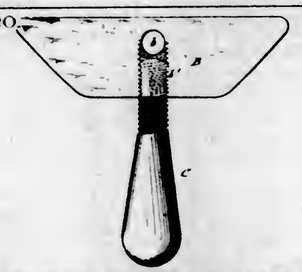
Claim.—A suspension device for tying the legs of poultry, game, &c., consisting of a metallic strip having an opening at one end, through which the opposite end is inserted, and a suspension-eye or eyes made integral with the body of the strip, substantially as set forth.

337,020. STRETCHING DEVICE FOR CLOTHES-LINES. FERDINAND SCHWEBER, Paterson, N. J. Filed Apr. 25, 1885. (No model.)

Claim.—The combination, with a clothes-line having a loop at one end and a knot at the opposite end, of a stretching device consisting of

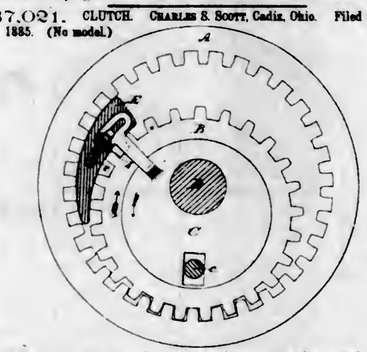


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a perforated head, through which the knotted end is passed, and a hand-screw for clamping or releasing said line, substantially as set forth.

337,021. CLUTCH. CHARLES S. SCOTT, Cadiz, Ohio. Filed Dec. 21, 1885. (No model.)

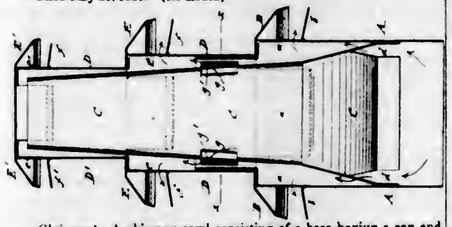


Claim.—1. In a clutch, a wheel within a wheel eccentrically arranged, means for rotating the center of one about the center of the other, and a clog between the wheels, substantially as described.

2. In a clutch, the combination of an inwardly-toothed wheel, A, and externally-toothed wheel B, meshing together, the latter revolving about a cam, C, together with a clog, E, interposed between said wheels, and a spring, *e*, for keeping said clog in a locking position, substantially as described.

3. In a clutch, the clog E, interposed between two wheels, A and B, and means for holding said clog in position, substantially as described.

337,022. CHIMNEY-COWL. HENRY F. SEIDEL, New York, N. Y. Filed July 25, 1885. (No model.)



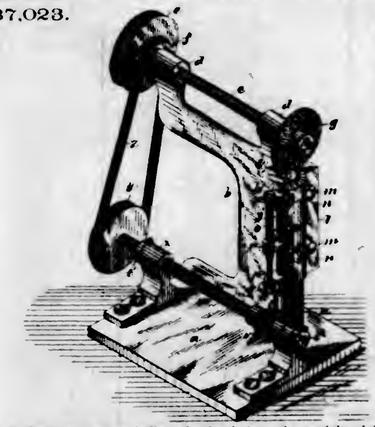
Claim.—1. A chimney-cowl consisting of a base having a cap and openings and outwardly-bent flanges below said cap, an interior truncated portion attached to the base and provided with corner openings at the lower end, and a top part formed of one or more box-shaped portions having caps and side openings and outwardly-bent flanges below said caps, substantially as set forth.

2. A chimney-cowl consisting of a base having a cap and openings and outwardly-bent flanges below said caps, an interior truncated portion attached to the base and provided with corner openings at the lower and middle parts, and a top part formed of one or more box-shaped portions having caps, side openings, and outwardly-bent flanges, substantially as set forth.

337,023. KNIFE-SHARPENER. ELIJAH SHAW and FRANK D. WALDEN, Milwaukee, Wis., assignors of one-half to Charles T. Bradley and Wm. H. Metcalf, same place. Filed Apr. 20, 1885. (No model.)

Claim.—1. In a device for grinding circular beveled-edged knives, a bracket, *l*, supporting the knife-carrying mechanism, which bracket is provided with slots *n n* and supported on screws *m m* through slots *n n*, in combination with bracket *b*, whereby the bracket *l* is adjustable laterally at its top or bottom independently or concurrently, and the desired inclination of bracket *l* may be secured, substantially as described.

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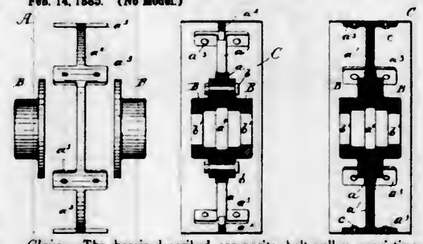
2. In a device for grinding circular knives, the upright rigid supporting-bracket *b*, in combination with the horizontally-adjustable bracket *l*, and the vertically-adjustable knife-carrying rod *j*, supported and rotating in the bracket *l*, substantially as described.

3. In a device for grinding circular knives, the rotating knife-carrying rod *j*, vertically adjustable in its bearings, in combination with the rod *o*, traveling nut *r*, arm *s*, and collars *t t*, all supported on a bracket, *l*, substantially as described.

4. In a knife-grinding device, the movable bracket *l*, adjustably attached to the rigid bracket *b*, the shaft *j*, supported and having endwise and rotary motion in lugs on said bracket *l*, in combination with rod *o*, supported and having rotary motion in ears rigid to bracket *l*, and provided with a screw-thread carrying the traveling nut *r*, the nut *r* provided with rigid arm *s*, clasping shaft *j*, and the sleeves *t t*, rigid to shaft *j*, one on each side of the arm *s*, substantially as and for the purpose set forth.

5. The knife-grinding device hereinbefore described, consisting of the grinding-wheel *g*, affixed to and rotating with the driving-shaft *c*, said shaft being supported on bracket *b*, affixed to base-plate *a*, the knife-supporting rotating shaft *j*, supported and rotating in lugs affixed to movable bracket *l* and provided with worm-wheel *u*, and adjusting-rod *o*, supported and rotating in ears *p p*, rigid on lugs *k k*, said rod having a screw-thread and provided with the traveling nut *r*, moving upon said rod, and the arm *s*, clasping the shaft *j*, in combination with the worm *v* on shaft *w*, shaft *w*, supported and rotating in brackets *x x*, provided with rigid pulley *y*, and the belt *z*, running upon pulleys on shafts *c* and *w*, substantially as and for the purpose set forth.

337,024. BELT-PULLEY. FREDERICK SIEBERT, St. Louis, Mo. Filed Feb. 14, 1885. (No model.)



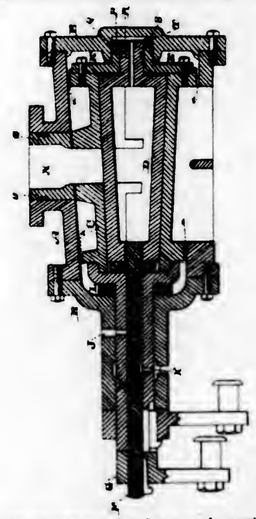
Claim.—The herein-described composite belt-pulley, consisting of the rim C, the spider A, having the central aperture, a^4, and the hub-flanges B B, made separate and detachable from the spider, having bearings for the shaft and bolted to the spider-web upon each side thereof, substantially as set forth.

337,025. CUT-OFF VALVE. JOHN P. SIMMONS, San Francisco, Cal. Filed July 7, 1885. (No model.)

Claim.—1. A rotary main valve and a cut-off valve fitting concentrically within each other and within the steam-chest, having inlet and outlet ports, arranged as shown, in combination with a packing let into the neck of the steam-inlet, so that its upper end is exposed to steam-pressure, while its lower end is fitted to the shape of the main valve, substantially as herein described.

2. The rotary tapering main valve and cut-off valve fitted concentrically within one another and within an exterior casing or steam-chest having inlet and outlet ports, as shown, and stems extending from their

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smaller ends for the attachment of rocker-arms, in combination with trunnions extending into corresponding chambers at the larger ends, and a passage by which steam is admitted into the chamber behind the trunnions, substantially as herein described.

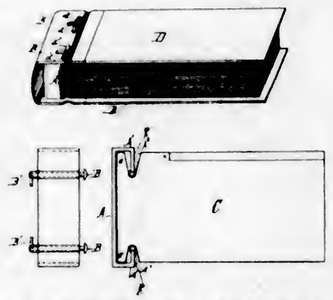
3. The rotary main valve and the cut-off valve fitting concentrically one within the other and within an exterior casing or steam-chest, in combination with openings or passages made around the ends and top of the main valve and communicating with the exhaust-passage, substantially as herein described.

337,026. PURIFYING WATER. HENRY H. SMITH, Wilmington, N. C. Filed Oct. 30, 1885. (No specimens.)

Claim.—1. The improvement in the art of purifying water, which consists in bringing the same into intimate contact with granular material coated with lime, as set forth.

2. The improvement in the art of purifying water, which consists in passing the same through a body of sand coated with lime, whereby the coloring-matter and other impurities held in suspension are arrested and retained, as set forth.

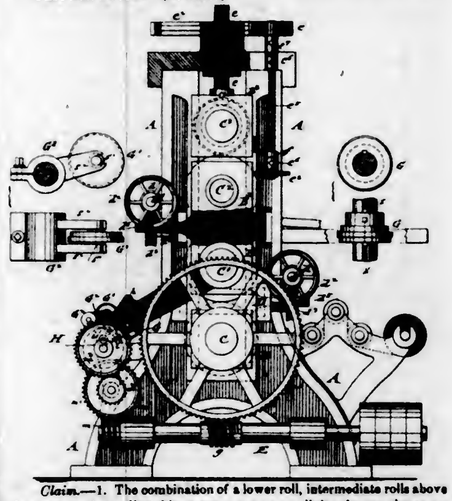
337,027. COMBINED BOOK-COVER AND REMOVABLE LEAF. E. W. SNOW and J. F. SNOW, Pawtucket, R. I. Filed Dec. 17, 1884. (No model.)



Claim.—1. The combination, with a rigid back-piece, A, having arms A' A^2 bent inwardly toward each other to form spaces between them and the body of the back-piece, as shown and described, of leaves or bill-heads C, open-slotted at the sides to form ears c c, a flexible-backed cover, D D, and a locking device, substantially as described, for securing the parts together.

2. The combination of a rigid back-piece, A, provided with arms A' A^2 bent inwardly toward each other to form spaces between them and the body of the back-piece, with leaves or bill-heads C, open-slotted at the sides to form ears c c adapted to engage said spaces, as shown, a flexible-backed cover, D D, and bolts B B, provided with rotating heads B' B', adapted to rotate to lock and unlock the cover, as shown and described.

337,028. MACHINE FOR CALENDERING PAPER. MOSES SOLINGER, New York, N. Y., assignor to Solinger, Schindler & Co., same place. Filed Nov. 23, 1885. (No model.)



Claim.—1. The combination of a lower roll, intermediate rolls above the same, and an adjustable counter-pressure roll bearing on the upper intermediate roll, substantially as set forth.

2. The combination of a lower roll, intermediate rolls above the same, and an adjustable counter-pressure top roll having a central covering layer of leather or other suitable material, substantially as set forth.

3. The combination of the supporting-standards having transverse guide-recesses, a lower roll, adjustable rolls turning in recessed bearings, transverse wedge-pieces engaging the recessed bearings of said adjustable rolls, and worm-gears for adjusting said slide-pieces, substantially as set forth.

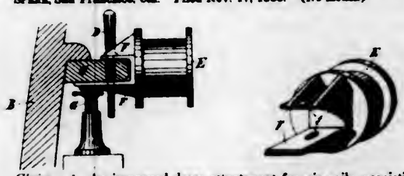
4. The combination of the rolls C C' C^3 and the bearings B B' B' with a counter-pressure top roll, C^5, having adjustable bearings B^3, screw-rods e, gear-wheels e^2, having threaded hubs e', pinions e^4, and shaft e^5, supported in bracket-arms e^6, substantially as set forth.

5. The combination, with calendering-rolls, of a cutting attachment supported by cranked arms, the cutting attachment consisting of two sets of guiding and stretching rolls, intermediate rotary cutting-disks supported on transverse shafts, a winding-up roller, and mechanism for imparting rotary motion to the winding-up roller, substantially as set forth.

6. The combination, with calendering-rolls, of cranked supporting-arms F, guide and stretching rolls A and i, transverse shaft s, disk-shaped cutting-knives G, splined thereto, a transverse shaft, s^3, cutting-disks G', supported in adjustable brackets of the shaft s, a winding-up roller, H, and transmitting gear-wheels, by which rotary motion is imparted to the winding-up rollers, substantially as set forth.

7. The combination of the rolls C C' C^3, arranged one above the other, with a double-beveled friction-wheel, g^2, on the shaft of the roll C, a fixed friction-wheel, g^3, and a sliding and spring-actuated friction-wheel, g^4, on the shaft of the roll C', and a double-beveled friction-wheel, g^5, on the shaft of the roll C^3, whereby a smooth and even motion is imparted to the rolls C' C^3 from the lower roll, C, substantially as set forth.

337,029. DRUM ATTACHMENT FOR PIN-RAILS. ALEXANDER F. SPEAR, San Francisco, Cal. Filed Nov. 17, 1885. (No model.)



Claim.—1. An improved drum attachment for pin-rails, consisting of a cylinder or drum to receive the guide-rope, and provided at one end with a pair of jaws extending parallel with each other and adapted to embrace the pin-rail, said jaws having each a perforation to receive the belaying-pin when in the pin-rail, substantially as described.

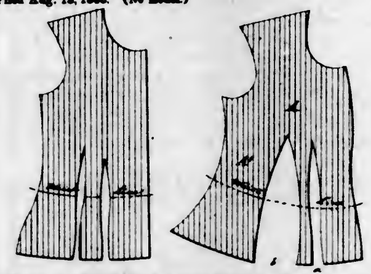
2. The drum E, having upon one end the clamp F, adapted to embrace the pin-rail of a vessel, and the pin D, passing through holes in the arms of said clamp and through holes in the rail, substantially as herein described.

3. The drum E, having upon one end the clamp F, provided with elongated holes f, said clamp being adapted to embrace the pin-rail and to receive the belaying-pin of said rail through its holes, substantially as herein described.

4. In combination with the pin-rail of a vessel, the drum E, having upon one end the clamp F, embracing the pin-rail, and the jack-screw G, binding the clamp against said rail, substantially as herein described.

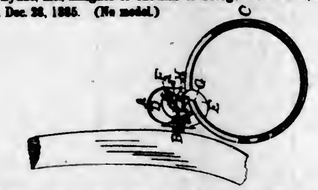
5. The combination of a pin-rail, C, of a vessel, having a belaying-pin, D, the drum E, having a clamp, F, upon one end, embracing the pin-rail and receiving the belaying-pin, and the jack-screw G, binding the clamp to the pin-rail, substantially as herein described.

337,030. PATTERN-LINING. MATILDA STOCKER, New York, N. Y. Filed Aug. 13, 1885. (No model.)



Claim.—A bust and waist pattern-lining, the front section of which is provided with two darts, one being several times wider than the other, the narrow dart a being the same width at the waist-line and the bottom of the pattern and narrower between said points, the dart b being wider between the waist-line and the bottom and nearly wedge shape, substantially as described.

337,031. RING-HOLDER FOR HARNESS. GEORGE W. SWINEHART, East Lynne, Mo., assignor of one-half to George W. Farrow, same place. Filed Dec. 28, 1885. (No model.)



Claim.—1. In a ring-holder for harness, arms D and E, having heads d^2 and e, made to correspond to form an opening, H, with points d^4 d^5, projecting inward, all substantially as and for the purpose set forth.

2. A ring-support composed of a piece, A, provided with arms D and E, forming openings F and G, said arms provided with inward projections d^4 d^5 and an open space, H, substantially as shown and described.

337,032. FRICTION-CLUTCH. WILLIAM B. TATRO, Hartford, Conn., assignor to the Pierce Manufacturing Company, New York, N. Y. Filed Nov. 2, 1885. (No model.)

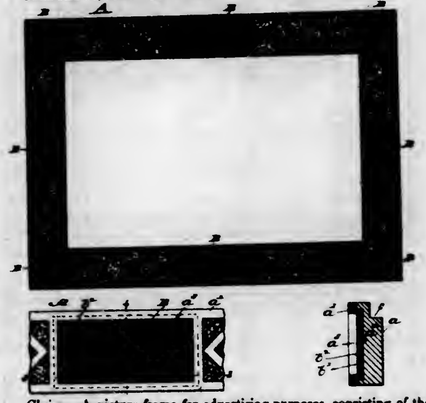


Claim.—1. In combination, in a friction-clutch, the body part c', an annular clamp, e, fitted loosely within a socket in this body part, and with inward-projecting arms with adjacent tapered faces, and a guard overhanging the space between the arms, the body part c^2 supporting a rock-arm with one end between the arms of the clamp, all substantially as described.

2. In combination with the body parts of a friction-clutch of the within-described class, the annular clamp e, with an overhanging guard partly covering the space at e', between the divided parts of the clamp, and the spreading-lever, with its end located between the ends of the clamp, all substantially as described.

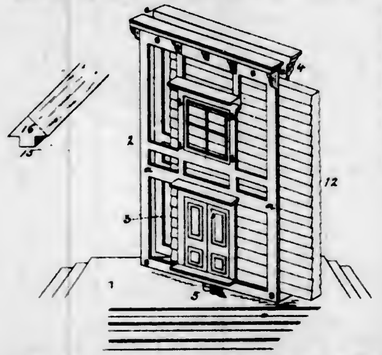
3. In combination with the clutch-body parts c' and c^2, the expansible annular clamp e, fitted loosely within the body part c', and bearing the inward-projecting arms e^2, with adjacent faces tapered, the rock-arm f, with the end f^2 located between the arms of the clamp, and the arm f^3, engaging the sliding collar g, movable on the hub of the body part c^2, all substantially as described.

337,033. PICTURE-FRAME. GERHARD H. THOMSEN, St. Louis, Mo. Filed Jan. 24, 1885. (No model.)



Claim.—A picture-frame for advertising purposes, consisting of the combination of the base a, having a mortise, a^2, near the margin thereof, the sheet b', bearing the inscription or design, and the composition facing a^3, having in its center a space bounded by the rabbet c, adapted to receive any desired picture, having an opening, a^2, corresponding with but smaller than the mortise a^2, and secured permanently to the base a, whereby the advertisement is preserved and its removal prevented, and the frame at the same time adapted to receive any desired picture, substantially as set forth.

337,034. PAINT-EXHIBITOR. THEODORE C. VAN ARSDALE, Montclair, N. J. Filed Mar. 3, 1884. (No model.)



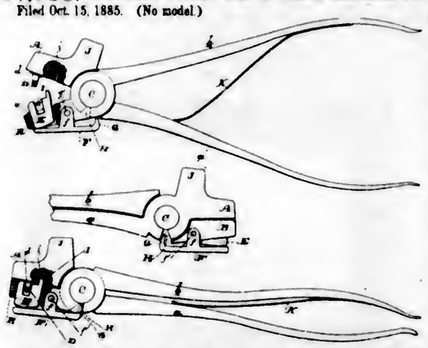
Claim.—1. As a paint-exhibitor, a series of variously-painted slides constructed each to represent the body part of a building, and a slotted or grooved frame or standard constructed and painted to represent the projecting parts and trimmings of the building, whereby the variously-painted slides may be combined in succession with the same projecting parts and trimmings, and the combination of the colors be thereby advantageously exhibited, substantially as set forth and described.

2. In a paint-exhibitor, the combination, with a frame or panel painted suitably for the body of a house, of a skeleton frame or panel painted in a contrasting color for the trimmings of a house, and of additional differently-painted frames or panels similar to one of the former and forming a set therewith, the several members of the set being adapted to be exchangeably applied to the other frame or panel, to exhibit color combinations and effects, substantially as and for the purposes set forth.

337,035. SOAP. CHAUNCEY H. WALKER, Sandy Lake, Pa. Filed Nov. 24, 1885. (No specimens.)

Claim.—The compound herein described, consisting of beef-tallow, water, rosin, potash, sal-soda, pearline, borax, sulphate of soda, salts of tartar, camphene, ammonia, benzine, turpentine, and oil of sassafras, substantially as specified.

337,036. CLINCHING-PUNCH. JOHN R. WATSON, Sacramento, Cal. Filed Oct. 15, 1885. (No model.)



Claim.—1. A clinching-punch comprising two-handled pivoted jaws, a punching-die on one jaw and an opposing socket-bed in the other, constructed, substantially as described, so as to resist the thrust of the die until it passes through the substance to be punched, and then to move back into its seat to allow the clinching-pressure of the meeting jaws, substantially as described.

2. A clinching-punch comprising two-handled pivoted jaws, a punching-die on one jaw, an opposing socket-bed loosely seated in the other jaw, and a pivoted locking-plate on said jaw, constructed, substantially as described, so as to hold said socket-bed rigid until the die has passed through the substance to be punched, and then to relieve it, substantially as and for the purpose herein described.

3. In a clinching-punch, the combination of the pivoted handled jaws A B with the punching-die D in jaw A, the grooved socket-bed E, loosely seated in an opening in jaw B, and a means, substantially as described, for holding said bed rigid to resist the thrust of the die and for relieving it to allow it to move back within its seat before the approaching jaws, substantially as and for the purpose herein described.

4. In a clinching-punch, the pivoted handled jaws A B, the punching-die D in jaw A, and the loosely-seated grooved socket-bed E in jaw B, in combination with the plate F, pivoted to the jaw B and bearing with its forward end on the back of the socket-bed, said plate being constructed, substantially as described, so that its rear end is alternately held and relieved by the oscillating base of jaw A, substantially as and for the purpose herein described.

5. A clinching-punch comprising the handled jaws A B, having curved bases, by which they are pivoted together, the punching-die D in jaw A, the grooved socket-bed E, loosely seated in an opening in the other jaw, the locking-plate F, pivoted to jaw B and bearing with its forward end on the back of the socket-bed, the lip G on the rear end of the locking-plate bearing on the curved base of jaw A, and the notch H in said base, into which the lip G drops, all arranged and adapted to operate substantially as herein described.

6. In a clinching-punch, the combination of the pivoted jaws A B, the jaw A being provided with the clinching-surface *d*, the punching-die D, the loosely-seated socket-bed E in the other jaw, and the pivoted locking-plate, F, adapted by the movement of the jaws to hold rigid and to relieve the socket-bed, substantially as and for the purpose herein described.

7. A clinching-punch comprising the handled jaws A B, having curved bases, by which they are pivoted together, the jaw A being provided with clinching-surface *d* and socket *i*, the punching-die D, the grooved socket-bed E, loosely seated in an opening in jaw B and having the stop I on its face, the locking-plate F, pivoted to jaw B and bearing with its forward end on the back of the socket-bed, the lip G on the rear end of the locking-plate bearing on the curved base of jaw A, and the notch H in said base, all arranged and adapted to operate substantially as herein described.

337,037. STOP FOR EXPANSION-JOINTS. JOSEPH B. WHITE, Brooklyn, N. Y. Filed July 16, 1885. (No model.)



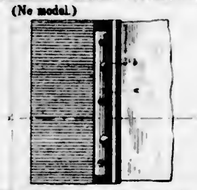
Claim.—1. An expansion-joint provided with adjustable stops which limit the longitudinal movement of the expansion-joint, substantially as and for the purposes set forth.

2. An expansion-joint provided with lugs, bolts, and adjustable nuts with locking devices which limit the longitudinal movement of the expansion-joint, substantially as and for the purposes set forth.

3. In combination with the shells or casing of an expansion-joint, the lugs C C, provided with bolt-holes *c c*, bolts D D, and adjustable nuts *d d d' d'*, provided with suitable locking devices, substantially as and for the purposes set forth.

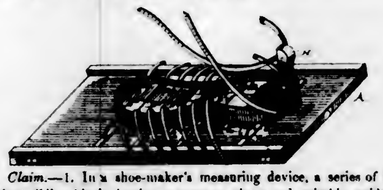
4. In an expansion-joint constructed with corrugated tubing, the combination of the lugs C C, provided with bolt-holes *c c*, bolts D D, and adjustable nuts *d d d' d'*, provided with locking devices, substantially as and for the purposes set forth.

337,038. SASH-LIFT. ALBERT WIGGERS, West Hoboken, N. J. Filed Mar. 28, 1885. (No model.)



Claim.—A lifting device for one-light window-sashes, consisting of a concavo-convex metallic plate provided with one or more teats, said plate being attached to the recessed corner of the sash-rail, the points of said teats being inside the angle formed by the meeting of the planes of the two exposed inner faces of the sash-rail, substantially as shown and described.

337,039. SHOE-MAKER'S MEASURE. ABRAHAM S. ADLER, Baltimore, Md. Filed Oct. 6, 1885. (No model.)



Claim.—1. In a shoe-maker's measuring device, a series of independent sliding blocks having transverse plates and suitable guides secured thereon, whereby the said blocks are adjusted toward or from each other, substantially as herein described.

2. In a shoe-maker's measuring device, a series of sliding blocks, in combination with the plates, the guides, and the pins mounted upon the plates and adapted to pass through perforations in the same, substantially as herein described.

3. In a shoe-maker's measuring device, a skeleton insole constructed to correspond to the configuration of the foot, substantially as herein described.

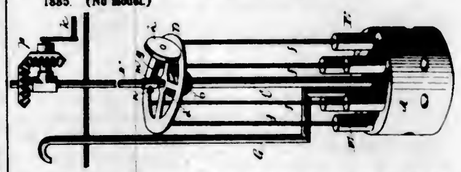
4. In a shoe-maker's measuring device, the combination, with a series of adjustable blocks, of a skeleton insole placed between and corresponding to the form of said blocks, substantially as herein described.

5. In a shoe-maker's measuring device, the combination of laterally-adjustable blocks of a skeleton insole provided with points of attachment to a base-board, substantially as herein described.

6. The combination, with a slotted base-board, of a removable heel-plate provided with measuring-straps and locking-tongue, substantially as herein described.

7. An improved shoe-maker's measuring device comprising a base-plate, a series of adjustable blocks having measuring-straps, a removable heel-plate having measuring-straps, and devices for holding the blocks in a fixed position after adjustment, substantially as herein described.

337,040. PUMP. WILLIAM P. ANDREWS, Dana, Ind. Filed Sept. 26, 1885. (No model.)

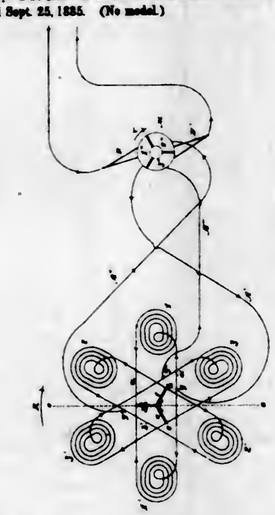


Claim.—1. The combination of the fixed shaft C, having the ball *b*, provided with the socket projection *d'*, the tilting platform D, having a central opening to receive the socket projection, and having the collar *d*, adapted to fit over the ball, the rotative shaft F, stepped in the socket projection *d'*, the arm *g*, adjustably attached to the rotative shaft, the wheel A, carried by the adjustable arm, and the piston-rods *f*, attached to the tilting platform, substantially as and for the purposes described.

2. The combination of the valve-box A, located at or near the bottom of the well and provided with the central water-chamber, B, water-passages *a*, having valves *c c'* and cylinders E, connected with the water-passages, the fixed hollow shaft C, adapted to form a water-pipe connected at the lower end with the water-chamber and provided at its upper portion with the branch pipe C' and the ball *b*, having the socket projection *d'*, the tilting platform D, located at the water-level in the well and having the central opening to receive the projection *d'*, and provided with the downwardly-extended collar *d*, adapted to fit over the ball, the piston-rods *f*, connected with the tilting platform, and means, as set forth, for imparting rocking motion to the tilting platform, substantially as and for the purposes described.

3. The combination of the valve-box A, located at or near the bottom of the well and provided with the central water-chamber, B, water-passages *a*, having valves *c c'* and the cylinders E, connected with the water-passages, the fixed shaft C, provided with the ball *b*, having the socketed projection *d'*, the tilting platform D, located in the well and having the central opening to receive the projection *d'*, and provided with the downwardly-extended collar *d*, adapted to fit over the ball, the pistons connected with the platform D, the water-pipe G, connected with the central water-chamber, B, and extended upward out of the well, and means, as set forth, for imparting rocking motion to the tilting platform, substantially as and for the purposes described.

337,041. DYNAMO-ELECTRIC MACHINE. FOREST BAIN, Chicago, Ill. Filed Sept. 25, 1885. (No model.)



Claim.—1. In a dynamo-electric machine, an armature consisting of a series of diametrically-opposite coils connected in independent loops, substantially as described.

2. In a dynamo-electric machine, an armature having diametrically-opposite coils connected in independent loops and each of said loops having a direct connection to the commutator, substantially as described.

3. In a dynamo-electric machine, a rotating armature provided with pairs of generating-coils connected in independent loops and located in diametrically-opposite parts of the field, in combination with a commutator and connections between said commutator and the loops and between the loops, substantially as described.

4. In a dynamo-electric generator, an armature provided with pairs of generating-coils connected in loops, the coils of each pair being located in diametrically-opposite parts of the field, in combination with a commutator and direct connections from the same to each loop, whereby the generating effects of the coils within the loops are mutually neutralized when the loops are disconnected from the external circuit, substantially as described.

5. In a dynamo-electric generator, an armature provided with pairs of diametrically-opposite coils connected in independent loops, whereby the generation of current in the loops is neutralized when the same are disconnected from the external circuit, substantially as described.

6. In a dynamo-electric generator, an armature provided with pairs of mutually-neutralizing coils connected in independent loops, in combination with a commutator system having a conducting-segment for each loop, and circuit-connections whereby each loop is cut out while it passes the neutral line of the field of force, substantially as described.

7. In a dynamo-electric machine, an armature the coils on which are connected in sets of twos, both terminals of each coil connected permanently to both terminals of its opposite coil, the terminals of like polarity being connected together, substantially as shown and described.

337,042. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. FOREST BAIN, Chicago, Ill. Filed Sept. 25, 1885. (No model.)

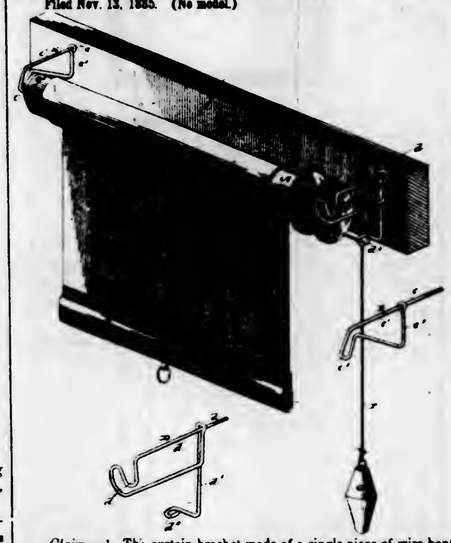


Claim.—1. In combination with an armature for dynamo-electric generators, spacing blocks or cheeks secured in place by portions of the generating-coils, substantially as described.

2. In an armature for dynamo-electric generators, spacing-blocks, each composed of two cheeks which sparingly embrace the core, in combination with distinct sections of the generating-coils wound upon the cheeks, whereby the latter are held in place without additional fastening devices, substantially as described.

3. An armature for dynamo-electric generators, consisting of a laminated core with fibrous material between the laminæ, in combination with spacing-blocks between the generating-coils, held in place by portions of said coils, substantially as described.

337,043. CURTAIN-FIXTURE. GEORGE H. BAKER, Merced, Mich. Filed Nov. 13, 1885. (No model.)



Claim.—1. The curtain-bracket made of a single piece of wire bent to form the arm, having the extended shank at its rear end to secure the bracket to the window-casing, the bearing at the outer end of the arm to receive the spindle of the roller, and the brace-arm bearing vertically against the casing, to stiffen the bearing-arm and support the bracket, substantially as described.

2. The curtain-bracket D, made of a single piece of wire bent to form the arm d', having the extended shank d to enter the window-frame and secure the bracket thereto, the bearing d^2 for the spindle of the curtain-roller, and the depending brace-arm d^3, bearing vertically against the window-frame, to support and stiffen the arm d', the said arm d^2 having the eye d^4 formed at its lower end, for the purpose set forth, substantially as described.

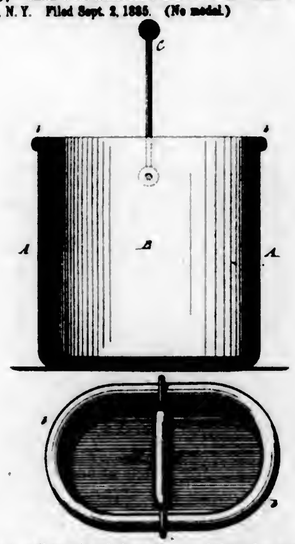
337,044. DOOR-LOCK. WILSON BOHANNAN, Brooklyn, N. Y. Filed Jan. 4, 1886. (Model.)



Claim.—1. The combination, with a knob or key locking mechanism and a tambler mechanism independent of each other, of a sliding coupling, E, operated by a spring, *e*, and the tamblers of the tambler mechanism, substantially as and for the purpose described.

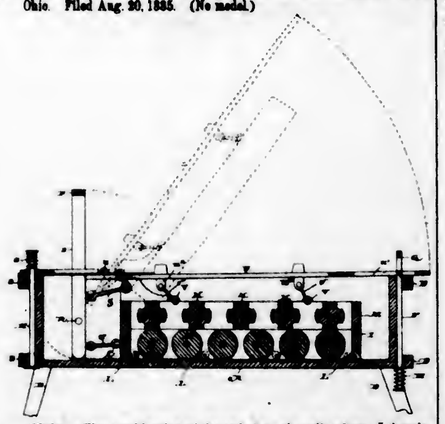
2. The combination of the slide L, spring l^4, barrel J, having transverse slot j^3, tamblers i^7, having notches i^8, key I, having steps i, spring-slides G H, having extensions *g'* and *h'*, and steps g^2 h^2, and lock-posts *a'*, substantially as and for the purpose described.

337,045. CELL FOR ELECTRIC BATTERIES. JOHN W. CARTER, Brooklyn, N. Y. Filed Sept. 2, 1885. (No model.)



Claim.—A cell for electric batteries, consisting of a metallic body and an interior lining of hard rubber vulcanized thereto, said lining being extended over the edge of the vessel, so as to form a protecting rim, substantially as set forth.

337,046. WASHING-MACHINE. DANIEL G. COLBERT, Grand Rapids, Ohio. Filed Aug. 20, 1885. (No model.)

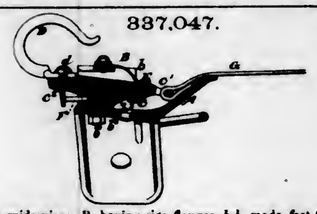


Claim.—The combination of the sads-box, the roller-frame I therein, the hinge-jointed bar U on the upper side of the box, and having the slot *u'* in its free end, the roller-frame I in the box, the roller-frame M on the frame I, and connected to the free end of the bar U, the rod E, passed through one end of the bar U, and the spring *e*, bearing downwardly on the bar, the spring-actuated turning-rod F, having the head G, to enter the slot *u'*, and the levers pivoted in the sads-box and connected to the roller-frames to reciprocate the latter simultaneously in opposite directions, substantially as described.

337,047. HARNESS-SADDLE. PATRICK W. CORCORAN, Sussex, Ill. Filed Dec. 29, 1885. (No model.)

Claim.—1. A check-hook slide having the rear hook, a, combined

337,047.

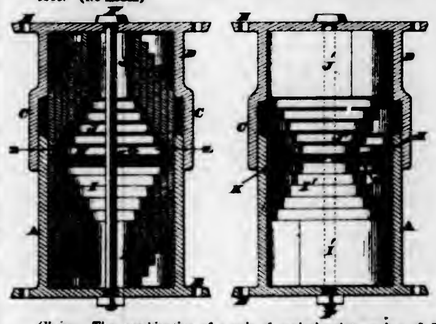


with a guide-piece, B, having side flanges, *b b*, made fast to the saddle, and having the rear edge, b^2, as and for the purpose set forth.

2. The superposed spring E, combined with the slide C and guide-piece B, provided, respectively, with the hook *c* and edge b^2, as and for the purpose set forth.

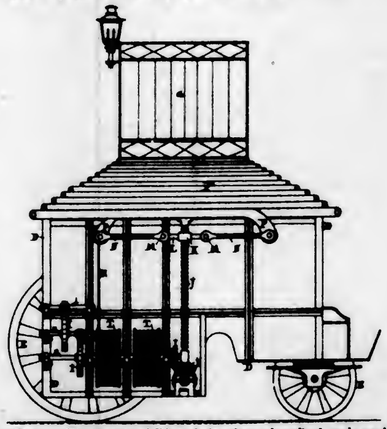
3. The combination, with a harness-saddle, of the fixed guide-piece B, having sides *b b* and rear edge, b^2, the slide C, having hook *c*, slot *c'*, and front flange, c^2, the spring E, and the spring-pin F, whereby the check-hook may be used in the manner described.

337,048. SPRING. JOHN H. DAVIS, Covington, Ky. Filed Nov. 23, 1885. (No model.)



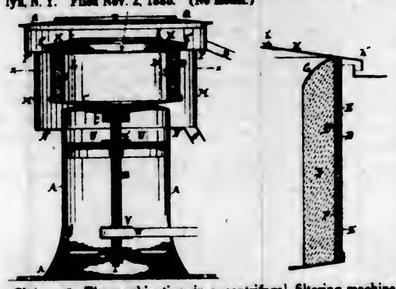
Claim.—The combination of a pair of conical volute-springs, I J, placed in line with each other and having a movable disk, H, interposed between their inner ends, the outer ends of said springs being in contact with the opposite heads of the cylindrical housings A D, one of which is chambered at C, and a tie-rod, F, being employed to unite said housings, which tie-rod passes through a central opening, G, of said disk and occupies an axial position within said springs, as herein described.

337,049. LIFT OR HOIST. JOSÉ MANUEL DE AGUIRRE Y LEAOLA, Bilbao, Spain. Filed Dec. 16, 1885. (No model.)



Claim.—The improved lift or hoist above described, and consisting of a carriage mounted on wheels, which allow of it being fixed level on the ground by means of screw-jacks and struts, provided with an arrangement of toothed wheels which actuate screws, by means of which jointed bands or rods can be extended or folded up, the rods raising or lowering a movable platform firmly maintained by means of cords, and carrying water-pipes and other accessories, for the purpose of rescuing persons, furniture, and goods, as described.

337,050. CENTRIFUGAL FILTER. RICHARD L. DE LIEBE, Brooklyn, N. Y. Filed Nov. 2, 1885. (No model.)



Claim.—1. The combination, in a centrifugal filtering-machine, of a revolving basket having perforated walls and a fixed flange attached to the upper edge thereof extending inwardly beyond the line of the filtering material and outwardly sufficient to discharge the overflow-liquid, substantially as and for the purposes set forth.

2. The combination, in a centrifugal filtering-machine, of a revolving basket having perforated walls, a fixed flange attached to the upper edge thereof extending inwardly beyond the line of the filtering material and outwardly sufficient to discharge the overflow-liquid, and a gutter adapted to catch and conduct away the overflow-liquid, substantially as and for the purposes set forth.

3. The combination, in a centrifugal filtering-machine, of a revolving basket having perforated walls, a fixed flange attached to the upper edge thereof extending inwardly beyond the line of the filtering material and outwardly sufficient to discharge the overflow-liquid, an outer stationary case provided with a gutter at its lower part to collect and conduct away the filtered liquid, substantially as and for the purposes set forth.

4. The combination, in a centrifugal filtering-machine, of a revolving basket having perforated walls, a fixed flange attached to the upper edge thereof extending inwardly beyond the line of the filtering material and outwardly sufficient to discharge the overflow-liquid, an outer stationary case provided with a gutter adapted to catch and conduct away the filtered liquid, and another gutter placed at or near the top of the external case adapted to catch and conduct away the overflow-liquid, substantially as and for the purposes set forth.

5. In combination with the perforated wall of a centrifugal machine, the flange G, extending circumferentially inwardly and downwardly, adapted to confine the filtering material at its upper part, substantially as and for the purposes set forth.

6. The combination, in a centrifugal filtering-machine, of a rotating perforated basket lined with filtering material, and overflow-conduit adapted to relieve the filter from excess of liquid, and a conduit to receive and conduct away the filtered liquid, substantially as and for the purposes set forth.

7. The combination, in a centrifugal filtering-machine, of a perforated rotating basket provided at its upper part with a flange or plate adapted to retain the filtering material in defined position relative to the walls of the basket, and a feed-regulating device attached to the basket, whereby the proper relation between the capacity of the filtering material and the supply of liquid will be regulated, substantially as and for the purposes set forth.

8. The combination, with a centrifugal filtering-machine, of an automatic feed-adjusting device, whereby excess of liquid will be automatically removed from the filter, substantially as and for the purposes set forth.

337,051. COCKLE AND GRAIN SEPARATOR. JOHN B. DIEHLAKER, Carlton, Wis. Filed July 20, 1885. (No model.)



Claim.—1. In a cockle or grain separator, a revolving cylinder provided with an elastic covering and grooves in its periphery, in combination with a partially-inclosing screen, substantially as set forth.

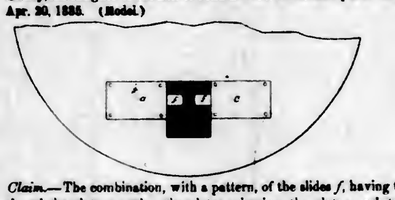
2. In a cockle and grain separator, a hopper, *l*, in combination with the rotating cylinder A, the longitudinal ribs *e e*, parallel to each other on the periphery of cylinder A, the rubber covering *d*, forming an elastic pad at the bottom of the grooves between the ribs *e e* on said cylinder, and the screen *m*, provided with elongated apertures of such size as to permit cockle and small seeds to pass through them and too small to allow the grains of wheat to pass sidewise through them, said screen being located underneath and against the cylinder, substantially as and for the purpose set forth.

3. The combination of the frame B, and cylinder A, supported and rotating thereon, the elastic covering *d*, and the ribs *e e*, with the screen *m*, affixed at one end to the bar *n* and at the other end attached to the roller *o*, and the roller *o*, provided with ratchet *p*, handle *q*, and pawl *r*, substantially as set forth.

4. In a cockle and grain-separator, a hopper, *l*, extending the entire length of the cylinder, provided with a throat-opening on its side, in combination with a cylinder, A, having longitudinal grooves *f f* on its periphery, and an enveloping-screen, *m*, partly covering the surface of the cylinder, substantially as and for the purpose set forth.

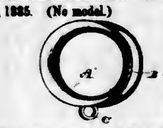
5. In a cockle and grain separator, a rotating cylinder provided with longitudinal grooves in its periphery, such grooves being too narrow to allow kernels of wheat to enter them otherwise than lengthwise, in combination with a feeding-hopper above the cylinder, and a screen inclosing a part of the cylinder, which screen has apertures too narrow to permit kernels of wheat passing over it crosswise to go through them, substantially as and for the purpose set forth.

337,052. PATTERN FOR MOLDING STOVE-LIDS. EDWARD EVANS, Quincy, Ill., assignor of one-half to John H. Whitbread, same place. Filed Apr. 20, 1885. (Model.)



Claim.—The combination, with a pattern, of the slides *f*, having the pins *d*, and the plates *c* and *x*, the plates *x* having the slots *g*, substantially as described, and for the purpose set forth.

337,053. CURTAIN-POLE RING. ALBERT D. FIELD, New York, N. Y. Filed Nov. 23, 1885. (No model.)



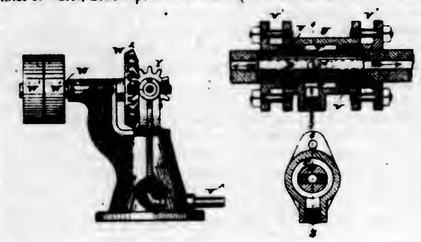
Claim.—1. As a new article of manufacture, a curtain-pole ring made of thin metal, concave in cross-section on its outer face and convex on its inner face, and an eyelet secured to said ring against concave surface thereof, substantially as set forth.

2. The combination, with a curtain-pole ring made of metal, concave in cross-section on its outer face and convex in cross-section on its inner face, of an ornamental cord surrounding the ring and seated in the transversely-curved surface thereof, and an eyelet suspended from said cord, substantially as set forth.

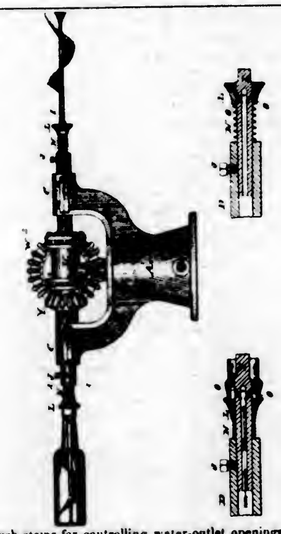
337,054. BOTTLE-WASHER. GEORGE J. FEITZ, St. Louis, Mo. Filed Apr. 15, 1885. (No model.)

Claim.—1. In a bottle-washer, the combination of the sleeve or hollow shaft having holes for the inlet of water, hollow perforated brushes secured in said sleeve, the perforations being controlled by automatic valves, stuffing-box surrounding the sleeve and provided with a water-chamber, and a supply-pipe, substantially as set forth.

2. In a bottle-washer, the combination of the stand, sleeve, or hollow shaft journaled to arms of the stand and having perforations for the inlet of water, hollow perforated brushes secured to the sleeve, collar-

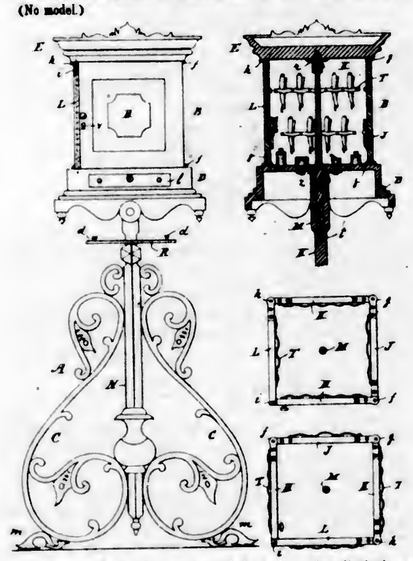


337,054.



valves on the brush-stems for controlling water-outlet openings, springs for moving the valves, described gearing for turning the sleeve, stuffing-box on the sleeve provided with a water-chamber, and supply-pipe passing through the stand and connecting with the box, substantially as set forth.

337,055. CABINET. LORENZ F. GERBERS, Wymore, Nebr., assignor to himself and Charles W. Widney, same place. Filed June 15, 1885. (No model.)



Claim.—1. In a cabinet substantially such as described, the combination of the following instrumentalities, to wit: a standard, legs or means for supporting said standard in a vertical position, and a case mounted on said standard and adapted to revolve in a horizontal plane, said case being provided with doors or sides hinged together and adapted to be swung around a common pivotal support or center of motion in such manner as to reverse their position or turn the inner side or face of each door outwardly, substantially as specified.

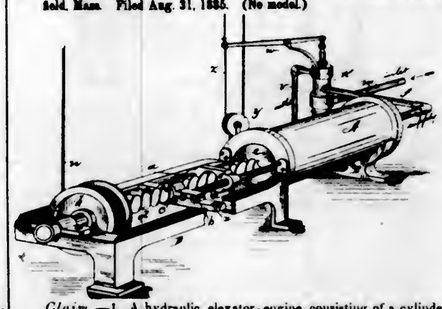
2. In a cabinet substantially such as described, the base D, cap E, rod *i*, hinged doors H J K L, spindle M, standard N, and means for supporting said standard in a vertical position, combined and arranged to operate substantially as set forth.

3. In a cabinet substantially such as described, the doors H J K L, provided with the straps T, said doors being hinged together and jointed to the rod *i*, substantially as described.

4. The bar R, provided with the hooks or knobs *d*, in combination with the standard N and case B, substantially as and for the purpose set forth.

5. The improved cabinet herein described, the same consisting of the stand A, provided with the standard N, having the legs C and socket *t*, and the case B, having the base D, cap E, rod *i*, hinged doors H J K L, and means for supporting razors or other articles on the inner faces or sides of said doors, constructed, combined, and arranged to operate substantially as described.

337,056. HYDRAULIC ELEVATOR-ENGINE. JAS. GIBBONS, Springfield, Mass. Filed Aug. 31, 1885. (No model.)

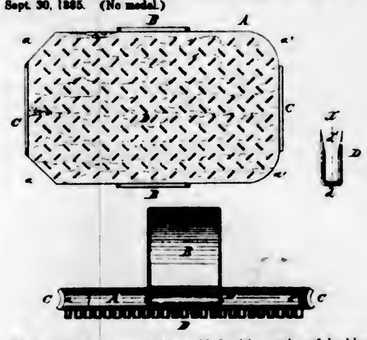


Claim.—1. A hydraulic elevator-engine consisting of a cylinder receiving and discharging water at one end, a piston-head for said cylinder, having two parallel piston-rods, a cross-head secured to the ends of the latter, having therein a screw-nut, a screw-shaft passing through said nut and having suitable cable-winding mechanism connected therewith, substantially as described, and a suitable frame supporting said cross-head and providing a bearing for one end of said screw-shaft, combined and operating substantially as set forth.

2. A hydraulic elevator-engine consisting of a cylinder receiving and discharging water at one end, a piston-head for said cylinder, having two parallel piston-rods, a cross-head secured to the ends of the latter, having therein a screw-nut, a perforated cross-bar secured to said rods between the cross-head and the piston-head, a screw-shaft passing through said nut and cross-bar and having suitable cable-winding mechanism connected therewith, substantially as described, and a suitable frame supporting said cross-head, and providing a bearing for one end of said screw-shaft, combined and operating substantially as described.

3. A hydraulic engine consisting of a screw-shaft hung in a suitable frame, and having cable-winding mechanism, substantially as described, connected therewith, a screw-nut adapted to be held rigidly and to be given a reciprocating motion on said screw-shaft, a cylinder receiving and discharging water at one end, and a piston operating in said cylinder and having a suitable connection with said screw-nut, combined and operating substantially as described.

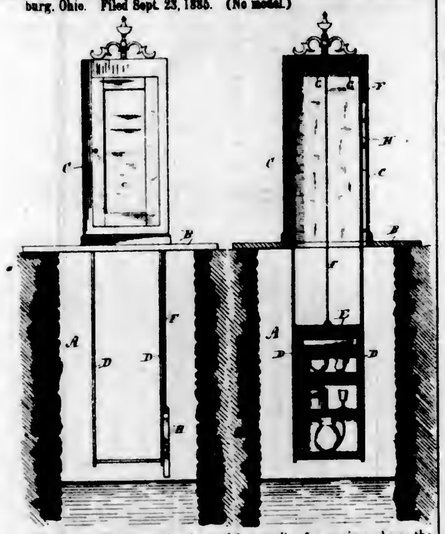
337,057. CURRY-COMB. TIMOTHY GINGRAS, Buffalo, N. Y. Filed Sept. 30, 1885. (No model.)



Claim.—1. A curry-comb provided with a series of double-pointed rectangular staples of angular form in cross-section, the staples being set in the face or body of the comb, and the loops thereof forming wedge-shaped currying projections, substantially as described and set forth.

2. A curry-comb provided with a series of double-pointed rectangular staples of angular form in cross-section, the staples being inserted in the face or body of the comb, so as to stand obliquely to the edges thereof, substantially as described, and for the purpose set forth.

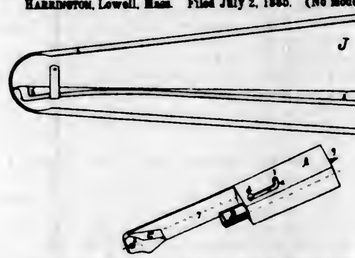
337,058. WELL-REFRIGERATOR. JAMES E. GROSJEAN, Fredericksburg, Ohio. Filed Sept. 23, 1885. (No model.)



Claim.—1. The combination, with a well, of a casing above the same, said casing being provided with a door, guideways attached to said casing and extending down into the well, an elevator-car between said guideways, a counterbalance-weight, a cord or rope attached to said car and weight, and one or more pulleys over which said cord or rope runs, substantially as set forth.

2. The combination, with the casing C, adapted to be supported over a well, the said casing being provided with a door, *c*, and with guideways D, extending down into the well and connected at their bottoms by a cross-piece, of an elevator-car, E, adapted to run between said guideways, a counterbalancing-weight, H, connected with said car, pulleys supported by said casing, over which the flexible connector between said weight and car runs, and a chain-pump also supported by and housed within said casing C, substantially as set forth.

337,059. DEVICE FOR SECURING VIOLIN-BOWS. CHAUNCEY F. HARRINGTON, Lowell, Mass. Filed July 2, 1885. (No model.)



Claim.—1. The combination, with a violin box or case, of the piece A, provided with the spur C, and the spring-bolt B, adapted to hold the bow, as set forth.

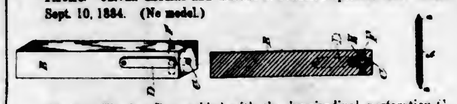
2. The piece A, having the spur C and the bolt B, in combination with the spring-actuating device, substantially as shown, for the purpose described.

337,060. SOLE FOR BOOTS OR SHOES. ELMER S. HARRIS, Haverhill, Mass. Filed May 9, 1885. (No model.)



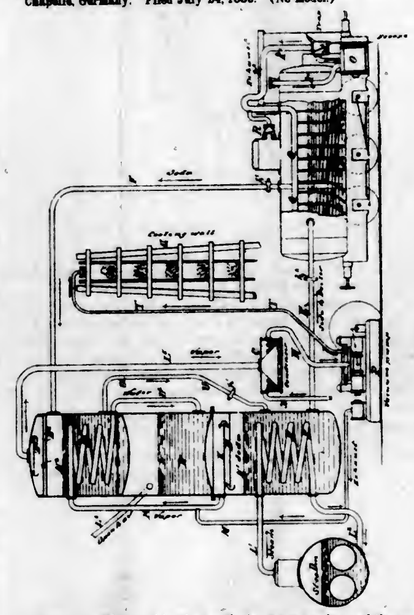
Claim.—A sole for a boot or shoe, having a lip formed by a cut starting from the edge of and extending diagonally into the sole, and having said lip and the portion from which the lip is cut turned from each other, as set forth.

337,061. DEVICE FOR DRIVING AND BENDING HEADLESS TACKS. OLIVER HIGGINS and ALONZO S. CONDIT, Napoleon, Ohio. Filed Sept. 10, 1884. (No model.)



Claim.—The bar B, provided with the longitudinal perforation C, slot or perforation E, and spring D, and the transverse perforation F, as and for the purpose set forth.

337,062. FIRELESS STEAM-ENGINE. MORITZ HONIGMANN, Aix-la-Chapelle, Germany. Filed July 24, 1885. (No model.)



Claim.—1. The combination, with the steam-engine and the vessel containing the lye, into which the steam from the engine is to be exhausted, of an exhaust-pipe, a portion of which is elevated considerably above the highest level of the lye in said vessel, a communication between said pipe and the upper part of the said vessel, and a valve in said communication, which opens when the pressure in said vessel is above that in the exhaust-pipe, but is closed when the pressure is greater in the exhaust-pipe, substantially as and for the purpose herein set forth.

2. The combination, with the lye-vessel and a concentrator for the concentration of the diluted lye, of a simple pipe-connection, through which the diluted lye may be forced from the said vessel to be concentrated by the pressure within said vessel.

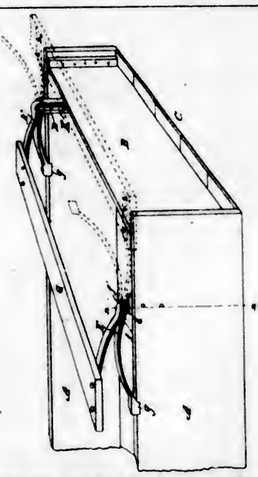
3. The combination, with the lye-concentrator for a fireless steam-engine, of a steam-boiler and a coil of pipe arranged within the concentrator, and having one end connected with the steam-space and the other with the water-space of said boiler, substantially as and for the purpose herein set forth.

4. The combination, with a fireless steam-engine, of a concentrating and condensing apparatus, consisting of an upright cylinder having three chambers, the upper and lower of which are lye-concentrating vessels, and the interposed one is a receiver for condensed water, a steam-boiler, a steam-circulating coil within the lower concentrating-vessel having both ends connected with the boiler, and a steam-circulating coil within the upper concentrating-vessel having one end in communication with the lower concentrating-vessel and the other end in communication with the interposed receiver, substantially as and for the purpose herein described.

337,063. WAGON-SEAT. JAMES L. HUGHES, New Plymouth, assignor of one-half to the Motherwell Iron and Steel Company, Logan, Ohio. Filed Dec. 16, 1885. (No model.)

Claim.—1. The combination of the vehicle-body, uprights secured thereto, an arm projecting from each upright, supports composed of a single bar bent on itself, the folded ends being divergent and inclosing a space near the bend, through which said arms extend, a seat secured to the upper ends of the supports, and their lower or free ends contact-

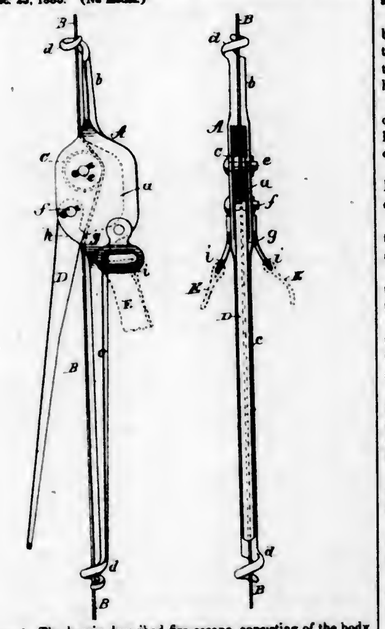
337,063.



ing with the vehicle-body, whereby the seat may be thrown forward out of the way, substantially as shown.

2. The combination of the vehicle-body, the irons having bent ends, the supports, each composed of a bar bent midway its ends, forming divergent arms, which inclose a space at or near the fold, a seat secured to the upper arms of the supports, and lugs or flanges depending from the lower or free ends of the supports, to embrace the edges of the sides of the vehicle and prevent lateral displacement of the supports therefrom.

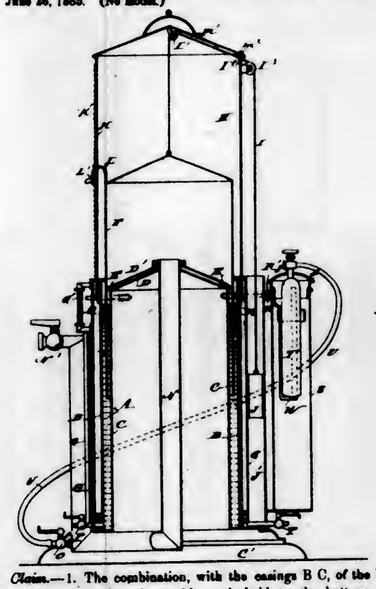
337,064. FIRE-ESCAPE. THEODORE D. JENKINS, Jersey City, N. J. Filed Dec. 23, 1885. (No model.)



Claim.—1. The herein-described fire-escape, consisting of the body portion A, having the box *a*, and provided with the upwardly and downwardly projecting arms *b c*, having the guide *d* in their ends, and the lever D, pivoted in the box of the body, as specified

2. The body A, formed with the chamber *a*, and extensions *b c*, having open guide-coils *d* for the rope or line B, in combination with the wheel C, lever D, and belt E, the lever being formed with the enlargement *h*, and the body A with the abutment *g*, substantially as and for the purposes described.

337,065. GASOMETER. GEORGE E. JOHNSON, Albion, Ind. Filed June 26, 1885. (No model.)



Claim.—1. The combination, with the casings B C, of the bell F, a top on the casing C, and a packing-strip held on the bottom edge of the top and resting against the inside of the bell, substantially as herein shown and described.

2. The combination, with the casings B C and the shell G, of the bell F between the casings B C, the bell H between the casing B and the shell G, the cord I, secured to the bell F and passed over pulleys on the bell H, and the weight J on the end of the cord, substantially as herein shown and described.

3. The combination, with the casings B C, of an imperforate cover on the casing C, the bell F, and the pipe N, having its inner open end held in the middle of the said cover, substantially as herein shown and described.

4. In a gasometer, the combination, with the shell G, of the rail R around said shell, and the gas-cylinder case S, having hooks E', hung on the said rail, substantially as herein shown and described.

5. In a gasometer, the gas-cylinder case S, in combination with the holder within said case, having a supporting-hook at its upper end engaging the upper edge of the said case, substantially as set forth.

6. In a gasometer, the nitrous-oxide holder W, formed of a wire tripod having the upper ends of the wires formed with hooks, substantially as set forth.

7. In a gasometer, the combination, with the casing B, having vertical guides M^2, and a lateral seat at the upper ends of said guides, of the bell H, provided with a lug, M, adapted to slide within the guides and to engage said seat, substantially as set forth.

8. In a gasometer, the combination, with the casing B, having vertical guides M^2, closed at the upper end and provided with a lateral opening in one side, and a bracket open at its top and forming a seat communicating with the lateral opening in the guides, of the bell H, having a lug, M, within the guides, substantially as set forth.

9. In a gasometer, the combination, with the casings B C, of the shell G of the bells F H, the racks K, the arm L, and the catch L', substantially as herein shown and described.

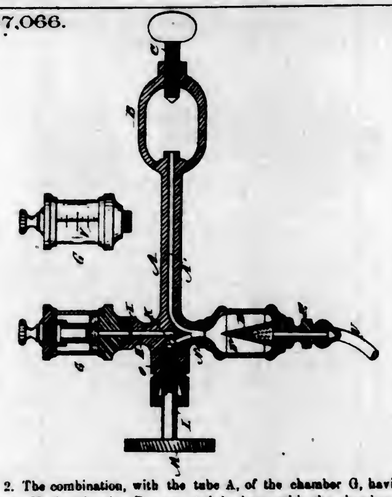
10. The combination, with the casings B and C and the shell G, of the bells F H and the outlet-cocks P P', substantially as herein shown and described.

11. The combination, with the bell F, of the bell H, surrounding it, and provided with the slot K, the racks at the sides of the slot, scales at the sides of the racks, the arm L, the latch L' on the end of the arm L, and pointers on the end of the arm L, substantially as herein shown and described.

337,066. MIXING AND VAPORIZING DEVICE FOR INHALERS. GEORGE E. JOHNSON, Albion, Ind. Filed Nov. 3, 1885. (No model.)

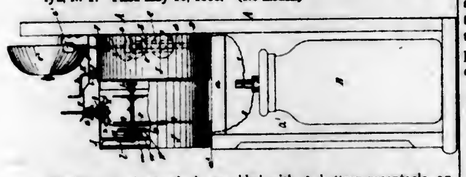
Claim.—1. The combination, with the tube A, of the chambers D and G, connected to the bottom and top of said tube by the bores H K N, arranged in a zigzag form, and of the regulating-screw L, with its inner end intersecting said bores, substantially as herein shown and described.

337,066.



2. The combination, with the tube A, of the chamber G, having the gage V, the chamber D, connected by bores with the chamber G, and of the regulating screw or valve L, substantially as herein shown and described.

337,067. ELECTRIC ALARM-CLOCK. CHARLES KORPHAGE, Brooklyn, N. Y. Filed May 16, 1885. (No model.)

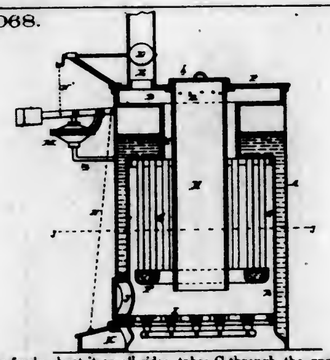


Claim.—1. A stand, A, provided with a battery-receptacle, an electro-magnet with bell-hammer on the armature thereof, a bell, a switch, a platform having metallic contact-surface, and suitable wires connecting the battery and the said switch-magnet and contact-surface for receiving a clock between the said platform and switch, and thus placing it in the electric circuit, substantially as and for the purpose set forth.

2. The stand A, having platform *a*, with metallic contact-surface a^2, and provided, also, with battery-connections, electro-magnet, hammer, and bell, substantially as described, and the spring F and switch H, in combination with a clock adapted to be placed upon the said surface a^2, and provided with an insulated button, G, for contact with the said spring F, an alarm-index, and means, as P K, for placing the said button G in the circuit when the hour-hand of the clock has reached the same hour as indicated by the alarm-index, for the purpose set forth.

3. The combination, with the stand A, provided with an electric alarm, a metallic contact-surface a^2, switch H, and spring F, substantially as described, of a clock provided with insulated button G and alarm-index, and adapted to be placed between the said surface and spring, the said button being connected to a stationary metal strip, K, and the spindle of the said alarm-index being provided with the notched disk M, loose wheel N, having pin *n*, and receiving motion from the clock-work, and the spring P, tending to slide the said wheel toward the said disk and form contact with the said strip K, all substantially as and for the purpose set forth.

337,068. HOT-WATER HEATER. HOSEA H. KRIMMEL, West Point, Pa., assignor of one-half to Frederick Light, Jr., same place. Filed Oct. 6, 1885. (No model.)



Claim.—1. A hot-water boiler consisting of the outer shell, A, and inner fire-box, B, forming an annular water-space about the fire-box, in combination with annular hollow heating-ring F and water-tubes G, connecting said ring with the crown-sheet of the fire-box, said ring F being suspended in the fire-box, so that the flame and heat in rising surround it and pass freely about it on all sides, substantially as and for the purpose specified.

2. A hot-water boiler consisting of the outer shell, A, and inner fire-box, B, forming an annular water-space about the fire-box, in combination with annular hollow heating-ring F and water-tubes G, connecting said ring with the crown-sheet of the fire-box, said ring F being suspended in the fire-box, so that the flame and heat in rising surround it and pass freely about it on all sides, tubes C through the upper part of the boiler and connecting the fire-box with the smoke-box, magazine-tube H, extending down between the tubes G and through the tube C and ring F, close to the grate, and the grate I, substantially as and for the purpose specified.

3. A hot-water boiler consisting of the outer shell, A, and inner fire-box, B, in combination with annular hollow heating-ring F and water-tubes G, connecting said ring with the crown-sheet of the fire-box, magazine-tube H, extending down between the tubes G and through the tube C and ring F, close to the grate, the grate I, smoke-box D, and flue C, connecting the fire-box and smoke-box, substantially as and for the purpose specified.

4. The outer shell, A, inner fire-box, B, the smoke-box D, cap P, and flue C, connecting the smoke-box and fire-box, in combination with the grate I and magazine-flue H, suspended from the plate P and extending down through the flue C, annular suspended heating-ring F, exposed to heat on all sides, and tubes G, connecting said ring with the crown-sheet of the fire-box, substantially as and for the purpose specified.

337,069. COMBINED PLOW-STOCK AND CULTIVATOR. JOHN A. LEPSEY, White House, Ga. Filed Oct. 27, 1885. (No model.)



Claim.—The combination, with the beam having the spear-shaped head, and the plate D, fitted on said head and having eyes *b*, of the beams C C', carrying shovels, the plates E, secured to said beams and having hooks *c*, one or more auxiliary plates having hooks *f*, the plates F, having slots *g*, the plates J, adjustably connecting the beams C C' at their rear ends, and the handles rigidly secured to beam B and loosely secured to beams C C', substantially as set forth.

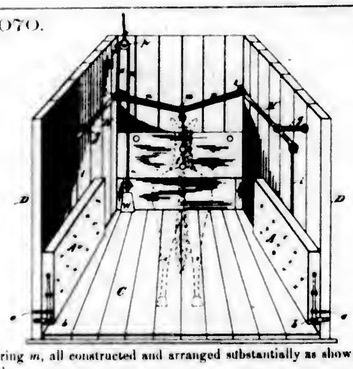
337,070. AUTOMATIC HORSE-BED. T. MILNER MCDONOUGH, Pittsburg, Pa. Filed May 6, 1885. (No model.)

Claim.—1. In an animal-stall, the combination, with the side of the stall, of a mattress hinged thereto, a spring retaining said mattress in a vertical position, a belt adapted to be applied to an animal, and suitably arranged rope and lever connections between said mattress and belt, whereby when the animal attempts to lie down the mattress will be pulled down upon the floor of the stall, substantially as described.

2. The combination, with an animal-stall, of the mattresses A A, hinged to the sides of the stall, and provided with springs *e e*, the ropes *i i*, levers H H, and a rope, *n*, connecting said levers, and adapted to be attached to a horse, whereby when said rope is drawn down the mattresses will assume a horizontal position, and when the rope is relaxed will automatically assume a vertical position, as set forth.

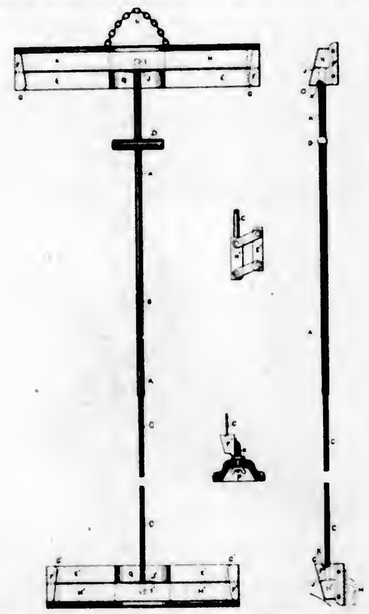
3. The combination, with an animal-stall, of the hinged mattresses A A, the hinged levers H H, the ropes *i i*, the rope *n*, pulley *p*, weight

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W, and ring *m*, all constructed and arranged substantially as shown and described.

337,071. TROUSERS-STRETCHER. FELIX MCILVENNA, Manchester, County of Lancaster, and JOSEPH G. ROLLASON, Birmingham, County of Warwick, assignors to Joel Cadbury, Birmingham, and William Phillips Thompson, Liverpool, England. Filed Sept. 23, 1885. (No model.) Patented in England Feb. 12, 1884, No. 3,126, and May 5, 1885, No. 5,498.



Claim.—1. The herein-described trousers-stretchers, consisting of the bars E E', provided with wedge-shaped sockets G G', bars H H', inserted in said sockets and adapted to clamp the garment, rods A C, inserted in the movable bars H H', and spring B, to urge said rods apart, as shown.

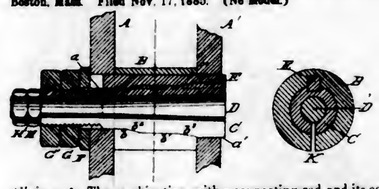
2. In combination with bars E E', provided with wedge-shaped sockets G G', bars H H', inserted in said sockets, and spring-pressed rods A C, inserted in the movable bars H H', and provided with plates J J', to bear upon the latter.

3. In combination with bars E E' and movable bars H H', rod A C, inserted at its ends in movable bars H H', and stand P, detachably secured to the outer face of the bar E', as and for the purpose set forth.

4. In trousers-stretchers, the combination of flat bar E, cape F, applied to the ends thereof and having wedge-shaped sockets, and bar H, fitting at its ends in said sockets.

5. In combination with frames E H E' H' and rods A C, provided with spring B, socket M upon the outer face of bar E, screw N, inserted in said socket, and stand P, held in place by screw N, as and for the purpose set forth.

337,072. EXPANSIBLE CONNECTING-PIN. HARRY M. MONTGOMERY, Boston, Mass. Filed Nov. 17, 1885. (No model.)



Claim.—1. The combination, with a connecting-rod and its coacting part, of an expansible pin for joining them together, consisting of a separate and independent split sleeve received solely within the member which sustains the wear, and means for expanding said sleeve to compensate for the wear, substantially as for the purpose set forth.

2. An expansible connecting-pin, consisting of the separate and independent split sleeve B, in combination with the wedge C and means for adjusting the same, said sleeve being supported solely by said wedge and capable of increased expansion from time to time, for the purpose of taking up wear, substantially as shown and described.

3. The combination, with a supporting-plate, of an expansible connecting-pin consisting of an expansible sleeve, B, abutting against but not entering said plate, in combination with suitable means for expanding it, substantially as and for the purpose set forth.

4. The combination, with a supporting-plate, of an expansible connecting-pin consisting of the split sleeve B, abutting against but not entering said plate, in combination with the wedge C and means for adjusting said wedge, substantially as and for the purpose set forth.

5. The combination, with a supporting-plate, of an expansible sleeve, B, and an adjustable wedge, C, having one or more frusto-conical portions, b^2 b^2, substantially as and for the purpose set forth.

6. The combination, with a supporting-plate having an opening therein, of an expansible sleeve, B, abutting against but not entering said plate, and an adjustable wedge, C, having a cylindrical end portion fitting the opening in said plate, substantially as and for the purpose set forth.

7. The combination, with a supporting-plate, of an expansible sleeve, B, an adjustable wedge, C, and means for locking said wedge to the supporting-plate, substantially as and for the purpose set forth.

8. The combination, with the plates A A', of the split sleeve B, the split hollow wedge C, the tapering center pin, D, and means for adjusting said wedge and said pin, substantially as and for the purpose set forth.

9. The combination, with plates A A', of the split sleeve B, the split hollow adjustable wedge C, the adjustable tapering center pin, D, and the key E, substantially as and for the purpose set forth.

337,073. STEAM-GENERATOR. JOHN R. MOORE, Brooklyn, N. Y., assignor of one-half to Joseph B. See, same place. Filed Sept. 17, 1885. (No model.)

Claim.—1. The combination, with a furnace and heating-coils arranged vertically thereon, of a horizontally-arranged drum, with which the upper ends of the coils are connected and from which the coils depend, whereby the drum is made to support the weight of the coils, upright frames independent of the brick setting of the generator supporting the drum, and return-pipes for conducting water from the drum to the lower ends of the coils, substantially as herein described.

2. The combination, with the upright frames F, the drum E, supported by them, and the coils D D', &c., having their upper ends connected by branches *d d'*, &c., of the drum, and suspenders *e*, hung from the drum for supporting the coils opposite said branches, substantially as herein described.

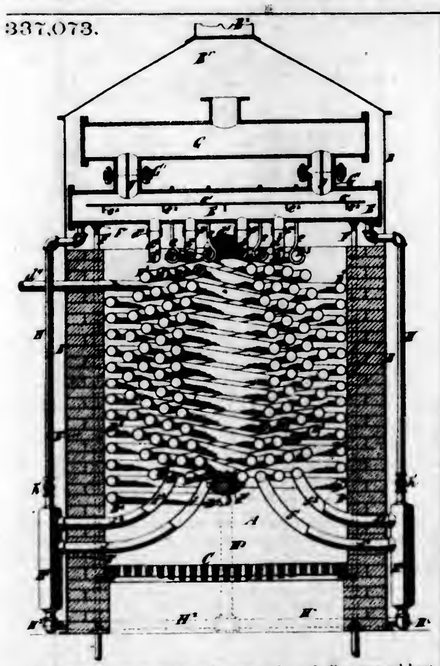
3. The combination, with a furnace and a horizontally-arranged drum above the same, of coils arranged within the furnace and having their upper ends connected with the drum so that the coils depend therefrom, the lower portions of the coils having an inverted conical form, and return-pipes for conducting water from the drum to the lower ends of the coils, substantially as herein described.

4. The combination, with the drum E, of the coils D D', &c., having their convolutions decreasing in diameter toward each end and having their upper ends connected with the drum so that the coils depend therefrom, and return-pipes for conducting water from the drum to the lower ends of the coils, substantially as herein described.

5. The combination, with a furnace and vertically-arranged heating-coils, of a horizontally-arranged drum, with which the upper ends of the coils are connected and which constitutes a separator for the steam and water, and a steam-drum connected with the separator and receiving steam therefrom, substantially as herein described.

6. The combination, with a furnace and vertically-arranged heating-coils therein, of the separator-drum E, with which the upper ends of the coils are connected and which contains the baffle-plate *e'*, and a steam-drum connected with the separator-drum and receiving steam from it, substantially as herein described.

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7. The combination, with a furnace and vertically-arranged heating-coils therein, of the separator-drum E, with its baffle-plate, and with which the upper ends of the coils are connected, the steam-drum G and branches G', having vertical partitions *g*, for dividing steam and water and connecting the two drums, substantially as herein described.

8. The combination, with a furnace and vertically-arranged heating-coils therein, of a drum with which the heating-coils are connected at their upper ends, and return-pipes connecting the drum with the lower ends of the coils and containing downwardly-opening check-valves, whereby circulation can only take place upward through the coils and drum and downward through the return-pipes, substantially as herein described.

9. The combination, with a furnace and vertically-arranged heating-coils therein, of a drum with which the upper ends of the coils are connected, return-pipes extending downward from the drum and terminating in manifolds, with which the lower ends of the coils are connected, an equalizing-pipe connecting the manifolds together, a feed-pipe for supplying water to the manifolds, and a blow-off pipe connected with the manifolds, substantially as herein described.

10. The combination, with a furnace and vertically-arranged heating-coils therein, of a drum with which the upper ends of the coils are connected, a feeding-coil arranged within the furnace outside the heating-coils, return-pipes leading downward from the drum, and pipes connecting the return-pipes and the lower end of the feeding-coil with the lower ends of the heating-coils, substantially as herein described.

337,074. MACHINE FOR MAKING MATCHES. GEORGE E. NORRIS and WILLIAM E. HAGAN, Troy, N. Y., assignors, by mesne assignments, to the Citizens Match Company, same place. Filed Dec. 28, 1885. (No model.)

Claim.—1. The combination, with the rollers R' and R^2, each having the grooves G' with intermediate cutting-edges, and the circumferential grooves G^2 G^2, said rollers being arranged to operate substantially as described, of the fingers *d' d'* and d^2 d^2, constructed to enter said circumferential grooves, and extended rearwardly to produce the intermediate guide-passage, U, substantially as and for the purposes set forth.

2. The combination of the guide-passage U, adapted to receive match-splints, the guideway C, having the concave surface C^2 arranged at the rear end of said guide-passage U, the roller I, and the endless belt B', constructed and arranged to operate substantially in the manner as and for the purposes set forth.

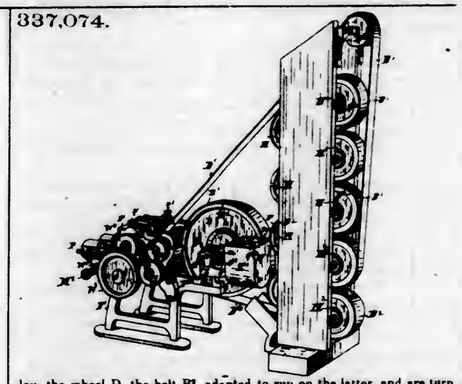
3. The combination of the guide-passage U, adapted to receive match-splints, the guideway C, made with the concave surface C^2 and arranged at the rear end of said guide-passage U, the roller I, arranged to turn within said concave substantially as described, the endless belt B', arranged to be operated by the roller I and to run on a return-pulley, the wheel D, the belt B^2, adapted to run on the latter, and are turn pulley, said belts being arranged with reference to each other and said concave guide, substantially as and for the purposes set forth.

4. The combination of the endless belts B' and B^2, arranged to be operated substantially as described, the dipping-tank T', made with the slot *n*, and the dipping-wheel d^2, arranged to be rotated in said tank relatively to the downward movement of said belt, substantially as described.

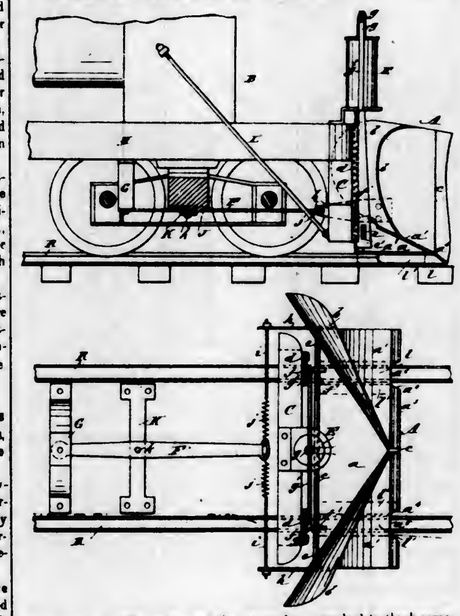
5. The combination of the splint-delivery passage U, the guideway C, made with the concave surface C^2, the roller I, adapted to rotate in the latter substantially as described, the wheel D, the pulleys N N^1 N^2 N^3, and the belts B' and B^2, substantially as and for the purposes set forth.

6. The combination of the tank T', made with the side slot, *n*, and the roller d^2, adapted to be rotated in said tank with reference to said slot, substantially as and for the purposes set forth.

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337,075. SNOW-PLOW. THOMAS ORMEROD and ALBERT E. CROSKEY, Leadville, Colo. Filed Apr. 10, 1885. (No model.)



Claim.—1. The body A of the snow-plow, attached to the locomotive or car by a bar held in loose bearings, whereby the body A is adapted to have lateral movement to accommodate the sway or lurch of the locomotive, substantially as described.

2. The combination of the locomotive or car, the keeper-plates *d*, secured thereto, the plates *f*, held and movable vertically in said keepers, and the body A, supported on said plates *f*, substantially as set forth.

3. The body A, attached to the locomotive or car by vertically-

movable bars *f* and horizontal cross-bar *e*, held in loose bearings, substantially as described.

4. The combination of the body A, suitably supported, whereby it may be adjusted vertically, the cylinder E, the piston-rod extended upwardly from said cylinder, and the cross-rod connected between its ends with said piston-rod, and having its opposite ends connected with the body A, substantially as set forth.

5. The body A of the plow, combined with the lever F, fulcrumed at or near the center of the truck of the locomotive or car, substantially as and for the purpose set forth.

6. The frame C, attached to the front of the locomotive, provided with plate *d*, in combination with the body A, attached to the irons *f*, held by the plates *d*, substantially as and for the purposes set forth.

7. The frame C, provided with plates *d*, in combination with the body A, attached to plates *f* by rod *e*, passed loosely through the irons *f*, substantially as described.

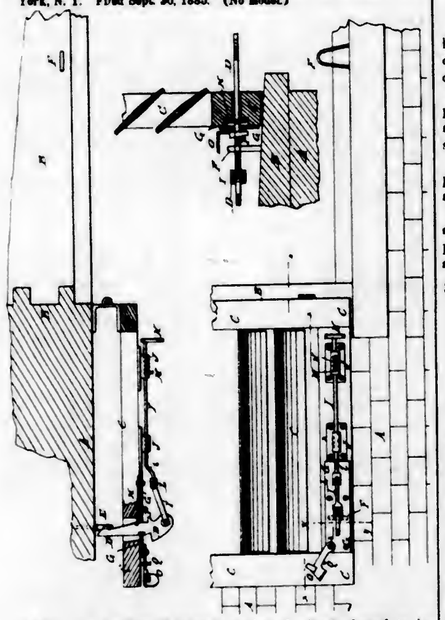
8. In a snow-plow, the body A, formed of sheet metal, and having the wings *b b*, and the base *a*, connected to said wings and extended to form the lip a^2, cut away at a^4 to span the rails, substantially as set forth.

9. The body A, cut away at a^4 and provided with the shoes *i*, substantially as and for the purposes set forth.

10. The body A, cut away at a^4 and provided with ribs *l*, substantially as and for the purposes set forth.

11. The body A, provided with the arms *h*, in combination with the rods *i*, springs *j*, lever F, and plates G K, substantially as and for the purposes set forth.

337,076. SHUTTER-FASTENER. FREDERICK A. S. PERRY, New York, N. Y. Filed Sept. 30, 1885. (No model.)

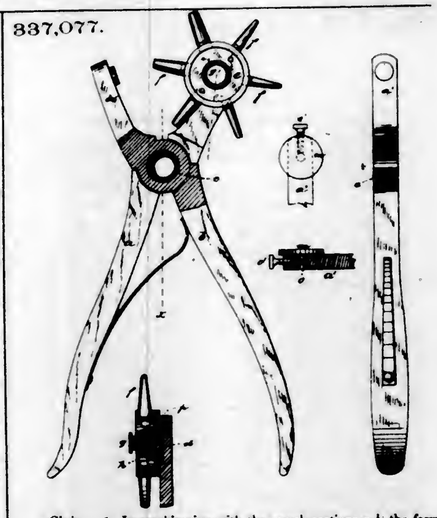


Claim.—1. A shutter-fastener consisting of a latch adapted to be held in a slot in the blind and projecting from opposite sides of the same to engage alternately catches on the wall and casing, a spring engaging the latch, a sliding jointed rod connected to said latch, and a hooked catch pivoted to the blind and adapted to engage the latch, as set forth.

2. In a shutter-fastener, the combination, with the blind C, having a slot in its bottom bar, and provided with the slotted plate G, of the notched latch D, the spring H, secured to the plate G and having its free end engaging one of the notches of the latch, and the jointed rod I, connected to the latch and sliding in keepers on the blind, substantially as shown and described.

3. In a shutter-fastener, the combination, with the latch D, pivoted in a slot in the shutter and provided with the shoulder P, and means for operating the latch, of the pivoted hook-catch O, having a wedge-shaped end for engaging the latch between its shoulder and shutter, substantially as herein shown and described.

337,077. PUNCH. THOMAS M. PLATTS and MARY CRANE, (administratrix of Oscar B. Crane, deceased.) Newark, N. J. Filed Nov. 13, 1885. (No model.)



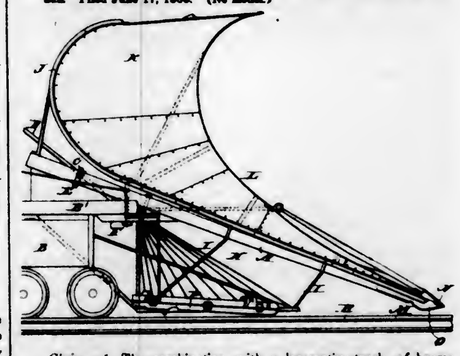
Claim.—1. In combination with the punch-sections *a b*, the former having a projecting pivotal portion, *d*, an adjustable hub, *e*, having radial hollow punches, and a set-screw, *g*, all said parts being arranged and operating substantially as set forth.

2. In combination, in a punch, the section *a*, having the pivotal projection *d* and bolding projection *p*, the hollow hub having tubes *f*, and a central projecting bearing, *h*, and the set-screw *g*, substantially as set forth.

3. In combination, in a punch, the punching-tubes *f* and an adjustable plate, *m*, presenting a flat bearing to said tubes, substantially as set forth and shown.

4. In a punch, the perforated section *a'*, the revolving plate presenting a flat surface to the punches and having a shank arranged in said perforation, and a set-screw, *o'*, all arranged and operating substantially as set forth and shown.

337,078. SNOW-PLOW. JOHN M. POTTRAS, Deseronto, Ontario, Canada. Filed June 17, 1885. (No model.)



Claim.—1. The combination, with a locomotive-truck, of beams having their upper ends resting upon and secured to the forward part of the said truck, the lower ends of the beams projecting over and beyond the cow-catcher, a snow-plow carried by said beams, and braces extending from the cow-catcher to the beams, substantially as herein shown and described.

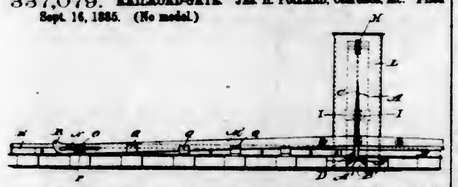
2. The combination, with a locomotive-truck, of beams held on the same by clips held on the locomotive-braces, and of a snow-plow formed on the said beams, substantially as herein shown and described.

3. The combination, with a locomotive-truck, of beams held on the same, the wedges E, and the clips C, substantially as herein shown and described.

4. The combination, with a locomotive-truck, of the beams A and F, secured on the truck, and of bolts and clips for holding the beams A on the truck, and the beams F, substantially as herein shown and described.

5. The combination, with the beams A, secured on the front truck of a locomotive, of the cross-bars G, and of ribs J, secured on the nose-piece O and bars G, and having their upper ends curved, and of sheet metal secured on the ribs, substantially as herein shown and described.

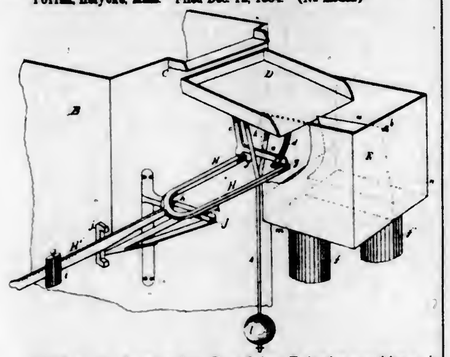
337,079. RAILROAD-GATE. JAS. H. POLLARD, Claremont, Mo. Filed Sept. 16, 1885. (No model.)



Claim.—1. In a railroad-gate, the combination, with the gate A, pivoted to swing to and from the railroad-rails, of the rod connected at one end with a crank of the gate, and provided at its opposite end with a slot inclined from its ends to its center, the said slotted end having an upward projection, R, extending above the railroad-rail, and the fixed pin passed through said slot into the said rail, substantially as set forth.

2. The combination, with the railroad-gate having a crank-bar, A', provided with tines or pickets C, of the bars M, connected at their adjacent ends to cranks on said bar, and formed with slots N and projections R at their opposite ends, the post J, adjacent to the cranked end of the bar A', the guide-pulleys I I on the side of the post, the pulley H on the top of the post, the cord G, secured to the cranked end of bar A' and passed upward between the pulleys I and over the pulley H, and a weight, K, on the end of the cord, substantially as set forth.

337,080. STOCK-REGULATOR FOR PAPER-MACHINES. CHARLES POTTER, Holyoke, Mass. Filed Dec. 12, 1884. (No model.)



Claim.—1. A pan or box, D, and box E, having partition *a*, in combination with the scale and stock-chest, substantially as shown.

2. The combination, with the feed-box of a paper-machine, of an indicatory balance and dividing-gate, *a*, whereby the flow of stock to the machine is automatically controlled, substantially as shown.

3. In a paper-machine, a chute or box, D, adapted to be moved by a variation in the weight of the stock, and two receiving-compartments separated by an inclined gate, whereby the amount of stock flowing to the machine is varied by a change in position of box D, substantially as shown.

4. In combination with the feed mechanism of a paper-machine, a chute, D, adapted to be changed in position by variations in the weight of the stock flowing through it, and a receiving box or compartment having a receiving-opening of tapering form, whereby the flow of material to the receiving-box is varied by a change in the position of the chute D without changing the amount or rapidity of the flow of pulp from the chest, substantially as shown.

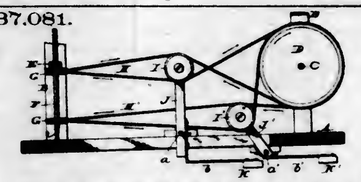
5. The combination, in a paper-machine, of a chute, D, adapted to be varied in its incline, and a supporting-balance and a box, E, with gate *a*, substantially as shown.

6. In a paper-making machine, a conducting-chute, D, having a weight suspended from it, whereby the chute is maintained in the desired position, substantially as shown.

7. The combination of chute D, supporting-arms *c d*, weighted pendulum *k*, balance-lever H, box E, and gate *a*, substantially as and for the purposes shown.

337,081. BAND-TIGHTENER. JOHN REID, Almonte, Ontario, Canada. Filed June 10, 1885. (No model.) Patented in Canada June 8, 1885, No. 21,234.

Brief.—The tightener is a double-grooved pulley carried by a pivoted counterweighted arm and runs upon different sides of the band which is crossed between the tightener-pulley and the driving-drum.

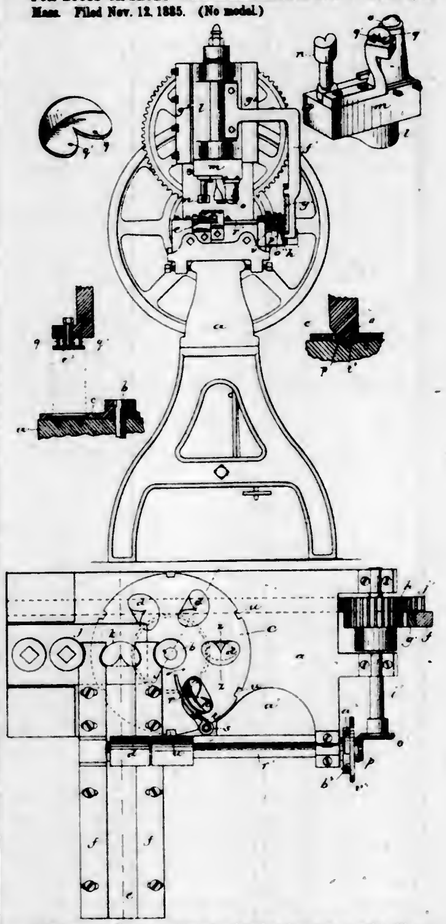


Claim.—1. In combination with frame A, drum D, and wheel G, band H, pivoted arm J, and double-grooved pulley I, all arranged as shown.

2. In combination with frame A, drum D, and wheel G, band H, passing about said drum and wheel, pivoted arm J, double-grooved pulley I, carried by said arm, and a weight, K, also carried by arm J, as and for the purpose explained.

3. The combination, with two wheels, of a crossed band passing about both of said wheels, and a double-grooved tightener-wheel running upon different sides of said band at a point between its ends and carried by a pivoted arm, substantially as described and shown.

337,082. MACHINE FOR MAKING BOX-TOES AND STIFFENERS FOR BOOTS OR SHOES. JOHN H. RUSSELL and LEMUEL W. LITCH, Lynn, Mass. Filed Nov. 12, 1885. (No model.)



Claim.—1. In a machine for forming box-toes or other like articles, the combination of the fixed female cutting-die, the reciprocating male cutting-die, a movable plate or carrier under said dies, having a series of pockets formed to receive the articles cut out by said dies, mechanism, substantially as described, for moving said carrier progressively step by step and holding it after each movement in position to receive a

blank in one of its pockets from the cutting-dies, a fixed bed under the carrier, containing a female forming-die arranged to coincide with a pocket of the carrier at each stoppage of the latter, and a reciprocating male forming-die arranged to pass through the pocket in the carrier, eject the blank therefrom, and press said blank into the female die, as set forth.

2. The combination of the fixed female cutting-die, the reciprocating male cutting-die, the intermittently-operating feed mechanism, whereby a strip of material is automatically supplied to said dies, a movable plate or carrier under said dies, having a series of pockets formed to receive the articles cut out by said dies, mechanism, substantially as described, for moving said carrier progressively step by step and holding it after each movement in position to receive a blank in one of its pockets from the cutting-dies, a fixed bed under the carrier, containing a female forming-die arranged to coincide with a pocket of the carrier at each stoppage of the latter, and a reciprocating male forming-die arranged to pass through the pocket in the carrier, to eject the blank therefrom, and press said blank into the female die, as set forth.

3. The combination of the feed mechanism for moving a strip forward step by step, the plate or carrier provided with a series of pockets, the cutting-dies arranged over said plate to cut blanks from a strip of material presented by the feeding mechanism and to force said blanks into the pockets of the plate, punches or perforators arranged to act on the blanks after they have been removed from the cutting-dies, and forming-dies arranged to act on the said blank after they have been punched or perforated, as set forth.

4. The combination of the rotative plate having a series of pockets and a corresponding series of recesses in its periphery, the cutting and forming dies arranged and operated substantially as described, and the spring-finger bearing with a yielding pressure against the periphery of the plate and caused by the notches therein to spring inwardly over the plate at intervals and remove the formed blanks therefrom, as set forth.

5. The combination of the carrier or plate having a series of pockets, the cutting-dies, the male crimping-die, l^2, the female crimping-die l^1, and the forming-dies o and p, substantially as set forth.

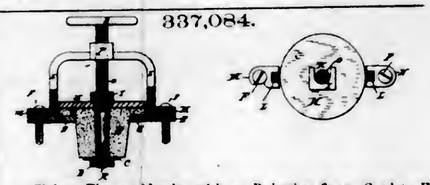
337,083. SAW-TOOTH. WILLIAM B. RIDDON, Trenton, N. J., assignor to the American Saw Company, New York, N. Y. Filed Oct. 9, 1885. (No model.)



Claim.—The combination, with the saw-plate formed with a recess, B, the rear end of which is straight and inclined rearward at one edge, and the bottom of which is made A shape, curved and provided with the projection E between its ends, having a recess, H, in its rear side, of the spring C, having its lower edge and rear end formed to engage the lower edge and the rear end of the recess B, and formed with the rearward-extending slot G, the recess J, and a A-shaped formed end, the bit D, having its sides grooved to engage the A-shaped edges of the spring and recess, the projection I on its lower end fitting into the recess H, and the recess K, forming, in connection with the recess J, a tool-receiving aperture, substantially as set forth.

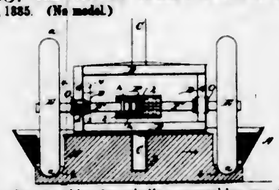
337,084. BARREL-BUNG. HENRY ROSENFELDT, Baltimore, Md. Filed June 1, 1885. (No model.)

337,084.



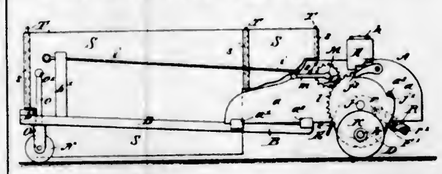
Claim.—The combination of bung B, having flange G, plate H, carrying slotted block I, and threaded rod R, washer C, and nut D, with plate E, frame L, having feet M N, vertical screw O, passing through top piece, P, of the frame L and arm S, all arranged substantially in the manner as and for the purposes described.

337,085. ORE-CRUSHER. SAMUEL G. ROLLINS, Boston, Mass. Filed May 25, 1885. (No model.)



Claim.—In a machine for grinding or crushing ore, &c., in combination, grinding-wheels E E and their separate horizontal shafts F, vertical sliding bearing blocks or boxes O, one for each rotating shaft, rotating support D, common to both boxes O, bearing-box P, connecting both of said shafts and interlocking with each and free to rise and fall therewith, and a casing or pan, A, having gutter or grinding-surface b, substantially as described, for the purpose specified.

337,086. PRAIRIE-FIRE EXTINGUISHER. ARTHUR W. RUSSELL, New Kiowa, Kans. Filed Jan. 13, 1886. (No model.)



Claim.—1. The combination, in a prairie-fire extinguisher, of a frame, a roller journaled therein, and arms or beaters held to the roller and adapted to strike the burning grass as the roller revolves and to be pressed to the ground by the roller, substantially as herein set forth.

2. The combination, in a prairie-fire extinguisher, of a frame, a main roller journaled therein, elastic arms or beaters held at one end to said roller, and an auxiliary roller or cross-bar on the frame acting to bend the elastic beaters prior to their striking the ground as the main roller revolves, substantially as herein set forth.

3. The combination, in a prairie-fire extinguisher, of a frame, a main roller journaled therein, elastic beaters held at one end to said roller, and a series of auxiliary rollers or cross-bars held in the frame around the upper side of the main roller, substantially as shown and described, whereby the beaters will be put in tension to strike the ground and the embers will be cleared from the beaters, as herein set forth.

4. The combination, in a prairie-fire extinguisher, of a frame, a main roller journaled therein, beaters held to said roller and adapted to strike the burning grass, and a water-distributing pipe arranged over the beaters to wet them, substantially as herein set forth.

5. The combination, in a prairie-fire extinguisher, of a frame, a main roller journaled therein, beaters held to said roller and provided with an absorbing fabric, as at e, and a water-distributing pipe arranged over the beaters to wet them, substantially as herein set forth.

6. The combination, in a prairie-fire extinguisher, of a frame, a main roller journaled therein, elastic beaters held at one end to said roller, and a series of auxiliary rollers or cross-bars held in the frame around the upper side of the main roller, a water-tank and a water-distributing pipe arranged over the main roller, and beaters between two of the auxiliary rollers, substantially as shown and described, whereby the elastic beaters will be put in tension to strike the ground and the embers will be shaken from the beaters and the water-distributing pipe will be protected for effective supply of water to the beaters, as herein set forth.

7. The combination, in a prairie-fire extinguisher, and with a frame, A, a main roller, D, journaled therein, and beaters held to said roller, substantially as specified, of disks J, journaled to frame A, wheels K, journaled to disks J, and mechanism, substantially as described, for raising the frame A and roller D on the wheels K, as and for the purposes herein set forth.

8. The combination, with the frame A, roller D, journaled therein, and beaters held to said roller, of disks J, journaled to frame A, wheels K, journaled to disks J, teeth l on disks J, shaft M, and gears L on shaft M, substantially as and for the purposes herein set forth.

9. The combination, with the frame A, disks J, wheels K, and means, substantially as specified, for turning disks J, of stops a^3, and pawls P on frame A, substantially as and for the purposes herein set forth.

10. The combination, with the frame A, roller D, and beaters E on said roller, of a front auxiliary roller or bar, as at F', held in arms R, pivoted to the frame A, substantially as and for the purpose set forth.

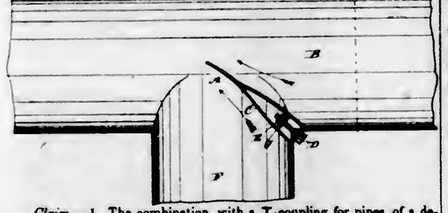
11. A prairie-fire extinguisher comprising a frame, A, a roller, D, journaled therein, beaters E on said roller, a tongue, B, fixed to frame A and extending backward therefrom, and a pilot-wheel, N, swiveled to the tongue, substantially as herein set forth.

12. The combination, in a prairie-fire extinguisher, of a frame, A, a roller, D, journaled therein, beaters E on said roller, a tongue, B, fixed to frame A and extended backward therefrom, disks J, journaled to frame A, wheels K, journaled to disks J, means, substantially as specified, for operating said disks to support frame A on wheels K, and a pilot-wheel, N, swiveled at the back end of the tongue B, substantially as herein set forth.

13. The combination, in a prairie-fire extinguisher, of a frame, A, provided with a backwardly-extending tongue and supporting-wheels, a roller, D, journaled in frame A, beaters E on said roller, a water-distributing pipe, G, arranged over said roller and adapted to wet the beaters, a valve, I, in said pipe, and a stem or rod, i, extended from said valve to the back end of the tongue, substantially as and for the purposes herein set forth.

14. The combination, with the frame A and tongue B of a fire-extinguisher provided with holes t at each side, of rods T, adapted for support in said holes, and a screen, S, supported by said rods, substantially as herein set forth.

337,087. SMOKE-CONDUCTOR. THOMAS RUNDLE Jr., Iron Mountain, Mich. Filed Apr. 15, 1885. (No model.)



Claim.—1. The combination, with a T-coupling for pipes, of a detachable deflector held at one end on the pipe and projecting into the interior of said pipe, substantially as herein shown and described.

2. The combination, with a pipe-coupling, of the deflector A, having a recess, C, and cross-piece J, of the bolt or screw D, substantially as herein shown and described.

337,088. EMBROIDERING-MACHINE. HENRY E. SCHMITZ and EDWARD ALDOM, Brooklyn, N. Y. Filed Oct. 30, 1885. (No model.)

Brief.—A vibrating thread-carrier is arranged to be revolved at will in connection with a universal feed. Lock-stitching mechanism instead of chain-stitching may be used in connection with the other features of the machine.

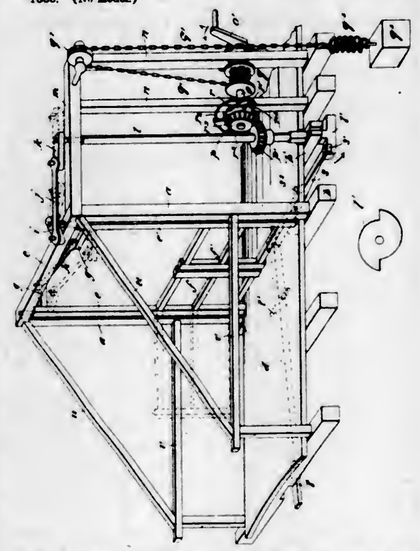
Claim.—1. In universal feed-motion embroidering-machines in which the embroidering cord or material is alternately laid upon opposite sides of the line of stitch, the combination, with the rotatable needle-bar carrier and universal feed-motion devices, operating substantially as described, of the arm or lever B', which carries and lays the embroidering cord or material, pivoted to swing or rock from an independent center, d', outside of and at an angle to the axis of rotation of the needle-bar, and made capable of rotation in common with the needle-bar carrier and needle, essentially as specified.

2. In a universal feed-motion embroidering-machine, the combination, with said machine, of the rotatable and vibrating lever B', operating to lay the embroidering cord or material on opposite sides of the line of stitch alternately, the rotatable ring or lever-carrier e', provided with a leg or arm, d^3, the needle-bar carrier G, the arm c^3, attached to said carrier and engaging with the arm d^3, the longitudinally-reciprocating and rotatable screw D', the worm-wheel C', and the arm i', carried by said wheel and arranged to engage with the lever B', essentially as and for the purposes herein set forth.

3. In embroidering-machines having a universal feed-motion, and in which the embroidering cord or material is alternately laid upon opposite sides of the line of stitch, the vibrating and rotatable arm or lever B', which lays the embroidering cord or material, constructed in sections and made adjustable in direction of its length, in combination with the rotatable needle-bar carrier and universal feed-motion devices, for operation together, substantially as described, and whereby said arm or lever is made adjustable up or down relatively to the sewing or table surface of the machine, as herein set forth.

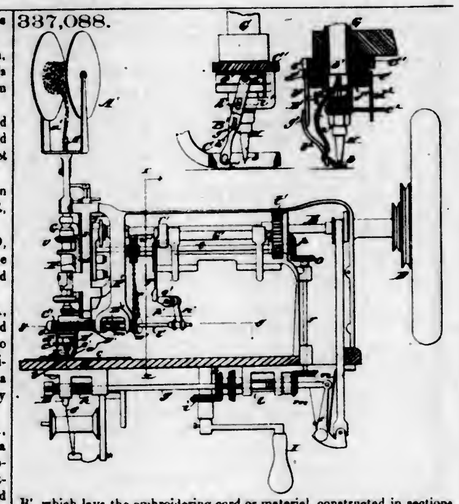
4. In embroidering-machines having a universal feed-motion, as described, the combination, with the vibrating and rotatable lever B', which lays the embroidering cord or material, of the rotatable ring e', to which said lever is pivoted, the worm-wheel C', the arm i' on said wheel, engaging with the lever B', the combined screw and rack D', the slotted guiding-tube E', capable of rotation together with the screw and rack, and providing for an independent sliding motion of the latter, the shaft G', deriving its motion by gears from the main shaft of the machine, and mechanism connecting the shaft G' and combined screw and rack D', for reciprocating the latter, essentially as specified.

337,089. GATE. FRED. W. SIEBERA, Talbot, Mich. Filed Sept. 18, 1885. (No model.)



Claim.—1. In a gate for draw-bridges, the combination of the following elements: a gate hung on a vertical shaft, as e, which shaft is provided with a crank-arm, a vertical shaft, as l, rotated by a mechanism operated by a weight, a crank-arm on shaft l of shorter sweep than

337,088.



the crank-arm of shaft *e*, a connecting-rod for said crank-arms, a retaining plate or plates on shaft *l*, and a pivoted lever, as *s*, engaging said plate, substantially as herein set forth and described.

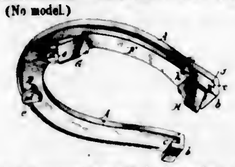
2. In a gate-operating device for draw-bridges, consisting of a gate hung upon a shaft which is rotary reciprocated by connections from another shaft rotated by a weight and held from revolution by the end of a lever, as *s*, the combination, with said gate, its operating devices, substantially as described, and the retaining-lever *s*, of a cam-block on the draw, and a pivoted lever, as *t*, engaging the free end of the lever *s* and the said cam-block, as set forth.

3. The posts *e e'*, to which the gates are attached, connected by arms *g g'* and rod *h*, the vertical shaft *l*, and gearing and weight attachments, substantially as described, for revolving the shaft *l*, the latter being connected to post *e'* by levers *k i* and connecting-rod *j*, and provided with the locking-plates *l'*, in combination with locking-lever *s*, for engaging with the said locking-plates, substantially as and for the purposes set forth.

4. The vertical shaft *l*, connected to the gate-posts by levers *i k* and rod *j*, and provided with locking-plates l^2, and gear-wheel *p'*, in combination with the locking-lever *s*, shaft *o*, gear-wheel *p*, pawl and ratchet *r r'*, drum *q*, chain *q'*, and weight q^4, substantially as and for the purposes set forth.

5. The gates *f f'*, secured to posts *e e'*, provided with opposite arms *g g'*, in combination with connecting-rod *h*, crank *i*, secured to the upper end of the post *e'*, the shaft *l*, provided with the crank *k*, the connecting-rod *j*, and means for operating said shaft, substantially as described.

337,090. **HORSESHOE.** WM. SOMERVILLE, Sr., Buffalo, N. Y. Filed Nov. 2, 1885. (No model.)



Claim.—1. The combination, with the horseshoe, of two separate removable calk-plates, each provided with a front calk and a heel-calk, the shoe being constructed with fastenings which overlap the under sides of the removable calk-plates at both ends thereof, and nails or stops *k*, whereby the removable calk-plates are held against lateral displacement, substantially as set forth.

2. The combination, with a horseshoe, A, provided with headed studs D and claws *b*, of two calk-plates, F, provided with notches *i* and lips *j*, whereby the calk-plates are attached to the studs D and claws *b* substantially as set forth.

337,091. **BROOM-HOLDER.** ALFRED D. STANBURY, Colliers, W. Va. Filed May 13, 1885. (No model.)

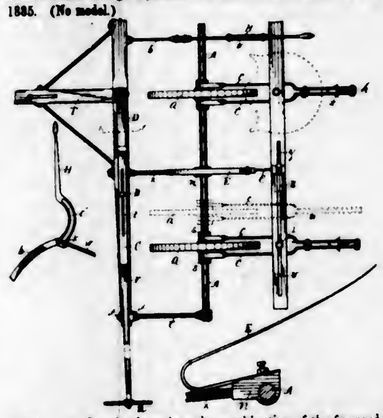


Claim.—1. The broom-clamp A, composed of a piece of wire having the horizontal portion *a*, the depending divergent arms *b*, and arms *c* rising therefrom and converging toward one another, the horizontal substantially parallel arms *d d*, projecting forwardly from the before-named parts and provided with the socket *e*, the braces *g*, extending from the outer ends of the arms *d d* downwardly and backwardly, and the horizontal portion *h*, with which said braces are united, substantially as described.

2. The broom-clamp A, composed of a piece of wire having the horizontal portion *a*, the depending divergent arms *b*, and arms *c* rising therefrom and converging toward one another, the horizontal substantially parallel arms *d d*, projecting forwardly from the before-named parts and provided with the socket *e*, the braces *g*, extending from the outer ends of the arms *d d* downwardly and backwardly, and the horizontal portion *h*, with which said braces are united, combined with the fastening-clip *i*, substantially as described.

3. The broom-clamp A, composed of a piece of wire having the horizontal portion *a*, the depending divergent arms *b*, and arms *c* rising therefrom and converging toward one another, the horizontal substantially parallel arms *d d*, projecting forwardly from the before-named parts, and provided with the socket *e*, the braces *g*, extending from the outer ends of the arms *d d* downwardly and backwardly, and the horizontal portion *h*, with which said braces are united, combined with the fastening-clip *i*, and a bracket having a central ridge and beveled sides, substantially as described.

337,093. **LAND-MARKER.** ANDREW T. STEWART, Concord, assignor of one-half to George S. Sheffield, Three Rivers, Mich. Filed June 11, 1885. (No model.)



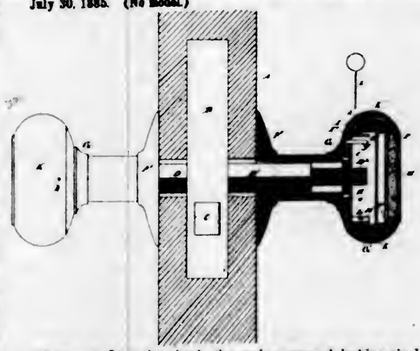
Claim.—1. In a land-marker, the combination of the forward beam, the wheel-axle rigidly held against revolving by bars connecting said beam and axle, wheels rotable on said axle, and laterally adjustable, and supporting-bars bearing marker-shares pivotally connecting to said axle and extending to the rearward behind said wheels, substantially as and for the object set forth.

2. The combination of the forward beam, the wheel-axle, bars connecting said beam and axle and holding the latter from revolving, rotable laterally-adjustable wheels on said axle, bars pivotally connecting the axle extending rearwardly and bearing marker-shares, said bars laterally adjustable with the wheels, a beam connecting said bars in an adjustable manner, and a spring to adjust the effect of the driver's weight upon the markers, substantially as set forth.

3. The combination of a wheel-frame, pivoted vertically-playing share-bars, a transverse beam connecting said bars, the lifting-lever provided with the slotted base and lock-recess at an angle to said slot and communicating therewith, said lever fulcrumed above the pivotal connection of the share-bars, and a jointed bar, one end of which connects with said transverse beam and the other end forming a cam-connection with the slot of the lever, all substantially as set forth.

4. The combination of pivoted vertically-playing share-bars bearing shares and supporting a driver's seat, and a spring and adjustable means connecting it with the share-bars, said spring having a lifting resistance against the downward pressure of the driver's weight, substantially as set forth.

337,093. **DOOR-KNOB.** EDWARD TRESTLE, West Hoboken, N. J. Filed July 30, 1885. (No model.)



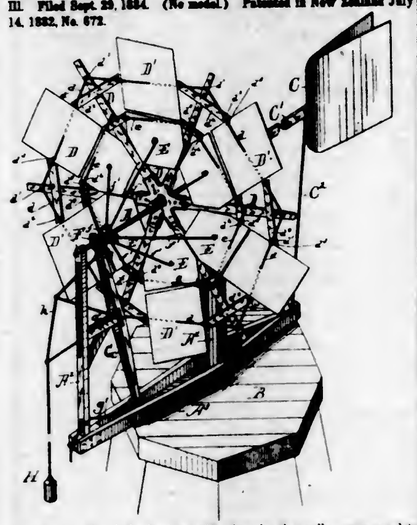
Claim.—1. In a door-knob, the spring-actuated locking-pin I, in combination with the screw-threaded ring K and correspondingly screw-threaded body G, arranged for joint operation, as herein specified.

2. In a door-knob, the ring K, having the hole *k*, engaged with the body G by screw-threads, as shown, in combination with such body, and with the pin I and spring H, all arranged for joint operation, as herein specified.

3. In a door-knob, the stop *g*, in combination with the spring H, pin I I', ring K, having the hole *k*, and body G, as herein specified.

4. In a door-knob, the front plate, M, ring K, body G, spindle D, and nut E, in combination with each other, and with a locking-pin, I I', and spring H, said ring formed with a hole, *k*, whereby the parts may be disengaged when desired, all substantially as herein specified.

337,094. **WIND-WHEEL.** JOHN T. THOMSON, Invercargill, New Zealand, assignor to John Clay, Jr., and William H. Forrest, both of Chicago, Ill. Filed Sept. 29, 1884. (No model.) Patented in New Zealand July 14, 1882, No. 672.



Claim.—1. A wind wheel or mill wherein the sails are secured to rods connecting the radial arms of the wheel, having some of said sails pivoted to said rods at or near their edge off balance, and other sails pivoted at or near their center in counterpoise, and mechanism, substantially as described, for facing or edging all the sails to or from the wind simultaneously.

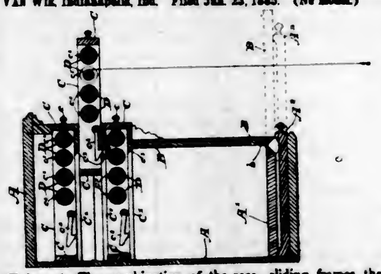
2. In a wind-wheel wherein the sails are connected by radial rods to a reciprocating boss on the axle, the reciprocating non-rotating boss F, provided with a revolving collar, *f*, having proper lugs for securing said radial rods thereto, said non-revolving boss being also provided with pins f^3, so as to engage the end of the lever G, substantially as specified.

3. In a windmill, the sleeve-bearing A', surrounding the stationary sleeve B', said sleeve A' having a wind-wheel and a tail-vane mounted on its upper end, and the framing A^2, secured at its lower end, in combination with the standard or brace A^3, for supporting the wind-wheel axle A, and the brace-rod C^2, for supporting the vane C, substantially as specified.

4. A windmill-wheel consisting of the radial arms D, connected with bolts by the rods *d e*, each of said rods *d e* having a sail mounted so as to revolve thereon, said sails being secured at a suitable angle longitudinally to said rods by stay-rods d^3 d^4, substantially as and for the purpose specified.

5. In a windmill, the manner of securing the sails D' and E to the rods *d* and *e* at an angle by means of the stay-rods d^3 and d^4, substantially as shown and described.

337,095. **COMBINED MAP, CHART, AND BOOK CASE.** DANIEL D. VAN WIE, Indianapolis, Ind. Filed Jan. 23, 1885. (No model.)



Claim.—1. The combination of the case, sliding frames therein, slides for supporting said frames, rolls for carrying maps or charts in said sliding frames, and a door hinged to the floor of the case, said door and floor being mitered where they are hinged together, all substantially as set forth.

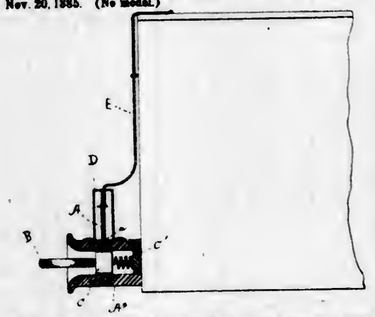
2. The combination, with the case A, of the door B, sliding frames C, removably mounted in the top of said case and provided with pivoted gravity-catches c^2, adapted to engage with notches c^3 in the slides C', and rolls D, mounted in said sliding frames and adapted to have maps or charts mounted thereon, substantially as set forth.

3. The combination, with the case A, of the floor A', having its under side front corner mitered, the sliding supports A^2, mounted under said floor and having their top edges hollowed out, and the door B, hinged to the front edge of the floor A' and having its lower inside corner mitered, said mitered part extending below the hinges, substantially as described, and for the purposes set forth.

4. In a combined map, chart, and book case, the combination of the floor A', sliding supports A^2, door B, hinged at its bottom to the floor A' and adapted to turn down upon said supports A^2, the sliding frames C, mounted on slides in the top of said case, and the rolls mounted in bearings in said frames, all arranged and operating substantially as set forth.

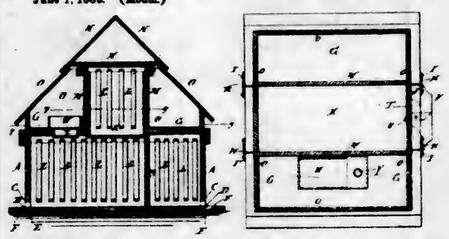
5. The combination of the case A, door B, having mitered lower edge, correspondingly-mitered bottom A', to which said door is hinged, frames C, slides in said case for supporting said frames, rolls mounted in said sliding frames for carrying maps or charts, and sliding supports A^2 for sustaining said door when folded down, the whole constituting a combined map, chart, and book case, as set forth.

337,096. **CAR-COUPLING.** GEORGE M. VETTO, Mills, Tex. Filed Nov. 20, 1885. (No model.)



Claim.—The combination, with the coupling-box or draw-head A^6 and spring-pin A, of the block C, spring C', and plate C^6, united together as described, the plate C^6 being of suitable size to enter the bore of the draw-head, substantially as and for the purpose set forth.

337,097. **BEE-HIVE.** WM. O. VINCENT, Newfoundland, Ky. Filed June 1, 1885. (Model.)

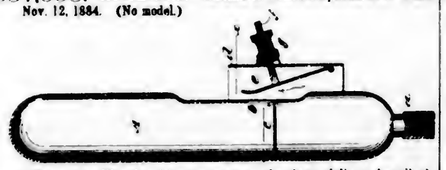


Claim.—1. A bee-hive constructed substantially as herein shown and described, and consisting of the body A, having entrance-openings at the lower edges of both front and rear walls, and provided with an adjustable division-board, the removable feed-boards G and honey-board K, covering the said body, the honey-box M, placed over the middle part of the hive-body, and the cover N O, made in three parts hinged to each other and resting upon and covering the honey-box and the feed-boards, substantially as herein shown and described.

2. In a bee-hive, the combination, with the body A of the hive and the honey-box M, of the cleat J, having opening T, and provided with a button, U, pivoted in the said opening, and a flange, V, attached to the said cleat, substantially as herein shown and described.

3. In a bee-hive, the combination, with the feed-board G and the body A of the hive, of the food-receiver made with a trough, W, and a chamber, X, having gauze-covered bottom openings and provided with an inlet-chamber, Y, having screw-cap Z, substantially as herein shown and described.

337,098. SIGNAL-HORN. CHARLES A. VOLEK, Stapleton, N. Y. Filed Nov. 12, 1884. (No model.)

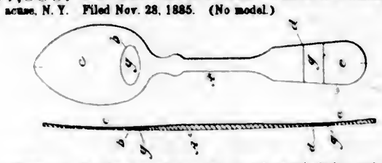


Claim.—1. The signal-horn, constructed, substantially as described, with an interior bridge, a mouth, and a hood or cap over the mouth, for the purpose set forth.

2. In a signal-horn, the adjustable valve *c* and hood or cap *d*, combined with tube A, having mouth *b*, substantially as described.

3. In a signal-horn, the combination, with the pipe A, of two or more hoods or caps and valves, the pipe having openings for each valve and hood, substantially as shown and described, whereby a single pipe may deliver more than one note, as set forth.

337,099. MANUFACTURE OF SPOONS. WILLIAM A. WARNER, Syracuse, N. Y. Filed Nov. 28, 1885. (No model.)

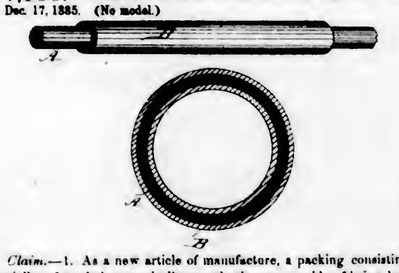


Claim.—1. In the manufacture of plated metal, forks, and other like articles fitted with protective precious metal or alloy fillings at their points of rest or contact, as specified, the method herein described of providing said articles with said fillings by first making holes or recesses for reception of said fillings in the flat blanks, from which said articles are made, then inserting and securing the fillings in said holes or recesses, afterward bending or striking up the articles into shape, and subsequently plating and finishing them, substantially as specified.

2. In the manufacture of plated metal spoons, forks, and other like articles, having incorporated precious metal or alloy fillings at their points of rest or contact, first cutting the blanks from which the articles are made, then rolling and grading them, then cutting them into shape, next making the holes or recesses for the incorporated fillings, afterward securing said fillings in the holes or recesses, and subsequently bending or striking up the filled blanks into the required shape of the article to be made, and plating and finishing them, essentially as described.

3. A flat-cut and graded metal blank for spoons and other like articles, having one or more precious metal or alloy fillings at the point or points of wear and contact of the spoon or article made from said blank, substantially as and for the purposes herein set forth.

337,100. PACKING. WILLIAM WHITE, Jr., Pittsburg, Pa. Filed Dec. 17, 1885. (No model.)



Claim.—1. As a new article of manufacture, a packing consisting, essentially, of a tubular practically non-elastic core capable of being bent or flattened and a casing or covering of elastic material adapted to constitute a seal, substantially as described.

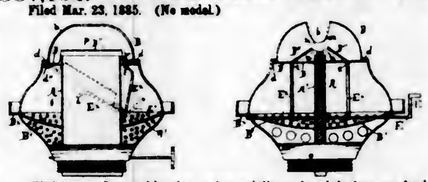
2. As a new article of manufacture, a packing consisting of a tubular lead core incased in a tube of rubber, substantially as described.

337,101. COMBINED BLOTTING-PAD AND MEMORANDUM-BOOK. HOWARD CHAUNCEY WHITNEY, Albany, N. Y. Filed Dec. 14, 1885. (No model.)



Claim.—As a new article of manufacture, a base-board provided at one end with means for retaining sheets of blotting-paper and at its other end with a book, to which it is permanently attached, forming a continuation of one of the book-covers, substantially as described.

337,102. LAMP-BURNER. THEODORE B. WILLSON, Chicago, Ill. Filed Mar. 23, 1885. (No model.)



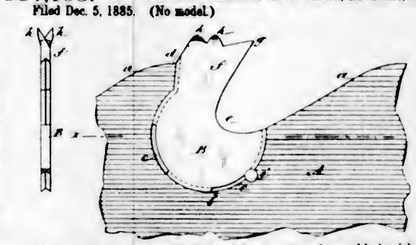
Claim.—1. In combination, substantially as hereinbefore set forth, the principal dome and wick-tube, a subsidiary dome within the principal dome, constituting a transverse partition therein complete and continuous, except as to its flame-aperture, and above all draft induction-apertures in said principal dome nearer the end of the wick-tube, and having a more restricted flame-aperture than said principal dome and removable from said position at will.

2. In combination, substantially as hereinbefore set forth, the principal dome and wick-tube, a subsidiary dome within and having a smaller flame-aperture than the principal dome, hinged or linked to said principal dome, interiorly fitting the same, and extending across and constituting a horizontal partition therein, and a removable support for the same.

3. In combination, substantially as hereinbefore set forth, the principal dome and wick-tube, a subsidiary dome within, and having a flame-aperture narrower than that of the principal dome and longer than the breadth of the wick-tube, and hinged to the principal dome, the axis of its hinge being at right angles with the breadth of the wick-tube, a removable support for the subsidiary dome, and a tongue extending from the wall of the principal dome to the edge of the wick-tube, to close the end of the flame-aperture in the subsidiary dome.

4. In combination, substantially as set forth, the principal dome and wick-tube, a subsidiary dome within the principal dome, near the top of the wick-tube, and a removable support for the same, the principal dome being provided with a ledge about its interior wall to form a stop above said subsidiary dome.

337,103. SAW-TOOTH. CHRISTOPHER J. WILSON, Knoxville, Tenn. Filed Dec. 5, 1885. (No model.)



Claim.—1. A saw-tooth, B, having a cutter, *f*, provided with the point *g* at the forward end of its upper edge, and the knives *h h* on opposite sides of said edge in rear of the cutter, the said knives extending into a higher plane than the point *g*, substantially as set forth.

2. The combination of a saw-plate, A, having in the edge thereof circular notches, and a V-shaped tongue formed around the notches, and a tooth, B, having an interrupted groove around its edge adapted to receive the interrupted tongue of the saw-plate, and provided with the cutter *f*, having the saw-cutting point *g* and the knives *h h* formed thereon, substantially as herein specified.

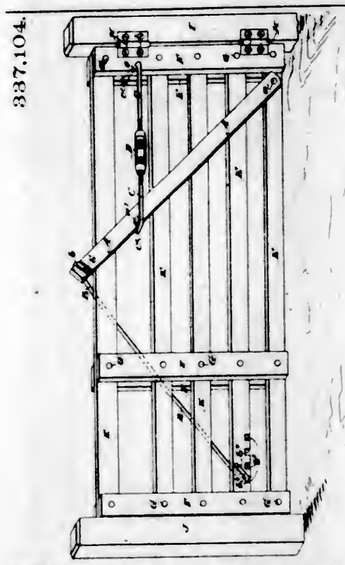
337,104. GATE. WILLIAM L. WILSON and JOHN C. WILSON, Cynthiana, Ind. Filed Oct. 9, 1885. (No model.)

Claim.—1. The combination, with a gate, of a lever, A, pivoted at *a* to the lower rear part of the gate and extending diagonally upward and forward, a bar, B, connected to the upper end of lever A and ranging diagonally downward and forward to and connected with the lower front part of the gate, and a draw-up rod connecting the upper part of the lever A with the upper rear part of the gate, substantially as herein set forth.

2. The combination, with a gate, of a lever, A, pivoted, as at *a*, to the lower rear part of the gate and extending diagonally upward and forward, a bar, B, connected to the upper end of lever A and ranging diagonally downward and forward to and connected with the lower front part of the gate, and a draw-up rod, C, provided with a turn-buckle, D, and connecting the upper part of the lever A with the upper rear part of the gate, substantially as herein set forth.

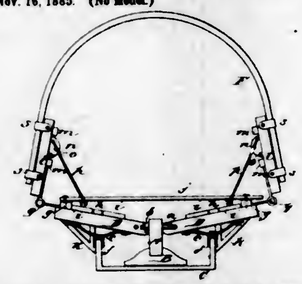
3. The combination, with a gate, of a lever, A, pivoted, as at *a*, to the lower rear part of the gate and extending diagonally upward and forward, a bar, B, connected to the upper end of lever A and ranging diagonally downward and forward to and connecting adjustably with the lower front part of the gate, which has a series of notches, as at *b*,

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to receive the end of the bar, and a draw-up rod, C D, connecting the upper part of lever A with the upper rear part of the gate, substantially as herein set forth.

337,105. HAY-RACK. JOSEPH A. WITHROW, Scranton City, Iowa. Filed Nov. 16, 1885. (No model.)



Claim.—1. In a hay-rack, the combination, with a central bar, A, of transverse bars D, the adjustable angled rods *a*, the longitudinal bars *h g*, transverse bars *j*, and the slotted curved springs *c*, provided with clips *f*, substantially as herein specified.

2. The combination, in a hay-rack, of the central bar, A, feet B, transverse bars D, hinged to the central bar, longitudinal bars *h g*, side frames, E, hinged to the sides of the rack, apertured plates *n*, secured to the side frames, E, and the hooks *p*, pivoted to the body of the rack, as herein specified.

3. In a hay-rack, the combination of the bar A, transverse bars D, longitudinal bars *h g*, springs *c*, clips *f*, and braces *k*, substantially as herein described.

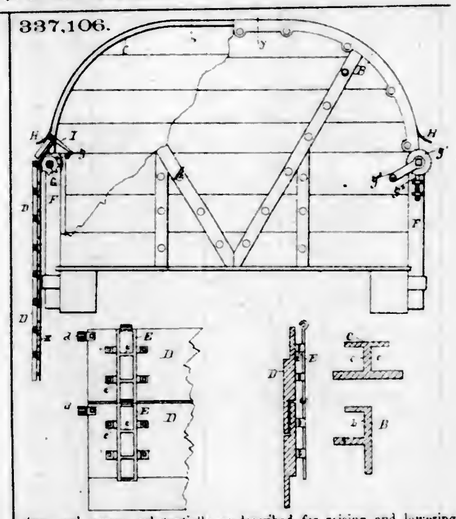
4. In a hay-rack, the combination, with the body of the rack, constructed substantially as herein described, of side frames, E, hinged thereto, clips *s*, attached to the side frames, E, and bows F, received by the clips *s*, as described.

5. In a hay-rack, the combination, with a body formed of the bar A, of transverse bars D, longitudinal bars *h g*, springs *c*, clips *f*, braces *k* transverse bars *j*, side frames, E, apertured plates *n*, attached thereto, hooks *p*, pivoted to the bars D and received in the apertures of the plate *n*, clips *s*, and the bows F, substantially as herein specified.

337,106. RAILWAY-CAR. RICHARD H. WYMAN, Evanston, Ill. Filed Nov. 24, 1885. (No model.)

Claim.—1. The combination, with a railway freight-car, of a flexible cover in two or more independent sections adapted to meet above the longitudinal central line of the car to cover said car, each section consisting of slats hinged together by means of links secured to said

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slats, and means, substantially as described, for raising and lowering said sections, for the purpose specified.

2. The combination, with a railroad freight-car, of a flexible cover in two or more independent sections, each section consisting of slats hinged together, friction-wheels mounted upon the ends of the slats, guideways secured to said car at the end of said slats, and means, substantially as described, for raising and lowering said sections, for the purpose specified.

3. The combination, with a railway freight-car, of a flexible cover in two or more independent sections, each section consisting of slats hinged together, friction-wheels on the end of each slat, the curved guide H, and means, substantially as described, for raising and lowering said sections, for the purpose specified.

4. A movable cover for railway freight-cars, in two or more independent sections, each section consisting of slats hinged together by means of links secured to said slats and extending outwardly therefrom, and having each slat overlap the slat next below it.

5. The combination, with a railway freight-car, of a flexible cover of two or more independent sections, each section consisting of slats extending lengthwise of the car, hinged links secured to said slats and extending outwardly from the surface of the slats, and sprocket-wheels mounted on the sides of the car and adapted to engage with said hinged links, substantially as and for the purpose specified.

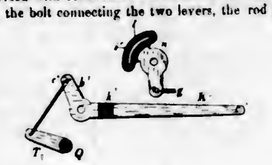
6. The combination, with a railway freight-car, of a flexible cover in two or more independent sections, each section consisting of slats hinged together and extending lengthwise of the car, friction-wheels on the ends of said slats, guideways secured to the car, adapted to engage with said wheels, means, substantially as described, for raising and lowering said sections, and hooks secured to the upper slat of each section, for the purpose specified.

337,107. GANG-PLOW. JACOB J. YOUNG, Rochester, N. Y., assignor, by direct and mesne assignments, to R. S. Kenyon and John O. Rea, both of same place. Filed Nov. 12, 1885. (No model.)

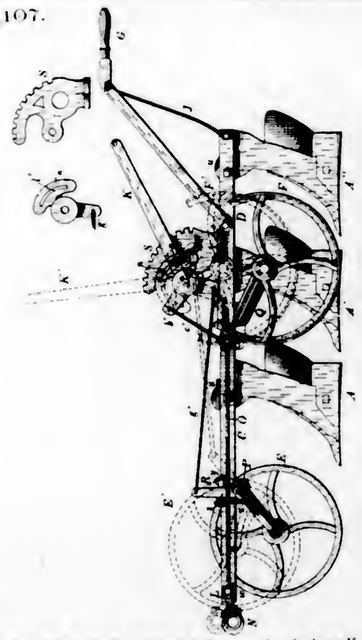
Claim.—1. In a gang-plow, the combination of the plows A, A', and A'', the bars B, C, and D, clevis L, jointed to said bars and extended landward beyond the bar C, and the brace O, extending from the outer end of said clevis to the bar D, as described.

2. In combination with the frame of a gang-plow, the wheels E F, their crank-axles P Q, the hand-lever K and its locking devices, the link connecting said lever with an arm on the axle Q, the slotted lever *n*, the rod connecting said lever with an arm on the axle P, and the adjusting-bolt connecting the lever *n* with the main lever K, as described.

3. In a gang-plow, and in combination with its main frame, the ground-wheels E and F, their cranked axles, each having an arm, the lever K, provided with serrations on its side face, the slotted lever *n*, also serrated, the bolt connecting the two levers, the rod *g'*, connecting

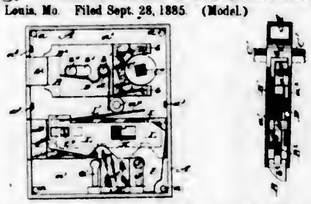


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the lever *n* with the axle P, and the link *c'*, connecting the lever K with the axle Q.

337,108. DOOR-LOCK. Garret G. Ackerson and Julius French Sht. St. Louis, Mo. Filed Sept. 28, 1885. (Model.)



Claim.—1. In a lock, the latching-bolt B, made in two parts, B' B^2, said part B' having studs *b b*, on which the spindle-dog acts, and provided with a pin, *b'*, entering a hole of part B^2, and said part B^2 having the latching-head b^2, and the parts B' B^2 having slots, as at b^3, in combination with a stud, as at b^4, on the lock-case, and a retracting-spring, as at D, coiled around the pin *b'* and bearing at its ends on the pins b^4 a^4, substantially as shown and described, whereby the part B^2 may be reversed for right or left hand locks, as set forth.

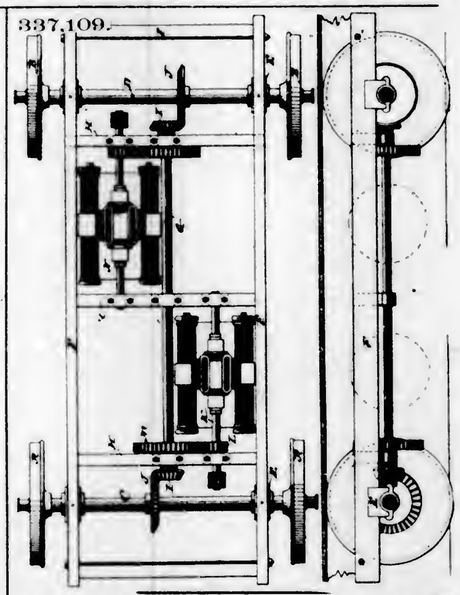
2. A lock comprising a case, A, having key-holes, as at G J, formed through its opposite side plates and out of line with each other, a locking-bolt, as at I, having two key-bit-receiving notches, i^2 i^3, into which the key may be passed from the opposite key-holes, and key-hole guard-plates, as at F L, provided with guards *f l*, respectively, adapted to cover said key-holes G J, and said plates F L, provided also with key-bit-receiving notches f^4 l^3, respectively, adapting them to be thrown by the key as the bolt is thrown, substantially as herein set forth.

3. In a lock, the combination, with the case A, provided with key-holes G J, made through its opposite sides out of line with each other, and provided, also, with a stud, E, of the key-hole guard-plates F L, adapted to cover the key-holes G J, and to be moved by the key as the key throws the bolt, and said key-hole guard-plates F L, having stop-lugs f^3 l^3, respectively, adapted to lock against the stud E of the lock-case, and springs, as at F' L', adapted to hold the plates F L over or clear of the respective key-holes G J, substantially as herein set forth.

337,109. MOTOR-CAR. Richard N. Allen, Cleveland, Ohio. Filed Jan. 26, 1885. (No model.)

Claim.—In combination, the axles C and D, the frame F, rigidly uniting the axles, the driving-shaft G, geared to both axles, and the motor rigidly supported upon said frame and geared to the main shaft, substantially as and for the purpose set forth.

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337,110. WOODEN BARREL. Wm. M. Allyn, Hastings, Minn. assign or to himself and Charles Espenschied of same place. Filed Oct. 17 1885. (No model.)



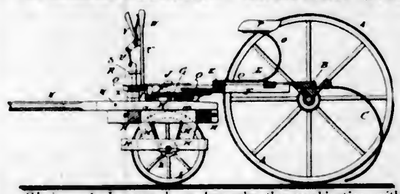
Claim.—1. In a wooden vessel, the combination of alternate hard and soft wood staves, substantially as and for the purpose set forth.

2. In a barrel or other wooden vessel, the combination of the hard-wood staves and narrow soft-wood strips, thicker than the staves, and compressed to have their inner edges overlap the inner edges of the staves, substantially as specified.

3. The combination of staves B, having beveled sides, and compressed strips C, entered by and overlapping the inner edges of staves B, substantially as described.

4. As a new article of manufacture, a barrel, keg, or other vessel constructed of hard-wood staves and interposed soft-wood strips bound together to form a close joint, substantially as and for the purpose specified.

337,111. TWO-HORSE HAY-RAKE. Alexander Anderson and Robert Rutherford, Brush Creek, Iowa. Filed Dec. 12, 1884. (No model.)

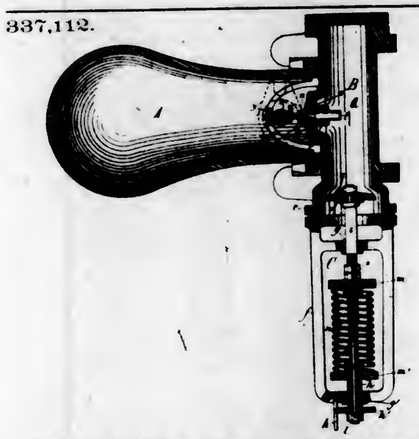


Claim.—1. In a two-horse hay-rake, the combination, with the rake A B C and the truck H K L, having a pivoted tongue, N, of the reach-frame D E F, the annular plate G, attached to the truck-frame, the hooks I, attached to the bar F of the reach-frame and engaging the annular plate, and the king-bolt J, passing through the bar F and the plate G, substantially as herein shown and described.

2. The combination, with the truck-frame H and the reach-frame D E F of a hay-rake, of the bail Q, the standard T, the spring-lever pawl R U V W, and the catch-plate X, substantially as herein shown and described, whereby the connection between the truck and rake can be made rigid, as set forth.

337,112. HYDRAULIC RAM. Adolphus Ham, Zurich, Switzerland. Filed Dec. 12, 1885. (No model.)

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Claim.—1. In a hydraulic ram, the combination of a water-chamber, a valve-seat secured at the discharge end of the chamber and having an outwardly-projecting guide-frame formed with an inner smooth longitudinal bearing and an outer screw-threaded longitudinal bearing, a discharge or stop valve having a stem passing through the bearings, and having a collar secured at its outer end, a screw-threaded sleeve fitting in the threaded bearing and having a notched disk at its outer end, the stem sliding in the sleeve with its disk bearing against the outside of the disk, and a latch pivoted to the end of the guide-frame and engaging the notched disk, as and for the purpose shown and set forth.

2. In a hydraulic ram, the combination of a water-chamber, a valve-seat secured at its discharge end, and having an outwardly-projecting frame provided with a smooth longitudinal inner bearing at one end and a screw-threaded bearing at its outer end, a screw-threaded sleeve fitting in the threaded bearing and having a disk with a notched edge at its outer end, a pivoted latch engaging the notched edge of the disk, a discharge or stop valve playing upon the seat and having a stem sliding in the bearing and sleeve, and formed with a collar at its outer end and with a screw-threaded inner portion, a disk upon the stem bearing against the inner end of the threaded sleeve, a disk fitting upon the inner portion of the stem, adjusting-nuts bearing against the inner face of the disk and fitting upon the threaded portion of the stem, and a spiral spring wrapped around the stem and held between the disks, as and for the purpose shown and set forth.

3. In a hydraulic ram, the combination of a water-chamber having a valve-seat at its upper side formed with a central bearing, an air-chamber having an outlet and secured over the valve-seat, a stem sliding with its enlarged lower portion in the bearing of the seat and having a threaded middle portion, a yoke having a bearing in its upper portion for the upper end of the stem, a valve upon the stem having an elastic disk clamped between a disk upon the shoulder and a nut upon the threaded portion of the stem, and a stop-nut and a jam-nut upon the threaded portion of the stem, as and for the purpose shown and set forth.

337,113. APPARATUS FOR BENDING THE RIBS OR FRAMES OF METALLIC SHIPS. Walter M. Bailey, New York, N. Y. Filed Sept. 8, 1884. (No model.)

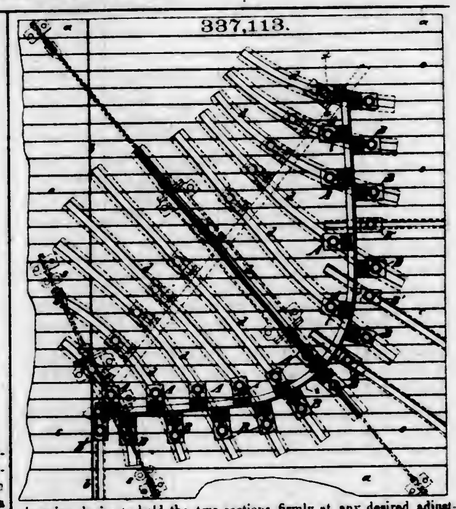
Claim.—1. In a ship-building apparatus, the combination, with an extended platform marked with a perpendicular line, and with a series of parallel water-lines at right angles thereto, of a series of adjustable abutting heads adapted to be adjusted on the platform to the contour of the rib of the vessel, as determined by measurements made on the aforesaid lines, and there fastened, substantially as and for the purpose set forth.

2. In a ship-frame-bending apparatus, the combination of an extended platform, a series of diagonal slots in said platform divergently curved, with a series of abutting heads adapted to be adjusted and fixed in said slots, and a movable head or series of heads adapted to be moved in said slots to and from the fixed heads, and motor mechanism to propel said heads, substantially as set forth.

3. In a ship-frame-bending apparatus, the combination of a level extended platform, a series of parallel water-lines marked thereon, a series of slots extending diagonally to said lines, with a series of abutting heads adjustable and fixable in said slots, a series of movable heads movable to and from the same, and motor mechanism to propel the latter, arranged and operating substantially as set forth.

4. The combination, with the slotted platform *a*, of the fixed head B, formed with the base-block *f*, adjustable in the slot, and the top block, *g*, adapted to swivel thereon on the top of the platform, with a

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clamping device to hold the two sections firmly at any desired adjustment on the platform, substantially as herein set forth.

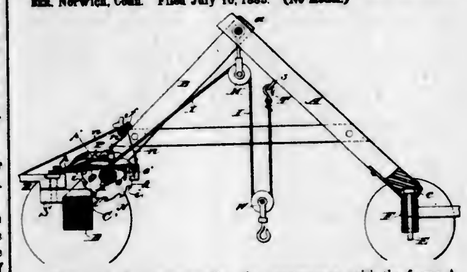
5. In combination with the platform *a*, the fixed head or heads B, provided with the tilting jaw or face *h* and set-screw *i*, substantially as and for the purpose set forth.

6. The combination, with the platform *a*, of the movable head A, having the tilting face or jaw *h*, and the set-screw *i*, substantially as and for the purpose set forth.

7. The combination, with the platform *a*, fixed heads B, and movable heads A, of the rams *m* and flexible connections *o* between the movable heads and the pistons of the rams, and pulleys over which said connections pass, substantially as herein shown and described.

8. The combination, with the platform *a*, having slots *d*, arranged diagonally and curved divergently at the outer ends, with fixed heads B, adapted to be fixed in the curved ends of said slots to correspond with the contour of the ship-frame on the outer or convex side thereof, and the movable heads A, free to move in the slots to and from the fixed heads on the inside of the same, with mechanism to propel said heads, substantially as herein set forth.

337,114. STUMP OR STONE PULLER. Thurston Browning Barber, Norwich, Conn. Filed July 10, 1885. (No model.)



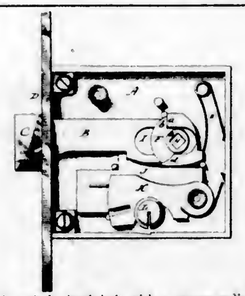
Claim.—1. In a stump-puller, the combination, with the frame A B C, the windlass K, journaled in said frame, and the toothed wheel N, attached on said windlass, of the lever R, pivoted by one end on the frame A B C, adjacent to the wheel N, to vibrate in a plane parallel with the axis of said wheel and windlass, the arms O and P, pivoted to the head of the lever R at opposite sides of the pivot-point of said lever and engaging the teeth of the wheel N, substantially as described.

2. The herein-described frame, consisting of the timbers A, B, and C, united, as described, by the sill C, bolt *a*, and brace-piece *d*, *e*, and *f*, the timber A being provided with a king-bolt, E, substantially as described.

337,115. NIGHT-LATCH. John H. Barnes and Joseph H. Woolaston, New Haven, Conn., assignors to the Barnes Manufacturing Company, same place. Filed Oct. 26, 1885. (No model.)

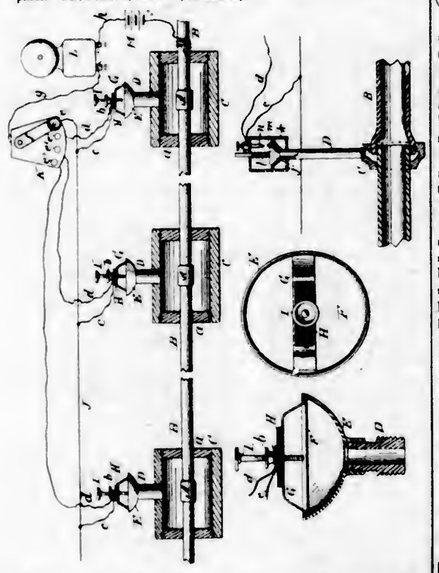
Claim.—In a night-latch, the combination of the latch-bolt B, a follower formed as a part of a hub and supported in bearings in the case for rotative movement only, the said hub adapted to receive a knob by which the hub and follower may be rotated, the follower constructed

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with a shoulder, *b*, and the latch-bolt with a corresponding shoulder, *a*, by which the rotation of the follower may impart an inward movement to the latch-bolt, the latch-bolt also constructed with a shoulder, *d*, upon the side of the hub opposite the shoulder *a*, and the follower constructed with a bearing-surface adapted to engage said shoulder *d* when the bolt is in its drawn position, substantially as described.

337,116. ELECTRIC LEAK-ALARM FOR PIPES. HENRY G. BAUMAN, Pittsburg, Pa., assignor to himself and James T. McMaster, same place. Filed Jan. 5, 1886. (No model.)



Claim.—1. In an electric leak-alarm for pipes, a jacket surrounding the joint of a pipe and an electric circuit-closer arranged to be operated by pressure within the jacket, substantially as herein shown and described.

2. The combination, with the pipe B, of jackets C, surrounding the joints of the pipe, a diaphragm-cell, E, and diaphragm F, connected with the jacket, an insulated contact-screw, I, placed near the diaphragm, but normally out of contact therewith, the battery M, alarm-bell L, and the electrical connections, substantially as herein shown and described.

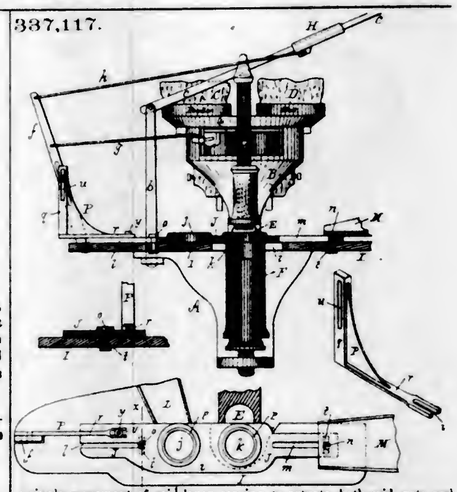
3. The combination of the pipe B, jacket C, diaphragm F, contact-screw I, conductors *c d*, line-wire J, switch K, battery M, electric bell L, and conductors *g h i*, substantially as herein shown and described.

4. The combination, with the jacket C, diaphragm-cell E, diaphragm F, bridge G, insulating-plate H, contact-screw I, nut *b*, conductors *c d*, battery M, electric bell L, and the battery and line connections, substantially as herein shown and described.

337,117. WAD-FEED ATTACHMENT FOR CARTRIDGE-LOADING MACHINES. ORLANDO FULLER BELCHER, Winthrop, Mass. Filed Nov. 30, 1885. (No model.)

Claim.—1. In combination with the measuring-gate for powder and shot, and the lever which actuates the same, a slide, also attached to and operated by said lever and provided with wad-retaining apertures,

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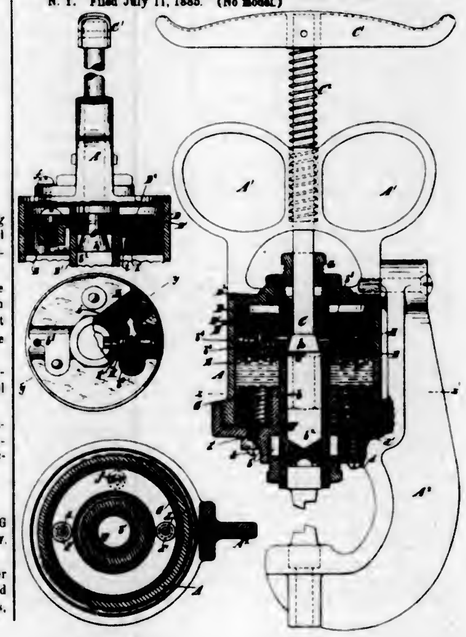
a single movement of said lever serving to actuate both said gate and said slide, substantially as set forth.

2. The combination, with the cartridge-holder F, rammer *e*, and actuating-lever *c*, of the vibrating measuring-gate *a* and the reciprocating apertured wad-carriage J, both united to the rock-lever *f* and actuated by the sleeve H, all co-operating together, as and for the purpose herein set forth.

3. In combination with a cartridge-holder and its co-operating rammer and rammer-lever, the apertured wad-carriage J, adjustable connection P, its rock-lever *f*, and the rod A, uniting the latter with the sleeve H, all substantially as herein described.

4. In a cartridge-filling machine, the bushed apertured wad-carriage adapted to reciprocate transversely across the mouth of a cartridge-holder and co-operate with a rammer entering the latter, in combination with lever *f* and plate P, the latter being vertically slotted at *u*, horizontally slotted at *v*, and connected by bolts through said slots to said slide and lever, respectively, substantially as set forth, the travel of said carriage being adjustably limited by the plate P, substantially as stated.

337,118. HYDRAULIC APPARATUS. LESLIE BELDEN, New York, N. Y. Filed July 11, 1885. (No model.)

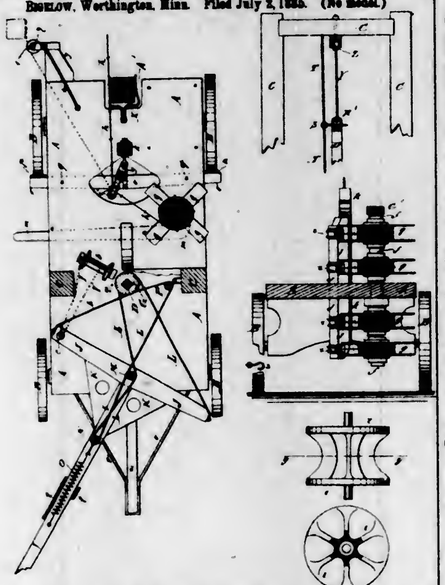


Claim.—1. In an apparatus constructed to be operated with hydraulic pressure, the combination of a cylinder for containing liquid, a piston fitted therein, an air-vent, and a diaphragm between the liquid-space of the cylinder and the atmosphere, substantially as specified.

2. In an apparatus constructed to be operated with hydraulic pressure, the combination of a cylinder for containing liquid, a piston fitted therein, a plunger, a cavity receiving the plunger, ports and valves whereby liquid may pass from one side of the piston to the cavity in which the plunger works, and subsequently from the cavity to the other side of the piston, an air-vent, and a diaphragm between the liquid-space of the cylinder and the atmosphere, substantially as specified.

3. In an apparatus constructed to be operated with hydraulic pressure, the combination of a cylinder for containing liquid, a piston fitted therein, a plunger, a cavity receiving the plunger, ports and valves whereby liquid may pass from one side of the piston to the cavity in which the plunger works, and subsequently from the cavity to the other side of the piston, a valve which will open when the piston is moved back to its normal position, an air-vent, and a diaphragm between the liquid-space and the atmosphere, substantially as specified.

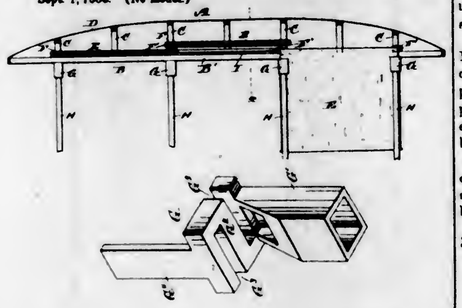
337,119. MACHINE FOR BUILDING WIRE FENCES. WILLIAM H. BIGELOW, Worthington, Minn. Filed July 2, 1885. (No model.)



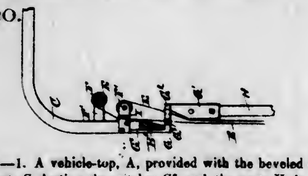
Claim.—1. In a fence-building machine, the combination, with the platform A, of the vertical shaft *f*, the horizontal reels thereon, the vertical post *k*, the horizontally-swinging support J, hinged thereto, and the horizontal guide-rollers *i i*, journaled in one vertical edge of said support, substantially as set forth.

2. The combination, with the platform A, the vertical shaft *f*, and the horizontal reels *g*, of the horizontally-swinging support J, provided with a series of guide-rollers, *i i*, formed with spaced concaved peripheral ribs, to receive the barbs of the fence-wires, substantially as set forth.

337,120. VEHICLE-CURTAIN. JOSEPH E. BIBB, Dayton, Ohio. Filed Sept. 1, 1885. (No model.)



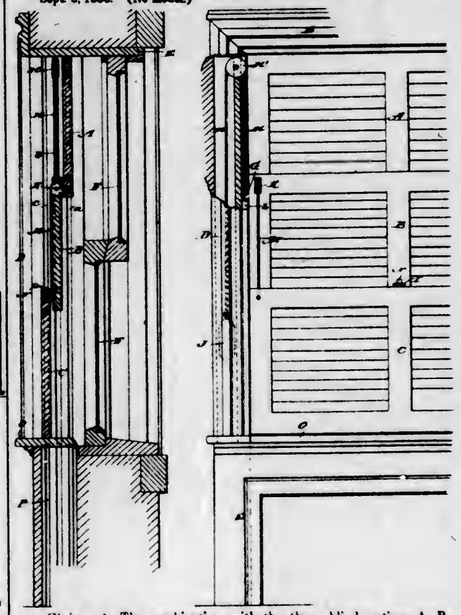
337,120.



Claim.—1. A vehicle-top, A, provided with the beveled side rails, B', the sockets G, having the notches G^3, and the posts H, in combination with the curtains E, mounted on the rollers F, attached to the frames F', which are secured to bows of the top A, substantially as shown and described.

2. A vehicle-top, A, provided with the beveled side rails, B', the bows C, the curtains E, the rollers F, the frames F', and the slat I, in combination with the posts H and the socket G, consisting of the casing G', the cross-plate G^2, having one or two notches, G^3, and the plate G^4, substantially as shown and described.

337,121. INSIDE SHUTTER. ROBERT BLAIR, New York, N. Y. Filed Sept. 8, 1885. (No model.)



Claim.—1. The combination, with the three blind-sections A, B, and C, of the ropes H, secured to the central section, B, and passed over pulleys H' in the window-frame, the weight J, secured to the ropes, and cords secured to the upper and lower sections and passed over pulleys on the central section, substantially as herein shown and described.

2. The combination, with the three blind-sections A, B, and C, of the ropes H, secured to the central section and passed over pulleys H' in the window-frame, weights J, secured to the said ropes, and the cords M, secured to the lower corners of the upper section, A, and to the upper corners of the lower section and passed over pulleys K, journaled in the upper corners of the central section, B, substantially as herein shown and described.

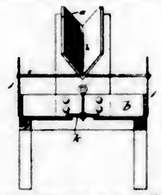
3. The combination, with the three sections A, B, and C, of cords M, secured to the upper and lower sections and passed over pulleys on the central section, weighted ropes connected with the central section and passed over pulleys in the window-frame, and a latch pivoted on the upper edge of the lower section, the central section having a recess or aperture into which the end of the latch can be passed, substantially as herein shown and described.

4. The combination, with the window-frame E, having the cavity or box P under the sill and having said sill hinged, of the three blind-sections A, B, and C, the cords M, the pulleys K, the ropes H, the pulleys H', and the weights J, substantially as herein shown and described.

337,122. MACHINE FOR CONCENTRATING ORES, &c. FRANCIS H. BLAKE, Pinal, Ariz., assignor to himself and Chas. Espenschied, same place. Filed June 8, 1885. (No model.)

Claim.—In a concentrator for minerals, a V-shaped sluice made

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from wood and constructed with a series of small openings in the line of its apex, combined with metal bushings introduced into said openings, the said bushings forming apertures through which heavier particles may pass with a portion of the water from the sluice, substantially as described.

337,123. METER FOR ELECTRIC CURRENTS. FRANÇOIS BOREL, Cortaillod, and EMILE PACCAUD, Lausanne, Switzerland. Filed Mar. 9 1885. (No model.)

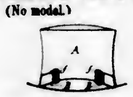


Claim.—1. The combination, with the main and branch circuits, of the helix E M in the branch circuits, an armature and shaft rotated by the current passing through said helix and armature, a solenoid in said branch circuit and a lever and circuit-closer operated by said solenoid, an electro-magnet or solenoid, X', in a shunt of the branch circuit, a shaft carrying the index-hand, and mechanism operated by said magnet X' for varying the speed of the index-shaft according to the variations of current in the branch circuit, substantially as and for the purposes specified.

2. The combination, with the main and branch circuits, of the helix E M in the branch circuit, armature E, shaft C, and worm-wheel V, the shaft K', and wheels L' M', loose thereon, the shaft R', and wheels N' O', fixed thereon, the lever V', coupling Q', and spring U', the solenoid H^2 in the branch circuit, the core H^2, lever I', and contacts I^2, and the solenoid X' in the shunt around the electro-magnet E M, substantially as and for the purposes specified.

3. The combination, with the main and branch circuits, of the helix H^2 and a meter (No. 1) in said branch circuit, the core H^2, lever H^4, and circuit-closing contacts, a shunt-circuit around the meter (No. 1) passing through such contacts, and a meter (No. 2) in said shunt-circuit of less resistance than the one in the branch circuit, substantially as and for the purposes set forth.

337,124. HAT-VENTILATOR. FRANCIS C. BOWEN, New York, N. Y. Filed Sept. 26, 1885. (No model.)



Claim.—1. A hat sweat-band extending partially around the inside of a hat and having its terminal ends folded upon itself and secured to the hat, substantially as shown and described.

2. A hat sweat-band extending partially around the inside of a hat and having its terminal ends provided with wedge-shaped or other suitably enlarged pieces and secured to the hat, substantially as and for the purpose herein described.

3. The combination, with a hat sweat-band extending partially around the inside of a hat, of a suitably-shaped protecting-piece arranged on the inside portion of the hat opposite the open portion or portions of the sweat-band, substantially as shown and described.

4. The combination, with a hat sweat-band extending partially around the inside of a hat and having its terminal ends provided with enlargements, of a protecting-piece arranged on the inside of the hat opposite the open portion or portions of the sweat-band, substantially as shown and described.

337,125. TOY MONEY-BOX. J. H. BOWEN, Philadelphia, Pa. Filed June 26, 1885. (No model.)

Claim.—1. A toy money-box having a box with a chute and a lid therefor, a figure behind said box having a rotary arm rigidly connected to said lid and provided with a crank, a slide having an arm engaging said crank, and a lever extending outside of said figure and adapted to operate the said slide, said parts being arranged and combined substantially as described.

2. A box with a chute, in combination with a frame or column of the form of a figure having a fixed hand and a movable thumb, which

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is mounted on said column and engaged by a slide which is operated by a lever or trigger, substantially as and for the purpose set forth.

3. A figure provided with a fixed arm and a hand, in combination with the laterally-movable thumb L, connected to the arm M, and slide H, having cam N, engaging with said arm M, substantially as and for the purpose set forth.

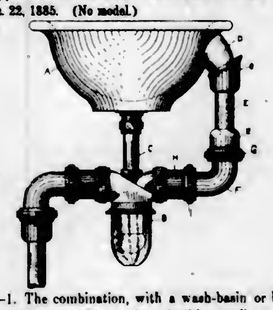
4. The chute B, provided with the lid D, in combination with the rotary arm F, rigidly connected to said lid and having a crank, F', the slide H, having an arm, G, and the lever J, substantially as and for the purpose set forth.

5. The thumb L, with arm M, and arm F with crank F', in combination with the slide H, having a cam, N, which engages with said arm M, and an arm, G, which is connected with said crank, substantially as and for the purpose set forth.

6. A toy money-box provided with a chute, and a column of the form of a figure having a fixed hand and a movable thumb therefor, and a rotary arm to which the cover of the chute is attached, said thumb and arm being operated by a slide which is connected with the inner ends of the thumb and arm and engaged by a lever or trigger, substantially as described.

7. A toy money-box provided with a chute, and a column of the form of a figure having a fixed hand and a movable thumb therefor, a rotary arm to which the cover of the chute is attached, a movable mouthpiece and movable eye-support, said thumb, arm, piece, and support being operated by a slide which is connected with said parts and engaged by a lever or trigger, substantially as described.

337,126. PIPE-CONNECTION. BUCKLAND P. BOWER, Cleveland, Ohio. Filed Dec. 22, 1885. (No model.)



Claim.—1. The combination, with a wash-basin or bath-tub, of a rigid overflow-pipe provided at each end with couplings forming slip-joints, arranged substantially as described, whereby the pipe may be lengthened or shortened vertically or horizontally.

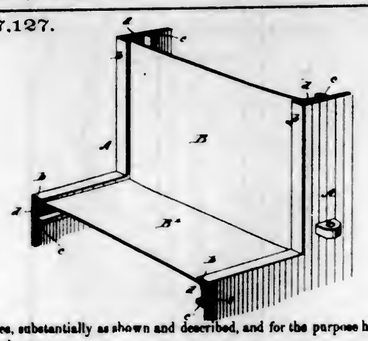
2. The combination, with a trap, wash-basin, or bath-tub, of an elbow overflow-pipe, unions forming slip-joints for connecting each end of the pipe, the parts being arranged substantially as set forth.

3. The combination, with a trap and basin, of a discharge-pipe for the basin, said discharge-pipe being connected directly with the trap, a union connected with the trap and arranged to form a slip-joint with the said pipe, the parts being arranged substantially as set forth.

337,127. PLATE-JOINT FOR STOVES OR RANGES. NATHANIEL A. BOYNTON, New York, N. Y. Filed July 29, 1885. (No model.)

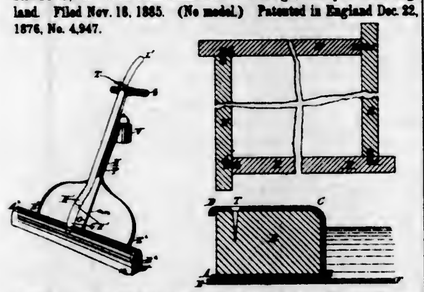
Claim.—In plate-joints for stoves and ranges, as described, the combination, with the cast-metal plates provided with parallel ribs or flanges *b c*, of the sheet or wrought metal plates having their marginal portions or flanges *d* bent to form an obtuse angle with their bodies, and arranged to fit within the grooves formed by the ribs *b c*, so as to leave an angular space, *e*, between said bent flanges *d* and the backs of said

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grooves, substantially as shown and described, and for the purpose herein set forth.

337,128. MEANS FOR THE CONSTRUCTION OF SURFACES FOR SKATING, &c. J. A. CALAWTARIDES, Scarborough, County of York, England. Filed Nov. 18, 1885. (No model.) Patented in England Dec. 22, 1876, No. 4,947.



Claim.—1. The method of preparing surfaces for sliding and skating upon by liquefying salts or compounds such as described, pouring the same upon a floor or surface, allowing it to cool, and finally rendering it smooth and solid by application of heat, as set forth.

2. The method of preparing surfaces for sliding or skating upon by fastening successively upon portions of the floor, so as to inclose a space, water-proof material and rims, and then pouring into the space thus inclosed a mass of liquefied salts or substances of the character hereinbefore defined, and allowing the mass to solidify, and then removing the rims and water-proof material, and repeating the operation until the entire surface is formed, substantially as hereinbefore described.

3. The method of preparing or renewing surfaces of the character described for skating and sliding upon, by forming a surface of salts or compounds such as specified, and heating such surface by steam or hot air, substantially as set forth.

4. The method of preparing surfaces for skating or sliding upon, by taking salts or compounds of the character hereinbefore defined, liquefying them, and pouring the liquefied mass upon a floor or surface, and placing over this mass a support for sustaining a sheet or covering thereover, to insure solidification of the mass, substantially as hereinbefore described.

5. In the construction or renewal of surfaces such as described for skating and sliding, the improvement consisting in traversing over the same an apparatus heated substantially as set forth.

6. In the construction or renewal of surfaces of the character described for skating and sliding upon, the improvement consisting in applying to said surface, in direct contact therewith, a current of steam, substantially as set forth.

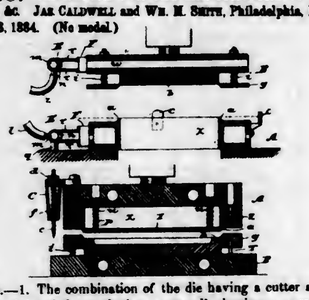
7. The method of preparing surfaces for skating or sliding upon, by taking boards or supports formed to fit together and forming them into temporary trays, and pouring into them liquefied salts or compounds of the character hereinbefore defined, then, when the liquid mass has solidified, removing the edges of the trays and placing the boards or supports together side by side, and leveling the surface thus formed, substantially as hereinbefore described.

8. The method of preparing surfaces for skating or sliding upon, by taking salts or compounds of the character hereinbefore defined and liquefying them, then preparing a yielding or elastic surface or floor by supporting flooring boards or sheets or plates upon india-rubber cords or springs or upon sawdust or horse-hair or the like, and then pouring the liquefied mass of salts or compounds upon the said yielding or elastic surface or floor and allowing the mass to solidify, substantially as hereinbefore described.

9. The apparatus for use in preparing sliding or skating surfaces of the character described, consisting of a box or receptacle, means for supplying heat or a heating agent thereto, and runners or similar means for traversing the same over said surface in close proximity thereto, substantially as set forth.

10. The portable heating apparatus for use in preparing and renewing surfaces composed of salts or compounds such as specified, said apparatus comprising a long box or receptacle having a slit or opening in its lower surface, and means for supplying steam to said box or receptacle, so that a current of steam is caused to issue therefrom against the surface traversed, substantially as described.

337,129. MECHANISM FOR THE MANUFACTURE OF PICTURE-MATS, &c. JAS CALDWELL and WM. M. SMITH, Philadelphia, Pa. Filed Apr. 28, 1884. (No model.)



Claim.—1. The combination of the die having a cutter adapted to remove the sight of the card, the counter-die having a corresponding recess to receive the cutter, a beveled edge round the cutter, and a corresponding beveled face on the counter-die, and means, substantially as described, for heating both dies.

2. The combination, in a machine for forming picture-mats, of a die, A, having an opening with a surrounding beveled-faced flange, a die, B, with a cutter projection, *b*, and a yielding die-plate, *g*, with an edge beveled to correspond to the face of the flange, substantially as set forth.

3. The combination of the die A, having an opening, *x*, flange *a*, and yielding follower 1, and the die B, having a cutter projection, *b*, and yielding beveled-edged die-plate *g*, substantially as described.

4. The combination, with the dies having chambers or recesses, of tubes arranged opposite said recesses and perforated, and gas-nipples within the tube communicating with gas-pipes, for the purpose set forth.

5. The combination, with the upper die having a beveled-edged flange and opening *x*, and with a corresponding lower die, of guide-pins carried by the upper die, for the purpose set forth.

6. The combination, with the upper die, of yielding and adjustable guide-pins, for the purpose specified.

337,130. REGENERATIVE GAS-BURNER. HARRY C. CAMPBELL, Pittsburg, Pa. Filed June 23, 1884. (No model.)



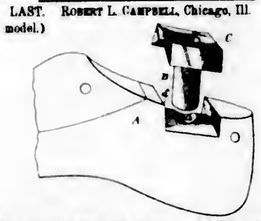
Claim.—1. The combination, in a regenerative lamp, of a gas-adit flue and exit-flue for the discharge of the waste products of combustion, arranged in proximity to the gas-adit flue, for the purpose of heating the same, and a vapor-producer communicating with the gas-adit flue, for the purpose of vaporizing hydrocarbon liquid and discharging its vapor thereinto, so that the heat applied to said gas-flue by the exit-flue may be of sufficient temperature to convert said vapor into a fixed gas, substantially as described.

2. The combination of a regenerative lamp and a vapor-producer arranged so that the hydrocarbon vapor shall pass directly from the producer into the superheating-flue of the lamp, substantially as and for the purposes specified.

3. A regenerative lamp having a vapor-producer connected therewith, in combination with a shield situate between the vapor-producer and the inlet-opening of the air-flue of the lamp, substantially as and for the purposes specified.

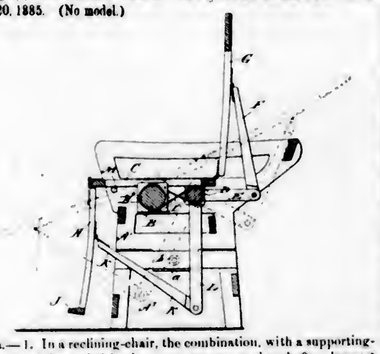
4. In a lamp or illuminator, the combination of a hydrocarbon-vapor producer or generator, a heating-chamber for superheating the vapor before it passes to the burner, and a burner, substantially as and for the purpose specified.

337,131. LAST. ROBERT L. CAMPBELL, Chicago, Ill. Filed Sept. 10, 1885. (No model.)



Claim.—The combination, with a last, A, having a hole, *a*, and recess *a'*, the bottom of which recess is downwardly and outwardly inclined laterally from the middle, of a cast thimble and plate B C, the under surfaces of said plate being downwardly and outwardly inclined to fit the bottom of the recess *a'*, substantially as and for the purpose set forth.

337,132. RECLINING-CHAIR. LEWIS DAVIS, Jackson, Ohio. Filed July 20, 1885. (No model.)

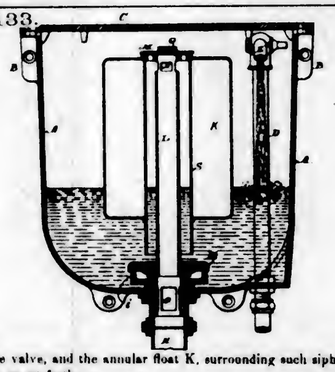


Claim.—1. In a reclining-chair, the combination, with a supporting-frame, of a shaft journaled in the same, a seat on the shaft, a leg-rest hinged to the seat, a shaft journaled or supported in the seat-supporting frame near the rear end of the latter, and arms projecting down from the rear shaft, bars connecting said arms with the leg-rest, and of devices for revolving one shaft from the other, substantially as herein shown and described.

2. In a reclining-chair, the combination, with a supporting-frame, of a shaft journaled in the same, a seat secured on the shaft, a shaft behind the one carrying the seat, arms projecting from the said rear shaft, a back-rest hinged to the seat, braces pivoted to the back-rest and the arms on the rear shaft, and of devices for revolving one shaft from the other, substantially as herein shown and described.

3. In a reclining-chair, the combination, with the supporting-frame, of a seat secured on a shaft mounted on the frame, a back-rest and a leg-rest hinged to the seat, braces connecting the back-rest with a shaft actuating the shaft carrying the seat, and bars connecting pendent arms of the actuating-shaft with the leg-rest, substantially as herein shown and described.

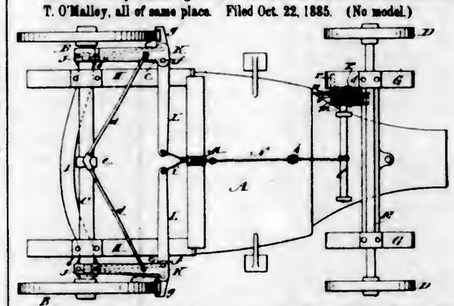
337,133. CISTERN FOR WATER-CLOSETS. JOHN DEMAREST, New York, N. Y., assignor to the J. L. Mott Iron Works, same place. Filed Feb. 1, 1886. (No model.)



Claim.—1. The combination, with the cistern A and pipe H to the water-closet, of the large valve-seat I, the valve E, siphon-pipes L S, above the valve, and the annular float K, surrounding such siphon, substantially as set forth.

2. The combination, with the cistern A, supply-pipe D, and cock E', of the annular seat I, pipe H, leading to the closet, the tube L, passing at its lower end into the coupling of the pipe H and having openings for the passage of the water, the valve P, surrounding the tube L, the float K, the tube S around the pipe L, the cap M, and elastic washer Q, substantially as specified.

337,134. VEHICLE-BRAKE. WILLIAM J. DEVERS, Providence, Lackawanna County, Pa., assignor to himself, James M. Devers, and William T. O'Malley, all of same place. Filed Oct. 22, 1885. (No model.)



Claim.—1. In a brake for wagons and other vehicles, the combination, with the rear axle, C, of the vehicle, its wheels B B, and rear springs, H H, of the perforated upper plate, I, connecting said springs the posts J J, secured to said axle and in guiding connection with and through said plate, the arms or plates K K, connected with said posts and axle, and the levers L L, with their attached shoes or blocks *g g*, substantially as specified.

2. In a brake for wagons and other vehicles, the combination, with the arms or plates K K, the posts J J, and the axle C, of the braces *c c* and *d*, the post-guiding plate I, the springs H H, connected by said plate I, the brake-levers L L, the chain N, and the spring M, connecting said chain with the levers, essentially as shown and described.

337,135. HEATING ATTACHMENT FOR LAMPS. SEYMOUR H. DIBBLE, Washington, D. C., assignor of one-half to Michael I. Waller, same place. Filed Aug. 26, 1885. (No model.)



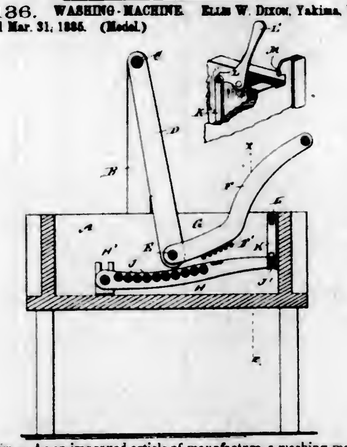
Claim.—1. The combination, with a chimney having a perforated cover and perforations in its walls, of a casing the walls of which extend below the perforations in said chimney and loosely surround the same, said casing being provided with the perforated cover, the perforations of which register with those in the chimney-cover, substantially as shown and described.

2. The combination, with the perforated chimney A and its perforated cover *c*, of the perforated inverted truncated cone B, provided with a cover, *f*, having perforations which register with those in the chimney-cover, substantially as described.

3. The combination, with a chimney having a registered opening in its top and holes in its sides, of an inverted truncated cone surrounding the same and suspended from the register-plate, substantially as described.

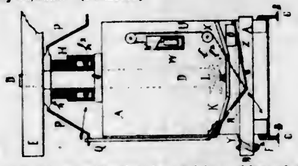
4. The combination, with the chimney A, having a perforated cover, *c*, and openings in its sides, of the register-plate *f*, pivoted to said cover *c*, and the perforated casing B, depending from said plate *f* and surrounding the chimney, substantially as described.

337,136. WASHING-MACHINE. ELLIS W. DIXON, Yakima, Wash. Filed Mar. 31, 1885. (Model.)



Claim.—As an improved article of manufacture, a washing-machine consisting of the tub A, having uprights B, the swinging arms D, pivotally connected to the upper ends of the uprights, the rubber G, having side bars, F, pivotally connected to the lower ends of arms D, the grooved rubber-bars F', the bearings H', the bottom rubber H, journaled at its inner end in said bearings and provided with the rollers J and cross-piece J', the elbow-lever L, pivoted at its bend to the inner end of the tub at right angles to the rubbers, and having a handle, L', the link connecting the elbow-lever and the cross-piece J', and the latch M, engaging the handle-arm of the elbow-lever, substantially as set forth.

337,137. BRICK-MACHINE. FREDERICK DOEPFLER, Springfield, Ill. Filed July 30, 1885. (No model.)



Claim.—1. The combination, in a brick-machine, of the sweep-arms P, the levers Q and R, the connecting-rods S, the roller T, the chain U, the pulleys X, and the weight W, or their equivalents, in the manner shown, and for the purpose specified.

2. The combination, in a brick-machine, of the sweep-arms P, the plunger D, and the safety-spring and pin A^2, or their equivalents, in manner shown, and for the purpose specified.

3. A connecting-rod for brick-machines, constructed in two parts, and supporting between its adjacent ends a spring, substantially as shown, and for the purpose specified.

4. A shoe for brick-machines, consisting of two wings (plane surfaces) lying in intersecting planes, one-half of the adjacent ends of said wings overlapping for a portion of their length, and presenting at their ends cutting-edges, substantially as shown, and for the purpose specified.

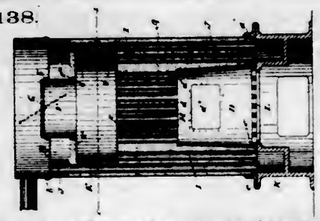
5. An oil-cup and reservoir for brick-machines, consisting of an annular chamber surrounding the bearings of plunger-head and extending below the lowest part of said bearings, in the manner shown, and for the purpose specified.

6. The combination, in a brick-machine, of a plunger, a plunger-head constructed in two parts having inclined surfaces of contact, and a surrounding annular oil chamber and reservoir, in manner shown, and for the purpose specified.

7. The combination, in a brick-machine, of the slides C^2, the cams B^2, connecting-shaft D^2, and lever E^2, or their equivalents, in the manner shown, and for the purpose specified.

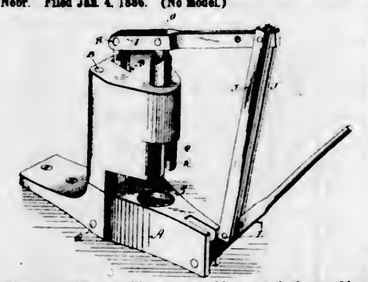
337,138. STEAM-BOILER. WILLIAM DOUGHERTY and JAMES P. FELLEY, Chester, Pa. Filed Dec. 14, 1885. (No model.)

Claim.—1. In a vertical steam-boiler, the combination of the boiler-shell A, the top plate, B, having flanges *b* and *b'*, the bottom plate, C, having flanges *c* and *c'*, the fire-box shell D, the crown-plate *d*, having flange *d'*, a smoke-box formed with parallel sides and situated in the upper part of the boiler, the smoke-stack F, provided with damper G and connecting the said smoke-box with the top of the boiler, the series of perpendicular flues H, I, and J, arranged parallel with one another, and the base K, provided with the chamber *k*, substantially as and for the purpose set forth.



2. In a vertical steam-boiler, the combination of the boiler-shell A, the top plate, B, having flanges *b* and *b'*, the bottom plate, C, having flanges *c* and *c'*, the fire-box shell D, the crown-plate *d*, having flange *d'*, the cylindrical smoke-box shell E, the bottom plate, *e*, having flange *e'*, the top plate, e^2, having flanges e^3 and e^4, the smoke-stack F, the damper G, the perpendicular flues H, I, and J, arranged parallel with one another, and the base K, provided with the chamber *k*, substantially as and for the purpose set forth.

337,139. PUNCHING-MACHINE. REUBEN H. DOWELL, Waverly, Nebr. Filed Jan. 4, 1886. (No model.)



Claim.—1. In a machine for punching metal, the combination of the base provided with a parallel pair of posts or uprights, the block or bearing placed upon the said posts or uprights and supported by its lower end upon the base, the arm or bar inserted vertically through a slot in said block and pivoted at its lower end in the base, the compound lever constructed as described, and the plunger provided at its lower end with the removable bit or punch, the whole constructed and combined to operate substantially as and for the purpose shown and set forth.

2. In a machine for punching metal, the vertically-reciprocating plunger having at its lower end a binding-screw for the attachment of the removable punch, which said screw is provided with a square head, in combination with the block or bearing through which the plunger works, said block or bearing having a recess in its front part with parallel sides facing the square sides of the nut and operating as a guide therefor, substantially as and for the purpose shown and set forth.

337,140. CARRIAGE-CURTAIN FASTENING. JAMES G. ENGLISH, New Haven, Conn. Filed Nov. 16, 1885. (No model.)

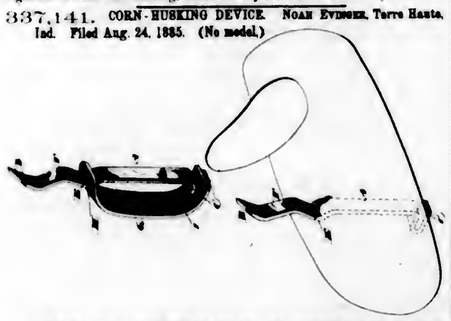


Claim.—1. As an article of manufacture, the herein-described bushing for carriage-curtains, consisting of the stay-piece, the bushing composed of the tubular collar *a*, with a laterally-projecting flange around it, the said tubular portion set through an opening in the stay-piece to bring the flange *b* upon one surface, combined with a corresponding collar, *d*, set over the tubular portion upon the opposite side of said stay-piece and secured through the stay-piece to the flange *b*, substantially as described.

2. The herein-described improvement in carriage-curtain fastenings, consisting in a tubular bushing corresponding in shape to the hole required, and fixed to a stay-piece, the outer thickness of the curtain having a hole made therein corresponding to the said tubular bushing, the said stay-piece applied upon the inside of the curtain, with the tubular bushing extend-

ing through the said hole in the curtain, the curtain and stay-piece stitched together around the bushing, substantially as described.

337,141. CORN-HUSKING DEVICE. NOAH EVINGER, Terre Haute, Ind. Filed Aug. 24, 1885. (No model.)



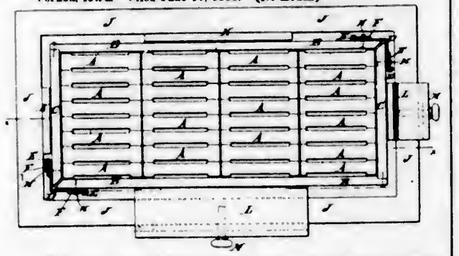
Claim.—In a corn-husking device, the combination of a husking pin or strip having a hook with its flat sides parallel and curved at a right angle to the remainder of the pin, a straight handle with a slight curve and a greater curve near its upper end, and with its upper end pointed, with a strap of leather provided with a perforation or eye at its upper end fitting at the lower slight curve in the handle, and having a series of perforations at its lower end fitting upon the hooked lower end of the strip, as and for the purpose set forth.

337,142. RIVET. ELISHA FLAGG, New York, N. Y. Filed Nov. 17, 1885. (No model.)



Claim.—The within-described rivet, consisting of the head *a* and the shank A, composed of a series of sections converging to and forming the piercing-point *b*, whereby when the rivet is applied its sections are bulged outwardly from one another with the point between or in the midst of them, substantially as shown and described.

337,143. HONEY-BOX CASE AND CLAMP. OLIVER S. FOSTER, Mount Vernon, Iowa. Filed June 17, 1885. (No model.)



Claim.—1. A case for honey-boxes, consisting of the two L-shaped sections B C B C, disconnected at two diagonally-opposite corners, angle-plates D, embracing the open corners of said case, and each arm of said angle-plate provided with a slot and a shoulder, as described, pins passed through the slots into the casing, and wedging devices working between the pins and shoulders, substantially as set forth.

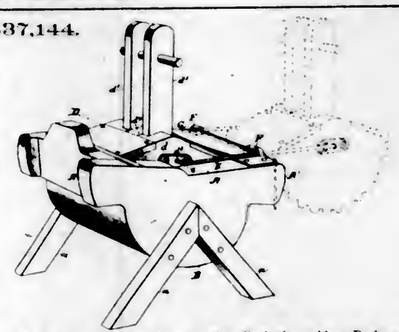
2. A case for honey-boxes, made substantially as herein shown and described, and consisting of two sides, B, and two ends, C, forming L-shaped sections opened at diagonally-opposite corners, and provided at the open corners with angle-plates D, having shoulders or flanges E at their side edges, and provided with slots I, and cam-plates F, pivoted to the said sides and ends through the slots I, whereby the said case can be locked firmly in place when adjusted, as set forth.

3. As a new article of manufacture, a honey-box case and clamp, consisting, essentially, of a case formed of two L-shaped sections open at diagonally-opposite corners, fastening devices at said open corners, and an outer removable clamp-frame, having spacing-blocks K on one inner side and end, and U-shaped blocks projecting beyond the inner sides of the opposite side and end, and adjusting-screws in said U-shaped blocks, substantially as set forth.

337,144. WASHING-MACHINE. DANIEL D. FREDERICK, Rossville, Ind. Filed Aug. 11, 1885. (No model.)

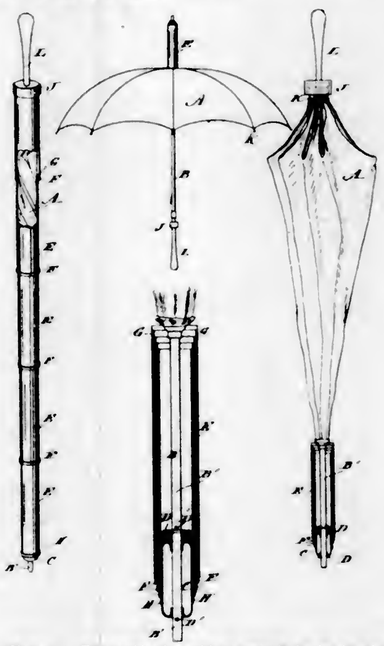
Claim.—1. In a washing-machine, the combination of the tub A and rubber D with the apron G, substantially in the manner and for the purpose set forth.

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2. In a washing-machine, as described, the rubber D, its upper part covered with suitable material, combined with its journal-wire E *e*, the tub A, and the apron G, whereby there is no escape of odor or steam at the rear of the machine, substantially as described.

337,145. UMBRELLA-CASING. ROMEO ERNESTO GHERSI, New York N. Y., assignor to himself and Virgilio del Genovese, same place. Filed Mar. 16, 1885. (No model.)



Claim.—1. The combination, with an umbrella having its stick extended some distance beyond the top of the umbrella, of the tube C on the extended end of the stick, and of a telescopic casing seated on the said tube C, substantially as herein shown and described.

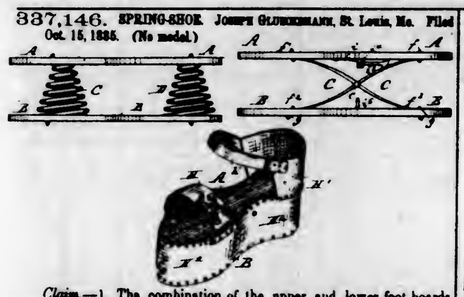
2. The combination, with an umbrella and its stick, which stick is extended beyond the top of the umbrella, of the tube C, secured on the extended part of the stick, the washer D on the tube, and the telescopic tubes E, secured on the tube C, substantially as herein shown and described.

3. The combination, with an umbrella, of the tubes E, having internally and externally projecting collars F at the ends nearest the top of the stick, and the externally-projecting collars G at the opposite ends, substantially as herein shown and described.

4. The combination, with an umbrella, of the tube C on the stick, the collar H on the tube C, and of the telescoping tubes E, having collars F and G, substantially as herein shown and described.

5. The combination, with the stick B and umbrella A, of the telescopic tubes E and the disk J, held on the stick at the handle end, substantially as herein shown and described.

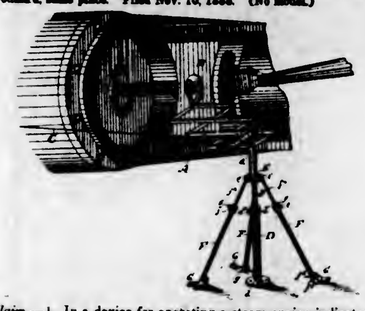
337,146. SPRING-SHOE. JOSEPH GLUECKMANN, St. Louis, Mo. Filed Oct. 15, 1885. (No model.)



Claim.—1. The combination of the upper and lower foot-boards having springs interposed between same, the upper ends of said springs fastened immovably to said upper board, the lower ends of said springs rendered movable along the lower foot-board, and the fastening-straps, substantially as and for the purposes set forth.

2. In combination with a spring-shoe consisting of the upper and lower foot-boards, having springs interposed capable of vibrating between said boards, the lever-clasp consisting of the spring-blade i, the lever-clasp proper, and catch, by means whereof said springs can be kept in locked or unlocked condition.

337,147. DEVICE FOR OPERATING STEAM-ENGINE INDICATORS. JAMES R. GODDARD, New Bedford, Mass., assignor of one-half to William Goddard, same place. Filed Nov. 10, 1885. (No model.)



Claim.—1. In a device for operating a steam-engine indicator, the combination of a pantograph adapted to be pivoted at one end to an engine cross-head, with an adjustable stand pivotally connected to the other end of the said pantograph and provided with feet for securing it to the floor, and with adjusting devices, so that the position of the pantograph may be fixed at any required adjustment, substantially as and for the purpose set forth.

2. In a device for operating a steam-engine indicator, the combination of a pantograph, with an adjustable pantograph-post adapted to be pivotally connected to one end of the said pantograph, and consisting of a central telescopic post and lateral telescopic braces hinged to the post, together with locking devices for the telescopic post and braces, substantially as and for the purpose set forth.

3. In a device for operating a steam-engine indicator, the combination of a pantograph, with a stand pivotally connected to the said pantograph, and consisting of a central tube, a rod sliding therein and provided with the collar E, the sliding rods f^4, pivotally connected to the said collar, the tubes F, having single eyes and pins, the feet G, and thumb-screws for fixing the position of the said sliding rods, substantially as and for the purpose set forth.

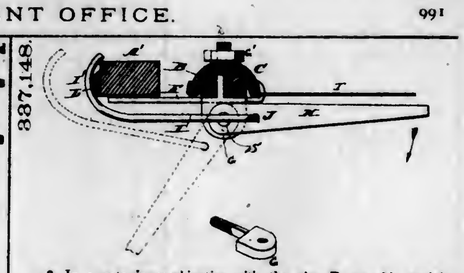
4. In a device for operating a steam-engine indicator, the combination of the pantograph A with the adjustable pantograph-post consisting of the central tube, D, having the flange *d* and thumb-screw d^2, the sliding rod d^3, having a circular groove therein, in which the said screw d^2 operates, the collar E, having lugs *e*, the tubes F, provided with thumb-screws f^5, and having single eyes and pins at their lower ends, the sliding rods f^4, hinged to the said collar, and the feet G, provided with double eyes, substantially as and for the purpose set forth.

337,148. GATE. GEORGE A. GRANT, Eddyville, Iowa. Filed Aug 14, 1885. (No model.)

Claim.—1. A gate consisting of the fixed posts A A', wires T, convex and concave uprights B C, hooked link I, and tightening-lever H, the parts being combined substantially as described.

2. In a gate consisting of the wires T, fixed post A, movable upright B, and clamp C, the tightening-lever H, pivoted to the upright B, and detachable hooked link I, pivoted to the lever H, the parts being combined substantially as herein described and shown.

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3. In a gate, in combination with the wires T, movable upright B, and suitable mechanism for straightening the wires and closing the gate, the arms F F, secured to the movable upright B, constructed and operating substantially as and for the purpose set forth.

337,149. PENDENT-CAR ELEVATED-RAILWAY SYSTEM. PERLEY HALE, Burlington, Iowa. Filed Dec. 21, 1885. (No model.)

Claim.—1. The combination, with the vertically and horizontally trussed rails of an elevated railway, of a single line of supporting-posts, the ground-extensions C of which are formed with a horizontal plate, C^3, wings C' above the plate, and a cross end, C^2, below the plate, substantially as described.

2. An elevated railway comprising a single line of posts, a single vertical truss, and an upper horizontal truss extended on opposite sides of the vertical truss, and its side bars forming the rails or foundations for the cape of the rail J of the track, substantially as described.

3. An elevated railway comprising a single line of supporting-posts, a single vertical truss, horizontal top truss, and a horizontal bottom truss, the side tie-plates, H, of which form guides for pendent cars, substantially as described.

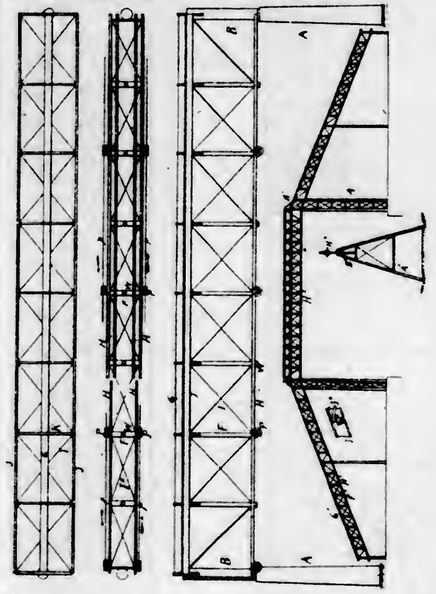
4. The combination of the single line of posts, vertical truss, top and bottom horizontal trusses, the rails J of the top truss, and the guides H of the lower truss, substantially as and for the purpose described.

5. The combination of the braced overhanging guards U, the top horizontally-trussed rails, J, the vertical truss, and the single line of supporting-posts, substantially as and for the purpose described.

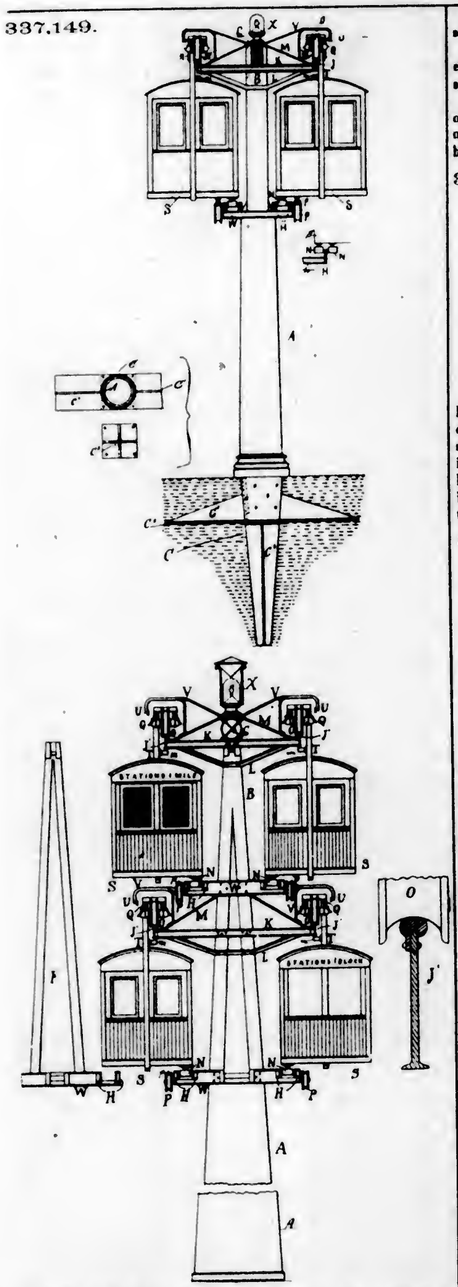
6. The combination of the single line of posts, single vertical truss, and two tiers of horizontally-trussed rails, J J, and two tiers of horizontally-trussed guiding tie-bars, H H, substantially as described.

7. The combination of a single line of posts, single vertical truss, and two tiers of horizontally-trussed rails, two tiers of horizontally-trussed guides, and two tiers of braced and overhanging truck-guards U, substantially as described.

8. The combination of a single line of posts, single vertical truss, two tiers of horizontally-trussed rails, two tiers of horizontally-trussed guides, two tiers of braced and overhanging truck-guards, U, and check pins or stops, substantially as and for the purpose described.



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9. The combination, with a single line of posts, single vertical truss, horizontal truss comprising rails, top chord, and tie-rods, and horizontal bottom truss comprising guiding tie-bars, tie-rods, and strut-sills, of pulleys P on each side of the elevated railway, and a cable, *p*, passing over said pulleys and traveling on one side and returning on the other, substantially as described.

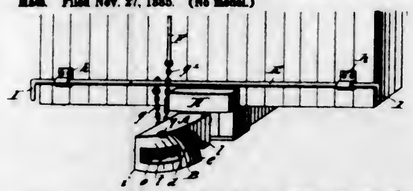
10. The combination of the inclined rail-supporting trusses G' F' H', the horizontal rail-supporting trusses H², and the inclined braced posts A' B', substantially as described.

11. The combination, with the inclined rails J, of the gravitating arms J⁴, substantially as described.

12. The combination, with the curved corner trussed sections of the elevated railway, of the posts A B D and the ties *a*, substantially as described.

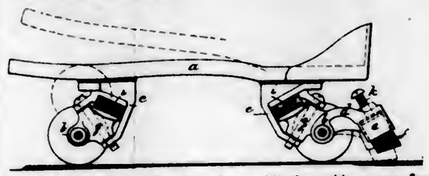
13. In an elevated railway, the combination, with the single lines of posts, the single vertical truss, and horizontal top and bottom trusses, of a turn-table or switch which comprises a vertical truss and top and bottom horizontal trusses, substantially as described.

337,150. CAR-COUPLING. JOHN H. HARRINGTON, New Bedford, Mass. Filed Nov. 27, 1885. (No model.)



Claim.—A draw-head, A, formed with a shank, C, and a draw-hook, B, the center of gravity of which is below the shank C, the said draw-hook at its forward inner and upper edges being rounded off, as shown at *d*, and having a concave recess, *l*, and a bearing-face, *e*, forming the front wall of said recess and extending at right angles to the length of the hook and shank and beyond the side wall of the head A, in combination with a supporting-chain of a length adapted to support the head in proper position, as shown and described.

337,151. ROLLER-SKATE. JAS. B. HARRER, Jr., Geneseo, N. Y. Filed Sept. 20, 1884. (Model.)



Claim.—1. In a roller-skate, the combination, with an arm fixed to and extending from a roller-carrier, and provided with a socket at its end, and with a rubber block held in said socket, of a set-screw at the base of the socket, substantially as shown and described.

2. The combination, with a roller-skate, of a socketed arm containing an adjustable stop, said arm being fixed to and extending from one of the roller-carriers, substantially as shown and described.

3. In a roller-skate, the combination, with the roller-carrier *g b*, of the arm *d*, provided at its outer end with the socket *e*, the buffer-block *f*, held in said socket, and the set-screw *k*, substantially as shown and described.

337,152. WINDOW-BLIND. HENRY HAWLEY, Culpeper, assignor of one-half to W. F. Latham, Culpeper County, Va. Filed Sept. 18, 1885. (No model.)

Claim.—1. The combination, with a window-frame, of two sliding bars in the frame, slats hung to each other and to the bars between said bars, and chains or ropes and pulleys for moving the bars independently, substantially as herein shown and described.

2. The combination, with a window-frame, of two sliding bars having tongues on their ends, the said tongues working in grooves in the uprights of the frame, slats hung to each other and connected with the top and bottom bars between said bars, and of chains or ropes and pulleys for raising each bar independently, substantially as herein shown and described.

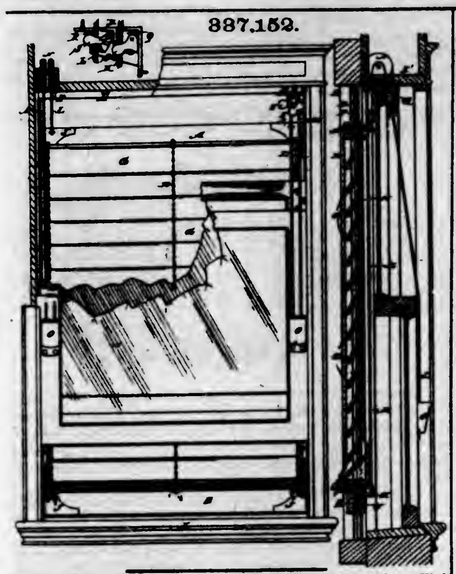
3. The combination, with the bars A and B, of the guide-wires F, the slats G, and separate chains or ropes secured to the top or bottom bars, substantially as herein shown and described.

4. The combination, with the bars A and B, of the slats G, the corner-pieces J on said bars, and the ropes or chains L and M, connected with the said corner-pieces and passed over suitable pulleys on the top of the window-frame, and boxes O, secured on the frame, substantially as herein shown and described.

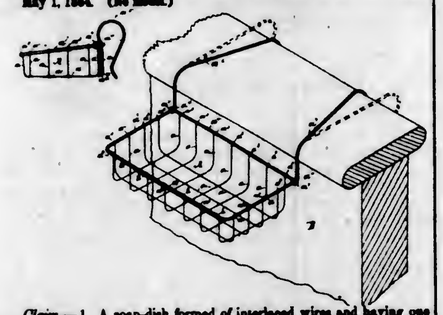
5. The combination, with the bars A and B, of the slats G, the ropes or chains L and M, connected with the bars A and B, the pulleys N, and the apertured plates P in the top cross-piece, substantially as herein shown and described.

6. The combination, with the bars A and B and the slats G, of the ropes or chains L M, passed over pulleys, the plates Q, having projections R, and the levers S, pivoted on the plates Q adjacent to the projections R, substantially as herein shown and described.

337,152.



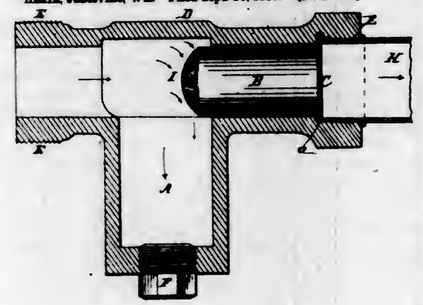
337,153. SOAP-DISH. ADELAIDE M. HAYWARD, Boston, Mass. Filed May 1, 1884. (No model.)



Claim.—1. A soap-dish formed of interlaced wires and having one side shaped to conform to the inner face of the side of a pail, tub, or other vessel, and provided with hooks to engage with the rim of such vessel, said hooks having flexible shanks, which may be bent sidewise to bring said hooks nearer to the back of said dish, as and for the purpose specified.

2. A soap-dish formed of interlaced wires and having a top rim formed of two wires, one of which extends along the front and ends thereof and has its ends bent into flexible hooks for attaching said dish to a pail or other vessel, and the other of which wires forms the back of the rim of said dish and is bent to conform to the inner face of the side of such pail or vessel, and has its ends looped about said first-named wire, substantially as described, and for the purpose specified.

337,154. FILTERING DEVICE FOR FEED-WATER PIPES. JOHN HEATH, Janesville, Wis. Filed Sept. 30, 1885. (No model.)



Claim.—The combination, with the pipe-section having the drop-chamber and the interior shoulder, *a*, of the cylindrical strainer having the seating-flange and its strainer end projecting into and overhanging the drop-chamber in line with the flow, whereby it will constantly shed the dirt and be washed in washing out the sediment-chamber.

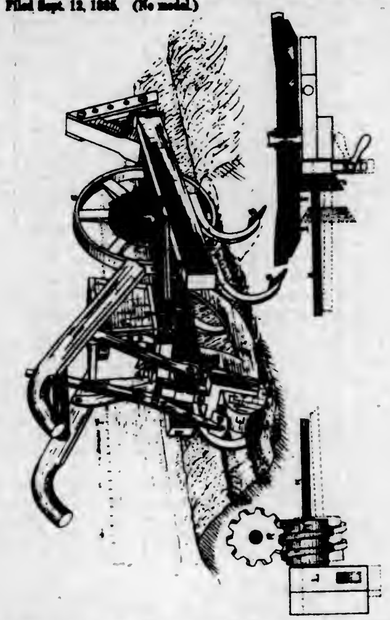
337,155. GREASE-PROOF PAPER. DAVID HUNTER, Philadelphia, Pa., assignor to Brown, Keator & Co., same place. Filed Nov. 9, 1885. (No model.)



Claim.—1. Grease-proof paper formed of paper and an inner stratum of silicate of soda or other alkaline equivalent, substantially as described.

2. A grease-proof paper formed of layers of paper having between the same a stratum or layer of silicate of soda or other alkaline equivalent, all of said layers being so pressed together as to form a single sheet, substantially as described.

337,156. LISTER CORN-PLANTER. MOSES M. HOLMES, Gower, Mo. Filed Sept. 12, 1885. (No model.)



Claim.—1. A lister corn-planter consisting of a frame, A, provided with the shovels B, adapted to plow in the bottom of a trench and throw the soil toward the center, making a slight ridge therein, combined with a runner, D, seed-hopper E, feed device to deliver definite quantities of seed, traction-wheel C, in front of the runner, and covering-roller E, behind the same, whereby the seed mechanism is driven and the machine is supported, as set forth.

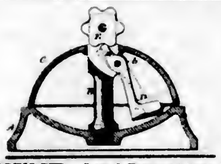
2. A lister corn-planter consisting of a frame, A, provided with shovels B, adapted to plow in the bottom of a trench and throw the soil toward the center, making a slight ridge of loose earth therein, combined with a runner, D, seed-hopper E, and the vertically-adjustable covering-roller E, to regulate the depth of penetration of the shovels and runner and cover the seed, as set forth.

3. The covering-roller E, attached to the standard *e*, adjustable up or down in a clip, *f*, combined with a scraper, G, mounted on one end of a lever, H, also pivoted to said standard, so as to be adjustable with said roller to clean said roller of adhering soil at will, as set forth.

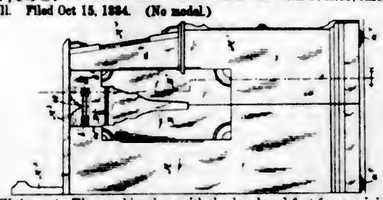
337,157. CALL-BELL. WM. C. HOBAN, Middletown, Conn. Filed Dec. 26, 1885. (No model.)

Claim.—In a call-bell, the combination of a base, A, provided with a post, B, bell C, secured to said post, and hammer D, hung upon the post B and constructed with a tail, *d*, with a notched wheel, E, hung in the post B, and adapted to impart swinging movement to the hammer, substantially as described.

337,157.



337,158. FOLDING BED. JOHN C. HORN and CARL F. HOFF, Chicago, Ill. Filed Oct 15, 1884. (No model.)



Claim.—1. The combination, with the head and foot frames, jointed side rails provided with slots, and elastic fabric appropriately held at one end, of a movable end rail supported in the slots of the said side rails and having the opposite end of the fabric secured thereto, projections on the ends of said movable end rail, and devices applied to the adjacent head or foot frame, constructed to engage said projections and to carry the end rail outward as the side rails descend, substantially as and for the purpose set forth.

2. The combination, with the jointed side rails and head or foot frame having the side rails pivoted thereto, of eccentrics E, fixed to said head or foot frame, an end rail supported movably in said side rails and adapted to engage the eccentrics, an elastic fabric, D, secured to said end rail, and suitable means for holding the opposite end of the fabric, substantially as described.

3. The combination, with the head and foot frames, jointed side rails pivoted to the head and foot frames, and a movable end rail for the elastic fabric, of a wedge-shaped plate, E, provided with curved faces *e* and *e'*, of which the latter is practically concentric with the pivot of the side rails, and rollers attached to the movable end rail and adjacent parts of the side rails in position to rise on the opposite sides of the plate E, substantially as and for the purpose set forth.

4. The combination, with the centrally-divided side rails pivoted to head and foot frames, generally, as set forth, of exterior handles at or near the joint of the side rails, substantially as and for the purpose set forth.

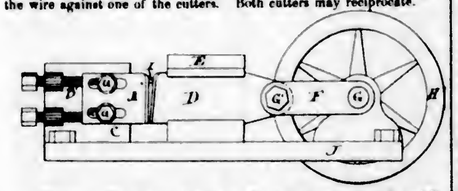
5. The combination, with the centrally-divided and hinged side rails and connecting-pieces joining the sections of said side rails, of a transverse fabric-support sustained by the said connecting-pieces, substantially as described.

6. The combination, with the centrally-divided and hinged side rails pivoted to head and foot frames, generally, as set forth, of interior depending connecting-pieces, F^4, pivoted to the sections of the side rails, crossed bars F', supported at their lower ends by the parts F^4, and springs f^3, inserted between the ends of the crossed bars, substantially as described.

7. The combination, with the head and foot frames, of which the latter is lower than the former, and with centrally-divided and hinged side rails pivoted to said head and foot frames, of a cover, A^3, hinged at its rear edge to the head-frame, and a part, A^4, hinged at its upper end to or near the front edge of the cover and adapted to meet the foot-frame when lowered, substantially as and for the purpose set forth.

337,159. WIRE-CUTTER. DARIUS HOUGHTON, Skowhegan, assignor to Calvin Colby and Sewall A. Dinsmore, both of Bingham, Me. Filed Apr. 2, 1885. Renewed Feb. 2, 1886. (No model.)

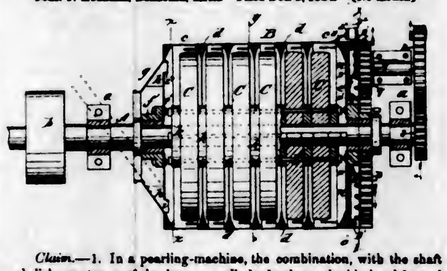
Brief.—The cutters do not quite touch at any point. The wire to be cut is rotated by hand or otherwise as it is pressed down between the cutters, and the cutting is completed and the end smoothed by pressing the wire against one of the cutters. Both cutters may reciprocate.



Claim.—1. In a wire-cutting machine, the two cutters A and D, their two cutting-edges forming a tapering recess, the cutter D having a reciprocating motion to and from the cutter A, substantially as described.

2. In a wire-cutting machine, two cutters having a tapering recess between their cutting-edges, and means, substantially as described, whereby the distance between said cutting-edges is alternately increased and decreased and an intermittent cutting of the wire is effected, substantially as set forth.

337,160. MACHINE FOR PEARLING WHEAT AND OTHER GRAIN. JOHN J. HUSSELL, Bessemia, Mich. Filed Dec. 5, 1884. (No model.)



Claim.—1. In a pearling-machine, the combination, with the shaft and disks or stones, of the drum or cylinder having a double head formed of spaced-apart disks or plates, both the inner disk and the periphery of said head having apertures, and means whereby a portion of said apertures are adapted to be closed, substantially as and for the purpose set forth.

2. In a pearling-machine, the head *e'*, provided with hooded apertures *i*, the hood *g*, and wings *h*, forming a force-feed, combined with drum B, disks C, and shaft A, substantially as described.

3. In a pearling-machine, the drum B, provided with a double head formed of disks *e*, having apertures *n o*, combined with shaft A and disks C, substantially as described.

337,161. GAS-COCK. EDWARD P. IRONS, Baltimore, Md. Filed Dec. 9, 1885. (No model.)



Claim.—1. In combination with the barrel A, having a portion of its larger end cut away, substantially as shown, the key B, having a bolt which passes through and projects from its surface, and a spring to make it normally engage with the remaining portion of the barrel and thereby prevent the key turning, and means whereby the projecting end of the said bolt may be forced beneath the surface of the key to admit of the same being turned to open the cock, substantially as specified.

2. In combination with the barrel of a cock having a portion of its larger end cut away, substantially as shown, a key with a bolt which passes through and projects from its surface and a spring to make it normally engage with the remaining portion of the barrel and thereby prevent the key turning, the said bolt being formed of a duplicated piece of wire having a thumb-piece, substantially as specified.

3. In combination with the barrel A, having a portion of its larger end cut away, substantially as shown, and provided with the notches or slots *g*, the key B, having the bolt D, which passes through and projects from its surface, and the spring *c*, substantially as specified.

337,162. BUNG FOR BEER KEGS, CASKS, &c. WILLIAM W. JACKSON, Chicago, Ill. Filed Apr. 24, 1885. (No model.)



Claim.—1. The combination, in a bung, of the hollow body portion provided with a locking mechanism, and the imperforate rotary adjustable screw-cap constituting the entire front end face of the bung and arranged to screw up to and away from the forward end of the hollow body portion, substantially in the manner described, said imperforate rotary adjustable screw-cap being coupled with the locking mechanism to operate the same, substantially as set forth.

2. The combination, with the hollow body portion provided with a locking mechanism back of its forward end, of an imperforate rotary adjustable screw-cap concealing both the said forward end of the hollow body portion and the locking mechanism, and arranged to screw up to and away from the hollow body portion, said imperforate rotary adjustable screw-cap being at its front provided with a socket, D, and at its rear connected with the locking mechanism to operate the same, substantially as described.

3. The combination, with a bung provided with a packing-ring, E, extended beyond its forward end, of a rotary screw-cap rotatable independently of the bung and arranged to screw up to and away from the forward extended end of the packing-ring, and means, substantially as described, providing within the bung a bearing for the said rotary screw-cap, for the purpose set forth.

4. The combination, in a bung, of an expansion locking mechanism, for the purpose described, with a rotary cap connected with the said locking mechanism and screwing up to and away from the front end of the bung, and a packing-ring, E, applied around the body of the bung and extended beyond the front end thereof, substantially as and for the purpose described.

5. The hollow bung-body provided with one or more lateral apertures, in combination with a longitudinally-adjustable draw-plug confined within the hollow bung-body and one or more stops loosely held between the draw-plug and the lateral apertures of the bung-body and formed with reference to the size of said apertures to render them incapable of being projected entirely through the same, and means for operating the draw-plug, substantially as and for the purpose described.

6. The hollow bung-body provided with an annular series of lateral apertures, in combination with the draw-plug C, provided with a tapering portion and adjustable longitudinally within the hollow bung-body, a set of spherical stops, B, arranged around the tapering portion of the draw-plug in coincidence with the lateral apertures of the bung-body, and means for operating the draw-plug, substantially as and for the purpose described.

7. The hollow bung-body provided with an annular series of lateral apertures, A', in combination with the stops B, the draw-plug C, screw-threaded at its forward end, and the rotary cap applied at the front end of the bung-body and connected with the draw-plug by a threaded connection, whereby a rotary movement of the cap shall effect a longitudinal movement on the part of the draw-plug, substantially as described.

8. The laterally-apertured hollow bung-body provided with a packing-ring, E, of the movable stops B, the draw-plug C, and the rotary cap D, coupled with the draw-plug by a screw-connection, whereby when the cap is turned and the draw-plug held by the stops the cap will be drawn against the packing-ring, substantially as described.

9. The combination, in a bung, of a locking mechanism, for the purpose described, with a rotary cap applied to actuate the locking mechanism and detachably connected therewith, and a self-adjusting stop confined within the bung and adjustable into position to limit the extent of rotation on the part of the cap and prevent the accidental disconnection of the same from the locking mechanism, substantially as described.

10. The hollow bung-body provided with an internal shoulder, in combination with a cap having a stem which is fitted to turn in the bung-body and provided with a lug at a point back of said shoulder, a locking mechanism, for the purpose described, actuated by and detachably connected with the cap-stem, and a self-adjusting stop, G, applied to limit the movement of the cap and stem, substantially as and for the purpose described.

11. The laterally-apertured hollow bung-body having an internal shoulder, *a'*, and a channel, a^3, extending from said shoulder to the front end of the bung-body, in combination with the draw-plug, the stops operated by the draw-plug, the cap D, having a lateral lug at the rear inner end of its stem, and the self-adjusting stop G, fitted to work in said channel a^3, substantially in the manner and for the purpose described.

337,163. BASE FOR POSTS. WM. H. KELLOGG, Lawton, assignor of one-half to Marcena O. Sebring and William A. Forbes, Kalamazoo, Mich. Filed June 1, 1885. (No model.)



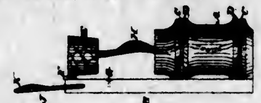
Claim.—1. A base for a post, consisting of a tile-section for burial in the earth, a bottom and top cap, the latter being provided with an integrally-formed cup to detachably receive the post, the interior of said cup being flared toward the mouth, and a suitable number of bolts for clamping the caps to the ends of the tile, substantially as set forth.

2. The post-base consisting of the tile-section, the bottom and top caps, and means for securing the caps to the ends of said section, the top cap being provided with the integrally-formed cup internally flaring at the top and having the openings in the sides at the bottom, substantially as set forth.

3. The combination of a post-base consisting of a hollow tile-section, a bottom cap, a top cap provided with an integral post-cup internally flaring at the mouth, a suitable number of bolts for clamping the caps to the ends of the section, and a stake tapered at the base for detachable insertion in the post-cap, substantially as set forth.

4. The combination of the tile-section, the bottom cap, the top cap provided with the post-cap, and a suitable number of bolts having their lower headed ends countersunk in the lower cap, passing up through the tile and the upper cap, and securing-nuts on the upper ends, substantially as set forth.

337,164. DEVICE FOR DISINFECTING. ALFRED H. KIDNEY, Philadelphia, Pa. Filed May 2, 1885. (No model.)

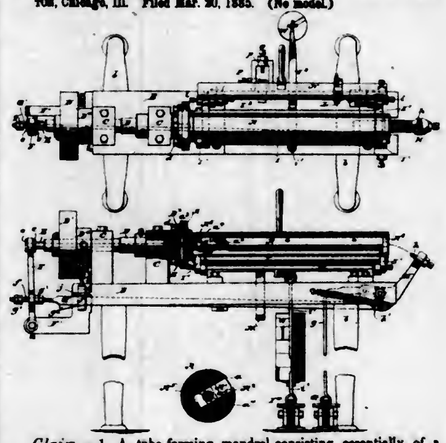


Claim.—1. A vessel for disinfecting purposes provided with the stopper E, having a pin, F, connected therewith, and an absorbent material, H, in combination with a back board into which said pin may be stuck, substantially as and for the purpose set forth.

2. A vessel for disinfecting, having a stopper and a strip or piece of absorbent material connected with the latter, in combination with a suspension device attached to the support of said vessel and adapted to be folded against said stopper, substantially as described.

3. A disinfectant holder and evaporator consisting of a vessel, a stopper, a strip or piece of absorbent material, and a pin connected with said stopper, a back board or support for said vessel, and a suspension device, said pin being adapted to be inserted in said back board and said suspension device to hold the stopper in closed position, all as stated.

337,165. MACHINE FOR MAKING PAPER TUBES. MARK D. KNOWLTON, Chicago, Ill. Filed Mar. 20, 1885. (No model.)



Claim.—1. A tube-forming mandrel consisting, essentially, of a cylinder provided with a longitudinal slot, *a'* lip or ledge overhanging one side of said slot, and a radially-movable slide located in said slot beneath the lip, substantially as set forth.

2. A tube-forming mandrel consisting, essentially, of a cylinder provided with a longitudinal slot, *a*, a lip, A^2, overhanging one margin of said slot, and a radially-movable slide, A', fitted to said slot and beveled beneath the lip, said slot and slide being materially wider than the lip, substantially as and for the purposes set forth.

3. A tube-forming mandrel comprising a cylinder provided with a longitudinal slot, a lip overhanging one margin of said slot, and an outwardly and inwardly movable slide located in the slot and acting in opposition to the lip, in combination with suitable means for supporting and rotating the mandrel and means for actuating the slide, substantially as and for the purposes set forth.

4. In combination with a tube-forming mandrel provided with a slot, a lip, and a radially-movable slide located in the slot, a suitably-supported spindle, D, constructed to connect with the mandrel and provided with a collar, D^4, and adjacent loose pulley, D', a rod, E, passing through the spindle into engagement with the mandrel-slide, and an external lever engaged with the rod E, substantially as described.

5. In combination with a mandrel having a slot, lip, and movable slide, as set forth, a suitable support for the mandrel, means for intermittently rotating the mandrel, and means for actuating the slide operated by a foot-lever, substantially as described.

6. In combination with the mandrel having a slot, slide, and lip, as set forth, a hollow spindle, D, supporting the mandrel, a rod, E, passing through the spindle and engaged with the slide, and a foot-lever and connections for operating the rod E and mandrel-slide, substantially as described.

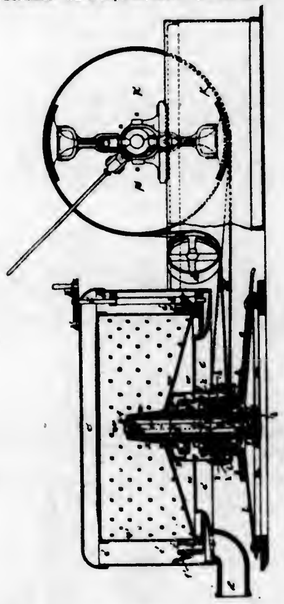
7. In combination with the tube-forming mandrel A, rotatably mounted and provided with a slot, a lip, and a slide, as set forth, of a movable presser, I, guiding the edge of the sheet which is to be formed

into the space beneath the lip of the mandrel, when said mandrel is brought to rest with its lip adjacent to the presser, substantially as described.

8. In combination with a tube-forming mandrel, A, provided with a slot, lip, and slide, as set forth, a spindle, D, supporting the mandrel and provided with a loose pulley, D', and adjustable collar D^4, a suitable stop-clutch mechanism for intermittently engaging the pulley with the collar, and a presser, substantially as described.

9. In combination with the spindle-rod E, for actuating the mandrel-slide, and with a movable support, H, for the free end of the mandrel, a single foot-lever, G, and connections leading from said foot-lever to both the rod E and the support H, actuating both by the same movement of the foot-lever, substantially as described.

337,166. CENTRIFUGAL MACHINE. J. Laidlaw, Glasgow, County of Lanark, Scotland. Filed Sept. 22, 1885. (No model.)



Claim.—1. In a centrifugal machine, the combination, with the basket and its shaft, of an elastic bearing which supports said shaft and permits its free oscillation, a base-frame supporting said elastic bearing, and a second elastic bearing upon which said base-frame rests and oscillates, substantially as and for the purpose set forth.

2. In a centrifugal machine, the combination, with the basket and the shaft thereof, of a tubular bearing in which said shaft revolves and by which it is supported, an elastic bearing upon which said tubular bearing rests and oscillates, and a base-frame supporting said tubular bearing, substantially as and for the purpose set forth.

3. In a centrifugal machine, the combination, with the basket, of a hollow shaft having radial holes or perforations, a hollow bearing in which said shaft fits, and a base-frame supporting said hollow bearing, substantially as set forth.

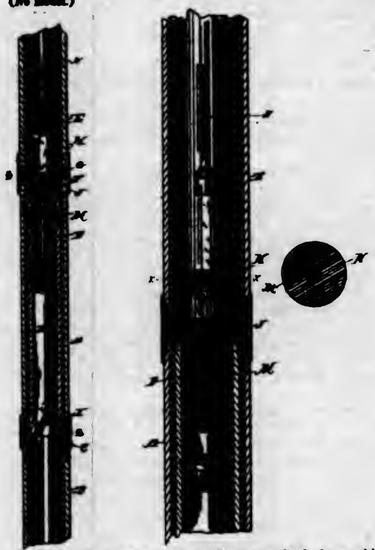
4. In a centrifugal machine, the combination, with the basket, of a hollow shaft having radial holes or perforations, a hollow bearing in which said shaft fits, an oil-reservoir secured to said hollow bearing and having communication with said hollow shaft, and a base-frame, substantially as and for the purposes set forth.

5. In a centrifugal machine, the combination, with the basket and a hollow shaft therefor, of a chilled or case-hardened plug fitted in the lower end of said shaft, a hollow bearing in which said shaft works, and a chilled or case-hardened step upon which said shaft rests, substantially as set forth.

6. In a centrifugal machine, the combination, with the basket and its shaft, of a hollow bearing in which said shaft fits, an annular flange or projection from said hollow bearing, elastic bearings placed above and below said flange, and a casting or frame supporting said elastic bearing, substantially as set forth.

7. In a centrifugal machine, the combination, with the basket and an oscillating shaft to which it is secured, of a broad supporting-base supported near its outer margin by an elastic bearing, substantially as set forth.

337,167. PUMP. Jas. M. Laing, Bay City, Mich. Filed Aug. 2, 1884. (No model.)



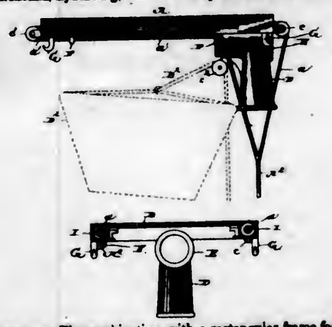
Claim.—1. In a pump, substantially as described, the combination, with a stationary tubing and a removable pump-cylinder, of a pump-rod, the ring J, and disk K, said disk and ring being constructed to engage said cylinder and formed to revolve with said rod for the purpose of removing said cylinder, as set forth.

2. In a pump, substantially as described, the combination, with the tubing E, pump-case A, cylinder D, and thimble F, of the packing G and the ring J, interposed between said case and cylinder to hold them concentric and engaging with said cylinder, whereby said packing is compressed between the periphery of said ring and the joint between the tubing and the pump-case, substantially as described.

3. The combination, with the pump-case A, tubing E, cylinder D; pump-rod M, having flange *b*, and the thimble F, of the packing G, the ring J, adapted to compress said packing between its periphery and the pump-case, and the nut K, sleeved on said pump-rod above said flange and adapted to engage with said ring, whereby the cylinder and its attachments may be lowered to its seat and the nut then raised independent of the ring, substantially as and for the purposes specified.

4. The combination, with the pump-case A, ring J, pump-rod N, and the pump-rod M, having a flange, *b*, an angular projection above said flange, and threaded, as shown, of the nut K, sleeved on said rod M above said flange, substantially as and for the purposes specified.

337,168. DEVICE FOR PICKING FRUIT, FLOWERS, &c. James S. Lansdowne, Lynchburg, Va. Filed July 15, 1885. (No model.)



Claim.—1. The combination, with a rectangular frame for supporting a receptacle, of the knives arranged transversely across and supported in the frame and movable laterally thereon, springs inclosed within the frame for normally closing the knives, and a cord connected to the knives for throwing them into operative position, substantially as described.

2. The combination of a rectangular frame for supporting a receptacle, the spring-actuated knives normally held in a closed position, said knives being guided and supported at their ends in the side pieces of the frame and movable laterally therein, and a cord passing through guides of the frame and connected to the knives for separating them, whereby when a pull on the cord is released the springs will force the knives together to sever the fruit or flower, substantially as described.

3. The combination, with a frame for supporting a receptacle, of the sliding knives supported in the frame, the springs bearing against the knives, and an operating-cord connected with the knives and passing through the springs, substantially as described.

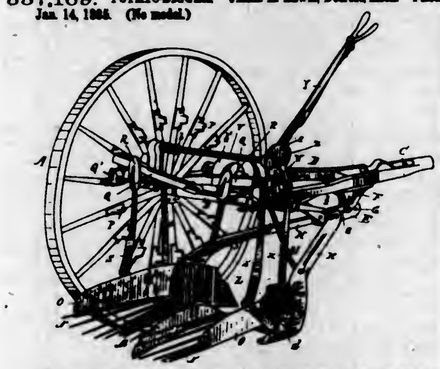
4. The combination of the frame having the hollow side pieces, laterally-movable knives mounted in the frame, coiled springs inclosed within the side pieces of the frame and bearing against the ends of the knives, and an operating-cord passing through the springs and connected with the knives for simultaneously operating the same, substantially as described.

5. The combination of the frame A and the springs I I' with the knives B B' and branched cords A^3, substantially as described.

6. The combination of the frame A, springs I I', pulleys mounted on the frame, sockets D E, knives B B', and operating-cords connected with the knives, substantially as described.

7. The frame A, in combination with the sliding knives B B', coiled springs acting against the same to retain them normally closed, pulleys on the frame, and cords A^4 having the branches *a a'* connecting with the knives passing through the springs and over the pulleys, substantially as described.

337,169. POTATO-DIGGER. James H. Lewis, Detroit, Mich. Filed Jan. 14, 1886. (No model.)



Claim.—1. In a potato-digger, the combination of the draft-pole, the plow, the plow-beam E, adjustable vertically and longitudinally on said pole, and the arched plow-standards H, secured to a point forward of the plow and extending rearward and outward, and the hangers U, arranged to adjustably support the said plow and standards, substantially as for the purposes described.

2. In a potato-digger, as described, the combination of the shoe I, the shovel-plow J, adjustably secured to the center thereof, the scraper-blades K, and side plows, L, provided with outside mold-boards, all supported from the standards H and arranged in relation to each other substantially as described.

3. In a potato-digger, the combination of the plow-beam E, arch-standards H, shoe I, connecting the free ends thereof, shovel-plow J, scraper-blades K, side plows, L, and shaking grates N, pivotally secured to the rear side of the shoe, with the fender M, centrally secured back of the shovel-plow, substantially as described.

4. In a potato-digger, the combination of the shoe I, and the shovel-plow J, adjustably secured upon the shoe, with the fender M, secured to the shoe in rear of the shovel-plow, and having the intervening convex and rearwardly tapering face *i*, substantially as described.

5. In a potato-digger, the combination of the shoe I, adjustable shovel-plow J, scraper-blades K, and side plows, L, all secured to the shoe, and the latter having outside mold-boards and landsides which diverge from the plow-point rearward, with the shaking grates N, pivotally secured to the rear of the shoe each independent of the other and extending the whole width of the path made in digging, and the guards O, attached to said screens, substantially as described.

6 In a potato-digger as described, the combination, with the shaking screens operated independently, and with the plow J, arranged centrally on the shoe I, of the fender M, arranged in rear of the plow J and between the said screens, and the guards O for said screens, as set forth.

7. In a potato-digger, the combination of the wheels A, having inwardly-projecting spurs P, secured to the spokes thereof, the shaker-arms Q, pivotally secured at one end and having their free ends arranged in the path of the spurs, the shaking grates N, pivotally secured to the rear end of the plow, and the connecting-bars S, connected to the shaker-arms by adjusting-holes, and to the shaking grates by pins passing through slots in their lower ends, substantially as described.

8. In a potato-digger, the combination of the wheels A, having inwardly-projecting spurs P, secured to their spokes, the hinged shaker-arms Q, the brackets R, adjustably secured to the rear end of the frame and forming hinge-connections, with the shaker-arms on their under side, and guide-supports for the same upon their upper sides, the connecting-bars S, and grates N, all arranged substantially as described.

9. In a potato-digger, the combination of the plow-beam E, pivotally and adjustably supported at its forward end, the handles T, pivotally secured to the plow-beam and supporting the plow upon the axle, the arched plow-standards H, and the adjustable hangers U, secured at their upper ends to the plow-handles and at their lower ends to the arched plow-standards, substantially as described.

10. In a potato-digger, a lifting device consisting, substantially, of the rock-shaft V, rock-arms W, connecting-bars X, and actuating-handle Y, with its locking device, in combination with the notch *f'* on the hub of the handle, and the pin *g*, engaging therein, all combined and operating substantially as described, whereby the plows are allowed to rise over obstructions without affecting the elevating parts, as set forth.

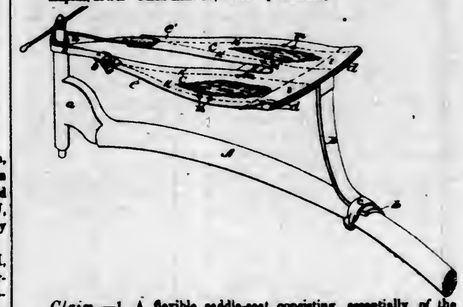
11. In a potato-digger, a lifting device consisting, substantially, of the rock-shaft V, rock-arms W, connecting-bars X, actuating-handle Y, pin *g*, and notch *f*, in combination with the coil-spring h upon the rock-shaft, all combined and operating substantially as described.

337,170. GLASSWARE. Edward D. Libbey, Winchester, Mass. Filed Oct. 3, 1885. (Specimen.)



Claim.—As an improved article of manufacture, glassware of homogeneous opaque material, portions of which present different colors or shades of color blended together, substantially as described.

337,171. SADDLE FOR BICYCLES. Freeman Lillibridge, Cedar Rapids, Iowa. Filed Mar. 30, 1882. (No model.)



Claim.—1. A flexible saddle-seat consisting, essentially, of the bifurcated upper outer surface having bifurcated braces, substantially as hereinbefore set forth, joined to its under surface, for the purpose stated.

2. The bifurcated saddle-seat having the under surface strengthened by means of forked braces which follow the lines of its outer and inner edges, in combination with the metallic flexible braces located as shown, by means of which the seat at that point is kept extended, substantially as and for the purpose hereinbefore set forth.

3. The bifurcated saddle-seat provided on its under side with the forked braces which follow the line of its outer and inner edges, and the metallic flexible transverse brace, in combination with the vertical jointed portion of the vehicle, to which it is attached as a support for its forward portion by means of an adjustable encircling-strap, which enables the seat to be tightened or relaxed at will, substantially as and for the purpose hereinbefore set forth.

4. The combination of the bifurcated saddle-seat having the under surface strengthened by means of forked braces which follow the lines of its outer and inner edges, and the metallic flexible brace located as shown, by means of which the seat at that point is kept extended, with the curved uprising spring adjustably attached at its foot to the curved bar and provided with a transverse bar at its upper and free end, substantially as and for the purpose hereinbefore set forth.

5. The combination of the curved uprising spring adjustably attached at its foot to the backbone of the vehicle and provided with a transverse bar at its upper and free end, the bifurcated saddle-seat con-

nected therewith, having its under surface strengthened by the forked braces which follow the lines of its outer and inner edges, and the metallic flexible brace, located as shown and for the purpose stated, with the vertical jointed portion of the vehicle, to which the saddle-seat is attached as a forward support by means of an adjustable encircling-strap, which enables the seat to be tightened or relaxed independently of the adjustable spring, substantially as and for the purpose hereinbefore set forth.

6. The combination of the bifurcated saddle-seat having its under surface strengthened by means of a forked brace which follows the line of its inner and outer edges, with the curved uprising spring adjustably attached at its foot to the curved bar and provided with a transverse bar at its upper free end, substantially as and for the purpose hereinbefore set forth.

7. The combination of the bifurcated saddle-seat having its under surface strengthened by means of forked braces which follow the lines of its inner and outer edges, and the curved uprising spring adjustably attached at its foot to the curved bar of the vehicle and provided at its upper free end with a transverse bar with vertical jointed portion, to which the saddle-seat is attached as a support by means of an adjustable encircling-strap, which enables the seat to be tightened or relaxed independently of the adjustable spring, substantially as and for the purpose hereinbefore set forth.

8. The combination, with the backbone of the vehicle and with the flexible saddle, of the curved uprising spring provided at its upper end with a transverse bar and adjustably attached at its lower foot and to the backbone of the vehicle in such a manner that the seat can be raised or lowered as desired, substantially as and for the purpose herein set forth.

9. A spring which forms the rear support of a flexible saddle-seat and is adjustably attached at its lower end to the backbone of a bicycle.

10. A spring which forms the rear support of a flexible saddle-seat and is adjustably attached at its lower end to the backbone of a bicycle by means of an encircling-clip.

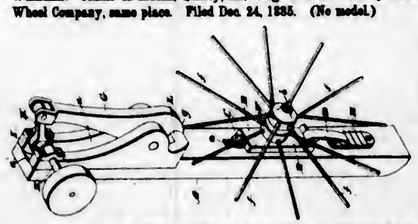
11. A spring which forms a rear support of a flexible saddle-seat and is attached at its lower end to the backbone of a bicycle at a point which is below and to the rear of said seat, for the purpose specified.

12. A spring which forms the rear support of a flexible saddle-seat which is attached at its foot to the backbone of a bicycle, and which has its flexible portion situated to the rear of and below the seat, for the purpose specified.

13. A spring which forms the rear support of a flexible saddle-seat and which bears on its lower end a curve, which, in connection with the curve of the backbone, to which it is adjustably attached, forms an adjustment in height, substantially as and for the purpose set forth.

14. A flexible saddle-seat suspended at its front end from the neck or upright jointed portion of the backbone, and suspended at its rear end by a spring, the lower end of which is attached to the backbone, and the flexible portion of which is situated to the rear of and below the seat, substantially as and for the purpose set forth.

337,172. **MECHANISM FOR THE MANUFACTURE OF METAL WHEELS.** JAMES R. LITTLE, Quincy, Ill., assignor to the Quincy Metal Wheel Company, same place. Filed Dec. 24, 1885. (No model.)

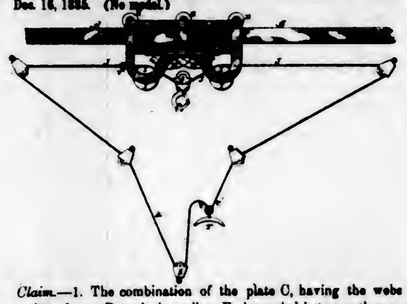


Claim.—1. As an improvement in mechanism for manufacturing metal wheels, an axle arm or stud for journaling a wheel-spider, in combination with cutting-jaws adapted to act upon opposite sides of each spoke as the spokes are successively brought into position between the jaws by the rotation of the spider upon the axle arm or stud, substantially as and for the purpose specified.

2. As an improvement in mechanism for manufacturing metal wheels, in combination with the movable block, the axle arm or stud thereon for journaling a wheel-spider, and the cutting-jaws adapted to operate upon opposite sides of a wheel-spoke, to cut off the end thereof as the spokes are brought successively between the jaws by the rotation of the spider upon the axle arm or stud, substantially as and for the purpose shown.

3. In a machine for trimming the spokes of metal wheels, in combination with a suitable frame, the fixed cutting-jaw mounted thereon, the movable cutting-jaw acting in opposition to such fixed jaw, means for actuating the movable jaw, the movable block adapted to be moved toward or from the cutting-jaws, and the axle arm or stud carried by the block for journaling a wheel-spider, so that the spoke ends can be brought successively between the jaws by the rotation of the spider, substantially as and for the purpose described.

337,173. **HAY-CARRIER.** WILLIAM LOUDEN, Fairfield, Iowa. Filed Dec. 16, 1885. (No model.)



Claim.—1. The combination of the plate C, having the webs D, the carriage-frame B, and the rollers E, journaled between them, substantially as shown and described.

2. The combination of the plate C, having webs D and extended flanges F, the carriage-frame B and the rollers E, substantially as described.

3. In a reversible carrier, the combination of the two rope-sheaves I, hoisting-rope J, trip-pulley K, and two double pawl-levers pivoted within the frame of the carriage, so that the upper ends of these levers will simultaneously engage suitable stops on the track and hold the carrier from moving in either direction on the track, while their lower ends simultaneously clamp the hoisting-rope against the rope-sheaves and hold it from passing in either direction, substantially as shown and set forth.

4. In a reversible carrier, the combination of the two rope-sheaves, the hoisting-rope, the trip-pulley, and the double pawl-levers pivoted side by side within the frame of the carrier and between the two rope-sheaves and the track, so that the upper ends of the levers will engage the stops on the track, and the lower ends engage the hoisting-rope on the sheaves, substantially as shown and described.

5. The combination of the two rope-sheaves, the hoisting-rope, the trip-pulley, and the two levers, as described, the lower or clamping ends of the levers being in line with each other, substantially as described.

6. The combination of the two rope-sheaves, the hoisting-rope, the trip-pulley, the two levers having their lower or clamping ends in line with each other and their upper or hooking ends set or bent out of line, and the catches O, set diagonally on the track so that each lever will engage its own catch only, substantially as set forth.

7. The combination of the two rope-sheaves, the hoisting-rope, the two levers and trip-pulley, arranged to engage both levers simultaneously without the employment of any intervening mechanism, substantially as set forth.

8. The combination of the two rope-sheaves, the hoisting-rope, the trip-pulley and the two levers, having their lower ends set in line with each other and made rounding so that the trip-pulley will engage both levers simultaneously without damage to the pulley, substantially as shown and described.

9. The plate P, secured to the under side of the track, and having the two catches O, formed on its diagonal corners, in combination with the hooked ends N of the levers M, set out of line with each other, substantially as shown and described.

10. The combination of the hook ends N of the levers M, bent laterally outward, the catches O, set diagonally on the track, and recesses formed in the laterally-contracted portions of the carriage-frame so as to permit a free vertical play of the levers, substantially as set forth.

11. The combination of the two rope-sheaves I, the hoisting-rope J, the trip-pulley K, and the equalizing-lever W, for the purpose of increasing the leverage of the draft-animal over the load, substantially as shown.

12. The combination of the two rope-sheaves I, the hoisting-rope J, the trip-pulley K, and the lever W, having the hook or eye for the attachment of the load, and set so as to equalize the draft of the rope, substantially as described.

13. The combination of the elevated track A, a suitable carriage for moving thereon, the guiding-pulleys Q Q' R R', the hoisting-rope J, and the return-rope *a*, both ropes being attached to the draft-animal, so that the movement of the animal in one direction will elevate the hay and draw the carriage along the track and its movement in the opposite direction will return the carriage to the starting-point, substantially as described.

14. The combination of the elevated track, a suitable carriage for moving thereon, the hoisting-rope J, the return-rope *a*, the guiding-pulleys Q Q' R R', and the single-tree T, substantially as and for the purpose set forth.

15. The combination of the elevated track, a suitable carriage for moving thereon, the hoisting-rope J, the return-rope *a*, and the guiding-pulleys Q Q', R R', and S, both ropes being suitably attached to the draft-animal, substantially as and for the purpose set forth.

16. The combination of the elevated track, a suitable carriage for moving thereon, the hoisting-rope J, the return-rope *a*, and suitable guiding-pulleys for conducting the ropes to a common point, both ropes being suitably connected to the draft-animal, and provided with sufficient slack to allow the movement of the hoisting-rope through the carrier without the necessity of other compensating devices, substantially as described.

17. In a reversible carrier, the combination of two rope-sheaves, a trip-pulley of any suitable construction to operate the locking mechanism, suitable guiding-pulleys, and a hoisting and return rope formed of one continuous piece of rope, or of two or more pieces of rope suitably connected together so as to form a continuous rope, and provided with suitable stops and places for the attachment of the draft-animal, so that the carrier can be reversed by drawing the rope through the carrier and guiding-pulleys from one side to the other and making the attachment for the draft-animal at different places on the continuous rope, substantially as set forth.

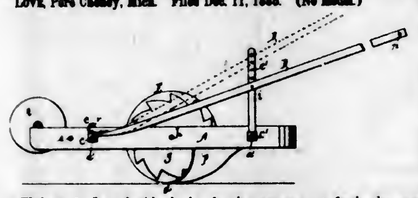
18. In a reversible elevator and carrier, the combination of two rope-sheaves, a trip-pulley of suitable construction to operate the locking mechanism of the carrier, suitable guiding-pulleys, and hoisting and return ropes connected together with enlarged connections, so as to form a continuous rope, provided with the necessary stops to keep the rope from running idly through the carrier, substantially as described.

19. In a reversible carrier, the combination of two rope-sheaves, a trip-pulley, a continuous rope, suitable guiding-pulleys, and two brake-levers or clamping devices set to clamp the rope against the rope-sheaves in opposite directions, so as to prevent the rope from passing through the carrier in either direction while the carrier is traversing the track, substantially as and for the purpose set forth.

20. The combination of the carriage provided with two rope-sheaves, the trip-pulley, suitable guiding-pulleys, and a continuous rope composed of two or more ropes joined together by swiveled connections to let kinks and twists out of the rope, substantially as shown and described.

21. The combination of the carriage provided with two rope-sheaves, a suitable trip-pulley, suitable guiding-pulleys, and a continuous rope composed of two or more ropes joined together by hooked connections for convenience in connecting and disconnecting the ropes and attaching and detaching the hoisting single-tree, substantially as set forth.

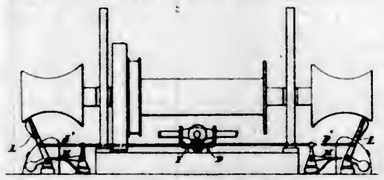
337,174. **DOUBLE STRAWBERRY-RUNNER CUTTER.** GEORGE W. LOVE, Pere Cheney, Mich. Filed Dec. 11, 1885. (No model.)



Claim.—1. In a double device for the purpose set forth, the combination of the sections A B, each carrying a drive-wheel and cutting-disk mounted on a shaft journaled in said sections, and a stationary knife attached to each of the inner bars of said sections, the sections adjustably coupled together, and handle for propelling said machine, substantially as specified.

2. In a double device for the purpose set forth, the combination of the U-shaped sections, each carrying a drive-wheel and a cutting-disk mounted on a shaft journaled in the sections, the stationary knives, as set forth, the sections adjustably coupled together, the handle adjustably coupled to the machine, and a transporting-wheel, *t*, mounted on each section, as and for the purposes specified.

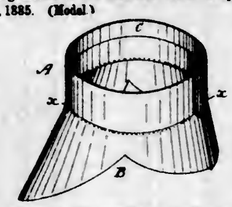
337,175. **STEAM-WINCH.** ARTHUR J. MACHINE, Liverpool, England. Filed Nov. 23, 1885. (No model.)



Claim.—1. The combination, with the winding-barrels of a steam-winch or other such like winding-engine, of the levers I, the wedges D and E, to which the levers are connected, the double wedge F, connected to treadles M, the rollers C, the bar B, and the steam-valve to which it is connected, substantially as described.

2. The combination, with the winding-barrel of a steam-winch or like winding-engine, of a lever moving at its free end close to the winding-barrel, and a steam-valve operated by connection with the lever and caused to turn on steam, when, upon the coiling of the rope about the barrel, the lever is moved in one direction by the pressure of the coils of rope against its end and caused to shut off steam, when, upon throwing off or slackening the rope the lever is automatically moved in the opposite direction, substantially as and for the purpose set forth.

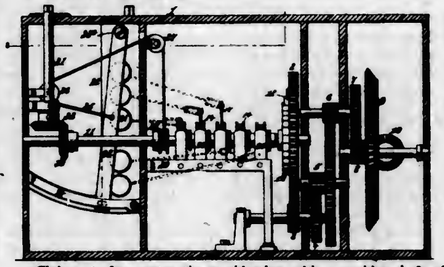
337,176. **COLLAR.** GEORGE N. MARCH, Watertown, Mass., assignor, by mesne assignments, to the Fiberline Collar Company, Portland, Me. Filed June 9, 1885. (Model.)



Claim.—1. A lady's collar comprising a collar proper, A, provided at its upper edge with a folding flap adapted to fold inward or outward for rendering the collar reversible, and a cape attached to the lower edge of said collar, substantially as described.

2. A lady's collar comprising a collar proper composed of paper or cloth-faced paper and provided at its upper edge with a folding flap adapted to fold inward or outward for rendering the collar reversible, and a cape composed of cloth stitched at its upper edge to the lower edge of said collar, substantially as described.

337,177. **SPRING-MOTOR.** H. R. MARCHAND, Pittsburg, Pa. Filed Oct. 31, 1885. (No model.)



Claim.—1. In a motor, the combination, with a working-shaft, of a series of pulleys having separate connection therewith, a corresponding series of devices for imparting power to said shaft, each having connection with the pulleys, and releasing mechanism actuated by the working-shaft, whereby each separate source of power is brought successively into action, substantially as described.

2. In a spring-motor, the combination, with a series of separate springs, each compressed to its highest tension, of a series of separate cords connected therewith, a series of pulleys, each having separate connection with the working-shaft, and a releasing-bar actuated by said shaft and bringing each spring successively into action, substantially as described.

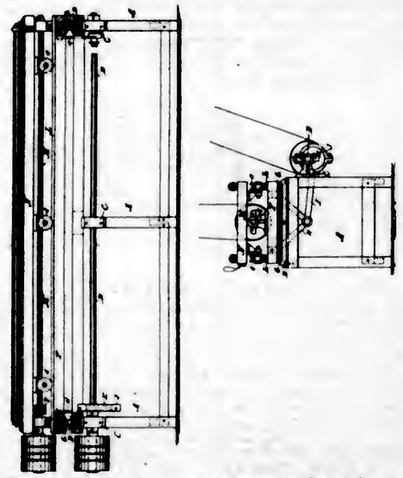
3. In a spring-motor, the combination, with a working-shaft, of a series of actuating-pulleys loose upon said shaft, a series of ratchets keyed to the shaft, a series of pawls carried by the pulleys and engaging with the ratchets, a series of brakes arresting the movement of the pulleys in one direction, and a series of motor-springs adapted to be brought successively into action, and each connected by a cord with one of said actuating-pulleys, substantially as described.

4. In a spring-motor, the combination, with a working-shaft having a series of pulleys mounted thereon, of a series of motor-springs, each connected with one of said pulleys, a releasing-bar confining said springs under tension, and means, substantially as described, for releasing each successively a little before the previous spring has parted with its energy, substantially as described.

5. In a spring-motor, the combination, with a working-shaft, of a series of pulleys loosely mounted thereon, a series of ratchets keyed to the shaft and engaging with pawls pivoted upon said pulleys, a series of friction-brakes bearing upon said pulleys, cords or belts passing over the same and connected with separate compressed springs, a holding and releasing bar pivoted over said springs, and a cord connected with said bar and winding on a pulley on the shaft, whereby the springs are successively released, substantially as described.

337,178. QUILTING-MACHINE. MARTIN H. MARCUS, Baltimore, Md. Filed Oct. 19, 1885. (No model.)

Brief.—A stand supports on rails a frame that is caused to have lateral reciprocations by means of pitmen connecting with eccentrics on a shaft extending lengthwise of the stand. The laterally-reciprocating frame is also provided on its top with rails, on which grooved rollers of the top or fabric-carrying frame travels in making longitudinal reciprocations.

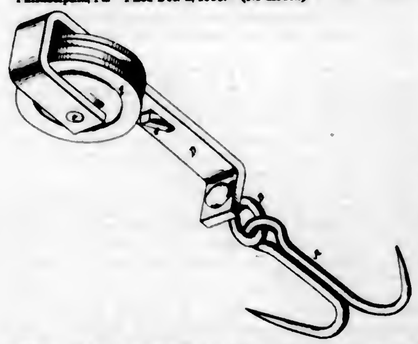


Claim.—1. In a quilting-machine, the combination of the stand, the intermediate frame mounted and movable transversely on said stand, the carriage supported and movable longitudinally on the intermediate frame, the cam-shaft extended in the direction of movement of the carriage, and pitmen connecting the intermediate frame and the cam-shaft, substantially as set forth.

2. The combination, in a quilting-machine, with the stand and the intermediate frame and carriage, of the shaft journaled to the stand and extended at right angles to the direction of movement of the intermediate frame, the eccentric-disks secured on said shaft, and pitmen connected at one end with the intermediate frame, and provided at their other ends with straps or rings encircling the eccentrics, all arranged and operating substantially as and for the purposes specified.

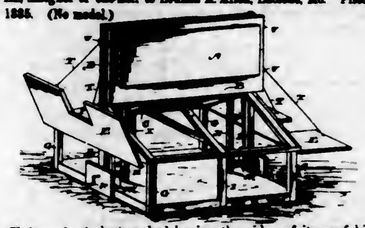
3. The quilting-machine herein described, comprising the stand having side brackets, C, the shaft journaled in said brackets and having eccentric-cams E, the intermediate frame placed and movable laterally on the stand, brackets H, depending from said frame to a horizontal plane with the cam-shaft, the pitmen connecting such brackets with the eccentric-cams, the quilting-carriage placed and movable longitudinally on the intermediate frame, and the feed-screw journaled to the intermediate frame and connected with the quilt-carriage, all arranged and operating substantially as set forth.

337,179. TRAVELING SUSPENSION-TRUCK. HENRY J. MCARDLE, Philadelphia, Pa. Filed Dec. 2, 1885. (No model.)



Claim.—A traveling suspension-truck in which a wheel and hook are combined with a bar having the guiding-projection *b*, consisting of a tongue less in width than the bar and struck up from the metal composing said bar, all substantially as specified.

337,180. DRYING-SHED FOR BRICKS, &c. OSCAR MCCOY, Versailles, Ill., assignor of one-half to Louisa A. Allen, Lacleda, Mo. Filed Sept. 7, 1885. (No model.)



Claim.—1. A drying-shed having the sides of its roof hinged to the ridge-pole, and having its sides hinged to the sides of the roof, and provided with means, substantially as described, for the purpose of raising or lowering the said hinged portions, as and for the purpose shown and set forth.

2. In a drying-shed, the combination of two upright posts having pulleys at their upper ends, a ridge-pole secured at its ends to the uprights below their upper ends, roof-flaps hinged to the ridge-pole, side pieces hinged at their upper edges to the eaves of the roof-flaps, and hoisting-ropes secured near the outer edges of the roof-flaps and passing into the shed over the pulleys, as and for the purpose shown and set forth.

3. In a drying-shed, the combination of the frame of the shed having two upright posts projecting above the ridge-pole, roof-flaps hinged to the ridge-pole, side pieces hinged to the eaves of the roof-flaps, end pieces hinged at their upper edges to the gable portions, windlasses at the ends of the shed, pulleys upon the upper ends of the upright posts, ropes passing over the pulleys and secured to the roof-flaps near their lower edges and to the windlasses, and ropes secured to the lower edges of the end pieces and to the ends of the roof-flaps, as and for the purpose shown and set forth.

4. In a drying-shed, the combination of the hinged roof-flaps and side pieces, the ropes passing over the pulleys upon the upright posts, and having T-shaped hooks at their lower ends, and the windlasses having the staples upon their drums, as and for the purpose shown and set forth.

337,181. MANURE-POUCH. T. MILNER MCDONOUGH, Pittsburg, Pa. Filed May 13, 1885. (No model.)



Claim.—A manure-pouch consisting of the flexible bag A, having the necks *b* and *c* and the openings *d* and *g*, adapted to permit of the entrance of the excreta and urine, said bag being provided with means for attaching it to an animal, substantially as shown and described.

337,182. METALLIC FASTENER. GEORGE W. MCGILL, Riverdale, N. Y. Filed Sept. 26, 1885. (No model.)



Claim.—1. A metal fastener-blank split centrally through its length from both ends in manner to form a connecting-neck, *a*, having two shanks, *b b*, of different lengths, projecting in one direction, and two arms, *c c*, in the opposite direction, substantially as set forth.

2. As an improved article of manufacture, a metallic fastener consisting of a metal fastener-blank split centrally through part of its length from both ends, one of the split ends forming the two shanks *b b*, of different lengths, and the other end the arms *c c*, the shanks *b b* being folded, back to back, in close parallel contact, and the arms *c c* folded over in opposite directions at right angles from the shanks *b b*, and permanently secured in such position by a metal cap, substantially as described.

3. A metallic fastener having the shanks *b b*, arms *c c*, bent in opposite directions from said shanks, and a trough-shaped cap, *d*, secured to said arms, substantially as described.

337,183. BOOK. JOHN T. MCCOY, Versailles, Ill., assignor of one-half to Louisa A. Allen, Lacleda, Mo. Filed Sept. 7, 1885. (No model.)



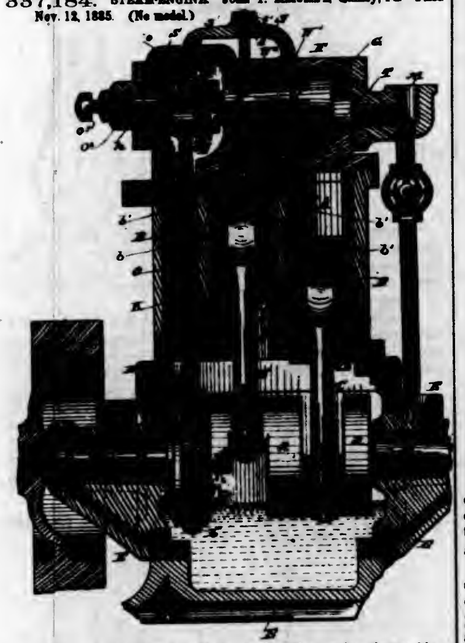
Claim.—1. In a book, the combination of the end hooks, central tube, and locking-spring, substantially as set forth.

2. In combination, the end hooks, central tube, and locking-spring, the end hook D having notch I, and the locking-spring being secured to the end hook E, as set forth.

3. In combination, the end hook E, central tube, F, and locking-spring G, rigidly secured together, and the end hook D, having slot I and hook J, and adapted to slide within the central tube, as set forth.

4. In combination, the end hook E, central tube, F, locking-spring G, rivet H, and end hook D, having slot I and hook J, the central tube being provided with a suitable key-hole, as set forth.

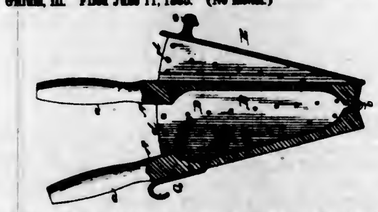
337,184. STEAM-ENGINE. JOHN T. MERCALFE, Quincy, Pa. Filed Nov. 12, 1885. (No model.)



Claim.—1. In a double-cylinder single-acting engine, the combination of the valve-crank chamber having the bearing o^3, the oscillating valve H, provided with the stem A, supported in said bearing, the said valve receiving steam-pressure at its large end, and the adjusting-screw o^3, engaging the said stem, substantially as specified.

2. In a steam-engine, the combination, with a valve-casing having a plurality of recesses arranged, respectively, at diametrically-opposite points to the eduction and induction ports and the exhaust-aperture, and an oscillating valve having a transverse aperture adapted to communicate with the said ports and recesses, and the longitudinal aperture connecting with the steam-ports, substantially as specified.

337,185. COMBINED SQUEEZER AND STRAINER. JANE MEEK, Gilman, Ill. Filed June 11, 1885. (No model.)

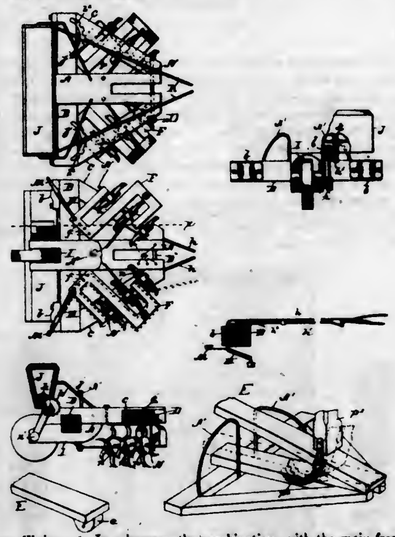


Claim.—1. In a combined squeezer and strainer, the combination of a stationary board having perforated side pieces attached thereto, and a movable board hinged to the stationary board, said boards being recessed and provided with channels, substantially as shown, and for the purpose set forth.

2. In a combined squeezer and strainer, the combination of the boards A A', provided with handles and pivotally attached to each other at their lower ends, perforated side pieces rigidly attached to one of said boards, and a removable plate, E, mounted in ways of the said side pieces, substantially as set forth.

3. In a combined squeezer and strainer, the combination of the pressing-boards A A', recessed on their inner sides and provided with vertical and inclined channels and openings C C, perforated side plates rigidly attached to one of the boards and provided at their upper edges with perforations *d*, a pin, F, adapted to be passed through said perforations, and a removable end plate, substantially as set forth.

337,186. HARROW. JOHN A. MEEKER, Sabetha, Kans. Filed Nov. 14, 1885. (No model.)



Claim.—1. In a harrow, the combination, with the main frame, of a supplemental harrow-frame laterally adjustably secured thereto, and a pair of compound crank-arms, as G and H, adjustably connected with the supplemental frame and the main frame, to regulate the position and adjustment of the supplemental harrow, substantially as described.

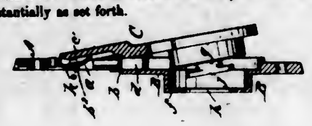
2. The combination, with the main frame, of an S-shaped harrow-supporting frame, a single shaft journaled in bearings on the short arms of the latter frame at right angles to said arms, and rotary cutters disposed on said shaft to have a limb of the S-shaped frame come between a pair of cutters, substantially as and for the purposes specified.

3. The combination, with the main frame having a series of apertures, of an S-shaped frame, compound crank-arms G and H, the one pivoted at one end to the latter frame and adjustably secured at its other end in one of the apertures formed in the main frame, and the other adjustably secured at one end to the S-shaped frame, and journaled at one end to the main frame and provided with an extension to form a handle, a shaft journaled on the short arms of the S-shaped frame, and rotary cutters mounted on said shaft, substantially as described.

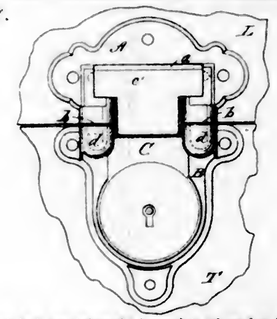
4. The combination, with the frame and the tongue pivotally connected therewith, of a slotted slide pivoted to the tongue, an operating-lever attached to the upper end of the slide, a pin projected from the side of the frame and working through the slot in the slide, and a ratchet-bar pivoted to the slide, to engage said pin and lock the tongue at right angles, substantially as set forth.

337,187. TRUNK-LOCK. FRANK W. MIX, New Britain, Conn., assignor to the Corbin Cabinet Lock Company, same place. Filed Sept. 11, 1883. (Model.)

Claim.—1. In a trunk-lock, a hasp-plate and a lock-plate the adjacent edges of which are constructed to interlock with each other, in combination with a hasp hinged to the hasp-plate and provided on its free end with a lock which is received in a cup or frame on the lock-plate, substantially as set forth.

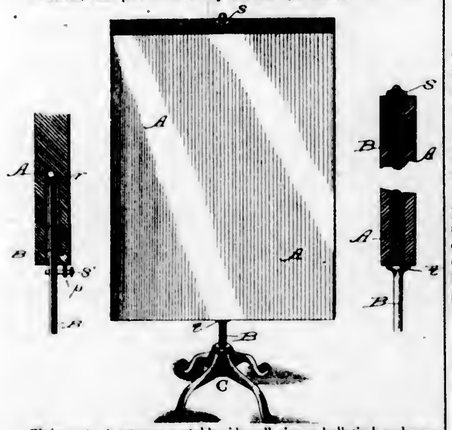


337,187.



2. A trunk-lock consisting of a hasp-plate adapted to be secured to the cover of the trunk, and a lock-plate adapted to be secured to the body of the trunk, and constructed with a cup or frame for the reception of the hasp-lock, the hasp-plate and lock-plate constructed and arranged to extend to the meeting edges of the cover and body of the trunk, and the hasp-plate provided with a dowel or extension that engages in a socket or recess in the lock-plate, in combination with a hasp hinged to the hasp-plate at a considerable distance above its lower edge, and provided on its free end with a lock, substantially as set forth.

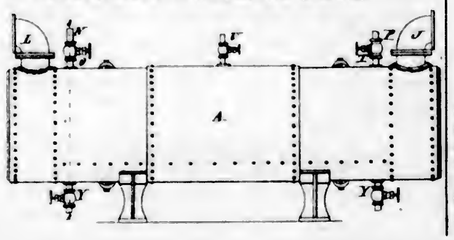
337,188. SIGN. ROBERT NIDOL, Jr., Chicago, Ill., assignor to Charles W. Shonk, same place. Filed May 5, 1885. (No model.)



Claim.—1. A rotatory portable sidewalk sign or bulletin board comprising, in combination, the part A, provided with a central opening extending upward from its lower edge, a rod, B, inserted toward one end within the opening and supporting the part A, and a portable pedestal, C, into which the opposite end of the rod is secured and of sufficient weight to secure the device from being overthrown by the exertion against it of the ordinary force of the wind, substantially as described.

2. A rotatory portable sidewalk sign or bulletin board comprising, in combination, a board, A, provided with a central opening extending to opposite edges, a rod, B, extending through the opening, and provided with a shoulder, *t*, to support the board A, and screw-threaded toward its upper extremity to receive a nut, *s*, and a pedestal, C, into which the lower extremity of the rod B is secured, and heavier than the weight of the device above its center, substantially as described.

337,189. FEED-WATER HEATER. JOHN O'BRIEN and SAML. J. WEAVER, St. Louis, Mo. Filed Dec. 12, 1885. (No model.)



Claim.—1. In a feed-water heater, the combination of the horizontal receiver, supporting-plates secured to the lower part of the receiver, and cross-strips secured to the plate, substantially as shown and described, for the purpose set forth.

2. In a feed-water heater, a receiver divided into two compartments by means of cross-strips with spaces between them, the part beneath the strips serving as a mud-drum, as shown and described.

3. In a feed-water heater, a receiver divided into compartments by means of transverse strips, the compartment beneath the strips serving as a mud-drum, in combination with blow-off pipes penetrating the mud-drum of the receiver, as shown and described.

4. In a feed-water heater, the combination of the horizontal receiver, steam-chamber at each end of the receiver, longitudinal steam-tubes connecting the chambers, supply and exhaust pipes communicating with the steam-chambers, water-pipes communicating with the receiver, and mud-drum formed in the lower part of the receiver by means of angle-plates and transverse strips, substantially as set forth.

337,190. RUBBER BOOT OR SHOE. JOE. S. OWNER, Hagerstown, Md. Filed May 14, 1885. (No model.)

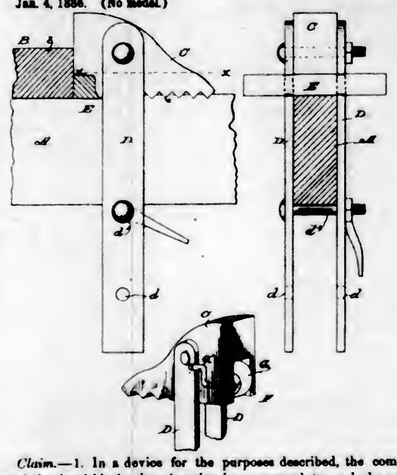


Claim.—1. A rubber shoe having high quarters, with a lacing or other fastening opening front, and a tongue united with the vamp of the shoe in the manner set forth, at the bottom of the front opening, thereby forming a strengthening-piece at this point to prevent the splitting of the rubber, as set forth.

2. A rubber shoe having high quarters and front lacing or other fastening opening, with a clinching stay-piece of leather or other strong material placed under the rubber on each side of the front opening, and united thereto by the clinching of the rivets of the hooks or eyelets.

3. A rubber shoe having high quarters and a rear stay or bridge piece covering the section between the quarters and overlapping the same, a front lacing-opening, a tongue secured to the vamp at the base of the lacing-opening in the manner set forth, so as to form a thickening or strengthening piece at this point, and clinching stay-pieces secured inside the front opening by the eyelets or other fastening means passing through and being clinched upon them, as set forth.

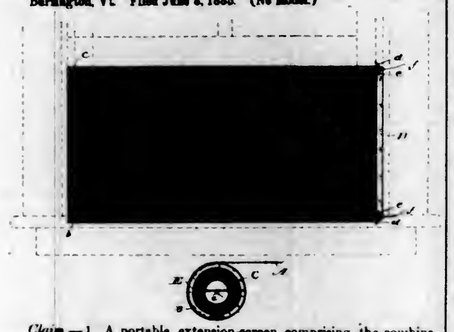
337,191. FLOOR-CLAMP. BENNETT PAGE, Evergreen, Ala. Filed Jan. 4, 1886. (No model.)



Claim.—1. In a device for the purposes described, the combination of the head-block, the clamping-jaws secured to and depending from the same and adapted at their lower ends to receive a bolt for securing the device in position, and a wedging device inserted between the floor and the head-block, substantially as specified.

2. The combination of the head-block having a series of teeth on its under side, and having its lower front corner cut away, parallel jaws secured to the head-block, and depending therefrom, and a wedge driven through the cut-away portion of the head-block, and bearing against it and the floor, substantially as specified.

337,192. ADJUSTABLE EXTENSION-SCREEN. THEODORE S. PECK, Burlington, Vt. Filed June 8, 1885. (No model.)

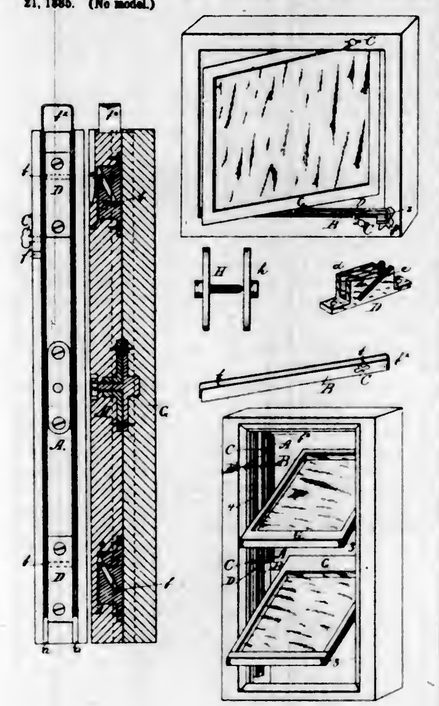


Claim.—1. A portable extension-screen comprising the combination of a spring-roller consisting of an inner spindle and outer tubular rotatable roller proper, and a spring connecting the two, an extension-bar, and netting connected on the one hand to the bar and on the other hand to the roller proper, both the bar and the spindle being provided with retaining devices to engage the sash and sill of the window or other part to which they may be applied, said devices on the spindle being arranged when so engaged to prevent the rotation of the latter, as and for the purposes hereinbefore set forth.

2. The spring-roller provided with retaining devices to engage the sash and sill of the window, arranged when so engaged to prevent the rotation of its central or inner spindle, in combination with the netting and the extension-bar provided with detents or dogs arranged to yield only in a direction to permit the bar to be moved away from the roller, as and for the purposes set forth.

3. The combination of the extension-bar, the spring-roller, and the intervening netting, of greater width than the length of said bar and roller, so that it shall project on each edge beyond the ends of the latter, as and for the purposes hereinbefore set forth.

337,193. WINDOW. JOHN S. PERLSTROM, Chicago, Ill. Filed Sept. 21, 1885. (No model.)



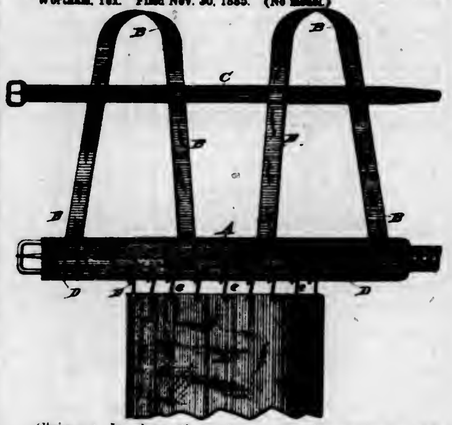
Claim.—1. A window-sash centrally pivoted to a sliding side or end strip, so as to turn entirely around within said strip, in combination with the locking device placed within said strip and extending through it and beyond one end, and suitable means for sliding the locking device in and out of the sash, whereby, when the sash and strip are locked together, a tight weather-joint is obtained between the sash and the strip their entire length, substantially as described.

2. In a window-sash, the slotted side or end piece, G, provided with the slotted plates D, in combination with the locking device B, provided with cross-rivets adapted to slide diagonally in said plates and within and out of the piece G, substantially as described.

3. In a window-sash, the locking device B, consisting of two metal strips united at one end, adapted to fit and slide in the sash, substantially as described.

4. A window-sash consisting of the slotted strips A, slotted sash G, the sash and said strips pivoted centrally together, the diagonally-sliding locking device B, secured to the side strips, the slotted plates D, placed within said strips to hold and guide the locking device, and means for sliding the locking device, constructed and operated substantially as herein shown and described.

337,194. HARVESTING-SACK SUPPORTER. JAMES E. POTEET, Wortham, Tex. Filed Nov. 30, 1885. (No model.)



Claim.—1. In a harvesting-sack supporter, the combination of the band A, provided with suitable fastenings at its ends and having suitable attaching devices secured to its lower edge, and shoulder-straps B, secured to the belt A, with the bag E, provided at its mouth with suitable devices for securing it to the lower edge of the belt A, substantially as described.
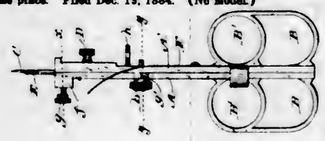
2. The combination of the belt A, provided at its ends with suitable fastening devices and on its lower edge with a number of attaching devices, as described, and the shoulder-straps B B, secured to it, with the strap C, secured to the straps B B, and provided with suitable fastenings at its ends, and a bag provided at its mouth with means for attaching the same adjustably on the belt A, all substantially as and for the purpose described.

337,195. FASTENING FOR ATTACHING BUTTONS TO GARMENTS. RICHARD J. POWELL and WILLIAM F. NOLAN, Evansville, Ind., assignors to themselves, Philip Baum, and Herman Lowenthal, same place, and Solomon Dozier, New York, N. Y. Filed Nov. 12, 1885. (No model.)



Claim.—A button-fastener consisting of a staple, C, having points D, and a base, E, in form approximating a double letter S, substantially as shown and described, and for the purposes set forth.

337,196. FABRIC-TURFING IMPLEMENT. MADISON A. RAFTER, Lockport, N. Y., assignor to the Rafter Embroidery Machine Company, same place. Filed Dec. 19, 1884. (No model.)



Claim.—1. In a fabric-turfing implement having the handle A', carrying a needle, and the handle A, having in its lower end a socket provided with an adjusting and holding screw, in combination with the loop-holder fitted with a block in said socket, substantially as shown, and for the purpose described.

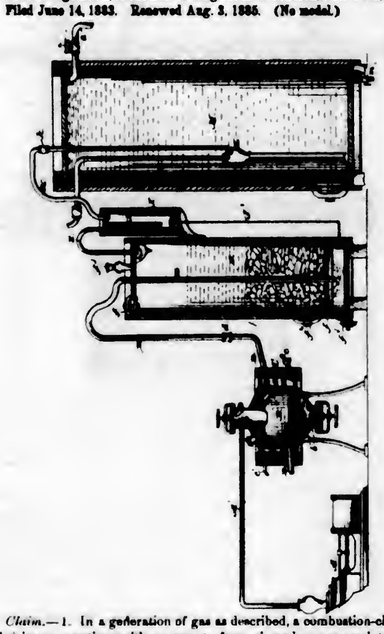
2. In a fabric-turfing implement, the handle A', carrying a needle, and having a groove, *d*, a holding and adjusting screw, D, a guide, A, and a spring with arms, in combination with the handle A, having the loop-holder and studs at its side edges, substantially as shown, and for the purpose described.

3. In a fabric-turfing implement, the handle A', having the spring with arms extending at and beyond the side edges of said handle, in combination with the handle A, having studs at its side edges and acting upon said spring-arms, substantially as shown, and for the purpose described.

4. In a fabric-turfing implement, the combination, with the handle A', having finger-loops, cleats, a screw, a spring having arms, a guide, a groove, an adjusting-screw, and carrying a needle, of the handle A, also having finger-loops, a slot, *a*, studs, a loop-holder, and a socket having a flat block and a holding or adjusting screw, all arranged substantially as shown and described.

337,197. APPARATUS FOR THE PRODUCTION OF PURE SULPHUROUS GAS. FRANCOIS RANDON, New Orleans, La., assignor, by mesne assignments, of one-half to Virginia M. T. Johnson, New York, N. Y.

Filed June 14, 1883. Renewed Aug. 3, 1885. (No model.)



Claim.—1. In a generation of gas as described, a combustion-chamber having connections with a pump to force air under pressure into the interior thereof, a water-jacket embracing such combustion-chamber, and a pipe leading from the interior thereof through coils formed in the water-jacket to multiply the cooling-surface, substantially as described.

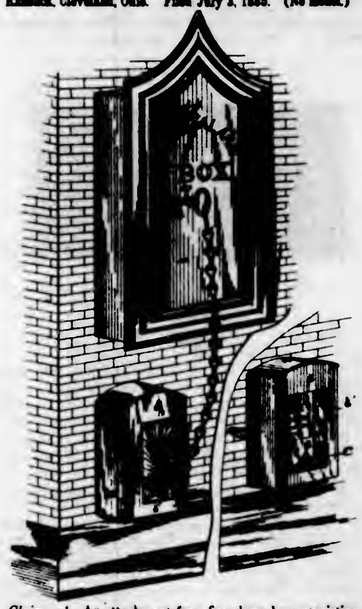
2. In combination with a purifying-tank having a false perforated bottom and a pipe leading the gas from the combustion-chamber through its water-jacket into the said purifying-tank below the false bottom, a pump for holding said gas under pressure, substantially as described.

3. The purifying-tank having false bottom, water-inlet, and drain, in combination with the combustion-chamber and its water-jacket, a pump, and a pipe leading from the combustion-chamber through the water-jacket and into the purifying-tank below the false bottom, said pipe having a check-valve to prevent backflow, substantially as described.

4. In combination with the purifying-tank having perforated false bottom, the reservoir J, having diaphragm J', the pipe I, and the pipe J^2, leading from said reservoir J back to the purifying-tank below the false bottom, substantially as described.

5. The treating tank or reservoir M, having an exit near the bottom and a safety exit-valve for the gas under pressure, in combination with the purifying-chamber I, having an inlet-pipe, the receiver J, and the pipe leading from the receiver to the charging-chamber, substantially as described.

337,198. ATTACHMENT FOR FIRE-ALARM BOXES. HENRY H. KENNEDY, Cleveland, Ohio. Filed July 3, 1885. (No model.)



Claim.—1. An attachment for a fire-alarm box, consisting of a box of suitable structure for storing a key that unlocks the fire-alarm box, said key-box having a portion thereof made of such material that it is easily broken in such parts as will give access to the key stored therein, substantially as set forth.

2. In an attachment for fire-alarm boxes, the combination, with a box having inclosed a key for the fire-alarm box, said key being secured by a suitable chain fastened to the inside of the key-box, said box having a portion thereof easily breakable, of a card containing directions for breaking the key-box in case of fire, so as to procure the key and give the alarm, substantially as set forth.

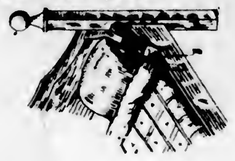
337,199. EXTENSION-ELECTROLIER. JAMES T. ROSS, New York, N. Y. Filed Sept. 26, 1885. (No model.)



Claim.—1. In an electric-light fixture, the combination of a stationary tube or body, a tube sliding therein and carrying the lamp-conductors within said sliding tube connected with the lamp, flexible conductors attached to said sliding tube and connected with the conductors inclosed thereby, a chamber above said sliding tube for concealing said flexible conductors, and a frictional device for holding said sliding tube at any desired point in the stationary tube or body, substantially as set forth.

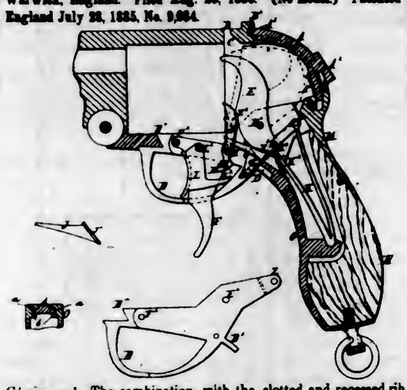
2. In an electric-light fixture, the combination of the main supporting-stem, the ring at the lower end thereof, the shell surrounding said ring, the stationary tube carried by said ring, the sliding tube within said stationary tube carrying a lamp and inclosing electrical conductors, and flexible conductors connected electrically with said inclosed conductors and adapted to be placed in or withdrawn from the said shell as the sliding tube is raised or lowered, substantially as set forth.

337,200. BED-CLOTHES HOLDER. FRANK P. SARGENT, New Haven, Conn. Filed Nov. 25, 1885. (No model.)



Claim.—As an improved article of manufacture, the herein-described bed-clothes holder, consisting of a single piece of spring metal coiled at one end adapted to hold the clothes between the opposing surfaces of the outer and inner parts of the coil, and provided with means for attaching to a bedstead, substantially as described.

337,201. REVOLVER. HENRY SCHLOSS, Aston Cross, County of Warwick, England. Filed Aug. 25, 1885. (No model.) Patented in England July 23, 1885, No. 9,994.



Claim.—1. The combination, with the slotted and recessed rib B at the rear and top of the barrel of a fire-arm, of a tongue, C, upon the frame, taking into a slot in the rib, and the curved spring-bolt A, sliding in the rear of the frame and having a nose, A^3, taking into a recess in the rib, said nose being rounded, so that when the barrel is closed down the spring-bolt will be pushed back and become automatically locked with the recessed rib, substantially as described.

2. The combination of the concealed hammer E, the sear G, having a tail, G^3, the pawl H, having a tail, H^3, the pivoted lever F, and the trigger L, pivoted to the lever to act on the tail of the pawl, and having the projection L^2, to act on the tail of the sear, substantially as described.

3. The combination, with the hinged barrel having the recess B, of the framing having curved grooves *b*, and the spring-bolt A, having curved flanges *a*, engaging the grooves, and provided with an attached finger-piece, A^3, substantially as described.

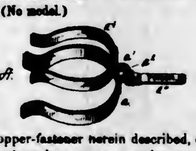
4. The combination, in a revolver, of the detachable plate M, and the framing O, the stock N, and the hinged barrel, with the detachable trigger-guard D, having one end extending to the said plate, the screw Z, connecting the plate with the guard, the concealed hammer E, pivoted to the guard, the sear G, the pawl H, having a tail, H^3, and the lever F, also pivoted to the guard, and the trigger L, pivoted to said lever to operate on the tail of the pawl and having a projection, L^2, to act on the sear, substantially as described.

5. The combination, in a revolver-action, of the detachable trigger-guard D, the transverse screw Z, for securing the guard, the concealed hammer E, pivoted to the guard, the sear G, pawl H, having a tail, H^3, and lever F, also pivoted to the guard, and the trigger L, pivoted to the lever to act on the tail of the pawl, and provided with a projection, L^2, to act on the sear, substantially as described.

6. The combination, in a revolver-action, of the framing O, the hinged barrel, and the detachable plate M, with the trigger-guard D, extending inward to said plate, and the screw Z, connecting the latter to the guard, said guard having the front beveled tongue, D', and rear stud D^2, engaging the framing, the concealed hammer E, pivoted to the guard, the sear G, the lever F, and the pawl H, also pivoted to the guard, and the trigger L, pivoted to the lever to act on the pawl, and having a projection, L^2, to act on the sear, substantially as described.

7. The combination, with the stock, the framing, and the barrel, of the detachable trigger-guard D, the hammer E, pivoted thereto, the pawl H, sear G, and lever F, also pivoted to the guard, said pawl having a tail, H^3, and the trigger L, pivoted to the lever to act on the tail of the pawl, and provided with the rearward projection L^2 to act on the sear, substantially as described.

337,202. STOPPER-FASTENER. F. W. SEYMOUR, Wheeling, W. Va. Filed Dec. 9, 1885. (No model.)



Claim.—1. The stopper-fastener herein described, comprised of the lyre-shaped spring-clip adapted to set over and grasp the neck of the bottle, a rigid plate fixed to the middle or bend of the spring-clip, and formed with a recess to fit over the flange of the mouth of the bottle, and a spring to bear on the stopper, substantially as described.

2. The stopper-fastener consisting of a lyre-shaped spring-clip to set about the neck of the bottle, a vertical connecting-piece secured to the spring-clip formed with a seat or recess to set over the flange of the mouth of the bottle, and the lyre-shaped spring-clip secured to the upper end of the connecting-piece, and adapted to set about the neck of the stopper of the bottle, substantially as described.

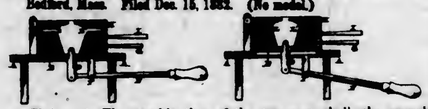
3. The stopper-fastener consisting of the lyre-shaped spring-clip to set about the neck of the bottle, a vertical connecting-piece secured to the spring-clip, and formed with a seat or recess to set over the flange of the mouth of the bottle and receive a caution-tag, and the lyre-shaped spring-clip secured to the upper end of the connecting-piece, and adapted to set about the neck of the stopper of the bottle, in combination with a caution-tag suspended from the connecting-piece, substantially as described, and for the purpose stated.

337,203. EXTENSION-KEY. JOHN H. SHAW, New Haven, Conn., assignor to Sargent & Co., same place. Filed Jan. 18, 1886. (No model.)



Claim.—In an extension-key, the combination, with the tubular body A, constructed with a bit, *a*, of the spindle B, provided with a finger-piece, *c*, and constructed with a series of notches, *f*, and a pin passed transversely through the body A, and adapted to engage the notches in the spindle, substantially as described.

337,204. GLASS-MAKER'S MOLD. FREDERICK S. SHIRLEY, New Bedford, Mass. Filed Dec. 15, 1883. (No model.)



Claim.—1. The combination of the two-part shell, the movable standard, the two-part mold within the shell and resting upon the standard, and the top to the shell, the mold and said top being constructed, substantially as described, to form a depression on the top of the article being molded when the mold is moved against the top.

2. The combination of the two-part shell, the movable standard, the two-part mold within the shell resting upon and adapted to be raised by the standard, the top to the shell, and the two-part slide to the top, substantially as specified.

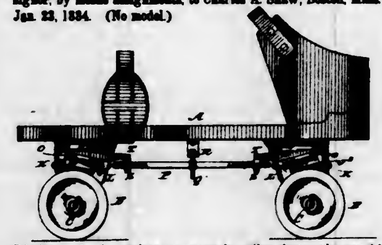
3. The combination of a vertically-moving mold and inclosing-shell, having a flange formed on its under side, and a mechanism for raising the mold upward, substantially as shown.

4. The combination of a vertically-moving mold having the upper edge of the opening or cavity formed in it beveled away, with an inclosing-shell having a flange formed on the under side of its top, and a mechanism for forcing the mold upward, substantially as described.

5. In a glass-blower's mold, the movable mouth or neck formers arranged to release the article by opening, substantially as shown.

6. The glass-blower's mold composed of the inclosing-case H, made in two parts, the mold C, having its upper edge beveled away, the rod D, by means of which the mold C is raised upward, and the operating-lever E, the top of the inclosing-case being provided with a flange, L, which corresponds to the cut-away edge of the mold C, substantially as shown.

337,205. ROLLER-SKATE. SAMUEL E. SMITH, Richmond, Ind., assignor, by mesne assignments, to Charles A. Shaw, Boston, Mass. Filed Jan. 23, 1884. (No model.)



Claim.—1. As an improvement in roller-skates, the combination, with the yielding bearings of the front and rear rollers, of elastic blocks and a tension-adjusting device which operates simultaneously upon the front and rear blocks for evenly adjusting the tension thereof.

2. As an improvement in roller-skates, the combination, with the yielding or elastic bearings of the front and back rollers, of the wedges for adjusting the tension or pressure against the elastic bearing-blocks, the rod having a right and left handed screw for operating the front and

back wedges simultaneously and evenly, the wheel for turning the rod, and means for preventing the same from moving in the direction of its length, substantially as and for the purpose shown and set forth.

3. As an improvement in roller-skates, the combination, with the yielding or elastic bearings of the front and back rollers, of wedges inserted between the fixed and movable bearing-plates, so as to regulate or adjust the tension or pressure against the elastic bearing-blocks, and means for operating the said wedges simultaneously and evenly or to the same extent, substantially as and for the purpose shown and set forth.

4. The combination of the fixed bearings J J' J², cap-plates O, elastic blocks N, bolts K, axle-boxes E I, forked wedges T, screw-threaded rod P, having turn-wheel Q, and means for preventing said rod from moving in the direction of its length, substantially as and for the purpose shown and set forth.

5. The combination of the fixed bearings J J' J², cap-plates O, elastic blocks N, bolts K, axle-boxes E I, forked wedges T, having cross-bars U, screw-threaded rod P, having turn-wheel Q, and means for preventing said rod from moving in the direction of its length, substantially as and for the purpose shown and set forth.

6. The combination of the fixed bearings J J' J², cap-plates O, elastic blocks N, bolts K, axle-boxes E, having enlarged flanged bolster-plates I, forked wedges T, having ways *t*, screw-threaded rod P, having turn-wheel Q, and means for preventing said rod from moving in the direction of its length, substantially as and for the purpose shown and set forth.

7. The combination of the fixed bearings J J' J², movable axle-box E I, elastic block N, bolt K, and spring M, adapted to bear with its free end against the head of the bolt, substantially as and for the purpose shown and set forth.

8. The combination of the fixed bearings J J' J², movable axle-box E I, elastic block N, cap-plate O, bolt K, forked-shaped wedge T, having lip *m* and spring M, its inner end being held under said lip, and its free end adapted to bear against the head of said bolt.

9. The combination of the fixed bearings J J' J², the bearing J' being provided with forwardly-projecting flanges *j* at each side, movable axle-box E I, elastic block N, cap-plate O, bolt K, forked-shaped wedge T, and spring M, whose free end is adapted to rest between said flanges against the head of said bolt.

10. The combination of the fixed bearings J J' J², the bearing J' being provided with forwardly-projecting flanges *j* at each side, movable axle-box E I, elastic block N, cap-plate O, bolt K, forked-shaped wedge T, having lip *m* and spring M, whereof the inner end is held under said lip and the free end adapted to rest between said flanges and bear against the head of said bolt.

11. In a roller-skate, the axle-box E, having downwardly-projecting ears at each side provided with oblong bearings D, said axle-box being also provided with a bevel, *e*, between and above the line of said bearings, in combination with the axle C, inserted through and playing in said bearings, an elastic block, F, interposed in the space between said axle and the bevel *e*, and a screw, H, for compressing said elastic block within said space and thus increasing its tension upon the parts.

12. In a roller-skate, the axle-box E, having downwardly-projecting ears at each side provided with oblong bearings D, said axle-box being also provided with a bevel, *e*, between and above the line of said bearings, in combination with the axle C, inserted through and playing in said bearings, an elastic block, F, interposed in the space between said axle and the bevel *e*, a block, G, closing the open side of said space and having a beveled upper face adapted to rest against said bevel *e* when the block is in place, and a screw, H, passing loosely through a hole in said block and into a screw-threaded hole in said axle-box, whereby the block G may be drawn obliquely against the elastic block F for compressing it within said space, and thus increasing its tension upon the parts.
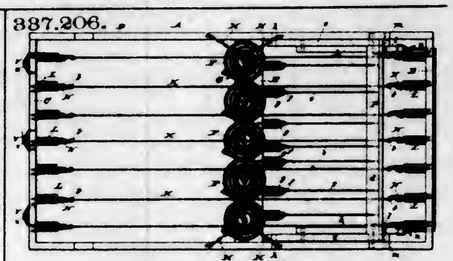
13. The combination, in a roller-skate, of the following elements: fixed bearings J J' J², cap-plates O, elastic blocks N, bolts K, springs M, movable axle-boxes E, having bolster-plates I and oblong axle-bearings D, elastic blocks F, beveled pressure-blocks G, adjusting-screws H, axles C, having rollers B, fork-shaped wedges T, screw-threaded rod P, having turn-wheel Q, and means for preventing said rod from moving in the direction of its length, substantially as and for the purpose shown and set forth.

337,206. SPRING BED-BOTTOM. MARVIN C. SILVER, New Brunswick, N. J. Filed Sept. 30, 1885. (No model.)

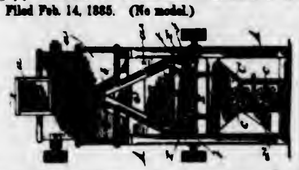
Claim.—1. The improved bed-bottom herein described, consisting of the longitudinal wires, the end springs connecting the said wires with the head and foot boards, the central transverse slat carrying spiral spring, the hinged head-rest having its wires connected to the said slat by spiral springs, and the transverse wire flexibly connected with the side rails of the frame, substantially as specified.

2. In a bed-bottom, the combination, with the longitudinal wires supported by a series of middle spiral springs upon a transverse bar, of the pivoted head-rest having wires provided with spiral end springs attached to a transverse bar, pivoted ratchet-arms, and catches to engage the same, substantially as specified.

337,206.



337,207. MIDDLINGS-PURIFIER. CHESHAM N. SMITH, Dayton, Ohio. Filed Feb. 14, 1885. (No model.)



Claim.—1. In a middlings-purifier, the combination, with the main frame A, longitudinally-reciprocating screen-frame B, and separating-chamber a^3, of the draft-chamber *a'*, valve *b*, rods *b'*, links b^3, and a suitable exhaust-fan above the draft-chamber, substantially as specified.

2. In a middlings-purifier, the combination of the screen-frame having its side bars grooved upon their inner faces, the bolting-cloth having tubular edges and the boards *f*, partially overlapping the grooves, so as to confine the rods and cloth, substantially as specified.

3. In a middlings-purifier, the combination, with the main frame A, screen-frame B, cleaning-cords H, and shaft K, oscillating in bearings in brackets depending from the sides of the screen-frame, near its rear end, of the standards I, having the pieces *i* pivoted upon them, transverse bar J, and guide-pieces *j*, substantially as specified.

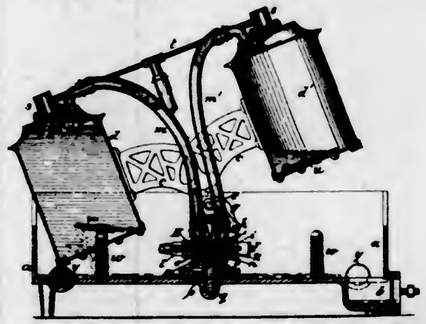
4. In a middlings-purifier, the combination of the reciprocating bolt, the shaft K, journaled upon the screen-frame, near its outer end, the levers *i*, fulcrumed in fixed supports, the bar J, and the cords H, attached at one end to the screen-frame and at the other to shaft K, and passing over a bar, J, substantially as specified.

337,208. VEHICLE-SPRING. CHARLES H. TERRY, Rigs, N. Y. Filed Sept. 26, 1885. (No model.)



Claim.—A vehicle-spring formed of a flat bar of steel bent to form a V from point *a* to point *b c*, the sides thereof being straight, as shown, the extremity of the upper portion of the spring being bent to form a stop, *f*, and the lower portion from point *c* to *d* bent to form a quarter-circle, and its extremity extending upwardly and outwardly and terminating in an eye, *e*, substantially as and for the purpose set forth.

337,209. HYDRAULIC AIR-COMPRESSOR. WILLIAM THOMAS, Jersey City, N. J., assignor to Bishop & Babcock, Cleveland, Ohio. Filed Oct. 2, 1885. (No model.)



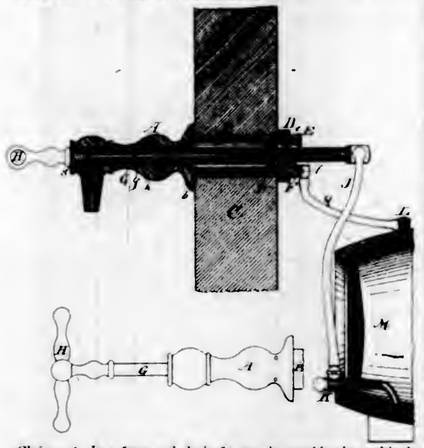
Claim.—1. In a hydraulic air-compressor, substantially such as described, the combination, with vessels or cylinders *d d'*, of a double-acting water-inlet valve, substantially such as H, arranged to open one eduction-port to the water under pressure and the other eduction-port to the atmosphere, with eduction-tubes *m m'*, leading from said ports to the tops of the vessels, and water-exhaust valves *u* in the bottoms of the vessels, arranged and operating substantially as shown and described.

2. In a hydraulic air-compressor, the combination, with the alternately-filling vessels *d d'*, of the water-valve H, having a cylinder, *i*, open to the air at the ends, pistons *k k*, inlet-port *p*, and outlet-ports *o o'*, arranged as shown, with eduction-pipes *m m'*, leading from said ports to the tops of the cylinders, air-outlet valves *s* in the tops of the cylinders, and water-exhaust valves *u* in the bottoms of the cylinders, with suitable means to shift the valve as the cylinders alternately fill and empty, substantially as herein set forth.

3. The combination of the vessels *d d'* and rocking beam *c*, a double-acting valve, substantially as set forth, arranged to open one eduction-port to the air and the other to the water under pressure, an operating connection between the beam and the valve, eduction-pipes *m m'*, extending from the eduction-ports to the tops of the cylinders, air-outlet valves *s* in the tops of the cylinders, and water-exhaust valves *u* in the bottoms of the cylinders, arranged and operating substantially as shown and described.

4. In a hydraulic air-compressor, such as set forth, the combination, with the rocking or tilting vessels *d d'* and exhaust-valves *u* in the base thereof, of the springs *w*, interposed between the valves and the supporting-base, and on which the valves fall when the vessels tilt, substantially as and for the purpose set forth.

337,210. FORCE AND DRAIN FAUCET. FRANK R. TIBBITTS, Cleveland, Ohio. Filed June 26, 1885. (No model.)



Claim.—1. In a force and drain faucet, the combination, with the faucet-body having the pump-barrel integral therewith, of a tubular piston-rod and pump-piston secured thereto, the bore in said piston-rod forming the discharge-conduit for the liquid, as set forth.

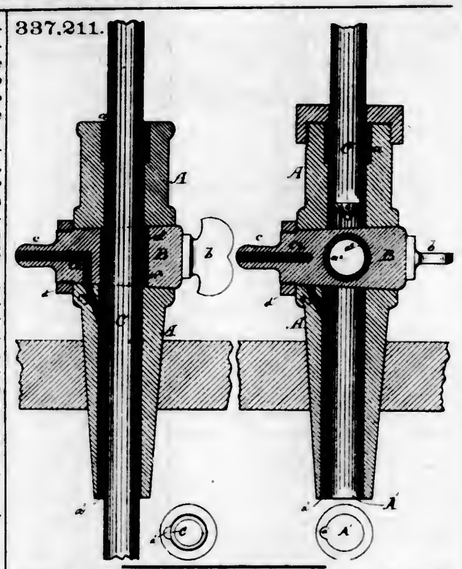
2. In a force and drain faucet, the combination, with the faucet-body and pump-barrel, substantially as described, of the tubular piston-rod for the passage of the liquid, and the piston secured thereto and working in the pump-barrel, for supplying air to the barrel or other vessel.

337,211. VENTING-BUNG. FRANK R. TIBBITTS and GEORGE W. TIBBITTS, Cleveland, Ohio. Filed Aug. 1, 1885. (No model.)

Claim.—1. The bung A, provided with a central passage, A', having on one side an offset, *a'*, which forms a supplemental passage for the inlet of air, and also a passage, c^4, extending from the said offset through the material of the bung obliquely to its upper end, in combination with the plug B, having a bushing, a^4, which closes the upper end of offset or passage *a'*, when the plug is open, and the angular inlet-passage c^3, arranged to connect with passage c^4 when the plug is in the latter position, and the outlet-pipe C, which fills the passage A', but leaves the offset or supplemental passage *a'* open to allow the influx of air through passages c^3 c^4 *a'*, substantially as set forth.

2. The bung A, having a central passage, A', and supplemental passage *a'*, which is formed by an offset therefrom, in combination with a passage, c^4, extending obliquely through the material of said bung to the upper end thereof, an outlet-pipe, C, which fills said passage A', but not the supplemental passage *a'*, and a plug, B, which is provided with a central passage, a^3, communicating with said outlet-pipe, and an air-inlet passage, c^3, communicating with passage c^4, for the purpose set forth.

337,211.

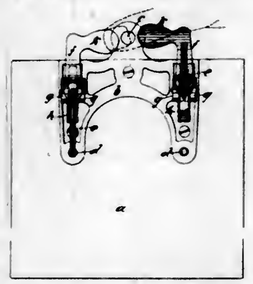


337,212. STAPLE-HOLDING IMPLEMENT. CHARLES E. VAN DUSEN, Oneonta, N. Y. Filed June 15, 1885. (No model.)



Claim.—As an improved article of manufacture, the herein-described device for holding and driving staples, consisting of a shank or handle, one end of which is adapted to receive the blows of the driving implement, and the opposite end is provided with a recess adapted to hold the staple, and a transverse slot or recess across said first recess and at right angles thereto, substantially as and for the purpose set forth.

337,213. BILL AND LETTER FILE. JOSEPH S. VANHORN, Jersey City, N. J., assignor to William H. Weglom, Brooklyn, N. Y. Filed Dec. 28, 1885. (No model.)

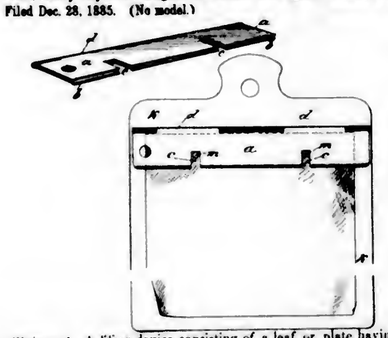


Claim.—1. In a bill or letter file formed with twin filing and transfer needles, the combination, with independently-moving transfer-needles, of an independent-operating finger piece or lever connected to each transfer-needle, and prolonged or directed toward each other in close proximity, whereby both levers may be spanned and depressed simultaneously by one finger or thumb at one action, or may be operated separately, as desired, substantially as herein set forth.

2. The combination, in a file, with a base provided with two filing-needles, such as *d d*, of two independently-moving transfer-needles, such as *e*, levers *f f*, on which said transfer-needles are mounted, and lateral prolongations *k k* on said levers, substantially as and for the purpose set forth.

3. The combination, in a file, with a base having filing-needles *d d*, of the transfer-needles *e e*, the pivoted operating-levers *f f*, with cam *i* and spring *h*, and lateral approaching thumb-pieces *k k*, substantially as shown and described.

337,214. BILL AND LETTER FILING DEVICE. JOSEPH S. VANHORN, Jersey City, N. J., assignor to William H. Weglom, Brooklyn, N. Y. Filed Dec. 28, 1885. (No model.)



Claim.—1. A filing device consisting of a leaf or plate having an abutting shoulder at its back edge and holes or notches corresponding to the filing-needles at its front edge, substantially as set forth.

2. A filing device consisting of a U-shaped clasp adapted to embrace the sheet to be filed between its leaves, and having holes or notches corresponding to the filing-needles, substantially as set forth.

3. A filing device consisting of two leaves or plates hinged at their meeting edges and having perforations or notches for the passage of filing-needles, substantially as shown and described.

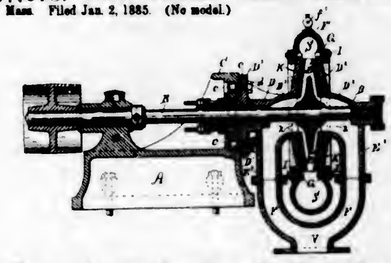
4. A filing device consisting of two leaves or plates hinged at their meeting edges, and having perforations or notches for the passage of filing-needles, and outwardly-flaring receiving edges, substantially as shown and described.

337,215. BACK-BAND HOOK. SETH WARD, Princeton, Ind. Filed Dec. 17, 1885. (No model.)



Claim.—As an article of manufacture, a back-band hook constructed of metal with a ridged back, a corresponding depression under said ridge, an upwardly and inwardly turned point, and countersunk flanged rivet-holes, all substantially as specified.

337,216. CENTRIFUGAL PUMP. WILLIAM O. WEBBER, Lawrence, Mass. Filed Jan. 2, 1885. (No model.)



Claim.—1. A centrifugal pump having the disk-casing flanges on each side of the disk jointed to the eduction-pipe, which is rotatory circumferentially around said disk-casing, for the purpose described.

2. A centrifugal pump consisting of a disk-casing whose flanges are jointed to a circular shell-like eduction-pipe, which is rotatory circumferentially around said disk-casing, and of a forked induction-pipe spanning said eduction-pipe, as described.

3. The combination, with a pump-case jointed to the hood-frame and turning thereon, of an eduction-pipe jointed to the disk-casing flanges and rotatory circumferentially about said disk-casing, for the purpose described.

4. The combination, with a pump-case jointed to the hood-frame and turning thereon, of an eduction-pipe jointed to the disk-casing flanges and rotatory circumferentially about said disk-casing, and a forked induction-pipe spanning said eduction-pipe and feeding water axially to both sides of the disk, substantially as and for the purpose described.

5. A centrifugal pump having the pump-case jointed to the hood-frame, and the eduction-pipe provided with air-vents and swiveled to the disk-casing provided with a removable plate, and the induction-pipe spanning said eduction-pipe and feeding water axially to the disk, all as and for the purpose described.

6. In a centrifugal pump, the combination, with the pump-case jointed to the hood-frame and having a forked induction-pipe feeding water to both sides of the disk, of the disk-casing provided with a removable plate and having peripherally swiveled thereto an eduction-pipe casing provided with air-vents, substantially as and for the purpose described.

7. The combination, in a centrifugal pump substantially as described, of the two rotatory joints, for the purpose described.

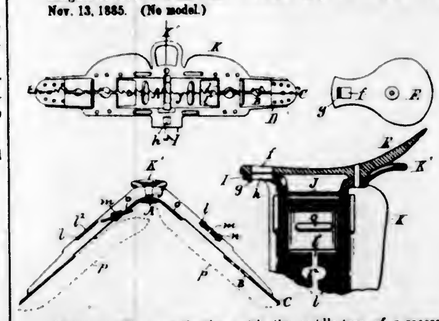
8. The combination, with the disk-casing K, of the eduction-pipe S, having the rotary joint, substantially as and for the purpose described.

9. The combination, with disk-casing K, revolvingly jointed to the eduction-pipe S, substantially as described, of the castings E^2 and E^3, and the forked induction-pipe F, substantially as described.

10. The combination, with the pump-case revolvingly jointed to the hood C, substantially as described, of the pump-case eduction-pipe S, revolvingly jointed to the disk-casing K, for the purpose described.

11. The combination, with the pump-case revolvingly jointed to the hood C, substantially as described, of the pump-case eduction-pipe S, revolvingly jointed to the disk-casing K, and the forked eduction-pipe F, and the castings E^2 and E^3, substantially as described.

337,217. HARNESS-SADDLE. WILLIAM S. WEBSTER, Newark, N. J., assignor of one-half to the Peters & Calhoun Company, same place. Filed Nov. 13, 1885. (No model.)



Claim.—1. The combination, with the saddle-tree, of a recess in the top of the arch provided with semicircular bearings at opposite ends, and a solid roller fitted to said bearings and arranged to support the back-band, substantially as herein described.

2. The combination, with the saddle-tree, of the extension I, formed at the front of the tree and provided with the hole h, to receive the shank of the rein-hook, and the seat secured on said extension by the shank of the rein-hook, substantially as and for the purpose set forth.

3. The combination, with a saddle-tree having sunken channel to receive the back-band, of the lugs *l*, projected from each side of the tree, the lugs being separated by the opening *l'*, to admit a rivet, and being formed with a notch, *l²*, to admit the hub of the terret-nut, substantially as shown and described.

4. The combination, with a cast-metal saddle-tree having a sunken channel to receive the back-band, of the stiffener C, formed integral with the ends of the tree, and the inclined ribs D, extended downward along the edges of the sunken channel and the edges of the stiffener, substantially as and for the purpose set forth.

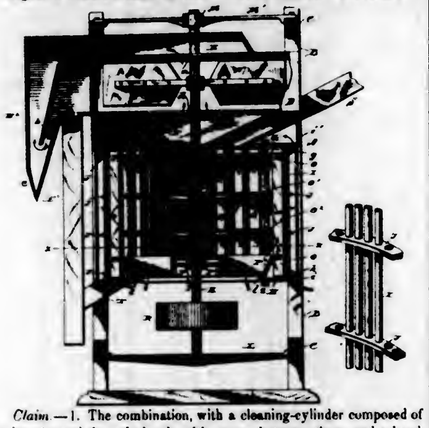
5. The combination, with the saddle-tree having the elongated hole *h* formed in the arch, of the seat E, provided with lug *g*, to fit one end of said hole, as and for the purpose set forth.

337,218. PRINTER'S GALLEY. DAVID W. WHITAKER, Durham, N. C., assignor of one-half to James Edwin Lyon, same place. Filed Feb. 9, 1886. (No model.)



Claim.—The combination of a printer's galley, a longitudinal bar sliding transversely in the same parallel to the sides, arms hinged in pairs to the outside of the said bar and having hinged heads or nuts at their outer ends formed with right and left handed threaded perforations each pair of nuts having a right and left hand perforation, and a bar journaled longitudinally in the side of the galley and having right and left hand screw-threads for the perforations of the arms, as said for the purpose shown and set forth.

337,219. SMUT-MACHINE. SYLVAN WOELBAR, Milwaukee, Wis., assignor to Faustin Prinz, same place. Filed Feb. 2, 1885. (No model.)



Claim.—1. The combination, with a cleaning-cylinder composed of a series of rounded vertical rods with spaces between them, and a band or ring through which said rods pass, of a series of revoluble horizontal plates inclosed within the space described by the said bars, the upper one of said plates being concave, a series of vertical blades at the outer edges of said plates, and a fan for creating an air-current through said cylinder, substantially as described.

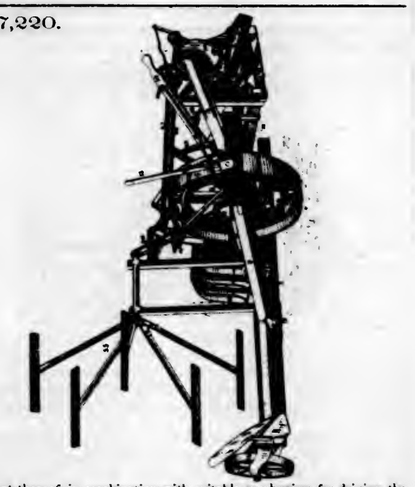
2. The combination, with the cylinder composed of vertical rods and the cross bands or rings through which the rods pass, of the revoluble horizontal plates inclosed within said cylinder, the fan composed of the curved blades, the inclined rim connected to the ends of the blades and provided with lugs, and the vertical blades connected to said horizontal plates and to the lugs on the rim of the fan, substantially as described.

3. In a smut-machine, a fan composed of the blades I^3, curved substantially as described, and an inclined rim, to which the outer ends of the blades are connected, substantially as described.

4. In a smut-machine, the combination, with a cleaning-cylinder, and a ring or plate at the lower part of said cylinder provided with an upwardly-extending flange, of a fan in the lower part of said cylinder, composed of a series of wings having their lower edges recessed to receive the upwardly-extending flange on the plate at the lower part of the cleaning-cylinder, substantially as described.

5. A smut-machine comprising an outer casing, a cleaning-cylinder composed of a series of rounded vertical rods with spaces between them, and cross rings or bands through which said rods pass and are rigidly held apart, a series of revoluble horizontal plates, the upper one of which is dish-shaped, a series of vertical blades at the outer edges of said plates, a fan in the lower part of the cylinder composed of a series of blades inclining outwardly from their lower edges upwardly, and plates above and below said cylinder, casing, and horizontal plates, both said plates being formed with openings for the passage of air into and out of the space between the cleaning-cylinder and outer casing, and the lower plate, also formed with an opening for the passage of air to the fan above it, substantially as described.

337,220. HARVESTER AND BINDER. WILLIAM N. WHITELEY and WILLIAM BAYLEY, Springfield, Ohio; said Bayley assignor to said Whiteley. Filed Apr. 17, 1884. (No model.)



Claim.—1. In a rear-cut grain-binding harvester, the combination of the main wheel-frame supported by the main driving-wheel, gearing extending direct therefrom to the cutting apparatus, which is supported on a frame hinged to said main wheel-frame on the line of the cutters, suitable binding mechanism rigidly connected to the frame supporting the cutting apparatus and located in rear of the hinge, and suitable gearing for driving said binding mechanism mounted upon the same frame, but located in advance of the axle of the main driving-wheel for the purpose of balancing the frame carrying the binder and grain-carrier on the hinge between said frame and the wheel-frame.

2. In a rear-cut grain-binding harvester, the combination of the main wheel-frame supported by the main driving-wheel, direct gearing therefrom located on the stubble side of and in advance of the center of said main driving-wheel, and suitable binding mechanism mounted on a separate frame located on the stubble side and in rear of said main wheel-frame and the center of the main driving-wheel for the purpose of balancing and operating the machine, as set forth.

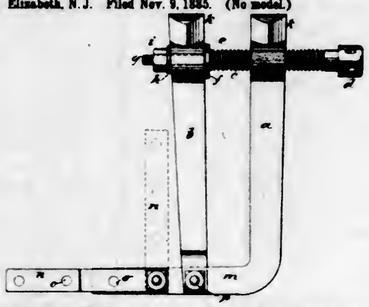
3. In a grain-binding harvester, the cutting apparatus, grain-carrier and binder mechanism located in rear of the main driving-wheel, and a counter-shaft driven mediately by said wheel, extending to a point in front thereof, in combination with suitable mechanism for driving the carrier and binder located in front of the periphery of the main wheel on its outside, and suitable means for communicating motion from the said counter-shaft to binder-driving mechanism located on the outer side of the wheel.

4. In a rear-cut grain-binding harvester having the frame carrying the cutting apparatus hinged to the main wheel-frame on the line of cut, the combination of the binding mechanism located in rear of said hinge, and the gearing for driving the binding devices located on an extension of said frame in front of said hinge, the extension and gearing being advanced forward by the side of the main wheel to counterbalance the weight of the binding mechanism and frame upon said hinge, as set forth.

5. In a rear-cut grain-binding harvester, the combination of a main wheel-frame supported by the main driving-wheel, a hinged tongue controlled by a lever attachment to the main wheel-frame, a frame supporting the cutting apparatus hinged to said main driving-wheel frame and supporting also the binding mechanism in rear of and outside of the plane of said main driving-wheel, gearing for said binder located in front of the axis of the main wheel, and a controlling-lever for said hinged frame supporting the cutting apparatus and the binder with segment and latch, all arranged, substantially as set forth, for the purpose of better balancing, raising, lowering, and tilting the frame carrying the cutters and binder.

6. In a rear-cut grain-binding harvester, the tongue hinged to the front end of the main wheel-frame, and the frame supporting the cutting apparatus hinged to the rear end of said main wheel-frame, in combination with the gear driven by the master-wheel located upon said main wheel-frame on the stubble side of and in advance of the center of said main wheel, and the binder mechanism located outside of and in rear of said wheel, and suitable means for separately controlling said binding and cutting apparatus supporting-frame for the purpose of balancing and raising, lowering, and tilting the machine by the driver from his seat or stand.

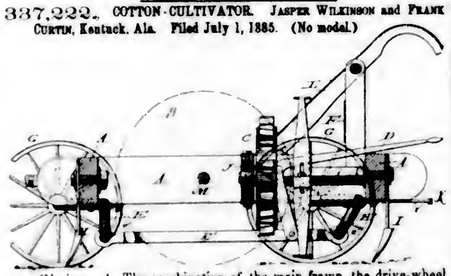
337,221. TOOL FOR EXPANDING HORSESHOES. HARVEY WILCOX, Elizabeth, N. J. Filed Nov. 9, 1885. (No model.)



Claim.—1. The combination, with the pivoted lever-jaws *a b*, having the knife-edge tips *k k*, of the screw *c*, screwing through one jaw and bearing on the other, substantially as shown and described.

2. The combination of the pivoted jaws *a b*, tips *k k*, screw *c*, and folding extension-bar *n*, substantially as shown and described.

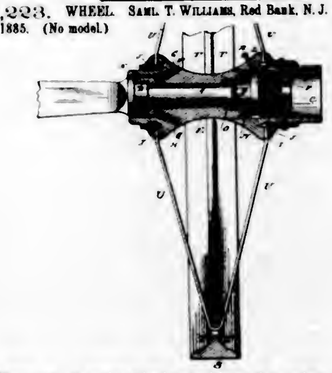
337,222. COTTON-CULTIVATOR. JASPER WILKINSON and FRANK CURTIN, Kentuck, Ala. Filed July 1, 1885. (No model.)



Claim.—1. The combination of the main frame, the drive-wheel supported thereby, the chopping mechanism, also supported by the main frame and geared with the drive-wheel, the axles journaled to said main frame and having crank-spindles and cranks *e'*, a connection between cranks *e'*, and an operating-lever, substantially as and for the purposes specified.

2. The combination of the main frame having holes H H and I I, the axles E, having crank-spindles *e e* and bell-cranks *e'*, link E', connecting cranks *e'*, the lever D, the shafts M and *j*, gearing connecting said shafts, a drive-wheel on the shaft M, and a chopping-wheel on the shaft *j*, substantially as and for the purposes specified.

337,223. WHEEL. SAML. T. WILLIAMS, Red Bank, N. J. Filed July 1, 1885. (No model.)



Claim.—1. A tension-wheel comprising a tire, spokes, and an axle-box having a friction-gasket, G, applied to one end, a holder for one end of the spokes seated upon said gasket, and a holder for the other end of the spokes longitudinally adjustable on the axle-box, substantially as described.

2. The combination of an axle-box having its inner end beveled and provided with a friction-gasket, a holder for the inner ends of the spokes seated on said gasket, and a holder for the outer ends of said spokes movable on said box and provided with internal screw-threads engaged by a threaded nut rotarily connected with the axle-nib, substantially as set forth

337,224. STRING-GAGE. CHAS. F. ALBERT, Philadelphia, Pa. Filed Dec. 12, 1885. (No model.)



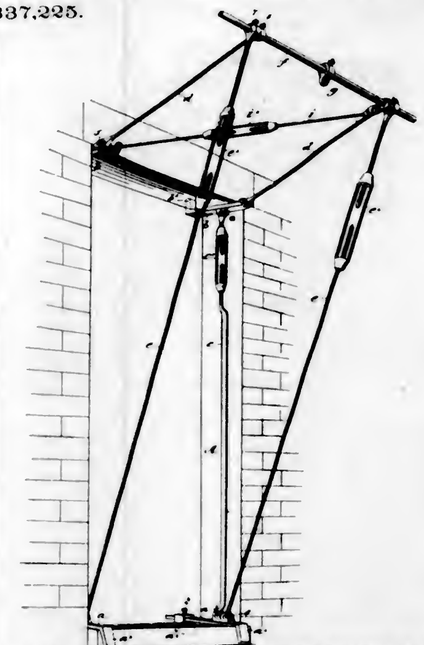
Claim.—A gage for the strings of a violin or similar instrument having its measuring-notches in separate relative sets for the separate strings, substantially as set forth.

337,225. PORTABLE WINDOW-CRANE. ALEXANDER ANDERSON, Boston, Mass. Filed Dec. 26, 1885. (No model.)

Claim.—1. In a window-crane, the foundation-plates to be applied to the upper and lower portions of a window-casing, combined with jibs and stays connected with said foundation-plates, and a cross-bar to which the outer or free ends of the jibs and stays are connected, substantially as described.

2. In a window-crane, the foundation-plates having engaging projections, as described, combined with jibs and stays connected with said foundation-plates, and a cross-bar to which the outer or free ends of the jibs and stays are connected, substantially as described.

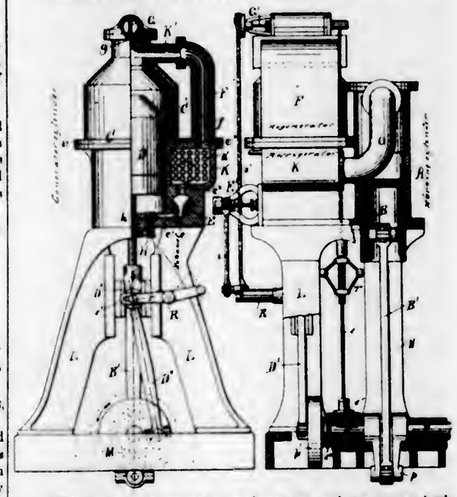
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3. In a window-crane, the foundation plates *a b*, combined with jibs and stays pivotally connected with said foundations, and a cross-bar to which the outer or free ends of the said jibs or stays are loosely connected, substantially as described.

4. In a window-crane, the foundation-plates *a b*, combined with jibs *d*, pivotally connected with the foundations *b*, and the adjustable stays *e*, pivotally connected with the foundation-plates *a*, the cross-bar *f*, to which the outer or free ends of the jibs and stays are loosely connected, and the brace-rod *i*, all substantially as described.

337,226. GAS-ENGINE. GARDNER C. ASTERLAT, Providence, R. I. Filed June 10, 1885. (No model.)

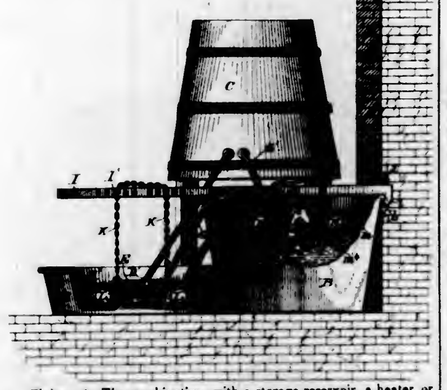


Claim.—1. An improved gas-engine constructed and arranged substantially as described, whereby the piston of the generator-cylinder is subjected to equal pressure on both sides during and after combustion of gases, the pressure being utilized in a second cylinder, as described.

2. An improved gas-engine constructed and arranged substantially as described, whereby the air is passed from one side of the generator-piston to the other through a restorer to produce compression in the generator previous to combustion of gases, and heating the air and augmenting the pressure, as specified.

3. An improved gas-engine constructed and arranged substantially as described, whereby the pressure generated by the combustion of the gas is transferred to the working cylinder by means of an intermediate volume of air, as described.

337,227. APPARATUS FOR AUTOMATICALLY FEEDING LIQUIDS TO EVAPORATORS. MERRITT C. BARDEN, West Pawlet, Vt. Filed Mar. 18, 1885. (No model.)



Claim.—1. The combination, with a storage-reservoir, a heater or other intermediate vessel, and an evaporator, of a discharge-pipe leading from the reservoir to the heater, a float resting upon the liquid in the evaporator and opening and closing the discharge-pipe, a float resting upon the liquid in the heater, and having a receiver mounted upon it provided with drainage-openings, and arranged to receive the flow from the discharge-pipe, a second discharge-pipe opened and closed by the rise and fall of the heater-float, and a communication between the heater and the evaporator, all substantially as and for the purpose described.

2. The combination, with a float having a receiver provided with drainage-openings mounted thereon, of a valve or other shut-off operated by the rise and fall of said float, and mechanism, substantially as described, for discharging fluid from a storage-reservoir, for sinking said float, substantially as and for the purpose described.

3. The combination, with a storage-reservoir, a heater or other intermediate vessel, and an evaporator, of a receptacle communicating with said reservoir, a valve seated in the wall of said receptacle, and opened and closed by the rise and fall of a float resting upon the liquor or sirup in the evaporator, a pipe conveying the discharge from said valve to a receiver mounted upon a float resting upon the fluid in the heater, and having drainage-openings, a valve in the receptacle opened and closed by the sinking and rising of the heater-float, a pipe which discharges the fluid from the latter valve directly to the heater, and means of communication between the latter and the evaporator, whereby the surplus fluid may pass into the pan, substantially as and for the purpose described.

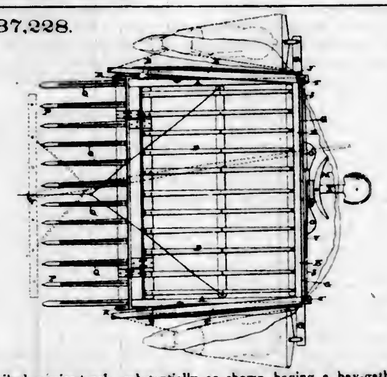
4. The combination, with a storage-reservoir, of a feeding-pipe, a valve or other shut-off opening and closing said pipe, a sinking and rising float actuating the same, a receiver mounted upon said float and provided with drainage-openings, and automatic mechanism for filling said receiver and sinking the float, substantially as and for the purpose described.

5. The combination, with a fluid-reservoir, an evaporator, and a heater intermediate of the two, of a receptacle between the heater and the reservoir and communicating with the latter, pipes leading from said receptacle to the heater, valves opening and closing said pipes, a float in the evaporator operating one of said valves, and a float in the heater operating the other, said heater having an overflow-pipe communicating with the evaporator, whereby the fall of the fluid in either vessel will give a fresh supply from the reservoir to the heater, and thence to the evaporator, substantially as specified.

337,228. COMBINED HORSE-RAKE AND CARRIER-TRUCK. JAS. H. BARLEY, Sedalia, Mo. Filed Sept. 19, 1884. (No model.)

Claim.—1. The combination and arrangement of the within-described carrier-truck, substantially as shown, having a hay-gathering device connected to the front end of said truck, and the guiding-wheel pivotally connected to the rear end of the truck-frame with the draft-bar, which has its ends to project beyond the rear corners thereof, and the side railings, to which the horses are fastened in front, substantially as set forth.

337,228.



2. The combination of the truck supported upon wheels at its front corners, and the horse-rake connected to the front end thereof, with the guiding-wheel pivotally connected to the rear end of the truck, the driver's seat connected to the stem or pintle of the wheel-yoke and extending rearwardly and supported by braces directly over said wheel, substantially as specified.

3. The combination of the truck supported upon wheels at its front corners, the gathering-rake connected to the front end of said truck, and the guiding-wheel pivotally connected to the rear end thereof, the stem or pintle of the wheel-yoke, which is provided with a handle, and the driver's seat connected to the rear of said pintle and supported over the wheel, substantially as shown.

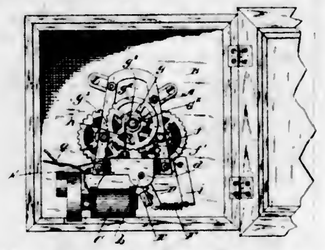
4. The combination of the carrier-truck with the gathering-rake loosely connected to the front end thereof, and the bottom which is hinged to the front end of the truck-frame, and which is adapted to be raised up from its rear end so as to discharge the load of hay or contents of the truck out forward over the rake, substantially as described.

5. The combination of the carrier-truck having a gathering device connected to the front end thereof, a hinged truck-bottom, and a means, substantially as shown, for raising the truck-bottom on its hinges, whereby the hay is unloaded at the forward end over the gathering device, substantially as set forth.

6. In a combined horse hay-rake and carrier-truck, the combination of the rake and truck having the rake hinged to the front end of the truck, and provided with standards attached to opposite ends of the rake, with the ropes, wires, or chains which are connected to said standards and extending rearwardly aroond the truck-frame and attached to a pivoted lever or wheel located upon the rear end of said truck, and the guiding-wheel which is pivotally attached to the rear end thereof, with the draft-bar, which has its ends to project beyond the rear corners of the truck-frame, and the side railings of said truck to which the horses are fastened in front, substantially as specified.

337,229. RAILWAY TIME-SIGNAL. CHARLES BARRY, Corning, N. Y. Filed Sept. 26, 1885. (No model.)

Brief.—Gives notice of an approaching train and indicates the time of passage of preceding train.



Claim.—1. In an electric time indicator or signal, the combination, with the clock mechanism, of the lever geared thereto and having an armature at one end, and carrying two pinions on a shaft at its other end, and the electro-magnet, substantially as and for the purpose set forth.

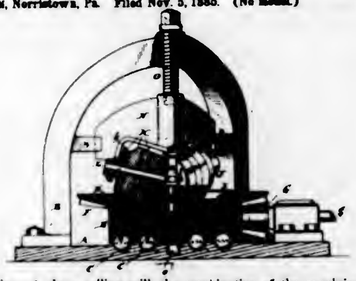
2. In an electric time indicator or signal, the combination, with the clock mechanism, the semi-cogless wheels, and an electro-magnet, of the lever provided with an armature and with pinions, one engaging the clock mechanism and the other the said semi-cogless wheel, substantially as and for the purpose set forth.

3. In an electric time signal or indicator, the combination, with the clock mechanism and the electro-magnet, of the lever carrying an armature at one end and connected to a spring at its armature end, said lever also carrying at its other end a shaft provided with pinions connected to the time or clock mechanism and to a partially-toothed wheel, respectively, substantially as and for the purpose specified.

4. In a time indicator or signal, the combination, with the time or clock mechanism and an electro-magnet, of the hand or index, the dial, the semi-cogless wheel having a drum, upon which is wound a weighted cord or strap, and the lever carrying at its one end an armature and connected at its same end to a spring, said lever carrying at its upper end a shaft provided with pinions adapted to gear with the clock mechanism and the semi-cogless wheel, respectively, substantially as and for the purpose set forth.

5. A railroad time signal or indicator having the lever carrying at its one end an armature, a spring connected to said lever, a shaft provided with pinions, the semi-cogless wheel having a drum, the weighted cord or strap wound upon said drum, and the electro-magnet, substantially as shown and described.

337,230. **MACHINE FOR ROLLING CAR-WHEELS.** THEO. W. BEAM, Norristown, Pa. Filed Nov. 5, 1885. (No model.)



Claim.—1. In a rolling-mill, the combination of the revolving die E, having its upper surface formed to receive the previously-cast article to be rolled, with a stationary frame, N, and loose compressing-roller J, journaled therein, substantially as and for the purpose specified.

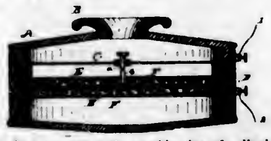
2. In a rolling-mill, the combination of the revolving die E, having its upper surface formed to receive the previously-cast article to be rolled, with a stationary frame, N, and loose compressing-roller J, journaled therein, suitable guides to prevent said frame from revolving, and screw O, to raise or lower the said frame and its roller, substantially as and for the purpose specified.

3. In a rolling-mill, the combination of the revolving die E, having the part H, to receive the article to be rolled, and gear-teeth F, with pinion G, anti-friction balls D, stationary frame N, carrying the rollers J, suitable guides or stops to prevent said frame from revolving, and screw O, to adjust said frame vertically, substantially as and for the purpose specified.

4. In a rolling-mill, the combination of the revolving die E, having its upper surface formed to receive the previously-cast article to be rolled, with a stationary frame, N, and loose compressing-roller J, journaled therein, the said rolls being made more or less conical and formed in sections K, substantially as and for the purpose specified.

5. In a rolling-mill, the revolving die E, having its upper part formed at H to conform to the shape of one side of a car-wheel, and provided with stud A, in combination with stationary rollers J, extending from the center of the die outward, and having their peripheries so shaped as to form the other face of the car-wheel, and a frame or support for said rollers, to prevent their rotation about the studs A, and feeding devices, substantially as described, to move said rollers to or from the die E, substantially as and for the purpose specified.

337,231. **TELEPHONE.** SIGMUND BERGMANN, New York, N. Y. Filed Dec. 4, 1883. (No model.)



Claim.—1. In a telephone, the combination of a diaphragm free to move under sound-vibrations, carrying one contact-point, and a diaphragm provided with a liquid body limiting its movement, carrying the other contact-point, substantially as set forth.

2. In a telephone, the combination, with a diaphragm and an electrode controlled thereby, of a liquid body on each side of said diaphragm, for limiting its movement, substantially as set forth.

3. In a telephone, the combination of three diaphragms and a liquid body on each side of the central diaphragm, for limiting its movement, said central diaphragm controlling an electrode, substantially as set forth.

4. In a telephone, the combination of a diaphragm free to move under sound-vibrations and carrying a contact-point, and a diaphragm carrying another contact-point and having a liquid body on each side of it, for limiting its movement, substantially as set forth.

5. In a telephone, the combination of a diaphragm free to move under sound-vibrations and carrying a contact-point, and a diaphragm carrying another contact-point and having a diaphragm on each side of it, the spaces between the three last-mentioned diaphragms being filled with liquid, substantially as set forth.

337,232. **TELEPHONE-RECEIVER.** SIGMUND BERGMANN, New York, N. Y. Filed Dec. 31, 1884. (Model.)



Claim.—1. In a telephone-receiver, the combination, with a diaphragm or other sound-producing body, of one or more magnets, circuit-connections for bringing such magnet or magnets axially into circuit, and an adjusting device varying the space through which the force is exerted, substantially as set forth.

2. In a telephone-receiver, the combination, with a diaphragm or other sound-producing body, of two or more magnets arranged in line and having circuit-connections, whereby the current is passed through said magnets axially, substantially as set forth.

3. In a telephone-receiver, the combination, with a diaphragm or other sound-producing body, of a magnet attached thereto, one or more other magnets arranged in line with the first magnet, a conductor or conductors connecting the magnets together, and circuit-connections bringing the magnets axially into circuit, substantially as set forth.

4. In a telephone-receiver, the combination, with a diaphragm or other sound-producing body, of a magnet secured thereto, one or more other magnets arranged in line with the first magnet, circuit-connections bringing such magnets axially into circuit, and an adjusting device varying the space or spaces through which the magnetic force is exerted, substantially as set forth.

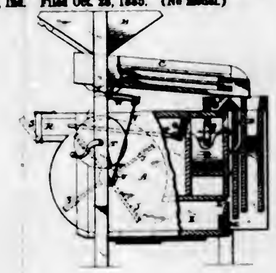
337,233. **STOVE OR RANGE DAMPER.** ALPHEUS M. BLAKESLEY, Rock Island, Ill. Filed May 28, 1885. (No model.)



Claim.—1. The combination, with a stove or range, of the damper-valve C, having cams c' on its opposite faces, a socket, c^3, therein, and a lug, c, at one end, a button, G, pivoted to the top plate of the oven and projecting into the socket c^3, and the valve-rod D, provided with fingers d^3, to engage the cams c', all arranged and operating as described.

2. The combination, with a stove or range, of a damper-valve, C, provided with an end journal, c, and a socket, c^3, a bearing for the end journal, a support, as G, between said ends, cams c' on the opposite faces of the valve C, and a rod, D, passing under the latter and provided with fingers d^3, to engage the cams c'.

337,234. **GRAIN SEPARATOR AND CLEANER.** JOHN P. BOND, Warsaw, Ind. Filed Oct. 28, 1885. (No model.)



Claim.—1. The combination of the frame A, shoe, and screens, the fan-chamber placed inside of the frame and provided with air-openings, the fan, the exhaust-passage R, door S, passage K, provided with opening L, slide M, passage I, and chamber N, whereby the grain is separated and cleaned either by suction or by suction and blast, substantially as described.

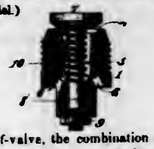
2. The combination of the frame A, the shoe, and screens, the fan-chamber placed inside of the frame and provided with air-openings, the fan-passage R, door S, passage K, provided with opening L, slide M, and passage I, with the chamber N, deflector or screen placed in the top of the chamber, the moderating-board Q, and a means for moving it, substantially as described.

337,235. **PACKAGE FOR BELT-DRESSING COMPOUNDS.** JOHN H. BRISCOLD, Albany, N. Y. Filed Mar. 11, 1884. (No model.)



Claim.—A case for packing and holding belt-dressing compounds made in a solidified form, the same consisting of the body A, having its bottom and side walls made of paper cemented tight at their joints, and having its interior wall-surfaces coated with substance which the oil in the compound will not pass through, and having external scores or cuts, c, at intervals, made all around, all substantially as and for the purposes and operations set forth.

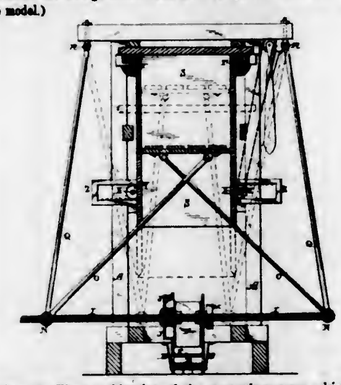
337,236. **RELIEF-VALVE.** JOHN BRISCOE, Belivar, N. Y. Filed Oct. 16, 1884. (No model.)



Claim.—1. In a relief-valve, the combination of a valve-chamber adapted to be tapped and secured into any part of a gas, water, or steam pipe, a valve, a valve-stem passing through and projecting outside the valve-chamber, a spring acting upon the valve, and means for adjusting the resilience of such spring located upon the exterior of the chamber, substantially as described.

2. A relief-valve for pipes or tubes, consisting of a chamber, adapted to be tapped into and secured to a pipe, and provided with outlets, a valve seated therein, a stem secured to the valve and projecting through and outside of the chamber, a spring seated within the chamber for normally holding the valve open, and a nut upon the stem outside of the chamber for adjusting the resilience of the spring, substantially as described.

337,237. **BALING-PRESS.** WALTER S. BRYAN, Kemp, Tex., assignor to himself and George Dallas Johnson, same place. Filed Nov. 27, 1885. (No model.)



Claim.—1. The combination of the operating-screw which has a vertical movement, the bearing in which it is journaled, the frame in which the bearing is placed and which has a vertical movement with the screw, the nuts, and the rods which connect the screw with the follower, substantially as described.

2. The combination of the right-and-left-hand screw, the bearing in which it is journaled and which has a vertical movement with the laterally-moving frame in which the bearing is placed, and the nuts and rods which connect the screw with the follower, substantially as shown.

3. In a cotton-press, the combination of the operating-screw with its journal or bearing, said screw having a limited universal motion, substantially as set forth.

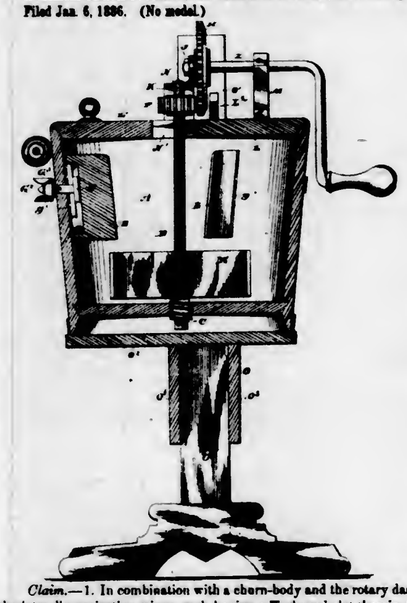
4. The combination of the right-and-left-hand screw, the bearing in which it is journaled and which has a vertical movement, the frame F, provided with friction-rollers, and the frame in which the frame F is supported, the frame F having a lateral movement, substantially as specified.

5. In a cotton-press, the combination of the box having pivoted sides which are movable only at their upper ends, the cams on each of the sides, and the rods provided with projections on each end to engage with the cams on opposite sides, whereby the sides of the box can be loosened from the bale, substantially as shown.

6. The combination of the box having pivoted sides which are movable only at their upper ends, clamping-rods for operating both of these sides at the same time, and the vertically-moving follower, substantially as described.

7. The combination of the follower, the box which has a vertical movement in relation to the follower, clamping devices which are applied to the top of the box, and a suitable mechanism for moving the box vertically, substantially as set forth.

337,238. **CHURN.** LEWIS D. BUSH, Salt Lake City, Utah, assignor to himself, Charles F. Decker, and Charles M. Donelson, all of same place. Filed Jan. 6, 1886. (No model.)

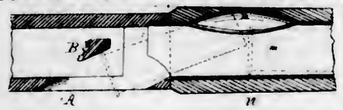


Claim.—1. In combination with a churn-body and the rotary dasher, the laterally-projecting wings, each having a T-shaped slot therein, bolts passing through the sides of the body and provided with heads which rest in the slots of the wings, and thumb-nuts for locking the bolts to the churn-body, substantially as set forth.

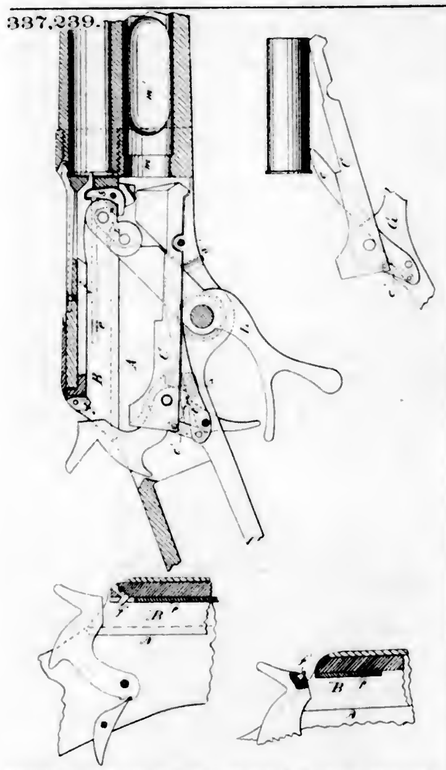
2. The combination, with the churn-body, the wings having T-shaped slots therein, and headed bolts for securing the wings to the body, of the two-part cover, the driving mechanism secured to one part of said cover, and the dasher-shaft having a pinion thereon engaging the driving mechanism, substantially as set forth.

337,239. **MAGAZINE-GUN.** ANDREW BURGESS, Owego, N. Y. Filed Apr. 26, 1882. (No model.)

Claim.—1. In a fire-arm, a reciprocating bolt, and a firing-pin with longitudinal movement in said bolt, and a bell-crank lever pivoted in the bolt below the firing-pin, its upper vertical arm engaging a shoulder in the firing-pin and its lower horizontal arm extending in line of movement of the locking-piece, combined with an oblique locking-piece, so that said locking-piece by turning toward the axis of the bolt turns the lever by



337,239.



engaging its lower arm, and thus forces back the firing-pin, substantially as described.

2. The combination, with a pivoted hammer, of a reciprocating bolt, and a fly arranged in the bolt, substantially as described, whereby the fly presses back the hammer as the bolt moves back, but rides easily over as the bolt moves forward.

3. In a magazine-gun, a frame and a carrier therein, combined with a lever fulcrumed in the frame and having its short arm connected to the carrier, whereby the long arm of the lever is operated to raise the rear of the cartridge as the carrier rises, substantially as described.

4. In a magazine-gun, the combination of a frame having a loading-opening to admit the passage of the cartridge into the magazine, and a magazine recessed on the opposite side and forward of said opening in the frame, so that the forward end of the cartridge may partly enter said recess to turn into the magazine, substantially as stated.

5. In a fire-arm, the frame having a socket therein parallel with the barrel, a spring in said socket, a rod, a barrel, and a cut-out thimble at the front of the barrel, whereby the rod is held with part of its face exposed, substantially as described.

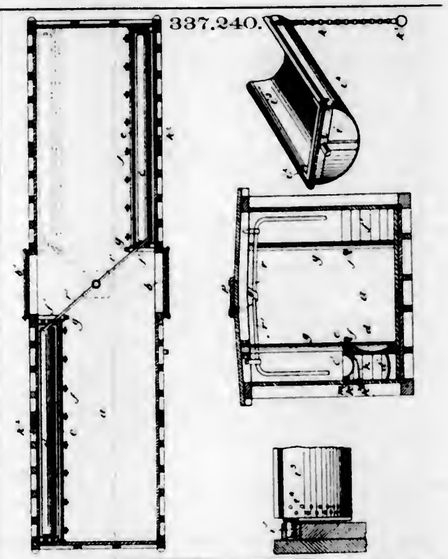
337,240. STOCK-CAR. GEORGE D. BURTON, New Ipswich, N. H. Filed Dec. 26, 1885. (No model.)

Claim.—1. The car-body *a*, forming a single compartment, combined with doors *b b'* at an intermediate point on either side, and centrally-pivoted feed-troughs, and fastening devices extending from the said doors to the ends of the car, along the sides thereof, for accommodating animals standing transverse to the length of the car, and the water-receptacle *o* at the middle of the car, and branch pipes leading therefrom to the feed-trough, substantially as described.

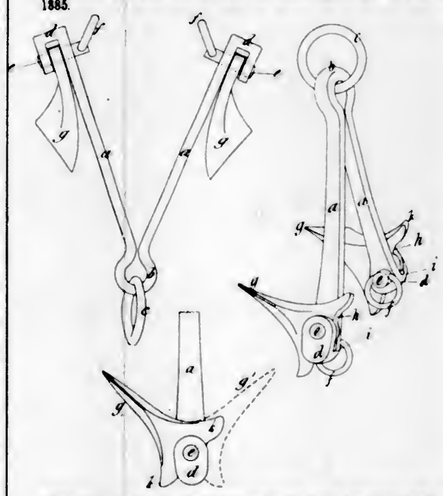
2. In a stock-car, the combination, with a centrally-pivoted feed-trough, of an actuating device for inverting the same, consisting of the flexible cord or chain *k*, connected with the trough near one side and extending across beneath the trough and out through an opening in the side of the car, substantially as described.

3. In a stock-car, a feed-trough composed of end pieces, *i*, provided with journals i^2 and flanges i^3, combined with sheet-metal sides i^4, secured to the said flanges by rivets, substantially as and for the purpose described.

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337,241. ANCHOR. THOMAS S. CALPIN, St. John's, Newfoundland. Filed Oct. 13, 1884. (No model.) Patented in England Aug. 18, 1884, No. 11,396; in Canada Nov. 28, 1884, No. 20,645, and in Norway Apr. 24 1885.



Claim.—1. An anchor having a V-shaped shank provided with an eye or shackle at its apex, and having at the extremity of each branch of the shank jaws for receiving the pivotally-mounted flukes, the latter being secured by pivot-bolts having fishing-rings on their inner ends, substantially as described.

2. An anchor having a V-shaped shank provided with an eye or shackle at its apex, and having jaws at the extremity of each branch of the shank, and flukes pivoted in said jaws and provided with spurs made integral therewith and curved outward upon each side of the pivotal support of the flukes, substantially as described.

3. The combination, with the V-shaped shank *a*, having an eye or shackle, *b*, and jaws *d*, of flukes *g*, pivotally mounted in said jaws and having spurs *k*, and the pivot-pins *e*, having fishing-rings *f*, substantially as described.

337,242. TOOL-HANDLE. JOHN CHANTRELL, Reading, Pa., assignor to the Reading Hardware Company, same place. Filed Aug. 14, 1885. (No model.)

Claim.—1. In a tool-handle, the head and shank made integral and having a slot whose sides taper upward and inward, loose jaws adapted

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to move in said slot, and a rotating sleeve which, when moved upward, carries the jaws against the inclines, thus closing them against the shank of the tool.

2. The head and shank made in a single piece and having a slot through it whose sides are inclined upward and inward, and an external screw-thread, in combination with loose jaws which move in said slot, and a sleeve having a screw-thread which engages the shank, and a recess which receives the jaws.

3. The combined head and shank having a cross-slot whose sides taper upward and inward, loose angular jaws adapted to move in said slot, whose faces are provided, respectively, with pins I', and holes I to receive them, whereby vertical displacement is prevented, and an external sleeve threaded to engage the shank, and having a recess, the bottom of which carries the jaws when in use.

4. In a tool-handle, a pair of jaws without shanks, and having parallel faces, and inclined backs, in combination with a head having a slot with inclined sides, in which the jaws slide, and a sleeve having a recess, the bottom of which carries the jaws against the sides of the slot, whereby they are closed.

5. In a tool-handle, a pair of jaws having parallel faces and inclined backs, in combination with a head having a slot with inclined sides, in which the jaws slide, a sleeve adapted to carry the jaws against the sides of the slot, and a loose ring or band lying between the sleeve and the head.

337,243. BRACE-CHUCK. JOHN CHANTRELL, Reading, Pa., assignor to the Reading Hardware Company, same place. Filed Oct. 2, 1885. (No model.)



Claim.—1. A brace-chuck consisting of a head having inclines, a follower adapted to slide within the head, and having an opening to receive the bit-shank, jaws loosely recessed into the ends of the follower, by which they are carried, and a sleeve adapted to raise the follower when it is desired to close the jaws.

2. The follower having a central opening to receive the bit-shank, and grooves in its ends, in combination with jaws loosely held in said grooves, a sleeve adapted to receive and carry the follower, and the head having inclines which close the jaws.

3. The jaws having shanks M and cross-pieces N, and the follower having a central opening to receive the bit-shank, and grooves in each end corresponding in shape with said shanks and cross-pieces, in which they loosely fit, in combination with the head, and the sleeve screw-threaded to engage therewith.

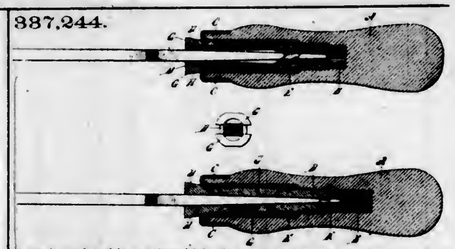
4. The follower having a central opening to receive the bit-shank, and vertical and transverse slots in its ends, in combination with jaws having shanks and cross-pieces which engage said grooves, said cross-pieces having inclines, as shown, a sleeve which carries the follower, and a head having inclines which close the jaws.

5. The head having internal inclines, B, a slot, C, through it, and an external screw-thread, in combination with the follower adapted to slide within the head and provided with a central opening to receive the bit-shank, independent jaws recessed into the ends of the follower, and a sleeve screw-threaded to engage the shank and having a circular recess which receives the follower, substantially as described.

337,244. FILE-HANDLE. JOHN CHANTRELL, Reading, Pa., assignor to the Reading Hardware Company, same place. Filed Oct. 5, 1885. (No model.)

Claim.—1. A file-handle consisting, essentially, of a part, A, having a central opening, spring-jaws to engage the tang, a sheath which engages

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part A, and a thin nut in which the tang is adapted to be turned to make or engage a groove at the corners, whereby it is locked against withdrawal, substantially as described.

2. In a file-handle, part A, having a central opening, and a ferrule turned over its outer end, in combination with a sheath having a screw-thread to engage part A, a nut in which the tang is adapted to be turned to cut or engage a groove therein, and spring-jaws having inclines which engage the ferrule, by which they are forced against the tang, as and for the purpose set forth.

3. The combination, with a file whose tang is provided with a groove at the corners, of spring-jaws and a screw-threaded sheath, a nut adapted to engage the groove in the tang when given a quarter-turn, and part A, into which the sheath is turned and which closes the jaws against the tang.

4. Part A, having a central opening, spring-jaws, and a sheath, the jaws having inclines at their outer ends to engage the end of the handle, and the sheath having a screw-thread to engage the body of the handle, in combination with a file or other tool with a grooved tang, and a nut with an opening corresponding in shape with the tang, the edges of said opening being made thin to engage the groove in the tang when given a quarter-turn.

5. A combined sheath and jaws for tool-handles, the sheath having an external screw-thread to engage the handle, and an internal fixed nut with thin edges adapted to engage or make a groove in the tang, and the jaws having inclines by which they are forced against the tang to keep it from turning

6. A combined sheath and jaws for tool-handles, the exterior of said sheath being screw-threaded, and it having also a fixed nut with a central opening corresponding with the tang of a file, the edges of said opening being made thin, as and for the purpose set forth.

337,245. FILE-HANDLE. JOHN CHANTRELL, Reading, Pa., assignor to the Reading Hardware Company, same place. Filed Oct. 5, 1885. (No model.)



Claim.—1. A tool-handle consisting, essentially, of a part, A, having a central opening, and a sheath and pair of spring-jaws, the sheath having a central opening corresponding in cross-section with the tang of a tool, whereby the latter is kept from turning, and the jaws having an edge or tooth to make or engage depressions in the tool-tang, and external inclines which engage part A, whereby they are closed against the tang.

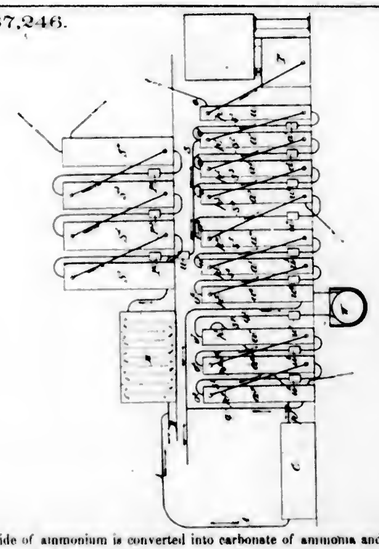
2. A tool-handle consisting of a part, A, having a central opening with a ferrule turned over the outer end and into said opening entirely around it, and a sheath having an external screw-thread, a central opening extending through it corresponding in cross-section with the tang of a tool, and jaws made integral with said sheath, and having an edge or teeth to engage the tang, and inclines whereby they are closed against the tang as the sheath is turned into part A.

3. A combined sheath and jaws for tool-handles, the sheath having an external screw-thread, and a central opening corresponding in cross-section with the tang of a file, and the jaws having an edge or teeth adapted to engage depressions in the tang of a tool.

337,246. PROCESS OF PURIFYING COAL-GAS AND OBTAINING AMMONIA AND OTHER PRODUCTS THEREFROM. CARL F. CLAUS, London, England. Filed May 23, 1883. (No specimens.) Patented in England June 23, 1881, No. 2,838, July 29, 1882, No. 3,603, and Sept. 29, 1882, No. 4,644.

Claim.—1. The process herein described of treating crude gas-liquor for decomposing the sulphide of ammonium contained in the same, said process consisting in showering the crude gas-liquor down one or more towers filled with coke or other porous material, and at the same time passing carbonic-acid gas in the opposite direction, whereby the

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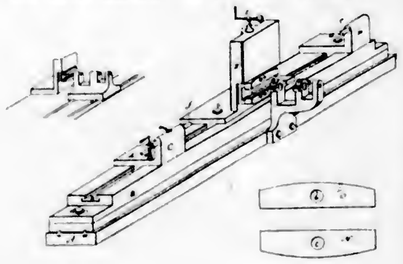
sulphide of ammonium is converted into carbonate of ammonia and the sulphide of hydrogen is set free.

2. In the purification of coal-gas, the method set forth of distilling the crude gas-liquor for the elimination of gaseous ammonia and vapors of carbonate of ammonia, said method consisting in running the liquor, heated as described, through a series of stills, each having an overflow-pipe in the bottom connecting it with the next succeeding still, and a pipe at the top communicating with the bottom of the adjacent still, whereby the liquor passes in one direction through the whole series and the liberated gases in the opposite direction, substantially as described.

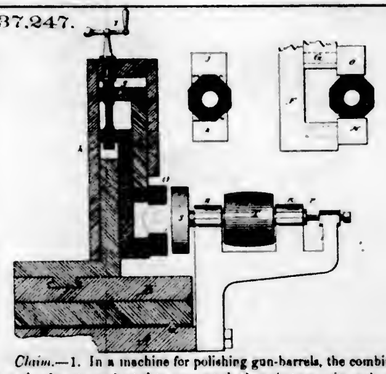
3. The process described of purifying gas, consisting in passing gaseous ammonia, which is produced in the manner set forth, together with the gas, into a mixing-chamber previous to the entrance of said gases into the gas-scrubbers of the plant, the liquor formed therein being passed through a separate series of coke-towers; where it is subjected to the action of carbonic acid, thereby setting free sulphide of hydrogen while the carbonated ammonia-liquor is conveyed into a second series of coke-towers, and there heated from 170° to 190° Fahrenheit, the carbonic acid set free being conducted to the first series of coke-towers, while the treated liquor from which it is derived is conducted to another series of coke-towers and there distilled, the gaseous ammonia being separated from the carbonate of ammonia in condensing-chambers and the former returned to the gas-scrubbers, while the liquor, exhausted of ammonia by distillation, is conveyed to the same point for use in washing down the scrubbers, substantially as set forth.

4. The process described of purifying coal-gas, said process consisting in passing said gas, with gaseous ammonia, through a mixing-chamber and into a series of gas-scrubbers, conveying the liquor formed therein through a series of coke-towers, and subjecting it therein to the action of carbonic acid, separating the sulphide of hydrogen from the carbonated ammonia-liquor, and then heating the latter from 170° to 190° Fahrenheit and distilling the heated liquor and condensing the carbonate of ammonia derived therefrom, substantially as described.

337,247. **MACHINE FOR FINISHING GUN-BARRELS.** JEFFERSON M. CLOUGH, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Oct. 5, 1885. (No model.)



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Claim.—1. In a machine for polishing gun-barrels, the combination of a pair of centers adapted to support the barrel at opposite ends, a pair of jaws between said supports, the faces of the said jaws being the one upon one side and the other upon the opposite side of the axial line between said centers, said jaws adapted to be moved toward or from each other to clamp or release the barrel, a polishing-wheel arranged upon an axis at substantially right angles to the said axial line between said centers, the side or plane of said wheel at right angles to the surface of the barrel held by said jaws, substantially as described.

2. In a machine for polishing gun-barrels, the combination of a pair of centers adapted to support the barrel at opposite ends, a pair of jaws between said supports, the faces of the said jaws being the one upon one side and the other upon the opposite side of the axial line between said centers, said jaws adapted to be moved toward or from each other to clamp or release the barrel, a polishing-wheel arranged upon an axis at substantially right angles to the said axial line between said centers, the side or plane of said wheel at right angles to the surface of the barrel held by said jaws, and a pair of cheeks, *j k*, adapted to be placed one upon one jaw and the other upon the opposite jaw, the said cheeks constructed with a longitudinal V-shaped groove on their adjacent surfaces, the sides of the said grooves being at substantially right angles to each other and substantially as described.

3. The combination of a carriage, B, arranged and movable upon longitudinal guides, heads C D, arranged upon said carriage, each carrying a center in axial line the one with the other, the intermediate vertical slides, F G, vertical leading-screw H, having a right and left hand threaded portion, the right-hand-threaded portion working in a correspondingly-threaded projection from the one slide, and the left-hand portion in a correspondingly-threaded projection from the other slide, the said slides carrying the one a jaw, N, and the other a jaw, O, the one above and the other below the axial line between said centers, the faces of said jaws each presenting a plane surface, and a polishing-wheel, S, arranged upon an axis at substantially right angles to said axial line between said centers, the said axis being in a plane parallel with the plane of the face of said jaws, and whereby the flat face of said polishing-wheel is substantially parallel with the axial line between said centers, substantially as described.

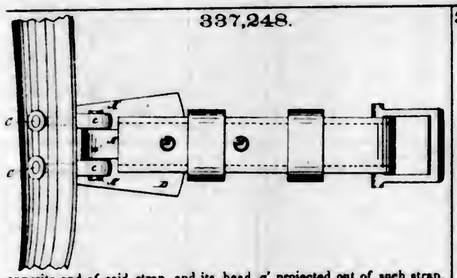
4. The combination of a carriage, B, arranged and movable upon longitudinal guides, heads C D, arranged upon said carriage, each carrying a center in axial line the one with the other, the intermediate vertical slides, F G, vertical leading-screw H, having a right and left hand threaded portion, the right-hand-threaded portion working in a correspondingly-threaded projection from the one slide, and the left-hand portion in a correspondingly-threaded projection from the other slide, the said slides carrying the one a jaw, N, and the other a jaw, O, the one above and the other below the axial line between said centers, the faces of said jaws each presenting a plane surface, and a polishing-wheel, S, arranged upon an axis at substantially right angles to said axial line between said centers, the said axis being in a plane parallel with the plane of the face of said jaws, and whereby the flat face of said polishing-wheel is substantially parallel with the axial line between said centers, and the cheeks *j k*, adapted to be placed between said jaws, the adjacent faces of said cheeks each constructed with a longitudinal groove, the sides of each of said grooves being at right angles to each other, substantially as described.

337,248. **HAME-TUG.** JOHN T. CONDON, Kingsley, Iowa. Filed Oct. 26, 1885. (No model.)

Claim.—1. The combination of the hame having eyes *c c*, the tug-strap, and the clip A, having its shank or body *a* incased and held in the tug-strap, and its head *d* projected out beyond such strap, and the projections or studs A′ extended from the opposite sides of the head *a′* and into the eyes *c c*, substantially as set forth.

2. As an improved article of manufacture, the herein-described hame-tug, consisting of the strap adapted at one end for connection with a trace, and the clip A, having its body or shank *a* incased within the

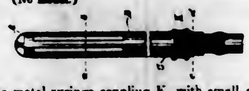
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opposite end of said strap, and its head *a′* projected out of such strap, and having the studs A′, projected in opposite directions from said head, substantially as set forth.

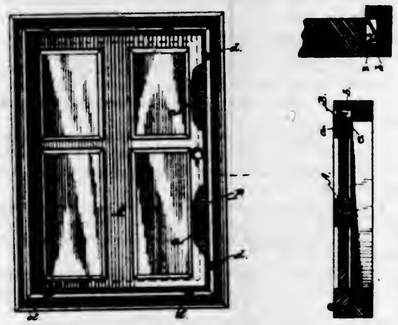
3. The combination, substantially as hereinbefore described, of the hame, the shield D, secured at one end to the rear edge of the hame, the eyes *c c*, secured to said hame, the tug-strap and the clip having its body or shank *a* incased in said strap, and its head *a′* projected out therefrom, and the studs A′, extended from the opposite sides of the head *a′* and fitted into the eyes *c*, all arranged and operated substantially as and for the purposes specified.

337,249. **SYRINGE.** WILLIAM H. COMKLE, Washington, D. C. Filed Nov. 2, 1885. (No model.)



Claim.—The metal syringe-coupling K, with small screw-threaded openings *c*, screw-thread upon its larger end, and projection for the rubber tube in its rear, combined with the exit-tube B, with slots in its sides and separate slots in its dome-shaped end.

337,250. **WEATHER-STRIP FOR DOORS.** ANDREW J. DAVIS, Hartford, Mich. Filed Jan. 26, 1885. Renewed Sept. 29, 1885. (No model.)



Claim.—The door A, having recesses *a*, strips B, adapted to fit therein, and springs *b*, attached at one end to the door upon the edges of said recesses and at the other to the strips, whereby to maintain the same in position, in combination with the door-frame having plates *d*, affixed thereto at those points where the springs *b* come in contact with said frame, for the purpose shown and described.

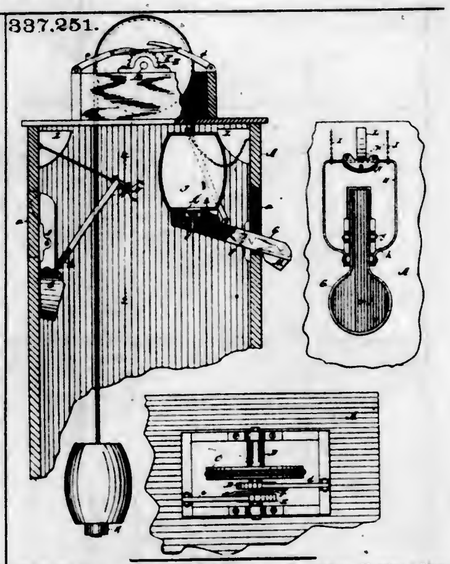
337,251. **WATER-ELEVATOR.** JOHNSON C. DAVIS, Athens, Ga. Filed Dec. 14, 1885. (No model.)

Claim.—1. In a water-elevator, the combination, with a pivoted spout, of a trip-connection with the inner portion of the spout and located in the path of the bucket, and a weight secured to the outer end of the spout, substantially as set forth.

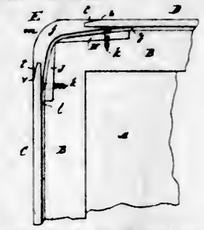
2. In a water-elevator, the combination, with the framing and the spout pivoted thereto, of a bail having its lower end pivoted to the inner portion of the spout, and a flexible connection extended between the upper portion of the bail and the framing, whereby said bail will be held normally in position for engagement by the bucket and may be swung on its pivotal connection with the spout, substantially as set forth.

3. The combination of the framing, the pivoted water-spout, the trip-bail pivoted at its lower end to the spout, a flexible connection extended between the upper end of said trip and the framing, and a stop whereby to limit the forward movement of the upper end of said trip-bail, substantially as set forth.

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337,252. **CARRIAGE-BODY.** JAMES DELAHUNTY, Merrimac, Mass. Filed Nov. 27, 1885. (No model.)



Claim.—1. The corner-piece for carriage-bodies herein shown and described, the same consisting of the body *f*, provided with the mortises *i* and *d* in its ends, said mortises being tapered from top to bottom throughout their entire lengths.

2. The corner-piece for carriage-bodies herein shown and described, the same consisting of the body *f*, provided with the mortises *i* and *d* in its ends, said mortises being tapered throughout their entire lengths from top to bottom and from their inner to their outer ends.

3. The corner-piece for carriage-bodies herein shown and described, the same consisting of the body *f*, provided with the mortises *i* and *d* in its ends, said mortises being tapered throughout their entire lengths from top to bottom on one face and straight on the other.

4. The corner-piece for carriage-bodies herein shown and described, the same consisting of the body *f*, provided with the mortises *i* and *d* in its ends, said mortises being tapered throughout their entire lengths from top to bottom on the face remote from the carriage-body and straight on that contiguous thereto.

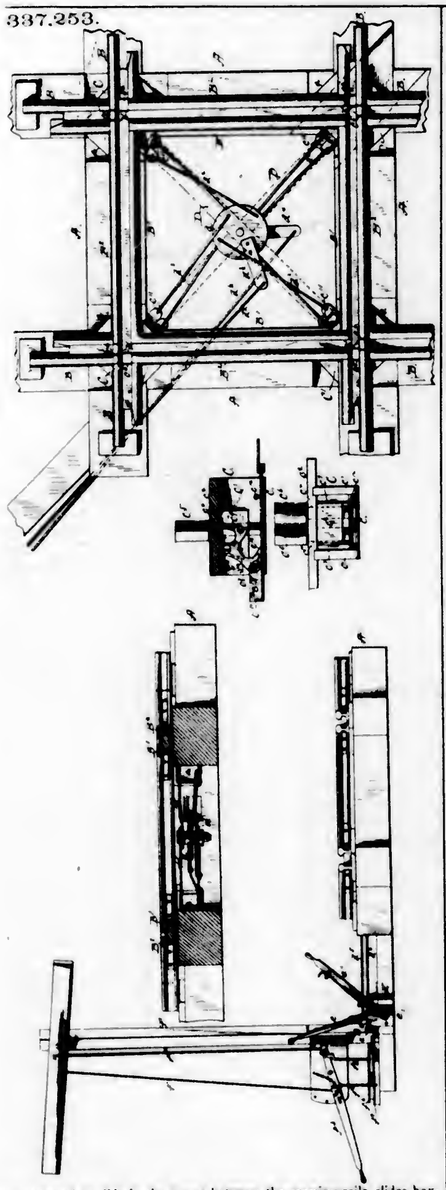
5. The corner-piece for carriage-bodies herein shown and described, the same consisting of the body *f*, provided with the mortises *i* and *d* in its ends, said mortises being tapered throughout their entire lengths from top to bottom and from their inner to their outer ends, and the flanges H and J, of the same thickness as the sills B and adapted to fit within recesses formed in the outer faces thereof, and fastening-screws *k*, passing through said flanges into said sills.

337,253. **RAILWAY-CROSSING.** MARTIN A. DILLEY, Wasepi, Mich. Filed Nov. 14, 1885. (No model.)

Claim.—1. The combination, with a foundation of a railway-crossing and a fixed crossing arranged thereon, having apertures between the adjacent ends of the line-rails and the wing-rails, of plugs movably disposed in said apertures, slides arranged under said plugs, formed with sections of different heights with an incline between them, and means, substantially as described, for reciprocating the slides, whereby the plugs are raised and lowered, substantially as described.

2. The combination, with a foundation of a railway-crossing and a fixed crossing arranged thereon, of frames seated in the angles of the crossing roads, plugs vertically arranged in ways formed in the frames

337,253.

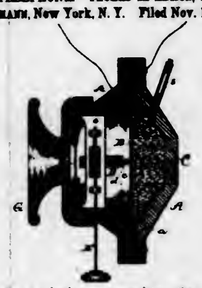


frames arranged in the seats in the foundation, slides arranged horizontally in the frames and formed with a higher and a lower section or seats, plugs vertically disposed in ways in said frames and in the spaces between the line-rails and the wing-rails, a bell-crank lever pivotally attached to the frames and having one arm connected to the plug and the other arm detachably connected to the slide, disks pivotally supported in the center of the crossing and having rods connected to the slides, levers and rods connected to said disks, and hand-levers to rotate the disks, substantially as described, and for the purpose stated.

5. The combination, with a railway-crossing having vertically-moving plugs between the spaces of the line-rails and the wing-rails, and mechanism for raising and lowering the plugs, of hand-levers connected to the shifting mechanism, and a locking-plate pivoted between the hand-levers and arranged to lock the undrawn hand-lever in normal position when the other hand-lever is drawn back, substantially as described.

6. The combination, with the crossing mechanism, substantially as described, the hand-levers, the signal, and the signal-lever provided with depending rods, of the sliding bars at the base of the signal-standard, having perforations to receive the ends of the suspended bars, whereby the apparatus is locked in position when either set of plugs is lifted, substantially as described, and for the purpose stated.

337,254. TELEPHONE. THOMAS A. EDISON, Menlo Park, N. J., and SIGMUND BERGMANN, New York, N. Y. Filed Nov. 13, 1883. (No model.)



Claim.—1. In a telephone-transmitter, the combination, with a diaphragm and electrodes controlled thereby, of a body of liquid connected with and limiting the movement of said diaphragm, substantially as set forth.

2. In a telephone-transmitter, the combination, with a diaphragm and metallic electrodes controlled thereby, of a body of liquid connected with and limiting the movement of said diaphragm, substantially as set forth.

3. In a telephone-transmitter, the combination, with a diaphragm and electrodes in direct contact controlled thereby, of a body of liquid behind said diaphragm and covering the active surface thereof, substantially as set forth.

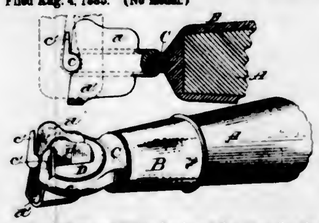
4. In a telephone-transmitter, the combination of a diaphragm, a body of liquid behind said diaphragm, and two electrodes, one of which is carried by said diaphragm on the side opposite the liquid, substantially as set forth.

5. In a telephone-transmitter, the combination of a diaphragm, a body of liquid behind said diaphragm, and two electrodes on the opposite side of the diaphragm from the liquid, one carried by said diaphragm, the other independent thereof, substantially as set forth.

6. In a telephone-transmitter, the combination of a diaphragm, a body of liquid behind it, electrodes affected by said diaphragm situated between the diaphragm and mouth-piece, and an outer diaphragm protecting the electrodes, substantially as set forth.

7. In a telephone-transmitter, the combination, with a diaphragm and electrodes in direct contact controlled thereby, of a body of liquid held between said diaphragm and a closed rigid case, substantially as set forth.

337,255. WHIFFLETREE-HOOK. FERDINAND EGGERS, Milwaukee, Wis. Filed Aug. 4, 1885. (No model.)



Claim.—A whiffletree-thimble having a flange ending in two half rings, the outer ends of which are opposite to and at a slight distance apart from each other, and there provided with vertically-projecting fingers, in combination with an inner ring revolving on the inner surfaces of said half-rings, and provided with inner guiding-walls united beneath the ring proper by a central web, the said ring being open above the web between said guiding-walls, substantially as set forth.

and adapted to slide in the spaces between the crossing-rails, slides having sections of different heights with an incline between them, and means, substantially as described, for reciprocating the slides, whereby the plugs are raised and lowered, substantially as specified.

3. The combination, with the foundation of a railway-crossing and a fixed crossing arranged thereon, of frames seated under the angles of the crossing roads, plugs vertically arranged in ways formed in the frames and adapted to slide in the spaces between the crossing-rails, slides having sections of different heights with an incline between them, means, substantially as described, for reciprocating the slides, and a bell-crank lever pivoted to the frame and having one arm connected to the plug and the other arm to the slide, whereby the plugs are raised and lowered, substantially as described.

4. In combination, the foundation-frame having seats formed at the intersection of the timbers, the fixed crossing secured thereon, plug-

337,256. REFRIGERATOR. ENOCH S. FARSON, Philadelphia, Pa. Filed Nov. 12, 1885. (No model.)



Claim.—1. A refrigerator having a recess formed in its packed casing for the reception of the spigot and tumbler, said recess being provided with a door, D, all substantially as specified.

2. The combination of the refrigerator having a recess, B, formed in its packed casing, the spigot and detachable tumbler-holder in said recess, and the door D, closing the front of the recess, all substantially as specified.

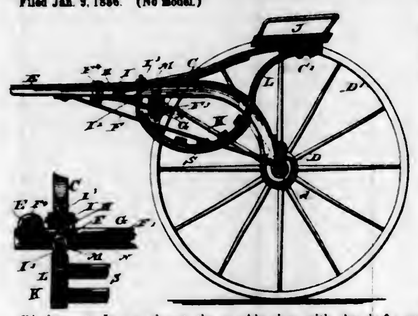
3. The combination of the refrigerator having in the front a recess for the reception of the spigot and tumbler-holder, with the closing-door D, recessed on the inner side for the reception of a projecting portion of said spigot, all substantially as specified.

337,257. CAR-COUPLING. ALFRED N. GABEL, Jr., and ARTHUR L. GABEL, Onarga, Ill. Filed Nov. 17, 1885. (No model.)



Claim.—In a car-coupler, the combination, with the draw-head *a'*, formed with the socket b^2, abutment *d*, and recess or hole *c'*, of the pivoted arm *b*, formed with the hook having shoulders or notches *e*, the spring *b'* under the rear end of the arm, and the chain *e* and lever *f*, all constructed and arranged to operate substantially as and for the purpose set forth.

337,258. TWO-WHEELED VEHICLE. JOSHUA G. GAY, Ottawa, Ill. Filed Jan. 9, 1886. (No model.)



Claim.—1. In a road-cart, the combination, with the shafts and cross-bar, of the shackle-braces F^2 F^2, the springs C C', and the seat, substantially as specified.

2. In a road-cart, the combination, with the shafts connected rigidly to the axle and strengthened by the cross-bar, of the shackle-braces having eyes intermediate of their ends on their upper faces, the springs secured at their forward ends between said eyes by bolts, the seat secured upon springs near the rear ends, and the curved supports and slats forming the foot-rest, substantially as specified.

3. The combination, with the shafts, axle, and cross-bar, of the brace-rods connecting the shafts and axle, the shackle-braces connecting the shafts and cross-bar, the springs connected to the shackle-braces and supporting the seat, and the curved end supports of the foot-rest secured to the springs C C' by nut-bolts and eyebolts, substantially as specified.

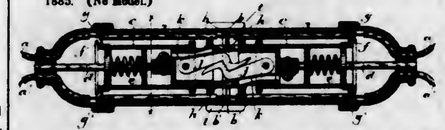
337,259. WIRE-FENCE STAY. WILLIAM C. GHOLSON, Cincinnati, Ohio. Filed Apr. 13, 1885. (No model.)



Claim.—1. A fence staple or stay, A, composed of a piece of pliable metal, and provided with arms, such as *a*, whereby the same is adapted to be applied to a stay-rod for the reception of the fence-wire by bending the said arms around the rod, substantially as described.

2. The rod B, provided at intervals on its surface with shallow notches *b'*, in combination with the staple A, having arms, such as *a*, the said arms being bent around said rod over the notches *b'*, whereby a support is formed for a fence-wire, substantially as described.

337,260. TRAIN-SIGNALING APPARATUS. JOSEPH P. A. HANLON, JOHN F. HANLON, and GEORGE O. HANLON, Boston, Mass. Filed Sept. 14, 1885. (No model.)



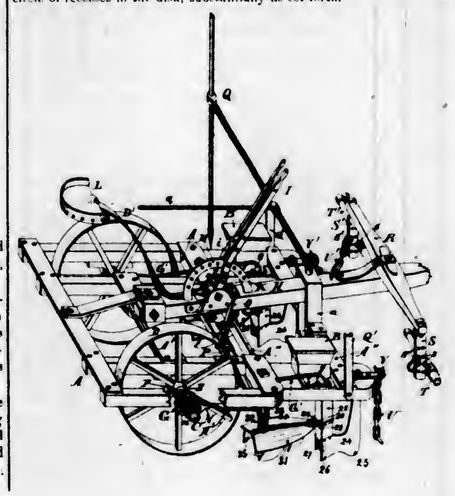
Claim.—1. The improved coupling composed of two members, each having two conducting-wires provided with segmental metallic terminals, a pivoted coupling-hook centrally located in each member, circuit-closing devices, substantially as described, which are made inoperative by the connection of said members and operative automatically when said members are disconnected, a casing entirely surrounding the mechanism in each member, said casings being provided with segmental flanges at their forward ends, said flanges of the casing of each member being supported by spaces adapted to receive the flanges of the other member, and thereby serving as guides connecting the members, as set forth.

2. The improved coupling, composed of two members, 2 3, each having two conducting-wires, *a a'*, provided with segmental metallic terminals *b b'*, a pivoted coupling-hook centrally located in each member, circuit-closing devices consisting of a spring-impelled slide provided with the metallic ring *f* on its rear portion, and the two metallic plates *g g'* in electrical contact, respectively, with the wires *a* and *a'*, which circuit-closing devices are made inoperative by the connection of said members and operative automatically when said members are disconnected, and a casing entirely surrounding the mechanism in each member, as set forth.

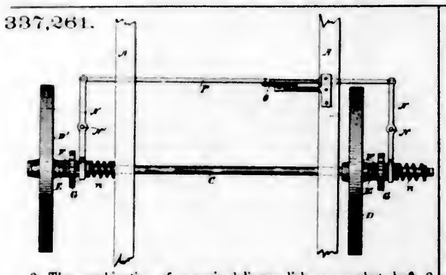
3. The combination, with the casings, of the two members provided with the wires *a a'*, having the metallic terminals *b b'*, the slides *c c*, rods *d d*, fingers *h h*, coupling-hooks *f f*, pivoted in the forward ends of said slides, the metallic rings *f f*, and metallic plates *g g'*, as set forth.

337,261. CORN-PLANTER. JAMES W. HARRIS, Vincennes, assignor of one-half to Leon O. Bailey, Indianapolis, Ind. Filed Aug. 21, 1885. (No model.)

Claim.—1. In a corn-planter, the combination of a grain-delivery disk having concentric circles of recesses, and a sprocket-shaft having an adjustable wheel, 3, formed with pins or projections engaging in either circle of recesses in the disk, substantially as set forth.



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2. The combination of a grain-delivery disk, a sprocket-shaft, 2, having holes 2^a and seat 2^b, pinion 3, horizontal key 4^a, having perforation 4^b, and the transverse key 4, substantially as set forth.

3. The combination of the bed-plate 10, formed with a central stud, 10', and opening 12, the grain-delivery disk centered by the stud, sprocket-shaft 2, and pinion 3, adjustable on said shaft in said opening, substantially as set forth.

4. The resting or intermediate bed-plate, 10, having a central stud, 10', orifice 11, opening 12, and depression 13, substantially as set forth.

5. The combination of the resting or intermediate bed-plate, 10, having a central stud, 10', the delivery-disk, conical boss 17, and bolt 16, the boss being removable from the disk and stud, substantially as set forth.

6. The combination of a hopper having an opening in the side thereof, and a box or cover, 19, within the hopper in rear of the opening and forming a chamber, and a pusher-pawl hinged to the inner wall of the box or cover, substantially as set forth.

7. The combination, with a hopper, of a box or cover, 19, a quadrant-formed sheath, 21, and a cut-off brush corresponding in form to the sheath and supported by the box or cover, substantially as set forth.

8. The combination of the spout and crown-shield or turtle-back 31, having covering-blades and loosely connected to the spout, a frame, a rod supporting the crown-shield on the frame, and a spring surrounding the rod for holding the crown-shield down, substantially as set forth.

9. The crown-shield or turtle-back 31, having sockets 37, and covering-blades 35, having dovetail shanks 36, substantially as set forth.

10. The combination of the frame for supporting the grain holding and dropping apparatus, a tongue or pole hinged thereto and projecting over the front thereof, a segment-plate, M, secured to the tongue or pole, a lever, I, having sheave J and hinged to the tongue or pole, a catch on the lever engaging the segment-plate, and a chain, K, connecting the sheave to the frame, substantially as set forth.

11. The combination, with the frame and delivery-spout, of the colter 24, having the convex and sharpened heel 25, and the two diverging wings 26 27, substantially as set forth.

12. The combination, with the frame and delivery-spout, of the colter 24, having the convex and sharpened heel 25, and the two diverging wings 26 27, and the crown-shield 31, having covering-blades, a spring to press it down, and a loose connection with the spout, substantially as set forth.

13. The combination, with clutches on the outside of one wheel and the inside of the other wheel, respectively, of the clutch-yokes, a connecting-bar for the clutch-yokes, and a lever for shifting the bar, substantially as set forth.

14. The combination, with clutches on the outside of one wheel and the inside of the other wheel, respectively, of clutch-yokes N, pivoted to the frame, a bar, P, connecting the clutch-yokes, and an arm, O, for shifting the bar, substantially as set forth.

15. The combination of wheels D D', having clutches F F on the same side thereof, axle C, springs *n n*, clutch-yokes N N, connecting-bar P, and lever O, substantially as set forth.

16. The T-formed double-acting reversible pointer hinged to a central support and having a rigid handle, *q*, substantially as set forth.

17. The combination, with the double-tree, of the drops or clevises S S', each drop or clevis having a double series of holes, *s s'*, for adjusting the single-trees and draft-chains independently, substantially as set forth.

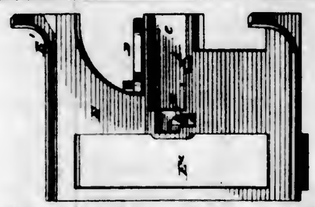
337,262. MONEY-DRAWER FOR FARE-BOXES. WILLIAM H. HARRISON, Louisville, Ky., assignor to the Street Car Money Drawer Company, same place. Filed Aug. 3, 1885. (Model.)

Claim.—1. The combination, with a money-drawer, of the bracket secured to the supporting-frame and having the ways E for the drawer-frame, the tension-bolts A and B, spring F for the said bolt A, and tension D, and the spring for holding the movable half-cover open when the drawer is being emptied, substantially as specified.

2. The money-drawer consisting of the double metal frames, the leather or flexible sack having its upper edge arranged between the said frames, and the securing screws or rivets, substantially as specified.

3. The combination, with the money-drawer having the handle H,

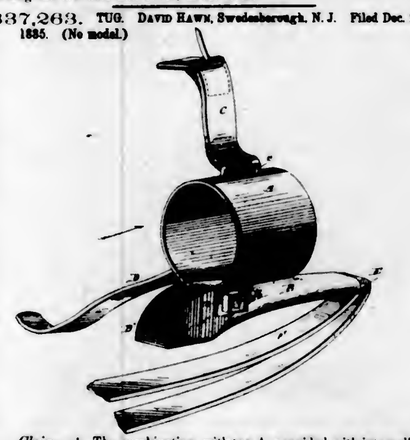
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of the spring Q, for holding the movable half-cover open, the bolts secured to the double frame of the drawer or bag, and locking or tripping devices secured to the bracket of the drawer-supporting frame, substantially as specified.

4. In a money-drawer, the combination, with the sack, of a top comprising a stationary half-cover and a movable half-cover, and the bracket, carrying devices, substantially as specified, for locking and unlocking the movable half-cover, as set forth.

337,263. TUG. DAVID HAWN, Swedesborough, N. J. Filed Dec. 24, 1885. (No model.)



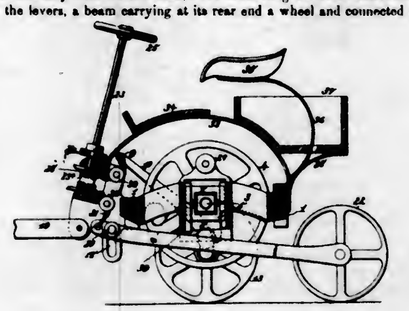
Claim.—1. The combination, with tug A, provided with integrally-depending ears, of a bar having a cam portion pivoted between said bars, and a portion, B, extending forward beneath the tug, and a breeching-strap connected to said portion B, whereby, upon the rearward pull of the breeching-strap, the cam portion is thrown up, substantially as set forth.

2. A shaft-tug provided with straps C and D for connecting the same to the back and belly band of a harness, said shaft-tug having a pivoted bar, B, attached thereto, so as to engage with a shaft, substantially as shown, and for the purpose set forth.

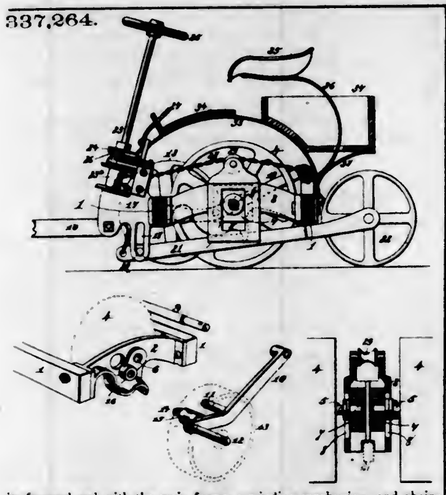
3. In a harness attachment, a rigid tug, A, provided with bails *c* and *d* for the reception of straps for connecting the same to the back and belly band of a harness, said tug having ears projecting therefrom, between which is pivoted a cam-lever, said cam-lever being adapted to engage with a shaft when pressure is applied to the breeching-strap, which is connected thereto, substantially as shown, and for the purpose set forth.

337,264. LAND-ROLLER. CHARLES HELM and JACOB NEKEBEKER, Toledo, Ohio. Filed July 24, 1885. (No model.)

Claim.—1. The combination, with a main frame, of levers pivoted intermediate their extremities at the ends of the frame, and provided at one extremity with truck-wheels, a rod connecting the other extremities of the levers, a beam carrying at its rear end a wheel and connected at



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its forward end with the main frame, a winding mechanism, and chains connecting the rod and the forward end of the beam with the winding mechanism, to bodily elevate the main frame, substantially as described.

2. The combination, with a main frame and a crushing and leveling roller mounted thereon, of the beam located beneath the frame and carrying a truck-wheel at its rear end and connected at its forward end with the main frame, a winding mechanism, a chain connecting the forward end of the beam with the winding mechanism, and a swinging frame carrying end truck-wheels, substantially as described.

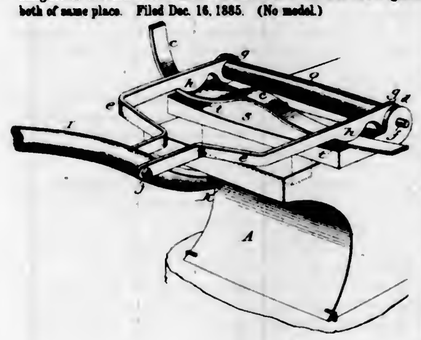
3. The combination of the frame consisting of two beams, the end bracket and central bracket having a front extension, with the levers pivoted intermediate their extremities to the end brackets, and provided at one extremity with truck-wheels, a rod connecting the other extremities of the levers, a beam connected at its forward end with the said front extension, and provided at its rear end with a truck-wheel, a winding mechanism, and chains connecting the rod and the forward end of said beam with the winding mechanism, substantially as described.

4. The combination, with a main frame and a crushing and leveling roller therein, of a swinging frame carrying end truck-wheels, a beam carrying a rear truck-wheel, and a mechanism for moving the swinging frame and lifting the forward end of the beam, substantially as described.

5. The combination of the main frame composed of beams, end brackets, and a central bracket having a front extension, with crushing and leveling rollers, the axle composed of two parts having their inner ends mounted in boxes vertically movable in the central bracket, a beam provided with a wheel at its rear end and having its forward end loosely connected with the front extension of the central bracket, and a swinging frame having end truck-wheels, substantially as described.

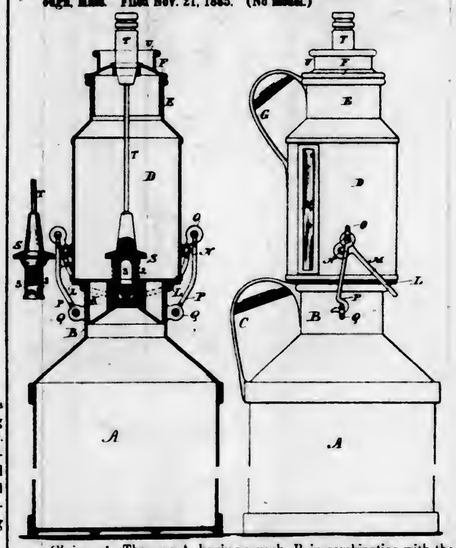
6. The combination, with the main frame having end brackets provided with curved lower edges, of levers pivoted to said brackets and provided with truck-wheels and friction wheels or rollers bearing against the said curved lower edges; and means for swinging the levers on their pivotal attachment to bodily elevate the main frame, substantially as described.

337,265. TIRE-UPSETTER. WILLIAM M. HELMS, Steubenville, Ohio, assignor of two-thirds to Lewis E. Helms and William S. Cunningham, both of same place. Filed Dec. 16, 1885. (No model.)



Claim.—In combination with an anvil, the seat-block S, levers e e and I, constructed as shown and described, and the lever I, hooking under the edge of the anvil, for the purpose set forth.

337,266. CREAM-SEPARATOR. WILLIAM H. JOHNSON, Westborough, Mass. Filed Nov. 21, 1885. (No model.)



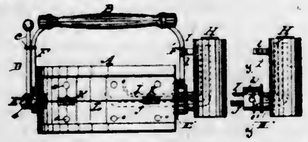
Claim.—1. The can A, having a neck, B, in combination with the cream-holder D, having a base, K, that passes into the neck B, with an opening through the base, an elastic washer, L, around the base K, to rest upon the top of the neck B, means, substantially as specified, for connecting the can A and cream-holder D, and a valve applied at the opening in the base K, substantially as specified.

2. The combination, with the can A and its neck B, of the cream-holder D and its base K, the elastic washer L, lever M, pivots N, hooks P, and eyes Q, for removably connecting and securing the cream-holder to the can, and a removable plug or valve applied at the opening in the base of the cream-holder, substantially as specified.

3. The combination, with the cream-holder D, having a base with an opening in it, of the valve S, with a slotted screw-cylinder passing into the screw-threaded opening in the base K, a cover to the cream-holder, and a stem to the valve passing up into the cover, substantially as set forth.

4. The cream-holder D and the removable cover F to the same, with a central opening, and the cup U around the same, in combination with the valve or plug fitting an opening in the bottom of the cream-holder, and a stem to the same passing through an opening in the cover, substantially as set forth.

337,267. SMOOTHING-IRON. GEORGE T. KEARNS and JOHN H. NOBLE, Hamilton, Ontario, Canada. Filed Apr. 13, 1885. (No model.) Patented in Canada May 5, 1885, No. 21,211.

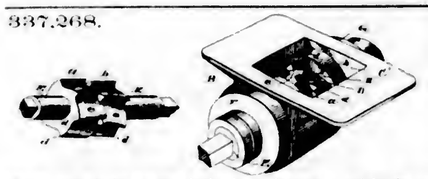


Claim.—The combination, with a reversible smoothing-iron having a tubular projecting portion at its rear end, of a handle having an inwardly-projecting socket upon its rear depending member provided with perforations and recesses, an oil-reservoir carrying a wick and vapor-tubes, as shown, and having a projecting portion provided with perforations and lugs, which register with the perforations and recesses of the handle, substantially as shown, and for the purpose set forth.

337,268. FORCE-FEED SEED-PLANTER. JOHN H. KEEDY, West Alexandria, Ohio. Filed June 23, 1885. (No model.)

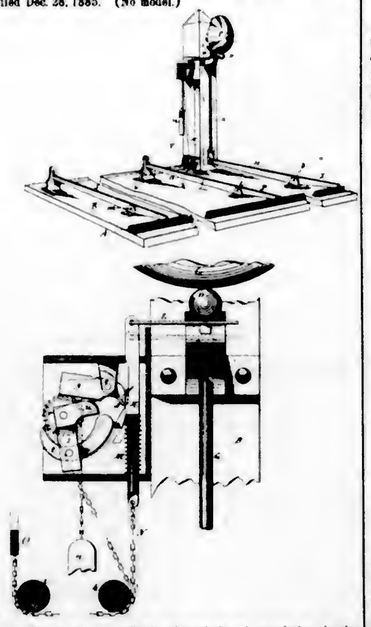
Claim.—The hopper, in combination with the case B, having an opening at each side, the seed-wheel D, having sleeves E at the ends passing through the openings and formed with the feeding-sections *a b* in the center, and the cut-offs F G, independent of each other sliding over the sleeves E to abut against the outer ends of the feeding-sections and

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working through the openings in the side of the case, as and for the purpose set forth.

337,269. RAILWAY SIGNALING APPARATUS. FRANK N. KELSEY, New Haven, Conn., assignor of one-half to John B. Rathbun, same place. Filed Dec. 28, 1885. (No model.)



Claim.—1. The herein-described railroad-signal, consisting in the combination of a lever, H I, extending from one rail of the track, one arm in the path of wheels passing on the track, the vertical rod G, hung to the other arm of said lever, a fixed bell, and a hammer hung between said rod and bell, the rod constructed with a projection and the hammer with a corresponding extension which shall stand in the path of said projection, whereby, as the rod descends, the hammer will be brought into contact with the bell, substantially as described.

2. The combination of the two levers H I and O P, extending from the railway-track, one arm being in the path of wheels passing on the track, the rod G, fixed bell C, hammer D, hung between said rod and bell, the slide K, connected to one arm of said lever O, the said slide provided with an extension arranged to take said hammer out of the path or action of said rod G, and a dog arranged to hold said slide away from said hammer, substantially as described.

3. In a railway signaling apparatus, the combination of a drum with mechanism between said drum and the signaling device, whereby said signaling device may be disengaged, a chain or cord wound about said drum, so as to be in frictional contact therewith, one end of said chain provided with a counter-balance tending to turn the drum in one direction, the other end of the chain extending to a distant point, and a lever at such distant point, the said chain connected to one arm of said lever, the other arm adjacent to the track over which wheels will pass, substantially as described, and whereby the said counter-balance will take up the expansion or permit contraction of the connection between it and the said lever.

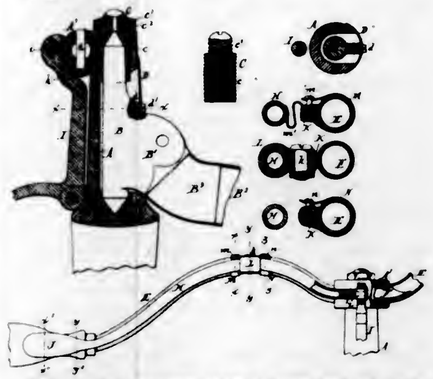
4. In a signaling apparatus, the combination of the vertical slide K, its lever O P, adapted to impart vertical movement to said slide, said slide adapted to bring the signaling apparatus into action or take it therefrom, as the case may be, a dog arranged to engage said slide and hold it in the inactive position, a shaft with the ratchet *r* thereon, a lever, *s*, hung on said shaft adjacent to said ratchet, a pawl, *t*, on said lever, arranged to engage the teeth of said ratchet, said lever constructed with an arm, *u*, arranged to operate upon said dog, a drum on said shaft, a chain wound about said drum, one end provided with a counter-balance and the other extending to a distant point, and a lever at that point in connection with that end of the chain, one arm of said lever arranged in the path of wheels passing on the track, substantially as and for the purpose described.

337,270. CARD-CUTTING MACHINE. WILLIAM A. KELSEY, Meriden, Conn. Filed Apr. 30, 1885. (No model.)



Claim.—As an improvement in paper-cutters, the combination, with the knife-carrying lever pivoted or hinged at one end, of the herein-described spring-actuated clamp having the curved operative portion, and arranged to operate in the manner and for the purpose shown and set forth.

337,271. VELOCIPEDE. ERNST G. LATTA, Friendship, N. Y., assignor of one-half to Adrian C. Latta, same place. Filed Nov. 23, 1885. (No model.)



Claim.—1. The combination, with the steering-head and spindle, of a center screw having right and left screw-threads, one engaging in the steering-head and the other receiving a check-nut, substantially as set forth.

2. The combination, with the steering-head and spindle, of a center screw having a slow and a quick screw-thread, one engaging in the steering-head and the other receiving a check-nut, substantially as set forth.

3. The combination, with the steering-head and spindle, of a center screw having right and left screw-threads of different pitch, the slow thread engaging in the steering-head and the quick thread receiving a check-nut, substantially as set forth.

4. The combination, with the steering-head, of a spindle and neck provided with a lug, B^3, curved downwardly from the neck, and a backbone, B^2, having its front portion curved upwardly to receive the curved lug B^3, substantially as set forth.

5. The combination, with the steering-head and dust-guard, of a spindle and neck having an offset, *d*, forming a support for the dust-guard, and a screw, *d'*, whereby the dust-guard is secured to the offset *d*, substantially as set forth.

6. The combination, with the handle-bar lug, of two handle-bars provided with overlapping inner ends, and an interposed key bearing against shoulders on said ends and drawing the ends toward each other, substantially as set forth.

7. The combination, with the handle-bar lug, of a handle-bar having its inner end constructed with a hook or shoulder, *f*, and a key, *g*, engaging against said hook or shoulder, and whereby the handle-bar is drawn inwardly, substantially as set forth.

8. The combination, with the handle-bar lug, of two handle-bars having overlapping inner ends, *e*, terminating in hooks or shoulders *f*, and a key, *g*, inserted between the shoulders of the handle-bars and tending to draw both bars inwardly, substantially as set forth.

9. The combination, with the handle-bar lug, of the tubular handle-bars E and a tubular stiffening-piece, F, inserted into the inner portions of the handle-bars, substantially as set forth.

10. The combination, with the handle-bar lug, of the tubular handle-bars E, constructed with overlapping hooked ends, a tubular stiffening-piece, F, inserted into the inner portions of the handle-bars, and a key, *g*, passed through the handle-bar lug, and the stiffening-piece F between the inner ends of the handle-bars, substantially as set forth.

11. A brake-lever for velocipedes, composed of a tube which is drawn down or tapered from its pivotal point toward its outer end, substantially as set forth.

12. A brake-lever for velocipedes, composed of a tube having its outer end flattened to form a handle, substantially as set forth.

13. A brake-lever for velocipedes, composed of a single length of tubing extending from the brake to the handle, substantially as set forth.

14. The combination, with the brake-lever and brake, of a connecting-screw held against turning in one of these parts and screwing into the other part, substantially as set forth.

15. The combination, with the brake-lever and brake, of the connecting-screw *i*, held against turning in the brake and screwing into the brake-lever, substantially as set forth.

16. The combination, with the handle-bar and the bracket K, secured thereto, of the brake-lever H and the clip L, secured to the brake-lever and pivoted to the bracket, substantially as set forth.

17. The combination, with the brake-lever and handle-bar, of the bracket K, secured to the handle-bar by a clamp of sheet metal embracing the handle-bar and secured to the bracket, substantially as set forth.

18. The combination, with the brake-lever provided with a clip, L, of a handle-bar, E, a bracket, K, secured to the handle-bar by clamps M N on opposite sides of the clip L, and a bolt whereby the clip is pivoted to the bracket, substantially as set forth.

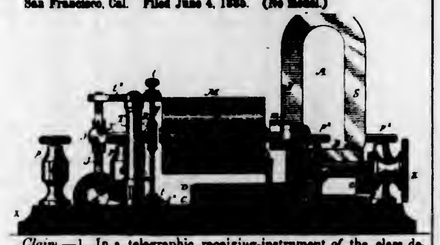
19. The combination, with the brake-lever and handle-bar, of the bracket K and the spring-clamp M, provided with an elastic front portion which bears against the brake-lever, substantially as set forth.

20. The combination, with the handle-bar and brake-lever, of the bracket K and the clamp N, embracing both the handle-bar and the bracket, and secured to the bracket by a screw, *n*, substantially as set forth.

21. The combination, with the handle-bar and brake-lever, of the slotted bracket K and the spring-clamp M, having its front portion passed through the slotted bracket and bearing against the brake-lever, substantially as set forth.

22. The combination, with the handle-bar and brake-lever, of the bracket K, the clamp N, embracing both the handle-bar and the bracket, and the screw *n*, passing through both ends of the clamp and the bracket, and bearing with its point against the lower portion of the clamp, substantially as set forth.

337,272. POLARIZED TELEGRAPHIC RELAY. JOHN C. LUDWIG, San Francisco, Cal. Filed June 4, 1885. (No model.)



Claim.—1. In a telegraphic receiving-instrument of the class described, the combination, with the electro-magnet having cores of normally similar polarity, of the oscillating armature having its end portions bent back away from the magnet-cores, essentially as and for the purpose set forth.

2. The neutral armature formed of a soft-iron strip bent back at both ends, as described.

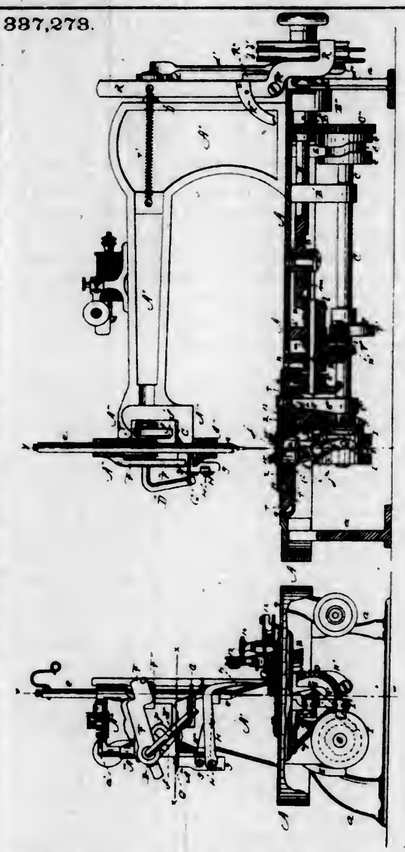
3. In a telegraphic receiving-instrument of the kind described, the combination, with the neutral oscillating armature and electro-magnet, of the permanent magnet having one end attached to the yoke-piece of said electro-magnet, and its other end arranged behind said attached end and on the opposite side thereof from the neutral armature, substantially as and for the purpose set forth.

4. The combination, with the electro-magnet and its oscillating neutral armature mounted upon a vertical arbor, of the arm J', projecting from said arbor, the pendent pivoted adjustable arm J, and the adjustable stops upon said arm, substantially as and for the purpose set forth.

337,273. BUTTON-HOLE SEWING-MACHINE. JOHN W. LUPKIN, Chelsea, Mass. Filed Nov. 17, 1884. (Model.)

Brief.—The invention is designed as an improvement on that class of machines shown in Patents Nos. 49,627, 151,857, 123,348, and 242,462. The button-hole is cut as the stitching proceeds. The machine is so arranged and timed that the cutting-lever will follow the needle down with every second movement of the latter, the bent arm of the main rock-shaft operating upon the cutting-lever every second time it descends. Said main rock-shaft is given also a longitudinal reciprocating movement.

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With each complete rotation of the vertical cam-wheel, and as the main rock-shaft is retracted in its longitudinal reciprocation, and with each second downward movement of the bent arm, the said bent arm presses down the cutter-lever against the action of a spring and makes an incision in the fabric, so as to make room for another pair of stitches. A short and stiff needle may be used. The machine rounds both the large and the small ends of the button-hole. A stop-motion device operates when the button-hole is finished. The machine is hinged so that it may be tipped back without throwing the belt off the pulley it may be running on.

Claim.—1. The needle-bar carrier F'', link F''', and bifurcated arm F, the latter rigidly secured to the shaft D, and the rocker-shaft D, provided with the collars E''', in combination with the lever E, adjustably pivoted at E'' to the arm, the cam-wheel *c*, and the crank *d*, connecting-rod *d'*, and eccentric *d'''*, substantially as and for the purpose set forth.

2. The needle-bar carrier-arm F, bifurcated or made in two parts, as shown, and provided with the needle-bar carrier and link F''', said two parts of the needle-bar carrier-arm extending one on each side of the needle-bar, for communicating the desired sidewise motion to the latter, substantially as and for the purpose described.

3. The take-up lever G, pivoted to the stationary head A''', and provided with the spring G' and the arm *f*, rigidly secured to the shaft D, and provided with the spring *f'*, for nipping the take-up lever, in combination with the rocker-shaft D and means for imparting to the same longitudinal reciprocating and oscillatory motion, substantially as and for the purpose described.

4. The combination of the bent cutter-lever H, pivotally secured to the stationary head A''', and the shaft D, having oscillatory and longitudinally-reciprocating motion, and provided with a bent arm, D'', adapted to press down the cutter-lever with each second downward movement of the same, and said cutter-lever being of shape to cut a small portion only of the button-hole at a time, substantially as and for the purpose set forth.

5. The cutter-lever H, pivoted to the bracket *g* and provided with the

spring H‴, the stationary head A‴, the rocker-shaft D, provided with the bent arm D‴, and collars E‴, in combination with the lever E, pivoted to the overhanging arm, the cam-wheel *c*, and gear-wheel C‴, the driving-shaft B, provided with the gear-wheel B‴, rotating at double the speed of the gear-wheel C‴, which it engages, and the eccentric *d*‴, connected with said rocker-shaft, substantially as and for the purpose described.

6. The combination of the overhanging arm A′, the stationary head A‴, to which are pivotally secured the take-up lever G and cutter-lever H, the bent arm D, the swinging head A″, guiding the needle-bar, and the shaft D, to which are rigidly secured the carrier-arm F, the reciprocating eye-pointed needle, and the loopers and their operating mechanisms, and means for imparting to said shaft oscillatory and longitudinally-reciprocating motion, substantially as and for the purpose set forth.

7. The combination of the overhanging arm A′, stationary head A‴, the swinging head A″, guiding the needle-bar, and the shaft D, to which are rigidly secured the carrier-arm F and arm *f*, the take-up lever G, the spring *f*′, the reciprocating eye-pointed needle, and the loopers and their operating mechanisms, and means for imparting to said shaft oscillatory and longitudinally-reciprocating motion, substantially as and for the purpose described.

8. The combination of the reciprocating eye-pointed needle, the looper-lever I′, pivoted to the bracket *i*, the spreader-lever J′, pivoted to the bracket J‴ and provided with the spring J″, and the shaft C, provided with the cams I and J, substantially as and for the purpose set forth.

9. The combination of the shaft C, provided with the eccentric P and strap P′, the link P″, loose on the shaft L, the lever N′, also loose on said shaft, the pawl N″, and the ratchet-wheel N and bevel gear-wheels O and *l*, said ratchet-wheel and bevel gear-wheels being rigidly secured to said shaft, the said bevel gear-wheel O engaging the feed-wheel T, substantially as and for the purpose set forth.

10. The cam gear-wheel M, engaged by the bevel gear-wheel *l* on the shaft L, and provided with the described groove, said groove consisting of four portions, M′, M″, M′, and M‴, combined with suitable connections, whereby varying speed is imparted to the feeding mechanism, substantially as and for the purpose described.

11. The combination of the cam gear-wheel M, provided with the groove M′, M″, M′, and M‴, the gear-wheel *l*, fixed on the shaft L, said shaft being provided with the ratchet-wheel N, the lever N′, provided with the pawl N″ and lug N‴, and operated by the lug P‴ on the link P″ and lifting projection *n*′, and the lever *m*, engaged by the cam and provided with the steps *m*′ and *m*″, substantially as and for the purpose set forth.

12. The combination of the shaft C, provided with the eccentric P and strap P′, the shaft L, to which are fixed the gear-wheels O and *l* and the ratchet-wheel N, and on which are loose the link P″ and lever N′, said link and lever being provided, respectively, with the lugs P‴ and N‴, and the latter lever provided with the lift *n*′, the lever *m*, provided with the steps *m*′ *m*″, and the cam gear-wheel M, substantially as and for the purpose described.

13. The combination, with the cloth-clamp operating and stitching mechanism, of the cam gear-wheel M, provided with the pin S‴, the lever S, the shipping-lever R, provided with the extension R‴, and the fast and loose pulleys *b* and *b*′, substantially as and for the purpose set forth.

14. The gear feed-wheel T, provided with the groove T′, and bed 1, provided with the flange 2, recessed at 7, in combination with the follower T‴, adapted to slide in and out of said groove, and the cloth-clamp, substantially as and for the purpose described.

15. The gear feed-wheel T, provided with the groove T′, and bed 1, provided with the flange 2, recessed at 5, in combination with the follower T‴, adapted to swing in and out of said groove, and the cloth-clamp, substantially as and for the purpose set forth.

16. The combination of the gear feed-wheel T, provided with the groove T′, recessed at 4 and 6, the bed 1, provided with the flange 2, recessed at 5 and 7, the followers T″ and T‴, adapted to move in and out of said groove, the pin 14, and the cloth-clamp, substantially as and for the purpose described.

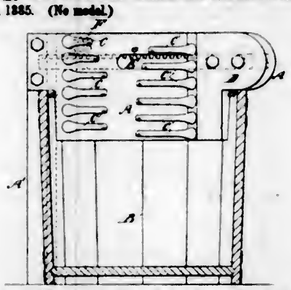
17. The combination of the cloth-clamp, the center plate, 8, having the shoulders 10, the bed-plate 9, having the corresponding shoulders, 11, and the feed-wheel T, provided with the groove T′, substantially as and for the purpose set forth.

18. The combination, with the clamp 12, provided with the pin 14, and the clamp-plate 13, of the bed-plate 9, provided with the shoulders 11, the center plate provided with the shoulders 10, feed-wheel T, provided with the recessed groove T′ and followers T″ T‴, and the recessed flange 2, substantially as and for the purpose described.

19. The combination of the fast and loose pulleys *b b*′, the shipping mechanism operated by the pin S‴, the cam-wheel M, and feeding mechanism, and the feed-wheel T′, and mechanism for imparting motion to the clamp, all timed and constructed to operate substantially as and for the purpose set forth.

20. The combination of the driving-shaft B, provided with the gear-wheel B‴, the shaft C, provided with the gear-wheel C‴, the eccentric P, and cams I J, for giving desired movement to the looper and spreader levers, the shaft L, provided with the gear-wheel O and feeding mechanism, and the feed-wheel T, timed and constructed to operate substantially as and for the purpose set forth.

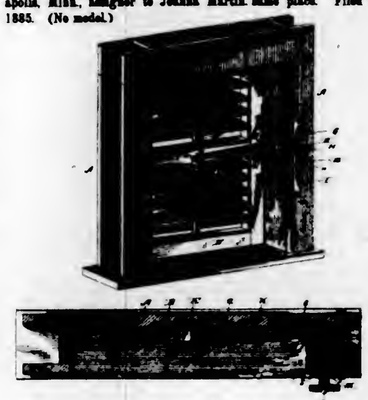
337,274. **MOP-WRINGER.** DANIEL LYNCH, Glens Falls, N. Y. Filed May 14, 1885. (No model.)



Claim.—1. The combination of the plate or board A, having an outer supporting or steadying leg, A′, and constructed to stand upon and to partly enter down within a tub or bucket, the stationary inwardly-inclining set or row of fingers C, the backwardly and forwardly moving row of oppositely-inclining fingers C′, arranged to enter at their forward ends or portions in between the stationary fingers, and mechanism, substantially as described, for opening and closing said movable row of fingers relatively to the stationary row thereof, essentially as specified.

2. A mop-wringer having duplicate rows of horizontal fingers set inclining in relation with each other, as described, and the one of which rows is movable toward and from and into and out of the other, the upper fingers of each row set flaring laterally, substantially as and for the purpose herein set forth.

337,275. **BLIND-SLAT ADJUSTER.** RICHARD M. MARTIN, Minneapolis, Minn., assignor to Joanna Martin same place. Filed Dec. 17, 1885. (No model.)



Claim.—1. The slat-rods D and E, the connecting-rod F, and the shaft G, with its arm *a*, in combination with the arm K, shaft H, plate N, and bar L, the several parts being operated substantially as and for the purpose specified.

2. The bar L, having upon it the rod S, and provided at its outer end with a screw-thread and a head, O, in combination with the thumb-screw M and slotted casing I, the bar L being connected at its inner end to a plate, N, and with mechanism, as described, for operating the blinds, substantially as set forth.

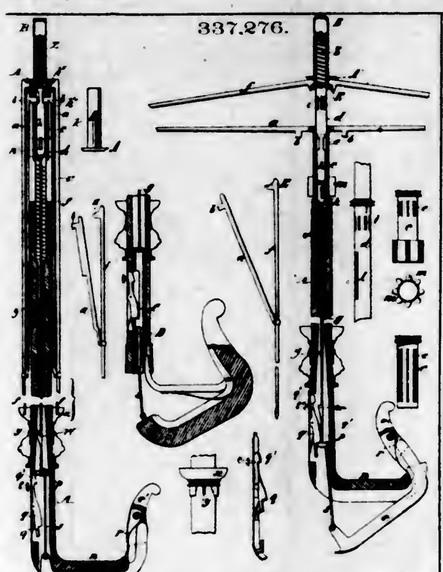
337,276. **UMBRELLA.** PHILIPP MEYER, Jr., Magdeburg, Prussia, Germany. Filed June 15, 1885. (No model.) Patented in Germany Oct. 29, 1884, No. 31,490.

Claim.—1. The pivoted stretchers *a*, provided with lugs *b*, in combination with runner *c*, slotted at *e*, to receive said lugs, and having said stretchers pivoted thereto, a sliding bar, *h*, which engages with said lugs to move them up or down, a lever in the umbrella-handle, and connections between said lever and said sliding bar, for the purpose set forth.

2. The pivoted lever *o* and rods *s g*, which connect it with the umbrella opening and closing devices, in combination with the nut *p*, which connects said rods to one another, and the spring-catch *q*, having a nose near each end, substantially as set forth.

3. The runner *c*, provided with slots *e* and lugs *m*, in combination

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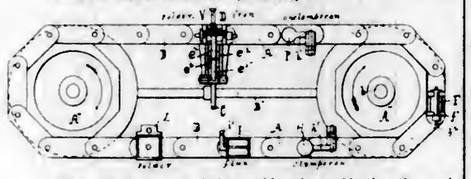
with stretchers *a*, which are pivoted to said runner and provided with lugs *b*, the said lugs *b* on the folding of the umbrella entering said slots, and the said stretchers lying between lugs *m*, substantially as and for the purpose set forth.

4. The fixed casing *d*, provided with slots *i*, in combination with the runner *c*, provided with registering slots *e*, in combination with stretchers *a*, pivoted to said runner, and having lugs *b*, which enter said slots *e* and *i*, the sliding bar *h*, recessed to receive and engage with said lugs, and a lever and connecting-rods for drawing on said bar to open the umbrella, substantially as set forth.

5. The sliding bar *h*, casing *d*, runner *c*, and replacing-springs *Z v*, in combination with the stretchers and ribs operated by said bar, and the lever and connecting-rods for drawing on the latter, substantially as set forth.

6. The tip-cup and its inwardly-extending stud *y*, in combination with a rod having a shoulder, *w*, to engage therewith, a spring for forcing said rod upward, a catch which prevents the upward motion of said rod till released by hand, and the ribs which have their tips protected by said cup when the umbrella is folded, substantially as set forth.

337,277. **CAN-SOLDERING MACHINE.** DAVID M. MONROE, Baltimore, Md. Filed Dec. 3, 1885. (No model.)



Claim.—1. In a can-soldering machine, the combination of an endless chain, the gaging device mounted on the chain, and means to expand the gaging device, whereby the body is gaged.

2. In a can-soldering machine, the combination of an endless chain, mechanism to impart an intermittent motion thereto, and the gaging device mounted on the chain, as set forth.

3. In a can-soldering machine, the combination of the endless chain, mechanism to impart thereto an intermittent motion, the gaging device mounted on the chain, and the soldering-iron D, for the purpose set forth.

4. In a can-soldering machine, the combination of the endless chain, means to impart thereto intermittent motion, gaging device mounted on the chain, and the solder-receptacle L.

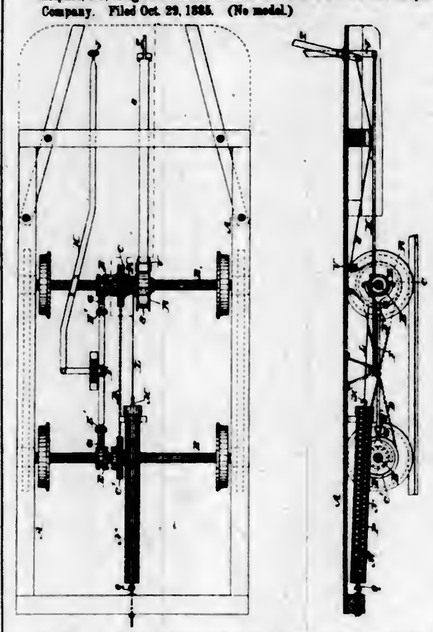
5. In a can-soldering machine, the combination of the endless chain, mechanism to impart thereto an intermittent motion, a gaging device mounted on the chain, means to expand the gaging device, the flux-applying device, the solder-applying device, the soldering device, and means to contract the gaging device by which the soldered can is released.

6. In a can-soldering machine, the combination of the endless chain, mechanism to impart thereto intermittent motion, gaging device mounted on the chain, the solder-receptacle L, and the soldering-iron D, for the purpose set forth.

7. In combination with a can-soldering machine, an endless chain, the gaging devices mounted on the chain, and the fluxing device consisting of a receptacle for the flux, provided with a series of holes, i^3, and the arms i^3, arranged to move over the holes by which the flux is ejected.

8. In combination with a can-seaming machine, the endless chain provided with the gaging device, and the solder-applying device consisting of a receptacle for molten solder, and an ejecting-orifice provided with a cut-off by which the flow of solder is regulated.

337,278. **CAR BRAKE AND STARTER.** JAMES F. MORELL, Philadelphia, Pa., assignor to the Automatic Car Brake, Starter, and Propeller Company. Filed Oct. 29, 1885. (No model.)



Claim.—1. In a car brake and starter, a cone-pulley attached to a clutch-pulley, both being loosely mounted on the car-axle, in combination with a clutch rotatably secured on the same axle, means, substantially as described, to operate said clutch, a cord secured to said cone-pulley and connected to a spring, a casing for said spring having a universal-joint attachment to the floor of the car, substantially as and for the purpose set forth.

2. Axles having clutch-pulleys, clutches therefor, a cross-chain passing around said pulleys, a spring and cord, a pulley on which said cord is adapted to be wound, and a holding-pulley for preventing the unwinding of said cord, in combination with a lever which engages with both clutches, and operating mechanism, substantially as and for the purpose set forth.

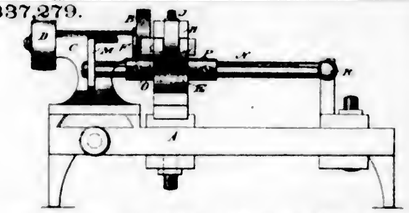
3. A car brake and starter consisting of spring-clutches, clutch-pulleys, an endless chain or band, a cord attached to said spring, a pulley on which said cord is wound, a pulley for preventing the unwinding of said cord, a friction-strap for said pulley, and an operating-lever for the clutches, and operating devices for said lever and the friction-strap, the clutches, clutch-pulleys, unwinding-pulley, and holding-pulley being on the car-axles, and all operated substantially as described.

337,279. **MACHINE FOR CLEARING TWIST-DRILLS.** JAMES A. MORTON, New Bedford, Mass., assignor to the Morse Twist Drill and Machine Company, same place. Filed June 16, 1884. (No model.)

Claim.—1. In a machine for clearing twist-drills, the combination, with a V-grooved lower block for receiving and supporting the heel of the drill to be cleared, of a pivoted upper jaw, H, arranged to enter the said V-groove, and an adjustment-screw, J, for holding the jaw H firmly in place upon the drill, all substantially as set forth.

2. In a machine for clearing twist-drills, the combination, with a square-formed V-slotted lower block, F, a hinged upper jaw, H, and a rod for imparting motion to the drill in the clearing operation, of a block, E, provided with a square slot, S, to receive the lower block, F, and a

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circular slot to receive and guide the rod N, the block E also serving as a pivotal support for the jaw H, all substantially as set forth.

3. In a machine for clearing twist-drills, the combination, with the finger or pin which rotates the drill, of an adjusting-screw, L, in which the said finger is set eccentrically, whereby the said finger may be adjusted not only inwardly and outwardly, but also circumferentially, for the purpose set forth.

4. In a machine for clearing twist-drills, the combination of the driver M, the slotted rod N, the sleeve P, and the guide-screws O, all substantially as and for the purpose herein set forth.

5. In a machine for clearing twist-drills, the combination of the driver M, the slotted rod N, the sleeve P, the guide-screws O, and the lever R, all substantially as and for the purposes herein set forth.

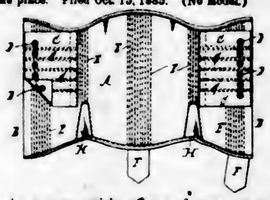
6. In a machine for clearing twist-drills, the driver M, in combination with the slotted rod N, the sleeve P, and the guide-screws O, the lever R, and the holder K, all substantially as and for the purpose herein set forth.

7. In a machine for clearing twist-drills, the grooved block F, in combination with the finger K and its adjusting-screw L, and the holder E, all substantially as and for the purpose herein described.

8. In a machine for clearing twist-drills, the grooved block F, in combination with the finger K and its adjusting-screw L, the holder E, and the arm H, all substantially as and for the purpose herein set forth.

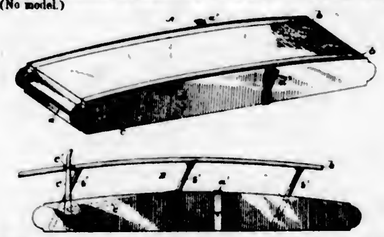
9. In a machine for clearing twist-drills, the holder E, in combination with the grooved block F, the arm H, the sleeve P, and the guide-screws O, all substantially as and for the purpose herein described.

337,280. UNDERWAIST OR STRENGTHENING-CORSET FOR CHILDREN. ELLA NAGLE, New York, N. Y., assignor to Louis Fallheimer, same place. Filed Oct. 15, 1885. (No model.)



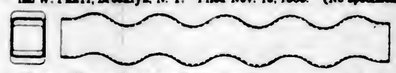
Claim.—As a new article of manufacture, an underwaist or strengthening-corset for children, consisting of a gored body, A, having plain ends B B, the free lacing-flaps C C, having eyelets and secured to the upper part of said body remote from the outer edges of the latter and corded in the direction of their length, the lacing-cords for the eyelets, a series of stiffening-cords, E E E, extending vertically along the center of the underwaist and along the plain ends thereof, and flaps F, attached to and depending from the lower edge of the underwaist, substantially as described.

337,281. STEAMBOAT-STAGE. JUSTIN PATIN, New Roads, assignor of one-half to Edouard Alphonse Koch, Waterloo, La. Filed July 16, 1885. (No model.)



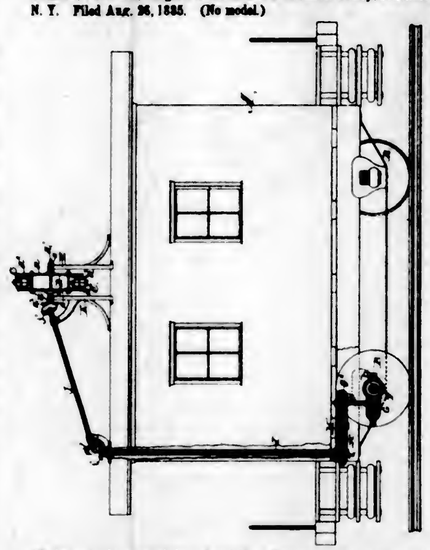
Claim.—The improved gang-plank or stage, provided with longitudinal grooves or spaces at its sides, side rails supported by standards which are pivoted to the plank or stage and to the rails, and which, when lowered, rest in said grooves, a lever fulcrumed in the plank or stage, connected with one of the standards by means of a rod or cord, and a catch for temporarily holding said lever in the elevated position of the rails, as set forth.

337,282. METHOD OF FORMING SERPENTINE TUBES. NATHANIEL W. PRATT, Brooklyn, N. Y. Filed Nov. 13, 1885. (No specimens.)



Claim.—The method described of making serpentine tubes, which consists in first compressing a cylindrical tube to an oblong form in cross-section, and subsequently forming transverse depressions therein, as described.

337,283. REVOLVING SIGNAL FOR RAILWAY-TRAINS. IRA REKARD, Cobleskill, assignor of one-half to William H. Sidney, Schoharie N. Y. Filed Aug. 26, 1885. (No model.)

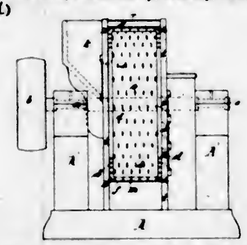


Claim.—1. In a revolving signal for railway-cars, the combination, with a pair of revolving spiders, D, composed of radial arms *d*, the said spiders being arranged opposite and parallel to each other, and secured to the shaft *d'*, so as to rotate in a vertical plane transversely to the line of travel of the car to which it is attached, and lanterns C, fitted between said spiders to turn freely on their trunnions *c*, but incapable of any fore-and-aft swaying motion, of the car-axle *b*, provided with a spiral worm, E, worm-wheel F, and the mechanism, substantially as described, intermediately between said worm-wheel and the shaft *d'*, for giving a positive motion to the latter, as herein specified.

2. The combination, with the lanterns C, provided with oppositely-projecting trunnions *c*, as herein described, of the pair of spiders D, composed of radial arms *d*, provided with springs d^2, adapted to receive the trunnions *c* of said lanterns, as herein specified.

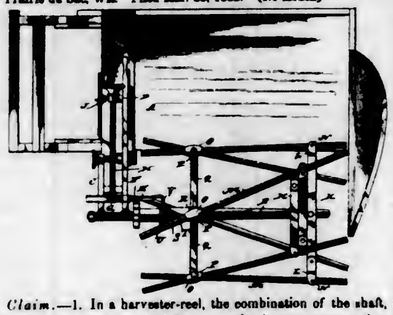
3. The combination, with the spiders D, fixed on the shaft *d'*, and carrying the lanterns C, as herein described, of the standards E, having open heads *e*, containing journal-boxes *e'*, resting on springs e^2, as and for the purpose specified.

337,284. GRAIN HULLING AND SCOURING MACHINE. FRIEDRICH B. ROLLE, Ischopanthal, Saxony, Germany. Filed June 15, 1885. (No model.)



Claim.—The cylinder *c*, having knives on its periphery and its heads, in combination with the upper rasp-like concave, *g*, and the lower concave, *f*, having slots *m*, substantially as set forth.

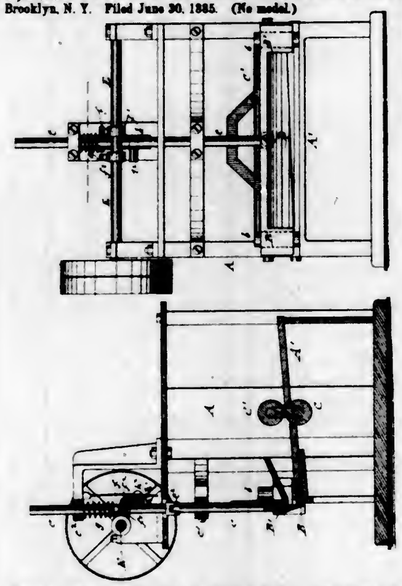
337,285. ADJUSTABLE REEL FOR HARVESTERS. JOHN H. ROSE, Prairie du Sac, Wis. Filed Mar. 25, 1885. (No model.)



Claim.—1. In a harvester-reel, the combination of the shaft, the fixed radial arms at one end of the same, the beaters connected to the said arms by the pivoted bails or clevises, and a hub adapted to be moved in a spiral direction upon the said shaft, and having arms provided with pivoted sleeves, through which the inner ends of the reel-beaters extend, substantially as herein described, for the purpose set forth.

2. In a harvester-reel, the combination of the shaft, fixed radial arms at one end of the same, beaters connected to the outer ends of said arms by universal joints, a sliding hub arranged upon the said shaft and having an oblique slot, a pin extending from the shaft through the said slot, arms extending radially from the said hub and having sleeves through which the inner ends of the reel-beaters extend, a sliding rack-bar having a forked end engaging an annular groove in the said hub, and means for adjusting the said rack-bar and retaining it in any position to which it may be adjusted, substantially as herein described, for the purpose set forth.

337,286. PAPER-CUTTING MACHINE. BERNHARD SANDMANN, Brooklyn, N. Y. Filed June 30, 1885. (No model.)



Claim.—1. The combination of a driving-shaft, a reciprocating cutting-knife, mechanism, substantially as described, for reciprocating said knife once for each rotation of the driving-shaft, a feed-table, feed-rolls disposed, respectively, above and below said feed-table, a cone-pulley on said driving-shaft, a cone-pulley on the shaft of one of the feed-rolls, and a shifting belt connecting said pulley for changing the relative speed of the feed-rolls and driving-shaft, substantially as described.

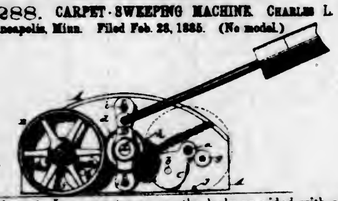
2. The combination of an actuating-rod, a vertically-guided spring-actuated cutting-knife, an actuating-rod connected to said knife, a driving-shaft, a cam attached to said shaft for intermittently lifting said rod, a spring-catch for locking said rod in its highest position, and a second cam on said shaft for intermittently releasing said knife, substantially as described.

3. The combination of a feed-table, feed-rolls, adjustable mechanism, substantially as described, for rotating the feed-rolls at different speeds, a vertically-guided and spring-actuated cutting-knife, a vertical shank pivoted to the cutting-knife and provided with a projecting pin and nose, a rotating shaft having a cam for lifting and a cam for releasing the shank of the cutting-knife, and a spring-catch that engages the nose on said shank and is released therefrom by said cam, substantially as set forth.

337,287. LEATHER STUFFING. JOHN A. J. SHULTZ, St. Louis, Mo., assignor to Mary E. Shultz, same place. Filed July 10, 1885. (Specimens.)

Claim.—The herein-described stuffing for leather having tanned surfaces and an interior of rawhide, for tawed leather, and for fulled-rawhide leather, the same consisting of petrolatum, tar, and tallow, combined in the proportions substantially as described.

337,288. CARPET-SWEEPING MACHINE. CHARLES L. TRAVIS, Minneapolis, Minn. Filed Feb. 28, 1885. (No model.)



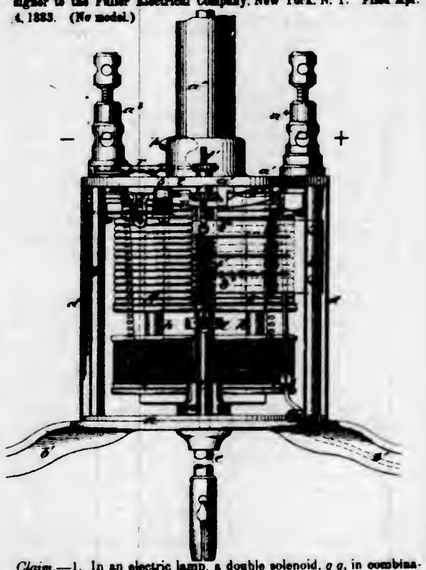
Claim.—1. In a carpet-sweeper, the body provided with openings at its ends, in combination with the brush having its ends extending through said openings, with pulleys at the outside, the plates or brackets applied externally to the body, as described, and the journals sustaining the ends of the brush in the plates and securing the brush against vertical motion.

2. In combination with the intermediate brush-actuating pulley, the two traction-wheels, their movable supporting-arms, and the movable equalizing bar or lever sustained at its middle and connecting said arms, as described.

3. In combination with the body, the rotary brush, two wheels at one end of the body on opposite sides of the brush, the pivoted wheel-carrying arms, and the elastic equalizing-bar *e*, sustained by and movable upon a certain support.

4. In a carpet-sweeper, the end plate, D, adapted, as described, to sustain the journal of the brush, and also provided with a seat or groove to receive the equalizing-bar.

337,289. ELECTRIC-ARC LAMP. JAMES J. WOOD, Brooklyn, assignor to the Fuller Electrical Company, New York, N. Y. Filed Apr. 4, 1885. (No model.)



Claim.—1. In an electric lamp, a double solenoid, *g g*, in combination with a horseshoe electro-magnet, *h i*, wound at one end of their cores only, and the opposite ends naked and projecting into the tubes of the solenoid and acting as the core or armature to said solenoid, with the coils circuited and wound, substantially as shown, and an operative

connection between the armature and the carbon or carbon-holder, to regulate the position thereof, substantially as herein set forth.

2. The combination, in an electric-arc lamp, with a regulating magnet or motor, of the clutch-hub *m*, surrounding the carbon-holder or movable electrode of the lamp, with the lever *n* pivoted thereto and bearing at one arm on said electrode, with an operative connection between the opposite arm of said lever and the regulating-motor, and a seat, *a*, on which the hub is lowered, substantially as and for the purpose set forth.

3. In an electric lamp, the combination, with a cut-out switch and a trigger device to hold the same open, of a primary attracting-magnet and an electro-magnet circuited in a shunt around the arc, both magnets being operatively related with said cut-out switch, with one of said magnets acting as the armature to the other and operatively connected with the trigger, whereby an abnormal flow of current in the shunt-magnet due to abnormal arc will repel one of the magnets from the other, and thereby release the trigger and close the cut-out switch, substantially as herein set forth.

4. In an electric lamp, the combination, with a cut-out switch and a trigger device to hold the same open, of a permanent magnet and an electro-magnet circuited in a shunt around the arc, both magnets being operatively related with said cut-out switch, with one of said magnets acting as the armature to the other and operatively connected with the trigger, whereby an abnormal flow of current in the shunt-magnet due to abnormal arc will repel one of the magnets from the other, and thereby release the trigger and close the cut-out switch, substantially as herein set forth.

337,290. **ABDOMINAL TRUSS.** CHRYSOSTOM ZIEMER, Rochester, N. Y. Filed Nov. 4, 1885. (No model.)



Claim.—1. In combination with the pad-holder of a truss, a pad formed with a tapering or inclined surface, as shown, turned toward said holder, an elastic ring fitted to said inclined surface of the pad, and forming an annular rest or seat for the same, and a fastener to hold said parts together, substantially as shown.

2. In combination with the pad-holder of a truss formed with slot *h*, a pad formed with an inclined posterior surface, an elastic ring for receiving and holding said pad, and a clamping-screw for the parts passed through said slot, by means of which said pad can be laterally adjusted upon said pad-holder, substantially as described.

337,291. **BOOT AND SHOE SEWING MACHINE.** EDWIN ADAMS, Newburyport, Mass., assignor to the Eppler & Adams Sewing Machine Company, Saco, Me. Filed Aug. 24, 1885. (No model.)

Brief.—The invention relates to that class of machines in which the patent of A. Eppler, Jr., No. 325,083, granted August 25, 1885, is an example. A lateral motion is given to the needle while it is in the work, whereby the work is fed between the stitch-completing movements of the needle, the work-rest and channel-gage being arranged to grasp the work while the needle is advancing to penetrate the same. After the needle has withdrawn from the work the work-rest is moved backwardly from the work, and then the swinging head moves so as to carry the needle, the work-rest, and the other parts carried by the head laterally until the needle is in position to enter the work at the required distance from the last loop. The fixed channel-gage enables the operator to control the work during the backward movement of the needle, said gage affording an unyielding support against which the operator can hold the channel-flap.

Claim.—1. The combination of the movable work-rest, devices for operating it to bear against the work when the needle is penetrating and withdrawing from the work, and the stitch-forming mechanism, the swinging head supporting the work-rest and stitch-forming mechanism, and the fixed channel-gage, as set forth.

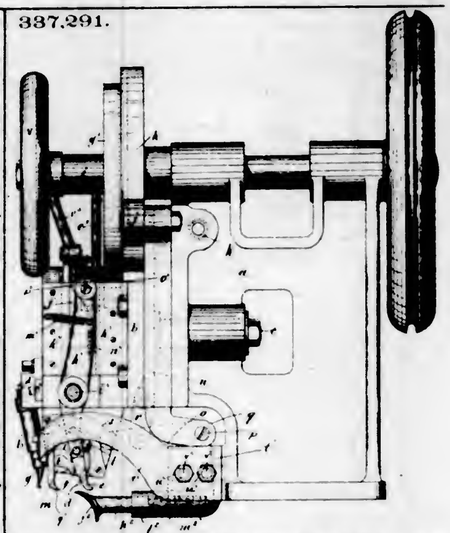
2. The combination of the fixed frame, the swinging head, the work-rest, and the stitch-forming mechanism carried by said head, the adjustable channel-gage attached to the fixed frame, and means for positively holding said gage in any position to which it may be adjusted.

3. The combination of the swinging head, means for oscillating it, the lever *h'*, pivoted thereto, having the work-rest *s*, the devices for oscillating said lever, the stitch-forming mechanism, the swinging head carrying the same, and the fixed channel-gage, as set forth.

4. The combination of the swinging head, the pivoted needle-arm carrying the needle, the devices for oscillating said arm and needle, the rock-shaft *t*, concentric with the needle-arm and carrying the cast-off, the bell-crank lever v^3, the cam-groove *u*, with which one end of said bell-crank lever is directly connected for operating said lever, and the rod *w*, connecting said lever with the arm *a'* of the rock-shaft *t*, as set forth.

5. The pull-off composed of the bell-crank lever a^3, having the

337,291.



roner or guide e^2 on one arm and the adjustable roller or guide f^2 on the other arm, combined with the looper and needle, as set forth.

6. The combination, with the work-holding and stitching mechanism, of the yielding finger-rest having the concave head or plate formed to fit the back of the forefinger, and located wholly below the plane in which the sewing operation is performed, as shown, and for the purpose set forth.

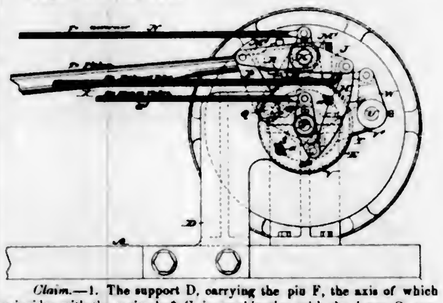
337,292. **FLEXIBLE FLOORING.** WILLIAM I. ADAMS and ALBERT A. HARROW, Baltimore, Md., assignors to the A. & H. Flexible Flooring Company, same place. Filed Nov. 10, 1885. (No model.)



Claim.—1. The flexible flooring, wainscoting, and the like, consisting of strips of wood or other material, fitted edge to edge, having elongated holes edgewise through the same, and threaded upon wires having a V or curved shape at proper distances and connecting the strips edge to edge, as herein specified.

2. The herein-described matched structure, consisting of strips having elongated holes perforated edgewise in a straight line, as shown and described, wires having elastic V-shaped or curved bends therein threaded through said strips and fastened by bending the wires, as specified herein.

337,293. **VALVE-MOTION.** JOHN S. ASH, Buckingham, Pa. Filed Aug. 1, 1885. (No model.)



Claim.—1. The support D, carrying the pin F, the axis of which coincides with the main shaft C, in combination with the lever G, connected to the rod G', the lever G^2, connected by the rod H to the rocker-arm J, the rocker-arm M', the connecting-bar P, and crank R, turning on the pin Q, said crank R being firmly attached to the main crank of the engine, armed disk M, and rod N, connecting-bar S, turning on the pin Q, and rocker-arm T, secured to the shaft U, having adjustable bearing V', both bar S and arm T being connected by a pin-arm, W, having

the rod X pivoted thereto, and disk V, all of said parts being arranged, combined, and operated substantially as described.

2. The pin Q, connected by the crank R with the main crank of the engine, in combination with the bar P, rocker-arm M', rocker-shaft K, rocker-arm J, bar H, and lever G, communicating motion to the steam-valve, as specified.

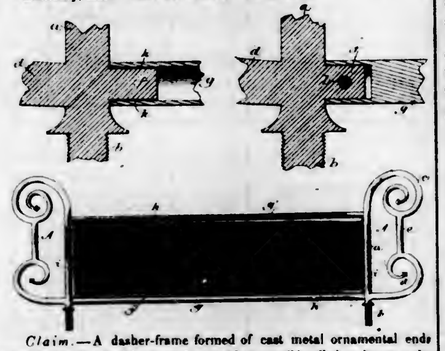
3. The crank R and pin Q, connected with the crank, in combination with the bar S, rocker-arm T, rocker-shaft U, and rocker-arm W, communicating motion to the exhaust-valve, the rocker-shaft being placed close to the center, as and for the purpose specified

4. The support D, carrying the pin F, in combination with the slotted disk V, rocker-shaft U, having adjustable bearing V', and set-screws *a*, substantially as and for the purpose set forth.

5. The pin Q, connected with the crank-shaft, as described, in combination with the bar P, rocker-arm M', rocker-shaft K, and rocker-arm J, said rocker-shaft being placed close to the center F and designed to originate a movement suitable for the travel of the steam-valve, such movement being characterized by a point for the beginning of the stroke at which its advance nearly agrees with the advance of the crank, and at the farther end by a nearly stationary point, which extends over a considerable portion of the crank-revolution, said travel being communicated to the steam-valve by suitable intermediate parts.

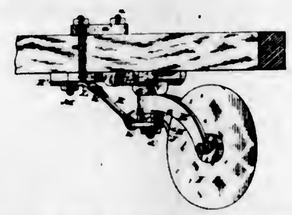
6. The disk M, having its position about the center F determined by the action of the governor, in combination with the lever G, moving about the same center, the rocker-arm J and bar H, and rocker-shaft K, supported on said disk, and having motion communicated thereto by suitable mechanism from the crank-shaft of the engine, and imparting through other suitable connections motion to the steam-valve, as and for the purpose specified.

337,294. **DASH-FRAME FOR VEHICLES.** WASHINGTON I. ATWOOD, Amesbury, Mass. Filed Oct. 3, 1885. (No model.)



Claim.—A dasher-frame formed of cast metal ornamental ends united by longitudinal bars cut from tubing or solid rolled or drawn rods, and united and secured together, substantially as specified.

337,295. **ROLLING COLTER.** SILAS W. BALL, Canton, Ohio, assignor of one-half to John L. Spangler, same place. Filed Dec. 17, 1885. (No model.)



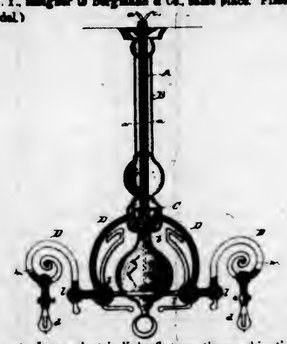
Claim.—1. The frame A, provided with the bent or curved portion B, said bent or curved portion having convexed and concaved surfaces, substantially as and for the purpose specified.

2. The combination, with the frame A, provided with the bent or curved portion B, of the block C, fitting in said bent or curved portion B, of the connecting-bolt D, provided with the grooved head *d*, the clamping-bolt *d'*, the arms E, and the colter, substantially as and for the purpose specified.

3. The combination, with the frame A, provided with the bent or curved portion B, said bent or curved portion having convexed and concaved surfaces, of the connecting-bolt D, provided with the corrugated or serrated end, the washers G and H, provided with the extensions *f*, the colter-arms E, provided with the eye F, and the stop *f''*, substantially as and for the purpose specified.

4. The combination, with the frame A, provided with the bent or curved portion B, said bent or curved portion having convexed and concaved surfaces, of the connecting-bolt D, the corrugated or serrated plate or arm L, the adjusting rod or bar K, provided with hooks *k'*, and the block or plate J, substantially as and for the purpose specified.

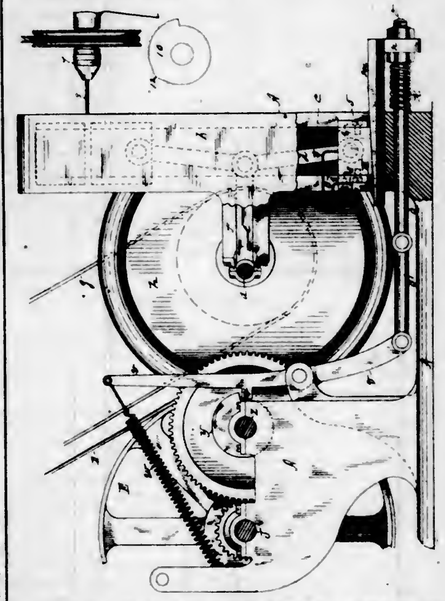
337,296. **ELECTRIC-LIGHT FIXTURE.** SIGMUND BERGMANN, New York, N. Y., assignor to Bergmann & Co., same place. Filed Oct. 31, 1884. (No model.)



Claim.—1. In an electric-light fixture, the combination with an inclosing tube or body, of two flexible separately-insulated electrical conductors united into a single cord passing through said tube or body, substantially as set forth.

2. In an electric-light fixture, the combination of stiff or rigid conductors for the primary circuit and secondary circuits, each composed of two flexible separately-insulated electrical conductors united into a single cord, substantially as set forth.

337,297. **MACHINE FOR SWAGING METAL BARS.** JOHN BERRY, Springfield, Mass., assignor to the National Needle Company, same place. Filed Nov. 30, 1885. (No model.)



Claim.—1. In a swaging-machine, substantially as described, having a movable die operated by toggle-bar mechanism, a movable backing or support, substantially as described, interposed between the abutment of said toggle-bar mechanism and the frame of the machine, and mechanism, substantially as described, for imparting motion to said backing or support, whereby said die is caused to move independent of its swaging motion toward and from the other die of the machine during

the operation of swaging, combined and operating substantially as set forth.

2. In a swaging-machine, substantially as described, having a movable die operated by toggle-bar mechanism, and a die connected to the frame of the machine, a movable backing or support, substantially as described, interposed between said frame and the die connected therewith, and mechanism, substantially as described, for imparting motion to said backing or support, whereby said last-named die is given a motion toward and from said movable die during the operation of swaging, combined and operating substantially as set forth.

3. The combination, with the movable die and the vibrating toggle-jointed bars of a swaging-machine, substantially as described, of a movable bearing-block connected to the end of one of said bars and forming its abutment, a sliding wedge upon which said block rests, and mechanism, substantially as described, for imparting a sliding motion to said wedge, substantially as set forth.

4. The combination, with the movable die and the vibratory toggle-jointed bars of a swaging-machine, substantially as described, of a movable bearing-block connected to the end of one of said bars and forming its abutment, two springs secured by one end thereof by the side of said bearing-block and having their free ends resting on the latter, a sliding wedge upon which said block rests, and mechanism, substantially as described, for imparting a sliding motion to said wedge, substantially as set forth.

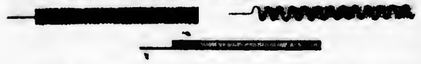
5. The combination, with the movable die and the vibratory toggle-jointed bars of a swaging-machine, substantially as described, of a movable bearing-block connected to the end of one of said bars and forming its abutment, a sliding wedge upon which said block rests, the connecting-rod *o*, having an adjustable connection with said wedge, the cam-wheel *y*, the lever *v*, having a pivotal connection with said rod, and a spring to swing said lever against said cam-wheel, substantially as set forth.

6. The combination, with the movable die and the vibratory toggle-jointed bars of a swaging-machine, substantially as described, of a movable bearing-block connected to the end of one of said bars and forming its abutment, a sliding wedge upon which said block rests, the connecting-rod *o*, having an adjustable connection with said wedge, a cam-wheel having a projection on its face between the terminating points of its higher and lower surfaces, the lever *v*, having a pivotal connection with said rod, and a spring to swing said lever against said cam-wheel, substantially as set forth.

7. In a swaging-machine, substantially as described, having a movable die operated by a toggle-bar, a sliding wedge operating against the abutment of said bar to impart a motion to said abutment while the die is in operation, and means, substantially as described, for imparting a sliding motion to said wedge, combined and operating substantially as set forth.

8. In a swaging-machine, substantially as described, having a movable die operated by a toggle-bar, and a die attached to the frame of the machine, a sliding wedge operating between the latter die and said frame to impart a motion to said die while said movable die is in operation, and means, substantially as described, for imparting a sliding motion to said wedge, combined and operating substantially as set forth.

337,298. SECONDARY BATTERY. CHARLES F. BRUSH, Cleveland, Ohio. Filed June 13, 1881. (No model.)



Claim.—1. A suitable plate or support provided with mechanically applied absorptive substance and adapted for use as a secondary-battery element or electrode after being rendered active by an electric current, substantially as set forth.

2. An improvement in the construction of secondary-battery elements or electrodes, said improvement consisting in suitable plates or supports primarily coated or combined with mechanically-applied porous, granular, spongy, or equivalent lead, substantially as set forth.

3. An improvement in the construction of a secondary-battery element or electrode, said improvement consisting in a corrugated lead or other plate primarily coated, combined, or filled with mechanically-applied absorptive substance, substantially as set forth.

4. An improvement in the construction of a secondary-battery element or electrode, said improvement consisting in a corrugated lead or other plate primarily coated, combined, or filled with mechanically-applied porous, granular, spongy, or equivalent lead, substantially as set forth.

5. An improvement in the construction of a secondary-battery element or electrode, said improvement consisting in a plate or suitable support provided with grooves, receptacles, or perforations primarily coated, combined, or filled with mechanically-applied absorptive substance, substantially as set forth.

6. An improvement in the construction of a secondary-battery element or electrode, said improvement consisting in a plate or support provided with grooves, receptacles, or perforations primarily coated, combined, or filled with mechanically-applied porous, granular, spongy, or equivalent lead, substantially as set forth.

7. The combination, with the plate *a*, primarily coated, combined, or filled with mechanically-applied porous or equivalent lead, of the retaining cover or sheet *b*, of suitable porous material, substantially as set forth.

8. In the process of making plates or elements for secondary batteries, primarily and mechanically applying to or combining with a suitable plate or support an absorptive substance adapted to be transformed into active material, substantially as set forth.

9. In the process of making plates or elements for secondary batteries, primarily applying to or combining with a suitable plate or support porous, granular, spongy, or equivalent lead, substantially as set forth.

10. In the process of making a secondary-battery plate or element, combining by means of pressure an absorptive substance and suitable material to form a support therefor, substantially as set forth.

11. In the process of making a secondary-battery plate or element, constructing a suitable plate or support with grooves, cells, receptacles, or perforations, said plate or support having an absorptive substance primarily applied thereto or combined therewith, substantially as set forth.

12. Absorptive material for use in secondary batteries formed into a coherent mass by pressure, substantially as set forth.

13. For use in secondary batteries, porous, granular, spongy, or equivalent lead formed into a coherent mass by pressure, substantially as set forth.

337,299. SECONDARY BATTERY. CHARLES F. BRUSH, Cleveland Ohio. Filed June 13, 1881. (No model.)



Claim.—1. A secondary-battery element or electrode consisting of a plate or suitable support primarily coated or combined with mechanically-applied active material or material adapted to become active, substantially as set forth.

2. In a secondary battery, an electrode consisting of a plate or support provided with a coating or surface layer of an absorptive substance, such as metallic oxide, applied thereto, substantially as set forth.

3. A plate or suitable support primarily coated or combined with mechanically-applied oxide of lead or equivalent lead compound, substantially as set forth.

4. A plate or suitable support corrugated and primarily coated or combined with mechanically-applied active material or material adapted to become active, substantially as set forth.

5. A plate or suitable support corrugated and primarily coated or combined with mechanically-applied oxide of lead or equivalent lead compound, substantially as set forth.

6. A plate or suitable support provided with grooves, perforations, or receptacles and primarily coated, combined, or filled with mechanically-applied active material or material adapted to become active, substantially as set forth.

7. A plate or suitable support provided with grooves, perforations, or receptacles and primarily coated, combined, or filled with mechanically-applied oxide of lead or equivalent lead compound, substantially as set forth.

8. The combination, in a secondary battery, of a plate, *a*, coated or combined with mechanically-applied active or absorptive material, and the retaining cover or sheet *b*, of suitable porous material, substantially as set forth.

9. The combination, with the plate or support of an electrode and an active spongy layer thereon, of a porous medium for holding said layer on the plate or support of the electrode, substantially as set forth.

10. An electrode for secondary batteries, comprising a support, an active spongy layer, and a holding medium through which the battery-fluids may pass, adapted to hold the layer on its support, the support, layer or coating, and holding medium being all fastened together so as to be capable of transportation, substantially as set forth.

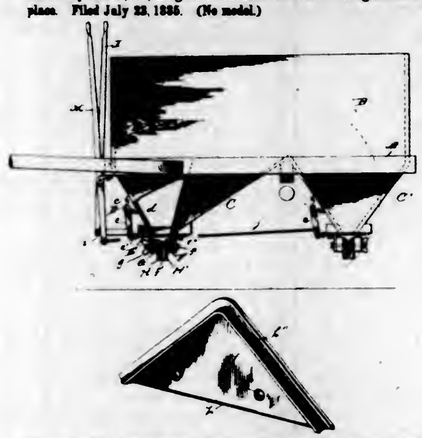
11. In the construction of secondary battery elements or electrodes, a plate or suitable support primarily coated or combined with mechanically-applied red lead, substantially as set forth.

12. The method of making plates or electrodes for secondary batteries, consisting in primarily combining active material with suitable plates or supports mechanically, in contradistinction to forming the active material by an electrical disintegration of the plate or support, substantially as set forth.

13. The method of making plates or electrodes for secondary batteries, consisting in coating the plates or supports with red lead prior to their immersion in the battery-fluid, substantially as set forth.

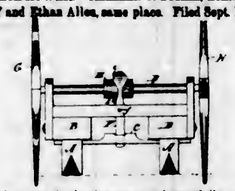
14. Active material for secondary batteries, formed into a coherent mass by pressure, substantially as set forth.

337,300. STREET-SANDING MACHINE. BRADMAN BUTLER, St. Johnsbury Centre, Vt., assignor of one-half to Cortes T. Brigham, same place. Filed July 23, 1885. (No model.)



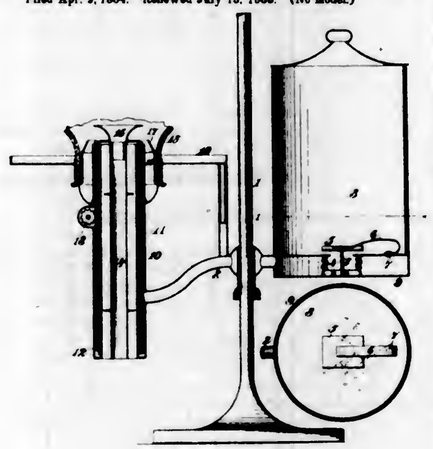
Claim.—The combination, in a sanding-machine, of a suitable trough or receptacle provided with openings in its bottom, and plates H H', having triangular ribs, conjointly forming broadcast-channels, one of said plates being adjustable relative to the other, hand devices for adjusting said plates, and cut-off devices for controlling the feed through the openings, substantially as set forth.

337,301. CHECK-ROWER. JEREMIAH C. BUTLER, Lexington, Me., assignor to himself and Ethan Allen, same place. Filed Sept. 16, 1885. (No model.)



Claim.—The improved check-rower, substantially as herein described and shown, consisting of the main or supporting frame, the seed-boxes, the dropping-slide, the shaft journaled in the main frame, connections between the shaft and the dropping-slide, whereby the latter may be oscillated, the rotating wheel secured on one end of the shaft and provided with spokes having their extremities curved forward with reference to the direction of revolution, and the marking-wheel secured on the opposite end of the shaft and provided with spokes having their extremities curved rearwardly, all arranged and operating substantially as and for the purpose specified.

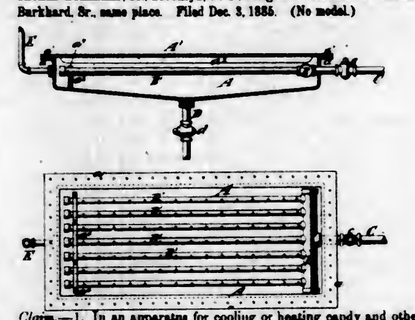
337,302. LAMP-RESERVOIR. WILLIAM P. BUTLER, Chicago, Ill. Filed Apr. 9, 1884. Renewed July 13, 1885. (No model.)



Claim.—1. In a lamp having a wick supplied from a reservoir, the combination, with the cap and the reservoir having an orifice in its bottom, of a laterally-movable flat or leaf spring in the reservoir, a cap attached to one end of the spring, and a pin or rod mounted on the cap for moving the spring and cap laterally, substantially as described.

2. In a student's lamp, the combination, with the cap and the reservoir having an orifice in its bottom, of a laterally-swinging flat spring pivoted at one end to the reservoir, a cap attached to the other end of the spring, and a pin projecting from the cap for swinging the cap and spring laterally and also opening the orifice in the reservoir, substantially as described.

337,303. APPARATUS FOR COOLING OR HEATING CANDY. THOMAS BURKHARD, Jr., Brooklyn, N. Y., assignor of one-half to Thomas Burkhard, Sr., same place. Filed Dec. 3, 1885. (No model.)

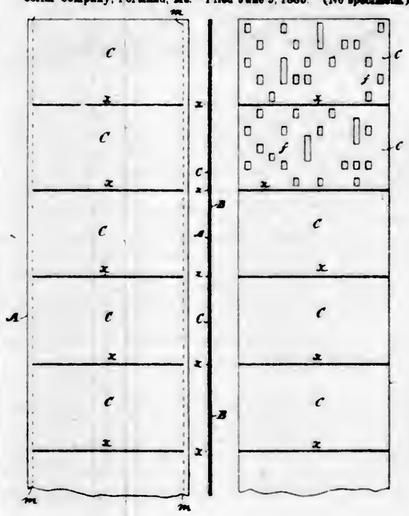


Claim.—1. In an apparatus for cooling or heating candy and other substances, the combination, with a horizontally-extending closed chamber, the top plate of which forms a surface for the candy or other substance, of a header in the chamber, and pipes extending therefrom through the chamber and perforated for the escape of the cooling or heating agent, and pipes for supplying such agent to the header, and for the discharge of the spent agent from the chamber, substantially as herein described.

2. The combination, with the chamber A, having an outlet-pipe, of the header B and the pipes B', extending therefrom and perforated in their upper portion, so as to deliver the cooling or heating agent directly against the top plate of the chamber, and the pipe C, for supplying the header with the cooling or heating agent, substantially as herein described.

3. The combination, with the chamber A, having its top plate, A', provided with longitudinal ribs a^2, and its outlet-pipe D, of the header B and the distributing-pipes B', extending therefrom, arranged between the ribs a^2, and perforated in their upper portions, and the pipe C, for supplying the header with the cooling or heating agent, substantially as herein described.

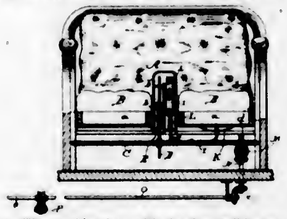
337,304. PROCESS OF MAKING MUSIC-STRIPS. ROBERT BUTTERWORTH, Somerville, Mass., assignor, by mesne assignments, to the Fiberlene Collar Company, Portland, Me. Filed June 9, 1885. (No specimens.)



Claim.—1. The improved process of making music paper or strip blanks for automatic reed-organs and other similar musical instruments, herein described, the same consisting, essentially, in taking a piece of paper or pasteboard of suitable width and length and a corresponding piece of cloth, punching a series of elongated transverse slots in the paper or pasteboard at regular intervals, pasting or cementing the cloth to the paper or pasteboard, and then trimming the cloth and paper or cloth and pasteboard longitudinally in such a manner as to open the ends of said transverse slots, substantially as set forth.

2. The improved process of making music-paper or perforated strips for automatic reed-organs and other similar musical instruments, herein described, the same consisting, essentially, in taking a piece of paper or pasteboard of suitable width and length and a corresponding piece of cloth, punching a series of elongated transverse slots in the paper or pasteboard at regular intervals, pasting or cementing the cloth to the paper or pasteboard, trimming the cloth and paper or cloth and pasteboard longitudinally in such a manner as to open the ends of said transverse slots, and then punching a series of holes in the paper or pasteboard plates thus formed, corresponding with the notes of the tune or music the strip is designed to aid in producing, substantially as described.

337,305. **CAR-SEAT RECORDER.** JOSEPH K. BYWATERS and JOHN Y. BURKE, Paris, Texas. Filed Oct. 19, 1885. (No model.)



Claim.—1. The combination, with the depressible seat, the traveling paper strip, the mechanism for imparting motion to said strip, the center G and its encircling spiral spring L, of the lever I, and the four-armed plate-spring K, attached to one end of said lever, and applied to the under side of the seat, so as to support the latter, whereby depression of any portion of the seat tilts the lever and effects the desired record, as specified.

2. The combination of the following elements: a car-axle, F, the depressible car-seat B, and the recording apparatus A, arranged alongside the seat, and consisting of friction feed-wheels 1 2 1 2, a paper strip, H, meshing spur-gears, and a puncturing device, G, arranged vertically, a lever, I, which operatively connects said seat and apparatus, and gearing which connects the latter with the axle, whereby movement of the car operates said apparatus and enables the record to be made by slitting the strip when the seat is depressed, as specified.

337,306. **MACHINE FOR TURFING FABRICS.** MATTHEW F. CONNETT, Jr., Springfield, Ill., assignor of one-half to Horatio B. Buck and William Schulze, both of same place. Filed Nov. 5, 1885. (No model.)



Claim.—1. In combination with the sheath and the needle-bar, the stop on the bar, and the sleeve on the sheath provided with a lug to engage the stop on the bar, substantially as and for the purpose shown.

2. In combination with the sheath, the needle-bar, the stop on the bar, and the sleeve on the sheath made adjustable along the sheath, and provided with a lug or stop to engage the stop on the needle-bar and limit the upward movement of the latter, substantially as and for the purpose described.

3. In combination with the sheath and the needle-bar within the same, both open at the same side, the stop within the bar and the adjustable sleeve on the sheath, provided with a lug projecting into the needle-bar, substantially as and for the purpose specified.

4. In combination with the sheath, open at its rear side, the sleeve on the sheath, the stop-lug thereon, and the spring-catch adapted to engage any one of a series of holes or notches on the sheath, substantially as and for the purpose shown.

5. In combination with the sheath and the needle-bar within the same carrying a tubular needle, the spring rigidly connected with the sheath projecting down into the needle, and serrated or roughened at its lower end, substantially as and for the purpose set forth.

6. In combination with the sheath, the needle-bar, the hollow needle carried thereby, and an arm connected with the sheath, so as to be stationary as the needle-bar and needle reciprocate, projecting down into the needle and serrated at its lower end, substantially as and for the purpose described.

7. In combination with the sheath and the needle-bar, the tubular needle carried by the latter, the plate held rigidly to the sheath, and the spring-arm attached to such plate, extending down into the needle, and adapted at its lower end to catch and hold the yarn as the needle rises, substantially as and for the purpose specified.

8. In a turfing-machine, in combination with the needle-bar, the tubular needle carried thereby, having its lower end cut away at an angle to form a point, and adapted to catch the yarn and prevent it from slipping through the needle as the latter descends, and means for causing the yarn to feed through the needle, substantially as and for the purpose shown.

9. In a turfing-machine, in combination with the needle-bar, the tubular needle having its lower end cut away at an angle to form a penetrating-point and notched or roughened at the rear side of this cut, and means for holding the yarn from being pulled upward as the needle ascends, substantially as and for the purpose set forth.

10. In combination with the needle-bar and the pivot-bar on the rear side of the same, the needle pivoted at its rear side upon this pivot-bar and a spring engaging the upper end of the needle above its pivotal point and pressing such end rearward, substantially as and for the purpose shown.

11. In combination with the needle-bar open at its rear side, the pivot-bar extending across such side, the needle pivoted to such bar near its upper end, and provided with a plate to steady it in the bar as it swings on its pivot, and the spring within the bar pressing the portion of the needle above its pivot rearward, so that the lower portion of the needle normally slants downward and forward with reference to the needle-bar, substantially as and for the purpose set forth.

12. In combination with the needle-bar and the pivot-bar extending across the same, the needle provided with a series of notches adapted to engage the pivot-bar and a spring pressing the needle toward such pivot-bar, substantially as and for the purpose described.

13. In a turfing-machine, in combination with the needle-bar provided at its lower end with ears to strike the fabric and limit its stroke, the needle provided on its rear side with several pivotal notches, the pivotal bar on the rear side of the needle-bar, adapted to be engaged by any of the notches on the needle, and the spring engaging the upper end of the needle and pressing it rearward, substantially as and for the purpose specified.

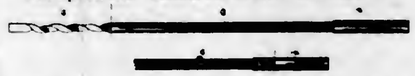
14. In a turfing-machine, in combination with the sheath adapted to rest on the fabric, the needle-bar, means for limiting the upward stroke of the bar in the sheath, means for limiting the downward stroke of the bar with relation to the fabric, and the needle so attached to the bar as to descend down through the fabric a greater distance than its point rises above the fabric, substantially as and for the purpose shown.

15. In a turfing-machine, in combination with the sheath adapted to rest on the fabric, the needle-bar within the same, having its lower end provided with suitable ears to strike the fabric and limit the downstroke of the bar, means for limiting the upward stroke of the bar and the needle carried by the bar, and so attached to it that its point projects beyond the limiting-ears a greater distance than it rises above the fabric on its upstroke, substantially as and for the purpose set forth.

16. In combination with the sheath for the needle-bar of a turfing-machine, the two parallel feet at the sides of the lower end thereof, formed of a single piece of wire, substantially as and for the purpose described.

17. In combination with the sockets on each side of the lower end of the sheath and on the front side thereof, the feet formed of a single piece of wire having one end fastened in the socket on one side of the sheath, then extending downward, then forward, then upward, then across through the sockets on the front side of the sheath, then downward, then rearward, and finally upward and into the socket on the other side of the sheath, where it is fastened, substantially as and for the purpose specified.

337,307. **SQUIB.** EDWARD J. COTTER, Frackville, assignor to John J. Keating, Michael J. Wayne, and James Cobbley, Mahanoy Plane, Pa. Filed Apr. 25, 1885. Renewed Jan. 20, 1886. (No model.)



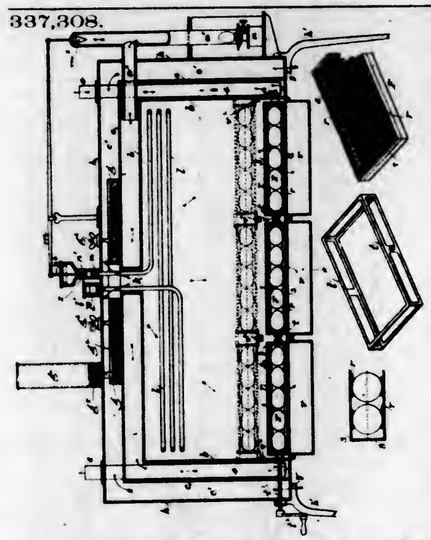
Claim.—1. A squib for blasting purposes having a coupling-sleeve surrounding one of its ends, the explosive material within such end being compressed to form a wad, as and for the purposes set forth.

2. As an improved article of manufacture, a blasting-squib of uniform diameter having a coupling-sleeve permanently attached to one end, substantially as described, and for the purposes specified.

337,308. **INCUBATOR.** WALTER Y. COWL, New York, N. Y. Filed June 1, 1885. (No model.)

Claim.—1. The combination of the cases *b*, *c*, and *h*, forming intermediate air-spaces, with the ventilating-pipes *e*, the lamp or heater *a*, and the pipe a^2, that passes the heated products of combustion into the air-space between the cases *b c*, substantially as set forth.

337,308.



2. The combination, in an incubator, of the cases *b c h*, ventilating-flues *e*, lamp *a*, and heating-pipe a^2, passing in between the cases *b c*, the air-pipe *k*, passing through such cases *b c*, and a water-vessel, *g*, substantially as set forth.

3. The combination, with the cases *b c h*, of a water-vessel in the air-space between the cases *c h*, a conical cover, and adjusting device to regulate the extent of surface from which evaporation takes place, and a water-supplying fountain, substantially as set forth.

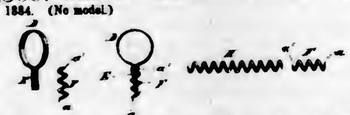
4. The combination, with an incubator-chamber and its surrounding cases, of a heater, a vertical flue or chimney for the same, a lateral flue passing from the chimney into the heating-space around the incubator-chamber, a valve within the upper end of the chimney, closing upwardly, to cause the heat to pass into the heating-chamber, and a lever and a thermostat within the incubator, for actuating the valve, substantially as specified.

5. The egg-baskets formed of two frames with slats of bent metal to support the eggs, in combination with the turners, formed as frames into which the baskets are inserted, and the shafts or axes on which such turners are revolved, substantially as set forth.

6. The combination, in an incubator, with the egg-baskets and the turner-frames into which they are inserted, of the drawers placed below the turners and the frames or slides for supporting the parts, substantially as specified.

7. The combination, with the incubator, of a water-holding vessel, a conical cover, and adjusting device to regulate the extent of surface from which evaporation takes place, and a water-supplying fountain, substantially as set forth.

337,309. **CORKSCREW.** WILLIAM CRABB, Newark, N. J. Filed Aug. 11, 1884. (No model.)



Claim.—1. A corkscrew consisting of a worm and handle, the entering end of the worm terminating in a scarf-cut point, substantially as and for the purpose specified.

2. A corkscrew consisting of a worm and handle, both extremities of the worm terminating in a scarf-cut point, substantially as shown and described.

3. A corkscrew consisting of a wire worm and a handle, the worm having a sharp point and containing for a portion of its length a core or stuffing, substantially as and for the purposes described.

4. A corkscrew consisting of a worm having a sharp point, and a handle whose ends meet and form legs, the legs being inserted into the upper end of the worm, substantially as set forth.

337,310. **SIDING AND ROOFING BOARD.** JAS. W. CRABBE, Brooklyn, N. Y. Filed Dec. 21, 1885. (No model.)

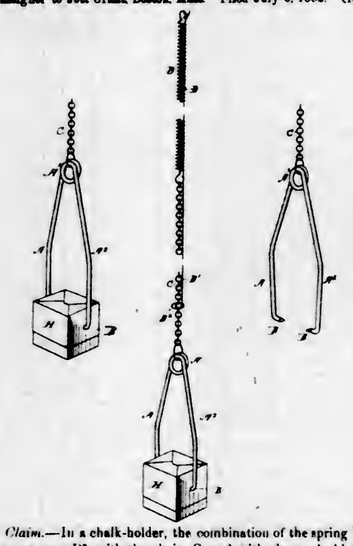
Claim.—1. A siding or roofing board having a double rabbet formed in each edge adapted and arranged to engage with a corresponding rabbeted board, substantially as shown and described.

337,310.



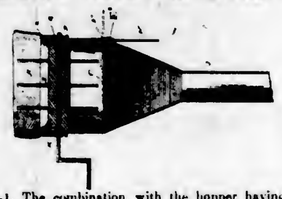
2. A roofing or siding board each edge whereof is provided with a face, *a*, at right angles to the side of the board, face a', parallel with the side of the board, incline a^2, extending outward from the face a', incline a^3, extending inward toward that side of the board in which the rabbet begins, and incline a^4, extending outward from the face a^3, substantially as shown and described.

337,311. **BILLIARD-CHALK HOLDER.** WILLIAM E. DAVIS, Chelsea, assignor to Jett Grant, Boston, Mass. Filed July 6, 1885. (No model.)



Claim.—In a chalk-holder, the combination of the spring D, rod D' having an eye, D^2, with the chain C, and with clasps A A' A^2, all arranged to operate together substantially as described, and for the purposes set forth.

337,312. **FERTILIZER-DISTRIBUTER.** JOS. H. DODDS and THOS. DODDS, Cedartown, Ga. Filed Oct. 17, 1885. (No model.)



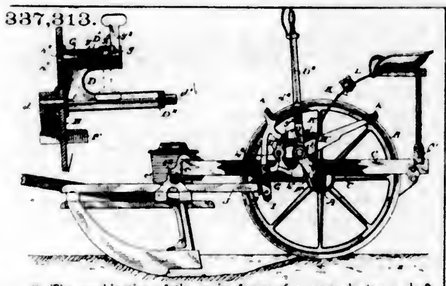
Claim.—1. The combination, with the hopper having the longitudinal opening in its bottom and provided with the discharge-tube, arranged as described, of the slide having the graduated arm passing through a slot in the side of the hopper, the said arm being curved, as shown, near the point where it connects with the slide, to adapt it to be adjusted as described, for the purpose set forth.

2. The combination, with the hopper having the longitudinal opening in its bottom and provided with the discharge-tube, arranged as described, of the transverse shaft having the fingers or stirrers, and the slide having the graduated arm passing through a slot in the side of the hopper, the said arm being curved, as shown, near the point where it connects with the slide, to adapt it to be adjusted as described, for the purpose set forth.

337,313. **CORN-PLANTER.** MERRITT E. DOOLITTLE, Troy, Ohio, assignor to the Beadle & Kelly Company, same place. Filed Oct. 28, 1885. (No model.)

Claim.—1. The combination of the main frame of a corn-planter, a hand-lever mounted thereon, a foot-lever connected to the runner-frame and mounted on the main frame concentrically with but independently of the hand-lever, and a spring-bolt reciprocating in a guideway parallel to the axis of the levers, and provided with a toe-piece for detachably connecting the hand and foot levers, when desired, substantially as hereinbefore set forth.

337,313.



2. The combination of the main frame of a corn-planter, a shaft-casting pivoted thereon, a hand-lever rigidly fixed to the shaft and provided with a rack and detent for holding it in position, and a foot-lever pivoted on the shaft and connected by a link on the runner-frame with a bolt mounted in a guideway in the shaft-casting, to lock the foot-lever to said casting, when desired, substantially as hereinbefore set forth.

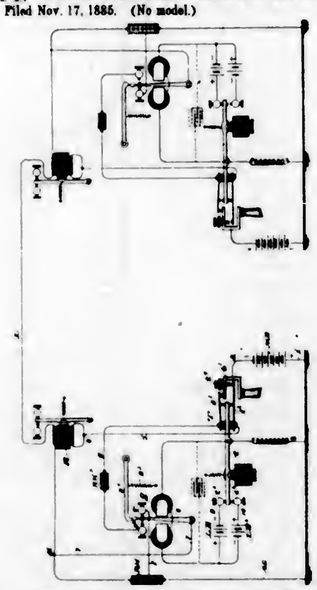
3. The combination of a shaft-casting, D, formed with a bolt chamber or recess, D', a spring-projected bolt lying in the chamber, and a foot-lever pivoted on the shaft and provided with an apertured quadrant or guard lying in the path of the bolt, which quadrant checks the outward movement of the bolt until the aperture is presented to it, substantially as hereinbefore set forth.

4. The shaft-casting D, formed with a bolt-chamber, D', having an inclined end portion or face, a bolt and suitable ejecting-spring within the chamber, and a toe-piece or latch secured to the outer end of said bolt, which, bearing against the inclined face, is adapted by partial rotation to retract the bolt against the thrust of its spring, substantially as hereinbefore set forth.

5. The combination of the main frame of a corn-planter, a foot-lever pivoted thereon and connected to the runner-frame, and an adjustable gage mounted on the seat-standard and lying in the path of the foot-lever, to limit its movement, and through it the depth to which the runners may penetrate or cut the soil, substantially as hereinbefore set forth.

6. The combination of the main frame of a corn-planter, a slotted seat support or bow, a foot-lever pivoted on the main frame and having one of its extensions playing in the slot in the seat-bow, and a depth-gage which crosses said slot, and may be clamped at any point along the bow to limit the movement of the foot-lever, substantially as and for the purpose hereinbefore set forth.

337,314. DUPLEX TELEGRAPH. BERTE E. J. ELIA, Washington, D. C. Filed Nov. 17, 1885. (No model.)



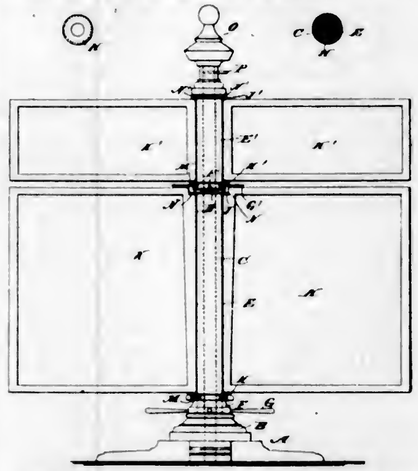
Claim.—1. The art of neutralizing the line-currents of static charge and static discharge on the home relay of duplex telegraphs operated by intermittent currents, which consists in sending momentary opposing primary currents of proper strength over the artificial line.

2. In a duplex telegraph operated by intermittent currents, the combination, substantially as before set forth, with the transmitter and the artificial line, of a shunt, a branch, and an automatic switch, whereby battery-currents of proper strength and direction are sent over the artificial line to neutralize the currents of static charge and static discharge on the line.

3. The combination, substantially as before set forth, of the main line, the artificial line, the main battery normally out of circuit, a normally-closed shunt connected with the artificial line, a normally-open branch from the main battery to the artificial line, a transmitter or key which alternately connects the same pole of the main battery with the said branch and with the junction of the main and artificial lines, and an automatic switch which breaks the said branch when it closes the said shunt and closes the branch when it breaks the shunt.

4. The combination, substantially as before set forth, of the main line, the artificial line, the main battery normally out of circuit, a normally-closed shunt connected with the artificial line, a normally-open branch from the main battery to the artificial line, a transmitter or key which alternately connects the same pole of the main battery with the said branch and with the junction of the main and artificial lines, and an electro-magnetic switch which breaks the said branch when it closes the said shunt and closes the branch when it breaks the shunt.

337,315. EXHIBITOR FOR PAPER-HANGINGS, &c. LEWELLEN A ELY, Muir, Mich. Filed May 19, 1885. (No model.)



Claim.—1. An exhibitor, substantially as described, comprising a shaft or support and a plurality of series of frames supported one above the other on said shaft, the frames of each series being movable independently of those of the other, whereby any one of the frames of the upper series may be adjusted above any desired frame of the lower series, substantially as and for the purposes set forth.

2. The combination of the supporting-shaft of a tube, E, placed thereon and having handles G, and a collar, F, having an annular groove in its upper side, apertured rings placed on said collar and on the upper end of the sleeve, and frames supported between said apertured plates, substantially as set forth.

3. In an exhibitor, the combination, with an upright tube, of a sleeve surrounding the same loosely, a collar having an annular groove in its top formed on the lower end of the sleeve, an apertured ring on the top of the collar, and a like ring on the top of the sleeve, and of frames having top and bottom pins passed into the apertures in the rings, substantially as herein shown and described.

4. In an exhibitor, the combination, with the upright tube or rod G, having the fixed collar D, of the sleeves E E', surrounding the tube or rod C loosely, apertured rings on the ends of the tubes, and of wings having top and bottom pins passed into the apertures in the rings, substantially as herein shown and described.

5. In an exhibitor, the combination of the upright shaft or rod having a fixed collar, D, the sleeves on the shaft, one above said collar, and the frames supported on said sleeves, substantially as set forth.

6. The combination of a plurality of series of frames arranged one above the other and movable rotarily in parallel horizontal planes independently one of the other, and supports, substantially as and for the purposes specified.

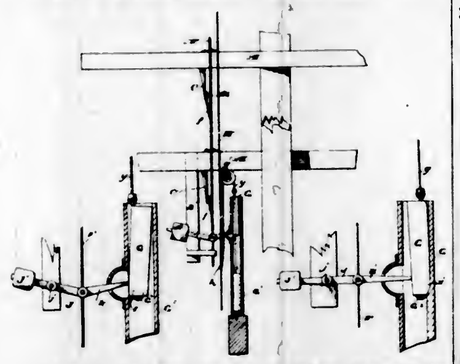
337,316. OVERALLS. CHARLES ERLANGER, Baltimore, Md. Filed Mar. 7, 1885. (No model.)



Claim.—1. The combination, with a pair of overalls, of the within-described re-enforce A, consisting of a front knee-covering, *a*, rear seat-piece, *a'*, and depending strip d^2, all made integrally of one piece of fabric adapted to cover the knee, the rear seat portion, the crotch, and inseams of the garment, as and for the purpose intended, substantially as described.

2. The combination, with overalls or analogous garments, of a re-enforce piece, A, of the character described, sewed into place under the crotch and covering the seat rearwardly, having a portion of the edge of its front unattached to form an opening for a pocket, P, said pocket being formed by side and lower rows of stitches, *p*, substantially as described.

337,317. SAFETY ATTACHMENT FOR ELEVATORS. HIRAM R. FERRIS, Cleveland, Ohio. Filed Jan. 6, 1886. (No model.)



Claim.—1. In a safety attachment for elevators, the combination, with a hatchway, of a bar, slat, or suitable device held suspended under the hatchway and parallel and flush with the face of the latter, said bar or slat being pivoted to inclined levers that operate in the same plane with the said bar or slat, said levers inclining in the same direction, substantially as set forth.

2. In a safety attachment for elevators, the combination, with a hatchway, and a bar or suitable device suspended under the hatchway and pivoted to levers, substantially as described, of chains secured to the hatchway and to the suspended bar to limit the depression of the latter, substantially as set forth.

3. In a safety attachment for elevators, the combination, with a hatchway, and a bar or suitable device pivoted to inclined levers and held suspended under the hatchway, with chains to limit the depression of the suspended bar, of rods inserted in the links of said chains, the parts being arranged substantially as set forth.

4. In a safety attachment for elevators, the combination, with a hatchway, a suspended bar, inclined lever, chains, and rods secured in said chains, substantially as described, of a cloth screen, netting, or suitable flexible device arranged to extend on the face of such bars, rods, and chains, so as to fold with the same, substantially as set forth.

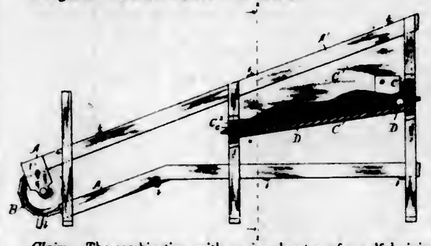
5. In a safety attachment for elevators, the combination, with a hatchway, a suspended bar, and inclined levers arranged substantially as described, of a cloth or suitable flexible material secured to the hatchway and to the suspended bar, so as to fold when the latter is elevated, substantially as set forth.

6. In a safety attachment for elevators, the combination, with a hatchway, and a bar or suitable device held suspended under the hatchway, of a cloth or suitable flexible material secured to the suspended bar, so as to close the opening between the bar and hatchway, said cloth being arranged to fold when the bar is elevated, substantially as set forth.

7. In a safety attachment for elevators, the combination, with a weight for reversing the shifting-cable to stop the ascent of the elevator, of a shelf, ledge, or projection for engaging the weight and holding the latter elevated and inoperative, and suitable mechanism for automatically disengaging the weight from such shelf, ledge, or projection, substantially as set forth.

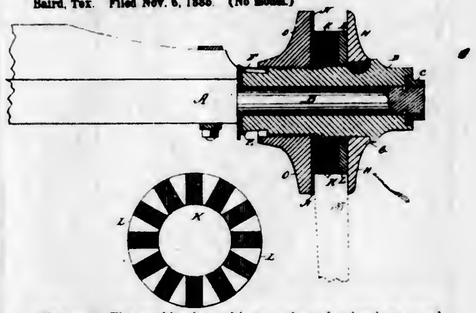
8. In a safety attachment for elevators, the combination, with a weight for reversing the shifting-cable, and a shelf, ledge, or projection for holding the weight elevated and inoperative, of levers forming so-called "knuckle-joints," arranged for disengaging the weights from such shelf, ledge, or projection, the parts being arranged substantially as set forth.

337,318. SLUSH-REMOVER FOR ICE-ELEVATORS. JOHN S. FIELD, Chicago, Ill. Filed Nov. 23, 1885. (No model.)



Claim.—The combination, with an ice-elevator, of a self-draining trough placed under the elevator, and a steam-supplying device located in the trough, substantially as specified.

337,319. WHEEL-HUB. STEPHEN H. FRENCH and WILLIAM J. MALTBY, Baird, Tex. Filed Nov. 6, 1885. (No model.)



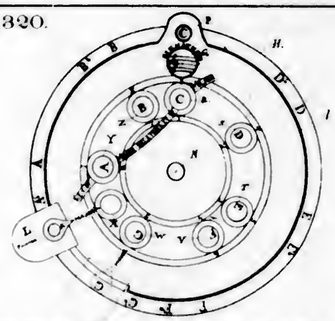
Claim.—1. The combination, with an axle and a hood or guard fixed thereon, of a hub reduced at one end and provided with a flange at the outer end of said reduction, and a collar or nut having a flange projecting over the free end of said hood or guard, said hood or guard fitting over said reduction of hub, substantially as and for the purpose set forth.

2. The combination of the hub-body D, provided with the shoulder G near its outer end and a screw-thread along the inner portion, the spline J near said shoulder, the slotted collar H, fitted to said shoulder and spline, the removable ring K, smaller than the collar and having radial mortises in one side, and shoulders L in alignment with said mortises, upon which shoulders rest shoulders of the spokes, the washer N, fitted against the ring K, and the internally-screw-threaded nut or collar O, fitted upon the threaded body D, substantially as and for the purpose set forth.

337,320. MUSICAL-KEY INDICATOR. OLIVER H. GOODWIN, San Francisco, Cal., assignor to Erastus Caswell, same place. Filed Mar. 18, 1884. (No model.)

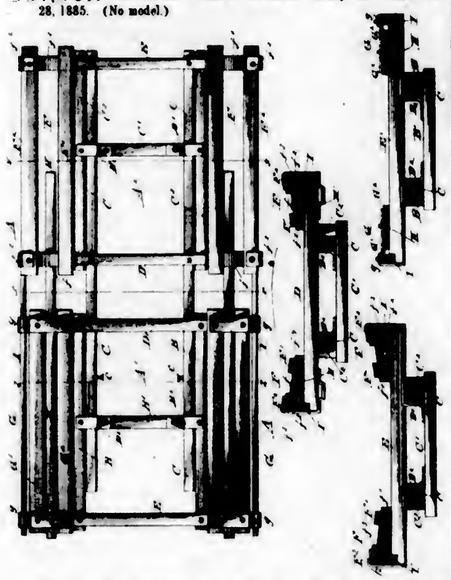
Claim.—In musical-key indicators, the card I, having the openings R, S, T, V, W, X, Y, and Z, the opening Q, the projection marked with the opening P, with the words "Key of — minor, relative key of — major" in any curved or straight line, crossing and referring to the letters shown through the openings Y and R, in combination with the card H, having the letters C, D♭, D, E♭, E, F, F♯, G♭, G, A♭, A, B♭, and B at the outer edge, spaced as shown, the staff showing the signatures ar-

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ranged concentrically with the pivot N, within the circle of the outer letters, and the letters C, C♯ D♭, D, D♯ E♭, E, F, F♯ G♭, G, G♯ A♭, A, A♯ B♭, B, and C♭ arranged within the circle of the staff concentrically with the pivot N, and the major and minor key indicator composed of the pointer K, the upper plate, L, the guide-groove M, the bar J, and pivot N, for the purpose set forth.

337,321. HAY-RACK. JOHN A. GRASSMAN, Henry, Ill. Filed Nov. 28, 1885. (No model.)



Claim.—The combination, in a hay-rack, of the front part, A', provided with the bars B B', guide-brackets B^2, transverse bars D' and E', and non-inclined frames G, composed of the bars G' G^2 and brackets *g*, with the rear part, A^2, provided with the bars C C' C^2, transverse bars D E, inclined frames F, composed of the bars F' F^2, brackets *f'*/*f'*, and bolsters *f f*, and the guide-bars H and I, secured to the front part, A', all constructed and arranged substantially as and for the purpose set forth.

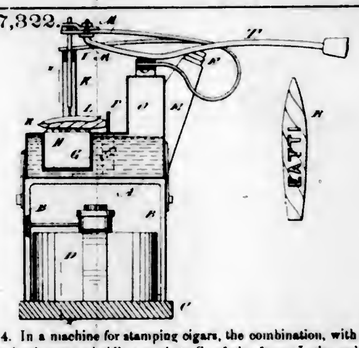
337,322. MACHINE FOR STAMPING CIGARS. LEOPOLD GRATHWOL, Troy, N. Y. Filed Feb. 3, 1885. (No model.)

Claim.—1. In a machine for stamping cigars, the combination, with a series of type-holders, of a series of plates above the types, and of springs for pressing the plates toward the types, substantially as herein shown and described.

2. In a machine for stamping cigars, the combination, with a vessel for containing hot water, of type-holding pockets formed in the top of said vessel, and plates above the type-pockets, and springs for pressing the plates toward the pockets, substantially as herein shown and described.

3. In a machine for stamping cigars, the combination, with the vessel A, having type-holding pockets G in its top, of the frame I, the rods K, passed through the same, the plates L on the lower ends of the rods K, and the springs M, connected with the upper ends of the rods K, substantially as herein shown and described.

337,322.

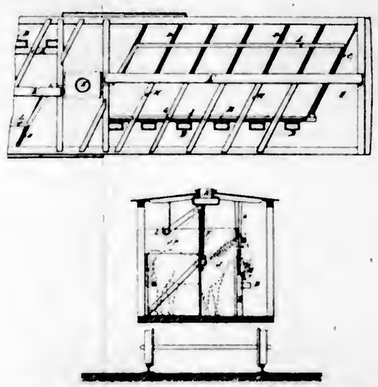


4. In a machine for stamping cigars, the combination, with the vessel A, having type-holding pockets G, of the frame I, the rods K, the plates L, the springs M, and the apertured lugs S, substantially as herein shown and described.

5. In a machine for stamping cigars, the combination, with the vessel A, having the raised portion O and the type-holding pockets G, of the frame I, the rods K, the plates L, and the springs M, substantially as herein shown and described.

6. In a machine for stamping cigars, the combination, with the vessel A, of the type-holding pockets G, plates above the pockets, springs for pressing them down, and the adjustable gage-plate P, extending over the top of the vessel A, substantially as herein shown and described.

337,323. STOCK-CAR. GEORGE GROSSMAN, Lancaster, Pa. Filed Sept. 7, 1885. (No model.)



Claim.—1. In a stock-car, the combination, with the car-body, of partitions hinged to the side of the car, which when opened to form stalls extend but partially across said car in order to permit the passage of animals in front of those occupying stalls, and hangers so secured above as to prevent any motion with the length of the car, substantially as specified.

2. The combination, in a stock-car, of a longitudinal pipe depending from the roof of the car, extending over and near the backs of the animals, and constructed to be raised or lowered and secured at the desired height to utilize the heat from the bodies of said animals to prevent the freezing of water therein and at the same time serve as a kicking-beam, substantially as specified.

3. The combination, with a stock-car, of a main water-pipe depending from the top of the car over the animals and feeding a distributing-pipe, the said distributing-pipe extending along the water-trough, and the trough, substantially as specified.

337,324. DECORATED GLASSWARE. AUGUST HAMPRECHT, Wellsburg, W. Va. Filed Dec. 16, 1885. (Specimens.)

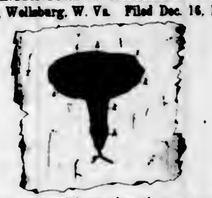
Claim.—1. A new article of manufacture consisting of a decorated glass article having a pattern the outline of which is delineated by ground frosted work and the middle portions by fixed colors, substantially as and for the purposes described.

2. A new article of manufacture consisting of a decorated glass article having a pattern the outline of which is delineated by ground imbricated surfaces and the middle portions by fixed colors, substantially as and for the purposes described.

337,324.



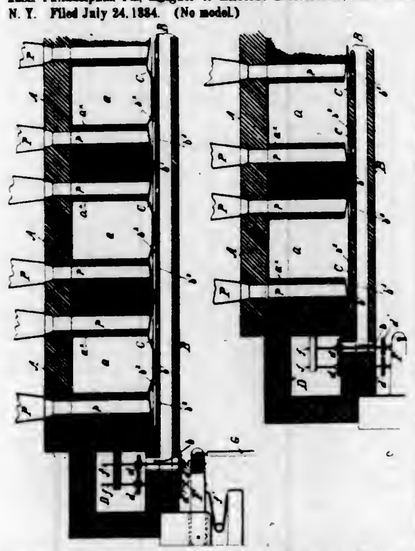
337,325. MANUFACTURE OF DECORATED GLASSWARE. AUGUST HAMPRECHT, Wellsburg, W. Va. Filed Dec. 16, 1885. (No specimens.)



Claim.—1. The process of decorating glassware, which consists in applying and baking coloring-matter to the surface at the desired point, and then grinding the outlines of the desired figure or pattern around said colored surface, whereby a colored figure with frosted edges or outline is formed on the surface of the article, substantially as and for the purposes described.

2. The process of decorating glassware, which consists in applying and baking coloring-matter to the surface at the desired point, and then producing the outline in frosted imbricated surfaces by grinding around said colored surface, whereby a colored figure with a frosted imbricated outline is formed on the surface of the article, substantially as and for the purposes described.

337,326. PNEUMATIC ACTION FOR ORGANS. CHARLES S. HASKELL, Philadelphia, Pa., assignor to Hilborne L. Roosevelt, New York, N. Y. Filed July 24, 1884. (No model.)



Claim.—1. The combination, in a pipe-organ, of a pallet-box, a wind-chest provided with partition-bars containing pipe-ducts and beveled off as to their under surfaces in the manner shown and described, a bottom board for the wind-chest provided with valve-seats, orifices, and valveways and diaphragm-valves, substantially as set forth.

2. The combination, in a pipe-organ, of a wind-chest provided with partition-bars which are beveled, as described, and which contain pipe-ducts opening upon the beveled surfaces, a bottom board containing valveways, orifices opening from said valveways below the pipe-ducts of the partition-bars, valve-seats formed in connection with said orifices, and diaphragm-valves applied to said valve-seats and adapted to close either the pipe-ducts or the orifices of the valveways, substantially as and for the purposes set forth.

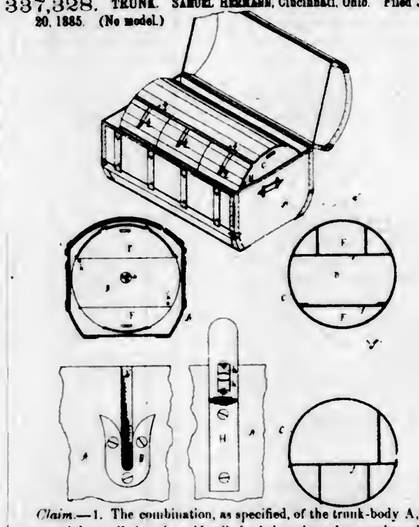
337,327. CAR-AXLE LUBRICATOR. WM. H. HERBERTSON, Brownsville, Pa. Filed Dec. 24, 1885. (No model.)



Claim.—1. In combination, the hub having the central cavity or oil chamber and a channel leading therefrom, a bar cast therein and projecting beyond the front thereof, and a circular cap pivoted on said bar, and provided with a perforation which may be made to register with the channel, when desired, said cap being securely held by riveting the outer end of its pivot-bar, and having projections by which it may be turned, as set forth.

2. In combination, the hollow hub, the inclined bars secured therein, and having their inner sides curved to fit the spindle, the oil-channel through the hub, and a suitable cap pivoted on the hub, substantially as set forth.

337,328. TRUNK. SAMUEL HERMANN, Cincinnati, Ohio. Filed July 20, 1885. (No model.)



Claim.—1. The combination, as specified, of the trunk-body A, and inner revolving cylinder, the said cylinder being pivoted to revolve within the outer case or body and divided into compartments closed by hinged covers, which form part of the outer shell of the said cylinder, with the latch H *h*, and pins *h'*, to lock the said cylinder in the desired position.

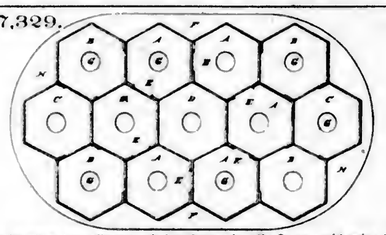
2. The combination, substantially as hereinbefore set forth, of the trunk-body or outer casing, A, with the inner revolving cylinder, said cylinder having a central compartment consisting of the open frame D, and two segments, E and F, the bottoms *e* and *f* of said segments forming, alternately, the bottom and top of said compartment D, as the segment E or F is brought on top by revolving the cylinder upon its trunnions, the said segments E and F being hinged to the frame D at its diagonally-opposite edges.

3. In a trunk of the character described, the combination, as specified, of the body A, provided upon the inner ends with the bearings B, and latches H, of the inner revolving cylinder having the trunnions *b* and pins *h'*, said cylinder being divided into compartments D, E, and F, hinged together as shown, and for the purpose specified.

337,329. BISCUIT-CUTTER. ROBT. J. HEWETT, St. Louis, Mo. Filed June 23, 1885. (No model.)

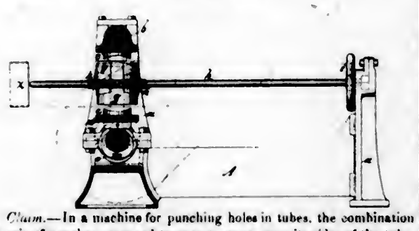
Claim.—The biscuit-cutter consisting of the strips bent to form hexagonal cutters and having end flanges, and the perforated cap-plate

337,329.



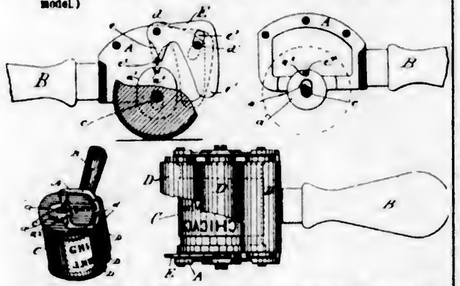
having its edges laterally extended to form a handle-flange, said strips being soldered together to form a cluster of hexagons, each having one side in common, and all said strips being soldered to the cap-plate, substantially as specified.

337,330. TUBE-PUNCHING MACHINE. CAMPBELL P. HIGGINS, Philadelphia, Pa. Filed Nov. 6, 1885. (No model.)



Claim.—In a machine for punching holes in tubes, the combination of a pair of punches arranged to operate upon opposite sides of the tube, a pair of internal dies arranged within the tube, and a wedging device arranged between said dies, to spread them against the interior surfaces of the tubes.

337,331. PRINTING-STAMP. HORACE HOLT, Brooklyn, N. Y., assignor to J. Frank Tenney, Chicago, Ill. Filed Apr. 26, 1884. (No model.)



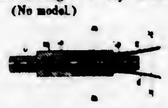
Claim.—1. In a printing-stamp, the combination of the movably-journaled printing-wheel, a pawl to arrest the movement of said wheel, and a pin or arm connected with said wheel for engagement with said pawl, substantially as described.

2. In a printing-stamp, the combination, with the loosely-journaled type-wheel, of the inking-rollers above said type-wheel and in position to contact therewith when the type-wheel is in operation, substantially as set forth.

3. In a printing-stamp, the combination, with the main frame having the seat a^3, of the type-wheel loosely journaled in said frame and provided with a pin to drop into said seat, substantially as set forth.

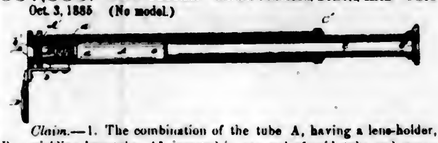
4. In a printing-stamp, the combination of the main frame A, having oblong slots a and seat a^3, the type-wheel C, having stop-pin c^3 and loosely journaled in the main frame, the gravitating-pawl E, and the inking-rollers D, all substantially as and for the purposes set forth.

337,332. BRUSH-HOLDER FOR BOTTLE-WASHING MACHINES. JOB M. HOYT, Lynn, Mass., assignor to Hoyt Brothers & Co., same place. Filed Aug. 29, 1885. (No model.)



Claim.—In a bottle-washer, the combination, with the spring-arms a a, for holding the rubber brush A, of the shell B, having a chamber to receive said arms and extending inward about one-half the length of said shell, and a female threaded chamber extending beyond said first-mentioned chamber, and the tubular core b, provided with the frusto-conical section b', and with a male screw-thread, all arranged and adapted to operate substantially as and for the purposes described.

337,333. LENS-TESTER. GEORGE JOHNSTON, Detroit, Mich. Filed Oct. 3, 1885. (No model.)

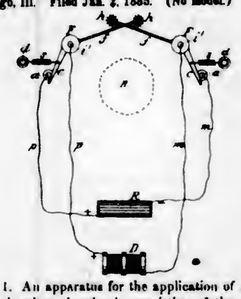


Claim.—1. The combination of the tube A, having a lens-holder, B, a yielding lens-tube, A^2, inserted in one end of said tube and carrying a lens, A', and a tube, C, telescoped in the opposite end of the tube A and provided with a glass, c, and one or more graduated scales, substantially as described.

2. The combination of the tube A, having an interior stop, a', and an outer arm, b, the lens-tube A^2, carrying a lens, A', the spring a, surrounding the inner end of said lens-tube and bearing against the stop a', the lens-holder B, mounted on the arm b, and the graduated telescopic tube C, having a glass, c, substantially as described.

3. The combination of the tube A, having a fixed lens-holder, B, and a pivoted lens-holder, D, the yielding lens-tube A^2, carrying a lens, A', and the telescopic tube C, provided with a glass, c, and one or more graduated scales, substantially as described.

337,334. APPLYING ELECTRICITY FOR DESTROYING LIVING ORGANISMS IN THE BODIES OF SLAUGHTERED ANIMALS. CHARLES S. JONES, Chicago, WILLIAM W. CROOKER, Waukegan, and FREDERICK ATTOS, Chicago, Ill. Filed Jan. 2, 1885. (No model.)



Claim.—1. An apparatus for the application of electric currents to the bodies of slaughtered animals, consisting of the combination, with the opposite poles of an electric generator, of movable arms or similar contrivances provided with puncturing devices and supported mechanically to bear upon the body of an animal passed beneath or between them.

2. In an apparatus for the application of electric currents to the bodies of slaughtered animals, the combination of movable arms or similar contrivances provided with puncturing devices and connected with the opposite poles of an electric generator, and a resistance-coil normally connected in circuit with said generator through said arms and disconnected therefrom by the movement of the arms when in contact with the body, substantially as described, and for the purpose specified.

3. The swinging arms provided with puncturing devices and arranged to form a double gate, substantially as described, in combination with the opposite poles of an electric generator, substantially as and for the purpose specified.

4. The combination of the swinging arms f f with the terminal conductors of an electric generator, D, and the posts a a, connected with the terminal conductors of a resistance apparatus, R, and adapted to form electrical connection with said swinging arms when in their normal position, substantially as and for the purpose described.

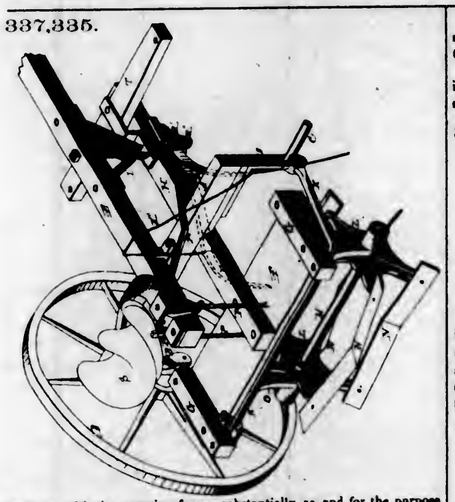
337,335. STALK-CUTTER. JAMES H. JOHNS, Rockford, Ill., assignor to Emerson, Talcott & Co., same place. Filed Aug. 6, 1885. (No model.)

Claim.—1. The combination, with a carrying-frame having a pivotal or loose connection of its tongue with the axle-tree, of a cutter-frame with cutter-reel attached, said cutter-frame having its draft-tongue hinge-jointed to the carrying-frame, substantially as and for the purpose set forth.

2. The combination, with the depending brackets of the axle, of a cutter-frame provided with a draft-tongue and having a chain-connection with the carrying-frame, and a bail whose ends are pivoted to the bracket-arms of the axle, while the body portion rests under the end battens of the cutter-frame, substantially as described.

3. The combination of a carrying-frame having a pivotal or loose connection of its tongue with the axle-tree, a cutter-frame with cutter-reel attached, having a hinge-connection of its draft-tongue with the tongue of the carrying-frame, and a rear pivotal connection of the cutter-frame with the carrying-frame, substantially as and for the purpose set forth.

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4. The combination, with the tongue, of the cutter-frame having both a rear and front connection with the carrying-frame, and a draft-tongue arranged below the tongue of the carrying-frame and provided with a draft-evener, substantially as described.

5. The combination, with the cutters, of branching trailing fingers, said fingers centrally pivoted to the forward portion of the draft-tongue and extending rearward in outward and downward curves, and a cross-pin arranged below the fingers in rear of their pivotal point, substantially as and for the purpose set forth.

6. The combination, with the trailing fingers and with the tongue of the carrying-frame, of a chain connected with the trailing fingers and overspanning the tongue of the carrying-frame, substantially as and for the purpose set forth.

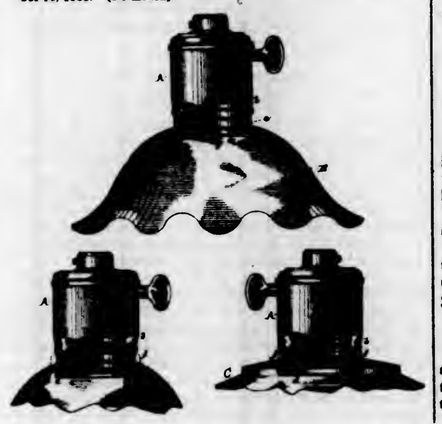
7. The combination, with the supporting-frame and with the cutter-frame pivotally secured to said supporting-frame, both front and rear, of a lifting and holding lever provided with crank-arms, as described, and made self-sustaining in its connection with the supporting-frame and lifting-chains connecting the cutter-frame with the cranks of said lever, substantially as described.

8. In a stalk-cutting reel, cutter-blades bent centrally from their cutting-face, substantially as and for the purpose set forth.

9. In a stalk-cutting reel, cutter-blades bent centrally from their cutting-face to present oblique cutting-edges, substantially as described.

10. The combination, with the heads of the reel, of blades secured thereto and centrally bent across their width to present their cutting-edges obliquely, substantially as described.

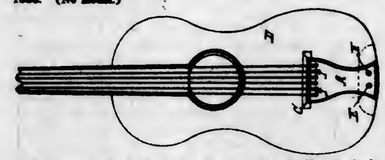
337,336. SHADE FOR ELECTRIC LAMPS. PHILIP H. KLEIN, Jr., New York, N. Y., assignor to Bergmann & Company, same place. Filed Oct. 16, 1885. (No model.)



Claim.—1. The combination, with an incandescent-electric-lamp socket having a screw-threaded sleeve, of a shade or reflector secured to said sleeve, substantially as set forth.

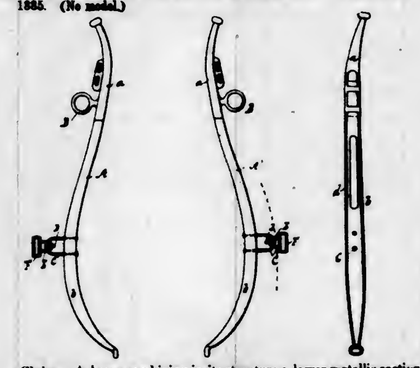
2. The combination, with an incandescent-electric-lamp socket having a screw-threaded sleeve, of a shade or reflector having a flange screwed upon said sleeve, substantially as set forth.

337,337. GUITAR. JOHN KLUMPP, Sandusky, Ohio. Filed Sept. 7, 1885. (No model.)



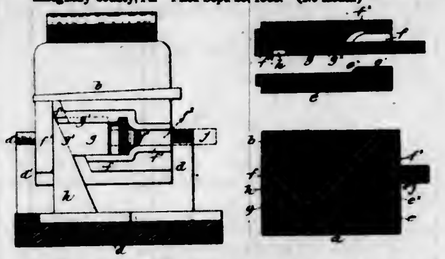
Claim.—A guitar having an interior block, F, attached to the inner side of the guitar-rim, at the center and lower end of the instrument, said guitar being provided with a combined bridge, string-holder, and hand-rest, A, having holes I I, ridge s, and cross-pieces B C, and secured by screws E E, passed through one of said cross-pieces and into the interior block, as and for the purpose specified.

337,338. HAME. JACOB F. KNORR, Orange, N. J. Filed June 18 1885. (No model.)



Claim.—A hame combining in its structure a lower metallic section, b, having transverse grooves c and holes c', and the upper metallic section, a, having part of its metal rigidly interlocked with the said grooves and holes, substantially as and for the purpose described.

337,339. DIE FOR MAKING VISE-JAWS. CHRISTIAN KOHOLD, Ross, Allegheny County, Pa. Filed Sept. 25, 1885. (No model.)



Claim.—1. The vise-jaw die f, having a T-shaped matrix recessed in the bottom to receive and shape the shank of the jaw, in combination with a male die, whereby the shank is forced beyond the plane of the head, substantially as and for the purposes described.

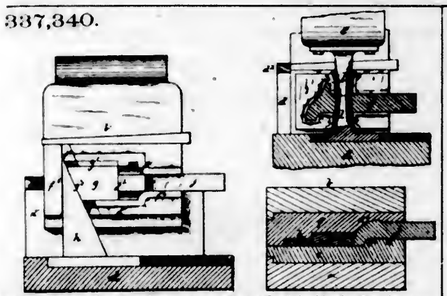
2. The combination of the dies a f and plunger g, substantially as and for the purposes described.

3. The combination of the series of vise-jaw-forming dies a, f, and i i, constructed and operating substantially as and for the purposes described.

337,340. MACHINE FOR MAKING VISE-JAWS. CHRISTIAN KOHOLD, Ross, Allegheny County, Pa. Filed May 21, 1884. Renewed Sept. 25, 1885. (No model.)

Claim.—1. In a machine for manufacturing vise-jaws and similar articles, the combination of a reciprocating head having dies secured thereto by pivoted die-carriers, and inclined surfaces for forcing said dies together, with a plunger operating longitudinally of the die-cavity by

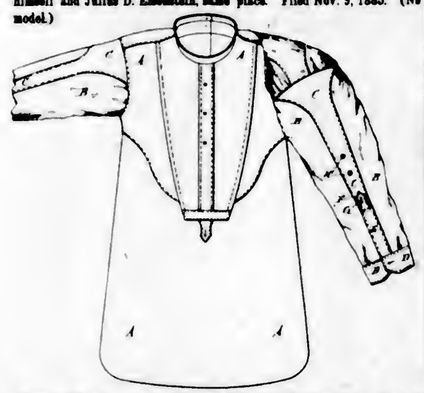
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means of an inclined surface to upset the end of the blank after the same has been gripped between the dies, substantially as and for the purposes described.

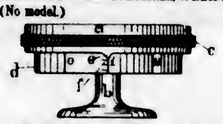
2. The combination of the dies *e f*, plunger *g*, and incline *h*, substantially as and for the purposes described.

337,341. SHIRT. ERNEST A. KRONER, New York, N. Y., assignor to himself and Julius D. Eisenstein, same place. Filed Nov. 9, 1885. (No model.)



Claim.—The combination, with the body and sleeve of a shirt, of a re-enforcing strip extending down along the sleeve from the shoulder-seam to the wristband, and formed at its lower end with a placket-facing for the slit at the lower end of the sleeve, and with a tab on the upper end of the placket-facing, substantially as herein shown and described.

337,342. PILL-ROLLER. JOHN D. KUTZNER, Wilkes-Barré, Pa. Filed Nov. 23, 1885. (No model.)



Claim.—In a pill-roller, the combination of a stand, *b*, with an adjustable rim, *g*, the screw-threads *h*, and the circumferential and vertical graduations, all substantially as described, and for the purpose set forth.

337,343. BABY-CARRIAGE. CHARLES LYNE, Chicago, Ill. Filed Nov. 11, 1885. (No model.)

Claim.—1. The combination, in a child's carriage, of the folding arms and supports of the hinged extensible seat and the prolonged front section, substantially as described.

2. The combination, in a child's carriage having the folding arms and supports hinged or jointed, as described, of the extensible seat adapted to slide in dovetail or tongue-and-grooved slides, the extensible portion having hinged sides to hold the extensible cushion either when folded or extended to form a bed or seat, substantially as set forth.

3. A child's carriage having the jointed arms or supports, and the extensible hinge-seat provided with hinged sides, in combination with the jointed or hinged extensible foot-section, as set forth.

4. The combination, in children's carriages having folding arms and seat-supports, of a rigid back and a rigid foot section, the latter being hinged to the jointed portions in such manner that, when open, it forms a prolongation to the body of the carriage, and when folded forms a receptacle for the bed or cushion, as set forth.

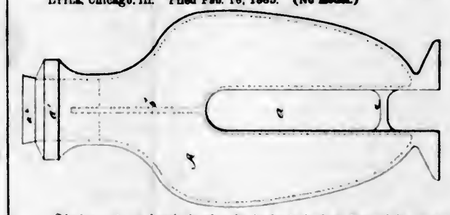
5. The combination, in children's carriages having folded sections,

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of a hinged extensible seat, a hinged foot-section, and a double cushion to fit said extensible seat, the seat having hinged sides and swinging sides and cushions to cover said sides, in the manner and for the purpose set forth.

337,344. HAND-GRENADE FIRE-EXTINGUISHER. ALBERT E. LYTLE, Chicago, Ill. Filed Feb. 16, 1885. (No model.)



Claim.—1. A bottle having its body forked or formed in several portions connecting with a single neck, substantially as and for the purpose set forth.

2. A hand-grenade formed of frangible material and having a dividing slot extending into its body from one end, substantially as and for the purpose set forth.

3. In a hand-grenade, a bottle of frangible material having a slot extending into it from one end, and a partition within the body extending from the termination of said slot to the neck, substantially as and for the purpose set forth.

4. In a hand-grenade, a frangible bottle formed with a partition extending into its neck, in combination with a cork or stopper having its end forked to receive the partition and close each chamber, substantially as and for the purpose set forth.

5. In a hand-grenade, a bottle divided by open slots into several chambers, and having a stud connecting said parts across the slot, substantially as and for the purpose set forth.

337,345. COAT-HANGER. MARVIN R. MAXWELL, Peoria, Ill. Filed Mar. 9, 1885. (No model.)



Claim.—1. The combination, with the chair-back, of the rod pivotally connected at one end to one side of the chair, and detachably connected at the other end to the other side of said chair, substantially as and for the purpose set forth.

2. The combination, with the chair-back, of the rod A, the supporting-arm B, loosely jointed to an end of said rod and to an edge of the chair-back, and the supporting-arm B', loosely jointed to the other end of said rod and adapted to be detachably connected to the opposite edge of said chair-back, as and for the purpose set forth.

3. The combination, with the chair-back having the clips K, secured to the opposite edges thereof, of the supporting-arm B, connected to one of said clips, the rod A, loosely jointed to said arm, the supporting-arm B', jointed to the other end of said rod and having the eye B', adapted to receive a button, D, on the other of said clips, and the spring-hook F, projecting from one of said arms, as set forth.

4. The combination, in a garment-hanger, of the rod A, the supporting-arm B, loosely joined to an end of said rod and to the chair-back, the supporting-arm B', loosely joined to the other end of said rod and

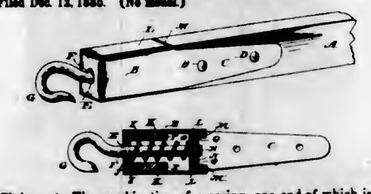
having the eye B', and the button D, projecting from said chair-back and adapted to enter said eye, substantially as and for the purposes specified.

5. The combination of the chair-back, and the rod pivotally connected at one end to one side of the chair, and detachably connected at the other end to the other side of said chair, and the subordinate link similarly connected to the chair-back below said rod, as and for the purposes set forth.

337,346. PROCESS OF VENEERING WITH FABRIC. GEORGE MULLER, New York, N. Y. Filed Dec. 16, 1884. (Specimens.)

Claim.—The herein-described process of veneering wood or other substances with a veneering of fabric, consisting of first coating the substance to be veneered with a mixture of three parts of glue and one part of whiting, which is well rubbed in; secondly, of securing the fabric thereto by means of an adhesive mixture of three equal parts of flour paste, starch, and gelatine, and, thirdly, of covering the outside of the cloth with a sufficient quantity of the mixture of paste, starch, and gelatine to make it smooth and glossy, and afterward varnishing said surface, substantially as and for the purpose set forth.
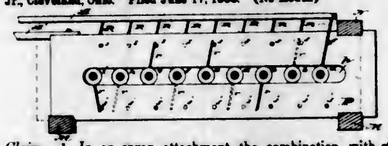
337,347. SPRING TUG-FASTENER. LEVI H. NUSBAUM, Goshen, Ind. Filed Dec. 12, 1885. (No model.)



Claim.—1. The combination of a casing, one end of which is open and has its sides at that end projecting to form lips, a U-shaped block secured at the other end of said casing, a rod passing through apertures in the end of the casing and said block, the outer end of which is provided with a hook and the inner end with a nut fitting and sliding within said casing, and a spring around said rod between said nut and said U-shaped block, as shown and described.

2. The combination, with a U-shaped block having an aperture in its middle portion and a piece of elastic material secured upon the inner end of each arm, of a casing open at one end and an aperture at the other end, a rod passing through said apertures and having a hook upon its outer end, and a nut secured upon its inner end, and a spring around said rod between said plate and said U-shaped block, as shown and described.

337,348. COMBINATION ORGAN STOP-ACTION. WM. H. PRICE, Jr., Cleveland, Ohio. Filed June 17, 1885. (No model.)



Claim.—1. In an organ attachment, the combination, with stops each provided with suitable slides or attachments having pins, projections, or depressions for engaging rock-arms connected, respectively, with the rollers or rock-shafts that operate the valves of the respective air-chambers, of a series of arms attached to said rollers, an arm of each roller being located by the side of each combination-stop attachment and so arranged that the arms extending in the one direction and the attached rollers and connections are included in the combination, and the arms extending in the opposite direction are excluded from the combination, substantially as set forth.

2. In an organ attachment, combination-stops each provided with a suitable slide or attachment having two series of pins, projections, or depressions arranged on opposite sides of the rollers, a series of rock-arms connected with the rollers and so arranged that an arm of each roller is located by the side of each slide, and that arms extending, respectively, in opposite directions will, when engaged by the pins, projections, or depressions of the contiguous slide, move the connected rollers respectively in opposite directions, substantially as set forth.

3. In an organ attachment, combination-stops and connected slides, each slide provided with two series of laterally-projecting pins arranged, respectively, on opposite sides of the rollers, for actuating the roller-arms and moving the rollers in the direction to open or close the air-valves, according to the position of the respective arms, to engage the one or the other set of pins, said pins being arranged, respectively, to move an arm only in one direction, substantially as set forth.

4. In an organ attachment, the combination, with a slide connected with a combination-stop and arranged to embrace the series of rollers, of series of pins extending laterally from the slide and on opposite sides of the rollers, reversible arms connected with the rollers and so arranged that the arms extending in the direction to engage one series of pins will be included in the combination, and arms extending in the opposite direction to engage the other series of pins will be excluded from the combination, substantially as set forth.

5. In an organ attachment, a series of rollers and reversible rock-arms connected with the respective rollers, a slide connected with a combination-stop, a series of pins connected with the slide for moving the respective rock-arms in the direction that opens the valves of the air-chamber, a second series of pins for the rock-arms to close said valves, and the arrangement of parts such that by reversing an arm on the roller such arm and attachments may be included or excluded from the combination, substantially as set forth.

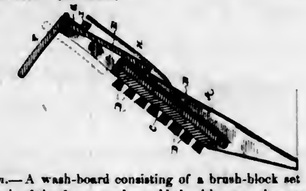
6. In an organ attachment, a reversible rock-arm consisting of a hub with the arm screwed into the latter, the arm arranged to perform the functions of a set-screw in fastening the hub to the roller on which the hub is mounted, substantially as set forth.

7. In an organ attachment, the combination, with a series of combination stops and slides, and series of pins connected with the latter, of a series of rollers, and reversible rock-arms mounted on the latter, arranged substantially as indicated, of rock-arms mounted, respectively, on the respective rollers and connecting each with one of the ordinary stops, and so arranged that these last-mentioned arms are included in the series that are operated by the combination-stop, substantially as set forth.

8. In an organ attachment, the combination, with a series of combination-stops, slides, and pins connected with the latter, of a series of ordinary stops, a series of rollers, rock-arms R, connecting the rollers and ordinary stops, and arms *r*, adapted to engage the pins on the slides, the said parts being arranged substantially as described, whereby any of the ordinary stops may be added to the combination being used.

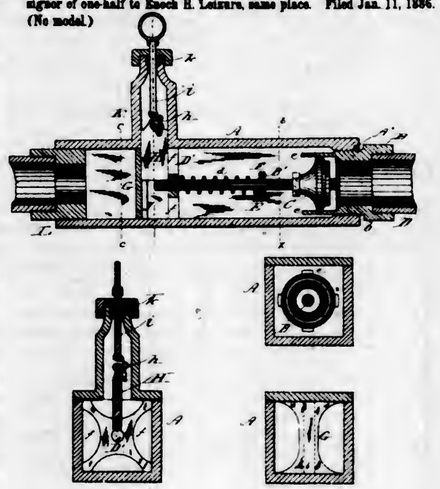
9. In an organ attachment, the combination, with the combination stops and slides, the latter having pins projecting laterally therefrom, of the ordinary stops and rollers connected thereto and provided with the arms *r*, adapted to engage the pins, the above parts being arranged substantially as described, whereby the opening of a combination-stop will close all open stops not included in the combination, substantially as set forth.

337,349. WASH-BOARD. EZRA L. FRIDMAN, Philadelphia, Pa. Filed Oct. 22, 1885. (No model.)



Claim.—A wash-board consisting of a brush-block set at an angle to the length of the frame, and provided with expansion-spaces on each side, a splash-board hinged to the top of said board, and spring-strips secured at their lower ends to the back of the board, and at their upper ends coincident with elastic buffers on the back, substantially as specified.

337,350. GAS-SUPPLY PIPE. GEORGE RUSSELL, McKeesport, Pa., assignor of one-half to Enoch H. Leisure, same place. Filed Jan. 11, 1886. (No model.)

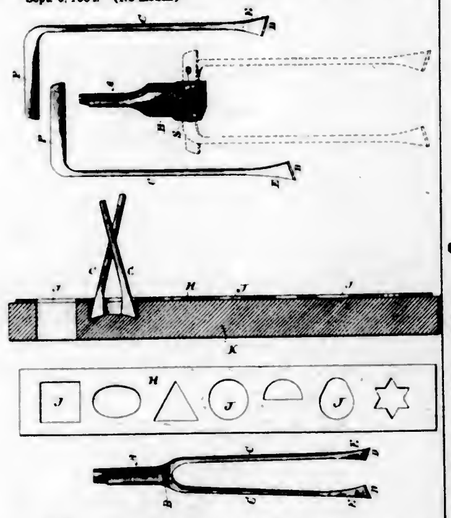


Claim.—1. A cut-off for gas-supply pipes, comprising a valve-chest, a stem-valve arranged to move lengthwise thereof, an adjusting or closing spring attached to the valve-stem, and a gravity block or catch constructed and arranged substantially as described, whereby, when the valve is closed, it cannot be opened by the pressure of the gas.

2. In a cut-off device for gas-supply pipes, the combination, with the valve-chest and a longitudinally-moving stem-valve adapted to open and close the inlet to said chest, of the partitions D G, and the vertically-sliding block or catch H, rod *i*, and connection *k*, substantially as described.

3. In a cut-off device for gas-supply pipes, the combination, with the valve-chest A and the longitudinally-moving valve adapted to open and close the inlet to said chest, of the sliding block H, the box or tube K, the rod *i*, connection *k*, and the open partitions D G, substantially as described.

337,351. **FORK-DRILL.** CHARLES SWEDMUN, Bay City, Mich. Filed Sept. 6, 1884. (No model.)



Claim.—1. A fork-drill consisting of a pair of bowed spring-arms secured together at the top, and each arm provided with a chisel-edge at the bottom, substantially as described, whereby the arms may be twisted one across the other, to cause the drill to bore a hole of any desired contour, as set forth.

2. A fork-drill consisting of arms C C, having cutting-edges D D, and a slotted body, B, provided with a stem, A, and a binding-screw, S, substantially as described.

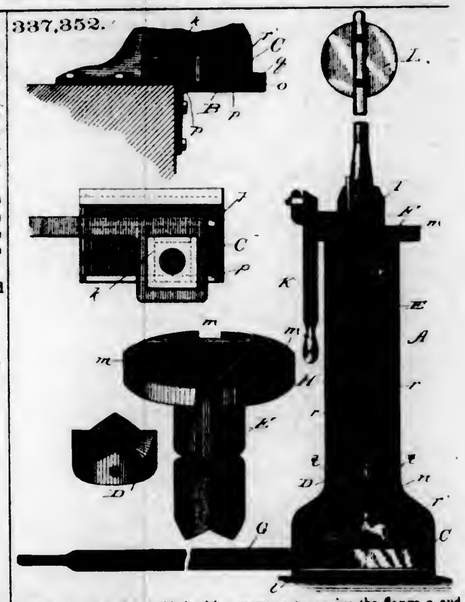
3. A fork-drill consisting of two adjustable spring-arms, C C, bowed at their upper ends, as at P, and provided with right and left chisel-edges, as specified, in combination with a slotted body, B, and a screw, S, for clamping said arms at any desired adjustment, and the pattern-plate H, in which it is adapted to operate, all for the purpose set forth.

337,352. **SWITCH-STAND.** AXEL A. STROM, Austin, Ill. Filed Sept. 28, 1885. (No model.)

Claim.—1. A switch-stand having a standard, *r*, and base *r'*, containing a rigid clutch portion, D, a recessed annular table, F, upon a cylinder, E, having teeth at its lower extremity to engage with the clutch portion D and afford a clutch, a spindle, H, extending through the device, and provided at one extremity with a crank, *l*, constantly off a dead-center, a switch-bar, G, connected with the crank, and a lever, K, pivotally connected to the spindle, to enter a recess in the table and interlock the spindle with the table, whereby the turning of either shall simultaneously turn the other, substantially as and for the purpose set forth.

2. A switch-stand having a standard, *r*, and base *r'*, containing a rigid clutch portion, D, a recessed annular table, F, upon a cylinder, E, having teeth at its lower extremity to engage with the clutch portion D and to afford a clutch, a spindle, H, extending through the device, and provided at one extremity with a crank, *l*, constantly off a dead-center, a switch-bar, G, carrying a yoke to receive the crank *l*, and a lever, K, pivotally connected to the spindle to enter a recess in the table and interlock the spindle with the table, whereby the turning of either shall simultaneously turn the other, substantially as and for the purpose set forth.

3. In a switch-stand, the base *r'*, having a flange, *q*, in combination



with a bracket, B, provided with a recess, *o*, to receive the flange *q*, and afford means for securing the stand to be supported on a single head-block, substantially as described.

4. In a switch-stand, the base *r'*, in combination with a bracket, B, provided with ribs *p*, affording ways for the sliding yoke of the switch-bar and stops for the base, substantially as described.

5. In a switch-stand, the base *r'*, having a flange, *q*, in combination with a bracket, B, provided with a recess, *o*, to receive the flange *p*, and afford means for securing the stand to be supported on a single head-block, and ribs *p* on the bracket, affording ways for the sliding yoke of the switch-bar and stops for the base *r'*, substantially as described.

6. A switch-stand comprising, in combination, a standard, *r*, and base *r'*, provided with a flange, *q*, a bracket, B, having a recess, *o*, and ribs *p*, a clutch portion, D, rigidly secured within the standard *r*, a recessed annular table, F, provided with a cylinder, E, having teeth at its lower extremity to engage with the clutch portion D and form a clutch, a spindle, H, extending through the device, and provided with a crank, *l*, constantly off a dead-center, a switch-bar, G, carrying a yoke to receive the crank *l* and move upon the ribs *p*, and a collar, I, keyed to the spindle, and provided with an extension carrying a pivoted lever, K, the whole being constructed and arranged to operate substantially as described.

337,353. **CUTTER FOR MOLDING-MACHINES.** HENRY C. TUNIS, Baltimore, Md., assignor to the Tunis Gang Flooring Machine Company, same place. Filed Sept. 8, 1885. (No model.)



Claim.—1. A cutting tool or blade having a side thereof so irregularly configurated that an oblique section through it will produce a projecting dividing-point, V-shaped or half-V-shaped in cross-section, and another or other cutting-edges.

2. A cutting tool or blade having a side thereof so irregularly configurated that an oblique section through it will produce a projecting dividing-point, V-shaped or half-V-shaped in cross-section, and another or other straight and curved cutting-edges.

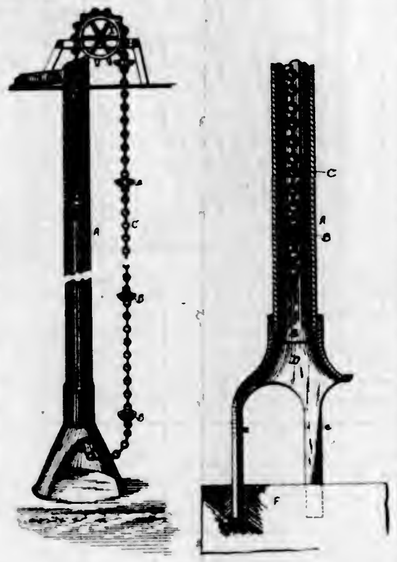
3. A cutting tool or blade having a side thereof provided with a longitudinal rib or raised surface, whereby a projecting dividing-point

V-shaped or half-V-shaped in cross-section and another or other cutting-edges are produced by sharpening the tool obliquely to its longitudinal axis.

4. A cutting tool or blade having a side thereof provided with a rib or raised surface running longitudinally about midway its width, whereby a projecting dividing-point V-shaped or half-V-shaped and other cutting-edges are produced by sharpening the tool obliquely to its longitudinal axis.

5. A cutting tool or blade having a side thereof provided with a rib or raised surface V-shaped or half-V-shaped in cross-section, and running longitudinally, whereby a projecting dividing-point and another or other cutting-edges are produced by sharpening the tool obliquely to its longitudinal axis.

337,354. **CHAIN-PUMP.** MATTHIAS S. TYLER and THOMAS H. CARTER, Mount Sterling, Ky.; said Carter assignor to said Tyler. Filed July 6, 1885. (No model.)



Claim.—1. A chain-pump whereof the pipe or barrel is of iron tubing, provided at its bottom with a funnel-shaped foot, which, with the superincumbent weight of the pipe, will, when resting on the bottom of the cistern, securely anchor the foot without bracings.

2. A chain-pump whereof the barrel or pipe is entirely of galvanized iron, with the several ends funnel-shaped to facilitate the passage of the chain-buckets, a discharge trunk or box at the top, and a funnel-shaped foot at the bottom, substantially as set forth.

337,355. **SAFETY DEVICE FOR ELEVATORS.** A. O. WUERDEMAN, Chicago, Ill. Filed Aug. 17, 1885. (No model.)

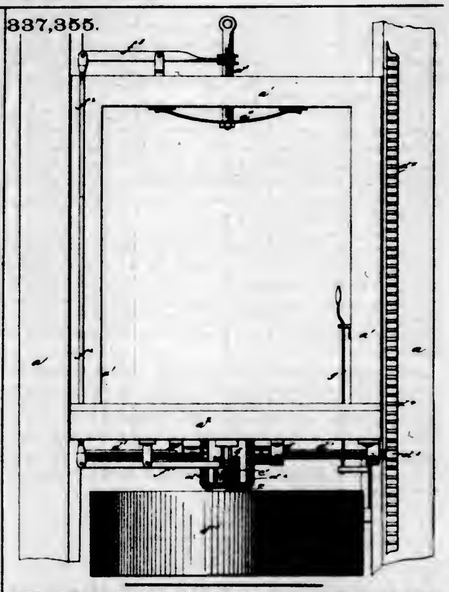
Claim.—1. The combination, with the cage or platform of an elevator, of a revolving fan or wind-wheel suspended from its lower side to prevent a too rapid fall, substantially as and for the purpose specified.

2. The combination, with an elevator shaft or guides and a cage suspended therein, of a wind-wheel upon said cage connected to and operated by the guides, and a clutch between the wheel and its operating devices held out of gear normally by connection with the suspension devices, substantially as shown and described, whereby the wheel is not in operation except when required by an accident.

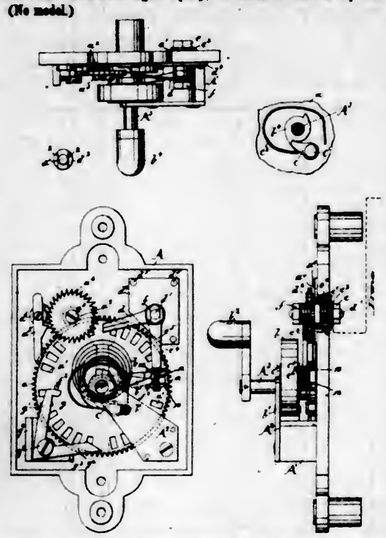
3. An elevator shaft or guide having a cogged rack secured along its face and a cage therein suspended upon a spring-actuated stud, in combination with a fan or wind-wheel secured upon a shaft suspended from the cage, a loose clutch-faced gear on this shaft connected by gearing with the cogged rack, and a shifting-clutch on the same shaft connected by a series of levers with the spring suspending-stud, substantially as and for the purpose set forth.

4. The combination, with an elevator-cage provided with a revolving fan operated by connection with the shaft or guides, of a brake-shoe bearing upon the periphery of said fan, and a hand-lever for operating it, substantially as and for the purpose set forth.

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337,356. **SIGNAL OR CALL BOX.** DANIEL DAVIS, Jr., Auburndale, and GEORGE F. GALE, Revere, Mass., assignors to the Electrical Development and Manufacturing Company, Portland, Me. Filed Sept. 18, 1885. (No model.)



Claim.—1. In a signal-transmitter, a gear provided at its side with slots *a'*, and a contact-brush, *d*, and the shaft A^3, and arm b^3, combined with the arm c^4, the brush referred to bearing upon the side of the gear, substantially as described.

2. In a signal-transmitter, a gear provided at its side with slots *a'*, and a contact-brush, *d*, and the shaft A^3, and arm b^3, combined with the arm c^4 and its movable collar to allow the handle to be turned as described, the combination being and operating substantially as described.

3. In a signal-transmitter, a gear provided at its side with slots *a'*, and having one or more pins or projections, and a contact-brush, *d*, and the shaft A^3, and arm b^3, combined with a safety-locking device to be operated by the arm b^3, and to co-operate with the said pins or projections, substantially as described.

4. The gear *a*, provided with slots *a'* and having one or more pins or projections, and a contact-brush, *d*, and the shaft A^3 and arm b^3, com-

bined with a safety-locking device to be operated by the arm b^3 and to co-operate with the said pins or projections, and means, substantially as described, to move the said locking device into position to engage the said pins or projections when the box is set in operation, substantially as and for the purpose set forth.

5. In a signal-transmitter, a contact-brush and a stationary arm forming one member of a cut-out or shunt and a bolt screw-threaded at both ends and provided with an irregular or other than round collar, combined with an insulating-block having an opening to receive the said collar, and with means, substantially as described, to hold the said bolt in place and to connect the said brush and arm, and also the line-wire with the said bolt, substantially as set forth.

6. The gear *a*, provided with slots *a'*, and having one or more pins or projections, and a contact-brush, *d*, and the shaft A^3, arm b^3, and arm c^4, and movable collar 13, combined with the bolt *d'*, provided with an irregular or other than round collar, d^3, and means, substantially as described, to secure the said arm and brush to the said bolt, and the insulating-plate d^4, provided with an opening to correspond with and receive the said collar and prevent movement of the bolt, substantially as described.

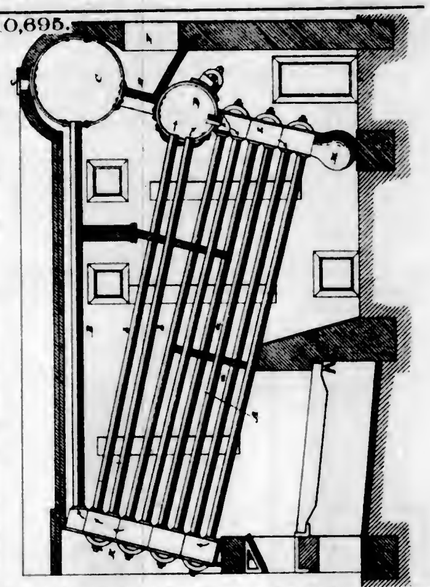
7. In a signal-transmitter, a shaft, a toothed hub thereon, a spring to rotate the said shaft, a toothed gear provided with slots *a'*, an arm, b^3, connected with the said shaft, and a spring to hold the said pawl in engagement with a tooth of the said hub, combined with a brush and an arm, c^4, and collar 13, to co-operate with the arm b^3 and form a stop and cut-out or shunt, and with a pinion, ratchet, and detent, the pinion being engaged by the teeth of the said wheel, to operate substantially as described.

REISSUES.

10,695. SECTIONAL STEAM-BOILER. ROBERT R. ZELL, Essex, N. J., assignor, by mesne assignments, to the Safety Steam Generator Company, New York, N. Y. Filed Feb. 3, 1886. Original No. 304,890, dated Sept. 9, 1884.

Claim.—1. In a sectional steam-boiler, the combination of the lower series of inclined water-tubes, *a*, upper series of inclined water-tubes, *b*, horizontal steam-tubes B, water-legs K and L, steam-drum C, connecting-tube E, and collecting-drum D, connected on one side to the upper series of tubes, *b*, and at the bottom to the rear water-leg, L, substantially as and for the purpose set forth.

10,695.



2. In a sectional steam-boiler, the combination of the lower series of water-tubes, *a*, upper series of water-tubes, *b*, steam-tubes B, water-legs K and L, steam-drum C, connecting-tube E, and collecting-drum D, connected on one side to the upper series of tubes, *b*, and at the bottom to the rear water-leg, L, substantially as and for the purpose set forth.

PHOTO-LITH NORRIS PETERS

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of Massachusetts.

ADAMS *et al.* v. BRIDGEWATER IRON COMPANY *et al.*, No. 1,430. AMERICAN TUBE WORKS v. SAME, No. 1,428.

Decided February 3, 1886.

Two bills in equity brought for infringement of Letters Patent No. 24,915, granted to Freeborn Adams, August 2, 1859, for improvement in casting copper cylinders. One suit brought for infringement during the original term of patent, the other for infringement during the extended term. The original term of patent expired August 2, 1873.

1. Defense urged that court had no jurisdiction of the suit covering the original term. *Held:* "This objection well taken. A bill in equity for a naked account of profits and damages against an infringer of a patent cannot be sustained. * * * In actions of tort the mere intricacy of the account does not furnish a ground for equitable interference."
2. To the second suit, covering the extended term, the defendants urge the same objection of want of jurisdiction. Suit was begun July 10, 1880, and the extended term of the patent expired August 2, 1880. The bill prays for a perpetual, but not for a provisional, injunction. The fact that no preliminary injunction was asked for is not deemed material. The bill prays for a perpetual injunction, and the plaintiffs had a right at any moment to amend their bill and ask for a provisional one. The case was cognizable in equity at the time the bill was filed, and it was not impossible to have obtained equitable relief during the life of the patent. It was not a mere device to transfer a plain jurisdiction at law to a court of equity, as the courts have held where the patent has only several days to run. A special contract between defendants and patentee *Held* not to affect the rights of complainant.
3. Upon question of novelty *Held:* "That the defendants have failed to make out want of novelty in the Adams invention, based upon the prior state of the art."
4. Upon question of infringement *Held:* "The complainants have made out a case of infringement, and a decree should be entered in their favor in the bill covering the extended term of the Adams patent. The bill brought upon the original term of the patent must * * * be dismissed."

COLT, *J:*

These bills in equity are brought for infringement of Letters Patent No. 24,915, granted to Freeborn Adams, August 2, 1859, for improvement in casting copper cylinders. One suit is brought for infringement during the original term of the patent, and the other suit for infringement during the extended term. At the outset it is necessary to consider certain special defenses to these suits. The original term of the patent expired August 2, 1873, and it is urged that this court has no jurisdiction of the suit covering the original term. We think this objection well taken. A bill in equity for a naked account of profits and damages against an infringer of a patent cannot be sustained. (*Root* v. *Railway*, 105 U. S., 189.) The plaintiffs seek to invoke equitable jurisdiction on the ground of the intricacy of the account, and that, consequently, their remedy at law would be inadequate and incomplete. We have recently held, in the case of *Lord* v. *Whitehead & Atherton Machine Co.*, (24 F. R., 801,) that in actions of tort the mere intricacy of the account does not furnish a ground for equitable interference. (*Hipp* v. *Babin*, 19 How., 271; *Root* v. *Railway, supra; Parrott* v. *Palmer*, 3 Myl. & K., 632, 642; *Higginbotham* v. *Hawkins*, L. R., 7 Ch. App., 676; *Smith* v. *London & Southwestern Railway Co.*, Kay, 408.)

The suit brought for infringement during the original term of the patent must be dismissed.

To the second suit, covering the extended term, the defendants urge the same objection of want of jurisdiction. Suit was begun July 10, 1880, and the extended term of the patent expired August 2, 1880. The bill prays for a perpetual, but not for a provisional, injunction. The fact that no preliminary injunction was asked for we do not deem material. The bill prays for a perpetual injunction, and the plaintiffs had a right at any moment to amend their bill and ask for a provisional one. The case was cognizable in equity at the time the bill was filed, and it was not impossible to have obtained equitable relief during the life of the patent. It was not a mere device to transfer a plain jurisdiction at law to a court of equity, as the courts have held where the patent has only several days to run. (*Dick* v. *Struthers*, 25 F. R., 103; *Toledo Mower & Reaper Co.* v. *Johnston Harvester Co.*, 24 F. R., 739; *Mershon* v. *Pease Furnace Co.*, 24 F. R., 741; *Gottfried* v. *Moerlein*, 14 F. R., 170; *Betts* v. *Gallais*, L. R., 10 Eq., 392; *Burdell* v. *Comstock*, 15 F. R., 395; *Davis* v. *Smith*, 19 F. R., 823.)

Another special defense set up is a contract dated June 16, 1873, between the defendant company and Adams, the patentee, whereby it was agreed, among other things, that the making of copper tubes and cylinders as practiced by the Bridgewater Iron Company was not an infringement of the Adams patent. Whatever force, if any, this contract may have as between Adams and the defendant company we do not see, under the circumstances, how it can affect the rights of the complainants. On March 27, 1862, Adams gave an exclusive license covering the original term of the patent to the complainants. On December 8, 1869, he agreed to assign the extended term to the complainants, which was subsequently done September 1, 1873. The subsequent assignment was but the fulfillment of the prior contract of December 8, 1869, and did not alter the rights of the parties. The fact that the extension had not been granted at the time the contract was made does not affect the case, for the assignment of an extension before the same is granted vests the extension in the assignee. It follows that at the date when Adams made his contract with the defendant company

the complainants had vested in them the entire right to this patent for the extended term, and that right Adams could not disturb by any act of his. (*Railroad Co.* v. *Trimble*, 10 Wall., 367; *Nicholson Pavement Co.* v. *Jenkins*, 14 Wall., 452; *Hendrie* v. *Sayles*, 98 U. S., 546.)

This brings us to the consideration of the Adams patent and the question of infringement. The patent relates to an improvement in casting copper cylinders. The specification says:

> Great difficulty is experienced by workers in copper in making castings of this metal, such castings being liable to be filled with imperfections and blow-holes, and the efforts heretofore made to remedy this evil have not been attended with success.

The patent describes a vertical cylindrical mold provided with a cylindrical core concentrically placed so as to form an annular mold-cavity, which is open and substantially unobstructed at the top, and rotating concentrically upon a vertical axis. By this means the stream of metal flowing downward at a given point above the annular mold-cavity enters the latter continuously, as it is revolved, at any point of its open annular area, as the same is by the rotation of the mold successively brought under the given point of the falling stream. The patent says:

> I am aware that rotating molds have been used. I make no claim whatever to them; but what I do claim (as a new article of manufacture) is a tube or cylinder cast out of copper, and free from blow-holes and other similar defects, when produced as herein stated.

The scope of the patent, as claimed by the patentee, seems to be clear. It is for a new article of manufacture in the form of a cast copper tube or cylinder free from blow-holes and other similar defects when produced as described. Adams has limited himself in his claim to a particular product when produced in a particular way. To become an infringer, therefore, it is necessary not only that the article described should be produced, but also that there should be employed substantially the same means to accomplish the result.

The defenses to the patent are two—want of novelty in view of the prior state of the art and non-infringement. Adams discovered a new method of distributing the metal by which a large percentage of good copper tubes can be obtained. He made a great advance in the art of casting copper. We have carefully examined the various prior patents introduced by the defendants as anticipations of Adams, and we nowhere find the method of distribution employed by him. Rotating molds were old, and Adams expressly disclaims any claim to them; but the apparatus described in the Adams patent, whereby the stream of molten copper is deposited in the annular space of a cylindrical mold so as to fall in subdivided portions all around intermittently in such manner as to allow the gases to escape, and thus avoid blow-holes, is seen in no prior patent. In the prior patents of the Eckhardt type (an English patent granted in 1809) it is the centrifugal force of rotation and not the Adams method of distribution which is relied upon to make a more perfect cylinder. Eckhardt says:

> The centrifugal force of the rotation causes the fluid to press against the interior surface, and renders the cast more perfect and neat.

The defendants urge that figure 1 of the Eckhardt patent shows an apparatus like that of Adams, except as to the perforated core-bar; but we do not think this is proved. We do not find in the Eckhardt patent either the mode of operation or the apparatus of Adams. So in the Needham patent for casting car-wheels, of December 22, 1879, there is employed centrifugal force generated by rotation and not the distribution of Adams. The same may be said of the French patent of Grand, dated June 2, 1854. The French patent to Estinant bears little or no resemblance to the Adams method. We deem it unnecessary to refer to other patents introduced by defendants. Our conclusion is that the defendants have failed to make out want of novelty in the Adams invention, based upon the prior state of the art.

The question of infringement remains to be considered. The defendants contend that they have never made or sold the article of manufacture covered by the Adams patent. The patent, they say, is for a cast copper cylinder free from blow-holes, while all their cylinders contain blow-holes. The specification contains the words "a perfect cast copper cylinder;" but this language must be taken in connection with the claim which says "free from blow-holes and other similar defects." It is blow-holes which are defects, or which render the copper tubes unmerchantable, which are here fairly intended. It would be a narrow construction to put upon the Adams patent to hold that it only covered a cast copper cylinder absolutely free from blow-holes. Probably no such cylinders were ever made by any process. It is a practical question. The claim must be construed to mean a cast copper cylinder so free from blow-holes as to be considered sound—that is, sufficiently perfect to be used in the arts for the purposes for which copper cylinders are used. The defendants object to any such standard of perfection, on the ground that it is variable; but we deem it sufficiently definite.

If it should be found that the defendants use the Adams process, they should not be allowed to shield themselves from the charge of infringement on the ground that the cylinders they produce, though merchantable and sound, practically speaking, are not absolutely free from blow-holes. The defendants deny the use in the casting of copper cylinders of the process shown in the Adams patent. In the Adams device the mold rotates, while the defendants rotate a basin on top of the mold; but the rotation of the basin on the top of the mold distributes the metal in the mold in the same manner substantially as is done by rotating the mold. What Adams accomplishes by the rotation of the mold the defendants accomplish by the rotation of the basin on top of the mold. We are aware that the defendants deny this. Their position is that the rotating basin causes a different distribution from the method of Adams; that, so far from distribution being caused by the rotation of the basin, there is less distribution when the basin rotates than when it is stationary. They further contend that the purpose for which a rotating basin is used is to prevent the iron of the basin from melting off and injuring the casting as the molten copper is being poured. In spite of this contention on the part of the defendants, we think the complainants have shown by careful experiments that by rotating the basin the metal is distributed in substantially the same way as by rotating the mold in the manner described by Adams, and that, therefore, the defendants use the Adams process. Again, the argument is pressed by the defendants that the good results they experience in casting copper tubes are due to the use of flux in the molten metal, which, they say, acts chemically to better said for cores, or to whitening for covering the cores. We may admit all these things to be improvements, and yet there is infringement if they use, in connection with these things, the method of distribution first pointed out by Adams. We know that the defendants undertake to prove that the results are equally good, whether the basin rotates or is stationary, and that if they use a stationary plumbago basin, which will not melt like iron, they produce a casting as free from blow-holes as when the basin is rotated. We cannot but doubt this, because the complainants prove that by the Adams method of distributing the metal caused by rotation a very large percentage of sound copper tubes were produced, when previously, by the great weight of testimony, the percentage was small, and because it is further shown that by rotating the basin the defendants do substantially the same thing.

In our opinion, the complainants have made out a case of infringement, and a decree should be entered in their favor in the bill covering the extended term of the Adams patent. The bill brought upon the original term of the patent, must, for the reasons before given, be dismissed.

No. 1430, bill dismissed.

No. 1428, decree for complainant.

U. S. Circuit Court—District of Massachusetts.

AMERICAN TUBE WORKS *v.* BRIDGEWATER IRON COMPANY *et al.*

Decided February 3, 1886.

1. Action for infringement of Patent No. 125,044, issued to James F. Guthrie, March 26, 1872.
2. Specifications and claims of said patent examined, construed, and defendants *Held* to have infringed claim 1 and not to have infringed claim 2.

Mr. George L. Roberts and *Mr. George William Estabrook* for the complainants.

Mr. David Hall Rice for the respondents.

COLT, *J.*:

This action is brought for infringement of Letters Patent No. 125,044, issued to James F. Guthrie, March 26, 1872, and by him assigned to the plaintiffs, for improvement in casting copper tubes. The specification says:

> Heretofore for casting copper tubes, &c., and under Letters Patent No. 24,915, issued to Freeborn Adams, a rotary mold has been employed. Practice, however, has shown that the use of a rotary mold did not produce uniform or perfect castings, that its length and weight and its revolution at a very high speed prevented that accuracy of rotation which is essential for a perfect introduction of the molten copper.
>
> The purpose of this invention is to obviate the disadvantages existing in the use of the letters patent aforesaid—or, in other words, of a rotary mold—while securing all the advantages which a rotary mold possesses over a stationary one, as employed previous to and since said letters patent to Freeborn Adams.
>
> The invention consists of an upright mold in combination with a chamber or vessel, into which the molten metal is poured, that has one, two, or more tubes for distributing the molten metal within the mold, and is arranged to be rotated, its axis of revolution and the axis of the mold being in the same vertical line and plane. By this combination a conveyance and introduction of the molten metal to the mold is secured without injury or disturbance to the core of the mold or the mold itself, and with the utmost accuracy and most uniform and perfect results, as practice and use have demonstrated.

The claims of the patent are as follows:

> 1. A mold-case, in combination with a revolving distributing chamber or hopper for conducting the molten metal to the mold, substantially as and for the purpose described.
> 2. The revolving distributing-hopper for conducting the molten metal to the mold, when provided with two or more distributing-tubes, substantially as described, for the purpose specified.

The defendants, as we have seen in the preceding case between the same parties, use a rotary chamber or basin in combination with a stationary mold. The basin used by them since 1872 is substantially like the one described in the Guthrie patent in controversy, except in the use of two or more distributing-tubes.

As stated in the specification, Guthrie's purpose was to improve upon the Adams patent by the use of a rotary hopper or basin instead of rotating the mold. Both devices, however, secure the same method of distribution of the metal in the mold, which was the great merit of Adams's invention. We have already decided in the previous case that the defendants use substantially the method of Adams as to distribution, and it follows, therefore, that they use substantially the same method of distribution as Guthrie. We think it clear, from the conclusions reached in the other case, that the defendants infringe the first claim of the Guthrie patent, which is for a mold-case in combination with a revolving distributing-chamber for conducting the molten metal to the mold. The prior patents referred to in this case, as in the other, do not anticipate the Guthrie device, for the same reasons that they did not anticipate the Adams process. The second claim is not infringed, because the defendants do not use two or more distributing-tubes. It appears that Guthrie was employed by the defendant company for some years previous to June 17, 1872, and that during this time a machine containing four rotary hoppers was built under his supervision and direction. Under such circumstances the defendant company may be said to have a license to use that particular machine. (*McClurg* v. *Kingsland*, 1 How., 202; *Worster* v. *Sidenberg*, 2 Ban. & A., 91; *Black* v. *Hubbard*, 3 Ban. & A., 39; *Bloomer* v. *Millinger*, 1 Wall., 340; *Magoun* v. *N. E. Glass Co.*, 3 Ban. & A., 114.)

Decree for complainants.

U. S. Circuit Court—Eastern District of Pennsylvania.

BOSTOCK AND WIFE *v.* GOODRICH.

Decided November 6, 1885.

INFRINGEMENT—PROFITS—DAMAGES—EVIDENCE.

Complainants received Letters Patent Nos. 64,404 and 80,269 for improvements in tuck-markers, which proved to be of little value. Defendant made improvements on same which cured the defects and rendered the device marketable. Complainants obtained a decree for assessment of damages and profits for infringement of the above patents. *Held*, that complainants must show what proportion of profits arising from the sale of the improved tuck-markers was due to the original invention, and that, failing in that, they were entitled to nominal damages only.

Mr. H. T. Fenton for the complainants.

Mr. L. L. Bond for the respondent.

BUTLER, *J.*:

The infringement complained of and decreed against is of claims 2, 3, 5, and 6 of Patent No. 64,404 and claim 1 of Patent No. 80,269. These claims are for improvements in tuck-markers, consisting of minor combinations and devices employed in such machines. Tuck-markers (differing from the complainants' only as respects these combinations and devices) had been in use for many years prior to the date of these patents. The complainants simply improved the old machines, rendering them more serviceable than before, by increasing their adaptability to the use contemplated. The

rule for ascertaining profits, applicable to the case, is therefore the one applied in *Garretson* v. *Clark*, (111 U. S., 120; S. C., 4 Sup. Ct. Rep., 291,) and more recently in *Dobson* v. *Carpet Co.*, (114 U. S., 439; S. C., 5 Sup. Ct. Rep., 945.) While, therefore, we might possibly not agree in all the master has said upon the subject of profits, his conclusion is right. The burden rested on the complainants to prove the proportion of profits justly ascribable to their improvements. Having failed in this they are entitled only to nominal damages.

The exceptions must be dismissed and the report confirmed.

U. S. Circuit Court—Eastern District of Pennsylvania.

FRAIM v. KEEN.

Decided November 2, 1885.

1. IMPROVEMENTS IN SCANDINAVIAN PADLOCKS—INVENTION.
   Reissued Letters Patent No. 10,272, granted to Edward T. Fraim (inventor) jointly with Miller W. Fraim, (assignee,) January 16, 1883, for an improvement in Scandinavian padlocks, *Held* not void for want of novelty and invention.
2. INFRINGEMENT.
   Where one party stands by and permits another to take out a patent, and then takes out a patent for a different invention, he cannot set up that he is the inventor of the first improvement.
3. NOVELTY.
   Although the question of patentable invention may be open to doubt, the court will not reverse the decision of the Patent Office, except upon clear evidence.

[The facts are as follows: Both parties claimed priority of invention. Complainant obtained a patent January 16, 1883. Defendant claimed that he made the invention at a time when he was employed by complainant in his shop, and it appears that he stood by while complainant made application for a patent without making any claim, and subsequently took out letters himself for another and a different invention.]

Mr. Joseph C. Fraley for the complainant.
Messrs. Grady & Gendell for the defendant.

BUTLER, *J.*:

While the question of patentable invention, respecting complainant's improved lock, may be open to debate and doubt, we do not feel justified in reversing the decision of the Patent Office by anything appearing in the case. Nor do we think the evidence would justify a conclusion that Fraim was not the first inventor. While the direct evidence in favor of Shallass's claim is not satisfactory, the inferences arising from his conduct are strongly against him. He not only stood by and saw Fraim assert his right to the patent without objection, but directly after took out letters for a different improvement. The infringement of the second claim is clearly proved, and the infringement of the third is virtually admitted.

The bill is sustained, and a decree must be entered accordingly, and for costs.

U. S. Circuit Court—Eastern District of Pennsylvania.

YODER v. MILLS.

Decided October 28, 1885.

PRIORITY—INFRINGEMENT—COMBINATION PATENT.

The employment of mechanical skill to construct a machine in accordance with ideas furnished by another gives no right to the invention. The entire merit is in him whose inventive suggestiveness conceived the invention.

Mr. William A. Redding for the complainant.
Mr. M. Daniel Connolly for the respondents.

MCKENNAN, *J.*:

The object of this suit is a patent to Lorenzo T. Yoder for an invention relating to the manufacture of candy, dated December 4, 1883, and numbered 289,488. The patent contains four claims, but no evidence is produced to show any infringement of the first two. The third and fourth claims are the only ones touching which there is any contest. They are both for combinations of mechanical devices, and differ only in that to the elements specified in the third claim is added a "cover, A," of peculiar construction, and thus the fourth claim is constituted. Nor is there any substantial controversy between the parties upon the question of infringement. It is clear that the machine made by the defendants is in every essential feature identical with that described in the patent.

The only contested inquiry in the case involves the right to the invention itself. All the evidence exhibited relates to it. Both parties claim the merit which the patent apparently accords to the complainant, and, without discussing the evidence, it is enough for us to say that, in view of the decided preponderance of the proofs, it is justly devolved upon him. The conception of the invention belongs to him, and all that the defendants contributed was the necessary mechanical skill, furnished at his request, to embody it in an operative form. He did not lose the merit which is due to inventive suggestiveness, and devolve it upon the mechanic whose only function was to materialize it. (*Watson* v. *Bladen*, 4 Wash. C. C., 582; *Blandy* v. *Griffith*, 3 Fisher, 609.) But some doubt may be entertained as to the right of the complainant to appropriate the combination covered by the fourth claim of the patent, treating it as an entirety. The cover A, which is an indispensable constituent of the combination, was not devised by him, but was suggested and constructed solely by one of the defendants. Whether that claim, then, is enforceable against the defendants we do not deem it imperative on us to decide. We will therefore adjudge that the patent is valid in so far as the *third* claim is involved, that an injunction issue against the infringement of that claim, and that the profits or damages accruing from the past infringement thereof be ascertained by a master; and a decree will be prepared accordingly.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 34—No. 10. TUESDAY, MARCH 9, 1886. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the Index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume 60 pages. In paper covers $1.50.

Vol. 4. Appendix No. 4, July 1, 1884 to June 30, 1885. One volume, 60 pages. In paper covers, $1.50.

Order No. 322.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 3, 1886.

In compliance with the recommendation of the Examiner in charge, the following sub-classes in Class 84, Music, are established:

Mouth-pieces.
Zithers.

M. V. MONTGOMERY,
Commissioner.

34 o g—10—1

Issue of March 9, 1886.

Patents	450	No. 337,357 to No. 337,806, inclusive.
Designs	9	No. 16,558 to No. 16,566, inclusive.
Trade-Marks	19	No. 13,083 to No. 13,101, inclusive.
Labels	6	No. 4,750 to No. 4,755, inclusive.
Reissues	4	No. 10,696 to No. 10,699, inclusive.
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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	2	
Arizona Territory			Nevada		
Arkansas	1		New Hampshire	4	1
California	11		New Jersey	20	1
Colorado	1		New Mexico Territ'y	1	
Connecticut	17	2	New York	85	6
Dakota Territory			North Carolina	2	
Delaware	1	1	Ohio	41	1
District of Columbia	2		Oregon	1	
Florida		1	Pennsylvania	42	4
Georgia	5		Rhode Island	12	1
Idaho Territory			South Carolina	1	
Illinois	37	1	Tennessee	4	
Indiana	10		Texas	2	
Indian Territory			Utah Territory		
Iowa	10		Vermont	5	
Kansas	4	1	Virginia	3	
Kentucky	5		Washington Territ'y		
Louisiana	3		West Virginia		
Maine	5		Wisconsin	8	1
Maryland	6	1	Wyoming Territory		
Massachusetts	23	2	United States Army		
Michigan	21		United States Navy		
Minnesota	6				
Mississippi	1		Total to citizens of the United States	429	24
Missouri	21				
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	10	
Austria-Hungary	2		Holland		
Barbadoes			Ireland		
Belgium			Italy	2	
Bermuda			Norway		
British Columbia			Russia	1	
Canada	7		Scotland		
Chili			Sweden		
Colombia, U. S. of			Switzerland	1	
Corea			West Indies		
Denmark					
Ecuador			Total to citizens of foreign countries	30	1
England	4				
France	3	1			

DESIGNS.

16,558.—TUREEN OR DISH.—*Thomas B. Atterbury*, Pittsburg, Pa. Application filed January 26, 1886. Serial No. 189,870. Term of patent 7 years.

16,559.—CLOCK-CASE.—*Charles Casper*, Meriden, Conn., assignor to *The Meriden Silver Plate Company*. Application filed December 3, 1885. Serial No. 184,649. Term of patent 7 years.

16,560.—SPOON-HANDLE.—*Charles T. Grosjean*, New York, N. Y., assignor to *Tiffany & Co.*, same place. Application filed December 26, 1885. Serial No. 186,832. Term of patent 14 years.

16,561.—SPOON-HANDLE.—*Charles T. Grosjean*, New York, N. Y., assignor to *Tiffany & Co.*, same place. Application filed January 15, 1886. Serial No. 188,693. Term of patent 14 years.

16,562.—BOTTLE.—*Sterling F. Hayward*, New York, N. Y. Application filed September 28, 1885. Serial No. 178,486. Term of patent 3½ years.

16,563.—QUILTING.—*August Hildt*, New York, N. Y., assignor to *L. Dryfoos & Co.*, same place. Application filed December 21, 1885. Serial No. 186,584. Term of patent 7 years.

16,564.—ORNAMENTATION OF KEYS.—*Frank W. Mix*, New Britain, Conn. Application filed December 31, 1885. Serial No. 187,308. Term of patent 7 years.

16,565.—MEMORIAL-TABLET.—*Joseph J. Phillipps*, Brooklyn, N. Y. Application filed December 18, 1885. Serial No. 186,096. Term of patent 7 years.

16,566.—SAUCEPAN.—*John Ringen*, St. Louis, Mo. Application filed November 25, 1885. Serial No. 183,998. Term of patent 14 years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

13,083.—STARCH FOR LAUNDRY PURPOSES.—*The Beatty Starch Company*, New Haven, Conn. Application filed February 11, 1886. Used since February 4, 1886.

"The word-symbol 'IVORY' and the picture of the head of an elephant."

13,084.—JAPAN TEA.—*Carter, Hawley & Co.*, New York, N. Y. Application filed February 11, 1886. Used since August 18, 1882.

"The word 'PEACOCK' and the picture of a peacock."

13,085.—JAPAN TEA.—*Carter, Hawley & Co.*, New York, N. Y. Application filed February 11, 1886. Used since May 30, 1883.

"The words 'HUMMING BIRD' and the picture of a humming-bird."

13,086.—COUGH-DROPS.—*Theodore Hinrichs*, Baltimore, Md. Application filed January 19, 1886. Used since November 20, 1885.

"The picture of a banner bearing a mortar and pestle which has on it a monogram of the letters 'T H,' with a band extending out on either side of the banner on which is inscribed 'SQUILL DROPS.'"

13,087.—LAMP CHIMNEYS.—*Hogan, Evans & Co.*, (*Limited.*) Pittsburg, Pa. Application filed February 15, 1886. Used since August, 1884.

"The representation of a globe, across the face of which appears in plain bold letters the word 'CLIMAX,' extending and projecting beyond each side of the globe."

13,088.—SHEARS AND SCISSORS.—*Henry Seymour Cutlery Company*, Holyoke, Mass. Application filed January 23, 1886. Used since March, 1865.

"The representation of a five-pointed star having a letter 'S' in its center."

13,089.—FLAKES OR GRITS PREPARED FROM THE CEREALS.—*A. M. Johnston Oatmeal Company*, Rockford, Ill. Application filed November 18, 1885. Used since August 1, 1885.

"The word-symbol 'NUDAVENE.'"

13,090.—HOSIERY OTHER THAN WHITE.—*James McCreery & Co.*, New York, N. Y. Application filed January 30, 1886. Used since January 1, 1886.

"The word 'FIRE.'"

13,091.—COMPOUND FOR PRESERVING AND RENDERING WATER-PROOF BRICK, STONE, WOOD, PAPER, CLOTH, AND OTHER FABRICS.—*Reuben E. Nichols*, Philadelphia, Pa. Application filed February 3, 1886. Used since January 12, 1886.

"The word 'EGYPTIAN.'"

13,092.—FERTILIZER FOR DISEASED ORANGE-TREES.—*James F. Prince*, Fort Reed, Fla. Application filed October 24, 1885. Used since June 15, 1885.

"The word 'AURANTICURA.'"

13,093.—MACARONI, VERMICELLI, &c.—*F. Scaramelli Fils et Cie.*, Marseilles, France. Application filed February 12, 1886. Used since 1862.

"The representations of a female figure, a star, and devices illustrative of trade and commerce, embracing a ship on water, a locomotive, a press, an anchor, gear-wheel, barrel, and bales."

13,094.—CERTAIN DRAWING MATERIALS AND INSTRUMENTS.—*E. G. Soltmann*, New York, N. Y. Application filed February 10, 1886. Used since July, 1885.

"The word 'GRIFFIN,' inclosed in quotation-marks."

13,095.—CERTAIN ROOFING MATERIALS.—*John W. Stelwagon*, Philadelphia, Pa. Application filed January 30, 1886. Used since January 28, 1886.

"A medallion head and the word 'AJAX.'"

13,096.—STOVES AND RANGES.—*Union Stove and Machine Works*, Leavenworth, Kans. Application filed February 13, 1886. Used since January 11, 1886.

"The representation of a bent arm holding a hammer in its hand."

13,097.—WINDMILLS AND TANKS.—*O. G. Stowell*, Delavan, Wis. Application filed January 21, 1886. Used since 1873.

"The letters 'U. S.' and the word 'STAR,' or the symbol of a star."

13,098.—GILLING-THREAD.—*John Summerill & Bro.*, South Penn's Grove, N. J. Application filed December 19, 1884. Used since 1880.

"The word 'GOLDEN.'"

13,099.—HOT-AIR FURNACES.—*Russel Wheeler, Frank E. Wheeler*, and *Francis Kernan, Jr.*, Utica, N. Y. Application filed January 11, 1886. Used since 1882.

"The words 'PALACE KING.'"

13,100.—KILN DRIED CORNMEAL.—*The William Lea & Sons Company*, Wilmington, Del. Application filed January 30, 1886. Used since 1876.

"The words 'BRANDYWINE, LEA.'"

13,101.—FINE WRITING-PAPER.—*Solomon Worthington*, Springfield, Mass. Application filed January 4, 1886. Used since January, 1880.

"The words 'ST. JAMES.'"

LABELS.

4,750.—Title: "LEBANON OVERALLS."—*Carter & Churchill*, Lebanon, N. H. Application filed February 15, 1886.

4,751.—Title: "MASSEY'S ELDER FLOWER AND CUCUMBER CREAM." (FOR COSMETICS.)—*Caswell, Massey & Co.*, New York, N. Y., and Newport, R. I. Application filed February 8, 1886.

4,752.—Title: "EMRICK'S COMPOUND." (FOR PREVENTING AND CURING DISEASE IN HOGS AND POULTRY.)—*J. G. Henninger*, Hamilton, Ohio. Application filed February 15, 1886.

4,753.—Title: "STRONGEST MADE LESTER BOOT."—*Lester & Co.*, Binghamton, N. Y. Application filed February 15, 1886.

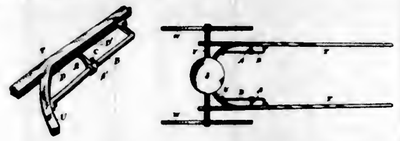
4,754.—Title: "FLORIDA COUGH BALM AND LINIMENT."—*Charles J. Matson*, Meadville, Pa. Application filed February 16, 1886.

4,755.—Title: "FIBRE LABEL" (FOR PAPER.)—*The Springfield Paper Company*, Rainbow, Conn. Application filed February 11, 1886.

PATENTS

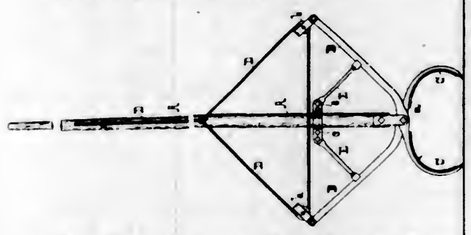
GRANTED MAR. 9, 1886.

337,357. STIRRUP FOR SULKIES. THOMAS D. ATKEN, Bradford, Ill. Filed Aug. 22, 1885. (No model.)



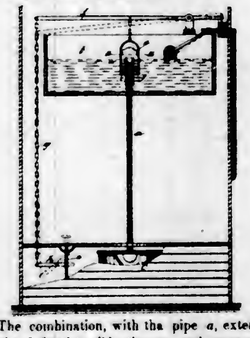
Claim.—The combination, with the sulky having the thills thereof provided with the indented plates D and the rods B, of the stirrups A, having an end of each adapted to enter said indentations, and provided with the collars encircling said rods, and the set-screw C, as and for the purpose set forth.

337,358. OYSTER-TONGS. ROBERT T. ALLISON, Solomon's Island, Md. Filed Aug. 1, 1885. (No model.)



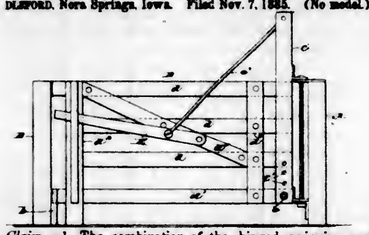
Claim.—The pole A, pivoted arms B, rakes C, and pawls E, combined with the rope D, all arranged substantially as specified.

337,359. WATER-CLOSET CISTERN. THOMAS BAILEY, New York, N. Y. Filed Aug. 5, 1885. (No model.)



Claim.—The combination, with the pipe *a*, extended up in the cistern, of the tube *j*, fitted to slide thereon, and arranged in and connected to the tube *e*, closed at the upper end and suspended from the weighted lever *f*, connected with the pull-rod of the closet, substantially as described.

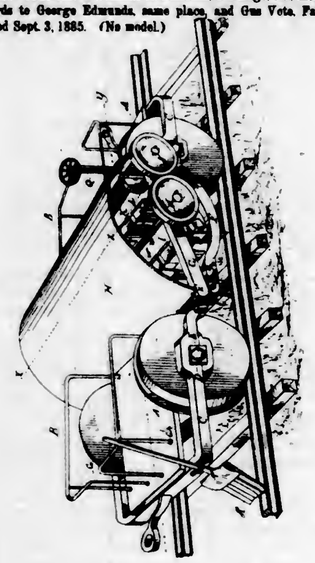
337,360. SWINGING GATE. JOHN T. BALTIMORE and JOHN F. PADDLEFORD, Nora Springs, Iowa. Filed Nov. 7, 1885. (No model.)



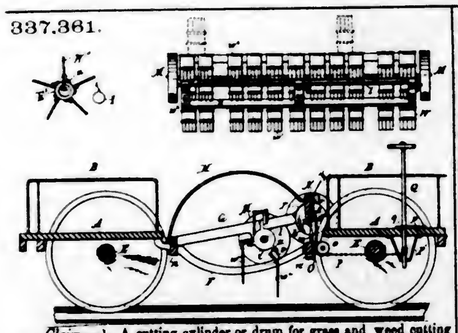
Claim.—1. The combination of the hinged swinging upright C, having the vertical series of openings *c'*, the gate, the pivotal bolt *e*, to pivot the gate in either of the openings *c'*, to permit the gate to be raised or lowered, for the purpose set forth, and the lever and rod connecting the lever with the upright for tilting the gate, substantially as described.

2. The gate having the vertical bars d^2 and d^3, and the horizontal rails *d* and d^4, having their ends projecting beyond the bars d^2 and d^3, the vertical swinging hinged upright C, slotted at its lower portion to receive the inwardly-projecting ends of the gate-rails, the bolt *e*, to pivot the lower inner corner of the gate in the slotted upright C, the lever E, pivoted to the gate, the rod *e'*, connecting the said lever with the upright C, to raise and lower the outer end of the gate, and the post B against which the gate closes, having the recess *b'* on its inner side, to receive the outwardly-projecting end of one of the gate-rails, and thereby secure the gate when closed, substantially as described.

337,361. GRASS AND WEED CUTTING MACHINE FOR RAILROAD-TRACKS. WILLIAM H. BARTELS, Carthage, Ill., assignor of two-thirds to George Edmunds, same place, and Gus Veta, Fairfield, Iowa. Filed Sept. 3, 1885. (No model.)



337,361.



Claim.—1. A cutting cylinder or drum for grass and weed cutting machines, comprising the shaft I, the friction-wheels M, the disks *t*, arms *u*, rods *v*, and hinged cutting-plates W, substantially as set forth.

2. The combination, in a grass and weed cutting machine, of a suitable frame, a cutter-cylinder, friction-wheels M N, the transverse shaft K, and friction-wheels L, substantially as and for the purpose described.

3. In a machine for cutting grass and weeds from railroad-tracks, the combination, with a suitable frame-work, of the dome H, brace-bars G, the cutter-cylinder, the shaft I, carrying friction-wheels M, and the shaft K, carrying the friction-wheels N and L, substantially as and for the purpose set forth.

4. A cutter-cylinder for machines for cutting grass and weeds from railroad-tracks, comprising a shaft, disks removably secured thereto, carrying projecting arms, rods secured to said arms, and metallic cutting-plates secured to said rods, substantially as set forth.

5. The combination, with a suitable frame-work and car-wheels, of a cutting-cylinder carrying metallic strips, the friction-wheels M, transverse shaft K, friction-wheels N and L, and means for throwing the friction-wheels L into and out of contact with the car-wheels, substantially as and for the purpose described.

6. In a machine for cutting grass and weeds from railroad-tracks, the combination of the dome H, the bowed beams F, the brace-bars G, the offsets or shoulders *k k'*, the extensions *t*, and screw-bolt *g*, substantially as described.

7. In a machine for cutting grass and weeds from railroad-tracks, the combination of the dome H, the bowed beams F, the brace-bars G, the offsets or shoulders *k k'*, the extensions *t*, screw-bolt *g*, the cups *m*, and the spiral springs *i*, substantially as and for the purpose described.

8. In a machine for cutting grass and weeds from railroad-tracks, the combination of the hinged dome H, the eye *s*, the bowed beams F, the brace-bars G, the shaft I, the cutter-cylinder, the shaft K, the friction-wheels M N L, the transverse bar *s'*, the frame O, grooved wheels *o*, the chain P, rod Q, the pawl *p*, and ratchet *q*, substantially as and for the purpose described.

9. A machine for cutting grass and weeds from railroad-tracks, comprising the following elements: a suitable frame-work and wheels, a hinged dome, brace-bars, a shaft journaled in said bars, the cutter-cylinder, the plates of which are formed in strips, the transverse shaft K, the friction pulleys or wheels L M N, the rod Q, ratchet-wheel *q*, pawl *p*, chain P, grooved wheel *o*, frame O, eyebolt *s*, spiral springs *i*, and cups *m*, all as and for the purpose set forth.

10. In a machine for cutting grass and weeds from railroad-tracks, the combination, with a suitable frame-work, of brooms A', secured to the rear end of said frame, substantially as described.

11. The combination, in a grass and weed cutting machine, of the shaft I, the tube E', flanges *e*, strips W', and means for securing the rotation of the tube with the shaft, substantially as and for the purpose described.

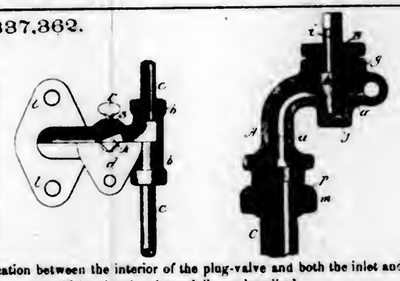
12. In a grass and weed cutting machine, the combination of the frame brush cylinder, its shaft I, the friction-wheels M, the shaft K, friction wheels L N, and means for throwing the wheels L in contact with the driving mechanism, substantially as described.

13. A brush-cylinder for machines for cutting grass and weeds from railroad-tracks, consisting of the tube E', having a groove, *m*, the flanges, *e*, riveted to said tube, and the spring-metal strips W', riveted to said flanges, substantially as described.

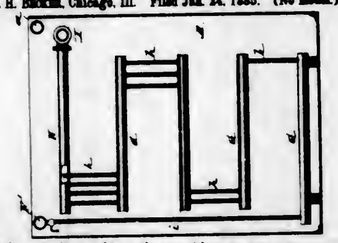
337,362. DISTRIBUTING-VALVE. VICTOR H. BECKER, Chicago, Ill. Filed Nov. 24, 1884. (No model.)

Claim.—In a distributing-valve, the casing or body having passages *a a'*, hole *s* in one of its sides, and plug *r*, fitting to said hole, in combination with plug-valve A, having a tapering passage, *k*, extending transversely through the plug, the said plug being arranged relatively to the inlet and exit passages *a a'* and hole *s* so that when the plug-valve is turned to bring the passage *k* in communication with hole *s* communication between the interior of the plug-valve and both the inlet and exit passages will be closed, substantially as described.

337,362.



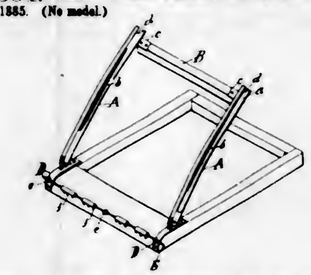
337,363. AMMONIA-EVAPORATOR FOR REFRIGERATORS. VICTOR H. BECKER, Chicago, Ill. Filed Jan. 24, 1885. (No model.)



Claim.—1. In a refrigerating-machine, an evaporator consisting of two or more enlarged evaporating-chambers, one placed above the other and connected by small pipes which project into the upper chamber, and an outlet-header arranged above the upper chamber and connected thereto by pipes, substantially as described.

2. In a refrigerating-machine, the combination, with two or more enlarged evaporating-chambers arranged one above the other, of a series of small pipes connecting said chambers and projecting into the upper chamber or chambers, an outlet-header, and a series of pipes connecting it with the upper evaporating-chamber, said pipes being of contracted diameter at their upper ends, substantially as described.

337,364. SEAT. MARSENA BENEDICT, New York, N. Y. Filed June 27, 1885. (No model.)



Claim.—1. In a seat, the combination of side bars provided with longitudinal slots and grooves, a rear bar attached to said side bars, and a seat-frame supporting the side bars by means of hinge-joints, substantially as and for the purpose described.

2. In a seat, the combination of side bars provided with longitudinal slots and grooves, a rear bar attached to said side bars, a seat-frame supporting the side bars by means of hinge-joints, and buckles arranged on the front bar of the seat-frame, substantially as and for the purpose described.

3. In a seat, the combination of side bars provided with longitudinal slots and grooves, a rear bar attached to said side bars, and a front rod or bar provided with buckles and having bearings in eyes formed with or attached to strap-pieces to which the front ends of said side pieces are attached by hinge-joints, substantially as and for the purpose herein described.

4. A cloth or webbing provided with side pockets and a rear end pocket, in combination with a frame constructed as described, with longitudinal slots and grooves and with side rods, *i*, rear end rod, J, front rod, E, and buckles *f*, carried by the front rod, substantially as and for the purpose herein described.

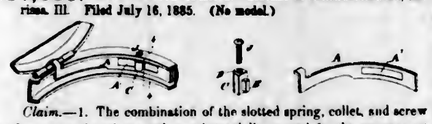
5. A seat consisting of a hinged frame and a cloth or webbing carried thereby, said hinged frame having its front and rear edges below the level of the hinge-pivots when the cloth or webbing is in place and the seat in position, whereby the parts are automatically held in place by the strain or line of draft being below the level of the hinge-pivots, substantially as herein described.

6. A seat consisting of a hinged frame and a cloth or webbing carried thereby, said cloth or webbing having a rear pocket forming an inclined plane for the support of the base of the spinal column, substantially as herein described.

7. A seat embodying in its structure a hinged frame, a cloth or webbing having a pocket formed in its rear edge, and a rod passing through the pocket for securing the cloth or webbing to the frame at that point, the whole being so arranged that the portion of the cloth or webbing which extends from said rod to the base of the pocket is an inclined plane, thereby operating to support the center of the span of the webbing and preventing the latter from sagging, substantially as shown and described.

8. In a seat, a frame divided into two parts, one longer than the other, hinged together at such point that the distance from the point of division of the frame to the attachment of one edge of the web is greater than the distance from the point of division to the attachment of the opposite edge, for the purpose of providing leverage for straining the cloth, substantially as herein described.

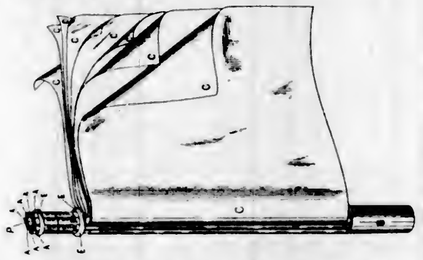
337,365. WATCH-CASE SPRING. ALBERT L. BLANKENHEISTER, Marissa, Ill. Filed July 16, 1885. (No model.)



Claim.—1. The combination of the slotted spring, collet, and screw or pin, arranged and operating substantially as and for the purpose set forth.

2. The combination of the slotted spring, collet having a shank dovetailed into the slot in the spring, and having a hole or perforation, D, and screw or pin J, all arranged and operating substantially as and for the purpose set forth.

337,366. NEWSPAPER-FILE. WILLIAM A. BORDEN, Boston, Mass. Filed June 29, 1885. (No model.)

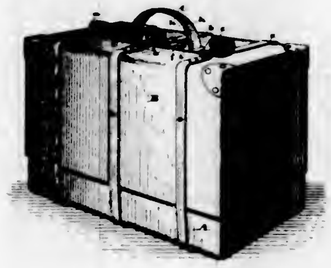


Claim.—1. A newspaper-file consisting of a series of parallel rods, A, held in position at one end by an elastic tube, B, and at the other end by a rubber ring, E, as set forth.

2. A newspaper-file consisting of a series of parallel rods, A, surrounding a central rod, F, and held in position at one end by a tube, B, and at the opposite end by a ring, E, as described.

3. A newspaper-file consisting of a series of parallel rods, A, provided with indications of the days of the week, and surrounding a central rod, F and held in position at one end by an elastic ring, E, and at the opposite end by an elastic tube or ring, B, as and for the purposes set forth.

337,367. VALISE. DAMON W. BROCKWAY, Dover, Me. Filed Dec. 10, 1885. (No model.)



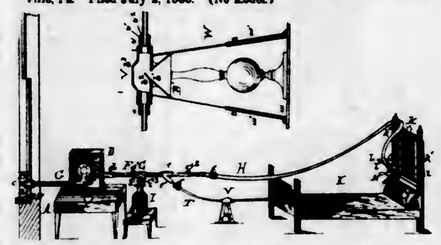
337,367.



Claim.—1. In combination with the cover of an extension-valise having a covering of textile fabric, a stay-piece of stout leather, metal, or other strong material placed upon the exterior of said covering, and provided with two rectangular holes cut through the same, two corresponding holes cut through the body of the cover, and a leather handle having a portion of each end thereof separated into two parts and turned against the inside of the cover in opposite directions after having been passed through said rectangular holes, the whole being secured together by through and through fastenings.

2. The combination, with the cover of a valise having a covering of textile fabric, of the stay-piece *f*, provided with two rectangular holes, corresponding holes cut through the body of the cover, the strengthening-piece *g*, also provided with corresponding holes, the handle having its ends inserted through said holes, and each end separated into two parts, which parts are turned in opposite directions against the strengthening-piece *g*, and secured thereto and to the body of the valise-cover by fastenings, which pass through the stay-piece *f*, the body of the cover, the strengthening-piece *g*, and a portion of the handle, substantially as described.

337,368. VENTILATING APPARATUS. JAMES L. BROWN, Brookville, Pa. Filed July 2, 1885. (No model.)



Claim.—1. The combination of the window having a suitable aperture, the fan, and the inlet and outlet pipes or tubing, the latter having a flexible extension, as set forth.

2. The combination of the window having a suitable aperture, the fan, the inlet and outlet pipes or tubing, and an adjustable bracket for the outlet-pipe, as set forth.

3. The combination of the fan, the inlet-pipe, the outlet pipe or tubing, and the T or three-way pipe located in the outlet pipe or tubing, and having a cock placed as described, with a receptacle placed at that end of the three-way pipe which has the cock, as set forth, with the vessel I located at the T-pipe, as and for the purpose set forth.

4. The portable ventilating apparatus consisting of an inlet, a fan, and an outlet-pipe, the last having a flexible extension, as set forth.

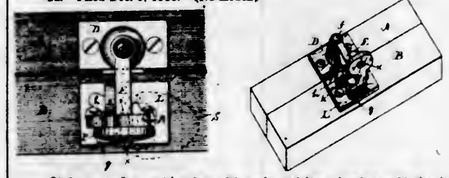
5. A ventilating apparatus, in combination with a fly-fan located at the end of the educt of such apparatus, as set forth.

6. The combination of a fan, an induct, an educt, and a flexible extension to the latter, and a metallic boxing forming a part of said educt, whereby the air passing through the educt may be warmed by placing a lamp or other heater under such boxing, as explained and set forth.

7. In a ventilating apparatus, the fan, and its induct and educt, the latter provided with a metallic boxing, in combination with a reservoir above such boxing, and having a pipe leading into or within such boxing.

8. In a ventilating apparatus, the fan, and its induct and educt, the latter having a flexible extension, which is provided with a metallic boxing, in combination with a reservoir above such boxing, and having a pipe leading into or within such boxing, as set forth.

337,369. SASH-FASTENING DEVICE. JOHN M. BURKERT, Atlanta, Ga. Filed Dec. 9, 1885. (No model.)



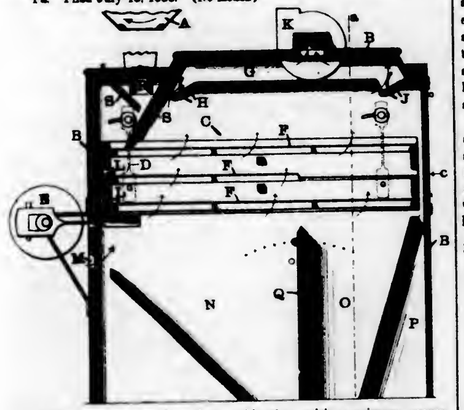
Claim.—1. In combination with a pivoted lever having a side hook, as described, a front plate provided with a projecting flange having a perforation therein to receive the aforesaid hook, substantially as and for the purpose specified.

2. In combination with a pivoted lever having a side hook and thumb-catch, as described, a front plate provided with a projecting flange having a perforation therein to receive the aforesaid hook, the latter adapted to be secured in the perforated flange by the thumb-catch, substantially as described.

3. In combination with a fastening-lever, a plate having a raised portion perforated to receive the hook thereof and an auxiliary plate or keeper provided with a slotted portion for straddling the aforesaid parts, substantially as and for the purpose set forth.

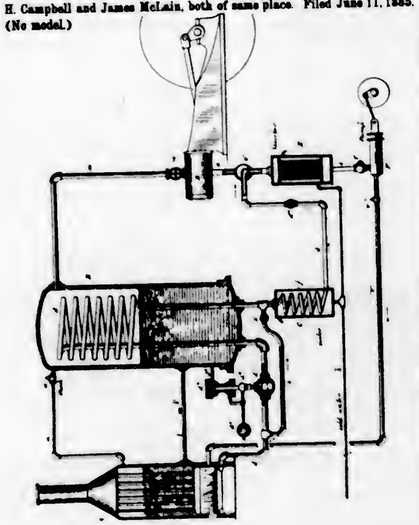
4. In a sash-fastening, the combination of a plate having a lever pivotally connected therewith, said lever provided with a side hook, and a pivoted thumb-catch with a plate having a raised projection perforated to receive the aforesaid hook, and an auxiliary plate or keeper adapted to fit in rear of the thumb-screw, and to be connected therewith by means of a padlock, substantially as described, and for the purpose set forth.

337,370. **MIDDLINGS-PURIFIER.** ELI T. BUTLER, of Philadelphia, Pa. Filed July 13, 1885. (No model.)



Claim.—In a purifier, the combination, with a primary screen adapted to deliver material to the purifier, of a shaker constructed with parallel screens, one above another, and of a mesh coarser than that of said primary screen, and with air-inlets between the heads of the screen, a hopper delivering from the primary screen to the head of the upper shaking screen, an inclosing casing having air-inlets below the screens and adjustable air-exits above the opposite ends of the upper shaking screen, and means for producing suction at said adjustable air-exits, substantially as and for the purpose set forth.

337,371. **ENGINE AND METHOD OF OPERATING THE SAME.** JOS. H. CAMPBELL, New York, N. Y., assignor of three-eighths to Charles H. Campbell and James McLain, both of same place. Filed June 11, 1885. (No model.)



Claim.—1. The method herein described of utilizing in a vapor-engine a fluid the absorptive power of which decreases as the temperature increases, the same consisting in storing the vapor as it is generated therefrom in a liquid reservoir the temperature of which is lower than the temperature of the boiler.

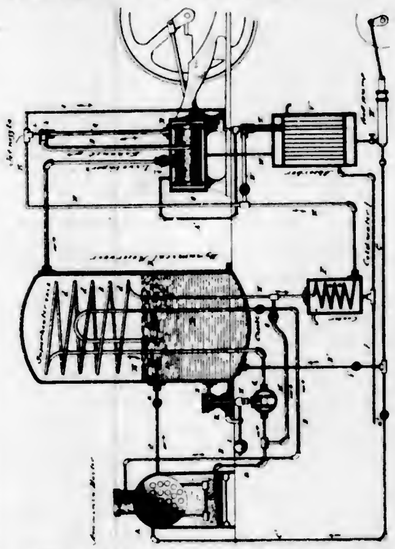
2. In a vapor-engine, the method herein described of utilizing the vapor of aqua-ammonia, the same consisting in vaporizing the liquid at a comparatively high temperature, conveying the vapor into a storage-chamber containing the same fluid as contained in the boiler at a lower temperature, and in which the vapor is superheated, and then conveying said superheated vapor to the cylinder of the engine where it is used, and the exhaust-vapor returning to the boiler by being absorbed in a current of the liquid at a lower temperature under pressure from the boiler.

3. In a vapor-engine, the method herein described of regulating the pressure in the generator and reservoir, the same consisting in transferring the fluid from the boiler to the reservoir or from the reservoir to the boiler, as occasion may require.

4. In a vapor-engine, the method herein described of preparing and applying the liquid used for absorbing the exhaust-vapor from the engine, the same consisting in heating the liquid, thereby reducing its absorptive power without breaking its continuity, and having it at all times under the pressure of the vapor in the boiler, then cooling the same, thereby restoring its absorptive power, and bringing it under boiler-pressure in contact with the vapor exhausted from the cylinder, so as to produce an induced current in the direction of the absorber.

5. In a vapor-engine, the method herein described of recovering and using the exhaust-vapor from the engine, the same consisting in spraying under boiler-pressure an indnced current in the direction of the absorber, a stream of the cold solution from which the vapor is generated into a chamber receiving the exhaust-vapor from the engine, whereby the vapor is absorbed by the solution without surrendering its latent heat, and is mechanically mixed by the force of the spray.

337,372. **METHOD OF UTILIZING AQUA-AMMONIA AS A MOTIVE POWER IN ENGINES.** JOSEPH H. CAMPBELL, New York, N. Y., assignor of three-eighths to Charles H. Campbell and James McLain, both of same place. Filed July 27, 1885. (No model.)



Claim.—1. In a vapor-engine, the method herein described of securing the absorption of the vapor and the heat developed by the absorption to superheat the vapor in the reservoir, the same consisting in introducing the vapor generated in the boiler into the storage-reservoir below the surface of the liquid contained in said reservoir.

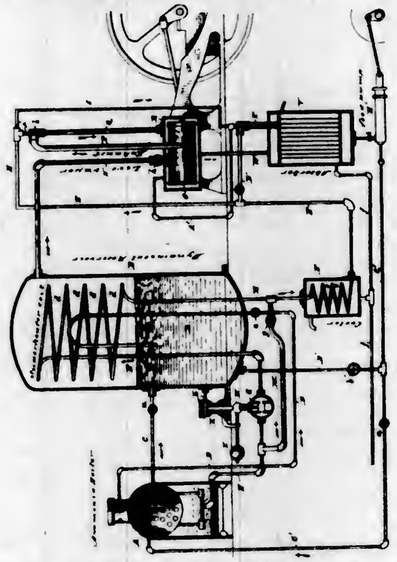
2. In a vapor-engine, the method herein described of regulating the tension of vapor in both the boiler and reservoir, the same consisting in introducing the binary liquid into either under pressure from the pump, as set forth.

3. In a vapor-engine, the method herein described of heating the cylinder of the engine so as to superheat the working-vapor therein, the same consisting in combining the exhaust-vapor from the cylinder with a cool weak solution of aqua-ammonia under pressure in a chamber which surrounds the cylinder, as set forth.

4. In a vapor-engine, the method herein described of preventing back-pressure on the piston of the engine, the same consisting in drawing from the chamber which surrounds the cylinder the vapor which is in excess of saturation by means of a stream or current of the cool weak solution under pressure from the boiler, as set forth.

5. A vapor-engine in which the vapor is worked expansively in the cylinder, the method herein described of disseminating the heat of absorption produced by the union of the cold weak solution and the exhaust-vapor within the jacket of the cylinder, the same consisting in joining or combining the exhaust-vapor from the cylinder with a weak solution under boiler-pressure in the jacket of the cylinder, thus neutralizing the effect of the expanded vapor within the cylinder, and the consequent fall of temperature resulting from such expansion.

337,373. **VAPOR-ENGINE.** JOS. H. CAMPBELL, New York, N. Y., assignor of three-eighths to Charles H. Campbell and James McLain, both of same place. Filed July 27, 1885. (No model.)



Claim.—1. In an aqua-ammonia engine, a boiler for generating the vapor and a dynamical reservoir, such as described, for receiving the vapor from the boiler and supplying it to the cylinder, said reservoir being partially filled with the solution or aqua-ammonia, as set forth.

2. In an aqua-ammonia engine, a liquid-reservoir, such as described, adapted to receive the vapor from the boiler, said vapor being injected into the reservoir below the surface of the liquid contained therein, as set forth.

3. In an aqua-ammonia engine, a boiler for generating the vapor and a dynamical reservoir, such as described, for receiving the vapor, said reservoir being partly filled with aqua-ammonia, the boiler and reservoir being connected by a pipe, C, whereby the quantity of liquid in either the boiler or reservoir is regulated.

4. In an aqua-ammonia engine, a boiler for generating the vapor and a dynamical reservoir, such as described, for receiving the vapor from the boiler, said reservoir being provided with a coiled pipe leading from the boiler, whereby the vapor in the reservoir is superheated, as set forth.

5. In an aqua-ammonia engine, a boiler for generating the vapor, a dynamical reservoir for receiving the vapor from the boiler, said reservoir being provided with a coiled pipe leading from the boiler for superheating the vapor in the reservoir, and a valve located in the path of the pipe leading to and connecting with the reservoir, whereby the supply of liquid passing through said pipe and the heat in the reservoir is automatically regulated, as set forth.

6. In an ammonia-engine, a boiler for generating the vapor, a dynamical reservoir for receiving the vapor from the boiler, and a pipe leading from the boiler through the reservoir to the exhaust from the cylinder, whereby the exhaust-vapor from the cylinder is absorbed by the weak solution from the boiler under boiler-pressure.

7. In an ammonia-engine the working cylinder of which is jacketed to receive the exhaust-vapor from the cylinder, a pipe leading from the boiler to the jacketed space of the cylinder, through which the weak solution from the boiler is conveyed to the jacketed space to absorb the exhaust-vapor, whereby the heat of absorption is utilized to maintain a proper working temperature in the cylinder, as set forth.

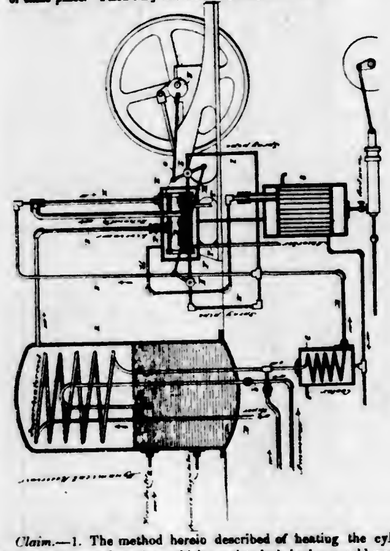
8. In an ammonia-engine the cylinder of which is jacketed, as described, to receive the exhaust from the cylinder, a pipe leading from the top of the jacketed space to and communicating with the liquid-pipe from the boiler, whereby an induced current is maintained, to free the jacketed space of vapor and to prevent back-pressure on the piston.

9. In an ammonia-engine, a boiler for generating the vapor, and a dynamical reservoir, such as described, partially filled with aqua-ammonia, for receiving and superheating the vapor from the boiler, in combination with the pipe N and cylinder O, as set forth.

10. In an ammonia-engine, the pipe E, having a branch or switch pipe, M, connecting the bent portions of the pipe E outside of the reservoir, in combination with the valve G, whereby a constant boiler-pressure is maintained on the liquid which absorbs the exhaust-vapor from the cylinder when the valve G closes the pipe E, as set forth.

11. The pipes C' and D', provided with the valves A' and *b'*, in combination with the pump E', whereby the liquid can be directed into the boiler or reservoir, as set forth.

337,374. **METHOD OF UTILIZING AQUA-AMMONIA AS A MOTIVE POWER IN ENGINES.** JOSEPH H. CAMPBELL, New York, N. Y., assignor of three-eighths to Charles H. Campbell and James McLain, both of same place. Filed July 27, 1885. (No specimens.)

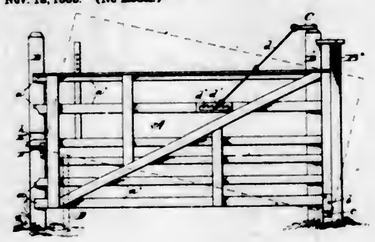


Claim.—1. The method herein described of heating the cylinder and piston of a vapor-engine, which consists in bringing a cold weak solution in contact with the cold expanded vapor within the cylinder of the engine, as set forth, whereby the cylinder and piston are heated to the proper working temperature by the heat of absorption.

2. The method herein described of heating the cylinder and piston of a vapor-engine, the same consisting in injecting a cold weak solution of aqua-ammonia alternately at each end of the cylinder, said cold weak solution being delivered under boiler-pressure, as set forth.

3. The method herein described of disseminating the heat of absorption, the same consisting in bringing the liquid and expanded vapor when in the act of solution in contact with the piston and working surface of the cylinder and imparting its heat thereto.

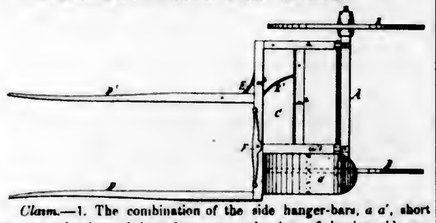
337,375. **GATE.** WILLIAM H. CAMPBELL, Ridge Farm, Ill. Filed Nov. 18, 1885. (No model.)



Claim.—1. The combination of the swinging gate A, hung upon a single hinge or pivot, *b*, the stays *d d*, placed one on each side of the gate, the stay-yoke C, pivoted to the top of the post, the ratchet-plate d^2, attached to the gate, and the stay-bar *d'*, attached to the stays and adjustable in the ratchet, substantially as and for the purposes described.

2. The combination of the swinging gate A, hung upon a single hinge or pivot, *b*, the stays *d d*, placed one on each side of the gate, the stay-yoke C, pivoted to the top of the post, the ratchet-plate d^2, attached to the gate, the stay-bar *d'*, attached to the stays and adjustable in the ratchet, and the pivoted bar D, adapted to support the gate in an elevated position, substantially as and for the purposes described.

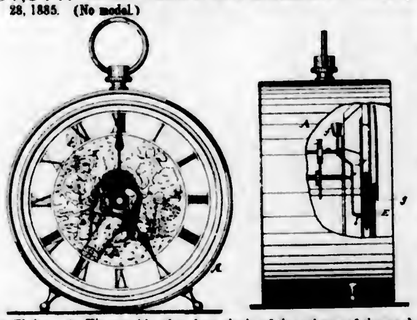
337,376. **DRAFT ATTACHMENT FOR WHEELED VEHICLES.** G. CARTER, Lemars, Iowa. Filed Nov. 2, 1885. (No model.)



Claim.—1. The combination of the side hanger-bars, *a a'*, short rear connecting-bar, a^2, long front connecting-bar, a^3, having side extended portion, a^5, shafts D D', one attached between the hanger-bars and the other to the extended part a^5, and the braces E and E', one applied between the right-hand hanger-bar, *a*, and right-hand shaft, and the other between the front bar, a^3, and the rear bar, a^2, substantially as and for the purpose described.

2. The combination, with the shafts and hanger-frame and a wheel of a vehicle, of the fender G, attached to the extension a^5 and sustained by a standard of a side hanger-bar, substantially as described.

337,377. **CLOCK.** WILLIAM D. CHASE, Hackensack, N. J. Filed Sept. 28, 1885. (No model.)



Claim.—1. The combination, in a clock, of the arbor *a* of the anchor B with the hook C and counterpoise *f*, and with the movable plate D, which is connected to said hook, substantially as herein shown and described.

2. In a clock, the combination of the dial E, which is cut away at or near its middle, with the movable plate D and with the false dial F, the plate D being between the dials E and F, substantially as herein shown and described.

3. The combination of the anchor-arbor *a* with the projecting hook C, having counterpoise *f*, movable plate D, and lug *g* on the dial, substantially as herein shown and described.

337,378. **NUTMEG-GRATER.** LOUIS J. CHURCH, Washington, D. C. Filed May 20, 1885. (No model.)

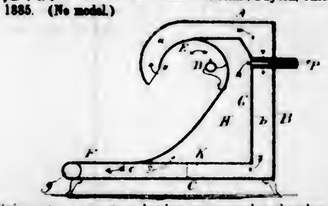


Claim.—1. A grater having a cup and grating-surface, in combination with a handle, B, formed of two branches, *e f*, in one piece, the branch *f* being secured to the body of the grater, and the branch *e* being free at its end and terminating in a pressure-plate, the parts being arranged and operating substantially as described.

2. A grater having a cup and grating-surface and a pressure-plate for pressing the article to be grated upon said surface, combined with a handle formed of a single wire, one branch of which is secured to the body of the grater, and the other of which is bent to enter the cup at right angles to the grating-surface, substantially as described.

3. In a grater, and in combination, a grating-surface, a cup, a handle having branches *e f*, a pressure-plate carried on the branch *e*, and a bearing for said branch *e*, substantially as described, whereby the pressure-plate is kept in proper position within the cup, and the branches are kept in proper position with relation to each other, substantially as described.

337,379. **GAS-STOVE.** JOHN CLEGHAN, Dayton, Ohio. Filed Apr. 6, 1885. (No model.)



Claim.—1. A gas-stove having an expansion-chamber, one wall of which forms an arch, burners under said arch, and a passage leading from one side of said arch over the same and ultimately into the expansion-chamber, and an outlet-pipe leading from said chamber, as set forth.

2. The combination, with an expansion-chamber, one wall of which forms an arch, of a series of burners under the arch, side plates which close the ends of said arch, and a passage from one side of the arch leading over the same and ultimately into the expansion-chamber, and an outlet-pipe leading from said chamber, substantially as described.

3. The combination, with the expansion-chamber having its front wall forming an arch, of a flat passage from the front of the arch over the expansion-chamber, down at the rear of the stove in proximity to the chamber, and finally entering said chamber, an outlet-pipe from said chamber, and a series of gas-burners under the arch, all substantially as described.

4. In a gas-heating stove, the combination, with an expansion-chamber having one of its faces exposed to the atmosphere, of the burners, a passage from said burners over the chamber, down behind said chamber, forward underneath said chamber to the extreme front of the stove, and separate passages from each side thereof leading backward and upward into the expansion-chamber, and an escape-pipe from said expansion-chamber, substantially as described.

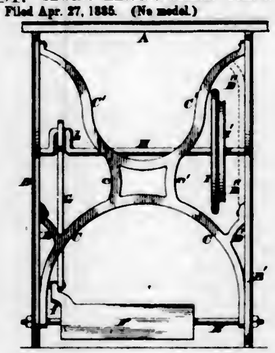
337,380. **PITMAN.** PHILIPP C. CLOSE, Augusta, Ga. Filed Aug. 3, 1885. (No model.)



Claim.—1. The combination of the oil-reservoir A, the tubular pitman-rods at each end thereof, valve-seats secured therein, and spring-valves, substantially as and for the purpose described.

2. The combination of the oil-reservoir A, its transverse partition, tubular pitman-rods, valve-seats therein, and spring-valves, with the sleeves G and jam-nut upon ends of the pitman, substantially as and for the purpose described.

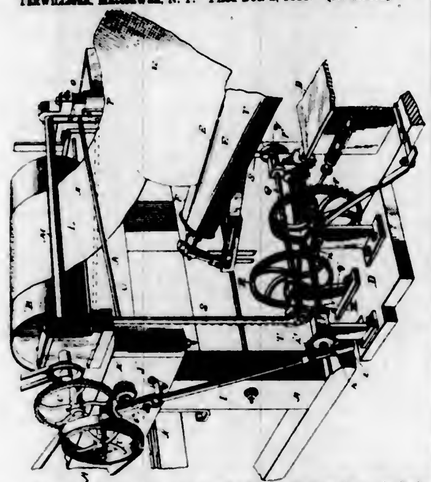
337,381. **SEWING-MACHINE STAND.** JOHN C. COCHRAN, Ripley Ohio. Filed Apr. 27, 1885. (No model.)



Claim.—1. The combination, in a sewing-machine stand, of the main braces C C', arranged in the manner herein shown and described, said braces being provided with branches D D', attached to the opposite legs B B', at a suitable point below the driving-shaft H, for the purpose of preventing any spreading of the lower portion of the frame, as stated.

2. A sewing-machine driving-shaft supported at each end on conical journal-bearings, which bearings consist of a socket, *h'*, absorbent bushing M, and adjustable spindle K, for the purpose specified.

337,382. **HAT-FORMING MACHINE.** LEDUM M. CONKLIN and SILAS TERWILLIGER, Matteawan, N. Y. Filed Dec. 2, 1885. (No model.)



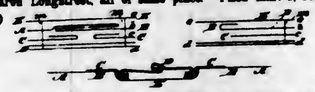
Claim.—1. The combination, with a lap-supplying roller and a body-block of a hat-forming machine, of a regulator-bar interposed between the roller and former and vertically-moving supports at each end of the bar traversing in alternate directions to vibrate said bar about its central point in a vertical plane, substantially as described, and for the purpose specified.

2. The combination of a lap-supplying roller, a body-block of a hat-forming machine, vertical guides, bearing-blocks working in said guides, and a regulator-bar loosely connected with and supported in said blocks to automatically adjust itself to the variation of angle and to the varying distances between the blocks, substantially as described.

3. The combination of the doffer-cylinder, the doffer-driving mechanism, and a regulator arranged in a horizontal position parallel with said cylinder, with a hat-former, a transverse shaft, gearing, substantially as described, connecting said shaft to the doffer-driving mechanism, eccentrics on said shaft, and pitmen connecting said eccentrics to each end of the regulator, whereby the latter is vibrated vertically, substantially as set forth, and for the purposes specified.

4. The combination, with the carding-machine and its driving mechanism, and the hat-forming machine and its driving mechanism, of the herein shown and described means for positively connecting the two sets of gearings, consisting of the double pinion, a shaft nearly vertically arranged, pinions keyed to or near each end of the shaft, the upper pinion meshing with the double pinion, and a third pinion attached to an extension of a shaft from the hat-former driving-gearing and meshing with the lower pinion or the connecting-shaft, substantially as set forth.

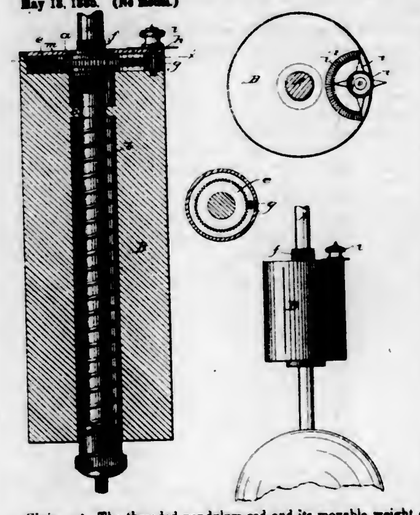
337,383. **METHOD OF SECURING BOSOMS TO SHIRT-BODIES.** C. J. COTLE, Chicago, Ill., assignor to Ebenezer Jennings, Albert B. Pullman, and Aaron Longstreet, all of same place. Filed Mar. 1, 1884. (No model.)



Claim.—1. The method herein described of stitching a bosom in a shirt by bringing the edges of the bosom, bosom-back, and re-enforce pieces in line with the edge of the body-piece, the body and re-enforce pieces being between the edges of the bosom and bosom-back, and then stitching these parts together and folding the body of the shirt between the bosom and bosom-back and arranging the edges of the other side in line and stitching them together, and then withdrawing the body from between the bosom and bosom-back, whereby the seams are back of the bosom and the side edges of the bosom are prevented from fulling, crinkling, and wrinkling, substantially as described.

2. The method herein described of stitching a bosom in a shirt by bringing the edges of the bosom, the bosom-back, and re-enforce piece in line with the edges of the body-piece, the two latter being laid wrong side out upon the bosom and bosom-back, respectively, and then stitching these edges together and folding the body and re-enforce pieces upon each other right side outermost, substantially as described.

337,384. **CLOCK-PENDULUM.** SYLVESTER EASTMAN, Providence, R. I., assignor to the Synchronous Time Company of Portland, Me. Filed May 13, 1885. (No model.)



Claim.—1. The threaded pendulum-rod and its movable weight or bob, combined with a spring to support said weight or bob, and with a gear having a threaded hub in engagement with the screw-thread of the said rod, and co-operating with the said spring to raise or lower the weight or bob, substantially as described.

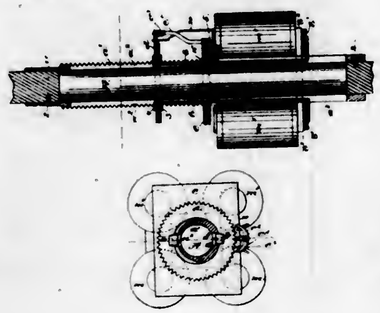
2. The pendulum-rod and weight or bob moving vertically thereon, combined with a spring to support the said weight or bob, and the gear-wheel turning on a screw-threaded portion of the pendulum-rod, and means to rotate the said gear-wheel to positively raise and lower the weight or bob, substantially as described

3. The threaded pendulum-rod and weight or bob loose on the said rod, a spring to support the said weight or bob, and a gear-wheel, *e*, having its threaded hub *a* turning on the screw-threaded portion of the rod, combined with the pinion *g* and the nut *i*, all substantially as described.

4. The pendulum-rod, the spring supported weight or bob thereon, the gear-wheel and means to move it, combined with an indicating device, substantially as described.

5. The threaded pendulum-rod and the weight or bob thereon, combined with a gear having a threaded hub in engagement with the screw-threads of the said rod, the pinion *g*, meshing with said gear, and the nut *i*, substantially as described.

337,385. **ELECTRIC REGULATOR FOR PENDULUM-CLOCKS.** SYLVESTER EASTMAN, Providence, R. I., assignor to the Synchronous Time Company of Portland, Me. Filed June 1, 1885. (No model.)



Claim.—1. A pendulum-rod and a movable frame thereon, and magnets and a pivoted armature mounted on the said frame, and means controlled by the said armature to effect the sliding of the said frame upon the pendulum-rod, combined with an electric circuit containing circuit-changing devices, whereby the armature is positively moved, substantially as described.

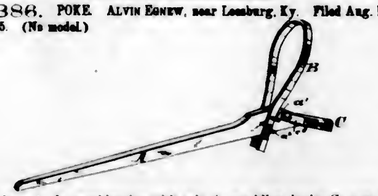
2. The pendulum-rod and screw-threaded tube thereon, combined with a movable weight consisting of a frame, the magnets and pivoted armature, and regulating device supported by the frame, substantially as described.

3. The threaded pendulum-rod having guideways, combined with a supplemental weight moving vertically therein and comprising a frame, magnets, a pivoted armature, and a regulating device, substantially as described.

4. The pendulum-rod and screw-threaded tube thereon, having guideways, and frame moving on the said rod, combined with two magnets supported by the said frame, the pivoted armature and gear-wheel *d*, and means to rotate the latter, substantially as described.

5. The pendulum-rod and screw-threaded tube thereon, having guideways, the frame movable thereon, and magnets, combined with a pivoted armature co-operating with the said magnets, spring-controlled pawls connected with and operated by the said armature, and a gear-wheel rotated upon the screw-threaded tube by the engagement of the pawls, substantially as described.

337,386. **POKE.** ALVIN EGNEW, near Leesburg, Ky. Filed Aug. 11, 1885. (No model.)



Claim.—1. In combination with pole A, prodding device C, secured to the end thereof, bow B, pivoted to pole A, and pin a^2, passing through bow B, and serving to limit the movement of the latter.

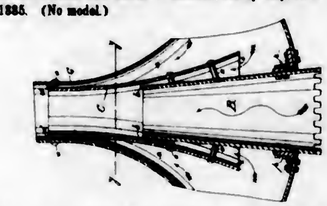
2. In combination with pole A, having slot a^2, pivoted bow B, pin a^2, passing through bow B and into slot a^2, and a prodding device, C, all arranged as shown.

3. In combination with pole A and pivoted bow B, plate *c*, rigidly secured to the end of pole A, shield *c'*, provided with apertures c^2, bolts c^3, rigidly secured to shield *c'* and passing loosely through plate *c*, spring c^4, encircling said bolts, and pins c^5, rigidly attached to plate *c*, and projecting through the apertures c^2, as and for the purposes described.

337,387. **PROCESS OF MANUFACTURING AMMONIA.** ALFRED FELDMANN, Bremen, Germany. Filed Sept. 10, 1884. (No specimens.) Patented in France Aug. 27, 1884, No. 163,979; in England Aug. 27, 1884, No. 11,711; in Germany Aug. 28, 1884, No. 31,237; in Italy Sept. 30, 1884, XXXIV, 372, and in Austria-Hungary Nov. 13, 1884, No. 32,575 and No. 51,449.

Claim.—In the manufacture of spirits of sal-ammoniac or of highly-concentrated ammoniacal water, which consists in first treating the crude ammoniacal liquor or gas-water with lime in the usual manner, effecting the separation of the lime and lime combinations from the liquor by mechanical filtration, in contradistinction to the usual mode of separation by precipitation and decanting, whereby an ammoniacal liquor free from lime and lime combinations is obtained for the purposes specified.

337,388. **APPARATUS FOR TRANSFERRING GRAIN, &c.** ALEXANDER B. FERNALD and DAVID T. LAWSON, Jersey City, N. J. Filed Jan. 21, 1885. (No model.)



Claim.—1. In a device for conveying grain or other material, the combination, with the grain-inlet pipe or tube, of a surrounding pipe or tube forming a jet-orifice for the compressed air or gas by which the grain is lifted, said pipes or tubes being elongated or oval in shape at the point of discharge, substantially as described.

2. A grain-conveyer operating by compressed air, gas, or similar means, having an oval or elongated jet-orifice which discharges in the direction of the moving grain, substantially as described.

3. In a pneumatic grain-conveyer, the combination, with the grain-pipe, of two ejectors or jet-orifices, the one directly in advance of the other, substantially as described.

4. The combination of the air-reservoir having a contracted and flattened prolongation or neck, a tube or pipe within the same, also flattened at its upper end, so as to form an oval or elongated jet-orifice, and a second tube or grain-inlet, substantially as described.

5. In a pneumatic grain-conveyer, the combination, with the air-reservoir and delivering-pipe forming a prolongation thereof, of two concentric tubes arranged therein to form two jet-orifices or ejectors, one in front of the others, and both surrounding the grain-orifice, substantially as described.

6. In a grain-conveyer, the combination of an air-reservoir and three concentric tubes flattened at their upper ends and arranged, as specified, to form two oval or elongated jet-orifices, one in advance of the other, substantially as described.

7. The combination, with a central air-reservoir, of two or more grain-pipes, an ejector or jet-orifice in each pipe, and connections for supplying air thereto from said reservoir, substantially as described.

8. In a grain-conveyer, the combination, with two or more grain-delivering pipes comprising each an inclosing air-reservoir, a grain-inlet, and an ejector having an oval discharge-orifice, of a central reservoir supported between said pipes and connected with said first-named reservoirs, substantially as described.

9. The combination of an air-reservoir, one or more delivering-pipes containing each an ejector or ejectors, and means, as specified, for keeping said pipe or pipes in an inclined position, substantially as described.

10. A portable pneumatic grain-conveying apparatus comprising an air-reservoir, a grain-inlet, a delivering-pipe, and an ejector or ejectors, said apparatus being adapted to rest in or upon the material to be transferred, and being constructed and arranged, as specified, to maintain its proper position therein, substantially as described.

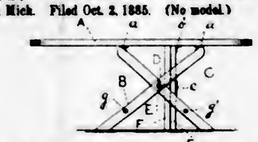
11. The combination of a central air-reservoir and two or more grain-delivering pipes connected therewith and constructed substantially as described, the bottom of said reservoir projecting below the lower ends of the grain-pipes, as and for the purpose set forth.

12. In a pneumatic grain-conveyer, the combination, with the grain pipe or pipes provided each with an ejector, of an air-reservoir connected therewith, said reservoir having a broad under surface adapted to rest upon the grain or material to be transferred, substantially as described.

13. A pneumatic grain-delivering apparatus comprising an air-reservoir, a grain-inlet, an ejector or ejectors, and means, such as specified, to prevent the apparatus sinking too far into the material to be transferred, substantially as described.

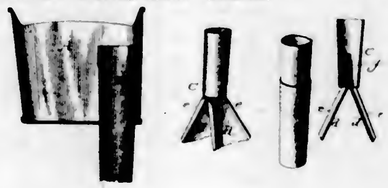
14. A portable pneumatic grain-conveying apparatus comprising the following elements in combination: a main air-reservoir, two or more grain-pipes having each two oval or elongated jet-orifices or ejectors, arranged one in front of the other, and a grain-inlet, short pipes for supplying air to said ejectors from said reservoirs, cocks in said pipes, and means, as specified, for enabling the apparatus to maintain its position in the pile of grain or other material to be transferred, substantially as described.

337,389. **FOLDING IRONING-TABLE.** DANIEL C. FLETCHER, Grand Rapids, Mich. Filed Oct. 2, 1885. (No model.)



Claim.—The combination, with the top A, of the two sets of legs B and C, braced in pairs and hinged at their upper ends to the top A and arranged to pass through each other obliquely downward fore and aft, and provided with the notch D, arranged to receive the brace E, and the legs F F, hinged to the top and arranged to pass each other obliquely downward athwart the top A and through the set C, and having the hinges *c c*, all arranged substantially as described, and for the purposes set forth.

337,390. **HAND PLANTER AND DISTRIBUTER.** HENRY E. FRIES, Salem, N. C. Filed Aug. 13, 1885. (No model.)



337,390.

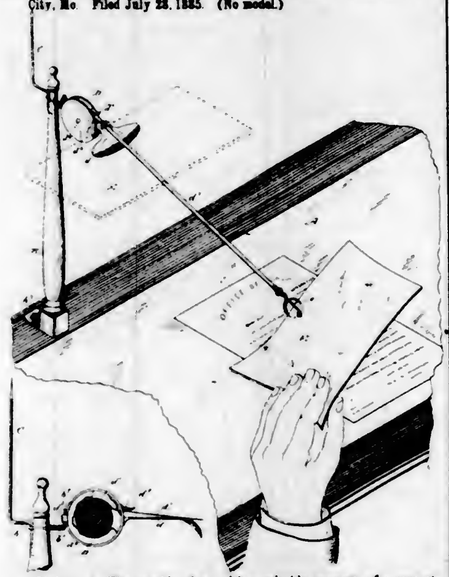


Claim.—1. In a hand-distributer, the combination of a vessel open at its top and a delivery-tube passing through the bottom and terminating a short distance below the top, for the purpose set forth.

2. In a hand-distributer, the combination of vessel A, tube B, and spreader C, composed of wings or plates *d* and *f*, as and for the purpose set forth.

3. In combination with vessel A and its tube B, a detachable spreader consisting of the dividing-plate *f* and lateral wings *d*.

337,391. **BLOTTING-PAD HOLDER.** WALLACE W. GILATT, Kansas City, Mo. Filed July 28, 1885. (No model.)



Claim.—1. The combination, with a suitable support, of a case attached to said support, and recoiling mechanism in said case, of a pad-holder attached to and operated by said recoiling mechanism, a pad upon said pad-holder, and a lip on said case, as and for the purpose described.

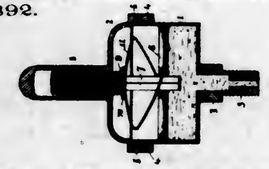
2. The combination, with a suitable support adapted to be attached to a desk, of a case attached to said support, recoiling mechanism in said case, a pad, and a gripping device attached to said recoiling mechanism and said pad.

3. The combination, with a suitable support, of a case attached to said support, recoiling mechanism in said case, a pad-holder attached to and operated by said recoiling mechanism, a pad upon said pad-holder, a lip on said case adapted to support the pad, and a guide on said case above said lip, as shown and described.

4. The combination, with a suitable support upon a desk or table, of a case adapted to receive the pad-holder, and a spring attached to said case and to said support, as described.

337,392. **LUBRICATOR.** RUDOLPH P. GERLACH, Cleveland, Ohio. Filed July 7, 1885. (No model.)

337,392.



Claim.—1. A lubricator having a rotating cap, in combination with a piston having a non-rotating stem, threaded in said cap and forced down by the rotating of said cap, substantially as set forth.

2. In a lubricator, the combination, with a cup and cap forming the casing and capable of turning one on the other, of a stem having a screw-thread at one end for engaging with a corresponding interior screw-thread on said cap, a piston or plunger arranged to have free longitudinal movement on said stem, means for preventing rotary movement of said stem, and a feed-spring, substantially as and for the purpose set forth.

3. In combination with the lubricator cup, piston or plunger, and stem having free longitudinal movement in said piston or plunger and formed with a shoulder or stop, a plate-spring engaging between the shoulder or stop on said stem and the piston or plunger, substantially as and for the purpose set forth.

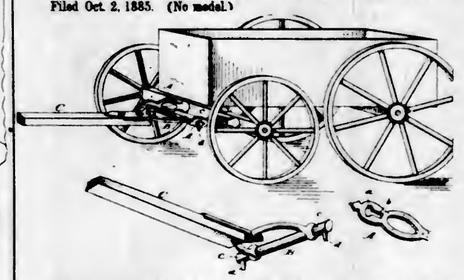
4. In a lubricator, a cap having a threaded neck or threaded opening, in combination with a piston having a stem threaded in said neck and a feed-spring adapted, when the piston is in its extreme outer position, to come in contact with the surface of the cap, substantially as and for the purpose set forth.

5. In a lubricator, the combination of a cap, a stem, and a piston or plunger having square bearing on the stem, the stem and cap being connected, substantially as and for the purpose set forth.

6. In combination with a lubricator cup, cap, piston, and stem connected to the cap, a bent plate-spring having legs resting on said piston on both sides of the stem, substantially as and for the purpose set forth.

7. In combination with a lubricator cup, cap, a piston, a stem connected to the cap and having square bearing in said piston, and feed-spring arranged and adapted to operate substantially as and for the purpose set forth.

337,393. **DRAW-IRON FOR WAGONS.** EUGENE H. GIBBS, Ludlow, Vt., assignor to the Ludlow Toy Manufacturing Company, same place. Filed Oct. 2, 1885. (No model.)



Claim.—1. The axle-irons formed with lateral openings or bearings and communicating-slots, as described, in combination with the draw-iron formed with laterally and outwardly-extending end journals and lugs adapted to pass endwise through said bearings and slots, said lugs being placed at such distance apart that when the journals are in place in the bearings the lugs shall be on the exterior opposite faces of the axle-irons, as and for the purposes hereinbefore set forth.

2. The combination of the wagon-body, the axle-irons provided with bearings and communicating-slots, the tongue or handle, and the draw-iron provided with laterally and outwardly extending journals to enter said bearings, and with lugs to pass through said slots placed at such distance apart that when the draw-iron is in place they shall embrace between them the axle-irons, substantially as and for the purposes hereinbefore set forth.

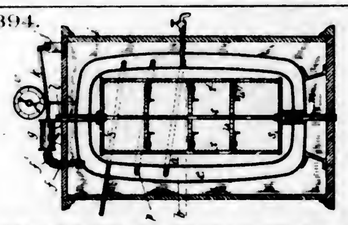
337,394. **REFRIGERATOR.** JOHN GOODALE, Cambridge, assignor to Jay B. Crawford, trustee, Boston, Mass. Filed June 23, 1885. (No model.)

Claim.—1. A storage-chamber, combined with a chamber or chambers entirely independent of the storage-chamber, from which the air is exhausted for refrigerating purposes, as set forth.

2. A refrigerator having a vacuum chamber or chambers arranged, as described, with relation to its storage-chamber and entirely independent thereof, as set forth.

3. A refrigerator having a vacuum-chamber surrounding the storage-

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chamber and entirely independent thereof, and a connection between the upper part of the storage-chamber and the external air, as set forth.

4. A refrigerator having a vacuum-chamber surrounding the storage-chamber and entirely independent thereof, and connections between the lower portions of the storage-chamber and the external air, as set forth.

5. A refrigerator having a vacuum-chamber surrounding the storage-chamber and entirely independent thereof, and an air-pump connected with the vacuum-chamber, as set forth.

6. A refrigerator having a series of vacuum tubes or pipes arranged, as described, with relation to the storage-chamber and entirely independent of said chamber, as set forth.

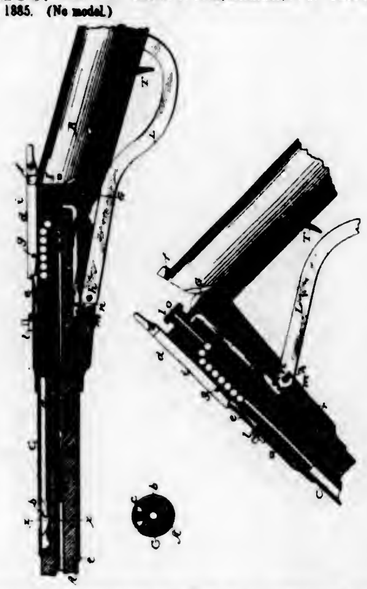
7. A refrigerator having a rotary frame composed of a series of uprights, *t*, and ends *s s*, provided with a series of shelves located between said uprights, as set forth.

8. A refrigerator having a rotary frame with notched uprights and a series of shelves placed between and adjustably secured to said uprights, as set forth.

9. A vacuum-chamber containing a pipe adapted to conduct water through said chamber, as set forth.

10. In a refrigerator, the combination of a series of vacuum tubes or pipes and a storage-chamber, as set forth.

337,395. AIR-GUN. GEORGE P. GUNN, Herkimer, N. Y. Filed Aug. 12, 1885. (No model.)



Claim.—1. In combination with the barrel A, the magazine *a*, more or less of which shall consist of an open groove, and the rotating sleeve C, provided with a hole, *b*, said sleeve being arranged to turn on the barrel and open or close the magazine, substantially as shown and described.

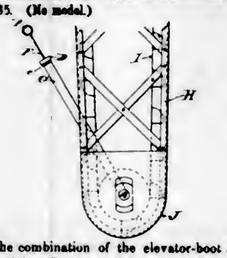
2. In combination with the magazine *a* and the rotating sleeve C, having a hole, *b*, therein, the concave chamber or enlargement c in the magazine, arranged to register with the hole *b* of the sleeve when the latter is turned into position to open the magazine, substantially as and for the purpose set forth.

3. The combination, in a gun, of the magazine *a*, connected to the bore of the barrel by a transverse passage, *i*, and the reciprocating plug I, connected to lever L by the slide J, said parts being constructed and arranged to operate substantially as described, whereby the passage from the magazine to the bore of the gun is automatically opened and closed in the act of swinging the barrel to compress the spring in the stock, as set forth.

4. The combination of the barrel A, having a magazine, *a*, arranged thereon, and connected with the bore thereof by a transverse hole, *i*, with the reciprocating plug I, the slide J, connected to said plug and provided with the teeth *m*, and the lever L, provided with corresponding teeth, *n*, all constructed and arranged for joint operation, substantially as described.

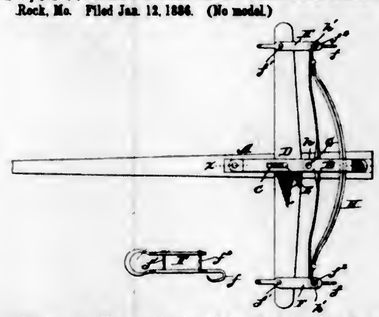
5. The combination, in an air-gun, of a magazine and a barrel with a transverse opening leading from the magazine to the bore of the barrel, and the reciprocating tubular plug arranged to close and open the passage from the magazine to the barrel and admit the air for propelling the projectile, substantially as set forth.

337,396. LUBRICATOR. PHILIP HACKLER, Minneapolis, Minn. Filed July 22, 1885. (No model.)



Claim.—The combination of the elevator-boot J, shaft A in the lower part thereof, box B, surrounding said shaft, and formed with an inclined hole through it radial to shaft A, the inclined pipe C, having its lower end fitted in the inclined hole of the box, the follower E, fitting in said pipe, and having eye *e*, the wire F, having ring *f*, engaging with eye *e*, the cap D, and the roll of grease G, all substantially as described.

337,397. SPRING DOUBLE-TREE. WOODWARD E. HAGARTY, Arrow Rock, Mo. Filed Jan. 12, 1886. (No model.)



Claim.—1. The combination of the pivoted spring, the movable double-tree, and the clevises having the arms pivoted to the ends of the double-tree and of the spring, substantially as described.

2. The combination of the pivoted spring, the double-tree, and the clevises connecting the ends of the spring and double-tree, the said clevises being bent substantially in U form, and having the extending arms formed into hooks, for the purpose set forth, substantially as described.

337,398. SAFETY-STOP FOR ELEVATORS. GEORGE C. HALELAUR, Chicago, Ill. Filed Oct. 19, 1883. (No model.)

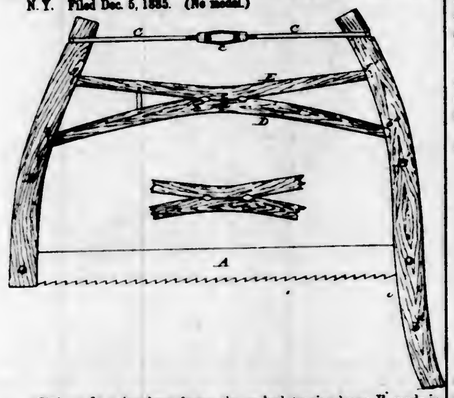


Claim.—1. A safety-catch for elevators, consisting of a casing or housing having a flange portion, A, guide-jaws B B, and pivoted dogs or catches C, with the cross-head D, receiving motion from the safety mechanism of the elevator, substantially as described, and for the purpose set forth.

2. A safety-catch for elevators, consisting of a casing or housing having flange portion A, and guide-jaws B B, in combination with the pivoted dogs or catches C C, having pins *c' c'*, and the cross-head D, having inclined slots *d d*, substantially as described, and for the purpose set forth.

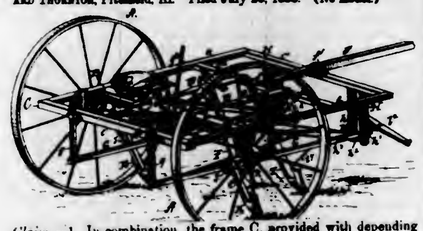
3. In a safety-catch for elevators, essentially as herein described, the casing or housing for the stop dogs or catches, provided with an elongated guide-slot, *a*, in combination with the cross-head D, having a stem, *d*, of an elongated form, moving in said slot, substantially as described, and for the purpose set forth.

337,399. BUCK-SAW FRAME. WILLIAM HASKIN, Sr., Williamsburg, N. Y. Filed Dec. 5, 1885. (No model.)



Claim.—In a handsaw-frame, the arched tension-brace E, made in one piece, constructed to have its convex side sit firmly in the corresponding central cavity of arched cross-bar D, to which it is, moreover, secured by studs, spurs, or straps, and being so shaped or curved that its two ends must enter the recesses of the frame-sides at fixed points *f f*, for the special purpose of allowing thereby the saw to be operated in even balance with the hand either above or below the brace end, all as described and shown.

337,400. WHEEL-CULTIVATOR. ANDREW J. HEAVNER and REUBEN THORNTON, Pittsfield, Ill. Filed July 20, 1885. (No model.)



Claim.—1. In combination, the frame C, provided with depending brackets H at its front end and a slotted cross-piece at its rear end, the beams G, carrying the plows, and provided with sleeve h^4, fitted to their front end, adjustable laterally on the cross-bar of the bracket, and provided with standards *g* at their rear end, the sleeves *g'*, adjustably secured within the slots of the rear cross-piece of the frame, a bar, g^7, mounted on journals in the projecting ends of the bolts of the adjustable sleeves and provided with a lever-handle, and a chain connecting the lever and the plow-beam, substantially as described, and for the purpose stated.

2. In combination with the front shovel-standards secured to the plow-beams and the levers hinged to the top of the frame and formed with slots to receive the projecting upper parts of the plow-standards, the spring secured between the free ends of said levers, with its free ends bearing against the levers, substantially as described, and for the purpose stated.

3. In combination, the seat mounted on the frame of the carriage, the spring secured about the foot of the seat, with its free ends bearing apart, and the levers having one end pivoted to the frame and the other end bearing against the arm of the spring, and having the standards of the forward plows adjustably connected therewith, substantially as described, and for the purpose stated.

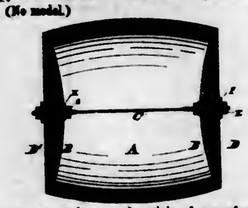
4. The plow-standard consisting of two sections joined together by a metal retaining-bolt at the upper end of the splice, and by a bolt formed with a side projecting lug to fit against the front of the spliced section and pass through a slot in the plow-standard, and secured by a break-pin passed through its projecting and across the rear faces of the splice, substantially as described.

5. The combination of the frame having slots in its rear cross-piece and the plow-beams provided with standards on their rear ends with the adjustable sleeves, provided with threaded bolts and nuts disposed in the slots of the rear cross-piece of the frame, substantially as described, and for the purpose set forth.

6. In combination, the frame having a slotted rear cross-piece, the plow-beams provided with standards on their rear end, laterally-adjustable sleeves having sheaves or sprocket-wheels journaled thereto and provided with bolts disposed in said slots of the frame, the lever-bar mounted in the heads formed on the ends of the sleeve-bolts and provided with sectors, and chains passed over the sectors and the sheaves on the sleeves and fixed to the lever and plow-beam, substantially as described, and for the purpose set forth.

7. The sleeve having a sheave pivotally attached thereto and formed with a threaded projecting bolt provided with a threaded nut, said bolt terminating in a fixed head with a hole set at right angles to the passage in the sleeve, substantially as described.

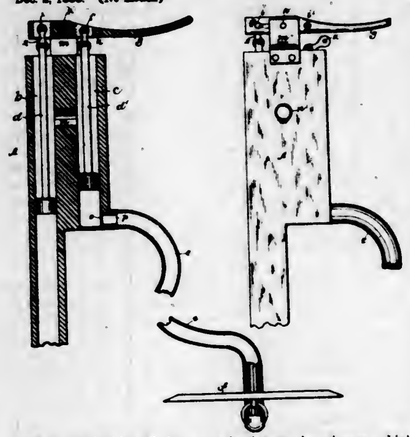
337,401. BEER-CASK. WILLIAM HEBER, Buffalo, N. Y. Filed Dec. 9, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a hogshead, barrel, or similar vessel having heads B B, brace-timbers D D', central rod, C, having enlarged screw ends *d d'*, nuts E and G, and plates and washers F H, the whole being constructed and combined substantially as described, for the purpose specified.

2. In beer hogsheads and barrels, the combination, with the heads B B, of the brace-timbers D D', central rod, C, and fastenings on the ends of said rod, whereby the heads B B may be expanded, and then locked in position, substantially as described, and for the use and purpose stated.

337,402. PUMP. PATRICK D. HIBBS, Summit Station, Ohio. Filed Dec. 2, 1885. (No model.)



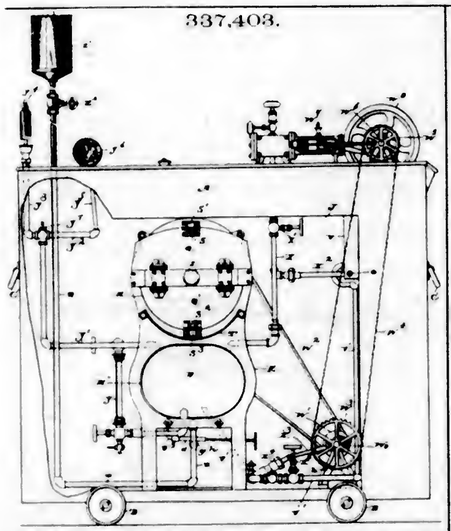
Claim.—A double-cylinder pump having one barrel upon a higher level than the other, in combination with a flexible pipe connecting with the lower end of the shorter pump-barrel, and a float secured to the lower end of said flexible pipe, substantially as and for the purpose specified.

337,403. COFFEE OR PEANUT ROASTER. DANIEL W. HITCHCOCK, Oskaloosa, Iowa. Filed June 25, 1885. (No model.)

Claim.—1. In a roaster for coffee, peanuts, and the like, the roasting-cylinder, in combination with the boiler located beneath the cylinder, the heating devices arranged beneath the boiler, so as to heat the cylinder at the same time, the engine supplied with steam from the boiler, and connecting mechanism between the engine and cylinder, as set forth.

2. The roasting-cylinder, in combination with a boiler located beneath the same, the heating devices arranged and supported under the boiler, the engine supplied with steam from the latter, a pump, and connecting mechanism between the engine, pump, and cylinder, as and for the purpose set forth.

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3. The roasting-cylinder, in combination with cylindrical boiler located beneath the same and made oval in cross-section, and the heating devices arranged and supported under the boiler, for the purpose set forth.

4. The outer casing or frame-work, A, in combination with the inclosing-frame D, located within the casing, and the roasting-cylinder and boiler, supported one above the other by means of the frame D, as and for the purpose set forth.

5. The outer casing, A, in combination with the frame D, located within the casing, the roasting-cylinder and boiler, supported one above the other by the frame D, the heating devices arranged under the boiler, the horizontal shaft W, mounted on the bottom of the casing A, and the engine connecting with the shaft W, said engine being supplied with steam from the boiler, and connecting devices between the shaft W and the roasting-cylinder, as set forth.

6. The casing A, in combination with the frame D, located within the same, the roasting-cylinder and boiler, supported one above the other by the frame D, the burners arranged under the boiler, the vertical pipe Z, and reservoir Z' for supplying the burners, the horizontal shaft W, mounted on the bottom of the casing A and connecting with the roasting-cylinder, a pump having the piston actuated by the shaft W, the water-reservoir V, supported within the casing, the pipe V', connecting the boiler and reservoir and communicating with the cylinder of the pump, and the engine supported on the top of casing A, supplied with steam from the boiler, and having a suitable connection with the shaft W, as set forth.

7. The roasting-cylinder, in combination with the boiler located beneath the same and provided with a series of vertical flues, and the heating devices arranged under the boiler, whereby the flame and heat from said heating devices will be caused to ascend through the flues, heat the water in the boiler, and also act upon the roasting-cylinder, as set forth.

8. The roasting-cylinder, in combination with the boiler located beneath the same, vertical flues provided in the boiler, and an inclosing-frame around the cylinder and boiler, forming a hot-air space or chamber, for the purpose set forth.

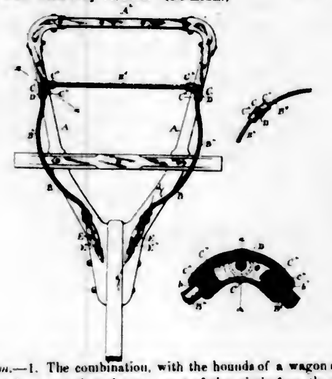
9. The roasting-cylinder, in combination with the supporting-frame, the bar extending across the open end of the cylinder, the lower door Q, and the upper door, Q, provided with side flanges to work over the supporting-frame and catch against the same when the limit of movement for the door is reached, as set forth.

10. The roasting-cylinder, in combination with the boiler located beneath the same, and the inclosing-frame D, comprising the heads or ends E E', and the plate F, connected to the ends and extending over the top of the cylinder and the sides of the boiler, so as to provide a hot-air chamber or space, as set forth.

11. In a roasting-machine, the outer casing, A, in combination with the inclosing-frame D, comprising heads or ends E E', and the connecting-plate F, the openings H H², provided in the heads or ends, cross-bars I I', extending across the top openings, H H², of heads E E', the annular flange or rim L, provided around the opening H, to support the open end of the roasting-cylinder and working in the cross-bar I, and a hand-wheel, P, mounted on the shaft, as set forth.

12. The roasting-cylinder, in combination with the boiler arranged under the same and provided with a series of vertical flues, a series of burners located beneath the boiler and coming on a line with a number of the flues, and a suitable reservoir to contain the burning-fluid, for the purpose set forth.

337,404. CIRCLE-IRON FOR WAGONS. NATHAN L. HOLMES, Racine, Wis. Filed July 11, 1885. (No model.)



Claim.—1. The combination, with the hounds of a wagon and two circle-posts for supporting the rear part of the circle from the hounds, of a circle comprising two side bars connected at their front ends with the hounds and at their rear ends with the posts, and a transverse bar located between the said posts, said several bars being attached to the posts by screw-connections, substantially as described.

2. The combination, with the hounds of a wagon, of posts, each provided with two screw-threaded sockets, and a circle comprising two side bars and a rear transverse bar, said several bars having their ends screw-threaded and engaged with the said sockets, substantially as described.

3. The combination, with the hounds, of two circle-posts for supporting the rear portion of the circle from the hounds, castings E, for connecting the forward ends of the side bars with the hounds, and a circle comprising two side bars and a rear transverse bar, said several bars being connected at their ends with the said posts and castings by screw-threaded joints, substantially as described.

4. The combination, with the hounds and a circle made in two or more parts screw-threaded upon their adjacent ends, of a circle-post provided with a longitudinal bolt-aperture, and with screw-threaded sockets to receive the adjacent ends of the parts of the circle, and a bolt inserted through the post and hounds, substantially as described.

5. The combination, with the hounds and a circle made in two or more parts, of a circle-post provided with projecting parts C' C', cast hollow and provided with screw-threaded sockets c' c', the adjacent ends of the parts of the circle being screw-threaded to engage said sockets substantially as described.

6. The combination, with the hounds and a circle made in two or more parts screw-threaded upon their adjacent ends, of a circle-post having a longitudinal bolt-passage, c, and provided upon its upper end with lateral projections C' C', formed upon a continuous curve, cast hollow and having screw-threaded sockets c' c', and a bolt for securing said post to the hounds, substantially as described.

7. The combination, with the hounds and a circle screw-threaded upon its forward ends, of castings E, for connecting the circle with the hounds, said castings being provided with parts E', for attachment to the hounds, and having screw-threaded sockets at their upper ends for engagement with the ends of the circle, substantially as described.

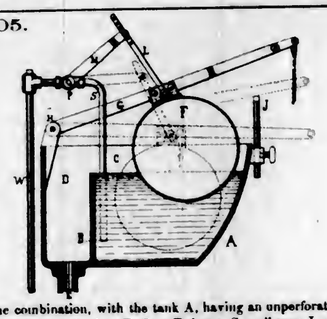
8. The combination, with the hounds and a circle screw-threaded upon its forward ends, of castings E, for connecting the circle with the hounds, said castings being cast hollow and provided with screw-threaded sockets e, and having parts E', for attachment to the hounds, substantially as described.

9. The combination, with a circle made cylindric and screw-threaded at its ends, and posts or other supports for the circle, provided with sockets for the ends of the circle, said sockets being screw-threaded in a portion of their length only, and constructed to extend over the adjacent unthreaded parts of the circle, substantially as and for either any or all of the purposes set forth.

337,405. WATER-CLOSET TANK. PHILIPPE G. HUBERT, New York, N. Y. Filed Nov. 30, 1885. (No model.)

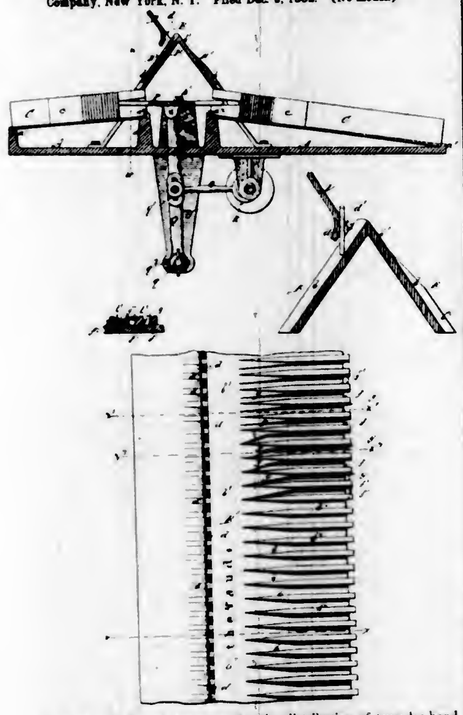
Claim.—1. The combination, with a tank, A, having the unperforated dam B and unobstructed pipe, E, float F, lever G, and pull-rod I, arranged substantially as described, of adjustable stop J, for regulating the amount of water discharged at each pull, in the manner herein set forth.

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2. The combination, with the tank A, having an unperforated dam, B, and an unobstructed pipe, E, float F, lever G, pull-rope I, and stop J, arranged substantially as herein set forth, of link L, lever M, stop-cock P, pipe W, and pipe S, arranged to operate as and for the purpose herein specified.

337,406. TYPE-DISTRIBUTING APPARATUS. LOUIS K. JOHNSON and A. AUGUSTUS LOW, Brooklyn, assignors to the Alden Type Machine Company, New York, N. Y. Filed Dec. 6, 1882. (No model.)



Claim.—1. In an apparatus for the distribution of type by hand, a duplex receiving table or bank of type-receiving conduits consisting of two plates or series of conduits arranged at suitable inclined and opposed angles, back to back, with their upper or receiving extremities in proximity, for the purpose and substantially in the manner herein set forth.

2. In an apparatus for the distribution of types by hand, having a duplex receiving-bank consisting of conduit-plates placed back to back with their upper edges adjoining each other, substantially as described, the combination and arrangement of the left-hand conduit-plate, B², formed with a receiving-surface, D', extending upward at substantially the same angle as that of the receiving-surface of the right-hand conduit-plate, B, and the said right-hand plate, B', formed with a smooth unobstructed receiving-surface above the upper ends of its conduit-walls in proximity to the receiving-plate D for the left-hand conduit-plate, B², for the purpose and substantially in the manner described.

3. In an apparatus for the distribution of type by hand, the combination, with a duplex receiving table or bank, of receiving-conduits, substantially such as herein designated, of a type-receiving surface or plate adapted to receive and conduct the types for one side of the duplex conduit-bank into their respective conduits, made adjustable with relation to the upper extremities of the latter, substantially in the manner described.

4. In an apparatus for the distribution of type by hand, the combination, with a duplex receiving table or bank, of receiving-conduits, substantially such as herein designated, of a type-receiving surface or plate adapted to receive and guide the types for one side of the duplex conduit-bank into their respective conduits, formed with slots or recesses coinciding with conduits underneath, while the side walls of the said slots or recesses coincide with the side walls of the said underlying conduits, substantially in the manner and for the purpose herein set forth.

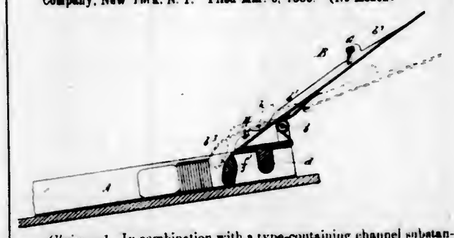
5. In an apparatus for the distribution of type by hand, the combination, with a duplex receiving table or bank, of receiving-conduits, substantially such as herein designated, of a type-receiving surface or plate adapted to receive and conduct the types for one side of the duplex conduit-bank into their respective conduits, formed with slots or recesses coinciding with the conduits underneath, said slots or recesses being provided with downwardly-projecting tongues or continuations of the receiving surface or floor, substantially in the manner and for the purpose set forth.

6. In a type-distributing apparatus, the combination of the right and left hand conduit-plates B' B², placed back to back with their upper edges in proximity, the horizontally-reciprocating double comb-pusher arranged underneath the said plates, and the type-containing channels C, the whole arranged and operating substantially in the manner and for the purpose described.

7. In an apparatus for the distribution of type by hand, the combination, with a duplex receiving table or bank, of receiving-conduits, substantially such as herein designated, of a reciprocating double-comb pusher or type-forwarding device situated underneath the duplex bank and operating alternately upon opposite sides thereof, substantially in the manner described, actuated by a lever having an adjustable connection with the device imparting the stroke or reciprocal movement, and provided with an adjustable fulcrum, for the purpose and substantially in the manner herein set forth.

8. In an apparatus for the distribution of type by hand, a type-conduit adapted to receive a type having one of its flat or broad sides downward, formed with a bottom or floor that gradually decreases in width on one side until insufficient to support a type in the position in which it was received, in combination with an adjoining parallel depression or narrow passage adapted to receive the type from the said contracted floor and to conduct it upon its edge to the containing-channel, substantially in the manner and for the purpose set forth.

337,407. TYPE-DISTRIBUTING APPARATUS. LOUIS K. JOHNSON and A. AUGUSTUS LOW, Brooklyn, assignors to the Alden Type Machine Company, New York, N. Y. Filed Mar. 6, 1885. (No model.)



Claim.—1. In combination with a type-containing channel substantially such as designated, a vibrating type-receiver adapted to conduct types into the said channel and pivotally supported with relation thereto in such manner that its vibrations will forward the types, substantially in the manner and for the purpose described.

2. In combination with a type containing channel and a type-receiving conduit capable of vibration for the purpose and substantially in the manner described, a coupling-plate constructed substantially in the manner and for the purpose described.

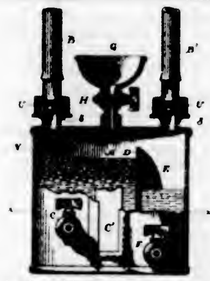
3. In combination with a type-containing channel and a type-receiving conduit capable of vibration for the purpose and substantially in the manner described, a retractile device for returning the receiving-conduit to its normal position, substantially in the manner and for the purpose described.

4. In a type-receiving conduit substantially such as designated, a hinged guard or type-turning device, arranged and operating substantially in the manner and for the purpose described.

337,408. DEVICE FOR PREVENTING THE FREEZING OF GAS IN PIPES. JOHN E. KEARNS, Peoria, Ill. Filed May 2, 1885. (No model.)

Claim.—1. In a means for preventing the freezing of gas in pipes, the vessel V, divided into two chambers by the vertical partition D, one of which chambers forms the alcohol-reservoir, and the other of which

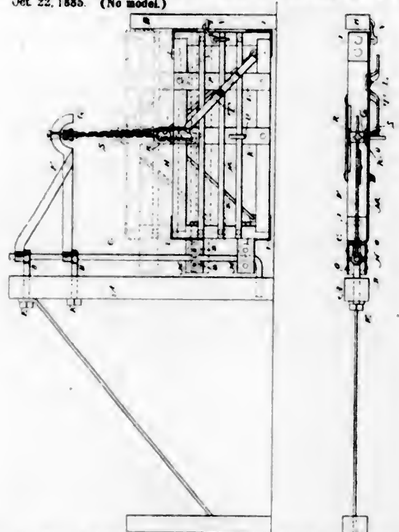
337,408.



the drip-cup, in combination with the two sections of gas-pipe B B', opening into said vessel at widely-separate points in the top thereof, the outflow-section B', having its mouth located directly over said drip-cup, substantially as and for the purpose specified.

2. The vessel V, divided into the reservoir A and drip-cup E by the incomplete vertical partition D, the cock F, opening from said drip-cup, and means for permitting the introduction of alcohol into said reservoir, in combination with the two sections of gas-pipe B B', opening into the top of said vessel, substantially as set forth.

337,409. GATE. ISAIAH H. KEPLER, New Hampton, Iowa. Filed Oct. 22, 1885. (No model.)



Claim.—The combination of the post A, having the vertical rod C, the swinging arm F, pivoted on the upper end of the said rod and having the sheave G at its outer end, the gate having the brackets N at its inner end, and rollers O in the said brackets, to bear upon and embrace the rod C, and thereby pivot the gate to the said rod, to permit it to be raised or lowered thereon, the bail attached to the lower rail of the gate, the lever fulcrumed to the gate, the stop for the said lever, and the chain hooked to the bail, passed over the sheave, and attached to the lever, to suspend the gate from the swinging arm, substantially as described.

337,410. PORTABLE TOBACCO-PRESS. HENRY W. KIMBALL, Wallsburg, Ohio. Filed July 13, 1885. (No model.)

Claim.—1. In a portable tobacco-press, the combination of a head-block and platform, sectional standards, and means of coupling the same, substantially as described.

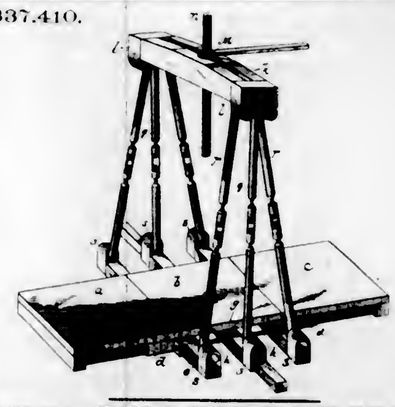
2. In a portable tobacco-press, the combination, with a head-block and platform, of vertically-adjustable standards, substantially as described.

3. In a portable tobacco-press, the combination, with a head-block, of vertically and laterally adjustable standards, substantially as described.

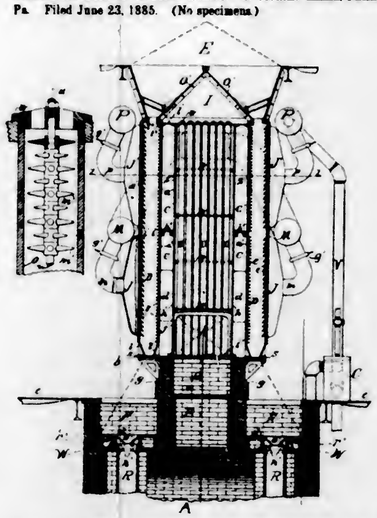
4. In a portable tobacco-press, the combination, with a head-block, of laterally-adjustable standards, substantially as described.

5. In a portable tobacco-press, the combination of the main platform *b*, supplemental platforms *a* and *c*, the sills, tie-rods, and angle-irons, whereby a "knockdown" combination-platform is produced, substantially as described.

337,410.



337,411. PROCESS OF UTILIZING THE WASTE HEAT FROM BONE-BLACK-REVIVIFYING KILNS. S. MORRIS LILLIE, Philadelphia, Pa. Filed June 23, 1885. (No specimens.)



Claim.—1. The within-described process of utilizing the heat in the gaseous products of combustion escaping from the furnaces of bone-black-revivifying kilns containing retorts for the bone-black heated externally by the said furnace, consisting in passing the products of combustion, after leaving the kiln-furnace, through wet black to dry the same before and preparatory to its introduction into the retorts of the kiln, substantially as specified.

2. The within-described process of cooling the gaseous products of combustion of the char-revivifying kilns of sugar-refineries preparatory to drawing them through bone-black for the drying of the same, consisting in mixing with them a proportion of cooler air, substantially as specified.

3. The within-described process of cooling the gaseous products of combustion of the char-revivifying kilns of sugar-refineries preparatory to drawing them through bone-black for drying the same, consisting in mixing with them a proportion of air which has been laden with moisture by being drawn through wet black or otherwise, substantially as specified.

4. The process of drying bone-black preparatory to passing it through the retorts of a kiln, consisting in first drawing through it the gaseous products of combustion from the kiln, by which it is partially dried, and then in additionally drying it by drawing through it the warm air from around the kiln, substantially as specified.

5. The process of utilizing the gaseous products of combustion from bone-black-revivifying kilns, consisting in using them first in a surface-heater for heating air, and in then passing the partially-cooled products of combustion through moist black for the purpose of drying the same, substantially as specified.

6. The within-described process of utilizing the waste heat of bone-black-revivifying kilns for drying black, consisting in drawing the warm air from around the exterior of the kiln through moist black, in then drawing the moistened and more or less cooled air through a surface-heater, in which it is reheated by the products of combustion from the kiln, and in finally passing the reheated air again through moist black, either by itself or mixed with the products of combustion, substantially as specified.

7. The within-described method of increasing the absorbent power for radiant heat of air which is to be heated in a surface-heater, consisting in moistening the air before passing it through the heater.

8. The process of utilizing the waste heat from the bone-black-revivifying kilns of sugar-refineries, consisting in drawing separately through the black the heated air rising from around the kiln, cooler-tubes, &c., and air heated by the waste products of combustion, substantially as specified.

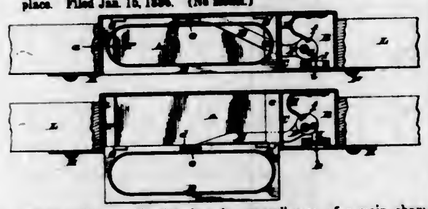
9. The within-described process of removing the vapors generated in the retorts of bone-black kilns, consisting in exhausting the vapors from the retorts through a suitable connecting main or mains, substantially as specified.

10. The process of utilizing the steam generated in the retorts of a bone-black-revivifying kiln, consisting in collecting the steam from the various retorts and in using it in suitable condensers or evaporating apparatus for heating water or for heating or evaporating sugar solutions, substantially as specified.

11. The employment of an artificial draft for the fire of a bone-black-revivifying kiln when the products of combustion from the same are cooled in a surface-heater in heating air, vapors, or gases, which are to be drawn through moist bone-black to dry the same preparatory to being passed through the retorts of the kiln, substantially as specified.

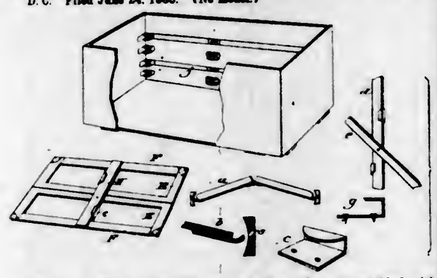
12. The process of compensating for the differences in the effectiveness of the various retorts of a kiln in burning black, consisting in delivering the black in a drier condition to the less effective retorts than to the more effective ones, substantially as specified.

337,412. DRAWER-PULL. WILLIAM LOSEE, Covington, Ky., assignor of two-thirds to Thomas Haswaring and Henry Berndt, both of same place. Filed Jan. 16, 1886. (No model.)



Claim.—The combination, in a drawer-pull case, of a main chamber, A, and secondary chamber B, in line with each other, and separated by a partition, C, the chamber A having a reciprocating handle, D, housed within it, which handle is slotted longitudinally at *d*, to admit the pin *e* of throwing-lever E, the latter being hung upon a pivot, G, of chamber B, and provided with a hub, F, notched at *f*, to admit the free end of a spring, H, said hub being furnished with a push-piece, *i*, accessible through an opening, *k*, of the slotted face-plate K N, and suitable stops, O O', being applied to the pull D, which latter is guided by the end *a* and partition C of said case A B, as herein described.

337,413. INSIDE TRUNK-BRACE. JACOB M. MARCH, Washington, D. C. Filed June 24, 1885. (No model.)



Claim.—1. The combination, with the hinged brace provided with the shank having an upwardly-turned tongue, the keeper H, and clasp C, of a socket attached to the sides of the trunk and provided with the aperture or socket having the retaining-shoulder, substantially as set forth, and for the purposes described.

2. In a trunk, a side bearing for the brace, provided with the aperture or socket having an upwardly-sloping retaining-shoulder, substantially as described, and for the purposes set forth.

3. The combination of a hinged brace provided with the shank having an upwardly-inclined tongue, and a concaved side socket or bearing having an upwardly-sloping retaining-shoulder, substantially as set forth, and for the purposes described.

4. In a trunk, the combination corner-brace and bearing provided with the concaved surfaces for the hinged brace, as set forth, and for the purposes herein described.

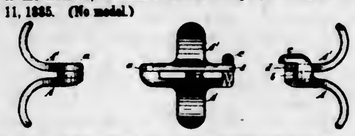
5. The combination of the hinged brace with the corner-braces, having concaved bearing-surfaces for the said hinged brace, all substantially as set forth, and for the purposes described.

6. The right-angle brace, in combination with an independent concaved side bearing extending the length of the trunk, and provided with the aperture or socket having the retaining-shoulder, substantially as set forth, and for the purposes described.

7. The combination of the hinged brace with the right-angle braces and the independent side bearings extending the length of the trunk, and provided with the aperture or socket having the retaining-shoulder, substantially as set forth, and for the purposes described

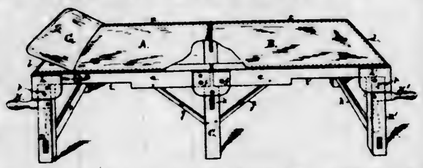
8. A trunk provided with inside corner-braces having the concaved bearings, the longitudinal and concaved side bearings or clasps provided with apertures or sockets having the retaining-shoulders, and the hinged brace provided with the upwardly-turned tongue, substantially as described, the clasp c, and the over-bar H, substantially as described, and for the purposes set forth.

337,414. REIN-HOLDER. DAVID MCCANCE, Newark, N. J., assignor to the Hanford, Peckham & McCance Company, same place. Filed June 11, 1885. (No model.)



Claim.—A band-piece for a rein, consisting of two parts, each provided with a bearing for the fingers made integral therewith, said parts being provided with flat surfaces adapted to receive a rein between them, and hinged together at one side so that one may be swung aside in a plane parallel with said surfaces, in order that a rein may be laid upon the other of said parts, a projection upon one of said parts extending above the flat surface thereof referred to and against the rein, and an interlocking device upon the side of the parts opposite the hinge, for securing the parts together about the rein, substantially as specified.

337,415. PORTABLE FOLDING CAMP-BEDSTEAD. JOHN MCKEOUGH, Burlington, Vt. Filed May 4, 1885. (No model.)



Claim.—1. In a portable folding bedstead, the combination of the sections A and B, having legs D D' pivoted to their outer extremities, the legs being provided with pivoted handles H H', the legs C C, having hinged braces *g g* connecting them with the side pieces, *a a* and *c c*, the whole being constructed and arranged in the manner substantially as and for the purposes set forth.

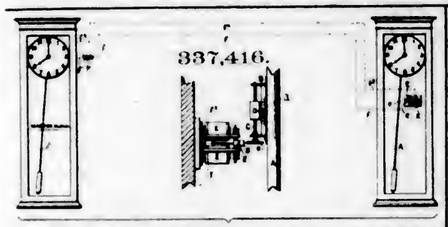
2. The combination of the sections A and B, pivoted to the plates *e*, attached to the center legs, C C, so that they can be folded down against the legs C C, and having their side pieces suitably recessed at *i i* to receive the folding legs D D', the legs C being provided with hinged braces *g g*, to more firmly secure the sections A B in a horizontal position, and the legs D D' having pivoted handles H H', substantially as described.

3. In a folding bed, the section A, provided with side pieces, *a*, having the recesses *i*, the metallic plates A, secured to the corners of the section, the legs D, adapted to be folded into the recesses *i*, the metallic plates *e*, and legs C, substantially as shown.

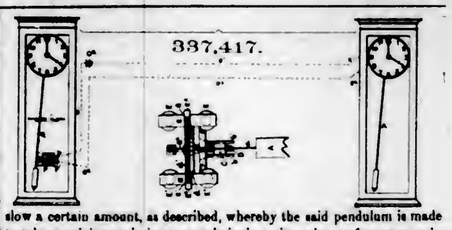
4. In a folding bed, the section B, provided with side pieces, *c*, having recesses *i'* in their lower edges, the legs D', metallic plates A', attached to the outer ends of the side pieces, the plates *e*, and legs C, the parts being arranged to operate substantially as described.

337,416. MEANS FOR REGULATING PENDULUM-CLOCKS FROM A DISTANCE. GEORGE W. HILLARD and JOSEPH H. CLARKE, Providence, R. I., assignors to the Synchronous Time Company of Portland, Me. Filed Nov. 10, 1884. (No model.)

337,416.



337,417.



Brief.—Vibrations of the pendulum of the secondary clock kept synchronous with those of the master-clock by devices actuated by electric connections controlled by the latter, which, at predetermined times, act to raise or lower the center of oscillation as may be required to accelerate or retard the beat.

Claim.—1. The combination, with a pendulum of a clock, of suitable means, substantially as described, whereby its center of oscillation may be raised and lowered, suitable mechanism, substantially as described, for working the said means, and suitable means, substantially as described, for operating the said mechanism from a distance, whereby the pendulum may be made to take a gaining or a losing rate relatively to its prior performance, substantially as set forth.

2. The combination, with a clock to be regulated, of means, substantially as described, located upon the pendulum, whereby its center of oscillation may be raised and lowered, an electro-magnet, and a tooth, *e*, normally held out of position to engage the said means on the pendulum, and adapted to be moved by said magnet into a position to engage the said means, as described, and a master-clock provided with suitable circuit-closing mechanism, as described, electrically connected with said magnet, whereby the tooth *e* may be brought into a position to operate the said means on the pendulum for changing its center of oscillation, substantially as set forth.

3. The combination, with a clock to be regulated, of a weight, D, screw C, and toothed wheel *c*, located upon the pendulum thereof, an electro-magnet having a tooth, *e*, on its armature-bar, which tooth is normally held out of position to engage the wheel *c*, and a master-clock provided with suitable circuit-closing mechanism, as described, electrically connected with said magnet and operated by said master-clock, whereby the tooth *e* can be brought into the path of movement of the wheel *c* at predetermined times, and be held in such position for a definite time, substantially as and for the purposes specified.

4. The combination, with the pendulum-rod A, of a weight, D, screw C, and toothed wheel *c*, a lever or bar having a tooth, *e*, which tooth is arranged, as described, so as to be brought into the path of movement of the wheel *c*, and suitable means, as described, for holding said tooth out of the path of movement of said wheel, substantially as set forth.

5. The combination, with a clock-pendulum, of a supplemental weight swinging therewith and adapted to be raised and lowered thereon, and suitable means, substantially as described, for raising and lowering the said weight, whereby the center of oscillation of the pendulum may be changed while the pendulum is in motion, substantially as set forth.

6. The combination, with a pendulum, of suitable means, substantially as described, whereby its center of oscillation may be raised and lowered, and suitable mechanism, substantially as described, normally held out of position to effect a change in the center of oscillation of the pendulum, and adapted as described, to be moved into a position to cause such change, substantially as set forth.

7. In a system for regulating clocks, an electric circuit, a master-clock in said circuit, mechanism operated by the master-clock to close said circuit at predetermined intervals, one or more secondary clocks, also in said circuit, provided with mechanism actuated by changes in said circuit, whereby the center of oscillation of the pendulum of said secondary clock or clocks is raised or lowered, all substantially as described.

337,417. MEANS FOR REGULATING PENDULUM-CLOCKS FROM A DISTANCE. GEORGE W. MILLARD and JOSEPH H. CLARKE, Providence, R. I., assignors to the Synchronous Time Company of Portland, Me. Filed Dec. 5, 1884. (No model.)

Brief.—Electric devices controlled by a master-clock and so connected with the pendulum of the secondary clock that its vibrating length may be automatically varied to cause acceleration or retardation, as may be required.

Claim.—1. The combination, with the pendulum of a clock to be regulated, of a block, C, arranged, as described, to slide upon the pendulum, a screw, D, provided with a wheel for raising and lowering said block, the electro-magnets E E', having pawls connected to their armatures for turning the said wheel in opposite directions, a movable bar, O, suitable means, as described, for moving said bar from a distance, and mechanism, substantially as described, for electrically connecting said bar with the magnets E or E', if the clock to be regulated be fast or slow a certain amount, as described, whereby the said pendulum is made to take a gaining or losing rate relatively to its prior performance, substantially as set forth.

2. The combination, with the pendulum of a secondary clock or a clock to be regulated, of a block, C, arranged, as described, to slide upon the pendulum, a screw, D, provided with a wheel for raising and lowering said block, the electro-magnets E E', having pawls connected to their armatures for turning the said wheel in opposite directions, an electro-magnet, O', having an armature-bar, O, mechanism, substantially as described, for electrically connecting said bar with the magnets E and E', as described, a master-clock, and mechanism, substantially as described, for automatically electrically connecting said master-clock with the magnet O' at predetermined times, substantially as and for the purposes specified.

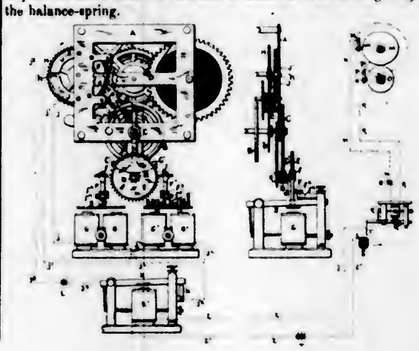
3. The combination, with the pendulum of a secondary clock or a clock to be regulated, of a block, C, arranged, as described, to slide upon the pendulum, a screw, D, provided with a wheel for raising and lowering said block, the electro-magnets E E', having pawls connected to their armatures for turning the said wheel in opposite directions, an electro-magnet, O', having an armature-bar, O, the disk or arm J, arranged, as described, to be rotated by the clock to be regulated, means, substantially as described, for electrically connecting the said disk or arm to the magnets E E' and bar O, a master-clock, a magnet, P, having its armature-bar furnished with springs *p p'*, electrically connected with the magnet O', and adapted to be brought into the path of movement of the master-clock pendulum, as described, the disks or arms R T, arranged to be rotated by the master-clock, as described, and suitable means, as described, for electrically connecting the disks or arms R T with the magnet P at predetermined times, whereby the master-clock may automatically regulate the secondary clock, substantially as set forth.

4. The combination, with the pendulum of a clock, of a block adapted to be raised and lowered thereon, to thereby change the center of oscillation of the pendulum by increasing or diminishing its vibrating length, suitable means, substantially as described, for raising and lowering said block, suitable mechanism, substantially as described, for moving the said means in opposite directions, suitable means, substantially as described, for operating from a distance the said means employed for raising and lowering the said block, whereby the vibrating rate of the pendulum relatively to its prior performance may be changed, substantially as described.

5. The combination, with a clock-pendulum, of a block adapted to be raised and lowered thereon, to increase and decrease the vibrating length of the pendulum, as described, a screw and wheel for raising and lowering said block, a pair of pawls for turning the wheel in opposite directions, as described, and suitable means, substantially as described, for operating the said pawls from a distance, substantially as set forth.

337,418. MEANS FOR REGULATING MARINE CLOCKS FROM A DISTANCE. GEORGE W. MILLARD, Providence, R. I., and JOSEPH H. CLARKE, Boston, Mass., assignors to the Synchronous Time Company of Portland, Me. Filed Feb. 2, 1885. (No model.)

Brief.—Electric devices controlled by a master-clock and applied at predetermined times to increase or diminish the vibrating length of the balance-spring.



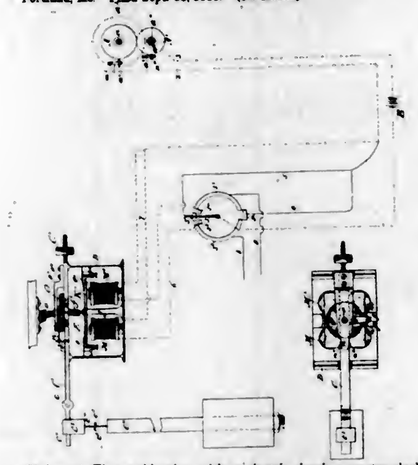
Claim.—1. The combination, with the regulator of a time-piece having a balance wheel and spring, of suitable means, substantially as described, for moving the regulator in opposite directions, suitable mechanism, substantially as described, for working the said means, and suitable means, substantially as described, for operating the said mechanism from a distance, whereby a change in the vibrating length of the balance-spring may be effected from a distant place and the time-piece be made to take a gaining or a losing rate relatively to its prior performance, substantially as set forth.

2. The combination, with the regulating member of a time-piece, of suitable means, substantially as described, co-operating with said regulating member, whereby the time-piece may be made to take a gaining or losing rate relatively to its prior performance, suitable electrical mechanism, substantially as described, for operating the said means, and the segments or plates J J', and spring or device *h*, for closing a circuit through said mechanism, substantially as and for the purposes specified.

3. The combination, with the regulating member of a time-piece, of suitable means, substantially as described, for moving said member in opposite directions, suitable electrical mechanism, substantially as described, for operating the said means, the segments or plates J J', and spring or device *h*, for closing a circuit through said mechanism, a bar, K, and a spring or device, *k*, normally held out of engagement with each other and adapted to be brought into contact, and suitable means, substantially as described, for bringing the bar K and device *k* in engagement from a distant place, substantially as and for the purposes specified.

4. The combination, with the balance-spring of a time-piece, and a regulator for increasing and decreasing the vibrating length of said spring, of suitable means, substantially as described, for moving the regulator in opposite directions, a pair of pawls for operating said means, and suitable means, substantially as described, for working the said pawls from a distance, substantially as set forth.

337,419. APPARATUS FOR REGULATING PENDULUM-CLOCKS FROM A DISTANCE. GEORGE W. MILLARD, Providence, R. I., and JOSEPH H. CLARKE, Boston, Mass., assignors to the Synchronous Time Company of Portland, Me. Filed Sept. 18, 1885. (No model.)



Claim.—1. The combination, with an electric circuit, a master-clock, and means, substantially as described, controlled by the master-clock, to close said circuit at predetermined intervals, of a lever pivoted within the secondary clock and controlling the regulating member thereof, mechanism, controlled by changes in the circuit, for raising and lowering the said lever, and segmental contact-pieces and contact-pointer located in the circuit and governing the transmission of the changes in the circuit caused by the master-clock, as set forth.

2. The combination, with an electric circuit, a master-clock, and means, substantially as described, operated by the master-clock, for closing said circuit at predetermined intervals, of segmental contact-pieces located in said circuit, a contact-pointer co-operating with the segmental contact-pieces and determining the transmission of the changes in the said circuit caused by the master-clock, to actuate mechanism controlling the regulating member of a secondary clock, and to actuate hand-setting mechanism in said secondary clock independently, as set forth.

3. An electric circuit, circuit-changing devices in said circuit, a contact piece or pointer connected with one terminal of said circuit, and segmental contact-pieces, over which the contact-pointer contignously travels, said segmental contact-pieces determining the transmission of the current back to the main line, or to such various branch circuits connected with the members of the segmental contact-pieces as the contact-pointer may be in contact with at the time the circuit-changing device is operated, as set forth.

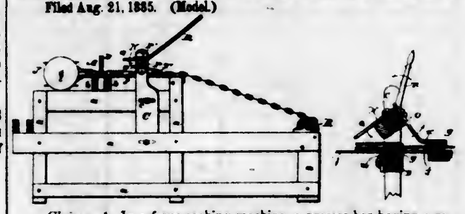
4. The lever C, pivoted within a clock and controlling the regulating member thereof, combined with the gear-wheel O, having a screw-threaded hub, and the worm *o*, upon which said gear-wheel rotates, thereby raising or lowering the said lever C, as set forth.

5. The lever C, having the arm *c'*, supporting the pendulum-rod, combined with the gear-wheel O, overhanging piece *o'*, worm *o*, compound pawl n^3 n^4, and means, substantially as described, for normally keeping said pawl out of engagement with the gear-wheel O, magnets M M', its armature E E', controlling the engagement of the compound pawl n^3 n^4, as set forth.

6. The lever C, pivoted within the clock, the arm *c'*, supporting the pendulum-rod, and the counterbalancing-weight C', combined with the gear-wheel O, having a screw-threaded hub, and the worm *o*, upon which said gear-wheel rotates, thereby raising or lowering the said lever C, as set forth.

7. The lever C, having the arm *c'*, controlling the regulating member of a time-piece, combined with the frame D, suspended from said lever C, the magnets M M', compound armature E E', and the controlling-springs *e e'*, the upright *f*, and pawl n^3 n^4, bent lever *n n'*, the springs n^2, toothed gear O, and worm *o*, all constructed and arranged substantially as described.

337,420. FENCE-MAKING MACHINE. ELI MILLER, Canton, Ohio. Filed Aug. 21, 1885. (Model.)



Claim.—1. In a fence-making machine, a presser-bar having a reciprocating rotary movement and an actuating-lever, substantially as described, and for the purpose set forth.

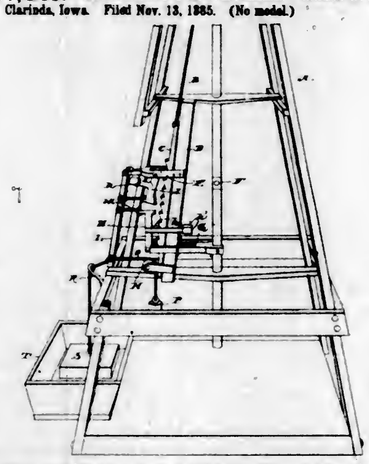
2. In a fence-making machine, the combination of the presser-bar N, the drivers Q, and the actuating-lever R, substantially as described, and for the purpose set forth.

3. In a fence-making machine, the combination of an adjustable frame composed of the cross-bar D, adjustable plate W, adjustable side pieces, C, and the presser-bar N, substantially as described, and for the purpose set forth.

4. In a fence-making machine, the combination, with the presser-bar N, the adjustable journal-box P, and spring P^2, substantially as described, and for the purpose set forth.

5. In a fence-making machine, the combination of the presser-bar N, the adjustable drivers Q, actuating-lever R, and the adjustable stops T, substantially as described, and for the purpose set forth.

337,421. ATTACHMENT FOR WINDMILLS. GEORGE W. MILLER, Clarinda, Iowa. Filed Nov. 13, 1885. (No model.)



Claim.—1. The combination of the movable ratchet-bar, the reciprocating plunger-rod, the detent for engaging with the ratchet-bar, the

pawl connected to the plunger-rod and reciprocated thereby, and the lever L, connected to the free ends of the detent and the pawl to keep the latter normally out of engagement with the ratchet-bar, substantially as described.

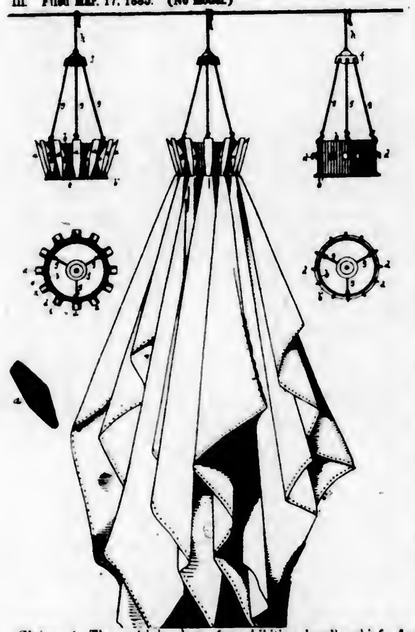
2. The combination of the ratchet-bar, the detent for engaging therewith, the reciprocating plunger-rod, the pawl connected therewith and reciprocated thereby, the lever L, connected with the free ends of the pawl and the detent, and the float connected to said lever, whereby the pawl and detent will engage with the ratchet-bar to move the latter when the float rises, and will release the ratchet-bar when the float descends, substantially as described.

3. The combination of the movable ratchet-bar, to which the cord B is attached, for throwing the wheel out of or into the wind, the detent for engaging with the said ratchet-bar, the reciprocating plunger-rod, the pivoted lever G, connected to the said rod, the pawl connected to the lever G and operated thereby, the lever L, connected to the pawl and detent, and the float connected to the said lever L, for the purpose set forth, substantially as described.

4. The cord or chain B, connecting with the wind-wheel, in combination with the pitman or plunger F, the movable ratchet-bar C on the end of cord B, the pawl H, engaging therewith, the lever G, connecting the pawl with the plunger, and a float connecting with the pawl, as set forth.

5. The chain or cord B, connecting with the wind-wheel, in combination with the pitman or plunger F, the movable ratchet-bar C on the end of the cord, the pawl H, to engage the ratchet-bar, the float to keep the pawl in engagement when it ascends and force the pawl out of engagement when the float descends, the said plunger or pitman connecting with the pawl, for the purpose set forth.

337,422. **HANDKERCHIEF-EXHIBITOR.** JONAS N. MILLER, Decatur, Ill. Filed Mar. 17, 1885. (No model.)



Claim.—1. The multiple clamp for exhibiting handkerchiefs, &c., herein set forth, consisting in a plate or band provided with a rim or elevation, *b'*, and a series of spring-levers pivoted on the band and adapted to operate independently of each other.

2. The combination, in a device for exhibiting handkerchiefs, &c., of a band provided with a series of lugs, a wire extending through the lugs of the band, and a series of spring-levers fulcrumed on the wire and adapted to co-operate with the band, for the purpose set forth.

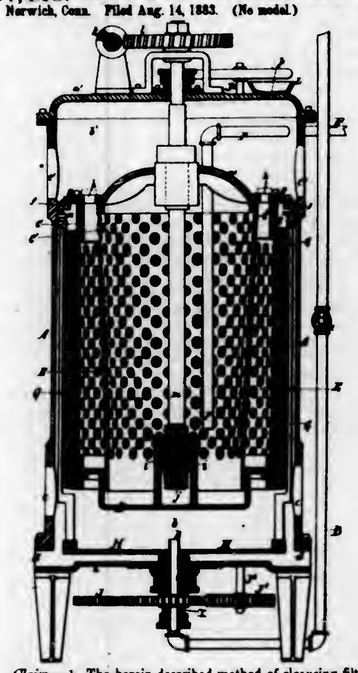
3. The combination, in a device for exhibiting handkerchiefs, &c., of a band provided with a series of undercut lugs stamped out of said band, a wire extending through the undercut recesses of the lugs, and a series of spring-levers fulcrumed on said wire and adapted to co-operate with the band, as and for the purpose set forth.

4. The combination, in a device for exhibiting handkerchiefs, &c., of a pendulously-supported band provided with a series of spring-levers adapted to co-operate with the band, as and for the purpose set forth.

5. The combination, in a device for exhibiting handkerchiefs, &c., of a pendulously-supported band adapted to rotate freely in a horizontal plane, and a series of spring-levers fulcrumed on said band, substantially in the manner and for the purpose set forth.

6. The combination, in a device for exhibiting handkerchiefs, &c., of band *b*, undercut lugs *b'*, rim *d*, wire *c*, levers *a*, and springs *e*, as and for the purpose set forth.

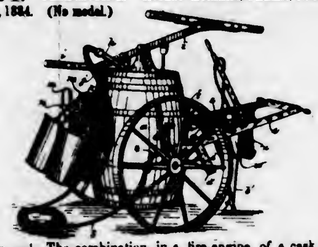
337,423. **METHOD OF CLEANSING FILTERS.** GEORGE H. MOORE, Norwich, Conn. Filed Aug. 14, 1883. (No model.)



Claim.—1. The herein-described method of cleansing filtering material in position, by means of steam introduced within the apparatus for the purpose of agitating a mass of immersed, movable, loose filtering material in position therein, at the same time re-forming the filtering-passages thereof, and causing the immersing-liquid to circulate within the apparatus, and ejecting from the filtering material any deposited matter into the immersing-liquid, which, with the contained deposited matter, flows out from the apparatus through a waste-outlet, all substantially as and for the purpose herein described.

2. The method of cleansing filtering material while in position within the filtering apparatus, consisting in heating and agitating the filtering material and the liquid in which it is immersed, and then introducing within the apparatus a stream of cold liquid, thereby displacing the heated immersing-liquid and any deposited matter contained therein, and causing the same to flow out and away from the filtering apparatus through a waste-outlet, substantially as set forth.

337,424. **FIRE-ENGINE.** ROBERT MORRELL, Summit, N. J. Filed Oct. 13, 1884. (No model.)

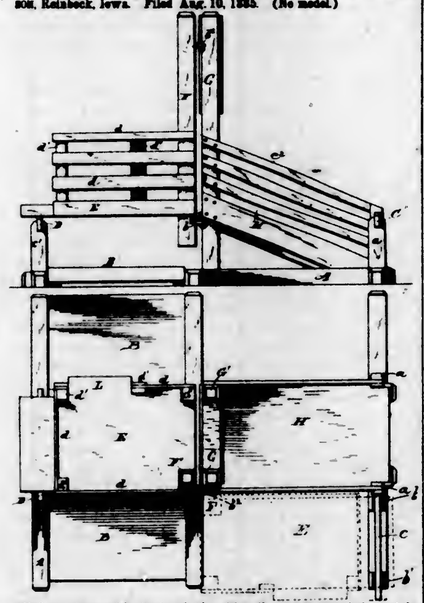


Claim.—1. The combination, in a fire-engine, of a cask or tank for containing the water, and a truck therefor open rearward from the tank, and on which the tank is detachably mounted by trunnion-pivots in the arrangement, enabling the truck to be detached by swinging up the truck-frame and setting the tank on the ground; also a rack for the support of the buckets and hose attached to the tank, and being thereby detachable from the truck with the tank, substantially as described.

2. In a fire-engine consisting of the water-tank and truck, substantially as described, the bucket-rack consisting of the stay-ring *v*, hanger *x*, cross-bar *y*, and the frame-legs *z*, combined and arranged with said truck, substantially as herein set forth.

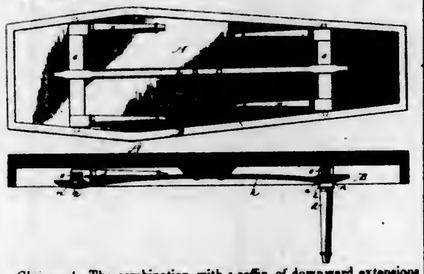
3. The combination of the stay-arms *c'* and tension-rod *d'* with the cask *a*, trunnion-pivots *b*, bearings *e*, independent truck-axles *d*, wheels *f*, and the truck-frame bars *e*, said frame-bars being arranged with a free opening from the trunnions to the rear end for enabling the tank to be taken on and discharged from the truck-frame, as described.

337,425. **PLATFORM FOR HANDLING STOCK.** JAMES D. MORRISON, Reinbeck, Iowa. Filed Aug. 10, 1885. (No model.)



Claim.—A portable device for handling live stock, consisting of the supporting-sills A and posts G G', the inclined way a^2, the platform B, the platform E, hinged to swing horizontally and provided with the guard-rails *d* and the side gate, L, the supports C D, and the inclined way H, leading to the hinged platform, all attached to the portable frame, substantially as and for the purposes described.

337,426. **COFFIN.** CHARLES J. NORDEN, De Kalb, Ill. Filed Apr. 2 1885. (No model.)

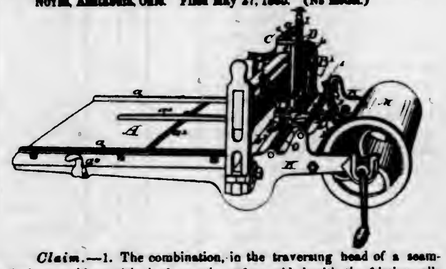


Claim.—1. The combination, with a coffin, of downward extensions from the bottom, legs mounted on an axle arbored in said extensions, said axle being rectangular and of greater width in one direction than the other, a spring fastened to the bottom of the coffin and provided at each end with rectangular recesses of a size to receive the short side of the axle, whereby the legs will be firmly held in their extended position by the shoulders of the recess, and also retained when folded against the bottom of the coffin by the pressure of the springs upon the broad side of the axle, substantially as described and shown.

2. The combination, with legs mounted upon an axle arbored to projections from the bottom of a coffin, said axle being rectangular in shape, of a spring attached to the bottom of the coffin and having at its end a rectangular recess adapted to receive one side of the said axle and brace it with the legs in extended position, whereby the legs are held, as aforesaid, in their extended position, or are retained in their folded position against the bottom of the coffin by the pressure of the spring upon one of the flat sides of the axle, substantially as described and shown.

3. The combination of a coffin having its sides projecting down below the bottom, legs mounted upon axles arbored in said projections, and means for bracing said legs in their extended position and holding them in their position when folded against the bottom of the coffin, said sides being extended below the plane of the mechanism when the legs are in their folded position, guarding it at such times from injury, substantially as described and shown.

337,427. **MACHINE FOR SEAMING SHEET METAL.** HORATIO J. NOYES, Ashtabula, Ohio. Filed May 27, 1885. (No model.)

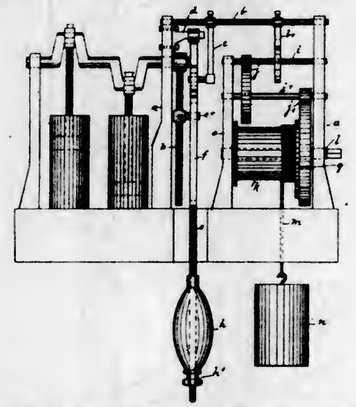


Claim.—1. The combination, in the traversing head of a seam-closing machine, with the box *c* thereof, provided with the friction-rolls *c'*, and a handle, H, and pinioned shaft I, of the divided frame D, carrying the two impression-rolls E F, and the bolts *e e*, and wrench G, constructed and operating as described, and for the purpose set forth.

2. The combination, with the bed or table A of a machine for closing the seams of sheet metal, having extension-arms K, and a receiving-drum, M, supported thereon, of the guide-roll *r*, fixed in yoke *y*, that is supported on the cross-rods *k k* by bar *x* and having springs *t t* and adapted to guide the sheets to the drum, substantially as specified.

3. The combination, with the bed or table A of a machine for closing the seams in sheet metal, the transverse frame B, carrying the traversing head C, and the receiving-drum M, of the stop N, consisting of the jointed bar supported on cross-rod *k*, and having springs *n n* on each side and adapted to adjust the seam of the united sheets to place upon the track of the impression-rolls, and to be turned to either side as said head C passes back and forth, substantially as and for the purpose specified.

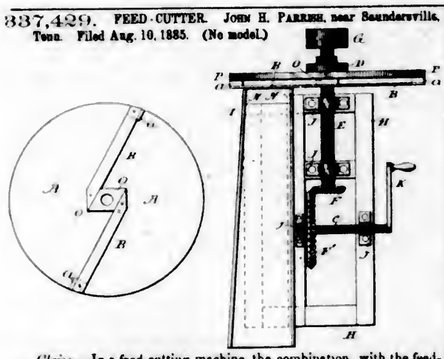
337,428. **AUTOMATIC WEIGHT-MOTOR.** ADOLPH OTTERLOH, San Francisco, Cal. Filed July 28, 1885. (No model.)



Claim.—1. The combination, with the swinging arm of a pump or other device, of an oscillating pendulum and drum, cord, and weight mechanically connected therewith in the ordinary way, so that the force of the weight shall cause the pendulum to vibrate and the movement of the pendulum shall work the pump or other handle.

2. The combination, with the weight and connected mechanism, of the pendulum *e*, having the longitudinal slot *f*, and the pump-handle or analogous part *p*, provided with the adjustable arm e^x, working in slot *f*, substantially as and for the purpose set forth.

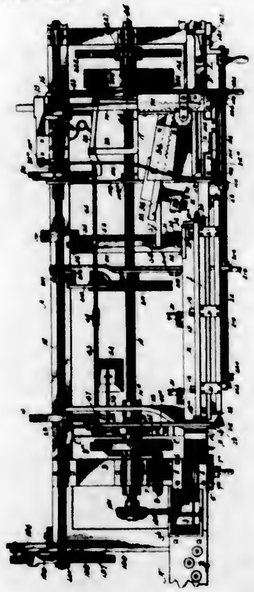
337,429. FEED-CUTTER. JOHN H. PARRISH, near Saundersville, Tenn. Filed Aug. 10, 1885. (No model.)



Claim.—In a feed-cutting machine, the combination, with the feed-box having a steel plate in the end thereof, of a solid iron wheel having a plane face, the interchangeable blocks to regulate the length of the cut of the feed, and the straight steel cutting-knives set in parallel planes, substantially as described.

337,430. MACHINE FOR MAKING CHECK-ROW WIRE. ELIJAH P. PEACOCK, Chicago, assignor to the Joliet Wire-Check-Row Company Joliet, Ill. Filed Jan. 12, 1885. (No model.)

Brief.—The wire is drawn through straightening-rolls, and is fed forward past the nearer bender till it reaches the farther bender. It is then severed near the feed-rolls, and the blank thus cut off is moved aside out of the direct line of feed, and has a horizontal hook formed on its front end by the advance bender. It is then drawn forward till its rear end reaches the bender nearest the feed-rolls, which bends it to a vertical hook. During this last operation the main wire has been fed forward, a blank cut off, moved aside, and bent, as above described. The first blank is then drawn forward and catches with its vertical hook the horizontal hook formed on the front end of the second blank. The two pieces of wire now hooked together pass on through guides, which cause the hooks to be exactly vertical and horizontal, respectively, to the coilers. Two mandrels—one vertical and the other horizontal—are inserted, respectively, in the horizontal and vertical hooks. The coilers then rotate and wrap the ends of the hooks about the main parts of the several pieces of wire, the coilers being arranged to separate slightly as they coil. The completed wire then passes over a wheel arranged to move backward and forward in order to change the intermitting feed to a continuous feed. The wire then passes back under the machine to a spool, on which it is wound.



337,430.



Claim.—1. In a machine for making check-row wire, a pair of simultaneously-operating benders constructed and arranged to bend the ends of wires passing through the machine into hooks lying in planes substantially perpendicular to each other, for the purpose set forth.

2. In a machine for making check-row wire, the two rotating benders arranged to turn about axes in planes substantially at right angles to each other, for the purpose described.

3. In a machine for making check-row wire, the two rotary benders arranged to bend the ends of the wires into hook shape, substantially as described, in combination with a throw-lever, by which one wire is drawn forward so as to bring its hook into engagement with the hook of the remaining wire, substantially as set forth.

4. In a machine for making check-row wires, the two rotary benders constructed and operating substantially as described, in combination with means for drawing forward a wire from one bender so as to bring the hook at its rear end into engagement with the hook formed by the remaining bender at the forward end of another wire, and an intermittingly-reciprocating slide, by which the rear unbent end of the said latter wire is at the proper moment brought and held in position to be bent by the first specified bender, substantially as described.

5. In a machine for making check-row wire, the benders E and F, located and operating substantially as described, in combination with means for drawing forward a wire from one bender so as to cause its hook to engage the hook formed at the end of a wire by the other bender, and an intermittingly-actuated feed mechanism by which a wire from the reel is fed forward at regular intervals to the bender F, substantially as and for the purpose described.

6. In a machine for making check-row wire, the benders E and F, located and operating substantially as described, in combination with means for drawing forward a wire from one bender so as to cause its hook to engage the hook formed at the end of a wire by the remaining bender, and to also draw forward the rear unbent end of said wire into a position opposite the bender E, substantially as and for the purpose described.

7. In a machine for making check-row wire, the two benders E and F, located and operating substantially as described, in combination with means for drawing forward a wire from one bender so as to cause its hook to engage a hook formed at the end of a wire by the remaining bender, an intermittingly-actuated feed mechanism by which a wire is at regular intervals fed forward to the bender F, and an intermittingly-actuated cutter by which said wire is severed after it has been fed forward to the required extent, substantially as described.

8. In a machine for making check-row wire, the two benders situated in different planes, and operating substantially as described, in combination with an intermittingly-actuated feed mechanism by which a wire is fed forward to a bender nearest in position to the delivery end of the machine, an intermittingly-actuated cutter by which the wire is severed at regular intervals, and an intermittingly-reciprocating slide operating transversely to the line of feed, and constructed to bring the rear end of said wire in line with the bender which is nearest the feed end of the machine, substantially as described.

9. In a machine for making check-row wire, the two benders situated in different planes, and operating substantially as set forth, in combination with the intermittingly-vibratory kickers, by which a wire running back from one bender is pushed out of the line of feed, substantially as described.

10. In a machine for making check-row wire, the bender F, in combination with the intermittingly-operating wire-lifter 60, by which the end of a wire is lifted up to the said bender, substantially as described.

11. In a machine for making check-row wire, the bender F, in combination with the pivoted wire-lifter 60, a pivoted lever by which the wire-lifter is raised and allowed to descend, and a revolving cam by which the said pivoted lever is intermittingly actuated, substantially as described.

12. In a machine for making check-row wire, the bender F, in combination with the intermittingly-reciprocating slide 81, notched and slotted at one end to receive the wire, and susceptible of being raised and lowered at said end, for the purpose set forth, and a swinging wire-lifter, 60, whereby said slide is raised and lowered simultaneously with the rise and fall of the wire, substantially as described.

13. In a machine for making check-row wire, the slide 81, notched at one end, and provided with a spring-latch normally held across said notch, which latch is arranged to be swung away from the notch by a bent wire drawn through the latter, substantially as described.

14. In a machine for making check-row wire, the slide 81, carrying a spring-latch, in combination with a vibratory lever, 88, and a revolving cam-wheel provided with a tooth, said slide being alternately engaged by the lever and the tooth, substantially as described.

15. In a machine for making check-row wire, a feed mechanism for feeding forward the wire to one bender, in combination with a lever projecting in the path of the wire, and a clutch mechanism connected with said lever, which is released by the action of the wire against the lever during the forward feed of the wire, so as to stop the feed, substantially as described.

16. In a machine for making check-row wire, the feed mechanism for feeding forward the wire, in combination with a clutch, a tripping-lever, and a rod and lever connection between said clutch and trip, said trip being located in the line of feed and actuated by the forward end of the advancing wire, so as to release the clutch mechanism and thereby stop the feed, substantially as described.

17. In a machine for making check-row wire, the feed mechanism, in combination with a tripping-lever, K, located in the line of feed, a clutch mechanism by which the feed mechanism is coupled with or uncoupled from the driving-shaft, and a latch for the clutch mechanism, which is released by the tripping-lever, so as to allow the clutch mechanism to uncouple the feed mechanism from the driving-shaft, substantially as described.

18. In a machine for making check-row wire, the tripping-lever K, located in the line of feed, in combination with a pivoted latch, 43, connected with a clutch-shifter, and a revolving cam by which the latch is moved forward and locked, so as to hold and maintain the two members of the clutch in connection with each other, substantially as described.

19. In a machine for making check-row wire, a feed mechanism for feeding forward the wire, in combination with a clutch through which the feed mechanism is operated or allowed to stop, a revolving cam, and a lock mechanism operated by said cam to bring and hold the sliding member of the clutch in engagement with the remaining member thereof, substantially as described.

20. In a machine for making check-row wire, the vibratory tripping-lever K, normally maintained in the line of feed, in combination with a pivoted latch connected by suitable connecting-rods with the clutch-shifting lever and a vibratory frame, 56, and the revolving cam situated to operate the vibratory frame in order to effect a forward sliding movement on the part of the member of the clutch carried by the clutch-shifter, substantially as described.

21. In a machine for making check-row wire, the vibratory tripping-lever K, normally maintained in the line of feed at a point near one of the benders, in combination with a pivoted latch situated above a lower arm of the said lever, and a clutch mechanism connected by a suitable connection with the latch, and held in a forward position by the same until the latch is released by the action of the vibratory tripping-lever, substantially as described.

22. In a machine for making check-row wire, the benders E and F, in combination with an intermittingly-reciprocating double rack-bar engaging a pinion upon the spindle of one of the benders, and also engaging a gear mechanism connected with a pinion upon the spindle of the remaining bender, substantially as described.

23. In a machine for making check-row wire, the intermittingly-reciprocating slide 108, carrying jaws for pushing a wire away from the direct line of feed, in combination with the rotary bender operating about a horizontal axis, substantially as described.

24. In a machine for making check-row wire, the rotary bender operating about a horizontal axis and the reciprocating slide, in combination with a spring-jaw and a fixed jaw carried by the said slide, substantially as described.

25. In a machine for making check-row wire, the slide carrying a spring-jaw, 112, and situated transversely to the line of feed, in combination with a stationary abutment by which the spring-jaw is depressed to allow the jaw to pass under the wire when the slide is moved in one direction, substantially as described.

26. In a machine for making check-row wire, the bender E, substantially as described, in combination with a pair of jaws by which the wire is held in position to be bent by the said bender, and a pivoted latch hung above the point at which the wire is held between the jaws, and arranged to be swung aside by the free end of the wire while being bent into hook form, and to subsequently swing back in position over the hook, substantially as described.

27. In a machine for making check-row wire, the pivoted plate 115 constituting one side of a passage situated in line with a bender, in combination with a jaw carried by a sliding support, whereby the jaw in moving forward to the bender shall push the wire against the said pivoted plate, so as to lift the same and cause the wire to enter the guide-passage, substantially as described.

28. In a machine for making check-row wire, the bender F, in combination with a stationary jaw, 60*, and the wire-lifter 60, by which the wire is raised and held against said jaw during the operation of the bender, substantially as described.

29. In a machine for making check-row wire, one or more vibratory kickers situated between the cutter and the benders, and operating to push the end portion of the wire nearest the cutter away from the line of feed, substantially as described.

30. In a machine for making check-row wire, the kicker or kickers normally maintained at one side of the line of feed, in combination with a latch by which the wire thrown out of the line by the kickers will be caught and prevented from springing back into the line of feed, substantially as described.

31. In a machine for making check-row wire, the kicker or kickers normally maintained at one side of the line of feed, in combination with a swinging keeper adapted, when in a lowered position, to form a side wall for a passage in the line of feed, substantially as described.

32. In a machine for making check-row wire, one or more vibratory kickers, G, in combination with a swinging keeper, I, provided with openings for the passage of the kickers, and means by which the kickers and the keeper are simultaneously operated, substantially as and for the purpose described.

33. In a machine for making check-row wire, a horizontal table situated between the cutting and bending mechanism, in combination with a vibratory kicker, G, passing through an opening in the table, and a spring-latch which is normally projected at its catch end above the table, and depressed by a wire which is being pushed away from the line of feed by the kickers, substantially as described.

34. In a machine for making check-row wire, the swinging keeper and the vibratory kickers, in combination with rock-shafts carrying the keeper and the kickers, a lever pivotally connected with arms on the said rock-shafts, and means, substantially as described, for intermittingly reciprocating the said lever, for the purpose described.

35. In a machine for making check-row wire, the vibratory cutter 13, in combination with a rotary bender, a feed mechanism, by which a wire is fed forward to said bender, and a rotary wheel provided with a camway timed to operate the cutter at a moment after the wire has been finally fed forward in position to engage its forward end with the said bender, substantially as described.

36. In a machine for making check-row wire, the rock-shaft carrying the kickers, in combination with a pivoted jaw or holder, 32, mounted above table H and operated from said rock-shaft, substantially as described.

37. In a machine for making check-row wire, the benders forming open hooks in the wires, the mandrels, and the coilers beyond said benders, in combination with a feed mechanism, whereby the open hooks are automatically fed forward to the mandrels and coilers, and their open free ends closed over the mandrels and coiled about the main wire outside the mandrels, substantially as described.

38. In a machine for making check-row wire, the benders forming open hooks, and a mechanism for interlocking said hooks at a right angle to each other and simultaneously drawing them forward in their open condition, in combination with the mandrels, and two coilers opposing each other, with their coiling rollers or ribs arranged at a right angle to each other beyond the benders, and rotating in opposite directions, substantially as described.

39. In a coiler for the purpose described, the hollow rotary stem, in combination with a lever pivoted in the stem, a fixed and a movable jaw carried by said lever, and a shell sliding upon the stem, the construction and arrangement of the parts being such that when the shell is moved toward one end of the stem it actuates the pivoted lever so as to bring the jaws into position for holding the wire, substantially as described.

40. In a coiler for the purpose described, the hollow rotary stem carrying a pivoted lever, 128, in combination with a shell fitted to turn with and slide longitudinally upon the hollow stem, the fixed and pivoted jaws at one end of the pivoted lever, and a roller, 137, carried by the pivoted jaw, substantially as described.

41. In a coiler for the purpose described, the hollow slotted stem, in combination with the lever 128, pivoted in the slot of the stem, and provided at one end with a pair of jaws, and means, substantially as described, whereby the jaws are closed, for the purpose set forth.

42. In a coiler for the purpose described, the hollow rotary stem provided at one end with a side opening, 127*, in combination with a pivoted jaw carrying a roller, 137, by which the free end of a wire hook is pushed, during the operation of coiling the same, through the side opening in the stem, substantially as described.

43. In a coiler for the purpose described, the hollow rotary stem, in combination with the pivoted lever 128, carried by the stem, the pivoted jaw carried at one end of the pivoted lever, and a lateral extension on the stem having a notch, 127*, in which the rear end of the pivoted jaw is received, whereby when the lever is vibrated its pivoted jaw shall be operated, substantially as described.

44. In a coiler for the purpose described, the hollow slotted stem 127, in combination with a pivoted lever, 128, carrying at one end a

fixed and a pivoted jaw, and a shell, 139, keyed to slide upon the stem, and provided with a roller, 142, substantially as and for the purpose described.

45. In a coiler for the purpose described, the hollow rotary stem, in combination with the pivoted lever carrying at one end a pivoted jaw, a shell, 139, keyed to slide on the hollow stem, and a vibratory yoke-frame for effecting a sliding movement on the part of the shell, substantially as described.

46. In a check-row-wire machine, the rotary coilers adapted to coil the free ends of a pair of wire hooks, in combination with the mandrels 146 and 155, each supported by a vibratory lever, substantially as set forth.

47. In a check-row-wire machine, the pivoted levers 147 and 156, each provided at one end with a pin or mandrel, in combination with a pair of rotary coilers of the character described, for the purposes set forth.

48. In a check-row-wire machine, a pair of rotary coilers of the character described, in combination with a standard supporting a pair of pivoted levers respectively provided with pins or mandrels 146 and 155, and sockets in which said mandrels are received when the latter are in position to hold the wires, substantially as set forth.

49. In a check-row-wire machine, a pair of rotary coilers of the character described, in combination with the mandrels carried by pivoted levers, and means adapted to operate the levers, and timed to actuate the same so as to bring the mandrels in position for holding the hooks at a moment when they are in position between the coilers, substantially as described.

50. In a check-row-wire machine, a pair of rotary coilers of the character described, in combination with levers 147 and 156, each carrying a mandrel, a rotary wheel provided with cams 157 and 158, and a spring, 152, connected with one of the levers, substantially as described.

51. In a check-row-wire machine, the spring-guide levers 120 and 121, located at the forward end of a guide-passage, L, which is situated between the coilers and the benders, substantially as described.

52. In a check-row-wire machine, the guide-passage L, formed, substantially, in cross-section in the shape of a cross, and located between the bending and the coiling mechanisms, substantially as described.

53. In a check-row-wire machine, the swinging channeled guide-plate 100, connected with a rock-shaft, in combination with the bender F, to which a wire is guided by said guide-plate, and mechanism for raising and lowering said guide-plate at proper intervals, substantially as described.

54. In a check-row-wire machine, mechanism, substantially as described, for intermittingly feeding forward a wire, in combination with mechanism for bending the forward end of the wire into hook form, means for severing the wire at regular intervals, means for drawing the wire forward, and mechanism for bending the rear end of the wire into hook form simultaneously with the forward end of the next following wire, substantially as described.

55. In a check-row-wire machine, a pair of rotary benders for simultaneously bending one end of each of two wires into hook form, in combination with means for drawing one wire forward so as to engage the hook of and draw forward the remaining wire, and a pair of intermittingly rotary coilers, by which the free ends of the hooks are coiled around the wires to form checks or shoulders, substantially as described.

56. In a check-row-wire machine, a pair of rotary benders for simultaneously bending one end of each of a pair of wires into hook shape, in combination with means for drawing forward one wire so as to cause its hook to engage the hook of the remaining wire and draw both hooks forward to a pair of coilers, a feed mechanism by which a wire is fed forward at intervals to one bender to take the place of a wire previously acted upon by the said bender, a cutting mechanism by which said wire is severed from the reel-wire after it has been drawn forward, and means for carrying the rear end of said wire into position to be bent by the remaining bender, said mechanism being timed to act successively, substantially as described.

57. In a check-row-wire machine, the intermittingly-operating coilers, in combination with gears 131 on a shaft fitted to turn with and slide longitudinally upon a rotary driving-shaft, a vibratory frame or lever connected with the said sleeve, and a revolving cam operating said frame or lever at intervals, whereby the gears are thrown into or out of connection with gears on the coilers, substantially as described.

58. In a check-row-wire machine, the vibratory bent lever K, having its upper end normally standing in the line of feed, in combination with latch 43, a notched plate, 58, in which said latch is locked, and from which the latch is released by the upward movement of the lower arm of the lever, and a clutch-actuating mechanism, substantially as described, connected with the latch, for the purpose set forth.

59. In a check-row-wire machine, a pair of rotary benders opposing each other, and each consisting of a body, 66, having at one end a lateral extension with a single pin, 68, and a roller, 69, arranged upon the end of the body, which is enlarged by reason of said lateral extension, substantially as described.

60. In a check-row-wire machine, the bender E and the bender F, respectively mounted to turn about a horizontal and a vertical axis, in combination with mechanism by which a reciprocating partial rotation is simultaneously imparted to the said benders, for the purpose described.

61. In a check-row-wire machine, the straightening-rollers B, mounted to turn about axes in different planes, in combination with the lever B', carrying the upper set of horizontal straightening-rollers, substantially as described.

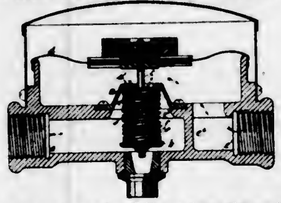
62. In a check-row-wire machine, the bender E, in combination with an angle-plate, 116*, secured upon the top of a support, and the plate 116, pivoted to the angle-plate, and having a lower beveled edge, said plate being raised above the support at its pivoted end, substantially as and for the purpose described.

63. In a check-row-wire machine, the feed-wheels and the intermeshing gears thereon, in combination with shaft 10, and gearing intermediate of said shaft and the feed-wheels, a clutch by which said gears are connected with the shaft, and a clutch-shifter and latch operated by a wire advanced by the feed-wheels at a time when the wire is in a position at one of the benders, substantially as described.

64. In a check-row-wire machine, the table H, having at its forward end an extension, 112*, in combination with the pivoted spring-latch 112, carried by a slide, 108, and depressed under the line of feed when the slide is operated to bring the latch under said extension of the table, substantially as described.

65. In a check-row-wire machine, the intermittingly-actuated slide 108, in combination with a spring-latch, 112, carried by said slide, a fixed jaw, 111, on the slide, and a latch, 118, pivoted on the fixed jaw, substantially as described.

337,431. FLUID-PRESSURE REGULATOR. OSKAR PINTSCH, Berlin, Germany. Filed Aug. 20, 1885. (No model.) Patented in Belgium Aug. 4, 1885, No. 69,823, and in England Aug. 4, 1885, No. 9,303.



Claim.—1. In a gas or other fluid regulator, the combination of a coiled spring, through the convolutions of which the fluid passes, with means connected with said spring for varying the distance between the convolutions of the same, according as the pressure of the fluid increases or decreases, substantially as described.

2. In a gas or other fluid regulator, the combination of a coiled spring, through the convolutions of which the fluid passes, and means for adjusting the tension of said spring, with means connected with the spring for varying the distance between the convolutions of the same, according as the pressure of the fluid increases or decreases, substantially as described.

3. In a gas or other fluid regulator, a coiled spring, one end of which is fixed and the other end bearing upon a disk mounted on one end of a rod, said rod being connected at its other end to a flexible diaphragm, said parts operating substantially as described.

4. The combination of a coiled spring fixed at one end, bearing at its other end upon a disk adjustably mounted upon one end of a rod, said rod being connected at its other end to a flexible diaphragm, said parts operating substantially as described.

5. In a gas or other fluid regulator, the combination of a coiled spring fixed at one end to a bearing-ring on the fluid-conductor, and at its other end bearing upon a disk mounted on one end of a rod, said rod being connected at the other and to a flexible diaphragm, also secured to the fluid-conductor, said parts operating substantially as described.

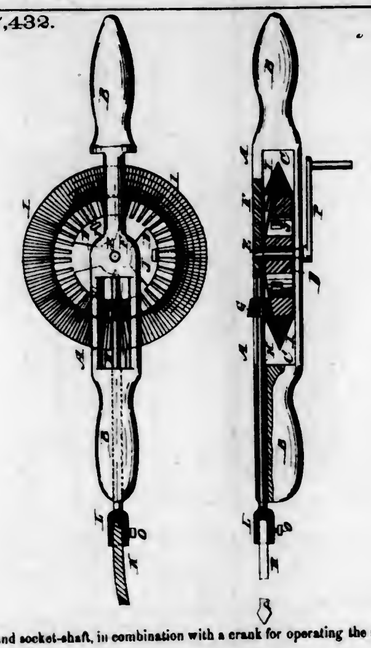
6. In a gas or other fluid regulator, the combination, with the conductor for the fluid having inlet and outlet ports, and having the dividing-wall c^3 and opening c^2, of a coiled spring connected at one end to a bearing-ring on the conductor, and at its other end bearing upon a disk mounted on one end of a rod, said rod being connected at its upper end to a flexible diaphragm, also secured to the fluid-conductor, said parts operating substantially as described.

337,432. DEVICE FOR FILING SAWS AND DRILLING. CHARLES L. POLLEY, Sandusky, Ohio. Filed July 2, 1885. (No model.)

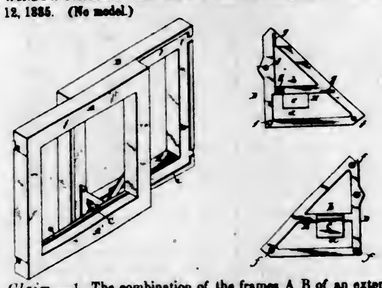
Claim.—1. A machine for filing saws, constructed substantially as shown and described, consisting of the frame, bevel-wheel, pinion, detachable file, and socket-shaft, which may be used as a means of attaching a driving-rope or to receive any tool, such as a drill or an auger, as set forth.

2. A machine for filing saws, constructed substantially as shown and described, consisting of the frame, bevel-wheel, pinion, detachable file, and socket-shaft, in combination with a crank for operating the same, as set forth.

337,432.



337,433. CORNER OR PLATE ATTACHMENT FOR EXTENSION WINDOW-SCREENS. EDWARD N. PORTER, Burlington, Vt. Filed May 12, 1885. (No model.)



Claim.—1. The combination of the frames A B of an extensible screen with a corner-plate which is secured to one side of one of the frames at its corner, and which is provided with an angular projection, C, which extends over a portion of the other frame and catches in a groove, *c*, substantially as shown.

2. The projection C, having its shoulder *b* firmly attached to or cast upon a metallic corner-brace or to a bar-plate, which is so fastened to the inner face of one of the horizontal or sliding bars of one screen-frame that its free end *d* may enter and freely move in a groove in the interior face of the corresponding bar of the other screen-frame, for the purpose of combining the frames together and enabling them to easily slide upon each other, substantially as described

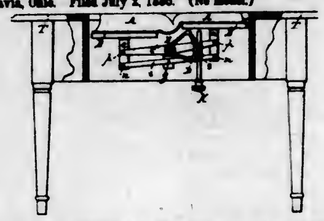
337,434. PACKING FOR STEAM-CONDENSER TUBES. ABRAM G. W. RANKIN, Hudson, N. J., assignor to William H. Jewell, New York, N. Y. Filed June 18, 1885. (No model.)



Claim.—1. A paper packing composed of a compressed laminated cylinder of paper and an adhesive substance having a lubricant upon its interior surface, formed as described, and for the purpose specified.

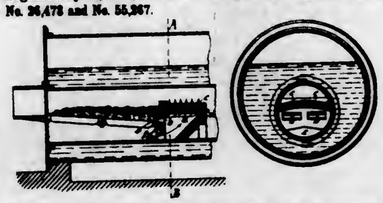
2. A paper packing composed of a compressed laminated cylinder of paper and rubber cement and having a lubricant upon its inner surface, formed as described, and for the purpose specified.

337,435. BOOK-HOLDER. JOSEPH W. RAMSON and JAMES L. H. BARR, Batavia, Ohio. Filed July 2, 1885. (No model.)



Claim.—The platforms B B and levers C C', the T-shaped pieces *a*, attached to the under side of the platforms, the pieces *t t'*, and the shaft N, operated by and in combination with the worm-gear D S, for the purpose described.

337,436. SMOKE-CONSUMING FURNACE. GUSTAV RAVEN, Dresden, Saxony, Germany. Filed Oct. 6, 1885. (No model.) Patented in Belgium July 9, 1885, No. 69,544; in France July 9, 1885, No. 170,060; in England July 20, 1885, No. 8,740, and in Austria-Hungary Oct. 25, 1885, No. 36,473 and No. 55,267.



Claim.—1. In a furnace, the combination, with the grate and draft-flue, of a chambered fire-bridge in direct communication with the fuel on the grate and with the draft-flue and outer atmosphere, respectively, substantially as and for the purpose specified.

2. In a boiler-furnace, the combination, with the grate and draft-flue, of a chambered fire-bridge having a hollow roof in communication with the boiler-passages formed in said roof, and passages in its walls communicating with the space above the grate and with the outer atmosphere, substantially as and for the purpose specified.

3. In a boiler-furnace, the combination, with the grate and draft-flue, of a chambered fire-bridge having a hollow roof in communication with the steam and water spaces of the boiler-passages formed in said roof, and passages in its walls communicating with the space above the grate and with the outer air, substantially as and for the purposes specified.

4. In a boiler-furnace, the combination, with the boiler, the draft-flue, and the grate, of a chambered fire-bridge projecting into said draft-flue, and having passages in its roof and rear wall communicating with said flue, passages communicating with the fuel on the grate, and a valved passage communicating with the outer atmosphere, substantially as and for the purpose specified.

337,437. HAND IMPLEMENT FOR CORKING BOTTLES. BENJAMIN P. ROBERTS, Boston, Mass. Filed July 24, 1885. (No model.)



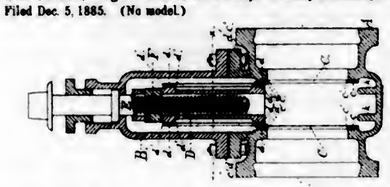
Claim.—1. The herein-described hand implement for driving corks into bottles, the same consisting of a loop, strap, or holder adapted to fit over the hand, and provided with a cork-driving block or pad attached thereto, substantially as set forth.

2. The combination, with a loop, strap, or holder, A, adapted to fit over the hand, of the elastic cork-driving block or pad B, secured to that portion of the loop, strap, or holder which lies over the palm of the hand, substantially as and for the purpose described.

3. The combination, with the loop, strap, or holder A, adapted to fit over the hand and having an aperture, *b*, for the passage of the thumb, of the elastic cork-driving block or pad B, secured to that portion of the

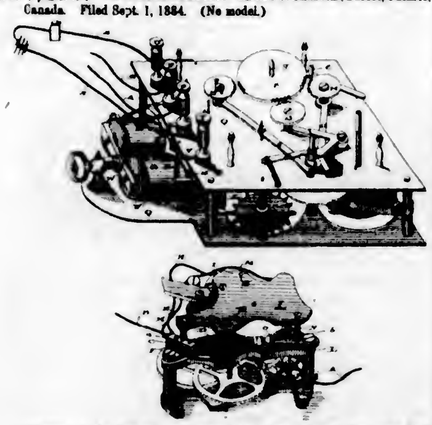
loop, strap, or holder which lies over the palm of the hand, all constructed to operate substantially in the manner and for the purpose set forth.

337,438. STOP-VALVE FOR WATER AND GAS MAINS. WESLEY ROYCE, Toledo, assignor of one-half to Joseph F. Kilby, Sandusky, Ohio. Filed Dec. 5, 1885. (No model.)



Claim.—The seat C C and valve D, provided with annular surfaces *c c d d*, having cutting-edges on those portions of both the exterior and interior surfaces thereof which pass by each other, substantially as shown and described, for the purpose set forth.

337,439. FIRE-TELEGRAPHY. SIDNEY J. SANFORD, Barrie, Ontario, Canada. Filed Sept. 1, 1884. (No model.)



Claim.—1. In fire-alarm telegraphy, a street-alarm box provided with circuit-closing springs F and G, rotating wheel D, arranged to bring said springs alternately into circuit, two circuit-breakers, as J O and I N, and line-connections, substantially as described, combined with a numbering apparatus provided with the electro-magnet R R, lever X, fly-stop *o*, and escapement *z*, intermittingly released by said lever to control the numbering-disks, substantially as described.

2. In a device for the purpose described, the combination, with the numbering-disks *p*, 12, 13, and 14, and levers and cams, as described, of the escapement *z*, spring *r*, chain of gearing arranged between said escapement and spring and driven by said spring, the electro-magnet R R, fly-stop *o*, and lever X, intermittently attached thereby to control said chain of gearing and numbering-disks, as set forth.

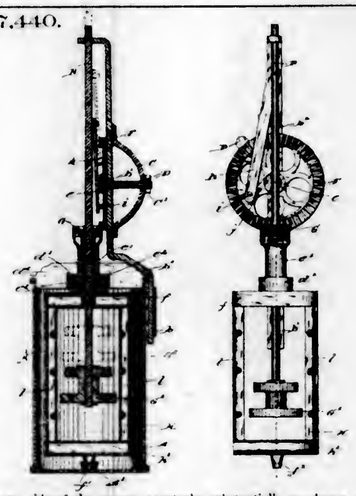
3. In fire-alarm telegraphy in which a numbering apparatus, as *p*, 12 13 14, and connections to exhibit the number of the alarm struck is employed in addition to the alarm-bell mechanism, as described, arranged to operate the numbering apparatus, and controlled through breakers I N J O and connections by a single street-circuit, in combination with bell-operating mechanism provided with an independent circuit, S, connected to the numbering apparatus and controlled by the action of the mechanism of the numbering apparatus, substantially as herein specified.

4. In fire-alarm telegraphy in which a numbering apparatus, as *p*, 12 13 14, and connections to exhibit the number of the alarm struck is employed in addition to the alarm-bell mechanism, as D J O, and springs F G I N, operated from a single street-circuit and connected to an independent bell-circuit, S, a fly-stop, *o*, and lever X, all arranged and operated to first strike the bell once, then set the indicating-numbers, and finally strike the alarm on the bell, substantially as set forth.

337,440. CHURN. CONRAD SCHIFFERLY, Fort Wayne, Ind. Filed Sept. 18, 1885. (No model.)

Claim.—1. In a churn, the combination, with the revolving beater-frame and the vertical dasher, the upper bar of said beater-frame having a rim or collar, of the pinion connected to said upper bar by a tubular standard and a cylinder, and the cog-wheel carrying a pitman connected to the rod of said vertical dasher, said cog-wheel having its shaft resting in a bar and bracket, said bar being removably secured in a socket on

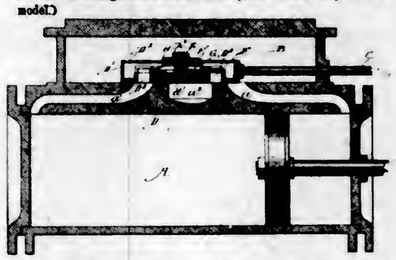
337,440.



the outer side of the cream-receptacle, substantially as shown and described.

2. In a churn, the combination, with the cog-wheel having the pitman *h*, the bar *b'*, and the crank-bracket, of the pinion connected to the top bar of the beater by a tubular standard and a cylinder, and the upwardly-projecting rim or collar fitted in a recess in the churn-cover, substantially as shown and described.

337,441. SLIDE-VALVE. CHARLES SCHMID, Chicago, Ill., assignor of one-half to George Farnsworth, same place. Filed July 7, 1885. (No model.)



Claim.—1. In slide-valve mechanism, the combination, with the main slide-valve having escape-ports therein, and a supplemental valve for opening and closing said escape-ports, of suitable mechanism extending between said supplemental valve and some relatively-fixed part of the structure, and adapted to shift the said supplemental valve as the main slide-valve is operated, substantially as described.

2. In slide-valve mechanism, the combination, with the main slide-valve having suitable escape-ports therein, and a supplemental valve for opening and closing said escape-ports of mechanism for shifting said supplemental valve comprising a crank-arm, a crank-pin, and a crank plate or rod suitably connected with the supplemental valve, and adapted to be operated from some relatively-fixed point of the structure, substantially as described.

3. In slide-valve mechanism, the combination, with the main slide-valve having suitable escape-ports therein, and a supplemental valve for opening and closing said escape-ports, of a crank-arm, a crank-pin, a crank plate or rod, and a bar extending from the steam-chest and connected with the crank-plate in a manner permitting said crank-plank to shift, substantially as described.

4. In slide-valve mechanism, the combination, with the main slide-valve having escape-ports therein, of a supplemental valve having suitable stops thereon, the crank E', adapted to engage with said stops during a portion of the travel of the valve, and a shaft for said crank provided with suitable means whereby its movement may be controlled by the steam-chest, substantially as described.

5. In slide-valve mechanism, the combination, with the main slide-valve having escape-ports therein, of the supplemental valve F, having the seat *f* therein, the crank-arm E', the crank-pin E, the crank-plate H, and the bar I, substantially as described.

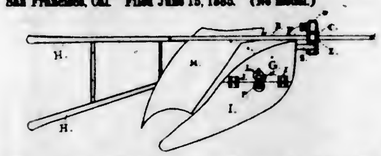
6. In slide-valve mechanism, the combination, with the main slide-valve having escape-ports therein, and the supplemental valve adapted

to open and close said escape-ports, of a crank-shaft suitably connected to the supplemental valve, and an adjustable connecting-bar between said crank-shaft and the steam-chest, substantially as described.

7. In slide-valve mechanism, the combination, with the hollow main slide-valve having escape-ports therein, and a supplemental valve within said slide-valve, of the spring for holding said supplemental valve to its seat, substantially as described.

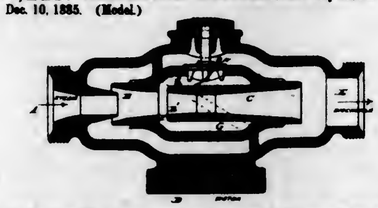
8. In slide-valve mechanism, the combination, with the main slide-valve having escape-ports therein, of the supplemental valve for opening and closing said escape-ports, having a suitable seat provided with stops or shoulders and with curved sides, a crank-arm, a crank-pin, a crank plate or rod, and a slotted connecting-bar extending to the steam-chest, substantially as described.

337,442. WEED GATHERER AND TURNER. AUGUST SCHROOR, San Francisco, Cal. Filed June 15, 1885. (No model.)



Claim.—The hinged gatherer G and O, having the hinges J and J, and the adjusting-segment L, hinged at P and set fast by the set-screw N, and the spring S, in combination with the spring-attaching journal D, the holder C, and set-screws F and E, for the purpose of gathering light or heavy stalks, weeds, or stubble, constructed and operated substantially as set forth.

337,443. STEAM-EJECTOR. LOUIS SCHUTTE, Philadelphia, Pa. Filed Dec. 10, 1885. (Model.)



Claim.—1. In an ejector or siphon-pump having a steam-nozzle, a combining-tube, and a discharge-tube, a passage forming a communication between the discharge end of the instrument and the combining-tube at a point between the end of the steam-nozzle and the smallest bore of the instrument.

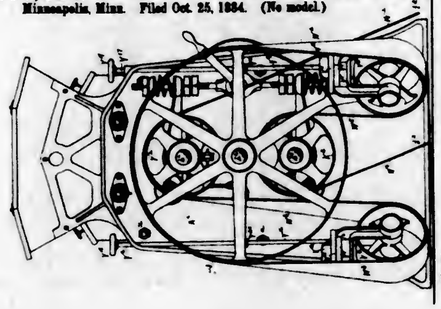
2. In a siphon-pump or ejector, the combination of the steam-nozzle, the mixing-tube provided with a lateral opening at an intermediate point in its length, the discharge-tube, and a channel, G, forming an external communication between the opening in the combining-tube and the delivery side of the apparatus, and a valve for closing said passage.

3. In an ejector or jet apparatus substantially such as herein described, the combination of the steam-nozzle, the combining-tube divided transversely, the discharge-tube, the channel or passage G, surrounding the combining-tube and communicating with the delivery end of the apparatus, and the check-valve H.

4. In combination with the steam-nozzle and the threaded regulating-spindle of angular or equivalent form at the outer end, the locking-washer, applied substantially as shown.

5. The threaded squared spindle, the recessed cap *b*, having the spindle mounted therein, the locking-washer, and the supplemental cap *c*, covering the end of the spindle and confining the washer, substantially as described.

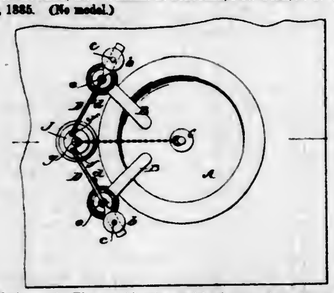
337,444. BELT-GEARING FOR ROLLER-MILLS. JOSEPH M. SCHUTZ, Minneapolis, Minn. Filed Oct. 25, 1884. (No model.)



Claim.—1. In a roller-mill, the combination of roll B', provided with pulley V', roll B², provided with pulley V², roll B³, provided with pulley V³, said rolls being arranged in line perpendicularly and supported in a suitable frame-work, angularly-set idlers V⁴ V⁵, and a belt adapted to pass around all of said pulleys, substantially as and for the purpose specified.

2. In a roller-mill, the combination of roll B', provided with pulley V', roll B², provided with pulley V², roll B³, provided with pulley V³, said rolls being arranged in line perpendicularly and supported in a suitable frame-work, idlers V⁴ V⁵, yoke-frames V⁶ V⁷, disks V⁸ V⁹, brackets V¹⁰ V¹¹, means for adjusting said yoke-frames upon said brackets, and means for adjusting said brackets upon said supporting frame-work, substantially as set forth.

337,445. DRAIN-PIPE CONNECTION FOR WASH-BOWLS, WATER-CLOSETS, &c. WILLIAM D. SCHUYLER, New York, N. Y. Filed MAY 20, 1885. (No model.)

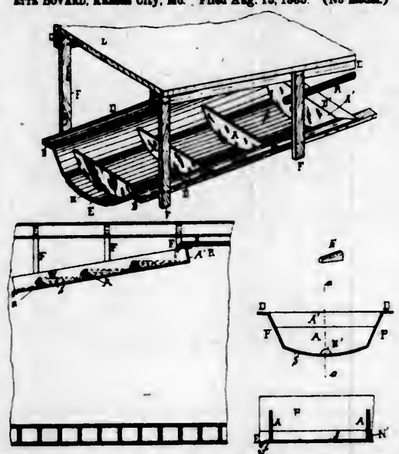


Claim.—1. The combination, with the supply valve or valves of the water fixture or structure and its discharge and drain pipes, of a hand trap-valve connected for joint operation with said supply valve or valves, and an adjustable locking device applied to said trap-valve and connected with the supply valve or valves, whereby both the supply valve or valves is or are held shut and the hand trap-valve is forcibly and permanently closed, essentially as shown and described.

2. The combination, with the discharge-pipe of a wash-bowl, water-closet, or other like water convenience or structure, its discharge-pipe and waste-water drain or soil pipe, and with the water-supply valve or valves to said structure, of the weighted plug or plunger trap-valve having an upwardly-projecting stem, the flexible or chain connections between said trap-valve and the supply valve or valves, and an adjustable lock applied to the stem of the trap-valve and adapted to forcibly close said valve when required, essentially as described, and for the purpose set forth.

3. The combination, with the supply-valves B of the wash-bowl or water-fixture, of the operating-levers D, the self-closing plug or trap valve E and its case F, the flexible connections *f*, and the adjustable lock J, substantially as and for the purposes herein set forth.

337,446. REFRIGERATING-TROUGH. THOMAS SCOTT and LAFAYETTE BOYARD, Kansas City, Mo. Filed Aug. 15, 1885. (No model.)

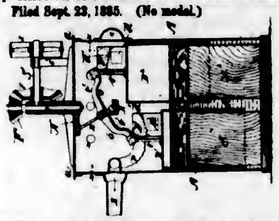


Claim.—1. In combination with a trough formed with side flanges, D, strips B, or equivalent devices, which engage the under side of said flanges, and hangers F, which depend from the ceiling and engage said

strips to support the trough, substantially as set forth, and for the purposes mentioned.

2. A trough for conveying and exposing liquid for cooling purposes, composed of bottom S, sides P, and flanges D, all formed integral of one metal sheet, end piece, A', and partitions A, having apertures N', substantially as set forth.

337,447. AIR-FORCING APPARATUS. GIUSEPPE SERRAMOGLIA, Turin, Italy. Filed Sept. 23, 1885. (No model.)



Claim.—1. In an air-forcing apparatus, the combination, with a stationary vessel or casing, of a piston-cylinder open at one end contained and adapted to be reciprocated within said stationary casing and dipping into a liquid or a semi-liquid in the same, a valve-chamber connected with said open-ended cylinder provided with an air-inlet port and a valve for the same opening inwardly and an air-outlet port having an upwardly-opening valve, the latter dividing the valve-chamber into two compartments, and a piston projecting from the interior of the stationary casing or vessel and into the piston-cylinder, substantially as and for the purpose specified.

2. In an air-forcing apparatus, the combination, with a stationary vessel or casing, a series of pistons secured to and projecting from the bottom of said casing, and a stationary air-discharge duct, of a series of piston-casings fitted to and reciprocating on the stationary pistons, a liquid seal for sealing the open end of said casings, a valve-chest secured to and reciprocating with each of said casings and provided with inlet and outlet ports, and flexible connections for connecting the outlet-ports of the valve-chests with the said stationary air-discharge duct, said parts being constructed and operated substantially as and for the purpose specified.

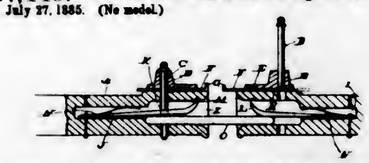
3. In an air-forcing apparatus, the combination, with a stationary vessel or casing provided at its upper end with a single annular air-discharge duct, and a series of pistons arranged in a circle secured to and projecting from the bottom of said casing, of a series of piston-casings fitted to and reciprocating on the stationary pistons, a valve-chest secured to and reciprocating with each of the piston-casings and provided with inlet and outlet ports, and flexible connections for connecting the outlet-ports of the valve-chests with the said stationary air-discharge duct, said parts being constructed and operated substantially as and for the purpose specified.

337,448. MANUFACTURE OF GLUCOSE. ALFRED SETTERLICH and ALEXANDER TRAMPEDACH, Riga, Russia. Filed July 21, 1885. (No specimens.) Patented in Belgium June 11, 1885, No. 69,236; in France June 11, 1885, No. 169,805; in England July 1, 1885, No. 8,000; in Luxemburg July 1, 1885, No. 552, and in Austria-Hungary Aug. 11, 1885, No. 24,527 and No. 42,956.

Claim.—1. In the manufacture of grape-sugar, the saccharification of the starch by diluted nitric acid and the regeneration of the remaining sirup containing nitric acid combinations, using the remaining nitric acid by adding sulphuric acid thereto.

2. In the manufacture of grape-sugar, obtaining solutions of starch-sugar by means of nitric and sulphuric acids, or combinations of such, and treating said starch-sugar with caustic or carbonaceous alkalies or alkaline earths in quantity, in order to obtain an alkaline sugary solution in which the sugar-crystals are easily and completely separated by centrifugal action.

337,449. CAR-COUPLING. JOHN SHANK, Las Vegas, N. Mex. Filed July 27, 1885. (No model.)

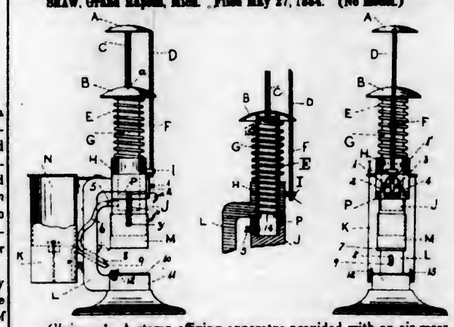


Claim.—1. In a car-coupler, the central opening projected rearwardly to receive the forwardly-projecting tongue secured therein, its upper face provided with a spring so disposed as to press the forward end of the tongue downwardly to hold the link in a horizontal position while in the act of coupling, substantially as herein set forth.

2. The combination of the draw-bar provided with a vertical pin box or house having underneath a recess to receive therein a forwardly-projecting slide, so as to hold up the pin, and with its forward end projecting to come in contact with the opposite draw-bar, thus forcing it rearwardly and permitting the pin to drop through the opening in the side, so as to engage with the link, with the central opening projected rearwardly to receive the forwardly-projecting tongue secured therein, its upper face provided with a spring so disposed as to press the forward end of the tongue downwardly to hold the link in a horizontal position while in the act of coupling, substantially as herein set forth.

3. The combination of the pin-box B, in connection with the slide E, the pin C, the forwardly-projecting tongue J, provided at its forward end with an upturned part, L, the spring N, and the link O, the whole arranged as and for the purpose substantially as herein set forth.

337,450. MACHINE FOR AFFIXING POSTAGE-STAMPS. JOHN L. SHAW, Grand Rapids, Mich. Filed May 27, 1884. (No model.)



Claim.—1. A stamp-affixing apparatus provided with an air-reservoir and piston, in combination with a water-reservoir and spraying device, and suitable connecting air and water tubes, substantially as described.

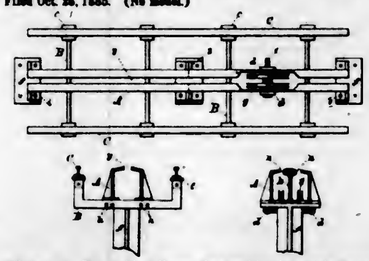
2. A stamp-affixing device provided with a water-reservoir and spraying device, substantially as and for the purpose described.

3. In a stamp-affixing apparatus, a pressure-plate, a piston to which said plate is attached, a spring for returning the piston to its normal position, and an air-cylinder within which the piston operates, the said cylinder provided with an air-vent and air-tube for the ingress and egress of air, in combination with a water-reservoir provided with a tube extending therefrom, having an opening near that of the air-tube, whereby spray is emitted when pressure is exerted on said pressure-plate, substantially as and for the purpose described.

4. In a stamp-affixing apparatus, a presser-plate, a piston to which said plate is attached, a vertically-reciprocating cylinder, a spring within said cylinder beneath the piston, a follower attached to said cylinder, and a stamp-holder attached to said follower, and a water-vessel, substantially as and for the purpose described.

5. A stamp-affixing apparatus comprising, in combination, the pressure-plates, the piston, the air-cylinder, the springs, the follower, the stamp-holder, the base-block and cushion, the water-reservoir N K and their connecting air and water tubes, and a spraying device, substantially as and for the purpose described.

337,451. CABLE RAILWAY. ABRAHAM A. SHOOK, Jerseyville, Ill. Filed Oct. 26, 1885. (No model.)



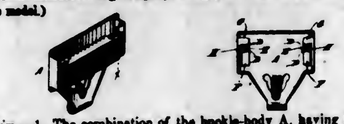
Claim.—1. In a cable railway, the combination, with supports central to the railway-track, of a cable tube or tunnel consisting of two parts separated longitudinally and adapted for lateral adjustment, substantially as set forth.

2. In a cable railway, the combination, with the cable-tube, of cross-ties secured to the under side thereof and turned up near their ends, so as to form, in one piece with the tie, vertical supports adapted to sustain the rail-chairs, as set forth.

3. In a cable railway, the combination, with a cable-tube divided longitudinally, each part being adapted for lateral adjustment, of a center rail interposed between said parts and sustained by the central supports, substantially as set forth.

4. In a cable railway, the combination, with a cable-tube divided longitudinally, each part being adjustable laterally, of hangers secured thereto and arranged in pairs adapted to sustain spindles, upon which are journaled cable-carriers, each of said spindles being immovable in the eye of one hanger and free to slide longitudinally in the eye of the other, as set forth.

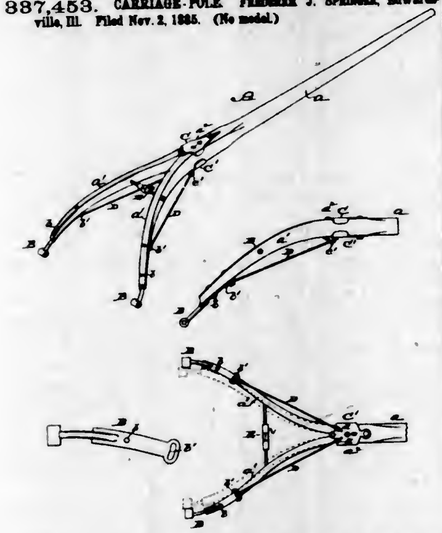
337,452. BUCKLE. WILLIAM E. SMITH, Amesbia, assignor to the B. Goodman Manufacturing Company, Bridgeport, Conn. Filed Jan. 5, 1886. (No model.)



Claim.—1. The combination of the buckle-body A, having the re-entering folds F G, the lugs F being depressed below the level of the parts G, the parts F G being provided with tongues D D D D, and the tongue B, provided with slots C C, resting when closed on the depressed lugs F F, thus forming a flat-back buckle, substantially as described.

2. The combination of a buckle-body, A, and a tongue, B, pivoted in said buckle-body, substantially as described, the back of said tongue being substantially rectangular in shape, and when closed lying in a plane substantially parallel with the back of the buckle, thus forming a flat-back buckle without wearing edges, substantially as described.

337,453. CARRIAGE-POLE. FREDERICK J. SPRINGER, Edwardsville, Ill. Filed Nov. 2, 1885. (No model.)



Claim.—1. A carriage-pole forked at its rear end, the forks being extensions of the main portion of the pole and curving downward therefrom, and being laterally elastic, and provided with tie-rods or braces connecting each fork end with the main portion of the pole, and thill-irons B, pivoted at *b* and slotted at *b'*, all combined and operating substantially as described.

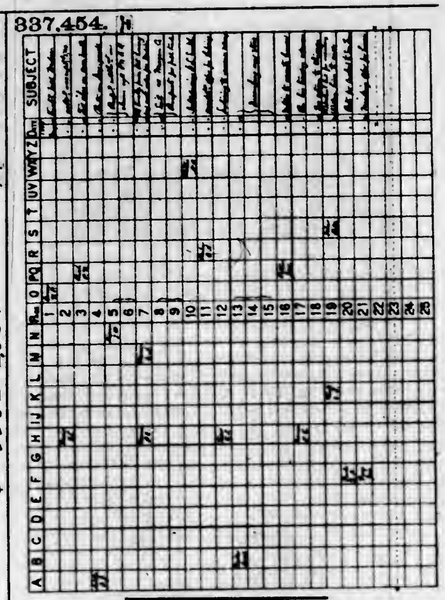
2. A carriage-pole forked at its rear end and provided with an upper and under plate to prevent splitting, the fork-extensions of the main portion of the pole integral therewith and curving downward, and being laterally elastic and connected together by a tie-rod, and connected to the main portion of the pole by tie-rods or braces, all substantially as shown and described.

337,454. INDEX FOR LETTER-BOOKS. ROBERT SPURDEN, Chicago, Ill. Filed July 6, 1885. (No model.)

Claim.—1. A letter-book index having vertical columns headed by letters of the alphabet and horizontal sections numbered consecutively from 1 up, the said numbers indicating the page of the book upon which the letters indexed in the horizontal sections are to be found, substantially as described and shown.

2. A letter-book index having vertical columns headed by letters of the alphabet, horizontal sections numbered consecutively, and provided also with a vertical column for recording dates in consecutive order, substantially as described and shown.

337,454.



337,455. FRAME FOR TRACK-DRILLS. AXEL A. STROM, Chicago, Ill. Filed Feb. 11, 1884. Renewed Feb. 4, 1886. (No model.)



Claim.—A frame for track-drills, comprising the bar A, and arms B B, provided with hooks *b' b'*, in combination with the movable rest *a*, sliding on the bar A, and provided with rigid extension C, projecting inward from it to serve as a bearing for the pivoted self-feeding device, substantially as described.

337,456. ART OF TREATING TOBACCO. GEORGE STOEK, New York, N. Y. Filed Aug. 17, 1885. (No specimens.)



Claim.—1. The improvement in the art of treating tobacco, which consists in subjecting the tobacco to the influence of a refrigerating agent after it has been dried or cured, during the aging thereof and before it is manufactured, whereby its gum is retained and its texture improved, substantially as described.

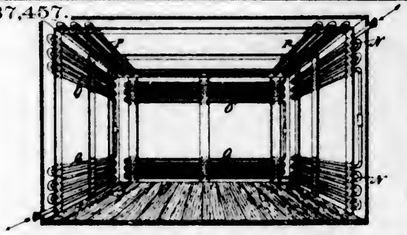
2. The improvement in the art of treating tobacco under sweat or fermentation, which consists in arresting fermentation by subjecting it to the influence of a refrigerating agent, substantially as described.

3. The improvement in the art of treating tobacco under sweat or fermentation, which consists in arresting fermentation by subjecting the tobacco to the influence of a refrigerating agent, and keeping it under such influence until the gum becomes settled and fermentation ceases, substantially as described.

4. The improvement in the art of treating tobacco under sweat or fermentation, which consists in subjecting it to the influence of a refrigerating agent at a predetermined temperature, and keeping it under such influence at such predetermined temperature until the gum becomes settled and fermentation ceases, substantially as described.

337,457. ART OF TREATING TOBACCO. GEORGE STOEK, New York, N. Y. Filed Dec. 2, 1885. (No specimens.)

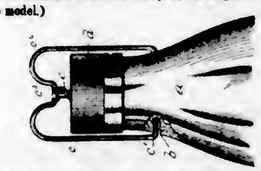
337,457.



Claim.—1. The improvement in the art of treating tobacco, whereby its texture is improved and the desired colors are obtained, which consists in subjecting it alternately to the influences of heat and refrigeration, substantially as described.

2. The improvement in the art of treating tobacco under sweat or fermentation, which consists in arresting fermentation by subjecting the tobacco to the influence of a refrigerating agent, then again inducing fermentation by subjecting it to the action of heat, then arresting fermentation, as before, and keeping the tobacco under the influences of heat and refrigeration until the desired results are produced and fermentation ceases, substantially as described.

337,458. BOTTLE-STOPPER. FREDERICK D. TAYLOR, Hartford, Conn., assignor to the Hartford Fruit Jar Company, same place. Filed Dec. 31, 1885. (No model.)

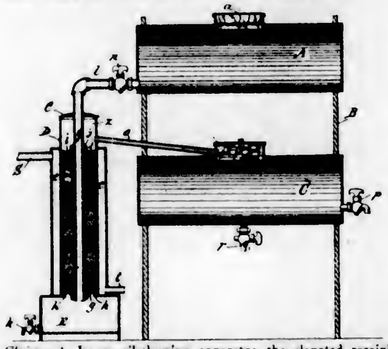


Claim.—1. In combination with a bottle bearing lateral bail-sockets, a swinging bail with pivot-supports, and a bow supporting a screw hinged thereto, and a stopper or plug attached to the screw by a threaded central socket, the side parts of the bail being of a sufficient length to suspend the stopper between the bow and the bottle-mouth, all substantially as described.

2. In a bottle-stopper fastening, in combination, a bail, *c*, with pivots *c'*, and bow c^2 with re-entrant bend c^3, a screw, *e*, hinged to the bow, and the stopper *d*, borne on the screw, all substantially as described.

3. In combination with a bottle, a bail pivoted thereto and adapted to swing across the mouth of the bottle, and a rotary stopper or plug suspended from the bow of the bail by a screw held against axial rotation, all substantially as described.

337,459. APPARATUS FOR CLEANING OIL. JOHN C. THORPTON, Mount Vernon, Ind. Filed Sept. 21, 1885. (No model.)

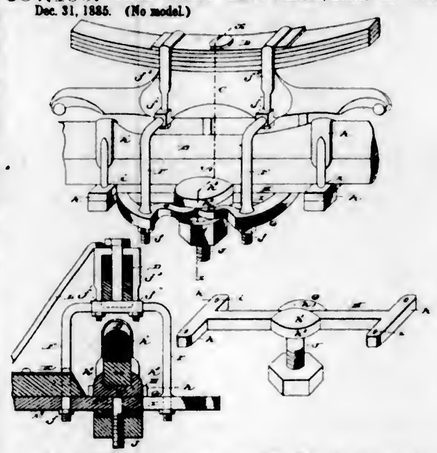


Claim.—1. In an oil-cleaning apparatus, the elevated receiving-tank, the filtering-chamber containing filtering material and having a clear space forming a settling-chamber below the filtering material, a pipe leading from said tank through the filtering material to said settling-chamber, and an annular steam-chamber surrounding the filtering material, all combined and arranged to co-operate substantially as and for the purpose specified.

2. In an oil-cleaning apparatus, the elevated receiving-tank, the storage-tank arranged below the receiving-tank, the filtering-chamber containing filtering material and having a clear space forming a settling-chamber below the filtering material and a second clear space above said filtering material, a pipe connecting the settling-chamber with the receiving-tank, and a pipe connecting the filter-chamber with the storage-tank, all combined and arranged to co-operate substantially as specified.

3. The combination, with the filtering-chamber D and the settling-chamber E, of the removable filtering-material support, consisting of the pipe *f* and disks *g* and *i* secured thereto, whereby the filtering material is supported and the oil conducted through said material to the settling-chamber, as and for the purpose specified.

337,460. FIFTH-WHEEL. MYRON TOMPKINS, Attica, Ohio. Filed Dec. 31, 1885. (No model.)



Claim.—1. The combination of an axle, a fifth-wheel arranged below the axle, a head-block located above and out of contact with the axle, and yokes rigidly connected to the head-block and the fifth-wheel, substantially as described.

2. The combination of an axle, a fifth-wheel, a head-block, and yokes that straddle the axle, and are rigidly connected to the fifth-wheel and the head-block, to support the latter out of engagement with the axle, substantially as described.

3. The combination of an axle and a fifth-wheel located below the axle, and comprising an upper member bolted to the axle, a lower member for supporting a head-block, and a king-bolt to pivotally connect the upper and lower members, substantially as described.

4. The combination of an axle, a fifth-wheel located beneath and supported by the axle, a head-block, and yokes straddling the axle and rigidly secured to the lower member of the fifth-wheel, substantially as described.

5. The combination of an axle, a fifth-wheel located beneath the axle, a head-block, yokes connecting the head-block and lower member of the fifth-wheel, and a reach, also connected with the lower fifth-wheel member, substantially as described.

6. The combination of an axle, an upper fifth-wheel member having a seat for the axle and rigidly connected thereto, a king-bolt rigidly secured to the upper member, and a lower member loosely mounted on the king-bolt, substantially as described.

7. The combination of an axle, an upper fifth-wheel member rigidly connected thereto, a lower member, a king-bolt, yokes secured to the lower member, a head-block rigidly connected to the yokes, and a reach connected to the lower member, the whole arranged and adapted to serve substantially as described, for the purpose set forth.

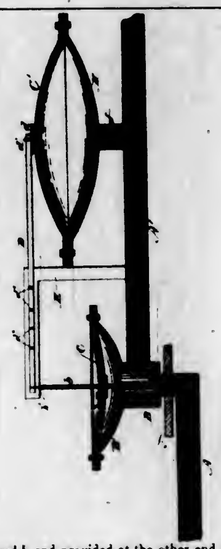
337,461. FLUID-PRESSURE REGULATOR. LEWIS W. TRUESDELL, Owego, N. Y., assignor of one-half to Emily Headley Gere, same place. Filed Aug. 3, 1885. (No model.)

Claim.—1. In a fluid-pressure regulator, the diaphragm-chamber B B', provided with the flexible diaphragm C, the cut-off secured to and moving with the diaphragm-rod *b*, passing through said diaphragm and secured therein, as described, in combination with the operating-lever D, having the horizontally-movable fulcrum, and the independently-acting diaphragm C, disconnected from but arranged to act upon said lever, substantially as described and shown.

2. The combination, in a fluid-pressure regulator, with the two diaphragms, one of which is connected to and moves with the supply-valve, of a lever connecting said diaphragms and supply-valve, the fulcrum of said lever being made longitudinally adjustable and changing the length of leverage, substantially as described.

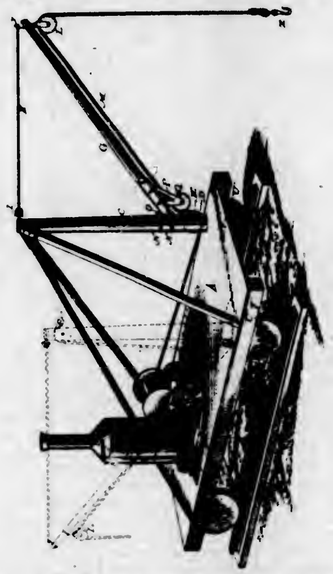
3. The combination, with the supply-pipe A and the house or distributing pipe A', of the valve *a*, diaphragm-chambers B and F, and the diaphragms C and C', and the adjustable lever D linked at one end

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to the diaphragm-rod *b*, and provided at the other end with the presser-plate *d*, arranged and operating substantially as described.

337,462. PORTABLE DERRICK. RICHARD L. VALENTINE, Brooklyn, N. Y., assignor to John W. Van Dyke. Filed Feb. 28, 1885. (No model.)



Claim.—1. In a portable derrick, the combination of a stationary mast, C, (having therein a slot, D,) an eye, I, and sheaves E and Q, with a pin or pivot, O, the said eye, pin, and sheaves being so placed, respectively, that a hoisting-rope, M, between the sheaves E and Q is in a straight line with the eye I and pin or pivot O, as and for the purpose described and shown.

2. In a portable derrick, the combination of a stationary mast, C, (having therein a slot, D,) an eye, I, and sheaves E and Q, with a pivot T, the said eye, pivot, and sheaves being so placed, respectively, that a hoisting-rope, M, between the sheaves E and Q is in a straight line with the eye I and pivot T, as and for the purpose described and shown.

3. In a portable derrick, the combination of a stationary mast, C, (having therein a slot, D,) an eye, I, and sheaves E and Q, with a pivot, W, the said eye, pivot, and sheaves being so placed, respectively, that a hoisting-rope, M, between the sheaves E and Q is in a straight line with the eye I and pivot W, as and for the purpose described and shown.

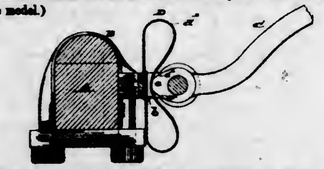
4. In a portable derrick, an extended sheave-holder or block, P, attached permanently to the lower end of a gaff, G, as and for the purpose described and shown.

5. In a portable derrick, the wheels K K K K, having the tread U, and the flange V, as and for the purpose described and shown.

6. The combination, in a portable derrick, of a sheave, E, permanently fixed in a slot in the mast, a sheave, Q, attached to or fixed in the lower end of the gaff, a sheave, L, inserted in or suspended from the outer end of the gaff, and the hoisting-rope M, as and for the purposes described and shown.

7. In a portable derrick, a mast, C, permanently attached to the platform of the derrick at one of the corners thereof, as and for the purpose described and shown.

337,463. THILL-COUPLING. MICHAEL WAGNER, Belleville, Ill., assignor of one-half to Curt Heinfelden, same place. Filed June 15, 1885. (No model.)



Claim.—1. In a thill-couplig, the combination of the axle-clips, the thill-iron having the portion *c* eccentric to its eye, and the flat metallic spring D, having the bends *d' d' d²*, and adapted to present a hard and smooth surface to the said portion *c*, substantially as set forth.

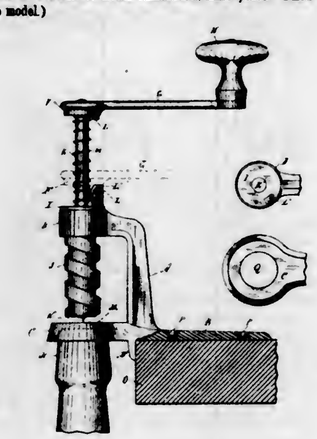
2. In a thill-coupling, the combination of the axle-clip, the thill-iron having the portion *c* eccentric to its eye, and the flat metallic spring D, having the bends *d' d' d²*, and having its ends bent around parallel and in contact with bat separate and free to move relatively to each other, substantially as set forth.

337,464. TOOL-HANDLE. GEORGE H. WAHLER, Littlestown, Pa. Filed Dec. 12, 1885. (No model.)



Claim.—A tool-handle having a central bore, a slotted shank located and held therein by a transverse bolt passing through the slot, and expanding jaws extending from the shank, having longitudinal grooves engaging with correspondingly-formed ribs in the bore of the handle, springs for operating the jaws and shank, and the opposite end of the handle provided with a suitable wrench, substantially as and for the purpose set forth.

337,465. CORK-EXTRACTOR. HENRY WAHLER, Freeport, Ill., assignor of one-half to Louis Ahsendorff, same place. Filed Oct. 9, 1885. (No model.)



Claim.—1. The combination, with a suitable frame, of a screw set in a nut in said frame and adapted, when rotated, to move longitudinally therein, a corkscrew journaled in a bearing in said frame and susceptible of rotary and longitudinal motion in said bearing, coacting lugs on said screw and corkscrew adapted, when in engagement, to insure the simultaneous rotation of said parts, and a spring interposed between said coacting lugs and adapted to hold them in the position of greatest separation, substantially as shown and described, and for the purpose set forth.

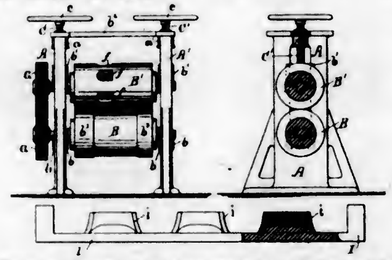
2. In a cork-extractor, the combination of a suitable frame, a hollow screw set in a nut in said frame and adapted to move longitudinally therein when rotated, a corkscrew journaled in said hollow screw and susceptible of rotary and longitudinal motion therein, coacting lugs on the screw and corkscrew adapted, when in engagement, to insure the simultaneous rotation of said parts, and thus to insure their simultaneous longitudinal movement, and a spring interposed between said lugs and tending to prevent their engagement, substantially as shown and described, and for the purpose set forth.

3. The combination of the frame A B C and nut D, the hollow screw J, set in said nut, the corkscrew E K, journaled in said screw and having the crank G, the lugs L L', formed on said crank and screw, respectively, and adapted, when in engagement, to insure the rotation of the screw with the crank, whereby the screw and corkscrew are raised or lowered together, and the spring *n*, coiled about the shank of the corkscrew and tending to raise the corkscrew and separate the lugs L L', substantially as shown and described, and for the purpose set forth.

337,466. FLEXIBLE LEAD-PENCIL. RENUE P. WALLIS, Oakland, Cal. Filed July 31, 1885. (No specimens.)

Claim.—An elastic composition formed of certain proportions of graphite and caoutchouc, for pencils incased in wood, and for pencil-points to be used in cases of metal or other material, substantially as hereinbefore described and set forth.

337,467. METHOD OF AND APPARATUS FOR FORMING BOTTOMS OF RUBBER SHOES. MOSES W. WHITNEY, Bristol, R. I. Filed Nov. 11, 1884. (No model.)

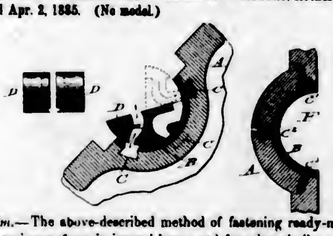


Claim.—1. A complete rubber bottom for a boot or shoe, said bottom formed entirely in one piece, for the purpose described.

2. A complete rubber bottom for a boot or shoe, said bottom consisting of the sole, heel, and tap-sole, and having a marginal flap, all formed in one piece, for the purpose described.

3. A rubber boot or shoe having the complete bottom, consisting of sole, heel, and tap-sole, and a marginal flap, all of said bottom formed in one piece, substantially as described.

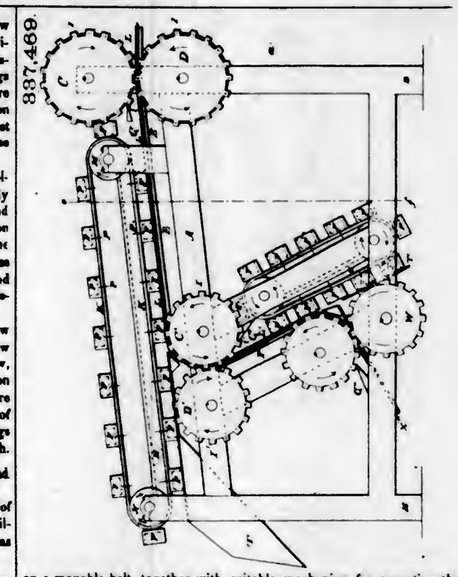
337,468. METHOD OF FASTENING SOFT-METAL WEARING-SURFACES IN JOURNAL-BOXES. DANIEL A. WOODBURY, Rochester, N. Y. Filed Apr. 2, 1885. (No model.)



Claim.—The above-described method of fastening ready-made linings or wearing-surfaces in journal-boxes and for other similar purposes, by casting metal anchors into suitable cavities or openings prepared for the purpose, substantially as shown and set forth.

337,469. DECORTICATING-MACHINE. HENRY S. WOODWARD, Philadelphia, Pa. Filed May 22, 1883. Renewed July 23, 1885. Again renewed Feb. 10, 1886. (No model.)

Claim.—1. The combination of the grip or feed-rollers with the supporting-surface, roller-cleaners, cams, and traveling scrapers arranged



on a movable belt, together with suitable mechanism for operating the same, substantially as described, and for the purpose set forth.

2. The traveling scraper with automatic cleaner on a movable belt, as and for the purpose described.

3. The traveling scraper, in combination with spring-flap and automatic cleaner, substantially as described.

337,470. MEMORANDUM CALENDAR AND STAND. ADOLPH ZUMPE, Berlin, Germany. Filed May 21, 1885. (No model.) Patented in Germany Jan. 9, 1884, No. 27,502.



Claim.—The combination of a supporting-stand, having a transverse supporting-piece and a flange or rib extending at right angles to said stand and transverse piece, and a spring-clasp applied to the transverse piece and adapted to retain a memorandum-calendar on said rib, substantially as set forth.

337,471. ORE-CONCENTRATOR. JOHN M. ADAMS and WILLIAM F. CARTER, San Francisco, Cal. Filed Oct. 21, 1885. (No model.)

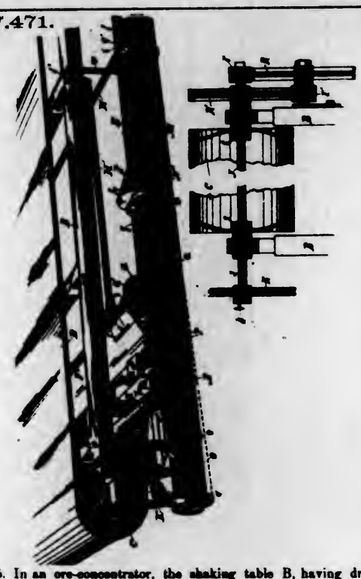
Claim.—1. In an ore-concentrator, the combination of the table B and the endless traveling belt D thereon, with mechanism comprising power-transmitting devices, and longitudinal and transverse bars or straps for imparting to said belt and table a vibrating motion, the result of linear motions at right angles acting simultaneously the one transversely of the table and the other parallel with its length, substantially as herein described.

2. In an ore-concentrator, the table B and the endless traveling belt D thereon, in combination with the power-shaft E, parallel with the table, and the shaft F, transverse of the table, miter-gears between said shafts, cranks on the shafts, and transverse and longitudinal bars or straps connecting the cranks with the table, whereby a motion is imparted to said table, the result of initial movements at right angles, substantially as herein described.

3. In an ore-concentrator, the table B and endless traveling belt D thereon, in combination with power-shaft E, parallel with the length of the table, a shaft, F, transverse of said table, the cranks *e' f'* on said shafts quartering with each other, and the bars or straps H H', connecting said cranks with the table, the gears G on the shaft E, and the gear G' on shaft F, said gears bearing the proportions to each other of two to one, substantially as herein described.

4. In an ore-concentrator, the table B and endless traveling belt D thereon, in combination with shaft E and transverse shaft F, miter-gears between said shafts, cranks quartering with each other on said shafts, and the bars or straps H H', connecting the cranks with the table, substantially as herein described.

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5. In an ore-concentrator, the shaking table B, having drum C, and the endless traveling belt D on said table and drum, in combination with the mechanism for causing the belt to travel, consisting of a shaft connected with the drum, a pulley, K, on the shaft, and pulley L on the driving-shaft, swinging tightener-pulleys under the pulley L, and guide-pulleys under pulley K, and an endless belt, P, substantially as herein described.

6. In an ore-concentrator, the shaking table B, having drum C, and the endless belt D on said table and drum, in combination with the shaft J, geared to the drum, the pulley K on the shaft, the driving-shaft E, the cone-pulley L on said shaft, the swinging tightener-pulleys N N', and the guide-pulleys *o o'*, and the endless belt P, all arranged and adapted to operate substantially as herein described.

7. In an ore-concentrator, the shaking table B, having drum C and the endless belt D, in combination with the shaft J, having pulleys K, back-gearing between said shaft and the drum, the driving-shaft E, the cone-pulley L on said shaft, the swinging tightener-pulleys N N', and the guide-pulleys *o o'*, and the belt P, substantially as herein described.

8. In an ore-concentrator, the shaking frame B, having drum C and endless belt D thereon, in combination with the shaft J, connected with the drum, the pulley K on the shaft J, the shaft E, and adjustable cone-pulley L, feathered on shaft E, the adjustable tightener-pulleys N N', the guide-pulleys *o o'*, the endless belt P, by which the drum is driven, and the means for regulating the speed, consisting of the screw-spindle Q, connected with the cone-pulley L, substantially as described.

337,472. COMPOSITION OF MATTER FOR MAKING MOLDED ARTICLES. STEPHEN M. ALLEN, Duxbury, Mass. Filed Nov. 20, 1885. (No specimens.)

Brief.—Improvement on Letters Patent No. 278,481, dated May 29, 1883, and No. 284,794, dated September 11, 1883, to same inventor.

Claim.—1. The composition herein described, consisting of a mixture of asphalt, resin, or equivalent substance, non-volatile oil, and animal or vegetable fiber, in substantially the proportions set forth.

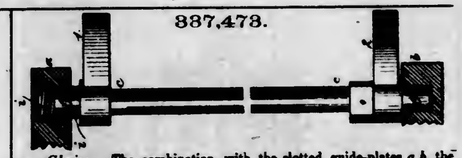
2. As a substance for insulating electric wires and for use in the construction of electrical apparatus, a composition of asphalt or like material, non-volatile oil, and animal or vegetable fiber mixed together and cast or molded into the desired shape, substantially as described.

3. In the manufacture of a composition of resinous or gummy matter and animal or vegetable fiber, the improvement consisting in moistening or wetting the fiber preparatory to mixing it with the resinous or gummy matter, substantially as and for the purpose set forth.

337,473. BRAIDING-MACHINE. JOHN ANDREW, Birmingham, Conn., assignor to himself and THOMAS F. STEVENSON, Brooklyn, N. Y. Filed Dec. 27, 1884. (No model.)

Brief.—The winglet is supported upon pivots between the slotted guide-plates. The hole for one pivot of the winglet is enlarged sufficiently to accommodate a spiral spring around said pivot, the said spring being longer than the pivot. The pressure of the spring against the flange of the winglet produces sufficient frictional resistance to prevent the winglet from rebounding during the working of the machine.

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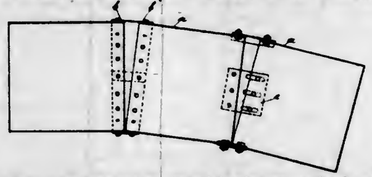
Claim.—The combination, with the slotted guide-plates *a b*, the bobbin-spindles, the carriers *a'*, and the winglets between said plates, of a helical spring, *i*, around one pivot of each winglet, the recess or hole for said pivot being enlarged to receive the spring, as specified.

337,474. FISHING-ROD. LEANDER L. BARTLETT, Montague, Mass., assignor to the Montague City Rod Company, same place. Filed Nov. 22, 1885. (No model.)



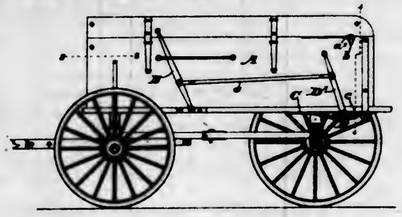
Claim.—The combination, with portion C of a fishing-rod ferrule, provided with a pin, *f*, fixed within the same, of the portion B, having its free end formed by cutting away a segment of its solid part, as described, to leave a shoulder at right angles to the axis of the rod, and cutting away also from said solid cylinder a groove, *e*, eccentric to the axis of the rod and inclined with reference to a plane at right angles to said axis, said groove engaging with pin *f*, and combining the functions of a spiral and a wedge, as and for the purpose set forth.

337,475. METHOD OF FORMING CURVED METALLIC PIPES. W. J. BRADY, San Francisco, Cal. Filed Aug. 11, 1885. (No model.)



Claim.—An improved method of forming curves, bends, and angles in wrought-iron pipes and tubes, by drawing a few lines, Fig. 11, developing a section therefrom, as described, Fig. 13, and springing the required curve in the manner described, Fig. 12, and temporarily securing the curved ends of the pipes by straps *e*, by which the pipes are adjusted and held to the curve until they are permanently secured by bands *c d* and riveted, substantially as described, and for the purpose set forth.

337,476. DUMPING-WAGON. ROBERT H. BRANON, Martinsville, Ind. Filed Nov. 24, 1885. (No model.)



Claim.—1. The combination, in a wagon-body, with the hinged or pivoted end-board, of springs carrying studs or detents which pass up through holes in the bottom of said body behind said end-board, a rock-shaft having wings or projections for operating said springs, and arms or levers for operating said rock-shaft.

2. The combination, in a wagon-body, of the end-board B, hinged or pivoted at or near the upper edge of said body, springs C, secured to the under side of said body, and bearing studs or detents which extend up through holes in the bottom thereof and engage with the lower edge of said end-board, a rock-shaft also secured to the under side of said body between it and said springs, and an arm or lever for operating the same.

337,477. GALVANIC BATTERY. HORATIO J. BREWER, New York, N. Y. Filed Nov. 12, 1885. (No model.)

Claim.—1. An electro-negative element which consists of a plate or plates of carbon or material containing carbon, held longitudinally between two other carbon plates, the electric connection between said plates being maintained by the pressure of a screw, substantially as described.

2. An electro-negative element for a battery, which consists of a

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horizontal plate of carbon, a vertical plate or plates of carbon or material containing carbon, and a horizontal plate of carbon placed above and upon said vertical plates, the said plates being forced together by screw-pressure, substantially as described.

3. The combination of a zinc rod with two or more carbon plates adjacent to the same, the carbon plates being held together by a pressure applied through the zinc rod, substantially as described.

4. The combination of a carbon element, a conducting-wire, and a zinc rod, the conducting-wire being forced against the carbon by a screw-pressure applied through the zinc rod, substantially as described.

5. The combination of a central zinc rod, a carbon element surrounding or partially surrounding the same, and an exterior cylindrical zinc surrounding said carbon element, the interior and exterior zinc being electrically connected together, substantially as described.

6. The combination of an interior zinc rod, an exterior cylindrical zinc, and an intermediate carbon element, which consists of two or more plates of carbon pressed together by a pressure applied through the zinc rod, substantially as described.

7. The combination, in a galvanic battery, of a central zinc rod, two horizontal carbon plates, and intermediate vertical carbon plates, the said carbon plates being held together by a pressure applied through the zinc rod, with an exterior cylindrical zinc electrically connected with the interior zinc rod, substantially as described.

8. The combination of the zinc rod C, provided with a head at its lower extremity, the plate F, supported thereby, the plates K' K', resting upon the plate F, the carbon plate G, resting upon the plates K', and the nut M, locking said carbon plates together, substantially as described.

9. The combination of the rod C, carrying block E' and supporting the plate F, with the plates K' K', plate G, cap E, and nut M, locking the said compound carbon element together, substantially as described.

10. A compound element which consists of a rod, C, supporting block E', plate F, plates K' K', plate G, cover J, cap E, nut M, and wire P, the said nut M serving to lock the compound carbon element together and to hold the wire P in contact therewith, substantially as described.

11. The combination of the zinc rod C, the carbon plate G, and the cap E, the said cap E serving to insulate the zinc rod from the surrounding carbon plate, substantially as described.

12. The combination of the horizontal carbon plate F and the washer O, greater in diameter than the plate F, with the cylindrical surrounding zinc, the said washer O serving to insulate the carbon plate from the zinc, substantially as described.

13. The combination of the central zinc rod, C, the exterior zinc cylinder, B, the connection B', and the set-screws M and N, serving to maintain a contact between the interior and exterior zinc, substantially as described.

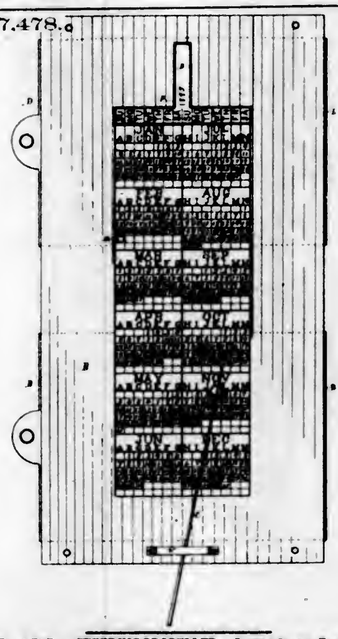
14. The combination of the horizontal plates F and G with the vertical plates K', containing perforations, substantially as described.

15. The combination of the horizontal carbon plate F, containing channels on its upper surface, the vertical carbon plates K, the horizontal carbon plate G, having channels on its lower side, the said horizontal plates being arranged to receive the ends of the vertical carbons in said channels, and a pressure mechanism holding the said carbons in continuous contact, substantially as described.

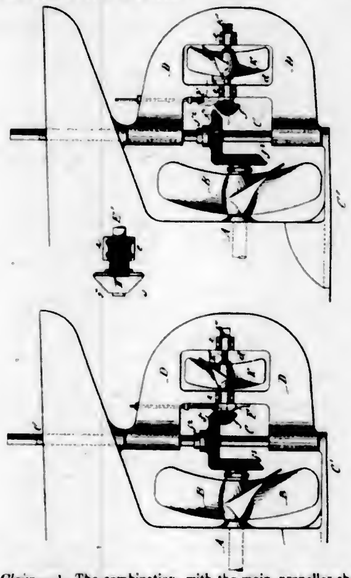
337,478. CALENDAR. MICHAEL CAREY, Kalamazoo, Mich. Filed Nov. 2, 1885. (No model.)

Claim.—A calendar consisting of a card or plate bearing associations of columns of dates representing months of the year, and having openings through the plate, one for the year, one for the days, and one in the month of February for the date 29, and a chart movable back of said openings and bearing characters in duplicate (representing a leap-year) for the first two months and the last ten months, the figures 29, and characters representing days, all so arranged in relation to each other, to the openings, and to the date-columns of the months that the proper days will be presented over the proper date-column, for a given leap-year presented at the year-opening, and that 29 will be presented at the date-opening in the month of February, substantially as set forth.

337,478.



337,479. STEERING-PROPELLER. JOSEPH CLARK, Brooklyn, N. Y. Filed Sept. 28, 1885. (No model.)



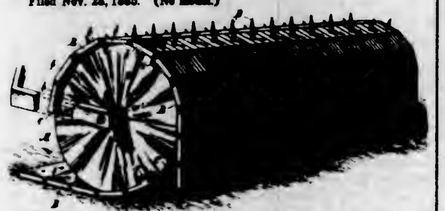
Claim.—1. The combination, with the main propeller-shaft carrying the main screw, of an auxiliary shaft carrying a steering-screw, the auxiliary shaft being supported in bearings of the rudder, and of transmitting gear-wheels respectively on the main shaft, rudder-post, and auxiliary shaft, the gear-wheel on the auxiliary shaft having less diameter than the gear-wheel on the main shaft, substantially as shown and described.

2. The combination, with the propeller-shaft carrying the main screw, of an auxiliary shaft carrying the steering-screw, said auxiliary shaft being supported in bearings of the rudder above or below the axis of the main shaft, a bevel gear-wheel on the main shaft, a loose bevel gear-wheel secured by thrust-bearings to the rudder-post, and a bastard wheel on the auxiliary shaft, the diameter of the bastard wheel being less than that of the bevel gear-wheel on the main shaft, substantially as set forth.

3. The combination, with the main propeller-shaft, of a rudder hinged to the rudder-post, an auxiliary shaft supported in bearings of the rudder and carrying a steering-screw, said steering-screw being mounted in a recess of the rudder, and bevel-gear and bastard wheel transmitting devices, the bastard wheel having a less diameter than the wheel on the main shaft, whereby motion is imparted from the main shaft to the auxiliary shaft, the speed of rotation of the auxiliary shaft being greater than the speed of rotation of the main shaft, substantially as set forth.

4. The combination, with the main propeller-shaft carrying the main screw, of an auxiliary shaft supported in bearings of the rudder and carrying a steering-screw, a bevel gear and bastard wheel transmission for giving greater speed of rotation to the auxiliary shaft than to the main shaft, and a forked and tapering slide-piece guided back of the bastard wheel on the auxiliary shaft, so as to shift said shaft and throw it in or out of gear with the transmitting bevel-wheel, substantially as set forth.

337,480. ROLLER-CULTIVATOR. JOHN CLAY, Camptonville, Cal. Filed Nov. 28, 1885. (No model.)



Claim.—1. A roller-cultivator comprising a cylindrical core and independent toothed sections hinged to said core and adapted to drop out from the core to the ground, substantially as herein described.

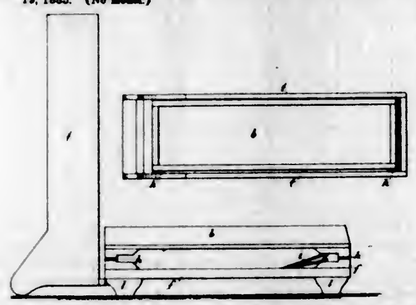
2. A roller-cultivator comprising a cylindrical core and independent toothed sections hinged to and covering the periphery of the core, substantially as and for the purpose described.

3. A roller-cultivator comprising a cylindrical core and independent toothed sections hinged to the core, each section being composed of parallel bars hinged to each other, substantially as and for the purpose herein described.

4. A roller-cultivator comprising the cylindrical core A, the independent sections B, hinged to the core and covering its periphery, the parallel bars *b*, of which the sections are composed, said bars being hinged together, and the teeth D upon the bars, substantially as herein described.

5. A roller-cultivator comprising the disks or wheels *a* and axle *a'*, forming a roller or core, A, the independent sections B, having ears or lugs *c*, and the pivot brace-bolts C, passing through said ears and the disks of the core, the parallel bars *b*, of which the sections are composed, said bars being hinged to each other, and the teeth D on the bars, substantially as herein described.

337,481. SOFA-BED. MICHAEL CLINE, Indianapolis, Ind. Filed Nov. 19, 1885. (No model.)



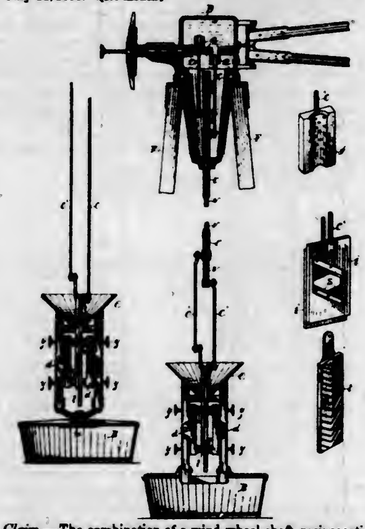
Claim.—1. In a bed-lounge, a folding frame composed of upper and lower sections hinged together at the sides, so that one part may be folded over upon the other to form a lounge, and a third section adapted to inclose the sections thus folded one upon the other, the top of which is intended to be upholstered to compose the lounge-seat, all combined substantially as described.

2. The bed-lounge herein described, composed of the lower section, *f*, and the upper section, *b*, hinged thereto, and forming a receptacle for the bed-clothing when folded up, the bolster-irons *i*, hinged to said folding parts, forming an incline for the support of the head, and the third top section, *t*, hinged to the end of the part *f*, all combined substantially as described.

3. A bed-lounge composed of the two folding sections *b* and *f*, hinged together at the sides, the part *b* providing a receptacle for the bed-clothes, the top section, *t*, adapted to be let down over and inclose the folding sections *b* and *f*, and to be raised to a vertical position to expose the said folding sections, all combined substantially as described.

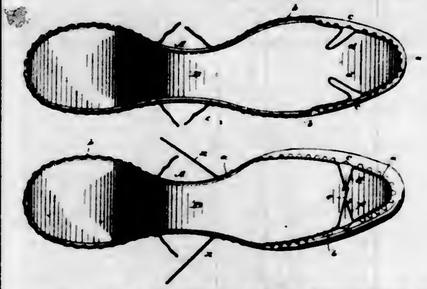
4. A bed-lounge composed of two sections hinged together, adapted to be folded one upon the other to close the lounge, the top section when so folded providing a receptacle for the bed-clothing within it, in combination with a third section whose top forms the lounge-seat and whose sides are adapted to be let down upon and over to inclose the folding sections, all combined substantially as described.

337,482. POWER-WINDMILL. HUDSON B. COLMAN and GEORGE TURNER, Kalamazoo, Mich.; said Turner assignor to said Colman. Filed July 11, 1885. (No model.)



Claim.—The combination of a wind-wheel shaft, reciprocating rods, and coacting machine parts adapted to perform the work of a secondary machine under reciprocating movements, substantially as set forth.

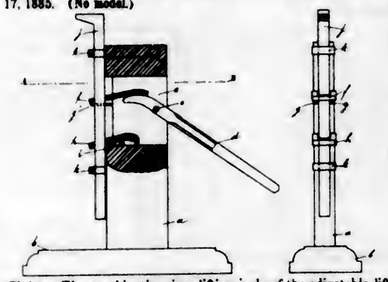
337,483. LASTING BOOTS AND SHOES. WILLIAM C. CROSS, Benton, Mass. Filed Dec. 29, 1885. (No model.)



Claim.—1. The hereinbefore-described improvement on that method of lasting boots and shoes in which the edge of the upper is gathered in and drawn over upon the last by means of a draw-cord around the said edge, consisting in taking out loops of the draw-cord on opposite sides of the last intermediate between the ends of said cord and the portion of the upper which it is desired to first draw in, then gathering in said portion by pulling on said loops, then connecting said loops together, and subsequently gathering in the other portion or portions of the upper bounded by the same draw-cord, substantially as hereinbefore set forth.

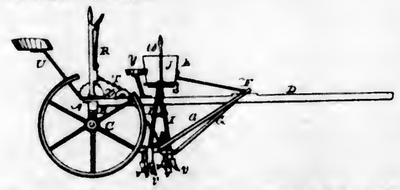
2. The combination of the upper, the loops *b*, the draw-cord *a*, with its intermediate loops, *d*, and the cross-connection *c*, substantially as and for the purposes hereinbefore set forth.

337,484. LIFTING-JACK. SOLOMON P. DAVIS, Napa, Cal. Filed July 17, 1885. (No model.)



Claim.—The combination, in a lifting-jack, of the adjustable lifting-catch *f* and check-catch *h*, as formed for lifting and gripping a smooth surface, and each being provided with the curved extension or tail described, the lifting-bar *j* and its guides *k*, the supporting-pins *g* for the lifting-catch, the lever *d*, as formed and its action on the lifting-catch, and the frame consisting of a standard, *a*, having a slot, *c*, and the base *b*, substantially as described, and for the purposes set forth.

337,485. CORN-PLANTER. JAMES W. DEAR, Dayton, Ohio. Filed Oct. 19, 1885. (No model.)

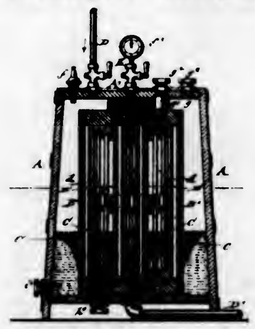


Claim.—1. In a corn-planter, the combination of the seed-box rigidly attached to the hoe-frames by conveyer-pipes, said hoe-frames carrying each a series of hoes, and said frames being connected by a cross-bar, the said hoe-frames and seed-box being pivoted by drag-bars and stay to the tongue of a vehicle, substantially as set forth.

2. In a corn-planter, the combination of the seed-box rigidly attached to the hoe-frames by conveyer-pipes, said hoe-frames carrying each a series of hoes, and said frames being connected by a cross-bar, and guide-bars astride of the tongue and attached to the cross-bar and the bottom of the seed-box, the said hoe-frames and seed-box being pivoted by drag-bars and stay to the tongue of a vehicle, substantially as set forth.

3. The raising device mounted as herein described, in combination with the rigid frame composed of the seed-box with base-plate 3, pipes I I, cross-bars O, arms S S, drag-bars G G, stay E, and plate F, with bolt and tongue, substantially as set forth.

337,486. PRESSURE-FILTER. SAMUEL G. DURHAM, New York, assignor to Carl P. Lenk, Brooklyn, N. Y. Filed Dec. 18, 1885. (No model.)

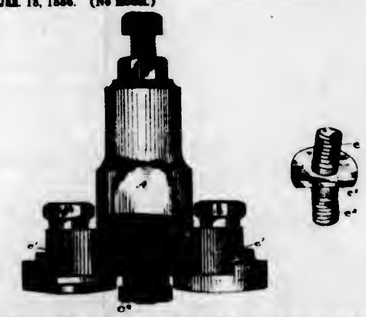


Claim.—1. A filtering body comprising two heads, longitudinal slats connecting said heads, a perforated disk fitting tightly within the space between said slats and a covering-layer of filtering material.

2. A filtering body consisting of two concentric sections, each comprising two heads, longitudinal slats connecting said heads, a covering-layer of filtering material wound around each section, a perforated disk fitting tightly within the space between the slats of the inner section, and an annular perforated diaphragm fitting tightly within the annular space between the slats of the outer and the filtering material upon the slats of the inner sections.

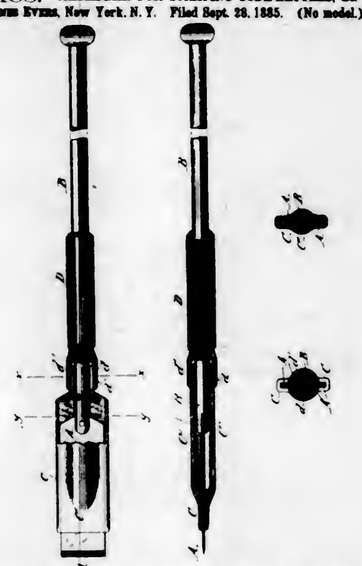
3. A filtering body consisting of two concentric sections each comprising two heads, longitudinal slats connecting said heads, a covering-layer of filtering material wound around each section, a perforated disk fitting tightly within the space between the slats of the inner section, and a perforated diaphragm fitting tightly within the annular space between the slats of the outer and the filtering material upon the slats of the inner sections, said disk and diaphragm standing opposite each other.

337,487. CUTTER-HEAD. WM. H. DOANE, Cincinnati, Ohio. Filed Jan. 18, 1886. (No model.)



Claim.—The combination, substantially as before set forth, of the head, the circular bit, and the bolt having a double-faced collar the head-clamping face of which is oblique to its other face, from which the shank for the bit projects at right angles.

337,488. CHISEL-BAR FOR SCRAPING SODA-KETTLES, &c. JOHANNES EVERS, New York, N. Y. Filed Sept. 28, 1885. (No model.)



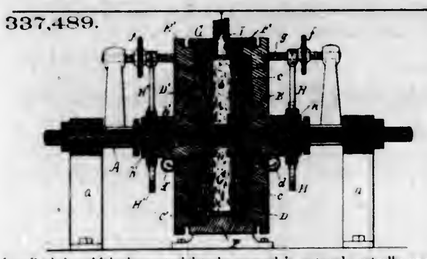
Claim.—1. A chisel-bar consisting of a scraping-knife, a handle-rod attached to said scraping-knife, a sleeve surrounding said cutting-knife and having a threaded socket at the rear end, and an adjusting-thimble having interior screw-threads for engaging a threaded portion of the handle-bar and the threaded socket of the sleeve, substantially as set forth.

2. A chisel-bar consisting of a scraping-knife, a handle-rod attached to said knife, a sleeve having bulging sides and an exteriorly-threaded rear socket, and a thimble having an enlarged and interiorly-threaded front end and an interiorly-threaded body that engages a thread on the handle-bar, substantially as set forth.

337,489. PAPER-PULP-FINISHING ENGINE. SIMEON L. GOULD, Gardiner, Me., assignor of one-half to William A. Russell, Lawrence, Mass. Filed Nov. 12, 1885. (No model.)

Claim.—1. A pulp-finishing engine, constructed substantially as

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described, in which the material to be ground is entered centrally upon each side of the grinding-disk and discharged at the circumference of the latter.

2. In a pulp-finishing engine, the combination, with a circular grinding-disk furnished with cutting-bars on each face, of the stationary but adjustable bed-plates co-operating therewith, and the inlet-supply pipes which enter centrally upon each side of said disk, substantially as and for purposes set forth.

3. The method herein described for feeding paper-pulp engines of the class mentioned, whereby the stock is admitted centrally upon each side of the rotary disk, to eliminate the end-thrusts and balance said disk, and thence discharged at the circumference by and in unison with the centrifugal force incident to the rotations of said grinding-disk, substantially as described.

4. In combination with the fixed shell F, containing a rotary grinding-disk, the stationary bed-plates D D', secured within the end heads, E E', and the latter adjustable with respect to said shell and its disk C, whereby the space between the co-operating bed-plates and the armed disk is regulated to suit the material passing through.

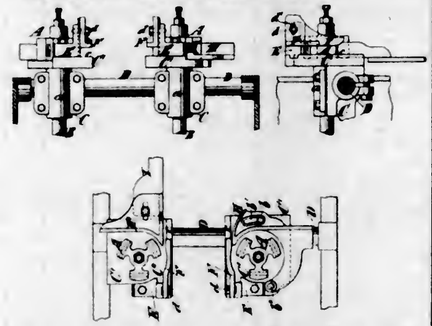
5. The combination, with the fixed shell F and the adjustable end heads, E E', of the actuating-levers H H', and operative mechanism, by which the space on either side of the rotary disk is regulated, substantially as herein set forth.

6. A circular grinding-disk composed of a series of knives radially disposed and of a width equal to the thickness of the disk to which they are secured, whereby the opposite edges of each bar shall constitute an active cutting-surface, substantially as stated.

337,490. COMPOSITION TO BE ADDED TO STARCH TO IMPROVE ITS QUALITY. HARRIETTE A. GRAY, Brooklyn, N. Y. Filed Oct. 14, 1885. (No specimens.)

Claim.—The within-described composition for improving the qualities of starch, consisting of borate of soda and chloride of sodium, in about the proportions herein set forth.

337,491. PRESSER-BAR FOR PLANING-MACHINES. WILLIAM H. GRAY, Brooklyn, assignor to the Glen Cove Machine Company, (Limited,) Grose Point, N. Y. Filed Jan. 13, 1886. (No model.)



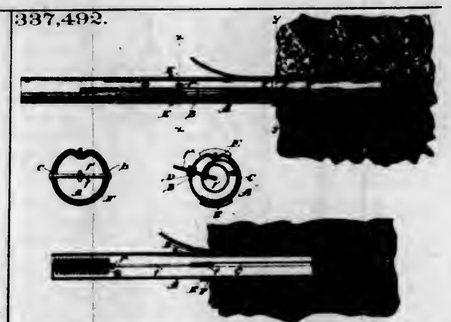
Claim.—In a wood-planing machine, the combination, with the side cutter-heads and spindles and the head-plates, above which the cutter-heads operate, of top guides, F, supported at their rear ends upon the head-plates and extending forward to or beyond the center of the side-cutter heads, substantially as and for the purpose herein described.

337,492. TAMPING-BAR. GEORGE W. HADERTY, Drifton, Pa. Filed Jan. 16, 1886. (No model.)

Claim.—1. In a tamping-bar for drill-holes, the combination of the case F and the spring-actuated plunger therein, for the purpose set forth, substantially as described.

2. In a tamping-bar for drill-holes, the combination of the case F, the spring-actuated plunger therein, and the detent to lock the plunger to the case when the plunger is extended, substantially as described.

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3. In a tamping-bar for drill-holes, the combination of the case having the groove *e* in its side to receive the fuse, and the plunger working in the case, for the purpose set forth, substantially as described.

337,493. GUARD FOR CUTTER-HEADS. ISAAC E. HALL, Lancaster, Ohio. Filed Dec. 10, 1885. (No model.)



Claim.—1. The combination, with the mandrel, the cutter-head, and the guard, of interchangeable washers of varying thicknesses interposed between the crown of the cutter-head and the base of the guard, to adjust the latter longitudinally on the mandrel relatively to the cutter-head, substantially as set forth.

2. The combination of the mandrel, the cutter-head mounted thereon, a guard adjustably supported on the mandrel to rotate therewith, and interchangeable washers of varying thicknesses, to be inserted between the crown on the cutter-head and the base of the guard, to effect the adjustment of the latter, said washers being mounted on an extension of the mandrel, substantially as and for the purposes specified.

337,494. METAL HUB FOR LOCKS. FREDERICK W. HELMAN, Newark, N. J., assignor to Jacob Lagowitz, same place. Filed Dec. 11, 1885. (No model.)



Claim.—1. A hub or barrel for a lock, consisting of a piece of sheet metal having its ends indented, as shown, and then bent or folded longitudinally through its middle to form the journals *a* at its opposite ends, substantially as set forth.

2. A sheet-metal hub or barrel provided with a hollow cylindrical enlargement at each end.

3. A sheet-metal hub or barrel provided with annular journals at each end, and with an intermediate annular enlargement.

4. A sheet-metal hub or barrel provided with annular enlargements at each end extending in a plane parallel with its length.

5. A key barrel or hub consisting of the sheet-metal blank A, indented at each side of the middle and at each end, substantially as shown, and bent lengthwise through its middle to form the flat key-seat *c* and the cylindrical journals *a*.

337,495. PROCESS OF TREATING PEAT. SALOMON HEIMANN, New York, N. Y. Filed Jan. 8, 1886. (No specimens.) Patented in Belgium Mar. 31, 1882, No. 57,289; in England Sept. 8, 1882, No. 4,281, and in France Nov. 6, 1882, No. 139,705.

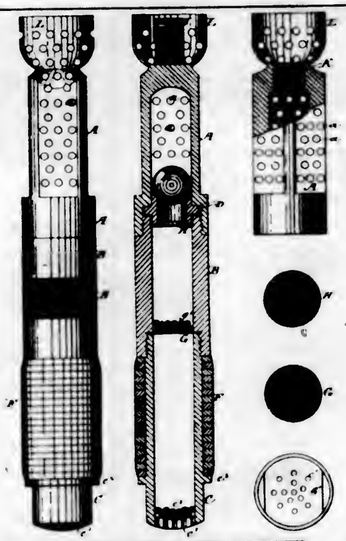
Claim.—The process of treating peat, which consists in pressing, drying, and grinding the peat, then mixing it in a heated condition with slag of aniline-works, and then casting it in molds, substantially as specified.

337,496. PISTON FOR DEEP-WELL PUMPS. GEORGE HODSON, Bradford, Pa. Filed Oct. 10, 1883. (No model.)

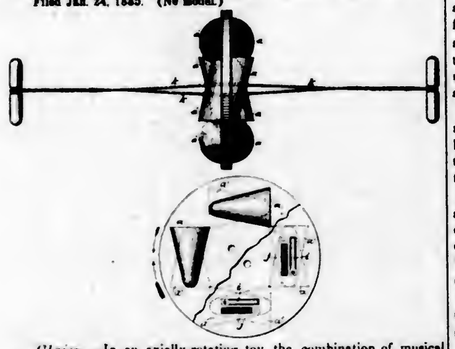
Claim.—1. The combination of a strainer in a pump-piston with a number of shot normally resting thereon, the attrition of said shot as they rise and fall serving to prevent the clogging of said strainer, substantially as set forth.

2. The piston in three sections, the upper one provided with the perforated parts A L, in combination with the valve proper, E, the strainers *c'* G H, and the shot which rests on two of said strainers, substantially as set forth.

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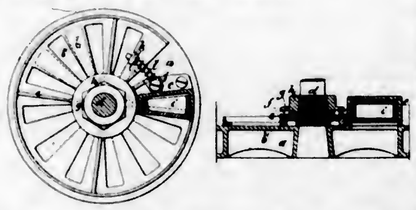


337,497. MUSICAL TOY. GILES J. HOLBROOK, Jersey City, N. J. Filed Jan. 24, 1885. (No model.)



Claim.—In an axially-rotating toy, the combination of musical reeds with hoods placed in such manner as to throw the air on said reeds when the toy is revolved, substantially as and for the purpose herein set forth.

337,498. VALVE. ALEXANDER HORNE, Liverpool, County of Lancaster, England. Filed Nov. 11, 1885. (No model.)

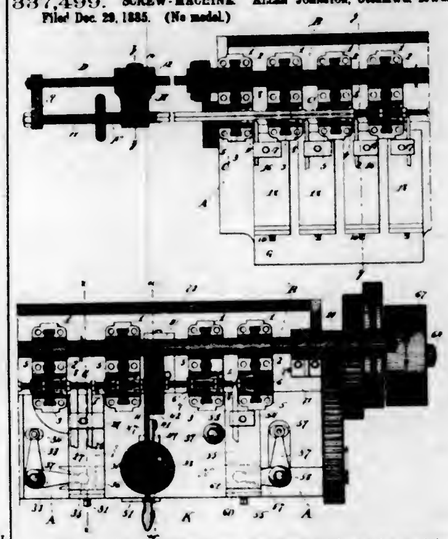


Claim.—1. The combination of a valve which moves across its seat with the seat, a plunger or piston, a container or chamber communicating with the adit side, so that the pressure of the fluid shall be directed to act against the piston, and a spring for seating the valve, substantially as and for the purposes described.

2. The combination of the valve-seat *a*, container *c*, valve-spindle *d*, valve *e*, cap *h*, plunger *i*, abutment and stem *j*, and spring *l*.

3. The combination of the valve-seat *a*, container *c*, valve-spindle *d*, valve *e*, bearing *f*, anti-friction balls *g*, cap *h*, plunger *i*, abutment and stem *j*, guide *k*, and spring *l*.

337,499. SCREW-MACHINE. ALLEN JOHNSTON, Ottumwa, Iowa. Filed Dec. 29, 1885. (No model.)



Claim.—1. In combination with the chuck or chucks for revolving a long rod or screw-stock and a cutting-off tool for severing the articles formed therefrom, a series of two or more tools placed one or more screw's length apart inside the cutting-off tool, so that two or more tools of said series may act successively upon each article and simultaneously upon two or more of the articles between the cutting-off tool and the rear end of the rod or stock, substantially as described.

2. In combination with the chuck or chucks and a cutting-off tool, a series of tools for turning down and threading successive portions of a long rod or stock, said tools being placed inside the cutting-off tool, so that the successive lengths of the rod or stock are turned down and threaded before reaching the cutting-off tool, substantially as described.

3. The combination, with a series of tools and feed mechanism for advancing the rod or stock to be operated upon by said tools, of a chuck or chucks placed between the tools for communicating power to the rod or stock between the tools, substantially as described.

4. The combination of a series of chucks arranged in line, feed mechanism, and a series of tools, substantially as described.

5. The combination of a series of chucks arranged in line, the feed mechanism, and the turning-down, threading, and cutting-off tools, substantially as described.

6. The combination, with a chuck or chucks for holding and revolving a rod or screw-stock, of a tool for cutting a groove in said rod or stock and cutters or chasers for threading said rod or stock beginning with said groove, substantially as described.

7. The combination, with a chuck or chucks and a series of turning-down tools placed one or more screw's lengths apart, of operating mechanism for feeding the rod or screw and for moving said tools, said mechanism bringing the tools into and out of action by transverse motions and causing them to reduce the rod or stock for the desired distance by a lengthwise movement, and to advance the rod or stock, so that the same portion may be acted upon successively by said tools, substantially as described.

8. The combination, with a chuck or chucks, a tool, such as a turning-down or a threading tool, for cutting by a movement lengthwise of the rod, and a cutting-off tool, of feed mechanism for advancing the rod continuously, so that it is fed against the first-named tool when the latter is in action, as well as advanced to bring a new portion of the rod in position to be acted upon, said cutting-off tool when in action being movable with said rod, substantially as described.

9. The combination, with a chuck or chucks, one or more turning-down tools, a threading-tool, and a cutting-off tool, of continuously-operating feed mechanism and means whereby the tools can be brought into and put out of action, substantially as described.

10. The combination, with a series of chucks and feed mechanism for advancing a rod or screw-stock continuously through said chucks, of a series of turning-down tools movable transversely, die cutters or chasers movable transversely, and a cutting-off tool movable both transversely and longitudinally, substantially as described.

11. The combination, with a chuck or chucks, of a rotatory leading-screw and a carriage engaging said screw for feeding the rod or screw-stock through the chuck or chucks, substantially as described.

12. The combination, with a chuck or chucks for rotating a rod or stock and one or more tools for acting upon the said rod or stock, of a feed mechanism comprising a rotating leading-screw and a carriage engaging the same for advancing the rod or stock, substantially as described.

13. A series of chucks arranged in line and comprising each a rotatory head, chuck-jaws in said head, and a spring tending to draw the jaws together, substantially as described.

14. The combination of the series of chucks, the parallel driving-shaft, the leading-screw, and the feed-carriage engaging said screw for advancing the rod or stock through said chucks, substantially as described.

15. The combination, with a series of chucks and a series of tools placed one or more screw's lengths apart and arranged between the chucks, of automatic mechanism for rotating the chucks for feeding the rod or screw-stock and for operating the tools, substantially as described.

16. The combination, with a chuck or chucks, of two or more turning-down tools and a threading-tool for operating successively upon the same portion of a rod or screw-stock and simultaneously upon three or more different portions, substantially as described.

17. The combination, with a chuck or chucks and continuously-operating feed mechanism, of a turning-down tool movable transversely to the axis of the chuck, and a shouldering-tool movable both transversely and longitudinally, substantially as described.

18. The combination, with a series of chucks and mechanism for feeding a rod or stock continuously, of a series of turning-down tools movable transversely and a shouldering-tool movable both transversely and longitudinally, substantially as described.

19. The combination, with a series of tools for acting successively upon the same portion of a rod or stock and simultaneously upon different portions, of mechanism for rotating the rod or stock and for supporting and guiding the same between the tools, substantially as described.

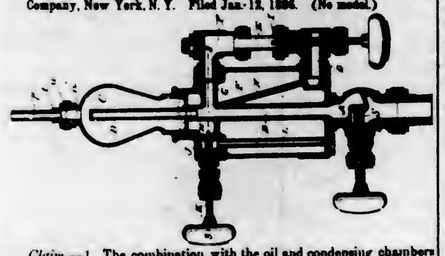
20. The herein-described improved machine for making screws from a long rod or screw-stock, the same comprising, in combination, the following elements: a frame, a chuck-shaft, a cam-shaft, connecting-gearing, a series of chucks arranged in line, a leading-screw, a feed-carriage, the series of turning-down tools, the shouldering and grooving tools, the threading-tool, the cutting-off tool, the cams, and the devices intermediate the cams and said tools, substantially as described.

21. The improved method or process of forming screws from a rod by the three following steps or operations: first, reducing the rod at proper intervals to form the shanks of the screw; second, threading the screws; third, continuously feeding the rod through the machine while said operations are being performed, substantially as described.

22. The improved art, method, or process of making screws from a rod, consisting of the following steps or operations: first, reducing the rod at proper places to form the shanks of the screws; second, threading the screws; third, cutting off the screws, said three steps being performed simultaneously, substantially as described.

23. The improved art, method, or process of making screws from a rod, consisting of the following steps or operations: first, reducing the rod at proper places to form the shank of the screw; second, squaring the screw-blank under the head; third, threading the screw; fourth, cutting off the screw, said operations being performed simultaneously, substantially as described.

337,500. LUBRICATOR. LEOPOLD KACHANDER, New York, and ROBERT RUDDY, Mount Vernon, assignors to the Nathan Manufacturing Company, New York, N. Y. Filed Jan. 12, 1886. (No model.)



Claim.—1. The combination, with the oil and condensing chambers of a lubricator, of two steam jets or pipes connected with a source of continuous steam-supply and discharging into the condensing chamber from opposite directions, one of said jets or pipes communicating with the oil-discharge passage, substantially as and for the purposes herein-before set forth.

2. The combination, with the oil and condensing chambers and their connections and the top steam-pipe, *p*, of the steam-channel B and the central steam-pipe, D, extending up into the condensing-chamber and closed at top, and provided with lateral discharge-holes A, as and for the purposes hereinbefore set forth.

3. The combination, with the oil and condensing chambers, the sight-feed, and the oil and water regulating devices, of two steam-jets, communicating with a source of continuous steam-supply and discharging into the condenser, supplying the condenser, entering the one centrally and vertically from the top and the other centrally and vertically from the bottom of the condensing-chamber, the two being arranged so that they shall meet near the top of the condenser, substantially as and for the purposes hereinbefore set forth.

4. The combination, with the oil and condensing chambers, of the central steam-pipe, D, with closed top and lateral openings A, and the opposed steam-pipe *p*, substantially as and for the purposes hereinbefore set forth.

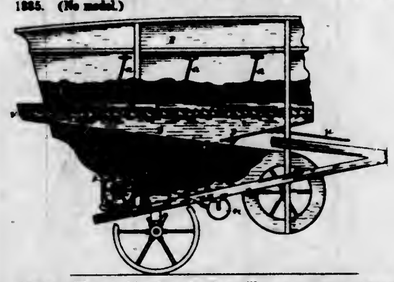
5. The combination of the oil-chamber, the condenser-chamber, the sight-feed and their connections, the conduit passage up through the oil-chamber, and discharging into the condenser-chamber, and having a branch leading to the sight-feed glass, whereby said conduit serves at once for the supply of steam and the discharge of oil, a branch pipe from said conduit to a source of continuous steam-supply, and an auxiliary pipe, *p*, leading into the condenser from the same source of steam-supply, these parts being arranged and organized as and for the purposes hereinbefore set forth.

337,501. POTATO COVERER AND CULTIVATOR. NOAH KEBLER, Wallace, N. Y. Filed July 29, 1885. (No model.)



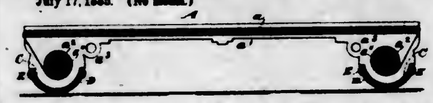
Claim.—The two forwardly-diverging scraper-plates A A, combined in a potato-coverer with rear cylinders, D D, having wings *d*, as and for the purpose described.

337,502. GRAIN-CLEANER FOR THRASHING-MACHINES. JAMES E. KEBLE, Vicksburg, Mich. Filed July 11, 1884. Renewed Aug. 15, 1885. (No model.)



Claim.—The combination of a fan-mill case, a screen, supporting-rods pivotally connecting said screen and the walls of the case at the end of the screen nearest the fan, a grain-conveyer having its end nearest the fan loosely resting on a stationary support, and the double-levered shaft having its lever-arms connected with and supporting the end of the screen and conveyer farthest from the fan, whereby the vertical action described of each of the ends of the horizontally-oscillating screen and the elevated end of the conveyer is effected, substantially as set forth.

337,503. TABLET. WILLIAM H. K. KIRK, Mount Sterling, Ill. Filed July 17, 1885. (No model.)



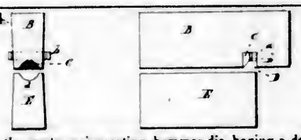
Claim.—1. The two parallel end rollers, a^2 a^2, having keepers a^4 and outside knobs, in combination with two parallel side pieces, a' a', four corner-supports, a^3, the shields C, and elastic bands D, all arranged substantially as shown and described.

2. In a tablet, the combination, with the rolls and bearing-blocks, of shields notched at the corners and rubber straps end-fastened across the bottom of said blocks, whereby the shields may be easily removed by turning back the rubber.

337,504. DIE FOR FORGING AXLES. JACOB KEPNER, Cleveland, Ohio. Filed Dec. 14, 1885. (No model.)

Claim.—In a two-part die for rounding and shaping the spindle

337,504.



ends of axles, the upper reciprocating hammer-die having a detachable cutter, which cutter does not extend beyond the plane face of the die, in combination with the lower die, substantially as and for the purpose described.

337,505. ERASER. CHARLES LA DOW, Albany, N. Y. Filed Dec. 14, 1885. (No model.)



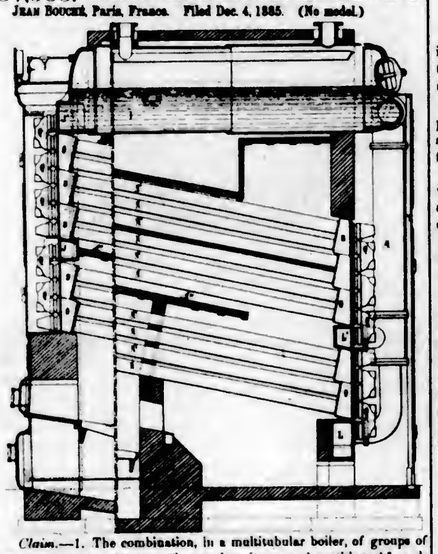
Claim.—1. The sheath B, the pencil A, engaging the sheath-screw, and the elastic eraser C, held in said sheath frictionally and movable therein.

2. The pencil or holder A, having a peg or other equivalent mechanism near one end to engage the sheath-screw, the sheath B, which incloses said end, and the elastic eraser C, held inclosed in said sheath frictionally and movable therein.

3. The metal eraser *d* and its attachments and the elastic eraser C, in combination with a tubular inclosing-sheath, B, in which they are lodged, and whereby they are mounted on a suitable holder, A, the sheath being movable upon the eraser C and holder and coacting therewith when moved thereon to protrude or withdraw the eraser C.

4. The holder A, having a peg set near one end to engage the sheath-screw, the sheath B, which incloses said end, the elastic eraser C, held inclosed in said sheath by friction, and the metal eraser *d*, inclosed in said sheath and operated therewith by the ring or stud *x* through a slot in said sheath, substantially as described.

337,506. MULTITUBULAR STEAM-BOILER. ETIENNE LAGOSSE and JEAN BOUCHÉ, Paris, France. Filed Dec. 4, 1885. (No model.)

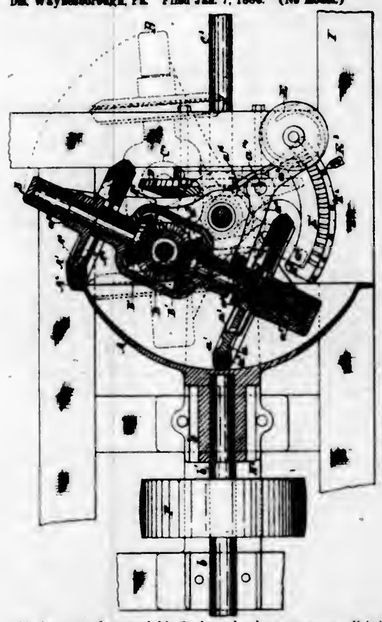


Claim.—1. The combination, in a multitubular boiler, of groups of tubes arranged one above another, and an interposed partition, A*, each group consisting of several horizontal ranges of tubular elements, N N' O O, boxes Q Q, connecting the elements of one range with those of the range above, a transversely-arranged water-collector, L L', at the bottom of one end of the group, and a transversely-arranged steam-collector, J or J', at the top of the other end of the group, all substantially as herein described.

2. The combination, with the superposed ranges of tubes N N', of the obliquely-arranged connection-boxes O O, and obliquely-arranged communication-boxes Q Q, whereby the circulation of the steam and water through said boxes is sinuous, but nearly vertical, substantially as herein described.

3. The feed-water heater consisting of the combination of tubes V, connecting boxes S, having openings opposite said tubes fitted with conical plugs U, connecting boxes T, and plates Y, all substantially as herein described.

337,507. FEED MECHANISM FOR SAW-MILLS. ABRAHAM B. LANDIS, Waynesborough, Pa. Filed Jan. 7, 1886. (No model.)



Claim.—1. In a variable-feed mechanism, a concave disk having its lowest point on its axis, in combination with the wheel adapted to travel on its inner surface from the center to the periphery thereof, substantially as described.

2. In a variable-feed mechanism, a concave disk having its lowest point on its axis, in combination with a swinging frame and a wheel adapted to travel on the inner surface of said disk, substantially as and for the purpose described.

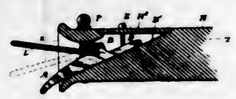
3. In a variable-feed mechanism, a concave disk, in combination with a swinging frame, a wheel thereof adapted to travel on the inner surface of said disk, and a wheel adapted to travel on the rim of said concave disk, substantially as and for the purpose described.

4. In a variable-feed mechanism, a concave disk, in combination with a swinging frame carrying a shaft and a feed-wheel having an endwise movement upon said shaft, substantially as described.

5. In a variable-feed mechanism, a concave disk having its lowest point on its axis, in combination with a swinging frame carrying a shaft and a feed-wheel, and a lever controlling said feed-wheel, substantially as described.

6. In a variable-feed mechanism, a concave disk, in combination with a swinging frame carrying a shaft, and a feed-wheel, a lever controlling said feed-wheel, and a sector controlling said lever, substantially as described.

337,508. CAR-COUPLING. JAMES J. LARGENT, Peoria, Ill., assignor of two-thirds to Thomas R. Danish and Michael Wilz, both of same place. Filed Dec. 7, 1885. (No model.)

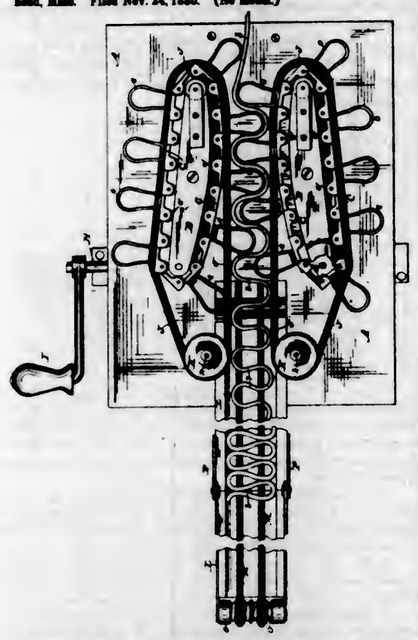


Claim.—1. In a car-coupling, the combination, with the draw-head having the bottom of its interior downwardly inclined to its mouth, of the telescopic guide easily movable upon said inclined bottom, and adapted to have its lower extremity project down and out from the mouth of the draw-head, and to be moved back up therein, whereby to receive and guide a link up into the draw-head, as set forth.

2. In a car-coupling, the combination, with the draw-head having the bottom of its interior inclined, as set forth, of the telescopic guide easily movable on said inclined bottom and having the longitudinal slot, and the bolt in said slot for limiting the displacement of said guide, substantially as and for the purpose set forth.

3. The combination, in a car-coupling, of the draw-head H, having the inclined bottom H' in its interior, the telescopic guide A, having the prop B, and the cavities therein, and having its upper end slotted, and the bolt E in said slot, substantially as and for the purpose set forth.

337,509. CANDY-CRIMPING MACHINE. PHILIP B. LASKEY, Marblehead, Mass. Filed Nov. 24, 1885. (No model.)



Claim.—1. In a candy-crimping machine, the combination, with suitable operating mechanism, of a pair of rotary endless chains provided with intermeshing teeth or crimpers, substantially as set forth.

2. In a candy-crimping machine, the combination, with a pair of rotary endless chains provided with intermeshing teeth or crimpers, of guides or supports around which said chains rotate, said guides or supports being arranged to diverge from each other at the delivery ends of the chains, so that the crimpers will come together on the arc of a comparatively-small circle, and will diverge or part on the arc of a larger circle, substantially as set forth.

3. In a candy-crimping machine, the combination, with a pair of rotary crimpers, of a pair of strippers for insuring the removal of the crimped candy from the said crimpers, substantially as set forth.

4. In a candy-crimping machine, the combination, with a pair of rotary crimpers, of a pair of rotary strippers moving therewith and serving to insure the removal of the crimped candy from the said crimpers, substantially as set forth.

5. In a candy-crimping machine, the combination, with the endless rotary crimpers, of a trough or guideway for receiving the crimped candy, substantially as set forth.

6. A candy-crimping machine provided with a hinged trough or guideway capable of being folded when the machine is not in use, substantially as set forth.

7. The combination, with a pair of rotary crimpers, of an endless carrrier or carriers for removing the candy from the said crimpers, substantially as set forth.

8. The combination, with a pair of rotary crimpers, of one or more endless carriers having a movement slower than the crimpers, substantially as set forth.

9. The combination, with the endless rotary crimpers, of the strippers and endless carriers, substantially as set forth.

10. The combination, with the rotary crimpers, of the trough or guideway and the endless carriers, substantially as set forth.

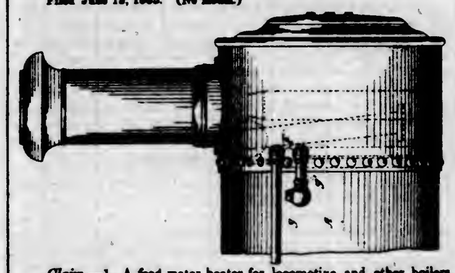
11. The combination, with the rotary crimpers, of the strippers, the trough or guideway, and the endless carriers, substantially as set forth.

12. The combination, with the guiding-blocks B, of the endless chain C, provided with anti-friction wheels *c'* and crimping-teeth *c*, substantially as set forth.

13. The combination, with the frame or platform A, having brackets *a*, of the driving-shaft H, having gears G, the vertical shafts E, having gears F and sprocket-wheels D, the endless chain C, having crimping teeth or loops *c*, and the guiding-blocks B, substantially as set forth.

14. The combination, with the driving-shaft H, having the grooved roller N, of the trough L, having the grooved roller O, and the endless carriers M, running over said rollers, substantially as set forth.

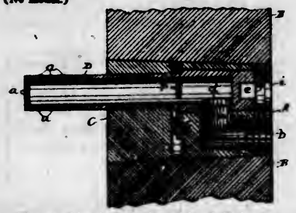
337,510. FEED-WATER HEATER. CYPRIAN HAMMER, Boston, Mass. Filed June 18, 1885. (No model.)



Claim.—1. A feed-water heater for locomotive and other boilers, comprising a continuous or unbroken pipe arranged in the smoke-box of the boiler in close proximity to the casing thereof, to extend about the smoke-box, and also in close proximity to the flue-sheet of the boiler, one end of which pipe is connected outside the smoke-box with the boiler, as specified, and the other of which is connected outside the boiler with a source of water-supply, all substantially as and for the purposes set forth.

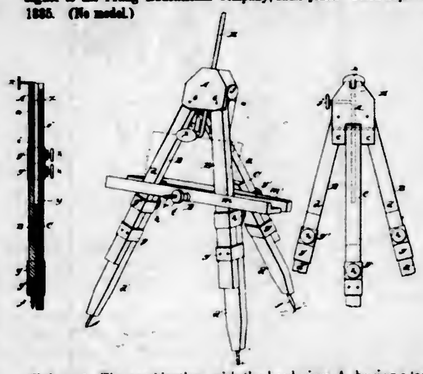
2. The combination, in a feed-water heater for locomotive and other boilers, of the smoke-box, the flue-sheet of the boiler, and a feed-water heater consisting of a coil of pipe extending about the inner surface of the smoke-box and in close proximity to the flue-sheet of the boiler, connected at one end with an injector or pump, and at the other end with a boiler, all substantially as and for the purposes specified.

337,511. FAUCET. JOHN MCKENZIE, West Troy, N. Y. Filed Oct. 19, 1885. (No model.)



Claim.—The combination of a barrel-head, B, having a conical hole flaring toward the inner side, the turn-plug A, fitting said hole from the inside of barrel, and a spigot, D, having a conical head fitting a corresponding hole through the plug from the inside of barrel, said plug being provided with a discharge-outlet, *m b*, and the spigot with a side hole adapted to register therewith, all substantially as and for the purposes specified.

337,512. SKETCHING-EASEL. EDWARD G. HEAD, Boston, Mass., assignor to the Prang Educational Company, same place. Filed Sept. 26, 1885. (No model.)



Claim.—1. The combination, with the head-piece A, having a longitudinal slot, of the side legs, B B, and rear leg, C, each made of two parts sliding upon each other, and a bar or rod, i, passing through the

slot and extending between the parts of the rear leg, to hold the same in position when folded for storage, substantially as described.

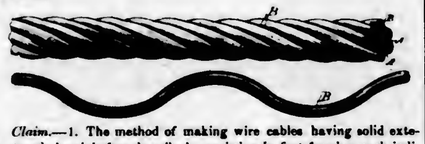
2. A canvas-rest for an easel, consisting of two sections, *m m'*, one being provided with a recess, and the other with a rib extending into said recess, and a clamping-screw passing through both sections, whereby the rest may be secured to the legs of an easel at any desired position, substantially as described.

3. The combination, with the head-piece of an easel having a longitudinal slot, as *x*, of a canvas-holder consisting of a bar or rod, *i*, having a button, *k*, upon its bent end, and adapted to be secured in the slot of the easel-head, so that the button will bear upon the upper part of any sized canvas and hold it in position, substantially as described.

4. The combination, with an easel, of a rest consisting of two sections arranged to be secured to the legs of the easel in any desired position, and a canvas-holder consisting of a rod having a button upon its end arranged to be secured in the head of the easel and bear upon the upper part of the canvas, substantially as described.

337,513. METHOD OR PROCESS OF MAKING WIRE CABLES. ARTHUR J. MOXHAM, Johnstown, Pa. Filed Sept. 17, 1884. (No model.)

Brief.—In order that the wire cable shall have, with a certain degree of elasticity, a greatly-increased durability, it is made by forming each individual solid strand into a helix when cold, then laying them up into a cable.

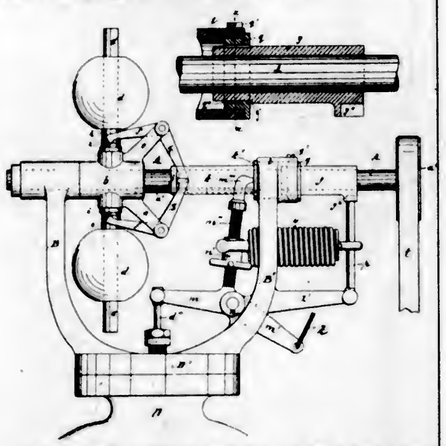


Claim.—1. The method of making wire cables having solid exterior strands hereinbefore described, consisting in first forming each individual solid strand into a helix when cold, and then winding or laying up said strands together into a cable, substantially as and for the purposes set forth.

2. The method of making wire cables having solid exterior strands hereinbefore described, consisting in first forming each individual solid strand into a helix when cold, and then winding or laying up said strands together into a cable over an interior or core, substantially as and for the purposes set forth.

337,514. GOVERNOR. WILLIAM M. NORCROSS, Brooklyn, N. Y. Filed Aug. 6, 1885. (No model.)

Brief.—In the event of the breaking of the belt the shaft A will spring upward so that the shoulder *y'* will clear the projections *q' q''* and allow the tube *y* to slide in the collar *q*, thereby relaxing the tension of the spring *o* and allowing the valve to close.



Claim.—1. The combination of shaft A and collar *b*, having arms *c c*, with balls *d*, and with bell-cranks pivoted to arms *c* and imparting motion to sliding tube *k*, for operating the throttle-valve, substantially as specified.

2. The combination of a governor with a three-armed lever, *m m' m''*, of which arm *m* is connected to the valve-stem, arm *m'* is connected to a hand-rope, and arm *m''* is oscillated by the action of the balls, substantially as specified.

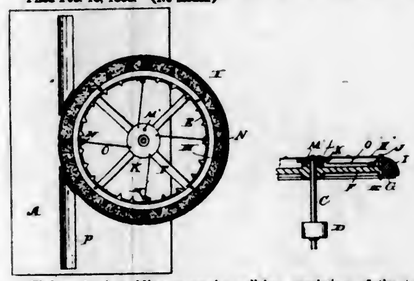
3. The combination of lever *m m''* with tube *k*, nut *n'*, embracing arm *m''*, and with the spring *o*, attached to nut *n'*, substantially as specified.

4. The combination of shaft A with collar *b*, having arms *c c*, and with balls *d*, bell-cranks *f g*, tube *k*, having lugs *j*, and collar *k'*, and with elbow-lever *m m''*, substantially as specified.

5. The combination of shaft A with sleeve *y*, having shoulder *y'*, and with ring *q*, having projections *q''*, and with the rod *p* and spring *o*, substantially as specified.

6. The combination of shaft A with sleeve *y*, ring *q*, rod *p*, spring *o*, nut *n'*, and lever *m m''*, substantially as and for the purpose specified.

337,515. MOLDING-POLISHER. SCOTT I. PHELPS, Cincinnati, Ohio. Filed Feb. 18, 1885. (No model.)



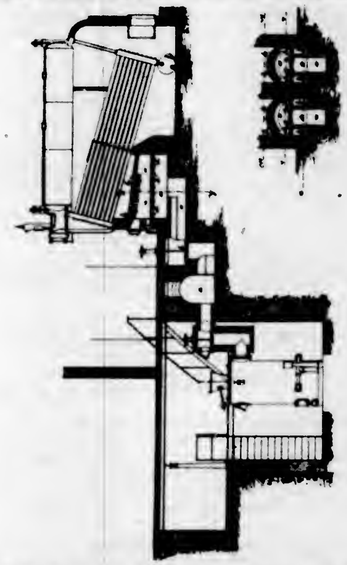
Claim.—1. A molding or cornice polisher consisting of the table having thereon removable guides of the conformation of the cornice or molding to be polished, in combination with the horizontal rotatable wheel having a peripheral removable rim of like changeable conformations, and provided with sand-paper for polishing purposes, substantially as herein described.

2. The horizontal rotating wheel having on the lower side of the solid rim E a projecting rim, G, and on the upper side a ring, H, with clamping-bolts J, in combination with the removable rim I, for holding the sand-paper, substantially as herein described.

3. The horizontal rotating wheel having changeable rims of different conformations, in combination with the tangential guides of like conformation in cross-section, substantially as herein described.

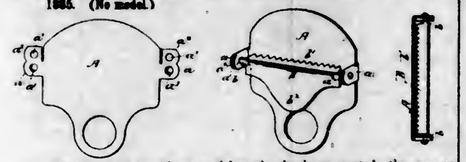
4. The horizontal rotating wheel having the removable rim I, in combination with the loops N, connecting-rod O, and perforated disk K and pin M, as and for the purpose substantially as herein set forth and described.

337,516. APPARATUS FOR BURNING GASEOUS FUEL. FERDINAND PHILIPS, Philadelphia, Pa. Filed June 13, 1884. (No model.)



Claim.—In an apparatus for generating heat by means of gaseous fuel, the alternate parallel tunnels for gas and air, divided by narrow partition-walls having outlet-openings for gas and air, respectively, lying directly opposite to and intersecting each other, in combination with a combustion-chamber made of refractory material interposed between said tunnels and the boiler, kiln, or furnace in such a manner that the entire roof of said gas and air tunnels form part of the interior of the combustion-chamber, said combustion-chamber being provided with outlet-openings of prescribed area, and all arranged substantially as and for the purpose set forth.

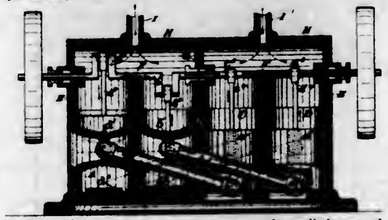
337,517. BUCKLE. THOMAS O. POTTER, Boston, Mass. Filed May 27, 1885. (No model.)



Claim.—1. A buckle comprising the back or part A, the ears or supports *a*, integral with the back, and having the cups a^2, and the perforated sections a^3, bent, as described, to bring the perforations in line with the cups and with each other, and the buckle-jaw having the pivots *b*, and supported by said ears or supports, all substantially as set forth.

2. The buckle having the supports for the jaw-pivots formed by the cups or depressions a^2, and perforated sections a^3, which are bent from the upper or lower edge of the remainder of the ear, and parallel therewith, to bring their holes or perforations in line with each other, all substantially as and for the purposes described.

337,518. STEAM-ENGINE. GEORGE W. PRES, Baltimore, Md., assignor of one-half to William J. Hooper, same place. Filed June 26, 1885. (No model.)



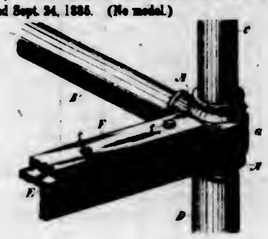
Claim.—1. In a steam-engine, two companion cylinders, as A and C, each having two ports, as *a'* and a^2, *c'* and c^2, and one piston, arranged, combined, and operating with the ports and each other, so that a portion of the steam operating on top of the piston in cylinder A may pass out the port *a'* when piston *a* has descended to open said port, and into its companion cylinder C and below the piston *c* to force said piston upwardly and pass out of the port *c'* when the piston *c* has uncovered the lower end of said port, back into cylinder *a* at the bottom, and under piston *a*, to counterbalance the steam on the opposite side of said piston during its upward stroke.

2. In a steam-engine, two companion cylinders, as A and C, each having two ports, as *a'* and a^2, *c'* and c^2, and one piston, arranged, combined, and operating with the ports and each other, so that the steam first enters cylinder A, and passes thence to cylinder C, and under piston *c*, to propel said piston, and out of cylinder C back again to cylinder A, and under piston *a*, to propel it, substantially as shown and described.

3. In a steam-engine, two companion cylinders, as A and C, each having two ports, as *a'* and a^2, *c'* and c^2, and one piston, arranged, combined, and operating with the ports and with each other, so that the steam from cylinder A will exhaust through cylinder C direct, and the steam from cylinder C will exhaust through cylinder A, and then back through cylinder C on the opposite side of its piston.

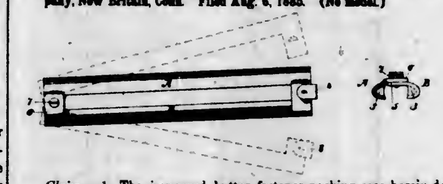
4. A steam-engine having two or more pairs of cylinders, one half of which have their pistons exposed to direct pressure of the steam on top, and the other half arranged to receive the pressure of steam on the bottom, substantially as described.

337,519. IRON BEDSTEAD. ANDREW L. PRESSLE, San Francisco, Cal. Filed Sept. 24, 1885. (No model.)



Claim.—In an iron bedstead, the combination of the T-coupling A, the pipes B C D, screwed into the coupling, the latter pipe being readily removable, the angle-iron strip E, having its horizontal portion abutting against the side of the coupling and its vertical portion passing behind it, the bolt G, passing through the angle-iron strip and the back of the coupling, the nut *g* on the inner end of the bolt within the coupling, and the clamp-plate F, substantially as herein described.

337,520. BUTTON-FASTENER PACKING-CASE. FRANCIS H. REMINGTON, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Aug. 6, 1885. (No model.)



Claim.—1. The improved button-fastener packing-case herein described, it comprising two bars grooved on their inner sides to clasp the fasteners, said bars being provided with adjustable connections, substantially as described, whereby they may be closed to retain or separated to discharge simultaneously a string of fasteners, substantially as set forth, and for the purpose specified.

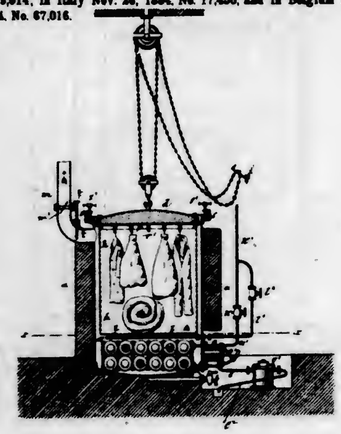
2. The improved button-fastener packing-case herein described, it comprising grooved bars A B, said bars being pivotally connected at one end and detachably connected at the other, substantially as set forth, and for the purpose specified.

337,521. RECLINING-CHAIR. SANFORD G. SCARRETT, St. Louis, Mo. Filed Nov. 2, 1885. (No model.)



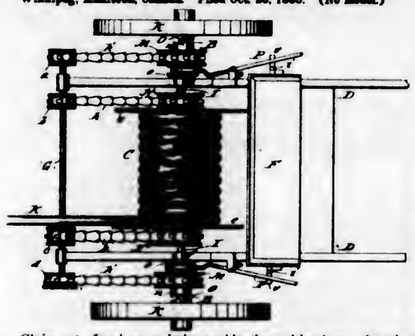
Claim.—In a reclining-chair, the combination of the chair-seat A, hinged back B, chair-arms E D, arm F, and head-rest C, said head-rest being hinged directly to the top of the chair-back and connected at its lower end with the arm F by means of a short arm, G, substantially as described, and for the purposes specified.

337,522. APPARATUS FOR DISINFECTING. OSCAR SCHIMMEL, Chemnitz, Saxony, Germany. Filed July 7, 1885. (No model.) Patented in France Sept. 14, 1883, No. 157,547; in England June 16, 1884 No. 9,014; in Italy Nov. 26, 1884, No. 17,450, and in Belgium Dec. 15, 1884, No. 67,016.



Claim.—An apparatus for disinfecting, a removable cage or basket having perforated walls and bottom, a cross-bar provided with hooks, and a double lid filled with non-conducting material, in combination with a steam-heated chamber surrounded by non-conducting walls, a perforated live-steam pipe, valved induction and eduction air-pipes, and a device for raising and lowering the basket, substantially as described.

337,523. **HOSE-REEL.** ANDREW SCHMIDT and CHARLES REVERCOMB, Winnipeg, Manitoba, Canada. Filed Oct. 20, 1885. (No model.)

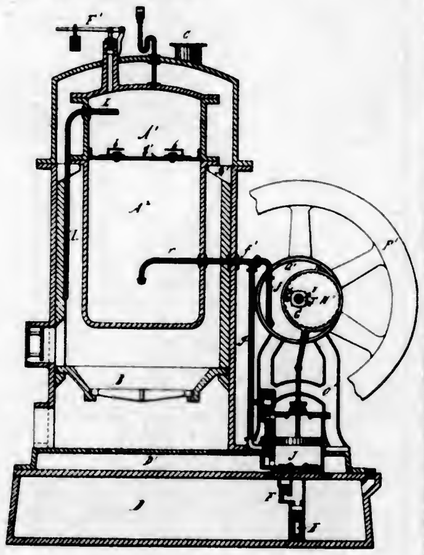


Claim.—1. In a hose-reel, the combination, with a bent axle, wheels mounted thereon, and thills supported on springs secured to the axle, of a reel mounted in bearings on the thills, directly over the axle, and mechanism for operating the reel from the wheels, substantially as herein shown and described.

2. In a hose-reel, the combination, with a bent axle, wheels thereon, and having notched hubs and thills supported by said axle, of a reel journaled in bearings on the thills, above the axle, sprocket-wheels on the ends of the reel, a shaft journaled in the rear ends of the thills, sprocket-wheels on the said shaft, sliding and notched sleeves on the axle, sprocket-wheels thereon, drive-chains, and a lever for operating the sleeve, substantially as herein shown and described.

3. A hose-reel consisting of the bent axle A, the wheels B, having notched hubs, the thills D, supported on springs E, secured to the axle, the reel C, journaled in the thills above the axle, and provided with sprocket-wheels N N', the shaft G, journaled in the rear ends of the thills and provided with the sprocket-wheels *a b c d*, the notched sleeves *s*, sliding on the axle, and provided with sprocket-wheels M, the chains A A', the forked lever P, and the catch *v*, substantially as herein shown and described.

337,524. **FLASHER.** JOSEF SCHREIBER, Vienna, Austria-Hungary. Filed Dec. 16, 1885. (No model.)



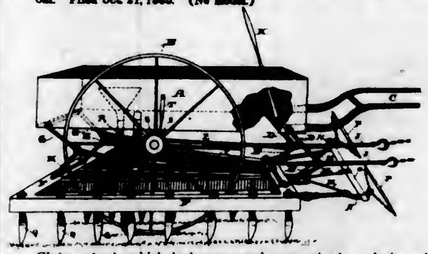
Claim.—1. The combination of the adjustable eccentrics for regulating the stroke of the piston or connecting-rods by means of the four-cornered or square part *p q r s* of the muff or sleeve *l m n o* with the oblong opening *t u v w* in the eccentrics H or H', which said four-cornered or square part *p q r s* of the muff or sleeve *l m n o* can be adjusted in the oblong opening *t u v w* in the eccentrics H or H' by means of the screws or screw-bolts S T U, substantially as described in the foregoing specification and shown in the accompanying drawings.

2. The combination of the sleeve or muff *l m n o* and the square extension *p q r s* to the same with the collar or disk P, the crank-shaft G, and the eccentric H or H', substantially as described in the foregoing specification and shown in the accompanying drawings.

3. In a feeding device for steam boilers or generators, the combination of the water-pump F and water-reservoir D with the air-pump I and the adjustable eccentrics H and H', substantially as and for the purpose set forth in the foregoing specification and shown in the accompanying drawings.

4. The combination of the eccentrics H and H', and the water and air pumps F I, and the graduations R, substantially as and for the purpose set forth in the foregoing specification and shown in the accompanying drawings.

337,525. **AGRICULTURAL IMPLEMENT.** JOHN D. SCOTT, Petaluma, Cal. Filed Oct. 21, 1885. (No model.)



Claim.—1. A vehicle-body supported upon wheels, and the cultivator or harrow frame suspended beneath by the angular links or levers connected with its front and rear end, and having their meeting angles connected by a rod, in combination with rods or links J, whereby the forward angles may be connected with the draft-horse, substantially as and for the purpose herein described.

2. A vehicle-body having a cultivator or harrow frame suspended beneath by links which are connected by rods extending between their meeting angles, in combination with the rods J to which the draft-animal is connected, and the hand-lever K, and the holding-rack, substantially as and for the purpose herein described.

3. A vehicle-body mounted upon wheels and having a cultivator suspended beneath it, in combination with a double series of links or levers connected with the front and rear of the body, and the draft-rods connected with them, whereby the cultivator may be raised and depressed by the movement of the team, substantially as set forth.

4. The vehicle-body mounted upon wheels and having a cultivator suspended adjustably beneath it, in combination with the tube or tubes R, extending downward from the vehicle, so that articles may be dropped into the trench formed by one set of teeth and covered by the following, substantially as herein described.

5. The cultivator-frame suspended beneath the vehicle-body by the angularly-joined levers united by rods or links extending between the joints of the front and rear sets of levers, and the draft-rods J, connecting with the joints of the front set, in combination with the draft-bar, the single-trees, and connecting-rods, whereby they are united with the cultivator-frame, so as to regulate the draft on the vehicle and the cultivator, substantially as herein described.

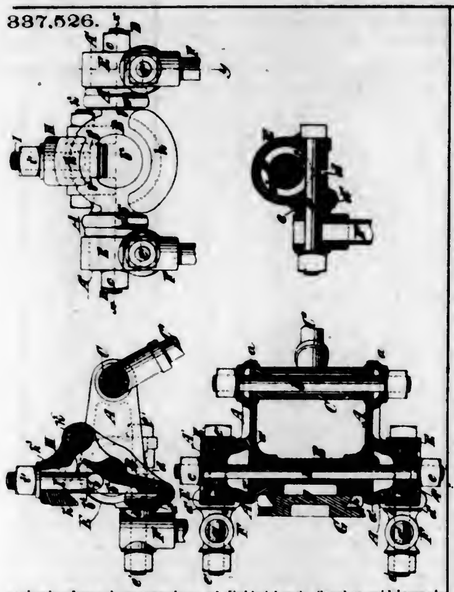
337,526. **SUPPORT FOR ROCK-DRILLS.** HENRY C. SERGEANT, New York, N. Y. Filed Dec. 24, 1885. (No model.)

Claim.—1. In a support for a rock-drill, the combination, with a clamp or body to receive a dovetailed projection on the drill-back, and having upon its face a fixed jaw which is beveled or undercut, of a movable jaw also beveled or undercut and carried by a lever fulcrumed to the clamp or body, and a single bolt for adjusting the lever and movable jaw relatively to the fixed jaw, substantially as herein described.

2. In a support for a rock-drill, the combination, with a clamp or body having a fixed jaw upon its face, of a movable jaw carried by a lever fulcrumed to the clamp or body, and a bolt for adjusting the lever and movable jaw relatively to the clamp or body and fixed jaw, the clamp or body being cored out so that the bolt may be inserted through it from the face, and having shoulders against which the head of the bolt bears, substantially as herein described.

3. In a drill-tripod, the combination, with a body provided with a clamp in which the drill-back may be secured, and hip-pieces having

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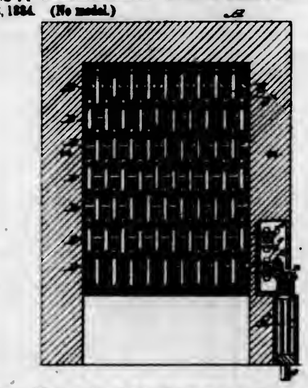


projecting journals or trunnions, of divided bands fitted to said journals or trunnions and front legs pivoted to the bands, whereby provision is afforded for the swinging of the front legs in planes parallel with and transverse to the hip-pieces, substantially as herein described.

4. In a drill-tripod, the combination, with a body provided with a clamp, wherein the drill-back may be secured, and hip-pieces having projecting journals or trunnions A', of the divided bands E, surrounding said journals or trunnions, the side legs, F, and the bolts *e'*, whereby the side legs are pivoted to said bands and the bands clamped upon the journals or trunnions, substantially as herein described.

5. In a drill-tripod, the combination, with a body provided with a clamp in which a drill-back may be secured, and hip-pieces provided with projecting journals or trunnions A', having circumferential grooves a^3, of the divided bands E, surrounding said journals or trunnions, the side legs, F, and the bolts *e'*, which project into the grooves a^3, and whereby the side legs are pivoted to said bands and the bands clamped upon the journals or trunnions, substantially as herein described.

337,527. **FURNACE-GRATE.** JOSEPH W. SHAW, St. Louis, Mo. Filed Oct. 3, 1884. (No model.)

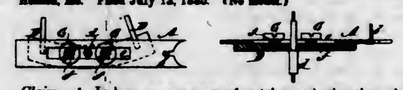


Claim.—The combination of the furnace A, the grate-bars B B, having the sprocket-wheels b^3, the chain C, the gears D E, and the shaft E', substantially as described.

337,528. **WATERPROOFING CLOTH.** JAMES H. SHELDON, Zanesville, Ohio. Filed Sept. 15, 1885. (No specimens.)

Claim.—The method of waterproofing cloth herein set forth, which consists in saturating the cloth one or more times in a hot solution of gum-arabic, table-salt, and alum dissolved in hot soft water, then handling and airing it, then hanging it up to drain, then saturating the cloth in a warm solution of Spanish whiting and prepared chalk, then handling and airing it, and then hanging it up to dry, all substantially as described.

337,529. **ESCAPEMENT-LEVER FOR WATCHES.** WM. B. SIMPSON, Holden, Mo. Filed July 12, 1885. (No model.)



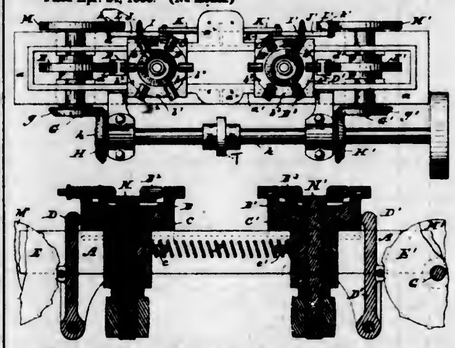
Claim.—1. In lever-escapements of watches and other time-pieces, the lever-fork A, having a longitudinal slot, *s*, arranged to extend on opposite sides of its staff, substantially as and for the purposes herein set forth.

2. In lever-escapements of watches and other time-pieces, the combination, with the lever-pallet D, of the lever-fork A, having a longitudinal slot, *s*, the staff *d*, the perforated plate E, and the screws G G, whereby the lever-fork may be adjusted forward or backward without taking the watch apart and while the balance-wheel is on, essentially as specified.

3. The combination of the screws G, having shoulders *f*, with the lever-fork A, slotted to receive said shoulders within it, substantially as and for the purpose herein set forth.

4. The plate E, having a recess, *g*, and apertures A A in it, in combination with the removable plate *i*, the screws G G, the slotted lever-fork A, the lever-pallet D, and the staff *d*, essentially as shown and described.

337,530. **AUTOMATIC LATHE.** FRANK M. STEVENS, New York, N. Y. Filed Apr. 24, 1885. (No model.)



Claim.—1. The combination of a lathe-bed having mechanism, substantially as described, for holding the work rigid, the sliding carriages, and revolving turrets, with longitudinal and transverse shafts hung in bearings on said bed and connected by bevel-gears, and suitable cams and actuating-levers, whereby said turrets are rotated and said carriages are moved as required, all constructed and operating substantially as and for the purpose specified.

2. The combination of a lathe-bed having mechanism, substantially as described, for holding the work rigid, the sliding carriages, and revolving turrets, stationary tools mounted radially thereon, with longitudinal and transverse shafts hung in bearings on said bed and connected by bevel-gears, and suitable cams and actuating-levers, whereby said turrets are rotated and said carriages are moved upon said bed as required, all constructed and operating substantially as and for the purpose set forth.

3. The combination of a lathe-bed having mechanism, substantially as described, for holding the work rigid, the sliding carriages and revolving turrets, revolving tools mounted radially thereon, and means, substantially as shown, for driving the same, with longitudinal and transverse shafts hung in bearings upon said lathe-bed and connected by bevel-gears, and suitable cams and actuating-levers, whereby said turrets are rotated and said carriages are moved upon said bed as required, all constructed and operating as and for the purpose set forth.

4. The combination of a lathe-bed having mechanism, substantially as described, for holding the work rigid, the sliding carriages and revolving turrets, revolving tools mounted radially thereon and driven by bevel-pinions, and a bevel-gear mounted on a vertical shaft hung centrally in said turrets and having at its lower end a belt-pulley, with longitudinal and transverse shafts hung in bearings upon said lathe-bed and connected by bevel-gears, and suitable cams and actuating-levers, whereby said turrets are rotated and said carriages are moved upon said bed as required, all constructed and operating substantially in the manner and for the purpose described and set forth.

5. In a lathe, the combination of a sliding carriage and a revolving

turret mounted thereon and provided with revolving tools, and means, substantially as described, whereby said carriage and turret are moved and rotated intermittingly, as set forth.

6. In a lathe, the combination of a weighted lever, a cam for operating said lever, a movable jaw, a latch, a feed-wheel, and a chute, all arranged to operate as an automatic feeding device, substantially as shown, and for the purpose set forth.

7. In a lathe, the combination of a movable jaw, a seat-block, a lever connected with said jaw, and means for operating the same, whereby the work may be held rigid while being operated upon, substantially as shown and described.

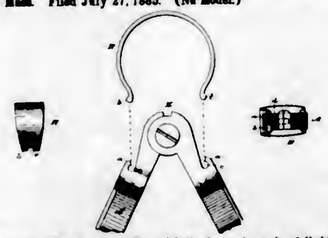
8. In a lathe, the combination of a movable jaw provided with a groove for the insertion of a stamping-die, a seat-block, a lever connected with said jaw substantially as shown, and means for operating the same, whereby the work may be stamped or marked while being held to be operated upon, as and for the purpose set forth.

9. In a lathe, the combination of revolving turrets and sliding carriages, and a cam for moving said carriages, substantially as described, with a spring, for the purpose of moving and holding said carriages in close contact with said cam, as shown and set forth.

10. In a lathe, the combination, with a sliding carriage, of a revolving turret, and revolving tools mounted thereon, and means, substantially as described, whereby said turret may be revolved independently of said carriage, as set forth.

11. In a lathe, the combination, with sliding carriages, of revolving turrets having notches or ratchets b^3 b^3, pawls l l', and means, substantially as described, whereby said turrets may be revolved independently of said carriages, as and for the purpose set forth.

337,531. CALIPERS AND DIVIDERS. JOSHUA STEVENS, Chicopee Falls, Mass. Filed July 27, 1885. (No model.)

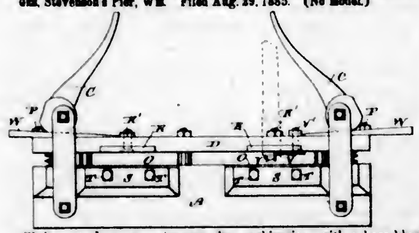


Claim.—1. The combination, with the legs of a pair of dividers, calipers, or other analogous instruments formed with outside hooks, *a a*, of a C-spring, the ends of which tend to press outwardly and are engaged by said hooks, substantially as set forth.

2. The combination, with legs A A, having hooks *a a* on their outer sides, forming sockets *c c*, of spring B, its ends formed with rounded ribs or beads *b b*, entering said sockets, substantially as set forth.

3. The combination of legs A A, having hooks *a a* on their outer sides, spring B, having its ends formed to engage said hooks, and notched at *e*, and a screw, *d*, entering said notch, substantially as set forth.

337,532. SAW-GUMMER. ALBERT B. STEVENSON and JOHN STUEMPGES, Stevenson's Pier, Wis. Filed Aug. 29, 1885. (No model.)



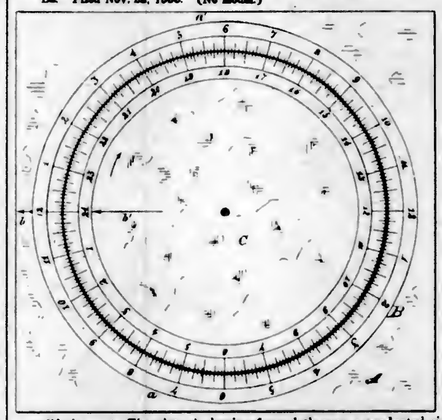
Claim.—1. In a saw-gummer, the combination, with a base-block and a clamping-plate, of dies in the base-block, dies in the clamping-plate, and devices for adjusting the dies in the base-block, substantially as herein shown and described.

2. In a saw-gummer, the combination, with a base-block and a clamping-plate, of dies held in the base-block and clamping-plate, the yokes S on the sides of the base-block, and the screws T in the yokes, for adjusting the dies on the base-block, substantially as herein shown and described.

3. In a saw-gummer, the combination, with a base-block, a clamping-plate, and the cam-levers C, for pressing the clamping-plate on the base-block, of the longitudinal slotted wedges W and the bolts P, substantially as herein shown and described.

4. In a saw-gummer, the combination, with a base-block, A, and the clamping-plate D, of the cam-levers C and the wedges W, between the cam ends of the levers and the clamping-plate D, substantially as herein shown and described.

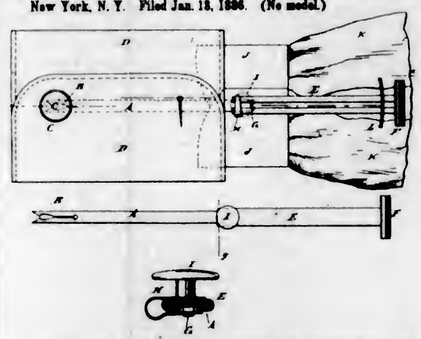
337,533. TIME-CALCULATOR. SULLIVAN S. STREET, New Orleans, La. Filed Nov. 23, 1885. (No model.)



Claim.—1. The plate A, having formed thereon a graduated circle, B, divided into hours and subdivisions thereof, each half of the circle being numbered from one to twelve, and in combination therewith of a disk, C, divided into twenty-four parts representing hours, each part being subdivided, substantially as herein shown and described.

2. In a time-calculator, the graduated circle B, divided into twenty-four equal divisions representing the hours of the day, the divisions of each half of the circle being numbered from one to twelve, and subdivided as described, and provided with the index *b*, and the disk C, pivoted co-axially with the circle B, and provided with twenty-four equal graduations around the edge thereof, said graduations being numbered from one to twenty-four successively and subdivided, and the index *b'* formed on the disk C, combined and arranged as herein specified.

337,534. CUFF HOLDER AND ADJUSTER. ROBERT STUYVESANT, New York, N. Y. Filed Jan. 13, 1886. (No model.)



Claim.—In a cuff holder and adjuster, the combination, with the bar A, having a spring-catch, B, at one end and a stop-pin, G, at its other end, of the bar E, grooved to receive the bar A, and having a cross-head, F, at one end and a stop-spring, H, and a button, I, at its other end, substantially as herein shown and described, whereby a cuff can be securely connected with the wristband of a shirt-sleeve, can be readily moved in or out, and will be held securely in either position, as set forth.

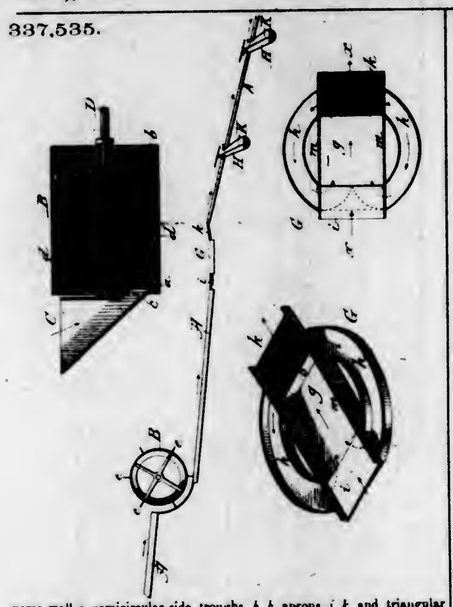
337,535. AMALGAMATING APPARATUS. JULIUS E. THIELEEN, EUGENE L. GHEQUIÈRE, and HENRY W. DILG, Portland, Oreg. Filed Oct. 29, 1885. (No model.)

Claim.—1. In an amalgamating apparatus, the combination, with a sluice-box, of an amalgamating-pan having aprons *i k* and semicircular side troughs, *h h*, substantially as described.

2. In an amalgamating apparatus, the combination, with a sluice-way, of an amalgamating-pan having a vertical wall, *o*, at one end, side troughs, *h h*, communicating with the body of said pan, metallic inlet-apron *i*, and wire exit-apron *k*, substantially as described.

3. In an amalgamating apparatus, the combination, with a sluice-way, of an amalgamating-pan having side flanges, *m m*, vertical transverse wall *o*, semicircular side troughs, *h h*, aprons *i k*, and triangular blocks *p p'*, located beneath said aprons, substantially as described.

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4. In an amalgamating apparatus, the combination, with a sluice-way, of an amalgamating-pan having a deep body, *g*, with communicating side troughs, *h h*, of less depth, and an inlet apron or plate, *i*, and exit-apron or sieve *k*, substantially as described.

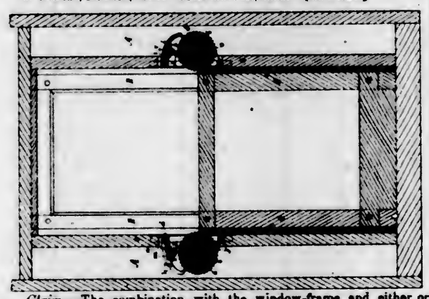
5. In an amalgamating apparatus, the combination, with a sluice-box and a pan-amalgamator having a wire-exit apron, *k*, of a riffle, H, provided with an adjustable partition, K, substantially as described.

6. In an amalgamating apparatus, the combination of the sluice-box A, having riffles H, the amalgamating-pan G, and the rotary cylindrical screen B, substantially as described.

7. In an amalgamating apparatus, the combination of the sluice-box A, the amalgamating-pan G, and the rotary cylindrical screen B, having paddles *e*, and inclosing a worm or conveyer, *d*, substantially as described.

8. In an amalgamating apparatus, the combination of the sluice-box A, the rotary cylindrical screen B, having a conveyer, *d*, the hopper C, and the amalgamating-pan G, substantially as described.

337,536. COMBINED SASH BALANCE AND FASTENER. GEORGE J. THOMAS, Newton, Mass. Filed Nov. 23, 1885. (No model.)

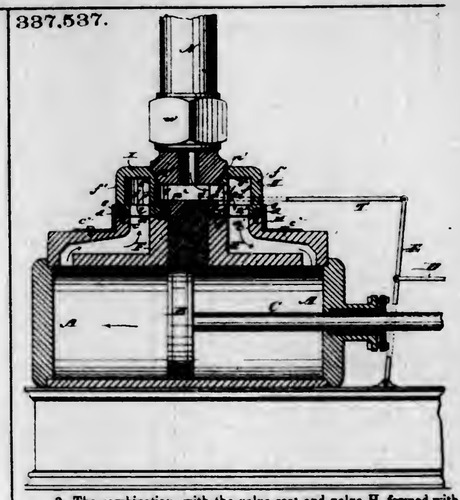


Claim.—The combination, with the window-frame and either or each sash thereof, and with two racks, *a*, applied to opposite edges of such sash, the gears *b*, engaging with such racks, the helical springs *f*, applied to the shafts *c* of said gears, and the catch-pawl *l* over one of the said gears, of the shaft *g* and its cams *h* and *i*, and the friction-arm *m* and its spring *n*, all being arranged substantially and to operate as set forth.

337,537. STEAM-VALVE. ARIE VOGEL, Lake, Ill. Filed Sept. 28, 1885. (No model.)

Claim.—1. The combination, with the valve-seat and valve H, of a hollow pivot, N, and a packing-ring, *d*, substantially as described.

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2. The combination, with the valve-seat and valve H, formed with the beveled bearing-surfaces b' b^3, of a hollow pivot, N, formed with correspondingly-beveled surfaces n' n^3, and a threaded end, *p*, substantially as described.

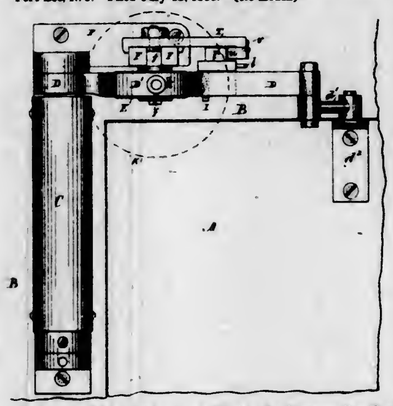
3. The combination, with the valve-seat and its groove *c*, of the valve H, with its groove c^3, a packing-ring, *d*, pivot N, formed with beveled surfaces n' n^3, and pivot *p*, substantially as described.

4. The combination, with the valve-seat formed with ports *a*, *a'*, and *b*, of the valve H, formed with ports *l l'*, *k k'*, and *m*, and hollow pivot N, formed with ports *v v*, substantially as described.

5. The valve H, formed with the chambers *i*, *i'*, and i^3, ports *k k'*, *l l'*, and *m*, and recess *g*, substantially as described.

6. The combination, with an engine-cylinder having ports, as *a*, *a'*, and *b*, and the rotary reciprocating valve H, of the hollow pivot N, having the ports *v v*, and the recess *g'*, substantially as described.

337,538. COMBINED DOOR-CHECK AND ALARM. CHARLES VOGEL, Fort Lee, N. J. Filed July 13, 1885. (No model.)



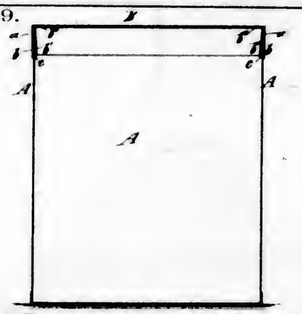
Claim.—1. The combination, with the elastic stop-roller E, of the stop-arm D, having the arch D' and finger D^2 to act in connection with the said roller E in stopping and holding the door, substantially as set forth.

2. The combination, in a door-stop, of an elastic roller, E, a bracket-plate, F, an adjustable stud-bolt, *f*, for supporting said roller, the arch D', and its finger D^2, substantially as set forth.

3. The combination, with the stop-arm D, having arch D', link d^2, door-plate d^3, elastic stop-roller E, and stop-finger D^2, of the gong K, supported by a stud on the stop-arm D, the hammer I, the stock I^2 for the same, pivoted at I, the spring S, latch *u*, and turning-plate *v* upon the bracket of the stop-roller E, substantially as set forth.

337,539. METAL CAN, &c. ALEXANDER WARNER, New York, N. Y. Filed Aug. 27, 1885. (No model.)

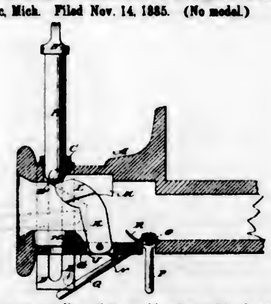
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Claim.—1. The combination, with a metal pail or can body, of a cover having a double rim which is presented downward and forms a wedge-shaped annular seat or groove, *c*, to receive the edge of the body, and closing thereon with a wedge-like action when forced down, substantially as herein described.

2. The combination, with a metal pail or can body, of a cover having a double rim, which forms a wedge-shaped groove or seat, *c*, to receive the edge of the body and to close with a wedge-like action thereon, the outer member, *b*, of the rim being straight and cylindric, and the inner member, *b'*, being beveled or slanted inward, substantially as herein described.

337,540. CAR-COUPLING. CHARLES H. WESTOVER and GEORGE D. WESTOVER, Cadillac, Mich. Filed Nov. 14, 1885. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-head A, of the frame D, provided with a pin-aperture, the pins E on the sides of the said frame, the shaft O in the draw-head, and the arms P and Q on the same, substantially as herein shown and described.

2. In a car-coupling, the combination, with the draw-head A, of the pivoted dog K, and of the curved arm N on the lower end of the same, substantially as herein shown and described.

3. In a car-coupling, the combination, with draw-head A, of the link-lifter G, pivoted in a slot in the bottom of the same and having a forked front end, and of the dog K, pivoted in the said link-lifter, substantially as herein shown and described.

4. In a car-coupling, the combination, with the draw-head A, of the link-lifter G, pivoted in a slot in the bottom of the same, the dog K, pivoted in a slot in the said link-lifter, and of the arm N, projecting from the lower end of the said dog through the slot in the link-lifter, substantially as herein shown and described.

5. In a car-coupling, the combination, with the draw-head A, having the curved shoulders M in its inner sides, of the dog K, pivoted within the draw-head, and provided with the laterally-projecting lugs L at its upper end, substantially as herein shown and described.

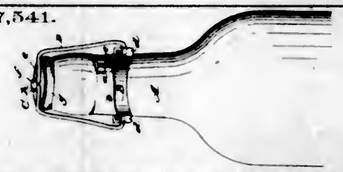
6. In a car-coupling, the combination, with the draw-head A, of the vertically-sliding frame D on the same, the link-lifter G, pivoted in a slot in the bottom of the draw-head, and having its front end forked, the dog K, pivoted in the link-lifter, the shaft O in the draw-head, the arms P and Q on the same, the cam-arm R on the said shaft O, the pins E on the frame D, and of the curved arm N on the lower pivoted end of the dog H, substantially as herein shown and described.

337,541. BOTTLE-STOPPER. FRANK C. WHITE, Woodbury, N. J. Filed Jan. 8, 1886. (No model.)

Claim.—1. The combination, with a bottle-neck provided with the lugs *a*, of the ring B, having the spiral cams *b* formed thereon, and provided with offsets *d*, the bail D, and the elastic stopper C, substantially as herein shown and described.

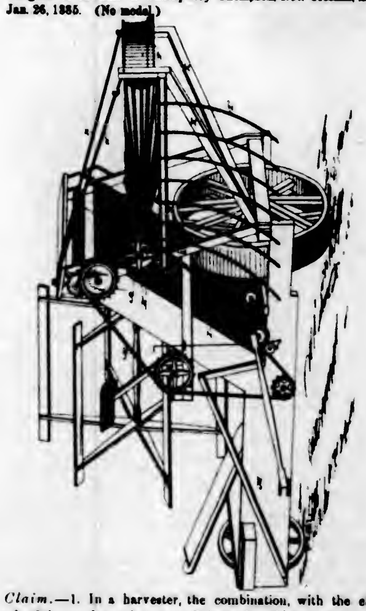
2. The combination of the ring B, having formed thereon the spiral cams *b*, and provided with offsets *d*, the bail D, havings its ends bent inward and passing into the offsets *d*, the elastic stopper C, formed of

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the plate *e* and the soft-rubber ring *g*, and the bottle A, provided with lugs *a*, substantially as herein shown and described.

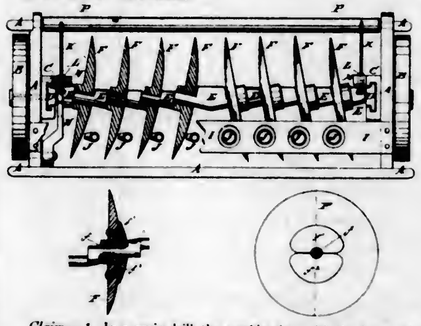
337,542. HARVESTER. HORATIO S. WILKINSON, Jefferson Parish, assignor of one-half to Phillip Kay Thompson, New Orleans, La. Filed Jan. 26, 1885. (No model.)



Claim.—1. In a harvester, the combination, with the elevator-apron I, of the quadrangular apron G, located at the top of the elevator, and guide-fingers I', depending toward the rear from the quadrangular apron, whereby the cut grain is elevated, turned at right angles to the path of movement of the machine, and dropped in an even continuous swath upon the stubble at one side of and at right angles to said path, substantially as shown and described.

2. In a harvester, the apron G, cut away at its center, as shown, and provided with a series of slats radiating from said opening and abutting at their inner ends, in combination with the upright L, and friction-rollers intermediate between said upright and slat ends, substantially as shown and described.

337,543. GRAIN-DRILL. MILEDEN WORDEN, Kingston, Kans. Filed Mar. 30, 1885. (No model.)



Claim.—1. In a grain-drill, the combination, with the frame of the machine and a series of circular rotary cutters, of the shaft E, having inclined sections to receive the hubs of the said cutters, and a supporting

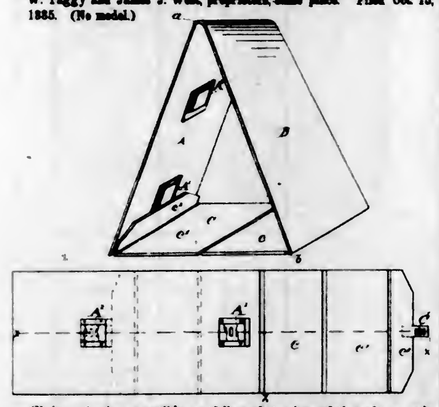
and adjusting mechanism, substantially as herein shown and described, whereby the inclination of the said cutters can be readily adjusted, as set forth.

2. In a grain-drill, a shaft having a plurality of bearing-sections arranged at an angle to its axis, substantially as set forth.

3. In a grain-drill, the shaft E, made substantially as herein shown and described, with inclined sections parallel with each other on each arm of the shaft and inclined in reverse directions upon the two arms of the shaft, as set forth.

4. The combination of a rotarily-adjustable shaft having bearings arranged at an incline or angle to its axis of revolution, cutters journaled on said inclined bearings, and vertically-adjustable supports for said shaft, whereby the cutters may be set at any desired incline and held at a common depth with each position or inclination, substantially as set forth.

337,544. PORTFOLIO OR CASE FOR ANATOMICAL CHARTS. LEVI W. YAGGY, Chicago, Ill., assignor to the Western Publishing House, Levi W. Yaggy and James J. West, proprietors, same place. Filed Oct. 15, 1885. (No model.)



Claim.—1. A convertible portfolio and stand consisting of two main leaves hinged to each other, and a flap hinged to one of the main leaves and adapted to form a base or support to said leaves and to fold over the free end of the other leaf, substantially as and for the purposes specified.

2. In a convertible portfolio and stand, the combination of the two leaves hinged to each other, and a flap hinged to one of the leaves, the said flap and the other leaf being provided with catches, whereby the whole may be locked in position either as a stand or portfolio, substantially as and for the purposes specified.

3. In a convertible portfolio and stand, the combination, with the main leaves A and B, of the flap C, hinged to the leaf B, and constructed in two or more sections hinged to each other, substantially as and for the purposes specified.

4. In a convertible portfolio and stand, the combination, with the main leaves A and B, hinged together at *a*, of the flap C, hinged to the leaf B, and composed of the sections *c*, *c'*, and *c²*, and adapted to be connected to the leaf A, substantially as and for the purposes specified.

5. In a convertible portfolio and stand, the combination, with the main leaves A and B, the former provided with two catches, A' and A², arranged as described, of the flap C, hinged to the leaf B, and provided with a tongue, C', to engage the said catches, substantially as and for the purposes specified.

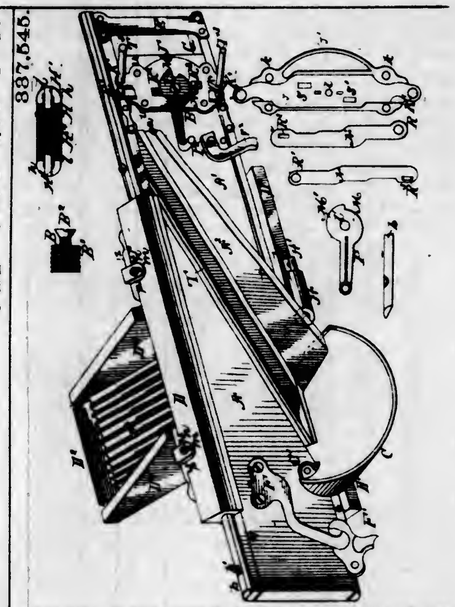
337,545. MEAT AND VEGETABLE SLICING MACHINE. JOHN W. ANDERSON, Lancaster, Pa. Filed Apr. 13, 1885. (No model.)

Claim.—1. In a meat and vegetable slicing machine, the combination, with the reciprocatory knife-slide having projections near each end, of a stationary guide therefor, having a spring-stop thereon midway of its length, whereby the throw or longitudinal movement of said slide is limited by contact of said projections with said spring-stops, substantially as described.

2. In combination, with the leaf D², provided with a couple of attaching-slips, O' O², having on each a rear guide, O⁴, of a couple of bed-plates, O, having their rear ends turned down, and having extensive longitudinal slots therein, in which said clips are caught by the cross-heads thereon, and in which they and said guides freely traverse, in manner to permit said leaf to lie back flat with the plane of the table, to which it is thereby permanently hinged, substantially as and for the purpose set forth.

3. In a meat and vegetable slicing machine, the stationary feed-box D³ D⁵, having its bottom or table provided with plates O, having therein extensive slots, and having their rear ends, O², turned down below the top of said table, in combination with the upward-folding presser-leaf D², provided with attaching-clips O' O², having their shanks

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kept in said slots by the cross-heads O' thereon caught in said slots, and with rear extensions or guides, O⁴, on said clips projected to reach into said slots, and thereby regulate the advancement of said leaf squarely up to the knife-carrying slide, substantially as and for the purpose set forth.

4. In a machine, substantially as set forth, in combination with the knife secured to the knife-slide by bolts driven through it into embedded nuts, as set forth, beveled end ledges clamped on the correspondingly-beveled ends of the knife, parallel with and on the stringers on the edges of the slide, substantially as and for the purposes set forth.

5. In a meat and vegetable slicing machine, the combination, with the transverse braces Z, having their under surfaces provided with the ledges *p* at their ends, of the parallel guides D D' for the knife-slides A A' G, having therein transverse parallel kerfs adapted to admit said ledges snugly therein, and thereby sustain said guides squarely braced, when said guides and braces are secured together by wood-screws, as set forth.

6. The combination, with the cross-braces Z, provided with oblong screw-holes *r r'*, through which screws *f* connect them adjustably to the guide D, of extensions *m* on the top of said braces, provided with the set-screws *n*, adapted to set against the top of guide D and assist screws *f*, substantially as and for the purpose set forth.

7. In a meat and vegetable slicing machine, the combination of a reciprocatory slide provided with a knife arranged to shear close up to the throat of the feed-box and having V-shaped or oval edges, two parallel guides having journaled in their inner edges anti-friction rollers whose peripheries are grooved to correspond with said slide's edges, and at such distance apart as to embrace said edges snugly between the opposite rollers for relieving the upward action of said slide while the knife performs its drawn cuts, and metallic liners for said rollers in said guides for keeping said knife in shearing contact with the throat of the feed-box, substantially as shown and described.

8. In a meat and vegetable slicing machine, the combination, with the reciprocatory knife carrying and operating slide, of a receiver or scoop-form attachment secured thereto adjacent to the exit from the knife and below it, substantially as and for the purpose set forth.

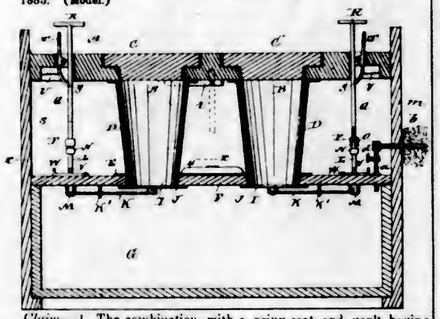
9. In a meat and vegetable slicing machine, the combination, with the receiver C, attached to the slide fixedly on the non-adjustable parts A G, below the exit from the knife T, of the chute A², attached to the gage-board A', to deliver the sliced product in said receiver, substantially as and for the purpose set forth.

10. In a slicing-machine, substantially as described, having gage-board A', supported on parallel guiding-standards T², the combination, with a pair of the latter arranged oppositely on the stringers G or frame of the slide, of the plate or casing J', fixedly attached to the gage-board A', and embracing said standards by eyes K' K⁴ in extensions of said plate, the locking-bars N N', also embracing said standards by the eyes R R' in their outer ends, and having their inner ends arranged to pass each other in recess J under said plate and present the lugs R³ R⁴

thereon out through said plate, and the locking-cam P, having eccentric faces M M' pivoted on said plate and adapted to engage said lugs on said bars, substantially as and for the purposes set forth.

11. For adjustably securing by opposite purchase a part, A', in a fixed frame, A G, the opposite fixed standard, T², in combination with the gripping mechanism composed of case J' and locking-bars N N', having their outer ends sleeved on said standards loosely and kept applied to each other by the attaching-screws of said case, and the locking-cam P, having eccentric faces M M' pivoted to said case and adapted to actuate said bars by contact with projections thereon, for tightening the grip of said sleeved parts on said standards, substantially as set forth.

337,546. PRIVY. EDMUND R. ANGELL, Derry, N. H. Filed Aug. 7, 1885. (Model.)



Claim.—1. The combination, with a privy-seat and vault having openings, of hoppers D, projecting downward from the same, and of the lever r, pivoted below the seat, for raising the same, substantially as herein shown and described.

2. The combination, with a privy-seat, of hoppers on the under side of same, a vault below the hoppers connected with the same, shafts in the top of the vault, arms on said shafts, and disks on the ends of said arms, the disks being on the under side of the top of the vault, substantially as herein shown and described.

3. The combination, with the privy-seat; of the vault G, the shaft L in the top of the vault, the spring-arm K on the lower end of the shaft, the disk J on the end of the arm K and pressed upward thereby, and the detachable handle-rod Q, for turning the shaft L, substantially as herein shown and described.

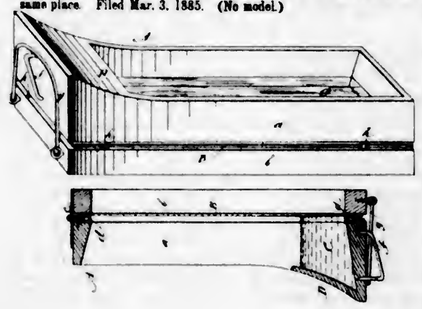
4. The combination, with the privy-seat A, of the vault G, having a top, F, provided with the opening I, the shaft L, the arm K on the same, the disk J on the arm, the spring M', pressing the shaft L upward, and the rod Q, having the handle R, substantially as herein shown and described.

5. The combination, with the privy-seat A, of the vault G, having a top, F, provided with the opening I, the shaft L, the arm K on the same, the disk J on the arm, the spring M, pressing the shaft L upward, the rod Q, having the notch S, and the latch T, substantially as herein shown and described.

6. The combination, in a privy, of a removable closed vault with a detachable pipe, *a*, leading from the vault to earth, and a stop-cock, *d*, in that part of the pipe that remains on the vault, whereby the excess of gases will be conducted to earth and the equality of pressure maintained in the vault, substantially as set forth.

7. The combination, with the privy-seat A, of the vault G, having the top F, provided with the opening I, the shaft L, having the notch V, the latch W on the top F, the arm K on the shaft L, the disk J on the arm, and the rod Q, substantially as herein shown and described.

337,547. TRAY FOR DEVELOPING PHOTOGRAPHIC PLATES. R. E. ATKINSON, New York, N. Y., assignor to E. & H. T. Anthony & Co., same place. Filed Mar. 3, 1885. (No model.)



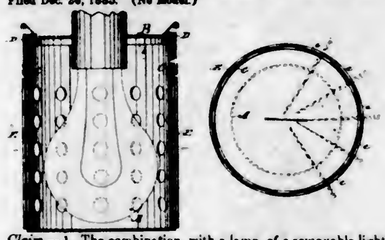
Claim.—1. A photographic developing-tray composed of open frames or sections hinged together, and combined with a packing or cushioning strip at their closing or adjacent edges to close upon the plate or film, substantially as and for the purposes described.

2. The photographic developing-tray A, composed of open frames or sections hinged together, in combination with the wire or latch *f*, attached to one section, and the bail *g*, attached to the other and adapted to engage with the latch *f*, substantially as and for the purposes set forth.

3. The section *a*, provided with reservoir D, packing *d*, and wire *f*, in combination with section *b*, hinged to section *a*, and having handle or bail *g* hinged to it, substantially as and for the purposes set forth.

4. The section *b*, hinged to the section *a*, and provided with the studs A, substantially as and for the purposes set forth.

337,548. LIGHT-REGULATOR. ROBERT A. BACON, New York, N. Y. Filed Dec. 26, 1885. (No model.)



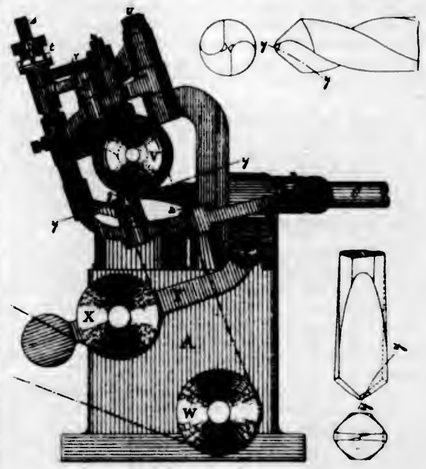
Claim.—1. The combination, with a lamp, of a removable light regulator surrounding the light, consisting of two concentric tubes, each of said tubes having a series of perforations corresponding and substantially registering with those in the other, and one of them movable with relation to the other to regulate the amount of light passing through the regulator, substantially as described.

2. The combination, with a lamp, of two concentric tubes surrounding the light thereof, each of said tubes having a series of perforations corresponding and substantially registering with those in the other, and one of them being movable with relation to the other and provided with openings of larger diameter at one portion than the other, whereby the light may be distributed unequally in the room lighted by said lamp, substantially as described.

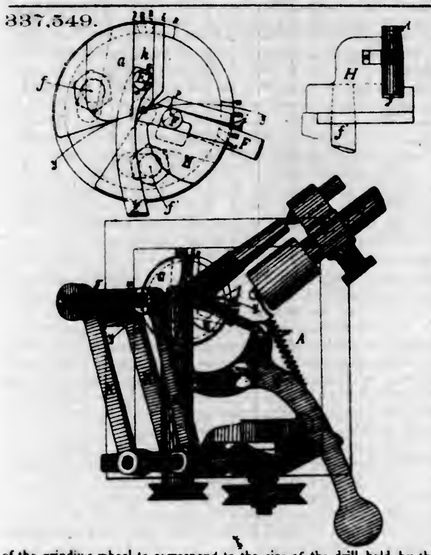
337,549. MACHINE FOR POINTING DRILLS. JOHN S. BANCROFT, Philadelphia, Pa., assignor to William Sellers, same place. Filed Mar. 1, 1884. (Model.)

Claim.—1. In a drill-pointing machine, a grinding-wheel operating in a fixed path with its axis variable in a plane parallel to the path in which its grinding-surface operates, whereby the width of the path may be increased or diminished, substantially as and for the purpose set forth.

2. In a drill-pointing machine, the combination of a grinding-wheel, a supporting-frame therefor vibrating about an axis perpendicular to the axis of the grinding-wheel, drill-clamping jaws, and a lever connected to said jaws and engaging said wheel-carrying frame, whereby the movement of the lever to operate the clamping-jaws adjusts the wheel-carrying frame with relation to the jaws and varies the width of the path of travel



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of the grinding-wheel to correspond to the size of the drill held by the clamping-jaws.

3. In a drill-pointing machine, clamping-jaws for holding the drill, in combination with supports which guide the clamping-jaws in lines parallel to the cutting-edges of the drill, substantially as and for the purpose set forth.

4. The adjustable guiding-blocks G and H, in combination with the clamping-jaws E and F for holding the drill, whereby the movements of the clamping-jaws are made parallel to the cutting-edges of the drill, substantially as and for the purpose set forth.

337,550. COMBINED DUST-PAN AND ASH-SIFTER. JOHN O. BENNEK, New Orleans, La. Filed Sept. 10, 1885. (No model.)

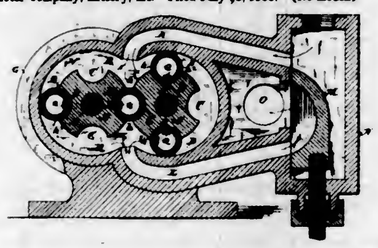


Claim.—1. The combination, with the lower pan, B, having perforations c in its bottom, a handle, C', a mouth-piece, *g*, and back and sides *f*, provided with a rear opening or slot, *h*, of the upper pan, A, pivoted to turn upon or within the lower pan, and having a handle, C, arranged to pass out through said opening, and having perforations c, arranged to come into and out of line with the perforations in the lower pan as the handles C C' are brought into or out of line with one another, essentially as described.

2. The upper perforated pan, A, provided with an upturned flange, *e*, open in front, and handle C, in combination with the lower perforated pan, B, with its back and sides *f*, having an opening or slot, *h*, the mouth *g*, handle C', and pivot *d*, substantially as specified.

3. The lower perforated pan, B, provided with annular gutters *k*, connecting its perforations, in combination with the shaking or vibrating upper perforated pan, A, having projections or scrapers *l*, arranged to work within said gutters, substantially as specified.

337,551. ROTARY ENGINE. WILLIAM BERENBERG and ADOLPH BERENBERG, Boston, Mass., assignors to the Positive Pump and Water Meter Company, Kittery, Me. Filed July 13, 1885. (No model.)

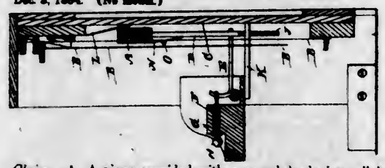


Claim.—1. The combination, with rotating intermeshing pistons or cams of otherwise ordinary or suitable construction and arrangement, of teeth B, separately made, and each of a tube fitted within a seat, P, of and attached to the piston, substantially as described, for the purpose specified.

2. The combination, with rotating intermeshing pistons or cams of otherwise ordinary or suitable construction and arrangement, of teeth B, constructed substantially as shown, for the admission of steam thereto, and thereby to be expanded, substantially as described, for the purpose specified.

3. The combination, with rotating intermeshing pistons or cams of otherwise ordinary or suitable construction and arrangement of teeth B, made in expansible layers *a b d*, separate by spaces *f g*, each closed to each other but having a separate port, A A², making communication with the chamber R of the piston-casing H, substantially as described, for the purpose specified.

337,552. PIANISSIMO-STOP FOR PIANO-FORTES. VITAL BERRIER, New York, N. Y., assignor to himself and John Ammon, same place. Filed Dec. 3, 1884. (No model.)



Claim.—1. A piano provided with a sound-deadening rail having its entire outer surface covered with felt, leather, or other fabric, which rail is located between the strings and the sounding-board, and is mounted to move to and from the strings, substantially as herein shown and described.

2. In a piano, the combination, with the case, strings, sounding-board, and hammer mechanism, of a sound-deadening rail between the sounding-board and strings, and of wedges secured on the sounding-board for pressing the damper-rail against the strings, substantially as herein shown and described.

3. In a piano, the combination, with the case, the strings, sounding-board, and hammer mechanism, of the wedges L on the sounding-board, the wedges N on bars connected with the rail, and of the pins O, projecting from the inner surface of the end pieces of the box, substantially as herein shown and described.

337,553. SHIRT. MORIS BLAU, New York, N. Y. Filed Nov. 18, 1885. (No model.)



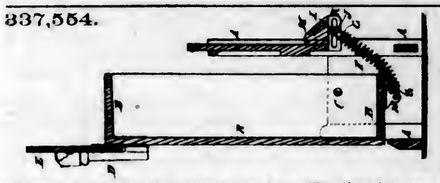
Claim.—1. In a shirt, the sleeve B, having the placket-facing *e* thereof formed with the narrow extension *f*, reaching up the sleeve and stitched at intervals to the body of the sleeve, and formed with a series of button-holes, one between each connection of the strip with the sleeve, in combination with the re-enforcing piece C, stitched to the sleeve and over the shoulder, the lower point of the re-enforcement being provided with the button-hole tab *d*, substantially as and for the purposes set forth.

2. A shirt the sleeves B of which are provided with a narrow strip, *f*, stitched transversely at intervals to the sleeve to form loops open at both edges, and having button-holes *f'* formed in the strips between the transverse rows of stitching, in combination with the button-hole tab *d*, secured near the shoulder-seam, substantially as described.

337,554. FOLDING BED. KARNELL BROOKS, New York, N. Y. Filed June 25, 1885. (No model.)

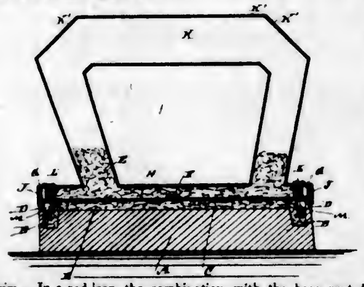
Claim.—In a folding bed, the combination, with the stationary part A and the folding part B, of the spiral spring F, the adjustable pivot-arm I, and the slotted bracket K, substantially as herein shown

337,554.



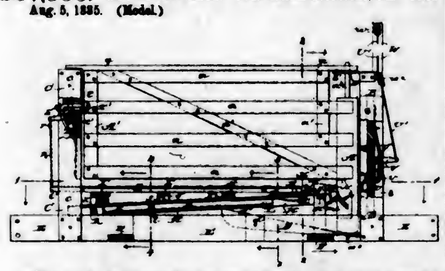
and described, whereby the said spring can be readily adjusted to counterbalance the weight of the folding part of the bed, as set forth.

337,555. SAD-IRON. GAETANO S. CASTAGNETO, Dannemora, N. Y. Filed Mar. 5, 1885. (No model.)



Claim.—In a sad-iron, the combination, with the base part A, of the plate F, having upwardly-projecting flanges G, the plate H, having downwardly-projecting flanges J, the screws L, the hollow handle K, and the asbestus, E, substantially as herein shown and described.

337,556. AUTOMATIC GATE. JOHN CLARK, Greenville, Cal. Filed Aug. 5, 1885. (Model.)



Claim.—1. An automatic gate comprising the gate proper, provided with a swing-post, A, having axial support at its upper end from the hinge-post B, and at its lower end in one of a system of levers pivoted in the gate-sills, and said post A provided with an inclined or cam groove, a platform or platforms adapted to be depressed and resting on the levers, and a head, N, held to one of the levers and adapted to the cam-groove in post A, substantially as shown and described, whereby the gate may be lifted and opened by depressing the platform, and will swing shut by gravity, as set forth.

2. An automatic gate comprising the gate proper provided with a swing-post, A, having axial support at its upper end from the hinge-post B, and at its lower end in one of a system of levers pivoted in the gate-sills, and said post A provided with an inclined or cam groove, a platform or platforms adapted to be depressed and resting on the levers, a head, N, held to one of the levers and adapted to the cam-groove in post A, substantially as shown and described, whereby the gate may be lifted and opened by depressing the platform, and will close by gravity, and said platform or platforms arranged to yield or fall first at one end, in combination with a device, substantially as described, for latching the gate, and connected to the platform so as to be unlatched as the platform falls at that end, substantially as herein set forth.

3. An automatic gate comprising the gate proper, provided with a swing-post, A, having axial support at its upper end from the hinge-post B, and at its lower end in one of a system of levers pivoted in the gate-sills, and said post provided with an inclined or cam groove, a platform or platforms adapted to be depressed and resting on the levers, a head, N, held to one of the levers and adapted to the cam-groove in post A, substantially as described, whereby the gate may be lifted and opened by depressing the platform, and a locking device, substantially as described, on the hinge-post B, and adapted to prevent the lifting and opening of the gate, substantially as herein set forth.

4. In an automatic gate, the combination, with the gate proper, its post A, provided with a double-inclined cam-groove, O, and the hinge-post B, of the levers D H, pivoted in the gate-sills, hinged platforms I I, resting on the levers, springs J, normally supporting the ends i' of the platforms, so said ends first will yield to pressure-levers L L, pivoted to lever H, a head, N, journaled by its shaft *m* on lever H, and adapted to the slot O of post A, a rock-arm, M, on shaft *m*, bars or plates L' L', connecting arm M with levers L L, and pins P P at the first yielding ends of the platforms, and adapted to tilt levers L L, arm M, and head N as the platform is depressed, substantially as herein set forth.

5. The double gate-platforms I I, held to the sill-frame at their outer ends or sides, plates or straps K K, lapping the joint between the opposite platforms, I I, to mutually support them at one end and cause their depression in unison at that end, and springs J under each platform at their ends i', to allow this end of each platform first to yield under pressure, in combination with a system of levers pivoted in the gate-sills and supporting the platforms yieldingly, and a head, N, on one of the levers, and acting in a cam-slot in the gate-post to swing the gate as it is lifted by the levers, substantially as herein set forth.

6. In automatic gates, the gate proper, its post A, having a cam-groove, a platform or platforms supported on a system of levers having a head, N, adapted to the cam-groove of post A, and one end, i', of said platforms arranged to yield first to pressure, in combination with a latch device consisting of a latch-bar, T, and an unlatching-lever, S, and a connection, as at R, between lever S and the platform, substantially as herein set forth.

7. In automatic gates, the gate proper, its post A, having a cam-groove, a platform or platforms supported on a system of levers having a head, N, adapted to the cam-groove of post A, and said parts coacting to raise and open the gate as the platforms are depressed, in combination with a lock device consisting of a lock-bar, U, and an unlocking-lever, V, said bar U adapted to a stud on the gate-post A, substantially as herein set forth.

337,557. PITMAN. PHILIP C. CLOSE, Augusta, Ga. Filed Oct. 19, 1885. (No model.)



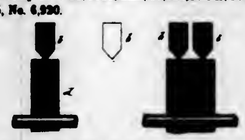
Claim.—1. The combination of a tubular pitman-rod and its transverse partition *a* with perforated disks c and packing *b* at each end, substantially as and for the purpose described.

2. The combination of a tubular pitman-rod and its transverse partition with the perforated disks c, packing *b*, and perforated plug *d* at each end, substantially as and for the purpose described.

3. The combination of a tubular pitman-rod, its transverse partition, perforated disk c, packing *b*, and perforated plug *d* with a diametrically-bored ball, E, having peripheral grooves, substantially as and for the purpose described.

4. The combination of a tubular pitman-rod with a transverse partition, *a*, therein, substantially as and for the purpose described.

337,558. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. CARL COMPER, Cologne, Germany. Filed June 1, 1885. (No model.) Patented in France June 10, 1885, No. 166,972; in Luxemburg Feb. 12, 1885, No. 494; in England Feb. 27, 1885, No. 2,671; in Belgium Feb. 28, 1885, No. 67,535; in Italy Mar. 31, 1885, XIX, 17,915, XXXI, 427, and in Spain Apr. 30, 1885, No. 6,220.



Claim.—1. An induction-ring for armatures of dynamo-electric machines, consisting of a closed ring-shaped hollow frame, and of a filling of insulated iron wire in said frame, substantially as set forth.

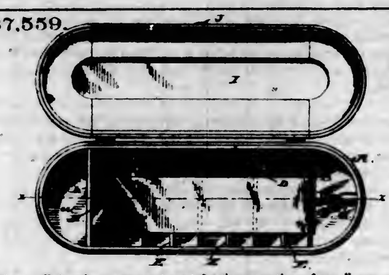
2. An induction-ring for armatures of dynamo-electric machines, consisting of a closed ring-shaped hollow frame, tapering at its inner circumference, and a filling of insulated iron wire wound in said frame, substantially as set forth.

3. An armature for dynamo-electric machines, consisting of a supporting web or disk of paper keyed to the center shaft, and one or more flat induction-rings having a tapering inner circumference, said ring or rings being made of a hollow frame and a filling of insulated iron wire, substantially as set forth.

337,559. OIL-STONE HOLDER. JAMES W. COLE, Nashville, Tenn. Filed Feb. 24, 1885. (No model.)

Claim.—1. The herein-described oil-stone holder, consisting of a box or casing having a series of ribs or strips upon its floor or bottom, a

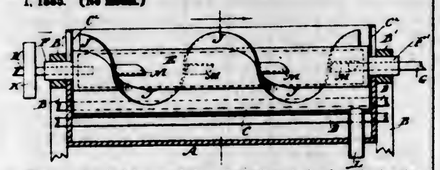
337,559.



partition-wall forming a compartment for the reception of an oil-can, and devices for clamping the oil-stone against movement in the casing, substantially as set forth.

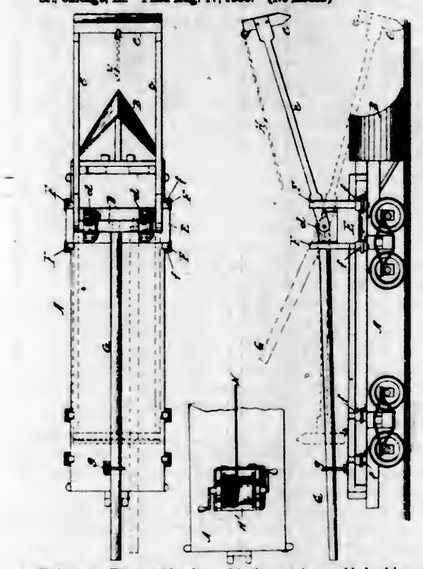
2. The herein-described oil-stone holder, comprising a case having a series of transverse ribs secured upon its bottom to form oil-chambers, a partition at one end adapted to form a chamber for the reception of an oil-can, a standard at the opposite end of said case carrying a set-screw, a series of inwardly-projecting wings, E, at one side of the case, and two or more standards at the opposite side of the case carrying set-screws adapted to clamp the oil-stone, substantially as described.

337,560. SALT-DRIER. JOSEPH A. COOK, Auburn, N. Y. Filed June 1, 1885. (No model.)



Claim.—A salt-drier consisting of the box A, having the heating-pipes in its lower part, the trough C, arranged above the heating-pipes and provided with the discharge-pipe L, the drum E, provided with the hollow gudgeons F F', and the spiral flange J, having the angle-irons M secured thereto and forming elevators, and the steam-pipes G H, projecting through the hollow gudgeons into the drum, substantially as shown and described.

337,561. SNOW PLOW AND SCRAPER. CHARLES M. CULBERTSON, Sr., Chicago, Ill. Filed Aug. 17, 1885. (No model.)



Claim.—1. An automatic gate comprising the gate proper, provided with a swing-post, A, having axial support at its upper end from the hinge-post B, and at its lower end in one of a system of levers pivoted in the gate-sills, and said post A provided with an inclined or cam groove, a platform or platforms adapted to be depressed and resting on the levers, a head, N, held to one of the levers and adapted to the cam-groove in post A, substantially as shown and described, whereby the gate may be lifted and opened by depressing the platform, and will swing shut by gravity, as set forth.

2. An automatic gate comprising the gate proper provided with a swing-post, A, having axial support at its upper end from the hinge-post B, and at its lower end in one of a system of levers pivoted in the gate-sills, and said post A provided with an inclined or cam groove, a platform or platforms adapted to be depressed and resting on the levers, a head, N, held to one of the levers and adapted to the cam-groove in post A, substantially as shown and described, whereby the gate may be lifted and opened by depressing the platform, and will close by gravity, and said platform or platforms arranged to yield or fall first at one end, in combination with a device, substantially as described, for latching the gate, and connected to the platform so as to be unlatched as the platform falls at that end, substantially as herein set forth.

3. An automatic gate comprising the gate proper, provided with a swing-post, A, having axial support at its upper end from the hinge-post B, and at its lower end in one of a system of levers pivoted in the gate-sills, and said post provided with an inclined or cam groove, a platform or platforms adapted to be depressed and resting on the levers, a head, N, held to one of the levers and adapted to the cam-groove in post A, substantially as described, whereby the gate may be lifted and opened by depressing the platform, and a locking device, substantially as described, on the hinge-post B, and adapted to prevent the lifting and opening of the gate, substantially as herein set forth.

4. In an automatic gate, the combination, with the gate proper, its post A, provided with a double-inclined cam-groove, O, and the hinge-post B, of the levers D H, pivoted in the gate-sills, hinged platforms I I, resting on the levers, springs J, normally supporting the ends i' of the platforms, so said ends first will yield to pressure-levers L L, pivoted to lever H, a head, N, journaled by its shaft *m* on lever H, and adapted to the slot O of post A, a rock-arm, M, on shaft *m*, bars or plates L' L', connecting arm M with levers L L, and pins P P at the first yielding ends of the platforms, and adapted to tilt levers L L, arm M, and head N as the platform is depressed, substantially as herein set forth.

5. The double gate-platforms I I, held to the sill-frame at their outer ends or sides, plates or straps K K, lapping the joint between the opposite platforms, I I, to mutually support them at one end and cause their depression in unison at that end, and springs J under each platform at their ends i', to allow this end of each platform first to yield under pressure, in combination with a system of levers pivoted in the gate-sills and supporting the platforms yieldingly, and a head, N, on one of the levers, and acting in a cam-slot in the gate-post to swing the gate as it is lifted by the levers, substantially as herein set forth.

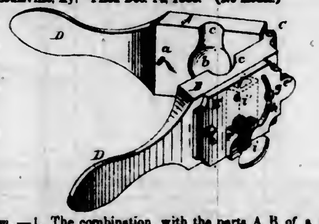
6. In automatic gates, the gate proper, its post A, having a cam-groove, a platform or platforms supported on a system of levers having a head, N, adapted to the cam-groove of post A, and one end, i', of said platforms arranged to yield first to pressure, in combination with a latch device consisting of a latch-bar, T, and an unlatching-lever, S, and a connection, as at R, between lever S and the platform, substantially as herein set forth.

7. In automatic gates, the gate proper, its post A, having a cam-groove, a platform or platforms supported on a system of levers having a head, N, adapted to the cam-groove of post A, and said parts coacting to raise and open the gate as the platforms are depressed, in combination with a lock device consisting of a lock-bar, U, and an unlocking-lever, V, said bar U adapted to a stud on the gate-post A, substantially as herein set forth.

F, of the supporting-block E, held in position by the said post, and the scraper mounted in suitable bearings on the supporting-block, substantially as and for the purposes specified.

3. The combination, with the car A, of the supporting-block E, the scraper C, attached to a shaft mounted in suitable bearings therein, and the lever G, detachably connected to the said shaft to permit the scraper to be turned back on the car, as described, substantially as and for the purposes specified.

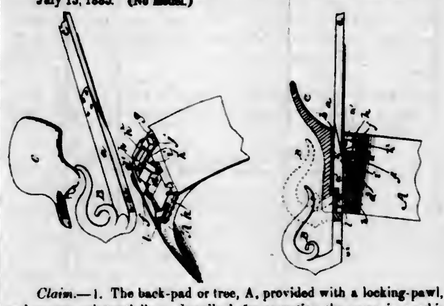
337,562. MOLD FOR CASTING SOLDER-JOINTS. ARTHUR CUMMINGHAM, Louisville, Ky. Filed Dec. 14, 1885. (No model.)



Claim.—1. The combination, with the parts A B of a mold for forming solder-joints, of the plate E, provided with casting-edges, and the channeled block F, substantially as herein shown and described.

2. As an improved article of manufacture, a mold for forming solder-joints, formed of the parts A B, hinged together and provided with cavities *b*, the plate E, pivoted to one-half of the mold, provided with a curved slot, *h*, lug *e'*, and clamped to the side of the mold by a set-screw, *g*, and the channeled block F and thumb-screw *i*, substantially as herein shown and described.

337,563. CHECK-HOOK. JOSEPH DARLING, Kansas City, Pa. Filed July 13, 1885. (No model.)

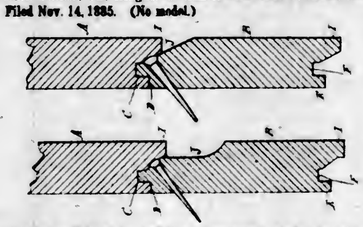


Claim.—1. The back-pad or tree, A, provided with a locking-pawl, and means, substantially as described, for operating the same, in combination with a notched check-hook adapted to slide in a slot in the pad or tree, substantially as and for the purposes set forth.

2. The back-pad provided with locking-pawl *d* and sliding plate *h*, in combination with the check-hook B, sliding between the pad and saddle and adapted to be engaged by the pawl, the sliding plate being adapted to lock the pawl in depressed position, substantially as and for the purposes set forth.

3. The pad provided with a spring locking-pawl, *d*, sliding plate *h*, and springs *i j l*, in combination with the check-hook recessed at *e*, provided with pin a^2, and formed with the lug *a'*, the pawl being formed with lip *d'* and the sliding plate with lip *h'* and lug h^2, substantially as and for the purposes set forth.

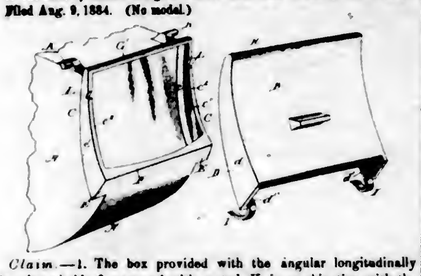
337,564. SIDING FOR BUILDINGS. ALBERT C. DAUGHERTY, North Bells Vernon, Pa., assignor to himself and John J. Jones, same place. Filed Nov. 14, 1885. (No model.)



Claim.—Siding for buildings, consisting of the boards being of uniform thickness throughout, the outer sides of the tongued edges thereof cut away beneath the extended outer lips of the grooved edges to form a watershed to each course, in combination with the inclined sur-

faces on the tongued edges, through which the nails are driven, substantially as and for the purpose herein described.

337,565. CAR-AXLE BOX. CORNELIUS DEMMER, Pullman, Ill., assignor of one-half, by mesne assignments, to Alexander Trembly, same place. Filed Aug. 9, 1884. (No model.)

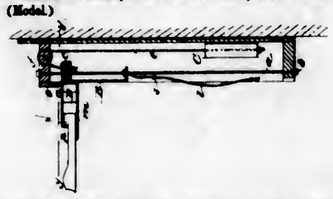


Claim.—1. The box provided with the angular longitudinally wedge-shaped side flanges and with a stud, K, in combination with the cover provided with corresponding flanges overlapping the box-flanges and provided with a hook adapted to be caught in the stud, all said flanges being concave with reference to the plane of the face of the box, whereby when the cover is elevated and its hook caught on the stud the upper end of said cover will be swung forward, substantially as and for the purpose described.

2. The car-axle box provided with the guideway C, concave with reference to the plane of the face of the box, and the corner extensions, E, at the two lower corners of its front opening, in combination with the concavo-convex sliding cover provided with the side lips, D, adapted to overlap the said guideways on the box, substantially as described.

3. The car-axle box provided with guideways, substantially as described, at two sides of its front opening and a ribbed ledge running along the upper edge of said opening, in combination with a cover having overlapping side flanges and a curved lip along its top edge adapted to fit over the transverse rib on the box when the cover is closed, substantially as set forth.

337,566. CLOTHES-DRIER. PERSIS DEVERELL, Rossville, Pa., assignor to himself and Joseph B. Robinson, same place. Filed June 22, 1885. (Model.)



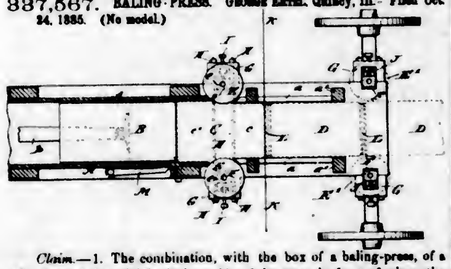
Claim.—1. In a clothes-drier, the combination, with a sliding frame counterbalanced by a weight, of a folding frame pivotally connected thereto, and suspending-arms *i i*, substantially as described.

2. In a clothes-drier, the combination, with a casing, A, provided with guide-rods *a a*, of a sliding frame, B, counterbalanced by a weight, a folding frame, D, pivotally connected to the frame B, and arms *i i*, substantially as described.

3. In a clothes-drier, the combination of the following named elements: casing A, rods *a a*, frames B and D, arms *i i*, weight C, and cords *e e*, substantially as set forth.

4. In a clothes-drier, the combination of the following named elements: casing A, provided with cross-piece *t*, rods *a a*, frames B and D, arms *i i*, weight C, and cords *e e*, substantially as set forth.

337,567. BALING-PRESS. GEORGE ERTEL, Quincy, Ill. Filed Oct. 24, 1885. (No model.)



Claim.—1. The combination, with the box of a baling-press, of a roller journaled unyieldingly in a side of the press in front of where the bale is tied, substantially as shown and described.

2. A baling-press constructed with oppositely-placed rollers journaled unyieldingly to and projecting within the press-box in front of where the bale is tied, substantially as shown and described, whereby resistance is offered by the rollers to the thrust of the plunger to insure proper density of the bales and the surface of the bales is smoothed, as set forth.

3. A baling-press constructed with smooth-faced rollers journaled unyieldingly across the sides of the press-box and behind where the bale is tied, substantially as shown and described, whereby the entire surfaces of the bales next the rollers will be smoothed by them as the bales are discharged from the press, as set forth.

4. A baling-press constructed with rollers at the sides of the press-box, and said rollers made adjustable, so as to be projected more or less into the interior of the box, substantially as shown and described, whereby the density of the bales may be regulated by shifting the rollers, as set forth.

5. A baling-press comprising a baling-box, A, a plunger, B, operating therein, and rollers journaled unyieldingly to the press-case in rear of the box A, substantially as shown and described, whereby the untied material being formed into a bale will be compressed to offer resistance to the thrust of the plunger and violent rebound of the plunger will be prevented, as set forth.

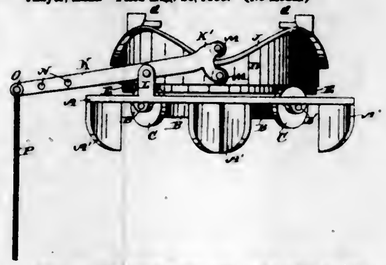
6. The combination, with the press-box of a baling-press contracted at its rear end, of one or more rollers in front of said contracted portion, substantially as shown and described.

7. A baling-press constructed with two rollers journaled to and projecting within opposite sides of the press-box, and the walls of said box at the sides where the rollers are placed being contracted in rear of the rollers, and the other sides of the box being convergent or tapering toward the end from which the bales are discharged, substantially as shown and described, whereby the compressing of the material by the rollers will be aided by the convergence of the press-box to secure resistance to the thrust of the plunger in forming the bales, as set forth.

8. A baling-press comprising a box, A, contracted at its sides, and two of said sides being formed open to allow of tying the bale, a plunger, B, operating in the press-box, and rollers E E, journaled unyieldingly in the press-case, substantially as shown and described, and for the purposes herein set forth.

9. A baling-press comprising a baling-box, A, a plunger, B, operating therein, rollers E E, journaled to and projecting within the press-case, and said case being contracted at the sides at which the rollers operate to confine the material passing the rollers, and the case also being open to allow tying of the bale, and bale-smoothing rollers E', journaled at the discharge end of the press-case, substantially as herein set forth.

337,568. DEVICE FOR CONVERTING MOTION. JARVIS M. FLINT, Thayer, Kans. Filed Aug. 26, 1885. (No model.)



Claim.—1. The combination, with a turn-table having a wavy or corrugated upper edge, of a pivoted lever acted upon by said edge, substantially as herein shown and described.

2. The combination, with a turn-table having a wavy or corrugated and flanged upper edge, of a pivoted forked lever connected with a working rod, substantially as herein shown and described.

3. The combination, with a turn-table having a wavy or corrugated flanged top edge, of a pivoted forked lever having rollers in the ends of the prongs, the rollers resting against the top and bottom of the wavy flange, and of a rod connected with the said lever, substantially as herein shown and described.

4. The combination, with a circular plate provided with rollers, of a turn-table having a shoulder on which the rollers run, and a flanged wavy top edge, and of a lever operated by the flange, substantially as herein shown and described.

5. The combination, with the ring A and rollers B, of the turn-table D, the arms F, the rollers H, and the lever K, substantially as herein shown and described.

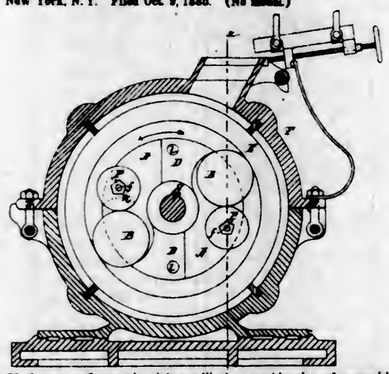
337,569. BOUQUET-HOLDER. MARIETTA FLINT, New York, N. Y. Filed Aug. 24, 1885. (No model.)

Claim.—As an improved article of manufacture, a bouquet-holder consisting of a receiver, A, provided with the cavity B, and the holder D, fitting into the upper end of the cavity B, and provided with the depending tube *d*, of less diameter than the cavity, and extending to a point at or near the center thereof, the sides of the tube being imperforate, substantially as set forth.

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337,570. MILL FOR PULVERIZING QUARTZ. GIDEON FREBECK, New York, N. Y. Filed Oct. 9, 1885. (No model.)



Claim.—1. In a pulverizing-mill, the combination of a crushing-ring, a driving-cylinder stationary in its support, means for supporting said cylinder and revolving it about the center of the crushing-ring, and a loose crushing-roller propelled by said driving-cylinder, substantially as described.

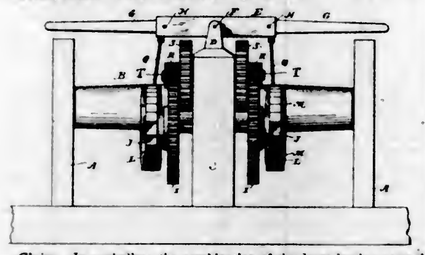
2. In a pulverizing-mill the combination of a crushing-ring, revolving disks, stationary driving-cylinder carried thereby, and a loose crushing-roller, substantially as described.

3. In a pulverizing-mill, a crushing-roller, combined with revolving disks, a stationary driving-cylinder carried by said disks, and means for adjusting said cylinder to present a new surface for contact with said roller, when desired, substantially as and for the purpose set forth.

4. In a pulverizing-mill, a crushing-ring and a crushing-roller combined with a stationary driving-cylinder provided with projections at its ends and a carrier bearing said driving-cylinder provided with corresponding cavities, substantially as described, for the purpose specified.

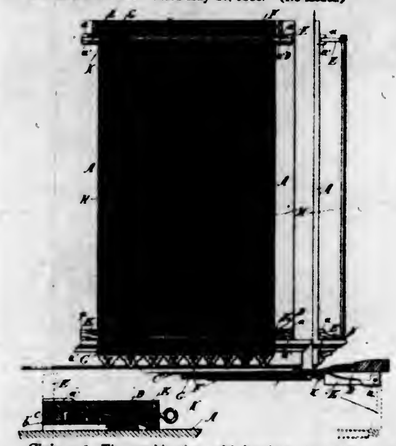
5. In a pulverizing-mill, the combination of a crushing-ring, a loose crushing-roller contained therein, a stationary driving-cylinder, a guard to prevent said roller falling away from said driving-cylinder when the mill is stopped, and a suitable carrier operating and supporting the same, substantially as described.

337,571. WINDLASS. HOWARD T. GAYTON, Lower Argyle, Nova Scotia, Canada. Filed Dec. 20, 1885. (No model.)



Claim.—In a windlass, the combination of the drum having cogged rims near its center, and having also a central cogged rim, a pawl-bolt engaging the central rim, the large cog-wheels having ratchet-wheels secured to their faces at a distance from the same, the small pinions meshing with the said large cog-wheels and rigidly secured to the sides of large cog-wheels, and the small pinions intervening between the said large cog-wheels and the cogged rims on the drum of the windlass, pawl-boxes having segmentally-cut-out inner ends formed with flanges engaging the projecting rims of the ratchet-wheel, and having pawls between their sides engaging the teeth of the ratchet-wheels, a lever having handles at its ends and pivoted transversely above the cog-wheels, and connecting-rods pivoted to the ends of the lever and to the outer ends of the pawl-boxes, as and for the purpose shown and set forth.

337,572. CURTAIN AND SCREEN HOLDER. F. MORTE GHORSE, Sr., Chatsworth, Ill. Filed May 26, 1885. (No model.)



Claim.—1. The combination, with brackets secured to a window-frame and arms pivoted therein, of rods and tubes connecting such arms, as set forth.

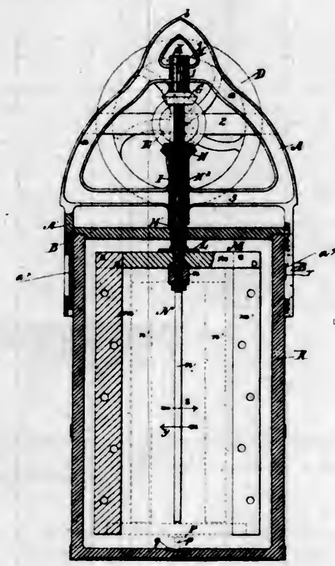
2. The combination, with brackets secured to a window-frame, arms pivoted therein, and springs arranged to act upon such arms, of rods and tubes connecting such arms, as set forth.

3. The combination, with brackets D and arms E, pivoted therein, of rods G, tubes F, and rods or tubes H, as set forth.

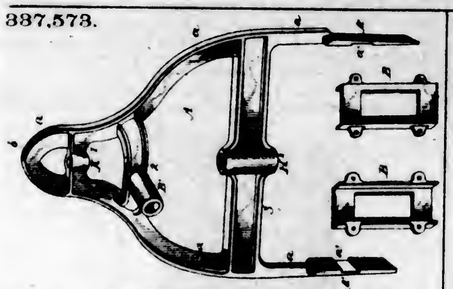
4. The combination, with brackets D, arms E, and springs *b*, of rods G, tubes F, and rods or tubes H, as set forth.

337,573. CHURN. JOHN H. GERKEN, Inwood-on-the-Hudson, N. Y. Filed Apr. 6, 1885. (No model.)

Claim.—The combination, with a tub, B, and clamps B, of the removable metallic gearing-framing A, formed with curved ribs *a a*, transverse ribs 1, 2, and 3, and a bracket-bearing, B', and having extensions A', formed with recesses *a'*, and gearing for operating the dashers, substantially as shown and described.



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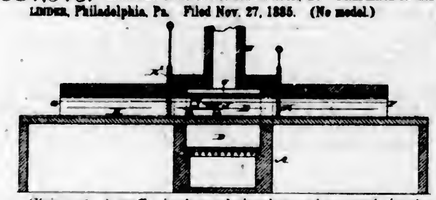
337,574. HORSE HAY-RAKE. SAMUEL B. GILLELAND, Monroe City Mo. Filed Mar. 18, 1885. (No model.)



Claim.—1. In a horse hay-rake, the combination, with the rearwardly-extending shafts or thills, of the rake-head having the upper and lower horizontal bars, and the two diagonal bars, the cross-heads secured between said horizontal bars having short axles, and the uprights or bars having the said shafts or thills connected thereto, substantially as shown and described.

2. The combination, with the short uprights or bars having the rearwardly-extended shafts or thills connected thereto, of the cross-heads having short axles, and the horizontal bars connected to the upper and lower sides thereof, substantially as shown and described.

337,575. MUFFLE FOR EARTHENWARE, &c. FREDERICK R. GILLENDER, Philadelphia, Pa. Filed Nov. 27, 1885. (No model.)



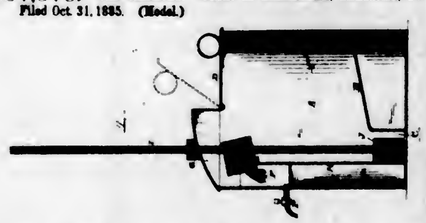
Claim.—1. A muffle having end chambers and a central chamber which is located directly over the fire-pot, and provided with valves or doors, by which the same can be separated from the other chambers, substantially as described.

2. A muffle having a chamber and a flue around the same for pasing the products of combustion over the sides and top of said chamber, substantially as described.

3. A muffle provided with chambers, substantially as described, the same being provided with valves for placing the chambers in and out of communication, substantially as described.

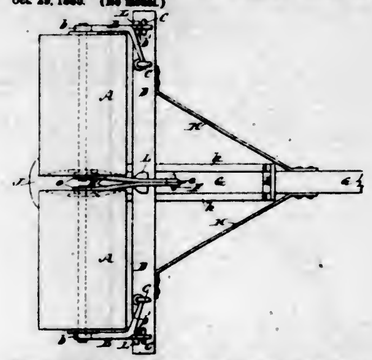
4. A muffle having the furnace A, the fire-pot D, central chamber, B, directly over the fire-pot, and having the flue C on the sides and top of the same, end chambers, F and G, and valves K and K', whereby the chamber B may be entirely separated from the chambers F and G, substantially as described.

337,576. OIL-CABINET. JACOB A. HACKENBERG, Kimberton, Pa. Filed Oct. 31, 1885. (Model.)



Claim.—The combination of the cabinet, the pocket connected thereto and having recesses in its rear top edge corresponding to the different measures used, the vertical wall or surface extending down from the pocket to guide the measures, with the rods having pronged lower ends, the perforated top through which the rods pass, and the measures which are pivoted between these pronged ends, substantially as set forth.

337,577. LAND-ROLLER. JOSEPH HAPNER, Fowler, Mich. Filed Oct. 29, 1885. (No model.)

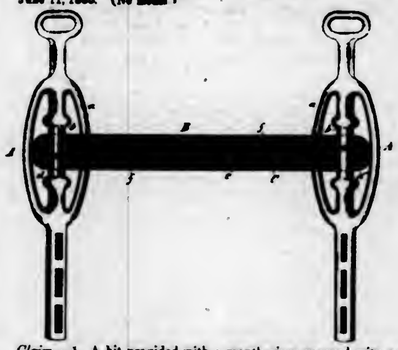


Claim.—1. A land-roller constructed with two rollers journaled in outer and inner hangers pivoted to the machine-frame, and on which hangers the frame is adapted to rest, and said inner hangers being longer than the outer hangers and connected to the frame in front of the points of connection of the outer hangers therewith, substantially as herein set forth.

2. A land-roller comprising rollers A A, journaled in hangers B B, pivoted to the machine-frame, and hangers E E, pivoted to the frame by an eyebolt, F, placed forward of the pivoted connection of the hangers B with the frame, and said hangers B E being adapted to support the frame on the axles of the rollers, substantially as herein set forth.

3. The combination, in a land-roller, of the cross-beam D, tongue G, hangers B E, pivoted to the beam and tongue, respectively, and rollers A A, journaled in the hangers, substantially as herein set forth.

337,578. BRIDLE-BIT. ROBERT G. HANFORD, Jr., Newark, N. J., assignor to the Hanford, Peckham & McCance Company, same place. Filed June 11, 1885. (No model.)



Claim.—1. A bit provided with a mouth-piece covered with paper treated with chloride of zinc, substantially as specified.

2. A bit provided with mouth-piece covered with paper rings or washers treated with chloride of zinc, substantially as specified.

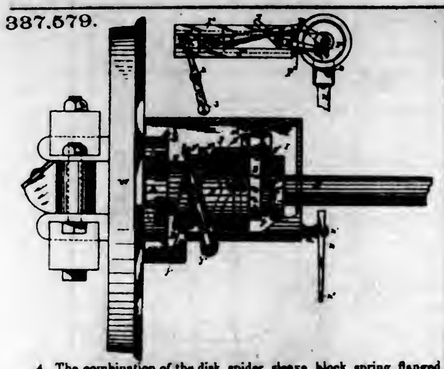
337,579. CAR-BRAKE. JAMES J. HASKINS and JOHN HASKINS, Pittsburg, Pa. Filed Sept. 2, 1884. (No model.)

Claim.—1. The combination, with a wheel and an axle, of a sliding block, D D', a slide, E, a spider, B, and a disk, A, substantially as set forth.

2. The combination, with a wheel and an axle, of a sleeve, C, a sliding block, D D', a slide, E, a spider, B, a disk, A, and a spring between the sleeve and the block, substantially as set forth.

3. The combination of a wheel, an axle, a disk having a concave face, and projections forming recesses, a spider fitting the concave face and having arms occupying the recesses in the disk, a sleeve having a conical head working in the spider, a sliding block on the sleeve, a slide to advance the block and retract the sleeve, and a spring to retract the block and advance the sleeve, substantially as set forth.

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4. The combination of the disk, spider, sleeve, block, spring, flanged collar, fixed collar, and slide E, having projections E' E^2 E^3 E^4 E^5, substantially as set forth.

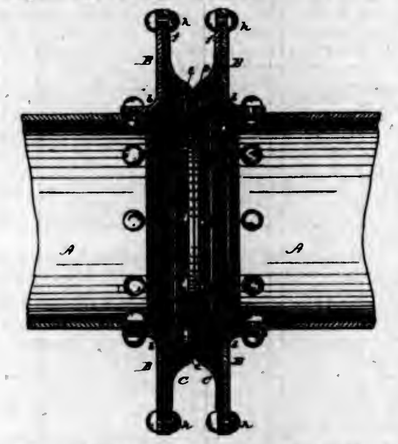
5. The combination of the disk, spider, sleeve, slide, spring, a sliding block formed with inclined face bearing on the spider, and grooves D^2 D^4 D^3 D^5, and a vibrating lever, J', having a pin, K, occupying the grooves, substantially as set forth.

6. The combination of the disk, spider, block, spring, slide, and rock-shaft having lever for lowering and lifting the slide, substantially as set forth.

7. The combination of the vibrating lever J, slides X and W', pitman V, crank u, worm-wheel P, sector O, having an arm, n, and brake-chain, substantially as set forth.

8. The combination of the rock-shaft S, having lever R, the worm-wheel P, having stud Q, sector O, having lever-arm n, and a brake-chain, substantially as set forth.

337,580. EXPANDING JOINT FOR TUBES. JAMES HEMPHILL, Pittsburg, Pa. Filed Dec. 28, 1885. (No model.)



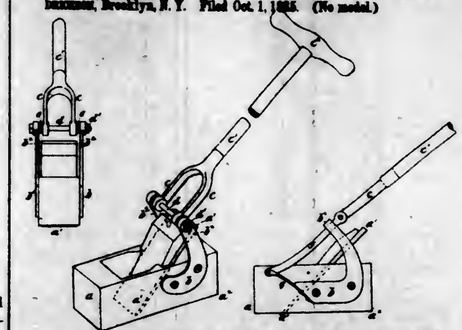
Claim.—1. The expanding pipe joint or coupling herein described, composed of the flanged disks B B, connected to the pipes A A, and the inwardly-curved and converging disks C C, riveted together at their inner edges, and at their outer edges riveted to the disks B B, substantially as described.

2. The combination, with the pipe-sections A A, having riveted or otherwise attached thereto the annular disks B B, of the curved and converging expanding disks C C, riveted together at their inner edges, and at their outer edges riveted to the disks B B, substantially as described.

3. An expansible coupling or connection for pipes, tubes, or conduits, consisting of flanged annular disks riveted or otherwise attached to the ends of the pipes, tubes, or conduits, and the interposed elastic disks or expanding plates of curvilinear form, riveted together and to the flanged disks, substantially as described.

4. The expansible coupling or connection for pipes, tubes, or conduits, consisting of the disks B B, having flanges, collars, or sockets for the reception of the ends of the pipes, tubes, or conduits, and the interposed elastic disks C C, of curvilinear form, converging toward their inner edges and riveted together and to the disks B B, substantially as described.

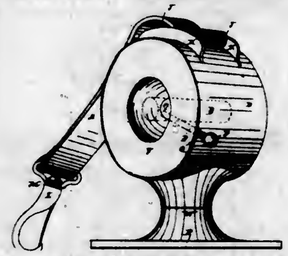
337,581. HANDLE ATTACHMENT FOR PLANES. ROBERT T. HENDERSON, Brooklyn, N. Y. Filed Oct. 1, 1885. (No model.)



Claim.—1. As an article of manufacture, a handle attachment for wood-planes, composed of a frame having upwardly-projecting ears and adapted to be rigidly attached to the body of the plane, and a handle pivoted to the projecting ears, which are above the top of the plane and vertically situated between the cutting-edge and heel of the plane, substantially as and for the purpose set forth.

2. In a handle attachment for wood-planes, in combination, the side frames, b b', rigidly secured to the body a of the plane, having upwardly-projecting ears b^2 b^3, extending above the plane and vertically situated between the cutting-edge and heel of the plane, the handle composed of the bifurcated piece c, shaft c', and hand-piece c^2, and the connecting-bolt and nut d d', by which the handle is pivoted to the ears b^2 b^3, substantially as set forth.

337,582. HITCHING DEVICE. ELMER J. HELDRETH, New Haven, Conn. Filed Dec. 14, 1885. (No model.)



Claim.—1. A hitching device having a strap, a spindle upon which the same is wound, a spring for rotating the spindle for winding the strap thereupon, a case for the strap, spindle, and spring, and a base for the case, the said case and base or fastening plate being swiveled together, substantially as set forth.

2. A hitching device having a strap, a spindle upon which the same is wound, a spring for rotating the spindle for winding the strap thereupon, a case for the strap, spindle, and spring, a base or fastening plate for the case, the said case and base or fastening plate being swiveled together, and means for temporarily locking the spindle against rotation, substantially as set forth.

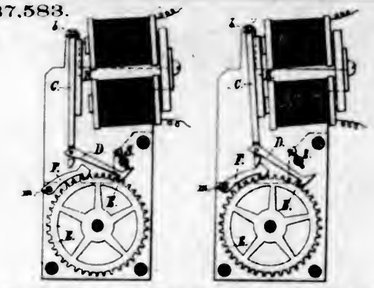
3. A hitching device having a strap, a spindle upon which the same is wound, a spring for rotating the spindle for winding the strap thereupon, a case for the strap, spindle, and spring, a base or fastening plate for the case, said case and base or fastening plate being swiveled together, and a snap-hook swiveled to the free end of the strap, substantially as set forth.

4. A hitching device having a strap, a spindle upon which the same is wound, a spring for rotating the spindle for winding the strap thereupon, a case for the strap, spring, and spindle, anti-friction rollers carried by the case for reducing the friction upon the strap, and a base or fastening plate for the case, the said case and base or fastening plate being swiveled together, substantially as set forth.

337,583. SECONDARY ELECTRIC CLOCK. VITALIS HERMES, New York, N. Y., assignor to the Standard Electric Clock Company, same place. Filed Apr. 23, 1885. (No model.)

Claim.—1. In a motor for electric clocks, the following combination of parts: first, a toothed or ratchet wheel; second, a pawl mounted upon the armature of an electro-magnet for operating said toothed wheel and serving to lock the same when in its advanced position by engaging

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a fixed stop; third, a dog or click independent of said driving-pawl operating to lock the toothed wheel from moving, and held in a locking position by the action of the armature on its return-stroke.

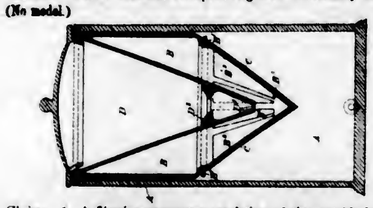
2. The combination of, first, a toothed wheel, E; second, a pawl actuated by the arm C for operating said wheel; third, the dog or click F, held in a locking position by the action of said arm C; fourth, the set-screw S, all substantially as shown and described.

3. The combination of the electro-magnet A, its armature B, the pawl D, set-screw S, toothed wheel E, and click F, independent of said pawl, all substantially as shown and described.

4. The combination of the electro-magnet A, its armature B, pawl D, toothed wheel E, set-screw S, and click F, held in a locking position by the action of said armature, substantially as shown and described.

5. The combination of the electro-magnet A, its armature B, extension C, pawl D, toothed wheel E, set-screw S, and click F, held in a locking position by the action of said armature, substantially as shown and described.

337,584. APPLIANCE FOR FILTERING WATER AND OTHER LIQUIDS. JOHN P. JACKSON, Liverpool, England. Filed May 21, 1884. (No model.)

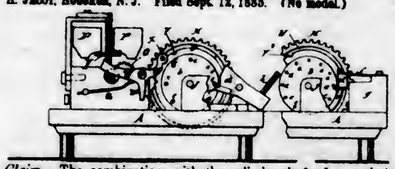


Claim.—1. A filtering apparatus consisting of the outside body or casing, A, the chamber B, having a conical end, and a groove, B', around it, into which is secured a bag or cloth of asbestos, for the purpose described, and said chamber being provided with the openings B^2, which extend to near the bottom and top of the conical end, and the chamber D, having diaphragm D^2 and opening D', as set forth.

2. In a filtering apparatus, the combination of chamber B, having a conical end and openings B^2, extending to near the top and bottom of said end, and provided with groove B', into which is secured the asbestus cloth, with the chamber A, as set forth.

3. The combination of conical chamber D, having diaphragm D^2 and opening D', chamber B, provided with a conical end and having openings B^2 and groove B', and the asbestus cloth secured in said groove, with chamber A, as set forth.

337,585. AUTOMATIC SAFETY-CHECK FOR MUSICAL BOXES. C. H. JACOT, Hoboken, N. J. Filed Sept. 12, 1885. (No model.)



Claim.—The combination, with the cylinder-shaft of a music-box, of a friction-wheel, *b*, having a circle of pins, *c*, and a balanced friction-pawl, *d*, having arm *s*, substantially as herein shown and described, whereby the said shaft will be stopped and held should its speed be unduly increased, as set forth.

337,586. BOB-SLEIGH. HENRY D. JEFFERY and JACOB LIVER, Winona, Minn., assignors to themselves, Calvin A. Bierce, and Frank B. Holbrook, all of same place. Filed Oct. 7, 1885. (No model.)

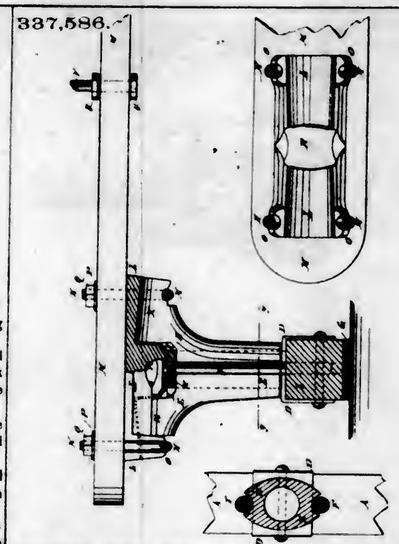
Claim.—1. The combination, with the knee E, having the transverse rounded arms K, having a longitudinal recess, I, and tapering outward slightly from said recess, of cap L, having a projection, R, on its under side fitting within the recess I, and concavities on opposite sides of the said projections to receive the upper rounded and tapered surfaces of the arms K, the said concavities being of greater width than the tapering arms, whereby a rocking and a lateral movement is afforded, substantially as and for the purpose set forth.

2. The combination, with the cap L, provided on its under side with the projection R, rounded recesses tapering outward from opposite sides of said projection, and recessed depending lugs O on opposite sides of the ends of the said recessed parts of the knee E, having a longitudinal recess, I, on its top, rounded arms K, tapered outward from opposite sides of said recess and resting in the recesses of cap L, the recesses being of greater width than the tapering arms, the clips N, fitting in the recesses of lugs O, and holding the cap and knee together, substantially as set forth.

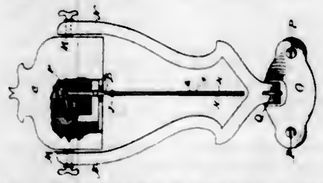
3. The combination, with the knee E, having the longitudinal recess I and the rounded outward tapered arms K on opposite sides of said recess, of the rave H, resting in the bottom of recess I and bent downward at opposite sides thereof, the cap L, provided with the projection R, fitting in recess I and resting on the rave H, the cap being recessed to receive the arms K and rock and oscillate laterally thereon, substantially as set forth.

4. The combination, with the runners A and the cross-beam M, of the knees E, having longitudinal recesses I, and rounded outward tapered arms K on opposite sides of said recesses, the rave-bolts extending upward from the runners in front and rear of the knees E, the raves H resting between their ends on the bottoms of the recesses I, apertured to receive the upper ends of the rave-bolts, and bent therefrom downward and secured to the runners, the caps L, having central projections, R, resting on the raves within the recesses I, rounded recesses receiving the arms K, and grooved lugs O on opposite sides of the ends of said grooved portions, and the clips N, passed upward through the grooves in said lugs and secured to the beam M, substantially as set forth.

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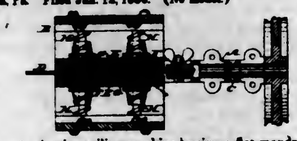
337,587. AUTOMATIC FAN. JAS. MCK. JOHNS, Glenmore, Ga. Filed Oct. 1, 1884. (No model.)



Claim.—1. The combination, with clock-work, a pendulum-rod caused to oscillate thereby, and a central fan adjustably fixed on the pendulum-rod, of two side fans hung by arms pivoted to the pendulum-rod and two brace-links connecting the side fans with the central fan, substantially as shown and described.

2. The combination, with a fan hung upon a pendulum-rod and clock-work to cause the said rod to oscillate, of a box to hold the clock-work, the double-branched or bifurcated bracket-arms N, having pivotal screws M M, sustaining the box between said arms, and a base-piece supporting the bracket-arm by a hinge, the base-piece being provided with screw-holes and screws, substantially as shown and described.

337,588. MACHINE FOR COILING WIRE. JOHN U. KESSLER, Philadelphia, Pa. Filed Jan. 12, 1886. (No model.)

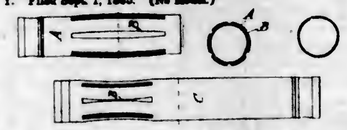


Claim.—1. A wire-coiling machine having a flat mandrel of greater breadth than thickness and sliding spring-jaws having spiral grooves, the said jaws being actuated by the rotation of said mandrel, substantially as and for the purpose set forth.

2. A wire-coiling machine composed of the frame A, the box B, rotary shaft C, flat mandrel D, located in said box, jaws E, having spiral grooves F, and the sliding holders G, with springs H, one of said jaws E having opening J, all of said parts being arranged and combined substantially as described.

3. Jaws with spiral grooves and a mandrel between the same, in combination with springs for pressing the jaws against the mandrel and means for rotating the mandrel, substantially as described.

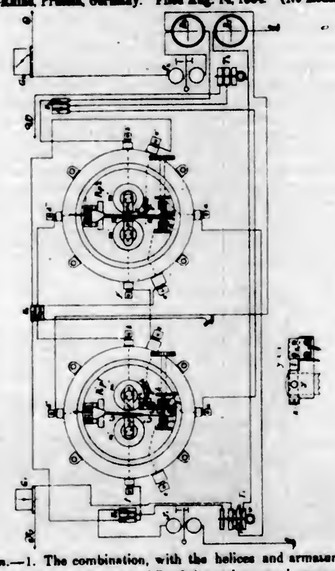
337,589. FISHING-ROD FERRULE. JOHN H. KNAPP, New York, N. Y. Filed Sept. 1, 1885. (No model.)



Claim.—1. As a new article of manufacture, a fishing-rod ferrule provided with an elastic compressible bearing-surface intermediate between the extremities of said ferrule, as and for the purpose described.

2. As a new article of manufacture, a fishing-rod ferrule provided with an elastic extensible bearing-surface intermediate between the extremities of said ferrule, as and for the purpose described.

337,590. TELEGRAPHIC REPEATER. JOSEPH KÖLLER, Duisburg-on-the-Rhine, Prussia, Germany. Filed Aug. 14, 1884. (No model.)

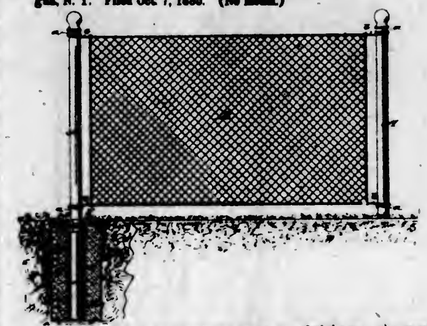


Claim.—1. The combination, with the helices and armature-lever of a relay and the contact-screws *l* L, of the spring-arm *i*, separate from the armature-lever, the contact *l'* thereof, the metallic piece *y*, the hook-shaped extension thereof, contact *k* in said extension, binding-post *c*, binding-screw *h*, plate Z, the yielding conductor connecting plate Z with screw *h*, and insulated point *j* of contact-screw L, substantially as shown and described.

2. In a telegraph apparatus, the combination, with the relays $E' p'$ and $E p^2$, constructed as shown and described, of the line-connections for main and branch circuits, suitable batteries for the latter, finger-keys $T' T^2$, and the commutators $U' U^2 U^3$, whereby a message can be transmitted from a remote station in a branch line to a station on the main line, or vice versa, in a manner substantially as set forth, all substantially as shown and described.

3. In a telegraph apparatus, the combination, with the polarized relay $E' p'$, constructed as shown and described, of a Morse relay, R *m*, having its armature-lever provided with an extension, a contact-plate, *m*, mounted on the extension and insulated from the armature-lever, a yielding electrical conductor, *g'*, connected with the contact-plate, and a binding-post on the base of the relay, and line-connections for main and branch circuits, suitable batteries for the latter, finger-keys, and commutators, all arranged substantially as set forth.

337,591. LAWN-TENNIS-NET SUPPORT. JAMES H. LEE, Canandaigua, N. Y. Filed Oct. 7, 1885. (No model.)



Claim.—1. In a lawn-tennis-net support and tightener, the combination of the socket C, provided with an internal collar, F, having a polygonal opening, the polygonal collar G, fitted to the collar F, and the pole A, secured in the collar G and projecting beyond the collar into the socket C, substantially as described.

2. In a lawn-tennis-net support and tightener, the combination of the socket C, collar F, having a polygonal opening, the polygonal collar G, fitted to the collar F, the pole A, secured in the collar G and projecting beyond the collar into the socket C, and the cement E, surrounding and supporting the socket C, as herein specified.

337,592. ATTACHMENT FOR HARROWS. WILLIAM A. LEECH and JOSEPH LITTLE, Lamar, Mo. Filed Jan. 21, 1886. (No model.)

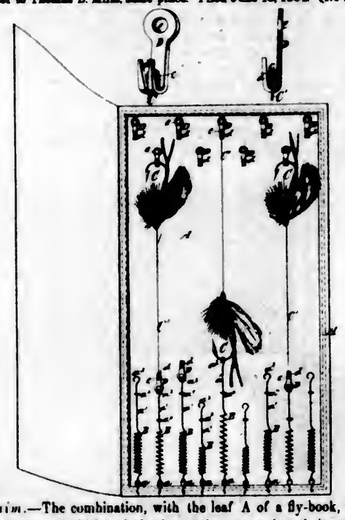


Claim.—1. In an agricultural implement, a tongue, A, having a series of perforations, *e*, a bail, C, having stirrups formed on its terminal

portions, and a pin pivoted thereto and adapted to enter one of said perforations, substantially as shown, and for the purpose set forth.

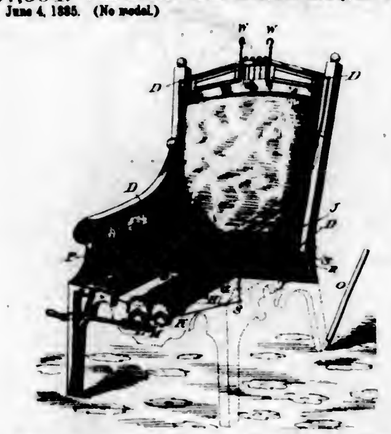
2. As a new article of manufacture, a foot-rest made of a single bent bar, the ends of which are upturned to form stirrups or foot-rests, the upper center portion having a depending pin pivoted thereto, substantially as shown, and for the purpose set forth.

337,593. FLY-BOOK. CHANCELLOR G. LEVISON, Brooklyn, N. Y., assignor to Thomas B. Mills, same place. Filed June 18, 1884. (No model.)



Claim.—The combination, with the leaf A of a fly-book, of two hooks, with one of which a fly-hook may be engaged, and the other of which, D, is provided with a V-shaped notch, *d*, to receive and hold the knotted end of a snell, one of said hooks being attached to the leaf at one end thereof, and a spring-retainer, B, with which the other hook is connected, and which is attached to the leaf at the other end, the spring-retainer serving to hold the snell under tension, with its knotted end in secure engagement with the notched hook, substantially as herein described.

337,594. FIRE-ESCAPE. HENRY LEWIS, New Liberty, Ill. Filed June 4, 1885. (No model.)



Claim.—1. The combination, with a fire-escape support having a seat for the person and side guards or arms, of a loop or keeper, and a hook secured to the inner side of one of said arms, and the bar supported by said loop and hook and adjustable across the front of the seat, substantially as set forth.

2. The combination, in a fire-escape, of a support, rollers journaled to said support, gears on said rollers and meshed together, a worm-shaft meshed with one of said gears, and cords connected with said rollers, substantially as set forth.

3. The combination of the support, the rollers journaled thereto, and a brake arranged to operate between said rollers, and having its opposite sides arranged to engage the adjacent roller and formed in diverging lines, substantially as set forth.

4. A fire-escape comprising a support, a pair of rollers journaled to said support, and cords secured one to each of said rollers, and extended thence up along the opposite sides of the support, substantially as set forth.

5. The combination, in a fire-escape, of a support, two parallel rollers, cords connected with said rollers, and a brake passed between said rollers, and having an X-shaped shoe forming bearing-surfaces diverging outwardly from the said rollers on opposite sides thereof, substantially as set forth.

6. The improved fire-escape herein described, consisting of the chair, the guard P, adjustable, whereby it may be set across the front of and retain a person within the chair, a pair of intergeared rollers journaled to the chair, cords connected with said rollers and extended through guides S S and D D, a worm-shaft geared with one of the rollers, and an X-shaped brake located and operating between said rollers, all arranged and operating substantially as set forth.

7. The combination of the support, the rollers journaled thereto, a brake arranged to operate between and engage said rollers, a lever supporting said brake, and a spring, substantially as set forth.

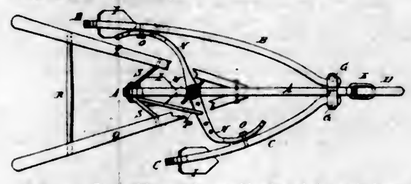
337,595. BOTTLE-WASHING IMPLEMENT. EDWARD J. LEYBURN, Lexington, Va. Filed Sept. 5, 1885. (No model.)



Claim.—1. The bars *a* and *b*, held and guided upon each other by a guide-strap, and pivoted, respectively, to the lever-bar *c*, one to the cranked or bent part and the other to the extremity of the short arm of said lever-bar, substantially as described.

2. The cranked lever-arm *c*, in combination with the looped bars *a* and *b* and guide-strap *m*, substantially as and for the purpose described.

337,596. CULTIVATOR. HENRY C. LEYDORF, Haskins, Ohio. Filed Oct. 24, 1885. (No model.)



Claim.—1. In a cultivator, the combination of the main beam A, the cross-pieces F, the S-shaped brace N, pivoted centrally to the main beam, and having slotted curved ends and intermediate apertures, the side beams, B, having their forward ends curved to engage the pivots G, the bolts O, and the hooked rod P, substantially as set forth.

2. As an improved article of manufacture, a plow-shovel having a hook-plate, J, on its rear face, a clamping-plate having one vertical edge hooked to engage the hook-plate, and a central bend forming a passage between the plate and shovel, and a bolt securing the clamp-plate to the shovel at its vertical edge opposite the hooked edge, substantially as set forth.

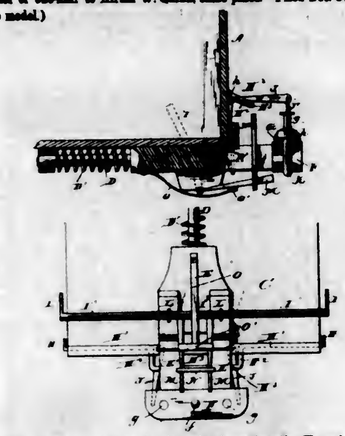
337,597. GATE. JOHN W. LIGHTFOOT, Keswick, Iowa. Filed June 4, 1885. (Model.)



Claim.—1. In a farm-gate, the spaced posts C C, one of which has a catch, in combination with the gate A, having the rails *a* and uprights *b*, the latch B, the longitudinally-arranged guide-rails D D, projecting a short distance in front of the gate to receive a post, C, between them, and extended in rear of the gate, the posts E E, having rollers *c c*, and the inner posts, F F, having the rollers *d d d d* on their inner sides, to receive and support the guide-rails, substantially as set forth.

2. The combination, with the spaced posts C C, one having a catch, the spaced posts E E, having rollers *c c* on their inner sides, and the spaced posts F F, having rollers *d d d d* on their inner sides, of the gate A, having a latch, B, longitudinal guide-rails D D, projecting in front of the gate to engage the latch-post C, extending rearward and resting on rollers *c c* and between the rollers *d d d d*, the lower rail, *a*, of the gate projecting in front of the gate and adapted to enter a notch in one of the posts C C, substantially as set forth.

337,598. CAR-COUPLING. CHARLES M. LEFLEROY, Shirley, Ill., assignor of one-half to Hiram W. Quinn, same place. Filed Dec. 31, 1885. (No model.)



Claim.—1. A car-coupler having the lever-handle H and continuous bent portions H' H² H³, the arms J, hinged to the car and resting on the lever-piece H³, the links J', depending from the outer ends of said arms, and the plate G, provided with openings, as described, and secured to the lower ends of arms J, in combination with the draw-head provided on its upper side with guide-pins *g* and the coupling-pin K, substantially as described.

2. A car-coupler having a lever-handle, I, with continuous bent connections I' I² I³ located under the car, the piece I³ having rigidly secured thereto the arms M, in combination with the slotted link-adjusting plate N, said plate having a vertical movement between the jaws E', and the arms M passing through openings in the plate, substantially as described.

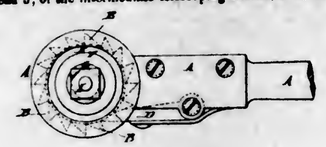
3. A car-coupler having a lever-handle, I, with continuous bent connections I' I² I³, located under the car, the piece I³ having rigidly secured thereto the arms M, in combination with the slotted link-adjusting plate N, said plate having a vertical movement between the jaws E', the arms M passing through openings in the plate, and a link provided on its ends with a projection, *t*, substantially as described.

4. A car-coupler having a lever-handle, I, with continuous bent connections I' I² I³, the piece I³ having rigidly secured thereto the arms M, a spring, O, having cross-piece O' or other equivalent means for elevating the arms M, the vertical movable slotted plate N, mounted between the draw-head pieces E', and the arms M, passing through openings in said plate, substantially as described.

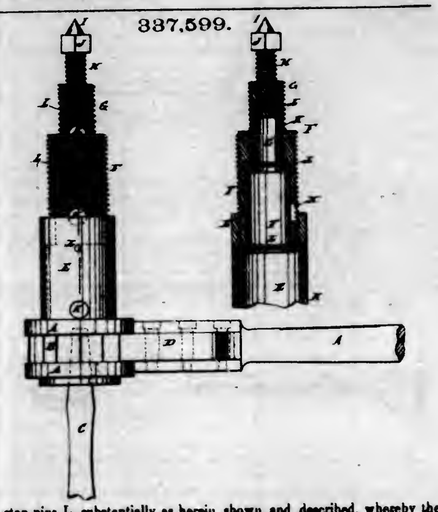
5. A car-coupler having a lever-handle, I, with continuous bent connections I' I² I³, the piece I³ having rigidly secured thereto the arms M, a spring, O, having cross-piece O' or other equivalent means for elevating the arms M, the vertically-movable slotted plate N, mounted between the draw-head pieces E', and a coupling-link with one or more extensions, *t*, in combination with the draw-head F, provided with guide-pins *g* and movable pin-lifter G, jointed arms secured to said lifter G by arms J', the lever-handle H, and continuous bent portions H' H² H³, and the part H² resting under the arms J, substantially as described and set forth.

337,599. RATCHET-DRILL. JULES MAGNETTE, Long Island City, N.Y. Filed Nov. 25, 1885. (No model.)

Claim.—In a ratchet-drill, the combination, with the screw-socket E of the ratchet-wheel B and the feed-screw H, having point I and polygonal head J, of the intermediate telescoping screws, F G, and their

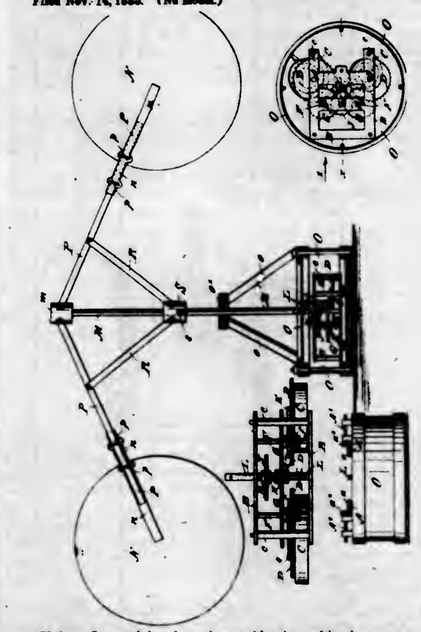


337,599.



stop-pins L, substantially as herein shown and described, whereby the feed-screws can be extended or contracted, as may be required.

337,600. REVOLVING FAN. HENRY HINKE, Jr., De Witt, Nebr. Filed Nov. 14, 1885. (No model.)



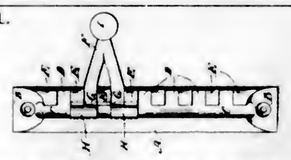
Claim.—In revolving fans, the combination, with a base or support and the fan-shaft M, of driving-gearing consisting of two springs, C C, cog-wheels D D, adapted to be rotated in the same direction by the springs, pinions *f f*, meshing with wheels D D, cog-wheels G G on the shafts of pinions *f f*, a pinion, H, rotated by the wheels G G, a cog-wheel, I, on the shaft of pinion H, and a pinion, K, on the driving-shaft L, to which the fan-shaft is attached, substantially as herein set forth.

337,601. WASH-BOARD HOLDER. BENJAMIN N. MERRILL, Lisbon, Me. Filed June 5, 1885. (Model.)

Claim.—1. The combination, with a wash-board, of grooved strips on the same, pieces or arms projecting from the strips, and of ball-heads on the ends of the pieces, substantially as herein shown and described.

2. The combination, with a grooved strip having notches, of a piece or arm having pivots on one end and a ball-head on the other end, substantially as herein shown and described.

337,601.



3. The combination, with a grooved strip having notches on one of the ridges formed by the groove, of a forked piece having pivots at the open ends, and a ball-head on the outer end, substantially as herein shown and described.

4. A wash-board attachment consisting of a strip provided with swinging arms having ball-heads on the outer ends, substantially as herein shown and described.

337,602. SPADE. CHARLES MCBRIDE, Victor, Iowa. Filed Dec. 7, 1885. (No model.)



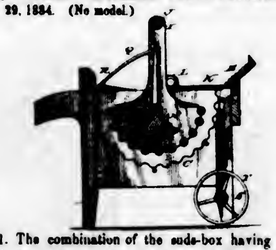
Claim.—1. A spade having its lower cutting-edge beveled upwardly on each side from its center and provided with upwardly-extending ears, forming a continuous angular cutting portion with the edge of the blade, substantially as described.

2. The combination of the convex-pointed blade 1 and the rods 4, secured to the upper edge of the blade and forming a continuation thereof, and united at their upper ends to form a shank for attaching the blade to a proper handle, substantially as described.

3. In a spade, the combination of pointed blade 1, ears 3 3, formed on opposite edges of the blade, and rods 4 4, united to the upper edge of the blade and forming a continuation thereof, and having their upper ends united to form a shank, substantially as and for the purpose described.

4. As an improved article of manufacture, the herein-described ditching-spade, formed of a convex blade, 1, ears 3, and rods 4, all constructed and adapted to operate substantially as and for the purpose specified.

337,603. WASHING-MACHINE. JAMES MCBRIDE, Barrington, Pa. Filed Mar. 29, 1884. (No model.)



Claim.—1. The combination of the suds-box having a concaved corrugated bed, the concavo-convex rubber, and the auxiliary rubber having a convex under side and the described means for securing its upper end to the suds-box and pivoted within the rubber, as and for the purpose shown and set forth.

2. The combination of the rubber pivoted upon the inwardly-bent ends of two arms, the said arms penetrating the sides of the rubber, with the auxiliary rubber having two vertical grooves in its sides resting with their upper ends upon the ends of the penetrating arms, as and for the purpose shown and set forth.

3. The combination, in a washing-machine, of the suds-box having a concave corrugated sheet-metal bed or bottom, two arms pivoted at the upper edge of one end piece of the box, coiled near their middle and bent at an obtuse angle, and having their outer ends bent inward, the concavo-convex rubber pivoted at its sides upon the inwardly-bent ends of the arms, and the auxiliary rubber having convex under side having vertical grooves rocking with their upper ends upon the inwardly-bent ends of the arms, provided with a laterally-inclined handle having a bent rod adapted to be hooked into a notch in the upper edge of the side of the suds-box, as and for the purpose shown and set forth.

337,604. TOWEL-RACK. WILLIAM L. MCKELVEY, Youngstown, Ohio, assignor of one-half to John Magown, same place. Filed Apr. 11, 1885. (No model.)

Claim.—The casting A, of a single piece having the independent circular open seats opening into the vertical slots, combined with the

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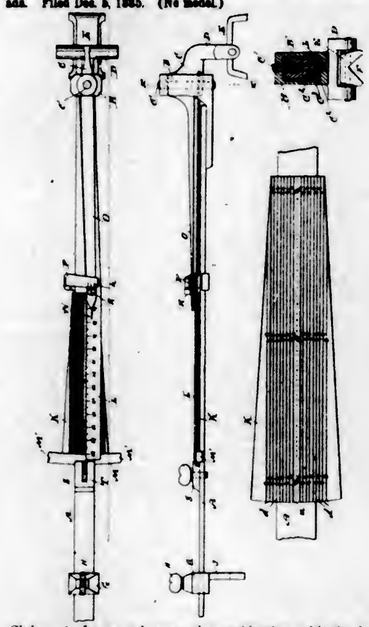
rods having the attachable balls fitting into the said independent seats, whereby to hold the rods in radial relation, as shown and described.

337,605. AXLE FOR VEHICLES. ROBERT MCLAUGHLIN, Oshawa, Ontario, Canada. Filed Oct. 9, 1885. (No model.) Patented in Canada Aug. 26, 1885, No. 22,304.



Claim.—The combination, with the axle B, provided with groove *b*, and having formed integral therewith the collar D, and annular bearing *b'*, of the same diameter as said collar, and annular lubricant-chamber between said collar and bearing, of the rubber washer C, bearing against said collar, the metal washer E, of the same diameter as said collar and annular bearing, and provided with lip *a* to fit said groove, and the axle-box A, sleeved on said axle, and having enlarged recess receiving said collar, bearing, and washers, and bearing upon the same, substantially as described.

337,606. AXLE-GAGE. HECTOR MCQUARRY, Allandale, Ontario, Canada. Filed Dec. 5, 1885. (No model.)



Claim.—1. In an axle-gage, the combination, with the bar A, of the slotted head B on the same, and the bracket-arm C, pivoted in said head and provided with the pointer O, extending over the bar A, substantially as herein shown and described.

2. In an axle-gage, the combination, with the bar A, of the slotted head B, the bracket-arm C, pivoted in the same, which arm C has the pointer O formed on one end and has the other end forked, and of the forked notched piece E, pivoted in the forked end of the arm C, substantially as herein shown and described.

3. In an axle-gage, the combination, with the bar A, of the slotted head B, the bracket-arm C, pivoted in the same and provided with the pointer O, and of the spoke-rule L, mounted to turn on the pivot of the bracket-arm C in the head B below said bracket, substantially as herein shown and described.

4. In an axle-gage, the combination, with the bar A, of the dish-rule K on the same, the spoke-rule L, pivoted to swing over the dish-rule, and of the bracket-arm C, pivoted on the bar A, and provided with

a pointer swinging above the spoke-rule, substantially as herein shown and described.

5. In an axle-gage, the combination, with the bar A, of the dish-rule K on the same, the curved arm P, extending over the top of the spoke-rule and provided with the marks A, the spoke-rule L, pivoted to swing over the dish-rule, and of the bracket-arm C, pivoted on one end of the bar A and provided with the pointer O, having the projection or pin R, adjacent to the arm P, substantially as herein shown and described.

6. In an axle-gage, the combination, with the base or body and the spoke-rule, of the dish-rule K, having a longitudinal central line, *a*, and longitudinal parallel lines *d d* at both sides of the said central line, substantially as set forth.

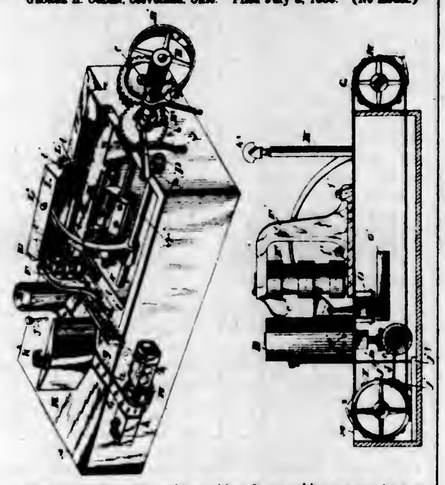
337,607. BUTTON. ADOLPH NELSON, Brooklyn, N. Y. Filed Aug. 18, 1885. (No model.)



Claim.—1. A button adapted to receive a facing of textile material, the said button consisting of a body of ivory, vulcanite, or similar elastic material, provided with an eye, a shank, or other suitable means of attachment, and having its face flat or slightly convex, and provided at its edge with a raised undercut rim integral with the body of the button, and a removable interior ring held in place by a sloping edge fitting the undercut inner edge of the rim of the body of the button, all substantially as shown and described.

2. An improved button, consisting of a body provided with eyes or other suitable means of attachment, and having a raised outer rim slightly undercut on its internal circumference, in combination with a piece of textile material placed upon the face of the button and secured thereto by a ring fitting the rim of the button tightly and locking by a dovetail therewith, all constructed substantially as shown and described.

337,608. MACHINE FOR ATTACHING COVERS TO PAMPHLETS. GEORGE H. OSBON, Cleveland, Ohio. Filed July 3, 1885. (No model.)



Claim.—1. An automatic machine for attaching covers to pamphlets, &c., consisting, essentially, of a clamp for pressing the covers upon the pamphlets, a breaker for wetting and pressing the cover into the clamp, feed-rolls for discharging the pamphlets one at a time into the clamp, and an intermittently-movable endless belt for moving the pamphlets to the feed-rolls, the parts being arranged and operated substantially as set forth.

2. In an apparatus for attaching covers to pamphlets, a clamping device consisting of a movable and a stationary jaw and bottom plate, and means for beating the latter, in combination with a cam for closing the clamp and spring for opening the same, the said cam being made adjustable, by means of which the throw of the cam may be regulated to close the clamp more or less, according to the thickness of the pamphlet, substantially as set forth.

3. In a machine for attaching covers to pamphlets, the combination, with a suitable clamp, of a breaker for wetting and pressing the covers into the clamps, and mechanism, substantially as described, for operating said breaker.

4. In a machine for attaching covers to pamphlets, the combination, with a clamp, of a breaker for pressing the covers into the clamp, said breaking device having an extended part packed with sponge or other suitable material for holding water, substantially as set forth.

5. In a machine for attaching covers to pamphlets, the combination, with a clamp, of vertical feed-rollers for discharging the pamphlets into the clamp, and a paste-roller located between the feed-rolls in position to support the pamphlets and be rotated thereby, substantially as set forth.

6. In a machine for attaching covers to pamphlets, the combination, with the rolls E and F and the paste-roller O, arranged substantially as indicated, of the roller D, with projecting points *d'*, substantially as set forth.

7. In a machine for attaching covers to pamphlets, the combination, with feed-rolls arranged substantially as indicated, of an endless belt and mechanism, substantially as described, for moving the belt intermittently, and a block or suitable device attached to the belt to move the pamphlet toward the feed-rolls, substantially as set forth.

8. The combination, with the belt G, with holes *g*, arranged substantially as indicated, of the block K and spindle *k*, arranged as shown, for securing the block to the belt, substantially as set forth.

9. In a machine for attaching covers to pamphlets, the combination, with a sprocket-wheel for driving an endless belt, and an annular rim concentric with the sprocket-wheel, of a bar arranged to embrace said rim, a cam for elevating the bar, and a spring for depressing the bar, and so arranged that when the bar is operated by the cam the sprocket-wheel is turned, and the bar, when disengaged from the cam, will return to the place of starting, substantially as set forth.

10. The combination, with the sprocket-wheel I and rim I', of the bar J, spring *j*, abutment-screw *j''*, and cam *c*, arranged substantially as set forth.

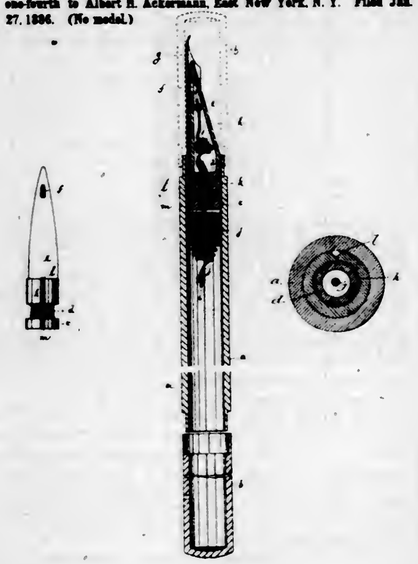
11. In a machine for attaching covers to pamphlets, the combination, with a clamp and a breaker arranged substantially as indicated, of a stop for the pamphlets, consisting, essentially, of a segmental disk pivoted to an adjustable support, and arranged in such a manner that the disk in its normal position will extend over the trough of the clamp, substantially as set forth.

337,609. MEANS FOR TEACHING SEWING. ELVIRE S. PAILLOT and LOUIS CHARBONNIER, Compiègne, France. Filed June 26, 1885. (No model.) Patented in France Nov. 15, 1884, No. 165,966.



Claim.—As a means of instructing beginners in the art of cutting and sewing, the herein-described article of manufacture, which consists of sheets of textile material having delineated thereupon characters or impressions which represent stitches of various kinds or patterns, and marks or impressions which represent the lines upon which the material is to be cut and along which the several parts are to be joined by stitches, as set forth.

337,610. FOUNTAIN-PEN. NOYES F. PALMER, Jamaica, assignor of one-fourth to Albert H. Ackermann, East New York, N. Y. Filed Jan. 27, 1886. (No model.)

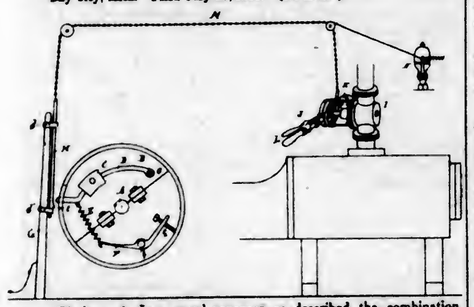


Claim.—1. The combination of reservoir *a* with tip *d*, and with wire *i*, provided with covering *j* and coiled within the reservoir, substantially as and for the purpose described.

2. The combination of reservoir *a* with tip *e*, having collar *k*, which is provided with groove *l*, and with the coiled wire *i*, having covering *j*, substantially as specified.

3. The combination of reservoir *a* and tip *e*, having grooved collar *k*, with grooved plug *c*, having screw-stem *d*, and with the wire *i*, extending from the reservoir into the tip, substantially as set forth.

337,611. **AUTOMATIC STOP FOR STEAM-ENGINES.** GEO. PARKER, Bay City, Mich. Filed July 23, 1885. (No model.)



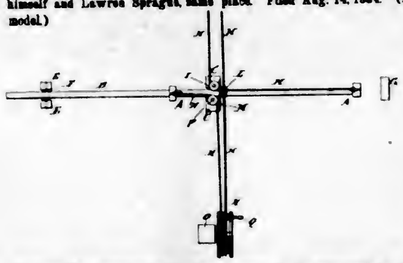
Claim.—1. In a speed-governor, as described, the combination, with the weighted lever C D, pivoted to and actuated from the main shaft of an engine, of an adjustable elbow-lever and a spring connecting the two levers, so as to regulate the rate of speed at which the weighted lever shall operate, as set forth.

2. In a speed-governor, the combination, with the throttle-valve, as described, a tripping device, and connections, of the weighted lever D, the lever F, spring E, and adjusting-screw *c*, as and for the purposes set forth.

3. In combination with the throttle-valve I, arranged to be self-closing when tripped, the chain M, the suspended bar H, having shoulder *e*, the rest *d'*, the arm D, controlled by the centrifugal force of the engine, and the disk B, all arranged substantially as described.

4. The combination of the upright G, having guides *d d'*, the weighted bar H, having shoulder *e*, the disk B, the arm D, having flying weight C, and the coil-spring E, having adjusting devices, such as the lever F, and adjusting-screw *c*, all arranged substantially as described.

337,612. **GATE.** THEODORE L. PATRICK, Paw Paw, Ill., assignor to himself and Lawren Sprague, same place. Filed Aug. 14, 1884. (No model.)



Claim.—The combination, with the posts C C, connected by the bar M, the gate A, sliding between the said posts and the roadway side posts, K O, of the crank-wheels J N, journaled in the posts K O, respectively, the pulleys I P, journaled on the tops of the posts C, the pulley L, journaled to the bar M, attached to the tops of the posts C, and the single cord H, having one end secured to the forward end of the gate, passed around the pulley I, one or more times around the wheel J, over the pulley L, one or more times around the pulley N, and thence around the pulley P, and its end secured to the rear end of the gate, substantially as herein shown and described.

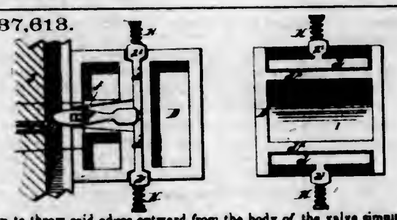
337,613. **SLIDE-VALVE.** JOHN W. PAYLER, Detroit, Mich. Filed July 12, 1884. (Model.)

Claim.—1. The combination, with a slide-valve, of movable edges and the lever F, capable of movement lengthwise and adapted to force outward said edges from the body of the valve, substantially as described.

2. The combination, with a slide-valve, of movable edges provided with arms *d'*, and a lever movable lengthwise, adapted to be forced between said arms and crowd said edges outward from the body of the valve, substantially as described.

3. The combination, with a slide-valve, of movable edges, mechan-

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ism to throw said edges outward from the body of the valve simultaneously, and springs to retract said edges, substantially as described.

4. The combination, with a slide-valve, of movable edges and a lever movable lengthwise and constructed to force said edges outward from the body of the valve and parallel to each other, substantially as described.

5. The combination, with a slide-valve, of movable edges and a lever capable of endwise motion and constructed to force said edges out permanently from the body of the valve until the pressure of said lever is removed, substantially as described.

6. The combination, with a slide-valve having movable edges, of mechanism for reciprocating said edges simultaneously and for automatically controlling the travel of said edges, substantially as described.

7. The combination, with a slide-valve having movable edges, of a pivoted lever, F, capable of lengthwise and vibratory movement, and adapted to operate said edges both alternately and simultaneously, substantially as described.

8. The combination, with a slide-valve having movable edges, and a lever, F, capable of operating said edges both simultaneously and alternately, as desired, and plates K, adapted to relieve the pressure from the back of said valve, substantially as described.

9. The combination, with a slide-valve having movable edges, of a lever, F, capable of operating said edges simultaneously, and an adjustable bar, G, to operate said lever, substantially as described.

10. The combination, with a slide-valve having movable edges, of a lever, F, capable of endwise and vibratory motion, to operate said edges, and an automatically-adjustable bar, G, for operating said lever and controlling its stroke, substantially as described.

11. The combination, with a sliding valve, of movable edges provided with arms *d'*, and a pivoted lever, F, arranged to throw said edges alternately, substantially as described.

337,614. **CARRIAGE-BOW SOCKET.** JOHN M. PERKINS, South Bend, Ind. Filed Jan. 7, 1886. (No model.)



Claim.—1. A bow-socket or similar article provided with outside layers of thin wood or veneer with their grain all running in the same direction, in combination with interposed layers of coarsely-woven cloth—such as scrim—and a double ferrule with a layer or layers of wood, and the cloth between the inner and outer ferrule, substantially as described.

2. A covering composed of layers of very thin wood alternately wound with coarse cloth having open meshes—such as scrim—through which glue will penetrate, the parts glued together to form a tubular or other covering, substantially as described.

337,615. **BOTTLE-WASHING MACHINE.** EDWIN S. PIPER, Bristol, Conn., assignor, by mesne assignments, to Walter E. Strong, same place. Filed July 28, 1884. (No model.)

Claim.—1. A machine for cleaning bottles, having scrubbers constructed and arranged for cleaning the outer surfaces of the bottles, and converging spring-arms carrying the said scrubbers, substantially as set forth.

2. A machine for cleaning bottles, having scrubbers constructed and arranged for cleaning the outer surfaces of the bottles, spring-arms carrying the said scrubbers, and a revolving head to which the said arms are attached, substantially as set forth.

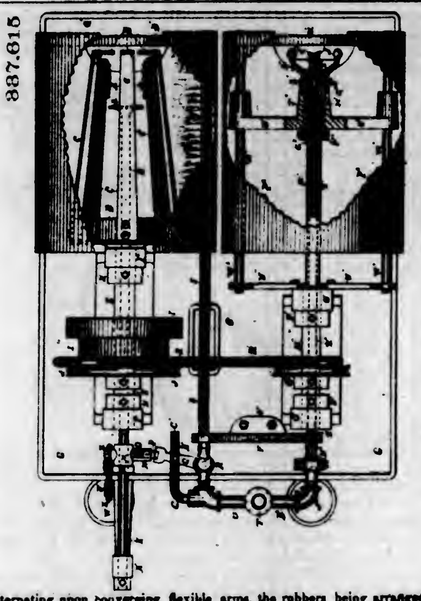
3. A machine for cleaning bottles, having scrubbers constructed and arranged for cleaning the outer surfaces of the bottles and grouped to inclose the bottles, and spring-arms carrying the scrubbers, substantially as set forth.

4. A machine for cleaning bottles, having scrubbers constructed and arranged to clean the outer surfaces of the bottles, and including rubbers adapted to clasp the necks of the bottles, substantially as set forth.

5. In a bottle-washing apparatus, means for washing the exterior surfaces of a bottle, consisting of brushes and rubbers respectively mounted upon converging flexible arms, substantially as set forth.

6. In a bottle-washing apparatus, means for washing the exterior surfaces of a bottle, consisting of brushes and rubbers attached to and

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alternating upon converging flexible arms, the rubbers being arranged to cleanse the neck of the bottle, substantially as set forth.

7. A machine for cleaning bottles, having scrubbers constructed and arranged for cleaning the outer surfaces of the bottles, and a removable support located within and between the scrubbers for supporting the bottles as the same are advanced between and withdrawn from the scrubbers, substantially as set forth.

8. A machine for cleaning bottles, having scrubbers constructed and arranged for cleaning the outer surfaces of the bottles, a cup situated within and between the scrubbers and located upon a longitudinally-movable rod, and means, substantially as shown, for operating the said rod and cup to support the bottles while they are being advanced between and withdrawn from the scrubbers, substantially as set forth.

9. A machine for cleaning bottles, having scrubbers constructed and arranged for cleaning the outer surfaces of the bottles, a movable support located within and between the scrubbers for supporting the bottles as the same are advanced between and withdrawn from the scrubbers, and means, substantially as shown, for supplying water to the bottles while being scrubbed and controlled by the movable support, substantially as set forth.

10. A machine for cleaning bottles, having scrubbers constructed and arranged for cleaning the outer surfaces of the bottles, and a frame located directly in front of the scrubbers and having an opening through which the bottles are passed for being scrubbed, substantially as set forth.

11. A machine for cleaning bottles, having scrubbers constructed and arranged for cleaning the outer surfaces of the bottles, a ring-frame located directly in front of the scrubbers, and a ring of smaller dimensions for removable attachment to the said ring-frame, substantially as set forth.

12. A machine for cleaning bottles, having scrubbers constructed and arranged for cleaning the outer surfaces of the bottles, a frame located directly in front of the scrubbers and having an opening for access to them, and a shield inclosing the scrubbers from the top and sides, substantially as set forth.

13. A machine for cleaning bottles, having scrubbers carried upon converging spring-arms attached to a revolving drum, a cup situated within and between the scrubbers and located upon a longitudinally-movable rod, means, substantially as described, for operating the said rod to support the bottles as they are advanced between and withdrawn from the scrubbers, a water-supply controlled by the movement of the rod, a frame located directly in front of the scrubbers and having an opening for access to them, and a shield inclosing the scrubbers from the top and sides, substantially as set forth.

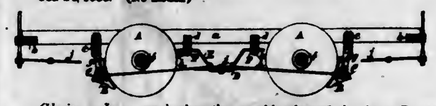
14. A machine for cleaning bottles, having an expansible scrubber consisting of a hollow stock, a brush mounted on the outer end thereof, and spring-arms secured to the stock and carrying scrubbers, substantially as set forth.

15. A machine for cleaning bottles, having an expansible scrubber consisting of a tapering hollow stock, a brush located in its forward end, and spring-arms secured to opposite faces or sides of the stock and carrying rubber scrubbers, substantially as set forth.

16. A machine for cleaning bottles, having an expansible scrubber, a rotary sleeve normally inclosing the same, a carriage carrying such sleeve and moved for uncovering the scrubber, a frame located directly in front of the scrubber and having an opening in it for access to the same, and a shield inclosing the scrubber from the top and sides and attached to the frame, substantially as set forth.

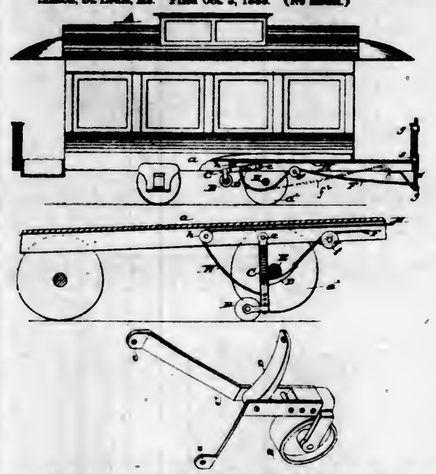
17. A machine for cleaning bottles, having scrubbers for cleaning their inner and outer surfaces, located side by side, as shown, and water and operating connections for supplying water to the said surfaces of the bottles and for driving the scrubbers, substantially as set forth.

337,616. **CAR-BRAKE.** BELLVILLE L. RANDALL, Boston, Mass. Filed Oct. 24, 1885. (No model.)



Claim.—In a car-brake, the combination of the lever D, connected with the brake-beams substantially as specified, a support or hanger, E, to which said lever is pivoted, and sockets F, in which said support or brace may slide, substantially as and for the purpose set forth.

337,617. **STREET-CAR.** BUDD M. RAWLINGS and CATHARINE A. WILLIAMSON, St. Louis, Mo. Filed Oct. 3, 1885. (No model.)



Claim.—1. A street-car having an arm or bracket that can be swung or lowered to bring the wheel to or toward the ground and is provided with an arm, projection, or attachment which, when the wheel-arm or bracket is moved downward, is brought beneath the car-axle or other part of the car, as and for the purpose described.

2. The combination of the body, *a*, the pivoted bracket C, the wheel B, the arm D, the chain F, and the shaft G, substantially as described.

3. The combination of the car-body *a*, the pivoted bracket C, the wheel B, the arm D, the chains F H, the bearing A, and the shaft G, substantially as described.

4. A car-body having a swinging bracket or arm carrying at the lower end a caster-wheel and between the ends provided with an arm, and a connection leading therefrom to the end of the car for the purpose of swinging the caster-wheel bracket or arm downward and drawing the bracket-arm beneath the car-axle, substantially as described.

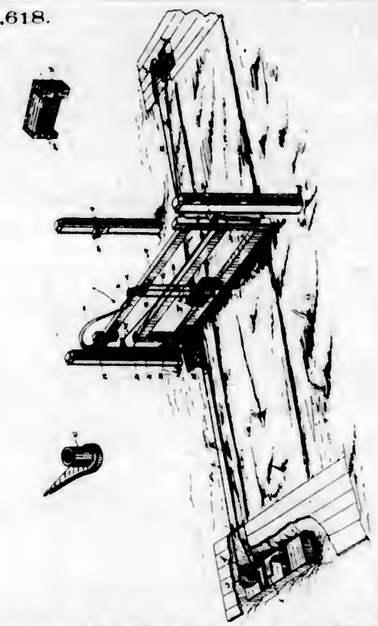
337,618. **GATE-OPENING DEVICE.** NICHOLAS E. REESOR, Markham, County of York, Ontario, Canada. Filed Aug. 6, 1885. (No model.) Patented in Canada Aug. 8, 1885, No. 22,230.

Claim.—1. The combination of the gate A, hinged upon hollow supports, the hinge-rod E, passing through said supports, the movable block or weight F, connected with said rod, the quadrant H, secured to said rod, and the double-cranked trip-rods I, connected with said quadrant, substantially as and for the purpose specified.

2. The combination of the gate A, hinged upon the hollow supports C, the vertical hinge-rod E, having a crank-arm, *a*, at its top, which passes through said supports and is connected to the movable block or weight F, as described, and the double-cranked trip-rods I, connected to the hinge-rod E, substantially as and for the purpose specified.

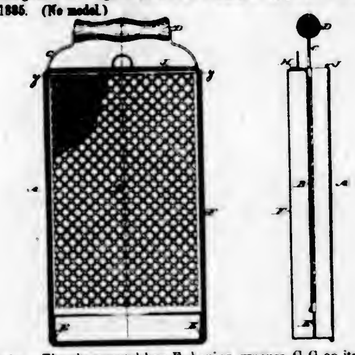
3. The post D, hollow supports C, attached thereto, vertical hinge-

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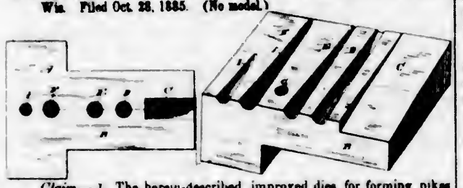
rod E, and the gate A, hinged upon said hollow supports, and the double arm M, formed on said hinge-rod, in combination with the spring-latch N, connected to said arm and arranged to engage with the hasp P, substantially as and for the purpose specified.

337,619. GRATER. WILLIAM S. SALMON and WILLIAM E. HAMLETT, Wilmington, Del., assignors to Cleaver & Hollis, same place. Filed Mar. 20, 1885. (No model.)



Claim.—The sheet-metal box F, having grooves G G on its inner sides, and provided with the end piece, H, and brace J, jointly with the frame C, carrying the grater B, and provided with a handle and supporting-feet, substantially as and for the purpose set forth.

337,620. DIE FOR FORMING PIKES. ALBERT SANFORD, Oshkosh, Wis. Filed Oct. 28, 1885. (No model.)

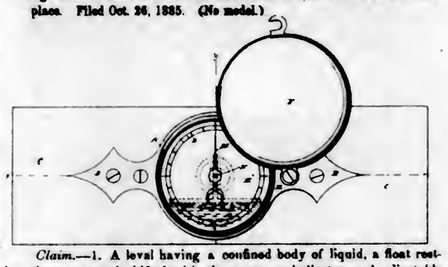


Claim.—1. The herein-described improved dies for forming pikes for pike-pole pikes, pevies, &c., consisting of the sections A and B, having the beveled portion C and the half-round depressions D and E and the threaded depressions F, substantially as described.

2. The herein-described improved dies for forming pikes for pike-pole pikes, pevies, &c., consisting of the sections A and B, having the beveled portions C, the half-round depressions D and E, and the threaded depressions F, one of the sections having the perforation G, substantially as described.

3. The herein-described improved dies for forming pikes for pike-pole pikes, pevies, and picaroons, consisting of the sections A and B, having the beveled portions C and half-round depressions D, E, and I, and the threaded depressions F, one of said sections having the perforation G, substantially as described.

337,621. SPIRIT-LEVEL. L. ARTHUR SANFORD, Bristol, Conn., assignor of two-thirds to Leverett A. Sanford and Rufus A. Sanford, same place. Filed Oct. 26, 1885. (No model.)



Claim.—1. A level having a confined body of liquid, a float resting thereupon and shifted with the same, an indicator, and adjustable connection between the same and the float, substantially as set forth.

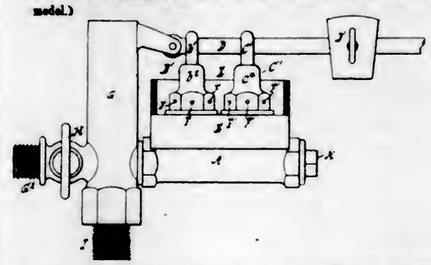
2. A level having a confined body of liquid, a float resting thereupon and shifted with the same, an indicator, and automatically-adjustable connection between the same and the float, substantially as set forth.

3. A level having a confined body of liquid, a float resting thereupon and shifted with the same, an arbor, a float-stem attached to the float and adjustably connected with the arbor, and a pointer or indicator secured to the arbor, substantially as set forth.

4. A level having a body of liquid confined in a circular chamber, a float resting upon the liquid and shifted therewith, an arbor located in the center of such chamber, and adjustable connection between the arbor and float, substantially as set forth.

5. A level having a body of liquid in a chamber composed of two circular cups provided with annular flanges, substantially as shown, a float resting upon the liquid and shifted by the same, an arbor centrally pivoted in said cups and provided with a hub having a square opening, a float-stem secured to the float and passing through the hub of the arbor, so as to move freely therein, a pointer mounted upon the arbor, and a graduated surface, substantially as set forth.

337,622. SAFETY-VALVE FOR BEER-CASKS. JOHN C. SCHAEFER and JOHN A. HASMAYER, New York, N. Y. Filed July 16, 1885. (No model.)



Claim.—1. The combination, with the valve-shell A and the lubricating cup or vessel E, having a valve-seat and a weighted disk, B, of the perforated cover b^3, arranged in the lubricating cup or vessel, the storage-chamber G, and the diaphragm J, rising from the valve-shell in the storage-chamber to or above the level of the upper portion of the lubricating cup or vessel, substantially as and for the purpose described.

2. The combination, substantially as hereinbefore described, with the valve-shell and the chamber, of the valve-seat, the weighted valve-disk B, the lubricating cup or vessel communicating with the outlet-orifice of the valve, and the diaphragm extending upward from the valve-shell to or above the level of the upper edge of the cup or vessel.

3. The combination, with the valve-shell and the chamber, of the weighted valve-disk, the lubricating cup or vessel on the valve-shell, the outlet-orifices in the cover opening into the said vessel, and the diaphragm in the chamber extending upward from the valve-shell to or above the plane of the upper edge of the vessel, substantially as shown and described.

4. The combination, substantially as hereinbefore described, with the valve-shell and the chamber, of the valve-seats *b* and *c*, the disk B, fitting the seat *b*, the weighted relief-disk C, fitting the seat *c*, the cup or vessel connecting with the valve-shell, and the diaphragm in the chamber.

5. The combination, substantially as hereinbefore described, with the valve-shell and the chamber, of the valve-seats *b* and *c*, the disk B, fitting the seat *b* and connected to a weighted lever, the elastic disk or diaphragm C on the seat *c*, connected with and sustaining the weight of the lever, the cup or vessel communicating with the valve-shell, and the diaphragm in the chamber extending upward from the valve-shell to or above the level of the upper edge of the cup.

337,623. CABLE RAILWAY. JOHN J. SCHILLINGER, New York, N. Y. Filed Nov. 5, 1885. (No model.)



Claim.—1. In a cable railway, the combination, with the rail-supporting ties D D, of the crown-plates E E, connected with the rail-supporting ties, substantially as shown and described.

2. The combination, with the rail-supporting ties D D, having at their inner adjacent ends the curved upwardly-projecting plates *d*, of the arched crown-plates E E, secured to said curved plates, substantially as described.

3. The road-bed for cable railways, consisting of foundation-bed A, the conduit B, the crown-plates E E, forming the arch of the conduit, the rails C, the ties D D, which are secured to the crown-plates and the rails, and the upper road-bed, A', substantially as shown and described.

337,624. UNDERGROUND CONDUIT FOR ELECTRIC WIRES. JOHN J. SCHILLINGER, New York, N. Y. Filed Oct. 29, 1885. (No model.)



Claim.—An electric-wire conduit composed of the exterior trough, A, having cover a' and semicircular bottom wall, a^2, the interior trough, B, supported within the outer trough to form a continuous intermediate air-space on all sides, said interior trough being provided with a cover, b', and having a continuous series of transverse perforations, *e e*, in its side walls and vertical perforations *f f* in its bottom wall, and the horizontal and vertical pegs *g h*, supported in said perforations respectively, substantially as described.

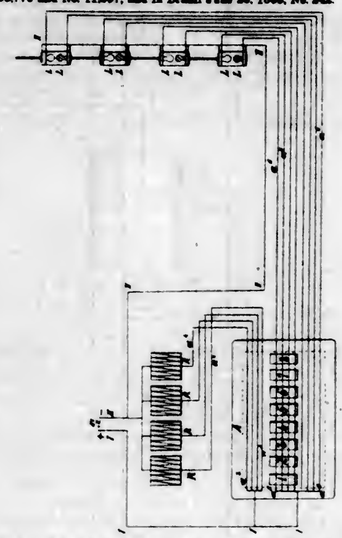
337,625. CUTTING APPARATUS FOR HARVESTERS. CHRISTIAN SCHMIDT, Blue Island, Ill., assignor of one-fourth to John Engelhardt, same place. Filed Apr. 6, 1885. (No model.)



Claim.—1. The combination of a sickle-bar having a longitudinal recess opening in its forward side and provided with a number of vertical pins, cutter-blades having L-shaped slots opening in their inner edges and fitting and sliding upon the said pins, the innermost cutter-blade having the notch in its inner side edge, the screw passing through the sickle-bar at its inner end fitting in the notch, and the tightening-screw at the outer end of the sickle-bar bearing with its inner end against the outer edge of the outermost cutter-blade, as and for the purpose shown and set forth.

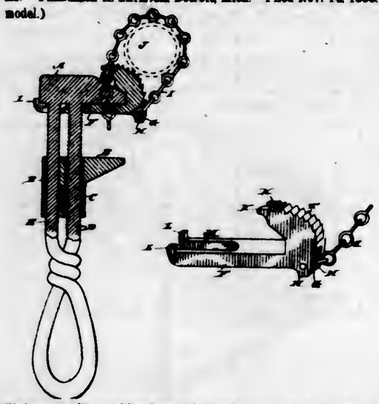
2. The combination of the sickle-bar having the flanges upon the edges of its inner end, having beveled inner sides, the block having the pitman-eye, and having the transverse recess in its upper side, and having beveled side edges fitting in the beveled flanges, the transverse bar fitting in the transverse recess in the block and with its ends in notches in the upper edges of the flanges, and the screw passing through the transverse bar, through the block, and into the sickle-bar, as and for the purpose shown and set forth.

337,626. SIGNALING APPARATUS. LEOPOLD SELLNER, Vienna, Austria-Hungary. Filed July 7, 1885. (No model.) Patented in France Dec. 5, 1884, No. 165,786; in England Dec. 8, 1884, No. 16,144; in Italy Dec. 31, 1884, XXXVIII, 165; in Austria-Hungary Mar. 7, 1885, No. 33,770 and No. 11,367, and in Brazil June 20, 1885, No. 242.



Claim.—The herein-described night-signaling apparatus, consisting of a switch-board carrying contact-blocks and switches at a station, and a series of electric signaling-lamps at a distant point or points, with intermediate conductors and resistances in branch circuits, all substantially as described.

337,627. PIPE-WRENCH ATTACHMENT FOR MONKEY-WRENCHES. FREDERICK H. SNYDER, Detroit, Mich. Filed Nov. 14, 1885. (No model.)



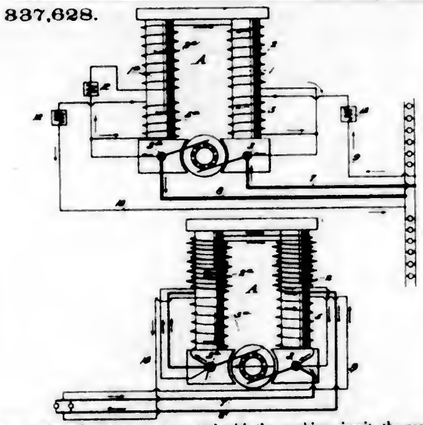
Claim.—1. In combination with a monkey-wrench, a pipe attachment consisting of a slotted shank adapted to straddle the post or posts of the wrench, and having at its end upturned lugs, and a cam-shaped head having a chain fastened to one end thereof, and at the other end a slot to receive the free end of said chain, substantially as shown and described.

2. As a new article of manufacture, a pipe-wrench attachment consisting of a slotted shank adapted to straddle the post of a wrench, and provided with a toothed cam-head having lugs K K, and a chain, I, attached to said cam-head, substantially as described.

337,628. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. O. B. SHALLENBERGER, Rochester, Pa. Filed Dec. 5, 1885. (No model.)

Claim.—1. In a system of electric distribution, the combination of a field-magnet and the main coils thereof, auxiliary exciting coil or coils, main conductors connecting the terminals of the machine and the working-circuit, and a shunt-circuit including the auxiliary coils and electrically connected to the terminals of the dynamo and the main conductors at or

337,628.

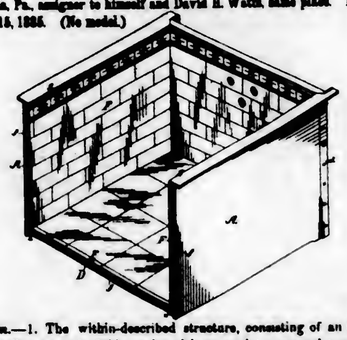


near where the same are connected with the working-circuit, the resistances of the auxiliary coils being suitably proportioned, so that any difference of potential in the main conductors between the points of generation and consumption will automatically increase or decrease the excitation of the magnetic field, substantially as set forth.

2. In a system of electric distribution, the combination of a field-magnet and the exciting-coils thereof, and an auxiliary exciting coil or coils suitably connected with the extremities of either or both of the main conductors and adapted to automatically increase or decrease the excitation of the magnetic field in proportion to the difference of potential between the inner and outer terminals of the main conductors, substantially as set forth.

3. In a system of electric distribution, the combination of a dynamo-electric machine, main conductors connecting the terminals of the dynamo and the work-circuit, and an exciting coil or coils upon the field-magnets having its terminals connected, respectively, to a terminal of the dynamo and to one of the main conductors at or near its connection with the working-circuit, said exciting-coil being suitable proportioned, so as to automatically increase or decrease the excitation of the magnetic field in proportion to the difference of potential in the main conductors between the points of generation and consumption, substantially as set forth.

337,629. TILE-LINED STRUCTURE. WILLIAM C. SHARPLESS, Philadelphia, Pa., assignor to himself and David H. Watts, same place. Filed Aug. 14, 1885. (No model.)



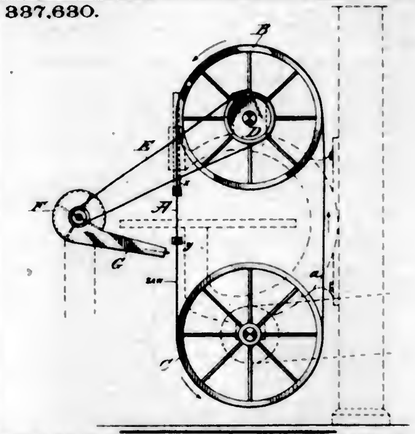
Claim.—1. The within-described structure, consisting of an outer metallic shell composed of side, end, and bottom plates secured together at the corners and having a lining of tiles cemented thereto, all substantially as specified.

2. The within-described structure, consisting of an outer shell composed of side, end, and bottom plates of cast-iron having flanges cast therewith, by which the plates are secured together at the corners, and having a lining of tiles cemented directly to the inner faces of the plates, all substantially as specified.

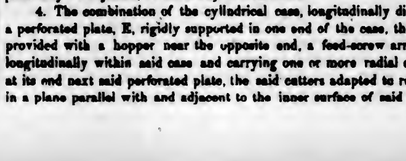
337,630. BAND-SAW MILL. JAMES SHAVALIER and AMASA HARVEY, Muskegon, Mich. Filed Aug. 1, 1885. (No model.)

Claim.—In a band-saw mill, the combination, with the idle or driven wheel B, of a fan or blower for directing a stream of air upon the saw, which fan is actuated by a belt-connection with said upper wheel in such manner as will retard the motion of the same, for the purpose of securing a uniform tension in the saw between the points *x* and *y*, substantially as shown and described.

337,630.



337,631. MINCING-MACHINE. JOHN R. SHAW, New Haven, Conn., assignor to Sargent & Co., same place. Filed Aug. 3, 1885. (No model.)



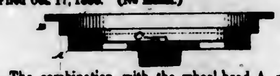
Claim.—1. The combination of the cylindrical case, longitudinally divided, the perforated plate E, rigidly supported in one end of the case, the case provided with a hopper near the opposite end, a feed-screw arranged longitudinally within the said case and carrying one or more radial cutters at its end next said perforated plate, the said cutters adapted to revolve in a plane parallel with and adjacent to the inner surface of said perforated plate, the shaft of the said feed-screw extending through a bearing at the end of the case opposite the perforated plate, and there provided with means for its rotation, with a screw-nut at said bearing around the shaft, between the end of the case and the said means for the rotation of the said shaft, adapted to adjustably support said feed-screw and cutters against longitudinal movement from said perforated plate, substantially as described.

2. The combination of the cylindrical case, longitudinally divided, the perforated plate E, rigidly supported in one end of the case, the case provided with a hopper near the opposite end, a feed-screw arranged longitudinally within the said case and carrying one or more radial cutters at its end next said perforated plate, the said cutters adapted to revolve in a plane parallel with and adjacent to the inner surface of said perforated plate, the shaft of the said feed-screw extending through a bearing at the end of the case opposite the perforated plate, and there provided with means for its rotation, a bushing around said shaft and interlocked with the bearing, to prevent the rotation of the bushing with the shaft, and yet leave the bushing free for longitudinal movement, the said bushing being adapted to bear against a shoulder on said feed-screw, and a nut on said bearing adapted to bear said bushing against said shoulder on the feed-screw, to adjustably support said feed-screw and cutters against longitudinal movement from said perforated plate, substantially as described.

3. The combination of the cylindrical case, longitudinally divided, a perforated plate, E, rigidly supported in one end of the case, the case provided with a hopper near the opposite end, a feed-screw arranged longitudinally within said case and carrying one or more radial cutters at its end next said perforated plate, the said cutters adapted to revolve in a plane parallel with and adjacent to the inner surface of said perforated plate, the shaft of the said feed-screw extending through a bearing at the end of the case opposite the perforated plate, and there provided with means for its rotation, and an adjusting device, substantially such as described, at the bearing in the end of the case opposite said perforated plate, and between the said end of the case and the means for the rotation of the shaft, whereby the relation of the cutters to the plate may be adjusted, substantially as described.

4. The combination of the cylindrical case, longitudinally divided, a perforated plate, E, rigidly supported in one end of the case, the case provided with a hopper near the opposite end, a feed-screw arranged longitudinally within said case and carrying one or more radial cutters at its end next said perforated plate, the said cutters adapted to revolve in a plane parallel with and adjacent to the inner surface of said perforated plate, the inner surface of the two parts of the said case provided with spiral ribs around its inner surface, the inclination of which is greater than that of the spiral rib which forms the feed-screw, the internal diameter of said ribs corresponding to the external diameter of the spiral rib on the feed-screw, substantially as described.

337,632. POTTER'S WHEEL. BENJAMIN F. SHELDON, Red Wing, Minn. Filed Oct. 17, 1885. (No model.)



Claim.—The combination, with the wheel-head A, provided with the legs D, of the batt-ring B, provided with recesses C in its bottom, substantially as specified.

337,633. GATE. SAMUEL S. SHERMAN, West McHenry, Ill. Filed Dec. 17, 1885. (No model.)

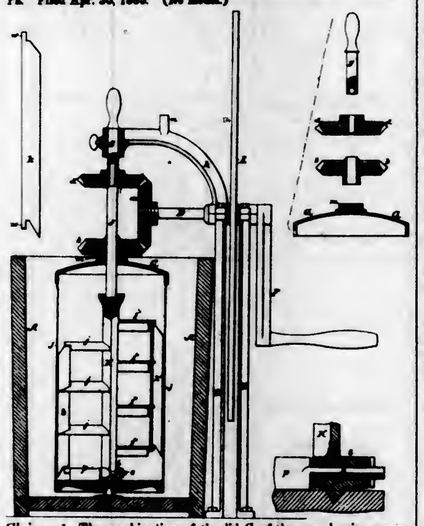


Claim.—1. The combination, with the gate consisting of the horizontal boards A, the vertical slats B, and the auxiliary bar C, pivoted to the lower board of the gate, of the adjusting diagonal rod E, its lower end embracing the lower board of the gate and formed into an eye at its upper end, by which it is secured adjustably to a staple on the stationary post D, substantially as specified.

2. The combination, with the gate constructed of the horizontal boards A, the vertical slats B, and the auxiliary bar C, of the diagonal rod E, bent at its lower end to embrace and operate in notches in the lower rail of the gate, and at its other end formed into an eye and a threaded continuation, so as to embrace and be adjustable on the staple F on the stationary post D, substantially as specified.

3. The combination, with the gate constructed of horizontal and vertical bars and hinged to the post D, of the locking-bar L, pivoted to one of the gate-bars, and a locking-hook, N, also pivoted to one of the gate-bars, and loosely connected to the said locking-bar L by a staple, *n*, substantially as specified.

337,634. ICE-CREAM FREEZER. WILLIAM J. TATE, Philadelphia, Pa. Filed Apr. 30, 1885. (No model.)



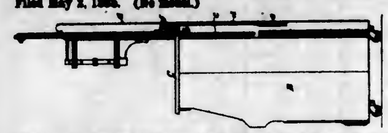
Claim.—1. The combination of the lid G of the can, having an internally-threaded boss, *m*, with the wheel *b*, having an externally-threaded hub adapted to said boss, and having a central opening forming the bearing for the dasher-spindle where the latter passes through the lid, all substantially as specified.

2. The combination of the dasher-spindle, the can, and the spindle-bearing having a beveled upper end to prevent accumulation of imperfections thereon, as set forth.

3. The combination of the dasher-web K, having a threaded opening in the upper end, the can having a lid, G, and the dasher-spindle *f*, screwed into the threaded opening of the dasher-web and projecting through a central opening in the lid, as set forth.

4. The combination of the lower scraper, *p*, having a projecting stem, *s*, with the dasher-web having a projecting boss, *t*, forming a bearing for said stem, as specified.

337,635. FOLDING BED. HENRY R. THAYER, New York, N. Y., assignor, by mesne assignments, to George S. Hulbert, East Orange, N. J. Filed May 2, 1885. (No model.)

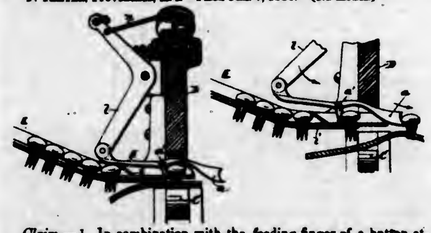


Claim.—1. In combination with the fixed head-frame A and folding part B of a folding bed, the movable panel C, constructed with pin-and-groove sliding connection with frame A, whereby to present one surface as a head-board and the other surface as a covering-shelf, substantially as and for the purposes set forth.

2. In combination with the fixed head-frame A and folding part B of a folding bed, the movable panel C, having attached counter-weights and constructed with pin-and-groove sliding connection with frame A, whereby to present one surface as a head-board and the other surface as a covering-shelf, substantially as and for the purposes set forth.

3. In combination with the frame A, having grooves *c c*, and the bed proper, B, the counterweighted panel C, having pins *b b*, all combined, substantially as and for the purposes set forth.

337,636. MACHINE FOR SECURING BUTTONS TO FABRICS. J. F. THAYER, Providence, R. I. Filed Jan. 7, 1886. (No model.)



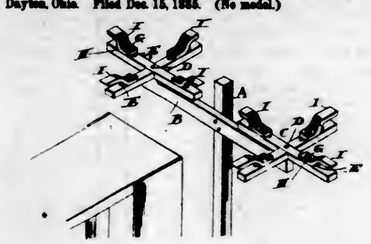
Claim.—1. In combination with the feeding-finger of a button-attaching machine, a movable button-ejector, as arranged with relation to said feeding mechanism, to precede the latter and eject the button previous to feeding the next button into the holding portion of the machine in position to be attached to material, all substantially as herein set forth.

2. In a machine for attaching buttons to fabrics, and in combination with the button-feeding mechanism of said machine, a movable pawl or ejector, as constructed and arranged with relation to said feeding mechanism as to precede the same and eject from the attaching portion of the machine the attached button before feeding the next succeeding button into position for attachment.

3. In combination with the feeding mechanism of a button-attaching machine, a movable pawl or ejector, said pawl or ejector provided with a longitudinal adjustment constructed to precede the feeding mechanism and eject a button from the holding member of the machine a greater or less distance from said holding member, substantially as herein set forth.

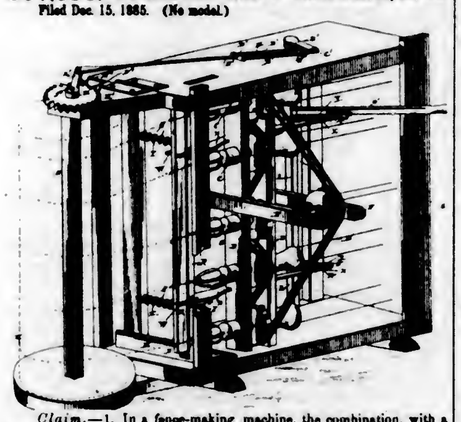
4. The combination, substantially as herein described, of a slotted stationary button-holding jaw provided with an inclined raceway or chute having a longitudinal slot communicating with the slot in the holding-jaw, a feeding-finger provided with a movable button-ejector, arranged to precede said feeding-finger and eject the first button secured previous to the placement in said holding-jaw of the next button to be secured.

337,637. REEL FOR FENCE-MAKING MACHINES. JOHN B. TUTHILL, Dayton, Ohio. Filed Dec. 15, 1885. (No model.)



Claim.—The combination of a frame pivotally secured upon a suitable support and comprising radiating slotted arms, with Z-shaped blocks mounted thereon on pivots adjustable in said slots, as and for the purpose shown and described.

337,638. **FENCE-MAKING MACHINE.** JOHN B. THEIS, Dayton, Ohio. Filed Dec. 15, 1885. (No model.)



Claim.—1. In a fence-making machine, the combination, with a gang of wire-twisters, of a pair of beveled bars, one of which is yielding, facing the ends of the twisters with their beveled sides, and means for forcing the pickets between the said yielding bars, as and for the purpose shown and set forth.

2. In a fence-making machine, the combination, with a gang of wire-twisters, of two bars, one of which is yielding, both having their inner edges beveled, and having the beveled sides facing the delivery ends of the twisters, and reciprocating arms having slotted ends sliding in notches in the facing edges of the beveled bars, as and for the purpose shown and set forth.

3. In a fence-making machine, the combination, with a gang of wire-twisters, of a rigid bar having its inner edge beveled and faced with a metallic strip, a bar having its edge facing the beveled edge of the rigid bar beveled and faced with a metallic strip, and having at the opposite edge laterally-projecting rods provided with coiled springs and sliding in bearings, arms having their longitudinally-slotted ends sliding in notches in the beveled edges of the bars, and means for simultaneously reciprocating the said arms, as and for the purpose shown and set forth.

4. In a fence-making machine, the combination of a rectangular upright frame having a vertical gang of wire-twisters, two transverse castings having flanges and longitudinal slots and adjustably secured by set-screws on the facing sides of the top and bottom piece of the frame, a bar secured to one end of the flanges of the castings and having its inner edge beveled and faced with metal, a bar secured at its ends in the other ends of the castings and having transverse perforations or bearings, a bar having its ends sliding against the castings and against their flanges, and having the edge facing the beveled edge of the rigid bar beveled and faced with metal, and provided with laterally-projecting rods sliding in the bearings in the perforated rigid bar, and having springs coiled around them bearing against the bars, and means for forcing the pickets between the beveled edges of the bars, the said edges facing the delivery ends of the twisters, as and for the purpose shown and set forth.

5. In a fence-making machine, the combination of a gang of wire-twisters, a vertical rock-shaft journaled to the rear of the twisters and having arms projecting from it, a pair of yielding bars having their beveled facing edges formed with notches and placed registering with the delivery ends of the twisters, and picket-forcing arms pivoted at their rear ends to the arms upon the rock-shaft, and having their forward ends slotted longitudinally and sliding in the notches in the beveled bars, as and for the purpose shown and set forth.

6. In a fence-making machine, the combination of a vertical rock-shaft operating the forcing-arms, and having a crank at its upper end, a reel-shaft having a ratchet-wheel upon its upper end and a pawl engaging the said wheel, a crank pivoted upon the upper end of the reel-shaft, and having a spring-pawl engaging the wheel at its outer end, and a pitman composed of two parts having an interposed spring and pivoted to the two cranks, as and for the purpose shown and set forth.

7. In a fence-making machine, the combination of the vertical rock-shaft operating the forcing-arms, and having the crank at its upper end, the reel-operating crank having a spring-pawl at its end, the ratchet-wheel upon the reel engaged by the pawl, the parallel rods having the ear pivoted to the rock-shaft crank, and having its ends connected by the perforated yoke, the rod pivoted to the loose crank and sliding in the yoke having a cross-head upon its end sliding with its notched ends upon the parallel rods, and the spring coiled around the rod and bearing against the yoke and against the cross-head, as and for the purpose shown and set forth.

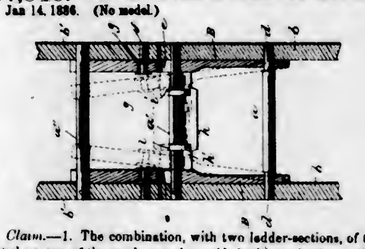
8. In a fence-making machine, the combination of the reel-shaft, the bracket hinged to swing upward upon the end of the top piece of the frame, the short shaft journaled in the outer end of the bracket and formed with the socket at its lower end receiving the upper end of the reel-shaft, the ratchet-wheel upon the short shaft, and the rocking arm or crank upon the end of the short shaft having the spring-pawl engaging the ratchet-wheel, as and for the purpose shown and set forth.

337,639. **CLIP FOR LEAVES OF MUSIC-FOLIOS, &c.** SAMUEL W. VALENTINE, Boston, Mass. Filed June 15, 1885. (No model.)



Claim.—A clip composed of spring or elastic jaws D D^2, having a return bend, E, substantially as described, for the purpose specified.

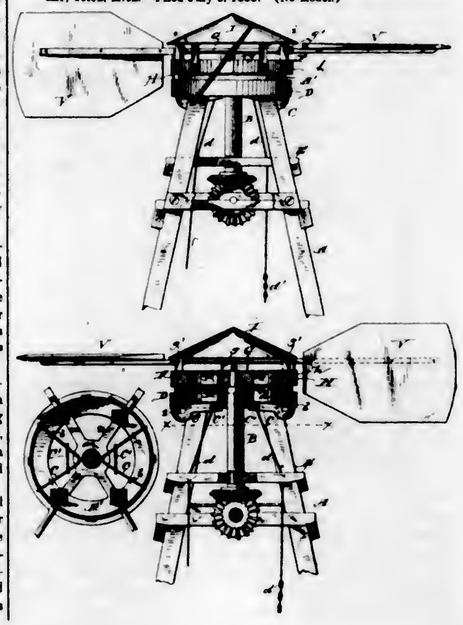
337,640. **LADDER.** LEONARD K. WARNER, Claremont, N. H. Filed Jan 14, 1886. (No model.)



Claim.—1. The combination, with two ladder-sections, of two bars pivoted on one of the sections and provided with projections adjacent to and engaging the other section, and a locking device adapted to hold them in an engaged position, substantially as set forth.

2. The combination, with a ladder-section, of two bars, B B, each pivoted thereon and provided with an elongated slot, *e*, and projections *f* of a key-block, A, having reduced portions, and a second section having perforations to engage said projections, substantially as set forth.

337,641. **WINDMILL.** EDWIN P. WELLESLEY and CHARLES WELLESLEY, Colon, Mich. Filed July 8, 1885. (No model.)

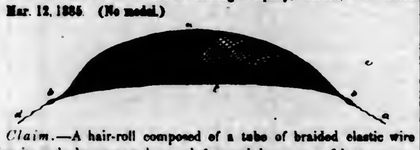


Claim.—1. In a horizontal windmill, the combination, with a vertical shaft carrying a revolving frame having projections upon its periphary, of the vane-carrying shafts having pins arranged to engage the said projections, a vertically-moving ring constructed to engage the revolving frame and pins, and the levers pivoted upon the shaft-supporting frame and constructed to raise the ring, as described

2. The combination, with the vertical shaft B, and the revolving frame mounted thereon and carrying the shafts G, of the frame A', the vertically-adjustable ring D, constructed to engage the revolving frame, and the levers C, pivoted to frame A' and arranged to raise the ring D into engagement with the revolving frame, as and for the purposes set forth.

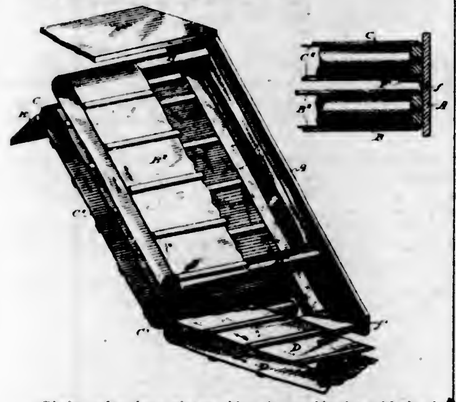
3. The combination, with the frame A, carrying portion A' and shaft B, and the levers C, pivoted to portion A' and provided with cords *d*, of the revolving frame F, carrying the vane-shafts and secured to shaft B, and the ring D, arranged to engage with the revolving frame, as and for the purposes specified.

337,642. **HAIR-ROLL.** JOSEPH L. WELLS, Philadelphia, Pa., assignor to the Weston and Wells Manufacturing Company, Camden, N. J. Filed Mar. 12, 1886. (No model.)



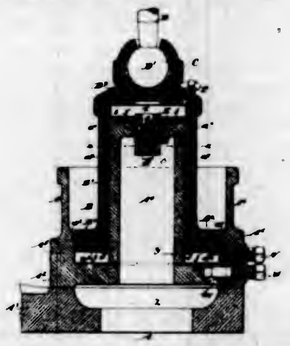
Claim.—A hair-roll composed of a tube of braided elastic wire having its ends drawn together and fastened by means of buttons, one side of the tube being flattened to set comfortably and securely upon the head of the wearer, substantially as specified.

337,643. **GRAIN-BINDER ELEVATOR.** WILLIAM H. WHITING, Elizabeth, N. J. Filed Oct. 22, 1884. (No model.)



Claim.—In a harvesting-machine, the combination, with the elevator-belts, of a fixed guard located between the belts and attached to the frame of the elevator and overlapping the rear edge of the lower or grain-carrying belt and the ends of its rollers, substantially as described.

337,644. **DASH-POT FOR STEAM-ENGINES.** JOHN YOUNG, Newark, N. J. Filed Dec. 21, 1885. (No model.)



Claim.—1. The post A^4, made hollow, as shown, in combination with the valve G, mounted in the interior near the top, a spring, H, and piston B, adapted to form a tight vacuum-chamber over the post, and an annular cushioning-chamber or dash-pot around the bottom, as herein specified.

2. The post A^4, piston B, and cylinder A^5 A^6, tapered below the offset, and arranged for joint operation as herein specified.

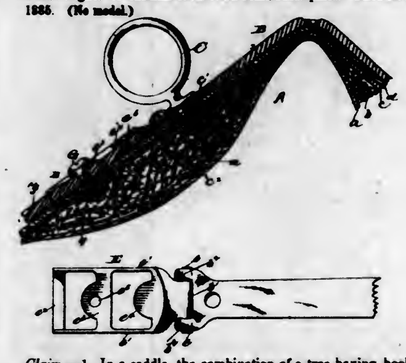
3. The piston B, cap C, and rod D, with its spherical end D', in combination with each other and with the post A^4, valve G, and cylinder A^5, arranged for joint operation as herein specified.

4. In a dash-pot, the bottom chamber, *z*, and passage *m* between the same and the cushioning-chamber *y*, in combination with the piston B and operating means D, arranged to serve as herein specified.

5. The duplicate passages *m n* and controlling means M N, leading from different levels in the dash-pot, communicating with the same bottom chamber, and arranged to serve as herein specified.

6. In a dash-pot, in combination with the rim A^5, piston B, operating means D, hollow post A^4, valve G, and spring H, the removable casing E, adapted to serve as herein specified.

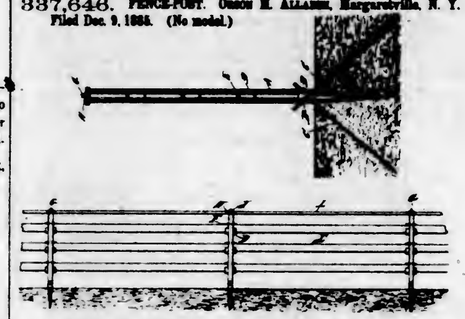
337,645. **HARNESS-SADDLE.** MELANCTHON P. ZELLER, Shelton, Ohio, assignor of one-half to A. J. St. John, same place. Filed Nov. 11, 1885. (No model.)



Claim.—1. In a saddle, the combination of a tree having hooks at its lower end to engage the pad-loop, and apertures to receive terrets, with a pad-loop having laterally-projecting spurs to engage hooks upon the tree, an apertare to receive the pad-screw, and a downwardly-projecting spur to engage the skirt or loop strap, substantially as described.

2. In a saddle, the combination of the following-named elements: a tree, B, having hooks b^3 at its lower ends, terrets C, having screw-threaded shank *c'*, and nut c^3, pad-loop E, having laterally-projecting studs *e*, downwardly-projecting stud e^3, and apertare e^2, screw G, and nut *g*, with the housing *d* and burr-piece *c*, substantially as described.

337,646. **FENCE-POST.** ORSON M. ALLARDS, Margaretville, N. Y. Filed Dec. 9, 1885. (No model.)



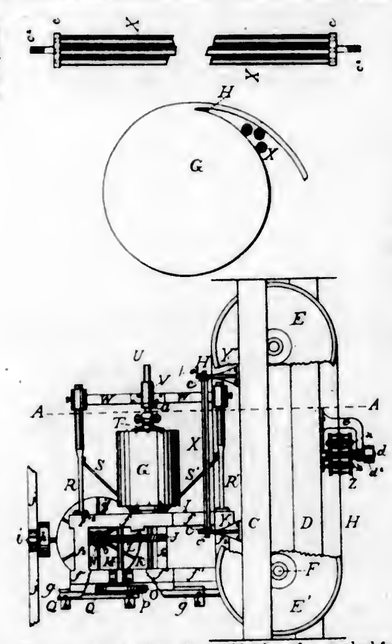
Claim.—1. A fence consisting of posts A, perforated at B for the reception of diagonal braces C, and provided with sockets D, perforations E, and perforated stud G, rails L L', and wedges or pins F and I, the whole combined and arranged substantially as shown and described.

2. The herein-described fence-post, consisting of body A, provided with diagonal perforations or slots B for the reception of side pieces or braces, C, sockets D, perforations E, and perforated stud G for the reception of the top rails of a fence, substantially as shown and described.

337,647. **BAND-SAW MILL.** DAVID K. ALLINGTON, East Saginaw, Mich. Filed Feb. 26, 1885. (No model.)

Claim.—1. In an endless band-saw machine, the combination of the anti-friction spreader X, constructed with rollers journaled in the heads *c* and *c*, self-adjusting in the slots in the brackets Y and Y', all substantially as described, and for the purpose hereinbefore set forth.

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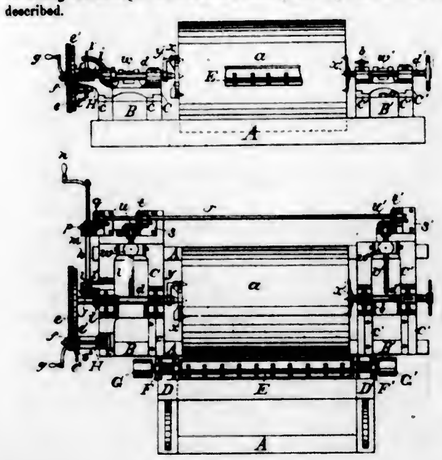


2. In a band-saw machine, the combination of a standard-frame supporting band-wheels on which an endless saw is carried, a supporting-frame provided with vertical standards connected at their upper ends by an adjustable bar supporting a disk for holding the log in a vertical position, and means for raising and lowering said bar, substantially as described.

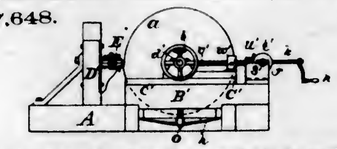
3. In a band-saw machine, the combination of an endless saw, upper and lower band-wheels, a brush for cleaning the saw, a spreader, and a movable frame or carriage consisting of an upper and lower frame secured together by suitable girts, revolving disks for supporting the log, an adjustable frame for regulating the distance of separation of the disks, and mechanism for operating the same, substantially as described.

337,648. CONVOLUTE LOG-PLANING MACHINE. DAVID K. ALLINGTON, East Saginaw, Mich. Filed Mar. 13, 1885. (No model.)

Claim.—1. In a machine for planing logs convolutely, the combination of a main frame, a supporting-frame, movable carriages resting thereon, disks for sustaining the log in position, means for adjusting the carriages carrying said disks the proper distance apart, and mechanism for sliding the carriages forward and revolving the log, substantially as described.



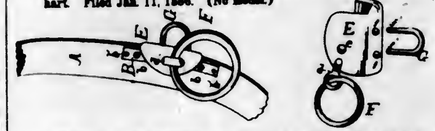
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2. In a machine for planing logs convolutely, the combination of the frames A and B, the carriages C and C', the carriage C' being adapted to be moved laterally and longitudinally, the disks *x* and *x'*, and means for supporting and operating the same, posts D and D', planer-head E, journaled in bearings F' and F, attached to said post, and mechanism for operating the same, substantially as described.

3. In a machine for planing logs convolutely, the combination of the following elements or parts, viz: the shaft *k*, journaled on the sliding carriage C in the eccentric-box *l*, for throwing the miter-gears *j* and *i* out and into mesh, the frame B in the angle-box *m*, provided with the miter-gear *j* on its inner end and the miter-gear *p* on the opposite end, which is feathered thereon, and the crank *n*, for revolving said shaft *k* and the shaft *r*, which is journaled to the frame B in the angle-boxes *m* and *s*, and in the angle-box *s'* on the longitudinal sliding frame B', and is provided with the miter-gear *q* and *t*, and the miter-gear *t'*, feathered thereon, for turning the feed-screws *v* and *v'*, which are provided with the miter-gears *u* and *u'*, the screw *v* being journaled to the frame B in the angle-box *s*, and the screw *v'* journaled to the longitudinal sliding frame B' in the angle-box *s'*, both being threaded in the bores *w* and *w'* on the sliding carriages C and C', for the purpose of feeding up the log to the planer-head while it is being revolved, all substantially as described and shown, and for the purpose hereinbefore set forth.

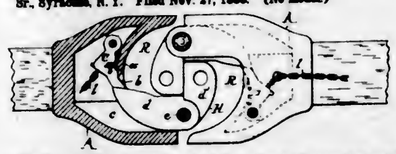
337,649. HAME ATTACHMENT. JAMES W. ARMON, East Lynne, Mo., assignor of two-thirds to George W. Farrow and George W. Swinehart. Filed Jan. 11, 1886. (No model.)



Claim.—1. The combination, with a clasp, E, having an eye, G, and provided with a hole, *c*, of a hame provided with a plate, B, having holes *b*, and a bolt, *d*, all substantially as shown and described, and for the purpose set forth.

2. The combination, with a hame having a groove, *a*, of a plate, B, provided with holes *b*, a clasp, E, having an eye, G, and hole *c*, and a bolt, *d*, substantially as shown and described.

337,650. CAR-COUPLING. CHARLES O. BARNES and LUCIEN BARNES Sr., Syracuse, N. Y. Filed Nov. 27, 1885. (No model.)



Claim.—1. The combination of the draw-head provided with the inclined bearing *g*, and the swinging head, composed of the coupling-arm *d'* and supplemental arm *d*, and pivoted on the draw-head to swing outward therefrom, and having the arm *d* formed at its under side with the beveled bearing *f*, substantially as described and shown, for the purpose set forth.

2. The combination of the draw-head provided with the inclined bearings *g* and A', and the swinging head H, composed of the coupling-arm *d'* and supplemental arm *d*, and pivoted on the draw-head to swing outward therefrom, and formed with corresponding inclined bearings, *f* and A, substantially in the manner specified and shown, for the purpose set forth.

3. The combination of the draw-head provided with the cavity *c* and opening *b*, the swinging head H, composed of the coupling-arm *d'* and supplemental arm *d*, and pivoted on the draw-head to swing outward therefrom, and having the arm *d* entering the opening *b*, the catch C, pivoted in the cavity *c*, inclined bearings *i o*, respectively on the bottom and top of the cavity, and the chain *l*, connected to the catch and passing out from the top of the cavity *c*, substantially as described and shown, for the purpose set forth.

337,651. BLOTTING-PAD, RULER, AND PAPER-CUTTER. GEORGE D. BARR, Greenville, S. C. Filed Jan. 12, 1886. (No model.)

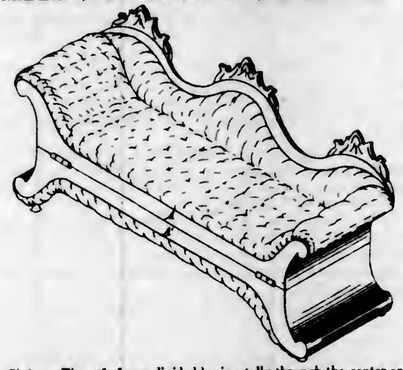
Claim.—In a combined blotting-pad, ruler, and paper-cutter, the combination of the clips B B, near the end of plate A, elastic bands C C

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stretched over the clips B B, and blotting-paper D, substantially as and for the purpose described.

337,652. SOFA AND BEDSTEAD COMBINED. JOHN J. BAYLOR, North Manlius, N. Y. Filed Dec. 10, 1885. (No model.)



Claim.—The sofa-frame divided horizontally through the center and the two sections hinged together at the front, the upper section having raised ends and the lower section formed with correspondingly-shaped ends, but inverted and upholstered on its under side, substantially as described and shown.

337,653. NUT-LOCK. FRANKLIN P. BIMM, Pottstown, assignor of one-half to John H. Egolf, Douglassville, Pa. Filed Dec. 7, 1885. (No model.)



Claim.—1. As an improved nut-locking device, an annular shell, E, having lugs E^2 at its inner interior surface and in its outer end an aperture, E^3, conforming with and adapted to receive the nut C^2 of the bolt C, in combination with a body-washer, D, with collar D', recesses D^4, and keeper-hooks D^5, adapted by perforation D^3 to slip over said bolt, and a spring, F, all arranged and adapted to be operated together substantially as shown, described, and for the purpose specified.

2. In combination with a nut-locking device consisting of a perforated body-washer, D, with passages D^4 and keeper-hooks D^5, formed upon or within the same, and an annular shell, E, having a nut-aperture, E^3, and lugs E^2, adapted to move within the passages D^4 and lock beneath the keepers D^5, as described, an outer open case, its inner end perforated for the bolt C, said case adapted to receive the collar D' of the washer D, and to conceal and protect the spring F and contacting parts of washer and shell in the manner as shown, and for the purpose set forth.

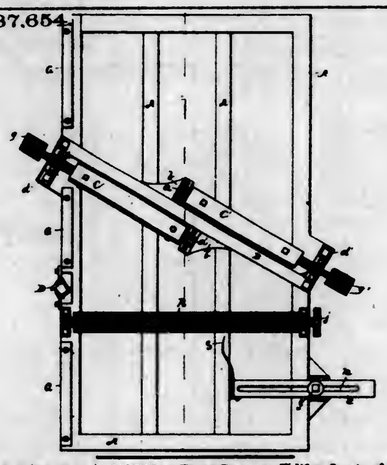
337,654. PLANING-MACHINE. EMERSON BELDEN, Green Island, N. Y., assignor of one-half to Albert Crampton, same place. Filed Nov. 24, 1885. (No model.)

Claim.—1. In a machine for planing doors, a sectional cutting-cylinder composed of overlapping sections provided at their overlapping ends with bearings supported by a spanning cross-beam, substantially as described, and for the purposes set forth.

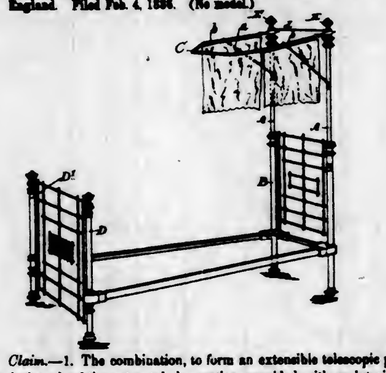
2. The combination, with the frame of a planing-machine, of a spanning cross-beam centrally provided with cylinder-bearing supports, and of two cutting-cylinders supported at their contiguous ends by said bearing-supports, the other ends of said cylinders being supported at opposite sides of said frame, substantially as described, and for the purposes set forth.

3. In a planing-machine, the cross-beam B, provided with the oppositely-projecting bearing-supports *b b'*, in combination with the cutting-cylinders C C' and feed-rolls R R', substantially as described, and for the purposes set forth.

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337,655. BEDSTEAD. HENRY BOOTHEL, Halifax, County of York, England. Filed Feb. 4, 1886. (No model.)



Claim.—1. The combination, to form an extensible telescopic pillar for a bedstead, of the outer tubular section provided with an interiorly-arranged nut, *p*, and the inner section provided at its inner or lower end with a screw, *p'*, which fits the nut *p*, and a button or head, p^2, which takes against the inner face of the nut where the parts are screwed up, substantially as described, whereby a firm and rigid connection is made, and the inner section is made irremovable, as set forth.

2. The combination, with the hollow foot-pillar D, provided with a removable knob, substantially as shown, of the folding canopy-frame C, constructed to be folded substantially as shown, and when so folded to fit into the hollow of said post, as set forth.

3. The canopy-support consisting of the canopy-frame C, hinged, as shown, so that its end portions may be folded on the middle portion in opposite directions, as described, the braces *a a*, and the curtain-rods *b b*, connected detachably to the said frame by means of pins or hooks on their ends, which engage eyes on the frame, substantially as set forth.

4. The hollow foot-pillar D', provided with the perforated disk *f*, constructed to receive and support the shorter parts of the canopy-support, substantially as set forth.

337,656. MANUFACTURE OF GLASSWARE. GEORGE W. BLAIR, Pittsburg, Pa. Filed Feb. 1, 1886. (Model.)

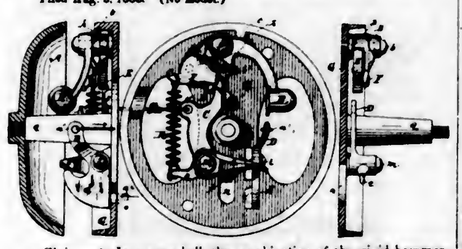


Claim.—1. The method of making ornamented glassware which consists in pressing a clear glass article with prismatic figured bands or zones, and an interposed plain band or zone, and then laying a lustrous transparent coloring-matter on the plain zone, and finally firing or baking the color in, substantially as and for the purposes described.

2. A pressed glass vessel having transverse figured crystal bands or sections with an interposed colored plain band or section, substantially as and for the purposes described.

3. A pressed glass vessel having figured crystal bands or sections with interposed lustrous-tinted plain bands or sections, substantially as and for the purposes described.

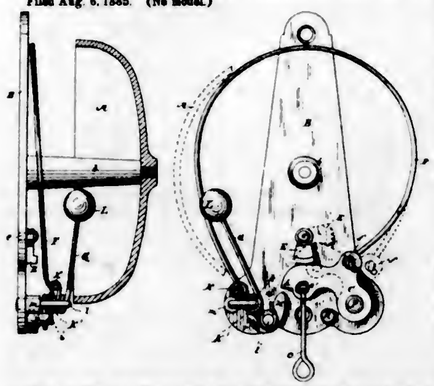
387,657. DOOR-BELL. ELLIS S. BLOOMFIELD, Jr., Jersey City, N. J. Filed Aug. 5, 1885. (No model.)



Claim.—1. In a gong-bell, the combination of the rigid hammer-arm and the hammer-lever working upon the same fulcrum and connected by means of the spring *g* and the trip E, substantially as described, and for the purpose set forth.

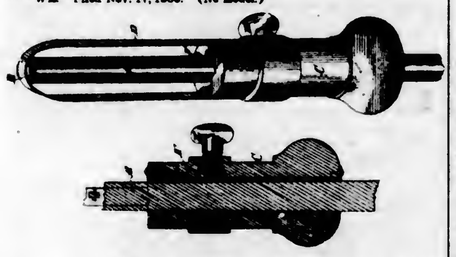
2. The combination as above, together with the tripping-lever for actuating the same and the intermediate lever, D, pivoted to a lug on the plate and working against an arm of the tripping-lever, for convenience in operating the bell in certain positions, as shown and described.

387,658. DOOR-BELL. ELLIS S. BLOOMFIELD, Jr., Jersey City, N. J. Filed Aug. 6, 1885. (No model.)



Claim.—The combination of the tripping-lever C and the hammer-arm G, having the trip H attached thereto, the spring F, and the movable stop E, substantially as shown and described.

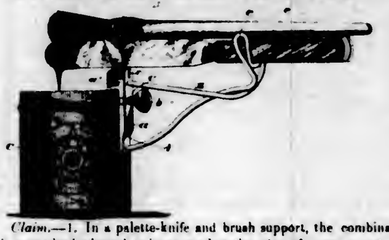
387,659. BILLIARD-CUE CLAMP. JOHN CALLAHAN, Milwaukee, Wis. Filed Nov. 17, 1885. (No model.)



Claim.—1. In a device for holding a tip against the top of a billiard-cue in the operation of gluing, the combination of a hollow shank for receiving the cue, a flexible strap forming a loop to limit its movement therein, and means for securing the holder to the cue, substantially as set forth.

2. In a device for holding a tip against the top of a billiard-cue in the operation of gluing, the combination of a hollow shank for the admission of the cue, a flexible strap forming a loop to limit its movement therein, a set-screw for securing the holder to the cue, and a strip of flexible material interposed between the screw and cue, to prevent injury to the latter, substantially as set forth.

337,660. PALETTE-KNIFE AND BRUSH SUPPORTER. ARTHUR S. CAMPBELL, Manchester, N. H. Filed Jan. 15, 1886. (Model.)



Claim.—1. In a palette-knife and brush support, the combination, with a standard adapted to be secured to the edge of a can or pot, of a handle-rest attached to the standard, substantially as set forth.

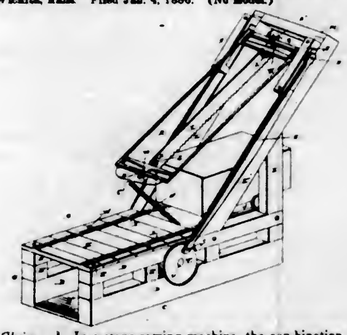
2. In a palette-knife and brush support, the combination, with a standard adapted to be removably secured to the side of a paint-receptacle, and provided with diverging arms for the reception of a knife-blade or brush, of a handle-support attached to the standard, substantially as set forth.

3. In a palette-knife and brush support, a bifurcated standard adapted to embrace the edge of a can, and provided with a pair of spring-arms set in its upper end, adapted to receive the knife or brush, or both, substantially as set forth.

4. In a palette-knife and brush supporter, the combination, with a bifurcated standard having a longer and a shorter leg, and provided with a pair of diverging spring-arms set in its upper end, and with a set-screw for locking it to a can, of a handle-support secured to the standard, substantially as set forth.

5. In a palette-knife and brush supporter, the combination, with a standard adapted to be removably secured to a paint-receptacle, of a bent-wire bracket extending outwardly from the standard and provided with a pair of branches adapted to receive the handle of a knife or brush between them, substantially as set forth.

337,661. STONE-SAWING MACHINE. WILLIAM H. H. CAMPBELL, Wichita, Kans. Filed Jan. 4, 1886. (No model.)



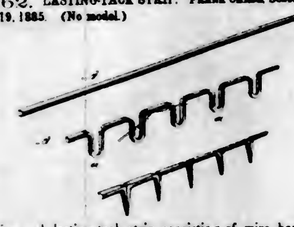
Claim.—1. In a stone-sawing machine, the combination of a base-frame comprising a bottom piece and sides, flooring connecting the upper edges of the said sides at the front end of the machine, stringers secured to the inner sides of the side pieces at their upper edges and extending over the unfloored portion of the frame, rails laid upon the said floor and stringers and adapted to support a suitable track, an inclined frame erected near one end of the base-frame and connected with the latter by means of suitable braces, suitable slideways near the upper end of the said inclined frame, boxes arranged to slide in the said ways, the saw-carrying frame or sash provided at its upper head or end with laterally-extending pintles journaled in the said boxes, and suitable operating mechanism for imparting a reciprocating motion to the said frame or sash, substantially as and for the purpose herein set forth.

2. In a stone-sawing machine, the combination of the base-frame, an inclined frame arranged near one end of the same, slideways near the upper end of said inclined frame, the boxes arranged to slide in said ways, the saw-carrying frame or sash provided at its upper end with laterally-extending pintles, whereby it is journaled in the said boxes, a shaft journaled transversely in the base-frame, fly-wheels at the ends of the said shaft, and pitmen connecting wrist-pins on the said wheels with the projecting ends of the pintles at the upper ends of the saw-sash, substantially as and for the purpose herein shown and specified.

3. In a stone-sawing machine, the combination of the base-frame, an inclined frame near one end of the same, slideways near the upper end of the said inclined frame, boxes arranged to slide in the said ways, the saw-carrying frame or sash having laterally-extending pintles at its upper end, whereby it is journaled in the said boxes, and a coiled spring connecting the lower end of the said sash with the bottom of the base-frame near the front end of the latter, together with suitable operating mechanism, all arranged and operating substantially as and for the purpose herein shown and specified.

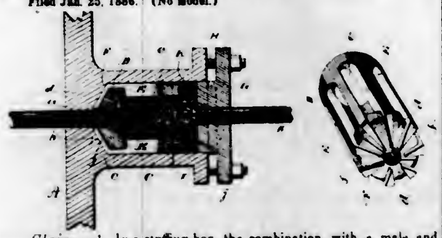
4. In a stone-sawing machine, the combination of the base-frame having a longitudinal track for a stone-carrying truck, an inclined end frame having suitable slideways, boxes arranged to slide in the latter, the saw-carrying frame or sash having laterally-extending pintles, the saw-clamps having slotted inner ends and constructed at their outer ends with hooks, in which set-screws are arranged to work, a spring connecting the lower end of the saw frame or sash with the bottom of the base-frame near the front end of the latter, and suitable mechanism for imparting a reciprocating motion to the saw-sash, all arranged and operating substantially as and for the purpose herein shown and specified.

337,662. LASTING-TACK STRIP. FRANK CHASE, Boston, Mass. Filed Nov. 19, 1885. (No model.)



Claim.—A lasting-tack strip consisting of wire bent at intervals into loops, pressed into tack form, and pointed, substantially as and for the purposes hereinbefore set forth.

337,663. STUFFING-BOX. ALEXANDER H. CLARK, Fond du Lac, Wis. Filed Jan. 25, 1886. (No model.)

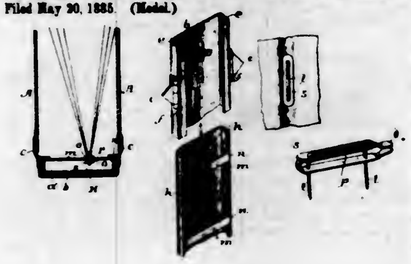


Claim.—1. In a stuffing-box, the combination, with a male and female gland and a piston-rod extending centrally through the same, of a hollow longitudinally-movable cylinder located within the female gland and provided with openings extending through its walls and channels extending from the outer ends of the openings to the edge in close proximity to the piston-rod, and flexible packing on the piston-rod within the movable cylinder, substantially as set forth.

2. In a stuffing-box, the combination, with a male and female gland, the latter having a conical-shaped seat on the end toward the cylinder, of a removable hollow cylinder located on the piston-rod within the female section and provided with a conical-shaped end adapted to engage the said conical-shaped seat, and with a series of channels leading from the apex of the conical-shaped end on the outer surface of the cylinder to a series of openings through the walls of the movable cylinder, and flexible packing on the piston-rod within the movable cylinder and on the end thereof, substantially as set forth.

3. In a stuffing-box, the combination, with the male and female glands and the piston-rod with its packing, substantially as set forth, of the removable cylinder constructed in half-sections and provided with the openings and channels, substantially as set forth.

337,664. TEMPORARY BINDER. FRANCIS H. COFFIN, Portland, Me. Filed May 20, 1885. (Model.)



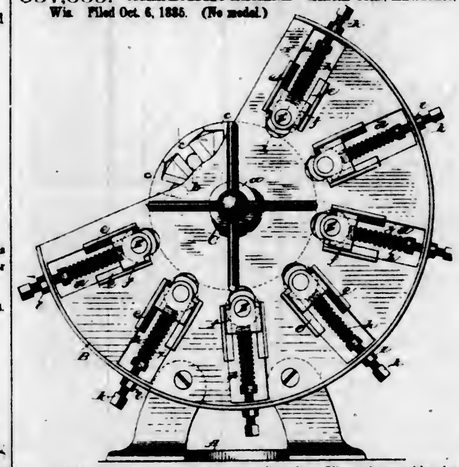
Claim.—1. In a temporary binder, a metallic back strip or piece having its edges bent twice at right angles, forming a passage on each side, and provided with hinged side flaps and combined with the covers *n*, substantially as described.

2. In a temporary binder, the combination of a movable slide, H, provided with hinge-connected cross-bars *m*, and the herein-described binding-staples, substantially as set forth.

3. In a temporary binder for the purpose of connecting sheets of music and the like to the cross-bars of a movable slideway, the herein-described binding-staple, consisting, essentially, of a staple, *t*, bar *s*, and slotted bar *o*, substantially as set forth.

4. In a temporary binder, the combination of permanent or stationary trough D, movable slide H and bars *m*, and binding-staples, substantially as shown.

337,665. CIGAR-MOLDING MACHINE. SIGMUND COHN, Milwaukee, Wis. Filed Oct. 6, 1885. (No model.)



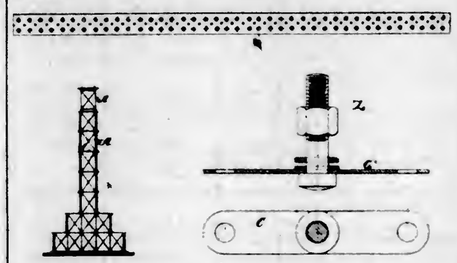
Claim.—1. In a machine for pressing cigar-fillers, the combination of a revolving drum formed with a series of molds, caps therefor, a series of yielding pressure-rolls, and a frame supporting said rolls in position to partly encompass the drum and come in frictional contact with the caps, as set forth.

2. A machine for pressing cigar-fillers, consisting of a revolving drum having a series of depressions or molds and removable mold-caps, two segments secured to a suitable stand and formed with hubs or bearings for the drum-shaft, a series of elastic-covered pressure-rolls journaled in loose boxes located in openings in the segments and pressing upon said caps, and the springs, spindles, and set-screws for regulating the pressure of the rolls, substantially as and for the purpose set forth.

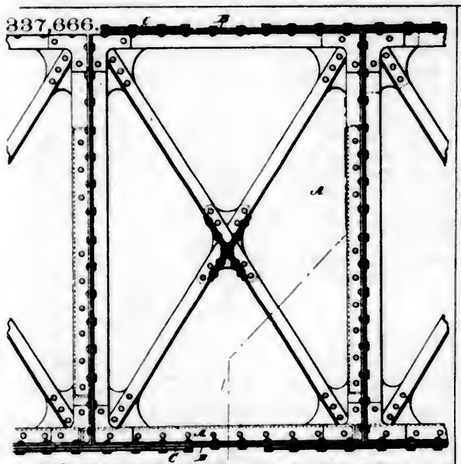
3. The segments B B', formed with a series of openings, each opening having its edges armed with guides, the loose boxes working on said guides, the play being regulated by the spring, spindle, and set-screw mechanism *h i k*, in combination with the elastic-covered pressure-rolls journaled in said loose boxes, and the revoluble mold-drum having its shaft journaled in hubs formed upon each of the segments, substantially as and for the purpose set forth.

337,666. BRIDGE, PIER, OR SIMILAR STRUCTURE. ALFREDO COTTRAU, Naples, Italy. Filed Aug. 13, 1884. (No model.) Patented in England July 8, 1884, No. 9,226, and in Italy May 21, 1884, No. 16,826.

Claim.—1. In the construction of bridges, the combination of the series of separate rectangular flat elements, A, the straight plates B and the cover-plates C, constructed substantially as and for the purpose described.



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2. In the construction of girders, the combination of the series of separate rectangular flat elements, A, having the diagonals, the flat plates B, secured to the sides thereof, and the cover-plates C, the whole constructed substantially as and for the purpose described.

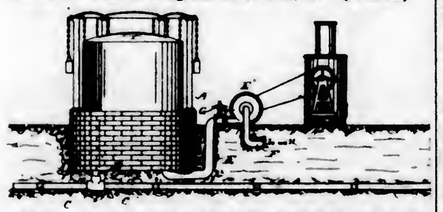
337,667. METHOD OF CONVEYING GAS IN AN INEXPLOSIVE CONDITION. JOHN H. DALBELL and THOMAS J. MCTIERE, Pittsburg, Pa. Filed Dec. 17, 1885. (No specimens.)

Claim.—1. The method for the safe distribution of combustible gas, which consists in conveying through conduits a mixture of combustible gas and air in such proportion as to render the mixture incapable of becoming explosive by a further admixture of air.

2. The method for the harmless distribution of gas in cities and towns to points of consumption, consisting in conveying it through the conduits or pipes in admixture with air in such proportion that the proportion of air exceeds that at which the mixture is explosive.

3. The method of distributing combustible gas in cities and towns, consisting in admixing such gas for transmission through the distributing conduits or pipes with air in such proportion that the proportion of air is in excess of that at which the mixture is explosive.

337,668. METHOD OF DISTRIBUTING GAS. JOHN H. DALBELL and THOMAS J. MCTIERE, Pittsburg, Pa. Filed Jan. 23, 1886. (No model.)



Claim.—1. The method of distributing combustible gas in an inexplosive condition, which consists in conveying the gas from the well or source of main supply to a distributing-point, admixing the gas before reaching said point with sufficient air to exceed the explosive limit, and then distributing said mixture to the points of consumption, substantially as described.

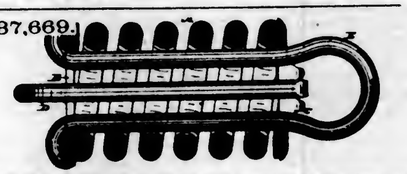
2. The method of distributing gas rendered non-explosive by the admixture of a proportion of air exceeding the explosive limit, which consists in diluting the gas with the requisite proportion of air while in transit from the well to a distributing point, tank, or reservoir, conducting the mixture to said point, tank, or reservoir, and distributing the mixture therefrom to the supply-pipes and points of consumption, substantially as described.

3. In a system for the dilution and distribution of gas, the combination, with the main conduit, the distributing-tank, and the supply-pipes leading therefrom, of a fan, blast apparatus, or other device located between the well and the reservoir at or near the latter and adapted for the dilution of said gas before its admission to the reservoir.

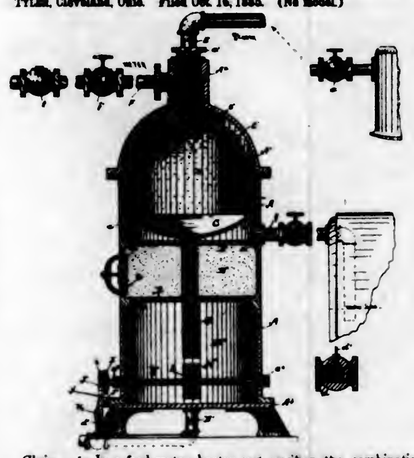
337,669. SPRING. NATHAN H. DAVIS, Philadelphia, Pa. Filed Sept. 19, 1885. (No model.)

Claim.—A spring consisting of a coiled spring, caps at the ends thereof, and yokes formed of legs, with eyes and hooks at opposite ends, the legs passing through the caps and spring, and having the hooks engaged with the caps, said yokes being removably held in position, substantially as described.

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337,670. FEED-WATER HEATER. THOMAS DAVIS and WILLIAM W. TYLER, Cleveland, Ohio. Filed Oct. 16, 1885. (No model.)



Claim.—1. In a feed-water heater and purifier, the combination, with a sediment-chamber provided with a discharge pipe and valve, of a water-wheel arranged so that the latter is actuated by the movement of the feed-water, said water-wheel having suitable connecting mechanism, substantially as indicated, whereby the said discharging-valve is operated automatically, substantially as set forth.

2. In a feed-water heater and purifier, the combination, with a sediment-chamber, a discharging pipe and valve, and a water-pipe leading to said sediment-chamber, of a water-wheel so located as to receive the discharge of said water-pipe and be rotated thereby, said water-wheel having suitable connecting mechanism, preferably as shown, for operating automatically the said discharge-valve, the parts being arranged and operated substantially as described.

3. In a feed-water heater and purifier, the combination, with a heating-chamber above, a sediment-chamber below, an intermediate filtering-chamber, and a pipe leading from the heating-chamber and discharging into the sediment-chamber, of a water-wheel located in the sediment-chamber in position to be actuated by the current of the feed-water, said water-wheel having suitable mechanism connected thereto, arranged substantially as indicated, for operating the discharge-valve of the sediment-chamber, the parts being arranged and operated substantially as set forth.

4. In a feed-water heater and purifier, the combination, with a water-wheel located in the sediment-chamber in position to receive and be actuated by the feed-water introduced to the sediment-chamber, of a spindle and crank connected with the water-wheel, and a pawl connected with the crank and engaging a ratchet-wheel, the latter having a cam or lug for engaging the stem of the discharge-valve, the parts being arranged substantially as set forth.

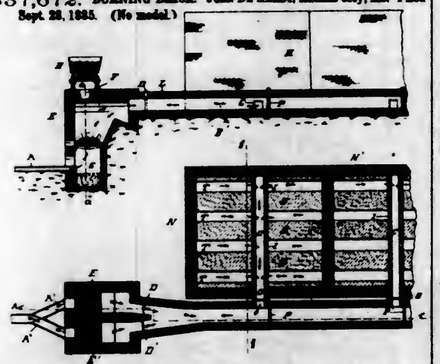
337,671. LETTER AND INDEX HOLDER. WILLIAM H. DAVIS, Fort Wayne, Ind. Filed June 10, 1884. (No model.)



Claim.—1. The combination, with the case, of an index-file, a holder permanently engaged with said file and having a removable connection with said case, said holder consisting of the flanged body D^2, provided with one or more spindles, *d*, and one or more hooks adapted to be engaged in corresponding sockets in the case, substantially as described.

2. The index-holder composed of the body D, provided with a hook adapted to engage with a case to contain the holder temporarily, and also provided with rods *d* for the permanent attachment of the index-leaves to the body, substantially as described.

337,672. BURNING BRICK. JOHN DE HARDT, Kansas City, Mo. Filed Sept. 28, 1885. (No model.)



Claim.—The within-described method of burning brick, which consists in arranging the material in a kiln so as to allow free diffusion of heat among it, supplying said material with a substantially air-tight cover, and maintaining a pressure of heated air within the kiln, as set forth.

337,673. LATHE-TOOL. CARL A. ELLBERG and JOHN F. WESTH, Worcester, Mass. Filed Nov. 27, 1885. (No model.)



Claim.—1. The within-described tool, composed of the bar A, having the longitudinal cavity and curved seat *a* internally thereof, the piece B, having the curved bearing *b*, fitted within the cavity of said bar, and the curved cutter C, formed as shown, and supported and held between said seat and bearing, substantially as set forth.

2. The combination, with the bar A, the top piece, B, and cutter C, of the stud F and screw *f*, substantially as and for the purpose set forth.

337,674. GATE. STEPHEN EMERY, Cameron, Mo. Filed Oct. 17, 1885. (No model.)



Claim.—The improved gate herein described, consisting of the hinge-post and the latch-post, the former having a vertical row of perforations near its lower end and a pin to engage the same, the strap-hinges arranged on the said post and adapted to move vertically thereon, the guide-frame composed of two vertical strips and separating-blocks, bolts and nuts for connecting the guide-frame to the strap-hinges, and the roller in the guide-frame, all arranged for joint operation substantially as specified.

337,675. BLOTTER. JACOB FELSH, New York, N. Y. Filed Sept. 24, 1885. (No model.)



Claim.—In combination with the block or former and journaled or fulcrumed above the same, the bent lever, one arm of which is adapted when turned down, as described, to draw and clamp the end of a piece of blotting-paper between its edge and the block or former, whereby the blotting-paper is given a snug and tight fit, as set forth.

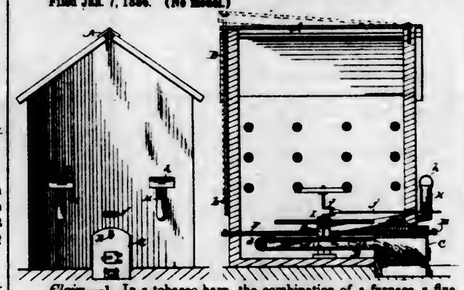
337,676. MOP-WRINGER. HENRY FLEISCHER, St. Louis, Mo. Filed May 21, 1885. (No model.)

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Claim.—A mop-wringer consisting of a clamp, A, having a part, *a*, to straddle the edge of a bucket, a lip, *a'*, and a horizontal part, a^2, formed with concave curved edge a^3, set-screw C, and an inwardly-curved arm, D, formed with projections d^2 d^3 at its lapping outer end, pivoted at its inner end on the horizontal part, and working over the latter, substantially as set forth.

337,677. TOBACCO-DRIER. ARTHUR F. FORBES, McLeansville, N. C. Filed Jan. 7, 1886. (No model.)



Claim.—1. In a tobacco-barn, the combination of a furnace, a flue extended therefrom into the barn, and an air-pipe having one end opening into the barn, and extended thence over the flue and through the furnace, opening at its opposite end into the external air, substantially as set forth.

2. In a tobacco-barn, the combination, with a furnace having a flue leading into the barn, a drum or confluent, an air-pipe leading into the drum, and a distributer adjustable rotarily on said drum, and having a lateral tubular arm, substantially as set forth.

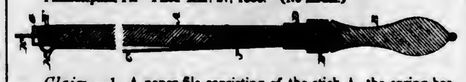
3. In a tobacco-barn, the combination, with an air-supply pipe, of a rotatable distributer communicating with the discharge end thereof and having a perforated tubular arm, substantially as set forth.

4. The combination, with the furnace and the rotatable air-distributer having a crank, of the pitman or handle connected at one end with the crank, whereby the distributer may be adjusted, substantially as set forth.

5. The combination, substantially as herein described, of the furnace, a drum or confluent within the barn, the pipes E and F, communicating at their inner ends with said confluent, the pipe E being extended through the furnace, substantially as set forth.

6. In a tobacco-barn, the combination of the furnace having flue D, branched as described, the rotarily-adjustable distributer having a lateral arm and the pipes E and F, substantially as set forth.

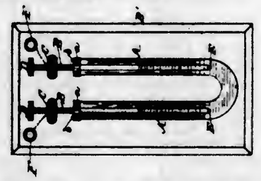
337,678. NEWSPAPER-FILE. JAKOB GLASER and JOHN GLASER, Philadelphia, Pa. Filed Mar. 27, 1885. (No model.)



Claim.—1. A paper-file consisting of the stick A, the spring-bar C, the sleeve D, spring E, and handle B, having a recess to receive said spring and sleeve, substantially as described.

2. A paper-file consisting of a stick, A, having the recess J, the bar C, with bends H and G, the ferrule F, with opening, the spring E and sleeve D, and the handle B, having a recess to receive said spring and sleeve, substantially as described.

337,679. ELECTRIC-CURRENT METER. JOHN J. GREEN, Beesten, N. J. Filed Sept. 10, 1885. (No model.)



Claim.—1. In an electric-current-measuring instrument, the combination, with a vessel adapted to receive a liquid, a scale to indicate

changes in the height of such liquid, and two electrodes entering said tube, of means, substantially as described, for adjusting the distance between said electrodes, as set forth.

2. In an electric-current-measuring instrument, the combination, with the tube A, secured to a base and provided with an outlet for the gases of decomposition, of the nut C, also secured to the base of the instrument, the screw-threaded rod B, passing through said nut, and the electrode attached to the end of said rod, all constructed and arranged substantially as described.

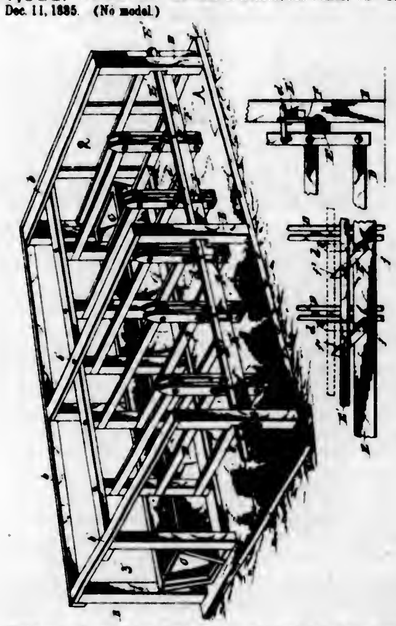
3. In an electric-current-measuring instrument, the combination, with a straight glass tube, A, having an electrode passing up into its interior from beneath and containing a liquid, of an adjustable electrode passing into the said tube from above and dipping into said fluid, substantially as described.

337,680. **LETTER-OPENER.** GEORGE C. HOLT, Hartford, Conn. Filed Sept. 21, 1885. (No model.)



Claim.—The combination, with the blades *g h*, composed of a single piece of material, of the wire cutter-guide secured between them and projecting beyond them, substantially as specified.

337,681. **CATTLE-PEN.** EDWARD T. HOLTON, The Plains, Va. Filed Dec. 11, 1885. (No model.)



Claim.—1. A pen for cattle, consisting of a series of stalls divided by swinging partitions, said partitions provided at their free ends with latches, in combination with a stationary bar, E, and a horizontally-movable bar, E', having pivoted strips F, as and for the purpose intended, substantially as described.

2. A cattle-pen divided into stalls by swinging partitions D, each partition supplied with a locking device, *d*, in combination with a series of strips, F, pivoted to the stationary bar E, and a horizontally-movable bar, E', said strips being adapted to engage with said locking devices when the bar E' is moved in one direction, and released by its movement in a contrary direction, as and for the purpose intended, substantially as described.

3. In a cattle-pen-partition locking and releasing device, the stationary bar E, attached to uprights B, having notches *b'*, in combination with the horizontally-movable bar E', provided with orifices *e*, and a locking device, said bar being connected by a series of pivoted strips, F, said strips having upwardly-extending detents *f'*, as and for the purpose intended, substantially as described.

337,682. **FASTENING FOR HAND-BAG, POCKET-BOOK, AND PURSE FRAMES.** GUSTAVE HOOD, Newark, N. J., assignor to Daniel M. Read, New York, N. Y. Filed Jan. 14, 1886. (No model.)

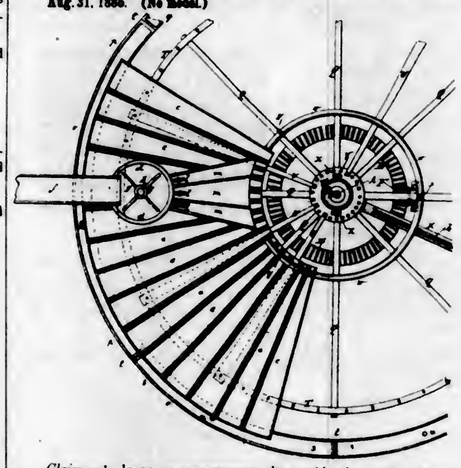
Claim.—The combination, with the recessed parts A B of the frame, of a plate, C, hinged to the said part A, and provided with a flange, E,

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and shoulder F, to engage with the said part B, substantially as herein shown and described.

337,683. **ORE-CONCENTRATOR.** WILLIAM HOOPER, Ticonderoga, N. Y., assignor to himself and John R. De Lamar, Denver, Colo. Filed Aug. 31, 1885. (No model.)



Claim.—1. In an ore-concentrator, the combination, with a frame, of an annular series of radial sluices adapted to revolve in a horizontal plane and movably connected to said frame, and mechanism for imparting a vibratory movement to said sluices independent of their rotary movement, substantially as set forth.

2. In an ore-concentrator, the combination, with a frame adapted for revolution in a horizontal plane, of a series of annularly-arranged radial sluices, mechanism for raising and lowering the inner ends of said sluices, and mechanism for rotary reciprocating the frame carrying the sluices, as shown and described.

3. In an ore-concentrator, the combination, with a vertical shaft, a driving mechanism, a stirring-tub, and a perforated water-pipe, of an annular series of radial flaring sluices adapted to have a rotary movement, substantially as herein shown and described, whereby the head ends of the said sluices will be brought successively beneath the feed and the water supply, as set forth.

4. In an ore-concentrator, the combination, with the vertical shaft A, its driving mechanism, the rotating sleeve D, its driving mechanism, the sleeve S, radial arms and bars R Q, and annular bars T, carrying the annular series of sluices *c*, of the beam K, attached to the said sleeve, the shaft L, journaled to the said beam, the gear-wheels M N, connecting the said shafts, and the crank-wheel and connecting-rod O P, substantially as herein shown and described, whereby the said series of sluices will be rotated and at the same time shaken, as set forth.

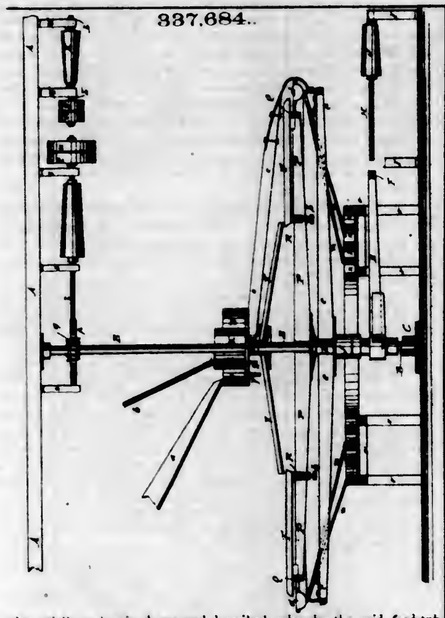
5. In an ore-concentrator, the combination, with the vertical shaft A, the sleeve S, the radial arms and bars R Q, connected with the said sleeve, the annular bar T, connecting the said radial bars, and the annular series of sluices *c*, of the sleeve V, the hinged radial bars U, the ring W, connecting-rods X, and lever Y, substantially as herein shown and described, whereby the inclination of the said sluices can be readily regulated, as set forth.

337,684. **ORE-CONCENTRATOR.** WILLIAM HOOPER, Ticonderoga, N. Y., assignor to himself and John R. De Lamar, Denver, Colo. Filed Aug. 31, 1885. (No model.)

Claim.—1. In an ore-concentrator, the combination, with the vertical shaft B, the annular series of inclined flaring sluices T, their supporting-bars P, and sleeve D, of the rotating feed-tub W, attached to the said shaft B, and the series of radial spouts V, substantially as herein shown and described, whereby the ore and water are fed to the said sluices successively, as set forth.

2. In an ore-concentrator, the combination, with the sluices T, spouts V, vertical shaft B, the sleeve D, placed upon the said shaft, the rotating feed-tub W, attached to the said shaft, and the annular receiving-trough *d*, of the arm *c*, rigidly connected with the said feed-tub and receiving-trough, and the bars *e* and sleeve *f*, carrying the said feed-trough,

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substantially as herein shown and described, whereby the said feed-tub and receiving-trough will be rotated to feed and receive the graded material from the sluices successively, as set forth.

3. In an ore-concentrator, the combination, with the vertical shaft B, the sleeve D, radial bars P, supported upon and directly attached to said sleeve, and the sluices T, of the arm E, the connecting-bar F, the crank-wheel G, and the horizontal shaft H, substantially as herein shown and described, whereby the said sluices will be vibrated, as set forth.

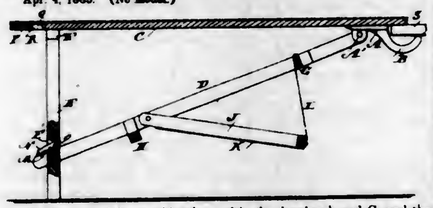
4. The combination, with an annular series of horizontally-vibrating sluices, of a rotary trough at the outer ends of the said sluices, partitions in said trough, a series of annular fixed receivers below the trough, corresponding in number to the divisions in said trough, and a pipe projecting from the under side of each division of the trough and extending to a point over a receiver, substantially as set forth.

337,685. **BARREL-HEAD FASTENING.** CHARLES R. JOHNSON and LOUIS P. DE FREMS CARR, St. Marys, Ohio. Filed Dec. 15, 1885. (No model.)



Claim.—A device for securing the heads of a barrel in position, consisting of a piece of metal having the central portion, *a*, turned-back parts *c*, and points *b*, substantially as shown.

337,686. **IRONING-TABLE.** THOMAS N. JOHNSON, Rome, N. Y. Filed Apr. 4, 1885. (No model.)



Claim.—1. The combination, with the ironing-board C, and the prongs B, fixed on the under side of the same, of the bars D, pivoted at their ends to the ironing-board, and the leg E, pivoted to said bars a short distance above the lower end of the leg, the lower end of the leg resting on the floor and the upper end supporting the free end of the ironing-board, substantially as herein shown and described.

2. The combination, with the ironing-board C, of the prongs B, the bars D, pivoted to the board, the leg E, pivoted to the bars D, and the frame J, pivoted to the bars D, substantially as herein shown and described.

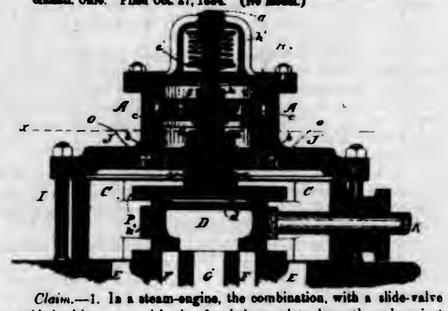
3. The combination, with the ironing-board C, of the bars D, the leg E, pivoted to the same, the cross-piece M on the bars D, and the spring-catch N on the leg, substantially as herein shown and described.

4. The combination, with the ironing-board C, having the recesses P and Q, the latter having a ledge, R, of the pivoted bars D, the leg E, pivoted to the same, the cross-piece M on the bars D, and the spring-catch N on the leg E, substantially as herein shown and described.

337,687. **PROCESS OF MAKING EMBROIDERY-LACES.** JOHN KELLER, St. Gall, Switzerland. Filed July 8, 1885. (No specimens.)

Claim.—The process of manufacturing embroidery-laces, consisting in dipping the foundation-fabric in a bath of acid and water at a temperature of about 20° centigrade or 68° Fahrenheit, then embroidering the said fabric with suitable threads, and at last exposing the fabric to a dry temperature of about 80° centigrade or 176° Fahrenheit, which will destroy the fabric without subjecting the same to the slightest moisture.

337,688. **BALANCED STEAM-VALVE.** WILLIAM W. LEWIS, Cincinnati, Ohio. Filed Oct. 27, 1884. (No model.)



Claim.—1. In a steam-engine, the combination, with a slide-valve provided with a recessed back, of a balance-plate, beneath and against which the valve has a sliding steam-tight connection, and a hollow vertical rod supporting the balance-plate and forming a conduit extending from the chamber at the back of the valve outward into the atmosphere, substantially as set forth.

2. In a steam-engine, the combination of a balancing-plate resting upon and forming a sliding steam-tight connection with the back of the valve, a central rod supporting the balance-plate and extending through a close-fitting orifice in the steam-chest cover for guiding said rod vertically and resisting the side strains caused by the friction of the valve and plate, and means, substantially as described, for balancing the plate from the outside of the steam-chest cover, substantially as set forth.

3. In a steam-engine, the combination of an auxiliary cylinder formed upon the outside of the steam-chest cover, a piston fitted therein, a piston-rod extending thence through a close-fitting orifice of the cover into the steam-chest and supporting a balance-plate upon the back of the valve by a ball-joint connection, said steam-chest cover being also perforated for the admission of steam into the cylinder from the chest, substantially as specified.

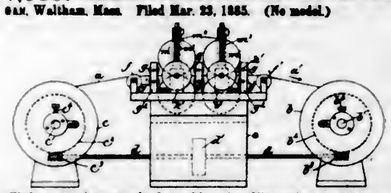
4. In a steam-engine, the combination of a slide-valve with a recessed back, an auxiliary cylinder upon the steam-chest cover, the latter perforated for the admission of steam from the chest into the said cylinder, a piston in said cylinder carrying a hollow piston-rod extending entirely through said cylinder from the outside and passing through a close-fitting orifice in the steam-chest cover, and a balance-plate supported on said piston-rod by a ball-joint connection, arranged and operating substantially as and for the purpose set forth.

5. In a steam-engine employing a slide-valve and actuating mechanism, a balance steam-cylinder upon the steam-chest cover and embodied therewith, containing a piston, and central depending piston-rod passing through a bossed orifice in the steam-chest cover, the latter being perforated to allow free passage of steam into the balance-cylinder, the object of the boss being to furnish rigid support against the lateral strains of friction, substantially as described.

6. In balanced-valve mechanism of the kind described, the combination of an auxiliary cylinder formed upon the steam-chest cover, communicating with the steam-chest interior, as described, the piston therein constructed as described, the hollow piston-rod and its jointure to the balance-plate by ball-bearing, as described, the bossed orifice in the steam-chest cover, and the rigid arch at the top of the auxiliary cylinder, with contained coiled spring surrounding the piston-rod, arranged and operating as described.

7. In a steam-engine, the combination of a slide-valve, a balance-plate resting on the upper face of the same, an auxiliary cylinder upon the steam-chest cover, a piston fitted therein, a piston-rod supporting the balance-plate and secured to said piston, said rod extending outwardly above said cylinder, and a spring secured to and acting upon said rod to assist in preserving contact between the balance-plate and valve, substantially as set forth.

337,689. MACHINE FOR FILING METALLIC RIBBONS. JOHN LOGAN, Waltham, Mass. Filed Mar. 23, 1885. (No model.)



Claim.—1. An organized machine for filing wire or ribbon, comprising a file and actuating mechanism which draws the wire or ribbon along against the cutting-faces of the said file, substantially as described.

2. A file-holding device combined with reels at either side thereof, and actuating mechanism for positively turning one of the said reels, whereby the wire or ribbon to be filed is wound thereon, being drawn off from the other reel and along against the cutting-face of the file, substantially as described.

3. In a machine for filing wire or ribbon, a file-holding device, combined with two reels, one at either side of the said file-holding device, and actuating-shafts for said reels positively rotated in opposite directions, the reels being capable of turning on the shafts independently thereof and provided with clamping devices whereby either one may be made fast on its shaft and rotated thereby to draw the wire or ribbon along the cutting-face of the file, substantially as described.

4. A file-holding device combined with actuating mechanism which draws wire or ribbon along against the cutting-face of the file, and guides governing the position of the part of the wire or ribbon at each moment acted on by the file, substantially as described.

5. In a machine for filing the edges of metal ribbon, a file and holding device therefor, and actuating mechanism which draws the ribbon along the cutting-face of the said file, combined with pairs of guide-rollers at either side of the file engaging the flat sides of the ribbon and causing its edge to be presented at the proper angle to the file, substantially as described.

6. In a machine for filing the edges of metal ribbon, a pair of files held in position to act on the opposite edges of the ribbon, combined with mechanism for drawing the wire along between the said files, and guide-rollers engaging the opposite faces of the ribbon between the files, substantially as and for the purpose described.

7. In a machine for filing metal wire or ribbon, the combination, with feeding mechanism for moving the wire, of a file, and movable file-holding device by which the file may be moved to vary the part of its cutting-face that acts on the ribbon, substantially as described.

8. The combination, with feed mechanism for moving the wire, of a file-holding device consisting of a clamp provided with a cylindrical shank and supporting-bracket for the said shank, the file being held in the clamp with its cutting-face at right angles to the shank, enabling the latter to be turned to vary the position of the cutting-face of the file with relation to the ribbon without varying the cutting-plane, substantially as described.

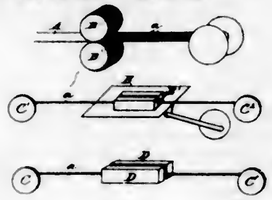
9. The combination, with feed mechanism for moving the wire or ribbon, of a file-holding device and file held thereby, and an adjusting device whereby the pressure or cutting action of the file on the wire or ribbon may be regulated, substantially as described.

10. The combination of actuating mechanism for moving a strip of metal ribbon lengthwise with a pair of supporting-rollers of less thickness than the width of the ribbon engaging the opposite faces thereof, the said rollers preventing the ribbon from turning when acted on along its edges at the side of the said rollers, substantially as described.

11. In a machine for filing metal ribbon, a series of pairs of files held in position to act on the opposite edges of the ribbon, combined with actuating mechanism which draws the wire or ribbon along between the said files, substantially as described.

12. An automatic machine for filing wire or ribbon, comprising a stationary file, and actuating mechanism which draws the wire or ribbon along against the cutting-faces of the said file, the cutting action of which is due to the movement of the ribbon, substantially as described.

337,690. ART OF MAKING WATCH-SPRINGS. JOHN LOGAN, Waltham, Mass. Filed Jan. 13, 1886. (No model.)



Claim.—1. That improvement in the art or method of making watch-springs which consists in first cutting strips of sheet-steel into narrow ribbons, filing the edges of the said ribbons, hardening and tempering the same, polishing the tempered ribbons, and finally cutting them into lengths sufficient for the separate springs, substantially as described.

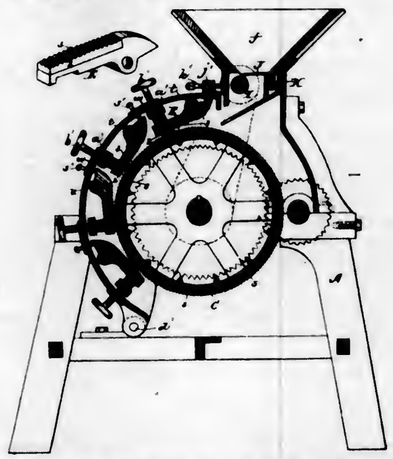
2. That improvement in the art or method of making watch-springs which consists in cutting strips of sheet-steel into ribbons, filing the edges of the said ribbons, polishing the edges of the said ribbons, hardening and tempering the same, polishing the tempered ribbons, and finally cutting them into lengths suitable for separate springs, substantially as described.

3. That improvement in the art or method of making watch-springs which consists in cutting long strips of sheet-steel into ribbons, hardening and tempering the said ribbons, polishing the edges and faces of the tempered ribbons, and cutting them into lengths suitable for separate springs, substantially as described.

4. That improvement in the art or method of making watch-springs which consists in providing blanks or ribbons, hardening and tempering the said ribbons, polishing the edges and faces thereof, and heating the said ribbons to oxidize and color their surfaces, and finally cutting them into lengths suitable for separate springs, substantially as described.

5. That improvement in the art or method of making watch-springs which consists in cutting long strips of sheet-steel into separate ribbons of proper width for watch-springs and of a length equal to that of many springs, filing the edges thereof, polishing the filed edges, hardening and tempering the ribbons, again polishing the edges, then leveling the flat surfaces, then polishing the said surfaces, then reheating the ribbons to develop the desired color, and finally cutting the ribbons into lengths suitable for separate springs, substantially as described.

337,691. COFFEE-HULLER. JOSEPH R. MERRIHEW, New York, N. Y. Filed May 4, 1885. (No model.)



Claim.—1. The combination, with a serrated cylinder, C, and concave *u*, of a series of serrated strippers pivoted toward their middle portion in the concave, adjusting-screws bearing upon the strippers on one side of the pivots, and adjusting-screws carrying a yielding connection bearing upon the strippers on the opposite sides of the pivots, substantially as and for the purpose set forth.

2. The combination of the cylinder C, concave *u*, serrated strippers pivoted in the concave, adjusting-screws *s'*, bearing upon the upper ends of the strippers, and yielding adjusting-screws *b' a' w*, bearing upon the lower ends of the strippers, as and for the purpose set forth.

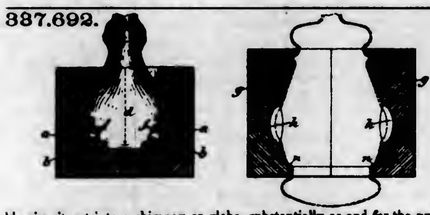
3. The combination, with the toothed cylinder, of the strippers pivoted in tangential relation with the cylinder, comprising the arms E and serrated plates 2, detachably secured to said arms and adapted to be reversed to bring different portions of their surfaces into stripping action, as set forth.

4. The combination of the toothed cylinder, the pivoted concave, the strippers pivoted to said concave, and the rod *s'*, for adjusting the concave and its strippers, as set forth.

337,692. MANUFACTURE OF LANTERN-GLOBES, &c. JOHN F. MILLER, Martin's Ferry, Ohio, assignor of one-half to Archibald W. Paull, Wheeling, W. Va. Filed Jan. 12, 1886. (No model.)

Claim.—1. The method of making glass lantern-globes, lamp-chimneys, &c., provided with lenses, which consists in first blowing a bulb of glass with a lens or lenses on the sides of the same in a preliminary former or mold, and then transferring said bulb to a chimney or globe mold, and

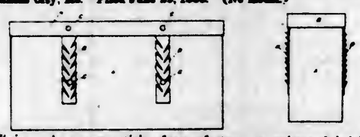
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blowing it out into a chimney or globe, substantially as and for the purposes described.

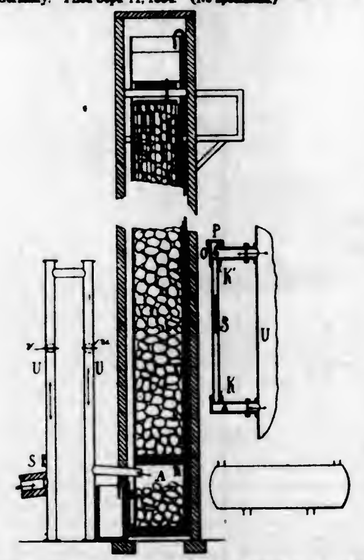
2. The method of making glass globes or lamp-chimneys with lenses, which consists in first blowing a bulb of glass with a lens or lenses on its sides in a preliminary mold at a desired distance from the end, then transferring the bulb to a chimney or globe mold having corresponding lens-cavities, and blowing out the chimney or globe into shape while the lenses are preserved in shape, substantially as and for the purposes described.

337,693. METAL-FACED BUILDING-BLOCK. JOSEPH H. MITCHELL, Kansas City, Mo. Filed June 29, 1885. (No model.)



Claim.—As a new article of manufacture, an unburned brick provided on its exposed or wearing faces or surfaces with a covering of sheet metal, the edges of said metal being turned back over the edge of the brick, and the strips secured to said edges of the metal and to the brick and slitted to form prongs which are turned outwardly, as set forth.

337,694. BOILING FIBERS WITH SULPHITES FOR THE MANUFACTURE OF PAPER-PULP. ALEXANDER MITSCHERLICH, Freiburg, Baden, Germany. Filed Sept. 11, 1884. (No specimens.)



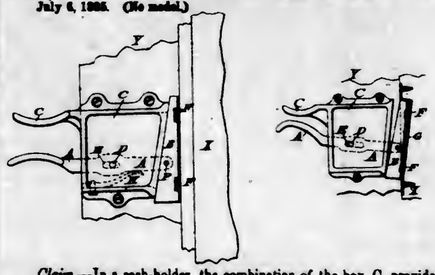
Claim.—1. As a preliminary step in the manufacture of sulphite cellulose, the method herein described of producing a sulphite solution free or nearly free from free sulpharous acid by condensing the gases from the roasting-kiln through the free system described to cool the current to about 86° Fahrenheit, and then presenting the gases in a tower to solid alkali in the presence of water, the solid alkali being located both above the inlet-orifice of the gas and below the same to absorb any free acid, substantially as shown and described.

2. The herein-described process for the manufacture of sulphite cellulose from wood-stock, which process consists, essentially, in first reducing the wood-stock to the herein-stated dimensions, and removing the objectionable bast fibers and cores; secondly, in steaming the wood-stock thus prepared to drive off the air, and, finally, boiling the same with a sulphite solution which is free, or nearly so, from free sulpherous acids, substantially as shown and described.

3. The herein-described method for the manufacture of sulphite cellulose from wood-stock in a divided state—such as sawdust—which consists in distributing the divided material in heaps between the larger pieces, then steaming the mass to drive off the air, and finally boiling the same with a solution of a sulpharous-acid compound which is free, or nearly so, from free sulpherous acid, substantially as described.

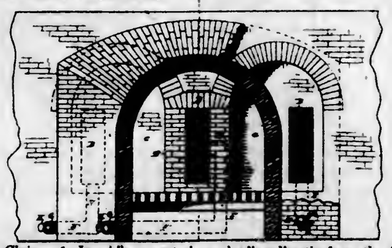
4. The combination, with the tower, of the bent flues U, leading from the roasting-kiln and communicating with the tower, and the indicating-tube S in said flue, substantially as shown and described.

337,695. SASH-HOLDER. E. WALTER MORRIS, Bloomfield, N. J. Filed July 6, 1885. (No model.)



Claim.—In a sash-holder, the combination of the box C, provided with the fulcrum-pin D and an inclined face, with the wedge-shaped block B and the lever A, to which the wedge is pivoted, the bearing E in said lever being elongated, for the purposes specified and set forth.

337,696. BRICK-KILN. ROBERT B. MORRISON, Oakdale, Ga. Filed Nov. 11, 1885. (No model.)



Claim.—1. In a kiln, a central eye leading directly from the furnace to the drying-chamber, and side eyes having combustion-chambers interposed between them and the said furnace, the said side eyes and their combustion-chambers being independent of connection with the central eye, substantially as specified.

2. In a kiln, a series of eyes leading from the heating-furnace to the drying-chamber, the central eye being continued by walls to the furnace, and the side eyes having enlarged combustion-chambers with their roofs supported by the walls of the said central eye, substantially as specified.

3. In a kiln, a series of eyes leading from the furnace to the drying-chamber, and a cold-air flue leading from the exterior of the kiln to each eye, substantially as specified.

4. In a kiln, a series of eyes leading from the furnace to the drying-chamber, and a cold-air flue leading from the exterior of the kiln to each eye, said flues having a wooden or metal lining for a portion of their length and a fluted or grooved plug at the mouth, substantially as specified.

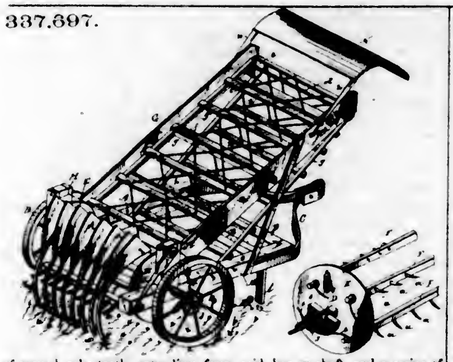
5. In a kiln, a series of eyes leading from the furnace to the drying-chamber, and a flue leading from the exterior of the kiln to each eye, said flue having a horizontal portion and a vertical portion, said vertical portion having its upper end provided with a cross-piece, substantially as specified.

337,697. HAY RAKE AND LOADER. JOSEPH S. NAFFZIGER, Wheatland, Mo. Filed June 12, 1884. (No model.)

Claim.—1. The combination, in a combined rake and holder, of a supporting-frame carrying a reel or drum, a series of bars arranged in said reel and provided with teeth, a projection or spring arranged on the end of each of said bars to come in contact with a fixed portion of the machine, an endless carrier composed of the belts *g*, parallel bars *f*, and interlaced and crossed cords passing through said bars, as and for the purpose set forth.

2. The combination, in a combined rake and loader, of a drum mounted on a main axle, an endless carrier passing around said drum, a shaft journaled in standards of the frame and carrying a lever, a series

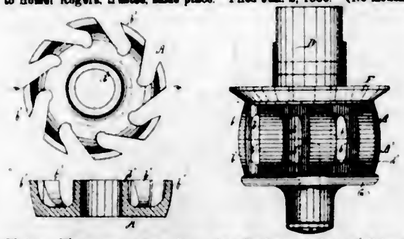
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of curved rake-teeth extending from said bar or shaft, and a series of blades or plates, M, rigidly connected to the upper portion of said teeth and curved to conform to said teeth for a portion of their length, substantially as specified.

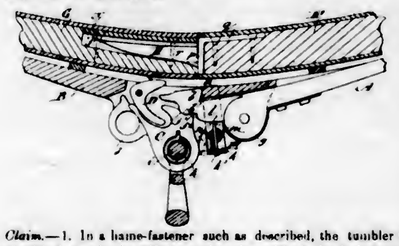
3. In a combined rake and holder provided with a rake and carrying devices, as specified, a detachable fender, N, supported and operating substantially as set forth.

337,698. ROTARY CUTTER. OSCAR L. NOBLE, Boston, Mass., assignor to Homer Rogers, trustee, same place. Filed Jan. 2, 1886. (No model.)



Claim.—The rotary cutter above described, consisting of disks A A', having teeth *b b'*, projecting inwardly, and a separating-sleeve, *d d'*, said disks adapted to be secured to a shaft and simultaneously rotated, substantially as and for the purpose set forth.

337,699. HAME-FASTENER. MARSH NOE, Davenport, Iowa. Filed Aug. 25, 1885. (No model.)



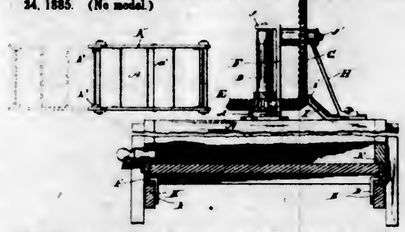
Claim.—1. In a hame-fastener such as described, the tumbler C, formed with the projection *f'*, in combination with the hook *b*, formed with the protuberance *b'*, substantially as and for the purposes set forth.

2. The hame B, formed with the notch *a*, and provided with the pivoted locking-tumbler C, and the hame A, provided with the hinged locking-hook *b*, in combination with a stop arranged below the notch *a* in the frame or support *k*, for locking the hook *b* in engagement with the notch *a*, substantially as described.

3. The hame B, formed with notch *a*, and provided with pivoted tumblers C, and downwardly-projecting frame *k*, in combination with the hame A, formed with the hinged hook *b* and the spring-actuated rotating stop-shaft *m*, and stop-pin *l*, held in the frame *k*, for locking the hook *b* into engagement with the notch *a*, substantially as described.

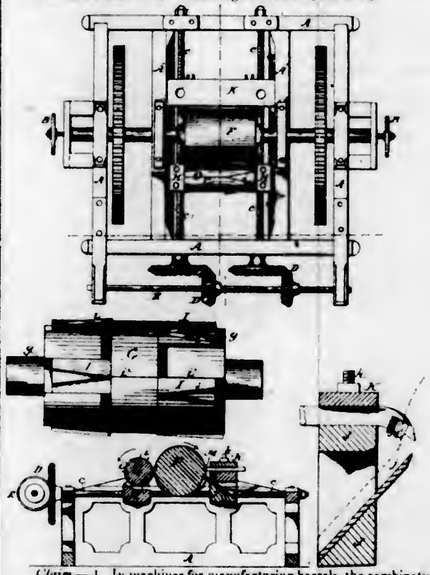
4. The hame A, secured to the section F of the collar, the hame B, made fast to the section G of the collar, and the automatic locking mechanism attached to the lower ends of the hames, in combination with the guide-tongue H, secured to the section F of the collar, and the socket J, secured in the section G of the collar, the guide-tongue H being of a length to reach past the automatic locking mechanism, whereby, when the sections of the collar and the hames are brought together, the tongue H acts as a guide in entering the socket J to cause the proper registering of the hames and the automatic locking mechanism, substantially as described.

337,700. WASHING-MACHINE. JOHN C. PETERS, Fort Wayne, Ind., assignor to the Horton Manufacturing Company, same place. Filed Oct. 24, 1885. (No model.)



Claim.—In a washing-machine, a shaft, D, mounted in a bearing in the lid of the tub and perpendicular to said lid, and carrying on its lower end suitable agitator-fingers, a bevel-pinion, E, secured to said shaft, a bracket, F, secured to the outside of the tub-lid and having on one side a projecting arm, *f*, in which the end of the shaft D has its bearing, and on the other side of the projecting arbor *f'*, on which is mounted the segmental rack G, in combination with a brace, H, secured to the end of the arbor *f'*, and having a guard, I, to hold the rack G and pinion E in gear, all arranged and operating substantially as shown and described.

337,701. MACHINE FOR MANUFACTURING BARRELS. JOHN W PHILP, Humboldt, Tenn. Filed Aug. 24, 1885. (No model.)



Claim.—1. In machines for manufacturing barrels, the combination, with the veneer-separating and the croze and chine forming knives, of the roller G, having gore-forming cutters *i*, arranged on each end thereof, and means for feeding said knives and roller to the log, whereby to produce barrel-forming blanks from a log at one operation, having the croze, the chine, and the bulge-forming gores, substantially as described.

2. In machines for manufacturing barrels, the roller G, having longitudinal surface recesses *g* around its periphery at each end, those in one end alternating in longitudinal line with those in the other end, in combination with blocks I, contained within said recesses, having V-shaped knives *i* projecting from their surfaces, and mechanism for feeding said roller to the log, substantially as described, for the purpose specified.

3. In machines for manufacturing barrels, the combination of the roller having longitudinally-adjustable cutter-carrying blocks I, arranged at each end in longitudinal recesses *g*, alternately, as described, with a head-block, J, having a knife, *j*, for separating the veneer from the log, the separate crozing-cutters M, and the separate chine-forming cutters L, means whereby these croze and chine forming cutters are made adjustable, and mechanism for causing said roller and head-block to be fed to the log, substantially as described

4. In a machine for making barrel-blanks from a log, the head-block J, having the knife *j* for separating the veneer, the adjustable tools L and M, the clamping-plate K, and bolts *k*, in combination with the roller having adjustable V-shaped knives, and mechanism for causing said head-block and roller to simultaneously approach the log, whereby the roller-knives may be adjusted to form bulge-gores suited to the length of the barrel and to the set of the croze and chine cutters, as herein set forth.

5. The roller G, having V-shaped knives secured in independent carriers placed in alternate longitudinal relation upon its surface around each end, adjustable lengthwise of the roller, whereby to cut the gores in the veneer of greater or less length to give the desired bulge to the barrel, according to its length, said roller having a non-adjustable knife, as and for the purpose set forth.

6. The roller G, having V-shaped surface-knives secured in independent carriers arranged around one or both ends of said roller, combined with the tools for cutting the veneer from the log and for forming the croze and the chines, all constructed and arranged for operation as set forth.

7. The combination, with the roller having the gore-forming knives, of the crozing and chining cutters having straight shanks, and downwardly-curved ends supplementing the shaving-knife *j*, as shown and described.

337,702. WITHDRAWN.

337,703. PROCESS OF MAKING IRON PICTURES. SAMUEL POWEL, Newport, R. I., assignor to Harford Willing Hare Powel, trustee. Filed Nov. 2, 1883. (No specimens.)

Claim.—The method of transforming the color of cyanotypes or blue prints into any other than the original blue color thereof, which consists in first producing a blue print by the usual photographic process upon a gelatine-sized paper, then treating the same with the hereinbefore-described discharging-bath (sesquicarbonate of soda) in or about the proportions hereinbefore set forth, and then, after washing and drying, subsequently recoloring it by the application of the hereinbefore-described recoloring-bath (gallic acid) in or about the proportion hereinbefore set forth, substantially as described.

337,704. COMBINED PORTFOLIO AND BINDER. EDWARD B. ROBINSON, Dearing, Me. Filed Aug. 1, 1885. (No model.)



Claim.—1. In a folio, the angular or V-shaped pieces herein described, in combination with the sides or covers A A and hinges B, as and for the purposes set forth.

2. In a folio, the herein-described means for clamping music-sheets and the like, consisting of covers folding upon suitable hinges and provided upon the outside with gripping-plates whereby the sheets placed between said planes are held by means of the leverage force exerted by the extended covers upon said gripping-planes, substantially as herein set out.

337,705. LOG-TURNER. ALEXANDER RODGERS, Muskegon, Mich. Filed Sept. 12, 1885. (No model.)

Claim.—1. In a log-turner, the vertically reciprocating and oscillating toothed bar and the chain G, one end of which is connected to said bar and the other to a stationary support, in combination with the stationary sheave over which the chain passes, and the movable sheave attached to the piston-rod of a steam-cylinder and acting upon said chain to operate the toothed bar as the piston-rod moves in and out the cylinder.

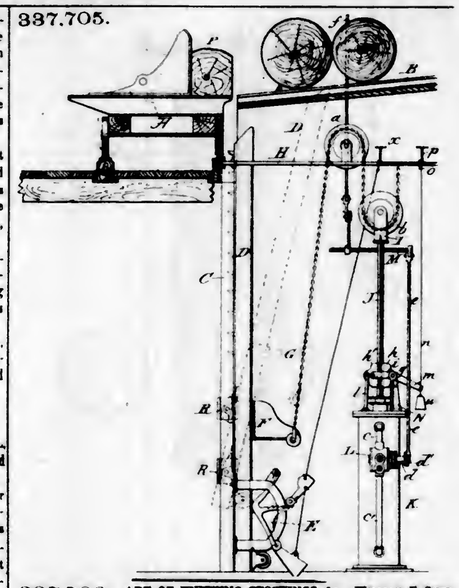
2. In a log-turner, the vertically reciprocating and oscillating bar D, provided with rear extension, F, and the chain G, one end of which is attached to said extension and the other to the beam H, in combination with the stationary sheave *a*, vertically-moving sheave *b* being attached to the piston-rod, and acting upon the chain to raise and swing the bar when steam is admitted to the upper end of the cylinder.

3. In a log-turner, the vertically moving and oscillating toothed bar, and chain G, passing over suitable sheaves and arranged to raise and lower said bar by the movement of the piston in a steam-cylinder, in combination with the trip mechanism E, arranged to swing the bar backward when it is desired to roll logs forward or upon the log-carriage, substantially as set forth.

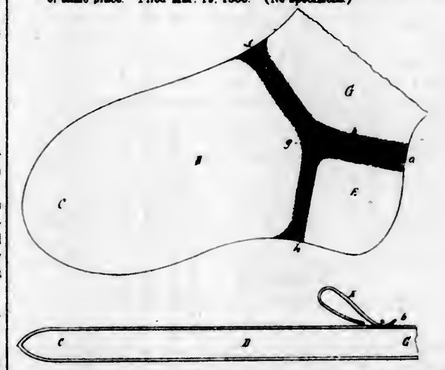
4. In a log-turner, the combination, with a toothed turning-bar and devices connecting the same with the piston-rod of a steam-cylinder, of the brake acting directly upon said rod to enable the operator to arrest its movement at any desired point.

5. In a log-turner, the combination of the toothed bar, the chain by which it is operated, the sheaves, the piston-rod, and steam-cylinder, to give said bar a vertical movement, the trip F, to swing it backward, and a brake arranged and operating directly upon the piston-rod, all arranged and operating as specified.

337,705.



337,706. ART OF KNITTING STOCKINGS, &c. WILLIAM E. SHERMAN, Laconia, N. H., assignor to Edgar C. Covell and Elisha S. Cram, both of same place. Filed Mar. 19, 1885. (No specimens.)



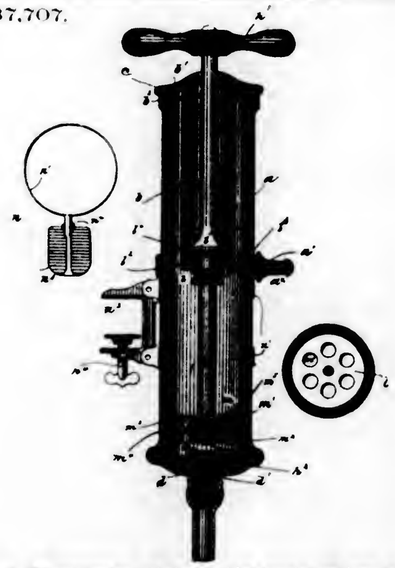
Claim.—The method of knitting and completing a stocking, which consists in knitting a toe and foot web to the line where the heel is to be joined to the main web, then taking a previously-knit heel-piece and running or picking a course of stitches thereof, taken one or more courses from the upper edge of the said heel-piece, upon a sufficient number of the needles of the knitting-machine still holding the stitches of the main web, then knitting the leg-web, then cutting across the foot-web just below the line where the heel-piece is joined to the main web, then joining by any suitable means the side edges of the heel-piece to the edge of the foot-web cut from the main web and entirely closing the heel, substantially as herein specified.

337,707. EMBALMING-SYRINGE. HARVEY N. SIEBENTHALER and ELLSWORTH CRAM, Springfield, Ohio. Filed Aug. 24, 1885. (No model.)

Claim.—1. A double-acting syringe consisting of the plain cylindrical barrel with a discharge-nozzle therein, an inner cylinder provided at the top with an outwardly-projecting flange adapted to screw onto the top of the said barrel and form a cap therefor, the plunger-rod carrying the two pistons thereon and projecting through an opening in the top of the inner cylinder, and provided with a removable handle, and the lower cap on said barrel being provided with an inlet-valve, substantially as set forth.

2. The combination, in a double-acting syringe, with the plain outside cylindrical casing, the inner cylinder supported therein, and the plunger-rod carrying pistons for said cylinders, respectively, of a table-clamp with rings adapted to be secured around said barrel, substantially as specified.

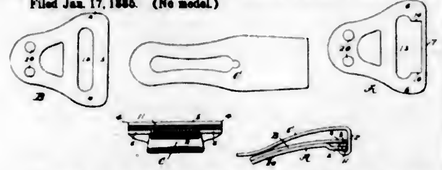
337,707.



3. The combination, with the cylindrical barrel A and inner cylinder, B, of the plunger-rod H, provided with a lower plunger, M, and having the stationary collar L', variable collar L², with projection L³, and packing-ring L⁴, substantially as set forth.

4. The combination, with the outer barrel and inner cylinder supported therein, of the plunger-rod having upper piston, L, and turned down and forming a projection, H², which is screw-threaded and shouldered at its lower end, provided thereon with the circular disks M² M³, having openings M³ therein, the flexible disk or washer M⁵, adapted to close said openings, and the packing-ring M⁴ between said disks, substantially as specified.

337,708. BUCKLE OR CLASP. EDWARD S. SMITH, Waterbury, Conn. Filed Jan. 17, 1885. (No model.)



Claim.—1. A clasp or buckle consisting of body-plates and a swinging holding-lever, one of said plates being provided with a pintle upon which the lever is hinged, and the other of said plates with a bearer that presses upon the knuckle of the lever, substantially as described.

2. The combination, with a clasp or buckle consisting of body-plates, one of which provides a pintle, 7, upon which the swinging holding-lever U is hinged, and the other a bearer, 5, that presses upon the knuckle of said lever, of a looped or slotted attaching-plate, D, substantially as described.

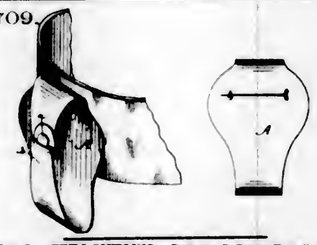
3. In a spring-clasp, the combination, with two spring-plates, one provided with arms 4 4 and a bearer, 5, and the other with arms 6 6, and the pintle 7, of a holding-lever hinged upon said pintle, and having its knuckle arranged to be engaged and pressed upon by said bearer, substantially as described.

4. In a spring-clasp, the combination, with the holding-lever hinged upon the pintle carried by one plate and provided with a depression, 9, of a bearer, 5, carried by the other plate, and provided with a projection, 8, substantially as described.

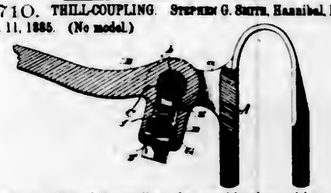
337,709. SATCHEL-HOLDER. MARGRET SMITH, Baltimore, Md. Filed Aug. 1, 1885. (No model.)

Claim.—A holder for satchels, consisting of a plate, A, having a pin or its described equivalent on its back for attachment to the garment, and having its upper end bent down and turned up to form a hook-shaped catch or lip, and its lower end bent up, crimped transversely, and slotted at the crimp to receive the hook-shaped catch, substantially as described.

337,709.



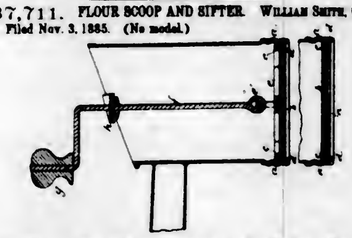
337,710. THILL-COUPLING. STEPHEN G. SMITH, Hannibal, Mo. Filed Dec. 11, 1885. (No model.)



Claim.—1. In a thill-coupling, the combination, with a thill-iron having a boss, the latter provided with a chamber extending from the outer end thereof to the eye of the thill-iron, of a plunger or bearing made of unyielding material, located within the boss, and having a curved face resting in contact with the bolt C, a spring for holding the plunger or bearing in position, and a screw-plug for closing the outer end of the boss and forming a seat for the spring, substantially as set forth.

2. In a thill-coupling, a thill-iron provided with a hollow female threaded boss, a plunger, a spring, and a screw-plug or follower adapted to work in the boss, and a lock-nut or washer on the screw-plug, the whole constructed and arranged substantially as set forth

337,711. FLOUR SCOOP AND SIFTER. WILLIAM SMITH, Cicero, Ind. Filed Nov. 3, 1885. (No model.)



Claim.—1. The combination, with a self-adjusting agitator having an armed ring, e, of a scoop having an inward rim, c, forming a seat for said agitator-ring, and a sieve clamped to said seat-rim, whereby said agitator is supported free of contact with said sieve, as shown and described.

2. The scoop having the screw-spun lower end terminating in an inward seat-rim, c, combined with a screw-spun ring having an inward rim-seat, d, one or more sieves clamped by and between said seat-rims, and an agitator having an armed ring, e, seated upon the scoop-rim, and thereby supported free of contact with said sieve, substantially as described.

3. The combination, with the scoop having the bottom screw, of a screw-spun ring rimmed at its lower edge, and one or more sieves seated upon said rim and clamped thereby to the scoop, as shown and described.

4. The scoop having the top inclined rib and one or more bottom screens, combined with an agitator and top-retaining cross-bar removably confined to said top rib, substantially as shown and described.

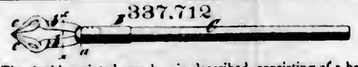
5. The scoop having the bottom screw and the seat-rim, in combination with the screw-ring having the seat-rim, one or more screens placed between the said rims and clamped by said ring, substantially as described.

6. The combination, with the shifting-scoop having a top edge, inclined rib, and an opposite side hook, of an agitator, and a top-confining cross-bar for said agitator having a hook at one end and an eye at its other end, whereby the agitator may be applied and removed, as described.

337,712. MULTIPLE-POINTED PEN. THOMAS W. F. SMITTEN, Brooklyn, N.Y. Filed Aug. 17, 1885. (No model.)

Claim.—1. The multiple-pointed pen herein described, consisting of a head or stock for insertion in a pen-holder, and elastic shanks extending therefrom and provided at their ends with converging pen-tips, substantially as specified.

337,712.



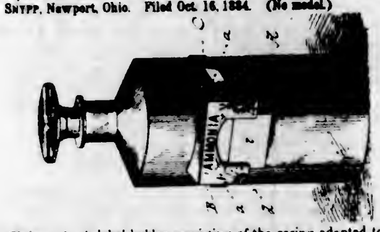
2. The double-pointed pen herein described, consisting of a head or stock for insertion in a pen-holder, two elastic shanks extending therefrom in approximately the same direction, and diverging from their inner edges laterally outward and downward from each other, and converging pen-tips carried by the two shanks, substantially as specified.

3. The multiple-pointed pen herein described, consisting of a head or stock for insertion in a pen-holder, elastic shanks extending therefrom, and converging pen-tips carried by and adjustable in said shanks relatively to each other, substantially as specified.

4. The combination, with a pen comprising a head or stock, and elastic shanks extending therefrom and provided with pen-tips, of a holder receiving the head or stock and having a cam which, by the pressure on the holder, is introduced between the shanks to spread them and their attached tips, substantially as specified.

5. The combination, with a pen-shank having at the end a socket or slideway, *b'*, of a pen-tip having an approximately circular head adjustably fitting said socket, substantially as herein described.

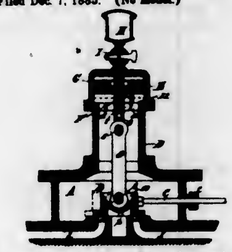
337,713. LABEL-HOLDING DEVICE FOR BOTTLES. THEODORE SNYPP, Newport, Ohio. Filed Oct. 16, 1884. (No model.)



Claim.—1. A label-holder consisting of the casing adapted to hold labels, and provided with loops *a*, in combination with a strap adapted to be secured in said loops, and bent near its center to form a serpentine spring, substantially as set forth.

2. A label-holder consisting of a casing adapted to hold labels, and provided with loops *a*, in combination with a strap which is bent to form a spring portion near the center of the same, and adjustable independently of the spring portion to fit and encircle bodies of different circumferences, substantially as set forth.

337,714. BALANCED SLIDE-VALVE. ARCHIE THOMSON, Chattanooga, Tenn. Filed Dec. 7, 1885. (No model.)



Claim.—1. In combination with a slide-valve and a supplemental piston, a link provided at each end with a slot, and pins passed through said slots for connecting the link to the valve and piston, whereby the piston is allowed to remain idle when the valve is moving without steam-pressure, substantially as described.

2. In combination with a slide-valve and a supplemental piston, a piston-rod having a valved oil-passage leading into the valve-chamber, and a link for connecting said valve and piston-rod, substantially as described.

3. In combination with a slide-valve, a valve-chamber, a supplemental piston, and a piston-chamber communicating with the valve-chamber, a piston-rod having a valved oil-passage, a link having a slot at each end, and pins for connecting said link to the piston-rod and slide-valve, substantially as described.

4. In combination with the supplemental piston G and piston-rod 3, having the oil-passage leading through said rod, the valve 7, operated by the pressure of the steam to close the oil-passage when the steam-pressure is operating in the chest, substantially as herein specified.

337,715. CAMP-CHAIR. GUSTAV TIETZE, San Francisco, Cal. Filed Apr. 27, 1885. (Model.)

Claim.—1. In a camp-chair, the herein-described leg-frame, comprising the leg B, having studs G and I and hinged plate K, the leg C, having notch H and stud J, and the leg D, having notch H, the said

337,715.

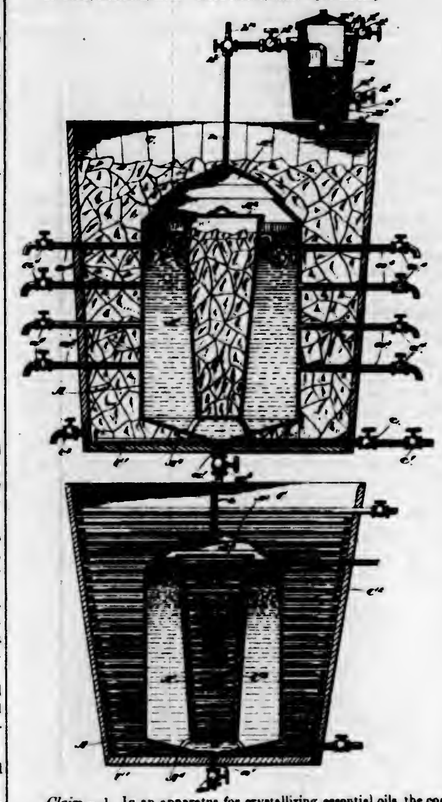


legs C and D being connected to the said leg B by means of pairs of plates swiveled together, substantially as and for the purpose herein set forth.

2. In a camp-chair, the combination, with the leg-frame, of a back-support hinged to the upper end of one of the legs, a cross-piece adapted to be secured to the upper end of said back-support, a cross-piece adapted to be secured to the upper ends of the two remaining legs, textile covering connecting the two cross-pieces and provided with slots or slits, perforated lugs or plates extending forwardly through said slits at or near the lower end of the back-support, and a round or bar extending through said lugs in front of or above the textile covering, substantially as and for the purpose set forth.

3. The combination of the leg-frame, the rear side of one of the legs of which is provided with a recess, and the back-support hinged to the upper end of the said leg and having a corresponding recess, the two forming a receptacle when the chair-frame is folded, substantially as and for the purpose set forth.

337,716. APPARATUS FOR TREATING ESSENTIAL OILS, &c. A. M. TODD, Nottawa, Mich. Filed Nov. 9, 1885. (No model.)



Claim.—1. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle, a tank situated inside of said receptacle, and a vat surrounding the same on the outside, said inner and

outer vessels being adapted to be supplied or fed with a suitable refrigerating substance, substantially as described.

2. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle having suitable drain-pipes, a tank removably situated inside of said receptacle, a vat surrounding the same, said inner and outer vessels being filled with a refrigerating substance, and means for heating the device, substantially as described.

3. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle having a removable cover, drain-pipes having valves connected to the receptacle, a tank having a cover, and side handles removably situated within the receptacle, an outer vat surrounding the oil-containing vessel, and means for feeding the said inner and outer vessels with a refrigerating substance, substantially as described.

4. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle having a conical bottom, a drain-pipe connected to the apex of said bottom, a removable conical cover having an air-pipe with suitable valves connected with the said cover, a trap containing water supported by the air-pipe, a tank removably situated within the oil-containing receptacle, and a vat surrounding the outside thereof, said inside and outside vessels being adapted to be fed with a refrigerating substance, substantially as described.

5. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle having suitable drain-pipes in its sides and bottom, an air-pipe supporting a trap connected to the removable cover of said oil-receptacle, an inside tank containing suitable means of refrigeration, a surrounding vat, also provided with refrigerating appliances, and a coil of pipe in the bottom of said vat adapted to be supplied with a suitable heating substance, substantially as described.

6. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle having suitable drain-pipes in its sides and bottom, an air-pipe connected to the top thereof having an elbow extending into and supporting a metallic vessel having a removable cover and containing water, suitable inlet and outlet pipes to said vessel, and an inclosing vat adapted to be supplied with a refrigerating substance, substantially as described.

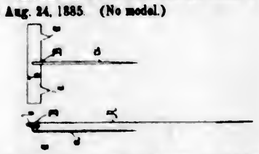
7. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle having suitable drain-pipes in its sides and in its conical bottom, a removable cover therefor having an air-pipe entering and supporting a trap connected thereto, with suitable valves and an escape-pipe, an internal tank resting on the conical bottom of said containing-receptacle having suitable handles and a removable top, a vat surrounding these vessels, said inner tank and outer vat being adapted to be fed with a refrigerating substance by suitable means, and a heating-coil lying in the bottom of the surrounding vat, being fed with a suitable heating material, substantially as described.

8. In an apparatus for crystallizing essential oils, the combination of an oil-containing tank having suitable drain-pipes, an internal tank removably situated inside of the containing-tank, a vat surrounding these vessels, said internal and external vessels being provided with a coil of pipe supported on their inner walls and supplied with a suitable mixture or gas, and a coil in the bottom of the surrounding vat supplied with a heating substance, when desired, substantially as described.

9. In an apparatus for crystallizing essential oils, the combination, with a surrounding vat containing suitable refrigerating substance, of a centrifugal drying device consisting of a wire-gauze vessel in the form of an inverted frustum of a cone, a vessel surrounding this wire-gauze vessel for catching the oil, and suitable gearing and shafts to which power is applied for turning the said wire-gauze vessel at a desirable rate of speed, substantially as described.

10. In an apparatus for crystallizing essential oils, the combination of a containing-vessel, A, having suitable drain-pipes, a^2 a^3 a^3, and internal tank, A, situated within said containing-vessel A, and outer vat, C, surrounding vessels A A', and adapted to be fed with refrigerating material, and a heating-coil, C', in the bottom of said vat C, substantially as described.

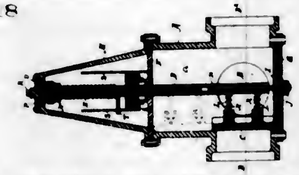
337,717. **BADGE.** EDWARD L. TORSCH and JAMES R. LEE, Baltimore, Md. Filed Aug. 24, 1885. (No model.)



Claim.—In combination with the badge A, the bar *b*, having the pin *a* and points *c*, which points project from the edge of the bar, and are passed through the said badge and folded to form a complete fastening, substantially as specified.

337,718. **FOUR-WAY VALVE AND BRANCH PIPE.** EZEKIEL VANGEZELL and HENRY STETSER, Camden, N. J. Filed July 17, 1885. (No model.)

337,718

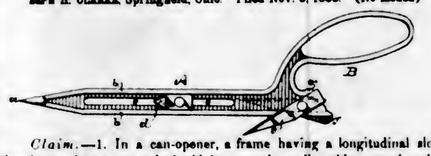


Claim.—1. In a four-way valve and branch pipe, the combination of the cylindrical chamber A, above the branch pipes, in which the valve is placed in order to shift its position from one branch pipe to another, valve C, and branch pipes B B' B² B³, all arranged and operating substantially as and for the purposes set forth.

2. In a four-way valve and branch pipe, the combination of the valve-chamber A, valve C, threaded valve-spindle D, with pins K, springs L, guide H, threaded sleeve N, with collar O, studs S, and arms T, all substantially as and for the purposes set forth.

3. As a device for holding and guiding the valve-spindle D and valve C while they are being raised or lowered, and in combination with D and C, the studs S and arm T, substantially as set forth.

337,719. **CAN-OPENER.** THOMAS R. WAY, FRANK K. WAY, and JOSEPH H. CLARKE, Springfield, Ohio. Filed Nov. 3, 1885. (No model.)



Claim.—1. In a can-opener, a frame having a longitudinal slot therein, a point at one end of said frame, and an adjustable cutter in said slot, said frame being provided with a curved handle at right angles to the plane of the cutter, said handle being extended at an angle to the frame in the plane in which it travels and turned back substantially parallel with said frame, as set forth.

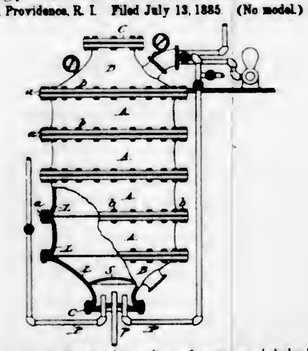
2. The combination, with a frame having a point at one end and provided with the longitudinal slot with an adjustable cutter therein, of the handle B, and the rear knife, *e*, substantially as specified.

3. The combination, with the frame having a point at one end and a curved handle at the other, and an adjustable cutter on said frame, of a cutter, *e*, and a guide, *f*, located at or near the junction of the said handle and frame, substantially as specified.

4. The combination, with the frame and the curved handle joined thereto, of the pivoted cutter *e*, stop e^2, and guide *f*, located at or near the junction of said handle and frame, substantially as set forth.

5. The combination, with the frame provided with the longitudinal ribs and slot, an adjustable cutter located between said ribs, the pivoted cutter *e*, guide *f*, and angular handle B, substantially as set forth.

337,720. **DIGESTER OR CONVERTER, &c.** CHARLES S. WHEELWRIGHT, Providence, R. I. Filed July 13, 1885. (No model.)

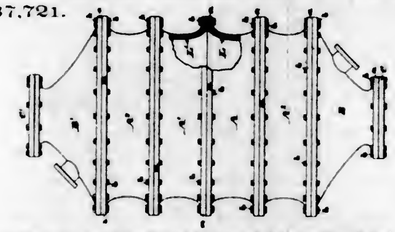


Claim.—1. A digester in sections of cast metal bolted together, the said sections swelling inward in concavo-convex curves at right angles to the seams between them, and having outwardly-projecting flanges, by which they are bolted together, substantially as described.

2. A digester having its outer shell in sections bolted together and provided with a lining, also in section, the inner faces of the said shell-section being in convex curves at right angles to the seams between them, and the lining being clamped at said seams, substantially as described.

337,721. **DIGESTER OR CONVERTER.** CHARLES S. WHEELWRIGHT, Providence, R. I. Filed Nov. 23, 1885. (No model.)

337,721.

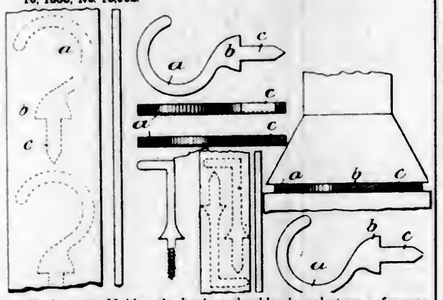


Claim.—1. A digester having its outer shell in sections, bolted together and provided with a lining, also in sections, the adjacent edges of the said lining-sections passing between the adjacent faces of said shell-sections, and being sealed or melted together, substantially as described.

2. The ring R, in combination with shell-sections A and A', provided each with a groove, *g*, and lining-sections L L', substantially as described, for the purpose specified.

3. A digester formed in sections and provided at the joints between said sections with recesses *v*, to receive portions of the lining-sheets, substantially as described, and for the purpose specified.

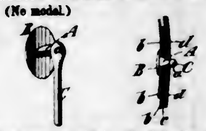
337,722. **MANUFACTURE OF SCREW-HOOKS.** GEORGE J. WILLIAMS, Birmingham, and FRANCIS R. SILK, Sparkbrook, County of Warwick, England. Filed Jan. 6, 1886. (No model.) Patented in England Sept. 16, 1885, No. 10,962.



Claim.—1. Making the hook *a*, shoulder *b*, and stem *c* of screw-hooks and other hooks and eyes of like manufacture in one piece and from sheet metal—that is, making or cutting out the hook or the blank of the hook in its entirety from sheet metal—substantially as described and set forth.

2. Shaping or fashioning the rectangular or square stems or shanks *c* of hook or eye blanks cut from sheet metal by concave half-round dies, which round and fashion the stem subsequently to it being wormed, substantially as described, and set forth in Figs. 7, 8, 9, and 10 of the drawings.

337,723. **BUTTON.** AUGUSTINE J. WILSON, New York, N. Y. Filed Nov. 30, 1885. (No model.)



Claim.—1. The button herein described, having a flattened post, A, which is of greatest width at the head and tapered in width in a direction away from the head, and also having an arm, C, extending from the narrow end of the post in a direction transverse to the plane of the post, substantially as herein set forth.

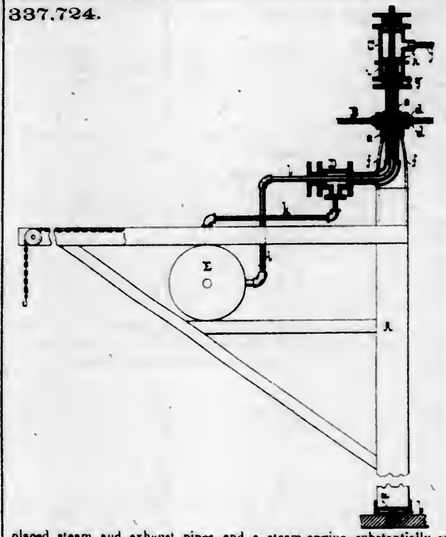
2. A button having at one end of the post a head or shoe, and at the other end an arm or horn extending transversely to the post and joined by a globular enlargement, *a*, to the post, substantially as herein described.

337,724. **STEAM-CRANE.** HENRY C. WEINBRENNER, Baltimore, Md., assignor to the Scott Manufacturing Company of Baltimore City. Filed Sept. 25, 1885. (No model.)

Claim.—1. In combination with a crane, a steam-engine with a portion of its steam and exhaust pipes placed in a line corresponding with the axial line of the crane-post, whereby the flow of steam to and from the engine is not interfered with in the swinging of the crane, substantially as specified.

2. In combination with the swinging post of a crane, a steam-chamber situated above the post and on the axial line thereof, centrally-

337,724.



placed steam and exhaust pipes, and a steam-engine, substantially as specified.

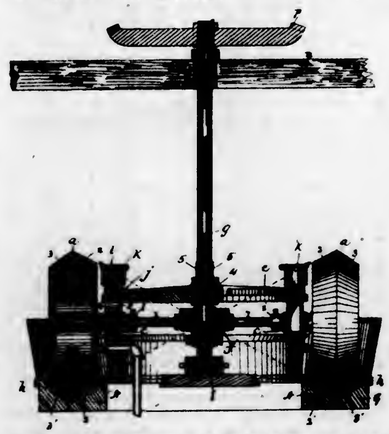
3. In combination with the swinging crane-post A, the chambers C and D, connecting-pipe *c*, steam-pipes *j* and *k*, and exhaust-pipe *l*, substantially as specified.

337,725. **PRINTING-SURFACE.** AUGUSTUS TEN WINKEL, Detroit, Mich. Filed Aug. 25, 1881. Renewed Jan. 14, 1886. (No model.)



Claim.—As an improved article of manufacture, a ground wire-cloth printing-surface, substantially as described.

337,726. **ORE-CRUSHER.** JACOB C. WERWELL, Medford, Mass., assignor to the Werwell Electric Mining Machinery Company, Portland, Me. Filed Oct. 12, 1885. (No model.)



Claim.—1. The combination of the bed or trough, the driving-shaft, the rotary frame having slots or guides *s* and adapted to rotate with and move vertically on the shaft *g*, the collar *f*, also adapted to move

vertically on said shaft, the rolls *a*, their arbors *b*, and the sliding boxes *c*, as set forth.

2. The frame *e*, adapted to move vertically on and rotate with the driving-shaft and provided with the slots or guides *s*, and the oil-cups over said slots, combined with the boxes *c*, adapted to slide in said guides and to receive oil from said cups, and the roll-arbors journaled in said boxes, as set forth.

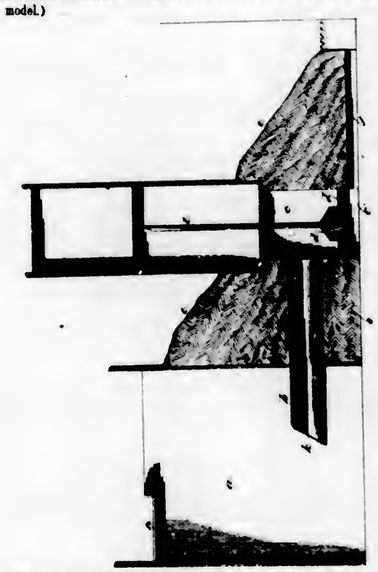
3. The combination, with the rolls, of the wearing-plates provided with ears projecting outside of the line of the working-faces of the rolls, and having bolts in the under sides of said ears cast into the plate, and the supporting portion having holes to receive said bolts, as set forth.

4. The combination, with the rolls, of the wearing-plates provided with ears projecting outside of the line of the working-faces of the rolls, and having bolts in the under sides of said ears cast into the plates, and the supporting portion recessed to receive said plates and their attached ears, with their upper surfaces flush with the upper surface of said supporting portion, the latter being provided with holes to receive said bolts, as set forth.

5. The combination, with the rolls, of the sectional trough-shaped bed and the correspondingly-shaped wearing-plates detachably secured to the bed, the wearing-plates breaking joints with the sections of the bed, as set forth.

6. The combination, with the rotary frame *e* and bed N, of the standards A, secured to said frame, the reversible arms B, pivoted to said standards, and devices for moving over the inner face of the bed to force the material accumulating on said surface toward the center of the bed, detachably secured to said arms and bearing on the bed, as set forth.

337,727. **MEANS FOR UTILIZING WATER-POWER.** BARCLAY M. ARMITAGE, Minnedosa, Manitoba, Canada. Filed July 20, 1885. (No model.)



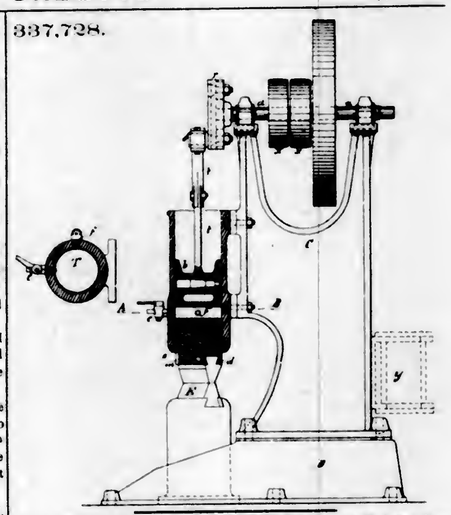
Claim.—1. The combination, with a reservoir or dam, of a pipe connected therewith near its bottom and provided with a grating set at an incline with the opening in said pipe, said pipe leading to a flume or penstock containing water-wheels and a discharge-pipe connected with the bottom of another body of water at a lower level than the level of the reservoir or dam, substantially as and for the purpose set forth.

2. The combination, with the dam and the penstock c, of the pipe connecting the penstock and dam, said pipe being provided with a grating set at an incline with the opening in the pipe, the water-wheel located in the opening of the penstock, the chamber below the water-wheel, and the discharge-pipe, substantially as set forth.

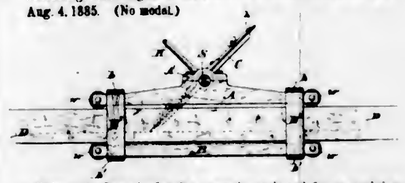
337,728. **PNEUMATIC HAMMER.** CARL ARNOLD ARNS, Remscheid, Prussia, Germany. Filed Oct. 23, 1884. (No model.) Patented in Germany Sept. 6, 1884, No. 31,975; in England Sept. 15, 1884, No. 12,433; in Belgium Oct. 15, 1884, No. 66,422; in Austria-Hungary Nov. 22, 1884, No. 35,511 and No. 53,931, and in France Feb. 12, 1885, No. 164,663.

Claim.—In combination, the shaft *a*, face-plate *r*, adjustable crank-pin *s*, pitman *t*, piston *b*, cylinder T, hammer D, the cylinder having space between piston and hammer, and the valve *e* and check-valve *f*, opening from said space, as set forth.

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337,729. **APPARATUS FOR GRAINING.** JAMES H. AUBLE, Lawrenceburg, Ind., assignor of one-half to John Cloke, Cincinnati, Ohio. Filed Aug. 4, 1885. (No model.)



Claim.—1. In a device for preparing a board for a graining type, a distributing-scraper mounted on a movable carriage, substantially as and for the purposes specified.

2. In a device for preparing a board for a graining type, a distributing-scraper mounted on a carriage, which latter moves on the sides of the preparing-box as ways, substantially as and for the purposes specified.

3. The combination of the stringers D, board D', and carriage A A, provided with rollers *w* and carrying a scraper, substantially as and for the purposes specified.

4. The combination of the stringers D, board D', and carriage A A, provided with rollers *w* and carrying an oscillating scraper, substantially as and for the purposes specified.

5. In a device for preparing a board for a graining type, an oscillating scraper, substantially as and for the purposes specified.

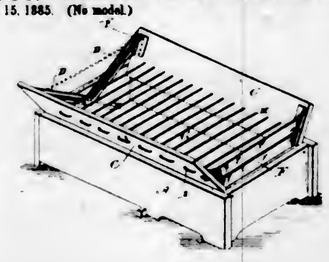
6. In a device for preparing a board for a graining type, a scraper, provided with leather edge, substantially as and for the purposes specified.

7. The scraper M, consisting of the plate C, mounted on the axle S and provided with clamps *h h*, leathers L, and handle H, substantially as and for the purposes specified.

8. The combination of the stringers D, board D', carriage A A B B B' B' *b b'* *w w*, and scraper M, substantially as and for the purposes specified.

9. The scraper M, consisting of the plate C, mounted on the axle S and provided with clamps *h h*, leathers L, handle H, supporting-carriage, and board D', substantially as and for the purposes specified.

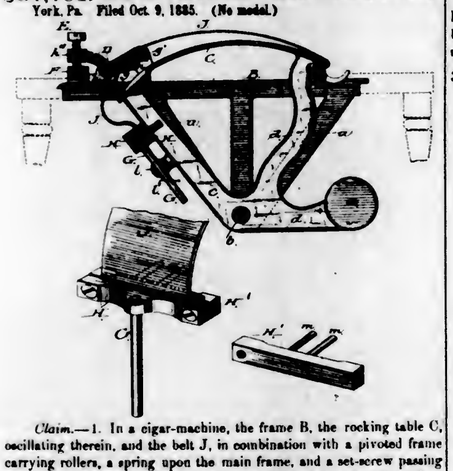
337,730. **FOLDING BED.** NEWELL G. AUSHER, Stuart, Nebr. Filed Dec. 15, 1885. (No model.)



Claim.—1. The combination of a box provided with feet, substantially as described, upon one side, and the opposite side is provided with a pair of outwardly-folding doors, a pair of slotted arms pivotally secured to the ends of each door, the inner ends of said slots being provided with a notch, a pin in each end of the box and projecting through said slots, and a suitable flexible material secured at its edges to the inner sides of said doors, as shown and described.

2. The combination of a box provided with feet, substantially as described, upon one side, and the opposite side of said box is provided with two outwardly-folding doors, and a pair of suitable braces connecting the ends of the doors and the ends of the box, a flexible strip secured at its ends to the opposite upper and lower ends of said doors, and a suitable flexible material secured at its edges to the inner sides of said doors, as shown and described.

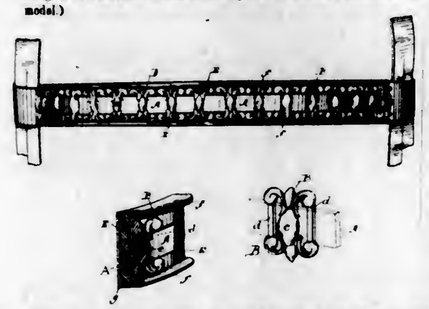
337,731. **MACHINE FOR BUNCHING CIGARS.** CHARLES A. BAYLER, York, Pa. Filed Oct. 9, 1885. (No model.)



Claim.—1. In a cigar-machine, the frame B, the rocking table C, oscillating therein, and the belt J, in combination with a pivoted frame carrying rollers, a spring upon the main frame, and a set-screw passing through an arm on the roll-carrying frame and bearing against the spring, substantially as herein described.

2. In a cigar-machine, the main frame, the rocking table, and the belt, in combination with the clamping-plates H H', the rod projecting therefrom, the eye and set-screw on the table, and the guide-pins on the rear of one of said plates, substantially as herein described.

337,732. **HARNESS ORNAMENT.** HENRY BERBER, Boston, Mass., assignor to Charles F. Waldron, same place. Filed July 24, 1885. (No model.)



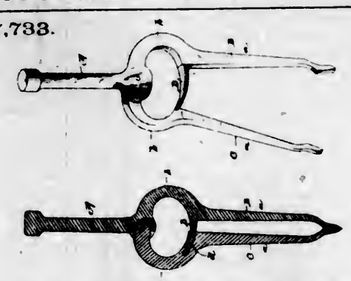
Claim.—1. In a brow-band, the combination of the band A, and the series of independent slides B, placed edge to edge thereon, but not secured to each other, the endmost slides of the series being fixed in position with relation to the ends of the band, substantially as set forth.

2. The band A and the series of independent slides B *c d*, placed side by side thereon, and secured at each end thereof, in combination with the doubly-beaded strap E *f*, having a smooth sunken portion between its beaded edges, substantially as set forth.

337,733. **FIRE-TONGS.** JOHN E. BISHOP, San Marcos, Tex. Filed Mar. 11, 1885. (No model.)

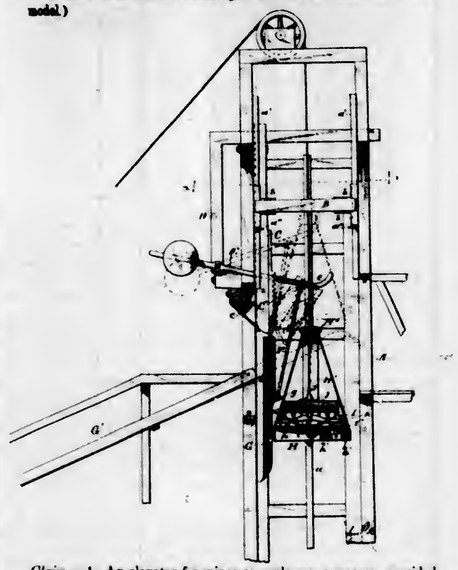
Claim.—As an improvement in fire-tongs of that class in which the two legs are provided with a semicircular part, *b*, the combination, with the movable leg C, having a curved slot or opening, *d*, in its part *b*, of the leg B, having a curved arm, D, projecting outwardly from the

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lower end of its part *b* and fitting in the slot *d*, the length of the arm being such that when the legs are opened to their full extent the arm is still retained in its slot, as and for the purpose set forth.

337,734. **SHAFT AND ELEVATOR FOR MINES.** JOHN R. BRAINWOOD and SAMUEL OSWALT, Pittsburg, Kans. Filed Dec. 31, 1885. (No model.)



Claim.—1. An elevator for mines or analogous purposes, provided with rack-bars and a movable transverse bar which engage with fixtures attached to the elevator-frame, by means of which the platform of the elevator will be released and tilted, substantially as shown, and for the purpose set forth.

2. In combination with a shaft, A, provided with guide-strips for an elevator and guide-strips for a sliding bar, and rack-bars secured thereto, an elevator having a movable platform which is pivotally attached to the elevator-frame, sliding bars for retaining the pivoted frame in a horizontal position, and means for disengaging said sliding bars by contacting with the movable cross-piece, substantially as shown, and for the purpose set forth.

3. In an elevator for mines, a shaft having secured thereto near its upper end a pivoted portion of a chute, said chute being connected to arms which project within the shaft, an elevator adapted to contact with the inwardly-projecting arms, so as to raise the chute, substantially as shown, and for the purpose set forth.

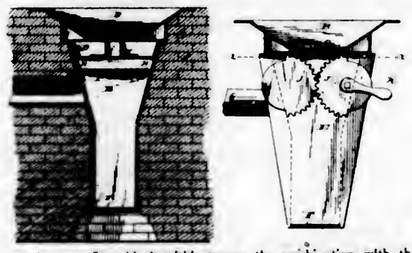
4. In an elevator for mines, constructed substantially as shown, a chute pivoted to the same and connected by rods to pivoted bars which extend within the shaft, said shaft being provided above the chute with rack-bars and a sliding transverse bar, in combination with the vertical moving elevator carrying a pivoted platform having segmental side pieces which engage with rack-bars, and sliding bars for holding the platform in a horizontal position, said sliding bars being operated by contacting with a movable transverse bar secured within the shaft, substantially as shown, and for the purpose set forth.

5. In combination with a shaft having a movable cross-bar, rigid vertical rack-bars located beneath the same, and a pivoted chute which is connected by bars to pivoted arms which project within the shaft, an elevator provided with a pivoted car-carrying frame with segmental

teeth, side pieces which engage with the rack-bars, sliding locking-bars J with pivoted levers, and members which project above the upper frame of the elevator, so that when they contact with a sliding bar within the shaft the locking-bars will be released, and simultaneously therewith the segments will engage with the rack-bars, so as to dump the platform, and the chute will be raised and inclined under the elevator, substantially as shown, and for the purpose set forth.

6. In a device for elevating and screening coal and other minerals, a vertical shaft having attached thereto an inclined chute with screens, as described, and a pivoted chute-section adapted to remain normally in a vertical position, in combination with an elevator having a pivoted platform attached thereto, and means, as described, whereby when the elevator is raised the platform will be released and tilted, and the pivoted section of the chute will be brought into position under the elevator to receive the material carried by the platform, substantially as shown, and for the purpose set forth.

337,735. **BLACKSMITH'S HEARTH.** HENRY BRANCHLER, Greensburg, Pa., assignor of one-half to James Wimer, same place. Filed Oct. 12, 1885. (No model.)

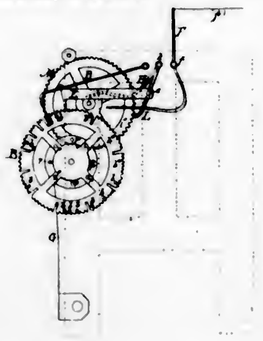


Claim.—1. In a blacksmith's tuyere, the combination, with the bowl having the aperture in its middle, of two downwardly-opening gates having cogged segments upon their pivotal shafts meshing with each other, said gates being so arranged that their edges always approach each other directly underneath the middle of the aperture in the bowl, as and for the purpose shown and set forth.

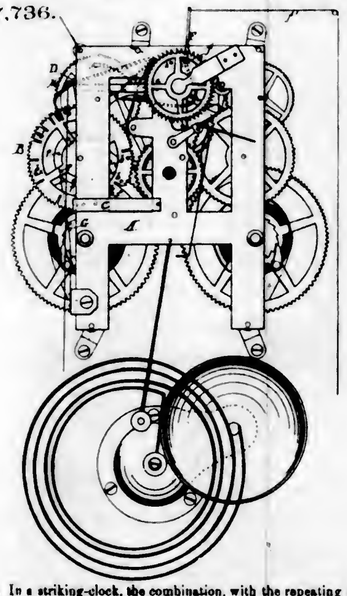
2. In a blacksmith's tuyere, the combination of a bowl having an aperture at its middle surrounded upon its under side with a neck or flange, a downwardly-extending chamber having its upper end fitting upon the neck, and having the blast-pipe entering its side near the upper end, and having an aperture at its lower end, two rock-shafts journaled in the upper end of the chamber, bearing against the sides of the chamber, and having wings upon their inner portions for closing the chamber, and having cogged segments upon their shafts meshing with each other, and means for rocking them, and a slide covering the aperture in the bottom of the chamber, as and for the purpose shown and set forth.

337,736. **STRIKING-CLOCK.** HENRY L. BRODEMANN and CHARLES O. OETH, Cleveland, Ohio. Filed Aug. 27, 1885. (No model.)

Claim.—1. In striking-clocks, the combination, with the count-wheel provided with the two sets of pins *b* and *p*, of the spring G and stop-spring C, the levers D and E lifted by lever F, which releases the hook of lever D from the count-wheel, also lifting the lever H, having the lever L, which engages with pin *l* on wheel M, for arresting the starting of the striking-train while the spring throws the said count-wheel backward, said lever F also carries a lever, I, forward to engage with a hook, J, on minute-shaft Y at a given point in its revolution, the operations of said mechanism enabling the striking mechanism to repeat the hour last, substantially as described.

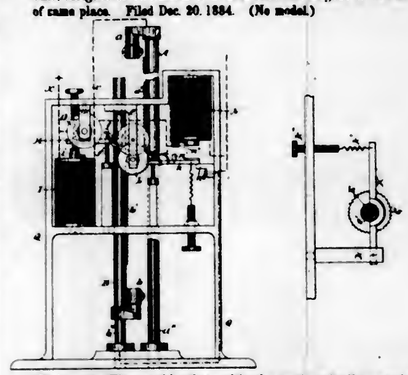


337,736.



2. In a striking-clock, the combination, with the repeating mechanism thereof, of the lever T, fixed to the sleeve S', and having the upward extension engaging with and operated by the striking-train, said sleeve S' being loosely placed on the hammer-shaft S, and made to slide thereon by the spring S^2 in one direction, the other end of said sleeve having an extension bearing against the lever V, pivoted at its middle to the frame A, its upper end being actuated by the half-disk W on minute-hand shaft Y, by means of which the hammer-lever is shifted forward and back every half hour to cause a part of the repeated striking to be performed on the two bells, as described.

337,737. **ELECTRIC-ARC LIGHT.** WILLIAM F. BUCKLEY, Cleveland, Ohio, assignor of two-thirds to L. E. Holden and Eugene H. Cowles, both of same place. Filed Dec. 20, 1884. (No model.)



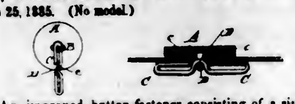
Claim.—1. The combination, with the carbon-feeding mechanism of an electric-arc light actuated by means of a revolving feed-shaft, E, of the friction-drum *a'*, secured upon shaft E, the brake-lever K, pivoted to the hanger *k*, the spring *k'*, and adjusting-nut k^2, substantially as described and shown, and for the purpose set forth.

2. In an electric-arc light, the combination of a friction-drum and brake-lever operating in connection with the feeding mechanism for separating the carbons, a ratchet-wheel adapted to give a reverse motion to the said feeding mechanism, which ratchet is operated by a pawl carried by the lever of a shunt-magnet, and a circuit-breaker for the shunt-circuit, which latter is operated by the armature-lever of said magnet, substantially as and for the purpose herein set forth.

3. In an electric-arc light, the combination, with the feeding mechanism which separates the carbons, of a locking device controlled by a magnet in the shunt-circuit which locks the carbon-separating mechanism as soon as the carbons have been once separated and holds it locked as long as the light is in circuit, substantially as and for the purpose set forth.

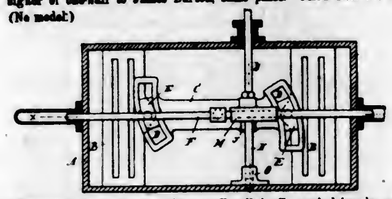
4. In an electric-arc light, the combination, with the operating-lever of the feeding mechanism which separates the carbons, of a magnet placed in the shunt-circuit, and an armature adapted to lock the operating feed-lever when the latter has once been brought into action, substantially as and for the purpose set forth.

337,738. **BUTTON-FASTENER.** HENRY BURCH, Garrettsville, Ohio. Filed June 25, 1885. (No model.)



Claim.—An improved button-fastener consisting of a single piece or bar of metal bent to form a central eye or loop to receive the eye of a button, its arms being turned back upon themselves, so that the free ends terminate on each side of, near to, and in a line with, the crown of the loop, all substantially as set forth.

337,739. **CUT-OFF VALVE.** HENRY BURTON, Port Huron, Mich., assignor of one-half to James Burton, same place. Filed Dec. 17, 1885. (No model.)



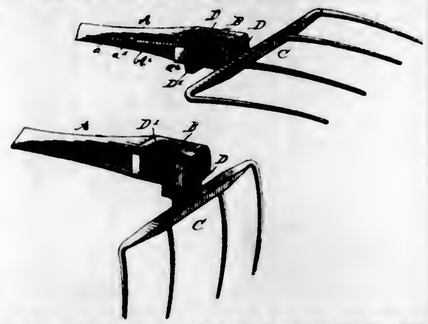
Claim.—1. In an automatic cut-off, a link, C, carried by the valve-stem and having eccentric slots engaging with the valves B, and a pivotal connection with the governor-rod for oscillating such link under the action of the governor, substantially as set forth.

2. In an automatic cut-off, an oscillating link having eccentric slots engaging with the two sections of a reciprocating valve, said link being carried on a pivot by the valve-stem, and suitable connections with the governor for actuating such link under the action of the governor, substantially as described.

3. In an automatic cut-off, the combination of the valves B, operated by a single valve-stem, an oscillating link connecting the two valves and having a pivotal connection with the valve-stem and a pivotal connection with the governor-stem, substantially as set forth.

4. In an automatic cut-off, the combination of the valves B, link C, provided with eccentric slots D, engaging with said valves, pin H, block G, loop J, valve-stem F, pin K, block L, cross-head M, and governor-rod N, when constructed, arranged, and operating substantially in the manner and for the purposes set forth and shown.

337,740. **COMBINED PITCHFORK AND RAKE.** JOSEPH J. BUTLER, near Select, Ky. Filed Aug. 6, 1885. (No model.)

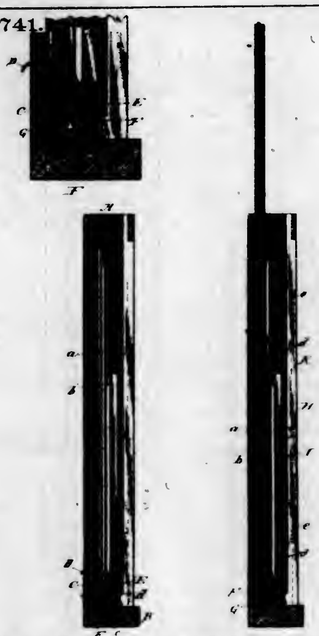


Claim.—The combination of the handle A, provided with the slotted head B and spring-latch A', and the fork C, pivoted to and within the slotted head B, and having a rectangular extension, D', perforated, as shown, and adapted to engage with and bear against the inner end of the slot in the head B, and brace the fork at an angle when adjusted for use as a rake, as specified.

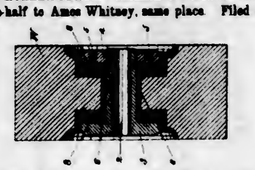
337,741. **WINDOW-SCREEN.** J. W. CARMAN, Madison, Wis. Filed Nov. 19, 1884. (No model.)

Claim.—1. The screen and the spring-actuated roller thereof, in combination with the strip *b* and a spring-actuated bar or jaw for automatically clamping the screen to the strip, substantially as described.

2. The sash, the case secured thereto, the spring-actuated roller mounted in said case, and the fabric, in combination with the spring-actuated jaw, the stop K, and a projection on the sash for engaging said stop, substantially as described.



337,742. **ROLLER-SKATE.** RICHARD J. COSTAIN, Hartford, Conn., assignor of one-half to Ames Whitney, same place. Filed Aug. 10, 1885. (No model.)



Claim.—1. The combination, in a roller-skate, and with the axles thereof, of rollers, each provided in their bores with a flanged bush smaller than their bore, and a pair of elastic cushioning-disks between the roller and the bush, substantially as set forth.

2. The combination, in a roller-skate, and with the axles thereof, of rollers, each provided in their bores with a bush having one fixed and one adjustable flange, and a pair of elastic cushioning-disks between the rollers and the said bush, said disk being held in compression by the said flanges, substantially as shown and described.

337,743. **CLAMPING-TOOL.** JOHN R. CUMMINGS, Chicago, Ill., assignor to the American Press Association, same place. Filed Mar. 18, 1885. (Model.)



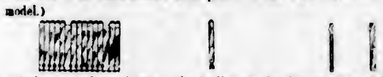
Claim.—1. A tool for bending the edges of a metal plate, consisting in the combination, with the slotted base-plate and central post, of the handle or plunger sliding on said post, a spring, and the bending-

plates and connecting-arms hinged to the plunger, substantially as and for the purpose described.

2. In a tool for bending the edges of a metal plate, the plunger, in combination with bending-plates, their supporting-plates, and connecting-arms hinged thereto, substantially as and for the purpose set forth.

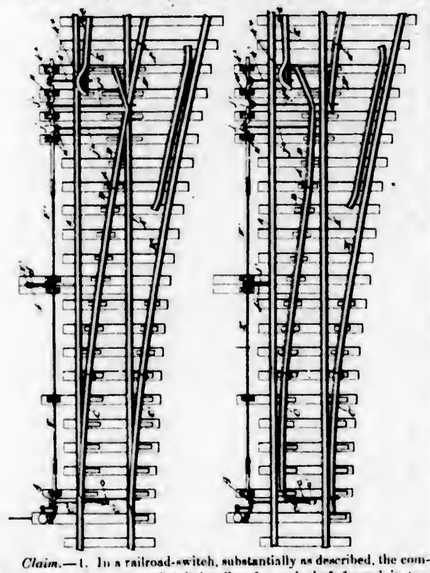
3. The combination of the base-plate provided with the slotted, rounded, and inclined flanges G and central partition, the bending-plates slotted to fit over said partitions, the hinged connecting-arms, the sliding automatic plunger, to which said plates and arms are secured, the coiled spring, and the central post, substantially as described.

337,744. TYPE. JOHN R. CUMMINGS, Chicago, Ill., assignor to the American Press Association, same place. Filed June 12, 1885. (No model.)



Claim.—A font of types the bodies of the letters of which are formed with a recess in two opposite sides, and the quads and spaces of which are provided with a rib on one side and a recess in the opposite side, the surfaces of those sides of the bodies of the types and of the quads and spaces being otherwise plane, substantially as described, and for the purpose stated.

337,745. SWITCH. SETH CURLIN, Louisville, Ky., assignor to the Curlin Switch and Crossing Company. Filed Dec. 17, 1885. (No model.)



Claim.—1. In a railroad-switch, substantially as described, the combination, with frog-rails and switch-rails, of a rock-shaft formed in two parts and connected with said movable parts, and means for operating such shaft and parts simultaneously or independently, as and for the purposes set forth.

2. The combination, with the frog-rails and connections, and with the switch-rails and connections, of the rock-shaft formed in two parts arranged upon contiguous ends in such proximity to each other as to operate together or separately, as described, as set forth.

3. The combination, with the movable parts described, and with the two-part rock-shaft F F' and connections, of the levers f' and f, and coupling means, as F^2, all arranged and operating as and for the purposes set forth.

4. In a railroad-switch, as described, the combination, with a main rail, A, of a pivoted trip-rail, E, having its web split horizontally and the tread bent laterally to provide inclines in two opposite directions, the said bent portion lying above the plain of the main rail and presenting an oval contact surface in opposite directions, as set forth.

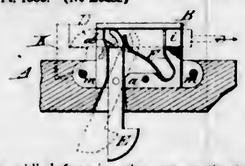
5. In a switch, the combination, with the movable parts and with operating-cranks, of a strap engaging the crank, and a rod connecting said strap with the part to be removed, and secured adjustably to the strap by jam-nuts embracing opposite sides, as set forth.

6. The combination, with the cranks and movable rails of a switch, of the straps H, bent to embrace the crank, and receiving blocks h, with lugs h', the threaded rods passing through both straps and blocks and secured by adjustable jam-nuts h^2, as set forth.

7. In a railroad-switch, a movable carrier or frog rail, as D, having a portion of its web and base flanges swaged by a die to correspond with the surface of the main rail against which it bears, and having its web deflected to rest against and upon the head of the main rail, and its head to rest fairly on said main rail, as set forth.

8. The combination, with the rail A', of the frog-rails D and D', swaged, as shown, to form recesses D^2 and D^3, respectively, which match closely against the main rail, and having portions of their webs and head to rest above and upon the tread of the main rail, as set forth.

337,746. SHUTTER-FASTENER. MARTIN A. CUTTER, Galveston, Tex. Filed Nov. 14, 1885. (No model.)



Claim.—In a blind-fastening, the case, constructed as shown and provided with projection i, in combination with the bolt D, having recess h, the spring, the swinging catch, and the keeper secured in the window-sill, all arranged as and for the purpose set forth.

337,747. LEVER-BUTTON. ROBERT S. CUTTING, Providence, R. I. Filed Aug. 25, 1885. (No model.)



Claim.—1. The integral rivet whose disk forms the head of the button and whose post is flattened on two opposite sides and rounded on the other two opposite sides to form the shank of said button, substantially as and for the purpose set forth.

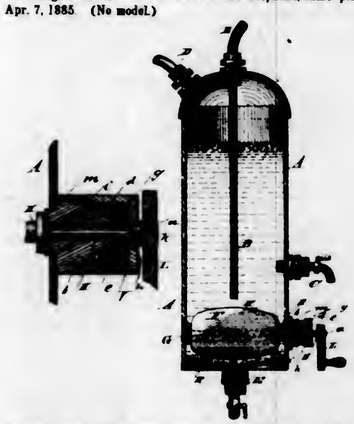
2. In the lever-button, the integral rivet which forms the disked head a, bearing the flat shank c, which is flattened on two sides and rounded on the other two opposite sides, and which is provided at its free end with the hinge-post d, substantially as and for the purpose described.

3. In combination, the integral rivet which forms the disked head a, the flat shank c, which is flattened on two sides and rounded on the other two opposite sides, and having the hinging-post d of the covering g sprung over the head a, for the purpose described.

4. The combination with the hinged shoe, substantially as set forth, of the integral rivet which forms the head a, shank c, which is flattened on two sides and rounded on the other two opposite sides and provided with the hinging-post d, substantially as described.

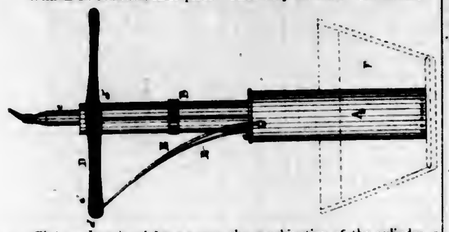
5. The integral rivet whose disk forms the dished head a of the button and whose post is flattened on two opposite sides and rounded on the other two opposite sides to form the shank c of said button, substantially as set forth.

337,748. KITCHEN-BOILER CLEANER. WILLIAM B. DAVIS, Norfolk, Va., assignor of one-half to Jadson Wade Stephens, same place. Filed Apr. 7, 1885. (No model.)



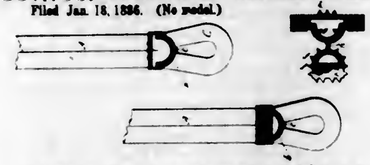
Claim.—The combination, with the upright kitchen-boiler, its transverse stirrer having a margin following the curvature of the bottom of the boiler, and the valved discharge-pipe, of the extended journal provided with a key-seat, the bearing-plug and gland, and the exterior drip-preventing cup, substantially as specified.

337,749. FORCE-PUMP. JOSIAH J. DEAL, Wilmot, Ohio, assignor to William M. Johnston, same place. Filed July 27, 1885. (No model.)



Claim.—In a hand force-pump, the combination of the cylinder, a flexible fulcrum consisting of a metal rod bent into a loop in the middle and its ends attached to opposite sides of the cylinder, the handle secured in the loop of the fulcrum, and operating piston and rod, substantially as and for the purpose described.

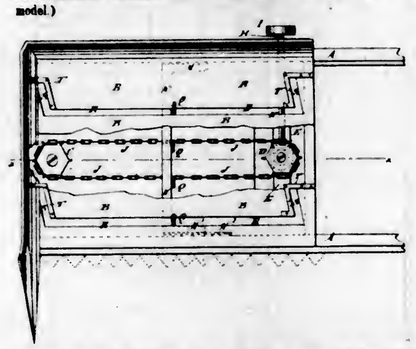
337,750. SUSPENDER-END. ERNEST DEMING, Middletown, Conn. Filed Jan. 18, 1886. (No model.)



Claim.—1. A suspender-end consisting of the strap A, made from braid or material doubled upon itself at the lower end, bringing the two parts into the same plane, and the button-hole portion C, also formed from a piece of flat braid or material doubled upon itself to form the button-hole, the two ends lapped upon the doubled end of the strap, combined with a clasp embracing the lapped portions of the two parts, substantially as described.

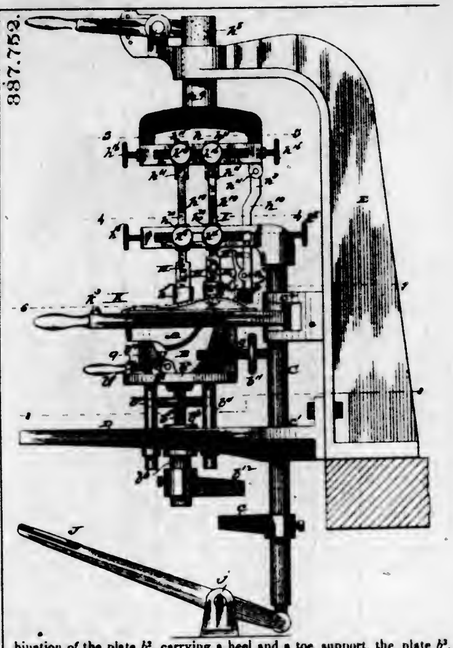
2. The clasp herein described, for uniting the strap and button-hole portions of a suspender end, consisting of two connected segments, a b, the one, a, constructed with flaps d d, the other segment constructed with an extension, e, the two parts provided with spurs adapted to enter the lapped portions of the suspender-end, in the manner substantially as described.

337,751. SELF-RAKING ATTACHMENT FOR REAPERS AND HARVESTERS. MARTIN DEW, Cass City, Mich. Filed Mar. 9, 1885. (No model.)



Claim.—In a self-raking attachment for reapers and harvesters, the combination, with the platform-frame A, the platform B, having slots R S, and the endless chain J, passing around the chain-wheels C D and driven from the driving mechanism of the said reaper or harvester, of the pin K, the sliding socket L, the sliding cross-bar M, having slot P', the sliding cross-bar N, having arms N', and the rake-teeth Q, pivoted to the bars M N, substantially as herein shown and described, whereby the said teeth will be projected and withdrawn at the proper times, as set forth.

337,752. LASTING-MACHINE. FREDERIK DOMBROWSKI and JACOB WOLTMANN, St. Louis, Mo. Filed Oct. 22, 1885. (No model.)



337,752.

Claim.—1. In a shoe-lasting machine substantially as described, the combination of the plate b^3, carrying a heel and a toe support, the plate b^2, the screw b^4, and the base-plate D, substantially as described.

2. In a shoe-lasting machine substantially as described, the combination of the plate b^3, carrying an adjustable heel and a toe support, the plate b^2, the screw b^4, the block b^5, the base D, and the plate b^2, movable thereon, substantially as described.

3. In a shoe-lasting machine substantially as described, the combination of the plate b^3, carrying a laterally-adjustable heel and toe support, the plate b^2, the base-plate D, the screw b^4, and the guide-pins b^6, substantially as and for the purposes set forth.

4. In a shoe-lasting machine substantially as described, the combination of the plate b^3, carrying an adjustable heel and a toe support, the screw b^4, the block b^5, the base D, and the plate b^2, movable thereon, substantially as described.

5. In a shoe-lasting machine, the combination of the plate b^3, the toe-support b', the pivoted heel-support b, and the pivoted wedge b^9, and means, substantially as described, for supporting the same, all as set forth.

6. The combination, in a shoe-lasting machine, of the arm E, the grippers H, upheld by said arm and pivoted by means, substantially as described, to be swung over the last, the guide I, the standard C, and treadle J, substantially as described.

7. The combination of the treadle J, the standard C, the tappets c b^{12}, the jack B, and the pivoted grippers H, provided with supporting mechanism, substantially as described.

8. In a shoe-lasting machine substantially as described, the combination of the jack B, constructed and operating as set forth, the clamp K, and the grippers H, as and for the purposes described.

9. The combination, in a shoe-lasting machine, of the jack B, the clamp K, and the grippers H, with the guide I, provided with supporting mechanism to hold it in operative relation with the other parts, substantially as set forth.

10. In a shoe-lasting machine substantially as described, the clamp K, consisting of arms k k, hinged around the standard C, and provided with the plates k' k', having the edges k^2 k^2, in combination with the standard E, all as and for the purposes described.

11. In a shoe-lasting machine, the combination of the jack B, as described, the clamp K, the nail-holder L, and the punch M, substantially as and for the purposes set forth.

337,753. DIAPHRAGM FOR TELEPHONE-RECEIVERS. NORTH DOWLING, Philadelphia, Pa. Filed Feb. 14, 1885. (No model.)

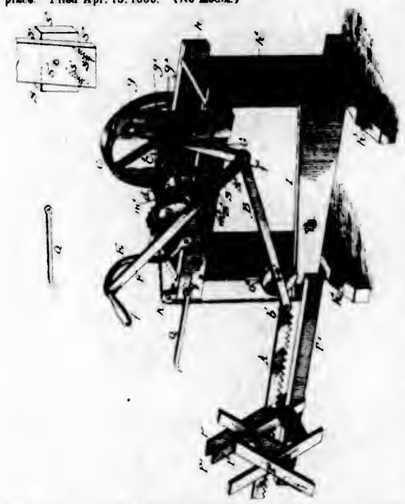


Claim.—1. A diaphragm for telephone-receivers, composed of a body of iron embedded in a body of resonant material, substantially as specified.

2. A diaphragm for telephone-receivers, consisting of a body of

comminuted iron embedded in a body of hard rubber, substantially as specified.

337,754. DRAG-SAW. MADISON M. DRIBELL, Springfield, Mo., assignor of one-half to Seward A. Hazeltine and Sumner C. Hazeltine, same place. Filed Apr. 13, 1885. (No model.)



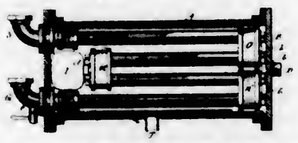
Claim.—1. A sawing device composed of a drag-saw supported by an arm, B, said arm being pivoted to a supporting-piece, G, and a driving-arm, F, and provided with a wheel, O, which runs upon a track-piece, I, which is pivoted to a frame, as is also the supporting-piece G, said frame supporting a shaft provided with a balance-wheel, cog-wheel, pinion, and a winch for driving the saw, on which the arm F has bearings, and a chain, J, attached to the track-piece and to a lever provided with a quadrant, all substantially as set forth.

2. The combination, with the main frame H, to which is pivoted a lever, L, connected by a chain, J, to one end of the track I, which is pivoted at the other end to the main frame, of a plate, S^2, attached near the lower end of said lever by a bolt passing through a hole, S^2, in the center of said plate, and springs S', attached near its lower side, S', substantially as and for the purpose set forth.

337,755. PLAYING-CARD. GEORGE M. ENDICOTT, Canton, Mass. Filed Jan. 20, 1886. (No model.)

Claim.—The improved playing-cards above described, having the face smooth and the back roughened, as set forth.

337,756. FEED-WATER HEATER. HENRY FAIRBANKS, St. Johnsbury, Vt., assignor to the Feed-Water Heater Company, Portland, Me. Filed Oct. 26, 1885. (No model.)



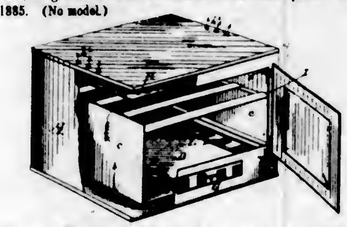
Claim.—1. The herein-described feed-water heater for locomotives, consisting of the case A, provided with heads B C, forming a steam-chamber, inlet-passages D E leading to said chamber and adapted to communicate with the respective exhaust-passages of the locomotive to receive the exhaust-steam, combined with a manifold, F, within said chamber having an inlet, G, leading thereto to receive the water, a series of tubes, J, in a horizontal plane leading from said manifold F, each tube of said series terminating at the opposite end of the chamber in return-bend K, a second like series of tubes, L, each leading from one of the said return-bends K and substantially parallel with the first series, J, said tubes L each terminating in a return-bend, M, a third like series of tubes, N, leading from said return-bends M toward the opposite end of the cylinder and substantially parallel with the series L, the said tubes N each terminating in a return-bend, O, a fourth series of tubes, P, leading from the said return-bends O to a second manifold, R, an exit, S, from said manifold R, and an air-chamber, I, in connection with the first or entrance manifold, F, and within the chamber, substantially as described.

2. The combination of the case A, its two heads, B C, closing the ends of the case and forming a steam-chamber, inlets D E to said chamber adapted to receive the exhaust-steam from the respective exhaust-passages, the two manifolds F R, arranged within said chamber, the manifold F provided with an inlet, G, to receive the water, and the manifold R with an exit, S, through which the water escapes, an air-chamber, I, in connection with said manifold F, four parallel horizontal series of tubes, the first leading from the manifold F to return-bends into the second series, and the second series through return-bends into the third series, and the third series through return-bends into the fourth series, and the fourth series into the second manifold, R, lugs *b b* on the one head, B, arranged to set between corresponding projections, *a*, on the return-bends at that end, and the air-chamber constructed with like lugs *d*, adapted to rest between projections *a a* on the return-bends of the central series at that end, substantially as described.

3. In a steam-heater consisting of a chamber adapted to receive steam as a heating medium, a series of water-conducting tubes within said chamber, with an inlet and an outlet therefrom for the supply and discharge of water, an air-chamber in connection with the inlet-passage, and a valve arranged in said inlet-passage and between the pump and said air-chamber, opening inward from the atmosphere outside and so as to admit air into said passage, substantially as described.

4. In a steam-heater consisting of a chamber adapted to receive steam as a heating medium, a series of water-conducting tubes within said chamber with an inlet and outlet therefrom for the supply and discharge of water, an air-chamber in connection with the inlet-passage, and a valve arranged in said inlet-passage, between the pump and said air-chamber, and opening inward from the atmosphere outside, and so as to admit air into said passage, with a device substantially such as described to mechanically open said valve, and thereby open a passage from the inlet-passage to the atmosphere, substantially as described.

337,757. OVEN FOR VAPOR-STOVES. THOMAS J. FORD, Geneva, Ohio, assignor of one-half to Frank S. Turner, same place. Filed May 7, 1885. (No model.)



Claim.—The combination, with the oven A, provided with open bottom *a*, of the second bottom, *a'*, end plates, *c c*, attached thereto having the grating and grating-cover B, and connected with the end flues, *c c*, the bottom D, provided with the openings *e e*, and slide-covers E, and the back and top lining, H, having openings *h* and *h'*, all constructed and operating substantially as and for the purpose specified.

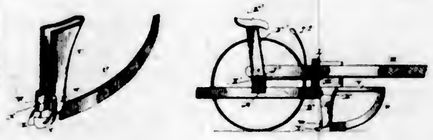
337,758. CLOTHES-LINE REEL AND HOUSE. ROBERT F. FOWLER, Canton, Ohio, assignor of one-half to Charles A. Rex, same place. Filed Apr. 13, 1885. (No model.)



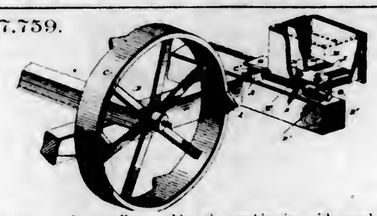
Claim.—1. The combination, with the metal plate *a*, provided with the hollow bearing B and the post B', of the reel-shaft *b*, having attached thereto the reel C and the pinion *d*, and the gears E, F, and G, all arranged substantially as shown and described, and for the purpose specified.

2. The house A, having located therein the reel C, the shaft *b*, carrying the reel, the pinion *d*, gear-wheel E, sectional shaft E', bearing B, thimble H, spring H', and gears F and G, substantially as described.

337,759. CHECK-ROW CORN-PLANTER AND FERTILIZER-DISTRIBUTER. JOHN J. FRAIKIN, Fort Wayne, Ind. Filed Nov. 25, 1885. (No model.)



337,759.



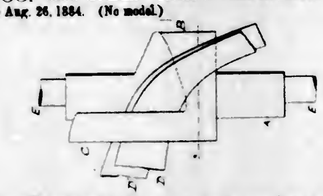
Claim.—1. In a seeding-machine, the combination with a seed-tube and runner or furrow-opener, of two covering-wings pivoted with vertical shafts upon the rear side of the lower end of the seed-tube and having the wings dragging rearward and their lower edges upon the ground, as and for the purpose shown and set forth.

2. In a seeding-machine, the combination, with a seed-tube having a furrow-opener and formed with two vertical sockets at the edges of its rearwardly-opening lower end, of two covering-wings having vertical shafts at their forward ends turning in the sockets, and having their forward corners rounded and their lower and rear edges flaring, as and for the purpose shown and set forth.

3. In a seeding-machine, the combination of a frame having a cross-beam at its forward end provided with seed-boxes having two compartments, the smaller of the two for the seed-corn and the larger for the fertilizer, and apertures in their bottoms, seed-slides in bearings upon the cross-beam and connected by a slide-rod, a rock-shaft in longitudinal bearings upon one slide provided with lips having inclined inner faces, and a drive-wheel having cam-projections or lips alternating at the edges of its rim, as and for the purpose shown and set forth.

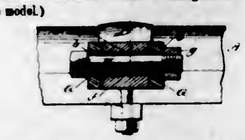
4. In a seeding-machine, the combination of a frame having uprights for the seat for the driver upon its axle and having forwardly-projecting bolts at the forward ends of its side pieces, a tongue pivoted with its slotted rear end to the lower ends of the seat uprights, a cross-beam carrying the seed-boxes and runners and formed with two vertical slots sliding upon the bolts upon the side pieces of the frame, and with an upright at its middle and an arm pivoted at its inner end between the seat uprights and having its forward end secured to the upright of the cross-beam, and a handle for raising or lowering it, as and for the purpose shown and set forth.

337,760. REIN-HOLDER. GEORGE M. FRAMPTON, Kansas City, Mo. Filed Aug. 26, 1884. (No model.)



Claim.—The rein-holder herein described, comprising the vertical loop *b* to receive the edge of the dash-board, a spring-loop, *c*, and a guard or support, C, projecting upwardly from the outer end of the loop *c*, and having its end turned inwardly to form a shoulder, as set forth.

337,761. THILL-COUPLING. ALBERT FRENCH, East Rockport, Ohio, assignor of one-half to Alfred French, Washington, D. C. Filed Sept. 12, 1885. (No model.)

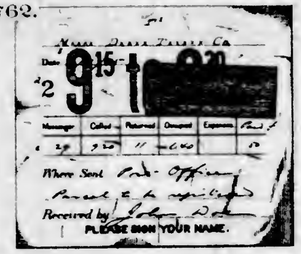


Claim.—The combination, with the draw and thill irons having cylindrical openings, and an interior circumferential shoulder in the thill-iron, of a sectional cylindrical bushing having plain inner and outer surfaces, the inner ends of said bushing bearing against opposite sides of the shoulder *f*, and their outer ends bearing in the openings of the draw-iron, and the bolt A, corresponding to and passing through the opening in the bushing and a nut, substantially as set forth.

337,762. CHECK-TICKET FOR MESSENGER SERVICE. JOHN S. GOLDSMITH, New York, N. Y. Filed June 9, 1885. (Specimens.)

Claim.—1. A messenger-ticket having on its face suitable ordinary printed matter, including the heading "Called," and blanks for entries thereon, including a blank under said heading in which to express the beginning of the period of service to be charged for, and provided with permanent and conspicuous time-control characters, as "9 to 9.15," in distinctive style, representing a short-time period, as indicated by ordinary time-pieces, to which its issue for use is limited, for controlling entries in said blank under "Called," and thereby preventing fraud, substantially as herein specified.

337,762.



2. A series of messenger-tickets having on the face of each suitable printed matter and blanks common to all, and provided serially in distinctive style with permanent and conspicuous time-control characters, as "9 to 9.15," "9.15 to 9.30," and so on, representing successive uniform short-time periods to which the issue of the respective tickets is limited, the time-control characters for each time period being printed on more or less numerous tickets, the whole series being also consecutively numbered, substantially as herein specified, for the purposes set forth.

3. A messenger-ticket having on its face suitable or ordinary printed matter, and blanks for entries thereon, together with an extra heading-blank, *f*, to receive the entry "Paid" or "Charge," or a symbol representing the same, and provided with permanent and conspicuous time-control characters in distinctive style, consecutive numbers, and a paster of distinctive color, the latter indicating the proper entry in said blank *f* and having on its face printed matter appropriate to calls from a particular call-box, substantially as herein specified.

337,763. BASKET. JOHN H. GULICK, Syracuse, N. Y. Filed Jan. 2, 1886. (No model.)



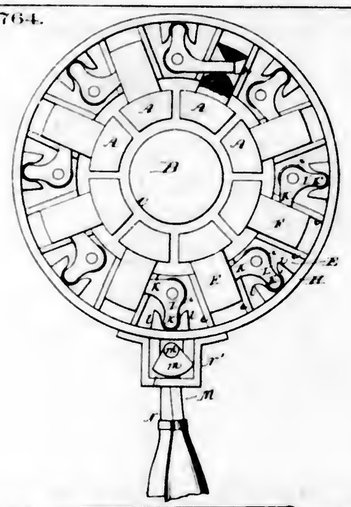
Claim.—The basket herein described, consisting of the body formed of a single sheet of canvas, and having the overlapped flange, the inner and outer bottom disks secured thereto, the stiffening-ribs, and the inner and outer top rings, the stiffening-ribs and canvas sides being securely clamped and held between said rings, the whole device being coated or saturated with any desirable compound, substantially as set forth.

337,764. GLASS-MOLD. WILLIAM H. GULLIVER, Phillipsburg, Pa. Filed Nov. 18, 1885. (No model.)

Claim.—1. In a glass-mold, the combination, with segmental mold-sections adapted to move on radial lines, of an encircling ring or band and pivotal levers contacting with said ring and with said sections, whereby when the ring is turned the sections will be moved, substantially as described.

2. In a glass-mold, the combination, with the segmental and radially-movable mold-sections A A, having the slides or sliding blocks F, of the plates E E', formed with guides *e e'*, the elbow-levers I, ring H, having studs *l l*, and the cam-lever M, substantially as described.

337,764.



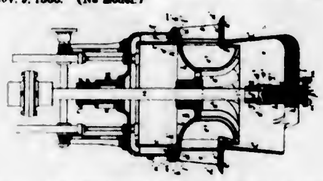
337,765. CUT NAIL. SAMUEL M. GOSS, Steelton, assignor of one-half to Jacob S. Ammon, Reading, Pa. Filed Dec. 3, 1885. (No model.)



Claim.—1. As a new article of manufacture, a cut nail or spike having a bracket-support to the head upon opposite sides of the nail or spike and integral with the body and head of the same, said bracket being in form that of a square pyramid cut through its vertical height diagonal with the base of the same, substantially as shown, described, and for the purpose set forth.

2. As an improved construction of a cut nail or spike, the addition of a bracket-support to the head upon opposite sides of the body of the nail or spike, said bracket being in thickness less than the width of the nail or spike, and having a tapered form in both its vertical and horizontal section, substantially as shown, described, and for the purpose set forth.

337,766. HYDRAULIC MOTOR. NELSON E. HARRIS, Orange, Mass. Filed Nov. 9, 1885. (No model.)



Claim.—1. The combination of the water-wheel, its chutes and gate, its surrounding case, with the packing-ring k' having on its outer edge a tongue, the ring b', with its groove m', for the tongue of ring k', and the upper grooved packing-ring, o', secured to ring k' by screws, all substantially as and for the purpose described.

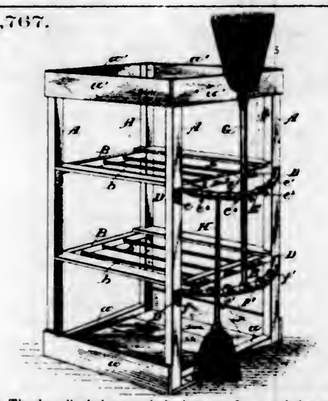
2. The combination of the shaft a, the step g, having its chamber c^3, with upper and lower holes, the saucer-shaped bearing-plate q, and wooden step-piece h, having a water-channel, p'', supported in the vertically-adjustable socket i, as and for the purpose described.

3. The combination of the water-wheel and its case and shaft, provided with the iron collar and its wooden bearing, as described, with the step g, having the chamber c^3, furnished with upper and lower holes, as set forth, the saucer-shaped plate q', and wooden step-piece h, having a water-channel, p'', as and for the purpose specified.

337,767. BROOM-RACK. JOHN B. HOUSE, Milwaukee, Wis. Filed Apr. 20, 1885. (No model.)

Claim.—1. A packing and show case for brooms, &c., consisting of the frame A a a' B b b C, with the receptacles D D and removable racks E F, substantially as set forth.

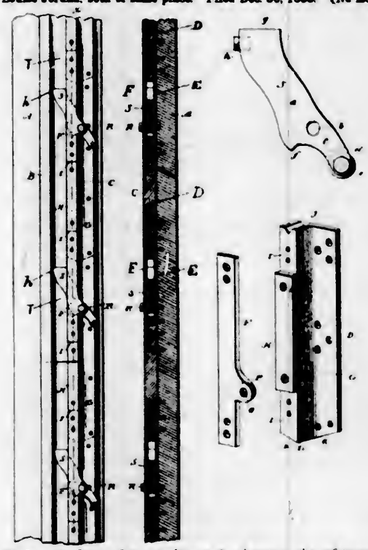
337,767.



2. The described show-rack for brooms, &c., consisting of the frame A A a a', with receptacles D D, rack E, having holes e', hooks e^2, and pintles e, and the rack F, having pintles f and caps f', substantially as set forth.

3. In combination with a packing-case for brooms and other long-handled articles, the removable semi-elliptical racks E F, provided with pintles for attachment to the packing-case, substantially as set forth.

337,768. SAFETY ATTACHMENT FOR ELEVATORS. THOMAS M. HUNTER, New York, N. Y., assignor of one-half to William J. Best and Louise Jordan, both of same place. Filed Dec. 30, 1885. (No model.)



Claim.—1. In a safety attachment for elevators, the safety-rail consisting of sections D, E, and F, constructed and arranged substantially as and for the purpose herein shown and specified.

2. In a safety attachment for elevators, the herein-described safety-rail having sections D, provided with vertical flanges having notches at their upper ends to receive the heels of the safety-pawls, substantially as and for the purpose herein set forth.

3. In a safety attachment for elevators, the herein-described safety-rail, consisting of sections D, having flanges H, base-plates G, recesses I, notches J, and extensions L, the sections E, consisting of flat plates forming continuations of the base-plates of the sections D, and having recesses M, and teeth N, and the sections F, secured in the recesses I of adjoining sections D, substantially as and for the purpose set forth.

4. In a safety attachment for elevators, the safety-rail consisting of sections D, in combination with sections E and F, which conjointly form the bearings for the safety-dogs, substantially as herein described, for the purpose set forth.

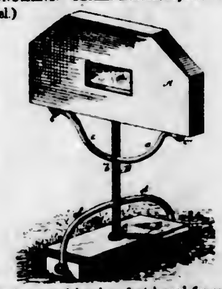
5. In a safety attachment for elevators, the herein-described safety-rail, consisting of sections E and F, having bearings for the pivots of the safety-dogs, in combination with the intermediate supporting-sections, D, the upper ends of which have transverse notches or recesses, in which the safety-dogs are supported when at rest, substantially as and for the purpose set forth.

6. In a safety attachment for elevators, the combination, with the safety-rail, constructed substantially as herein described, of the dogs pivoted between the sections E F of said safety-rail, and having upwardly-extending weighted bodies, heel-pieces, and projecting toe-pieces provided with friction-rollers, substantially as herein described, for the purpose set forth.

7. In a safety attachment for elevators, the combination, with a suitable safety-rail, of the herein-described dogs S, having body a, pivot-hole b, toe-piece c, recess d, friction-roller e, heel f, and cushion h, substantially as herein described, for the purpose set forth.

8. The combination, with the safety-rail, dogs, and car, constructed and relatively arranged substantially as described, and the supporting-cable G' and suspension-spring H', of the automatic operating mechanism consisting of the lever J', rod K', bell-crank L', and lever M', all arranged and operating substantially as herein described, for the purpose shown and specified.

337,769. MONUMENT. THOMAS HUSTON, Ceylon, Pa. Filed Dec. 17, 1885. (No model.)

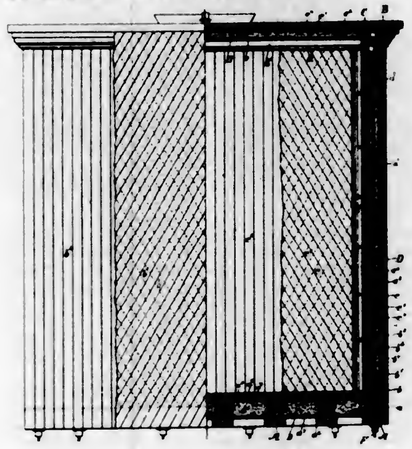


Claim.—1. The improved head or foot board for graves, herein described, consisting of a sign-board, A, supported above the ground by a metallic frame having arms projecting in opposite directions, the upper arms being attached to the end of said sign-board, while the lower arms are attached to the supporting-block, and both passing through or secured to the standard B, substantially as shown, and for purpose set forth.

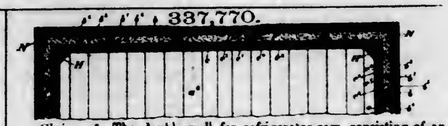
2. The improved sign-board herein described, consisting of the board A, which is attached to the metallic frame having arms c and d, which project from the vertical support b at right angles with each other, and bent in opposite directions, a block, D, and post E, the parts being organized substantially as shown, and for the purpose set forth.

3. In combination with a head or foot board, A, the vertical support b, screw-threaded at its ends, and provided with arms bent in opposite directions and at right angles with each other, the upper arms being attached to the under side of the board A, while the lower arms are attached to the edges of the base-block D, a washer, C, located above the base-block adjacent to the perforation through which the vertical rod passes, substantially as shown, and for the purpose set forth.

337,770. WALL FOR REFRIGERATOR-CARS. CARLETON B. HUTCHINS, Detroit, Mich. Filed Sept. 29, 1885. (No model.)



337,770.



Claim.—1. The double wall for refrigerator-cars, consisting of an inner and an outer wall, each composed of two layers of boards arranged diagonally to or crossing each other, and a non-heat-conducting or insulating material filling the space between said walls, substantially as specified.

2. The double wall for refrigerator-cars, consisting of an inner and an outer wall, each composed of two layers of matched boards arranged diagonally to or crossing each other, the outside wall having a layer of vertically-arranged matched boards upon its outside, and the inner wall having a layer of vertically-matched boards upon its inside, and a non-heat-conducting or insulating material in the space between said walls, substantially as specified.

3. The combination, in a refrigerator-car, with the outside sills, A, having shoulders or offsets a a', of the frameless outer wall, B, consisting of diagonally-arranged boards b b', the inner layer of boards, b, being shorter than the layer of outer boards, b', to form a shoulder or offset corresponding to the shoulder a' on the sill, an inner frameless wall, C, consisting of diagonally-arranged boards c c', the boards c being shorter than the boards c', to form an offset or shoulder corresponding to offset or shoulder a' on the sills, and an insulating material, D, between said walls, substantially as specified.

4. The combination, in a refrigerator-car, with the outside sills, A, having shoulders or offsets a a', of the frameless outer wall, B, consisting of diagonally-arranged boards b b', the inner layer of boards, b, being shorter than the layer of outer boards, b', to form a shoulder or offset corresponding to the shoulder a on the sill, an inner frameless wall, C, consisting of diagonally-arranged boards c c', the boards c being shorter than the boards c', to form an offset or shoulder corresponding to offset or shoulder a' on the sills, and an insulating material, D, between said walls, a layer of vertically-arranged boards, b^2, upon the outside of the outer wall, and a layer of vertically-arranged boards, c^2, upon the inside of the inner wall, substantially as specified.

5. The double wall for refrigerator-cars, consisting of an inner and an outer wall, each composed of two layers of matched boards arranged diagonally to or crossing each other, the outside wall having a layer of vertically-arranged matched boards upon its outside, and the inner wall having a layer of vertically-matched boards upon its inside, and a non-heat-conducting or insulating material in the space between said walls, said layer of diagonal boards having sheets of paper, felt, or like insulating material interposed between them, substantially as specified.

6. The double wall for refrigerator-cars, consisting of an inner and an outer wall, each composed of two layers of matched boards arranged diagonally to or crossing each other, the outside wall having a layer of vertically-arranged matched boards upon its outside, and the inner wall having a layer of vertically-arranged matched boards upon its inside, and a non-heat-conducting or insulating material in the space between said walls, said layers of diagonal boards having sheets of paper, felt, or like insulating material interposed between them, and sheets of paper, felt, or like insulating material interposed between said layers of vertically and diagonally-arranged boards, substantially as specified.

7. The combination, with the platform or bottom frame of the car, of double walls resting thereon, consisting of an inner and an outer frameless wall, each composed of two layers of diagonally-arranged or crossing boards, an insulating material between said walls, and tie-rods extending from the top of said wall to the bottom of said platform or bottom frame, substantially as specified.

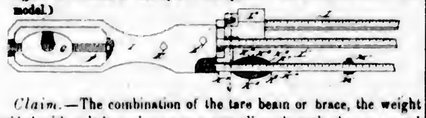
8. The combination, with the platform or bottom frame of the car, of double walls resting thereon, consisting of an inner and an outer frameless wall, each composed of two layers of diagonally-arranged or crossing boards, an insulating material between said walls, and tie-rods extending from the top of said wall to the bottom of said platform or bottom frame, and horizontal cross-rods extending between and anchored in the opposite side walls of the car, substantially as specified.

9. The combination, with the platform or bottom frame of the car, of double walls resting thereon, consisting of an inner and an outer frameless wall, each composed of two layers of diagonally-arranged or crossing boards, an insulating material between said walls, and tie-rods extending from the top of said wall to the bottom of said platform or bottom frame, and horizontal cross-rods extending between and anchored in the opposite side walls of the car, and the cross-beams of the roof extending between and resting upon the opposite side walls of the car, substantially as specified.

337,771. METHOD OF MAKING BLANKS FOR THE BOTTOMS OF CARTRIDGE-CASES. ALFRED JULLIEN, Paris, France. Filed Dec. 23, 1884. Renewed Feb. 10, 1886. (No specimens.) Patented in France Nov. 24, 1884, No. 165,542.

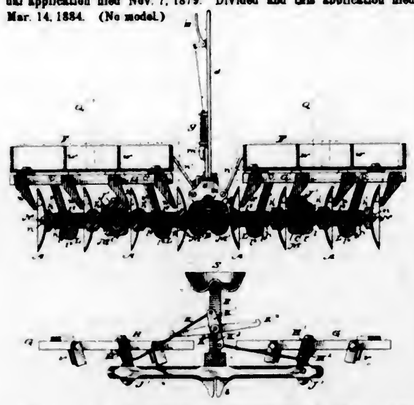
Claim.—The herein-described process of manufacture for obtaining blanks for the bottoms of cartridges and other like purposes, which consists in casting a metal bar or cylinder, cutting it into disks perpendicularly to the axis of the bar or cylinder, and then hammering the blanks on their cut faces, substantially as hereinbefore described.

337,772. WEIGHING-SCALE. JOHN A. KNOWLES, Jr., Lowell, Mass., Susan M. Knowles (executrix of said John A. Knowles, Jr., deceased) assignor to William H. Thompson, same place. Filed Jan. 10, 1884. (No model.)



Claim.—The combination of the tare beam or brace, the weight provided with a hole and a groove extending through the same, and with another hole leading into said groove and the spring bent as described, as and for the purpose specified.

337,773. WHEEL-HARROW. CHAS. LA DOW, Albany, N. Y. Original application filed Nov. 7, 1879. Divided and this application filed Mar. 14, 1884. (No model.)



Claim.—1. In a disk-harrow, the combination of a pole, a cross-bar, a disk-gang, a beam connected to and vibrating with the disk-gang, a scraper carried by said beam, (said scraper having lateral motion relatively to the side of a disk,) a flexible connection which attaches said beam directly to the cross-bar, so that the beam and its disk-gang may vibrate up and down at their ends independently of the cross-bar, and mechanism for varying the angle of the gang.

2. The combination of a disk-gang, an endwise-moving scraper-bar which reciprocates across the vertical planes of the disks, a series of scrapers, one for each disk carried by said bar, and devices for securing the scrapers to their bar, so as to permit their independent adjustment relatively to the disks.

3. In a disk-harrow, a main frame, a disk-gang, a ball, a pin thereon, and a case or boxing for the ball, in combination with a draft-arm for connecting the disk-gang to the main frame at a point to one side of the line of the draft-pole.

4. In a disk-harrow, the arrangement, substantially as set forth, of the pole, the cross-bar, and the bifurcated braces secured to both the cross-bar and pole, and the disk-gangs attached to the cross-bar and vibrating in rear thereof.

5. In a disk-harrow, the combination of a main frame, two gangs of disks, two gangs of scrapers, and mechanism for operating both gangs of scrapers simultaneously.

6. The combination of a pole and frame, disk-gangs connected therewith, mechanism for adjusting the angle of the gangs, scrapers which act or move together as a gang, and connections between the scrapers and their support, whereby each scraper is independently adapted to work in proper relation to the face of its disk.

7. The combination of the following three elements: first, a frame; second, a disk-gang capable of vibrating vertically and horizontally independently of the frame, and, third, a stop interposed directly between the gang and the frame to prevent the gang from rising at its inner end.

8. The combination of a cross-bar, a disk-gang vibrating independently of the cross-bar, a beam mounted on and vibrating with its gang, a flexible draft-connection uniting the beam directly to the cross-bar at a point outside of the vertical line of the pole, and a stop which prevents the gang from rising at its inner end, but permits the horizontal movement of the gang relatively to the line of draft.

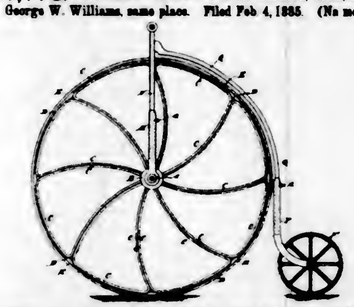
9. In a disk-harrow, the combination of a pole, cross-bar, disk-gang, a draft-arm hinged at its forward end to the cross-bar at a point outside the vertical line of the pole and hinged at its rear end to the disk-gang, and mechanism for adjusting the angle of the gang relatively to the line of draft.

10. In a disk-harrow, a cross-bar, disk-gangs vibrating independently of the cross-bar, means for flexibly connecting the gangs to the cross-bar, scrapers carried by the gangs and having lateral motion relatively to the sides of the disks, in combination with means for adjusting the angle of the gangs.

11. The combination of a pole, cross-bar, disk-gang, a beam carried by the gang, a ball-and-socket joint for connecting the gang and its beam to the cross-bar, and an arm hinged to the frame.

12. The combination of a draft-frame, a gang of disks, laterally-moving scrapers for acting against the disks, and mechanism whereby the driver can operate the scrapers with his foot.

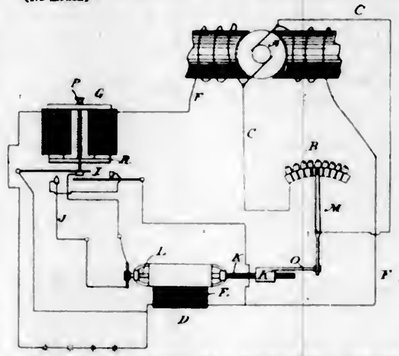
337,774. BICYCLE. GEORGE S. LOWE, Hartford, Conn., assignor to George W. Williams, same place. Filed Feb 4, 1885. (No model.)



Claim.—1. A bicycle-frame having its standards made in sections, the parts N N Q operating within sleeved parts M M P and adjustably secured therein by set-screws, as O R, as and for the purposes set forth.

2. The bicycle described, having extensible arms M N and confining means O, in combination with extensible frame P Q and confining means R, and with a wheel, B C, and adapted to allow the said wheel to be replaced by one of a different size, as herein specified.

337,775. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. OSBORN P. LOOMIS and HENRY W. COOLEY, Lynn, Mass. Filed Sept. 22, 1885. (No model.)



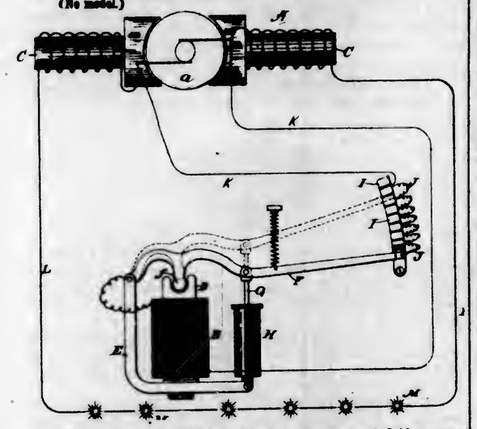
Claim.—1. In a regulator for a dynamo-electric generator, the combination of a variable resistance in a shunt-circuit to the armature of said generator, a motor having a rotatable armature geared to a device for controlling the said resistance and located in the main circuit, and a rheotrope in circuit with said motor, substantially as and for the purpose described.

2. In a regulator for a dynamo-electric generator, the combination of an electric motor whose field-magnets are in the main circuit and whose armature is in a shunt to the field-magnets, a solenoid in the main circuit, an armature to said solenoid, a rheotrope in circuit with said motor, a lever located in a shunt to said generator-armature and geared to said motor-armature, and a number of resistances between the terminal of said lever and that of the said generator-armature, and being in the same shunt-circuit as the said lever, substantially as and for the purposes set forth and described, and shown in the annexed specification and drawings.

3. In a regulator for a dynamo-electric generator, the combination of an armature to said dynamo, a variable resistance in shunt to said armature, an electric motor whose field-magnets are in the main circuit, a solenoid in the main circuit, an armature to said motor, and a rheotrope,

both located in a shunt to the field-magnets of said motor, a screw-thread cut upon an extension of the shaft of said motor, a nut fitting upon said thread, and a lever having one end communicating with said variable resistances, and having the other end secured by a pivot-joint with said nut, substantially as and for the purpose set forth.

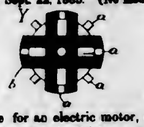
337,776. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. OSBORN P. LOOMIS and HENRY W. COOLEY, Lynn, Mass. Filed Sept. 22, 1885. (No model.)



Claim.—1. In combination with the armature and field-magnets of a dynamo-electric generator, a variable resistance and electric automatic-operating mechanism therefor, both located in a shunt-circuit to said armature, the lamps or other translating devices being in series with said field-magnets, substantially as described.

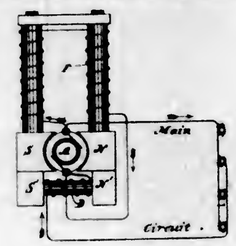
2. In combination with a dynamo-electric generator, a regulator consisting of the combination of an armature, a shunt to the armature, an electro-magnet in said shunt and provided with a pole-piece at one end, a back piece, E, for said magnet, bent at right angles, a lever-armature, F, pivoted at one end of said back piece, having a projection upon it opposite said pole-piece and pivoted to a piston of a dash-pot, which is pivoted to the other end of the above-named back piece, and a series of contact-pieces connected together by conductors of high resistance arranged in an arc to the axis of rotation of the above-named pivoted armature, and one of said contact-pieces being in electrical contact with said pivoted armature, the said contact-pieces, one or more, and said pivoted armature being in a shunt-circuit to the armature of the dynamo-electric generator, substantially as described.

337,777. ELECTRIC MOTOR. OSBORN P. LOOMIS and HENRY W. COOLEY, Lynn, Mass. Filed Sept. 22, 1885. (No model.)



Claim.—An armature for an electric motor, consisting of a cylindrical core provided with eight longitudinal grooves upon its cylindrical surface, two sets of coils in said grooves, the coils of each set being parallel to each other, and the coils of the two sets being perpendicular to each other, and projections upon said core forming said grooves, the alternate projections being in contact with said coils and the remaining alternate projections being out of contact with said coils, substantially as described.

337,778. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. R. H. MATHER, Windsor, Conn. Filed May 21, 1884. (No model.)



Claim.—1. In a dynamo-electric machine, the field-magnet F, in combination with the detractor D, said magnet and detractor having constantly-closed circuit-connections and being placed one in the main or working circuit of such machine and the other in a derived circuit about the work, substantially as and for the purpose specified.

2. In a dynamo-electric machine, a field-magnet, in combination with a fixed armature thereof, said field-magnet and armature being severally wound as electro-magnets and constantly connected one in the working-circuit of such machine and the other in a shunt-circuit about the work, substantially in the manner and for the purpose specified.

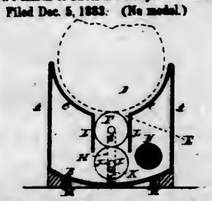
3. In a dynamo-electric machine, a field-magnet, in combination with a magnetic switch or shunt between the poles thereof, said field-magnet and switch being electro-magnets which are constantly connected in parallel arc, substantially in the manner and for the purpose specified.

4. In a dynamo-electric machine, an electro-magnet whose core is a magnetic shunt between the poles of the field-magnet, and whose helix, being in a constantly-closed circuit, is connected in parallel with the helix of such field-magnet, substantially in the manner and for the purpose specified.

5. In a dynamo-electric machine, an electro-magnet whose poles are respectively adjacent to like poles of the field-magnet and whose helix is in a constantly-closed circuit with the armature independently of the helix of such field-magnet, substantially in the manner and for the purpose specified.

6. In a dynamo-electric machine, the detractor D, wound as an electro-magnet and constantly connected in the main or shunt circuit of such machine independently of the field-magnet, substantially in the manner and for the purpose specified.

337,779. CAR-AXLE LUBRICATOR. WILLIAM MEGAFFEY, Cleveland, assignor of two-thirds to Thomas Currey, Cleveland, and Thomas E. Keavy, Kent, Ohio. Filed Dec. 5, 1883. (No model.)



Claim.—The journal-lubricator herein described, consisting of the case A, having its top curved downwardly toward the center and terminating in two inward parallel vertical walls, L L, and also provided with end wall recesses to receive the journals of the lubricating-rollers, the upper roller F arranged between the said vertical parallel walls, and the lower roller arranged in the said recesses beneath the upper roller, and supported by the springs K, and the filling-tube secured to one of the end walls of the case, the whole adapted to be placed in and serve with an ordinary axle-journal box, substantially as specified.

337,780. CAR-COUPLING. CHARLES L. MUELLER, Humboldt, Minn. Filed Dec. 30, 1885. (No model.)



Claim.—In combination, with the draft-bars and the follower-plates, the wearing-plates provided with bent ends entering the draft-bar and provided with slots or openings, and the lugs provided with tenons entering the slots in the plates, and the bolts passing through the said lugs, wearing-plates, and draft-bars, substantially as described.

337,781. SAFETY ATTACHMENT FOR HYDRAULIC ELEVATORS. ANDREW MURPHY, Columbus, Ohio. Filed Apr. 9, 1885. (No model.)

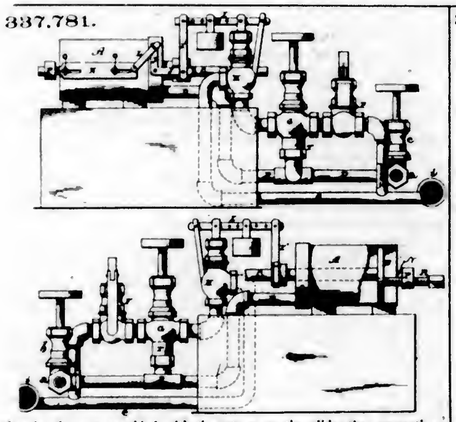
Brief.—A relief-valve upon the supply-pipe adapted to be opened by excessive pressure at any time during the stroke of the piston, and connections between the valve and open end of the cylinder, whereby the valve is opened by the piston at the end of each stroke.

Claim.—1. The combination of the cylinder A, the piston B, the pipe D, connected to the cylinder at one end, a relief-valve, H, connected to the pipe, a weighted rod connected to the valve, and connecting-rods connected to both the weighted rod and to the slide which is operated by the piston, substantially as shown.

2. The combination of the cylinder A, piston B, pipe D, relief-valve H, weighted rod I, connecting-rods I' J L, slide N, and arm P, provided with a set-screw, substantially as described.

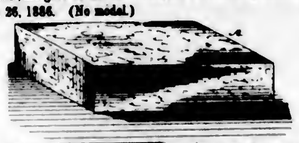
3. The combination of the open-ended cylinder, the piston placed

337,781.



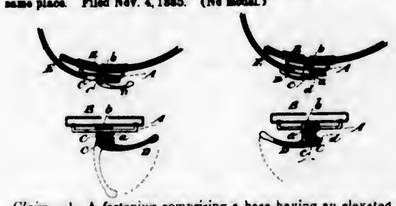
therein, the arm provided with the set-screw, the slide, the connecting-rods, the bell-crank lever, and the valve, the parts being arranged to operate substantially as specified.

337,782. **FIRE-KINDLER AND FUEL-BLOCK.** WILLIAM R. MYERS, Camden, N. J., assignor of eleven-twentieths to John B. Adams, same place. Filed Jan. 26, 1886. (No model.)



Claim.—A fire-kindler and fuel-block formed of clay, ground bone, feathers, and charcoal, substantially as described.

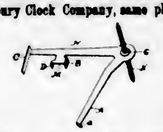
337,783. **FASTENER FOR SHOES, &c.** ADOLPH NOLTE, Dundee, Ill., assignor of two-thirds to Arthur Schmalz and Wilhelm Lorenz, both of same place. Filed Nov. 4, 1885. (No model.)



Claim.—1. A fastening comprising a base having an elevated bar, a slide to move along said bar, and a cam-lever fulcrumed to said slide and adapted to be locked at any desired point on said bar, substantially as and for the purposes described.

2. The fastening composed of the raised bar, the eccentric lever, and the slide formed with a notch or hook, substantially as described.

337,784. **STRIKING CLOCK.** HOMER F. NORTHROP, Waterbury, Conn., assignor to the Waterbury Clock Company, same place. Filed July 14, 1884. (No model.)



Claim.—1. In the striking part of a clock, a single piece of sheet metal having a lift, warn, count-hook, and stop, the warn and stop being bent at right angles to the body of the piece, substantially as set forth.

2. In the striking part of the clock, a single piece of sheet metal embodying a lift, warn, count-hook, and stop, the warn and stop offsetting from that arm of the device carrying the count-book thereof, substantially as set forth.

337,785. **SAMPLE BOX OR PACKAGE.** JOHN A. PRICE, Jonestown, Miss. Filed Sept. 15, 1885. (Model.)

Claim.—1. A sample-box having a body, Y, with opening and strips y' y' at the ends, fast end rings, B B, thereon, and a cover, Z, corresponding in form to the body Y, but made short enough to fit between the end rings, substantially as shown and described.

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2. A sample-box made of a cylinder headed at both ends, two end rings, and a cylindrical cover which turns on the cylinder and between the rings, said cylinder and cover being provided with openings which may be closed or caused to register, as described.

337,786. **MEANS FOR CARRYING TRACTION-CABLES AROUND CURVES.** WILLIAM PRESCOTT, Chicago, Ill., assignor of one-half to George Judge, same place. Filed June 22, 1885. (No model.)



Claim.—1. The combination, with a traction-cable, of a system or series of sheave-wheels rotating in a horizontal plane and arranged in pairs on the same shaft, the single companion sheave of each pair being adapted to rotate in opposite directions, substantially as and for the purpose set forth.

2. The combination, with the yoke-flanges, of the bar D, provided with the socket-bearings C^2, and the means described for adjustably securing and retaining said bar in relation to said yoke-flanges, substantially as and for the purpose set forth.

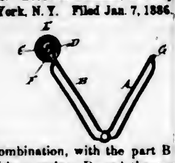
3. The combination, with the bar D, provided with the socket-bearings C^2, of the vertical stationary shaft B^3 and the companion arms C C', whereby said shaft is retained in place, substantially as set forth.

4. The combination, with the vertical stationary shaft B^3, provided centrally with the shoulder a, of the collar a', the upper sheave-wheel, B, having the under side of the hub recessed, as described, and the lower sheave-wheel, B', said sheave-wheels being adapted to rotate independent of each other, substantially as and for the purpose set forth.

5. The combination, with the stationary shaft B^3, of the collar a', having the under side recessed and provided with the flaring edge a^2, and the lower sheave-wheel, B', having part of the hub beveled and fitting inside of said flaring edge, substantially as and for the purpose set forth.

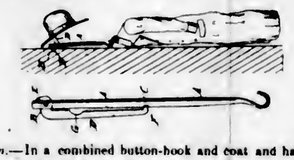
6. The combination, with the wheel B', having the wide face a^4 and provided on the lower end of the hub with the annular flaring rim a^3, of the socket-bearing C^2, having a beveled contour, substantially as and for the purpose set forth.

337,787. **FASTENING FOR HAND-BAG, POCKET-BOOK, AND PURSE FRAMES.** LOUIS B. PRAHAR, Brooklyn, assignor to Prahar & Shephard, New York, N. Y. Filed Jan. 7, 1886. (No model.)



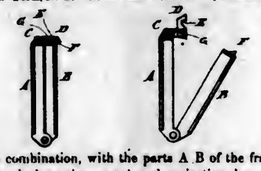
Claim.—The combination, with the part B of the frame, having a stud, C, provided with a spring, D, and the part A of the said frame, having a catch, G, of the recessed knob E, pivoted transversely to the said stud and engaging with the said catch, substantially as herein shown and described, whereby the said frame will be securely fastened, and can be readily unfastened, as set forth.

337,788. **COMBINED BUTTON-HOOK AND COAT AND HAT HANGER.** LOUIS B. PRAHAR, Brooklyn, assignor to Gustav Helles, New York, N. Y. Filed Nov. 18, 1885. (No model.)



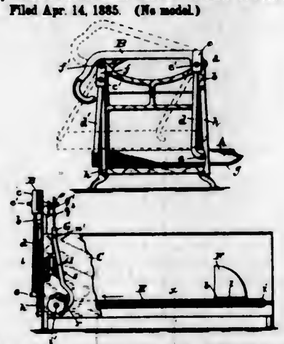
Claim.—In a combined button-hook and coat and hat hanger, the combination, with the shank of a button-hook having slot B and recess C, of the arm D, pivoted in the slot B, having prong E upon its pivoted end and projecting in the opposite direction from and nearly parallel with the said arm, and having a point, F, upon its outer end to engage with the recess of the said shank, substantially as herein shown and described.

337,789. **FASTENING FOR HAND-BAG, POCKET-BOOK, AND PURSE FRAMES.** LOUIS B. PRAHAR, Brooklyn, assignor to Prahar & Shephard, New York, N. Y. Filed Jan. 14, 1886. (No model.)



Claim.—The combination, with the parts A B of the frame, of the plate C, rigidly attached to the part A and projecting beyond the forward side of the said part, the plate D, hinged to the plate C and provided with a recess, E, in its under side, and the catch F, rigidly attached to the part B of the frame, substantially as herein shown and described, whereby the said plate D, when the frame is being closed and the forward side of the said part B passes the hinging-rivet, will be swung down into the plane of the plate C and made to engage with the catch F, as set forth.

337,790. **MEAT-SLICING MACHINE.** ROBERT B. PUMPHREY, Baltimore, Md. Filed Apr. 14, 1885. (No model.)



Claim.—1. A slicing-machine having in combination a hand-lever provided with a right-angled arm and pivoted at the front and at one side of the machine, and having a crank-arm on its pivot-bolt, a rod pivoted at the front and at the other side of the machine, a slicing-blade suspended to the said arm and rod, a meat-carrier, and feed mechanism, substantially as described, connecting the meat-carrier with the said crank-arm, attached to the hand-lever, as set forth.

2. A slicing-machine having in combination a hand-lever pivoted at the front and at one side of the machine and provided near said pivot with a socket having a set-screw, and an arm having its upper end held in the socket, a vertically-adjustable rod, d', pivoted at the front and at the other side of the machine, and a slicing-blade suspended to the said arm and rod, as set forth.

3. A slicing-machine having in combination a slicing-blade, an endless apron to feed the article to be sliced, and a follower provided with claws to engage with the endless apron, as set forth.

4. A slicing-machine having in combination a pivoted hand-lever provided with a right-angled arm and a crank-arm on its pivot-bolt, a rod pivoted at one end and having position parallel with the right-angled arm, a slicing-blade suspended to the said arm and rod, a roller-shaft having a feed-apron attached and provided with a ratchet-wheel, a feed-pawl, and a lifting-rod connecting the said crank-arm and feed-pawl, as set forth.

5. A slicing-machine having in combination a roller-shaft having a feed-apron attached and provided with a ratchet-wheel, a box, m, carrying a feed-pawl, a pawl-lifting rod, G, having a guide or keeper which permits it to move up and down, a link-rod, I, connecting the pawl-box and lifting-rod, and an adjustable stop device to restrict the movement of the said lifting-rod, as set forth.

337,791. **VEHICLE-SPRING.** ELIAS D. ROTH, Fort Collins, Colo., assignor of one-half to A. H. Patterson, same place. Filed Jan. 5, 1886. (No model.)

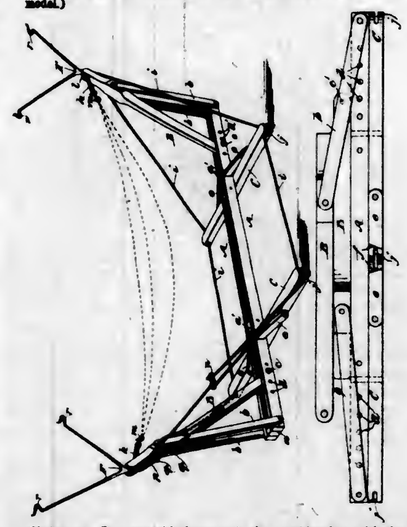


Claim.—1. The plates J J', constructed at their inner ends and slotted, as described, in combination with the cross-bar F, bars I I, the rods D D, and springs surmounted with cap E, substantially as and for the purpose specified.

2. The side bars, I I, having plates J J' secured to their inner ends, and provided at their outer ends with recessed ferrule-tips, in combination with the clip K and its slotted head or knob, substantially as and for the purpose set forth.

3. The openings G g, of unequal size and tension, one arranged within the other, in combination with the adjusting-rods D D, caps E E, and plates J J' upon the side bars, substantially as and for the purpose set forth.

337,792. **PORTABLE FOLDING HAMMOCK-STAND.** CHARLES L. RUDD and EZRA J. MANNING, Lake City, Minn. Filed July 29, 1885. (No model.)



Claim.—1. In a portable hammock, the combination, with the central bar, bed-pieces connected thereto and slotted at their ends, and the main supporting-standards slotted at their upper ends and pivoted to the said central bar, of the guy-rope passed through the slots in the bed-pieces, looped, and passed through the slots in the ends of the main supports, whereby a hammock may be connected to said looped ends, substantially as set forth.

2. In a portable hammock, the combination, with the central bar, the bed-pieces connected thereto and slotted at their ends, and the main supporting-standards slotted at their upper ends and pivoted at their lower ends to said central bar, of the guy-rope passed through the slots in the bed-pieces, looped, and passed through the slots in the main supporting-standards, hooks on said looped portions for connecting with a hammock, and a clamping-block for adjusting the guy-ropes, whereby the hammock may be adjusted by adjusting the guy-ropes, substantially as set forth.

3. In a folding hammock-support, the main supporting-standards slotted at their upper ends and provided on their outer faces, below said slots, with screw-eyes, and the canopy-irons F F, formed with shanks p, passed through the screw-eyes, and with hooked arms, the irons being bent at or near the juncture of the arms and shanks and passed through the slots of the main supporting-standards, thereby obtaining lateral support, substantially as set forth.

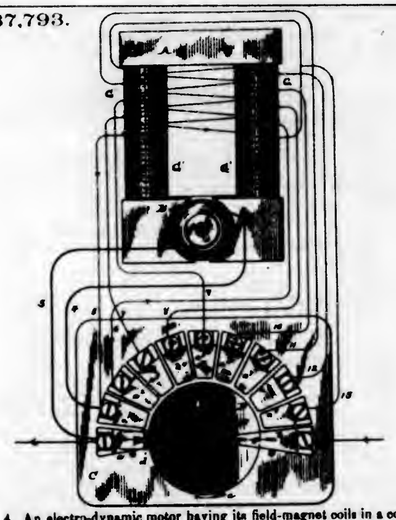
337,793. **ELECTRO-DYNAMIC MOTOR.** FRANK J. SPRAGUE, New York, N. Y. Filed July 6, 1885. (No model.)

Claim.—1. The combination, with a series motor, of a movable terminal of the supplying-circuit, a contact therefor whereby the whole motor may be short-circuited, and a contact whereby the field-magnet alone may be short-circuited, substantially as set forth.

2. The combination, with a series motor, of a movable terminal of the supplying-circuit, a contact therefor whereby the whole motor may be short-circuited, and contacts whereby said terminal may be connected to different points of the field-magnet coils, substantially as set forth.

3. The combination, with a series motor, of a movable terminal of the supplying-circuit, a contact therefor whereby the whole motor may be short-circuited, a contact whereby the field-magnet alone may be short-circuited, and contacts whereby said terminal may be connected to different points of the field-magnet coils, substantially as set forth.

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4. An electro-dynamic motor having its field-magnet coils in a continuous closed circuit, in combination with one terminal of the supplying-circuit having a fixed connection with said field-coils, and the other terminal movable for connection with different points of said field-coils, substantially as set forth.

5. The combination, with a series motor, of a switch having a stationary contact forming one terminal of the supplying-circuit, a stationary contact connected with the first contact through the armature, stationary contacts connected with different parts of the field-magnet coils, and a movable contact forming the other terminal of the supplying-circuit, and adapted to be brought into connection with the stationary contacts successively, substantially as set forth.

6. The combination, with a series motor, of the movable terminal of the supplying-circuit, adapted to short-circuit the motor, to short-circuit the armature alone, and to be connected to different points of the field-magnet coils, and an additional fixed connection from the same terminal of the supplying-circuit to the field-magnet coils, substantially as set forth.

7. An electro-dynamic motor having part of its field-magnet coils in sections connected at intervals with blocks of a switch, and all its field-magnet coils joined together in a continuous closed circuit, in combination with a terminal of the supplying-circuit permanently connected between the sectional and the regular coils, and a movable arm of the switch forming the other terminal of the supplying circuit, substantially as set forth.

8. In an electrical switch, the combination of a series of contacts, a revolving metal disk having a projection engaging with said contacts successively, and another contact constantly engaging with said disk, substantially as set forth.

337,794. ELECTRO-DYNAMIC MOTOR. FRANK J. SPRAGUE, New York, N. Y. Filed July 6, 1885. (No model.)

Claim.—1. The combination with an electro-dynamic motor, of a regulating-switch having contacts for short-circuiting the armature, contacts for shunting the armature upon more or less of the field-coils, and contacts for reversing the current in more or less of the field-coils, substantially as set forth.

2. The combination, in an electro-dynamic motor, of field-coils in shunt relation to the armature, field-coils in series with the armature, and means for reversing the current in more or less of said series coils, substantially as set forth.

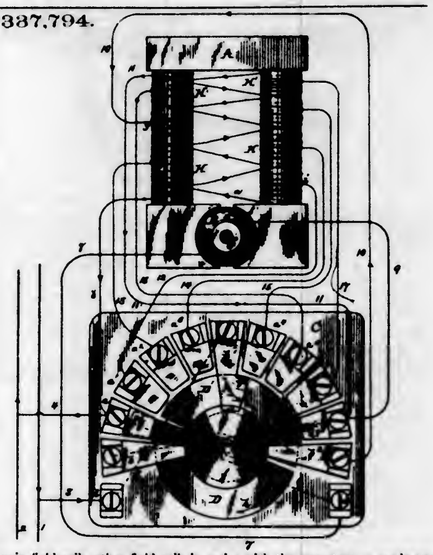
3. In an electro-dynamic motor, the combination of main field-coils the armature shunted upon a variable number of said main field-coils, other field-coils in series with the armature, and means for reversing the current in more or less of said series coils, substantially as set forth.

4. In an electro-dynamic motor, the combination of the armature, main field-coils, other field-coils in series with the armature, and a conductor extending from between the armature and the series field-coils, and having a movable terminal, whereby said conductor may be made to short-circuit the armature or to shunt the armature upon more or less of the main field-coils, substantially as set forth.

5. In an electro-dynamic motor, the combination of the armature, main field-coils, other field-coils in series with the armature, and a movable terminal of said series coils adapted to short-circuit them or to reverse the current in more or less of them, substantially as set forth.

6. In an electro-dynamic motor, the combination of the armature,

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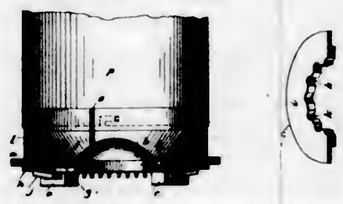
main field-coils, other field-coils in series with the armature, a conductor extending from between the armature and the series field-coils, and having a movable terminal, whereby said conductor may be made to short-circuit the armature or to shunt the armature upon more or less of the main field-coils, and a movable terminal of said series coils adapted to short-circuit them or to reverse the current in more or less of them, substantially as set forth.

7. The combination, with an electro-dynamic motor having two sets of field-coils, of means for changing one set from shunt to series relation with the other, substantially as set forth.

8. The combination, with an electro-dynamic motor having two sets of field-coils, of means for changing one set from shunt to series relation with the other and for reversing the current in the set so changed, substantially as set forth.

9. In a regulating-switch, the combination, with the long and short contacts, of the revolving two-part disk, one part having a contact-finger adapted to engage with said short contacts, substantially as set forth.

337,795. CORN AND SEED PLANTER. LLOYD C. STALMAKER, York, Pa. Filed Oct. 3, 1885. (No model.)



Claim.—1. In a seed-planter, a rotating feeder comprising an annulus having seed-cells in its inner edge, substantially as described.

2. The annular feeder having seed-cells in its inner circle, and a rotating annulus in which it is supported and by which it is driven, substantially as described.

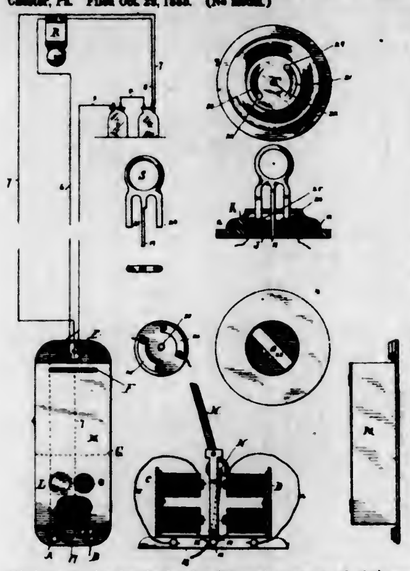
3. In a seed-planter, the bed-plate *a*, having a central dome, *b*, a surrounding well or opening, *d*, a lateral discharge, *g*, and bridges *c*, to connect the dome and bed-plate, substantially as described.

4. In a seed-planter, the bed-plate *a*, having a central dome, *b*, provided with a horizontal flange, and the lateral discharge-opening, *g*, a vertical shoulder, *f*, and a surrounding rotating feeder provided with internal seed-cells, substantially as described.

5. In a seed-planter, the bed-plate having a central dome provided with a horizontal flange having a lateral discharge-opening, a vertical shoulder, and a surrounding rotating feeder provided with internal seed-cells, and a superposed hopper, *l m*, substantially as described.

6. A seed-planter comprising a bed-plate having a central dome, a lateral discharge-opening, and a positively-driven annular feeder having inwardly-projecting seed-cells, substantially as described.

337,796. ELECTRIC MAIL-BOX AND INDICATOR. HENRY F. STAHL, Chester, Pa. Filed Oct. 23, 1885. (No model.)



Claim.—1. An electric signal and letter-box composed of the receptacle M, call-bell R, an electric battery, a series of circuit-wires, and circuit-closing mechanism consisting of the revolving circuit-closing button E, constructed substantially as described, and a removable key, S, having two contact-prongs and a guiding-prong adapted to fit in said button and revolve the same, as set forth.

2. The combination, with the receptacle M, constructed, as described, with openings L and O, circuit-closing mechanisms, and electric battery, and series of circuit-wires, of indicator mechanism consisting of a pair of right-hand magnets, D, and a pair of left-hand magnets, C, armature N, supporting-post 10, and needle H, substantially as described.

3. Circuit-closing mechanism consisting of the upper and lower sections, K and J, the latter having metallic contact-bars 25 and 26, to which the opposite wires of an electric circuit are respectively connected, and the former provided with a central vertical opening, 32, and with vertical openings 23 and 24 at the termini of circular slots 30 and 31, circumferentially surrounding said central opening, said upper section, K, being also provided on its under side with a rotating pivoted bar, 22, having a central vertical opening of irregular shape corresponding in position with said central opening, 32, said mechanism being constructed, combined, and operating substantially as set forth.

4. Circuit-closing mechanism constructed substantially as described, in combination with a key, S, having a central prong, and also two side prongs of equal length, but the former being of greater length than the two latter and corresponding in form with the central opening in the pivoted bar 22 of said circuit-closing mechanism, and said side prongs being adapted to fit said slots and recesses 23 and 24, whereby on the insertion of said key in the vertical opening of the pivoted bar 22 and the rotation of the same thereby said outside prongs will penetrate to the surface of the contact-bars 25 and 26 and complete an electric circuit, substantially as described.

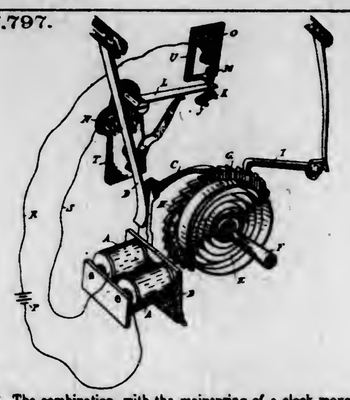
337,797. SELF-WINDING ELECTRIC CLOCK. D. FRED SWEET, Grand Rapids, Mich., assignor, by direct and mesne assignments, to the Electric Time Company, same place. Filed Feb. 23, 1884. (No model.)

Brief.—Circuit closed by action of the train at regular intervals causes the main spring to be wound a little faster than it unwinds on the running of the clock.

Claim.—1. The combination, with the minute-arbor of a clock-train, of a ratchet-wheel having a less number of teeth than the times the minute-arbor moves in one revolution and connected thereto by a spring, and an electro-motive device and connections for imparting motion to the said ratchet-wheel, substantially as described.

2. The combination, with the minute-arbor of a clock and an actuating clock-spring fixedly secured to said minute-arbor, of a ratchet-wheel independently journaled on the axis of the minute-arbor and fixedly connected to the clock-spring, a spring-operated winding-pawl, and an electric device for actuating the same, substantially as described, whereby the clock-spring is wound up faster than it pays off, and is prevented from overwinding.

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3. The combination, with the mainspring of a clock-movement, of a supplementary spring constructed and arranged to be moved in one direction by an electro-magnet and to wind said mainspring proportionately faster than it unwinds without overstraining the same, substantially as and for the purpose specified.

4. In combination with the ratchet-wheel H, arbor F, and mainspring E, connecting the two and imparting a motion to the latter, a pawl, C, connecting with the armature of an electro-magnet, A, and a spring, D, arranged to actuate the pawl at intervals through the medium of the said electro-magnet A to rotate the ratchet-wheel H proportionately faster than the arbor F and in an opposite direction to the rotation thereof, substantially as and for the purpose set forth.

337,798. CABINET FOR JEWELERS. THOMAS W. SWINEY, Reading, Pa. Filed May 21, 1885. (No model.)



Claim.—1. A drawer-pull comprising a bolt and a reversible tag having a number or character on one side only thereof, substantially as specified.

2. In a cabinet of the class described, a drawer having a reversible indicator permanently connected therewith and serving as a drawer-pull, substantially as specified.

3. A sheet-metal box or drawer, the sides, bottom, and rear end of which are formed of a single sheet of metal, said sides being provided with independent U-shaped grooves or ways, a suitable front and cover, in combination with a combined pull and indicator, substantially as specified.

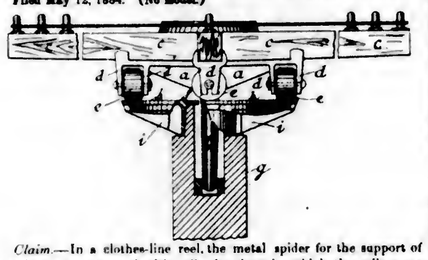
4. A box or drawer having an eyebolt swiveled in the front portion thereof, said eyebolt having suspended therefrom an indicator, one side of which bears a number, letter, or character, and the other side of which is blank, substantially as specified.

5. The combination, in a box or drawer, of a front portion having an eyebolt swiveled therein, an indicator suspended from said eyebolt, and washers interposed between the bolt and front portion at both sides thereof, substantially as specified.

6. The combination of the drawer having the sides A', ways A², cover A³, having a stop, A⁴, and front A, with the eyebolt B, indicator E, and washers C and D, substantially as shown and described.

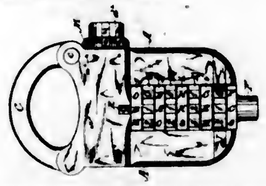
7. A cabinet consisting of a series of drawers, provided upon the front portion thereof with indicators, one side of which bears numbers or characters and the other being blank, whereby the numbered side may be turned out to indicate that the drawer is occupied and reversed when empty, and a check bearing a corresponding number or character, substantially as specified.

337,799. CLOTHES-LINE REEL. DAVID W. TRAVIS, Athens, N. Y. Filed May 12, 1884. (No model.)



Claim.—In a clothes-line reel, the metal spider for the support of the reel-arms, constructed with roller-brackets in which the rollers are suspended under the arms, in combination with the pivot-socket having a railway for the rollers of the reel-spider supported on arms, whereby both the rail and the roller-pivots shed the snow and the rain and are protected from ice, substantially as described.

337,800. PERMUTATION-PADLOCK. WILLIAM B. TURMAN, Waldron, Ark. Filed Oct. 3, 1884. (Model.)



Claim.—1. The combination of the part *b*, having grooves b^4, with the part *b'*, sliding within it and having a slotted portion, b^2, and flanges b^3, and the spring b^5, forming the bolt B of the lock, substantially as described and shown, and for the purpose set forth.

2. The combination of the draw-bar D, having a key, *d'*, and a head, d^2, with the sleeve L, provided with the slot *l*, groove *l'*, and the many-sided projecting end l^2, the pin l^3, for retaining said sleeve in frame A, the tumbler M, and frame A, having the slot P and index-letter N, substantially as described, shown, and set forth.

3. The combination of the bolt B when made in two parts, *b* and *b'*, substantially as described, and provided with a spring, b^5, with the draw-bar D, having the key *d'* and head d^2, the sleeve L, having the slot *l* and many-sided end l^2, the tumbler M, and frame A, having the slot P and index-letter N, substantially as described, shown, and set forth.

4. The combination, with the frame and locking-bar E, having a key, e^3, of the tumbler G, having a central aperture, through which the locking-bar and its key may freely pass, and two disks on opposite sides of the tumbler and connected to it by holes and pins, one of the disks having a central aperture of greater diameter than the locking-bar and its key, and the other disk having a smaller aperture and a notch in the wall of the same, substantially as set forth.

5. The combination of tumbler G, having disks *g* and *g'*, the tumbler H, having disk A, the locking-bar E, provided with the keys e', e^3, and e^4, and the frame A, provided with the fixed bar *a*, having a slot, *a'*, and the index-figures R, substantially as described and shown.

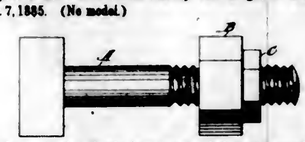
6. The combination of the locking-bar E, provided with an end, *e*, engaging with a hole in the bolt B, and the key *e'*, the tumbler F, provided with a boss, *f*, and screw *f'*, the end plates, J and K, provided with overlapping portions *j* and *k*, united by the screws *j'*, and the frame A, provided with the fixed bar *a*, having a slot, *a'*, the index-figures R, and notches a^2, for receiving the end plates, substantially as shown and described.

7. The combination of the hasp C, bolt B, made in two parts, the draw-bar D, provided with the sleeve L and tumbler M, the locking-bar E, provided with a series of tumblers, F, G, H, and I, the end plates, J and K, united by the screw *j'*, passing through their overlapping portions *j* and *k*, and the frame A, provided with the fixed bar *a*, notches a^2, slots *a'* and P, and index-letters N and R, substantially as described and shown, and for the purpose set forth.

8. The combination, with the lock-frame and a sliding bolt, of a perpendicular movable locking-bar at right angles to the sliding bolt, adapted to engage the said bolt with its upper end, and provided with a tumbler projecting through the frame and having characters on its periphery, the lower end of the locking-bar projecting through the frame, substantially as set forth.

9. The combination, with the lock-frame open at its bottom, the walls of the opening being recessed at a^3, and the locking-bar E, extending through the same, of the end plates, J K, having overlapping portions *j k*, secured together and recessed to form an aperture for the locking-bar to pass through.

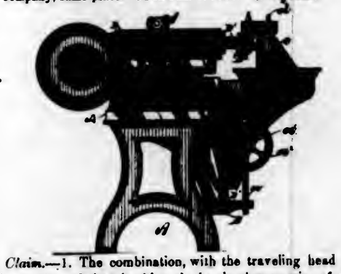
337,801. NUT-LOCK. AARON C. VADEHAN, Shane's Crossing, Ohio, assignor of one-half to James Hervey Sternbergh, Reading, Pa. Filed Aug. 7, 1885. (No model.)



Claim.—1. An elastic jam-nut consisting of a continuous elastic band or ring of metal having an elongated opening through the same, and its interior proximate side provided with screw-threads, substantially as shown and described.

2. An elastic jam-nut consisting of a continuous elastic band or ring of metal, having an elongated opening through the same, having a tapered screw-thread cut in its proximate inner sides, as and for the purpose described.

337,802. MACHINE FOR FINISHING HARVESTER-FINGERS. J. F. WEBSTER, Springfield, Ohio, assignor to the Champion Bar and Knife Company, same place. Filed Jan. 6, 1886. (No model.)



Claim.—1. The combination, with the traveling head and the revolving cutter, of the chucking device having a series of pockets and clamping mechanism therein, substantially as set forth.

2. The combination, with the traveling head and the revolving cutter, of the chucking device having the pockets therein, a gage-plate forming the front side of said pockets, and clamping mechanism opposite said gage-plate, adapted to press the guard-finger against said plate, substantially as and for the purpose set forth.

3. The combination, with the traveling head and revolving cutter, of the chucking device having a series of pockets therein, a gage-plate adapted to form the front of each of said pockets, a sliding piston extending into said pockets opposite said gage-plate, and means for moving said piston longitudinally, substantially as specified.

4. The combination, with the revolving cutter, of the pocket provided at the front with a gage-plate adapted to enter the slot in the guard-finger, and at the rear with a sliding piston and a cam adapted to move said piston longitudinally, substantially as set forth.

5. The combination, with the revolving cutter, of the pocket provided with the gage at the front thereof adapted to enter the slot in the guard-finger, a sliding pin below said pocket, adapted to engage the rivet-hole in said finger, a sliding piston extending into said pocket opposite said gage-plate, and means for moving said sliding piston longitudinally, substantially as and for the purpose set forth.

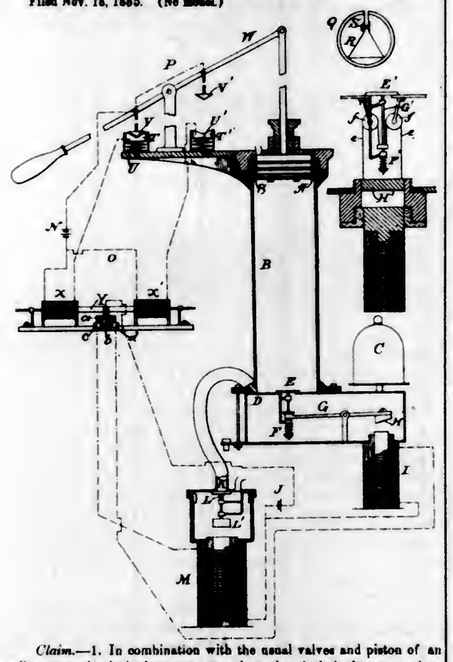
6. The combination, with a cutting-tool, of the pocket provided with the gage-plate, a sliding piston extending into said pocket opposite said gage-plate, a cam to operate said piston, a sliding pin, *e*, and a bearing-screw, *e'*, substantially as specified.

7. The combination, with the chucking device provided with a series of pockets therein and clamping mechanism in each of said pockets, of the traveling head having the revolving tool thereon, feeding mechanism for moving said traveling head, and means for reversing the motion of said feeding mechanism, substantially as set forth.

8. The combination, with the chucking device having a series of pockets therein, a gage-plate, and clamping mechanism in each of said pockets, of a traveling head having a revolving cutter thereon, a feeding-screw adapted to move said head, a sliding rod having variable collars thereon, adapted to be engaged by said traveling head, and clutching mechanism operated by said sliding rod, adapted to disconnect the feeding-screw from its revolving mechanism and connect the same to mechanism by which it is revolved in the opposite direction, substantially as and for the purpose set forth.

9. The combination, with the chucking device having a series of pockets, and clamping mechanism therein adapted to hold the guard-fingers, of a milling-tool adjacent to said chucking device, adapted to act on the guards therein, and means for securing a continuous passing of the tool and the clamping mechanism, either by moving the said cutter in relation to the chucking device or by moving the chucking device in relation to the milling-tool, substantially as and for the purpose set forth.

337,803. ELECTRIC AIR-PUMP. ALBERT B. WORTH, Greenport, N. Y. Filed Nov. 18, 1885. (No model.)



Claim.—1. In combination with the usual valves and piston of an ordinary mechanical air-pump, operating electrical devices geared to said valves and current-controlling devices geared to said piston and in circuit with said operating electrical devices, substantially as and for the purpose mentioned.

2. In combination with an electric air-pump, two solenoids having a common core, a piece of insulating substance rigidly fixed thereto, and a piece of conducting substance secured to the said insulating substance and resting upon one of two conducting-pieces, the said three pieces having electrical connections, as described.

3. In an air-pump, the combination, with the handle or operating-lever of the pump, of a fulcrum for said lever, loosely-suspended conically-shaped contact pieces or terminals to said handles, one being on each side of the fulcrum, corresponding terminals supported on springs and located below the first-named terminals, electric valves to said pumps, and suitable electrical connections, substantially as described.

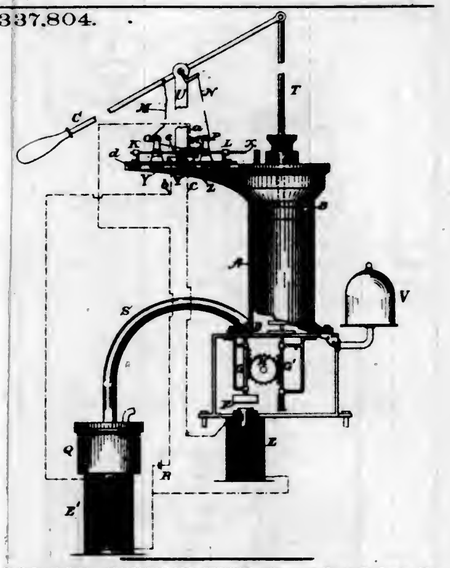
4. In an air-pump, the combination of the usual piston, cylinder, and receiver, a chamber communicating with said cylinder and with said receiver, a first valve leading to said receiver from said cylinder, a spring support or balance for said valve, an operating-lever geared at one end to said valve and fixed at the other end to an armature, an electro-magnet under said armature and in circuit with a first electric generator, a second valve and a spring support or balance therefor, an armature attached to said valve, an electro-magnet under said armature and in a circuit having a second electric generator, and a commutator having electrical connection with said circuits and with a pole-changer, which is geared to said piston, substantially as described.

337,804. ELECTRIC AIR-PUMP. ALBERT B. WORTH, Greenport, N. Y. Filed Dec. 9, 1885. (No model.)

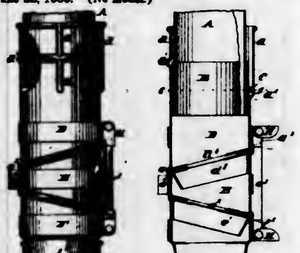
Claim.—1. In an air-pump, the combination of the usual cylinder piston and valve, a switch geared to said piston and an electro-magnet armature geared to said valve, the gearing of said armature consisting of two ratchets, the one upon a rod fixed to the armature and the other upon a rod fixed to the valve, and a pinion gearing into both ratchets, substantially as described.

2. In an air-pump, the combination of the usual cylinder-piston, operating handle and valve, an electro-magnet, an armature to said magnet, gearing connecting said armature to said valve, and an automatic switch in circuit with said magnet, said switch consisting of a contact-piece mounted upon a rod movable in bearings, cords secured to said contact-piece passing over pulleys and connected to said operating-handle, substantially as and for the purpose described.

337,804.



337,805. RAIN-WATER CUT-OFF. CHARLES ZITKO, St. Louis, Mo. Filed June 22, 1885. (No model.)



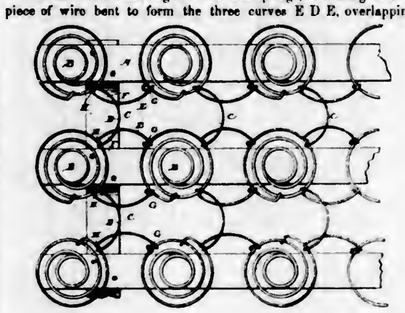
Claim.—1. A pipe made up of a number of sections connected by oblique turn-joints, substantially as described, the lower extremity of each section being provided with a tapering or conical nozzle extending from said joint into the next adjacent section, substantially as and for the purpose set forth.

2. The combination, with the sections of a pipe connected by turn-joints, of overlapping stops secured to said sections for limiting the rotation of one section upon the other, as explained.

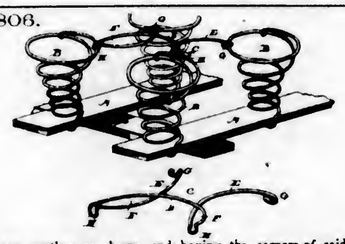
3. The combination of sections of a water cut-off connected by oblique turn-joint, stops upon the sections limiting the turning movement of one section upon another, and hinged latch locking the stops together, for the purpose set forth.

337,806. BED-SPRING. SAMUEL K. BUTTERFIELD, Swanton, Vt. Filed June 29, 1885. (No model.)

Claim.—A connecting-link for bed-springs, consisting of a single piece of wire bent to form the three curves E D E, overlapping and



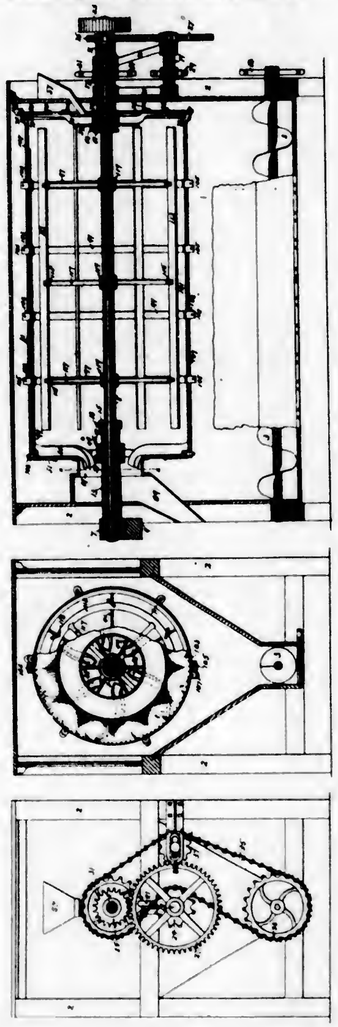
337,806.



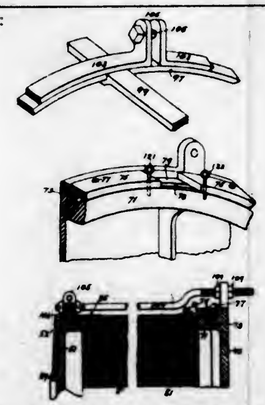
crossing one another, as shown, and having the corners of said overlapped and crossed parts turned down to form the loops H, in planes at right angles to the horizontal oblong loops F, as and for the purpose herein shown and specified.

REISSUES.

10,696. **CENTRIFUGAL REEL.** EMIL R. DRAVER, Stillwater, Minn. Dec. 19, 1885. Original No. 326,901, dated Sept. 22, 1885.



10,696.



Claim.—1. The combination, in a bolting-reel with a fixed and a movable reel end, of a bolting-cloth secured to the fixed reel end, passing over the edge of the movable reel end, and having its end contracted around the face thereof, and means for moving said reel end, substantially as described, and for the purpose set forth.

2. The combination, in a flour-bolt, of a fixed head or reel end, a movable reel end, means for moving said end toward or from the fixed end, and a bolting-cloth attached to the fixed reel end and turned over and contracted around the outer face of the movable end, but unattached to said end, substantially as and for the purpose set forth.

3. In a bolting-reel, the combination of a fixed reel end, a movable reel end, a bolting-cloth secured to said ends, an interior cloth-supporting frame attached at one end to and carried by said movable end and unattached at its opposite end, and means for moving said reel end, all substantially as described.

4. In a bolting-reel, the combination, with the reel end 43, and the movable end 51, having the groove 52 in its edge, of the bolting-cloth secured upon said ends, the exterior clamping-frame having the convex band fitting the groove 52, the rods 107 with the threaded ends, and the adjusting-nuts, whereby said clamping-frame is adjustably secured to the fixed reel end, all substantially as and for the purpose set forth.

5. The combination, in a bolting-reel, of a fixed reel end, a movable reel end, a bolting-cloth, an exterior clamping-frame consisting of a series of longitudinal bars, a series of hoops, each formed in two or more sections, clamps for securing one end of said frame to said movable reel end, and means for adjustably securing the opposite end of the frame to the fixed reel end, substantially as described.

6. In a bolting-reel, the combination, with the fixed reel end having the projecting lugs and the movable reel end having a groove in its edge, of the bolting-cloth, the interior cloth-supporting frame attached to and moving with said movable end, the exterior clamping-frame having a convex band fitting the groove in the movable end, and threaded rods and nuts for adjustably securing one end of said frame to the lugs on the fixed reel end, substantially as described.

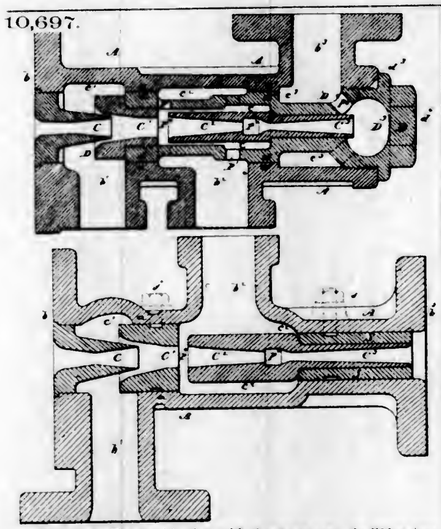
7. The combination, in a centrifugal bolting-reel, with the main shaft and the collar 15, of the fixed end 43, the movable end 51, having the threaded hub 45, the threaded tube 13, the bolting-cloth, and means, as described, for securing said cloth upon said ends, all substantially as and for the purpose set forth.

8. The combination, in a centrifugal reel, with the beater-shaft and beaters, of the tubular shafts or sleeves surrounding said beater-shaft at the ends of the reel, collars on said beater-shaft for preventing said sleeves from moving toward each other, reel ends mounted on said sleeves, a bolting-cloth secured upon said reel ends, and means for moving one of said ends lengthwise on its sleeve, all substantially as set forth.

9. In a centrifugal separator, the combination of a frame-work, a horizontal shaft, a beater-cylinder adapted to be rapidly revolved, a pinion, 25, on said shaft, a bolting-cloth-covered reel surrounding said beater-cylinder, tubular shafts or sleeves 13 17, by which it is journaled concentrically around said shaft and beater-cylinder, chain-pulley 31, fast on sleeve 17, counter-shaft 19, gear-wheel 27, engaging pinion 25, chain-pinion 29 on said counter-shaft, chain-wheel 33, the conveyer-shaft, tightener 37, and chain 35, substantially as described.

10,697. **INJECTOR.** JAMES GRESHAM, Manchester, England, assignor to the Nathan Manufacturing Company, New York, N. Y. Filed Feb. 10, 1886. Original No. 318,892, dated May 26, 1885. Patented in England May 2, 1884, No. 7,116, and July 23, 1884, No. 10,475, and in France June 14, 1884, No. 162,753.

10,697.



Claim.—1. The combination, with the steam-cone, the lifting-cone, the overflow branch or chamber, and the communicating passage between said lifting-cone and overflow-branch, of a combining and discharging cone controlled by the force of the jet of steam, or by that of the combined jet of steam and water, to automatically open and close said passage, substantially as and for the purposes hereinbefore set forth.

2. In an injector, the combination, with a lifting-cone, C', of a combining and discharging cone controlled by the force of the jet of steam, or by that of the combined jet of steam and water, to automatically vary the area of the space intervening between said lifting and combining cones, or close said passage, as described, for the purpose specified.

3. In an injector, the combination, with a lifting-cone, C', an overflow branch or chamber, and a communicating passage between said cone and overflow-branch, of combining and discharging cones having overflow-ports interposed between their axial passages, said cones being actuated by the force of the jet of steam, or by that of the combined jet of steam and water, to automatically control said passage, as described, for the purpose specified.

4. In an injector, the combination, with a steam-cone and a lifting-cone, C', of combining and discharging cones controlled by the force of the jet of steam, or that of the combined jet of steam and water, to automatically vary the area of the space intervening between the combining-cone and the lifting and steam cones, as described, for the purpose specified.

5. In an injector, the combination, with a steam-cone and a lifting-cone, C', of combining and discharging cones having overflow-ports interposed between their axial passages, said cones being controlled by the force of the jet of steam, or by that of the combined jet of steam and water, to automatically vary the area of the space intervening between the combining-cone and the lifting and steam cones, or close the passage between the combining and lifting cones, as described, for the purpose specified.

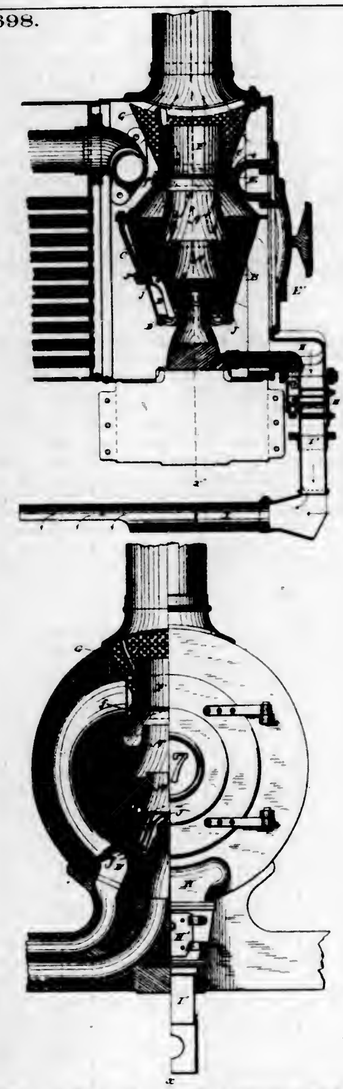
6. In an injector, the combination, with the injector-casing, of an internal casing provided with bearings for a lifting-cone, and a combining and a discharging cone, said internal casing being adapted for endwise removal from the injector-casing, for the purpose stated.

7. In an injector, the combination, with the injector-casing having steam and water overflow, and delivery branches, of an internal casing constituting the bearings for the lifting, combining, and discharging cones, and adapted for removal from the casing with said cones without uncoupling the injector from either of its connected branches, as described.

8. The combination, substantially as herein described, with the casing A, its steam and water overflow and delivery passages, and the steam-cone C, of the casing D, screwed at one end into casing A, the lifting-cone C', secured to one end of casing D, and the combining and discharging cones C^2 C^3, having overflow-ports p^3, between their axial passages, said cones C^2 C^3 being arranged to slide longitudinally within the casing D, said parts co-operating to the ends stated.

10,698. **SPARK-ARRESTER.** GEORGE D. HUNTER, Terre Haute, assignor, by direct and mesne assignments, of one-half to Thomas C. Van Nuys, and one-sixth to Morton C. Hunter, both of Bloomington, Ind. Filed Aug. 9, 1883. Original No. 220,922, dated Oct. 28, 1879

10,698.



Claim.—1. In a spark-arrester, the combination, with the exhaust-nozzle, of the devices located within the smoke-box for arresting the escape of cinders, and constructed so as to clear the nozzle and to be removable from the smoke-box without disarranging the parts thereof.

2. The combination, in a spark-arrester, of the cones A A', screen B, braces C, and casting E, all constructed and arranged to operate substantially in the manner and for the purpose hereinbefore set forth.

3. The combination, in a spark-arrester, of the casting E, the raised rim e, and the smoke-box door E', all constructed and arranged to operate substantially in the manner and for the purpose hereinbefore set forth.

4. The combination, in a spark-arrester, of the casting F, perforated sheet G, and braces supporting the same, constructed and arranged to operate substantially in the manner and for the purpose hereinbefore set forth.

5. The combination, in a spark-arrester, of the door E', boiler-head, and smoke-box, and front casting, with extension H, substantially as and for the purpose hereinbefore set forth.

6. In a spark-arrester, the combination, with the door of the smoke-box, of spark-arresting devices secured thereto, located within said box, and capable of being removed by the opening of the door, substantially as described

7. In a spark-arrester, the combination, with the smoke-box and its hinged outwardly-opening door, of the spark-arresting screen secured to to the door and capable of being removed and returned by opening and closing the door, substantially as described.

8. In a spark-arrester, the combination, with the smoke-box door and the spark-arresting screen secured thereto, of the exhaust-nozzle, the conical pipe sections, and the fixed screen in the upper part of the box, substantially as described.

9. In a spark-arrester, the combination of the casting F, having the semicircular downwardly-extending flange *f* and the semicircular horizontal flange *e'*, with the casting E, having the rim *e*, whereby sparks are prevented from entering the joint between the castings and independent lateral vibration of the parts prevented, substantially as described.

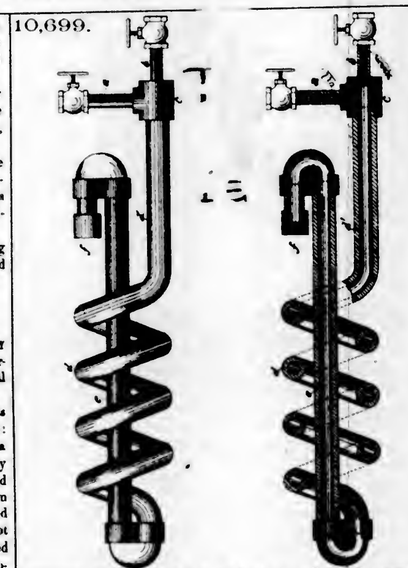
10. In a spark-arrester, the combination, with the frame J, having the flanges *j' j''*, of the sheet D, fitting against the flange *j* and supported by a ring fitting over the nozzle, substantially as described.

10,699. APPARATUS FOR BURNING HYDROCARBON OILS. HENRY W. WHITING, Philadelphia, Pa., assignor of two-thirds to Albert E. Paterson and John H. C. Whiting, same place. Filed May 26, 1885. Original No. 306,887, dated Oct. 21, 1884.

Claim.—1. A superheater-burner consisting of the following parts in combination, the respective areas of said parts being as follows, viz: a supply-pipe for hydrocarbon oil or vapor, a supply-pipe for steam, a common superheater-pipe into which the same leads and in which they are simultaneously superheated while in combination, the bore of said pipe being substantially uniform throughout, and a burner leading from said superheater and having an orifice area greater than the combined areas of the openings through which oil and steam are admitted and not less than the area of the superheater-bore, said burner being directed toward said superheater, whereby the vapors are driven through the apparatus without arrestation, and the total product is directed in a substantially single blast upon the superheater, in the manner and for the purposes set forth.

2. A superheater-burner formed of piping and consisting of the following parts in combination: the steam-pipe *b*, oil-pipe *a*, connected

10,699.



therewith, the superheater *d* in the form of a coil, and the return-pipe *e*, leading to the burner, which is so placed that the flame is discharged along the pipe *e* and upon the superheater-coils for the purpose of heating the mingled oil and steam on its passage to the burner, substantially as described.

PHOTO LITH NORRIS PETERS WASHINGTON D.C.

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

SHEPARD *et al. v.* CARRIGAN, ADMINISTRATOR.

Decided February 1, 1886.

1. Letters Patent No. 155,534, granted September 29, 1874, to Helen M. Macdonald for an improvement in dress-protectors, construed, and *Held* to include a fluted or plaited band or border as one of the essential elements of the invention, and is not infringed by a skirt-protector manufactured under a patent granted March 23, 1875, to Theodore D. Day, No. 161,012, having neither plaited or fluted bands or borders.
2. When an applicant for a patent to cover a new combination is compelled by the rejection of his application by the Patent Office to narrow his claim by the introduction of a new element, he cannot, after the issue of the patent, broaden his claim by dropping the element which he was compelled to include in order to secure his patent.
3. If an applicant, in order to get his patent, accepts one with a narrower claim than that contained in his original application, he is bound by it.

APPEAL from the Circuit Court of the United States for the District of Massachusetts.

Mr. Causten Browne and *Mr. E. N. Dickerson* for the appellants.

Mr. B. F. Butler and *Mr. F. P. Fish* for the appellee.

STATEMENT.

This was a suit to restrain the infringement of letters patent for an improvement in dress-protectors, granted to Helen M. Macdonald, the intestate of the defendant in error, dated September 29, 1874, upon an application filed May 10, 1873.

The specification of the patent described the invention as follows:

My invention relates to protectors for the lower edge of dresses and other garments; and consists of a band or strip of fluted or plaited fabric, either waterproof itself or covered or bound with any waterproof material.

In the drawing, Figure 1 represents a view of a detached portion of the dress-protector, and Fig. 2 represents the protector as applied to the bottom of the dress-skirt.

A is the plaited or fluted band, which is waterproofed or bound with waterproof material, and *a* is a heading to which it may be secured for better attachment to the garment.

Heretofore skirt-protectors have been made of a plaited or fluted strip of "wiggan" or other fabric stiffened with starch, which, upon becoming wet, gets limp, loses its shape, and absorbs the dirt, besides being objectionable on account of the harsh scraping noise it makes upon the pavement.

By my improvement these objections are overcome. The waterproof protector preserves the lower edge of the dress from all moisture on the ground, retains its rigidity and proper shape, giving a graceful hang to the skirt, and can easily be cleaned.

Both the figures referred to in the specification represented skirt-protectors made with plaited or fluted bands.

The claim was as follows:

As a new article of manufacture, a skirt facing or protector, having a plaited or fluted border bound with or composed of enameled cloth or other waterproof material, substantially as and for the purpose set forth.

On November 9, 1874, the patentee filed in the Patent Office a disclaimer by which she struck out from her claim the words "facing or," leaving the claim to cover only a skirt-protector. The answer of the defendants denied infringement and denied that Macdonald was the first and original inventor of the improvement described in her patent. Upon final hearing, the circuit court found the issues were for the plaintiff, and entered a decree in her favor against the defendants for profits and damages, and restrained the latter from selling to be used protectors embracing said patented improvement, or any substantial part thereof. From this decree the defendants appealed. After the appeal Macdonald died, and Carrigan, who had been appointed her administrator, was made appellee in her stead.

Mr. Justice WOODS delivered the opinion of the Court.

The evidence shows that skirt-protectors are made isolated and are sold as distinct articles of manufacture, and not as a part of the dress to which they are to be attached. They are kept in shops for sale singly or by the dozen, and the purchasers use them by sewing them on the inside of the trains of long dresses near the lower edge. They can be easily detached when worn out and new ones substituted. It is admitted that the defendants sell skirt-protectors made under the patent issued to Theodore D. Day, March 23, 1875, for an improvement in skirt-protectors. The improvement of Day is that described in the specification of his patent:

I use a strip of india-rubber that is made with longitudinal ribs of sufficient size to withstand the wear to which it is subjected, and between these ribs there is a groove that makes the strip light and flexible, and the web of rubber between the ribs receives a line of stitching, by which the protector-strip is united to a strip of rubber cloth, muslin, or other suitable material that is to be attached to the inside of the dress at or near the lower edge.

The skirt-protectors made under this patent are not made with a fluted or plaited band or border. The defendants insist that, by reason of this fact, they are essentially different from the improvement described in the Macdonald patent, and therefore do not infringe that patent. On the other hand, the plaintiff insists that the fluted or plaited border mentioned in the Macdonald patent is a matter of descriptive form merely, and not an essential part of the invention covered by the patent, and that the use of skirt-protectors without a fluted or plaited border, but in other respects substantially like the protectors described in the Macdonald patent, is an infringement of that patent. Upon this issue we think the defendants are right.

It appears from the file-wrapper and contents in the matter of letters patent granted to Helen M. Macdonald that in the first application for her patent, dated May 6, 1873, the specification describes her patent as follows:

My invention consists of a strip of enameled muslin from two to four inches wide, which may be covered with any dress material—such as silk, cashmere, alpaca, armure, or tamise-cloth. It is then formed in pleats, and bound across the top, (like samples,) said plaits being held in place by one row of machine-stitching through the center. It is then ready to be sewed in the dress-skirt.

My invention protects the dress from being cut or damaged by contact with earth or brick or concrete pavements and sidewalks, said invention being impervious to moisture. It also protects the

skirt from being soiled or damaged by mud or dampness of street-crossings, sidewalks, &c.

It also forms a very neat trimming and improves the hanging of the skirt.

On May 10, 1873, Macdonald, for some reason which does not appear, withdrew this specification and substituted the following:

My invention consists in protecting the lower edge of dresses and other garments by affixing thereto a portion of waterproofed material, or in waterproofing the material itself; and I claim as my invention the use of waterproofed material, in whatsoever form it now exists or may hereafter exist, for the purpose of protecting the lower edge of all garments from wear and soiling, either from friction or moisture, and refer to the inclosed samples as substantially representing my invention.

In this specification all reference to plaits or plaiting is omitted.

The application with the substituted specification was rejected by the Patent Office on August 9, 1873, and the applicant was referred to the patent issued to James A. McKee, January 10, 1865, which covered neither a plaited nor fluted band or border as one of its elements. Upon re-examination her application was, on September 9, again rejected.

On October 9, 1873, after the second rejection, Macdonald filed an amended specification, in which she described her invention and stated her claim as follows:

My invention consists in protecting the lower edge of dresses and other garments by affixing thereto a portion of waterproofed or enameled material, or in waterproofing the material itself; and I claim as a new article of manufacture a skirt facing or protector having a plaited or fluted border bound with or composed of enameled cloth or other water-proof material, substantially as and for the purpose set forth.

On October 30th she was informed by the Patent Office that her application was adjudged to interfere with the pending application, among others, of M. Herbert Chase, and that "the subject-matter involved in the interference" was "a skirt-protector having a fluted or plaited border." The skirt-protector of Chase referred to in the notice of interference was a plaited strip of india-rubber. Macdonald prevailed over Chase in the matter of the interference between their two applications, and received the patent for her invention, which is the patent involved in this suit. This patent, it will be observed, covers a skirt-protector merely without including any means or method for attaching it to the dress, the purchaser being left to fasten the protector to the dress in her own way.

It is shown by the evidence in the record that for several years prior to the earliest date assigned by Macdonald for the discovery of her device, in fact as far back as 1857, strips of enameled cloth without fluting or plaiting had been sewed on the bottom of the skirts of ladies' dresses, so as to project below the lower edges, with a view of protecting the inside surface and lower edge. This fact, and the file-wrapper and contents of which we have stated the substance, make it clear that the claim and specification of the Macdonald patent must be construed to include, as their language requires, a fluted or plaited band or border as one of the essential elements of the invention. Without this element the patent would not have been issued. The Patent Office decided, and it is clear, that without it the invention had been anticipated. Where an applicant for a patent to cover a new combination is compelled by the rejection of his application by the Patent Office to narrow his claim by the introduction of a new element, he cannot after the issue of the patent broaden his claim by dropping the element which he was compelled to include in order to secure his patent. (*Leggett* v. *Avery*, 101 U. S., 256; *Goodyear Dental Vulcanite Company* v. *Davis*, 102 U. S., 222-228; *Fay* v. *Cordesman*, 109 U. S., 403; *Mahn* v. *Harwood*, 112 U. S., 354-359; *Cartridge Co.* v. *Cartridge Co.*, 112 U. S., 624-644; *Sargent* v. *Hall Safe and Lock Company*, 114 U. S., 63.)

In the case of *Fay* v. *Cordesman*, *ubi supra*, it was said by Mr. Justice Blatchford, who delivered the judgment:

The claims of the patents sued on in this case are claims for combinations. In such claims, if the patentee specifies any element as entering into the combination, either directly by the language of the claim, or by such a reference to the descriptive part of the specification as carries such element into the claim, he makes such element material to the combination, and the court cannot declare it to be immaterial. It is his province to make his own claim and his privilege to restrict it. If it be a claim to a combination, and be restricted to specified elements, all must be regarded as material, leaving open only the question whether an omitted part is supplied by an equivalent device or instrumentality.

So in *Sargent* v. *Hall Safe and Lock Company*, *ubi supra*, the same justice said:

In patents for combinations of mechanism, limitations and provisos imposed by the inventor, especially such as were introduced into an application after it had been persistently rejected, must be strictly construed against the inventor and in favor of the public, and looked upon as in the nature of disclaimers.

These authorities are in point and decisive of the present case.

If an applicant, in order to get his patent, accepts one with a narrower claim than that contained in his original application, he is bound by it. If dissatisfied with the decision rejecting his application, he should pursue his remedy by appeal. Under the circumstances of this case, the inventor could not even get a reissue based on the broader claim which she had abandoned. (*Leggett* v. *Avery*, *ubi supra*.) Much less can she, in a suit brought to restrain its infringement, enlarge her patent by argument, so as to cover elements not falling within its terms, and which she had explicitly abandoned.

As the skirt-protectors sold by the defendants have neither plaited nor fluted bands or borders, we are of opinion, in accordance with the views expressed, that they do not infringe the patent of the plaintiff. The decree of the circuit court must, therefore, be reversed, and the cause remanded, with directions to dismiss the bill.

U. S. Circuit Court—District of New Jersey.

CARY *et al.* v. DOMESTIC SPRING-BED COMPANY *et al.*

Decided January 6, 1886.

1. PRELIMINARY INJUNCTION.
   No new facts appearing from defendant's affidavit, a preliminary injunction was granted in this case, without an examination of the merits or any expression of opinion upon the validity of the patent, following the ruling in *Cary* v. *Wolff*, (24 Fed. Rep 139.)
2. MOTION TO DISSOLVE PRELIMINARY INJUNCTION.
   Upon a motion to dissolve the preliminary injunction, the defendants conceded the utility of the invention, but sought to show by affidavits that the patentee was not the first inventor. The court, not deciding that such evidence was conclusive as to the prior use, *Held* that it was of a character to suggest grave doubts on this point and dissolved the injunction.
3. RULE AS TO DISSOLVING INJUNCTIONS.
   It is a good rule that evidence which would prevent the issuing of an injunction ought to be regarded as sufficient to dissolve one already granted.

Mr. Collins and *Mr. Keasbey* for the defendants.
Mr. Duncan and *Mr. Witter* for the complainants.

NIXON, *J.*:

The validity of the complainant's patent was passed upon and sustained by his honor, Judge Wheeler, in the case of *Cary* v. *Wolff*, (24 Fed. Rep., 139,) pending

for several years in the Circuit Court of the United States for the Southern District of New York. Judge Acheson, in the western district of Pennsylvania, followed Judge Wheeler, and granted to the complainant a preliminary injunction. (24 Fed. Rep., 141.) An application was then made to this court, in July last, for a provisional injunction, and, finding that no facts were revealed by the affidavits which had not been considered by the learned judge in the Wolff case, I ordered the injunction without an examination of the merits or expressing any opinion upon the validity of the patent.

The defendants now introduce a number of new affidavits relating to the novelty of the invention, and move to vacate and dissolve the injunction heretofore granted. They seem to occupy new ground. They acknowledge the value of Cary's alleged invention; concede, as the patent claims, that in the operation of coiling the wire into springs the metal is weakened by disturbing the molecules—the outer portion of the coil being drawn or stretched, and the inner portion crushed or shortened—and admit that the elasticity and strength lost by the distortion is more than restored by subjecting the spring for a few minutes to a degree of heat known as "spring-temper heat." They claim, nevertheless, that Cary has been anticipated in the discovery that spiral springs are improved in elasticity by such a process, and that the fact was known and the process in public use—by the affidavits—some years before he claims to have discovered and used it.

In considering the application I have confined myself mainly to the testimony of the three employés of the American Spiral Spring Butt Hinge Company—to wit, John I. Riker and John and Joseph R. Pereira.

Mr. Riker says that in 1864 he became the foreman of the American Spiral Spring Butt Hinge Company, then carrying on its business in Jersey City; that they manufactured spiral springs in connection with butt-hinges; that he was in the continuous employ of the company from 1864 to 1875 either as foreman or superintendent, and was thoroughly acquainted with all its manufacturing operations, and conducted them; that he studied the best means of tempering the springs after they were completed, and early learned that it injured their quality to heat them, beyond a blue color, to a red heat; that for several years he was in the habit, after heating the springs, to plunge them into an oil-bath, supposing that it was necessary in order to impart to them a good, even, elastic temper; but that in the year 1867 or 1868 (certainly before 1870) he had some springs, on which some japan had accidentally dropped, and which he put into the furnace to burn off, and found their quality improved, although he had not cooled them in the oil-bath mixture.

This [he continues] led us to experiment, and we found that the heating alone caused the increase of elasticity, and that the cooling was not necessary. Therefore we discontinued the use of the [oil] mixture on the springs, and simply heated them to a blue color, and let them cool off in the air.

John Pereira testifies that he was employed in 1864 as a workman in the same company, while Riker was foreman, and has remained in their employ ever since; that he was familiar with all departments of their business, and at present has the charge of their factory as superintendent. He states in his affidavit the incident to which Mr. Riker refers, from which they learned that the increased elasticity of the spring arose from the mode of heating, and not to the cooling in the oil-bath. He says that some years before 1870, and, as near as he can recall, in the year 1867 or 1868, they put some butts in the oven, with the springs in, to burn off some japan which had dropped on them, and to his surprise he ascertained that the springs were not ruined, but were better than before. They learned from experiment that heating the springs to a spring-temper heat and to a blue color improved their elasticity, and that such heating was the best process for tempering, and that they have continued such process more or less ever since.

His brother Joseph swears substantially to the same effect. He says:

About 1867, and before the japanning-oven was built, we had some springs that got japan on. It was necessary to take off the japan, and so we burned it off by putting them on a plate over the fire. They were heated enough to burn off the japan, and not to a red heat. I supposed that the temper would be taken out by the heating, but on testing we found that they were improved by the heating, although they had not been dipped in the oil. This led us to experiment, and we heated a lot of soft springs until they were blue, and let them cool off without any bath, and found that they were improved. After this we tempered many of our springs in this way. Sometimes, when the wire was very soft, we put them in the oil mixtures, but generally we left them to cool in the air. This we practiced frequently before the year 1870. I think we began it in 1868, and I am sure it was before 1870. We have continued to practice it ever since on springs requiring tempering.

It does not appear that such testimony of the prior discovery, knowledge, and use of the invention was brought to the notice of either of the learned judges who granted the injunction in the other cases. I do not say that it is conclusive. A cross-examination may throw a different light on the matter; but it is certainly of a character to suggest grave doubts whether Cary was in fact the original and first discoverer of the beneficial results which followed the application of spring-temper heat to springs, whose value so largely depends upon their elasticity and strength. I do not think that I should have seen my way clear to allow the preliminary injunctions in the present case if it had been presented on the original motion; and the rule is a good one that the evidence which would prevent the issuing of an injunction ought to be regarded as sufficient to dissolve one already granted.

The injunction must be dissolved until the final hearing.

U. S. Circuit Court—District of New Jersey.

NEW YORK BELTING AND PACKING COMPANY v. MAGOWAN *et al.*

Decided February 18, 1886.

1. Letters Patent No. 86,296, granted January 26, 1869, to Dennis C. Gately for an improvement in packing for stuffing-boxes of pistons construed, *Held* to be valid and infringed by the defendants.
2. Whether the thing devised is due to the genius of an inventor or to the mechanical skill of a workman is often a difficult question to determine. The line between them is not always clearly drawn. Invention indicates genius and the production of a new idea. Mechanical skill is applied to an idea and suggests how it may be modified and made more practical.
3. The complainant's patent is nearly on the line dividing invention from mechanical skill; but a new and better method of obtaining a tight joint between the packing and the piston-rod was obtained, and the fact that it went at once into extensive public use, superseding other methods, is pregnant evidence of its novelty, value, and usefulness.

Mr. B. F. Lee for the complainant.
Mr. F. C. Lowthorp, Jr., for the defendants.

NIXON, *J.*:

Letters Patent No. 86,296, for improved vulcanized-

rubber packing, were granted to the complainant corporation as assignee of Dennis C. Gately on January 26, 1869, and this suit is brought to recover profits and damages for their infringement.

The answer of the defendants (1) denies infringement; (2) alleges that Gately was not the original and first inventor of the thing patented, and (3) claims that the Letters Patent are void (*a*) because the single claim is too broad, covering more than Gately invented; (*b*) because the specifications fail to sufficiently distinguish between what was novel and what was old in the art; (*c*) because in view of the state of the art at the date of the issue of the patent no invention is exhibited and shown.

The defense of non-infringement was not well taken, not being sustained by the evidence. The packing manufactured by the defendant in 1882 and 1884 were exhibited. The first was an exact counterpart of the complainant's product under its patent, and the second was a feeble attempt at evasion by having only the central part of the inner surface of the canvas next to the piston-rod cut bias.

The other defenses, which may be fairly grouped under the single allegations of want of patentability of the invention in view of the state of the art, have caused more difficulty and required more careful examination.

In the specification of the patent the inventor states that his invention relates to packing of the kind for which Letters Patent were issued to Charles McBurney on June 28, 1859; that the defects of the McBurney invention were that the packing was not sufficiently elastic to maintain a tight joint between it and the piston, and that he has secured this greater elasticity by "forming the packing with a backing of pure vulcanized rubber * * * which may be covered and protected by a strip of canvas or other suitable fabric." He claims that when a packing thus formed is placed in the stuffing-box and around the piston, and the follower is screwed down so as to compress the packing, the rubber strip will also be compressed and forced against the sides of the stuffing-box, and, as it cannot expand in the direction of the follower, it acts as a spring to hold the packing against the piston-rod and to prevent leakage, compensating for any slight wear in the packing and making a tight joint between the rod and the packing.

The claim of the patent is—

The combination, with the packing such as herein specified, of an elastic backing or cushion of vulcanized india-rubber, substantially as and for the purposes set forth.

It is quite clear from the specification that the patentee conceived that he had remedied the defects and made an improvement upon the then existing McBurney patent. Turning to that patent we find that it was granted on June 29, 1859, for an improvement in packing for stuffing-boxes of pistons. It was claimed by the inventor to be a durable substitute for the hempen packing before employed in stuffing-boxes, more easily adjusted to produce a uniform pressure upon all sides of the piston-rod; but in practical use it fell short of accomplishing what the patentee claimed for it. Frequent complaints came from the purchasers to the manufacturers that it was too stiff and rigid, and was not compressible enough to make a tight joint in the stuffing-box. Gately, the patentee, who was the superintendent of the complainant corporation, set himself to the task of overcoming the defects. He made several experiments, and the result was the patent on which the suit is brought. He added to the McBurney packing the elastic backing or cushion of vulcanized india rubber, which not only rendered the whole more compact and more elastic, but, being compressed between the follower and the sides of the stuffing-box, acted as a spring to hold the packing continuously against the piston-rod, thus making a tight joint which had not been attained under the McBurney invention, and was not shown to have been so well accomplished under any other patent.

Whether the thing devised is due to the genius of an inventor or to the mechanical skill of a workman is often a difficult question to determine. The line between them is not always clearly drawn. Invention indicates genius and the production of a new idea. Mechanical skill is applied to an idea and suggests how it may be modified and made more practical, and according to *Smith* v. *Nichols* (21 Wall., 112) such mere modification is not patentable unless some new and useful result is secured. The complainant's patent is nearly on the line dividing invention from mechanical skill; but after carefully comparing it with the exhibits which are put in to show anticipation and its lack of patentability I am of the opinion that the combination reveals invention not so much because the packing is more elastic by reason of the addition of pure hard rubber, but because the patent discloses a new and better method of obtaining a tight joint between the packing and the piston-rod than has been obtained by any other combination of elements, new or old. It is a fact not to be overlooked and has much weight that the products manufactured under it went at once into such extensive public use as almost to supersede all packing made under other methods. Such a fact is pregnant evidence of its novelty, value, and usefulness, and accounts for the defendant's infringement.

Let a decree be entered in favor of the complainants, and for an account.

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OF THE

United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1881, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume 60 pages. In paper covers $1.50.

Vol. 4. Appendix No. 4, July 1, 1884 to June 30, 1885. One volume, 60 pages. In paper covers, $1.50.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth.....$10 00

INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pp.—

Bound half-turkey	2 50
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Issue of March 16, 1886.

Patents	434	No. 337,807 to No. 338,240,	inclusive.
Designs	11	No. 16,567 to No. 16,577,	inclusive.
Trade-Marks	16	No. 13,102 to No. 13,117,	inclusive.
Labels	3	No. 4,756 to No. 4,758,	inclusive.
Reissue	1	No. 10,700.	
Total issue	465		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Montana Territory	.....	.....
Arizona Territory	.....	.....	Nebraska	3	.....
Arkansas	1	.....	New Hampshire	2	1
California	5	.....	New Jersey	9	1
Colorado	2	.....	New Mexico Territ'y	2	.....
Connecticut	33	.....	New York	83	6
Dakota Territory	3	.....	North Carolina	1	.....
Delaware	1	.....	Ohio	30	2
District of Columbia	1	.....	Oregon	1	.....
Florida	1	.....	Pennsylvania	42	.....
Georgia	2	.....	Rhode Island	7	.....
Idaho Territory	1	.....	South Carolina	2	.....
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Indian Territory	.....	.....	Texas	9	.....
Indiana	17	1	Utah Territory	.....	.....
Iowa	11	.....	Vermont	2	.....
Kansas	10	.....	Virginia	1	.....
Kentucky	7	.....	Washington Territ'y	.....	.....
Louisiana	2	.....	West Virginia	3	.....
Maine	4	.....	Wisconsin	8	.....
Maryland	2	.....	Wyoming Territory	.....	.....
Massachusetts	21	3	United States Army	1	.....
Michigan	13	.....	United States Navy	.....	.....
Minnesota	7	1			
Mississippi	2	.....	Total to citizens of the United States	414	18
Missouri	17	1			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria-Hungary	.....	.....	Germany	8	.....
Barbadoes	.....	.....	Hawaii	.....	.....
Belgium	.....	.....	Holland	.....	.....
Bermuda	.....	.....	Italy	1	.....
Brazil	.....	.....	Mexico	.....	.....
Canada	4	.....	Newfoundland	.....	.....
Central America	.....	.....	New Zealand	.....	.....
Colombia, U. S. of	.....	.....	Scotland	1	.....
Cuba	.....	.....	Spain	.....	.....
Denmark	1	.....	Switzerland	2	.....
Egypt	.....	.....			
England	10	1	Total to citizens of foreign countries	31	1
France	4	.....			

DESIGNS.

16,567.—TRUNK-IRON.—*James H. Alexander*, Philadelphia, Pa., assignor to *Thomas Devlin & Co.*, same place. Application filed December 19, 1885. Serial No. 186,236. Term of patent 7 years.

16,568.—SPOON OR FORK HANDLE.—*Henry W. Hirschfeld*, Meriden, Conn., assignor to *The Meriden Britannia Company*, same place. Application filed December 26, 1885. Serial No. 186,800. Term of patent 14 years.

16,569.—HARNESS-TERRET.—*George M. Hubbard*, New Haven, Conn., assignor to *W. & E. T. Fitch*, same place. Application filed November 23, 1885. Serial No. 183,790. Term of patent 7 years.

16,570.—TOBACCO-PIPE.—*Frederick J. Kaldenbery*, Tarrytown, N. Y. Application filed January 28, 1886. Serial No. 190,130. Term of patent 7 years.

16,571.—BRACKET FOR SPRINGS.—*Joseph W. Kenna*, Chicago, Ill., assignor to *William I. Bunker* and *Charles L. Miller*, both of same place. Application filed October 31, 1885. Serial No. 181,545. Term of patent 14 years.

16,572.—TABLE-WARE.—*Thomas Maddock*, New York, N. Y., assignor to *Henry Maddock*, same place. Application filed January 30, 1886. Serial No. 190,373. Term of patent 7 years.

16,573.—ASH-BOWL.—*Zero Marx*, Chicago, Ill. Application filed January 29, 1886. Serial No. 190,241. Term of patent 7 years.

16,574.—RUBBER MAT.—*John Murphy*, Brooklyn, N. Y. Application filed November 3, 1885. Serial No. 181,789. Term of patent 14 years.

16,575.—STALL-GUARD.—*William C. Peet*, New York, N. Y., assignor to *The J. L. Mott Iron Works*, same place. Application filed February 10, 1886. Serial No. 191,521. Term of patent 14 years.

16,576.—COFFIN-HANDLE SOCKET.—*William M. Smith*, Meriden, Conn., assignor to *The Meriden Britannia Company*, same place. Application filed December 28, 1885. Serial No. 186,968. Term of patent 14 years.

16,577.—COFFIN-PLATE.—*William E. Stevens*, New Haven, Conn., assignor to *Sargent & Co.*, same place. Application filed January 18, 1886. Serial No. 189,018. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

13,102.—CERTAIN CANNED GOODS.—*George W. Aldrich*, Burlington, N. J. Application filed February 18, 1886. Used since February 1, 1886.

"The words 'PARNELL HOME RULE.'"

13,103.—WHISKY.—*G. Amsinck & Co.*, New York, N. Y. Application filed February 9, 1886. Used since January 21, 1886.

"The figure of a five-pointed star having within it the letter 'A.'"

13,104.—REFRIGERATORS.—*Blodgett & Osgood*, St. Paul, Minn. Application filed February 13, 1886. Used since February 2, 1886.

"The representation of an ice palace, in front of which is a refrigerator open, with a monogram of 'B & O' upon the lid and the words 'ICE-PALACE' on the front panel."

13,105.—OVERALLS.—*Carter & Churchill*, Lebanon, N. H. Application filed February 15, 1886. Used since January, 1880.

"A pictorial representation of the 'OLD MAN OF THE MOUNTAIN.'"

13,106.—SHELLED CORN.—*E. B. Crofut & Co.*, Syracuse, N. Y. Application filed February 3, 1886. Used since January 15, 1880.

"The word 'SOL.'"

13,107.—GENTS' AND CHILDREN'S SUITS AND OVERCOATS.—*Einstein & Co.*, Chicago, Ill. Application filed January 30, 1886. Used since January 2, 1886.

"The word 'GRANT.'"

13,108.—WINE.—*James Foley* and *John R. Poor*, Boston, Mass. Application filed November 18, 1885. Used since July 1, 1885.

"The picture of a shield with a hand grasping an arrow above it, a smaller, inside of said larger shield, bearing a clinched hand and a cross-bar extending across said larger shield, with stars arranged above and below, the whole partially inclosed by the wreath and knot."

13,109.—BLOOD-PURIFIERS, TONICS, PILLS, TEAS, POWDERS, AND DROPS.—*Xavier Herberg*, Cincinnati, Ohio. Application filed January 9, 1886. Used since December 1, 1885.

"A design consisting of a sun in the background and a chariot, driver, and horses in the foreground."

13,110.—ROLLER-PROCESS WHEAT-FLOUR.—*Heyman & Co.*, Monroeville, Ohio. Application filed November 16, 1885. Used since March 1, 1883.

"The words 'NICKEL PLATE.'"

13,111.—HORSE-RASPS.—*Kearney & Foot Company*, New York, N. Y., and Paterson, N. J. Application filed February 9, 1886. Used since December 9, 1885.

"The figures of a crescent inclosing the word 'CRESCENT,' and of an ellipse inclosing the letters and character 'K & F.'"

13,112.—CANNED CORN.—*Kemp, Day & Co.*, New York, N. Y. Application filed February 18, 1886. Used since July, 1885.

"The words 'SILVER SPRAY.'"

13,113.—MALT LIQUORS.—*Machen & Co.*, Liverpool, England. Application filed February 17, 1886. Used since 1861.

"The representation of a pelican feeding its young in a nest."

13,114.—DRIED FRUITS.—*Reid, Murdoch & Fischer*, Chicago, Ill. Application filed February 19, 1886. Used since November 1, 1884.

"The representation of a flying oriole."

13,115.—HIGHLY-SPICED PICKLES.—*Shilton, Foote & Co.*, Somerville, Mass. Application filed February 9, 1886. Used since January 25, 1886.

"The word 'CAULIBALSA.'"

13,116.—MACKEREL.—*Trask Fish Company*, St. Louis, Mo. Application filed February 13, 1886. Used since January 1, 1886.

"An ocean scene, with three hanging fish conspicuously represented in the center of the foreground."

13,117.—GOLD CHAINS.—*A. Wallach's Nephews*, New York, N. Y. Application filed January 28, 1886. Used since January 1, 1886.

"The representation of a five-pointed star."

LABELS.

4,756.—Title: "RHEUMATIC SPECIFIC."—*Reason Drake*, La Grange, Ind. Application filed February 19, 1886.

4,757.—Title: "HONEY EXTRACT" (FOR A COUGH SIRUP.)—*Thomas W. Halliday*, Mansfield, Mass. Application filed February 20, 1886.

4,758.—Title: "WESTLAKE'S VEGETABLE OINTMENT."—*William Westlake*, Lima, N. Y. Application filed February 12, 1886.

DISCLAIMER.

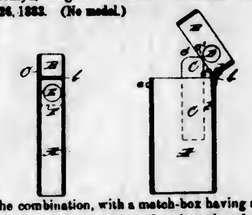
174,130.—*William Gardner*, Toledo, Ohio. IMPROVEMENT IN MACHINE-GUNS. Patent dated February 29, 1876. Disclaimer filed March 11, 1886, by *The Pratt and Whitney Company*, assignee.

Enters its disclaimer "to that part of the claim in said specification which is in the following words, to wit: '6. In combination with the slots of varying widths, as shown at H H', the cartridge-extractor for discharging the empty shell, substantially as described.'"

PATENTS

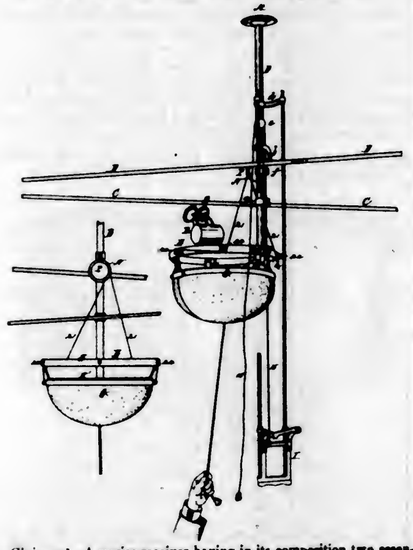
GRANTED MAR. 16, 1886.

337,807. **COMBINED MATCH-BOX AND CIGAR-CUTTER.** PHILLIPS ABBOTT, Brooklyn, assignor to William M. Decker, New York, N. Y. Filed Nov. 26, 1883. (No model.)



Claim.—The combination, with a match-box having a hinged cover provided with a hole for the insertion of a cigar-tip, of a cutter which by the closing of the box is caused to sway across the hole through which the tip of the cigar is inserted, and a stop which limits the opening of the cover, substantially as shown and described.

337,808. **CASH AND PARCEL TRANSMITTING APPARATUS FOR STORE-SERVICE.** EDWIN I. BLOUNT, Cambridge, and CHARLES A. KIMPTON and WILLARD H. GILMAN, Boston, assignors to the Gilman Cash Railway Company, Boston, Mass. Filed Nov. 18, 1885. (No model.)



Claim.—1. A carrier-receiver having in its composition two essential features—viz., an upper stationary portion having a movable bottom, into which the carrier drops after it leaves the track, and a lower movable portion for receiving the carrier after having passed through the upper portion, said movable portion being capable of being lowered into a position for the salesman to conveniently remove the carrier therefrom, and of being automatically raised into proximity with the under side of the stationary portion, for the purpose set forth.

2. The stationary upper portion of a carrier-receiver having a pivoted bottom held closed in its normal position by one or more springs or spring-actuated mechanism, in combination with a movable carrier-receiving portion thereunder, which, on its ascent, opens the movable bottom of the stationary portion to allow of the descent of the carrier therefrom into the movable portion of the receiver, for the purpose specified.

3. In combination with the upper stationary portion of a carrier-receiver, a bottom therefor, consisting of two pivoted portions swung up into their normally-closed position by springs, and locked in said position by weighted levers, for the purpose described.

4. The movable portion of the carrier-receiver, with its projections, in combination with and for tripping the weighted levers and unlocking the movable bottom of the stationary portion of the carrier-receiver, substantially as shown and specified.

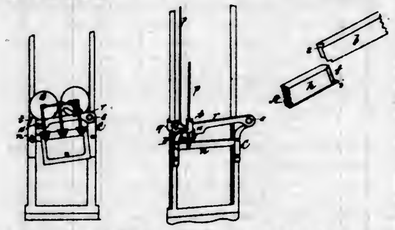
5. In combination with the stationary and movable portions of a carrier-receiver, a mechanism for elevating the latter, consisting, essentially, of a helical spring, a pair of grooved pulleys, and a cord or other flexible connection, substantially as set forth.

6. The guide-rolls 22, in combination with the movable portion of the receiver, its cords 21, and elevating mechanism, as described.

7. A carrier-tripping device consisting, essentially, of the bent lever S, with its arm r, hook s, and locking end u, in combination with and actuated by a spring, as specified.

8. A two-wheel carrier having a receptacle, R, and a central supporting-standard, p^3, provided with a guard-pin, w, in combination with a spring-actuated lever, S, having a curved arm, r, and a hook, s, for engaging with the rotating rod q, to which the axes of the wheels of the carrier are secured, substantially as described.

337,809. **CASH AND PARCEL CARRIER FOR STORE-SERVICE.** EDWIN I. BLOUNT, Cambridge, and CHARLES A. KIMPTON, Boston, assignors to the Gilman Cash Railway Company, Boston, Mass. Filed Nov. 18, 1885. (No model.)



Claim.—1. A carrier-elevator with a carrier thereon, in combination with a single-rail track-section swung up thereby, for the purpose described.

2. A single-rail track and a pivoted single-rail section, in combination with a carrier-elevator having a carrier thereon for swinging up or opening the pivoted section, for the purpose set forth.

3. A carrier-elevator having a rail for supporting a carrier, in combination with a single-rail track, and a single-rail track-section pivoted thereto, for the purpose specified.

4. A single-rail track and a pivoted single-rail track-section closed automatically, in combination with and swung up or opened by a carrier located on a carrier-elevator, for the purpose described.

5. A single-rail track and a pivoted single-rail track-section closed by gravity, or by gravity accelerated by a spring, and swung up or opened by a carrier located on a carrier-elevator, substantially as set forth.

6. A carrier-elevator having a rail for supporting a carrier, and a stop for keeping the carrier thereon until the carrier-supporting rail of the elevator comes in line with and registers with the contiguous stationary portion of a single-rail track, in combination with an automatically-closed single-rail track-section, for the purpose stated.

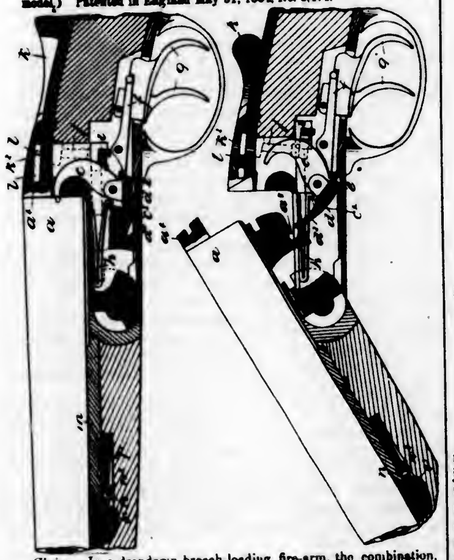
7. A carrier-elevator having a rail for supporting a carrier thereon,

and a spring-actuated stop for keeping it upon said rail while being raised into line with a single-rail track, in combination with a single-rail track-section swung up by the elevator or carrier and closed by gravity, or by gravity assisted by a spring, substantially as shown and described.

8. A carrier-elevator having a carrier-supporting rail inclined downward at a greater angle than that of the single-rail track with which it connects or intersects, as set forth.

9. A pivoted single-rail track-section, in combination with a stationary single-rail track provided with a stop for limiting the descent of the pivoted section, the free end of which is grooved to fit a tongue or projection on the contiguous end of the stationary track, or vice versa, as described.

337,810. BREECH-LOADING FIRE-ARM. CHRISTOPHER G. BOXHELL, Birmingham, County of Warwick, England. Filed Apr. 11, 1885. (No model.) Patented in England May 31, 1884, No. 8,471.



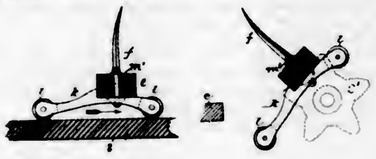
Claim.—In a dropdown breech-loading fire-arm, the combination, with the gun-barrel and the stock, of a hammer pivoted in said stock and provided with side snugs, c^3, a hammer-lifter, *d*, working upon the same pivot as the hammer and provided with a spring, *e*, and forwardly-projecting toe d^2, engaging with a notch, a^2, upon the lump a^2 of the barrel, whereby when the barrel is tilted the arm will be cocked, substantially as described.

337,811. HAY-LOADER. JACOB BRENER, BENJAMIN F. BRENER, WILLIAM M. BRENER, and JACOB B. BRENER, Richland Centre, Wis. Filed May 1, 1885. (No model.)

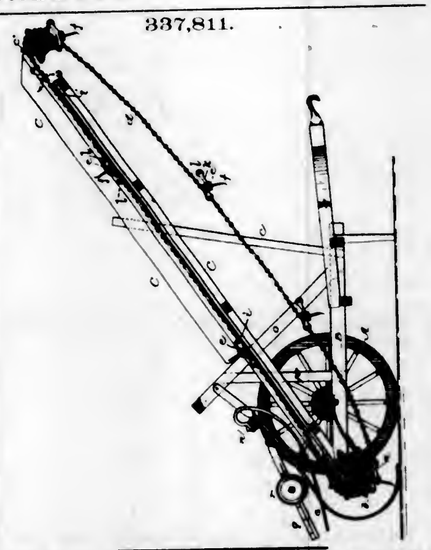
Claim.—1. The combination, with the endless chains or belts and toothed slats pivoted thereto, of a running-board intermediate the extremities of the slats, and traveling blocks provided at their extremities with wheels supported on said board, said blocks being concaved on their under sides and adapted to support the teeth in an erect position and to swing down after leaving the board and permit the swinging of the slats on their pivots, substantially as described.

2. In a hay-loader elevator, the combination, with the chain belts and the slats, of bearings connected with the drive-chains and provided with internal V-shaped stops, said slats having flattened pivots engaging with the bearings, substantially as described.

3. The combination of the endless belts, the bearings having the V-shaped stops, the slats pivoted in said bearings and engaging with said stops, the running-board, and traveling blocks and teeth secured to the slats, said blocks mounted on rollers and supporting the teeth in an erect position above the running-board, substantially as described.



337,811.

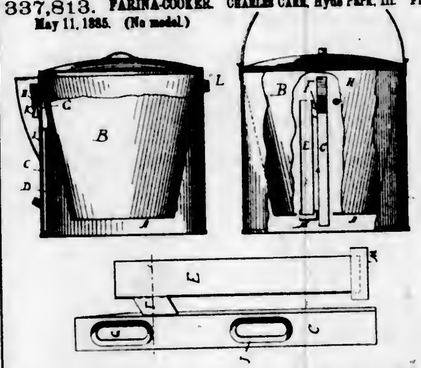


337,812. DENTAL BRIDGE-WORK. GEORGE V. I. BROWN, St. Paul, Minn. Filed June 1, 1885. (No specimens.)



Claim.—The process in the manufacture of artificial dentures of fitting silver bands to the permanent teeth, making a plaster cast of the jaw with bands attached, then removing the bands, adjusting them to the model of permanent teeth on the cast, then waxing up such artificial teeth as may be necessary, investing the cast and artificial teeth in a flask, removing the wax, and casting about the teeth and bands a molten alloy forming the metal bridge without backing or the use of solder, all as and for the purpose set forth and described.

337,813. FARINA-COOKER. CHARLES CARR, Hyde Park, Ill. Filed May 11, 1885. (No model.)

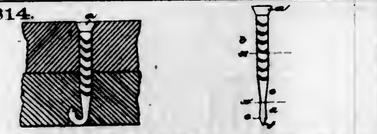


Claim.—In a farina-cooker, the combination of an outer and an inner vessel, a water-inlet pipe, a steam-outlet pipe, a reed or whistle located in such outlet-pipe, and through which the steam in passing sounds an alarm, a drain-pipe, and a short piece or pipe, F, connecting the water-pipe and the drain-pipe, substantially as described.

337,814. SHOE-NAIL. DAVID O. CLARK, Haverhill, Mass., assignor of one-half to Edward E. Dow, same place. Filed Jan. 8, 1886. (No model.)

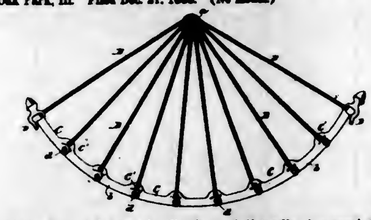
Claim.—1. A nail consisting, essentially, of a head, a straight main body portion of substantially the same sectional area throughout its length, and a reduced body portion comprising a tapered part, *c*, the crippling section *d*, the enlarged portion *e*, and a point, as and for the purpose set forth.

337,814.



2. As and improved article of manufacture, a nail consisting, essentially, of a head, the corrugated main body portion *b*, of substantially oval form in sectional area, and the reduced body portion of substantially oval form in cross-section, the major axis of one oval being at right angles to that of the other, the said reduced body portion comprising the tapered part *c*, the crippling section *d*, the enlarged portion *e*, and the conical point *f*, all substantially as shown and described.

337,815. HAMMOCK STRETCHER OR ADJUSTER. ROBERT C. COOK, Oak Park, Ill. Filed Dec. 21, 1885. (No model.)



Claim.—1. A hammock adjusting and distending bar consisting of a series of hinged or folding sections adapted to grip or clasp the suspension-cords of a hammock, the said sections lapping each other at their ends in the direction of their length, and the said overlapping parts being jointed or hinged to each other, for the purpose of thereby permitting the sections to be folded together one upon the other, substantially as and for the purposes specified.

2. The combination, substantially as specified, in a hammock adjusting or distending bar, of a series of hinged or folding sections, *b b*, each having at or near the ends thereof the meeting jaws or clasps C' C', the ends of the said sections overlapping each other laterally, or side by side, and the said overlapping portions being joined or hinged together, substantially as and for the purposes specified.

3. A hammock adjusting or distending bar consisting of a series of metallic sections, each made in one and the same piece, the said sections having thereon jaws for clamping the suspension-cords of a hammock detachably, and the said sections overlapping each other at their ends and in the direction of their length, and the said overlapping parts being hinged or jointed together, substantially as and for the purposes specified.

4. The combination, substantially as specified, with the suspension-cords of a hammock, of a folding, adjusting, or distending bar, consisting of a series of sections adapted to clasp the said cords by means of jaws or clasps C' C' and hooks D D, the said sections overlapping each other at their ends and in the direction of their length, and the said overlapping portions being hinged or jointed together, substantially as and for the purposes specified.

337,816. VENTILATING-COVER FOR MILK-PANS. JAMES DAVIES, Mitchell, assignor of one-half to Fred. M. Pratt, White Lake, Dak. Filed Dec. 14, 1885. (No model.)



Claim.—1. In a ventilating-cover, the solid top A, provided with the ventilating-wall B, depending therefrom, and the horizontal base or rim C, projecting inwardly from its point of connection with the wall and resting on the upper edge of the vessel to support the cover, as set forth.

2. In a ventilating-cover, the top A, having a flange, *a*, and provided with the wall B, having ventilating-openings, and the base or rim C, as set forth.

3. A ventilating-cover having the sloping top A, and the wall B, provided with escape-openings E at the point of connection with the top, as set forth.

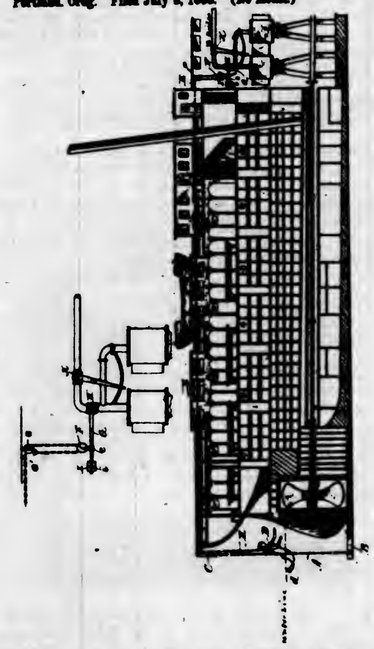
4. A ventilating-cover having the top A, the wall B, provided with escape-openings E at the point of connection with the top, and the base or rim C, as set forth.

5. A ventilating-cover having the top A, the wall B, depending therefrom and provided with ventilating-openings, and the base or rim C, connected to the wall and extending inwardly therefrom, so as to rest upon the upper edge of the vessel and support the cover, the wall of the cover being held away from the vessel, as set forth.

6. A ventilating-cover having the top A, the wall B, depending therefrom and provided with ventilating-openings, and the base or rim C, connected to the wall, extending inwardly therefrom and provided with two parallel guide-walls, in the space between which the upper edge of the vessel is received, as set forth.

7. A ventilating-cover having the top A, the wall B, and the base or rim C, said wall having suitable ventilating-openings, and notches E, cut out of the wall at the point of junction with the top A and base C, as set forth.

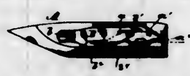
337,817. AUTOMATIC MARINE GOVERNOR. CHARLES DICKINSON, Portland, Oreg. Filed July 6, 1885. (No model.)



Claim.—1. In a marine governor, a float located in the rear of the rudder outside of the vessel, so as to be operated by the water, and means for transmitting said motion to the governor-valve, substantially as set forth.

2. The combination, with the float D, having rudder *d*, of the guide-rod A, chain E, lever G, and valve H, as and for the purpose set forth.

337,818. SEWING-MACHINE SHUTTLE. PHILIP DIEHL, Elizabeth, N. J., assignor to the Singer Manufacturing Company of New Jersey. Filed Oct. 8, 1885. (No model.)



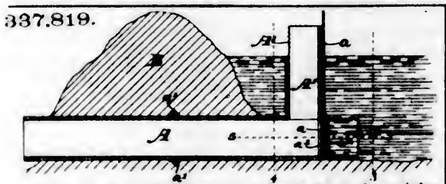
Claim.—1. The combination, with a shuttle-body having an open inclined slot at its rear end, of a tension-spring the rear end of which extends across said slot partly on the outside and partly on the inside of the said shuttle-body, and rests against the inner wall of the latter, substantially as set forth.

2. The combination, with a shuttle-body having an open inclined slot at its rear end, of a tension-spring attached to said shuttle-body at its forward end, and provided with thread-fingers, the rear end of said spring entering said slot and resting against the inner wall of the shuttle-body.

3. The combination, with the shuttle-body A, having the slots *a* and *a'*, of the tension-spring B, having the thread-fingers *b'* and b^2, and the downwardly-bent projection or hook b^3, entering the slot *a'*, substantially as set forth.

337,819. COMBINED WASTEWAY AND DRAIN FOR PONDS. R. M. DILL, Morgantown, Ind. Filed Dec. 5, 1885. (No model.)

337,819.

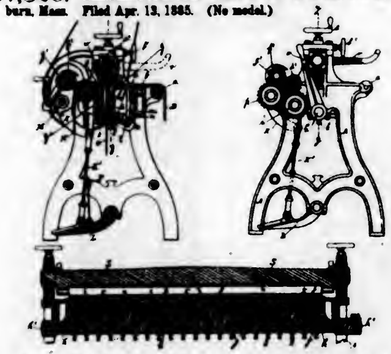


Claim.—1. A combined wasteway and drain for ponds, consisting of a drain or flume, A, extending out under the bank, a vertical pipe or flume, A', connected to said drain A near its inner end and extending up therefrom, and a gate, *a*, arranged between the connection of said pipe A' with said drain A and the inlet to said drain, whereby when it is desired the pond may be easily drained, or when it is filled to the desired height the excess will flow into the drain through the vertical pipe, thereby adapting said drain for both uses, substantially as set forth.

2. A drain for ponds, the horizontal flume or pipe of which has a surrounding ridge or projecting portion, *a'*, to intercept the flow of water down the outside of said pipe or flume, substantially as shown and described.

3. The combination of the horizontal pipe or flume A, having the ridge or projecting portion *a'* and gate *a*, and the upwardly-projecting portion A', having the upper portion of one side open, and the wire-netting or cross-bars covering said open portion and also the open receiving end of said pipe or flume A, substantially as set forth.

337,820. LEATHER-SPLITTING MACHINE. A. EDGAR DODGE, Woburn, Mass. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination, with the splitting-knife *f* and stock-supporting table *b*, of the gage-roll *t*, mounted on a journaled support and provided with the adjustable presser-rolls *u*, whereby a uniform pressure of the gage-roll throughout its length is obtained, substantially as specified.

2. A leather-splitting machine having a table fast to a pivotal support, *d*, at one side, and at the other sustained by a supporting-piece hung on journals below the level of the table, whereby as said support is turned on its journals the front end of the table is lowered, for the purposes and substantially as shown and described.

3. The combination, in a leather-splitting machine, with the driving-shaft carrying the draw-roll *c'*, of pinion *d'*, intermediate gears, *i* and *p*, pinion *f'*, and draw-roll *g'*, substantially as shown and described.

4. The table *b*, mounted as shown, in combination with case *h*, provided with blocks *g*, and adjustable supports *j*, substantially as shown and described.

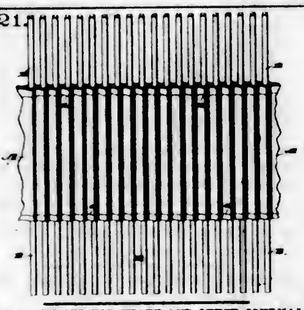
5. The table *b*, its pivoted support *d*, and arm *m*, in combination with supporting-case *h*, provided with elastic blocks *g*, lever *l*, and adjusting device *n*, for the purposes and substantially as shown and described.

337,821. MANUFACTURE OF MATCHES. WILLIAM R. DOOLITTLE, New Haven, Conn. Filed Apr. 21, 1884. (Model.)

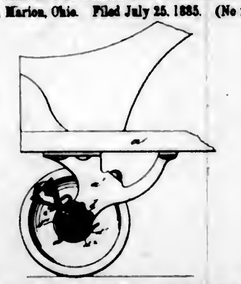
Claim.—1. As an improvement in the art of manufacturing matches, the method of preparing match-splints for the reception of the igniting material, which consists in arranging the splints in a continuous series between two strips of webbing, and then securing said splints in position by means of one or more rows of stitches, substantially as and for the purpose described.

2. As an improvement in the art of making matches, the method of preparing the match-splints for the reception of the igniting material, which consists in arranging the splints in a continuous series between two strips of webbing, and then securing said splints in position by means of one or more rows of chain-stitch sewing, substantially as and for the purpose described.

337,821.

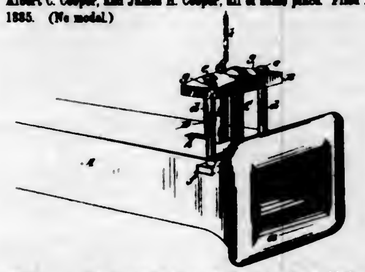


337,822. OIL-CUP FOR SKATE AND OTHER JOURNALS. WILLIAM B. DORWARD, Marion, Ohio. Filed July 25, 1885. (No model.)



Claim.—The combination, with the skate box or frame *a'*, formed with the oil-hole *b'* and depression d^2 on opposite sides, of the cup *c* and its hollow shank c^2, and the spring *d*, secured thereto at one end and formed with a nib, *d'*, at the other, substantially as and for the purpose set forth.

337,823. CAR-COUPLING. FRANKIN N. EDDLEMAN, Mount Pleasant, Tenn., assignor of three-fourths to Willis J. Howard, James C. Cooper, Albert C. Cooper, and James H. Cooper, all of same place. Filed Aug. 21, 1885. (No model.)



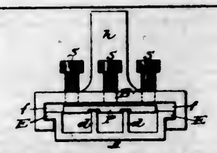
Claim.—1. The combination of the draw-head provided with longitudinal slots in its upper and lower sides, the vertical stationary guide-pins rigidly secured to and extending upward from the draw-head, the movable block having perforations through which the guide-pins pass, so that the block can slide vertically on the pins, a coupling-pin carried by the block, and a trigger hinged or jointed to said block for supporting the block and pin when raised until the entering link dislodges the trigger, substantially as described.

2. In a car-coupling, the combination of a draw-head having upper and lower compartments and provided with longitudinal slots on its upper and lower sides, a vertically-movable block supported above said draw-head and carrying a vertically-movable coupling-pin, and a trigger hinged or jointed to said block, and adapted to support the block and pin when raised until the entering link dislodges the trigger and causes the block and pin to descend, thereby automatically engaging the pin and link, substantially as described.

337,824. CLAMP FOR HOLDING DYNAMO-ELECTRIC BRUSHES WHILE BEING FILED. MAYNARD S. ELDON, Williamsport, Pa. Filed Apr. 1, 1885. (No model.)

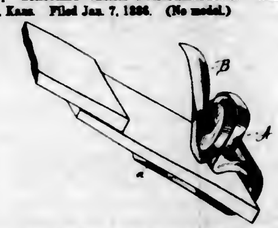
Claim.—The herein-described clamp for holding dynamo-electric brushes while in process of filing and dressing, consisting of the top piece, B, provided with the handle *h*, binding screw or screws S, and grooves *f f*, the bottom piece, A, beveled at its front end, divided into sections by the partitions *d d*, said partitions drawn to an edge at the rear end.

337,824.



and having its sides extended to fit the grooves *f f*, and the plate P, having grooves *g g*, substantially as and for the purposes described.

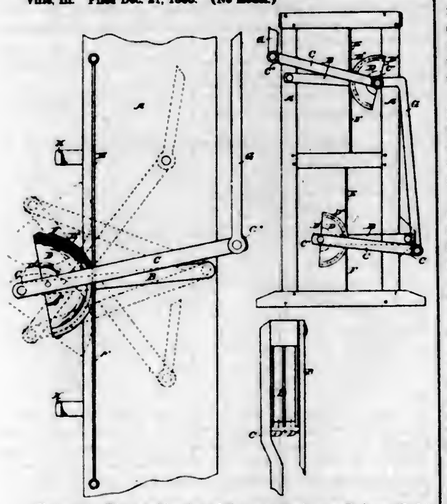
337,825. BRACKET-CLAMP FOR SHINGLING. WILLIAM ERVIN, Argentine, Kans. Filed Jan. 7, 1886. (No model.)



Claim.—1. In a shingle-bracket, the combination of a bracket having a part to run under the butt of a shingle, and a cam-lever swinging to the right or left to clamp the same to the shingle.

2. A bracket-clamp for roofing, consisting of a bracket, A, formed out of a single piece of material having an elongated tongue, *a*, and cam-lever B, pivoted or fulcrumed thereto, substantially as shown and described.

337,826. MECHANICAL MOVEMENT. ANDREW FARRINEY, Milledgeville, Ill. Filed Dec. 21, 1885. (No model.)



Claim.—1. The combination of the support A, arm B, lever C, fulcrum D, attached to such lever, and band E, substantially as shown, and for the purpose described.

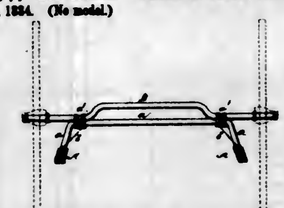
2. The combination of the support A, arm B, lever C, fulcrum D, and bands E and F, substantially as shown, and for the purpose specified.

3. As an improvement in mechanical movements, the combination of a lever, C, a fulcrum, D, attached to such lever and having a convex side, and a band, E, suitably attached at one end to a fixed point and at the other end to such fulcrum, in such manner as to wind and unwind upon the convex side of the latter, substantially as shown, and for the purpose mentioned.

4. As an improvement in mechanical movements, the combination of a lever, C, a fulcrum, D, attached thereto, and a supporting-band, E, adapted to wind and unwind upon and move such fulcrum in the oscillation of such lever, whereby the action of the weight end of such lever is increased, substantially as shown, and for the purpose described.

5. The combination of the lever C, the fulcrum D, attached thereto, and bands E and F, attached stationarily at their outer ends and having their inner ends attached from opposite directions to the fulcrum D, and adapted to alternately wind and unwind upon the latter, whereby such fulcrum is positively drawn alternately in opposite directions in the oscillation of such lever, substantially as shown, and for the purpose specified.

337,827. BOB-SLEIGH. WILLIAM H. GALVIN, Ottawa, Ill. Filed Sept. 6, 1884. (No model.)



Claim.—The combination, with the wagon-axles B, of the runners A, provided with connecting beams and knees made in one piece, the clips *a' a'*, and braces *b b*, the said braces being carried backward and forward of the runner, as described, all constructed and arranged substantially as shown and described, and for the purpose set forth.

337,828. FREIGHT-CAR. JOHN R. GATESBURY, Jeffersonville, Ind. Filed Dec. 24, 1885. (No model.)



Claim.—1. The combination, in a freight-car, of side sills extending the length thereof, two box-compartments fixed upon the sills and separated by an open space, the floors of the said compartments stopping at the said open space, cross-ties in the said space below the level of the said compartment-floors, and rods connecting the said cross-ties with the said sills, substantially as shown and described.

2. In a freight-car, the combination of two side sills extending the length of the car, two compartments, each having ends, sides, and a floor independent of and separated from the other by an open space between the sills, a floor to the said open space lower than the level of the said compartment-floors, and rods connecting the space-floor with the car-sills, substantially as shown and described.

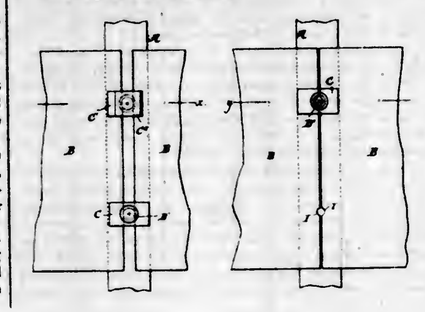
3. The combination, in a car, of two compartments separated by an open space, trusses along the sides of the space joining the compartments, a floor to the space supported by the trusses below the level of the compartment-floors, and a fluid-tank shaped to loosely fit the said space, substantially as shown and described.

4. The combination of the sills A, the rafters K, resting thereon as braces, and the screw-threaded rods L, each provided with screw-nuts M, adapted to engage both the upper and lower sides of the rafters and sills, substantially as shown and described.

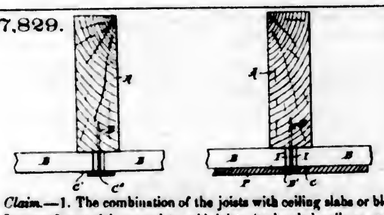
5. The combination of two separate compartments, D, the side sills, A, supporting them, cross-ties G in the space between the compartments and lower than the level of their floors, the rafters K, meeting at the center and resting their extreme ends on the sills, the hanger-rods L, connecting the rafters, the sills, and the ties G, and the screw-nuts M threaded on the said rods, substantially as shown and described.

6. The combination of the sills A, the rafters K, resting thereon, the hanger-bolts L, provided with screw-nuts M, and the girders N on the upper side of the rafters, substantially as shown and described.

337,829. FIRE-PROOF CEILING. CHARLES C. GILHAM, Elders, Iowa. Filed Aug. 14, 1885. (No model.)



337,829.



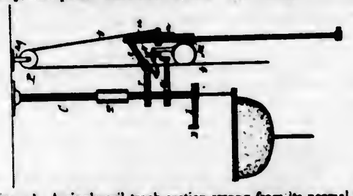
Claim.—1. The combination of the joists with ceiling slabs or blocks of a fire-proof material secured to said joists by headed nails or screws placed at a distance from said slabs or blocks, and by washers or retaining-plates having enlarged openings, through which the shanks of said nails pass, substantially as described.

2. The combination of the joists with ceiling slabs or blocks of a fire-proof material carrying a coat of plaster and secured to said joists by headed nails or screws placed at a distance from said slabs or blocks, and by washers or retaining-plates having enlarged openings, through which the shanks of said nails pass, substantially as described.

3. The combination of the joists with notched ceiling slabs or blocks of a fire-proof material laid close together and secured to said joists by headed nails or screws located in said notches at a distance from the edges of said blocks, and by washers or retaining-plates having enlarged openings, through which the shanks of said nails pass, substantially as described.

4. The combination of the joists with ceiling slabs or blocks of a fire-proof material secured to said joists by headed nails or screws located at a distance from the edges of said slabs or blocks, and by washers or retaining-plates having enlarged openings, through which the shanks of said nails pass, and extensions folded over the heads of said nails, substantially as described.

337,830. CASH AND PARCEL TRANSMITTING APPARATUS. WILLARD H. GILMAN, Boston, Mass., assignor to the Gilman Cash Railway Company, same place. Filed Nov. 20, 1885. (No model.)



Claim.—1. A single-rail track-section swung from its normal position, by the weight of a carrier thereon, laterally out of the vertical plane of the line of the track, for the purpose described.

2. A single-rail track-section swung from its normal position laterally out of the vertical plane of the line of the track by the weight of a carrier which is derailed thereby, substantially as set forth.

3. A single-rail track-section swung from its normal position laterally out of the vertical plane of the line of the track by the weight of a carrier thereon, which is derailed thereby, in combination with a carrier-receiver thereunder.

4. A single-rail track-section swung from its normal position laterally out of the vertical plane of the line of the track by the weight of a carrier thereon, which is derailed thereby, in combination with a support to which the track-section is secured, for returning the latter automatically to its vertical normal position, constructed to operate substantially as specified.

5. A weighted support for a single-rail track-section, by which the latter is kept in its upright normal position in line with the contiguous stationary portions of the track, in combination with a carrier belonging to the station under said track-section, for laterally swinging or tipping the same automatically away from the vertical plane passing through the center of the track, for the purpose described.

6. A weighted pivoted support for a single-rail track-section, a tripping device therefor, and a locking device for holding the support and track-section in their normal position, in combination with a carrier having a tripping device so constructed as to come into contact with the track-section-tripping device, for releasing said locking device and causing the track-section to be swung on its pivoted support out of its upright normal position, for the purpose specified.

7. A movable single-rail track-section disconnected from and interposed between the contiguous portions of the stationary track, a support for the stationary portions, and a support for the movable track-section pivoted thereto, a spring-actuated bolt for locking the same in its normal position, and a tripping device connected with the pivoted support and located in the path of a carrier-tripping device, for unlocking the bolt and leaving the track-section free to swing out of line of the stationary portions of the track, constructed to operate substantially as set forth.

8. In combination with the single-rail track-section and its support, the locking-bolt provided with a tripping device and surrounded by a spiral spring, as described.

9. A carrier-receiver having in its composition three essential features—viz., an upper stationary portion, G, provided with a permanently-open bottom, a lower movable portion, I, and an intermediate portion, H, having a bottom adapted to open and close, for the purpose stated.

10. A carrier-receiver having an upper stationary portion, G, provided with a permanently-open bottom, a lower movable portion, I, and an intermediate portion, H, pivoted to the upper portion, and having a bottom adapted to open and close at determinate times, as described.

11. A stationary upper portion, G, with a permanently-open bottom, a movable lower portion, I, a middle portion, H, pivoted to the stationary portion, and having its bottom formed of two parts or halves which automatically close, so as to receive and hold a carrier while the lower or movable portion, I, is away from a position to receive it, for the purpose set forth.

12. A middle portion, H, having its bottom formed of parts or halves which close automatically in their normal position, in combination with a lower movable portion, I, which when drawn down opens the bottom of the portion I, for the purpose specified.

13. The middle portion, H, with its divided bottom closed automatically, in combination with the movable lower portion, I, provided with hooks *q q*, for engaging (when elevated) with the portion H, and for opening said divided bottom when drawn down, substantially as and for the purpose described.

14. A carrier-elevator which on its ascent also approaches the vertical plane passing through the track in order to locate a carrier thereon, substantially as described.

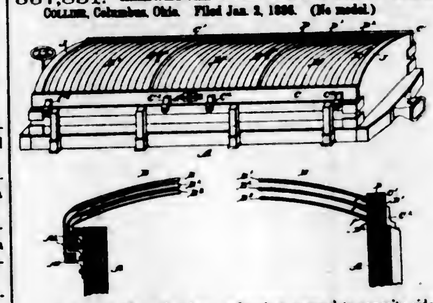
15. A carrier-elevator having the guide or way on or in which it moves pivoted to a support thereover, as set forth.

16. A support for the movable way of a carrier-elevator, consisting of a stationary arm, *r*, and a movable arm, *s*, pivoted thereto, as specified.

17. The rod *u*, connected with the carrier-elevator, in combination and for swinging up the arm *s* and allowing the guide-rod L to be simultaneously elevated and approach the vertical plane of the center of the track, to enable the carrier to be located thereon.

18. The arm *s*, with its stop 28, in combination with the stationary arm *r* and guide-rod L, substantially as set forth.

337,831. RAILWAY-CAR COVER. GEORGE P. GOOD and ROBERT B. COLLIER, Columbus, Ohio. Filed Jan. 2, 1886. (No model.)



Claim.—1. The strips, bars, or brackets secured to opposite sides of the car on the outside, and provided with two or more grooves or ways, in combination with the roof-sections having their edges received in and sliding in the grooves or ways, and interlocking devices to cause one section to engage with the other when extended to close the roof, as set forth.

2. A cover for open or freight cars made in sections, said sections being adapted to slide within each other, and having the end of one section interlocking with the end of the adjacent section, as shown and set forth.

3. The strips, bars, or brackets secured to opposite sides of the car and provided with a series of grooves or ways, the bottom wall of which is inclined for the purpose explained, in combination with the roof-sections having their side edges received and sliding in the grooves or ways, as set forth.

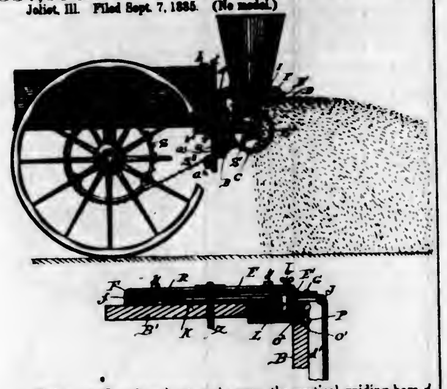
4. The strips, bars, or brackets secured to opposite sides of the car, which strips or brackets are provided with two or more guides, grooves, or ways, arranged one above the other, in combination with the roof-sections, oval in cross-section, having their side edges on a horizontal plane and received in the grooves or ways, as set forth.

5. The sliding roof-sections, in combination with the car having their upper ends projected over, so as to prevent the ends of the roof-sections from being wedged upward, as set forth.

6. The strips, bars, or brackets secured to the car and provided with a set of ways arranged one above the other, in combination with the roof-sections having their edges received and sliding in the ways, and

an interlocking lip provided on one of the sections, to engage with the adjacent section when the parts are extended, for the purpose set forth.

337,832. BROADCAST SEED-SOWER. OSCAR P. HEARTWELL, Jr., Joliet, Ill. Filed Sept. 7, 1885. (No model.)



Claim.—1. In a broadcast seed-sower, the vertical guiding-bars *d*, having the attachments, substantially as shown and described, for securing them to a wagon-bed, in combination with the slides *d'*, secured to the frame of the seeder, and the means, substantially as set forth, for uniting said parts to hold the seed-sower adjusted vertically, for the purpose specified.

2. In a broadcast seed-sower, the means described and shown for giving vertical adjustment, consisting of the combination of the guiding-bars *d*, having hooks *h*, and swivels *v*, and screw-hooks *v'*, for attaching them to a wagon-bed, slides *d'*, secured to the seeder-frame, and bolts *t*, constructed and arranged substantially as set forth.

3. In the broadcast seed-sower described, the seed-distributer D having its extending radial arms slightly curved forward at their outer end, and having forwardly-extending flanges arranged on the upper part of said radial arms, as and for the purpose set forth.

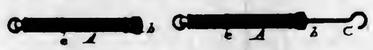
4. In combination with the chain and chain-wheels for operating the seed-sower, and the means for holding tight said chain, consisting of the bar *a*, arm *a'*, sheave a^2, and spring *w*, a seed-sowing machine arranged to be vertically adjusted, substantially as and for the purpose set forth.

5. In the seeding-machine shown and described, and in combination with the stationary base-plate K, constructed as specified, and the rim F, the rotatable plate E, having the flanges R, separate apertures *g g*, and extension E', gage-plate G, having the separate apertures X X, and slides J J, each having an aperture, *r*, substantially as for the purpose set forth.

6. In combination with the frame of the seed-sower arranged to be vertically adjusted, as specified, the hopper H, the flanged rim F, the bed-plate K, having the two independent elongated apertures *n n*, depression *o*, and slotted face-flange *o'*, plate E, arranged to be partially rotated, and having the two independent apertures *g g*, flanges R R, and extension E', the slides J J, each having an aperture, *r*, gage-plate G, having the two independent apertures X X, depending lug L, and thumb-screw P, the shaft Z, the distributer D, the bevel-gears *m* and C, and the means shown and described for operating said parts, as and for the purpose set forth.

7. In combination with the frame of a seed-sowing machine and the hopper thereof, the cast stationary base-plate K, flanged rim F, rotatable plate E, seed-gage plate G, and cut-off slides J J, arranged above the upper surface of the seeder-frame, and having two separate and distinct seed-discharging ports arranged in advance, and one at either side of the distributer-shaft Z, and arranged to bring one of said ports in advance of the other by means of rotating said plate E, as and for the purpose set forth.

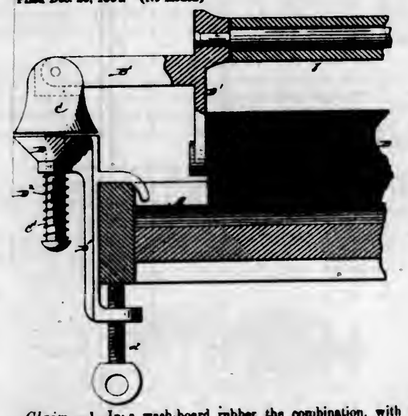
337,833. BUTTON-HOOK. WILLIAM S. HEBER, New York, N. Y. Filed Jan. 12, 1886. (No model.)



Claim.—1. A case for button-hooks, consisting of a tubular body, A, provided with an enlarged oval or flattened mouth, substantially as described, whereby a button-hook can be inclosed which is wider than the diameter of the body of the case.

2. In combination with the case A, provided with a mouth which is wider than the body thereof, a sliding hook, C, of greater width than the body of the case, substantially as shown and described.

337,834. WASH-BOARD RUBBER. CORNELIUS HOOD, Chicago, Ill. Filed Dec. 29, 1884. (No model.)

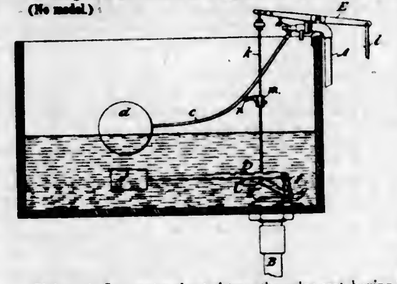


Claim.—1. In a wash-board rubber, the combination, with the rubber, of a clamp adapted to clasp the edge of the board and secured to the rubber by a swivel-joint, substantially as shown and described.

2. In a wash-board rubber, a frame provided with two fluted rollers and having an arm projecting from one end, in combination with a head in which this arm is hinged, having a shank swiveled in a clamp adapted to be secured upon the edge of the board, substantially as and for the purpose set forth.

3. The frame B', fluted rollers B, handle *b*, and projecting arm B^3, in combination with a head, C, in which the arm is hinged, formed with a shank swiveled in and sliding vertically through the clamp D D', and the spring D^2 upon said shank, all constructed and arranged to operate substantially as and for the purpose set forth.

337,835. WATER-CLOSET CISTERN. FRANK A. JACOB, Indianapolis, Ind., assignor to Aschoomal & Strong, same place. Filed Sept. 15, 1885. (No model.)



Claim.—1. In a water-closet cistern, the valve-seat having lugs *f*, valve C, having lip *i* and pivoted to said lugs, lever D, also pivoted to lugs *f* and arranged to engage lip *i*, and float *j*, all combined in the manner and for the purpose specified.

2. In a water-closet cistern, the combination, with the inlet-valve *b* and lever *c*, of the discharge-valve C, pivoted to its seat, the buoyed lever D, arranged to engage said discharge-valve when open, and rod *k*, attached to the discharge-valve and having arm *n*, engaging lever *c*, whereby said lever is sustained by the discharge-valve when open, substantially as and for the purpose specified.

337,836. AUTOMATIC SPRINKLER. GEORGE W. KITTELL and WILLIAM JACKSON, Springfield, assignors to the Star Automatic Fire Extinguisher Company, Boston, Mass. Filed May 31, 1883. Renewed Nov. 4, 1885. (No model.)



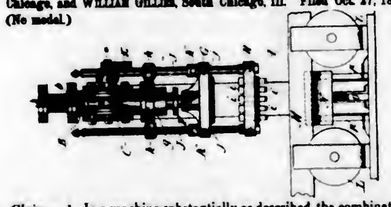
Claim.—1. In combination with the body of an automatic sprinkler having a rigid valve-seat therein, a valve and a perforated sprinkler-cap, a lever-hook on one side of said body, a flexible lever having a bearing on the end of said valve and engaging by one end with said

hook, a link to engage with said lever, a hook and link holder on the sprinkler-body opposite to said lever-hook, and a link-hook adapted to engage with said link and with said link-holder, and to have one end thereof united by solder fusible at a low temperature with the latter, substantially as set forth.

2. In combination with the body, the valve and the valve-locking devices of an automatic sprinkler, substantially as described, a sprinkler-cap of cup shape rigidly secured to said body, whose sides are formed with a series of curves or undulations having perforations through them in lines substantially at right angles to the undulating surface parts thereof.

3. In an automatic sprinkler, the combination, with the body, the valve, and the valve-holding lever, substantially as described, of the hook *e*, and link *i*, the hook and link holder *m*, having the notch *x* therein, and the link-hook *n*, substantially as set forth.

337,837. **MACHINE FOR STAMPING RAILS.** HENRY C. KRIETE, Chicago, and WILLIAM GILLIES, South Chicago, Ill. Filed Oct. 27, 1885. (No model.)



Claim.—1. In a machine substantially as described, the combination, with the cylinder and piston-rod carrying the hammer-head, of a die-holder guided by and suspended from such hammer-head, being automatically elevated thereby to clear the rail and provide sufficient space for exchanging dies, as and for the purpose set forth.

2. In a machine substantially as described, the combination, with the cylinder, piston-rod, and hammer-head, of a die-holder having square holes for the reception of headed dies, and being guided by and suspended from such hammer-head, to be automatically elevated for clearing the rail and for providing sufficient space for exchanging dies, as and for the purpose set forth.

3. In a machine substantially as described, the combination, with the cylinder, piston-rod, and hammer-head, of a die-holder supported by guide-rods that are passed through eyes of cylinder and hammer-head, and having adjustable collars for holding suspended such die-holder and hammer-head while on its elevated position, as and for the purpose set forth.

4. The combination, with cylinder B, having guide-eyes A, and the piston-rod F, carrying hammer-head G with guide-holes *j*, of die-holder H, having guide-rods J with collars K, all constructed and arranged substantially as described, for the purpose specified.

5. The combination, with cylinder B, piston-rod F, hammer G, and die-holder H, and with rollers L, of the vertically-movable anvil N, actuated by treadle *n*, all substantially as described, for the purpose specified.

6. The combination, with cylinder B, rod F, hammer G, and die-holder H, and with rollers L, of the vertically-movable anvil N, actuated by pivotal lever *m*, having treadle *n* and being counterbalanced by weight P, all substantially as and for the purpose described and shown.

337,838. **FOUNTAIN-PEN.** JULIUS KLAUKE, Solingen, Prussia, Germany. Filed Sept. 5, 1885. (No model.)



Claim.—1. In a fountain-pen, an oscillating ink-reservoir provided with suitable ink inlet and outlet, and supported on lateral trunnions in the front end of the pen holder or handle and acted on by a spring so as to keep the front end of the fountain-piece or reservoir constantly in contact with the inside of the pen, and capable of following the up and down movements of the pen, substantially as shown and described.

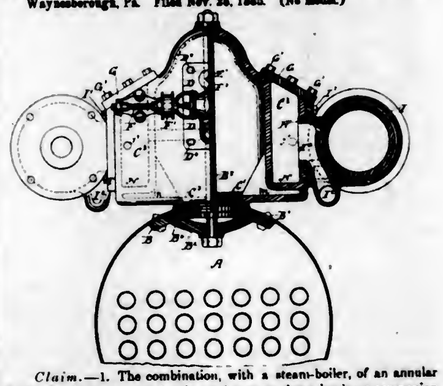
2. In the ink-reservoir of a fountain-pen, a sloping transverse bridge-wall or diaphragm placed near the front end of said ink-reservoir, and provided with an aperture for allowing the ink to feed through to the front end of the said reservoir and thence through a suitable inlet to the pen in just such quantity and at such time as required for the use of the pen, substantially as shown and set forth.

3. In a fountain-pen, an oscillating ink-reservoir placed within the handle of the pen and mounted on central trunnions supported in bearings in the handle, and having its lower end open-topped and placed against the inside of the pen, so as to readily deliver the ink thereto as the pen and its adjacent reservoir oscillate or vibrate up and down as in the writing movement, which said movement of the pen causes the ink-reservoir to oscillate on its trunnions, substantially as described and set forth.

4. In a fountain-pen, a spring-actuated oscillating ink-reservoir placed within the pen-handle and supported in suitable bearings therein, so as to permit a longitudinal vertical oscillation which is imparted to it by the up and down movements of the pen in writing, the front or lower end of the reservoir being placed in contact with the inside of the pen for this purpose, and for the ready delivery of the ink to the pen, substantially as shown and described.

337,839. WITHDRAWN.

337,840. **TRACTION AND OTHER ENGINES.** FRANK P. LANDIS, Waynesborough, Pa. Filed Nov. 28, 1885. (No model.)



Claim.—1. The combination, with a steam-boiler, of an annular casting having a concave bearing and a steam-dome having a companion convex bearing on the bottom thereof mounted and secured upon said casting, substantially as specified.

2. A steam-dome provided with integral and oppositely-arranged valve-chests, in combination with horizontal cylinders and a horizontal boiler, substantially as specified.

3. A steam-dome provided with exteriorly and oppositely arranged integral valve-chests and an intermediate bearing for connection with a steam-boiler, substantially as specified.

4. A steam-dome formed with exteriorly and oppositely arranged valve-chests and an interior hollow rib or steam-passage communicating with the same, substantially as specified.

5. The combination, with a boiler, of a steam-dome pivotally secured thereon and cylinders mounted upon opposite sides of the dome, substantially as specified.

6. The combination, with a horizontal boiler and a steam-dome thereon, of valve-chests arranged upon opposite sides of the dome and integral therewith, cylinders arranged outside of the valve-chests, valves arranged within the chests, a throttle-valve, and steam-passages from the dome to both valve-chests, substantially as specified.

7. A steam-dome having an interior steam-passage to opposite sides thereof, in combination with a casting provided with a channel communicating with said passage and with the interior of the dome, substantially as specified.

8. The combination of the boiler A, spider-casting B, having the concave bearing B^4, dome C, having the flange C′ and convex bearing C^3, and a bolt or bolts, substantially as specified.

9. The combination of the dome C, having the opening C^3, and hollow rib C^4, and aperture C^5, with the casting D, having the steam-passages D′ D^2 D^3, the latter communicating with the passage C^5, substantially as specified.

10. The combination of the steam-dome carrying the casting D, having the passages D′ D^2 D^3, with the throttle E, adapted to close the latter passage, substantially as specified.

11. The combination, with the dome C, of the casting D secured thereon, having the described steam-passages leading to the steam-chests, and the throttle E, substantially as specified.

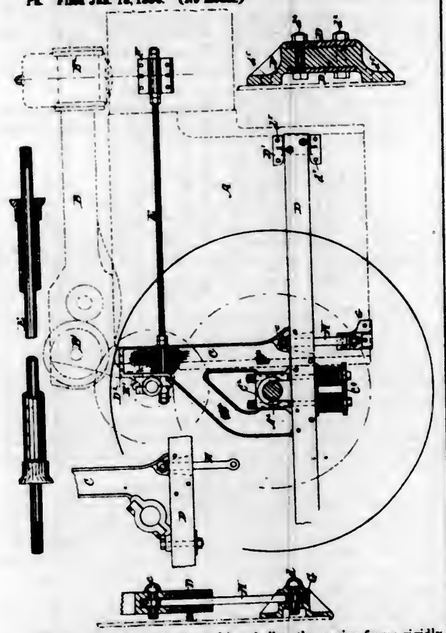
12. The dome C, provided with the valve-chests C^3, having apertured exterior walls, in combination with the cylinders I, having the projections H, substantially as specified.

13. The combination, with the dome C, provided with the valve-chests, interior hollow rib, and annular flange or bearing, of the casting D, having the described steam-passages, the throttle E, and the governor F, the valve mechanism J J′ J^2, the frame-work K^2, cross-head L, and piston-rod M, substantially as specified.

14. The combination of the steam-boiler, its steam-dome, and a ball-joint bearing between said boiler and steam-dome, substantially as and for the purpose described.

15. The combination of a steam-dome and a steam-chest having two of its walls within said dome, and a recessed portion, N, in the bottom of said steam-chest, substantially as and for the purpose described.

337,841. **TRACTION-ENGINE.** FRANK P. LANDIS, Waynesborough, Pa. Filed Jan. 18, 1886. (No model.)



Claim.—1. In combination with a boiler, the engine-frame rigidly secured to said boiler at its front end and movably secured to the housings or supporting-frame, substantially as and for the purpose described.

2. The combination of a traction-engine boiler, the engine-frame rigidly secured to said boiler at its front end and movably secured to the housings or supporting-frame at its rear end, with bolts or rods secured at their front end to the boiler in a plane passing transversely across the boiler and at their rear end to the housings or supporting-frame of the traction-engine, substantially as and for the purpose described.

3. The combination of a traction-engine boiler, its housings, and sills D with brackets D′, secured to the front end of the fire-box, and links H, having their lower end secured to the rear end of the fire-box and their upper end to the frame-work, substantially as described.

4. The combination of a traction-engine boiler, its supporting-frame, housings, and horizontal bar E^2, connecting said housings with the interlocking plates e and e^2, secured to the rear end of the boiler and to said horizontal bar, substantially as and for the purpose described.

5. An engine-frame rigidly secured at its cylinder's end to the top of a boiler, with its opposite or crank-shaft end movably secured to the housings or supporting-frame of the boiler and machinery of a traction-engine, substantially as and for the purpose set forth.

6. In a traction-engine, the rear end of boiler supported by links H, pivotally attached at their upper ends to the supporting-frame, substantially as and for the purpose set forth.

7. The combination of a traction-engine boiler, the supporting-links H, and brackets G G, with a connecting or distance bar *g*, substantially as and for the purpose set forth.

8. The combination of a traction-engine boiler, the transverse braces D^2 E^2, and the interlocked, tongued, or grooved plates, as *e* e^2, substantially as and for the purpose set forth.

9. The combination of a traction or portable engine-boiler, its engine-bed having three bearing-points, a single rigid bearing to the boiler at the cylinder's end, and two sliding bearings at the opposite end, and connected to the supporting-frame or housings, substantially as set forth.

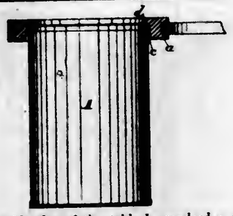
337,842. **SOLDERING-TOOL.** EDWARD H. LAIRD, Jr., Falmouth, Me. Filed Jan. 18, 1886. (No model.)

Claim.—1. The combination of a soldering-tool and a ring of metal having a shoulder upon the inner wall thereof, substantially as described.

2. As a device for soldering the covers of cans, the combination of a ring of metal having on its interior wall a shoulder slightly smaller than the wall of the can to be soldered, and a circular soldering-tool the diameter of which is such as to allow its free rotation within the shoulder.

3. The combination of the standard *e*, lever or arm *g*, spring *f*, table A, and ring *a*, as and for the purposes described.

337,842.



4. The combination of the table A, standard *e*, arm *g*, and ring *a*, as and for the purposes set forth.

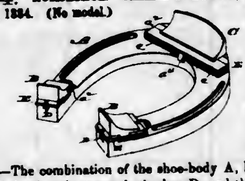
5. The combination of the table A, standard *e*, arm *g*, ring *a*, and rotary table *k*, substantially as described.

337,843. **CARRIAGE-CURTAIN FASTENER.** WILLIAM LEONHARDT, Waverly, Md. Filed May 22, 1885. (No model.)



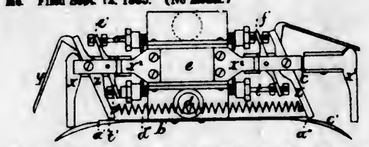
Claim.—A curtain-fastener having a pointed head, a neck, and side flange inclining from the neck to the outside of the head, as set forth.

337,844. **HORSESHOE.** CHARLES J. LE ROY, St. Louis, Mo. Filed Nov. 11, 1884. (No model.)



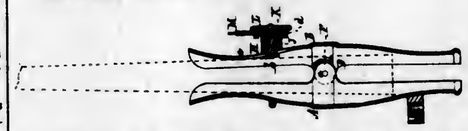
Claim.—The combination of the shoe-body A, having the mortise *a*, the calk B, having the tenon *b*, the key D, and the band E, substantially as described.

337,845. **PISTON WATER-METER.** JOHN M. LIBBOTT, Lewiston, Me. Filed Sept. 12, 1885. (No model.)



Claim.—In a water-meter, the combination of the stem *a*, ports *f* and *g*, valve A, stem *c*, piston *b*, ports *m* and *n*, valves *r* and *s*, ports *p* and *o*, stems *t* and *t′*, exits *u*, *v*, and *d*, with the levers *z*, *z′*, *f*″, and *e*, pivoted as set forth, lips *z z′*, plate *b′*, shoulders *a′* and *a*″, and spring *d*″, all operating as herein set forth.

337,846. **LOCK FOR WHIP-SOCKETS.** JOHN MADDEN and CHARLES R. BROWN, Cleveland, Ohio; said Madden assignor to said Brown. Filed Nov. 2, 1885. (No model.)



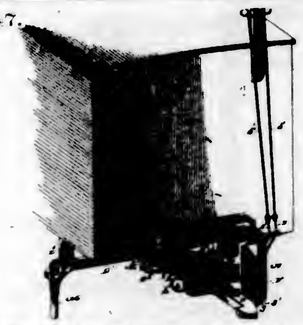
Claim.—1. In whip-sockets, in combination with the jointed two-part socket, consisting of section A and slotted section B, the binding-ring and tubular neck, bolt J, and nut, said nut having a peripheral groove in its flange adapted to receive the nib of the cap L, constructed and arranged to operate in the manner substantially as described, and for the purpose specified.

2. The combination, with the cap L and nut of the herein-described lock for whip-sockets, of the screw-key M, for the purpose specified.

337,847. **CAR-COUPLING.** JOHN C. F. MCCAULEY, Crooked Creek, Kans. Filed Nov. 14, 1885. (No model.)

Claim.—1. The combination of the draw-head, the pivoted draw-hook, having the recesses A and A′, and the weighted plate I, having the projection for engaging with said recesses for the purpose set forth, substantially as described.

337,847.



2. The combination, in a car-coupling, of the spring-actuated coupling-jaw G, the rock-shafts connected to said jaw for moving the same, and the detent for locking the rock-shafts to prevent rotation thereof, and thereby secure the jaw G against movement, and the levers M, connected to the said detent, substantially as described.

3. The combination, in a car-coupling, of the spring-actuated coupling-jaw G, the rock-shaft connected to said jaw for moving the latter, the detent for engaging with the rock-shafts, the lever connected with the detent, and the fulcrumed bell-crank lever connected to the said lever, and the movable rod S', connected to the bell-crank lever, substantially as described.

337,848. PORTABLE FAN AND OPERATING MACHINERY FOR SAME. ARTHUR W. MCCOMAS and HENRY A. FITZHUGH, Austin, Tex. Filed July 17, 1885. (No model.)



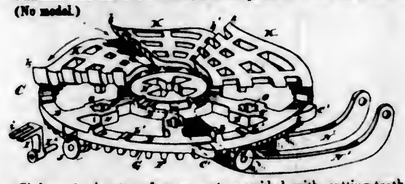
Claim.—1. In a fan to be operated by suitable driving mechanism, as set forth, the combination, with the straight and rigid upper bar and the zigzag or corrugated weighted lower bar, of suitable radial connecting-ribs and covering materials, substantially as set forth.

2. The combination, with the U-shaped hinged arm A'', supporting-bars P, by which said arm may be held above or below a horizontal plane, the adjustable bar X', provided with sliding couplings X and suspending-rods Y, of the bar B', uprights W and S, and rod U, by which said uprights W and S are adjustably connected, as and for the purpose set forth.

3. The combination, with the upright stanchions B, fixed upon a suitable base, hinged arm A'', hinged supporting-bars P, by which said arm may be held above or below a horizontal plane, the adjustable bar X', provided with sliding couplings X, suspending-rods Y, bar B', uprights W and S, and adjustably-connected rod U, of fan Z, suspended upon said rods Y, all arranged as and for the purpose specified.

4. The combination, with the suspended fan, supporting-arm A'', and connecting-rod U, substantially as set forth, of the driving mechanism composed of rock-lever K, arm N, pendulum F C, pitman H, crank I, and the train of gear-wheels, all arranged substantially as and for the purpose set forth.

337,849. GRATE FOR FURNACES, HEATERS, &c. EDWARD MCFARLAND and LEVIS PASSMORE, Philadelphia, Pa. Filed May 13, 1885. (No model.)



Claim.—1. A rotary furnace-grate provided with cutting teeth or grates by which a rotation of the grate cuts positively into the ashes and cinders, forcing them from above to below the same, the forward or cutting edge of one grate extending above the rear or tail edge of the grate next behind it, so as to form an oblique passage-way, substantially as and for the purpose specified.

2. A rotary gate provided with a circle of separate and removable inclined teeth or grates upon its upper surface, the cutting-edge of each of said teeth or grates overlapping the rear portion of the one succeeding it, substantially as described.

3. A rotary grate provided with a circle of separate removable inclined teeth or grates upon its upper surface, the cutting-edge on each of said teeth or grates overlapping the rear portion of the one succeeding it and in which the teeth are of less width than the radius of the grate proper, forming a circular opening in the center, in combination with a stationary grate which fits into and fills said opening, substantially as described.

4. In a furnace, a rotary grate having gear-teeth, in combination with grooved supporting-rollers to receive the gear-teeth of the grate positively supporting and guiding it, a bevel-pinion meshing therewith, and a shaft secured thereto and extending from within the ash-pit to the outside of the furnace, by which said grate may be rotated, substantially as and for the purpose specified.

5. In a furnace, a rotary grate having gear-teeth, in combination with grooved supporting-rollers to receive the gear-teeth of the grate positively supporting and guiding it, a bevel-pinion meshing therewith, and a shaft secured thereto and extending from within the ash-pit to the outside of the furnace by which said grate may be rotated, and sprocket-wheels, chain, and crank to rotate said shaft, substantially as and for the purpose specified.

6. The combination of the frame D F with helical cutter-grates K, in which their forward ends, *k*, are raised and their rear ends depressed, and in which the surface between the ends K K' is practically horizontal, substantially as and for the purpose specified.

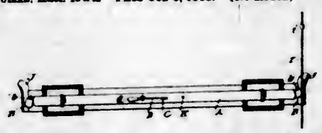
7. The combination of the frame D E, having holes *e*, with the removable helical cutter-grates K, in which their forward ends are raised and their rear ends depressed, and their center provided with a shank, K^2, substantially as and for the purpose specified.

8. A rotary grate having beveled teeth F and flange G, in combination with anti-friction wheels J, formed with large flange *j*, upon which the grate rests, and groove J', shaped to conform to the gear-teeth on the grate-frame flange, said roller being used to support said flange and receive the teeth, and thereby guide the grate-frame and keep it in position, substantially as and for the purpose specified.

9. The frame of a rotating grate having beveled teeth F and flange G, anti-friction wheels J, formed, substantially as shown, to support said flange and receive the teeth, and adjustable brackets to carry said wheels, in combination with the frame of the furnace, substantially as and for the purpose specified.

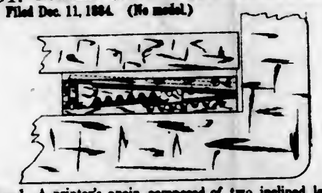
10. The frame D E, having lugs L L', and hole *e*, in combination with helical grates K, having notches *l*, and shank K^2, substantially as and for the purpose specified.

337,850. CORN-PLANTER. WILLIAM MCMULLIN and WILLIAM R. MCMULLIN, Adel, Iowa. Filed Oct. 8, 1885. (No model.)



Claim.—The combination of the bar A, the piece B, the guide J, the standard C, the spring D, with thumb-piece *d*, and the hoop E, arranged to be operated by the check-row wire I and the balls *i*, substantially as set forth.

337,851. PRINTER'S QUOIN. THEODORE S. HEDGALP, Cedar Rapids, Iowa. Filed Dec. 11, 1884. (No model.)



Claim.—1. A printer's quoin composed of two inclined laterally-movable side pieces interlocking at one end and having bearing-faces corresponding with their height, and a connecting longitudinally-movable wedge of equal height having bearing-faces corresponding thereto and matching the side pieces, said wedge being shorter than said side pieces, to admit of the quoin being applied close to the corner of a chase, and all adapted to operate substantially as and for the purposes specified.

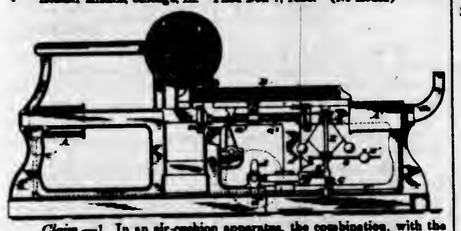
2. In a printer's quoin, the wedge B, having a row of teeth on opposite sides and in opposite positions, in combination with two side pieces having each a single row of teeth corresponding thereto, whereby the wedge is moved between said side pieces by means of a pinion, substantially as set forth.

337,852. SPOOL-HOLDER FOR SEWING-MACHINES. HERMANN MEYERS, Rush City, Minn. Filed Aug. 24, 1885. (No model.)



Claim.—A spool-holder for sewing-machines, consisting of a cylindrical case provided with a curved and reserved thread-slot, open to the top of the case and terminating at its lower end above the bottom of the said case, substantially as set forth.

337,853. CUSHIONING APPARATUS FOR PRINTING-MACHINES. ROBERT MIEHLE, Chicago, Ill. Filed Dec. 7, 1883. (No model.)



Claim.—1. In an air-cushion apparatus, the combination, with the cylinder and piston, a valve to control the air therein, and governor, of a positive actuated cam, and mechanism, substantially as described, interposed between said cam and valve, for engaging and closing said valve, operating in unison with the speed of the press, substantially as herein described, to confine the air in the cylinder when regulated by the governor, according to the speed or momentum of the part to be resisted, as set forth.

2. The combination of a cylinder and piston, a valve, and a valve-closing device the operating part or face of which is inclined in two directions, essentially as set forth.

3. The combination of a cylinder and piston, a valve, a valve-closing device, substantially as described, the operating part or face of which is inclined in two directions, and governor, essentially as set forth.

4. The combination of a cylinder and piston, a valve, a reciprocating slide for closing said valve, the operating part or face of which is inclined in two directions, and a governor to automatically change the time of closing and opening said valve, essentially as and for the purpose set forth.

5. The combination of a cylinder and piston, a valve, an inclined-face valve-operating device, substantially as described, provided with a series of stepped grooves, d^2, and a governor to automatically change said groove with which the valve-arm engages to close said valve, essentially as set forth.

6. The combination of a cylinder and piston, a valve, and a valve-operating device, substantially as described, having its operating part or face inclined in a vertical and horizontal direction for engaging the valve-arm, essentially as set forth.

7. The combination of a cylinder and piston, a valve, and the valve-operating device, substantially as described, provided with a series of stepped grooves, d^2, and a smooth surface, d^3, essentially as set forth.

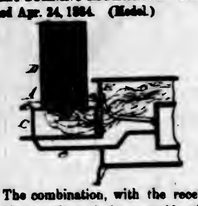
8. The combination of a cylinder and piston, a valve, a valve-closing device, substantially as described, inclined in two directions, and cams *d d'*, essentially as set forth.

9. The combination of a cylinder and piston, a valve, a valve-operating device, substantially as described, inclined in two directions, and a governor provided with a counterpoise-arm, *e*, and an adjustable counterpoise, E', essentially as set forth.

10. The combination of a cylinder and piston, a valve, an inclined-face valve-operating device, substantially as described, and a valve-operating arm capable of an adjustment upon the stem of said valve, essentially as set forth.

11. In a cushioning apparatus, the combination, with a cylinder and piston, a valve, governor, and the device D, substantially as described, of a cam for closing said valve to confine the air in the cushioning-cylinder, essentially as set forth.

337,854. HAY-BURNING APPARATUS. RUSSELL H. MIDER, Atkinson, Nebr. Filed Apr. 24, 1884. (Model.)

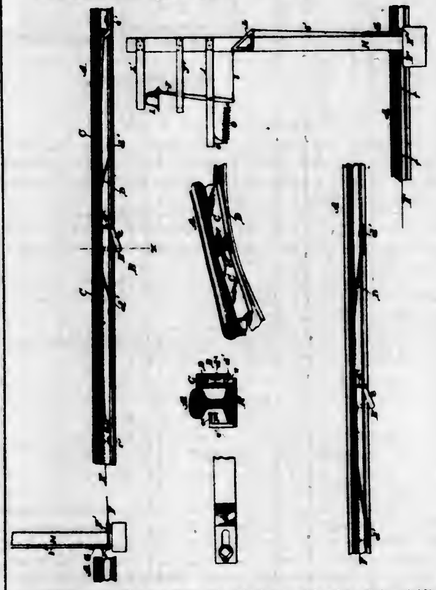


Claim.—1. The combination, with the receiver A, consisting of fire-box C, having the opening *c* in its rear side, the flanges *a*, and the bottom having the opening B therein, of the magazine D, having an open bottom which coincides with the opening B, substantially as described.

2. The combination, with a cooking-stove having a hearth and provided with an opening in the front, of the magazine D and receiver A, having an opening, *c*, in its rear side which coincides with that in the front of said stove, substantially as described.

3. An attachment for stoves, consisting of the receiver A and magazine D, the former having a draft-opening and being provided with an opening in its rear side which extends substantially to the bottom of the same, substantially as described.

337,855. RAILWAY-SIGNAL. ELIAS H. MOTT, Sangerfield, N. Y. Filed Jan. 7, 1886. (No model.)

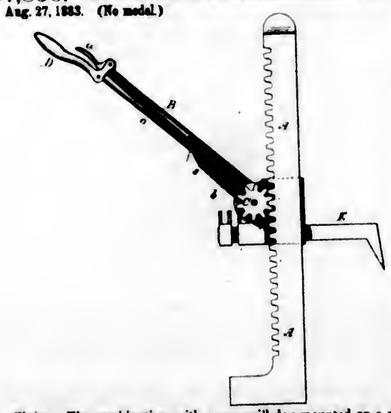


Claim.—1. In a railway-signal, the combination of the yielding bars adapted to be operated by a passing train, a rock-shaft extending beneath the track and having two arms, *a a'*, the latter of which has a leg, a^2, extending inwardly to a point beneath the head of one of the rails of the track, a link, d^3, intermediate of the arm *a* and the yielding

bars, a wire, F, connected to the lug c^2 and extending beneath the head of the rail, the staples or eyes *f*, for holding the wire, the signal devices, and connections intermediate of the wire and the signal, substantially as described.

2. In a railroad-signal, the combination of the following elements, namely: the yielding movable bars C, arranged alongside of the track-rail and adapted to be operated by the car-wheel flanges, the curved spring D, having an arm, *d'*, a rock-shaft, E, having the arms *e e'*, the pivoted bell-crank levers, the connecting-wires, a bell, a pivoted spring-actuated bell-hammer, and a slotted guide-arm, substantially as described.

337,856. SAW-MILL DOG. THOR. J. NEACY, Milwaukee, Wis. Filed Aug. 27, 1885. (No model.)



Claim.—The combination, with a saw-mill dog mounted on a rack-bar and having an operating-pinion, as described, of the lever B, pivoted on the axle of the pinion, catch *b*, engaging said pinion, catch-rod *c*, and bent lever D, pivoted to lever B so as to project beyond the said lever and form an operating hand-grasp beyond the end of the lever, catch-rod *c* being connected to said bent lever, substantially as described.

337,857. WIRE-FASTENING DEVICE FOR FENCE-POSTS. AARON J. NELLIS, Pittsburg, Pa. Filed June 27, 1885. (No model.)

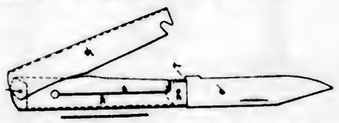


Claim.—1. The combination, with a guttered post, of a hook having a wire swell, *b*, and beak *c*, said hook pivoted to swing within the gutter of the post, and adapted to hold a fence wire or ribbon, substantially as and for the purposes specified.

2. The combination, with a guttered post having a hook-slot, *b*, of a wire hook having laterally-bent spring-arms forming a T-head for securing the hook in the slot of the post, substantially as and for the purposes specified.

3. The fencing-wire hook composed of the doubled wire having the swell *b* and the laterally-projecting spring-arms, and T-head *a c*, substantially as and for the purposes specified.

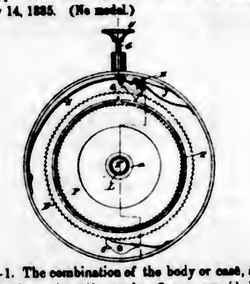
337,858. POCKET-CUTLERY. FERDINAND NEUHAUS, Solingen, Prussia, Germany. Filed July 31, 1885. (No model.)



Claim.—1. The handle-pieces *a* and *b*, of approximate U-shaped form, (in transverse section,) united by a hinge, *x*, at the opposite end to which the blades are attached, the free end of one of the halves of the handle carrying the cutting-instrument which is hinged thereto, the said cutting-instrument having a notch, *i*, which engages with the other half of the handle, and is thereby supported and held in position for use, substantially as shown and described.

2. In a knife or other pocket-piece of cutlery, the handle *a*, provided with a central longitudinal slot, *s*, for the purpose of giving greater elasticity to the handle, as and for the purpose set forth.

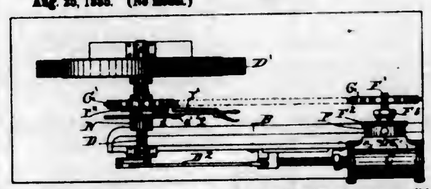
337,859. GRAIN-REGISTER. LLOYD NOTTINGHAM, Norfolk, Va. Filed May 14, 1885. (No model.)



Claim.—1. The combination of the body or case, a wheel journaled thereto and having a lateral annular flange provided with a notch or gap, a second wheel journaled within the annular flange, a pair of pawls arranged laterally to each other, one of said pawls being arranged to engage the first wheel and the other to rest on the annular flange and to project at intervals through the gap thereof and engage the second wheel, and a pin or stem connected with said pawls, whereby they may be actuated, substantially as set forth.

2. The combination of a body or case, a wheel journaled thereto and having a lateral annular flange provided with a notch or gap, a second wheel journaled within said flange, a support, and two pawls pivoted to said support and located laterally one to the other, one of said pawls being arranged to engage the first wheel and the other the second wheel at intervals through the gap of the annular flange, said pawls being supported independently of the wheels, substantially as set forth.

337,860. STEAM-ENGINE. DAVID PATTEN, Des Moines, Iowa. Filed Aug. 25, 1885. (No model.)



Claim.—1. In a steam-engine, the combination of a rotary slide-valve, K, having an elongated port, No. 3, near its circumference, and a chamber, I, with a straight cylinder having a valve-chamber at its side and center, steam-ports Nos. 1 and 2, and an exhaust-chamber, J, a stem, F, a shaft, D, chain-wheels G and G^2, a lever, *r*, carrying a pawl, a ratchet-wheel, *r''*, and a clutch, N, to operate in the manner set forth, for the purposes stated.

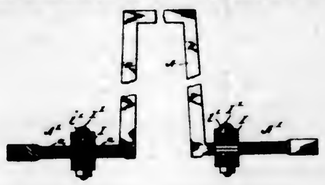
2. The combination of the shaft D, having a fixed driving-wheel, the lever *r*, carrying a pawl, *r'*, and loop *s'*, the ratchet-wheel *r''*, the clutch N, and the arched guide *s*, substantially as shown and described, to operate in the manner set forth, for the purposes stated.

3. The improved reciprocating steam-engine, composed of a straight cylinder having a valve-chamber at its side and center, a driving-shaft having a crank connected with the piston in the cylinder, a rotating slide-valve having a stem extending parallel with the driving-shaft and connected therewith by means of chain-wheels and a chain, a ratchet-wheel fixed to the driving-shaft, a sliding clutch on the same shaft, a lever carrying a pawl and a loop, and a fixed arched lever-guide, to operate in the manner set forth.

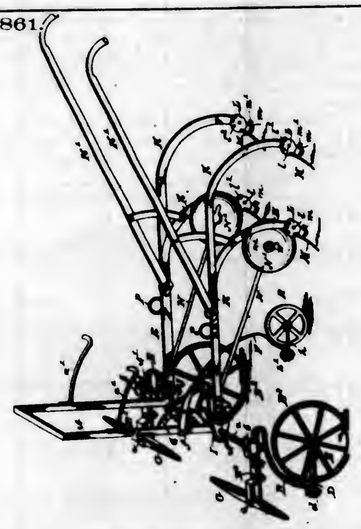
337,861. WHEEL-CULTIVATOR. ARTHUR I. PEPPLEY, Lodoga, Ind. Filed Dec. 10, 1885. (No model.)

Claim.—1. The curved and bent plates B B', in combination with the arch A, plates D, axles E E', and transporting-wheels B^2, all arranged to operate as and for the purpose set forth.

2. The bar F, provided with wheel H and perforated plate G, in combination with the arch A, as and for the purpose set forth.



337,861.

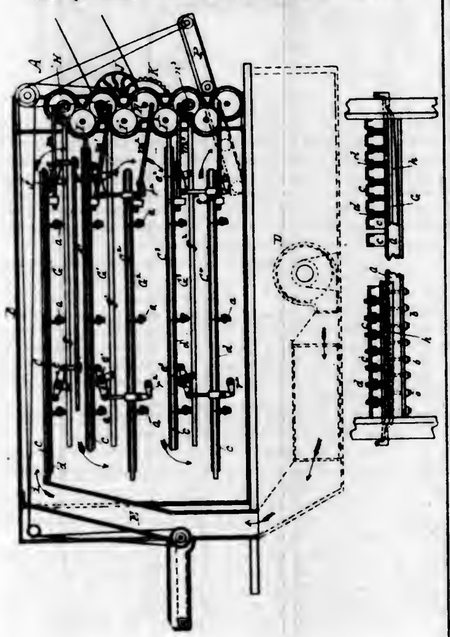


337,862. CLASP. AUSTIN PERRY, Florence, Kans. Filed Aug. 6, 1885. (No model.)



Claim.—The described kitchen-utensil clasp formed of a metallic plate, bent, as described, at a' a^2 a^3 a^4 a^5, the bend a^3 being carried beyond the bend a^2, to form the cavity a^3, and provided with the attaching-shank A, as shown and described.

337,863. MACHINE FOR DRYING WOOL. JOHN PEPPER, Jr., and JOHN FIELDEN, Rochdale, County of Lancaster, England. Filed Nov. 12, 1885. (No model.) Patented in England Dec. 30, 1878, No. 5,227.

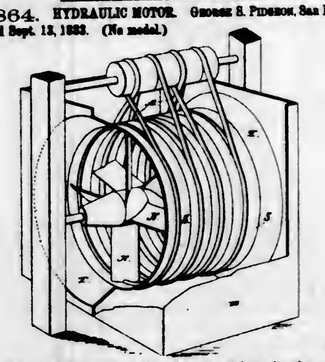


Claim.—1. In combination with the driving-gear, the cam-slotted gear H, the bell-crank lever M, operated thereby, the carriage G, the links *f*, attached to said carriage and to the frame or casing, the rods *g*, connecting said lever to said carriage, and the fixed table C, the bars *c* of which are arranged alternately with respect to the bars of said carriage, the said grooved gear-lever, links, and rods giving to said carriage a rising and falling motion, substantially as set forth.

2. In combination with a series of fixed tables each composed of a set of parallel bars, and a series of movable carriages each composed of a set of parallel bars arranged alternately with respect to the bars of the corresponding fixed tables, the mechanism for giving reciprocating endwise motion to said carriages, consisting of a train of gear-wheels and the crank, disks, and connecting-rods operated thereby, substantially as set forth.

3. In combination with the fixed wool-supporting tables, the carriages consisting of bars arranged alternately with respect to the bars of the corresponding tables, the mechanism for giving said carriages rising and falling motion, consisting of cam-grooved disks, bell-crank levers operated thereby, rods connecting said levers to said carriages respectively, and links attached to said carriages and the frame or casing of the machine, and the mechanism for giving said carriages endwise motion, consisting of crank, disks, rods, and actuating-gears, substantially as set forth.

337,864. HYDRAULIC MOTOR. GEORGE S. PIDGEON, San Diego, Cal. Filed Sept. 13, 1883. (No model.)



Claim.—1. In a motor adapted to be driven by the passage of water or air, the combination of a stationary shaft, a series of wheels journaled thereon and provided with vanes or blades inclined in opposite directions in the adjacent wheels, a counter-shaft, and connecting means between this shaft and the wheels, whereby the wheels all act to drive the shaft in the same direction, substantially as shown and described.

2. The combination of a stationary shaft, wheels journaled thereon and provided with radial vanes or blades inclined in opposite directions in adjacent wheels, a counter-shaft provided with a suitable pulley fixed thereon, and endless bands passing around the wheels and around the pulley in such direction that all the bands will act to drive the pulley in the same direction, substantially as shown and described.

3. The combination of the shaft, the wheels journaled thereon forming with their rims a cylinder for the passage of water or air and provided with vanes or blades inclined in adjacent wheels in opposite directions with reference to the line of such passage, and the endless bands passing around and guided in grooves in the wheel-rims and the pulley on the shaft, alternate bands being crossed between the wheels and pulley, substantially as shown and described.

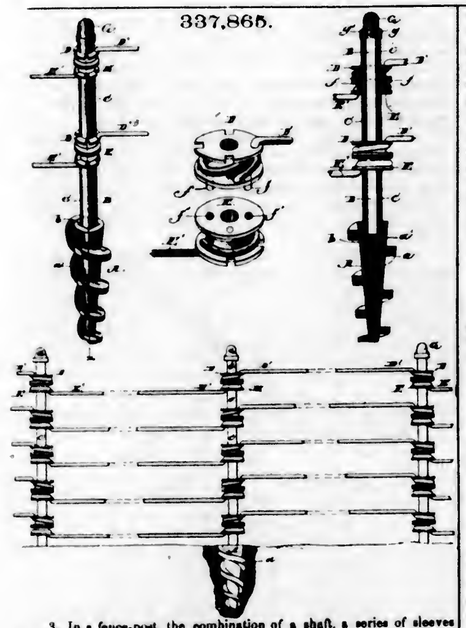
4. In a motor-wheel, the combination of the rim corrugated peripherally to form an external groove for the driving-band and an internal rib, a hub having grooves to receive and hold the inner ends of the blades of the wheel, and the vanes or blades notched at their outer ends to engage the rib on the rim and fitting at their inner ends in the grooves in the hub, substantially as shown and described.

337,865. WIRE-STRETCHING DEVICE FOR FENCE-POSTS. HENRY PERDAY, Houston, Tex. Filed Dec. 10, 1885. (No model.)

Claim.—1. The combination of a post, a pair of coupled pulleys rotatably mounted on the post and adapted to be rotated simultaneously, an independent fence-wire attached to each of the pulleys and extending in opposite direction to adjacent posts, and means for holding the pulleys against rotation after the wires have been stretched, substantially as described.

2. The combination of a fence-post, the coupled pulleys mounted thereon and adapted to be simultaneously rotated, independent fence-wires extending in opposite directions and attached to one of the pulleys at points thereon that are arranged close together, and binding-sleeves for preventing the rotation of the pulleys after the wires have been stretched, substantially as described.

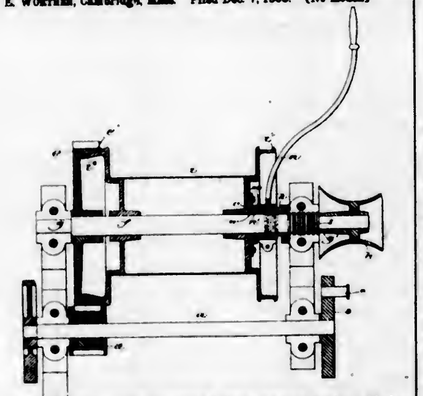
337,865.



3. In a fence-post, the combination of a shaft, a series of sleeves mounted on the shaft, and a pair of pulleys arranged between the adjacent ends of two sleeves, and a device for clamping the pulleys and sleeves rigidly on the shaft, substantially as described.

4. A fence-post comprising a threaded tapered base, a shaft secured in the base, a series of sleeves loosely mounted on the shaft, a pair of connected pulleys arranged between the adjacent ends of two sleeves and having an independent fence-wire secured to each pulley, and a cap for binding the pulleys and sleeves rigidly on the shaft, substantially as described.

337,866. HOISTING APPARATUS. GEORGE W. RAWSON and GEORGE E. WORTHEN, Cambridge, Mass. Filed Dec. 7, 1885. (No model.)



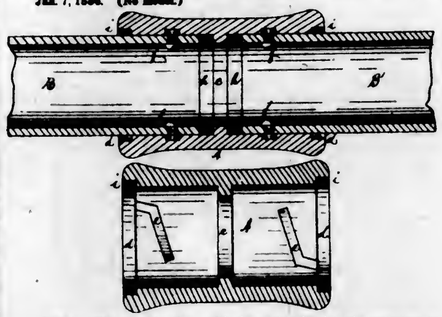
Claim.—1. The positively-actuated clutch member having a friction-surface and the co-operating member having a corresponding friction-surface, combined with the shaft supporting the said clutch members, and the clutch actuating or shifting device, consisting of a stationary threaded hub surrounding the said shaft, and the nut on the said hub connected with the clutch member, as set forth, whereby the cloth is positively engaged or disengaged, substantially as described.

2. The actuated clutch member having a friction-surface, and the shaft connected with the said member provided with a winch-head, combined with the clutch member loose on the said shaft and the clutch operating or shifting device surrounding the shaft between the winch-head and movable clutch member, substantially as described.

3. The actuated clutch member and shaft upon which it is fixed, the clutch member loose upon said shaft, combined with a shifting device consisting of the stationary threaded hub surrounding the shaft, a nut fitted to turn on said hub and having a grooved end portion, a collar connected with the loose clutch member and engaging the grooved end portion of the nut, and the lever to rotate the nut, all substantially as described.

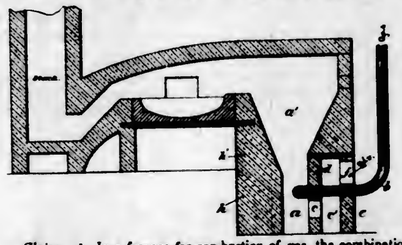
4. The actuated clutch members, the loose clutch member combined with a shaft, *f*, having a scored end portion, *s*, said shaft having the clutch members, respectively, rigidly and loosely connected therewith, substantially as described.

337,867. PIPE-JOINT. WILLIAM H. RICHARDS, McKeesport, Pa. Filed Jan. 7, 1886. (No model.)



Claim.—The combination, with the socket having the centrally-located internal projection, and of enlarged diameter at its ends, and having the angular grooves or channels *c*, of the pipes having openings, and headed rivets located in said openings and engaging the grooves or channels, and the gaskets *h* on opposite sides of the internal projection, the pipes bearing against said gaskets, as set forth.

337,868. FURNACE FOR THE COMBUSTION OF NATURAL GAS. WILLIAM RIPPEY, Allegheny City, Pa. Filed June 12, 1885. (No model.)



Claim.—1. In a furnace for combustion of gas, the combination of a combustion-chamber consisting of a contracted mixing-chamber or neck and an expanded throat tapering in straight lines both from the bridge-wall and from the front wall of the furnace directly above the mixing-chamber or neck and communicating therewith, a gas pipe or flue entering the contracted mixing-chamber or neck below the expanded throat, and an air-port entering the mixing-chamber below the gas pipe or flue, substantially as and for the purposes specified.

2. In a furnace for combustion of gas, the combination of a combustion-chamber consisting of a contracted mixing-chamber or neck and an expanded throat above the mixing-chamber or neck and communicating therewith, a gas-pipe or flue entering the contracted mixing-chamber or neck below the expanded throat, an air-port entering the mixing-chamber below the gas pipe or gas-flue, and a vertical air-flue made in the front wall of the furnace adjacent to the combustion-chamber and discharging thereinto through the said air-port, substantially as and for the purposes described.

337,869. DIORAMIC OR PANORAMIC STRUCTURE. CHARLES H. RITTER, Chicago, Ill. Filed Sept. 19, 1885. (No model.)

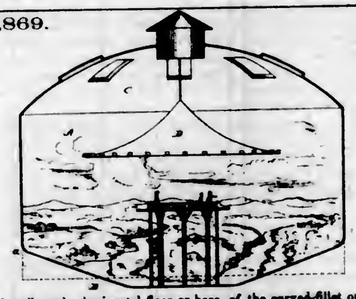
Claim.—1. The combination, in a dioramic or panoramic structure with an upright wall, of a base or foreground inclined downward from such wall toward its center, as set forth.

2. In a dioramic or panoramic structure, the combination, with an upright wall and a base or foreground, of a fillet-shaped portion between the two, substantially as described, and for the purpose set forth.

3. In a dioramic or panoramic structure, the combination, with the upright wall, of the base or foreground inclined downward from its edge toward its center, and the fillet-shaped portion between the edges of the base or foreground and the wall, substantially as shown and described.

4. In a dioramic or panoramic structure, the combination, with

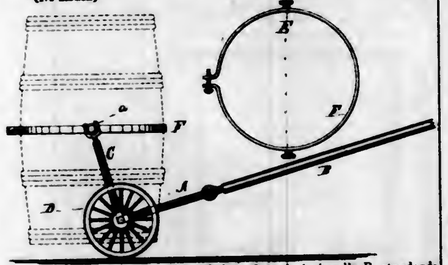
337,869.



vertical walls and a horizontal floor or base, of the carved fillet or strip *a* between the said walls and floor, substantially as described.

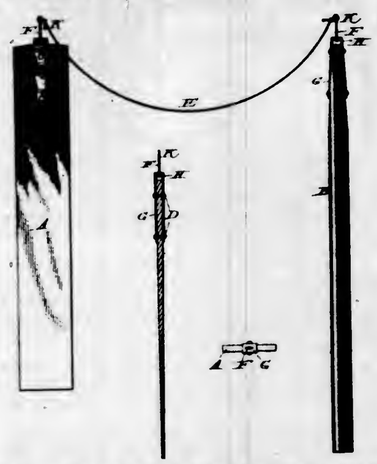
5. In a dioramic or panoramic structure, the upright wall united with the foreground or base by a gradual curve or by an obtuse angle or obtuse angles, substantially as described.

337,870. BARREL-TRUCK. FRANK W. ROSEBER, Syracuse, N. Y., assignor of one-half to Sydney Bonds, same place. Filed Dec. 7, 1885. (No model.)



Claim.—A barrel-truck consisting of reach A, handle B, standards C, provided with jaw-pieces *a*, and wheels D, in combination with a barrel provided with trunnions E, constructed and operating together substantially as shown and described.

337,871. HUMMING TOY. SAMUEL F. ROBINSON, Columbus, Ohio. Filed May 8, 1885. (No model.)

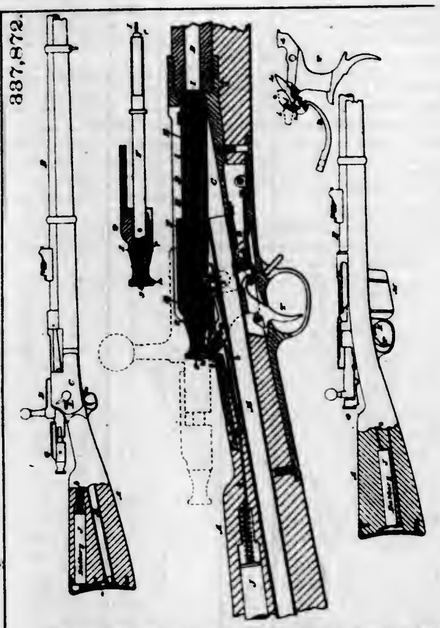


Claim.—1. The combination, in a humming toy, of a swivel, G F, with a thin rectangular piece of wood or other material, A, with the cord, wire, or chain E and the handle B, all substantially as set forth.

2. The wedge-shaped thin rectangular piece of wood or other material A, in combination with the swivels G F, the cord, wire, or chain E, and the handle B, substantially as set forth, and for the purpose specified.

337,872. ELECTRIC FIRE-ARM. SAMUEL RUSSELL, Brooklyn, assignor to the American Electric Arms and Ammunition Company, New York, N. Y. Filed May 27, 1886. (No model.)

337,872.



Claim.—1. In a breech-loading gun having an immovable barrel and a breech-block or other moving part which moves to open the breech, the combination, with such moving part, of an insulated electrode mounted therein and moving therewith, and capable of being moved independently thereof to fire the gun, and a source of electric energy connected at its one terminal with the said electrode and at its opposite terminal with the barrel, substantially as set forth.

2. In a breech-loading gun having an immovable barrel and a breech-block or other moving part which moves to open the breech, the combination, with such moving part, of a metal firing-pin mounted therein and moving therewith, and capable of being moved independently thereof, an electrode inclosed within said firing-pin and projecting beyond the front end thereof, a tubular insulating-sheath interposed between said electrode and firing-pin, and a source of electric energy in connection at its one terminal with said electrode and its opposite terminal in connection with the barrel, substantially as set forth.

3. In a breech-loading gun having an immovable barrel and a breech-block or other moving part which moves to open the breech, the combination, with such moving part, of an insulated electrode mounted therein and moving therewith, and capable of being moved independently thereof to fire the gun, a source of electric energy with its opposite terminals in connection, respectively, with the barrel and with said electrode, and a normal break in said latter connection, which is closed upon the forward movement of the electrode, substantially as set forth, whereby the electrode is normally out of circuit.

4. In a breech-loading gun having an immovable barrel and a breech-block or other moving part which moves to open the breech, the combination, with such moving part, of an insulated electrode mounted therein and moving therewith, and capable of being moved independently thereof to fire the gun, a source of electric energy with its opposite terminals in connection, respectively, with the barrel and with said electrode, and a safety-lock adapted, when applied, to prevent the moving forward of said electrode, substantially as set forth.

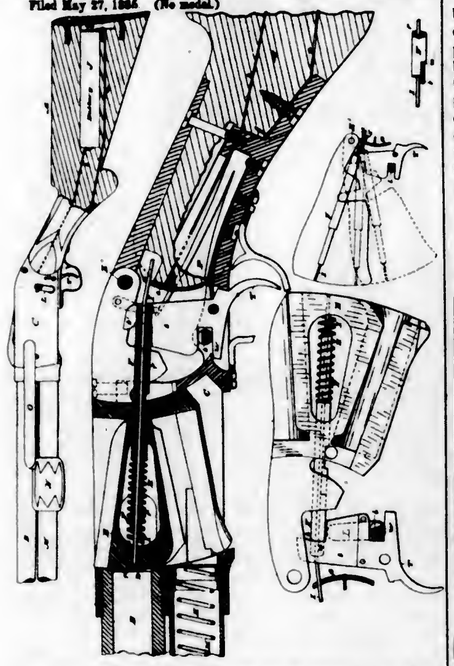
5. In a breech-loading gun having an immovable barrel and a breech-block or other moving part which moves to open the breech, the combination, with such moving part, of an insulated electrode mounted therein and moving therewith, and capable of being moved independently thereof to fire the gun, a mainspring tending to force said electrode forward, a trigger having a scar for holding said electrode retracted, and a source of electric energy having its opposite terminal in connection, respectively, with said electrode and with the barrel, substantially as set forth.

6. In a breech-loading gun, the combination of a bolt adapted to move toward and from the barrel, an insulated electrode borne thereby, a mainspring tending to force said electrode forward, a trigger having a scar adapted to engage said electrode and hold the same retracted, a contact-piece adapted to make contact with said electrode when the latter is shot forward, and arranged to be out of contact therewith until

the trigger is pulled, and a source of electric energy having its opposite terminals connected, respectively, to said contact-piece and to the barrel of the gun, substantially as set forth.

7. In a breech-loading gun, the combination of a bolt adapted to move toward and from the barrel, an insulated electrode borne thereby, a main-spring tending to force said electrode forward, a trigger having on its front arm a sear adapted to engage the said electrode and hold the same retracted, a contact-piece on the rear arm of the trigger adapted, when the trigger is pulled, to make contact with the rear of the electrode, and a source of electric energy having its opposite terminals connected, respectively, to said contact-piece and to the barrel or equivalent part of the gun, substantially as set forth.

337,873. **ELECTRIC GUN.** SAMUEL RUSSELL, Brooklyn, assignor to the American Electric Arms and Ammunition Company, New York, N. Y. Filed May 27, 1885. (No model.)



Claim.—1. In a breech-loading gun having immovable barrel and a movable breech-block, the combination, with the breech-block mounted to move in a vertical plane to open and close the breech, of an insulated circuit-closing electrode mounted in and borne by said breech-block and moving with the latter and having an independent movement therein toward and from the cartridge, a battery or equivalent source of electric energy, its opposite terminals connected, respectively, to said electrode and to the gun-barrel or breech-block, and the trigger connected to said electrode and adapted, when pulled, to move said electrode forward into contact with the cartridge, substantially as set forth.

2. In a breech-loading gun, the combination, with immovable barrel and a pivoted breech-block arranged to vibrate in a vertical plane, of an insulated circuit-closing electrode mounted in and borne by said breech-block and having an independent movement therein toward and from the cartridge, a battery-connection with said electrode adjacent to the pivot of the breech-block, a battery with its opposite terminals joined, respectively, to said connection and to the gun-barrel or breech-block, and the trigger connected to said electrode at a point adjacent to the pivot of the breech-block and adapted, when pulled, to move said electrode forward into contact with the cartridge, substantially as set forth.

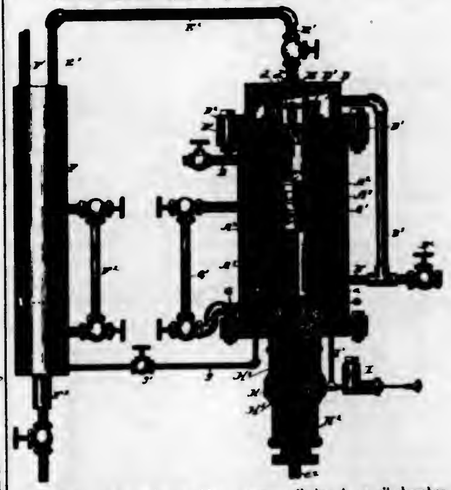
3. In a breech-loading gun, the combination, with immovable barrel and vibrating breech-block, of an insulated circuit-closing electrode mounted in and borne by said breech-block and having an independent movement therein toward and from the cartridge, a battery connected at its opposite terminals to said electrode and to the gun-barrel or breech-block, respectively, and the trigger formed with an elastic arm engaging the said electrode and adapted, when the breech-block is in the position for firing, to press forward the electrode upon being pulled, and to be laterally displaced and disengaged upon the movement of the breech-block, substantially as set forth.

4. The combination, with a pivoted breech-block, E, vibrating in a vertical plane, of a firing-pin, F, mounted therein and adapted to move longitudinally, a shoulder, *u*, formed thereon, a trigger, T, having elastic plate *t* notched at *t'* and adapted to engage said shoulder, an insulated electrode, I, in said firing-pin, and a battery, J, in connection therewith, substantially as set forth.

5. In a breech-loading gun having an immovable barrel and a movable breech-block, the combination, with said breech-block, of an insulated circuit-closing electrode mounted therein and moving therewith and capable of a movement of its own toward and from the cartridge, a retracting-spring mounted in said breech-block and arranged to normally press said electrode back from the cartridge, and a trigger which, when pulled, presses said electrode forward against the tension of said spring, substantially as set forth.

6. In a breech-loading gun having an immovable barrel and a movable breech-block, the combination, with said breech-block, of an insulated electrode mounted therein and moving therewith and having an independent movement therein toward and from the cartridge, an electric battery in connection with said electrode and with the gun barrel or breech-block, a trigger connected to said electrode and adapted, when pulled, to move the same into contact with the cartridge, and a mechanical safety-lock for said trigger, consisting of an oscillating bar arranged close against and in the path of said trigger and having a notch which, when turned toward the trigger, admits the same, substantially as set forth.

337,874. **REFRIGERATING-MACHINE.** JACOB SCHUHLE, San Antonio, Tex. Filed Mar. 2, 1885. (No model.)



Claim.—1. In an ice-machine, a pump-cylinder, A, an oil-chamber, C, in the lower end thereof, a jacket, A^3, forming a gas-chamber surrounding said cylinder and provided with openings *a* at the bottom thereof, in combination with a valve-supporting plate, D', and cap-piece D^2, attached to the upper flange of the jacket A^3, substantially as and for the purpose described.

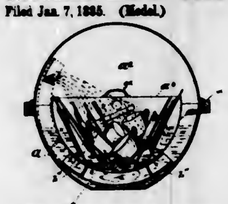
2. In an ice-machine, a valve-supporting plate, D', provided with a series of supply-valves, D^3, arranged in a circle around a discharging-valve, D^4, in combination with a cap or cover, D^2, forming a supply-chamber provided with a cylindrical chamber, E, a piston-chamber, A, oil-chamber C, and pipes leading from the chamber C to the valve-chamber D, substantially as and for the purpose described.

3. In an ice-machine, a valve-receiving plate, D', provided with valves D^3 and D^4, in combination with a piston, C', and its lead cap secured to the top portion thereof, substantially as and for the purpose described.

4. An ice-machine provided with the cylinder A, jacket A^3, surrounding the same to form an annular space, A^3, and the pipes communicating with said space, and a valve-chamber and oil-chamber at the top and bottom of the cylinder, substantially as and for the purpose set forth.

5. In an ice-machine, a double-walled pump-cylinder, a gas-chamber between them provided with a glass gage, G', an oil-chamber receiving the lower end of said gage, and a pressure-regulating pipe, *g* at the bottom, in combination with an oil-intercepting cylinder, F, provided with a glass gage, F^2, an oil-discharging pipe, F^3, at the bottom, and an inlet-pipe, E^3, and an outlet-pipe, F', located at the top of the oil-intercepting cylinder, substantially as and for the purpose described.

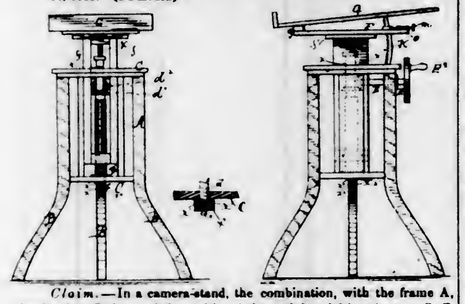
337,875. **DISH-WASHING MACHINE.** HORACE B. SCOVILLE, Austinburg, Ohio. Filed Jan. 7, 1885. (Model.)



Claim.—1. A dish-washing machine consisting of the water-vessel and a removable basket, in combination with a removable vibrating frame provided with buckets, an operating-handle fixedly secured to said frame, and stops arranged in the path of the handle to limit its movements each way, as and for the purposes described.

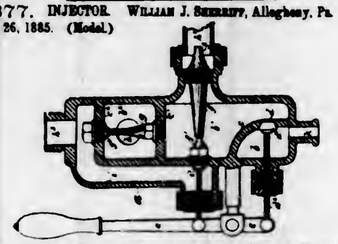
2. In a dish-washing machine, the combination of a water-vessel, a removable basket, and a removable vibrating bucket-frame provided with two angular buckets having the upper portions open, and spring-stops for limiting and cushioning the vibrating movements of said frame each way, substantially as and for the purposes described.

337,876. **ADJUSTABLE ATTACHMENT FOR CAMERA-STANDS, SCHOOL-DESKS, &c.** FRANK SHEPHERD, Fredericksville, Ind. Filed May 16, 1885. (No model.)



Claim.—In a camera-stand, the combination, with the frame A, having legs B, integral therewith, of the uprights *f f*, bevel-gears d' d^2, central screw, *d*, provided at the top and bottom with the pivots or pins *x x*, crank-shaft E, crank E', rack K, and boards F G, the board F having the slot *l'* therein for the passage of the rack, all constructed and arranged in the manner specified.

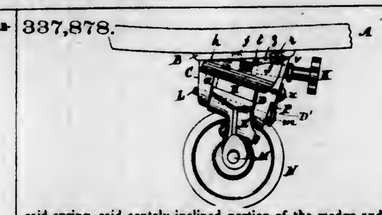
337,877. **INJECTOR.** WILLIAM J. SHERRIFF, Allegheny, Pa. Filed Sept. 26, 1885. (Model.)



Claim.—1. In an injector, the combination, with a shell, as *a*, having integrally-formed compartments, as *b b' b²*, and a steam-port, as *i*, of removable vertical lifting-tubes, as *g g'*, a supply-pipe, as *h*, a steam-inlet valve, as *i'*, horizontal forcing-tubes, as *f f'*, a waste-water discharge-valve, as *d'*, and mechanism, substantially as described, for operating the valves, as and for the purpose set forth.

2. In an injector, the combination, with a shell having an integrally-formed steam-port and a waste-water chamber, each provided with a valve-seat, of valves, as *i'* and *d'*, connected with an actuating-lever fulcrumed between said valves, so that when one valve is open the other will be closed, substantially as described, and for the purpose stated.

337,878. **ROLLER-SKATE.** SAMUEL E. SHUTE, Richmond, Ind., assignor to Charles A. Shaw, Boston, Mass. Filed Jan. 13, 1885. (No model.)



Claim.—1. In a roller-skate, the combination of the following instrumentalities, to wit: a foot-piece, brackets projecting downwardly from said foot-piece, a rocking bolster journaled in said brackets, a pair of trucks axled or journaled in said bolster, a cushion or spring mounted on said bolster, a wedge provided with an acute incline near its rear end, and a screw adapted to engage said wedge and govern the tension of said spring, said acutely-inclined portion of the wedge and also another portion of the same being adapted to engage fixed portions of the skate as said wedge is forced forward and downward, substantially as described.

2. In a roller-skate, the foot-piece A and the bracket D, provided with the notch *b*, in combination with a screw adapted to rest in said notch, means for retaining the latter in the notch with a yielding pressure, and a wedge and spring.

3. In a roller-skate, the foot-piece A and the bracket D, provided with the notch *b*, in combination with a screw adapted to rest in said notch, the spring *r*, interposed between said foot-piece and screw, for retaining the latter in the notch with a yielding pressure, and a wedge and spring.

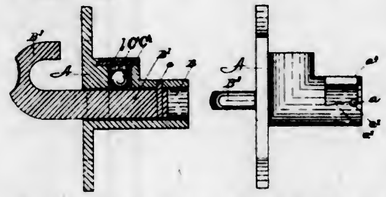
4. In a roller-skate, the wedge J, provided with the threaded hole *f* and incline *l*, in combination with the screw K, cushion H, bolster E, brackets C D, spring *r*, and plate B, provided with the projection *g*, substantially as and for the purpose set forth.

5. In a roller-skate, the screw K, provided with the bosses *v t*, the bracket D, provided with the notch *b*, the wedge J, provided with the threaded hole *z* and incline *l*, and the spring *r*, in combination with the cushion H, bracket C, bolster E, axle M, and rollers N, substantially as described.

6. In a roller-skate, the combination, with the brackets C and D, the bolster E, carrying axle and trucks, suitable cushioning devices above said bolster, and the pin L, passing obliquely upward through said brackets and bolster, of the spring-plate P, secured to a shoulder on said bracket D above said pin L and flush with the head thereof, and provided with the depression *m* in its free end, into which the head of the pin L is adapted to fall.

7. In a roller-skate, the combination, with the brackets C and D, the bolster E, carrying axle and trucks, suitable cushioning devices above said bolster, and the pin L, passing obliquely upward through said brackets and bolster, of the plate P, pivotally attached to a shoulder on said bracket D, above the pin L, flush with the head thereof, and provided with the depression *m* in its free end, into which the head of the pin L is adapted to fall.

337,879. **SEAL-LOCK.** JOHN M. SMITH, Kansas City, Mo. Filed June 17, 1885. (Model.)

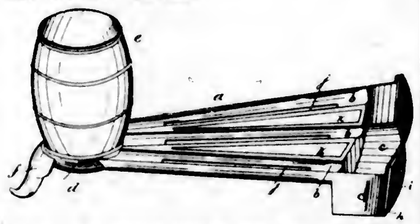


Claim.—1. A seal-lock consisting of a casing provided with a horizontal passage and with a vertical chamber or passage intersecting the horizontal passage, a movable staple or bolt operating in the horizontal passage and having a depression in its body, a ball located in the vertical chamber and engaging said bolt, and means at the inner end of such bolt to prevent its withdrawal from the passage should said ball become inoperative, substantially as set forth.

2. The combination, with the casing A, having depressions a^2, of the seal, the hasp, and a movable staple or bolt, B^2, operating within the casing and being provided with a hook, B^2, upon its outer end, and with a pin, *a*, projecting near its inner end at right angles to its body on a plane with said hook, and having a depression, D, formed upon its upper side, and a ball also operating in the casing and adapted to drop in said depression D, and secure the said bolt when pressed inwardly, substantially as and for the purposes herein set forth.

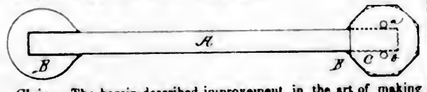
3. In a seal-lock, the combination of a casing provided with a horizontal passage, a chamber located above and intersecting therewith, a movable bolt adapted to operate in said horizontal passage, said bolt having a depression in its body, and a loose ball located in the upper chamber and adapted to roll into said depression, which is of a depth less than the diameter of the ball, whereby the ball comes in contact with the shoulder at the lower part of the wall of said upper chamber, to prevent the withdrawal of the bolt, substantially as described.

337,880. COMBINED MATCH-BOX AND CIGAR-HOLDER. PHILIP SMITH, New York, N. Y., assignor of one-half to John Cooper, same place. Filed Feb. 26, 1885. (No model.)



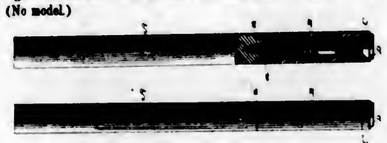
Claim.—The improved combined match-box, cigar-holder, and ash-receiver consisting of the grooved table, the match-box mounted on one end of said table, which is supported by a leg, and the ash-box formed on the other end of the table and adapted to receive the ashes from the cigars on the table, and at the same time to support the end of the table to which it is attached, substantially as described.

337,881. MANUFACTURE OF EYE-BARS. HENRY C. STAAR, Pittsburg, Pa. Filed Mar. 13, 1885. (No model.)



Claim.—The herein-described improvement in the art of making eye-bars, which consists in providing each end of the bar with a loop of a thickness equal to that of the bar, then placing a perforated plate both above and below said loop, then heating the whole to a proper degree and welding, and finally shaping the eye as desired.

337,882. FENCE-POST. BRADLEY W. STANTON, Paw Paw, Mich., assignor of one-half to C. S. Maynard, same place. Filed Nov. 16, 1885. (No model.)

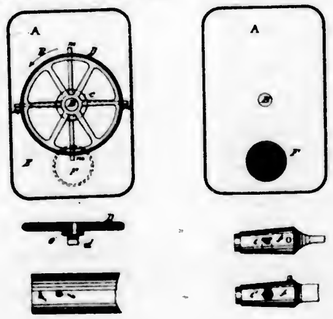


Claim.—1. The fence-post comprising the wooden post having the tenon on its lower end, the hollow cylindrical tile on the lower end of the post, and into which the tenon extends, and the screw or bolt extending through the bore of the tile and entering the tenon, to secure the tile to the post, substantially as described.

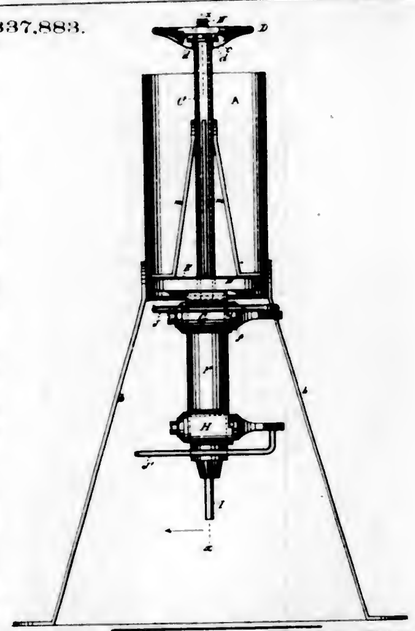
2. The fence-post comprising the wooden post having the tenon on its lower end, the hollow cylindrical tile on the lower end of the post, and into which the tenon extends, the washer on the lower end of the tile, and the bolt or screw passing through the said washer and through the bore of the tile and entering the lower end of the post, substantially as described.

337,883. APPARATUS FOR FILLING BOTTLES WITH LIQUIDS. ROBERT STEEL, Philadelphia, Pa. Filed Nov. 3, 1885. (No model.)

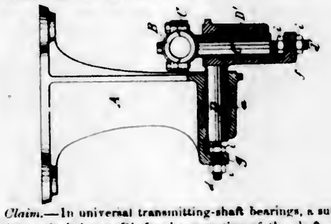
Claim.—The tank A, constructed as described, having the tube C provided with plate or plunger E, operated by suitable mechanism, in combination with the valve G, having orifices K, *i*, and *i'*, tube F, having orifice *l*, stop-cock H, and tube I, for forming apparatus for filling a bottle with a specified charge of liquid.



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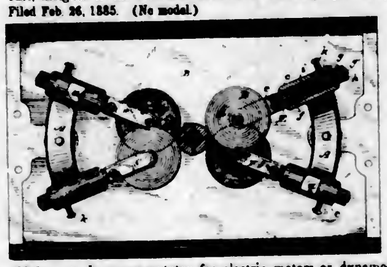


337,884. BEARING. AUGUSTO STIGLER, Milan, Italy. Filed Dec. 15, 1885. (No model.) Patented in Italy Aug. 10, 1885, XIX, 18,742, XXXVII, 139, and Sept. 19, 1885, XIX, 18,869, XXXVII, 347, and in England Dec. 1, 1885, No. 14,762.



Claim.—In universal transmitting-shaft bearings, a support consisting of a vertical sleeve, D', for the reception of the shaft or pivot C' of the bearing proper, and a horizontal shaft or pivot, D, extending from the upper end of said sleeve, which has its bearings in the horizontal sleeve *a* of the main support, in which the axial displacement of the pivots C' D may be effected by means of screws *d'' d*, which are guided by lugs or projections on the sleeves D' *a*, and in which they are adjustable, substantially as and for the purpose specified.

337,885. COMMUTATOR-BRUSH. LEVI W. STOCKWELL, Cleveland, Ohio, assignor to the Cleveland Electric Motor Company, same place. Filed Feb. 26, 1885. (No model.)



Claim.—1. In a commutator for electric motors or dynamos, the combination of the casting in which the socket for the wheel-brush spindle is formed, the wheel-brush and its spindle, the collar and spring on the spindle, and the set-screw.

2. In a commutator for electric motors or dynamos, the combination of the casting in which the socket for the wheel-brush spindle is formed, the wheel-brush and its spindle, the slotted collar and spring on the spindle, and the cross-pin in the spindle.

3. In a commutator for electric motors or dynamos, the combination of the casting in which the socket for the wheel-brush spindle is formed, the wheel-brush and its spindle, the slotted collar and spring on the spindle, the cross-pin in the spindle, and the set-screw in the side of the spindle-socket which binds the collar in place.

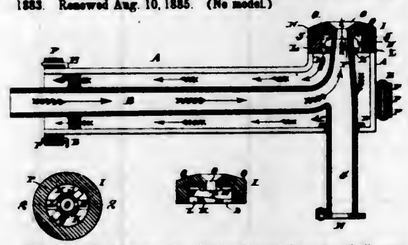
4. In a commutator for electric motors or dynamos, the combination of the commutator-ring, the wheel-brush, the axle or pin on which the brush is rigidly mounted, and the bearings for said pin.

5. In a commutator for electric motors or dynamos, the combination, substantially as set forth, of the commutator-ring, a wheel-brush which runs thereon, and a spring-finger which holds the wheel in contact with its conducting-support.

6. In a commutator for electric motors or dynamos, the combination of the commutator-ring, the wheel-brush which runs thereon, the pin or axle on which the wheel is rigidly secured, the spindle and bearing of the wheel, and the spring-finger which presses on the pin or axle of the wheel, for the purpose described.

7. In a commutator for electric motors or dynamos, the combination, substantially as set forth, of the end plate, the casting A, the commutator-ring, the wheel-brushes, their spindles, and the radial sockets for the spindles in the casting.

337,886. TUYERE. JACOB STOLL, Milwaukee, Wis. Filed May 2, 1883. Renewed Aug. 10, 1885. (No model.)



Claim.—1. In a tuyere, the combination of the outer shell, removable cap, and the blast-pipe having hollow leg, substantially as shown and described, for the purpose set forth.

2. The combination of outer shell, cap, and blast-pipe having hollow leg, substantially as and for the purpose set forth.

3. The combination of outer shell, cap, and blast-pipe having hollow leg provided with a damper, substantially as and for the purpose set forth.

4. In a tuyere, the combination of outer shell, removable cap having collar K, said collar having slots L, and the blast-pipe having lugs to engage the collar to secure the cap in place, as set forth.

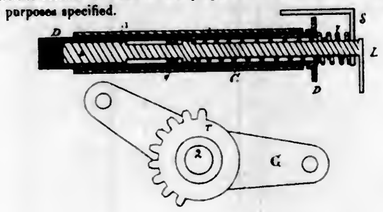
5. In a tuyere, the combination of shell A, pipe B, having hollow leg G, damper H, and lugs J, and the cap I, having chamber N, counterbored opening O, flange P, openings Q, and collar K, with slots or openings L, all substantially as shown and described, for the purpose set forth.

337,887. HAND ROCK-DRILL. HADWEN SWAIM, Denver, Colo. Filed Sept. 5, 1884. (No model.)

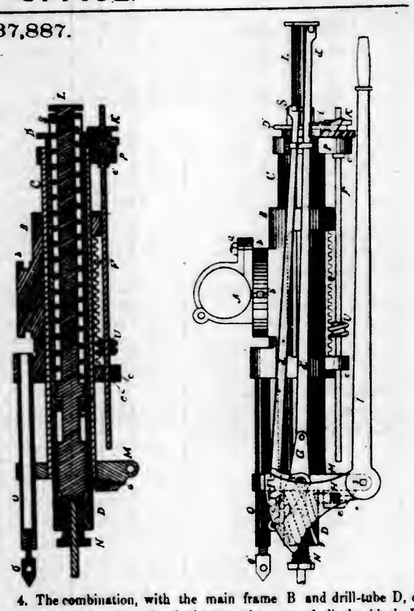
Claim.—1. The combination, with the main frame B, having an annularly-grooved projection, *b*, of the coupling A, constructed in two parts hinged together, and provided with lugs to enter the groove, and a confining-bolt, whereby the drill may be secured to a suitable support, substantially as specified.

2. The combination, with the main frame B, the drill-tube C, and the actuating-block M, of the crank G and its pinion, the intermeshing segment-rack H, the actuating-lever I, and connected rods *d* and *d'*, whereby the hammer-rod is forced backward at intervals, substantially as specified.

3. The combination, with the hammer-rod L and its head, of the actuating-arms *d d'* and the block P, having inclined openings, through which the inclined portions of the rods *d d'* pass, whereby they are caused to release the head at the proper time, substantially as and for the purposes specified.



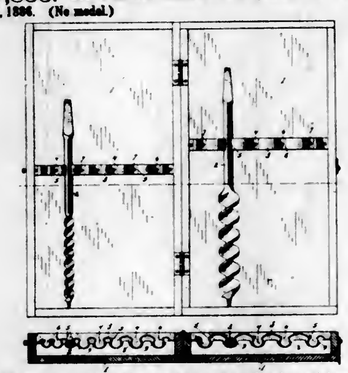
337,887.



4. The combination, with the main frame B and drill-tube D, of the hammer-rod L and its head, the actuating-arms *d d'*, the block P, and the mainspring S, all arranged to operate substantially in the manner specified.

5. The combination, with the main frame B, of the advancing rack *k*, the rod E, and intergearing worm U, the sliding ratchet K, feathered upon the rod F, the tube D and flange D', and the pawls *i j*, adapted to engage the ratchet, the whole arranged to operate substantially in the manner specified.

337,888. BIT-HOLDER. JAMES SWAN, Seymour, Conn. Filed Jan. 2, 1886. (No model.)



Claim.—1. A bit-holder consisting of a strip of metal bent to form loops or sockets to receive the shanks, and having the openings to said loops or sockets partially closed by spring projections 5, and a backing provided with curved depressions, in which the loops or sockets are secured, and which form a support therefor.

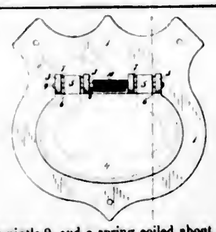
2. The combination, with a metallic strip bent to form projections 5, and loops or sockets 4, which are provided with holes at their bottoms, of a backing having depressions, in which the loops or sockets are secured by screws 7, and whose curved sides serve as a support for said loops or sockets, as and for the purpose set forth.

3. The combination, with box 1 and backing 8, having depressions 9, of a strip of spring metal bent to form sockets 4, and projections 5, and secured to said backing by screws or nails 7 at the bottoms of said sockets.

337,889. HANDLE FOR FURNITURE. WILLIAM R. TAYLOR, Bridgeport, Conn. Filed Dec. 28, 1885. (No model.)

Claim.—1. In a flush handle, the plate having a socket for the loop or hand-piece, and brackets 3, in combination with lugs 5 upon the

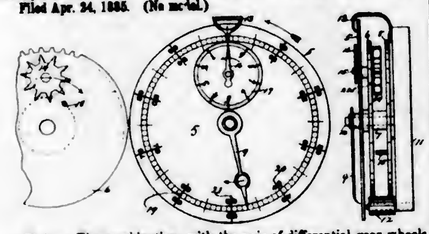
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hand-piece, shaft or pintle 9, and a spring coiled about said shaft or pintle, one end being attached thereto and the other to the plate, whereby the hand-piece is held in the socket.

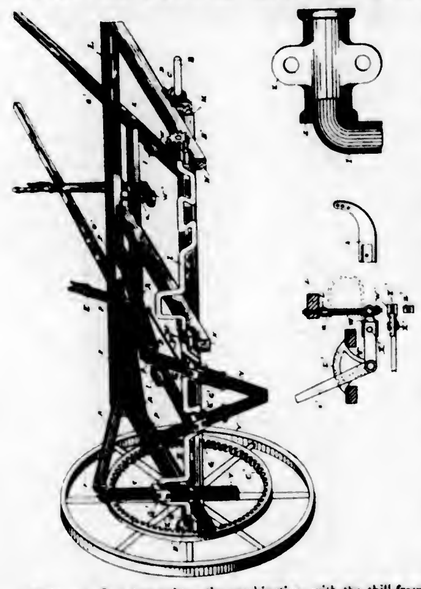
2. The plate having apertures 7, brackets 3, and socket 2, with apertures 6, in combination with the loop or hand-piece having legs 5, which project through said apertures, and are pivoted between the brackets by pintle 9 and coil-spring 10, one end of which is held by the plate, the other by the pintle, whereby in lifting the strain is entirely upon the plate and top of socket, and when released the hand-piece is returned to the socket and held there.

337,890. COUNTING-REGISTER. JOHN THOMSON, Brooklyn, N. Y. Filed Apr. 24, 1885. (No model.)



Claim.—The combination, with the pair of differential gear-wheels and means for operating the same, of the tooth, as 18, the star-wheel 14, the hand 16, attached to the star-wheel, and means for indication, as the graduation 17, substantially as described.

337,891. COMBINED HAY RAKE AND TEDDER. JOHN H. THOMAS and JOSEPH E. OFFUTT, Springfield, Ohio. Filed Aug. 6, 1885. (No model.)



Claim.—1. In a hay-tedder, the combination, with the thill-frame, and the tedder-frame, of the adjusting-lever and the yielding support supported by the lever and interposed between it and the tedder-frame and constructed to support said frame, the yielding capacity of the support being the same, whatever the position of the lever may be.

2. In a hay-tedder, the combination, with the thill-frame and the tedder-frame, of the pivoted lever, the rod connected with the lever and with the tedder-frame, and a spring for supporting said frame, interposed between it and the lever and supported by the lever, the yielding capacity of the support being the same, whatever the position of the lever may be.

3. In a hay-tedder, the combination, with the thill-frame, the pivoted lever and its detent, the locking-segment, the guide secured to the lever, and the rod adapted to play through the lever, of the tedder-frame to which the rod is connected, and a spring for supporting said frame, interposed between it and the lever and guided by said rod, the yielding capacity of the support being the same, whatever the position of the lever may be.

4. In a hay-tedder, the combination, with the thills and cross-piece, the segment, the lever, and the guides secured to the lever, of the tedder-frame, the rods secured thereto, and the spring interposed between the frame and the guide, the lever and spring being adapted to adjust the frame to different positions, the yielding capacity of the support being the same, whatever the position of the lever may be.

5. In a rake and tedder, the combination, with the axle and eccentrics mounted thereon, of connecting-plates having cheek-pieces, and the locking-section and means to secure the section to the cheek-pieces.

6. In a hay rake and tedder, the combination, with the axle and the eccentrics secured thereon, of the tedder-frame, the connecting-plates secured thereto and having cheek-pieces, and the locking-sections adapted to fit within the cheek-pieces and to embrace the eccentrics, and means to lock the sections to said pieces.

7. In a hay rake and tedder, the combination, with the axle having the eccentrics secured thereon, of the tedder-frame, the connecting-plates secured thereto and having cheek-pieces, the locking-sections, means to secure them to said pieces, the arm secured to the axle, the lever, and the connecting-pitman, whereby the eccentrics are actuated and the frame adjusted to and fro.

8. In a hay rake and tedder, the combination, with the axle having eccentrics and an arm secured thereon, the lever, and the pitman connecting it with said arm, of the tedder-frame, the connecting-plates secured thereto and having cheek-pieces, the locking-sections locked to said pieces, the tedder-shaft mounted upon said frame, and the cog-rims mounted on the drive-wheels intergearing with the tedder-shaft pinions.

9. In a hay rake and tedder, the combination, with the axle, the eccentrics and arm secured thereon, and a lever and pitman for actuating the same, of the rake-head, the connecting-plates secured thereto and having cheek-pieces, and the locking-sections locked to said pieces.

10. The combination, with the tedder-frame mounted upon the axle, the tedder-shaft and pinions, and the cog-rims mounted on the drive-wheels, of the seat-standard secured to the frame between the tedder-shaft and the axis of the axle, and the seat-beam pivotally connected with the thills and to the seat, whereby the weight of the driver holds the pinions down against the lifting action of the cog-rims.

11. The combination, with the rake-head mounted upon the axle, of the seat-standard pivotally connected to the head in front and above the axis of the axle, and the seat-beam pivotally connected with the thills and connected to the seat.

12. The combination, with the tedder-arm, of the coupling consisting of two plates rigidly secured thereto, one of which has a sleeve extending therefrom and into the other, and the radius-arm pivotally mounted on said sleeve.

13. The combination, with the tedder-arm, of the lugs fitted thereto and the sleeve fitted over the arm, the rods connecting the sleeve and lugs, and the interposed springs.

14. The combination, with the tedder-arm, of the springs, and the tedder-shaft boxes secured thereto and having the recessed ends, and the tedder-shaft passing through the boxes and having its cranks in proximity to said recesses.

15. The combination, with the tedder-frame and the tedder-arms, of the boxes secured to the frame and the boxes secured to the arms, both being provided with recessed ends, and the tedder-shaft journaled in said boxes.

16. A tedder-shaft box constructed with recessed ends, whereby the tedder-shaft is prevented from having longitudinal motion and from binding in the box at the juncture of the shaft and the crank.

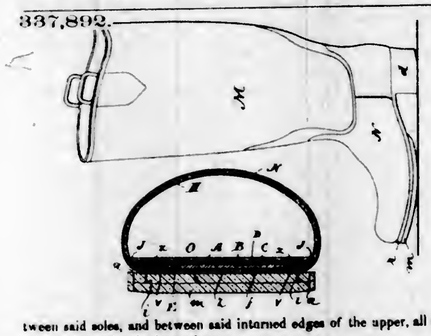
17. A tedder-shaft box constructed with enlarged portions having wooden bushings fitted therein and having its ends recessed.

18. The combination, with the axle having the annuli, of the two-part boxes having recesses in which said annuli fit, and the thills secured to said boxes.

337,892. RUBBER BOOT. JAMES F. TELTON, Ashland, assignor to himself, and William H. Huntington, Boston, Mass. Filed Sept. 4, 1885. (No model.)

Claim.—1. The upper N, an insole, a leather outer sole, both said soles lapping over the edges *v* of the upper, a row of nails passing through said soles and edges, and a layer of rubber chips interposed between said soles, and between said inturned edges of the upper, all said parts being vulcanized together.

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2. The upper N, an insole, a leather outer sole, both said soles lapping over the edges *v* of the upper, a rubber sheet between said soles, also lapping over the edges of the upper and cemented thereto, a row of nails passing through said soles, rubber sheet, and edges, and a layer of rubber chips interposed between said rubber sheet and the insole, and between said inturned edges of the upper, all said parts being vulcanized together.

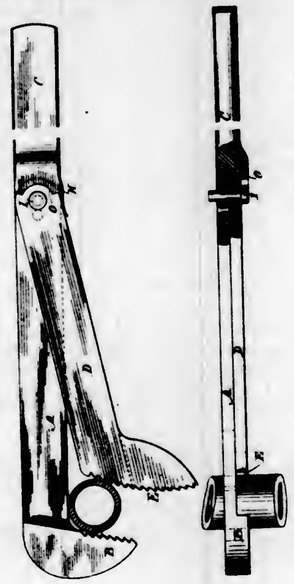
337,893. NEEDLE-CASE. EDWIN J. TOOF, New Haven, Conn. Filed Feb. 2, 1882. (No model.)



Claim.—1. A case for pins and needles, consisting of an exterior slotted case, forming a sheath provided with an adjustable sliding holder containing felted or an elastic substance, serving as a cushion, all combined and operating substantially as set forth.

2. A case for needles and pins, consisting of an exterior case, an adjustable internal sliding cushion provided with a projection for operating the latter, and an index, substantially such as described and shown, and for the purpose set forth.

337,894. PIPE-WRENCH. JOHN J. TOWER, Brooklyn, N. Y. Filed Dec. 11, 1885. (No model.)



Claim.—1. The bar A, with a jaw, B, at one end and a handle, C, at the other end, in combination with the bar D, having a jaw at one end, a pivot-pin passing through the bar near the other end, and said bar D having its rear end formed as an arc of a circle passing into a correspondingly-shaped recess at the front end of the handle C, substantially as set forth.

2. The bar A, having a jaw, B, at one end, a handle, C, at the other end, and a flange, O, at the side of the segmental recess in the front end of the handle C, in combination with the swinging bar E, having a jaw at one end, the segmental rear end fitting the recess in the end of the handle, and a pivot-pin passing through the bars A and D, substantially as set forth.

3. The bar A, with a jaw, B, at one end, in an inclined position to the bar, and a handle at the other end, in combination with the bar D, having a jaw at one end, and a bearing at the rear end formed as the arc of a circle, and a pivot-pin at the center of the arc, the bar A having a correspondingly-shaped bearing for the arc and two or more holes for the pivot-pin, substantially as set forth.

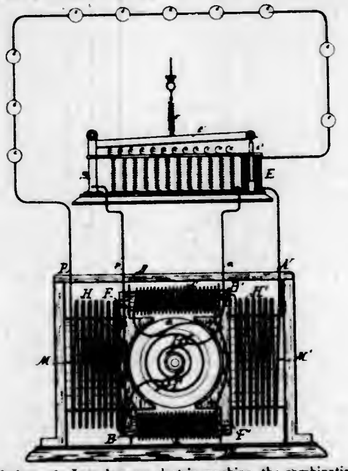
4. The bar A, having a jaw, B, at one end, a handle, C, at the other end, a segmental recess, and a flange, O, adjacent to the recess, and two or more holes for the pivot-pin, in combination with the swinging bar D, having a jaw at one end and a segmental rear end fitting the recess, and a movable pivot-pin, substantially as set forth.

337,895. THILL-COUPLING. MARSHALL H. UNDERWOOD, South Riley, Ill. Filed Jan. 13, 1886. (Model.)



Claim.—The combination, in a thill-coupling attachment, of the plate B, Fig. 2, with its ends turned up, as shown, and the hook C, Fig. 2, with the thread and burr upon its lower end, and sharp corner upon lower surface, as shown, attached to the ordinary thill-coupling, as described, and as shown in Fig. 1, and constructed in the shape and manner described, or in any manner substantially the same which shall produce the same double results of holding the coupling-pin to place and forcing and holding the anti-rattle rubber wedge to its position.

337,896. DYNAMO-ELECTRIC MACHINE. CHARLES J. VAN DEPOELE, Chicago, Ill., assignor of one-half to Richard H. Mather, Windsor, Conn. Filed May 17, 1884. (No model.)



Claim.—1. In a dynamo-electric machine, the combination, with the field-magnet poles thereof, of one or more iron bridges placed directly across said poles and inclosing the armature, thereby magnetically short-circuiting the field of force, said bridges being provided with proper helices adapted to magnetize the same with greater or less strength, as desired, and independent of the field-magnet coils, substantially as shown and described.

2. In a dynamo-electric machine, the combination, with two diametrically-opposite field-magnets having non-consequent poles, of two or

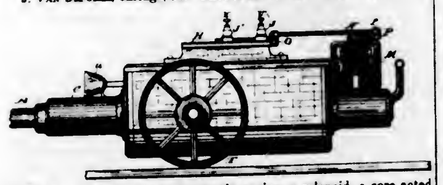
more magnetic bridges spanning said poles, the latter being provided with magnetizing-helices, in circuit with an automatic resistance adapted to direct more or less current through said helices, and thereby to modify the strength of the field of force by either increasing or decreasing the magnetism in the main poles thereof by the action of the bridges, substantially as described.

3. A dynamo-electric machine provided with two extra electro-magnets placed across the non-consequent main north and south poles of the field-magnets, said electro-magnets being in circuit with an automatic device for diverting more or less current through the helices of said extra electro-magnets, so as to energize the same correspondingly, and thereby to modify the magnetic strength of the field-magnets, and thereby control the production of current in a dynamo-electric machine.

4. In a dynamo-electric machine, and in combination with the magnetic poles of the field-of-force magnets, two electro-magnetic bridges so arranged and disposed as to influence the magnetism in the field of force, for the purpose of regulating the production of current in a dynamo-electric machine, and an automatic resistance operated by the main current, and so disposed and arranged as to regulate and control the current passing around the fixed bridge-magnets, substantially as set forth.

5. In a dynamo-electric machine, a magnetic frame consisting of a pair of field-magnets, between which the armature is rotated, and one or more iron bridges placed across and closing the space between the pole-pieces of the field-magnets and inclosing the armature, and provided with suitable helices for opposing their magnetically short-circuiting effect to a greater or less degree.

337,897. ELECTRO-MAGNETIC RECIPROCATING ENGINE. CHAS. J. VAN DEPOELE, Chicago, Ill. Filed June 24, 1885. (No model.)



Claim.—1. In an electro-magnetic engine, a solenoid, a core acted on by the opposite ends thereof alternately, a commutator and traveling contacts therefor, and a spring constructed and arranged to carry said contacts to the end of the commutator, energizing the solenoid when the core and the tool carried thereby are delivering their blow, substantially as described.

2. In an electro-magnetic engine, a solenoid, an iron core working therein, and a magnetic cylinder enveloping the solenoid, substantially as described.

3. In an electro-magnetic engine, a solenoid, an iron core working therein, magnetic heads at each end of the solenoid, and a magnetic cylinder enveloping the solenoid, substantially as described.

4. In an electro-magnetic engine, a solenoid, an iron core working therein, and a diamagnetic rod to transfer the core's force and motion, a diamagnetic tube inside the solenoid within which the core works, and a magnetic cylinder enveloping said solenoid, substantially as described.

5. In an electro-magnetic engine, a solenoid, an iron core working therein, a diamagnetic rod to transfer the core's force and motion, a diamagnetic slotted tube inside the solenoid within which the core works, and a magnetic cylinder enveloping the solenoid, substantially as described.

6. In an electro-magnetic engine, a sectional solenoid and commutator, an iron core working in the solenoid, and a magnetic cylinder surrounding the solenoid provided with an opening through the center for the connections between the solenoid and its commutator, substantially as described.

7. In an electro-magnetic engine, a sectional solenoid, a core working therein, a rectangular commutator having its sections in electrical connection with the corresponding coils or sections of the solenoid, and contacts for said commutator, in combination with an independent electromotor constructed and arranged to move said contacts over said commutator, substantially as described.

8. The combination, with an electro-magnetic reciprocating engine and its current-controller, of a rotary electromotor constructed and arranged to operate said current-controller, substantially as described.

9. In an electro-magnetic engine, a solennid, a core working therein, and a current-controller, in combination with a rotary electromotor in electrical connection with the solenoid, and operating said current-controller, substantially as described.

10. In an electro-magnetic engine, a sectional solenoid, a core working therein, a rectangular commutator having its sections in electrical contact with the successive coils of the sectional solenoid, and a pair of contacts traveling over the commutator, in combination with an independent electrical motor operating said contacts, substantially as described.

11. In an electro-magnetic engine, a solenoid, a core acted on by the opposite ends thereof alternately, a commutator connected to the solenoid, and traveling contacts therefor, in combination with an independent motor constructed and arranged to give the traveling contacts an intermittent motion, substantially as described.

12. In an electro-magnetic engine, a solenoid, a core acted on by the opposite ends thereof alternately, a commutator connected to the solenoid, and traveling contacts therefor, in combination with an independent electromotor constructed and arranged to give the traveling contacts an intermittent motion, substantially as described.

13. In an electro-magnetic engine, a solenoid, a core acted on by the opposite ends thereof alternately, a commutator connected to the solenoid, and traveling contacts therefor, in combination with an independent rotary electromotor constructed and arranged to give the traveling contacts an intermittent motion, substantially as described.

14. In an electro-magnetic engine, a solenoid, a core acted on by the opposite ends alternately, and a commutator for the solenoid, in combination with an independent continuously-operating motor, traveling contacts for the commutator, and an intermittently-operating connection between the motor and contacts, whereby the contacts are caused to travel rapidly over the commutator and rest at the end of their forward stroke, substantially as described.

15. In an electro-magnetic engine, a solenoid, a core acted on by the opposite ends alternately, and a commutator for the solenoid, in combination with an independent continuously-operating electro motor, traveling contacts for the commutator, and an intermittently-operating connection between the motor and contacts, whereby the contacts are caused to travel rapidly over the commutator and rest at the end of their forward stroke, substantially as described.

16. In an electro-magnetic engine, a solenoid, a core acted on by the opposite ends alternately, and a commutator for the solenoid, in combination with an independent continuously-operating rotary electromotor, traveling contacts for the commutator, and an intermittently-operating connection between the motor and contacts, whereby the contacts are caused to travel rapidly over the commutator and rest at the end of their forward stroke, substantially as described.

17. In an electro-magnetic engine, a solenoid, its traveling core, a commutator, and traveling contacts, in combination with a motor having a crank and a pitman forming a loose connection between the crank and traveling contacts, substantially as described.

18. In an electro-magnetic engine, a solenoid, its traveling core, a commutator, and traveling contacts, in combination with an electric motor having a crank and a pitman forming a loose connection between the crank and traveling contacts, substantially as described.

19. In an electro-magnetic engine, a solenoid, its traveling core, a commutator, and traveling contacts, in combination with a motor provided with a crank having one end positively connected with the traveling contacts and its other end loosely connected with the crank of the motor, and mechanism, substantially as described, for disconnecting the crank and pitman, as set forth.

20. In an electro-magnetic engine, a solenoid, its traveling core, a commutator, and traveling contacts, in combination with a rotary electromotor provided with a crank having one end positively connected with the traveling contacts and its other end loosely connected with the crank of the motor, and mechanism, substantially as described, for disconnecting the crank and pitman, as set forth.

21. In an electro-magnetic engine, a solenoid, its traveling core, a commutator, and traveling contacts, in combination with a motor having a crank, a pitman having one end positively connected to the traveling contacts and provided with a hook at the other, a stop to disconnect the hook and crank, and a spring to carry the traveling contacts in the opposite direction they were moved by the crank, substantially as described.

22. In an electro-magnetic engine, a solenoid, its traveling core, a commutator, and traveling contacts, in combination with a rotary electromotor having a crank, a pitman having one end positively connected to the traveling contacts and provided with a hook at the other, a stop to disconnect the hook and crank, and a spring to carry the traveling contacts in the opposite directions they were moved by the crank, substantially as described.

23. In an electro-magnetic engine, a sectional solenoid having a rectangular commutator composed of permanent contact-plates in electrical connection with the sections of the solenoid, and detachable wearing-plates, substantially as set forth, and for the purpose specified.

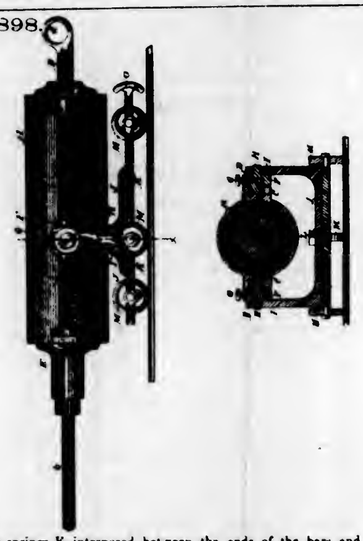
337,898. CARRIAGE FOR ROCK-DRILLS. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed July 30, 1885. (No model.)

Claim.—1. The combination, in a drilling-machine, and with the cylinder and the journals thereof and their supports, of a spring interposed between said cylinder and journals to take up the recoil, substantially as described.

2. The combination, in a drilling-machine, and with the cylinder thereof, of journals yieldingly connected to said cylinder, to allow the latter to move independently of the journals, substantially as described.

3. The combination, in a drilling-machine, and with the drill-cylinder thereof, of the bars D, working in guides therein, and provided with the springs E, interposed between the ends of the bars and the cylinder, substantially as described.

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4. The combination, in a drilling-machine, and with the drill-cylinder thereof, of the bars D, working in guides therein and carrying the journals H, mounted in suitable supports, substantially as described.

5. The combination, in a drilling-machine, and with the drill-cylinder thereof, of the bars D, working in guides therein and carrying the adjustable journals H, substantially as described.

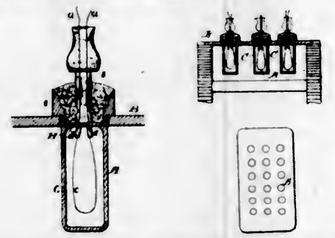
6. The combination, in a drilling-machine, and with the drill-cylinder thereof, of the bars D, working in guides therein, and the journals carried by said bars and mounted on the standards I, substantially as described.

7. The combination, in a drilling-machine, and with the cylinder thereof, of the bars D, working in guides therein, the journals H, carried by said bars and mounted in the standards I, and the springs E, interposed between the bars and the cylinder, substantially as described.

8. A four-wheeled drill-carriage having two of its wheels arranged one in advance of and the other in the rear of the other two, substantially as described.

9. A four-wheeled drill-carriage having two of its wheels arranged one in advance of and the other in the rear of the other two, in combination with a foot-piece, O, attached to the rear of said carriage, substantially as described.

337,899. CARBON FOR INCANDESCENT LAMPS. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Aug. 7, 1885. (No model.)

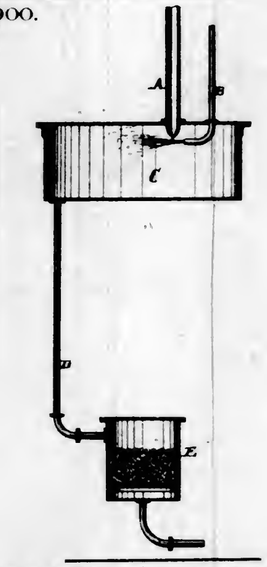


Claim.—In combination with the conducting-wires and the carbon fiber of an incandescent lamp, and as a means of uniting the same, a collar formed of a section of straw or other similar naturally hollow material adapted to receive the wires, fiber, and filling material without preliminary boring, substantially as described.

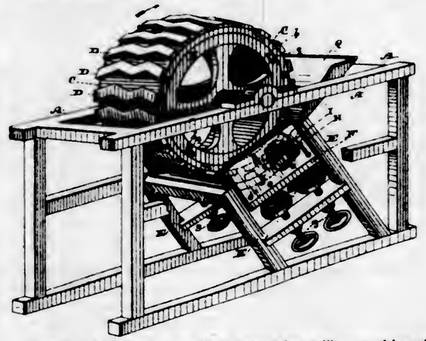
337,900. PROCESS OF SEPARATING SULPHATE OF LIME FROM SALINE SOLUTIONS. THOMAS G. WALKER, Morristown, N. J. Filed Dec. 10, 1885. (No specimens.)

Claim.—The herein-described process of separating sulphate of lime from saline solutions, which process consists in atomizing the solution by a jet of steam, and in thereby crystallizing the sulphate of lime, all as specified.

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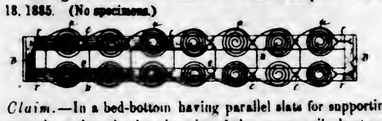


337,901. PULVERIZING-MILL. E. A. WALL, Bullion, Idaho. Filed Nov. 12, 1885. (No model.)



Claim.—The herein-described pulverizing-mill, comprising the frame A, having the inclined guides E, the muller B, having the dovetailed grooves *b*, the semi-annular plates C, having the dovetailed keys *c*, bolts *c'*, and zigzagged teeth D, the frame F, concave shoe H, having zigzagged teeth I, the side flanges, J, the springs G, adjusting-screws *g*, and feed-spout Q, all constructed and arranged as herein described.

337,902. SPRING BED-BOTTOM. JOHN R. WARREN, Plainwell, Mich., assignor of one-half to John H. Williams, same place. Filed July 18, 1885. (No specimens.)



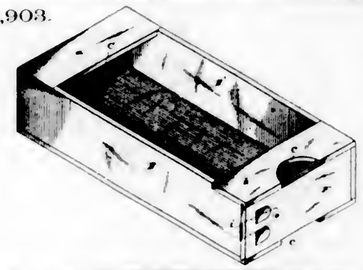
Claim.—In a bed-bottom having parallel slats for supporting the springs, twin springs having the wire of the upper coils bent out and turned over to form hooks, the wire on the opposite side of the springs being bent to form loops at each end of the straight portion of wire which connects the upper coils of the springs, substantially as set forth.

337,903. FILE-BOX. ALPHONSO D. WASTE, Galesburg, Ill. Filed Nov. 12, 1885. (No model.)

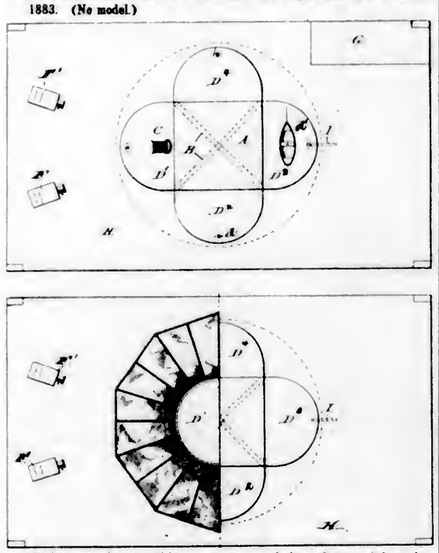
Claim.—1. A file-box, open at the top for the insertion of the papers, provided with overhanging strips *a b* and with a transversely-movable end cover F, substantially as and for the purpose set forth.

2. The combination, in a file-box having an open top and a notched bottom, of the top end strip *a* and the top end strip *b*, having the notch *c*, and transversely-movable end cover F, provided with a retaining device, substantially as and for the purpose described.

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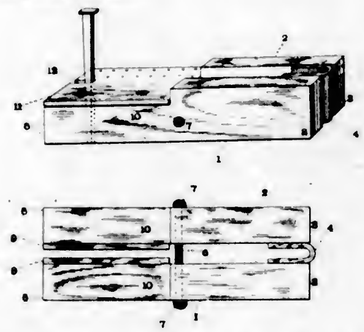


337,904. REVOLVING PHOTOGRAPHIC BACKGROUND AND FOREGROUND. ISAAC A. WETHERBY, Iowa City, Iowa. Filed June 18 1883. (No model.)



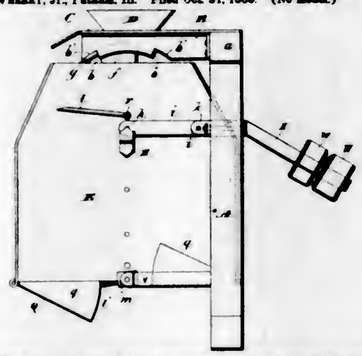
Claim.—A photographic apparatus consisting of a revolving platform, D, carrying a background-receiving frame, A, arranged, as described, to divide the surface of the platform into four spaces, D' D^2 D^3 D^4, with interchangeable background and foreground furniture to match, in combination with a camera, as and for the purposes set forth.

337,905. NAIL-HOLDER. AARON L. WHEELOCK, Buffalo, N. Y. Filed Feb. 3, 1886. (No model.)



Claim.—A device for holding nails to be driven, consisting of the two bars or parts 1 and 2, secured together by a spring-hinge, 4, and provided with the limiting cord or wire 7, leather wearing-plates 8 and 9, and a slotted plate, 11, secured to one of the bars, as and for the purposes described.

337,906. AUTOMATIC GRAIN-WEIGHING APPARATUS. JOHN WHERRY, Jr., Putnam, Ill. Filed Oct. 31, 1885. (No model.)



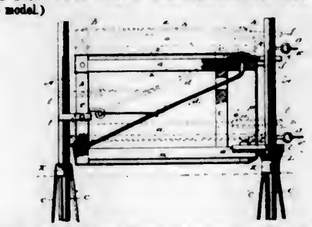
Claim.—1. In a weighing apparatus of the class described, the combination, with the rising and falling main casing having the swinging guide-plate and the drop bottoms hinged to the main casing and connected to the swinging guide-plate, of the hopper and the stationary arms having shoulders thereon, the latter arranged to engage said guide-plate when in its two positions, substantially as and for the purpose set forth.

2. The combination, with the main casing divided into two compartments and the drop-bottoms hinged at the sides and arranged to close toward the vertical dividing partition, of the plate pivoted under said partition and having downwardly-inclined wings against which the free ends of drop-bottoms abut, substantially as described, and for the purpose set forth.

3. The combination, with the pivoted plate having wings *l l*, of the bar arranged below said plate as a stop for said wings, substantially as described.

4. The combination, with the rising and falling main casing having a stationary partition, drop-bottoms located on opposite sides of said partition, and a guide-plate pivoted to the casing above the partition and forming a continuation of said partition, and having laterally-projecting catches, of the stationary hopper located above the casing, and the shouldered and curved-edge rigid arms arranged to engage the projecting catches on the guide-plate, substantially as set forth.

337,907. GATE. JOHN W. WHITE, Elkhart, Ind. Filed Oct. 15, 1885. (No model.)



Claim.—1. The combination of the gate-post having the eyebolts with the collar on said post, having the open slot, and the gate having the hangers slipped over the post to hinge the gate thereto, provided with the aligned open slots, whereby the gate may be raised and supported in a raised position on the post, substantially as described.

2. The gate having the diagonal brace-rod having the upturned threaded end, the hangers, one of which is secured on the upturned end of the brace-rod, and the nut on the threaded end of the said brace-rod for clamping the hanger to the gate, substantially as described.

3. The combination of the gate-post and the gate having the brace-rod extending diagonally through it, and the hanger secured on the upper end of said brace-rod, and the lower hanger bolted to the lower bar of the gate, the hangers having openings to slip over the gate-post and hinge the gate thereto, substantially as described.

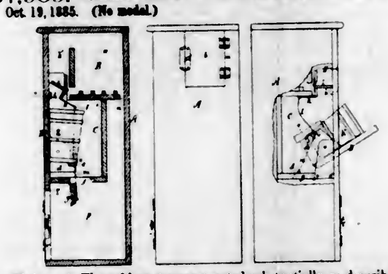
337,908. WATCH-CHAIN SWIVEL. WILLIAM F. WHITING, Norwood, R. I. Filed Sept. 17, 1885. (No model.)



Claim.—1. In a watch-chain swivel, the combination of the barrel A, the loop B, the strap F, and the spring E, the strap F resting over the lower end of loop B, and having the edges of barrel A turned over it and into grooves or depressions in loop B, substantially as described.

2. The combination of the barrel A, the loop B, strap F, collar H, and spring E, the strap F resting over the lower ends of loop B, and the collar H resting under one part and encompassing the sides of the other part of the lower end of loop B, substantially as described.

337,909. REFRIGERATOR. O. M. WHITMAN, Boston, Mass. Filed Oct. 19, 1885. (No model.)

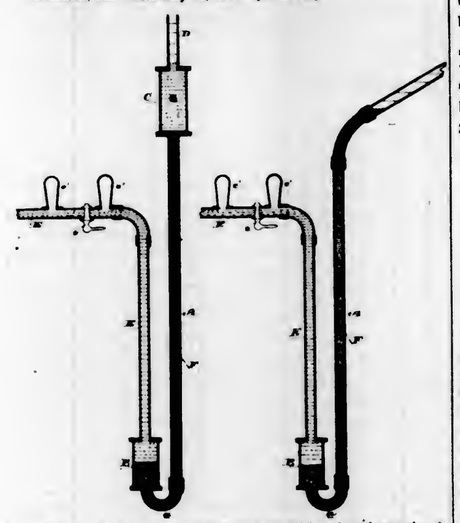


Claim.—1. The refrigerator constructed substantially as described—viz., with the ice-receptacle B in its upper portion, the chamber *p* in its lower part, one or more intermediate chambers, C, a doorway to each of such chambers, and a door, D, thereto, pivoted so as to be capable of being turned outwardly and downwardly, as set forth, racks or devices in such door for sustaining a bar for supporting a firkin or other vessel, openings in the top and bottom of the chamber C, and to each of such openings a valve so connected with the door that on such door being opened and turned outwardly and downwardly into an inclined position both of such openings should be closed, but be open when the door is closed, all as set forth.

2. The combination, with a refrigerator having to each of its cooling-chambers a door to open outwardly and downward, as explained, of the racks projecting inwardly from such door and serving to support a bar for sustaining a firkin or vessel arranged with such door, as specified.

3. A refrigerator having one or more cooling-chambers and to each a door pivoted to open downward into an inclined position and provided with a device or means for supporting a firkin or other vessel to enable it to be moved by such door from its position within the chamber down into an inclined position, all being substantially and for the purpose as set forth.

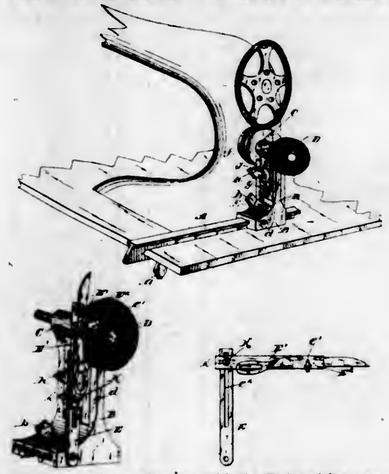
337,910. WATER-LEVEL INDICATOR. JOSEPH R. WILCOX, San Francisco, Cal. Filed July 13, 1885. (No model.)



Claim.—1. A water-level indicator comprising the tube or pipe A, having a bent lower end, the enlarged chamber B on its lower end, with the top of which the main or pipe from the reservoir communicates, the enlarged chamber C on its upper end, the graduated tube D, of small diameter, let into the top of said chamber, a liquid of great specific gravity—such as quicksilver—F, in chamber B and tube A, and a liquid of less specific gravity—such as water—G, in the chamber C, substantially as herein described.

2. A water-level indicator comprising the tube or pipe A, having an upwardly-bent lower end and an inclined graduated upper end, an enlarged chamber, B, on the lower end, with the top of which the main or pipe from the reservoir communicates, and the quicksilver, F, in the chamber B and the tube or pipe A, substantially as herein described.

337,911. GRINDING ATTACHMENT FOR SEWING-MACHINES. HENRY ASHBY, Crawford, Miss. Filed June 18, 1884. (No model.)

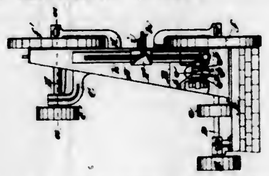


Claim.—1. The combination, with the T-shaped in cross-section adjustable rail or bar having a hooked end and a holding-screw, of the socketed bar fitted adjustably upon said T-shaped bar or rail, the plate or standard provided with a vertical slot together with a holding-screw and having at its upper end the tubular shaft sleeve or box adjustable in said socketed bar, and the emery-wheel having its shaft supported in said shaft sleeve or box, substantially as shown, and for the purpose set forth.

2. The combination, with the emery-wheel, its shaft-supporting plate or standard, and the socketed supporting-bar, of the implement-holding bar connected to said latter supporting-bar and having a pivoted bar with its clamp-plate and holding-screw, substantially as and for the purpose specified.

3. In a sewing-machine implement-sharpening attachment, the slotted bar E, in combination with the pivoted bar with its pivot provided with a thumb-nut, and the clamp-plate having a holding-screw for securing the implement being sharpened, substantially as and for the purpose set forth.

337,912. BAND-SAW MACHINE. DAVID K. ALLINGTON, East Saginaw, Mich. Filed Oct. 26, 1885. (No model.)



Claim.—1. In a band-saw machine, the combination of a ribbed supporting-column mounted on a suitable base, a vertically-sliding plate adjustable upon said column and having an extended arm, a guiding mechanism mounted thereon, and a series of pulleys which operate a screw to raise and lower the guiding-arm, substantially as described.

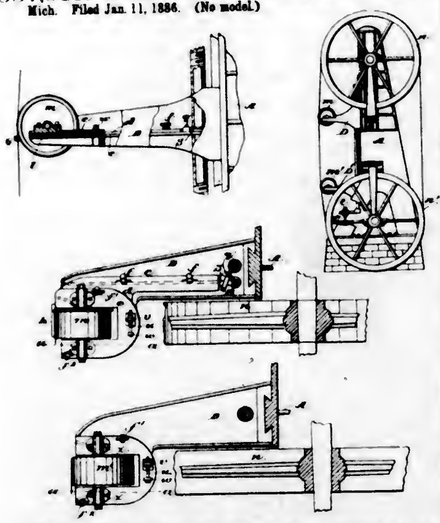
2. In a band-saw machine, the combination of a single supporting-column mounted on a suitable base, band-wheels surrounded by an endless band-saw, a vertically-adjustable yoke having an extended arm operating therewith and carrying the upper band-wheel, a vertically-sliding guide-arm engaging with a beveled plate secured to the column, a vertical screw operated by bevel-gears and pulleys for raising and lowering the said guide-arm, guide-wheels mounted in the guide-arm having rigid and adjustable bearings, and means for adjusting the saw to the true line of its cut, substantially as described.

3. In a band-saw machine, the combination of a single supporting-column mounted on a suitable base, a beveled plate secured to the col-

tion, a guide-arm engaging with said plate and extending outwardly at right angles thereto, a circular flanged plate on the end of the guide-arm, rigid and adjustable journal-boxes mounted in the circular plate, suitable guide-wheels engaging the saw-blade, and a lug having a bolt adjustable by means of nuts, whereby the saw may be always directed to its true line of cut, substantially as described.

4. In a band-saw machine, the combination of a single supporting-column, B, mounted upon a suitable base, A, a vertically-adjustable yoke, H, carrying the upper band-wheel, a beveled plate, *b*, on the supporting-column, a guide-arm, F, engaging said plate, a circular flanged plate, *q*, at the extremity thereof, rigid and horizontally-adjustable journal-boxes, a saw-adjusting device, as *s*, and means for operating the guide-arm to raise or lower it, substantially as described.

337,913. **BAND-SAW MILL.** DAVID K. ALLINGTON, East Saginaw, Mich. Filed Jan. 11, 1886. (No model.)



Claim.—1. In a band sawing machine, the combination of a supporting-column, a pair of saw-wheels carrying an endless hand-saw, and a pair of guide-wheels in contact with and revolved by the saw, such guide-wheels extending beyond the main saw-wheels, so as to deflect the saw from the perpendicular, substantially as and for the purposes set forth.

2. In a band sawing machine, the combination of a supporting-column carrying saw-wheels and an endless saw, and upper and lower guide-arms carrying adjustable guide-wheels, such guide-wheels projecting beyond a vertical line drawn tangent to the main saw-wheels, one of the guide-arms being vertically adjustable on the column, substantially as and for the purposes set forth.

3. In a band sawing machine, the combination of a supporting-column, upper and lower saw-wheels carrying an endless band-saw, and upper and lower guide-arms carrying guide-wheels in contact with the saw, such guide-wheels being movable toward and from the column, substantially as described, and for the purposes set forth.

4. In a band sawing machine, the combination, with a supporting-column and with saw-wheels carrying an endless band-saw, of guide-arms and guide-wheels journaled therein, such guide-wheels being adjustable toward and from the column and also adjustable horizontally relatively to the plane of the guide-arms, substantially as described, and for the purposes set forth.

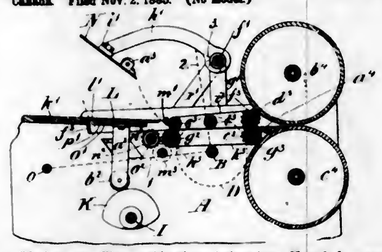
5. The combination, with the guide-arms D D', having the horizontal plate *c*, of the sliding plate *d*, the plate *e*, having a partial rotary motion and supporting the guide-wheels, and means for forcing the plate *d* outward from the column and holding it there, substantially as described.

6. The combination of the guide-arms D D', the sliding plate *d*, the plate *e*, carrying the guide-wheels and having a partial rotation, the arm *s*, feathered on the shaft B, so as to be turned to engage with the plate *d* to control the backward movement thereof, and the vertical shaft B, substantially as described.

7. In a band sawing machine, a saw-guide consisting of an arm adjustable to and from a supporting-column, a friction-wheel, *m*, mounted in the outer end of the saw-arm, and means for adjusting the said friction-wheel *m* with relation to the saw to set it to a true line of its cut, substantially as described.

8. In a band sawing machine, a lower guide-arm supported on a supporting-column and having a vertical movement only, and a friction-wheel, *m'*, mounted in the outer extended portion, said friction-wheel being adjustable in a semicircular groove, whereby the saw running over the wheel will be adjusted to a true line of its cut, substantially as described.

337,914. **FOLDING-MACHINE.** CHARLES BAILLIE, Montreal, Quebec, Canada. Filed Nov. 2, 1885. (No model.)



Claim.—1. The combination of the plates N and L, operated as described, friction-rollers a^3 and n^2, rail *m'*, side pieces, *l'*, rollers g^3, c^3, d^3, and e^3, and endless belts i^3 k^3, constructed and arranged substantially as and for the purposes set forth.

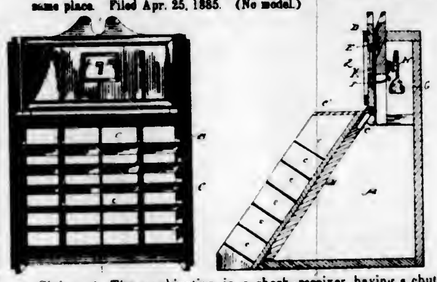
2. The combination of the plates N and L, operated as described, friction-wheels a^3 n^3, rail *m'*, side pieces, *l'*, rollers g^3, c^3, d^3, and e^3, endless belts i^3 and k^3, table a^4, and rollers b^4 and c^4, constructed and arranged substantially as and for the purposes set forth.

3. The combination of the plate L, having studs d^2, plate *o'*, spring e^2, guiding-strips f^2, arms a^2, roller b^2, cam K, arms r', shaft f', and knees q', the whole constructed and arranged substantially as described.

4. The combination of the pivot O, link a', cam M, link d', crank-arm e', shaft f', arm h', and sizing-plate N, the whole constructed and arranged substantially as described.

5. The combination, in a folding-machine, of a table having an opening, and a plate which, when raised to the level of the upper surface of said table in said opening, approximately fills said opening in said table, said opening and said plate being made the proper size and configuration that it is desired to fold a piece of material, with sizing-plate arranged substantially to operate as described, for the plate N to come down upon a piece of material laid upon the plate, filling the space in the table, the two plates then arranged to operate as described, with rollers and endless belts for pressing the folds of the material, substantially as described.

337,915. **ALARM CASH-INDICATOR AND CHECK-RECEIVER.** CHARLES E. BALDWIN, New York, N. Y., assignor to William B. Shryock same place. Filed Apr. 25, 1885. (No model.)



Claim.—1. The combination, in a check-receiver having a chute provided with sides to confine the check, of an alarm apparatus, and a hammer for operating the same provided with an arm projecting into the chute at one side in the path of the check, whereby the check directly operates the hammer and rings an alarm, substantially as described.

2. The combination, with a check-receiver and a check having a portion cut out to receive the end of a retainer, of a chute through which the spring passes to the receiver, and a retainer constructed and arranged to prevent the withdrawal of the check, substantially as described.

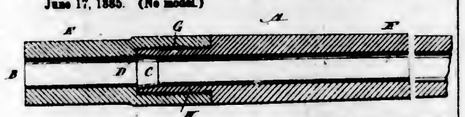
3. The combination, with a check-receiver and a chute for the check, having a retaining-spring, of a check provided with a hole to receive said spring, substantially as described.

4. The combination, with a check-receiver, of a series of checks provided with two indicating-numbers on the same side, of a chute through which such checks pass, and a window in said chute constructed to show one of said indicating-numbers and conceal the other, substantially as described.

5. The combination, with a check-receiver, an alarm, and the hammer of the alarm thereof having an arm projecting into the path of the checks, of a series of checks having their corners cut off, to give motion to the hammer, substantially as described.

6. The combination of a check-receiver and a series of checks, each check having four numbers, two of said numbers being on each side and two on each end, each of said numbers being arranged at a substantially equal distance from the center of the check, with a chute having a window constructed and arranged to hide one number and display another, whereby the figures will show correctly with either side of the check in front, substantially as described.

337,916. **GUN-BARREL.** JOHN K. BALLARD, Grayling, Mich. Filed June 17, 1885. (No model.)



Claim.—1. A fire-arm barrel having an annular groove a short distance in front of the breech, and which groove increases in diameter in the direction from the muzzle to the breech, and forms a shoulder at its largest end, substantially as herein shown and described.

2. The combination, with the breech-piece E, having the socket G, of the barrel-section F, having a neck, H, in the socket G, which neck has its bore flared at the end to form an annular groove, C, substantially as herein shown and described.

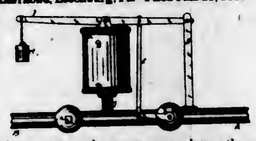
337,917. **SHEARS.** AMBROSE M. BARNETT, Elkton, Ky., assignee of one-half to John B. Wright, same place. Filed Dec. 17, 1885. (No model.)



Claim.—1. In a scissors, the combination, with the pivoted blades having the lugs *c c'*, provided with grooved faces, of the detachable and reversible handles D, having the spring-arms *d*, to closely fit the lugs, substantially as described.

2. The combination of the pivoted blades having the lugs, the detachable and reversible handles having the spring-arms, and a pivoted latch carried by the handles, substantially as described.

337,918. **AUTOMATIC PRESSURE-REGULATOR.** JOSEPH G. BEALE and JOHN A. ARMSTRONG, Leechburg, Pa. Filed Jan. 25, 1886. (No model.)



Claim.—1. In an automatic pressure-regulator, the combination, with a gas-main having a valve, of a flexible chamber located outside of the pipe, and a lever mounted on the chamber and connected with the valve, whereby when said chamber is expanded the lever will be raised and the valve closed, as set forth.

2. In an automatic pressure-regulator, the combination, with a gas-main and a valve therein, of a flexible chamber located outside the main and communicating therewith, a lever mounted on the upper side of the chamber and carrying a movable weight, and connections between the lever and valve whereby when the chamber is expanded the lever will be raised and the valve closed, as set forth.

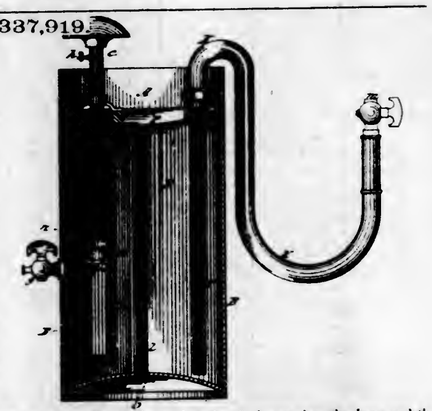
3. The combination, with the main A and valve, of the flexible chamber communicating with the main, a standard, F, a lever pivoted thereto and connected with the flexible chamber, a movable weight on the lever, a rod, E, pivoted to the lever and connected with the valve, as set forth.

337,919. **SPRAYING-PUMP.** JOHN BEAN, Los Gatos, Cal. Filed Oct. 10, 1885. (No model.)

Claim.—1. In a combined liquid and pneumatic insectile pump, the combination, with a suitable receiving-vessel and a charge-receptacle, of a pump-stock in communication with said vessel and said receptacle, a plunger-rod adapted to act upon the liquid to transmit it from the one to the other, and having communication with the stock, whereby air may be introduced simultaneously into the receptacle with the liquid, and a suitable ejecting-tube and sprayer.

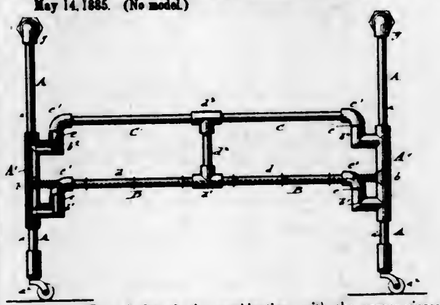
2. In an insectile spray-pump, the hollow plunger-rod provided with an external air-valve located above and outside the pump-stock or plunger-case and an internal valve or gate located within the plunger-case and above the plunger, substantially as set forth.

3. In an insectile spray-pump, the combination, with the receiving-vessel and the charge-receptacle, of the pump-stock communicating with said vessel and extending into said receptacle and having an outwardly-opening valve, and the plunger communicating with the stock and having an outwardly-opening valve, the discharge-pipe, the hose, and the spray-nozzle.



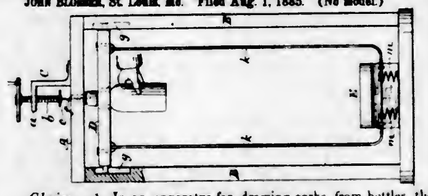
4. In liquid insectile pump, the combination, with a suitable receiving-vessel and a charge-receptacle, of a pump-stock in communication with said vessel and said receptacle, a plunger-rod adapted to act upon the liquid to transmit it from the one to the other and having communication with the stock, and a suitable ejecting-tube and sprayer.

337,920. **BEDSTEAD.** GEORG BIRKMANN, New York, N. Y. Filed May 14, 1885. (No model.)



Claim.—In a bedstead, the combination, with the corner-pieces A', each provided with a lateral socket, *b*, and also with two lateral L-shaped sockets, *b'*, opening upwardly and at right angles to said socket *b*, end rails entering said sockets *b*, and legs for supporting said corner-pieces, of side rails each comprising two parallel rods, B and C, connected near their centers by a rod, d^2, and having at their ends downwardly-extending pins *e* for engaging said L-shaped sockets *b'*, substantially as described.

337,921. **APPARATUS FOR DRAWING CORKS FROM BOTTLES.** JOHN BLOSSER, St. Louis, Mo. Filed Aug. 1, 1885. (No model.)

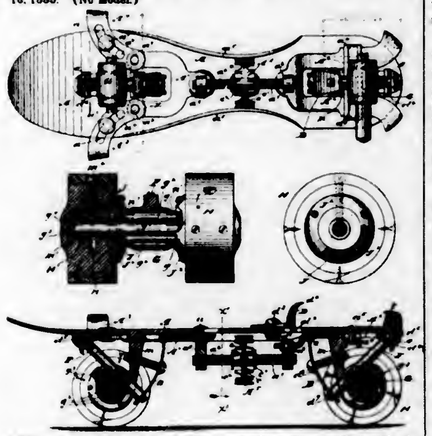


Claim.—1. In an apparatus for drawing corks from bottles, the combination, substantially as set forth, of the frame, the movable yoke provided with an opening for the reception of the neck of the bottle, the corkscrew, and a support therefor, a pedal, and connections between the pedal and yoke, whereby the yoke may be operated to draw the bottle away from the fixed corkscrew and extract the cork.

2. The combination of the frame, a corkscrew-support therein, a yoke which may be moved bodily in a straight line from and toward the corkscrew-support, an opening in said yoke for the reception of the bottle arranged in proper relation to the corkscrew-support, mechanism for operating the yoke to extract the cork, as described, and a corkscrew fixed in the corkscrew-support in proper line with the opening in the yoke.

3. The combination of the frame, an aperture therein through which the corkscrew loosely passes, a fixed corkscrew-support arranged above said aperture and having a screw-threaded socket therein, the screw-threaded shank of the corkscrew which works in said socket, a bottle-yoke which is moved bodily away from the corkscrew-support, and mechanism, substantially such as described, for moving the yoke, as set forth.

337,922. ROLLER-SKATE. CALEB BRETTON, Chicago, Ill. Filed Mar. 16, 1885. (No model.)



Claim.—1. The yoke or bifurcated plate A', provided with the threaded lug a^3 at or near its rear portion, and having its forward terminals pivotally connected with the curved clamping-plates A^3 and A^4 in advance of said lug a^3, whereby tilting of said plate A', and consequent friction between the threaded lug aforesaid and its engaging-screw a^5, is obviated, all arranged substantially as and for the purpose set forth.

2. The combination of the plate A' with curved plates A^3 and A^4 when a pivotal connection is formed between said plates by means of studs and oblong or transverse slots, substantially as and for the purpose set forth.

3. The combination of the plate A', curved plates A^3 and A^4, connected pivotally by means of studs and transversely-slotted apertures, when said pivotal connection is located so as to pass equal distances across a line connecting centers of circles, of which latter said plates A^3 and A^4 are segments, substantially as and for the purpose specified.

4. Clamping mechanism consisting of a yoke, A', pendent screw-lug a^3, stud a, clamps A^3 and A^4, rivet a', stud a^2, and an actuating-screw, all combined and operating substantially in the manner and for the purpose set forth.

5. The yoke A^3, provided with rear projections or spurs, t, when the latter have inner faces beveled or inclined, in combination with adjusting mechanism by which said yoke is moved longitudinally, substantially as described and for the purpose specified.

6. The yoke or plate A^3, in combination with the pendant m and stirrup a^4, whereby said yoke or plate is supported and guided without weakening perforations, substantially in the manner and for the purpose specified.

7. In combination with the skate-clamp A^3 or its equivalent, the spur D, provided with a beveled horizontal portion, whereby slipping beneath the adjusting-screw d^3 is prevented, substantially as and for the purpose set forth.

8. The combination, in a roller-skate having a cylinder located between its floor-wheels, of the said cylinder provided with anti-friction rollers having conical axial ends and a revoluble axle-bearing on said rollers, upon which axle is rotatably mounted the floor-wheels and washers, the latter interposed between said wheels and the conical ends of said rollers, whereby free movements of all said parts is obtained independently of each other, substantially as and for the purpose specified.

9. In combination with the foot-piece or plate A and wheels and axles of a roller-skate, the inclined axle or brace F, when said brace is so constructed and adapted to said foot piece or plate that when the latter is oscillated or laterally depressed said axle or brace F is caused by a cam action to recede longitudinally, and is actuated in an opposite direction by a spring, B, or its equivalent, substantially as and for the purpose set forth.

10. In a roller-skate, the wheel or roller having its periphery covered with a band of leather, and provided with an axle-chamber the outer end of which is closed, in combination with the axle and main bearing therefor, a cup-shaped collar or cap secured to the inner face of the wheel or roller and extending over the axle-bearing, so as to cover the point between the said axle-bearing and wheel, whereby it catches all oil thrown off by centrifugal force, and an absorbent packing located within said cup-shaped collar or cap and at or near its largest diameter to hold or retain any oil collected by said collar, the said parts operating to prevent any oil from getting to the leather upon the periphery of the wheel and softening it, substantially as and for the purpose specified.

11. The ratchet-wheel A^2, provided with teeth at its edges or sides, whereby it may be operated by an independent lever, in combination with adjusting mechanism, substantially as shown and described, and for the purpose specified.

12. In a roller-skate, a wheel or roller having its bearing provided with a bushing furnished with a hole in its periphery, in combination with a holding-screw extending down through the wheel or roller from the periphery thereof and entering said hole in the bushing, to prevent longitudinal movement of said bushing in said roller, the head of said screw being set down below the face of the wheel or roller, an axle extending through said bushing, and a collar secured to the end of said axle, to prevent the roller and its bushing working off the said axles, substantially as and for the purpose specified.

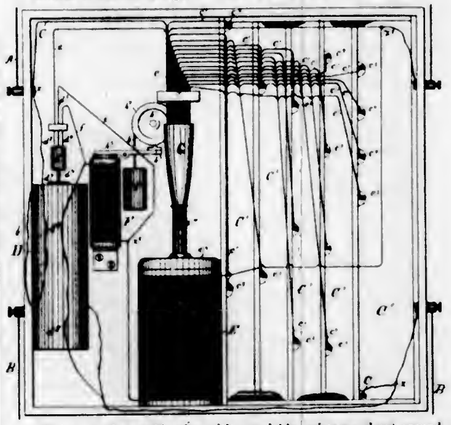
13. In a roller-skate, the foot-piece axles and its floor-rollers, in combination with the inclined axle-bearing having lugs d^3, a cam-face, e, formed of two faces arranged at an angle to each other, and against which the said lugs work, and a spring to press said axle-bearing and its lugs down toward the line of juncture of said cam-faces, substantially as and for the purpose specified.

14. In a roller-skate, the foot-piece axles and its floor-rollers, in combination with the inclined axle-bearing having lugs d^3, a cam-face, e, formed of two faces arranged at an angle to each other and against which the said lugs work, and a spring to press said axle-bearing and its lugs down toward the line of juncture of said cam-faces, and means to adjust the tension of said spring, substantially as and for the purpose specified.

15. The wheel H, provided with the end disk or plate, g^3, in combination with the axle g', when said plate is so arranged as to form an end bearing for said axle, substantially as and for the purpose described.

16. In a roller-skate, the foot-piece provided with an axle-cylinder having an enlarged central part or oil-chamber about the anti-friction rollers and extending over their middle part, in combination with a loose axle, anti-friction rollers contained within said cylinder and arranged about the axle, the floor-rollers having metallic bushings and loosely or rotatably secured upon said axle, washers upon said axle between the anti-friction bearing and bushings or floor-rollers, and washers upon the ends of the axles and outside of the bushings, whereby the axle and floor-rollers may rotate independently of each other, and should a roller become broken the washers and bushings retain the axle and anti-friction rollers in place, substantially as and for the purpose specified.

337,923. INCANDESCENT ELECTRIC-LIGHTING APPARATUS. HAROLD P. BROWN, Chicago, Ill. Filed Nov. 13, 1885. (No model.)



Claim.—1. In combination with a variable-resistance shunt around a group of incandescent lamps, a movable mercury contact or cup, and a series of fixed contacts projecting therein of different lengths, substantially as specified.

2. In combination with a variable-resistance shunt around a group of incandescent lamps, a movable liquid contact or cup, a series of fixed contacts of different lengths projecting therein, an electro-motive device for operating said liquid-contact, a relay-solenoid, a liquid-contact operated by its core, and fixed contacts connecting therewith, substantially as specified.

3. The combination, with a variable-resistance shunt around a group of lamps, of a series of fixed contacts of different lengths, a movable mercury-contact, a solenoid having a shell or spool closed at the bottom, containing oil or other fluid, and a core fitting therein as a dash-pot for operating said mercury-contact, substantially as specified.

4. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a series of contacts of different lengths, a mercury-contact, a solenoid normally short-circuited, a weight, an electro-magnet for holding and releasing said weight, and a relay for controlling the operation of said solenoid, and said weight holding and releasing magnet, substantially as specified.

5. The combination, with different-length contacts c, of mercury-contact G and solenoid E, said solenoid operating to make and break connection between said mercury-contact and said several contacts of different lengths, substantially as specified.

6. The combination, with solenoid E, having closed shell e', provided with enlargement or rim e^4 at its top, of core e^2, fitting therein as a dash-pot, substantially as specified.

7. The combination, with a variable-resistance shunt around a group of lamps, of a relay included in a branch circuit, and an electro-motive device and a weight, set in operation by said relay for varying the resistance of said shunt, substantially as specified.

8. The combination, with a variable-resistance shunt around a group of incandescent lamps, of a relay included in a branch circuit, a weight, and pawl-and-ratchet mechanism for arresting said weight, an electro-magnet for holding the pawl in engagement with the ratchet, and an electro-motive device acting in conjunction with said weight to vary the resistance of said shunt, said weight and electro-motive device being controlled by said relay, substantially as specified.

9. The combination, with a variable-resistance shunt around a group of lamps, of a series of contacts of different lengths arranged in a bundle, leading to different parts of the resistance, and a liquid-contact vessel conforming substantially in shape or size to said bundle of contacts, substantially as specified.

10. The combination, with a variable-resistance shunt around a group of lamps, of contacts c of different lengths, solenoid E, its movable core e^2, and mercury-contact G, mounted on the end of said core, substantially as specified.

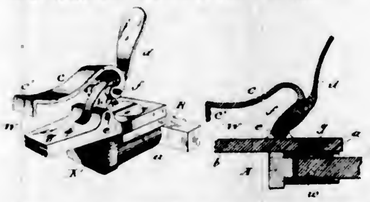
11. The combination, with a variable-resistance shunt, of contacts c of different lengths, solenoid E, having closed dash-pot shell e', movable core e^2, and mercury-contact G, secured to said core, substantially as specified.

12. The combination, with a variable-resistance shunt, of contacts c of different lengths, solenoid E, having closed dash-pot shell e', movable core e^2, mercury-contact G, secured to said core, weight H, cord or chain h, pulley h', ratchet h^2, lever h^3, magnet F, and a relay to open and close circuits, in which said magnet and solenoid are included, substantially as specified.

13. The combination, with a variable-resistance shunt, of contacts c of different lengths, solenoid E, having closed dash-pot shell e', movable core e^2, mercury-contact G, secured to said core, weight H, cord or chain h, pulley h', ratchet h^2, lever h^3, magnet F, relay-solenoid D, having movable core d, mercury-contact d', secured to said core, fixed contacts d^2, d^3, and d^4, said relay operating to break and close short circuits e and f around said solenoid E and magnet F, substantially as specified.

14. The combination, with a variable-resistance shunt around a group of lamps, of a controlling relay-solenoid in a branch circuit, having a movable core, a mercury-contact secured to said core, and fixed contacts projecting into said mercury-contact, substantially as specified.

337,924. NIPPER OR WIPER FOR LASTING-MACHINES. FRANK CHASE, Boston, Mass. Filed Oct. 26, 1885. (No model.)



Claim.—1. The combination of the stationary jaw, the locking-lever pivoted thereto, and the movable jaw pivoted to the locking-lever, so that its acting end may, by the movement of the locking-lever, be caused to move to and from the acting end of the stationary jaw, the pivots or axes of the said movable jaw and locking-lever being arranged relatively to the point at which the jaws nip the leather between them, substantially as and for the purposes hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the stationary jaw, the locking-lever pivoted thereto, and the movable jaw pivoted to said lever, said jaws being constructed and arranged substantially as hereinbefore described, so that the acting end of the one may have a yielding spring action with reference to the other.

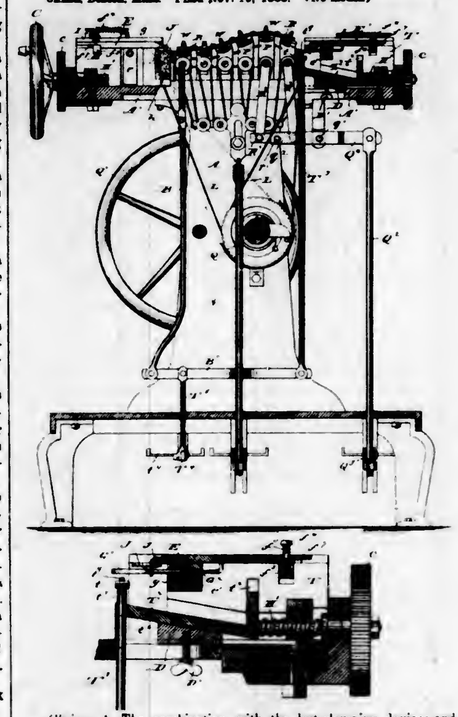
3. The combination of the stationary jaw, the locking-lever pivoted thereto, and the movable jaw provided with a bow-spring shank pivoted to said lever, these parts being arranged for joint operation substantially in the manner hereinbefore set forth.

4. The combination, with the jaw support or base, of the stationary and movable jaws and locking-lever swiveled thereto upon a vertical axis, substantially as and for the purposes hereinbefore set forth.

5. The combination, with the slide, of the nipper-wiper mounted thereon, substantially in the manner herein shown and described, so that its acting jaws may as a whole be capable of bodily oscillation in both a vertical and a horizontal plane, as and for the purposes hereinbefore set forth.

6. The combination of the nipper-wiper, its supporting-slide, and the buffer X, of rubber or equivalent material, substantially a sand for the purposes hereinbefore set forth.

337,925. LASTING-MACHINE FOR BOOTS OR SHOES. FRANK CHASE, Boston, Mass. Filed Nov. 19, 1885. (No model.)



Claim.—1. The combination, with the last-clamping devices and the wipers, of a movable plate, T^2, longitudinally adjustable to different sizes of lasts, vertical guides carried by the plate, a rest for the last movable in said guides, and springs interposed between the rest and plate for giving a yielding support to the rest, substantially as described.

2. The combination, with the last-clamping devices and the wipers, of a rest for the last, comprising a heel and toe rest independent of the clamps, and devices, substantially as described, for pressing or raising the rest toward the plane of operation of the wipers, where it may then be clamped, substantially as hereinbefore set forth.

3. The combination, with the last-clamping devices and the wipers, of a rest for one end of the last, a rest or support for the other end of the last, said rests being in addition to and independent of the clamping devices, and actuating and equalizing devices, substantially as described, whereby the rests may be simultaneously but independently moved toward or maintained in the plane of operation of the wipers, substantially as hereinbefore set forth.

4. The combination, with the side wipers and the end wipers, both operated from a common power mechanism through yielding devices which pull upon the wipers simultaneously but independently, of devices, substantially as described, for locking one or more sets of said wipers in their inoperative position while the other wipers perform their lasting operation, substantially as hereinbefore set forth.

5. The combination, with the wiper, of a retarding-nipper, l^x, situated behind the wiper, and adapted to hold the upper in a folded position over the wiper and cause a tight and smooth lasting of the upper, substantially as described.

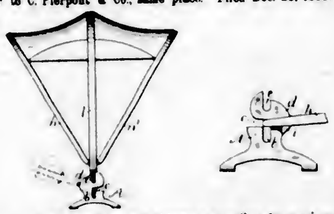
6. The combination, with a longitudinally-movable end clamp for the last, of a support for the last engaging and longitudinally movable with the clamp, an inclined plane forming a bed for the support, and means for adjusting said plane longitudinally independently of the support, substantially as described.

7. The combination, with the end wipers, of an automatically bodily yielding spring-clasp, G', arranged just below the plane of operation of the wipers and separate from and independent of the latter, said clasp being adapted to fit around the end of the last and to gather evenly and prepare the upper for the operation of the wipers, substantially as described.

8. The combination, with the lasting-wipers adapted to obtain a hold upon the leather, of equalizing mechanism, substantially as described, whereby said wipers are positively forced upward simultaneously, but for different distances relatively to one another, thus evenly stretching the upper, substantially as described.

9. The combination, with the horizontally-sliding and pivoted wipers having means for grasping the leather, of a mechanism, substantially as described, for forcing the inner ends of said wipers upward to stretch the upper, substantially as hereinbefore set forth.

337,926. **CARRIAGE-TOP.** O. CHESTER COGGINS, New Haven, Conn., assignor to C. Pierpont & Co., same place. Filed Dec. 28, 1885. (No model.)



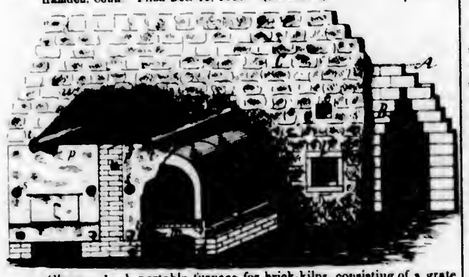
Claim.—1. In the seat-iron of a hinge or coupling for carriage-tops, a vertical slot, *b*, joined at its upper end to a horizontal slot or notch, *c*, extending to the forward edge of the iron, and a vertical notch or slot, *e*, over the central slot, extending to the upper edge of the iron, as and for the purpose specified.

2. In a hinge or coupling for carriage-tops, the combination, with a seat-iron having the slots *b c e*, curved surface *d*, and projection *i*, of the bow-plate *h*, provided with two projections or pins, *m m'*, adapted to fit the slots in the seat-iron, substantially in the manner and for the purpose described.

3. In a hinge or coupling for carriage-tops, a bow-plate, *h*, having two pins or projections, *m m'*, arranged with a space between them equal to or slightly exceeding the distance from the curved edge *d* to the upper end of the slot *b*, substantially as described.

4. In a hinge or coupling for carriage-tops, the seat iron or standard A, having a central vertical slot, *b*, which joins a horizontal slot or notch, *c*, extending to the forward edge of the iron, the upper vertical notch or slot, *e*, over the central slot, the curved edge *d*, concentric with the upper end of the central slot, and a projection, *i*, at the lower part of the curved edge, substantially as and for the purpose described.

337,927. **PORTABLE BRICK-KILN FURNACE.** SAMUEL P. CRAFTS, Hamden, Conn. Filed Dec. 18, 1885. (No model.)

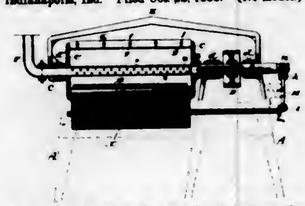


Claim.—1. A portable furnace for brick-kilns, consisting of a grate frame or base erected exterior to the kiln, a furnace-front or door-plate secured to the base, an arch of fire-clay mounted upon the grate frame or base and covered with sand or other non-conducting material banked against the face of the kiln, and an air-tube arranged over the furnace within the covering, with one end inserted into the casing of the kiln and communicating with the peak of the fire-arch for admitting heated air to the interior of the kiln, substantially as and for the purpose described.

2. In combination, the U-shaped arches A, longitudinal bars *n*, joined by transverse bars *m*, the grate-bars *i*, supported on the transverse bars, and the furnace-front or door-plate P, secured to the frame, all arranged and combined substantially in the manner and for the purpose described.

3. A furnace-grate composed of two series of grate-bars arranged end to end and having projections *r* at their meeting ends which are adapted to fit between the sides of a double transverse bar, *m*, substantially as described.

337,928. **MACHINE FOR CLEANING INTESTINES.** JAMES CUNNING, Indianapolis, Ind. Filed Oct. 22, 1885. (No model.)



Claim.—1. In a machine for cleaning intestines, the combination, with a scraper and a support for holding the intestines in contact with the scraper, of a pipe for conducting water into the interior of the scraper-cylinder, substantially as set forth.

2. In a machine for cleaning intestines, the combination, with a skeleton cylinder having scrapers on the periphery thereof, and a support for holding the intestine in contact with the scrapers, of a sprinkler for throwing water from within the cylinder onto the scrapers, to thereby keep them free and clean, substantially as set forth.

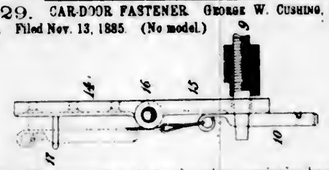
3. In a machine for cleaning intestines, the combination, with a rotary cylinder provided with scrapers on its periphery and a table for holding the intestine in contact with the scraper, of a water-pipe extending through the end of the cylinder to throw water from within the cylinder onto the scrapers, for the purpose substantially as set forth.

4. The combination with the rotary cylinder provided with adjustable scrapers on its periphery, of an adjustable table for holding the intestine in engagement with the scrapers, substantially as set forth.

5. The combination, with the rotary scraper and the table for supporting the intestine in engagement therewith, of a water-pipe for discharging water into the interior of the scraper-cylinder, and the two rollers for grasping the intestine and drawing it beneath the scraper, substantially as set forth.

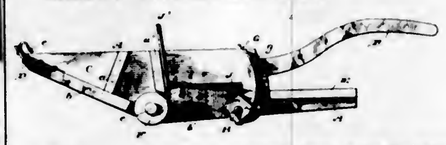
6. The combination, with the rotary scraper, the pipe for conducting water into the interior of the scraper, the table, and the rollers for drawing the intestine beneath the scraper, of the shaft and gear for communicating the rotary motion of the operating-shaft to the rollers, substantially as set forth.

337,929. **CAR-DOOR FASTENER.** GEORGE W. CUSHING, St. Paul, Minn. Filed Nov. 13, 1885. (No model.)



Claim.—The combination of a bearing-plate, a swinging hasp hinged thereto, and having a slot near its free end, a suspending staple fixed to the bearing-plate in position to be inclosed by the slot of the hasp when turned upwardly, and a sealing-bolt having a head or stop of greater width than the slot of the suspending staple, substantially as set forth.

337,930. **ROAD SCRAPER AND GRADER.** CHARLES H. DANA, West Lebanon, N. H. Filed Oct. 12, 1885. (No model.)



Claim.—1. The combination, with the frame, having its bottom inclined in opposite directions, of the scraper placed in the rear of the angle of inclination, and the handles, whereby the scraper is caused to bite into the ground by depressing the rear of the frame or easily lifted to discharge its load, as set forth.

2. The combination, with the frame provided or not with a roller, or the equivalent, and a scraper, of the front platform and its grading-plate, as set forth.

3. The combination, with the frame capable of rocking on an angle of its oppositely-inclined bottom, of a scraper in the rear of said angle and the front and rear platforms, as set forth.

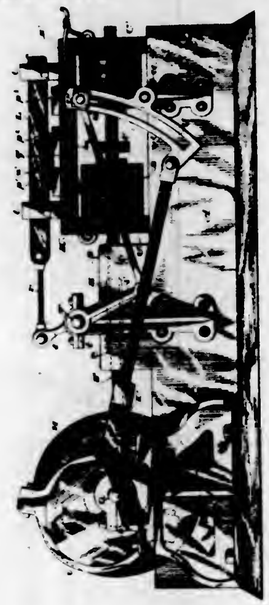
4. The combination of the frame having its bottom inclined in opposite directions, substantially as shown, and a scraper with the roller placed at or near the angle of inclination, whereby the frame balances on the roller and the draft is made easy, as set forth.

5. In a road-scraper, the combination, with the scraper, of the trap-plate, as set forth.

6. The combination, with the frame having lateral grooves, of the bail, the swinging trap-plate, and the curved scraper, as set forth.

7. A road-scraper composed of a frame with an oppositely-inclined bottom, a roller placed at or near the angle of inclination, the front platform and its grading-plate, the turf-cutter, the inclined scraper attached to cleats in the rear of it, the lifting-bail, and the trap-plate swinging thereon, the rear platform, and the handles, as set forth.

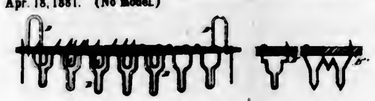
337,931. **ELECTRO-MAGNETIC MOTOR.** WILLIAM H. DARLING, New York, N. Y., assignor of one-half to Gardner P. Harrington, same place. Filed Nov. 19, 1885. (No model.)



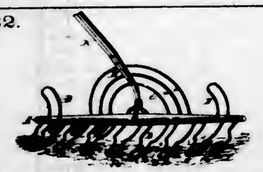
Claim.—1. In a double-acting electro-magnetic engine, the combination, with the facing oppositely-acting electro-magnets, of the reciprocating armature arranged between said magnets, the two contact-plates forming terminals or electrodes of circuits through the coils of magnets on opposite sides of the armature, respectively, the intermediate contact-plate forming an opposite terminal or electrode to each of the other contact-plates, and the reciprocating bridge-plate arranged to traverse said contact-plates, and having connection with the armature through intermediate devices, substantially as described.

2. The combination, with the oppositely-arranged electro-magnets, intermediate reciprocating armature, and rod carrying said armature, of the slab K, supported by the yoke-pieces of said magnet, the insulated contact-plates supported by said slab, the reciprocating bar arranged in suitable guides and carrying the insulated bridge-plate *q*, arranged to traverse said contact-plates, the electrical circuits, and the intermediate mechanical connections between the said reciprocating bar and the armature, as set forth.

337,932. **HAND-RAKE.** THEODORE D. DAVIS, Syracuse, N. Y. Filed Apr. 18, 1881. (No model.)



337,932.



Claim.—1. In a hand-rake, a series of compound wire teeth, each consisting of a main tooth and a shorter intermediate tooth, substantially as shown and described.

2. In combination with the compound teeth, the rake-head A, braces C, and socket E, substantially as described.

3. In a hand-rake, a series of double wire teeth having shanks bent oblique to their main portion, substantially as shown and described.

4. In a hand-rake, a double wire tooth formed with a series of steps or angles, substantially as shown and described.

5. In a hand-rake, a series of teeth the points of which are gradually raised from a line parallel with the axis of the head, forming a convex line from end to end, whereby the teeth are adapted to work in depressions and between ridges, substantially as shown, and for the purpose set forth.

6. In a garden implement, the shank E", provided with pins or pegs H on the sides thereof, in combination with braces G G, whereby the braces may be secured to the shank in a longitudinal direction, substantially as shown, and for the purpose described.

7. In an implement-handle socket, the braces G, having spurs or ends G' bent inward, as shown, whereby said braces may be set diagonally in the head, as and for the purpose set forth.

8. In an implement-handle socket, the braces G G, in combination with the bifurcated shank formed of malleable iron and provided with spurs P P, whereby the shank may be clamped to the rake-head, substantially as shown and described.

9. In a garden implement, the combination of the socket, the sleeve F, having perforations *f*, and braces C', secured in said perforations, substantially as shown and described.

10. In a hand-rake, a series of teeth the points of which are gradually raised from a line parallel with the axis of the head, forming a convex line from end to end, said teeth also gradually decreasing in length from the center to the end of the rake-head, substantially as shown and described.

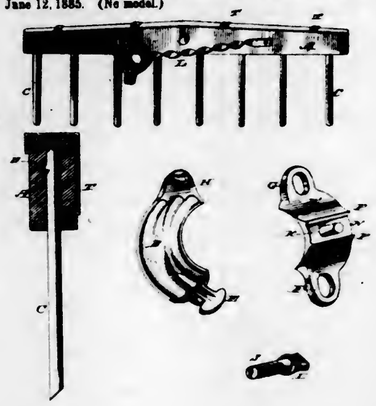
11. In a garden implement, the compound socket composed of section E, provided with a shank, and section E', secured by lugs or rivets and sleeve, substantially as shown, and for the purpose set forth.

12. In a garden-rake, the tooth herein described, having its tapering shank or shanks formed by removing the metal from one side only, substantially as shown and described, and for the purpose set forth.

13. A double wire tooth for garden-rakes, formed by removing the metal from opposite sides or corners of each end of the blank, whereby the unbroken surfaces of both shanks may be on the same side when bent into shape, substantially as shown and described.

14. In a hand-rake, the combination, with the shank having a handle-socket and a screw fitted to extend into the socket, of a handle having a seat formed at the side thereof and running toward the upper end and center of the handle, and provided with a plate against which the point of the screw abuts, whereby when the strain tends to withdraw the handle from the socket the plate binds harder against the screw in the direction of its axis.

337,933. **HAND-RAKE.** THEODORE D. DAVIS, Williamsport, Pa. Filed June 12, 1885. (No model.)



Claim.—1. In a rake, the combination, with the rake-head, of the wear-irons placed across the upper edge and secured to the forward and upper edges thereof.

2. In a rake, the combination, with the rake-head, of a rake-tooth having a barb projecting therefrom, the inclined surface of which is toward the upper end of the tooth.

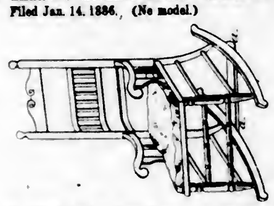
3. In a rake, a socket composed of two parts, each having a stud or rivet projecting therefrom, and one part having a head and a narrow neck and a threaded hole, and the other part an aperture for the passage of the head, and another aperture for the passage of a connecting-screw.

4. In a rake, the combination, with the sectional socket provided with flanges and rivets or studs, of the braces secured to the sockets by the rivets or studs.

5. In a rake, the combination, with the head having teeth-holes, of the teeth fitted, respectively, in said holes and provided with barbs and diagonally-cut points.

6. In combination with head A and handle M, of clamp B B', braces L, teeth C, and wear-irons T, all substantially as set forth.

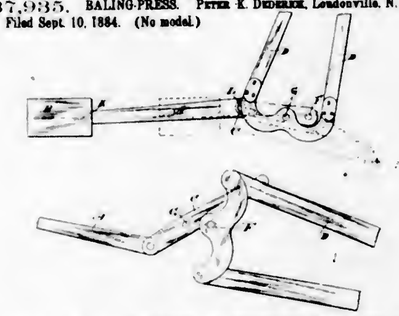
337,934. EXERCISE ROCKING-CHAIR. GEORGE W. DEAN, New York, N. Y. Filed Jan. 14, 1886. (No model.)



Claim.—1. A rocking-chair having each of its rockers provided with a fixed projection on its lower side at about the middle of their length in coincident crosswise relation, whereby to produce combined rocking and jolting movements, as described.

2. The combination, with a rocking-chair, of a cross-rocker bar attached to the lower sides of its rockers at about the middle of their length, whereby to produce a jolting interruption of the rocking movement, as described.

337,935. BALING-PRESS. PETER K. DEDERICK, Londonville, N. Y. Filed Sept. 10, 1884. (No model.)



Claim.—1. In a baling-press, the combination of a pitman connected to the traverser, an arm or arms pivoted to the frame and forming with the pitman a toggle-joint capable of being worked back and forth across a central line or dead-point, and an independent reversible horse-lever mounted on a separate pivot or center, and adapted when swung in either direction to bear upon the said arm or arms, with a sliding or rolling contact shifting outward from the pivot or fulcrum of the same, and to carry the toggle across the central line and permit it to separate from the horse-lever, and be automatically projected at the other side of the press by the expansion of the pressed material, substantially as described.

2. In a baling-press, the combination of a pitman and an arm or arms forming a double-acting toggle with a reversible horse-lever mounted on a pivot which is eccentric to that of the pivot of the arm or arms, and having two remote bearing-points which alternately act upon the arm or arms as the lever is vibrated from side to side of the press, to force the toggle over the central line or dead-point and permit it to be reversed automatically by the expansion of the pressed material independently of the horse-lever, substantially as described.

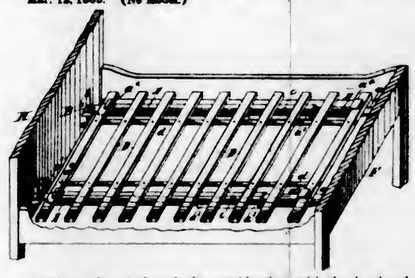
3. The combination, substantially as described, of the traverser, pitman, and swinging arm or arms, with the reversible horse-lever mounted upon a pivot separate and independent from that of the arm or arms and in front of it, and having the remote bearing for alternately acting upon the arm or arms, and having, also, the curved inner portion for accommodating the pivot of the latter, substantially as described.

4. A pivoted arm or arms having an extended free end, in combination with a pitman pivoted to said arm or arms and a horse-lever pivoted to one side of the pivotal point of said arm or arms, substantially as and for the purpose specified.

5. A horse-lever with a pivoted broad end or head having stops thereon, in combination with an arm or arms pivoted to one side of the lever-pivot, and having an extended free end and a connecting rod or pitman pivoted to said arms, substantially as and for the purpose specified.

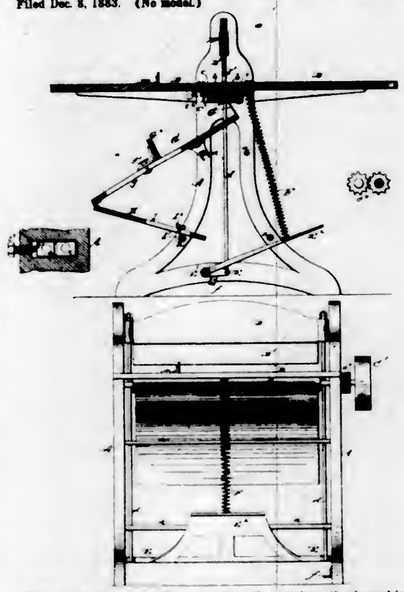
6. A V-shaped lever pivoted at its broad end and provided with stops thereon, in combination with an arm or arms pivoted to one side the pivotal point of the lever and a connecting rod or pitman pivotally secured to the arm or arms at a distance from the free end thereof, substantially as and for the purpose specified.

337,936. BEDSTEAD. JOHN T. DEITERER, Willshire, Ohio. Filed Mar. 12, 1885. (No model.)



Claim.—In a bedstead, the combination, with the head and foot boards provided with hooks B, and the sheet-metal slat-supports A, having slots a' and retaining devices a^4, said slat-supports being constructed for longitudinal adjustment, of the bed-slats D, flexibly connected together, as set forth, and detachably held to the supports A by the said retaining devices a^4, said parts being constructed and arranged substantially as and for the purpose specified.

337,937. FOLDING-MACHINE. EDWARD P. DONNELL, Chicago, Ill. Filed Dec. 8, 1883. (No model.)



Claim.—In a paper-folding machine, the receiver G, pivoted in the main frame and provided with the deflector G' and stop G^2, in combination with the hinged adjusting-arm H, slotted and provided with the adjustable hook h', substantially as and for the purpose set forth.

337,938. SEAL-LOCK. FRANK A. DUNNING, Blue Island, Ill. Filed Dec. 23, 1884. (Model.)

Claim.—1. The seal-lock for cars shown and described, consisting of a pivoted frame having side covering-plates, a spring latch-bolt having an elongated opening through its body, an interior lever having a

337,938.



ticket-perforating punch or prod and arranged to extend through the opening in the latch-bolt, a receptacle for a seal-ticket covered by a transparent front cap, and the means described for operating said parts, substantially as and for the purpose set forth.

2. In the seal-lock shown and described, the combination of the frame or case J, the lever *a*, having the prod P^2, the latch-bolt B, the spring *t*, and the tumbler R, as and for the purpose set forth.

3. In a seal-lock shown and described, the combination, with the frame or case J, of the lever *a*, having the prod P^2, spring latch-bolt B, and the studded rotating tumbler R, all adapted to operate substantially as and for the purpose set forth.

337,939. MACHINE FOR MAKING WIRE BALE-TIES. DAVID L. ECKERSON, Worcester, N. Y., assignor of one-half to Abram Diefendorf, same place. Filed Dec. 31, 1885. (No model.)

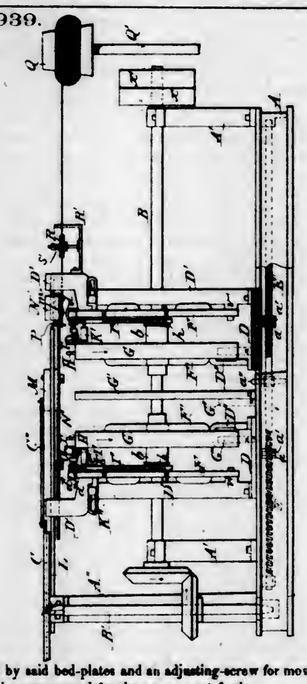
Brief.—The wire passes from a reel around a tension-pulley and through stationary jaws, and its end is seized and drawn forward by jaws mounted on a reciprocating slide. When this slide nears the end of its stroke, the stationary jaws are allowed to close on the wire. The further movement of the slide stretches and straightens the wire. The wire is then cut and the straight blank falls onto the carrying-wheels, where it is clamped, its ends bent into hook form, and twisted, to form the eyes of a bale-tie. The finished tie is then released and allowed to drop from the machine.

Claim.—1. In a machine for making wire bale-ties, the combination, with a wire straightening and stretching mechanism and a cutting-off device, of the mechanism for automatically forming loops on each end of the wire and means for operating the several mechanisms in due order, as set forth.

2. In a machine for making bale-ties, the combination, with a bed and suitable journal-supports mounted thereon, of a driving-shaft and carrying wheels or disks rotating with and adjustable on said shaft, and devices for looping and twisting the wires carried by the wheels or disks, substantially as and for the purpose set forth.

3. In a bale-tie machine, the two movable bed-plates supporting the carrying-wheels and loop forming and twisting mechanism carried by the wheels, in combination with the non-rotating cam and gear plates

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supported by said bed-plates and an adjusting-screw for moving the bed-plate, in the manner and for the purpose set forth.

4. In a wire bale-tie machine, the rotating disks or carrying-wheels provided with diametrically-sliding clamps and carrying-spindles provided at their outer ends with a loop-forming hook, in combination with a shaft revolving in suitable bearings and carrying a forming-pin at one end and the non-rotating cam and gear plates provided with suitable teeth and projections to give the desired movement to the several parts, as set forth.

5. The combination of the bed-plate, the rotating disks or carrying-wheels, and the central supporting band or bands secured to said bed-plate, to prevent the sagging of the wires between the wheels, as set forth.

6. The combination, with the rotating carrying-wheels G G and supporting-bands G', of the curved extensions G'', attached to or integral with said bands and forming a receptacle for the finished bale-ties, as specified.

7. In a bale-tie machine, a carrying-wheel provided with a clamp formed of two parts, H and H', elastically connected, in combination with the cam-plate F and spring c'', arranged to operate said clamp as the wheel rotates, for the purpose specified.

8. In a bale-tie machine, the carrying-wheel provided with bracket I and loop-forming spindle and hook, in combination with pinion f', sector-lever K, and adjustable stop K'', arranged and operating to form the loops in the ends of the wire, as set forth.

9. The combination, in a bale-tie machine, of the loop-forming hook, the pinion f', and spindle J, sector-lever K, and spring k, said spring acting to return the parts to their normal position after displacement by the stop K'', as specified.

10. In a bale-tie machine, the combination of loop-forming hook J', provided with notch f'', with the curved guide *g* and recess g', arranged to catch and carry the wire around a forming-pin, as set forth.

11. In a bale-tie machine, the combination of the rotating loop-forming hook with the shaft I', its pinion, the triangular guide-block, the gear-plate and connected toothed segment, arranged as set forth, to form and twist the loop.

12. In a bale-tie machine, the shaft I', having one end thrown out of the axial line, in combination with the removable loop-forming pin, as set forth.

13. In a bale-tie machine, a wheel, G, bracket I, shaft I', carried by said bracket and provided with removable pin d'', spring e'', pinion *d*, and triangular block d', in combination with the gear-plate and toothed segments, for imparting motion to said shaft, as set forth.

14. In a bale-tie machine, the combination of the vertical shaft B', crank-plate C, having recess *i*, with adjustable slide C', carrying the crank-pin, and set-screws i' for securing said slide, with cross-head M,

cam-rod N', having adjustable stops *o o'*, cross-piece N, and holding-jaws *m m'*, for the purpose set forth.

15. In a bale-tie machine, the adjustable crank and adjustable connecting-rod, in combination with the cross-head M and slide M', for opening and closing the jaws *j j* in the operation of drawing and stretching the wire, arranged to have a limited movement within the slide M, as set forth.

16. In a bale-tie machine, the combination, with the reciprocating cross-head M and slide M', having a limited movement in said cross-head, of the jaws *j j*, pivoted to the cross-head and operated by the slide, in the manner set forth.

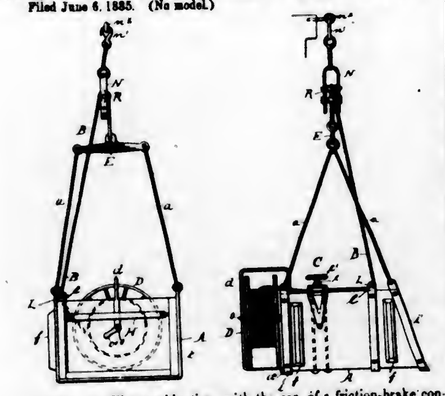
17. The combination, in a bale-tie machine, of the cross-piece N, stationary jaw *m*, and pivoted jaw *m'*, with the cam-rod N', having stops *o o'*, and suitable projections, *n n'*, to operate the pivoted jaw, as specified.

18. The reciprocating cross-head carrying slide M, and provided with wire-grasping jaws operated by said slide, in combination with the jaws *m m'*, attached to cross-piece N, and cam-rod N', having stops *o o'*, all arranged and operating to hold and stretch the wire, as set forth.

19. In a bale-tie machine, the combination of the spring-supported plate P with slide M, the cutter P', and carrying-wheel G, as set forth.

20. In a bale-tie machine, the combination of the wire-supporting reel, tension-pulley, and standard D', cross-piece N, having spring-supported plate P, and holding-jaws *m m'*, cam-rod N', having adjustable stops *o o'* and projections *n n'*, cross-head M, having grasping-jaws *j j*, slide M', and operating connecting-rod C'', for straightening and stretching the wire, substantially as shown and described

337,940. **FIRE-ESCAPE.** FOWLER W. EBOMS, Philadelphia, Pa. Filed June 6, 1885. (No model.)



Claim.—1. The combination, with the car, of a friction-brake consisting of the straps *s s'*, oppositely placed on a side of the car, bolts 1, passing through the side of the car and the straps, and extending downward within the car and projected through its bottom, the cap *c*, hinged to the strap *s'* on one side and secured to the strap *s* by a keeper, blocks *m m'*, the one located within the cap *c*, the other between the ends of the straps projecting beyond the edge of the car, and a set-screw to adjust the block *m* to and from the block *m'*, substantially as and for the purpose specified.

2. The combination of the car open at one end and closed at the other, a reel secured to the closed end, the brake C, fastened to one side, the supporting-ropes *a*, beam E, operating-ropes B, stay-bar A, the gate-bar H, hinged to one side of the car and extended across the open end, and the spring draw-bolt *r*, to lock the free end of the bar when in position, as and for the purposes set forth.

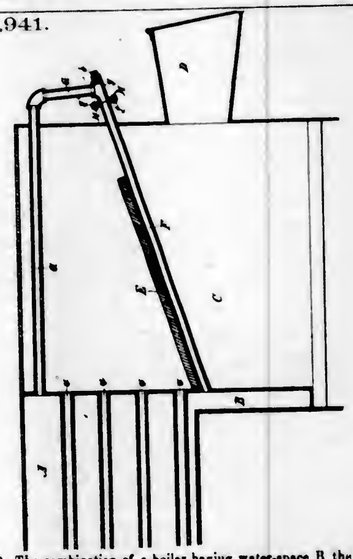
3. The combination, with the car, of a reel, a support, *d*, the reel-shaft securing the support to the car by passing through its side and one of its ends, and a keeper securing the other end of the support to the bottom of the car, substantially as described.

337,941. **BRIDGE-WALL OR FIRE-ARCH SUPPORT.** JOSEPH ENRIGHT, San José, Cal. Filed Oct. 15, 1885. (No model.)

Claim.—1. A bridge-wall or fire-arch support for steam-boiler furnaces, consisting of pipes on which the bridge-wall or fire-arch rests, said pipes communicating with the water-space in front, and each pipe having a separate or individual communication or connecting-pipe between its rear end and the boiler, the joint between the bridge-supporting pipes and their connecting-pipes being exterior to the furnace, substantially as described.

2. The pipes F, supporting the bridge-wall or fire-arch and communicating at one end with the water-space, in combination with the pipes G, communicating with the boiler and connected exterior to the furnace, pipe for pipe, with the pipes F, substantially as described.

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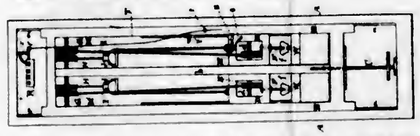


3. The combination of a boiler having water-space B, the fire box or chamber C, and the bridge-wall or fire-arch E therein, with the pipes F, supporting the bridge-wall or fire-arch and communicating at their forward ends with the water-space, and the separate pipes G, communicating with the boiler and connected, pipe for pipe, with the pipes F, substantially as described.

4. The pipes F, communicating at their forward ends with the water-space and projecting at their rear ends beyond the furnace, said pipes forming the support for the bridge-wall or fire-arch of said furnace, in combination with pipes G, communicating with the boiler, and a connection between the pipes G and F, pipe for pipe, on the outside of or exterior to the furnace, substantially as described.

5. The pipes F, forming the bridge-wall or fire-arch support for a steam-boiler furnace, said pipes communicating at their forward ends with the water-space and having their rear ends projecting backwardly outside of the furnace, and the pipes G, communicating with the boiler, in combination with the means for securing the pipes G to the pipes F, consisting of the flange *f* on the ends of pipes F and the nipple *g* on the ends of pipes G, having flange *g'*, and the bolts H, uniting the flanges *f g'*, substantially as described.

337,942. **EXERCISING-MACHINE.** BERNARD FARLEY, San Francisco, Cal. Filed Sept. 14, 1885. (No model.)



Claim.—1. In an exercising-machine, the casing A, in combination with the frame B, mounted in said casing, and adapted to be vertically adjusted to accommodate different heights of operators, weights on the frame B, and ropes secured to the weights and extending outside of the casing A, whereby said weights may be raised and lowered, substantially as herein described.

2. In an exercising-machine, the casing A, in combination with the frame B, mounted within said casing, and the screw C, supporting said frame B, and adapted to adjust it vertically to suit the height of the operator, weights mounted on and carried by the frame B, and ropes for raising and lowering the weights, substantially as herein described.

3. In an exercising-machine, the casing A and the frame B within it, in combination with the sliding bearings D in the frame B, the weights W, suspended from said bearings, pulleys on the bearings and in the frame B above, and ropes attached to the bearings and passing over the pulleys to the outside of the casing, substantially as herein described.

4. In an exercising-machine, the casing A, the frame B therein, having shafts G in its top, with pulleys H thereon, in combination with the bearings D, mounted and adapted to slide in the frame B, the weights W, suspended from the bearings, the shafts *d* in said bearings, and pulleys E on said shafts, and the ropes I, secured to the bearings and passing over the pulleys E and H, as described, and the handles J on the ends of the ropes, substantially as herein described.

5. In an exercising-machine, the sliding bearings D, in combination with the bolts F, the weights W on said bolts, and the thumb-screws *f*, by which additional weights may be secured to the weights W, substantially as herein described.

6. In an exercising-machine, the casing A, having the registering device R upon it, in combination with the sliding bearings D, carrying weights W, and means for raising and lowering the sliding bearings, and a mechanism operated by the movement of the bearings to cause the registering device to operate substantially as herein described.

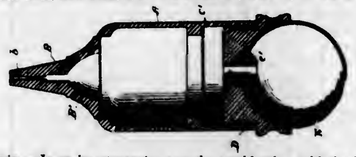
7. In an exercising-machine, the registering device R, having an operating-lever, *r*, and the reciprocating bearings D, carrying the weights, in combination with the mechanism by which the movement of the bearings is recorded by the registering device, consisting of the lug S on one of the bearings, the rod T, connected with the lever *r* of the registering device, and the lug *t'* on said rod, with which the lug S comes in contact, substantially as herein described.

8. An exercising-machine comprising the casing A, the frame B, mounted and adapted to be vertically adjusted therein, the screw C, by which said frame is supported and adjusted, the bearings D in the frame B and adapted to slide therein, the weights W, suspended from said bearings, the ropes I, secured to the bearings and passing over suitable pulleys thereon, and pulleys mounted in the frame B above, the registering device R, and mechanism by which the movement of the bearings is indicated by the said device, substantially as herein described.

9. In an exercising-machine the casing A, the weights W within the casing, and the ropes I, by which said weights are raised and lowered, in combination with the back-rest K, having arms *k'*, pivoted to the bearings *k²* on the sides of the casing, and short arms *k*, holding the back-rest out from the casing, substantially as herein described.

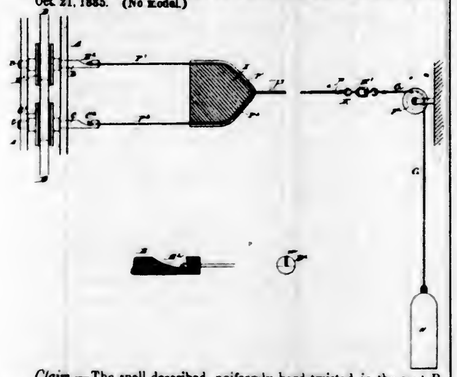
10. In an exercising-machine having weights and ropes adapted to raise and lower them, as described, the casing A, in combination with the removable shaft M on the front of the casing, having guide-pulleys *m* for the ropes, and the guide-pulleys *n* at the bottom of the casing, substantially as herein described.

337,943. **INSECT-POWDER GUN.** CLARENCE A. POWERSON and HENRY BELL, New York, N. Y. Filed June 22, 1885. (No model.)



Claim.—In an insect-powder gun, the combination, with the barrel A and nozzle B *b*, of the concave end plug or head having the thick bottom described, with a central opening therein, and the hollow bulb E, having the tube or neck *e*, for insertion through the hole in the thick bottom, and the flange or securing-ring *e'*, for holding the neck in the bulb, as set forth.

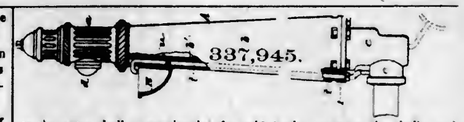
337,944. **SNELL FOR FISHING.** FERDINAND E. FORSTER, New York, N. Y., assignor to himself and Albert G. Forster, same place. Filed Oct. 21, 1885. (No model.)



Claim.—The snell described, uniformly hard-twisted in the part P and soft-twisted in the part *p*, adapted to serve as herein specified.

337,945. **HYDRANT.** THADDEUS GALVIN and JOHN GALVIN, Detroit, Mich. Filed Oct. 30, 1885. (No model.)

Claim.—1. A hydrant-body composed of two concentric shells, separated, as shown and described, in combination with a basin secured



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to the outer shell, a supply-pipe for said basin, between the shells, and a discharge-pipe connecting the basin and the interior of the hydrant-body.

2. In combination with chamber *c*, having lugs or inclines *g* and *h*, yoke C, consisting of frame *j* and plate *k*, nut *i*, carried by frame *j*, screw-stem B passing through nut *i* and frame *j*, gate D, carried by plate *k*, and pivoted wedges *m*, carried by the frame *j*, as shown.

3. In combination with chamber *c* and lugs *g* and *h*, yoke C, consisting of open frame *j*, plate *k*, and ears *l*, wedges *m*, pivoted in the latter, stationary nut *i*, carried by frame *j*, and disk D, secured to plate *k*, as shown.

4. The herein-described hydrant and drinking-fountain, consisting of a hydrant-body, a main gate controlling admission of water thereto, an outlet-opening from the interior of the hydrant-body, a valve controlling said outlet and adapted to be opened by the closing of the main gate, an external basin, a supply-pipe for said basin connected with the water supply outside of the main gate, and a discharge-passage connecting the basin and the interior of the hydrant-body.

5. In combination with hydrant-body A, inlet *s*, gate D, outlet *f*, pivoted valve *s*, basin E, supply-pipe *t*, and discharge-pipe *u*, connecting the basin and the interior of the hydrant-body, all arranged as shown.

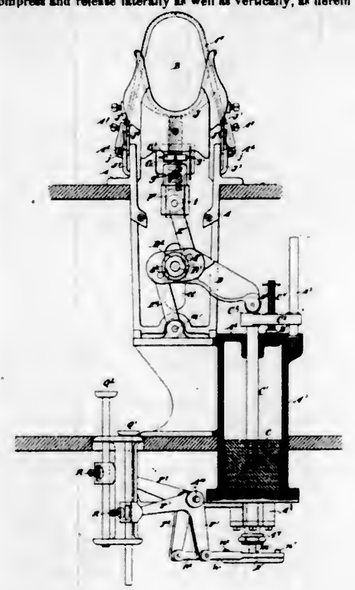
337,946. **MACHINE FOR BUNDLING WOOD.** DARWIN A. GREENE, New York, N. Y. Filed July 2, 1885. (No model.)

Claim.—1. In a wood-bundling machine, the combination, with a steam-actuated piston having a horizontal plane, as at C², of a lever pivoted to two toggles, the one pivoted stationarily to the frame and the other to the movable wood-carrying cradle, the said lever carrying a friction-roller which rides upon the plane surface of the piston, as set forth.

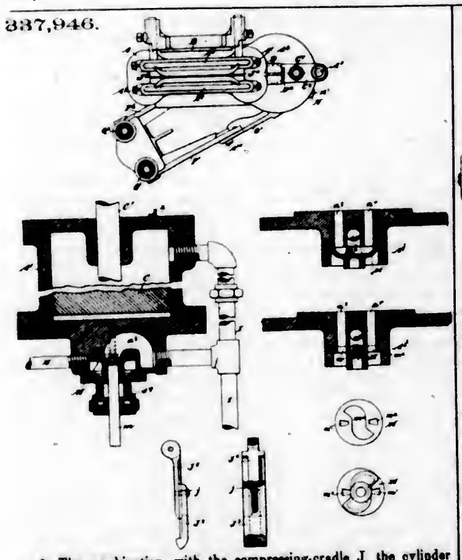
2. The combination, with the piston, the lever, and toggles, as described, of the cradle J, the stationary strap A⁴, and a right-and-left screw, G, arranged between the cradle and toggles, to adjust the throw of the cradle, as set forth.

3. The combination, with the piston having a horizontal arm, and with the lever D and toggles, as described, of an adjustable threaded vertical pin, C⁴, operating through the arm of the piston, and an elastic stop, W, arranged to stop the descent of the piston yieldingly, as set forth.

4. In a bundling-machine, as described, the cradle J, having lower semicircular contour and sides curving outwardly and upwardly, and the adjustable straps A⁴ A⁵, having semicircular upper contour with sides curving outwardly and downwardly, combined and arranged, as shown, to compress and release laterally as well as vertically, as herein specified.



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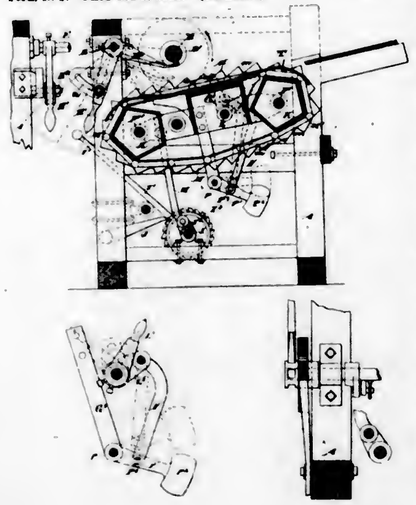


5. The combination, with the compressing-cradle J, the cylinder and piston, and suitable connections between said parts, substantially as shown, of the oscillating valve M, arranged at the lower end of the cylinder and adapted to control the supply of steam thereto, the cross-bar N, rigid with the valve-stem, crank-levers P' P^2, links O' O^2, connecting said levers with the cross-bar N, and treadles Q' Q^2, for operating the crank-levers to admit or exhaust steam at will, as and for the purposes specified.

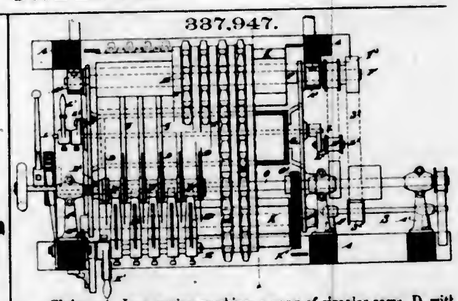
6. In a wood-bundling machine, substantially as described, the combination, with the cradle J, of the curtains formed by the parts J^3 J^3, adjustably secured together by screw-and-slot connection, and pivoted at J' to the sides of the cradle, to exclude dust and dirt from the working parts, as set forth.

7. In a bundling-machine, as described, the combination, with the guide A^2 and yielding stop W, recessed in the cylinder-head, of the piston C C', having a horizontal arm, an adjustable pin working through said arm and against said stop, a cradle, J, a lever and toggles, as described, transmitting power from the piston to the cradle, and a right-and-left screw, G, arranged between the cradle and toggles, to adjust the throw of the cradle, as herein set forth.

337,947. CIRCULAR SAWING MACHINE. DARWIN A. GREENE, New York, N. Y. Filed Oct. 2, 1885. (No model.)



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Claim.—1. In a sawing-machine, a gang of circular saws, D, with means for driving them, in combination with a series of feed-chains, M arranged to carry the wood below the saws and in the same direction as the saws run, arranged for joint operation, as and for the purposes herein specified.

2. In a sawing-machine, as described, the combination, with a gang of saws, as D, hung on a single shaft, of a corresponding series of feed-chains carried on drums arranged parallel with the saw-arbor and revolved by the same power, the said chains being arranged to move in the same direction as the saws, as set forth.

3. In a sawing-machine, as described, the combination, with the gang of saws D and the series of feed-chains arranged to allow one chain to traverse the space between two adjacent saws, of a table, as G', and spring-guards secured to said table and arranged one between each adjacent pair of chains and extending beyond the drums, as set forth.

4. In a sawing-machine, as described, a feeding device consisting of a series of chains led over revolving drums, the shaft of one drum being the pivot of an adjustable frame in which the other drum is journaled, whereby the feed-chains may be thrown closer to or farther from the saw-arbor, to accommodate saws of different diameters, as set forth.

5. The combination, with the saws and their shaft B, of the frame G, pivoted on the shaft F and carrying near its free end a drum, K, of the chains M, having teeth *m*, the drum K, hung on the shaft F, and provisions for oscillating the frame G on its pivot, to throw the feed-chains into desired relations with the saws at will, as specified.

6. In a sawing-machine, the combination, with a gang of saws supported on a common shaft, and with a feed-carrier operated by the same power, of a shaft, as K, carrying clearing-fingers E^3, a lever, E', rigid with said shaft, and a set-screw, E^3, for adjusting and holding the clearing-fingers in proper relations with the saws and carrier, as set forth.

7. In a sawing-machine, as described, the combination, with the gang of saws and with the frame G, pivoted on shaft F and carrying the feeding-chains M *m*, of the shaft I, having arm I^3, the link H, connecting said arm with the carrier-frame G, and the lever I' and pawl J, for controlling the said shaft I, to adjust and hold the carrier in proper relation to the saws, as set forth.

8. In a sawing-machine, the combination, with the shaft B, the shaft F, and power connections, of the frame G, pivoted on shaft F, and carrying-chains M and their drums K K, the shafts O and L, journaled in the frame G, the gears O' K', connecting the shafts O F, and the belt Q and tightener, all arranged to turn together on the center F without changing relation of parts, as specified.

9. In a sawing-machine, as described, the combination, with the frame G and chain-carriers M, of the belt Q and tightener-pulley L^4, the lever arranged to stop the feed, the weight P^3, and the link N and connections for throwing the link past a center to hold the weight and tightener out of operation, as set forth.

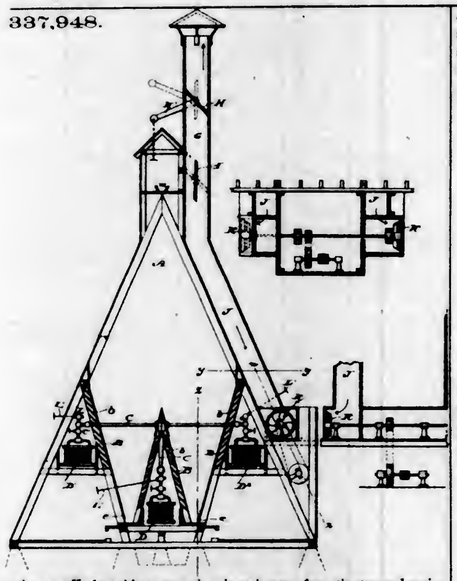
337,948. DRIER. DARWIN A. GREENE, New York, N. Y. Filed Oct 16, 1885. (No model.)

Claim.—1. In a kiln for drying kindling-wood, a bin having exhauster K, for taking away air and vapors from the top and maintaining a partial vacuum in the interior, in combination with one or more gratings, as B, an inlet for admitting fresh dry air thereto from the external atmosphere, and heaters, as D D' D^2, for heating such air before its admission through the grates, all combined and arranged for joint operation, substantially as and for the purposes herein specified.

2. The two valves arranged one above and one below each bin-exit, in combination with the drying-bin M, having inlets for introducing drying-air and draft-exits at the top of flues, as G, connecting with such exits, exhaust-flues, as J, and means, as K, for mechanically creating a vacuum therein, and having connections with said exit-apertures, whereby the natural draft or the exhaust mechanism may be applied at will, as set forth.

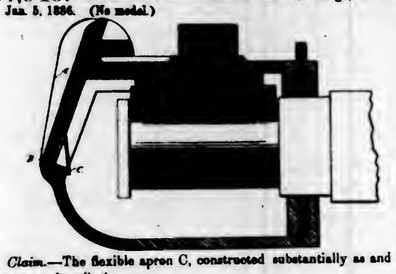
3. In a kiln for drying kindling-wood, the bin M, in which the wood is slowly descending during the drying operation, in combination with

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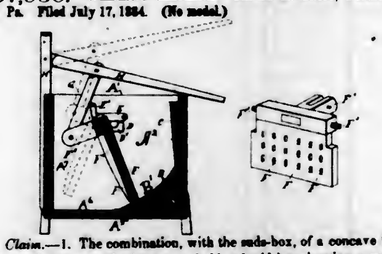
exhauster K, for taking away the air and vapor from the top and maintaining a partial vacuum in the interior, and with a bottom having apertures e, performing the double functions of discharging the wood and admitting air to extract and utilize the heat from the wood, all substantially as and for the purposes herein specified.

337,949. CAR-AXLE BOX. THOMAS A. GRIFFIN, Chicago, Ill. Filed Jan. 5, 1886. (No model.)



Claim.—The flexible apron C, constructed substantially as and for the purpose described.

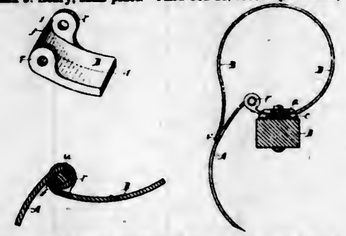
337,950. WASHING-MACHINE. ISRAEL M. GROFF, Middletown, Pa. Filed July 17, 1884. (No model.)



Claim.—1. The combination, with the suds-box, of a concave fitted in the angle between the bottom and side of said box, leaving a wedge-shaped space between the vertical face of the concave and the side of the box, and a breast-board having a corresponding taper and fitted in said space, whereby it is securely held in place and adapted to be easily removed, as and for the purposes set forth.

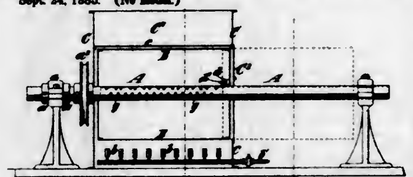
2. A washing-machine consisting of the following elements, in combination: a suds and receiving chamber contiguously arranged, a concave located in the angle formed between the bottom and a side of a suds-box, leaving a space between said side and the vertical face of the concave, a breast-board inserted in said space by which it is held in place, a presser, notched cleats attached to the inner walls of the suds-box, for adjustably supporting the presser, a pivoted cap-plate and button for securely holding the presser in an adjusted position, a lever pivoted on one side of the suds-box, and a link connecting said lever with an arm-extension of the presser, whereby the latter is vibrated, substantially as and for the purposes specified.

337,951. HARROW-TOOTH. WILLIAM HARTT, Kalamazoo, Mich., assignor to Nehemiah Chase, Frederick A. Taylor, Marshall B. Shaw, and Frank J. Henry, same place. Filed Oct. 13, 1885. (No model.)



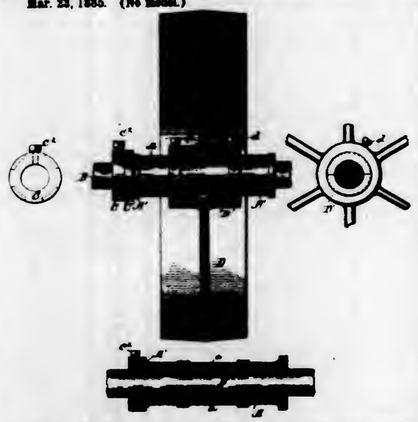
Claim.—The bowed spring having its end extending rearwardly from its contact with the harrow-frame and curved abruptly upward, forming a concavity, and provided with eyed lugs walling up the sides of said concavity, in combination with a non-elastic tooth having its hinging-eye formed by turning the end of the tooth under, whereby the tooth contacts with the end of the spring between the eyed lugs, preventing said tooth from tilting ondaly forward, substantially as set forth.

337,952. PEANUT-ROASTER. ISRAEL HYDE, Yonkers, N. Y. Filed Sept. 24, 1885. (No model.)



Claim.—The combination, with a casing, C, containing heating-burners, of a hollow rotary shaft, A, having that portion which is within the casing perforated, and bearings preventing the lengthwise movement of the shaft, the cylinder B, free to slide on the shaft to move it into and out of the casing, and a clutch fixed on the shaft, and into and out of engagement with which the cylinder is moved by sliding it upon the shaft, whereby the cylinder is locked to the shaft when slid within the casing, and free to turn on the shaft when removed from the casing, substantially as herein described.

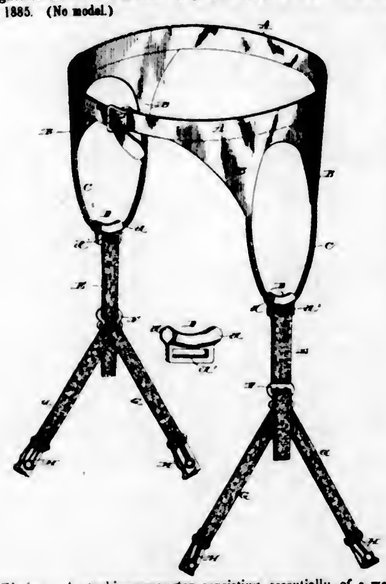
337,953. PULLEY-BEARING. HARRY W. HILL, Beloit, Wis. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination of the removable pulley-bearing A, formed of two segmental parts, with collars secured to the shaft thereof and designed to inclose the periphery of the ends of said segmental parts, substantially as and for the purpose described.

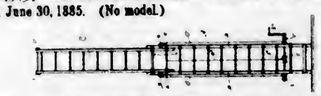
2. The combination of the removable pulley-bearing A, formed of two segmental parts, with collars C and C', provided with side projections adapted to receive the ends of said bearing, substantially as and for the purpose described.

337,954. HOSE-SUPPORTER. CHARLES A. HINE, New Haven, assignor to the Canfield Rubber Company, Bridgeport, Conn. Filed Sept. 3, 1885. (No model.)



Claim.—A stocking-supporter consisting, essentially, of a waist-band, a pair of cord-loops secured thereto, clasps adapted to grasp the stocking, and elastic straps attached to the cord-loops by slides, and adjustably secured to the clasp-straps, all of the above parts arranged substantially as described.

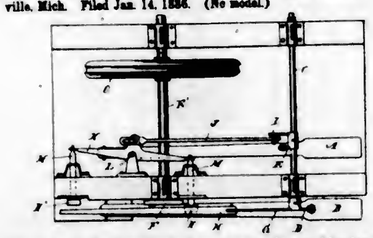
337,955. EXTENSION-LADDER. ROBERT S. ISARD, Hudson, Ohio. Filed June 30, 1885. (No model.)



Claim.—1. In an extension-ladder, in combination with a lower main section, an upper adjustable section guided in said lower section, longitudinal grooves in the inner faces of the supports of the lower section, a windlass journaled on the said supports and carrying three drums, two without and one within the supports, a rope fixed at one end to the central drum and at the other to a round of the upper section of the ladder, two additional ropes fixed at their lower ends to the outer drums and at their upper ends to the upper section, and pulleys journaled in the top of the lower section and carrying said latter ropes, substantially as and for the purpose set forth.

2. In an extension-ladder, in combination with lower main section carrying pulleys at top and windlass having drums and ropes, as described, at bottom, guides fixed to the lower section near the said pulleys, and adapted to receive the elevating-rope, substantially as set forth.

337,956. MECHANICAL MOVEMENT. FRANCIS JACKSON, Rainsville, Mich. Filed Jan. 14, 1886. (No model.)



Claim.—1. In a mechanical movement, the combination of the connecting-rod H, actuated in the manner described and having an extension beyond the crank-pin, and two fulcrums alternatingly projected into the path of the connecting-rod, to operate substantially in the manner and for the purposes described.

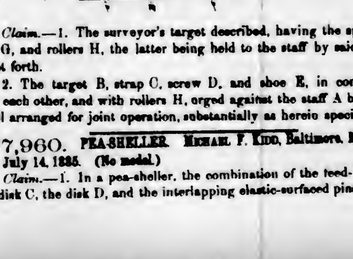
2. In a mechanical movement, the combination of the connecting-rod H, rock-shaft C, rock-arm G, and fulcrums N N', arranged to move alternatingly into the path of the connecting-rod at a certain period of its travel, substantially as described.

3. In a mechanical movement, the combination of the connecting-rod H, rock-shaft C, treadles A B, rock-arm G, and the roller-fulcrums N N', operated by suitable connection from the rock-shaft C to alternatingly project into the path of the connecting-rod, all arranged and operating substantially as described.

4. In a mechanical movement, the connecting-rod H, extended beyond the crank-pin and operating in the manner described, in combination with the rollers N N', rods M, lever K, connecting-rod J, crank I, and rock-shaft C, all arranged to operate substantially as described.

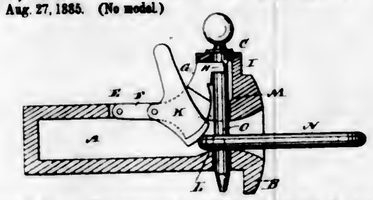
5. In a mechanical movement, in combination, the rock-shaft C, the treadles A B, and their connection with said rock-shaft, the rock-arm G, the connecting-rod H, the crank F on the drive-shaft, and the rollers N N', having an actuating-connection with the rock-shaft, which alternatingly projects them into the path of the connecting-rod, all arranged and operating substantially as described.

337,957. TRACE-CARRIER. WILL R. JOHNS, Rockford, Ill., assignor to Frank M. Rowe and Rockwood Sager, both of same place. Filed Apr. 21, 1885. Renewed Feb. 11, 1886. (No model.)



Claim.—In a trace-carrier the combination, with the end bars, and with the end arches, of a trace-carrying hook whose main portion is inwardly curved, and whose end depends toward the plane of the base of the frame, and a fluke or projection arranged upon the hook, to operate in connection with the adjacent end arch, to prevent accidental displacement of the trace, substantially as set forth.

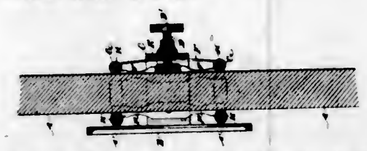
337,958. CAR-COUPLING. CALVIN KEELER, Hobart, N. Y. Filed Aug. 27, 1885. (No model.)



Claim.—1. The combination, with the draw-head A, having the shoulder M and the apertured flange C, of the lever F, pivoted in a slot on the top of the draw-head and provided with the edge J, and the fork H, substantially as herein shown and described.

2. The combination, with a draw-head, of a lever pivoted in the same and provided with a fork on its swinging end, and of a cam-lever for adjusting the link, the cam-lever being pivoted on the lever provided with the fork, substantially as herein shown and described.

337,959. SURVEYOR'S TARGET. WILLIAM KEUFFEL, Hoboken, N. J. Filed Nov. 13, 1885. (No model.)



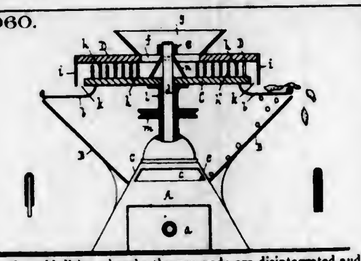
Claim.—1. The surveyor's target described, having the springs F pins G, and rollers H, the latter being held to the staff by said springs, as set forth.

2. The target B, strap C, screw D, and shoe E, in combination with each other, and with rollers H, urged against the staff A by springs F, all arranged for joint operation, substantially as herein specified.

337,960. PEA-SHELLER. MICHAEL F. KIDD, Baltimore, Md. Filed July 14, 1885. (No model.)

Claim.—1. In a pea-sheller, the combination of the feed-hopper *g*, the disk C, the disk D, and the interlapping elastic-surfaced pins A and A',

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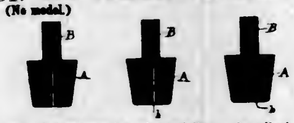
secured to the said disks, whereby the pea-pods are disintegrated and the peas when released therefrom are prevented from being injured.

2. In a pea-sheller, the combination of the disks C and D, the interlapping elastic-surfaced pins A and A', secured to the said disks, the feed-hopper *g*, arranged to deliver the pea-pods in the center of the disks, and the band *i*, secured to the disk D, for the purpose as herein set forth.

3. The combination of the disks C and D, the pins A and A', secured to the disks and provided with an elastic covering, the feed-hopper *g* and a screen secured to and extending around the edge of the disk C, as herein set forth.

4. In a pea-sheller, the combination of the disks C and D, provided with interlapping elastic-surfaced pins A and A', for the purpose set forth.

337,961. BUNG. JOHAN KIRST, Cincinnati, Ohio. Filed Dec. 17, 1885. (No model.)

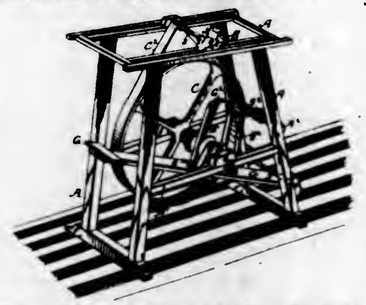


Claim.—1. A bung made, substantially as described, with a bore to contain a plug, and in combination with a plug to fit in said bore, both plug and bung having the grain of the wood composing them perpendicular to or crosswise to the axis of the bung and to the direction of the gas or liquid to be stopped, the sides of the bung made so thin as to make the bung compressible at its interior bore upon the plug by the bung being driven or forced into the bung-hole or bushing of the receptacle, substantially as and for the purposes set forth.

2. A bung made, substantially as described, with a bore to contain a plug, and in combination with a plug to fit in said bore, both plug and bung having the grain of the wood composing them perpendicular to or crosswise to the axis of the bung and to the direction of the gas or liquid to be stopped, the sides of the bung made so thin as to make the bung compressible at its interior bore upon the plug by the bung being driven into the bung-hole or bushing of the receptacle, said bung being combined with a support for said plug, provided at the bottom of said bore, substantially as and for the purposes set forth.

3. A bung made, substantially as described, with a bore to contain a plug, and in combination with a plug to fit in said bore, both plug and bung having the grain of the wood composing them perpendicular to or crosswise to the axis of the bung and to the direction of the gas or liquid to be stopped, the sides of the bung made so thin as to make the bung compressible at the interior bore upon the plug by the bung being driven into the bung-hole or bushing of the receptacle, said bung being provided with a diaphragm at the bottom of said bore as a support for said plug, substantially as and for the purposes set forth.

337,962. DEVICE FOR CONVERTING MOTION. WILLIAM L. KLING, St. Cloud, Minn. Filed Aug. 22, 1885. (No model.)

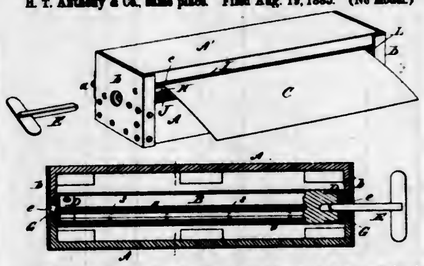


Claim.—1. The combination of a treadle, the bar G^2, extending upward therefrom, the sleeve D, having two straps coiled around it in opposite directions and provided with projections D^3 and D^4, a pawl pivoted thereto, and a ratchet-wheel connected with a driving-wheel, substantially as and for the purpose described.

2. The combination of the main shaft B, its sleeve having projections, as D^3, a pawl pivoted thereto at one end and having a slot, d^4, about the middle of its length, with the disk H, mounted loosely upon the main shaft and having a pin entering the slot of the pawl, and a ratchet-wheel secured upon the shaft, substantially as and for the purpose described.

3. The combination of a treadle, the bar G^2, extending upward therefrom, the sleeve D, having two straps coiled around it and provided with projections, as D^3, a pawl pivoted thereto, a disk, H, connected with said pawl, and a ratchet-wheel upon the main shaft with the strap g^3 and spring g^4, substantially as and for the purpose described.

337,963. CASE FOR PHOTOGRAPHIC SENSITIZED PAPER. WILLIAM H. LEWIS and ERASTUS B. BARKER, New York, N. Y., assignors to E. & H. T. Anthony & Co., same place. Filed Aug. 19, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a light-tight case for the storage and delivery of continuous rolls of photographic sensitive paper or tissue, made substantially as described, the same consisting of a case adapted to contain a continuous roll of the sensitive material, and provided with a longitudinal slot having one or more flexible lips through which portions of the roll of sensitive tissue may be withdrawn as desired, while access of light to the tissue remaining within the case is prevented, all as set forth.

2. In a case for storing photographic sensitive paper, the combination, with a light-tight box having a light-tight passage-way for the movement of the paper sheet into or out of the box, of a roller operated from the exterior of the box for drawing in and out the paper, as set forth.

3. In a case for storing photographic sensitive paper, the combination, with the box having a passage-way for the movement of the paper sheet in and out of it, of a roller for guiding said paper, and wipers made of soft and flexible material arranged to bear on said roller and on the paper passing over it, essentially as and for the purpose herein set forth.

4. In a case for storing photographic sensitive paper, the combination, with the roller B, of the ferrules D, constructed, as described, to form journals and key-holes for winding the roller, essentially as described.

5. The combination, with the box part A and hinged lid A', of one or more spring-buttons applied to the back of the case, substantially as and for the purpose described.

6. The combination, with the paper-carrying roller B, constructed with a U-shaped longitudinal recess, *d*, of the teeth *s*, arranged wholly within said recess and projecting from one wall thereof toward the opposite wall, and adapted to receive and hold the paper, as set forth.

7. The combination of the cupped spring-washers G with the roller B and box carrying said roller, essentially as and for the purpose herein set forth.

8. In a case for storing photographic sensitive paper, the combination, with the box part A and its hinged lid A', constructed with a longitudinal opening, L, in front, of the spring-buttons K, the roller B, the guide-roller H, and the wipers I J, substantially as shown and described.

337,964. PAPER-BAG MACHINE. WILLIAM A. LORENZ and WILLIAM H. HOMER, Hartford, Conn., assignors to Felix W. Leinbach and Clarence A. Wells, Bethlehem, Pa. Filed Feb. 24, 1885. (No model.)

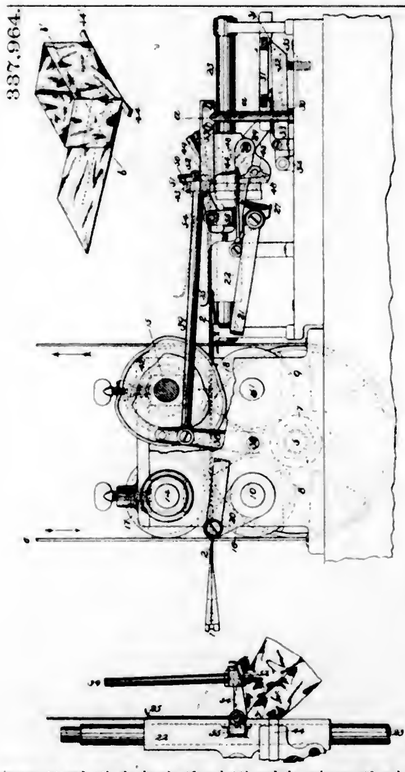
Claim.—1. The combination of the carriage 22, the presser-plate 25, having the arms 26 and 26', the shaft 28, having the arm 29, the fixed inclined planes 31 and 31', and the cam 32, worked by the spring 35, all operating together substantially as described.

2. The combination of the carriage 22, the gripper 44, the cam 45, the dog 46, keyed to the shaft 45^a, and the hook-springs 47 and 48, adapted to oscillate that dog, all operating together substantially as described.

3. The combination of the head 43, attached to the end of the rod 39, the gripper 49, the spring 50, and the rail 53, all operating together substantially as described.

4. The combination of the carriage 22, the presser-plate 25, the

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grippers 44 and 44', the heads 43 and 43', and the grippers 49 and 49', all operating together substantially as described.

5. The combination of the head 43, the gripper 49, and the arm 54, all operating to clasp the upper fold of the adjacent tuck of the paper tubing at the place *b*, and to carry it over from the position shown in Fig. 8 through that shown in Fig. 9 to that shown in Fig. 10, all substantially as described.

337,965. PAPER-BAG MACHINE. WILLIAM A. LORENZ and WILLIAM H. HOWES, Hartford, Conn., assignors to Felix W. Leinbach and Clarence A. Wells, Bethlehem, Pa. Filed Feb. 24, 1885. (No model.)

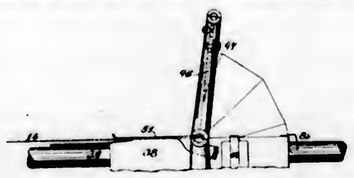
Claim.—1. The combination of the fingers 96 and 96' with the spring 103, all constructed and operating together substantially as described.

2. The combination of the reciprocating carriage 38, the presser-plate 51, the side grippers, 67 and 68, and the front gripper, 85, all operating together substantially as described.

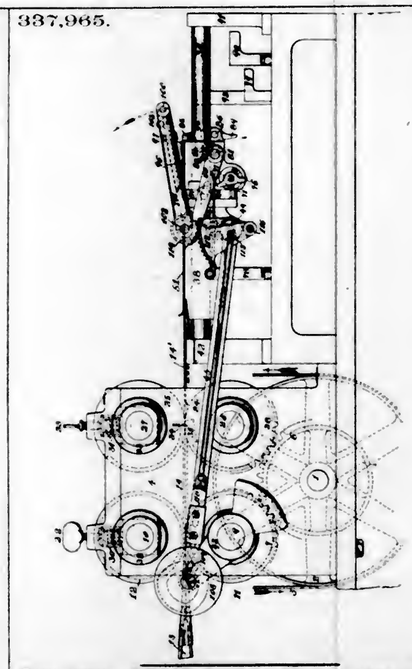
3. The combination of the reciprocating carriage 38, the presser-plate 51, the gripper 85, and the fingers 96 and 96', substantially as described.

4. The combination of the reciprocating carriage 38, the fingers 96 and 96', the gripper 85, and the grippers 67 and 68, all operating together to open out the end of the tucked paper tube, substantially as described.

5. The combination of the reciprocating carriage 38, the presser-plate 51, the gripper 85, the grippers 67 and 68, and the fingers 96 and 96', all operating together to fold the forward end of the blank of Figs. 1 and 2 into the diamond shape of Fig. 5, all substantially as described.

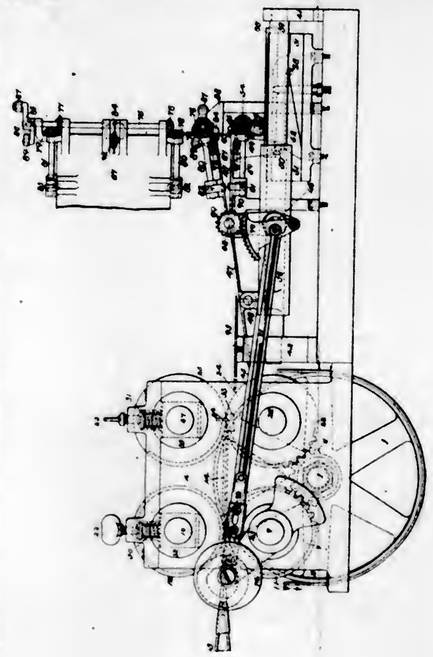


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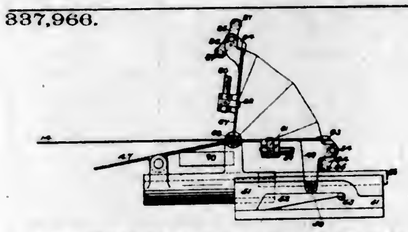


337,966. PAPER-BAG MACHINE. WILLIAM A. LORENZ and WILLIAM H. HOWES, Hartford, Conn., assignors to Felix W. Leinbach and Clarence A. Wells, Bethlehem, Pa. Filed June 20, 1885. (No model.)

Claim.—1. The combination of the side grippers, 61 and 62, the front gripper, 63, the shafts 54, 59, and 60, the bevel-gears 55, 56, 57, and 58, the arm 64, the rail 66, and the spring 91, all substantially as described.



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2. The combination of the presser-plate 47, oscillating on the pivot 48, and the presser-plate 67, oscillating on the pivot 68, substantially as described.

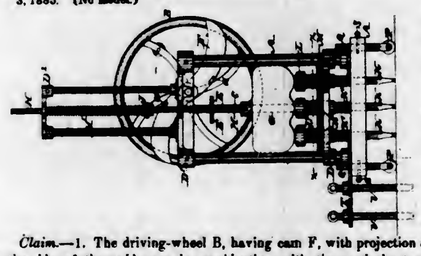
3. The combination of the presser-plate 47, provided with the grippers 61, 62, and 63, with the presser-plate 67, provided with the grippers 82, 83, and 84, substantially as described.

4. The combination of a presser-plate, oscillating on a pivot, and two side grippers and one front gripper clasping a paper tube to that presser-plate, all substantially as described.

337,967. PROCESS OF EXTRACTING GOLD AND SILVER FROM ORES AND MATTES. PIERRE MANHES, Lyons, France. Filed Aug. 21, 1884. (No specimens.) Patented in France May 10, 1884, No. 162,001; in England July 19, 1884, No. 10,353; in Belgium July 19, 1884, No. 65,521; in Germany July 21, 1884, No. 30,419; in Austria-Hungary July 24, 1884, No. 12,823 and No. 46,606, and in Spain July 26, 1884, No. 4,385.

Claim.—The process herein specified of extracting gold and silver from auriferous and argentiferous copper matte, consisting in pulverizing the matte, mixing the same with pulverized chloride of ammonium, and subjecting the mass to a low degree of heat until the ammoniacal vapors pass off so as to chloridize the precious metals, and then dissolving and removing the chlorides of the precious metals, substantially as specified.

337,968. ROCK-DRILL. FRANK MANNING, Ardmore, Pa. Filed Sept. 3, 1885. (No model.)



Claim.—1. The driving-wheel B, having cam F, with projection *a* on the side of the said cam, in combination with the vertical rotary shaft C, provided with suitable bearings and having horizontal arms E, and gears for rotating a series of drills, substantially as and for the purpose set forth.

2. The wheel B, with cam F, having lateral projections *a*, and rotary shaft C, having horizontal projections E, adapted to engage the said projections *a*, and thereby operate a series of drill-rotating gears, in combination with hammer G, having vertical stem H, provided with arm J, and spring H', substantially as and for the purpose set forth.

3. A rotary wheel having a cam, in combination with a vertical rotary shaft having pins thereon adapted to be brought in contact with lateral projections on said cam, and a hammer having a handle with projecting arm, the latter by its contact with the cam of the wheel imparting a rising and falling motion to the said hammer, substantially as described.

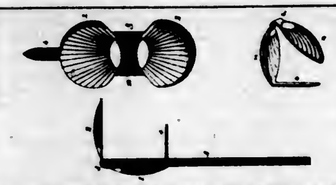
4. The bit K, in combination with the frame A, head L, with feather, wheel M, mounted on the head A, pinion N, mounted on the shaft C, the shaft C, having horizontal projections E, and wheel B, having cam with lateral projections *a*, substantially as and for the purpose set forth.

5. In a rock-drill or quarrying-machine, the frame A, in combination with the horizontal perforated bar T, attached to said frame and having adjustable pins U, adapted to be inserted in the perforations of said bar and the drill-holes in the rock, whereby the carriage is anchored, substantially as and for the purpose set forth.

337,969. METALLIC FASTENER. GEORGE W. MCGILL, Riverdale, N. Y. Filed Jan. 15, 1886. (No model.)

Claim.—1. A metallic-fastener blank having a central part, 3, and plates 1 and 2, struck correspondingly concavo-convex, with a prong or

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prongs, 4, projecting from the outer edge of one or both such plates, substantially as set forth.

2. A metallic fastener having two concavo-convex clamping-plates, 1 2, a penetrating prong or prongs, 4, projecting from one or both of said plates, and a folded neck connecting such plates, as and for the purposes described.

3. In a metallic fastener having two connected clamping-plates, 1 2, the penetrating-prong 4, one or more, folded back on its connecting-plate to form the shoulder *b*, then cut from said plate on a line within the border of the same, substantially as described.

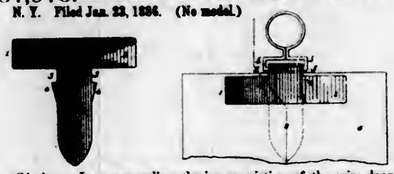
4. In a metallic fastener having two concavo-convex clamping-plates, 1 2, connected together by an integral neck, 3, the penetrating-prong 4, one or more, arranged to project from within the border of its connecting-plate and at an angle therefrom, substantially as and for the purposes described.

5. In a metallic fastener, a base-plate, 1, provided with a fastening-prong, 4, in combination with a covering-plate, 2, struck concavo-convex, and connected with and overlapping the base-plate by means of a folded connecting-neck, 3, made integral with both plates, the covering-plate adapted to receive in its concavity and cover the turned-down point of the applied prong, as described.

6. In a metallic fastener having a base pronged plate and a concavo-convex covering-plate connected together by an integral neck, the penetrating-prong 4, cut wholly or partly from the body of the base-plate and bent up at an angle therefrom on a line within the outer edge or periphery of such plate, substantially as shown in Figs. 9 and 10, for the purposes described.

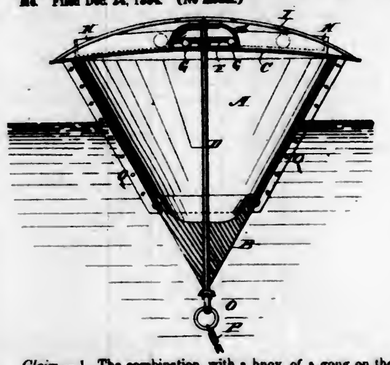
7. A metallic fastener having two connected clamping-plates, 1 2, each plate provided with a penetraling-prong, 4, projecting from the outer edge of such plate on parallel lines with each other, as and for the purposes herein set forth.

337,970. SUSPENDING DEVICE. GEORGE W. MCGILL, Riverdale, N. Y. Filed Jan. 23, 1886. (No model.)



Claim.—In a suspending device consisting of the wire loop and T-shaped adhesive tablet herein described, the body part 2 of the tablet, provided with barbs 4 4, adapted to spring open the eye of the wire loop and to hold the loop on the tablet-neck 3, substantially as and for the purposes herein set forth.

337,971. AUTOMATIC SIGNAL-BUOY. HENRY MCLAUGHLIN, Bangor, Me. Filed Dec. 24, 1884. (No model.)



Claim.—1. The combination, with a buoy, of a gong on the same, and guides containing balls and conducting the balls directly in contact with the gong, substantially as and for the purpose set forth.

2. The combination, with a buoy, of a gong, guides arranged be-

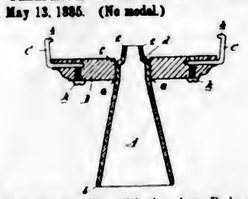
neath said gong, and guides arranged outside the gong, said guides containing balls and conducting the latter directly in contact with the gong, substantially as and for the purpose set forth.

3. The combination, with a buoy, of a rod extending from the bottom of the same up through the top, a gong on the upper end of the rod, and guides for conducting balls to and from the gong, substantially as herein shown and described.

4. The combination, with a buoy, of the guides H, the springs K, the pins M, and the balls J in the guides, substantially as herein shown and described.

5. A buoy provided with external ribs extending from top to bottom and carrying a gong, and guides for balls adapted to strike the gong, substantially as herein shown and described.

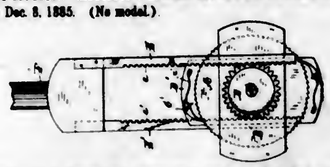
337,972. TELEPHONE MOUTH-PIECE. JAMES MILLER, Detroit, Mich. Filed May 13, 1885. (No model.)



Claim.—1. The combination, with the plate B, having a parallel-sided orifice and means for attaching said plate to a telephone-transmitter, of the glass mouth-piece A, conical in form from *a* to *b*, and with parallel side walls from *a* to *c*, engaging the walls of the orifice in said plate, as set forth.

2. The plate B, carrying the glass mouth-piece A and having formed therein the recesses, as shown, the fastenings C, extending into said recesses and terminating in hooks *h*, and the set-screws *k*, passing through the front of the plate and bearing on said fastenings, all combined, arranged, and operating as set forth.

337,973. DEVICE FOR CONVERTING RECIPROCATING INTO ROTARY MOTION. AUGUSTUS C. MOSHER and CLIFTON MOSHER, Amboy, Ill. Filed Dec. 8, 1885. (No model.)

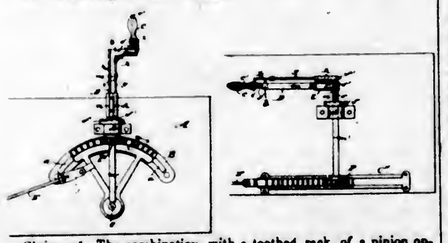


Claim.—1. A device for converting reciprocating into rotary motion, consisting of a ratchet-wheel securely attached to the driving-shaft, and actuated into a continuous rotary movement by means of actuating-pawls pivoted to the adjacent faces of two vibrating or rocking frames placed on opposite sides of the driving-wheel, and pivoted on its shaft and actuated by reciprocating frames or cogged racks placed on diametrically-opposite sides of the driving-shaft, and arranged to gear into cogged wheels securely fixed, respectively, to the faces of the rocking frames, substantially as shown and described.

2. A continuous rotary movement imparted to a ratchet-wheel by means of the engagement therewith of two sets of pawls attached to vibrating arms or levers moved in opposite directions in alternate times, so as to impart a continuous rotary movement to the wheel, substantially as shown and set forth.

3. The rotary ratchet-wheel A, the rocking frames B B', with their respective pawls C C' and cogged wheels D D', and the cogged racks E *e* and E' *e'*, combined and arranged as described and set forth.

337,974. WAGON-BRAKE LEVER. COLUMBUS F. MOORE, Waveland, Ind. Filed Aug. 28, 1885. (Model.)



Claim.—1. The combination, with a toothed rack, of a pinion operated by a crank-armed bar, as D, provided with a sliding hand-piece, *c*, and carrying a lever, *k*, formed with an end, *i*, and connected by a rod, *g*, with a ratchet, *f*, substantially as described.

2. The combination, with a toothed rack, of a pinion operated by a jointed crank-armed bar, as D, that is provided with a sliding hand-piece, *c*, and carrying a lever, *k*, formed with an end, *i*, that is normally elevated by a spring, *j*, said lever being connected by a rod, *g*, with a ratchet, *f*, substantially as described.

3. The combination, with a toothed rack, of a pinion operated by a bar, D, made up of sections m m', one of which is socketed at *l* to receive the end of the other section, which is slotted at *o*, the two sections being united by a bolt, *o'*, the crank-arm of said bar being provided with a sliding hand-piece, *c*, and carrying a lever, *k*, looped at *i*, that is connected with a ratchet by a rod, *g*, which is normally depressed by a spring, *j*, substantially as described.

4. The combination, with a toothed sector-rack, of a pinion operated by a crank-armed bar, as D, provided with a sliding hand-piece, *c*, and carrying a lever, *k*, formed with an end, *i*, that is normally elevated by a spring, *j*, said lever being connected by a bar, *g*, with a ratchet, *f*, substantially as described

337,975. VELOCIPEDE. SCHUYLER W. MORGAN, East Concord, N. H. Filed Aug. 4, 1885. (No model.)



Claim.—1. In a velocipede, the combination, with the frame B and its attachments, and the driving-axle E, of the spur-gears H, the counter-shafts J, the double ratchet-wheels I, and spur-gears H', mounted loosely between the same, and spring-pawls *h*, attached thereon, the forked levers K, mounted on said counter-shafts J, and spring-pawls K' and spiral springs *k*, attached thereto, the pawls J', having arms *j* and suitable springs, *j'*, the coil-springs L, mounted as shown, the rods M M', having at one end, respectively, the heads *m* *m'*, the foot-plates N, mounted on ways *n*, the levers O O', springs *o*, and casing Y, all constructed, arranged, and operating substantially in the manner and for the purpose set forth.

2. In a road-carriage, the combination, with the main axle and springs for actuating the same, of the mechanism for winding up said springs by hand and foot power, consisting of the ratchet and pawl devices, the hand-lever O, the pedals N, and rods extending from said pedals and lever to said ratchet and pawl devices to actuate the same, the rods having an engagement with the lever and pedals in one direction and free to move relatively thereto in the other direction, substantially as set forth.

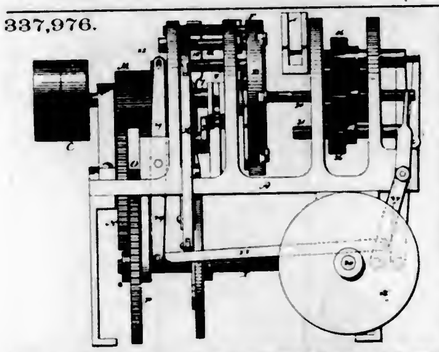
3. In a road-carriage having axle-actuating springs, the combination, with the springs, of a shaft and ratchet-wheel for winding them up, a pawl for turning said wheel, a hand-lever and connections for oscillating the pawl, and a stop, *y*, the pawl having a projecting arm for engaging the stop to throw out the pawl when sufficiently moved by the hand-lever, substantially as set forth.

4. In a road-carriage, the combination, with the axle, of the grooved wheel S, keyed thereon, the brake-levers R R, arranged transversely to the axle and pivoted together so as to form arms of different lengths, the shorter of said arms being provided with concave grasping-jaws partially surrounding said wheel, the spring *r'*, and the operating-cord T, attached to one of the said longer arms and passing around a pulley on the other arm, and thence to within reach of the driver, substantially as set forth.

337,976. SCREW-MACHINE. FRANCIS F. MOTLEY, New Haven, Conn., assignor to Reynolds & Co., same place. Filed Dec. 22, 1885. (Model.)

Claim.—1. In a machine for making screws, the combination of an intermittently-rotating disk provided with a series of blank-holding devices equidistant from each other, the said holding devices arranged in a circle in said disk concentric with the axis of the disk, the said holding devices adapted to receive and hold blanks projecting from the face of the disk parallel with the axis of the disk, mechanism, substantially such as described, to impart intermittent rotation to said disk and holding devices, a feeding device, substantially such as described, adapted to automatically and successively deliver a blank into each of said holding devices as they are successively presented to said feeding device, a series of revolving mandrels carrying tools arranged in a circle concentric with the axis of the disk, and the axis of the said mandrels parallel with the axis of the said disk, and the said series of tools in axial line with the respective tool-holders in the said holding-disk when the said disk is in its position of rest, a driving-shaft axially extending within the circle on which the said revolving tools are arranged, a gear upon said shaft, and

337,976.



a corresponding pinion on each of the said mandrels, substantially as described, and whereby, under the rotation of the said driving-shaft, rotation is imparted to the respective mandrels.

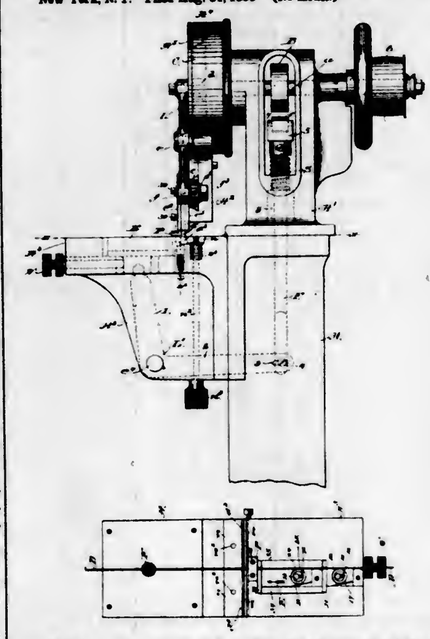
2. In a machine for making metal screws, the combination of a series of mandrels carrying tools adapted to successively perform their work upon screw-blanks, the said mandrels arranged equidistant from each other and in a circular line around a concentric driving-shaft, the mandrels themselves being parallel with the said driving-shaft, the said mandrels arranged to receive a longitudinal or advance and retreating movement, a disk arranged upon an axis concentric with the center around which the said mandrels are arranged, the said disk having an intermittent or step-by-step rotation imparted to it, and carrying in its face toward the said tools holding devices corresponding to the said revolving tools, and adapted to hold a series of blanks respectively in line with the tools, a hopper arranged upon a slide parallel with the axis of rotation of said disk, and so as to be moved toward or from the face of said disk, and constructed with an opening therefrom in line with one of said holding devices in the disk when the disk is at rest, and a follower arranged to work through said hopper and toward the disk, substantially as described, and whereby the lower blank in the column of blanks in the hopper will be transferred from the hopper into the grasp of the holding device in the disk, substantially as described.

3. In a machine for making metal screws, the combination of a series of mandrels carrying tools adapted to successively perform their work upon screw-blanks, the said mandrels arranged equidistant from each other and in a circular line around a concentric driving-shaft, the mandrels themselves being parallel with the said driving-shaft, the said mandrels arranged to receive a longitudinal or advance and retreating movement, a disk arranged upon an axis concentric with the center around which the said mandrels are arranged, the said disk having an intermittent or step-by-step rotation imparted to it, and carrying in its face toward the said tools holding devices corresponding to the said revolving tools and adapted to hold a series of blanks respectively in line with the tools, a hopper arranged upon a slide parallel with the axis of rotation of said disk, and so as to be moved toward or from the face of said disk, and constructed with an opening therefrom in line with one of said holding devices in the disk when the disk is at rest, a follower arranged to work through said hopper and toward the disk, and a second follower arranged in line with the first, but on the opposite side of the disk, and having an intermittent forward and back movement imparted to it, all substantially as described.

4. In a machine for making metal screws, the combination of a series of mandrels carrying tools adapted to successively perform their work upon the screw-blanks, the said mandrels arranged equidistant from each other and in a circular line around a concentric driving-shaft, the mandrels being parallel with the said driving-shaft, the said mandrels arranged to receive a longitudinal or advance and retreating movement, a disk arranged upon an axis concentric with the center around which the said mandrels are arranged, the said disk having an intermittent or step-by-step rotation imparted to it, bolding-dies *a* *b*, arranged radially in the said disk, the dies constructed with a recess in their meeting faces corresponding to the blank to be held, and the said recesses being in line with the respective mandrels when the disk is in a state of rest, cams *c*, arranged in said disk, and adapted to force one of the parts of the holding-dies toward the other, a lever, E, fixed to each of said cams and carrying a stud, *h*, in their free end, with a lever, F, arranged to swing in a plane parallel with the said levers E and constructed with a groove, *i*, into which the said studs *h* may pass, and the mechanism, substantially such as described, to impart swinging movement to said lever F, whereby the one of said levers E presented to said lever F as the disk comes to a state of rest will be correspondingly turned to open and close the holding-dies, substantially as specified.

5. In a screw-making machine, the combination of a driving-shaft, a series of mandrels parallel to said shaft and arranged concentrically about said driving-shaft, the said mandrels receiving a constant revolution from said driving-shaft, said mandrels carrying in their ends tools arranged and adapted to perform successive operations upon the blank, an intermittently-rotating blank-holding disk arranged upon said driving-shaft, but loose thereon, the said disk having in its face adjacent to the tools in the said mandrels holding devices adapted to receive and hold a blank, and under the intermittent rotation of the said disk to successively present the blanks so held to the revolving tools, a counter-shaft, I, in changeable gear-connection with the said driving-shaft, cams in connection with the said shaft I, arranged to impart longitudinal back and forward movement to said mandrels, a counter-shaft, R, a gear, S, loose on said shaft R and in gear-connection with the driving-shaft, whereby constant rotation is imparted to said gear S, a clutch, T, fixed to said shaft R, the spring-bolt *m* in said clutch, adapted to engage the said gear S, the cam W on said shaft I, and the trip mechanism, substantially such as described, between said cam W and the said clutch, whereby the said bolt is permitted to engage with or forced to disengage from said gear S at predetermined times, with a pawl and ratchet between said shaft R and said disk, substantially as described, and whereby the said intermediate rotation is imparted to said disk.

337,977. SAW-MAKING MACHINE. SAMUEL E. MOWER and THADDEUS FOWLER, New Haven, assignors to Henry G. Thompson, Milford, and Harry G. Thompson, New Haven, Conn., and Arthur G. Thompson, New York, N. Y. Filed Aug. 31, 1885. (No model.)



Claim.—1. In a saw-making machine, dies to support at both sides the metal strip or band to be made into a saw, combined with a tooth-cutting tool adapted to be reciprocated in a path substantially at right angles to the longitudinal center of the said strip or band, the said tool cutting into the band or strip from opposite sides thereof at alternate strokes, each stroke of the tool forming the back of one tooth and the front of the tooth next ahead of the tool in the direction of movement of the strip or band, substantially as described.

2. In a saw-making machine, dies to support at both sides the metal strip or band to be made into a saw, combined with a tooth-cutting tool adapted to be reciprocated in a path substantially at right angles to the longitudinal center of the said strip or band, the said tool cutting into the band or strip from opposite sides thereof at alternate strokes, each stroke of the tool forming the back of one tooth and the front of the tooth next ahead of the tool in the direction of movement of the strip or band, and a feeding mechanism to move the strip or band intermittingly, substantially as described.

3. In a saw-making machine, the die provided with a groove for the tooth-cutting tool, and having its face beveled or inclined, as at a^2, to enable one tooth to be set as the back of the next tooth is being cut, substantially as described.

4. In a saw-making machine, the two dies d^3 d^3, and the cutting-

tool and its carriage, combined with the lever L, the cam to move it, and the stud and adjustable screw to connect the lever and carriage, substantially as described.

5. In a saw-making machine, the dies d^2 d^3, slotted bed or table A^3, and the gage-plate P, combined with the plunger, to act upon one edge of the band or strip and keep the other edge thereof against the gages, substantially as described.

337,978. METHOD OF TEMPERING METAL BANDS OR STRIPS. SAMUEL E. MOWER and TREADDUS FOWLER, New Haven, assignors to Henry G. Thompson, Milford, and Harry G. Thompson, New Haven, Conn., and Arthur G. Thompson, New York, N. Y. Filed Aug. 31, 1885. (No model.)



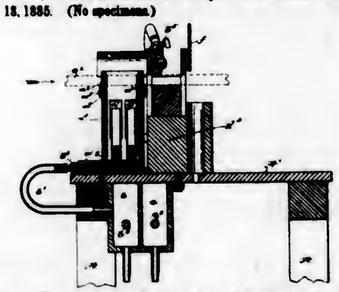
Claim.—The herein-described method of hardening and tempering one edge of a metal strip or blank, which consists in drawing or passing the edge to be hardened against a wet or moistened absorbent strip, substantially as described.

337,979. METHOD OF TEMPERING METAL. SAMUEL E. MOWER, New Haven, assignor to Henry G. Thompson, Milford, and Harry G. Thompson, New Haven, Conn., and Arthur G. Thompson, New York, N. Y. Filed Aug. 31, 1885. (No specimens.)



Claim.—The herein-described method or process of hardening or tempering steely metal, which consists in passing heated metal through water or other fluid between a packing of asbestos or other non-combustible material, whereby the said fluid is prevented from reaching the metal above the packing, thereby tempering only a part of the said metal, substantially as described.

337,980. PROCESS OF TEMPERING. SAMUEL E. MOWER, New Haven, assignor to Henry G. Thompson, Milford, and Harry G. Thompson, New Haven, Conn., and Arthur G. Thompson, New York, N. Y. Filed Sept. 18, 1885. (No specimens.)



Claim.—The herein-described method of tempering the toothed edge of a metal strip or band in the manufacture of saws, which consists in protecting the back of the said strip or band to, at, or near the base of the teeth cut therein, subjecting the toothed edge only to a tempering-heat opposite the point where the back is so protected, thereafter moving the said strip or band and cooling the toothed edge previously raised to tempering-heat while another portion of the same strip or band is being raised, as described, to tempering-heat, the heating and cooling described being practiced on the same edge of the same strip or band at the same time or by a continuous operation, all substantially as described.

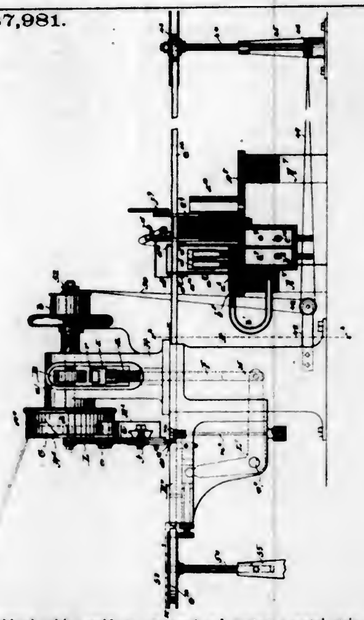
337,981. APPARATUS FOR TEMPERING. SAMUEL E. MOWER, New Haven, assignor to Henry G. Thompson, Milford, and Harry G. Thompson, New Haven, Conn., and Arthur G. Thompson, New York, N. Y. Filed Nov. 30, 1885. (No model.)

Claim.—1. The combination, with one or more blow-pipes supplied with gas and air under pressure, of a guide or support to surround and protect one edge of a metal strip or band, whereby but one edge of the said strip or band is exposed to the flame of the blow-pipes, substantially as described.

2. The combination, with blow-pipes supplied with gas and air under pressure, of a guide, d^2, for a metal strip or band, a support for the said guide, and a preliminary heater, whereby the metal strip or band is heated on its way to the blow-pipes, substantially as described.

3. A blow pipe or pipes supplied with gas and air under pressure,

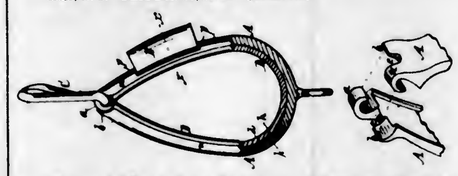
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combined with a guide to surround and protect a metal strip or band, whereby but one of its edges is exposed to the flame of the blow-pipe, and with means, substantially as described, to cool and temper that edge of the strip or band which is raised to tempering-heat by the action of the blow-pipe, as and for the purpose set forth.

4. The dies, the cutting-tool, and feeding mechanism for the metal strip or band, combined with a tempering apparatus composed, essentially, of a guide for the said strip or band, one or more blow-pipes supplied with gas and air under pressure to heat one edge only of the strip or band, and with means, substantially as described, to cool and temper that edge of the said strip or band which is raised to tempering-heat by the blow-pipes, all in continuous operation, substantially as set forth.

337,982. SHAFT-TUG FOR HARNESS. WILLIAM H. NOYES, Rochester, N. Y. Filed Dec. 29, 1885. (No model.)



Claim.—1. The shaft-tag for harness, consisting of the two metallic sections A A, each constructed at its top with an open hook, *a*, on one side, a socket, *c*, in the center, and a concave bearing-lug, *b*, on the other side, the hooks and lugs alternating in the two sections, the whole so arranged, as herein described, that a common buckle can be attached, the hooks engaging the buckle on opposite sides of its tongue, and the hook of one section resting against the lug of the other section, as herein set forth.

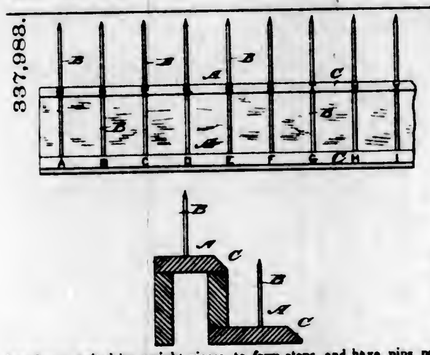
2. The shaft-tag for harness, consisting of the two sections A A, one section having a projecting lap, *d*, at the bottom, and the other section a corresponding cavity, *f*, to receive it, the lap provided with a lug, *h*, on its under side, and the cavity with a depression, *i*, to receive it, and a screw, *k*, passing in through the side of the tag and entering the lug to secure the parts together, as herein shown and described.

3. The shaft-tag for harness, consisting of the two sections A A, provided with hooks *a a* and bearings *b b* at the top for the connection of a common buckle, one section provided with a lap, *d*, at the bottom fitting in a cavity of the other section, and secured by a screw, and provided with flanges at the edges slotted on one side to receive a box loop or guard, as herein shown and described.

337,983. CHECK-FILE. THOMAS A. O'KEEFE, Brooklyn, N. Y. Filed May 14, 1885. (No model.)

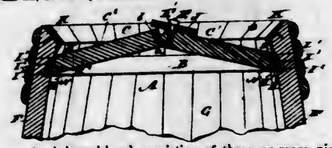
Claim.—In a check-file, a series of boards having their front edges beveled, and provided with numbers, letters, or other marks, which

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boards are united by upright pieces, to form steps, and have pins projecting from their upper surfaces, substantially as herein shown and described.

337,984. BARREL-HEAD. FRANCESCO J. OLIVER, Brooklyn, N. Y. Filed Jan. 22, 1886. (No model.)



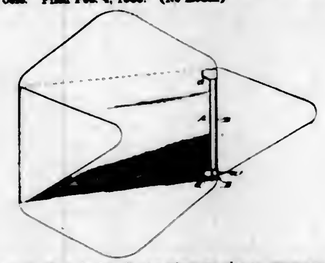
Claim.—1. A barrel-head consisting of three or more pieces, of which the center one is halved, in combination with a locking-piece swinging on a bolt attached to one half of the center piece, and with shoes secured to the staves of the barrel, substantially as shown and described.

2. A barrel-head consisting of three or more pieces provided on their peripheries with two beveled edges separated by a groove, of which pieces the center one is halved, in combination with a barrel having a croze made of two annular bevels separated by an annular ridge, shoes provided with projections and placed opposite each other, and a locking-plate swinging on a bolt attached to one of the halves of the center pieces, substantially as herein shown and described.

3. The barrel-head A, provided with the center half-pieces, C' and C^2, having, respectively, a projection, *a*, and a groove, *b*, on their inner ends, and provided on their edges with the two annular bevels, H and H', separated by the annular groove H^2, and the packing N, in combination with barrel-staves F, having annular bevels I' and I^2, and the ring I^3, the shoes K, projecting inward from the barrel-staves F, and the locking-piece J, turning on the bolt E, substantially as herein shown and described.

4. The barrel-head A, provided with the center piece, C, made in two parts, C' and C^2, the barrel-staves F, and the shoes K, in combination with the locking-plate J, turning on a bolt, E, and held in position by the shoes K, and a nut, E', substantially as herein shown and described.

337,985. DEVICE FOR OPENING ENVELOPES. JAMES H. PAIGE, Salida, Colo. Filed Feb. 4, 1885. (No model.)

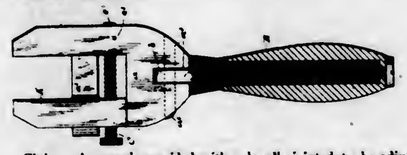


Claim.—1. In a device for opening envelopes, wrappers, &c., a blank carrying a cutting-string and adapted to be secured within the envelope, wrapper, &c., substantially as set forth.

2. A device for opening envelopes, wrappers, &c., consisting, essentially, of a paper blank having a string or thread secured thereto and adapted to be secured within the envelope, wrapper, &c., substantially as set forth.

3. A device for opening envelopes, wrappers, &c., consisting, essentially, of a string firmly secured at one end to a paper blank and secured at its opposite end to the blank in an easily-detachable manner, the blank with the string attached thereto being adapted to be secured within an envelope or wrapper, substantially as set forth.

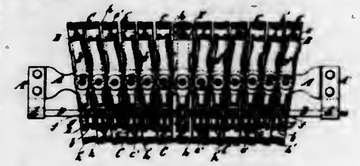
337,986. WRENCH. EDWIN C. PALMER, Cleveland, Ohio. Filed June 25, 1885. (No model.)



Claim.—A wrench provided with a handle jointed to be adjusted to a plane angular to the plane passing through the mouth and jaws, substantially as set forth.

337,987. SPREADER FOR SPREADING AND STRETCHING FABRICS. ISAAC P. PALMER, Middletown, Conn. Filed Feb. 4, 1882. (No model.)

Brief.—The periphery of the spreader is formed of a series of rings supported by an equal number of central wheels, around which they rotate. Said central wheels are arranged at different angles of divergence on opposite sides of the central perpendicular one, and are each pivoted in the center to a bar passing through and supporting them. The angle of divergence of these rings may be changed by turning a bar which passes through the central wheels near their peripheries, and upon which are arranged threads, into which pins in the central wheels take.



Claim.—1. The combination, in a spreader, of a series of supporting wheels or frames arranged side by side and capable of being adjusted at different angles divergent in opposite directions from a central line or plane, means for so adjusting said wheels or frames simultaneously throughout their whole range of adjustment, and a series of rings encircling said wheels or frames adapted to be rotated upon and adjusted with said wheels or frames and adapted to bear upon the fabric throughout its width, substantially as specified.

2. The combination, in a spreader, of a stationary supporting-bar, a series of non-rotary supporting wheels or frames attached to said bar, but adjustable thereon at different degrees of divergence in opposite directions from a central line or plane, and a series of rings encircling said bar and wheels or frames, each ring being fitted to rotate on a wheel or frame and forming a cloth-supporting surface which is continuous throughout its periphery, substantially as herein described.

3. The combination, in a spreader, of the bar A, the supporting wheels or frames, the rings C, and the screw-shaft D, having threads of different pitch engaging with said wheels, substantially as specified.

4. The combination, in a spreader, of a supporting-bar, a series of frames pivoted thereto so as to be capable of adjustment laterally relatively to each other, and each comprising arms having shoes at their outer ends, and rings fitted to and adapted to rotate upon said shoes, substantially as specified.

5. The combination of the bar A, the frame B^3, comprising arms *t*, having inclined seats *t'*, the shoes *u*, fitting said inclined seats *t'*, and the rings C, fitted to and adapted to rotate upon said shoes, substantially as specified.

6. The combination, in a spreader, of a series of springs arranged side by side and connected together so as to be capable of rotation in unison, with means for adjusting them at different angles to each other, and means for imparting rotary motion to one ring and through it to the others, substantially as specified.

7. The combination, in a spreader, of the bar A, the non-rotary wheels B B', the rings C, constructed with interlocking lugs and notches *f f'*, and the belt *k*, substantially as specified.

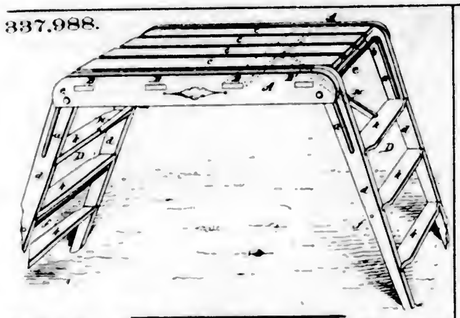
337,988. COMBINED STEP-LADDER AND ADJUSTABLE PLATFORM. STEPHEN J. PALMER, Dover, N. J. Filed Oct. 6, 1885. (No model.)

Claim.—1. A platform provided with pivotally-connected step-ladders, as D D, substantially as described.

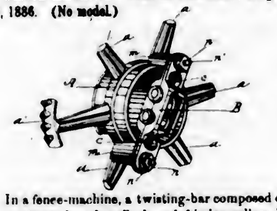
2. A platform provided with pivotally-connected step-ladders in which the side strips are formed with slots *a b*, substantially as described.

3. The combination, with a platform, substantially as described, of ladders D D, having side strips, *d d*, formed with slots *a b*, and brace-rods N N, substantially as described.

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337,989. FENCE-MACHINE. JOHN M. PATTERSON, Ridge Farm, Ill. Filed Jan. 12, 1886. (No model.)



Claim.—1. In a fence-machine, a twisting-bar composed of a frame, B, in two parts, constructed as described, and friction-rollers D D, journaled in suitable recesses in said frame B, and the openings c, as and for the purposes herein set forth and described.

2. The combination, with the twisting-wheel of a fence-machine, of the twister-bar B, provided with friction-rollers D D.

337,990. VEHICLE-DASH. JOHN M. PERKINS, South Bend, Ind. Filed Oct. 14, 1885. (No model.)



Claim.—1. The method of making curved dashes and other curved forms of laminated wood, consisting of uniting by means of a suitable cement an outer sheet of dry veneer with an inner sheet of veneer less dry, and then pressing the sheets together flat, whereby when the inner sheet or sheets shrink the fabric will be drawn into a curved form, substantially as described.

2. A form in wood composed of sheets of laminated wood, the outer sheet dry and the inner sheet or sheets damper than the outer sheet, in combination with a suitable cement for uniting the sheets, substantially as described.

3. An article composed of sheets of laminated wood, the outside sheet being dry and having its grain running in a vertical direction, and the inner sheet or sheets being damper and thicker and running crosswise of the outer sheet, in combination with an elastic glue, substantially as described.

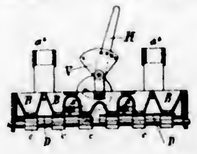
4. A curved form composed of sheets of laminated wood, in combination with an elastic glue, substantially as described.

5. A form in wood composed of two or more sheets of veneer, one outer sheet being drier than the others and having the grain running vertically, in combination with intermediate layers of fibrous material, substantially as described.

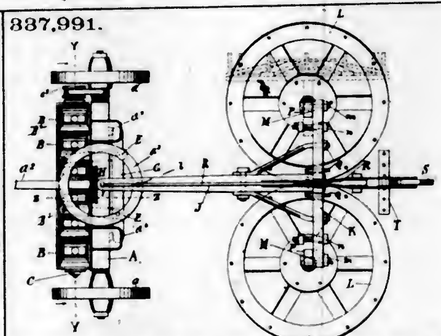
337,991. COMBINED HARROW AND SEED-PLANTER. WILLIAM POHLENZ, Painted Wood City, Dak. Filed Apr. 16, 1885. (No model.)

Claim.—1. In a combined seeder and harrow, constructed as described, the combination, with the front axle-tree, A, and rear axle-tree, K, of the reach J, fifth-wheel a^2, king-bolt *i* and auxiliary bolt *l*, and the pivoted bent lever R, and steering or pivot wheel S, whereby said rear axle-tree and parts carried thereby may be held rigidly in a right line with the line of draft, or the entire machine may be turned on the wheel S as a pivot, as herein shown and described.

2. The combination, with two sets of seed-hoppers, B², of the



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bucket-wheels c and their shaft C, revolved by a band from one of the wheels of the machine, the sliding perforated plates D, arranged under the hoppers, for regulating the flow of the seed to the bucket-wheels, the levers E, connecting-bar G, lever H, and perforated stationary plate V, whereby both sets of hoppers may be used at once, or only one set may be used, as herein shown and described.

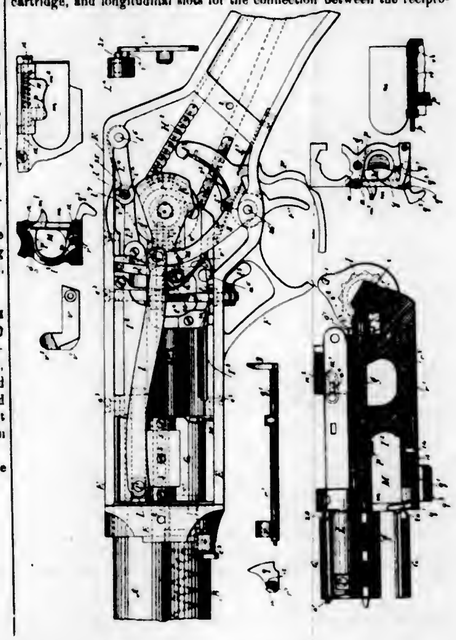
3. The combination, with the harrow-frames, the rear axle-tree, and the reach, of the rake T, carried by the bent lever R, substantially as herein described.

337,992. REPEATING FIRE-ARM. FRANK REES, New York, N. Y. Filed Apr. 17, 1885. (No model.)

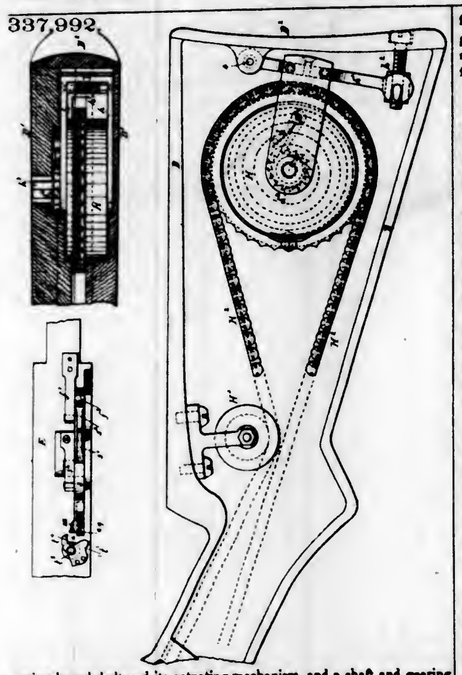
Claim.—1. The combination, with the magazine for cartridges and a carrier for conveying the cartridges from the magazine to the breech in a fire-arm, of a spring-barrel capable of being wound up, and a chain from such barrel and gearing acted upon by the chain to revolve the carrier progressively, substantially as set forth.

2. The combination, with the barrel and magazine in a fire-arm, of a carrier to convey the cartridges from the magazine to the breech, a spring-barrel capable of being wound up, chain-wheels, and a chain from such barrel, and gearing for revolving the carrier, a reciprocating breech-bolt for conveying the cartridge from the carrier into the breech, a crank and connecting-rod receiving motion from the spring-barrel chain, and wheels for giving a backward and forward motion to the reciprocating breech-bolt, substantially as specified.

3. The combination, with the barrel and reciprocating breech-bolt and its actuating mechanism, of a revolving carrier for bringing the cartridge up to the breech of the barrel, and having two openings for the cartridge, and longitudinal slots for the connection between the reciprocating breech-bolt and its actuating mechanism, and a shaft and gearing for revolving the carrier, substantially as specified.



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4. The combination, with the barrel and magazine, of a spring-barrel capable of being wound up, chain-wheels, a chain, a revolving cartridge-carrier, a shaft for the same, a pinion upon the said shaft, sectional gearing acted upon by the chain for turning the pinion, and the stops for holding the pinion and carrier, substantially as set forth.

5. The combination, in a magazine fire-arm, of a revolving carrier at the rear of the breech for conveying the cartridges from the magazine to the breech, a reciprocating breech-bolt, a spring-barrel, chain, and chain-wheels, and sectional gearing for rotating the carrier and its shaft and a tumbler, crank-pin, and connecting-rod for moving the reciprocating breech-bolt and forcing the cartridge from the carrier into the barrel, substantially as set forth.

6. The combination, with the barrel and magazine, of a revolving carrier to convey the cartridges from the magazine to the breech, a reciprocating breech-bolt, toggle-links at the rear end of such breech-bolt, a spring capable of being wound up, a chain and chain-wheels, a shaft and gearing acted upon by such chain to rotate the carrier, a cam revolved with the gearing to act upon the toggle-links and move them beyond the center, a spring to give the return-motion to the toggles, a crank-pin, and connecting-rod to reciprocate the breech-pin, substantially as set forth.

7. The combination, with the magazine for the cartridges, the barrel, the carrier behind and upon an axis parallel with the barrel, and gearing for revolving the carrier, of a spring-barrel adapted to be wound up, a chain connecting the barrel and the carrier-operating-mechanism, and chain-wheels, a hinged lever, and bearings for the shaft of the spring-barrel, a pivot upon the frame of the butt, and a screw for tightening the chain, substantially as set forth.

8. The combination, with the magazine and barrel in a fire-arm, of a carrier for conveying the cartridges from the magazine to the breech, and gearing for revolving the same, of a spring-barrel in the stock of the gun, a chain, chain-wheels, and a guide-pulley for directing the chain in its passage through the stock of the gun, substantially as set forth.

9. The combination, in a fire-arm, with the magazine for cartridges, the barrel, and a revolving carrier to transfer the cartridges from the magazine to the breech, of a spring capable of being wound up, chain-wheels, and chain from the same, and sectional gearing for revolving the carrier, a tumbler revolved by the chain, a trigger, and sear for arresting the motion of the tumbler, a breech-bolt for moving the cartridge into the barrel, a firing-pin, a spring, and a sear for holding the firing-pin, substantially as specified, whereby the sear of the trigger discharges the firing-pin before allowing the tumbler to revolve, substantially as set forth.

10. The combination, in a fire-arm, with the revolving tumbler K, for operating the lock mechanism of the gun, of the trigger F″, the trigger-sear *s*, latch *s'*, hook f^9, the springs for the respective parts, and the spring-barrel capable of being wound up, and the chain and chain-wheels for giving motion to the tumbler, substantially as specified.

11. The combination, in a fire-arm, with the spring-barrel capable of being wound up and the chain and chain-wheels, of the tumbler K for operating the lock mechanism of the gun, having a notch, 26′, the trigger F″, and sear *s*, the firing-pin and its sear, and the arm n^3 upon the sear, and the hook f^9 upon the trigger, substantially as and for the purposes specified.

12. The combination, with the trigger F″ and its sear *s*, of the firing-pin *n*, sear n^2 for the firing-pin, the arm n^3, connected with the sear n^2, joint 29, sear-spring and arm f^4, for holding the sear n^3, and the cartridge-carrier G, and its axle and sectional gearing for revolving the same, whereby the sear n^3 and firing-pin are locked and held while the trigger and sear are being moved for allowing the cartridge-carrier to be revolved, substantially as set forth.

13. The finger-piece f^8, vertical shaft f^6, supported in the housing, and safety-lock *t* upon the shaft f^6, to lock the parts, in combination with the revolving tumbler K, the trigger and trigger-sear between the tumbler and the safety-lock, the spring-barrel capable of being wound up, and the chain-wheels and chain for revolving the tumbler K, substantially as set forth.

14. The combination, with the fire-arm barrel, the magazine for cartridges, and the revolving carrier behind the barrel, for conveying the cartridges successively from the magazine to the breech, of the stationary lock-frame P, for supporting the operating mechanism of the gun, having a filling and ejecting chamber, M, in line with the magazine, a swinging door to the same, an ejector within the chamber, and the crank-arm *p'* upon the axis of the swinging door, link r^3, cam-arm *r*, and revolving cam i^3, and operating mechanism for actuating the ejector, substantially as specified.

15. The combination, with the magazine, barrel, and revolving carrier upon an axis in line with the barrel, of the filling and ejecting chamber in the lock-frame and in line with the magazine, the gate *q* at the front end of the ejecting-chamber, the shaft *q'*, and finger 15, the shaft *r'* in line with the shaft *q'*, the finger 14, and cam-arm *r* upon the same, and the revolving cam i^3, for moving the arm *r*, chain and acutating-spring for moving the parts, and swinging gate at the end of the filling and ejecting chamber, substantially as set forth.

16. The combination, with the barrel and magazine in a fire-arm, of a revolving carrier, an axis for the same parallel with the barrel, the stationary lock-frame having a filling and ejecting chamber in line with the magazine, a hinged door for said chamber, and a spring for closing the same, a gate, *q*, at the front end of the ejecting-chamber, a thumb-piece, q^2, acted upon by the door of the ejecting chamber and moving the gate, and an ejector within the chamber, and mechanism, substantially as specified, for giving motion to the respective parts, as set forth.

17. The combination, with the tumbler K and spring, capable of being wound up, of the chain and chain-wheels for revolving the tumbler, a trigger, F′, and sear *s* beneath the revolving tumbler, a spring-lock, *v*, upon the stationary lock-frame for the trigger-sear, and an incline, v^2, upon said spring *v*, whereby the tumbler in its revolution unlocks the trigger-sear, substantially as set forth.

18. The combination, with the reciprocating breech-bolt and the firing-pin, of the sear n^3, to hold the firing-pin, the set-back *o*, pivoted within the breech-bolt and having a cam end to act upon the firing-pin, the stationary projection o^4, with which an inclined face on the set-back comes into contact as the breech-bolt is drawn back, and the spring acting directly upon the set-back to return it to the normal position, substantially as set forth.

337,993. REPEATING FIRE-ARM. FRANK REES, New York, N. Y. Filed Dec. 18, 1885. (No model.)

Claim.—1. The combination, with the tumbler K and the lock mechanism of the fire-arm operated by the tumbler and the spring, of a chain made of short links introduced between longer links, and the chain-wheels having projecting teeth that pass in between the pairs of longer links and acting against the shorter links, substantially as specified.

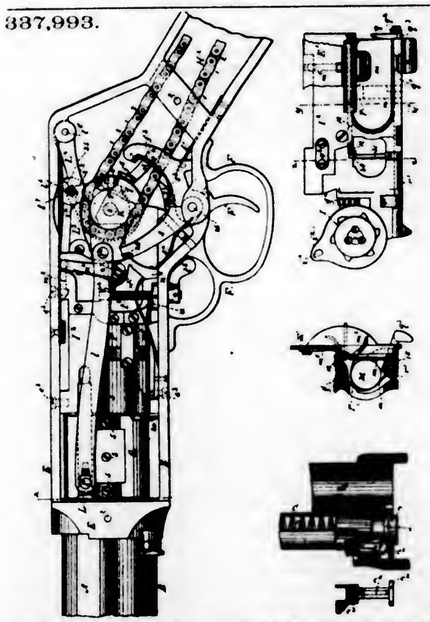
2. The combination, in a repeating fire-arm, of a revolving tumbler, and the parts actuated by the same, chain-wheels and a chain, a helical expansive spring, a tube containing the same, a fusee-barrel, and a chain extending from the same to the follower of the helical spring, substantially as set forth.

3. The combination, with the stationary lock-frame having the filling and ejecting chamber M, of the hinged door *m* for said chamber, the axis 12 for the hinge of the door, the crank-arm at the end of the same, and the spring 31 for closing said door, substantially as set forth.

4. The door *m* of the ejecting-chamber, hinged at the top and having a finger-piece, m^2, with a mortise in the same, in combination with the spring-latch m^6, and the side plate, E′, that incloses the breech mechanism and to which the spring is attached, substantially as set forth.

5. The combination, with the revolving tumbler K, the trigger F′, and trigger-sear S, of the arm n^3 upon the end of the firing-pin sear, the sear end n^5 below the arm n^3, and the latch n^6, both hinged to the sear-

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arm a^2, the shaft f^6, adjacent to the rear end, finger-piece f^6, and blocking-piece f^4 upon such shaft f^6, substantially as set forth.

6. The combination, with the trigger F' and its hook, revolving tumbler K, reciprocating breech-bolt, toggle-arms L^2 and L^3, and pin i^2, of the blocking-piece f^4, extending out from the rear of the trigger-hook, with its end adjacent to the teeth 7 upon the tumbler K, substantially as and for the purposes set forth.

7. The combination, with the magazine below the barrel, the follower c' within the magazine, stop c^3 for the said follower, and finger-piece c^3 outside the magazine, of the gravity-latch c^4, connected to the stop, substantially as and for the purposes set forth.

8. The combination, with the revolving carrier behind the barrel, and the magazine-tube below the barrel, of the follower c' within the magazine-tube, the stop below the follower, the finger-piece outside the magazine for moving the stop and follower, and the screw c' passing in from outside the housing for clamping the follower, as and for the purposes set forth.

9. The combination, with the magazine-tube, of a removable extension magazine-tube adapted to set over the magazine-tube, and an additional spring within the same, and a fastening device for securing the extension-magazine in place, substantially as set forth.

337,994. **MONEY-TILL.** JOSEF ROSSY, Saar-Louis, Prussia, Germany. Filed Oct. 8, 1885. (No model.) Patented in Germany Aug. 24, 1885, No. 34,579; in England Aug. 28, 1885, No. 10,223; in Belgium Aug. 29, 1885, No. 70,067; in France Sept. 3, 1885, No. 170,999, and in Austria-Hungary Nov. 5, 1885, No. 31,063 and No. 55,910.

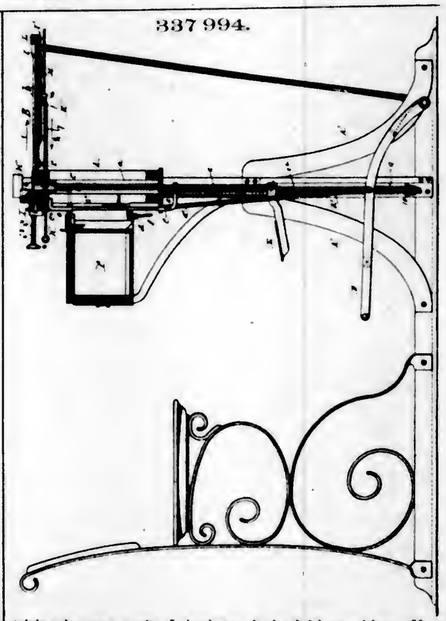
Claim.—1. The combination of a block, A, having wells, *a a*, spring-actuated pistons C, having toothed bars *c*, a transverse rail, *e*, and a treadle, D, connected by rods to said rail, substantially as set forth.

2. The combination of a block, A, having wells *a* and vertical slots *c'*, spring-actuated pistons C, toothed rods *c*, attached to the piston-rods, a transverse rail, *d*, a treadle, D, pivot-rods *d'*, connecting the rail with the treadle D, and angular keepers *f*, attached to the block, substantially as set forth.

3. The combination of a block, A, having wells *a*, a transverse bar, G, guided in ways H, a horizontal table, B, having grooves *b*, spring-actuated pistons C, having toothed rods *c*, a transverse rail, *e*, engaging said rods, and a treadle, D, connected by rods *d'* with said rail *e*, substantially as set forth.

4. The combination of a block, A, having wells *a*, a transverse rail, G, extending partly over the mouths of the wells, a horizontal table, B, having grooves *b*, spring-actuated pistons C, means for lowering and retaining the same, a rake, L, having push-pins *l*, fulcrumed levers M, and a spring-actuated slide-frame, N, connected to said levers for moving the coins over the table into the wells, substantially as set forth.

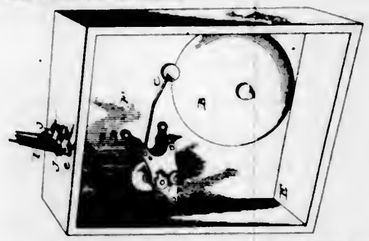
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5. The combination of a block, A, having wells *a*, spring-actuated pistons C, having toothed rods *c*, a rail, *e*, arranged transversely to the lower ends of the rod *c*, a sleeve, *e'*, connected to the rail *e*, and a spring-actuated treadle E, connected to the sleeve *e'*, substantially as set forth.

6. The combination of a block, A, having wells *a*, a horizontal table, B, having grooves *b*, and a bar, G, guided in ways H and extending partly over the well-openings, said bar being beveled at one side and provided with depressions of different sizes for the different denominations of coins, substantially as set forth.

337,995. **BURGLAR-ALARM.** ALMER L. SAHM, Washington, Ind. Filed Dec. 10, 1885. (No model.)



Claim.—1. In combination with an alarm mechanism provided with an arm, D, a detent, H, consisting of a coiled-wire spring, having ring *c* to engage over said arm.

2. In combination with alarm A and its arm D, detent H, having loop or ring *c*, and eyes *d*, for the attachment and separation of cords or wires I.

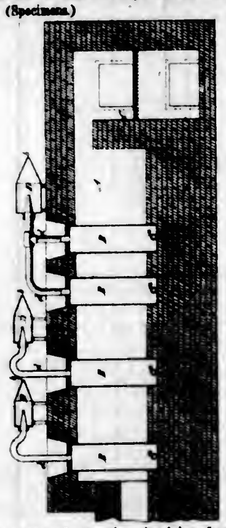
3. In combination with an alarm mechanism, a detent for holding said mechanism out of operation, a series of wires or cords attached to said detent, guides or holes for said cords, each marked to indicate the point to which its wire or cord passes, and pins or pegs attached to said cords and serving to indicate by their withdrawal the source of the alarm.

4. In combination with an alarm, a detent therefor, a series of cords or wires attached to said detent and to different doors and windows, a series of guide-holes for the cords or wires, each hole marked to indicate the point to which its cord or wire proceeds, and bent pegs or pins attached to the cords and inserted beside the same in the guide-holes, said cords serving by their withdrawal to indicate which wire is pulled, and being prevented by their bent form from re-entering the holes.

5. In combination with the operating cords or wires of an alarm as described, and with legs projecting from the doors and windows to

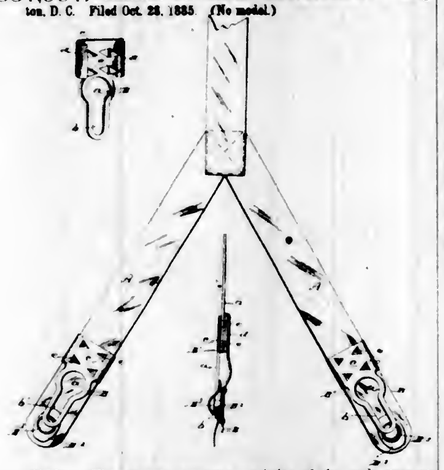
be protected, clasps K, attached to said cords and provided with rings L, substantially as and for the purpose set forth.

337,996. **PROCESS OF OBTAINING ALUMINIUM FROM ALUMINOUS ORES AND EARTHS.** FREDERICK J. SEYBOUR, Wolcottville, Conn., assignor of one-half to William Henry Brown, New York, N. Y. Filed Mar. 2, 1885. (Specimens.)



Claim.—The process of extracting aluminium from aluminous ores and earths, consisting in subjecting such ore or earth with an ore of zinc, carbonaceous matter, and a flux to heat in a retort wherein the oxides of aluminium and zinc are vaporized, collecting and condensing the vapors in a condenser, and afterward subjecting the condensed product to heat with carbonaceous matter, substantially as herein described.

337,997. **GARMENT-SUPPORTER.** HENRY A. SEYBOUR, Washington, D. C. Filed Oct. 28, 1885. (No model.)

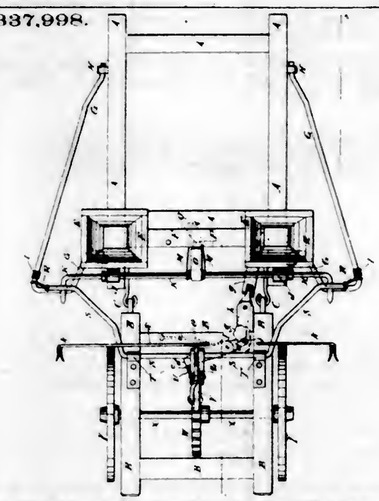


Claim.—The garment-supporter consisting of the main strap attached to a suitable suspending-strap, the main strap having at its lower end a supplemental strap carrying a button, the said main and supplemental straps being united by a metallic loop having attaching-prongs and side flanges.

337,998. **HILL-MARKING ATTACHMENT FOR CORN-PLANTERS.** CHARLES C. SHUPE, Meadon, Ill. Filed Dec. 2, 1885. (No model.)

Claim.—1. The combination, with the forward frame, A, of a corn-planter, and the seed-dropping slide F, having double-inclined projection P, of the angular hinged markers G I, the rock-shaft K, having downwardly-projecting arms provided with catches L, the rigid arm O, attached to the said shaft, and the spring M, substantially as herein

337,998.



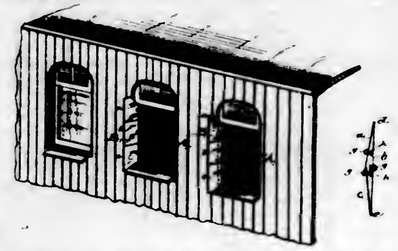
shown and described, whereby the said markers will be supported, and will be released by the movement of the said seed-dropping slide, as set forth.

2. The combination, with the angular markers G I, the rock-shaft K, having springs M, and downwardly-projecting arms provided with catches L, and the rear frame of a corn-planter, of the cords or chains R, the rock-shaft S, having projecting arms carrying the said cords or chains, and an operating mechanism, substantially as herein shown and described, whereby the said markers will be raised from the ground into contact with the said catches by the advance of the planter, as set forth.

3. The combination, with the wheels and axle Y X, the rear frame, B, and the rock-shaft S, having arms connected with the hinged markers G I by cords or chains R, of the ratchet-wheel W, attached to the said axle, the lever-pawl V, the rigid arm U, attached to the said shaft and carrying the said lever-pawl, and the spring-held bar Z, pivoted to the said lever-pawl and engaging with the said rigid arm, substantially as herein shown and described, whereby the advance of the planter is made to raise the marker from the ground, as set forth.

4. The combination, with the ratchet-wheel W, attached to the drive-wheel axle, the lever-pawl V, pivoted to the arm attached to the rock-shaft, having arms connected with the markers by cords or chains, and provided with the spring-held catch-bar Z, and the seed-dropping slide F, having pin *i*, of the lever *d*, having loop *c* and pin *f*, and the jointed lever *g*, having angular rear end engaging with the pin of the lever *d*, and forked forward end engaging with the pin of the seed-dropping slide F, substantially as herein shown and described, whereby the said lever-pawl will be released by the movement of the seed-dropping slide and allowed to engage with the teeth of the ratchet-wheel, as set forth.

337,999. **DUST-GUARD FOR RAILWAY-CARS.** JAMES C. SLAFTER and ADLER C. CLAUSEN, Minneapolis, Minn. Filed Aug. 19, 1885. (No model.)

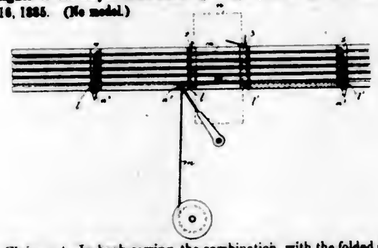


Claim.—1. A dust-guard for car-windows, consisting of the sections *a*, *b*, and *c*, each provided with a cam or button, *g*, whereby the sections may be independently secured to the window-groove, or be locked together when not in use, substantially as herein described.

2. A dust-guard for car-windows, consisting of the combination of the sections *a*, *b*, and *c*, the cams or buttons *g*, secured to each of the

sections, and the shanks, b, projecting through the sections and operating the cams, substantially as herein described.

338,000. BOOK-SEWING. DAVID MCC. SMYTH, Hartford, Conn., assignor to the Smyth Manufacturing Company, same place. Filed Feb. 16, 1885. (No model.)



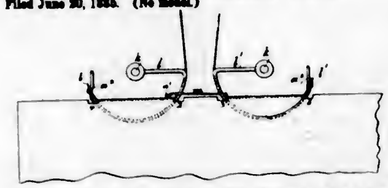
Claim.—1. In book-sewing, the combination, with the folded sheets or signatures, of threads passing in at the inner notches, 2 3, and looped at the outer notches, 4 5, with the threads in the next signatures, the threads at the notches 2 3 passing from one signature to the next, substantially as set forth.

2. In book-sewing, the combination, with the folded sheets or signatures, of threads passing in at the notches 2 3 in each sheet and looped at the notches 4 5, and the interlaced thread at the notches 2 3, substantially as set forth.

3. In book-sewing, the combination, with the folded sheets or signatures, of threads passing in at the adjacent notches 2 3, led in opposite directions, looped at 4 5 with the threads in the next signatures, in combination with the thread *m*, interlaced across alternately with the threads that pass into the notches 2 and 3, substantially as set forth.

4. In book-sewing, the combination, with the folded sheets or signatures, of threads passing as loops in at the notches 2 3, in opposite directions, and connected at the notches 4 and 5 with the threads in the adjacent signatures, substantially as specified.

338,001. BOOK-SEWING MACHINE. DAVID MCC. SMYTH, Hartford, Conn., assignor to the Smyth Manufacturing Company, same place. Filed June 20, 1885. (No model.)

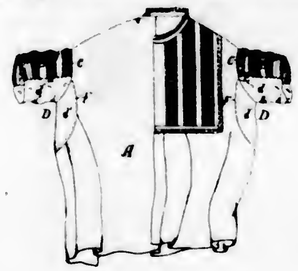


Claim.—1. In a book-sewing machine, the combination of a pair of curved needles swinging simultaneously in opposite directions, with loopers that hold the loops of thread and loop the threads in one signature with the threads in the next signature, substantially as set forth.

2. In a book-sewing machine, the combination, with a pair of curved needles swinging simultaneously in opposite directions, of loopers to loop the threads together and a vibrating thread-carrier to interlace a thread with the other threads where the needles enter and leave the signatures, substantially as set forth.

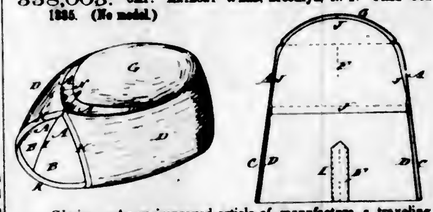
3. In a book-sewing machine, two curved needles carrying threads and swinging simultaneously in opposite directions for passing loops of thread into the signatures in opposite directions, and means, substantially as specified, for connecting the loops of threads in one signature to the loops of threads in the adjacent signatures, substantially as set forth.

338,002. CORSET-COVER. THOMAS P. TAYLOR and M. BURDETT HAMMOND, Bridgeport, Conn. Filed Oct. 17, 1885. (No model.)



Claim.—A corset-cover composed of textile material, having the upper half of the sleeves made of the material of the garment, and having cut-away portions under the arms, in combination with sections of perspiration-proof material, consisting of parts *d* and *d'*, one of said parts forming the under half of the sleeves and the other portion forming the portion of the body just under the sleeves, said sections being joined to the upper half of the sleeves and to the body by seams E and F, as shown.

338,003. CAP. ANTHONY WARD, Brooklyn, N. Y. Filed Oct. 27, 1885. (No model.)



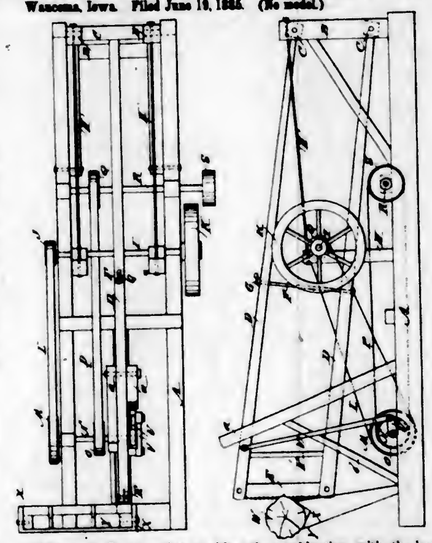
Claim.—As an improved article of manufacture, a traveling cap composed of two pieces, the crown G and body portion A, the latter being provided with the visor B, the cape C, and the cape-lining D, the said body portion formed from one and the same piece of material, as set forth.

338,004. VALVE FOR STEAM-ENGINES. THOMAS H. WARD, Tipton, County of Stafford, England. Filed July 26, 1883. (No model.) Patented in England June 16, 1882, No. 2,846; in France June 26, 1882, No. 149,773; in Germany June 26, 1882, No. 23,408, and in Belgium July 3, 1882, No. 58,372.



Claim.—The combination of the valve-chest having steam-ports of H form, and slide-valves having corresponding form, with covers C, central exhaust-pipe, E, and exhaust-passages *p* in the recesses left between the said ports, substantially as specified.

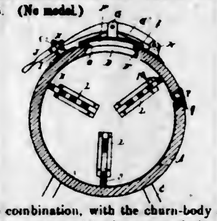
338,005. DRAG-SAW. IRA B. WARREN and CHARLES M. POTTER, Wauconia, Iowa. Filed June 19, 1885. (No model.)



Claim.—1. In a sawing-machine, the combination, with the base A and standards B, of the bars C, journaled one above the other in the said standards, the saw-carrying bars D, secured to the bars C and connected together by the rods F F', the rod F being provided with the nut G, the shaft N, journaled in the base and provided with the crank U and pulley O, the rod V, connected to said crank and to the upper bar D, the shaft R, provided with the pulleys Q S, and the belt P, substantially as shown and described.

2. In a sawing-machine, the combination, with the base A, the standards B H, the bars C, journaled in the standards B, one above the other, the bars D, secured to the bars C, and the saw E, secured between the free ends of the bars D, of the shaft N, journaled in the base below the free ends of the bars D, and provided with the crank U and the pulleys M O, the rod V, connected to the crank and to the upper bar D, the shaft I, journaled in the upper ends of the standards H and provided with the pulley J and fly-wheel K, the shaft R, journaled in the base and provided with the pulleys Q S, and the belts L P, substantially as herein shown and described.

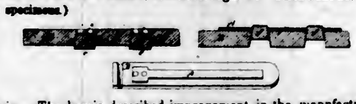
338,006. CHURN-CLOSING DEVICE. JOHN H. WEBER, Detroit, Mich. Filed Oct. 8, 1885. (No model.)



Claim.—1. The combination, with the churn-body A, cover F, and lever G', pivoted on the cover, and having one end pivotally secured to said body, of the cam-lever J, having head K, provided with slot *c*, and pivoted on said body, and arranged to engage with the free end of the lever G', substantially as and for the purpose specified.

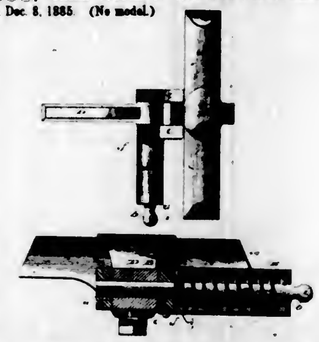
2. In a churn, the combination, with the body A, having opening D, ring E, packing *b*, and cover F, having flange *a*, of the lever G', pivoted to said cover, with one end pivotally connected with the body, and the cam-lever J, pivoted on said body in proximity to the free end of the lever G', substantially as and for the purpose specified.

338,007. MANUFACTURE OF REEDS FOR MUSICAL INSTRUMENTS. JOSIAH D. WHITNEY, Brattleborough, Vt. Filed June 25, 1885. (No specimens.)



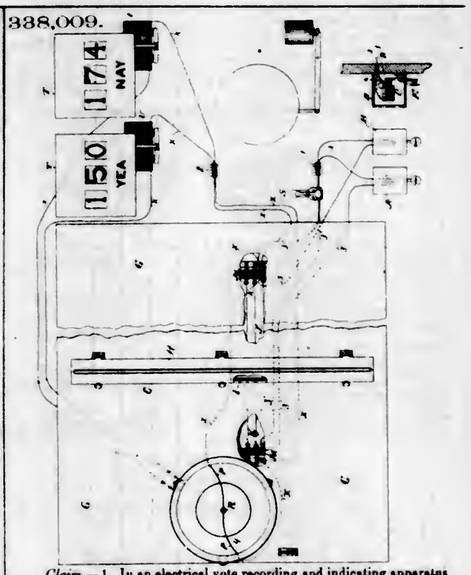
Claim.—The herein-described improvement in the manufacture of reeds for musical instruments, consisting in first punching the body where the rivets are required from the face side toward the reverse side, forming recesses on the face side and corresponding projections on the reverse side, but the projections on the reverse side of larger diameter than the recesses on the face side, then applying the tongue upon the face side of the body within the heel end and over said recesses, then forcing the metal of the body displaced in the formation of said recesses and projections in the reverse direction through the body and through the tongue, to form projecting studs on the body through the tongue, the said projecting studs from the face being of smaller diameter than upon the reverse side, the said projecting studs riveted upon the tongues, substantially as described.

338,008. THILL-COUPLING. ROBERT H. WILSON, Montezuma, Ind. Filed Dec. 8, 1885. (No model.)



Claim.—In combination with the draw-irons of the hollow cylinder or case, notched or cut out at its open end to fit over one of the eyes of the draw-irons, screws or the like to hold the cylinder to the latter, and a straight spring-actuated bolt working in the cylinder through the draw-irons, as set forth.

338,009. ELECTRICAL VOTE RECORDING AND INDICATING APPARATUS. CHARLES O. YALE, Rome, N. Y., and GEORGE F. W. HOLMAN and WILLIAM J. BARNETT, U. S. Navy; said Holman assignor to said Barnett. Filed Oct. 17, 1885. (No model.)



Claim.—1. In an electrical vote recording and indicating apparatus, a table having openings opposite the name of each voter, a strip of paper placed thereon, two series of printing-levers, I, arranged beneath the table, for printing through the holes, magnets having armatures, connections J, for operating the levers, and a device for making and breaking the circuit in which the magnets are placed, substantially as described.

2. In an electrical voting apparatus, the table having the openings for the reception of the printing-levers, and provided with an inked ribbon and a strip of paper, the printing-levers I, arranged in two series beneath the table, each connected with one of the series of operating-magnets, the magnets having armatures, the connections J, the device for making and breaking the circuit, and the visual recording device, substantially as herein described.

3. In an electrical vote recording and indicating apparatus, the combination, with two electric circuits, of the printing mechanism, the device for making and breaking the first connection in the secondary circuits, the connection made by the armature and core of the operating-magnets, standard O, and spring-fingers N, and the device for making and breaking the secondary circuit, consisting of the ring composed of insulated pieces of metal and metal rings to which the wires are connected, and the revolving brushes.

4. In an electrical vote recording and indicating apparatus, the combination, with the two electric circuits made by keys on the desks of the voters, of the printing mechanism consisting of the table having a strip of paper for the reception of the votes, and the two series of levers mounted beneath the table and projecting therethrough, and the operating-magnets operated by the electric circuit and connected by suitable connections with the levers, the device for making and breaking the secondary circuits, and the visual recording device.

5. In an electrical vote recording and indicating apparatus, the two electrical circuits made by the buttons upon the voters' desks, in which circuits are included the operating-magnets, the cores of whose armatures are free to slide back and forth, the spring-fingers operated by the said armature, the metal upright to which the line-wires are connected, and the device for making the second connection in the circuit, which consists of the two rings formed of the insulated metal strips and rings and the revolving brushes, the visual recording device and wires connecting the same with the apparatus for making the second break in the secondary circuits.

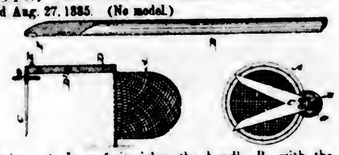
6. In an electrical vote recording and indicating apparatus, the electrical circuits made by the buttons upon the voters' desks, the concentrator of the votes, consisting of the insulated metal strips and rings and its revolving brushes, and the magnets in the circuit for operating the levers of the visual recorder.

7. In an electrical vote recording and indicating apparatus, the table upon which the votes are cast, the strip for printing upon, the ribbon containing the printing-ink, the hinged panel for securing the strip to be printed upon, and the type electrically operated.

8. In an electrical vote recording and indicating apparatus, the combination of the circuit for printing, in which is contained a circuit-

closer, an armature, and a magnet with a loosely-fitting core, to make and break the secondary circuit, and buttons for closing the printing-circuit, substantially as described.

338,010. FRUIT-PICKER. WILLIAM F. ZIEGLER, Long Swamp, Pa. Filed Aug. 27, 1885. (No model.)

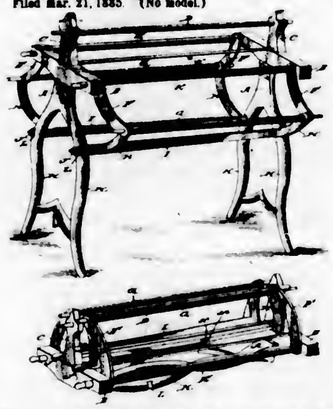


Claim.—1. In a fruit-picker, the handle B, with the recess F therein, in combination with the arm having a lug, and the clamping-ring G, substantially as and for the purpose set forth.

2. In a fruit-picker, the jointed arm D, having the handle B removably attached to the upper joint of said arm D, and having a basket secured to the lower joint of the said arm, substantially as and for the purpose set forth.

3. A handle, in combination with a jointed or hinged arm having a cutter and basket at opposite ends thereof, and a clamping-ring, substantially as and for the purpose set forth.

338,011. FOLDING CLOTHES-RACK. THOMAS ADAMS, Jr., Highland N. Y. Filed Mar. 21, 1885. (No model.)



Claim.—1. In a folding clothes-rack, the combination of the heads or ends, the inwardly-folding leg-frames hinged to the under edges of the same, and the pivotally-connected arms connected by cross-braces, and adapted to be connected with the leg-frames when the latter are extended, substantially as herein described, for the purpose shown and specified.

2. In a folding clothes-rack, the combination of the heads or ends connected by cross-braces, the inwardly-folding leg-frames hinged to the under edges of said heads or ends, arms pivoted to the outer braces, connected to the heads or ends, and having their free ends connected by cross-braces, arms pivoted upon the said cross-braces, and having their free ends connected by cross-braces provided with dovetailed or arrow heads, and notches in the leg-frames adapted to receive the said heads, substantially as herein described, for the purpose shown and specified.

338,012. SAFETY-SWITCH. ROBERT ADAMSON, Auburn, N. Y. Filed Oct. 9, 1885. (No model.)

Claim.—1. The combination, with the switch-rails, of a sliding block mounted in an inclined way, a chain, and connecting-gearing, substantially as described.

2. The combination, with a switch, of a way, D, a block, E, chain *d*, wheel F, pinion H, gear I, rod *o*, and bar O, substantially as described.

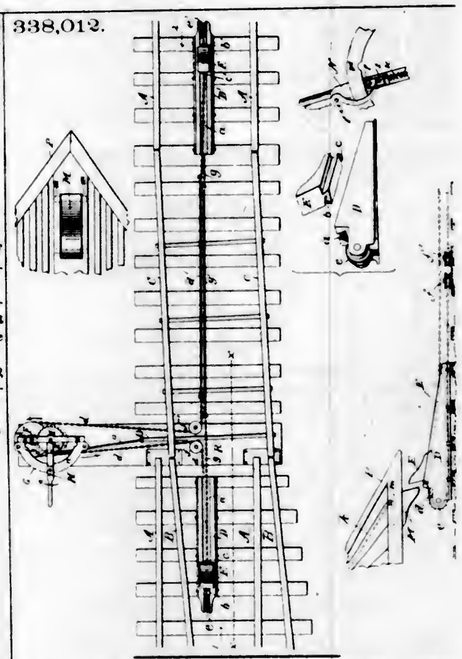
3. The combination, with a switch, of the following elements: ways D D', blocks E E', chains *d* and *g*, sheaves *e e'* and *f f'*, wheel F, pinion H, gear I, rod *o*, and bar O, substantially as set forth.

4. The combination, with a switch, of the following elements: way D, block E, chain *d*, sheaves *e f*, wheel F, pinion H, gear-wheel I, rod *o*, and bar O, all arranged to be operated by a dog, M, substantially as set forth.

5. The combination, with the bar O, formed with sockets J J', and the rods *o o'*, leading to a gear, I, of a rocker, T, carrying pins *i i'*, substantially as set forth.

6. The combination, with a switch, of a bar, O, formed with sockets J J', rods *o o'*, held by pins *i i'*, carried by a rocker, T, gear I, pinion H, wheel F, chain *d*, block E, and a way, D, substantially as set forth.

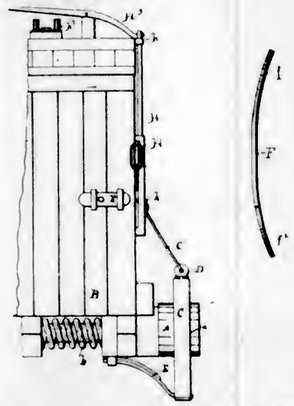
338,012.



338,013. REMEDY FOR HOG AND CHICKEN CHOLERA. ANDREW J. ALEXANDER, Mayfield, Ky. Filed Nov. 7, 1885. (No specimens.)

Claim.—The herein-described composition of matter to be used for the treatment and prevention of hog and chicken cholera, consisting of water, tobacco, mandrake-root, bichromate potassa, and alcohol, in the proportions specified.

338,014. CAR-COUPLING. JULIUS A. ALEXANDER, Monticello, Ark. Filed June 18, 1885. (No model.)



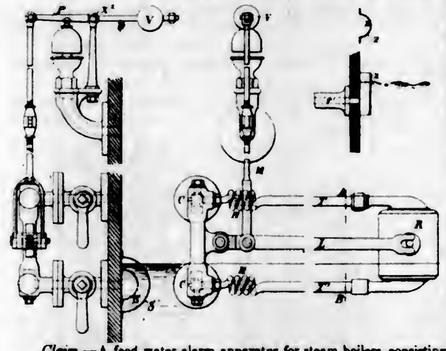
Claim.—1. The spring-actuated frame C, pin D, sliding buffer A', and vertical spring a^2, combined and adapted to operate substantially as shown and described.

2. The combination of a draw-head having a conically-shaped link-recess, *a'*, pin D, its carrying-frame C, spring E, acting habitually to press the frame in a downward direction, the slotted sliding buffer A', and the vertical spring a^2, substantially as shown and described.

3. The sliding frame C, the pin D, link C', sliding bar H, and operating-levers H' H^2 H^3, combined and operated as described.
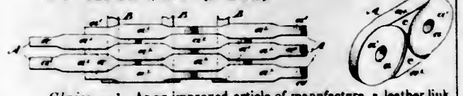
4. The locking slides A' A^2 A^3, fitted to the car B, and operating to lock the levers H' H^2 H^3 in place when required, substantially as shown and described.

338,015. FEED-WATER ALARM FOR STEAM-BOILERS. ELIE ARBOUROUX, Paris, France, assignor to Alfred La Roche and Antoine Julien Champion, both of same place. Filed Jan. 16, 1886. (No model.)



Claim.—A feed-water-alarm apparatus for steam-boilers, consisting in the combination of a container, R, with the two flexible tubes T T', having spiral parts H H', which allow of said container rising and falling, and with the lever L, yoke M, and lever P Q, and weight V, all arranged to operate by the vertical movement of the container R, as set forth.

338,016. MACHINERY-BELT. HOLLAND C. RANCOCK, New York, N. Y. Filed Dec. 9, 1885. (No model.)

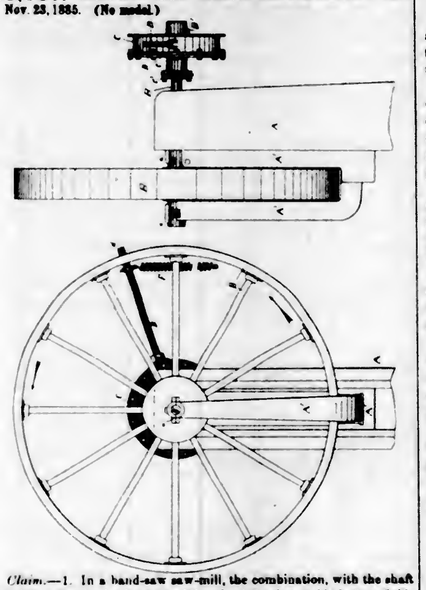


Claim.—1. As an improved article of manufacture, a leather link, substantially as described, for machinery-belts, having its ends solidified by compression and reduced in thickness, substantially as described.

2. The link A, of leather, and formed with the parallel openings *a*, and made of greater thickness in the center than at its ends, substantially as and for the purposes set forth.

3. The leather link A, compressed at *a'* at its ends, and countersunk at *b* about the orifices *a*, substantially as described.

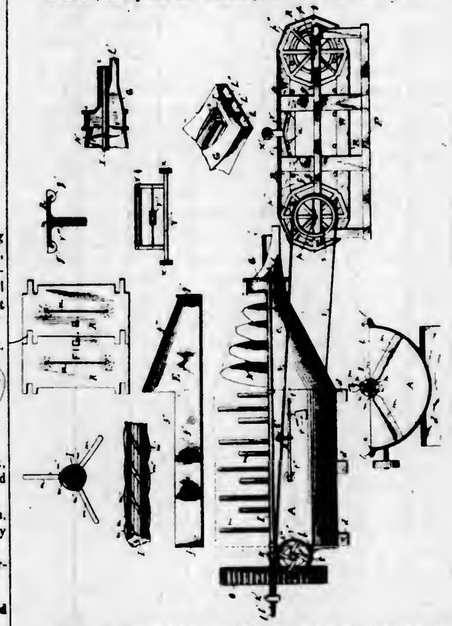
338,017. BAND-SAW MILL. HENRY R. BARNHURST, Erie, Pa. Filed Nov. 23, 1885. (No model.)



Claim.—1. In a band-saw saw-mill, the combination, with the shaft of the driven band-wheel, of a paddle-wheel fixed on said shaft, a fluid-holding box surrounding said paddle-wheel and journaled concentrically therewith on said shaft, a fastening for preventing said box from rotating with the shaft, and conduits for conveying fluid to and away from said box, substantially as and for the purposes set forth.

2. In a band-saw saw-mill, the combination, with the shaft of the driven band-wheel, of a resisting device consisting of a box or case, C, having internal ribs, *c*, and an induct and educt for the admission and discharge of fluid therefrom, and a rotating paddle-wheel, E, contained within said case and driven from the said band-wheel shaft, substantially as set forth.

338,018. MACHINE FOR MAKING BRICK, TILE, &c. CALVIN J. BARROW, Cheneyville, La. Filed Sept. 11, 1885. (No model.)



Claim.—1. In combination with the mixing-box of a brick-machine, a shaft having spiral ribs provided with perforations, and knives adapted to fit said perforations and be secured at any desired angle therein by means of set-screws, substantially as set forth.

2. The combination of a mixing-box having a tapering delivery end, a former adapted to fit said end, and a mixing-shaft having its inner end journaled in the former and its outer end in a cross-head, as described, the former and cross-head directly connected by bolts, so as to resist endwise movement of the shaft, substantially as and for the purpose set forth.

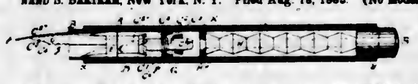
3. The combination of the mixing-box A, shaft I, and spur-wheel O, with a carrier mounted in a frame at the discharge end of the mixing-box, the carrier and mixing-box connected by belt *r*, operating over pulleys *r' r''*, the latter having an enlarged diameter adapted to be driven by friction from the spur-wheel, substantially as set forth.

4. The combination of the mixing-box A, shaft I, provided with spur-wheel O, the carrier-shaft *p*, pulleys *r' r''*, and connecting-belt *r*, with an idler composed of pulley *t*, strap *s*, pivoted lever *t'*, and weight *t'''*, all arranged to operate substantially as and for the purpose specified.

5. In combination with the mixing-box A, a carrier-frame having side ways provided with inclined slots *a*, an endless carrier composed of slotted plates R, and knife-frames provided with rollers *x*, adapted to operate in the aforesaid inclined slots, substantially as and for the purpose specified.

6. In combination with the mixing-box of a brick-machine, a carrier-frame provided with inclined side slots, *a*, an endless carrier composed of slotted plates R, provided with knife-guides V'''', and knives V, with their frames, substantially as and for the purpose set forth.

338,019. FOUNTAIN-PEN AND FOUNTAIN PEN-HOLDER. FERDINAND S. BARTRAM, New York, N. Y. Filed Aug. 18, 1885. (No model.)



Claim.—1. A fountain-pen having an outer case surrounding the reservoir-case, said outer case being connected to the reservoir-case at

its upper and lower ends by pieces of cork or similar material placed between said reservoir-case and said outer case to admit a free circulation of air between them, for the purpose described.

2. An ink-trough for a fountain-pen, consisting of an open longitudinal channel in a bar having a stem, said channel being closed at both extremities and formed in the surface of the bar next to the under surface of the pen for the purpose of conveying ink from the reservoir to the pen and from the pen to the reservoir, substantially as herein described.

3. In a fountain-pen, a feed-bar having its upper end reduced in diameter from a point about midway of the length of said bar to form a stem, the latter being provided with an ink-conduit near its center which connects with a channel or groove formed exteriorly on the upper surface of said feed-bar and stem, substantially as described.

4. A feed-bar for a fountain-pen, having its upper surface of the proper contour to conform to the convexity of an ordinary pen and of sufficient diameter to be inserted easily within the case, between which surfaces the pen may rest, and having its circumference back of the pen enlarged into a crown or bell shaped configuration toward the inner circumference of the case, and having said bell-shaped edge serrated or perforated transversely, as required, for the necessary admission of air to the reservoir, and as and for the other purposes herein described.

5. A bulk-head in a fountain-pen case between the reservoir and the pen and through which a portion of the feed-bar passes, said bulk-head having a central perforation to accommodate the stem of the feed-bar and having a number of auxiliary perforations for the admission of air to the reservoir, and being designed for the dispensing of ink to the feed-bar and pen and for the independent admission of air to the reservoir, said bulk-head being adjusted or constructed within the case, substantially as hereinbefore described, and for the purposes specified.

6. In a fountain-pen, a regulator and stop consisting of a movable feed-bar having a channel and a convexed stop or plug affixed to said bar, in combination with a wall or bulk-head adjusted or constructed within the case between the reservoir and pen, having a recess through which said bar passes, and a backward convexing seat within and back of said recess into which said plug or stop is drawn, said feed-bar being operated by its exposed part at the open end of the case by sliding or rotating, or both, within the case for the purposes of increasing, decreasing, or stopping entirely the supply of ink to the pen, said bar having upon a portion of its surface a section of a screw-thread conforming to and moving within a similar one cut within said recess for the purpose of better securing said bar and regulator firmly within its seat, all substantially as hereinbefore described, and for the purposes set forth.

7. In a fountain-pen, a stop to shut off the supply of ink from the reservoir, consisting of a movable bar within the case having a channel in said bar, in combination with a ring fixed within the case near the lower end of the reservoir, said bar having its extreme backward or inward end beveled to fit a corresponding seat within said ring, and operated at its exposed end by revolving or sliding said bar backward to and within its seat in said ring, substantially as hereinbefore described, and for the purposes specified.

8. In a feed-bar for a fountain-pen, one or more transverse perforations or air-vents upon its under surface near its point extending upward into the ink-channel, and a larger lateral perforation, C*, near the point, and one or more notches in its under surface cut transversely, by the aid of which said feed-bar may be operated in either direction for the purposes hereinbefore specified.

9. A feed-bar for a fountain-pen, having one or more lateral projections near its point which form retaining-grips for the ink and prevent the surplus ink from overflowing or dropping from the point of the pen, substantially as described.

10. In a fountain-pen, a spur-ring, E, consisting of a ring adjusted within the case in proximity to the reservoir, said ring having a front or outer parallel wall or surface from which projects a spur designed to keep the pen from contact with the feeder except at or near its point and operates as a cover lying over and upon the open channel of a feeder to prevent the escape of ink therefrom, and constructed substantially as hereinbefore described.

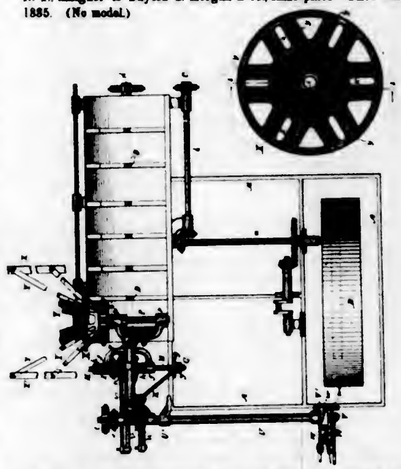
11. In a fountain-pen, a movable and removable feeder consisting of the feeder C, having a stem, C*, an open channel, C*, in combination with a spur-ring, E, adjusted within the case B, through which said feeder may have a reciprocating movement for the purpose of increasing, diminishing, or suspending the flow of ink from the reservoir to the pen, said feeder also being removable from the case independently of the pen for the purpose of more rapidly replenishing the reservoir, all constructed substantially as herein described.

12. In a fountain-pen, a self-filling device consisting of a flexible tube hollow and closed at its upper end, and movable longitudinally and vertically within the case, and having a friction-ring or similar means at its lower end for holding it properly within the case, said filler being adapted to be operated to expel air from and draw ink upward within itself, as hereinbefore described, and for the purposes set forth.

13. In a fountain-pen, the spur-ring constructed as described, in combination with a feed-bar having a stem at its upper end and channeled as described, said spur-ring and feed-bar each being capable of independent adjustment within or of removal from the case, substantially as described.

14. The fountain-pen herein described, having the duplex case, the collapsible filler, the perforated bulk-head, the channeled feeder having a stem at its upper end carrying a regulator or valve adjustable to the valve-seat in the bulk-head, and the safety-collar, all substantially as described.

338,020. HARVESTER-REEL. FREDERICK G. BAKER, Brockport, N. Y., assignor to Dayton S. Morgan & Co., same place. Filed Mar. 19, 1885. (No model.)



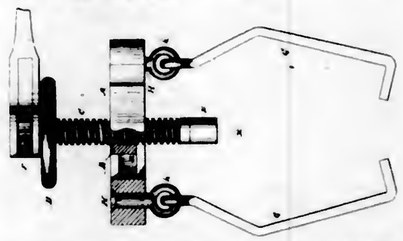
Claim.—1. The combination of the main frame, the rotating packer-shaft, the bifurcated bearing-bracket of the main frame supporting the packer-shaft at front, the upright bearing-bracket of the main frame, the pivot-rod supported by said brackets, and the rocking bracket mounted on the pivot-rod for supporting the reel-post, substantially as and for the purpose hereinbefore set forth

2. The combination of the main frame, the bifurcated bearing-bracket thereof, the upright bearing-bracket, the pivot-rod supported by said brackets, the vertically-rocking bracket supported on the pivot-rod, the reel-post secured to said rocking bracket, and the inclined brace-rod connected with the reel-post and pivot-rod, substantially as and for the purpose hereinbefore set forth.

3. The combination of the upper section of the reel-post, the lower section of the reel-post having jointed connection therewith, the main frame with which the main section of the reel-post has pivotal supporting-connection, the cranked tubular rock-shaft, the cranked rock-shaft passing therethrough, the rods connecting the cranks of the rock-shafts with the lower section and the upper section, respectively, of the reel-post, the actuating-levers of the rock-shafts, and their detent devices, substantially as and for the purpose hereinbefore set forth.

4. The combination of the reel-head having flaring sockets provided with the pointed teeth, the divulging reel-arms, and the wedge-blocks secured between the reel-arms, substantially as and for the purpose hereinbefore set forth.

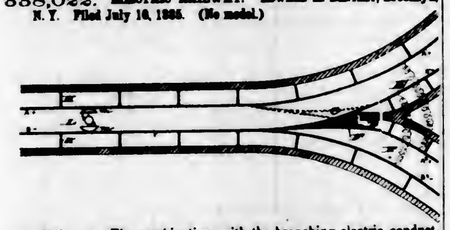
338,021. DRILLING-MACHINE. FRANKLIN BENNETT, Marshallville, Ohio, assignor of one-third to LORRAIN S. ZIMMERMAN, same place. Filed Nov. 12, 1884. (No model.)



Claim.—1. The combination, with a head-block provided with hinged pendent hooks and having parallel ways and a nut fitting in said ways and arranged to slide therein, of a hollow feeding-screw fitting said nut, provided with a hand-wheel and inclosing a drill-shaft provided with driving mechanism, substantially as shown, and for the purpose hereinbefore set forth.

2. The combination, with a hook connected with the head-block of a hand-drill press, of a plate, I, having two flanges, *i i*, with intermediate formation arranged to fit on said hook, substantially as shown, and for the purpose specified.

338,022. ELECTRIC RAILWAY. EDWARD M. BENTLEY, Brooklyn, N. Y. Filed July 10, 1885. (No model.)



Claim.—1. The combination, with the branching electric conductors extending along the two branches of an electric railway, respectively, of an independent conducting-point pivoted at the termination of the two inner conductors, so as to be turned to lead the sliding contact from either main conductor onto its corresponding branch conductor.

2. The combination, with the branching track-rails, of the independent conducting-rails branching correspondingly with the track-rails, and the independent movable conducting-point at the termination of the two inner conductors adapted to be turned to connect with either main conductor.

3. The combination of the continuous conductor A A' of an electric railway, the corresponding conductor, A^2, of a branching railway, and an intermediate movable section adapted to carry the contact device from A A' to A^2.

4. The combination of the conductors A A' and B B^2, the conductors A^2 and B', connected therewith, respectively, by bridging-conductors, and an independent movable conducting-point, C.

5. The combination of the positive and negative conductors A A' and B B^2 with the conductors B' and A^2, connected therewith, respectively, and the movable point forming a continuation with either B' or A^2.

6. The combination of the two continuous positive and negative conductors A A' and B B^2, the contact-shoes between said conductors and movable relatively thereto and adapted to slide in contact therewith, respectively, the positive and negative conductors A^2 and B', and the bridging-conductors connecting A^2 and B' with A A' and B B^2, respectively, and placed out of the path of said conducting-shoes.

7. The combination of the movable guide for the slot and a movable conductor-section supported therefrom.

8. The combination of the movable slot-guide, a conductor-section supported therefrom, and intervening insulating material.

9. The combination of a movable slot-guide for a branching slotted conduit, substantially as described, and a support for its outer end placed between the two branches of the slot.

10. The combination of a branching slotted conduit, insulated conductors in the main and in the branch conduit, substantially as described, a movable slot-guide, and a standard therefor placed within the two inner conductors.

11. The combination of a branching slotted conduit, conductor A A' in the main conduit, a corresponding conductor, A^2, in the branch conduit, a contact device, a movable slot-guide, and a standard therefor placed inside of conductor A^2.

12. The combination, with a branching railway-track, of a stationary branching slotted conduit and a movable conductor-section within the conduit for switching the contact device, and means for working said section from without the conduit.

13. The combination, with a branching railway-track, of a stationary branching slotted conduit inclosed in the main and in each branch conduit, and a movable conductor-section within the conduit for switching the contact device.

14. The combination, with a branching railway-track, of an insulated electric conductor on the main and on each branch track, a contact device adapted to connect said conductor with a vehicle traveling on the said track, a movable conductor-section for switching the contact device, and a slot-point connected to said movable section.

338,023. ELECTRIC MOTOR. EDWARD M. BENTLEY, Brooklyn, N. Y. Filed July 10, 1885. (No specimens.)

Claim.—1. The combination, with an electric motor, of a resistance in circuit therewith, mechanism controlling said resistance, and an automatic stop for said mechanism.

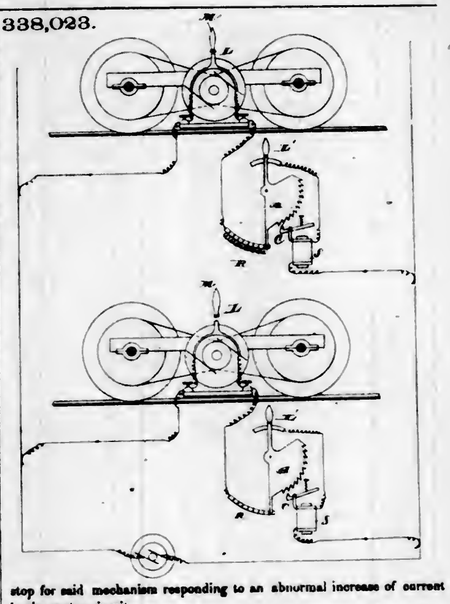
2. The combination, with an electric motor, of a resistance in circuit therewith, mechanism controlling said resistance and an automatic stop for said mechanism responding to an abnormal increase of current in the motor-circuit.

3. The combination of two or more electric motors in multiple arc on the same circuit, a resistance in circuit with each mechanism controlling the same resistances, and automatic stops for said mechanisms.

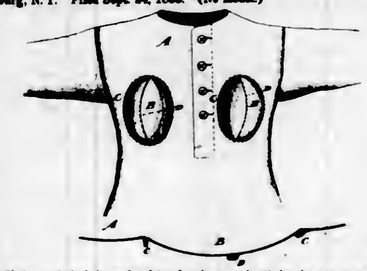
4. The combination, with two or more electric motors in multiple arc, of a resistance in circuit with each mechanism controlling said resistances, and automatic stops for said mechanisms responding to an abnormal increase of current.

5. The combination, with an electric motor, of a resistance in circuit therewith, mechanism controlling said resistance, and means for automatically controlling the movement of said mechanism.

338,023.



338,024. LADY'S UNDERSHIRT. WILLIAM H. SILSBOURN, Lansingburg, N. Y. Filed Sept. 24, 1885. (No model.)



Claim.—A lady's undershirt having each of its bosom-gores B B in two pieces, attached to each other by a cross-seam, D, made flat on the outside and smooth on the inside, substantially as shown and described.

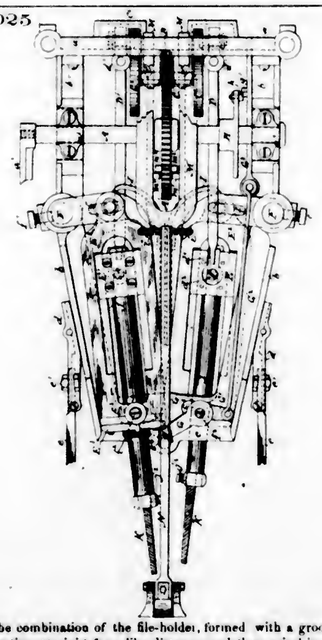
338,025. MACHINE FOR FILING COTTON-GIN SAWS. WILLIAM H. BLANCHARD, Gainesville, Ga. Filed July 24, 1885. (No model.)

Claim.—1. In a saw gumming and filing machine, the combination, with cheek-pieces attached to the side rails of the machine, of vertically-adjustable rest-bars for supporting the front of the machine in proper relation to the saw, substantially as described.

2. In a saw gumming and filing machine, the combination, with cheek-pieces removably secured to the side rails of the machine, of vertically-adjustable rest-bars pivoted at their rear ends in the cheek-pieces and governed in their upward and downward adjustments by adjusting-screws in the ends of the cheek-pieces, substantially as described.

3. The combination, with the feed-bar, of a longitudinally-adjustable center bit secured to the bar by a screw or bolt, and two side bits pivoted to the bar, said side bits, when in working position, resting on the ends of a rod passing through the head of the feed-bar, substantially as described.

338,025



4. The combination of the file-holder, formed with a groove spiral in one direction, straight for a like distance, and then spiral in an opposite direction, with a screw fixed in a suitable part of the machine, for giving the file a twist in one direction for one-third of the stroke, then a straight movement for a like distance, and, finally, another twist in an opposite direction, thereby rounding the tooth both at top and bottom, substantially as set forth.

338,026. **ARTIFICIAL STONE.** GEORGE BLUE, Orlando, Fla. Filed June 16, 1885. (Specimens.)

Claim.—An artificial stone or building-block composed of the following ingredients: slaked lime, sulphur, sulphuric acid, common salt or other saline matter, and sand, mixed in the proportions given.

338,027. **PROCESS OF TREATING HOPS TO OBTAIN EXTRACTS THEREFROM.** LOUIS BOULE, Bourges, Department of Cher, France. Filed July 13, 1885. (No specimens.) Patented in France May 19, 1883, No. 155,560; in Belgium Aug. 25, 1883, No. 62,404; in England Aug. 28, 1883, No. 4,151, and in Germany Aug. 30, 1883, No. 26,434.

Claim.—1. The process herein described of producing a hop extract, said process consisting in mixing with the lupuline of the hop-plant the dry extract of the leaflets of the plant, substantially as set forth.

2. The process herein described of treating hops to obtain an extract therefrom, said process consisting in first separating the lupuline from the plant and obtaining a liquid extract from the leaflets of the plant, drying this extract, and finally mixing it with lupuline, all substantially as set forth.

3. The process herein described of treating hops to obtain an extract therefrom, said process consisting in first separating the lupuline and lixiviating the leaflets from which this lupuline has been separated, evaporating the extracted liquor in a vacuum, drying the extract, and finally mixing it with the lupuline, all substantially as set forth.

338,028. **UTILIZATION OF NATURAL GAS.** HENRY BOWER, Philadelphia, Pa. Filed Oct. 5, 1885. (No model.)



Claim.—1. The method of utilizing the pressure and products of natural gas, consisting, first, in passing the gas under its initial pressure to an engine, next in conducting the exhaust by its own pressure to a chamber, furnace, stove, or other place, where it is ignited or otherwise used, substantially as set forth.

2. The method of utilizing the pressure and products of natural gas under its initial pressure, consisting, first, in passing the gas through a purifier, next to the cylinder of an engine, and next in exhausting it to a receiver, conducting it into a chamber, furnace, or other place, where it is ignited or otherwise used, or allowing it to escape, substantially as set forth.

3. The method of utilizing the pressure and products of natural gas, consisting, first, in passing the gas to a regulator, next to the cylinder of an engine, next in exhausting it to a receiver or point of application, and then in conducting it into a chamber, furnace, stove, or other place, where it is ignited or otherwise used, substantially as described.

4. The method of utilizing the pressure and products of natural gas, consisting, first, in passing the gas through a purifier, next through a regulator, next to the cylinder of an engine, then exhausting it to a receiver or point of application, and then conducting it into a chamber, furnace, stove, or other place, where it is ignited or otherwise used, substantially as set forth.

5. The method of utilizing the pressure and products of natural gas, consisting, first, in passing the gas under its initial pressure to an engine, next passing the exhaust by its own pressure to succeeding engines, and finally conducting it by its own pressure into a chamber, furnace, stove, or other place, where it is ignited or otherwise used.

338,029. **TOOL FOR FINISHING JOINTS OF BRICK WALLS, &c.** JAMES H. BRIGHT, St. Louis, Mo. Filed Nov. 7, 1885. (No model.)



Claim.—1. A brick-layer's tool for the purpose described, consisting of a suitable handle with a scoring-head and rollers on each side thereof adjustable to or from the bearing-edge of said head, substantially as specified.

2. A brick-layer's tool consisting of a suitable handle with flattened and slotted head, an axle with a threaded extension passing through said slot, rollers on said axle on each side of said head, and a nut for holding said axle in the slot, substantially as and for the purpose specified.

3. A brick-layer's tool consisting of a suitable handle, scoring-head and anti-friction bearings, substantially as and for the purpose specified

338,030. **WIRE-FENCE POST.** EUGENE BRESEE, Weston, Ohio. Filed Apr. 17, 1885. (No model.)



Claim.—The combination, with a base, A, having a central aperture, B, and end apertures, D, of the post C and the rods H, having their upper ends held on the post and their lower ends bent above the base-plate A to form offsets, and prongs J, which prongs J are forced through the base into the ground, substantially as herein shown and described.

338,031. **BATHING APPARATUS.** F. BARTON BROWN, Boston, Mass. Filed June 8, 1885. (No model.)



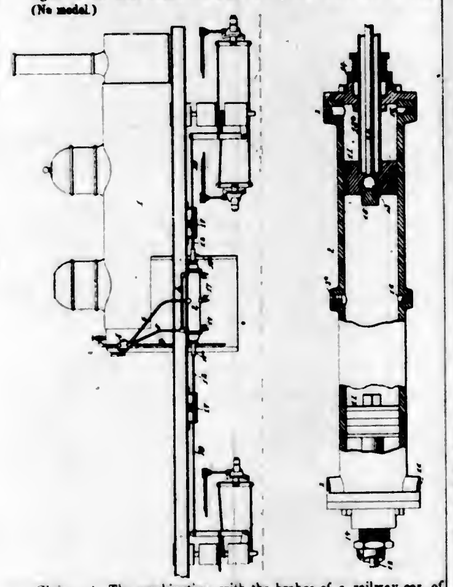
Claim.—1. The herein-described improvement in bathing apparatus, consisting of a frame with a flexible support, E, attached thereto, adapted to be submerged in the water of the bath and form a support for the body above the bottom of the bath, substantially as described.

2. A frame constructed with slots *a*, and a flexible support, E, its two ends extending, respectively, through said slots, the material of the support doubled beneath the slots, combined with a removable bar through the doubled portion of the material below the slots, substantially as described.

3. The frame-work A, adapted to receive and surround the bathing-pan D, two opposite sides of the frame constructed with slots *a*, and the flexible support E, across said frame over the pan, its two ends doubled and passed through the respective slots, with a bar, *f*, through the doubled ends, substantially as described.

4. The frame-work A, adapted to receive and surround the bathing-pan D, two opposite sides of the frame constructed with slots *a*, the flexible support E, across said frame over the pan, its two ends doubled and passed through the respective slots, with a bar, *f*, through the doubled ends, and a removable back-piece, F, substantially as described.

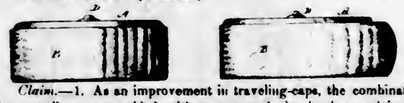
338,032. **STEAM CAR-BRAKE.** IRA P. CARTER, Lima, Ohio, assignor to the Lima Machine Works, same place. Filed Nov. 12, 1885. (No model.)



Claim.—1. The combination, with the brakes of a railway-car, of a steam-cylinder having ports at its ends and a port at its center, the tubular sections packed through the opposite ends of the cylinder and connected with pistons in the latter, the piston-rods connected with the brakes and extending through the tubular sections, and having ball-and-socket connections with the pistons to permit the rods to move laterally in all directions in the tubular sections, a steam-boiler, a three-way valve-casing connected with the boiler and having an exhaust-passage, 9, a pipe, 4, connecting the ends of the cylinder, a pipe, 5, connected with the aforesaid pipe and with the valve-casing, a pipe, 6, connecting the latter with the center port of the cylinder, and a rotary valve in said casing to throw steam in at both ends of the cylinder, or in at the center to exhaust at both ends, substantially as described.

2. The combination, with a steam-cylinder having the piston-heads and the tubular sections packed through the heads of the cylinder, the ports at the end of the cylinder and the ports at the center of the same, of a steam-boiler, a three-way valve-casing connected with said boiler and having an attached exhaust-pipe, 9, a pipe, 4, connecting the ends of the cylinder, a pipe, 5, connected with said pipe 4 and with the valve-casing, a pipe, 6, connected with the valve-casing and with the upper center port, and a rotary valve arranged in said casing to throw steam in at both ends of the cylinder, or in at the center to exhaust at both ends, substantially as described.

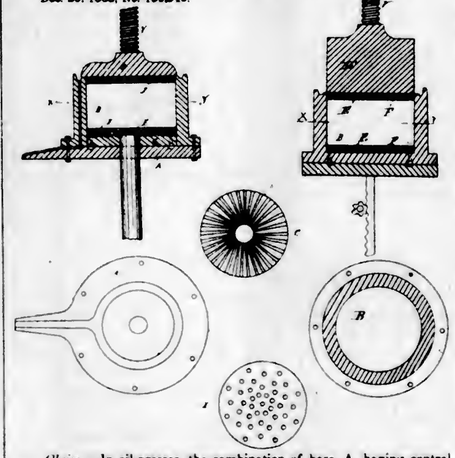
338,033. **TRAVELING-CAP.** THOMAS R. CARSKADON, Keyser, W. Va. Filed Oct. 10, 1885. (No model.)



Claim.—1. As an improvement in traveling-caps, the combination of a traveling-cap provided with an upturned rim having a plaited or crimped portion, and an elastic bag or air-receptacle adapted to be inflated with atmospheric air, and arranged between the body portion of the cap and the said plaited or crimped portion of the upturned rim thereof, substantially as described.

2. As an improvement in traveling-caps, the combination, with the herein-described traveling-cap provided with an upturned rim having a plaited or crimped back portion, of the elastic bag or pouch disposed between the back part of the body of the cap and the said plaited or crimped portion of the rim, and the mouth-piece arranged in the center of the top of the cap, having a self-closing valve and communicating with the said elastic air-pouch, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

338,034. **OIL-PRESS.** JEAN P. F. CARTIER, Dommard, France. Filed July 11, 1884. Renewed Feb. 2, 1886. (No model.) Patented in France Dec. 20, 1883, No. 159,349.



Claim.—In oil-presses, the combination of base A, having central aperture and formed with circular channel and spout, vessel B, having in its top a channel communicating with said spout, perforated piston carrying the perforated plate covered with filtering material, and the cover D, also provided with a perforated plate and filtering media, substantially as described.

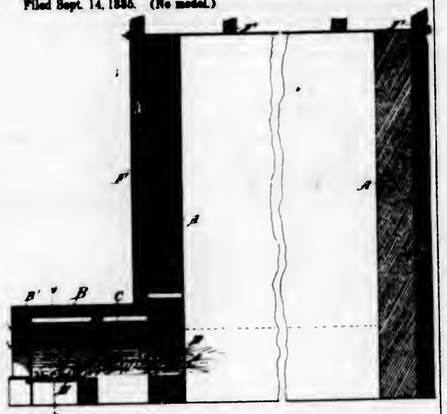
338,035. **METHOD OF STRETCHING FENCE-WIRE AND OTHER STRANDS.** GEORGE W. CASON, Glasgow, Mo. Filed Sept. 28, 1885. (No model.)

Claim.—The herein-described method of setting out and stretching fence-wire, check-row wires, &c., which consists in first unreeling the wire from a reel carried by a moving vehicle, second, securing said wire at intervals to stakes or posts; third, unreeling a portion of said wire to form a loop, fourth, crossing said looped portion of the wire and then passing it between the spokes and around the hub of an elevated wheel of the vehicle, and, fifth, rotating said wheel to stretch the wire by winding it around the inner portion of the hub thereof, substantially as described.

338,035.



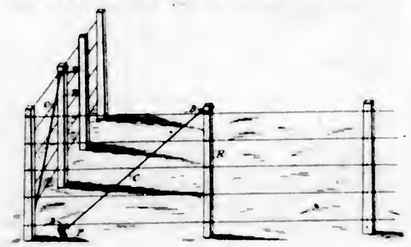
338,036. BRICK OR OTHER KILN. ENOCH CHASE, Milwaukee, Wis. Filed Sept. 14, 1885. (No model.)



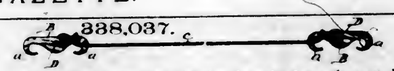
Claim.—1. In a kiln, a furnace surrounded by air-spaces, in combination with openings leading from the open air into the air-spaces and other openings from the air-spaces into the rear of the furnace.

2. The combination of the chambers B, having air-spaces *a*, openings B' and *b*, the latter opening into the rear of the furnace, and smoke-passages D, with the kiln A, as set forth.

338,037. ANCHORING DEVICE FOR WIRE FENCES. WILLIAM M. CLOW, East Wheatland, Ill. Filed Jan. 12, 1885. (No model.)

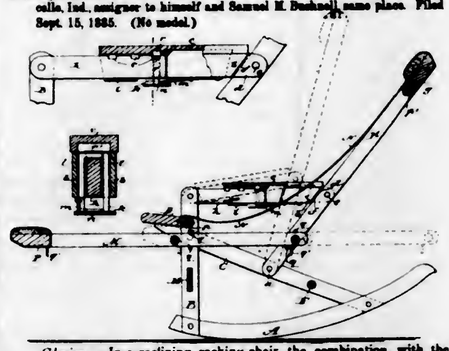


338,037.



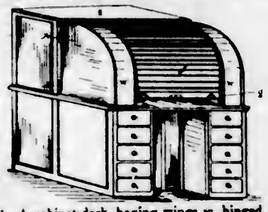
Claim.—In combination with the wires of a fence, the posts R, the cable C, the tightening-stake P, and the plates B B, each having the hooks *a* at each end turned in the same direction, and each having the central apertures, D, substantially as and for the purpose set forth.

338,038. RECLINING ROCKING-CHAIR. GEORGE W. COOK, Monticello, Ind., assignor to himself and Samuel M. Bushnell, same place. Filed Sept. 15, 1885. (No model.)



Claim.—In a reclining rocking-chair, the combination, with the rigid frame A B C, the back frame or bars, H, seat N, and arms K, of the sliding frame M, having at its forward and rear ends upon the under side pendent stops *q' q'*, the front bars or legs and the back frame or bars provided with stops *q*, substantially as and for the purpose set forth.

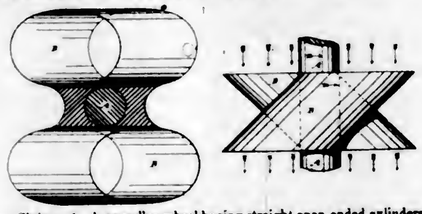
338,039. CABINET-DESK. FRANCIS A. COFFIN, Indianapolis, Ind. Filed June 10, 1885. (No model.)



Claim.—1. A cabinet-desk having wings *w*, hinged on either side of the top, adapted to be closed by the flexible curtain *f*, arranged to slide between said wings in grooves formed on the inner sides thereof, all combined substantially as described.

2. The cabinet-desk having top *t*, wings *w*, hinged thereto on each side, the flexible curtain *f*, adapted to slide in grooves formed on the inner sides of said wings and between them, with means for securing the parts when closed, all combined substantially as described.

338,040. TUBE-MOTOR FOR PROPELLING VESSELS. WILLIAM H. DANIELS, Southsea, England. Filed Sept. 25, 1885. (No model.)

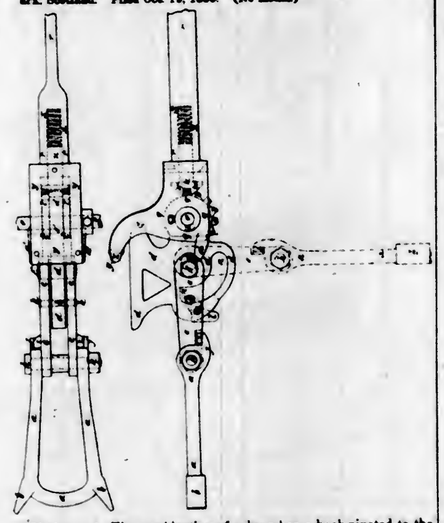


Claim.—1. A propeller-wheel having straight open-ended cylinders arranged about its hub and inclined thereto, as and for the purpose set forth.

2. A propeller-wheel consisting of a hub suitably bored to receive a shaft, and provided with two tubes, B B, located on opposite sides of the hub, inclined in opposite directions thereto and having their ends open, the longitudinal axis of the two tubes being at right angles to each other, as set forth.

3. A propeller-wheel having straight open-ended cylinders arranged about its hub at an inclination thereto, the two ends of each cylinder being cut off in planes parallel to each other and at right angles to the axis of the hub, as set forth.

338,041. CAR-COUPLING. JOHN DARLING, Glasgow, County of Lanark, Scotland. Filed Oct. 19, 1885. (No model.)



Claim.—1. The combination of a draw-bar, a hook pivoted to the draw-bar, a link hinged to the hook, means for locking the hook in required position, and a latch or lever for supporting the link on the hook, substantially as set forth.

2. The combination of a draw-bar, a hook, *d*, having projections *v* on its rear edge and pivoted to the draw-bar, a piston located in line with the draw-bar at the rear of the hook, and having a recess, *w*, for receiving the projections, and a spring for projecting the piston, substantially as set forth.

3. The combination of a draw-bar, a hook, *d*, having projections *v*, a shaft having cams *t*, and a spring-pressed piston having a recess, *w*, for the projections, substantially as set forth.

4. The combination of a draw-bar, a hook, *d*, pivoted thereto, formed with curved slot *n* and a latch, *l*, and a link hinged to the hook having a pin, *k*, engaged by the latch, substantially as set forth.

5. The combination of a draw-bar, a hook pivoted thereto having elongated slot, a link pivoted in said slot, and means for supporting the link in horizontal position on the hook, substantially as set forth.

6. The combination of a draw-bar, a hook pivoted thereto, and a chain pivoted to the hook, consisting of bars *e*, having projections *i*, link *a*, having stops *j*, pivot-pin *f*, and bolt *h*, substantially as set forth.

7. The combination of a draw-bar, a hook pivoted thereto, and a link, *a*, having guides *b* and hinged to the hook, substantially as set forth.

8. The combination of a draw-bar having a forked end, *q*, projections *z z*, and casing *y*, and the hook *d*, pivoted to the end, substantially as set forth.

9. The combination of a draw-bar having projections *z z* and link-rests *a' a'*, and the hook *d*, pivoted to the draw-bar, substantially as set forth.

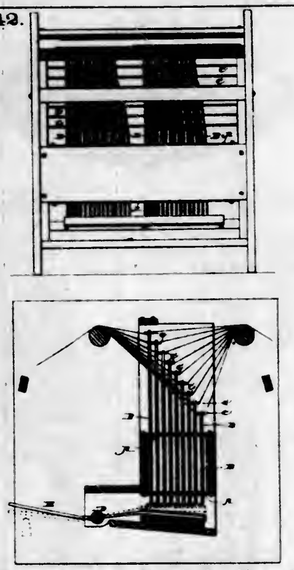
338,042. STOP-MOTION FOR WARPING-MACHINES. CLAYTON DEEN, Philadelphia, Pa. Filed Jan. 12, 1884. (No model.)

Brief.—The drop-wires are arranged in rows diagonally—that is, the drop-wires of one row are out of line with the drop-wires of the rows before and behind it to the extent of about one-fiftieth part of an inch. The rows of drop-wires are also in different horizontal planes, each succeeding row being higher than the preceding, so as to prevent the threads from coming in contact either horizontally or vertically. Each row of drop-wires has near its top a transverse rod before and behind it, which are held in the sides of the containing-box, whereby the tops of the drop-wires are prevented from being bent or carried forward by the thread as it passes through them.

Claim.—1. A stop-motion having drop-wires arranged in rows diagonally—that is to say, the drop-wires of one row being out of line with the drop-wires of the rows before and behind it, and each succeeding row being located on a higher plane than the preceding row, so as to prevent the threads from coming in contact either vertically or horizontally, as set forth.

2. A stop-motion having drop-wires arranged in rows diagonally—that is to say, the drop-wires of one row being out of line with the drop-wires of the rows before and behind it, and each succeeding row being located on a higher plane than the preceding row, so as to prevent the threads from coming in contact with each other either vertically or horizontally, and the transverse bars arranged in pairs at the front and rear of each row of drop-wires, as set forth.

338,042.



338,043. SPOOL FOR BARBED WIRE. CALEB S. DE WITT, Lockport, Ill. Filed July 10, 1885. (No model.)



Claim.—1. A spool for barbed wire, consisting of the circular heads B, having the cleats D and holes D' and *a*, and having the peripheral band-wires *c*, in combination with the central tie-wire, W, substantially as set forth.

2. A spool for barbed wire, consisting of two circular heads centrally connected by a tie wire or wires, and having the peripheral band-wires *c*, substantially as set forth.

3. A spool for barbed wire, formed of two circular heads, each having central apertures, and each having perforations between said central apertures and their peripheries, in combination with a tie-wire threaded through said perforations, as and for the purpose set forth.

338,044. SHOE-FASTENING. WILLIAM H. DILLON, Glasgow, Ky. Filed Oct. 17, 1885. (No model.)

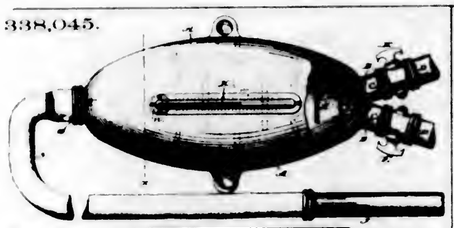


Claim.—The combination, with the flaps of a shoe, of two series of lace-eyes riveted thereto, said rivets having oblong shanks, and the shanks of the lace-eyes having oblong apertures, as shown and described.

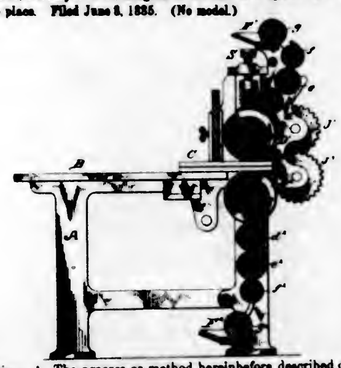
338,045. TEMPERING-BULB FOR SYRINGES, &c. THOMAS S. EASTON, New York, N. Y. Filed Dec. 7, 1885. (No model.)

Claim.—The combination, with a tempering-chamber for a vaginal or rectal douche constructed with double induction and a single eduction port, a valve controlling each port, and a flexible delivery-tube fitted to the eduction-port, of deflecting wings or diaphragms fitted within the chamber to produce a commingling of the inflowing stream, substantially in the manner and for the purpose herein set forth.

338,045.



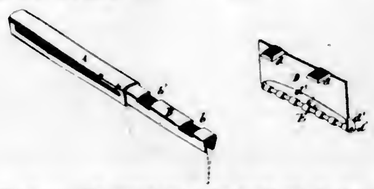
338,046. **PROCESS OF PRINTING ON RESAWED LUMBER.** G. D. EDDY, Brooklyn, N. Y., assignor of one-half to Benjamin E. Valentine, same place. Filed June 8, 1885. (No model.)



Claim.—1. The process or method hereinbefore described of printing on resawed boards—to wit, by subjecting to the simultaneous action of type in a printing-press the severed sections of a single resawed board combined in their original relative positions, substantially as and for the purposes described.

2. The within-described process of box-printing—to wit, splitting a smooth board of uniform thickness by sawing the same, cutting the two parts maintained in their original relative position into suitable lengths for the opposite sides or ends of boxes, and simultaneously printing the smooth faces of said lengths, substantially as and for the purposes described.

338,047. **SAFETY-RAZOR.** LEO EHRLICH, St. Louis, Mo. Filed Jan. 30, 1886. (No model.)



Claim.—1. The combination of the handle and clip for a razor-blade telescoped together, substantially as set forth.

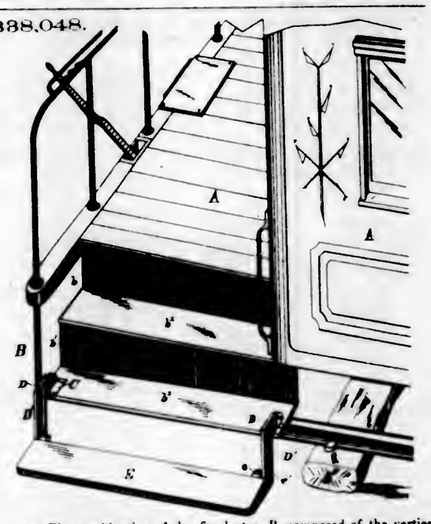
2. The combination of handle A, clip B, sliding therein, a razor-blade and a roller guard, substantially as set forth.

338,048. **CAR-STEP.** FRANCIS E. ELLIOTT, U. S. Army. Filed Jan. 23, 1886. (No model.)

Claim.—1. In a passenger-car, the combination, with a fixed step of ordinary construction secured to the end platform of a car, of a movable step composed of end angle-irons having their ends pivoted upon standards secured to the lower foot-board of the fixed step, a brace-bar connecting the lower end of said angle-irons, and a foot-board having its ends journaled at its inner edge upon the angle-irons, and its sides and front edges resting upon the angle-irons and brace-bar when the step is lowered, substantially as specified.

2. The combination of the step B, secured to the platform A', and composed of the vertical parts b' b and the horizontal parts b^2 b^3, the angle-irons D', pivoted at their upper ends upon standards secured to the part b^3, connected at their lower ends by the brace-rod D^2, and composed of the horizontal parts d d' and vertical part d^2, and the foot-board journaled, by means substantially as described, upon the parts d^2 of the angle-irons.

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3. The combination of the fixed step B, composed of the vertical parts b b' and horizontal parts b^2 b^3, the plates C, secured to the part b^3 near the ends thereof, and provided with standards c, having journal-pins c', the angle-irons D', composed of the parts d d' d^2, with the ends of the parts d journaled on the pins c', having the slots d^3 in the parts d^2, and the ends of the parts d' connected by the bar D^2, and the foot-board E, provided with the projections e, having the journal-pins e', which enter the slots d^3, so that the foot-board can be turned up and down on the angle-irons, all parts constructed and arranged substantially as and for the purpose specified.

338,049. **HORSE-DETACHING DEVICE FOR VEHICLES.** ARTHUR L. ENGELSENE, Omaha, Nebr. Filed Nov. 27, 1885. (No model.)



Claim.—1. In a horse-detaching device, the combination of hook-bolts attached to the breast-band or hames, socket-pieces secured upon the ends of the vehicle-shafts, locking-bolts connecting the said hook-bolts to the said socket-pieces, and rollers journaled in brackets projecting downward from the said socket-pieces for protecting the shafts from injury when the locking-bolts are drawn back, substantially as and for the purpose set forth.

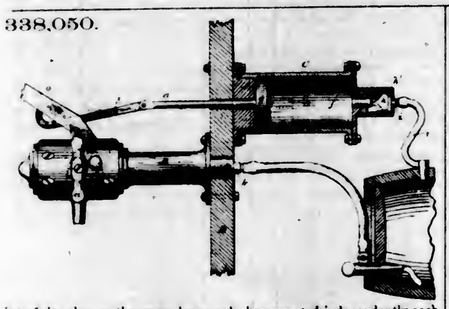
2. In a horse-detaching device, the combination of the hook-bolt b, attached to the breast-band or hames, and provided with the hole b', the socket-pieces E, provided with the socket e, and hole e', the locking-bolt F, the spring G, and a wire connected to the said locking-bolt for operating it from inside the vehicle, substantially as and for the purposes set forth.

3. In a horse-detaching device, the combination of the hook-bolt b, secured to the breast-band or hames, and provided with the hole b', the socket-pieces E, provided with the socket e, and hole e', the locking-bolt F, having the collar f attached to it, the spring G, the yoke H, provided with arms h, the slide I, the tube D, provided with holes d', and the guide d for the slide, and the wire J attached to the said slide, and provided with a handle, so that the locking-bolt may be operated from inside the vehicle, substantially as and for the purpose set forth.

338,050. **COMBINED FAUCET AND BEER-PUMP.** FRANK X. EBERHARD, Buffalo, N. Y. Filed Nov. 16, 1885. (No model.)

Claim.—1. In a combined pump and faucet, the turning plug of the faucet provided with a cam, and a pump-lever pivoted near said turning plug, but having no positive connection therewith, provided with edges against which the cam may act when the turning plug is turned to oscillate said pump-lever, and with a notch or opening into which the cam may be turned to be placed out of contact with said lever, substantially as described, whereby the pump may be operated with every turning of the plug, or the pump-lever and plug operated independently each of the other, for the purpose set forth.

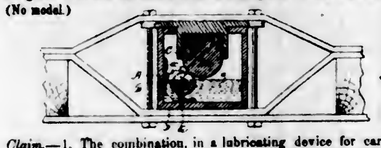
338,050.



2. The combination, with a faucet the turning plug of which is provided with cam projections arranged substantially at opposite sides thereof, of a pump lever or handle provided with an extension, b', and a notch or incision, b^3, whereby the turning plug is adapted to engage the said pump lever or handle to operate the pump, or the pump and turning plug may be operated independently each of the other, as set forth.

3. The combination of a faucet the turning plug of which is provided with cam projections located substantially at opposite sides thereof, a pump lever or handle provided with an extension, b', and a notch or incision, b^3, pivoted near said turning plug, whereby the turning plug is adapted to engage the said pump-lever to oscillate the same, or by a change of the relative position of the parts the said plug and lever may be operated independently each of the other, and a vessel connected by means of a pipe or tube with the pump and faucet, substantially as described.

338,051. **CAR-AXLE LUBRICATOR.** RUDOLPH FAAS, Chicago, Ill., assignor of one-half to MARX WINEMAN, same place. Filed Dec. 10, 1885. (No model.)

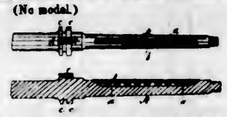


Claim.—1. The combination, in a lubricating device for car-axle journals, of the frame or plate D, the springs E E, the springs G G, and the roller I, mounted in bearings on the springs E E, substantially as and for the purposes specified.

2. The combination of the frame or plate D, the springs E E, having on their ends the bearing-blocks H H, the roller I, and the adjustable tapering centering-screws L L, substantially as and for the purposes specified.

3. The combination of the frame or plate D, the springs E E, springs G G, the roller I, the bearings, the screws L L, the nuts M M, and the plates J J, all constructed and arranged together, substantially as and for the purposes specified.

338,052. **AXLE-LUBRICATOR.** HIRAM G. FARR, Boston, Mass. Filed Aug. 31, 1885. (No model.)



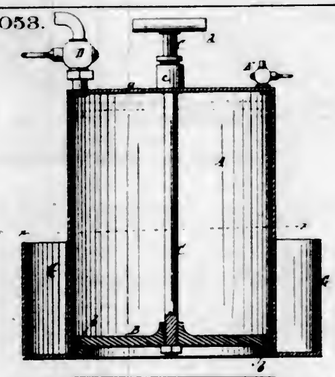
Claim.—1. A non-revolving journal, A, having one or more annular flanges or collars, c, each provided with a notch, d, for the reception of a lubricated wick, e, and with a longitudinal channel, a, for the reception of a lubricant and wick, b, a threaded outer end, and a nut, C, turned thereover, in combination with a revolving axle-box, B, substantially as described.

2. In combination with the journal, A, provided with a collar, c, having a wedge shape notch, d, the wick e, of corresponding shape, located therein, as and for the purpose set forth.

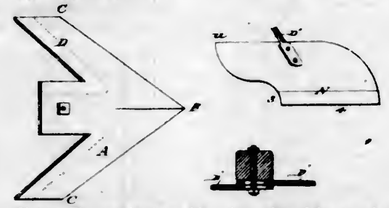
338,053. **RECEPTACLE FOR CARRYING BEER.** LAWRENCE FEELY, Rochester, N. Y., assignor of one-half to Walter B. Duffy, same place. Filed Dec. 3, 1885. (No model.)

Claim.—The combination of the receptacle having a closed top and open bottom and provided with a stop-cock and discharge-spout, and a plunger resting in the receptacle, worked by a handle on the outside of the receptacle, the whole arranged to operate in the manner and for the purpose specified.

338,053.

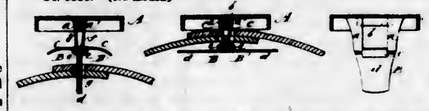


338,054. **PLOW.** JOHN L. FELDER, Lessburg, Tex. Filed Dec. 23, 1885. (No model.)



Claim.—The combination, with a plow-point, of the curved guides or fenders recessed at their rear ends and provided with cutting lower edges, said fenders being detachably connected to the plow-standard, substantially as described.

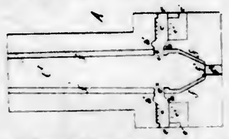
338,055. **BUTTON.** GABE FELSENTHAL, Louisville, Ky. Filed Nov. 24, 1885. (No model.)



Claim.—1. In a sleeve-button, the combination, with the button-body, of the spring-arms a a', forming the shank of the button, and angled levers B B', pivoted to the spring-arms and provided with angled shoulders f, pressed into engagement with each other by the spring-arms a a', substantially as herein shown and described.

2. As an improved article of manufacture, a sleeve-button formed of the body A, two pairs of spring-arms, a a', projecting from the body, two angled levers, B B', pivoted to the spring-arms and provided with angled shoulders f, and the stop b, placed between the spring-arms a a', substantially as herein specified.

338,056. **LIMEKILN.** ISAAC F. GARNER and WILLIAM B. HILL, Carthage, Mo. Filed Oct. 22, 1885. (No model.)



Claim.—1. A limekiln having the air-flues c c' above and below the fire-box, and the chamber b' above such box, as set forth.

2. A limekiln having the air-flues c c', above and below the fire-box, the chamber b' above such box, and the flare b below the chamber, as set forth.

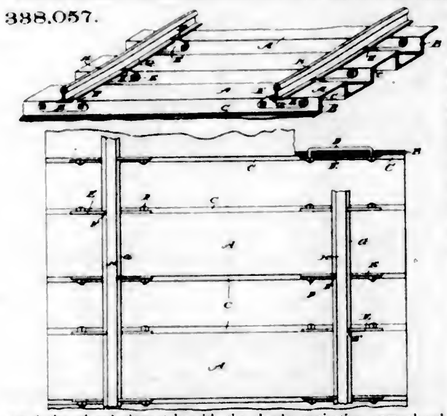
3. A limekiln having a converging bottom, one of the sides of the latter consisting of the plates g, cross-rods h, and strips h', there being an opening, f', at the bottom of such side, as set forth.

4. A limekiln one of the sides of the bottom consisting of metal, with a fire-brick lining, as set forth.

338,057. **RAILROAD-TIE.** JOHN GEARON, Alta, Iowa, assignor to H. V. & T. Slutz, same place. Filed Oct. 16, 1885. (No model.)

Claim.—1. A railroad-bed covered by a series of united U-shaped

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metal ties placed alternately with the shanks projecting upward and downward, the shanks of one tie passing into the recess of the other tie, substantially as herein shown and described.

2. The combination, with a series of U-shaped railroad-ties placed alternately with the shanks projecting upward and downward and completely covering the road-bed, of rails resting on the ties, and of bolding-clips on the sides of the ties for holding the rails on said ties, substantially as herein shown and described.

3. The combination, with a series of U-shaped railroad-ties, of rails on the same, and U-shaped bolts passed through the sides of the ties and through rail-fastening clips placed on the outer surfaces of the sides of the ties, substantially as herein shown and described.

4. The combination, with a series of U-shaped railroad-ties, of rails on the same, and U-shaped bolts passed through the sides of the ties and through fastening-clips placed on the sides of the ties, which clips have hooks catching on the base of the rail, substantially as herein shown and described.

5. The combination, with a sheet-metal covering covering the entire road-bed and having transverse raised parts, of rails on said raised parts, and fastening devices for holding the rails on the raised parts, substantially as herein shown and described.

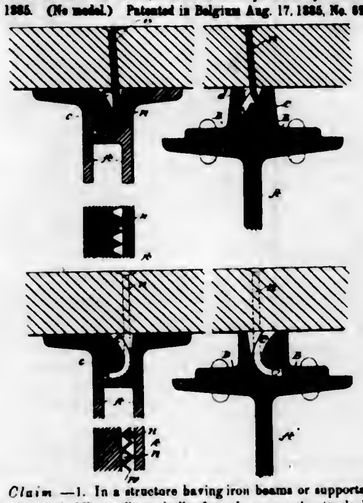
6. The combination, with a series of U-shaped railroad-ties, A, having the exterior flanges, C, on the edges of the flanges B, the flanges C of one tie resting against the base or body plate of the next ties, of rails on the tops of the upper ties, and of fastening devices for holding the rails on the ties, substantially as herein shown and described.

338,058. GATE. CYRUS W. GILLM, San Antonio, Tex. Filed July 2, 1885. (No model.)



Claim.—The combination, with a swinging gate provided with a rearwardly-extending arm and a pivoted latch, of a crank-shaft journaled in said gate and connected to said latch, and an operating mechanism consisting of pivoted arms on supporting-posts, rods or wires provided with loops and connecting the arms, one loop engaging with the rearward gate-arm and the other loop with the crank-shaft, and levers operating to give a longitudinal movement to the wires, substantially as and for the purpose specified.

338,059. LOCKING DEVICE FOR SECURING WOOD, &c., TO IRON BEAMS. KARL L. GOURT, Chemnitz, Saxony, Germany. Filed Dec. 8, 1885. (No model.) Patented in Belgium Aug. 17, 1885, No. 69,795.



Claim —1. In a structure having iron beams or supports, a locking device for holding nails or similar fastenings securely attached thereto, consisting of a recess formed in or on the iron support, and adapted to receive the nail or fastening and clinch it, and a locking-bar introduced into or formed in the clinching-recess for that purpose, substantially as shown and described.

2. A locking or fastening device for iron structures, consisting of a chambered part or recess for the nail, a locking-lug formed in or attached to the chambered part, and a flexible nail driven into the said recess and bent around its locking-lug, so as to clinch thereon and lock the parts together, substantially as described.

338,060. ARTIFICIAL STONE. JOHN GRANT, Omaha, Nebr. Filed Dec. 29, 1885. (No specimens.)

Claim.—1. The herein-described compound for artificial pavements and other similar purposes, consisting of the slag formed during the reduction of gold and silver bearing ores combined with hydraulic cement, substantially as specified.

2. The herein-described compound for artificial pavements, composed of slag from the reduction of gold and silver bearing ores, hydraulic cement, sand or gravel, and water combined, substantially as specified.

3. An artificial-stone pavement composed of the slag of gold and silver bearing ores after reduction and hydraulic cement, substantially as described.

4. An artificial-stone pavement composed of the slag of gold and silver bearing ores combined with hydraulic cement and applied to a base or substructure of ordinary concrete, substantially as specified.

5. An artificial-stone pavement composed of the slag of gold and silver bearing ores with hydraulic cement and sand or gravel mixed with water and laid in a plastic state, substantially as described.

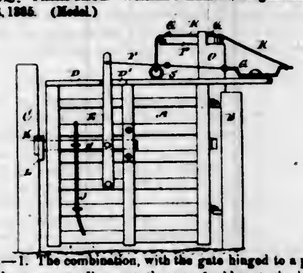
6. An artificial-stone pavement composed of slag from gold and silver bearing ores, combined with hydraulic cement and gravel, and a base or substructure of ordinary concrete, the compound being applied as a surface, substantially as specified.

338,061. PROCESS OF MAKING FLUORINE SALTS. RICHARD GRATEL, Hanover, Prussia, Germany. Filed Oct. 5, 1885. (No specimens.)

Claim.—1. The process of causing aluminium chloride to act in solution on an alkalic fluoride, and of separating from the liquor the precipitate obtained, substantially as and for the purpose described.

2. The process of causing a solution of aluminium chloride to act on an alkalic fluoride combined with aluminium fluoride, and of separating the solid from the liquid portion, substantially as and for the purpose specified.

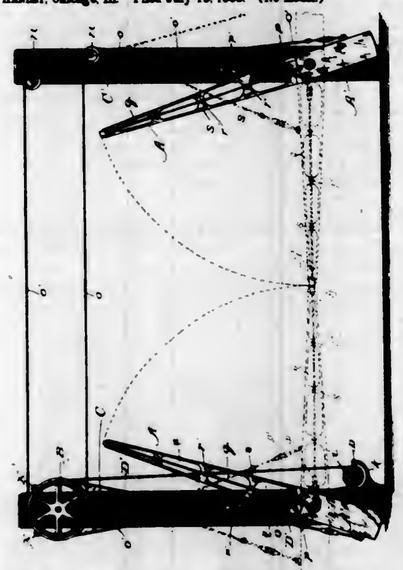
338,062. FARM-GATE. WILLIAM C. HAMMER, Morgantield, Ky. Filed Aug. 28, 1885. (Model.)



Claim.—1. The combination, with the gate hinged to a post, B, the top rail of the gate extending over the top of said post, the latch H, the vertical lever E, the horizontal lever G, pivoted on the extension of the top rail, the rod F, connecting the lever E with the inner end of the horizontal lever G, and the posts O O at opposite sides of the post B, of the arms P, pivoted to the posts at their inner ends, the guides Q on said arms, and the cords R, connected to the outer end of the horizontal lever and extending through the guides on the arms P P, substantially as set forth.

2. The combination, with a gate, its latch, and a lever for operating the latch, of the side posts, O O, the arms P, pivoted at their inner ends to said posts, the guides Q Q on the arms, and the cords R, said cords being connected with the gate-latch-operating lever and extending longitudinally over the arms P and through the guides Q, substantially as set forth.

338,063. SAFETY-GATE FOR RAILWAY-CROSSINGS. WILLIAM HANLEY, Chicago, Ill. Filed July 18, 1885. (No model.)



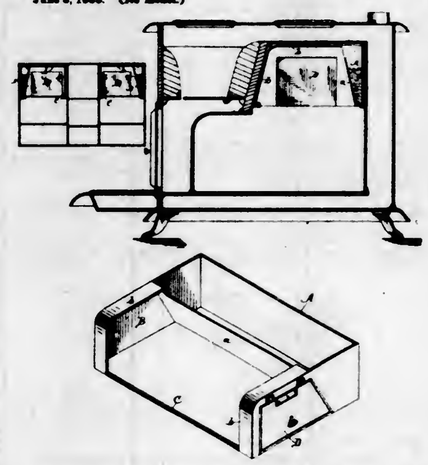
Claim.—1. A safety-gate for railway-crossings, comprising, in combination, vertically-swinging gate-bars mounted upon posts in line with each other on the same side of a railway-track, pulleys *n* and *n'*, provided on one post, and a pulley, B, provided on another post, and cables passing over the said pulleys and connected to the several bars at opposite sides of the pivotal points thereof, whereby both bars shall be raised or lowered simultaneously by raising or lowering one bar, as set forth.

2. A safety-gate for railway-crossings, comprising, in combination, vertically-swinging bars on posts in line with each other on the same side of a railroad-track, a pulley, B, on one post toward its upper extremity, and pulleys *n n'* on the opposite post, the cables connecting the said bars each attached at its opposite ends to opposite sides of the pivotal points of the bars and passing over the pulley B and pulleys *n n'*, and a windlass connected with the pulley B, whereby by turning the windlass in one direction the bars will be simultaneously lowered, and by turning it in the contrary direction the bars will be simultaneously raised, substantially as described.

3. A tapering gate-bar for safety-gates for railway-crossings, comprising the frame A, provided with transverse rods *r*, and cables *q*, connected longitudinally to the gate-bar and to the ends of the rods *r*, the solid base A', sufficiently heavy to counterbalance the part A, and means, substantially as described, for regulating the tension of the cables.

4. A safety-gate for railway-crossings, comprising, in combination, posts C and C' in line with each other on the same side of a railway-track, a vertically-swinging bar mounted on each post, comprising a solid part, A', and a tapering frame, A, having transverse rods *r*, and cables *q*, connected longitudinally to the gate-bar and the ends of the rods *r* and provided with tightening-screws *p*, a pulley, B, secured to oscillate upon its bearings in a vertical plane upon the post C toward its upper end, a cable, *o*, secured at one end to the part A' of the gate-bar and passing around the pulley B over a pulley, *n*, upon the post C' to the gate-bar thereon, to which it is secured at the part A, a cable, *o'*, secured at one end to the part A of the gate-bar on the post C, and passing thence over the pulley B and over a pulley, *n'*, upon the post C' to the gate-bar thereon, to which it is secured at the part A', and a windlass, D, provided with dog mechanism *l l'* and connected with the pulley B by means of a cable, D', the whole being constructed and arranged to operate substantially as described.

338,064. STEAMER. CHARLES F. HANNEMAN, Abbadon, Wis. Filed June 8, 1885. (No model.)



Claim.—1. The combination, with a steaming-vessel, of a guard-plate extended laterally from one end thereof, and a flange projected horizontally inward from the top and side edges of said guard-plate, substantially as set forth.

2. A steamer comprising a vessel, a guard-plate extended laterally therefrom and having the portion adjacent the vessel of equal height therewith, and a door in said guard-plate, substantially as set forth.

3. A steamer having a vessel and a guard-plate extended laterally therefrom and having the portion adjacent the vessel of equal height therewith, the upper edge of the inner plate of said vessel being located below the upper edge of the guard-plate, substantially as set forth.

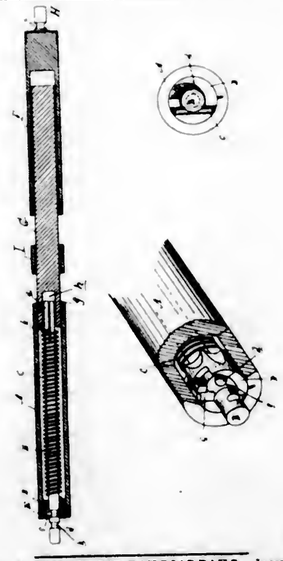
4. The steamer herein described, consisting of the vessel having its inner plate inclined, as described, the guard-plates extended laterally from the opposite ends of the vessel and having their portions adjacent the same of equal height therewith, flanges extended inwardly from the top and side edges of the guard-plates, and a brace-rod extended between said guard-plates, substantially as set forth.

338,065. SPRING CURTAIN-ROLLER. JONATHAN HARRIS, Grand Ledge, Mich. Filed Sept. 20, 1885. (No model.)

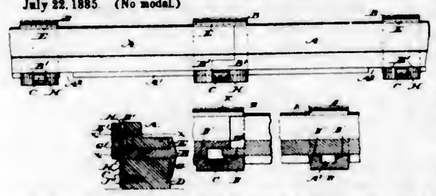
Claim.—1. The combination of the end sections, A F, of like diameter, of the intermediate section, G, of less diameter than said sections A F, and the sleeve I, of the same diameter as the end sections, substantially as and for the purpose specified.

2. In a spring curtain-roller, the combination, with the roller, of a plug inserted in one end thereof, the spindle B, passing through an opening in said plug and having groove *e*, said plug being recessed to receive upon one side the pin *c*, and its opposite side inclined, as shown, and the ball *d*, resting in the groove in the spindle, all constructed, arranged, and operating substantially as and for the purpose specified.

338,065.



338,066. FASTENING FOR RAILROAD-RAILS. JACOB HARTMAN, Philadelphia, Pa., assignor of one-half to A. H. Moore, same place. Filed July 22, 1885. (No model.)



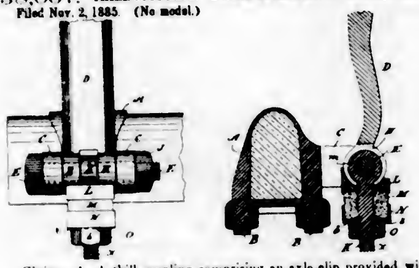
Claim.—1. A railroad-rail fastening consisting of a clamp having lips which engage with the rail and stringer, and provided with a key, which passes through a vertical opening in the clamp and is secured to the stringer, substantially as described.

2. The clamp B, formed with upwardly-projecting lips E E', a downwardly-projecting lip, G, and a base-plate, F, in combination with a fastening-key, substantially as described.

3. The clamp B, having a vertical opening, H, shoulder E', and lugs B', and the rail having a flange, A', with openings A², substantially as and for the purpose set forth.

4. A clamp having a vertical opening, H, and the key C, interlocking with the wall of said opening and connectible with a stringer, substantially as described.

338,067. THILL-COUPLING. LUTHER D. HASKELL, Jr., Beverly, Mass. Filed Nov. 2, 1885. (No model.)



Claim.—1. A thill-coupling comprising an axle-clip provided with two parallel perforated ears, a thill-iron having two parallel perforated arms adapted to fit between said ears, a bolt for connecting said parts, a downwardly-extending rod having a perforated head, through which the bolt also passes, and a screw-threaded lower end, a cushion-bed disposed on said rod and adapted to bear against said ears, said bed being provided with a square socket on its opposite face, a cushion-cap, also disposed on said rod, and provided on its inner face with a square socket and on its outer face with a series of teeth, a square cushion between said bed and cap adapted to fit within said sockets, and a nut on the screw-threaded end of said rod, said nut being provided with projections adapted to engage said teeth.

2. A thill-coupling comprising an axle-clip provided with two parallel perforated ears, a thill-iron having two parallel perforated arms adapted to fit between said ears, a bolt for connecting said parts, a downwardly-extending rod having a perforated head, through which said bolt also passes, and a screw-threaded lower end, a cushion-bed disposed on said rod and adapted to bear against said ears, said bed being provided with a square socket on its opposite face, a cushion-cap also disposed on said rod and provided on its inner face with a square socket and on its outer face with a series of teeth, a square cushion between said bed and cap adapted to fit within said sockets, and a nut on the screw-threaded end of said rod, said nut being provided with beveled projections adapted to engage said teeth.

338,068. METHOD OF JOINING PIECES OF RUBBER CLOTH. THEO. HAWLEY, Fairfield, Conn. Filed Dec. 21, 1885. (No model.)



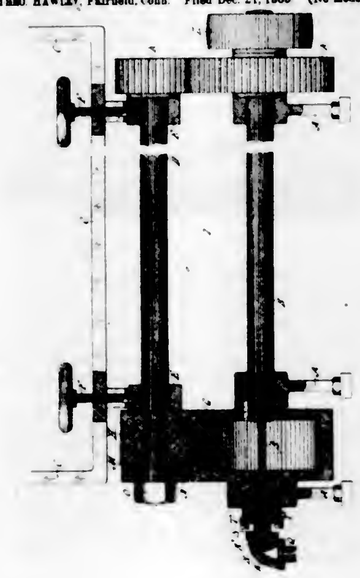
Claim.—1. The improvement in the art of joining pieces of rubber cloth, which consists in heating the lower piece, placing the upper one over it, then rolling them together under great pressure, the lower piece being kept heated and the upper piece cold.

2. The improvement in the art of joining pieces of rubber cloth, which consists in placing them face to face, heating the lower piece, whereby the gum is softened, mechanically pressing them together the width of the seam, then turning the upper piece back face upward, and finally mechanically pressing them together again with heat applied to the lower piece only.

3. The method of joining pieces of rubber cloth, which consists in cementing the edge of the upper piece, placing the upper piece over the lower, face to face, heating the lower piece, whereby the gum is softened, mechanically pressing the pieces together, then turning the upper piece over backward, and finally mechanically pressing them together again with heat applied to the lower piece only.

4. The method of joining pieces of rubber cloth, which consists in heating the lower piece, placing the upper one over it, then pressing them together with heat applied to the lower piece only, and finally placing a strip of gum over the seam and pressing it thereon with heat applied from below only.

338,069. MECHANISM FOR JOINING PIECES OF RUBBER CLOTH. THEO. HAWLEY, Fairfield, Conn. Filed Dec. 21, 1885. (No model.)



Claim.—1. A machine for joining pieces of rubber cloth, consisting, essentially, of a heated table and a heated lower roller, in combination with an adjustable cold upper roller.

2. The heated table and heated lower roller, in combination with an upper roller of less diameter than the lower roller, and gears whose relative diameters correspond with the diameters of the rollers, so that the surface motion of the two rollers is equal.

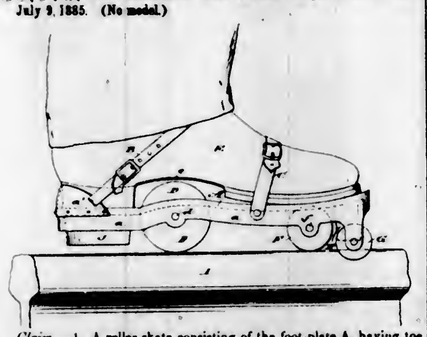
3. Shafts B and D, carried by frame-work A and C, in combination with a heated roller and a cold roller carried by said shafts, and located outside of the frame-work, and gears at the other ends of said shafts, also outside of the frame-work, whereby an open space, I, is provided, through which garments, &c., may be passed.

4. The table and lower roller having steam and exhaust pipes connected therewith, in combination with a cold upper roller, and means—for example, journal-blocks and screws—for adjusting the upper roller.

5. The table and lower roller having steam and exhaust pipes connected therewith, in combination with an elastic adjustable upper roller, and means—for example, gears of suitable size—whereby motion is imparted by one roller to the other, the surface motion of the two rollers being equal.

6. In a machine for joining pieces of rubber cloth, shaft B, carrying a heated roller, in combination with shaft D, carrying a cold roller, and also a stitcher, whereby the gum upon one piece of cloth is softened without affecting the other piece, the two pieces are firmly pressed together, and an imitation of stitching is produced upon the upper piece, all at a single operation.

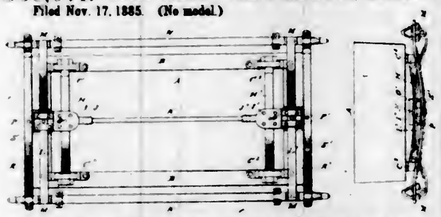
338,070. ROLLER-SKATE. JOEL HEACOCK, Brighton, Iowa. Filed July 9, 1885. (No model.)



Claim.—1. A roller-skate consisting of the foot-plate A, having toe and heel stops K J, roller D, journaled at *d* in front of the rear stop, the roller F, journaled at *f* in rear of the toe-stop, and the two guide-rollers G H at the toe end of the plate on opposite sides of the front stop, K, and spaced to receive the bead I of a rail between them, substantially as set forth.

2. The combination, with the foot-plate A, of the roller D, journaled thereon, as shown at *d*, the roller F, journaled as shown at *f*, in front of the roller D, and the two guide-rollers G H, journaled at the toe of the plate to receive the head of a rail between them, as shown and described.

338,071. BUGGY-SPRING. PETER F. HELLERSTEDT, Morrison, Ill. Filed Nov. 17, 1885. (No model.)

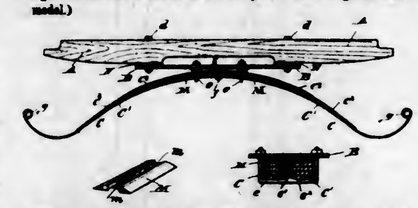


Claim.—1. The combination, with the body-sills, and the hanger-bearings secured thereto and provided with journals having integral lugs thereon, and the side bars provided with the hanger-bearings M, of the half-springs H H', the seats I I', connected by the reach K, the upwardly-bowed half-springs connecting the side bars and the seats I I', and the downwardly-bowed end springs connecting the side bars in front of and in rear of the body, substantially as specified.

2. The combination, with the side bars and body, the half-spring H H', and end springs, L L', of the hanger-bearings clipped to the side bars, the hangers of the body, the angular arms O O', and clips P, substantially as specified.

3. The combination, with the vehicle-body having the hanger-bearings secured to the under faces of the sills of the same and provided with journals having integral lugs thereon, and the side bars provided with hanger-bearings M, of the half-springs H H', the seats I I', connected by the reach K, and the upwardly-bowed half-springs connecting the side bars to the seats I I', substantially as specified.

338,072. VEHICLE-SPRING. ELMER J. HESS, Cincinnati, Ohio, assignor of one-half to Alfred Hess, same place. Filed Aug. 10, 1885. (No model.)



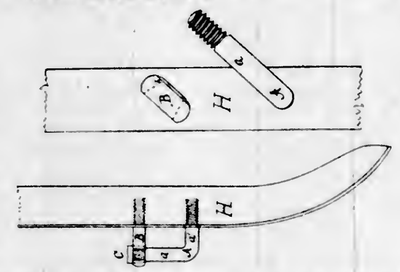
Claim.—1. The combination of the vehicle body or support, elastic plate B, secured at its ends thereto, space A' above the middle portion of said plate, and continuous spring C, connected to said plate B by clips *c c* directly beneath said space A', and at the middle portion of the latter, substantially as and for the purposes set forth.

2. The combination of the vehicle body or support, elastic plate B, secured at its ends thereto, space A' above the middle portion of said plate, continuous spring C, connected to said plate B by clips *c c* directly beneath said space A', and at the middle portion of the latter, and bearing-blocks M, provided with notches *m*, substantially as and for the purposes set forth.

3. The combination of the plate B, spring C, bearing-blocks M, provided with notches *m* at the ends, and clips *a a*, fitting said notches, substantially as and for the purposes set forth.

4. The combination of the plate B, spring C, bearing-blocks M, provided with notches *m*, and clips *a*, provided with tongues *c'*, fitting corresponding recesses in the spring, substantially as and for the purposes specified.

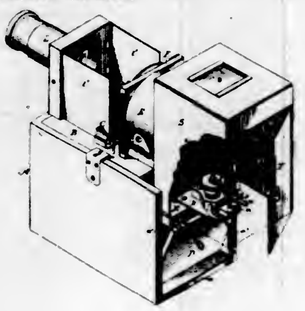
338,073. HAME-STAPLE. WARREN A. HEYWOOD, Bucksport, Me. Filed Dec. 17, 1885. (No model.)



Claim.—1. The herein-described hame-staple, consisting of the elbow A, eyebolt B, having its eye notched or slotted, as at *b*, and nut C, substantially as described.

2. In combination with a hame, the herein-described staple, consisting of the elbow A, eyebolt B, having its eye notched or slotted, as at *b*, and nut C, substantially as described.

338,074. MAGIC LANTERN. FREDERICK E. IVES, Philadelphia, Pa. Filed Dec. 24, 1885. (No model.)



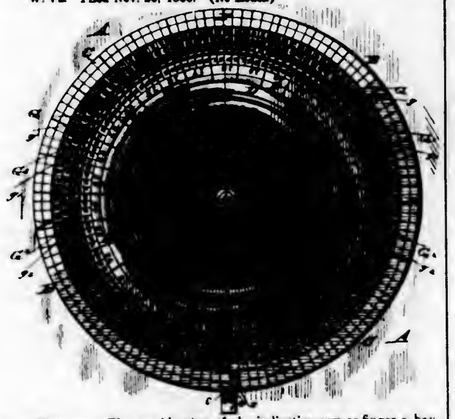
Claim.—1. The combination of the operative parts of a magic lantern with an inclosing-box having a reversible cover carrying some of said operative parts, substantially as set forth.

2. The combination of the inclosing-box having a reversible cover with an objective lens, condensing-lens, and slide-holder mounted on said reversible cover, and a jet adapted to be adjustably secured to the cover, all substantially as set forth.

3. The combination of the inclosing-box having a reversible cover, and carrying the lenses and slide-holder of the magic lantern, with the jet and the adjustable inclosing-casing for the latter.

4. The combination of the inclosing-box with a reversible cover, having on one side a carrying-handle and on the other the lenses and slide-holder, substantially as set forth.

338,075. CALCULATING DEVICE. WILLIAM D. F. JARVIS, Philippi, W. Va. Filed Nov. 20, 1885. (No model.)

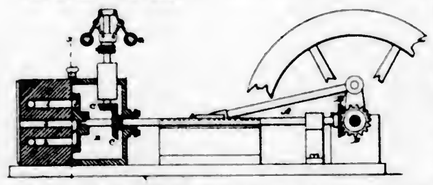


Claim.—1. The combination of the indicating arm or finger *c*, having an edge, *c'*, situated in a radial line of the disk C, the rotating disk C having its edge weighted, so as to bring by gravity its naught radial line to correspond with the edge *c'* of said finger *c*, and the rotating disk D', pivoted through its center and turning concentrically on the disk C, substantially as specified.

2. The combination of the support A, the indicating-finger *c*, secured thereto, and having an edge, *c'*, situated in a radial line of the disk C, the disk D', having thirty-one equal divisions around it near its edge, each division being divided into four equal parts to show the parts of a day, and the disk C provided with the series of divisions *g g' g²* near its edge, the divisions *g* being marked from the zero-line with fourths of a day in an ascending series, and the spaces *g g' g²* being marked from the zero-line with numbers which show the corresponding prices for fourths of a day in an ascending series, substantially as specified.

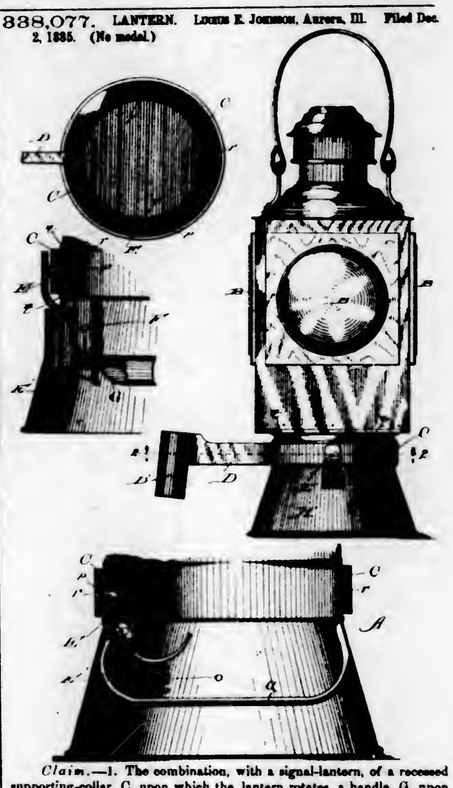
3. The combination of the support A, the indicating-finger *c*, secured thereto, and having an edge, *c'*, situated in a radial line of the disk C, the disk C having the graduations, substantially as described, and provided on its edge with the weight X, arranged to cause the disk to move by gravity into the position in which its zero-line will correspond with the edge *c'* of the finger *c*, and the disk D' graduated, as described, on its edge, and having its surface made of some material capable of having records or notes made upon it, substantially as specified.

338,076. STEAM-ENGINE. THOMAS JENNI, Allegheny, Pa. Filed July 30, 1885. (No model.)



Claim.—The combination of the driving-shaft of the engine, the wheel B, applied thereto, the shaft A, having the wheel B' secured to one end and having its other end to project through the side of the steam-chest, with the wheel C for operating the governor, and the rotary valve, which is applied directly to the end of the shaft, substantially as set forth.

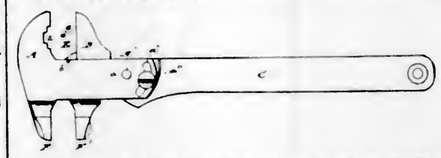
338,077. LANTERN. LOUIS E. JOHNSON, Aurora, Ill. Filed Dec. 2, 1885. (No model.)



Claim.—1. The combination, with a signal-lantern, of a recessed supporting-collar, C, upon which the lantern rotates, a handle, G, upon the lantern-body, a lever, E E', fulcrumed in position within the lantern-body, a lug, *p*, upon the lever, and a suitable spring, substantially as described.

2. The combination, with a signal-lantern, of a recessed supporting-collar, C, a handle, G, secured within the hollow base of the lantern, a lever fulcrumed upon the handle G, a lug, *p*, upon the lever toward its upper extremity to enter through the body of the lantern the recesses in the collar, a thumb-piece, E', upon the lever adjacent to the handle G, and a spring, *o*, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

338,078. WRENCH. AUGUST KINDERMANN, Cleveland, Ohio. Filed Aug. 1, 1884. (No model.)



Claim.—1. The combination of the jaw A, having the curved slot *a'*, the pinch-screw *a''*, and the handle C, pivotally connected to the jaw A, and carrying the sliding jaw B.

2. The combination, in a wrench, of a fixed recessed jaw, and a jaw which is slidable upon the shank of the fixed recessed jaw, and which is provided on its engaging face with an adjustable slide, which carries an engaging tooth, which, when the slide is adjusted inwardly, rests against the shank of the fixed jaw, and which, when the slide is in its outward adjustment, is opposite the recessed portion of the fixed jaw.

3. A wrench one of the jaws of which is provided with a groove, in which is a slide which carries a projecting tooth, the body of the slide being contained within the groove in the jaw, and the body of the tooth being transverse to the face of the jaw and outside the body thereof, so that when the tooth is not in position for engagement the face of the jaw is left plain and unobstructed.

4. A wrench one of the jaws of which is provided on its engaging face with an adjustable slide, E, for engagement with a pipe or other object which has a curved or rounded surface.

5. The combination, with the fixed jaw A, of the sliding jaw B, grooved as described and carrying the adjustable slide E, substantially as set forth.

6. The combination, with the jaw A, having recess 2, of the jaw B, having groove *b* and side E.

7. The combination, with the jaw A, having recess 2, and inclined faces F, of the jaw B, having slide E and inclined faces F'.

8. The combination, with the jaw A, having recess 2, and pivotally connected to the handle C, of the jaw B, having slide E, and connected by link D to the handle C.

9. The combination of the jaw B, having recesses *b'''* *b'''*, the handle C, having cavity C', and the link D, having the members D' D'.

10. The combination, with the jaw B and the handle C, of the link D, having the slots *d* at the ends thereof, whereby when the sliding jaw B is moved toward the fixed jaw the pins *d'* are relieved from strain.

11. The combination, with the jaw B, having recesses *b'''*, of the link D, having a slot in each end thereof, the pins *d'*, and the handle C, having central slot, C', and perforation *c*, which extends through the unslotted portion of the handle.

338,079. CORNICE-BENDING MACHINE. AMOS O. KITTREDGE, Slate Hill, N. Y., and GEORGE A. OHL, Newark, N. J.; said Kittredge assignor to George A. Ohl, Jr., Newark, N. J. Filed June 15, 1885. (No model.)



Claim.—1. The combination, in a cornice-bending machine, of two clamping-leaves movable in relation to one another to clamp the sheet metal and constructed with flat faces, so that the metal may be fed forward between them, a turning-leaf cut back from the axial line to admit a concentric cylindrical former, and a movable slide or wiper upon the side of said turning-leaf and adjustable to fit a variety of such cylindrical formers, substantially as herein shown and described.

2. The combination, in a cornice-bending machine, of two clamping-leaves movable in relation to one another to clamp the sheet metal, a concentric cylindrical former on the movable clamping-leaf, a turning-leaf cut back from the axial line to admit the cylindrical former concentric thereto, and a slide or wiper upon the side of the turning-leaf and fitted to said cylindrical former, as and for the purpose set forth.

3. The combination, in a cornice-bending machine, of two clamping-leaves movable in relation to one another to clamp the sheet metal, a turning-leaf cut back from the axial line to admit a concentric cylindrical former, and a movable slide, A', upon the front of the fixed clamping-leaf, the movable clamping-leaf and slide A' being adapted to carry formers and shapes of various sizes, substantially as herein shown and described.

4. The combination, in a cornice-bending machine, of two clamping-leaves movable in relation to one another to clamp the sheet metal, a concentric cylindrical former on the movable clamping-leaf, a turning-leaf cut back from the axial line to admit said concentric former, and a movable slide, A', upon the front of the fixed clamping-leaf A, with a shape applied to its upper edge to co-operate with said former, substantially as and for the purpose set forth.

5. In a cornice-bending machine, the combination, with the turning-leaf D and the fixed leaf A, having an adjustable slide, A', upon its front side next the turning-leaf, of a movable clamping-leaf, C, holding a former, a shape upon the adjustable slide A' to co-operate with the under side of the former, and mechanism operating substantially as described for pressing the clamping-leaf and former toward the fixed leaf and shape, so as to bend the metal before operating the turning-leaf, substantially as herein set forth.

6. In a cornice-bending machine constructed with upper and lower leaves having horizontal clamping-faces, the combination, with the lower leaf, of vertical guides affixed thereto, boxes upon the upper leaf fitted to such guides, and means, as screws F', for adjusting the upper leaf upon the boxes transversely in relation to the lower leaf, as and for the purpose set forth.

7. In a cornice-bending machine constructed with upper and lower bending-leaves having horizontal clamping-faces and a turning-leaf pivoted before the joint of such faces, the combination, with the lower leaf, of vertical guides upon said leaf, vertically movable boxes fitted to said guides and to transverse slots formed in the upper leaf, and screws applied to the said boxes and provided with connecting-gears, and a shaft mounted upon the upper leaf to adjust the upper leaf transversely upon said boxes, substantially as and for the purpose set forth.

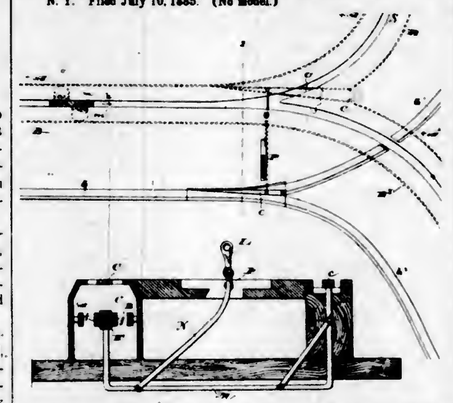
8. In a cornice-bending machine, the means for locking the clamping-leaves together upon the sheet metal, consisting in the guides attached near opposite ends to the stationary lower leaf and passing through the upper leaf, the slots A in the upper ends of said guides, and wedges H, fixed movably upon the upper leaf and operated by a hand-lever to force them into the slots A, substantially as shown and described.

9. The combination, with the leaf A, having vertical guides provided with slots across their upper ends to receive locking-wedges, and with the upper leaf, C, provided with vertical openings fitted to said guides, of the hand-lever H², pivoted upon the upper leaf, the wedges H, operated thereby, and the inclined seats *s* upon the leaf C, operating to throw the outer ends of the wedges upward and to press their inner ends downward, as and for the purpose set forth.

10. The combination, with the upper and lower leaves of a cornice-bending machine, and means for clamping them onto the sheet metal, of a former applied to the upper leaf and projected below the clamping-surfaces of the leaves, as set forth, and a shape applied to the corner of the lower leaf to co-operate with the former upon the upper leaf, substantially as herein set forth.

11. In a cornice-bending machine having upper and lower leaves with horizontal clamping-surfaces, and a turning-leaf mounted before the joint of said surfaces, the combination, with the lower and upper leaves, A and C, of the opposite slots, *n'* and *r*, formed in such leaves, and the gage *n*, secured in the slot *n'* by the screw *n²*, passed through the leaf A, with its clamping-nut beneath the same and projecting into the slot *r* when the leaves are clamped together, substantially as shown and described.

338,080. ELECTRIC RAILWAY. WALTER H. KNIGHT, New York, N. Y. Filed July 10, 1885. (No model.)



Claim.—1. The combination, in an electric railway, of a branching slotted conduit having the edges of the slot fixed at the branching-point, an electric conductor in the main and in each branch conduit, a contact device extending into the conduit and adapted to move along said conductors, and a movable conductor-section in said conduit at the branching-point for guiding said contact device.

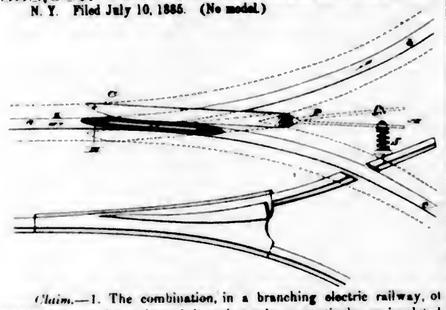
2. The combination, in an electric railway, of a branching slotted conduit having the edges of the slot fixed at the branching-point, an electric conductor in the main and in each branch conduit, a contact device extending into the conduit and adapted to slide along said conductors, a movable conductor-section at the branching-point for guiding said contact device, and means for actuating said section from without the conduit.

3. The combination, in an electric railway, of a branching slotted conduit having the edges of the slot fixed at the branching-point, an electric conductor in the main and in each branch conduit, a contact device extending into the conduit and adapted to slide along said conductors, a movable conductor-section at the branching-point, a movable switching track-rail, and a connection between said track-rail and said conductor-section whereby they may be moved together.

4. The combination, in a branching electric railway, of two conductors on the main and on each branch railway, and a single movable conductor-section at the point of branching.

5. The combination, in an electric railway, of a main and branch track, an electric conductor in the main and in each branch, and a movable conductor-section at the place of branching pivoted at the point between the branches.

338,081. ELECTRIC RAILWAY. WALTER H. KNIGHT, New York N. Y. Filed July 10, 1885. (No model.)



Claim.—1. The combination, in a branching electric railway, of conduits along the main and branch tracks, respectively, an insulated longitudinal conductor in each conduit, a protected insulated conductor adapted to extend into either main or branch conduit and having a contact device adapted to make a traveling connection with said longitudinal conductor in either conduit, but detachable therefrom, and a movable guide-piece for the slot at the branching-point of said conduit.

2. The combination, in a branching electric railway, of a main and branch conduit, a longitudinal insulated conductor in each conduit, a movable guide-piece adapted to close the entrance to one branch of the conduit, and an insulated contact-conductor adapted to extend into either main or branch conduit with a protecting-guard, whereby it is adapted to actuate said guide-piece.

3. The combination, with a branching slotted conduit, of beveled guide-plates C, spring S, adapted to hold said guide-plate over the branching-slot, and a protected insulated conductor adapted to extend into either branch of the conduit and to actuate said guide-plate.

4. The combination of the main conductor A, a branch conductor, A', forming a continuation of A, a branch conductor, A^2, connected with A and A', and the contact device of a length sufficient to bridge the break between A, A', and A^2.

5. The main conductor A, branch conductor A', forming a continuation of A, branch conductor A^2, connected to A A', but placed so as to allow the passage of the contact device, combined with a contact device adapted to pass from A A' to A^2 without interruption of the contact.

6. The combination, in an electric railway, of a slotted conduit, a stationary insulated electric conductor therein parallel with the slot and adapted to carry the actuating current for an electrically-propelled vehicle upon the railway, a branching slotted conduit having also a stationary insulated conductor parallel with the slot and in line with the conductor in said main conduit, a contact device extending into said conduit and adapted to move along the conductor in either conduit, and a movable guide-piece for said device placed at the branching-point of the conduit.

7. The combination, in a branching electric railway, of a branching slotted conduit, an insulated longitudinal conductor in the main and in each branch conduit, a conductor extending into the conduit with a spring reacting thereon and acting to press a contact against said longitudinal conductor, and a movable guide-piece for the conduit at the point of branching.

8. The combination of the branching slotted conduit, an insulated conductor inclosed in each branch thereof, a rigid insulated conductor extending through the slot with a contact device at its lower end, and a movable guide for the said rigid conductor at the branching-point of the slot.

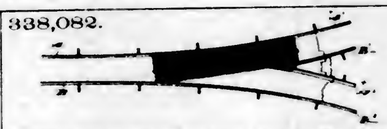
9. The combination, with a main slotted conduit and an insulated conductor therein, and a contact device connected with a vehicle and extending into said slot to make connection with said conductor, of a branch conduit having a slot leading into the slot of the main conduit, and an insulated conductor therein leading to the main conductor at the point of junction of the two slots and adapted to the said contact device, whereby the contact device may pass from main to branch slot and from the main conductor to the conductor in the branch conduit.

338,082. ELECTRIC RAILROAD. WALTER H. KNIGHT, New York, N. Y. Filed July 10, 1885. (No model.)

Claim.—1. The combination, in a branching electric railway, of a branching slotted conduit parallel therewith having its edges stationary at the branching-point, an electric conductor thereon parallel with the slot and also stationary at the branching-point, a contact device extending from the vehicle of the railway into the slotted conduit to the conductor therein, and means for directing said device from the main into the branch slot.

2. The combination, in a branching electric railway, of a branching slotted conduit parallel therewith, having its edges stationary at the

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branching-point, an electrical conductor therein parallel with the slot and also stationary at the branching-point, a contact device extending into said slot, and having freedom of lateral movement, with means for directing said device from main to branch slot.

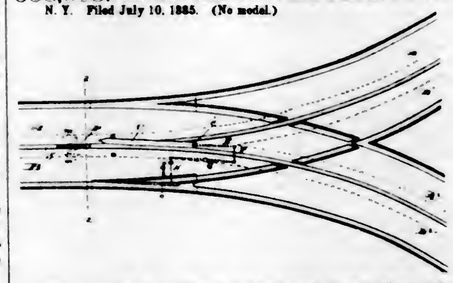
3. The combination, in a branching electric railway, of a branching slotted conduit parallel therewith, an insulated conductor therein, and a contact device extending from a vehicle on the railway through the slot into the conduit, and a track-switch for directing a vehicle from the main to a branch track, the said switch being placed in advance of the branching-point of said slot.

4. The combination, in a branching electric railway, of a branching slotted conduit parallel therewith, a branching insulated electric conductor inclosed therein, and a flexible contact device extending through the slot to the conductor, the branching of the slot being in advance of the branching of the conductor.

5. The combination, in a branching electric railway, of a vehicle thereon, a branching slotted conduit parallel therewith, an insulated electric conductor inclosed therein, a contact device extending from said vehicle through the slot to the inclosed conductor, and means for switching the vehicle from main to branch track before the contact device passes from main to branch conduit.

6. The combination, in a branching electric railway, of a branching slotted conduit parallel therewith, an insulated electric conductor inclosed in each branch conduit, an insulated electric conductor terminating in a contact device and extending from a vehicle on the railway through the slot to the inclosed conductor, with means for directing the said conductor from main to branch conduit before its contact device passes from main to branch conductor.

338,083. ELECTRIC RAILWAY. WALTER H. KNIGHT, New York, N. Y. Filed July 10, 1885. (No model.)



Claim.—1. The combination, in a branching electric railway, of a track-switch, a branching slotted conduit having a movable guide-piece at the branching-point and contact devices extending into said slot, main conductor A, branch conductor A', forming a continuation of A, and a branch conductor, A^2, connected electrically to A and A', but so placed as to allow passage of the contact device between itself and said conductors A A'

2. The combination, in an electric railway, of a branching slotted conduit parallel therewith, an electric conductor in main and branch conduit stationary at the branching-point, contact devices extending into said conduit through the slot to connect with said conductor, a track-switch, and a movable guide-piece for said slot at the point of branching.

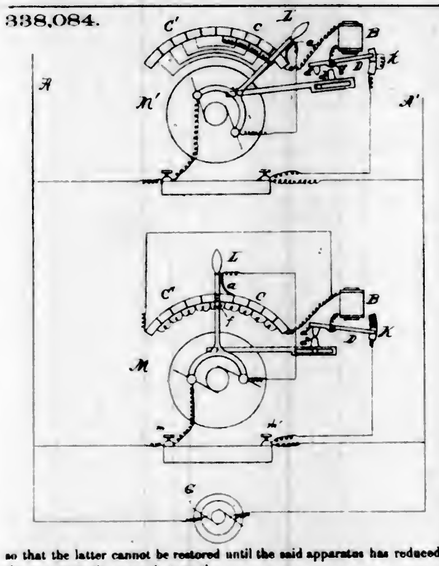
3. The combination, with the branching slotted conduit, of an insulated electric conductor inclosed therein and supported in position to be reached by a contact device, and a movable guide-piece for the slot at the point of branching resting upon the surface of said conduit and supported thereby.

4. The combination of the branching slotted conduit, the contact device extending into it, the conductor stationary at the branching-point, and the movable guide for said contact devices at the branching-point of the slot.

338,084. SAFETY-CATCH FOR ELECTRICAL TRANSLATING DEVICES. WALTER H. KNIGHT, New York, N. Y. Filed July 10, 1885. (No model.)

Claim.—1. The combination of an electric circuit, a translating device in said circuit, and a cut-out or circuit-controller responding to abnormal increase of current in the said circuit, with apparatus for reducing the strength of current connected to the said cut-out or circuit-controller,

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so that the latter cannot be restored until the said apparatus has reduced the current to the normal strength.

2. The combination, with an electric circuit, of a translating device therein, means for controlling at will the current on said circuit, and a cut-out or circuit-controller responding to an abnormal increase of current and dependent upon said means, whereby the cut-out or circuit-controller cannot be restored to its original position until the current-controller has been actuated.

3. The combination, with an electric circuit, of a translating device therein, a cut-out or circuit-controller responding to an abnormal increase of current, a resistance in the circuit, with means for controlling it, and actuating devices for the said cut-out or controller connected to the said means, whereby the cut-out or controller is restored to its original position when said resistance has been cut in.

4. The combination of an electric circuit, including an electric translating device, a resistance therein variable at will by mechanism under control of the operator, and a cut-out or circuit-controller responding to an abnormal current, with a restoring device connected to the resistance-controlling mechanism and adapted to restore said cut-out to its normal position when said mechanism is at a definite position.

338,085. ELECTRIC MOTOR. WALTER H. KNIGHT, New York, N. Y. Filed July 10, 1885. (No model.)

Claim.—1. The combination of two or more electric motors in multiple arc, a vehicle conveying and propelled by each, reversible commutator-brushes for each motor, and means controlled at will by the driver for actuating said brushes to change the direction of rotation of the motor, a resistance in each motor-circuit, and means for automatically controlling the same.

2. The combination, with an electric circuit, of two or more motors therein in multiple arc adapted to run at variable speeds, a speed-regulator for each motor under control of the operator, a resistance in each motor-circuit, and an electric device in said circuit connected with and controlling said resistance.

3. The combination of an electric motor, a vehicle driven thereby, a speed-regulator under the control of the operator, and an electrically-operated indicator in the motor-circuit carried by said vehicle.

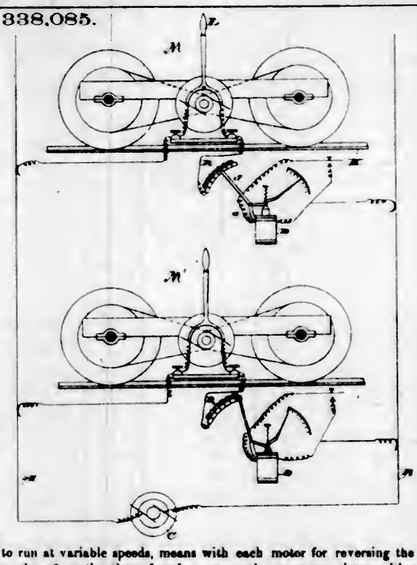
4. The combination of two or more electric locomotives having their motors in multiple arc, means for controlling at will the speed of each locomotive, and a current-indicator carried by each locomotive.

5. The combination, with an electric circuit, of two or more electric motors in multiple arc therein, adapted to run at variable speeds, a speed-regulator for each motor under control of the operator, and an electric-current indicator in each motor-circuit placed in view of the operator.

6. The combination, with an electric motor adapted to run at a variable speed, and connected to main conductors, between which there is a constant difference of potential, of a resistance in the motor-circuit, automatic devices for increasing the resistance upon a decrease in the speed of the motor, and means for reducing the resistance at the will of the operator.

7. The combination of two or more motors in multiple arc, adapted

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to run at variable speeds, means with each motor for reversing the direction of rotation thereof, and an automatic current-regulator, with each motor adapted to keep a constant current in the motor-circuit.

8. The combination, with two or more electric locomotives having their motors in multiple arc, of a resistance in each motor-circuit carried by the locomotive, means controlled by the driver for cutting out said resistance, and an indicator, substantially as described.

9. The combination, with an electric motor on a multiple-arc circuit, of a variable load for the same, a resistance in the motor-circuit, and an automatic electrical controller for the same adapted to respond to a definite current.

338,086. WHEEL-HARROW. CHARLES LA DOW, Albany, N. Y., and J. JEROME BUDLONG and LUCIUS P. HOTT, Aurora, Ill. Filed Oct. 9, 1882. (No model.)



Claim.—1. The adjustable foot-pad made in two parts, one a heel-piece pivoted so that it can be moved freely laterally, and the other a toe-piece pivoted to the heel-piece so that the toe-piece can be moved on its pivot independently of the heel-piece, in combination with the swinging-frame beams, whereby the driver is enabled while in his seat readily to vary, control, or regulate with his feet the lateral movements of the swinging frame.

2. The combination of a pole, an arched yoke-frame, a gang of disks connected with the yoke-frame and capable of being rocked vertically to vary the inclination of the disks to the surface of the ground, and means for holding the gang in such adjusted positions relatively to the yoke-frame.

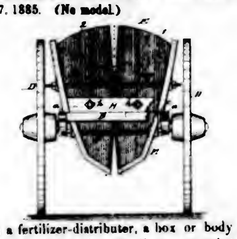
3. The combination, substantially as hereinbefore set forth, of the swinging-frame beams, the arched or V-shaped yoke, the graduated or beveled notched washer, and the clamps for adjusting and clamping the parts together, in order to so adjust and hold the disk-gangs that they will cut deeper or shallower next to the plants that are being cultivated.

338,087. LUBRICATOR. MORITZ LEHMANN, Menselwitz, Saxony, Germany. Filed Aug. 6, 1885. (No model.)



Claim.—The combination of chamber A, having hub *a*, aperture *e*, and partition *b*, extending from hub to the wall of the chamber, with cover B, adapted to turn on chamber A, and provided with wing *d*, substantially as specified.

338,088. **FERTILIZER-DISTRIBUTER.** ALEXANDER LIVELY, Sardis, Ga. Filed Dec. 7, 1885. (No model.)



Claim.—1. In a fertilizer-distributer, a box or body divided vertically into sections and having a pivotal adjustment, substantially as set forth.

2. In a fertilizer-distributer, a box or body divided vertically into sections, each of which is pivotally adjustable, substantially as set forth.

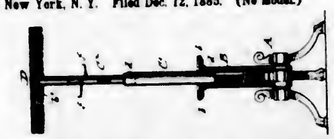
3. In a fertilizer-distributer, a box or body divided vertically into sections having a pivotal adjustment, the meeting edges of the ends of said sections being formed on lines diverging from a point midway the upper and lower sides thereof, substantially as set forth.

4. In a fertilizer-distributer, a box or body divided vertically into sections and having the ends of such sections connected by battens, said battens being pivotally connected to each of the sections, substantially as set forth.

5. The combination, in a fertilizer-distributer, of the body-sections, batten-bars connecting the ends thereof and pivoted to each section, and clamp-rods connecting the sections above and below the batten-bars, substantially as set forth.

6. In a fertilizer-distributer, the box or body herein described, consisting of the sections having the meeting edges of their ends formed on lines diverging from a point midway the upper and lower sides thereof, the batten-bars pivoted to and connecting said sections, and the clamp-rods extending between said sections above and below the batten-bars, substantially as set forth.

338,089. **COMBINED TABLE AND CLOTHES-RACK.** JOHN LOCHNER, New York, N. Y. Filed Dec. 12, 1885. (No model.)



Claim.—1. The combination of a supporting-stand having a hollow center pillar, an extensible standard composed of telescoping sections, a top attached to the inner section of the standard, and provided with suspension-hooks at the under side, and locking devices by which the sections of the standard are locked in extended state, respectively, to the pillar and to the intermediate section, substantially as set forth.

2. The combination of a supporting-stand having a hollow center pillar, the extensible standard formed of telescoping sections, spring locking devices for locking said sections in extended state, a top attached to the innermost section, suspension-hooks arranged at the under side of the top, and suspension-hooks hinged to recesses of one of the telescoping sections, substantially as set forth.

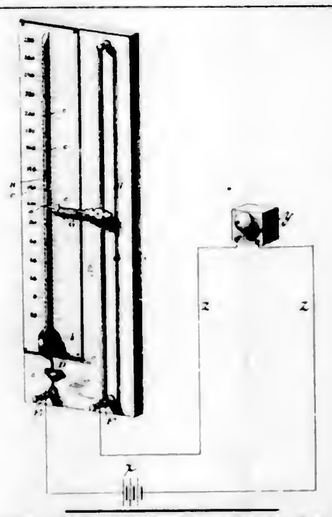
3. The combination of a supporting-stand having a hollow center pillar, a depressed shelf at the upper end of said pillar, an extensible standard formed of telescoping sections, devices for locking said sections in extended position, a top attached to a disk of the innermost section of the standard, said top being provided with suspension-hooks on the under side, and suspension-hooks pivoted to recesses of the innermost section, substantially as set forth.

338,090. **ELECTRICAL THERMOSTAT.** MAHLON LOOMIS, Terra Alta, W. Va. Filed Nov. 6, 1885. (No model.)

Claim.—1. The combination, with an alarm and a battery-circuit, of the thermometer-tube provided with a bulb-connection and a series of independent tube-connections, a guide rod, and an adjustable index-hand sliding thereon in electrical connection therewith, as and for the purpose set forth.

2. The combination, with the battery X, alarm Y, and circuit Z, of the tube B, having connecting-points *b* and *c c*, the contact D, and the guide-rod G, provided with the adjustable index-hand G', as and for the purpose set forth.

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338,091. **GRAIN-BINDER.** WILLIAM LOTTRIDGE, Osage, Iowa, assignor of twelve-eighteenths to Martin V. Nichols and Cyrus H. Cotter, both of same place. Filed Aug. 1, 1883. (Model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the platform, the wheel-frame behind said platform, the carrying-wheels and their axle from which the wheel-frame is hung, the thrust-tongue fixed to said axle, the caster-wheel supporting the rear end of said tongue and provided with a tiller, the driver's stand upon the tongue in front of said wheel, the vertical post from the axle, the truss-frame bridging the tongue from the continuous rear sill of the wheel-frame, the tilting-lever hooking into said post and resting upon the apex of the truss-frame, and the standard upon the tongue along which said lever may be secured to hold the platform at any desired inclination.

2. The combination, substantially as hereinbefore set forth, of the platform, the cutter crank-shaft at its inner end by which the rakes are driven, the wheel-frame rigid with said platform, the carrying wheels

and their axle from which said frame is suspended, the thrust-tongue fixed to said axle and supported at its rear end by a caster-wheel, and having a driver's stand, the tilting-lever, the prime pinion-shaft extending from wheel to wheel, and having a pinion at each end meshing with the gear upon the adjacent wheel, and the counter-shaft driven from said prime pinion-shaft by beveled gears and driving the cutter crank-shaft by a gear and pinion.

3. The combination, substantially as hereinbefore set forth, of the platform, the cutter crank-shaft at the inner end thereof serving to drive the rakes, the wheel-frame with which said platform is rigid, the carrying-wheels and their axle from which said frame is suspended, the thrust-tongue fixed to the axle and supported by a caster at its rear end, and having a driver's stand in front of said caster, the tilting-lever, the prime pinion-shaft extending from one carrying-wheel to the other and having a pinion at each end meshing with gears on said wheels, the counter-shaft driven by beveled gearing from said prime pinion-shaft, and driving the cutter crank-shaft directly, the clutches upon the prime pinions, their spring-pressed controlling-rods meeting beneath the tongue, the sliding wedge-piece passing through the slotted heads of said rods, and the link connecting it with a treadle or foot-piece in front of the driver's stand.

4. The combination, substantially as hereinbefore set forth, of the platform, the wheel-frame, the carrying-wheels and their axle from which said frame is hung, the thrust-toogue and caster, the driver's stand, the tilting-lever, the prime pinion-shaft extending from wheel to wheel, and having pinions meshing with gears on each wheel, the counter-shaft driven from said prime pinion-shaft by beveled gears, the sliding clutch-halves engaging with the prime pinions, the spring-pressed rods extending from said clutch-halves toward the center of the machine, and there meeting each other and overlapping, the wedge-piece passing through the slotted heads of said rods at their overlapping-point, the link connecting it with a treadle in front of the driver's stand, and the spring-pawl snapping over the toe of such treadle that it may be kicked out of engagement by the driver.

5. The combination, substantially as hereinbefore set forth, of the low-level platform, the binder-frame sliding transversely along its delivery end, the wheel-frame, the carrying-wheels and their axle from which said frame is hung, the thrust-tongue fixed to said axle and supported at its rear by a caster-wheel, the driver's stand on said tongue, and a lever system whereby the driver on his stand may move the binder-frame back and forth to accommodate longer or shorter grain.

6. The combination, substantially as hereinbefore set forth, of the low-level platform, the binder-frame sliding transversely along the delivery end of said platform, the wheel-frame, the carrying-wheels and their axle from which said frame is hung, the thrust-tongue fixed to said axle and supported at its rear by a caster-wheel, the driver's stand on said tongue, the tilting-lever operated from said stand, and a second lever alongside said stand link-connected with the binder-frame, whereby the driver may tilt the platform or move the binder back and forth to accommodate longer or shorter grain.

7. The combination, substantially as hereinbefore set forth, of the low-level platform, the binder-frame arranged to slide transversely along the delivery end thereof with its table flush with said end, the wheel-frame with which said platform is rigid, the carrying-wheels and their axle supporting said frame, the thrust-tongue fixed to said axle and supported at its rear by a caster-wheel, the tilting-lever, the standard in front of the driver's stand along which said lever locks, and the second lever pivoted to said standard and latching into a rack borne thereby, the sliding bar arranged in keepers along the tongue and moved by said second lever, the link from the binder-frame, and the intermediate lever connecting said link with the end of the sliding bar whereby the driver can adjust the binder-frame by manipulating the upright lever in front of his stand.

8. The combination, substantially as hereinbefore set forth, of the low-level platform, the binder-frame sliding along the delivery end of said platform and having its table flush therewith, the wheel-frame, the carrying-wheels and their axle from which said frame is suspended, the thrust-tongue fixed to said axle and supported by a caster at its rear end, the driver's stand carried by said tongue, the tilting-lever extending to said stand, the upright lever in front of said stand for moving the binder-frame, the treadle and its connections for throwing the gearing into and out of engagement pivoted to the tongue to bring its foot-piece also just in front of said stand, the second treadle pivoted to the tongue on the opposite side from the other, the linked elbow-lever and dog which it controls, and the sheaf-board which said dog locks in position.

9. The combination, substantially as hereinbefore set forth, of the low-level platform, the binder-frame sliding along the delivery end of said platform and having a table flush therewith, the wheel-frame rigid with the platform, the carrying-wheels and their axle, from which said frame is hung, the thrust-tongue and its caster-wheel, the tilting-lever, the prime pinion-shaft driven by both carrying-wheels, the counter-shaft driven from said prime pinion-shaft, the cutter crank-shaft which said counter-shaft drives, the sliding sprocket-wheel on the counter-shaft, the arm from the binder-frame yoked to said sprocket-wheel, and the chain communicating motion from said sprocket-wheel and counter-shaft to the binder-shaft.

10. The combination, substantially as hereinbefore set forth, of the platform, the binder-frame sliding along its delivery end and having a table flush therewith, the wheel-frame rigid with the platform-frame, the carrying-wheels and their axle from which said wheel-frame is suspended, the thrust-tongue fixed to said axle, the caster-wheel and driver's stand, the tilting-lever, and mechanism for moving the binder back and forth operated from said stand, the prime pinion-shaft extending from one carrying-wheel to the other and having pinions meshing with gears upon both, the counter-shaft driven from said prime pinion-shaft by beveled gears and directly driving the cutter crank-shaft or rake-shaft of the platform, the sliding sprocket-wheel on said counter-shaft, the arm from the binder-frame yoked to said sprocket-wheel to move it concurrently, and the chain belt running from the sprocket-wheel to a second sprocket-wheel on a parallel shaft, and thence communicating motion to the binder.

11. The combination, substantially as hereinbefore set forth, of the platform, the binder-frame at its delivery end arranged to slide transversely thereof, the wheel-frame to which said platform is rigidly attached, the carrying-wheels and their axle from which said frame is suspended, the thrust-tongue fixed to said axle and supported at its rear end by a caster-wheel having a tiller to guide the machine, the tilting-lever and the lever for adjusting the binder-frame, both having their hand-holds adjacent to the driver's stand at the rear end of the tongue, the prime pinion-shaft having pinions at each end meshing with gears upon the carrying-wheel at such ends, the clutches to said pinions, and the treadle in front of the driver's stand for retracting said clutches, the counter-shaft driven from said prime pinion-shaft by beveled gearing and driving the cutter crank-shaft directly, the sliding sprocket-wheel upon said counter-shaft controlled by a rigid arm from the binder-frame, and the chain communicating motion from said sprocket-wheel to the sprocket-wheel borne upon the binder-frame, and ultimately to the binding mechanism.

12. The combination, substantially as hereinbefore set forth, in a thrust-cut harvester, of the wheel-frame suspended from the axle, the thrust-tongue fixed to said axle, the post braced from the axle and tongue and mortised near its head, the bolt passing through said post and through the upper part of the mortise and securing the ends of two of the brace-rods, and the tilting-lever notched on the upper edge of that end which enters the mortise to catch over the bolt.

13. The combination, substantially as hereinbefore set forth, in a thrust-cut harvester, of the wheel-frame, the carrying-wheels and their axle, the tongue fixed to said axle, the post rising from the axle at the junction of the tongue and mortised at its head, the brace-rods extending from the axle and from the tongue to the head of the post, the bolt securing the upper ends of the brace-rods from the axle and passing through the top of the mortise, the truss or bridge rising from the rear sill of the frame over the axle, the keeper at the apex of said truss, and the notched tilting lever taking into the mortise and over the bolt and resting within said keeper upon the anti-friction roll at the bottom thereof.

14. The combination, substantially as hereinbefore set forth, with the grain-platform and binder, of the sheaf-board at the outer end of the platform-frame or on the stubble side of the binder, the shaft to which said board is fixed, the winding spring around the shaft, the crank-arm on the end of said shaft, and the dog catching over the end of said crank-arm.

15. The combination, substantially as hereinbefore set forth, with the grain-platform and binder, of the hinged sheaf-board fixed to its pivot-rod or shaft, the winding spring around said shaft tending to constantly close the board to a vertical position or in toward the binding apparatus, the crank-arm on the end of said shaft, and the dog to hold it against the pressure of the sheaves, and the removable bolt serving as a stop against the crank-arm to prevent the board from rising above the horizontal, but removable to permit it to close for transportation.

16. The combination, substantially as hereinbefore set forth, of the platform, the binder-frame adjustable transversely along the delivery end of said platform, the wheel-frame behind the platform and rigid therewith, the carrying-wheels and their axle, the thrust-tongue and its caster, the prime pinion-shaft driven from said carrying-wheels, the counter-shaft driven directly by the prime pinion-shaft, the sliding sprocket-wheel on said counter-shaft, controlled by a rigid arm from the binder-frame, the chain-belt passing from said sprocket-wheel over a sprocket-wheel on the packer-shaft supported from the binder-frame, and a second chain belt passing from another sprocket-wheel on said packer-shaft over a sprocket-wheel on the needle-shaft of the binder to drive said binder.

17. The combination, substantially as hereinbefore set forth, of the pivoted tripping-arm vibrating in a slotted guideway, the spring-pressed block against which it bears, the pivoted lever-arm bent or inclined to cross said slotted way behind the block, the pin or roller from said block bearing against the inner face of the lever-arm, and the link from the free end of said arm extending to the immediate tripping instrumentalities, whereby as said lever is forced aside by the retreat of the tripping-arm before the incoming grain it will actuate the trip, causing the binder to start in motion.

18. The combination, substantially as hereinbefore set forth, to form a trip for binders, of a sliding clutch-half, a spring-pressed bar to which it is yoked and which forces it constantly into engagement with its opposite, a sliding bar alongside the spring-pressed bar carrying a pawl which takes over the projection on said latter bar, an arm from the pawl-bar, and a cam-collar on the shaft (which is set in motion by the engagement of the clutch) acting upon said projecting arm so as to retract the pawl-bar after the pawl has snapped over the projection on the clutch-bar.

19. The combination, substantially as hereinbefore set forth, to form a trip for binders, of a sliding clutch-half engaging with a constantly-driven wheel and itself splined to the shaft upon which the wheel turns loosely, a spring-pressed bar yoked to said clutch-half and serving to carry it into engagement, a pawl-carrying bar alongside the clutch-bar and also spring-pressed in the same direction, a stop upon the clutch-bar over which the pawl catches when the two bars are at the extreme of their forward movement, an arm projecting from the pawl-bar over the shaft, and a cam-collar on said shaft against one face of which the arm rests, and of such outline that it permits the pawl-bar to move forward during the revolution of the shaft, but at the end of the revolution forces it back with the clutch-bar over which its pawl has snapped, thereby disengaging the clutch until the pawl is again moved to release the clutch-bar.

20. The combination, substantially as hereinbefore set forth, of the pivoted tripping-arm receiving the grain from packing devices, the spring-pressed block against which it bears, the bent lever forced aside by said block as it retreats, the link extending from the free end of said lever to the heel end of a spring-pawl, the spring-pressed sliding bar in which said pawl is pivoted, the arm from said bar resting against one face of a cam-collar on the shaft to be started, the spring-pressed clutch-bar lying alongside the other, and the sliding clutch to which it is yoked, and the projection on said clutch-bar over which the pawl catches, whereby the clutch will be released and caused to engage by the retreat of the tripping-arm before the accumulating gavel.

21. The combination, substantially as hereinbefore set forth, of the needle-shaft, the wheel mounted loosely thereon, the packer-shaft, and the driving-wheel thereon also mounted loosely and driving the wheel on the needle-shaft constantly, tripping devices to clutch and unclutch the wheel on the needle-shaft from said shaft, a cam-collar on said needle-shaft which revolves whenever the shaft revolves, a sliding clutch on the packer-shaft engaging with the driving-wheel thereon, and a lever yoked at one end to said sliding clutch and at the other resting against one face of the cam-collar on the needle-shaft, whereby the packer-shaft will be thrown out of action after the binder-arm starts and brought again into action at or before the time that the binder-shaft stops.

22. The combination, substantially as hereinbefore set forth, of the loose wheel upon the binder-shaft, the loose wheel upon the packer-shaft driving the wheel on the binder-shaft and itself driven constantly, sliding clutches on the respective shafts adapted to engage with said wheels, a spring-pressed bar yoked to the clutch on the binder-shaft and tending to carry it into engagement, a spring-pressed pawl-carrying bar lying alongside the first with its pawl arranged to take over a projection thereon, a tripping-arm actuated by the accumulation of the grain and intermediately connected with said pawl, so as to release it from the stop or projection as the limit of the gavel is reached, an arm from the pawl-bar extending over the binder-shaft and resting against one face of a cam-collar thereon, and a spring-held lever yoked at one end to the clutch on the packer-shaft and at the other pressing against the opposite face of said cam-collar, the outline of which is such that the pawl-bar will be allowed to move forward while the shaft is revolving that its pawl may catch the clutch-bar and at the end of a revolution will be drawn back to retract said clutch-bar and the clutch, and that the packer-lever will be forced out against the stress of its spring to disengage the packer-shaft after the binder-shaft has started, and will be released by a depression in said collar at or before the time that the binder-shaft stops.

23. The combination, substantially as hereinbefore set forth, of the platform, the binding-table, the packer-shaft overhanging the delivery end of the platform, the series of cranks thereon, the packer-arms pivoted to said cranks near their front ends and provided with curved teeth along their length a part of the distance, and the vertical guideways for the heels of said packer-arms arranged on the other side of the binding arm or needle and elongated to permit the packer-arms to rise in their forward movement if they strike accumulating grain.

24. The combination, substantially as hereinbefore set forth, of the tripping-arm, the hinged bar x, to which it is pivoted, the ledge or shoulder against which said bars rest normally in a horizontal position, and the pawl or dog carried by the needle to raise said hinged bar as the needle rises to permit the bound sheaf to be pushed on.

25. The combination, substantially as hereinbefore set forth, of the needle, its lateral offset, the compressor pivoted to said offset, the link pivoted to the compressor, the slotted lever with which said link connects, and the wrist-pin from a rotating crank taking into said slot to actuate the compressor.

26. The combination, substantially as hereinbefore set forth, of the binder arm or needle, the cam-slotted transverse bar attached thereto, the lateral offset from said needle, the compressor pivoted to said offset, the link connecting the compressor with the shorter arm of a slotted lever also pivoted to the needle, and the wrist-pin from the crank at the end of the binder-shaft passing through both slotted lever and cam-bar, to actuate both the needle and the compressor in true relation.

27. The combination, substantially as hereinbefore set forth, of the separator-arm, the swiveling guide in which its heel end plays, the link connecting its body with a wrist-pin on a rotating crank, the roller carried by said separator-arm, and a guideway for said roller, whereby the point of the separator-arm is given an orbital movement.

28. The combination, substantially as hereinbefore set forth, of the separator-arm, the swiveling guide in which its heel end plays, the link connecting its body with the wrist-pin on a rotating-crank, the roller which it carries, the long cam-track over which said roller travels as the separator-arm is drawn up by the movement of the crank, a lower cam-track over which it passes when being projected, and a switch between the two cam-tracks.

29. The combination, substantially as hereinbefore set forth, of the needle, the cam-slotted bar attached thereto, the separator-arm, the swiveling guide in which its heel end plays, the roller which it carries and the cam-way for guiding said roller, and a wrist-pin from the needle-shaft crank taking into the slotted bar on said needle and directly connected by a link with the body of the separator-arm, to impart motion to both.

30. The combination, substantially as hereinbefore set forth, of the needle, the cam-slotted bar attached thereto, the lateral offset from said needle, the compressor pivoted to said offset, the link connecting the compressor with the shorter end of a slotted lever, also pivoted to said needle, the separator-arm, the swiveling guide for its heel, its cam-tracks and their communicating switch, and the wrist-pin from the crank on the end of the rotating binder-shaft receiving a link from said separator-arm and passing through the slotted lever and cam-bar, whereby the needle, compressor, and separator are actuated by the revolutions of the single wrist-pin, preserving their proper relations and concordance.

31. The combination, substantially as hereinbefore set forth, to form a tension device for cord-binders, of a bracket supporting a rubber roll, a hinged cap to said bracket supporting a second opposing roll, a guide-eye suspended behind the two rolls to direct the cord therebetween, a rod passing through the outer jutting arm of the bracket and through the overhanging arm of the cap and having around it a coiled spring to draw the two together and press one roll upon the other, and a nut upon the screw-threaded end of said rod to increase or decrease the force of the pressure exerted by the spring.

32. The combination, substantially as hereinbefore set forth, to form a slack device for grain-binders, of a reciprocating needle, a guide-eye or anti-friction roll at the top of said needle, and cord-guides on each side of the way in which it reciprocates and at the head thereof, through which and the intermediate guide-eye in the needle the cord is carried on its way to the needle-eye and to the holder, all arranged in such manner that as the needle descends to encircle a gavel a slack-length will be drawn from the spool and any slack about the handle be taken up, and as the needle ascends it will pay out such slack-length without strain upon the holder.

33. The combination, substantially as hereinbefore set forth, of the tripping-arm, the long guide-slot in which it moves, the rod lying alongside and parallel with said slot and having an encircling-spring, a nut working upon the screw-threaded end of said rod and forming one seat for said spring, the block playing along said slot and resisting the retreat of the tripping-arm, and the spur or finger from said block collared to and guided by said rod at the other end of the spring, which is compressed as the block retreats.

34. The combination, substantially as hereinbefore set forth, of the knotter, its retracting cord-hook, the sleeve connected with said hook, the revolving gear and cam wheel, its cam-groove receiving a roller from a bar yoked to the sleeve upon the knotter-spindle and acting to retract and project the cord-hook at the proper times, the gear-section overhanging the opposite face of the wheel and engaging with a pinion on the end of the knotter-spindle, the delay-ledges on the face of said wheel, delay-shoes on the end of the knotter-spindle beyond the pinion riding upon said ledges to hold the knotter against rotation, and the reversing-teeth opposite a gap between said delay-shoes to reset the knotter in position to receive the cord at the proper interval before it receives its effective revolution.

35. The combination, substantially as hereinbefore set forth, of the knotter-spindle, the retracting-hook or cord-hook playing in its tubular outer end, the sleeve upon the spindle whereby said hook is moved, the bar yoked to said sleeve and having a pin or an anti-friction roll at its other end, the gear and cam wheel having a continuous cam-groove in one face to receive said pin or anti-friction roll from the sliding bar and move the sleeve to project and retract the cord-hook as the wheel revolves, a sliding thimble on the end of the knotter-spindle and revolving therewith, a looping-finger operated by said thimble to close over the strands of cord and deflect them as the knotter revolves to form the loop, a sliding bar connected with said thimble and actuated by a peripheral cam-track on the revolving wheel to project the sleeve successively, first to close the looping-finger over the cord and next to push the loop off of the end of the spindle, and gearing and delay devices on the opposite face of the wheel operating to revolve the knotter and to reset it in position for action in proper concord with the action of the other instrumentalities enumerated.

36. The combination, substantially as hereinbefore set forth, of the knotter-spindle, its tubular effective end, the cord-retracting hook playing therein and suitably actuated, the slotted thimble revolving with and moving upon the end of the spindle, the looping-finger pivoted to a lug from the spindle within the slot in said thimble and having a cam-slot, as described, and the pintle passing from the thimble through said slot, whereby as the thimble is successively projected it will operate, first, to close the finger, and next to slightly open it for the escape of the loop, and when fully retracted will open said finger into a nearly perpendicular position.

37. The combination, substantially as hereinbefore set forth, of the knotter-spindle having a tubular end, the cord-retracting hook playing within said tubular part, means for projecting and withdrawing it, the slotted thimble playing longitudinally upon the spindle at its effective end, but turning therewith, the looping-finger pivoted to the spindle within said slot and having itself a curved or cam slot, the pintle passing from the thimble through the slot in the looping-finger, a sliding bar yoked to the thimble and having at its rear end an anti-friction roll, and the cam-track upon the periphery of the revolving gear and cam wheel having two successive rises and an intermediate arc section acting upon the anti-friction roll, the first rise to project the thimble sufficiently to close the looping-finger, and the second after the knotter has made its revolution to advance the thimble to the extreme end of the knotter-spindle and of the looping-finger, slightly opening the finger and pushing the loop from the spindle.

38. The combination, substantially as hereinbefore set forth, of a knotter-spindle, a cord-hook playing therein, a looping-finger pivoted to said spindle, and an advancing and retreating thimble playing along the end of said spindle, and to the end of the looping-finger, and serving in its advancing motion to first close and then to open said looping-finger, and finally to push or strip the loop from the spindle.

39. The combination, substantially as hereinbefore set forth, of the spring-seated holder-block, the sliding holder-bar and its anti-friction roll, the revolving wheel having a continuous cam-groove into which said roll takes, whereby the holder-bar is carried against the holder-block to clamp the cord and hold fixed thereagainst for a definite period, the fingers upon the holder-block, the longest beneath the other, and having a gathering projection, and the cord receiving bow arranged in the space between the paths of such fingers, whereby the cord-strand within said bow will be clamped by said fingers as the holder-block is urged forward by its spring when the bar recedes.

40. The combination, substantially as hereinbefore set forth, of the spring-seated holder-block, the sliding holder-bar urged thereagainst by a cam to take a primary grasp upon the cord, the cord-bow forming the termination of the cord-slot, the cord-placer working beneath said bow to carry the cord to its base, and the fingers projecting from the holder-block to come, one on either side of the bow, as the block is forced forward by its spring when the bar retreats to take the final grasp upon the spool-strand before it is released from the primary grasp imparted by the bar.

41. The combination, substantially as hereinbefore set forth, of the sliding holder-bar, the cord-placers, one above and one beneath the knotting-head, fixed to the same spindle, and the pin from said holder-bar taking into an elongated slot in the lower cord-placer, whereby said cord-placers will both be operated by the advance of the holder-bar.

42. The combination, substantially as hereinbefore set forth, of the knotter-spindle, the cord-hook playing therein, the thimble moving upon a squared section near the end of said spindle and capable of being advanced to come flush with the extreme end, the sliding cutter-bar underlying said knotter and having a vertical flange which enters a groove in the thimble, the anti-friction roll at the inner end of said cutter-bar, and the revolving wheel having a peripheral track against which said anti-friction roll rests, and provided with three successive rises—the first to advance the thimble to close the looping-finger, the second to further advance the thimble to the end of the tube to strip the loop therefrom, and the third to give said cutter-bar its own effective stroke to sever the cord.

43. The combination, substantially as hereinbefore set forth, of the knotter-spindle, the cord-hook playing therein, the thimble and looping-finger operated thereby, and the fork above the cylindrical end of said spindle connected with the thimble by an arm and receiving the cord-strands to retain them in position for the grasp of the looping-finger and to direct them as the thimble is moved.

44. The combination, substantially as hereinbefore set forth, with the knotter-spindle, its retracting-hook, the looping-finger and thimble, and the cord-fork moved by said thimble, of the upper cord-placer serving to carry the strands of cord down into the base of said fork.

45. The combination, substantially as hereinbefore set forth, of the gear and cam wheel, the cutter-bar forced outward by its peripheral track, the holder-bar projected and retracted by a continuous cam-groove, and the pin from said holder-bar entering a mortise in the cutter-bar, whereby the cutter-bar is permitted to move outward independently of the holder-bar, but is withdrawn into position against the peripheral track of the gear and cam wheel by the holder-bar as the latter is positively retracted.

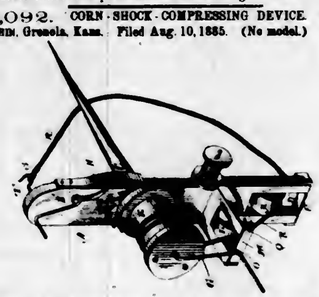
46. The combination, substantially as hereinbefore set forth, of the revolving gear and cam wheel, the cutter-bar forced out of its peripheral track, the holder-bar projected and retracted by a continuous cam-groove in the face of said wheel, the pin from said holder-bar entering a mortise in the cutter-bar to retract the latter, and the spring-stop entering a recess in said cutter-bar to hold it in position until the proper time for its movement.

47. The combination, substantially as hereinbefore set forth, of the gear and cam wheel, the sliding holder-bar projected and retracted by a continuous cam-groove in the under face of said wheel, a second bar lying alongside thereof and projected and retracted by an outer cam-groove to operate the cord-hook, the cutter-bar overlying and covering these two bars and slotted longitudinally to admit the passage of a lug connecting the second bar with the cord-hook sleeve and mortised to receive a pin from the holder-bar, and a spring-stop to hold said cutter-bar in position until its proper time for action, whereby the underlying bars are permitted to reciprocate without reference to the cutter-bar, but the cutter will be withdrawn after its reciprocation by the holder-bar.

48. In combination with the knotter and its cord-hook, the gear and cam wheel having an irregular continuous cam-groove to operate said hook, of the outline described—that is to say, having the re-entering portion which serves at the outset to withdraw the hook within the tube, then a concentric section holding it fixed in said relation while the knotter is revolving, next flaring outwardly to project the hook, and immediately after returning inwardly a sufficient distance to just withdraw the hook within the tube and hold the cord ends while the strands are being severed, next a sharp inward incline, whereby the hook is withdrawn to the extreme of its inward motion to tighten the knot, and finally a return outward to project the hook and release the knot.

49. The gear and cam wheel, constructed substantially as described—that is to say, having on one face an overhung rack, two delay-ledges, and reversing-teeth at the ends of said delay-ledges away from the overhung rack, on the other face two cam-grooves of the outline shown, and on its edge or periphery a track or way of three successive rises, with intermediate concentric portions and a returning incline.

338,092. CORN-SHOCK-COMPRESSING DEVICE. MATHEW T. MANN, Grenola, Kans. Filed Aug. 10, 1885. (No model.)

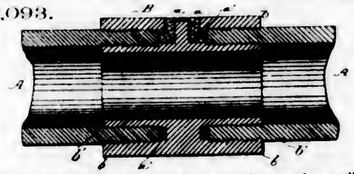


Claim.—In a compressing device for corn-shocks and similar bundles, the combination of a frame-piece having a bearing at its middle, and having a pulley journaled in a slot at one end and guarded by a guard-strip across the end of the slot, and having a hook at the rear side of the other end of the frame-piece, a bracket projecting from the front side of the frame-piece, and having a pulley journaled in a slot in the end of the same, and having a guard-strip across the end of the slot, a shaft journaled in the bearing in the frame, and having one end formed into a projecting prong, and having its other end provided with a drum having a ratchet-wheel at its inner end and a crank at its outer end, a flat spring-pawl secured at one end to the upper side of the frame and engaging the ratchet-wheel with its other end, a lever pivoted upon the front side of the frame, and having its outer end formed with a handle, and a cord passing over the pulleys and secured at one end to the drum, and having an eye at its other end adapted to engage the hook upon the end of the frame-piece, as and for the purpose shown and set forth.

338,093. COUPLING FOR JOINTS OF GAS-CONDUITS. GEORGE MARLAND, Pittsburg, Pa., assignor of one-half to Hugh Hagan, same place. Filed Jan. 11, 1886. (No model.)

Claim.—1. A coupling for pipes consisting of cylindrical casting having formed integral therewith at each end the annular concentric flanges b b', forming a socket for the reception of the pipe end, the flange b being screw-threaded on its inner surface, substantially as described.

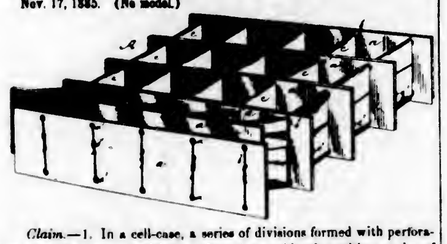
338,093.



2. The coupling for pipes consisting of the cast-iron cylindrical coupling-sleeve B, having cast integral therewith the annular concentric flanges *b b'*, forming sockets for the reception of the pipe ends, and having the ports *a*, communicating with the sockets and adapted for the insertion of a packing metal.

3. The combination, with the pipe or conduit sections A A, having their ends screw-threaded on their inner and outer surfaces, of the coupling-sleeve B, consisting of a cylindrical casting, having cast integral therewith the annular concentric flanges *b b'*, screw-threaded, respectively on their inner and outer surfaces, substantially as described.

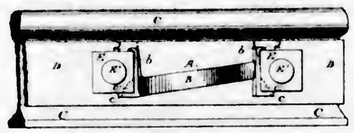
338,094. EGG-CASE. ALBERT L. MARTIN, Concordia, Kans. Filed Nov. 17, 1885. (No model.)



Claim.—1. In a cell-case, a series of divisions formed with perforations near their upper and lower edges, in combination with a series of cords passed transversely through the perforated divisions, and a series of short partitions secured upon said cords between the others, substantially as and for the purpose set forth.

2. In a folding cell-case, a series of division-pieces each formed with holes along its sides protected by eyelets, in combination with a series of cords passed transversely through all the divisions, and a series of short partitions formed of paper looped or folded around each pair of cords between the longer divisions, substantially as and for the purpose set forth.

338,095. NUT-LOCK. JAMES H. MCLEAN, St. Louis, Mo. Filed June 19, 1885. (Model.)



Claim—1. The combination, with a pair of nuts, of a bearing-piece having a lug fitting behind and a toe fitting beneath one nut, a second bearing-piece having the lug fitting behind and a thin end adapted to be bent over the top of the other nut, and a bar connecting said bearing-pieces, substantially as set forth.

2. The combination, with a pair of nuts, of a bearing-piece having a lug fitting behind and a toe beneath one nut, a second bearing-piece having a curved face, a lug, and a thin extremity, and a bar connecting said bearing-pieces, substantially as set forth.

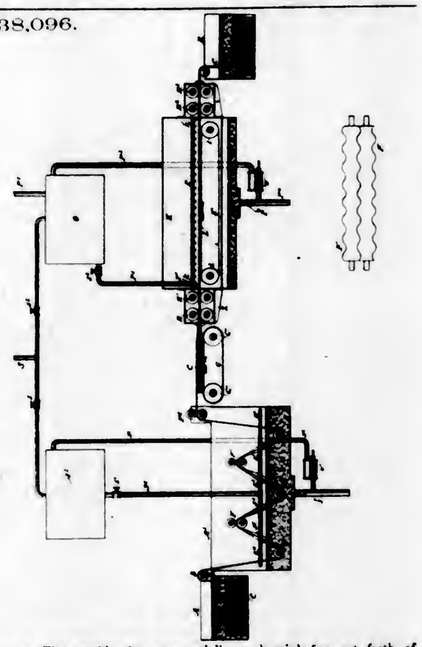
3. The combination, with the bolts E E, of the curved bearing-pieces *b b*, having the lugs *c' c'*, toes *c c*, and thin extremities *d*, and the curved diagonal bar B, connecting said bearing-pieces, substantially as set forth.

338,096. BLEACHING APPARATUS. JAMES MEHLE, Providence, R. I. Filed Oct. 8, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, in a bleaching apparatus, of a tank for holding the bleaching solution and having a series of fluted or corrugated rollers whereby the fabric is kept extended to its full width while passing through said tank, and a bleaching keir or boiler containing an endless belt or apron within the same for conveying the fabric, a system of perforated pipes extending above said belt or apron, and means, substantially such as described, for conveying the fabric into and out of said keir.

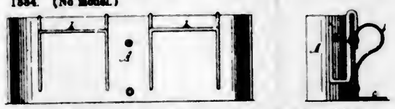
2. The combination, substantially as hereinbefore set forth, with a tank, A', of the series of rollers E, F, E', and F', and the system of perforated pipes S^{p}.

338,096.



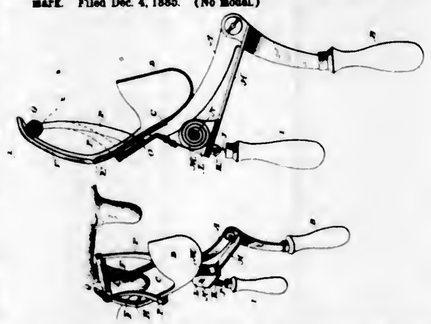
3. The combination, substantially as hereinbefore set forth, of a tank A', the series of rollers E E', the corrugated rollers F F', the perforated pipes S^{p}, with the keir or boiler K, containing the belt L, perforated pipes P, and the means, substantially such as described, for conveying the fabric through the tank A' and the keir K.

338,097. TOASTER. WALTER MILES, Chilton, Wis. Filed July 31, 1884. (No model.)



Claim.—The embowed reflector having a handle with a counter-bracing-foot, in combination with the counter-bent hooking and projecting hangers, substantially as and for the purposes herein specified.

338,098. MILKING-MACHINE. JOHAN E. NYROP, Copenhagen, Denmark. Filed Dec. 4, 1885. (No model.)

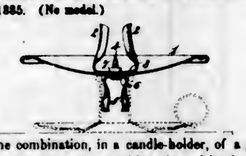


Claim.—1. In a milking-machine, the combination of a plate provided with inwardly-curved arms or horns at its upper corners, a yielding roller, and means for yieldingly pressing the said roller against the arms and plate and for reciprocating it over the arms and plate, as and for the purpose shown and set forth.

2. In a milking-machine, the combination of a plate provided with inwardly-curved arms or horns at its upper corners, and having the said arms and the side edges of the plate corrugated, with a yielding roller having means for pressing it yieldingly against the plate and for reciprocating it over the arms and plate, as and for the purpose shown and set forth.

3. In a milking-machine, the combination of a bent arm having a handle at its lower end and a plate at its upper end, formed with a cup at its lower end, and with inwardly-curved corrugated horns at its upper edges, an arm pivoted at the bend of the bent bar or arm, and having two inwardly-projecting lips at its outer end connected by means of a pin, a handle loosely attached to the outer end of the arm, a spring secured at one end to the pin between the lips, an arm secured to the free end of the spring and having bifurcated ends straddling the edges of the plate and horns, and a yielding roller journaled between the upper ends of the bifurcated arm traveling upon and bearing against the inner sides of the plate and its horns, as and for the purpose shown and set forth.

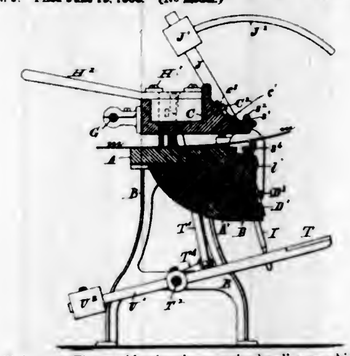
338,099. CANDLE-HOLDER. BERNARD M. O'BOYLAN, Corning, Ohio. Filed Aug. 10, 1885. (No model.)



Claim.—1. The combination, in a candle-holder, of a guard-plate, elastic fingers bent up from a single metallic strip and having a connecting-base, by which they are attached to the upper surface of said guard-plate, spring-catches, also bent from a single metallic strip, with a connecting-base by which they are attached to the under side of said guard-plate, and a screw-bolt and nut for connecting the guard-plate, fingers, and catches, substantially as described.

2. The combination, in a candle-holder, of the concaved guard-plate 1, the concaved elastic fingers, 2, having an integral connecting-base, 3, the spring-catches 5, also having an integral base, 6, the spur-pointed screw-bolt 4, and the nut 7, substantially as described.

338,100. METAL-BENDING MACHINE. GEORGE A. OHL, Newark, N. J. Filed June 15, 1885. (No model.)



Claim.—1. The combination, in a cornice-bending machine of the class herein shown and described, of the fixed lower leaf, A, having attached thereto bearings D^{2}, for the pivots D^{3}, the hinged leaf D, mounted upon such pivots, the vertically-movable leaf C, provided with an acute front corner and operated in conjunction with the lower leaf to clamp the sheet metal adjacent to the turning center for bending acute or right angles, and complemental curved formers detachably held upon the outer faces of the upper leaf, C, and the turning leaf D, and adjusted to operate upon the sheet metal projected from between the fixed leaf A and the clamping-leaf C, the leaf C being connected with a treadle and provided with a suitable locking device when closed upon the sheet metal, and the turning leaf being provided with means to turn it in the bearings D^{2}, substantially as and for the purpose set forth.

2. In a machine for bending sheet metal, the combination, with the top leaf and a die or former thereon, of a hinged leaf provided with a suitable presser-die, and with open clips for holding the die detachably thereon.

3. In a machine for bending sheet metal, the combination, with a stationary leaf and a die or former thereon, of a hinged leaf provided with an adjustable slide having means to hold a complemental die thereon.

4. In a machine for bending sheet metal, the combination, with the top leaf, of an adjustable slide applied to its outer face and provided with means, as abutment *c*^{4}, for holding a former in an operative position, substantially as and for the purpose set forth.

5. In a machine for bending sheet metal, the combination, with the top leaf and the hinged leaf, of adjustable slides and complemental dies applied to the adjustable slides, substantially as herein shown and described.

6. In a cornice-bending machine operated substantially as herein described, and having a fixed lower leaf, A, a movable clamping-leaf, C, and a hinged turning leaf, D, the combination, respectively, with the leaves C and D, of the detachable bar constructed with rounded corners *s*^{3}, and grooves or channels *s*^{3}, of various curvatures, formed in its different faces, and the die or former applied to the turning leaf and provided with ridge *r'*, adapted to press the sheet metal into such grooves or channels, substantially as and for the purpose set forth.

7. The combination, with an abutment upon the top leaf, of a former having grooves formed upon two or more sides and adapted to be turned into different positions in contact with the abutment and to present the different grooved sides to a complemental former upon the hinged leaf.

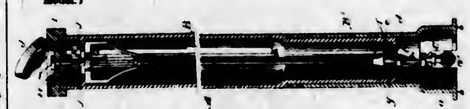
8. In a cornice-bending machine operated substantially as herein described, and having a fixed lower leaf, A, a movable clamping-leaf, C, and a hinged turning leaf, D, the combination, with the leaves C and D, of complemental formers attached, respectively, to said leaves, and the former upon the turning leaf being extended above the level of the adjacent leaf to bend the sheet metal when the clamping-leaves are closed, and before the hinged leaf is turned, and means for pressing the clamping-leaves together and for turning the leaf D upon its pivots, substantially as herein shown and described.

338,101. HEAD-DRESS. MARY A. PATON, Paris, Ky. Filed Nov. 21, 1885. (No model.)



Claim.—As a new article of manufacture, a head-dress or wig composed of a lace or hair foundation having its outer surface covered with hair in the usual manner, in combination with hair secured to the inner side thereof in such manner that the hair of the two surfaces may be brought together and combed, substantially as described.

338,102. STOP OR CURB BOX. WALTER S. PAYNE, Fostoria, Ohio, assignor to Walter S. Payne & Co., same place. Filed Oct. 30, 1885. (No model.)



Claim.—1. The combination, with the casing of the box, provided with stop-lugs, of the valve located in the box above the stop-cock, valve-rod, and the swiveled handle adapted to engage under the lugs so as to hold the valve on its seat, as set forth.

2. The combination, with the telescoping sections of the box, of the valve located in the bottom of the upper section above the stop-cock, and the valve stem or rod provided with locking means for holding the valve on its seat, as set forth.

3. The combination, with the casing of the box, of the valve seated therein above the stop-cock, the valve stem or rod projecting upwardly from the valve, and locking means for the stem or rod to hold the valve on its seat, as set forth.

4. The combination, with the casing of the box, provided with stop-lugs, of the valve seated in the casing above the stop-cock, and the rod or stem projecting upwardly from the valve and having its upper end constructed to be held in position by the stop-lugs, as set forth.

5. The combination, with the telescoping sections of the box, of the valve located in the bottom of the upper section above the stop-cock, the valve stem or rod projecting upwardly from the valve, and lugs or stops in the top of the upper section to lock the valve stem or rod, as set forth.

6. The combination, with the casing of the box, of the valve located in the box above the stop-cock, valve stem or rod, locking means therefor, the cover, and the bolt holding the cover in place and connecting with the valve stem or rod, as set forth.

7. The combination, with the casing of the box, of the valve in the casing to close communication with the stop-cock, locking means for the valve, the detachable cover closing the top of the casing, locking means for the cover, and a supplemental cap closing over the top of the cover, as set forth.

8. The combination, with the casing of the box, of the cover closing the top of the casing, the securing-bolts for the cover, and the supplemental cap fitting down within the depressed top of the cover over the heads of the securing-bolts, as set forth.

9. The combination, with the casing of the box, of the valve in the casing to close communication with the stop-cock, the valve stem or rod, and locking means therefor, said valve being withdrawn from the box by its stem or rod to allow access to the stop-cock, as set forth.

10. The combination, with the box, of the valve, valve stem or rod, the swiveled handle at the upper end of the said rod, the stops or lugs on the inner side of the box, the cover, and a bolt connecting the cover and handle, as set forth.

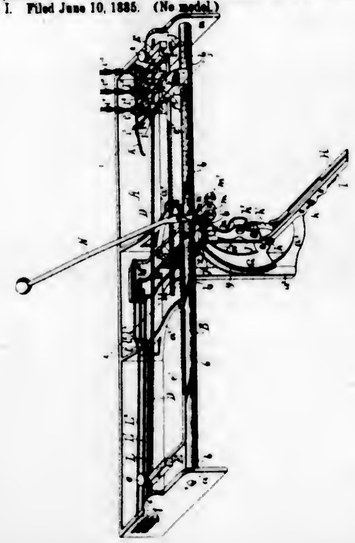
11. The combination, with the telescoping sections of the box, of the stops or lugs on the upper section, the valve seated in the lower end of the upper section, the valve rod or stem, the handle connected with the rod or stem, a projection on the handle, the cover, a bolt securing the cover in place, and the supplemental hinged cap, said bolt and the projection on the handle and stop-cock being capable of turning by the same key, as set forth.

12. The combination, with the box, of the valve, valve rod or stem, swiveled handle at upper end of rod, stops or lugs on the inner side of the box, the cover closing over the top thereof, and a securing-bolt for the cover, the head of the bolt and the handle being adapted to be turned by the same key, as set forth.

13. The combination, with the stop-cock, of the inclosing-box, the valve, valve rod or stem, the handle at the upper end of said rod or stem, the cover closing over the top of the box, the securing-bolt for the cover, and the key constructed to turn either the securing-bolt, the handle, or the stop-cock, as set forth.

14. The combination, with the stop-cock, of the inclosing-box, the valve, valve rod or stem, locking means therefor, the cover also provided with locking devices, and the key constructed to actuate the locking means of both the cover and valve-stem and also turn the stop-cock, as set forth.

338,103. MUSIC-LEAF TURNER. HENRY W. POOL, Providence, R. I. Filed June 10, 1885. (No model.)



Claim.—1. In a music-leaf turner, a revolving grooved roll and a carrier operated thereby, in combination with one or more leaf-turners thrown by said carrier, and mechanism, substantially as described, for operating said roll, as set forth.

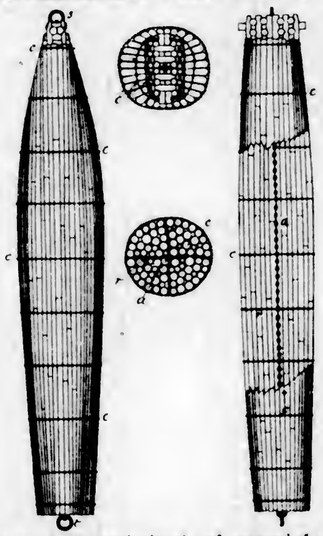
2. The combination, with a revolving grooved roll, and a carrier operated thereby and provided with a latch, of one or more leaf-turners or travelers having each an arm engaging with said latch, and a bar for guiding the movements of the travelers and set obliquely to the roll, substantially as described.

3. The combination, with a grooved revolving roll, a carrier operated thereby and provided with a latch, of one or more travelers moving upon a bar set obliquely to the roll, and provided each with an arm to engage the latch, and fixed and movable guide-rods for extending and retracting the traveler-rods to engage with and clear the carrier, substantially as specified.

4. The combination of frame A *a a'*, grooved roll B, bars C D, levers H I, rods *j'* L L', &c., pull-rods M M', &c., carrier F, with its latch *f'*, and travelers I I', &c., with their arms and sliding rods having the knobs, as described.

5. The combination, with frame A *a a'*, grooved roll B, bars C D, rods K L L', &c., stops E, with rack-bars *e'*, pinion E', carrier F, with its latch *f'*, and wire *f²*, of travelers I I', &c., with their clips, arms, and sliding rods, and the levers H I, segment G, with cam *g*, pinion *h'*, arm N, pull-rods M M', &c., and rod *j'*, as set forth.

338,104. RAFTING LOGS, TIMBERS, &c. HUGH R. ROBERTSON, St. John, New Brunswick, Canada. Filed Nov. 17, 1884. (No model.)



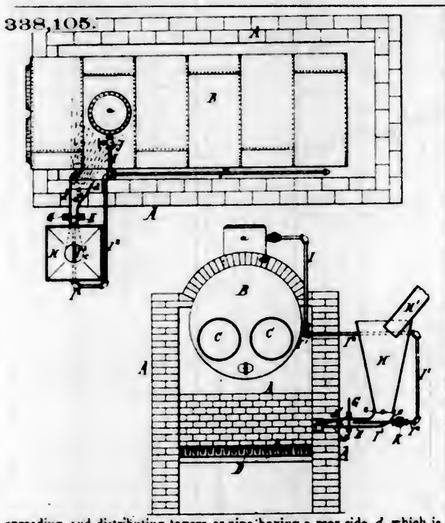
Claim.—1. The combination of a raft composed of a number of pieces of lumber both in cross-section and in length, forming a continuous bundle of (practically) parallel pieces, in which the jointing is thoroughly broken, and the whole bound together with encircling chains at frequent intervals into a cylindrical or approximately cylindrical form, with a longitudinal chain or cable, or several such chains or cables, running through the raft or along the sides thereof and fastened thereto, as described.

2. The combination of a raft composed of a number of pieces of lumber both in cross-section and in length, forming a continuous bundle of (practically) parallel pieces, in which the jointing is thoroughly broken, and the whole bound together with encircling chains at frequent intervals into a cylindrical or approximately cylindrical form, with a longitudinal chain or cable, or several such, running through the raft or along the sides thereof, and with radial or cross chains or cables running in or through the raft at intervals corresponding with the encircling chains and attached thereto and to the longitudinal chain or chains, all substantially as described.

338,105. FEEDING FINE FUEL. WILLIAM ROGERS, New Orleans, La., assignor to himself, Augustus Wheaton Burke, Henry Warner, Henry Gehl, and Phillip Heckel, all of same place. Filed July 6, 1885. (No model.)

Claim.—1. The steam supplying and superheating pipes I I' I², having blast-nozzle I², and arranged partly outside the furnace-wall and partly within the fire or flame space or combustion-chamber, in combination with the fuel-supplying hopper provided with a discharging.

338,105.

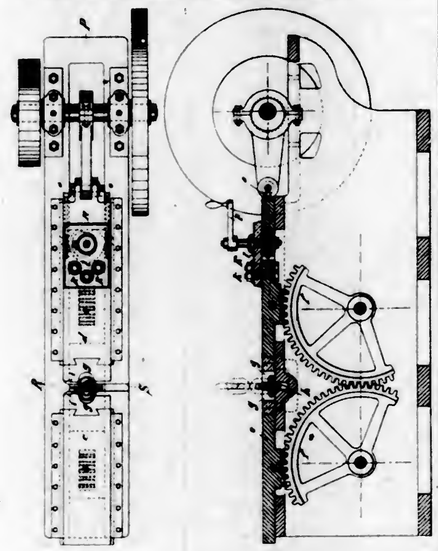


spreading, and distributing tuyere or pipe having a rear side, *d*, which is oblique to its front side, *d²*, and with a furnace and boiler, substantially as and for the purpose described.

2. The tuyere or pipe having a front side, *d²*, which is parallel with the front wall of the furnace, a rear side, *d*, which is oblique to the side *d²*, and a beveled top, *d'*, in combination with a steam-blast nozzle, I², a steam supplying and superheating pipe, I I' I², a fuel-supplying hopper, a boiler-furnace, and boiler, substantially as and for the purpose described.

3. The combination of the tuyere having a front side parallel with the front wall of the furnace and a rear side oblique to said wall with a blast-nozzle of a fuel-supplying hopper, substantially as and for the purpose described.

338,106. CHAIN-MACHINE. VICTOR RÖPER, Duisburg-on-the-Rhine, Prussia, Germany. Filed Feb. 19, 1885. (No model.)

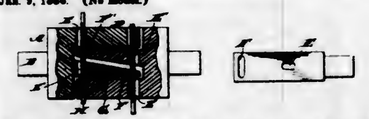


Claim.—1. In a machine for manufacturing chains, the combination of two sliding carriages, *c d*, the segments *f f*, and the dies *g*, substantially as shown and described.

2. In a machine for manufacturing chains, the combination, with the two sliding carriages *c* and *d*, of the cam *m*, provided with a crank, *p*, and the reciprocating cross-head *n*, the said cam being adapted to be engaged by the cross-head to actuate the carriage *d*, substantially as shown and described.

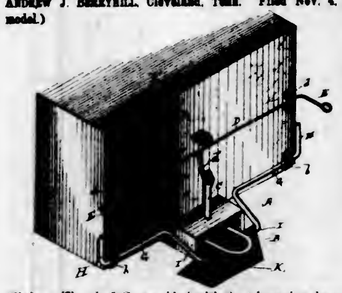
3. In a machine for manufacturing chains, the combination, with the sliding carriages *c* and *d*, of the cam *m*, the reciprocating cross-head *n*, and the bolts *o*, extending through the cross-head and adjustable in the carriage *d*, substantially as shown and described.

338,107. CAR-COUPLING. ERNEST G. SIMMONS, Rice, Texas. Filed Jan. 9, 1886. (No model.)



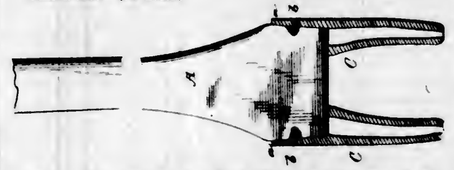
Claim.—The combination, with the draw-heads provided with projections D and G, each having at its inner portion a horizontally-elongated slot, and at its outer portion a vertically-elongated slot, of the horizontally-slidable coupling-pins H H, for respectively engaging the said slots, substantially as described.

338,108. CAR-COUPLING. ZEBEDEE B. SHROPSHIRE, Oaktown, and ANDREW J. BERRYHILL, Cleveland, Tenn. Filed Nov. 4, 1885. (No model.)



Claim.—The shaft G, provided with the triangular sleeve K and operating-arms H H, as and for the purpose set forth.

338,109. CLOTHES-FORK. ALFRED J. SLOAN, Clyde, N. Y. Filed June 4, 1885. (No model.)



Claim.—In combination with the handle A, having a tapered end, as shown, a metallic socket, B, with side walls, *a a*, and prongs C, extending therefrom, the upper portion of said prongs extending across the side walls, so as to form a stop for the end of the handle, and means for securing the socket to the handle, substantially as shown, and for the purpose set forth.

338,110. PROCESS OF MAKING INSECTICIDES, &c. HENRY H. SMITH, Wilmington, N. C., assignor of two-thirds to Andrew Smith and Ludvig Hansen, both of same place. Filed June 11, 1885. (Specimens.)

Claim.—The process herein described of producing a soluble material from tar-oil, consisting in, first, mixing with the same about one-third the quantity of potash; secondly, allowing the same to settle, and, thirdly, separating the soluble material from the insoluble hydrocarbon and the excess of potash.

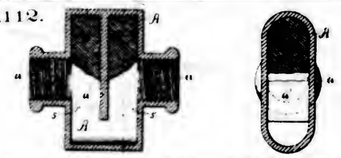
338,111. CHANGEABLE BUTTON. SAMUEL E. SMITH, Brooklyn, N. Y. Filed Apr. 11, 1885. (No model.)



Claim.—The combination, with the button A, having recess *b*, as described, of the shell C, having lip *c*, and arm *c'*, the shell being arranged to be oscillated upon the button, for the purposes set forth.

338,112. SAFETY-SEAL FOR GAS-TRAPS. WILLIAM T. SMITH, Providence, R. I. Filed Mar. 27, 1885. (No model.)

338,112.

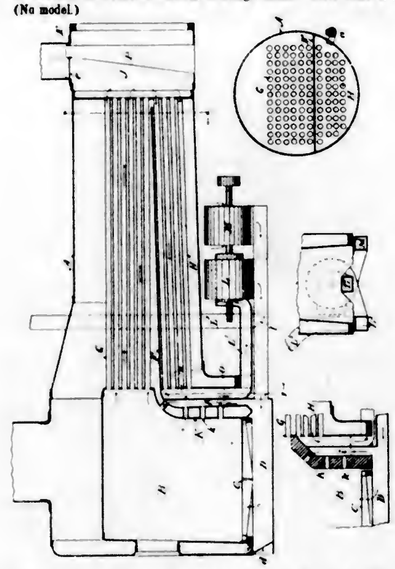


Claim.—1. A trap consisting of a casing which has a lower continuous chamber and a partial division-piece extending from the top of said casing into said chamber, and of fusible solder lying normally in the top of said casing, for the purpose described.

2. In a pipe, an enlargement partially divided by a vertical partition extending from the top of said enlargement, in which said top normally lies fusible solder, which, combined with said partition, closes and seals the pipe-channel, as described.

3. The combination, with the trap-casing A, provided with the division-piece *a'* and sockets *a*, of the solder B, lying normally out of the gas-channel, for the purpose described.

338,113. STEAM-BOILER. HAMILTON SPENCE, Minneapolis, assignor of one-half to Denzel W. Davis, Hastings, Minn. Filed June 6, 1885. (No model.)



Claim.—1. The combination, in a boiler, with the fan M and a pipe extending from said fan to the ash-pan, whereby air is constantly supplied beneath the grate, of the fan L, means connecting said fan with the smoke-box, a pipe, L^2, extending from said fan to the ash-pan, a pipe, L^3, and a damper, *l*, arranged to close either the pipe L^2 or the pipe L^3, whereby the products of combustion are returned beneath the grate and mingled with the air supplied by fan M, or are discharged through the pipe L^4, all substantially as described, and for the purpose set forth.

2. The combination, in a boiler, with the direct tubes G and the return-tubes H, located below said direct tubes, of the fan L and means connecting said fan with the exit ends of said return-tubes, all substantially as described.

3. The combination, in a boiler, with the direct tubes G and the return-tubes H, located below said direct tubes, of the fan L, means connecting said fan with said return-tubes, a pipe, L^2, connecting said fan with the ash-pan D, the pipe L^3, and damper *l*, said damper being arranged to close either the pipe L^3 or the pipe L^2, all substantially as described, and for the purpose set forth.

4. The combination, in a boiler, with the ash-pan, fire-box, and flues thereof, of a fan, L, means connecting said fan with the flues, a pipe, L^2, connecting said fan with the ash-pan, a pipe, L^3, and damper *l*, said damper being arranged to close either the pipe L^2 or the pipe L^3, whereby the products of combustion are drawn from the boiler-flues and returned to the ash-pan or discharged through pipe L^4, substantially as described.

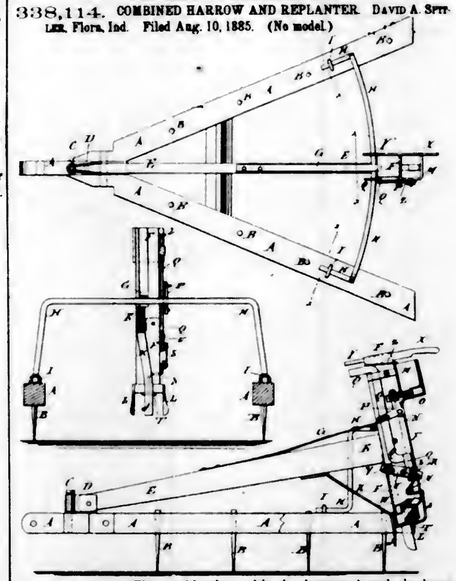
5. The combination, with the ash-pan D, having damper *d*, fire-box B, flues G and H, damper *e*, and exhaust P, of the fan L, means for connecting said fan with the flues H, pipes L^2 and L^3, damper *f*, fan M, and pipe M', all substantially as described.

6. The combination, with the boiler having tubes G and H, of the arch K, lining I, pipe L', and fan L, all substantially as described.

7. The combination, in a boiler having tubes G and H, of the arch K, having openings *k*, the lining I, having damper *i*, the exhaust P, damper *e*, fan L, and pipe L', all substantially as described.

8. The combination, in a boiler, of the direct tubes G, smoke-box J, return tubes H, partition F, and feed-pipe *a*, located near the exit end of said tubes H, as described, and for the purpose set forth.

338,114. COMBINED HARROW AND REPLANTER. DAVID A. SPITLER, Flora, Ind. Filed Aug. 10, 1885. (No model.)



Claim.—1. The combination, with the harrow A and the beam and standard E F, carrying a seed-dropping mechanism, of the bolt and clevis C D, the spring G, and the arched bar H, substantially as herein shown and described, whereby the said beam and standard will be carried above the ground when not in use, and can be quickly lowered into contact with the ground when a hill is to be replanted, as set forth.

2. In a combined harrow and replanter, the combination, with the standard F, the arched bar H, and the seed-box M, of the sliding bar Q, having a forwardly-projecting upper end, the elbow-lever P, the seed-dropping slide O, and the spring Z, substantially as herein shown and described, whereby the said slide will be operated to receive and drop seed by the downward and upward movement of the said standard, as set forth.

3. In a combined harrow and replanter, the combination, with the standard F, having channel N, and the arched bar H, of the sliding bar Q, the spring Z, the elbow-lever and slide P O, the bent and slotted lever S, and the valve-plate T, substantially as herein shown and described, whereby the same movement of the sliding bar that operates the seed-dropping slide to receive and drop the seed at the upper end of the standard will operate the valve-plate at the lower end of the said standard to drop and receive seed, as set forth.

4. In a combined harrow and replanter, the combination, with the standard F, having channel N, the arched bar H, the spring Z, the elbow-lever and slide P O, and the bent lever and valve-plate S T, of the slotted lever U and the sliding bar W, substantially as herein shown and described, whereby the discharge-opening is kept free and the prompt discharge of the seed is insured, as set forth.

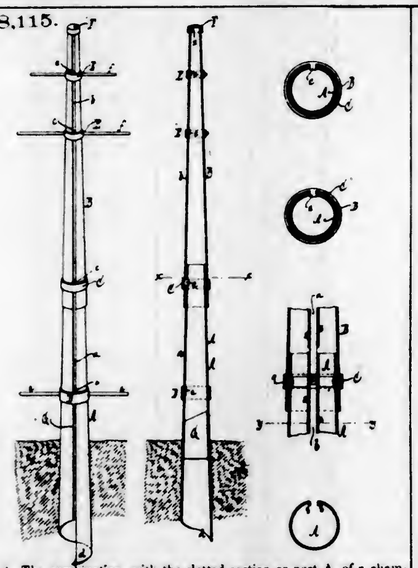
338,115. METALLIC POLE FOR USE AS A TELEGRAPH-POLE. SAMUEL H. TERRY, Brooklyn, N. Y. Filed Aug. 7, 1885. (No model.)

Claim.—1. The combination of the longitudinally-slotted sections A B, one section having its end inserted within the end of the other section, and a ring, C, for clamping the adjoining ends of the sections together, substantially as shown and described.

2. The combination, with the slotted section or structure, such as A or B, of the clamping-ring C, having a tooth which fits the slots of the sections, substantially as and for the purpose shown and described.

3. The combination, with the lowest section, A, and its spiral cutting-edge, of a ring provided with arms for operating the section in boring a hole, substantially as described.

338,115.

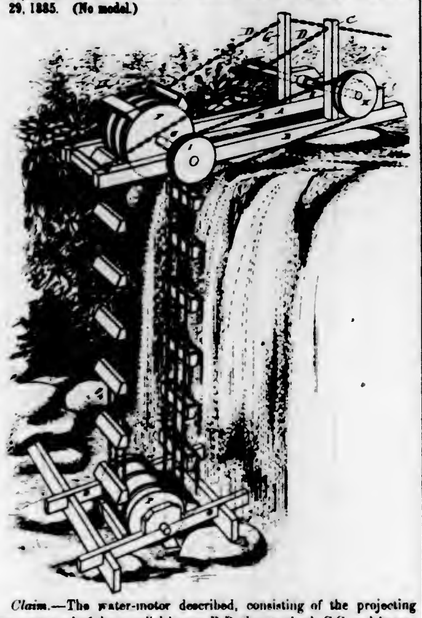


4. The combination, with the slotted section or post A, of a chamfered plug, G, arranged in it near its lower end, substantially as and for the purpose described.

5. The circular grooves O in the overlapping parts of the divisions or sections A B of the pole, in combination with the clamping-ring C, substantially as shown and described.

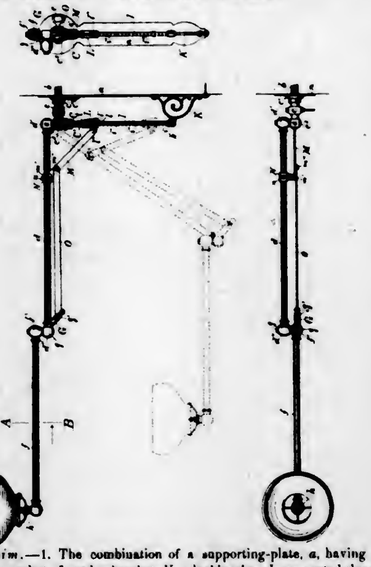
6. The metallic pole herein described, provided with a longitudinal slot having its edges *s s* bent inwardly, in combination with the toothed clamping-ring, substantially as described and shown.

338,116. WATER-MOTOR. HAREN TITUS, Toledo, Ohio. Filed Dec. 29, 1885. (No model.)



Claim.—The water-motor described, consisting of the projecting frame composed of the parallel beams B B, the standards C C, and braces D D, the shaft L, journaled in the inner end of the frame having the pulley K, the shaft journaled in the outer end of the frame carrying the pulley I, having a chain-connection with the pulley K, and the bucket-wheel adapted to receive the endless chains carrying the buckets, and the similar wheel, P, journaled in the frame beneath the said wheel F, the whole arranged with relation to a water-fall, substantially as specified.

338,117. PARALLEL DROP-BRACKET FOR GAS, &c. JAMES E. TREAT, Boston, Mass. Filed Dec. 7, 1885. (No model.)



Claim.—1. The combination of a supporting-plate, *a*, having a stationary socket, c^2, and a bracket, K, a locking-bar, I, supported thereby, the inner arm, *d*, joined to said socket, the outer arm, *f*, jointed to the inner arm and having an attached lever, G, a link, O, connected at one end with said lever, the link M, connected intermediate its ends to the link, a locking-sleeve, L, located on the locking-bar and connected with one end of the link M, and a sliding connection between the other end of the latter link and the inner jointed arm, substantially as described.

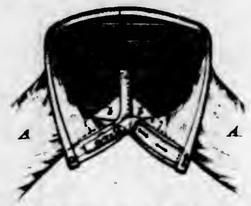
2. In a bracket, the stationary socket c^2, and the locking-bar I, arranged centrally below it, and provided with locking device L, combined with the link M, hinged to such locking device and to the arm *d*, in a manner and for the purpose as set forth.

3. The combination, in a bracket, of a supporting-plate, *a*, a locking-bar, I, supported thereby, the inner arm, *d*, having a jointed connection with the plate, the outer arm, *f*, jointed to said inner arm, the lever G, connecting-link O, link M, and locking device L, connected with the latter and arranged on the locking-bar, substantially as described.

4. The combination of the stationary socket c^2, the locking-bar I, the adjustable locking-sleeve L thereon, the arm *d*, jointed to said socket, the movable block N on said arm, and the link M, connected with the block and the locking-sleeve, substantially as described.

5. The combination of the stationary socket c^2, the bracket K, the locking-bar I, supported by said parts, the locking-sleeve on the bar, the inner arm, *d*, jointed to the socket, the link M, connected with the sleeve and having a sliding connection with the inner arm, the outer arm, *f*, hinged to the inner arm and having the attached lever G, and the link O, connecting said lever with the link M, substantially as described.

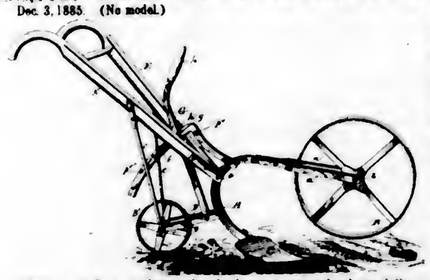
338,118. OVERALLS. MAURICE VANDERBEDGLE, New York, N. Y. Filed Nov. 23, 1885. (No model.)



Claim.—The combination, with the legs of a pair of overalls, said legs having narrow strips cut at their front edges, of a crotch-piece inserted in the seat of the overalls, the strip of one leg being extended across the crotch and attached to the inner front edge of the adjoining

leg, while the strip of the second leg is extended backwardly across the crotch-piece, and attached to the same and the back seam, substantially as set forth.

338,119. GARDEN-PLOW. GARY H. VAUGHN, Hannibal, Mo. Filed Dec. 3, 1885. (No model.)



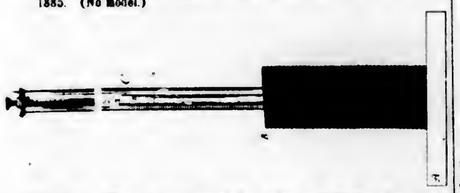
Claim.—1. In a garden or hand plow constructed substantially as described, a curved beam carrying the plow and front wheel, said beam having pivotally attached thereto handles and arms which carry a small wheel, and lever G, for vertically adjusting the small wheel, substantially as shown, and for the purpose set forth.

2. In a hand or garden plow, the combination of the curved beam A, having rigidly attached thereto a plow, C, and wheel B, said beam carrying a bent bar, F, in combination with the wheel B', pivotally connected to the plow-beam, and provided with a lever which engages with the bent bar F, substantially as shown, and for the purpose set forth.

3. In a hand-plow, the combination of the beam A, wheel B, plow C, and bent arm F, rigidly secured thereto, the wheel B', pivotally connected by arms to the plow-beam and by brace-rods *c* to the handles, and the lever G, attached to the arms D, and adapted to engage with the bent arm F, substantially as shown, and for the purpose set forth.

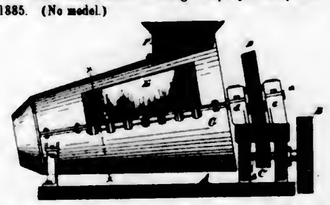
4. In a garden-plow, the bent beam A, provided with a wheel, B, and a bent arm, F, which is rigidly attached thereto, and the handles E, pivotally attached to the plow-beam and connected to a wheel, B', by rods *c*, said rods being pivotally connected to the plow-beam by arms or straps D, to which is connected the end of a lever, G, the parts being organized substantially as shown, and for the purpose set forth.

338,120. VOLT-AMPÈRE METER. LEONARD WALDO, New Haven, Conn., assignor to L. G. Tillotson & Co., New York, N. Y. Filed Mar. 9, 1885. (No model.)



Claim.—The combination of the hollow coil B, the transparent glass tube C, through the solid transparent wall of which the core is exposed—that is, without vertical slit or opening therein—arranged concentrically within said coil and extending above it, and the core D, suspended within said tube by a spring, E, the said glass and core the one provided with a graduated scale and the other with an indicator-mark, whereby the extent of movement of the said core may be determined, substantially as described.

338,121. PUG-MILL. WILLIAM W. WALLACE, Frankfort, Ind., assignor to the Wallace Manufacturing Company, same place. Filed Oct. 31, 1885. (No model.)



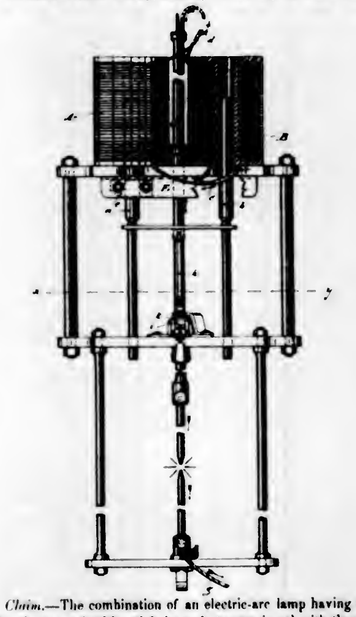
Claim.—1. A pug-mill composed of a cone-shaped cylinder, with its bottom line or plane placed at or near the horizontal, as shown, in combination with a tempering-shaft and blades, with the axis of the shaft inclined to the horizon, and receiving the clay at the larger end of the cylinder and discharging it through the smaller end, substantially as specified.

2. In combination with the cylinder of a pug-mill, the cleaner-fingers 4, projecting through said cylinder and hinged on a pivot, with break-pins arranged outside of the cylinder to hold them normally in working position, substantially as specified.

3. In combination with the cylinder of a pug-mill, the recess E and cleaner-fingers 4, pivoted at the under side of said recess, projecting through the cylinder, and held normally in working position by a break-pin, which will yield to foreign substances and allow the fingers to pass in the recess out of the way of the tempering-blades, substantially as specified.

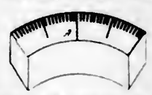
4. In combination with a cone-cylinder provided with a recess, E, tempering-fingers 4, pivoted to the cylinder and projecting through said cylinder, and provided with break-pins for holding them normally in working position, substantially as specified.

338,122. ELECTRIC-ARC LAMP. RICHARD WALTHER and HUGO WALTHER, Werdas, Saxony, Germany. Filed July 15, 1885. (No model.)



Claim.—The combination of an electric-arc lamp having solenoids A B and cores *a b* with rod *h*, lever *k*, tongue *i*, and with the magnetic brake-shoes *e f*, adapted to be placed nearer to or farther away from the cores *a b*, substantially as specified.

338,123. METHOD OF GRADUATING DIALS. RODOLPHUS L. WEBB, New Britain, Conn. Filed July 13, 1885. (No model.)



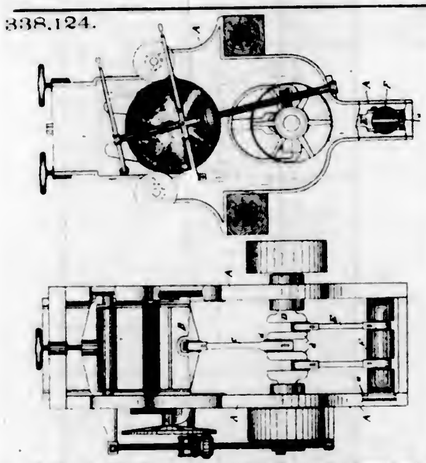
Claim.—The herein-described improvement in the art of graduating dials, consisting in the employment of a segment-shaped die, in length a submultiple of the full circle to be graduated, and having upon its face ribs corresponding to the graduations to be produced in that portion of the full circle, and presenting the plate to be graduated to the said die by successive steps, each step corresponding to the length of the segment, whereby the predetermined number of steps indicated by the length of the segment will complete the graduation of the full circle, substantially as described.

338,124. RECIPROCATING-SAW MILL. WILLIAM M. WILKIN, Erie, Pa. Filed July 27, 1885. (No model.)

Claim.—1. In a reciprocating-saw mill, the combination, with a vertically-guided saw-frame, of a vertically-guided counter-balance and a crank-shaft and connections for reciprocating said frame and counter-balance simultaneously in opposite directions.

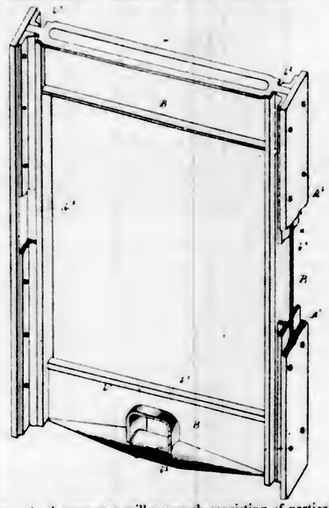
2. In a gang-saw mill, the combination, substantially as shown, of a reciprocating saw-sash, a crank-shaft and connecting-rod for reciprocating said sash, and a counter-balance guided below the crank-shaft and connected to a crank in said crank-shaft, which stands opposite the crank which moves the saw-sash.

338,124.



3. In a reciprocating-saw mill, the combination of a frame-work, a saw frame or sash mounted so as to be reciprocated in said frame-work, a counter-weight mounted so as to be reciprocated in said frame-work, a crank-shaft having opposite cranks mounted in said frame-work between the said saw-frame and the said counter-weight, and connecting-rods connecting said oppositely-placed cranks with the saw-frame and the counter-weight, in a manner substantially as shown, whereby the said saw-frame and counter-weight will be simultaneously reciprocated by said crank-shaft.

338,125. SAW-SASH FOR RECIPROCATING-SAW MILLS. WILLIAM M. WILKIN, Erie, Pa. Filed Oct. 20, 1885. (No model.)



Claim.—1. A gang-saw-mill saw-sash consisting of vertical stiles and upper and lower girts with proper means for attaching the saws to said girts formed of one piece of metal, substantially as and for the purposes set forth.

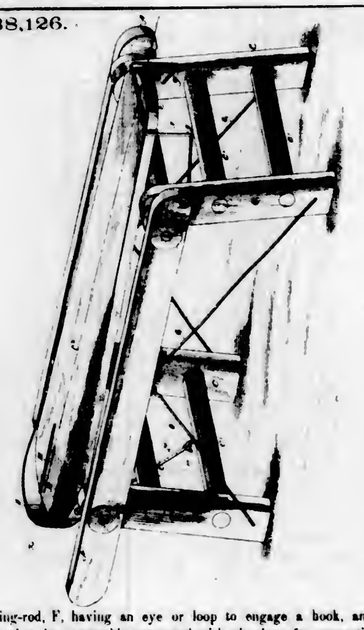
2. A gang-saw-mill saw-sash having the slot *b* vertically through its upper girt, the groove *b'* forming a catch along the top of its lower girt, guide-ribs *b² b²* on its sides, and the noddle-pin *b³*, as shown, formed of one piece of metal.

338,126. IRONING-BOARD. JOHN H. WILLIAMS, Rockville, Md. Filed Apr. 11, 1885. (No model.)

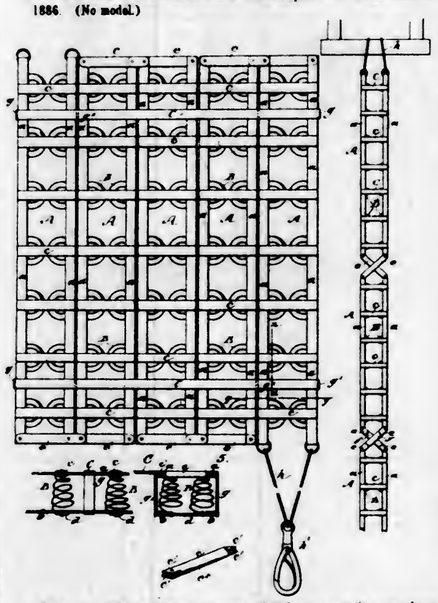
Claim.—1. In an ironing-table, the combination, with the side rails, of the bars connecting the same and carrying legs, a board secured to one of said bars, and a pivoted bail to engage the other end thereof, substantially as set forth.

2. The combination, with the side rails, of the journaled bars connecting the same and carrying legs, a pivoted bail, bent as shown, a bracing-rod, F, having an eye or loop to engage a hook, and rods adapted to be removably connected with the legs for supporting the same, substantially as set forth.

338,126.



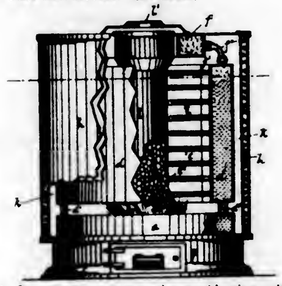
338,127. COMBINED SPRING-BED AND FIRE-ESCAPE. WILLIAM G. WILSON and GEORGE ZIMMERMANN, Philadelphia, Pa. Filed Jan. 13, 1886. (No model.)



Claim.—1. The sections A, composed of bars *a b* and cross-pieces *c d*, with springs B, interposed between the bars *a b*, in combination with the connecting-links *e f*, uniting the sections A, and crossing each other as the sections are extended, and means for attaching one of the sections to a permanent object, substantially as described.

2. The sections A, formed of the bars *a b*, and pieces *c d*, and springs B, the cross-pieces *c* being rounded at one edge, as shown at *c²*, substantially as and for the purposes set forth.

338,128. SECTIONAL STEAM-BOILER. WILLIAM H. WILSON, Westfield, N. Y. Filed Nov. 25, 1885. (No model.)

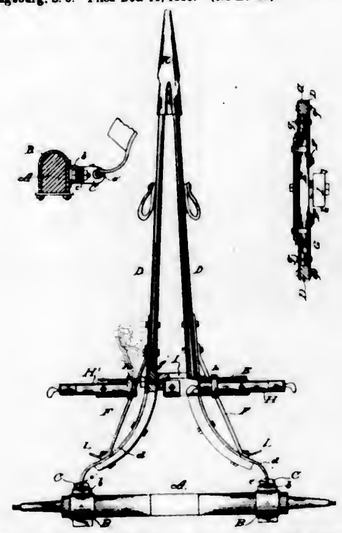


Claim.—1. In a steam-generator, the combination, with the segmental sections *d*, provided with the series of radial pipes *e*, of the annular steam-chamber *f*, connected thereto by pipes f^2, substantially as shown and described.

2. In a steam-generator, in combination, the annular base *a*, the connected segmental sections *d*, with the series of radial pipes *e*, and the annular steam-chamber *f*, connected thereto by pipes f^2, substantially as shown and described.

3. In a steam-generator, in combination, the annular base *a*, the segmental sections *d*, with the series of radial pipes *e*, the connected annular steam-chamber *f*, connected thereto by pipes f^2, and the jacket *h*, with space *k* between it and the sections of the boiler, substantially as shown and described.

338,129. VEHICLE-THILL. DANIEL G. ZEIGLER and ROBERT COPES, Orangeburg, S. C. Filed Dec. 19, 1885. (No model.)



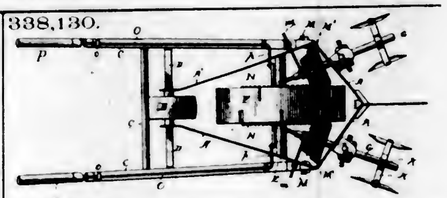
Claim.—1. The combination, with an axle and a clip having a loop on its forward end, of a thill having a clip pivotally attached to its end and swivelly connected to the loop of the axle-clip, substantially as described.

2. The combination, with the convertible thills swivelly connected to the axle, of an interchangeable cross-bar provided with a block pivotally connected therewith, substantially as and for the purposes set forth.

3. The combination, with the convertible thills and adjustable brace-bars, of an interchangeable cross-bar and a block pivotally connected therewith, substantially as described.

338,130. HOEING-MACHINE. DANIEL G. ZEIGLER and ROBERT COPES, Orangeburg, S. C. Filed Dec. 30, 1885. (No model.)

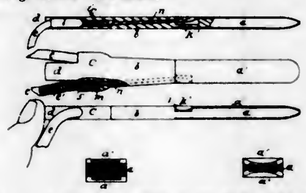
Claim.—1. The combination of the frame, the cross-bar E, drive-wheel F, loosely mounted on the cross-bar, a hoe-shaft having its end passed through a longitudinal slot in the cross-bar to one side of the drive-wheel, a universal bearing for the opposite end of the hoe-shaft, and means to move said end of the hoe-shaft in the slot in the cross-bar, whereby said shaft may be thrown in and out of gear with the drive-wheel as desired, substantially as set forth.



2. The combination of the frame, side bars, rods mounted in keepers on the side bars and free to partially rotate therein, hoe-shafts mounted in universal bearings and driven from the traction-wheel by intermeshing gearings, and links connecting the hoe-shafts with the rods, whereby a partial turn of either of the rods will throw the corresponding hoe-shaft out of gear with the drive-wheel, substantially as and for the purposes set forth.

3. The combination of the frame, side bars, cross-bar, drive-wheel loosely mounted on the cross-bar, hoe-shafts mounted on each side of the drive-wheel in universal bearings, with their inner ends passed through slots in the cross-bar, gearing connecting the hoe-shaft and drive-wheel, rods mounted on the side bars and adjustably connected with the hoe-shafts, whereby the shaft may be thrown in and out of gear as desired, substantially as and for the purpose specified.

338,131. SPRING JACK WEDGE. HOMER ANDERSON, Peekskill, N. Y. Filed Aug. 12, 1885. (No model.)



Claim.—1. A spring-jack wedge of the form herein shown, consisting of an insulating-handle, to which the conducting-plates are made to adhere by means of a dovetailed joint, substantially as and in the manner described.

2. A spring-jack wedge of the form herein shown, comprising an insulating-handle, to which conducting-plates are made to adhere by means of a dovetailed joint, substantially as and in the manner described, and a projection, substantially as shown, from said handle between the points to which the conducting-cords are joined, substantially as and for the purpose set forth.

3. A spring-jack wedge of the description shown, consisting of an insulating-handle to which conducting-plates are made to adhere by means of a dovetailed joint, substantially as set forth, in which the conducting-plates and conducting-cords are connected by means of conductors buried in the body of the handle, and from which an extension, substantially as shown, projects between the points to which the conducting-cords are attached, said extension having a length sufficient to protect said cords from injury by finger-pressure, as herein set forth.

4. A spring-jack wedge of the class described, provided with a projection, *d*, from the handle *c* between the points for attaching the cords *e*, the united width of said projection *d* and the said cords *e e* being uniform, or nearly so, in width with said handle *c*, substantially as illustrated and described.

5. A spring-jack wedge of the form described, having conducting-plates *a'*, joined to conducting-cords *e* by means of conductors secured to plates *a'*, within recesses *k'*, provided for the purpose, embedded in the body *b* and handle *c*, as and for the purpose set forth.

6. In a spring-jack wedge of the form herein shown, the combination of plates *a' a'*, conductors *n*, joined thereto and buried in the body *b* and handle *c*, and connected with conducting-cords *e e*, and extension *d*, substantially as shown, having a thickness adapted to this form of wedge and a length sufficient to protect the cords *e e* from finger-pressure, substantially as set forth.

7. In a spring-jack wedge, the combination of conducting-plates *a' a'*, conducting-wires *n n* joined thereto, buried in the body *b*, and attached to tubes 10 10 in handle *c*, recess 8 in *c*, conducting-cord *e*, sheath *i* and tip J, and extension *d*, provided with recess 7, substantially as shown.

8. As a new article of manufacture, a spring-jack-wedge blank of the form herein shown, consisting of an insulating-body having conducting-plates made to adhere thereto by means substantially of a dovetailed joint and a projection, substantially as shown, from said body between the points to which conducting-cords are to be attached, said projection having a thickness adapted to this form of wedge and a length sufficient to protect the cords from finger-pressure, all substantially as set forth.

9. A wedge or plug for electrical switch-boards, provided with contact-tubes 10, recesses 8 and 7, adapted to be used with detachable conducting-cords, substantially as set forth.

10. A wedge or plug for electrical switch-boards, provided with tubes 10, recesses 8 and 7, and conductors *n*, to be used in combination with detachable cords having tip-sheaths *i*, made of a non-conducting substance, for the purpose herein specified.

11. A wedge or plug for electrical switch-boards, provided with recesses 8 and 7, tubes 10, and conductors *n*, to be used in combination with detachable conducting-cords having metallic tip-sheaths *i*, and a tube of rubber or other non-conducting wrapping made to inclose said tips about projection *d* for the purpose of insulation, as set forth.

12. A wedge for electrical switch-boards of the class described, in which the conducting-cords are attached on each side of a projection from the handle, the united widths of the said projection and cords being nearly uniform with the width of said handle, said cords being connected with the conducting-plates of the wedge by means of conductors embedded in the body of the wedge, as set forth.

338,132. LAWN-MOWER. DANIEL ARNDT, Cleveland, Ohio. Filed Apr. 8, 1885. (No model.)



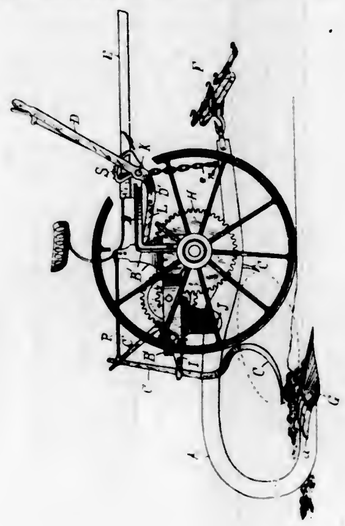
Claim.—1. A lawn or other mower having two plates reciprocating concentrically and simultaneously, said plates each carrying a main set of cutting teeth or knives, and also a supplementary set of cutting teeth or knives to the rear of the main set, substantially as and for the purpose specified.

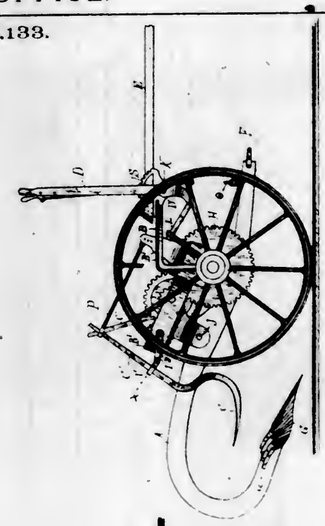
2. In a lawn or other mower, the combination, with concentrically-moving plates, each carrying a main and a supplementary set of cutting knives or teeth, and having rearward extending arms, of a driving-roller having a single zigzag groove in which the said rearward arms rest, substantially as and for the purpose specified.

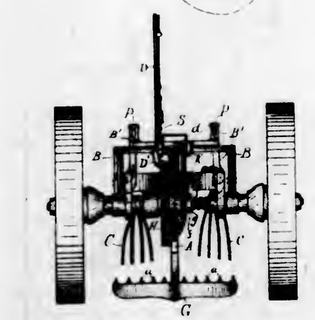
338,133. POTATO-DIGGER. CHARLES BABCOCK, Troy, N. Y., assignor of one-fourth to John M. Foster, same place. Filed Sept. 28, 1885. (No model.)

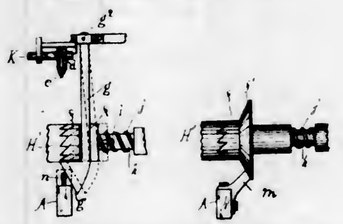
Claim.—1. In a potato-digger having a potato-digging plow, a sickle-shaped fork, C, provided with means—as driving-axle A, connected by a gear-train with operating-crank I, and pivoted arm P—for causing said fork to travel rearwardly through the soil toward and above said plow in an approximately-elliptical orbit, substantially as described, and for the purposes set forth.

2. In a potato-digger, the combination, with a plow, of a series of









thin laterally-flexible slats pivoted to the plow and projecting rearwardly therefrom, substantially as described, and for the purposes set forth.

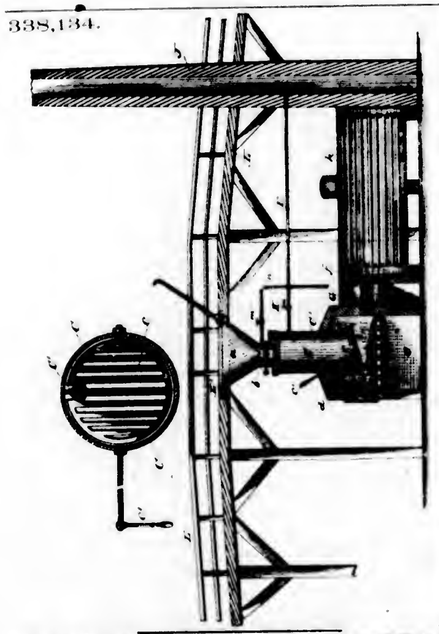
3. In a sulky potato-digger provided with a rotary crank-shaft for actuating a vertically-adjustable reciprocating fork provided with a plurality of tines and rectangular-shaped shank, the combination, with a rectangular-shaped socket pivoted to said shank, with said rectangular-shaped fork-crank adapted to fit and slide in said socket, substantially as described, and for the purposes set forth.

338,134. GARBAGE-DESTROYER. ALVIA K. BROWN, Newton, Iowa. Filed Apr. 18, 1885. (No model.)

Claim.—1. The combination, with the furnace *d*, and the cylinder having the valved feeding-hopper, dumping-grate, and gas-pipe C', of the secondary furnace, the boiler, smoke-stack, and the valved steam-pipe connecting the cylinder and smoke-stack, substantially as specified.

2. A garbage-destroyer consisting of a main furnace, a reservoir in the top thereof, and having a dumping-grate at its lower end, a steam-boiler, a secondary furnace interposed between the main furnace and the steam-boiler, and a pipe passing through the secondary furnace and connecting the boiler with the main furnace, whereby garbage placed in the reservoir may be consumed and the hot air and particles of combustion utilized to heat the boiler, substantially as specified.

338,134.



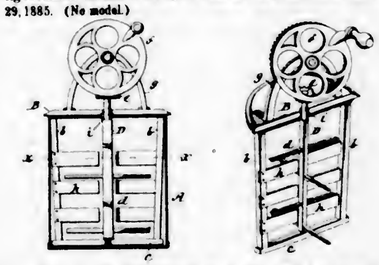
338,135. CAR-COUPLING. GEORGE W. BROWN and JOHN E. WILSON, Duryea, Pa. Filed Jan. 7, 1886. (No model.)



Claim.—1. The combination of a recessed draw-bar, a link-retaining clasp pivoted thereto at one end and having a recess that registers with the recess thereof, a locking-loop pivoted to the draw-bar and engaging the free end of the clasp, a transverse pin, J, passing through the free end of the clasp and bearing against the loop, a rope, L, connected to the pin, and a rope, L', connected with the rope L and the pivoted loop, substantially as described.

2. The combination, in a draw-bar and coupling of the class described, of a bar, A, having a draft-eye, D, the transverse groove *f'*, and the lugs *f*, a clasp, G, having a lug, *g*, pivoted between and to the lugs *f*, and having a groove, *g'*, a loop, I, pivoted to the bar A and adapted to confine the free end of the clasp G, a transverse pin, J, passing through the lug in front of the pivoted loop, a cord, L, connected to the pin, and a cord, L', connected to the cord L and the pivoted loop, substantially as described.

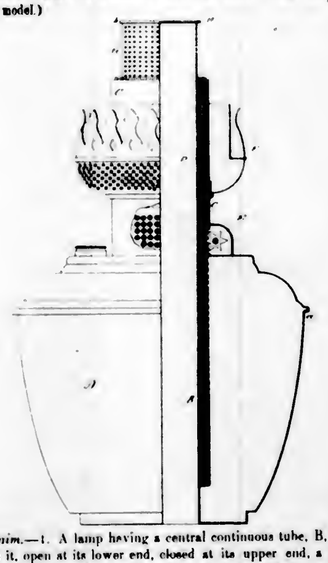
338,136. CHURN. GEORGE BRUSH, Wakefield, assignor, by mesne assignments, of one-half to George E. Scherer, Chapman, Kans. Filed June 29, 1885. (No model.)



Claim.—1. The combination, in a churn, of the partial cover notched in its meeting-edge, a frame provided with beaters fixedly secured to and depending from the meeting edge of the cover, a dasher-shaft removably stepped in the lower cross-bar of the frame, its upper portion being seated in and having a bearing in the notch in the edge of the cover, a pinion secured to the end of the shaft, and a gear-wheel journaled on the cover in a plane beyond the meeting edge and meshing with the pinion, whereby the dasher is held in place and motion imparted thereto, substantially as shown and described.

2. In a churn, the combination of a cover, a frame depending therefrom and rigidly secured thereto, beaters secured to opposite faces of the frame and having beveled ends, a dasher-shaft removably journaled in the frame, dasher-arms projected at right angles from the shaft alternately in opposite directions and having a straight upper side, the under side being beveled from its point to its rear edge, as shown, and gearing supported by the cover and connected with the shaft, substantially as and for the purposes set forth.

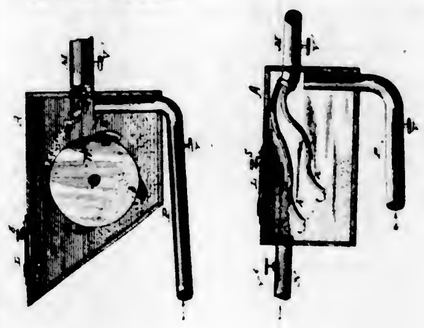
338,137. ARGAND LAMP. EDSON L. BRYANT, Ansonia, Conn., assignor of one-half to Wallace & Sons, same place. Filed May 18, 1885. (No model.)



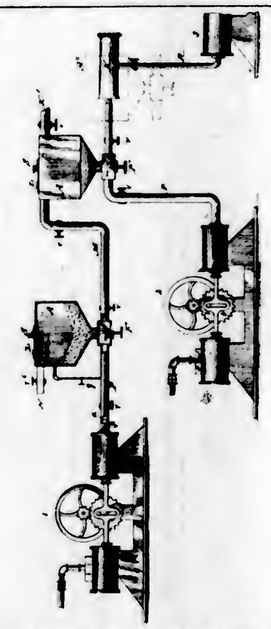
Claim.—1. A lamp having a central continuous tube, B, vertically through it, open at its lower end, closed at its upper end, a tube surrounding said central tube to form a wick-chamber between the two, the inner tube extending above the outer tube, the portion of the inner tube projecting above the onter tube radially perforated, and the upper end of the projecting portion of the tube constructed with an annular or radially-projecting flange, *b*, above the perforations, substantially as described.

2. In an Argand lamp-burner having the central tube open to the atmosphere at its lower end, a tube surrounding said central tube concentric therewith to form a wick-chamber between the two tubes, the inner tube extended above the outer tube, the extension being in the same piece and an integral part of the said inner tube, the portion of the inner tube projecting above the outer tube radially perforated, substantially as described.

338,138. APPARATUS FOR CONVEYING PARCELS OR GRAIN BY ATMOSPHERIC PRESSURE. CHAS. E. BUELL, Springfield, Mass. Filed June 1, 1885. (No model.)



338,138.

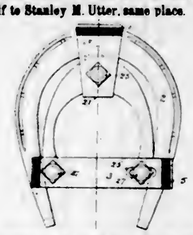


Claim.—1. In a pneumatic-carrier system, the air-tight receptacle A, the motor-gas inlet, and the main M, opening from said receptacle and provided with an outwardly-opening valve to allow grain in said receptacle to pour into said main, and a receiver for the transmitted grain provided with an elastic or yielding medium to receive the grain without injurious impact, substantially as described.

2. A pneumatic tube in sections, each provided with a valve or gate hung pendulous within said section, and an air-escape vent between said gate and the contiguous section, substantially as described.

3. In a pneumatic-carrier system, a double main, M M', for transmitting material in opposite directions, combined with a single supply-pipe, P, and valvular connections therewith, substantially as described.

338,139. HORSESHOE. CHARLES S. CANFIELD, Minneapolis, Minn., assignor of one-half to Stanley M. Utter, same place. Filed Feb. 1, 1886. (No model.)



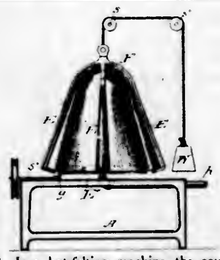
Claim.—1. The combination, with the shoe, of the curved securing-bars having the flange 11, and the flanges 13 15, fitting over the top of the shoe, the plate 19, having the toe-calk, the bar 3, having the heel-calks, and means for securing said plate and bar to said securing-bars, all substantially as described.

2. The combination, with the curved bars 7 and 9, having the forward flange, 11, and the lateral flanges, 13 and 15, of the toe-calk plate, the screw 23, securing said plate to the forward ends of said bars, the cross-bar 3, having the heel-calks 5 5, and the screws 27, securing said bar to the rear ends of said bars 7 9, all substantially as described.

3. The combination, with the curved plates pivoted together at their forward ends, provided with the forward flange, 11, and the rear lateral flanges, 13 15, and adapted to fit within the shoe, of the toe-calk, means for securing said calk to the forward ends of said bars, the cross-bar 3, having the calks 5 5, and having the slot at one end, and the screws 27, holding said bar to the bars 7 9, and permitting a lateral adjustment thereof, substantially as described, and for the purpose set forth.

338,140. MACHINE FOR FELTING HATS. ABRAHAM T. CLASON, Danbury, Conn. Filed Feb. 26, 1884. (No model.)

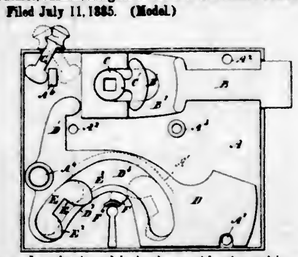
338,140.



Claim.—1. In a hat-felting machine, the combination of a cone adapted to be heated and conforming to the shape of the hats, combined with a series of workers or rollers, E F, the rollers F being made to curve over the spherical end of the cone, substantially as set forth.

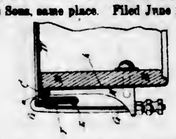
2. In a hat-felting machine, the combination of a cone adapted to be heated and conforming to the shape of the hats, a vat, and a series of workers or rollers, E F, the rollers F being made to curve over the spherical end of the cone, substantially as set forth.

338,141. COMBINED LATCH AND LOCK. JOHN C. CRAIG, Fenelon Falls, Ontario, Canada, assignor of one-half to Edward Deanes Hand, same place. Filed July 11, 1885. (Model.)



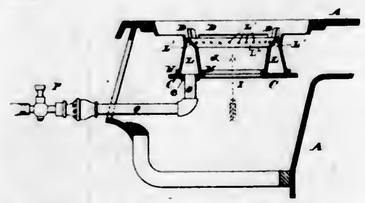
Claim.—In a latch and lock, the combination, with case A, having a curved projection, A', of the sliding bolt B, having slot B' and notch B^2, socket C, having trippet C', lever D, having arm D' and curved slot D^2, and dog E, sliding in said slot to engage with projection A', for locking the lever and bolt by appliance of a key, as set forth.

338,142. BANJO. CHARLES E. DOBSON, New York, N. Y., assignor to Henry Besary's Sons, same place. Filed June 2, 1885. (No model.)



Claim.—A banjo constructed substantially as herein shown and described, with the forward edge of its rim spun over a wire ring, and the spun-over rim and wire ring provided with numerous perforations parallel with the axes of the said rim and ring and registering with each other, as set forth.

338,143. GAS-BURNER ATTACHMENT FOR STOVES. JOHN E. DOOLY, St. Louis, Mo. Filed Feb. 16, 1884. Renewed June 1, 1885. (No model.)



Claim.—1. A gas-burner attachment for stoves, consisting of a skeleton frame having a ring, B, arms D, and a bottom plate, C, formed with a central opening, I, side opening, *c*, and concentric flanges N N, a supply-pipe connected with the side opening, and an annular box, J, having perforations L', and resting on the plate between the flanges within the frame, and forming with the plate an annular chamber, L, substantially as set forth.

2. A gas-burner attachment for stoves, consisting of a skeleton frame

having a ring, B, arms D, and a bottom plate, C, formed with a central opening, I, side opening, c, and concentric flanges N N, a supply-pipe connected with the side opening, and an annular box, J, having inwardly and downwardly inclined top I.", formed with perforations I.', and resting on the plate seated against the flanges within the frame, and forming with the plate an annular chamber, L, substantially as set forth.

338,144. SHOE. THOMAS R. EVANS, Philadelphia, Pa. Filed Aug. 22, 1885. (No model.)

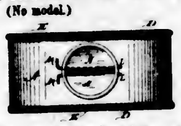


Claim.—1. A shoe having slits D in the vamp or quarters thereof, and flaps fitted between the walls of said slits and secured thereto, substantially as described.

2. A shoe having slits D in the vamp or quarters thereof, and flaps fitted between the walls of said slit and secured thereto, and a gusset or gussets connected with said vamp or quarters adjacent to said slits, substantially as described.

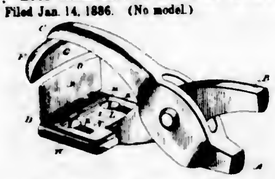
3. The vamp and quarters formed in one piece, with the slits D in the vamp, in combination with the flaps fitted in said slits and secured to the walls thereof, and the gussets G, connected with the vamp adjacent to the slits, substantially as described.

338,145. STOVE-PIPE DRUM. BENJAMIN D. EVANS, Byhalia, Ohio. Filed Sept. 2, 1885. (No model.)



Claim.—The combination of a section of stove-pipe the lower portion of which is bent in upon itself to form supports, two rods across said pipe, the outer end of each of which is bent to form a handle, and a semi-circular damper secured upon each of said rods, the outer edges of which rest upon said supports, as shown and described.

338,146. HOOF CLEANER AND TRIMMER. EVAN EWAN, Bridgetos, N. J. Filed Jan. 14, 1886. (No model.)

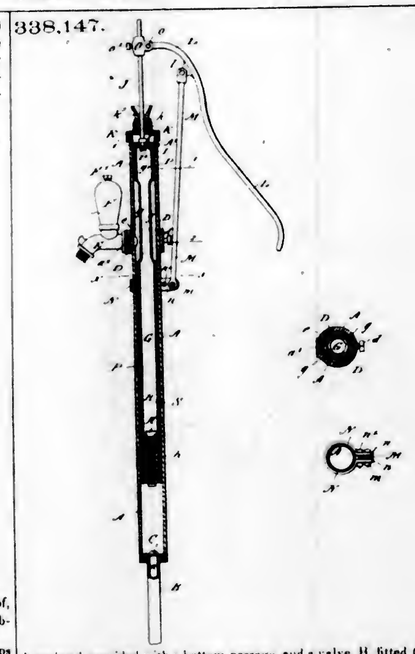


Claim.—In a tool for trimming the hoofs of horses, the combination of a concavely-curved blunt jaw with a flat jaw having flanges upon its side edges and a rectangularly-bent bit having a curved cutting-edge, a notched rear edge, and a slotted middle portion, and bolts for securing said bit adjustably between the flanges of the flat jaw, as and for the purpose shown and set forth.

338,147. PUMP. HIRAM FIELD, Smithville, Ontario, assignor to himself, and John Henry Smith, North Grimsby, Canada. Filed Dec. 26, 1885. (No model.)

Claim.—1. The combination, in a pump, of a barrel, A, having an aperture, *a*, an upwardly-opening valve, C, fitted thereover, an outlet, E, and a closed head or cap, K, a hollow plunger, G, fitted loosely in the

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barrel and provided with a bottom passage, and a valve, H, fitted thereto, a downwardly-opening valve, I, closing apertures *i* in the top of the plunger, side openings, *g*, below the head part *g'* of the plunger, and means, substantially as specified, for operating the plunger in the barrel, as and for the purposes herein set forth.

2. A pump comprising the barrel A, having an aperture, *a*, and an upwardly-opening valve, C, at its lower end, a cap, K, on the upper end of the barrel, having a stuffing-box, *k*, and a discharge-opening, *a'*, with the hollow plunger G, having the upward-opening valve H in its lower end, apertures in its upper end, a downward-opening valve, I, for said apertures, intermediate openings, *g*, the rod J, connected to the plunger and extended through the cap and stuffing-box, the handle-lever L, and the fulcrum-rod M, connecting the handle to the barrel, all constructed and arranged substantially as set forth.

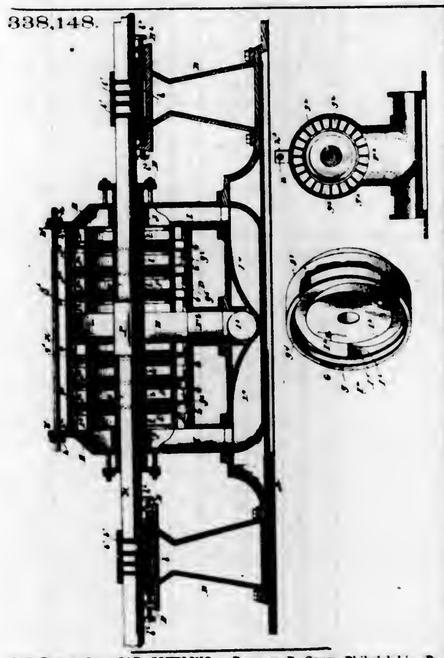
338,148. DUPLEX PROPELLER-PUMP. JOHN R. FISHER and LEANDER T. FISHER, Knobnoster, assignors to themselves, and JOHN C. WINKLER, ALPHEUS P. WINKLER, CHAUNCEY COBB, GORDON HARDEY, and ARTHUR E. VEST, all of Johnson County, Mo. Filed May 9, 1885. (No model.)

Claim.—1. In a duplex propeller-pump, the combination of the cylinder comprising the central suction-chamber, the series of sections having channels g^2 disposed at each side of the suction-chamber, and forming wheel-chambers, the discharge-chambers at the ends of the cylinder uniting in a single outlet, the bed upon which the cylinder is mounted having two channels connected with the outlet-chambers at the ends of the cylinder uniting in one outlet from said bed, said bed being also provided with a channel communicating with the inlet or suction chamber, the longitudinal rotary shaft, and the herein-described propeller-wheels secured upon the shaft, substantially as and for the purpose set forth.

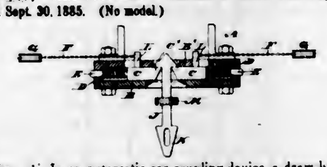
2. In a duplex propeller-pump, the combination of the cylinder comprising the central suction or inlet chamber, the series of sections having channels g^2 disposed at each side of said suction or inlet chamber, and forming wheel-chambers, and the discharge-chambers at the ends of the cylinder, the bed upon which the cylinder is mounted having two channels connected with the outlet-chambers at the ends of the cylinder uniting into one outlet from said bed, said bed being also provided with a channel communicating with the inlet or suction chamber, as set forth.

3. The combination of the central chamber or section having the projecting flange e^2 and shoulder *e*, the series of sections at each side the latter having channels aligning with each other, and each provided with a wheel-chamber and a circumferential shoulder in the edge of their channeled portions, which shoulders receive the projecting edges of the wheel-chamber of the adjoining section, the end chambers having the channeled inner portions, and provided with the flanges h^3 and h^3, and the longitudinal rods passing through and secured to the flanges h^3, substantially as shown and described.

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338,149. CAR-COUPLING. DELBERT B. GRAY, Philadelphia, Pa. Filed Sept. 30, 1885. (No model.)



Claim.—1. In an automatic car-coupling device, a draw-head having front and rear walls, B B', the said rear wall having slots A', in combination with spring-pressed jaws C, guided between said walls and provided with lugs L, projecting through said slots A', substantially as described.

2. An automatic car-coupling consisting of a draw-head having front and rear walls, the latter having slots therein, spring-pressed jaws having stems projecting through the side walls and lugs projecting through the rear wall of the said draw-head, the said lugs being connected to gearing for operating said jaws, and a coupling-link having an end adapted to be held between said jaws, all of said parts being arranged, combined and operating substantially as described.

3. A draw-head having front and rear walls, B B', spring-pressed jaws C, fitted between said walls, chains F, connected directly with said jaws for opening the jaws, and the rod H, for winding said chains, substantially as described.

338,150. ELECTRIC CASH AND PARCEL CAR. GEORGE F. GREEN, Kalamazoo, Mich., assignor to himself, Oliver S. Kelly, and Sol. J. Houck, Springfield, Ohio. Filed Sept. 14, 1883. (No model.)

Claim.—1. The combination of a track, a car to travel over the same, an electric motor connected with the car, means for charging said motor through the track to propel the car, means remote from the car for breaking or closing the circuit to start or stop the car at will, means for reversing the direction of travel of the car, and mechanism for automatically breaking the circuit between the car and track to bring the car to a rest, substantially as described.

2. The combination, with a track and car propelled over the same by electricity, of a switch for changing the direction of the current, a rocking lever connected with the car and said switch, and a tripping device for operating said lever, when the latter in the movement of the car comes in contact therewith to shift the switch, and thereby reverse the direction of travel of the car, substantially as described.

3. The combination, with a track, a car to travel over the same, and an electric motor connected with said car, of the perforated plate and the rods having a vertical and lateral play in the perforations of the

338,150

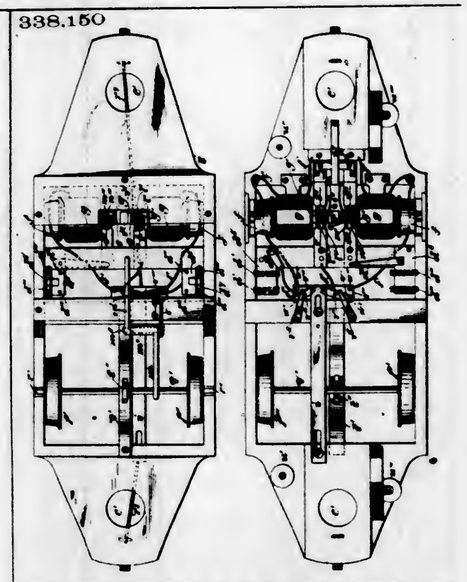


plate and formed with brushes at their lower ends to come in contact with the rails, substantially as described.

4. The combination of the track, the car traveling over the same the electric engine, the commutators thereof, formed with gaps at right angles to each other, as set forth, the brush-rollers bearing on said commutators on opposite sides of the gaps, as described, means for transmitting the current through the brush to the engine, and a switch to change the direction of the current to reverse the line of travel of the car, substantially as described.

5. The combination of the track, a recoil device adapted to be moved by a car striking it, means for holding said device when so moved by the car, and means for releasing said device when the car is to be reversed in its movement, whereby the power stored by the car moving said device is utilized to impart momentom to the car on the release of said device, substantially as described.

6. The combination, with a track and a car propelled over the same by electricity, of a device for breaking circuit between the car and track, a recoil device for stopping the movement of the car, means for holding said recoil device to the position moved by the car, and means for closing circuit between the car and track and releasing the recoil device to utilize the recoil of said device in propelling the car, substantially as described.

7. The combination, with the track and a car propelled over the same by electricity, of the tilting frame above the track to break the circuit between the car and track, and means for lowering said frame to establish the circuit again, substantially as described.

8. The combination of the track, the spring-board, the slotted standard, the ratchet-bar pivoted to the spring-board and passed through the slot of the standard, the lever engaging with the rack-bar, and means for operating said lever to release the ratchet-bar from the standard, substantially as described.

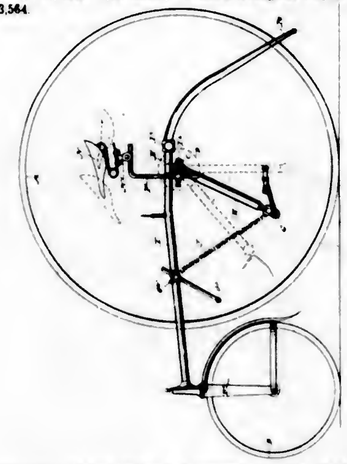
9. The combination of the track, the spring-board, the slotted standard, the ratchet-bar pivoted to the spring-board and passed through the slot of the standard, the lever engaging with the rack-bar, the tilting frame, and the arm connected with said frame and the said lever for lowering the frame and releasing the spring-board, substantially as described.

10. The combination of the track, the car, the car-axle adjustable to conform to irregularities in the track, and the idler holding said axle in its bearings, substantially as described.

11. The combination of the track, the car to travel over the same, the electric motor connected to the car, the switch for changing the direction of the current through the motor, the swinging lever connected with the switch and having the curved arms in different vertical planes and extending in opposite directions, and the trips at or near each end of the track adapted to move said arms to reverse the line of travel of the car, substantially as described.

12. The combination, with the car, of the frame supported beneath the car, the gauze within the frame, the spring-actuated roller, and the basket suspended from the roller under the gauze in the frame, substantially as described.

338,151. VELOCIPEDE. JOHN A. GRIFFITHS, Coventry, England. Filed Sept. 21, 1885. (No model.) Patented in England July 20, 1883, No. 3,564.



Claim.—1. In a velocipede, the combination, with a rigid frame carrying the drive and steering wheels, of a frame carrying the rider's seat and the pedal-shafts loosely connected with and oscillating freely on said rigid frame, substantially as and for the purpose specified.

2. In a velocipede, the combination, with a swing-frame such as described, of one or more springs connecting said swing-frame with the rigid frame, for the purpose of controlling its movements, substantially in the manner and for the purpose specified.

3. In a velocipede, the combination, with a rigid frame carrying the drive and steering wheels, and a frame carrying the rider's seat, and pedal-shafts loosely connected with and oscillating freely on said rigid frame, of a stop to limit the oscillations of the movable frame on or around the rigid frame in either direction, substantially as and for the purpose specified.

4. The combination, in a velocipede, of a spring-controlled swinging frame.

5. As a means for adjusting the position of the crank or pedal axle, the combination, with the leg-tube H and the support or bearing for the crank or pedal axle, of an intermediate sleeve screw-threaded exteriorly and interiorly in reverse directions, and operating to adjustably connect the said leg-tube and bearing, substantially as and for the purpose specified.

6. As a means for adjusting the position of the crank or pedal axle, the combination, with the leg-tube H, screw-threaded interiorly, and a sleeve, *h*, screw-threaded exteriorly and interiorly in reverse directions, and adapted to be screwed into said leg-tube, of a slot joint or bearing, H^3, provided with a screw-threaded shank constructed to fit the internal screw-thread of the sleeve *h*, and a suitable check-nut, substantially as and for the purpose specified.

7. In a velocipede, the combination, with a swinging frame having stops K' K^3, of a fixed frame having a stop, K^3, constructed to engage the stops K' K^3 and limit the amplitude of oscillation of said swinging frame, substantially as and for the purpose specified.

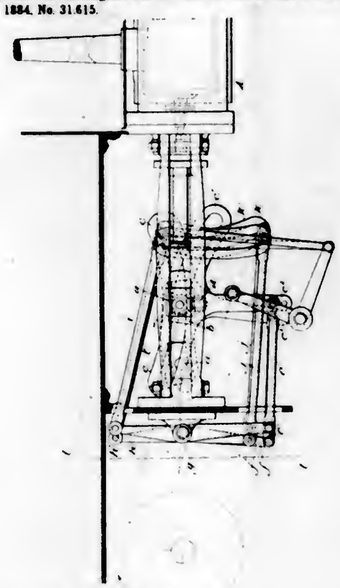
8. In a velocipede, the combination, with the spring-supporting bracket *d*, having a face, *d'*, adapted to slide upon the flat side of the support F, of an independent jaw, d^3, adapted to fit the round side of the said support F and toothed or roughened, so as to engage with the roughened surface d^4 of said bracket, the two portions being clamped together by a screw-bolt, d^3, the whole constructed and operating substantially in the manner and for the purpose specified.

9. In a velocipede, the combination, with the angle-standard F, of a seat-support adjustable longitudinally and radially on the horizontal arm of said standard, and a single locking device to lock the said support in position when adjusted, substantially as and for the purpose specified.

10. In a velocipede, the combination, with a rigid frame carrying the drive and steering wheels, and a frame for carrying the cranks or pedal-shafts, loosely connected with and oscillating on said rigid frame, of a seat-standard connected with the oscillating frame and a seat adjustable longitudinally and radially on said seat-standard, substantially as and for the purpose specified.

11. In a velocipede, the following elements in combination: a rigid frame for the drive and steering wheels, a frame for the cranks or pedal-shafts, loosely connected with and oscillating on said rigid frame, a stop to limit the amplitude of the oscillations of said oscillating frame, a seat-standard adjustably connected with the oscillating frame, and a seat adjustable longitudinally and radially on said standard, substantially as and for the purpose specified.

338,152. VALVE-GEAR FOR STEAM-PUMPS. ABRAHAM HILL, Marlborough, County of Wilts, England. Filed Nov. 3, 1884. (No model.) Patented in England Oct. 8, 1884, No. 13,347; in France Oct. 21, 1884, No. 164,918; in Belgium Oct. 22, 1884, No. 66,667, and in Germany Nov. 7, 1884, No. 31,615.



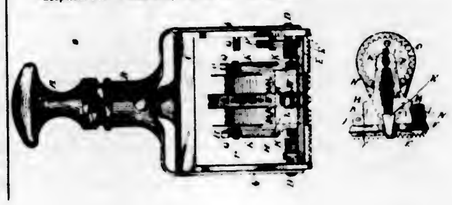
Claim.—1. In a valve-gear for duplex engines in which the valve of one engine is operated by the other engine, the combination, with reciprocating cross-heads, of centrally-pivoted levers having uniformly-curved slots and slide-blocks pivoted to the cross-heads and working in the slots of the said levers, substantially as herein shown and described, whereby the motion of the valves will be slowest at the end of its travel when it is full open, and quickest at the moment of cutting off and admitting steam, as set forth.

2. In valve-gear for duplex engines in which the valve of one engine is operated by the other engine, the combination, with a piston cross-head, of a T-shaped lever having a uniformly-curved slot in its cross member, and pivoted on an axis at right angles to the direction of motion of the piston-rod, and a slide-block pivoted to the cross-head and working in the said curved slot, substantially as herein shown and described.

3. In valve-gear for duplex engines in which the valve of one engine is operated by the other engine, the combination, with slotted T-shaped levers pivoted on an axis at right angles to the direction of motion of the piston-rod and having the slide-blocks *b b'* pivoted to the piston cross-heads, of the rock-shafts *g g'*, the levers *f f''* on the said rock-shafts, and their rods *e e*, connecting said levers to the member e^2 of the T-shaped lever, substantially as herein shown and described.

4. In a valve-gear for engines, the combination, with slotted T-shaped levers, slide-blocks *b b'*, pivoted to the piston cross-heads, the rock-shaft *g g'*, the levers *f f''*, and the connecting-rods *e e'*, of the reversing-links *k k'*, the levers *h h'*, and connecting-rods *i i' j j'*, substantially as herein shown and described.

338,153. SELF-INKING HAND-STAMP. BENJAMIN B. HILL, Philadelphia, Pa. Filed July 23, 1884. (No model.)

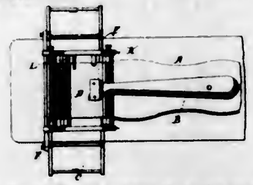


Claim.—1. The combination, with a permanent inscription-plate, of a movable type-carrier yieldingly connected thereto, a spring between the two, and means, substantially as described, for compressing the spring to adjust the inscription-plate and type-carrier with respect to each other, substantially as described.

2. The combination, with a permanent inscription-plate, of a movable type-carrier having one side hinged to the plate and the other secured thereto by an adjusting-screw, substantially as described.

3. The combination of the supports of the upper bearing of the type-bands of a hand-stamp, with set-screws at each end of said bearing, constructed and arranged to regulate the position of said upper bearing with respect to the lower bearing thereof, substantially as described.

338,154. QUILTING ATTACHMENT FOR SEWING-MACHINES. TERELIUS A. HILL and JESSE PERLEE, Maryville, Tenn. Filed Aug. 11, 1885. (No model.)

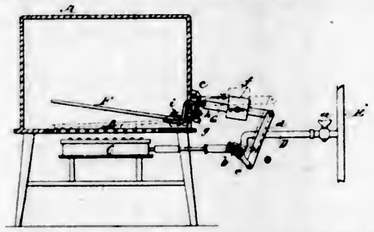


Claim.—1. In a quilting attachment for sewing-machines, the combination of a frame made in corresponding sections, each provided with a hinged support at one end and a clamp at the other or adjacent end, consisting of plates extending flush with the upper face of the sections to extend across the machine-table and form a nearly continuous track, and spring-plates secured to the under side of said sections by screws, substantially as set forth, and a bar to hold the sections together, as shown and described.

2. In a quilting attachment for sewing-machines, the combination of a carriage provided with rollers carrying the fabrics to be quilted, of a take-up roller mounted in vertical slots, and elastic bands, as O, rigidly secured at one side of the slots, over which they extend, and adjustably secured at their outer ends, substantially as shown, and for the purpose described.

3. The combination, with a carriage, for the purpose herein set forth, of an elastic band or strap, K, and a spring marking-finger attached to the forward or initial side of the carriage, substantially as shown, and for the purposes specified.

338,155. AUTOMATIC ATTACHMENT FOR GAS-STOVES. JOHN N. IVES, Brooklyn, N. Y. Filed June 3, 1885. (No model.)



Claim.—1. The combination, with a burner, a supply-pipe for the same, and a valve in said pipe, provided with an arm, of a lever having one end extending over the burner, and the other provided with a weight, a link connecting the weighted end of the lever and the arm of the valve, and an adjusting-screw impinging against the lever, substantially as described.

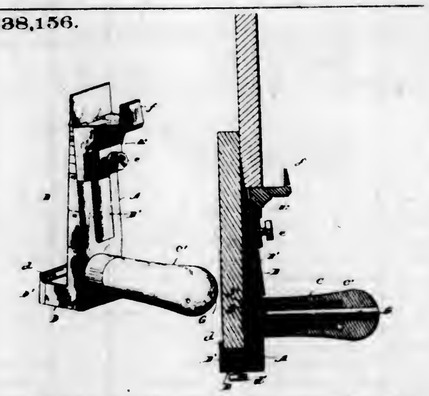
2. The combination, with a burner, of a lever having a portion extending above the burner, said portion consisting of a plate provided with a curved slot, and an adjusting-screw passing through said slot and connecting said plate with the main part of the lever, substantially as described.

3. The combination, with a burner, a supply-pipe for the same, and a valve in said pipe, provided with an arm, of a weighted lever having one end extending over the burner and the other provided with a weight, a link connecting the weighted end of the lever and the arm of the valve, an adjusting-screw impinging against the lever, and the plate adjustably connected to said lever, substantially as and for the purpose specified.

338,156. WEATHER-BOARDING GAGE. HORACE E. JOHNSON, Pittsburg, Kans. Filed Jan. 23, 1886. (No model.)

Claim.—1. In a weather-boarding gage, a body portion having an outwardly-projecting screw-threaded member, C, a handle internally

338,156.



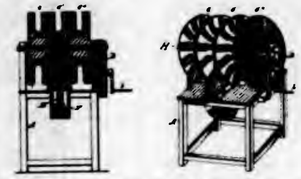
screw-threaded and provided with a follower, substantially as shown, and for the purpose set forth.

2. In a weather-boarding gage, a body portion having an outwardly-extending screw-threaded member formed integral therewith, and a handle located on said screw-threaded member and provided with a follower, in combination with the adjustable members D' and E, substantially as and for the purpose set forth.

3. In a weather-boarding gage, a tapered body portion, B, having a dovetailed projection formed thereon, a gage or rest movably secured to said dovetailed projecting portion, a rotary internally-screw-threaded handle which is adapted to engage with the outwardly-extending screw-threaded portion C, and provided with a follower which can be projected beyond the inner side of the body portion, and an adjustable foot, D', with an upwardly-projecting portion, *d*, the parts being organized substantially as shown, and for the purpose set forth.

4. In a weather-boarding gage, the body portion B, provided on its inner side with a recess and on its opposite side with an outwardly-extending screw-threaded portion, in combination with a handle located on said screw-threaded portion and carrying a bar, G, having a washer, *g*, secured thereto, and a foot with an upwardly-extending portion, substantially as and for the purpose set forth.

338,157. APPARATUS FOR CLEANING BOOTS AND SHOES. THOS. O. JONES, 1 Welford Terrace, Brooke Road, Upper Clapton, County of Middlesex, England. Filed June 11, 1885. (No model.) Patented in England Nov. 21, 1883, No. 5,478.



Claim.—1. The combination, with a frame and a rotary spindle, of a series of disks carried by said spindle and provided with a series of brushes radially mounted therein, substantially as described.

2. The combination, with a frame and a rotary spindle, of brushes constructed of a series of U-shaped sections removably engaged upon a disk, substantially as described.

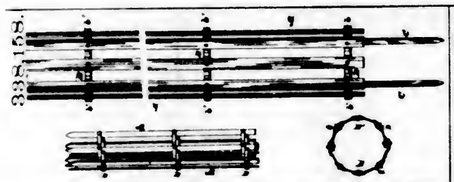
3. The combination, with a frame and a rotary spindle, of disks carried by said spindle, provided with a series of projecting walls, forming channels for the reception of the brushes, substantially as described.

4. The combination, with a frame and a rotary spindle, of disks carried by said spindle, provided with a series of channels within which the brushes are inserted, and a securing-tire passed circumferentially around said disks, substantially as described.

5. The combination, with a frame, a rotary spindle, and disks mounted upon said spindle, carrying the brushes, of a rotary distributing-brush located underneath said spindle and between the disks carrying the brushes, substantially as described.

6. The combination, with a frame, of a rotary actuated spindle provided with a series of brushes, and a distributing-brush rotatable by frictional contact with one of the brushes engaged upon said spindle, said distributing-brush provided with a receptacle in which it is rotatable, substantially as described.

338,158. TREE-PROTECTOR. FREDERICK P. KOEHLER, Canton, Ohio. Filed Sept. 5, 1885. (No model.)

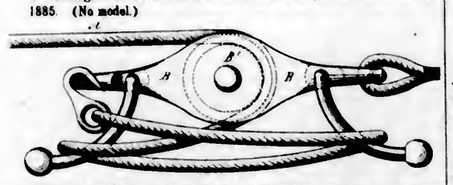


Claim.—1. A tree-protector made of two parts of different diameters, each part consisting, essentially, of semicircular bands or hoops having depressions therein, and a series of slats separated, as shown, and secured within the depressions in the semicircular bands or hoops, the two parts being united by overlapping and securing together the ends of the bands, substantially as set forth.

2. In a tree-protector, a supporting-hoop formed in two sections semicircular in form, of different diameters, and having depressions formed therein for a lateral support for the slats, substantially as described and set forth.

3. A tree-protector made in two parts of different diameters, each part consisting, essentially, of semicircular bands or hoops having depressions formed therein, slats secured within the depressions in the bands or hoops, and the stakes C, all of the above parts combined substantially as set forth.

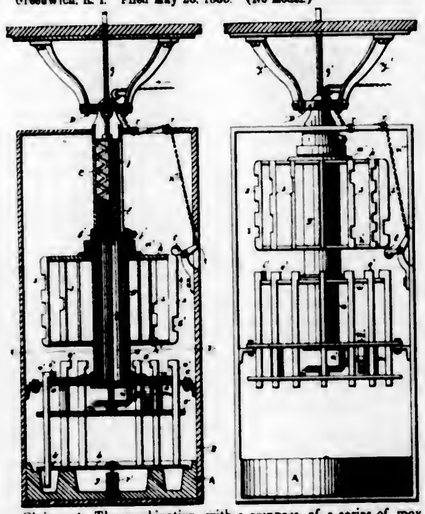
338,159. CLOTHES-LINE FASTENER. IGNAZ KOHN, New York, N. Y., assignor of one-fourth to Jacob Zaber, same place. Filed Mar. 19, 1885. (No model.)



Claim.—1. The combination of a clothes-line and its supporting-pulleys, a hook attached to one end of the line, a pulley, and a pulley-block having bent arms extending in opposite directions, and eyes at both ends of the block for attaching the ends of the clothes-line, substantially as described.

2. An attachment for clothes-lines, consisting of a pulley and a pulley-block having bent arms extending in opposite directions to each other, and eyes at both ends of the block, substantially as set forth.

338,160. MARINER'S SIGNAL-COMPASS. BENJAMIN ARNOLD, East Greenwich, R. I. Filed May 20, 1885. (No model.)



Claim.—1. The combination, with a compass, of a series of movable pins and suitable mechanism to move the pins toward and from the compass card or needle, substantially as and for the purpose set forth.

2. The combination of a compass and a series of pins with a set of signal-bars and suitable mechanism for operating the pins and signal-bars, substantially as and for the purpose specified.

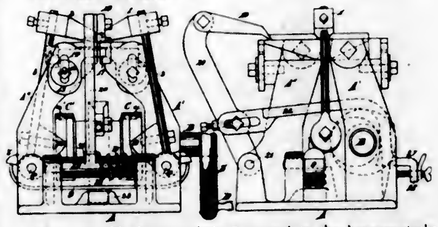
3. The combination of the tube *e*, plates c and c', sliding tube *g*, plates *h h'*, bars *s s*, pins *o' o'*, and plate *w*, substantially as described, and for the purpose set forth.

4. The combination of the shaft *g'*, shaft *m*, friction-pulley *m'*, and plate *w*, with pin *i'*, the plate *c*, and pins *o' o'*, substantially as and for the purpose set forth.

5. In an apparatus for controlling signals by means of a compass, a compass-card having an aperture made in it, as described, with the drop-pins *o'*, plate *w*, pin *i'*, bars *s s*, and lever *t* and suitable intermediate mechanism, substantially as and for the purpose set forth.

6. In an apparatus for controlling signals by means of a compass, the combination of a compass-card having an aperture in it, as described, with a pivot for the compass-needle capable of being depressed, and a series of pins, *o' o'*, substantially as and for the purpose specified.

338,161. SAW-SET. GEORGE W. BUSBEE and FREDERICK DANNER, Cincinnati, Ohio, assignors to the Egan Company, same place. Filed Dec. 5, 1885. (No model.)



Claim.—1. The hammer-shafts 3, secured to the hammer-stocks, journaled upon a center, and provided with lugs for compressing the spring to impart the force to the hammers, substantially as herein specified.

2. In combination with the two hammers placed on opposite sides of the frame, the cams, a spring, and the hammer-stocks journaled on centers and retracted by the engagement of lug 10 with the cams on shaft B, for a simultaneous stroke by the release of the spring 9, substantially as herein specified.

3. In combination with the hammer-stock 6, journaled on a center sleeve, the hammer-shafts 3, radially adjustable on said stock, substantially as herein specified.

4. In combination with the hammer-stocks, the shaft B and cams C C', said stocks provided with lugs 8, for simultaneously compressing the free ends of the spring, which project up from opposite sides of the machine, to give a simultaneous stroke of both hammers, substantially as specified.

5. In combination with the hammers and table of a saw-set, the eccentric 26 and a connecting-arm, 22, having a bent shank engaging with said eccentric and adjustably pivoted to the oscillating arm 20, carrying an oscillating pawl, and the spring 30, whereby the feeding of the saw is automatically accomplished by rotating the main shaft, substantially as described.

6. In combination with the hammers and table of a saw-set, the oscillating feeding-arm 20, having a sleeve, 29, the coiled spring 30, wound around said sleeve and attached to the feeding-arm, the eccentric 26, and a connecting-arm, 22, having a bent shank engaged with said eccentric and adjustably pivoted to the feeding-arm, substantially as described.

7. In combination with the spring 9, operated by the lugs 8, the adjusting-screw 35, for regulating the tension of said spring, substantially as herein specified.

8. In combination with the spring 9, the adjusting-screw 35 and movable block 34, for regulating the tension of the spring, substantially as herein specified.

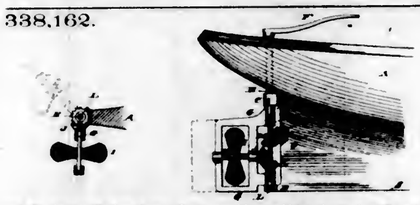
9. The combination, with a saw-support and the shaft B, having cams C C', of the stocks journaled on centers 4 and provided with ledges 6 and cam-lugs 8 and 10, the hammer-shafts 3, adjustably attached to said ledges 6, and an adjustable spring, 9, adapted to engage the opposite lugs, 8, substantially as described.

10. The combination, with a saw-support, of the eccentric 26, oscillating feed-arm 20, carrying a pawl, 19, said feed-arm being provided with a pivotal sleeve, 29, a spring, 30, coiled on said sleeve and attached to the feed-arm, a connecting-arm, 22, provided at one end with a shank, 27, adapted to engage the eccentric, and having a slot, 24, at its other end, a bolt, 23, passed through said slot and forming a pivotal connection for the arms 20 and 22, and an adjusting-screw, 25, passing through the head of the connecting-arm and adapted to bear on the bolt 23, to limit the throw of the feed-arm, substantially as described.

338,162. PROPELLING AND STEERING VESSELS. WILLIAM H. BURNS, St. Louis, Mo. Filed Apr. 6, 1885. (No model.)

Claim.—In a steering-propeller, the combination of the brackets C

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and D, the oscillating frame G, stepped into said brackets, the tiller-shaft E, connected to the frame G, the short vertical shaft L, journaled at both ends in the frame G concentrically with its axis of oscillation, the propeller-shaft H, journaled at its ends in said frame, the propeller-screw secured to said propeller-shaft at a point intermediate of its journals, the beveled cog-wheel J on said propeller-shaft, the operating-shaft O, having the beveled cog-wheel N, and the beveled gear secured to the vertical shaft L and connecting the operating-shaft with the propeller-shaft, all constructed and arranged to operate substantially as set forth.

338,163. PRESSER-FOOT FOR SEWING-MACHINES. THOMAS M COMPROFF, Boston, Mass., assignor to the Singer Manufacturing Company of New Jersey. Filed Oct. 23, 1885. (No model.)

Brief.—The invention relates to a presser-foot for use in sewing stays or stay-pieces which are intended to overlie and strengthen seams. A central rib or fin extends lengthwise of the foot, projecting below the bottom thereof and terminating at or near the needle-hole therein. Longitudinal edge ribs may also be provided.



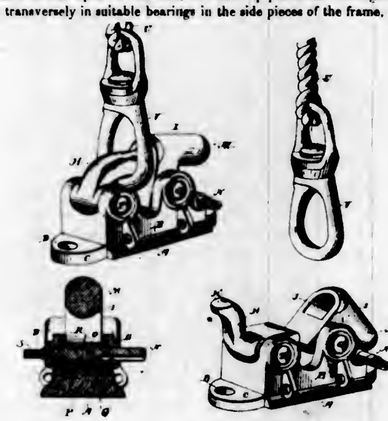
Claim.—1. A sewing-machine presser-foot provided on its under side, at its forward end, with a central longitudinal rib rigid with said foot and terminating rearwardly at or near the needle-hole, said rib being V-shaped in cross-section, or sharpened on its bottom, and chamfered off or extending upward at the front or toe thereof, to adapt it to enter the crease of the seam, substantially as set forth.

2. A sewing-machine presser-foot provided on its under side, at its forward end, with a central longitudinal rib or fin, the rear of which is at or near the needle-hole, the bottom of said foot having also longitudinal ribs at its edges, substantially as set forth.

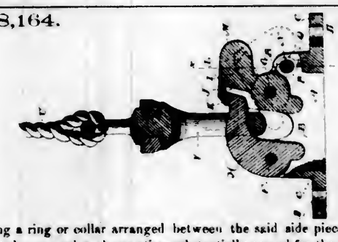
3. A sewing-machine presser-foot provided on its under side, at its forward end only, with a central longitudinal rib or fin, said foot having also on its bottom longitudinal side ribs rearward of the needle-hole only, substantially as set forth.

338,164. BOAT-DETACHING DEVICE. LEWIS L. CREAMER and FRANK A. SPARKS, Millville, N. J. Filed Sept. 15, 1885. (No model.)

Claim.—1. In a device for detaching boats, the combination of a frame having cheeks or side pieces, the hook pivoted between the said side pieces and having an upturned or inclined point or nose, the pivoted latch-arm having a beveled recess adapted to receive and retain the point of the hook, and provided with a weight or arm, and having a heel or shoulder formed upon its rear side, and the trip pin or bolt arranged to slide transversely in suitable bearings in the side pieces of the frame, and



338,164.

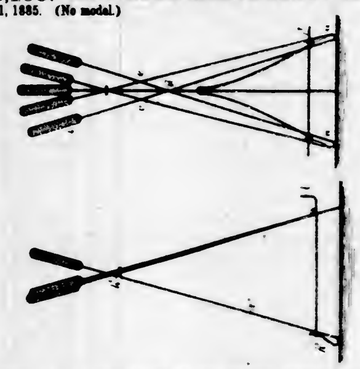


having a ring or collar arranged between the said side pieces, all constructed, arranged, and operating substantially as and for the purpose set forth.

2. In a device for detaching boats, the combination of the frame, the hook having an upturned point or nose pivoted between the sides of said frame, the latch-arm having a beveled recess, a laterally-extending weight or arm, and a heel or shoulder formed on its rear side, the transversely-sliding trip pin or bolt having a ring or collar adapted to engage the said heel or shoulder, and an upwardly-bulging spring arranged in a transverse groove in the base of the frame and adapted to bear against the collar of the trip-bolt, and to retain the latter in any position to which it may be adjusted, substantially as and for the purpose herein shown and specified.

3. As an improvement in devices for detaching boats, the herein-described frames secured one at the bow and another at the stern of the boat, each provided with a pivoted hook having an upturned point or nose, a pivoted latch-arm having a beveled recess adapted to retain the said point or nose, a laterally-extending weight or arm, and a heel or shoulder, a transversely-sliding trip pin or bolt having an annular collar adapted to bear against the said heel or shoulder, and a detaining-spring arranged to bear against the collar of the trip-pin, in combination with a line extending longitudinally through the boat and connecting the inner ends of the trip pins or bolts, which may thereby be simultaneously withdrawn from engagement with the heels or shoulders of the latch-arms, and the davit-falls having swiveled links attached to their ends for engagement with the detaching devices, all arranged and operating substantially as and for the purpose herein shown and specified.

338,165. EASEL. EUGENE B. CROCKER, Pawtucket, R. I. Filed Oct. 21, 1885. (No model.)



Claim.—1. An easel having the side supports crossing above their centers, and around which crossing is looped the brace-rod, and having said side supports fixedly connected near their bases by a cross-rod, to which is hinged a V-shaped prop-rod, for the purpose described.

2. A folding easel having the side supports crossing above their centers, and around which is looped the brace-rod, and having said side supports fixedly connected near their bases by a cross-rod, to which is hinged a V-shaped prop-rod, the bent free ends of said prop forming the shelf of the easel when adjusted, for the purpose described.

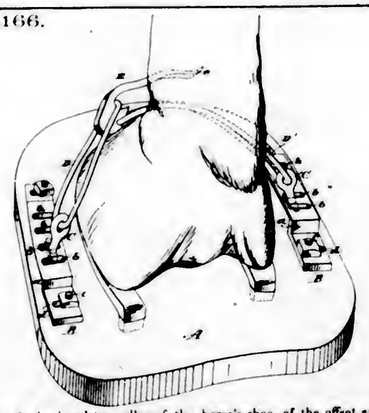
3. The combination, with the side supports bent at *a* and having the cross-rod *r*, of the brace-rod *s*, having a snap-hook, *k*, and looped at *k'* around said side supports, and of the prop-rod *p*, having the bent ends *l l*, and hinged to said rod *r* and taking into the snap-hook *k*, for the purpose described.

338,166. HORSE MARSH-SHOE. CHARLES DUMKE, Portland, Wis. Filed Feb. 2, 1886. (No model.)

Claim.—The combination, with the board A, provided with recesses for receiving the heel and toe calks of the horse's shoe, of the offset apertured bars B, the eyebolts C, provided with T-shaped heads, the links D D', and the cam-lever E, substantially as herein shown and described.

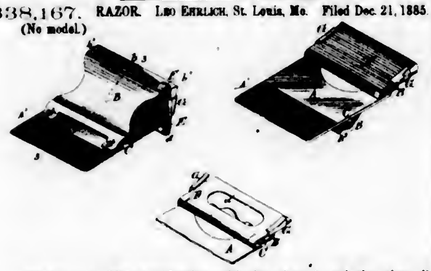
2. The combination, with the board A, provided with recesses for

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receiving the heel and toe calks of the horse's shoe, of the offset apertured bars B, the metallic strips *f*, the bolts *c*, the eyebolts C, having T-shaped heads, the links D D', and the cam-lever E, substantially as herein shown and described.

338,167. RAZOR. LEO EHRLICH, St. Louis, Mo. Filed Dec. 21, 1885. (No model.)



Claim.—1. The combination, with the plate A and the plate D hinged thereto, of the latch-plate B, hinged to the plate A and having the lips or lugs embracing the edge of the plate D between them, as set forth.

2. The combination, with the plate A, the blade-plate D hinged thereto, and the blade F, of the plate B, hinged to the plate A and engaging directly with the blade-plate D, and the lug or lip *b*, projecting from the plate B and engaging the blade F for holding it to place, substantially as set forth.

338,168. METHOD OF MAKING WHEELS. WALTER EYRE, 167 Ellesmere Road, Sheffield, County of York, England. Filed June 4, 1885. (No specimens.) Patented in England Dec. 29, 1884, No. 16,985, and in Canada June 15, 1885, No. 21,886.



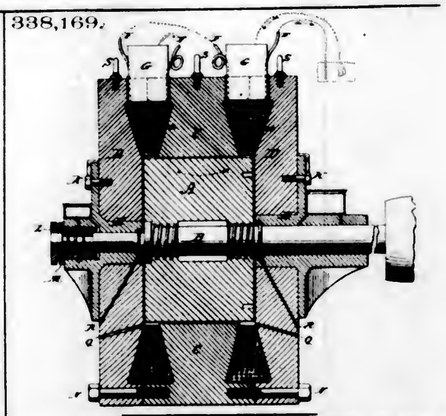
Claim.—The within-described method of manufacturing iron or steel car-wheels, which consists, essentially, in the following steps: first, swaging down the ends of a cylindrical piece to form the protuberances for the boss of the wheel; second, forging the body of the said piece between and around the said protuberances in dies into the form of a flat disk, and, third, dishing and flanging the said disk, all as herein specified.

338,169. DYNAMO-ELECTRIC MACHINE. GEORGE FORBES, London, County of Middlesex, England. Filed Oct. 11, 1884. (No model.) Patented in England June 22, 1883, No. 3,115, and in France Dec. 19, 1883, No. 159,262.

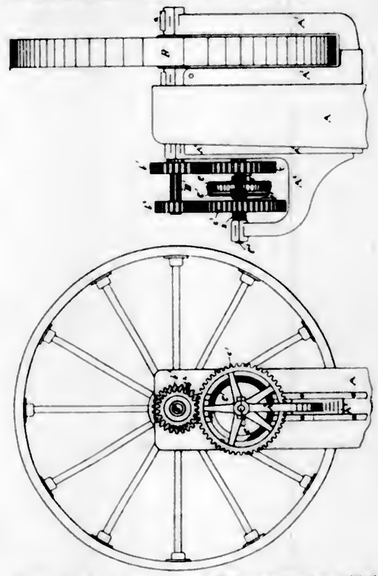
Claim.—1. In a machine for generating electricity of the unipolar type, the combination, with a rotating magnetized mass and a box-like mass of magnetic material recessed for the reception of magnetizing-coils, of metallic troughs inclosing said coils and inserted in said recesses, said troughs being insulated from the walls of said recesses, but in circuit with the rotating mass, substantially as described.

2. A magnetic circuit of iron in which all the lines of force are closed curves, a part of the iron being adapted to rotate about a central axis, whereby an electric circuit is generated in the rotating mass, the terminals from which said current is collected being one within and the other without all the circuits of lines of force.

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338,170. BAND-SAW MILL. ALBERT F. GRISWOLD and HENRY R. BARNHURST, Erie, Pa. Filed Nov. 23, 1885. (No model.)



Claim.—1. In a band-saw saw-mill, the combination, with the shaft of the driven band-wheel and the vertically-movable frame in which it is journaled, of a rotating resisting device and gearing for actuating the same, which is mounted on said vertically-movable frame and actuated from said band-wheel shaft, substantially as set forth.

2. In a band-saw saw-mill, the combination, with the shaft of the driven band-wheel and the vertically-movable frame-work in which it is journaled, of friction-disks and gearing for causing said disks to act upon each other, mounted on said vertically-movable frame and actuated from said band-wheel shaft, substantially as set forth.

3. In a band-saw saw-mill, the combination, with the shaft of the driven band-wheel and the vertically-movable frame in which it is mounted, of friction-disks and gearing for causing said disks to revolve at different speed in the same direction, mounted on said vertically-movable frame and actuated from said band-wheel shaft, substantially as set forth.

4. In a band-saw saw-mill, the combination, with the shaft of the driven band-wheel, of a resisting device consisting of two friction-disks and gearing for moving the same upon each other, which is operated from said band-wheel shaft, substantially as set forth.

338,171. BABY-CARRIAGE. RICHARD HELM, St. Louis, Mo. Filed Apr. 10, 1883. (Model.)

Claim.—1. A child's carriage having springs folding on the body

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and sliding in slots therein, wheels carried on spindles connected to said springs, and a removable axle for retaining the springs and wheels in an operative position, substantially as specified.

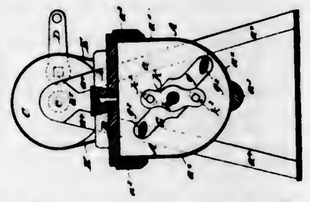
2. In a baby-carriage, an axle carrying oppositely-moving arms or rods, which pass through the upturned ends of said axle, combined with springs carrying wheel-spindles, said rods entering slots or holes in said springs coincident with said spindles, substantially as specified.

3. In a baby-carriage, a removable axle allowing the wheels and springs to be folded on the body, substantially as specified.

4. A baby-carriage having wheels folding on the body, a foot board or rest and front wheel folding on the body, and a folding back, substantially as specified.

5. A baby-carriage having a removable axle, folding springs and wheels, folding foot-board and front wheel, removable folding arms, an extensible seat with a hinged front and a folding back, the whole combined substantially as specified.

338,172. CHURN. JAMES HULTS, Greeley, Kans. Filed Dec. 9, 1885. (No model.)



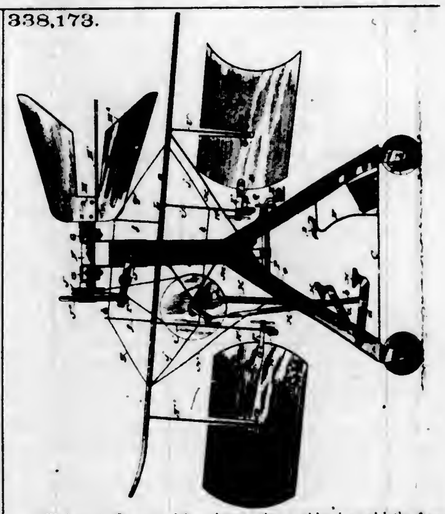
Claim.—1. The combination, in a churn, of the body A, provided with a cover, a shaft, H, mounted in a bearing at one end of the body and provided with a squared inner end, A, and a pulley, J, a shaft, M, journaled within shaft H and provided with a squared end, *m*, and a pulley, N, a driving-pulley, C, open and crossed belts E F, leading, respectively, from said pulley to the pulleys J N, an adjustable bearing, L, in the opposite end of the churn-body, and a double dasher consisting of an outer dasher, G, and an inner dasher, K, made substantially as specified, and mounted at one end of the shafts H M, and at the other end on each other and on the bearing L, substantially as herein set forth.

2. The combination, in a churn and with the shafts H M, bearing L, and dashers G K, mounted on said shafts and bearing and on each other, substantially as specified, and the driving-pulleys J N, and open and crossed belts E F, of a pin, O, passed through pulley N and adapted to be entered into a hole, *o*, in pulley J, substantially as and for the purpose herein set forth.

338,173. AERIAL NAVIGATION. RINGERT JONGEWAARD, Harrison, Dak. Filed Aug. 15, 1885. (No model.)



338,173.



Claim.—1. In an aerial navigator, the combination, with the framing, of the rudder pivotally supported between its ends, and a detent located at one end of the rudder, whereby such rudder may be held at any suitable angle and the pivot thereof may be braced, substantially as set forth.

2. The combination of the frame A, provided with vertical slots in its upper portion, the sail L, consisting of the cloth *c*, attached beneath a frame consisting of crossed slats *d* and a hoop, *e*, and provided with two crossing bars, *l*, adapted to fit through the aforesaid slots, substantially as shown and described.

3. The combination, in the sail-frame, of the crossed slats *d*, the hoop *e*, secured around them, the queen-posts *f*, rising from the frame, the tie-cords connecting the tops of the posts, the brace-cords connecting the tops of the posts with the sail-frame, the depending posts *i*, braces *j*, and ties *k*, substantially as shown and described.

4. The combination of the frame A, provided with the slotted post M, the sail L, provided with crossing bars *l*, adapted to engage the said slots in post M, the winch O, journaled transversely to the frame A, the winch P, journaled longitudinally therewith, the disks Q Q', notched in their edges, the spring-pawls R R', attached to the winch-cranks and adapted to engage the said disks, and the brace-lines N, attached at one end of each to the sail-frame and passing around the winches, substantially as shown and described.

5. The combination of the frame A, the sail L, attached thereto, the hangers T' and U', depending from the sail-frame, the rudders T and U, centrally pivoted to the said hangers, and means for setting the rudders, substantially as shown and described.

6. The combination of the frame A, the sail L, attached thereto, the hangers T' and U', depending from the sail-frame, and the rudders T and U, centrally pivoted to the said hangers and slotted from one edge to the center, substantially as shown and described.

7. The combination of the frame A, the sail L, attached thereto, the hangers T' and U', depending from the sail-frame, the rudders T and U, centrally pivoted to the said hangers and provided each with a square stud, *r*, in the line of its axis, provided with springs *p*, the cross-bars *n*, notched in their upper sides to receive the said studs, and the depending posts *n'*, supporting the cross-bars, substantially as shown and described.

8. The combination of the frame, the sail having its front edge turned upward, and a propeller, substantially as set forth.

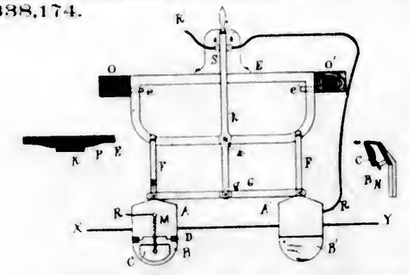
9. The combination of the frame having a support for the rider, a sail, and a flat blade-like rudder pivotally supported, the axis of said pivot being in line with the direction of motion of the machine, substantially as set forth.

10. The combination of the frame, the sail connected therewith by a universal joint, winches journaled in the frame, and cords passed one around each winch and secured at their ends to the sail, the ends of one cord being secured in front and rear and the other on opposite sides of the joint of the sail with the frame, substantially as set forth.

338,174. ELECTRIC RAILWAY. WALTER H. KNIGHT, Cleveland, Ohio. Filed May 11, 1885. (No model.)

Claim.—1. The combination of a metallic shank, a contact-shoe movable relatively to said shank, an insulating-support for said shoe, and an insulated conductor connected to said shoe and extending through said shank.

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2. The combination, with a metallic shank, of the contact-shoe, a movable insulating-support for said shoe, and an insulated conductor extending through said shank and connecting with said shoe.

3. The combination, with the metallic shank extending into the slot, of a contact-shoe supported from said shank and a flexible insulated conductor extending through said shank and connecting with said shoe.

4. The combination, with the supporting-shank, of the contact-shoe carried thereby through intermediate insulating material and movable relatively thereto, and the flexible insulated conductor extending through said shank and connecting with said shoe.

5. The combination, with an electric locomotive and the main conductor, of a contact device adapted to pass along said conductor and held in position by a detachable connection with the locomotive, adapted to give way upon the said device meeting an obstruction.

6. The combination, with an electric locomotive and the main conductor, of a contact device adapted to slide along said conductor and held in position by a spring-catch connection with said locomotive, adapted to give way when the said device meets an obstruction.

7. The combination, with the main conductor, of the shank extending into the conduit, and a contact-shoe movable relatively to said shank, and an insulating-backing for said shoe movable therewith.

8. The combination of the contact-shoe and the supporting-foot of waterproofed fiber.

9. The contact-shoe provided with an extension of insulating material.

10. The combination of a slotted metallic conduit, a fixed conductor therein, contact-shoe shorter than the distance of the conductor below the slot, and extensions on said shoe, of insulating material.

11. The combination, in an electric railway, of the main conductor, an electric locomotive, a contact device adapted to slide along said conductor, and a circuit-controller in the circuit of said locomotive dependent on the mechanical connection between said contact device and the locomotive.

12. The combination, in an electric railway, of the main conductor, an electric locomotive, a contact device connected to the said locomotive, but movable relatively thereto, and a switch in the circuit of the locomotive connected to the said contact device, so as to be actuated by its movement relative to the locomotive.

13. The combination of plow A, lever K, and the switch in the motor-circuit controlled by the said lever.

14. The combination, with a slotted conduit and a longitudinal conductor therein, of a connection device consisting of a shank having an insulated conductor extending through the slot, and a contact portion resting constantly under pressure of a spring against the said longitudinal conductor and movable relatively to said shank on a longitudinal axis.

15. The combination, in an electric railway, of the slotted conduit, the conductor therein having a bare contact-surface and placed at a fixed height relatively to the edge of the slot, an electrically-propelled vehicle on said railway, and a contact device extending from said vehicle into said conduit and connected to said vehicle by a joint having a longitudinal axis at a point a distance above the edge of the slot greater than the distance of the conductor below the said edge.

16. The combination, with two contact-plows independently hung from an electrically-propelled vehicle, of a connection between them pivoted to each, so as to permit of a parallel link motion of the two plows relative to their supports.

17. The combination, with an electric locomotive, of a slotted conduit, a conductor fixed therein, an insulated conductor connected with said locomotive and extending into the conduit, and a contact device connected therewith thinner than the width of the slot, so as to be withdrawn therethrough.

18. The combination, with a conductor inclosed in a slotted conduit, of an insulated conductor extending through the slot and a collapsible contact device at its inner end adapted to be withdrawn through the slot of the conduit.

19. The combination, with a slotted conduit containing an insulated electric conductor, of an electrically-propelled vehicle, a contact device connected therewith adapted to extend into the conduit and to be withdrawn therefrom, and a guard on said contact device, upon which it is adapted to ride when pulled out of the conduit.

20. The combination, with a slotted conduit and fixed conductor therein, of a conductor connected with a moving vehicle and extending into said conduit through the slot, and a contact-piece normally held under spring-pressure at an angle to said conductor, but capable of movement against said spring into a position in line with said conductor, whereby the said conductor and contact-piece may be withdrawn through the slot.

21. The combination, with an electric locomotive and a slotted conduit containing a stationary conductor, of a contact-conductor extending into said conduit through the slot, and connected with said locomotive through a joint having a transverse axis and a contact device inclosed in said conduit, but removable therefrom, connected with said conductor.

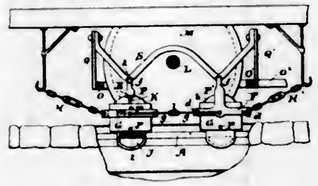
22. The combination, with a slotted conduit and an electrically-propelled vehicle, of a conductor connected with said vehicle and extending into said conduit, to connect with a supply-conductor therein, being also movable about a transverse axis and removable from the conduit through the slot, and a stop in the path of movement of the conductor, adapted to give way when the conductor meets an obstruction.

23. The combination, with a vehicle and a stationary electric conductor inclosed in a conduit, of a conductor extending into said conduit, and a contact-piece connected therewith and movable about a longitudinal axis, and a coiled spring pressing said contact-piece against the stationary conductor.

24. The combination of the two plows, connected together, and a stop common to both plows, adapted to give way when either plow strikes an obstruction.

25. The combination, with a slotted conduit and a contact-plow extending into the conduit and removable therefrom, of a stop adapted to give way before an obstruction and allow the plow to be thrown out of the conduit by the movement of a vehicle to which the plow is connected.

338,175. ELECTRIC RAILWAY. WALTER H. KNIGHT, New York, N. Y. Original application filed May 1, 1885, Serial No. 165,102. Divided and this application filed Jan. 13, 1886. (No model.)



Claim.—1. The combination, with a railway-track, of a slotted conduit having an electric conductor therein at a fixed height relative to said railway, a vehicle traveling thereon having springs between its journal-boxes and its body, and a conductor supported from said journal-boxes extending into said slotted conduit, to make a traveling connection with the conductor inclosed therein, and connected at its upper end with an electric motor arranged to propel the said vehicle.

2. The combination, with the track of an electric railway, of an electric supply-conductor extending along said track at a fixed height relative thereto, a vehicle having springs between its journal-boxes and its body, and an electric conductor supported from said journal-boxes, terminating in a contact device and extending to said conductor, to make a constant electrical connection therewith.

3. The combination, in an electric railway, of an inclosed supply-conductor at a constant height relative to the track of the railway, an electrically-propelled vehicle having springs between its body and its axle, and a frame supported from journal-boxes on said axle and carrying a contact device adapted to maintain the electrical connection between the supply-conductor and the propelling motor.

4. The combination, with a journal-box of an electrically-propelled vehicle, of a car-body supported thereby through an intermediate spring, and a contact device also supported by the said journal-box, and adapted to maintain the electrical connection between a stationary supply-conductor and the propelling electric motor.

5. The combination of core E, contact J, movable relatively to said core about a longitudinal axis and supported thereby, and a spring actuating said contact about said axis.

6. The combination, with the insulated core and supporting devices, of a removable reversible guard.

7. The combination, with the conducting-core of the plow, of the insulating-sheath, a metallic guard and transverse pins of insulating material.

8. The combination, with the plow, having a vertical connection with the locomotive, of a draw chain or bar extending from the plow to a fixed point of the locomotive.

9. The combination, with an electrically-propelled vehicle, of a conduit inclosing a supply-conductor and two contact-plows supported from said vehicle and extending into the conduit, one upon each side of an axle of the vehicle.

10. The combination, with an electric locomotive, of a slotted conduit inclosing means for conducting a supply of electricity and two connection-plows extending from said locomotive into said conduit, the two being in line with each other and connected together with an intermediate joint, substantially as described.

11. The combination of two connection-plows extending into a slotted conduit and connected together with a common draw chain or bar.

12. The combination of the two plows, connected together, and each hung so as to swing about a transverse axis, and the two draw-chains connected to their outer extremities.

13. The combination, with a railway and an electric locomotive thereon, of a fixed longitudinal conductor extending along said railway and inclosed in a conduit, and a depending conductor extending from the locomotive into contact with the said fixed conductor, but movable vertically independently thereof, and provided with means outside of the conduit for vertically adjusting its height relatively to said fixed conductor, consisting of a variable connection and stop.

14. The combination, with a stationary longitudinal conductor and a depending connection-conductor movable about a transverse axis, of a chain or stop in the path of its movement about said axis, made weaker than the conductor itself, so as to permit of its breaking when an obstruction is encountered.

15. The combination, with metallic top pieces forming the edge of the slot and contact-conductors removable therethrough, of an insulating lining for said top pieces.

16. The combination, with slot iron K, of a removable contact-conductor and insulating guard or lining, I.

17. The combination, with a slotted conduit, of an insulated conductor therein having a bare contact-surface and a contact-shoe broader than the distance between said conductor and the edge of the conduit.

18. The combination, with the top piece forming the edge of the slot, of conductor A′ and foot a with shoe J.

19. The combination, with an electric locomotive, of a stationary conductor in electric connection with the propelling motor, two terminal conductors from said motor, a short-circuiting conductor in a position to be placed in connection with said terminals, and an automatic device actuated by the rupture of the connection between the motor and stationary conductor, for establishing a connection between the two terminals and the short-circuiting conductor.

20. The combination, with insulated core E, of a wearing-guard removable therefrom and independent of the support.

21. The combination, with an electric locomotive, of a slotted conduit beneath the surface of the street or roadway, an insulated electric conductor therein carrying the supply of electricity, a constant electric connection between the locomotive and said conductor, and a broom carried by said locomotive and extending into said conduit through the slot to a point below the said conductor.

22. The combination, with an electric locomotive, of a slotted conduit and an insulated electric conductor therein carrying the main current supply, and with which the locomotive has a constant connection, and a broom having a flat shank, carried by the locomotive and extending into said conduit through the slot.

23. The combination, with an electric locomotive, of a slotted conduit and an insulated electric conductor therein carrying the current supply, and with which the locomotive has a constant connection, and a broom of insulating material carried by the locomotive and extending into said conduit through the slot.

24. The combination, with an electric locomotive, of a slotted conduit having catch-pits at intervals, an insulated electric conductor therein having a bare contact-surface, and a broom carried by the locomotive and extending into the conduit through the slot.

25. The combination, with an electric locomotive, of a slotted conduit, an insulated electric conductor therein having a bare contact-surface, and a splint broom, substantially as described, carried by the locomotive and extending into the conduit.

26. The combination, with a vehicle, of a slotted conduit beneath it, an insulated electric conductor therein having a bare contact-surface, catch-pits at intervals along the conduit, and a cleaning device of insulating material carried by said vehicle, and provided with a flattened shank and extending into said conduit through the slot to a point below the said conductor.

27. The combination, with a slotted conduit, of an insulated conductor therein having a bare contact-surface, catch-pits at intervals along said conduit, and a broom or cleaning device of insulating material, reaching substantially to the bottom of said conduit, for cleaning the same, and having a shank extending upward through the slot for propelling the broom longitudinally.

28. The combination, with an electric locomotive and a slotted conduit inclosing an electric conductor with bare contact-surface, of a broom or cleaning device carried by the locomotive and extending into the conduit, being removable therefrom through the slot.

29. The combination, with an electric locomotive and a slotted conduit, of a broom or cleaning device depending from the locomotive into the conduit, being removable therefrom through the slot and hung on a transverse axis.

30. The combination, with an electric locomotive and a slotted conduit containing the stationary supply-conductor, of a cleaning device carried by the locomotive and a support for the same having a transverse movement relative to the locomotive.

31. The combination, with a vehicle adapted to travel on a street or roadway, having a slotted conduit, of a cleaning device for said conduit connected to said vehicle and longer than the distance from its point of connection with said vehicle to the surface of the conduit, so as to extend into it and expanded transversely within the conduit.

32. The combination, in an electric railway having a slotted conduit containing an insulated conductor for the current of the railway, of a cleaning device for said conduit and a vehicle outside of the conduit connected therewith, the said device being longer than the distance from its point of connection with the vehicle to the surface of the conduit, so as to extend within it, and having a contracted shank adapted to travel along the slot.

33. In an electric railway having its insulated supply-conductor inclosed in a conduit, the combination, with an electric locomotive on said railway, of a cleaning device for said conduit carried thereby, the said device being adapted to extend from the locomotive into the conduit through the slot to a point below the conductor.

34. A cleaning device for the conduit of an electric railway, adapted to be propelled along said conduit and having an insulating-surface at the points adjacent to the electric conductor within the conduit.

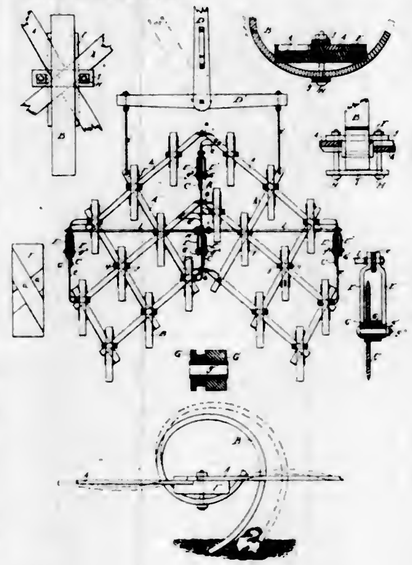
35. The combination of the stationary insulated conductor, an electric locomotive, and an intermediate contact-conductor insulated with waterproofed vulcanized fiber.

36. The combination of the stationary insulated supply-conductor, an inclosing-conduit, an electric locomotive, and an intermediate contact-conductor extending through the slot of the conduit and insulated with waterproofed vulcanized fiber.

37. The combination, with a slotted conduit inclosing an electric supply-conductor, of a contact-plow extending through the slot of the conduit and consisting of a conductor for the current, insulation of waterproofed vulcanized fiber, and means for protecting the latter against wear from the edges of the slot.

38. The combination, with an electric conductor extending from an electric locomotive to an inclosed supply-conductor, of an insulation of vulcanized fiber treated with paraffine, oil, or like waterproofing substance.

338,176. SPRING-TOOTH HARROW. CHARLES LA DOW, Albany, N. Y. Filed Feb. 1, 1886. (No model.)



Claim.—1. A harrow-frame composed of the spring-bars A A', crossing each other, and spring-teeth mounted on the bars at their junction with each other, in combination with means adapted to clamp the teeth and bars together.

2. A sectional harrow-frame consisting of the elastic bars A A', crossing each other, spring-teeth mounted on the bars at their point of junction with each other, and hinges between the sections.

3. A harrow-frame composed of the elastic bars A A', crossing each other diagonally, spring-teeth mounted on the bars and supported solely from the points where the bars cross each other, and means adapted to unite the bars and teeth at their point of junction.

4. A harrow-frame composed of bars crossing each other, teeth mounted on the bars, so as to be supported from the points where the bars cross each other, and clamp-bolts arranged in two opposite angles formed by the crossing bars, which hold the bars relatively to each other without being perforated or embedded into each other.

5. A jointed harrow-frame and spring-teeth, in combination with wheels adapted to balance the sections, and also to cut into the ground, so as to prevent swerving of the harrow-frame.

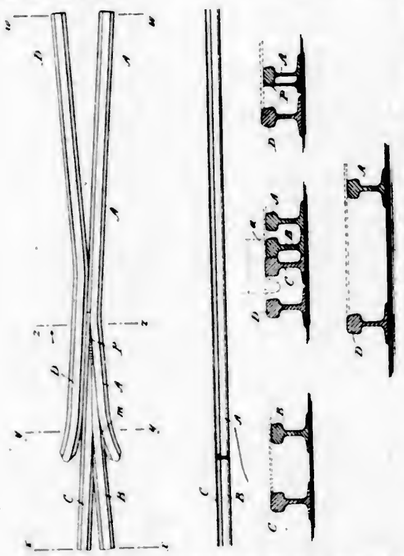
6. The combination of a harrow-frame, spring-teeth thereon adapted to hook into the earth as they are drawn forward, and a pole pivoted thereto, so as to swing laterally, substantially as described.

7. In a harrow, the combination of the bars A A', the spring-teeth B, supporting-wheels C C C, the cranked rods I I', the lever J, and the link K.

8. A harrow-frame composed of flat metal bars A A', teeth mounted on the bars at the points where they cross each other, in combination with clamp-bolts formed independently of the teeth, which prevent the bars from having end motion relatively to each other and permit adjustment of the pitch of the teeth.

9. In a harrow, a sectional frame adapted to conform to inequalities of surface, spring-teeth vibrating on the sections, and wheels or other supporting devices having contact with the ground at three or more points beneath the frame, so as to balance the sections, in combination with mechanism whereby the sections can be simultaneously raised or lowered on their supporting devices.

338,177. SPRING-FROG. DAVID H. LOVELL, Renovo, Pa. Filed Dec. 9, 1885. (No model.)

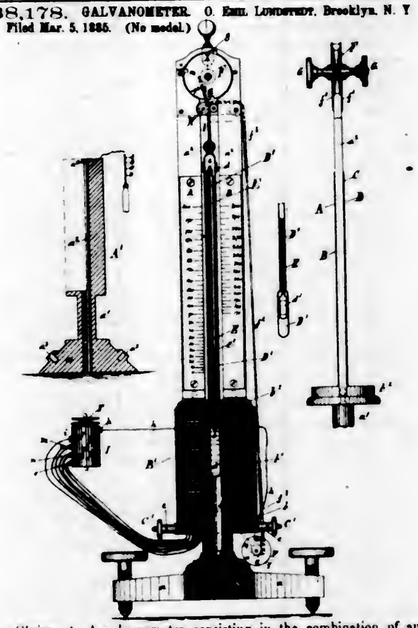


Claim.—1. A railway spring-frog having the top of its spring-rail throughout its entire length a short distance below the top of the main-line rail, substantially as herein shown and described.

2. The combination of the main rail C and the wing and siding rail D, of equal height with the other siding-rail having its top surface lower than the top of the main rail C at its juncture therewith, and the spring-rail A, made lower throughout its entire length than the main and wing rails C and D, substantially as set forth.

3. A railway spring-frog having the top of the siding-rail and of the spring-rail a short distance below the top of the main-line rail and having the frog-point beveled, substantially as herein shown and described.

338,178. GALVANOMETER. O. EMIL LUNDSTEDT, Brooklyn, N. Y. Filed Mar. 5, 1885. (No model.)



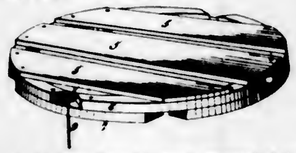
Claim.—1. A galvanometer consisting in the combination of an electric coil or helix, a transparent tube partly filled with a liquid and suspended in the axial line of the said helix, a rod or float of uniform size, of cross-section slightly smaller than the interior cross-section of the said tube and free to slide within the said tube while buoyant on the said liquid, the said rod or float having its lower end hermetically sealed and provided with a substance attractable by electro-magnetic force, and a stationary scale indicating the rise in the space between the said float and tube of the liquid displaced by the float under the influence of the electric current.

2. The galvanometer-stand A', consisting of the base *a*, helix-tube *a'*, and scale-post *a²*, made in one piece of insulating material, substantially as specified.

3. The combination of an electric coil or helix, a transparent tube partly filled with a liquid and adjustable as to elevation in the axial line of the said helix, a rod or float free to slide within the said tube while buoyant on the said liquid, and having at its lower end a substance attractable by electro-magnetic force, and a set of scales of different graduations indicating, in accordance with the adjusted elevation of the said tube, the rise of the liquid displaced by the float under the influence of the electric current, substantially as and for the purpose specified.

4. The combination of an electric coil or helix, a transparent tube partly filled with a liquid and adjustable as to elevation in the axial line of the said helix, a rod or float free to slide within the said tube while buoyant on the said liquid, and having at its lower end a substance attractable by electro-magnetic force, a set of scales of different graduations indicating, in accordance with the adjusted elevation of the said tube, the rise of the liquid displaced by the float under the influence of the electric current, and a switch, I, bringing in operation more or less coil to vary the resistance, according to the electric force acting on the thus elevated tube and indicated by the corresponding scale, substantially as and for the purpose specified.

338,179. COVER FOR FRUIT-BASKETS. JOSHUA H. MARVIL, Laurel, Del. Filed Feb. 9, 1886. (No model.)

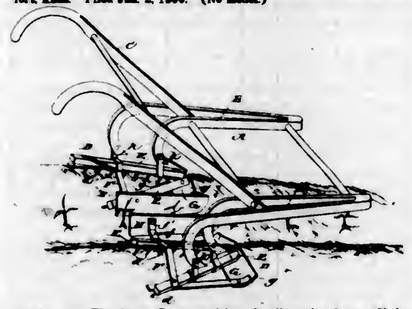


Claim.—1. In a fruit-basket, a cover composed of slats, attached to a rim composed of sections of a complete circumference arranged in two or more series, the spaces between the same breaking joints in the adjacent series, substantially as described.

2. In a fruit-basket, the combination, with the chine thereof, of a cover having a rim composed of sections or fellies arranged in two or more series, one placed upon the other, the spaces between the fellies in one series breaking joints with those of the next series, substantially as described.

3. In a fruit-basket, the combination, with the chine thereof, of a cover having a rim composed of two or more series of fellies, each cut at the ends at an angle with the radius to form an open space, and wires driven through the lower series and projecting below the same to engage with the chine of the basket, the spaces between the fellies of the upper series breaking joints with those of the lower, substantially as described.

338,180. LISTED-CORN CULTIVATOR. GEORGE W. MOFFITT, Frankfort, Kans. Filed Jan. 2, 1886. (No model.)

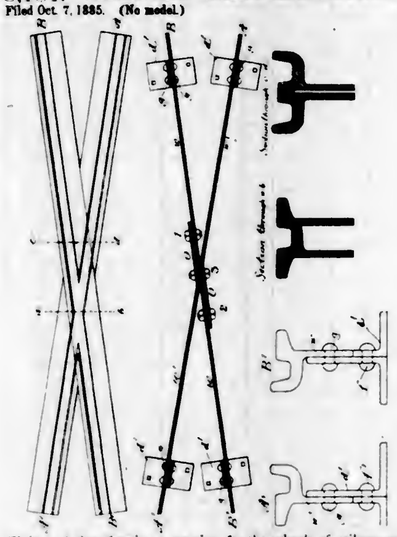


Claim.—1. The frame D, comprising the diverging beams E, having the harrow-teeth on their lower sides, the bar F at the rear end of the frame, and bent in the form of an oblique angle, and thereby adapted to the shape of the ridge, and having the inner extended end, the shoe G, formed substantially like the bar F, and attached to the front end of the frame, the vertical fender attached to the inner ends of the bar F, and the shoe G, and the cultivator-teeth working on the inner side of the fender, substantially as described.

2. The cultivator having the opposing frames adapted to the shape of the ridges, the harrow-teeth extending from the frames, the shovels on the inner side of the harrow-teeth, and the fenders on the inner side of the frame, as set forth.

3. The frame D, made substantially in the form of an obtuse angle in cross-section, and having teeth depending therefrom, shovels on the inner side of the teeth, and the fenders on the inner side of the frame, as set forth.

338,181. RAILROAD-FROG. ARTHUR J. MOXHAM, Johnstown, Pa. Filed Oct. 7, 1885. (No model.)

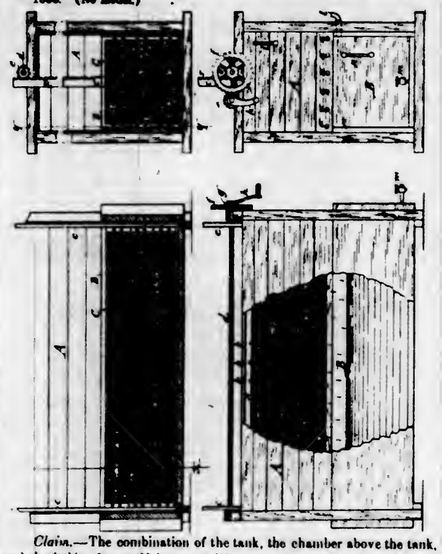


Claim.—A frog forming a crossing for the wheels of railway-cars, composed of three rolled girder guard-rails having the webs of two of said rails offset and directly secured together and to the third rail, near the apexes of said frogs, by bolts or rivets devoid of chocks or blocks, and said rails near their divergent ends secured to the main rails of the track, substantially as and for the purposes set forth.

338,182. PROCESS OF TANNING WITH SULPHOLEIC ACID. ARMAND MÜLLER, New York, N. Y., assignor of two-thirds to M. E. Waldstein and A. R. Mann, both of same place. Filed May 15, 1885. (No specimens.)

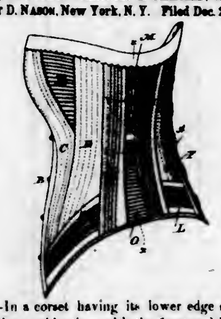
Claim.—In the art of tanning, the improvement which consists in treating the skins with sulpholeates, substantially as described.

338,183. VINEGAR-GENERATOR. JAMES D. MURRAY, Canandaigua, assignor of one-half to Rufus E. Benbert, Syracuse, N. Y. Filed Dec. 5, 1885. (No model.)



Claim.—The combination of the tank, the chamber above the tank, and the holder for acetifying material, arranged movable from the tank to the upper part of the chamber and back to the tank, substantially as set forth and shown.

338,184. CORSET. CHAUNCEY L. OLMSTEAD, West Brookfield, Mass., and ALBERT D. NASON, New York, N. Y. Filed Dec. 26, 1885. (No model.)



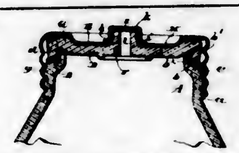
Claim.—In a corset having its lower edge cut away to pass up over the hips, the combination, with the front and back sections and the bands K L, of the vertical corded sections H I, extending from the top to the bottom of the corset above the hips, the elastic gore M, between the sections H and I and beneath the arm, and the non-elastic section O, between the sections H and I, and extending from the bottom edge of the corset above the waist to the elastic gore M, substantially as specified.

338,185. FRUIT-JAR. THOMAS G. OTTERSON and JOHN H. OTTERSON, Woodbury, N. J. Filed Dec. 2, 1885. (No model.)

Claim.—1. The combination, with a jar having a threaded neck and a lid provided with a depressed central portion, and with a teat or boss extending upwardly from its center, of a metallic screw-cap having a central portion somewhat more depressed than the central portion of the lid, the cap being pivotally secured on the said teat or boss and engaging the screw-threads on the neck of the jar, substantially as set forth.

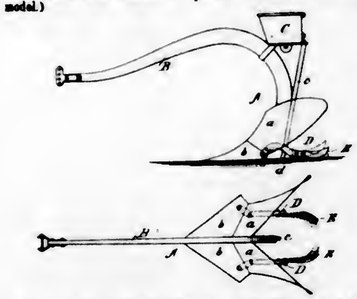
2. The combination, with the jar having a threaded neck, the

338,185.



gasket seated on a shoulder and extending into a groove formed by the shoulder and beaded neck, and the lid having a central perforated teat or boss, of the screw-cap pivotally mounted on a teat or boss, and the smaller cap adapted to engage the teat or boss and secure the larger cap to the lid, substantially as set forth.

338,186. PLANTING-PLOW. THOMAS PATEK, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Dec. 14, 1885. (No model.)

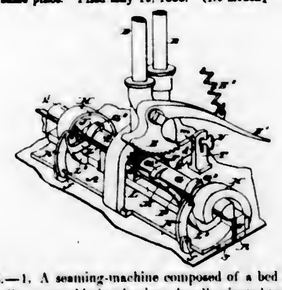


Claim.—1. In a planting-plow provided with a plow in advance adapted to open a wide furrow and runners adapted to steady the plow, the covering-blades constructed separate and attached to the said runners with bolts, substantially as and for the purpose set forth.

2. In a planting-plow, the combination of the plow A with the runners D, and with the covering-blades E, the latter adjustably attached to the said runners, substantially as and for the purpose set forth.

3. In a planting-plow, the combination of the plow A, provided with the mold-boards *a*, shares *b*, beam B, and carrying the seed-box C, seed-spout *c*, with the drill-tooth *d*, and runners D, with the covering-blades E, adjustably attached to the said runners, substantially as and for the purpose set forth.

338,187. TINNER'S SEAMING-MACHINE. HERMANN POELL, Philadelphia, Pa., assignor of one-half to Henry Gruner and Anton Schmidt, both of same place. Filed May 19, 1885. (No model.)



Claim.—1. A seaming-machine composed of a bed having a stationary handle, a movable jaw having a handle pivoted to said stationary handle, a crimper journaled to said jaw and operated by means of segmental racks and a lever connected therewith, and a shaper provided with a dog and pivotally connected to said bed and provided with raisers, all of said parts being arranged, combined, and operated substantially as described.

2. A bed provided with a stationary handle, the jaw C, a crimper having a rack and journaled in segmental pieces secured to said jaw, and a lever pivoted to said pivoted handle and carrying a rack meshing with the rack of said crimper, substantially as described.

3. The bed A and jaw C, having the handle D, in combination with the pivoted lever E', having the rack E, the crimper G, having a rack, F, meshing with the rack E, and spring E^2, substantially as described.

4. A crimper, G, a jaw, C, segmental pieces H, and blocks J, combined and operating substantially as and for the purpose set forth.

5. The bed A, having an aperture therein to receive the nose of the dog M, and provided with arms K, in combination with shaper L, having a dog, M, and arms L^2, said arms being journaled to said arms K, and crimper G, having lugs G', substantially as and for the purpose set forth.

6. A shaper carrying a dog, M, having a nose which passes through said shaper into the bed of the machine, substantially as and for the purpose set forth.

7. The crimper G, provided with a projection, G', and lugs G^2, the dog M, arms L^2, bed A, and shaper L, combined and operating substantially as described.

8. The arms K, bed A, and the jaw C, in combination with the raisers R and S, which are journaled, respectively, to said arms and jaw, substantially as and for the purpose set forth.

9. In combination with the bed A, having handle B, and jaw C, having handle D, the rest T, connected with the arm T' of the jaw C and provided with notches *h k*, and the screw U, said arm T' having a projection or tongue, M, substantially as described.

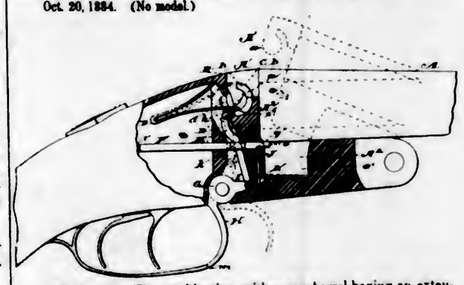
10. The bed A, handle B, jaw C, handle D, lever E', toothed segments E F, and crimper G, combined and operating substantially as and for the purpose set forth.

11. The jaw C, segmental pieces H, blocks J, crimper G, having lug G', arms K, and shaper L, dog M, bed A, having an aperture therein, springs P Q, and arms L', combined and operating substantially as and for the purpose set forth.

12. The bed A, handle B, jaw C, handle D, lever E', toothed segments E F, crimper G, having lug G', segmental pieces H, blocks J, arms K, shaper L, dog M, springs P Q, and arms L', bed A having an aperture therein, combined and operating substantially as and for the purpose set forth.

13. The bed A, having an aperture therein, handles B D, jaw C, toothed segments E F, crimper G, having lug G', segmental pieces H, blocks J, arms K, shaper L, dog M, springs P Q, arms L', and raisers R S, combined and operating substantially as and for the purpose set forth.

338,188. FIRE-ARM. GEORGE D. POTTER, Deming, N. Mex. Filed Oct. 20, 1884. (No model.)



Claim.—1. The combination, with a gun-barrel having an extension-rib provided with a dependent cylindrical hook, of a crescent-shaped cam pivoted at one end to a lifter-lever mounted in the frame of the gun and by movement of the lever engaging or disengaging with said hook, substantially as described.

2. In combination with the dependent cylindrical hook of the extension-rib and the crescent-shaped cam pivoted at one end to a lifter-lever mounted in the frame of the gun, the spring D, engaging with the inner end of said cam and pressing its outer end around said hook, substantially as described.

3. In combination with the stock of a gun, provided with a recess, B, and grooves *d*, the dependent cylindrical hook of the extension-rib and the crescent-shaped cam adapted to engage therewith and moving in said grooves in said recess, substantially as described.

4. The combination, with the depending cylindrical hook of the extension-rib and the crescent-shaped cam arranged to engage therewith, substantially as described, of a lifter-lever mounted in the gun-frame, pivoted at its upper end to the lower end of said cam, and having its lower end so connected to an operating-lever pivoted upon the gun-frame and operated from the outside thereof that by means of said lever the cam may be engaged with and disengaged from the depending hook, substantially as specified.

5. In combination, the dependent hook of the extension-rib, the crescent-shaped cam adapted to engage therewith, a lifter-lever pivoted at its upper end to the end of said cam, and the slotted lug-bolt F, through whose slot the lifter-lever passes, whereby movement of said lever imparts movement to said lug-bolt, substantially as described.

6. In combination, the dependent hook of the extension-rib, the crescent-shaped cam adapted to engage therewith, the lever-lifter pivoted at its upper end to the end of said cam, the slotted lug arranged to have the lever-lifter pass through its slot and be actuated by said lever, and an operating-lever pivoted to the gun-frame, connected to the lower end of the lever-lifter, and operated from the outside of the gun-frame to give motion to the lever-lifter and cam, substantially as specified.

7. The combination of the depending hook of the extension-rib, the crescent-shaped cam engaging therewith, the lever-lifter pivoted to the end of said cam, and an operating crank-lever pivoted to the gun-frame, having an arm within the gun-frame pivoted to the lower end of the lever-lifter, and an arm without the same forming the front section of the trigger-guard, the rear section of which has secured to it a spring which is arranged to return to and hold against it (the said front section) when the latter has been elevated, substantially as specified.

8. The combination of the depending hook from the extension-rib, the crescent-shaped cam, the lifting-lever pivoted to the lower end of said cam, the slotted lug operated by the lifting-lever, which passes through its slot, the lever H, pivoted to the gun-frame, having its interior arm pivoted to the lifting-lever and its exterior arm forming the front section of the trigger-guard and provided with the recess *p*, and the spring I, secured to the rear section of the trigger-guard and provided with the hook *o*, to engage in the recess *p*, substantially as specified.

9. A lug-bolt provided with a slot for the passage of the lifter and with a slot for the reception of a locking-pin, combined with a spring exerting pressure forward to such bolt, substantially as described.

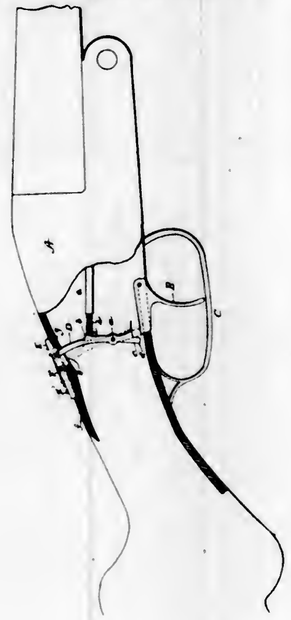
10. The combination of the flat spring K, provided with a vertical pin mounted on its free end, the other end of said spring being secured to the bottom of the lug-recess *c'*, with the lug-bolt provided with a recess, *q*, adapted to receive said pin, and the extension-lug A^3, dependent from the gun barrel or barrels, substantially as and for the purposes set forth.

11. The combination of the crescent-shaped cam adapted to engage with the dependent hook of the extension-rib, the lifter-lever to whose upper end said cam is pivoted, the spring D, acting upon said lifter-lever, and the crank-shaft G, provided with an arm to which the lower end of said lever is connected, all constructed and arranged to present the crank-arm and lifter-lever in line when said spring is compressed, substantially as and for the purposes set forth.

12. The combination of the depending hook of the extension-rib, the crescent-shaped cam having a shoulder or notch, i^2, on the upper edge near its lower end, the lifter-lever pivoted to the lower end of the cam, and the spring D, having upon the edge of its lower arm a hook, *j*, arranged to enter the recess i^2 when the depending hook is locked, and press upon the upper end of the lifter-lever when the hook is unlocked, substantially as described.

13. The combination of the lug A^3, depending from the barrel and having the lug-notch *c* in its rear edge, the spring K, having one end secured in the lug-recess *c'* and carrying the vertical bolt J on its other end, and the sliding lug-bolt E, provided with a shoulder or recess, *q*, within which the upper end of the bolt J engages when the lug A^3 is raised and the lug-bolt retracted, substantially as specified.

338,189. SAFETY-CATCH FOR FIRE-ARMS. GEORGE D. POTTER, Deming, N. Mex. Filed Oct. 20, 1884. (No model.)



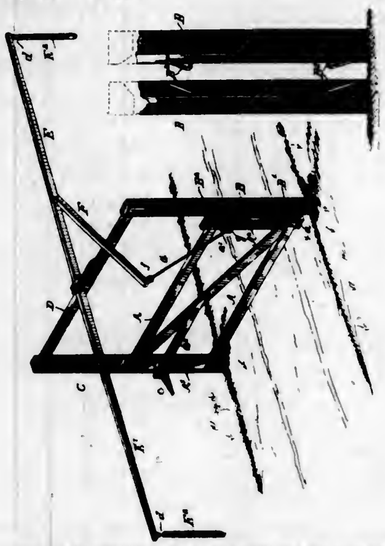
Claim.—1. The slide described, composed of the parts E and E', connected by a spring-hinge located in a groove in the back plate, having a shoulder, *g*, in combination with a trigger-locking lever connected with said slide, and adapted by movement of said slide to lock and unlock the triggers, substantially as described.

2. The spring-hinged slide composed of two connected parts, in combination with a pivoted lever, to which the slide is connected, and the sears and triggers, with which the lower end of said lever engages and disengages by the movement of said slide, substantially as described.

3. In combination with the spring-hinged slide composed of two connected parts and the lever pivoted within the gun-frame and having its upper arm connected to said slide, the spring-bolt G, arranged to move longitudinally within the gun-frame and have its rear edge come in contact with the front edge of the upper arm of the pivoted lever, and cause the end of the lower arm of the said lever to engage upon the trigger and sears, substantially as specified.

4. The combination of the spring-hinged slide composed of two connected parts, the back plate, with its groove and shoulder, the locking-lever pivoted within the gun-frame and having its upper end connected with the slide through a slot in said frame, and the spring-bolt G, arranged to move longitudinally in the gun-frame and impinge on the upper arm of the locking-lever in its rearward motion and cause the lower arm of said lever to engage and lock the sears and trigger, substantially as specified.

338,190. GATE. WILLIAM H. PEEK, Crystal Springs, Miss. Filed Sept. 22, 1885. (Model.)



Claim.—The combination of the gate-frame provided with eyes, as shown, and the post provided with oppositely-inclined pintles with the lever supported by an oscillating beam, and provided with an angularly-extended arm connected at an angle with the gate-frame, and arranged to operate the same, as and for the purpose set forth.

338,191. BULLET. EDUARD RUBIN, THUN, Switzerland. Filed May 8, 1885. (No model.)

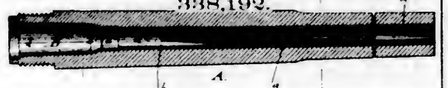


Claim.—A rifle-bullet consisting of a ball or core of lead or other soft metal and an exterior casing or covering-shell of harder metal that is thicker at the point and lapped over the base of the core, substantially as set forth.

338,192. BARREL FOR FIRE-ARMS. EDUARD RUBIN, THUN, Switzerland. Filed June 14, 1884. Renewed Jan. 11, 1886. (Model.)

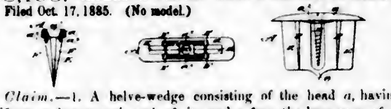
Claim.—A rifle-barrel consisting of a rifled portion, A, having grooves *a a* gradually vanishing at their rear ends in a smooth portion, d^3, of the same diameter as the curve of the lands of said rifled portion,

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and of a cartridge-chamber, B, formed of an enlarged cylindrical main part, *d*, a short cylindrical portion, d^2, slightly larger than and just in the rear of said portion d^2, and a conical portion, *d'*, connecting said parts *d* and d^2, substantially as described.

338,193. AX-HELVE WEDGE. HENRY F. SAWYER, Providence, R. I. Filed Oct. 17, 1885. (No model.)

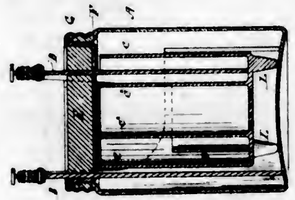


Claim.—1. A helve-wedge consisting of the head *a*, having a cruciform wedge at each end of its under face, the long arms of said wedges being in alignment and extending in the direction of the length of the head, substantially as set forth.

2. A helve-wedge consisting of the head *a*, provided on its under face with two cruciform wedges, the long arms of said wedges extending in the direction of the length of the head and connected at their adjacent ends by the pointed tie-bar *e*, substantially as set forth.

3. A helve-wedge consisting of the head *a*, provided on its under face with two cruciform wedges having their long arms in alignment, and the short lips on the head at opposite sides of the adjacent ends of the said long arms, substantially as set forth.

338,194. GALVANIC BATTERY. JAMES SERSON, Boston, Mass., assignor of one-half to William Walsh, same place. Filed Oct. 8, 1885. (No model.)



Claim.—1. A porous cup supported on legs and provided with an outer and inner chamber, the bottom of the inner chamber being perforated and raised, as described, whereby the solution surrounding the porous cup is given free access to the lowest portion of the element contained in the inner chamber, substantially as described.

2. A galvanic battery consisting of an outer jaw, a porous cup resting on legs and provided with an outer and inner chamber, the said inner chamber having a perforated bottom, a carbon electrode surrounding the porous cup, a zinc electrode in the outer chamber of the porous cup, bichromate-of-potash crystals in the said inner chamber, a solution of sulphuric acid and water in the outer chamber of the porous cup and also in the outer jar, substantially as described.

3. A galvanic battery consisting of an outer jar, a porous cup having an outer and inner chamber, and legs to support it above the bottom of the jar, zinc and carbon electrodes, the solution used to charge the cell, substantially as described.

4. A galvanic battery consisting of the jar A, the porous cell C, supported on legs and having an inner chamber, C^2, a zinc electrode, D, a carbon electrode, B, a charging solution, the stopper E, and ring G, all arranged substantially as described.

5. A galvanic battery consisting of an outer jar, A, provided with a tight cover, a porous cup, C, made as described, a zinc and carbon electrode, a charging-fluid of acid (preferably sulphuric acid) and water in the outer jar and outer chamber of the porous cup, and bichromate-of-potash crystals in the inner chamber of the porous cup, substantially as described.

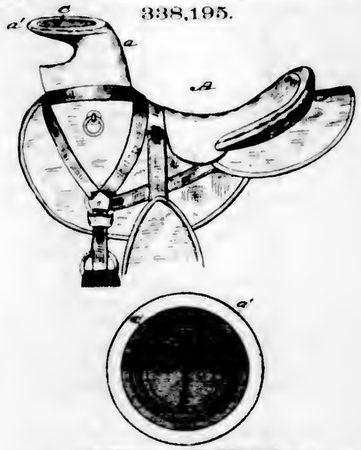
6. In a galvanic battery, a cup and cell supported above the bottom of the jar, provided with two chambers having no connection with each other, the inner chamber having a perforated bottom, substantially as described.

338,195. RIDING-SADDLE. FLOYD SHOCK, Weatherford, Tex., assignor of one-half to George D. Barnard, St. Louis, Mo. Filed Jan. 12, 1886. (No model.)

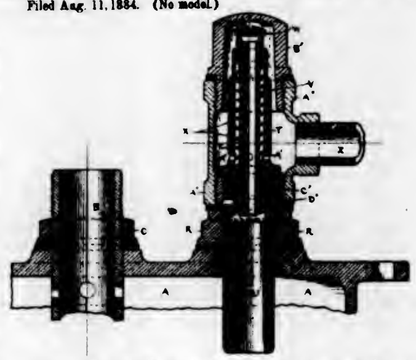
Brief.—Applicant provides a recess in the pommel of a saddle, sets a compass therein, and protects it by a glass cover.

Claim.—The combination of the saddle-pommel *a*, the compass B, and the glass C, substantially as described.

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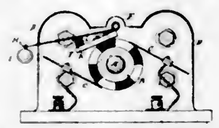


338,196. AIR-VENT VALVE. MICHAEL J. SMITH, New York, N. Y. Filed Aug. 11, 1884. (No model.)



Claim.—The described and shown air-vent valve, consisting of tube R, tube T, with vent-holes A' A', float U, valve-stem V, adjusting-nut W, and coil-spring X, all arranged within the described common T, and connected to the vessel A, all substantially as and for the purposes set forth.

338,197. OILER AND WIPER FOR COMMUTATORS. JACOB SNOWBERGER, Akron, Ohio, assignor of three-fourths to Orlando Cass, U. Grant Kirn, and Louis A. Smith, all of same place. Filed Dec. 28, 1885. (No model.)



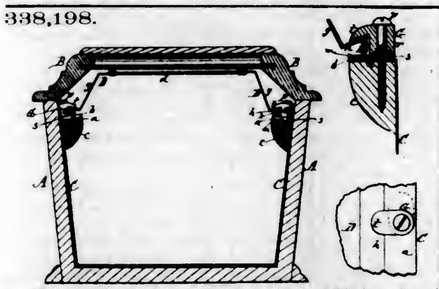
Claim.—1. An oiler and wiper for commutators of dynamo-electric engines, consisting of a wood block saturated with a lubricating substance and arranged to rest on the periphery of said commutator, and having said wood grain substantially tangential to said periphery, substantially as shown, and for the purpose specified.

2. The combination, with a commutator of a dynamo-electric machine, of a wood block saturated with a lubricating substance resting against and with the grain of the wood substantially tangential to the periphery of said commutator, and a weight or equivalent device which presses said block against said commutator, substantially as shown, and for the purpose specified.

3. The combination, with the commutator B, of the block F, weighted arm H, and spring *i*, all constructed and arranged substantially as hereinbefore set forth, and for the purpose specified.

338,198. COFFIN. WILLIAM A. SPARKS and NICHOLAS RAPPLEYEA, Rochester, N. Y., assignors to the Stein Manufacturing Company, same place. Filed May 19, 1885. (No model.)

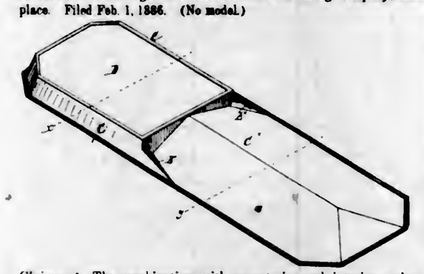
338,198.



Claim.—1. In a burial-casket, the combination, with the casket, of the clamps G and screws *p*, the clamps turning on the screws and provided with offsets that set over the edges of the lid, and the lid bearing on a packing between itself and the casket, as set forth.

2. In a burial-casket, the combination, with the casket, of the clamps G, provided with offsets that rest over the edges of the lid, the screws *p* on which the clamps turn, and the packing-blocks *s* under the clamps surrounding the screws, the whole arranged to operate in the manner and for the purpose specified.

338,199. COFFIN. WILLIAM A. SPARKS and NICHOLAS RAPPLEYEA, Rochester, N. Y., assignors to the Stein Manufacturing Company, same place. Filed Feb. 1, 1886. (No model.)

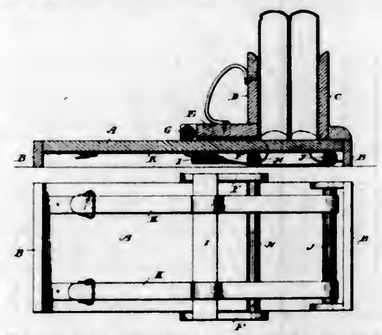


Claim.—1. The combination, with an exterior and interior casket, of a lid on the interior casket constructed with a raised head-section that rests near the lid of the exterior casket, and a foot portion that lies substantially on a level with the clamps that attach the lid in place.

2. The casket-lid constructed of sheet metal, with the raised head-section C, the depressed foot-section C', and braces E E between the two sections, as set forth.

3. The casket-lid constructed of sheet metal, with a raised head-section and a depressed foot-section, the lower edges of which are bent and turned in V form, with a strip of stiff metal in the groove to form a packing-edge, as set forth.

338,200. BOOK-HOLDER. JOHN M. STEWART and JOHN A. ROBERTSON, Spencer, Ind. Filed Nov. 9, 1885. (No model.)



Claim.—1. In a book-holder, the combination of a base-board having a rigid upright side piece at one end, a slide formed by a cross-piece having flanges at its ends, and having anti-friction rollers pivoted between the outer ends of the flanges above the board, and between the inner ends of the flanges below the board, and having an upright side piece and springs secured to the slide and drawing it toward the rigid side piece, as and for the purpose shown and set forth.

2. In a book-holder, the combination of a base-board having an upright rigid side piece at one end, and having a roller journaled under the end having the rigid side piece, a slide having flanges at the edges of the base-board, and having anti-friction rollers bearing against the upper and under sides of the board, journaled between the flanges, and provided with a cross-strip below the board and an upright side piece above the board, and elastic straps secured to the cross-strip of the slide and passing over the roller at the end of the board, and secured at their other ends to the other end of the board, as and for the purpose shown and set forth.

3. In a book-holder, the combination of a base-board having an upright rigid side piece at one end, and having a roller journaled under the board at the end having the side piece, a slide traveling upon the board and having an upright side piece and a portion sliding under the board, and elastic straps secured to the lower portion of the slide and passing over the roller at the end of the base-board, and secured at the other end of the base-board, as and for the purpose shown and set forth.

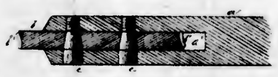
4. In a book-holder, the combination of a base-board having an upright rigid side piece at one end with a sliding upright side piece having a cross-piece at its lower end, provided with downwardly-projecting flanges at its ends, having a roller journaled between their outer ends above the board, and having a roller journaled between their inner ends below the board, as and for the purpose shown and set forth.

338,201. FELT BOOT. EDWARD T. STELLE, Chicago, Ill., assignor to himself and Adalbert B. Crofoot, same place. Filed Nov. 30, 1885. (No model.)



Claim.—The improved article of manufacture consisting of a felt boot, A, provided with loosely-attached protector B, secured by lacing or equivalent fastening, and having a heel or instep strap, said protector extending above the line of the overshoe, so as to protect the felt boot from breaking or injury at the top of the overshoe, substantially as specified.

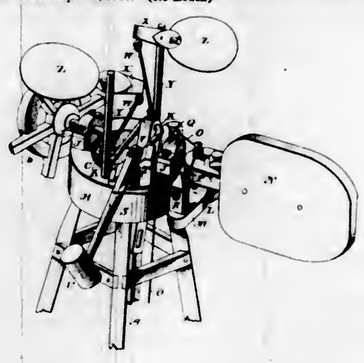
338,202. MEANS FOR HOLDING DIES. CHARLES F. STONE, Chicago, Ill. Filed July 25, 1885. (No model.)



Claim.—1. A securing-screw for dies, formed with straight ends and a tapering center, substantially as shown and described, and for the purpose set forth.

2. The combination, with a die and its holder, of a securing-screw having straight portions passing through the holder and a tapering portion passing through the die, substantially as described and shown, and for the purpose set forth.

338,203. WINDMILL. JOHN G. STOUGH and URIAS C. STOUGH, Dover, Pa. Filed Sept. 28, 1885. (No model.)

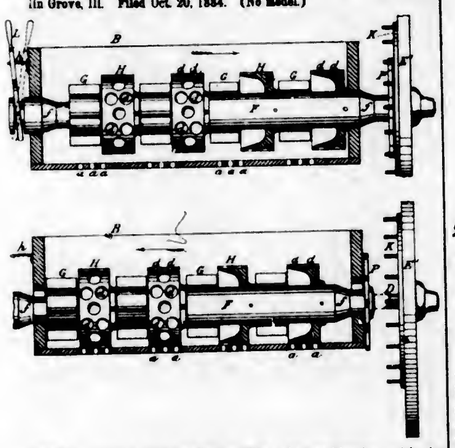


Claim.—1. In a wind-wheel, the combination of the circular frame bearing the wheel and provided with a rectangularly-bent arm diametrically opposite to the wheel, a steering-vane pivoted with its arm at the elbow of the rectangularly-bent arm, a pulley or bearing secured to the frame at one side of the vane-arm, a pulley or bearing secured at the end of the arm, a block having an inclined side facing away from the vane and secured upon the frame at one side of the vane, a lever having a weight at its outer end and pivoted at its inner end upon the inclined face of the block, a cord secured to the inner end of the vane-arm and passing over the pulley or bearing upon the frame, and a cord secured to the inner end of the vane-arm and passing over the pulley or bearing upon the end of the bent arm and secured to the weighted lever, as and for the purpose shown and set forth.

2. In a wind-wheel, the combination of the main wheel-shaft formed with cranks, levers pivoted upon uprights and having weighted outer ends, and pitmen pivoted to the cranks and to the inner ends of the weighted levers, as and for the purpose shown and set forth.

3. In a wind-wheel, the combination of the wheel-shaft formed with two cranks, levers pivoted upon uprights at the sides of the shaft, poises sliding adjustably upon the outer arms of the levers, and pitmen pivoted at their lower ends to the cranks and at their upper ends to the inner ends of the levers, as and for the purpose shown and set forth.

338,204. GRASS-SEED-SOWING MACHINE. JOHN L. STROCK, Franklin Grove, Ill. Filed Oct. 20, 1884. (No model.)



Claim.—1. In a grass-seeding machine, the combination, with the hopper, of an endwise-moving shaft, F, provided with tapered bearings, seed-carrying wheels H, provided with cups or depressions formed in its periphery, and a hopper provided with seed-discharge openings formed in the bottom thereof, substantially as and for the purpose described.

2. The combination of the seed-hopper B, the endwise-moving shaft F, provided with tapered bearings *f*, agitators G, seed-carrying wheels H, provided with cup-sloped depressions in its periphery, and a hopper provided with a series of seed-discharge openings arranged in groups and corresponding in number and position with the annular rows of cups in the seed-carrying wheels, substantially as described, for the purpose specified.

338,205. COMBINATION-LOCK FOR MONEY-DRAWERS, &c. HERBERT M. STURGIS, Hillsborough, Tex. Filed May 16, 1885. (Model.)



Claim.—1. The combination, with the drawer and its support, of a pair of jaws, a plurality of bars having hooks turned in opposite directions for engaging said jaws, and operating levers and rods or wires for actuating said hook-bars, as explained.

2. The combination, with the drawer and its support, of the pair of jaws I I', the pivoted rods D, each having a hook, D^2, projecting from one side thereof, one or more of said hooks being presented toward each jaw, as explained, the finger-pieces L, and the connections between said finger-pieces and hook-bars, substantially as set forth.

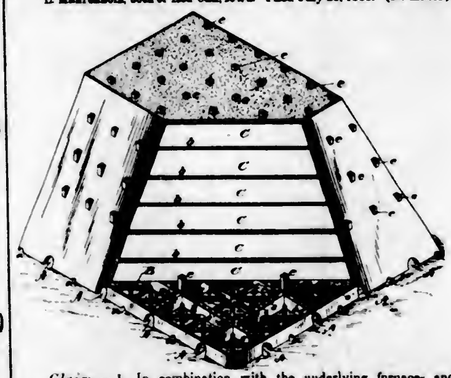
3. In combination with the drawer and its support, the hinged reversible hook-bars, pivoted levers for raising the bars, wires or rods for operating the levers, and jaws I I', all arranged and operating substantially as and for the purpose set forth.

4. In combination with the drawer and its support, the pivoted frame C', reversible hook-bars hinged to the frame, levers for raising the bars, wires or rods for operating the levers, jaws I I', bar N, pivoted to said frame, spring-hammer having a projection engaged by a projection on the bar, and a gong, all arranged and operating substantially as and for the purpose set forth.

5. In combination with the drawer and its support, the pivoted frame C', having rod C^4 and bar C^3, hook-bars hinged to the frame, levers for raising the bars, projections J^2 on the levers, for engaging the bar C^3 of the frame, spring or springs C^5, wires or rods L, and jaw I, all arranged and operating substantially as and for the purpose set forth.

6. In combination with the drawer and its support, the frame C', having rod C^4, reversible hinged hook-bars secured to the frame by being slotted to receive the rods C^4 and by pins D', pivoted levers for raising the bars, wires or rods for operating the levers, and jaws I I', all arranged and operating substantially as and for the purpose set forth.

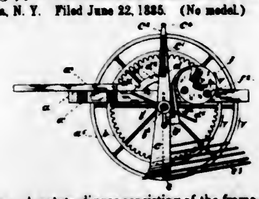
338,206. KILN FOR AND METHOD OF BURNING CLAY. JAMES STURGIS, Mount Pleasant, assignor of two-thirds to Nelson A. Gray and Carl L. Mahrenholz, both of Red Oak, Iowa. Filed July 25, 1885. (No model.)



Claim.—1. In combination with the underlying furnaces and ventilating-flues having upward openings *e'* of a clay-burning kiln having its superstructure composed of successive alternate layers of fuel and clay, the vertical flues or chimneys *e*, connecting by means of the openings *e'* with said horizontal underlying furnaces and flues, and also by lateral openings with the different layers of fuel, substantially as shown, for the purposes specified.

2. In combination with the underlying furnaces and flues of a clay-burning kiln and vertical ventilating and smoke-discharging flues, all having outward openings, the shutters or flue-caps, Fig. 4, substantially as shown, for the purposes specified.

338,207. POTATO-DIGGER. NILES C. TABER and LACELL C. TABER, Marilla, N. Y. Filed June 22, 1885. (No model.)

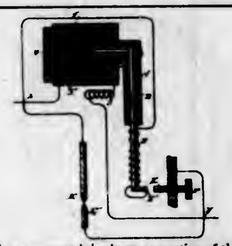


Claim.—A potato-digger consisting of the frame, the driving-wheels on the supporting-shaft provided with the usual gearing, *b*, the shaft b^2, mounted in bearings on the frame and provided with pinions adapted to gear in with the gearing *b*, and with disks *f f'*, having a series of friction-rollers, f^3, in combination with the shaking screen pivoted to the sides of the scoop by pins *e l* and having arms e^4, extending upward and terminating in hook-shaped ends e^5, adapted to be operated by the friction-rollers in the disks *f f'*, to give the screen its required shaking movements, substantially as described.

338,208. AUTOMATIC CUT-OUT FOR ELECTRIC LAMPS. ELIHU THOMSON and EDWIN W. RICE, Jr., Lynn, Mass., assignors to the Thomson-Houston Electric Company, of Connecticut. Filed May 21, 1884. (No model.)

Claim.—1. In an automatic cut-out for electric lamps or other electrically operated or controlled mechanism, the combination of a derived

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circuit of high resistance around the lamp or portion of the lamp in which abnormal resistance may occur, and a thermo-motive device actuated by the heat in said derived circuit for closing a safety or branch circuit.

2. The combination, in an automatic cut-out for an electric lamp or other electrically-operated apparatus, of a derived circuit of high resistance, a thermo-motive device actuated by the heat developed in said derived circuit for closing a safety or branch circuit, and a supplemental or accessory circuit or portion of a circuit closed by the action of the thermo-motive device for conveying a current whose thermal or equivalent action, as specified, may serve to keep the safety or branch circuit closed.

3. The combination, with an electric lamp or other electrically-operated apparatus, of a derived circuit containing a coil of high resistance, a compound metallic bar exposed to the action of the heat developed by the current in said coil, and a branch or safety circuit closer actuated by said bar.

4. The combination, with the derived circuit containing the resistance-coil, of a compound bar, a safety or branch circuit, and a coil in said circuit arranged in suitable relation to the bar, so that the heat developed by the current in said latter coil shall keep the bar flexed and in position to maintain the safety or branch circuit closed.

5. The combination, with the derived circuit and the thermo-motive device actuated by heat developed therein, of a safety or branch circuit closer, one member of which is controlled by said thermo-motive device, while the other member is controlled by a second thermo-motive device, whereby disturbance in the adjustment of the circuit-closer by changes of external temperature may be avoided.

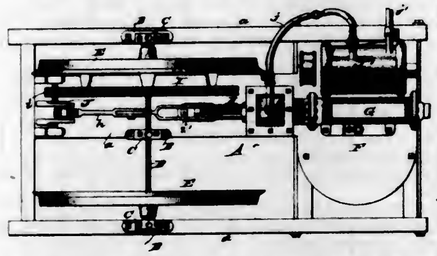
6. The combination, with the resistance-coil S', of a core, C, a compound bar, B, a second compound bar, B', and contacts K K', one of the latter being supported on each bar.

7. The combination of a derived-circuit coil of high resistance, a compound bar actuated by the heat developed in said coil, a circuit-closer governed in its action by the bar, and a heating-coil wound over the bar and in the circuit closed by the action of the same.

8. The combination, with the coil S', of a core, C, a compound bar, B, covered with felt or similar non-conductor of heat, and a shunt or safety circuit-closer governed in its action by said bar.

9. In an automatic safety circuit-closer, a compound bar composed aluminium and iron, and a circuit-closer governed in its action by said bar under the influence of the heating effects of the electric current.

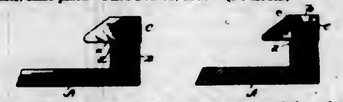
338,209. PROCESS OF AND MACHINE FOR THE USE OF COMPRESSED AIR AS A MOTIVE POWER. FRANK S. TULL, HERMAN KOEHN, and WILLIAM F. BEERS, Galveston, Tex.: said Beers assignor to Joseph Edmund Wallis, same place, and said Tull and Koehn assignors of one-fourth of their right to said Wallis. Filed July 1, 1885. (No model.)



Claim.—1. The combination, with a truck or frame, of flanged wheels adapted to travel on a railroad-track, an air-pump cylinder supported on said truck, and a piston connected to a crank-shaft, a gear-pinion, and a gear-ring rigidly secured upon one of the truck-wheels, concentric therewith, and a compressed-air reservoir provided with an outlet-pipe, substantially as described.

2. The combination, with the air-pump and its piston and operating-crank, of a cogged ring secured rigidly to one of the truck-wheels, substantially as described.

338,210. CATCH FOR CASTING HEARTH-PLATE CATCHES AND GRATE-HOOKS. CASPAR VETTER, Louisville, Ky., assignor to Henry H. Sulzer, same place. Filed Dec. 30, 1885. (No model.)



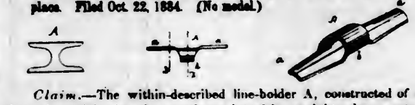
Claim.—The sheet-metal casing described, consisting of the sides of desired form, a strip connecting the sides, an opening in said strip, and the flanges formed by turning in the sides of said opening, substantially as set forth.

338,211. CAN-OPENER. BRYAN S. WAKEMAN, Batavia, assignor of eleven-twentieths to Sampson S. Tucker, Albany, N. Y. Filed Nov. 23, 1885. (No model.)



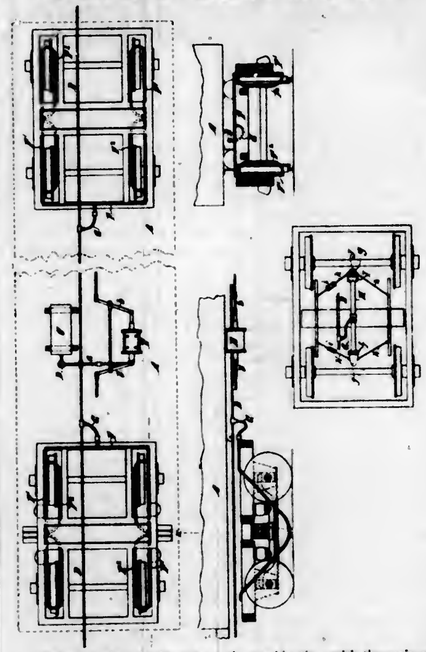
Claim.—In a can-opener, the combination of the cutter C and thumb-nut D with the handle H and shank B, said shank being provided with the forwardly-projecting hook K, the longitudinal slot S, and the grooves or channels M M, the latter to prevent the cutter from slipping from any point of the said shank at which it may be set, constructed and operated substantially as hereinbefore set forth.

338,212. LINE-HOLDER. HENRY B. WHITING, New Haven, Conn., assignor to Augustus D. Hendrick and George W. Hendrick, both of same place. Filed Oct. 22, 1884. (No model.)



Claim.—The within-described line-holder A, constructed of one piece of metal having the meeting-point of its straight edges centrally through its length, the eye *b*, raised above the other parts, and the ends or projections *a*, having circular grooves on their under sides, substantially as shown and described.

338,218. AUTOMATIC BRAKE FOR RAILWAY-CARS. HIRAM K WHITNER, New York, N. Y. Filed June 25, 1885. (No model.)



Claim.—1. In a brake system, the combination, with the main air-pipe, of pipes or bulbs of frangible material so disposed upon a car-truck or its appurtenances that displacement of the car-truck or derangement of

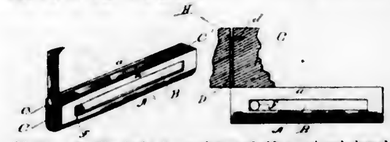
its parts will fracture said pipes or bulbs and afford vent to the main air-pipe, substantially as and for the purpose specified.

2. In a brake system, the combination, with the main air-pipe, of frangible pipes or bulbs disposed about a car-truck or its appurtenances, and a flexible connection between said pipes or bulbs and the main air-pipe, substantially as and for the purpose specified.

3. In a brake system, the combination, with the main air-pipe, of pipes or bulbs of frangible material disposed about a car-truck or its appurtenances, a flexible connection between said pipes or bulbs and the main air-pipe, a coupling-piece, and a valve in the coupling-piece which will prevent the reflow of air from the frangible pipes to the main air-pipe, substantially as specified.

4. In a brake system, the combination, with a main air-pipe, of a pipe of frangible material disposed about a car-truck or its appurtenances, and a flexible connection between said frangible pipe and the main air-pipe connected to the frangible pipe at the point of farthest radius from the bolster-pin of the car which a radial line drawn longitudinally of the truck-frame will admit, substantially as specified.

338,214. DOOR-SECURER. HARRY A. WITMAN, Wernersville, Pa. Filed Jan. 22, 1886. (No model.)



Claim.—1. The body A, consisting of sides *a a'* and slotted and having one end shortened at *c*, in combination with the hook-piece having pins to engage said slots, and shoulders *e* to engage the end *c*, as set forth.

2. In combination, the body A, having slots B B', in combination with the hook-piece having arms E, stem F, and pins *f f'*, whereby the bearing of said pins in the slot is brought inside the edge of the door-jamb, as set forth.

338,215. GAGE-COCK. JAMES B. ATWOOD, Boston, and SAMUEL H. HOWES, Chelsea, Mass. Filed Aug. 20, 1885. (No model.)



Claim.—1. The gage-cock body C, constructed with the perforations J and K and perforations for pin I.

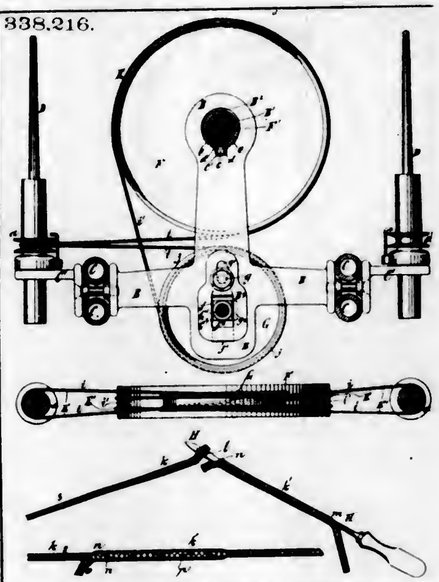
2. The spindle D, constructed with the bore and internal screw-thread at F, said thread being twice as coarse as the external thread near the center of said spindle, used in connection with and working upon the external screw-thread at end of spindle E, for the purpose of transmitting from the said spindle D to said spindle E a positive, equal, and simultaneous motion in a direction opposite to that traversed by the said spindle D, substantially as and for the purposes in our said specification described.

338,216. SPINNING-FRAME. JOHN E. ATWOOD, Stonington, Conn. Filed Nov. 17, 1883. (No model.)

Brief.—The guide and tension pulley is suspended below the driving-pulley in boxes so constructed as to allow it to rise and fall and maintain an even tension on the bands. Each driving-pulley drives two spindles by means of two bands, each of which passes completely around both pulleys and the whirl of one spindle, which is in a horizontal plane midway between the two pulleys. The ends of the driving-bands are united by entering one end portion directly into the other extreme end portion and sheathing it within the same, and are additionally secured by sewing through both.

Claim.—1. The combination, with a driving-pulley and a guide and tension pulley having parallel axes and supports for said driving-pulley, the said guide and tension pulley being arranged below said driving-pulley, of two spindles arranged at opposite sides of said pulleys, and having their whirls in a horizontal plane about midway vertically between the said pulleys, two driving-bands, one for each spindle and each encircling both of said pulleys and the whirl of a spindle, and comprising two portions, *i i*, which extend horizontally between said whirl and adjacent sides of said pulleys, and a portion, *i'*, extending directly between said pulleys and passing between the two horizontal portions of the band, and bearings wherein said guide and tension pulley is capable of rising and falling, whereby the guide and tension pulley is caused to

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maintain a proper tension on said bands and accommodate itself to the length thereof, and also serves to properly direct the bands, substantially as herein described.

2. The combination of the driving-pulley F and its support, the two spindles D and their whirls *a*, the two driving-bands E E', each comprising the horizontal portions *i i* and the portion *i'*, the guide and tension pulley G, hung in the said bands and below the driving-pulley F, and provided with flanges *j*, the shaft G' or journals for said guide and tension pulley, and bearings wherein said guide and tension pulley may rise and fall, whereby the guide and tension pulley is caused to maintain a proper tension on the bands and properly direct the same, all substantially as herein described.

3. The combination of the driving-pulley F, the shaft F', the box B', fitted thereto and provided with the projection *c*, and the projections or swells *d*, and the intermediate support, B, having an opening, B², larger than said box, and the recess *c'* in the under side of said opening, whereby the said box is held both against turning and moving longitudinally in said opening, all substantially as herein described.

4. The combination of the guide and tension pulleys G, the shaft G', on which they are placed, the box G², fitted to said shaft and constructed with the projection *g²*, and the support B, having an elongated opening, *f'*, wherein the said box may rise and fall, and constructed with shoulders or stops between which the projection *g²* is held, substantially as herein described.

5. The combination of the guide and tension pulleys G, the shaft G', the box G², and support B, having an elongated opening, *f'*, wherein said box may rise and fall, and the bracket or hanger B³, adjustably secured to the support B, and having an elongated opening, *f³*, receiving said box, all substantially as herein described.

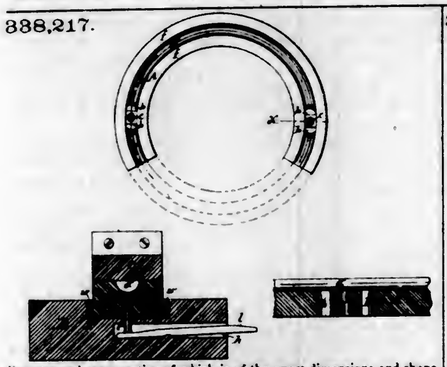
6. The combination, with the guide and tension pulleys G and shaft G', and boxes and bearings intermediate between the ends of said shaft and providing for the rise and fall thereof, of the end box or cap, G², applied to the end of the shaft, the standard A, having an opening, *h*, receiving said box or cap G², and the bracket or support A', having an adjustable connection with said standard and provided with the set-screw *h'*, for bearing against said end box or cap, all substantially as herein described.

7. The tubular driving-band composed of fibrous material, having one end portion entered directly into the other extreme end thereof and sheathed or telescoped within the other end portion without looping or tying, and having the end portions additionally secured by sewing through them both, substantially as herein described.

338,217. DIE FOR MAKING FIFTH-WHEELS. FRANKLIN P. SATHS, Syracuse, N. Y., assignor of one-half to Ellis L. Baker, same place. Filed July 30, 1885. (No model.)

Claim.—1. A die for forming fifth-wheels of vehicles, consisting of a metal block having an annular or segmental face of a true uniform plane, and provided in said face with a circular or segmental groove, the

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diameter and cross-section of which is of the exact dimensions and shape required of the wheel to be formed, substantially as set forth.

2. The within-described dies for forming fifth-wheels of vehicles, consisting of a metal block having an annular or segmental face of a true uniform plane, and provided in said face with a circular or segmental groove of the diameter and cross-section required of the wheel to be formed, and a metal block over said grooved block and provided on the side adjacent thereto with a corresponding annular or segmental face of a true and uniform plane, substantially as described and shown.

3. The dies for forming fifth-wheels of vehicles, consisting of the block A, having an annular or segmental face, *f*, of a true uniform plane, and provided in said face with the circular or segmental groove *a*, and with sockets *b b* in said groove, at opposite sides of a diametrical line drawn through the center about which the groove is formed, and the block C over the block A, and provided on the side adjacent thereto with a corresponding annular or segmental face of a true and uniform plane, substantially as shown and set forth.

4. The combination of the die A, provided with the annular or segmental groove *a* and the vertical channels *c c* through the die and intersecting the groove *a*, and plungers *d d* in the channels, substantially as described and shown, for the purpose set forth.

5. The combination of the bed B, provided with a recess, *r*, vertical channels *e e*, intersecting said recess, and lateral channels *h h*, extending from the vertical channels to the exterior of the bed, the levers *l l* in the channels *h h*, the die A, seated in the recess *r* and provided with the annular or segmental groove *a*, and with vertical channels *c c*, coinciding with the channels *e e* and intersecting the groove *a*, and the plungers *d d* in said vertical channels and resting on the levers *l l*, substantially as described and shown, for the purpose set forth.

338,218. GARMENT-SUPPORTER. ALEXANDER B. BUTLER, St. Albans, Vt. Filed June 8, 1885. (No model.)



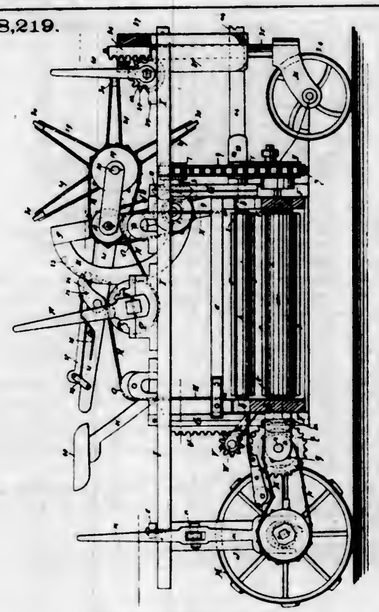
Claim.—A garment-holder consisting of the flat arms B C, in one of which is the opening E and in the other the projection D, with flat surfaces around each which clasp upon and hold the goods in connection with the opening and projection.

338,219. LOW-BINDING GRAIN-HARVESTER. J. CALDER CUNNINGHAM and GEORGE A. CUNNINGHAM, Washington, Jackson County, Kans. Filed Dec. 10, 1884. (No model.)

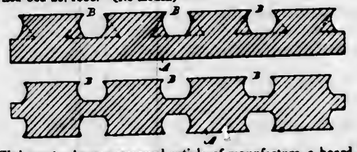
Claim.—1. In a grain-harvester, the combination, with the platform-frame A, the drive-wheel M, and the supporting-wheels *i* 34, of the standards and cross-bar J I, the sliding uprights G *d*, the rack-bar U, pinion V, and shaft W, and the pulleys and ropes O P N and Y *a c* Z, and the lever R, spring lever-pawl S, and catch-bar T, substantially as herein shown and described, whereby the said platform-frame can be readily raised and lowered, as set forth.

2. In a grain-harvester, the combination, with the platform-frame A, the cross-bar I, standard J, caster-wheel 34, standard 35, of the rack-bar 36, the guide-block 37, the pinion 38, the lever 40, spring lever-pawl 41, and catch-bar 42, substantially as herein shown and described, whereby the guards and cutter can be readily adjusted, as set forth.

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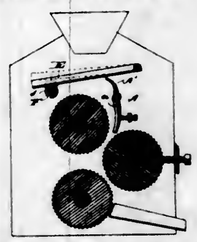
338,220. SHEATHING-LATH. WILLIAM M. DWINELL, Detroit, Mich. Filed Oct. 29, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a board for the purpose described, provided with two or more grooves of substantially rectangular shape with concave sides, as set forth.

2. A sheathing-board provided upon its opposite sides with two or more parallel grooves of substantially rectangular shape with concave side or sides, substantially as and for the purpose specified.

338,221. GRINDING-MILL. WILLIAM R. ETNOS, Cleveland, Ohio, assignor of one-half to James W. Field, same place. Filed Sept. 19, 1885. (No model.)



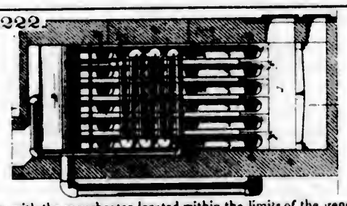
Claim.—1. A grinding-mill comprising the concave A, having vertical corrugations, the cylinder B, having both longitudinal and annular corrugations, and cylinders C and D, having both longitudinal and annular corrugations, all arranged and operating substantially as shown and described.

2. A grinding-mill comprising the concave A, having the hood A' and vertical corrugations, the cylinder B, having both annular and longitudinal corrugations, and the cylinders C and D, having both annular and longitudinal corrugations, all arranged and operating substantially as shown and described.

338,222. STEAM GENERATOR AND SUPERHEATER. MILTON FOREMAN, Philadelphia, Pa., assignor to Lydia K. Foreman, same place. Filed Nov. 19, 1885. (No model.)

Claim.—1. The combination of the tubular lower portion of the

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generator with the superheater located within the limits of the generator, above said tubular lower portion of the tube, whereby the products of combustion are caused to pass through the latter before reaching the superheater, all substantially as specified.

2. The combination of the combustion-chamber and its fire-place, the superheater, and the generator comprising a lower tubular portion extending across the combustion-chamber and an upper portion composed of tubes located at opposite sides of the combustion-chamber, so as to form a space for the reception of the superheater, all substantially as specified.

3. The combination of a superheater with a generator comprising upper, lower, and intermediate transverse pipes, vertical pipes connecting the lower and intermediate pipes from end to end of the same, and end pipes only connecting the intermediate and upper transverse pipes, thereby forming a space in which the superheater is contained, all substantially as specified.

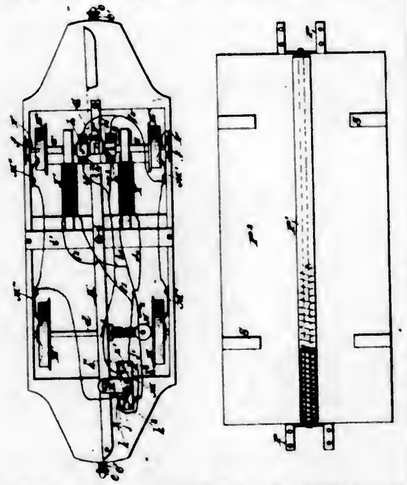
338,223. UMBRELLA-TIE. EDMUND L. GLENN, Philadelphia, Pa., assignor to Wright Brothers & Co., same place. Filed July 11, 1885. (No model.)



Claim.—1. A slide for an umbrella-tie, consisting of two loops, C, and a central connecting-piece, D, formed of a continuous piece of wire, substantially as described.

2. A slide for an umbrella-tie, consisting of a single piece of wire having the end portions thereof forming loops C, and the central portion forming the connection D of said loops, substantially as and for the purpose set forth.

338,224. ELECTRIC CASH AND PARCEL TRANSFER SYSTEM. GEORGE F. GREEN, Kalamazoo, Mich., assignor to himself, Oliver S. Kelly, and Sol. J. Houck, Springfield, Ohio. Filed Feb. 25, 1884. (No model.)



Claim.—1. The combination of the car, the electric motor connected therewith, the system of circuit-wires, and the switch composed of the pivoted switch-bar and the pivoted arms connected to said bar, substantially as described.

2. The combination of the track, the car having an electric motor connected therewith, the system of circuit-wires, the switch for changing the direction of the current through the circuit system, and a projection for said switch to strike against in the movement of the car, whereby the switch is automatically operated, substantially as described.

3. The combination of the track, the car propelled over the same by electricity, the switch-bar connected to the car to change the direction of the circuit to reverse the line of travel of the car, and a stop at the end of the track for the switch-bar to strike against to shift the switch, substantially as described.

4. The combination of the car, the carrying-receptacle, the spring-actuated roller, the cord connecting said receptacle with the roller, and the covering for said receptacle supported in a fixed position below said roller, substantially as described.

5. The combination of the track, the car propelled over the same by electricity, the governors connected to the car, and a device for said governors to strike against to check the speed of the car, substantially as described.

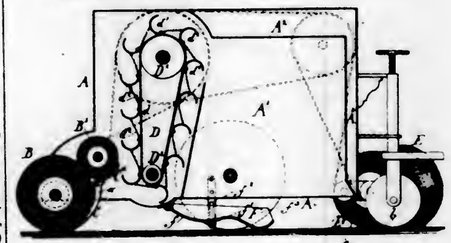
6. The combination of the track, the car propelled over the same by electricity, the governors connected to the axle of the car, and the bar suspended above the track for depressing the governors to check the speed of the car, substantially as described.

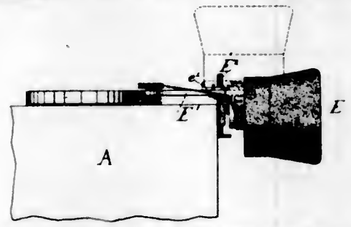
7. The combination of the car, the carrying-receptacle suspended from said car below the same, the board or plate above said receptacle, and catch devices for connecting said receptacle and plate or board, substantially as described.

8. The combination of the track, the car, and the stop supported beneath the car under the track, to restore the car to the track when it jumps the same, substantially as described.

9. The combination of the car, the two-part axles, the wheels connected thereto, journal-boxes in which the inner ends of said axles have their bearing, and the pivotal pins connecting the other ends of said axles with the car-frame, substantially as described.

338,225. STREET-SWEEPING MACHINE. CARL F. GRÖNER, New York, N. Y. Filed Mar. 17, 1884. (No model.)





Claim.—1. The combination of a wheeled storage-box, A, a rotating main brush, B, at the rear end of said box, a scoop, C, formed of a number of curved and pivoted teeth, *a*, arranged close to each other, the end teeth having vertical flanges *a'*, a fixed concave scoop, C', located immediately above the pivoted scoop, a take-up brush, B', and an elevator, D, substantially as set forth.

2. In a street-sweeping machine, the combination, with a wheeled storage-box, A, of a forward-extending curved scoop, F, hinged to the bottom of the box A, and adapted to receive tin cans, substantially as specified.

3. The combination of a wheeled storage-box, A, with a forward-extending scoop, F, formed of a series of curved and pivoted teeth, *f*, the end teeth having vertical flanges f^3, and a transverse supporting-bar, *f'*, guided in slotted straps f^3, substantially as described.

4. In a street-sweeping machine, the combination, with the vehicle-body, of a stub-shaft projecting laterally therefrom, a lever pivoted at one end to said shaft, a bolt attached to said body for supporting said lever in elevated position, a gutter-cleaning brush the spindle of which turns in a bearing at the outer end of said lever, the outer end of said lever being hinged to the main body thereof, whereby the brush may be swung to the front or side of the sweeper, and a bolt for locking the two parts of said lever in line, substantially as described.

338,226. MOLD-BED FOR CROCKERY-WARE. DAVID HALLEN, East Liverpool, Ohio, assignor of one-half to Robert Hallen. Filed June 5, 1885. (Model.)



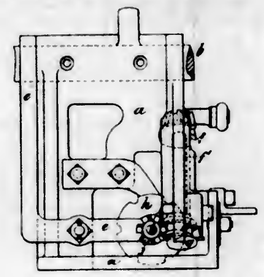
Claim.—The combination of two plaster molds, A A', each having its working-face provided with the peripheral marginal recess a^2, and metallic facings B B', fitted each into one of the two said recesses, facing B provided with knobs *b b'*, and facing B' provided with convex sockets b^2 b^2, into which said knobs fit, said knobs and sockets located entirely within the peripheral plane of said plaster molds

338,227. HANDLE FOR BLOWERS. WILLIAM A. HART, La Salle, assignor to John E. Robie, Buffalo, N. Y. Filed Feb. 24, 1885. (No model.)

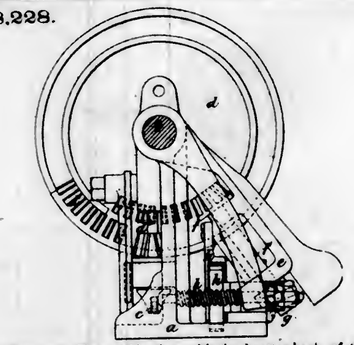


Claim.—A blower-lifter consisting of a forked handle having the upright bends F F' and the return-bends G G', substantially as and for the purpose described.

338,228. CORD-HOLDER-OPERATING MECHANISM. JAMES HOWARD, EDWARD T. BOOMFIELD, and GEORGE GIBBS, Bedford, England; said Boomfield and Gibbs assignors to said Howard. Filed Nov. 12, 1885. (No model.) Patented in England Aug. 25, 1885, No. 10,060.



338,228.



Claim.—1. The combination, with the knotter-hook, of the cord-holder driven by toothed gearing and mounted on a swinging frame pivoted on the axis of the holder-operating wheel, substantially as described.

2. The combination, with the knotter-operating wheel provided with the series of teeth concentric with the knotter-shaft, of the pinion *f*, shaft *f'*, worm *g*, worm-wheel *j*, shaft *i*, and holder-disk *h*, mounted on a swinging frame, substantially as described.

3. The combination, with a knotting-hook mounted on a fixed frame, of a knotter-actuating shaft supported in said frame and provided with a toothed cam-wheel, a swinging frame pivoted on the knotter-actuating shaft, and a cord-holder disk and its rotary actuating mechanism carried by said swinging frame, substantially as described.

4. The combination, with a fixed frame and a knotting-hook and knotter-actuating shaft supported by said frame, of a toothed cam-wheel fixed to the knotter-actuating shaft, a swinging frame pivoted on said shaft, a cord-holder disk mounted on a shaft carried by said swinging frame, mechanism carried by said frame for actuating the cord-holder from the cam-wheel, and a spring for keeping the swinging frame and fixed frame apart, substantially as described.

5. The combination, with a knotter-hook supported by a fixed frame, of a cord-holder mounted on a swinging frame and driven by rotary mechanism, and an elastic support for holding said frames apart, substantially as described.

6. The combination of the fixed frame *a*, the knotting-hook *c*, and knotter-actuating shaft *b*, supported by said frame, the toothed cam-wheel *d*, fixed to the shaft *b*, the swinging frame *e*, pivoted on said shaft, the pinion *f*, worm-shaft *f'*, worm *g*, shaft *i*, cord-holder *h*, and shoe *h'*, carried by the swinging frame, and the spring *k*, for resisting the inward movement of the swinging frame, substantially as described.

338,229. BARBED FENCE-WIRE. JAMES E. HUNT, Chicago, Ill. Filed May 3, 1885. (No model.)

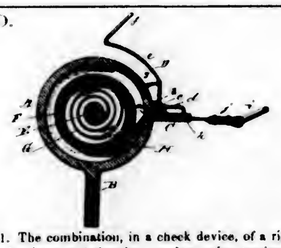


Claim.—The combination, with the wire A, provided with the loop B, having its open end contracted, of the wire C, wrapped around the loop with its ends projecting in opposite directions and having one end projecting through the said loop, substantially as herein shown and described.

338,230. CHECK-REIN ATTACHMENT. WINFIELD E. JAMES, South Oil City, Pa., assignor of two-thirds to John S. Downing and Jacob Camp, both of same place. Filed Nov. 12, 1885. (No model.)



338,230.

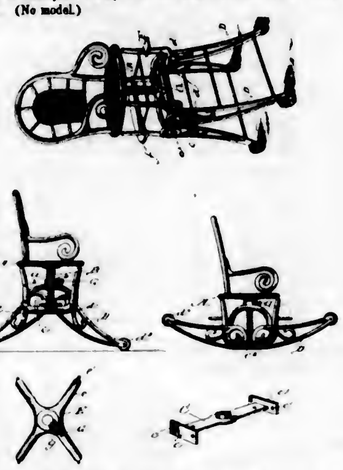


Claim.—1. The combination, in a check device, of a rigid cylinder or case, a cylinder journaled therein, a spring acting torsionally on said cylinder, a strap winding on said cylinder and passing through the outer cylinder, and a locking-lever pivoted on said case and adapted to be engaged and become disengaged from said strap, substantially as set forth.

2. The combination, in a check device, of an outer fixed cylinder or case, a shaft located therein, a cylinder mounted loosely thereon, a torsional spring connecting said shaft and inner cylinder, a strap winding on said inner cylinder and extending through the case, a tube, C, located on said case and vertically perforated, and a lever pivoted on said tube and reduced at one end and bifurcated at the other, substantially as set forth.

3. The combination of the cylinder A, shaft E, cylinder F, and spring G, a strap, H, and lever D, pivoted as described, and held in engagement with the strap by a spring, *g*, substantially as set forth.

338,231. CONVERTIBLE CHAIR. JOSEPH W. KERNA, Chicago, Ill., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Filed Oct. 20, 1885. (No model.)



Claim.—1. In a convertible chair, the combination, with the seat-frame, and pivoted legs arranged to be spread and contracted, of a pivot-bar, an adjusting-spindle, and a controlling-frame whereby the pivoted legs can be spread and contracted to lower and raise the seat-frame substantially as described.

2. In a convertible chair, the combination, with a seat-frame and the pivoted legs, of an adjusting screw-spindle connected to the seat-frame, a pivot-bar connected to the end of the screw-spindle and to the legs, and a screw-threaded controlling-frame, substantially as described.

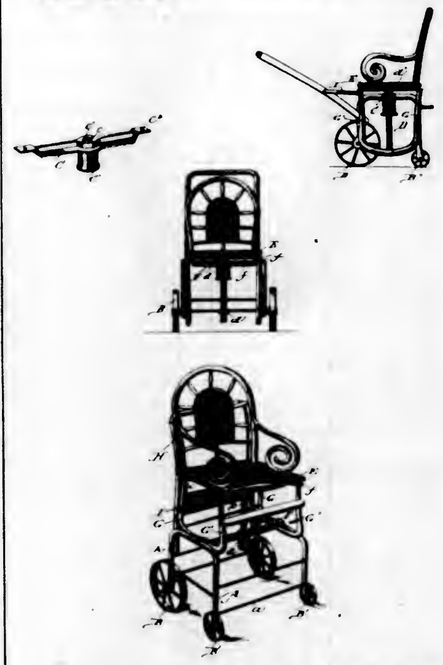
3. In a convertible chair, the combination, with the seat-frame, an adjusting-spindle, and pivoted legs provided with slots, of a controlling-frame having pins entering said slots, and a pivot-frame for said legs, substantially as described.

4. In a convertible chair, the combination of the seat-frame, the adjusting-spindle, the pivoted legs, the pivot-bar, the controlling-frame, and the foot-rest frame provided with the foot-rests, substantially as described.

5. In a convertible chair, the combination, with the seat-frame, the legs, and a suitable pivot-bar and controlling-frame, of a screw-spindle, and a catch-pin for engaging with and locking said screw-spindle, substantially as described.

6. In a chair, the combination of a seat-frame, a screw-spindle having sockets therein, suitable supports for said spindle, and a spring catch-pin for engaging with and locking said screw-spindle at different elevations, substantially as described.

338,232. CONVERTIBLE CHAIR. JOSEPH W. KERNA, Chicago, Ill., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Filed Oct. 20, 1885. (No model.)



Claim.—1. In a convertible chair, the combination of the base-frame mounted on wheels, a seat-frame pivotally mounted to turn horizontally on the base-frame, and a handle by which the chair may be trundled, substantially as described.

2. In a convertible chair, the combination, with the base-frame and the seat-frame pivotally mounted thereon, of a foot-rest frame provided in front and rear with foot-rests, substantially as described.

3. In a convertible chair, the combination, with the base-frame and the vertically-movable seat-frame, of the perforated and vertically-grooved cross-bar attached to the base-frame, and the sliding spindle attached to the seat-frame and provided with the projecting lugs, substantially as described.

4. In a convertible chair, the combination, with the seat-frame and the base-frame of the cross-bar, the interior whereof is provided with the vertical grooves and the top whereof is provided with the transverse grooves, and the sliding spindle connected with the seat-frame and having the projecting lugs adapted to slide within the vertical grooves of the hub and to rest within the transverse grooves at the top thereof, substantially as described.

5. In a convertible chair, the combination, with the base frame and the seat-frame, of the cross-bar attached to the base-frame, the sliding spindle connected with the seat-frame, and the foot-rest frame provided with the foot-rest, substantially as described.

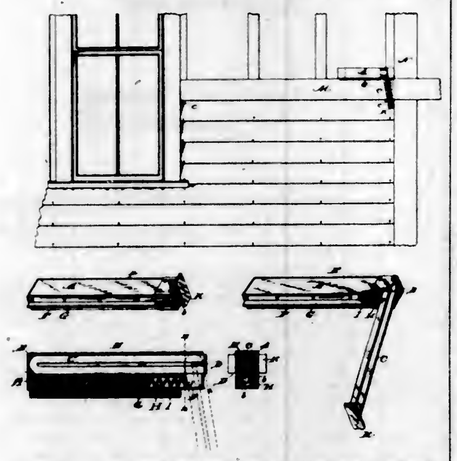
6. In a convertible chair, the combination, with the base-frame and the vertically-movable seat-frame, of a foot-rest frame consisting of the side bars, G and G′, mounted with the seat-frame, whereby said foot-rest can be raised and lowered and fit within the base-frame, substantially as described.

7. In a convertible chair, the combination of the base-frame, the seat-frame, the foot-rest frame, the sliding spindle, the spider-frame for sustaining the foot-rest frame, and the cross-bar provided with a perforated hub, substantially as described.

8. In a convertible chair the combination, with the base-frame and a seat-frame adapted to be raised and lowered, of a handle, H, pivoted to the base-frame, and a foot-rest pivotally connected to the handle and to the foot-rest frame, substantially as described.

9. In a convertible chair, the combination, with the base-frame and a seat-frame adapted to be raised and lowered, of a handle pivoted to the base-frame, and a foot-rest pivotally connected to the handle and to a portion of the chair structure that is adapted to be raised and lowered, substantially as described.

338,233. WEATHER-BOARD GAGE. JOHN H. KUYKENDALL and JEDEDIAH K. ELKINS, Sedalia, Mo. Filed June 4, 1885. (No model.)



Claim.—1. In a weather-board gage, the block, body, or handle, in combination with a swinging spring-actuated blade, the latter extending normally in an inclined position when in use, and adapted to be operated or forced inwardly, the handle or body being slitted or made hollow to receive the blade when not in use, as set forth.

2. In a weather-boarding gage, the body or handle, in combination with a spring-actuated blade pivoted and adapted to fold in said body or handle, and which extends normally when in use in an inclined line and is adapted to be operated or forced inwardly into a vertical position, as set forth.

3. In a weather-boarding gage, the block, body, or handle, in combination with a spring-actuated blade formed at its outer end with a head, as at K, as set forth.

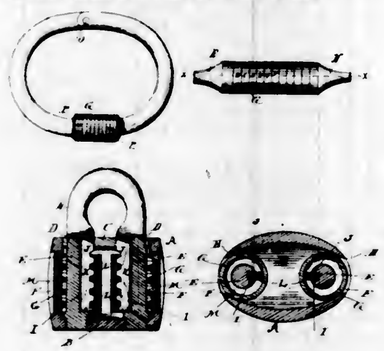
4. In a weather-boarding gage, the block, body, or handle, provided with a longitudinal flange or projection along one side, in combination with the adjustable spring-actuated blade pivoted in said handle, as set forth.

5. In a weather-board gage, the block, body, or handle slotted, recessed, or made hollow, as described, in combination with the blade slotted longitudinally, a pivot, post, or stud arranged at the forward end of the block and received within the slot of the blade, and a spring acting upon the inner side of said blade, as set forth.

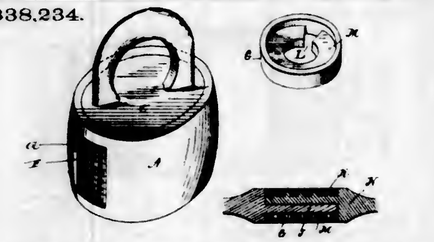
6. In a weather-board gage, the block, body, or handle, in combination with the pivoted blade, a coiled spring fitted in a recess of the block, and a plate arranged to be forced outward by the spring and held in contact with the side of the blade, as set forth.

7. In a weather-boarding gage, the block, body, or handle slotted, recessed, or made hollow, in combination with a pivoted sliding blade adapted to extend outward at an angle from one end of the body or to be received within the same, and a spring acting against one side of the blade, as set forth.

338,234. PERMUTATION-LOCK. MICHAEL LYNCH and WILLIAM F. HARRISON, Florence, Ala. Filed July 1, 1885. (Model.)



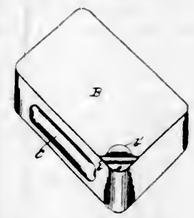
338,234.



Claim.—1. In a permutation-lock, the combination of a post having a longitudinal recess in one side, a number of washers turning upon the said post, formed each with a notch in its inner edge, and with an annular recess around its inner edge, each pair of washers having their flat sides bearing against each other, and a bar or shank having a number of notches in its outer edge for the reception of the inner edges of the washers, the edges of one pair fitting in one notch, the said shank sliding with its inner portion in the longitudinal recess in the post and with its outer notched portion in the registering notches in the inner edges of the washers, as and for the purpose shown and set forth.

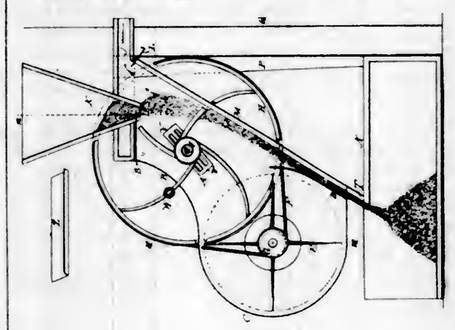
2. In a permutation-lock, the combination of a casing having longitudinal slots in its sides beveled upon the inner sides of the side edges, and having upright posts projecting from its bottom, the said posts having longitudinal grooves or recesses in their facing sides, a top having perforations for the reception of the upper ends of the posts and fitting in the casing, washers turning upon the posts and formed each with a notch in its inner edge, and with an annular recess in one side around the inner edge, each pair of washers bearing with their flat sides against each other, the outer edges of the washers projecting out through the slots in the casing and bearing tightly against the beveled edges of the same, and a hasp having its shanks sliding with their outwardly-facing portions in the longitudinal recesses in the posts and having their inwardly-facing portions notched, each notch receiving the edges of two washers, the said inwardly-facing notched portions sliding in the registering notches of the washers, as and for the purpose shown and set forth.

338,235. PAPER-WEIGHT. FENTON P. F. MULLINS, Philadelphia, Pa. Filed July 25, 1884. (No model.)

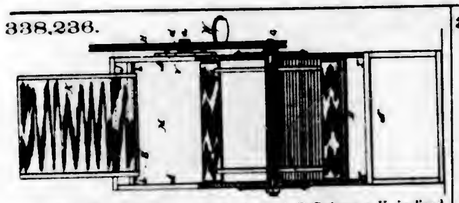


Claim.—A weight composed of a metal block having a covering or pellicle consisting of two thicknesses of leather fastened thereto by adhesive materials, substantially as set forth.

338,236. GRAIN-CLEANER. CHAS. TUPPER, Ridgeland, Ill. Filed Sept. 25, 1885. (No model.)

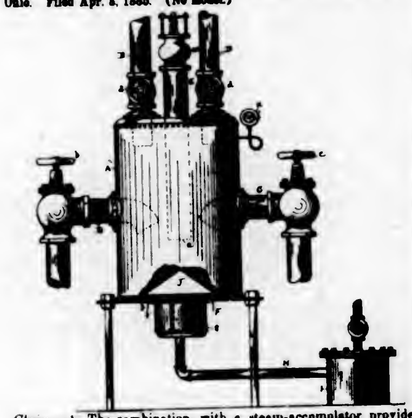


338,236.



Claim.—In combination with the body A B C, hopper K, inclined back board, M, and blast-fan E, a dust-discharge spout, J, which is placed on the top of the body and above the lower end of the hopper, and an adjustable grain-stop, L, put through the back board at or near its junction with the dust-discharge spout, as and for the purpose specified.

338,237. STEAM-ACCUMULATOR. PATRICK TWOHIG, Cleveland, Ohio. Filed Apr. 8, 1885. (No model.)



Claim.—1. The combination, with a steam-accumulator provided with one or more inlet-pipes and one or more outlet-pipes, the latter depending within the accumulator, of a surplus-steam discharge-pipe depending within the accumulator and having its receiving-mouth on a horizontal plane below the horizontal plane of the mouth or mouths of said inlet pipe or pipes, substantially as set forth.

2. The combination, with a steam-accumulator provided with one or more steam-inlet pipes and also provided with one or more steam-discharge pipes located at the top of the accumulator, of an independent surplus-steam escape-pipe depending within the accumulator and having its open receiving end located below the mouths of said steam-discharge pipes and also below the discharging end of said steam-inlet pipe or pipes, substantially as set forth.

3. The combination, with steam-accumulator A, provided with one or more supply-pipes and one or more discharge-pipes, the latter having their receiving-mouths depending below the accumulator-top and above the horizontal plane of the discharge-mouths of the supply-pipes, of the surplus-steam escape-pipe E, depending within the accumulator and having its open end *e* located below the mouth of said supply-pipes and nearer the bottom of the accumulator, substantially as set forth.

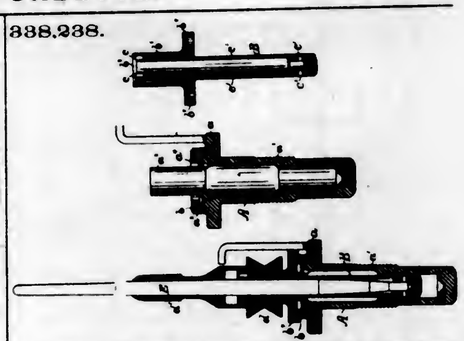
4. The combination, with a steam-accumulator, of a water-basin located at the bottom of the accumulator, and a cover located over the basin and forming horizontal water-passage *f'* between the same, said steam-accumulator provided with one or more steam-supply pipes connected therewith in a horizontal plane above said basin-cover, substantially as set forth.

5. The combination, with a steam-accumulator provided with a steam-supply pipe, of a water-basin depending below the accumulator-bottom and a conical cover located slightly above the latter, substantially as set forth.

338,238. BOLSTER FOR SPINNING-MACHINE SPINDLES. HENRY F. WOODHANCY, Whitinsville, Mass. Filed July 7, 1884. (No model.)

Brief.—The construction is intended to render the spindle self-adjusting and to secure more perfect lubrication. The bolster-case is extended upward, forming a tube above the oil-cup. The bolster is provided at its lower end with a step and at its upper end with a downwardly-projecting sleeve surrounding the tube of the case and resting by a flange upon an elastic sound-deadening ring. The bolster thus supports the spindle in a yielding manner. Tube, bolster, and sleeve are provided with holes, through which the oil raised by the spindle can flow back readily to the reservoir.

338,238.



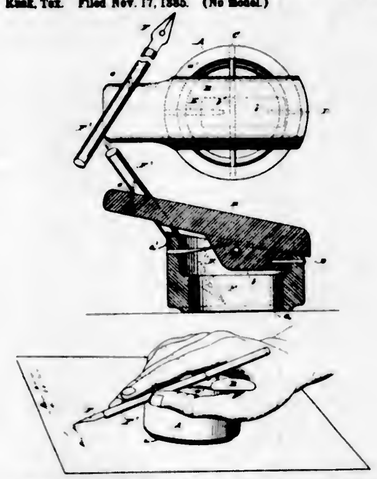
Claim.—1. The combination, with the bolster-case A, provided with the upwardly-extending tube a^2, of the bolster provided with the sleeve b^2, and flange b^4, constructed to support the bolster and step within the bolster-case, as described.

2. The combination, with the bolster-case A, of the combined bolster and step B, provided at its upper end with the sleeve b^2 and the flange b^4, constructed to form a cover for the oil-cup and support the bolster and step within the bolster-case, as described.

3. The combination, with the bolster-case A, provided with the upward-extending tube a^2 and the oil-cup a^3, of the combined bolster and step B, provided with the sleeve b^2 and flange b^4, and the elastic ring *b*, constructed to form a yielding sound-deadening support for the spindle, as described.

4. The combination, with the combined bolster and step B, provided with the sleeve b^2 and flange b^4, and the bolster-case A, provided with the oil-cup a^3 and tube a^2, of the spindle E, provided with the sleeve-whirl *d*, the whole constructed to suspend the bolster within the bolster-case from a point above the center of the whirl and allow the spindle to find its true center, as described.

338,239. HAND-SUPPORT FOR USE IN WRITING. JOHN L. WYCHE, Rusk, Tex. Filed Nov. 17, 1885. (No model.)

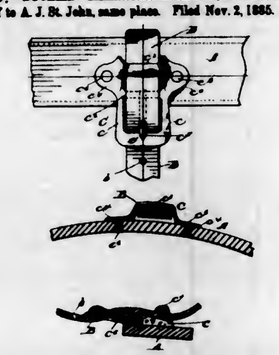


Claim.—1. A device for aiding in writing, consisting of a supporting-piece having its lower edge made smooth, so as to slide easily over the paper, and a hand-rest connected to the top of the supporting-piece and arranged to have a pen-handle pivoted upon it, substantially as specified.

2. The combination of the cylindrical supporting-piece having the smooth lower edge and the inclined upper edge, the hand-rest pivoted thereon and lying in the line of the inclination of its top edge, the pin *e* near the thumb end of the hand-rest, and the pen-handle F', pivoted upon the pin *e*, substantially as specified.

3. The combination of the glass supporting-piece A, provided with the smooth edge *a* and the inclined edge *a'*, the hand-rest B, provided with the projection *b* on its lower surface, the pivoting-rod C, passing through the slot *b'* of said projection, the pivot D, the spring E, the pin *e*, and the pen-handle F', pivoted on said pin, substantially as specified.

338,240. BUCKLE. MELANCTHON E. ZELLER, Bluffton, Ohio, assignor of one-half to A. J. St. John, same place. Filed Nov. 2, 1885. (No model.)

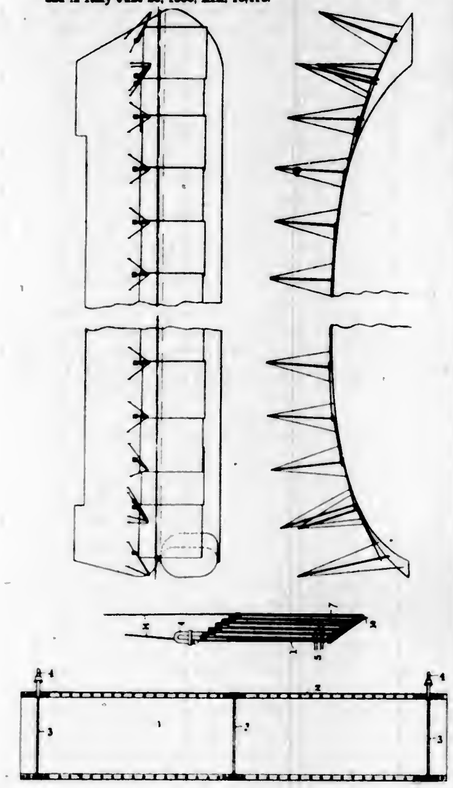


Claim.—1. A buckle having side bars provided with laterally-projecting attaching-ears, in combination with cross-bars and a tongue pivoted to one of said bars, substantially as described.

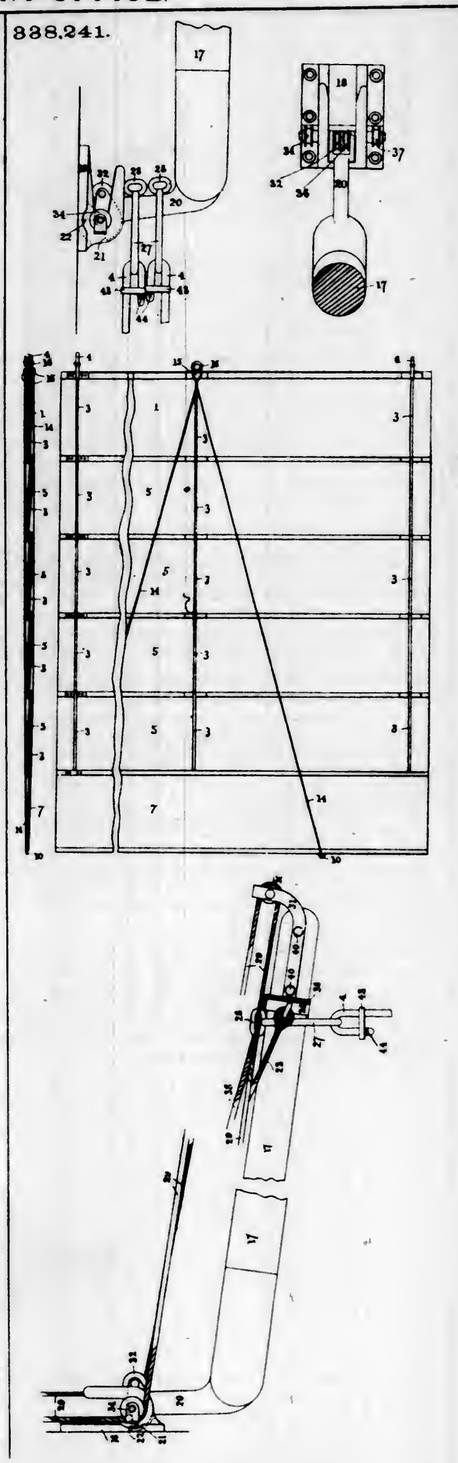
2. The combination of the crown-piece and winker strap or stay with a buckle having side bars provided with lateral securing lugs or ears, transverse bars, and a pivoted tongue, substantially as described.

3. A buckle having side bars provided with apertured lateral securing-lugs, and transverse bars extending from one to the other of said bars in different planes, and a tongue hinged to the lower of such bars, substantially as described.

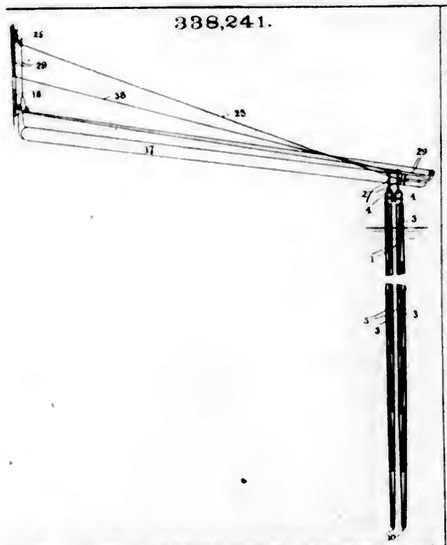
338,241. APPARATUS FOR PROTECTING VESSELS AGAINST TORPEDO ATTACKS. ALFRED C. KOMMERER, Paris, France, assignor to Hotchkiss & Co., same place. Filed July 6, 1885. (No model.) Patented in France Apr. 22, 1885, No. 168,441; in England May 9, 1885, No. 5,734, and in Italy June 20, 1885, XIX. 18,415.



338,241.



338,241.



Claim.—1. The hereinbefore-described shield for protecting vessels against torpedo attacks, the same consisting of independent sections or series of metal plates and spars for suspending the same at a suitable distance from the sides thereof, so as to entirely or partially surround or inclose the vessel, substantially as shown and described.

2. A section or series of the shield, the same consisting of a number of plates connected together by rods and eyes, so as to pack side by side or be distended, and provided with a spar for supporting the same from a vessel, substantially as described.

3. In a shield for protecting vessels against torpedo attacks, the combination, with supporting-bearings 18, secured to the side of the vessel, of the spars 17, each seated by a journal or axis in said bearings and provided with a ring, 27, for supporting a section or series of the shield, and with gear for raising, lowering, and supporting the spar, substantially as shown and described.

4. A shield for protecting vessels, the same consisting of independent sections of metal plates and spars for supporting the same, which spars are arranged to swing in bearings secured to the side of the vessel and provided with supports for maintaining them horizontally, and which sections are provided with rings and gear, whereby they may be moved from one end to the other end of the spars, substantially as shown and described.

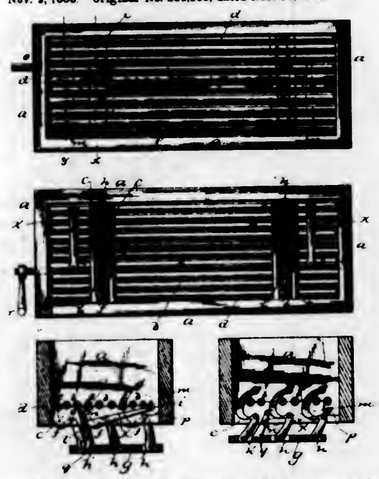
5. The combination, with the vessel and a spar for supporting and a ring running on the spar for carrying a section or series of metal plates, of guide-pulleys 30 32 34, secured to said spar, and a wire rope, 29, for operating the rings, substantially as shown and described.

6. The combination, with the vessel and series of spars 17, supporting the shield, of two holders, 25, associated with each spar, and two ropes, 23, each connected with one of said holders 25 and secured to a spar, 17, whereby all the spars are maintained at a given height, substantially as shown and described.

7. The combination, with the plates of a section, of the wire rope 14, passing through eyes 10 10 of the lowermost plate, 7, and secured at 15 to an eye, 16, whereby the plates of a section may be made to slide against each other, substantially as shown and described.

REISSUES.

10,700. **GRATE-BAR FOR LOCOMOTIVES, &c.** ISAAC W. SWALLOW, Kingston, Pa., assignor to the American Water Bar Grate Company. Filed Nov. 9, 1885. Original No. 288,599, dated Nov. 13, 1883.



Claim.—1. A fire-grate for locomotive fire-boxes, consisting of a series of water-bars and movable tumbler-bars extending longitudinally of the fire-box, beside and parallel with the water-bars, curved levers, and a bar pivoted to the lower ends of the curved levers, whereby the said tumbler-bars may be raised on curvilinear lines, substantially as specified.

2. The combination, with a fire-box, of a series of grate-bars and a series of tumbler-bars, which are approximately on the same horizontal plane in their normal positions, a bar beneath the grate and tumbler bars, and levers having curved extensions pivotally connecting the tumbler-bars with the said lower bar and passing between the grate-bars, substantially as specified.

3. The combination, with the pairs of water-bars *b b* and notched cross-bars *c c*, of the tumbler-bars *d d d*, pivoted curved arms *f*, the slotted connecting-bars *g g*, shaking-rod *o*, the single tumbler-bar *i*, the inclined transverse arms *k k*, the rigid arms *n n* on the shaking-rod, and arms *q q*, connecting the rod *o* and the connecting-bars *g g*, substantially as specified.

4. A fire-grate for fire-boxes, consisting of a series of stationary bars and movable tumbler-bars extending longitudinally of the fire-box, beside and parallel with the stationary bars, a shaking-rod, curved connections, and means for connecting the shaking-rod with said curved connections, to raise and lower said tumbler-bars on curvilinear lines, as specified.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

MARCHAND *v.* EMKEN.

Decided February 18, 1886.

1. Bill for infringement of Letters Patent No. 273,569, granted March 6, 1883, for an improvement in the manufacture of hydrogen peroxide.
2. The claim in controversy is as follows: "1. The method of making hydrogen peroxide by cooling the acid solution, imparting thereto a continuous movement of rotation, as well in vertical as in horizontal planes—such, for example, as imparted by a revolving screw in a receptacle—and adding to said acid solution the binoxide in small quantities while maintaining the low temperature and the rotary or eddying movements, substantially as described.
3. "The defenses are lack of novelty and invention and non-infringement." "As every device, apparatus, formula, law of nature, motion, and ingredient adopted by the complainant was old, the patent must be held invalid, unless it can be said that giving to oxygenated water a well-known rotary motion springs 'from that intuitive faculty of the mind put forth in the search of new results of new methods, creating what had not before existed or bringing to light what lay hidden from vision.' No such faculty has been tasked in giving form to this patent."
4. "The question then seems to be narrowed down to this: Does it constitute invention to stir by a well-known and simple mechanical device what had before been stirred by hand," and the court decides it does not. The case being disposed of upon the question of novelty and invention the question of infringement is not considered. The bill is dismissed.

Mr. B. F. Lee and *Mr. W. H. L. Lee* for the complainant.

Mr. Marshall P. Stafford for the defendant.

COXE, *J.*:

The complainant is the owner of Letters Patent No. 273,569, granted March 6, 1883, for an improvement in the manufacture of hydrogen peroxide.

The claim in controversy is as follows:

1. The method of making hydrogen peroxide by cooling the acid solution, imparting thereto a continuous movement of rotation, as well in vertical as in horizontal planes—such, for example, as imparted by a revolving screw in a receptacle—and adding to said acid solution the binoxide in small quantities while maintaining the low temperature and the rotary or eddying movements, substantially as described.

The defenses are lack of novelty and invention and non-infringement. The invention, as stated in the specification, relates to the manufacture of hydrogen peroxide or oxygenated water by the addition of barium, mixed with water, to an acid; and it consists in imparting to the acid a movement of rotation, the time required for chemical reaction being thereby lessened, while the reaction itself is more complete. To effectuate this purpose the specification describes and the drawing illustrates an apparatus consisting of a caldron surrounded by a jacketing vessel which contains the cooling medium, and an automatic stirrer provided with helicoidal blades and suspended so as to revolve near the bottom of the kettle. The claim is for this process of making hydrogen peroxide. The application was three times rejected, and was finally allowed by the Examiners-in-Chief in a qualified form upon the theory that there was as to this particular liquid something magical in the motion imparted by a screw. It is not pretended that the complainant discovered hydrogen peroxide, or the method of adding barium, mixed with water, from time to time to the diluted acid, or the necessity for stirring or agitating the liquid. Neither did he invent the obliquely-bladed screw, the hemispherical receptacle, the jacketing vessel, or any part of the apparatus described in the specification. All this was old and well known. The patent itself illustrates how extremely circumscribed was the theater of invention. This is demonstrated by placing side by side two statements taken from the specification, the first describing the prior process and the second the patented process:

Heretofore hydrogen peroxide has been made by adding the barium or calcium binoxide, mixed with water, to the diluted acid, the binoxide being added from time to time in small quantities, the vessel in which the operation is conducted being set in a refrigerating medium, and the liquid being agitated or stirred to facilitate the reaction. The stirring has been performed by hand.	The [jacketing] vessel B being filled with the cooling medium, the proper quantities of acid and water * * * are placed in the receptacle A. The screw C is put in motion, and the binoxide of barium or calcium, in the state of a more or less thick emulsion of milk, is added in small quantities. The revolving screw imparts a movement of rotation more or less rapid to the liquid, producing eddies therein and constantly changing the material, and the chemical reaction takes place very regularly and completely.

If the word "machinery" were substituted for the word "hand" at the end of the first quotation, the description of the old method would answer as well for the new. The question then seems to be narrowed down to this: Does it constitute invention to stir by a well-known and simple mechanical device what had before been stirred by hand?

The complainant desired to manufacture in large quantities what had before been produced chiefly in the laboratory. He knew how hydrogen peroxide had been made. Every step in the formula was familiar. A mixture that needed stirring and a vessel provided with a revolving stirrer were ready at his hand. He put the former into the latter. This was all. The object of agitating the liquid while making hydrogen peroxide is to keep the barium, which is three times as heavy as water, suspended in the acid, so that its particles may come in contact with the particles of acid. Whether they come in contact while going round, rising, settling, or remaining stationary can make no difference. Divest the case of the air of mystery with which it is environed and it seems simple enough. The complainant's predecessors knew that to keep the barium up in the solution they must stir it.

The complainant knew this. Unlike them, however, he manufactured on a scale large enough to make it essential to employ a power-shaft. The oar-shaped sticks which formerly went round and round by hand now go round and round by machinery.

Perhaps the clearest statement of the invention from complainant's standpoint is found in the evidence of the witness Hedrick. He says:

> The method * * * set out in the complainant's patent * * * is based upon reactions well known in the art and discovered by Thenard. * * * The dilute acid is given a movement which has never before been imparted to it in the manufacture of hydrogen peroxide, and which the patentee claims as new in that art. * * * The liquid is thrown out toward the circumference of the vessel at the bottom, rises at the sides, returns to the center, and then descends, to be again thrown out at the bottom, while at the same time it is carried round and round,

which, being reduced to still simpler language, means that the machine will stir large quantities of the liquid more thoroughly than the hand-worked paddles.

He who wishes the sugar and cream which he puts into his coffee to be diffused uniformly through the mixture is quite likely to stir it with a spoon. Should the same individual have occasion to provide coffee for a regiment of soldiers, he might, to save time and labor, place it in a kettle provided with a stirrer like complainant's; but to found upon such action a claim for a new process of making coffee would probably be thought absurd.

The pretense that the complainant has discovered some occult and wonder-working power in the motion of a screw revolving in the bottom of a tub is not sustained by the proof. Whether the contents of the tub be oxygenated water, or soap, or lye, or tartaric acid, the action will be the same. That rotary eddying motions in liquid will result from the revolving screw, that the liquid will rise highest at the periphery of the tub, and thus have the tendency at the top to fall toward the center, were well-understood operations of centrifugal force.

As every device, apparatus, formula, law of nature, motion, and ingredient adopted by the complainant was old, the patent must be held invalid, unless it can be said that giving to oxygenated water a well-known rotary motion springs "from that intuitive faculty of the mind put forth in the search of new results of new methods, creating what had not before existed or bringing to light what lay hidden from vision." No such faculty has been tasked in giving form to this patent.

There is here no sufficient foundation upon which to rest a claim which, if construed as broadly as the complainant insists it should be practically, makes all pay tribute who stir the mixture in question by machinery, and by hand also, provided substantially the same movement can be produced by hand-stirring, and this seems to be a disputed question upon the proof. The complainant's claim to be enrolled upon the list of inventors is based upon propositions too theoretical and visionary for acceptance. He has but caught a bubble from "the advancing wave of improvement."

As the foregoing considerations must dispose of the case, it is deemed unnecessary to consider the question of infringement. It would seem, however, in view of the fact that the claim, if upheld at all, must be confined within exceedingly narrow limits, that grave difficulties confront the complainant upon this branch of the case.

The defendant uses a tub in which revolves a shaft set with flat blades at right angles to the shaft. The only action of the stirrer is to make the liquid go round and round. In order to produce violent agitation, he projects from a vertical cleat fastened to the side of the tub two horizontal boards extending nearly to the center. As the shaft revolves the lower blades pass under the lower board and the upper blades pass between the boards. It would seem doubtful, at least, whether the motion thus produced is at all analogous to that described in the patent. It is difficult to discover that which the examiners aptly liken to the movement of the smoke-ring. It can hardly be said that there is a "ring-vortex" in defendant's tub.

The bill is dismissed.

U. S. Circuit Court—Northern District of Illinois.

TOBEY FURNITURE COMPANY v. COLBY *et al.*

Decided November 16, 1885.

1. COMBINATION CLAIM—INFRINGEMENT.

A claim for a combination of three elements is not infringed by the use of only two of them where the omitted element has a function of its own not performed by the elements used in the device claimed to infringe.

2. EQUIVALENTS.

An inventor who is only an improver and not the first in the art is not entitled to invoke, broadly, the doctrine of mechanical equivalents so as to cover devices not specifically claimed.

3. WARDROBE-BEDSTEADS.

The patent to Blackmore and Green, assignees of Hand and Caulier, No. 204,321, of May 28, 1878, for wardrobe-bedsteads, construed and *Held* not infringed by a bedstead made under the patent to Robert F. Meissner, No. 270,327, of January 9, 1883.

Messrs. Coburn & Thacher for the complainant.

Messrs. Banning & Banning and *Messrs. Hutchinson & Partridge* for the defendants.

BLODGETT, *J.*:

This is a bill charging defendants with infringement of Patent No. 204,321, issued May 28, 1878, to H. P. Blackmore and C. S. Green, assignees of C. Hand and Frederick Caulier, for an improvement in wardrobe-bedsteads. The two chief features of the patent are an arrangement of folding doors which give the bedstead the appearance of a wardrobe when the bed is raised to an upright position, and these doors are closed around it; and when the bed is let down for use these doors fold back, so as to form a paneled head-board, giving the whole structure the appearance of a canopied bedstead, while the other feature consists in an arrangement of vertical spiral springs which aid in raising the bed from a horizontal to a vertical position. These features are covered by the two claims of the patent, which are:

> 1. In a wardrobe-bedstead, the hinged folding sections A B C, secured to the uprights D, substantially as and for the purpose described.
> 2. The combination of body E, rods or mandrels F, having coiled springs *f* and links G, substantially as shown and described.

Defendants' bedstead, which, it is claimed, infringes this patent, has folding doors which inclose the upper part of the bedstead when raised and give it a wardrobe appearance, and which fold back to give the effect of a paneled head-board when the bed is down. In these respects the defendants' device accomplishes, substantially, the same result as complainant's; but the defendants use only two folding doors or hinged boards, while complainant uses, describes, and specifically claims three doors. As already said, defendants' two doors produce, substantially, the same general effect and result as the three used and described by complainant; but a study of the specifications of complainant's patent shows that for the purpose of producing the result aimed at by his device three doors were necessary, and it cannot, it seems to me, be accomplished by two doors. At all events, defendants do not use three to accomplish the purpose of their device.

One object of complainant's patent was to give the side supports of the upright frame a heavy massive appearance; and this is done by the peculiar way in which the three doors are folded around the side supports. The patentees say:

> Our invention has for its primary object to provide a folding or wardrobe-bedstead, in which the head-board will form or serve as the bottom board of the bed or front of the wardrobe, and in which solid posts are simulated by means of hinged boards, thus materially reducing the expense of construction.

Inasmuch, therefore, as the inventors of complainant's device seem to have had a special purpose in the use of three hinged doors or sections—that is, to give the vertical standards or sides of the upright frame a solid massive appearance when these sections were folded around the upright D—and inasmuch as these three sections, for the purpose described, are specifically claimed, I am of opinion that the defendants' use of two folding sections which accomplish part of, but not the entire purpose of, complainant's three sections, is not an infringement of this patent. Another evident reason for the use of the three folding sections in complainant's device was to form a casing or box for the concealment of the vertical springs which are used to help lift the bed to an upright position, a purpose not needed in the defendants' structure, as their springs are concealed in another way.

The second claim is for the vertical springs by which to aid in lifting the bed. Defendants use a spring seated in the lower part of the upright frame, and which, by means of a cord passing over an eccentric, utilizes the spring to aid in lifting the bed. If the inventors of complainant's device had been the first in the art to show the use of a spring to aid in lifting a turn-up or folding bedstead to a vertical position, and therefore entitled to invoke the doctrine of equivalents, I should deem the device used by defendants an infringement, as it is clearly an equivalent for that covered by complainant's claim; but the proof shows several prior patents for folding bedsteads in which an auxiliary lifting device is shown, and especially that shown in the patent to Maine, in 1869, is almost exactly reproduced in defendants' bedstead. I must, therefore, find that defendants do not infringe either claim of complainant's patent. That defendants' bedstead is so much like that of complainant's as to be a dangerous, if not a successful, competitor, is undoubtedly true; but I think this a clear case of an evasion, and not of the infringement, of a patent.

U. S. Circuit Court—District of Massachusetts.

TUBULAR RIVET COMPANY v. COPELAND.

Decided February 20, 1886.

This suit is brought for the infringement of Reissued Patent No. 8,276, granted to Mellen Bray, June 11, 1878, for an improvement in rivet-setting machines. The original patent was granted April 6, 1875. The application for the reissue was made May 27, 1878, more than three years after the issue of the original patent. The seventh and eighth claims of the reissue form the subject-matter of the present controversy. The seventh claim is not found in the original patent, and is held to be void, as it broadened the original patent. The eighth claim is held not to have been infringed. The bill is dismissed.

Mr. Chauncey Smith for the complainant.

Mr. Gilbert M. Plympton for the defendant.

COLT, *J.*:

This suit is brought for the infringement of Reissued Patent No. 8,276, granted to Mellen Bray, June 11, 1878, for an improvement in rivet-setting machines. The original patent was granted April 6, 1875. The application for the reissue was made May 27, 1878, more than three years after the issue of the original patent. The seventh and eighth claims of the reissue form the subject-matter of the present controversy. They are as follows:

> 7. In combination with a reciprocating plunger and a clinching-anvil, a receiver provided with spring or yielding sides, and adapted to receive the rivet and hold it in a perpendicular position between the plunger and anvil, and to be moved vertically or in line with the movement of the plunger during the first part of the downward movement of said plunger and guide the rivet to the work, and then remain in a state of rest till the plunger has completed its downward motion and forced the rivet from the receiver into the material, substantially as described.
> 8. The receiver N, provided with the springs *r* and *r'*, mounted upon the setting-plunger B, and adapted to operate substantially as described.

The seventh claim is not found in the original patent. The eighth claim of the reissue was the seventh claim of the original. In the original patent the receiver is subject to the limitation of being "mounted upon a movable setting-plunger, and made to move at times with said setting-plunger." In the reissue these words are omitted, and it is no longer necessary to mount the receiver upon the plunger, but to locate the receiver between the anvil and the movable setting-plunger. In the original patent the receiver is attached to the plunger. In the reissue by the seventh claim it is only necessary to locate the receiver between the plunger and anvil. The claims of the reissue are clearly broader than the original, and therefore the seventh claim of the reissue under the recent decisions of the Supreme Court must be held to be void. (*Miller* v. *Brass Co.*, 104 U. S., 350; *James* v. *Campbell*, Id., 356; *Matheus* v. *Machine Co.*, 105, Id., 54; *Bantz* v. *Frantz*, Id., 160; *Johnson* v. *Railroad Co.*, Id., 539; *Gage* v. *Herring*, 107 Id., 640; *Clements* v. *Odorless E. A. Co.*, 109 Id., 641; *McMurray* v. *Mallory*, 111 Id., 97; *Turner & Seymour Manufacturing Co.* v. *Dover Stamping Co.*, Id., 319.)

The question remains whether the defendant infringes the eighth claim of the reissue, which is like the seventh claim of the original. We do not find the combination described in this claim in defendant's machine. The receivers differ materially in construction. The defendant's receiver is not attached to the setting-plunger. It does not consist of a tubular thimble fitted loosely to the plunger and held in position by a pin set in the plunger and projecting outward into a slot formed in the thimble; nor has it the side springs described in the Bray patent. On the contrary, the defendant's receiver consists of a long lever pivoted at its rear end to the supporting-frame of the machine and composed of two elastic strips of metal flaring at their front ends to hold the rivet. It is thrown upward by a spring fixed to the arm of the machine.

We would not be warranted in putting such a broad construction on the eighth claim of the Bray reissue as to make it include the defendant's machine, when it differs so materially in construction. We therefore find no infringement of the Bray patent, and the bill must be dismissed.

Bill dismissed.

U. S. Circuit Court—District of New Jersey.

THE NEW YORK BELTING AND PACKING COMPANY *v.* MAGOWAN *et al.*

Decided March 5, 1886.

1. "The question raised in this case is whether, after the expiration of the patent sued on, the court ought to include in the decree an injunction against the defendants using or selling the infringing articles manufactured by them during the life of the patent."
2. *Held*, "That the court would interfere after a patent had expired to restrain the sale of articles manufactured previous to its expiration in infringement of a patent right."

ON settlement of decree.

Mr. B. F. Lee and *Mr. W. H. L. Lee* for the complainant.

Mr. F. C. Lowthorp, Jr., for the defendants.

NIXON, *J.*:

The question raised in this case is whether, after the expiration of the patent sued on, the court ought to include in the decree an injunction against the defendants using or selling the infringing articles manufactured by them during the life of the patent. The bill of complaint prayed for an injunction and for an account of profits and damages. On filing the bill an application was made for a preliminary injunction. Affidavits were put in by the defendants which suggested a doubt concerning the validity of the complainant's invention, and as the defendants were pecuniarily responsible the court denied the injunction, but required a bond and monthly statement, under oath, of the sales. Before a final decision of the suit was reached on the merits the patent expired. The defendants now object to any injunction restraining them from selling any of the vulcanized-rubber packing infringing the patent of the complainant which was manufactured by them previous to January 26, 1886, the date of the expiration of the patent.

The counsel for the complainant is not quite correct in assuming that it is the ordinary rule to grant the injunction in all such cases, but courts are authorized to do it, and often exercise their authority when the circumstances warrant it. (*Root* v. *The R. R. Co.*, 105 U. S., 189.) In *American Diamond Rock Boring Co.* v. *Rutland Marble Co.* (1 Fed. Rep., 356) Judge Wheeler, in discussing the propriety of such action, says:

> The grant to the patentee was of the exclusive right to make, use, and sell to others to be used the invention during the term. The right to exclude others from making, using, and selling was the essential thing, and really all that was granted. * * * Any making for use during the term was taking from him what belonged to him. To permit any others to make such machines during the term and hold them till the expiration and then use them freely, as if made after, would be to permit them to make off with so much of his (the patentee's) property that the law had granted to him.

See, also, to the same effect *The Rock Diamond Co.* v. *Sheldon*, (2 Fed. Rep., 870.) The English equity practice is the same, as shown in *Crossley* v. *Gaslight Co.*, (4 L. J. (N. S.) Ch., 25,) in which Lord Ch. Lyndhurst said:

> It was objected that the court would not interfere, &c. The point has never yet been decided; but I am of the opinion that the court would interfere after a patent had expired to restrain the sale of articles manufactured previous to its expiration in infringement of a patent right.

I think this is a proper case for interference. A suit was pending against the defendants and they were advised of the claim of the complainants. With their eyes wide open they went on and agreed to take the consequences. The consequences may be serious, but if they had wished to avoid them they ought to have refrained from such manufacture until the issues raised by the pleadings had been determined.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 34—No. 12. TUESDAY, MARCH 23, 1886. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1 1883, to June 30, 1884. One volume 60 pages. In paper covers $1.50.

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Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth $10 00

INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pp.—

Bound half-turkey	**2 50**
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Issue of March 23, 1886.

Patents	**445—No.**	**338,242 to No. 338,686, inclusive.**
Designs	**11—No.**	**16,578 to No. 16,588, inclusive.**
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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Nebraska	3	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	2	.....	New Hampshire	4	.....
California	6	1	New Jersey	24	.....
Colorado	1	.....	New Mexico Territ'y	.....	.....
Connecticut	13	.....	New York	86	5
Dakota Territory	.....	.....	North Carolina	1	1
Delaware	.....	1	Ohio	28	.....
District of Columbia	4	.....	Oregon	.....	.....
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Georgia	3	.....	Rhode Island	9	.....
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Illinois	39	.....	Tennessee	3	.....
Indiana	14	.....	Texas	4	.....
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Iowa	15	.....	Vermont	3	.....
Kansas	3	.....	Virginia	4	1
Kentucky	4	.....	Washington Territ'y	.....	.....
Louisiana	.....	.....	West Virginia	.....	.....
Maine	2	2	Wisconsin	5	.....
Maryland	12	.....	Wyoming Territory	.....	.....
Massachusetts	37	2	United States Army	.....	.....
Michigan	22	1	United States Navy	.....	.....
Minnesota	3	.....			
Mississippi	1	.....	Total to citizens of the United States	419	17
Missouri	11	1			
Montana Territory	.....	.....			

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Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	6	.....
Austria-Hungary	3	.....	Holland	.....	.....
Barbadoes	.....	.....	Ireland	.....	.....
Belgium	.....	.....	Italy	.....	.....
Bermuda	.....	.....	Norway	.....	.....
British Columbia	.....	.....	Russia	.....	.....
Canada	7	1	Scotland	1	.....
Cape of Good Hope	1	.....	Spain	1	.....
Colombia, U. S. of	.....	.....	Switzerland	1	.....
Corea	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	37	2
England	12	1			
France	5	.....			

DESIGNS.

16,578.—BOX.—*Webster C. Estes*, Brooklyn, N. Y. Application filed January 28, 1886. Serial No. 190,129. Term of patent 7 years.

16,579.—MANTEL-PIECE.—*Emile Hardy*, Andover, assignor to *The Craighead & Kintz Manufacturing Company*, Ballard Vale, Mass. Application filed October 27, 1885. Serial No. 181,113. Term of patent 14 years.

16,580.—STOVE.—*Lazard Kahn*, Hamilton, Ohio, assignor to *The Harris Stove Pattern and Machinery Company*, same place. Application filed January 23, 1886. Serial No. 189,549. Term of patent 7 years.

16,581.—STOVE.—*Felix Kahn*, Cincinnati, assignor to *F. & L. Kahn & Brothers*, Hamilton, Ohio. Application filed February 11, 1886. Serial No. 191,651. Term of patent 7 years.

16,582 to 16,585, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed February 23, 1886. Serial Nos. 192,932 to 192,935, inclusive. Term of patents 3½ years.

16,586.—STOVE OR RANGE.—*Abram C. Mott* and *John K. McLaughlin*, Philadelphia, Pa., assignors to *The Abram Cox Stove Company*, same place. Application filed February 1, 1886. Serial No. 190,553. Term of patent 14 years.

16,587.—DRAWER-HANDLE.—*Alexander J. Roux*, New York, N. Y. Application filed July 9, 1885. Serial No. 171,121. Term of patent 7 years.

16,588.—CAKE OF SOAP.—*John E. Smith*, New York, N. Y. Application filed December 22, 1885. Serial No. 186,500. Term of patent 14 years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

13,118.—CORSET-COVERS.—*Benjamin Altman*, New York, N. Y. Application filed January 22, 1886. Used since January 12, 1886.

"The numerals '700' and the letters and character 'B. A. & Co.'"

13,119.—CIGARS, CIGARETTES, AND SMOKING AND CHEWING TOBACCO.—*W. Duke, Sons & Company*, Durham, N. C. Application filed February 19, 1886. Used since November 19, 1885.

"The representation of a setting of a cameo ring, which contains the bust-portrait of a female, and from which extends horizontally on either side the band of the ring."

13,120.—PREPARATION FOR TREATMENT OF THE CIRCULATION AND ORGANS CONNECTED THEREWITH.—*J. J. Mack & Co.*, San Francisco, Cal. Application filed December 28, 1885. Used since November 10, 1885.

"The words 'DR. A. E. FLINT'S HEART REMEDY AND REGULATOR OF THE KIDNEYS AND CIRCULATION,' with a picture of the heart and the arteries leading from it downward to the kidneys, shown upon each side, a continuation of the arteries forming a border, within which the other matter is inclosed, and the word 'HEART' imprinted upon the picture of the heart, the word 'KIDNEYS' across the picture of the kidneys, and the word 'CIRCULATION' upon the triangular fork of the arteries at the bottom."

13,121.—HAIR-RESTORER.—*Wilhelm Moro*, London, England. Application filed February 17, 1886. Used since January 1, 1886.

"The words 'COUNT D'ORSAY.'"

13,122.—CIGARS.—*Francis P. Norton*, Boston, Mass. Application filed February 12, 1886. Used since December, 1882.

"The letters and character 'N. & S.'"

13,123.—LAUNDRY-SOAP.—*Pugsley, Dingman & Co.*, Toronto, Ontario, Canada. Application filed November 14, 1885. Used since January 1, 1886.

"The words 'DINGMAN' and 'RING OUT THE OLD, RING IN THE NEW.'"

13,124.—STOVES, RANGES, HEATERS, AND FURNACES, AND THE PARTS THEREOF.—*Richardson & Boynton Company*, New York, N. Y. Application filed December 9, 1885. Used since 1851.

"The word 'PERFECT,' on a panel running obliquely across the door or other part of a stove or range."

13,125.—CIGARS AND CIGARETTES.—*George A. Scott*, New York, N. Y. Application filed February 23, 1886. Used since February 1, 1886.

"The word 'LIGHTNING.'"

13,126.—GUANO.—*Charles Spear, Jr.*, New York, N. Y. Application filed February 15, 1886. Used since March 1, 1883.

"The words 'PENGUIN ISLAND.'"

13,127.—YPSILANTI MINERAL WATER AND ALL THE VARIOUS PRODUCTS OF THE SAME.—*Tubal-Cain Owen*, Ypsilanti, Mich. Application filed November 2, 1885. Used since September 29, 1885.

"The picture of a well represented as a flowing fountain, surmounted by a hexagonal canopy, across the front of which appear the words 'OWEN MINERAL WELL.'"

13,128.—WHEAT-FLOUR.—*The William Lea & Sons Company*, Wilmington, Del. Application filed January 30, 1886. Used since 1876.

"The letters 'F F F.'"

LABELS.

4,759.—Title: "YELLOW BURLAP" (FOR COVERS OR BAGS FOR HAMS AND OTHER PORK AND BEEF PRODUCTS.)—*George C. Bonbright*, Harrisburg, Pa. Application filed March 2, 1886.

4,760.—Title: "DOWDEN'S DENTAL FLUID."—*J. B. Dowden & Co.*, Richmond, Va. Application filed January 8, 1886.

4,761.—Title: "DR. D. DYER." (FOR GELATIN OR SUGAR-COATED PILLS.)—*John F. Dyer*, Burnham, Me. Application filed February 26, 1886.

4,762.—Title: "DR. D. DYER'S GELATIN OR SUGAR-COATED HEADACHE, DYSPEPTIC AND LIVER PILLS."—*John F. Dyer*, Burnham, Me. Application filed February 26, 1886.

4,763.—Title: "SARAH BUCKEY PEARSON'S REMEDY."—*Kate L. Koenig*, Philadelphia, Pa. Application filed March 2, 1886.

4,764.—Title: "HARRIS' COUGH BITTERS."—*Robert T. Miller*, Sedalia, Mo. Application filed January 14, 1886.

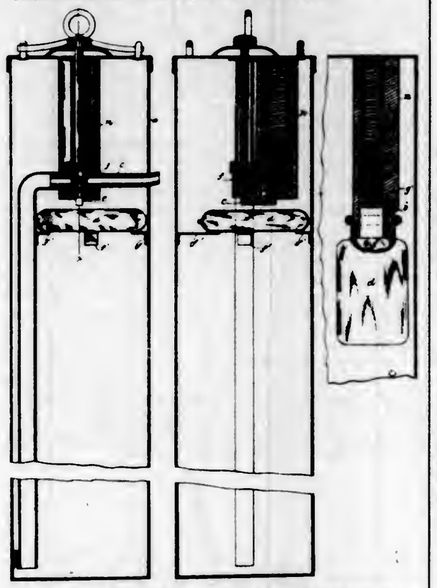
4,765.—Title: "SUSPENDERS."—*John M. Pevey*, Lowell, Mass. Application filed February 26, 1886.

4,766.—Title: "STAFFORD'S VEGETABLE BLOOD PURIFIER."—*Milton Stafford*, Victor, N. Y. Application filed February 27, 1886.

PATENTS

GRANTED MAR. 23, 1886.

338,242. **CHEMICAL FIRE-EXTINGUISHER.** RUSSELL A. BALLOU, Newton, Mass., assignor to the Chemical Hand Fire Extinguisher Company, Portland, Me. Filed Aug. 13, 1885. (No model.)



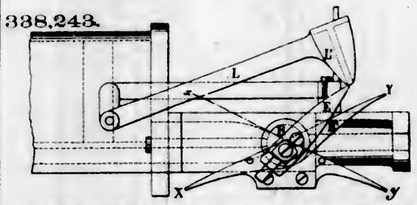
Claim.—1. In a chemical fire-extinguisher, the combination of a receptacle having a discharge-spout and a valve or faucet therefor and containing a suitable chemical or chemicals, a fragile vessel within the receptacle containing another chemical, a spring-actuated hammer arranged within the receptacle, and a movable detent connected with the plug of the faucet and arranged to hold the hammer in a retracted position when the faucet is closed and to release the hammer when the faucet is opened, as set forth.

2. The combination of the receptacle, the bottle supported therein, the spring-hammer over the bottle, the discharge-pipe having a faucet, and an arm on the plug of the faucet acting as a detent for the spring-hammer when the faucet is closed, as set forth.

3. The receptacle *a*, having the inclosed bottle, the spring-hammer and its operating devices, and a casing or partition separating the hammer and its operating devices from the lower portion of the receptacle, as set forth.

4. The receptacle having the fragile vessel or bottle, the partition or casing bottom over said bottle, having an aperture protected by a yielding cover, and the spring-hammer and its operating devices over said partitions, the hammer coinciding with the aperture in the partition, as set forth.

338,243. **PISTON WATER-METER.** PIERRE BERTHON and AUGUSTE DESMOUT, St. Etienne, Department of Loire, France. Filed Apr. 17, 1884. (Model.)

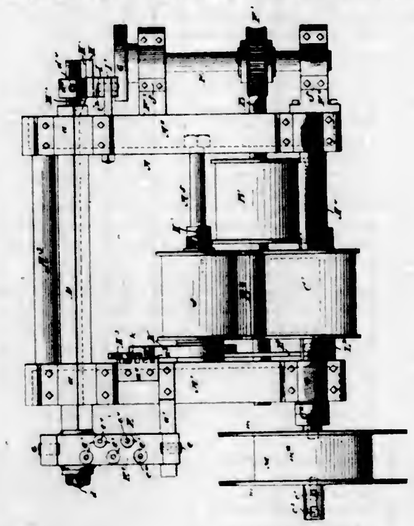


Claim.—1. In water-meters, the combination of the arm L, reciprocated by the motion of the piston, hammer L', regulating-incline E, and roof-shaped guide-piece N, with the reversing-beam R' and distributing-cock R, substantially as set forth.

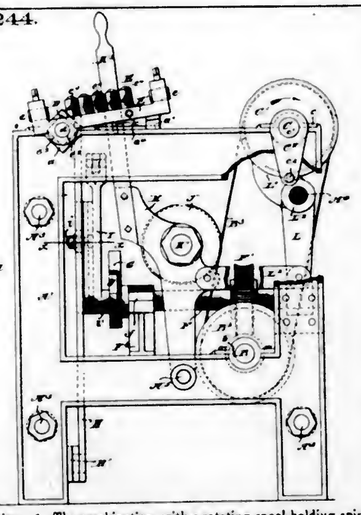
2. In combination with a water-meter having separated ports for induction and eduction, the cylindrical distributing-cock R, composed of a hollow part with the slot S to form the communication of the cylinder with the induction-pipe, and a solid part with the passages R^2 R^3, arranged to form the communication of the cylinder with the eduction-pipe within the box D, substantially as and for the purpose specified.

338,244. **WIRE-SPOOLING MACHINE.** ORLANDO P. BRIGGS, Chicago, Ill., assignor to the Thorn Wire Hedge Company, same place. Filed October 13, 1884. (No model.)

Brief.—The wire-receiving spool is placed on the end of a rotating spindle and held by a suitable catch. A slide-bar working in bearings opposite to and parallel with the rotating spindle is actuated by a lever and cam, &c., from the driving-shaft, and carries on one end and in line with the spool a wire guide and straightener, which, while it traverses with the slide-bar, is capable of turning on the same to keep the wire passing through said guide tangent to the exterior surface of the body of wire on the spool. The straightening device consists of several rollers mounted on vertical studs, said rollers being so located out of line with each other as to slightly bend the wire as it passes between them. The wire-guide consists of a tube at either end of the series of rollers.



338,244.



Claim.—1. The combination, with a rotating spool-holding spindle, a reciprocating wire-guide and wire-straightening device, driving-connections giving a reciprocating movement to said guide and straightening device, and means for actuating the spool-holding spindle, said guide and straightening device being movable in a plane transverse to the axis of the spool-holding spindle, whereby the wire passing through said guide and straightening device may remain tangent to the exterior surface of the body of wire upon the spool during the operation of winding, substantially as described.

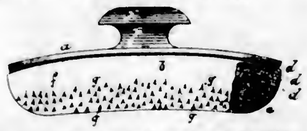
2. The combination, with the frame of a wire-spooling apparatus, a rotating spool-holding spindle, a slide-bar mounted upon the machine-frame parallel with the said spindle, a wire-straightener and a wire-guide pivotally connected with the said slide-bar, a cam for reciprocating said slide-bar, actuating devices between the cam and the slide-bar for actuating the latter from the former, and means for actuating the spool-holding spindle, substantially as described.

3. The combination, with the frame of a spooling-machine, a rotating spool-holding spindle, and means for actuating the spindle, of a reciprocating slide-bar mounted in bearings in the frame parallel with the said spindle, a plate or arm, E', pivoted upon said slide-bar, a wire-straightener and a wire-guide mounted upon said plate, and means for actuating said slide-bar, substantially as described.

4. The combination, with the machine-frame, of a rotating spool-holding spindle and means for actuating the latter, a reciprocating slide-bar mounted in bearings upon the frame parallel with the said spindle, an arm or plate, E', pivotally connected near one of its ends with the said slide-bar, a wire-straightener and a wire-guide mounted upon said arm or plate, an arm, *a'*, upon the machine-frame supporting the free end of said plate, and means for actuating said slide-bar, substantially as described.

5. The combination, with a revolving spool-holding spindle, of a combined wire-straightener and wire-guide comprising a plate, E', provided with guides *e e*, one at each of its ends, and a series of straightening-rollers, *e'*, mounted upon said plate between its ends, means for giving a reciprocating movement to the said plate E', and means for actuating the spool-holding spindle, said plate E being movable in a plane transverse to the axis of the said spool-holding spindle, whereby the wire may remain tangent to the mass of wire upon the spool during the operation of winding, substantially as described.

338,245. FINGER-NAIL POLISHER. GEORGE H. BROADHURST, Brooklyn, N. Y. Filed June 18, 1885. (No model.)

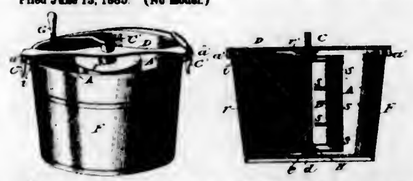


Claim.—1. As a new article of manufacture, a polishing implement having a pad or cushioned body formed of elastic material and charged with polishing-powder, the outer covering of the pad having apertures capable of distending under pressure, as set forth.

2. In a nail-polisher, the combination, with the frame, of a pad composed of layers of felt having perforations, an under layer of cotton fiber, and a covering of perforated chamois-skin, and the whole charged with powder, as set forth.

3. In a nail-polisher, the combination of a pad composed of felt layers, a fibrous substance, interposed layers of polishing material, and an outer covering of chamois-skin having angular-shaped perforations, as set forth.

338,246. ICE-CREAM FREEZER. JAMES F. BROWN, Lansing, Mich. Filed June 13, 1885. (No model.)



Claim.—1. The combination, in an ice-cream freezer, of the beater-frame B, beaters *s s s*, and scraper attached, sleeve *r'*, secured to the upper bar or arm, and having rib or feather *b'*, with bar D, adapted to said sleeve, all substantially as described, and for the purpose specified.

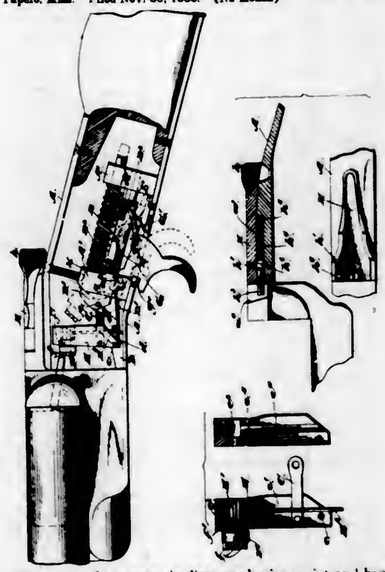
2. In an ice-cream freezer, the combination of the stationary beater-frame, having beaters *s s s* and scraper *r* attached, sleeve *r'*, secured to the upper bar of said frame and having feather *b'*, with bar D, adapted to said sleeve, and having on each end studs *i i* and *a' a'*, to the latter of which are attached by a pin cam-levers C' C', all as described, and for the purpose specified.

3. The combination, in an ice-cream freezer, of the beater-frame B, beaters *s s s* and scraper *r* attached, sleeve *r'*, secured to the upper bar or arm of said frame, with shaft C, which turns in the lower bar or arm, and sleeve *r'*, secured to the upper bar or arm, and having collar H near the lower end, as shown, and for the purpose specified.

4. The combination, in an ice-cream freezer, of the shaft C, having collar H attached, and which turns in the lower bar, and sleeve *r'*, secured to the upper bar of a stationary beater-frame, and having the lower end made square, with the can A, on the bottom of which is secured the bearing *a*, having a square socket adapted to the lower end of shaft C, and attached to the under side of said bottom pivot, *d*, which turns in bearing *e*, secured to the bottom of wooden pail F, all substantially as set forth.

5. In an ice-cream freezer, the rotating can A, pivot *d*, attached to the bottom of said can, and the cover A', having a central opening through, with the sleeve *r'*, the larger part of which is adapted to said cover, all substantially as shown, described, and for the purpose specified.

338,247. BREECH-LOADING FIRE-ARM. JAMES C. BROYLES, Tupelo, Miss. Filed Nov. 30, 1885. (No model.)



Claim.—1. In a breech-loading gun having an internal hammer, the combination, with a sliding two-part bolt, a hammer connected to the head of the bolt and pivoted in the frame, and a combined trigger

and sear adapted to engage with one part of the bolt, and thereby to set and impel the bolt and pivoted hammer, substantially as described.

2. In a breech-loading gun having an internal hammer, the combination of a double sliding spring-actuated bolt, a hammer pivoted to the breech-frame and connected to the head of said bolt, a combined trigger and sear pivoted in the frame, a dog pivoted to the trigger and sear and adapted to engage with the bolt, and a firing-disk on the hammer, substantially as described.

3. In a breech-loading gun having an internal hammer, the combination of a double sliding bolt the upper portion of which is rounded and encircled and actuated by a spring, a recessed hammer pivoted to a lug on the breech-frame and connected to the head of said double bolt by a link, a spring fitted in a recess in a lug cast integral with the breech-frame, and a combined trigger and sear upon which the spring bears, the sear portion thereof being pivoted at one side to the bearing-frame and having a dog pivoted in a slot at its other side for retracting the bolt, substantially as described.

4. In a breech-loading gun having an internal hammer, the combination of a double sliding bolt, the upper part of which is rounded and encircled and actuated by a spring, and the lower part rectangular in form and provided with a slot, said bolts uniting in a common head, suitable bearing-frames in which said bolts are mounted and have free movement, a hammer pivoted to a lug on the breech-frame, suitably connected to the head of the bolts, a centering firing-disk having nipples on its face mounted on the forward upper end of the hammer, and a combined trigger and sear, the sear portion of which is pivoted to one of the bearing-frames at one end and having a dog pivoted in a slot formed at the other end, substantially as described.

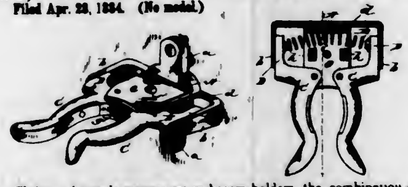
5. In a breech-loading gun, the combination of a double sliding bolt situated in suitable bearing-frames, a spring encircling the upper part of said bolt, a recess in the lower rectangular portion of the bolt, a sear pivoted to a bearing-frame in its forward part and having a spring-actuated dog pivoted in a slot in its rear portion, said dog engaging with the shoulder formed by the rear end of the recess in the lower rectangular bolt, an internal recess hammer straddling and pivoted to a lug cast integral with the lower breech-frame, a link connecting said hammer and the double bolt-head, a centering firing-disk having nipples on the forward upper side of said internal hammer, and means for operating said firing-disk, substantially as described.

6. In a breech-loading gun, the combination, with an internal recessed hammer straddling and pivoted to a lug cast integral with the lower breech-frame, of a ratchet-wheel situated in the rear upper portion thereof, a shaft secured at one end to the said ratchet-wheel and passing through to the forward outside portion of the hammer, a centering firing-disk having suitable nipples on the face mounted on the end of this shaft, a vertical spring connected to the rear portion of the lug on the lower breech-frame, said spring engaging with the teeth in the ratchet-wheel and acting to turn the firing-center, and a cushion-spring situated in the upper forward part of the hammer, the firing-disk resting against said cushion-spring, any injury being thereby prevented to the other parts of the back by the rebound, substantially as described.

7. In a breech-loading gun, a top snap or catch consisting of a plate mounted on the upper part of the breech-frame, a screw passing through the said plate and the squared portion of a sliding bolt, a spring encircling the part of said bolt extending rearwardly from said squared portion, the forward portion of the bolt engaging the projection on the gun-barrels, a fulcrum-pin situated to one side of the central screw, and suitable recesses formed in the breech-frame for the reception of the parts of this top snap-lever, substantially as described.

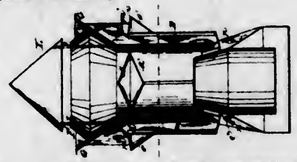
8. In a breech-loading gun, the combination of a double bolt consisting of parts B and B^2 and having a head, B', supported and moving in suitable bearing-frames, A', an internal hammer, E, a link, C, connecting said hammer E to the head B', a centering firing-disk, F, mounted on the upper forward end of the hammer, and a combined trigger and sear, G, having a dog, G', for operating the parts, substantially as described.

338,248. BROOM-SUPPORT. FRANKLIN S. CAPRON, Taunton, Mass. Filed Apr. 23, 1884. (No model.)



Claim.—As an improvement in broom-holders, the combination of the base having outwardly-extending arms *b* at each side thereof, a base-plate, *g*, arranged at the lower end and middle thereof, and having upwardly-projecting bracing-lug *h* on each side thereof, a wing, *e*, arranged at the upper edge of the plate A and riveted to the plate *g*, curved outwardly-extending clamping-arms C, pivoted independently of each other between the wing *e* and plate *g*, and each provided with a lug or ear, D, adapted to bear against one of the arms *b* of the base-plate and serve as a stop to limit the movement of its arm, each arm having an elastic facing, and a coiled spring, E, arranged in rear of the lugs H, and adapted to bear against the inner ends of the stop-ears *d* of the arms, all arranged and adapted to serve as described.

338,249. CHIMNEY-TOP. CHARLES W. CARLL, Camden, N. J. Filed Feb. 27, 1885. (No model.)

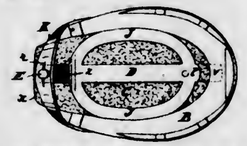


Claim.—1. In chimney caps or cowls, the combination, with a smoke-pipe, of a surmounting deflector consisting of two conical flanges, F G, arranged at opposite inclinations and including a V-shaped space closed at the bottom and adapted and designed to deflect currents of air, and a surmounting conical hood of a diameter equal to or less than the flange G of said deflector, said hood being arranged with its base above the top of the flange F', substantially as described.

2. In a chimney top or cowl, the combination, with the body E, provided with the radial partitions or guards *m m*, and having a V-shaped deflector, G F', arranged at its upper end, of the external casing, D, provided with a double conical deflecting-flange, *o o'*, the partitions *m* being widened and shouldered at their upper portions, so as to rest upon said flange, substantially as described.

3. In a chimney top or cowl, the combination, with the smoke-stack and the surrounding casing E, separated from said smoke-stack by an annular space, of the external casing, D, having an upturned flange at its lower edge embracing the lower edge of the casing E, and forming a trough for the reception of water, the base of said trough being perforated and the flange portion being below the mouth of the stack, substantially as set forth.

338,250. HOOF-PAD. EUGENE F. COLLINS, Anson, Me. Filed Jan. 25, 1886. (No model.)



Claim.—1. In a hoof-pad, the combination, with the pad proper, of the bar D, extending beneath the same and bent up at its front end, *i*, means for supporting said bar at the rear end, an upright standard, *f*, near the front end extending through said pad, and an auxiliary bar, H, secured to the upper end of said standard *f*, and the point *v* of which is adapted to rest above the horseshoe.

2. In a hoof-pad, the combination, with the pad proper, of the bar D, extending beneath the same, means for supporting said bar at its forward end, the headed stud E, rigidly secured to the under side of said bar near its rear end, and the strap K, adapted to pass over the hoof, and provided with a slot, *r*, adapted to receive the stud E.

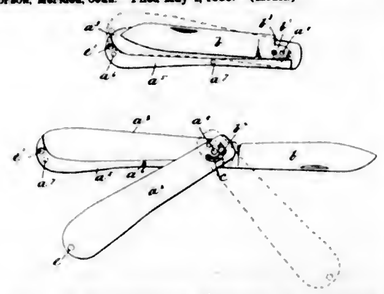
3. In a hoof-pad, the combination, with the pad proper, of the bar D, extending beneath the same, means for supporting said bar at its forward end, the headed stud E, extending through said bar near its rear end and rigidly secured therein, the shank of said stud also projecting through the pad, its inner end being bifurcated and the so-split ends folded over onto the pad, and the strap K, adapted to pass over the hoof, and provided with a slot, *r*, adapted to receive the stud E.

4. In a hoof-pad, the combination, with the pad proper, of the bar D, extending beneath the same and bent up at its front end, *i*, an upright standard, *f*, near the front end extending through said pad, an auxiliary bar, H, secured to the upper end of said standard *f*, and the point of which is adapted to rest above the horseshoe, the headed stud E, extending through said bar near its rear end and rigidly secured therein, the shank of said stud also projecting through the pad, its inner end being bifurcated and the so-split ends folded over onto the pad, and the strap K, adapted to pass over the hoof, and provided with a slot, *r*, adapted to receive the stud E.

5. In a hoof-pad, the combination, with the pad proper, of the bar D, extending beneath the same and bent up at its front end, *i*, an upright standard, *f*, near the front end extending through said pad, an auxiliary bar, H, secured to the upper end of said standard *f*, and the point of which is adapted to rest above the horseshoe, the headed stud E, rigidly secured to the under side of said bar near its rear end, and the

strap K, adapted to pass over the hoof, and provided with a slot, *r*, adapted to receive the stud E.

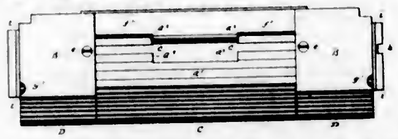
338,251. POCKET-KNIFE. NATHAN W. CRANDALL and GEORGE W JOPSON, Meriden, Conn. Filed May 4, 1885. (Model.)



Claim.—1. The combination, substantially as hereinbefore described, of the fixed scale or partition, the back-spring, the blade having a guide-pin on its side and a shoulder to engage the back-spring, the movable scale having a semicircular slot concentric with the pivot-pin of the blade, and the pivot-pin, all arranged and operating substantially as set forth.

2. In a knife, the combination, with a movable scale having an approximately semicircular slot concentric with the pivot-pin, the blade, and the back-spring, of the guide-pin projected from the side of the blade through the slot and arranged to stop the scale before the latter reaches its normal position on the handle, and a catch-pin projecting from the outer end of the scale to enter a corresponding opening in the handle, substantially as and for the purpose set forth.

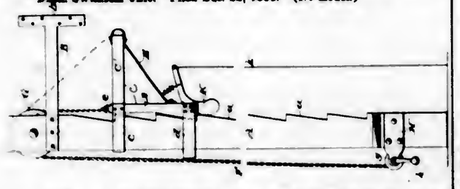
338,252. STOVE-BACK. OSCAR DAMAN, Minneapolis, Minn. Filed Feb. 2, 1885. (No model.)



Claim.—1. A stove-back composed of the body A, having horizontal ridges *a*, and provided with grooves *c* and *f*, the sliding plates B, connected to said body by screw-bolts *e* in said grooves *c*, the lugs *g*, and ribs *f* and *d* on said sliding plates, and the interposed adjustable corrugated plates, C and D, substantially as set forth.

2. The combination, with the body A, provided with the groove *c*, and the plates B, sliding horizontally thereon by means of the groove *c* and bolts *e*, of the bolts *e*, the loose plates D, fitting under lugs *g* on said plates B, and the loose plate C, having notches *n* to fit over said lugs, the said body and sliding plates being adapted to clamp and retain said loose plates when said screw-bolts are tightened, substantially as set forth.

338,253. CARPENTER'S AND PAINTER'S SCAFFOLD. HENRY DEE, Swanton, Ohio. Filed Dec. 22, 1885. (No model.)

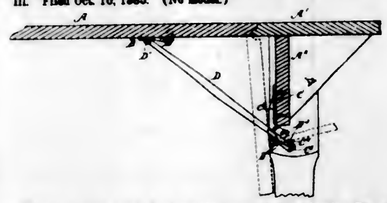


Claim.—1. The combination, with a pillar having shoulders on one face thereof, the bracket, the lower end of which is adapted to rest on the shoulders on the pillar, and the straps secured to the bracket and embracing the pillar, of the bent lever pivoted to the bracket and constructed and arranged to move the lower end of the bracket away from the shoulders on the pillar, a cord for operating the lever, and a rope or chain for raising the bracket, substantially as set forth.

2. The combination, with the vertically-movable bracket-arm secured to the pillar by straps, of the hoisting rope or chain leading from the bracket over a pulley in the pillar, and thence to a winding-drum, the said hoisting rope or chain being adapted to be attached at the inner or outer end of the bracket-arm, for the purpose substantially as set forth.

3. The combination, with the notched pillar, the bracket secured thereto by straps loosely embracing the pillar, the lower end of said bracket adapted to engage the shoulders on the pillar, and the hoisting rope or chain extending from the bracket-arm over a pulley at the upper end of the pillar, and thence down to a winding-drum journaled in suitable bearings at the base of the pillar, of a spring-actuated lever pivotally secured to the lower end of the bracket, for releasing the bracket from the notches on the pillar, substantially as set forth.

338,254. TABLE-LEAF SUPPORT. FRANK C. ERLANDER, Rockford, Ill. Filed Oct. 10, 1885. (No model.)

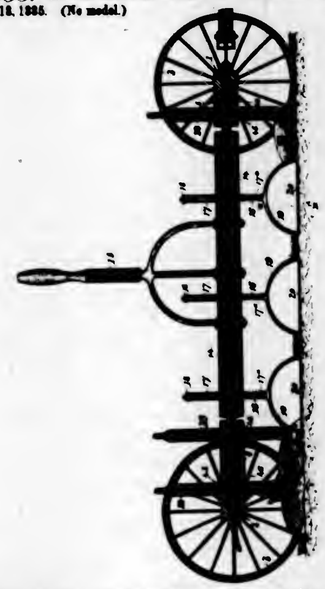


Claim.—1. In a table-leaf support, the safety projection C^4, substantially as described, and for the purpose set forth.

2. The combination, with the guide-plate C, having the longitudinal slot C' and provided with the rest C^3, safety projection C^4, oblique shoulders C^5, and strengthening-ribs C^6, of the supporting-arm D, furnished with the cross-pieces D' D^2, substantially as set forth.

3. The combination, with the hinge-plate B, of the supporting-arm D and guide-plate C, substantially as described, and for the purpose specified.

338,255. COTTON-CHOPPER. JOHN C. FARLEY, Hearne, Tex. Filed Apr. 18, 1885. (No model.)



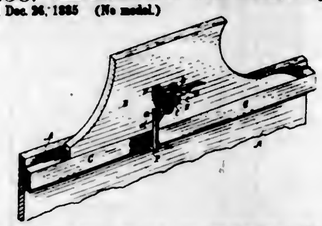
Claim.—1. In a cotton-chopper, in combination with axles 1 2, longitudinal beams 4, connecting said axles, short bearing-beams 5 6, fixed to the axles, oscillating beam 14, supported between said beams 5 6, handle 15, fixed to and projecting upwardly from said beam 14, and choppers depending from said beam 14, substantially as and for the purpose set forth.

2. In combination with an oscillating beam, 14, supported from the axles of a cotton-chopper, and having operating-handle 15, a series of choppers depending from said beam 14, substantially as and for the purpose set forth.

3. In a cotton-chopper, in combination with the oscillating beam, the shafts 16, supported in said beams, having bifurcated arms 19 at bottom, and cutter-blades 20 between said arms, substantially as set forth.

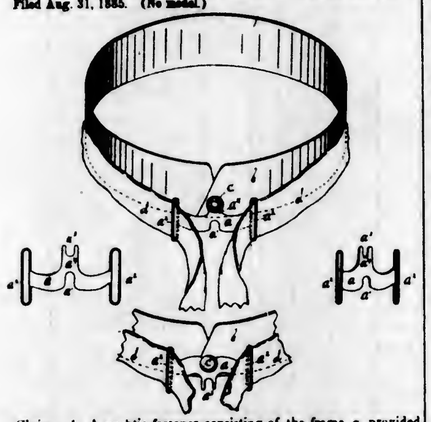
4. In combination with oscillating beam 14, the shafts 16, sleeves 17 17', surrounding the same, and nuts 18, arranged substantially as and for the purpose set forth.

338,256. VEHICLE-SEAT LOCK. WILLIS H. FARR, Dowagiac, Mich. Filed Dec. 26, 1885. (No model.)



Claim.—In a vehicle-seat lock, the combination, with the base plate provided with the studs, of the slotted hooked plate, the operating-lever provided with the cam and stop-shoulder, and the L-shaped hook having the point *x* and hole *d* to receive the hook *a*, substantially as described.

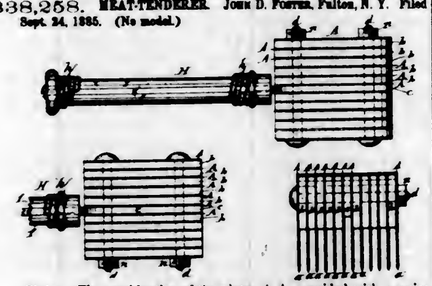
338,257. NECKTIE-FASTENER. BURTON M. FISH, Hamburg, N. Y. Filed Aug. 31, 1885. (No model.)



Claim.—1. A necktie-fastener consisting of the frame *a*, provided with the collar-button slot a', the extension a^4, having the auxiliary collar-button slot a^3, and the end loops, a^3 a^3, substantially as and for the purpose stated.

2. A necktie-fastener consisting of the frame *a*, provided with the raised button-slot a^3, and the end loops, a^3 a^3, substantially as and for the purpose stated.

338,258. MEAT-TENDERER. JOHN D. FOSTER, Fulton, N. Y. Filed Sept. 24, 1885. (No model.)

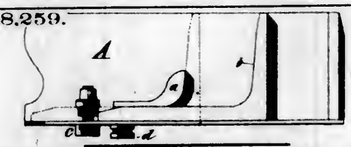


Claim.—The combination of the plates A A, provided with a series of cutting-edges, *a a*, spreading-plates *b b*, and the handle-shank *c*, interposed between the plates A A, and the clamping-bolts *d d*, passing transversely through the plates A *b* and shank *c*, and provided with removable nuts *n n*, substantially as described and shown.

338,259. COMPOSING-STICK. CHARLES FERRIER, Brooklyn, N. Y. Filed Jan. 2, 1885. (Model.)

Claim.—A composing-stick constructed as described and provided with the sliding pieces *b* and *a*, arranged and adapted to be adjustably secured to the lower angle of the stick A by means of the screws *c* and *d*, as and for the purpose specified.

338,259.



338,260. ARMATURE FOR ELECTRO-MAGNETS. CHARLES A GARNER, Edwardsville, Ill. Filed July 6, 1885. (No model.)



Claim.—1. An armature consisting of a leaf provided with perforations, and a secondary leaf overlapping the same, substantially as and for the purpose described.

2. The combination, with an electro-magnet, of an armature consisting of a leaf provided with perforations, and a secondary leaf overlapping the same, substantially as and for the purpose described.

3. An armature consisting of a series of leaves overlapping each other, substantially as described.

4. An armature consisting of a series of leaves overlapping each other and separated from each other by a suitable intermediate space, substantially as described.

5. An armature consisting of a series of separate leaves overlapping each other, said leaves being separated from each other by a suitable intermediate space, and one or more thereof being provided with perforations, substantially as described.

6. An armature consisting of a leaf provided with perforations, and a secondary leaf integral therewith, said secondary leaf bent back to overlap the other, substantially as described.

7. An armature consisting of a leaf provided with perforations adapting it to pass over the edges of the cores of an electro-magnet, and the combination therewith of one or more auxiliary leaves, the construction being such that an electro-magnet may exert more attractive force upon the auxiliary leaf or leaves than upon the leaf adjacent to the magnet when said armature has been drawn to the magnet, substantially as described.

338,261. ARMATURE FOR ELECTRO-MAGNETS. CHARLES A. GARNER, Edwardsville, Ill. Filed July 13, 1885. (No model.)



Claim.—1. An armature for an electro-magnet, composed of a plate having recesses which receive the core of the magnet, said recesses being formed in the outer edges of the plate, substantially as described.

2. An armature for electro-magnets, composed of a plate having recesses which receive the cores of the magnets, said recesses being formed in the outer edges of the plate, the latter being bent to bring said edges adjacent to each other, substantially as described.

3. An armature for electro-magnets, composed of a plate having recesses formed in its outer edges and bent to bring said edges adjacent to each other, in combination with one or more auxiliary plates, substantially as described.

4. An armature for electro-magnets, composed of one or more plates recessed upon the outer edges and bent to bring said edges adjacent to each other, in combination with an electro-magnet, substantially as described.

5. An armature for electro-magnets, consisting of a series of plates or leaves, one or more thereof being recessed upon the edges and said edges being brought into contiguity, substantially as described.

6. An armature for electro-magnets, composed of a series of plates or leaves, one or more thereof being recessed upon the edges and mounted upon suitable intermediate supports with the recessed edges in contiguity, substantially as described.

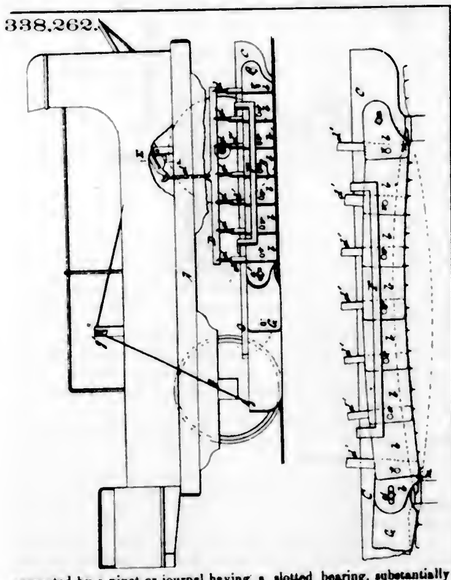
338,262. STREET-SCRAPER AND SNOW-PLOW. GEORGE G. GIBSON, St. Louis, Mo. Filed Jan. 5, 1886. (No model.)

Claim.—1. In a scraper or snow-plow, a flexible or floating scraper made up of sections loosely or pivotally united one with another, substantially as and for the purposes specified.

2. In a scraper or snow-plow, the combination, with a scraper, of a flexible or sectional wing-piece composed of two or more plates loosely or pivotally connected, substantially as and for the purposes specified.

3. In a scraper or snow-plow, the combination of a floating or flexible scraper composed of pivoted sections and a stretcher, the parts

338,262.

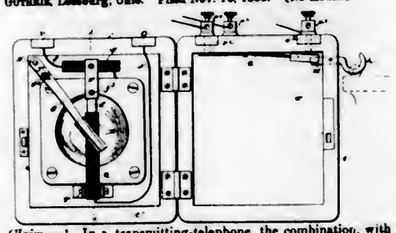


connected by a pivot or journal having a slotted bearing, substantially as and for the purposes specified.

4. In a scraper or snow-plow, the combination of a flexible scraper, a stretcher, and a saddle-brace, substantially as and for the purposes specified.

5. In a scraper or snow-plow, the combination of a flexible scraper, a stretcher, a saddle-brace, and a suspension-bar with which the sections of the flexible scraper are each independently connected, substantially as and for the purposes specified.

338,263. TELEPHONIC TRANSMITTING APPARATUS. JAMES T. GUTHRIE, Leesburg, Ohio. Filed Nov. 10, 1885. (No model.)

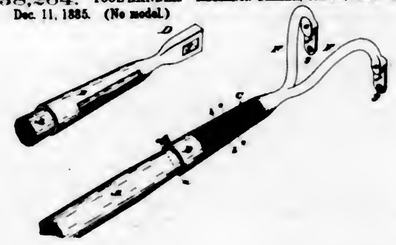


Claim.—1. In a transmitting-telephone, the combination, with the diaphragm, of the carbon bar, the metal arm and spring metallic electrode supported thereby, and the plumbago electrode bearing against said metallic electrode, essentially as set forth.

2. In a transmitting-telephone, the combination of a diaphragm, a vibrating metallic electrode in contact with said diaphragm, and a hinged plumbago electrode, Q, resting against the outer end of the metallic electrode, substantially as shown and described.

3. The combination, with the diaphragm, the metallic electrode, and the hinged plumbago electrode, of the adjustable spring-arm arranged to press the plumbago electrode against the metallic electrode, substantially as described.

338,264. TOOL-HANDLE. ALGERNON GILLIAM, Canton, Ohio. Filed Dec. 11, 1885. (No model.)

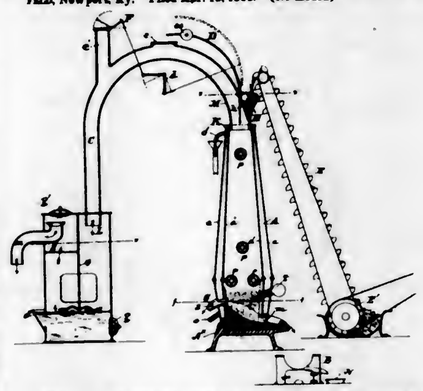


Claim.—1. The combination of the socket provided at its closed end with a shank for the attachment of a tool and having a bore, the latter being contracted in diameter at a point between its extremities, and a handle secured in said bore, substantially as set forth.

2. The combination, with the socket having a shank for the attachment of a tool formed integral therewith, the said socket having a bore contracted in diameter at a point between its extremities, of a handle having a conical or tapered end, and a wedge for expanding the conical end of the handle after the latter has entered the bore of the socket.

3. The combination, with the socket provided at its closed end with a shank having a serrated disk, and with a bore, the latter being contracted in diameter at a point between its extremities, of a handle secured in said bore, the arms each having a serrated disk constructed to engage the serrated disk on the shank, and a bolt for locking the arms to the shank, substantially as set forth.

338,265. FURNACE FOR PRECIOUS METALS. CHARLES L. HARTFIELD, Newport, Ky. Filed Apr. 13, 1885. (No model.)



Claim.—1. The portable water-jacketed blast-furnace A, constructed, as shown and described, of two sheet-iron casings, *a a'*, each in two parts in double conical form, separable horizontally at the widest portion, unconnected at the top, provided with a removable annular grooved cap-plate, K, and a bottom plate, A'', an inclined hearth, A, and tuyere-opening *t*, arranged as shown, and metal and slag openings, substantially as set forth.

2. In a portable blast-furnace, in combination with the body of the furnace A and the grooved annular cap-plate K, the removable hopper-casting M, (embracing the hopper H and part of the uptake,) adapted to rest upon and engage within the cap-plate, substantially as set forth.

3. The portable water-jacketed blast-furnace embodying, in combination, the two horizontally-separable casings *a a*, bottom plate, A, grooved annular cap-plate K, hopper-casting M, and curved pipe C, constructed and arranged as set forth.

4. In combination with the furnace A, the hopper H, delivery-pipe or uptake C, the bleeder-pipe *c'*, and valve F, the latter provided with actuating connecting mechanism for its automatic operation simultaneously with and by means of the hopper-valve, substantially as set forth.

5. In combination with the blast-furnace A and its uptake, the hopper H, provided with a closing-valve, A, and connections, weighted arm D, and the supplemental uptake *c'* and closing-valve F, substantially as set forth.

6. The combination of the automatic fuel-elevator E, the hopper H, provided with the counterbalanced weighted valve A, the bleeder-valve F, and connecting mechanism for the simultaneous operation of the valves, substantially as set forth.

7. In combination with a blast-furnace of the character described and its annular cap-ring K, the hopper-casting M, provided with flanges, as shown, to rest upon and be retained within the cap-ring of the furnace, and with a suitable inner lodge or shoulder for the seating of the horizontal hopper-valve, substantially as set forth.

338,266. SCALE-BEAM. RICHARD L. HASKELL, Chicago, Ill. Filed June 15, 1885. (No model.)



338,266.



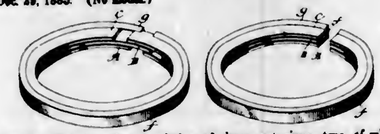
Claim.—A scale-beam having two side bars, such as B B, each of said bars being provided with a flange, B', said flanges forming a cover or partial cover for the beam, substantially as set forth.

338,267. SPRING. CHARLES C. HEARLE, Montreal, Quebec, Canada. Filed Oct. 19, 1885. (No model.) Patented in Canada Nov. 26, 1885, No. 22,885.



Claim.—A spiral spring formed out of a bar or rod of iron or steel or other metal, A, which is straight and thick from *a* to *b*, tapered and thin from *b* to *c*, and thin and straight from *c* to *d*, substantially as and for the purpose set forth.

338,268. KEY-RING. THEODORE W. HENRY, Sanford, Florida. Filed Dec. 29, 1885. (No model.)



Claim.—The key-ring consisting of three cut rings, two of which are flat and of the same diameter and provided with projections on the inside, and the third ring or sheath inclosing the other two, as shown, and tightly binding them against accidental displacement, all substantially as described.

338,269. BUTTON. JOHN S. HOVEY, Rome, N. Y. Filed Dec. 14, 1885. (No model.)



Claim.—The button and fastener herein described, the button provided with a flattened shank and an eccentric head, the said shank being pivoted to the table of the fastener and adapted to rotate thereon, substantially as described.

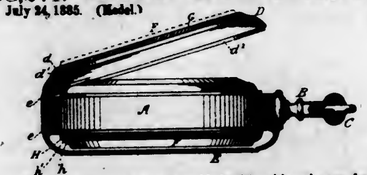
338,270. METHOD OF MAKING AXES. CHARLES W. HUBBARD, Pittsburg, Pa. Filed Jan. 13, 1886. (No model.)

Claim.—The method of making axes herein described, which consists in slitting the blank from its rear end, opening up the eye part, and then closing the open rear end by inserting a bit of metal, substantially as and for the purposes described.

338,270.



338,271. WATCH-CASE. ANDREW J. HUGLE, Chicago, Ill. Filed July 24, 1885. (Model.)

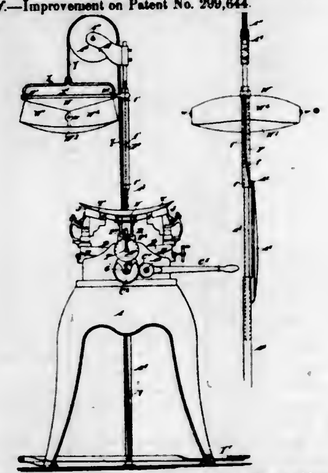


Claim.—1. A watch-case provided with a hinged open front plate or bezel adapted to receive a cap-plate or crystal, in combination with a bezel-ring removably secured to the back of the case-center, similarly formed to receive said crystal or cap-plate interchangeably with the bezel, substantially as described.

2. In a watch-case, the combination of the exterior ring or center, the solid back plate hinged thereto, a bezel-ring secured to the inner case beneath the back plate provided with a movable cap-plate or crystal, and an open front plate or bezel adapted to receive a corresponding crystal or cap-plate interchangeably with the bezel-ring, substantially as described.

338,272. APPARATUS FOR SHAPING HAT-BRIMS. LOUIS H. HOYT. Danbury, Conn. Filed June 9, 1885. (No model.)

Brief.—Improvement on Patent No. 299,644.



Claim.—1. In a hat-brim-shaping apparatus, in combination with the means, C C' B *b*, for enlarging the hat-space longitudinally, the cams C^2 c, engaging with the side carriage R, for enlarging the same laterally by the same motion, as herein specified.

2. In a hat-brim-shaping apparatus, the side carriages R R and side shaping-pieces, M, movable thereon, in combination with the cross-shaft P and suitable connections for operating both simultaneously, as herein specified.

3. In a hat-brim-shaping apparatus, the combination of the shaping parts I J K M, lever P^3, dog P^4, and notched segment A^4, arranged as shown and adapted to aid in determining the points to which the pieces M shall be expanded at each operation, as herein specified.

4. In a hat-brim-shaping apparatus, the side shaping parts, K K', each in two parts lapping one upon the other, engaged, respectively, with the shaping parts, as I I, at the front and back, in combination therewith, and with the side carriages B R', and suitable means for moving them, as herein specified.

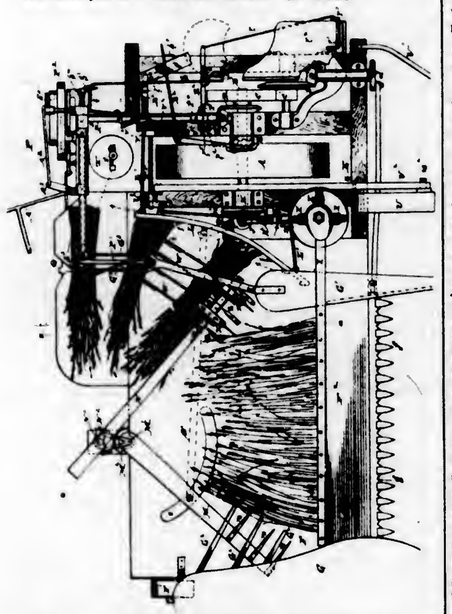
5. In a hat-brim-shaping apparatus, in combination with thin movable parts, as I J K, and a yielding continuous covering, T, of rubber or analogous material, the folding fastenings V, arranged to serve as herein specified.

6. The folding sand-pan described, having the frames W' W^3, loose connections w, flexible bottom W^2, and sand W^4, adapted to serve with suitable hat-shaping parts, as I J K M, as herein specified.

7. In a hat-brim-shaping apparatus, the combination, with suitable shaping parts, as I J K M, of a sand-pan, W, treadle Y', chain or flexible connection Y, pulley A^{11}, turning-arm A^9, and guiding means, as A^7 F *f*, arranged for joint operation as herein specified.

8. In a hat-brim-shaping apparatus, the removable side support, N, having springs arranged to act on the curl of the brim, in combination with the side shaping-piece, M, as herein specified.

338,273. HARVESTING AND BINDING MACHINE. SAMUEL JOHNSTON, Brockport, N. Y. Filed Nov. 13, 1885. (No model.)



Claim.—1. In a harvesting-machine, the combination of the platform and the binding devices with a pivoted vibrating collecting-arm adapted to sweep across the platform from the grain side when collecting the cut grain, a reciprocating arm carrying a packer and adapted to receive the grain from the advancing collecting-arm and deliver it to the binder, the said packer being adapted to approach toward and recede from the collecting-arm, reel arms or beaters to deposit each gavel upon the platform when the said packer and collecting-arm are farthest from each other, and operating mechanism to actuate said parts, whereby their movements shall be properly timed, substantially as and for the purpose specified.

2. In a harvesting-machine, the combination of the platform and the binding devices with a pivoted collecting-arm adapted to sweep across the platform from the grain side when collecting the cut grain, a reciprocating arm carrying a packer adapted to approach the collecting-arm and receive the grain therefrom and to retreat and deliver it to the binder, and a vibrating butting-board arranged to act upon the butts of the grain during its transit to the binder, substantially as and for the purpose specified.

3. In a harvesting-machine, the combination of the platform and the binding devices with a pivoted collecting-arm adapted to sweep across the platform from the grain side while collecting the cut grain, a reciprocating arm carrying a packer adapted to approach the collecting-arm from the other side of the platform and receive the grain therefrom as said collecting-arm advances, and then to retreat and deliver it to the binder, and a vibrating butting-board arranged to act upon the butts of the grain during transit to the binder, reel arms or beaters to deposit each gavel upon the platform when the said packer and collecting-arm are farthest from each other, and operating mechanism to actuate said parts, whereby their movements shall be properly timed, substantially as and for the purpose specified.

4. In a harvesting and binding machine, the platform and cutters, in combination with the usual gathering reel or rakes to deliver the cut grain back upon the platform, collecting devices adapted to sweep across the platform and collect each gavel before the next succeeding one falls and deliver it to the binder, an adjustable butting-board hinged or pivoted to the machine by parallel bars and operated by means of crank and pitman connected to the board between the points of connection of the bars with the board, substantially as described, to straighten the butts of the gavel during their passage to the binder and control the location of the band around the bundle, substantially as and for the purpose specified.

5. In a harvesting-machine, the platform, the binder, and suitable rake or reel arms to deliver the cut grain onto the platform, in combination with a collecting device to pass across the platform and deliver the grain to one side, leaving the platform clear for the next gavel, and a packer adapted to reciprocate between the binder and collecting device, said packer being provided with two sets of prongs or fingers arranged one in advance of the other, each set acting on different gavels, whereby when one set is receiving the gavel from the collecting device the other set is receiving the gavel previously acted on by the first set, and whereby both gavels are simultaneously advanced toward the binder, substantially as and for the purpose specified.

6. A device for collecting cut grain and moving it over a platform of a harvesting-machine, consisting of a vibrating arm to which one or more wheels armed with fingers or teeth are journaled, in combination with means to reciprocate said arm and means to prevent the toothed wheels rotating in one direction, but allowing of their rotating in the other direction when passing the pivoted collecting-arm, whereby they roll over the collected grain without disturbing it, and in moving in the opposite direction they are locked against rotation and move the cut grain with them, substantially as and for the purpose specified.

7. In a device for collecting cut grain and moving it over a platform, the combination, with a reciprocating collecting-arm, of a vibrating arm to which one or more wheels armed with fingers or teeth are journaled, in combination with means to reciprocate said arm and means to prevent the toothed wheels rotating when the arm is moving toward the binder, springs or friction devices whereby the rotation of the wheel is prevented when the arm is moving in the other direction or gathering the grain, and until the resistance offered by the collected grain is greater than that offered by the spring or friction devices when the wheels are allowed to rotate and pass over the gavel, substantially as and for the purpose specified.

8. A packer for a harvester and binder, consisting of a vibrating arm having its free end provided with toothed wheels adapted to turn when passing the pivoted collecting-arm, and having pawls to prevent said wheels rotating when the arm is moved in the other direction, and projecting arms arranged in front of the wheels and provided with gravitating pawls, whereby as the packer-carrying arm is moved the toothed wheels move the grain forward, and upon the next movement in the same direction the pawls push the grain still farther forward, thereby keeping each gavel separate and causing an extended movement of the grain with a limited throw of packer-carrying arm, substantially as and for the purpose specified.

9. A packer for a harvester and binder, consisting of a vibrating arm having its free end provided with toothed wheels adapted to turn when passing the pivoted collecting-arm, and having pawls to prevent said wheels rotating when the arm is moved in the other direction, and projecting arms arranged in front of the wheels and provided with gravitating pawls, whereby as the packer-carrying arm is moved the wheels move the grain forward, and upon the next movement in the same direction the pawls receive and push the grain still farther forward, thereby keeping each gavel separate and causing an extended movement of the grain with a limited throw of packer, in combination with a vibrating butting-board adapted to act upon the grain while in transit to the binder, substantially as and for the purpose specified.

10. A packer consisting of the vibrating arm N, having toothed wheel X, provided with ratchet-wheels X' and spring-pawls Y, in combination with the arms W, having gravitating pawls W', substantially as and for the purpose specified.

11. The packer consisting of vibrating arm N, provided with toothed wheels X, and arms W, provided with gravitating pawls W', in combination with the vibrating butting-board L, hinged to links L', operating-rod K', and crank K, substantially as and for the purpose specified.

12. The packer consisting of vibrating arm N, provided with toothed wheels X, and arms W, armed with gravitating pawls W', in combination with the vibrating butting-board L, hinged to links L', means to adjust the butting-board to or from the packer, operating-rod K', and crank K, substantially as and for the purpose specified.

13. The packer consisting of vibrating arm N, provided with toothed wheels X, and arms W, armed with gravitating pawls W', in combination with the vibrating butting-board L, hinged to links L', means to adjust the butting-board to or from the packer, operating-rod K', and crank K, and means to vary the throw of the said butting-board, substantially as and for the purpose specified.

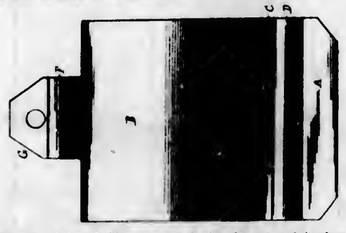
14. The packer consisting of vibrating arm N, provided with toothed wheels X, and arms W, provided with pawls W', in combination with vibrating butting-board L, hinged to links L', operating-rod K' and crank K, the platform F, vibrating collecting-arm M, provided with teeth m, gearing M^3 N^2, connecting the packer-carrying arm N and collecting-arm M, crank O, and link O', to vibrate said collecting-arm, substantially as and for the purpose specified.

15. The packer consisting of toothed wheels X and the projecting arms W, provided with pawls W', forming two sets of teeth to act upon the grain, in combination with the binder or needle arm, and the guard G^2, under which the packer works and through which the needle-arm descends, substantially as and for the purpose specified.

16. The packer consisting of toothed wheels X and the projecting arms W, provided with pawls W', forming two sets of teeth to act upon the grain, in combination with the binder or needle arm, the vibrating collecting-arm M, adapted to sweep the grain across the platform to the packer, and the teeth Z on the platform, over which the grain is swept by the gathering-arm and by which it is prevented from moving back while the packer-carrying and gathering arms recede to gather and carry a fresh gavel to the binder, substantially as and for the purpose specified.

17. The combination of the collecting-arm M, the packer-carrying arm N, and the needle-arm, and the devices for starting said needle-arm, and operating mechanism whereby the collecting, the packer-carrying, and the binder arms are caused to work in unison, so that the needle-arm shall descend between the arms W W W while holding the complement of grain for one bundle and before the first gavel for the next bundle is delivered to the binder, substantially as and for the purpose specified.

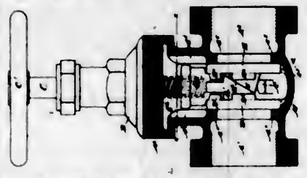
338,274. PAPER-BAG HOLDER. DAVID M. KARR, Hustiton, Ind. Filed June 29, 1885. (No model.)



Claim.—1. A bag-holder composed of a sheet-metal back plate, a forwardly-arched sheet-metal spring front plate integral with said back plate and of the same width therewith, and a pressure plate or frame attached to the free edge of said front plate and of the same width therewith, which pressure-plate stands at approximately a right angle to said back plate and presses the bags against the same, substantially as set forth.

2. A sheet-metal back plate and a forwardly-arched sheet-metal spring front plate integral with said back plate and of the same width therewith, in combination with a pressure plate or frame pivoted at one side to the free edge of said front plate and of the same width therewith, which pressure-plate stands normally at approximately right angles to said back plate, and presses the bags against the same, substantially as set forth.

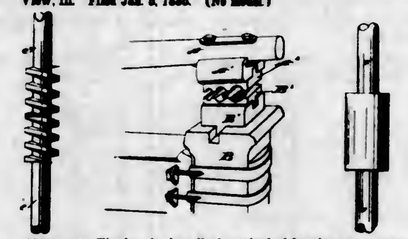
338,275. STOP-VALVE. DANIEL KENNEDY, New York, N. Y. Filed Oct. 29, 1885. (No model.)



Claim.—1. The combination, with a suitable casing, as A, and with the gates D E, of the loose wedge-block H, supported on the gate E, and the separate wedge G, all arranged for joint operation, as specified.

2. The combination, with the gates D E and with the wedge-blocks G H, the latter supported loosely on the gate E, of stop A^6, arranged in the casing to arrest the descent of the loose wedge H, stops A^7 for arresting the descent of the gates, and shoulders G^4 for lifting the gates after their release, as specified.

338,276. DIE FOR SWAGING SCREWS. BURR A. KENNEDY, Lake View, Ill. Filed Jan. 5, 1885. (No model.)



Claim.—1. The herein-described method of forming screw-threads, consisting in passing the blank slowly in an endwise direction between a pair of converging dies, which are threaded internally and reduced in diameter from the receiving toward the delivery side, whereby the threads are gradually developed on the blank.

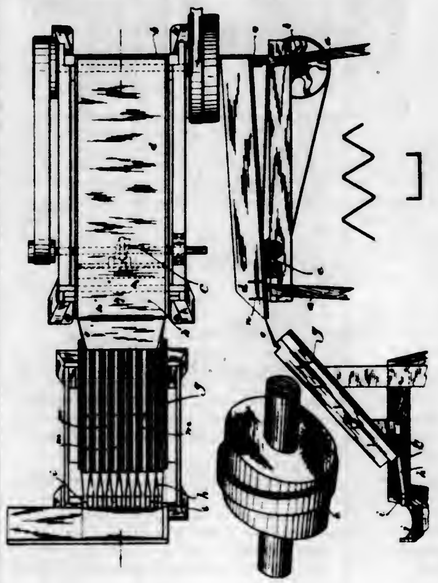
2. A pair of screw converging dies with complementary forms or cavities therein, said cavities diminishing in size from the receiving toward the delivery side of the dies, and provided with internal threads of increasing size from the receiving toward the delivery side, whereby each portion of the thread upon the blank may be gradually developed as it is presented to the developing portions of the die-thread.

3. As an improvement in the art of forging screw-threads, the method consisting in first passing the blank between tapering internally-threaded forming-surfaces, and subsequently between forming-surfaces of smaller internal diameter having threads of constant form and size therein.

4. Complementary screw-forging dies provided with tapering internally-threaded forms or cavities to produce the crude thread, and the finishing-form of smaller internal diameter threaded in exact conformity to the required screw.

5. The complementary dies for finishing screw-threads, having the internal forms or unthreaded recesses, F F', of semicircular section and uniform diameter, and the internal threads of uniform size throughout their entire length, whereby said dies are adapted to finish the threads for use and at the same time to maintain the screw in a perfectly straight condition.

338,277. MACHINE FOR ARRANGING SHOE-BLANKS. ZENAS M. LANE, Rockland, Mass. Filed July 24, 1885. (No model.)

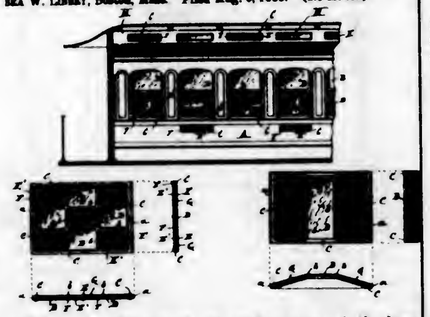


Claim.—1. In a machine for forming shoe-shanks, the hopper *d*, the V-shaped troughs *g g*, the troughs *h h*, the troughs *i i*, and the table *j*, in combination, substantially as and for the purpose above stated.

2. In a machine for forming shoe-shanks, the V-shaped troughs *g g*, the tapering troughs *h h*, and the table *j*, substantially as and for the purpose above stated.

3. The V-shaped troughs *g g*, the tapering troughs *h h*, the troughs *i i*, and the table *j*, in combination, substantially as and for the purpose above stated.

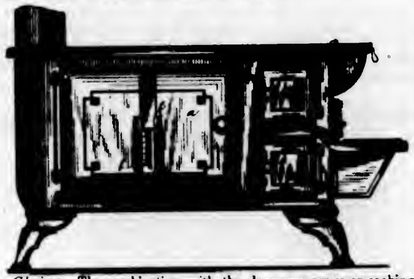
338,278. COMBINED WINDOW-SCREEN AND VENTILATOR. HOSEA W. LIBBEY, Boston, Mass. Filed Aug. 6, 1885. (No model.)



Claim.—1. A window-screen and ventilator composed of a frame divided into sections, one or more of which are fitted with glass, and one or more with wire gauze or netting on each side, the space between said netting being filled with sponge or other suitable absorbent material, substantially as shown and described.

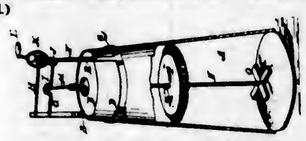
2. A wire gauze or netting, E', provided with pins *f*, for holding sponge or other suitable absorbent material, in combination with a frame having one side covered with wire gauze or netting, substantially as shown, and for the purpose described.

338,279. ATTACHMENT FOR BAKE-OVENS. LOUISA B. LEITENDORF, Helena, Ark. Filed Sept. 21, 1885. (No model.)



Claim.—The combination, with the door on a range or cooking-stove, of the vertical guide-strips *b' b²*, forming the two grooves shown, the thermometer B, and the two slides C C', the slide C being scaled and slotted to receive the thermometer, substantially as shown and described.

338,280. CHURN. THOS. E. MAGY, Berne, Ind. Filed Feb. 13, 1885. (No model.)

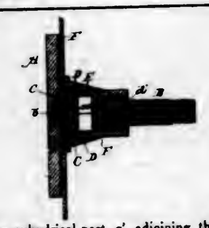


Claim.—The combination, with the churn-body, a dash-rod provided with a dasher and an adjustable surface-beater, and mechanism for operating said dash-rod, of the band C, provided with clamp-screws, the perforated standards secured to said band and supporting the driving devices, and the pins S, resting upon the upper side of the lid B, substantially as described.

338,281. CARRIAGE-TOP PROP. LACHLAN E. MCKINNON, St. Catharines, Ontario, Canada. Filed Nov. 7, 1885. (No model.)

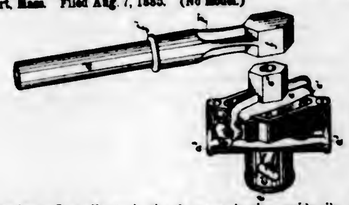
Claim.—The combination, in a top-prop, of the base-plate A, having a non-cylindrical projection, C, with the collar D, fitting over the projection C, the screw-thimble E, covering and holding in place the collar D, and the stem B, having a threaded part, *b'*, screwing into the

338,281.



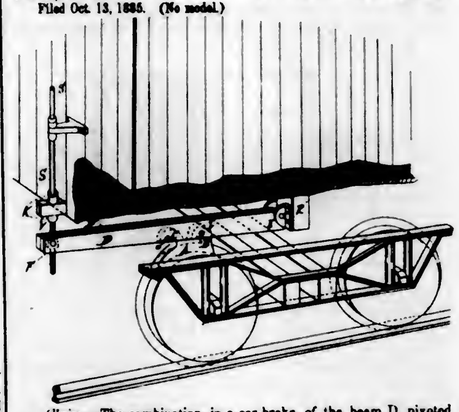
projection C, a non-cylindrical part, *a'*, adjoining the projection C, and a threaded part, *d'*, on which the thimble E screws, all substantially as shown, and for the purposes specified.

338,282. SCREW-THREADING DEVICE. JOHN MILLER, Cambridgeport, Mass. Filed Aug. 7, 1885. (No model.)



Claim.—In a die-stock, the frame *a*, having guide-ribs *a⁴ a⁴*, in combination with the clamp *e*, having polygonal head *e''* and downwardly-projecting ends *e'*, provided with thumb or set screws *e³ e³*, the construction of the frame and clamp being such that the device is adapted to be operated either by the handles *d d* or by the wrench F, as and for the purpose set forth.

338,283. CAR-BRAKE. MICHAEL J. MORIARTY, Muskegon, Mich. Filed Oct. 13, 1885. (No model.)



Claim.—The combination, in a car-brake, of the beam D, pivoted at one end, a brake-shoe supported at a point thereon intermediate between its pivot and its outer end, and an adjustable connection at the opposite end of said beam D, consisting of the screw-rod, suitably supported, and a nut secured in the end of said beam and adapted to receive the threaded end of the rod, whereby the brake may be adjusted and the direct power of the operating-lever applied to the wheel, substantially as described.

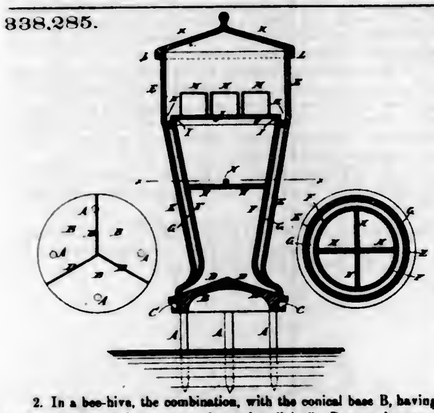
338,284. COMPOUND FOR PURIFYING BEER. BERTHOLD MUELLER, Cincinnati, Ohio. Filed Sept. 24, 1885. (No specimens.)

Claim.—A compound for purifying beer, consisting of tartaric acid, one-half ounce, (in crystallized form;) pulverized isinglass, one-fourth pound; water, one-half gallon, and beer five gallons, mixed for use, substantially as set forth.

338,285. BEE-HIVE. WILLIAM M. MYERS, Hannibal, Mo. Filed May 16, 1885. (No model.)

Claim.—1. A bee-hive constructed substantially as herein shown and described, and consisting of the conical base B, having L-shaped groove C in its outer edge to receive grease, and radial ribs D on its upper surface, the double-walled body E F, having annular space G between the walls, and the cover K, substantially as herein shown and described.

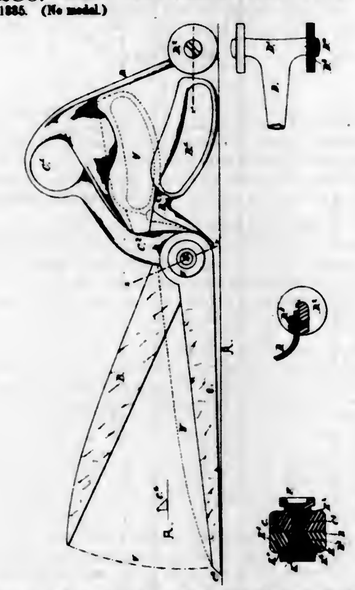
338,285.



2. In a bee-hive, the combination, with the conical base B, having L-shaped groove C in its outer edge and radial ribs D upon its upper surface, the double-walled body E F, having annular space G between the walls, and a groove, H, to receive grease in the rabbeted upper edge of the inner wall, and the cover K, of the perforated honey-board J, substantially as herein shown and described.

3. In a bee-hive, the base B, made, substantially as herein shown and described, with an L-shaped groove in its outer edge to receive grease to keep out moths, and radial ribs on its upper surface to support the hive-body and allow the bee-droppings to escape, as set forth.

338,286. SHEARS. LOUIS A. NIEDERMEIER, Rockford, Ill. Filed Sept. 23, 1885. (No model.)



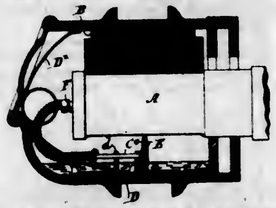
Claim.—1. The combination, with the blade B, provided with the countersink B⁴, the finger-bow B', and the shank B², of the blade C, having its lower surface a plane and the free end thereof beveled to a blunt edge, and having the thumb-bow C' and downward-projecting rest, consisting of the parts D, D', and D², substantially as described.

2. The combination, with the joint-bolt E, having the head E' and external screw, E², of the brass washer E³, rubber washer E⁴, and set-nut F, provided with an internal screw, substantially as set forth.

3. The combination, with the rest-shank D, of the axle D', wheels D³, screws D⁴, and swivel-joint screw D⁵, substantially as set forth.

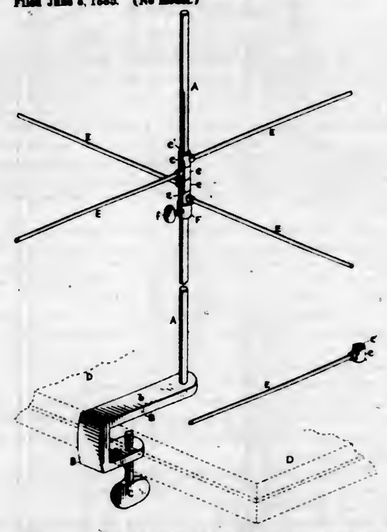
4. Tailor-shears provided with a wheeled rest projecting downward from a thumb-bow, having their lower blade beveled to a blunt edge at the upper portion of its point, and furnished with a non-rotating joint-bolt, whereon their upper blade moves when in the operation of cutting, substantially as and for the purpose specified

338,287. AXLE-LUBRICATOR. JOHN C. NUTTER, Montreal, Quebec, Canada. Filed Nov. 21, 1885. (No model.)



Claim.—An axle-lubricator consisting of a disk mounted on a spindle carried on a plate set in the bottom of the axle-box and rotated by the axle proper through a flexible connection, all substantially as herein set forth.

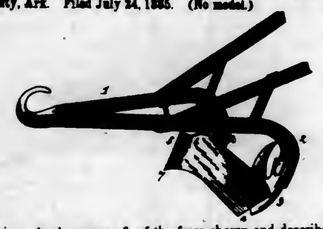
338,288. CLOTHES-DRIER. HENRY NORMANDY, Providence, R. I. Filed June 8, 1885. (No model.)



Claim.—1. The device for drying towels, &c., herein described, consisting of the standard A, provided with the clamping device B C, to enable it to be securely attached to the top of a stove, and having the vertically-adjustable arms E loosely mounted thereon, and means, substantially as described, for supporting said arms upon the standard, substantially as set forth.

2. The combination of the standard A, the clamp member B, attached thereto, and having a screw, C, the upper arm, *b*, of said member being of greater length than the arm *b'*, as described, the radial arms E, adjustably mounted on said standard, and the collar F, having a set-screw, *f*, for supporting the arms on the standard, substantially as set forth.

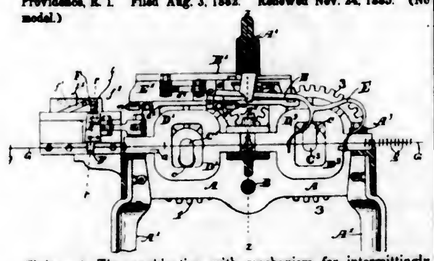
338,289. COMBINATION-PLOW. WILLIAM YELL OLIVER, Franklin County, Ark. Filed July 24, 1885. (No model.)



Claim.—1. A scraper, 3, of the form shown and described, having the outer half, *a*, nearly straight horizontally, its inner side, *b*, curved forward and to a greater degree at the bottom, said end and cutting-edge being curved sharply downward to the point 7, and having the cutting-flange 5 bent forward for a colter, the face of the scraper being twisted, substantially as set forth.

2. The scraper 3, in combination with the seat or block 8, the sweep or hilling plow 9, and the V-shaped frame 1, said frame having a short drag-bar to carry the scraper in front of the hilling-plow, substantially as shown and described.

338,290. **MACHINE FOR FASTENING BARBS ON WIRE.** OLAF R. OLSEN, Indianapolis, Ind., assignor to the American Screw Company, Providence, R. I. Filed Aug. 3, 1882. Renewed Nov. 24, 1885. (No model.)



Claim.—1. The combination, with mechanism for intermittingly feeding a wire through the machine, of mechanism for separating at each movement of the wire a metal plate from a number of metal plates strung upon a wire and feeding it a uniform distance upon the wire, and mechanism for clamping the wire and upsetting it by linear compression upon both sides of the metal plate at the position to which it is thus taken.

2. In a machine for fastening barbs upon wire, the combination of four dies or jaws adapted to move toward and from a common center, mechanism for operating the same, and mechanism for drawing the barbs successively along the wire to a central point between the dies, substantially as set forth.

3. The combination, in a machine for fastening barbs upon wire, of dies having their rear sides formed partly diagonal and partly parallel with their face, and a rolling or sliding bearing with which they come in contact, whereby they are caused to first move toward a common center and then directly forward, substantially as set forth.

4. The combination of the several dies D' D^2 D^3 D^4, the diagonal ways therefor, and the anti-friction rollers *d*, substantially as set forth.

5. In a machine for fastening barbs upon wire, the combination, with the fastening mechanism, of a reciprocating and vibrating hook, E, substantially as described, and for the purposes specified.

6. The combination of the hook E, mounted on a sliding carriage, e', the arm E^2, a connecting-link, e^2, and the wheel 2, having cam-plates e^3 e^4, whereby said arm is actuated and said hook thereby operated, substantially as set forth.

7. The combination of the hook E, pivoted to the sliding carriage e', and having the arm *e*, and the strikes e^5 e^6, substantially as shown and described, and for the purposes specified.

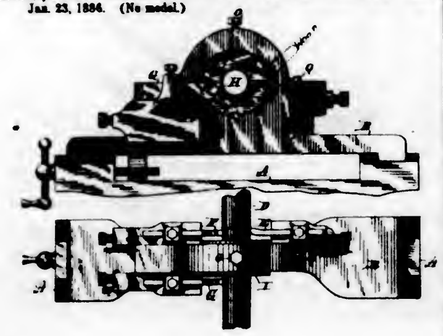
8. The combination, with the reciprocating and vibrating hook E, having projection e^4, of the slides e^5 e^6 and the spring-catches e^7 e^8, substantially as set forth.

9. In a machine for fastening barbs upon wire, the combination, with the fastening mechanism, of a horizontally and vertically reciprocating device, F, substantially as described, and for the purposes specified.

10. The combination, with the device F, loosely mounted in the carriage or slide F', and provided with a projection, *f*, of the pivoted incline f', substantially as shown and set forth.

11. The combination, with the device F and its carriage, of the bell-crank lever F^2, a connecting-link, f^2, and the wheel 1, provided with the cam-flanges e^3 e^4, substantially as shown and specified.

338,291. **LATHE-REST.** PHILIP O'NEIL, Milwaukee, Wis. Filed Jan. 23, 1886. (No model.)



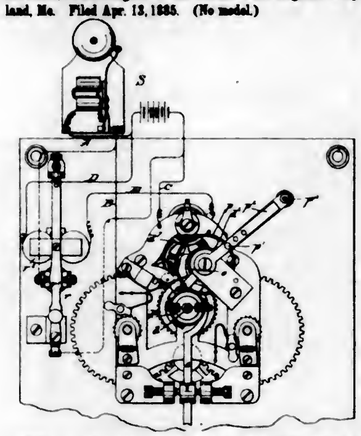
Claim.—1. In a rest for a shaft-turning lathe, a bushing for the shaft-bearing, constructed of wood or other material yielding only under great pressure, substantially as described.

2. In a rest for a shaft-turning lathe, a bushing for the shaft-bearing aperture, constructed of wood or other material yielding only under great pressure, and lined with sheet metal, substantially as described.

3. In a rest for a shaft-turning lathe, the combination of frame B with the semi-cylindrical blocks I and J, and the sheet-metal lining K and L, substantially as described.

4. The combination of lathe-rest frame B, semi-cylindrical blocks I and J, metal linings K and L, plate P, and set-screws O and Q, substantially as described.

338,292. **WATCHMAN'S TIME-DETECTOR.** LLOYD W. PRESSELL, Braintree, Mass., assignor to the Tarbox Time Register Company, Portland, Me. Filed Apr. 13, 1885. (No model.)



Claim.—1. In a watchman's detector apparatus, the clock and its recording device or marker and an electro-magnet in circuit with different or distant stations to be visited by the watchman, combined with a circuit-controlling device operated by the clock, one member of the said device being moved toward the other by the clock from a predetermined starting-point after each operation of the recording device, substantially as described.

2. A marking device and a clock to move it to indicate the time at which the marking device is operated, combined with a circuit-controlling device moved by the said clock and rendered effective upon the circuit by the operation of the marking device only at predetermined intervals of time measured by the clock, substantially as described.

3. The clock and its recording device or marker and an electro-magnet in circuit with different or distant stations to be visited by the watchman, and a circuit-controlling device, one member of which is engaged and moved by the clock while the marker is not being operated to produce a record, but is disengaged whenever the marker is so operated, combined with a retracting-spring which moves the said member backward, or in the opposite direction when disengaged, and a stop which limits the said backward movement and constitutes the starting-point from which the member of the circuit-controlling device begins its movement after each record has been made, substantially as described.

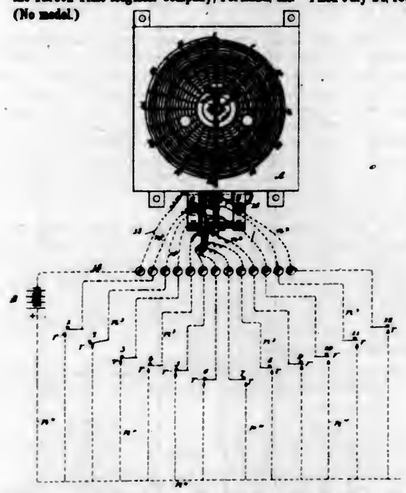
4. The clock and its recording device or marker and an electro-magnet in circuit with different or distant stations to be visited by the watchman, and a circuit-controlling device, a member of which is engaged and moved by the clock immediately after each recording operation of the marker, combined with a retractor for the circuit-controlling device, a movable stop limiting its movement under the influence of the retractor when disengaged by the clock after a record is made, and means for holding the said stop in any desired position for the purpose of determining the interval of time that must elapse after a record is made before the circuit-controlling device will cause a change in the circuit controlled by it, substantially as described.

5. A clock having an arbor provided with a friction-disk, combined with a wheel engaged by said disk, forming part of a circuit-controlling device, the said wheel having a portion of its periphery reduced or made smooth permitting it to cease moving when it has operated the circuit-controlling device to produce a change in the circuit controlled by it, substantially as described.

6. A clock or time-train, an electric-circuit-controlling mechanism operated by it while the clock or train is running, and interposed mechanism, substantially as set forth, rendered operative upon the stopping of the clock to cause the operation of an alarm or signal placed in said circuit, substantially as described.

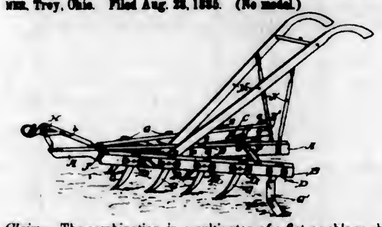
7. A clock or time-train and circuit-closer, one member of which is connected with a portion of the escapement or governing mechanism of the clock, the said circuit-closer being closed at each vibration of the governing device, combined with an electro-magnet in circuit therewith, and its armature-lever and retarding device, whereby the said lever is prevented from making a complete retractive movement between the successive attractive impulses of the magnet while they recur with the proper or normal frequency, substantially as described.

338,293. **CIRCUIT-CONTROLLING DEVICE FOR WATCHMEN'S TIME-RECORDERS.** LLOYD W. PRESSELL, Braintree, Mass., assignor to the Tarbox Time Register Company, Portland, Me. Filed July 24, 1885. (No model.)



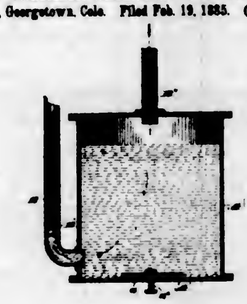
Claim.—In a watchman's time-detector, a clock or motor and a recording device operated by the watchman at different or distant stations, combined with a circuit-controlling device consisting of a metallic arm or brush rotated by a shaft and a disk of insulating material provided with studs or pins co-operating with the said arm or brush, to operate substantially as described.

338,294. **CULTIVATOR.** JAMES W. PETERS and JOSEPH HENRY SKINNER, Troy, Ohio. Filed Aug. 28, 1885. (No model.)

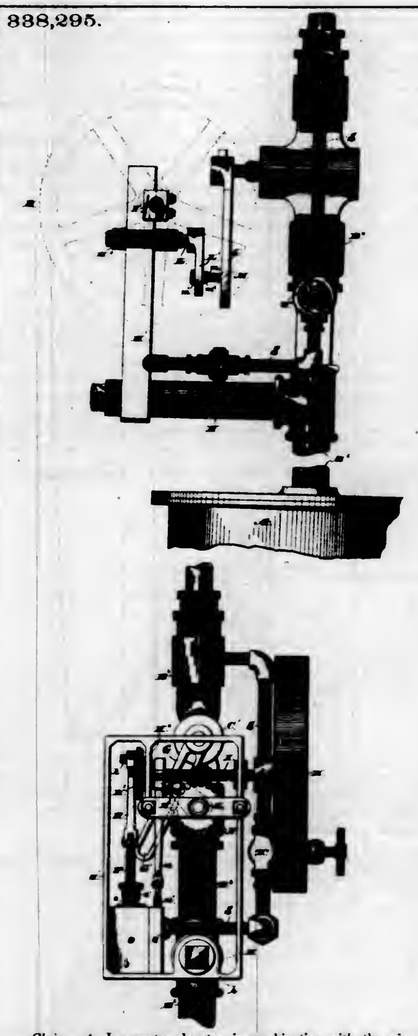


Claim.—The combination, in a cultivator, of a flat or oblong shaped tooth, as shown in Fig. 2, with an L-shaped cutting-tooth, as shown in Fig. 3, both secured to the beam by the casting D, Fig. 2, for the purpose set forth.

338,295. **PNEUMATIC WATER-ELEVATOR.** JULIUS G. POHLÉ and DAVID HILL, Georgetown, Colo. Filed Feb. 19, 1885. (No model.)



338,295.



Claim.—1. In a water-elevator, in combination with the pipe for supplying compressed air or steam to the receiving and collecting chamber, the valve in the pipe for regulating the admission of the air or steam to the chamber, and a motor operated and driven by air or steam taken from the supply-pipe above such valve, substantially as and for the purpose described.

2. In a pneumatic water-elevator, in combination with the supply-pipe and the valve adapted to admit compressed air to the collecting tank or chamber and to allow the escape of air therefrom, the pipe connected with the supply-pipe above such valve, the motor adapted to be operated and driven by the air taken from the supply-pipe by such connecting-pipe, and mechanism, substantially as described, driven by the motor and adapted to operate the valve, substantially as and for the purpose described.

3. In a water-elevator, in combination with the collecting or receiving tank, the pipe for conveying compressed air or steam thereto, the three-way cock or valve in the pipe, a motor continuously driven by compressed air or steam taken from the supply-pipe above the valve, and connecting means or gearing, substantially as described, whereby the valve is intermittingly operated from the motor, all substantially as and for the purpose described.

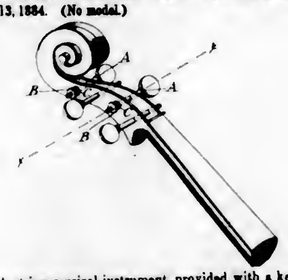
4. In a water-elevator, in combination with the pipe from the source of supply of compressed air or steam, and the pipe connected with the collecting tank or chamber, the rotary valve between the pipes adapted

to alternately establish communication between the two pipes and between the pipe to the tank and an exhaust-opening, the slotted crank on the valve-stem, the rotating shaft, the crank thereon, the pin on the crank, engaging the slot in the valve-crank, a motor driven by the compressed air or steam from the source of supply, and connecting gearing between the motor and crank-shaft, substantially as and for the purpose described.

5. In a pneumatic water-elevator, the rotary valve for admitting the compressed air or steam to the collecting-tank and for shutting off the same and allowing the air or steam in the tank to escape, the slotted crank on the valve-stem, the shaft, the crank on the shaft, the pin on the crank engaging the slot in the valve-crank, the worm-wheel on the shaft, the shaft provided with a worm meshing with the wheel, the motor driven continuously by the compressed air or steam from the source of supply, and connecting means, substantially as described, between the motor and the worm-shaft, as and for the purpose set forth.

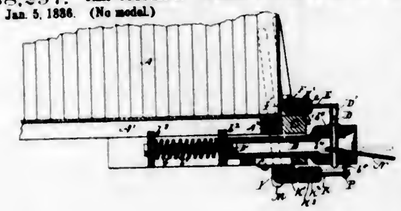
6. In a pneumatic water-elevator, in combination with the rotary valve adapted to admit the compressed air or steam to the collecting-tank, and to shut off the same and allow the air or steam to escape from the tank, the motor having the reciprocating piston and rod and the slide-valve, the pipe between the air or steam supply pipe and the valve-chest of the motor, the pitman, the shaft, the pitman wheel or crank thereon, the eccentric on the shaft, the eccentric-rod connected with the slide-valve, the balance-wheel, the worm on the shaft, the counter-shaft, the worm-wheel and the crank thereon, the crank-pin, and the slotted crank on the rotary valve-stem, substantially as and for the purpose described.

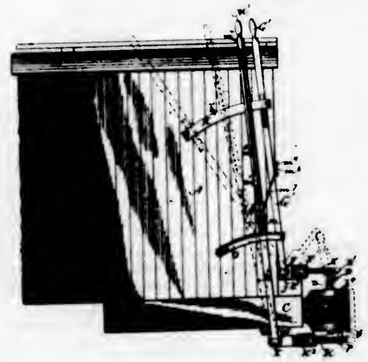
338,296. VIOLIN TUNING-PEG. JOHN K. PORTER, Philadelphia, Pa. Filed Mar. 13, 1884. (No model.)



Claim.—A string musical instrument provided with a key for tuning the strings, having a flattened face and a screw-threaded portion above said flattened face of the key, in combination with a washer, C, having one side of its opening flattened, washers D, and screw-nut B, all arranged substantially as set forth.

338,297. CAR-COUPLING. WILLIAM POWELL, Oneida, Ill. Filed Jan. 5, 1886. (No model.)





Claim.—1. The combination, with a car, of the rock-shaft F, arm E, coupling-pin D, suspended from said arm, a hand-lever, G', secured to the ends of the rock-shaft, a smooth-surfaced segment plate or plates, and a spring-plate, *g*, secured to and adapted to hold said lever by frictional contact solely, which contact holds the pin up until released by the jar of the cars, substantially as and for the purpose specified.

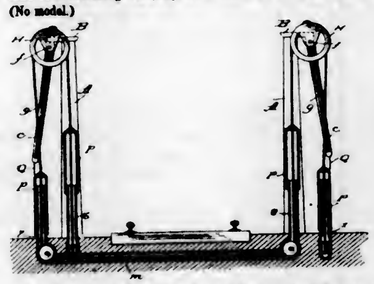
2. The combination, with a car, of the rock-shafts adapted to respectively support the coupling-pin and link by means of arms secured to said rock-shafts, and levers secured to each of said rock-shafts, a segment rack-bar and pawl for holding the link-supporting mechanism in a fixed position, and the smooth-surfaced segment-plate for holding the pin-supporting mechanism by frictional contact only, substantially as described.

3. The combination, with a car, of the rock-shaft journaled to fixed bearings upon the car-frame, an extensible arm secured to the rock-shaft and formed of two sections united by a spring-coupling, and a link-lifter pin jointed to the vibrating end of the arm and supported upon a yielding draw-head, substantially as described, for the purpose specified.

4. The combination, with a car, of the rock-shaft journaled to fixed bearings upon the car-frame, an extensible arm secured to said rock-shaft and formed of two sections united by a spring-coupling, and a coupling-pin supported upon the end of said extensible spring-arm and adapted to pass vertically through holes in a yielding draw-head, substantially as described, for the purpose specified.

5. The combination, with a car, of the rock-shafts journaled to fixed bearings upon the car-frame, an extensible arm secured to one rock-shaft and formed of two sections united by a spring-coupling, a coupling-pin supported from the end of said extensible arm and adapted to pass vertically through holes in a yielding draw-head, a second extensible arm secured to the other rock-shaft, and a link-lifter pin jointed to the vibrating end of the second arm and supported upon a yielding draw-head, substantially as described.

338,298. GATE. KING H. C. PRESTON, Syracuse, assignor to the Copeland Manufacturing Company, New York, N. Y. Filed Dec. 26, 1885. (No model.)



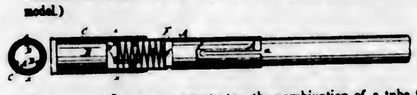
Claim.—1. In combination, the end frames pivoted upon supporting-posts, a wire stretched between the ends of the arms c of said frames, the grooved pulleys secured to said frames, and the connecting-ropes, substantially as described.

2. The combination, in a railroad-gate, of supporting-posts, end frames pivoted upon said posts, having suitable operating-palleys and a connecting rope or chain, a wire stretched between the arms c of said frames to form a barrier across the road, and a supplemental arm, *q*, extending at right angles to the arm c and adapted to form a barrier across the sidewalk, substantially as described.

3. In combination with the gates, their pulleys and the connecting-ropes, the pipes having upturned ends, the filling of non-freezing lubricant, and the protecting-caps *p*, substantially as described.

4. In combination with the gates, the ropes, and the pipes having upturned ends, the tubular caps attached to the ropes, substantially as described.

338,299. ERASER. JOSHUA PUSEY, Philadelphia, Pa., assignor to GUSTAVUS A. Goldsmith, New York, N. Y. Filed Dec. 30, 1885. (No model.)

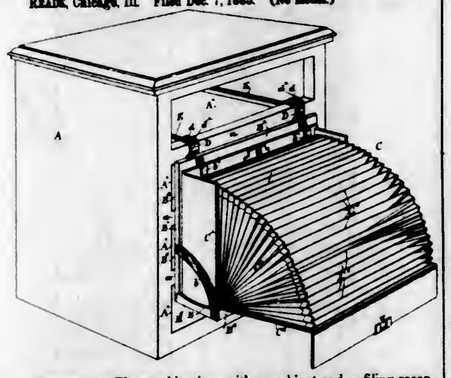


Claim.—1. In an eraser-protector, the combination of a tube for holding the eraser, a sleeve longitudinally movable thereon adapted to project beyond the free end of the eraser, to come into contact with the matter to be erased, a stop for preventing the sleeve from escaping from said tube, and a spring adapted to retain said sleeve normally projected beyond the free end of the eraser, all constructed and adapted to operate substantially as and for the purpose set forth.

2. In an eraser-protector, the combination of the eraser-holding tube provided with the slots closed at the ends thereof, the sleeve adapted to slide upon said tube, and provided with projections extending through said slots into the tube, and the spring contained within the latter and bearing against said projections, and thereby retaining said sleeve normally projected beyond the free end of the eraser, substantially as and for the purpose described.

3. The combination, in an eraser-protector, of a tube for holding the eraser, a sleeve adapted to slide thereon, stops for limiting the movement of said sleeve, a spring for retaining the latter normally projected beyond the free end of the eraser, and means, such as shown and described, for retaining said sleeve retracted against the stress of the spring and releasing the same when desired, substantially as and for the purpose recited.

338,300. CABINET FOR HOLDING PAPER-FILES. HENRY W READE, Chicago, Ill. Filed Dec. 7, 1885. (No model.)



Claim.—1. The combination, with a cabinet and a filing-receptacle, of a sliding frame adapted to receive and hold the filing-receptacle, mutually-interlocking parts upon the rear or inner end of the frame and the cabinet, constructed to sustain the frame in a vertical position when drawn out of the cabinet, and attaching devices upon the frame for securing the filing-receptacle thereto, substantially as described.

2. The combination, with a cabinet provided with a cross-piece, a, of a sliding frame adapted to receive and hold a filing-receptacle, rods E E upon the cabinet, secured at their forward ends in the said cross-bars, and slotted hook-shaped ears upon the frame, sliding upon the rods and adapted to engage the said cross-piece, substantially as described.

3. The combination, with a cabinet and a filing-receptacle, of a sliding frame provided with a front piece or ledge, B^2, engaging the back edge of the filing-receptacle, attaching devices, as *b' b'*, for securing the rear or inner edge of the receptacle to the frame, and mutually-interlocking parts upon the cabinet and the rear edge of the frame, constructed to sustain the latter in a vertical position when drawn out of the cabinet, substantially as described.

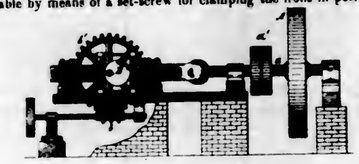
338,301. MACHINE FOR GRINDING SAD-IRONS. JOHN W. RENSHAW and SAMUEL H. PERIN, Jeffersonville, Ind. Filed June 8, 1885. (No model.)

Claim.—1. In a machine for grinding sad-irons, the combination of a grindstone having a rotating and a laterally-reciprocating motion, with one or more endless chains carrying a series of plates for holding sad-irons.

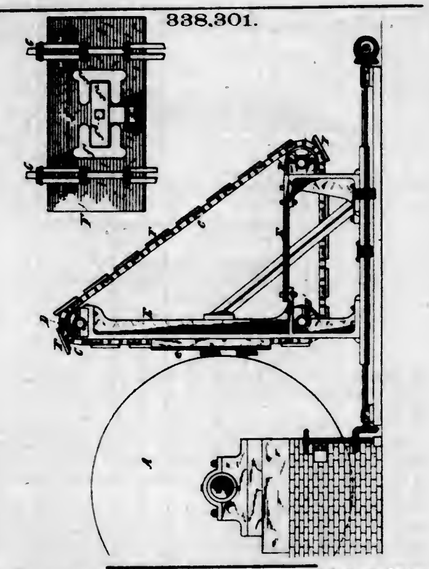
2. In a machine for grinding sad-irons, the combination of a grindstone having a rotating and a laterally-reciprocating motion, with one or more endless chains carrying a series of plates for holding sad-irons, and carried by sprocket-wheels and rollers mounted upon a sliding frame.

3. In a machine for grinding sad-irons, the combination of a grindstone having a rotating and a laterally-reciprocating motion, and one or more endless chains carrying a series of plates for holding sad-irons, and carried by sprocket-wheels and rollers mounted upon a sliding frame, with guides adapted to confine said plates to a straight path during the contact of the irons with the grindstone.

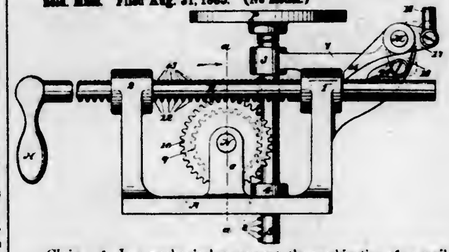
4. In a machine for grinding sad-irons, the combination of a pair of endless chains, of a series of plates for holding sad-irons, each having apertures for receiving the handles of the irons, and a hinged T-arm adjustable by means of a set-screw for clamping the irons in position.



338,301.



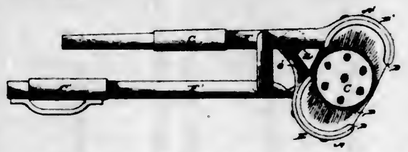
338,302. MECHANICAL MOVEMENT. FRANCIS H. RICHARDS, Springfield, Mass. Filed Aug. 31, 1885. (No model.)



Claim.—1. In a mechanical movement, the combination of an oscillating sliding rod, driven gearing, substantially as described, adapted not to be disconnected, and driving-gearing, substantially as described, adapted to be disconnected by a rotary movement of said rod, substantially as set forth.

2. In a mechanical movement, the combination of rod R, provided with teeth 12 and 13, a gear meshing with teeth 12, and a ratchet mechanism, substantially as described, adapted to move said rod by means of teeth 13, said rod being constructed to be rotated for disconnecting said ratchet mechanism, substantially as set forth.

338,303. FRUIT-GATHERER. JOHN N. RUDD, Sparta, Tenn., assignor of one-half to Samuel Parker, same place. Filed June 25, 1885. (No model.)

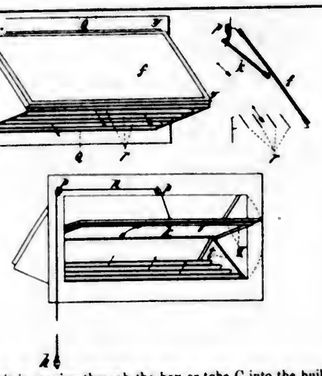


Claim.—The combination, with the conveyer, of the pair of severing-jaws secured to opposite sides of the conveyer at the open end, and each jaw forming one-half of the circumference of said conveyer, and parallel straight handles sliding one alongside of the other, one of the handles being pivoted to the other by a link and worked back and forth, while the other is held rigid, as set forth.

338,304. VENTILATOR. WALTER S. SAYERS, Chicago, Ill. Filed Jan. 7, 1885. (No model.)

Claim.—1. In a ventilator, the bevel-faced box or tube C, Fig. 6, having its external opening at the bottom, as shown in Figs. 6, 7, and having its face *f* made of glass and inclined upward and inward, in order

338,304.



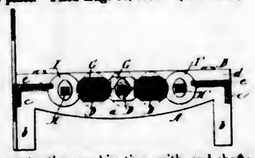
to deflect the air in passing through the box or tube C into the building in an inclined upward current, all substantially as and for the purpose specified.

2. In a ventilator, the box or tube C, having its external opening at the bottom, as shown at Figs. 6, 7, in combination with the valve *k*, hinged on one edge to the inner surface of the face *f*, so that the falling of the valve *k* closes the opening at the bottom of the box or tube C, as and for the purpose described.

3. The combination of the louvers *r* with the box or tube C, the louvers *r* being placed in a horizontal plane in the external opening at the bottom of the box or tube C, and set at an angle of deflection, as shown at Fig. 7, substantially as and for the purpose described.

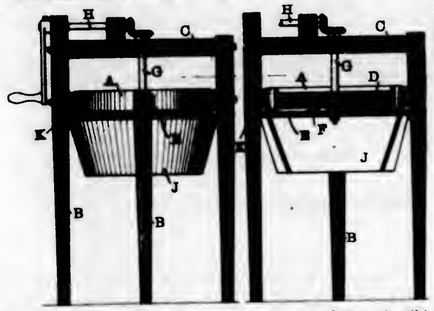
4. The combination of the box or tube C with the series of louvers *r*, set in the external opening at the bottom of said box or tube, the valve *k*, hinged to the inside face of the front *f*, and the balance-weight *h*, attached to the valve *k*, all substantially as and for the purpose set forth.

338,305. **SHAKING-GRATE FOR FURNACES.** CHARLES SCHENK, Chicago, Ill., assignor of one-half to the Brunswick, Balke, and Collender Company, same place. Filed Aug. 18, 1885. (No model.)



Claim.—In a grate, the combination, with end shafts, H H', and circular plates I I' mounted thereon, of intermediate shafts, D, oblong plates G mounted thereon, cranks A, arm E, and lever F, as and for the purpose set forth.

338,306. **VEGETABLE-CUTTER.** CHARLES A. SENSENEILER, Hamilton, Ohio. Filed Nov. 9, 1885. (No model.)

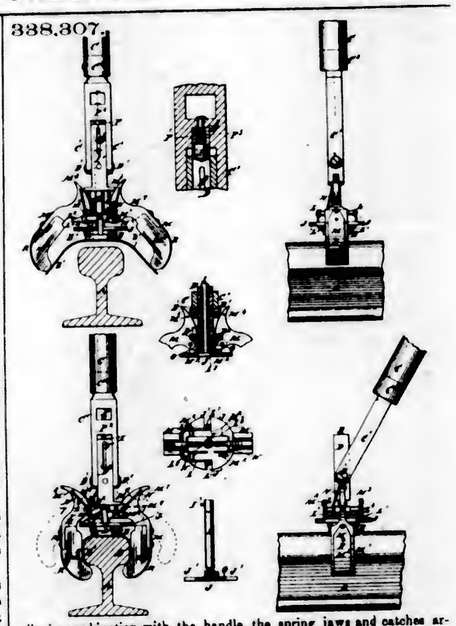


Claim.—In a vegetable-cutter, the combination, with cutting-disk E, its shaft G, and legs B, of the ring A, disposed over the cutting-disk and within the legs and secured to the legs, the cross-piece D, secured within the ring, and the hopper J, suspended below the ring within the legs, substantially as and for the purpose set forth.

338,307. **INSTRUMENT FOR ATTACHING TORPEDOES TO RAILWAY-RAILS.** ALEXANDER B. SHAW, St. Louis, Mo. Filed June 10, 1885. (No model.)

Claim.—1. In an instrument for attaching torpedoes to railway-

338,307.



rails, in combination with the handle, the spring jaws and catches arranged to operate substantially as and for the purpose set forth.

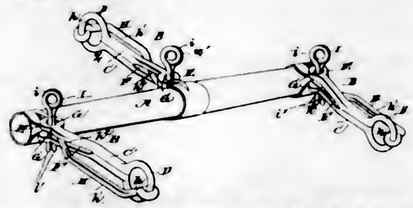
2. In an instrument for attaching torpedoes to railway-rails, the combination of the handle, arms secured to the handle and provided with elastic jaws, and spring-catches for holding the torpedoes, substantially as and for the purpose set forth.

3. In an instrument for attaching torpedoes to railway-rails, the combination of the handle, sleeve secured to the handle, rod fitting and working in the sleeve, disk on the lower end of the rod, plate secured to the rod, frame hinged to the plate, spring-catches secured to one end of the frame for holding the torpedoes against said disk, jaw-arms hinged to said plate, springs connected to the arms to open the jaws, and legs on said sleeve to close the jaws, substantially as and for the purpose set forth.

4. In an instrument for attaching torpedoes to railway-rails, the combination of the handle, sleeve secured to the handle, rod fitting and working in the sleeve, disk on the lower end of the rod, plate secured to the rod, frame hinged to the plate, spring-catches secured to one end of the frame for holding the torpedoes against said disk, arms hinged to said plate and having notches M', springs connected to the arms to open the jaws, lugs on said sleeve to close the jaws, and pins on said legs for coming against projections on the arms, substantially as and for the purpose set forth.

5. In an instrument for attaching torpedoes to railway-rails, the combination of the handle, sleeve pivoted to the handle, rod fitting and working in the sleeve, spring jaws and catches secured to the rod, and spring-bolt arranged in the handle to hold the sleeve in line therewith until the torpedo is attached and then released therefrom by the [illegible] substantially as and for the purpose set forth.

338,308. **HORSE-DETACHER.** DON SIMPLETARY, Union City, Tenn. Filed Dec. 18, 1885. (No model.)

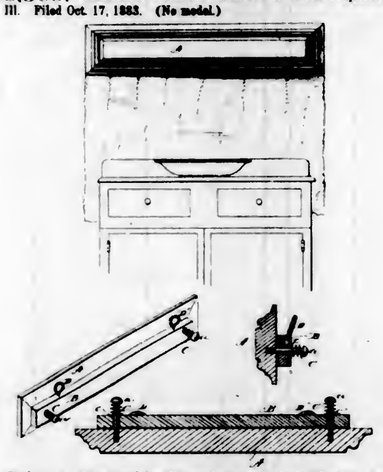


Claim.—1. The detacher comprising the arm, the hook pivoted or hinged thereto, and to which the trace or chain is attached, and the key for securing the hook when the latter is closed against the arm, substantially as described.

2. The detacher comprising the arm C, provided with the eye D, the clip E, the slotted opening F, and the aligned openings G, the hook pivoted or hinged to the eye D and having the transverse bent end *h*, against which the trace or chain draws; the longitudinal portion *h'*, and the bent end *h²*, to enter the slotted opening F when the hook is closed, and the key passed through the openings G to lock the hook in a closed position, substantially as described.

3. The combination, with the detacher having the hinged or pivoted hook, of the key formed of spring wire and having the normally-diverging arms, substantially as described.

338,309. **SPLASHER-HOLDER.** AMANDA R. SMITH, Prophetstown, Ill. Filed Oct. 17, 1885. (No model.)



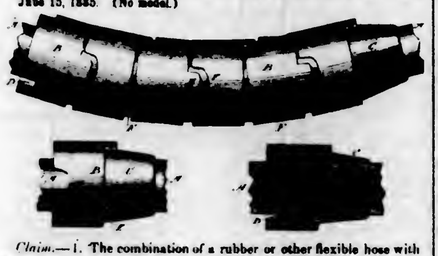
Claim.—1. As an article of manufacture, a splasher-holder adapted to be suspended from a wall, comprising a cornice and movable spring-actuated clamping-plate arranged in rear of and supported by said cornice, one end of the splasher being clamped between the cornice and the movable clamping-plate, substantially as described.

2. As an article of manufacture, a splasher-holder adapted to be suspended from a wall, and comprising a cornice and a laterally-movable spring-actuated clamping-plate supported and concealed from view by the cornice, one edge of the splasher being detachably clamped between the cornice and the plate by frictional contact between the opposing faces, substantially as described.

3. As an improved article of manufacture, a splasher-holder comprising a cornice, a laterally-movable clamping-plate concealed from view by the cornice, pins secured in the cornice and passing through openings in the plate, the plate being supported and free to move on the pins, and springs on the pins for normally pressing the clamping-plate in contact with the cornice, substantially as described.

4. The combination, in a suspended splasher-holder, of a cornice, the headed adjustable screws *a*, supported therein, a movable clamping-plate, C, supported on the screws and concealed from view by the cornice, the coiled pressure-springs arranged on the screws and bearing against the clamping-plate to normally force the latter against the cornice, and the angular suspending-hooks D, secured to the clamping-plate, the whole combined and arranged substantially as described.

338,310. **ARMOR FOR RUBBER HOSE.** JAMES M. SMITH, Sycamore, Ill., assignor of one-half to Mark W. Harrington, Ann Arbor, Mich. Filed June 15, 1885. (No model.)



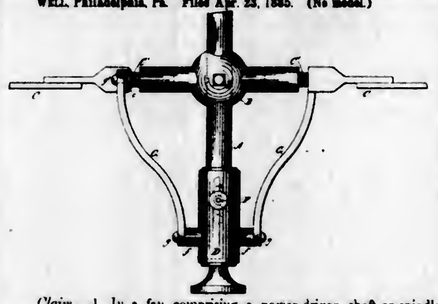
Claim.—1. The combination of a rubber or other flexible hose with a series of overlapping metallic rings, substantially as described and shown, about the same, as a protecting cover therefor.

2. A hose-cover consisting of a series of rings dovetailing with each other, substantially as described and shown, whereby twisting of the hose is prevented.

3. A hose-cover consisting of rings B, inwardly beveled from one end for substantially their whole length and provided at the other end with the conical projections C, of a length corresponding to the bevel, substantially as described and shown.

4. The section of hose-cover B, conical at one end, beveled inwardly at the other and provided with projection E, and receiving indentation F, substantially as described and shown.

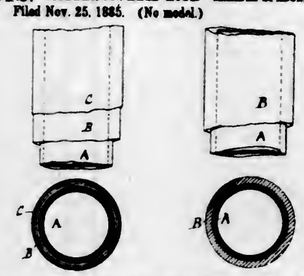
338,311. **AUTOMATIC FAN.** WILLIAM M. SMITH and JAMES CALDWELL, Philadelphia, Pa. Filed Apr. 23, 1885. (No model.)



Claim.—1. In a fan comprising a power-driven shaft or spindle with blades, the combination, with said shaft and adjustable blades thereon, of an adjustable collar which locks fast on said shaft at different points, and links or connections between said blades and collar whereby by moving said collar the angle of inclination of said blades may be varied and the latter locked in their adjusted position, substantially as described.

2. The combination, with spindle having sockets or recesses *a a*, of cross-head or hub B, having female screw-sockets, blades C C, having threaded shanks C' C', knob or sleeve D, having spring-plug F, and links G G, substantially as shown and described.

338,312. **RUBBER-COVERED HOSE.** AMADEE SPADONE, New York, N. Y. Filed Nov. 25, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a hose consisting of an inner tubing of rubber and an outer tubing of braided, woven, or wrapped silk or its equivalent, substantially as and for the purposes specified.

2. As an improved article of manufacture, a hose consisting of an inner tubing of rubber, a middle tubing of woven, braided, or wrapped silk or its equivalent, and an outer or protective tubing of rubber, substantially as and for the purposes specified.

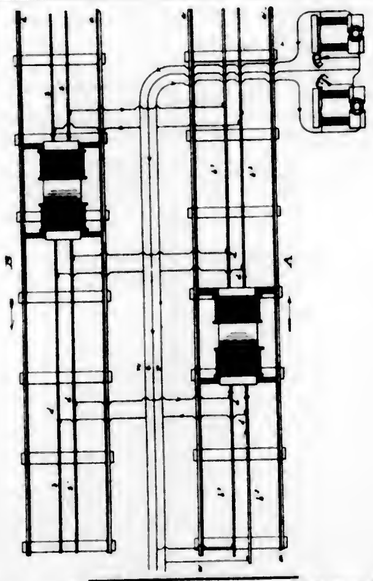
338,313. **ELECTRIC RAILWAY SYSTEM.** FRANK J. SPRAGUE, New York, N. Y., assignor to the Sprague Electric Railway and Motor Company. Filed Dec. 15, 1884. (No model.)

Claim.—1. In an electric railway system, the combination of working-conductors from which the motors derive current, and main conductors extending along the line and connected at intervals with said working-conductors, said main conductors being divided into sections and provided with means for connecting and disconnecting said sections, substantially as set forth.

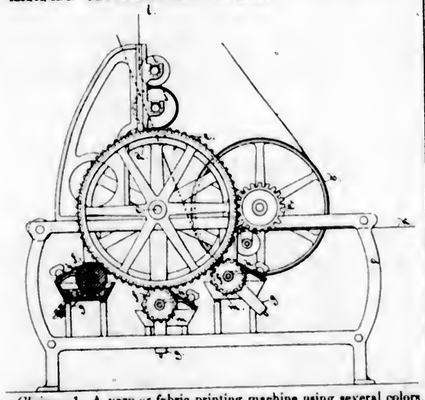
2. In an electric railway system, the combination of normally-continuous main conductors, two or more generating-stations, and a switch-board at each station to which the said main conductors and the supply-conductors of the generators are connected, whereby the continuity and connections of said main conductors may be broken or changed, substantially as set forth.

3. In an electric railway system, the combination, with the main conductors and the break-circuit switches at the generating-stations, of the indicators connected with said conductors at each station to indicate the breaking of the circuit at the next station, substantially as set forth.

338,313.



338,314. YARN-PRINTING MACHINE. EDWARD J. STEPHENS, Pawtucket, R. I. Filed Oct. 29, 1885. (No model.)

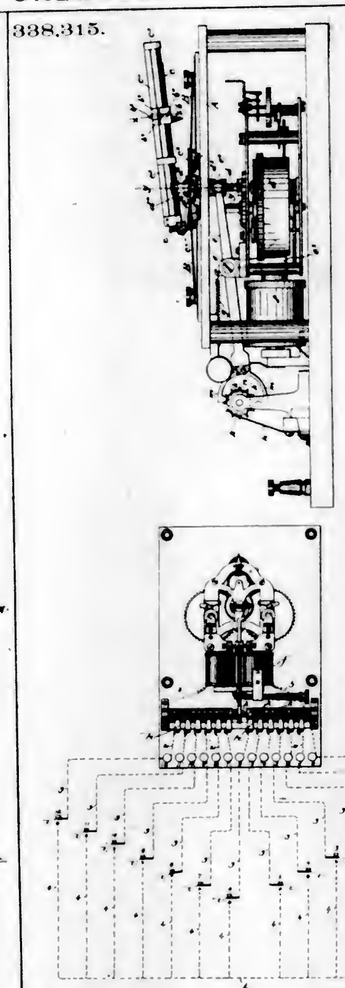


Claim.—1. A yarn or fabric printing machine using several colors, consisting of frame *a*, printing-drum *d*, ink-rolls *f*, and yielding bearings *g*, controlled by cams *m*, combined substantially as described, and for the purpose specified.

2. In a yarn or fabric printing machine, the combination of the fluted drum and ink-roll, as described, to print by pressing the ink-roll against the yarn or fabric while passing around the revolving fluted drum, substantially as described.

338,315. WATCHMAN'S TIME-RECORDER. JAMES E. TARBOX and EUGENE H. TAYLOR, Lynn, Mass., assignors to the Tarbox Time Register Company, Portland, Me. Filed Apr. 13, 1885. (No model.)

338,315.



Claim.—1. The dial having spirally-arranged graduations and the stationary gear, combined with the screw-threaded shaft provided with a pinion meshing with the said gear, the marking device having a nut engaging the said arm, a clock-work or motor producing a revolving movement of the said shaft and consequent spiral movement of the said marking device over the dial, and an electro-magnet armature, and circuit-changing and circuit-closing devices connecting said electro-magnet in circuit with but one station at a time, successively, substantially as described.

2. The dial and marking device and electro-magnet for actuating the latter, operated by circuit-closers at different stations, combined with a circuit-changing device actuated by the said magnet, when energized by closing its circuit at a given station, to automatically place the said magnet in circuit with the station next to be visited only, and at the same time disconnecting it from the station from which the said magnet was operated, substantially as described.

3. The stationary dial and stationary gear combined with the threaded shaft provided with a pinion meshing with the said gear, a clock-work or motor for revolving the said shaft, a marking device provided with a movable nut capable of being engaged with or disengaged from the threaded shaft, and an electro-magnet and armature therefor connected with the said shaft, and circuit changing and closing devices connecting said electro-magnet in circuit with but one station at a time, and only successively, substantially as and for the purpose described.

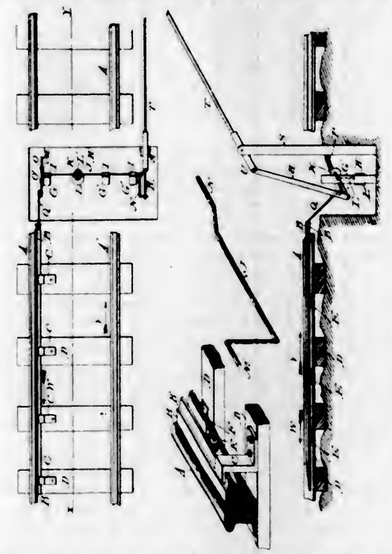
4. The stationary dial provided with spirally-arranged graduations or divisions and the stationary gear combined with the frame c^3, and shaft having bearings therein, and threaded arm provided with a pinion, the clock-work or motor for revolving the said frame, and the marking device on the said shaft provided with a nut engaging the threads thereof, and an upright engaging the frame c^3, and an electro-magnet and its armature connected with the said shaft, and circuit-changing and circuit-closing devices connecting said electro-magnet in circuit with but one station at a time, and only successively, substantially as described.

5. The dial and revolving shaft provided with a marking device, combined with the electro-magnet and its armature for actuating the said arm independently of its revolving movement, a series of branch circuits from said magnet to the different stations from which it is to be operated, normally-open circuit-closers in the said branches, and a circuit-changing device operated by the armature of the magnet which actuates the shaft and marking device, whereby but one of the said circuit-closers is closed at a time and a different one is closed at each operation of the magnet-armature, substantially as described.

6. The dial-marking devices and clock-work whereby one receives a uniform or timed movement with relation to the other, combined with the electro-magnet for actuating the said marking devices, a series of branch circuits from the said magnet to the different stations at which it is to be operated, a normally-open circuit-closer in each of the said branches, and a circuit-controlling device consisting of a shaft provided with projections whereby the said circuit-closers are closed one at a time in the revolution of the shaft, a toothed wheel connected with the said shaft, and co-operating pallets actuated by the armature-lever of the said magnet, whereby the said shaft is turned and a different circuit-closer closed at each operation of the said armature-lever, substantially as described.

7. The clock-work or motor and arbor actuated thereby, provided with an arm, combined with the frame pivoted on said arm, and threaded shaft having bearings in the said frame and provided with a pinion, the stationary gear meshing with the said pinion, and the sleeve longitudinally movable on the said arbor connected with the threaded shaft, and means for actuating the said sleeve, substantially as described.

338,316. RAILWAY SAFETY-GATE. JAMES H. TAYLOR and ZACHARY T. MILLER, Philadelphia, Pa. Filed Dec. 19, 1885. (No model.)



Claim.—1. In an automatic mechanism for opening or closing gates over railroad-crossings, the combination of the main rails A A', the supplemental longitudinally-reciprocating rail B, held down close beside the main fixed rail A by cleats or clamps C, and sustained against the same by the spring-cushioned rollers E E, arm Q, slotted pivoted lever P, crank-shaft J, with its cranks M N, weight L, attached substantially as described, and arm R, attached to the heel of the pivoted gate T, whereby the latter is raised and lowered, all combined and operating substantially as described.

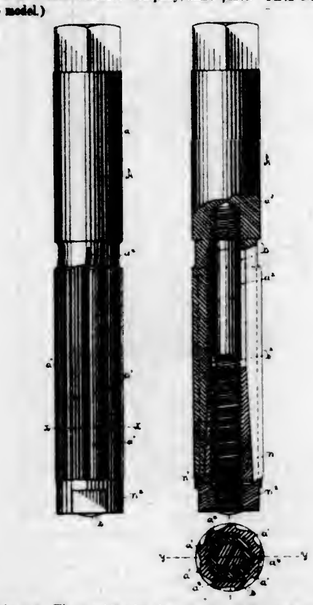
2. In an automatic mechanism for opening and closing gates over railroad-crossings, the combination of main rails A A', supplemental longitudinally-reciprocating rail B, held down close beside the main fixed rail A by cleats or clamps C, and sustained against the same by the spring-cushioned rollers E E, and vertically-vibratory arm R, actuated by intermediate mechanism from said rail B, substantially as described.

3. In an automatic mechanism for operating devices to avoid railroad accidents at crossings, the combination of the main rails A A', supplemental longitudinally-reciprocating rail B, held down close beside the main rail A by cleats or clamps C, and sustained against the same by the spring-cushioned rollers E E, and movable arm R, receiving motion by intermediate mechanism from said rail B, substantially as described.

338,317. ALLOY. ORLANDO M THOWLESS, Newark, N. J. Filed Nov. 27, 1885. (Specimens.)

Claim.—A compound alloy composed of the following ingredients, in about the proportions named, to wit: nickel, eighteen parts; zinc, eighteen parts, and copper sixty-four parts, fused together into an alloy, and pure silver seventy parts, substantially as specified.

338,318. REAMER. HOREA R. TILLSON, Boston, Mass., assignor to the S. A. Woods Machine Company, same place. Filed Nov. 23, 1885. (No model.)



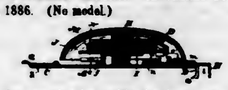
Claim.—1. The combination, in a reamer, of the shell provided with cutters *a'*, two or more slots, a^4, and bore a^3, with the rod *b*, provided with screw-thread b^2 and the tapering nut *n*, substantially as described.

2. The combination, in a reamer, of the shell provided with cutters *a'*, two or more slots, a^4, and bore a^3, with the rod *b*, provided with screw-thread b^2, the tapering nut *n*, and the nut n^2, substantially as described.

3. The combination, in a reamer, of the shell provided with cutters *a'*, two or more slots, a^4, and bore a^3, with the rod *b*, provided with screw-thread b^2, and the tapering nut *n*, provided with slots *n'*, substantially as described.

4. The combination, in a reamer, of the shell provided with cutters *a'*, two or more slots, a^4, cut entirely through said shell from the open end thereof toward the solid part *a*, the tapering wedge *n*, and mechanism adapted for forcing the same into the open end of said reamer-shell and expanding the cutters at that end, while their opposite ends are fixed, substantially as described.

338,319. BURGLAR-ALARM. A. CLARKE TONNER, Canton, Ohio. Filed Jan. 2, 1886. (No model.)



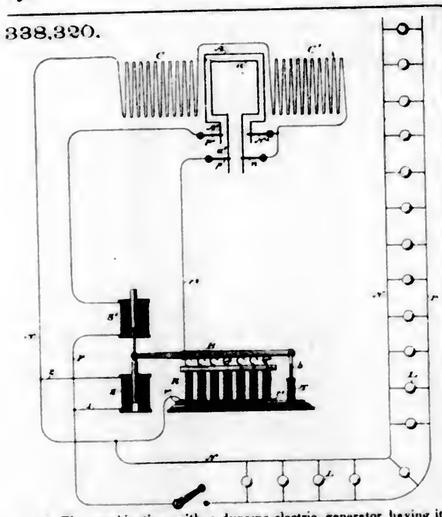
Claim.—1. In combination with the herein-described alarm, the sliding locking-bar E, having its outer or free end adapted to pass between the swinging door and the latching-jamb, the other end provided with an upwardly-projecting stop, *o'*, adapted to engage with and arrest the movement of the wheel J, substantially as described, and for the purpose set forth.

2. In combination with the herein-described alarm, the locking-bar E, having its outer or free end adapted to pass between the swinging door and the latching-jamb when the door is closed, the other end provided with an upwardly-projecting stop, *o'*, adapted to engage with the rotating mechanism, thereby locking the same, and the spring *g*, by which, when the door is opened, the locking-bar will be thrown out, releasing the mechanism, which will then sound an alarm, all operating jointly, as described, and for the purpose set forth.

338,320. DYNAMO-ELECTRIC GENERATOR. CHARLES J. VAN DE POELE, Chicago, Ill. Filed Aug. 1, 1885. (No model.)

Claim.—1. The combination, with a dynamo-electric generator the field-magnet coils of which are included in the external circuit, of a variable resistance spanning the field-magnet conductor, a number of working-resistances in multiple arc, a solenoid in circuit in the main conductors and a solenoid in parallel circuit with the working-resistances, and means operated by said solenoids for cutting out the variable resistance as the working-resistances are brought into circuit, as set forth.

338,320.



2. The combination, with a dynamo-electric generator having its field-magnet coils in the external circuit, of main and auxiliary armatures, a consumption-circuit including working-resistances arranged in multiple arc, and a solenoid in series with said main conductor, a group of artificial resistances connected in multiple arc between one of said main conductors and the auxiliary armature, the other pole of said auxiliary armature being connected to the other end of said conductor, thereby including the coils of the field-magnets in the auxiliary circuit, and a contact device operated by the joint action of the solenoids to diminish or increase the extent of the group of artificial resistances as more or fewer of the working-resistances are brought into circuit, as set forth.

3. The combination, with a dynamo-electric generator the field-magnet coils of which are included in the external circuit of a divided armature, the main portion of which feeds the consumption-circuit, in which are placed a number of working-resistances in multiple arc, a group of artificial resistances, also in multiple arc and arranged to span the field-magnet conductors, a solenoid in series with the main circuit, and a solenoid in multiple arc and parallel with the working-resistances in circuit, and connections leading from the auxiliary portion of the armature to the artificial resistance and from said resistance to one of the main conductors, and from the opposite binding-post of the auxiliary armature to the other main conductor, as set forth.

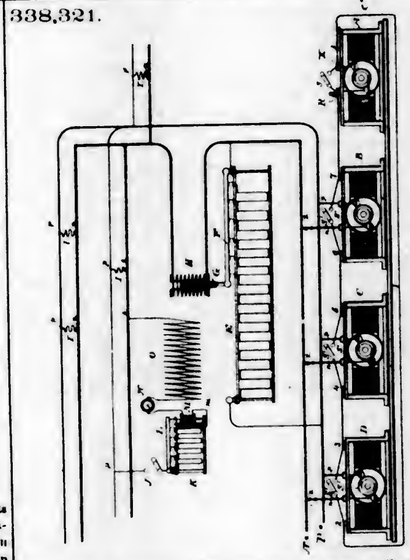
4. In a dynamo-electric machine, an armature provided with two sets of independent coils—one as the main and the other as an auxiliary—both arranged so as to send their current through the field-magnet helices for the purpose of exciting the same, and proper means for varying the resistance in the auxiliary circuit, corresponding to the resistance in the working-circuit, substantially as described.

5. In a dynamo-electric machine, an armature provided with two independent sets of coils around its core, one set of coils—the main—so arranged as to send its current through the working-resistances and the field-coils, the second set—the auxiliary—so disposed as to send its current through the field-magnet coils and a variable resistance in circuit with said auxiliary armature, in order to vary the intensity of the current produced in the main armature-coils by adding more or less to the current flowing through the single field-conductors, substantially as described.

6. In a dynamo-electric machine, the field-magnet coils composed of a single conductor, through which the current of the consumption-circuit and main armature is flowing, and an auxiliary armature capable of adding its current to that of the main armature flowing through the field-magnet coils, for the purpose of varying the intensity of the current in the consumption-circuit.

338,321. SYSTEM OF GENERATING ELECTRICAL CURRENTS. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Nov. 12, 1885. (No model.)

338,321.



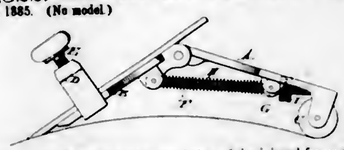
Claim.—1. In a system of generating and distributing electric currents of constant electro-motive force and varying intensity, the combination, with generators the field-magnets of which are energized from an independent source of electricity, of means for preventing leaping of the current between the commutator-brushes, consisting of an artificial resistance temporarily placed in the working-circuit whenever the motors or other translating devices are using less than a predetermined amount of current, as set forth.

2. In a system of generating and distributing electric currents, the combination, with a number of dynamo-electric generators, all connected in multiple arc, of an independent source of electricity for energizing the field-magnets and producing in all the machines an equal potential, and means for automatically introducing and withdrawing artificial resistance between the main conductors as the working-resistance is increased or decreased beyond a predetermined point, as set forth.

3. In a system of generating and distributing electric currents of varying intensity and constant electro-motive force, the combination, with a plurality of generators the field-magnets of which are energized from an independent source of electricity, and all their armatures connected to the main conductors in multiple arc, of an artificial or temporary resistance also in multiple arc, and normally absorbing a sufficient amount of current to prevent injury to the generators by the current leaping between the commutator-brushes, and means, substantially as described, for increasing or entirely cutting out said resistance as working-resistances are added to the main line in parallel circuit therewith, as set forth.

4. In a system of generating current for the transmission of electric energy, a number of electric generators excited from a separate source of electricity and connected in multiple arc to the main conductors, an electric motor normally in the main circuit, but of higher resistance than the other working-resistances, and mechanical connections between said motor and the source of power, whereby the current forced through said motor by the cutting out of said circuit of other work is caused to return power to the prime motor, as set forth.

338,322. TOOL-HOLDER. ELISHA WATERS, Troy, N. Y. Filed June 16, 1885. (No model.)



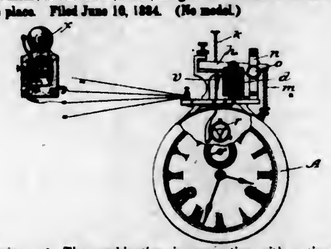
Claim.—1. The tool-holder consisting of the jointed frame provided with the supporting-roll and a tool-clamping device at opposite ends, and with means, substantially as described, for adjusting the angle of the jointed parts with respect to each other.

2. The plate A, having a supporting-roll, C, in combination with the plate B, jointed thereto, and provided with the bar D and screw E, the rod F, spring H, and nut I.

3. In a tool-holder, a transversely-jointed frame provided with a supporting-roll and a tool-clamp at opposite ends, in combination with a screw for bending or flexing the frame, and a spring tending to straighten the same as it is relieved from the action of the screw.

4. In a tool-holder, the plate A, provided with the roller C and swiveled bar G, in combination with the plate B, jointed thereto and provided with the tool-clamping device, the rod F, jointed to the part B and extended through bar G, the spring H, applied to the inner end of said rod, and the nut I, applied to the outer end of the same.

338,323. ELECTRIC TIME REGISTER AND ALARM. CHARLES W. WEITED, Battle Creek, Mich., assignor of one-half to W. H. Pettibone, same place. Filed June 10, 1884. (No model.)



Claim.—1. The combination, in connection with a time-keeping mechanism, of a magnet and an electric circuit therefor, an armature-lever for said magnet, mechanism actuated by said armature-lever to control the movement of the time-keeping mechanism, and an alarm-circuit and circuit-closer therefor, said circuit-closer being also actuated by the armature-lever, substantially as described, for the purpose set forth.

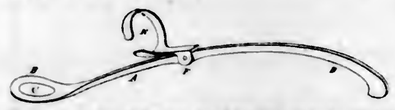
2. The combination of a railway-track circuit-controlling instrument, a circuit therefor, a magnet in said circuit, an armature-lever for said magnet, a time-keeping mechanism, mechanism between said armature-lever and said time-keeping mechanism for stopping or starting the time-keeping mechanism according to the position of said lever, and an alarm-circuit and a circuit-closer therefor, also operated by said armature-lever, whereby on the passage of a train the clock is stopped and simultaneously an alarm is given, substantially as described, and for the purposes set forth.

3. The combination of a railway-track circuit-controlling instrument, a circuit therefor, a magnet in said circuit, a time mechanism mechanically controlled by the armature-lever of said magnet, an alarm-circuit, and a circuit maker and breaker in said alarm-circuit controlled by the position of said armature-lever, whereby both the clock and the alarm are simultaneously actuated by a passing train, substantially as described, and for the purposes set forth.

4. The combination of a time-keeping mechanism, an electro-magnet and circuit therefor, an armature and armature-lever for said magnet, a spring or weight acting on the armature-lever in opposition to the magnet, mechanism actuated by the armature-lever and operating to arrest said time-keeping mechanism when the magnet is de-energized and to release it when the magnet is energized, and an alarm-circuit provided with a circuit maker and breaker controlled by the position of said armature-lever, substantially as described and shown.

5. The combination of a time-keeping mechanism, an electro-magnet and circuit therefor, a retracting spring or weight for said armature-lever, a stop for the escape-wheel or other moving part for the time-keeping mechanism, and connecting mechanism between said stop and said armature-lever, whereby when the armature-lever is under the influence of the magnet the stop is out of engagement with the time-keeping mechanism, but when the magnet is de-energized and the armature is under the influence of the spring or weight the stop is brought into engagement with the time-keeping mechanism, preventing its farther movement, and an alarm-circuit and a circuit maker and breaker therein controlled by the position of said armature-lever, substantially as described and shown.

338,324. DIGITAL FORCEPS. S. ROLLIN WILCOX, Bennington, Vt. Filed July 22, 1885. (No model.)



Claim.—A surgical instrument for obstetrical purposes, consisting of a fenestrated forceps-blade provided with a hinged finger-socket for the reception of the finger of the operator, arranged as described, so that the tip of the inserted finger may co-operate with the forceps-blade as a companion member to form a digital forceps, substantially as specified.

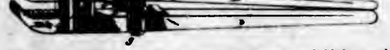
338,325. PLOW. ALBERT WILHELM, Pleasant Hill, Tex. Filed Jan. 14, 1886. (No model.)

Claim.—In a plow, the combination, with the beam, mold-board, point, and landside-plate, of a standard consisting of a longitudinal bar, to which the beam is attached, and provided with a transverse elongated slot, two downwardly-extending arms connected together by a cross-brace and having serrations and elongated slots on their extremities, and bolts, nuts, and serrated washers for adjustably connecting the landside-plate thereto, the forward one of said arms having a seat for the plow-point, substantially as and for the purpose set forth.

338,325.



338,326. PIPE-WRENCH. HERVEY M. WILSON, Fullerton, Nebr. Filed Dec. 23, 1885. (No model.)

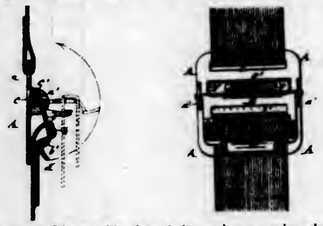


Claim.—1. In a wrench, the combination of a rigid jaw, a lever pivoted to the rigid jaw, a pivoted jaw pivotally connected to the lever and movable laterally of the rigid jaw, and a spring for normally forcing the movable jaw away from the rigid jaw, substantially as described.

2. In a wrench, the combination of a rigid jaw carrying a bracket, a lever, a movable jaw pivoted to the bracket and to the rear end of the pivoted lever, a spring bearing against the movable jaw at a point intermediate of the pivots thereof, and a screw for regulating the adjustment of the movable jaw, substantially as described.

3. As an article of manufacture, a wrench comprising a rigid jaw having a handle, *b*, a slotted bracket, C, secured thereon, links G, pivoted to the handle *b*, a lever, E, pivoted to the links, a laterally-adjustable jaw, D, having trunnions working in the slotted bracket and pivoted at its lower end to the lever E, a spring, F, and an adjusting-screw, I, substantially as described.

338,327. BUCKLE. JOHN F. WHITTIER, New York, N. Y., assignor to George W. McGill, same place. Filed May 19, 1886. (No model.)



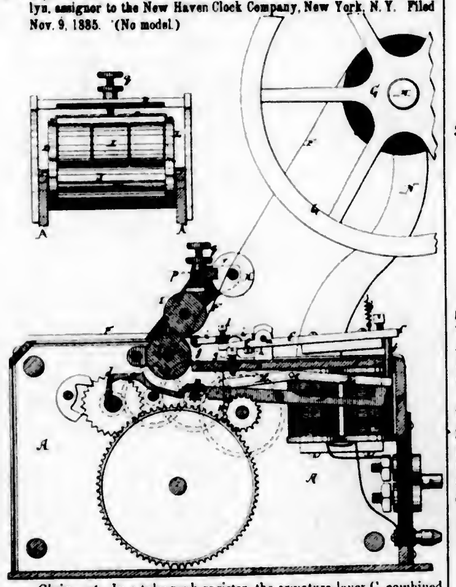
Claim.—1. The combination of the main supporting-plate A, provided with ears *a'*, the angular or convex clamping buckle-plate or lever B, pivoted to said ears, and adapted to swing into horizontal position and to close at its lower end against the main plate, the bend of the buckle-plate extending, when closed against the main plate, beyond the plane of its pivotal connection therewith, and a spring which forces the buckle-plate against the main plate, for clamping the lapped ends of the

strap between said plates, said plates being provided with means for connecting the strap thereto, substantially as described.

2. The combination of the main plate A, provided with ears *a'* and with the spring *e*, and the angular buckle-plate B, pivoted to said ears and provided with the bar *b* for the strap, and with the inwardly-bent end *e'*, resting against said spring *e*, substantially as described.

3. The combination of the main plate A, the angular buckle-plate B, pivoted thereto, the bend of said buckle-plate extending beyond its pivotal connection with the main plate, said buckle-plate being provided with an outturned toe, *d*; and a spring for forcing said buckle-plate into contact with said main plate, said plates being provided with means for connecting the strap thereto, substantially as described.

338,328. **TELEGRAPH-REGISTER.** LOUIS WIDTERHALDER, Brooklyn, assignor to the New Haven Clock Company, New York, N. Y. Filed Nov. 9, 1885. (No model.)



Claim.—1. In a telegraph-register, the armature-lever C, combined with the adjustable extension-piece *i*, which carries the rotary indenting-roller *j*, and with the holding-screw *h*, which connects the parts C and *i*, and with the adjusting-screw *l*, which serves to tilt the part *i* into the desired inclined position, substantially as and for the purpose specified.

2. In a telegraph-register, the feed-lever D, combined with the lever E, adjusting-screw *g*, and with the armature-lever C, substantially as and for the purpose shown and described.

3. The paper-guide H, constructed of the threaded and notched collars *r r*, right-and-left screw *s*, and stationary bar *p*, as specified.

4. The combination of the feed-rollers I J with the frame L, in which the roller I is hung, spring *o*, which constitutes the sole upper portion of the frame L, and with the stationary bar *p* and central adjusting-screw, *q*, as set forth.

5. The combination of the reel G and mechanism, substantially as described, for revolving it with its supporting-shaft M, tension-spring *t*, and washer *u*, the said spring and washer being rigidly united and held on the non-revolving shaft M, substantially as herein shown and described.

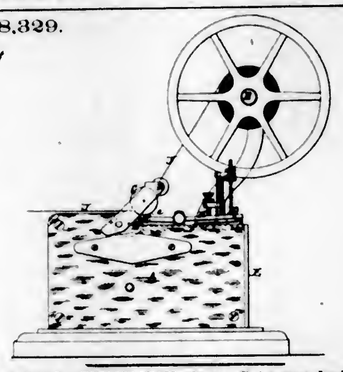
338,329. **TELEGRAPH-REGISTER.** FRANK B. WOOD, New York, N. Y., assignor to the New Haven Clock Company, New Haven, Conn. Filed Nov. 9, 1885. (No model.)

Claim.—1. In a telegraph-register, the armature-lever H and the roller *e*, which is carried by said armature-lever, in combination with the roller C, and means, substantially as described, for revolving said roller C by contact with the paper J, the roller e pressing the paper against the revolving roller C in marking the same, substantially as herein shown and described.

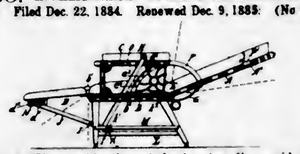
2. In a telegraph-register, the main box A, which contains the clock-work mechanism, combined with the sliding end plate, E, having part of the cover F rigidly attached to it, and also with the electro-magnets and armature-lever which it carries, as specified.

3. In a telegraph-register, the combination of the box A with the removable angular slide E F, and with the non-conducting plate L contained therein, and with the binding-posts secured to said non-conducting plate, as specified.

338,329.



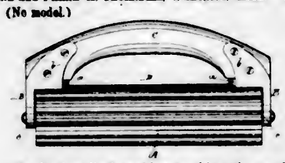
338,330. **INVALID-CHAIR.** CHARLES E. ANDERSON, London, Ontario, Canada. Filed Dec. 22, 1884. Renewed Dec. 9, 1885. (No model.)



Claim.—1. The combination of the bracket E, provided with the groove *e'*, ratchet *e²*, pin-holes *e³*, and flange *e⁴*, and curved bar F, provided with lug *a²*, dog *a'*, and keeper *a³*, and spring G, with the back A, pivotally connected to the chair, for the purpose of causing the back A to assume and retain any position, from the erect to the prone, to which it may be adjusted, substantially as shown and described.

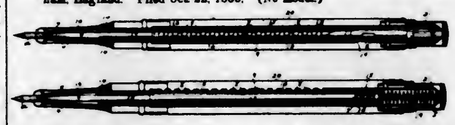
2. The combination of the levers H H, ratchets O O, boxes I I, friction-wheels *b² b²*, grooved friction-wheels K K, beveled bars L L, guide-bars M M, pivot-bolts *k' k'*, bars J J J', brace-rods J² J², flanged pins N N, flanges *d² d²*, provided with slots *d'*, joint-cover *b'*, and foot-rest D, hinged to the chair, for the purpose of causing the foot-rest D to assume and retain any position to which it may be adjusted, from the erect to the prone, substantially as shown and described.

338,331. **MACHINE FOR WASHING CLOTHES, &c.** JOSEPH HENRY ANTHOINE and FRANK H. THORNDIKE, Wakefield, Mass. Filed Sept. 19, 1885. (No model.)



Claim.—In the described washing-machine, the combination, with the handle, guard, and fluted roller, of the two brackets extending between the guard and handle, and up the opposite sides of the latter, and down across the ends of the guard and roller, and connected to the said handle, guard, and roller by screws, all being substantially as represented.

338,332. **LEAD OR CRAYON HOLDER.** JOSEPH APPLEBY, Birmingham, England. Filed Oct. 22, 1885. (No model.)



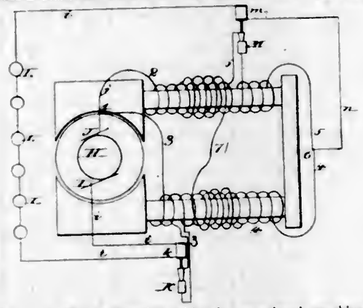
Claim.—1. The combination, with the follower 11, having stud 9, of the feeding-tube 17, having the teeth 8, for engaging with the stud, and having a rotary movement whereby the teeth are brought into and out of engagement with the stud to lock and release the follower, and an independent longitudinal movement whereby the follower is advanced to protrude the lead, substantially as described.

2. The combination, with the follower 11, having the stud 9, of the conducting-tube 15, having the slot 10, through which the stud projects, and the feeding-tubes 17, having the teeth 8, for engaging with the stud, and having a rotary movement whereby the teeth are brought into and out of engagement with the stud to lock and release the follower, and an independent longitudinal movement whereby the follower is advanced to protrude the lead, substantially as described.

3. The combination, with the follower 11, having the stud 9, of the conducting-tube 15, having the slot 10, through which the stud projects, the feeding-tubes 17, having the teeth 8, for engaging with the stud 9, the wide oblique or winding slot 18 and the stud 7, projecting into said slot, whereby the feeding-tube is given a rotary movement and is permitted to have an independent longitudinal movement, and the spring 19, interposed between the conducting and feeding tubes, substantially as described.

4. The combination, with the follower 11, having the stud 9, of the conducting-tube 15, having the stud 7, and the slot 10, through which the stud 9 projects, the feeding-tube 17, having the teeth 8, for engaging with the stud 9, and the wide oblique or winding slot 18, into which projects the stud 7, and the spring 19, interposed between the conducting and feeding tubes, substantially as described.

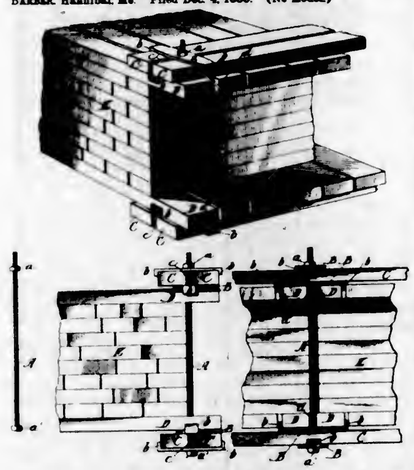
338,333. **REGULATOR FOR DYNAMO-ELECTRIC MACHINES.** ROYAL E. BALL, New York, N. Y. Filed May 13, 1884. (No model.)



Claim.—1. The combination, with a dynamo-electric machine having its field-coils arranged in multiple arc, of a variable resistance included in each of its branches, and means for operating said variable resistance, substantially as described.

2. The combination, with a dynamo-electric machine having its field-coils arranged in multiple arc and a variable resistance included in each of the branches of said multiple circuit, of a supplemental coil arranged as a shunt across the field-circuit and surrounding a portion of the field-magnets, substantially as and for the purpose described.

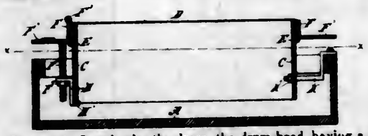
338,334. **DEVICE FOR BINDING TOGETHER LUMBER.** JAMES T. BARBER, Hannibal, Mo. Filed Dec. 4, 1885. (No model.)



Claim.—The combination, with the timber composing the crib or raft, of the opposite binding-strips C and D, crossing each other, the plates interposed between the strips and each having end flanges embracing the strips D, and provided with the intermediate opening, the plates arranged upon the outer strips C, and each having the end flanges embracing the same, and provided with the intermediate opening and the headed clamping-bolt A, passing through all of said plates, substantially as described.

338,335. **BANJO.** BYRON E. BOYLEN, Bridgeport, Conn. Filed May 26, 1885. (No model.)

338,335.



Claim.—1. In a banjo, the drum, the drum-head having a wire at its edge to form a roll, and a flanged band or angle-plate, the vertical portion of which fits the drum and rests upon the roll, and the horizontal portion has downwardly-projecting screw-threaded pins made integral therewith, in combination with angle-irons which engage the bottom of the drum, and are provided with holes through which the screw-pins pass, and nuts engaging said screw-pins, whereby the drum-head is tightened.

2. The drum, drum-head, and band F, having lugs F⁹, in combination with a pin passing through said lugs for the attachment of the strings.

3. As a new manufacture, a flanged band for tightening the drum-heads of banjos, having lugs cast thereon, to receive a pin for the attachment of the strings.

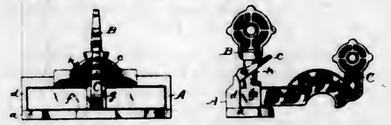
4. The drum and drum-head, in combination with a flanged band surrounding the drum, and provided with lugs to receive a pin for the attachment of the strings, and means—for example, angle-irons and screw-pins engaging them—whereby the drum-head is tightened.

338,336. **REED-PLATE FOR MUSICAL INSTRUMENTS.** FREDERICK J. BRAND, Southington, Conn. Filed May 27, 1885. (No model.)



Claim.—A drawn metal bar having a series of equidistant grooves, *b*, formed in one of its sides, and a series of transverse and equidistant grooves, *c*, formed in its opposite side, also having a series of equidistant slots or throats extending through the bar and adapted to be made into reed-plates by punching out the part *a*, as described.

338,337. **SASH-FASTENING DEVICE.** CHARLES M. BURGESS, New Britain, Conn., assignor to the Russell & Erwin Manufacturing Company, same place. Filed Jan. 18, 1886. (No model.)



Claim.—1. In a sash-fastener of the class described, the frame A, consisting of the horizontal base-plate *a*, the upper bearing-plate, *c*, slanting forward and upward, as shown, and the connecting vertical plate *d*, said plates being recessed from the back side, for the reception of the pivotal post, substantially as described, and for the purpose specified.

2. The pivotal post B, having squared hub *g*, and the sweep or handle lever C, all formed in one piece and with the journals *h h*, formed at points above and below the said handle-lever, substantially as described, and for the purpose specified.

3. The sash-lock herein described, consisting of the frame A, having its upper bearing-plate slanting forward and upward, the said frame having journal-recesses opening at the back side thereof, the pivotal post B, and integral hand-lever C, and the spring *f*, all substantially as described, and for the purpose specified.

338,338. **PERMUTATION-LOCK.** HENRY CLARKE, Chicago, Ill. Filed Apr. 23, 1885. (Model.)

Claim.—1. The lock-casing having a rabbet along its upper edge, and a series of upright grooves in the rear wall of the rabbet, and the series of openings from the inside of the casing through the lower side of the rabbet, each situated at the bottom of one of the upright grooves, substantially as and for the purpose described.

2. In combination with the casing, the series of sliding stops for locking the lock mechanism within the casing, having portions of their outer ends projecting through and exposed along one edge of the casing, substantially as and for the purpose described.

3. In combination with the casing provided with the oblong opening, and the lock mechanism within, the cup-shaped thumb-piece for moving the mechanism within, extending through such opening, provided with the flange covering the opening, and adapted to engage and operate the lock mechanism with the sides of its depressed portion, substantially as and for the purpose described.

338,338.



4. In combination with the sliding stop-plate provided with the longitudinal series of lugs, the sliding stops or bars having transverse notches or grooves in them, so located that when the bars are in line with each other the notches on all such as are turned the same way will be in line with each other and with the lugs on the stop-plate, while the notches on such as are inverted, or turned the other way, will be out of line with the notches in the other stops until such inverted ones have been moved endwise, substantially as and for the purpose described.

5. The sliding stop-bar for a lock, having suitable lugs or shoulders to limit its movement, and provided with a transverse groove nearer one of the lugs than the other, substantially as and for the purpose described.

6. The sliding stop-bar for a lock, having lugs or shoulders on its sides to limit its movement, the transverse notch or groove, and the small notches on each side near such transverse groove or notch, substantially as and for the purpose described.

7. In combination with the casing provided with a transverse way and with corresponding series of notches in the opposite walls of the way, the series of stops fitting and sliding at their opposite ends in such notches, and the U-shaped friction-springs placed between the stops, substantially as and for the purpose described.

8. In a lock, in combination with the casing provided with the way or channel, having in its opposite sides corresponding series of opposite notches, the stops or bars having their opposite ends fitting and sliding in such notches, each stop or bar being provided with lugs or shoulders on its sides to limit its motion, and with a transverse groove nearer one of the limiting-lugs than the other, substantially as and for the purpose described.

9. In combination with the casing provided with the way or channel, having corresponding notches in its opposite sides, the sliding stops having their outer ends exposed through openings in the casing, and provided with stop-lugs on their sides adapted to strike the channel-sides, and with transverse grooves situated in each stop nearer one of the limiting-lugs than the other, so that when all the stops are turned the same way and are in line all the transverse grooves will be in line, but if one of the stops be inverted it must be moved longitudinally to bring its groove into line with the grooves on the others, substantially as and for the purpose described.

10. In combination with the sliding stop-plate for locking the lock mechanism, provided with a longitudinal series of lugs, the series of sliding stops or bars having their upper or outer ends exposed at the front of the casing, provided with transverse grooves so situated that when the stops are all turned one way and moved upward or outward the grooves will be in line with each other, but if any of the stops be inverted or turned end for end its groove will be out of line with the grooves on the others until the stop is pushed down or in, substantially as and for the purpose described.

11. In combination with the casing provided within with a transverse way or channel, the series of stops sliding in notches in the opposite sides of the channel, and provided with transverse grooves and with the side lugs, of which one is nearer the transverse groove than the other, which are adapted to strike against the sides of the channel when the stops are slid longitudinally, and the sliding stop-plate provided with a longitudinal series of lugs, one for each stop, substantially as and for the purpose described.

12. In combination with the casing provided with the transverse way or channel, the sliding stop-plate provided with the longitudinal series of lugs, and the sliding stops alongside such lugs having their outer ends exposed through suitable openings in the casing, some of said stops being provided with transverse grooves in line with the lugs on the stop-plate when the stops are pushed outward, and others having similar grooves situated out of line with such lugs when said stops are pushed out, and adapted to be brought into line with them when the stops are pushed in, substantially as and for the purpose described.

13. In combination with the stop-plate and the lugs thereon, the series of stops adapted to lock or release the plate as they are moved, the lever engaging a lug on the plate or an arm thereon, the spring-jaw engaged by the other end of the lever, so as to be swung back or withdrawn thereby, and the movable thumb-piece or knob adapted to engage a portion of the lever to swing it so as to withdraw the jaw, substantially as and for the purpose described.

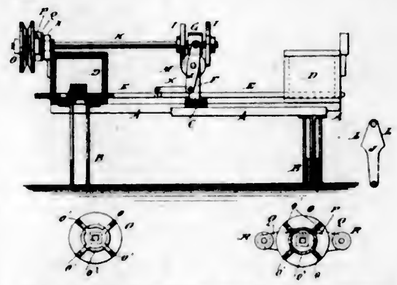
14. In combination with the sliding stop-plate provided with an arm having a lug, means, substantially as described, for locking and releasing the plate, the pivoted lever notched at its upper end to engage the lug on the arm of the stop-plate, the spring-jaw for engaging a notch in one side of a projection on the hasp, provided with a notch or recess engaged by a tongue or heel on the lever, the sliding thumb-piece engaging a projecting portion on the lower end of the lever, so as to force the same outward to withdraw the jaw, substantially as and for the purpose described.

15. In combination with the casing, the thumb-piece G, moving in an opening therein, the lever pivoted at one side of such opening, having its lower end extended under the piece G, the swinging jaw engaged by the outer side of the lower end of the lever, the spring pressing such jaw inward over the hasp-opening in the casing, means, substantially as described, for locking and releasing the upper end of the lever, as desired, substantially as and for the purpose described.

16. In combination with the cup-shaped thumb-piece extending through and moving in an opening in the casing, the jaw pivoted at one side of the opening, having a projection extending under or in the track of the thumb-piece as it is moved along the opening, a spring adapted to swing the jaw inward over the hasp-opening in the casing, the lever pivoted to the other side of the opening for the thumb-piece, having a portion projecting into the path of the thumb-piece, the jaw pivoted outside of and engaged by such lever, and the spring adapted to swing such jaw normally inward over the hasp-opening, substantially as and for the purpose described.

17. In combination with the series of sliding stop-keys for locking the lock mechanism, the movable thumb-piece for swinging back the jaw or jaws, and the yoke attached to or carried by such piece, adapted to move all the keys outward and return them to their normal positions, substantially as and for the purpose described.

338,339. **CHECK-ROWING ATTACHMENT FOR CORN-PLANTERS.** EDWARD F. CRAWFORD, Honey Bend, Ill. Filed Nov. 23, 1885. (No model.)



Claim.—1. In a check-rowing attachment, the combination, with the frame and the seed-slide, of a rotary shaft for operating the slide and carrying the wire wheel, a central standard having a pivoted bearing mounted between its arms and supporting the inner end of the rotary shaft, and bearings at opposite sides of the frame for the outer end of the shaft, whereby the position of the rotary shaft and its wire wheel may be changed to be operated from either side of the machine, substantially as set forth.

2. In a check-rowing attachment, the combination of a rotary shaft mounted in pivoted bearings at its inner end and provided with a wire wheel on its outer end, with the seed-slide and a connection between the shaft and the slide, whereby the wire wheel may be thrown to either side of the machine.

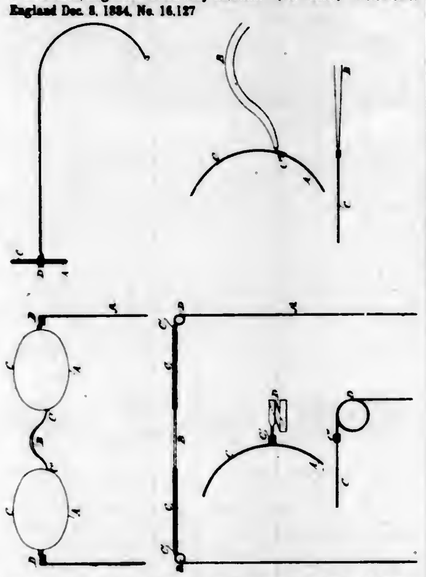
3. The combination, with the seed-slide, the standards F, the bar J, pivoted at its upper end to a standard F, and connected with the seed-slide at its lower end, of the shaft H, having a wire wheel on its outer end and mounted at its inner end in a bearing in the standards F, and the cross-bars I on the shaft, at opposite sides of the said bearing, and parts projecting from the bar J into the path of the bars I, substantially as set forth.

4. The combination, with the frame having the seed-boxes, the seed-slide, the bearings on the seed-boxes, the central standards, F, and the bearing G, pivoted between the standards, of the rotary shaft H, mounted at its inner end in the bearing E and resting near its outer end in one bearing on the seed-box, the wire wheel on the outer end of the shaft H, the cross-pieces I I on the inner end of the shaft, at opposite sides of the bearing E, the bar J, pivoted at its upper end to the standard F, connected at its lower end to seed-slide, and adapted to be vibrated from the shaft by the cross-bars I, substantially as set forth.

5. In a check-rower, the wire wheel O, formed in two sections, having central shaft-openings and radial ribs or projections O′ on their inner faces, and a pulley or roller, O^2, between said sections, having a round central aperture in alignment with the apertures of the two sections, substantially as set forth.

6. In a check-rower, the wire wheel O, formed in two sections, each having radial ribs O′ on their inner surfaces, and annular ribs O^2 at the inner ends of the ribs, and the pulley or roller O^2 within the bearing formed by the annular ribs O^2, substantially as set forth.

338,340. **MECHANISM FOR MAKING SPECTACLE-FRAMES.** SEBASTIAN SIANI DE FERRANTI, 5 Stanwick Road, West Kensington, County of Middlesex, England. Filed July 20, 1885. (No model.) Patented in England Dec. 8, 1884, No. 16,127.



Claim.—1. The combination, substantially as set forth, of the stationary die E, the movable die F, its actuating-lever, the stationary dies H H, the movable dies K K and their actuating-lever, whereby the main wire is operated upon, first to shape the bridge, and then to shape the rim portions at opposite sides of the bridge, as described.

2. The combination of the stationary die E, the movable die F, the stationary dies H H, provided with the recesses H′ H′, and the movable dies K K, substantially as and for the purpose set forth.

3. The combination of the rotating and reciprocating coiling-spindle having the cross-cut and incline at its outer end, the stop against which the outer end of the coiling-spindle abuts, the needle projecting from the coiling-spindle and entering a hole in the stop, the spring acting on the spindle, and a yielding clamp from which the wire passes under tension to the coiling-spindle, substantially as and for the purpose set forth.

4. The combination of the coiling mechanism, the yielding clamp from which the wire passes to the coiling mechanism, and the cutter between the clamp and coiling mechanism for severing the rim-pieces from the wire after coiling their ends, substantially as and for the purpose set forth.

5. The combination of the rotating and reciprocating tubular spindle into which the side arm of a frame passes, the fixed arm of the spindle, and the spring-actuated clamp carried by said fixed arm and movable toward and away from the spindle, for engaging the end of the rim-piece, substantially as and for the purpose set forth.

6. The combination of the rotating and reciprocating tubular spindle into which the side arm of a frame passes, the fixed arm of the spindle, the spring-actuated slider on this arm, the clamp carried by the slider for engaging the end of a rim-piece, and the clamp-tripping stop, substantially as and for the purpose set forth.

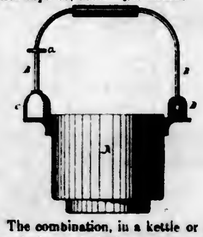
7. The combination of the reciprocating hammer, the anvil, and the sliding carriage for the spectacles having the rest for the side arm, as and for the purpose set forth.

338,341. **STOCKING.** THOMAS H. DODGE, Worcester, Mass. Filed June 20, 1885. (No model.)



Claim.—The herein-described article of manufacture, consisting of a stocking having the foot portion of a single thickness and the leg portion of two independent thicknesses separate from each other at the top and united at the bottom with each other and with the foot portion, as set forth.

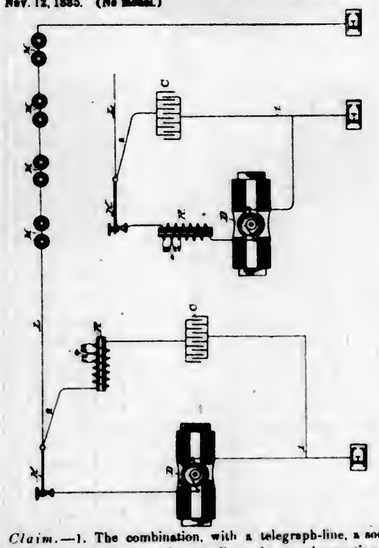
338,342. **RAIL FASTENING OR CLUTCH.** HIRAM W. EAMES, Milford, Mass. Filed Sept. 18, 1884. (No model.)



Claim.—1. The combination, in a kettle or other utensil having ears and a swinging bail attached thereto, of a tubular locking device having a hole of a size to receive the bail, and another hole or opening of a size to embrace or surround one of the ears when the bail is in a vertical position, and adapted to then automatically lock the bail thereto, all substantially as and for the purposes described.

2. The combination of a pot or kettle having ears, a swinging bail attached thereto having a stop, *a*, and the sliding sleeve C, all substantially as and for the purposes described.

338,343. **PRINTING-TELEGRAPH.** STEPHEN D. FIELD, New York, N. Y., assignor to the Commercial Telegram Company, same place. Filed Nov. 12, 1885. (No model.)



Claim.—1. The combination, with a telegraph-line, a source of electrical energy, and a circuit-controller, of a spark-arresting shunt around the circuit-controller and the source of electrical energy, a condenser in said shunt, and an electro-magnetic current-retarder in circuit both with the source of electrical energy and the condenser, substantially as set forth.

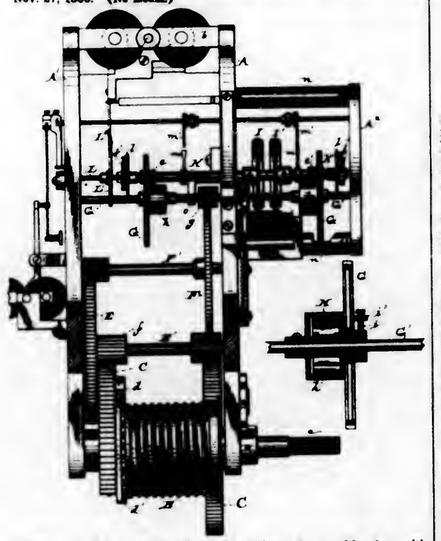
2. The combination, with a telegraph-line, a dynamo-electric machine supplying current thereto, and a circuit-controller, of a spark-arresting shunt around the circuit-controller and said dynamo-electric machine, a condenser in said shunt, and an electro-magnetic current-retarder in circuit both with the dynamo and the condenser, substantially as set forth.

3. The combination, with a telegraph-line, a source of electrical energy, and a circuit-controller, of a spark-arresting shunt around the circuit-controller and the source of electrical energy, a condenser in said

shunt, and an electro-magnetic current-retarder, also located in said shunt, substantially as set forth.

4. The combination, with a printing-telegraph line, the receiving electro-magnets, the transmitting circuit-controller, and the dynamo-electric machine, of a spark-arresting shunt around the transmitting circuit-controller and dynamo, said shunt including a condenser and an electro-magnetic current-retarder, substantially as set forth.

338,344. **PRINTING-TELEGRAPH.** STEPHEN D. FIELD, New York, N. Y., assignor to the Commercial Telegram Company, same place. Filed Nov. 27, 1885. (No model.)



Claim.—1. In a printing-telegraph receiver, the combination, with the main frame, of two power-trains located within such main frame, two type-wheels located together outside the main frame on one side thereof, and connections from such power-trains to the outer sides of the type-wheels, substantially as set forth.

2. In a printing-telegraph receiver, the combination, with the main frame, of two power-trains located within such main frame, and two type-wheels located together outside such main frame and between a side plate of said main frame and a bracket-plate supported therefrom, the shaft of one type-wheel extending into the space within main frame and connected with one train therein, and the final shaft of the other train extending outwardly to bracket-plate across both type-wheels and connected with shaft of outer type-wheel outside main frame, substantially as set forth.

3. In a printing-telegraph receiver, the combination, with the main frame, of two power-trains located within main frame, two type-wheels located together outside main frame on one side thereof, and carried by shafts sleeved on an escapement-shaft and connected therewith by pawls and ratchets, and connections from such power-trains to the type-wheel shafts outside of type-wheels, substantially as set forth.

4. In a printing-telegraph receiver, the combination, with a power-train and a type-wheel driven thereby, of a maintaining-spring interpolated in the train at the type-wheel end thereof, substantially as set forth.

5. In a printing-telegraph receiver, the combination, with a power-train and a type-wheel driven thereby, of a maintaining-spring interpolated in the train at the type-wheel end thereof, and a dog engaging the cog-teeth of one of the intermediate train-wheels, substantially as set forth.

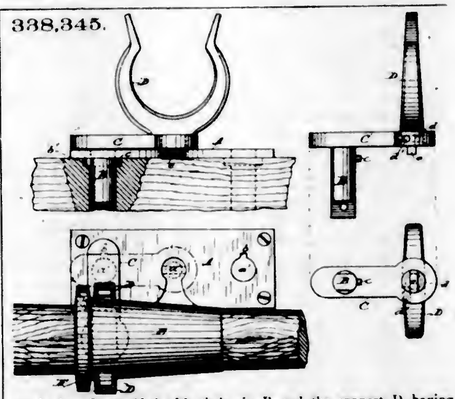
338,345. **ROWLOCK.** HENRY FINCH, Manistee, Mich. Filed June 10, 1885. (No model.)

Claim.—1. In a rowlock, the combination of a plate, A, provided with open-ended slot *a*, and the holes *a'*, having notch *b*, for the reception of the thole-pin B, provided with pin *c*, and the crank-plate C, having the revolving support D, arranged as shown and specified.

2. The combination of the plate A, constructed as shown, with the



338,345.



crank-plate C, provided with thole-pin B, and the support D, having groove *d*, into which the pin *d'* fits, and the flattened end *e*, all arranged as herein shown, and for the purpose set forth.

3. In a rowlock, the combination of a plate, A, provided with open-ended slot *a* and holes *a'*, having notch *b*, for the reception of the thole-pin B, provided with pin *c*, to lock the thole-pin with said plate, with the crank-plate C, having oar-support D, attached, as shown, by a swivel-joint, all arranged as and for the purpose specified.

4. In combination with the rowlock herein described, consisting of a plate, A, crank-plate C, having thole-pin B, and oar-support D, all constructed and applied as shown, the sleeve E, provided with collar F and secured to the oar, as and for the purpose specified.

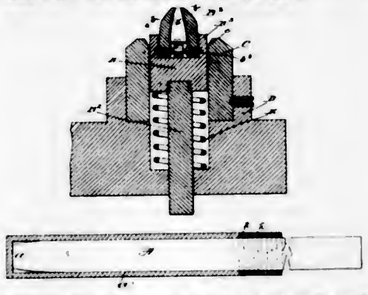
338,346. **SHEARS.** FRANK E. FRENCH, Laconia, N. H. Filed Oct. 21, 1885. (No model.)



Claim.—1. As a means of securing the blades of a pair of shears together, a chambered hub on one of said blades, in combination with a screw pivot-pin, a spring inclosed in said chambered hub and surrounding said screw-pin, and a non-revoluble nut fitted within the chamber of said hub, and constructed and arranged to be moved outward or inward to diminish or increase the tension of said spring by turning said screw pivot-pin, substantially as described.

2. A pair of shear-blades one of which is provided with a chambered hub having a slot or groove cut in its wall, in combination with a spring inclosed in said chambered hub, a nut provided with a radial projection to fit said slot or groove, and constructed and arranged to be moved outward or inward within the chamber of said hub, and a screw pivot-pin passing through both blades and the nut, all arranged and adapted to operate substantially as and for the purposes described.

338,347. **MANUFACTURE OF WASHERS.** CHARLES T. GRILLEY, Boston, Mass. Filed Nov. 30, 1885. (No specimens.)



Claim.—That improvement in the art or method of manufacturing circular washers which consists in cutting from leather an oval or other shaped ring having one of its outside diameters less than the outside diameter of the completed circular washer, and then forcing the same into true circular form by pressure, substantially as described.

338,348. **BOTTLE-STOPPER.** C. KENNEDY HAMILTON, Jr., New Brighton, N. Y. Filed Jan. 2, 1886. (No model.)

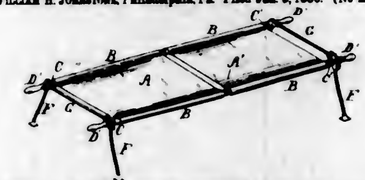
338,348.



Claim.—1. The combination, with the rubber plug C, of the stem E, having a head, D, and the top piece, F, to rest upon the bottle-neck, the follower G, above the rubber plug C, and mechanism, substantially as specified, acting between the top piece, F, and the follower G, to press the follower down and spread the rubber, substantially as specified.

2. The combination, with the rubber plug C, of the two-part stem E, having a head, D, to support the rubber, and the top piece, F, to rest upon the bottle-neck, the follower G, the lever H, and cam K, having eyes through which the top piece, F, passes, substantially as specified.

338,349. **STRETCHER FOR CONVEYING WOUNDED PERSONS.** WILLIAM H. JOHNSTONE, Philadelphia, Pa. Filed Jan. 5, 1886. (No model.)



Claim.—1. A folding stretcher composed of two bars, C C' C C', each in two halves, as shown, connected by a joint, D, sustaining between them a soft or yielding fabric, A A', the latter being provided upon the under side with two pockets, J J', to receive the ends of the disjointed halves of the bars C C' C C', whereby the same may be rolled up into a compact and close roll, substantially as described.

2. A folding stretcher composed of two bars, C C' C C', each in two halves, as shown, connected by a joint, D, sustaining between them a soft or yielding fabric, also in two parts, A A', each of said sections of fabric being provided with a pocket upon its under side, J J', to receive the ends of the disjointed halves of the bars C C' C C', whereby the stretcher mechanism may be rolled up into a compact and close roll, substantially as described.

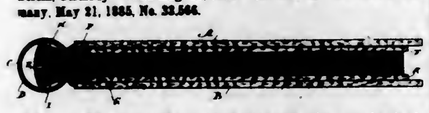
3. A folding stretcher composed of two bars, C C' C C', each in two halves, as shown, connected by a joint, D, sustaining between them a soft or yielding fabric, A A', the latter being provided upon the under side with two pockets, J J', to receive the ends of the disjointed halves of the bars C C' C C', and bands or straps L L, secured to the fabric A A', whereby the same may be rolled up into a compact and close roll and tied securely, substantially as described.

4. A folding stretcher composed of two longitudinal bars, C C' C C', each in two halves, as shown, connected by a joint, D, sustaining between them a soft or yielding fabric, A A', the lateral brace-bars G G, to hold the longitudinal bars C C' C C' apart, provided with rings E E, to slip over the ends of said longitudinal bars and legs F F, hinged, as shown, to fold the legs inwardly, and spring-latches H H, whereby the legs may be locked in position or released to be swung inwardly at pleasure, substantially as described.

5. A folding stretcher composed of two longitudinal bars, C C' C C', each in two halves, as shown, sustaining between them a soft or yielding fabric, A A', the lateral brace-bars G G, to hold the longitudinal bars C C' C C' apart, provided with rings E E, to slip over the ends of said longitudinal bars and legs F F, sockets F' F'', to receive the bars G G and the legs F F, hinged, as shown, to fold the legs inwardly, and spring-latches H H, whereby the legs may be locked in position or released to be swung inwardly at pleasure, substantially as described.

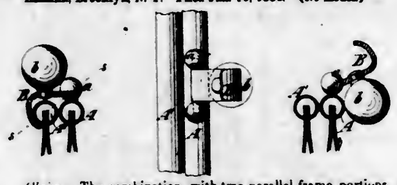
6. In a stretcher for wounded persons, the combination of the hinged socket-pieces F' F'', ring E, and hollow tubular legs or standards F F, substantially as and for the purpose described.

338,350. **BINDER FOR MUSIC, PERIODICALS, &c.** JOHN C. KOCH, Berlin, Germany. Filed Aug. 22, 1885. (No model.) Patented in Germany, May 21, 1885, No. 33,566.



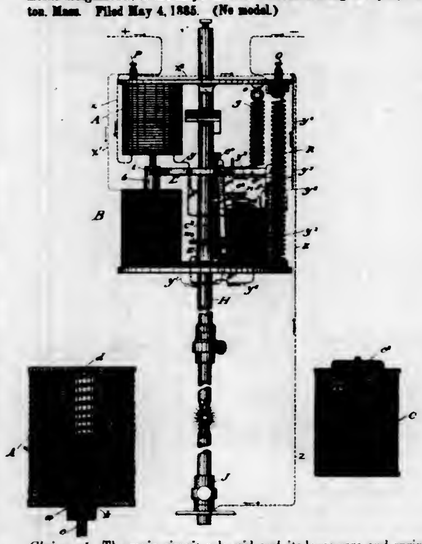
Claim.—The combination, with the binder having a spring-back, of the supplemental binder having the covers F G and strips H I united together, and the straps E passing across the back of the supplemental binder, substantially as specified.

338,351. **CLASP FOR SATCHELS AND POCKET-BOOKS.** OTTO A LEHMAN, Brooklyn, N. Y. Filed Jan. 16, 1886. (No model.)



Claim.—The combination, with two parallel frame portions, A A', of a satchel or pocket-book frame, of a clasp consisting of a hoop pivoted to the portion A and engaging directly with the portion A', the hook having its beak curved inward and rearward relatively to the shank, so that its point or outer extremity will pass beyond the point in the frame portion A' which is most distant in a direct line from the pivot of the book, substantially as herein described.

338,352. **ELECTRIC LAMP.** GEORGE A. MAYO, Lynn, assignor, by mesne assignments, to the Mayo Electric Manufacturing Company, Boston, Mass. Filed May 4, 1885. (No model.)



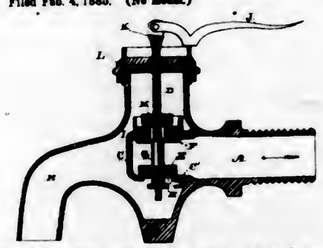
Claim.—1. The main-circuit solenoid and its loose core and spring, and the shunt-circuit solenoid and its core provided with the rod *c*, to be engaged by the core of the main-circuit solenoid when the lamp is not in circuit, and with a spring-held lever, a clutch, and a carbon-holding rod to be moved by the clutch to operate substantially as described.

2. In an electric lamp, the main-circuit solenoid, its loose core and spring to act against it, and the shunt-circuit solenoid, its core, the rod *c*, a lever to carry the core and rod, and a spring of sufficient strength connected with the said lever to overcome the magnetic force exerted by the shunt-circuit solenoid upon its core when the lamp is in circuit and the arc is abnormally small, and to be overcome by the said magnetic force when the arc is abnormally great, the force of the said spring being overcome by the spring acting upon the core of the main-circuit solenoid when the lamp is out of circuit, substantially as described.

3. In an electric lamp, an automatic safety or cut-out circuit containing a differential magnet, the coarse wire of which is in the main circuit and the fine wire in the shunt-circuit, an armature for the said magnet, and a terminal or back-stop, *n*, for the said armature, the said armature and back-stop forming the terminals of the cut-out circuit, combined with a resistance-coil, the said automatic safety or cut-out circuit being operated by the differential action of the main and shunt-circuits to cut out the lamp when the arc becomes abnormally great by reason of a failure of the carbons to feed, or a breaking of a carbon or other like cause, substantially as described.

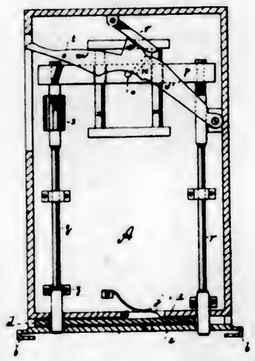
4. In an electric lamp, two solenoids, one in the main and the other in the shunt circuit, combined with a differential magnet and its armature, arranged, when not attracted, to close a safety or cut-out circuit, a part of the wire of the differential magnet being in circuit with the main solenoid, and another part of the said wire being in circuit with the shunt-solenoid, thus enabling the safety-circuit to be put into operation when the arc is abnormally long, substantially as described.

338,353. FAUCET. DAVID MORRIS and THEODORE MORRIS, San Francisco, Cal., assignors to the Morris Manufacturing Company, same place. Filed Feb. 4, 1885. (No model.)



Claim.—In a faucet adapted to be kept closed by the pressure of water from the main ingress and egress passages, an interposed diaphragm having an exit-opening and interior valve-seat in its lower portion, a second opening and exterior valve-seat in its upper portion, valves of different diameters united by a stem adapted to said discharge-openings, combined with a supplemental collar, E', secured to the valve-stem below the valve-seat, substantially as described.

338,354. SAFETY COLLECTING-BOX. OTTO NIELSEN, Jersey City, N. J. Filed Dec. 12, 1885. (No model.)



Claim.—1. The combination of box A, having pivoted bottom *d*, with box B, having pivoted cover *f*, and with bars *q r*, the bar *r* receiving vertical motion to lock said cover, and the bar *q* receiving vertical and rotating motion to oscillate said cover, substantially as specified.

2. The combination of box A, having pivoted bottom *d*, and bars *q r*, operated by beam *p* and lever *m*, with the box B, having cover *f*, adapted to be engaged by said bars, substantially as specified.

3. The combination of box A, having pivoted bottom *d*, with bars *q r*, having squared ends and attached to beam *p*, having pin *o*, and with lever *m*, having curved groove *n*, for the reception of such pin, the squared ends of bars *q r* being adapted to engage cover *f* of box B, substantially as specified.

4. The combination of box A, having pivoted bottom *d*, with bars *q r*, worm *s*, attached to bar *q*, beam *p*, connecting the bars, lever *m*, for operating the beam, and with pawl *v*, pivoted above the beam, substantially as specified.

5. The combination of box A, having vertically-movable rod *r* and vertically-movable and horizontally-revolving bar *q*, with the receiver B, having pivoted cover *f*, leg *l*, and catch *h i*, substantially as specified.

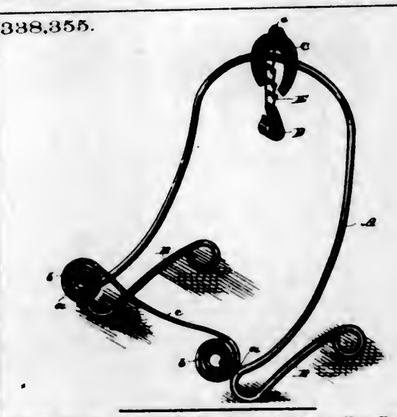
6. The combination of a depository having a pivoted bottom, with a receiver having a pivoted cover and a catch, and with a vertically-movable, and a vertically-movable and horizontally-revolving, rod within the depository to operate the catch and oscillate the bottom and cover, substantially as specified.

338,355. EASEL. GEORGE R. OSBORN and ARTHUR F. GREGORY, New York, N. Y. Filed Aug. 5, 1885. (No model.)

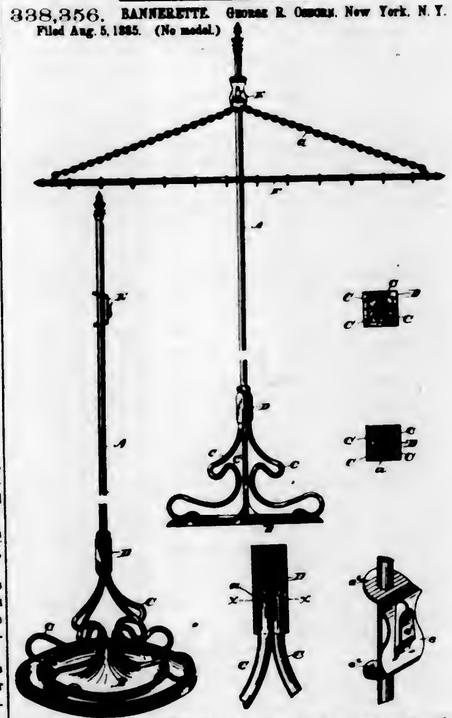
Claim.—1. In an easel, the combination, substantially as before set forth, of a fixed projection on the top of the back, and a chain-hook adapted to be suspended by any one of its links from the said projection.

2. An easel the legs of which are connected by a tie comprising rests, scroll-guards, and a rail elevated above the rests in front of the legs, substantially as before set forth.

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338,356. BANNERETTE. GEORGE R. OSBORN, New York, N. Y. Filed Aug. 5, 1885. (No model.)



Claim.—1. The composite base composed of the cast foot, the wire legs, and the coupling, substantially as before set forth.

2. The composite base composed of the cast foot, the wire legs, the coupling slipped on the upper ends of said legs, and the cross-pin for locking the legs to the coupling, substantially as before set forth.

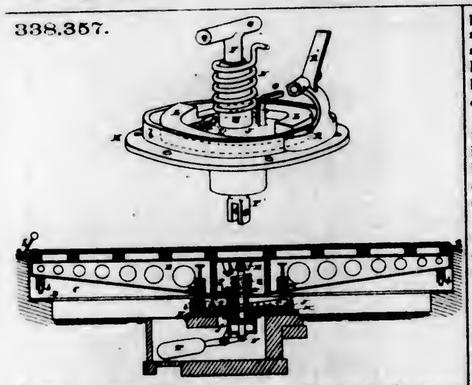
3. The combination, substantially as before set forth, of the described composite base, the staff, the adjustable self-clamping hook, and the suspended banner-rod.

4. The self-clamping hook composed of a body with a punched hook-bill and diverging perforated ears, substantially as before set forth.

338,357. TURN-TABLE. GEORGE T. PARRY, Philadelphia, Pa. Filed Oct. 13, 1885. (No model.)

Claim.—1. In an automatic turn-table, a truss supported upon a vertical pivot, in combination with a vertical pivot supporting the truss, counterbalancing devices to keep the truss normally in a raised position, and self-acting mechanism, substantially as described, to cause the truss to revolve by an excessive weight and reset itself in any position it may

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be upon the removal of the load, substantially as and for the purpose specified.

2. In an automatic turn-table, a pivoted truss, in combination with a vertical pivot supporting the truss, counterbalancing devices to keep the truss normally in a raised position, mechanism, substantially as described, to cause the truss to revolve upon its being pressed downward by an excessive weight, and a brake to control the rotation of the truss, substantially as and for the purpose specified.

3. In an automatic turn-table, a pivoted truss, in combination with a vertical pivot supporting the truss, counterbalancing devices to keep the truss normally in a raised position, mechanism, substantially as described, to cause the truss to revolve upon its being pressed downward by an excessive weight, and a brake to control the rotation of the truss, which is carried by the truss and extends up to within reach of the engineer on a locomotive standing upon the truss, substantially as and for the purpose specified.

4. In an automatic turn-table, a truss supported upon a vertical pivot, in combination with a vertical pivot supporting the truss, counterbalancing devices to keep the truss normally in a raised position, self-acting mechanism, substantially as described, to cause the truss to revolve upon its being pressed downward by an excessive weight and reset itself in any position it may be upon the removal of the load, and locks to lock the truss in position after it has made any desired portion of a revolution, substantially as and for the purpose specified.

5. In an automatic turn-table, a pivoted truss, in combination with a vertically-movable pivot supporting the truss, a counter-balance to keep the truss normally in a raised position, and a movable inclined-plane plate having one or more inclines, and rollers carried by the truss and adapted to run upon the inclines, substantially as and for the purpose specified.

6. In an automatic turn-table, a pivoted truss, in combination with a vertically-movable pivot supporting the truss, a counter-balance to keep the truss normally in a raised position, a movable inclined-plane plate having one or more inclines, and rollers carried by the truss and adapted to run upon the inclines, and mechanism, substantially as described, to turn the incline-plane plate always to a position where the highest part of the inclines are under the supporting-rollers upon the load being removed from the truss, substantially as and for the purpose specified.

7. In an automatic turn-table, a pivoted truss, in combination with a vertically-movable pivot supporting the truss, a counter-balance to keep the truss normally in a raised position, a movable inclined-plane plate having one or more inclines, and rollers carried by the truss and adapted to run upon the inclines, and mechanism, substantially as described, to turn the inclined-plane plate always to a position where the highest part of the inclines are under the supporting-rollers upon the load being removed from the truss, and a stop carried by the truss to arrest the rotation of said inclined-plane plate, substantially as and for the purpose specified.

8. In an automatic turn-table, a pivoted truss, in combination with a vertically-movable pivot supporting the truss, a counter-balance to keep the truss normally in a raised position, a movable inclined-plane plate having one or more inclines, and rollers carried by the truss and adapted to run upon the inclines, and mechanism, substantially as described, to turn the inclined-plane plate always to a position where the highest part of the inclines are under the supporting-rollers upon the load being removed from the truss, and a ratchet-and-pawl device to prevent rotation of the inclined-plane plate, except in one direction, substantially as and for the purpose specified.

9. In an automatic turn-table, a pivoted truss, in combination with a vertically-movable pivot supporting the truss, a counter-balance to keep the truss normally in a raised position, a movable inclined-plane plate having one or more inclines, and rollers carried by the truss and adapted to run upon the inclines, and mechanism, substantially as described, to turn the inclined-plane plate always to a position where the highest part of the inclines are under the supporting-rollers upon the load being removed from the truss, and a brake carried by the truss to control its rotation, substantially as and for the purpose specified.

10. The combination of a vertically-movable truss, B, having guide-wheels *b*, and rails, with the railway D and the main track Q, in which in the normal position of the truss where fully raised and free to swing in any horizontal position, the rails thereon are above the main tracks a distance equal to the height of the wheels *b* above the tracks D, substantially as and for the purpose specified.

11. In an automatic turn-table, the combination of the truss B, the vertical pivot F, the counter-balance T, bed-plate H, plate J, having one or more inclines, L, and rollers M, adapted to run upon the inclines and carried by the truss, substantially as and for the purpose specified.

12. In an automatic turn-table, the combination of the truss B, the vertical pivot F, the counter-balance T, bed-plate H, plate J, having one or more inclines, L, spring N, and rollers M, adapted to run upon the inclines and carried by the truss, substantially as and for the purpose specified.

13. In an automatic turn-table, the combination of the truss B, the vertical pivot F, the counter-balance T, bed-plate H, having ratchet I, plate J, having one or more inclines, L, pawl I', and rollers M, adapted to run upon the inclines and carried by the truss, substantially as and for the purpose specified.

14. In an automatic turn-table, the combination of the truss B, the vertical pivot F, the counter-balance T, bed-plate H, having ratchet I, plate J, having one or more inclines, L, spring N, pawl I' and stop O, and rollers M, adapted to run upon the inclines, and carried by the truss, substantially as and for the purpose specified.

15. In an automatic turn-table, the combination of the truss B, the vertical pivot F, the counter-balance T, bed-plate H, having flange h, plate J, having one or more inclines, L, and rollers M, adapted to run upon the inclines and carried by the truss, and brake R R', carried by the truss, substantially as and for the purpose specified.

16. In an automatic turn-table, the combination of the truss B, the vertical pivot F, the counter-balance T, bed-plate H, plate J, having one or more inclines, L, and rollers M, adapted to run upon the inclines, and carried by the truss, and anti-friction balls between the bed-plate H and plate J, substantially as and for the purpose specified.

338,358. ASBESTUS PACKING. RUFUS N. PRATT, Hartford, Conn. Filed Oct. 30, 1885. (No model.)



Claim.—1. The within-described process of forming asbestus or the like fibers into a mass for use as a packing, which consists in mixing them in a solution of india-rubber or the like adhesive gum, and then distributing the fibers while wet in molds, then removing the molded mass and alternately drying and pressing the mass, the final pressure being applied after the final thorough drying of the mass, all substantially as described.

2. The within-described process of forming a composition of asbestus and india-rubber or the like gum into a mass of uniform density while in a fibrous state, which consists in mixing the fibers with india-rubber in solution with naphtha or the like fluid, and then subjecting the mass to the alternate drying and pressing process, all substantially as described.

3. The within-described process of forming asbestus packing, which consists in distributing the fibers in a wet state in a mold of the desired shape, next removing it from the mold for drying, and then subjecting it to pressure, and repeating these drying and pressing operations in alternation until the mass is compressed to the desired density, all substantially as described.

4. The within-described process of forming packing-rings of asbestus fiber, which consists in distributing the fibers in a wet state about the removable core in the forming-chamber, then compressing the mass with a tubular plunger, then removing the ring and partly drying it, then subjecting it to further pressure within the forming-chamber, and continuing these drying and pressing operations in alternation until the mass is compressed to the desired thickness, all substantially as described.

338,359. APPARATUS FOR DRAWING WIRE. JACOB REESE, Pittsburg, Pa. Filed Mar. 17, 1884. (No model.)

Claim.—1. The combination, with a delivering drum or reel, of a die-frame, a two-part die, a weighted lever, a cooling device, and a receiving-drum, substantially as set forth.

2. A cooling-pipe provided with a longitudinal slot to admit the in-

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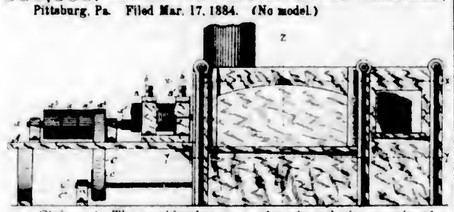
section of the rod or wire, and having a stop-plate to close the same and prevent the escape of the cooling medium, substantially as herein described.

3. In a wire-drawing plant, the combination, with a two-part die and a weighted lever, for the purpose described, of a cooling device, substantially as described, for abstracting the heat from the wire after its passage through the two-part die, substantially as set forth.

4. In a wire-drawing plant, the combination, with a furnace having an opening, of a delivering-reel located in said furnace, a two-part die through which the wire is adapted to pass, and a receiving-drum, substantially as set forth.

5. The combination, with a furnace having an opening, of a delivering-reel located therein, a two-part die through which the wire is adapted to pass, a cooling-pipe having an elongated opening, a plate fitting therein, and a receiving-drum, substantially as set forth.

338,360. MACHINE FOR ROLLING METAL RODS. JACOB REESE, Pittsburg, Pa. Filed Mar. 17, 1884. (No model.)



Claim.—1. The combination, in a plant for reducing metals, of a set of reducing-rolls with rotatable drums, tubs, and caps or covers for the drums, substantially as set forth.

2. The combination, in a plant for reducing metal, of a set of reducing-rolls with rotatable drums, rotatable tubs surrounding the lower ends of the drums, and caps or covers for the drums, substantially as set forth.

3. The combination, with a heating-chamber, of rotatable drums or reels located therein, and rotatable tubs surrounding the lower ends of the drums, substantially as set forth.

4. The combination, with a set of reducing-rolls, of rotatable drums or reels, and tubs surrounding the lower ends of said reels, and caps or covers for said drums and tubs, substantially as set forth.

5. The combination of the rolls, the front and rear roll-guides, and the front and rear guiding-pins for guiding the metal in line with the entry sides of the roll-guides, substantially as set forth.

6. The combination of the rolls, the front and rear roll-guides, the front and rear guiding-pins, a delivering guiding trough or tube, and a drum or reel, substantially as set forth.

7. The combination of the rolls, the roll-actuating mechanism, the front and rear roll-guides, and the guiding-trough with the receiving and delivering drums or reels, substantially as set forth.

8. The combination of the main driving-shaft with the supplemental driving-shaft, gears E D C^4, the movable gears c^2 d^2, and the lever pivoted midway between said gears c^2 d^2, substantially as set forth.

9. The combination of the main driving-shaft with the supplemental driving-shaft, gears E D C^4, and the movable gears d^2 c^2, substantially as set forth.

10. The combination of the main driving-shaft, the supplemental driving-shaft, and its pinion with the anxiliary driving-shafts, pinions D E, adjustable gears d^2 c^2, and adjusting-lever C, substantially as set forth.

11. The combination, with a shaft, of a tub fitted thereon to revolve therewith, a reel on the shaft and secured to the tub, and a dished cap or cover for the tub and reels, substantially as set forth.

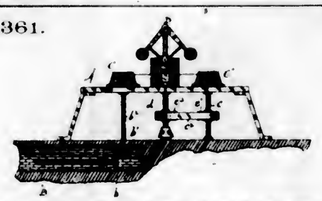
12. The combination, with a furnace and revolnble reels or drums therein, of a set of reducing-rolls and a guiding trough or tube having a bent end, substantially as set forth.

338,361. MACHINE FOR REDUCING WIRE. JACOB REESE, Pittsburg, Pa. Filed Mar. 17, 1884. (No model.)

Claim.—1. The method herein described for drawing metals, which consists, essentially, in drawing the metal through a two-part die or equivalent compressing mechanism adapted and adjusted to bring a tensile strain upon the metal above its elastic limit, but below its point of rupture, while passing from the dies to the receiving drum or spool.

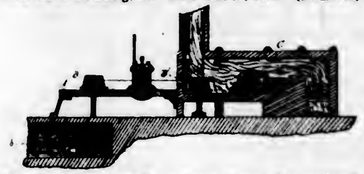
2. The combination, in a machine for drawing wire, of the two-part dies, the die-frame provided with an aperture through its base for

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the reception of the end of a lever, and the die-adjusting lever, constructed and arranged to operate substantially as herein set forth.

338,362. APPARATUS FOR REDUCING METAL RODS OR WIRE. JACOB REESE, Pittsburg, Pa. Filed Mar. 17, 1884. (No model.)

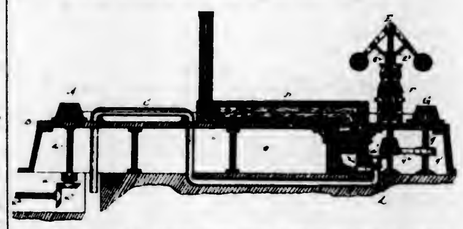


Claim.—1. In a plant for reducing metals, the combination, with delivering and receiving spools, of an intermediate set of reduction-rolls revolved solely by the moving wire, substantially as set forth.

2. In a plant for reducing metals, the combination, with delivering and receiving spools, of an intermediate set of reduction-rolls revolved solely by the moving wire, and a roll guide-box located between the delivering and receiving spools, substantially as set forth.

3. In a plant for reducing metals, the combination, with a set of reducing-rolls, of a pipe for conveying a cooling agent to the heated metal after its passage from the rolls, substantially as set forth.

338,363. APPARATUS FOR DRAWING WIRE, STRIPS, OR RODS. JACOB REESE, Pittsburg, Pa. Filed Mar. 17, 1884. (No model.)



Claim.—1. In a wire-drawing plant wherein the wire is reduced while passing through a heating medium, the combination, with a furnace, of a valve for regulating the supply of air thereto, and controlled by an automatic regulating device operated from the rotative movement of the delivering-reel, substantially as set forth.

2. In a wire-drawing plant, the combination, with a wire-drawing pulley and a set of wire-compressing dies, of a heating apparatus arranged between said pulley and the compressing-dies, substantially as set forth.

3. In a wire-drawing plant, the combination, with a set of compressing-dies, of a die-pressure-regulating device, substantially as described, adapted to be regulated by the rotative movement of the wire-delivering reel, substantially as set forth.

4. In a wire-drawing plant, the combination, with a drawing-pulley and a delivering-pulley, of a wire-heating device arranged between them, and a set of wire-compressing dies, substantially as set forth.

338,364. APPARATUS FOR THE MANUFACTURE OF PAPER. CHARLES J. RICHARDSON, Team Valley Paper Mills, Gateshead-on-Tyne, England. Filed Jan. 12, 1885. (No model.)

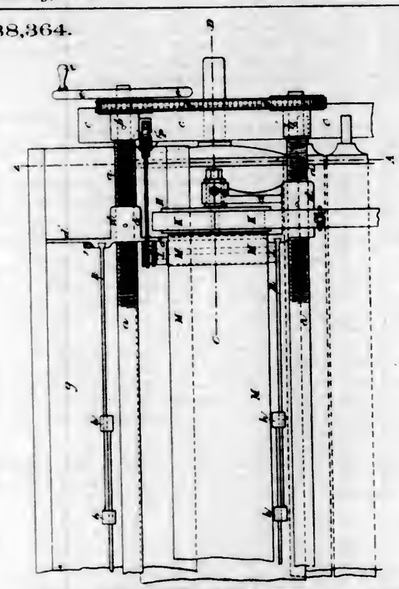
Claim.—1. The combination of the deckle-frames *d* and the screwed bars *a*, or equivalent parts, which move the two deckle-frames simultaneously in opposite directions.

2. The combination, with the apron M, of movable rollers L, and cords and weights O and P, or equivalent parts, which keep the apron strained between the rollers.

3. The combination, with the deckle-frames *d*, of the jointed slices R R.

4. The combination of the deckle-frames, the gear connecting the deckle-frames, the apron, and mechanism carried upon the deckle-frames which spreads and rolls up the apron, substantially as described.

338,364.

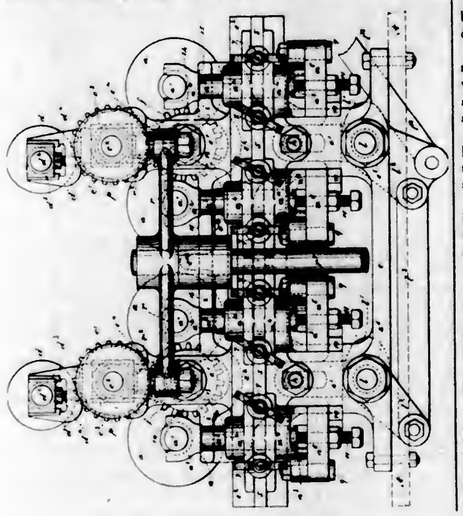


338,365. MANUFACTURE OF SALICYLIC-ACID COMPOUNDS. RUDOLF SCHMITT, Dresden, Saxony, assignor to Dr. F. Von Heyden Nachfolger, Radebeul, near Dresden, Germany. Filed July 13, 1885. (No specimens.) Patented in England July 15, 1884, No. 10,167; in Germany May 10, 1885, No. 33,635; in Luxemburg May 15, 1885, No. 533, and in Belgium May 18, 1885, No. 68,902.

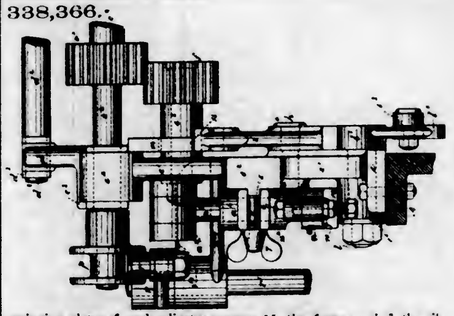
Claim.—The process of obtaining salicylic-acid substitutes, which consists in first treating the substituted phenolates of the alkalies and of the earthy alkalies with dry carbonic acid for the production of substituted phenyl carbonic alkalies and earthy alkalies, and afterward treating the salts thus formed in a hermetically-closed apparatus from about 120° to about 140° centigrade for their conversion into substituted salicylic salts without any separation of phenol, substantially as specified.

338,366. INKING APPARATUS FOR PRINTING-MACHINES. WALTER SCOTT, Plainfield, N. J. Filed June 2, 1884. (No model.)

Claim.—1. The combination, with the distributing and inking rollers and their shafts, of the jaws a^3 and jaw-rods a^3, the stocks a^4, grooved and having flanges that project laterally from said stock, the



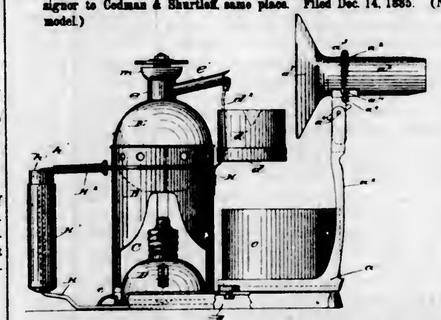
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swinging plates a^6, and adjusting-screws 11, the frames e e' e^2, the ribs 5 upon the surfaces of said frames for the grooved stocks a^4 to slide upon, the clamping-screws 6, projecting from said ribs 5, and nuts 7 upon said screws, substantially as specified.

2. The combination, with the composition inking-rollers, and the ink-distributing roller above them, of vertical rods with jaws for the journals of the inking-rollers, stocks through which the rods pass, and adjusting-screws and swinging plates for supporting and adjusting the vertical rods and for lowering the jaws for the removal of the rollers, substantially as set forth.

338,367. ATOMIZER. ASAHEL M. SHURTLEFF, Boston, Mass., assignor to Codman & Shurtleff, same place. Filed Dec. 14, 1885. (No model.)



Claim.—1. In an atomizer, the combination, with the boiler and its safety-valve located in the top portion thereof, of a substantially non-heat-conducting strip or cross-piece, as described, connected with the safety-valve by which it is removed, all substantially as set forth.

2. In an atomizer, the frame or stand combined with a handle, both ends of which are pivoted to turn about a center of motion coincident to the center of the frame, substantially as described.

3. In an atomizer, the combination, with the base-plate A and stand B, of a handle, H, one end of which passes around the stand B, while its opposite end is pivoted to the base-plate A, the latter having a recess cut in its under side in which the handle moves, substantially as and for the purpose described.

4. In an atomizer, the combination, with the boiler E, of the following elements all made in a single piece, viz: the neck *e*, the outlet-tube e', nozzle-protector e^3, and ear or support e^4, all substantially as described.

5. In an atomizer, the combination, with the boiler E, of the following elements all made in a single piece, viz: the neck *e*, its funnel, the outlet tube e', nozzle-protector e^3, and ear or support e^4, all substantially as described.

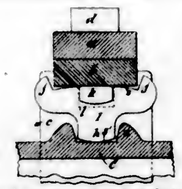
6. In an atomizer, the combination, with the boiler E, of the following elements all made in a single piece, viz: the neck *e*, its outlet-tube e', and ear or support e^4, all substantially as described.

7. In an atomizer, the combination, with the frame or stand, of a handle, H, connected therewith, the said handle having the hand-pieces H' and H^2, to operate substantially as described.

338,368. CAR-TRUCK. WILLIAM H. H. SMITH, Brooklyn, N. Y. Filed June 29, 1885. (No model.)

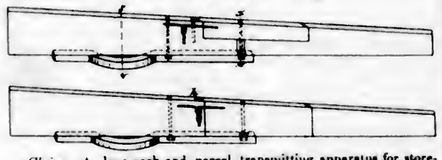
Claim.—The combination, with axles, of journal-boxes inclosing bearings operating in conjunction with the axles, so as to move with the latter in the direction of their length, frames provided with slideways in which the journal-boxes and axles may move in the direction of the lengths of the axles, and rockers arranged upon the tops of the journal-boxes and supporting the said frames, said rockers having arc-shaped or

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approximately arc-shaped upper and lower surfaces, and seats for the rockers located upon the tops of the journal-boxes, and having flat bottoms, substantially as specified, whereby, when the axles and journal-boxes are moved laterally with relation to the said frames, the said frames will be raised.

338,369. CASH AND PARCEL TRANSMITTING APPARATUS FOR STORE-SERVICE. NORMAN W. STEARNS and CHARLES GRANT, Jr., Boston, Mass. Filed Jan. 18, 1886. (No model.)



Claim.—1. In a cash and parcel transmitting apparatus for store-service, &c., a track having the vertical distance between its upper and lower surfaces at one station different from that between said surfaces at another station, in combination with a series of non-graduated devices located at the stations—*i. e.*, devices of unvarying size and form for all stations—and a series of carriers provided with gradnated devices, in order that the carriers may be arrested or derailed thereby at their respective stations, according to the class of carrier employed.

2. A track having its upper surface inclined and its lower surface so located as not to be parallel therewith, and a series of non-graduated devices located at the several stations thereof, in combination with a series of carriers provided with graduated devices to come into contact with the non-graduated station devices, for the purposes described.

3. A track having its upper surface inclined and its lower surface horizontal, in combination with a series of non-graduated station devices and a series of carriers having graduated devices, each arranged to coact only with the non-graduated device located at the station to which the carrier belongs.

4. A track having its upper surface composed of two or more inclines and its lower surface so located that the distance measured from any point of an incline at one station vertically down to the lower surface of the track will not be the same as or correspond to a similar vertical measurement taken at another station, in combination with a series of non-graduated track or station devices and a series of graduated carriers, which, according to the class (of carrier) employed, may be either automatically stopped or automatically derailed at their respective stations.

5. A single-rail track whose upper surface is composed of inclined and horizontal portions, a series of non-graduated track devices, and a series of graduated carriers, which come into contact therewith, for the purpose specified.

6. A track composed of two rails—one located above the other—the upper surface of the upper rail having the whole or a portion thereof inclined, and the lower surface of the lower rail located in a line not parallel with an incline of the upper rail, in combination with non-graduated devices located at the stations of the track, and a series of graduated carriers stopped or derailed thereby, for the purpose set forth.

7. A gradnated or inclined track of the class described, having located at a carrier-station a pivoted track-section and a non-graduated device connected therewith, in combination with and actuated by a graduated carrier belonging at said station, whereby said track-section is swung out of line with the contiguous stationary portions of the track, to permit of the derailment of the carrier, substantially as described.

8. A series of permanently-fixed non-graduated devices, in combination with a track of the class described, and carriers so constructed that the wheel or wheels of each carrier are capable of being swung automatically out of their upright normal position, in order that the carrier may be derailed at the station to which it belongs, substantially as specified.

9. A graduated or inclined track of the class described, having a carrier-station provided with a pivoted track-section and a non-graduated device pivoted to the track either thereunder or at its side, and pivoted to the track-section at or near its upper or contiguous end, said track-section being pivoted at its lower end to the track, in combination with a gradnated carrier belonging to said station, for swinging the track-section out of line with the contiguous stationary portions of the track to permit of the derailment of the carrier.

10. A series of pivoted track-sections formed by cutting part way through the rail of a track of the class herein described, and a series of non-graduated arms connected therewith, in combination with a series of gradnated carriers to be derailed at the stations where the track-sections are located, as specified.

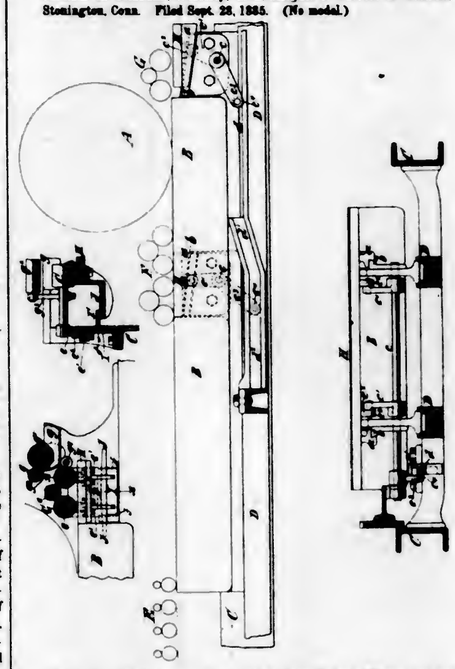
11. A pivoted track-section formed by cutting through the rail of a track of the class described from the top to the bottom thereof, in combination with one of a series of non-graduated track devices and one of a series of graduated carriers coacting therewith.

12. A graduated or inclined track embodying the feature of our herein-described invention, a series of non-gradeated devices, *m n m*, pivoted thereto or to the track-supports or other objects located at the stations, in combination with a series of graduated carriers belonging thereat, for the purpose set forth.

13. A graduated or inclined track embodying the feature of our herein-described invention, a series of non-graduated devices, *m n m*, pivoted thereto or to the track-supports or other objects located at the stations, in combination with a series of wheel-carriers having gradnated devices *f* or flanges *s*, for the purpose described.

14. A graduated or inclined track embodying the feature of our invention herein described, a series of fixed inclines, pins, projections, or other devices integral therewith or secured thereto or to the track-supports or other suitable objects located at the stations, in combination with a series of wheel-carriers having gradnated flanges or other graduated devices, for the purpose specified.

338,370. INKING APPARATUS FOR LITHOGRAPHIC MACHINES. CHARLES A. STILLMAN, Westerly, R. I., assignor to Calvert B. Cottrell, Stonington, Conn. Filed Sept. 28, 1885. (No model.)



Claim.—1. The combination, with the impression-cylinder and bed and distributing-rollers arranged at one side of the cylinder, of wetting-rollers arranged on the opposite side of the cylinder, and an ink-table carried by the bed, the wetting-rollers and ink-table having one of them a rising and falling movement relatively to the other, whereby contact of the ink-table with the wetting-rollers is avoided, substantially as herein described.

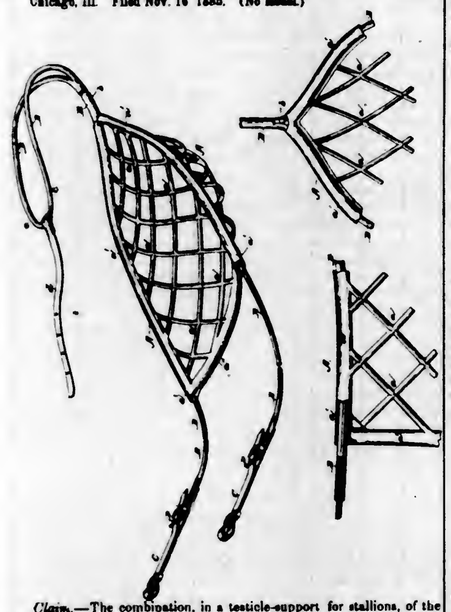
2. In a printing-press, the combination, with the impression-cylinder and bed and with wetting and distributing rollers arranged at opposite sides of the cylinder, of an ink-table carried by the bed and having a rising and falling movement, whereby it is caused to make contact with the distributing-rollers as it passes beneath them, and to avoid contact with the wetting-rollers as it passes beneath the latter, substantially as herein described.

3. In a printing-press, the combination, with the impression-cylinder and bed and with the distributing and wetting rollers, of bearers at the rear end of the bed, having a downward and rearward inclination,

an ink-table fitted to and movable upon said bearers, a stationary cam extending lengthwise of the bed, and connections, substantially such as described, carried by the bed and operated by said cam to move the ink-table upon its bearers, whereby said table is caused to make contact with the distributing-rollers and to avoid contact with the wetting-rollers, substantially as herein described.

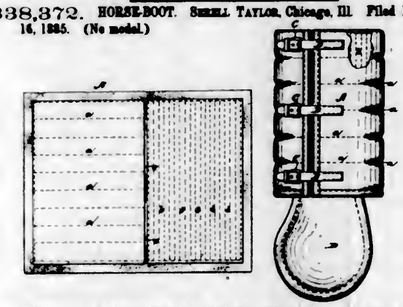
4. In a printing-press, the combination, with an impression-cylinder and distributing and wetting rollers, of a bed having inclined bearers carried by it, the ink-table H, fitted to said ways or bearers, the rock-shaft e and its arms c' c^2, and the stationary cam d' d^2, operating through said rock-shaft and arms to move the ink-table, substantially as herein described.

338,371. STALLION-TESTICLE SUPPORTER. SEBELL TAYLOR, Chicago, Ill. Filed Nov. 16 1885. (No model.)



Claim.—The combination, in a testicle-support for stallions, of the net-like pouch A, made of rubber and having tabular edges, and the non-elastic supporting-cords B B, coated with rubber, and passing freely through the said edges, substantially as and for the purposes specified.

338,372. HORSE-BOOT. SEBELL TAYLOR, Chicago, Ill. Filed Nov. 16, 1885. (No model.)



Claim.—1. A horse-boot in which the roll consists of a part folded upon itself and having on its outer side the horizontal stitches *a a*, and on its inner side the vertical stitches *b b*, substantially as and for the purposes specified.

2. The combination, substantially as specified, in a horse-boot, of the roll A, folded upon itself and having therein the slit or slot E, and the shield D, entering the said slit and attached to the roll, for the purposes set forth.

338,373. METHOD OF MAKING BUTTONS. JAMES F. THAYER, Providence, R. I. Filed Oct. 9, 1885. (No model.)

Claim.—1. The method herein described of making a leather or analogous button having an eye, the same consisting in passing a doubled

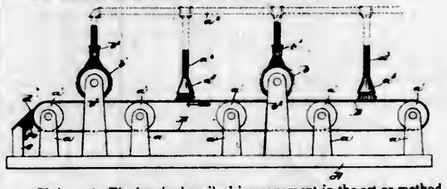
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wire through the leather or compressible front, then embedding the prongs into the top or face of said front and shaping the latter at one and the same operation, and, finally, enlarging or expanding the doubled wire to form an eye, substantially as set forth.

2. The method herein described of making a leather or analogous button having an eye, the same consisting in passing the closed end c^4 of a doubled wire, C, having bent ends c^3, down through the leather blank or front, and embedding said ends c^3 therein, then forming or shaping the head B, and subsequently expanding the doubled end c^4, to produce an eye, c^5, substantially as set forth.

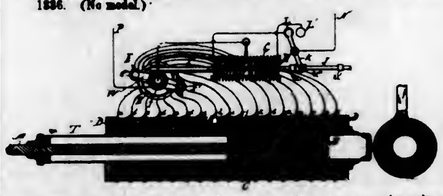
338,374. METHOD OF MANUFACTURING GLUE. KIDD UPTON, Salem, Mass. Filed Nov. 23, 1885. (No model.)



Claim.—1. The herein-described improvement in the art or method of manufacturing glue, which consists in applying the hot liquid glue upon a receiving-surface in successive thin layers, substantially as described.

2. The herein-described improvement in the art or method of manufacturing glue, which consists in applying the hot glue in a liquid state to a receiving-bed in successive thin layers, whereby each layer becomes partially dried before the next successive layer is applied, and removing the resultant layer from the receiving-bed, substantially as described.

338,375. ELECTRO-MAGNETIC RECIPROCATING ENGINE. CHAS. J. VAN DEPOELE, Chicago, Ill. Filed Feb. 7, 1885. Renewed Feb. 24, 1886. (No model.)



Claim.—1. In an electric engine, a main electromotor, and a minor electromotor acting independently of said main motor, in combination with a current-controller operated by said minor motor, substantially as described.

2. The combination, in an electric engine, of a main core, a solenoid composed of coils acting on the core in opposite directions alternately, and a minor motor acting independently of the main core and solenoid, with a current-controller operated by said minor motor, substantially as described.

3. In an electric engine, a main traveling core, a solenoid composed of a series of individual coils acting on said core, connected to a commutator, and a minor electromotor acting independently of said main core, in combination with said commutator, and brushes acting thereon and moved by said minor motor, substantially as described.

4. In an electric engine, a traveling core, a solenoid acting on said core, composed of a series of individual coils arranged side by side and connected to a commutator, in combination with said commutator, brushes acting thereon, and an electromotor operating said brushes and working independently of said traveling core, substantially as described.

5. In an electric engine, a traveling core, a series of individual coils acting on said core and connected to a commutator, in combination with brushes acting on said commutator, and a secondary core and solenoid for giving motion to said brushes, substantially as described.

6. In an electric engine, a traveling core, a solenoid acting on the same, composed of a series of individual coils connected to a commutator, in combination with brushes acting on said commutator, a secondary core and solenoid for operating said brushes, and a circuit-controller operated by the movement of the secondary core, substantially as described.

7. In an electric engine, a core and a solenoid acting thereon, composed of a number of individual coils mounted side by side and connected to a commutator, in combination with said commutator and a secondary electromotor, and brushes moved upon said commutator by

means of said secondary electromotor, operating independently of the main or working core, substantially as described.

8. In an electric engine, a sectional solenoid provided with a commutator, the sections of which correspond to the sections of the solenoid, and a plunger operated by said solenoid, in combination with an independent motor, a pair of brushes moved upon the commutator by means of said independent motor, and means, substantially as described, for regulating the speed and stroke of the plunger in the sectional solenoid, substantially as described.

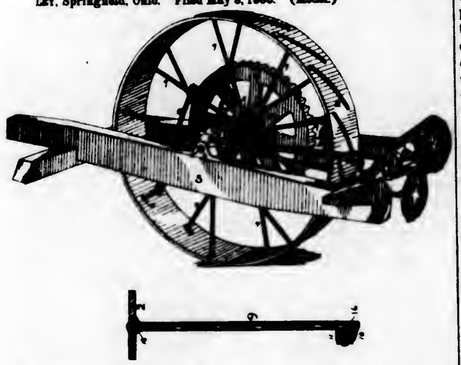
9. In an electro-magnetic engine, a solenoid mounted upon a diamagnetic tube having longitudinal slots extending the whole length of the solenoid, in order to expose the moving plunger to the direct action of the solenoid to increase its power, substantially as described.

10. In an electro-magnetic engine, a solenoid mounted upon a perforated diamagnetic tube, substantially as and for the purpose specified.

11. The combination, in an electromotor, of the rod J, operated by said motor, and provided with the adjustable rings *a a'*, with a current-controller, K, moved by said rings, substantially as described.

12. The combination, in an electric engine, of the core B, the solenoid C, for operating said core, and having its sections connected to a commutator, with the secondary solenoid G, the secondary core H, for operating the brushes of the commutator, and the current-controller operated by the motion of the secondary core, substantially as described.

338,376. **MAIN WHEEL FOR HARVESTERS.** WILLIAM N. WHEELET, Springfield, Ohio. Filed May 8, 1885. (Model.)



Claim.—1. In a driving or carrying wheel, a metallic rim and a hub composed of a main sleeve and a sliding flanged sleeve, 10, and straining-bolts connecting the sleeve, and combined with spokes provided at the outer ends with tenons and shoulders and secured to the wheel-rim, and the inner ends with L-heads set in sockets tangential to the axis thereof, whereby when the parts of the hub are drawn together or relaxed said L-heads will partly rotate in their sockets without cramping, substantially as set forth.

2. In a trussed driving or carrying wheel, a contractile hub composed of a main sleeve, 6, and a sliding flanged sleeve, 10, and a detachable gear-wheel, in combination with the tension-bolts 13, which pass through said gear and the flanges of the hub, as and for the purpose set forth.

3. A driving or carrying wheel rim and spokes 9, each having an L-shaped end, 16, in combination with adjustable flange 10, sleeve 6, and straining-rods 13, as shown and described, for the purposes set forth.

4. A driving or carrying wheel and draft-rod 18, combined with a gear-wheel detachable from said driving-wheel and its contractile hub, and the straining-bolts 13, whereby the gear-ring is attached and the wheel is strained by the same bolts, for the purposes set forth, substantially as shown and described.

5. In an expanding wheel, the spokes set in radial planes, or nearly so, with axis of an expanding and contracting hub, and with the hook ends in a plane transverse to the axis, for the purpose set forth.

338,377. **BUTTON AND FASTENING.** ERASTUS P. WHITNEY, New York, N. Y. Filed May 14, 1885. (No model.)



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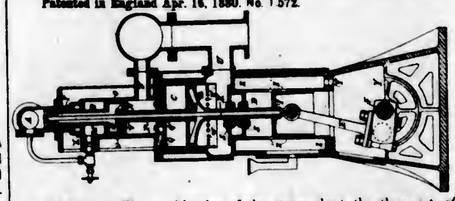
Claim.—1. A button-head having an interior cavity and a slot in its bottom communicating with said cavity, in combination with a detachable shank which is held in said cavity through said slot, and a spring-actuated locking-latch within said cavity, which stands normally across said slot, is displaced by the insertion of the shank, and automatically resumes its normal position across the slot when the shank is inserted, whereby said shank is retained in said cavity, substantially as set forth.

2. A button-head provided with an interior cavity and with a slot in its bottom communicating with said cavity, in combination with a shank having an eye or loop, whereby it is secured to the fabric, an enlarged head and elongated point, which head and point are inserted in said cavity through said slot and take over the inner margin of said slot, and means for locking said shank in said button-head, substantially as set forth.

3. A button-head provided with an interior cavity and with a slot in its bottom communicating with said cavity, said slot having an enlargement at one end thereof, in combination with a detachable shank having an elongated point which passes through the body or narrower portion of said slot and is held within the cavity beyond the termination of the slot, and an enlarged head which is inserted through the enlargement of the slot and engages the margins of the body of the slot, a latch pivoted within said cavity, and a spring which normally holds said latch in the position across said slot to act as a stop behind the shank, substantially as set forth, whereby the detachment of the shank from the button-head is prevented.

4. A button-head and a shank detachably secured thereto, said shank having an eye or loop whereby it is held to the fabric, in combination with an elastic ball beneath the fabric having a perforation extending therethrough, and through which perforation said loop is passed before the shank is secured to the button-head, substantially as set forth.

338,378. **MOTIVE-POWER ENGINE.** PETER W. WILLIAMS, Thames Ditton, County of Surrey, England. Filed Feb. 24, 1885. (No model.) Patented in England Apr. 16, 1880, No. 1572.



Claim.—1. The combination of the steam-chest, the three sets of high-pressure and low-pressure cylinders, their pistons, the piston rods or rams fixed to the pistons and constituting steam-admission valves, the main shaft, its cranks, rods by way of which the cranks have connection with the pistons of the high and low pressure cylinders, and the steam-passages leading from the high-pressure cylinders to the low-pressure cylinders, substantially as and for the purpose set forth.

2. The combination of the steam-chest, the three sets of high-pressure and low-pressure cylinders, their pistons, the piston-rods constituting valves, the cranked main shaft, the connecting-rods, the steam-passages between the high-pressure and low-pressure cylinders, and the steam passages and cocks for admitting steam continuously from the steam-chest to the high-pressure cylinders, substantially as and for the purpose set forth.

3. The arrangement of the covers of the low-pressure cylinders, the same being received into sockets at the upper ends of the cylinders, and kept in place by the casting above, of which the high-pressure cylinder forms part, substantially as described.

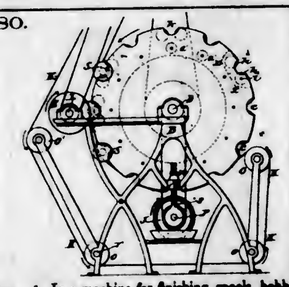
338,379. **BARREL-HEAD.** JAMES R. ALLSHE, Indianapolis, Ind. Filed Jan. 2, 1886. (No model.)



Claim.—A barrel-head consisting of two or more sections having corresponding grooves in their adjacent edges, with connecting-strips extending across the joints into the corresponding grooves of adjacent sections, each strip consisting of veneer having its grain running across the joint between the sections, substantially as set forth.

338,380. **MACHINE FOR PAINTING BOBBINS, &c.** LUTHER C. BALDWIN, Manchester, N. H. Filed June 19, 1885. (No model.)

338,380.



Claim.—1. In a machine for finishing spools, bobbins, and other like articles, the revolving drum or carrier A, having enlarged heads H H, with anti-friction rolls *h h*, set in their circumferences for receiving, supporting, and carrying the articles to be finished, substantially as set forth.

2. The work-rotating friction-belt K K K K, arranged to partly encircle the drum A and impart rotary motion to whatever articles may be placed upon the anti-friction rolls *h h* of the drum A, substantially as shown.

3. The combination of the revolving drum or carrier A, having work-supporting anti-friction rolls *h*, fixed in the circumferences of its enlarged ends or heads, with the work-rotating belt K K K K, as shown and described.

4. The drum or carrier A, having enlarged ends or heads H H, with rollers *a a* set between them at equal intervals, said rollers being armed with bobbin or other work-carrying spindles or mandrels, (see Figs. 2 and 3, *b b*,) substantially as shown.

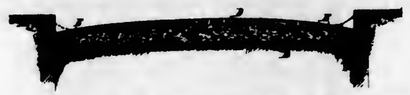
5. The revolving drum or carrier A, having rollers *a a*, armed with bobbin or other work-carrying spindles or mandrels *b b*, in combination with the work-rotating friction-belt K K K K, essentially as described.

6. In machines for finishing spools, bobbins, and other like articles, the smoothing wheels or rubbers E E *e e*, or the smoothing-belt *l*, in combination with the revolving drum A, furnished with anti-friction rollers *h h*, or armed with projecting spindles or mandrels *b b*, and the work-rotating belt K K K K, as and for the purpose set forth.

7. In an apparatus for painting spools, bobbins, and other like articles, the revolving paint brush or brushes J, in combination with a revolving drum or carrier, A, provided with anti-friction work-supporting rolls *h h*, or armed with work-supporting spindles *b b*, and the work-rotating friction-belt K K K K, substantially as shown and described.

8. In an apparatus for finishing spools, bobbins, or other like articles, the combination of the revolving drum or carrier A, furnished with work-supporting anti-friction rollers *h h*, or work-supporting spindles or mandrels *b b*, the device for rotating the articles while being finished, the device for smoothing said articles, and the device for painting them after they have been smoothed, substantially as shown, and for the purpose set forth.

338,381. **CONCRETE PAVEMENT.** ASHE L. BARBER, Washington, D. C., assignor to the Barber Asphalt Paving Company, same place. Filed Oct. 7, 1885. (No model.)



Claim.—1. An asphalt-concrete pavement, the edges of which are joined to hydraulic-concrete or artificial-stone strips, as set forth.

2. An asphalt-concrete pavement having the gutters formed of hydraulic concrete, as described, with tight water-proof joints between the gutters and the main body of the pavement, as set forth.

3. A concrete pavement composed of the hydraulic-concrete base A, asphalt-concrete surface D, the hydraulic-concrete strips or gutters E, and the curbstones C, as set forth.

338,382. **CONSTRUCTION OF CONCRETE PAVEMENTS.** ASHE L. BARBER, Washington, D. C., assignor to the Barber Asphalt Paving Company, same place. Filed Oct. 26, 1885. (No model.)

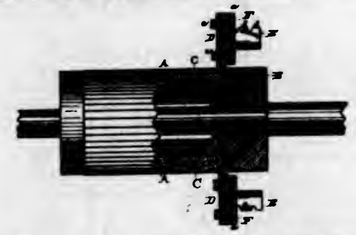
Claim.—1. A pavement or roadway composed of a Trinidad-asphalt-concrete wearing-surface, having the curbstones and rails which form the street-rail railroad partially embedded in the hydraulic concrete forming the base of the pavement, as set forth.

2. A street-pavement composed of a hydraulic-concrete base and a Trinidad-asphalt-concrete wearing-surface, in combination with the rails D, embedded in the hydraulic-cement base and asphalt concrete, as set forth.

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338,383. **DYNAMO-ELECTRIC MACHINE.** CHARLES BATCHELOR, New York, N. Y. Filed Nov. 16, 1885. (No model.)



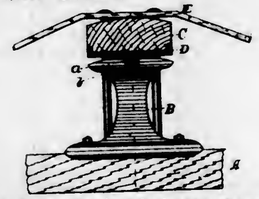
Claim.—1. In a dynamo-electric machine, the combination, with the commutator-bars, of the radial strips extending therefrom, and the cups for the armature-wires each having a flange or plate secured to the backs of said radial strips, substantially as set forth.

2. In a dynamo-electric machine, the combination, with the commutator-bars, of the radial strips extending therefrom provided with projecting lips at their outer ends, and the cups for the armature-wires secured to the backs of said radial strips under said lips, substantially as set forth.

3. In a dynamo-electric machine, the combination, with the commutator-bars, of the radial strips extending therefrom provided with projecting lips at their outer ends, the cups for the armature-wires having flanges or plates secured to the backs of said radial strips beneath said lips, substantially as set forth.

4. In a dynamo-electric machine, the cups in which the armature-wires are soldered having their edges provided with tongues bent down upon said wires, substantially as set forth.

338,384. **SLEIGH-KNEE.** CHAS. R. BELKNAP, Grand Rapids, Mich. Filed Dec. 7, 1885. (No model.)

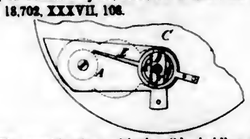


Claim.—1. In a sleigh, a knee having an upper rounded surface, and a beam adapted to rock or roll upon said surface, and one or more interlocking projections and depressions on the contiguous surfaces of said knee and beam, substantially as and for the purpose specified.

2. In a sleigh, a knee having an upper rounded surface and a groove in said surface, in combination with a beam adapted to rock or roll upon said rounded surface, said beam having a tongue or ridge on its under surface to fit within said groove, substantially as and for the purpose specified.

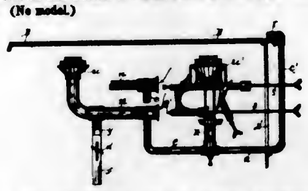
3. In a sleigh, a knee having a groove or depression in its upper surface at right angles to the runner, in combination with a beam having a corresponding tongue or elevation upon its under surface, substantially as and for the purpose specified.

338,385. **WATCH.** ALPHONSE BENOIT, Chaux-de-Fonds, Switzerland. Filed Sept. 28, 1885. (No model.) Patented in Belgium July 15, 1885, No. 69,361; in France July 26, 1885, No. 154,862, and in Italy Aug. 30, 1885, XIX. 18,702, XXXVII, 108.



Claim.—The combination, with the slide holding the end stone, of the cock or bridge having a groove, into which the slide is inserted, and a split ring for holding the slide in place, substantially as specified.

338,386. **VAPOR-BURNING APPARATUS FOR COOK-STOVES.** FRANK E. BROWN and GEORGE P. FRAIM, Three Rivers, Mich. Filed June 23, 1885. (No model.)



Claim.—1. The combination, with an ordinary fuel-stove, of the vapor-burning apparatus detachable within the fire-box, as shown, and having its feeder-pipe leading outward and upward onto the flange of the stove-top, and a clamp having the fixed jaw and the vertically-movable jaw clamping the feeder-pipe and flange of the stove-top, substantially as set forth.

2. The combination, with an ordinary fuel-stove, of a vapor-burning apparatus for detachable insertion within the stove, consisting of a supporting-frame vertically and longitudinally adjustable, a burner or burners supported by said frame beneath the kettle-holes of the stove-top, and a supply-tank and feeder-pipe, substantially as set forth.

338,387. **CABLE-TENSION DEVICE.** TOWNSEND W. BURT, Minoola, N. Y. Filed Dec. 26, 1885. (No model.)

Claim.—1. In a tension device, the combination of the cables, means connected at one end of the cables for actuating the same, and an oscillating lever having the independent and common supports, the free ends of the cables passing from the common support, and having a weight, substantially as described.

2. A tension device having the free ends of its cables weighted and connected to a lever provided with independent supports for the cables and a common support therefor, substantially as described.

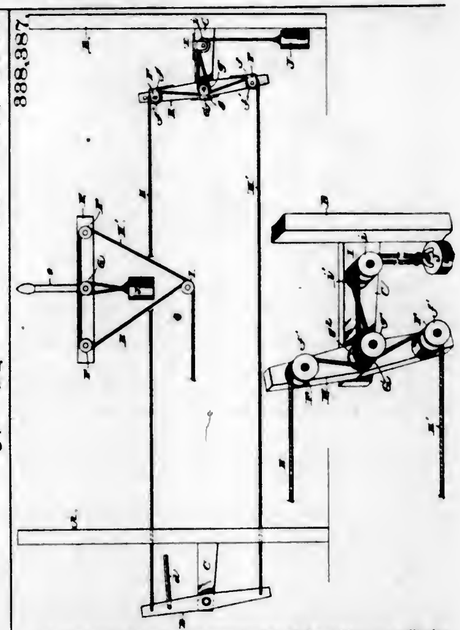
3. In a tension device, the combination of the cables, a lever to which the cables are connected, a weight suspended from the free ends of the cables, and means for actuating the cables and lever, substantially as described.

4. The combination of the cables, a lever to which the cables are loosely connected, and a weight connected to the free ends of the cables, whereby the cables are held under equal tension and expansion and contraction thereof are permitted independent of any movement of the lever, substantially as described.

5. The combination of the cables, an oscillating lever or device provided with independent supports for the cables at or near its ends, and a common support therefor between the independent supports, and a weight connected to the free ends of the cables, substantially as described.

6. The combination of the cables, an oscillating lever provided with independent supports at its ends, each carrying a friction-roller, and a common support at its center having a friction-roller for each cable, an exterior support, I, and a weight for the free ends of the cables, substantially as described.

7. The combination of the oscillating lever D, the cables connected thereto, a lever, E, having the end and central supports, F G, an independent support, I, over which the ends of the cables are passed, and a weight suspended from the free ends of the cables, substantially as described.



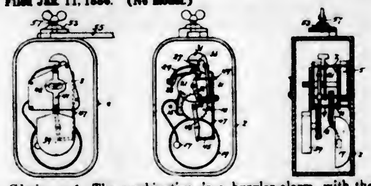
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8. In a tension device, the combination of the cables, an oscillating lever provided with a central support to which the cables are connected, and a weight secured to the free ends of the cables, whereby the lever is permitted to oscillate without operating the weight, and the cables can expand and contract to adjust the weight vertically independent of any movement of the lever, substantially as described.

9. In a tension device, the combination of the cables, an oscillating lever having independent and common supports for the cables, a support, I, arranged in alignment with the common support of the lever, and a weight suspended from the free ends of the cables, whereby when the lever is oscillated the weight will remain stationary, and the cables are permitted to expand and contract without moving the lever, substantially as described.

10. In a cable-tension device, the combination of the cable, an oscillating device on which the free ends of the cables are loosely supported, and a weight connected to the free ends of the cables beyond their point of support on the oscillating device, whereby the cables are held under equal tension, and expansion and contraction thereof are permitted independent of any movement of the oscillating device, substantially as described.

338,388. **BURGLAR-ALARM.** JAMES E. CHURCH, Minneapolis, Minn. Filed Jan. 11, 1886. (No model.)

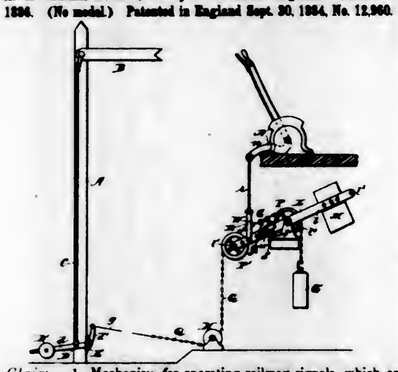


Claim.—1. The combination, in a burglar-alarm, with the gong-operating mechanism, of the detent-wheel 21, the star-wheel 27, adapted to engage therewith, the weighted lever 31, having the detent 33 engaging said star-wheel, and means for raising said detent as the mechanism is tilted, all substantially as and for the purpose set forth.

2. The combination, in a burglar-alarm, with the gong-operating mechanism, of the detent-wheel 21, the star-wheel 27, engaging therewith, the lever 31, having the detent 33 engaging said star-wheel, the suspended weight 39, and means connecting said weight with the lever 31, whereby the detent 33 is raised as the mechanism is tilted, as and for the purpose set forth.

3. The combination, with the casing and the described alarm mechanism arranged therein, of the bridge 53, the bar 55, the clamp-screw 57, and means for securing the opposite end of said bar to a door or window, whereby said casing is tilted as the door or window is opened.

338,389. **MECHANISM FOR ACTUATING SIGNAL-WIRES.** FRANCIS R. CLARKE, Redditch, County of Lancaster, England. Filed Jan. 9, 1886. (No model.) Patented in England Sept. 30, 1884, No. 12,960.



Claim.—1. Mechanism for operating railway-signals, which consists of a counterbalanced lever interposed in the signal-connections, carrying a loose pulley on its fulcrum, a signal-connection passing over said fulcrum-pulley, and a yielding tension device on the free end of said connection to maintain the same stretched and allow it to expand and contract, in combination with a brake operating to lock the pulley against rotation on the lever, and stops to throw the brake out of action when the lever assumes a given position, and limit the movement of said brake away from the pulley, substantially as and for the purpose specified.

2. The combination, substantially as herein described, with a counterbalanced lever carrying a loose guide-pulley at one end and a loose sprocket-wheel or chain-pulley on its fulcrum, a chain connected at one end with a signal and at its other with a weight, and passing over the guide-pulley and fulcrum-pulley of the lever, of a brake operating automatically to lock the fulcrum-pulley against rotation when the lever is moved in one direction to operate the signal and to disengage said pulley when the lever moves in a reverse direction, for the purpose specified.

3. The combination, substantially as described, with a counterbalanced lever carrying at one end a loose guide-pulley and a loose chain-pulley or sprocket-wheel on its fulcrum, a chain connected at one end with a signal and passing over said pulleys, and an adjustable yielding tension device connected with the other end of said chain, of a brake to automatically lock the fulcrum-pulley against rotation, and stop to throw the brake out of operation and limit its movement when thrown out of operation, for the purpose specified.

4. The combination, substantially as herein described, with the chain G and its weight G', and the lever-frame L, carrying pulleys P and P', the pulley P having a wedge-shaped peripheral groove, *p*, by the side of the chain-groove, of the brake-wedge W and the stops S and S', for the purpose specified.

5. The combination, substantially as herein described, with the chain G, its weight G', lever-frame L, adjustable weight M, the pulleys P P', said pulley P having a wedge-shaped peripheral groove *p*, and the brake-wedge W, of the lever N and its connections R and *r*, for the purpose specified.

6. The combination, substantially as herein described, with the signal-arm B and operating-wire C, of the counterbalanced lever D, chain G, its weight G', the counterbalanced lever-frame L, pulleys P P', brake-wedge W, and the lever N, said parts being arranged for co-operation, as described.

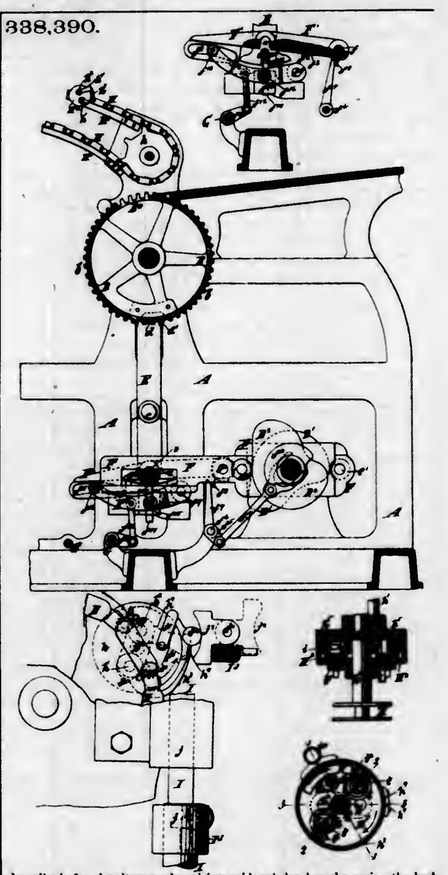
338,390. **STOP-CYLINDER PRINTING-MACHINE.** CALVERT B. COTTRELL, Stonington, Conn. Filed July 13, 1885. (No model.)

Claim.—1. The combination, with the impression-cylinder and its starting-lever, arranged to operate as described, of a reciprocating gab-hook or bar for engaging with a stud on said lever, and a guard having a reciprocating movement independently of the gab-hook or bar, whereby it is traversed along the gab-hook or bar, to cover and uncover the notch or opening therein, substantially as herein described.

2. The combination, with the impression-cylinder and its starting-lever, arranged to operate as described, of a cam-actuated bar having a direct reciprocating motion, a gab-hook pivoted to said bar and engaging with a stud on said lever, and an independently-reciprocating guard working on said gab-hook, to cover and uncover the notch or opening therein, substantially as herein described.

3. The combination, with the impression-cylinder and its starting-lever, arranged to operate as described, of a reciprocating gab-hook for engaging with a stud on said lever, an independent reciprocating guard working on said gab-hook, to cover and uncover the notch therein, a locking-bolt for locking said lever, and mechanism, substantially such as

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described, for simultaneously raising said gab-hook and moving the locking-bolt to lock said lever, substantially as herein set forth.

4. The combination, with the impression-cylinder and starting-lever, arranged to operate as described, of the reciprocating gab-hook for engaging a stud on said lever, a guard on the gab-hook, a spring for removing the guard in one direction, and a cam-actuated rod for moving said guard in the other direction, whereby the guard is reciprocated to cover and uncover the notch or opening in the gab-hook, substantially as herein described.

5. The combination, with the impression-cylinder and its starting-lever arranged to operate as described, of the reciprocating gab-hook F', with its independently-reciprocating guard f^3, the pivoted arm or lever F^2, arranged below the gab-hook for raising the same, and the rock-shaft G and connections for operating said arm or lever, substantially as herein described.

6. The combination, with the impression-cylinder and its starting-lever, arranged to operate as described, of the reciprocating gab-hook F', with its independently-reciprocating guard f^3, the locking-bolt f^{14}, pivoted arm or lever F^2, connected with the locking-bolt and arranged below the gab-hook, and the rock-shaft G and connections for actuating the arm or lever F^2, substantially as herein described.

7. The combination, with the impression-cylinder and starting-lever, arranged to operate as described, of the gab-hook F', having a slot, f^{13}, the arm or lever F^2, provided with a roller, f^{14}, fitting said slot, and a rock-shaft and connections for actuating said arm or lever to raise the gab-hook, substantially as herein described.

8. The combination, with the impression-cylinder and starting-lever, arranged to operate as described, of a reciprocating gab-hook for engaging a stud on the lever, and provided with an independently-reciprocating guard, whereby its notch or opening is covered and uncovered, a rock-shaft and connections for raising the gab-hook, a rod or connection having a reciprocating movement for double-rolling, and an arm on said rock-shaft with which the double-rolling connection may be engaged, substantially as herein described.

9. The combination, with the impression-cylinder and its starting-lever, arranged to operate as described, of the reciprocating gab-hook and independently-reciprocating guard, the rock-shafts G G', and connections between the shaft G and gab-hook for raising the latter, the arms g^4 g^7 on the shaft G, the double-rolling rod g^4 and hook g^5, and the rod g^8 and hook g^6, the foot-rod g^{11} and connections for operating the hooked rod g^6, the arms g^{12} g^{13} on the shaft G', for raising the hooked rods g^6 g^8, and the foot-rod g^{17} and connections for operating the shaft G', substantially as herein described.

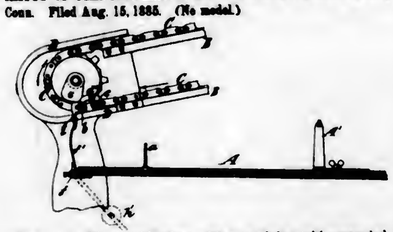
10. The combination, with the impression-cylinder, its starting-lever, and mechanism, substantially as described, for tripping the cylinder, of the endless chains, and a gripper-rod extending between the chains and provided with delivery-grippers, a spring or springs interposed between one of the chains and said rod, and which act when released to turn the rod and grippers into an inoperative position so that they will clear the cylinder, a locking device, substantially as described, for holding the rod and grippers in an operative position against the force of the spring or springs, and cams whereby the locking device will be thrown off to release the spring or springs, and the latter afterward wound up or put under tension, substantially as herein set forth.

11. The combination, with the impression-cylinder and means, substantially as described, of starting and tripping the same, of endless chains, and automatically-tripped delivery-grippers carried by said chains, whereby the grippers will be enabled to clear the cylinder in passing it while the cylinder is stationary, substantially as herein set forth.

12. The combination, with the impression-cylinder and endless delivery-chains H, of the gripper-rod, and bar h' h^3, extending between the chains, the spring-box H^3, fast on a chain, and its cover h^2, in which are fixed the rod and bar h' h^3, and which can turn relatively to the box or case, and is provided with a roller or projection, i^{10}, the spring or springs interposed between the box or case and its cover, a locking device, substantially as described, connecting the box or case and its cover, and cams which are movable to bring them into positions for tripping the locking device and for the engagement of the roller or projection i^{10}, to wind up the spring or springs, substantially as herein set forth.

13. The combination, with the impression-cylinder, of the delivery-chains H, the spring-box H^3 and its cover h^2, provided with a roller or projection, i^{10}, and a locking-notch, i^9, the chain-stud h^6, on which the box-body H^3 is secured and on which the cover h^2 may turn, the gripper-rod, and bar h' h^3, provided with grippers, and to which the cover h^2 is secured, the springs i, connecting the body H^3 and cover h^2, the locking device i^8 i^9 i^7, and the sliding bar I, with its pivoted or movable cams j' j^3, for engaging the arm i^7 of the locking device and the roller or projection i^{10} of the cover, substantially as herein described.

338,391. SHEET-STRAIGHTENER FOR SHEET-DELIVERY APPARATUS OF PRINTING-MACHINES. CALVERT B. COTTRELL, Stonington, Conn. Filed Aug. 15, 1885. (No model.)



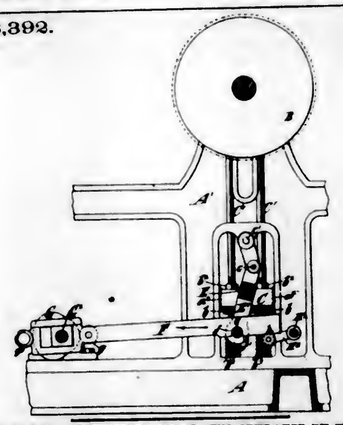
Claim.—1. The combination, with a receiving-table provided with gages, and an endless gripper-carrier for conveying sheets to and delivering them upon said table, of a sheet evener or straightener arranged at the front of the table and operated by the endless gripper-carrier to cause it to straighten or even the sheets on the table, substantially as herein described.

2. The combination, with a receiving-table provided with gages, and an endless gripper-carrier for conveying sheets to and delivering them upon the table, of a sheet evener or straightener consisting of a rod provided with fingers projecting therefrom to strike the front edge of a sheet, a spring or equivalent weight for turning the rod to throw the fingers inward toward the table, and an arm through which the gripper-carrier acts on the rod to throw the fingers outward from the table, substantially as herein described.

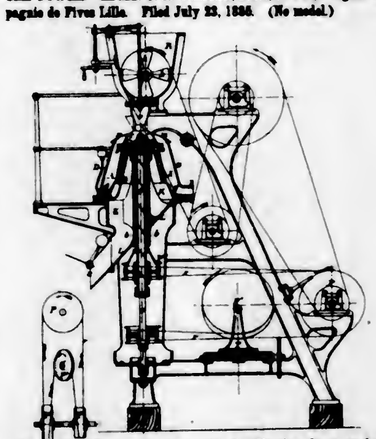
338,392. CYLINDER PRINTING-MACHINE. CALVERT B. COTTRELL, Stonington, Conn. Filed Aug. 17, 1885. (No model.)

Claim.—The combination, with the impression-cylinder, and mechanism, substantially as described, for raising and lowering the cylinder, and comprising the rock-shaft E and its arm E', provided with a wrist-pin, of the cam-actuated bar or rod F, having a gab-hook or notch, f, engaging with the wrist-pin, and a downward projection or abutment, f', at the side of the hook or notch, adapted to engage with the wrist-pin when the hook or notch f is raised out of engagement therewith, substantially as herein described.

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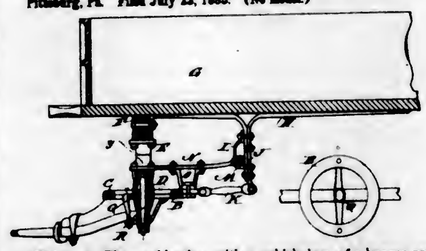
338,393. CONTINUOUS APPARATUS OPERATED BY CENTRIFUGAL POWER. ADRIEN J. A. DUBOULIN, Paris, France, assignor to Compagnie de Fives Lille. Filed July 23, 1886. (No model.)



Claim.—1. The combination, with the filtering drum or basket A and its shaft O, and the helically-flanged drum B and its hollow shaft b, of the palleys P' P''', of different sizes, placed on the said shafts O b below the said drums, the driving-pulley P, the guide-pulley P'', the single belt r, running on all of the said palleys, and the tension-screw T', all substantially as herein described, and for the purpose herein set forth.

2. The combination of the filtering drum or basket A, the spirally-flanged drum B, the reservoir K, having the inclined lateral spout L z below the said drums, and the shafts O B of the said drums extended downward through the said reservoir and furnished below said reservoir with palleys P' P''', over which the dried substance is delivered by the said spout L z, substantially as herein described.

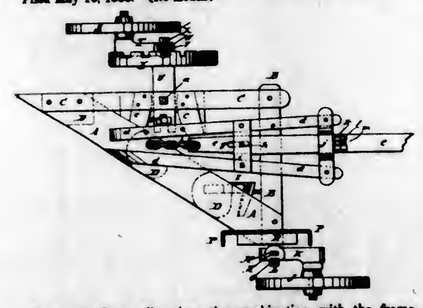
338,394. FIFTH-WHEEL GEAR FOR VEHICLES. JOHN G. ESKIN, Pittsburg, Pa. Filed July 23, 1885. (No model.)



Claim.—1. The combination, with a vehicle-box, of a hanger projecting downward from the box, a bar secured to the bolster and having a roller running on the hanger, and a piece secured to said bar and to the upper fifth-wheel section, substantially as herein shown and described.

2. The combination, with a vehicle-box, of a hanger projecting downward from the bottom of the same, a bar extending from the bolster to said hanger and having a roller running on said hanger, a piece connecting the upper fifth-wheel section with the above-mentioned bar, and of a link pivoted to the hanger and to the upper fifth-wheel section, substantially as herein shown and described.

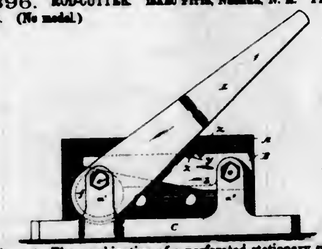
338,395. WHEEL-PLOW. MOSES P. FARNHAM, Germantown, Cal. Filed May 16, 1885. (No model.)



Claim.—1. In a sulky-plow, the combination, with the frame, of the horizontally-adjustable axle U, pivoted between its ends to the frame and slotted at its inner end, the crank-arm T, pivoted to swing vertically on the said axle, the land-wheel journaled on said crank-arm, the vertical pivoted lever b, engaging the slotted end of lever U, the lever W, connected to crank-arm T, and the spring X and the toothed catch-plate Y on opposite sides of the said lever, substantially as set forth.

2. In a wheel-plow, the combination, with the frame A B C and the tongue a, having slot g, of the hounds d, the short chain f, the fulcrum-bolt and cross-bars h i, and the cross-bar, lever, and pin j k l m, substantially as herein shown and described, whereby the forward end of the frame can be readily adjusted to cause the plows to take or leave land, as set forth.

338,396. ROD-CUTTER. ISAAC FITCH, Nashua, N. H. Filed Nov. 6, 1885. (No model.)



Claim.—1. The combination of a perforated stationary plate and a cutter-bar pivoted to swing across the perforations in the stationary plate in contact with the face thereof, and having a semicircular sharp-edged groove at the edge, substantially as and for the purpose set forth.

2. The combination of the perforated plate secured to supports upon the base C, a cutter-bar in contact with the face of said plate pivoted to a standard upon the base, a lever pivoted to another standard upon the base and provided with an eccentric arranged to actuate the cutter-bar, substantially as described.

338,397. SCHOOL-BLACKBOARD. JOHN FREY, Cincinnati, Ohio. Filed Nov. 6, 1885. (No model.)

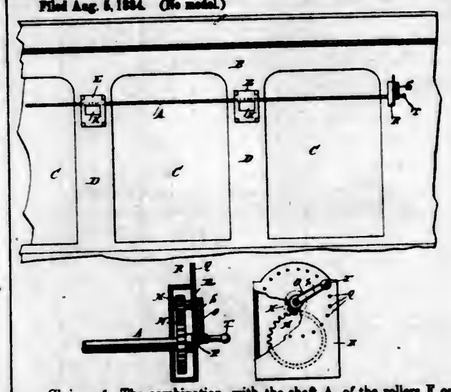


Claim.—1. As a new article of manufacture, a blackboard composed of material rendered opaque and dark-colored in the process of manufacture, and having a sand-blast writing-surface, substantially as described.

2. As an improved article of manufacture, a blackboard composed of opaque dark-colored glass held against a suitable backing and having a sand-blast writing-surface, substantially as described

3. As an improved article of manufacture, a blackboard composed of two or more glass slabs butted together and held against a suitable backing, said glass slabs being opaque throughout their substance, and having a sand-blast writing-surface, substantially as described.

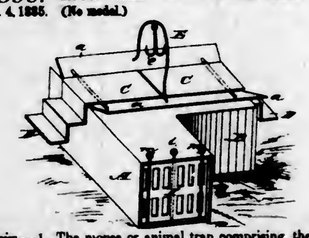
338,398. STATION-INDICATOR. WATSON FULLER, Atlanta, Ga. Filed Aug. 5, 1884. (No model.)



Claim.—1. The combination, with the shaft A, of the rollers F on the same, the boxes E, the rollers G, the bands L, the cog-wheel M on one end of the shaft A, the pinion N, the handle O, the pin P, and the box R, having apertures Q arranged in a circle, substantially as herein shown and described.

2. The combination, with the shaft A, of the rollers or drums F on the same, the boxes E, the rollers G, the bands L, the cog-wheel M, the pinion N, the handle O, the spring S, the pin P, and the box R, having a circle of apertures Q in one side, substantially as herein shown and described.

338,399. MOUSE-TRAP. LESTER H. GEAR, Hunter, Iowa. Filed Dec. 4, 1885. (No model.)



Claim.—1. The mouse or animal trap comprising the cage having the tilting plates hung in an opening in the cage, and having stepped outer ends, and the bait-suspending hook arranged upon the outwardly and upwardly inclined plates of the cage, substantially as and for the purpose set forth.

2. In a mouse-trap, the combination, with the cage; of the pivoted or tilting plates hung in an opening in the cage, and having stepped outer ends, and the bait-suspending hook disposed upon the cage intermediately of the pivots of said pivoted or tilting plates, substantially as and for the purposes set forth.

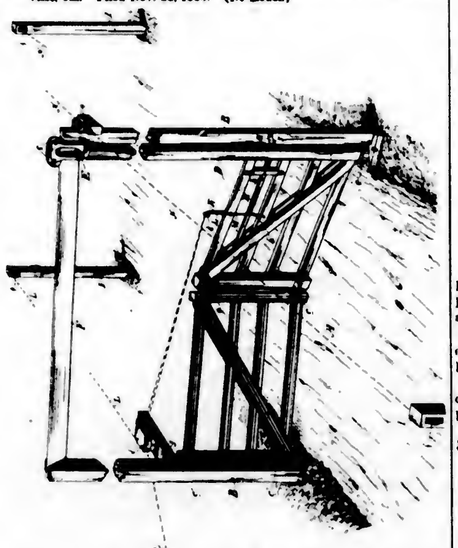
338,400. HOOF-PARER. RUDOLPH GLOCK and STOVER MOON, Green Kans. Filed Nov. 25, 1885. (No model.)



Claim.—In a hoof-parer, the combination, with a pair of pivotal jaws branching outwardly from the pivotal joint, and then curving toward each other, as shown, one of said jaws having a concave-faced abutment on the free end thereof and the other jaw having a blade cured to the free end thereof, of the handles secured to the jaws as

curved or bent toward each other near the pivotal point of said jaws to form a stop, and a spring interposed between the handles, all of the above parts constructed and combined substantially as set forth.

338,401. GATE. MELVIN B. GORDON and WILLIAM Y. GORDON, Davisville, Cal. Filed Nov. 28, 1885. (No model.)



Claim.—1. A gate hinged at one end to the gate-post and comprising independent sections hinged to one another, in combination with the upright or guide at the opposite end of the gate, and a track arranged in the plane or line of the hinge end, substantially as herein described.

2. In a gate, the combination of the gate C, hinged at one end to the gate-post, and consisting of independent sections hinged together, the upright D on the other end of the gate, a traveler on the top of said upright, and a track in the vertical plane of the ends of the gate and on which the traveler moves, substantially as herein described.

3. The gate-posts B and the track F on their tops, in combination with the gate C, hinged at one end to one of the posts, and consisting of independent sections hinged together, as described, the upright D at the other end of the gate, the bracket E, swiveled on the top of the upright D, and the guide-rollers *e* in said bracket traveling on the track, substantially as herein described.

4. The gate-posts B and the track F, mounted between their tops, in combination with the gate C, hinged at one end to one of the gate-posts, and consisting of independent sections hinged together, the upright D at the other end of the gate, the bracket E, swiveled to its top, and the rollers *e* in the bracket traveling on the track, the ropes L, secured to one of the sections of the gate and extended to one side of the roadway on each side of the gate, and the ropes N, secured to the upright D and extending on the other side of the roadway on each side of the gate, substantially as herein described.

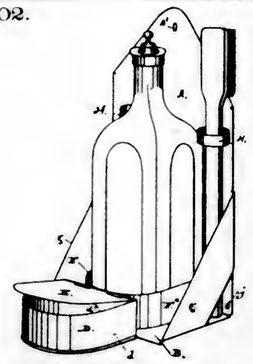
5. In a gate, the posts B, having a track, F, in their tops, and the swinging pivoted stirrup-catch G on one of the posts, in combination with the gate C, hinged at one end to the gate-post, and consisting of independent sections hinged together, the upright D at the other end of the gate having rollers *e*, swiveled to its top and traveling on the track, the spring-actuated pivoted latch H on the gate engaging the stirrup-catch from below, the ropes L, connected by link M with the latch, and the ropes N, connected with the upright D, substantially as herein described.

6. The posts B, having a track, F, between their tops, the swinging stirrup-catch G on one of the posts, and the beveled guides O in the roadway at its base, in combination with the hinged sectional gate C, having an upright, D, the rollers *e*, swiveled to its top and traveling on the track, and the roller-stud *o* on its bottom, the pivoted swinging latch H on the gate engaging with the stirrup-catch, the ropes L, connected with said latch, and the ropes N, connected with the upright D, all arranged and adapted to operate substantially as herein described.

338,402. RACK OR HOLDER FOR TOOTH-BRUSHES, &c. NORMAN W. GERWOLD, Alameda, Cal. Filed Sept. 11, 1884. (No model.)

Claim.—1. As a new article of manufacture, a rack or holder for dentifrices and toilet articles, wherein are combined a back or upright

338,402.

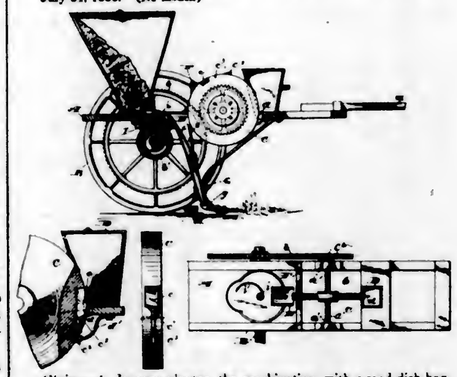


part, A, a projecting support, B, with box or receptacle for paste or powder and socket or support for a bottle, and brush-holders H, substantially as herein described.

2. The combination of the metal bracket piece or frame A B, box or receptacle D, socket F, and rings or brush-holders, substantially as hereinbefore described.

3. The combination of the metal bracket piece or frame A B, box or receptacle D, socket F, and a brush-rack, I, substantially as hereinbefore described.

338,403. CORN-PLANTER. SAMUEL E. HAKE, Niles, Ohio. Filed July 31, 1885. (No model.)



Claim.—1. In corn-planter, the combination, with a seed-disk having movable pockets therein, of a container for fertilizing material, a revolving arm arranged to enter the container and discharge a quantity of the fertilizing material with the corn, substantially as set forth.

2. The combination, with a vertical disk having movable pockets therein, springs for holding the pockets in closed adjustment, and gearing connecting the disk with the ground or carrying wheels, of a seed-hopper having a slot therein for entrance of the disk, and devices for opening the pockets.

3. In a seed-planter, the combination, with a disk having a recess in the periphery thereof, a lever pivoted within said recess and provided at one end with a seed-cup and a spring for holding the cup within the recess, of a seed-hopper and devices for engaging the free end of the lever for moving the cup away from the disk, substantially as set forth.

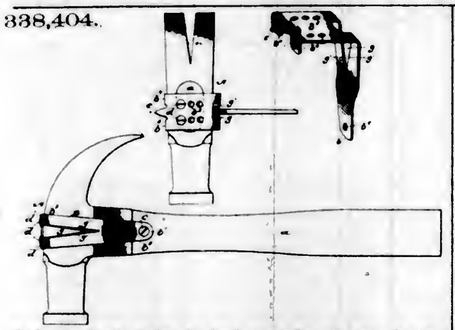
4. In a seed-planter, the combination, with a frame and fertilizer and seed-hoppers, of a seed-disk having movable cup, substantially as described, the curved arm for discharging the fertilizer, and gearing connecting the arm and disk to the ground-wheels, substantially as set forth.

5. In a seed-planter, the combination, with a frame and hoppers secured thereon, of a seed-disk having a movable seed-discharging cup, the curved arm for discharging the fertilizer, gearing connecting the arm and disk to the ground-wheels, the implement for making the furrow, and the devices for closing the furrow, substantially as set forth.

338,404. HAMMER. GEORGE F. HALL, Long Branch Village, assignor of one-half to William R. Warwick, Long Branch, N. J. Filed Feb. 1, 1886. (No model.)

Claim.—1. As an article of manufacture, a nail-holding device for hammers, comprising two plates, b^3 b^3, arranged at substantially right angles to each other and adapted to be secured to the sides and end of

338,404.

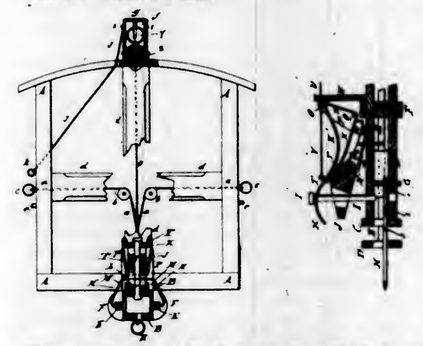


the hammer-handle against the head, one of the said plates having a laterally-inclined portion and a longitudinal slot, substantially as described.

2. As an article of manufacture, a nail holding and suspending device for hammers, comprising two angular plates, b^3 b^3, one of which has a longitudinally-tapered slot and the other a spur or pointed ear adapted to suspend the hammer to which the device is applied, substantially as described.

3. The combination, with a hammer, of the plates b^3 b^3, arranged at substantially right angles to each other and having openings for the passage of screws, the plate b^3 having a longitudinally-tapered slot and a laterally-inclined portion to throw one end away from the hammer-head, and the plate b^3 provided with bent lugs b^4 at its free edges, and a pointed spur, *e*, substantially as described.

338,405. CAR-COUPLING. JOSEPH T. HAMMER, Rhinebeck, N. Y. Filed Sept. 7, 1885. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-bar B, the stationary draw-head C, the movable draw-head D, the sliding bars E, the hinged lifting-block J, the hinged bail N, connecting the said hinged lifting-block and sliding bars, the hinged lifting-plate K, the movable coupling-pin I, connected with the said lifting-plate, and the link H, of the stationary pin G, substantially as herein shown and described, whereby the coupling-link is permanently connected with the draw-bar, as set forth.

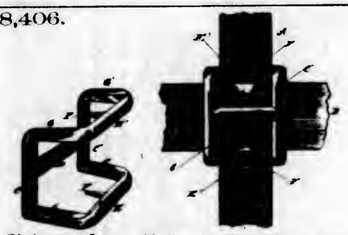
2. In a car-coupling, the combination, with the hinged block J, the lifting-plate K, and the coupling-pin I, connected to said plate, of the bail T, hinged to the block J and having its bend under the plate K, the cords or chains U V *a*, and the guide-palleys *b* X, substantially as herein shown and described.

3. In a car-coupling, the combination, with the car-body A, the hinged lifting-plate K, the coupling-pin I, the hinged bail T, the cord or chain U, and its cap Z, of the slotted standard *f*, the hinged bail *g*, having recesses *h* in its arms, the stop-pins *i*, and the cord *j*, substantially as herein shown and described, whereby the said lifting-plate and coupling-pin can be raised and locked in a raised position and can be released from the top or sides of the car, as set forth.

4. In a car-coupling, the coupling-link H, made, substantially as herein shown and described, with a weighted inner end, a wedge-shaped outer end, and with three cross-bars dividing it into four sections, whereby the said link can be permanently connected with a draw-bar, and will be held in a horizontal position when uncoupled, as set forth.

338,406. COMBINED PAD-BUCKLE AND TRACE-LOOP. ALBERT HARTS, Richland Centre, Wis., assignor of one-half to Jesse G. Bunell, same place. Filed Jan. 8, 1886. (No model.)

338,406.

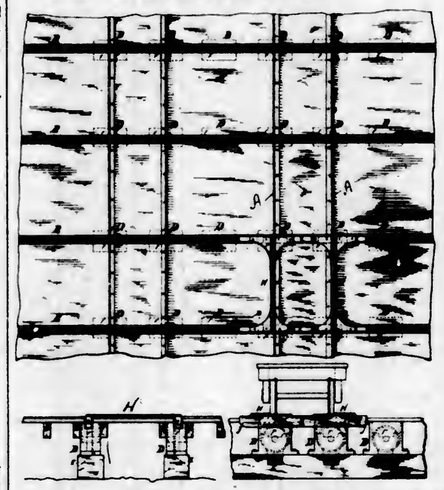


Claim.—1. In a combined pad-buckle and trace-loop, two horizontal bars adapted to lie under and at right angles to the back-pad strap, two vertical bars adapted to lie over and at right angles to the trace, angle-bars connecting the vertical with the horizontal bars, and pins formed on the horizontal bars and adapted to engage the back-pad strap, substantially as shown and described, and for the purpose set forth.

2. The combined trace-loop and pad-buckle shown and described, consisting of the two sets of bars C C' E E', connected by angle-bars G G', and the pins F, formed on the bars E E', substantially as and for the purpose set forth.

3. The bars C C' E E', angle-bars G G', pins F, formed on the bars E E', and web D, connecting the bars C C', all formed in a single piece, substantially as shown and described, and for the purpose set forth.

338,407. RAILROAD TRANSFER-TABLE. CHARLES HATHAWAY, Cleveland, Ohio. Filed June 5, 1884. (No model.)



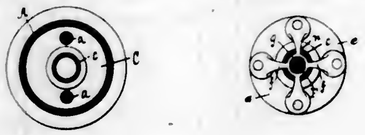
Claim.—In a transfer-table, track rails or plates H, secured at their respective ends to supporting traveling devices, said rails or plates forming the sole lateral connection between such traveling devices.

338,408. MOTOR. GEORGE HAYDN, Baltimore, Md., assignor of one-half to William L. Deming, Salem, Ohio. Filed Oct. 19, 1885. (No model.)

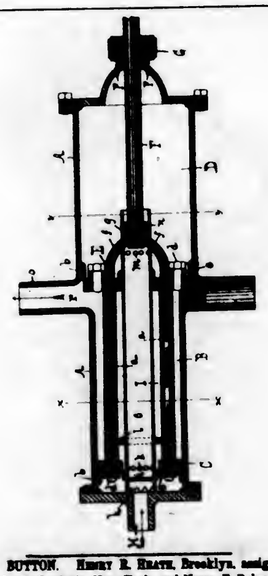
Claim.—1. The combination of the cylinder A', having differential diameters, the piston-heads C and E, the tube *c*, the corrugations *h*, the partition *i*, the holes *k* and *m*, and the packing *b*, arranged to pack the joints between the heads and the cylinder.

2. The combination of the cylinder A, having differential diameters, the piston-heads C and E, the movable central tube, *c*, corrugations *h*, the partition *i*, and the holes *k* and *m*, for the purpose set forth.

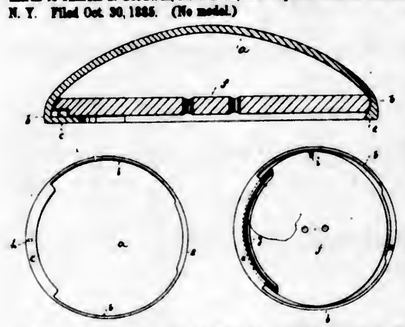
3. The combination of the cylinder A, having differential diameters, the piston-heads C and E, the central movable tube, *c*, and the trunnions *o*, one of which is arranged to form the exhaust-port *r*, as herein specified.



338,408.

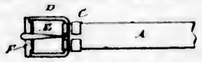


338,409. BUTTON. HENRY R. HEATH, Brooklyn, assignor of two-thirds to Charles S. Goodwin, New York, and Noyes F. Palmer, Jamaica, N. Y. Filed Oct. 30, 1885. (No model.)



Claim.—In a button provided with a changeable face, the combination of the face *a*, recessed on its under side and provided with peripheral opposite flange portions, one of said flange portions carrying a lug on its under side with an elliptical base, *f*, provided with a notch or recess to engage with said lug, substantially as specified.

338,410. ATTACHMENT FOR TAPE-MEASURES. EDWARD HERLIHY, Jr., Hoboken, N. J. Filed Sept. 19, 1885. (No model.)



Claim.—1. In a tape-measure, the combination, with the tape A, of the link D, and the hinged point E, substantially as herein shown and described, whereby the end of the tape can be readily secured in place, as set forth.

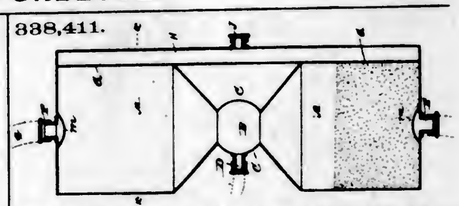
2. In a tape-measure, the combination, with the tape A, the link D, and the point E, of the tubular sleeve F, rigidly attached to the said point, rocking upon the end bar of the link and provided with stop-shoulders to engage with the side bars of the said link, substantially as herein shown and described, whereby the said point is stopped when at right angles with the plane of the said link, as set forth.

338,411. FILTER. JOSEPH C. ERDMAN, New Brunswick, N. J. Filed Sept. 23, 1885. (No model.)

Claim.—1. In a filter, the combination, with the cylinder A, contracted at its middle to form the neck B, provided with the bulges C, of the necks E and F on the ends of the cylinder, the neck D on the neck B, the tube H, connecting the two ends of the cylinder, wire-netting in the end parts of said tube, and the neck J, projecting from said tube H, substantially as herein shown and described.

2. A filter consisting of two vessels for receiving a filtering medium,

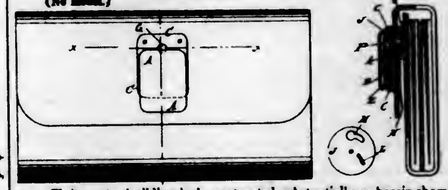
338,411.



which vessels are connected at their adjacent ends by a neck, and are also united at their opposite ends by a tube secured permanently on the sides of said vessels, which tube is provided with a screw-neck, substantially as herein shown and described.

3. A filter consisting of two vessels for receiving a filtering medium, connected at their adjacent ends by a neck which is bulged out and provided with a screw neck or nipple for attaching the tube, which screw neck or nipple is at right angles to the longitudinal axis of the neck, substantially as herein shown and described.

338,412. LOCK FOR POCKET-BOOKS. GUSTAVE HOOD, Newark, N. J., assignor to Daniel M. Read, New York, N. Y. Filed Jan. 26, 1886. (No model.)

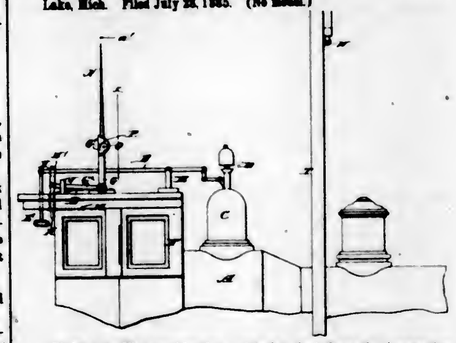


Claim.—1. A sliding lock constructed substantially as herein shown and described, and consisting of the sliding plate A, provided with the flanged plate B, having pin K, the outer stationary plate, C, having slots D, and provided with a central pivot-pin, I, attached to its central bar, the key-plate E, having end notch, F, and central slot, H, to fasten the sliding plate in place, the rotary locking-plate J, pivoted to the pin I, and having graduated perforation to receive the stud P, and inclined slot L to receive the actuating-pin K, the inner stationary plate, N, having perforation O, and the stud P, having a neck whereby the locking-plate will be rotated to fasten and release the stud by the longitudinal movement of the sliding plate, as set forth.

2. In a sliding lock, the combination, with the stationary plate C, having stud-receiving perforation near its upper end, of the downwardly-sliding outer plate, A, substantially as herein shown and described, whereby the said stud-receiving perforation will be uncovered by the downward movement of the said outer plate in unfastening the lock, as set forth.

3. In a sliding lock, the combination, with the pivoted locking-plate J, having graduated perforations M and inclined slot L, of the longitudinal sliding plate A, carrying a pin, K, substantially as herein shown and described, whereby the longitudinal movement of the said sliding plate will give a rotary movement to the said locking-plate, as set forth.

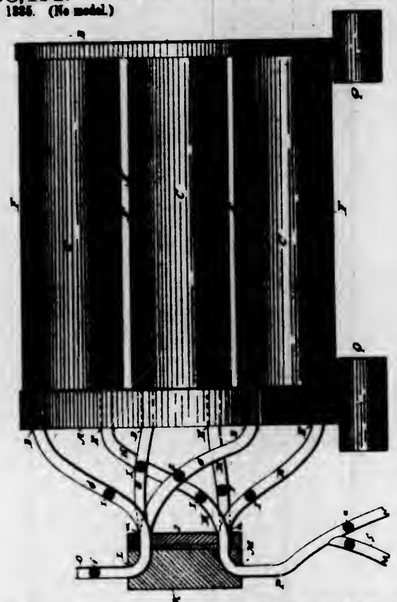
338,413. LOCOMOTIVE-WHISTLE ALARM. CHARLES HULST, Torch Lake, Mich. Filed July 23, 1885. (No model.)



Claim.—1. The combination, with the shaft G on the locomotive-cab, of the upwardly-projecting arm G', the arm or bar N, connected with the same by a knuckle-joint, the arm G^2, projecting toward the rear and provided with an eye, and of the usual whistle-lever, D, which is passed through the eye on the end of the arm G^2, substantially as herein shown and described.

2. The combination, with the shaft G, of the upwardly-projecting arm G', the arm or bar N, jointed to the same, the arm G^2, projecting toward the rear and provided with an eye, the whistle-lever D, passed through the said eye, the notched arm K, depending from the under side of arm G^2, and the catch M, adapted to engage said notched bar, substantially as set forth.

338,414. FILTER. JOHN W. HYATT, Newark, N. J. Filed July 17, 1885. (No model.)



Claim.—1. In a filter, a rotating series of receptacles having independent inlet and outlet ports and containing beds of filtering material partly filling them, combined with independent pipes leading from each of said inlets to a common supply, and pipes leading from each of said outlets to a common delivery, substantially as set forth.

2. In a filter, a series of receptacles having inlet and outlet ports and containing beds of filtering material partly filling them, combined with a series of pipes leading from said inlets to a common supply, a series of pipes leading from said outlets to a common delivery, and stationary supply and delivery ports, the filter being capable of rotation for the purpose of loosening the filter-beds and reversing the passage of the water through them, substantially as set forth.

3. In a filter, a series of receptacles having inlet and outlet ports and containing beds of filtering material partly filling them, combined with a series of pipes leading from said inlets to a common supply, a series of outlets leading to a common delivery, stationary supply and delivery ports, and a waste-pipe for water used in washing the beds of filtering material, the filter being capable of rotation for the purpose of loosening the filtering agent and of reversing the passage of the water through the same, substantially as set forth.

4. In a rotating filter, a series of receptacles having inlet and outlet ports and containing beds of filtering material, in combination with a series of pipes leading from said inlets to a common supply, a series of pipes leading from said outlets to a common delivery, stationary supply and delivery ports, a waste-pipe, a barker's mill in communication with said waste-pipe, and pinion and rollers supporting the filter, substantially as set forth.

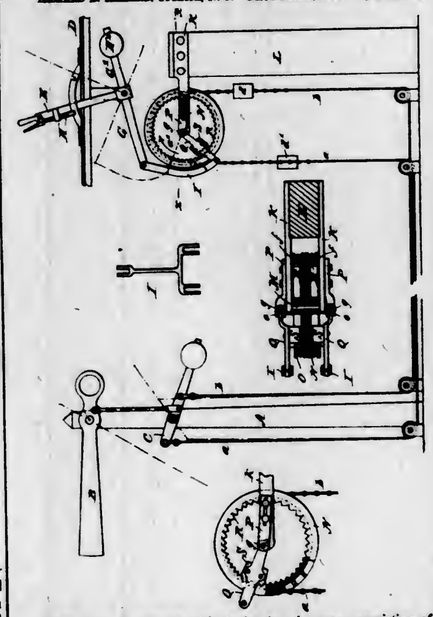
5. In a rotating filter, a series of receptacles having inlet and outlet ports and containing beds of filtering material, combined with a series of pipes leading from said inlets to a common supply-port, a series of pipes leading from said outlets to a common delivery-port, a waste-pipe, a barker's mill communicating with said waste-pipe, and gearing connecting the mill and the filter, substantially as set forth.

6. In a filter, a rotating series of receptacles having inlet and outlet ports and containing beds of filtering material partly filling them, combined with pipes leading from a common supply to said inlets, pipes leading from said outlet to a common delivery, waste-pipe, and a water-motor adapted to be actuated by the flow of the water to rotate the filter, substantially as set forth.

7. A reversible filter consisting of a receptacle containing a loosely-placed bed of filtering material which partially fills the receptacle and having a supply and delivery, combined with a water-motor, whereby the flow of water may be utilized to rotate the receptacle, substantially as and for the purposes set forth.

8. A reversible filter consisting of a receptacle containing a loosely-placed bed of filtering material which partially fills the receptacle, protected supply and delivery ports, a waste-outlet, and a water-motor in communication with said waste-outlet and adapted to rotate the filter when desired, substantially as and for the purposes set forth.

338,415. COMPENSATOR FOR WIRE ROPES AND CABLES. EBHARD B. IRELAND, Trenton, N. J. Filed Dec. 2, 1885. (No model.)



Claim.—1. A compensating device for wire ropes, consisting of an internally-geared wheel over which the rope passes, a lever carrying a gear-segment pivoted eccentrically to the axis of the said wheel, and a hand-lever connected to the free end of the lever carrying the gear-segment, substantially as herein shown and described.

2. A compensating device for operating the ropes of a semaphore, consisting of two loosely and independently mounted wheels over which the operating-ropes pass in opposite directions, an operating-lever, two levers pivoted eccentrically to the axis of and normally disengaged from said wheels, and a suitable connection between said operating-lever and the eccentrically-mounted levers, substantially as set forth.

3. The compensating device for the operating-ropes of a semaphore, consisting of two wheels mounted side by side loosely and independently, and provided each with an internal gear, and over which wheels the said ropes pass in opposite directions; levers pivoted eccentrically to the axis of said wheels, and a gear-segment secured to each of said levers, substantially as shown and described.

4. The combination, with the rope *a* of a semaphore, of the wheel N, provided with internal gear, R, and carrying the end of said rope, the lever Q, pivoted eccentrically to the axis of said wheel, the segment S, secured to lever Q adjacent to the gear R, the levers E G, and the connecting-rod I, substantially as shown and described.

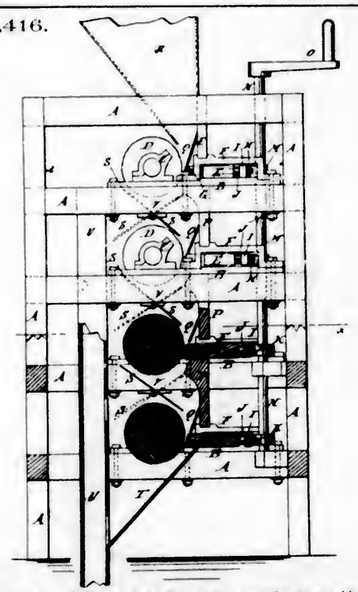
5. The combination, with the wheel N, mounted in brackets K and provided with the internal gear, R, of segment S, lever Q, carrying said segment, and pivoted eccentrically to axis of said wheel N, and the adjustable arm P, secured to one of the brackets K, substantially as shown and described.

6. The combination, with the operating-ropes of a semaphore, of the wheels N and O, provided each with an internal gear, R, and over which wheels the said ropes pass in opposite directions, the shaft M, mounted in the brackets K, the adjustable arms P, the levers Q, the segments S, the levers E G, and the forked connecting-rod I, substantially as shown and described.

338,416. GRINDING-MILL. LEWIS B. JOY, Bath, N. Y. Filed July 21, 1885. (No model.)

Claim.—1. In a grinding-mill, the combination, with the frame A and the bed-plate B, of the grinding-plate E, the frame F for holding

338,416.



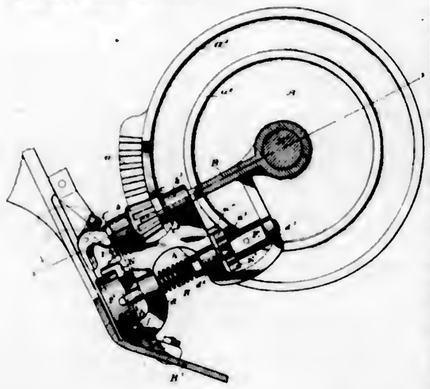
said plate, the bars I K, the shafts N, and the eccentrics M on said shafts between the said bars I K, substantially as herein shown and described.

2. In a grinding-mill, the combination, with the frame A, the bed-plate B, the roller D, having a corrugated face, and the grinding-plate E, having a beveled and corrugated inner edge, of the frames F for holding the said plate to its seat, the set-screws G for limiting the inward movement of the grinding-plate, the eccentrics M, shafts N, and the bars and screws I K H L for connecting the said eccentrics and grinding-plate, substantially as herein shown and described, whereby the said grinding-plate can be readily adjusted, as set forth.

3. In a grinding-mill, the combination, with the frame A, the rollers D, having corrugated faces, the grinding-plates E, having beveled and corrugated inner edges, the discharge-spout U, and the stationary guide-aprons Q, of the shafts V, and the guide-plates S, pivoted on the said shafts at about the middle of their length, substantially as herein shown and described, whereby the material passing through the mill can be guided into the discharge-spout at any desired point, as set forth.

4. A grinding-mill consisting of a series of pairs of grinding-surfaces arranged one above the other, one of the said surfaces of each pair being adjustable, a discharge-spout extending in front of the series of grinding-surfaces, stationary aprons, and movable guide-plates for guiding the material, the said guide plates being pivoted at about the middle of their length to permit the material to be guided to the grinding-surfaces below or to the discharge-spout, as set forth.

338,417. GRAIN-BINDER. EDWIN M. KELLOGG, Waupun, Wis. Filed Oct. 8, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the tying-bill or knotter, its spindle, a holder-disk having a peripheral notched flange or rim thereon parallel with the knotter-spindle and bearing a fixed relation to said knotter, and a clamping-shoe saddling said flange or rim on the side adjacent to the knotter.

2. The combination, substantially as hereinbefore set forth, with the knotter or tying-bill, of a cord-holder having a fixed relation to said tying-bill, and consisting of a disk having a peripheral notched flange and a shoe saddling the flange on the side adjacent to the tying-bill and in such proximity thereto that the nose of the bill sweeps close to the adjacent side of the shoe as its open jaws receive the crossed ends of the band.

3. The combination, substantially as hereinbefore set forth, with the breast-plate and tying-bill, of a cord-holder having a fixed relation to said breast-plate and tying-bill, and consisting of a crown-disk lying with its face in close proximity to the inner side of the breast-plate and its flange turned away therefrom, and a shoe saddling the flange of this disk between it and the knotter in such position that the nose of the knotter sweeps close to its inner side as it grasps the crossed ends of the band and approaches the limit of its revolution.

4. The combination, substantially as hereinbefore set forth, of the notched crown-disk, the shoe which saddles its flange, a spring holding the disk elastically against the shoe, and means whereby the stress of said spring may be adjusted.

5. The combination, substantially as hereinbefore set forth, of the notched crown-disk, the shoe which saddles its flange, a spindle secured to the disk and whereby it is turned, bearings in which said spindle is allowed to slide, and a spring acting upon said spindle to hold the disk against the shoe.

6. The combination, substantially as hereinbefore set forth, with the notched crown-disk and its shoe, of a spindle attached to said disk and permitted to slide in bearings, a spring whereby the spindle and disk are held against the shoe, a polygonal delay-sleeve pinned to the spindle, and a delay-flange on the face of the tyer-cam, whereby said delay-sleeve will remain in engagement with the flange and lock the disk against rotation, notwithstanding the yielding of the spindle.

7. The combination, substantially as hereinbefore set forth, of the crown-holder disk, the stationary shoe saddling its rim, the holder-spindle mounted in bearings which permit it to slide, the spring coiled about said spindle and acting to press the disk against its shoe, the pinion upon said spindle, the long delay-sleeve having its face or shoes parallel with the spindle, and the driving-tooth and delay-ledge on the face of the tyer-cam.

8. The combination, substantially as hereinbefore set forth, of the crown-holder disk, the stationary shoe which saddles the flange thereon, the spindle attached to said disk, the bearings in which it is carried, the pinion, and delay-sleeve fixed to the upper end of said spindle, the coiled spring encircling the spindle and seated against one of its bearings, the collar upon said spindle, against which the other end of the spring is seated, and the tooth and delay-ledge on the tyer-cam for operating the spindle.

9. The combination, substantially as hereinbefore set forth, of the crown-holder disk, the stationary shoe which saddles its flange, the holder-spindle, the coiled spring encircling the spindle and seated against one of its bearings, and the adjustable nut upon the spindle, forming a collar against which the other end of the spring is seated, to hold the disk adjustable against the shoe.

10. The combination, substantially as hereinbefore set forth, of the knotter or tying-bill, its spindle, the pinion and delay-shoe on said spindle, the segment-rack and delay-flange on the face of the tyer-cam engaging with said pinion and delay-shoe, the crown-holder disk and its shoe, the holder-spindle arranged in bearings parallel with the knotter-spindle, the pinion and delay-sleeve on said holder-spindle, and the solitary tooth and inner delay-flange on the face of the tyer-cam.

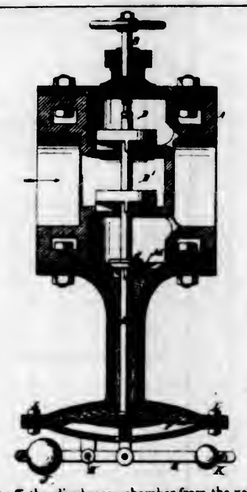
11. The combination, substantially as hereinbefore set forth, of the knotter or tying-bill, the crown-holder disk having a fixed relation thereto, the shoe saddling the flange of the disk adjacent to the knotter, and the movable knife by which the end strands are severed at the conclusion of the knotting operation.

12. The combination, substantially as hereinbefore set forth, of the knotter, its spindle, pinion, and delay-shoe, and the crown-holder disk, its shoes, spindle, pinion, and delay-sleeve, mounted in bearings on one side of the tyer-cam and actuated by the segment-rack, solitary tooth and concentric delay-ledges on said side, the plunger or knife-stem mounted in bearings on the other side of said tyer-cam, the anti-friction roller at one end of said stem, the knife at the other or lower end, and the cam-groove in the face of said tyer-cam, into which said roller takes, and having a jog to depress the stem at the proper moment for severing the cord.

338,418. AUTOMATIC PRESSURE-REGULATING VALVE. TIMOTHY J. KIELEY, New York, N. Y. Filed Nov. 16, 1885. (No model.)

Claim.—1. The combination of a regulating-valve with a diaphragm controlling said regulating-valve located in a chamber separate from the valve-chamber, and a valve normally open but capable of being

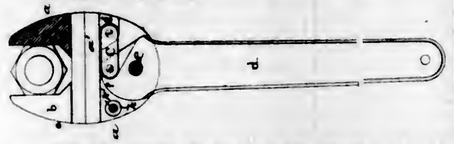
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closed so as to shut off the diaphragm-chamber from the valve-chamber for the purpose of removing the diaphragm, substantially as described.

2. The combination of the balanced regulating-valve D D', the diaphragm F, the valve C, and the screw-stem B, whereby the extent of opening of the valve D D' may be determined and the valve C may be closed, if desired, substantially as described.

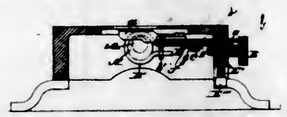
338,419. WRENCH. FRIEDRICH KRUDENBRANN, Scranton, Pa. Filed Jan. 26, 1884. (No model.)



Claim.—In a wrench, the fixed jaw having the rigid walls which inclose the sliding jaw, said walls provided with the T-shaped grooves and perforated to receive a pin on the end of the link, in combination with a sliding jaw which has correspondingly T-shaped tongues to fit into the T-shaped grooves in the walls of the rigid jaw, the links having the nipples cast integral therewith and pivotally connecting the sliding jaw and handle together, the pivoted handle having therein a hole for the reception of a nipple on the link, and the supplemental removable strengthening screw or bolt K', and the thimble *k*, all constructed and combined to operate substantially as set forth.

338,420. FEEDING DEVICE FOR SEWING-MACHINES. THOMAS LAMB, Philadelphia, Pa. Filed Sept. 11, 1884. (No model.)

Brief.—The feed-bar is adjustable, whereby the feed may be readily varied without disturbing or removing other parts of the machine.



Claim.—1. In the feeding device of a sewing-machine, the feed-dog *a*, having bar *c* attached thereto, said bar *c* having a depending hook, C, connected therewith, formed of vertical limb *d* and horizontal limb *f*, in combination with the sliding plate *b*, having yoke B, shaft A, having eccentric A', and adjusting-screw E, working in the frame of the machine and limiting the play of the bar *c*, all of said parts being arranged, combined, and operating substantially as and for the purpose set forth.

2. A feeding device consisting of the dog *a*, the bar *c*, with hook C, having horizontal limb *f* and notch *g*, the plate *b*, having recess *e*, spring D, secured to the plate *b* and bearing against the bar *c*, and the adjusting-screw E, substantially as and for the purpose set forth.

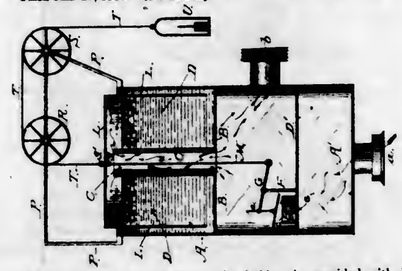
338,421. SMOKER'S APPLIANCE. SAMUEL E. LAWRENCE, Utica, N. Y. Filed July 7, 1885. (No model.)

Claim.—A smoking-tube having a chamber, C, divided by a transverse coiled-spring diaphragm, D, and containing a filtering material, F, on one side of said diaphragm, substantially as described.

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338,422. GAS-REGULATOR. ELI C. MCCLOY, Mount Vernon, Ohio. Filed Jan. 27, 1886. (No model.)

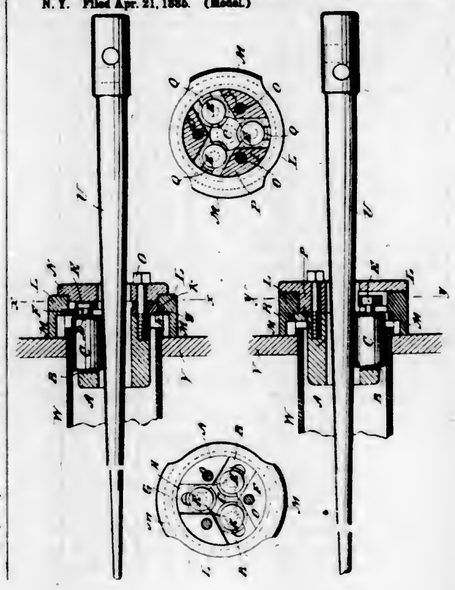


Claim.—1. In a gas-regulator, the holder A, provided with inlet and outlet apertures, a diaphragm, D, having a tube, *d*, projecting therefrom, a diaphragm, B, having an upwardly-extending tube, C, and a valve supported above the tube *d*, in combination with a dome, a connecting-rod passing through the tube C and attached to the dome, a lever operated by the rod, and a counter-balance attached to the dome, substantially as herein described.

2. In a gas-regulator, a holder provided with diaphragms B and D and tubes C and *d*, the upper edge of the latter being beveled to form a knife-edge valve-seat, in combination with a leather disk or valve, H, having a valve-stem, a pivoted lever to which the valve-stem is connected, a dome, and a connecting-rod between the dome and lever, substantially as herein described.

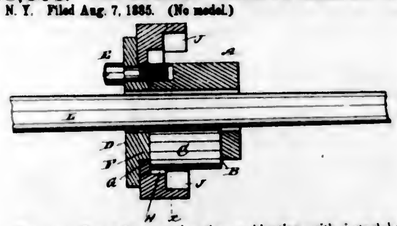
3. An improved gas-regulator comprising a holder having a diaphragm, D, with opening *c* formed therein, a tube surrounding the opening and forming a valve-seat, a post, F, projecting from the diaphragm, a lever fulcrumed in the top of the post, a valve-stem secured to the lever, a valve supported above the valve-seat, a second diaphragm, B, having an upwardly-extending tube, C, a dome, a rod within the tube and connecting the dome and lever, a frame, P, pulleys R S, the cord or chain T, attached to the dome, and a weight attached to the cord, substantially as herein described.

338,423. TUBE-EXPANDER. WILLIAM I. B. MCHALE, New York, N. Y. Filed Apr. 21, 1885. (Model.)



Claim.—In a tube-expander, the combination, with a tubular stock having longitudinal slots extending from the inner to the outer surface, of rollers or cylindrical swages having necks, on the ends of which necks beads E are formed, the end piece, P, having radial slots and grooves and placed against the outer end of the stock, the ring L, placed on the end piece to revolve around the same, and of the screws O, passed through the end piece into the stock for the purpose of holding the end piece on the stock, substantially as herein shown and described.

338,424. TUBE-EXPANDER. WILLIAM I. B. MCHALE, New York, N. Y. Filed Aug. 7, 1885. (No model.)

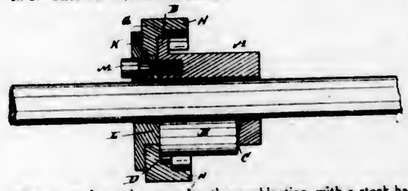


Claim.—1. In a tube-expander, the combination, with a stock having longitudinal slots extending from the rear end of the stock to near the front end, of cylindrical swages or rollers in said slots and a flanged ring surrounding the stock and holding the swages in the stock, substantially as herein shown and described.

2. In a tube-expander, the combination, with a stock having slots extending from the rear end to within a short distance from the front end, of cylindrical swages or rollers in said slots and a ring surrounding the rear end of the stock loosely and holding the swages or rollers in the slots of the stock, substantially as herein shown and described.

3. In a tube-expander, the combination, with a stock having slots extending from the rear end to near the front end, of the flanged ring G, surrounding the rear end of the stock loosely, and the plate D, held on the rear end of the stock and holding the ring G on the stock, substantially as herein shown and described.

338,425. TUBE-EXPANDER. WILLIAM I. B. MCHALE, New York N. Y. Filed Oct. 29, 1885. (Model.)



Claim.—1. In a tube-expander, the combination, with a stock having longitudinal slots for the swages, which stock is provided at one end with a flange the diameter of which is greater than the diameter of the stock, and which flange is provided with radial grooves for receiving and guiding the ends of the swages, the outer ends of said grooves being beyond the outer surface of the stock, of swages in the slots and of a plate held against one end of the stock by screws, for the purpose of holding the swages in the several slots, substantially as herein shown and described.

2. In a tube-expander, the combination, with the slotted tubular stock A, having a flange provided with radial guides for the swages, the collar G, having the lugs H, the circular plate K, having the projecting part L, and of the screws M, passed through the plate K into the end of the stock, substantially as herein shown and described.

338,426. FARE-REGISTER. JOHN W. MEAKER, Chicago, Ill., assignor to the Railway Register Company, same place. Filed Apr. 24, 1885. (No model.)

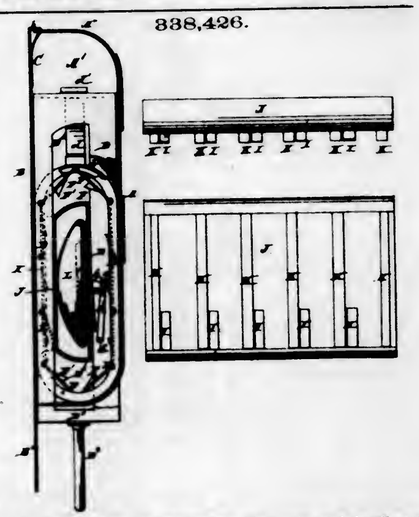
Claim.—1. The combination, with a series of progressively-moving chains, each link having a numeral on its front face and a catch on its rear face, of a dog or catch having a series of projections to engage the catches on the chains and a pull for operating the dog or catch, substantially as and for the purpose specified.

2. A series of chains, F, each link having on its front face a numeral and on its rear face a catch, F', and guides E, in combination with the side bars, D, and dog G, having a series of projections to coact with the catches F', substantially as and for the purposes specified.

3. A series of chains, F, each link having on its front face a numeral and on its rear face a catch, F', in combination with a bar, G, having a series of catches to coact with the catches of the respective chains to advance the chains intermittingly, substantially as and for the purposes specified.

4. A series of chains, F, each link having on its front face a numeral and on its rear face a catch, F', the catches forming a graded series in relation to each other, substantially as and for the purpose specified.

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5. A shell or case, in combination with a series of chains, F, each link having a numeral on the front face and a catch on its rear face, guides E, bar or dog G, having a series of projections to engage the catches F', and a pull for advancing the chains intermittingly, substantially as and for the purpose specified.

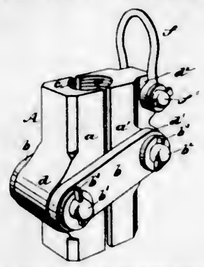
6. The bars D, slide O, carrying pawls *k l*, in combination with the bell L, lever M M', and spring N, for sounding the bell at each registration and preventing the bell from being struck by a half-pull or otherwise, substantially as specified.

7. The combination of the bars D, slide O, carrying pawls *k l*, the arm P, having a deadening material on its end, the bell L, and spring-lever M', for sounding the bell at each registration and preventing its ringing except by the hammer, substantially as described.

8. The combination, with the chains of a trip-register, said chains being provided with graduated stops and pawls adapted to engage therewith, of the knob Q, plate R, and dogs S, for resetting the chains, substantially as described.

9. The combination, with the chains of a trip-register, said chains being provided with graduated stops and chain-actuating pawls adapted to engage said stops or catches, of the knob Q, plate R, dogs S, and springs T, substantially as described.

338,427. DEVICE FOR WITHDRAWING THE PIPES FROM DRIVEN WELLS. JAMES MERCLE, Patchogue, N. Y., assignor to himself and William T. Shaw, same place. Filed Dec. 12, 1885. (No model.)



Claim.—1. The pipe-shackle or grasping device herein shown and described, the same consisting of two jaws linked together and made concaved upon their adjacent faces, one of the jaws being formed or provided with means for receiving or attaching the device to a power connection, substantially as described.

2. The jaws *a a'*, made concaved upon their adjacent faces and linked together by the plates *b* and bolts *b'*, the connection of the plates *b* to the jaw *a* being below the center thereof, while the connection of the plates *b* to the jaw *a'* is at or above the center thereof, substantially as described.

3. The concaved jaws *a a'*, linked together by the plates *b b* and bolts *b' b'*, in combination with the clevis *f*, attached to the jaw *a'*, substantially as and for the purposes set forth.

338,428. MOSQUITO-CANOPY. ROBERT MITCHELL, Atlanta, Ga. Filed June 17, 1885. (No model.)



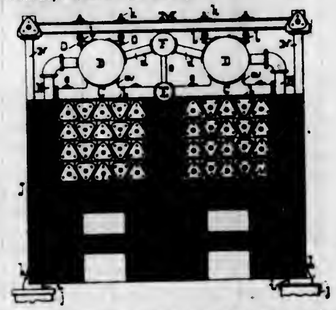
Claim.—1. A mosquito-canopy top comprising a frame, A, adapted to support the sides of the canopy fabric, opposite lids hinged to frame A to close it, a loop, I, on one lid, and a rod, J, on the other lid engaging loop I, substantially as described, whereby both lids will be opened simultaneously by drawing on rod J, as herein set forth.

2. A mosquito-canopy top comprising a frame, A, adapted to support the sides of the canopy fabric, and connected to a suitable support, opposite frames, F G, pivoted to frame A and covered by netting fabric H, a loop, I, on frame G, and a rod, J, on frame F, engaging loop I, substantially as herein set forth.

3. A mosquito-canopy top comprising a frame, A, adapted to support the sides of the canopy fabric, and connected to a suitable support, opposite frames, F G, pivoted to frame A and covered by netting fabric H, a loop, I, on frame G, a rod, J, on frame F, engaging loop I, and a pull-cord, K, connected to rod J, substantially as herein set forth.

4. The combination, in a mosquito-canopy, of the frame A, adapted to support the sides of the canopy fabric, a hanger, C, having branched arms *c c*, connecting with opposite ends of the frame A, and having inturned ends forming pivot-pins *c' c'*, opposite side frames, F G, pivoted on said pins and covered by netting H, a loop, I, on frame G, a rod, J, on frame F, engaging loop I, and a pull-cord, K, connected to rod J, substantially as herein set forth.

338,429. WATER-TUBE BOILER. EDWARD J. MOSER, Baltimore, Md. Filed Sept. 7, 1885. (No model.)



Claim.—1. In a water-tube boiler, the combination, with a longitudinal drum and a series of headers, of an interposed transverse saddle united to the headers by means of nipples, and having holes in its upper side over the said nipples covered by removable plates, substantially as specified.

2. In a water-tube boiler, the combination, with a longitudinal drum and a series of headers, of an interposed transverse saddle united to the drum by means of a cylindrical neck or nozzle and to the headers by nipples, and having holes in the upper side over the said nipples covered by removable plates, substantially as specified.

3. In a water-tube boiler, the combination of the drums D D, saddles C C, and feed-water heater E, all arranged substantially as specified.

4. In a water-tube boiler, the drums provided with trunnions which are united to overhead girders by means of links and eyebolts, substantially as specified.

5. In a water-tube boiler, the combination of overhead girders, supporting-columns, piers, and base-plates on the said piers having flanges at their edges and sockets for the columns, substantially as specified.

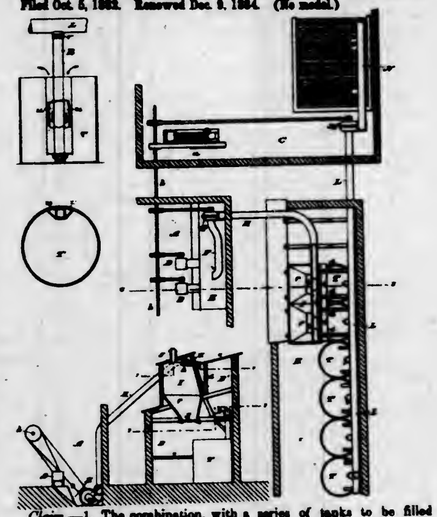
6. In a water-tube boiler having a central partition-wall, the said wall provided with a cleaning-opening and a door, substantially as specified.

7. In a water-tube boiler, the longitudinal drum D, united to the transverse drum G by means of nipples, substantially as specified.

8. In a water-tube boiler, the outer walls of the same, composed of vertical pipes placed practically close together, each pipe being independently united to an overhead drum by means of nipples, substantially as specified.

9. In a water-tube boiler, the outer walls of the same, composed of vertical pipes placed practically close together, each pipe being independently united to an overhead drum by means of nipples and closed at its lower end, substantially as specified.

338,430. METHOD OF AND APPARATUS FOR MANIPULATING COMMINUTED SUBSTANCES. AUGUSTUS MORAND, Philadelphia, Pa. Filed Oct. 5, 1882. Renewed Dec. 9, 1884. (No model.)



Claim.—1. The combination, with a series of tanks to be filled with comminuted substances, of a cutter for comminuting the material, a receptacle for the comminuted material, a blower, a suction-pipe leading from said receptacle to the blower, and a delivery-pipe leading thence over the tanks, and provided with valved openings corresponding with the respective tanks, substantially as set forth.

2. The combination of a tank to be filled with a comminuted material, a bin arranged above said tank and capable of being emptied therefrom, a pit or accumulating-receptacle for the material, a blower, a suction-pipe leading from said accumulating-receptacle to said blower, a delivery-pipe leading from said blower to said bin, and provision for the free escape of the air from the upper part of said bin, substantially as set forth.

3. The combination of a series of tanks, a bin or series of bins or compartments thereof arranged above said tanks, a series of openings in the bottom or bottoms thereof corresponding to said tanks and for delivery thereto, a pit or accumulating-receptacle, a blower, a suction-pipe leading from said accumulating-receptacle to said blower, a delivery-pipe leading from said blower into said bin or bins, a series of valved discharge-openings in said pipe within said bin or bins, and an aperture for escape of air from the upper part of said bin or bins, substantially as set forth.

4. The combination of blower G, pipe H, having valved openings *h h*, bin I, having hopper-bottoms *f f* and trap-doors *g g*, and tanks T T, substantially as set forth.

5. The combination of bin I, hopper-bottom *f* thereof, door *g*, spout K, and tank T, substantially as set forth.

6. A tank-house, B, constructed with ventilator B', in combination with a row of tanks, T T, beneath said ventilator, and a continuous bin or series of bins, I, arranged in front of said ventilator and above said tanks, substantially as and for the purposes set forth.

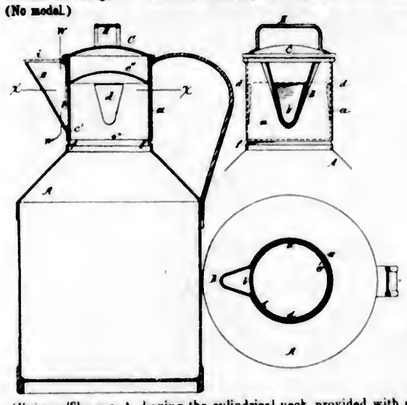
7. The combination of a tank, an air-pipe extending thereinto opening at or near its bottom, and leading thence to a blower, the said blower, and an air tube or duct leading from the top of said tank down into the same to near the opening of said pipe, substantially as set forth.

338,431. ART OF CLARIFYING EXTRACTS. AUGUSTUS MORAND, Philadelphia, Pa. Filed May 2, 1885. Renewed Feb. 20, 1886. (No specimens.)

Claim.—1. The improved method of clarifying vegetable extracts, which consists in dissolving casein or its specified equivalent in a solvent which has a chemical affinity for a substance contained in or added to the extract, mingling the said solution with the extract, and separating the resulting precipitate from the clarified extract, substantially as specified.

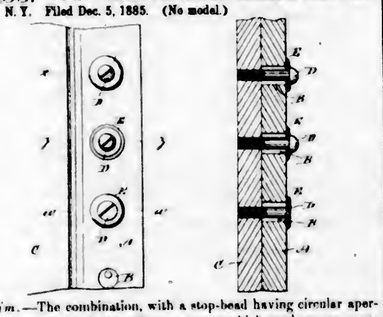
2. The improvement in the art of manufacturing tannin extract, which consists in dissolving casein or its specified equivalent in an alkaline solvent, mingling the solution with the acidulous extract in sufficient proportion to neutralize the free acid therein, and finally separating the resulting precipitate from the clarified extract, substantially as set forth.

338,432. CAN. DE WITT C. MOREY, Jr., Worcester, Mass., assignor of one-half to George M. Tourtellotte, same place. Filed Jan. 13, 1886. (No model.)



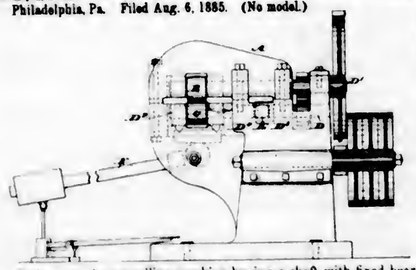
Claim.—The can A, having the cylindrical neck provided with an annular inwardly-projecting ledge, *f*, the opening *b*, and spout B through the side of said neck, in combination with the removable rotatable stopper C, having the perforated rim C', fitting within said neck, with its lower edge, C², against the top of said ledge, substantially as and for the purposes set forth.

338,433. WINDOW-BEAD FASTENER. CHARLES R. NELSON, New York, N. Y. Filed Dec. 5, 1885. (No model.)



Claim.—The combination, with a stop-bead having circular apertures, of washers placed over the apertures, which washers can completely cover said apertures, and of screws passed through the washers and the apertures into the casing, the diameter of the screws being equal to about one-third of the diameter of the apertures to permit of moving the bead slightly in all directions without changing the positions of the screws, substantially as herein shown and described.

338,434. MACHINE FOR ROLLING SAWS. LYMAN O. ORTON, Philadelphia, Pa. Filed Aug. 6, 1885. (No model.)

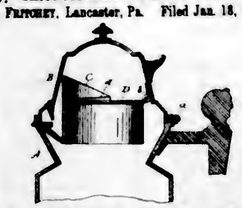


Claim.—1. A saw-rolling machine having a shaft with fixed bearings and a roller with a rounded face mounted thereon, and a sectional shaft having a fixed bearing at one end and provided with a cylindrical roller having a right-line surface, said parts being combined and operating substantially as described.

2. The roller B with shaft D', carrying the same, the roller C with the sectional shaft D, carrying the same, and the weighted lever F, bearing against the bearing of the movable portion of the sectional shaft, said parts being combined and operating substantially as and for the purpose set forth.

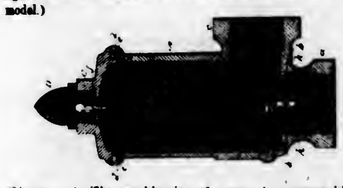
3. A saw-rolling machine consisting of the upper and lower shafts D' and D, the upper shaft having fixed bearings and carrying the roller B, having a rounded face, the lower shaft being in sections connected by a ball-and-socket joint and having at one end a vertically-adjustable bearing, means to rotate said shafts D' and D, and means, substantially as described, adapted to keep said roller C in contact with the roller B, all combined substantially as stated.

338,435. SIRUP-PITCHER. HENRY E. OSBORN, Meriden, Conn., and JOSEPH U. FRITCHET, Lancaster, Pa. Filed Jan. 18, 1886. (No model.)



Claim.—In a pitcher having a neck with a cover hinged thereto, a spout arranged vertically within the neck and so as to be inclosed by the cover, the combination therewith of the gate D, hinged to the cover above the hinge between the cover and the neck, the said gate adapted to work across the spout as the cover is opened and closed, whereby said spout will be accordingly opened or closed, substantially as described.

338,436. SAFETY-VALVE. WALTER S. PAYNE, Fostoria, Ohio, assignor to Walter S. Payne & Co., same place. Filed Oct. 28, 1885. (No model.)

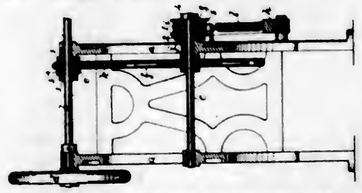


Claim.—1. The combination of a case, A, a removable cover, B, having an upward hollow extension, C, a hollow cap, D, secured to and within the hollow extension, and a vertically-movable valve-stem arranged within the case and passing through openings in the cover and extension C, and projected into the hollow cap, to be guided therein in its movements, substantially as described.

2. The valve-case A, a detachable perforated cover, B, provided with an integral hollow flange, C, a washer, *f*, seated in the flange, and a hollow cap, D, removably secured in the flange, in combination with a vertically-movable valve-stem arranged within the case, and working through the openings of the cover and washer and projected into the cap, substantially as described.

3. In a safety-valve, a case, A, having the threaded extensions *a c*, forming the inlet and outlet ports thereto, and a valve-seat, *b*, intermediate of the ports, a vertically-movable valve-stem having the valve and the depending guide-flanges *g*, the weights placed vertically on and carried by the valve-stem, a removable cover, B, having a threaded collar, C, and a hollow removable cap, D, screwed into the collar, the upper end of the valve-stem passing through the cover into the cap and guided therein, substantially as described.

338,437. FOOT-POWER MACHINE. WILLIAM L. PERRY, Chelsea, assignor, by mesne assignments, of one-half to Blount & Kimpton, Boston, Mass. Filed Sept. 19, 1885. (No model.)



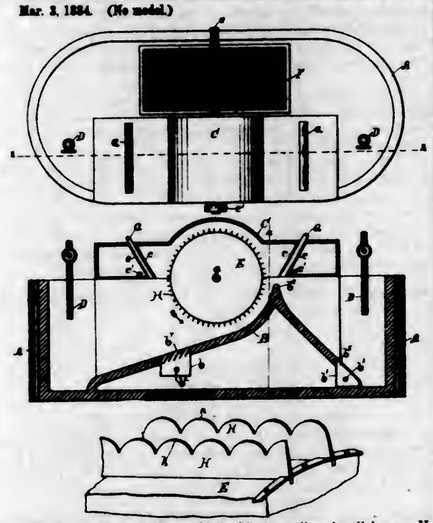
Claim.—1. The shaft *c*, suitable bearings therefor, and the clutch *g*, adapted to be oscillated thereon and revolve said shaft in one direction, combined with the shaft *b*, suitable bearings therefor, and the clutch *e* thereon, adapted to revolve its shaft in one direction, and mechanism, substantially as described, for connecting and transmitting motion from one shaft to the other, as set forth.

2. The shaft *c*, suitable bearings therefor, chain-wheel *f*, fast thereto, and a clutch adapted to oscillate thereon and revolve said shaft in one direction, combined with the shaft *b*, suitable bearings therefor, and a clutch thereon adapted to be driven by an endless chain, *k*, and revolve said shaft in one direction, all substantially as and for the purpose set forth.

3. In a foot-power machine, the combination of a frame, *a*, cross-shafts *b* and *c*, clutches *e* and *g*, wheels *d* and *f*, chain or belt *k*, treadle *h*, strap *i*, cord *j*, and spring *l*, all combined to operate substantially as set forth, whereby the shafts revolve in but one direction, thus utilizing the momentum of the moving parts, and dispensing with the powerful springs usual for reversing and returning the mechanism to its normal position, as set forth.

4. In a foot-power machine, the treadle A, made in the form of a bell-crank lever, combined with the shaft *c* and clutch *g*, adapted to be oscillated thereon by the alternate action of the strap *i* and cord *j*, attached to opposite ends of the lever or treadle, and thus revolve said shaft in one direction as the treadle is depressed by the operator, and returned by means substantially as and for the purpose set forth.

338,438. MACHINE FOR DYEING AND WASHING WOOL AND COTTON. WILBERT POLLARD and HOBBS POLLARD, Pawtucket, R. I. Filed Mar. 3, 1884. (No model.)



Claim.—1. The roll E, provided with the scalloped radial vanes H, as and for the purposes described.

2. The vat A, provided with the partition B and the traps *b b'*, as and for the purposes specified.

3. The combination of the vat A, having the partition B, the traps *b b'*, the deflectors *b⁴*, and screen *b³*, the cover C, the screens G, the axle *e*, and the roll E, having vanes H, arranged and constructed as and for the purposes set forth.

4. In a vat, the combination, with a rotating cylinder having scalloped or indented radial vanes on its periphery and located near the top of and to one side of the vat, and the inverted-V-shaped partition situated directly below the cylinder, of a screen revolving by the side of and on the same axis as the cylinder, substantially as and for the purpose described.

5. The combination, with the vat A, of the cylinder E, the fan F, revolving side by side on the same axis, *e*, the partition B, having the traps *b b'*, the injecting-pipes *b² b²* and D D, the cover C, having the guides *c c*, holding the screens *g g*, and the outlet-pipes *c' c'*, for the purpose specified.

338,439. ELECTRIC SIGNALING APPARATUS FOR RAILWAY-TRAINS. WILLIAM F. RAY, Springfield, Mass. Filed Dec. 19, 1885. (No model.)



Claim.—1. The within-described electric signaling apparatus for railway-trains, consisting of the combination, with a suitable battery and an electrically-actuated alarm-bell located on the engine, of two electric conductors connected with said battery and bell and extending in separated sections throughout the train, a coupling attached to the ends of each section of said conductors, consisting of a cylindrical and half-round metallic shell, to which one of said conductors is attached, having a ring surrounding said half-round portion, a spring-finger thereon extending in a line with the latter, a metallic cross-bar extending between the sides of said half-round part of said shell, a plug of non-conducting material filling said shell, and a circuit making and breaking finger having the second of said conductors attached thereto located in said plug and extending under said cross-bar of the shell, and having a curved portion projecting above the surface of said plug in the said half-round part of the coupling, substantially as set forth.

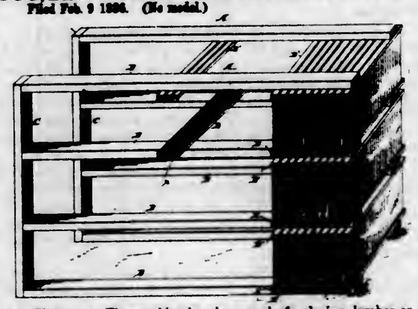
2. The within-described electric signaling apparatus for railway-trains, consisting of the combination, with a suitable battery and an electrically-actuated alarm-bell located on the engine, of two electric conductors connected with said battery and bell and extending in separated sections throughout the train, one or more push-buttons connected with said conductors for sending signals to the engine, a coupling attached to the ends of each section of said conductors, consisting of a cylindrical and half-round metallic shell having the sides of the latter portion thereof united by a metallic cross-bar, to which shell one of said conductors is attached and has a ring surrounding its said half-round portion, a spring-finger thereon extending in a line with the latter, a plug of non-conducting material filling said shell, and a circuit making and breaking finger having the second of said conductors attached thereto, located in said plug and extending under said cross-bar of the shell, and having a curved portion projecting above the surface of said plug in the said half-round part of the coupling, substantially as set forth.

3. Electric signaling apparatus for railway-trains, consisting of a suitable battery and an electrically-actuated alarm-bell located on the engine, of two electric conductors connected with said battery and bell and extending in separate sections throughout the train, combined with couplings attached to the ends of each section of said conductors, consisting of a cylindrical and half-round metallic shell, to which one of said conductors is attached, whose half-rounded ends overlap and are separably secured together by surrounding rings and spring-fingers thereon, substantially as described, each of said couplings having an internally-insulated circuit making and breaking finger, to which one of said conductors is attached, which fingers lie normally in contact with the said cross-bar of the shell and are brought into contact with and removed from the latter by the union of the two couplings, and are automatically returned to said normal position by the separation of the couplings, substantially as set forth.

4. The within-described coupling for the ends of the conducting-wires of electric railway signaling apparatus, consisting of a cylindrical and half-round metallic shell having the sides of the latter portion thereof united by a metallic cross-bar, to which shell one of said conducting-wires is attached and has a ring surrounding its said half-round portion, a spring-finger thereon extending in a line with the latter, and an internally-insulated circuit making and breaking finger, to which one of said conductors is attached, which lies normally in contact with said cross-bar of the shell, and has a curve therein to make a contact with the finger of another coupling when two of the latter are united, and whereby contact is broken between said finger and said cross-bar, substantially as described.

5. As means for maintaining an open circuit in the conducting-wires of an electric railway signaling apparatus, the combination, with the cylindrical and half-round coupling *b*, having one of said conducting-wires attached thereto, and having an internally-insulated circuit making and breaking finger, to which one of said conductors is attached, one end of which lies normally in contact with said shell, of the non-conducting plug K, located in the coupling-receiving socket *t* of a fixed part of the end of the car, with which said coupling is engaged, and whereby the contact of its said finger with said shell is broken, substantially as described.

338,440. LUMBER-DRIER. PERLEY B. RAYMOND, Indianapolis, Ind. Filed Feb. 9, 1886. (No model.)

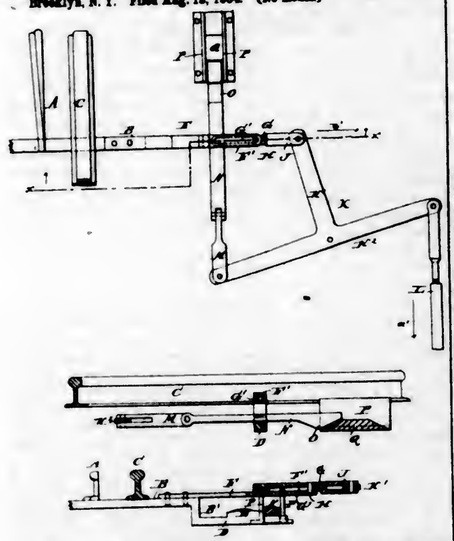


Claim.—1. The combination, in a rack for drying lumber or veneers, of pairs of cross-bars provided with oppositely-arranged grooves

placed parallel to each other, substantially as described, and adapted to receive between them the sheets to be dried, as and for the purpose set forth.

2. A rack for drying lumber or veneers, provided with grooved guides B B', arranged in pairs parallel to each other in a horizontal position, and with their grooved faces toward each other, substantially as set forth.

338,441. SWITCH-LOCK AND THROW-BAR. WILLIAM B. S. REED, Brooklyn, N. Y. Filed Aug. 13, 1884. (No model.)



Claim.—1. The combination, with a switch-bar provided with lugs or notches in its top edge, and carrying both switch rails or tongues, of a T-shaped lever having one arm connected by a lost-motion link with the said switch-bar, and a locking-bar connected with said T-shaped lever that actuates the switch-bar, substantially as herein shown and described.

2. The combination, with a switch-bar having lugs or notches, of a locking-bar crossing the switch-bar and connected with devices for throwing the switch-bar, of beveled projections on the locking-bar, and of fixed beveled projections on which the beveled projections of the locking-bar rest, substantially as herein shown and described.

3. The combination, with a switch-bar having lugs or notches, of the locking-bar N, crossing the switch-bar and connected with the devices for throwing the switch-bar, of the V-shaped or beveled lug on the locking-bar, and of the plate Q, having its ends beveled in opposite directions, on which plate Q the beveled ends of the locking-bar rest, substantially as herein shown and described

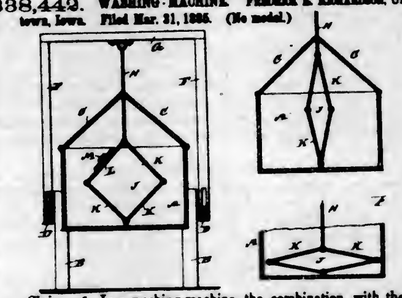
4. The combination, with the switch-bar B, having the lug E, of the pivoted T-shaped lever K, the link G, pivoted to the same and to a link-bar on the switch-bar, the locking-bar N, having a beveled lug, O, the link M, connecting the locking-bar with the cross-piece of the lever K, and the block Q, having its ends beveled in opposite directions, on which block the beveled ends of the switch-bar rest, substantially as herein shown and described.

5. The combination, with the switch-bar B, having a lug, E, of the link-bar F, connected with the switch-bar, the link G, having longitudinal slot G', through which a pin, H, of the link-bar passes, the pivoted T-shaped lever K, connected with the link G, the locking-bar N, crossing the switch-bar and connected with the cross-piece of the lever K by the link M, the beveled lug on the locking-bar, the guide-plates P, and the bottom plate, Q, having its ends beveled in opposite directions, substantially as herein shown and described.

6. The combination, with a switch-bar provided with lugs or notches in its top edge, and carrying both switch-rails or tongues, of a locking-bar extending over the switch-bar, which locking-bar is actuated by the same device that actuates the switch-bar, and is combined with devices for raising and lowering it during its movements, substantially as herein shown and described.

7. The combination, with the switch-bar B, of the part D, secured to the same, and having the lug E, the link F, secured on the switch-bar above the part D, which link F is connected with a T-lever, and of a locking-bar passed over the part D, substantially as herein shown and described.

338,442. WASHING-MACHINE. FREDERIK R. RICHARDSON, Uniontown, Iowa. Filed Mar. 31, 1885. (No model.)



Claim.—1. In a washing-machine, the combination, with the box A and the collapsible cage therein, of the levers D, pivoted to the box, the uprights F, pivoted to the inner ends of the levers D and having the cross-piece G at their upper ends, and the rod H, connected to said cross-piece, and the collapsible cage, substantially as herein shown and described.

2. In a washing-machine, the combination, with the box A, of the hinged top sections, C, the rod H, a frame to which the said rod is connected, and of levers for working the said frame, substantially as herein shown and described.

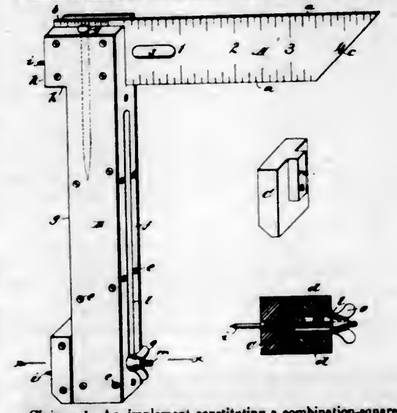
3. In a washing-machine, the combination, with the box A, having an aperture in its cover, of the collapsible cage J, provided with the door M, the operating-levers D, pivoted to the box, the uprights F, pivoted to the inner ends of the said operating-levers and having the cross-piece G, and the rod H, passing through the aperture of the cover of the box and having its ends pivoted to the said cross-piece G and collapsible cage, respectively, substantially as herein shown and described.

338,443. CONVERTIBLE KEG. JOHN H. SOHREN, New York, N. Y. Filed Jan. 4, 1886. (No model.)



Claim.—As an improved article of manufacture, a combined hoop and bail consisting of a hoop provided with a pivoted bail having substantially the same inner radius from the center of the line connecting the pivots as the larger exterior radius of the hoop, as set forth.

338,444. COMBINED SQUARE, MITER, AND CIRCLE-SCRIBER. WILLIAM F. SEARGEANT, Marshall, Mo. Filed July 25, 1885. (No model.)

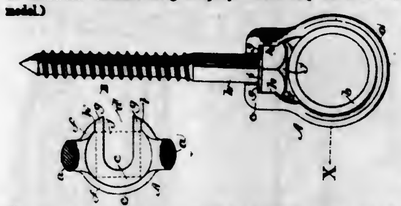


Claim.—1. An implement constituting a combination-square having a graduated blade, the point of which is beveled, a slotted stock, on which there is mounted a sliding block carrying a point, i', a second point, i, being carried by the stock just back of the heel of the blade, substantially as described.

2. A combination-square having a blade-miter beveled at the point, said blade being graduated on both edges of each face, and being formed with a slot, s, a slotted stock carrying a pin, i, which, in conjunction with a pin, i', carried by a sliding block, C, forms a circle-scribing attachment, substantially as described.

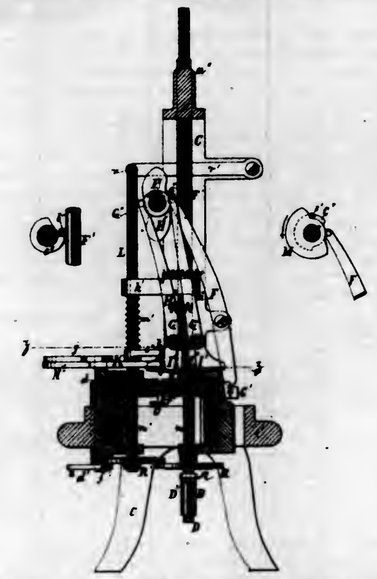
3. A combination-square containing the following elements: slotted blade graduated on both edges of each face, a slotted stock, having a shoulder, k, that carries a pin, i, and is clamped to the stock by a bolt, m, and thumb-screw o, substantially as described.

338,445. PIPE-RING. HARRY H. SHAW, Boston, Mass., assignor to the Walworth Manufacturing Company. Filed May 16, 1885. (No model.)



Claim.—A pipe-supporting ring formed with a circular portion to receive the pipe to be thereby sustained, a flattened portion having an open slot to receive the stem of the supporting-screw, and a seat to receive the head of said screw, and having steps formed upon said flattened portion outside said seat and at such distance from said slot that the space between the steps is less than the diameter of said seat, substantially as specified.

338,446. MACHINE FOR MAKING THREADED WIRE NAILS, WOOD-SCREWS, &c. THOMAS J. SLOAN, St. Menda, France. Filed Feb. 8, 1883. Renewed Nov. 21, 1885. (No model.) Patented in France July 12, 1880, No. 137,798, and July 13, 1881, No. 142,921.



Claim.—1. In a machine for making spirally-threaded nails, screws, bolts, and the like, the combination of the following elements, to wit: mechanism for cutting and heading the blank, consisting of the jaws E E, shaft F, provided with heading device F'' and proper cutters *e e*, for separating the blank, mechanism for transferring the headed blank from the heading-jaws to the threading mechanism, consisting of the nippers K, adapted to be swung in the arc of a circle, and mechanism for threading the blank, consisting of the dies N N', provided with spiral threads adapted to be rotated with unequal surface movements, the said elements being constructed and arranged to operate conjointly, substantially as herein set forth.

2. In a machine for making spirally-threaded nails, screws, bolts, and the like, the threaded disks N N', in combination with means, substantially as described, for giving the same a differential movement of surface in opposite directions, the said disks being arranged opposite each other in such relation as to roll the nail or like article upon its own axis between them, and thus form the spiral groove thereon by the contact of the threaded surfaces of the disks, all substantially as and for the purpose set forth.

3. In a machine for making spirally-threaded nails, screws, bolts, and the like, the oppositely-arranged circumferentially-threaded differentially-speeded disks N N', in combination with the nippers K, arranged to carry the blank holding it in a vertical position to the said disks, substantially as and for the purpose herein set forth.

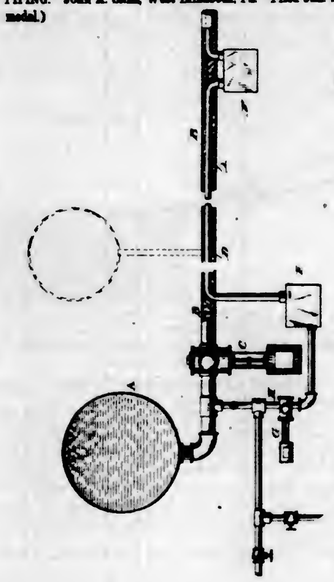
4. In a machine for making spirally-threaded nails, screws, bolts, and the like, the combination, with circumferentially spirally-threaded disks N N', adapted to be rotated, of the bar O, having the upwardly-projecting stem *f'*, and adapted by the cam T and spring *w* to be reciprocated horizontally to operate said stem in relation to the receiving side of said threading-disks, and mechanism, substantially such as described, whereby the headed blank is gripped, taken from the position in which it was headed, held, carried, and deposited in position to be received between the threading-disks, substantially as described.

5. In a machine for making spirally-threaded nails, screws, bolts, and the like, the combination of the gripping-jaws E E', the die or hammer F, the cutters *e a*, and the circumferentially threaded disks N N', adapted to be rotated with unequal surface speed, with the means, substantially as described, for seizing and holding the headed blank and transferring it by a horizontal swinging movement to a position to be deposited at the receiving side of the threading-disks, and mechanism, substantially such as described, whereby the headed blank is forced downward from between the seizing, holding, and carrying devices, in position to be received by said rotating disks, substantially as described.

6. The combination, in a machine for making spirally-threaded nails, bolts, and the like, of the spirally-threaded disks or rollers N N', adapted to have different rates of rotation, with means for effecting such rotation, consisting of the spur-gears R R', having an unequal number of teeth, and consequently of different diameters, arranged upon the shafts of the disks N N', respectively, and the spur-gear R'', by which the spur-gears R R' are actuated, whereby the inner peripherical surface of the disk N' will be more rapidly moved in a direction away from the heading and cutting mechanism than the peripherical surface of the disk N is moved in a direction toward the same, to cause the blank to be seized at one side, carried between said disks, and discharged at the other side of the same.

7. The improved machine herein described for making spirally-threaded nails, bolts, and the like, comprising the following elements in combination, viz: the heading and pointing jaws E E', the circumferentially-threaded disks or rollers N N', operating with unequal surface speed, the nippers K, operating to seize, hold, and carry by a controlled swiveling movement the blank from the heading to the threading mechanism, the reciprocating bar O, having the vertical stem *f''*, operating to deliver the blank between the threading disks or rollers, and mechanism operating to force the headed blank down from between the carrying-nippers in position to be received between the said threading disks or rollers, all constructed and arranged for co-operation, substantially as herein set forth.

338,447. METHOD OF AND APPARATUS FOR REGULATING THE TEMPERATURE OF A SUBSTANCE PASSING THROUGH A LINE OF PIPING. JOHN A. SHIM, West Elizabeth, Pa. Filed Jan. 22, 1886. (No model.)

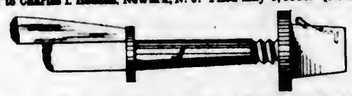


Claim.—1. The method of regulating the temperature of a substance passing through a line of piping by means of a medium having the required temperature passing through a pipe passing longitudinally through sections of the line of piping, and through devices at the ends of the sections, substantially as described, for imparting to the regulating medium the required temperature, substantially as shown and described.

2. The combination of a line of piping, a pipe extending longitudinally through the interior of sections of said line of piping, and through temperature-regulating devices, substantially as described, a force-pump connected with a line of piping for forcing the desired substance through it, and another force-pump connected with the interior pipe for forcing another substance having the desired temperature through it, substantially as and for the purpose set forth.

3. The combination of a line of piping, a pipe connected at one end with the interior of said line of piping and passing through a temperature-regulating device and through the interior of sections of said line of piping, and through other temperature-regulating devices at the ends of the sections similar to the first one and substantially as described, and a force-pump connected with the interior pipe between the point where it is connected with the line of piping and the first temperature-regulating device, as shown and described.

338,448. **NUT-LOCK.** WILLIAM P. TEED, Livingston, assignor of one-half to Charles I. Hedden, Newark, N. J. Filed May 9, 1885. (No model.)



Claim.—1. The combination of the notched axle or bolt and a recessed nut having a spring-actuated lever to engage the notch in the axle, held in said recess by a fulcrum, *f*, as set forth.

2. The combination of the notched bolt or axle, a nut, and a lever fulcrumed on said nut and having a tooth to engage the notch of said bolt, and a bearing, *k*, to prevent said lever from turning, substantially as set forth.

3. In combination, the notched or ratcheted and threaded bolt, the nut having the recess *c*, perforation *d*, and ears *g*, the lever having the the tooth *h*, bearing *k*, and spring *j*, all formed of one piece, and the fulcrumal pin, said parts being arranged and operating substantially as set forth.

4. A lock-nut for vehicle-axles, having a lever fulcrumed thereon, said lever having at one end a tooth to engage a notch in said axle and at the other an outwardly or radially projecting and inclined end or arm adapted to be depressed by the wrench and to raise said tooth, substantially as set forth.

5. In a nut-lock, the nut having the recess *c*, opening *d*, and ears *g*, a lever, *e*, having one end turned, as at *j*, to form a spring and the other bent into said opening and toothed to engage the notch of the bolt, and provided with the incline *i* and bearing *j*, and the pin *f*, all said parts being arranged and combined substantially as and for the purposes set forth.

6. The improved lock for vehicle-axles, combining therein a nut and a spring having a tooth to engage a notch in the axle, and having an end or arm, *l*, extending radially or outwardly from the nut and adapted to be depressed by the wrench and to raise the tooth from engagement from the axle, substantially as herein set forth.

338,449. **KITCHEN UTENSIL.** IDA A. TELLER, Unadilla, N. Y. Filed Dec. 29, 1885. (No model.)



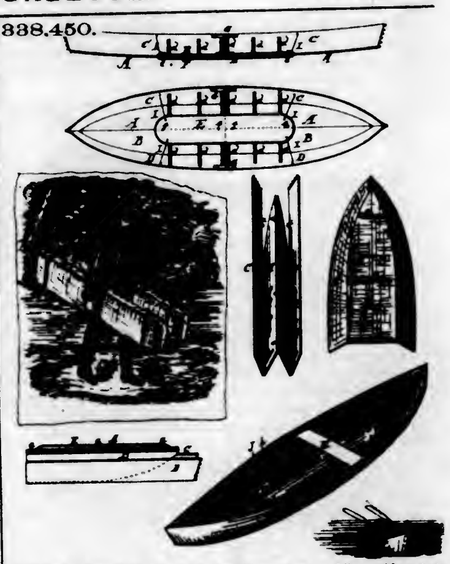
Claim.—A kitchen utensil consisting of a thin blade of steel having a uniform thickness, and a handle fastened to one corner at an oblique angle to the blade, whereby it may be conveniently used, as described.

338,450. **SECTIONAL AND FOLDING BOAT.** FREDERIC W. URAHN, Painesville, Ohio. Filed Nov. 30, 1885. (No model.)

Claim.—1. The combination, with the bottom A B, consisting of one continuous piece, of the side pieces, C D, attached to the midship portion of said bottom by strap-hinges *d d*, enabling said side pieces to be folded to lie down upon said bottom, and when turned upright the free ends are bent to join onto the curved edges of said bottom piece and secured together at their meeting ends by staples or eyes and a pintle passed through them, thereby forming one section of the boat-frame, as shown and described.

2. The half-bottom divided longitudinally into two parts, A B, said

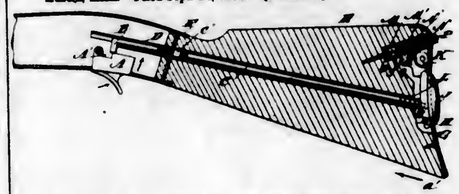
338,450.



parts being joined together by strap-hinges *a a*, enabling said parts to be folded together or opened out, and said parts A B having attached the side pieces, C D, by means of the strap-hinges *d d*, enabling them to be folded to lie upon said bottom pieces, or when turned upright their free ends are bent to join onto the curved edges of said bottom and the ends secured together with staples and a pintle, thereby forming one section of boat-frame, all constructed as shown and described.

3. The combination of the two sections of a boat consisting of the bottom A B, divided longitudinally and hinged together, and provided with sides C D, hinged to said bottom pieces, as described, the union of the two sections consisting in joining said sections amidship and securing them together by means of the upper and lower boards, E F, and binding them to the bottom with bolts *e e*, and spreading and holding the top edges of the side pieces, C D, with the transverse seat H and the braces I I, and said sections incased in the impervious skin, thus completing the boat, as shown and described.

338,451. **SAFETY-LOCK FOR FIRE-ARMS.** HENRY C. WALDHEIER, Austin, Minn. Filed Sept. 24, 1885. (No model.)



Claim.—1. The combination, with the trigger-locking rod and its operating-plate, of the locking-bolt adjacent to said operating-plate and constructed to engage a part thereof and prevent its movement, substantially as set forth.

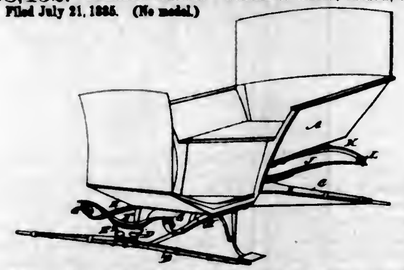
2. The combination, with the gun-stock and the trigger, of the locking-rod, its operating-plate projecting beyond the face of the butt or heel plate and provided with an arm or projection, and a locking-bolt extending beyond the butt-plate at its heel and constructed to engage said arm or projection and lock the operating-plate, substantially as and for the purpose set forth.

3. The combination, with a gun-stock, of a swinging plate in the butt-end of the same, a rod extending from said plate to the trigger, a prong on the swinging plate, a fixed tube in the stock, and a sliding tube in the fixed tube, both tubes having slots into which the above-mentioned prong can pass when the slots register, substantially as herein shown and described.

4. The combination, with the gun-stock E, of the plate K, pivoted at the butt-end of the stock, the prong S on the said plate K, the rod C, extending from the plate K to the trigger, the fixed tube M in the stock and having the slot Q, the sliding tube N in the tube M and having the slot R, and of a spring for pressing the tube N outward, substantially as herein shown and described.

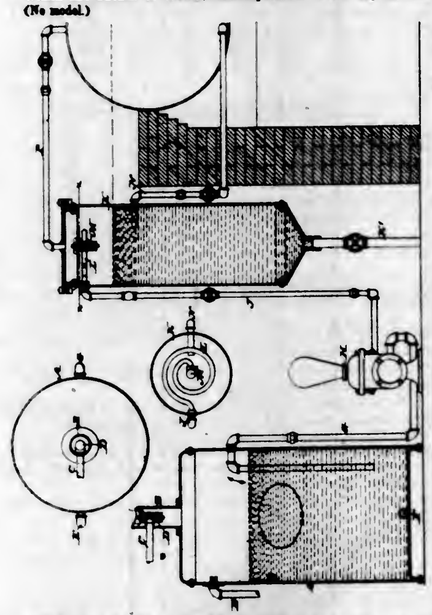
5. The combination, with the gun-stock E, of the plate K, pivoted on the butt or heel plate of the stock and having a cushion-plate projecting through an opening in the heel-plate, a rod extending from the plate K to the trigger, the tube M in the stock, the sliding tube N in the tube M, the spring O, for pressing the tube N outward, and the prong S on the plate K, substantially as herein shown and described.

338,452. **PHAETON-SPRING.** WILLIAM J. WAYNE, Decatur, Ill. Filed July 21, 1885. (No model.)



Claim.—The combination, with a vehicle-body and front and rear springs, F J, of the front quarter-elliptical springs, H, secured to the body and to the springs F by shackles G, and the rear quarter-elliptical springs, K, secured to the body and to the spring J by knuckle-joints L, substantially as herein shown and described.

338,453. **WATER-HEATING APPARATUS FOR BOILERS.** THOMAS WELSH and THOMAS R. CROCKER, Philadelphia, Pa. Filed May 21, 1885. (No model.)



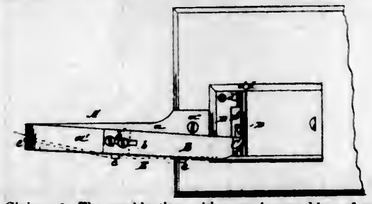
Claim.—1. The tank A, having the exhaust-steam pipe, with the water-pipe C, having an adjustable sprinkler connected to said pipe C and opening in said pipe B, and the discharge-pipe G, having its inner open end near the bottom of said tank, substantially as and for the purpose set forth.

2. The tank A, having an adjustable water-sprinkler opening into an inlet-steam exhaust-pipe, in combination with an outlet-pipe having its inner end near the bottom of said tank, a force-pump, a heater, and an inlet-pipe for said heater having an adjustable sprinkler, substantially as described.

3. The tank A, in combination with pump H, pipes G and J, said pipe having coil L and sprinkler M, heater K, and a boiler, steam-pipe P, communicating with said boiler and opening into said heater above said coil M, and water-pipe N, also communicating with the boiler and opening into the heater below the water-line of the said boiler, all of said parts being arranged, combined, and operating substantially as described.

4. The heater K, in combination with the inlet-pipe J, having a coiled end portion within the said heater, and provided with the adjustable sprinkler M, the steam-pipe P, a boiler, and the water-pipe N, the said steam-pipe opening into the heater above the said sprinkler M, and the water-pipe N opening into the said heater below the water-level of the said boiler, substantially as and for the purpose set forth.

338,454. **CORDING AND BONING ATTACHMENT FOR SEWING-MACHINES.** ELBERT D. WHEDON, Chicago, Ill., assignor to himself and the Union Bag Machine Company, same place. Filed May 12, 1885. (No model.)



Claim.—1. The combination, with a sewing-machine, of mechanism for inserting and securing cords, bones, or braid in a fabric, consisting, essentially, of a plate, D, located in the bed-plate of the machine and having its upper surface grooved to receive and guide the cord, bone, or braid, and provided with an orifice through which the feed operates, and an arm, B, connected at one end with the machine-bed, with its other end arranged above the grooved plate and provided with a guide around which the cord, bone, or braid passes to the grooved plate, substantially as described.

2. The combination, with a sewing-machine, of mechanism for inserting and securing cords, bones, or braid in a fabric, consisting of a plate, D, located in the bed-plate of the machine and having its upper surface grooved to receive and guide the cord, bone, or braid, and provided with a slot, D′, through which the feed operates, the plate A, secured to the bed-plate and having an overhanging arm, *a*, and the arm B, connected at one end with said overhanging arm and having its other end arranged above the grooved plate and provided with a guide around which the cord, bone, or braid passes to the grooved plate, substantially as described.

3. The combination of the plate D, having its upper surface grooved and provided with a slot, D′, for the operation of the feed-dog of a sewing-machine, with the plate A, having the overhanging arm *a*′, and the arm *a*, for attaching it to the bed-plate of the machine, and the longitudinally-adjustable arm B, carried at one end by the overhanging arm, and provided at its other end with a guide arranged above the grooved plate, and around which a cord, bone, or braid is adapted to pass to the grooved plate for inserting and securing the cord in a fabric, substantially as described.

4. The combination of the plate D, having its upper surface grooved and provided with a slot, D′, for the operation of the feed-dog of a sewing-machine, with the plate A, having an arm, *a*′, and an arm, B, adjustably secured at one end to said arm *a*′, and provided at one edge with the guide-eyes *c* and at its other end with the guide C, located directly above the grooved plate, and around which a cord, bone, or braid is adapted to pass to the grooved plate for inserting and securing the cord in a fabric, substantially as described.

5. The combination, with a sewing-machine, of the plate D, detachably secured in the bed-plate of the machine and having its upper surface horizontally grooved, with the ends of the groove opening at the ends of the plate and provided with the slot D′ and hole D″, through which the feed-dog and needle operate, and an adjustable arm, B, having at one end a guide, C, located directly above the grooved plate for conducting thereto a cord, bone, or braid to insert and secure the same in a fabric, substantially as described.

338,455. **STOVE-DOOR HANDLE.** JAMES G. WHITLOCK, Richmond, Va. Filed Mar. 17, 1885. (No model.)

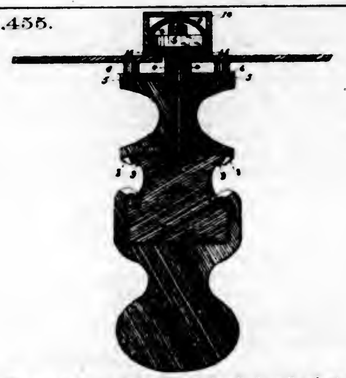
Claim.—1. The combination of a handle having a stem, 2, a nut by which the handle is secured, and a protecting non-combustible non-conducting envelope, 4, substantially as set forth.

2. The combination of a handle having a stem, 2, a nut by which the handle is secured, non-conducting asbestus envelope 4, and shield 5, and metallic insulating-shield 6, substantially as set forth.

3. The combination of a handle having a stem, 2, a nut by which the handle is secured, metallic handle-base 7, and asbestus shield 9, the asbestus shield being interposed between the handle and the handle-base, substantially as set forth.

4. The combination of a handle, 10, having a stem, 2, handle-base 7, a nut by which the handle is secured, metallic insulating-shield 6, envelope 4, having shield 5, supplemental handle 12, and asbestus non-conducting shields 9 and 11, substantially as set forth.

338,455.

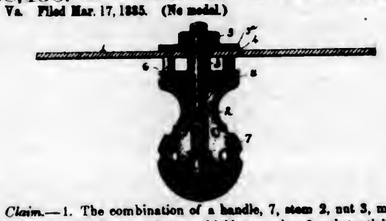


5. The combination of a handle, 10, handle-base 7, asbestus shield 9, stem 2, nut 3, and envelope 4, substantially as set forth.

6. The combination of a handle, 10, handle-base 7, asbestus shield 9, stem 2, nut 3, envelope 4, and cap 14, having flanges 15, substantially as set forth.

7. The combination of a handle, 10, supplemental handle 12, asbestus shield 11, handle-base 7, asbestus shield 9, stem 2, and nut 3, substantially as set forth.

338,456. STOVE-DOOR HANDLE. JAMES G. WHITLOCK, Richmond Va. Filed Mar. 17, 1885. (No model.)



Claim.—1. The combination of a handle, 7, stem 2, nut 3, metallic insulating-shield 6, and asbestus shield or washer 8, substantially as set forth.

2. The combination of a handle, 7, stem 2, nut 3, and wrapping 5, of asbestus, substantially as set forth.

3. The combination of a handle, 7, stem 2, nut 3, and washer 4, of asbestus, substantially as set forth.

4. The combination of a handle, 7, stem 2, nut 3, washer 4, of asbestus, and plate 3*, substantially as set forth.

5. The combination of a handle, 7, stem 2, nut 3, washer 4, of asbestus, and wrapping 5, of asbestus, substantially as set forth.

6. The combination of the handle 7, handle-stem 2, nut 3, non-conducting asbestus shields 4 and 8, and the metallic insulating-shield 6, as shown and described.

7. The combination of the handle 7, handle-stem 2, nut 3, non-conducting asbestus shields 4 and 8, asbestus wrapping 5, and the metallic insulating-shield 6, as shown and described.

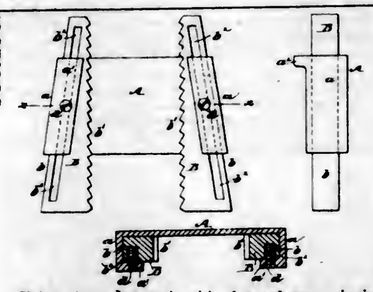
338,457. SAD-IRON. JAMES G. WHITLOCK, Richmond, Va. Filed Mar. 17, 1885. (No model.)



Claim.—The combination of the handle-stem 1, collars 2 7, non-conducting wrapping 3, non-conducting washers 4 6, and the handle 5, separated from contact with the handle-stem 1 by the said non-conducting wrapping and washers, as and for the purposes herein set forth.

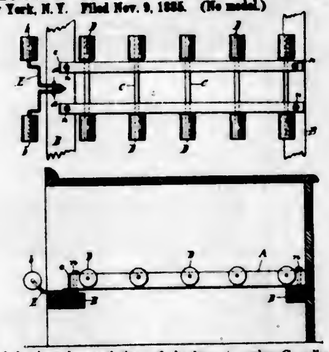
338,458. KEYING-CLAMP. ROBERT S. ARMFIELD, Rutherford College, N. C. Filed Dec. 3, 1885. (No model.)

338,458.



Claim.—As an improved article of manufacture, a keying-clamp consisting of the frame A, formed with the diagonal side flanges, *a*, the flanges *a'*, extending inward from the lower edges of the side flanges parallel with the face of the frame A, and the outward-projecting lip a^2 on the narrow end of the frame, the wedge-shaped jaws B B, having straight serrated inner edges, *b'*, smooth inclined outer edges, *b*, and longitudinal slots b^2, parallel with the inclined edges *b*, and the screws *d*, extending through the flanges *a'* into the slots b^2, substantially as set forth.

338,459. ROLLER AND EXTENSION AXLE. A. LESSEL ADAMS, New York, N. Y. Filed Nov. 9, 1885. (No model.)



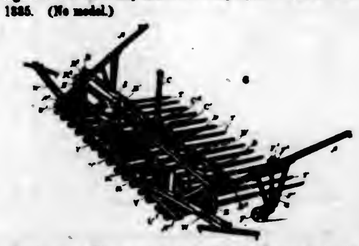
1. A book-rack consisting of the bars A, axles C, rollers D, and spring E, substantially as herein shown and described.

2. A spring, E, bent in the shape of a staple, then to the right and left, then upward and outward, with or without rollers on its outer ends, substantially as shown and described.

3. In combination with a book-rack, the spring E and its rollers *b*, substantially as and for the purpose described.

4. A book-rack consisting of the bars A, axles C, rollers D, spring E, and rollers *b*, substantially as and for the purpose described.

338,460. HORSE HAY-RAKE. HORACE A. ALDEN, Peoria, Ill., assignor to the Acme Hay Harvester Company, same place. Filed June 1, 1885. (No model.)



Claim.—1. The combination, with the hay-rake having tongues pivotally attached to the ends thereof, of the levers connected to the frame of said rake, and adapted to have their outer ends rest upon said tongues, and provided with means for raising their inner ends, for the purpose set forth.

2. The combination, with the hay-rake having tongues pivoted to its ends, of the levers pivotally connected to the frame of said rake and connected at their outer ends to said tongues, and the elbow-lever arranged to elevate the inner ends of said levers, substantially as and for the purpose set forth.

3. The combination, with the hay-rake having the tongues pivoted to its ends, of the levers B, centrally pivoted to the frame of the rake, and having their outer ends rest upon said tongues, the elbow-lever C, pivoted to said frame, and the links D, joining the short arm of said elbow-lever to the inner ends of said levers B, substantially as and for the purpose specified.

4. The combination, with the hay-rake and the tongues pivoted thereto and allowed a limited vertical play by means of the straps E, of the levers B, pivoted at an intermediate point of each to the angle-irons B', fast on the frame of the rake, and having their outer ends rest upon said tongues, the elbow-lever C, pivoted to the bearing-irons C^2, projecting rigidly from said frame, and the links D, joining the short end of said elbow-lever to the inner ends of said levers B, substantially as and for the purpose specified.

5. The combination, with the hay-rake having tongues pivoted to its ends, and provided with means for supporting the weight of the front portion of the rake-teeth from said tongues, of the caster-wheels swiveled to said tongues and adapted to uphold the same, for the purpose set forth.

6. The combination, with the hay-rake having tongues pivoted to the ends thereof, and provided with means whereby said tongues can support the front portion of the teeth of said rake, of the caster-wheels F, having vertical swivel-shafts F', the V-braces G, secured to the under sides of said tongues, and having suitable bearings at their vertices for receiving said swivel-shafts, the bearing-plates F^2, secured to said tongues, for holding the upper ends of said swivel-shafts, and the pins F^3, as and for the purpose specified.

7. The hay-rake having the tongues A pivoted to its ends and the caster-wheels F swiveled to said tongues and adapted to support the same, in combination with the levers B, pivoted to the frame of the rake and having their outer ends rest upon said tongues, and the elbow-lever C, pivoted to said frame and having its short arm joined to the inner ends of said levers B, substantially as and for the purpose specified.

8. The hay-rake consisting of the teeth T, parallel beams R R' R^2, and blocks U U' U', in combination with the tongues A, pivoted to said blocks U', the angle-irons B' and levers B, connected therewith, the prolonged bolts L, the tubes P, surrounding said bolts, and the brace-rods M, having eyes M', held by said bolts and tubes, and having their lower ends anchored at the ends of the beams R', as set forth.

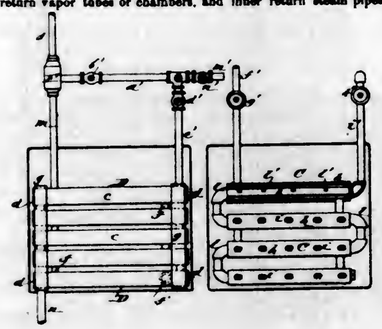
9. The hay-rake consisting of teeth T T, parallel beams R R' R^2, blocks U U' U', the tongues A, pivoted at A' to the blocks U', the straps E, for laterally confining said tongues, and the draft-bars W, in combination with the caster-wheels F, having swivel-shafts F' and V-braces G, for holding the same to the tongues, the levers B, pivotally connected to the rake-frame by the angle-irons B', and having their outer ends rest upon said tongues, and the elbow-lever C, having bearing-irons C^2, and links D, for connecting its short arm to the inner ends of the levers B, as set forth.

338,461. VAPOR-FUEL APPARATUS. ADOLPH I. ARMLER, Chicago, Ill. Filed Dec. 9, 1885. (No model.)

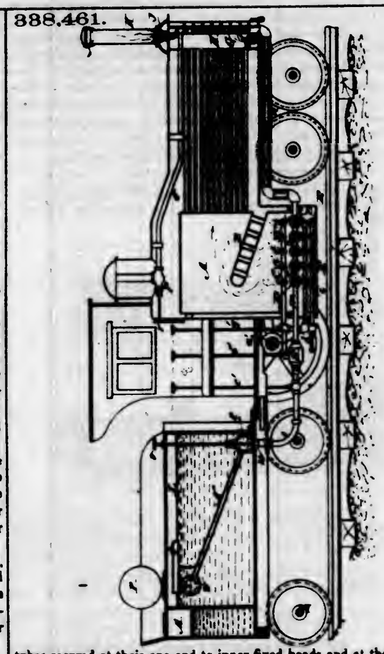
Claim.—1. In apparatus for the production and use as vapor-fuel of petroleum or its products and steam combined, the combination, with a mixer of the oil and steam, of a retort or retorts for heating the vapor derived from said mixer, and a series of burners arranged above and below said retorts, and arranged to receive their supply of heated vapor from the retorts, essentially as described.

2. In vapor-fuel apparatus, the combination, with oil and water reservoirs and tanks, of a steam-boiler of locomotive type, having a suction-chamber in its forward end, a superheater for the steam, a steam and oil mixer, a retort or retorts arranged within the fire-box of the boiler, burners arranged above and below said retorts and connected with them, and pipes and valves connecting and controlling the supply of oil and steam to the mixer and retorts, and vapor from the retorts to the burners, substantially as described.

3. The retort or retorts of the apparatus, consisting of a series of outer return vapor tubes or chambers, and inner return steam pipes or



338,461.

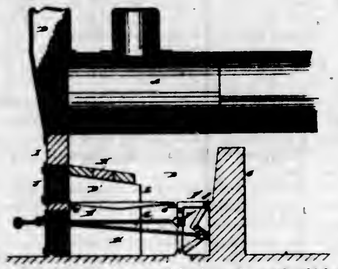


tubes secured at their one end to inner fixed heads and at their opposite end to inner sliding or piston-like heads, substantially as shown and described.

4. In an apparatus for the production and use of vapor-fuel, the combination of an oil and steam supply, a mixer and force-pump, retort-cylinders closed at each end, internal steam-heating tubes, steam-chambers, a vapor-chamber in each cylinder, and connecting-pipes for the passage of the steam and vapor from one cylinder to the other of the retort, substantially as shown and described.

5. The cylinders forming the outer casings of each part of the multiple retort, the headings therein, the internal steam-heating tubes, the steam-chambers, and vapor-chambers, combined with the pipes connecting the steam-chambers and the vapor-chambers of each retort, and the pipes and valves connecting the apparatus with the supply of oil and steam and the burners, substantially as described.

338,462. BOILER-FURNACE. ABSALOM BACKUS, Jr., Detroit, Mich. Filed Aug. 7, 1885. (No model.)



Claim.—1. In a furnace, a wall having a flue with which the flues of the boiler communicate at their forward ends, a combustion-chamber located under the forward end of the boiler, an arch, K, abutting against the front wall of said chamber, midway thereof, and extending over the front half, or thereabout, of the stationary grate, and a bridge-wall, substantially as described.

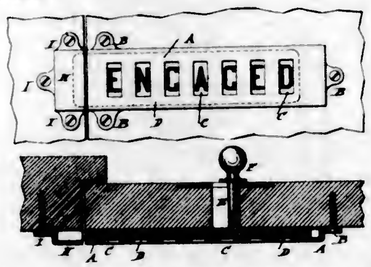
2. In a furnace, the combination, with a stationary grate, of a damping-grate consisting of an L-shaped grate-section pivoted by the ends of its longer arms to a support, and by the ends of the shorter arms to a supporting bar or plate pivoted beneath said damping-grate, substantially as described.

3. In a furnace, the combination, with a stationary grate, of a damping-grate consisting of an L-shaped grate-section pivoted by its

longer arms or bars to a rigid support, and by its shorter arms to a bar or plate having pivotal support beneath said grate, and a connecting-bar pivotally attached to the supporting-bar, substantially as described.

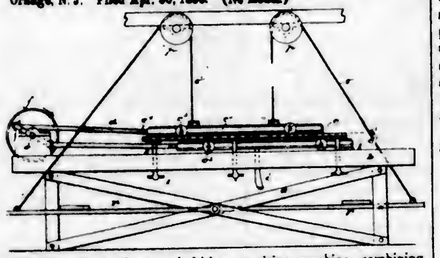
4. In a furnace having a free combustion-chamber adapted to permit direct radiation of heat from the fuel-bed against the under surface of the boiler, and an inclined arch, K, located in the front portion of the combustion-chamber and about midway between the top thereof and the grate, the front of said arch abutting against the front wall of the combustion-chamber to form a coking-oven, substantially as described.

338,463. INDICATOR-BOLT. ALFRED E. BARRETT, London, England. Filed Aug. 7, 1885. (No model.) Patented in England Apr. 22, 1885, No. 4,990.



Claim.—The combination of perforated or slotted frame A, fixed outside the door or window, bolt D, sliding therein and itself forming also an indicator, stem E, passing through slotted guide G to the interior of the room or back of window or partition, the handle or knob F, to actuate the bolt or indicator, and catch and plate H, substantially as described.

338,464. HAT SIZING OR FELTING MACHINE. FRIEDRICH BAUER, Orange, N. J. Filed Apr. 30, 1885. (No model.)



Claim.—1. An improved felting or sizing machine, combining therein an upper and lower felting-bed, the latter of which is provided with a raised margin or edge, to enable said bed to hold water, and means for operating the upper of said beds, substantially as set forth.

2. A horizontal felting-bed and a co-operating bed, comprising a plurality of hinged sections adapted to be separately raised to remove the hat, substantially as set forth.

3. In combination, upper and lower reciprocating felting-beds working oppositely in parallel planes and provided with corrugated or ribbed felting-surfaces, the opposite ends of the ribs being turned at an angle to the center portions thereof on the plane beds, substantially as and for the purposes set forth.

4. In combination, the upper and the lower reciprocating felting-beds and adjusting mechanism, whereby the said beds may be separated or brought together while the hats are under the influence of the two oppositely-moving surfaces, substantially as set forth.

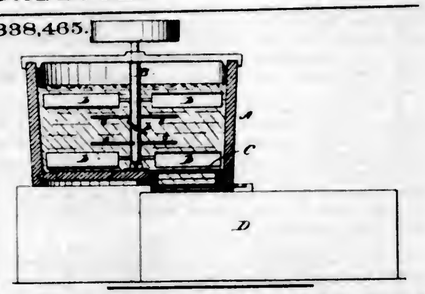
5. In combination, the lower bed provided with a raised margin and a pipe, *i*, and an upper reciprocating surface, substantially as shown and described.

6. In combination, two oppositely reciprocating felting-surfaces, one of which works on adjustable tracks or ways whereby it may be raised or lowered to or from the other, substantially as set forth.

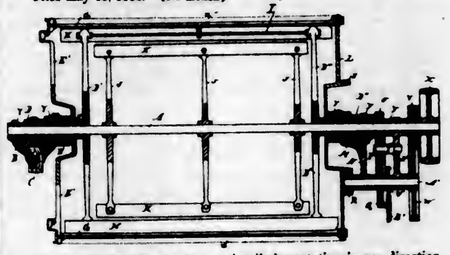
338,465. MANUFACTURE OF TILES. JOSEPH BAYER and EMIL PUCHTA, Washington, Mo. Filed Sept. 25, 1885. (No model.)

Claim.—The process herein described of making tiles, which consists in first washing the clay by mixing it with water, stirring the same, passing the washed clay through a sieve, drying the washed or purified clay, and subsequently grinding it and pressing it into form, and finally baking the same, as specified.

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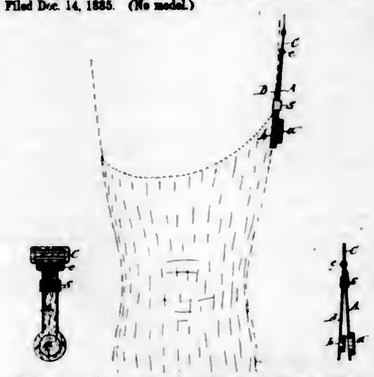
338,466. CENTRIFUGAL REEL. HENRY E. BIERLING, Jackson, Mich. Filed May 13, 1885. (No model.)



Claim.—1. In a floor-bolt, a reel-cylinder rotating in one direction, in combination with rotating beaters rotating in opposite directions, and means for driving all from the same shaft, substantially as and for the purposes described.

2. In a centrifugal reel, the main drive-shaft, inside beaters secured upon said main drive-shaft, outside beaters provided with hollow trunnions journaled upon said shaft, one of said trunnions having a drive-pinion, O, and a reel-cylinder provided with hollow trunnions journaled upon the trunnions of the outside beaters, and having the drive-gear S secured to one of its heads, in combination with the counter-shaft A' and suitable intermediate gearing connecting the same with the main shaft, with the outside beaters, and with the cylindrical reel, all substantially as described.

338,467. STOCKING-SUPPORTER. JOHN A. BEERS, Oneida, N. Y. Filed Dec. 14, 1885. (No model.)



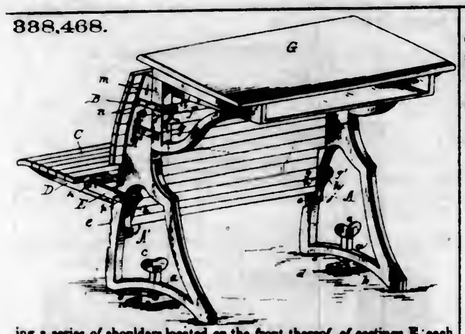
Claim.—The improved stocking-supporter consisting of the flexible metallic arm A, formed at one end with the cap *a*, consisting of a cap or cover provided with the annular band, the flexible metallic arm B, connected to the opposite end of the arm A, and formed at its free end with the boss *b*, adapted to enter the aforesaid annular band, and the slide S, embracing said arms, substantially as described and shown.

338,468. SCHOOL-DESK. JAMES F. ERSKINE, Nashville, Ind. Filed Nov. 19, 1885. (No model.)

Claim.—1. The combination, in school furniture, of a suitable supporting-frame, a seat-back permanently secured on the front thereof, castings E, locking-cams, a seat pivoted directly to said castings, and springs F, arranged and operating substantially as described.

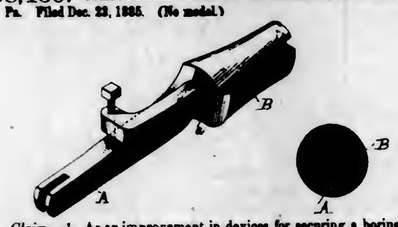
2. The combination, in school furniture, of a supporting-frame having a series of shoulders located on the front thereof, of castings E, each consisting of a front and rear pair of ears and a central cross-bar, *g''*, a seat pivoted to said front ears, and a cam pivoted between said rear ears to lock the bar *g''* on one of the shoulders of the frame, substantially as set forth.

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3. The combination, in school furniture, of a supporting-frame having curved horizontal portions, perforated plates *d*, adapted to be secured to the floor and having a threaded opening, bolts passing through said curved portions and each provided with a thumb-screw, and nuts located in said bolts below said curved horizontal portions, but above the plates *d*, to act with said thumb-screws to rigidly clamp said curved portions, for the purpose specified.

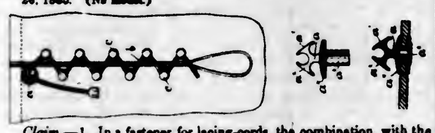
338,469. DRILL-FRAME ANCHOR. ELI BETTENHEIMER, Nanticoke, Pa. Filed Dec. 23, 1885. (No model.)



Claim.—1. As an improvement in devices for securing a boring or other machine to the face of the work, the combination of a pair of pivoted interlocking jaws, internally rabbeted so as to lie close together and form, when closed, a solid pin for insertion into a drill-hole, the pin having the same sectional area as the hole into which it is inserted, as shown and described.

2. As an improvement in devices for securing a boring-tool to the face of the work, a pair of pivoted interlocking jaws having internally rabbeted or overlapping surfaces, and forming when closed a solid pin having the same sectional area as the hole into which it is inserted, and provided with a screw by which said jaws may be forced apart and caused to retain their firm hold upon the sides of the hole, as set forth.

338,470. FASTENING FOR LACING-CORDS. WILLIAM H. BLAISDELL, Attleborough, Mass., assignor to Frank D. Hall, same place. Filed May 26, 1885. (No model.)



Claim.—1. In a fastener for lacing-cords, the combination, with the post *a*, of the stud-like arms *a'* *a²*, for the purpose described.

2. The improved fastening consisting of the post *a*, arms *a'* *a²*, cap *a⁴*, and rivet *a³*, as specified.

338,471. MANUFACTURE OF PURE NON-ORGANIZED FERMENTS. MORITZ BLUMENTHAL, Gruson, near Berlin, Germany. Filed June 11, 1885. (Specimens.) Patented in Belgium May 4, 1885, No. 68,754; in France May 4, 1885, No. 168,675; in England May 4, 1885, No. 5,483; in Sweden May 4, 1885, No. 230; in Germany May 5, 1885, No. 34,043; in Luxemburg May 5, 1885, No. 857; in Canada July 9, 1885, No. 22,047, and in Spain Sept. 2, 1885, No. 5,062.

Claim.—1. The herein-described process of obtaining enzymes or zymotic agents in a pure form, which consists in acidulating a saline solution in which said agents are held in solution with mucous and albuminous matter to separate the latter from the zymotic agent, removing such mucous and albuminous matter, and supersaturating the solution with a salt of the alkalies or alkaline earths to separate the zymotic agent from the solution, substantially as described.

2. The described process of obtaining pure enzymes or zymotic agents or products, such as chymosin and pepsin, which consists in separating and precipitating the impurities and keeping the pepsin in solution by acidulating a solution containing such products or agents, removing the precipitate, supersaturating the solution with a salt of the alkalies or alkaline earths to effect the separation of the chymosin, removing the latter, and neutralizing the solution with an alkali to precipitate the pepsin, as described.

338,472. COOK-STOVE. NATHAN O. BOND, Fairfax Court-House, Va., assignor of one-half to John J. Gould, Washington, D. C. Filed Oct. 27, 1885. (No model.)

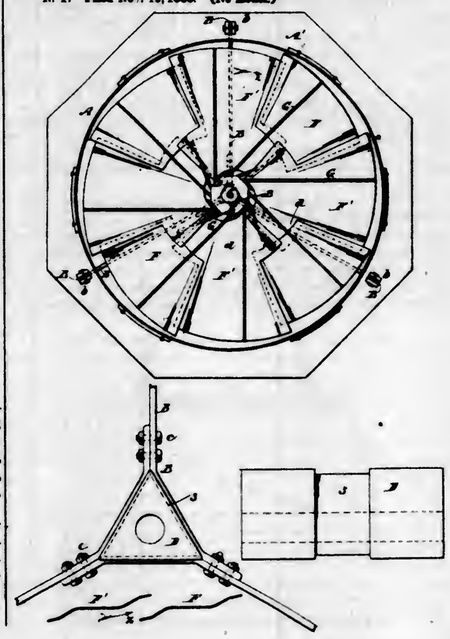


Claim.—1. The fire-box provided with an extension at the rear on a level with its top and having a securing-lug, said fire-box and extension having holes in the top of the same, and the fire-box provided with a draft-opening in the front, and the extension with an opening on its under side, substantially as set forth.

2. The combination, with a cooking-stove, of the supplemental fire-box B, provided with the extension *a*, having the securing-lug C, said fire-box and extension having holes in the top of the same, and the fire-box provided with a draft-opening in the front, and the extension with an opening on its under side, substantially as set forth.

3. A fire-box having an extension on a level with the top of the same, but of less depth, the top of both being provided with openings for the reception of cooking-utensils, the said fire-box having a draft-opening at its front, and the extension having an opening and a lug on its under side, whereby the fire-box may be connected with a cooking-stove and have a portion of the same below the top plate of said stove, as and for the purposes specified.

338,473. ROTARY VENTILATOR. EDWIN F. REEDER, Brooklyn, N. Y. Filed Nov. 19, 1885. (No model.)



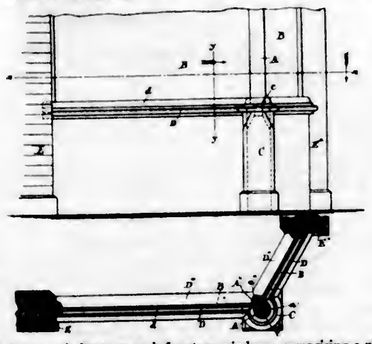
Claim.—1. In a rotary ventilator, the combination of the outer vanes, F, of the ventilator-wheel with the intermediate vanes, F', constructed with widened inner portions, *d*, arranged to extend on opposite sides beyond the inner ends of the outer or main portions, substantially as and for the purposes specified.

2. The hub-sections E E of the wheel, having step-like projections *e*, in combination with the vanes of the wheel, and the arms G G, arranged in tangential relation with the wheel and fitted to screw into said step-like projections, substantially as shown and described.

3. In a rotary ventilator, the combination, with the case A and face-plate A', of the frame or frame-sections B B, composed of bars bent at their inner ends to connect with each other, as described, and to leave angular openings at the center of the ventilator for reception of boxes or bearings, essentially as described.

4. In a rotary ventilator, the frame-sections B B, each composed of three flattened bars having their inner ends bent and secured to each other, so as to leave a triangular opening within them at the center of the ventilator, in combination with the case A and with the boxes or bearings D D, having grooves *s* in their sides, of corresponding outline to the triangular opening formed by the bent inner end portions of said bars, substantially as and for the purposes herein described.

338,474. WINDOW-SASH. PATRICK J. BRONAN, Chicago, Ill. Filed Jan. 8, 1886. (No model.)



Claim.—1. A frame or sash for store-windows, comprising a vertical post for the side edge of the sash, a metal support or base sustaining said post, and a horizontal lower sash-bar made of metal and cast integral with the said support or base, substantially as described.

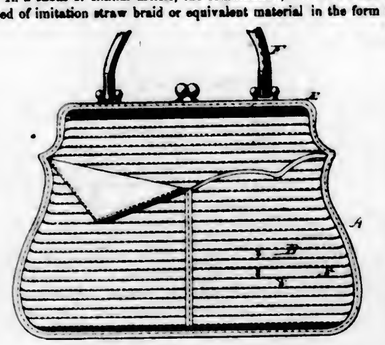
2. The combination, with a post, A, of a cast-metal support or base provided with a socket for said post, and a horizontal metal sash-bar, D, cast integral with the said base, substantially as described.

3. The combination, with the post A, of a metal support or base provided with a socket, *c*, for the lower end of the post, and a metal sash-bar cast in one piece with the support and provided with an inwardly-extending horizontal flange, D', affording support for the glass, and located in the same plane with the bottom of the socket *c*, substantially as described.

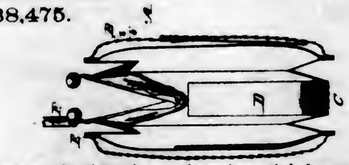
338,475. HAND-BAG. CHAS. H. BUCHANAN, Philadelphia, Pa. Filed Feb. 9, 1886. (No model.)

Claim.—1. As an improved article of manufacture, a cabas or similar bag, the sides of which are composed of imitation straw braid or equivalent material in the form of strips or stranda, whose edges overlap each other, and which are secured together by lines or rows of stitching, substantially as shown and described.

2. In a cabas or similar article, the combination, with the sides B, composed of imitation straw braid or equivalent material in the form of

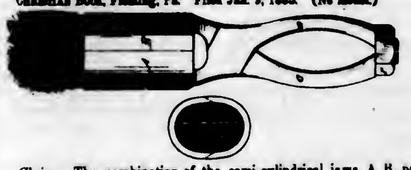


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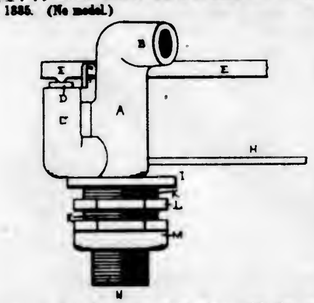
stripe or stranda, whose edges overlap and are stitched together, of the metallic frame E, to which said stranda or strips are secured, substantially as described.

338,476. COMBINED HANDLE AND HOLDER FOR BRUSHES. CHRISTIAN BUCK, Fleming, Pa. Filed Jan. 9, 1885. (No model.)



Claim.—The combination of the semi-cylindrical jaws A B, provided with lever-handles C D, having screw-threads upon their rear ends to receive a nut to hold the handles or jaws together in a closed position, said jaws also having inner projecting tighteners or collar, whereby the fibrous material is securely bound, substantially as described.

338,477. BALL-VALVE. DAVID D. BUSH, Detroit, Mich. Filed Aug. 21, 1885. (No model.)

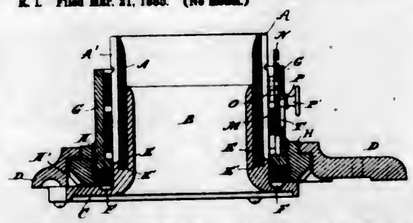


Claim.—1. In a float-valve which closes with the water-pressure, a float-lever pivoted on the shell, a cylinder having therein a piston constantly subjected to the water-pressure confined by the valve and bearing upon the short arm of the float-lever, and a spindle passing through the valve-seat and bearing upon the long arm of the float-lever, substantially as shown and described.

2. In a float-valve, the combination of the shell, containing the outlet and inlet pipes B N and seat T, with the cylinder C, communicating with the shell below the seat by the passage A, and having therein the piston D, valve S, having the spindle R rising through the seat and shell and extending below the valve, and spring *g*, surrounding the spindle below the valve, substantially as shown and described.

3. In a float-valve which closes with the water-pressure, a float-lever pivoted on the shell, a cylinder having therein a piston constantly subjected to the water-pressure confined by the valve and bearing upon the short arm of the float-lever, a valve, S, consisting of washer *e*, flange *f*, and nuts *a d*, and spindle R, passing through the valve-seat and bearing upon the long arm of the float-lever, substantially as described.

338,478. KNITTING-MACHINE. FREEMAN A. CALLEY, Pawtucket, R. I. Filed Mar. 21, 1885. (No model.)



Claim.—1. The combination, with the needle-cylinder A, of the plates C and D, the neck B, formed on the plate C, and having an annular groove, F, in its top, the ring H, and the cam-cylinder G, substantially as herein shown and described.

2. The combination, with the needle-cylinder A and the cam-cylinder G, provided with the casing J' and having a screw-thread on its outer surface at the bottom, the screw-ring H, having apertures, and the latch or bolt J, held in the casing J' on the outer side of the cam-cylinder, substantially as herein shown and described.

338,479. LAWN-MOWER. STEPHEN R. CAMPBELL and CHARLES H. FISER, Toronto, Ontario, Canada, assignors of one-half to William Hewitt same place. Filed Apr. 1, 1884. (No model.)



Claim.—1. In a lawn-mower, the combination of the front cutters, the removable rake in rear of the same, the ground-roller or traction-wheel arranged in rear of the rake, the frame, the guide-rods, and the hinged handle, substantially as and for the purpose specified.

2. The rake L and hinged handle L', in combination with the frame A, having the guides M, arranged as described, and for the purpose specified.

338,480. APPARATUS FOR USE IN DRY OUT-HOUSES. THOMAS W. CARRICO, San Antonio, Tex. Filed Nov. 10, 1885. (No model.)



Claim.—1. In a dry out-house, the receptacle having the perforated head provided with bolts having an enlargement on the under side of the head, and securely held to the top of the receptacle, in combination with a plate which is secured by the bolts over the top of the head of the receptacle, as set forth.

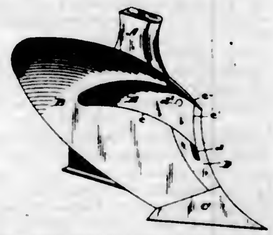
2. In a dry out-house, the combination of the receptacle having the recessed upper part, the removable head, and the covering-plate and chain, substantially as set forth.

3. The receptacle having the removable perforated head, in combination with a ring secured to the head, and provided with bolts rigidly secured thereto, and a covering-plate secured to the head over the perforations, as set forth.

4. The receptacle having the perforated removable head and the bolts, in combination with the covering-plate, the rubber packing, and the nuts for securing the cover to the head, as set forth.

5. The hopper and the receptacle or barrel having a perforated removable head, in combination with a ring, D, on the inside of the head and the sleeve which connects the barrel with the hopper, as set forth.

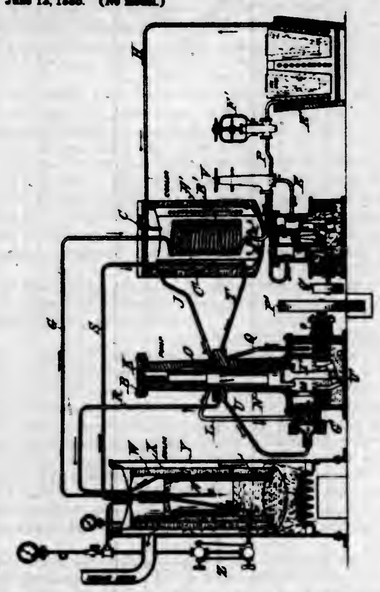
338,481. PLOW-JOINTER. GEORGE R. CASADAY, Hudson, La Porte County, Ind. Filed Oct. 27, 1885. (No model.)



Claim.—1. In a plow, a shin or cutter having a groove in its working-face about parallel with its cutting-edge, in combination with a jointer having on its under side a flange provided with a shoulder adapted to be secured in the groove on the cutter and adjustable in said groove, substantially as shown and described.

2. In a plow, a shin or cutter, in combination with a jointer secured directly to the working-face of the cutter, the lower edge of the jointer forming a continuous cutting-edge from the point of the plow to the heel of the jointer, substantially as shown and described.

338,482. ICE-MACHINE. OLIVER H. CASTLE, Indianapolis, Ind. Filed June 13, 1885. (No model.)



Claim.—1. In a machine for ice-making, a condensable gas retort or boiler consisting of the chambers A, W, and X, contained the one within the other, the outer one, as X, being adapted to hold water for heating, the next one, as W, being suspended therein and adapted to hold the saturated solution of condensable gas and its solvent, and the central one, A, communicating at the top with the chamber W and adapted to hold the separated gas and weak liquid, and this triple-chambered arrangement being situated within a wall or casing, Y, which has the accompaniments of a furnace for heating the substance within the boiler, all substantially as and for the purpose specified.

2. In a machine for making ice, a condensable gas retort or boiler consisting of three or more chambers contained one within the other, the middle chamber suspended within the outer, and the central chamber mounted within the middle one by attachment to its bottom, and provided at the top with a greater or less number of perforations and with a tubular passage-way communicating with the said middle chamber, substantially as shown and described.

3. In an ice-making machine, a condensable gas retort or boiler consisting of three or more chambers contained one within the other, the whole being combined with a furnace, the central chamber, as A, being provided with a water-gage, Z, for showing the height of the liquor within the same, and the other chambers being each provided with pressure-gages, substantially as shown, and for the purpose specified.

4. In an ice-making machine, a closed chamber or cooler, C, containing two or more coils of pipe, through which gas and weak liquor coming from the boiler may pass and be cooled preparatory to their further use in water-freezing, substantially as shown and described.

5. In an ice-making machine, the cooler C, having an outer annular casing which contains water to be cooled, a second chamber, A', containing a coil of pipe, and a third chamber formed by a loose shell or annular diaphragm, C, communicating with the next chamber by apertures *a a*, near the bottom, containing a pipe-coil, and filled with the expanded and cool gas by means of a pipe, H, entering at the top, substantially as shown, and for the purpose specified.

6. In an ice-machine, the combination, with a chambered boiler, substantially as described, of an inlet-pipe, R, entering the top head of the boiler and having its extremity situated near the bottom of the chamber W, and outlet-pipes 2 3 G S, extending outward from the inner chamber, W, through the top head of the boiler, whereby the gas and liquor separated by heat may be conveyed away, as specified and shown.

7. In an ice-making machine, the combination of a boiler having three or more chambers W, X, and A, situated within an inclosing-wall, Y, a cooler, C, having interior chambers, A' and C', pipes R, leading into the boiler, and pipes S and G, leading from the boiler to the cooler, substantially as shown and described, and for the purpose specified.

8. In an ice-making machine, a three-cylinder engine having trunk-pistons which fit the bores *s s s* of the cylinder L', and are actuated by rods *b*, connected with a three-throw crank-shaft, having crank-wrists A inclined at an angle with the line of bearings, said pistons being provided with ports *f*, adapted to be closed and unclosed by the oscillations and reciprocations of the pistons, whereby the exit and inlet pipes E E communicate with these ports and admit the vapor or gas which drives the engine, substantially as shown and described.

9. In a machine for the manufacture of ice, a vapor-engine constructed of two castings, K' and L', one of which, L', contains the cylinder-bores, and the other forming an oil-receptacle into which the crank dips each revolution, said two castings being bolted together by bolts passing through their flanges, substantially as shown and described.

10. In a machine for the manufacture of ice, a crank-shaft having the center line of its crank-wrists set at an angle to the line of bearings, the divergence of the central line of the wrist from the axial line of the bearings being regulated to conform to the amount of oscillation necessary to be given the piston to allow its ports to be opened and closed in the manner and for the purpose specified.

11. In a machine for making ice, an engine adapted to be driven by the vapor-gas of the freezing agent, connected with a cooler, C, by a pipe, E, provided with valve V, for admitting the gas to the engine, substantially as shown and described.

12. In a machine for making ice, the engine driven by vapor-gas, consisting of the combination of the triple-bored cylinder-casting L', having outlet and inlet passages E E for the gas, the basal casting K', having a space for the lubricant, crank-bearings *c c*, the three cylinders provided with the ports *f*, the crank-shaft *d*, having crank-wrists A, set at an angle to the axial line of shaft-bearings, and the connecting-rods *b*, formed in two parts, substantially as and for the purpose specified.

13. In a machine for making ice, the combination of a chambered boiler, a cooler, C, connected with said boiler by means of pipes G and S, and an engine connected with the cooler by a pipe, E, through which gas is transmitted from the boiler to drive it, substantially as shown and described.

14. In a machine for making ice, a pump, B, having internal pump-spaces, K O N, of different diameters, and a plunger constructed to fit said spaces actuated by rod I', driven by a crank-shaft having the angularly-set crank-wrist J', said plunger being provided with inlet and outlet ports to correspond with the passages in the pump-casing itself, substantially as and for the purpose described.

15. In a machine for making ice, the combination, with a pump, as described, of the pipes R, U, and L, leading from the pump, and pipes J, T, and Q, leading to said spaces from other parts of the apparatus, substantially as shown and described.

16. In an ice-making machine, the combination, with a pump, as described, of a lower chamber, M, provided with injector-shaped nozzles communicating with pipe U, and larger injector-shaped nozzles communicating with a pipe, L, whereby the gas and weak liquor coming from pump-spaces through said pipes must be reunited and discharged within this chamber, which is also provided with an exit-pipe, Q, substantially as shown and described.

17. In an ice-making machine, an apartment provided with two sets of injector-shaped nozzles, those of one set being larger than those of the other, whereby gas and liquid entering under pressure must combine within the chamber, substantially as shown and described.

18. In an ice-making machine, a chambered boiler whose water-space is filled with a liquid composed of water and alcohol, whose boiling-point is less than water, so that when the composition is heated to its boiling-point gas only may be carried forward from the supercharged central chamber, thus leaving all vapors of the water behind, substantially as and for the purpose specified.

19. In a machine for making ice, a boiler or retort, W, containing a condensable gas and the solvent therefor, said solvent being charged with such condensable gas to the greatest quantity that may be dissolved or taken up by it, provided with a pipe, 1, for further introducing into such boiler or retort a sufficient amount of such condensed liquefied gas as will result in producing at ordinary temperatures a pressure of several atmospheres, substantially as and for the purpose set forth.

20. In an ice-making machine, a chambered boiler, as described, having a chamber, W, containing a saturated solution of the condensable gas and its solvent, and the further addition in sufficient quantities of the condensed or liquid gas, so that the resulting pressure at ordinary temperatures may be sufficient to cause a pump or engine to operate for a time without the addition of heat as a previous requirement to the movement of such pump or engine, substantially as shown and described.

21. In an ice-making machine, a boiler or retort constructed so that the rich aqua-ammonia shall enter at or near the bottom, coming at once in contact with a warm heating-surface and rising gradually as the enriched aqua-ammonia keeps coming in and heated portions rise until it is discharged through numerous openings in the cover or top of the central chamber and with the interior gas-space therein contained, substantially as and for the purpose specified.

22. In an ice-making machine, a boiler constructed with a condensable gas chamber or retort having an envelope of hot water or other heating medium adapted to be heated directly by a furnace and so arranged that the same supply of water may be used continuously without requiring further additional quantities, substantially as and for the purpose specified.

23. In an ice-making machine, a trunk-piston for use in a pump of peculiar construction, as described, provided with ports and with a forked connecting-rod, I', made in two parts and so arranged as to permit its ends to surround the trunnions of a crank-box, *x*, also in halves, and a piston wrist-box having trunnions *y*, so as to regulate the oscillation of the piston, substantially as and for the purpose set forth.

24. In an ice-making machine, the combination of pipe P and valve F', consisting, essentially, of hand-screw *i* and rod *j*, liquid packed by capillary attraction, the same being for the purpose of controlling the supply of expanded gas in the refrigerating-cans, substantially as described.

25. In an ice-making machine, a box, E', for the insertion of freezing-cans adapted to be used with small slabs of ice, which are placed in the middle portion of the freezing water of each can, substantially as shown, and for the purpose specified.

26. In an ice-making machine, the combination of a chambered boiler, a furnace, a cooler, a pump, an engine, and a water-freezing box, substantially as described, and for the purpose specified.

27. In an ice-making machine, the combination of the boiler having chambers W X A and outer wall, Y, the pump B, connected with chamber W by a pipe, R, the cooler C, containing two or more pipe-coils connecting with chamber A of the boiler, the engine connecting with the cooler by the pipe E and driven by the gas coming through said pipe E, said engine driving the pump B, the refrigerating-box E, containing ice-cans and connected with the engine by a pipe, P, through which the flow of the gas is controlled by a valve, F', and pipe H, leading from box E' to cooler C, substantially as shown and described.

28. In a machine for ice-making, the combination of the pump B, having internal pump-spaces, K, O, and N, plunger, connecting-rod I crank-shaft o, band-wheel P', and the engine for driving the same, having in its construction two castings, L' K', and three pistons fitting into as many cylinder-bores and actuating a crank-shaft, *d*, having band-wheel Q', which connects a belt with the band-wheel P', substantially as and for the purpose set forth.

29. In an ice-machine, the combination of a pump and plunger, having spaces O and N adapted and so proportioned that the weak liquor passing from O is exposed to a given cooling-surface produced by the fixed volume of gas from the engine-cylinders, and which volume of gas is in turn absorbed by the fixed cooled weaked liquor registered by the pump-space O and the combined product taken by the pump-space N and returned to the boiler A, substantially as specified.

30. In an ice-machine, the combination of a central chambered boiler and pump-spaces O and N, and gas-space K, adapted and so proportioned that the products received from the boiler by space O and K are taken by space N, when combined as an enriched solvent, and returned back to the boiler, so as to maintain it at all times in working condition, substantially as described.

338,483. **LOZENGE-MACHINE.** NEIL A. CLACHER, Chicago, Ill. Filed Dec. 23, 1885. (No model.)

Claim.—1. In a lozenge-machine, the combination of a frame, two fixed disks, K K', two rings, M M', two or more bars, *b f*, connected to said rings to hold the printing and cutting devices, two gear-wheels, N N', and a clutch-pin, *i*, all substantially as and for the purposes specified.

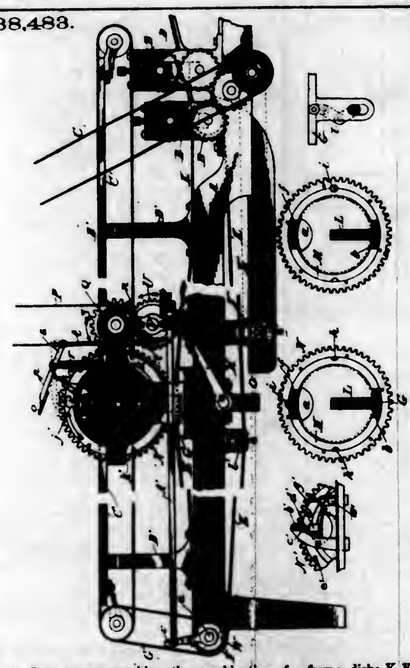
2. In a lozenge-machine, the combination of a frame, two disks, K K', two rings, M M', two or more bars connected to said rings to receive and hold the printing and cutting devices, two gear-wheels, N N', a clutch-pin, *i*, a belt, E, moving intermittingly, and a vertically-movable table, G, over which the belt E travels, substantially as and for the purposes specified.

3. In a lozenge-machine, the combination of a frame, two disks, K K', two rings, M M', connecting-bars *b f*, two gear-wheels, N N', belt E, table G, lever H, wheel U, provided with pins *m n*, rod A', lever *v*, ratchet-wheel W, and shaft *u*, substantially as and for the purposes specified.

4. In a lozenge-machine, the combination of a frame, two disks, K K', rings M M', bars *b f*, for receiving the printing and cutting devices, gear-wheels N N', clutch-pin *i*, belt E, belt O, and bar *o*, intermittently operating, substantially as and for the purposes specified.

5. In a lozenge-machine, the combination of a frame, two disks, K K', two rings, M M', connecting-bars *b f*, to receive the printing and cutting devices, gear-wheels N N', belt O, arranged to receive the lozenges from the cutters, delivery-belt B', and a sweep to remove the lozenges from the belt O to the belt B', substantially as and for the purposes specified.

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6. In a lozenge-machine, the combination of a frame, disks K K', rings M M', bars *b f*, carrying the printing and cutting devices, wheels S S', wheel U, provided with pins *m n*, belt E, table G, lever H, toggle-joint I, rod or lever A', lever *v*, ratchet-wheel W, and roller F, substantially as and for the purposes specified.

7. In a lozenge-machine, cutting devices revolving intermittently, in combination with a carrying-belt, O, moving transversely to the machine, and arranged to receive the lozenges from the cutters and carry them to one side, substantially as specified.

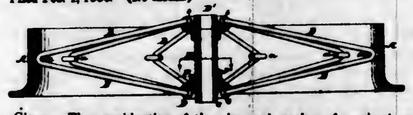
8. In a lozenge-machine, a belt, E, arranged to be moved intermittently, in combination with a vertically-movable table, G, devices for intermittently moving said table upward, and devices for printing and cutting the lozenges, substantially as specified.

9. In a lozenge-machine, a belt, E, in combination with a pan, F', and a duster, F', substantially as and for the purpose specified.

10. In a lozenge-machine, a belt, E, arranged to be moved intermittently, in combination with an intermittently vertically-moving table, and printing and cutting devices intermittently rotating over said table, substantially as and for the purposes specified.

11. In a lozenge-machine, two stationary disks, K K', each cut away upon one side, as shown at *a*, in combination with a transverse belt, O, and intermittently-rotating printing and cutting devices carried by bars *b f*, secured to rings M M', or by a rotating cylinder, substantially as and for the purposes specified.

338,484. **TENSION-WHEEL.** JOSHUA R. CLAIR, Philadelphia, Pa. Filed Feb. 1, 1886. (No model.)



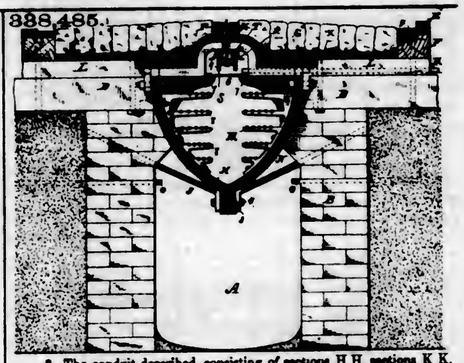
Claim.—The combination of the rim and spokes of a wheel and hubs, one of which has steps of different heights, with an axle-box adapted to rotate in the hubs, and having a pin or projection adapted to bear against said steps, substantially as specified.

338,485. **STREET-CONDUIT FOR ELECTRIC AND CABLE RAILWAYS.** HENRY T. CLAY, Philadelphia, Pa. Filed June 26, 1885. (No model.)

Claim.—1. A street-conduit consisting of sections H H, sections K K, interposed plate L, said parts being constructed, arranged, and combined substantially as described.

2. The combination constituting an electric or cable railway conduit, consisting of sections H H and sections K K, with suitable braces connecting the same together and with rail-sills F, said parts being combined, constructed, and arranged substantially as set forth.

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3. The conduit described, consisting of sections H H, sections K K, plate L, ties D, masonry foundation B, and pipes M and O, in combination with rail-sills and rails F and E, the said parts being constructed substantially as described, and arranged upon a suitable road-bed, as set forth.

4. The combination, with sections K K, of the sections H H, open at *a*, and having projecting bars 8 provided with insulated perforations N, substantially as set forth.

5. In a street-conduit for electric railway purposes, the combination of the sections H H, sections K K, interposed plate L, insulated blocks T, and rigid metallic conductor R.

6. A street-conduit for the purposes described, consisting of sections H H, provided in each of its lengths with projecting flanges 7 and openings at *a*, plate L, and sections K K, constructed, combined, and arranged substantially as set forth.

338,486. **WIRE-STRETCHER.** JOHN B. CLEAVELAND, Indianapolis, Ind. Filed Nov. 25, 1885. (No model.)

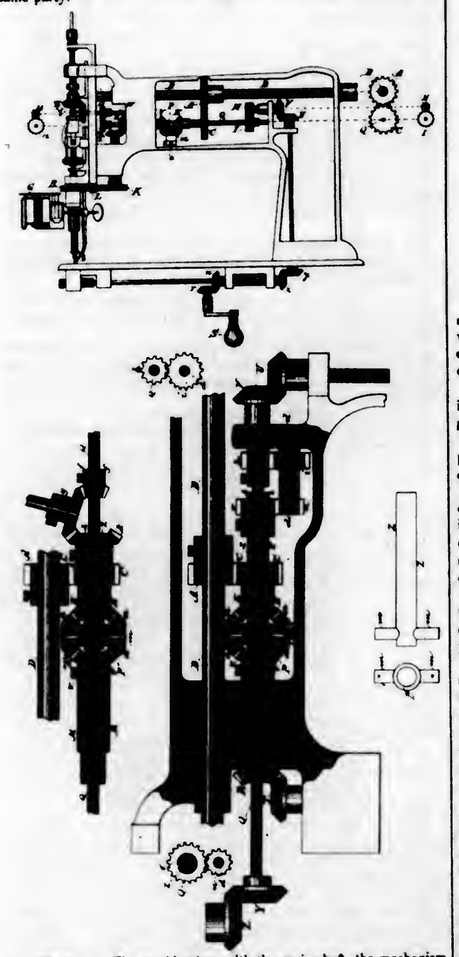
Claim.—The above-described portable wire-stretcher, consisting of the spindle having a fixed head and a removable collar, one side of which collar is provided with ratchet-teeth, means for securing said collar to the spindle, the elastic washer, the supporting-bracket having bearings in which said spindle is arranged to revolve, and a ratchet-toothed boss thereon arranged to engage the ratchet-teeth of said collar, said ratchet-teeth having backwardly-inclined retaining-faces, as shown and described, whereby the spindle is allowed to turn backward, all combined and arranged to co-operate substantially as and for the purpose specified.

338,487. **FOOT-REST FOR SCHOOL-DESKS.** WILLIAM P. CONNER, Bloomsburg, Pa., assignor to the School Furnishing Company, same place. Filed June 27, 1885. (No model.)

Claim.—The combination, with the legs B of a desk, provided near their lower inner ends with the curved transverse bars C, notched, as at D, of bolts H, above the central notches, D, foot-bar resting at its ends in the notches D, and the vertical plates F, secured on the ends of the foot-rest bar, and having slots G, through which the bolts pass, substantially as set forth.

338,488. EMBROIDERING-MACHINE. EMIL CORMELY, Paris, France. Filed June 15, 1885. (No model.)

Brief.—The invention is an improvement on the constructions shown in Patents Nos. 262,742, 228,445, and 83,910, granted to the same party.

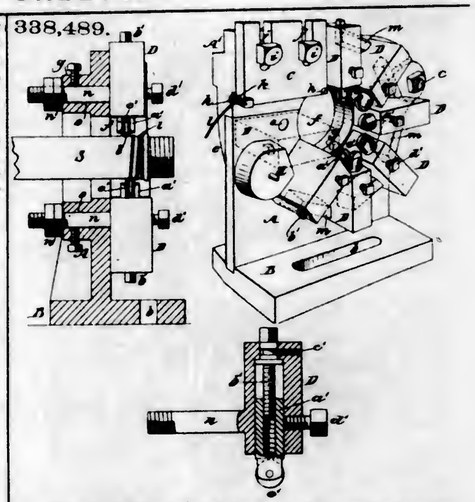


Claim.—1. The combination, with the main shaft, the mechanism for controlling the direction of the feed, and the rotary thread-carrier, of the connecting-gearing, which comprises a cogged wheel on the main shaft and a train of pinions and cogged wheels driven by said cogged wheel on the main shaft, for imparting continuous rotation through continuously-rotating parts from the main shaft to the thread-carrier, and a pinion or pinions connected with the said feed-controlling mechanism and forming part of said train, for guiding the thread-carrier in accordance with the direction of the feed, substantially as described.

2. The combination, with a shaft actuated by the feed-directing mechanism, of the stud or studs on said shaft, the pinion or pinions on said stud or studs, and the gears engaging said pinion or pinions on opposite sides, for communicating motion through the same to the thread-carrier, substantially as described.

338,489. MACHINE FOR WINDING WIRE UPON HOSE. JOSEPH A. COULTAUS, Brooklyn, N. Y., assignor, by direct and mesne assignments, to himself, DANIEL M. ROLLINS, and ALICE W. ROLLINS, all of same place. Filed Apr. 29, 1885. (No model.)

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Claim.—1. In apparatus for applying wire armor to hose-pipes and other cylindrical articles, the combination, with a suitable standard within which the hose is supported, of a series of spirally-arranged roller-guides, substantially as described, for directing and bending the wire onto the article to be covered, essentially as described.

2. The combination, with a standard having an aperture, *f*, through it, of the wire-feeding block C and the series of spirally-arranged roller-guides D, substantially as specified.

3. In apparatus for applying wire armor upon hose, the adjustable perforated wire-feeding block C, provided with a free roller, *h*, at the entry end of the passage through it, essentially as described.

4. In apparatus for applying wire armor to hose-pipe and other cylindrical articles, the standard A A', having an aperture, *f*, through it, and having its upper section or cap-piece, A', hinged or pivoted, as described, and constructed with a tongue, *e*, arranged in relation to the standard and so as to admit of being secured in position by a wedge-pin, *d*, substantially as specified.

5. In combination with the apertured standard of the apparatus, the roller-guides D, made adjustable to occupy successively-increasing distances from the face of the standard, essentially as and for the purpose herein set forth.

6. The roller-guides D, provided with adjustable screw-threaded shanks *n*, in combination with the guides or guiding-blocks *m* on the face of the standard carrying the roller-guides, substantially as specified.

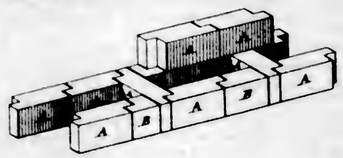
7. In apparatus for applying wire armor to hose, pipes, and other cylindrical articles, the roller-guides D, fitted with longitudinally-adjustable roller-carriers having grooved wire guiding and bending rollers *e'* on their exposed ends, essentially as described.

8. The roller-carriers *a'*, provided with grooved rollers *e'* on their exposed ends, and made capable of axial adjustment, as described, to vary the angular position of the rollers, in combination with the longitudinally-adjusting screw *b'*, substantially as and for the purposes specified.

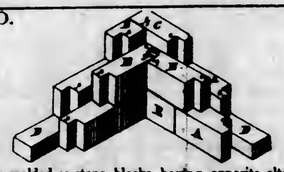
9. The roller-guides D, composed of blocks having adjustable shanks *n* on their backs, longitudinally-sliding and circularly-adjustable roller-carriers *a'*, having grooved rollers *e'* on their exposed ends, and the screws *b'*, for longitudinally adjusting said carriers, essentially as shown and described.

338,490. BRICK, CONCRETE BLOCK, &c. HUGH C. COWAN, Oxford, Ohio. Filed Mar. 9, 1885. (Model.)

Claim.—1. Bricks molded or stone blocks having opposite alternating shoulders, as form A, the extension S being in thickness equal to one-half the thickness of the block, and the shoulder having a depth equal to one-half the thickness of the block, substantially as and for the purposes specified.



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2. Bricks molded or stone blocks having opposite alternating extensions and shoulders, the extensions and shoulders extending across the entire block from edge to edge of the latter, substantially as and for the purposes specified.

3. Bricks molded or stone blocks having opposite alternating shoulders, as form A, the extension S being equal to one-half the thickness of the block, and the shoulder having a depth equal to one-half the thickness of the block, the extension and the shoulder extending across the entire block from edge to edge, substantially as and for the purposes specified.

4. Bricks molded or stone blocks having opposite alternating extensions and shoulders, the central body of the block being of the thickness of the two extensions, and the shoulders or extensions extending across the entire width of the block, every portion of the side of the block being in one plane, and every portion of the edge of the block being in one plane, substantially as and for the purposes specified.

5. Bricks molded or stone blocks having a shoulder or shoulders, the extension being equal to one-half the thickness of the block, and the shoulder having a depth equal to one-half the thickness of the block, the extension and shoulder extending across the entire block from edge to edge, substantially as and for the purposes specified.

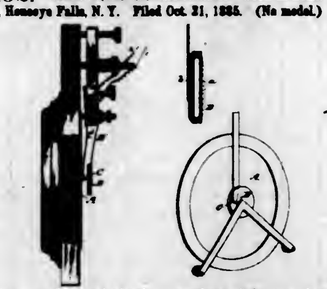
338,491. TELEPHONE-RECEIVER. JOHN E. DANN and JOHN LAPP, Massaye Falls, N. Y. Filed Oct. 31, 1885. (No model.)



Claim.—1. In a telephonic receiver, the combination, with the diaphragm B, of the two horseshoe electro-magnets C and C, arranged on the rear side of and in laterally-opposite directions from the diaphragm, the two armatures D D, having arms *a* projecting toward each other, and the two rigid rods E E, connecting these arms with the center of the diaphragm, as shown and described, for the purpose specified.

2. In a telephonic receiving-instrument, the combination of the socket-screws with the armature-arms having points that constitute bearings or fulcra for said armatures, as shown and described.

338,492. TELEPHONE-TRANSMITTER. JOHN E. DANN and JOHN LAPP, Massaye Falls, N. Y. Filed Oct. 31, 1885. (No model.)



Claim.—1. In a telephonic transmitter of the type hereinbefore indicated, the combination, with the diaphragm, of two vibrating electrodes, one of which is composed of a metal piece that readily expands under electrical influence, and another part or holder that is not materially affected by such influence, substantially as specified.

2. In a telephonic transmitter of the type hereinbefore indicated, the combination of the larger electrode having a diaphragm that is free to expand with the diaphragm of the instrument, and the other electrode placed intermediately, substantially as shown and described.

3. In a telephonic transmitter of the type hereinbefore indicated, the combination, with the diaphragm of the instrument and an electrode, of a second electrode having a socket or holder, and a thin iron diaphragm inserted therein and confined at its perimeter, substantially as shown and described.

4. In a telephonic transmitter of the type hereinbefore indicated, the electrode B, composed of the thin iron diaphragm, and the holder in which the latter is held, as shown and described.

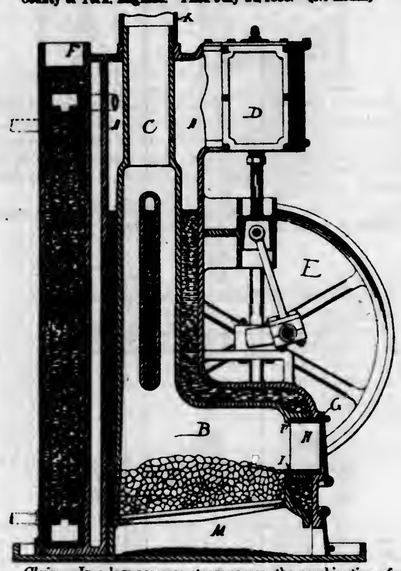
338,493. THILL-COUPLING. PIERRE G. DAUSEN, Baltimore, Md. Filed Sept. 2, 1885. (No model.)



Claim.—1. The combination of axle and clip having lugs *c*, with shaft-iron having tube B^2, plug D, and screws *b'* and E, as and for the purpose set forth.

2. A thill-coupling consisting of an axle-clip having two interiorly-threaded lugs, conical pointed bolts therein, a shaft-iron having its end of tubular form, and a plug secured in said end removably and having end recesses to receive the points of the screws.

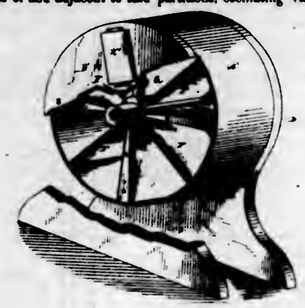
338,494. LOW-PRESSURE STEAM-BOILER. HENRY DAVEY, Leeds, County of York, England. Filed July 24, 1885. (No model.)



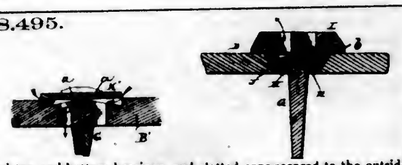
Claim.—In a low-pressure steam-motor, the combination of an internal fire-box and flue, a surrounding boiler shell or case, a connecting box or ring by which the parts are connected at the entrance of the fire-box, and a layer of fire and water proof cement between such connecting-ring and the shells of the boiler and internal fire-box and flue, whereby the parts are securely united and the joint between the same rendered water or steam proof, substantially as described.

338,495. MINE-VENTILATOR. HOWELL DAVIES, Coal Creek, Tenn. Filed Apr. 17, 1884. (No model.)

Claim.—In a mine-ventilator, the combination of an oscillating cylinder, A', oscillating hub C, blades F, connecting said parts, stationary heads B B', having radial partitions G, and radial slots H and K on opposite sides of and adjacent to said partitions, oscillating valves having

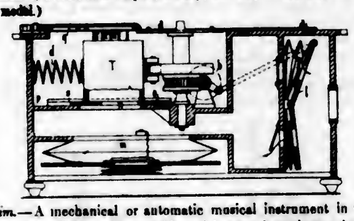


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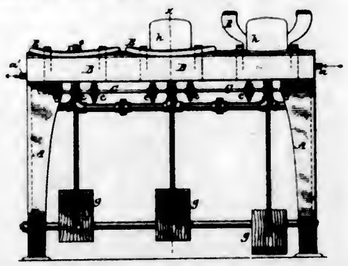
beveled top and bottom bearings, and slotted caps secured to the outside of the head B, to partly cover the valves, and having shouldered recesses to receive the valves, substantially as set forth.

338,496. MECHANICAL MUSICAL INSTRUMENT. FRIEDERIK R. P. EHRLICH, Gohlis, near Leipsic, Saxony, Germany. Filed Sept. 24, 1885. (No model.)



Claim.—A mechanical or automatic musical instrument in which the reed-chamber T is made movable and is caused to change its position relatively to the casing of the instrument in accordance with the form of the music-sheet *a* by means of a cam-shaped device, *b b' b²*, the latter being arranged to correspond with the form of the music-sheet, substantially as set forth.

338,497. HAT-BRIM-HEATING MACHINE. RUDOLF EICKEMEYER, Yonkers, N. Y. Filed Oct. 23, 1885. (No model.)



Claim.—1. In a brim-heating machine, the combination, substantially as hereinbefore described, of a hollow annular or oval brim-bed provided with steam-heating connections, and a central crown-bed practically insulated from said brim-bed.

2. In a brim-heating machine, the combination, with the annular brim-heating bed, of the central insulated hollow crown-bed provided with means for interior water-circulation, substantially as described.

3. In a brim-heating machine, the combination of the brim-heating bed, a central crown-bed, and a vertically-movable brim-clamp, substantially as described.

4. In a brim-heating machine, the combination of a brim-heating bed and a central crown-bed provided with a block-centering chuck substantially as described.

5. In a brim-heating machine, the combination of the brim-heating bed, the annular brim-clamp normally in contact with said bed, and a treadle for lifting and lowering it, substantially as described.

6. In a brim-heating machine, the combination of the brim-heating bed, the central insulated crown-bed, a block-chuck on said crown-bed, and a brim-clamp, substantially as described.

7. In a brim-heating machine, the combination of the brim-heating bed, the central aperture, and the brim-clamp, substantially as described.

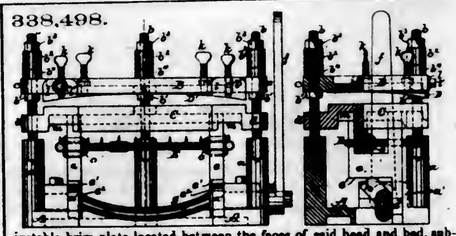
8. In a brim-heating machine, a hollow steam-table provided with a series of annular or oval brim-beds which are heated by steam within the table, substantially as described.

338,498. SETTING-PRESS FOR CURLING HAT-BRIMS. RUDOLF EICKEMEYER, Yonkers, N. Y. Filed Dec. 17, 1885. (No model.)

Claim.—1. In a hat-brim-setting press, the combination, substantially as hereinbefore described, of a press-head, a vertically-reciprocating press-bed below said head, and a gas-pipe which is below said bed and provided with jet-apertures, whereby burning-gas may be employed for heating said bed.

2. In a hat-brim-setting press, the combination, substantially as hereinbefore described, of a press-head, a press-bed, and a flexible adjustable brim-plate located between the faces of said head and bed, substantially as and for the purposes specified.

338,498.



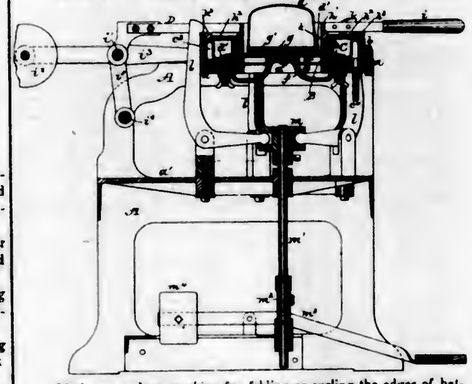
3. In a hat-brim-setting press, the combination, substantially as hereinbefore described, of a press-head, a flexible adjustable brim-plate mounted upon the face of said head, and a press-bed which co-operates with said head and brim-plate, substantially as and for the purposes specified.

4. In a hat-brim-setting press adapted to operate on one-half of a brim, the combination, with one of the press-faces, of a semi-oval flexible brim-plate attached thereto, adjusting abutting screws acting against the rear side of said plate, and the clamping-screws, by which the two ends of said plate may be firmly secured in any desired position of adjustment, substantially as described.

5. In a hat-brim-setting press, the combination of a bed-plate or frame, a vertically-reciprocating press-bed, a press-head, the springs, and a series of vertical screw-posts, which serve as guides for said springs and for the press-bed, and by means of nuts thereon serve also as adjustable supports for the press-head, substantially as described.

6. In a hat-press-setting press, the combination of a press-head and its springs, a vertically-reciprocating press-bed provided with depending legs, a bed plate or frame provided with a series of screw-posts, which serve as guides for said springs and said bed, and also as supports for said head, and vertical guiding-lugs on said bed-plate, which co-operate with said depending legs and the screw-posts in limiting said bed to a truly vertical movement, substantially as described.

338,499. HAT-BRIM-CURLING MACHINE. RUDOLF EICKEMEYER, Yonkers, N. Y. Filed Dec. 31, 1885. (No model.)



Claim.—1. In a machine for folding or curling the edges of hat-brims, the combination, substantially as hereinbefore described, of a brim-bed, a brim-folding flexible diaphragm backed by fluid under pressure, and having its working and movable portion wholly outside of and surrounding said bed, a guide-ring and a guide-plate attached thereto, affording a central opening for the reception of a hat-crown, and adapted to annularly confine the brim of a hat between said plate and brim-bed, and to limit the folding and compressing action of the diaphragm to portions of the brim which extend beyond the peripheries of said plate and bed.

2. In a machine for folding or curling the edges of hat-brims, the combination, substantially as hereinbefore described, of a brim-bed, a central hat-support for receiving hats mounted on blocks, and for supporting a hat independently of the contact of its brim with said bed, a flexible brim-folding diaphragm surrounding said bed, a guide-ring, and a guide-plate attached thereto, affording a central opening for the reception of the crown of a hat when on a block and mounted on said support.

3. In a machine for folding or curling the edges of hat-brims, the combination, substantially as hereinbefore described, of an annular brim-bed having a central opening for the free reception of hat-crowns, and an annular brim-folding diaphragm connected to said bed and having a central opening for the free reception of the crowns of hats, whereby brims may be folded at their upper or at their under sides, as may be desired.

4. In a machine for folding or curling the edges of hat-brims, the combination, substantially as hereinbefore described, of an annular brim-bed affording a central space for the reception of hat-crowns, an annular brim-folding diaphragm affording a similar central space, and a detachable hat-support mounted centrally with relation to said bed and diaphragm, as and for the purposes specified.

5. In a machine for folding or curling the edges of hat-brims, the combination, substantially as hereinbefore described, of the flexible brim-folding diaphragm, the brim-bed annularly surrounded by said diaphragm, and a central hat-block chuck, whereby a hat mounted on a block can be readily applied in an accurate position with relation to said bed and as readily removed with its block.

6. In a machine for folding or curling the edges of hat-brims, the combination, substantially as hereinbefore described, of a stationary brim-bed, a flexible brim-folding diaphragm annularly surrounding said bed, a guide-plate for clamping a brim between it and said bed and for defining the line of a fold or curl in a brim, and a guide ring which is movable toward and from said bed and on which said plate is mounted.

7. In a machine for folding or curling the edges of hat-brims, the combination, substantially as hereinbefore described, of a flexible brim-folding diaphragm adapted to operate solely upon the outer portions of a hat-brim, an annular guide-plate which co-operates with said diaphragm and defines the line of fold, and a central support for receiving a hat-block and centering it, whereby a hat on its block can be accurately centered without contact of its crown with said guide-plate.

8. In a machine for folding or curling the edges of hat-brims, the combination, as hereinbefore described, of a brim-bed, a flexible brim-folding diaphragm surrounding said bed, a guide-ring coincident with said bed and having a central opening larger than the largest hat-crowns, and a series of annular guide-plates of various peripheral dimensions, each of which is adapted to be attached to and carried by said ring for defining the line of a fold or curl to be developed by said diaphragm.

9. In a machine for folding or curling the edges of hat-brims, the combination, substantially as hereinbefore described, of the brim-bed, the brim-folding diaphragm, the guide-plate, the guide-ring, and clamps, by which the guide-plate is confined in contact with a brim during the operation of the diaphragm.

10. In a machine for folding or curling the edges of hat-brims, the combination, substantially as hereinbefore described, of the brim-bed, the flexible brim-folding diaphragm, the guide-plate, its ring, the clamps for confining said plate upon a brim during the operation of the diaphragm, and the treadle for controlling said clamps.

338,500. METHOD OF MAKING WATCH-CASE STEMS. WALTER H. FITZ GERALD, Brooklyn, N. Y. Filed Oct. 3, 1885. (No specimens.)



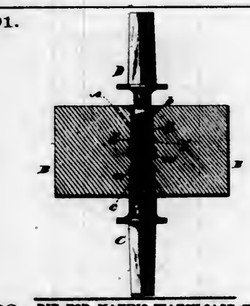
Claim.—1. The method employed for forming watch-case stems, consisting, first, in drawing a disk of sheet metal into the form of an elongated cup, next in grooving or necking the blank stem between V-shaped rollers, and, finally, in beading the stem and spreading its base by clamping the stem-blank between dies and compressing it longitudinally by plungers operating within its interior and against said base, substantially as and for the purpose specified.

2. The method of forming watch-case stems with the ring-sockets thereon, which consists in first forming a hollow stem-blank, then clamping said blank between dies which conform to the exterior of the finished stem and have socket-cavities, and then forcing into the stem-blank a flattened plunger with its greatest transverse diameter or dimensions in line with the socket-cavities in the dies, so as to force the metal of the stem-blank outward into such cavities, substantially as and for the purpose shown.

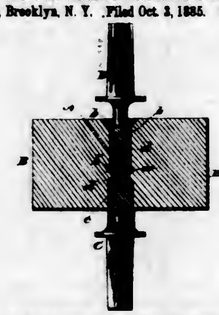
338,501. DIE FOR MAKING WATCH-CASE STEMS. WALTER H. FITZ GERALD, Brooklyn, N. Y. Filed Oct. 3, 1885. (No model.)

Claim.—As an improvement in devices for the construction of watch-case stems, die-blocks provided within and across their contiguous faces with coinciding recesses which correspond in shape to the exterior of a case-stem having ring-sockets, in combination with an anvil-plunger for sustaining the closed end of said stem, and a flattened pointed plunger, which is adapted to enter into the open end of said stem and to force the metal thereof laterally into the ring-socket recesses of said die-blocks, substantially as and for the purpose specified.

338,501.

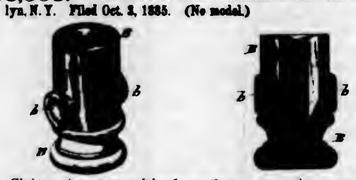


338,502. DIE FOR MAKING WATCH-CASE STEMS. WALTER H. FITZ GERALD, Brooklyn, N. Y. Filed Oct. 3, 1885. (No model.)



Claim.—As an improvement in devices for constructing watch-case stems, in combination with the die-blocks having within and across their contiguous faces coinciding recesses which correspond in shape with the exterior of a case-stem, a plunger that has a cup-shaped inner end adapted to engage and give form to the closed end of a stem-blank, and a plunger that has a cylindrical body and a pointed end and is adapted to compress longitudinally and expand laterally the metal of the blank as it is forced into the open end of the blank, substantially as and for the purpose described.

338,503. WATCH-CASE STEM. WALTER H. FITZ GERALD, Brooklyn, N. Y. Filed Oct. 3, 1885. (No model.)



Claim.—As a new article of manufacture, a watch-case stem formed from one piece of metal and having protuberant ring-sockets which are a part of and integral with its body, substantially as and for the purpose specified.

338,504. BLACKING-BRUSH. BENJAMIN G. FITZHUGH, Frederick, assignor to Virginia Gaddess, Baltimore, Md. Filed June 28, 1883. (No model.)

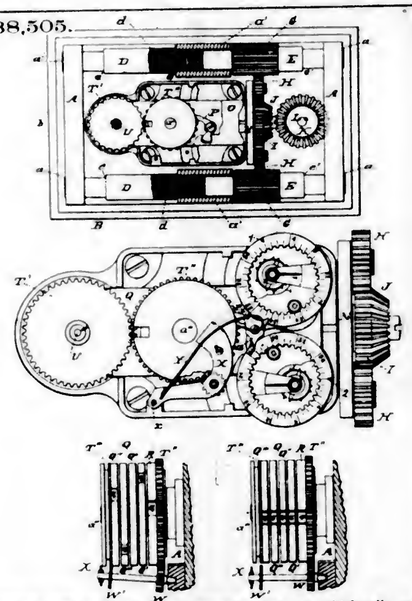


Claim.—A fountain for a brush, provided with a liquid-receptacle and a sponge-holder, the latter consisting of a tube provided with perforations having jagged inwardly-projecting edges, said tube communicating with a screw-capped opening and extending into the liquid-receptacle, whereby the jagged edges of the perforations serve to hold the sponge in position, and the perforations allow the passage of the liquid to the sponge, as set forth.

338,505. SAFE-LOCK. EDWIN H. FLINT, Cincinnati, Ohio. Filed Nov. 24, 1884. (Model.)

Claim.—1. In a safe-lock, the combination, with the lock-frame, of a two-part door-bolt having screw-threaded connection between said parts, a pinion secured to one member of said bolt, the knob or handle

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outside the safe-door, and geared connection between said handle and pinion, substantially as and for the purpose set forth.

2. In a safe-lock, the combination, with the lock-frame, of a two-part door-bolt having screw-threaded connection between said parts, a stop for preventing the rotation of one section, and a pinion secured to the other section of said bolt, the knob or handle outside the safe-door, and the geared connection between said knob and pinion.

3. In a safe-lock, the combination, with the lock-frame A, having the guides *a a'*, of the two-part lock-bolt D E, having screw-threaded connections *d e* and the shoulders *e'*, the stop for preventing the rotation of the section D, the pinion G on the section E, the handle M, and the geared connection between said handle and pinion G, substantially as and for the purposes set forth.

4. In a safe-lock, the combination, with a two-part door-bolt having screw-threaded connection and an elongated pinion on one member of said bolt, of the lock-bolt, the bolt-operating handle or knob on the outside of the door, its shaft passing through the door, a pinion secured to the inner end of said shaft, and gear-wheels carried by the lock-bolt for connecting said pinion with said elongated pinion, substantially as set forth.

5. The combination, with a screw-actuated door-bolt and its operating knob or handle having a shaft extending through the door and a master-wheel secured thereto, of the lock-bolt and the gear-wheels carried by said lock-bolt, for connecting said master-wheel and bolt when said lock-bolt is protracted, as set forth.

6. The combination, with the lock-frame and a pair of screw-actuated door-bolts having pinions G G, and the operating knob or handle M, having shaft L and master-wheel K, of the lock-bolt O, having the cross-head N and the gear-wheels carried by said cross-head, for connecting the pinions G G and master-wheel K when the lock-bolt O is protracted, substantially as set forth.

7. In a permutation-lock, the combination, with the tumblers having spurs or teeth and a pinion gearing therewith, for compelling their synchronous rotation, of the time mechanism and connecting mechanism between said time mechanism and pinion, for moving the latter in and out of engagement with said spurs or teeth, for the purpose set forth.

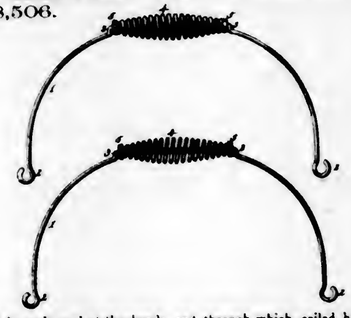
8. The combination, with the tumblers Q" and R, having the spur-wheels T"' and T", respectively, of the double-headed pinion W' W, gearing with said spur-wheels, the latch X, in which one end of the shaft of said double-headed pinion is journaled, and the time mechanism for controlling the position of said latch, substantially as set forth.

9. The combination, with the tumblers Q" and R, having spur-wheels T"' and T", respectively, of the double-headed pinion W' W, the latch X, the spring-bridle Y *y*, the trigger Z, and the time mechanism, substantially as and for the purposes set forth.

338,506. KETTLE-BAIL. JOHN E. GAFFLEY, Troy, N. Y. Filed May 13, 1885. (No model.)

Claim.—A kettle-bail formed with two bends to produce abutments or shoulders, and provided with a separate coiled handle or grasp bearing at its ends against the bends, and through which coiled handle or grasp the bail centrally and loosely passes, substantially as described.

338,506.

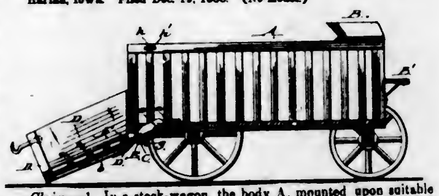


338,507. KNOB AND HANDLE FOR STOVE-DOORS. JOHN E. GAFFLEY, Troy, N. Y. Filed Aug. 29, 1885. (No model.)



Claim.—A knob or handle consisting of a single strand of wire coiled spirally at one end, and at the opposite end bent and extended centrally through the coil, and having its extremity projecting from and beyond the inner end of the coil, and constructed with a screw-thread for receiving a nut or nuts to clamp the inner end of the coil to a stove-door, substantially as described.

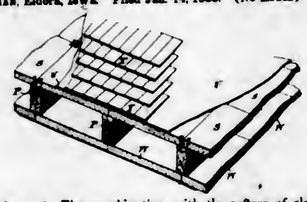
338,508. STOCK-WAGON. WILLIAM E. GEORGE and HENRY HORNEY, Harlan, Iowa. Filed Dec. 19, 1885. (No model.)



Claim.—1. In a stock-wagon, the body A, mounted upon suitable running-gear, in combination with an end-gate, the side portions of which inclose the rear of the body, and a platform hinged to the bottom of the body and to the end-gate, substantially as herein described.

2. In a stock-wagon, the body A and the platform C, hinged to the bottom thereof, in combination with an end-gate hinged to the platform and adapted to be swung downward to serve as a chute in loading and discharging the stock, the transverse slats *e* on the end-gate and platform, the transverse bar beneath the platform, the brace-irons *l*, and hooks and eyes, whereby the end-gate and body of the wagon are securely braced, substantially as herein described.

338,509. CONSTRUCTION OF WOODEN BUILDINGS. CHARLES C. GILMAN, Eldora, Iowa. Filed Jan. 14, 1885. (No model.)

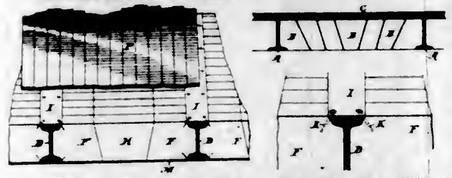


Claim.—1. The combination, with the rafters, of slabs or sheets of terra-cotta lumber secured to the same and a layer of cement or its equivalent applied to the outer surface thereof, substantially as described.

2. The combination, with the rafters, of slabs of terra-cotta lumber secured to the same and a covering which protects the said slabs from the action of the weather and renders the roof water-tight, substantially as described.

3. The combination, with the rafters, of slabs or sheets of terra-cotta lumber secured to the same, a layer of cement or its equivalent, and an outer covering of slate or shingles bedded in said layer, substantially as described.

338,510. FIRE-PROOF FLOOR. CHARLES C. GILMAN, Eldora, Iowa. Filed Mar. 18, 1885. (No model.)



Claim.—1. The combination of iron beams with sectional joists of a porous burned-brick material, said joists consisting of three blocks, the opposing edges of which have been sawed to the proper angle, and are closely fitted together without the intervention of the ordinary mortar joint, substantially as described.

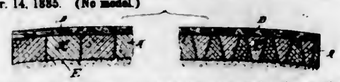
2. The combination of iron beams with sectional joists of a porous burned-brick material, said joists projecting beyond the top and bottom of said beams, and each joist consisting of three blocks, the opposing edges of which have been sawed to the proper angle, and which blocks are closely fitted together without the intervention of the ordinary mortar joint, and protecting-strips applied to the upper and lower surface of said beams and secured to said joists, substantially as described.

3. The combination of iron beams with blocks of fireproofing material occupying the space between said beams, said blocks projecting beyond the top and bottom thereof, and protecting-strips applied to the top and bottom of said beams and secured to said blocks, substantially as described.

4. The combination of iron beams with blocks of fireproofing material occupying the space between said beams and projecting beyond the top and bottom thereof, and having beveled corners adjacent thereto, and beveled protecting-strips laid on the top and bottom of said beams and secured to said blocks, substantially as described.

5. The combination of iron beams with sectional joists of fireproofing material supported between the same and projecting beyond the top and bottom thereof, protecting-strips covering the top and bottom of said beams and secured to said sectional joists, and with a floor applied to the top and a ceiling of plaster to the bottom of said strips and joists, substantially as described.

338,511. PAVEMENT. CHARLES C. GILMAN, Eldora, Iowa. Filed Apr. 14, 1885. (No model.)



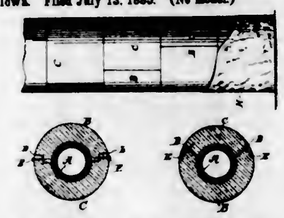
Claim.—1. A pavement consisting of a surface-layer of material, substantially as described, and a foundation composed of slabs or blocks of terra-cotta lumber saturated or completely impregnated with asphaltum, substantially as set forth.

2. A pavement consisting of a surface-layer of paving-blocks and a foundation composed of slabs or blocks of terra-cotta lumber saturated or completely impregnated with asphaltum, substantially as described.

3. A pavement consisting of a surface-layer of wood paving-blocks and a foundation composed of slabs or blocks of terra-cotta lumber saturated or completely impregnated with asphaltum, substantially as described.

4. A pavement consisting of a surface-layer of paving-blocks and a foundation composed of two layers of slabs or blocks of terra-cotta lumber saturated or completely impregnated with asphaltum, the slabs of one layer being arranged to break joint with those of the other, substantially as described.

338,512. FIRE-PROOF POST AND COLUMN. CHARLES C. GILMAN, Eldora, Iowa. Filed July 13, 1885. (No model.)



Claim.—1. A post or column surrounded by a covering of terra-cotta lumber or its equivalent, constructed of two parts, of the form substantially as described, and united by nails passing from one part into the other, substantially as described.

2. A post or column surrounded by a covering of terra-cotta lumber or its equivalent, constructed of two parts, of the form substantially as described, united by nails passing from one part into the other, and a covering of stucco over all, substantially as described.

3. A post or column surrounded by a covering of terra-cotta lumber or its equivalent, constructed of two parts, one of which has a wedge-like form and is secured to the other, substantially as described.

4. A post or column surrounded by a covering of terra-cotta lumber or its equivalent, constructed of two parts, the smaller of which has a wedge-like form, and the larger an opening sufficiently large to permit it to be passed around a post, and fitted to receive the smaller part, the said parts being nailed together, substantially as described.

5. A post or column surrounded by a covering of terra-cotta lumber or its equivalent, constructed of two parts, one of which has a wedge-like form and is nailed to the other, and a finish of stucco over all, substantially as described.

6. A sectional fire-proof covering for posts and columns, consisting of two pieces of terra-cotta lumber or its equivalent, one of which has a wedge-like form and the other a form to fit therewith, substantially as described.

7. A sectional fire-proof covering for posts and columns, consisting of two pieces of terra-cotta lumber or its equivalent, the smaller of which has a wedge-like form and the larger a form to correspond therewith, substantially as described.

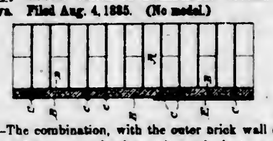
338,513. FIRE-PROOF FLOOR AND CEILING. CHARLES C. GILMAN, Eldora, Iowa. Filed July 13, 1885. (No model.)



Claim.—1. The combination, with wooden floor-joists, of slabs of terra-cotta lumber separately nailed to the upper surfaces thereof, a layer of cement spread over said slabs, and a wooden flooring laid thereon and secured by nails passing into said slabs, substantially as described.

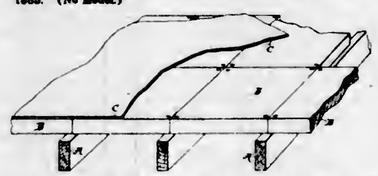
2 The combination, with wooden floor-joists, of slabs of terra-cotta lumber separately nailed to the upper surfaces thereof, a wooden flooring bedded in cement secured by nails passing into said slabs, and slabs or sheets of terra-cotta lumber closely fitted together nailed to the under surfaces of said joists, substantially as described.

338,514. OUTER WALL OF BUILDINGS. CHARLES C. GILMAN, Eldora, Iowa. Filed Aug. 4, 1885. (No model.)



Claim.—The combination, with the outer brick wall of a building, of fluted sheets of terra-cotta lumber or its equivalent, secured with the fluted side against the bricks to the inside surface of said wall, so as to form a series of dead-air spaces, substantially as described.

338,515. ROOF. CHARLES C. GILMAN, Eldora, Iowa. Filed Aug. 14, 1885. (No model.)



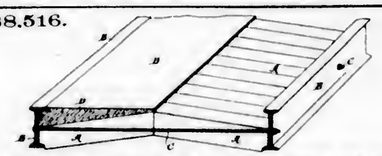
Claim.—The combination, with the wooden rafters, of slabs or blocks of terra-cotta lumber or its equivalent, laid on said rafters and secured to the same by nails, said slabs extending from rafter to rafter, and a finishing-layer of asphalt mastic or its equivalent spread over the same, said layer adhering tenaciously to said slabs, by reason of their porous character, substantially as described.

338,516. FLOOR-ARCH. CHARLES C. GILMAN, Eldora, Iowa. Filed Oct. 15, 1885. (No model.)

Claim.—1. The combination, with iron beams united by tie-rods, of an arch composed of two blocks of porous terra-cotta or terra-cotta lumber, placed in an inclined position to correspond with the line of thrust, substantially as described.

2. The combination, with iron beams united by tie-rods, of an arch composed of two blocks of terra-cotta lumber, placed in an inclined po-

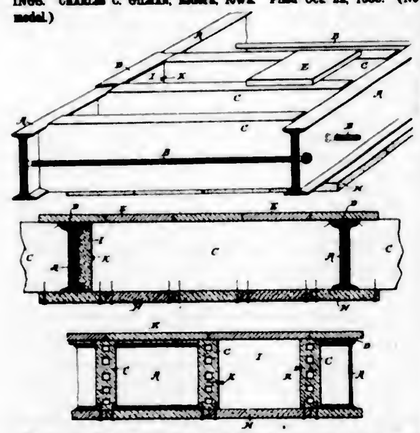
338,516.



sition corresponding with the lines of thrust, their abutting ends being in contact with each other without being united by a mortar joint, substantially as described.

3. The combination, with iron beams and tie-rods, of an arch composed of two blocks of terra-cotta lumber, inclined to correspond with the lines of thrust, and a filling of grouting in the triangular spaces above said blocks, substantially as described.

338,517. CONSTRUCTION OF FIRE-PROOF FLOORS AND CEILINGS. CHARLES C. GILMAN, Elders, Iowa. Filed Oct. 22, 1885. (No model.)



Claim.—1. The combination, with iron beams and porous terra-cotta joists, each of one piece extending across the space between beams, of tie-rods holding said beams against said joists, to retain the latter in position, substantially as described.

2. The combination, with iron beams and porous terra-cotta joists, each of one piece extending at intervals across the space between beams, of tie-rods holding said beams against said joists, to retain the latter in position, substantially as described.

3. The combination, with iron beams and porous terra-cotta joists, each of one piece extending at intervals across the space between beams, and flush with the under surface of the same, of tie-rods and porous terra-cotta ceiling-blocks secured to said joists, forming a ceiling, and covering the under surface of said beams, substantially as described.

4. The combination, with iron beams and porous terra-cotta joists, of separating-blocks of porous terra-cotta interposed between said joists at their ends and protecting the said beams, substantially as described.

5. The combination, with iron beams and porous terra-cotta joists, of separating-blocks of porous terra-cotta interposed between said joists at their ends, and secured to said joists, substantially as described.

6. The combination, with iron beams and porous terra-cotta joists flush with the under surface of said beams, of porous terra-cotta ceiling-blocks secured to said joists and covering the under surface of said beams and separating-blocks of the same material, substantially as described.

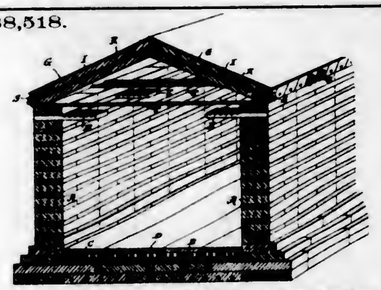
7. The combination, with iron beams and porous terra-cotta joists flush with the under surface of said beams, of porous terra-cotta ceiling-blocks secured to said joists and covering the under surface of said beams, porous terra-cotta strips and separating-blocks, as D and I, and a flooring, substantially as described.

338,518. ELECTRICAL SUBWAY. CHARLES C GILMAN, Elders, Iowa. Filed Oct. 26, 1885. (No model.)

Claim.—1. An electrical subway provided with a floor of asphalt mastic laid on a foundation of terra-cotta lumber, narrow joists of asphaltum, coated or saturated terra-cotta lumber properly spaced laid on said floor, and a covering of flooring-blocks of the same material as said joists, whereby insulated supports for cables are provided, substantially as described.

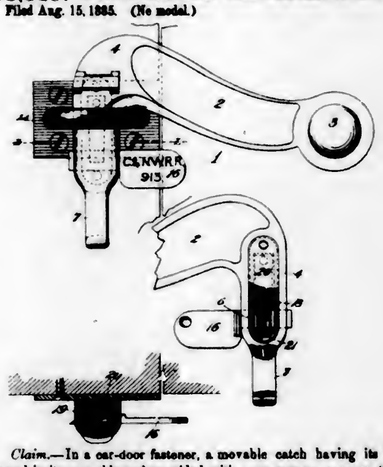
2. An electrical subway provided with a roof constructed of rafters of asphaltum, coated or saturated terra-cotta lumber strengthened by iron cores cast therein, combined with a tie-rod connecting said cores, forming substantially a trussed roof, substantially as described.

338,518.



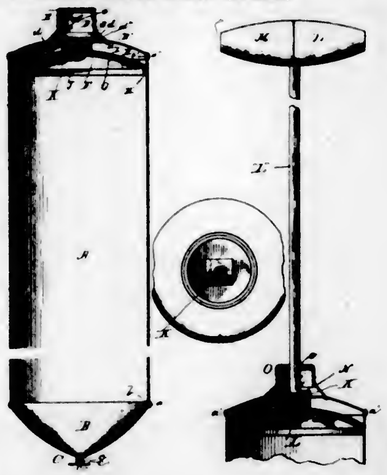
3. An electrical subway provided with a roof constructed of rafters of asphaltum, covered or saturated terra-cotta lumber strengthened by iron cores cast therein, combined with a tie-rod provided with eyes engaging the ends of said iron cores, forming substantially a trussed roof, substantially as described.

338,519. CAR-DOOR FASTENER. FRED P. HANCHETT, Madison, Wis. Filed Aug. 15, 1885. (No model.)



Claim.—In a car-door fastener, a movable catch having its head recessed in its rear side and provided with a transverse passage therethrough, in combination with a cap-plate, 20, adapted to close said recess, a spring-detent, 19, secured to the cap-plate, and a frangible key or bolt notch to engage the detent, substantially as set forth.

338,520. HAND FIRE-EXTINGUISHER. WILLIAM M. HARRISON, Baltimore, Md. Filed Dec. 31, 1885. (No model.)



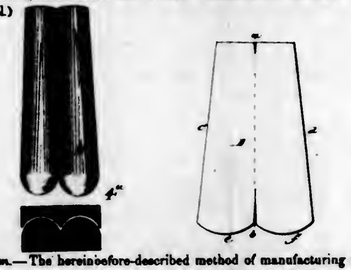
Claim.—1. A syringe fire-extinguisher provided with an opening in its rear end conforming in outline to a nut attached to the piston-head, whereby the nut, when the piston-head is at the rear end of the stroke, will be securely held for the insertion of the detachable handle.

2. In combination, the piston-head consisting of the outer and inner rigid disks and inclosed flexible disk, the screw passing through said perforations, the nut on the opposite side thereof to receive said screw, and the body of the syringe having a perforation in its rear end to receive and securely hold the nut therein, as set forth.

3. In combination, the piston-head having a nut secured at its rear side, the rear end of the syringe having a central perforation to receive the nut, and a seam of solder or other proper sealing material to secure the nut therein, as set forth.

4. In combination, the piston-head having a nut at its rear side, a threaded handle to enter said nut, the rear end of the syringe having a perforation corresponding in size and shape to said nut for receiving and holding it against turning, and a cap soldered to said end piece and having a central perforation to receive and guide the piston rod or handle, as set forth.

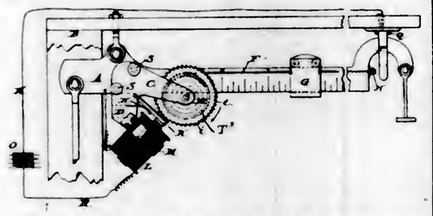
338,521. MANUFACTURE OF KNIFE-HANDLES. HUBERT C. HART, Unionville, Conn. Filed Nov. 2, 1883. Renewed Feb. 11, 1886. (No model.)



Claim.—The hereinbefore-described method of manufacturing handles for table-knives, which consists in, first, cutting a flat blank of requisite shape from a piece of sheet metal; second, shaping or bulging said blank upon a double-faced die; thirdly, bending the shaped blank across a line between the bulges longitudinally; fourthly, uniting the meeting edges of the bent and shaped blank by brazing, substantially as and for the purpose shown and set forth.

338,522. ELECTRO-MAGNETIC POISE-ADJUSTER. CHARLES W. HASTINGS, Brooklyn, N. Y. Filed Apr. 30, 1885. (No model.)

Brief.—The spring in the operating-pulley is sufficiently strong to pull the poise along and overcome the slack-take-up spring in the other pulley.

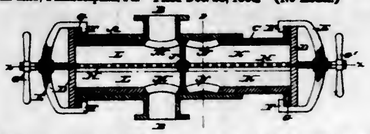


Claim.—1. The combination, with the sliding poise on a scale-beam, of a cord actuated by a spring or weight to produce automatically an inward movement of the poise, a stop device to prevent said movement, an armature and an electro-magnet actuating the same to release the stop, and a battery and suitable conductors to complete an electric current with the magnet through the scale-beam and its trig-loop, which shall be closed when the beam is in contact with the loop and open when the contact is broken, all substantially in the manner and for the purpose herein set forth.

2. The combination, with the sliding poise upon a scale-beam, of a spring-actuated drum or pulley, a cord extending from the poise to the pulley to wind thereon and thereby draw the poise toward it, a rack upon the rim of the pulley, a spring-actuated pawl engaging said rack, an electro-magnet which, when excited, will attract the pawl and withdraw it from the rack, and a battery in circuit with the magnet through the beam and its trig-loop to be closed by the contact of the beam and loop.

3. The combination, with a detachable frame fitting upon a scale-beam, of a spring-actuated pulley pivoted to said frame and carrying cords extending from it to the sliding poise on the beam, an electro-magnet attached to the frame, an armature pivoted to the frame to serve as a pawl for a ratchet on the pulley, and detachable electric conductors to connect a battery with the electro-magnet, the beam, and the trig-loop at the end of the beam, and thereby complete and close an electric circuit when the beam and loop are in contact, all substantially in the manner and for the purpose herein set forth.

338,523. STRAINER FOR WATER AND OTHER FLUIDS. ROBERT H. REY, Philadelphia, Pa. Filed Dec. 28, 1885. (No model.)



Claim.—1. A strainer having the outer shell, A, with branches B B on opposite sides, and the shifting-cylinder C, having ports M M and N N, substantially as described.

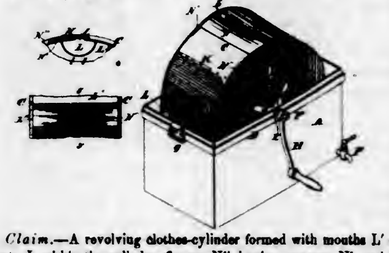
2. In a strainer, the shifting-cylinder C, provided with ports M M and N N, division-plate J, and diaphragm H, in combination with the outer shell, A, having both an inlet and outlet port, substantially as described.

3. A strainer having inlet and outlet openings, and a shifting straining-chamber formed in divisions, each provided with ports which may be placed in communication with said openings and permit the straining of fluid without stopping the flow of the same while shifting the straining-chamber, substantially as described.

4. A strainer-chamber formed in sections separate from each other, each provided with ports, and an exterior shell with inlet and outlet openings, said chambers having detachable heads and made movable within said shell, substantially as described.

5. In a strainer, an inner shifting-cylinder having two compartments separated by a solid division-plate, each compartment being provided with a perforated diaphragm, and having an inlet and an outlet port and detachable heads, the said cylinder having means for shifting said cylinder in relation to the outer shell, substantially as and for the purpose set forth.

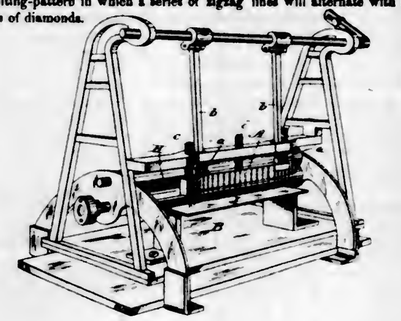
338,524. WASHING-MACHINE. SYLVESTER W. HIGGINS, St. Louis, Mo. Filed Aug. 22, 1884. (No model.)



Claim.—A revolving clothes-cylinder formed with mouths L' and pockets L within the cylinder, flanges N'', having grooves N', and the slides N, adjustable over the mouths for regulating the width of the latter, substantially as set forth.

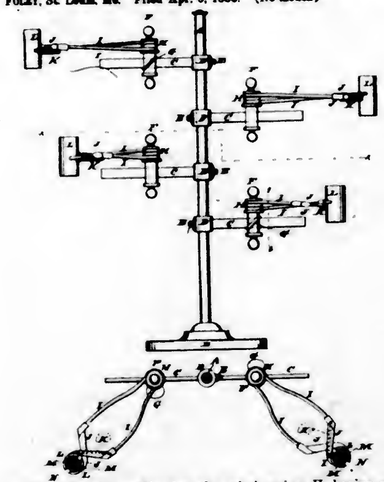
338,525. QUILTING-MACHINE. AUGUST HILDT, New York, N. Y., assignor to L. Dryfoos & Co., same place. Filed Oct. 21, 1885. (No model.)

Brief.—The invention relates to that class of quilting-machines in which a stitch-forming mechanism is combined with a feed mechanism for imparting a forward movement of the goods, and mechanism by which the sewing mechanism and goods are caused to reciprocate (the one or both) laterally or transversely of the line of feed with respect to each other. The invention is designed for executing by a single needle-bar a quilting-pattern in which a series of zigzag lines will alternate with a series of diamonds.



Claim.—The combination, with the feed mechanism and the laterally-reciprocating needle-carriage, of a needle-bar carried by and moving with said carriage extending crosswise of the line of feed and having the portion *e* of its length at right angles to the line of feed, and the other portion, *f*, diagonal or inclined thereto, substantially as and for the purposes set forth.

338,526. SPRING-CLASP. JOHN W. HOLDSWORTH and JAMES B. FOLEY, St. Louis, Mo. Filed Apr. 6, 1885. (No model.)



Claim.—1. The combination of a spiral spring, H, having ends I, jaw-pieces J, secured to the ends, and the jaws L, secured to the jaw-pieces, substantially as set forth.

2. The combination of a spiral spring, H, having ends I, crossed jaw-pieces J, secured to the ends, the jaws L, secured to the jaw-pieces, and a staple or loop, K, secured by its ends to one of the jaw-pieces, the other jaw-piece occupying a position within the loop or staple, substantially as set forth.

3. The spring-arms I J, crossing each other, and the guide loop or staple K, substantially as and for the purpose set forth.

4. The spring-arms I J, carrying jaws L, with lining or padding M, for the purpose set forth.

5. The combination of spring H, with arms I carrying jaws thereon, and the piece F, having a neck forming the pivot-bearing of the spring, all constructed and arranged substantially as set forth.

6. The combination of spring-arms crossing each other and carrying at the ends holding-jaws pressed toward each other by the spring-tension, for the purpose set forth.

338,527. TAPE-MEASURE. ALFRED T. HYDE, Oil City, Pa. Filed Nov. 21, 1885. (No model.)



Claim.—As an article of manufacture, a tape having serrations on its edges, in combination with the tags *b*, substantially as herein described.

338,528. LADDER. ALFRED T. HYDE, Oil City, Pa. Filed Nov. 21, 1885. (No model.)

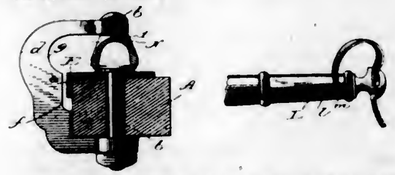


Claim.—1. An improved ladder having a single sustaining-post, and provided with holes having inclined edges and arranged upon opposite sides of the post, in combination with a series of oppositely-disposed rungs extending through each alternate pair of holes, and provided with a shoulder or enlargement to enter one of said holes and form a tight joint therewith, substantially as described.

2. The combination, with the post C, having the alternately-disposed holes upon either side, of the obliquely-extending rungs *a*, located alternately upon opposite sides of the post, said rungs having each an enlargement or shoulder formed thereon to enter the post, and a nut, *b*, to secure said rung, substantially as set forth.

3. In a ladder, the post C, provided with a series of holes on two of its sides, in combination with the inclined rungs *a*, provided with enlargements at or near their centers, and the nuts *b*, for engaging the opposite and threaded ends of the rungs, substantially as shown and described.

338,529. WHIFFLETREE. JAMES P. JOHNSON, Virden, Ill. Filed Dec. 26, 1885. (No model.)

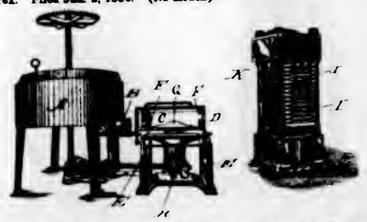


Claim.—1. In combination, the single and double trees, the plate with its flange bearing on the rear surface, and the clevis recessed to fit the flange, and the connecting-bolt, all substantially as described.

2. The malleable-iron single-tree having a slot in its rear edge, combined with the leather strap passed through said slot and having the ends attached to the under side of the bar, substantially as described.

3. The channeled tip of the single-tree combined with the thong having a head, substantially as described.

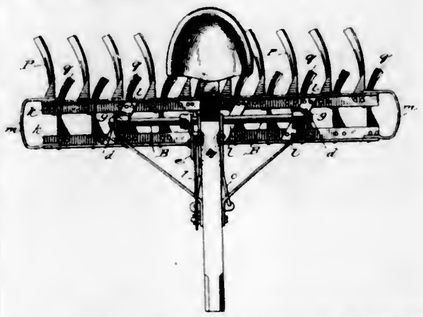
338,530. MANUFACTURE OF OIL-CAKE. WILLIAM V. KAY, Belton, Tex. Filed Jan. 2, 1886. (No model.)



Claim.—1. The improvement in the manufacture of oil-cake in the process of extracting the oil in forming the same, which consists in providing the seed with a paper envelope in which it is compressed, substantially as and for the purpose set forth.

2. As a new article of manufacture, an oil-cake provided with an adhering paper envelope, substantially as described.

338,531. HARROW. WILLIAM J. LANE, Poughkeepsie, N. Y. Filed Nov. 19, 1885. (No model.)



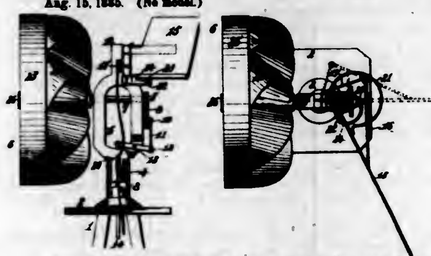
Claim.—1. The combination, in a harrow, of a pole, a rocking shaft journaled upon the pole, and a pair of frames swiveled to arms upon the end of the rocking shaft, the said frames carrying sets of blades upon the front and rear thereof, substantially as described.

2. The combination, in a harrow, of a pole, a rocking shaft journaled upon the pole, and a pair of frames composed of angle-irons connected rigidly together by cross-pieces, said angle-irons supporting sets of blades, and the said frames being swiveled upon the arms of the rocking shaft, substantially as described.

3. In combination with the rocking shaft and its arms, the swiveled frames carrying the sets of blades, said frames being composed of side bars connected rigidly together by cross-pieces, and having a bow front, forming the front ends of the side when they are used as runners.

4. In combination with the rocking shaft and its arms, the swiveled frames consisting of the bars *k k*, connected rigidly to each other by cross-pieces, each of said bars carrying a set of blades or teeth, substantially as described.

338,532. WINDMILL. THADDEUS P. LEVAN, Ness City, Kans. Filed Aug. 15, 1885. (No model.)

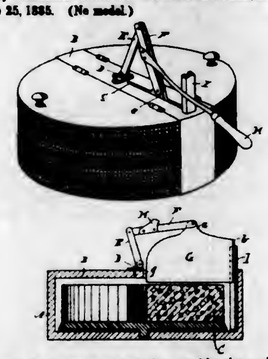


Claim.—1. The combination of the vertical hollow post 3, the rotary frame 5, having a guide-yoke, 22, and a hollow vertically-grooved shank, 4, a wind-wheel mounted on a shaft journaled in said frame, a vane, 15, pivoted to said rotary frame above the guide-yoke, the spring 21, attached to the upper part of the rotary frame for throwing the vane in a parallel line with the wheel, and the pull-out cord 17, passed through the groove in the hollow post to draw the vane to an angle with the wheel, substantially as described.

2. The combination, of the hollow post 3, rotary frame 5, vane 15, pivoted to said frame, guide-yoke 22, shaft 7, journaled in said frame and carrying a wind-wheel, 6, gears 8 and 9, pitman 11, rocking bar 12, and plunger 14, substantially as described.

3. A wind-wheel composed of the broad band 25, elongated hub 26, spokes 27, set to one side, and the sector-shaped fan-blades 28, attached to said spokes and to the edge of the wheel-band on the opposite side, substantially as described.

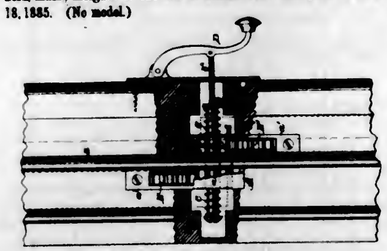
338,533. CHEESE-CUTTER. EDWARD L. LIEBER, Sandusky, Ohio. Filed June 25, 1885. (No model.)



Claim.—1. In a cheese-cutter, the combination, with the case A and a table, C, of the link E, pivotally connected to the top of the case, a connection, F, pivoted to the link E, a knife carried by said links F, a guide, I, for said knife, and a lever fastened directly to one of said links F, substantially as and for the purposes specified.

2. In a device for the purpose specified, the combination, with the case A and centrally-pivoted table C, of the link E, pivotally connected with the top of said case, the double links F, pivotally secured at their upper ends to said link E, the knife G, sharpened upon its lower and inner vertical edges, and its head *a* pivotally secured between the free ends of links F, the guide I, for the outer edge of said knife, and the handle H, secured to one of said links F, between their connection with the knife G and link E, substantially as described.

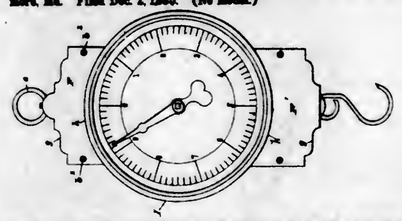
338,534. SASH-FASTENER. FREDERICK D. LIVINGSTONE, Springfield, Mass., assignor of one-half to Almon Gelt, same place. Filed Nov. 18, 1885. (No model.)



Claim.—1. The combination of the casting, the gear-pinions journaled therein, for meshing with the rack-bars with which the window-sashes are provided, and the endwise-movable shaft having the feathers engaging with the pinions, whereby either of the pinions may be disengaged by moving the shaft, substantially as described.

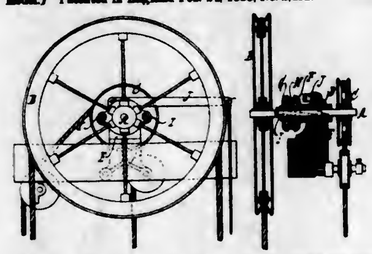
2. The combination of the casting, the pinions journaled therein, for meshing with the rack-bars secured to the window-sashes, the endwise-movable locking-shaft having the feathers for engaging the pinions, whereby either of the pinions may be disengaged by moving the shaft, and the springs for keeping the feathers of the shaft normally engaged with both pinions, substantially as described.

338,535. SPRING-BALANCE SCALE. CHARLES R. MAGUIRE, Baltimore, Md. Filed Dec. 2, 1885. (No model.)



Claim.—A spring-scale having a dial-case and a plated detachable front plate curved at one edge to coincide with the said dial-case and secured to the spring-case, as set forth.

338,536. LIFT OR HOIST. CHARLES G. MAJOR, London, England, assignor of one-half to John Drew, same place. Filed Dec. 10, 1885. (No model.) Patented in England Feb. 24, 1885, No. 2,482.



Claim.—1. The arrangement of single-spindle lifting apparatus with oscillating bearing, combined with the automatic friction-brake, as described, and shown in Figs. 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.

2. In a lifting apparatus, the combination of the automatic brake actuated by links, as described, and shown in all the figures, with any oscillating shaft.

3. In a lifting apparatus, the combination of an oscillating shaft, an automatic friction-brake, as described, and a lever, V, for the purpose of releasing the brake, as described, and shown in Figs. 1, 2, 3, 4, 9, 10, 11, 12, 13, and 14.

4. The portable forms of lifting apparatus with automatic brake, as described, and shown in Figs. 5, 6, 7, 8, 15, 16, 17, and 18.

5. The arrangement of lifting apparatus with one long shaft and two bearings mounted in bell-cranks linked together, combined with an automatic friction clutch-brake, as described, and shown in Figs. 9 and 10.

6. The arrangement of lifting apparatus with increased power by means of toothed wheels and extra shafts, in which the load-wheel is carried in a pivoted frame, partly supported by one end of the motive-power shaft, combined with automatic friction clutch-brake, as described, and shown in Figs. 11 and 12.

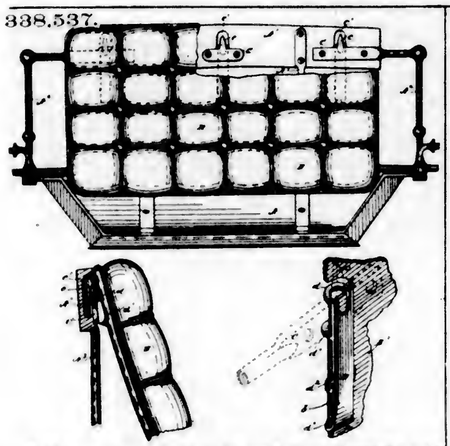
7. The arrangement of lifting apparatus with increased power by means of toothed wheels and extra shafts, in which the downward effort of the load is transmitted to the driving-shaft through the teeth of the wheels only, combined with the automatic friction-brake, as described, and shown in Figs. 13 and 14.

8. The combination of the automatic friction-brake and oscillating shaft with an adjustable weight, as described, and shown in Figs. 5, 6, 7, 8, 13, and 14.

338,537. DETACHABLE BACK FOR CARRIAGE-SEATS. HENRY MARKEL, Jr., McKean, Pa. Filed May 21, 1885. (No model.)

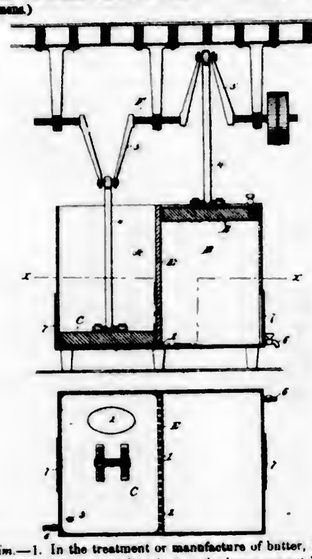
Claim.—1. In a carriage or other seat, the combination, substantially as set forth, of a series of hooks on the side of the frame-back, a series of eyes on the upholstered back for engaging with said hooks on the frame-back, and a series of catch-lugs on the said upholstered back which engages with projection from said frame-back and holds the said eyes upon the said hooks.

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2. In a carriage or other seat, the combination, substantially as set forth, of the upholstered back B, having attached to its back the irons D, with eyes *d* and lugs *d'*, with the frame-back A', having attached to its front the irons C, with hooks *c*, which engage the said eyes *d*.

338,538. TREATMENT OF RANCID BUTTER AND OTHER MATERIALS. CHAS. MARCHAND, New York, N. Y. Filed Dec. 29, 1885. (No specimens.)



Claim.—1. In the treatment or manufacture of butter, butter compounds, and products resembling butter, the improvement in purifying by chemicals, washing, impregnating with buttermilk, or flavoring, mixing, or the like operation, consisting in expressing or squeezing the butter, butter compound, or fat alternately from one vessel into another, through one or more openings for that purpose therein provided under moderate pressure, and at about the temperature named, so that the grain is preserved, substantially as described.

2. The process of treating butter or fat with a liquid for purification, washing, flavoring, or other purpose by repeatedly expressing or squeezing the said material from one vessel into another containing the liquid through one or more openings provided in the vessels for that purpose, so that new surfaces of such material shall be constantly exposed to the action of said liquid, substantially as described.

3. The process of subjecting butter or fat to the action of any liquid by which it is to be treated, by repeatedly expressing or squeezing the butter or fat from one vessel into another containing the said liquid through one or more openings provided for that purpose at or near the bottom of the said vessels, so that the butter or fat may rise through the said liquid, substantially as described.

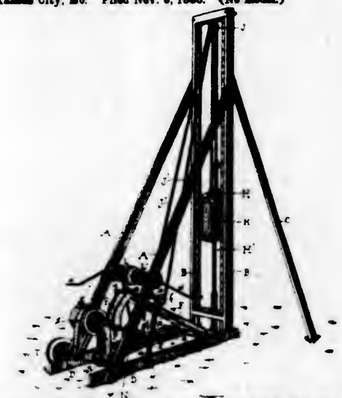
4. The chambers communicating with each other through a series of separate openings or tubes, in combination with the pistons for passing the material from one chamber to the other through said openings or tubes, substantially as described.

5. The chambers placed side by side and separated by a partition having at the bottom a row of holes, through which the chambers communicate, in combination with the pistons, substantially as described.

6. The combination of the communicating chambers provided with doors for removing the solid material, and pipes for drawing off the liquid, and the connected pistons provided with man-holes, substantially as described.

7. The combination, with the chambers separated by a partition perforated at the bottom, of the pistons, the pitmen, and the double crank-shaft, substantially as described.

338,539. MACHINE FOR DRILLING WELLS. RUFUS G. MARDT, Kansas City, Mo. Filed Nov. 6, 1885. (No model.)



Claim.—1. A well-drilling machine comprising devices for raising and dropping the drill-rods and the driving-block alternately and automatically, substantially as set forth.

2. A well-drilling machine comprising devices for raising the drill or sand-pump rods and releasing the driving-block simultaneously and automatically, said devices being capable of adjustment to vary the drop of the rods or the block, substantially as herein set forth, and for the purpose specified.

3. In a well-drilling machine, the combination, with the framing of the machine comprising a derrick, of the main shaft N, to which power is applied, two or more lifting-cranks, P, rigidly secured upon such shaft, and devices intermediate of the drilling and driving tools, substantially as herein set forth, and for the purpose specified.

4. In a well-drilling machine having two or more automatic vertical motions, the combination of a drum, such as L, the tube *f*, the shaft *r*, and crank or cranks *d*, secured to said tube, the framing of the machine to which said drum is hung, and the spring-actuated pin *g*, for holding the drum at any desired portion of a revolution, substantially as set forth.

5. In a well-drilling machine having two or more automatic vertical motions, the combination of the drums L L', the tubes *f*, the shaft *r*, the hand-cranks *d*, secured to the outer end of said tubes, the framing of the machine to which said drums are hung, and the spring-actuated pins *g*, for holding the drums at any desired portion of a revolution, said drums being arranged to revolve independently of each other, substantially as set forth.

338,540. PAINT COMPOSITION. JEROME MCARTHUR, Mount Morris, N. Y. Filed Nov. 19, 1885. (No specimens.)

Claim.—The herein-described composition of matter to be used in connection with paints, consisting of soft water, soda, shellac, tarpentine, and arsenic, in about the proportions specified.

338,541. MECHANICAL MOVEMENT. GEORGE F. MCINDOE, Everett, Mass. Filed Sept. 16, 1885. (No model.)



Claim.—1. In combination with a gear having a part of its periphery free of teeth and provided with an arm, D, and roller *e*, a rack having pivoted thereto a lever, E, inclined or beveled at *n*, substantially as and for the purpose set forth.

2. The combination of gear A, having part of its periphery free of teeth, swinging arm D, roller *e*, and a piece or lever, E, inclined or beveled at *n* and fixed to the rack, substantially as and for the purpose set forth.

3. The combination of gear A, arm D, roller *e*, rack C, lever E, and stop *k*, substantially as specified.

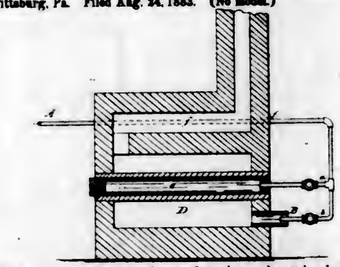
4. The combination of gear A, stop or spring and roller *k* and *i*, rack C, and piece or lever E, provided with the incline or bevel *n*, substantially as specified.

5. The combination of gear A, provided with a roller, *e*, rack C, lever or piece E, provided with an incline or bevel, *n*, and stop *l*, substantially as specified.

6. The combination of gear A, provided with an arm, D, and roller *e*, rack C, lever E, locking-piece F, and a stop or pin, *r*, substantially as set forth.

7. The combination of gear A, provided with an arm, D, and roller *e*, rack C, lever E, locking-piece F, and stop or pin *g*, substantially as set forth.

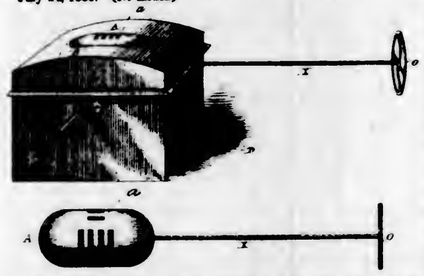
338,542. MANUFACTURE OF HARD CARBON. JAMES J. MCTIGUE, Pittsburg, Pa. Filed Aug. 24, 1883. (No model.)



Claim.—1. In the art of manufacturing coke or hard carbon, the improvement consisting in decomposing in a closed vessel by external heat the natural gas having substantially the chemical composition described, and maintaining said heat until the carbon is deposited, as set forth.

2. As a new manufacture, the within-described hard dense carbon, distinguished by a nearly black color, velvety surface, and fracture, and comparatively high electric conductivity, and possessing the other properties and characteristics set forth.

338,543. TUYERE. WM. G. MILLER, Arkansas City, Kans. Filed July 24, 1885. (No model.)



Claim.—In a tuyere, a hollow rotatable valve provided with perforations extended in series in line with and at right angles to its axis and formed in sets or gangs through different segments of the case, substantially as set forth.

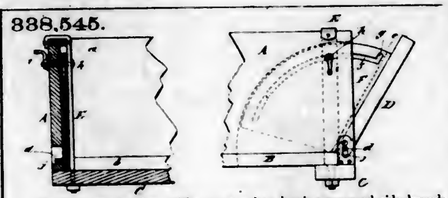
338,544. COMPOSITION FOR REMOVING PAINT. GEORGE W. MOORE, Ercildoun, Pa. Filed Jan. 9, 1886. (No specimens.)

Claim.—A liquid compound consisting of white rosin, oil turpentine, oil linseed, benzine, and a coloring-pigment, combined in substantially the proportions named, and for the purpose set forth.

338,545. WAGON END-GATE. ADELBERT H. NOYES and ELMER S. GARDNER, Jefferson, Wis., assignors to themselves and Arthur de Buell, same place. Filed Jan. 13, 1886. (No model.)

Claim.—1. The combination, with the end-gate D, pivoted in slots *c* in the side-board, of the sector-shaped end plates, F, provided with curved slots *f* and notches *g*, and the bolts A, passing through the side-boards of the box and through the slots of the end plates, substantially as herein specified.

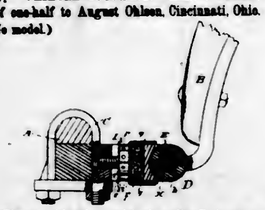
338,545.



2. The combination, with a wagon-box having recessed side-boards and having formed at the ends of the bottom boards the rabbet *b*, of the end-gate D, sectoral plates F, provided with curved slots *f* and notches *g*, the strap-bolts E, and the clamping-bolts *h*, substantially as herein specified.

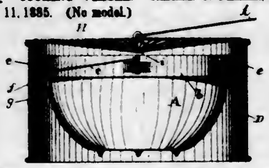
3. The combination, with a wagon-box having side-boards A, provided with sector-shaped recesses *a*, and having slots *c* formed therein, of the cleat C, forming with the ends of the bottom of the box the rabbet *b*, the end-gate D, provided with pivots *d*, the sectoral plates F, having curved slots *f* and notches *g*, and the bolts *h*, substantially as specified.

338,546. VEHICLE-COUPLING. HANS C. OHLSEN, Covington, Ky., assignor of one-half to August Ohlsen, Cincinnati, Ohio. Filed Oct. 12, 1885. (No model.)



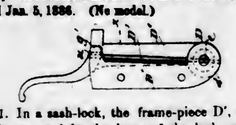
Claim.—The combination, with the clip C, having screw-threaded orifice, and provided with lugs having eyes *c*, bar B, having an eye, *b*, and a pin, E, hinging the bar to the clip, of the gib H, bearing on the bar, the cushion F, the box G, supported between the lugs and having side pieces, *g g*, extending over the lugs, cushion, and gib, and a screw, I, adjustable in the orifice and having a recessed head bearing on the box, substantially as set forth.

338,547. COOKING-VESSEL. CHARLES J. PARKER, Alberton, Md. Filed Sept. 11, 1885. (No model.)



Claim.—A cooking-vessel comprising a cylindric sheet-metal jacket, D, without bottom, provided on its inner surface, near the top, with lateral lugs or brackets *f*, spaced equal distances apart, and having a removable cover resting on its top rim, in combination with a crock, A, having sides and bottom which together approximate the shape of a half-sphere, and provided around its top rim with an exterior flange, *b*, and the crock occupying the cylindric jacket and supported and centered therein by the said lugs or brackets, and leaving a space around the crock, including its bottom, sides, and top, as set forth.

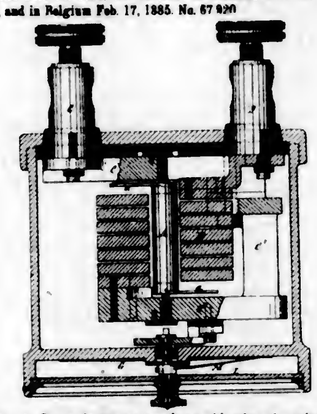
338,548. SASH-FASTENER. JOHN F. PORTER, Mount Washington, Ky. Filed Jan. 5, 1886. (No model.)



Claim.—1. In a sash-lock, the frame-piece D', having a bearing, *d'*, at or near its one end for the lever of the lock, and stops *g g'* at or near its opposite end, in combination with the finger-piece or lever D^2, provided with a forward side locking projection, *h*, and constructed and arranged for operation between said stops, and the wire spring D^3, operating to throw the lever against its forward stop, *g'*, for action in connection with one or more fixed catches on the adjacent portion of the structure carrying the lock, substantially as specified.

2. The wire spring D^3, in combination with the screw *e*, the frame-piece D', with its boss and bearing *d d'* and stops *g g'*, and the lever D^2, having a locking projection, *h*, said wire directly connecting the lever with the boss *d* at opposite ends of the frame-piece, and being secured in position by the same screw which holds the lever in place, essentially as described.

338,549. ELECTRIC METER. JOHN S. RAWORTH, Manchester, County of Lancaster, assignor to Siemens Brothers & Company, (Limited,) 12 Queen Anne's Gate, Westminster, County of Middlesex, England. Filed Feb. 25, 1885. (No model.) Patented in England May 13, 1884, No. 7,668; in France Feb. 14, 1885, No. 167,046; in Germany Feb. 15, 1885, No. 33,950, and in Belgium Feb. 17, 1885. No. 67,920

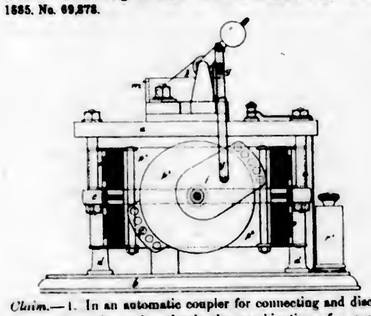


Claim.—1. In an electric meter, the combination of a spindle which is turned by hand, a spring connecting the spindle turned by hand with a magnetic spindle, and a magnetic spindle whereby in each operation the operator in turning the spindle turned by hand puts an increasing tension upon the spring until it balances the deflecting force of the current, as and for the purposes described.

2. The combination of the spindle H, the spring K, connecting the spindle H to the magnetic spindle A, the magnetic spindle A, the indicator F, and the needle M, which turns with the spindle H, as and for the purposes described.

3. The combination of the spindle A, having two small arms, *a a*, projecting from it in opposite directions, the conducting-coils B, consisting of convolutions of copper bar helically wound without contact with each other, the metallic framing C' C² C³, the index-wire F, counterbalanced by an adjustable weight, F', and projecting through the dial G, the central spindle, H', passing through the dial, and the volute spring K, connected by the arm *k* to the index-wire, as and for the purposes described.

338,550. AUTOMATIC ELECTRIC COUPLER. JOHN S. RAWORTH, Manchester, County of Lancaster, assignor to Siemens Brothers & Company, (Limited,) Westminster, County of Middlesex, England. Filed Sept. 12, 1885. (No model.) Patented in England Mar. 5, 1885, No. 2,924; in France Aug. 11, 1885, No. 170,591, and in Belgium Aug. 11, 1885. No. 69,878.



Claim.—1. In an automatic coupler for connecting and disconnecting a dynamo-machine and a circuit, the combination of a magnet or electro-magnet balanced on a pivot with two solenoids of high resistance, as and for the purpose described.

2. In an automatic coupler for connecting and disconnecting a dynamo-machine and a circuit, an electro-magnet excited by two coils, each of which is in series with a high-resistance solenoid, as and for the purpose described.

3. A magnet the movement of which connects and disconnects a dynamo-machine and a circuit, in combination with two highly-resisting shunt-coils connecting, respectively, the terminals of the machine and those of the circuit, substantially as described.

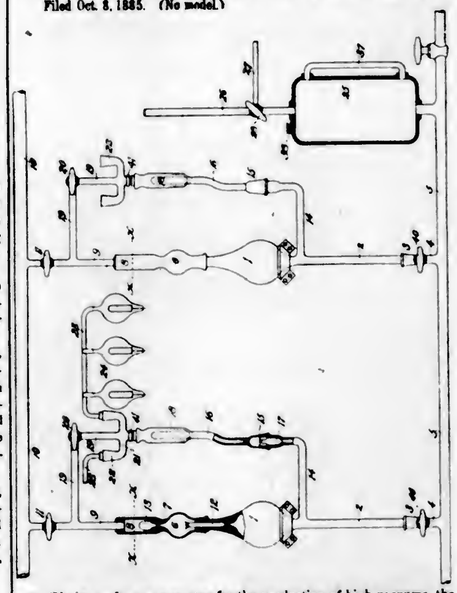
4. The combination of the low-resistance circuit, which carries the full current of the dynamo-machine from the terminal *a'* to the terminal n^3, the two circuits of high resistance wound in opposite directions on the deflecting-bobbin and the magnetizing-bobbin, as and for the purpose described.

5. In an automatic coupler for connecting and disconnecting a dynamo-machine and a circuit, the combination of a magnet or electro-magnet balanced on a pivot with two solenoids of high resistance and two small resistance-coils, r' r^3, included in one of the circuits of high resistance, as and for the purpose described.

6. The combination of the frame *c*, supporting the pivots of the balanced electro-magnet, the balanced electro-magnet *f*, which is free to turn on its pivots, the link *g*, the dipper *k*, and the cups m' m^3, as and for the purpose described.

7. In an electric coupler, in combination with the magnet and the two shunt-coils, a low-resistance coil, which, according to the direction of current through it, assists the one or the other of the shunt-coils in its action on the magnet, substantially as and for the purpose set forth.

338,551. APPARATUS FOR THE PRODUCTION OF HIGH VACUUMS. ALBERT L. REHMANN and CHARLES F. REHMANN, Pittsburg, Pa. Filed Oct. 8, 1885. (No model.)



Claim.—In an apparatus for the production of high vacuums, the combination of a series of vacuum-chambers, each having suitable outlets for the escape of air therefrom, a single mercurial reservoir connected to all of the vacuum-chambers, the mercurial reservoir being provided with suitable connections, with a mechanical exhaust-pump, and with the open air, substantially as set forth.

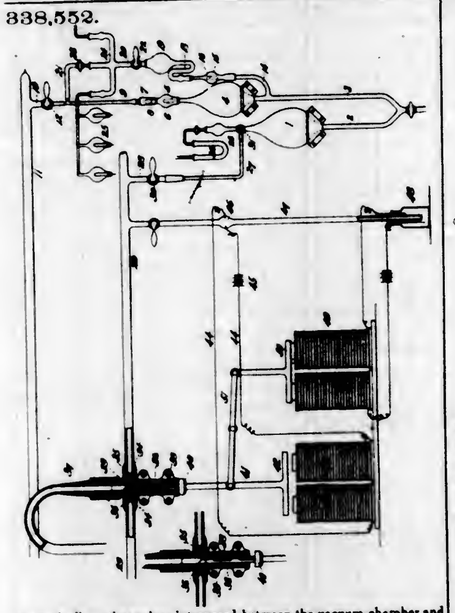
338,552. PUMP FOR THE PRODUCTION OF HIGH VACUUMS. ALBERT L. REHMANN, Pittsburg, Pa. Filed Nov. 21, 1885. (No model.)

Claim.—1. In an air-pump of the kind described, a vacuum-chamber having a valved outlet for the escape of air, in combination with a mercury-reservoir, a tube connecting the reservoir and chamber, said reservoir being connected by suitable pipes to a continuously-operating exhaust-pump, a valve mechanism interposed between the mercury-reservoir and exhaust-pump, a reciprocating column of mercury operated by the varying atmospheric pressures in the mercurial reservoir and its connections, and means for communicating the movements of the mercurial column to the valve mechanism, substantially as set forth.

2. In an air-pump of the kind described, a vacuum-chamber having an uninterrupted connection with a mechanical exhaust-pump, in combination with a mercury-reservoir, a tube connecting the reservoir and chamber, a continuously-operating exhaust-pump connected to the reservoir, a valve mechanism interposed between the reservoir and exhaust-pump, a barometric column, and electro-magnets for so operating the valve mechanism as to connect the reservoir with the exhaust-pump and with the open air alternately, the circuits of said magnets being opened and closed by the movement of the barometric column, substantially as set forth.

3. In a pump of the kind described, the vacuum-chamber 4, connected by a suitable tube to the exhaust-pipe 11, in combination with

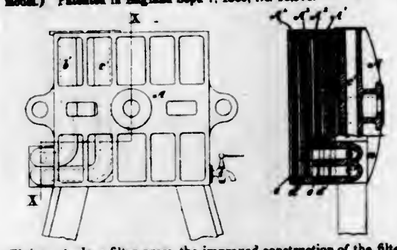
338,552.



automatically-acting valves interposed between the vacuum-chamber and the exhaust-pipe, whereby the return of air to the vacuum-chamber is prevented, substantially as set forth.

4. In a pump of the kind described, the pipe 20, connected at both ends to exhaust-pipes or chambers and provided with branches 24 or other suitable means for connecting the bulbs to be exhausted therewith, in combination with cocks 22 and 23, for cutting off said pipes or branches 24 from communication with the exhaust pipes or chambers, substantially as set forth.

338,553. FILTER-PRESS. BERNHARD H. REMMERS and JOHN WILLIAMSON, Glasgow, County of Lanark, Scotland. Filed Jan. 27, 1886. (No model.) Patented in England Sept. 7, 1885, No. 10,570.



Claim.—1. In a filter-press, the improved construction of the filter-plates with snugs or projections having lixiviating-channels *b c* formed therein, and ports *d e*, communicating between the filter-spaces and alternately with the upper and lower channel throughout the series of plates, vertical inlet and outlet channels or pipes reaching to the top of the press being provided, substantially as and for the purpose set forth.

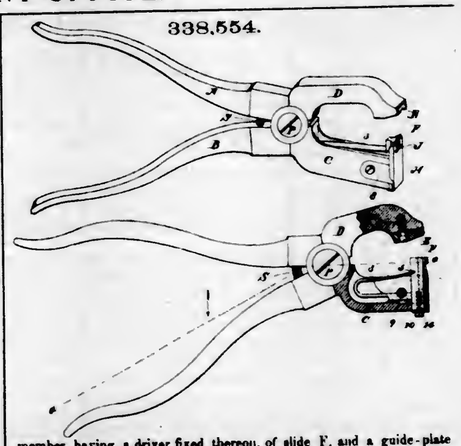
2. In a filter-press having lixiviating-channels formed in snugs or projections on the filter-plates, forming recesses in said snugs and fitting therein blocks of cork, rubber, or similar elastic material, as and for the purpose set forth.

338,554. BUTTON-FASTENER-SETTING INSTRUMENT. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Aug. 24, 1885. (No model.)

Claim.—1. In a button-fastener-setting instrument, the combination, with a member provided with a prong-bending die, and with a member which carries a presser-slide and has a fixed driver next to said slide, of a guide-plate in front of said driver and slide, and adapted to be moved with said slide, said members being arranged to be moved toward and from each other, and said plate having an opening through which to put fasteners above the driver, all arranged substantially as set forth.

2. In a button-fastener-setting instrument, the combination with a

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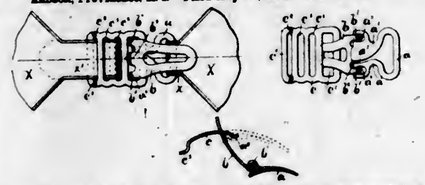
member having a driver fixed thereon, of slide F, and a guide-plate elastically held to said slide, substantially as described, said plate having an opening through which to put fasteners above the driver, and at its upper end a prong-guiding notch, substantially as set forth.

3. The combination of slide F, driver G, plate H, having opening J, notch 18, and lips 19 20, and means, substantially as described, for operating said slide, substantially as set forth.

4. The combination of jaw C, having a space for the reception of spring 3, slide F, driver G, having wings 7 and 8, spring 3, and a screw, 9, arranged to hold in place both the driver and spring, substantially as set forth.

5. The combination of slide F, driver G, and plate H, secured at its lower end to said slide, and having on its upper end the side guides, 24 25, substantially as set forth, and for the purpose specified.

338,555. CLASP-FASTENING FOR OVERSHOES. FREDERICK RICHARDSON, Providence, R. I. Filed May 13, 1885. (No model.)



Claim.—1. A clasp having a resilient tongue-plate consisting of two arms, one of which has a spring cam-bearing extending upwardly and inwardly, and acting with a cam correspondingly located on the tongue hinged to said arms, for the purpose described.

2. The combination, with a resilient tongue-plate having two arms, one of which has a spring cam-bearing extending upwardly and inwardly and acting with a cam correspondingly located on the tongue hinged to said arms, of a transversely-bent catch-plate having the tongue-bearing lying below the line of said hinges when locked, for the purpose described.

3. The combination, with the base-plate *a*, having the arms *a'*, pintles a^2, and cam-bearing a^3, of the tongue formed with the extensions *b'* and cam b^3, as described.

4. The catch-plate having the slots *c'*, c^2, and c^3, and the bend with its slot c^4, as set forth.

5. The combination, with the catch-plate *c*, having the bend a^2, of the base-plate *a*, having the arm *a'*, pintles a^2, and cam-bearing a^3, and the tongue *b*, having the extensions *b'*, as specified.

338,556. CONDUIT FOR ELECTRIC AND CABLE RAILWAYS. ELIAS E. RIES, Baltimore, Md., assignor of one-half to Albert H. Henderson, same place. Filed Sept. 28, 1885. (No model.)



Claim.—1. In combination with a conduit for an electric or a cable railway, having a longitudinally-extending opening therein, covering-plates having downwardly-extending flanges which enter the said open-

ing and are curved toward the sides of the conduit, substantially as and for the purpose specified.

2. In combination with two adjacent lengths or sections of a conduit for an electric or cable railway, the abutting ends of which are practically in contact, a supporting-frame, substantially as shown, placed exteriorly of the said lengths or sections, to sustain and connect the same, and covering-plates attached to the said supporting-frame, adapted to contract the width of the longitudinal opening or slot in the said conduit, substantially as specified.

3. A conduit for an electric or cable railway, having a longitudinally-extending opening or slot therein, and exteriorly-situated supporting-frames combined with detachable covering or surface plates secured independently of the conduit to the said supporting-frames, substantially as specified.

4. The combination, in an electric railway, of a conduit formed of lengths or sections of fragile non-electricity-conducting material with a longitudinally-extending opening therein, metallic plates to partly cover the said opening and separated to form the grip-slot of the conduit, and a series of supporting-frames placed at intervals along the line of the conduit, and adapted to independently sustain both the conduit and the surface-plates, substantially as set forth.

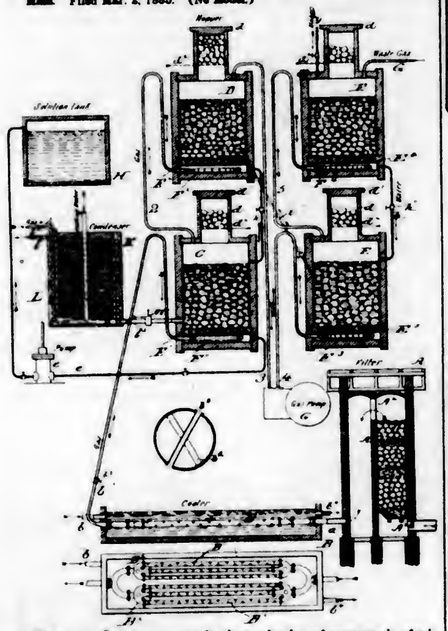
5. In combination with a conduit for an electric or a cable railway, having a longitudinally-extending opening or slot therein, and provided with supporting-frames arranged along its length, of covering-plates situated at each side of the said slot in lengths which meet over the said frames and are secured thereto, substantially as specified.

6. In combination with a conduit for an electric or a cable railway, having a longitudinally-extending opening therein, and provided with supporting-frames, arranged at intervals throughout its length, of covering-plates separated to form the surface-slot, secured to said frames, having downwardly-projecting flanges adapted to come in contact with the inner sides of the conduit, to brace them against exterior pressure of earth, substantially as specified.

7. A conduit for an electric railway, formed of some non-metallic non-electricity-conducting material, combined with exteriorly-situated metallic supporting-frames, substantially as specified.

338,557. APPARATUS FOR THE MANUFACTURE OF SULPHUROUS ACID, &c.

EUGEN BARON RITTER and CHARLES KELLNER, Goerz, Austria-Hungary, assignors to William A. Russell, trustee, Lawrence, Mass. Filed Mar. 2, 1885. (No model.)



Claim.—1. In an apparatus for the production of compounds of sulphurous acid with other substances, the combination, with the combining apparatus and a suitable source of supply from whence sulphurous-acid gas may be derived, of a chamber containing a solid material acted upon by sulphuric acid and a solid material not acted upon by acids, whereby the sulphurous acid before entering the combining apparatus is filtered and purified, substantially as described.

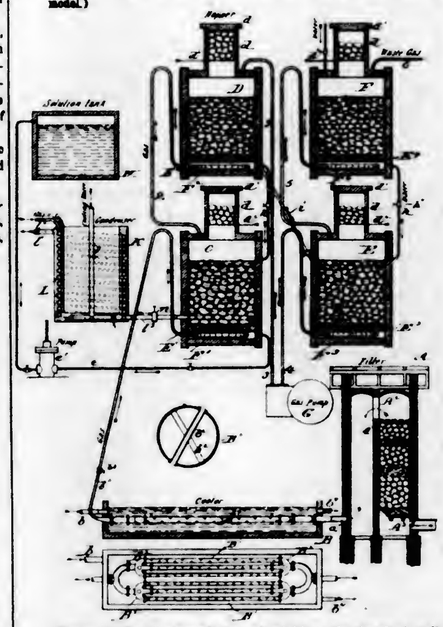
2. In an apparatus for the production of sulphurous-acid solutions or salts, the combination of a chamber containing materials for the filtration of particles held in suspension in the gas and a material adapted to combined with and absorb the sulphuric acid accompanying the gas, a cooling apparatus, and series of tanks or boxes containing a base and a liquid, the whole being connected by suitable pipes and provided with a gas-pump, whereby the gas is caused to pass from the generator through the filtering, the cooling, and the combining apparatus in succession, substantially as described.

3. In an apparatus for the production of sulphurous-acid solutions or salts, the combination, with the combining apparatus, of the cooling-tank B, having water inlet and outlet, and the pipes B' B' B', arranged in said tank and connected to the gas-inlet *a'* and outlet *b'*, and having the transversely-arranged pipes *b² b²*, substantially as described.

4. In an apparatus for the production of sulphuric-acid solutions, the combination, with a suitable generating apparatus, of the filtering and purifying chamber A, provided with the division-wall A' and the grating A^6, upon which are placed alternate layers of limestone or other material adapted to combine with sulphuric acid, and coke or other substance not acted upon by acid, substantially as and for the purpose described.

338,558. PROCESS OF MANUFACTURING SULPHITES.

EUGEN BARON RITTER and CHARLES KELLNER, Goerz, Austria-Hungary, assignors to William A. Russell, trustee, Lawrence, Mass. Filed Mar. 2, 1885. (No model.)

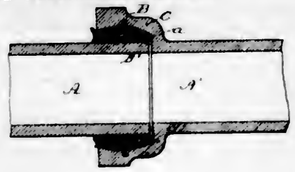


Claim.—1. In the manufacture of sulphites, the herein-described process of purifying sulphurous-acid gas previous to combining it with a base, consisting in passing the gas through a solid material which will combine with the sulphuric acid held in suspension in such gas.

2. In the manufacture of sulphites, the process of filtering and purifying sulphurous acid preparatory to making solutions of the same, consisting in passing the sulphurous acid through a solid material which will combine with sulphuric acid, and a solid material adapted to interrupt the passage of dry particles, and then cooling the acid, substantially as described.

338,559. GAS-CONVEYING CONDUIT.

JACOB SCHEIDWELLER, Pittsburg, Pa. Filed Nov. 21, 1885. (No model.)



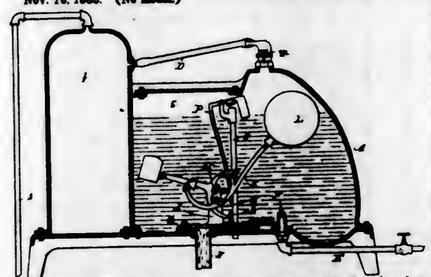
Claim.—1. In a conduit for the conveyance of gas or fluids, the combination, with the section A', provided with the bowl B, and the section A, having a spigot end fitting within said bowl and separated therefrom by an annular space, of the joint seal or packing consisting of a ring or belt of lead having double walls, both said walls being of substantially equal length and extending from the mouth to the base of said bowl, and insloding between them an elastic filling or packing, substantially as shown and described.

2. In a conduit for the conveyance of gas or fluids, the combination, with the spigot-section A and the double-folded ring or packing C, of the section A', having the bowl B', whose interior surface is made concave on the arc of a circle described from the center of the bowl, whereby said bowl and packing form a ball-and-socket joint, substantially as described.

3. In a conduit for the conveyance of gas or fluids, the combination, with the connected sections, of a coupling sleeve or bowl and the doubled-walled packing-ring, said sleeve or bowl having a cavity of increased or enlarged diameter between its mouth and base, and said double-walled ring being expanded to conform to the shape of said cavity, substantially as described.

338,560. BEER-PUMP.

JOHANN J. BREWERT, Detroit, Mich. Filed Nov. 16, 1885. (No model.)

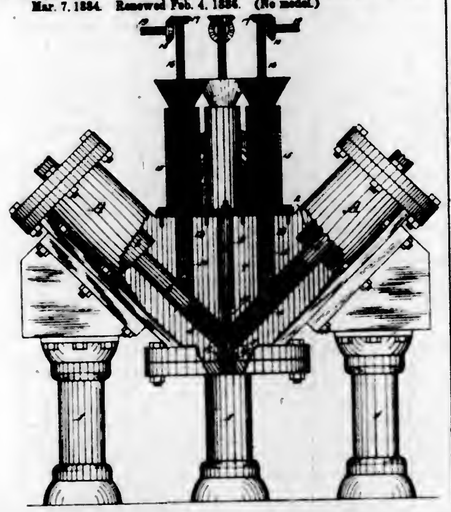


Claim.—1. In a beer-pump, the combination, with the chambers *b c*, pipe D, connecting the same, supply-pipe E, discharge-pipe N, base-plate G, having apertures, as shown, and the slide-valve M, provided with projection *k*, and working in said base-plate, of the shafts H I, journaled in bearings on said base-plate, weighted lever J on the shaft H, and provided with triangular stud *f*, and the lever K, having arms *h h*, provided with rollers *i i*, and carrying the float L, all substantially as and for the purpose specified.

2. In a beer-pump, the combination of the chambers *b* and *c*, pipes D, E, and N, base-plate G, standards *d*, arising therefrom, rock-shafts H I, journaled in said standards, crank-arm T on the shaft H, levers J and K, secured to shafts H I, respectively, slide-valve M, working in said base-plate, with the pipe O, lever P, actuated by the crank-arm T, and valve R, carried by said lever P, when constructed, arranged, and operating substantially in the manner and for the purposes specified.

338,561. LEAD-PRESS.

WILLIAM A. SHAW, Pittsburg, Pa. Filed Mar. 7, 1884. Renewed Feb. 4, 1886. (No model.)



Claim.—1. In a lead-press, a cylinder having a lead-passage, 4, and feed-passage 13, in combination with a plunger and automatic mechanism for feeding the lead into said passage during the retreat of the plunger, substantially as set forth.

2. In a lead-press, a cylinder having a lead-passage, 4, and a feed-passage, 13, in combination with a plunger, and the feed-screw 14, substantially as set forth.

3. In a lead-press, a cylinder having a lead-passage, 4, and a feed-passage, 13, in combination with a plunger, the feed-screw 14, and the jacketed filling-head 15, substantially as set forth.

4. In a lead-press, a cylinder having a lead-passage, 4, and feed-passage 13, in combination with a plunger, a feed-screw, and mechanism operated by the plunger for rotating the feed-screw, substantially as set forth.

5. In a lead-press, a series of two or more cylinders having suitable lead-passages, 4, and feed-passages 13, the lead-passages uniting and forming a central chamber, in combination with a mandrel, 10, the die 11, the plungers 6, and the feed-screws 14, substantially as set forth.

6. In a lead-press, a series of two or more cylinders having lead-passages 4 and feed-passages 13, the lead-passages uniting and forming a central chamber, in combination with jacketed filling-heads arranged around each of the feed-passages and connected to a central receiving-basin, substantially as set forth.

338,562. FIFTH-WHEEL.

EDWARD M. SIMMONS, Grand Rapids, Mich., assignor of one-half to William J. Russell, same place. Filed Sept. 2, 1885. (No model.)

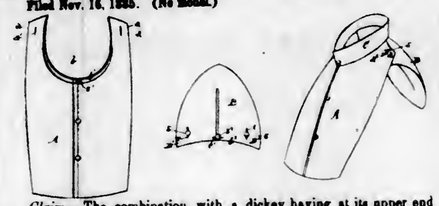


Claim.—1. In a fifth-wheel, the combination of an upper anchor-shaped plate having at its front end an arc provided with forward projecting end stops, a lower anchor-shaped plate provided at its front end with an arc having a central guide and stop consisting of an upward and rearward projection or lug, and a king-bolt for connecting said plates, substantially as described.

2. In a fifth-wheel, the combination of the upper plate, A, having a rear arc, *b*, a perforated boss, *c*, and a forward arc, *c*, provided with end stops, *d d*, the lower plate, C, having a rear arc, *g*, and a forward arc, *l*, provided with a central guide-stop, *m*, the king-bolt B, and the nut *k*, substantially as described.

338,563. DICKEY FOR SHIRTS.

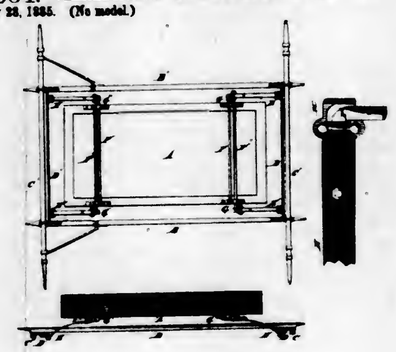
JAMES H. SIMONSON, Albany, N. Y. Filed Nov. 16, 1885. (No model.)



Claim.—The combination, with a dickey having at its upper end the side tagging-pieces, *a a*, provided with eyelets *a' a'*, and neckband *b'*, of the saddle-piece B, made as above described, collar C, and studs *s*, *s'*, and s^2, or their known equivalent connecting devices, all substantially as shown and described, for the purposes set forth.

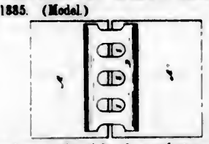
338,564. VEHICLE-SPRING.

EDWARD S. SMITH, Ovid, Mich. Filed July 28, 1885. (No model.)



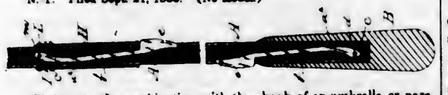
Claim.—The combination of the side bars, B B', and the front and rear transverse equalizers, D D', connected at their ends with the side bars, with the pairs of brackets G G', each constructed with a square and a circular orifice, the front and rear pairs of torsional springs, F F', the former having square ends engaging the square orifices in the brackets, and the others having circular ends engaging the circular orifices in the brackets, and each of said torsional springs having its other end bent, as described, the side springs, E E', connected with the equalizers, and clips H, connecting the bent ends of both pairs of torsional springs with the side springs, substantially as set forth.

338,565. **BELT-FASTENER.** EUGENE C. SMITH, New York, N. Y. Filed Sept. 22, 1885. (Model.)



Claim.—As an improved article of manufacture, a skeleton strip of metallic belt-fasteners, consisting of a skeleton body provided with teeth at opposite points along its edges, which stand at an acute angle to the body, and having enlarged openings along its center at points opposite the spaces between said teeth, whereby the strip may be readily cut into fasteners of suitable lengths on transverse lines passing between the teeth and through said openings, substantially as described.

338,566. **UMBRELLA OR PARASOL.** JAMES T. SMITH, New York, N. Y. Filed Sept. 21, 1885. (No model.)

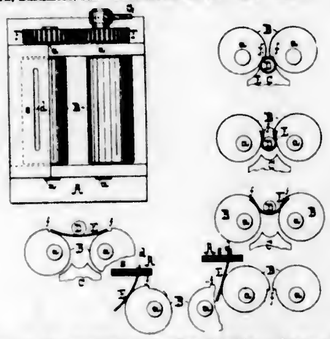


Claim.—1. In combination with the shank of an umbrella or parasol, a holding-spring riveted at one end to the shank beneath the handle, and extending out of the slot in the shank above the handle, and the handle entirely closed, concealing said rivet and forming a bearing directly against it, substantially as described.

2. In combination with the shank of an umbrella or parasol, a holding-spring for the runner, and a ring-stop above the runner, said holding-spring and stop secured to the shank by one and the same rivet, substantially as described.

3. In combination with the stick or handle of an umbrella or parasol, a runner, a stop-ring above the runner, an upper spring riveted to said stop-ring, and a lower spring for engagement with the runner, the the same being riveted to the stick below the travel of said runner, substantially as described.

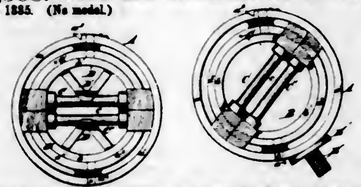
338,567. **MACHINE FOR MAKING THIMBLES FOR BOLTS.** JAMES T. SMITH, Baltimore, Md. Filed Nov 23, 1885. (No model.)



Claim.—1. In a machine for bending thimbles, a frame, a pair of rotative rolls having projections on their surfaces extending longitudinally thereof, adapted to engage with the edges of a sheet-metal blank inserted between the said rolls, gearing to connect the said rolls and effect their rotation in opposite directions, and a hollow-faced seat for the thimble, situated between the said rolls, all combined substantially as specified.

2. In a machine for bending thimbles, a frame, a pair of eccentric rolls supported by the said frame and connected by means of gearing so as to rotate in opposite directions, and means, substantially as described, to hold the blank at one of its ends in contact with one of the said eccentric rolls, so that in the revolution of the said roll the said blank may be slightly bent and thereby adapted for insertion between the said rolls, and subsequently bent around a mandrel, substantially as specified.

338,568. **HARNESS RING.** JOHN F. SMITH, Pontiac, Mich. Filed Nov 12, 1885. (No model.)



Claim.—1. In a harness-ring, the combination of an outer ring, provided with a circular track or guideway, with a rotatable inner ring having attached oppositely-arranged loops or guides engaging said circular track or guideway, substantially as described.

2. In a harness-ring, the combination of an outer ring comprising two hinged sections, each having a curved track or guideway, and provided with a fastening, with an inner ring composed of circular sections, each having at its extremities loops or guides engaging the track or guideway of the outer ring-sections, substantially as described.

3. In a harness-ring, the combination, with an outer ring, of an inner ring arranged to travel about the inner surface of said outer ring, said inner ring provided with rotatable spindles, substantially as described.

4. The combination, with an outer ring constructed with a track, of an inner ring arranged to travel about the inner surface of said outer ring upon said track, said inner ring provided with rotatable spindles, substantially as described.

5. The combination, with an outer ring constructed in two semicircular parts, of an inner ring constructed with two rotatable spindles, substantially as described.

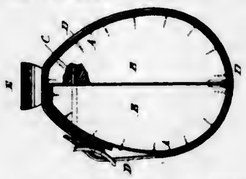
6. The combination, with an outer ring constructed of two parts hinged together, of an inner ring provided with rotatable spindles, and arranged to travel about the inner surface of said outer ring, said parts of the outer ring provided with means to connect their free ends when closed together, substantially as described.

7. The combination, with an outer ring provided with means of connection to a harness, of an inner ring arranged to travel about the inner surface of said outer ring, said inner ring provided with rotatable spindles, substantially as described.

8. The combination, with a ring, of rotatable spindles engaged therewith, substantially as and in the manner described.

9. The combination, with an outer ring, of an inner ring movably connected therewith, said outer ring provided with a stem having a movable connection therewith, substantially as described.

338,569. **MUSIC-SATCHEL.** EUGENE THAYER, New York, N. Y. Filed Jan. 2, 1886. (No model.)



Claim.—1. A music-satchel consisting of a flexible cover having attached to the inside thereof at each end a pair of semi-ovoid or semicircular end pieces arranged at a slight distance from each other, so that when the cover is rolled the said end pieces are folded to form the ends, substantially as set forth.

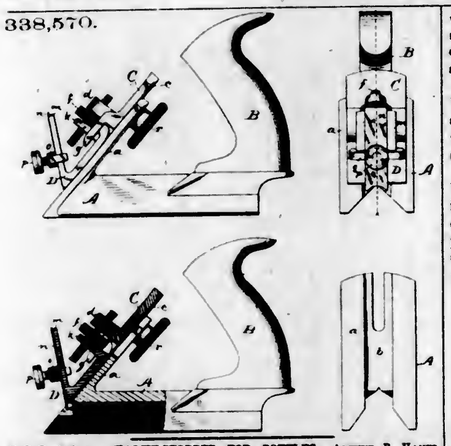
2. A music-satchel consisting of a flexible cover having attached to the inside thereof at each end a pair of folding semi-ovoid or semicircular end pieces, the adjacent faces of which are provided, respectively, with a pin and an aperture therefor, to prevent lateral movement of the sectional ends when folded, substantially as set forth.

3. A music-satchel consisting of a flexible cover having attached to the inside thereof at each end a pair of folding semi-ovoid or semicircular end pieces having apertures in alignment, and the sliding pin C, extending from the outside of the case at the end into the said apertures, substantially as set forth.

338,570. **BENCH-PLANE.** JUSTUS A. TRAUT, New Britain, Conn., assignor to the Stanley Rule and Level Company, same place. Filed Feb. 1, 1886. (No model.)

Claim.—The combination of the stock or V guide having the frog *a*, the holding-block adapted to be secured to said frog, the cutter-block having the cutter attached, and feeding mechanism for feeding the cutter-block and cutter downward upon the face of the frog, substantially as described, and for the purpose specified.

338,570.



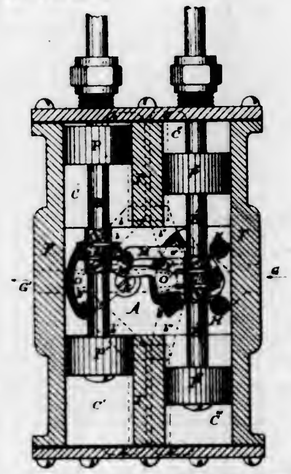
338,571. **VALVE-STOPPER FOR BOTTLES.** ARTHUR B. VANNE, Uitenhage, Cape of Good Hope. Filed July 1, 1885. (No model.) Patented in England May 19, 1883, No. 2,512.



Claim.—1. A stopper in which the valve consists of a rigid flange or disk on the bottom of the body of the stopper, combined with an elastic ring or washer supported on such flange, said stopper having on the upper side of said flange a circular rib or projection, b^2, adapted to embed itself against said rubber and having a groove or grooves, *h*, as and for the purpose set forth.

2. In combination with a rigid stopper-body, having the bottom flange, *b*, and groove *c*, the rubber valve-ring *d*, fitted in such groove and having in it one or more small perforations, d^2, all as and for the purposes set forth.

338,572. **WATER-MOTOR.** DANIEL P. WEBB, Salem, Mass. Filed Dec. 23, 1885. (No model.)



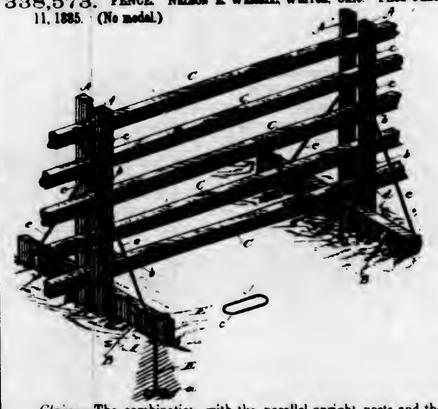
Claim.—1. A water-motor consisting of the two pairs of cylinders C C' and C'' C''' and the pistons P P' and P'' P''', in combination with the two sector-shaped valves V and V' and the crossed arms M M', each arm being rigidly attached to one valve and extending toward the valve carrying the other arm and connected with a piston, substantially as described.

2. In a water-motor, the two chambered or boxed sector-shaped valves V V', combined with the crossed arms M M', and suitable connections with the reciprocating piston-rods, whereby said valves are caused to oscillate upon the centers of the circles of which they are the sectors and in the same direction from those centers, as described.

3. In a water-motor, the two like oscillating sector-shaped valves V V', in combination with the sector-shaped ports O O' and $o\ o'\ o''\ o'''$, and the crossed arms M M', each arm being rigidly attached to one valve and extending toward the valve carrying the other arm and connected with a piston-rod, substantially as described.

4. In a water-motor, the two like oscillating sector-shaped valves V V', in combination with the crossed arms M M', each arm being rigidly attached to one valve and extending toward the valve carrying the other arm, pins D D' and grooved collars L L', piston-rods B B', and pistons P P' P'' P''', all constructed and arranged substantially as described.

338,573. **FENCE.** NELSON E. WESSELL, Warren, Ohio. Filed June 11, 1885. (No model.)



Claim.—The combination, with the parallel upright posts and the fence-rails located between the same, of the transverse binding-loops and the brace-wires passing under the lower rail, then upward through the post, and crossing each other on the outside, the ends being secured to the transverse base-beams, substantially as and for the purpose specified.

338,574. **SIGNAL-LANTERN.** GEORGE WELLS, Annapolis, Md. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination, with the lamp and the concentric colored cylinders in a signal-lantern, of an outer mask-cylinder having a bar extending inwardly across the colored cylinders and arranged, as described, to be raised with either or both of the said colored cylinders, substantially as shown and described.

2. The combination, with the lamp and the concentric cylinders B B' C, of a collar or flange, D, connected to the lamp, a disk, D', above, the connecting-rods extending from the collar to the disk and separating the cylinders, and a key for detachably fastening the disk to the rods, substantially as shown and described.

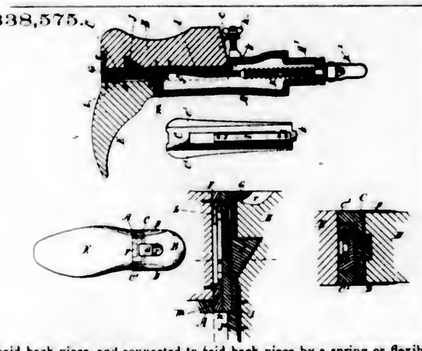
3. The combination, with the lamp and its concentric cylinders B B' C, having attached bails, of the collar and disk D D', the connecting-rods extending from the disk to the collar and separating the cylinders, a handle or bail fastened to and rising from the disk, and a block-and-tackle hung from said handle, and having cords extending from the bails of the cylinder down through guide-eyes in the collar and disk, to permit the cylinders to be operated aloft, as described.

4. The disk D', having a pendent skirt or flange, G, combined with the lamp bearing a collar, D, the rods connecting the collar and disk, the concentric cylinders arranged between the rods, and the outer cylinder or mask arranged to telescope with the said skirt or flange, as and for the purpose described.

338,575. **BOOT-TREE.** EDWIN W. WHITMORE, Worcester, Mass. Filed Dec. 9, 1885. (No model.)

Claim.—1. The combination, with the back piece in a boot or shoe tree, of an auxiliary attaching-plate, as C, having forwardly-extending side flanges, C', outwardly conforming to the lateral size and shape of

338,575.



said back piece, and connected to said back piece by a spring or flexible link, as I, substantially as and for the purposes set forth.

2. The combination of the back piece, B, the auxiliary plate C, provided with side plates, D, and the connecting-link I, substantially as and for the purpose set forth.

3. The combination, with the standard A, having the reduced end portion, of the auxiliary attaching-plate C, embracing the sides of said standard, the wing-plates D, rigidly secured thereto, the back B, movably connected to said attaching-plate, and means, substantially as described, for detachably connecting the plate and standard, for the purpose set forth

4. The combination, substantially as described, of the standard A, the attaching-plate C, the back B, flexibly connected therewith, the side plates, D, protecting the variable space between said plate and back, the lug *b*, and the spring-latch G, for the purposes set forth.

5. The combination, with the standard having the reduced end, and the removable back piece, B, of the back-attaching plate C, having the rigid side flanges, C', that embrace the sides of said standard and fill out the space to the proper size of the foot, substantially as set forth.

6. The combination, substantially as hereinbefore described, of the standard A, the auxiliary plate C, the back piece, B, flexibly connected thereto and provided with a triangular recess, the rod J', having a plain wedge-shaped head fitting said recess, and stop-shoulder *n*, substantially as and for the purposes set forth.

7. The combination, with the foot-piece E and standard A, having a longitudinal guideway, of the recessed plate F, having the slot *f*, and opening *f'*, secured to said foot-piece, and the projecting headed stud L, fixed to said standard, substantially as and for the purposes set forth.

338,576. ROLLER FOR SKATES. RUSSEL B. WHITTEL, Columbus, Ohio. Filed July 28, 1885. (No model.)



Claim.—1. The combination, with a roller having a recessed periphery with beveled walls, of a beveled packing fitting in said recess, and a tire or band covering the entire peripheral face of said packing, said tire having its annular edges rounded and bent around the edges of the packing to cover and protect said edges and prevent injury to the surface traversed, substantially as described.

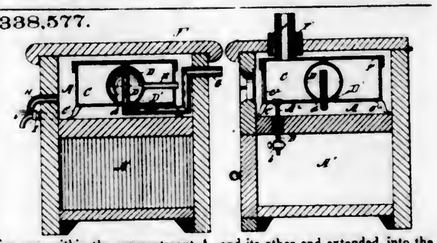
2. A roller composed of a hub having a beveled flange at one edge, a beveled annulus fitting around said hub, an elastic packing or cushion fitting in the beveled recess formed by said parts, and a tire or band fitting around the rubber packing, substantially as described.

3. A roller composed of a hub having a beveled flange at one edge, a ring fitting around said hub and formed with a beveled flange, an elastic packing fitting between said flanges, and a tire or band fitting around the packing, substantially as described.

338,577. CREAMERY. NATHAN YINGST, Reistville, Pa. Filed June 29, 1885. (No model.)

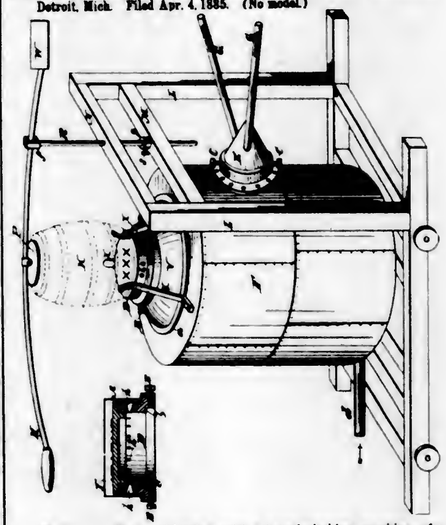
Claim.—The creamer substantially as herein described and shown, consisting of the cabinet having an upper compartment, A, a lower compartment, A', a sight-opening, *a*, and a lid or cover having an opening, F', the pan C, located in compartment A, having a sight-opening, a^2, and provided with a globular cooler, D, having curved sides and a vent, E, the water-inlet pipe G, extended through the side of the cabinet and having its discharge end extended into and terminating close to the crown of the globular cooler, the overflow-pipe H, the discharge-pipe I, the milk-drawing pipe B, passed through the partition between compartments A A', having its upper end detachably connected with the cool-

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ing-pan within the compartment A, and its other end extended into the compartment A and provided with a cock, as *b*, and a cover, F, fitted over the pan, and having a tube, *f*, extended through the opening F' in the top or lid, substantially as set forth.

338,578. DEVICE FOR BRANDING KEGS. HENRY ZIMMERMANN, Detroit, Mich. Filed Apr. 4, 1885. (No model.)



Claim.—1. The combination, with a barrel-pitching machine, of a branding device consisting of a pipe communicating with the interior of the furnace and attached to the furnace, having its upper end closed by a plate carrying thereon a brand in raised letters, and having a series of holes therein for the escape of the products of combustion, substantially as shown and described.

2. In combination with a barrel-pitching machine, a brand attached to the furnace of the pitching-machine, guides secured to the furnace of the pitching-machine around the brand, a frame secured to the support of the pitching-machine, and a lever pivoted in said frame and adapted to press a keg against said brand, substantially as shown and described.

3. The combination, with the furnace of a pitching-machine, of a brand secured thereto and having a tubular connection therewith for the passage of heat to the brand, substantially as described.

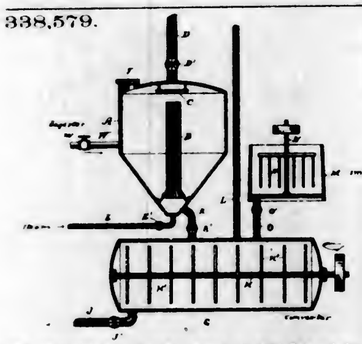
4. The combination, of the barrel-pitching machine with the pipe D, having the holes *h* therein, brand-plate A, and cover T, substantially as shown and described.

338,579. PROCESS OF PREPARING WHOLE GRAIN FOR FERMENTATION. CHRISTIAN ANDERSEN, New York, N. Y., and ADOLPH WOOLNER, Jr., Peoria, Ill. Filed June 22, 1885. (No model.)

Claim.—1. The within-described process for preparing grain for distilling-mashes, which consists of the following steps: first, introducing whole steeped grain within a digesting and macerating vessel, then closing said vessel, then introducing therein a suitable supply of water, then subjecting the steeped unbroken grain to a steam-pressure of several atmospheres and to a temperature of about 300° Fahrenheit, or more, then permitting a limited vapor-escape, then agitating and digesting the contents of the vessel at a temperature of about or slightly above 216° Fahrenheit with free escape of steam, then conducting the digested mass to a closed converting-vessel, then cooling the mass, then admixing said material within said converter with small grain, substantially as set forth.

2. A process for treating unpulverized grain for subsequent fermentation, consisting of the following steps: first, subjecting the grain intermingled with a suitable supply of water to a steam-pressure of sev-

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eral atmospheres at a temperature of 300° Fahrenheit, or more, for about one hour within a closed vessel, then supplying more water, decreasing the pressure to but slightly above the normal atmospheric pressure and to a temperature of about 216° by means of a limited vapor-escape, then digesting and macerating the contents of said vessel for from sixty to ninety minutes, and finally intermingling the mass with small mashed grain within a closed converter, as and for the purpose intended, substantially as set forth.

3. The within-described process for preparing distillery mashes for fermentation, which consists in macerating and digesting unpulverized grain, steeped in water, within a closed vessel, the inlet and outlet pipes of which being closed by suitable valves, such whole steeped grain being first subjected to a steam of several atmospheres and a temperature of about 300° Fahrenheit, or more, for about sixty minutes, which pressure and temperature are afterward reduced to about 215° Fahrenheit, whereby the whole mass is digested and agitated at a low temperature in from sixty to ninety minutes, then leading the macerated and digested mass to and within a closed converter, then cooling the same, then admixing therewith small grain, as and for the purpose intended, substantially as described.

338,580. POCKET CIGARETTE-MACHINE. LOUIS L. ARNOLD, Buffalo, N. Y. Filed June 5, 1885. (No model.)



Claim.—1. The combination of a supporting-frame consisting of heads having separate guide-slots and longitudinal connecting-rods, two rollers the journals of which are guided in said slots, and an endless apron extending around said rollers, substantially as set forth.

2. The combination of a supporting-frame, laterally-movable rollers journaled to said frame, an endless apron extending around said rollers, and a locking-bail applied to the journal of one roller and adapted to engage the journal of the other roller, substantially as set forth.

3. The combination of a supporting-frame, the heads of which are provided with guide-slots, two rollers the journals of which are guided in said slots, an endless apron extending around said rollers, and a locking-bail that is applied to the journals of one roller and provided with recesses to be locked to the journals of the other roller, substantially as set forth.

4. The combination of a supporting-frame having heads with guide slots, two rollers the journals of which are guided in said slots, an endless apron extending around said rollers, and a locking-bail the heads of which are pivoted to the journals of one roller and provided with recesses to be locked to the journals of the other roller, said bail having parallel guide-rods at the upper ends, substantially as set forth.

338,581. REIN-HANDLE. CHARLES K. BARLOW, Poughkeepsie, N. Y. Filed Dec. 14, 1885. (No model.)

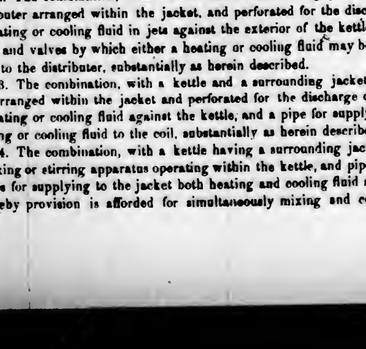


Claim.—1. The flexible-rubber tubing-sheath or rein-handle provided with a longitudinal aperture, as described, and constructed with contracted beveled ends operating as compressing-lips, by which the handle is more securely attached to the rim, as set forth.

2. The flexible-rubber tubing-sheath or rein-handle, as described, provided with an outer corrugated surface or with re-enforced friction-flanges, which act as stops and more effectively prevent the slipping of the driver's hands, as set forth.

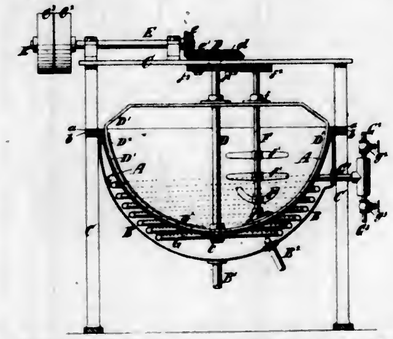
3. In combination with the rein, the flexible-rubber tubing-sheath or rein-handle constructed with a longitudinal aperture and contracted at its extremities, and provided on its outer face with corrugations and re-enforced friction-flanges, as and for the purposes set forth.

338,582. COAL-SIFTER. ALDEN F. BULLARD and GEORGE A. LANGMAID, St. Albans, Vt. Filed Jan. 9, 1886. (No model.)



Claim.—The improved sifter herein described, comprising the base having the downwardly-extending flange and the horizontal flange, the body C, having the horizontal flange at its lower end and secured to the base A, and a forward bottomless extension, a basket-hook on the outer side of the extension, and a handle, J, on the straight wall above the extension, the hinged cover, the inclined sieve, and the basket having the hinged half-cover adapted to engage the said extension snugly when the handle is placed over the hook, substantially as specified.

338,583. MIXING AND HEATING AND COOLING KETTLE FOR CANDY, &c. THOMAS BURKHARD, Brooklyn, N. Y. Filed Dec. 24, 1885. (No model.)



Claim.—1. The combination, with a kettle and a surrounding jacket, of a distributer arranged within the jacket and perforated for the discharge of the heating or cooling fluid in jets against the exterior of the kettle, and a pipe for supplying heating or cooling fluid to the distributer, substantially as herein described.

2. The combination, with a kettle and a surrounding jacket, of a distributer arranged within the jacket, and perforated for the discharge of heating or cooling fluid in jets against the exterior of the kettle, and pipes and valves by which either a heating or cooling fluid may be supplied to the distributer, substantially as herein described.

3. The combination, with a kettle and a surrounding jacket, of a coil arranged within the jacket and perforated for the discharge of jets of heating or cooling fluid against the kettle, and a pipe for supplying a heating or cooling fluid to the coil, substantially as herein described.

4. The combination, with a kettle having a surrounding jacket, of a mixing or stirring apparatus operating within the kettle, and pipes and valves for supplying to the jacket both heating and cooling fluid at will, whereby provision is afforded for simultaneously mixing and cooking

and then cooling the contents of the kettle, substantially as herein described.

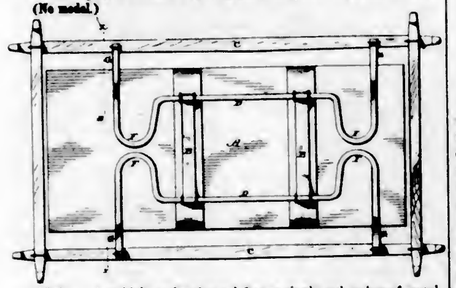
338,584. HAT. FRANCIS H. CRAFTS, Williamsport, Pa. Filed Sept. 12, 1884. (No model.)



Claim.—1. The combination of the hat A, provided with a series of perforations, *a a*, separated by a partition, E, extending nearly across the surface of the crown of the hat, with the cord D, interlaced throughout the perforations *a*, thus forming a configuration upon the hat and a means of identification, substantially as set forth.

2. The combination of the perforated hat A and the crown-lining C, which is correspondingly perforated and placed in the hat, so that the perforations in the lining will register with those in the hat, with the cord D, interlaced through the perforations in the hat and lining, thus securing them together and preventing the sagging of the latter, and also keeping open the holes and facilitating the free circulation of air through the interior of the hat-crown, substantially as set forth.

338,585. SIDE-BAR SPRING. CHARLES P. CROWE, Mount Gilead, Ohio, assignor of one-half to H. M. Smith, same place. Filed Jan. 4, 1886. (No model.)



Claim.—A vehicle-spring formed from a single rod or bar of metal, the central portion of which extends parallel with the body of the vehicle, and which is provided with the bends F and the curved ends G, substantially as shown and described.

338,586. COMBINATION-LOCK. JEFFERSON C. CULBERT, Spencer, Ind. Filed Nov. 23, 1885. (No model.)



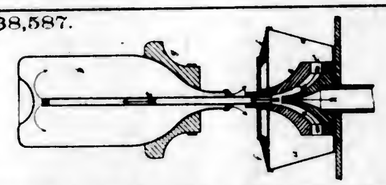
Claim.—1. The combination of a casting having a recess upon its inner side, a bolt pivoted within said recess and having a head projecting through an opening in the side of the casting and a lug upon its back portion, a spring bearing against said bolt around said lug and against the side of the recess, a pin in said head projecting through a slot in the side of the casting, and revolving apertured tumblers for locking said bolt with its head projecting through the opening in the side of the casting, as shown and described.

2. The combination of a casting having a recess upon its inner side, a bolt pivoted within said recess and having a head projecting through an opening in said casting, and a series of pins upon its back portion, a series of apertures through said casting, forming bearings, and an apertured tumbler in each of said bearings, each of said tumblers having a flange at its inner end and marks upon its outer end, said marks registering with marks upon the outside of the casting, as shown and described.

338,587. APPARATUS FOR RINSING OR WASHING BOTTLES, &c. FRIEDRICH CONTZ, Carlsbad, Bohemia, Austria-Hungary. Filed Dec. 29, 1885. (No model.) Patented in Germany July 11, 1884, No. 30,654; in England July 16, 1884, No. 10,317; in France Aug. 6, 1884, No. 163,661, and in Austria-Hungary Feb. 7, 1885, No. 40,310 and No. 589,067.

Claim.—1. In an apparatus for washing or rinsing bottles, the

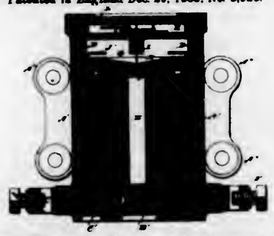
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combination of a pan, *a*, for containing a mixture of water and sand or other gritty matter, a nozzle, *d*, connected with a water-supply pipe extending through the bottom of the pan, a trumpet-shaped mouth, *c*, located above the said nozzle and having lateral communications *c'* with the pan, a tube, *e*, carried by the said trumpet-shaped mouth, and a bottle rest or support, substantially as and for the purpose described.

2. In apparatus for washing or rinsing bottles, the combination of the pan *a*, having openings *f*, with the nozzle *d*, trumpet-mouth *c*, and tube *e*, substantially as herein described.

338,588. ELECTRIC METER. SEBASTIAN Z. DE FERRANTI, West Kensington, County of Middlesex, England. Filed Oct. 6, 1884. (No model.) Patented in England Dec. 29, 1883, No. 5,926.

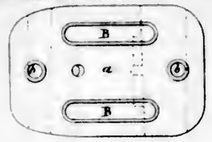


Claim.—1. The combination, in an electric meter, of (*a*) a bath of mercury (or other conducting-liquid) through or across which the current to be measured is made to pass radially, (*b*) a magnet or a coil of an insulated conductor through which the current is also passed, in the magnetic field of which the bath is located, and (*c*) mechanism for recording the rotation set up within the mercury-bath by the passage of the current.

2. The combination, in an electric meter, of (*a*) a bath of mercury (or other conducting-liquid) through or across which the current to be measured is made to pass radially, (*b*) a magnet or a coil of an insulated conductor through which the current is also passed, in the magnetic field of which the bath is located, (*c*) a solid totally submerged in the mercury contained in the bath, and (*d*) a spindle passing upward from the said solid to the recording mechanism.

3. In an electric meter, the combination of a body of mercury (or other conducting-liquid) through which the current to be measured is passed, a magnet or electric coil, in the field of which said body of mercury (or other conducting-liquid) is disposed, so that when a current passes the mercury is caused to move or travel in its receptacle, and recording mechanism for making a record of such movement or action of the mercury or other conducting-liquid.

338,589. BASE-PLATE FOR A RAIL-CHAIR. PETER DE GUERRE, Toronto, Ontario, Canada. Filed Jan. 16, 1886. (No model.) Patented in Canada Dec. 23, 1885, No. 23,040.



SEAT VIEW.

Claim.—In a railroad-chair, the base-plate *a*, provided with ribs B B and legs *b b*, substantially as and for the purpose hereinbefore set forth.

338,590. TWO-WHEELED VEHICLE. CHARLES A. ELLISON, Minooka, N. Y. Filed Oct. 10, 1885. (No model.)

Claim.—1. In a two-wheeled vehicle, the combination, with the axle, the shafts attached thereto, and the body-supporting frame attached to the axle by springs, of a spring consisting of a horizontal section and a vertical section coupled together and connecting the body-supporting frame with a cross-bar attached to the shafts, substantially as set forth.

2. The combination, with the springs secured on the axle and the

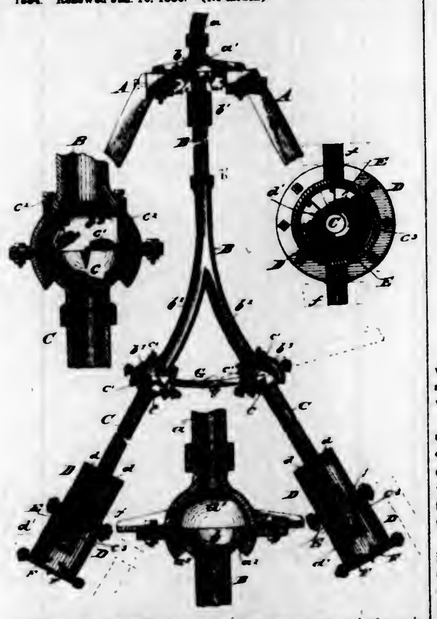
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shafts coupled to the axle in a vertically-rocking adjustment, of the body-supporting frame secured to the axle-springs and to the shaft cross-bar in a vertically and longitudinally yielding adjustment, substantially as set forth.

3. The combination, with the axle and a pair of elliptical springs secured thereon, of a pair of side bars secured on said springs, a pair of cross-bars connecting the side bars, and a vertically and longitudinally yielding spring connecting the front cross-bar with the shafts, substantially as set forth.

338,591. PUMP. JOHNSON P. FORD, Frazier, Cal. Filed Dec. 13, 1884. Renewed Jan. 16, 1886. (No model.)



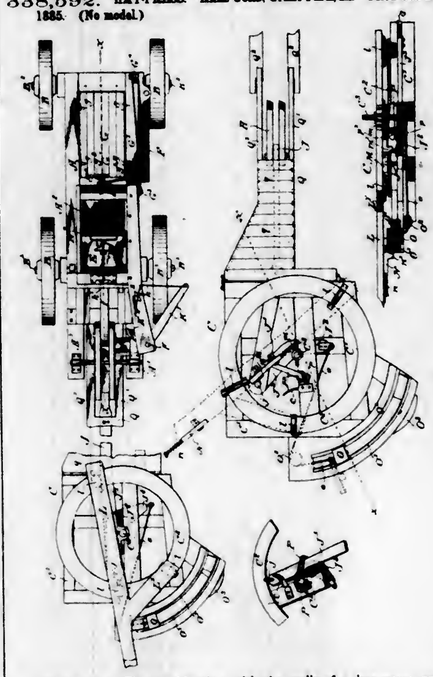
Claim.—1. An oscillating or vibrating pump composed of a main discharge-pipe pivoted at and vibrated upon its upper end and bifurcated at its lower end, two similar cylinders each provided at its lower end with one or more upwardly-opening valves, and trunnioned at said end transversely to the plane of motion of the main pipe, and two hollow plungers each working air-tight at its lower end in a cylinder, and having its upper end, which is provided with one or more upwardly-opening valves, connected to one arm of the bifurcated main pipe by a ball-and-socket joint, substantially as specified.

2. In an oscillating or vibrating pump, the combination of a proper frame-work, A, having the part *a* of the ball-and-socket joint fixed thereto, the vibrating bifurcated main pipe B, provided with the hemispherical upper end, *b*, and the enlarged and rounded lower end, b^3, and the plungers C C, having upwardly-opening valves in their enlarged upper ends, with proper mechanism for vibrating the main pipe and its connections, substantially as specified.

3. In an oscillating pump, the combination of a main discharge-pipe pivoted at and vibrating upon its upper end, and a valved receiving-cylinder pivoted transversely to and vibrating in the plane of motion of the main pipe, with a hollow valved plunger working in the cylinder and jointed to the main pipe.

4. In a vibrating or oscillating pump, the combination, with the vibrating main pipe B, the plunger C, and trunnioned cylinders D, of the bar G, connecting and bracing the lower ends of the bifurcated arms of said main pipe, the pin *g*, and mechanism attached to said pin and adapted to vibrate or oscillate the main pipe, plungers, and cylinders, substantially as specified.

338,592. HAY-PRESS. AXEL GORD, Grant Park, Ill. Filed Oct. 21, 1885. (No model.)



Claim.—1. The combination, with the walls of a hay-press provided with an outwardly-yielding section, G, of pivoted arms or links supporting said section, and a rock-shaft provided with a projection or wing engaging the section for holding it closed, substantially as described.

2. The combination, with the walls of a hay-press provided with an exit-door, F, and with an outwardly-yielding section, G, of pivoted arms or links sustaining said section, a rock-shaft provided with a projection or wing engaging the section for holding it closed, and with an arm whereby said rock-shaft may be moved, a cord connecting said door with the arm of the rock-shaft, and suitable guide-pulleys for the cord, substantially as described.

3. The combination, with a hay-press provided with an inlet-opening, A^2, in its top, of a door for closing said inlet-opening constructed to close by gravity, and provided with a spring-latch, a reciprocating plunger, a lever, H, connected with said plunger for actuating the latter, a vertical rock-shaft, K, provided with an arm, K', and with an arm, K^2, engaging the said lever H, a cord connecting the arm K' with the said spring-latch, and a guide-pulley for said cord, substantially as described.

4. The combination, with the reciprocating plunger of a hay-press, of a horizontal revolving bar or sweep, a lever, J^3, pivoted concentrically with said bar or sweep and provided with a pin or stud, *j*, a spring-detent, M, upon the sweep engaging the stud, a stationary cam-surface engaging the detent M for releasing it from the stud, a block, O, movable concentrically with the pivotal axis of the sweep and connected with the lever J^3, a second spring-detent, N, upon the sweep engaging the said block, a stationary cam-surface engaging said detent N, and connecting devices between the lever J^3 and the plunger, substantially as described.

5. The combination, with the reciprocating plunger of a hay-press, of a revolving bar or sweep, a lever, J^3, pivoted concentrically with said bar or sweep and provided with a pin or stud, *j*, a spring-detent, M, upon the sweep engaging said stud, a stationary cam-surface engaging said detent M, a block, O, movable concentrically with the pivotal axis of the sweep and connected with the lever J^3, a second spring-detent, N, upon the sweep engaging the said block, a stationary cam-surface engaging the detent N, and a vertically-arranged lever, H, connected with the plunger, and a connecting-rod, J, and bar J', connecting said lever H with the lever J^3, substantially as described.

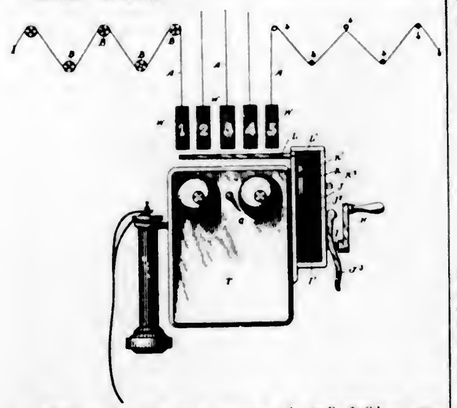
6. The combination, with the reciprocating plunger of a hay-press, of a revolving bar or sweep, a lever, J^3, pivoted concentrically with said bar or sweep and provided with a pin or stud, *j*, a spring-detent, M, upon the sweep engaging said stud, a stationary cam-surface engaging said detent M, a movable block, O, curved guides O' for said block arranged concentrically with the pivotal axis of the sweep, a cord connecting said block with the lever J^3, a guide-pulley for the cord, a detent, N, upon the sweep engaging said block, a stationary cam-surface engaging the detent N, and connecting devices between said lever J^3 and the plunger, substantially as described.

7. The combination, with the hay-press and plunger, of the sweep L, provided with the spring-detent M, lever J^3, bar J', pivoted to said lever and connected with the plunger, and the detent P, applied to hold said bar from backward movement, substantially as described.

8. The combination, with the hay-press and plunger, of the sweep L, provided with the spring-detent M, the lever J^3, the bar J', pivoted to said lever and connected with the plunger, and the detent P, applied to hold the bar from backward movement, said sweep being provided with a projecting part or stop, *p'*, engaging the detent for releasing the latter, substantially as described.

9. The combination, with a hay-press mounted upon wheels and provided with a reciprocating plunger and inclined arms Q^3, rigidly attached to the press, of a horse-power driving-gear comprising a frame, C', resting upon the ground, a connecting-rod, J, transmitting motion from the driving-gear to the press, and a brace between the press and the frame C', comprising side pieces, Q', resting upon the ground and engaging the frame, and the arms Q^3, and planking *q*, connecting said side pieces and located over the connecting-rod J, substantially as described.

338,593. **FIRE-ALARM.** ALMA C. GORDON, Dunlap, Ill. Filed May 22, 1884. (No model.)



Claim.—1. In a fire-alarm apparatus, the easily fusible or combustible pins or wheels arranged in a zigzag path, the incombustible wire made fast at one end and passing about said pins or wheels, and attached at its other end to an alarm mechanism adapted to be actuated when said wire is slackened, all in combination, as and for the purpose set forth.

2. In a fire-alarm apparatus, the easily fusible or combustible supports arranged in a zigzag path and the wire passing about the same, in combination with a lettered or numbered weight supported by said wire, and an alarm mechanism adapted to sound by the falling of said weight, substantially as and for the purpose specified.

3. The crank-shaft I, the call-bell of a telephone-circuit connected therewith, a pinion, I', fast on said crank-shaft, a spur-wheel, J, meshing with said pinion, a shaft, J^3, adapted to be moved longitudinally, on which said spur-wheel is mounted, an elongated pinion, J', fast on said shaft, a spur-wheel, K, meshing with said elongated pinion, and a spring, K', for driving said spur-wheel K, in combination with a stop or lever, L, for holding said spur-wheel K, and means arranged to be actuated by fire to release the spur-wheel from said stop, substantially as and for the purposes described.

338,594. **BARBED CANDLE-HOLDER.** AUGUST GRAFER, Vailsburg, N. J. Filed Sept. 25, 1885. (No model.)



Claim.—The combination, with the base of a candle-holder, of one or more barbed tongues formed in one piece therewith and bent downward and inward beneath said base, with the barbs projecting backward toward the base, said tongue and base forming a tapering recess with backwardly-inclined barbs, substantially as and for the purpose set forth.

338,595. **TREATMENT OF FIBER AND FIBROUS MATTER.** FRANK B. GREENE, Providence, R. I. Filed June 10, 1885. (No specimens.)

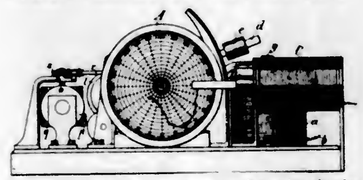
Claim.—1. A new composition of matter consisting, essentially, of a fatty hydrocarbon of vegetable or mineral origin and a vegetable or animal fat or oil in composition with the glycerine set free from the fat or oil by the addition of an alkali.

2. A new treatment for disintegrating the fiber from the stalk, leaf, or other fibrous portions of plants, consisting in boiling or washing the same in a solution of a compound composed of a fatty hydrocarbon of vegetable or mineral origin and a vegetable or animal fat or oil in composition with the glycerine set free from the fat or oil by the addition of an alkali.

3. A new treatment for removing from vegetable and animal fiber, either in the crude or manufactured state, the natural gums, tars, resins, or protecting pellicle of such fibers, either for cleansing or for the processes of bleaching, dyeing, or printing, consisting in boiling or washing the fiber in a compound of a fatty hydrocarbon of vegetable or mineral origin and a vegetable or animal fat or oil in composition with the glycerine set free from the fat or oil by the addition of an alkali.

4. A new composition of matter consisting of a fatty hydrocarbon of vegetable or mineral origin and a vegetable or animal fat or oil in composition with glycerine and an alkali.

338,596. **APPARATUS FOR MEASURING ELECTRICAL CURRENTS.** JOSEPH L. HUBER, Hamburg, Germany. Filed Aug. 5, 1885. (No model.) Patented in Germany Dec. 29, 1883, No. 28,749.

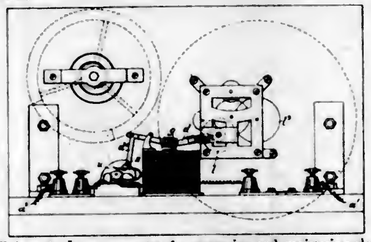


Claim.—1. In an apparatus for measuring and registering electric currents, the combination of an electro-magnet, the anchor *g*, pivoted in a suitable bracket and actuated by the said magnet, a vibrating lever operated by the said anchor, a disk deriving intermittent rotary motion from the said lever, a marker pressing on the said disk, and an electrical measuring device attached to the said marker and moving it according to the intensity of the current, substantially as and for the purpose set forth.

2. In an apparatus for measuring and registering electric currents, the combination of an electro-magnet, the anchor *g*, pivoted in a suitable bracket, the lever *d*, having spring *i*, pressing on the end of the anchor, a disk deriving intermittent rotary motion from the lever *d*, a marker pressing on the said disk, and an electrical measuring device moving the said marker according to the intensity of the current, substantially as and for the purpose set forth.

3. In an apparatus for measuring and registering electric currents, the combination of an electro-magnet, the anchor *g*, the lever *d*, having spring *k* and friction-clutch *m*, the friction-wheel *l*, the brake *n*, a disk rotated by the said friction-wheel, a marker pressing on the said disk, and a solenoid for moving the said marker according to the intensity of the current, substantially as and for the purpose set forth.

338,597. **APPARATUS FOR MEASURING ELECTRIC CURRENTS.** JOSEPH L. HUBER, Hamburg, Germany. Filed Sept. 15, 1885. (No model.)



Claim.—1. In an apparatus for measuring and registering electric currents, the combination of an electro-magnet, a lever pivoted at one end and provided with the anchor *g* and pin *s*, the segment-plate *u*, a wheel connected to the said lever by means of a ratchet and pawl, the clock-work mechanism actuated by a spring wound up by the movement of the said wheel, a revolving disk operated by the said clock-work, and an indicator bearing upon the said disk, substantially as and for the purpose set forth.

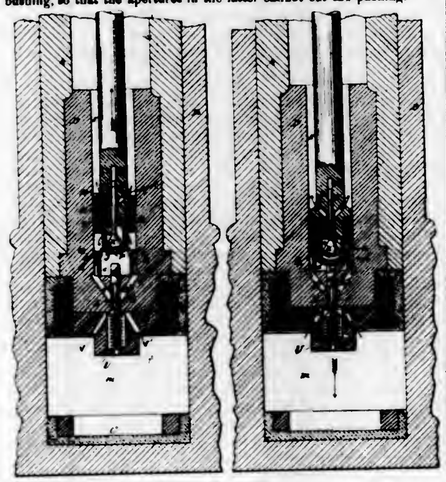
2. In an apparatus for measuring and registering electric currents, the combination of an electro-magnet, a lever pivoted at one end and provided with the anchor *g* and pin *s*, the segment-plate *u*, a wheel connected to the said lever by means of a ratchet and pawl, the clock-work mechanism actuated by a spring wound up by the movement of the said wheel, a revolving disk operated by the said clock-work, an indicator bearing upon the said disk, and a solenoid for actuating the said indicator, substantially as and for the purpose set forth.

3. In an apparatus for measuring and registering electric currents, the combination of a balanced ring consisting of the two parts D and D', provided with arms and pivoted on a central axis, a solenoid for operating the said ring, an indicator connected to the said ring, and a revolving disk, substantially as and for the purpose set forth.

4. In an apparatus for measuring and registering electric currents, the combination of a balanced ring consisting of the two parts D and D', the solenoid C, the indicator B, the disk L, intermediate clock-work mechanism provided with a spring, a ratchet and pawl, the lever *d* for winding up the said spring, and provided with the anchor *g* and pin *s*, the segment-plate *u*, and the electro-magnet *a*, substantially as and for the purpose set forth.

338,598. **HYDRAULIC JACK.** CHARLES HUEBNER, Brooklyn, N. Y. Filed Jan. 20, 1886. (No model.)

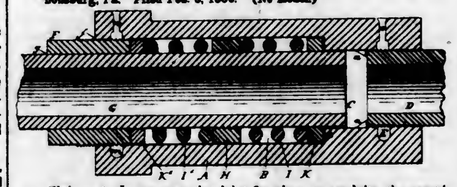
Brief.—An apertured bushing in the lower part of the cylinder, forming an annular chamber through which the return-water passes into the cap of the piston, over the valve therein, and thence to the cylinder-bore above the piston, thus avoiding the closing of the valve by the pressure of the water. In operation the cap only of the piston enters the bushing, so that the apertures in the latter cannot cut the packing.



Claim.—1. A hydraulic jack provided in the lower part of the bore of the cylinder in which the pump-piston works with a bushing forming an annular chamber which is in communication with the channels through which the water passes from the bottom chamber to the bore of the pump-cylinder, said bushing having apertures, and said bushing being of less diameter than the pump-piston, so that the piston cannot pass into it, substantially as shown and described.

2. In a hydraulic jack, the combination, with the casing, ram, and the pump-cylinder, which pump-cylinder has an annular groove in its bore near the lower end, of a bushing in the bottom of the pump-cylinder, which bushing is provided with an annular flange on its upper edge, which flange is forced into the groove in the bore of the cylinder, and which bushing has apertures in its sides, the diameter of the bushing being less than the diameter of the plunger and packing, so as to prevent forcing the packing into the bushing, thereby preventing the cutting of the packing by the edges of the apertures, substantially as shown and described.

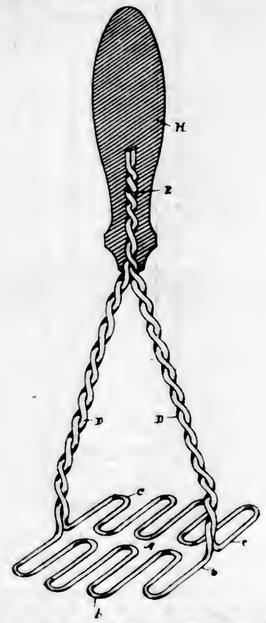
338,599. **EXPANSION-JOINT FOR PIPES.** SAMUEL T. HUGHES, Canonsburg, Pa. Filed Feb. 8, 1886. (No model.)



Claim.—1. In an expansion-joint for pipes or conduits, the combination, with an exterior casing or bowl having an interior chamber, of a pipe-section passing into said chamber, a rigid nut or washer affixed to said section, spiral springs surrounding the same on each side of the washer, and flexible washers surrounding the pipe at the ends of said springs, substantially as described.

2. In an expansion-joint for pipes or conduits, the combination, with the bowl A, having the contracted portion C and chamber B, of the bush or sleeve F, fitting the end of said chamber, the pipe-section G, passing through said bush, the rigid nut or washer H upon said section, the spiral springs I I', and the washers K K', substantially as described.

338,600. **VEGETABLE-MASHER.** WILLIAM J. JOHNSON, Newton, assignor to the National Manufacturing Company, Boston, Mass. Filed Jan. 16, 1886. (No model.)



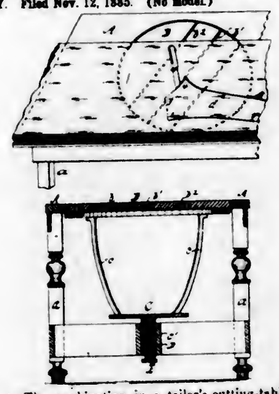
Claim.—1. As an improved article of manufacture, the vegetable-masher herein described, having the body A formed of the two sinuous wires *b* and *c*, arranged in the same plane, the converging arms D, formed

of said wires bent upwardly, joined in lateral contact at each side of the body, and extending side by side upwardly therefrom, and the stem E, formed by the union of said wires, with a suitable handle, substantially as set forth.

2. The masher described, having a body made of two separate wires running sinuously in the same plane, two arms formed by twisting together the upward prolongations of said wires and causing the twisted strands to converge and meet, and a shank made of the united ends of such wires, two of the ends extending beyond the other two, substantially as set forth.

3. The wire frame or body A, and the converging arms D, each formed of two wires united laterally, in combination with the shank E, formed by the union of two only of the wires composing said arms, and with a suitable handle, H, substantially as set forth.

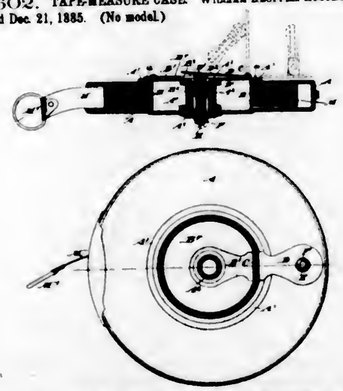
338,601. TAILOR'S CUTTING-TABLE. DAVID L. KETCHAM, New York, N. Y. Filed Nov. 12, 1885. (No model.)



Claim.—1. The combination, in a tailor's cutting-table, of a main table having a box, D, connected with its frame-work and provided with a circular opening in its top, an adjustable plug, E, in the lower end of the box, a rotating disk, B, having a series of parallel slots for the passage of a cutting-knife, and a series of arms, *c*, connected at one end with the disk and at the other end with a post, *c'*, arranged in the box and bearing against the plug, substantially as described.

2. The combination, in a tailor's cutting-table, of a stationary main table having a box, D, secured to its frame-work and provided with a circular opening in its top, and an adjustable plug, E, arranged in the lower end of said box and provided with a conical cavity, with a rotating disk, B, having a series of parallel slots for the passage of a cutting-knife, and a series of arms, *c*, connected at one end with the disk and at the other end with a post, *c'*, arranged in said box and having a conical lower end fitting the cavity in the adjustable plug, substantially as described.

338,602. TAPE-MEASURE CASE. WILLIAM KEUPPEL, Hoboken, N. J. Filed Dec. 21, 1885. (No model.)

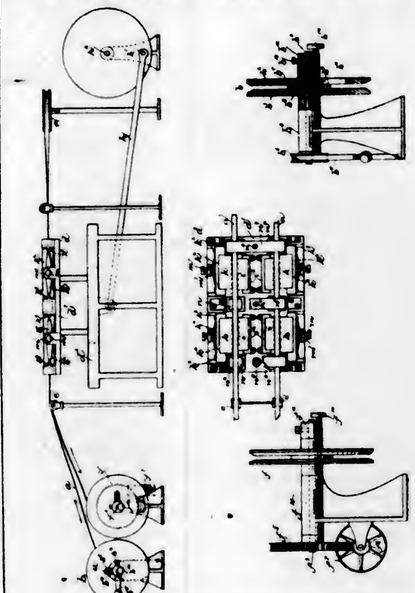


Claim.—1. In a tape-measure case, the tubular center A^2, fixed to the casing A, and arranged to constitute a rigid center for the reel B, combined with a folding crank-arm, as herein specified.

2. The lug D' and the pivoted handle on the pivoted plate D, combined with and arranged to engage frictionally the interior of the tubular center A^2 and to lock the device by the elasticity of its members, substantially as herein specified.

3. The crank-handle E, pivoted on the hinged plate D C, in combination therewith and with the reel B, case A, and central tube, A^2, and arranged to allow the unlocking by pressure on the end of the handle presented at the back, all substantially as herein specified.

338,603. MACHINE FOR POLISHING METAL WIRE OR RIBBON. JOHN LOGAN, Waltham, Mass. Filed Mar. 27, 1885. (No model.)



Claim.—1. In a machine for polishing metal wire or ribbon, the combination of a reciprocating polishing-instrument, comprising a carriage and polishing devices supported thereon, and guides upon which the said carriage has a rectilinear movement, and feed mechanism for drawing the wire or ribbon through the said polishing-instrument, substantially as described.

2. In a machine for polishing metal wire or ribbon, the combination of the following elements, namely: a reel or holder for the wire or ribbon to be polished, a reciprocating polishing-instrument, and pulley around which the wire or ribbon coming from the holder is turned after passing the polishing-instrument, and a feeding device by which the ribbon is drawn back through the polishing-instrument in the opposite direction to that in which it passed from the holder, the polishing-instrument being provided with polishing devices acting on the parts of the ribbon moving therethrough in opposite directions, substantially as described.

3. The combination of a reciprocating polishing-instrument, comprising a carriage and polishing devices having notched or serrated polishing-faces, with feed mechanism for drawing wire or ribbon to be polished through the said polishing-instrument, substantially as described.

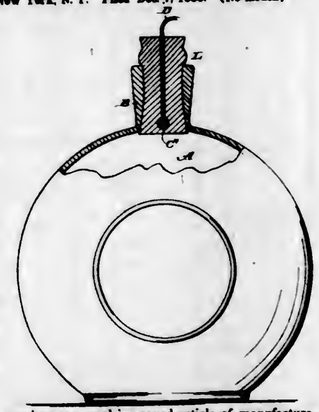
4. The combination of the reciprocating polishing-instrument, comprising a carriage and a polishing device and a holder therefor fixed on the said carriage, and a co-operating polishing device and movable holder therefor, and a spring pressing the said movable holder toward the fixed one, and feed mechanism for drawing wire or ribbon to be polished progressively through between the said polishing devices, substantially as described.

5. In a machine for polishing the edges of metal ribbon, a reciprocating polishing-instrument provided with polishing devices for acting on opposite edges of the ribbon, combined with clamps or guides embracing the flat sides of the ribbon at either side of the polishing devices, for preventing the ribbon from twisting under the pressure of the polishing devices against its edges, substantially as described.

6. In a machine for polishing metal wire or ribbon, the polishing instrument or carriage and polishing devices and their holders fixed thereon, combined with polishing devices and holders therefor movable on guides toward or from the fixed ones, and springs for pressing them against the wire or ribbon between them and the fixed polishing devices, substantially as described.

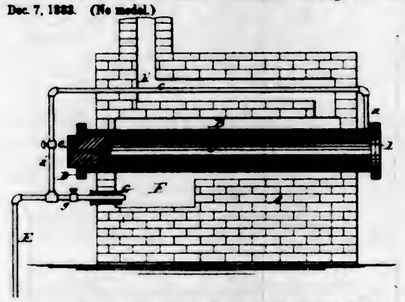
7. In a machine for polishing metal wire or ribbon, the combination of the following instrumentalities: a reel for holding the wire or ribbon to be polished, and friction device for producing tension thereon, a reciprocating polishing-instrument through which the wire or ribbon is led from the said holding-reel, a pulley beyond said polishing-instrument about which said wire or ribbon is turned and from which it is led back in the opposite direction through the said polishing-instrument, and a receiving-reel and actuating mechanism for rotating the same, whereby the wire or ribbon is drawn progressively from the holding-reel and fed progressively through the polishing-instrument, substantially as described.

338,604. HAND-GRENADE EXTINGUISHER. WILLIAM W. LUYSTER, New York, N. Y. Filed Dec. 7, 1885. (No model.)



Claim.—As a new and improved article of manufacture, a cork or stopper for bottles or vessels which contain extinguishing matter to extinguish fire, provided with a recess or recesses to receive and hold fulminate or other suitable explosive material to destroy the vessel and liberate the extinguishing material, constructed substantially as herein described and shown.

338,605. APPARATUS FOR PRODUCING HARD CARBON FROM HYDROCARBON VAPOR. JAMES J. MCTIGHE, Pittsburg, Pa. Filed Dec. 7, 1883. (No model.)



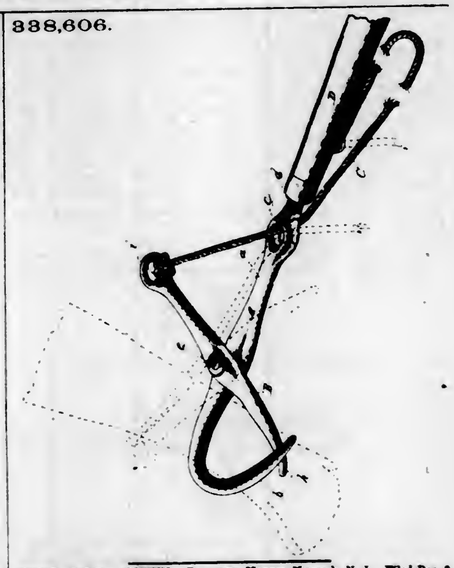
Claim.—1. An apparatus for producing coke from natural gas, comprising in combination a furnace structure, a vented retort set therein, a main supply gas-pipe, a branch thereof communicating with said retort, and a second branch leading to said combustion-chamber, substantially as described.

2. An apparatus for producing coke from natural gas, comprising in combination a furnace structure, a retort set therein, and a gas-supply pipe having one branch leading to the combustion-chamber of said furnace and a second branch communicating with the retort, the latter branch passing first through the furnace at such point as to be heated by the burning gas in the combustion-chamber, substantially as described.

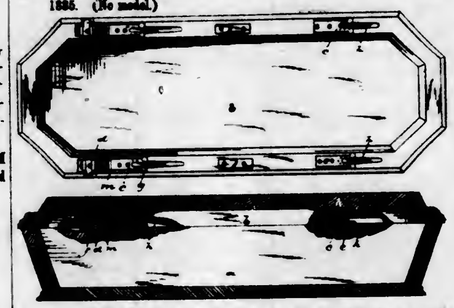
338,606. ANIMAL-CATCHING DEVICE. CHARLES F. MORLEY, Tecumseh, Mich. Filed May 13, 1885. (No model.)

Claim.—In a device for the purposes described, the hook A, having hook *b*, and handle D, combined with the latch B, pivoted to the hook A, and provided with a point, *h*, said hook and latch being so constructed in relation to each other that the point *h* of the latch B will bear on the hook *b* on the side opposite to the bearing of the latch B on the hook A, whereby the pivot of said parts A B is relieved of strain, as set forth.

338,606.



338,607. COFFIN. BENJAMIN MORRIS, Newark, N. J. Filed Dec. 9, 1885. (No model.)



Claim.—1. The combination, with the cover and body of a coffin and a co-operating catch, of a flat catch-plate secured on the face of said body or cover, and projecting from said face to slightly separate the said body and cover and present a broad and smooth bearing-surface, substantially as set forth.

2. In combination with the coffin cover and body, flat sheet anti-friction plates secured on the face of one of said parts to hold them slightly apart, and thus reduce friction as the parts slide on one another, substantially as set forth.

3. The combination, with the body and cover of the coffin having catches near the head and foot thereof, as shown, of intermediate anti-friction plates, *s s*, to prevent the central portions of the cover from sagging, substantially as set forth.

4. The combination, with the body and cover of a coffin, of a flat sheet catching-plate, *c*, having at one end bifurcations *g g*, to engage a co-operating catch, substantially as set forth.

5. In a coffin, the combined catch and automatic fastener consisting, essentially, of the plate bifurcated at one end to engage a co-operating catch and bent at the other to spring automatically into engagement with the fastening projections and prevent disengagement of the catching portion, substantially as set forth.

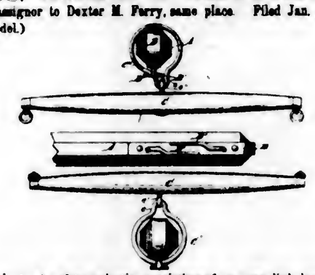
6. In a coffin, the combined catch and fastener consisting, essentially, of a plate, *c*, having bifurcations *g g*, bent end *d*, and laterally-extending finger-piece *d'*, said parts being arranged and combined substantially as set forth, for the purposes stated.

7. In combination, the coffin body and cover, co-operating catches *c c*, arranged on the edges of the body and under side of the cover to hold said body and cover together, and a fastening-spring seated or affixed to one of said parts and bent to project from the said one part and enter automatically into holding engagement with a co-operating stop on the other, to prevent back motion of the cover and the disengagement of the catches, substantially as set forth.

8. In combination, the coffin body and cover, co-operating catches *e e*, to hold said cover to said body, a fastening-spring bent to project from the face of the part on which it is fixed, a stop to receive the projecting end of said spring and prevent back motion of the cover and disengagement of the catches, said projecting spring being provided with a laterally-extending spring which projects beyond the edge of the body and lies beneath the overhanging edge of the lid, substantially as set forth.

9. In combination with a casket-body having a recess, *m*, in the edge thereof, and suitable catches to hold down the cover, and said cover having suitable co-operating catches to engage those on the body, and a fastening-spring fixed upon the cover and projecting therefrom to enter the said recess *m* and engage the end wall thereof, substantially as set forth.

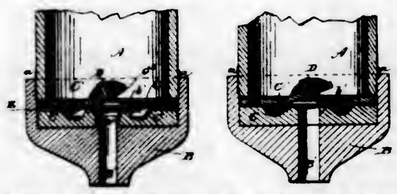
338,608. CARRIAGE-POLE TIP. GEORGE L. K. MORROW, Detroit, Mich., assignor to Dexter M. Ferry, same place. Filed Jan. 29, 1886. (No model.)



Claim.—1. A safety pole-tip consisting of an open link beneath the pole formed by two prongs, B', and adapted to be used in connection with a neck-yoke ring having a contracted portion, c, substantially as and for the purpose described.

2. A safety attachment for a pole-tip, consisting of an open link formed of two prongs, B', connected to a plate and adapted to be secured to the under side of any ordinary pole, and designed to be used in connection with a neck-yoke provided with a ring having a contracted portion, c, substantially as described.

338,609. VALVE-SEAT. DAVID J. NYSEWANDER, New Carlisle, Ohio. Filed July 22, 1885. (No model.)



Claim.—1. The combination, with the cap formed with the central upwardly-extending annular flange, of the annular rubber cushion forming an elastic valve-seat, and constructed of such a diameter that when placed in operative position within the said cap its outer circular edge will extend beneath the lower edge of the pump-cylinder, upon the lower end of which the said cap is adjustably secured, as and for the purpose set forth.

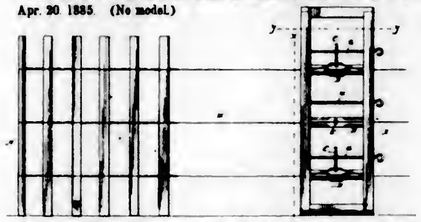
2. The combination of the cap formed with the central upwardly-extending annular flange, the annular rubber cushion forming an elastic valve-seat, and constructed of such a diameter that when placed in operative position within the said cap its outer circular edge will extend beneath the lower edge of the pump-cylinder, upon the lower end of which the said cap is adjustably secured and the valve arranged above the said cushion, as described.

3. The combination, with the cap having its upper end provided with the interior screw-thread to adapt it to be secured adjustably upon the lower end of the pump-cylinder, and formed with the central upwardly-extending annular flange, of the annular rubber cushion forming an elastic valve-seat, and constructed of such a diameter that when placed in operative position within the said cap its outer circular edge will extend beneath the lower edge of the pump-cylinder, upon the lower end of which the said cap is adjustably secured, substantially as and for the purpose shown and described.

4. The combination of the cap formed with the central upwardly-extending annular flange, the annular rubber cushion forming an elastic valve-seat, and constructed of such a diameter that when placed in operative position within the said cap its outer circular edge will extend beneath the lower edge of the pump-cylinder, upon the lower end of which the said cap is adjustably secured, and the annular metallic plate arranged, as described, above the said cushion.

5. The combination, with the cap having its upper end provided with an interior screw-thread to adapt it to be secured adjustably upon the lower end of the pump-cylinder, and formed with the central upwardly-extending annular flange, of the annular rubber cushion forming an elastic valve-seat, and constructed of such a diameter that when placed in operative position within the said cap its outer circular edge will extend beneath the lower edge of the pump-cylinder, upon the lower end of which the said cap is adjustably secured, the annular metallic plate arranged, as described, above the said cushion, and the valve, all constructed and arranged in the manner and for the purpose shown and described.

338,610. TENSION APPARATUS FOR FENCE-WIRE. JOHN M. OVERPECK, OBEY D. SHANK, and LUCIAN A. CUSHEN, New Paris, Ohio. Filed Apr. 20, 1885. (No model.)



Claim.—1. The combination, with the upright vertical frame perforated for the passage of the wires, of the cross-beams journaled therein, the perforated levers carried by said beams and the stop-bars, the parts being constructed and arranged to operate substantially as specified.

2. A tension apparatus for fence-wire, composed of the frame A, having apertures F F, cross-beams B, journaled in said frame, levers C, carried by said beams, and provided with holes D and means for locking said levers, substantially as and for the purposes specified.

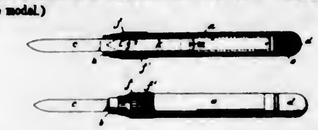
338,611. LEAD OR CRAYON HOLDER. JOSHUA PUSEY, Philadelphia, Pa. Filed May 17, 1883. (No model.)



Claim.—1. In a holder for leads or crayons and analogous articles, the combination of a case having mechanism for holding and releasing the lead, &c., the lead or other article loosely contained within said case and provided with a stop or enlargement thereon, an adjustable longitudinally-movable stop-gage with which said stop or enlargement is adapted to engage, and the extent of the drop or protrusion of the lead, &c., from the case thereby limited, substantially as described.

2. The combination of the case or handle, the lead-containing tube having the tapering jaws longitudinally movable with relation to the case, the spring-controlled pressure-cap actuating said lead-containing tube, the lead or crayon provided with a stop or enlargement thereon, and the longitudinally-movable gage, with which the said stop or enlargement is adapted to engage, substantially as and for the purpose set forth.

338,612. POCKET-KNIFE. JOSHUA PUSEY, Philadelphia, Pa., assignor to Gustavus A. Goldsmith, New York, N. Y. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination of the case or handle, the gravity-knife or other analogous implement having a notch or offset therein, the rotatable sleeve, the pin connected thereto and extending within the case through a transverse slot therein in the path of the knife, all constructed and adapted to operate substantially as and for the purpose stated.

2. The combination of the case or handle, the gravity-knife or other analogous tool provided with a notch or offset therein, and a stop for preventing said knife, &c., from escaping, the rotatable sleeve, the pin connected thereto and projecting within the case through a transverse slot therein in the path of the knife, &c., together with the spring pressing against said pin, all constructed and adapted to operate substantially as and for the purpose set forth.

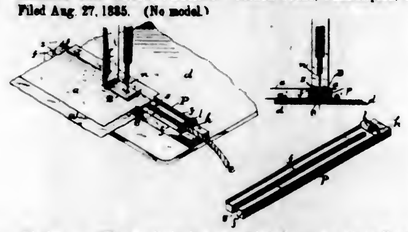
3. The combination of the slotted case or handle provided with the rotatable sleeve and pin, the notched blade or other analogous tool, the spring, and the slotted plug *h*, substantially as and for the purpose set forth.

4. The combination, with a transversely-slotted case or handle having a gravity-knife or other analogous tool therein, with a notch in the tang thereof, and a rotatable sleeve on one end having a pin therein, of a removable cushioned cap, substantially as and for the purpose specified.

5. The combination of the slotted case or handle, the rotatable sleeves on one end of the handle having pins therein, the gravity-knife or other analogous tool having a notch in its tang, with a stop or projection thereon, and a slotted stop-plug for arresting the fall of such tool, substantially as and for the purpose set forth.

6. The combination of the double-slotted common case or handle, the two sleeves and respective pins adapted to be rotated in opposite directions, the double-slotted plug or guide *h*, and the two implements—such as a knife and glove-buttoner—provided with notches and stops, respectively, substantially as and for the purpose stated.

338,613. METHOD OF INSERTING CORDS IN THE SEAMS OF TEXTILE AND OTHER FABRICS. JOSHUA PUSEY, Philadelphia, Pa. Filed Aug. 27, 1885. (No model.)



Claim.—1. The method of ornamenting the seams of textile and similar fabrics which consists in superposing the margins or edges of such fabrics and interposing and guiding between the same, as the sewing proceeds, a cord, and then sewing directly through said layers and cord with straight-ahead stitches on a line parallel with the sides of said cord, substantially as and for the purpose set forth.

2. The method of ornamenting the seams of fabrics which consists in interposing between two pieces or layers thereof two or more cords maintained in superposition, and then sewing directly through said layers and cords, substantially as and for the purpose set forth.

338,614. HEMSTITCHING AND CORDING ATTACHMENT FOR SEWING-MACHINES. JOSHUA PUSEY, Philadelphia, Pa. Filed Aug. 27, 1885. (No model.)



Claim.—1. The described hemstitching attachment for sewing-machines, consisting of a plate provided with the longitudinal slot and flanges *f*, adapted to engage with and to be guided by the side of the presser-foot of a sewing-machine, substantially as and for the purposes set forth.

2. In combination with the slotted plate, the projection *l*, adapted to impinge against the presser-foot of a sewing-machine under the circumstances mentioned, substantially as and for the purpose described.

3. In combination with the slotted plate, the projection *l*, provided with the aperture *g*, substantially as and for the purpose specified.

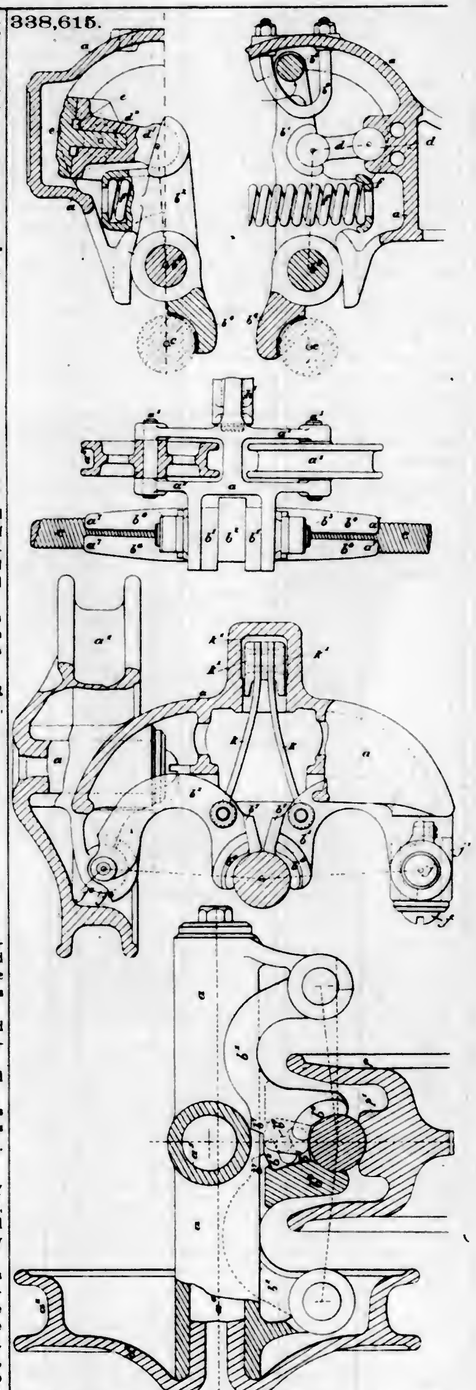
4. A hemstitching attachment consisting of a plate having a series of steps of different thickness, and provided, respectively, with flanges and longitudinal slots, substantially as described, and as shown in Figs. 3, 4, and 5, and for the purpose recited.

338,615. CLIP APPARATUS FOR TRANSPORTING LOADS BY MEANS OF ROPES OR CABLES. JOHN P. ROE and PETER R. BEDLINGTON, Bilbao, Spain. Filed Apr. 10, 1885. (No model.) Patented in England Jan. 2, 1884, No. 479; in France Oct. 6, 1884, No. 164,690; in Germany Oct. 19, 1884, No. 32,865, and in Spain May 29, 1885, No. 7,136.

Claim.—1. The combination, in an automatic clip apparatus, of a saddle-head, a clip-saddle, means operating the jaws thereof automatically to clamp the rope with a force proportionate to the weight of the load, and devices to further increase the grip of the jaws upon the cable in proportion to the steepness of the gradient, substantially as described.

2. The combination, in an automatic clip apparatus, of a saddle-head, a clip-saddle, toggle devices operating the jaws thereof automatically to clamp the rope with force proportionate to the weight of the load, and devices to further increase the grip of the jaws upon the cable in proportion to the steepness of the gradient, substantially as described.

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3. The combination, in an automatic clip apparatus, of a saddle-head, a clip-saddle provided with jaws which clamp the rope, and a means

operating the jaws automatically to clamp the rope with a force proportionate to the steepness of the gradient, substantially as described.

4. The combination, in an automatic clip apparatus, of a saddle-head, a clip-saddle provided with jaws which clamp the rope, and a connection between the saddle-head and the jaws operating automatically to increase the grip of the jaws upon the cable in proportion to the pull upon the saddle-head, tending to resist the pull of the cable in the opposite direction, substantially as described.

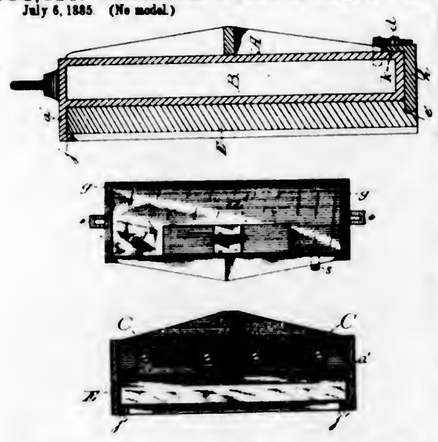
5. The combination, in an automatic clip apparatus, of the saddle-head *a*, the clip-saddle *b*, provided with the clips *b'* *b²*, and jaws for clamping the rope, the toggle *d'*, formed with the segment *d²*, and engaging with the portion *e²* of the saddle-head, the toggle *d'* also operating the clips, so as to clamp the rope with more or less force according to the resisting pull on the saddle-head, substantially as described.

6. The combination, in apparatus for transporting by means of traveling cables, with the traveling cable and clips carried thereby, said clips consisting of jaws which clamp the said cable upon the sides, of supporting pulleys or sheaves provided with grooves enlarged laterally or made sufficiently broad to allow the clips to pass.

7. The combination, with apparatus for transporting loads by means of a traveling cable, of a clip formed with tapering ends constructed to pass between the flanges of the supporting-sheaves, substantially as described.

8. The combination, in apparatus for transporting by means of traveling cables, with supporting-pulleys provided with grooves sufficiently broad to allow the clips to pass, of clips formed with tapering ends, substantially as described.

338,616. **FURNACE-DOOR.** JOHN A. ROWEY, Corning, N. Y. Filed July 6, 1885. (No model.)



Claim.—1. In a furnace-door, the fire-brick E, in combination with the side pieces or liners, the staple secured upon the side of the liner, and a key, L, provided with a rounded head, *o*, extending through an aperture in the side of the lining, a wedge, *p*, driven over the key L and under the staple, to press the rounded portion *o* upon the side of the brick, substantially as described.

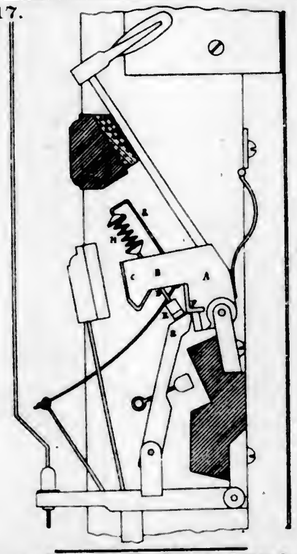
2. A furnace-door provided with the eyes *d*, cast upon its surface, in combination with the removable bottom piece, *h*, provided with a flange, K, extending over and upon the front surface, A, the said eyes extending through the flange K, and a suitable key, whereby the joint between the bottom piece and door is protected and the said flange of the bottom piece securely held against the surface of the door, substantially as described.

3. In combination with a furnace-door consisting of a hollow cast-iron box, B, provided with top and bottom pipes for introducing a stream of cold air or water through said box, the sides and top of said box extending inwardly and provided with flanges *j*, the bottom piece, *h*, and the fire-brick E, cut out at the bottom to form a recess, *e'*, against which the said bottom piece of the box projects, and a locking device for holding said bottom piece on the door or removing it therefrom, substantially as described.

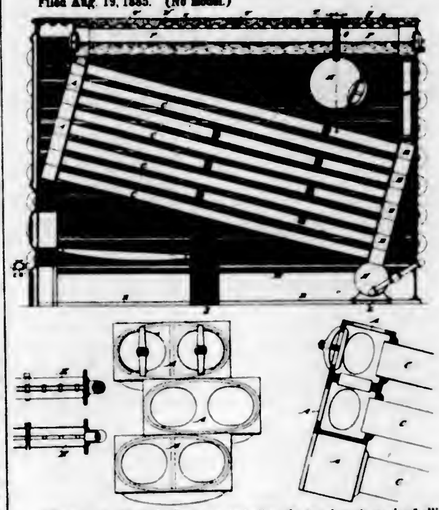
338,617. **REPETITION-ACTION FOR PIANOS.** HENRY SCHALLEHN, London, England, assignor of one-half to Henry Barton Warning, same place. Filed Mar 18, 1885. (No model.)

Claim.—The combination of the hopper G with the hammer-butt having an enlargement, B, sticker-rod D, bracket K, screwed into said enlargement, to be adjustable thereon, and spring H, between said bracket and sticker-rod, substantially as described.

338,617.



338,618. **STEAM-BOILER.** FREDERICK SOEHNE, Brooklyn, N. Y. Filed Aug. 19, 1885. (No model.)



Claim.—1. In a sectional steam-boiler, the headers A, each of elliptical body with a flange on its front forming a rectangle, combined, as shown, with each other and with two tubes connected to each header, all arranged for joint operation substantially as herein specified.

2. In a steam-boiler, substantially as described, the steam and water tubes P, having headers on each end connected to each vertical row of sections by the uppermost header, respectively, in combination with the steam-superheating drum M, arranged across the furnace and common to all the tubes P, as set forth.

3. In a sectional boiler, the steam-superheating drum M, with connecting-tubes O, taking the saturated steam from the steam-room of tubes P, as herein specified.

4. In a sectional boiler, the superheating-drum M, applied underneath the water-level of the boiler in place of the hanging wall, leading the draft downward, as herein specified.

5. In a steam-boiler, the side chambers, E, composed of corrugated metal arranged to formed channels, in combination with the elastic end connections of wrought-iron plates and elbows connecting the channels on both ends alternately, and a furnace inclosed between the said chambers, all arranged for joint operation as specified.

6. In a sectional boiler, the side chambers, E E, applied in first place as feed-water heaters, with suitable means of receiving, circulating, and delivering the feed-water into the main boiler, and provided with suitable piping for blowing off the med from the lowest part, all arranged for joint operation as herein specified.

7. In a sectional boiler, the side chambers, E E, secured to side beams, R, in connection with cross-beams L and S, and connected together by furnace-front and suitable traverses on the top with covering W so, so forming together a casing for the furnace, as herein specified.

8. In a sectional boiler, the headers A B, receiving the inclined tubes C, the water and steam tubes P, in connection with the superheating-drum M, applied below the water-level, and means, O, for connecting with the steam-room in tubes P, the side chambers, E E, constructed of corrugated metal, so as to receive, circulate, and deliver the feed-water and steam, connected with long and cross beams at the base, and with front and top connections, so as to form together an independent casing for the furnace of the main boiler, all arranged for joint operation substantially as herein specified.

338,619. **ELECTRIC RAILWAY.** FRANK J. SPRAGUE, New York, N. Y. Original application filed Apr. 14, 1882. Divided and this application filed May 6, 1885. (No model.)

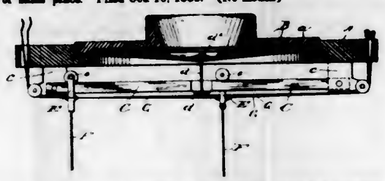


Claim.—1. In an electric railway, the combination, with the ties, of the support carried thereby for the working conductors, having a shield upon its upper part for protecting said conductors from the weather, substantially as set forth.

2. The combination, with one or more working conductors of an electric railway, of a support therefor, consisting of a neck or web, to a side or the sides of which said conductors are attached, and an outwardly-extending shield above said conductors, substantially as set forth.

3. In an electric railway, a continuous longitudinal support placed upon the ties, having a neck and an outwardly-extending shield, in combination with the working conductors, attached one on each side of the neck, substantially as set forth.

338,620. **MECHANICAL TELEPHONE.** ANDREW W. SYMMER, New York, N. Y., assignor to John A. Cabot and William L. McCreary, both of same place. Filed Oct. 16, 1885. (No model.)



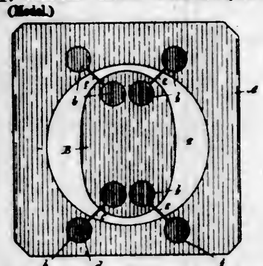
Claim.—1. In an acoustic or mechanical telephone system, the combination, with a vibrating diaphragm, of two or more line-wires connected therewith, and provided with mechanism whereby the pull of one or all of the wires may be transferred from the diaphragm to the frame within which it is mounted, substantially as set forth.

2. In an acoustic or mechanical telephone, the combination, with a vibrating diaphragm, and with a supporting-frame therefor, of two or more guide-bars secured to said frame and adapted to serve as guides for two or more sliding yokes, and permit them to be brought singly or together to bear upon a stirrup connected directly with the vibrating diaphragm, each yoke being connected with a transmitting-line, and provided with means for moving it upon its guide-bars, substantially as set forth.

3. In an acoustic or mechanical telephone, the combination, with the diaphragm B and frame A therefor, of two or more guide-levers, C, pivoted to the frame at one end, and bearing at their other end upon a stirrup secured to the diaphragm, a sliding yoke upon each guide-lever to be connected with each line-wire, and means whereby the said sliding yokes may be moved back and forth upon the said guide-levers, substantially as and for the purpose set forth.

4. In an acoustic or mechanical telephone, the combination, with a vibrating diaphragm, and with two or more line-wires leading thereto, of a stirrup attached to the diaphragm, two or more guide-levers attached to the frame of the telephone and leading to the stirrup, each lever having mounted thereon a sliding yoke to which may be attached one of the line-wires, means for sliding the yoke upon the guide-levers, and a guide-ring in the rear of the device, through which to lead the several line-wires, substantially as and for the purpose set forth.

338,621. **STENCIL.** MICHAEL W. STEERE, Dayton, Ohio. Filed Dec. 3, 1885. (Model.)

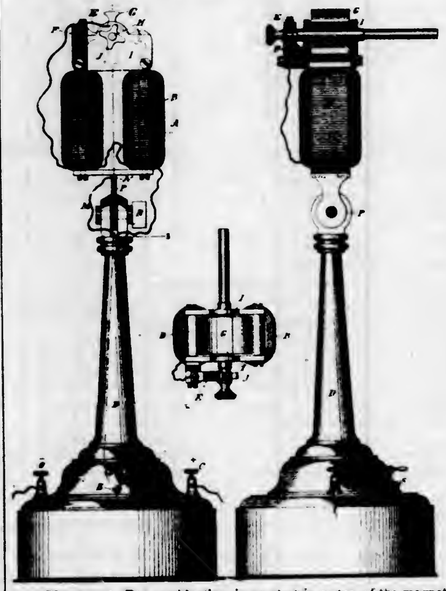


Claim.—1. A wire or wires the ends of which are bent and embedded in the faces of paper or wood disks, said disks being provided with suitable adhesive substances and constructed to secure together in parallel or curved lines two or more edges of paper or other materials, substantially as described.

2. A stencil-plate wherein the necessary blanks in the letters or figures are held in place by wires and disks, substantially as specified.

3. The combination, in a stencil-plate and with said plate, of the center blank, the removable wires, the disks, and the metallic tags or clips, substantially as set forth.

338,622. **ELECTRIC MOTOR.** GEORGE H. STOUT, Chapel Hill, N. J. Filed June 20, 1885. (No model.)



Claim.—1. The combination, in an electric motor, of the magnet A, provided with the outwardly-curved polar extensions *a a*, the armature G, provided with radial arms and located and rotated in the axial line between said polar extensions, the contact-maker J, and spring-brush E, bearing on said contact-maker, substantially as described.

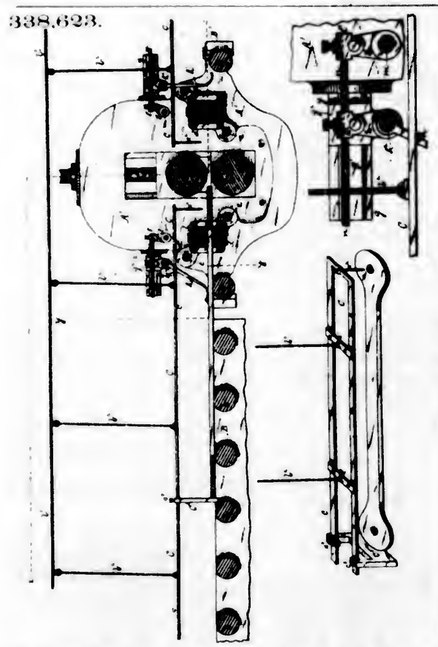
2. In an electric motor, the combination of the electro-magnet A, provided with the polar extremities *a a*, an armature, G, provided with radial arms, the outer ends of which are curved to correspond to the concavities of the polar extremities of the electro-magnet between which they rotate, a contact-maker provided with contact-points corresponding in number to the arms of the armature, and one or more contact-brushes, substantially as described.

338,623. **APPARATUS FOR ROLLING EYE-BARS.** CHARLES L. STRASSER, Pittsburg, Pa. Filed Oct. 9, 1885. (No model.)

Claim.—1. In combination with reducing-rolls, a gage located in the coarse of the bar rolled and adapted to indicate the length thereof, substantially as and for the purposes set forth.

2. In combination with reducing-rolls, a longitudinally-movable

338,623.



gage located in the course of the bar rolled and adapted to indicate the length thereof, substantially as and for the purposes set forth.

3. In combination with reducing-rolls, a gage having an end piece against which the end of the bar strikes, substantially as and for the purposes set forth.

4. In combination with the reducing-rolls A A, the gage device C, having the finger c^2 and adjustable end piece, C', substantially as and for the purposes set forth.

5. In an apparatus for rolling eye-bars, the combination, with edging-rolls, of a drag located in the course of the moving eye-bar, and connections between the drag and the apparatus for adjusting said edging-rolls, substantially as and for the purposes set forth.

6. In apparatus for rolling eye-bars, the combination of longitudinally-moving edging-rolls mounted in bearings and provided with pistons or plungers, valve apparatus for operating the same, a drag in the course of the eye-bar, and connections between said drag and valve apparatus, substantially as and for the purposes set forth.

7. The combination of the housings, the cross-bars *a*, and the roll-bearing *d*, having guide-lugs *e'* at diagonally-opposite corners fitting over said cross-bars, substantially as and for the purposes set forth.

8. The combination of the housings having the cylinders d^3 therein, the cross-bars *e*, and the roll-bearings *d*, having the pistons or plungers *d'*, fitting in the cylinders, and the guide-lugs *e'*, substantially as and for the purposes set forth.

9. The combination of the housing having the cylinder d^3 therein, the roll-bearing *d*, having the piston or plunger *d'*, the auxiliary cylinder *r*, and the piston *r'*, connected to the piston *d'*, substantially as and for the purposes set forth.

10. The combination of the shafts h^3 *m*, levers *k l*, longitudinal bar *n*, the edging-rolls, and valve apparatus for operating them, substantially as and for the purposes set forth.

11. The combination of the drag-shaft, the drag *h*, and hand-lever *p*, connected thereto, the lever *k*, mounted thereon, and the clutch *i*, substantially as and for the purposes set forth.

12. The combination of the edging-rolls, the drag, connections between the drag and the apparatus for operating the edging-rolls, and apparatus for adjusting the drag toward or from the edging-rolls, substantially as and for the purposes set forth.

13. The combination of the housings, the horizontal ways *g'*, the hangers supported and adjustable thereon, the drag-shaft mounted in said hangers, and the drag, substantially as and for the purposes set forth.

14. The combination of the housings, the shaft *m*, mounted therein and carrying the lever *l*, the horizontal ways *g'*, the hangers supported and adjustable thereon, the drag-shaft, the hanger, the lever *k*, and the bar *n*, adjustably secured to said levers, substantially as and for the purposes set forth.

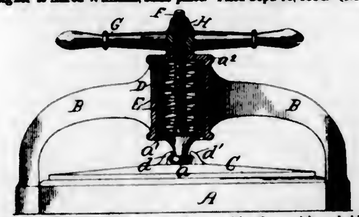
338,624. NUT-LOCK. MORRIS W. TOOKER, Sumner, Mich. Filed Aug. 15, 1885. (No model.)



Claim.—1. A nut-lock for railway fish-plates, consisting of a plate perforated to receive a bolt and countersunk to receive a burr upon the end of said bolt and a plate constructed with an elongated slot rounded at one end and provided with a shoulder toward the opposite end, and constructed to permit a partial rotation of the bolt adjacent to said shoulder, said plates united by a bolt squared at one end and a nut located in said countersunk plate, substantially as described.

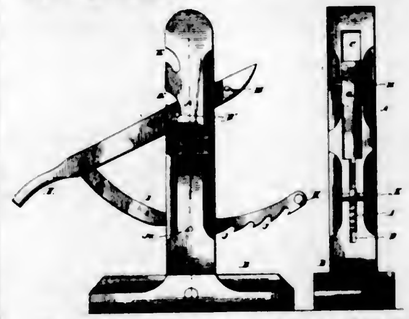
2. The combination, with a railway-rail, of a fish-plate constructed to receive a nut, a plate provided with an elongated orifice rounded at one end and constructed toward the opposite end to hold the squared end of the bolt to prevent its turning, and a bolt squared at one end, provided with a nut, and uniting said plates, the construction being such that the bolt may be tightened in said nut, and one of the plates forced along said bolt and the bolt be thereby prevented from turning, substantially as described.

338,625. COPYING-PRESS. GEORGE W. WILLIAMS, Chicago, Ill., assignor to Aaron Williams, same place. Filed Sept. 10, 1884. (No model.)



Claim.—In a copying-press, the combination, with a bridge provided centrally with a chamber, of a spring inclosed in said chamber, an inverted screw-threaded bolt passing vertically through said chamber and provided with a shoulder forming a movable bearing for the lower end of said spring, a platen provided on the upper side with curved legs adapted to engage with the lower headed end of said bolt, and a lever-handle having a threaded engagement with the upper end of said bolt, all combined and arranged to operate as and for the purpose set forth.

338,626. WAGON-JACK. JOHN J. WILLIAMS, Vernon, Mich. Filed Oct. 13, 1885. (No model.)

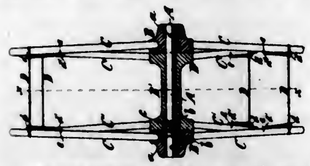


Claim.—1. In a wagon-jack, the combination of an upright having a vertical slot formed with a wider upper portion and a narrow lower portion and having notches upon its rear side, a lifting-lever resting with its fulcrum-pin in the notches and projecting through the wider portion of the slot, and a notched guide-bar passing through the lower narrow part of the vertical slot and pivoted to the rear portion of the lifting-lever and engaging a transverse pin in the upright, as and for the purpose shown and set forth.

2. In a wagon-jack, the combination of an upright having a vertical slot wider in its upper end and narrow in its lower end and having a series of notches upon its rear side and a transverse pin passing through the lower narrow end of the vertical slot, a lifting-lever projecting through the wide portion of the slot and having a transverse fulcrum-pin resting in the notches and a transverse stop-pin through its forward end, and a curved flat bar pivoted at its rear end to the rear portion of the lever, having a transverse head at its forward end and having its lower end notched and engaging the transverse pin in the narrow portion of the vertical slot, the said notched bar passing through the said narrow portion, as and for the purpose shown and set forth.

338,627. SWIFT FOR SILK, &c. JOHN E. ATWOOD, ROBERT ATWOOD, and EDWARD E. BRADLEY, Stonington, Conn., assignors to said John E. Atwood and Eugene Atwood. Filed Jan. 29, 1885. (No model.)

Brief.—Upon a center shaft are secured two end hub-sections, from which one set of arms spring, and between these end hub-sections a loose sleeve or intermediate hub-section extends, and from it all the arms of the other set spring. A spiral spring is arranged in a recess between the adjacent faces of the end hub-section and the loose sleeve, and produces sufficient friction to prevent the two sets of arms being accidentally disarranged. The skein-supports consist of wire extending between the opposite arms and coiled around them, the ends of the rim being inserted in holes in the sides of the arms to prevent catching the silk as it is wound.

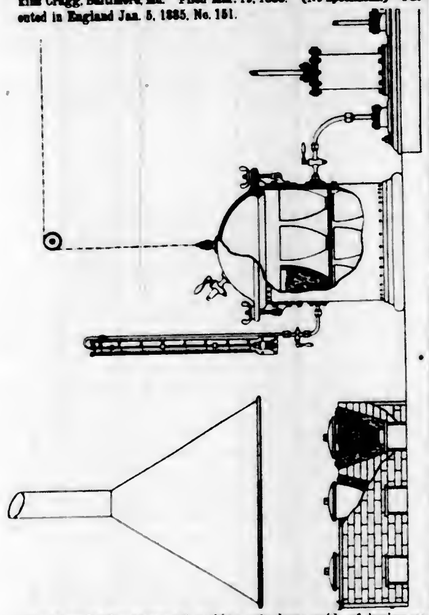


Claim.—1. The combination, with the two sets of arms and skein-supports, of a center shaft and end hub-sections fast thereon and from which one set of arms spring, a single loose sleeve or intermediate hub-section extending between the end hub-sections and from which all the arms of the other set spring, and a spring interposed between one end hub-section and the sleeve, substantially as herein described.

2. The combination, with the two sets of arms C C' and skein-supports, of the shaft A, end hub-sections, B B, and a loose interposed sleeve, B', on said shaft, one end hub-section and the sleeve having a recess formed between them, and a spiral spring in said recess, substantially as herein described.

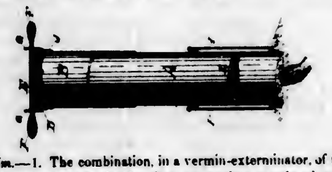
3. The combination, with the hub and arms of a swift, the arms having in them sockets *e*, of the wire skein-supports D, coiled around the arms and having their end portions extended parallel with the arms and sheathed in said sockets, substantially as herein described.

338,628. MANUFACTURE OF ANHYDROUS OXIDE OF BARIUM. LÉON Q. BRIN and ARTHUR BRIN, Paris, France, assignors to Samuel Wilkins Cragg, Baltimore, Md. Filed Mar. 19, 1885. (No specimens.) Patented in England Jan. 5, 1885, No. 151.



Claim.—In the process of making anhydrous oxide of barium or baryta by calcining barium nitrate, the improvement herein described, which consists in excluding moisture and carbonic acid from the baryta while cooling, either by exhausting the air of the chamber or filling the same with a gas destitute of moisture and carbon dioxide, substantially as specified.

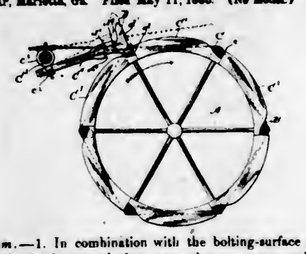
338,629. VERMIN-EXTERMINATOR. FRANK E. BROWNE, Los Angeles, Cal. Filed Dec. 21, 1885. (No model.)



Claim.—1. The combination, in a vermin-exterminator, of two cylinders telescoping upon each other, loops secured to one of such cylinders, and a movable valve secured to such cylinder by means of handles attached to such valve and extending therefrom through such loops, the loops allowing a play of the handles and valve in the line of the axis of the cylinder, whereby the movement of the handles in operating the machine will first operate the valve and afterward the cylinder.

2. In a vermin-exterminator substantially such as described, the combination of the movable valve D, handles F, loops G, and cylinder B.

338,630. CLEANER FOR BOLTING-REEL CLOTHS. GEORGE S. BURNAP, Marietta, Ga. Filed May 11, 1885. (No model.)



Claim.—1. In combination with the bolting-surface of a reel, a series of rods or wires attached at one end to a support and with their bodies or free ends projected above the bolting-surface, and devices, substantially such as indicated, for actuating said rods or wires to cause them to impinge against the bolting-cloth, substantially as described.

2. In combination with the reel, a series of whippers composed, essentially, of elastic rods or wires secured at one end in holders, and actuating devices for effecting the oscillation of the whippers as each panel or bolting-section of the reel is presented, substantially as described.

3. In combination with the reel such as described, a series of whippers secured to a holder at one end, and projecting laterally over the bolting-surface, substantially as described.

4. The combination, with the bolting-reel and oscillating shaft supported in bearings to one side of the bolting section or panel and the series of flexible rods or wires secured at one end to said shaft and projecting above the bolting section or panel, of a tension device applied to the shaft, to regulate the blow of the rods or wires, substantially as described.

5. In combination with the oscillating shaft mounted to one side of the bolting section or panel of the reel, the adjustable holders applied to said shaft, and the flexible rods secured at one end in said holders with their bodies in proximity to the bolting-surface, whereby the angular position and contact of the said rods or wires relative to the bolting-surface can be adjusted or varied, as and for the purpose set forth.

6. In combination with the shaft, the flexible rods constituting the whipper, the socket applied to the said shaft, the adjustable arm, and the cam, substantially as described.

7. In combination with the oscillating shaft carrying the whippers, the reel provided with the cam-sections, and the arm applied to the said shaft and provided with a relief-section or hinged bearing portion for co-operating with said cam-sections, whereby when the motion of the reel is reversed the whippers are raised and held elevated, substantially as described.

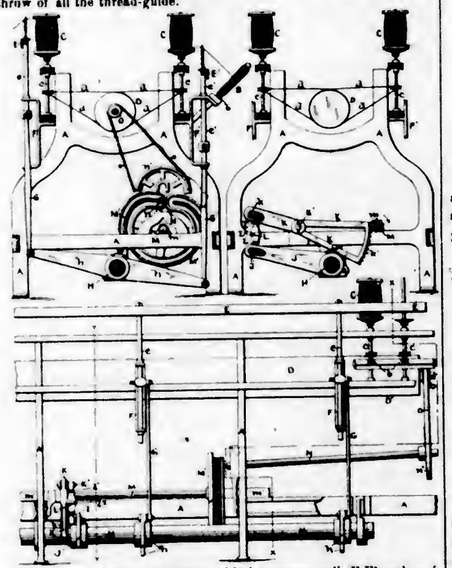
8. In combination with the reel, the shaft, the whippers carried thereby and projecting above the bolting sections or panels, the adjustable tension-spring, the radially-adjustable arm applied to said shaft, and the cam for co-operating with said arm, substantially as described.

9. In combination with the reel and the cam-sections applied thereto, a shaft mounted in bearings on the main frame and carrying an arm in contact with the said cam-sections, and a series of flexible rods or wires, constituting the whipper, supported at one end and projecting across the bolting-surface, said whippers being alternately raised and released, and thereby caused to impinge upon the bolting-surface by the oscillating movement of the shaft as derived from the cam-sections, substantially as described.

10. In combination with the reel, the oscillating actuating-shaft, the series of flexible rods or wires, each independently and adjustably applied to said shaft, with their free ends lying in proximity to the bolting-surface, substantially as described.

338,631. MACHINE FOR WINDING YARN ON BOBBINS. GEORGE W. BURNHAM, Lincoln, assignor to Easton & Burnham, Pawtucket, R. I. Filed Oct. 2, 1885. (No model.)

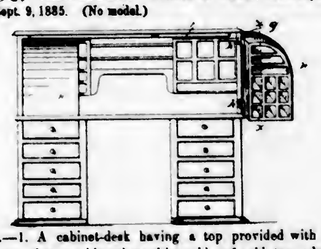
Brief.—The traverse-rails are connected to the rocker-arms of the rock-shaft, and motion is transmitted to said rock-shaft through an arm having segmental gears, by means of which said arm is reciprocated from the driving mechanism through a mangle or irregularly-shaped gear. The rock-shaft and arm having segmental gears are connected by an adjustable link, which latter, being varied in length, varies the throw of all the thread-guide.



Claim.—1. The combination, with the traverse-rails E E', rods *e e'*, rocker-arms A, links G G', connected to said rods and arms, and the rock-shaft H, of the arm J, secured to the shaft H, the pivoted arm K, means for operating the arm K, and a link adjustably connected to the arms J K, substantially as set forth.

2. The combination, with the traverse-rails E E', rods *e e'*, rocker arms A, links G G', connected to said rods and arms, and the rock-shaft H, of the arm J, secured to the shaft H, the pivoted arm K, means for operating the arm K, and the link L, adjustably secured to the arms J K, and composed of the screw-rods *l l'* and nut P, substantially as set forth.

338,632. CABINET-DESK. FRANCIS A. COFFIN, Indianapolis, Ind. Filed Sept. 9, 1885. (No model.)



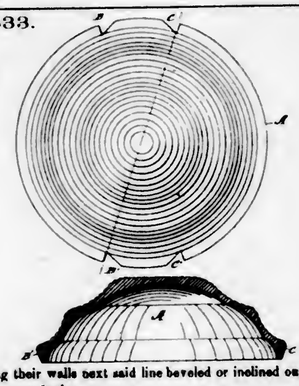
Claim.—1. A cabinet-desk having a top provided with interior compartments, wings *w*, hinged on either side of said top, adapted to be opened outward or closed inward, as desired, the flexible curtain *f*, arranged to slide in grooves formed in the sides of said wings and covering the ends thereof when closed, all combined substantially as described.

2. A cabinet-desk having a top to which are hinged wings *w* on each side, the flexible curtain *f*, arranged to slide in grooves *g*, formed on the inside of the ends of the wings, as shown, in combination with means for locking the parts together when closed, substantially as described.

338,633. FLYING TARGET. FRANKLIN J. CURRAN, Stanford, Ky. Filed July 30, 1885. (No model.)

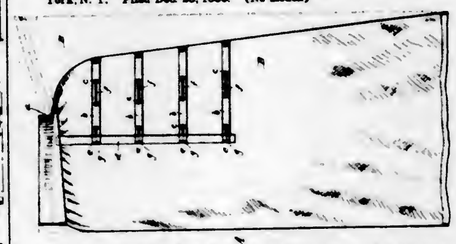
Claim.—A flying target provided with a plurality of pairs of notches, said pairs being arranged on opposite sides of a diametrical line

338,633.



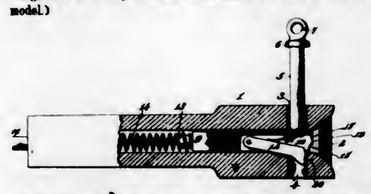
and having their walls next said line beveled or inclined outwardly, substantially as set forth.

338,634. COMBINED SKIRT AND BUSTLE. LOUIS DEYPONS, New York, N. Y. Filed Dec. 28, 1885. (No model.)



Claim.—The skirt formed with a back breadth made broad and long, as described, to receive bustle-wires, and having a fullness of material above the topmost wire, to permit it to be drawn in over and above said wires, and provided with waist draw-strings, bustle-wires secured in pockets in or on the back breadth, and cross tapes or strips secured on the inside to opposite sides of the bustle portion of the skirt, for distending the bustle, as hereinbefore shown and described.

338,635. CAR-COUPLING. JOSEPH C. FOWLER, Washington, D. C., assignor to John Boyle, trustee, St. Louis, Mo. Filed Feb. 1, 1886. (No model.)



Claim.—1. The combination, with a draw-head having an upper and a lower pin-opening, of a sliding spring-propelled pin-support provided with a pivoted dog adapted to engage the lower pin-opening when the coupling-pin is raised, substantially as described.

2. The combination, with a draw-head having an upper and a lower pin-opening, of a sliding spring-propelled pin-support having its forward end concaved and grooved transversely, and provided with a pivoted dog adapted to engage the lower pin-opening and prevent ejection of said support when the coupling-pin is raised, substantially as described.

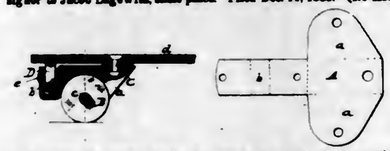
3. The combination, with a draw-head having an upper and a lower pin-opening, of a sliding spring-propelled pin-support having its forward end slotted or recessed on the under side, and a dog pivoted in said slot or recess and adapted to engage the lower pin-opening to prevent ejection of the support when the coupling-pin is raised, substantially as described.

4. The combination, with a draw-head having an upper and a lower pin-opening, of a sliding spring-propelled pin-support recessed at its forward end, a dog pivoted in said recess and adapted to engage the lower pin-opening, and a spring arranged in the recessed pin-support above said dog, substantially as described.

5. The combination, with a draw-head having an upper and a lower pin-opening, of a sliding pin-support arranged in said draw-head and having a rounded knob at its rear end, a spiral spring attached to said knob, and a dog pivoted in a recess at the forward end of said support

and adapted to engage the lower pin-opening of the draw-head, substantially as described.

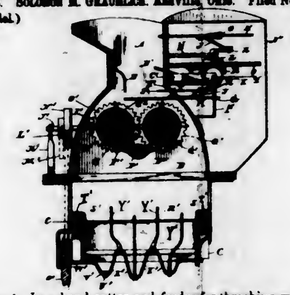
338,636 CASTER. ALEXANDER C. FRANCIS, Newark, N. J., assignor to Jacob Lagowitz, same place. Filed Dec. 11, 1885. (No model.)



1. A casing for casters made of a single piece of sheet metal and provided with a socket for the main wheel and socket for a friction-wheel, substantially as shown.

2. The herein-described caster, consisting of the top plate, a sheet-metal frame or casing pivotally connected therewith and having sides *a a* and portion *b*, roller B, mounted upon an axle between the sides *a a*, and roller D, carried by an axle in the part *b* and arranged to bear against the plate at the end of the casing farthest removed from the pivot of said casing.

338,637. BAND-CUTTER AND FEEDER FOR THRASHING-MACHINES. SOLOMON M. GRAUBLICH, Ashville, Ohio. Filed Nov. 19, 1885. (No model.)



Claim.—1. In a band-cutter and feeder for thrashing-machines, the combination of means for holding a sheaf, a hopper having horizontal slots in its side, cutters revolving through the slots, a pair of toothed rollers revolving outward in opposite directions, and an inclined feed-table having means for reciprocating it, as and for the purpose set forth.

2. In a band-cutter and feeder for thrashing-machines, the combination of a hopper having two pairs of perforations in its side and registering bearings projecting from the side, shafts having cranks at their upper and lower ends and provided with gears engaging each other, rods sliding in the perforations, and bearings and pitmen pivoted to the said rods and to the cranks, the said cranks being diametrically opposite to each other, as and for the purpose set forth.

3. In a band-cutter and feeder for thrashing-machines, the combination of a hopper having two pairs of perforations in its side, and having two horizontal slots in its side having their ends nearly meeting at the middle of the side, brackets projecting from the side of the hopper and formed with sliding bearings registering with the perforations, rods sliding in the perforations and bearings, oppositely-set crank-shafts, each with oppositely-set crank-arms, intermeshing cog-wheels thereon, springs inside of the hopper opposite to the rods, pitmen connecting the cranks and rods, and knives secured to the lower ends of the crank-shafts and operating through the slotted side of the hopper, as and for the purpose set forth.

4. In a band-cutter and feeder for thrashing-machines, the combination of a hopper having two vertical slots in its side, vertical crank shafts journaled upon the side of the hopper, cutters and separating-rods projecting from their cranks and operating in the hopper, a pinion upon one of the shafts, a shaft journaled horizontally upon the side of the hopper and having double cranks and a pinion at one end, brackets projecting from the side of the hopper and having bearings in their outer ends, and feeder-arms pivoted to the cranks and sliding in the bearings and having their inner ends projecting through and rocking vertically in the slots of the hopper, as and for the purpose set forth.

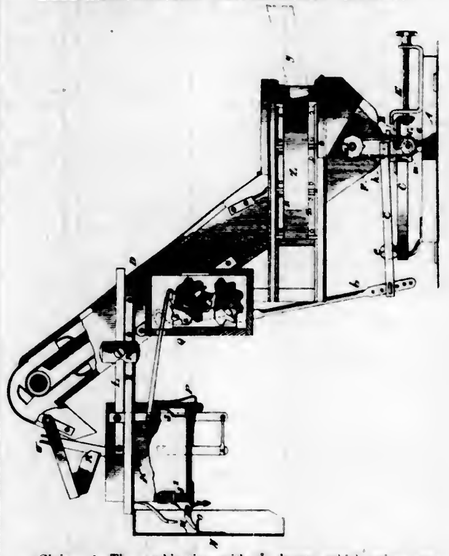
5. In a band-cutter and feeder for thrashing-machines, the combination of a pair of longitudinal rollers having teeth and meshing gears at their ends, a band-cutting mechanism above the rollers, means for revolving the rollers outward, and the longitudinal bar having the projecting spring-fingers, as and for the purpose set forth.

6. In a band-cutter and feeder for thrashing-machines, the combination of a revolving shaft having a number of cranks, an inclined feed-table resting upon ways and having a transverse row of perforations, a pitman pivoted to one crank and to the table, and a number of arms pivoted to the cranks and sliding in the perforations in the table, as and for the purpose set forth.

7. In combination with a thrashing-machine, a band-cutter and feeder comprising a hopper, means for holding one sheaf at the time and for cutting its band, two toothed longitudinal rollers below the hopper, means for revolving them outward in opposite directions, inclined ways resting with their lower ends in the ends of the feed-aperture of the thrashing-cylinder, a feed-table sliding upon the said ways under the rollers, and means for reciprocating it, as and for the purpose set forth.

8. In a band-cutter and feeder for thrashing-machines, the combination of a pair of longitudinal rollers having teeth and meshing gears at their ends, and formed with the annular grooves, a band-cutting mechanism above the rollers, means for revolving the rollers outward, and the longitudinal bar having the spring-fingers, substantially as described.

338,638. GRAIN WEIGHING AND DELIVERING APPARATUS. HARLAN HODGE, Keota, Iowa. Filed June 13, 1885. (No model.)

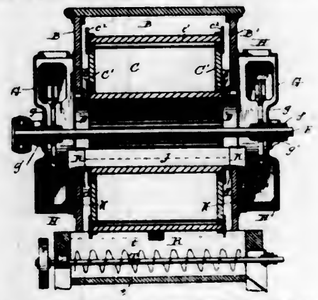


Claim.—1. The combination, with an elevator which swings upon a pivot, of a circular railway over which travel the wheels that partially support the weight of the machine.

2. The combination of the wheel B, shafts E G F, endless chain A, and the pulleys *m m²*, for operating the elevator belt and buckets.

3. The combination of the standards W, carrying the pivoted arms *c c*, with the bottom plate, W², carrying the shaft G, the whole turning upon the axis *a* of the bevel-wheel B.

338,639. DUST-COLLECTOR. NOAH W. HOLT, Jackson, Mich., assignor to the George T. Smith Middlings Purifier Company, same place. Filed Nov. 21, 1885. (No model.)



Claim.—1. The combination, with the balloon and its casing, of the fans, the fan-casings, and the slotted air-tube having its ends projecting into the eyes of the fans and thence toward and within the peripheries of the fan-casings, the ends of the tube being open to receive the blast from the fans, and the fan-casings being imperforate except at the eyes and mouths, substantially as and for the purpose set forth.

2. In a dust-collector, the combination, with the balloon having the radially-projecting spurs *c²*, of the rotating through-shaft I, the arm M,

adapted to engage with the spurs c^2, the detent arranged between the end of the balloon and the casing, and the lug on the arm M, adapted to actuate the detent, substantially as set forth.

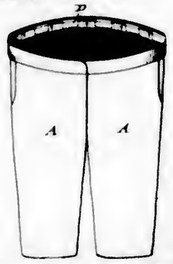
3. In a dust-collector, the combination, with the balloon having the radially-projecting spurs c^2, of the rotating shaft I, the arm M, adapted to engage with said projecting spurs, the rock-shaft, the knocker mounted centrally of the rock-shaft, the arms O O, mounted centrally of the rotating shaft, the arms P *s*, and the returning spring S, also arranged centrally of the rock-shaft, substantially as set forth.

338,640. **DOOR-BOLT.** SIMON A. KINTNER, Ney, Ohio. Filed Dec. 29, 1885. (No model.)



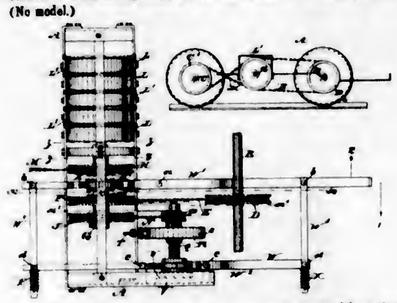
Claim.—The combination, with the casing having a slot in the face wall and rigid knob *n*, of the slide-bolt having the knob *m*, and extension D, provided with the longitudinal slot *e*, the spring *k*, the knob-lever Z, pivoted in the door with its handle portion on the opposite side thereof from the bolt-knob, and the connecting-wire *s*, substantially as specified.

338,641. **ATTACHMENT FOR PANTS.** HENRIETTA J. LYON, Newark, N. J. Filed Nov. 23, 1885. (No model.)



Claim.—The combination, with a pair of pants, of a band provided with button-holes and pockets around said button-holes, elastic strips extending through said pockets at one side of the button-holes and being attached to the upper part of the band, and a transverse base-strip attached to the lower edges of the elastic strips and to the body of the pants below the waistband, substantially as set forth.

338,642. **CAR MOTOR AND BRAKE.** JAMES P. MORELL, Philadelphia, Pa., and DANIEL GOFF, Millville, N. J., assignors to the National Car Starter Manufacturing Company of New Jersey. Filed Aug. 15, 1885. (No model.)



Claim.—1. A shaft with springs connected therewith, a double clutch on the said shaft, a loose clutch-pulley on each side of the said clutch, a fixed pulley, and chain or bands passing from said clutch-pulleys to the axles, the said parts being combined and operating substantially as and for the purpose set forth.

2. The shaft G, located about midway between the axles and having springs L, double clutch K, and pulley, in combination with the pulley P, shaft Q, and locking-clutches U and V, substantially as and for the purpose set forth.

3. The shaft G, with springs and clutch mechanism independently of each other, in combination with an adjustable frame pivoted to the truck and adapted to operate the said clutch mechanism, substantially as described.

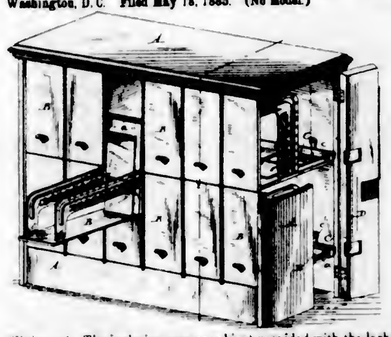
4. The shaft G, with springs and clutch mechanism, in combination with the pulley J, fixed on said shaft, the pulley P, connection N, shaft Q, pulley R, brake S, and locking-clutches U V, substantially as and for the purpose set forth.

5. An axle and a shaft having a fixed pulley, J, loose pulleys F H, and a clutch, K, in combination with a shaft having a pulley, P, and clutch U, a clutch, V, on a frame, a connection, N, of the pulley P, with the fixed pulley J, and a connection, E or M, of the loose pulley F or H with said axle, substantially as and for the purpose set forth.

6. In a starter or motor, a clutch-moving frame consisting of the side piece, W', slotted pieces W^3 W^4, spring X, and jointed side piece, W^2, substantially as and for the purpose set forth.

7. The springs L, the shaft G, the fixed pulley J, the clutch K, with clutch-pulleys F H, the shaft Q, with clutch U, and the clutch V, in combination with the jointed side piece, W^2, the end pieces, W^3 W^4, and side piece, W', substantially as and for the purpose set forth.

338,643. **FILE-CABINET FOR PAPERS, &c.** CHARLES H. MOULTON, Washington, D. C. Filed May 18, 1885. (No model.)



Claim.—1. The inclosing case or cabinet provided with the lockable door at its side, in combination with the file-boxes arranged in horizontal series therein and removable at the front therefrom, and the horizontal locking-bar engaging the rear ends of the series of boxes by a longitudinal movement, as described.

2. The inclosing case or cabinet, the file-boxes arranged in horizontal rows therein and removable from the front thereof, in combination with a horizontal locking-bar engaging the rear ends of the boxes, and the special lockable door located in the side of the case and preventing access to the bar, as described.

3. The case or cabinet provided with the special door in its side and with means for locking the same, in combination with the file-boxes arranged in horizontal series and provided with the shouldered baseboard, and the horizontal vertically-movable bar secured in the back of the case and adapted to engage the shoulders of the box by a longitudinal and lateral motion, as described.

4. A case or cabinet having file-boxes arranged therein in multiple horizontal rows and adapted for independent removal at the front, and a series of independent locking-bars mounted within the case and engaging the respective rows of boxes as described, and a lockable door giving access to the rear of the case and to the series of bars therein, substantially as described, whereby either row may be locked or unlocked independently of the other, thus permitting the removal of the boxes from one row while preventing access to the remainder.

5. In combination with the cabinet, the file-boxes having shoulders at their rear ends and a locking-bar attached to the case by swinging links, substantially as described, whereby it is adapted to engage the boxes on being moved endwise.

338,644. **HOOP-FASTENER.** NELSON NEWMAN, Springfield, Ill., assignor to the Advertising Alarm Sign Company, same place. Filed Jan. 25, 1884. (No model.)



Claim.—1. The improved hoop for barrels, tubs, and other like articles, having on its inner face ratchet-shaped teeth rounded in cross-section, substantially as and for the purpose described.

2. The improved hoop for barrels and the like, having portions punched in so as to form on the inner side ratchet-shaped projections with their abrupt ends toward the rear or outer edge of the hoop, substantially as and for the purpose described.

338,645. **SCHOOL DESK AND SEAT.** ISAAC OSGOOD, Chicago, Ill. Filed July 30, 1885. (No model.)

Claim.—1. In a school seat or desk, a covering slat or board having its edge formed with an angular projecting tongue, *c*, and a corresponding-shaped depression, *c'*, placed side by side and joined by a straight incline, c^2, said tongue and depression connecting also with the faces of the slat by rectilinear surfaces, substantially as shown and specified.

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2. In a school desk or seat, a main supporting-frame having a continuous tongue upon one edge, and a lug or lugs at the base of said tongue formed with an open slot extending into the web of the tongue, in combination with a covering-board formed with a groove, and provided with a securing-bolt passing through one side of said groove, substantially as and for the purpose set forth.

3. In a school-seat joist, the combination, with the seat-arm and standard, of a pivot-bolt passed through them, a spring thereon engaged with the standard, a brace or arm thereon engaged with the seat-arm, and a nut abutting upon said arm, whereby the nut is held in contact with a surface moving with the seat and bolt, and thereby prevented from loosening, substantially as and for the purpose set forth.

4. In a school-seat, the combination, with a standard having its upper end formed of two concentric curves of different radiuses connected by a shoulder, and the larger curve ending in a tangent approximately straight, in combination with a seat-arm formed with a curved flange concentric with the pivotal point and having a shoulder at one end and an approximately-straight tangential extension at the other, substantially as and for the purpose set forth.

5. The combination, in a hinge-joint for school-seats, of the standard formed with the curve d^2, ending in a tangent extension, d^3, and the curve *e* on the opposite side concentric with the first and connected with it by the shoulder *e'*, with the seat-arm *f*, formed with the curved flange *g*, tangent-bearing *g'* at one end of the same and shoulder g^2 at the other, the pivotal bolt g^3, brace *h*, elliptic spring *i*, and nut g^4, all constructed and arranged to operate substantially as and for the purpose set forth.

6. The combination, with the hinged seat *f*, of the folding foot-rest consisting of the rods *k' k'*, pivoted to the frame, the connecting-links k^1 k^1, pivoted to the rods *k'* and also to the seat, and the cross-piece *k*, substantially as shown, and for the purposes set forth.

338,646. **COMBINED WASH-STAND AND TABLE.** LYON P. ROSS, Rockford, Ill. Filed Nov. 13, 1885. (No model.)



Claim.—1. In a combined wash-stand and table having a pedestal-support produced in box form and subdivided into apartments, substantially as shown and described, a removable waste-water tank, and a lid to the open end of the tank, said lid having a hinged connection with the pedestal, and forming a foot-support to the wash-bowl, as and for the purpose set forth.

2. The combination, with the pedestal-support, of the cornice projecting outward from and rising above the pedestal, and forming a receptacle to contain a wash-bowl and toilet articles, substantially as and for the purpose set forth.

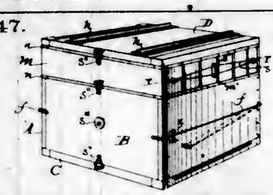
3. As an article of manufacture, a combined wash-stand and table consisting, essentially, of a pedestal-support produced in box form containing apartments, substantially as shown and described, a cornice forming a receptacle to receive the wash-bowl and toilet articles, and a lid to close the receptacle and form the table-top, said lid having a mirror fixed to its inner face, substantially as and for the purpose set forth.

338,647. **BEE-HIVE.** JOHN M. SHOOK, Des Moines, Iowa. Filed Sept. 5, 1885. (No model.)

Claim.—1. In combination with a bee-hive having horizontal slots in its walls, removable strips fitted in said slots, and removable honey-frames in the inside of the hive engaged and fastened by said strips, as set forth.

2. The combination of the strips *f* with the walls of a bee-hive having horizontal slots *g* and removable comb-frames, as set forth.

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3. The combination of a bottom, C, and a cover, D, each having plain-edged fixed strips or bars *h*, with the wall of a bee-hive and a series of plain-edged movable honey-frames, as and for the purposes stated.

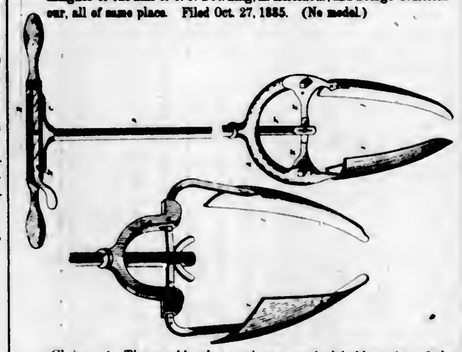
4. A bee-hive having horizontal slots in opposite ends or sides, and removable bars fitted in said slots, a removable bottom and a removable cover, each having fixed strips or bars on their inside surfaces, and a series of removable honey-frames, arranged and combined to operate in the manner set forth, for the purposes stated.

5. A surplus-box section for bee-hives, having one open side composed of end pieces, K, backs *m*, and strips *n* and *n'*, substantially as shown and described, for the purposes stated.

6. A surplus-box for bee-hives, consisting of a series of three-sided sections, K K *m*, having fixed strips *n* and *n'* and clamping devices *r s s'*.

7. A vertically-divisible surplus-box for bee-hives, composed of a series of sections having closed backs and closed ends, fixed partitions, laterally-projecting strips fixed on the top and bottom edges of the ends and fixed partitions, a loose partition corresponding in size and shape with the fixed backs, and a clamping device for fastening the sections together.

338,648. **POST-HOLE AUGER.** GEORGE W. SMITH, Union City, Ind., assignor of one-half to J. J. Downing, H. Rattenour, and George U. Rattenour, all of same place. Filed Oct. 27, 1885. (No model.)



Claim.—1. The combination, with the vertical bolder-tube, of the recessed handle, the under bracket having its eye communicating with the said recess, the branched bracket having the perforated bearings, the angular levers carrying the blades, the short connecting-rod slotted at its lower end, and the operating-rod connecting the slotted rod with the finger-lever in the handle, all arranged for joint operation substantially as specified.

2. A post-hole auger consisting of a bracket with divergent arms having perforated bearings, angular levers carrying blades at the lower ends of their vertical branches, a connecting-tube having a slotted end to receive the horizontal branches of the angular levers, and an operating-rod connecting the said slotted rod with a pivoted lever in the recessed handle, substantially as specified.

3. The combination, with the branched bracket and the angular levers carrying shovels, of the connecting-rod, the operating-rod, the pivoted finger-lever, and the latch for engaging the said lever to hold the blades in the desired position, substantially as specified.

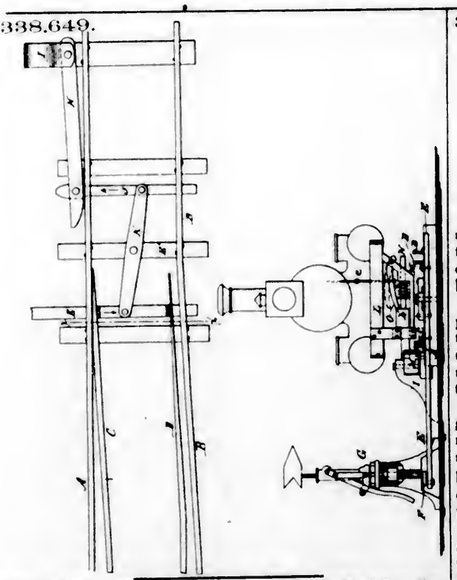
338,649. **RAILWAY-SWITCH.** JAMES B. SUFFERN, Suffern, N. Y. Filed June 13, 1885. (No model.)

Claim.—1. The combination, in an automatic safety-switch, of the spring switch-rails C D, the track-lever H and intermediate connections, and spring-actuated track-lever-operating bolt N, carried by the locomotive and held normally by the spring in position to engage the track-lever, substantially as herein specified.

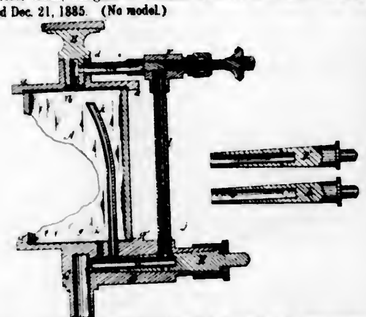
2. The combination, with the spring track-rails C D and switch-stand G, connected therewith, of the track-lever H, lever K and connective devices associated therewith, and the track-lever-operating-bolt N, carried by the locomotive, as herein specified.

3. The combination, with the switch-actuating track-lever H, of the spring-acted bolt N, carried by the locomotive, the pawl O, and rod *c*, substantially as herein specified.

338,649.



338,650. SIGHT-FEEDING LUBRICATOR. DANIEL F. TAFT, New Bedford, Mass., assignor of one-half to Jacob B. Hadley, same place. Filed Dec. 21, 1885. (No model.)



Claim.—1. In the lubricator herein described, the transparent oil-receiver and steam-condensing cylinder having gasket-packed and rod-stayed metal ends, the vertically steam connective and fitting tube, and triple ports—one of entrance atop and two of exit at bottom—in combination with the externally-circuitous steam-pipe way commencing at said steam-fitting tube and ending at said receiver-entrance through its screw-stopple tube, said connected steamway-pipes having the horizontal screw-valve above and the externally-tapering and horizontally-seated spigot-valve below, the latter furnished with a close bore tapped with triple ports, one of which passes diametrically through the spigot-tube and the other two separately entering the same on opposite sides and parallel with said diametrical port, and all of said spigot-ports made to be correspondingly adjustable and mutually co-operative with said receiver-exits, steam passage-way, and upper screw-valve, substantially as and for the purposes herein specified.

2. In the sight-lubricator herein described, the oil-receiver and steam-condenser having the vertically-connective steam-fitting upon its lower end, the screw-stoppled entrance-port through its top, and the two exits through its bottom, one of which latter leads directly into the reversely-tapering spigot-valve seat below and the other into the same through a service-pipe rising from said exit into the upper portion of said receiver, in combination with the screw-connective pipes of the externally-circuitous steamway herein described, furnished with the upper screw-valve and the lower triple-vented spigot-valve, substantially as and for the purposes herein specified.

338,651. MOUNT FOR PICTURES AND PHOTOGRAPHS. RICHARD H. L. TALCOTT and ELIZABETH TALCOTT, Boston, Mass. Filed July 18, 1885. (No model.)



Claim.—1. The mounted picture herein described, the same consisting of a picture having its face cemented to a transparent front, a suitable covering to the back of the picture and transparent front, and a flexible material attached to the backing and extended across the edges of the covering and transparent front, and cemented to the face of the latter, substantially as and for the purposes described.

2. The mounted picture herein described, the same consisting of a picture-sheet and a plate of glass, the picture by its front face cemented to the glass, and provided with an inclosing-casing of suitable flexible material, which covers the back of the picture and overlaps and is cemented to the glass at its edges, all substantially as described, and for the purposes specified.

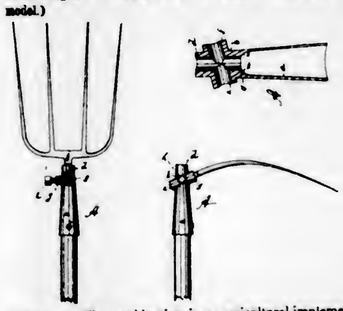
3. The combination, with a sheet bearing a picture, of a plate of glass, sheet or sheets D D^2, of card or paste board, and a plate having rings or eyes *m* between them, and an incasing or covering sheet of suitable flexible material inclosing the whole at the back and edges, leaving the front exposed, said rings of the plate protruding through the card-sheet D^2 and covering-sheet, substantially as described, for the purpose specified.

4. The combination, with a sheet bearing a picture, of a plate of glass, said picture-sheet being made to adhere to one side of said glass sheet or sheets D D^2, of card or paste board, and a plate having eyes or rings *m* between them, and an incasing or covering sheet of suitable flexible material inclosing the whole at the back and edges, leaving the front exposed, said rings of the plate protruding through the card-sheet D^2 and covering-sheet, substantially as described, for the purpose specified.

5. The combination, with a sheet bearing a picture, of a plate of glass, sheet or sheets D D^2, of card or paste board, and a plate having rings or eyes *m m* and *n* between them, and an incasing or covering sheet of suitable flexible material inclosing the whole at the back and edges, leaving the front exposed, said rings of the plate protruding through the card-sheet D^2 and covering-sheet, and a leg or support, M, engaging with said projection *n*, substantially as described, for the purpose specified.

6. The combination, with a sheet bearing a picture, of a plate of glass, sheet or sheets D D^2, of card or paste board, and a plate, H, between them, with a projection, and an inclosing or covering sheet of suitable material inclosing the whole at the back and edges, leaving the front exposed, the said projection from the plate protruding through the card-sheet D^2 and inclosing-sheet, and adapted to be attached to suitable means for supporting the mounted picture, substantially as described.

338,652. TOOL-HOLDER. FREDERICK W. WEBB, Mount Vernon, N. Y., assignor to Carolina Weiss, same place. Filed Dec. 19, 1885. (No model.)

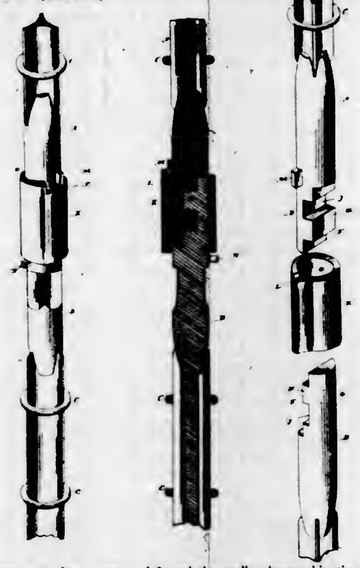


Claim.—1. The combination, in an agricultural implement, of sleeve *a* with head *b*, having channels *c d e f*, that cross each other, and with the screw-threaded socket *g*, arranged at right angles to such channels for the reception of key *h*, substantially as and for the purpose specified.

2. The combination, in an agricultural implement, of sleeve *a* with head *b*, having channels *c d e f* crossing each other at an obtuse angle, and with screw-threaded sockets *g* and key *h*, substantially as specified.

3. The combination, in an agricultural implement, of sleeve *a*, and of head *b*, having crossing channels, and socket *g*, with key *h*, and with tang *i*, having notches for engagement with said key, substantially as specified.

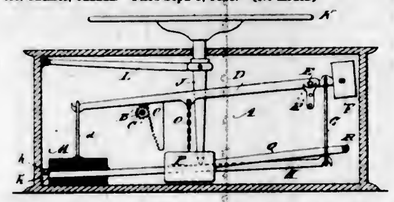
338,653. SUCKER-ROD FOR OIL-WELLS. SAMUEL K. WHITMORE, Knox, Pa., assignor of one-third to Sam. Gibbs, same place. Filed Jan. 4, 1886. (No model.)



Claim.—1. In a pump-rod for tubular wells, the combination of a rod having its sides formed with cylindrical grooves or recesses, producing a hollow-sided prismatic rod, with rings secured to the edges of the flanges of the rod at intervals upon the same, as and for the purpose shown and set forth.

2. In a pump-rod for tubular wells, the combination of two rod-sections having their cylindrical ends reduced to form semi-cylindrical tongues, formed with registering and corresponding lugs and recesses upon their flat faces, and having projecting studs upon the round portions, with a sleeve fitting around the united semi-cylindrical tongues and having a longitudinal groove in its bore and formed with one end cut to form a part of a spiral, the said ends bearing against the studs when the sleeve is in place, as and for the purpose shown and set forth.

338,654. AUTOMATIC WEIGHING-SCALE. JACOB BALL, Waterloo, Ontario, Canada. Filed Sept. 3, 1885. (No model.)



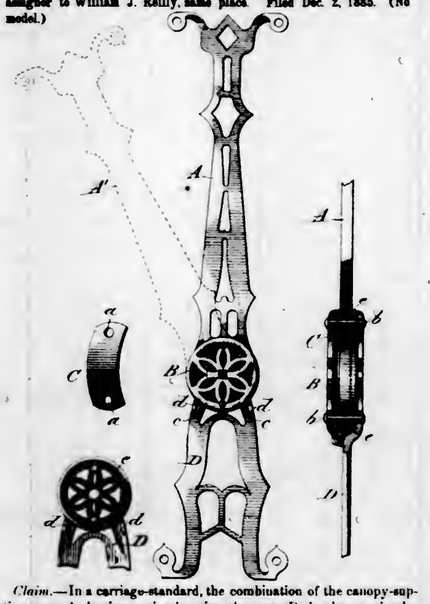
Claim.—1. The combination, with a scale-beam, of the lever H, the rod G, connecting the same with the beam, a pan or plate supported by the lever H, and of balancing-disks M, suspended from the end of the beam D, the weight P, and the chain O, for suspending the weight from the beam D, substantially as herein shown and described.

2. The combination, with a scale-beam, of the lever H, connected with the same, disks hung on one end of the scale-beam, the pan or plate K, supported by the lever H, the shaft R, the arm Q on the same, the weight P on the arm Q, and the chain O, connecting the beam D and the weight P, substantially as herein shown and described.

3. The combination, with the scale-beam D, of the lever H, a pan or plate supported by the same, the weight P, suspended from the scale-beam, the shaft R, the arm Q, on the end of which the weight is held, and of mechanism for locking the arm Q and its weight P at the desired elevation, substantially as herein shown and described.

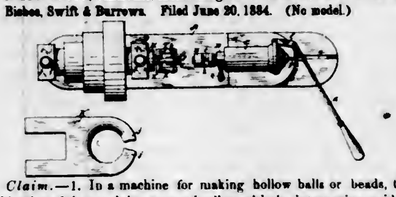
4. The combination, with the scale-beam D, of the lever H, a pan or plate supported by the same, the weight P, suspended from the beam D, the shaft R, having the arm Q, on the end of which the weight P is held, the crank S on the end of the shaft R, and the lever T, pivoted on the scale-case, substantially as herein shown and described.

338,655. CARRIAGE-STANDARD. HENRY BIGGS, Montpelier, Vt., assignor to William J. Reilly, same place. Filed Dec. 2, 1885. (No model.)



Claim.—In a carriage-standard, the combination of the canopy-supporting arm A, having a circular rim, the arm D, having a circular flange, *e*, located within said rim, the cap-piece B, and the spring clamping-plate C, tensioned between the opposing faces of the cap-piece and the upper arm, so that the latter may be held by friction in any position, substantially as shown and described.

338,656. MACHINE FOR MAKING HOLLOW METALLIC BALLS. ALBERT BIBBY, Plainville, Mass., assignor to Lincoln, Bacon & Co. and Bishee, Swift & Burrows. Filed June 20, 1884. (No model.)

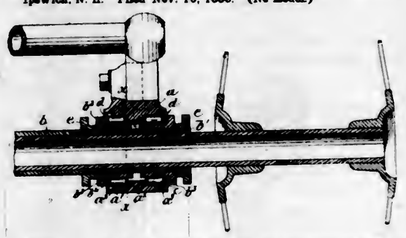


Claim.—1. In a machine for making hollow balls or beads, the combination of the revolving grooved rollers with the intervening guides, and means for forcing the hollow-formed blanks into the chamber between the said revolving rollers and guides, substantially as described.

2. The combination of the revolving grooved rollers and the intervening guides, the hollow holder, and the sliding forcer, substantially as described.

3. The combination of the head-block, the revolving grooved rollers, and intervening guides, with the tail-block, the sliding spindle, the holder provided with the inlet-opening, and the sliding forcer, substantially as described.

338,657. ANTI-FRICTION BEARING. GEORGE D. BURTON, New Ipswich, N. H. Filed Nov. 16, 1885. (No model.)



Claim.—1. In an anti-friction bearing, the combination of the outer member or box having grooves or rabbets in either end terminating in

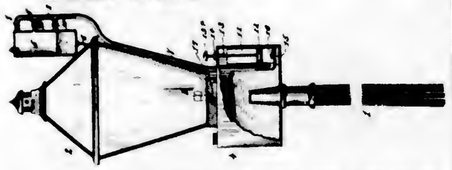
shoulders, with the inner member and bushings provided with flanges, and the oblong anti-friction rollers interposed between the outer curved surface of said bushings and inner curved surface of the box and confined between the shoulder in the box and the flange on the bushing, substantially as described.

2. The combination of the outer member or box provided with grooves at either end with an inner member having a threaded portion extended through the box, flanged bushings supported on the said threaded portion, and check-nuts by which the said bushings are fastened when adjusted to the proper position, and the elongated frictional rollers, substantially as described.

3. The combination of the outer member or box provided with grooves at its ends and the inner member provided with bushings longitudinally adjustable thereon, and straight-sided tapering oblong anti-friction rollers between said bushing and box, which have their curved bearing-surfaces tapering to facilitate the adjustment of the rollers to compensate for wear and to co-operate with the said rollers, substantially as described.

4. The outer member or box grooved or rabbeted at its ends and having a counterbore of larger diameter at the outer end of the said groove, combined with the inner member and bearing bushings thereon, the elongated rollers placed in the grooves of the box and bearing on the said bushings, and washers in the counterbored part of the box, substantially as described.

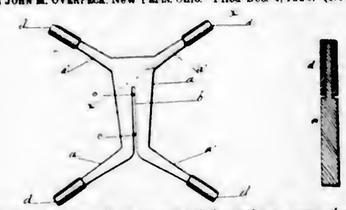
338,658. **STREET-LAMP.** WILLIAM P. BUTLER, Chicago, Ill. Filed Jan. 21, 1886. (No model.)



Claim.—1. The combination, with a street-lamp, a reservoir-tank, and an elevated feed-tank having a discharge-tube connecting with the lamp-burner, of a feed-pipe connected at its lower end with the reservoir-tank and having its other end extending vertically beside the reservoir and provided with a series of lateral branches placed one above the other and communicating with the reservoir, said branches having stop-cocks, substantially as described.

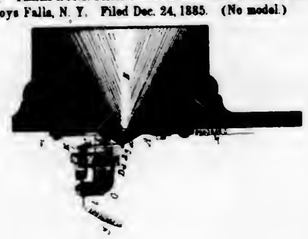
2. The combination, with a street-lamp, a reservoir-tank, and an elevated feed-tank having a discharge-tube connecting with the lamp-burner, of a pump, a feed-pipe connected at its lower end with said pump and having its other extending vertically along the feed-tank and provided with a series of branches having cocks and communicating with the feed-tank at different heights, and a branch having a valve and leading from said feed-pipe into the top of the reservoir-tank, substantially as described.

338,659. **WRENCH FOR TWISTING WIRE.** LUCIAN A. CUSHING and JOHN M. OVERPECK, New Paris, Ohio. Filed Dec. 4, 1885. (No model.)



Claim.—A wrench composed of the body *a*, arms *a' a' a' a'*, handles *d d d d*, and slot *b*, constructed and operating in the manner and for the purpose substantially as herein set forth and described.

338,660. **TELEPHONE-TRANSMITTER.** JOHN E. DANN and JOHN LAPP, Honeoye Falls, N. Y. Filed Dec. 24, 1885. (No model.)



Claim.—1. The diaphragm having a central hollow cone and a surrounding annular part, all portions of which are flat or lie normally in the same plane, said diaphragm being free to vibrate, as shown and described.

2. The combination, with the diaphragm and its central hollow cone, of electrode-levers having yielding fulcra, and one of them attached to said cone, substantially as shown and described, to operate as specified.

3. The combination of the spring F with the connected electrode-levers, the spring or elastic fulcra therefor, the diaphragm having a hollow cone to which one of said levers is attached by a yielding connection, all as shown and described.

4. The combination of the spring F with the pin-electrode, the lever C, and the cone-diaphragm, substantially as shown and described.

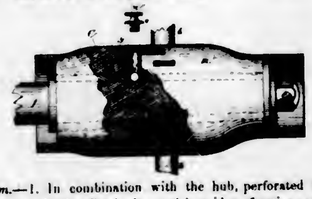
5. In a telephone of the character hereinbefore specified, the combination, with the diaphragm and an electrode, E, of the lever C, connected with the diaphragm and carrying a carbon contact-point.

6. The combination, with the diaphragm and the lever-electrode C, attached thereto, and the spring-fulcrum *d* therefor, of the electrode C' and its spring-fulcrum *g*, substantially as shown and described.

7. The combination, with the diaphragm and the vibrating lever-electrode C, attached thereto and having a spring-fulcrum, of the second electrode-lever, C', and a spring-fulcrum therefor, which connects it with the other, C, at a point between the fulcrum and free end of the latter, as shown and described.

8. The combination, with the diaphragm, the electrode-levers, the spring F, and a fixed bar, D, of the adjusting-lever G and the screw i, all arranged as shown and described to operate as specified.

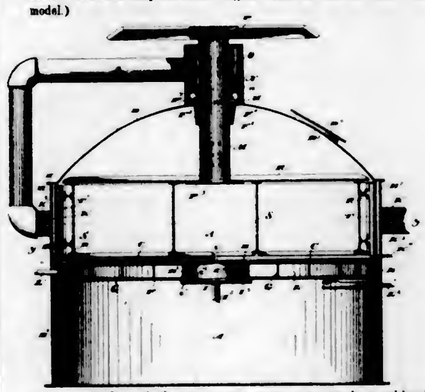
338,661. **AXLE-LUBRICATOR.** BENJAMIN M. FRELIGH, Saugerties, N. Y. Filed June 25, 1885. (No model.)



Claim.—1. In combination with the hub, perforated radially, as described, the axle, the oil-tube inserted in said perforation, and the ball-valve and lubricator in said tube, for the purpose set forth.

2. In combination with the axle having spindle *d*, the box *c*, perforated as described, the oil-tube *g*, having ball-receptacle *i*, the cap *n* and the hub radially perforated to receive the oil-tube, as set forth.

338,662. **VACUUM-PAN.** ARTHUR B. FRECHEL, New York, N. Y., assignor of one-third to C. H. Delamater & Co., same place. Filed Dec. 21, 1883. Renewed May 22, 1885. Again renewed Jan. 30, 1886. (No model.)



Claim.—1. In a drying apparatus, a vacuum-pan, in combination with a stirrer carried on a tubular shaft, through which the vapors within the pan are drawn off, substantially as shown and described.

2. In a drying apparatus, the closed pan, in combination with the hollow shaft carrying the stirrer, and means for drawing off the vapors within the pan through the shaft, substantially as and for the purpose described.

3. In a drying apparatus, in combination with a vacuum-pan, a tube through which the air and vapors within the pan are exhausted, extending into said pan and below the top thereof, substantially as and for the purpose described.

4. In a drying apparatus, in combination with a vacuum-pan having a dome-shaped top, an exhaust-tube, through which the air and vapors in the pan are drawn off, extending down through the dome, and adapted to take the air and vapors from a point within the pan and below the top of the dome, substantially as shown and described.

5. In a drying apparatus, in combination with a vacuum-pan, an exhaust-tube extending down within the pan to take the air and vapor from a point well within the pan and away from the top thereof, having the open end and a series of apertures in its sides near its end, substantially as and for the purpose described.

6. A vacuum-pan having on its top a hood connected with a suction apparatus, in combination with a rotary tubular shaft extending through the hood down into the pan, and carrying on its lower end an agitator, and provided with a series of openings through its portion which is within the hood, substantially as and for the purpose described.

7. In combination with the closed pan having a hood on its top connected with a suction apparatus, the rotary hollow stirrer-shaft extending through the hood and top, open at its lower end and provided with a series of openings through the sides of its portions which are within the hood and below the top of the pan, substantially as and for the purpose described.

8. In combination with a pan having in its top bearings for a stirrer-shaft, and above such bearings a hood connected with means for producing a vacuum therein, a rotary hollow shaft extending through the hood and down into the pan, perforated along its portion contained within the hood, open at its lower end, and carrying thereon means for stirring the contents of the pan, substantially as and for the purpose described.

9. A vacuum-pan provided with means for heating it at its bottom, and having a jacket-space around its sides; in combination with means for causing the heated vapors from the interior of the pan to pass around through the jacket-space to heat the sides of the pan, substantially as and for the purpose described.

10. In combination with the vacuum-pan provided with the steam-space below its bottom and a jacket around its sides, the discharge-pipe for drawing off the heated vapors from within the pan, connected with and discharging into the jacket-space, substantially as shown and described.

11. In combination with the vacuum-pan having in its top a tubular bushing for the stirrer-shaft, and above such bushing a hood, the hollow rotary shaft carrying at its lower end means for stirring the contents of the pan, and at its upper end within the hood provided with a series of perforations, the collar on the shaft resting on anti-friction bearings on the top of the shaft-bushing, and the exhaust-pipe connecting the hood with means for producing a vacuum, substantially as and for the purpose described.

12. A vacuum-pan provided with a jacket, a pipe for admitting heated vapor to the jacket, having a partition to divide the volume of the vapor and cause portions of it to pass around through the jacket-space in opposite directions, and with a discharge-pipe for allowing the escape of the vapor from the jacket-space on the opposite side of the pan from the entrance-pipe, substantially as shown and described.

13. In combination with the stirrer-shaft, the bars attached thereto, the vertical arms depending from said bars, and the sharp-edged scraper and stirrer blades carried on the lower ends of the vertical bars and adapted to scrape up and stir the material resting on the bottom of the pan, substantially as shown and described.

14. In combination with the stirrer-shaft provided with a flange, the parallel bars fastened to such flange, the vertical arms attached to the bars, and the scraper and stirrer blades extending between and attached to the lower ends of the arms, substantially as shown and described.

15. The rotary stirrer provided with sharp-edged scraper and stirrer blades moving close to the surface of the pan with which the material to be dried is in contact and inclined toward such surface in the direction of their movement, substantially as shown and described.

16. In a drying apparatus, the vacuum-pan provided with a closed heating-chamber below its bottom for the reception of the dried contents of the pan, substantially as shown and described.

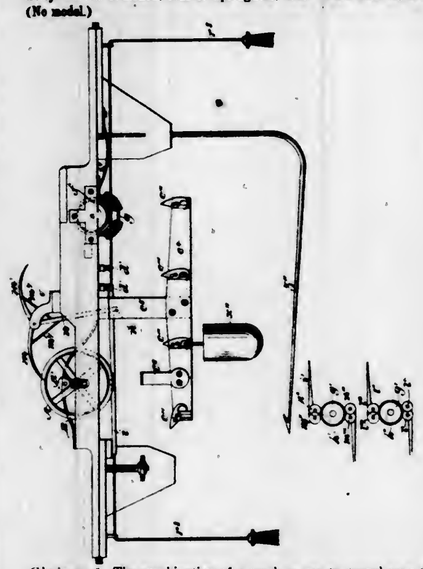
17. A vacuum-pan having a discharge-opening through its bottom, means for closing and unclosing the same, and a chamber below its bottom for the reception of the dried contents of the pan, substantially as shown and described.

18. A vacuum-pan having a discharge-opening through its bottom, a spiral plow, in combination with means for rotating it to cause the contents of the pan to be brought to and discharged through the opening, substantially as shown and described.

19. In combination with a vacuum-pan provided with an opening through its bottom, a spiral plow connected with the rotary stirrer-shaft, adapted when it is let down upon the pan-bottom to force the material on the pan-bottom toward the central discharge-opening, substantially as shown and described.

20. In combination with the stirrer-shaft provided with a flange, the parallel bars attached to the flange, the arms depending from the same and carrying blades for scraping up the material on the bottom of the pan, and the short horizontal arms attached to the outer depending arms, and carrying the vertical knives adapted to scrape the material from the sides of the pan, substantially as shown and described.

338,663. **ELECTRIC CASH AND PARCEL TRANSFER SYSTEM.** GEORGE F. GREEN, Kalamazoo, Mich., assignor to himself and Oliver S. Kelly and Sol J. Houck, both of Springfield, Ohio. Filed Feb. 25, 1884. (No model.)



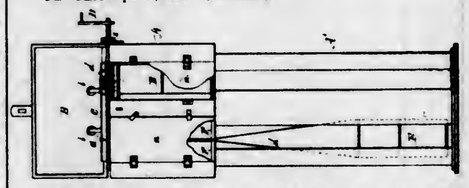
Claim.—1. The combination of a track, a car to travel over the same, an electric motor connected with the car and charged through the same, a switch for controlling the direction of travel of the car, a parcel-holder support located in proximity to said track, and a lift attached to said car adapted to remove the article held by said holder-support as the car travels past the same, substantially as described.

2. The combination of a track and a car propelled over the same by electricity, a parcel-holder support connected with the car, a receiver supported in proximity to the track, and a trip to release the parcel-holder from its support to permit its transfer to the said receiver, substantially as described.

3. The combination of the track, the car propelled over the same by electricity, the pivoted hooks c''', suspended by a suitable support from the car, the hook z'', supported from the car, the hooks y'' y''', supported from the track, and the trip z' above the hook y''', substantially as described.

4. The combination of a track, a car to travel over the same, a pivoted parcel-holder support connected with the car, a receiver supported in proximity to the track, and a trip for moving the said pivoted support to permit the transfer of the parcel-holder therefrom to said receiver, substantially as described.

338,664. **WELL-REFRIGERATOR.** JOHN K. GRUBB, New Bloomfield, Pa. Filed Sept. 16, 1885. (No model.)

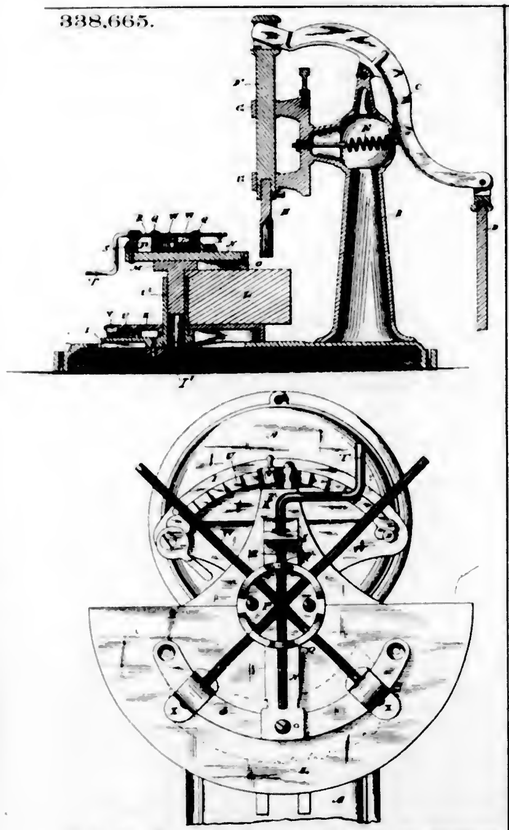


Claim.—1. The combination of the sections A A', the doors F F between them, the windlass C, the two cords *d d*, the closets E E, and the ratchets *c c'*, as set forth.

2. A refrigerator having the hinged cover B, provided with the holes *b b*, in combination with the internal tubes, G G, as set forth.

338,665. **BUTTON-FLY-SCALLOPING MACHINE.** CHARLES B. HATFIELD, Rochester, N. Y., assignor of one-half to John C. Houghton, Henry Loewer, and Amos S. McNab, all of same place. Filed July 30, 1885. (No model.)

338,665.



Claim.—1. In a button-fly-scalloping machine, the combination, with a cutting-chisel, of a rotatable support for the work adjustable laterally toward and from the chisel by mechanism substantially such as described, and a gage for regulating the number of times the support is to be arrested in its rotary motion and the consequent number of scallops which is to be formed in the work, substantially as described.

2. In a button-fly-scalloping machine, the combination, with the cutting-chisel, of a rotatable support for the work and a series of different gages for regulating the number of times the said support is to be arrested in its rotary motion and the consequent number of scallops which are to be formed in the work, substantially as described.

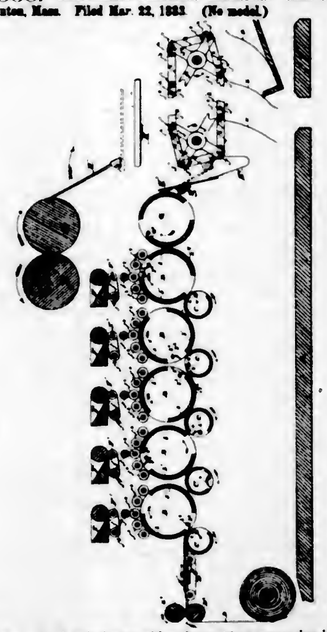
3. In a button-fly-scalloping machine, the combination of a rotatable support for the work, a gage for regulating the number of times the support is to be arrested in its rotary movement and the consequent number of scallops that are to be formed in the work, and indicators located on lines radiating from the center of motion of the work-support and of the same number of degrees apart as are the extremities of the regulating-gage, whereby by placing the extremities of the portion to be scalloped beneath the indicators the proper disposition of the scallops is insured, substantially as described.

4. In a button-fly-scalloping machine, the combination of a rotatable support for the work, a gage for regulating the number of times the support is to be arrested, indicators adjustable on lines radiating from the center of motion of the work-support and of the same number of degrees apart as are the extremities of the regulating-gage, and means, substantially as described, for securing said indicators in adjusted position, whereby button-flies of different lengths are enabled to be scalloped with their scallops properly disposed, substantially as described.

5. In a button-fly-scalloping machine such as described, the combination, with the scalloping-chisel and its operating mechanism, of a rotatable support for the work, a gage for regulating the number of times the support is to be arrested in its rotary motion, and indicators located on lines radiating from the center of motion of the work-support and of the same number of degrees apart as are the extremities of the regulating-gage, substantially as described.

6. In a button-fly-scalloping machine, the combination of a rotatable support for the work, the gage for regulating the number of times the work-support is arrested in its rotation, the radially-adjustable indicators, and the adjustable presser-bar operating to effect the simultaneous adjustment of the indicators in or out, substantially as described.

338,666. CHROMATIC-PRINTING MACHINE. JOHN T. HAWKINS, Taunton, Mass. Filed Mar. 22, 1883. (No model.)



Claim.—1. A printing-machine for making successive impressions upon one side of a sheet of paper, consisting of a series of successive plate or form cylinders, as B, and a series of successive impression-cylinders, as C, arranged so that the sheet is taken by the grippers of the first cylinder of one series, thence transferred to the first cylinder of the other series by the grippers thereof, and thereafter transferred alternately from the cylinder of one series to the cylinder of the other series by the grippers of the succeeding cylinder closing upon the advancing sheet simultaneously with its release by the grippers of the preceding cylinder, substantially as set forth.

2. In a printing-machine for printing successive impressions upon a sheet of paper by means of a series of successive pairs of impression and form cylinders, in combination with said series of cylinders, a circumferentially-grooved delivery-cylinder, and a series of oscillating stripper-fingers, said cylinder carrying a set of grippers to receive the sheet and remove it from contact with the last form-cylinder, and having sufficient diameter to retain its hold upon the sheet until said sheet is entirely rolled from the last form-cylinder before its release by said grippers and entrance upon said stripper-fingers for the purposes of further delivery, substantially as set forth.

3. In a printing-machine, a type or form cylinder, as B, having grippers, as b^2, and recesses, as b^4, in its gripper edge, in combination with an impression-cylinder, as C, having grippers, as c, and recesses, as c^2, in its gripper edge, whereby when said cylinders and grippers are actuated the grippers on the respective cylinders either close or open, as may be desired, through said recesses in the opposite cylinder, one set of grippers thereby seizing while the other set releases the sheet, which is thus delivered from impression-cylinder to type-cylinder, or vice versa, without disturbance of register, substantially as and for the purposes set forth.

4. In a machine for printing from a cylinder form or plate, a form-cylinder provided with end bearings for carrying the journals of a straining roller or shaft, and with a continuous intermediate bearing for supporting the remainder of said shaft, whereby provision is made for stretching or straining a sheet-metal form-plate upon said cylinder, substantially as and for the purposes set forth.

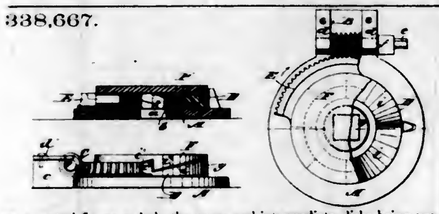
338,667. BILLIARD-TABLE LEVELER. ERNST A. HORNBOSTEL, Oskaloosa, Iowa. Filed Jan. 6, 1886. (No model.)

Claim.—1. In a billard-table leveler, the combination, with a base plate or disk and an upper plate or disk, of an intermediate disk mounted on a central flange or hub, the upper and intermediate disks being provided with correspondingly-inclined faces and an actuating mechanism whereby the central disk may be turned about its axis, substantially as described.

2. In a billiard-table leveler, the combination, with a base-plate formed with a flange, *b*, of the plate D, formed to fit about said flange and being provided with inclined faces *i i* and a segmental rack, E, a plate, F, formed with inclined faces *i' i'* and post *k*, and a worm, C, all substantially as described.

3. In a billiard-table leveler, the combination, with a base-plate formed with a flange, *b*, and lugs *c*, of a plate, D, formed to fit about said flange, said plate being provided with inclined faces *i i* and segmental rack E, a plate, F, formed with inclined faces *i' i'* and a post, *k*, and a worm, C, formed with a collar, *f*, and mounted in bearings carried by lugs *c*, all substantially as described.

338,667.



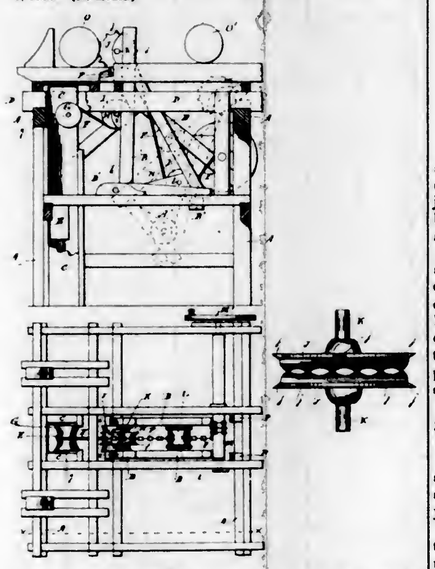
338,668. HOLLOW STRUT-CONNECTION. ALFRED T. HYDE, Oil City, Pa. Filed Nov. 21, 1885. (No model.)



Claim.—1. A tubular strut-connection having at one end an inserted re-enforce plate, the re-enforced end of the tube being flattened and closed upon the re-enforce plate, substantially as described.

2. A strut-connection consisting of a tubular blank, the end of said blank being forged or swaged, a plate inserted within the end of the blank to re-enforce the same, and an eye formed in said re-enforced end, substantially as described.

338,669. LOG-TURNER. WILLIAM INGALLS, Mobile, Ala. Filed Jan. 5, 1886. (No model.)

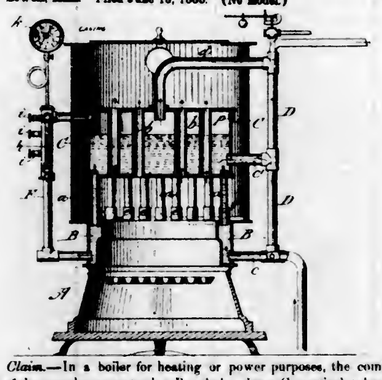


Claim.—1. In a log-turner, the combination, with the frame of a saw-mill, of an oscillating frame, of a sprocket-wheel revolving therein, said wheel having radial points adapted to engage with a saw-log, a tension-chain passing over the top of said sprocket-wheel, one end of said chain attached to a weight and the other end secured to a windlass, substantially as described, and for the purposes set forth.

2. In a log-turner, the combination of box C, of pulley G, of chain F, and weight E, with frame B, adapted to oscillate in bearings attached to the framing of a saw-mill, the said frame being provided with pulley H, the sprocket-wheel J, having double radial points *j*, the pulley L, and windlass M, as described, and for the purposes set forth.

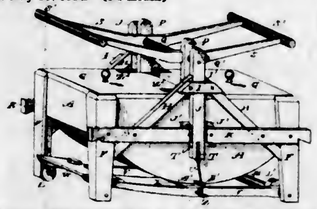
3. In a log-turner, the oscillating frame B, in combination with a sprocket-wheel, J, having double radial points *j*, as described, and for the purposes set forth.

338,670. BOILER FOR STEAM-HEATERS. JONATHAN JOHNSON, Lowell, Mass. Filed June 18, 1885. (No model.)



Claim.—In a boiler for heating or power purposes, the combination of the annulus or water-leg B, tubular dome C, vertical tubes *a a*, and circulating-column D, connecting with the annulus or water-leg by a tube, *a*, and with the tubular dome by tube *c*, entering below the water-line and near the crown-sheet or lower head of dome C, whereby the circulation will remove all sediment to the lower part of the boiler, avoid incrustation, and generate more steam, substantially as described.

338,671. WASHING-MACHINE. JOHN MCCLURE, Indian Grove, Mo. Filed July 18, 1884. (No model.)



Claim.—1. The combination, with the suds-box, of the roller-frame and roller, the converging strips H, connected near their upper ends, the side rails, K, and guides J', the arms J, to which the roller-frame is journaled, said arms sliding between the strips H and guides J', a treadle located beneath the suds-box, and rods pivotally connecting the arms J and treadle, substantially as set forth.

2. In a washing-machine, the combination of the suds-box, a roller arranged therein and journaled in a suitable frame, vertically-sliding bars connected with said roller-supporting frame and bifurcated at their lower ends, inclined side strips, H, between which the bars slide, guide-blocks I J', secured, respectively, to the strips H and the suds-box, a treadle comprising two side bars pivoted at their forward ends to a cross-bar of the suds-box frame and connected at their rear ends by a weighted foot-piece, and rods U, connected at one end to the bifurcated ends of the sliding bars and with staples on the pivoted levers, as set forth.

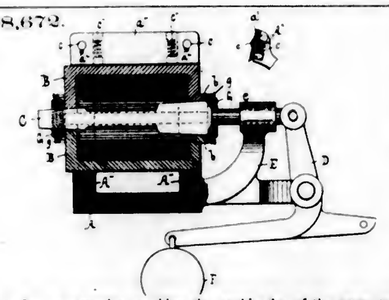
338,672. CAN-SOLDERING MACHINE. DAVID M. MONROE, Baltimore, Md. Filed Dec. 3, 1885. (No model.)

Claim.—1. The combination of the standards A', rigidly secured to a common base, the expanding-cylinder B, means to expand the cylinder, and the clamping-guide *a'*, arranged to bear against the cylinder and yield therewith.

2. The combination of the standard A', the expanding-cylinder B, the wedge C, the guide *a'*, secured to the standards A', and to be reciprocated vertically by the movement of the cylinder, and suitable springs arranged in conjunction to press the said guide toward the cylinder.

3. The combination of the expanding-cylinder B, mechanism to expand the cylinder, the standard A', and the guide *a'*, to be reciprocated by the movement of the cylinder.

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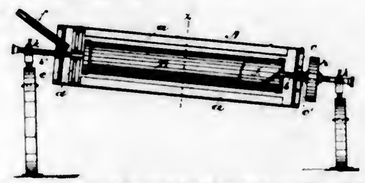


4. In a can-seaming machine, the combination of the rotary table H and a series of complete gaging devices mounted on and arranged to rotate with the table, which consist of the standards A', the expanding-cylinder B, means to expand the cylinder, and the guide *a'*, arranged to yieldingly clamp the can-body when placed on the cylinder.

5. The combination of the rotary table H, the standards A', the expanding-cylinder B, mechanism to operate the cylinder, and the guide *a'*, arranged to be reciprocated by the cylinder.

6. In a can-body-seaming machine, the combination of the rotary table H and a series of gaging devices mounted on and arranged to rotate with the table, which consist of the standards A', the expanding-cylinder B, means to expand the cylinder, and the clamping-guide *a'*, arranged to bear against the cylinder and to yield therewith, whereby the can-bodies are first expanded outwardly and held by the same means in that position until soldered and cooled by a partial or whole rotation of the table.

338,673. GRAIN-DRIER. MARTIN L. MOWREY, Newark, N. J. Filed Aug. 29, 1885. (No model.)



Claim.—1. A grain-drier consisting of an outer revolving cylinder, the entire periphery of which is solid, having scoops or grain-buckets therein, a stationary drier arranged within said revolving cylinder, and mechanism for introducing steam into said drier and exhausting it therefrom, for the purpose set forth.

2. In a grain-drier, in combination, a revolving cylinder having scoops or grain-buckets therein, a stationary drier consisting of a hollow cylinder arranged within said revolving cylinder and having hollow journals projecting from the ends thereof, a head, as *c*, secured in one end of the revolving cylinder and turning on one of the hollow journals of the drier and provided with openings therein, a stationary head, as *d*, secured to the hollow journal in the opposite end of the revolving cylinder and around which said cylinder turns, and means for feeding grain into the revolving cylinder, for the purpose set forth.

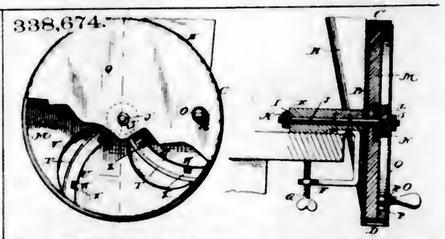
3. In a grain-drier, in combination, an outer revolving cylinder, scoops secured to the inner surface of the said revolving cylinder, an inner stationary drier having hollow journals *b b'*, a head, *c*, having slots c^3, and a collar, *c'*, secured in one end of the revolving cylinder and turning on one of the hollow journals, a head, *d*, secured to the other of said journals in the opposite end of the revolving cylinder, and having orifices *g* therein, pipes *f*, connected with the orifices *g* in the head, and adjustable and pivotal bearings *k*, that receive the hollow journals, all said parts being arranged and operating substantially as and for the purposes set forth.

338,674. VEGETABLE-SLICER. SCHUYLER C. NORRIS, South Whitley, assignor of one-half to John S. Miller, Warsaw, Ind. Filed Nov. 23, 1885. (No model.)

Claim.—1. In a vegetable-slicer, the combination of a cylindrical casing having the feed-opening arranged as described, and having an aperture in the lowermost point of its rim, a revolving cutter-disk having slots provided with cutters, and a circular covering-disk secured to the cutter-disk and revolving with the same and fitting in the open end of the cylindrical casing, as and for the purpose shown and set forth.

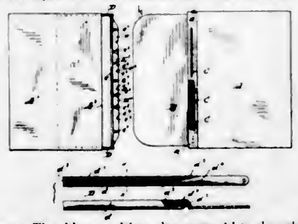
2. In a vegetable-slicer, the combination of a cylindrical casing having the feed-opening arranged as described, and having a downwardly-tapering feed-hopper in the upper portion of its closed end, and having a discharge-aperture in the lowermost portion of its rim, a revolving cutter-disk having radiating slots provided with inclined cutter-blades at their edges, and a covering-disk secured to the cutter-disk at a distance from the same and fitting in the open end of the casing, as and for the purpose shown and set forth.

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3. In a vegetable-slicer, the combination of a flat cylindrical casing formed with a tapering feed-hopper at the upper portion of its closed end, and with a discharge-aperture in the lowermost portion of its rim, and having a diagonal laterally-projecting plate at the outer face of its closed end provided with a clamping bracket and screw, a shaft journaled centrally in the closed end of the casing, a cutter-disk secured upon the said shaft and having curved radiating slots with beveled edges and provided with a laterally-projecting crank-pin formed with a collar, curved cutter-blades having slots in their back edges secured upon the beveled edges of the slots by screw-bolts in their slots, and a covering-disk secured upon the shaft a distance from the cutter-disk and having an aperture for the crank-pin resting upon the collar of the said crank-pin and covering the open end of the casing, as and for the purpose shown and set forth.

338,675. FILE AND BINDER FOR PAMPHLETS, BILLS, &c. JOHN R. PITT, Brooklyn, N. Y. Filed Oct. 21, 1884. (No model.)

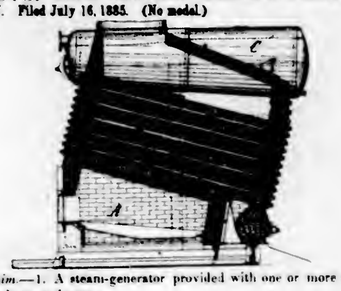


Claim.—1. The hinge uniting the cover A' to the other parts of the binder, formed with a socket part, D, having two parallel lips, *d d'*, of unequal length, between which the cover A' is inserted and secured in place therewith by pressing down the edges of the lips *d d'* into the substance of the cover, combined with said cover and the plate E, as described.

2. The socket part D of the hinge of the removable cover A', formed of two side lips, *d d'*, of unequal length, and a central web or socket rib uniting the two said side lips and extending far enough forward from the front termini of the side lips to form the hinge-socket *e*, the said forward or projecting end of the central web or rib re-enforced by the side piece, d^4, turned down upon it.

3. In combination with the cover A', a hinge-plate, E, secured to its inner edge and extending parallel therewith, the said hinge-plate perforated for the passage of the binding-wires C, and provided with locking-lugs E' for holding the free ends of said locking-wires in place, and with counter locking-lugs e^4, to prevent accidental unlocking of said wires C, the whole combined and arranged as described.

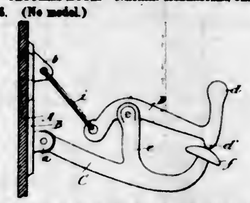
338,676. STEAM-GENERATOR. NATHANIEL W. PRATT, Brooklyn, N. Y. Filed July 16, 1885. (No model.)



Claim.—1. A steam-generator provided with one or more conical water and steam drums.

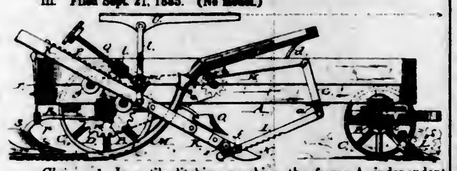
2. A steam-generator provided with inclined heating-tubes and a steam and water drum constructed of gradually-increasing diameter, substantially as and for the purpose set forth.

338,677. CLOTHES-HOOK. NATHAN RUBENSTEIN, Chicago, Ill. Filed Jan. 19, 1886. (No model.)



Claim.—The described lever C, hinged at its inner end to any suitable support, and having its outer end bent up nearly at a right angle with the body thereof and provided with the standard *e*, in combination with the lever D, bent vertically down at its inner end, where it has a hinge-and-link connection with the same support which sustains lever C, the lever D being hinged to the top end of standard *e*, substantially as and for the purpose described.

338,678. TILE-DITCHING MACHINE. HARRY SULLIVANT, Archie, Ill. Filed Sept. 21, 1885. (No model.)



Claim.—1. In a tile-ditching machine, the frame A, independent shafts F, and suitable driving mechanism, in combination with reciprocating saw-blades, the independent levers G, to the short arms of which the blades are secured, and a connection between the shafts F and levers G, whereby the saw-blades move in opposite directions, substantially as described.

2. In a tile-ditchieg machine, the frame A, gears D, the drive-chain, and the pinions E, in combination with the independent shafts, the connecting-rods H, levers for operating the saw-blades, and an adjustable bar, K, to which the lower ends of the saws are attached, substantially as described.

3. In a tile-ditching machine, the frame, the driving mechanism, and the independent shafts having cranks set at different angles, in combination with the connecting-rod H, the transverse shaft F, and levers fulcrumed upon the shaft and operated by the driving mechanism to cause the saw-blades to move in different directions, substantially as herein described.

4. In a tile-ditching machine, the frame having a support, *d*, in combination with an inclined feeding-table, a discharge-chute connected thereto, and a rock-shaft, *e*, upon which the discharge-chute is mounted, substantially as herein described.

5. In a tile-ditching machine, the frame, the saw-blades, and mechanism for operating the same, in combination with an adjustable bar, K, having a cutter or plate, N, at its lower end, the said cutter being secured to and between the saw-blades and adapted to remove the dirt after the walls of the ditch have been cut by the blades, substantially as herein described.

6. In a tile-ditching machine, the frame, the saw-blades, and mechanism for operating the same, in combination with an inclined bar, K, a plow, O, secured to the frame and adapted to discharge the earth upon each side of the ditch, a rack, P, upon said bar, suitable supporting-rollers, *g h*, a shaft, Q, a worm, *m*, and a hand-wheel for operating the worm to raise or lower the lower point of the bar, substantially as herein described.

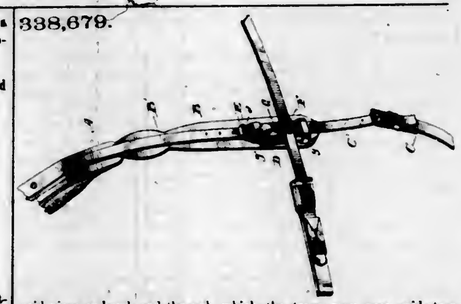
7. In a tile-ditching machine, the frame and the rear axle having eyebolts or loops, in combination with the plow-beams R, the oppositely-placed plows S, located one in advance of the other, and a lever, *r*, whereby the plows may be lifted from the ground, substantially as herein described.

8. A tile-ditching machine comprising a frame, a feed-table, a discharge-chute, suitable saw-blades for opening the ditch, an adjustable bar and mechanism for operating the same, grading-plows upon the front of the machine, and covering-plows at the rear, substantially as herein described.

338,679. TRACE-CARRIER. SAMUEL SWIHART and WILLARD K. SWIHART, Oakland, Nebr. Filed Dec. 31, 1885. (No model.)

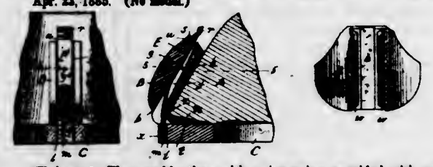
Claim.—The improved trace-supporter herein described, made of a single piece or band of malleable metal and provided with a loop, the aperture or passage through which is at right angles to the body of the

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said piece or band, and through which the trace may pass, said strap being bent upon itself so as to form a loop for the attachment of a buckle, substantially as shown, and for the purpose set forth.

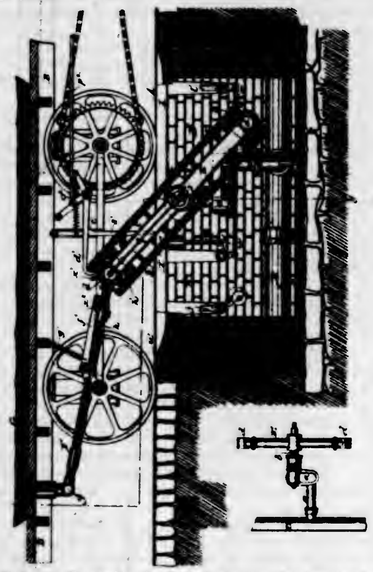
338,680. TOE-WEIGHT. GEORGE E. TWAMBLEY, Saco, Me. Filed Apr. 23, 1885. (No model.)



Claim.—1. The combination, with a horseshoe provided with an opening, *l*, for the reception of one end of a spring, E, of the fastening-piece D, having longitudinal groove *f*, the weight B, having dovetail groove *b*, and the spring E, interposed between the piece D and weight B, and means, substantially as described, for preventing longitudinal movement of the spring, all being constructed and combined substantially as set forth.

2. The combination, with a horseshoe provided with an opening for the reception of one end of a spring, E, of the fastening-piece D, having longitudinal groove *f*, the weight B, having dovetail groove *b*, the spring E interposed between piece D and weight B and having opening *g*, and the pin *h*, secured to piece D, substantially as described.

338,681. RAILWAY SYSTEM. HERMANN WIEDLING, Baltimore, Md., assignor of twenty-four one-hundredths to the Wiedling Meter Company, New York, N. Y. Filed Oct. 23, 1884. (No model.)



Claim.—1. In combination with the stationary main and the movable car, the delivery-pipe jointed to the main and the receiving-pipe jointed to the car, said pipes having side throats or openings and coupling-faces in a plane parallel with the line of travel, whereby the coupling-

surfaces are adapted to slide upon each other during the coupling and uncoupling action.

2. In combination with the stationary main, the movable car, their movable pipes provided with coupling-faces which are held in contact by fluid-pressure, and means, substantially as described and shown, for applying the fluid-pressure to hold said coupling-faces in contact.

3. In combination with a car having a receiving-pipe to connect therewith, the double-ended rotary coupling-pipe.

4. In combination with the rotary coupling-pipe, the car provided with a receiving-pipe, and with an arm to engage and turn the coupling-pipe, whereby an automatic coupling of the two pipes is insured.

5. The main provided with a rotary coupling-pipe, in combination with the car provided with the receiver and swinging receiving-pipe, whereby a connection between the main and the receiver may be established and maintained while the car is in motion.

6. The main and its rotary coupling-pipe, in combination with a valve to close said pipe, and mechanism, substantially such as shown, operated by the rotation of the pipe to actuate said valve, whereby the rotation of the pipe is caused to effect the automatic opening of the valve.

7. In combination with a railroad-car provided with a receiving-pipe, the main and the rotary coupling-pipe provided with an eccentric, *g*, the valve *w*, to control the discharge from the main, and the rod or spindle connecting the same with the eccentric.

8. The combination, substantially as shown, of a car provided with a receiving-pipe and the main, the rotary coupling-pipe C, provided with the outlet-ports, the valves *e e'*, the secondary valve *f*, its spindle, and the stationary crank to actuate the spindle, whereby the rotation of the coupling is caused to apply the fluid-pressure to the opening and closing of the discharge-valves.

9. In combination with a car provided with a receiving-pipe and the coupling-pipe provided with the two outlet-ports on opposite sides, the hollow valves *e e'*, exposed beyond their seats, and the valve *f*, to control the fluid-pressure within said hollow valves, whereby the pressure is caused to open and close the valves as may be demanded.

10. In combination with the rotary coupling-pipe, the car provided with the receiving-pipe, and the mechanism for lifting said arm at will above an operative position, whereby a connection with the coupling-pipe may be automatically secured or avoided at the will of the attendant.

11. In combination with the rotary coupling-pipe, the car provided with the receiving-pipe, the arm to engage and turn the coupling-pipe, and the detent to sustain said arm mechanically in an inoperative position.

12. The rotary coupling-pipe, in combination with the car provided with the receiving-pipe, the arm *d'*, to turn the coupling-pipe, the detent to sustain said arm, and the fixed device to trip the detent, whereby the arm after being carried past one coupling-pipe is caused to automatically engage the next.

13. The main provided with the rotary coupling-pipe, in combination with the car provided with the receiving-pipe, the arm *d'*, to bring the coupling-pipe into action, and the second arm, *f'*, to restore the coupling-pipe to its normal position.

14. The rotary coupling-pipe, in combination with the car provided with the receiving-pipe and the arm *f'*.

15. In combination with the rotary coupling-pipe, two independent locking mechanisms provided with operating devices extending above the track at different points, whereby the release of the pipe by the accidental operation of either locking device is avoided.

16. In combination with the movable coupling-pipe and locking mechanism therefor, two operating-rods for said mechanism extended above the track in position to be operated by the tread and the flange of the car-wheels, respectively.

17. In combination with the car and the swinging receiving-pipe thereon, the rotary coupling-pipe connected with the main or source of fluid-supply, and the covering-plate D, provided with the channels or recesses opposite the end or ends of the pipe.

18. In combination with the rotary coupling-pipe located beneath the track in a pit or chamber, the covering-plate slotted to permit the rotation of the pipe, and the side plates applied to the pipe to close the slot in the covering-plate, as shown.

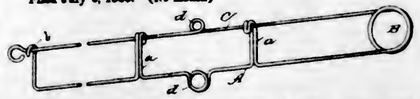
19. In combination with a railway-car having the coupling-pipe to connect therewith, the receiving-pipe divided or branched to embrace the coupling-pipe, the diaphragm or its equivalent, and a conductor for admitting fluid behind the diaphragm, whereby the receiving-pipe is caused to maintain a close connection with the coupling-pipe, as described.

20. The car having the coupling-pipe provided at its end with a head having outlet-openings in opposite sides, in combination with the divided receiving-pipe having mouths to register with said outlet-openings, and the bar *x*, connecting the two arms of the receiving-pipe, whereby it is adapted to assist in effecting the connection of the pipes, as described.

21. In combination with the car having the movable divided receiving-pipe, the connecting-bar *x*, having a sliding connection at one end, the fluid-pressure device to urge the two arms of the pipe toward each other, its controlling-valve *b'*, and the arm *c'*, to actuate said valve, whereby the arms are caused to automatically clamp and release the coupling-pipe.

22. In combination with the railway-car provided with a receiving-pipe, the rotary coupling-pipe, the valves at its two ends, their secondary valves *f*, the two valve-spindles *q*, the stationary crank, and the spring applied to actuate the two spindles.

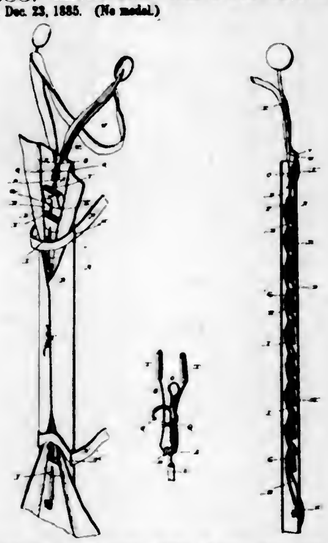
338,682. **NEWSPAPER-FILE.** WILLIAM F. WITBECK, Albany, N. Y. Filed July 6, 1885. (No model.)



Claim.—1. A newspaper-file consisting of limbs A and C with an intervening coil or bend, B, prongs *a*, and hooked end *b*, all combined substantially as described.

2. A newspaper-file having limbs A and C and intervening coil or bend, B, and hooked end *b*, and the prongs *a*, provided with hooks, substantially as described.

338,683. **ELECTRIC BELT.** JAMES H. WOODWARD, Seward, Nebr. Filed Dec. 23, 1885. (No model.)



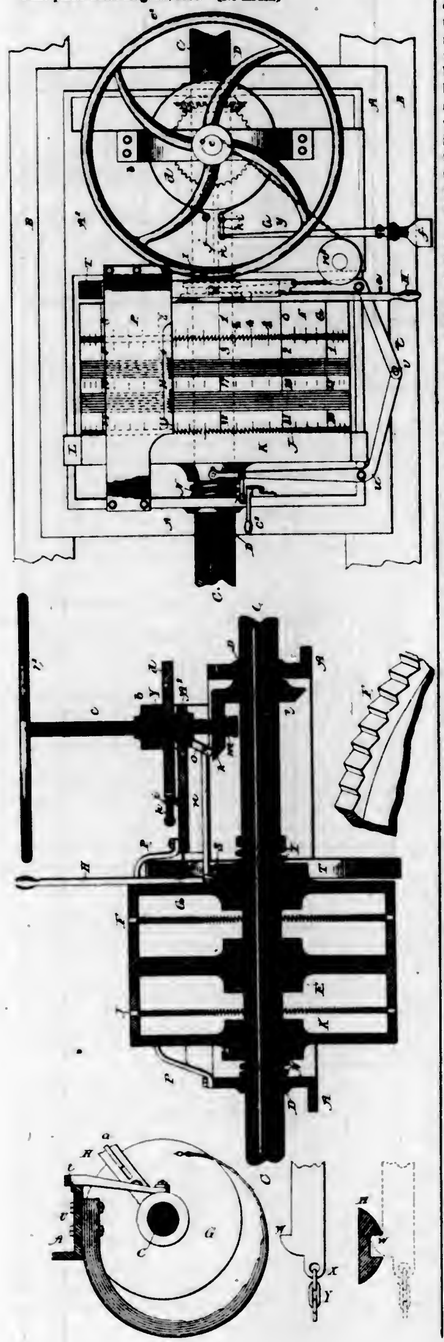
Claim.—1. In a galvanic battery for local application upon the body, the combination of a lining-strip having a series of transverse slits with a number of cups having their inner ends inserted through the slits and having wires secured to their outer ends, hooking over the slits and connected with the adjoining cups, as and for the purpose shown and set forth.

2. In a galvanic battery for local application upon the body, the combination of a lining-strip having a series of transverse slits with a number of zinc cups inserted through the slits, and copper coils inserted with the absorbent into the cups and having their ends secured to the outer end of the adjoining cup, hooking over the edges of the slits, as and for the purpose shown and set forth.

3. In a galvanic battery for local applications upon the body, the combination of the body-strip having flaps at its edges and having elastic fastening-straps, a lining-strip secured to the body-strip and having a series of transverse slits, a number of battery cups or cells inserted into the slits and having the wire from one cup secured to the outer end of the adjoining cup, hooking over the edges of the cups, and buttons secured at the ends of the wires of the circuit by means of their shanks and projecting upon the inner sides of the ends of the body-strip, as and for the purpose shown and set forth.

4. In a galvanic battery for local application upon the body, the combination of the positive wire having its end doubled and bent into cross shape, having a hook at its lower end pointing downward and having the ends of the lateral branches bent inward to form retaining-hooks, with a wire having metallic buttons at its ends and bent double, to form a loop adapted to be inserted between the retaining-hooks and to be hooked upon the lower hook, as and for the purpose shown and set forth.

338,684. **SAW-MILL SET-WORKER.** A. IRWIN LOOP, North East, Pa., assignor of one-half to William H. Stetson and Charles Loop, both of same place. Filed Aug. 20, 1885. (No model.)



Claim.—1. The combination of a saw-mill carriage, its knees, and knee-setting shaft C, geared to said knees, with a drum, E, keyed fast to said shaft, a drum, G, free to move forward and back on said shaft and carrying a setting-lever, H, a drum, K, on said shaft C, held from rotation by projections engaging with a frame surrounding the three drums and fitting on said shaft loosely enough to allow its being rotated, the drum E being toothed in the entire circumference of both sides or rims in the form of a rose-clutch, the teeth of both sides pointing backward, said teeth being equal in size, so that lines formed across its face between opposite teeth can be figured to indicate the distance of the knees from the saw, the said drum G being on one side of the drum E and toothed on its connecting edge or rim with the teeth pitched forward, so as to engage with the teeth of drum E, for the purpose of rotating the set-shaft *c* forward, but being itself free to be turned backward for a new forward movement, the said drum K being on the opposite side of drum E, toothed on its connecting-rim, the teeth being pitched forward, allowing drum E to be rotated forward, but holding it from any backward movement, all substantially as described.

2. The combination of a saw-mill carriage, its knees, and knee-setting shaft C, geared to said knees, a double rose clutch-drum, E, keyed to said shaft, a setting rose clutch-drum, G, and a holding rose clutch-drum, K, mounted loosely on said shaft C, one on each side of drum E, with two coil-springs, one outside of each drum K and G for the purpose of holding said drum into clutch with drum E, an upright lever, c^3, connected at its lower end to the frame of the carriage inclosing said drums K E G, also connected at a suitable distance from its lower end with a horizontal right-angled arm, *t*, said arm being in contact at one end with drum K, being pivoted on the carriage-frame at its angle and attached at its other end to a similarly-constructed arm, *u*, said arm pivoted on the carriage-frame at its angle and coming in contact at its other end with the drum G, said lever and arms being for the purpose of temporarily disconnecting drums K and G from drum E, all substantially as described.

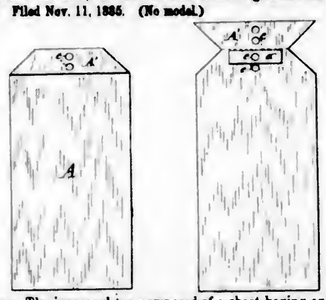
3. In a saw-mill carriage, the combination of its knees, and knee-setting shaft C, geared to said knees, with a bevel-gear, *l*, keyed fast to said shaft C, a vertical or upright shaft, *c*, supported by frame-work on said carriage, the shaft *c* having on its lower end, mounted on a feather key, a bevel-gear, *k*, held up a short distance by a spring allowing of its being depressed into connection with bevel-gear *l* on shaft C, said shaft *c* having on its upper end a hand-wheel, c^2, an upright lever, c^3, attached at its lower end to the frame of the carriage and being connected by a series of arms, *t u*, and a rod, *n*, to a finger, *o*, said finger being so supported on the frame-work of the carriage that by moving lever c^3 the finger *o* depresses the bevel-gear *k* into connection with bevel-gear *l* on shaft C for the purpose of receding the knees, all substantially as set forth.

4. The combination, in a saw-mill carriage, of the knees, and knee-setting shaft C, geared to said knees, with a semicircular leaf-spring, T, fastened at its commencement to a frame-work of the carriage outside the set-shaft C, said spring extending down under said shaft, its free end coming up on the opposite side, a vertical or upright shaft, *c*, mounted on the frame-work of the carriage, said shaft *c* having on its upper end a hand-wheel, c^2, and on its lower end mounted on a feather key, a bevel-gear, *k*, held up a short distance by a spring, a chain or rope, Y, connecting said spring T to said shaft *c*, a bevel-gear, *l*, keyed fast to set-shaft C immediately under gear *k*, a lever, c^3, connected to a finger, *o*, by the arms *t* and *u* and rod *n*, said finger being so supported upon the frame-work that by moving lever c^3 the gear *k* will be depressed by it into connection with gear *l* on set-shaft C for the purpose of receding the knees, said shaft *c* having also fastened to it a brake-wheel, *d*, encircled by a friction-band, said band being connected at one end to the carriage frame-work and at the other to a pedal, *f*, by suitable rods for the purpose of controlling the action of the spring T, all substantially as and for the purpose described.

5. The combination, in a saw-mill carriage, of its knees, knee-setting shaft C, geared to said knees, with a double rose-clutch feeding-drum, E, keyed fast to said shaft, a single rose-clutch holding-drum, K, mounted loosely on said shaft on one side of drum E and secured from rotation by projections from it to the frame-work of the carriage, a setting rose-clutch drum, G, mounted loosely on said shaft C on the opposite side of drum E, free to be moved backward and forward and clutching with drum E in its forward movement, thereby advancing the knees, a lever, H, attached to drum G, said lever being at right angles to shaft C, being rounded on its outside and provided with a longitudinal slot in the center of the rounded portion, and a rod, *a*, sliding in this slot so that it may be closed or opened at will of operator, a heavy semicircular leaf-spring, T, fastened at its commencement to the frame-work of the carriage, its free end describing a curve parallel and similar to the rim of drum G, said spring having a projection, W, on its free end suitable for engaging with the slot in lever H, a vertical or upright shaft, *c*, mounted on the carriage-frame, said shaft having on its upper end a hand-wheel, c^2, and also having a brake-wheel, *d*, encircled by a friction-band, said band being fastened at one end to the frame-work and connected by its other end to a pedal, *f*, by suitable rods, a chain or rope, Y, connecting the free

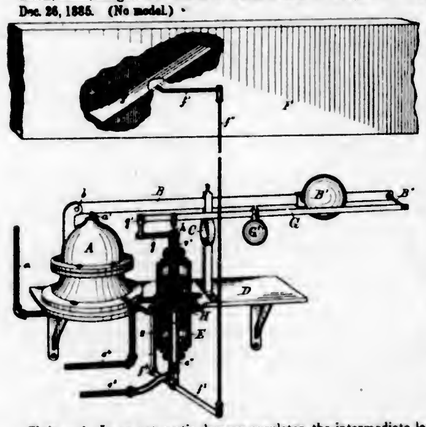
end of the spring T with the shaft c, a stop-gage, P, mounted on the frame-work of the carriage for arresting at a certain point the forward movement of lever H, all substantially as and for the purpose described.

338,685. TAG. AUGUSTUS MORRELL, St. Louis, Mo., assignor to himself, Robert L. Little, and Francisco De Salles Figueiredo, all of same place. Filed Nov. 11, 1885. (No model.)



Claim.—The improved tag composed of a sheet having an integral portion thereof folded back upon itself and embracing in its fold the perforated re-enforcing strip, and having an eye punched through it back of the edge of the re-enforcing strip adjacent to the line of folding of the tag, substantially in the manner described and shown.

338,686. AUTOMATIC DAMPER-REGULATOR. JOHN E. STEVENS, Salem, Mass., assignor of one-half to Smith & Smart, same place. Filed Dec. 26, 1885. (No model.)



Claim.—1. In an automatic damper-regulator, the intermediate lever, G, connected to the pressure-lever B and to the valve-stem A of the regulator-cylinder E, as and for the purpose set forth.

2. In an automatic damper-regulator, a pressure device with its lever B connected to the intermediate lever, G, the latter being suspended upon the movable piston-rod *e'* and connected to the valve-rod A, as and for the purpose set forth.

3. In an automatic damper-regulator, a pressure device and an adjustable damper, combined with a regulator having one end of its piston connected to the damper, the other end of said piston jointed to the intermediate lever, G, the latter being connected to the main lever B of the pressure device and to the valve of the regulator, as and for the purpose set forth.

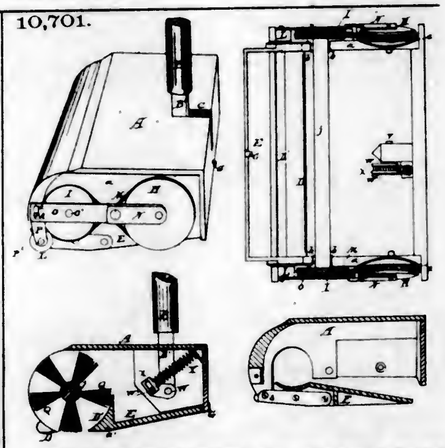
4. In an automatic damper-regulator, the intermediate lever, G, connected to the pressure-lever B and to the piston-rod *e'* and valve-stem A of the regulator-cylinder E, as and for the purpose set forth.

REISSUES.

10,701. CARPET-SWEEPER. JONAS HEDDLEY, Norwalk, Ohio, assignor to Bostwick & Burgess, same place. Filed Jan. 9, 1886. Original No. 259,856, dated June 20, 1882.

Claim.—1. In a carpet-sweeper, the combination, with the casing A, provided with the slot C, of the arm B', handle B, pin V, crank W W', slotted headed arm *x*, and spiral spring Y, substantially as described, whereby the depressing of said handle increases the traction of the driving-wheels and decreases the pressure of the brush upon the carpet as specified.

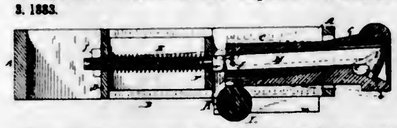
10,701.



2. In a carpet-sweeper, the combination, with crossed endless belt M, of the grooved wheels I H, having their planes inclined to each other, substantially as described.

3. In a rotary-brush carpet-sweeper, the combination, with the casing A and brush-cylinder Q *j*, of the brush-supporting bars O, pivotally attached to the casing and having slots c in their outer ends, adjustably secured by a set-screw, *k*, and provided with the angle-arms P, also pivoted thereon and adjustably held by the same set-screw and carrying the roller L L, all constructed as and for the purpose specified.

10,702. CAR-COUPLING. CHARLES F. MARK, Flint, Mich., assignor, by mesne assignments, to the Mark's Automatic Car Coupler Company, Cleveland, Ohio. Filed Jan. 31, 1884. Original No. 275,054, dated Apr. 3, 1883.



Claim.—1. In a car-coupling as described, the buffer-box, combined with a hooked draw-bar arranged within and having its rear end projected through the rear end of the said buffer-box, the draw-bar having an enlargement, *d*, against which the buffer-box abuts to keep said box out of contact with spring, as set forth.

2. In a car-coupling, a hollow buffer-box, combined with a hooked draw-bar supported therein, the said buffer-box bearing against an enlargement, *d*, on the draw-bar and being adapted to move with said draw-bar as it is projected or retracted, as set forth.

3. In a car-coupling, the combination, with a hollow buffer-box and a hooked draw-bar supported therein, of means, as L, for raising the rear end of the buffer-box to disconnect the link from the draw-bar in uncoupling, as set forth.

4. In a car-coupling, the hollow buffer-box, and means, as K L, for raising its rear end, combined with a hooked draw-bar supported in said box, and with a buffer-spring acting upon the bar and out of contact with the buffer-box, as set forth.

5. In a car-coupling constructed substantially as described, the draw-bar H, provided with shoulders *e e*, substantially as and for the purposes described.

6. In a car-coupling, and in combination with a bar, H, provided with the shoulders *e e*, the vertical movable partition F, and the spring E, substantially as and for the purposes described.

7. In a car-coupling constructed substantially as described, the bar H, provided with shoulders *e e* and *d*, said bar being pivoted within and near the rear end of a hollow buffer-box, substantially as and for the purposes specified.

8. In combination with the hook-bar H, formed at its front end in a hook, the buffer-box C, cored or recessed interiorly and pivoted near its back end to the bar H, substantially as and for the purposes set forth.

9. The buffer-box C and bar H, arranged between guides B B in the frame A, in combination with the rigid partition D, vertical and longitudinally-movable partition F, spring E, and key J, arranged and operating as set forth.

10. The buffer-box C and hooked bar H, pivoted together, as described, and arranged within the guides B B on the frame A, in combination with mechanism for lifting the rear end of the buffer-box, substantially as and for the purposes described.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE SILLIMAN.

Decided March 12, 1886.

TILTING FRAME-WORK FOR VERTICAL MILLS.

1. RULE 63.

Upon receiving and examining an application for patent the examiner in charge should in his first letter to applicant state all his objections, formal or otherwise.

2. SAME.

"All formal matters and all preliminary and intermediate questions should be settled before any of the claims are rejected upon the merits, and there should be no *rejection in terms* until such formal, preliminary, and intermediate questions are disposed of."

3. SAME.

In such first letter the examiner should advise applicant "of all preliminary requirements, cite all his references, (ordinarily,) and then advise him that action upon the merits will be postponed until all preliminary and intermediate questions are settled."

4. SAME.

Such examination need not be made or references cited, *first*, when it is manifest that the case cannot proceed without division until such question of division be settled; *second*, when there are objections as to form which are "vital," as, for instance, when an important and indispensable element is omitted from the claims, and for that reason an intelligent examination is impossible; and, *third*, when one examination has been had and certain formal and preliminary objections made and references cited, which formal and preliminary objections have not been disposed of.

Application of E. B. Silliman filed September 26, 1885.

Mr. A. M. Wooster for the applicant.

MONTGOMERY, *Commissioner:*

When this application was filed it contained five claims. The first Office letter was written on the 14th of November last, in which applicant was advised that much was described which was not of his invention, and therefore that certain modifications were necessary. The same communication also advised applicant that each and all his claims were anticipated by certain prior patents, which were cited. The communication closed as follows: "The application is *rejected*." On the 23d of November applicant filed an amendment, and on the following day he was advised by another Office letter that "nothing patentable over the prior state of the art formerly shown appears to be set forth in any of the claims," but that the case was "not in condition for final action by the examiner, as there are still some remaining formal objections" to be removed.

This letter concluded by calling attention to the unnecessary length of the title of the invention. December 8 applicant filed another amendment, which was met on the 12th of the same month by a third Office letter, in which the Examiner pointed out specifically his former objections. Again, and on the 24th of December, applicant filed still another amendment. December 29 a fourth Office letter was written, and applicant advised that the case by such last amendment had been placed in condition "for further action upon its merits," and the Examiner failing to discover patentable novelty in any of the claims, they were finally rejected on the references formely cited. After receiving this last (fourth) letter, and on the 11th of January last, applicant proposed further amendments, which were refused by Office letter of the 18th of January, upon the ground that the case being in condition to be appealed to the Examiners-in-Chief, applicant could not be permitted, under Rule 67, to amend "unless good and sufficient cause therefor be shown, together with the reasons why they were not earlier presented." Applicant thereupon comes to the Commissioner with a petition asking that the Examiner "be advised that the claims presented in such amendment [the last-proposed amendment] be examined upon their merits."

The present Commissioner has had occasion several times since his incumbency of this Office to call attention to the practice which ought to obtain in cases of this character. This subject was fully discussed in *ex parte Campbell*, (MSS. Dec. Vol. 29, 460.) It must be said, however, in justice to the Examiner, that perhaps none of these decisions have been published, and it is hardly to be expected that unpublished manuscript decisions should be read by all the Examiners. I do not think I can do better than to quote literally from the decision above cited, as follows:

Rule 63 clearly intends that the examiner shall, in his first letter, state all his objections, formal or otherwise, and, in case of such formal objections, he shall decline to act further upon the merits, except he shall be especially directed to do so by the Commissioner, until after the disposition of such formal objections. The examiner is not expected to *reject* any of the claims in case he have formal objections to make; but he should, nevertheless, cite applicant to all the references which, in his judgement, bear upon the claims. Rule 129 requires that all preliminary and intermediate questions shall be settled before an appeal upon the merits. Under the practice, therefore, as it is now prescribed by the rules, all formal matters and all preliminary and intermediate questions should be settled before any of the claims are *rejected* upon the merits; and there should be no rejection in terms until such formal, preliminary, and intermediate questions are disposed of. I do not wish to be understood to mean that the questions of novelty and usefulness should be ignored on the first examination. Such examination seems to be not only desirable, but indispensable. In the *first* place, it is impossible for the examiner to intelligently determine just how applicant's claim should be limited and restricted without such an examination, and, in the *second* place, it is the undoubted duty of the Office to point out to applicant, after having advised him of all such limitations, restrictions, and reformations, that, even if made, his claims, or some of them, seem to be met by such and such references, if any exist. I do, however, earnestly desire that examiners shall keep in mind the fact that the Rules of Practice as they now exist, whether wise or unwise, clearly contemplate that all preliminary and intermediate questions and requirements should be first carefully considered, pointed out, and disposed of before applicant should be in terms *rejected* upon any of his claims. Before the examiner says or does anything to lead applicant to believe that any of his claims have been rejected he should advise him of all preliminary requirements, cite all his references, and then advise

him that action on the merits will be postponed until all preliminary and intermediate questions are so settled. If this course be pursued, and all preliminary and intermediate questions required to be settled before applicant is informed that any of his claims are rejected, and if the examiners will carefully advise applicants in each case that *action* upon the merits will be postponed until such preliminary and intermediate questions are determined, much less confusion will occur as to where an appeal properly lies.

I hope this decision will leave no uncertainty as to my views about the practice of the Office in such cases. I again urge, as was suggested in Office circular of August 7th last, that the Examiner's letter should leave nothing uncertain about what is intended. I do not intend to insist that such examination shall be made and such references cited, when it is manifest that the case cannot proceed without division until that question be settled; nor when the "objections as to form" are "vital," as, for instance, where an important and indispensable element is omitted from the claims, and for that reason an intelligent examination is impossible; nor in cases where an examination has been had, and certain formal and preliminary objections made, and references cited should an applicant be afterwards permitted to amend and then insist upon further action without first having such formal and preliminary objections disposed of; but when no division is necessary, and no "vital objections as to form" are apparent, the case should proceed primarily, as above indicated.

In this case the Examiner's first letter should not have advised applicant that his case was "rejected." A formal rejection at that time was improper. The first authorized rejection, therefore, was the one of December 29. Since that time no rejection has really been made, and applicant has a right to demand another action. The Examiner should have receive and considered the amendment. The case will go back for this purpose.

Ex parte DYSART.

Decided March 13, 1886.

1. RULE 134.

Rule 134 does not intend to direct that the Examiners-in-Chief shall absolutely determine the form of a claim to be passed or acted upon by the Principal Examiner.

2. SAME.

When the Examiners-in-Chief are not satisfied with simply affirming or overruling a rejection by the Principal Examiner, but are of the opinion that a different form of claim should be allowed, they should "annex to their decision a statement to that effect, with such recommendation as they shall deem proper." The Principal Examiner, however, is not bound by such recommendation. He may act upon it or not, but he is at liberty to treat the claim so suggested "the same as though it had been proposed by the applicant in the first instance."

3. NEW REFERENCES.

When new references are cited by the Principal Examiner after appeal to and decision by the Examiners-in-Chief, applicant should be permitted to again appeal without payment of fee unless the citation of such new references has been made necessary by an amendment after such decision of the Board.

ON petition.

CRUSHED-COKE BOXES.

Application of James C. Dysart filed March 28, 1885.

Mr. C. H. Fowler for the applicant.

MONTGOMERY, *Commissioner*:

When this application was filed it contained three claims. June 13th last the Principal Examiner wrote applicant a letter criticising, first, the specification; second, one of the claims; and, finally, declaring that the claims were all met by certain patents which were cited. June 19th applicant amended his specification, and erased all his claims, and substituted one in lieu thereof. June 26th this amended claim was examined and rejected. Applicant appealed to the Examiners-in-Chief, who affirmed such rejection. The Board, in their opinion, however, in pursuance of Rule 134, suggested that, while the Examiner was right in rejecting the claim as it was drawn, still applicant was entitled to a claim substantially like No. 3 as originally presented. Thereupon the case went back to the Examiner, and applicant proposed an amendment which is said by him to be in conformity to such suggestion or recommendation of the Board. On the 3d of February last the Examiner informed applicant by Office letter that his amendment had been received and entered, suggested how the phraseology of his claim might be improved, referred him to certain patents, and finally rejected his claim for want of novelty. On the 18th of the same month the Examiner again wrote applicant advising him that he was still of the opinion that the adoption of his suggestion as to form would make the claim more clear and exact, and also called his attention to other (English) references. Applicant thereupon petitioned the Commissioner for an order remanding the case to the Examiners-in-Chief for their consideration of the new references cited.

If the Examiner was of the opinion that the claim as last amended should be reformed and corrected, I think it was his privilege and duty to insist upon it. Rule 134 does not intend that the Board shall absolutely determine the form of the claims which shall be passed or acted upon by the Examiner; on the contrary, it simply makes it their duty to recommend a form which they think would be permissible in case they are not satisfied to affirm or overrule as the case comes to them. The Examiner is not bound by such recommendation. He may act upon it and accept the form of claim so recommended, or he may decline to do so and require the same to be corrected or modified, or he may reject it, the same as though it had been proposed by the applicant in the first instance. The Examiner, however, if he thinks the claim as last amended should be corrected, should undoubtedly require it to be done before again rejecting applicant in terms. (See *ex parte Campbell*, MS. Decs., vol. 29, p. 460, and *ex parte Silliman*, decided March 12, 1886.)

This case is remanded to the Examiner, who is instructed to settle the question of the form of the claim before any further action is taken. If settled without coming to the Commissioner, the claim will then be acted upon on its merits, as though no such action had heretofore been attempted since the application was returned from the Board. In case the final action of the Examiner makes it necessary for applicant again to appeal to the Board, if the references cited since the former appeal were applicable at the time of such appeal, and unless they have been made necessary by the amendment of the claim since the case came back from the Board, applicant should not be required to pay another appeal fee to again get his case before the Examiners-in-Chief.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Eastern District of New York.

SHIRLEY *v.* MAYER.

Decided June 11, 1885.

Motion for preliminary injunction to restrain defendant from infringing Reissued Patent No. 7,659, dated May 8, 1877, for an improvement in lamp-chimneys, original Patent No. 79,936 having been granted to Robert R. Crosby, July 14, 1868. The validity of the reissue is disputed by the defendant upon the ground that the claim of the original patent has been expanded in the reissue, and the reissue, having been obtained nearly nine years subsequent to the issue of the original, must be held void upon the authority of *Mahn v. Harwood*, (30 O. G., 657; 112 U.S., 362,) where the court says: "If a patentee has not claimed as much as he is entitled to claim, he is bound to discover the defect in a reasonable time, or he loses all right to a reissue." *Held* that the claim of the original patent has been substantially expanded, and that more than nine years' delay is an unreasonable time, and defendant thereby loses the right to reissue. Motion for injunction denied.

Mr. T. Frank Brownell and *Mr. J. Edgar Buell* for the complainant.

Mr. William B. Lynes and *Mr. M. B. Andrus* for the defendant.

BENEDICT, *J.*:

This is a motion for a preliminary injunction to restrain the defendant from making lamp-chimneys which, as the plaintiff asserts, infringe upon a patent reissued to him as assignee of Robert K. Crosby, the inventor, on May 8, 1877, the original patent having been granted to Crosby, July 14, 1868. The validity of the reissue is disputed by the defendant upon the ground that the claim of the original patent has been expanded in the reissue, and the reissue having been obtained nearly nine years subsequent to the issue of the original must be held void upon the authority of *Miller v. The Bridgeport Brass Co.*, (104 U. S., 350;) *Mahn v. Harwood*, (112 U. S., 362.)

The original patent contained but a single claim, as follows:

The abrupt or nearly right angled enlargement of the chimney, as represented in Fig. 3, arranged in relation to the lamp-burner, substantially as and for the purpose herein specified.

It is manifest from an inspection of this claim in connection with the specification that the feature of the chimney claimed as a new and useful invention was an abrupt enlargement of the chimney located so as to bring the enlargement "at about the base of the burner-cone."

The reissue has but a single claim, as follows:

A lamp-chimney having an abrupt or nearly right angled enlargement on or nearly on a level with the flame, in combination with the conical sides and contracted opening at the top, substantially as set forth.

The points of difference between the two claims are these: In the original claim the abrupt enlargement is located so as to come "at about the base of the burner-cone." In the claim of the reissue the abrupt enlargement is located so as to be "on or nearly on a level with the flame." The original claim makes no allusion to the combination of the abrupt enlargement with the conical sides and contracted opening, which is the whole subject-matter of the claim of the reissue. In regard to the first of these points of difference, the ground taken by the plaintiff here is that the words "at about the base of the burner-cone" in the original claim are equivalent in meaning to the words "on or nearly on a level with the flame" in the claim of the reissue; but it seems to me that a chimney having its enlargement at or about the base of the burner-cone, which is as low as it would ordinarily be practicable to locate the enlargement, comes within the description of chimney considered by Mr. Justice Blatchford in *Shirley v. Sanderson*, (8 Fed. Rep., 905,) where he holds "a chimney with a right-angled enlargement too low down" to be no infringement of the reissue in question. The "chimneys with short necks," considered by Mr. Justice Blatchford in *Shirley v. Sanderson* not to infringe upon the Shirley reissue, certainly are more nearly the equivalent of chimneys with the enlargement "at about the base of the burner-cone" than of chimneys with the enlargement "on or nearly on a level with the flame." The decision in *Shirley v. Sanderson* is authority, therefore, for holding that by substituting in the claim of the reissue the words "on or nearly on a level with the flame" in place of the words "at about the base of the burner-cone," used in the original specification, a substantial expansion of the patent was effected. If "at the base of the burner-cone" were the equivalent of "on a level with the flame," it would not have been held in *Shirley v. Sanderson* that chimneys with short necks and chimneys with the enlargement too low down were not covered by the claim of the reissue. It has been shown on this motion by affidavit that both the original and the reissued patent here in question were before Mr. Justice Blatchford when he decided *Shirley v. Sanderson*, but the opinion in *Shirley v. Sanderson* makes no allusion to any question as to the validity of the reissue, and it is evident that no decision of that question was intended to be made in that case; but, further, the second point of difference before alluded to as existing between the original and the reissue appears to me to be fatal to the validity of the reissue. It is manifest from an inspection of the two patents that the claim of the reissue is for a combination which was not claimed in the original, and this constituted a substantial expansion of the patent.

The defendant has put in evidence a patent issued to Joseph H. Connelly, July 3, 1866, many years prior to the Crosby patent, and this patent the expert called for the plaintiff, while contending that it does not anticipate the reissue, concedes would anticipate the original. This concession appears to be fatal to the reissue, for if the reissue covers an invention not covered by the original the scope of the patent has been enlarged by the reissue; but, aside from this concession made by the defendant, I am of the opinion that the reissue must be held void. It was issued nearly nine years subsequent to the issue of the original patent, and then not to the inventor, but to an assignee of the inventor. The claim of the original was clear and explicit. Its scope was plain, and it did not include the combination covered by the claim of the reissue. No error or misstatement in the claim of the original appears to have been suggested until the application for a reissue, and then the only amendment applied for was to describe the enlargement as "on or nearly on a level with the flame" instead of by the words "at about the base of the burner-cone," used in the original. The application for that amendment was rejected on reference to the Connolly patent of July 3, 1866, and then only was the claim amended so as to cover a combination. The omission from the claim of the original of any refer-

ence to a combination being manifest on inspection of the claim, and it being also manifest that such omission was not the result of inadvertence, accident, or mistake, as otherwise it would have been corrected without delay, the case is one of intentional omission from the original claim of what the reissued patent now purports to secure, and it comes within the principle of the decision of the Supreme Court in *Mahn* v. *Harwood*, (112 U. S., 362,) where the Court says:

If a patentee has not claimed as much as he is entitled to claim, he is bound to discover the defect in a reasonable time, or he loses all right to a reissue.

Here more than nine years were allowed to pass, and because of that delay the reissue must be held void.

The motion for injunction is denied.

U. S. Circuit Court—Southern District of New York.

BIRDSEYE *et al.* v. HEILNER *et al.*

Decided December 22, 1885.

INFRINGEMENT—DEFECTIVE PLEADINGS—PRACTICE.

By taking issue upon a plea the complainants admitted its sufficiency, and the defendants, having established the truth of the facts alleged in their plea, are entitled to a judgment.

Mr. Edmund Wetmore for the complainants.

Mr. Livingston Gifford for the defendants.

WALLACE, *J.*:

By taking issue upon the plea the complainants admit its sufficiency in point of form and substance. The only facts which are put in issue by the replication are whether the springs or stays which the defendants have employed in making corsets were purchased by them from one Bassett, and whether Bassett was licensed by complainants to manufacture and sell said stays or springs for use in the manufacture of corsets. If these allegations of fact are established, the legal conclusion that they are a good defense to the suit is not open to contention. The case has been argued as though the question were whether the complainants have authorized Bassett to license others to use the complainants' patents for improvements in corsets. No such issue is raised by the plea and replication. The proofs show that the defendants purchased the springs or stays used by them in manufacturing corsets, and which are known in the trade as "twin-wire," from Blun & Co. and one Doremus, who had purchased them from Bassett, and who were his agents to sell the same to others. The only question, therefore, is whether Bassett was authorized by the complainants to sell the articles for use in the manufacture of corsets. The complainants and Bassett entered into an agreement, bearing date March 30, 1881, by which Bassett covenanted to manufacture for the complainants all corset materials which they might require upon specified conditions, including bone-wire, twin-wire, and other corset materials, and the complainants covenanted to discontinue the manufacture of such materials. The agreement contained these provisions.

It is agreed that the parties of the second part [the complainants] shall not sell bone or twin wire to any other corset-manufacturer, except when it is intended to be used in corsets intended for the sales of the parties of the second part. It is agreed that the party of the first part [Bassett] shall not sell twin-wire to any party or parties for a less price than twenty per cent. in addition to the price which he shall charge the parties of the second part, and he shall pay to the parties of the second part five per cent. on all sales of twin-wire which he may make to any party or parties other than the parties of the second part.

It appears very clearly by the proofs that the complainants had been making for several months the article of twin-wire for use in corsets of a description invented by one Bray. It is the precise article, also, that has been purchased by the defendants of Bassett through Blun & Co. and Doremus. As early as in the fall of 1880 the complainants had entered into an arrangement with Bray for the purchase of his invention, which had not then been patented, and Bray had agreed to assign his patent to them when it should be obtained. Owing to delay on the part of Bray the application for a patent was not filed until April 23, 1881. In the meantime the complainants had been making twin-wire to use in manufacturing the Bray corsets, and had been manufacturing these corsets and selling them to a limited extent. The time came when the complainants wanted to forego the manufacturing of corset material and confine themselves to manufacturing corsets from materials to be supplied by others; hence the negotiations with Bassett which resulted in the execution of the agreement. Bassett was aware of the relations existing between the complainants and Bray, and that the complainants had purchased Bray's invention and expected to obtain the patent, and these matters had been the subject of conversation between Bassett and complainants during the negotiations which resulted in the execution of the agreement. It also appears that although at some period previous to the date of the agreement twin-wire had been used to a limited extent for other purposes than for the manufacture of the Bray corsets, its use for those purposes had become obsolete and had been abandoned. In view of these facts it is manifest that both parties to the agreement understood that the twin-wire which Basset was to make and sell to the complainants and to other persons was just such an article as he has sold to the defendants. It is also manifest that the parties contemplated that the sales which Basset was expected to make would be made to manufacturers for use in making corsets. This was the only use of which the article was practically capable, and unless it was to be sold for such use it could not probably be sold at all.

If the question was whether by this agreement the complainants have authorized Bassett to license others to use their patents in manufacturing corsets, the answer would not seem to be difficult. The scope of the agreement does not extend beyond the relations which the parties to it are to assume toward each other in the manufacture and sale of corset material. There is nothing in its language, or in the circumstances contemporaneous with its execution, to justify the implication that Bassett was to have any interest, by way of license or otherwise, in either of the two patents upon which the bill is founded. The contemporaneous facts and the terms of the agreement are consistent with the purpose of the parties to secure to the complainants a royalty upon twin-wire in the event a demand for it should arise among manufacturers to be licensed by the complainants to use their Bray patent who might find it more convenient or economical to purchase the material of Bassett than to make it themselves. This conclusion is enforced by the fact that the complainants did not then have any interest in the other of the two patents in suit—the patent granted to Cohn in February, 1880, and which was purchased by the complainants in October, 1884—but, as has been stated, this question is not here.

The defendants have established the truth of the facts alleged in their plea, and they are therefore entitled to judgment.

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[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

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TO CITIZENS OF THE UNITED STATES.

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Maryland	7	2	Wyoming Territory	1	.....
Massachusetts	39	1	United States Army	.....	.....
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Minnesota	11	.....			
Mississippi	.....	.....	Total to citizens of the United States	414	33
Missouri	18	.....			

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Barbadoes	.....	.....	Hawaii	.....	.....
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Bermuda	.....	.....	Italy	.....	.....
Brazil	.....	.....	Mexico	.....	.....
Canada	7	.....	Newfoundland	.....	.....
Central America	.....	.....	New Zealand	.....	.....
Colombia, U. S. of	.....	.....	Scotland	1	.....
Cuba	.....	.....	Sweden	3	.....
Denmark	.....	.....	Switzerland	1	.....
Egypt	.....	.....			
England	11	1	Total to citizens of foreign countries	32	2
France	1	.....			

DESIGNS.

16,589.—SCARF-PIN.—*Julius A. Bidwell*, Ivanpah, Cal. Application filed February 17, 1886. Serial No. 192,308. Term of patent 14 years.

16,590.—INDICATOR-COVER.—*Charles E. Dey*, Denver, Colo. Application filed June 1, 1885. Serial No. 167,352. Term of patent 3½ years.

16,591.—CLOCK-CASE.—*Louis C. Hiller*, Meriden, Conn., assignor to *The Meriden Silver Plate Company*, same place. Application filed February 1, 1886. Serial No. 190,390. Term of patent 7 years.

16,592 and 16,593.—ORNAMENTATION OF LEATHER, &c.—*Sigmund Loewenherz*, New York, N. Y. Applications filed February 13, 1886. Serial Nos. 191,903 and 191,902. Term of patents 3½ years.

16,594.—VESSEL OR DISH.—*John E. Miller*, Pittsburg, Pa., assignor to *George Duncan & Sons*, same place. Application filed February 5, 1886. Serial No. 190,959. Term of patent 7 years.

16,595.—LATCH-CASE.—*Joseph R. Payson, Sr.*, Chicago, Ill. Application filed March 17, 1884. Serial No. 124,721. Term of patent 7 years.

16,596.—BRIDLE-ROSETTE.—*William F. Riker*, Newark, N. J. Application filed March 5, 1885. Serial No. 157,858. Term of patent 7 years.

16,597.—PARASOL OR UMBRELLA TOP.—*Norcom L. Séguin*, Philadelphia, Pa. Application filed January 23, 1886. Serial No. 189,550. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

13,129.—FELT BOOTS.—*William C. Brooks* and *John H. Brooks*, Chicago, Ill. Application filed March 1, 1886. Used since June, 1884.

"The words 'FROST KING.'"

13,130.—LINIMENT.—*Charles E. Clark*, Philadelphia, Pa. Application filed February 27, 1886. Used since April, 1876.

"The word 'GIANT.'"

13,131.—MOHAIR-PLUSH.—*William Foerster & Co.*, New York, N. Y., and Hamburg, Germany. Application filed February 24, 1886. Used since October 1, 1885.

"The representation of an eagle perched on a globe."

13,132.—REFINED PETROLEUM.—*W. R. Grace & Co.*, New York, N. Y. Application filed October 16, 1885. Used since October 22, 1883.

"The representation of electric-light carbons with radial rays surrounding their adjacent ends, with curved rows of dots upon the opposite sides of said adjacent ends."

13,133.—CHEWING-GUM.—*Charles T. Heisel*, Cleveland, Ohio. Application filed February 19, 1886. Used since February 1, 1886.

"The word-symbol 'GLASS-CASE.'"

13,134.—REMEDY FOR THE CURE OF CORNS.—*Hiscox & Co.*, New York, N. Y. Application filed February 26, 1886. Used since January 1, 1886.

"The word 'HINDERCORNS.'"

13,135.—DRIED FRUITS.—*Noerdlinger & Brother*, Trieste, Austria-Hungary. Application filed February 11, 1886. Used since January 1, 1885.

"The representation of a recumbent lion having a crown on its back."

13,136.—VERMIFUGE.—*George F. Payne*, Macon, Ga. Application filed March 5, 1886. Used since November 1, 1877.

"The words 'EARLY BIRD.'"

13,137.—FANCY-COLORED SILKS, ARMURES, SATIN-FACED GOODS, SERGES, OR OTHER SILKEN FABRICS.—*Poidebard Silk Manufacturing Company*, Jersey City, N. J. Application filed February 25, 1886. Used since 1882.

"A heraldic shield and its crest and an emblematic design above the crest, consisting of an eagle with its wings spread resting upon the face of a shield, which is divided to represent stars and stripes, the eagle holding in its talons two flags, one representing the tri-color of France and the other the stars and stripes of the United States of America."

13,138.—PETROLEUM-OIL.—*Benjamin S. Pray*, Boston, Mass. Application filed January 25, 1886. Used since 1867.

"The word 'SUNLIGHT.'"

13,139.—LIQUID MEDICINE FOR THE CURE OF RHEUMATISM AND OTHER LIKE COMPLAINTS.—*George Quarrie*, Ulverston, county of Lancaster, England. Application filed January 19, 1886. Used since May 19, 1885.

"The words 'MANX SHRUB' and the representation of plants."

13,140.—CORSETS, DRESS-STIFFENINGS, AND WAISTS.—*Edward K. Warren*, Three Oaks, Mich., and Chicago, Ill. Application filed February 24, 1886. Used since February 1, 1886.

"The word 'QUILLBONE.'"

13,141.—PREPARATION OF CHOCOLATE.—*H. O. Wilbur & Sons*, Philadelphia, Pa. Application filed March 4, 1886. Used since March 1, 1864.

"The word 'COCOATINA.'"

13,142.—SAPONACEOUS CLEANSING COMPOUND.—*The Ford Acme Renovator Company*, Baltimore, Md. Application filed March 2, 1886. Used since February 20, 1886.

"PAN-ELECTRIC,' whether written as two words or as a compound word."

13,143.—THREE-LEAF TWILLED SILESIAS AND OTHER COTTON LININGS.—*Hyde & Burton*, New York, N. Y. Application filed February 26, 1886. Used since January, 1879.

"The word 'FRENCH,' in an elliptical field."

13,144.—THREE-LEAF TWILLED SILESIAS AND OTHER COTTON LININGS.—*Hyde & Burton*, New York, N. Y. Application filed February 26, 1886. Used since March, 1881.

"The word 'LONDON,' in an elliptical silver-colored field."

13,145.—VARIOUS PREPARATIONS OF CHOCOLATE AND CREAM AND OF COCOA AND CREAM.—*Henry McCobb*, New York, N. Y. Application filed March 4, 1886. Used since November, 1878.

"The picture of an owl and the word 'OWL.'"

13,146.—WHISKY.—*Robert G. McCorkle & Co.*, Louisville, Ky. Application filed February 1, 1886. Used since January 1, 1886.

"The words 'ANDERSON COUNTY CLUB.'"

13,147.—LAGER-BEER.—*The Peter Schoenhofen Brewing Company*, Chicago, Ill. Application filed January 29, 1886. Used since January 21, 1886.

"The word 'EDELWEISS.'"

13,148.—LAGER-BEER.—*The Peter Schoenhofen Brewing Company*, Chicago, Ill. Application filed February 20, 1886. Used since January 21, 1886.

"The picture or representation of the flower edelweiss."

13,149.—LAUNDRY-SOAP.—*Samoset Manufacturing Company*, Boston, Mass. Application filed March 6, 1886. Used since March, 1885.

"The word 'WONDER.'"

13,150.—WHIPS AND WHIP-LASHES.—*Edward K. Warren*, Three Oaks, Mich., and Chicago, Ill. Application filed February 24, 1886. Used since February 1, 1886.

"The word 'QUILLBONE.'"

LABELS.

4,767.—Title: "DR. TODD'S TOLU & TAR."—*William C. Buntin*, Terre Haute, Ind. Application filed March 1, 1886.

4,768.—Title: "LEIPZIGER BURGUNDER WEIN BITTER."—*Hockstadter & Co.*, New York, N. Y. Application filed March 8, 1886.

4,769.—Title: "J. A. HUBBARD'S ASH REMEDY."—*James A. Hubbard*, Galena, Kans. Application filed March 4, 1886.

4,770.—Title: "LARRABEE'S SNOW FLAKE BISCUITS."—*E. J. Larrabee & Co.*, Albany and New York, N. Y. Application filed February 20, 1886.

4,771.—Title: "LARRABEE'S SNOW FLAKE BISCUITS."—*E. J. Larrabee & Co.*, Albany and New York, N. Y. Application filed February 20, 1886.

4,772.—Title: "DENTAL CHEWING GUM."—*Robert W. Morgan*, Lynchburg, Va. Application filed March 3, 1886.

4,773.—Title: "FOWLER'S COMPOUND SYRUP HYPOPHOSPHITES."—*Rollin E. Stevenson*, New York, N. Y. Application filed March 4, 1886.

4,774.—Title: "DR. LA TOUR'S HOSPITAL INJECTION."—*Rollin E. Stevenson*, New York, N. Y. Application filed March 4, 1886.

4,775.—Title: "THE GREAT ENGLISH REMEDY, DR. FOWLER'S KIDNEY CURE."—*Rollin E. Stevenson*, New York, N. Y. Application filed March 4, 1886.

4,776.—Title: "DR. PARKER'S VEGETABLE CURE."—*Rollin E. Stevenson*, New York, N. Y. Application filed March 4, 1886.

4,777.—Title: "WHITE RAILROAD MANILLA." (FOR PAPER.)—*Ticonderoga Pulp and Paper Company*, Ticonderoga and New York, N. Y. Application filed March 9, 1886.

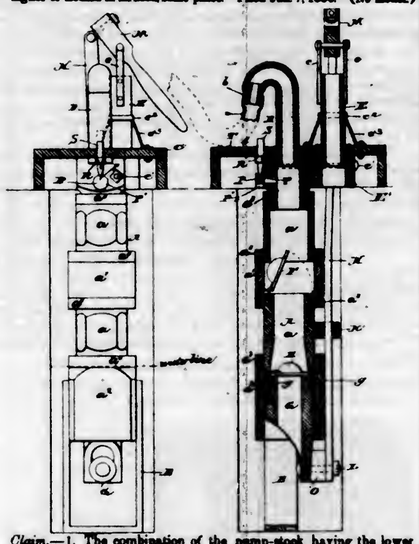
4,778.—Title: "WHITE MANILLA."—*Ticonderoga Pulp and Paper Company*, Ticonderoga and New York, N. Y. Application filed March 9, 1886.

4,779.—Title: "QUININE AND SULPHUR" (FOR SOAP.)—*Vail Brothers*, Philadelphia, Pa. Application filed March 4, 1886.

PATENTS

GRANTED MAR. 30, 1886.

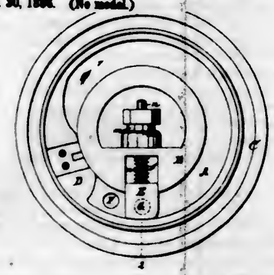
338,687. LIFT-PUMP. JOHN A. J. ARNOLD, Stilesville, Ind., assignor to Louisa R. Arnold, same place. Filed Jan. 7, 1886. (No model.)



Claim.—1. The combination of the pump-stock having the lower extension, a^3, of enlarged interior diameter, and provided with the depending open box B, the reciprocating hollow valved bucket in the extension a^3, and having its lower end cut or beveled away on one side, for the purposes set forth, the transverse bolt L, passed through the lower end of the bucket, and the pump-rod having its lower end attached to the projecting outer end of the said bolt and working alongside the pump-stock, substantially as described.

2. The combination of the pump-stock having the discharge-spout at its upper end, the valve F, and the bucket G, working in the bore of the pump-stock at the lower end thereof, with the box E', the bolt d', securing the said box to the upper end of the pump-stock, the open-ended ventilating-tube E, having its lower end secured in the box E', and the lever M, fulcrumed in the upper end of the ventilating-tube, and the rod N, passing alongside the pump-stock and connecting the lever M and the valved bucket G, to operate the latter, substantially as described.

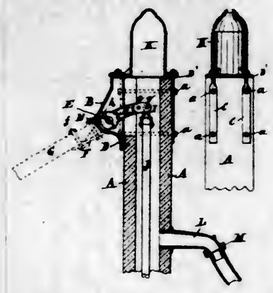
338,688. ROTARY ENGINE. ROBERT ADAMS, New York, N. Y. Filed Jan. 30, 1886. (No model.)



Claim.—1. The combination of stationary disks A A' with central hub, B, and revolving ring or casing C with stationary abutment D, having tapering sides, and with the movable abutment E, all being so arranged that the abutment E is operated by the tapering sides of the abutment D, as and for the purpose described.

2. The combination of disks A A', hub B, ring C, with the inlet-pipe F, outlet-pipe G, and with the tapering abutment D, and sliding abutment E, all being so constructed that the abutment D serves as a valve for the inlet-pipe F and the abutment E as a valve for the outlet-pipe G, as and for the purpose set forth.

338,689. COMBINED FORCE AND LIFT PUMP. GEORGE S. ATER, Saco, Me. Filed Mar. 16, 1885. (No model.)



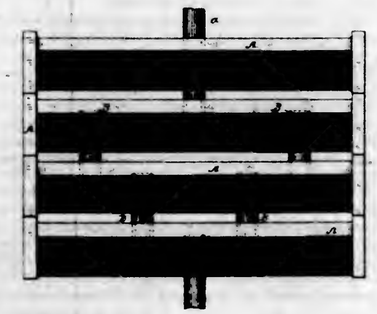
Claim.—1. The combination, with a pump having a casing, as B, attached thereto, of an adjustable air-chamber, K, having a double rib, *l*, either one of which ribs may be brought in line with the casing.

2. The combination, with the casing B, of the plug N in an opening coincident with the line of the pin *h* when the handle G is at its lowest position, as and for the purpose set forth.

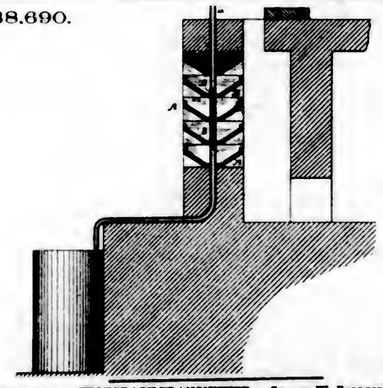
338,690. FIRE-BAR FOR LIQUID-FUEL FURNACES. JOHAN FREDRIK BACKLUND, Stockholm, Sweden, assignor to Petter Ostberg, same place. Filed Nov. 4, 1885. (No model.)

Claim.—1. The trough-like fire-bar provided with the overflow pipe or pipes in its bottom, as and for the purpose set forth.

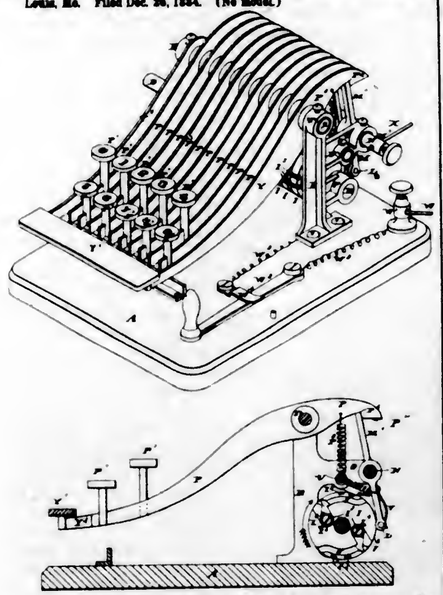
2. The combination of the several trough-like fire-bars, the supply-pipe, and the overflow-pipes in the bottoms of the fire-bars, all arranged within the furnace-wall, substantially as and for the purpose set forth.



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338,691. TELEGRAPH-TRANSMITTER. GEORGE W. BALDWIN, St. Louis, Mo. Filed Dec. 26, 1884. (No model.)



Claim.—1. In a telegraph-transmitter, a disk carrying letters, figures, or characters, and having a way behind the letters, figures, or characters, in combination with an arm carrying a contact-brush and a pin or projection, the parts being so arranged that the pin or projection will traverse said way while the contact-brush is bearing against the letters, figures, or characters, substantially as set forth.

2. A telegraph-transmitter having the telegraphic letters, figures, or characters formed upon revolving disks, and having suitable means for closing and breaking the circuit to transmit the letters, figures, or characters, and spring-dogs secured to said disks for throwing the circuit making and closing devices away from the disks after the transmission of a character, substantially as set forth.

3. A telegraph-transmitter having the telegraphic letters, figures, or characters formed upon revolving disks, and having suitable movable contact brushes or members arranged opposite said disks and adapted to be forced into contact therewith to transmit the letter, figure, or character, the disks having grooves and dogs behind the letters, figures, or characters, the grooves being adapted to receive and hold said brushes or members against the letters, figures, or characters, and the dogs being adapted to force said brushes or members out of contact with the letters, figures, or characters, substantially as set forth.

4. In a telegraph-transmitter, the disks supported and turned by suitable means and provided with telegraphic letters, figures, or characters, back of which are grooves to receive pins or projections on arms controlled by the keys of the instrument, and having brushes for coming in contact with the letters, figures, or characters, substantially as specified.

5. In a telegraph-transmitter, the disks supported and turned by suitable means and provided with letters, figures, or characters, back of which are grooves and spring-dogs, the grooves being adapted to receive pins and projections on arms controlled by the keys of the instrument, and having brushes or springs for coming in contact with the disks to close the circuit, and the dogs being adapted to throw the arms and brushes out from the disks to open the circuit, substantially as set forth.

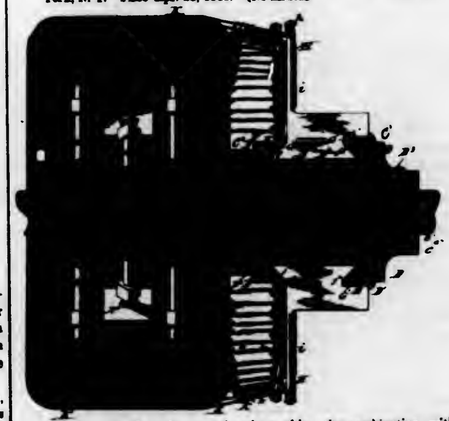
6. In a telegraph-transmitter, the revolving disks having letters, figures, or characters, and grooves, in combination with the spring-dogs secured to the disks, arms having extensions, springs acting to move the lower end of the arms inward, keys with notches to engage the extensions of the arms, pins or projections on the arms to enter the grooves in the disks, and brushes or springs secured to the arms and adapted to bear against the disks on the letters, figures, or characters, substantially as and for the purpose set forth.

7. In a telegraph-transmitter, the disks secured to a revolving shaft and having letters, figures, or characters, in combination with spring-dogs secured to the disks, arms supported on a rod and having extensions, springs acting to move the lower ends of the arms inward when the keys are operated, keys supported on a rod and having notches to engage the extension of the arms, spring to pull the outer ends of the keys down, pins or projections on the arms to enter the grooves in the disk, and brushes or springs secured to the arms and adapted to bear against the disks on the letters, figures, or characters, substantially as and for the purpose set forth.

8. In a telegraph-transmitter, the combination of the type-disks, insulated arms having extensions, springs and dogs for operating the arms, and keys adapted to bear upon the extensions of the arms while the letter, figure, or character is being formed to hold the finger-piece depressed, the dogs acting to move the arms and extensions to permit the finger-keys to rise, substantially as and for the purpose set forth.

9. In a telegraph-transmitter, in combination with keys having finger-pieces, and transmitting-disks, each carrying the sign of a letter, figure, or character, arms pivoted to the stationary frame carrying brushes for contacting with said transmitting-disk, and adapted to lock the keys until a letter, figure, or character is transmitted, and means for actuating said arms so as to lock the keys and bring the brushes and disks into contact.

338,692. DYNAMO-ELECTRIC MACHINE. ROYAL E. BALL, New York, N. Y. Filed Apr. 25, 1885. (No model.)



Claim.—1. In a dynamo-electric machine, the combination, with the armature and the shaft, of shoes having grooved faces and screws seated in said shoes and screwing into a sleeve upon said shaft, fibrous packing being interposed between said grooved shoes and the interior of the armature, substantially as described.

2. In a dynamo-electric machine, the combination, with a ring-armature, grooved shoes bearing against the same upon the inside, and a fibrous shellac-soaked packing interposed between said armature and shoes, of blocks attached to said shoes, and screw-threaded arms screwing into a sleeve upon said shaft and seated in said blocks, substantially as described.

3. In a dynamo-electric machine, the combination, with the armature and its shaft and the commutator, of a sleeve fitting said shaft and projecting out from within the armature through the hub of the commutator, substantially as described.

4. In a dynamo-electric machine, the combination, with the commutator and the armature and its shaft, of a sleeve fitted over said shaft and secured thereupon, said sleeve serving to receive the ends of radial arms upon which said armature is supported, and having a reduced end which passes through the hub of the commutator, substantially as described.

5. In a dynamo-electric machine, the combination, with the armature-shaft and a sleeve secured thereupon, to which the armature is attached by means of radial arms, of a commutator whose hub fits over said sleeve and is secured thereupon by means of a screw-key which enters a hole formed at the junction of said hub and sleeve, substantially as described.

6. In a dynamo-electric machine, the combination, with a sleeve fitted upon the armature-shaft and carrying the armature, of a hub fitted upon said sleeve and provided with a flange at or near one end and a nut at the other end, cylinders of insulating material having flanges, and commutator-sections which are set between said flanges and held in position by the nut and flange upon the hub, substantially as described.

7. In a dynamo-electric machine, the combination, with the armature-coils, of commutator-sections whose projecting arms are bent in at intervals, or alternately, to prevent contact of the same and permit of the employment of a larger number of sections, substantially as described.

8. The combination, with the commutator-sections E E and their arms H H', of the tape *i*, woven upon and between said arms, substantially as described.

338,693. DEVICE FOR SETTING SAWS. CHARLES J. BALCH, East Minneapolis, Minn. Filed Jan. 28, 1886. (No model.)



Claim.—1. In a saw-set for circular saws, the movable sleeve T, having the inclined sides *f'*, and the spring bearing under the sleeve T, for the purpose set forth, substantially as described.

2. In a saw-set for circular saws, the combination of the arm D, the cup O, the bolt R, the sleeve T on the upper end of the bolt, and having the inclined sides *f'*, and the spring for raising the sleeve normally, substantially as described.

3. The combination, in a saw-set for circular saws, of the head A, the swage, the arm D, pivoted to the head A, and having the segmental slot H, and the bolt I and clamping-nut K, passing through the slot and through an opening in the head, for securing the arm D at any desired angle, substantially as described.

4. The combination of the slotted arm D with the spring-actuated sleeve T, forming the pivot for the circular saw, and movable in or out on the arm D, and means for clamping the said sleeve to the arm at any desired adjustment, substantially as described.

5. The combination of the arm D, the sleeve T, forming the pivot for the circular saw and movable in or out on the arm, and the movable gage G on the said arm, for the purpose set forth, substantially as described.

6. The combination of the arm D, having the spindle L, and the movable gage G and the movable sleeve T, forming the pivot for the circular saw, substantially as described.

338,694. SELF-LUBRICATING CAR-WHEEL. ORSON BARKER, Braidwood, Ill. Filed Jan. 11, 1886. (No model.)



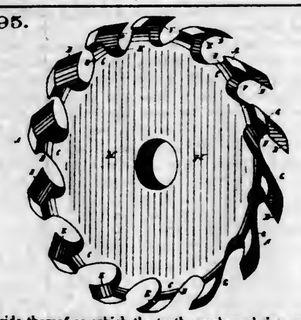
Claim.—The self-lubricating car-wheel shown and described, having the oil-chamber C surrounding its box and extending its length, and cast with its front end open, said chamber having the equidistant longitudinal partitions S' extending from its rear wall to near the front end of the box, but not entirely across said chamber, in combination with the detachable cap D, having a feed-aperture provided with a screw-plug, P, substantially as set forth.

338,695. CUTTER-HEAD. ELDRIDGE F. BARNES, New Haven, Conn. Filed June 5, 1885. (No model.)

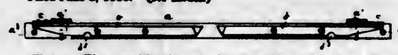
Claim.—1. A cutter for wood-working machines, having an annular series of teeth which are undercut or overhanging on one side thereof, said teeth having curved and inclined under or front walls and inclined or draw cutting-edges, substantially as set forth.

2. A cutter for wood-working machines, made in one piece and having an annular series of inclined or draw cutting-teeth which are undercut or overhanging on one side of said cutter, and which are provided with curved and inclined front walls, the body portion of the cutter on the side thereof on which the teeth overhang being on a plane or even with the bottoms of the overhanging portions, substantially as set forth.

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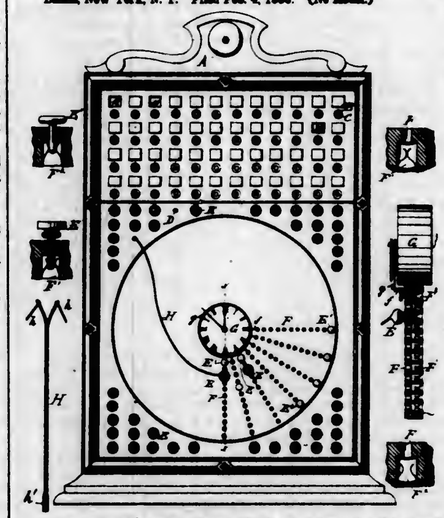


338,696. FOLDING COT-BED. GEORGE E. BENDLL, Herkimer, N. Y. Filed June 3, 1885. (No model.)



Claim.—The combination of the two side rails, *a*, connected by the strips *a'*, attached to their top sides near their upper ends, and by the rods a^2, located below their upper sides, the legs *b'* having notches b^2, to engage with the rods a^2, pivoted to the legs *b*, and extending up between rods a^2 and strips *a'*, and connected by strip *c*, to form the head-rest, all constructed substantially as described, whereby the legs may be folded inside the rails, as set forth.

338,697. ELECTRIC HOTEL CALL-BELL SYSTEM. JAMES L. BURNS, New York, N. Y. Filed Feb. 4, 1885. (No model.)



Claim.—1. The combination, with a hotel-register placed in a main electric circuit, said register containing an electric bell, A, and being provided with perforations F, adapted to receive circuit-closing pins E' and indicator-pins E, and also provided with a time-movement, G, adapted and arranged to automatically operate a number of electric switches, *f*, of the branch circuits V, of the manually-operated indicator-pins E, and the independent manual circuit-closing device consisting of springs F^3 and pins E', whereby the circuit may be completed both manually by the pins E' and automatically by the time-movement G, and the alarm-bell A sounded at any predetermined time, substantially as shown and described.

2. The combination, with the circuit of an office-bell, A, and with a time-movement, G, adapted to automatically operate a number of switches, *f*, of branches V of said circuit, and with the manual circuit-closing devices consisting of the springs F^3 and pins E', whereby the circuit may be completed both manually by the pins E' and automatically by the time-movement G, and also with a number of auxiliary room open circuits, each provided with a bell, of the springs F', pins E, and flexible cord H, whereby one or more of said loop room-bell circuits may be

successively incorporated into the main-office circuit, substantially as and for the uses and purpose shown and described.

3. The combination, with the circuit of an office-bell, A, and with a time-movement, G, adapted to automatically operate a number of switches, *f*, of branches V of said circuit, and with the manual circuit-closing devices consisting of the springs F^3 and pins E', whereby the circuit may be completed both manually by the pins E' and automatically by the time-movement G, and also with a number of auxiliary room open circuits, each provided with a bell, of the springs F', pins E, and flexible cord H, whereby one or more of said loop room-bell circuits may be successively incorporated into the main-office circuit, and the office manual push-buttons C, adapted and arranged to operate the room-bell circuits, substantially as shown and described.

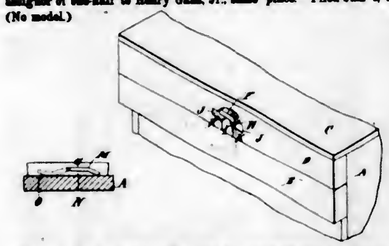
4. The combination, with the circuit of an office-bell, A, and with a time-movement, G, adapted to automatically operate a number of switches, *f*, of branches V of said circuit, and with the manual circuit-closing devices consisting of the springs F^3 and pins E', whereby the circuit may be completed both manually by the pins E' and automatically by the time-movement G, and also with a number of auxiliary room open circuits, each provided with a bell, and with the springs F', pins E, and flexible cord H, whereby one or more of said loop bell-circuits may be successively incorporated into the main-office circuit, of the push-buttons P, adapted and arranged to operate the circuit of the bell A and annunciator-magnet B, substantially as shown and described.

5. The combination, with the time-movement G, radial series of perforations F, circuit spring-fingers F', pins E', and hour-hand *g*, of the projecting wire *f* and circuit-wires V, V', and X'.

6. The combination, with the time-movement G, radial series of perforations F, circuit spring-fingers F', pins E', hour-hand *g*, projecting wire *f*, and circuit-wires V V', of the double flexible cord H and auxiliary circuit Y Y^3 and alarm mechanism located thereon, substantially as described.

7. In an electric call-bell system of the character herein specified, the combination, with a main electric circuit, and with a case or register containing a bell, A, time-movement G, a half-hour series of radial perforations, F, contiguous to the time-movement, perforations D, pins E and E', automatic drops B, and push-buttons C, of the auxiliary electric connections and circuits connected therewith, and arranged substantially as shown and described.

338,698. **BOX-FASTENER.** CHARLES W. BIEBLER, St. Louis, Mo., assignor of one-half to Henry Gans, Jr., same place. Filed Jan. 4, 1886. (No model.)



Claim.—1. The combination, with the two members of a box—i. e., the body and the lid—of a cleat having a T-shaped mortise formed therein, secured to one of said members, a wire or rod having at each end an angle-arm, both projecting in the same direction, and a second cleat secured to the other member of the box, through which said wire or rod passes, as and for the purposes set forth.

2. In a box-fastener, the combination of the cleat D, having the T-shaped mortise I J formed therein, the wire or rod E, having at one end the angle-arm F and at the other the bent angle-arm G, and the cleat B, through which said rod passes, as set forth.

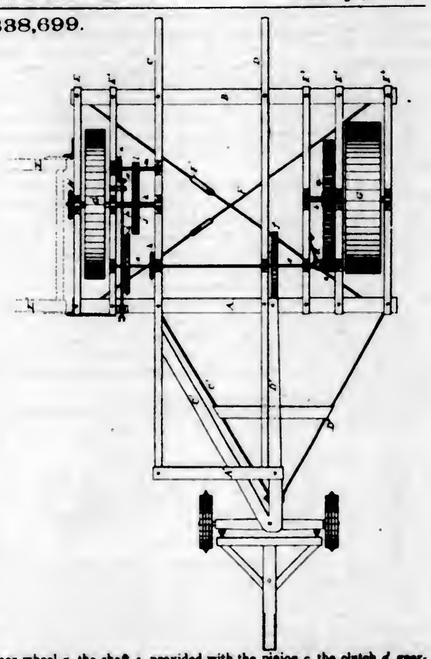
3. The combination, with the cleat D, having the slot I J and lug K, of the rod E, having the angle-arm F at top and the angle-arm G at bottom, the cleat B, through which said rod passes, and the staple H, for holding the arm F elevated in the plane of the lateral portion J of the slot, as set forth.

338,699. **COMBINED HEADER AND THRASHER.** HERBERT A. BURTON, Farmington, Cal. Filed Jan. 15, 1885. (No model.)

Claim.—1. In a header and thrasher, the combination of the main frame consisting of the transverse bars A B, longitudinal beams C, D, E, F', F^2, F^3, and F^4, the transverse beam A' at the forward ends of the said beams C D, the forward-extending draft-beam D' and diagonal draft-beam C', the brace-rods C^2 D^2, the front supporting-truck, the thrasher carried on the said main frame, and the header-frame, being the beams L L', hinged to the said beams E and A, substantially as and for the purpose set forth.

2. The main frame, constructed as described, the self-feeder, the thrasher and the cleaner carried on the said frame, in combination with the supporting and driving wheels G G', the axle *b*, provided with the

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gear-wheel *a*, the shaft *c*, provided with the pinion *c*, the clutch *d*, gear-wheel *f*, and sprocket-wheels *h i*, connecting mechanism for operating the said self-feeder from the said sprocket-wheel *i*, connecting means for operating the thrasher from the sprocket-wheel *h*, the pinion *g*, connected to the cleaning-cylinder and meshing into the said gear-wheel *f*, the header-frame carrying the reel, the sickle, and the draper, the axle *k*, provided with the sprocket *r*, for driving the reel, and the gear-wheel *j*, the shaft, *m*, provided with the pinion *l*, and bevel gear-wheel *n* on the tambling-shaft *p x*, provided with the bevel-pinion O, a crank-wheel for driving the sickle, and the sprocket-wheel *y*, for driving the draper.

3. The combination of the thrasher, the feeder-box O^3, located in front of the cylinder, the self-feeder O^4, and the vertical self-feeder *w*, both carried in said box, the shaft of the last-named feeder having the pulley *v*, sprocket-wheel *i*, shaft *t*, provided with the sprocket-wheel *s* and pulley *n*, and the connecting-belts, substantially as and for the purpose set forth.

4. The combination, with the feeder and the shaft *t*, of the bearing-iron *t'*, secured to the forward end of the frame E', and projecting forward from the same, substantially as described.

5. In combination with the main frame, the header-frame, the draper, and the sickle, the tambling-shaft *p* X, provided with two universal joints, and the part *p*, located on the main frame, and the part X, provided with the crank-disk X', and sprocket-wheel *y*, the sickle, pitman, and a connecting-belt, whereby the said wheel *y* drives the draper, substantially as and for the purpose set forth.

6. The combination, with the beam A and brace-rod D^2, of the platform H, located as shown, the sack-damper H', and tool-box H^2, substantially as shown and described.

7. The combination, substantially as herein shown and described, with the main frame, being the beams A and E, the transverse beams L and L', hinged to said beams E and A, respectively, the longitudinal beams M, M', M^2, M^3, and M^4, secured to the said transverse beams, the outer supporting-wheel, N, the forward-projecting beams P, P', and P^2, hinged, respectively, to the said beams M, M^2, and M^4, the transverse beams O and O', the sickle carried on the said beam O', the draper O^2, the guide-boards or chute O^3, means, substantially as described, for operating the said sickle and the said draper, and means, substantially as described, for adjusting the said beams P, P', and P^2, substantially as and for the purpose set forth.

8. The combination of the hinged beams P P^2, the beams M M^4, the fulcrum-posts on said beams, the balance-lever Q Q', provided with weights and fulcrumed on said posts and connected to said beams, substantially as and for the purpose set forth.

9. The combination, with the header-frame and adjustable draper and sickle-frame, of the fulcrum-post R', and the guide-pulleys T T', all secured to the beam L', the post R^2, secured to the feed-box O, the lever R, fulcrumed on the post R', the chain S, connecting the outer

end of said lever and passing around said guide-pulleys and secured to the said beam P^2, substantially as and for the purpose set forth.

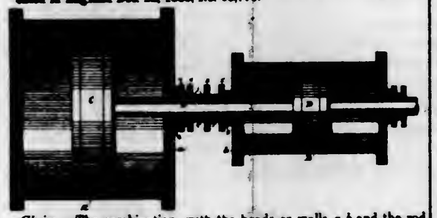
10. The combination, with the thrashing mechanism and its return-apron, of the feeder-box O^3, the self-feeder O^4, and vertical feeder *w*, both contained in said feeder-box, whereby the lost grain will be delivered to the thrashing-cylinder, substantially as set forth.

11. In combination with the draper, its frame, and the chute O^3, the sprocket-wheel *y*, the sprocket-wheel connected to the draper-roller, the drive-chain J', the spring J, secured to the beam O and bifurcated at its top, and the sprocket-wheel carried in the bifurcation, substantially as and for the purpose set forth.

12. The combination, with the main frame carrying the thrasher, and provided with the beams C' D' and brace-rods C^2 D^2, and the truck supporting the forward end of said main frame, of the header-frame provided with the diagonal beams M^3 M^3 and the transverse beams L L', the last-named beams being hinged, respectively, to the beams E and A of the said main frame, substantially as and for the purpose set forth.

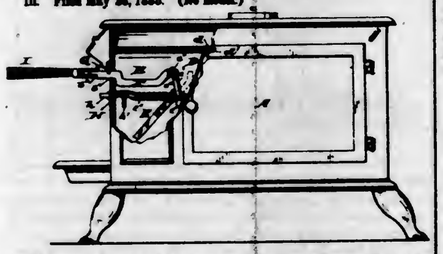
13. The main frame consisting of the transverse beams A' A B, longitudinal beams E E' C' D F^2 F^3 F^4, diagonal brace-rods F F', forward-projecting bars C' D', brace-rods C^2 D^2, and supporting and driven wheels, arranged and combined substantially as shown and described, and for the purpose set forth.

338,700. **PISTON-ROD PACKING.** WILLIAM A. P. BRENNELL, New York, N. Y., assignor to Dunpkin S. Hines, William A. Parry, and Charles C. Worthington, same place. Filed July 31, 1885. (No model.) Patented in England Dec. 22, 1885, No. 15,771.



Claim.—The combination, with the heads or walls *a b* and the rod E, of the stuffing-boxes 7 8, sleeve 9, and follower 4, the box 8 being provided with a packing which is compressed around the rod by the sleeve, and the box 7 with a packing which is compressed around the sleeve by the follower, substantially as described.

338,701. **STOVE OR RANGE.** ALPHEUS H. BLAKESLEY, Rock Island, Ill. Filed May 28, 1885. (No model.)



Claim.—1. In combination with a stove, grate E, provided on its rear with lateral pintles *e e* and radial arm e^3, bars or supports for said grate, and link F, connected to the radial arm, extending through the front plate of the stove and provided with a notch to engage with the front of the stove, as shown, whereby the grate may be locked in position.

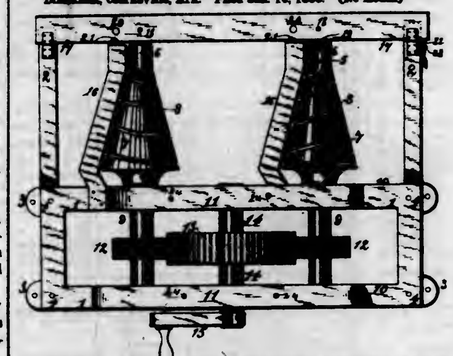
2. In combination with a stove, grate E, provided at its rear with lateral pintles *e e'* and radial arm e^3, bars or supports for said grate, a link, F, connected to the radial arm, extending through the front of the stove and notched to engage therewith, and a latch or button, G, pivoted to the front plate to engage with the link F, as and for the purpose set forth.

3. In a range or stove, the combination of a grate, E, journaled upon lateral pintles *e e'* at its rear ends, a radial arm, e^3, secured thereto, a notched link, F, connected with the latter and working through a slot in the front plate, a latch, G, pivoted to the front plate of the stove to engage the link F, and a handle, I, to fit upon the end of link F, and having its end rounded, as at *i*, as and for the purpose set forth.

4. In a stove or range, the combination of the grate E, having pintles *e e'* and radial arm e^3, with link F, having notch b^3, latch G, and shaker-handle I, all constructed and arranged substantially as described.

5. In a stove or range, the combination of the grate E, having shafts or pintles *e e'*, lateral projections e^2 in front portion, forwardly-extending lug e^3, and radial arm e^3, with the link F, having notch b^3, latch G, shaker-lever H, having forward end, A, projecting beyond the front plate, and forked rear end, A', and a shaker-handle, I, all constructed and arranged substantially as described.

338,702. **DOUBLE-SPIRAL-RED-SPRING MACHINERY.** HENRY A. BLAGBURN, Clarksville, Ark. Filed Jan. 16, 1886. (No model.)

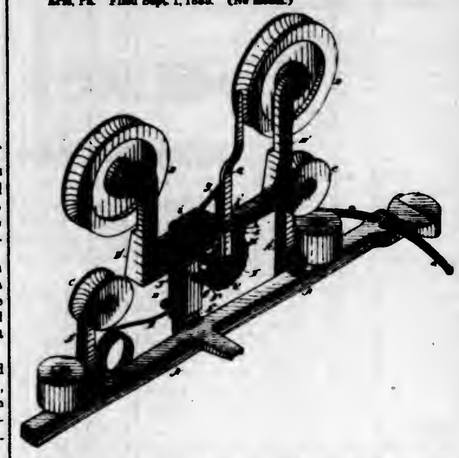


Claim.—1. The combination of the frame 1, having extended arms 2, perforated feet 3, and caps 11, with shaft 14, cog-wheel 13, rigidly secured on said shaft, cog-wheels 12, meshing with said wheel 13 and rigidly secured on shafts 9, spirally-grooved conical mandrels 7, rigidly secured on the forward ends of shafts 9, and having holes 19, guides 16, securely bolted on said frame, and having pins 21, support 17, hinged to the extended arms 2, and having pins 18 and holes 20, spring-lever 22, and pin 23, all substantially as shown and described, and for the purposes set forth.

2. In a machine for making double spiral springs, as above described, the combination of the extended arms 2, support 17, hinged on the forward ends of said arms, and having holes 20, pins 18, secured in said support and adapted to work in holes 19 in the forward ends of the conical mandrels 7, and points 21 on the forward ends of guides 16, all substantially as shown and described, and for the purposes set forth.

3. In combination with the frame 1, supporting the shafts 9 and 14, bearing the cog-wheels, as above described, the conical mandrels 7, and guides 16, the support 17, having the pins 18 and holes 20, adapted to support the forward ends of the conical mandrels 7, having the holes 19, and guides 16, having pins 21, spring-lever 22, secured on one end of the support 17, and pin 23, secured in the outer face and forward end of one of the extended arms 2, and arranged to hold support 17 in an upright position, all substantially as shown and described.

338,703. **CONVEYER APPARATUS.** GEORGE C. BLAKEMORE, Erie, Pa. Filed Sept. 1, 1885. (No model.)



Claim.—1. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of fixtures placed along the track at each station, in position to be struck by the operating-lever of a releasing apparatus on the cars which traverse said track, and cars for traversing said track, on which the devices for effecting the transfer of said cars to the switch-tracks are mounted, and retained from action by

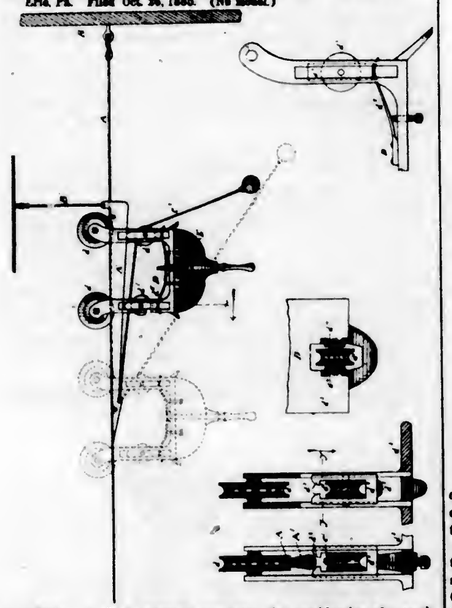
a releasing device which is moved by its operating-lever coming in contact with the said fixtures along the track, and which, when so moved a fixed number of times, will release the said switching devices, substantially as set forth.

2. In a car for a conveyer apparatus of the class herein named, the combination, substantially as set forth, of means, substantially as shown, for effecting the transfer of said car from the main to the switch track, a releasing device, substantially as shown, which retains said switching device from action until it has been moved into its releasing position, and a ratchet device which moves said releasing device in a manner substantially as shown.

3. In a car for a conveyer apparatus, the combination, substantially as set forth, of two sets of wheels, one for running on the main track and the other on the switch-track, one of which sets is adapted, substantially as described, to change its position when the transfer of the car from one track to the other is effected, a releasing device, substantially as set forth, for retaining said movable set of wheels and releasing them at the proper time, and a ratchet device, substantially as shown, for moving said releasing device.

4. In a car for a conveyer apparatus, the combination, substantially as set forth, of the frame A, with wheels C C, the frame B B', with wheels D D, retaining-pin *b*, and arm *b'*, the ratchet-wheel H, with rim H', stop A, and slot *h'*, the spring J, the lever G, with block *g*, the reacting-spring g^2, and the spring-pawl I, with pin *i*, pivoted to said lever G.

338,704. CONVEYER APPARATUS. GEORGE C. BLEKINSDERFER, Erie, Pa. Filed Oct. 26, 1885. (No model.)



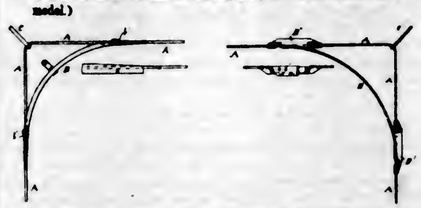
Claim.—1. In a conveyer apparatus, the combination of a track, a wedge-formed extension below the track, a cord hanging below the track, a car embracing said track and provided with lugs to engage said wedge, and a sheave on the car below the track to receive said cord, substantially as and for the purposes mentioned.

2. In a conveyer apparatus, the combination of a track, a wedge-formed extension below the track, a cord hanging below the track, a car embracing said track, a sheave mounted on a block which slides vertically in the frame of said car below the track and receives said cord, a spring for supporting said sliding block, and lugs on said sliding block above the sheave for engaging said wedge-formed extension from the track, substantially as and for the purposes set forth.

3. In a conveyer apparatus, the combination of a track or wedge-formed extension below the track, a cord hanging below the track, a carriage movable on said track and having in its frame below the track a yielding block which will bind upon said wedge-formed extension, and a sheave in said yielding block to receive the hanging cord, substantially as and for the purposes set forth.

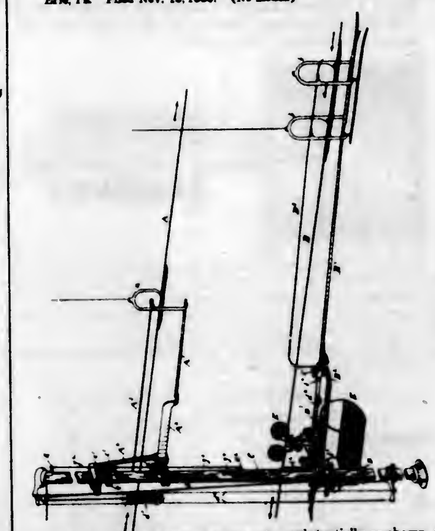
4. In a conveyer apparatus, the combination of a track, a trolley movable on said track, which is provided with a lateral extension, d^2, below the track, and a receptacle, E, having grippers *e e* above the receptacle to engage said extension, and handles *e' e'* for operating said grippers and handling said receptacle, which extend below the said receptacle.

338,705. TRACK FOR CONVEYER APPARATUS. GEORGE C. BLEKINSDERFER and HERVEY SMITH, Erie, Pa. Filed Oct. 26, 1885. (No model.)



Claim.—In a conveyer-apparatus track, the combination of a taut wire forming the straight sections of the track, and a curved bar forming the curved sections of track, said curved bar being so connected, substantially as shown, with the taut wire as to form a continuous track.

338,706. CONVEYER APPARATUS. GEORGE C. BLEKINSDERFER, Erie, Pa. Filed Nov. 13, 1885. (No model.)



Claim.—1. In a conveyer apparatus, substantially as shown, the combination, with the switch-track, of a guide-rail placed to come in contact with the upper part of the car-frame while the car is running on the switch-wheels, substantially as and for the purposes set forth.

2. In a conveyer apparatus, substantially as shown, the combination, with the switch-track B' and arm B^2, supporting the inner end of said track, of the bracket b^3, adjustable vertically on the elevator-track C, and the link b', connecting said arm B^2 and bracket b^3 by a double joint, substantially as and for the purposes mentioned.

3. In a conveyer apparatus, substantially as shown, the combination, with the receiving-switch track B' and the elevator-track section D', of the grooved block b^3 by the side of the end of the switch-track and the arm d^3 on the elevator-track section D', adapted, as shown, to enter the groove in said block b^3, substantially as and for the purposes set forth.

4. In a carrier apparatus, substantially as shown, the combination, with a terminal track, whether at the central station or at the way-stations, of pivoted bar F, set in the face of the track and provided with means for raising and lowering its free end, substantially as and for the purposes set forth.

5. In a carrier apparatus, substantially as set forth, the combination, with the terminal track, whether at the central station or at the way stations, of a pivoted spring-bar, F, set in the face of the track and provided with means for raising and lowering its free end, substantially as and for the purposes set forth.

6. In a conveyer apparatus, substantially as shown, the combination, with a terminal track-section, of the pivoted bar F, the lever f^3 f^3, for raising and lowering the said bar F, the pivoted catch d^7 below the bar F in position to be tilted by said bar F, and a car having a stop or projection below the wheel, substantially as and for the purposes set forth.

7. In a carrier apparatus, substantially as set forth, the combination, with the elevator-track section D', of the pivoted bar F, the lever f^3 f^3, the connecting-rod f', and the lever f, said parts being arranged substantially as and for the purposes set forth.

8. In a conveyer apparatus, substantially as shown, the combination, with the elevator track or way C, of a movable stop or catch by which the elevator may be stopped from going up, a yielding support for the main track A at a point in advance of the elevator, which will be depressed by a car passing on said main track A, and connecting devices, substantially as shown, connecting the said yielding track-support with the said movable stop, substantially as and for the purposes set forth.

9. In a conveyer apparatus, the combination, substantially as shown, of an elevator way or track, a car-elevator moving on said track, a cord for operating said elevator, and a winding-drum for operating said cord.

10. In a conveyer apparatus, the combination, substantially as shown, of an elevator track or way, a car-elevator moving on said way, a cord for moving said elevator on said way, a winding-drum for operating said cord, and a motor for operating said winding-drum.

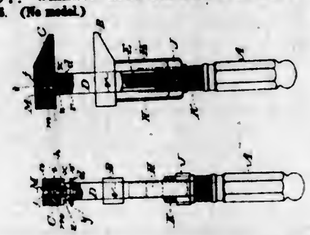
11. In a conveyer apparatus, the combination, with the converging tracks at the central station, of the frame N', hangers H, clamped upon said frame, arms extending from said hangers, and terminal track-sections attached to said arms, substantially as and for the purposes set forth.

12. In a conveyer apparatus, the combination, with the curve-track section A^5, of the arch-irons I, supporting curve-guards J J below the track, substantially as and for the purposes set forth.

13. In a conveyer apparatus, the combination, with the curve-track section at the angles of the track-line, of two curved guard-rails suspended below and on each side of the said curve-tracks, substantially as and for the purposes set forth.

14. In a conveyer-apparatus car, the combination, with the wheels, of the thin tongue-pieces *e*, pivoted in slots in the frame-pieces of the car directly below the wheels, and springs *e'*, for expelling said tongues from said slots, substantially as and for the purposes set forth.

338,707. WRENCH. HENRY BORNSTEIN, Boston, Mass. Filed Jan. 18, 1886. (No model.)



Claim.—1. In a wrench, the combination of the following instrumentalities, to wit: a fixed jaw, a movable jaw, a handle, and a screw-driver or other implement, said jaws being adapted to be closed or opened by turning said handle to the right or left, as the case may be, and said screw-driver or other implement adapted to protrude from or be housed in the wrench by the act of closing or opening its jaws, as the case may be, substantially as described.

2. In a wrench, the screw-driver M or other implement disposed in a socket or in suitable ways therein or thereon, and provided with the spring *m*, in combination with the jaws B C, bar D, means for causing the jaws to close and open, means for causing the screw-driver to protrude, means for withdrawing or housing it, means for preventing it from being entirely expelled from its socket or ways, and means for causing it to turn with the wrench when the screw-driver is in use, substantially as set forth.

338,708. ARTIFICIAL ELECTRIC RESISTANCE. HAROLD P. BROWN and FRANCIS HERBERT BROWN, Chicago, Ill. Filed Dec. 8, 1885. (No model.)

Claim.—1. The artificial electric resistance consisting of a pile of thin sheet-metal plates, substantially as specified.

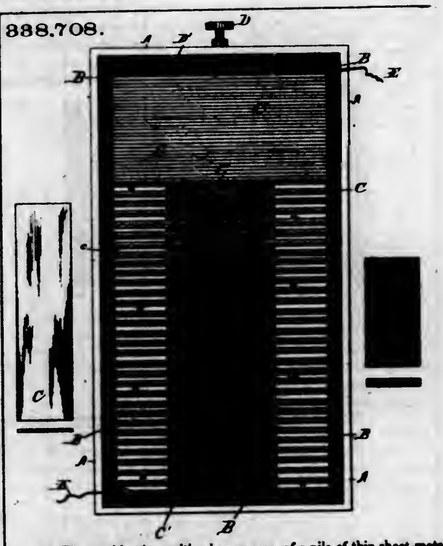
2. The artificial electric resistance consisting of a pile of thin sheet-iron plates placed one on top of another, substantially as specified.

3. The artificial electric resistance consisting of a pile of thin sheet-iron plates placed one on top of another, said plates having the gloss removed from their surface, substantially as specified.

4. The artificial electric resistance consisting in a pile of thin sheet-metal plates, in combination with thicker plates of smaller area interposed at intervals between them, substantially as specified.

5. The artificial electric resistance consisting in a pile of thin sheet-metal plates placed one on top of another, and provided with open spaces or passages for circulation of air, substantially as specified.

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6. The combination, with a box or case, of a pile of thin sheet-metal resistance-plates therein and a screw for regulating the pressure upon said plates, substantially as specified.

338,709. CULTIVATOR. ELISHA S. BROWN and CHARLES R. BROWN, Santa Rosa, Mo. Filed Dec. 16, 1885. (No model.)



Claim.—1. The combination, with a shovel or share, of a beam or shank compound of two parts pivotally united, a bar or leaf spring passing around the rear of and attached at its ends to both parts, but springing away therefrom during the remainder of its length, a yoke secured upon the upper part of the shank or beam, and a set-screw seated therein and taking directly upon the spring, substantially as and for the purposes hereinbefore set forth.

2. The combination, with a share or shovel, of a beam or shank composed of two pivotally united parts, the upper adapted to be secured to the frame-work of a cultivator, the lower carrying the shovel or share, and a leaf or bar spring upon the rear of both parts and attached at one end to one point of the upper part of the beam or shank, and at the other end to the lower part at two points, one above and one below the pivotal point thereof, substantially as and for the purpose set forth.

3. The combination, with a shovel or share, of a beam or shank composed of two pivotally-united parts, a bar or leaf spring connected at one end to the upper part, and at its other end to the extreme limit of the lower part below its pivotal point, and a brace or arm extending from the spring and uniting it to the lower part above the pivotal point thereof, substantially as and for the purposes hereinbefore set forth.

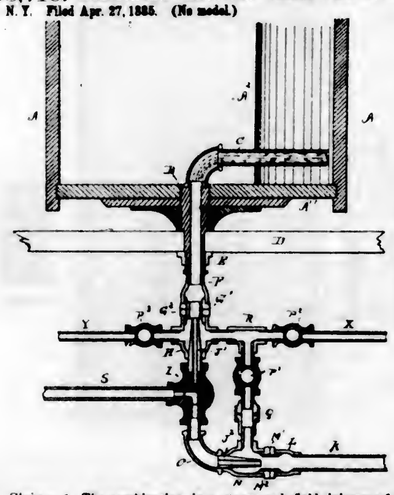
4. The combination, with a shovel or share, of a beam or shank composed of two pivotally-united parts, a leaf or bar spring passing around the rear of and attached at its ends to both parts, and an intermediate brace or arm made as a loop or link passing around the spring and around the lower part of the shank or beam above its pivotal point, whereby the spring is connected to a second point of the lower part of the beam or shank and the forward movement of the share or shovel is limited, substantially as and for the purposes hereinbefore described.

5. The combination, with a shovel or share, of a shank or beam made in two parts pivoted together, a leaf or bar spring acting at its ends upon both parts, a yoke and plate mounted upon the beam portion for securing the spring thereto, and a bar attached to the lower end of the pivoted portion for the securement of the other end of the spring, substantially as set forth.

6. The combination, with a shovel or share, of a shank or beam made in two parts pivoted together, a leaf or bar spring connected at its ends to and acting upon both parts, an adjusting-screw for regulating the

tension of the spring, and an intermediate loop, brace, or arm connecting the spring and lower part of the shank or beam at a second point, substantially as set forth.

338,710. INJECTOR AND EXTRACTOR. CHARLES C. BURTON, Utica, N. Y. Filed Apr. 27, 1885. (No model.)



Claim.—1. The combination, in a steam and fluid injector of the character described, of the fluid and steam passage-ways uniting in a chamber surrounding the union of the ways, the steam passage-way projecting into the chamber, and the valve for controlling the steam passage-way for changing the direction of the steam-pressure, and controlling the same in the direction of the discharge which connects with the chamber, whereby an injector may be used as an extractor, substantially as described.

2. The combination, in a steam and fluid injector of the character described, of separate steam and fluid passage-ways uniting in a chamber surrounding the union of the ways on the opposite side of the steam-supply pipe from the injector, and a valve for controlling the steam passage-way between the steam-supply pipe and the injector, for changing the direction of the steam-pressure toward the discharge-pipe connecting with the chamber, whereby an injector may be used as an extractor.

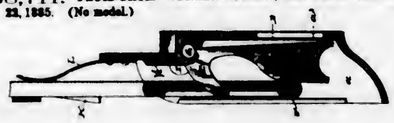
3. The combination, in an injector of the character described, of a separate steam and fluid passage-way uniting in a chamber surrounding the union of the ways, into which chamber the steam passage-way projects, and a valve for controlling the steam passage-way, constructed to turn the steam-pressure in the direction of the discharge-pipe connected with said chamber, whereby an injector may be used as an extractor, substantially as described

4. The combination, in an injector of the character described, of a separate steam and fluid passage-way uniting in a chamber surrounding the union of the ways, which chamber has a discharge-pipe, a valve for controlling the steam passage-way, constructed to turn the steam-pressure in the direction of the discharge-pipe, and a valve for controlling the fluid-pipes leading to the injector, constructed to shut off the fluid from the main channel, arranged substantially as described, whereby an injector may be used an extractor.

5. The combination of separate steam and water passage-ways uniting in chambers located on opposite sides of the steam-supply pipe, each chamber having an outlet, and a valve for controlling the steam passage-way, constructed to change the direction of the steam-pressure in either direction, whereby the same may be used as a steam and fluid injector and a steam and fluid extractor.

6. The combination of separate steam and water passage-ways uniting in chambers located on opposite sides of the steam-supply pipe, the steam pipe or passage-way projecting into the chambers, and a valve for controlling the steam passage-way, constructed to shut off the steam-pressure in one direction, allowing the same to operate in the opposite direction, substantially as described, whereby an injector may be converted into an extractor.

338,711. FLUID-GATE. CHARLES C. BURTON, Utica, N. Y. Filed May 22, 1885. (No model.)

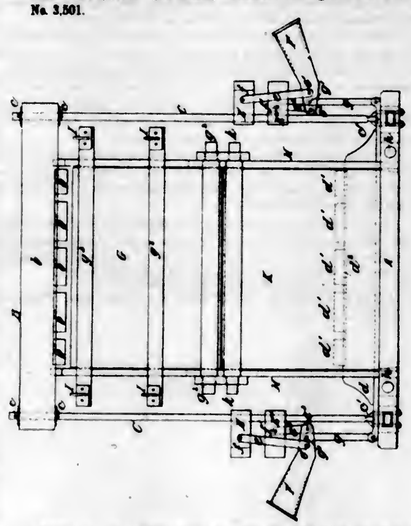


Claim.—1. The combination, with the valve-seat, valve, and movable rod and cross-bar, arranged substantially as shown, of the spring rigidly attached to the seat and bearing against the rod, having a catch on its opposite surface for engaging with a stationary stop or guide, whereby the valve may be opened and held in a fixed position, substantially as shown.

2. In a valve, the perforated seat with ways and the valve pivoted thereto, in combination with a removable plate which secures the valve in place, said plate having the projection I I″, and the sliding lever which operates the valve, all constructed and combined to operate substantially as and for the purposes stated.

3. In a valve, the perforated seat having on its face a guide or way, and also provided with a valve pivoted thereto, said valve having lugs on its back which engage a lever, in combination with a lever which operates the valve by its engagement with the lugs, and also serving to lock the valve in place by wedging between the way or guide and one of the lugs on the valve, substantially as described.

338,712. BALING-PRESS. HERBERT C. CAPEL, London, England. Filed June 1, 1885. (No model.) Patented in England Mar. 18, 1885, No. 3,501.



Claim.—1. In a baling-press in which the follower is raised to compress the bale and the tying of the bale is effected at the top of the press, the combination of the top platen, B, secured to rods or supports C, hinged or pivoted to the bottom frame, A, the follower D, the grippers or clutches E E′, fitted upon the said rods or supports C and arranged to rise with the said follower, and the levers F, for operating the said grippers or clutches to raise the said follower, all substantially as and for the purpose set forth.

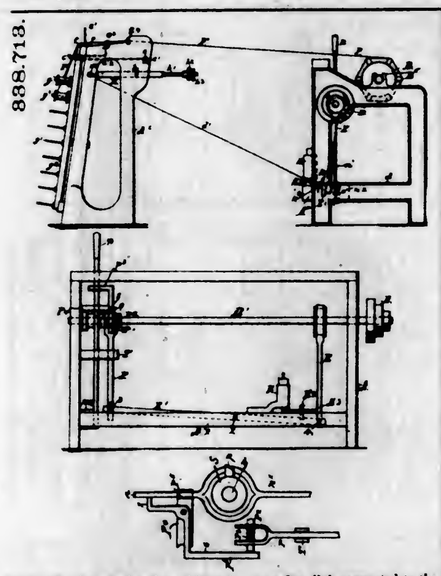
2. A pair of grippers, E E′, in combination with the rod C, on which they are fitted, the lever-socket F, which is connected to said grippers by links $e\ e^3$, the link g, which is attached to said lever-socket between the points of attachment of said links, the upper platen, which is attached to the rod C, and the lower platen, which is attached to the link g, the bottom platen being raised by the upstroke of the lever as well as by its downstroke, and said grippers alternately acting as the fulcrum, substantially as set forth.

3. In a baling-press, the combination, with the doors of the box, of pivoted end pieces provided with projections or recesses to fit corresponding recesses or projections in or upon the said doors, which recesses and projections are V-shaped or of other suitable form to permit the said doors and end pieces to move outward simultaneously immediately the retainers are disengaged, for the purpose above specified.

338,713. WARPING-MACHINE. THOMAS CLAY, Paterson, N. J. Filed Nov. 7, 1883. (No model.)

Brief.—In suitable bearings in the supporting-frame the driving-shaft is journaled, and is provided with an eccentric on one end, which operates a rod connected to one end of a pivoted lever across the lower front part of the frame. To the other end of said lever is attached a forked rod carrying a slide-bar, one end of which is reciprocated across the path of a lug attached to the clutch member keyed on the driving-shaft. Contact of the lug and slide-bar operates the other clutch member. On a cross-bar of the frame, alongside of the pivoted lever, is secured a box containing a spring, which has an arm held from engagement with a lug on the pivoted lever by a cord or link connected to the tripping-frame. On breakage of thread the tripping-frame falls and allows the spring-arm to engage lug on pivoted lever, thus arresting it and putting the slide-bar in the path of the lug on the clutch member, thus stopping the machine.

338,713.



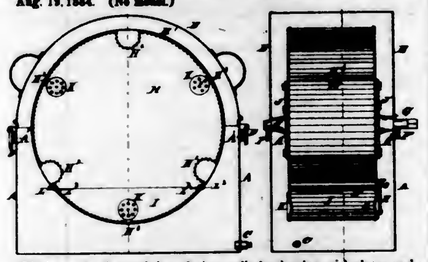
Claim.—1. The combination of the lever E′ with the rod E, eccentric D^2, shaft D′, means for operating the same, spring G, standard b, and the frame A, said spring and eccentric operating on said rod to reciprocate the said lever, substantially as set forth.

2. The combination of the reciprocating lever E′, provided with the stop K^2, with reciprocating rod E, means for operating said lever and rod, spring K^3, having arm K^4, for engaging stop K^2, box K, provided with a set-screw for securing said spring, rail A^5, for supporting box K, link d', eye-stud H^3, tripping-frame H, rod A, threaded rod A', balance-weight A^3, thumb-nut A^4, and fallers C^2, substantially as and for the purpose set forth.

3. The combination of lever E′, rod E, and eccentric D^2 with the rod P, reciprocated by said devices, the arm T, for guiding said rod, the frame A, the slide-bar P^2, having stop P^3 on its side, the clutch member S′, having leg p, the shaft D′, for rotating said clutch member, the lever P′, shifter n, bracket P^4, having notch P^5, the clutch member S, the reel B, and the gearing for rotating said reel, substantially as set forth.

4. The combination, with the tripping-frame H and fallers C^2, for tripping said frame, of the rod C, to which said fallers are attached, the stop K^2, spring K^3, the flexible link d, the guides d', creel g^3, pins g', lever P′, rod P, slide-bar P^2, bracket P^4, having a notch, P^5, the frame A, the driving-shaft D′, the clutch members S S′, eccentric-rod E, and lever E′, substantially as set forth.

338,714. WASHING-MACHINE. LEON CLERC, St. Louis, Mo. Filed Aug. 19, 1884. (No model.)



Claim.—1. A revolving clothes-cylinder having end plates and a periphery formed with a removable lid, the lid comprising a segment of the periphery and end plates, the lid being connected to the body portion by means of interlocking strips secured to the body portion of the periphery and the lid portion thereof, substantially as set forth.

2. A revolving clothes-cylinder comprising end plates, H H, corrugated periphery H′, formed with corrugated ribs H^2 and spaces H^3 between the ribs, the cylinder having a removable portion, I, connected by interlocking strips, and the side plates being formed with perforations between the ribs at each end of the spaces, substantially as set forth.

338,715. FOLDING TOP FOR SCHOOL-DESKS. WILLIAM P. CONNER, Bloomsburg, Pa., assignor to the School Furnishing Company, same place. Filed June 27, 1885. (No model.)

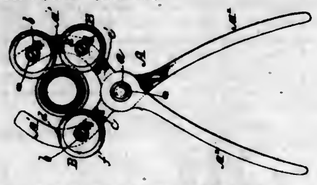


Claim.—1. The combination, with a desk having an opening in its front and a leaf for closing the same, of cleats F, secured to said leaf and projecting beyond the edge of the same, and links H, pivoted to the inner sides of the desk and to the projecting ends of the cleats, substantially as herein shown and described.

2. The combination, with a desk-box having an opening in its front, of a leaf for closing the opening, links hinged to the leaf and to the inner surfaces of the ends of the box, and brackets secured to the ends of the box, and having pivots or pins projecting toward each other a short distance from the front edge of the desk-top, substantially as herein shown and described.

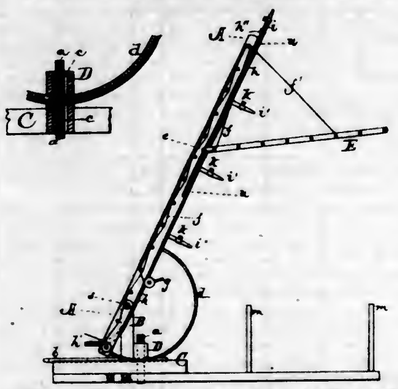
3. The combination, with a desk-box having an opening in its front, of the leaf E, fitting in said opening, the cleats F, secured to the under side of the leaf and provided with jaws, the links H, and the springs J on the inner sides of the ends of the box, and to which links the jaws on the cleats are pivoted, substantially as herein shown and described.

338,716. PIPE-CUTTER. FREDERICK H. CONNER, Worcester, Mass. Filed Dec. 30, 1885. (No model.)



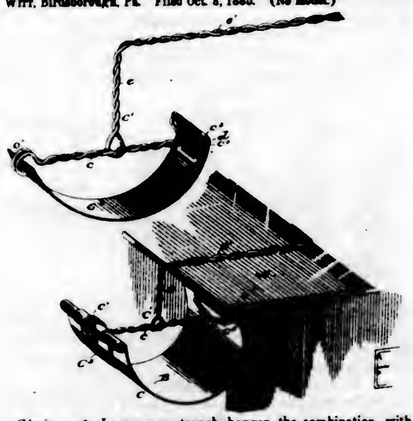
Claim.—A pipe-cutter, the same consisting of the tongs A, having the jaws A′ A′ and operating-handles A^2 A^2, hinged at a and provided with the bubs or projections d d', in combination with the circular pipe-cutting knives B and their bolding-studs b, substantially as shown and described.

338,717. EXTENSION FIRE-LADDER. JOHN P. CRANE and THOMAS F. STRACHAN, Jr., Buffalo, N. Y. Filed Oct. 31, 1885. (No model.)



Claim.—The devices for raising and lowering the main ladder, consisting of the two curved screw-rods d d, attached to the ladder as described, the cog-wheels c c in frame D, having screw-threads in the central opening, with the screw-rods d working therein, said cog-wheels meshing into a larger end central cog-wheel, a, fastened on the operating-shaft b, all substantially as described.

338,718. EAVES-TROUGH BRACE AND HANGER. AUGUSTUS DE WITT, Birdsborough, Pa. Filed Oct. 8, 1885. (No model.)



Claim.—1. In an eaves-trough hanger, the combination, with a trough, of a band inclosing the same and a hanger-arm having a cross-bar hinged at one end to said inclosing-band, and detachably connected at its opposite end to the trough, substantially as described.

2. In an eaves-trough hanger, the combination, with a trough, a band inclosing said trough and lapped over one edge thereof, and a hanger-arm hinged at one end to the inclosing-band, and having at one end a loop, c^2, bearing against the trough, and detachably fitted at its opposite end over the lapped free end of the inclosing-band, substantially as described.

3. In an eaves-trough hanger, the combination, with a trough, a metallic inclosing-band fitted around said trough and lapped over one edge thereof at its free end, a cross-bar formed of wire hinged at one end to said band, and having an eye, c^2, bent to bear against one edge of the trough, and a hook, c', to fit over the free lapped end of the inclosing-band on the opposite edge of the trough, and a hanger-arm formed of wire and rigidly secured to the cross-bar at its lower end and adapted to be secured to a roof, substantially as described.

338,719. STEEL-WIRE BRUSH. CHARLES E. DOTY, Rock Falls, Ill. Filed Apr. 5, 1884. (No model.)



Claim.—As a new article of manufacture, the combination of the back A, constituted of one piece, and provided with holes *a*, having convex walls *a'*, the flat metallic wires B, arranged with their greatest diameters in the same direction, and the staple C, placed astride of the central point of each tuft of said wires, and having its pointed ends driven through the closed ends of the holes *a* and clinched in the opposite side of the back A, as shown, whereby the centers of such wires are firmly held against the closed ends of the holes *a*, and the flexibility of such wires extends into such holes and is uniform in the line of pressure thereon.

338,720. AUTOMATIC RAILROAD-SIGNAL. EDWD. D. DOUGHERTY, Philadelphia, Pa. Filed Nov. 20, 1885. (No model.)

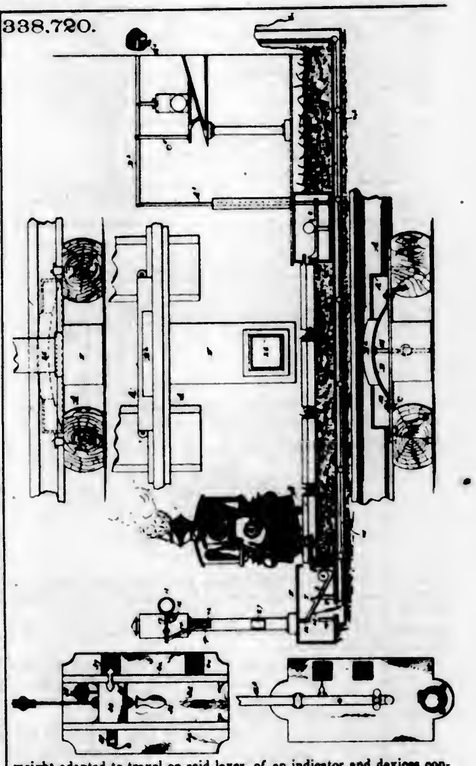
Claim.—1. In a railroad-signal, the combination, with a signal slide or disk and devices located alongside of one of the rails of the track and adapted to be engaged by the wheels of a passing train for automatically operating the slide or disk, of an indicator and devices connecting the slide and indicator, whereby the position of the former is indicated on the latter, substantially as set forth.

2. In a railroad-signal, the combination, with a signal slide or disk and devices for operating the same, of an indicator, a bell, and devices connecting the slide and indicator for indicating on the latter the position of the former, and for sounding the bell as the danger-signal is set, substantially as set forth.

3. In a railroad-signal, the combination, with a slide, a lever located alongside of the track and adapted to be moved by the passage of a train over the same, and devices connecting the lever and slide, of an indicator and devices connecting the lever and indicator, substantially as set forth.

4. The combination, with a slide or disk, a lever, and a movable

338,720.



weight adapted to travel on said lever, of an indicator and devices connecting the lever and indicator.

5. The combination, with a slide or disk, a lever, and a roller adapted to move on said lever, of an indicator having an alarm-bell thereon, and devices connecting the lever and indicator, substantially as set forth.

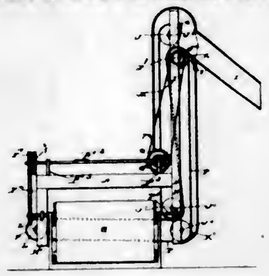
6. The combination, with a standard, a lamp-case, a disk secured to a lever, and a bell secured to the lamp-case and adapted to be operated by the movement of said lever, of a pivoted lever, a weight adapted to move thereon, and a rod connecting the pivoted lever and the lever carrying the disk.

7. The combination, with a slide or disk and a rod connected thereto, of a pivoted lever having a groove or channel therein, the lugs formed on said lever at the ends of said groove or channel, and a roller mounted on the lever and adapted to travel between the lugs.

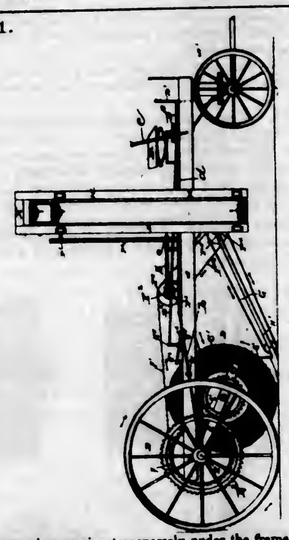
8. The combination, with a slide or disk, a pivoted lever, and a movable device mounted on said lever, of a semi-elliptic spring located in a position to be engaged by the wheel of a passing train, and a pin connected with said spring for operating the lever.

338,721. STREET-SWEEPING MACHINE. CHARLES DRILL, St. Louis, Mo. Filed Dec. 5, 1884. (No model.)

Claim.—1. In a street-sweeping machine, the combination, with the main frame, of the endless vertical carriers having opposing faces in contact and located at one side of the frame, one of said carriers having



338,721.



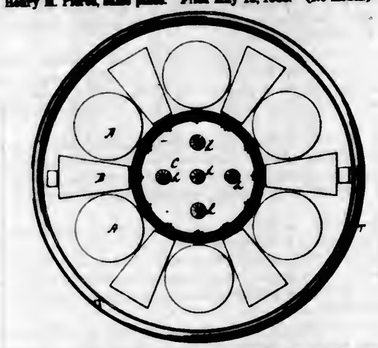
a horizontal extension running transversely under the frame, the endless inclined conveyer hinged at its upper end and arranged at right angles to the horizontal extension of the vertical carrier and communicating therewith, and the rotating brush for feeding the sweepings onto the conveyer, substantially as described.

2. The combination, in a street-sweeping machine, of the vertical endless carriers having opposing faces in contact, and the scrapers at the upper ends of the carriers, substantially as described.

3. The combination, in a street-sweeping machine, of the vertical carriers, the conveyer, the brush, driving mechanism therefor, and the clutches and operating-levers therefor, for throwing the brush, the conveyer, and the vertical carriers into or out of gear with the driving mechanism simultaneously, substantially as described.

4. The combination, in a street-sweeping machine, of the vertical endless carriers having the opposing faces in contact, the scrapers at the upper ends of the carriers, and the discharge-chute leading from the upper ends of the carriers, substantially as described.

338,722. APPARATUS FOR THE MANUFACTURE OF IRON AND STEEL. EUGENE F. FALCONNET, Nashville, Tenn., assignor of one-half to Henry M. Pierce, same place. Filed May 18, 1885. (No model.)



Claim.—1. In apparatus for treating molten metal, the combination, with a refining-chamber provided with a series of tuyeres, of one or more revoluble spraying disks or cones arranged in said chamber, substantially as and for the purposes specified.

2. In apparatus for treating molten metal, the combination, with the refining-chamber, of one or more revoluble spraying disks or cones, and a series of tuyeres arranged at intervals and at different levels around the refining-chamber, substantially as and for the purposes specified.

3. In apparatus for treating molten metal, the combination, with the refining-chamber, of one or more revoluble spraying-disks, a series of tuyeres arranged around and delivering into the refining-chamber, and basic receptacles connected with and delivering into the blast pipes or tuyeres, substantially as and for the purposes specified.

4. In apparatus for refining metal, the combination, with the refining-chamber, of two or more revoluble spraying cones or disks arranged on different levels within the refining-chamber, substantially as and for the purposes specified.

5. In apparatus for refining metal, the combination, with the refining-chamber, of two or more revoluble spraying disks or cones arranged on different levels within the refining-chamber and geared to revolve in reverse direction, substantially as and for the purposes specified.

6. In apparatus for refining and converting metal, the combination, with the refining-chamber, of one or more revoluble spraying cones or disks, and a series of air and gas tuyeres arranged around and delivering into the refining and converting chamber at intervals above the bottom thereof, substantially as and for the purposes specified.

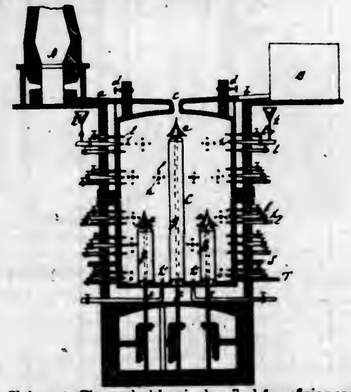
7. In apparatus for treating molten metal, a refining-chamber having a hollow water-cooled pillar, and a rotating cone or disk shaft journaled in the pillar, substantially as and for the purposes specified.

8. In apparatus for treating molten metal, the combination of the water-jacketed refining-chamber provided with water-cooled pillars, and cone or disk shafts journaled in said pillars, and the subterranean gear-chamber provided with the gearing for rotating and raising the cone-shafts, substantially as and for the purposes specified.

9. In apparatus for refining and converting molten metal, the combination of an upper and a lower communicating chamber, each provided with revoluble spraying cones and disks, and tuyeres delivering through the side walls of the chambers at different levels, substantially as and for the purposes specified.

10. In an apparatus for refining molten metal, the combination, with a refining-chamber having a hollow water-cooled pillar, of a hollow water-cooled revoluble disk and disk-shaft journaled in the pillar of the refining-chamber, substantially as and for the purposes specified.

338,723. PROCESS OF MANUFACTURING STEEL. EUGENE F. FALCONNET, Nashville, Tenn., assignor of one-half to Henry M. Pierce, same place. Filed May 18, 1885. (No model.)



Claim.—1. The method herein described for refining and purifying iron and producing steel, which consists in subjecting the molten metal in a divided state—as in the form of sheets or spray—to the combined action of currents of air and gas freighted with pulverized basic substances, substantially as and for the purposes specified.

2. The method herein described for the manufacture of steel, which consists in subjecting the molten blast-furnace metal in a divided state or spray to the action of currents of air freighted with pulverized basic material, and then adding thereto the recarburizing agent in the form of molten spray, substantially as and for the purposes specified.

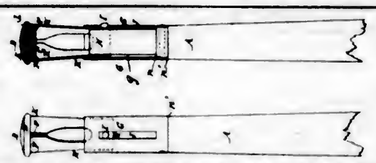
3. The process herein described for refining iron and producing a homogeneous steel therefrom, which consists in first subjecting the molten metal in a divided state—as in the form of sheets or spray—to the action of air-blasts freighted with pulverized basic material; secondly, recarburizing the bath by adding thereto the recarburizing agent in the form of a molten spray, and, finally, respraying the bath thus recarburized and subjecting it to air and gas currents, substantially as and for the purposes specified.

4. The method herein described for recarburizing the molten metal, which consists in introducing the recarburizer in the form of molten spray, substantially as and for the purposes specified.

338,724. FASTENING FOR BILLIARD-CUE TIPS. ERNST FERDINAND, Brooklyn, N. Y. Filed May 25, 1885. (No model.)

Claim.—The combination, with the cue A, provided with the shoulders *a a'*, and the ferrule G, provided with the slot J, and forming the chamber *g* with the end of the cue, of the sleeve H, having the pin I for engagement in the slot J, the spring-arm plates K, provided with the

338,724.

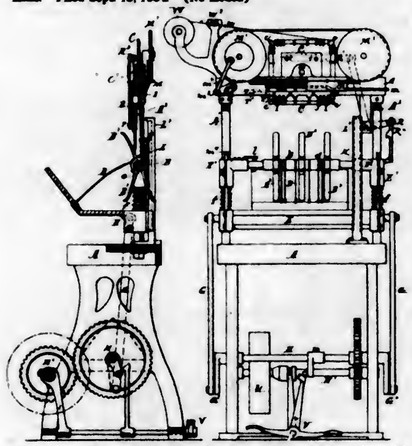


flange L, and the tip B, provided with the bead E, flange F, and groove D, for engagement with the flange L, all constructed and adapted to operate, substantially as set forth.

338,725. REMEDY FOR SKIN DISEASES. WILLIAM B. FERGUSON, Rochester, N. Y. Filed Dec. 26, 1885. (No specimens.)

Claim.—The fluid or solid compound extract composed of thistle-root, cranberry-root, elderberry-root, wild turnip, leaves of the thorn-apple, and buds of the balm of Gilead, in the proportions described, for the purposes herein set forth.

338,726. BOOK-BINDING MACHINE. LEVI W. FIFIELD, Worcester, Mass. Filed Sept. 13, 1884. (No model.)



Claim.—1. The combination of the revoluble strand-carrier with a series of gripping devices, substantially as described, for receiving the binding-strand from a continuous coil or spool, and for holding portions thereof extended for delivery to the fold of the signatures, substantially as hereinbefore set forth.

2. A revoluble strand-carrier having a plurality of grooved sides for supporting a binding-strand as extended for delivery, and provided with a series of grippers for holding said strand at the angles of said carrier, in combination with mechanism, substantially as described, for imparting an intermittent rotative action to consecutively bring the respective sides of the carrier to a given position, substantially as hereinbefore set forth.

3. A rotative cylinder, as B, provided with series of fingers, as B', extending outward from the periphery in the manner described, and forming V-shaped spaces for supporting signatures in a book-binding machine, substantially as set forth.

4. The combination, with the bed or cylinder having guards or fingers for supporting signatures, and provided with a series of transversely-arranged grooves, of a series of band-carrying needles having their points arranged in said grooves for receiving the signatures and collecting them into books, substantially as hereinbefore set forth.

5. A rotative cylinder, as B, provided with annular grooves *d*, longitudinal grooves *e*, and projecting fingers B', for supporting the signatures, in combination with the strand-carrier C and transverse needles D, substantially as and for the purposes set forth.

6. The combination, hereinbefore described, of the revoluble strand-carrier having gripping devices for retaining a wire or cord thereon, the reciprocating bed or cylinder having guards or fingers for supporting signatures, actuating mechanism, substantially as described, for advancing and receding the bed to and from the strand-carrier, and for intermittently rotating said carrier and cutters for severing the binding-strand, for the purposes set forth.

7. The combination, with the strand-carrier C and rotative cylinder B, having guards or fingers B' at opposite sides thereof, of the reciprocating support-bearings E', ratchet-connected gear K, rack L, catch device R^2, and carrier-actuating devices, substantially as described, whereby change of position of said carrier and bed-cylinder is effected, for the purposes set forth.

8. The combination, with the strand-carrier C and bed-cylinder B, of the cutters I and punches J, substantially as and for the purposes set forth.

9. The combination of the strand-carrier C, the bed B, the cutters I, the cam-rod *m*, the slide-plate M, the sheaves M', carrying a band connected with said plate, and means, substantially as described, for effecting partial rotation of said sheaves, substantially as set forth.

10. A grip-opener, as T', in combination with the rotative strand-carrier and gripping devices *c*, for the purpose set forth.

338,727. GUITAR. ROBERT F. FLEMMING, Jr., Melrose, Mass., assignor of one-fourth to Charles L. Sprague, same place. Filed Sept. 5, 1885. (No model.)



Claim.—1. A stringed musical instrument the body of which is provided with a parchment or vellum head perforated at or near the point where the strings are operated upon, with a cluster of circular openings to cause them to vibrate.

2. A stringed musical instrument the body of which is provided with two removable heads, one of which is provided with a cluster of circular openings, and a series of strings within said body corresponding in number and pitch with the strings upon the outside of said instrument.

3. A stringed musical instrument the body of which is provided with a perforated vellum or parchment head and a reverberant mounted upon a spring or yielding arm, and located beneath the perforated portion of said head to regulate the amount of sound to be emitted therefrom.

4. In a musical instrument, the combination of two removable vellum or parchment heads, one or more headed rods or posts interposed between said heads and mounted in bearings, with their heads in contact with the front or upper head, and a spring interposed between the head of said rod and its bearing to maintain said rod in contact with said front or upper head.

5. A stringed musical instrument the body of which is provided with two vellum or parchment heads, a series of strings located within said body and corresponding in number and pitch with the strings outside of said body, and a series of pins interposed between said inside strings and one of the heads to transmit the vibrations of said head to said inside strings.

6. In a stringed musical instrument, a mute or damper consisting of a support covered with a non-resonant material pivoted to the bridge of the instrument and connected to a lever in such a manner that said support may be oscillated about its axis by said lever and brought into contact with the strings to deaden and soften their tone.

7. In a stringed musical instrument, a reverberant or sound-regulator consisting of a ring having clamped thereon a disk of thin parchment or vellum, and mounted upon a spring-arm beneath the openings for the omission of the sound.

8. In a stringed musical instrument provided with a series of strings within the interior of the body thereof, a twanging device consisting of a rod mounted in suitable bearings in which it is adapted to be oscillated or reciprocated by means of a milled head located outside of said body, and having mounted thereon an arm provided with a cam portion by which any desired string may be snapped.

9. In a stringed musical instrument, the combination of the strings and the tail-piece thereof with a series of independent and detachable booked wires interposed between said strings and said tail-piece.

10. In a stringed musical instrument, a series of strings secured in a fixed position to one of the ends of the body thereof, passing through said end into the interior of the body, where they are stretched over suitable bridges, and passing out at the opposite end to suitable tuning-pegs mounted in a suitable arm projecting from the lower end of the instrument.

11. In a stringed musical instrument, the combination of the sides *a a*, provided with the slots *g' g'*, the vellum head A or A', the band *f*, the pull-downs *g g*, the bolts g^3 g^3, and the nuts g^4 g^4, all substantially as and for the purposes described.

12. In a stringed musical instrument, the combination of the sides *a a*, provided with the slots *g' g'*, the vellum head A or A', the metal band *f*, provided with the slots *f'*, f^3, and f^4, and the stud or bolt f^2, the bolts g^3 g^3, the nuts f^5 g^3 and g^4, and a series of pull-downs, *g g*, all substantially as and for the purposes described.

13. In a stringed musical instrument, the combination of the sides *a a*, the vellum head A or A', the metal band *f*, provided with the slot *f'* at one end and the bolt f^4 at the other, and the nut f^5, all substantially as and for the purposes described.

14. In a stringed musical instrument, the combination of the vellum head A', the cross-brace *c*, the pins n^4 n^4, the vertically-moving bridges n^3 n^3, the springs n^5 n^5, and the strings *n n*, all substantially as and for the purposes described.

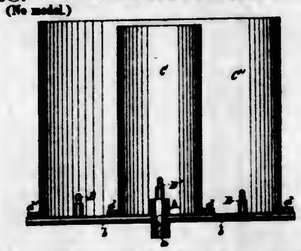
15. In a stringed musical instrument, the combination of the sides *a a*, provided with the stiffening-pieces r^3 and r^4, the neck B, provided with the projection *r*, the extension r^5, secured to said projection, and the screws *f'* and r^6, all substantially as and for the purposes described.

16. In a stringed musical instrument, the combination of the sides *a a*, the vellum head A or A', and the series of longitudinal and cross-braces *c c*, all substantially as and for the purposes described.

17. In a stringed musical instrument, the combination of a series of strings, *a a*, within the body thereof, the rod *p*, provided with the stop-rod *q* and the picker-arm p^3, and mounted in suitable bearings, so that it may either be oscillated or reciprocated therein, and the hook *q'*, secured to a fixed support, all substantially as and for the purposes described.

18. In a stringed musical instrument, a bridge composed of a wooden base portion and a metal strip the upper edge of which is provided with suitable notches to receive the strings.

338,728. LAMP. JOSEPH S. FORD, Philadelphia, Pa. Filed Jan. 23, 1886. (No model.)



Claim.—The combination of the central stud, A, provided with the burner B', the radial tubular arms *b*, projecting horizontally from said stud, the concentric glass cylinders C C', resting one within the other upon said arms, and burners B, located midway in the space between the adjacent surfaces of the cylinders upon said arms, substantially in the manner herein shown and described.

338,729. NUT-LOCK. GEORGE P. FULLER, Minneapolis, Minn., assignor of one-half to Andrew A. Kelly, same place. Filed May 19, 1885. (No model.)

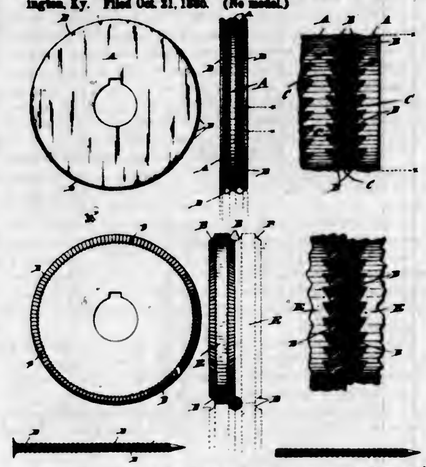


Claim.—1. The herein-described nut-locking device, comprising the inner serrated washer having a series of depressions or recesses and the outer washer-plate having a corresponding number of projections to enter the recesses of the inner washer, the edge of the outer washer being provided with points which may be turned up against the side of the nut, as set forth.

2. The bolt, in combination with the inner washer having a serrated or rasp inner face to bind by indentation alone against the part to which it is applied, a series of depressions or recesses formed in the outer face of the inner washer, and the outer washer-plate provided with a corresponding number of projections to enter the recesses and having a number of points on its edge to be turned up against the side of the nut, as set forth.

3. The herein-described nut-locking device, comprising the inner thick washer having sharp-pointed projections extending from its entire inner face forming a rasp-surface, the several pointed projections each binding by indenture alone against the part to which the lock is applied, so as to avoid the necessity of providing holes or openings for the reception of the projections, and the outer thin plate or washer larger than the inner washer and provided with a series of points any one of which may be turned out against the side of the nut, and means, substantially as described, for holding the outer washer from turning independently of the inner washer after they have been adjusted in position, and yet allowing the said washers to move independently while the adjustment is being effected, as set forth.

338,730. DIE FOR MAKING WIRE NAILS. BURTON H. GRIDER, Covington, Ky. Filed Oct. 21, 1885. (No model.)



Claim.—1. In dies for forming barbs, ridges, or corrugations on the wire, the teeth E, concavely curved on their edges and located in the groove of the die, substantially as and for the purpose specified.

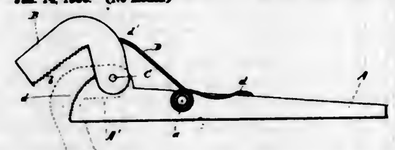
2. The disk B, provided on its edges with teeth E, concavely-curved on their edges, substantially as and for the purposes specified.

3. The combination of four disks, B, each provided on its edges with teeth E, the outer edges of adjacent teeth on the respective disks forming a continuous concavely curved edge, substantially as and for the purposes specified.

4. The combination of pairs of disks B B, each having at its edge the teeth E E, having curved edges, substantially as and for the purpose specified.

5. The die made in two disks, B B, each provided on both peripheral edges with teeth, substantially as and for the purpose specified.

338,731. PIPE-WRENCH. GEORGE M. GILLETT, Larned, Kans. Filed Jan. 14, 1886. (No model.)



Claim.—In a pipe-wrench, the spring D, having loops *d d'*, in combination with the stud *a*, handle A, having head A', and slotted pivoted piece B, having serrations, as shown and described.

338,732. BREECH-LOADING FIRE-ARM. WILLIAM J. GRAHAM, Toronto, Ontario, Canada. Filed Dec. 12, 1885. (No model.)

Claim.—1. The combination, with the suitably formed and recessed receiver A of a single-shot breech-loading fire-arm, of the vertically-

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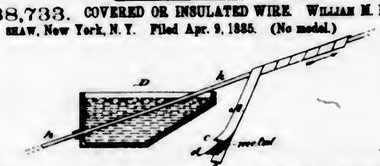


sliding and closely-fitting breech-block J, suitably connected to the double end of a U-shaped connecting-bar, I, connected at its single end by a hinged joint to the crank D, having supported on it the anti-friction roller *g*, operated and pressed on by the operating-spring G, and operating the axle C, on which it is suitably and rigidly supported, and which is connected to the lever B, whereby all the parts of the lock mechanism are operated, substantially as and for the purpose specified.

2. The combination, with the breech and lock mechanism of a single-shot breech-loading fire-arm, of a side lever, B, having a longitudinally-extended recess in its inner side containing the inserted extractor-spring P, secured by one end, and allowing of the movement and working of the opposite end, which, when operated against the stud Q, (on and part of the extractor-bar R,) forms a spring-cushioned bearing between the side lever, B, and the grooved extractor-bar R, which is secured in a suitably-shaped slot in the receiver A by the divided plate S, fixed in corresponding grooves in and secured to the receiver A, the whole forming a combined spring and positive cartridge-extractor, substantially as and for the purpose specified.

3. In combination with and part of the mechanism of a single-shot breech-loading fire-arm, the suitably formed and recessed trigger-guard N, containing, having attached to, and operating in it the operating and main springs G and H, the trigger M, the trigger-spring O, and safety-stop *w*, the trigger-guard N being secured vertically at its rear end by the screws *p* and *q* and at its opposite end to the receiver A by the horizontal stud-screw *o*, on which the trigger-guard N revolves, substantially as and for the purpose specified.

338,733. COVERED OR INSULATED WIRE. WILLIAM M. HARRISHAW, New York, N. Y. Filed Apr. 9, 1885. (No model.)



Claim.—1. The improvement in the art of covering wire herein described, consisting in winding a plastic vulcanizable strip of substantial thickness spirally about the wire, with its edges abutting, and causing said abutting edges to adhere about the wire.

2. The described mode of coating wire, consisting in preparing strips of plastic insulating material of substantial thickness mounted on a sustaining core or web of longitudinally-unyielding material, and then winding said stripe with tension spirally about the wire, with its edges tightly abutting and adhering, substantially as set forth.

3. The described mode of coating wire, consisting in winding a plastic vulcanizable strip of substantial thickness spirally about the wire, with its edges abutting, and subsequently vulcanizing said strip upon the wire.

4. The described process of coating wire, consisting in first winding a plastic strip spirally about the wire, with its edges abutting, and then rolling said covered strip to compact the same and close and perfect the abutting joints of the strip.

5. The process of coating wire consisting in first winding a plastic strip spirally about the wire, with its edges abutting, subsequently rolling the same, and finally overwinding the same with a sheathing strip or tape, with its edges spirally overlapping.

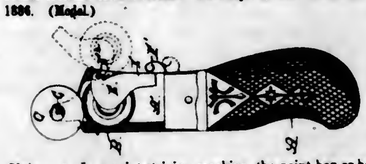
6. The process of coating wire consisting in winding a plastic vulcanizable strip spirally about the wire, with its edges abutting, then rolling the same, subsequently overwinding the same with a sheathing tape or strip, and finally vulcanizing the same.

7. The process of coating wire consisting in first coating the wire with an inner coat of plastic rubber wound on spirally, with its edges abutting, then rolling the same, and afterward overwinding the said coat with a sheathing-tape wound at a reverse inclination to the inner coat, with its edges overlapping, and finally vulcanizing the said coats.

8. The improvement in the art of covering wire consisting in preparing plastic insulating-strips with an embedded sustaining core or web of metal, and winding said strips spirally about the wire.

9. The improvement in the art of covering wire consisting in preparing strips of plastic vulcanizable rubber mounted on a strengthening core or web of metal and winding the same spirally about the wire, with the edges of the rubber abutting and the metal out of contact with the wire, substantially as and for the purpose set forth.

338,734. STRIPING-MACHINE. JOSEPH HAMILL, Montrose Lot 3, Prince Edward Island, Canada. Filed Apr. 6, 1883. Renewed Feb. 23, 1886. (Model.)



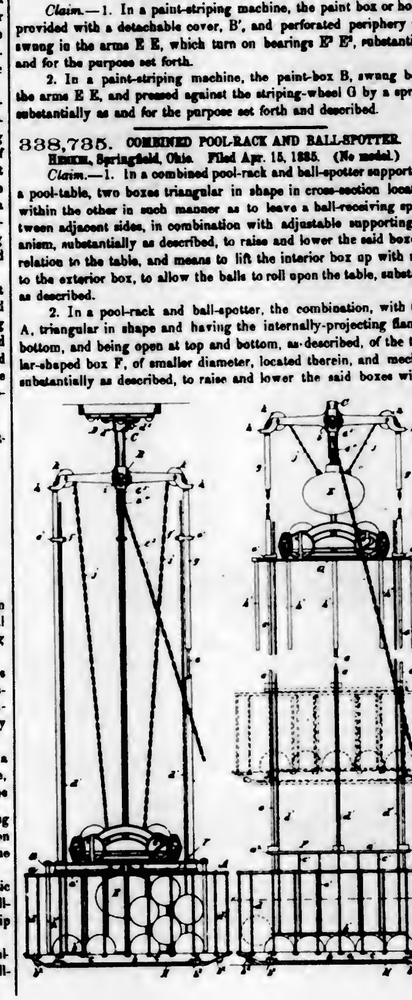
Claim.—1. In a paint-striping machine, the paint box or holder B, provided with a detachable cover, B', and perforated periphery C, and swung in the arms E E, which turn on bearings E^2 E^2, substantially as and for the purpose set forth.

2. In a paint-striping machine, the paint-box B, swung between the arms E E, and pressed against the striping-wheel G by a spring, F, substantially as and for the purpose set forth and described.

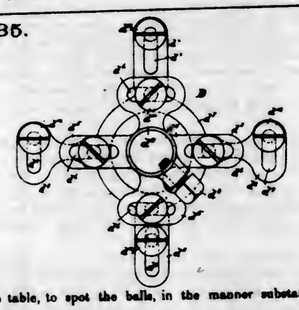
338,735. COMBINED POOL-RACK AND BALL-SPOTTER. GEORGE HENKEL, Springfield, Ohio. Filed Apr. 15, 1885. (No model.)

Claim.—1. In a combined pool-rack and ball-spotter supported over a pool-table, two boxes triangular in shape in cross-section located one within the other in such manner as to leave a ball-receiving space between adjacent sides, in combination with adjustable supporting mechanism, substantially as described, to raise and lower the said boxes with relation to the table, and means to lift the interior box up with relation to the exterior box, to allow the balls to roll upon the table, substantially as described.

2. In a pool-rack and ball-spotter, the combination, with the box A, triangular in shape and having the internally-projecting flange *b* or bottom, and being open at top and bottom, as described, of the triangular-shaped box F, of smaller diameter, located therein, and mechanism, substantially as described, to raise and lower the said boxes with relation to the table, to spot the balls, in the manner substantially as set forth.



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3. The combination, in a combined pool-rack and ball-spotter, of the box A, triangular in shape, provided with an open inclined triangular-shaped bottom, *b*, as shown, the wires H, secured to the bottom of said box, as set forth, said wires H forming the triangle, and the inside box, F, located within the box A, and adjustably connected therewith, all arranged and operating substantially as described, and for the purpose set forth.

4. The combination, in a combined pool-rack and ball-spotter, with the boxes A and F, constructed and arranged as described, of the supporting-rods *s*, guide-tubes *g*, brace G, provided with the depending partition-rods *h'*, the bracket B, supporting-rod C, spider D, and the chains *j*, and counter-weight E, all arranged to operate in the manner and for the purpose set forth.

5. In a pool-ball rack and spotter, the combination, with the triangular-shaped outside box, A, the supporting-rods *s*, and tubes *g*, of the inside box, F, constructed as described, its upwardly-projecting operating-rods *d'*, eyes or stops *s'*, adjustably secured thereto, and the brace G, against which the eyes *s'* strike to stop the downward movement of the inner box in spotting the balls, the whole being adjustably supported above a table, in the manner substantially as described.

6. The combination, with the rack-supporting rod of a combined pool-rack and ball-spotter, of the spider D, consisting of the upper piece, d^7, having four arms provided with the elongated slots d^8, and the lower piece, d^4, having four projecting arms provided with the elongated slots d^8, and the central depending collar, d^{11}, substantially as shown and described.

7. The combination, with the bottom of the outside triangular-shaped box A, of the wires H, secured thereto by means of the adjustable clamps b^2, substantially as shown and described.

8. In a combined pool-rack and ball-spotter, the combination, with the outside triangular-shaped box, A, its supporting-rods *s*, and mechanism, substantially as shown and described, to raise and lower said box, of the inside triangular-shaped box, F, loosely connected to the supporting-rod *c*, as set forth, its operating-rods *d'*, provided with the adjustable eyes or stops *f'*, to govern its movement with relation to the box A, and the brace G, having the dividing-rods *h'* depending therefrom, all constructed and arranged in the manner and for the purpose described.

338,736. ROLLER-SKATE. MIJAJAH C. HENLEY, Richmond, Ind. Filed Apr. 18, 1885. (No model.)



Claim.—1. In a roller-skate, the combination of a sole-plate, a hanger secured to said plate and provided with ears *a b c*, and with a locking pin or bolt, *f*, passing through the ears *b c*, and a roller or truck-frame provided with a stud to enter the perforation of ear *a*, and with a perforated lug, *e*, to enter between the ears *b c* and receive the pin or bolt *f*.

2. In a roller-skate, the combination, with a sole-plate, of a hanger and a truck-frame, one of said parts being formed with three perforated ears and the other with a perforated lug to fit between two of said ears, and with a stud to enter the third one, a bolt or pin passing through the ears and the lug, and, together with the stud in the third ear, forming a pivotal connection between the hanger and truck-frame.

3. The combination, substantially as described and shown, of a sole-plate, A, hangers B B, secured thereto and provided each with perforate ears *a b c*, truck or roller frames C, provided each with stud *d* and lug *e*, locking pins or bolts *f*, and springs *g*, all substantially as described and shown.

4. In a roller-skate, the combination of a sole-plate, a hanger secured thereto, a truck or roller frame pivotally connected with the hanger, a vertically-adjustable plate mounted in the hanger, an elastic cushion interposed between the plate and truck or roller frame, and a bolt passing through said frame, cushion, and plate, and having a pivotal support upon the latter, substantially as described.

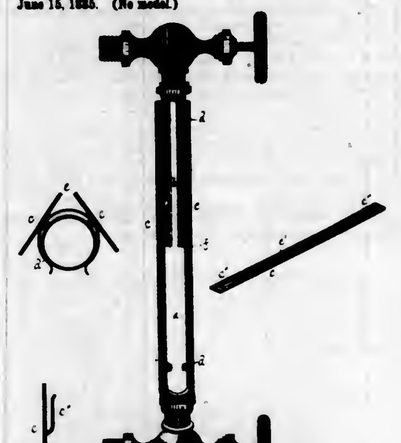
5. In a roller-skate, the combination of a sole-plate, a hanger secured thereto, a truck or roller frame pivotally connected with the hanger, a plate vertically movable in said hanger and interlocking therewith to prevent rocking or tipping of either independently of the other, an elastic cushion interposed between the plate and frame, and a compression-screw passing through the frame, cushion, and plate, and pivotally supported on the latter.

6. In a roller-skate, the combination of a sole-plate, a hanger, B, secured thereto and provided with ears *a b*, having ribs *l*, a truck or roller frame, C, pivotally connected with the hanger, a plate, E, provided with notches *k* to receive the ribs *l*, an elastic cushion, D, interposed between the frame and plate, a bolt, F, passing through the frame, cushion, and plate, and resting pivotally upon the plate and forming a support for the bolt.

7. In combination with a sole-plate, a hanger, B, secured thereto, a truck or roller frame, C, pivotally connected with the hanger, a cushion, D, resting upon the frame, a roughened plate, E, resting upon the cushion, a bolt passing through the frame, cushion, and plate, and pivotally supported on said plate, and a head or button at the lower end of the bolt for effecting a compression of the cushion, said head or button and the lower side of the frame being provided, respectively, with cavities and studs to engage with each other and prevent the rotation of the head or button.

8. In combination with a sole-plate and a hanger, B, secured thereto, and provided with ears *a b*, a truck or roller frame pivotally connected therewith and formed with a box, *h*, having opening *i* to receive the ear *b*, substantially as and for the purpose explained.

338,737. WATER-GAGE. GEORGE A. HENDERSON, Decatur, Ill. Filed June 15, 1885. (No model.)



Claim.—1. An opaque partial casing for the glass of water-gages, having an open face and a single longitudinal rearward aperture, as and for the purpose set forth.

2. A glass for water-gages, having one side transparent and exposed and the other side opaquely incased, with the exception of a narrow central longitudinal strip, as and for the purpose set forth.

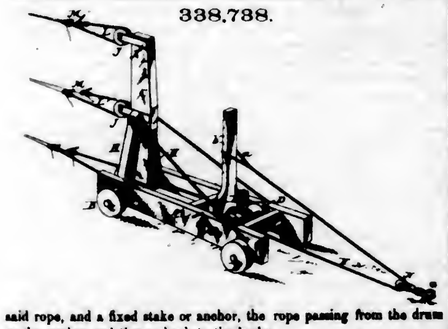
3. A partial casing for the glass of water-gages, composed of a pair of coextensive opaque strips, longitudinally parallel and laterally adjacent, substantially as and for the purpose set forth.

4. In a casing for the glass of water-gages, for the purpose set forth, the combination of strips *c*, provided with hooks *c''*, and resilient clamps *d*, as shown and described.

338,738. TENSION DEVICE FOR FENCE-MACHINES. MIJAJAH C. HENLEY and HENRY FARBER, Richmond, Ind. Filed Nov. 30, 1885. (No model.)

Claim.—1. A tension device for use in fence-building, consisting of a traveling frame provided with means of attachment to the fence-wires, a drum, a rope, a friction-brake serving to control the paying out of

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said rope, and a fixed stake or anchor, the rope passing from the drum to the anchor and thence back to the brake.

2. In a tension device, the combination of a traveling frame provided with means for attaching the wires, a drum carried thereby, a brake for said drum, and a rope or band passing about a stationary anchor and attached at opposite ends to the drum and the brake.

3. In a tension device, the combination of a traveling frame, an equalizer-bar provided with clamping devices to hold the fence-wires, a rope or band carried by the traveling frame, a brake adapted to control the paying out of said rope, and a stake or anchor about which the rope passes.

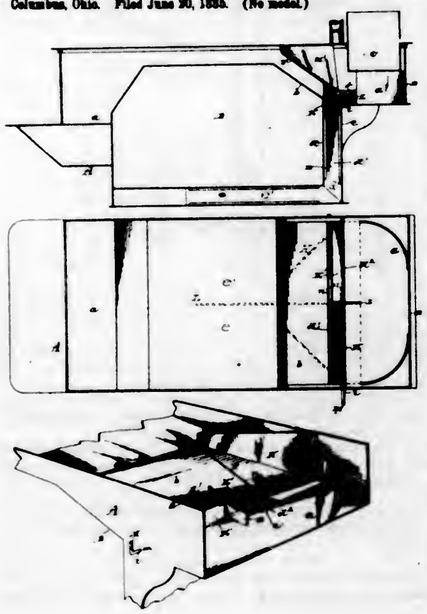
4. In a tension device of the character described, an equalizer-bar provided with independent equalizers for each pair or double strand of wire, whereby the double strands and the individual members of the double strands are caused to receive exactly the same tension.

5. In a tension device such as set forth, the combination of a main equalizer-bar, as C, and two or more independent equalizers carried thereby each consisting of a pulley, J, and a flexible band, L, provided at each end with a clamping device, as M.

6. The herein-described wire-stretching machine or tension device, consisting of traveling frame A, provided with main equalizer C, carrying independent equalizers having clamps M, drum D, brake E, and rope or band F, all constructed and arranged to operate substantially as described and shown.

7. A tension device for use in fence-building, consisting of a traveling frame provided with means of attachment to the fence-wires, a rope, a friction-brake serving to control the paying out of said rope, and a fixed stake or anchor, the rope passing from the traveling frame to the anchor.

338,739. RESERVOIR COOKING-STOVE. MICHAEL HEIDENHEIMER, Columbus, Ohio. Filed June 20, 1885. (No model.)



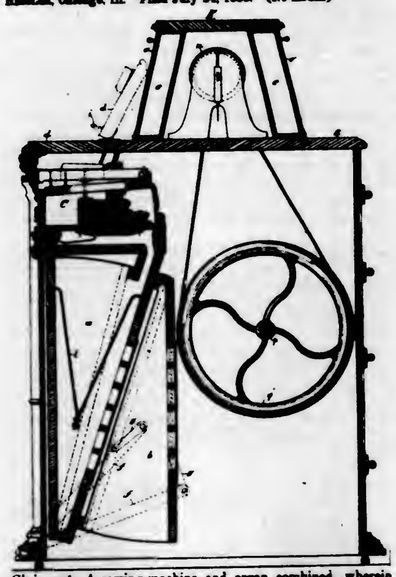
Claim.—1. The combination, with the reservoir, the heat-chamber located below the same, and a smoke-exit flue in front of the reservoir, of a fire-pot, an oven having a declined portion, and a deflector located above the declined portion of the oven and parallel therewith and extending into the heat-chamber under the reservoir, whereby the heat and products of combustion are caused to pass into said heat-chamber before they can escape from the stove.

2. The combination, with the oven having a declined portion, the reservoir, and the heat-chamber located beneath the reservoir, of a heat and flame deflector parallel with the declined portion of the oven, for separating the declined and inclined fire-flues leading to and from the said heat-chamber, and guides located above the deflector for contracting the flue leading from the heat-chamber smoke-pipe, substantially as set forth.

3. The combination, with a fire-pot, oven, the reservoir, the heat-chamber located beneath the reservoir, and the deflector located between the top of the stove and the oven and forming flues leading from the fire-pot to the heat-chamber, and from the heat-chamber to the smoke-pipe, which latter is located in front of the reservoir, of the curved wall located within the heat-chamber behind the deflector, adapted to turn the current of heat to the right and left toward the center of the chamber, substantially as set forth.

4. The combination, with a fire-pot, oven, reservoir, the main fire-flues leading from the fire-pot to the heat-chamber beneath the reservoir, and the fire-flues d' d^3, leading beneath the oven, of dampers located between the main flue and flues d' and d^3, for cutting off the direct draft and sending the entire current of heat below the oven, and a single rod or handle, substantially as described, for operating both dampers.

338,740. COMBINED ORGAN AND SEWING-MACHINE. JACOB R. RISELEY, Chicago, Ill. Filed July 24, 1885. (No model.)



Claim.—1. A sewing-machine and organ combined, wherein the table *k* of the case A forms the table of the sewing-machine and cover *d* of the organ, substantially as specified.

2. In an organ-action, the vacuum *a*, provided with space *h*, covered with flexible material *m*, in combination with the treadles *f*, substantially as specified.

3. The table *k*, provided with machine *n* and lid *d*, in combination with the organ-action C and the mechanism to operate said action, substantially as specified.

4. The table *k*, provided with machine *n*, case E, having pockets *e*, and lid *d*, in combination with the organ-action C and the mechanism to operate said action, substantially as specified.

5. The case A, provided with wheel *q*, adjustable longitudinally on its shaft, action C, and level table *k*, having lid *d*, in combination with removable machine *n*, substantially as specified.

6. In an organ-bellows, the vacuum *a*, provided with a gap, *h*, in combination with the treadles *f* and link *g*, substantially as specified.

338,741. STOCK-CAR. HENRY C. HEIDE, Minneapolis, Minn. Filed Sept. 12, 1885. (No model.)

Claim.—1. In a stock-car, the stanchions or side frames, B, provided with inwardly-projecting lower portions adapted to support and carry the outer edges of folding auxiliary deck-sections E' E^2 and E^3 E^4, substantially as shown and described, whereby said deck-sections may be folded up against the sides of the car to leave the interior of the car unobstructed for use in transporting freight, and folded down horizontally to form a floor or deck in said car between its main floor and the roof, for the transportation of animals.

2. In a stock-car, the stanchions or side frames, B, provided with inwardly-projecting lower portions adapted to support and carry the outer edges of folding auxiliary deck-sections E' E^2 and E^3 E^4, the inner contiguous edges of said auxiliary deck-sections being rabbeted in opposite relations and provided with hinged supporting-legs F, substantially as set forth.

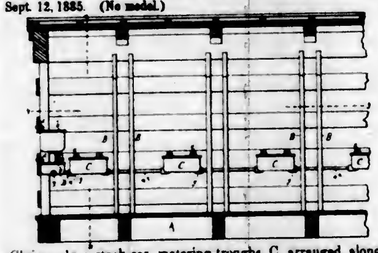
3. In a stock-car, an auxiliary deck or floor intermediate between the main floor and roof, said deck being composed of inclined folding sections, and said sections being provided with gutters at their lower ends, in combination with hollow legs which support the lower ends of the folding sections, and which communicate with said gutters, substantially as and for the purpose set forth.

4. In a stock-car, sheaves H', H^2, H^3, and H^4, said sheaves H' and H^4 being concentric with each other, and endless stall-bar carrying cables which pass consecutively around sheaves H', H^4, H^3, and H^2 back to sheaves H', in the order named, in combination with angularly-set sheaves or carriers H^7, mounted between sheaves H^4 and H^3, which lead the cables from sheaves H^4 to sheave H^3, substantially as set forth.

5. In a stock-car, endless cables which support and carry transverse stall-bars, and which run over suitable sheaves, whereby said stall-bars may be raised and lowered across the car, in combination with horizontal bars fixed to the upper part of the car, which support the ends of said stall-bars when the same are elevated, substantially as set forth.

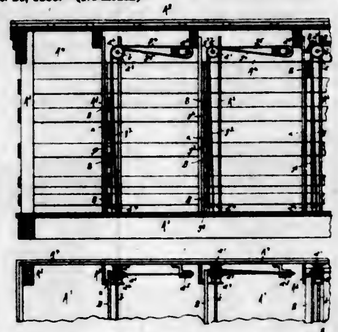
6. In a stock-car, endless cables which run over suitable sheaves, short cables attached at their ends to said endless cables, and transverse stall-bars secured to said short cables, and adapted to be raised and lowered across the car by means of said endless cables, in combination with disks or carriers H^{11}, which support the ends of said stall-bars when said bars are being raised or lowered, substantially as set forth.

338,742. STOCK-CAR. HENRY C. HEIDE, Minneapolis, Minn. Filed Sept. 12, 1885. (No model.)



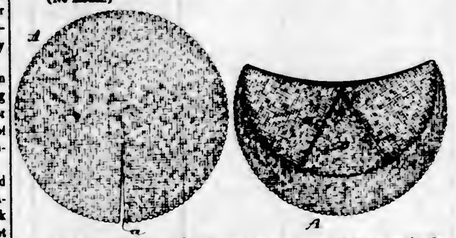
Claim.—In a stock-car, watering-troughs C, arranged along both sides of the car and connected together by pipes a^3, in combination with a tank, D, extending across the ends of the car in a substantially horizontal position and with its bottom in line with the bottoms of said troughs and with its top below the top line of said troughs and connected to said system of troughs by pipes a', substantially as and for the purpose set forth.

338,743. STOCK-CAR. ROBERT C. HEIDE, Minneapolis, Minn. Filed Dec. 21, 1885. (No model.)



Claim.—In a stock-car, a series of shafts, *b*, journaled across the upper part of the interior of said car at suitable intervals, and each of said shafts provided with two drums, d' d^2, attached thereto, and one sheave, d^3, loose thereon, sheave d^4, attached to the floor of said car beneath each pair of said drums, a sheave, d^5, journaled to the upper part of the interior of said car, a cable attached by its ends to said drums d' d^2 and running around said sheaves, and a series of stall-bars, B, attached by their ends to each opposite pair of said cables, and means for revolving said shafts *b*, whereby said stall-bars will be elevated and depressed to form stalls for the animals in said car.

338,744. DRESS-SHIELD. ALVA J. HISCOTT, Bridgeport, Conn., assignor to the Canfield Rubber Company, same place. Filed Sept. 3, 1885. (No model.)

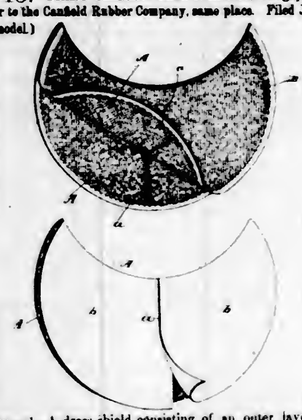


Claim.—1. A dress-shield having a gore inserted in one of its flaps or folds, substantially as set forth.

2. A dress-shield formed from a flat piece of stock, having a gore inserted in one edge to assist in forming a fold, substantially as set forth.

3. A dress-shield consisting, essentially, of a circular-shaped piece of stock, having a gore inserted in its edge and folded, the ridge of the fold being seamless and located a short distance from the vertex of the gore, substantially as set forth.

338,745. DRESS-SHIELD. ALVA J. HISCOTT, Bridgeport, Conn., assignor to the Canfield Rubber Company, same place. Filed June 12, 1885. (No model.)



Claim.—1. A dress-shield consisting of an outer layer and inner layer of suitable fabric and a layer of water-proof material on the face

of one of the layers, one of the layers having a seam running transversely to the length of the fold, substantially as set forth.

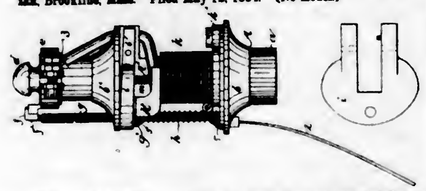
2. A dress-shield consisting of an outer layer of stockinet and inner layer of suitable fabric and a film or layer of water-proof material located between the two layers, the inner layer being formed in two sections united by a seam extending transversely to the length of the fold, substantially as set forth.

338,746. COMBINED ENVELOPE AND LETTER-SHEET. FREDERIK P. HOFMANN, Lima, Ohio. Filed June 19, 1885. (No model.)



Claim.—An envelope and letter-sheet combined, the former having upon its rear side a secondary pocket consisting of a strip adhering at its edges to the face of the wrapper, with a flap protruding through a slit in the same, substantially as specified.

338,747. ELECTRIC GAS-LIGHTING BURNER. CHARLES W. HOLTZER, Brookline, Mass. Filed May 12, 1884. (No model.)



Claim.—The burner composed of a casting having circular flanges and a flattened body portion between them, with a longitudinal gas-passage, combined with a circuit-breaker having a movable electrode on a spring-pressed rod longitudinally movable in passages in the flanges of the burner, an electro-magnet having flattened coils at either side of the flattened portion of the burner, and poles offset from the axial line of the said coils, and a pivoted armature slotted to embrace the said flattened body of the burner, substantially as described.

338,748. ELECTRIC GAS-LIGHTING APPARATUS. CHARLES W. HOLTZER, Brookline, Mass. Filed May 12, 1884. (No model.)

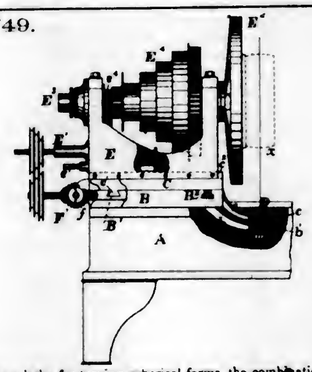


Claim.—In an electric gas-lighting apparatus, the combination of the burner-tube and oscillating circuit-closer pivoted thereon with a fitting at the base of the said tube, containing a cock and having its spindle provided with a ratchet and a pawl and pawl-carrying arm loose on the said spindle and connected with the said circuit-closer, and a spring to restore the said arm to its normal position, all substantially as described.

338,749. LATHE FOR TURNING SPHERICAL SURFACES. NATHAN HUNT, Salem, Ohio, assignor of one-half to the Buckeye Engine Company, same place. Filed Aug. 9, 1883. (No model.)

Claim.—1. In a lathe for turning spherical forms, the combination, substantially as set forth, of a lathe-bed, a fixed plate having a projection extending forward of the face-plate or chuck of the lathe-head and in the plane of its axis or spindle, a movable plate pivoted to said projection, and a lathe-head mounted upon the said movable plate and adapted to move toward and from the axis of the pivot.

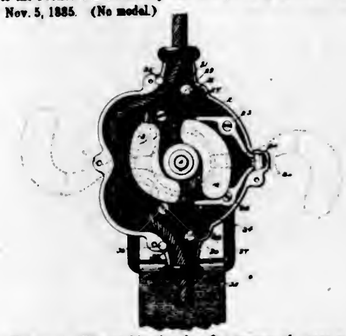
338,749.



2. In a lathe for turning spherical forms, the combination, substantially as set forth, of a lathe-bed, a fixed plate having a projection extending forward of the face-plate or chuck of the lathe-head and in the plane of its axis or spindle, a movable plate pivoted to said projection, a lathe-head mounted upon said movable plate, and the described mechanism for moving and adjusting the lathe-head upon said movable plate toward and from the axis of the pivot.

3. In a lathe for turning spherical forms, the combination, substantially as set forth, of a lathe-bed, a fixed plate having a projection extending forward of the face-plate or chuck of the lathe-head and in the plane of its axis or spindle, a movable plate pivoted to said projection, a lathe-head mounted upon said movable plate, the described mechanism for moving and adjusting the lathe-head upon said movable plate toward and from the axis of the pivot, and mechanism, as described, for imparting movement to the same movable plate about the axis of the pivot.

338,750. FIRE-ESCAPE. ANDREW J. JOHNSON, Chicago, Ill., assignor to the Pocket and Stationary Fire Escape Company, same place. Filed Nov. 5, 1885. (No model.)



Claim.—1. The combination, in a fire-escape, of a rope or its equivalent, a casing, fixed pulleys for the rope mounted therein, a pulley mounted to rotate, a centrifugal governor attached to said rotating pulley, and friction devices controlled by the governor for regulating the friction of the casing upon the rope, substantially as described and shown.

2. In a fire-escape, the combination of a rope or its equivalent, a casing, means therein for effecting a certain normal amount of friction between the casing and rope, means for increasing said normal friction at will, as desired, a centrifugal governor operated by the rope as it moves through the casing, and friction devices controlled by said governor for automatically regulating the descending motion of the case, substantially as described and shown.

3. In a fire-escape, the combination of a casing, a pulley mounted therein so as to be rotated by the rope as it passes through the said casing, governors attached to said pulley, a cylinder mounted upon the shaft of said pulley, mechanism between the governor and the cylinder, whereby the latter is moved by the action of the governor when the speed of the casing becomes too great, and friction-shoes, and mechanism connecting said friction-shoes with the said cylinder, whereby they are caused by the motion of the cylinder to impinge upon the rope, substantially as described and shown.

4. The combination, in a fire-escape, with a governor, of two friction-shoes operated thereby, one of said shoes being located above and one below the governor, and being so constructed as to operate when moving upon the rope in one direction only, and being oppositely arranged in this respect with reference to the rope, substantially as described and shown.

5. In a fire-escape, a friction-shoe mounted to rotate and having one face cut away, substantially as described, and for the purpose set forth.

3. In a fire-escape, the combination, with a friction-shoe, of a projecting cylindrical metal surface opposite thereto, upon which the rope is forced by the friction-shoe, substantially as described and shown.

7. In a fire-escape, a rotating pulley, 7, having projecting arms 10 and 11, governing-weights 12 and 13, pivoted thereto, sleeve 18, mounted upon the shaft of the said pulley, levers 16 and 17, pivoted to projections from said shaft, lever 21, lug 24, levers 25 and 26, arms 27 and 28, and friction-shoes 30 and 31, substantially as described, and for the purpose set forth.

8. In a fire-escape, the combination of a casing, a pulley mounted upon a shaft journaled within said casing, projections from said shaft extending parallel thereto, and a sleeve about said shaft and between it and the said projections, said sleeve having a shoulder, the under side of which normally rests upon said projections, and the upper side of which gives movement to a train of mechanism connected with a friction device when said sleeve is moved by a governor, also carried by the said pulley, substantially as described, and for the purpose set forth.

9. As a means for attaching a fire-escape rope, a hook, a toothed washer, and a thumb-screw, substantially as shown and described.

10. The combination, in a fire-escape, of a rope, a casing adapted to move thereon, and friction devices, and a governor controlling the same attached to said casing, substantially as described and shown.

11. The combination, in a fire-escape, with a moving part thereof, of a rotating governor mounted on said moving part, for regulating its movements, substantially as described and shown.

338,751. HAME-CLIP STAPLE AND TUG-IRON. RICHARD W. JOHNS, Syracuse, N. Y. Filed Jan. 23, 1886. (No model.)

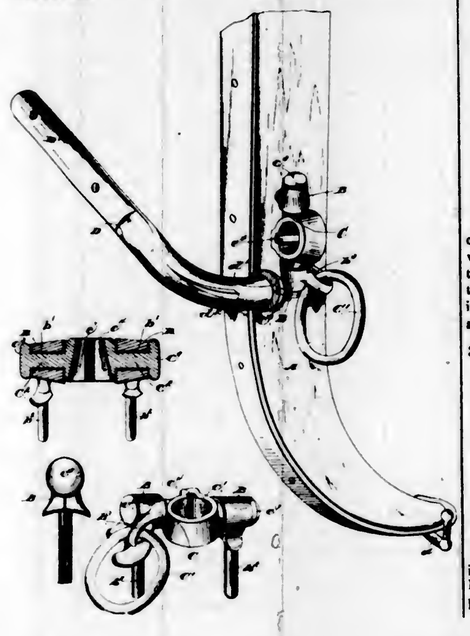
Claim.—1. A hame-clip staple and swiveled tug or draft iron constructed substantially as described, and made detachable from each other when brought into an abnormal relation, as set forth.

2. A hame-clip staple consisting of suitable eyes carrying a pivoted bar between them, provided with a grooved or recessed eye, in combination with a tug or draft iron, substantially as described.

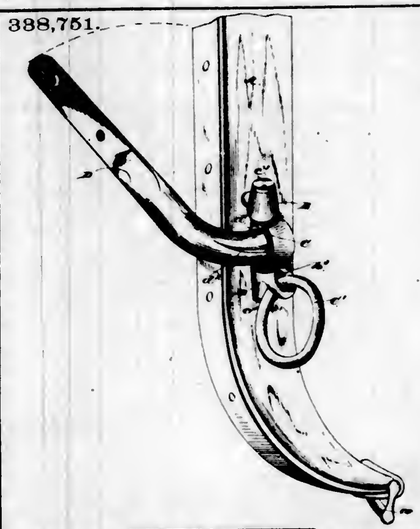
3. A hame-clip staple provided with a pivoted bar having an annular socket or bearing provided with a groove or recess, in combination with a curved headed tug-iron flattened at one end, cylindrical at the other, and having a spline or feather thereon, substantially as set forth.

4. A hame-clip staple consisting of suitable eyes and a pivoted bar between them, in combination with a swiveled tug or draft iron, substantially as described.

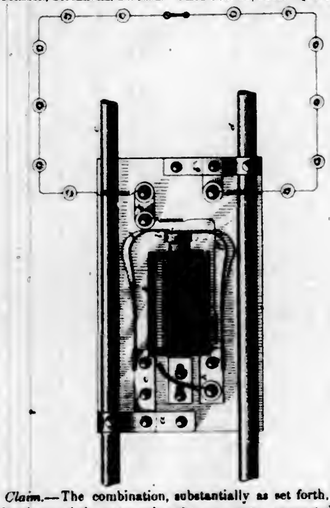
5. In a hame-clip staple, the eyes split vertically and adapted to form bearings for the pivoted bar of the staple when closed, substantially as described.



338,751.

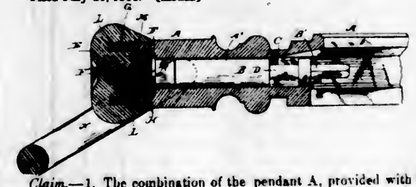


338,752. AUTOMATIC SAFETY CIRCUIT-CONTROLLER. OSCAR F. JOHNSON, Stockholm, Sweden. Filed Feb. 10, 1885. (No model.)



Claim.—The combination, substantially as set forth, of the main-circuit wires and the automatic safety apparatus supported on the main wires, said apparatus consisting of the combination of the base-board, the brackets by which the base-board is connected to the main wires, the branch circuit, the electro-magnet included in the branch circuit, the interlocking spring-arms, also included in the branch circuit, and the armature carried by one of the arms.

338,753. WATCH-CASE PENDANT. CASPER KISTLER, Sterling, Ill. Filed July 21, 1885. (Model.)

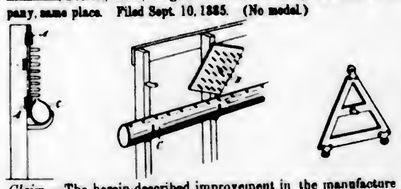


Claim.—1. The combination of the pendant A, provided with the interior thread, M, and external annular shoulder, H, the winding-stem B, provided with the annular recess D, the screw C, and the crown E, provided with the annular recess, G, and internal boss, F, having the

exterior thread, F', the boss F being thus adapted to be screwed into the open outer end of the pendant A, and the outer end of the latter to enter coincidently the recess G until the inner edges of the crown E shall abut against the shoulder H, substantially as shown, and for the purpose described.

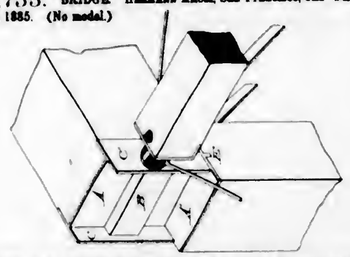
2. The combination of the pendant A, provided with the interior thread, M, and external annular shoulder, H, the winding-stem B, having a limited longitudinal play in the pendant A, the crown E, provided with the annular recess G, and internal boss, F, having the exterior thread, F', the boss F being thus adapted to be screwed into the open outer end of the pendant A, and the outer end of the latter to coincidently enter the recess G until the inner edges of the crown E shall abut against the shoulder H, substantially as shown, and for the purpose herein specified.

338,754. **PROCESS OF MAKING GELATINE CAPSULES.** JOHN KREISSEL, Detroit, Mich., assignor to the Globe Drug and Capsule Company, same place. Filed Sept. 10, 1885. (No model.)



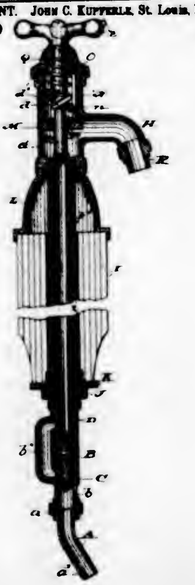
Claim.—The herein-described improvement in the manufacture of gelatine capsules, consisting in setting the gelatine on the mold-pins after dipping by the use of artificial air-currents of regulated temperature and moisture, substantially as described.

338,755. **BRIDGE.** HERMANN KRUM, San Francisco, Cal. Filed Feb. 12, 1885. (No model.)



Claim.—In a top-chord box, the dividing-plate A, with raised portion B, perforated longitudinally, and having supporting sides C C' on a lower plate, A', substantially as and for the purpose herein described.

338,756. **HYDRANT.** JOHN C. KUPFERLE, St. Louis, Mo. Filed Mar. 13, 1885. (No model.)

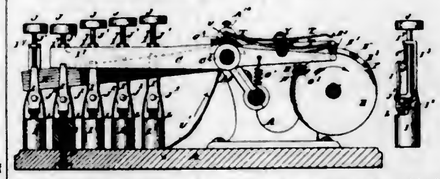


Claim.—1. The hydrant having the chamber G, provided with a partition, M, constituting the roof of said chamber, said partition being closed except for the passage of the valve-rod, the valve-rod D, inner case, N, above said partition, leather P, encircling the valve-rod and resting upon the partition and held down in place by the case N, and cap O, securing the case N, substantially as and for the purpose set forth.

2. The combination of the partition M, the slotted case N, the valve-rod D, having the spiral projection *d*, the handle E, and the cap O, substantially as described.

3. The combination, in a hydrant, of the chamber G, the nozzle H, the partition M, the leather P, the slotted case N, the valve-rod D, having the spiral projection *d*, the handle E, and the cap O, substantially as described.

338,757. **TELEGRAPH-TRANSMITTER.** GODFREY H. LASAR, St. Louis, Mo. Filed May 23, 1885. (No model.)



Claim.—1. In a telegraph-transmitter, in combination with the disks provided with letters, figures, or characters, spring-levers carrying brushes to bear against said letters, figures, or characters, and the inclines on the lateral faces of the disks, and cams rigid on the disks to throw and keep the levers out of contact therewith, substantially as set forth.

2. In a telegraph-transmitter, the flanged revolving disks provided with letters, figures, or characters over the flanges, in combination with the spring-levers, notched pins on the levers to engage beneath said flanges, inclines and cams on the disks to throw and keep the pins out of contact with the disks until the levers are operated again, and the brushes on the levers for coming against said letters, figures, or characters, substantially as set forth.

3. In a telegraph-transmitter, the flanged revolving disks having notches at the receiving end of the flanges, and figures, letters, or characters over the flanges, in combination with the spring-levers, notched pins on the levers to engage beneath said flanges, incline and cams at the releasing ends of the flanges to throw and keep the pins out of contact with the disks until the levers are operated again, keys and springs for operating the levers, and brushes for bearing against said letters, figures, or characters, substantially as set forth.

4. In a telegraph-transmitter, the revolving disks, levers carrying brushes to bear against letters, figures, or characters on said disks and projecting beneath the finger-keys at their forward ends, spring-dogs at the forward end of said levers for retaining them when depressed, and keys for releasing said levers and permitting their inner ends to be pulled down by suitable springs, substantially as and for the purpose set forth.

5. In a telegraph-transmitter, the revolving disks, levers carrying brushes to bear against letters, figures, or characters on said disks, springs to force the levers down when released, dogs engaging with the levers to hold their inner ends up, springs beneath the dogs, and finger-keys connected to the dogs for operating them, the dogs being pivoted to stands that give support to the keys, substantially as set forth.

6. In a telegraph-transmitter, the combination of revolving disks provided with letters, figures, or characters, levers and brushes for bearing on said disks, springs for forcing the inner ends of the levers down, dogs for engaging the outer end of the levers to hold their inner ends up, keys for releasing the dogs, and cams on the disks for engaging the levers with the dogs when the letters, figures, or characters are completed, substantially as set forth.

7. In a telegraph-transmitter, in combination with revolving disks provided with letters, figures, or characters, a cam and an incline on the lateral face of said disk and a lever carrying a contact-brush, said brush being adapted to contact with said disk and said lever adapted to be thrown both radially and laterally of said disk by said cam and incline and then to spring back to normal position, substantially as set forth.

8. In a telegraph-transmitter, the revolving disks provided with letters, figures, or characters, mechanism for coming in contact with the disks to close the circuit, shaft on which said disks are supported, and pivoted journal-boxes giving bearing to the shaft, substantially as and for the purpose set forth.

9. In a telegraph-transmitter, the combination of the base A, brackets A', pivoted boxes A^2, connected to the brackets by bolts and nuts, shaft journaled in said boxes, disks on the shaft provided with letters, figures, or characters, and mechanism for coming against the disks to close the circuit, substantially as and for the purpose set forth.

10. In a telegraph-transmitter, the combination of disks B, provided with letters, figures, or characters, levers C, springs D', brushes T, connected to the levers by screws Y, wire or rod U, and keys for releasing the levers, substantially as and for the purpose set forth.

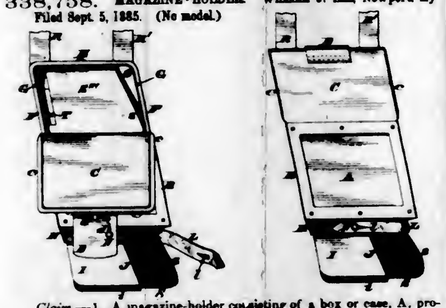
11. In a telegraph-transmitter, the combination of the revolving disks B, provided with letters, figures, or characters and with flanges B^2, notches P, incline O^3, and cam N, levers C, provided with pins O, having notches O', brushes T on the levers, springs D', pivoted dogs I, springs L, stands I^2, and keys J J', substantially as and for the purpose set forth.

12. In a telegraph-transmitter, the disks provided with letters, figures, or characters and with flanges B^2, notches P, incline O^3, and cams N, in combination with the brush-carrying levers provided with notched pins O, the pins and levers being forced to one side by the inclines O^3 and being raised by the cams N, and then the levers resuming their natural position to permit the cams N to pass through the notches in the pins, as shown and described.

13. In a telegraph-transmitter, the disks provided with letters, figures, or characters, in combination with the brush-carrying levers, springs for forcing the levers down against the disks, and stops to prevent the levers being forced down too far by the springs, substantially as set forth.

14. In a telegraph-transmitter, the disks provided with letters, figures, or characters, in combination with the brush-carrying levers, springs for forcing the inner ends of the levers down against the disks, and the posts I, with interned ends I', to form stops for the levers, to prevent their inner ends being pulled down too far by the said springs, substantially as set forth.

338,758. **MAGAZINE-HOLDER.** WILLIAM J. LEE, Newport, Ky. Filed Sept. 5, 1885. (No model.)



Claim.—1. A magazine-holder consisting of a box or case, A, provided with an opening at the upper end for the insertion of the magazines, and with a lateral opening at its lower end for the withdrawal of the magazines, substantially such as shown and described.

2. A magazine-holder consisting of a box or case provided with an opening at the top for the insertion of the magazines, with a lateral opening at the bottom for withdrawing the magazines, and a retaining strap or device for preventing the accidental discharge of the magazines, the construction being substantially such as shown and described.

3. A magazine-holder provided with an interior chamber or space of a thickness sufficient to enable the magazines to lap one upon another when placed therein, as shown, and having a lateral opening at its lower end for withdrawing the lowermost one of the tier of magazines, substantially as shown.

4. A magazine-holder, substantially such as described, having its lower end reduced in thickness and its rear lower wall, K, inclined, as shown, for the purpose of causing the lowermost magazine to automatically assume a position in line with the inclined lateral opening for withdrawal, substantially as shown and described.

5. A magazine-holder, substantially such as described, having an inwardly-projecting shoulder, H, arranged, as shown, to assist in sustaining the weight of the magazines above it, and thereby relieving the lowermost one of the series of the weight or pressure of those above it in part, and enabling it to be more easily withdrawn from the holder.

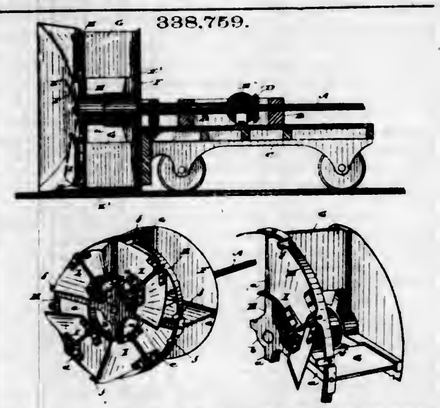
6. A magazine-holder, substantially such as described, provided with a lateral opening, and having a portion cut away at its lower end to enable the magazine to be more readily taken hold of for withdrawal, as set forth.

7. A holder for magazines, substantially such as shown, having one of its vertical side walls inclined or beveled transversely by the insertion of a strip, O, or equivalent means, substantially as and for the purpose set forth.

338,759. **SNOW-PLOW.** EDWARD LESLIE, Orangeville, Ontario, Canada, assignor to the Rotary Steam Snow Shovel Manufacturing Company, Paterson, N. J. Filed Aug. 17, 1885. (No model.)

Claim.—1. A series of shovels, G, connected to and radiating from the revolving driving-shaft A, in combination with a series of bent plates,

338,759.



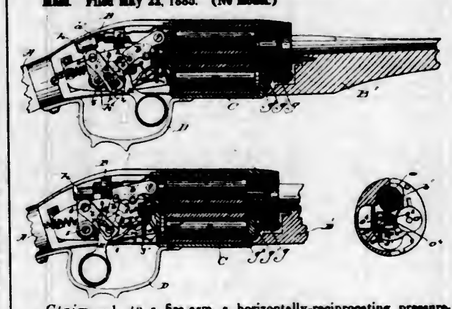
I, placed between the shovels G, substantially as and for the purpose specified.

2. A series of shovels, G, fixed to and radiating from the revolving shaft A, in combination with the bent plates I, pivoted at their center between the shovels G, substantially as and for the purpose specified.

3. A series of shovels, G, connected to and radiating from the shaft A, the rings *d* and *e*, designed to brace the shovels together, as specified, in combination with the bent plates I, hinged to the rings *d* and *e*, substantially at the center of the plates and between the shovels G.

4. The bent plates I, hinged to the rings *d* and *e*, in combination with the spring-catches F, arranged substantially as and for the purpose specified.

338,760. **REVOLVING FIRE-ARM.** BENJAMIN MERRITT, Newton, Mass. Filed May 22, 1885. (No model.)



Claim.—1. In a fire-arm, a horizontally-reciprocating pressure-block, *c*, having a flat face to bear against a cartridge, a firing-pin passing longitudinally through said pressure-block, the trigger *d*, and means connecting said trigger with the pressure-block for reciprocating the latter, substantially as and for the purpose described.

2. In a fire-arm, the combination, with the stock and a revolving cylinder mounted in a frame connected with the stock, of a horizontally-reciprocating cartridge-pressure block sliding in bearings within the frame, the firing-pin passing through the pressure-block, the trigger, and compound link-connection, substantially as described, for operating the cartridge-pressure block, as set forth.

3. In a fire-arm, the combination, with the stock, the revolving cylinder and its frame connected with the stock, of a cartridge-pressure block reciprocating in bearings in the frame, the firing-pin, trigger, and compound link-connection, substantially as described, for operating the cartridge-pressure block, and the abutment *f*, to receive the shock, as set forth.

4. In a fire-arm, a cartridge-pressure block mounted within the frame B, the trigger, and means connecting said trigger with the pressure-block for forcing the latter against a cartridge, and the revolving cylinder *c*, also mounted in said frame, and having grooves c^2 concentric with the chambers, and capable of being forced forward by said pressure-block, combined with an annulus, *c*, forming a continuation of the barrel, as described, and co-operating with the concentric grooves c^2 to produce a gas-tight chamber, together with means for returning said cylinder to its normal position, as set forth.

5. In a fire-arm, the frame B, a cartridge-pressure block mounted therein, the trigger, and means, substantially as described, connecting said trigger with the cartridge-pressure block, the revolving cylinder,

also mounted in said frame, capable of being forced forward by said pressure-block, and having grooves rectangular in cross-section at its forward end concentric with the chambers, combined with an annulus, *s*, forming a rearward continuation of the barrel and projecting sufficiently to enter the grooves c^2, but not bottom therein, all substantially as and for the purpose set forth.

6. The combination, with the cartridge-pressure block mounted in bearings in the frame B, its firing-pin *a'*, the trigger, and mechanism connecting said trigger with the cartridge-pressure block for forcing the latter against a cartridge, of the hammer pivoted within the said frame, and means, substantially as described, for operating it to strike the firing-pin, as set forth.

7. The combination, with the trigger pivoted within the frame B, and having stade 7, of the hammer, also pivoted within the frame, its mainspring, and the link *i*, connecting the hammer with the trigger, said link being provided with the projection *i'*, to co-operate with the stade 7, and the safety-pin 8, substantially as described.

8. The combination, with the trigger pivoted within the frame B, of the bent link m^2, and mainspring and hammer controlled thereby, the said bent link being attached to the trigger to turn eccentrically to its main pivot 4, and to the mainspring *h'*, to contract the latter, and mechanism, substantially as described, connecting said hammer with the trigger, whereby the hammer may be tripped after the bent link has arrived at its dead-center, substantially as described.

9. The combination, with the trigger pivoted within the frame B, of the cam-disk operated thereby, the spring-controlled lever *n*, moved by the cam-disk, rack-bar *o*, meshing with the toothed hub o^3, located at the rear of the cylinder, the finger o^4, and the cylinder to be engaged and rotated by the finger o^3, all substantially as described.

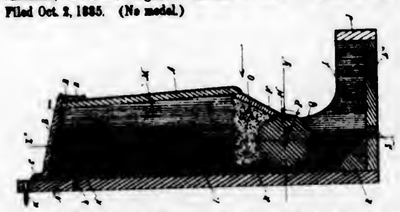
10. The combination, with the trigger pivoted within the frame B, of the bent link m^2, and mainspring and hammer controlled thereby, the said bent link being attached to the trigger to turn eccentrically to its main pivot 4 and to the mainspring *h'*, to contract the latter, and the supplemental withdrawing-spring m^3, and mechanism, substantially as described, connecting the hammer with the trigger, all as set forth.

11. The combination, with the trigger pivoted within the frame B, of the cam-disk operated thereby, the lever *n*, moved by said cam-disk, the rack-bar *o*, and springs S S^3, controlling the movement of the said lever and rack-bar, the toothed hub engaged and rotated by the said finger o^3, all substantially as described.

12. In a fire-arm, the face-plate E, placed over and concealing the operating parts, and having a depression, *t'*, to receive the extracted cartridge, combined with a spring-controlled pivoted latch, t^2, hinged in the frame and extended normally into the depression *t'*, to prevent accidental withdrawal of a cartridge, substantially as described.

13. In a fire-arm, the trigger pivoted within the frame B, the cylinder, also mounted therein and provided with cartridge-chambers, and cylinder-revolving mechanism combined with the lever *n*, controlling-spring s^2, and means, substantially as described, operated by the said trigger, whereby the said lever is moved and the spring is compressed during the backward movement of the trigger, and the spring is released and the lever returned to its normal position, actuating the cylinder-revolving mechanism during the forward movement of the said trigger, as set forth.

338,761. **DEVICE FOR SUPPLYING SALT TO STOCK.** GEORGE MILLIKEN, Osseo, Ill., assignor of one-half to James C. Bike, same place. Filed Oct. 2, 1885. (No model.)



Claim.—1. In a device for supplying salt to stock, the combination of a salt-receptacle, a trough below said receptacle and rigidly connected therewith, and a roller suspended above said trough and forming the bottom of the salt-receptacle, and adapted, when rotated, to carry downward a portion of the salt therein, said roller and the contents of said trough being readily accessible to stock, substantially as and for the purpose set forth.

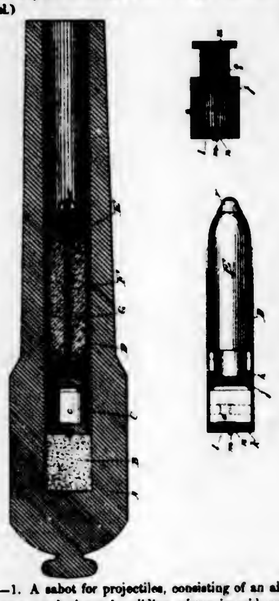
2. In a device for supplying salt to stock, the combination of a salt-receptacle, a trough below said receptacle, and a grooved roller supported above said trough by suitable journals and forming the bottom of the salt-receptacle, the rotation of said roller being adapted to carry downward a portion of the salt in the receptacle, and the front of the trough being open, whereby its contents and the roller above it are readily accessible to stock, substantially as and for the purpose set forth.

3. The combined salt-receptacle and trough, consisting of the back A‴, the sides A′ A″, the front A, and bottom A^{IV}, in combination with the journaled roller H above the trough and forming the bottom of the receptacle, the front A of the receptacle being shorter than the back A‴, and its lower edge being above the axis of the roller, whereby the roller and the bottom of the trough are readily accessible from the front, substantially as and for the purpose set forth.

4. The combination of the receptacle M, the roller H in contact with the front of said receptacle, but separated by a space from the back thereof, and the regulator L N, attached to the back and adapted to vary the space between the roller and back, substantially as shown and described, and for the purpose set forth.

5. The combination of the receptacle M, having the cover B, the roller H, regulator L N, and the trough J, provided with the aperture *s*, substantially as set forth.

338,762. **SABOT FOR HIGH-EXPLOSIVE PROJECTILES.** DANIEL MOORE, Brooklyn, N. Y. Filed June 9, 1885. Renewed Feb. 1, 1886. (No model.)

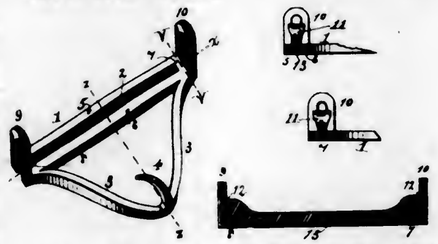


Claim.—1. A sabot for projectiles, consisting of an air-tight casing filled with compressed air, and a sliding piston in said casing, said piston being held outward by the compressed air, substantially as described.

2. In combination with the air-tight casing containing compressed air, a sliding piston in said casing, which piston is held outward by the compressed air, and a projectile which enters the casing and bears against the piston, as set forth.

3. In combination with the air-tight casing which has a charging-orifice, a stopper covering said orifice, and a sliding piston in the casing, held outward by compressed air, all constituting a sabot, substantially as described.

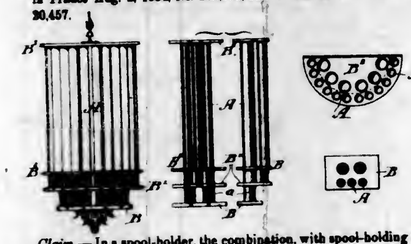
338,763. **BACK-BAND HOOK.** JESSE B. MOORE, El Dorado, Ark. Filed Jan. 22, 1886. (No model.)



Claim.—1. A back-band buckle consisting of the plate 1, having the arms 3, hook 4, slot 2, cross-pieces 7 and 8, unbroken elongated eyes 9 and 10, and the pin 11, having the V-shaped flange 13, necks 12, and notches 14 in the under side of said necks, substantially as shown and described, and for the purposes set forth.

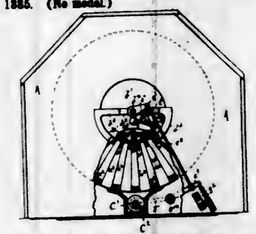
2. In a back-band hook, as above described, the combination of the plate 1, having the slot 2, cross-pieces 7 and 8, and the unbroken elongated eyes 9 and 10, with pin 11, adapted to fit in said eyes 9 and 10, and said slot 2, substantially as shown and described.

338,764. **SPOOL-HOLDER.** ALEXANDER A. MURPHY, Montreal, Quebec, Canada, assignor of one-half to Foster Bean, same place. Filed July 29, 1884. (No model.) Patented in England Aug. 1, 1884, No. 10,865; in France Aug. 2, 1884, No. 163,008, and in Canada Nov. 3, 1884, No. 20,457.



Claim.—In a spool-holder, the combination, with spool-holding tubes of different lengths, arranged in rows according to length, of a common top plate and a separate platform, upon which each row of tubes rests, so as to display the bottom spool in each tube, substantially as described.

338,765. **DUST-COLLECTOR.** PETER M. NELSON, Minneapolis, Minn. Filed May 6, 1885. (No model.)



Claim.—1. In a dust-collector, a dust-collecting medium, a still-air chamber, and a cut-off for effecting an isolation of a portion of said medium from the air-current, in combination with a pneumatic device acting at intervals through said cut-off to cause a vibration of the air within the isolated portion of said medium.

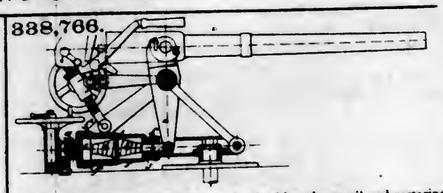
2. In a dust-collector, a reel having a series of cloth-covered compartments and a central opening, and mechanism for rotating said reel intermittently, in combination with a still-air chamber, a cut-off for isolating from the fan-blast the compartments within the still-air chamber, and a pneumatic device for vibrating the air within said compartments.

3. In a dust-collector, a dust-collecting medium, a still-air chamber, and a cut-off for effecting an isolation of a portion of said medium from the air-current, said cut-off plate having an opening communicating with said isolated portion, in combination with a taut diaphragm stretched above said cut-off and inclosing an air-space above said cut-off, and a knocker which strikes said diaphragm, substantially as set forth.

4. In a dust-collector, a reel having a series of cloth-covered compartments and a central opening, and mechanism for rotating said reel intermittently, in combination with a still-air chamber, a cut-off for isolating from the fan-blast the compartments within the still-air chamber, said cut-off having a slit extending therethrough, a taut diaphragm stretched above said cut-off and inclosing an air-space above said cut-off, and a knocker which strikes said diaphragm intermittently.

5. In a dust-collector, a reel having a series of cloth-covered compartments and a central opening, and mechanism for rotating said reel intermittently, in combination with a still-air chamber, a hollow cut-off plate which isolates from the air-blast the compartments within the still-air chamber, said cut-off plate having a slit or opening communicating with said isolated compartments, a flexible air-tight diaphragm stretched over said hollow cut-off plate, springs interposed between the plate and diaphragm, and a knocker which strikes said diaphragm intermittently.

338,766. **ORDNANCE-CARRIAGE.** THOMSON NORDENFELT, Westminster, England. Filed Aug. 11, 1885. (No model.) Patented in England Mar. 6, 1883, No. 1,072, and in France June 15, 1883, No. 149,619.

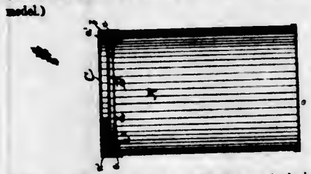


Claim.—1. The combination, with a gun-carriage, of a hydraulic cylinder and piston for controlling the movement of the gun in recoiling and returning to the firing position, and the spring acting upon the piston to check the recoil and restore the gun to the firing position, substantially as and for the purpose set forth.

2. The combination, with a gun-carriage, of the grooved hydraulic cylinder and its piston for controlling the movement of the gun in recoiling and returning to the firing position, and the spring within said cylinder and acting upon the piston for checking the recoil and restoring the gun to the firing position, substantially as and for the purpose set forth.

3. The combination, with a gun-carriage, of a hydraulic cylinder, its piston, and piston-rod, a spring within the cylinder and acting upon the piston, and the pivoted lever of the gun-carriage connected at its lower end with the piston and at its upper end supporting the gun by its trunnions, substantially as and for the purpose set forth.

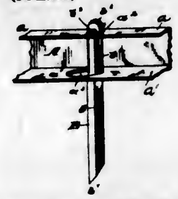
338,767. **PAINT-CAN.** EDWIN NORTON, Chicago, Ill., assignor to himself and Oliver W. Norton, same place. Filed Jan. 25, 1886. (No model.)



Claim.—1. The combination, with the can-body having an interior shoulder consisting of an interior annular fold, *a*, in the stock of the can-body, the parts of said fold being pressed together and provided with a flange, *a'*, above said annular shoulder, of a head, B, having an upwardly-projecting flange, *b*, turned down and folded, with the flange on said can-body, into a seam, substantially as specified.

2. The combination, with can-body A, having an interior annular fold, *a*, in its stock, the parts of said fold being closed together and the joint or crevice between the parts of said fold being soldered together, and provided with an upwardly-projecting flange, *a'*, of a head, B, having an upwardly-projecting flange, *b*, turned down and secured with the flange on said can-body, substantially as specified.

338,768. **HARROW.** MICHAEL S. O'NEIL, Rock Island, Ill. Filed Mar. 30, 1885. (No model.)



Claim.—1. A harrow-tooth consisting of a single straight bar of metal or other suitable material with a diamond-shaped body portion cut down to a point at its bottom, an oval or rounded upper portion, and tenoned upper end with perforation therein.

2. In a harrow, the combination of a harrow-tooth beam having a vertical body portion, and upper and lower flanges at right angles thereto extending in the same direction, with slits in the upper and angular slots in the lower flange, with a series of harrow-teeth, each consisting of a single straight piece of metal or other suitable material, with a diamond-shaped body portion cut down to a point at its lower end, oval or rounded upper portion, and tenoned upper end with perforation in such tenon, substantially as described.

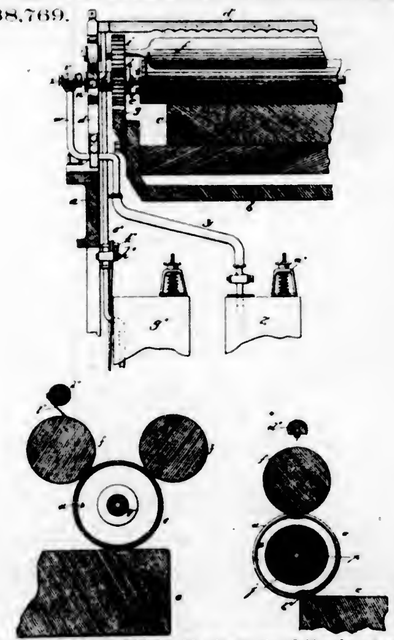
3. In combination with a harrow-frame, a metallic tooth having its upper portion rounded in cross-section, its lower portion angular in cross-section, and its upper end tenoned and perforated, as shown.

338,769. **MEANS FOR DAMPING LITHOGRAPHIC-PRINTING SURFACES.** JOHN W. OSBORNE, Washington, D. C. Filed Sept. 16, 1881. (No model.)

Claim.—1. In a lithographic machine, the combination, with a bed or surface for printing in the lithographic manner, of a pliant damping-roller containing air or other fluid under pressure, and mechanism, substantially as described, to cause said roll to act forcibly upon the printing-surface.

2. In a lithographic-printing machine, the combination of a bed carrying a stone or surface adapted for printing in the lithographic man-

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ner, a pliant damping-roll filled with air or other fluid under pressure, and one or more riding-rolls, substantially as described.

3. In a lithographic-printing machine, the combination of a horizontal tube provided with minute orifices adapted and arranged to retain water by capillary attraction and to deliver the same upon the surface, and means, substantially as described, for effecting the forcible and positive ejection of the water from said orifices at suitable intervals.

4. In a lithographic-printing machine, the combination of the water-tube d^2, provided with a row of minute openings, the rider, and an intermediate flap, l^2, whereby the uniform distribution of water is secured.

338,770. POCKET-BATTERY. GUSTAV OTTO, Jersey City, N. J. Filed Oct. 23, 1885. (No model.)



Claim.—1. An electric battery made of flexible india-rubber, to render it an expansible gas-holder, and provided with electrodes that dip into its liquid contents when said battery is in its normal position, substantially as and for the purpose described.

2. The flexible battery-shell A, combined with one or more stoppers, B C, carrying the electrodes, as specified, said battery when in use being wholly closed by said stopper or stoppers, as set forth.

3. An electric battery constructed of a flexible shell, which wholly incloses the electrodes and the acid, and provides against the escape of gases that are generated when the battery is in use, as specified.

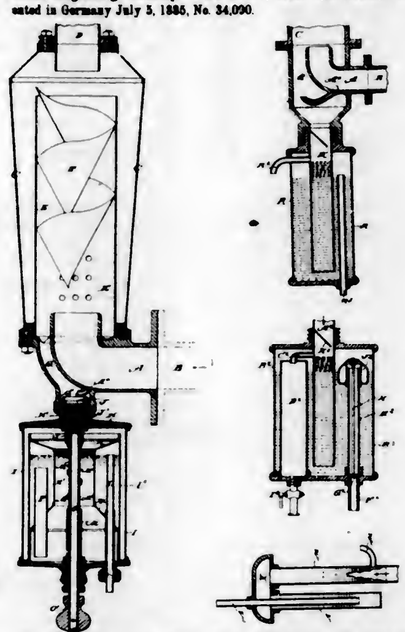
338,771. VALVE. RAMSOM C. PAGE and FRANCIS H. SODEN, Chicago, Ill. Filed JUNE 26, 1885. (No model.)



Claim.—1. The combination of the shell or case B, having the chamber B', ports *e*, *i*, *j*, and *k*, the cock F, having the passages *f g h*, and the exterior pipe, E, with the shell or case A, having the chamber A', and the stem C', piston C, and valve D'', substantially as and for the purpose herein set forth.

2. The case A, having the chamber A', case B, having the chamber B', valve C, stem C', spring C^3, and valve D, in combination with the outlet *c*, pipe E, inlet *d*, and passage *e*, and a controlling-valve and passages leading to and from the chamber B', for opening and closing the valve, substantially as specified.

338,772. OIL-SEPARATOR FOR STEAM AND WATER. EUGEN POLTE, Magdeburg, Germany. Filed Dec. 7, 1885. (No model.) Patented in Germany July 5, 1885, No. 34,090.



Claim.—1. The combination, with a vessel divided into two compartments in communication with each other at their lower ends, of an outlet for each compartment, and of a float-valve for closing the outlet of one of the compartments, substantially as herein set forth.

2. In an apparatus for separating oils and fats from water, the combination, with a steam-nozzle, of a cylindrical vessel held below the same, which nozzle is provided with a channel for conducting the water of condensation and oil into the cylindrical vessel below it, and of an outlet-pipe for the water in the cylindrical vessel, which outlet-pipe extends up to the level of the water in said cylindrical vessel, substantially as herein shown and described.

3. In an apparatus for separating fats and oils from water, the combination, with a steam-nozzle, of a cylindrical vessel held below the same, into which vessel the water of condensation, fats, &c., are conducted, an outlet-pipe for the water in said cylindrical vessel, which outlet-pipe extends from the bottom up to the desired level of the water in said vessel, and of a sliding outlet-pipe within said cylindrical vessel, substantially as herein shown and described.

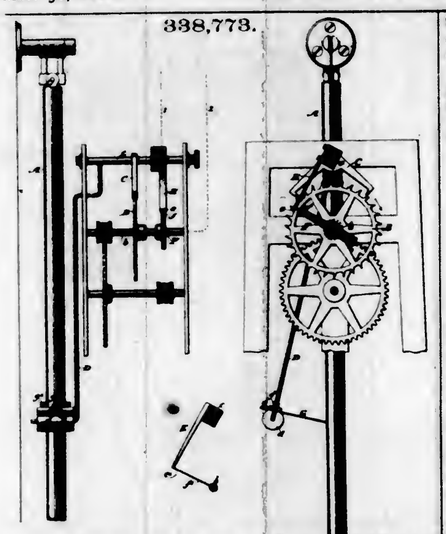
4. In an apparatus for separating fats and oils from water, the combination, with a steam-nozzle, of a cylindrical vessel held below the same, into which vessel the water of condensation, oils, fats, &c., can be conducted, an annular partition dividing the cylindrical vessel into two compartments, a water-outlet pipe in one compartment, a slotted pipe extending through the other compartment, and a sliding oil-outlet pipe in said slotted pipe, substantially as herein shown and described.

338,773. CIRCUIT-CLOSER FOR ELECTRIC CLOCKS. CHESTER H. POND, Brooklyn, N. Y. Filed JUNE 6, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, with a pendulum-rod and a weighted impulse-lever, of a scape-wheel, an escapement-anchor applied thereto and controlling the movements of said impulse-lever, a contact-point vibrating with said escapement-anchor, and a second contact-point periodically placed in the path of the first-named contact-point, substantially as described.

2. The combination, substantially as hereinbefore set forth, with a clock-pendulum and an impulse-rod applied thereto, of a scape-wheel, an escapement-anchor, a contact-point moving with said anchor, a second

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contact-point moving with said scape-wheel and periodically placed thereby in the path of the first-named point, substantially as described.

3. The combination, substantially as hereinbefore set forth, with a pendulum-rod, a scape-wheel, and an escapement-anchor, of an impulse-arm, a spring secured to said arm and normally pressing against said pendulum-rod, a contact-point moving with said impulse-arm, and a second contact-point periodically placed in the path of the first-named point, thereby intercepting its movements and momentarily separating said impulse-spring from said pendulum-rod.

4. The combination, substantially as hereinbefore set forth, with a pendulum-rod, an impulse-arm, a scape-wheel, an escapement-anchor applied thereto and controlling the movements of said arm, and an impulse-spring intervening between said arm and rod, of a contact-point and means for placing the latter periodically in the path of the former during one vibration only of the said impulse-arm.

5. The combination, substantially as hereinbefore set forth, with a pendulum-rod, an impulse arm or lever, and an intervening spring, of a scape-wheel, an escapement-anchor applied thereto, an insulated knife-edge contact-point supported from the arbor of said escapement-anchor, a second knife-edge contact-point carried upon the arbor of said scape-wheel, the faces of which contacts intersect each other at an angle, and means substantially such as described for placing the one contact in the path of the other once each revolution of the scape-wheel.

6. The combination, substantially as hereinbefore set forth, with a clock-movement, of a circuit-closer, consisting of a vibrating knife-edge contact and a revolving knife-edge contact, the two having their faces in planes crossing each other, substantially as described.

7. The combination, substantially as hereinbefore set forth, with a clock-movement, of a circuit-closing point vibrating with the pendulum and a second contact-point revolved by the clock-movement and periodically placed in the path of the first-named contact-point.

8. The combination, substantially as hereinbefore set forth, with a clock-movement, of a circuit-closing point vibrated thereby, and a yielding contact-arm revolving with one of the arbors of the movement and periodically placed in the path of the vibrating-point, substantially as described.

9. The combination, substantially as hereinbefore set forth, with a clock-pendulum and a scape-wheel, of a vibrating contact moving with the pendulum, and a yielding contact-arm having a beveled end revolving with the scape-wheel and periodically placed in the path of the vibrating contact.

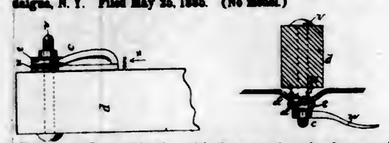
338,774. BINDING ATTACHMENT FOR SEWING-MACHINES. NELSON P. POOR, Cleveland, Ohio, assignor to the Davis Sewing Machine Company, Watertown, N. Y. Filed May 11, 1883. (No model.)



Claim.—1. A binding attachment for sewing-machines, formed with scroll-guides *a a'*, for holding the binding-strip, and with the lip or guide *c* extending in between them, to form a channel or passage-way for the edges of the cloth to pass through together, and in which both edges are turned over in the same direction and folded together, substantially as described.

2. A binding attachment for sewing-machines, formed with scroll-guides *a a'*, having an opening, *s*, for the binding-strip to enter beyond the front part, *i*, substantially as described.

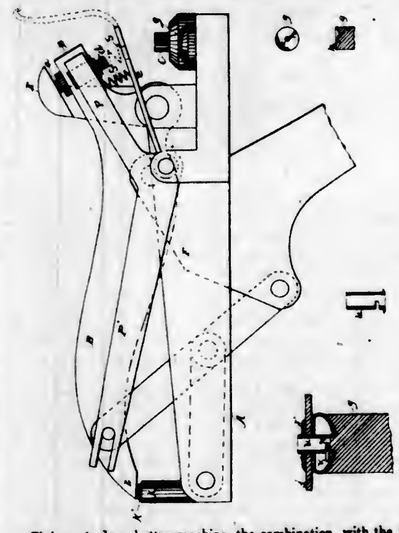
338,775. WIRE-HOLDER FOR FENCES. HENRY C. PRATT, Canandaigua, N. Y. Filed May 25, 1885. (No model.)



Claim.—1. In combination with the post of a wire fence, a clamp, *c*, for the wire, consisting of an inner jaw bearing against the post, an outer opposing jaw, and clamping-bolt for said jaws, with a lever-nut formed in one piece for said clamping-bolt, the inner jaw being formed with a slit at its lower end, and the outer jaw being turned at its lower end toward said inner jaw, and formed with a tongue for said slit and shoulders or rests to bear against said inner jaw, substantially as shown.

2. In combination with the post of a wire fence, a clamp for the wire, consisting of an outer and an inner jaw, the latter bearing against said post, a clamping-bolt for said jaws, with lever-nut for said bolt, the opposing clamping-faces of said jaws being formed, respectively, convex and concave, said inner jaw being formed with a slit at its lower end, and said outer jaw being turned at its lower end to meet said inner jaw and formed with a tenon to enter said slit and shoulders to bear against said inner jaw, substantially as shown and described.

338,776. BUTTON-SETTING MACHINE. EUGENE PRINDLE, Gloversville, N. Y. Filed Mar. 7, 1885. (No model.)



Claim.—1. In a button-machine, the combination, with the frame A and lever B, of the links H I J F and the lever G, carrying foot-rest G', as and for the purpose described.

2. The combination, with the anvil C, of a perforated swage, D, provided with an opening, D', slightly enlarged at the mouth thereof, whereby a stop, *i*, on a post, *m*, may be swaged, as described.

3. The combination, with the perforated swage D, of the spring-plunger *a* and the stop, E', on an upright, E, of frame A, as and for the purpose specified.

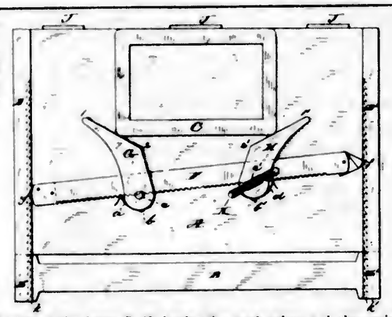
4. The combination, with lever B and anvil *g*, of the lever P P' carrying punch *d*, as shown and described.

5. In button-setting machines, the combination, with the anvil *g*, having concave top and central projection, *n*, and punch *d*, of the spring S and hinged plate *e*, the latter holed to receive punch, as shown and described.

338,777. PRINTER'S FORM-CLAMP. GEORGE H. RANDALL, Jersey City, N. J. Filed Oct. 17, 1885. (No model.)

Claim.—1. A device for clamping printers' forms upon the beds of printing-presses, consisting of the rack-bar F, the catch *g*, the pivoted

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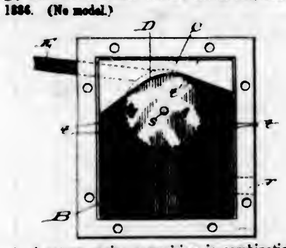


catch-plate *e*, the jaws G H, having the perforations *c c'*, the spring-pawls *a a'*, and the notched bearers D D', all constructed and arranged substantially as and for the purpose hereinbefore described and shown.

2. A printer's form-clamp consisting of the rack-bar F, the catch *g*, the pivoted catch-plate *e*, the jaws G H, having the perforations *c c'*, and the spring-pawls *a a'*, locked by means of the pinion-key K, all constructed and arranged substantially as and for the purpose hereinbefore described and shown.

3. As an improvement in a printer's form-clamp, a locking device consisting of the sliding jaw G, having the perforation *c*, the rack-bar F, and the spring-pawl *a*, all constructed and operated substantially as and for the purpose hereinbefore described and shown.

338,778. ROTARY ENGINE. RASMUS RASMUSSEN, Chicago, Ill. Filed Jan. 18, 1886. (No model.)



Claim.—1. A rotary engine comprising, in combination, a rotatory toothed wheel, and a chamber communicating with the source of power and to inclose a continually-changing portion of the wheel toward the periphery of the latter during its rotation, and rendered a close chamber by such inclosed portion, substantially as described.

2. A rotary engine comprising, in combination, a rotatory toothed wheel, and a chamber communicating with the source of power by means of an oblique opening and to inclose a continually-changing portion of the wheel toward the periphery of the latter during its rotation, and rendered a close chamber by such inclosed portion, substantially as described.

3. A rotary engine comprising, in combination, a toothed wheel supported on journals, a chamber to inclose a continually-changing segmental portion of the wheel during its rotation, and rendered a close chamber by such inclosed portion, and communicating with a source of power by means of a conduit having an oblique opening, the forward extremity of which opening forms a tangent, or nearly a tangent, to a tooth of the wheel in contact with it, and the rear extremity of which is in contact with a tooth at the end of a segment between the first-named point and a radius preferably forty-five degrees or less from the said first-named point, substantially as described.

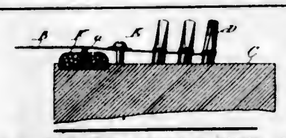
4. A rotary engine comprising, in combination, a wheel, A, provided with teeth *t* and supported on a central shaft, *s*, a block, C, recessed on its under side to receive a portion of the periphery of the wheel, and a conduit, E, leading from an oblique opening in the recess of the block C, the whole being constructed and arranged to operate substantially as described.

5. A rotary engine comprising, in combination, a case, B, having an exhaust-opening, *r*, a wheel, A, provided with teeth *t* and supported on a central shaft, *s*, within the case B, a block, C, within the case, recessed on its under side to receive a portion of the periphery of the wheel, and a conduit, E, leading from an oblique opening in the recess of the block C, the whole being constructed and arranged to operate substantially as described.

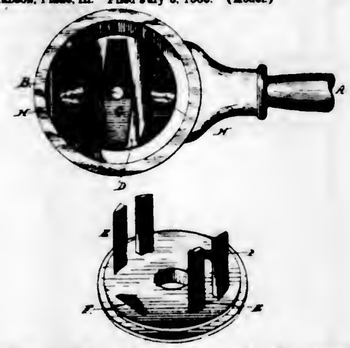
338,779. PIANO-STRING BRIDGE. JOHN W. REED, Chicago, Ill. Filed Jan. 31, 1885. (No model.)

Claim.—The combination, with a bridge made of glass, of a metal bar or wire embedded in the same, as set forth.

338,779.



338,780. DEVICE FOR CONVERTING MOTION. GEORGE W. RICHARDSON, Plano, Ill. Filed July 8, 1885. (Model.)

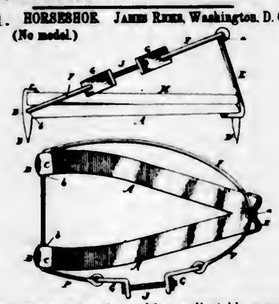


Claim.—1. The combination, with a ring and a concentric cam-wheel, of intermediate binding-rollers, and a cap, the latter provided with means to shift the position of said rollers, whereby the parts may be caused to interlock in either direction, substantially as and for the purposes set forth.

2. The combination, with the cam-wheel having an upwardly-projecting stud, a concentric ring, and intermediate binding-rollers, of a centrally-apertured cap-plate mounted on said stud and provided with depending arms arranged in opposite pairs and free to turn around said stud, to shift the position of the rollers in either direction, and interlocking mechanism, substantially as described, to secure the cap-plates in either of its adjusted positions, as and for the purposes specified.

3. The combination, with the ring B, provided with a suitable handle, of the cam-wheel D, the intermediate locking-rollers H, spring-plate G, and the cap-plate C, provided with the depending pairs of arms E and the double wedges F, all constructed, arranged, and operating substantially as shown and described.

338,781. HORSESHOE. JAMES REED, Washington, D. C. Filed Jan. 20, 1886. (No model.)



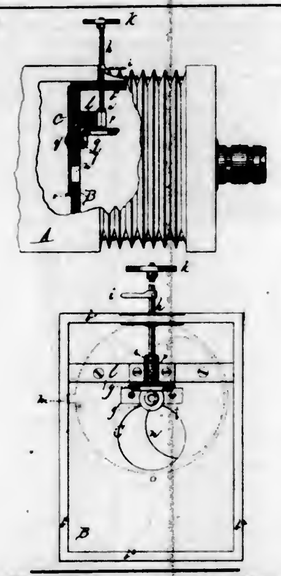
Claim.—1. The combination, with an adjustable rough-shoeing or sleet shoe, consisting of a V-shaped plate provided with calks at heel and toe and heel-catchers, of a triangular toe-loop made integral, and a metallic band passing through holes at the heels and through an eye of the loop, having its ends secured to a two-part clamp which is adjustably secured by a screw-threaded bolt and nut.

2. The combination, with an adjustable rough-shoeing or sleet shoe, consisting of a V-shaped plate provided with calks at heel and toe and heel-catchers, of a triangular toe-loop made integral, a metallic band passing through eyes at the heels and through the eye of the loop, having its ends secured to a two-part clamp which is adjustably secured by a screw-threaded bolt and nut, and a spur projecting upwardly from the angle of the toe of the plate, substantially as described.

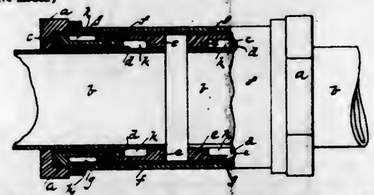
338,782. CAMERA-SHUTTER. ALFRED E. REINHART, Denver, Colo. Filed Apr. 20, 1885. (No model.)

Claim.—In a photographic camera, the revolving shutter C, in combination with the partition B, the center bolt, *q*, the bevel gear-wheels *g g'*, the journal-box *p*, the shoulder *r*, the spindle *h*, the index *i*, and the thumb-nut *k*, all substantially as described, and for the purposes herein set forth.

338,782



338,783. PIPE-COUPLING. BENJAMIN F. RITCHIE, Pittsburg, Pa., assignor of one-half to Jefferson Staley, same place. Filed Feb. 20, 1886. (No model.)



Claim.—In a line of pipe, *b*, the combination of the nuts *a*, having secured thereto thimbles *c* and suitable packing, *d*, the thimbles *e*, overlapping those before mentioned, fitting neatly about the same, and secured to the ends of the pipes *b*, the outside casing, *f*, having an inner lining of packing, *g*, substantially as shown and described.

338,784. BRACE FOR THRASHING-MACHINES AND SEPARATORS. JAMERSON RITEMAN, Madison, Butler County, assignor of one-half to Thomas H. Cobia, Franklin County, Iowa. Filed Oct. 12, 1885. (No model.)



Claim.—1. The combination, with the frame A B and wheel C, of the detachable longitudinal brace D, comprising bar *d*, pivot-bolt *d'*, and the U-shaped clip-bolt d^2, having nuts d^3, substantially as and for the purpose described.

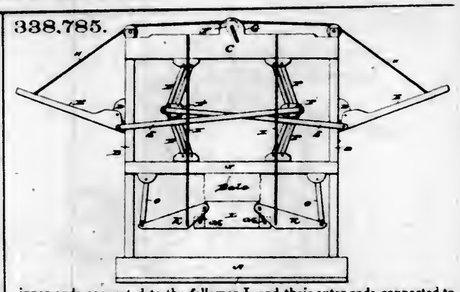
2. The combination, with frame A B and wheel C, of the detachable longitudinal brace D, comprising bar *d*, pivot-bolt *d'*, and the connecting and clipping devices, substantially as described, for firmly connecting the wheel and brace, substantially as and for the purpose set forth.

338,785. BALING-PRESS. GEORGE W. ROSBURH, Elmo, Tex., assignor of one-half to John E. Polk, same place. Filed Jan. 13, 1886. (No model.)

Claim.—1. The combination of the follower N, and levers for moving it, with the follower L and the fulcrumed levers K, having their inner ends connected to the follower L and their outer ends connected to the follower N, whereby the said followers move simultaneously, substantially as described.

2. The combination of the frame or support, the lever-arms E, the follower N, the toggle-jointed levers connecting the said follower with the frame, and the rods connecting the joints of the said levers to the lever-arms, with the follower L and the fulcrumed levers K, having their

338,785.

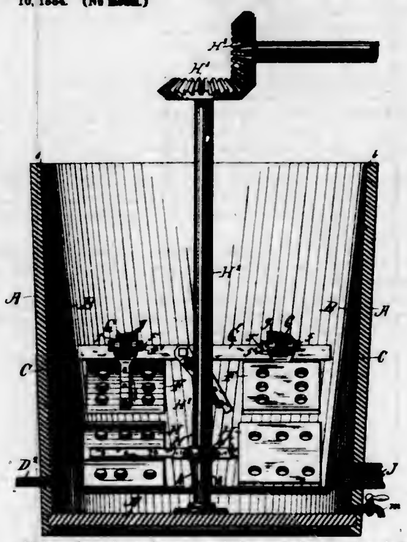


inner ends connected to the follower L and their outer ends connected to the follower N, whereby the said followers move simultaneously, substantially as described.

3. The combination of the frame or support, the lever-arms E, the winch and the ropes connecting the said arms thereto, the follower N, the toggle-jointed levers connecting the said follower with the frame, and the rods connecting the joints of the said levers to the lever-arms, with the follower L and the fulcrumed levers K, having their inner ends connected to the follower L and their outer ends connected to the follower N, whereby the said followers move simultaneously when the winch is turned, substantially as described.

4. The combination of the frame or support, the lever-arms E, the follower N, the toggle-jointed levers connecting the said follower with the frame, and the rods connecting the joints of the said levers to the lever-arms, with the stringer-rods l, having their upper ends attached to the frame, the levers K, fulcrumed to the lower ends of the said rods, and the follower L, connected to the inner ends of the levers K, the outer ends of the said levers being connected to the follower N, substantially as described.

338,786. CHURN. CHARLES H. ROBISON, Maywood, Ill. Filed Dec. 10, 1884. (No model.)



Claim.—In a churn, the rotary splashers and the operating-shaft, in combination with the stationary splashers, bars G G', and hinges *f f' f''*, substantially as specified.

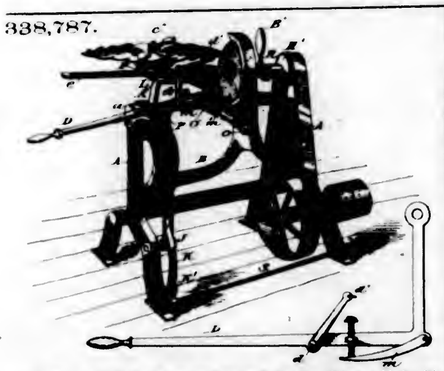
338,787. SAW-FILING MACHINE. SAMUEL C. ROGERS, Hamilton, Ontario, Canada. Filed July 1, 1885. (No model.)

Claim.—1. The combination of a slotted arm, *e*, concave base F, convex block G, and cone C'', provided with screw and jam nuts, substantially as described.

2. In a saw-filer, the combination of a bent lever, D, attached at one end to a table and carrying the pawl *d''*, the slotted arm *e*, the concave base F, the convex block G, and the cone C'', provided with screw and jam nuts for holding and moving the saw, substantially as described.

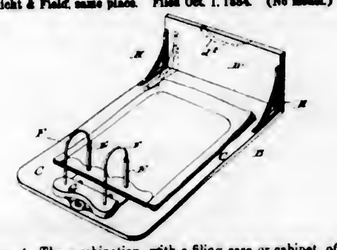
3. The combination of the bent lever D, attached at one end to a table, an adjustable templet, M, and oscillating frame B, provided with stops O and M', and emery-wheel C', substantially as described.

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4. In a saw-filer, the combination of a cone, C'', provided with screw and jam nuts, concave base F, convex block G, slotted arm *e*, table A, bent lever D, pawl *d'*, templet M, oscillating frame B, provided with stops, and emery-wheel, substantially as described.

338,788. BILL-FILE. PAUL J. SCHLICHT, Rochester, N. Y., assignor to Schlicht & Field, same place. Filed Oct. 1, 1884. (No model.)

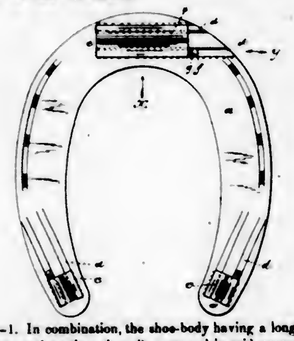


Claim.—1 The combination, with a filing case or cabinet, of a file comprising a base-board provided with a paper-holding device at its inner end and a vertical board at its opposite or outer end adapted to close the front opening of the cabinet when the file is inserted therein, substantially as and for the purpose set forth.

2. The combination, with a filing case or cabinet, of a file comprising a base-board having one or more receiving-wires at its inner end and a board at its opposite or outer end adapted to close the front opening of the cabinet when the file is inserted therein, substantially as and for the purpose set forth.

3. The combination, with a filing case or cabinet, of a file consisting of a base-board provided with a vertical board at its outer end adapted to close the front opening of the cabinet, and with a paper-holding device at its opposite or inner end, comprising one or more stationary receiving-wires and one or more arched transfer-wires, substantially as and for the purpose set forth.

338,789. HORSESHOE. HOWARD B. SCHUREMAN, Newark, N. J. Filed Jan. 30, 1885. (No model.)



Claim.—1. In combination, the shoe-body having a longitudinally-inclined groove, and a prismatic calk arranged in said groove, substantially as and for the purposes set forth.

2. In combination with the shoe-body, calks arranged longitudinally on the heels thereof, the ground-engaging edges of said calk being sharpened and inclined, as shown and described, for the purpose stated.

3. The improved shoe herein described, having on the under side thereof a groove with an indented bottom, and a calk arranged in said groove and held therein by a lug bent into the indentation in a direction at right angles to the plane of the shoe, as shown and described, the said parts being combined substantially as and for the purposes set forth.

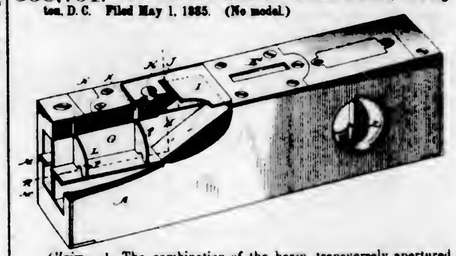
4. The improved shoe, combining therein the shoe-body *a*, having on the under side thereof a groove with inclined sides, an abutment, and a bottom indentation, and a calk arranged in said groove against said abutment, and held therein by a lug turned in a direction at right angles to the plane of said shoe into said indentation, substantially as set forth.

338,790. SLEEVE AND GLOVE PROTECTOR. MARTHA W. SLACK, Sandwich, Ill. Filed Dec. 23, 1885. (No model.)



Claim.—A sleeve-protector provided with a hand extension having an opening, and an elastic around the opening to draw it closed, and a thumb-piece secured to the extension, and an elastic to draw said extension around the wrist, substantially as and for the purpose set forth.

338,791. LEVELING-INSTRUMENT. CHARLES G. SMITH, Washington, D. C. Filed May 1, 1885. (No model.)



Claim.—1. The combination of the beam transversely apertured, and a spirit-level located within said aperture, with slotted plates supporting said level and adjustable lengthwise of the beam, and means for securing said plates in an adjusted position, as and for the purpose set forth.

2. The combination, with the block or beam having recess at its forward end and a vertical partition dividing the same, of the mirror located therein at an angle of forty-five degrees, whereby distant objects may be reflected upward through a suitable opening for ascertaining their relative horizontal level, as specified.

3. The combination, with the block having an open recess at its forward and and the inclined mirror, of the vertical partition, the pivoted platform to each side thereof, and the vertically-sliding diaphragms, whereby angular adjustments and measurements are effected, substantially as described.

4. The combination, with the beam or block having an open recess at its forward end communicating with a transverse opening at the top, of the inclined mirror, and the adjustable top plate or diaphragm arranged above the mirror over the transverse opening, substantially as described.

5. The combination, with the beam or block having an open recess at its forward end and a transverse opening in its top, of the adjustable slotted plates, and set-screws, and the graduations whereby angular measurement may be determined, substantially as described.

6. The combination, with a level having a recess at its forward end, vertical grooves on either side of said recess, and a transverse opening leading into said recess, of the inclined mirror, an adjustable slotted plate for said transverse opening, vertically-sliding diaphragms having recesses, the pivoted platforms, and a vertically-adjustable plate supporting the forward end of said platforms, the whole being constructed, arranged, and operated substantially as and for the purposes specified.

338,792. CLASP OR BUCKLE. EDWARD S. SMITH, Waterbury, Conn. Filed Sept. 15, 1885. (No model.)

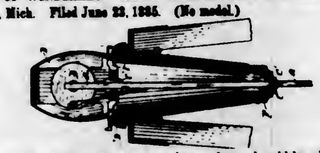


Claim.—1. In spring clasps or buckles, the combination, with a holding-lever the knuckle of which is provided with a recess, as 6, of a bearer carried by the body of the clasp or buckle, adapted to engage with said recess, substantially as described.

2. A body-plate for a spring clasp or buckle, one member of which is provided with a pintle, as 4, and the other with a bearer, as 5, adapted to co-operate with a recessed lever, substantially as described.

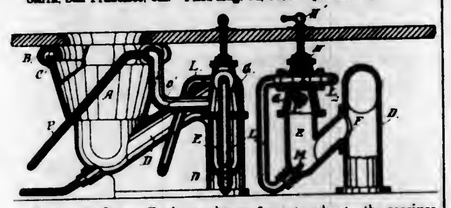
3. A spring clasp or buckle, consisting of a body-plate comprised in two members, one of which is provided with a pintle, 4, and the other with a bearer, 5, and a holding-lever hung to swing on the pintle 4, and having its knuckle provided with a recess, as 6, substantially as described.

338,793. DETACHABLE GUIDE-BEARING FOR RECIPROCATING RODS OF WINDMILLS. KIRK A. SMITH and JOHN E. WOODARD, Kalamazoo, Mich. Filed June 23, 1885. (No model.)



Claim.—A guide-bearing for a reciprocating rod, said bearing being provided with detachable guide-blocks on the opposite wearing sides of said rod, substantially as set forth.

338,794. EFFLUVIA-EJECTOR FOR WATER-CLOSETS. WILLIAM SMITH, San Francisco, Cal. Filed Aug. 14, 1885. (No model.)



Claim.—1. In an effluvia attachment for water-closets, the receiver or exhaust-chamber E, fashioned with a trap, N, in the bottom thereof, and provided with a water-service pipe operated by a valve or plug above the said exhaust-chamber and entering the lower portion of the same, substantially in the manner and for the purpose shown and described.

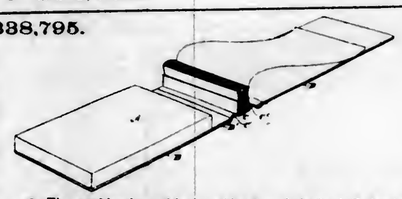
2. In combination with a water-closet, the effluvia-ejector herein described, consisting of an exhaust-chamber having a plug or valve located above it, and a water-service pipe entering at the lower end of the chamber and provided with a nozzle, together with an exhaust-pipe entering the casing above the chamber and connecting with the bowl of the water-closet in the manner as set forth and specified.

3. In a water-closet, the effluvia-exhaust pipe O' and the water-pipe P, for flushing the closet, forming a junction with each other at the points shown, whereby the pipes for flushing the closet and exhausting the foul air are combined in one and the same, and form only one connection with the bowl or basin, as set forth and specified.

338,795. COMBINED TABLET AND FILE. WILLIAM G. SMITH, Minneapolis, Minn. Filed Nov. 6, 1885. (No model.)

Claim.—1. The combination, with a writing-tablet, of a back secured thereto and projecting beyond the tablet, and a series of gummed stubs secured to the projecting portion of the back, as described, and for the purpose set forth.

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2. The combination, with the tablet A and the back B, having the projecting portion B', of the gummed stubs C, the cover D, and the flexible connections C' C'', all substantially as described, and for the purpose set forth.

338,796. RAIL-SUPPORT. FRED W. SNOW, Hillsboro, N. Y. Filed June 19, 1885. (No model.)



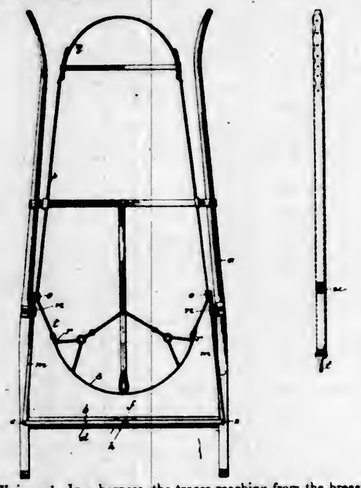
Claim.—1. The combination, in a retaining device for rails, of a flat switch-plate provided with one or more openings or recesses, *y*, and adapted to constitute a bearing for the main and the switch rails, and an abutment-block adapted to fit the side of the main rail and having one or more projections at the under side extending into the same, but not below the plate, and corresponding to the recesses *y*, substantially as set forth.

2. The combination of the rail B, plate C, having recesses adjacent to the outer edge of the rail, and block D, fitted to the plate and side of the rail and provided with projections adapted to said recesses, and having extended bearing portion *d*, substantially as set forth.

3. The flat switch-plate C, forming a bearing for the main and switch rails, having one or more openings with beveled edges, in combination with the main rail and with a block adapted to the plate and main rail and having projections at its under side, with beveled edges extending below the bottom of the block into the opening, and having a bearing upon the outer side of the opening, substantially as described.

4. The combination of the plate C, having recesses *y*, and openings or notches for the passage of spikes, and the abutment-block D, adapted to fit the outer side of the rail, having one or more projections corresponding to the recesses *y*, and with spike openings or notches corresponding to those in the plate, substantially as set forth.

338,797. HARNESS. JACOB W. SPANGLER, York, Pa. Filed July 3, 1885. (No model.)

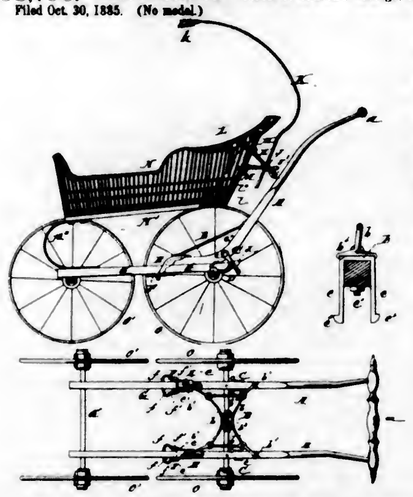


Claim.—1. In a harness, the traces reaching from the breast-strap or hames to the breeching-rings and secured to each, and provided with eyes to engage arms extending forward from the whiffletree to hitch the animal to a vehicle, and adapted to be disengaged therefrom to completely unhitch the animal, substantially as described.

2. The combination, with a harness having traces provided with eyes or openings *n*, and extending from the breast-strap or hames to the breeching-rings and secured thereto, of a whiffletree having arms ex-

tending forward along the shafts and provided with buttons to engage the eyes in the traces, substantially as described.

338,798. CHILD'S CARRIAGE. LLOYD G. SPENCER, Chicago, Ill. Filed Oct. 30, 1885. (No model.)



Claim.—1. In a child's carriage, the combination, with the parallel side bars, G, and the handle side pieces, A, secured thereto, of a brace comprising curved pieces *b b*, having feet *b' b'*, fitted to the handle side pieces, substantially as described.

2. In a child's carriage, the combination, with the side bars, G, and the handle side pieces, A, having their forward ends detachably secured to said bars, of the swinging loops C and catch-plates D, for locking and unlocking the handle, substantially as described.

3. In a child's carriage, the combination, with the side bars, G, having holding-plates F, and the handle side pieces, A, having at their forward ends hook-plates E, to engage said holding-plates, of a catch-lock for securing the handle side pieces to the rear ends of the side bars, substantially as described.

4. The side bars, A, of a handle, swinging loops C, and hook-plates E, in combination with the catch-plates D, holding-plates F, and side bars, G, for detachably securing the handle to the running-gear, substantially as and for the purpose specified.

5. The swinging loop C and stationary hook-plate E, both carried by a handle, in combination with the catch-plate D and holding-plate F, both attached to the running-gear, for connecting and disconnecting the handle, substantially as and for the purpose specified.

6. The bracket H, having an end face provided with notches h^2, in combination with a slotted bolt, I, and cap or clamp J, having notches *j*, for securing the parasol-rod in varying positions, substantially as specified.

7. The combination, with a wicker-work body, of a brace-plate, L, and a parasol-support for removing the strain from the wicker-work or body, substantially as specified.

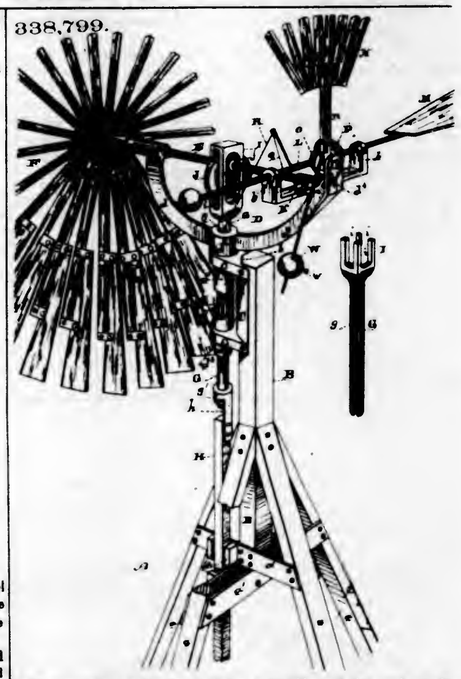
8. The combination, with the parallel side bars, G, and the handle side pieces, A, detachably secured thereto, of a brace, B, having curved pieces *b b*, provided with feet *b' b'*, fitted to the handle side pieces, said curved brace-pieces being connected by parallel straight pieces *b'' b''*, substantially as described.

338,799. WINDMILL. SYRANUS STANDISH, Pacheco, Cal. Filed Nov. 23, 1885. (No model.)

Claim.—1. In a windmill, a turn-table, a shaft mounted thereon, and a wheel on said shaft, in combination with the vane N, parallel with the wheel and having a stem, *n*, pivoted to the turn-table, its axis being parallel with the shaft of the wheel, whereby said vane is moved edgewise, the weight W on the lower end of the stem, the shaft L, mounted on the turn-table at right angles to the vane N, the vane M on said shaft, and the intermeshing gears O P on the stem of vane N and on the shaft L, respectively, substantially as herein described.

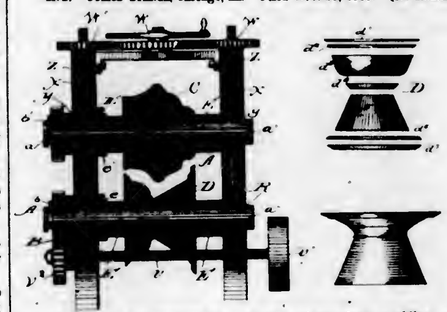
2. In a windmill, the turn-table D, having a hollow stem, *d'*, the shaft E, mounted in said turn-table, the wind-wheel F on said shaft, the shaft L, mounted on the turn-table at right angles to the shaft E, the regulating-vane M on said shaft, and the arm Q, in combination with the tubular piece or pipe G, connected at its upper end with the reciprocating devices of the wind-wheel shaft and swiveled at its lower end to the pump-pitman, said piece or pipe being pivoted in the tubular stem

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of the turn-table and having a slot, *g*, in its side, and the cord or wire R, connected with the arm Q of the shaft L, and entering the pipe G through its slot and passing through said pipe, substantially as described.

338,800. MACHINE FOR EMBOSSING PICTURE-FRAME MOLDING. JULIUS STANGE, Chicago, Ill. Filed Nov. 25, 1885. (No model.)



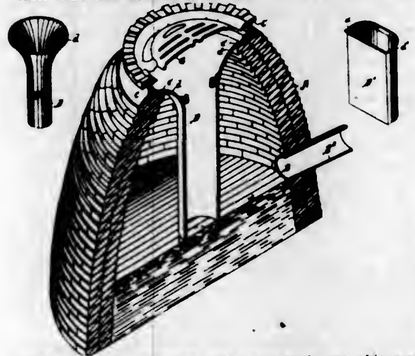
Claim.—1. In a machine for embossing picture-frame molding, an embossing-wheel detachably secured to a mandrel and having an ornamented periphery, the cross-section of which periphery is at varying angles with the axis of said embossing-wheel, in combination with a back roller built up of suitable ring-sections, all detachably secured to a mandrel, all substantially as described, and for the purpose set forth.

2. In a machine for embossing, an embossing-wheel having an ornamented periphery, the cross-section of which periphery is at varying angles with the axis of said embossing-wheel, a mandrel passing through said embossing-wheel and detachably secured thereto, a gear-wheel placed on said mandrel and also detachably secured thereto, in combination with a back roller built up of ring-sections, and a gear, both detachably secured to a mandrel, all substantially as described, and for the purpose set forth.

3. In a machine for embossing, an embossing-wheel having an ornamented periphery, the cross-section of which periphery is at varying angles with the axis of the embossing-wheel, the said embossing-wheel being built up of separate embossing-wheels forming ring-sections, and detachably secured to a mandrel, in combination with a back roller built up of suitable ring-sections detachably secured to a mandrel, all substantially as described, and for the purpose set forth.

4. In a machine for embossing, an embossing-wheel built up of separate embossing-wheels forming ring-sections detachably secured to a mandrel, a gear also detachably secured to the mandrel, in combination with a back roller built up of rings detachably secured to a mandrel, and a gear also detachably secured to the mandrel, all substantially as described, and for the purpose set forth.

338,801. CESSPOOL AND CATCH-BASIN. ARTHUR STAPLES, Lowell, Mass. Filed June 24, 1885. (No model.)

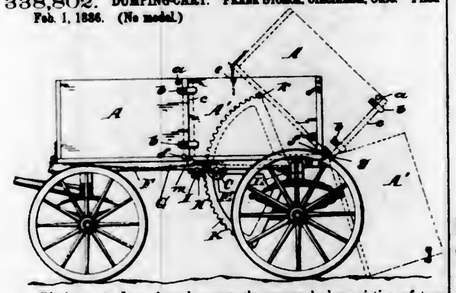


Claim.—1. The combination, with a catch-basin, and with an outlet sewer-pipe, B^2, communicating therewith at a point above the bottom, of a pipe extending from the mouth of the basin downward below the said pipe, B^2, substantially as and for the purpose set forth.

2. The combination of a catch-basin, a sewer-pipe, B^2, communicating therewith at a point above the bottom, a pipe, D, extending from the mouth of the basin downward and below the pipe B^2, and a perforated cap or grating, G, closing the top of the pipe D, for the purpose set forth.

3. The combination of a catch-basin provided with an opening at the top, and a pipe having an outwardly-flaring upper end resting upon the edges of said opening to support said pipe, and adapted to reach below the level of the outlet-pipe B^2, as and for the purpose specified.

338,802. DUMPING-CART. FRANK STORCK, Cincinnati, Ohio. Filed Feb. 1, 1886. (No model.)



Claim.—1. In a dumping-cart, the wagon-bed consisting of two sections, A A', hinged together at their bottom, and provided with lugs C, pins *f*, and flanges *e*, for the purposes described.

2. In a dumping-cart, the frame G, being provided with a shaft, H, having a square end and pinion I, the latter being in mesh with segmental rack K, having friction-roller *k*, and being pivoted to shaft L, secured to frame G, and hooks *g*, bolted to the end of the frame G.

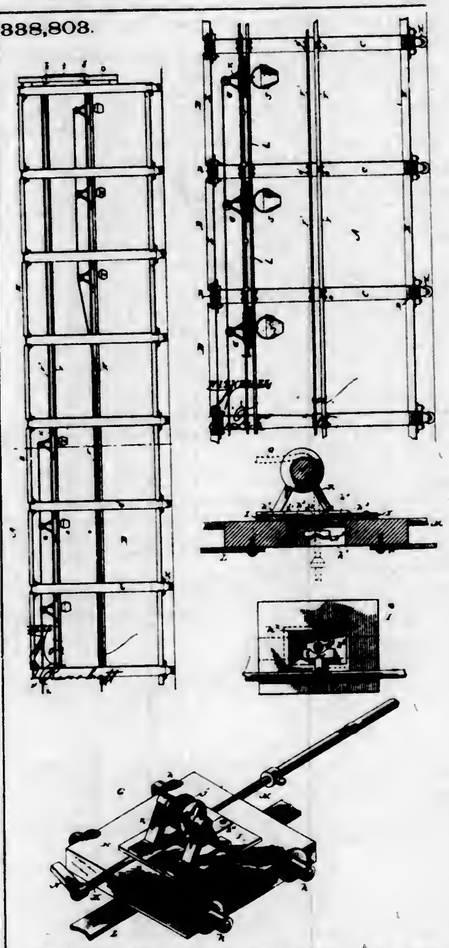
3. In a dumping-cart, the combination of a sectional bed, A A', hinged together, and pins *f*, with shaft H, pinion I, rack K, and hooks *g*, all secured to the frame G.

338,803. EXCAVATING APPARATUS. JOHN THOMSON and RICHARD W. MULLINS, Kansas City, Mo.; said Thomson assignor to said Mullins. Filed Aug. 5, 1885. (No model.)

Claim.—1. In an excavating apparatus, the combination, with a supporting tramway or trestle comprising a series of flexibly-connected sections, of tracks secured to said tramway, one above the other, a series of tracks to travel on said tracks, and buckets carried by the trucks and adapted to be raised and lowered, substantially as set forth.

2. A supporting tramway or trestle comprising a series of flexibly-connected sections, said sections being provided with wheels or rollers at their lower ends, flexibly-connected tracks supported by said trestle and arranged one above the other, and a set of flexibly-connected tracks on each track, substantially as set forth.

338,803.



3. The combination, with a supporting tramway or trestle comprising a series of flexibly-connected sections, tracks supported by said trestle and adapted to turn with the sections, guard-rails arranged above the track and adapted to turn with the sections, and trucks to travel on the tracks, as set forth.

4. A trestle or tramway comprising a series of flexibly-connected sections, a series of flexibly-connected tracks supported by said trestle, flexibly-connected trucks on the tracks, buckets carried by the trucks, and a rope or chain connected with said buckets and adapted to raise and lower the same, substantially as set forth.

5. A trestle or tramway comprising a series of flexibly-connected sections, jointed tracks secured to the trestle, and a series of trucks to travel on the tracks, said trucks being connected by means substantially as described, whereby they may readily turn upon curves, as set forth.

6. A trestle comprising vertical bars connected at their upper and lower ends to form frames, brackets having perforated lugs secured to said frame, and bars connecting the frames and having bolts or pins to engage the openings in the lugs, as set forth.

7. A trestle consisting of a series of flexibly-connected sections, brackets on the inner sides of the vertical uprights of said sections, and tracks having their meeting ends pivoted in said brackets, substantially as set forth.

8. The combination, with a trestle or frame, of tracks arranged one above the other, trucks on said tracks, buckets supported by the trucks and adapted to be lowered therefrom, and cables or their equivalents connecting the trucks upon the different tracks at one end, substantially as set forth.

9. The combination, with a trestle or frame composed of a series of flexibly-connected sections, a series of flexibly-connected rails to form a

track, and a series of flexibly-connected trucks on the track, substantially as set forth.

10. The combination, with a supporting frame or trestle comprising a series of flexibly-connected sections having tracks arranged one above the other, of a series of trucks on said tracks, openings in the trucks, hinged doors to close said openings, a rock-shaft to raise the doors, buckets, cables connected with the buckets and passing between the doors, and disks or buttons on said cables, substantially as set forth.

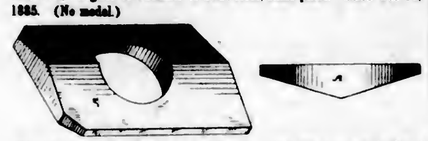
11. The combination, with a tramway or trestle comprising a series of flexibly-connected sections, of a track, a series of flexibly-connected trucks on the track, openings in the trucks, hinged doors to close the same, a rock-shaft having tappet-arms and connecting the trucks, buckets, and cables secured to the buckets and extending through the hinged doors, and disks or buttons on the cables, as set forth.

12. The combination, with a trestle comprising a series of flexibly-connected sections, of trucks to travel on a track supported by said trestle, said trucks being flexibly connected, a jointed rock-shaft connecting the trucks and having an operating-lever and tappet-arms, hinged doors to close openings in the trucks, springs to bear against the upper sides of the doors, cables to pass between the doors, buckets on the lower ends of the cables, and buttons on said cables, for the purpose set forth.

13. The combination, with a supporting-trestle comprising flexibly-connected sections, of flexibly-connected tracks adapted to travel on a track thereof, brackets on the upper sides of the trucks, sheaves journaled between the brackets, cables leading to the trucks, and buckets suspended from the ropes, substantially as set forth.

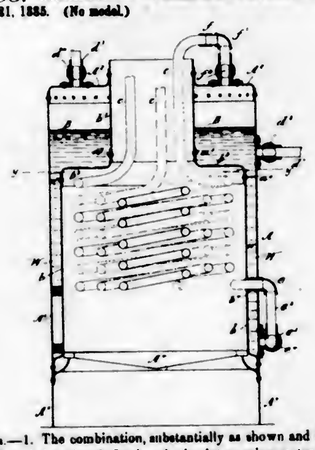
14. The combination, with a supporting-tramway, and tracks arranged one above the other and supported by the tramway, of a series of trucks to travel on the tracks, buckets suspended from the upper trucks by ropes which are connected with a winding-drum, a car on the lower track connected with the winding-drum by two ropes, and buckets connected by ropes with said car, whereby the buckets of the upper trucks may be lowered between said ropes.

338,804. **DUST-GUARD FOR AXLE-BOXES.** JAMES TIBBS, Columbus, Ohio, assignor of one-half to B. F. REES, same place. Filed Oct. 16, 1885. (No model.)



Claim.—A dust-guard or packing, A, with cut-away or inclined inner surfaces, forming a central projection or angle made of a single plate, substantially as set forth.

338,805. **STEAM-BOILER.** WILLIAM L. TOMEY, Boston, Mass. Filed Aug. 21, 1885. (No model.)



Claim.—1. The combination, substantially as shown and described, of the shell A, being closed, fire-box *b*, the intervening water-space W, the steam-space B, and the series of coils of pipe *c*, connected at their lower ends by valves c^4 with the water-space, and extended up through the smoke-flue and connected to the steam-space at their upper ends by valves f^3, substantially as shown and described.

2. The fire-box *b* and the shell or jacket A surrounding it, leaving a water-space, W, between, and the cock or valve outside the shell and in communication with the said water-space, the pipe c^3 and the sleeve b^4, extended through the fire-box and shell, combined with a coil, *c*, of pipe, one end of which is extended through the said sleeve and opens into the said pipe c^3, the opposite end of the pipe after entering the fire being connected with the steam-space by a cock, whereby the said coil may be cut off or rendered inoperative, substantially as described.

3. In a steam-generator, the wrought-metal case or shell and the wrought-metal fire-box therein shaped to leave a steam-space, B, and water-space W, combined with one or more coils of pipe arranged in the fire-box above the grate and connected each at its opposite ends with both the said steam-space and the said water-space by interposed valves, the ends of the coils connected to the steam-space being extended through the smoke-flue to the outside of the steam-space, and with connections to join the said ends to the outside of the steam-space, substantially as described.

4. In a steam-generator, a wrought-metal case or shell and a wrought-metal fire-box therein shaped to leave a steam-space, B, and water-space W, combined with one or more coils of pipe arranged in the fire-box above the grate and connected each at its opposite ends with both the said steam-space and the said water-space, the ends of the said coils connected to the water-space being extended to the outside of the water-space, and with connections to join the said ends to the outside of the water-space, substantially as described.

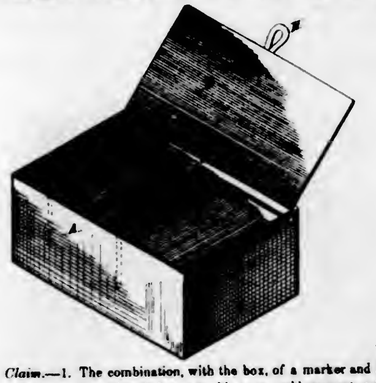
5. In a steam-generator, a wrought-metal case or shell and a wrought-metal fire-box therein shaped to leave a steam-space, B, and water-space W, combined with one or more coils of pipe arranged in the fire-box above the grate, and connected each at its opposite ends with both the said steam-space and the said water-space, the ends of the coils connected to the steam-space being extended through the smoke-flue to the outside of the steam-space, and with connections to join the said ends to the outside of the steam-space, substantially as described.

338,806. **PROCESS OF SCOURING WOOL.** CHARLES TOPPAN, Salem, assignor to the Canton Manufacturing Company, Boston, Mass. Filed July 16, 1885. (No specimens.)

Claim.—1. In the process of scouring wool, immersing the same in a warm solution of expressed oil of mustard-seed, petroleum products, and alkali, as described.

2. In the art or process of scouring wool, immersing the same in a warm solution of expressed oil of mustard-seed, paraffine-oil, vacuum-oil, and alkali, as described.

338,807. **CASE FOR PHYSICIANS' PRESCRIPTION-PAPERS, &c.** FERDINAND G. UHLICH, St. Louis, Mo. Filed Jan. 18, 1886. (No model.)



Claim.—1. The combination, with the box, of a marker and a support therefor, said marker being movable upon said support, substantially as set forth.

2. The combination of the box, the supporting-rod, and the marker engaging said rod and movable in a circular direction with the rod for its axis, and also in the direction of the length of said rod, as set forth.

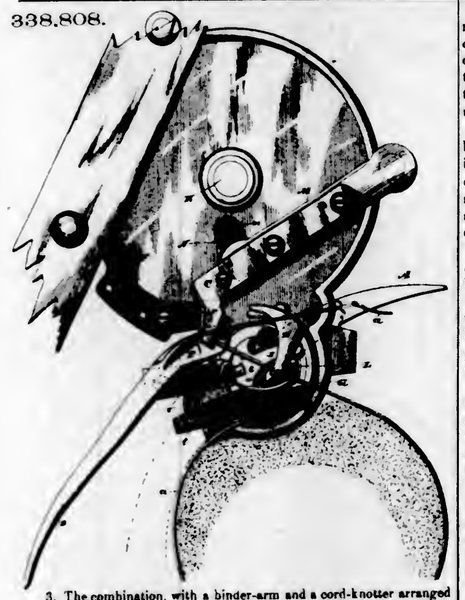
3. The combination, with the box, the marker, and a support upon which said marker slides, of a separate compartment or pocket for the reception of said marker when not in use, as set forth.

338,808. **SELF-BINDING HARVESTER.** HENRY M. WEAVER, Mansfield, Ohio. Filed June 23, 1884. (No model.)

Claim.—1. The combination, with a rotary binder-arm and a knotter arranged at right angles to the path of the binder-arm, of a cord holder and cutter consisting, essentially, of stationary and movable sections or jaws, and a tapering finger forming a continuation of said stationary section or jaw and adapted to catch under the cord as the latter is carried up by the binder-arm and deflect it laterally into the jaws of the holder, substantially as set forth.

2. The combination, with a binder-arm and a knotter, of a cord holder and cutter consisting, essentially, of a stationary guide-hook, slotted as described, and a movable portion, and a tapering finger forming a continuation of the guide-hook.

338,808.



3. The combination, with a binder-arm and a cord-knotter arranged at right angles to the path of the binder-arm, of a cord-holder and cutter consisting, essentially, of a stationary section, slotted as described, and provided with a cord catching and deflecting hook, a movable cutter-section adapted to enter the slot in the stationary section, and a movable cord-holding jaw adapted to engage the stationary section, the movable cutter and holder jaws or sections being rigidly secured together, substantially as set forth.

4. The combination, with a knotter, of a cord-holder consisting, essentially, of a stationary section having a cord catching and deflecting hook, and a movable portion, the latter provided with a laterally-extending flange adapted to hold the cord leading from the holder to the binder-arm out of the reach of the tying-bill.

5. In a tying mechanism for grain-binders, the combination, with a cord-holder consisting, essentially, of a stationary section having a cord catching and deflecting hook and provided with a laterally-projecting flange, and a movable section having a laterally-projecting flange registering with the flange on the stationary section, of a knotter located adjacent to the cord-holder, substantially as set forth.

6. The combination, with a knotter-shaft, of a cam loosely encircling said shaft, and devices, substantially as described, for first rotating the cam and shaft simultaneously, and, secondly, rotating the shaft and locking the cam.

7. The combination, with a knotter-shaft having a tying-jaw rigidly secured thereto, a movable jaw provided at its inner end with an anti-friction roller, and a cam loosely encircling said shaft, of devices, substantially as described, for first rotating the cam and the shaft, and, secondly, locking the cam, substantially as set forth.

8. The combination, with a knotter-shaft and two pinions of similar construction secured thereon, one rigidly and the other loosely, of the movable jaw of the knotter adapted to engage a cam-flange on the loose pinion, and a gear-wheel for engaging the pinions, thereby rotating the knotter and operating the jaw, substantially as set forth.

9. The combination, with a knotter-shaft provided with two pinions of similar construction, one rigidly and the other loosely mounted thereon, of the movable jaw of the knotter operated by a cam on the loose pinion, and a gear-wheel adapted to first turn both pinions simultaneously, and, secondly, turn the fixed pinion and the knotter-shaft and lock the loose cam-pinion against rotation, substantially as set forth.

10. The combination, with a knotter-shaft provided with two pinions, one rigidly and the other loosely secured thereon, of the movable jaw of the knotter pivoted thereto and operated by a cam-flange on one of the pinions, and a driving-wheel adapted to first rotate both pinions simultaneously, secondly, to lock the loose one and rotate the fixed one and the knotter-shaft, and, thirdly, to lock both, substantially as set forth.

11. The combination, with a binder-arm and a knotter, of a rigid cord-guide partially overlying the knotter, and an outwardly-extending flange located outside of the knotter and in close relation to the guide, substantially as and for the purpose set forth.

12. The combination, with a rotary knotter adapted to have two revolutions to tie the knot, of a rigid inwardly-inclined cord-guide partially overlying the knotter, and constructed to hold the cord out of the reach of the knotter during the first part of its first revolution, and to prevent the cord from slipping off the ends of the jaws as the latter pass under the guide during the latter part of the first revolution and the commencement of the second revolution, substantially as set forth.

13. In tying mechanism for grain-binders, the combination, with a knotter-shaft carrying a stationary and a pivoted jaw, a sleeve surrounding said shaft and having a cam adapted to be engaged by the inner end of the pivoted jaw, and devices for rotating said cam-sleeve, of a stationary cam-flange for holding the pivoted jaw in a closed position, and the yielding spring-cam for yieldingly holding the pivoted jaw in a closed position, substantially as set forth.

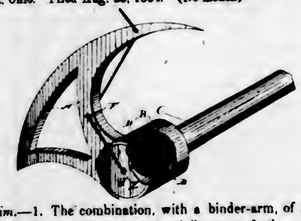
14. The combination, with a knotter-shaft having a rigid jaw and a pivoted jaw, of the flange S, partially surrounding the knotter and having a cam thereon for holding the jaws in closed adjustment.

15. The combination, with a knotter-shaft having a rigid jaw and a pivoted jaw, of the flange S, partially surrounding the knotter and having a cam thereon for holding the jaws in closed adjustment, and the yielding spring-cam U, forming a continuation of said flange, substantially as set forth.

16. The combination, with a knotter-shaft having a rigid jaw and a pivoted jaw, a sleeve encircling said shaft and provided with a cam, and gearing, substantially as described, for operating said shaft and sleeve, of the flange S, partially surrounding the knotter and having a cam thereon, all of the above parts combined and operating substantially as described.

17. The combination, with a knotter-shaft having a rigid jaw and a pivoted jaw, a sleeve encircling said shaft and provided with a cam, and gearing, substantially as described, for rotating the shaft and sleeve, of the flange S, partially surrounding the knotter and having a cam thereon, and the yielding spring-cam U, forming a continuation of said flange, substantially as set forth.

338,809. **SELF-BINDING HARVESTER.** HENRY M. WEAVER, Mansfield, Ohio. Filed Aug. 23, 1884. (No model.)

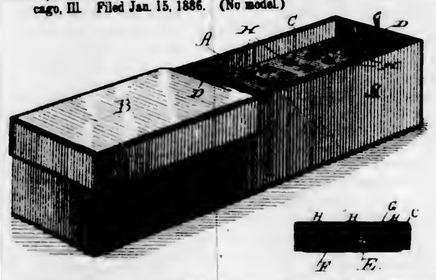


Claim.—1. The combination, with a binder-arm, of a cord-receptacle located within said arm, substantially as set forth.

2. The combination, with a binder-arm, of a cord-receptacle located within the hub of said arm, substantially as set forth.

3. The combination, with a revolving binder-arm, of a cord-receptacle located within said arm and caused to rotate therewith, substantially as set forth.

338,810. **MERCHANDISE-RECEPTACLE.** LEWIS WHITEHEAD, Chicago, Ill. Filed Jan. 15, 1886. (No model.)



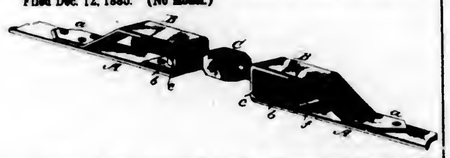
Claim.—1. A merchandise-receptacle having a lining composed of a moisture-absorbing substance, in combination with a tray composed of a moisture-absorbing substance and containing a moisture-absorbing substance, substantially as and for the purpose set forth.

2. A merchandise-receptacle having a lining composed of a moisture-absorbing substance, in combination with a tray, E, containing a moisture-absorbing substance, F, a covering, G, of a material of loose texture upon the tray, and a perforated cover, C, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

3. A merchandise-receptacle, A, having a lining, D, of absorption-

paper, in combination with a tray, E, formed of absorption-paper and containing lime F, a cloth-cover, G, for the tray, and a perforated cover, C, upon the tray, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

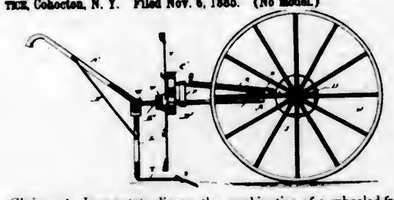
338,811. BAND-TIGHTENER. WILLIAM H. WHITTAKER, Seneca, Ill. Filed Dec. 12, 1885. (No model.)



Claim.—1. The brackets B, having securing-plates *b a* and holes *d*, combined with the nuts *c*, and with the rods having right and left threads, the whole being adapted to serve with a metal band, A, as set forth.

2. The combination, with a metal band or tie, A, and with a tightening-rod having right and left hand threads, of nuts *c*, and brackets, as B, arranged to confine said nuts and to be removably secured to metal bands of different lengths and widths, as set forth.

338,812. POTATO-DIGGER. FRANCIS O. WILLIAMS and JOHN C. MATTHEW, Cohocton, N. Y. Filed Nov. 6, 1885. (No model.)



Claim.—1. In a potato-digger, the combination of a wheeled frame formed into a spindle at its rear end, a stirring-reel journaled upon the said spindle and having a pinion upon its hub, a shaft journaled in longitudinal bearings upon the frame, and having a pinion upon its rear end meshing with the pinion upon the hub of the reel, and a pinion at its forward end, and a drive-axle having cog-wheels meshing with the pinion at the forward end of the longitudinal shaft, as and for the purpose shown and set forth.

2. In a potato-digger, the combination of a frame having forwardly-projecting arms formed into bearings at their ends, having beveled inner ends, a drive-shaft journaled in the said bearings, a sleeve sliding upon and turning with the said axle and provided with pinions upon its ends, a pinion meshing with either of the cog-wheels, a lever having a cross-head at its pivoted end, and bars pivoted to the ends of the cross-head, and having beveled forward ends bearing against the beveled inner ends of the bearings, and having their inner edges bearing against the outer faces of the cog-wheels, as and for the purpose shown and set forth.

3. In a potato-digger, the combination of a bifurcated frame having bearings in the forward ends of its forward bifurcated arms, and having its rear end formed into a spindle, a drive shaft or axle having the drive-wheels at its ends journaled in the bearings in the ends of the frame-arms, cog-wheels connected by a sleeve and sliding upon and turning with the axle, means for sliding the said sleeve and cog-wheels, a stirring-reel journaled upon the spindle at the rear end of the frame and having a pinion upon its hub, a shaft journaled longitudinally upon the frame and having a pinion at its rear end meshing with the pinion of the hub, and having a pinion at its forward end meshing with either of the sliding cog-wheels, and a box secured to the rear end of the spindle and having a curved standard or frame secured to it, provided at its lower ends with forwardly-bent arms having an opening-shoe secured between their ends, as and for the purpose shown and set forth.

4. In a potato-digger, the combination of a frame having its forward end bifurcated and provided with transverse bearings in the ends of the bifurcated arms, and having its rear end formed into a spindle, a drive-axle journaled in the bearings, and a box secured to the rear end of the spindle and provided with a curved frame having forwardly-bent arms secured to its lower ends, provided with an opening-shoe secured between the ends of the said arms, as and for the purpose shown and set forth.

5. In a potato-digger, the combination of an axle, a sleeve sliding upon and turning with the said axle and having cog-wheels at its ends, a pinion meshing with either of the cog-wheels, bearings for the axle having their inner ends beveled, and bars having their ends beveled at their outer edges, bearing against the beveled ends of the bearings, and having means for forcing one forward and the other back, the inner edges of the bars bearing against the cog-wheels, as and for the purpose shown and set forth.

338,813. BLANK FOR TURN-BUCKLES. CHARLES H. WILLIAMS, Cleveland, Ohio. Filed Jan. 9, 1886. (No model.)



Claim.—1. The method herein set forth of making turn-buckle blanks, which consists in bending a straight bar, spreading the ends of the same, and curving the side edges of said ends, substantially as specified.

2. A step in the art of making turn-buckle blanks, which consists in simultaneously carving and spreading the end of a bar to adapt said bar end to form a portion of the head or socket of a turn-buckle, substantially as specified.

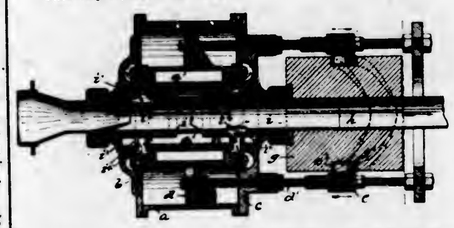
3. The method herein set forth of making turn-buckle blanks, which consists in simultaneously carving and spreading the opposite ends of a bar, and subsequently curving the side edges of said ends, substantially as specified.

4. A turn-buckle blank consisting of a bar having its ends spread and arranged in a common plane at one side of the body portion of the bar, said ends being thus adapted to form parts of the heads or sockets of a turn-buckle, substantially as specified.

5. A turn-buckle blank consisting of a bar having its ends spread, transversely curved, and arranged in a common plane at one side of the body portion of the bar, whereby said ends are adapted to be united with similar ends of a similar blank to form the heads or sockets of a turn-buckle, substantially as specified.

6. A turn-buckle blank comprising a bar having widened ends arranged outside of the plane of the bar, and swaged or beveled at the side edges for welding, substantially as specified.

338,814. VAPOR-ENGINE. WILLIAM H. WOOD, Hartford, Conn. Filed July 17, 1885. (No model.)



Claim.—1. In a vapor-engine, in combination, a group of cylinders arranged about a common center, the pistons with connected rods that engage a curved cam formed on a cam-block fast to the central shaft, and the hollow rotary valve-stem bearing the rotary valves with the several inlet and outlet ports, all substantially as described.

2. In a vapor-engine, in combination, a cylinder, a piston with its piston-rod bearing the anti-friction roller that engages a curved cam, the cam-block bearing the cam and fast to the driving-shaft, and the hollow rotary valve-stem bearing the rotary valves with the several inlet and outlet ports, all substantially as described.

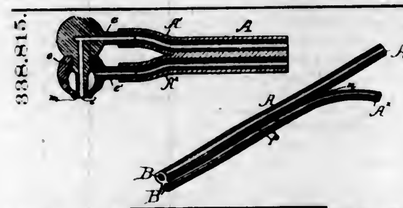
3. In combination with a group of cylinders arranged about a common center and with their axes parallel, the pistons with connected rods, the curved cam fast to the main shaft and set in a plane transversely of the line of movement of the rods, the hollow valve-stem bearing the rotary valves having inlet and outlet ports and held between the cylinder-heads and the shoulders on the valve-stem, all substantially as described.

4. In combination with the group of cylinders arranged about a common center, the pistons connected to the main shaft, whereby the latter is rotated, the hollow valve-stem bearing the rotary valves with the inlet-ports cut through both walls of the hollow disk-like valves, whereby the valve is counterbalanced, and the outlet-ports opening into the valve-stem, all substantially as described.

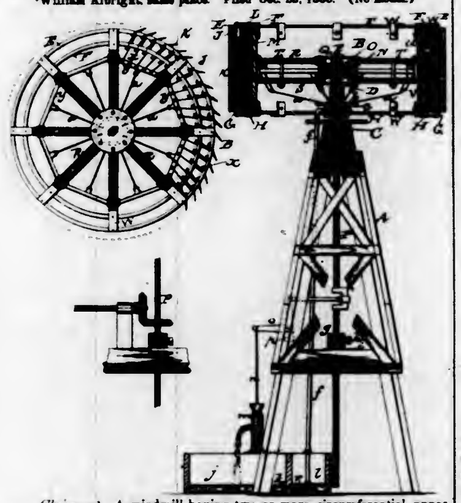
338,815. RUBBER TUBE FOR HATTERS' IRONS. GEORGE YULE, Newark, N. J. Filed June 8, 1885. (No model.)

Claim.—The conductor herein shown and described, consisting in a tube formed of india-rubber and provided with two separate continuous channels, substantially as shown and described.

338,815.



338,816. WINDMILL. SAMUEL ALBRIGHT, Nevada, Mo., assignor to William Albright, same place. Filed Dec. 23, 1885. (No model.)



Claim.—1. A windmill having two or more circumferential upper and lower rims or rings, a circumferential series of sails or slats pivotally supported between the outer top and bottom rims, one or more series of sails or slats supported between the inner rims or rings, a central disk or hub, spider-arms connecting said hub and the slat-bearing rims or rings, and bracing the latter, a hollow shaft or sleeve connecting the wheel and the tower, a drive-shaft passing through said hollow shaft, and connecting at its upper end with the wheel and at its lower end with the mechanism or devices to be operated, a ring or disk loosely mounted upon said hollow shaft, with capability of reciprocating thereon, radial arms or rods attached to said ring or disk, a series of bars connected to said rods and having connection with the outer pivotal slats or sails, and depending rod or lever connected to said ring or disk, for the purpose of reciprocating the same and the radial arms attached thereto, and thereby opening and closing the outer row of slats or sails.

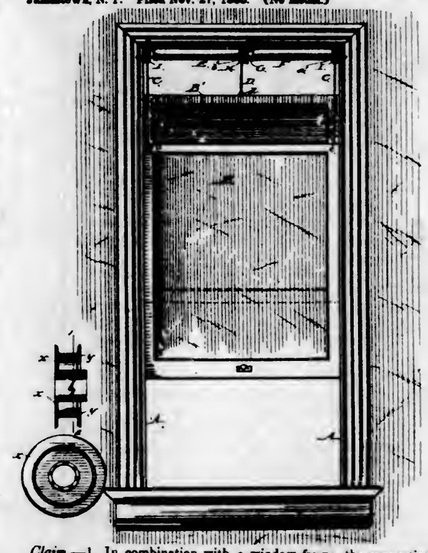
2. A windmill having two or more upper and lower circumferential rims or rings, a series of slats or sails pivotally supported between the external rims, a series of inner slats or sails supported between the inner rims or rings, a central disk or hub having radial arms extending therefrom to strengthen and brace the said wheel and hollow shaft connecting the wheel and tower, a drive-shaft extending through said hollow shaft and connecting with the wheel, and operative devices connected to the outer series of slats or sails, whereby the same may be opened or closed, substantially as set forth.

3. A windmill having a wheel provided with an outer series of pivotal slats or sails and an inner row or rows of slats, rods, or arms connected at their outer ends to and extending inwardly from said outer slats or sails, and at their inner ends connected to a series of bars or beams, a disk having arms or rods radiating therefrom and connecting with said bars or beams and a depending sleeve, and means, substantially as described, connecting with said sleeve for reciprocating said disk and closing and opening the outer sails.

4. A windmill having a wheel composed of two or more upper and lower circumferential rims or rings, an outer row of pivotal slats or sails, one or more inner rows of slats or sails, all having bearing between the top and bottom rims or rings, a central disk or hub, and radial arms extending from the upper and lower portions, respectively, of said disk or hub, and extending across the respective rims or rings, for the purpose of bracing said wheel.

5. A windmill having a wheel provided with a central hollow disk or hub, an outer row of pivotal slats, and an inner row or rows of slats, means, substantially as described, for opening and closing said outer slats, a hollow shaft connecting the lower building or other support and the hub of the wheel, and a drive-shaft passing through said hollow shaft and connected at its upper end to said wheel-hub.

338,817. SASH-BALANCE. CHARLES H. AMES and MILO HARRIS, Jamestown, N. Y. Filed Nov. 27, 1885. (No model.)



Claim.—1. In combination with a window-frame, the supporting-rod G, having its bearings in said frame, and provided with pulleys I I, rigidly secured thereto, spring F, loose pulley H, and spring E, with suitable means of connecting the pulleys with the sash of the window, as and for the purpose set forth.

2. In combination with a window-frame, the supporting rod G, having its bearings below the upper casing of the window, with pulleys I I secured thereto, loose pulley H, helical springs E F around said rod and secured at one end to the frame of the window, their opposite ends having a torsional bearing against the bisected ratchet-pulleys H I, with suitable means of connecting pulleys with each sash of a window, as shown, as and for the purpose set forth.

3. In combination with a window-frame, the rotating rod G, having helical spring or springs around said rod, one end of the spring being held in a fixed position, the other end of the spring bearing against one section of the bisected pulley, so that any desired torsional stress may be given the spring without removing the ends of spring from their fixed positions, as and for the purpose set forth.

338,818. PICKET-FENCE. WILLIAM F. BAIRD, Burlington, Iowa. Filed Oct. 2, 1884. (No model.)



Claim.—The combination, with the fence-sections composed of corrugated pickets and intertwining wires, of the fence-posts B, the sill E, and the flanged plate D, corrugated longitudinally and forming a sheathing for the sill and a support for the pickets, substantially as and for the purposes specified.

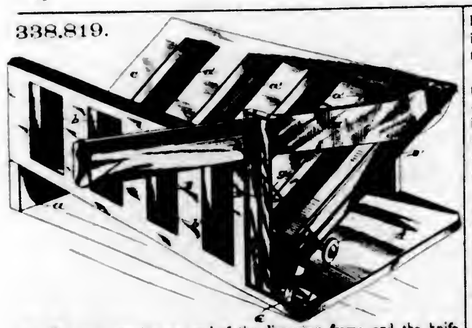
338,819. BREAD AND VEGETABLE CUTTER. FRITZ BOES and HERMANN WINTER, Helena, Mont. Filed Dec. 11, 1885. (No model.)

Claim.—1. In a machine for slicing vegetables, &c., the combination, with a frame diverging from the base upwardly, and knife-guides secured to the ends of said diverging frame, of a knife-blade secured in sliding adjustment within the guides, and a spring-actuated arm connected to the handle of the knife and adapted to gradually stop and automatically start the knife on the return, substantially as set forth.

2. The combination, with a frame having knife-guides at one end thereof, and a knife adapted to rise and fall in said guides with a draw-cut, of a spring-actuated rock-arm connected with the handle end of the knife by a cord, substantially as set forth.

3. The combination, with the base and diverging frame secured thereto and having rollers journaled therein, of two pairs of parallel

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metallic bars secured to one end of the diverging frame, and the knife secured between said bars in vertical and longitudinally-sliding adjustment, substantially as set forth.

4. The combination, with the diverging frame, the two series of feed-rollers adapted to crowd the article to be sliced between them and the knife-guides located at one end of said frame, of a knife adapted to rise and fall in said guides with a draw-cut, substantially as set forth.

5. The combination, with a frame, the two series of feed-rollers adapted to crowd the article to be sliced between them and the knife-guides attached to one end of the frame, of the knife secured in the guides, and the spring-actuated rock-arm indirectly connected to the handle end of the knife, substantially as set forth.

338,820. LEAD OR CRAYON HOLDER. CLARK WM. BOMAN, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed Jan. 15, 1886. (No model.)



Claim.—1. The combination, with the spring-controlled lead clamping and releasing mechanism of a lead and crayon holder, of a back-stop arranged and operating substantially in the manner and for the purpose herein set forth.

2. The combination, with the sheath or handle, the stop-gage mechanism, and the spring-controlled lead clamping and releasing mechanism of a lead and crayon holder, of a back-stop arranged and operating substantially as and for the purposes hereinbefore set forth.

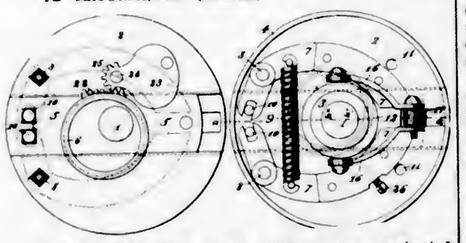
3. The combination of the sheath or handle, the guide-tube, the receiver connected therewith by a pin and inclined slot connection, the toothed back-stop or follower, the stop-gage jaws carried by the receiver, the collapsible or split nozzle carried by the guide-tube, the pressure-cap, and the retracting-spring, these parts being connected and arranged together for joint operation substantially as hereinbefore set forth.

338,821. CAR-COUPLING. IRA H. BRADSHAW, San Francisco, Cal., assignor of one-half to A. E. Ball, same place. Filed Jan. 4, 1886. (No model.)



Claim.—The combination, with a draw-head, A, having slot *a* and link-chamber $A^{\times}$, recessed at *b*, of the coupling-pin holder consisting of the bow-shaped gravitating latch B, provided with knuckle *b'*, short arm B^3, weight D, and beak B^3, formed with a depressed extremity, b^4, said pin-holder being pivoted in the slot *a*, substantially as shown and described.

338,822. GOVERNOR FOR ENGINES. ALBERT P. BROOMELL, York, Pa. Filed Dec. 21, 1885. (No model.)

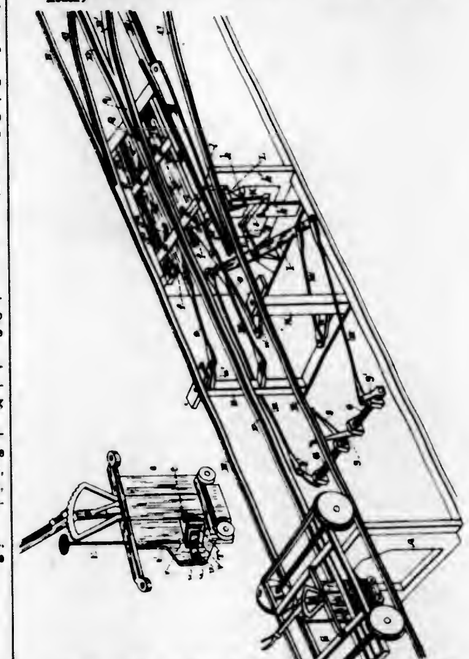


Claim.—1. The combination of a disk for attachment to the shaft of an engine, a base-plate carrying the eccentric and adapted to move longitudinally in or upon such disk, an eccentric, weighted arms operating upon the sliding base-plate, and a spring extending between and attached at opposite ends directly to said arms, substantially as described.

2. The combination of the disk 2, sliding base-plate 5, and eccentric 6, carried thereby, and the weighted lever-arms 7, pivoted to the disk 2, engaging with their shorter arms the sliding base-plate, and having their longer arms connected by a spring, 9, extending between and attached at opposite ends directly to said arms, these parts being constructed and arranged for joint operation in the manner hereinbefore set forth.

3. A combined automatic governor and reversing-gear for steam-engines, consisting of the disk 2, the sliding base-plate 5, and eccentric 6, carried thereby, weighted arms 7, detachably connected to said base-plate, means for locking the said arms against movement, the sliding reversing-sleeve 12, and the arms or links 16, whereby said sleeve may be detachably connected with the base-plate 5, these parts being arranged and adapted for use substantially in the manner and for the purposes hereinbefore set forth.

338,823. AUTOMATIC CABLE-ROAD SWITCH. ARTHUR F. BROWN and FRANCIS E. STRATTON, San Francisco, Cal. Filed Oct. 15, 1885. (No model.)



Claim.—1. In a railway-switch, the mechanism by which the throw-rail is operated, comprising the rock-shafts G, having arms *g* and cranks *g'*, the pivoted lever I, and connecting-rods H, the crank *i* of said lever, the pivoted vertical lever K, and the links J L, and a lug on the traveling car, adapted to come in contact with an arm of the rock-shafts, substantially as herein described.

2. In a cable-railway switch, the throw-rail E, the rock-shafts G in the underground frame-work of the road-bed, having arms *g* and cranks *g'*, and suitable levers and connecting-rods between said cranks and the throw-rail, in combination with a swinging lug on the grip-frame of the grip-car, adapted to come in contact with the arms of the rock-shafts, substantially as herein described.

3. In a cable-railway switch, the throw-rail E and the mechanism in the underground frame-work of the road-bed, comprising the rock-shafts G, having arms *g* and cranks *g'*, the connecting-rods H, the lever I, having crank-arm *i*, the link J, the lever K, and the link L, in combination with the grip of the grip-car, having a lug, T, in its frame, adapted to be moved at right angles with said frame on one side or the other, whereby it comes in contact with one or the other of the arms *g* of the rock-shafts, substantially as herein described.

4. In a cable-railway switch, the oppositely-located plates F, adapted to move longitudinally and laterally to open and close the main and branch grip-slots of the road-bed alternately, substantially as herein described.

5. In a cable-railway switch, the oppositely-located plates F, adapted to have a longitudinal and lateral movement to open or close the main and branch grip-slots of the road-bed alternately, and a mechanism connected with said plates and operated by the approaching grip-car for operating the plates, substantially as herein described.

6. In a cable-railway switch, the movable plates F, having the curved or eccentric slots f^2 in them, and the fixed studs *f'*, passing into said slots, by which the plates are properly guided and adapted to open or close the main and branch grip-slots of the road-bed alternately, in combination with mechanism connected with said plates and operated by the approaching grip-car for moving the plates, substantially as herein described.

7. In a cable-railway switch, the movable plates F, adapted to open or close the main and branch grip-slots alternately, in combination with the mechanism by which said plates are operated, consisting of the rock-shafts G in the underground frame-work of the road-bed, said shafts having arms *g* and cranks *g'*, and connecting mechanism between said cranks and the plates, and a lug on the grip of the grip-car, adapted to come in contact with the arms *g* of the rock-shafts, substantially as herein described.

8. In a cable-railway switch, the oppositely-moving plates F on each side of the main grip-slot at its junction with the branch grip-slot, said plates having shoulders Q, in combination with the plate *q* at the junction of the slots, against the end of which the shoulders of plates F abut when moved as described, substantially as herein described.

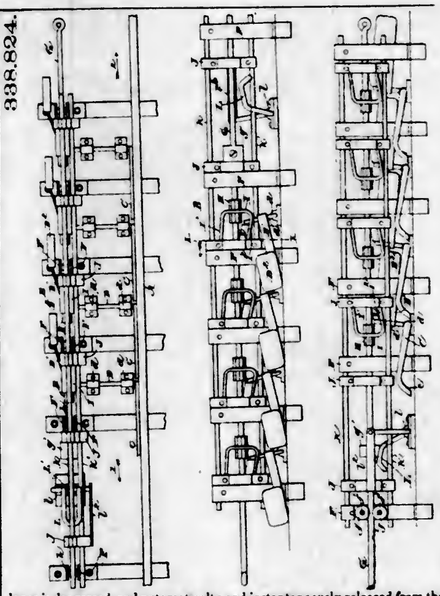
9. In a cable-railway switch, the plates F, resting on bed-pieces on each side of the grip-slot, and having the eccentric slots f^2, guided on fixed pins, and shoulders Q on the forward ends, and a means for moving said plates, as described, in combination with the plate *q* at the junction of the main and branch grip-slots, against the end of which the shoulders of plates F are moved to open and close the slots, substantially as herein described.

10. In a cable-railway switch, the oppositely-moving plates F, adapted to open and close the main and branch grip-slots of the road-bed alternately, in combination with the rock-shafts G, having arms *g* and cranks *g'*, the connecting-rods H, the lever I, the connecting-rods M, the vertical shafts N, having crank-arms *n n'*, and the connecting-rods O, and a lug, T, on the grip-car, adapted to come in contact with the arms *g* of the rock-shafts, substantially as herein described.

11. In a cable-railway switch, the main track, the branch track, and the throw-rail, the main slot, the branch slot, and the oppositely-moving plates F of the slots, as described, in combination with the mechanism by which the throw-rail is operated, and by which the plates are moved to open and close the slots alternately, consisting of the rock-shafts G, having arms *g* and cranks *g'*, the connecting-rods H, the lever I, having crank-arm *i*, the link J, the lever K, and link L, the vertical shafts N, having crank-arms *n n'*, the connecting-rods N, joining the lever I with the lower crank-arms, *n*, the connecting-rods O, joining the upper crank-arms, *n'*, with the movable plates, and the lug T on the grip of the grip-car, substantially as herein described.

12. In a cable-railway switch, the pivoted lug T in the grip-frame, and the spindle *t'*, by which it is operated, in combination with the sliding bearing U and the pivoted link V, connecting said bearing with the lug, substantially as herein described.

338,824. AUTOMATIC SETTING APPARATUS. TOWNSEND W BURT, Mineola, N. Y. Filed Dec. 29, 1885. (No model.)



Claim.—1. The combination of a movable setting-rod and two or more levers, each provided with a gripping device adapted to be thrown into engagement with the rod to move the same, substantially as described.

2. The combination of a movable setting-rod and a series of successively-operated levers provided with gripping devices and adapted to engage and move the rod, substantially as described.

3. The combination of a movable setting-rod and a series of successively-operated levers provided with gripping devices to engage and move the rod in a step-by-step motion, and automatically released from the rod simultaneously with the return of the levers to their normal position, substantially as described.

4. The combination of a movable setting-rod and a series of independent levers operated successively and each provided with a gripping device that is thrown into engagement with the movable rod when the lever is depressed, and automatically and instantaneously released from the rod when the lever is elevated to its normal position, each of the gripping devices of the series being operated independently of the fellow gripping devices of the series, and only by the lever to which it is connected, substantially as described.



5. The combination of a movable setting-rod and a series of levers, each lever being provided with a gripping device that engages the rod when the lever is depressed, and released from the rod when the lever is returned to its normal position, substantially as described.

6. The combination of a movable setting-rod and levers having gripping devices arranged and operated to move the rod in a step-by-step motion, substantially as described.

7. The combination of a movable setting-rod fed with a step-by-step motion, and levers having gripping devices for engaging and feeding the rod, substantially as described.

8. The combination of the levers, a movable setting-rod operated by the levers, and a shifting mechanism operated by the setting-rod when the latter has been moved a certain distance, substantially as described.

9. The combination of a lever or levers, a movable setting-rod operated thereby, and a shifting mechanism operated by and moving in unison with the setting-rod, substantially as described.

10. The combination of a lever or levers having gripping devices, a movable setting-rod, and a shifting mechanism moving in unison with the rod and adapted to act upon the gripping devices of the levers to prevent them from moving the rod, substantially as described.

11. The combination of a movable setting-rod, a rock-shaft carrying a holder, and gripping-clamps loosely mounted in the holder and operated thereby to actuate the setting-rod, substantially as described.

12. The combination of a movable setting-rod, a weighted lever, a holder, and gripping devices mounted in the holder and operated thereby when the levers are moved, substantially as described.

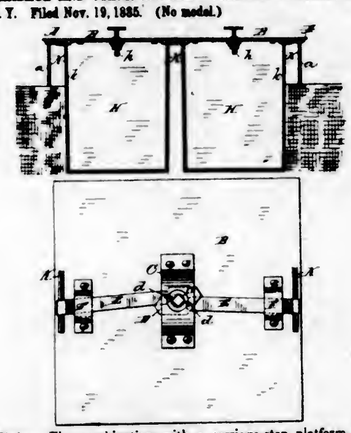
13. The combination of the movable setting-rod, a weighted lever, a weighted movable holder, and gripping devices carried by the holder, substantially as described.

14. The combination of a movable setting-rod, a series of weighted levers, a movable holder for each lever, and a gripping device mounted in each holder and adapted to operate the movable rod independently of the other gripping devices of the series, substantially as described.

15. The combination of the movable setting-rod, a series of rock-shafts, each having a lever and a weighted arm, a movable holder connected to the rock-shaft and having the arms, and a gripping device carried and operated by the holder to move the rod, substantially as described.

16. The combination of the movable setting-rod having a stop, a series of levers, a holder connected to each lever and carrying the gripping devices, an oscillating shaft having an inclined stop-arm, and shifting-rods connected with the oscillating shaft, and having bars J to bear on the holders and prevent the gripping devices from engaging the movable rod, substantially as described.

338,825. COMBINED CARRIAGE-STEP AND RECEIVER FOR GARBAGE AND OTHER REFUSE. FREDERICK W. CARLIN, Brooklyn, N. Y. Filed Nov. 19, 1885. (No model.)



Claim.—The combination, with a carriage-step platform, A, supported as described, and provided with one or more receiver-holders, H, and one or more removable top plates, B, of a bracket-piece, C, bearings *c*, locking-piece D, pivoted levers E E, and bearings F F, arranged as described, and adapted to hold their top plates in position, substantially as shown and described.

338,826. DRY OUTHOUSE. THOMAS W. CARRICO, San Antonio, Tex. Filed Nov. 10, 1885. (No model.)



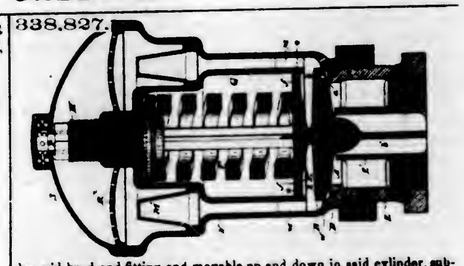
Claim.—1. In a dry outhouse of the character described, the vault, which is set into the ground entirely beneath the surface, in combination with the house the roof of which extends entirely over the vault, and the floor of which covers only a part of said vault, while the partition in the house extends across the top of the vault, dividing it about centrally, and having the inclined door which covers the rear portion of the vault, and the receptacles in the vault provided with trucks upon which they may be rolled from beneath the hopper to the rear, and the blocks and tackle extending from the rear portion of the roof of the house which are adapted to engage with suitable hooks on the barrel, to facilitate the removal of the same from the vault, all constructed and combined to operate substantially as described, whereby the vault is kept always dry and free from moisture and the barrels may be readily removed and replaced, substantially as described.

2. In a dry outhouse, the vault B, in combination with the house having stool and hoppers, said hoppers having a ventilating-tube and an inclined trap-door, J, having holes and guards or sheds for the same, substantially as described.

338,827. SAFETY-VALVE. JOSEPH H. COALE, Baltimore, Md. Filed Jan. 2, 1886. (No model.)

Claim.—1. The combination, with the main valve A, the seat *a* therefor, and the auxiliary valve B and its co-operating lip or seat W, of a sinuous steam-passage, *b*, terminating in an inclined aperture, decreasing in size toward its outer end, said passage intervening between the main valve and its seat on the one hand and the auxiliary valve and its seat or co-operating lip on the other hand, substantially as and for the purposes hereinbefore set forth.

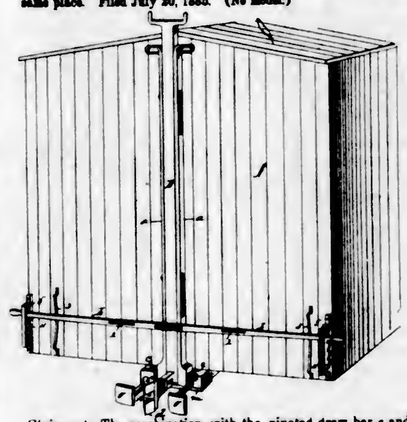
2. The combination of the valve proper, the seat therefor, the escape or blow-off passage M, the guide-cylinder, the guide head or flange arranged above and connected to the valve substantially in the manner described, so that there shall be between the two a space that is in communication with the blow-off M, and the packing or guide ring carried



by said head and fitting and movable up and down in said cylinder, substantially as and for the purposes hereinbefore set forth.

3. The valve proper, the seat therefor, the spindle E, provided with head E' and stepped in the valve, the blow-off passage M, communicating with the space between the head E' and the valve, the spring-case G, and the packing or guide-ring *e*, mounted and laterally movable on the head E' and fitting and adapted to move up and down in the spring-case G, as and for the purposes hereinbefore set forth.

338,828. CAR-COUPLING. JAMES W. COLE, Westfield, Mass., assignor of two-thirds to George T. Moore and Cyprian J. King, both of same place. Filed July 20, 1885. (No model.)



Claim.—1. The combination, with the pivoted draw-bar *e* and the timbers *c c*, of the vertically-sliding stops *a a*, operating between said timbers and the draw-bar, and means for moving the latter up and down, substantially as described.

2. The pivoted draw-bar *e*, the timbers *c c*, the stops *a a*, the levers *b b*, the straps 5, and ratchet-stripe 4, combined and operating substantially as set forth.

3. In combination with the levers *b*, stops *a a*, and the ratchet-stripe 4, the springs 3 3, substantially as set forth.

4. The draw-bar *e*, having the wedge-shaped end *d*, provided with the slot 14, and the pin-hole 16, having that part thereof above said slot enlarged for a part of its length, combined with the coupling-pin 13, having a head on its lower end and the pin *i* through its upper end, and the latch 15, pivoted in the draw-bar at the rear of said slot 14, all as set forth.

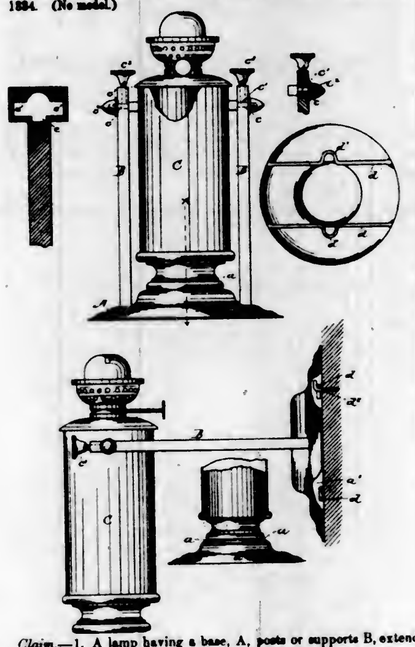
338,829. DRAW-BAR FOR CARS. JAMES W. COLE, Westfield, Mass., assignor of two-thirds to George T. Moore and Cyprian J. King, both of same place. Filed July 20, 1885. (No model.)



Claim.—1. Two sets of draw-bar connections for a car, one at each end thereof, each consisting of a draw-bar, E, having a rigid shank, *b*, thereon, extending through three cross-heads, *c c' c²*, and having an engagement with the rear side of two thereof, a spring, S, located on the shank of the draw-bar between the cross-heads *c c'*, two longitudinal notched supports, D D, for the ends of said cross-heads, in which the latter have a limited movement imparted thereto by either draw-bar, two connecting-rods *b b*, whose ends pass through the cross-head *c²* of each set of said connections, and a spring, *a*, between the end of each of said rods and the side of said cross-head *c²*, all combined and operating substantially as set forth.

2. The parallel separated timbers B B, secured to the bottom of the car, the notched supports D D, secured to the opposite inner sides of said timbers at each end of the car, the cross-heads *c c' c²*, engaging in the notches in said supports, and having a limited movement therein, the draw-bars E E, each having a shank passing through said cross-heads and having an engagement with the two inner ones, the springs S S, one on each draw-bar shank between the cross-heads *c c'*, the connecting-rods *b b*, extending through the cross-head *c²* at each end of the car, and each having thereon, between its end and the side of said cross-heads *c²*, the spring *a*, combined and operating substantially as set forth.

338,830. LAMP. JOSEPH O. COLBY, Boston, Mass. Filed Dec. 26, 1884. (No model.)

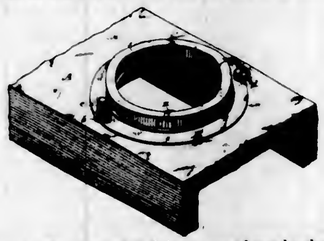


Claim.—1. A lamp having a base, A, posts or supports B, extending therefrom and supporting below their upper ends a swinging lamp-holder, C, and the set-screws *c²*, for locking the lamp-holder rigidly to the posts, all substantially as and for the purposes described.

2. In a lamp, the combination of the base A, having the surface *a*, for the support of the lamp-holder when in a vertical position, the posts B, and the lamp-holder C, pivoted to said posts, all substantially as described.

338,831. TRAVELER-CLEANER FOR RING-SPINNING FRAMES. CHARLES C. DUHAM, Fall River, assignor to the Atherton Machine Company, Lowell, Mass. Filed Oct. 14, 1882. (No model.)

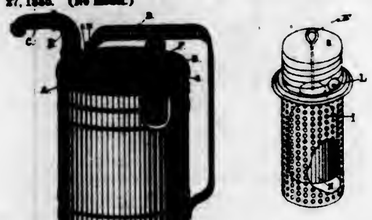
Brief.—One of the ring-confining screws is formed with a long head, whereby the said screw is also made to serve as a traveler-cleaner. The head is of such shape that by turning the screw the operative edge of the head is moved nearer to or farther from the path of the traveler.



Claim.—1. The combined confining-screw and traveler-cleaner consisting of a screw formed beyond its retaining-head with a prolongation, which constitutes at once a cleaner-post and a stem by which the screw can be set in place or removed, in combination with the ring-rail, ring-holder, and traveler-ring, substantially as hereinbefore set forth.

2. The combination, with the traveler and ring, of the cleaner-post adjustable to vary the distance of its acting edge from said ring, substantially as and for the purposes hereinbefore set forth.

338,832. OIL-CAN. WILLIAM G. DESMOND, Oakland, Cal. Filed Nov. 27, 1885. (No model.)



Claim.—1. The oil-can described, composed of the can A, with spout B and C, and handle D, having the cork-holder N to hold the cork M, the filling-tube F, the indicator composed of the float H, with indicating-stem E, the guide-case I, cap G, and the vent L, and the tray J, with spring-catches K, the whole being combined, constructed, and operated substantially as and for the purposes set forth.

2. The indicator composed of the float H, the guide-case I, in combination with the indicator-stem E, the cap G, and vent L, for the purpose of showing when the can is full and admitting air to allow the flow of oil from the same, constructed and operated substantially as and for the purposes set forth.

338,833. RECEPTACLE ATTACHMENT FOR DASH-BOARDS. MICHAEL FAHEY, Oakland, Cal. Filed Dec. 18, 1885. (No model.)



Claim.—1. In combination with the dash-board of a vehicle, a flexible bag, receptacle, or casing for parcels, &c., adjustably connected therewith, whereby it can be easily placed in position and again removed, substantially as herein described.

2. In combination with the dash-board of a vehicle, a flexible bag, receptacle, or casing lying against the inner surface of said dash-board, and a removable connection between the top of the bag, receptacle, or casing and the top of the dash-board, substantially as herein described.

3. In combination with the dash-board of a vehicle, a flexible bag, receptacle, or casing adapted to be collapsed and distended, and a means on the said bag, receptacle, or casing for readily connecting it with the dash-board, substantially as herein described.

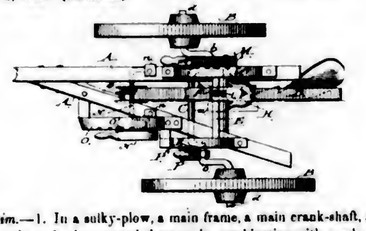
4. The bag, receptacle, or casing A, having a flap, C, on its rear top edge, in combination with the spring-bars D, stiffening the lower portion of the front of the bag, its bottom, its back, and the flap, all substantially as herein described.

5. The bag, receptacle, or casing A, and the flap C at its rear top edge, in combination with the spring-bars D in said bag and flap, and the cross-bar E in the lower edge of the flap, substantially as herein described.

6. The bag, receptacle, or casing A, having elastic ends *a* and elastic partitions *a'*, in combination with the spring-clamp flap C, at its rear top edge, for embracing the top of the dash-board, substantially as described.

7. An attachment for the dash-boards of vehicles, consisting of the flexible bag, receptacle, or casing A, having elastic ends *a*, elastic partitional walls *a'*, and a cover, B, a flap, C, at its rear top edge, spring-bars D, stiffening said bag and flap, as described, the cross-bar E in said flap, and the swiveled buttons *f* on said bars D, whereby the cover is secured, all arranged and adapted to operate substantially as herein described.

338,834. SULKY-PLOW. EDUARD FALK, Gilbertville, Iowa. Filed Feb. 2, 1886. (No model.)

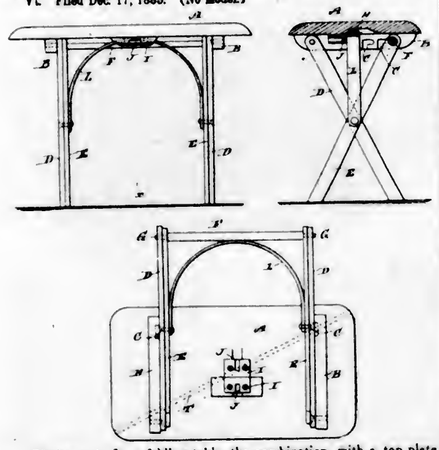


Claim.—1. In a sulky-plow, a main frame, a main crank-shaft, and the supporting-wheels mounted thereon, in combination with a yoke secured to said shaft, a laterally-adjustable block mounted upon said yoke and having an opening corresponding to its cross-sectional configuration, an opening in the outer end of the block, a seat having a shank loosely mounted in said opening, and a spring around the shank between the seat and block, substantially as herein described.

2. In a sulky-plow, a main frame, a main crank-shaft, and the supporting-wheels mounted thereon, in combination with the yoke E, the vertically-adjustable blocks I, mounted thereon, a transverse rod or shaft, K, journaled in said blocks, an arm, L, laterally adjustable on said shaft and connected with the plow-beam, and a lever, and locking mechanism for operating the shaft, and arm to raise the plow, substantially as herein described.

3. In a sulky-plow, a main frame, a crank-shaft, and the supporting-wheels, in combination with a second crank-shaft, N, mounted in bearings *n* on the main frame, a plow and plow-beam provided with a clevis, an arm, *p*, depending from the shaft N and having slots or openings formed therein, and an arm, *s*, attached to the clevis, and arm *p*, whereby the plow is adjusted in the ground, substantially as herein described.

338,835. FOLDING TABLE. DANIEL A. FAY, West Brattleborough, Vt. Filed Dec. 17, 1885. (No model.)



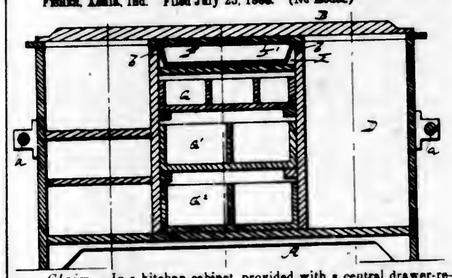
Claim.—1. In a folding table, the combination, with a top plate and two pairs of crossed legs pivoted to the said top plate, of a brace for connecting the legs, having its ends pivoted on the pivot of the said legs, and means for locking the middle portion of the said brace to the under side of the top plate, substantially as described.

2. In a folding table, the combination, with a top plate, of cleats on the under side of the same, which cleats have slots or grooves, two pairs of crossed legs pivoted to the cleats, a curved brace pivoted to the legs, and of a device on the brace for locking the same at its middle to the under side of the top plate, substantially as herein shown and described.

3. In a folding table, the combination, with a table, of notched or slotted plates on the under side of the same, legs pivoted to the cleats, a curved pivoted brace uniting the legs, a headed stud on the center of the brace, and of notches on the under side of the top plate, substantially as herein shown and described.

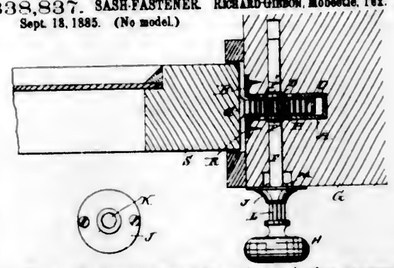
4. In a folding table, the combination of a top plate, notched plates secured on the under side of the same in different horizontal planes, two pairs of cross-legs pivoted to the said top plate, and a curved brace having its ends pivoted to the legs and provided with a stud at its middle portion, substantially as herein shown and described.

338,836. KITCHEN-CABINET. WILLIAM N. FISHER and EDDA A. FISHER, Xenia, Ind. Filed July 25, 1885. (No model.)



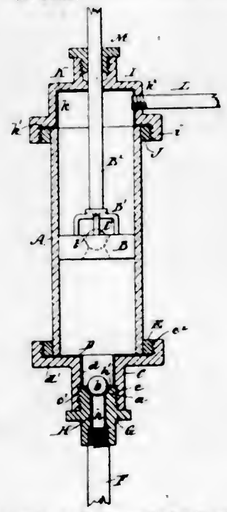
Claim.—In a kitchen-cabinet provided with a central drawer-receptacle, side receptacles, and a single hinged cover, the combination of the receptacle E, having hand-holes on opposite sides of it, the flanged pan F, supported as described, and the laterally-sliding dough-board F', arranged to slide over said pan and also over the meal-compartment D, as shown and described.

338,837. SASH-FASTENER. RICHARD GIBSON, Mobeetie, Tex. Filed Sept. 18, 1885. (No model.)



Claim.—The combination of the casing A, having apertured ears D, and a front plate, B, of the rack-bolt N, having a head, Q, beveled on its rear face to fit a corresponding beveled opening in the front plate, the pinion P, and the spindle F, the beveled head being adapted to enter the beveled opening of the front plate and lie flush with the outer surface of said front plate.

338,838. BEER-PUMP. PATRICK R. GREENE, Brooklyn, N. Y. Filed Oct. 20, 1885. (No model.)

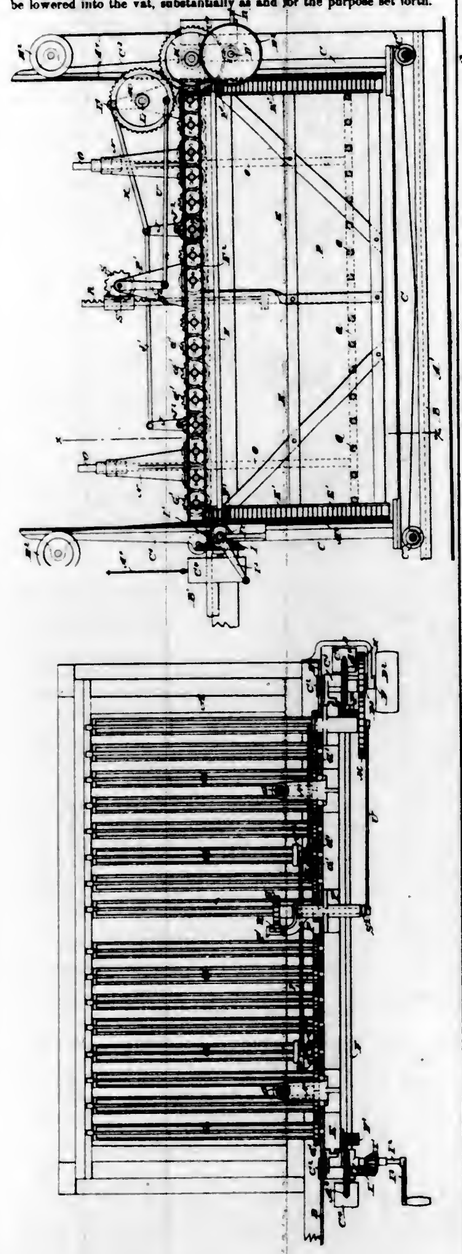


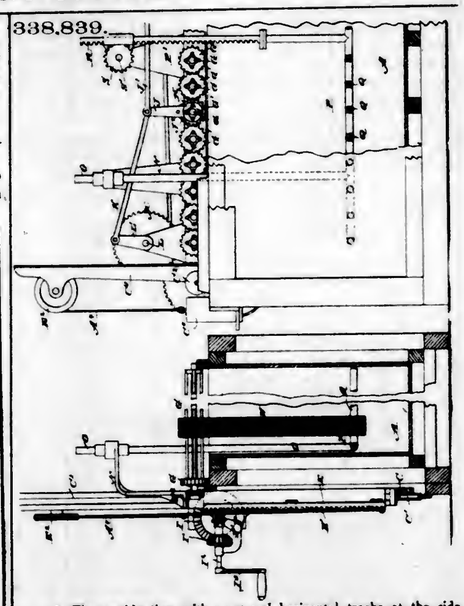
Claim.—1. The cylinder A, provided at its ends with the externally-screw-threaded rings, in combination with metal mountings provided upon the inside with shells of non-corrosive metal having flanges of greater diameter than the cylinder, so that when the mountings are screwed to place liquid-tight joints will be formed between the cylinder and the non-corrosive shells, substantially as described.

2. The combination, with the glass cylinder A and mounting C, having the shell D, of non-corrosive metal, formed with the tubular portion *d* and flange *d'*, of the coupling G, provided with the lining H, of non-corrosive metal, and formed with the tubular portion *h* and flange *h'*, to join the lower end of the tubular portion *d* of the shell D, substantially as and for the purposes set forth.

338,839. APPARATUS FOR DYEING. JOSEPH HAMSON, Philadelphia, Pa. Filed Sept. 2, 1885. (No model.)

Claim.—1. The combination, with a vat, of a frame adapted to move horizontally and carrying a vertically-movable frame which can be lowered into the vat, substantially as and for the purpose set forth.





2. The combination, with a vat and horizontal tracks at the side thereof, of a frame adapted to move on said tracks and carrying a vertically-movable frame which can be lowered into the vat, substantially as set forth.

3. The combination, with a vat and horizontal tracks at the side thereof, of a frame adapted to move on said tracks and carrying a vertically-movable frame which can be lowered into the vat and is provided with a vertically-reciprocating frame, substantially as set forth.

4. The combination, with a vat, of a frame adapted to move horizontally and carrying a vertically-movable frame which can be lowered into the vat, and racks and pinions for operating the said vertically-movable frame, substantially as set forth.

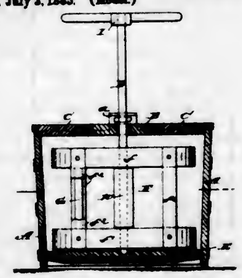
5. The combination, with a vat, of the frame C at one side of the same, the vertically-sliding frame E on the frame C, the reels G on the frame E, and cog-wheels and ratchet-wheels for revolving the reels, substantially as herein shown and described.

6. The combination, with a vat, of the frame C at one side of the same, the vertically-sliding frame E on the frame C, the reels G on the frame E, cog-wheels and ratchet-wheels for revolving the reels, the vertically-reciprocating frame P, and gearing for reciprocating the same, substantially as herein shown and described.

7. The combination, with a vat, of the frame C, the vertically-sliding frame E, having arms N, the reciprocating frame P, having guide-rods O passed through the arms N, gearing for reciprocating the frame P, reels G on the frame E, and gear-wheels and cog-wheels for revolving the reels, substantially as herein shown and described.

8. The combination, with the vat A, of the frame C, the vertically-movable frame E, the vertically-reciprocating frame P, the rack R on the same, the cog-wheel S, the shaft S', the arm S², the rod U, the cog-wheel M, the shaft L, the crank L', the rocking arms J, the pawls J², the ratchet-wheel H, the cog-wheels G', and the reels G, all on the frame E, substantially as herein shown and described.

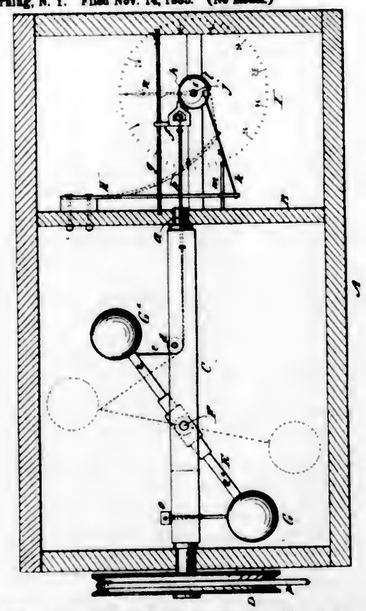
338,840. WASHING-MACHINE. JOHN S. HEADEN, Pleasant Hill, Mo. Filed July 3, 1885. (Model.)



Claim.—1. A washing-machine constructed with a tub or vessel, a cover therefor, and a rotatable clothes-holding rack comprising a shaft, D, journaled in the tub and provided with a handle, a frame, F, made with upper and lower boards or plates, *f f'*, tie-bars f^3, rack-bars G, and a cross-board, H, all constructed and combined for operation substantially as herein set forth.

2. The rotatable clothes-holding frame or head F, comprising a shaft, D, provided with a handle, boards or plates *f f'*, tie-bars f^3, rack-bars G, and a cross-board, H, substantially as shown and described.

338,841. **CENTRIFUGAL SPEED-INDICATOR.** HENRY HERDEN, Corning, N. Y. Filed Nov. 14, 1885. (No model.)



Claim.—1. In an indicator, the combination, with a shaft carrying a weighted lever, of the spring opposing the movements of said lever and connected to a spindle, said spindle also being connected to said lever and carrying an index, substantially as set forth.

2. In a speed-indicator, the combination of the slotted shaft C, the two-armed lever E and weights G G', attached thereto, the spindle *j*, means for connecting the spindle with the weighted lever, a spring, H, connected with the spindle, and an index, *n*, carried by the end of the spindle, substantially as herein specified.

3. In a speed-indicator, the combination of the shaft C, the two-armed weighted lever E, the cord *c*, rod *b*, slide *f*, cord *h*, drum *i*, spindle *j*, snail *l*, cord *k*, and spring H, substantially as herein specified.

4. In a speed-indicator, the combination, with a weighted lever, E, and spring H, opposing the centrifugal action of the weighted lever, of a spring, *m*, arranged to bear against the side of the spring H, substantially as herein specified.

5. In a speed-indicator, the combination, with the shaft C and the weighted lever E, of the screw *o*, for limiting the motion of the lever E, as herein specified.

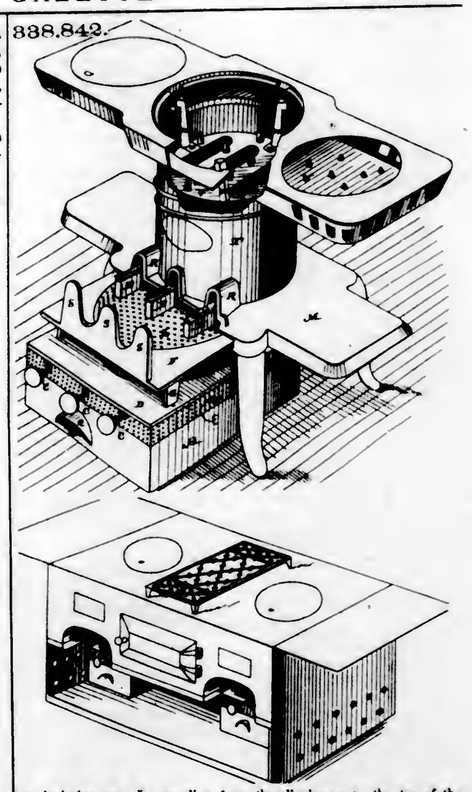
6. In a speed-indicator, the combination of the shaft C, weighted lever E, cord *c*, guiding-pulley *d*, rod *b*, slide *f*, guiding-rod *g*, cord *h*, drum *i*, spindle *j*, snail *l*, cord *k*, spring H, and spring *m*, substantially as herein described.

338,842. **OIL-STOVE.** HENRY L. HOWES, San Francisco, Cal., assignor of one-half to William H. Wiester, same place. Filed May 12, 1884. (No model.)

Claim.—1. In a lamp, and in combination, the oil-reservoir, with a horizontal plate, D, the surrounding foraminous sides, the plate F, with the ring J extending downward, and forming the air passage or chamber 3, and the diaphragm H, having air-spaces around the wick-tubes and fitted closely against the bottom of the diaphragm.

2. An oil-reservoir with horizontal plates D and F, secured at intervals above it, a surrounding foraminous partition inclosing the space between the top of the oil-reservoir and the plate D, a horizontal diaphragm, H, between which and the top of the lamp a current of air is drawn, openings through which the air passes up beside the wick-tubes,

338,842.



an inclosing-ring, J, extending from the diaphragm to the top of the plate F, forming the air-passage 3, and the foraminous diaphragms K and L, situated within the ring and above the diaphragm, as herein described.

3. In a stove, the oil-reservoir with its wick-tubes, the horizontal plates D and F, and diaphragm H, and the ring J, extending from the plate F to H, through the plate D, and forming openings or air-passages 2 3, to admit air to cool the parts, as herein described.

4. In an oil-stove, the cone-plate, the body or chimney T, resting thereon, the slotted cones corresponding to the position of the wick-tubes, and the horizontal portions M, extending to each side beyond the chimney, said cone-plate and extensions M being cast in one piece, as described.

5. In combination, the cone-plate having upwardly-extending cones provided with conical arches extending from the cones, and communicating with the interior thereof and the front of the plate M through the cylindrical body, suitable guides on the under side of said plate for suspending the plate F, the lamp, the wick-tubes carried thereby, and the vertical projections S on the front of the plate F, corresponding with and fitting against the open ends of the arches when the lamp is in place, substantially as described.

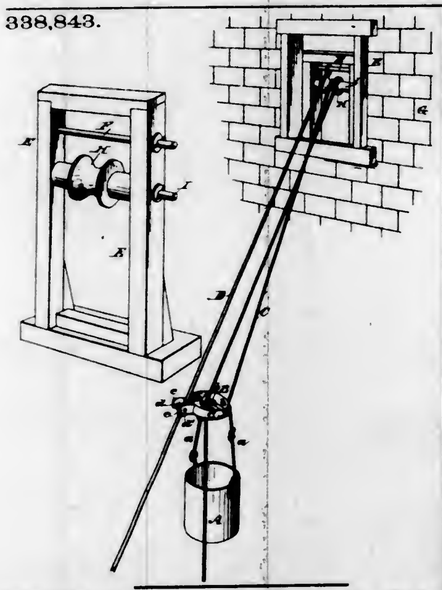
6. The combination of the wick-tubes and cones of an oil-stove, the body surrounding said wick-tubes and cones and extending upward from the base, a slotted flame-guard and hooked arms, and a shoulder on the upper edge of the body to receive and support the hooked arms of the flame-guard, substantially as described.

338,843. **FIRE-ESCAPE.** AUGUSTUS ILSE, Evanston, Wyo. Filed Sept. 9, 1885. (No model.)

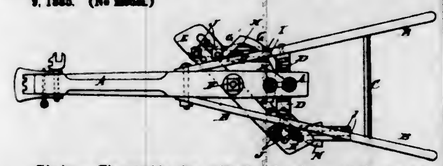
Claim.—1. In a fire-escape, the ring B, having basket A attached, and provided with the central pulley, *b*, and side pulley, *d*, mounted on a shaft held in flanges, which, with the pulley and body of the ring, confine the guide-rope D, substantially as described.

2. The window-frame E, provided with cross-bar F, to which the guide-rope D is attached, and with the cross-bar I, having pulley H, over which the rope C passes, in combination with the ring B and attached basket A, the ring being provided with side pulley, *d*, and central pulley, *b*, and the rope C being attached to one side of the ring and passed over the pulley H, substantially as and for the purpose set forth.

338,843.



338,844. **PLOW.** THOMAS E. JONES, Centre Star, Ala. Filed Dec. 9, 1885. (No model.)



Claim.—The combination, with the plow-beam, of the cross-bar centrally pivoted to the beam and having slots, and the rear curved bar connected by a U-shaped bolt to the beam, and the curved slotted standards connected to said cross-bar by pivot-bolts and by adjusting-bolts passed through the slots of said standards and cross-bar, substantially as and for the purpose set forth.

338,845. **FLOWER-VASE WITH BACKGROUND.** ROBERT KIPP, Philadelphia, Pa. Filed Mar. 24, 1885. (No model.)



Claim.—1. A flat oblong vase provided with a porous front part, a glazed rear part, and a well, C', the said well being intended to receive flower-stems and the front part of the vase to have flower-stems attached thereto in order that moisture may percolate to them through the porous front of said vase, substantially as set forth.

2. A vase provided with a downward flattened extension or well intended to receive flower-stems internally and to have flower-stems bound to it externally, in combination with a colored background, to which said vase is attached, substantially as set forth.

338,846. **MEANS FOR SECURING SATCHELS, BAGS, &c., TO CAR-SEATS.** ARTHUR C. KIDDER, New York, N. Y. Filed Dec. 31, 1885. (No model.)



Claim.—1. In a device for securing a bag or other portable article to a car-seat or other convenient structure, a chain having open angular loops or rings, as specified, attached to its ends, substantially as described.

2. In a device for securing a bag or other portable article to a car-seat or other convenient structure, the combination of a chain, *a*, with loops *b* and *b'* attached to its ends, substantially as described.

338,847. **SCREEN FOR ORES AND MINERAL SUBSTANCES.** S. R. KROM, Plainfield, N. J. Filed May 25, 1885. (No model.)



Claim.—1. The combination, with the screen sections and frames, of the angle-iron bearer-bars *l*, ribbed at 5, the spokes *c*, collars c^3, hubs *b b'*, shaft *a*, clamps *n*, and nuts c^3, substantially as set forth.

2. The combination, with the screen-sections, frames, and the shaft *a*, of the clamps *n*, bearer-bars *l*, spokes *c*, nuts c^3, and springs *o*, substantially as set forth.

3. The combination, with the screen sections and frames, of the angle-iron bearer-bars *l*, ribbed at 5, clamps *n*, spokes *c*, nuts c^3, and springs *o*, substantially as set forth.

4. The combination, with the revolving screen, of the headed bolts r^2, the inclosing-tubes r^3 and their hubs r^3, the sliding weights r^4, and the elastic cushion r^5, substantially as set forth.

5. The combination, with the revolving screen, of the headed bolts r^2, the inclosing-tubes r^3 and their hubs r^3, and the sliding weights r^4, substantially as set forth.

6. The combination, with the screen-sections, the frames, and the bolts, of the clamps *n*, the nuts c^3, and the intervening spring-washers c^3, substantially as set forth.

7. The combination, with the screen-sections and their frames, the angle-iron bearer-bars *l*, and spokes *c*, of the clamps *n*, the separate bolts *r* at intervals between the spokes, and the nuts upon said bolts, substantially as specified.

8. The combination, with the screen-sections and their frames and bolts, of the angle-iron bearer-bars *l*, spokes *c*, clamps *n*, the nuts c^3, and the intervening spring-washers c^3, said washers having teats or depressions, substantially as specified.

9. The combination, with the revolving screen having screen-sections and their frames, of the bearer-bars *l*, the headed bolts r^2, passing through the bearer-bars *l*, the nuts and collars for the bolts r^2, the sliding weights r^4, upon said bolts, and the elastic cushions r^5, substantially as specified.

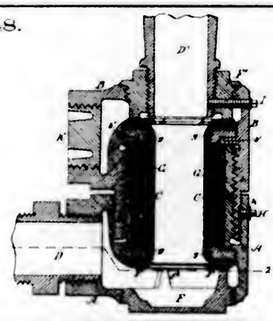
10. The angle-iron bearer-bars *l*, spokes *c*, and the open polygonal ring or head *w* within and connected to the ends of the bearer-bars and forming the smaller end of the screen, in combination with the removable screen-sections and their frames, substantially as specified.

338,848. **FLEXIBLE JOINT OR CONNECTION-PIPE.** HIPPOLYTE LECOUTEUX and EMILE GARNIER, Paris, France. Filed Mar. 2, 1885. (No model.) Patented in England Jan. 17, 1885, No. 704.

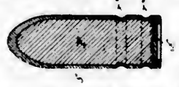
Claim.—1. The combination of the sockets A and B of the coupling fitted into each other and a flexible tube, C, covering the joint, with a series of supporting-rings, D, free to turn on each other, substantially as set forth.

2. The combination of the two sockets A and B of a coupling, screw-threaded into each other and free to turn to a limited extent on each other, with an internal flexible tube having its opposite ends secured in the two sockets and covering the screw-joint, substantially as set forth

338,848.



338,849. COMPOUND PROJECTILE. WILHELM LORENZ, Carlsruhe, Baden, Germany. Filed Jan. 17, 1885. (No model.) Patented in Belgium June 23, 1884, No. 65,556, and in Italy June 30, 1884, No. 17,059.

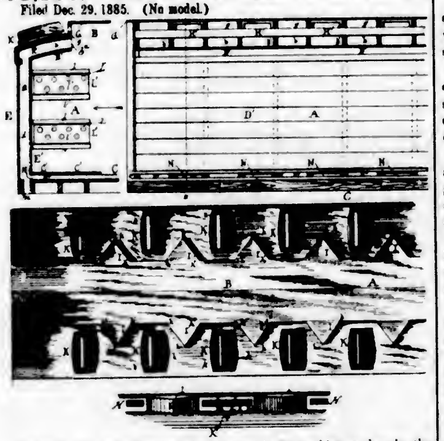


Claim.—1. A compound projectile the core of which is melted to the covering-shell, substantially as set forth.

2. A compound projectile the core of which is melted to the covering-shell, which latter is coated with tin or other metal, substantially as set forth.

3. A compound projectile composed of a core and covering-shell, the former being melted to the shell, and guide-rings melted to the core or shell, or both, substantially as set forth.

338,850. VENTILATING CARS. CHRISTIAN E. LUCAS, Atlanta, Ga. Filed Dec. 29, 1885. (No model.)



Claim.—1. A car having double top, bottom, sides, and ends, the spaces between them being connected all around the car, forming a complete and connected air-chamber around the entire car, as set forth.

2. The car A, having the openings H at its top and the wedge-shaped projections I between such openings, in combination with the plates K, placed between such projections.

3. The car A, having the openings H at the top and the wedge-shaped projections I between such openings, in combination with the plates K, arranged in pairs at each opening I, as set forth.

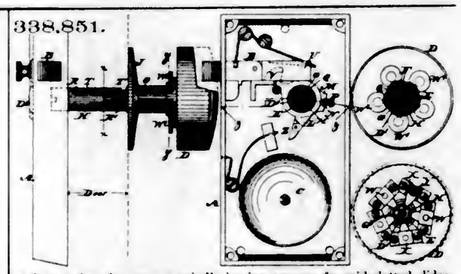
4. The car A, having the openings H at the top and the wedge-shaped projections I between such openings, in combination with the plates K, arranged in pairs at each opening H, such plates diverging from each other upwardly, and having a space, l^2, beneath them, as set forth.

5. A car provided at the top with the openings H, in combination with the plates K, located at such openings, such plates consisting of the bodies k^2 and ends k', forming a space, l^2.

338,851. ALARM-LOCK. TRUMAN MARSETT, Jr., Bridesman Station, N. J. Filed May 2, 1885. (Model.)

Claim.—1. A bolt in combination with a dog controlling said bolt, a sleeve within a narrow hub or collar, the dog being secured to said collar, bits attached to slotted slides and moving in slots of the said sleeve

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and operating the same, a spindle having grooves for said slotted slides, and a knob connected to said spindle, substantially as described.

2. A bolt in combination with a knob having a spindle, and provided with arms connected with slides fitted to said spindle, the said slides having bits adapted to play in slots in a sleeve on said spindle, a sleeve and a hollow hub, each carrying a dog adapted to engage with the bolt, substantially as and for the purpose set forth.

3. A bolt in combination with a knob attached to a spindle, and provided with angular arms having heads on the outside of said knobs, slides working in grooves in said spindle and having recesses in one end and bits on the other end thereof, a slotted sleeve, and a dog, substantially as described.

4. A bolt, a knob, and a spindle in combination with a slotted sleeve surrounding said spindle, means, substantially as described, connecting said knobs and slides, and slides fitted to said spindle, having bits which play in the slots of said sleeve, substantially as and for the purpose set forth.

5. A bolt provided with a swinging heel and dogs engaging with said heel, one withdrawing the bolt from its keeper and the other raising said heel and preventing the withdrawal of the bolt, substantially as described.

6. A bolt a and knob in combination with a spindle, a slotted sleeve surrounding said spindle, and mechanism, substantially as described, whereby said sleeve and spindle may be rotated together or singly, as stated.

7. A bolt in combination with two dogs, a spindle, and a sleeve, one of said dogs being operated by the spindle and the other by the sleeve, both dogs engaging with the bolt, one effecting the withdrawal of the bolt and the other operating to prevent the same, substantially as described.

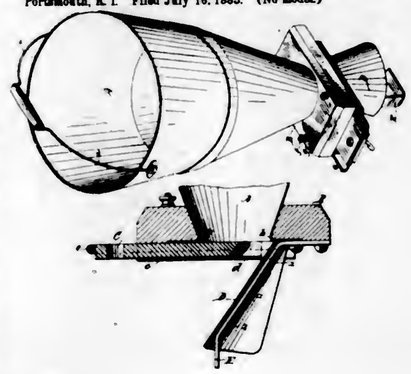
8. A bolt in combination with a knob having within the same angular arms operated from without the said knob, said arms having guides and springs, substantially as described, a spindle connected to said knob, bitted and recessed slides engaged by said angular arms, a slotted sleeve, and dogs, substantially as and for the purpose set forth.

9. In a door or other bolt, a case containing the bolt and an alarm, in combination with two dogs, both engaging with said bolt, one effecting the withdrawal of the bolt and the other preventing the same and causing the sounding of said alarm, substantially as stated.

10. A rotary knob provided with a returning-spring, which is connected with the spindle of the knob and with a rose within which it is concealed, substantially as described.

11. A hollow knob formed in two parts or sections, one of which has a collar, in combination with a spindle, and a bolt passing through both sections and the spindle, substantially as described.

338,852. FERTILIZER-DISTRIBUTER. ELLWOOD G. MACOMBER, Portsmouth, R. I. Filed July 16, 1885. (No model.)

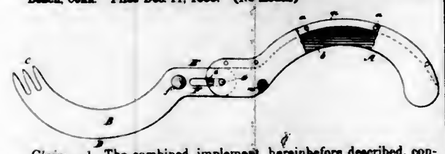


Claim.—1. A fertilizer-distributer consisting, essentially, of a pail having a tapering lower portion provided with a single discharge-opening, as specified, the said pail having secured thereto below the discharge-opening a gate-board provided with a sliding gate to wholly or partially close the discharge-opening, a gage to limit the movement of the gate, and a deflecting-plate secured to the gate-board with its upper end to one side of the discharge-opening, substantially as specified.

2. A fertilizer-distributer consisting, essentially, of a pail having a tapering lower portion provided with a discharge-opening, as specified, the said pail having a gate-board secured thereto at the discharge-opening, and provided with a sliding gate, a gage to limit the movement of the gate, a rest or support attached to the gate-board, and a deflecting-plate, D, secured to the rest, with its upper end arranged to one side of the discharge-opening, substantially as described.

3. In a fertilizer-distributer, the combination, with the receptacle having a tapering lower portion ending in a single discharge-opening, as specified, of a gate-board secured to the tapered end of the receptacle about the discharge-opening and provided with a sliding gate, the U-shaped gage, and adjusting screws and nuts, the rest E, attached to the gate-board to one side of the discharge-opening, and the deflecting-plate secured to the rest and made tapering from bottom to top, with its upper end arranged to one side of the discharge-opening, as specified.

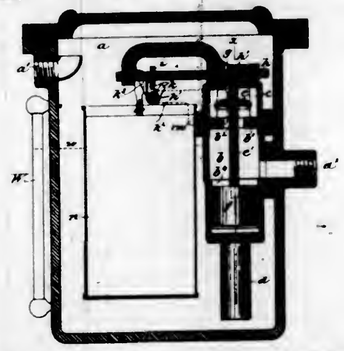
338,853. COMBINED KNIFE AND FORK. GEORGE E. MARES, Sound Beach, Conn. Filed Dec. 11, 1885. (No model.)



Claim.—1. The combined implement hereinbefore described, consisting of the handle, the curved blade having in its shank end an elongated slot, a rivet passing through said slot and attaching the blade to the handle, tines formed on the end of the blade, a stud secured to the blade forward of said slot, and a pocket on the end of the handle to receive said stud for the purpose of locking the blade in an open position.

2. The combined implement hereinbefore described, consisting of the handle, the curved folding blade having in its shank end an elongated slot and on its front end a fork, a rivet passing through said slot and attaching the blade to the handle, a stud secured to the blade forward of said slot, a slot formed in the handle to receive and retain said stud when the blade is closed, and means, substantially as described, for positively locking the blade is its open position.

338,854. STEAM-TRAP. WILLIAM B. MASON, Boston, Mass., assignor to the Mason Regulator Company, same place. Filed Feb. 3, 1886. (No model.)

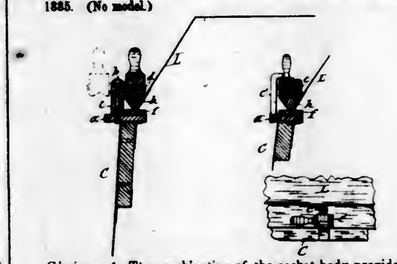


Claim.—1. A steam-trap comprising a reservoir having an inlet-opening and an outlet-passage with its mouth or inlet end near the lower end of the trap, combined with a main valve controlling said outlet-passage, an actuating-piston connected with said valve and cylinder therefor, having an inlet-port communicating with the reservoir and an exhaust-passage, and the controlling-valve governing said inlet-port operated in accordance with the rise and fall of the liquid in the reservoir, substantially as described.

2. In a steam-trap, the combination of the reservoir for the condensed liquid, provided with inlet and outlet passages, with a valve controlling the outlet-passage, and the actuating-piston therefor, and a controlling-valve governing the admission of fluid to act on said piston, and variable and invariable weights actuating the said controlling-valve, tending to move it in opposite directions, substantially as described.

3. The combination of the reservoir having inlet and outlet passages, with a valve controlling the latter, an actuating-piston connected with the said valve working in a cylinder provided with an inlet-passage, a controlling-valve for said passage, an elbow-lever for actuating said valve, a bucket arranged to receive the liquid flowing into the reservoir and acting by its weight to move the lever and controlling-valve in one direction, its weight being variable, owing to the rise and fall and buoyant effect of the liquid in the reservoir outside the bucket, and a weight acting to move the lever and arm in the other direction, the weight and bucket each having greater leverage to resist the movement produced by the other than to cause the movement of the other, substantially as and for the purpose described.

338,855. COFFIN. JOHN MAXWELL, Oneida, N. Y. Filed Dec. 17, 1885. (No model.)



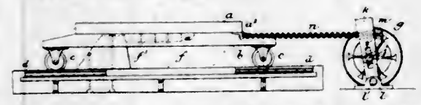
Claim.—1. The combination of the casket-body provided at the top of its side and end walls with outward projections, the lid seated on the casket directly over the walls thereof and having around its base outward projections reaching part way the width of the projection of the casket-body, posts rising from the projections of the casket at the outside of the margin of the lid and having arms projecting over the same, and cams or their described equivalents interposed between said arms and marginal portion of the lid, substantially as set forth.

2. In combination with the casket-body and its lid, an outward projection around the top of said body, a packing-strip on the latter, a bar secured to the base of the lid and having a V-shaped longitudinal bottom edge resting on the packing-strip, posts on the outward projection of the casket-body, arms on said posts, and cams or their described equivalents on the arms engaging the top of the bar on the base of the lid, substantially as set forth and shown.

3. The combination, with the casket C, of the bar *a*, secured to the top thereof and projecting outward therefrom, the pintle *b*, secured vertically on the projecting portion of the bar *a*, the sleeve *c*, embracing loosely the said pintle, the pintle *d*, projecting horizontally from the said sleeve, and the cam or eccentric *e*, pivoted on the pintle *d* and adapted to impinge the marginal portion of the lid, substantially as described and shown.

4. The combination, with the casket and its lid, of the stiffening-bars *a*, attached to and projecting outward from the top edge of the casket, the packing-strip *f* over the inner portion of the bars *a*, the stiffening-bars *h*, of triangular form in cross-section, attached to the marginal portion of the lid with the V-shaped edge downward and seated on the packing-strip, the vertical pintles *b*, attached to the outward projecting portions of the stiffening-bars *a*, the sleeves *c c*, loosely embracing said pintles, and the cams or eccentrics *e e*, pivoted on said sleeve, substantially as described and shown.

338,856. ORE-CONCENTRATOR. MICHAEL MCANENY and WILLIAM L. RISLEY, Denver, Colo., assignors, by direct and mesne assignments, of one-half to William Thompson and John Livesay, Jr., both of same place. Filed Nov. 9, 1885. (No model.)



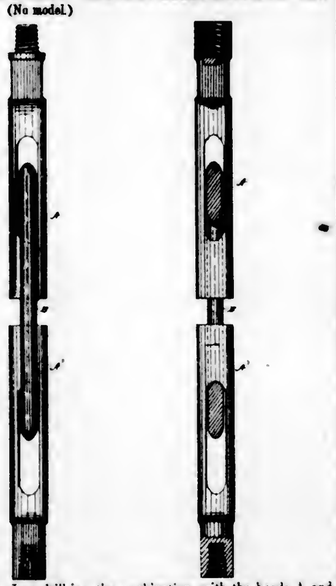
Claim.—1. In an ore-concentrator, the combination of concentrating-box *a*, provided with riffled plate a^3, bumper a', hanger a^2, and a movable support, bumper f', platform f, and mechanism for propelling concentrating-box *a*, consisting of shank *h*, crank *i*, pin *j*, lever *k*, provided with slots k' and k^3, and a suitable fulcrum, rod *m*, and spring *n*, substantially as described and shown, and for the purpose set forth.

2. In an ore-concentrator, the combination of concentrating-box *a*, provided with riffled plate a^3, and oblique bumper a', a supporting-carriage for concentrating-box *a*, consisting of spring-beams *b* and rollers *c*, oblique bumper f', platform f, and suitable mechanism for propelling concentrating box *a*.

3. In an ore-concentrator, the combination of a concentrating-box provided with oblique bumper a', spring-beams *b*, provided with a suit-

able support, and oblique bumper *f*, provided with a suitable supporting-platform, substantially as described, and for the purpose set forth.

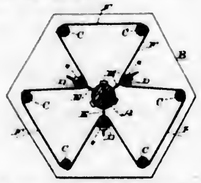
338,857. DRILL-JAR. JAMES M. MCCANDLESS, Bradford, Pa. Filed Oct. 13, 1885. (No model.)



Claim.—1. In a drill-jar, the combination, with the heads A and A', of the intermediate link, B, substantially as and for the purposes mentioned.

2. As an article of manufacture, a drill-jar consisting of three parts, A, A', and B, linked together, substantially as shown.

338,858. FLOUR-BOLTING REEL. WILLIAM C. MEYER, Vallejo, Cal. Filed Nov. 17, 1885. (No model.)



Claim.—1. In a flour-bolting reel, the combination of the reel-heads, the shaft, an outer annular series of fixed ribs, an inner annular series of movable or adjustable ribs concentric with the outer series, a sifting-fabric supported on the ribs of the two series to form a number of centrally-opening chambers, and means for supporting the inner ribs from the shaft of the reel and adjusting them toward said shaft to tighten the sifting-fabric, substantially as herein described.

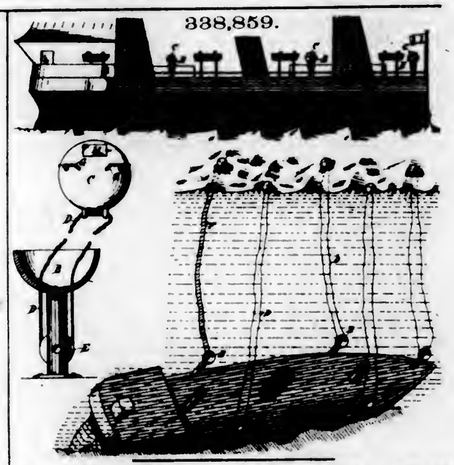
2. In a flour-bolting reel, the combination of the heads, the annular series of fixed ribs C, the annular series of movable or floating ribs D, the sifting-fabric F, supported upon the ribs and forming a number of centrally-opening chambers, the radial bolts E, headed in the shaft of the reel and carrying the ribs D, and the thumb-nuts e on said bolts, adapted to set up the ribs D and tighten the silk or sifting surface, substantially as described.

3. A flour-bolting reel comprising the shaft A, the heads B, the outer ribs, C, fixed in the heads, the inner floating ribs, D, independent of the heads, the radial bolts E, headed in the axis A and carrying the ribs D, the thumb-nuts e on the bolts, and the sifting-fabric F, supported on the ribs C D and forming a number of centrally-opening chambers, substantially as described.

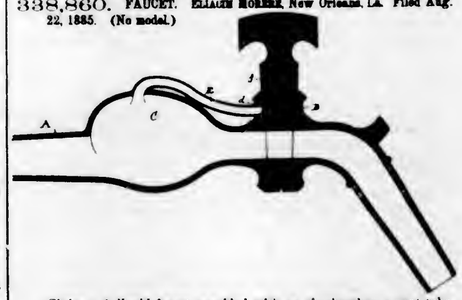
338,859. BUOY ATTACHMENT FOR VESSELS. PIETRO MICHELETTI, San Francisco, Cal. Filed July 11, 1885. (No model.)

Claim.—An attachment for a ship or vessel, consisting of the combination of the float or buoy, the pocket in which the float rests, a loosely-paying double line connecting the said float or buoy with the vessel, and the cross-ropes F, forming a ladder of the double line, substantially as herein described.

338,859.

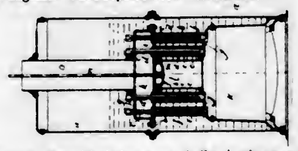


338,860. FAUCET. ELIJAH MORRIS, New Orleans, La. Filed Aug. 22, 1885. (No model.)



Claim.—A liquid-faucet provided with an air-chamber, a vent tube or passage connecting said chamber with the plug-socket, as described, and a plug provided above one end of its passage-way with a vertical groove of sufficient length to extend above the plug-socket and to communicate with the vent-tube at such times as desired, substantially as and for the purpose set forth.

338,861. MULTITUBULAR STEAM-BOILER. FRANCIS S. MORRIS, London, England. Filed Sept. 22, 1885. (No model.)



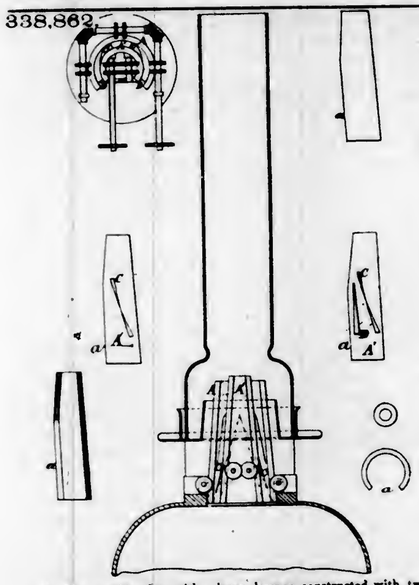
Claim.—1. A multitubular steam-boiler having a series of fire-tubes extending down to the fire-chamber, a series of field or analogous tubes inserted in said fire-tubes, a large central fire-tube, *l*, communicating with the secondary combustion-chamber *h*, and a baffle at the top of the fire-tube *l* for regulating the draft through the fire-tubes, all substantially as shown, and for the purposes described.

2. A multitubular steam-boiler having a series of fire-tubes extending down to the fire-chamber, a series of field or analogous tubes inserted in said fire-tubes, a large central fire-tube, *l*, communicating with the secondary combustion-chamber *h*, a central uptake or chimney above the same, and a baffle at the top of the fire-tube *l*, operated by means of a rod, *n*, passing up through the central chimney, all substantially as shown, and for the purposes set forth.

338,862. OIL-BURNER. JAMES C. MORRISON, West Ham, County of Essex, and ROBERT SMITH, Bromley, County of Middlesex, England. Filed Nov. 22, 1884. (No model.) Patented in England Dec. 22, 1883, No. 5,836; and in France Dec. 22, 1883, No. 159,345.

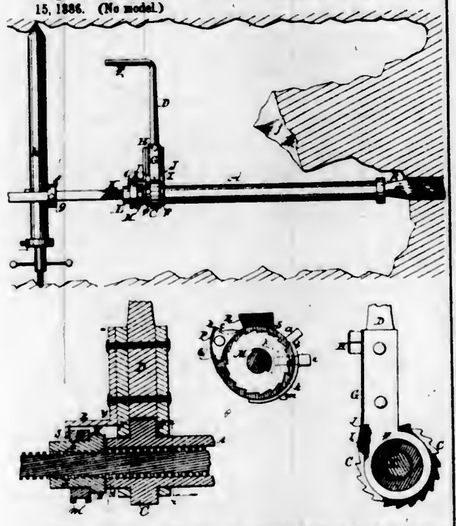
Claim.—1. The combination, with a lamp-burner having two or more wick-tubes or cases arranged in substantially parallel positions and provided with openings admitting air within said tubes, of a series of inclined division-plates arranged within the space between said tubes, substantially as set forth.

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2. The combination, with a lamp-burner constructed with two or more wick-tubes, substantially circular in form, and having an air-space between the same and openings to said space and to the center of the burner, of division-plates C C, and division-plates D D, arranged upon the tubes on said space and openings, substantially as described.

338,863. RATCHET MINING-DRILL. GEORGE W. NIXON, Rockwood, assignor of one-half to William M. Nixon, Chattanooga, Tenn. Filed Feb. 15, 1886. (No model.)



Claim.—1. The combination, in a ratchet-drill, of a tubular body having a socket in one end, a ratchet-wheel fixed upon the body near its other end, a lever having ears journaled upon the said body, one ear at each side of the ratchet-wheel, a spring secured at one end upon the lever, a block secured upon the other end of the spring in position to engage one edge with the teeth of the said ratchet-wheel, and a shoulder of the said lever in position for the other edge of the said block to rest on when engaging the wheel, substantially as shown and described.

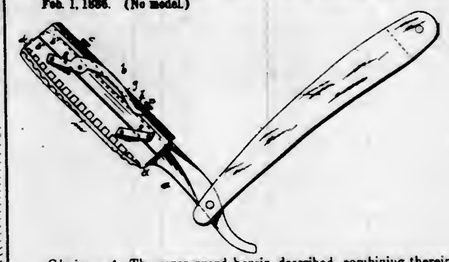
2. The combination of a tubular body having a drill-socket at one end, a feed-screw fitted to slide freely in the other end, a nut threaded upon the feed-screw to bear against the rear end of the said body and provided with a ratchet-wheel adjacent to the body and having a reduced cylindrical portion along the opposite end of the nut, a collar fitted loosely upon the said cylindrical portion and having two radial shoulders on its edge, a pawl pivoted to one side of the collar to engage the said ratchet-wheel, and a ratchet-lever fitted to revolve on the aforesaid tubular body, having an arm extending longitudinally over the said collar between the shoulders thereof, substantially as shown and described.

3. The combination of the body A, the wheel C, fixed thereon, the feed-screw K, fitted to slide freely in the body, the nut L, threaded upon the feed-screw and provided with a ratchet-wheel, M, the collar O, fitted to revolve upon the nut L, and provided with shoulders *a* and *b*, the pawl Q, pivoted upon the collar to engage the said ratchet-wheel M, the lever D, having ears F, bearing upon the body A at the sides of the wheel C, and the arm R, extending over the wheel M, and the collar O, between the shoulders *a* and *b*, the said arm being provided with a radial inward projection, S, to bear against the side of the collar O, opposite to the body A, substantially as shown and described, whereby the said feed-screw, nut, and collar are retained with the body A, as set forth.

4. The combination of the tubular body A, the lever D, fitted to revolve thereon and provided with the arm R, the screw K, fitted to slide in the body, the nut L, threaded upon the screw to bear against the end of the body and having a ratchet-wheel, M, and cylindrical portion N, the collar O, fitted upon the portion N, against the wheel M, and provided with the shoulders *a* and *b*, the pawl Q, provided with the radial arm *c*, the aforesaid arm R being fitted to first strike the arm *c* and then the shoulder *b*, substantially as shown and described.

5. The combination, with the lever of a ratchet-drill provided with the arm R, of the feed-screw K, the nut L, threaded thereon and provided with a ratchet-wheel, M, and the cylindrical portion N, the collar O, fitted upon the said cylindrical portion and provided with the radial shoulders *a* and *b* in the path of the aforesaid arm R, and means, substantially as described, for adjusting the shoulder *a* circumferentially upon the collar O, as and for the purpose specified.

338,864. RAZOR-GUARD. CHAS. F. NIEHLER, Newark, N. J. Filed Feb. 1, 1886. (No model.)



Claim.—1. The razor-guard herein described, combining therein the coupled or united sections *b' b''*, one of which is provided with an edge for guarding the razor-edge, and the other is provided with a backing which provides bearings for set or adjusting screws *c*, and said adjusting-screws, said parts being arranged and adapted to operate substantially as and for the purposes set forth.

2. In a razor-guard, the combination of the sections *b' b''*, one of which is provided with a backing, *b'''*, and set-screws *c*, and the other with hooks *d* and openings *i*, said sections being coupled together by couplers *g g*, and fastened by a suitable fastening, substantially as set forth.

3. In a razor-guard, adjustable end hooks, *d'*, to enable the guard to be attached to razors of a variety of lengths, substantially as set forth.

4. The improved razor-guard, substantially as set forth, combining therein the sections *b' b''*, couplers *g*, extension *g'*, and lug *h*, screws *c*, hooks *d*, and guarding portions *j*, all said parts being arranged and adapted to operate substantially as and for purposes set forth.

5. In a razor-guard, the combination of the sections *b' b''*, adapted to be secured to the razor and protect the edge thereof, said sections being coupled together by the couplers *g g*, arranged and adapted to allow the sections to move from one another and remain in a parallel relation to one another, substantially as shown and described.

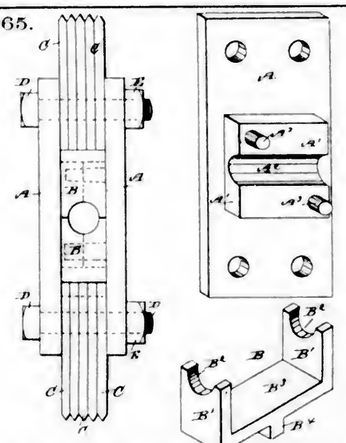
338,865. BUSH-HAMMER. WILLIAM OPPY, Westerly, R. I. Filed Sept. 8, 1885. (Model.)

Claim.—1. In a bush-hammer, the side plates, A, each provided with the offset A', and the gibs B, each provided with the tongue B', in combination with the cutting-tools C, each having a recess, C', the bolts D, and the nuts E, substantially as shown and described.

2. In a bush-hammer, the combination, with the cutting-tools C and the gibs B, of the side plates, A, each provided with the offset A', having a semicircular groove, A², substantially as shown and described.

3. In a bush-hammer, the combination, with the cutting-tools C and the side plates, A, of the gibs B, each constructed with the side

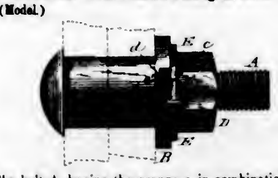
338,865.



pieces, B', having semicircular grooves B^3, and the cross-piece, B^4, provided with the tongue B^4, substantially as shown and described.

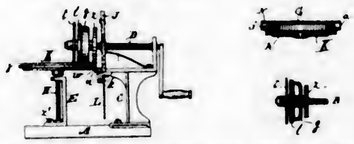
4. In a bush-hammer, the combination, with the side plates, A, and the gibs B, of the cutting-tools C, each having a recess, C', which fits over a corresponding tongue in the gib, substantially as shown and described.

338,866. NUT-LOCK. JOHN PARLEY, Burlington, Iowa. Filed Aug. 21, 1884. (Model.)



Claim.—The bolt A, having the groove *a*, in combination with the washer B, having the spline *b*, the groove *d*, formed in one of its faces, and with the recess *e* back of the wall *e'*, the nick *b'*, the spring-pawl *c*, secured in the groove *d*, and having the catch end *c'* at the nick *b'*, and the nut D, having the ratchet E, as set forth.

338,867. PRESS. HENRY PATTISON, St. John, New Brunswick, Canada. Filed June 6, 1885. (No model.)



Claim.—1. In a press for making covers substantially such as described, the bed A, provided with the standards C E, the shaft H, provided with the disk K, the shaft D, provided with the dies *t l g z*, the vertically-movable boxes *f* and *b*, for supporting said shaft D, the lever J, provided with the rod L and treadle N, and the spring *w*, combined and arranged to operate substantially as set forth.

2. The disk K, provided with the rabbet or shoulder *j*, in combination with the dies *g z*, shafts H D, and means for rotating and exerting pressure on said dies, substantially as described.

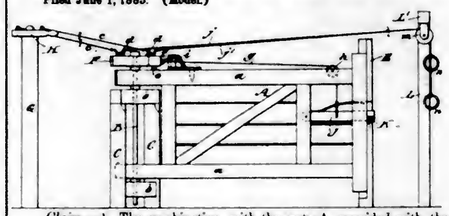
3. In a press substantially such as described, the roller or wheel *w*, in combination with the shaft H, disk K, shaft D, and a circular die or dies on said last-named shaft, substantially as and for the purpose set forth.

4. In a press substantially such as described, the ring N, having annular downwardly-extending flange *a*, in combination with the bed-die or disk K, for preventing the die or dies on the shaft D from injuring the blank or cover and to permit it to be drawn toward the center of the die K as it is formed, substantially as described.

338,868. MIXED PAINT. TRUMAN J. PEARCE and MELVIN W. BEARDSLEY, Oakland, assignors to the Paraffine Paint Company, San Francisco, Cal. Filed Sept. 17, 1884. (Specimens.)

Claim.—As a new composition of matter, maltha and bisulphide of carbon, substantially as herein set forth.

338,869. FARM-GATE. EDWIN H. PENFIELD, Santa Barbara, Cal. Filed June 1, 1885. (Model.)

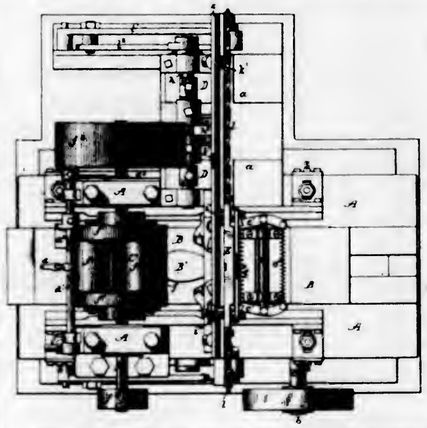


Claim.—1. The combination, with the gate A, provided with the pin *e*, the latch J, and the upright B, to which the gate is hinged, of the head F, secured upon the end of the said upright and having the slot *f* to receive the pin *e*, the lever H, the cords *c*, attached to the lever on the opposite sides of its pivot and to the head F on opposite sides of the upright rod B, and the cord *g*, having its ends attached to the said head and latch, substantially as herein shown and described.

2. The combination, with the gate A, provided with the pin *e*, the latch J, the upright B, and the posts G L, of the head F, having the slot *f*, and provided with the eye-plates *d* on opposite sides, the lever H, the cords *c*, attached to the lever and eye-plates, the cord *g*, attached to the head F and to the latch J, and cords *j j'*, attached to the eye-plates of the head and extending to the post L, substantially as herein shown and described.

3. The posts C C, set diagonally to each other and having the cross-pieces *b b* attached to them, in combination with the upright B, placed in the cross-pieces *b b*, the head F, gate A, and lever H, the latter being connected to the head by cords *c c*, and the head connected to the latch J by cord *g*, substantially as and for the purpose set forth.

338,870. HORSESHOE-MACHINE. CHARLES H. PERKINS, Providence, R. I. Filed Jan. 23, 1886. (No model.)



Claim.—1. In a horseshoe-machine, the combination, substantially as hereinbefore described, of a hammer, a shoe-forming die mounted on a movable bed below said hammer, stationary studs co-operating with said die for making an initial bend in a shoe-blank, and a pair of automatic jaws mounted on said bed and moving with said die for completing the bend, and thereafter clamping the blank and confining it at the forming-die while passing to and beneath the hammer and during the hammering operation.

2. In a horseshoe-machine, the combination, substantially as hereinbefore described, of a pair of swaging dies or jaws for thickening the ends of a straight shoe-blank, a hammer, a shoe-forming die mounted on a movable bed below said hammer, stationary bending-studs co-operating with said forming-die for making an initial bend in a blank after receiving it from the swaging-dies, and a pair of automatic lever-jaws mounted on said bed for making a finishing-bend in said blank, and thereafter clamping it at the forming-die while passing to and beneath the hammer and during the hammering operation.

3. In a horseshoe-machine, the combination of a movable bed, a forming-die mounted on said bed, a pair of stationary studs co-operating with said forming-die for initially bending a blank, and a pair of automatic lever-jaws mounted on said bed adjacent to and moving with said die for completing the bend in the blank, and thereafter serving as a clamp for confining the fully-bent blank at the forming-die.

4. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the hammer, the centering-gage, the swaging-dies for thickening the ends of a straight blank, and the bending mechanism consisting of the movable die-bed, the forming-die, the stationary pendent studs, and the automatic lever-jaws, these latter also operating as clamps during the hammering operation.

5. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the sliding die-bed, the forming-die, the studs, and the automatic lever-jaws, all co-operating for bending a blank, the swaging-dies for thickening the end of a straight blank, and the blank-carrier for automatically engaging with a straight blank at the swaging-dies and delivering it to the bending mechanism.

6. In a horseshoe-machine, the combination, substantially as hereinbefore described, of swaging-dies for thickening the ends of a straight blank, a hammer, a sliding die-bed below said hammer, the forming-die on said bed, the stationary bending-studs co-operating with said die in making the initial bend in a swaged blank, the automatic lever-jaws co-operating with said forming-die for making the finishing-bend in a blank, and thereafter serving as a clamp for confining said blank at said die during the hammering operation, and a blank-carrier for transferring blanks from the swaging-dies to the bending mechanism.

7. In a horseshoe-machine, the combination, substantially as hereinbefore described, of a pair of swaging-dies for thickening the ends of straight blanks, a movable forming-die co-operating with stationary pendent studs for bending a swaged blank, and a blank-carrier having a centering-gage thereon, whereby blanks are accurately centered and delivered with uniformity first to the swaging-dies and then to said bending mechanism.

8. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the die-bed, the forming-die, and the pendent studs, all co-operating for initially bending a blank, the swaging-dies at one side of said bed, and the blank carrier movable between the swaging-dies and the bending mechanism, whereby on receiving a straight blank said carrier may deliver it to the swaging-dies, then convey the swaged blank to the bending mechanism, and then be returned for another blank.

9. In a horseshoe-machine, the combination, with the swaging-dies and the bending mechanism, of a rail overhanging said dies and extended thence over said bending mechanism, and a blank-carrier mounted on said rail and coupled by chains with two oppositely-vibrated levers, substantially as described

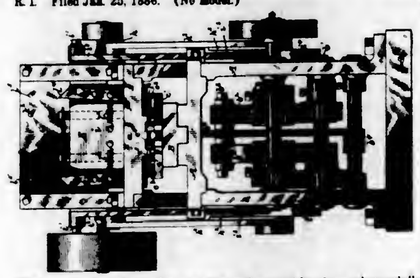
10. In a horseshoe-machine, the combination of the swaging-dies, the bending mechanism, the horizontally-reciprocated blank-carrier, and the carrier-supporting rail provided with inclined planes, substantially as described, whereby during the forward movement of said carrier on said rail it is first dropped at the swaging-dies, is then moved to the bending mechanism, and then dropped.

11. In a horseshoe-machine, the combination, with the swaging-dies and the bending mechanism, of the blank-carrier embodying a centering-gage, the rail on which said carrier is mounted, the sliding rod on said carrier, coupled to the centering-gage, and the stationary inclined plane, substantially as described, for engaging with said sliding rod and spreading the arms of the centering-gage when above the swaging-dies.

12. In a horseshoe-machine, the combination, with a blank-carrier block, of the centering-gage finger pivoted to said block, a spring common to both of said fingers, and a sliding rod in said block and coupled to both of said fingers above their pivots, substantially as described.

13. In a horseshoe-machine, the combination, with a blank-carrier block, of a pair of spring-controlled fingers pivoted to said block, and provided at their lower ends with coincident projecting studs, substantially as described.

338,871. HORSESHOE-MACHINE. CHARLES H. PERKINS, Providence, R. I. Filed Jan. 25, 1886. (No model.)



Claim.—1. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the sliding bed and the bending mechanism, the swaging-dies above said bed, the vertically-reciprocating blank-carrier, and the hammer.

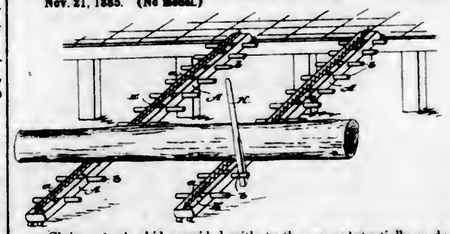
2. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the sliding die-bed, its forming-die, the studs and jaws co-operating therewith, the swaging-dies above said bed, a vertically-reciprocating blank-carrier, and a rotating cam for controlling said carrier by first fully lifting it for receiving a blank, then dropping it for presenting the blank to the swaging-dies, and then dropping it still further for presenting it to the forming-die on said bed, and thereafter rising to its full height.

3. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the sliding bed, the forming-die on said bed, the studs co-operating with said die for initially bending a blank, lever-jaws mounted upon and moving with said bed and co-operating with said forming-die in making the finishing bend in forming a shoe, a stationary cam-plate located centrally above said bed for closing said jaws, and a spring for opening them.

4. The combination, substantially as hereinbefore described, of the vertically-reciprocating blank-carrier, the pivoted gaging-fingers inclined at their upper ends, their springs, and the stationary studs which engage with the inclined ends of said finger during the upward movement of the carrier and cause said ends to move toward each other and thereby cause their lower ends to move outwardly for the reception of a blank.

5. The combination, substantially as hereinbefore described, of the vertically-reciprocating carrier-block, and the blank-supporting brackets co-operating with said block for affording a blank holder and carrier.

338,872. SPIKED SKID. WILLIAM H. POLLETT, Melrose, Wis. Filed Nov. 21, 1885. (No model.)



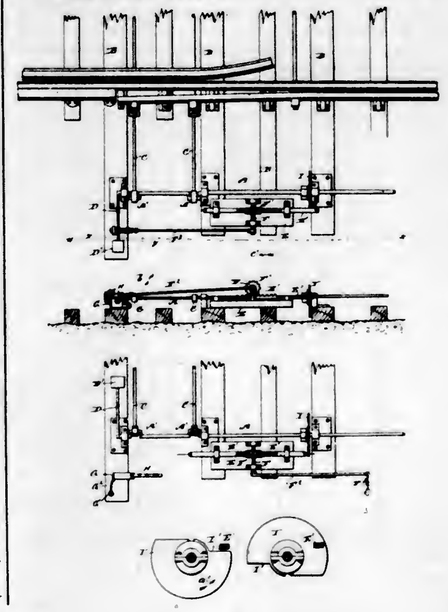
Claim.—1. A skid provided with teeth *a a*, substantially as described, and for the purpose specified.

2. The combination, with a skid, substantially as described, of plates E, formed with teeth *a a*, substantially as described.

3. A skid provided with pins *b b*, substantially as described, and for the purpose specified.

4. The combination, with a skid provided with pins *b b*, of plates E E, formed with teeth *a a*, substantially as described.

338,873. SWITCH-LOCK. HOBART B. POTTER, North Adams, Mass. Filed May 16, 1885. (No model.)



Claim.—1. The combination, with a switch-throwing shaft or lever, of a sliding bar for locking the said shaft or lever, a rack formed on the bar, a pinion engaging with the rack, a lever for turning the pinion, and chain-links secured on the end of the lever, substantially as herein shown and described.

2. The combination, with a switch-throwing shaft or lever, of a disk mounted on the same and provided with an offset, a sliding locking-bar provided with a rack, a pinion engaging with the rack, a lever for turning the pinion, links on the end of said lever, the standard G, and the pivot-hasp H, substantially as herein shown and described.

3. The combination, with a switch-throwing shaft or lever having a disk provided with an offset, of a sliding bar provided with cogs, a pinion engaging with the said cogs, and a bolt operated from the said pinion, and signals connected with the sliding rack-bar, substantially as herein shown and described.

4. The combination, with a switch-throwing shaft or lever, of a locking-bar sliding in the horizontal plane parallel with the shaft and having a rack, a pinion engaging with the rack, and a lever for turning the pinion, substantially as herein shown and described.

5. The combination, with a switch-throwing lever or shaft, of a disk mounted on the same and provided with an offset, a sliding locking-bar parallel with the switch-throwing lever or shaft, and mechanism for shifting the said locking-bar to engage with the offset in the disk or to disengage it from the same, substantially as herein shown and described.

338,874. **WRENCH.** JOSHUA PUSEY, Philadelphia, Pa. Filed Nov. 27, 1885. (No model.)



Claim.—1. The combination of the stock provided with the fixed jaw, the rotatable threaded nut partially cut away, as shown, and contained within a transverse slot in the stock, the sliding plane-sided and partially-threaded jaw-bar extending through the nut, and the retracting-spring, all constructed and adapted to operate substantially as and for the purpose recited.

2. The combination of the stock provided with a fixed jaw, the rotatable threaded nut partially cut away, as shown, and contained within a transverse slot in the stock, the stop for limiting the extent of rotation of said nut, the sliding plane-sided and partially-threaded jaw-bar extending through the nut, and the retracting-spring, all constructed and adapted to operate substantially as and for the purpose recited.

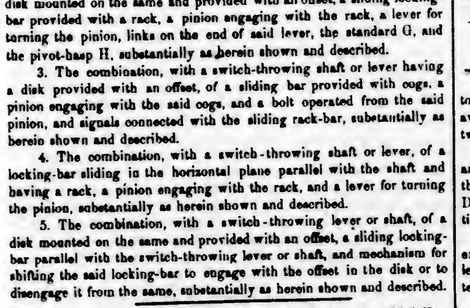
3. The combination of the fixed jaw and stock, the sliding partly-threaded jaw-bar, the threaded rotatable nut having a portion of its periphery cut away, the stop I, and the jaw-bar-actuating and nut-rotating spring, substantially as and for the purpose set forth.

4. The combination of the fixed jaw and stock, the sliding partly-threaded jaw-bar, the threaded rotatable nut having a portion of its periphery cut away, the stop I, and the retracting-spring S, having one end secured under tension to the rotatable nut and the other end to the head of the rear end of said sliding jaw-bar, whereby the one spring serves to retract said sliding bar, and at the same time to rotate said nut, substantially as and for the purpose set forth.

5. The combination of the fixed jaw and stock, the partly-threaded sliding jaw-bar, the rotatable nut having a portion of its periphery cut away, the retracting-spring, and the ledge *o* upon the lateral edge of said sliding jaw projecting beyond the edge of the fixed jaw, substantially as and for the purpose specified.

6. In combination with the stock and fixed jaw, the threaded nut having a portion of its periphery cut away, and the sliding partly-threaded jaw-bar, the ends of said threads being pointed or beveled off, substantially as and for the purposes specified.

338,875. **AWNING.** EMIL A. H. RABSER and C. ROBERT G. RABSER, Philadelphia, Pa. Filed Jan. 4, 1886. (No model.)



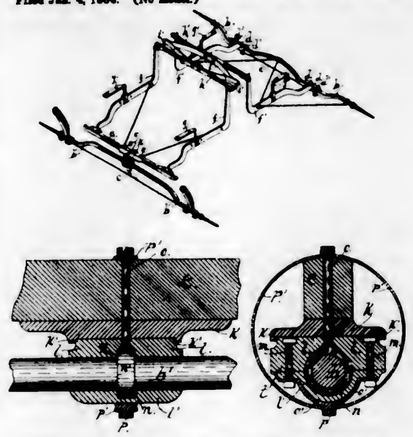
Claim.—1. The combination, with a bracket, G, adapted to be secured to a wall of a building, with the upper and lower rollers, D D', of an awning, clutches E E', both carried by the bracket, and gearing between the clutches and the rollers, substantially as described.

2. The combination of the upper roller, D, and lower roller, D', of an awning, and a bracket carrying clutches E E', with a wheel, F, on the clutch E, and chain *f*, connecting it with the roller D and a pulley, D^2, and chain *d*, connecting the clutch E' with the roller D', all substantially as set forth.

3. The combination of the ratchet-wheel K, having internal and external teeth and a pawl for the external teeth, with a weighted pulley, H, having a pawl, A, within the wheel K, to engage with the internal teeth thereof, and stops for the pawl, as specified.

4. The combination of the ratchet-wheel K, having internal teeth and external teeth, with a pulley carrying a pawl to engage with the internal teeth, and a bracket carrying a pawl to engage with the external teeth, said pulley also carrying a finger, M, to disengage the outer pawl, substantially as set forth.

338,876. **WAGON-GEARING.** PETER J. RENTER, Bay City, Mich., assignor to Lewis T. Wilcox and James P. Light, both of same place. Filed Jan. 4, 1886. (No model.)



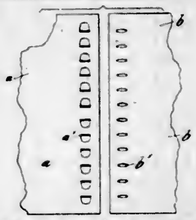
Claim.—1. In a wagon-gearing, the levers *f*, secured by their outer ends to the bolster and by their inner upturned ends to the spring-bar *h*, the levers *f'*, secured by their rear ends to the rear axle and by their inner upturned ends to the spring-bar *h'*, the supports *g* and *g'*, secured to the body by one end and pivoted to the levers *f* and *f'* by their opposite ends, and the spring *i*, secured between the bars *h* and *h'*, in combination with an open link, *i'*, passed through openings in the ends of the spring-sections, and having a solid collar, *j*, upon its central portion and between the spring-sections, substantially as herein described, and for the purpose set forth.

2. In a wagon-gearing, the combination, with the axle *b'*, provided with a rigid collar, *n'*, of a box, *l*, consisting of the parts *l* and *l'*, secured together by the bolts *m*, and surrounding the axle, and having the chamber *n*, inclosing the collar *n'*, and the bolster-plate *k*, and bolster *c*, secured to the part *l* by the king-bolt *o*, substantially as set forth.

338,877. **SHEET-METAL PIPE.** DAVID A. RITCHIE, Cambridgeport, Mass. Filed Feb. 11, 1886. (No model.)

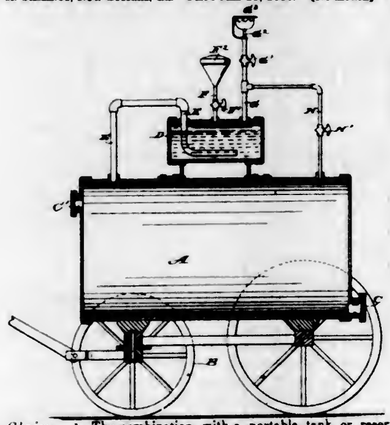


338,877.



Claim.—As an improved article of manufacture, a sheet-metal expanding-pipe having a longitudinal seam parallel with the center thereof, and composed of united sections having projections or recesses, the projections of one section entering recesses in the next section, thus forming annular joints, substantially as described.

338,878. **APPARATUS FOR EMPTYING PRIVY-VAULTS.** LOUIS R. SAMBIOT, New Orleans, La. Filed Jan. 23, 1886. (No model.)



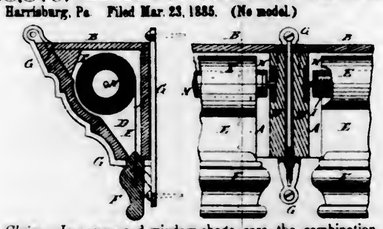
Claim.—1. The combination, with a portable tank or reservoir provided with inlet and outlet pipes, of a smaller reservoir containing a disinfecting-fluid and connected with the portable tank by a pipe, and of a gas pipe and burner connected with the smaller reservoir to burn the carbureted gases generated in the smaller reservoir, substantially as shown and described.

2. The combination, with the portable tank or reservoir A, provided with the inlet-pipe C' and the outlet-pipe C, of a pipe connecting the tank A with the generating-reservoir D, of the gas-pipe G and the burner G^3, having a shield, G^4, and of a device for filling the reservoir D with a disinfecting-fluid, substantially as shown and described.

3. The portable tank A, provided with the inlet-pipe C' and the outlet-pipe C, the tube E, and the reservoir D, provided with the pipe F and the funnel F^2, in combination with the gas-pipe G, provided with the cock G', the burner G^3, and the shield G^4, substantially as shown and described.

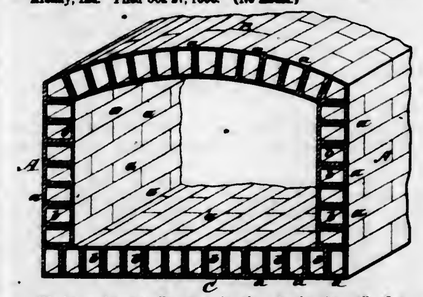
4. The portable tank A, provided with the inlet-pipe C' and the outlet-pipe C, and the tube E, in combination with the reservoir D, the gas-pipe G, and the exhaust-pipe H, provided with the cock or valve H', substantially as shown and described.

338,879. **MAP AND WINDOW-SHADE CASE.** JOHN M. SAUDER, Harrisburg, Pa. Filed Mar. 23, 1885. (No model.)



Claim.—In a map and window-shade case, the combination, with the spring-roller H I, the map or shade E, having molding F attached to its outer edge, and the case A B C D, of the flanged brackets G, substantially as herein shown and described, whereby the said cases will be securely supported and can be readily detached.

338,880. **ANNEALING-OVEN FOR GLASS.** FRANK SCHEPOLD, New Albany, Ind. Filed Oct. 27, 1885. (No model.)



Claim.—An annealing-oven for glass, having its walls, floor, and ceiling composed of a series of hollow bricks, forming a series of longitudinal flues on all sides the furnace, whereby provision is made for heating and cooling the furnace very rapidly, substantially as herein shown and described.

338,881. **FAN.** SIMON SCHEUER, New York, N. Y. Filed Jan. 18, 1886. (No model.)



Claim.—The combination, in a fan, substantially as described, of a hollow or tubular handle, a web, a retractile spring secured at one end to the web and at the other end to the handle, a finger-piece secured to the web, and a lock or catch for holding such finger-piece in the prescribed position, substantially as set forth.

338,882. **MACHINE FOR CONSTRUCTING FENCES.** WILSON D. SCHOOLEY, Richmond, Ind. Filed Dec. 31, 1885. (No model.)



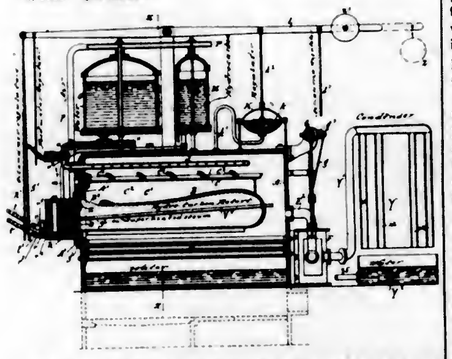
Claim.—1. In a machine for constructing picket and wire fences, a suitable upright frame carrying rotary twisting-wheels for the wire, in combination with a truck-wheel and swivel-braces for supporting the frame and allowing it to be moved back and forth, substantially as and for the purpose specified.

2. In a machine for constructing picket and wire fences, the combination with a suitable upright frame provided with wire-twisting wheels and means for rotating them, of a longitudinal bar provided with hangers for suspending it from the fence, two levers, and means for attaching one of said rods to the frame pivoted to the bar, and hooked rods connected to the levers, substantially as and for the purpose set forth.

3. In a machine for constructing picket and wire fences, the combination, with wheels for twisting the wire, of disks located in the hubs of the wheels, each consisting of one stationary and one removable section, notched as shown, to receive the wire, substantially as and for the purpose described.

4. A machine for constructing picket and wire fences, consisting of a device for twisting the wires, provided with rotary twisting-wheels, means for tightening the wires, consisting of a grooved clamp, rope tackle and anchor, a bar provided with clamps for holding the wires and connected to the wire-tightening device, and two pivoted hand-levers and hooked rods adapted to engage with the last one of the pickets and the frame of the wire-twisting device, respectively, substantially as and for the purpose set forth.

338,883. COMBUSTION OF FLUID FUEL FOR THE DEVELOPMENT OF STEAM. LEMUEL W. SERRELL, Plainfield, N. J. Filed May 4, 1885. (No model.)



Claim.—1. The method herein specified of burning fluid fuel and vaporizing water, consisting in forcing such fuel into the flame within a retort by the action of an air-jet under pressure, and promoting a perfect combustion by jets of air acting in the opposite direction to the flame to check its escape from the retort, and causing the heated gases to pass into a generator containing water, substantially as set forth.

2. The method herein specified of evolving a fluid under pressure, consisting in driving into a retort a fluid fuel and burning the same in the presence of air under pressure, passing the resulting gases into a chamber or generator into contact with water supplied in small streams or spray to be vaporized by the heat and pass off in the form of steam with the gases, substantially as specified.

3. The method herein specified of evolving a fluid under pressure, consisting in forcing air into a retort, supplying fluid fuel into that retort and burning the same, passing the products of combustion into a generator that incloses the retort, and supplying water in spray or small streams into such generator to come into direct contact with the heated gases, substantially as set forth.

4. The method herein specified of evolving a fluid under pressure, consisting in forcing air into a retort, supplying fluid fuel into such retort, burning the same, promoting a perfect combustion by opposing the escape of the flame by jets of air, passing the flame into a combustion-chamber and allowing the products of combustion to pass into a surrounding generator and act directly upon water to vaporize the same, and to leave the generator with the steam, substantially as set forth.

5. The method herein specified of vaporizing water, consisting in supplying the same in jets or small streams into a chamber and upon ledges or troughs, burning fluid fuel in a retort in the presence of atmosphere, and exposing the water and the ledges or troughs to the direct action of the gases resulting from the combustion of such fluid fuel, substantially as set forth.

6. The method herein specified of vaporizing water and evolving a fluid under pressure, consisting in pumping air into a retort, supplying and burning within that retort a fluid fuel, causing water to trickle over surfaces that are heated by the combustion, and causing the products of combustion to escape into the generator containing the water and steam, so as to commingle and pass off with the steam, substantially as set forth.

7. The method herein specified of developing and employing a fluid under pressure, consisting in pumping air into a retort, supplying and burning in that retort a fluid fuel, vaporizing water by bringing the same in the form of spray or streams into contact with the heat developed, and passing the products of combustion and the steam jointly through the engine that drives the air-pump and performs other work, substantially as set forth.

8. The method herein specified of developing a fluid under pressure, consisting in forcing air into a retort, supplying liquid fuel into the retort and burning the same, exposing the liquid fuel to the air-pressure in the vessel, holding the same so that it is free to run by gravity into the retort and against the pressure within the retort, and passing the resulting products of combustion into a surrounding generator into which water is supplied in a spray or streams and with which the products of combustion come into direct contact, substantially as set forth.

9. The method herein specified of supplying and vaporizing water for the development of a fluid under pressure, consisting in forcing air into a chamber or retort, supplying a combustible fluid into that retort, passing the products of combustion into a surrounding generator, causing the water to flow in streams or jets into such generator by gravity and the pressure of the air upon the water in the vessel holding such water, substantially as set forth.

10. The method herein specified of vaporizing water and obtaining a fluid under pressure, consisting in burning a fluid fuel in a retort in the presence of air pumped into that retort, passing the products of combustion into the chamber or generator surrounding the retort, causing the water to shower or trickle over the heated portions of the generator and in direct contact with the products of combustion, and returning the surplus water from the bottom of the generator to the supply, substantially as set forth.

11. The method herein specified of vaporizing water and commingling the same with the products of combustion to form a fluid under pressure, consisting in forcing air into a retort, supplying into the same a fluid fuel, burning the same in said retort, passing the products of combustion into a chamber beneath a water-holding vessel, and through openings in said vessel into a generator into which water is supplied and in which the steam and gases commingle, substantially as set forth.

12. The method herein specified of burning a fluid fuel and vaporizing water, consisting in forcing air and a fluid fuel into a retort and burning the same, and introducing into the same retort superheated steam in a regulated proportion, and directing the heated gases into the generator containing water, substantially as set forth.

13. The method herein specified of developing a fluid under pressure, consisting in forcing into the flame within a retort a fluid fuel and atmospheric air and steam superheated by the heat in the retort before entering the flame within the retort, and forcing in additional air near the place where the products of combustion leave the retort, and passing the products of combustion into a generator into direct contact with water in a divided condition, substantially as set forth.

14. The method herein specified of developing a fluid under pressure and utilizing the same, consisting in forcing a fluid fuel into the flame within a retort by the action of air under pressure, passing the products of combustion into a generator and supplying into the generator water in spray or streams, whereby the heat developed is transferred to the water for the production of steam without reducing the temperature of the retort unduly; passing the steam and gases through an engine for converting the heat developed into mechanical force, and actuating the air-forcing mechanism by the engine, substantially as specified.

15. The method herein specified of developing a fluid under pressure and utilizing the same, consisting in forcing a fluid fuel into the flame within a retort by the action of air under pressure, passing the products of combustion into a generator, and supplying water in streams or spray into the generator and into contact with the products of combustion, whereby the heat developed is transferred to the water for the production of steam, passing the steam and gases through an engine for converting the heat developed into mechanical force, and passing the fluid from the engine through a condenser to recover the water or a portion of it and allow the gaseous products of combustion to escape into the atmosphere, substantially as set forth.

338,884. LOG-PUSHER FOR SAW-MILLS. ROBSON W. SHELBOURNE, Blandville, Ky. Filed July 6, 1885. (No model.)

Claim.—1. A log-pushing apparatus for saw-mills, comprising log-pushers A A', fitted in slideways arranged transversely to the mill-carriage and outside of a truck or trough on which the logs are brought into the mill-house, and mechanism, substantially as described, for operating the pushers from the driving-shaft of the mill, whereby the log will automatically be pushed from the log truck or trough onto the mill-carriage, substantially as herein set forth.

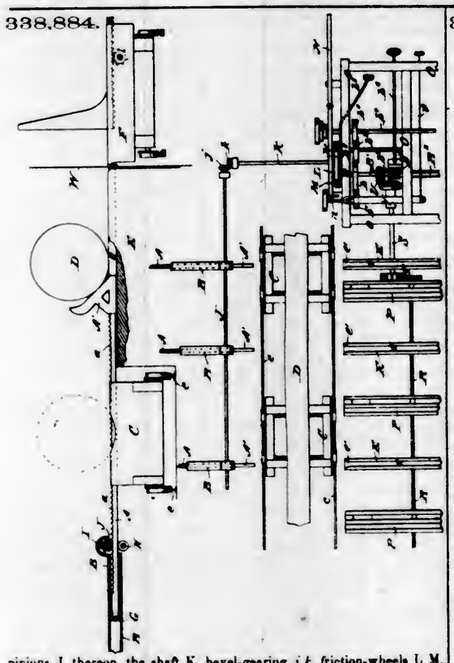
2. A log-pushing apparatus for saw-mills, comprising log-pushers A A', fitted in slideways arranged transversely to the mill-carriage and outside of a truck or trough on which the logs are brought into the mill-house, and grooved skids arranged between the pushers and the carriage, to serve as guides to the pushers and as supports to the log, substantially as herein set forth.

3. The combination, in log-pushers for saw-mills, of the pushers A A', provided with racks *a*, casings forming guides therefor, a shaft, J, pinions I thereon, meshing with racks *a*, and gearing, substantially as described, for operating shafts J from the driving-shaft of the mill, substantially as herein set forth.

4. The combination, in log-pushers for saw-mills, of the pushers A A', provided with racks *a*, casings forming guides therefor, a shaft, J, pinions I thereon, the shaft K, bevel-gearing *j k*, friction-wheels L M, driving-shaft B', and means, substantially as described, for engaging said wheels L M and for rotating the shaft B' in reverse directions, for projecting and backing the pushers A A', substantially as herein set forth.

5. The combination, in log-pushers for saw-mills, of the pushers A A', provided with racks *a*, casings forming guides therefor, a shaft, J,

338,884.

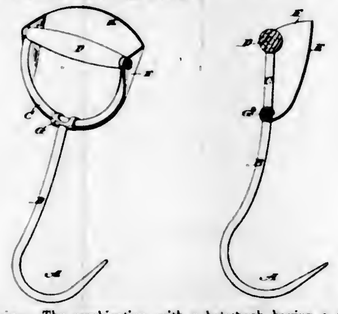


pinions I thereon, the shaft K, bevel-gearing *j k*, friction-wheels L M, driving-shaft B', lever N, and friction wheels or gearing, substantially as described, for rotating the shaft B' in reverse directions, substantially as herein set forth.

6. In a log-pusher for saw-mills, constructed substantially as shown and described, the combination, with the tubular guideways B, of the pushers A A', working in said tubular guides and provided with rollers G on their inner ends in said guides, and means for operating the pushers, substantially as herein set forth.

7. In log-pushers for saw-mills, constructed substantially as shown and described, the combination, with the pushers A A', provided with the racks *a* on one side and with the rollers G at their inner ends, and the shafts J, journaled above the pushers and provided with the pinions I, meshing with the racks, of the pushers and the rollers H below the racks and opposite the pinions I, substantially as set forth.

338,885. BALE AND BOX HOOK. PHILIP J. STOCKINGER, San José, Cal. Filed Oct. 6, 1885. (No model.)

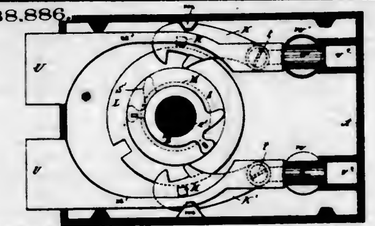


Claim.—The combination, with a bale-hook having a fork, C, formed on the upper end of its shank, and a handle, D, between the prongs of the fork, of the guard E, having wings F held on the ends of the handle, and the prongs G, bent over the middle portion of the fork, substantially as herein shown and described.

338,886. PERMUTATION-LOCK. AUGUSTUS STONER, New York, N. Y. Filed July 23, 1885. (No model.)

Claim.—1. The combination, with a bolt and a dog pivoted upon said bolt and a fence on the dog, of two independent sets of circular notched tumblers in the same axial line, a spindle capable of a limited

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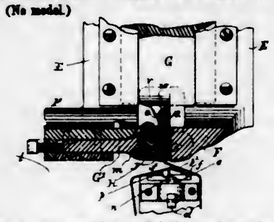
movement endwise, and a cross-bar or disk upon the spindle for setting first one set of tumblers and then the other, substantially as set forth.

2. The combination, with two separate sets of circular notched tumblers in the same axial line, of a spindle, a tubular stud for one set of tumblers, through which the spindle passes, a stud for the second set of tumblers in line with the tubular stud, a cross-bar or disk at the inner end of the spindle, and projections *r s*, for engaging and turning the tumblers in one set of tumblers or the other, substantially as set forth.

3. The combination, with the two separate sets of notched circular tumblers in the same axial line, of one spindle and its cross-bar and dial for setting first one set of the tumblers and then the other, and two bolts and their respective pivoted dogs and fences, and the notched disks S S', one dog being below one set of tumblers and swinging upwardly, and the other dog being above the other set of tumblers and swinging downwardly, the said dogs being moved in the opposite directions by the respective notched disks S S', substantially as set forth.

4. The combination, with the circular tumblers and the means for setting the same successively, of the bolts, the bolt-frame extending behind the tumblers, the guide upon such frame, a socket upon the case for the same, the dog pivoted to the frame to the rear of the tumblers and notched, the lug *m* upon the case, and the fence or studs upon the dog, substantially as set forth.

338,887. MACHINE FOR JOINTING AND SEAMING TIN CAN BODIES. CLARENCE M. SYMONDS, San Francisco, Cal. Filed July 1, 1885. (No model.)



Claim.—1. In a machine for jointing and seaming can-bodies, the horn or anvil D, having the blade *n*, arranged to be projected up through a slot in its upper face which extends through its length, and provided with spring-pins *p* on one side and p^2 on the opposite side, in combination with the slide E with its divided foot-piece F, having the adjustable plate with its arms and eccentrically-suspended pressing-bit, and the slide G with its hammer-bar *a*, substantially as described.

2. A machine for jointing and seaming can-bodies, consisting of the base A, with its curved arm B, and having a semicircular recess in its front, and an anvil-bar, D, projecting horizontally from its base in said recess and carrying the blade *n* and spring-pins *p* and p^2, a vertical head, C, on the end of the curved arm, and vertically-moving slides E G, provided with crimping and forming devices, which act upon the edges of the tin, so as to crimp, bend, interlock, and flatten them into a union-seam upon the anvil, substantially as described.

3. In combination with the base A, provided with a horizontally-projecting horn or anvil, D, in which a blade, *n*, is arranged to be automatically projected above its surface and then withdrawn below its surface through a slot in its upper face, a sliding head, E, having a foot-piece, F, which is divided by a channel extending parallel with the anvil, and which carries in said channel a pressing or crimping bit, and a vertically-moving hammer-bar, *a*, arranged to move down through the channel and flatten the edges of tin upon the anvil, substantially as described.

4. In combination with a horizontal horn or anvil, D, having a blade, *n*, arranged to project upward through a slot in its upper face, and provided with mechanism for withdrawing said blade below the surface of the anvil, and the spring-pins *p* p^2 on opposite sides of the blade *n*, a descending foot-piece, F, which carries a pressing or crimping bit, and a hammer-bar, *a*, which is arranged to move down upon the anvil after the foot-piece and crimping-bit have completed their action, substantially as described.

5. The horn or anvil D, having a channel extending longitudinally

through it, above which are secured two die-plates, *f f*, one of them provided with the depression i^2, so as to leave a narrow slot, *i*, between them, and having a bar, *e*, which is provided with a blade, *n*, placed in said channel so that its blade will pass through the slot *i*, in combination with suitable mechanism for raising and lowering said bar *e*, so as to alternately project the blade above and withdraw it below the surface of the anvil, substantially as described.

6. In a machine for jointing and seaming tin can-bodies, the anvil D, provided with the die-plates *f f*, and intermediate narrow slot, *i*, and having the bar *e*, with its blade *n*, and recesses in its under side arranged in a channel below said slot, in combination with the parallel longitudinally-moving lower bar, *d*, connected with the bar *e* by links *k*, said lower bar, *d*, having studs *j j*, corresponding with the recesses in the under side of bar *e*, substantially as described.

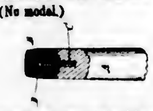
7. In a machine for jointing and seaming tin can-bodies, the anvil D, having a narrow blade, *n*, arranged to be projected above its upper surface, and provided with the short inclined spring-pins *p* on one side of the slot, and the long spring-pins p^2 on the opposite of the slot, to serve as guides, and stops for the edges of the tin and to hold them in the proper position with reference to the blade *n*, substantially as described.

8. In a machine for jointing and seaming tin can-bodies, having a horizontal horn or anvil, D, provided with a thin blade, *n*, arranged to be projected up through a slot in its upper surface, a channeled foot-piece, F, arranged to move down upon the anvil, said foot-piece having an adjustable sliding plate, G^2, provided with arms H at each end, in which is journaled eccentrically a pressing or crimping bit, J, substantially as described.

9. In a machine for jointing and seaming tin can-bodies, the eccentrically-suspended pressing or crimping bit J, mounted in a channel in the foot-piece F of a slide, E, and provided with the studs *o*, near its upper edge on one side, and pressed forward by a spring, *m*, above its center on the opposite side, in combination with the vertically-moving hammer-bar *a*, which is provided with tracks in which the studs *o* traverse, said tracks having a projection, *v*, and curved shoulders *w*, by means of which the pressing-bit is moved to crimp the interlocked edges of tin and withdrawn in time to avoid the descending hammer, substantially as described.

10. In a machine for jointing and seaming tin can-bodies, the outer slide, G, carrying the hammer-bar *a*, moved by the main lever T, which passes through a vertical slot in the slide E, in combination with inner slide, E, with its divided foot-piece F, having the adjustable plate carrying the eccentrically-suspended compressing-bit, which is moved by the short lever U by means of the cam-projection or short lever-bearing Y on the lever T, and the adjustable contact-point, consisting of the projection f^2 on the block E^2, and the set-screw g^2, for bearing on the head of the outer slide, substantially as described.

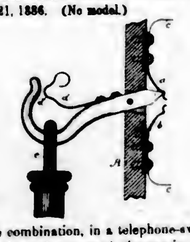
338,888. BILLIARD-CUE. JOHN ALOYSIUS TRACY, Weston, W. Va. Filed Sept. 8, 1885. (No model.)



Claim.—1. In a billiard-cue provided with a fixed screw, C, having a central head thereon recessed in the end of the cue flush with its surface, the attachable and detachable tip B, consisting of a number of layers of any suitable material secured to an independent bushing, substantially as and for the purpose set forth.

2. As a new and improved article of manufacture, a billiard-cue tip constructed substantially as herein described and shown, consisting of a tip of leather or other suitable material, provided with a metallic bushing having an interior and an exterior screw-thread, to receive a tip detachably thereon, and adapted to be attached to and detached from a cue, as set forth.

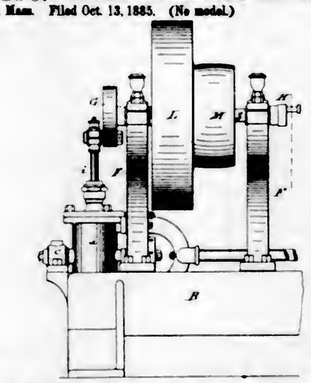
338,889. TELEPHONE-SWITCH. WILLIAM C. TURNBULL, Baltimore, Md. Filed Jan. 21, 1886. (No model.)



Claim.—1. The combination, in a telephone-switch, of the pivoted supporting-hook and the spring secured thereon in such relation to the end of the hook as to make it necessary to exert an upward and downward strain upon the hook in removing and replacing the telephone, substantially as set forth.

2. The combination, substantially as set forth, of the pivoted telephone-hook, the steadying-springs *a b*, and the spring *d*, secured upon and projecting into the face of the hook.

338,890. OSCILLATING STEAM-ENGINE. MAX ULRICH, Easthampton, Mass. Filed Oct. 13, 1885. (No model.)



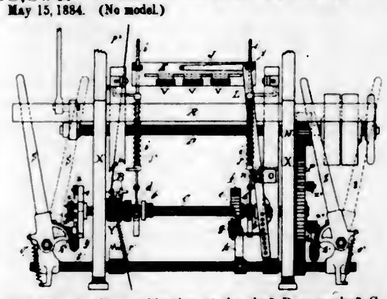
Claim.—1. The combination of a laterally-oscillating steam-cylinder, *a*, having steam-channels *u u'* and front and rear pivots, *q q'*, a yoke, *c*, for the front pivot, *q*, and a ring-shaped supporting-block for the rear pivot, *q'*, the yoke *c* and block *b* being provided with journal-bearings for said pivots, having interior linings, *l* and *l'*.

2. The combination of a laterally-oscillating steam-cylinder, *a*, having steam-channels *n* and *n'* and front and rear pivots, *q* and *q'*, a yoke, *c*, into which said pivot *q* on the side opposite said steam-channels extends and is supported, a ring-shaped supporting-block, *b*, through which said pivot *q'* extends, and means within said yoke for forcing the cylinder away from said yoke and against the faces of the steam-ports of the supporting-block.

3. The combination of a laterally-oscillating steam-cylinder, *a*, having steam-channels *u u'* and front and rear pivots, *q q'*, the end of the pivot *q* being conical, a yoke, *c*, having a journal-bearing provided with interior lining, *l'*, and plate, l^2, against which the conical end of said pivot is adapted to bear, and set-screw *t* in said yoke, for adjusting said plate l^2 and forcing the cylinder away from said yoke, a ring-shaped supporting-block, *b*, having a central journal-bearing, *b'*, and steam supply and exhaust pipes *s'* and *e'*.

4. The combination of a laterally-oscillating steam-cylinder, having steam-channels *u u'* and front and rear pivots, *q q'*, a yoke, *c*, a ring-shaped supporting-block, *b*, having a central journal-bearing, *b'*, and steam supply and exhaust ports *s'* and *e'* at the upper and lower parts, and semicircular steam supply and exhaust pipes *s* and *e*, attached to the supporting-block, substantially as set forth.

338,891. SWIVEL-LOOM. JOB WADSWORTH, Paterson, N. J. Filed May 15, 1884. (No model.)



Claim.—1. The combination of the shaft B, cam-shaft C, gear-wheels N and M for rotating said cam-shaft, rollers z, z', z^2, z^3, and z^4, arranged on said cam-shaft in relation to each other substantially as described, treadles *t t*, picker-sticks *s s*, connections $h^\times$ $h^\times$, springs $o^\times$ $o^\times$, double cam Y, and device B, all constructed substantially as described, and adapted to operate the body or fly shuttle in both plain and swivel weaving, substantially as set forth and described.

2. The combination of the sliding cam-shaft C, double cam Y, vibrating beam B, with the arms *b b* and their attached rollers *d d'*, treadles *a a*, rods *i i*, springs $j^\times$ $j^\times$, rack E, and lay R, constructed and arranged substantially as described, and adapted to sink the rack E, essentially as and for the purposes set forth and described.

3. The combination of the shaft D, sliding cam-shaft C, double cam Y, vibrating beam B, and gearing N M for rotating said cam-shaft, with the cam *f*, levers K L, and rod J, rack E, rack-bar V^3, connected to rod J, pinions V', and the swivel-shuttles V V, substantially as shown and described, and adapted to drive the swivel-shuttles, substantially as and for the purposes set forth.

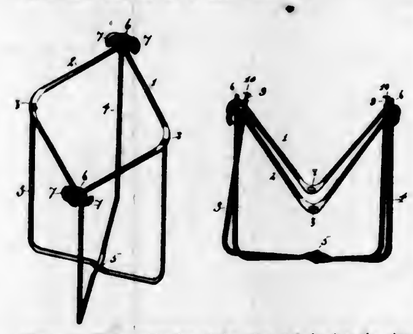
4. The combination of the shaft D, sliding cam-shaft C, double cam Y, vibrating beam B, gearing N M, arms *b b*, and rollers *d d'*, with treadles *a a*, rods *i i*, springs $j^\times$ $j^\times$, rack E, lay R, cam *f*, levers K L, and rod J, rack-bar V^3, pinions V', and the swivel-shuttles V V, the several parts being constructed and arranged in relation to each other substantially as described, and adapted to operate the swivel-shuttle, substantially as and for the purposes set forth and described.

5. The combination of the shaft D, cam-shaft C, and gearing N M for rotating said cam-shaft, with the double cam Y and device B, which latter is constructed to be controlled by the Jacquard or other pattern mechanism, and operates conjointly with the double cam Y in the manner described to impart an endwise movement to the cam-shaft C, substantially as set forth and described.

6. The pivoted beam B and projecting studs *l l'*, adapted to be controlled by the Jacquard or other pattern mechanism, in combination with the double cam Y, shaft D, cam-shaft C, and gearing N M, substantially as and for the purposes set forth and described.

7. The combination of the shaft D, cam-shaft C, and gearing N M with the double cam Y, beam B, and studs *l l'*, said beam and studs adapted to be controlled by the Jacquard or other pattern mechanism, rollers z, z', z^2, z^3, and z^4, and the treadles *t t*, picker-sticks *s s*, connections $h^\times$ $h^\times$, springs $o^\times$ $o^\times$, arms *b b*, rollers *d d'*, treadles *a a*, rods *i i*, springs $j^\times$ $j^\times$, cam *f*, the levers L K, rod J, lay R, rack E, rack-bar V^3, pinions V', and shuttles V V, all constructed and arranged substantially as and for the purposes set forth and described.

338,892. COTTON-BASKET. JOHN W. WALKER, Florence, Ala. Filed July 23, 1885. Renewed Mar. 6, 1886. (No model.)



Claim.—1. The combination of the wires 1 2, having the slots 8 and circular hooks 7, with the wire 3, pivoted at its middle to the middle of wire 4 by pivot 5, its upper end having the necks 9 and buttons 10, which fit into the slots 8 of wires 1 2, and wire 4, having the circular hooks 6, grasping the circular hook 7, substantially as shown and described.

2. A cotton-basket consisting of the wires 1 and 2, having the slots 8 and circular hooks 7, wire 3, pivoted at its middle to the middle of wire 4 by pivot 5, its upper ends having necks 9 and buttons 10, fitting into slots 8 of said wires 1 and 2, and wire 4, having circular hooks 6, grasping the circular hooks 7, in combination with the sack 11, having draw-string 12, said sack fitting around said wire frame, substantially as set forth.

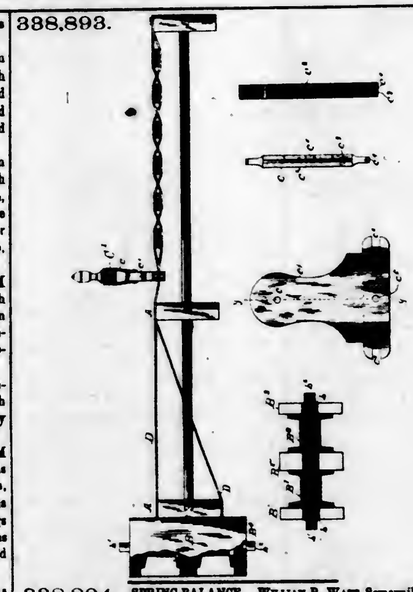
338,893. FENCE-MACHINE. SAM WATSON, Straughn, Ind. Filed Jan. 14, 1886. (Model.)

Claim.—1. In a fence-machine of the kind described, the combination of a reel-frame, the reels in pairs, the fence-posts against which the reel-frame is placed, and the wires passing on each side of the fence-post and secured, whereby the wires hold the reel-frame against the post, for the purpose set forth.

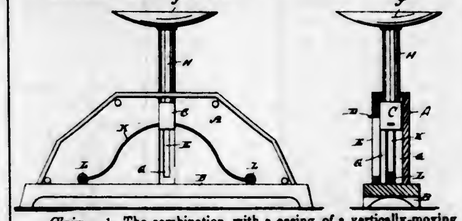
2. In a fence-machine, the twister having a pivoted wire-retainer consisting of a plate, c^3, having a slot, c^3, and a wire-retaining bar, c^4, secured in said slot, substantially as described.

3. The combination of a reel-frame, the reels arranged in pairs, the fence-posts, to one of which, acting as a tension-post, the reel-frame is secured, and the wires secured, substantially as set forth, and passing on each side of the tension-post in front of said frame, substantially as and for the purpose described.

338,893.



338,894. SPRING-BALANCE. WILLIAM R. WATT, Somerville, Tenn. Filed Nov. 30, 1885. (No model.)



Claim.—1. The combination, with a casing, of a vertically-moving rod for supporting the article to be weighed, and of a bow-spring connected with the lower end of said rod, the ends of said spring having rotatable bearings, substantially as herein shown and described.

2. The combination, with a casing containing a vertically-sliding block, of a rod on said block for supporting the object to be weighed, and of a bow-spring in the casing connected with said block, the ends of said spring having rotatable bearings, substantially as herein shown and described.

3. The combination, with a casing, of a vertically-sliding rod guided in the same, and of a bow-spring connected with the said rod and provided on its ends with rollers running on the bottom of the said casing, substantially as herein shown and described.

4. The combination, with the casing A and the base B, of the block C, guided by vertical grooves in the sides of the casing, a rod projecting upward from the said block and carrying a pan or plate, and of the bow-spring K, held in the said block, the ends of said spring having rotatable bearings, substantially as herein shown and described.

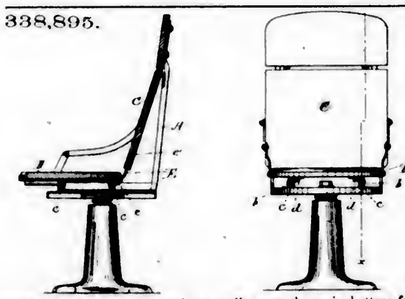
5. The combination, with the casing A, provided with the slot E and the guide-grooves G, of the base B, the sliding block C, the rod H on the same, a pan on said rod, the pointer or pin D on the block and projecting through the slot E, the bow-spring K, held in the block C, and of the rollers on the ends of the said spring K, substantially as herein shown and described.

6. A spring-balance provided with a bow-spring for supporting the pan or plate, the ends of said spring having rotatable bearings, substantially as herein shown and described.

338,895. CHAIR. HENRY C. WHEDEN, Boston, Mass. Filed Nov. 14, 1885. (No model.)

Claim.—1. In an extension-chair, the combination, with the main back-frame and the main bottom frame, of a supplementary back-frame and a supplementary bottom frame, the said supplementary back-frame being in hinged connection with the main back-frame and in extensible connection with the supplementary bottom frame, so as to move in and out with it, as set forth, and the said supplementary bottom frame being

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arranged to slide inwardly and outwardly upon the main bottom frame, all substantially as herein set forth.

2. In an extension-chair, the combination of the main back-frame A, the main bottom frame, B, provided with the guides *b*, supporting anti-friction rollers *c*, the supplementary back-frame C, and the supplementary sliding bottom D, provided with guide-ribs *d*, and with connection-rods E, working in recesses *e'* in the hinged supplementary back-frame C.

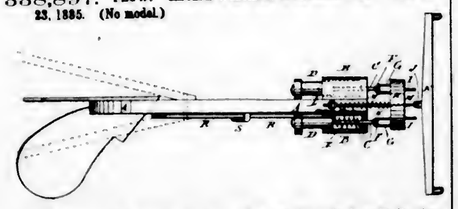
338,896. **DRIVING-BELT.** FRIEDRICH WEISMANN, Zurich, Switzerland. Filed Aug. 5, 1885. (No model.) Patented in Belgium July 23, 1885, No. 69,694; in England July 23, 1885, No. 8,907; in France July 23, 1885, No. 170,272; in Germany July 23, 1885, and in Austria-Hungary Oct. 17, 1885, No. 28,908 and No. 54,498.



Claim.—1. A double or compound belt of leather or other suitable material of a single length wound or doubled upon itself, as described, so as to form a free inner section and an overlapping outer section, the ends of the inner and outer sections of the belt being connected to each other by suitable means, substantially as set forth.

2. A double or compound belt made of leather or other suitable material of a single length wound or doubled upon itself, as described, so as to form a free inner section and an overlapping outer section, the inner and outer ends of said sections being connected to each other by lacings or otherwise through an opening or openings of the intermediate part of the belt, substantially as set forth.

338,897. **PLOW.** ADOLPH WESTLING, Ortonville, Minn. Filed Dec. 23, 1885. (No model.)



Claim.—1. A plow-clevis consisting of the cylinders B B, plungers D, rods C, hooked at F, spiral springs E, the draft-plate H, having staples G on its rear face engaging the hooks F, and the several hooks, I, projecting from different parts of the front face of said draft-plate, substantially as set forth.

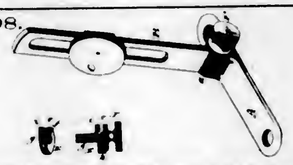
2. The combination, with the plow-beam A and the draft-plate H, connected with the said plow-beam by the rods C, springs E, and cylinders B, and provided with the hooks I, to receive the draft, of the rod M and the spiral spring N, substantially as herein shown and described, whereby the said draft-plate is kept from tilting back when the draft is applied to the lower part of the said draft-plate, as set forth.

3. The combination, with the plow-beam A, the cylinders B, rigidly secured to the forward end thereof, spring-pressed plungers within said cylinders, and a draft-plate connected with said plungers, of a guide-rod extending in front of the plow-beam and connecting it with draft-plate, substantially as set forth.

338,898. **SIGHT FOR FIRE-ARMS.** WILLIAM W. WETMORE, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Mar. 1, 1886. (No model.)

Claim.—1. The combination of the base A and the sight-arm B, hinged together by a knuckle on the one part and corresponding ears on the other part, with a pintle through said ears and knuckle, a spring-collar on said pintle within one of said ears and adapted to bear against

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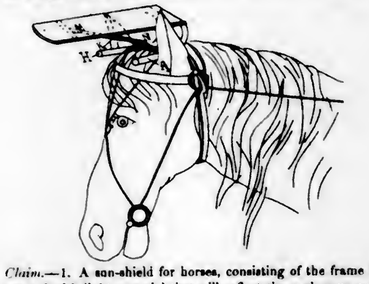
the corresponding side of the knuckle, with a head on the said pintle adapted to bear against said spring-collar, substantially as described, and whereby under the adjustment of the said head the force of the spring upon the knuckle may be increased or diminished.

2. The combination of the base A and the sight-arm B, hinged together by a knuckle on the one part and corresponding ears on the other part, with a pintle through said ears and knuckle, a spring-collar on said pintle within one of said ears and adapted to bear against the corresponding side of the knuckle, with a head on said pintle adapted to bear against said spring-collar, the inner side of the collar and the corresponding face of the knuckle constructed the one with a projection and the other with a corresponding recess adapted to engage each other at predetermined positions, substantially as described.

3. The combination of the base A and the sight-arm B, hinged together by a knuckle on the one part and corresponding ears on the other part, with a pintle through said ears and knuckle, a spring-collar on said pintle within one of said ears and adapted to bear against the corresponding side of the knuckle, with a head on said pintle adapted to bear against said spring-collar, the collar and the ear within which it rests constructed the one with a projection and the other with a corresponding recess to prevent the rotation of the collar, substantially as described.

4. The combination of the base A and the sight-arm B, hinged together by a knuckle on the one part and corresponding ears on the other part, with a pintle through said ears and knuckle, a spring-collar of U shape in longitudinal section on said pintle, one side of the U adapted to bear against the knuckle, and the pintle constructed with a head adapted to bear against the other side of the U, substantially as described.

338,899. **SUN-SHIELD FOR HORSES.** SOLOMON WHITE, Toledo, Ohio. Filed Aug. 10, 1885. (No model.)



Claim.—1. A sun-shield for horses, consisting of the frame D P E I L, covered with light material that will reflect the sun's rays, and having the wire D P E, forming part of its frame, extended beyond the frame and forming hooks C H and H F, and provided with the arm K, ending in the hook N, substantially as shown and described.

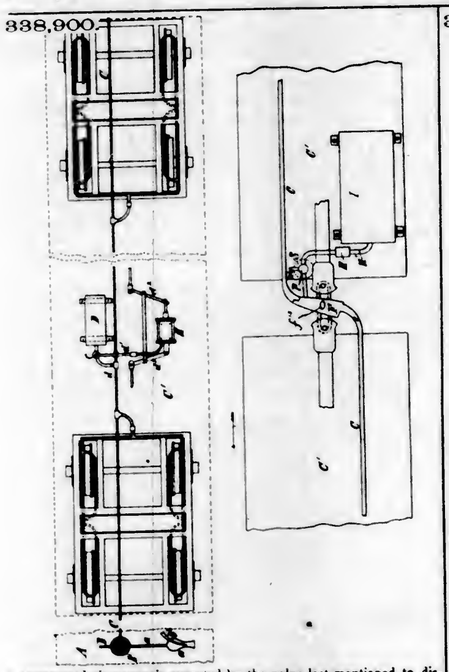
2. A sun-shield for horses, in combination with the means of fastening the shield to a horse's bridle, consisting of the hooks A C H F and the arm K, ending in a hook, N, and capable of turning about an axis, I, substantially as shown and described.

338,900. **BRAKE.** HIRAM K. WHITNER, New York, N. Y. Filed Dec. 14, 1885. (No model.)

Claim.—1. In an air-brake system, the combination, with railway-cars, of a main compressed-air reservoir, auxiliary reservoirs, a main air-pipe, mechanism, substantially such as described, for creating a vacuum in said air-pipe, a valve dividing the brake system into sections and opening to admit of the flow of compressed air from the main reservoir throughout the length of the main air-pipe, and closing to prevent a reflow of compressed air from one of the sections of said pipe, and a valve operated, when a vacuum is created in one section of the main air-pipe, to vent another section, substantially as specified.

2. The combination, with railway-cars, of a main compressed-air reservoir, auxiliary reservoirs, a main air-pipe, mechanism, substantially such as described, for creating a vacuum in said air-pipe, a valve dividing the brake system into sections and opening to admit of the flow of compressed air from the main reservoir throughout the length of the main air-pipe, and closing to prevent a reflow of compressed air from one of the sections of said pipe, a valve operated, when a vacuum is created in one section of the main air-pipe, to vent another section, and

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a compressed-air reservoir operated by the valve last mentioned to discharge into the section of the main air-pipe last mentioned after the same has been vented, substantially as specified.

3. The combination, with a main air-pipe, C, of the coupling-valve chest F, provided with the passages *f f'*, the valve f^3, the valve-chamber f^4, the vent-aperture f^5, the valve G, the spring f^6, and the passage f^7, provided with the open end f^{10}, substantially as specified.

4. The combination, with a main air-pipe, C, of the coupling-valve chest F, provided with the passages *f f'*, the valve f^3, the valve-chamber f^4, the vent-aperture f^5, the passage f^7, provided with the open end f^{10}, the valve G, provided with the passage f^{11}, and the spring f^9, substantially as specified.

5. The combination, with a main air-pipe, C, of the coupling-valve chest F, provided with the passages *f f'*, the valve f^3, the spring f^9, and the adjusting-screw f^{14}, substantially as specified.

338,901. **FLANGING-MACHINE.** SAMUEL T. WILLIAMS, Red Bank, assignor to the Williams Tension Wheel Company, Newark, N. J. Filed Jan. 25, 1886. (No model.)

Claim.—1. The combination of the frame and flanging-ring with adjustable dies and an adjustable rotary flanging-wheel, substantially as set forth.

2. The combination of the frame and flanging-ring with adjustable dies and an adjustable rotary flanging-wheel carrying rollers to flange the edge of the blank.

3. The combination of the frame, flanging-ring, and adjustable dies with a rotary flanging-wheel, F, and adjustable shaft F', on which the flanging-wheel is free to turn, substantially as specified.

4. The combination of the bed-plate, flanging-ring and adjustable dies with cross-head B, carried by the bed-plate, screw-shaft F', mounted in the cross-head and carrying a flanging-wheel, F, free to rotate on said shaft, substantially as described.

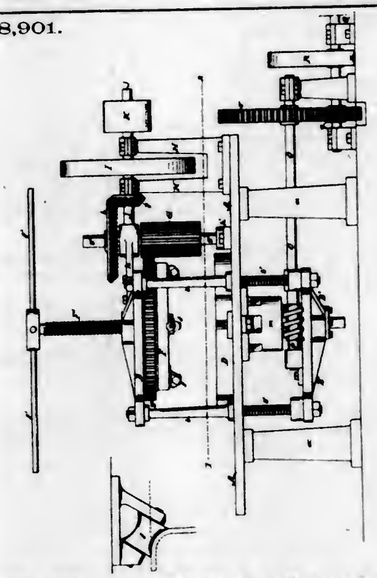
5. The combination of the frame, flanging-ring, and rotary flanging-wheel with adjustable dies and adjustable shaft L, carrying cones to act on said dies, all substantially as specified.

6. The combination of the frame and flanging-ring with adjustable dies beveled at their inner sides and carrying beveled lugs, and an adjustable shaft, L, carrying a cone, M, and hollow cone M', substantially as specified.

7. The combination of the frame, flanging-ring, and adjustable dies with a threaded shaft, L, having cones to act on said dies, a cross-head to which the threaded portion of the shaft is adapted, and the rotary wheel P, having a key-and-feather connection with the shaft, all substantially as specified.

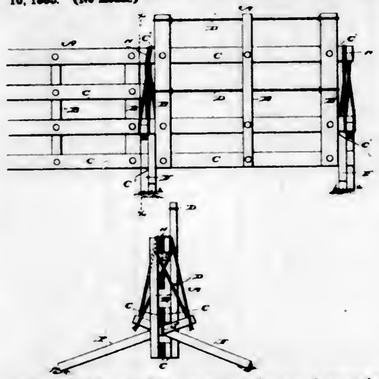
8. The combination of the bed-plate A, flanging-ring, and adjustable dies with a vertical shaft, L, having a cone, M, and hollow cone

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M', and a socket, *m*, secured to the under side of the bed-plate A, substantially as and for the purpose specified.

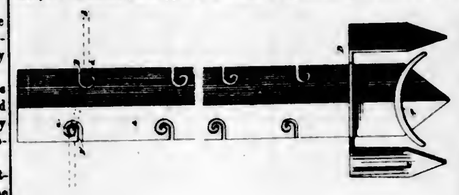
338,902. **FENCE.** MCDOWELL WILSON, Hankins, Ohio. Filed Dec. 10, 1885. (No model.)



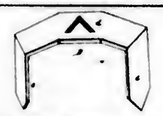
Claim.—The portable fence, comprising the crossed supporting-bars, connected together at *f* and having their lower ends resting on the ground, the fence-panels having the extended rails supported in the angles formed by the crossed bars, and the loops H passed over the extended rails of the adjoining panels and connecting them with the top ends of the crossed bars, the inner sides of the said loops being crossed below the extended ends of the rails, substantially as described.

338,903. **FENCE-POST.** LAUREN D. WOODWORTH, Youngstown, Ohio. Filed May 13, 1885. (No model.)

Claim.—1. A fence-post constructed of angle-iron, having convolute slots extending from opposite edges toward the vertical median line of the post alternately in opposite directions, the entering portions of the



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opposite slots being in a horizontal plane with each other for the ready insertion of the wires, and the convolute portions out of line with each other to cramp the wires when inserted, substantially as specified.

2. The combination, with the pointed post and the anchor D, of the point anchor curved downward toward its ends, so as to be fastened in the ground, and having a V-shaped opening for the point of the post, substantially as specified.

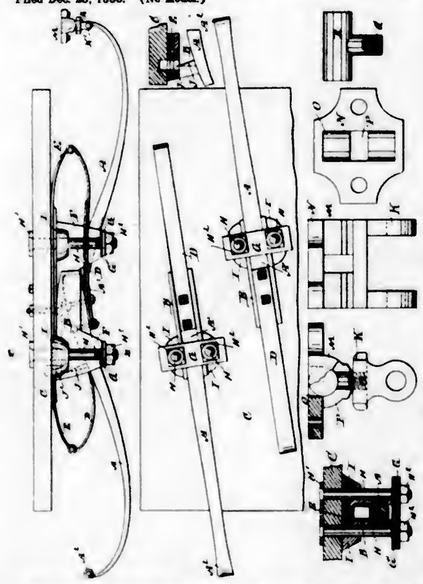
338,904. PENCIL-SHARPENER. FRANK WORN, Philadelphia, Pa., assignor to Daniel Fitzpatrick, same place. Filed Sept. 25, 1885. (No model.)



Claim.—1. In a pencil-sharpener, in combination with an outer case, A, having a tapered recess and provided with a removable cap, B, having a return central support with an opening through which a pencil is introduced to be sharpened, the removable tapered holder D and the series of converging sharpening-blades E F, of different lengths, secured thereto, the holder D and case A having openings at their lower ends through which the cuttings from a pencil being sharpened may escape therefrom, substantially as herein described and shown.

2. In a pencil-sharpener consisting of an exterior case, A, having a tapering recess, to which is fitted a detachable correspondingly-tapered holder, D, a series of independent knives or sharpening-blades, E F, of different lengths, secured to this tapering holder D, substantially as and for the purpose herein described and shown.

338,905. VEHICLE-SPRING. JAMES R. WRIGHT, Portland, Oreg. Filed Dec. 23, 1885. (No model.)



Claim.—1. In a vehicle-spring, the combination, with a box, of a lever having one end in said box, flat spring-plates secured to the bottom of that part of the lever in the box, and springs secured on the top of the box, the ends of the springs secured on the box and on the lever being jointed together, substantially as herein shown and described.

2. In a vehicle-spring, the combination, with the box B, of the lever A, having one end in said box, the tongue J, projecting upward from said lever through a slot in the top of the box, the springs D, secured to the end part of the lever A, and the springs E, secured to the top of the box B, substantially as herein shown and described.

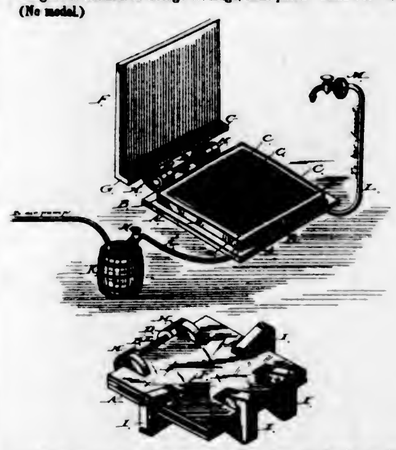
3. In a vehicle-spring, the combination, with the box B, having the side lugs, I, of the lever A, having one end in said box, the clip-yoke G, the bolts H, passed through the lugs I and the clip-yoke, and the springs D and E, secured to the lever A and the box, substantially as herein shown and described.

4. In a vehicle-spring, the combination, with the box B, having the lugs I and F, of the clip-yoke G, the bolts H, passed through the lugs I, and of the springs D and E, secured to the lever A and the box B, substantially as herein shown and described.

5. In a vehicle-spring, the combination, with the box B, having the side lugs, I, the tops of which project above the top edges of the box B, of the springs E, secured on the top of the box B between said lugs I, the lever A, having one end in the box B, the springs D, secured to that end of the lever A within the box B, the ends of the springs D and E being jointed together, and of bolts passed through the lugs I, for holding the box B to the under side of the vehicle-box, substantially as herein shown and described.

6. The combination, with a plate provided with a neck or projection having a cavity or recess, of a ball or cylinder in said recess, and provided with a screw-stem projecting from the bottom of the neck or projection, and of a shackle-piece in which the said stem is screwed, substantially as herein shown and described.

338,906. LIQUID-COOLER. ELLSWORTH B. A. ZWOYER, Reading, Pa., assignor of one-half to George W. Ange, same place. Filed Oct. 27, 1885. (No model.)



Claim.—1. As an improvement in coolers for liquids on draft, a shallow case having a series of division plates or partitions cast integral with the same, each alternate division-plate being disconnected from the side of the case at opposite alternate ends, thus forming a continuous open channel for the liquid, provided with induct and educt apertures at opposite ends of the case and having hinge-ears at one side of the same, with a suitably-secured cover pivoted thereto, substantially as shown, and for the purpose set forth.

2. As an improvement in coolers for liquids on draft, a receptacle or case, as described, having a lid or cover adapted thereto suitably attached to the same by hinge-ears and a pintle common to both, in combination with a suitable packing interposed between said receptacle, frame, partitions, and cover, and retained in removably liquid-tight connection therewith by open-jawed clamps or their equivalent, whereby a continuous closed channel is provided for the liquid to circulate through under pressure, and the cooler may be readily thrown open to be cleansed, substantially as shown, and for the purpose specified.

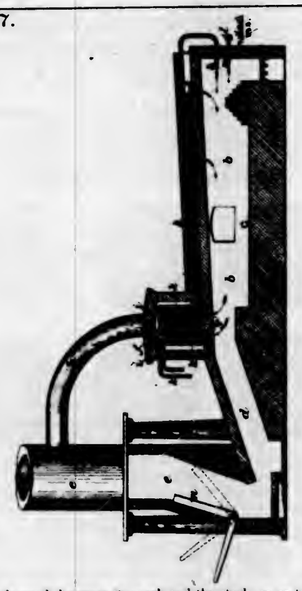
3. In a cooler for liquids on draft, the following elements in combination: a liquid-receptacle, K, in communication with a pressure-pump and with the cooler by pipe and valve A', the cooler being a hollow case or receptacle subdivided by a series of partitions, C, having a hinged and detachably connected cover, F, secured by clamps I upon a suitable packing, J, between said cooler and cover, and connected with the bar-faucet M by pipe L, substantially as shown, and for the purpose set forth.

338,907. METALLURGICAL FURNACE. WILLIAM ASHESON, Pittsburg, Pa., assignor of one-fourth to William D. Young, same place. Filed July 24, 1885. (No model.)

Claim.—1. The combination, with a furnace, of a chamber arranged upon the neck between the neck and the stack and communicating with both of said parts, so as to form a by-pass for the passage of the products of combustion from the furnace to the stack, and air-heating pipes arranged in said chamber and opening into the furnace, substantially as and for the purposes described.

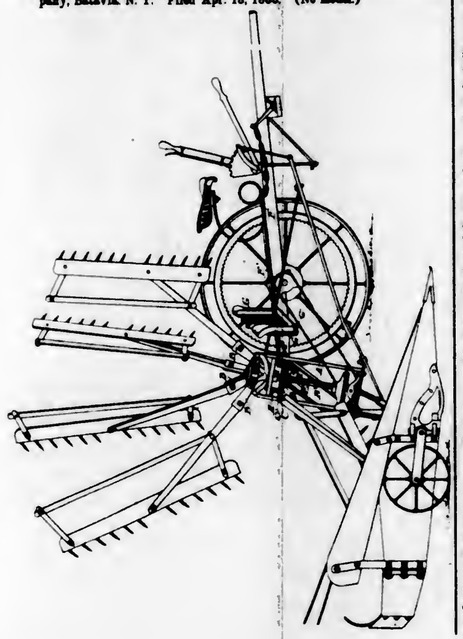
2. The combination of a furnace with an air-heating chamber arranged upon the neck between the neck and the stack, so as to afford a by-pass for a portion of the products of combustion, and a damper arranged in the stack below the point where said air-heating chamber communicates therewith, substantially as and for the purposes described.

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3. The combination of the furnace with the chamber *f*, placed over the neck of the same, ports *g*, communicating therewith, pipe A, leading therefrom to the stack, and coils of air-pipe arranged in said chamber around the tubes *i* and communicating at one end with the open air and at the other end with the interior of the furnace, substantially as and for the purposes described.

338,908. HARVESTER-RAKE TRIP. SAMUEL ARNOLD, London, County of Middlesex, England, assignor to the Johnston Harvester Company, Batavia, N. Y. Filed Apr. 18, 1885. (No model.)



Claim.—1. The combination of the gear-wheel D, the forked shipping-lever, the lever-operating rod, and the graduated sliding adjusting-gage, substantially as described.

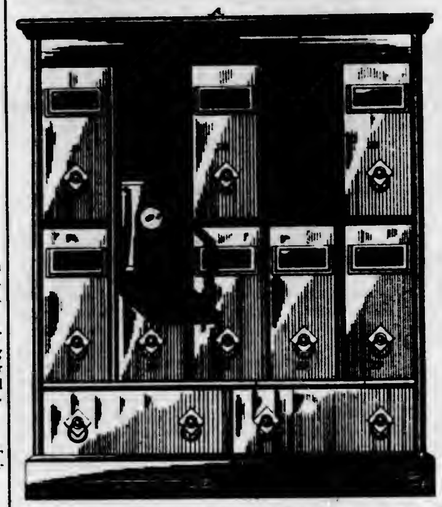
2. The combination of the gear D, the forked shipping-lever, the lever-operating rod, the graduated sliding gage G, and the screw-threaded adjusting-tube, all arranged and operating substantially as described.

3. The combination of the gear-wheels D C, the forked shipping-lever, the graduated movable gage G, the slotted plate G', the lever-operating rod, and the adjusting-tube, all arranged and operating substantially as described.

4. The combination of the adjusting-block G, the plate G', having slots *g*, guides *g'*, and brackets G^2, all arranged and operating substantially as described.

5. The combination of the thick gear-wheel D, constructed as shown and described, the cam-gear wheel C, spring I, and trip-latch H, arranged and operating substantially as described.

338,909. PAPER-FILE. EDWARD E. BAKER, Morgantown, W. Va. Filed Apr. 13, 1885. Renewed Mar. 3, 1886. (No model.)



Claim.—1. In combination with the case having the cell with grooved bottom and a slotted plate covering said groove, the bar with a head on each end thereof, one of which fits and works in said groove, and the file having a groove in which the other head of said bar fits and works, and a slotted plate covering said groove, substantially as and for the purpose set forth.

2. In a paper-file, the front and bottom and side bars, in combination with the sliding plate, and a rotary disk journaled to said plate and engaging at opposite points with said side bars, substantially as set forth.

3. In combination with a case having a cell formed with a grooved bottom and a slotted plate covering said groove, and a file having a groove covered by a slotted plate, of a bar formed in different planes connected by an inclined part, and having an enlarged head at each end which fit and work in the grooves in the bottom of the cell and the file, respectively, being confined by the slotted plates, substantially as set forth.

4. The front and bottom, in combination with the side bars slotted longitudinally, as described, the sliding plate having pins projecting through said slots, and blocks or plates secured to said pins outside of the side bars, and a rotary cam-disk journaled to said sliding plate and bearing at its opposite sides outwardly upon the side bars, as set forth.

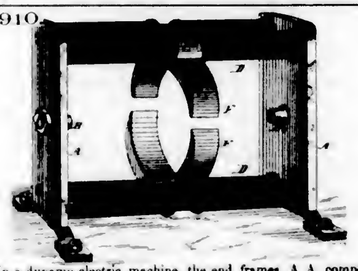
5. In combination with the front and bottom, the side bars, the sliding plate, a cam-disk adapted to engage at its opposite edges with said side bars, a shaft to which said disk is secured, and a thumb-wheel secured to said shaft for turning it, as set forth.

338,910. DYNAMO-ELECTRIC MACHINE. ROYAL E. BALL, New York, N. Y. Filed Apr. 25, 1885. (No model.)

Claim.—1. In a dynamo-electric machine, the combination, with the cores of the field-magnets, of forged iron end frames having hard-metal bearings attached thereto for the reception of the armature-shaft, substantially as described.

2. In a dynamo-electric machine, the combination, with the end frames and cylindrical field-magnet cores, of pole-pieces grooved to receive the said cores and secured thereto by means of screws, substantially as described.

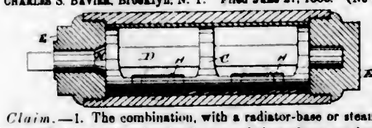
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3. In a dynamo-electric machine, the end frames, A A, composed of a flat plate of forged iron having a central opening for the passage of the armature-shaft and a cast-metal bush screwed of the armature-shaft and a cast-metal bush screwed into said opening, substantially as described.

4. In a dynamo-electric machine, the combination of the end frames, A A, having bearings B B, the cores C C, having a tapered hole at each end, and the pole-pieces F F, grooved to receive said cores and secured thereto, substantially as described.

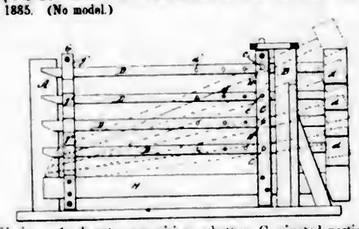
338,911. STEAM-RADIATOR. JOHN BARNETT, New York, and CHARLES S. BAVIER, Brooklyn, N. Y. Filed June 27, 1885. (No model.)



Claim.—1. The combination, with a radiator-base or steam-chest having a cylindrical valve-chamber in one end thereof, open at both ends and provided with apertures leading from the outside of the end of the base to the interior thereof, of the plugs in the ends of the cylindrical chamber, the valve-spindle mounted therein, and a rounded valve on the spindle in the said chamber for closing the said end apertures, substantially as set forth.

2. The combination, with the radiator-base or steam-chest having a rounded inner end open at both sides and having inlet and outlet apertures in said rounded end, of the separate cylindrical valve-casing held within the rounded end of the base and provided with apertures in alignment with the inlet and outlet apertures in said end and with apertures communicating with the interior of the base, plugs within the side apertures of the base at opposite ends of the valve-casing, a valve-stem journaled in the plugs, and a rounded valve on the stem in said casing, substantially as set forth.

338,912. GATE. JESSE H. BARTON, Brownsville, Tenn. Filed June 2, 1885. (No model.)



Claim.—1. A gate comprising a batten, C, pivoted vertically in suitable supports, bars D, having weights *d* and provided with a series of perforations, *d'*, and pins passed through the batten C and any suitable ones of the perforations *d'* of bars D, substantially as and for the purposes specified.

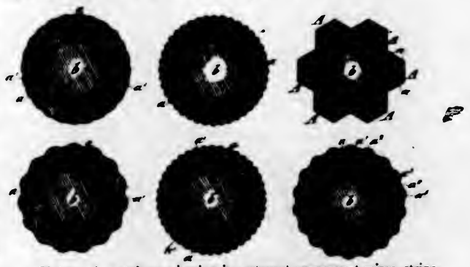
2. The combination, in a gate, of a supporting-frame, a hinge-batten, C, pivoted thereto, a sill-bar secured to the batten C, battens F and G, connected with sill H, and the bars D, pivotally connected with batten C and extended in rear of such batten, and weights on the rear extensions of the bars D, substantially as set forth.

3. The gate herein described, consisting of the edge-batten, the center batten, the hinge-batten provided with pin-openings, the bars supported in and movable through said battens, each provided with a number of pin-openings, weights on the rear ends of said bars, and pins passed through the openings in the hinge-batten and the coincident ones in the bars, the parts being combined substantially as set forth.

4. The combination, with the hinge-batten and the bars pivoted thereto and provided with weights, of the edge batten composed of an upright provided in one edge with a mortise fitted to receive the ends of the bars, and a second upright secured to the first upright and over the mortise thereof, substantially as set forth.

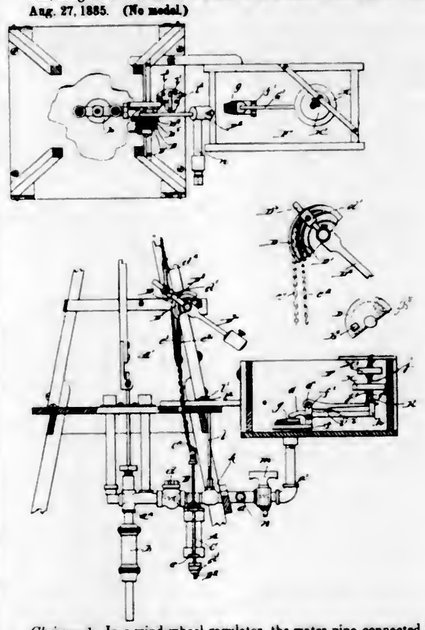
338,913. METAL ROPE. TELFORD CLARKSON BATCHELOR, West Kensington, County of Middlesex, England. Filed May 16, 1885. (No model.) Patented in England Mar. 31, 1884, No. 5,734; in France Oct. 1, 1884, No. 151,965; in Germany Oct. 2, 1884, No. 42,068, and in Belgium Oct. 2, 1884, No. 63,726.

Brief.—The external members of the rope are made with longitudinal projections and recesses, so that when laid up into a rope a portion of each member underlies a portion of one adjacent member, so that should any one member become fractured it will not fray out from the rope, but will be held in place by the adjacent members.



Claim.—A metal rope having its external component wires, strips, or members constructed with longitudinal matching projections and recesses, substantially as herein described, and combined as herein set forth, whereby a portion of each underlies a portion of an adjacent one.

338,914. WINDMILL-REGULATOR. GEORGE M. BEARD, Auburn, Ind., assignor of one-half to William H. Rakestraw, same place. Filed Aug. 27, 1885. (No model.)



Claim.—1. In a wind-wheel regulator, the water-pipe connected to a pump-cylinder, a regulator-cylinder, and a tank, and having the check-valve, regulating-valve, and stop-cock, substantially as and for the purpose set forth.

2. In a wind-wheel regulator, the water-pipe having connection with the pump-cylinder and the tank and provided with the valve, and having its stem adapted to engage with a scale or plate having a series of segmentally-arranged apertures, substantially as and for the purpose set forth.

3. In a wind-wheel regulator, the water-pipe connecting with the pump-cylinder by a T-pipe connection and having the stop-cock and the fountain or hydrant attachment pipe-arm, substantially as and for the purpose set forth.

4. In a wind-wheel regulator, the regulator-cylinder and its piston, in combination with the segmental pulleys or levers of different-sized

arcs having studs or projections on their inner surfaces and connected to said piston by means substantially as described, whereby the small segmental pulley or lever will stand in a dead-center when the wheel is pulled out of the wind or gear, substantially as and for the purpose set forth.

5. In a wind-wheel regulator, the combination, with the regulator-cylinder and its piston, of the segmental levers or pulleys of different-sized arcs, and connected by chains or cords of different lengths to the said piston, the larger lever or pulley carrying a weighted arm and the smaller lever being connected to the wheel-shifting contrivance, substantially as and for the purpose set forth.

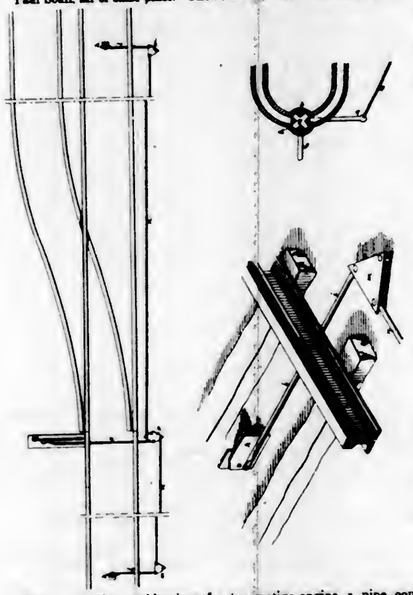
6. In a wind-wheel regulator, the combination, with the water-pipe with its tank end provided with a valve, of the float-levers having independent movement relatively to each other, one lever being temporarily held to its fellow lever and having a float adapted to be held in submergence, and released from its fellow lever, also provided with a float, the whole arranged to operate substantially as shown and described, and for the purpose set forth.

7. In a wind-wheel regulator, the combination, with the water-pipe with its tank end provided with a valve, of the lever pivoted near one end in a post and having a narrow bail or bridle at its other end, and the second lever also pivoted to said post and having a shoulder or projection on its under side which engages with a coincident shoulder or offset of the other lever, said levers having floats secured thereto, and the whole arranged to operate substantially as shown and described.

8. In a wind-wheel regulator, the combination, with the water-pipe with its tank end provided with a valve, of the float-levers adapted to have temporary engagement and separated as the float of one lever reaches the limit of its movement by the rising action of the water in the tank, the float of the other lever remaining submerged, and the regulator-cylinder connected to said pipe and with its piston connected to the differentially-moving segmental levers or pulleys, one carrying a weighted arm and the other being connected to the wheel-shifting contrivance, substantially as and for the purpose set forth.

9. In a wind-wheel regulator, the water-pipe with its tank end provided with a valve, in combination with the levers, one acting upon the said valve and having a rigid bail or bridle at one end to which is connected a float, the other lever or dog being pivoted at one end and having a bend near said end and having its opposite end movable in the said bridle or bail and also connected to a float, each of said levers having an abutting shoulder, substantially as and for the purpose set forth.

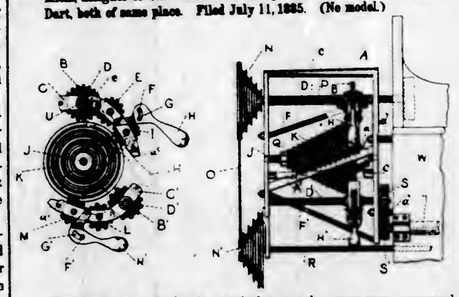
338,915. ALARM MECHANISM FOR RAILWAY-SWITCHES. ROBERT S. BELSLE, Philadelphia, Pa., assignor, by direct and mesne assignments, of part to Thomas Ott, Charles D. Freeman, Henry A. Dahring, and Paul Scull, all of same place. Filed Jan. 13, 1886. (No model.)



Claim.—1. The combination of a locomotive-engine, a pipe communicating with the steam-space of the boiler and having a whistle, and an alarm-valve provided with ports or passages, substantially as set forth, whereby the flow of steam to the whistle is permitted by movement of the valve in either direction from a central or cut-off position, said valve having an operating arm or finger to be actuated directly by contact with a toe on the track, all substantially as specified.

2. The combination of the switch and its operating mechanism, the pivoted toes A, located at a distance from the switch on each side of the same, the bell-crank levers *m*, the three-armed lever *p*, one arm of which is connected to the switch-operating mechanism, and rods *n* and *i*, whereby the other arms of said lever *p* are connected to the levers *m*, and said levers are connected to the toes A, all substantially as specified.

338,916. SPEED-REGULATING DEVICE. JAMES BEVIER, Potoskey, Mich., assignor of two-thirds to Christopher F. Hankey and Rollin C. Dart, both of same place. Filed July 11, 1885. (No model.)



Claim.—1. In a device for regulating speed, a gear-cone arranged between two movable trains of gear, a power-shaft connected with one of said trains, and provisions for throwing either train into or out of gear with either of the cone-gears at will, as set forth.

2. In a device for regulating speed, a power-shaft, a train of gear revolving with said shaft and having longitudinal movement thereon, and a gear-cone arranged to be connected to the power-train through either of its gears at will, as set forth.

3. The combination, with a power-shaft, of two operating-shafts, as T R, and independent trains of speed-adjusting mechanism, one connecting each operating-shaft with the power-shaft, as set forth.

4. The combination, with the power-shaft and transmitting-shaft D', of the movable trains of gear, the cone K, screw or feed shaft T, and connections, as set forth.

5. The combination, with the grooved power-shaft and cone-gear K, of the frame C, the gear B, key-seated on said shaft, the transmitting-gear I, and means, as H, for throwing the latter into or out of engagement with the cone, as set forth.

6. The combination, with the power-shaft D P and gear B, having hub V, key-seated on said shaft, and having longitudinal movement thereon, of the frame C, centered on said hub, the handle H, and gear-cone, as set forth.

7. The combination, with the shaft D, frame C, having lug *a'*, and the gears B E I, as described, of the guide A', rollers *e*, and cone K, as and for the purposes set forth.

8. The combination, with the frames C C', having lug *a'*, and handles H H', with curved slots G G', of the cone K, guide A, and inclined rods F, as and for the purposes set forth.

9. The combination, with the shafts D and D' and the feed-shaft T, of the cone K, the frames C and C', the independent trains, each having a gear, B or B', key-seated on its respective shaft, and a transmitting-gear, I or M, arranged to be thrown into or out of mesh with either of the cone-gears, as set forth.

10. The combination, with the power-shaft D, feed-shaft T, the cone and connecting mechanism, as described, of the cone-pulleys N and N', belt O, and shaft R, as and for the purposes set forth.

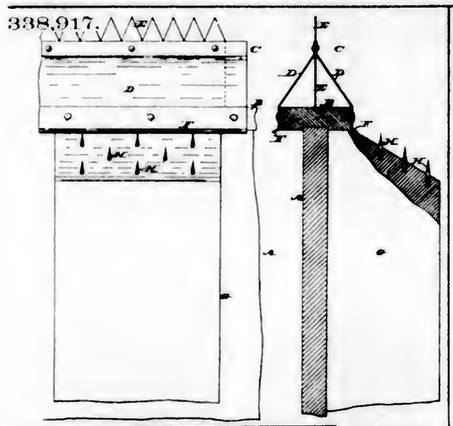
338,917. FENCE-GUARD. JOHN P. BLOOMER, Philadelphia, Pa. Filed Aug. 31, 1885. (No model.)

Claim.—1. A continuous central piece having a serrated top, in combination with slanting side pieces secured at their upper ends to said central piece, the central piece being secured between the said side pieces and extending above the same, substantially as and for the purpose set forth.

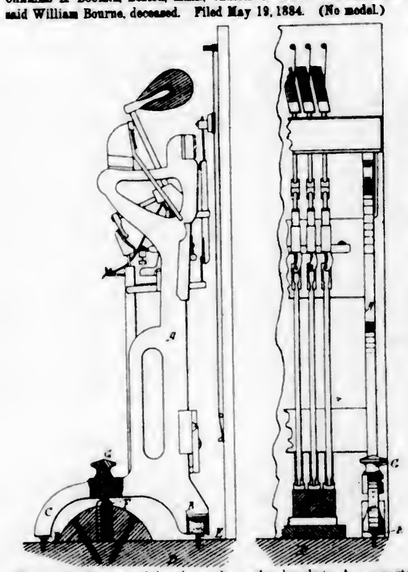
2. The fence A, with capping B, in combination with a continuous central piece having a serrated top, and the slanting side pieces, D, secured to said central piece and to said capping, the said central piece resting on said capping and extending above the said side pieces, substantially as and for the purpose set forth.

3. In combination with a fence, slanting side pieces secured to the capping and having gutters at their lower ends and a separate central serrated upright piece firmly secured to said pieces at their upper ends, substantially as described.

338,917.



338,918. UPRIGHT-PIANO-ACTION FRAME. WILLIAM BOURNE and CHARLES E. BOURNE, Boston, Mass.; Charles E. Bourne administrator of said William Bourne, deceased. Filed May 19, 1884. (No model.)



Claim.—1. In an upright piano, the action-brackets A, supported by legs B C, in combination with the bolt F, nut G, and adjusting-screws E, substantially as and for the purpose described.

2. In an upright piano, the action-brackets A, supported by legs B C, resting upon the bottom of the instrument, in combination with the bolt F and nut G, substantially as and for the purpose described.

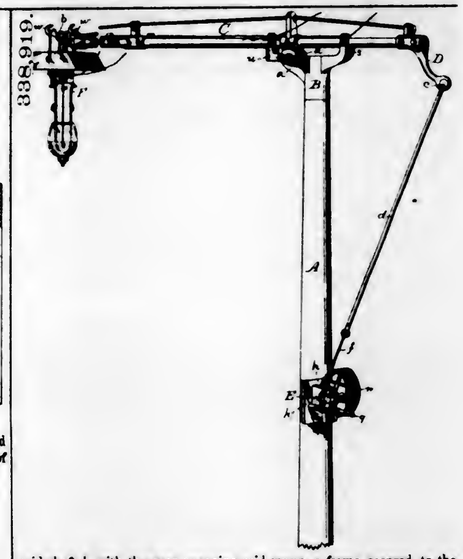
338,919. MEANS FOR SUSPENDING ELECTRIC LIGHTS. THOMAS H. BRADY, New Britain, Conn. Filed Sept. 8, 1885. (No model.)

Claim.—1. The combination of the pole A, the swinging lever suspended at the upper part thereof, provided at one end with means for suspending a swinging lamp, the cord or chain having one end connected to the opposite end of said lever, the drum having the other end of said chain secured thereto, said drum being mounted upon a suitable frame secured to the body of the pole A, toward the lower end thereof, and mechanism for revolving said drum and holding it in position, substantially as described, and for the purpose specified.

2. The combination of the pole A, the swinging lever C, the cross-arm *b*, curved upward and outward and having hooks *w*, the lamp suspended therefrom with its hood just under the hub of the cross-arm, and mechanism for raising and lowering the lever C, substantially as described, and for the purpose specified.

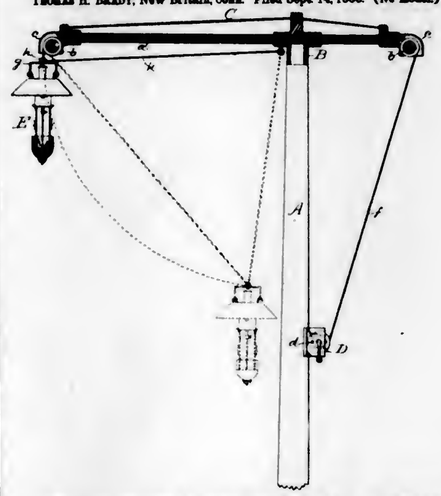
3. The combination of the pole A, the shaft *g*, having a thread or worm thereon, the shaft *h*, the drum *m*, and worm-gear *k*, mounted on

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said shaft *h*, with the gear engaging said worm, a frame secured to the body of the pole A, for supporting said shafts, the swinging lever secured to the upper part of said pole and provided at its long end with means for suspending a lamp, and the cord or chain with its ends connected to the short end of the lever and to the drum, substantially as described, and for the purpose specified.

338,920. APPARATUS FOR SUSPENDING ELECTRIC LIGHTS. THOMAS H. BRADY, New Britain, Conn. Filed Sept. 14, 1885. (No model.)

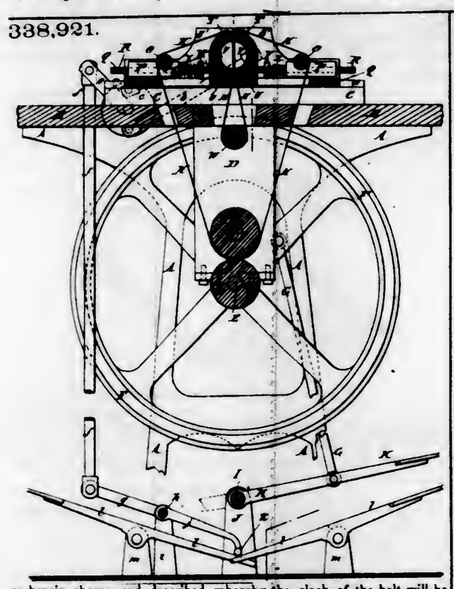


Claim.—An apparatus for suspending electric lamps, consisting of the pole or upright, the cross-head rigidly attached to the upper ends thereof, the pulleys at the ends of said cross-head, the windlass attached to the body of the pole, the cable or chain leading from the windlass through the horizontal passage, through the cross-head, and over the pulleys, and the guide *k*, for drawing the lamp toward the pole in its descent, substantially as described, and for the purpose specified.

338,921. CIGAR-ROLLING MACHINE. JAMES W. CAMERON, New York, N. Y., assignor to David J. Beehm, same place. Filed Nov. 23, 1885. (No model.)

Claim.—1. In a cigar-rolling machine, the combination, with the sliding frames Q, having jaws S, the belt N, and the sliding bars P, carrying the guide-rollers O, of the pins R, having screw-threads, the spiral springs X, and hand-nuts Y, placed upon the said pins R, substantially

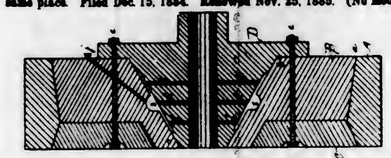
338,921.



as herein shown and described, whereby the slack of the belt will be taken up and the tension of the said belt can be regulated, as set forth.

2. In a cigar-rolling machine, the combination, with the sliding frames Q and the recessed jaws S, of the pairs of pitmen *b*, the wheels *c*, the crank-arms *e*, the pitmen *f*, and the crank-shaft *h*, having arms *j*, provided with a projecting pin, *k*, and the two treadles *l*, engaging with the said pin, substantially as herein shown and described, whereby the said frames and jaws can be readily drawn apart, as set forth.

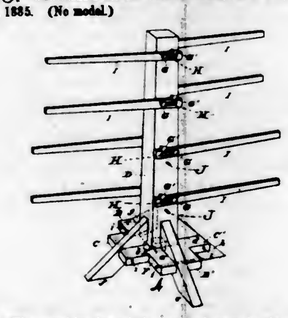
338,922. WHEEL. THOMAS H. CARLIN, Allegheny, Pa., assignor of two-thirds to William J. Carlin and to James T. Arnold, trustee, both of same place. Filed Dec. 15, 1884. Renewed Nov. 25, 1885. (No model.)



Claim.—1. In a metal wheel, the combination of hub D, wheel-body B, cuneiform ring *c*, and tire A, all constructed and arranged substantially as described.

2. In a metal wheel, the combination of wheel-body B, cuneiform ring *c*, and tire A, with a cone or wedge shaped hub D, said wheel being held together by bolts and nuts *e e*, substantially as described.

338,923. CLOTHES-DRIER. JOSEPH CARR, Elk Falls, Kans. Filed Apr. 27, 1885. (No model.)

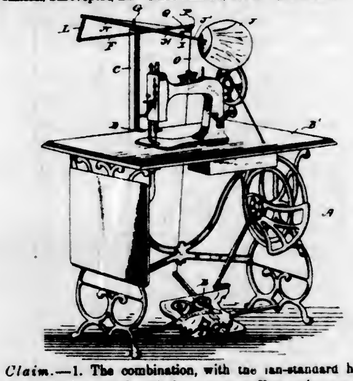


Claim.—The combination of the vertical post having the headed pins arranged in two vertical rows on opposite sides, and having the stop-pins J, and the arms I pivotally held to the post by the said headed pins, substantially as shown, to serve with a base as set forth.

338,924. MANUFACTURE OF BLOCKS OF BICARBONATE OF SODA. JAMES W. CARSON, Philadelphia, Pa., and FRANCIS P. HARNED, Camden, N. J., assignors to said James W. Carson. Filed Nov. 14, 1885. (Specimens.)

Claim.—In the process of manufacturing sodium bicarbonate, compressing it into blocks immediately on removing it from the carbonating-chambers or the washing-tables and before drying or grinding it, whereby the addition of adhesive matter is rendered unnecessary.

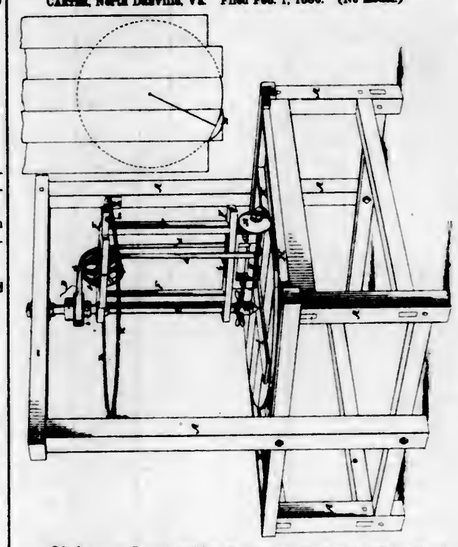
338,925. FAN ATTACHMENT FOR SEWING-MACHINES. FOSTER CARTER, Shreveport, La. Filed Jan. 26, 1886. (No model.)



Claim.—1. The combination, with the fan-standard having the clamps near its lower end, and the cross-arm F near its upper end, of the fan-arm and fan, the spring connecting the cross-arm and fan-arm, the pulley on the cross-arm, the operating-cord, and the bracket-bar S, substantially as specified.

2. The combination, with a sewing-machine, of the fan-standard provided with the attaching-clamp near its lower end and the pivot-pin in its upper end, of the rigid cross-arm with pulley at one end, the pivoted fan-arm, the adjustable fan at the end of the fan-arm, the retracting-spring, and the operating-cord and bracket-bar S, substantially as specified.

338,926. MACHINE FOR MAKING BARREL-HEADS. JOHN T. CARTER, North Danville, Va. Filed Feb. 1, 1886. (No model.)



Claim.—1. In a machine for sawing the heads of hogsheads, tierces, and other vessels, the combination of a fixed supporting-bed and means for clamping planks thereon with a frame carrying a circular saw and hung to a central axial spindle, so as to be free to rotate around the same, and with means for driving the said saw, all substantially as specified.

2. The combination of the frame and means for supporting and clamping planks thereon with the circular saw *x*, a frame carrying the

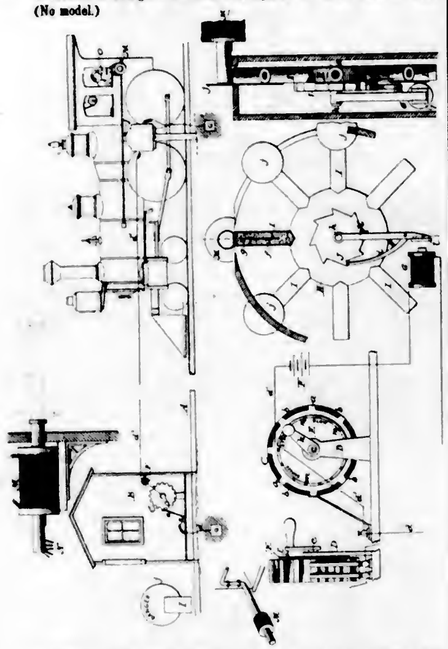
same and hung to a central spindle, so as to be free to rotate around the same, and an annular track supporting the outer portion of said frame, all substantially as specified.

3. The combination of the frame A and means for supporting and clamping planks thereon, a frame, F, hung to a central spindle and free to rotate around the same, and a circular saw, the mandrel of which is carried by a frame adjustable radially on said swinging frame, all substantially as specified.

4. The combination of the frame A and means for supporting and clamping planks thereon, the frame F, hung to a central spindle and free to rotate around said spindle, a driving-pulley on said central spindle, a saw, the mandrel of which has a belt-drum, and a belt adapted to the driving-pulley and to said drum and passing around supporting-pulleys on said frame F, all substantially as specified.

5. The combination of the frame A and its supporting-bed H, the clamping-bar I, the central spindle, B, having a clamping-nut at the lower end, and the frame F, hung to and free to rotate around the spindle B and carrying a circular saw, all substantially as specified.

338,927. **RAILWAY-SIGNAL.** ANGEL CASTRO, New York, assignor of one-half to George A. Saward, Brooklyn, N. Y. Filed Dec. 17, 1885. (No model.)



Claim.—1. The herein-described signal apparatus, consisting of a rotary carrier provided with a series of disks adapted to be attracted by a magnet and bearing the required information or signals, a ratchet-wheel connected with said carrier, a lever provided with a pawl for rotating the ratchet and carrier and with an armature, an electric circuit, an electro-magnet in said circuit and within attracting distance of the armature, and a circuit maker and breaker placed in the circuit at a distance from the carrier, whereby the carrier may be controlled from a distant point and caused to place any required signal-disk in position.

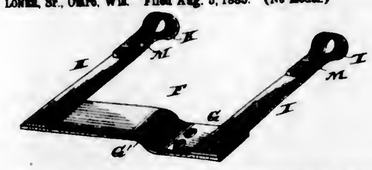
2. The combination of a rotary carrier provided with a series of holders each containing loose disks, those of each holder bearing different information, an electric circuit, mechanism included in said circuit for effecting the rotation of said carrier from a distance and causing any one of the holders to be brought to a given point, and a magnet carried by the train and arranged to pass in close proximity to said point and to pick up one or more of the disks contained in said holder.

3. In a signal apparatus such as described, a rotary carrier or wheel, H, having tubular spokes I, provided with sliding stems *f*, bearing magnetized buttons *g*, a ratchet-wheel, J, secured to the axle of the carrier, a lever, K, provided with a pawl, *i*, to engage with and rotate the ratchet-wheel, armature L, carried by said lever K, battery F, line *d e*, electro-magnet G, and circuit-breaker C, placed within said circuit.

4. The combination of wheel H, having hollow spokes or holders I, provided with loose metallic disks bearing signals, ratchet mechanism J K *i*, for rotating said wheel, armature L, line *d e*, battery F, electro-magnet G, and make-and-break wheel C, indicator *k*, for turning said wheel, dial D, bearing signals to correspond with those of the carrier, and a magnet, M, carried by the train, all substantially as described and shown.

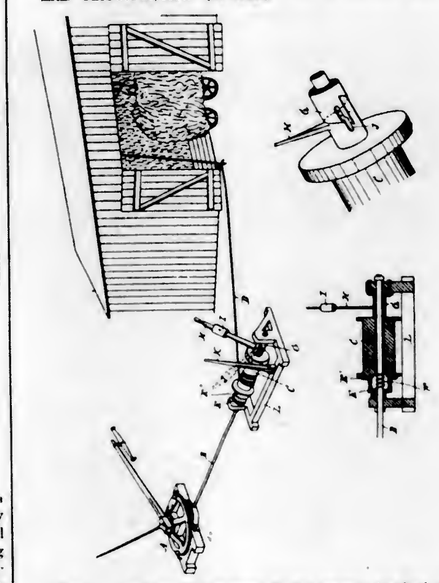
5. In combination with a holder adapted to contain loose disks bearing signals and placed close to the line of a passing train, a magnet carried by said train and arranged to travel close to the holder, and a magnifying device also carried by the train, to enable the signal-disks to be easily read.

338,928. **WELT-GUIDE FOR SEWING-MACHINES.** JOHN CHALLONER, Sr., Omro, Wis. Filed Aug. 5, 1885. (No model.)



Claim.—As an improved article of manufacture, the welt-guide attachment for sewing-machines herein described, consisting of the bent attaching-plate G, the parallel arms H and I, secured at opposite ends of the said plate and provided at their outer ends with the open-eye welt-guides K L, and the communicating welt-edge guides M, all constructed substantially as specified.

338,929. **HOISTING APPARATUS.** HENRY W. CHAMPLIN, Chelsea, Mich. Filed Oct. 29, 1885. (No model.)



Claim.—1. In a hoisting apparatus for the purpose described, the shaft B, spring-clutch E E', spool C, weighted lever H, and bearing G, the latter constructed to give a lateral movement to the lever in turning it, all combined and arranged substantially as described.

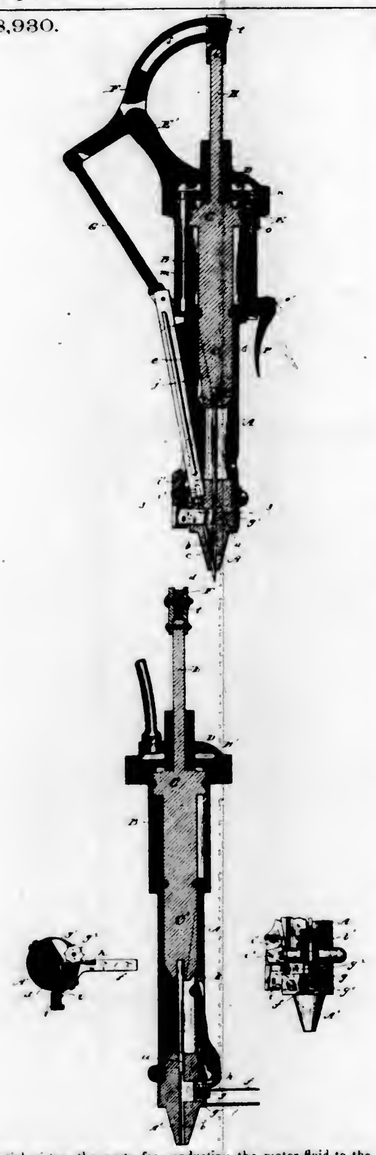
2. In a hoisting apparatus for the purpose described, the horse-power A, shaft B, spring-clutch E E', loose spool C, weighted lever H, bearing G, and brake K, all arranged and constructed to operate substantially in the manner and for the purposes set forth.

338,930. **PEGGING-MACHINE.** FRANK CHASE, Boston, Mass. Filed Dec. 10, 1885. (No model.)

Claim.—1. The combination, with the stem or handle of the pegging-machine, of the motor-cylinder, the piston having heads of different areas, the continuously open passage for conducting the motor-fluid to that head of the piston which has the smaller area, the passage or port for conducting said fluid to the other head of the piston, the valve controlling said last-named passage, and means, substantially as described, for controlling at will the movement of the valve, all substantially as hereinbefore shown and set forth.

2. The combination of the stem or handle, the motor-cylinder, the

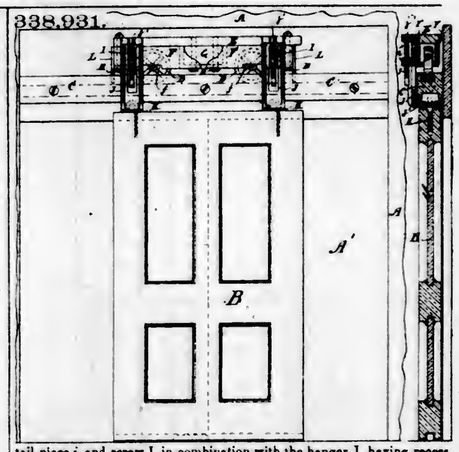
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differential piston, the ports for conducting the motor-fluid to the opposite side or head of said piston, the valve and its controlling hand or finger lever, and the reciprocatory awl and driver connected to and operated from the piston, substantially in the manner and for the purposes hereinbefore set forth.

3. The combination, with the motor and the handle or stem of the pegger, cutter, and feed-levers, and the piston-extension C', provided with cams or inclines for operating said levers, substantially as and for the purposes set forth.

338,931. **DOOR-HANGER.** WILLARD W. CHIPMAN, Everett, Mass. Filed Sept. 19, 1885. (Model.)



Claim.—1. The combination of the bar E, bearing-pieces F F, provided with dovetailed projections *i* and screw I, the hangers J J, and hooks K, with the wheels D, and track C, substantially as and for the purposes described.

2. The bearing-pieces F, provided with recesses *f*, *f'*, and *f''*, dovetail piece *i*, and screw I, in combination with the hanger J, having recess *j*, with dovetailed edges for the adjustment of a door suspended therefrom, substantially as described and shown.

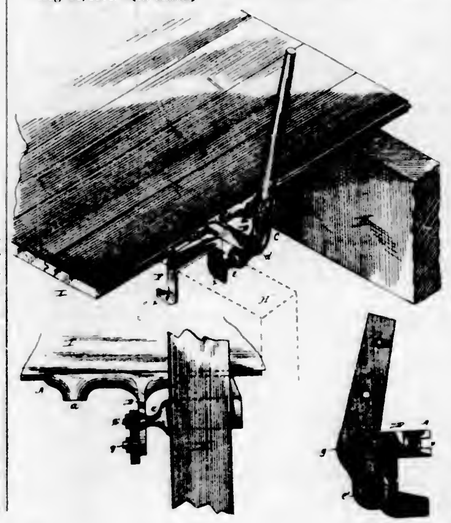
3. The hanger J, having a projection, J', provided with notches *j''*, in combination with a hook, K, when used for supporting a door, substantially as shown and described.

4. The clearer L, in combination with the bearing-pieces F and track C, substantially as shown, and for the purpose described.

338,932. **PLOW.** ZENON CHARE CLEBERT, Donaldsonville, La. Filed Dec. 30, 1885. (No model.)

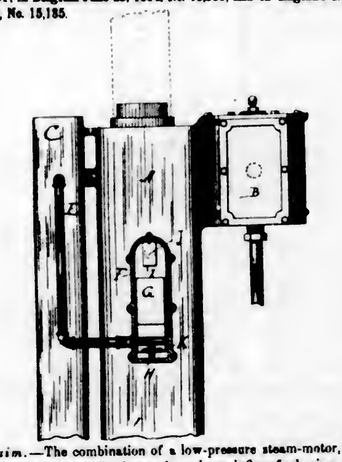
Claim.—The combination, with a plow-standard, of a colter and fender consisting of a flat plate having slots in its rear portion, and the front portion of which is inclined downward and forward, and provided with a point, F, having a lateral inclination which is thinner than the rest of the plate, and which projects in front of and below the plate and has its front edge sharpened to act as a colter, as shown and described.

338,933. **FLOORING-JACK.** HENRY C. CLOYD, Union City, Ind. Filed Aug. 31, 1885. (No model.)



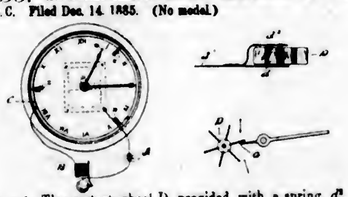
Claim.—A flooring-clamp consisting of a clamping-frame with downwardly-projecting arms provided with biting-feet, and having on one of the said arms an arm with a tapering axle thereon, a grooved bar or templet having an arm with a tapering axle thereon, and a lever fulcrumed on the axle on the frame and pivotally connected to the templet by means of the axle on the arm thereof, substantially as specified.

338,934. LOW-PRESSURE STEAM-MOTOR. HENRY DAVEY, Leeds, County of York, England. Filed Aug. 20, 1885. (No model.) Patented in France May 31, 1884, No. 162,804; in Germany June 17, 1884, No. 30,101; in Belgium June 23, 1884, No. 65,569, and in England Nov. 18, 1884, No. 15,185.



Claim.—The combination of a low-pressure steam-motor, an upright exhaust-steam condensing-tank, and an inflow-feed pipe leading from near the top of the condensing-tank and entering the boiler at a point much lower down, whereby the water at the highest temperature in the condensing-tank is drawn by gravity into the boiler, substantially as described.

338,935. ELECTRIC ALARM-CLOCK. GEORGE H. DAVIS, Washington, D. C. Filed Dec. 14, 1885. (No model.)



Claim.—1. The contact-wheel D, provided with a spring, d^3, and frame d', said frame having sharpened end, as shown in drawings, substantially as set forth and described.

2. In an electric alarm-clock, a contact-wheel provided with three or more blades, as shown, composed of a conducting material, said blades extending into the path of the hour pointer of said clock, substantially as set forth and described.

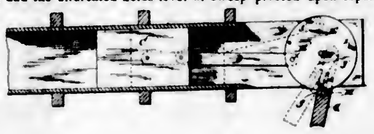
3. In an electric alarm-clock, a contact-wheel provided with three or more blades, alternately conductors and non-conductors, said blades extending into the path of a pointer of said clock, substantially as set forth.

4. In an electric alarm-clock, the combination of the insulating-cap G, the hour-pointer of said clock, with adjustable contacts, and conducting-rim, substantially as set forth.

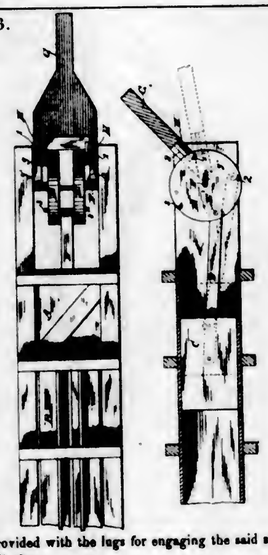
5. In an electric alarm-clock, a circuit-breaker consisting of an insulating cap so placed upon a pointer of said clock as to bear against contacts placed in the path of said pointer, substantially as set forth.

338,936. BALING-PRESS. PETER K. DEDERICK, Londonville, N. Y. Filed Jan. 23, 1886. (No model.)

Claim.—The combination, with the traverser and pitman, of the disks or plates mounted upon the shaft and provided with stops, as described, and the bifurcated horse lever or sweep pivoted upon separate

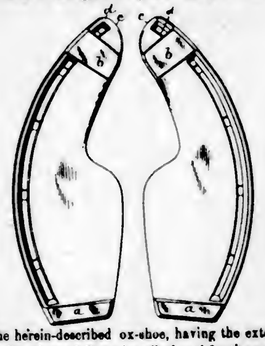


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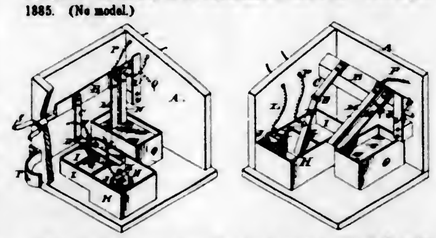
centers and provided with the lugs for engaging the said stops, substantially as described.

338,937. OX-SHOE. JOHN DEBBLE, Southington, Conn., assignor of one-half to Julius B. Savage, same place. Filed Feb. 19, 1886. (No model.)



Claim.—The herein-described ox-shoe, having the extension c forward of the toe-calk, substantially as described, and for the purpose specified.

338,938. GALVANIC BATTERY AND SWITCH FOR TELEPHONE SYSTEMS. CHARLES A. A. T. DE ST. AUBIN, St. Louis, Mo. Filed Aug. 1, 1885. (No model.)



Claim.—1. In combination with a box or case, a rock-shaft or bar mounted therein, a battery-cell in said case, an electrode mounted on said shaft, and a hook for the receiver without the box on said shaft, substantially as and for the purpose set forth.

2. In combination with a telephone, a main circuit, an alarm-circuit, and a rock-shaft, to which one electrode of the battery of the main circuit and the make and break of the alarm-circuit are secured in such manner that the making of one circuit breaks the other, as set forth.

3. The combination, with a telephone and its circuit, comprising a galvanic battery and a separate alarm-circuit, of a rock-shaft to which

is secured one electrode of said battery and a pair of arms forming part of the alarm-circuit, and a cup of mercury into which said arms are dipped for completing the alarm-circuit when the main circuit is broken, substantially as set forth.

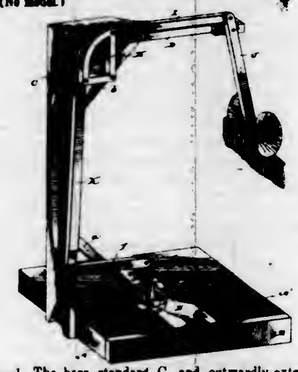
4. In combination with a telephone, a battery-cell in two compartments containing exciting and non-corroding fluids, respectively, an electrode mounted on a hinged arm, and a rock-shaft whereto said electrode is connected, substantially as set forth.

5. In combination with a battery-cell having a movable electrode, a hook or support for the receiver of a telephone, and connection between said hook and electrode, whereby the latter is operated by removing said receiver from and placing it upon said hook or support.

6. The combination of a shaft with arm C, connected to one element of a galvanic battery, and two arms, M and N, a mercury bath, a spring, U, and two faces, *b b'*, on the shaft, upon which the spring bears, substantially as and for the purpose set forth.

7. The combination, with a shaft connected with an element of a galvanic battery, so as to remove the element from the battery by movement of the shaft, a fork on said shaft supporting the receiver, and an arm, T, preventing the removal of the receiver from the fork when the element is removed from the battery

338,939. FAN. DANIEL DILLON, Nashville, Tenn. Filed Aug. 6 1885. (No model.)



Claim.—1. The base, standard C, and outwardly-extending horizontal arm D, in combination with the vertical fan-shaft J, pivoted at an intermediate point of its length to the arm D, a rod, I, connecting with the upper end of shaft J, a triangular frame, H, or bell-crank lever pivoted at one of its angles to the standard and connecting at another of its angles with the rod I, a vertical rod, K, connecting with the last angle of the frame H, an oscillating lever, F, pivoted at an intermediate point and connecting at one end with the lower end of the rod K, a rod, G, connecting at its upper end with the other end of lever F, and the horizontal treadle D, mounted in the base, and an arm, E, carried by the treadle-shaft and connecting with the lower end of rod G, for the purpose set forth.

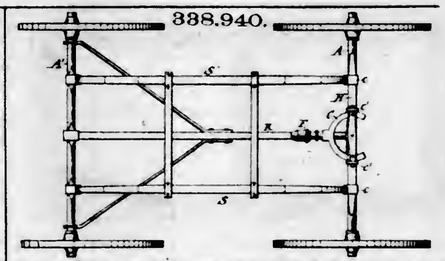
2. The herein-described portable fan comprising the base A, and a horizontal treadle, D, mounted thereon, in combination with the vertical standard C, secured to the base, an inclined brace, *a*, connecting the standard and base, an arm, E, carried by the treadle-shaft, a rod, G, connecting at its lower end with the arm E, an oscillating lever, F, pivoted near its center to the brace *a*, and at its rear end pivoted to the upper end of rod G, a vertical rod, K, extending lengthwise along the standard C and pivoted to the outer or front end of the lever F, an arm, D, extending horizontally outward from the upper end of standard C, a brace-bar, *b*, connecting the latter with the arm D, a bell-crank lever, H, pivoted intermediately to the brace-bar *b* and connecting at one of its angles to the upper end of rod K, a horizontal rod, I, connecting with the upper end of the bell-crank lever, and the fan-shaft J, pivoted intermediately of its length to the outer end of the bar D and connecting at its upper end to the outer of the rod I, as set forth.

338,940. SPRING-VEHICLE. WILLIAM L. EARLE and CHARLES G. CROFOOT, Tully, N. Y. Filed Jan. 7, 1886. (No model.)

Claim.—1. The improved reach-coupling, consisting of the longitudinal clip *e*, provided with the screw-threaded socket *f*, the stem *g*, screwed into said socket and terminating with the head *h*, the collar K, sliding on said stem and provided with the female-screw-threaded sleeve *l*, and the shank *m*, screwed into the sleeve *l* and provided with the



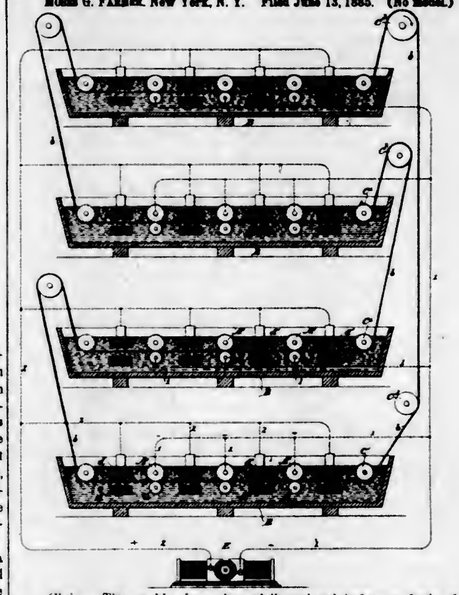
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cavity *n*, all constructed and combined substantially in the manner specified and shown.

2. In a reach-coupling, the combination of the stem *g*, provided with the head *h*, the collar K, sliding on said stem and provided with the female-screw-threaded sleeve *l*, and the shank *m*, screwed into the sleeve *l* and provided with the cavity *n*, substantially as described and shown.

338,941. APPARATUS FOR FORMING WIRE BY ELECTROLYSIS. MOSES G. FARMER, New York, N. Y. Filed June 13, 1885. (No model.)



Claim.—The combination, substantially as hereinbefore set forth, of an electro-deposition vat, a series of endless wires, portions only of each of which are in the vat at any time, means for passing the same continuously through the vat, and two series of horizontal anodes, one series being above and the other series below the wires.

338,942. HAIR-TONIC. LEON P. FREDERSTER, Leadville, Colo., assignor to himself and Alfred Brisbois, same place. Filed Sept. 17, 1885 (No specimens.)

Claim.—The composition or hair-tonic herein described, consisting of tincture Peruvian bark, tannin, sulphuret of potash, common salt, alcohol, water, and a perfume, compounded in or about the proportions described.

338,943. SHOW-COVER FOR BOXES. GEORGE FERGUSON, Glidden, Iowa. Filed July 2, 1885. (No model.)

Claim.—1. A box-cover consisting of a frame of longitudinal and lateral strips and a transverse metallic strip fixed to the longitudinal strips, and having a dust-strip, and arranged, as described, to divide the frame into two sections, one of the sections being provided with a glass, and the other section with a glass lid hinged between the two sections, all as set forth.

2. A box-cover consisting of a frame of longitudinal and lateral pieces divided into two sections by a metallic strip soldered to the longitudinal pieces, one of said sections being glazed and the other provided

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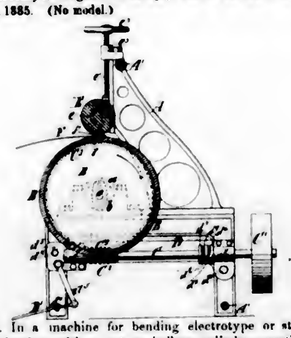


with a hinged glazed lid, the metallic strip being provided with a dust-strip, all substantially as shown and described.

3. The combination of the show-box-cover frame A, consisting of strips A' and B, with the glass D, strips *d* and *e*, supporting the glass, the hinged lid, and the strip C, having dust-strip *a'*, substantially as shown and described.

4. In a box-cover, the combination of the angular metallic strips A' and the angular strips B, glass D, and the hinged lid, substantially as shown, and for the purpose described.

338,944. MACHINE FOR BENDING METAL PLATES. JAMES H. FERGUSON, Brooklyn, assignor to Lovejoy Son & Co., New York, N. Y. Filed Oct. 3, 1885. (No model.)



Claim.—1. In a machine for bending electrotype or stereotype plates, the combination, with a rotary hollow cylinder constituting a former, and provided on its exterior with a grip to receive the edge of a plate for holding the plate on the cylinder, of pipes for introducing a heating agent into the cylinder, and a movable abutment for bearing directly against the outer side of the plate to hold the plate against the cylinder as the latter rotates, substantially as herein described.

2. In a machine for bending electrotype or stereotype plates, the combination, with a rotary hollow cylinder constituting a former, and provided on its exterior with a grip to receive one edge of a plate, for holding the plate to the cylinder, of pipes for introducing a heating agent into the cylinder, and a bending-roll arranged parallel with and adjustable toward and from the cylinder for bearing against the outer side of the plate to hold it against the cylinder as the latter rotates, substantially as herein described.

3. The combination, with a rotary cylinder or former provided with a grip for holding one edge of the plate to be bent, of a number of removable lags or segments made arc shape in their transverse section and fitted to the cylinder to vary the size thereof, and also provided with a grip for holding the edge of the plate, and a movable abutment for holding the plate against the cylinder as the latter rotates, substantially as herein described.

338,945. STEM WINDING AND SETTING MECHANISM FOR WATCHES. WALTER H. FITZ GERALD, Brooklyn, N. Y. Filed Oct. 3, 1885. (Model.)

Claim.—1. As an improvement in stem winding and setting watches, the combination of a rotatable longitudinally-movable stem-arbor which has no positive connection with the watch-movement, a device that is pivoted within the case-center, and adapted by a movement upon its axis to change the engagement of the winding and setting train from the winding-wheel to the dial-wheels, and an intermediate device which is contained within said case-center and is adapted to communicate the longitudinal movements of said stem-arbor to said pivoted device and cause the latter to turn upon its axis, substantially as and for the purpose specified.

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2. As an improvement in stem winding and setting watches, the combination of a rotatable longitudinally-movable stem-arbor which has no positive connection with the watch-movement, a device that is pivoted within the case-center and by a movement upon its axis is adapted to permit the winding and setting train to be disengaged from the dial-wheels and engaged with the winding-wheel, and an intermediate device which is contained within said case-center and is adapted to communicate the longitudinal movements of said stem-arbor to said pivoted device and cause the latter to turn upon its axis, substantially as and for the purpose shown.

3. As an improvement in stem winding and setting watches, the combination of a winding and setting train which is normally in engagement with the winding-wheel, a device that is pivoted within the case-center and by a movement upon its axis is adapted to change the engagement of the winding and setting train from the winding-wheel to the dial-wheels, a rotatable longitudinally-movable stem-arbor which has no positive connection with the watch-movement, and an intermediate device that is contained within said case-center and is adapted to communicate the longitudinal movements of said stem-arbor to said pivoted device and cause the latter to turn upon its axis, substantially as and for the purpose shown.

4. As an improvement in stem winding and setting watches, the combination of a winding and setting train which is normally in engagement with the winding-wheel, a device that is pivoted within the case-center and by a movement upon its axis is adapted to permit the winding and setting train to be disengaged from the dial-wheels and engaged with the winding-wheel, a rotatable longitudinally-movable stem-arbor which has no positive connection with the watch-movement, and an intermediate device that is contained within said case-center and is adapted to communicate the longitudinal movements of said stem-arbor to said pivoted device and cause the latter to turn upon its axis, substantially as and for the purpose shown and described.

5. As an improvement in stem winding and setting watches, a watch-case provided with a rotatable longitudinally-movable stem-arbor, a pivoted device which by a movement upon its axis is adapted to change the engagement of the winding and setting train from the winding-wheel to the dial-wheels, and an intermediate device that is adapted to communicate the longitudinal movements of said stem-arbor to said pivoted device and cause the latter to turn upon its axis, each of said parts being connected with said case and having no positive connection with the watch-movement, substantially as and for the purpose specified.

6. As an improvement in stem winding and setting watches, a watch-case provided with a rotatable longitudinally-movable stem-arbor, a cam which is pivoted within the inner face of the case-center and has gear-teeth at one point upon its periphery, and a lever that is pivoted within said case-center and has one end engaged by a peripheral groove in said stem-arbor and its opposite end, which is provided with a toothed segment, in engagement with the toothed periphery of said cam, whereby a longitudinal movement of said stem-arbor will cause a partial rotation of said cam, substantially as and for the purpose shown.

338,946. STEM WINDING AND SETTING WATCH. WALTER H. FITZ GERALD, Brooklyn, N. Y., and EDWARD A. MARSH, West Newton, Mass. Filed Oct. 3, 1885. (No model.)



Claim.—1. As an improvement in stem winding and setting watches, the combination of a rotatable longitudinally-movable stem-arbor which has no positive connection with the watch-movement, a device which is pivoted within the case-center and adapted to communicate the longitudinal movements of said stem-arbor to the winding and setting train, and a stationary stop that is engaged by said pivoted device and operates to hold the latter at the limit of its motion in either direction, substantially as and for the purpose specified.

2. As an improvement in stem winding and setting watches, the combination of a longitudinally-movable stem-arbor which has no positive connection with the watch-movement, a device that is pivoted within the case-center and by a movement upon its axis is adapted to change the engagement of the winding and setting train from the winding-wheel to the dial-wheels, means, substantially as described, whereby the longitudinal movements of said stem-arbor are communicated to and cause said pivoted device to turn upon its axis, and a stationary stop which is engaged by said pivoted device and operates to lock the same at the limit of its motion in either direction, substantially as and for the purpose shown.

3. As an improvement in stem winding and setting watches, the combination of a longitudinally-movable stem-arbor which has no positive connection with the watch-movement, a device that is pivoted within the case-center and by a movement upon its axis is adapted to permit the winding and setting train to be changed from engagement with the dial-wheels to the winding-wheel, means, substantially as described, whereby the longitudinal movements of said stem-arbor are communicated to and cause said pivoted device to turn upon its axis, and a stationary stop which is engaged by said pivoted device and operates to lock the same at the limit of its motion in either direction, substantially as and for the purpose set forth.

4. As an improvement in stem winding and setting watches, the combination of a winding and setting train which is normally in engagement with the winding-wheel, a device that is pivoted within the case-center and by a movement upon its axis is adapted to change the engagement of the winding and setting train from the winding-wheel to the dial-wheels, a rotatable longitudinally-movable stem-arbor which has no positive connection with the watch-movement and by its longitudinal movements is adapted to turn said pivoted device upon its axis, and a stationary stop that is engaged by said pivoted device and operates to lock the same at the limit of its motion in either direction, substantially as and for the purpose shown and described.

5. As an improvement in stem winding and setting watches, the combination of a winding and setting train which is normally in engagement with the winding-wheel, a device that is pivoted within the case-center and by a movement upon its axis is adapted to permit the winding and setting train to be changed from engagement with the dial-wheels to the winding-wheel, a rotatable longitudinally-movable stem-arbor which has no positive connection with the watch-movement and by its longitudinal movements is adapted to turn said pivoted device upon its axis, and a stationary stop that is engaged by said pivoted device and operates to lock the same at the limit of its motion in either direction, substantially as and for the purpose specified.

6. As an improvement in stem winding and setting watches, a watch-case provided within its pendant with a rotatable longitudinally-movable stem-arbor which is adapted to engage with a suitably-constructed watch-movement without having positive connection therewith, a lever that is pivoted within the inner face of the case-center and is adapted to communicate the longitudinal movements of said stem-arbor to the winding and setting train, and a stationary stop which is secured within said case-center in position to be engaged by the outer spring end of said lever and operates to hold the same at the limit of its motion in either direction, substantially as and for the purpose shown.

338,947. STEM WINDING AND SETTING WATCH. WALTER H. FITZ GERALD, Brooklyn, N. Y. Filed Oct. 3, 1885. (Model.)



Claim.—1. As an improvement in stem winding and setting watches, the combination of a winding and setting train which is in part journaled upon a pivoted yoke and is normally in engagement with the winding-wheel, a rotatable longitudinally-movable stem-arbor that has no positive connection with the watch-movement, and an intermediate device which is contained within the case-center and is adapted to communicate the longitudinally-outward movement of said stem-arbor directly to said pivoted yoke and cause said train to engage with the dial-wheel, substantially as and for the purpose specified.

2. As an improvement in stem winding and setting watches, the combination of a winding and setting train which is in part journaled upon a pivoted yoke and is normally in engagement with the winding-wheel, a rotatable longitudinally-movable stem-arbor that has no positive connection with the watch-movement, and an intermediate device which is contained within the case-center and impinges directly upon said pivoted yoke, and by the longitudinal inward movement of said stem-arbor is adapted to permit said train to be disengaged from the dial-wheels and engaged with said winding-wheel, substantially as and for the purpose shown.

3. As an improvement in stem winding and setting watches, a watch-case provided within its pendant with a rotatable longitudinally-movable stem-arbor which is adapted to engage with a suitably-constructed watch-movement without having positive connection therewith, and an intermediate device which is contained within the case-center and is adapted to impinge directly upon the pivoted yoke of the winding and setting train and to communicate thereto the longitudinal movements of said stem-arbor, substantially as and for the purpose set forth.

4. As an improvement in stem winding and setting watches, a watch-case provided within its pendant with a rotatable longitudinally-movable stem-arbor which is adapted to engage with a suitably-constructed watch-movement without having a positive connection therewith, and intermediate device which is adapted to communicate the longitudinal movements of said stem-arbor to the winding and setting train, and a stop for holding said intermediate device in different positions, said intermediate device and stop being independent of the watch-movement and substantially outside of the movement-holding space in the case, substantially as and for the purpose specified.

5. As an improvement in stem-winding and setting watches, a watch-case provided within its pendant with a rotatable longitudinally-movable stem-arbor which is adapted to engage with a suitably-constructed watch-movement without having a positive connection therewith, a lever that is pivoted within the case-center and is adapted to communicate the longitudinal movements of said stem-arbor to the winding and setting train, and a spring-stop secured to or within said case-center and adapted to engage with and hold said lever in different positions, substantially as and for the purpose shown.

338,948. CONSTRUCTION OF BARRELS, &c. MOTT G. GILLETTE, New York, N. Y. Filed Nov. 9, 1885. (No model.)



Claim.—1. A wooden keg or equivalent package having its staves compressed transversely or circumferentially of the keg.

2. A wooden keg or its equivalent formed of straight staves, producing a cylindrical package and compressed transversely or in the direction of the circumference of the keg.

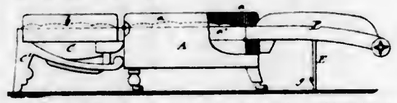
3. A keg or its equivalent formed of wooden staves compressed transversely or in the circumferential direction and inclosed in an external binding metallic case.

4. A keg or its equivalent formed of wooden staves having the croze-groove compressed into the wood.

5. A keg or its equivalent having the marginal edge of its head compressed to fit into the croze, with a subsequent tendency to expansion therein.

6. A keg or its equivalent having its head pieces compressed across their width previous to being inserted in the croze.

338,949. SOFA-BED. MICHAEL GUINA, New York, N. Y. Filed Nov. 30, 1885. (No model.)



Claim.—1. The combination of a main section, a hinged seat-section having fixed arms, a hinged back-section provided with folding legs, a pivot-rod connecting said legs, and locking-hooks attached to said pivot-rod, and adapted to be locked to or released from the arms of the seat-section, substantially as set forth.

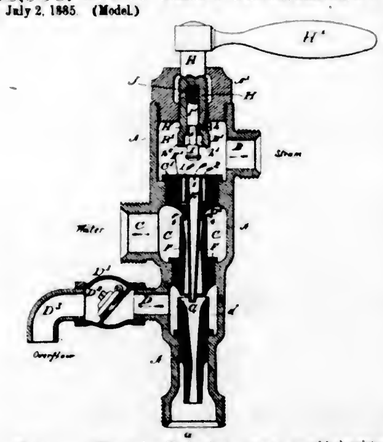
2. The combination of a main section, a hinged seat-section having fixed arms, a hinged back-section provided with folding legs, a pivot-rod connecting said legs, locking-hooks applied to said pivot-rods, and mechanism for locking said legs and hooks in line with or at right angles to the back-section, so as to either lock it to the arms of the seat-section or support it in a horizontal position, substantially as set forth.

3. The combination of the fixed arms C', having recesses *d* and pins *d'*, the back-section B, supporting-plates D², having stop-flanges *f f' f²*, a pivot-rod, D', having a rectangular portion, *e'*, a locking-hook, D, having a lug, *d²*, a sliding leg, E, applied to one end of the pivot-rod, and having a slotted shank, *e²*, and spring *e³*, and a fixed leg, E, at the other end of the pivot-rod, substantially as set forth.

4. The combination of the back-section B, having a recess, *e⁴*, supporting-plates D², having locking-flanges *f f' f²* and bearings *e*, a folding leg, E, having a slotted shank, *e²*, a pivot-rod, D', having a rectangular portion, *e'*, a spring, *e³*, a locking-hook, D, having a lug, *d²*, engaging the slotted shank, and the fixed arms C', provided with the

recesses *d* and the transverse pins *d'*, which can be engaged with the locking-hooks D, substantially as set forth.

338,950. INJECTOR. NORMAN W. GIRDWOOD, Asheville, N. C. Filed July 2, 1885. (Model.)



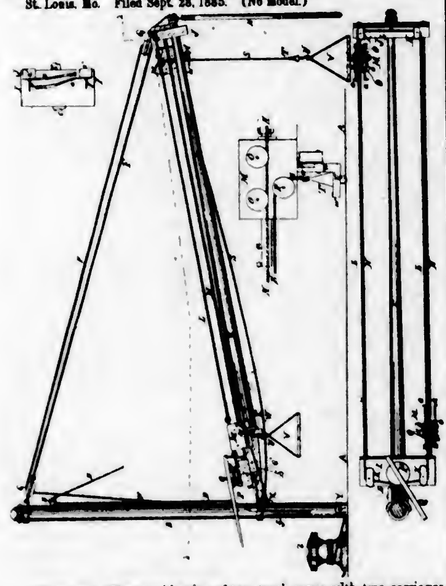
Claim.—1. The valve H, having a recess provided with an additional spring-actuated valve, I, arranged to operate as specified, for the purpose set forth.

2. The tubes C' and E E', in combination with the valve mechanism and the shell, as and for the purpose set forth.

3. The combination of the tubes C' E E' F G, the tube E extending through tube C' and into tube G, as shown, with the shell A, as and for the purpose set forth.

4. The combination of the valves H I, cap A', tubes C' E E' F G, and shell A, constructed substantially as described, and arranged to operate as specified, for the purpose set forth.

338,951. APPARATUS FOR HANDLING FREIGHT. LOUIS GRAFF, St. Louis, Mo. Filed Sept. 28, 1885. (No model.)



Claim.—1. The combination of two track-ropes with two carriages running thereon and rope-connection arranged to cause the simultaneous movement of the carriages on the track-ropes in opposite directions, substantially as set forth.

2. The combination of a boom with cross-bars, as I and J, connected by track-ropes, and two carriages running upon said ropes and having rope-connection insuring simultaneous movement in opposite directions, substantially as set forth.

3. The combination of two track-ropes, two carriages traveling thereon, an endless-rope connection between the carriages, insuring their simultaneous movement, substantially as set forth, and a brake mechanism constructed to act on the endless rope which connects the carriages.

4. The combination of the two track-ropes, two carriages running thereon, an endless-rope connection between the carriages, for the purpose set forth, a pulley around which the endless rope is coiled, and a brake acting on the pulley, for the purpose set forth.

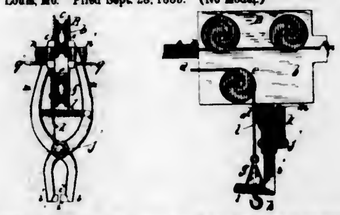
5. The combination of two track-ropes, two carriages connected by an endless rope stretched by pulleys at the bends of the rope, a hoisting-rope running over a pulley on each carriage, and a capstan or equivalent hoisting device.

6. The combination of a mast, a boom connected to said mast and vertically adjustable thereon, a track-rope stretched by connection to the boom, and a carriage running upon the track-rope.

7. The combination of a mast, a boom connected to the mast and vertically adjustable thereon, cross-bars at or near the ends of the boom, track-ropes connecting the cross-bar at one end to the cross-bar at the other end, carriages running on the track-ropes, and continuous rope-connection between the carriages passing around pulleys at the cross-bars, for the purpose set forth.

8. The combination of a mast, a boom connected to the mast and vertically adjustable thereon, cross-bars at or near the ends of the boom, track-ropes connecting the cross-bars, carriages running on the track-ropes, continuous rope-connection between the carriages, for the purpose set forth, said connecting-rope passing around pulleys at the cross-bars, and a hoisting-rope extending through each carriage, for the purpose set forth.

338,952. HOISTING AND CONVEYING APPARATUS. LOUIS GRAFF, St. Louis, Mo. Filed Sept. 28, 1885. (No model.)



Claim.—1. A carriage constructed to run upon a track-rope, and having hinged jaws and a cam projecting from the carriage, with projection acting on the jaws, for the purpose set forth..

2. The carriage B, having hinged to it jaws with hooks i', a hoisting-rope passing over a pulley on the carriage, and having a head constructed for engagement by the hooks i', and carrying a device, as k, for the attachment of an object.

3. The combination, in a conveying-carriage, of jaws i, with closing-springs and cam-rod sliding in the carriage and projecting therefrom, and having a projection acting on the jaws to open them, substantially as set forth.

4. The combination, in carriage B, of wheels C, pulley *e*, hoisting-rope with head *g*, spring-jaws i, and cams *n*, all constructed substantially as and for the purpose set forth.

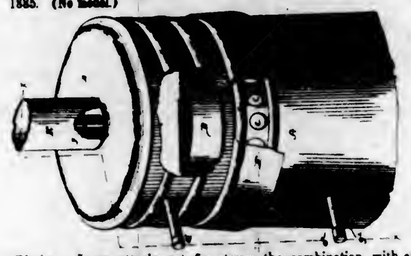
338,953. RAIL-BRACE. THOMAS A. GRIFFIN, Chicago, Ill. Filed Jan. 5, 1886. (No model.)



Claim.—1. A brace constructed from a blank of the form in cross-section of a T-rail, the head of the blank forming the foot of the brace and the foot of the blank forming the head of the brace.

2. A rail-brace constructed with a lip or flange on the head of the brace which supports the outer, downward, and inward curve of the head of the rail, the head of the brace being constructed to rest upon the flange or foot of the supported rail, substantially as and for the purpose set forth.

338,954. STOVE. DAMIAN HAHN, Cumberland, Md. Filed May 12, 1885. (No model.)



Claim.—In an attachment for stoves, the combination, with an outer casing having a series of perforations between two swaged beads, and a perforated cover provided with a hot-air pipe leading therefrom, of a flaring shield fitting said outer casing, covering the said perforations, an inwardly-extending lip provided with an upwardly-extending flange secured to said outer casing below said series of perforations, and a bottomless heating-drum fitting upon said flange, substantially as and for the purpose set forth.

338,955. ORNAMENTATION OF CARDS, &c. PHILIPP HAKE, Hoboken, N. J., and FRANZ OSCHMIL, New York, N. Y.; said Oschmil assignor to said Hake. Filed Jan. 21, 1886. (No specimens.)



Claim.—As a new article of manufacture, a card, invitation, or analogous article having a ragged or irregular edge, the same being coated with a coloring-matter, substantially as herein set forth.

338,956. SCREW. CHARLES HALL, New York, N. Y. Filed Oct. 12, 1885. (No model.)



Claim.—The lag-screw having two threads with inclined surfaces at the lower sides of the threads, and surfaces that are nearly perpendicular to the axis at the upper sides of the threads, a conical point the base of which coincides with the bottom of the screw-thread, and two cutting-lips composed of the ends of the two screw-threads at opposite sides of the base of the conical point, substantially as set forth.

338,957. HARVESTER-REEL. LEWIS HALL, Worth, Woodford County, Ill. Filed Feb. 9, 1885. (No model.)



Claim.—1. In a harvester, the combination of the reel-bat, the arms to which said bat is secured, and the vibratory bars supporting and operating said reel-bat arms, whereby the grain is delivered to the sickle and upon the platform, substantially as described.

2. In a harvester, the combination of the reel-bat, its supporting-arms, vibrating bars supporting said arms, sliding pivots supporting said bars, and cranks for operating said bars, substantially as and for the purpose set forth.

3. The combination of the reel-bat, the supporting vibratory bars, the operating-cranks, the sliding supporting-pivots, and means, substantially as described, for adjusting said pivots along said vibratory bars, whereby the vertical movement of the reel-bat may be varied, substantially as and for the purpose set forth.

4. The combination of the reel-bat, the oscillating arms to which it is secured, and the vibratory supporting and operating bars, pivoted at their ends to said arms in such a manner that the movement of said bars shall move said arms in the same direction, substantially as and for the purpose described.

5. The combination of the reel-bat, its oscillatory supporting-arms, the vibratory operating-bars, and the rods connecting the upper ends of said oscillatory arms to fixed points, substantially as and for the purpose specified.

6. The combination, with the reel-bat and vibratory bars supporting the same, of the shaft and cranks operating said bars, the guide-rods, and sleeves pivoted to said bars and adapted to slide along said guide-rods, substantially as and for the purpose specified.

7. The combination of the reel-bat, the vibratory bars supporting the same, the shaft and cranks operating said bars, the guide-rods, the collars adjustable along said bars, and sleeves swiveled to said collars and adapted to slide along said guide-rods, as and for the purpose described.

8. The combination of the reel-bat, the vibratory bars supporting the same, the shafts and cranks operating said bars, the guide-rods hinged at their rear ends to the rear edge of the platform, mechanism for raising and lowering the free ends of said guide-rods, and sleeves sliding on said rods and pivoted to said bars, substantially as and for the purpose set forth.

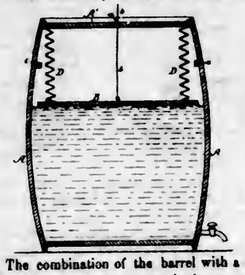
9. The combination of the vibratory bars, the operating shaft and cranks, the guide-rods, the sliding sleeves pivoted to said bars, the oscillating arms pivoted at intermediate points to the ends of said bars, the reel-bat fastened to the lower ends of said oscillating arms, and connecting-rods joining the upper ends of said oscillating arms to the guide-rods, substantially as and for the purpose set forth.

10. The combination of the vibratory bars, the operating shaft and cranks, the guide-rods pivotally held at their rear ends to the rear edge of the platform, mechanism, substantially as described, for adjusting the height of said guide-rods, the sliding sleeves pivoted to said vibratory bars, the oscillating arms pivoted at intermediate points to the free ends of said vibratory bars, the reel-bat secured to the lower ends of said oscillatory arms, and connecting-rods joining the upper ends of said oscillatory arms to the guide-rods, as set forth.

11. The combination of the reel-bat, the vibratory bars supporting the same, intermediate sliding pivots for said bars, the shaft and cranks operating the vibratory bars, and the adjustable brackets J, substantially as specified.

12. In combination with the platform P of a harvester, the shaft H, having the cranks H', the brackets J, holding said shaft to the rear edge of said platform, the vibratory bars A, held at their rear ends to said cranks, the guide-rods F, hinged to the rear edge of the platform, the tail-board P', fastened rigidly to said guide-rods, the collars G', adjustable upon said bars A, the sleeves G, swiveled to said collars and adapted to slide along said guide-rods, the oscillating arms C, pivoted at intermediate points to the ends of the bars A, the reel-bat B, secured to the lower ends of the arms C, the connecting-rods D, joining the upper ends of said arms C to the ends of the guide-rods F, the rock-shaft N' the crank-arm N, the rod M, joining said crank-arm N to the end of one of the guide-rods, the lever L, the segment-rack L', the bolt L^2, engaging with said rack, and the hand-piece L^2, as herein described.

338,958. APPARATUS FOR PRESERVING BEER. JOHN J. HAHN, Allentown, Pa. Filed July 16, 1885. (No model.)



Claim.—1. The combination of the barrel with a collapsible tube and diaphragm, free to descend under atmospheric pressure as the liquor is drawn off from the barrel, and a flexible cord, *b*, to draw the diaphragm back to the end of the barrel, substantially as described.

2. The combination of the diaphragm and collapsible tube with a bellied barrel having a stop-ring, *c*, as and for the purpose set forth.

338,959. COMBINED WHEEL AND PINION FOR WATCHES. GEORGE E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed July 7, 1885. (No model.)



Claim.—As a new article of manufacture, a combined gear-wheel and pinion, in which the gear-wheel is provided with an internally-toothed central opening that corresponds in size and shape to the toothed periphery of the pinion, and said pinion is fitted into and caused to closely fill said opening, substantially as and for the purpose specified.

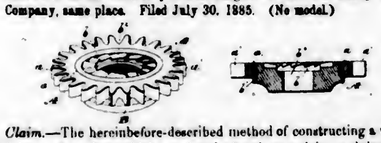
338,960. MAINSPRING-BARREL FOR WATCHES. GEORGE E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company same place. Filed July 14, 1885. (No model.)



Claim.—1. As a new article of manufacture, a blank mainspring-barrel which is constructed from sheet metal by drawing or pressing, and is provided upon its periphery with a radial flange from which to form gear-teeth, substantially as and for the purpose specified.

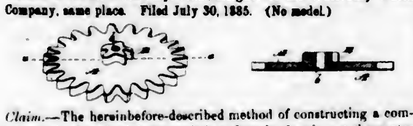
2. As a new article of manufacture, a blank mainspring-barrel which is constructed from sheet metal by drawing or pressing, and is provided upon its periphery with a radial flange from which to form gear-teeth, and within its interior with a raised central hub, substantially as and for the purpose shown.

338,961. MANUFACTURE OF COMBINED PINION AND RATCHET. GEORGE E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed July 30, 1885. (No model.)



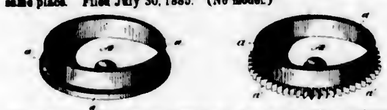
Claim.—The hereinbefore-described method of constructing a winding pinion and ratchet, which consists in forming a plain, peripherally-toothed ring by any usual means, in forming by means of dies a hub with ratchet-teeth within and a rabbet around one end, and finally combining said parts by fitting said pinion over or upon and securing it to the rabbeted end of said hub, substantially as and for the purpose specified.

338,962. MANUFACTURE OF COMBINED WHEEL AND PINION. GEORGE E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed July 30, 1885. (No model.)



Claim.—The hereinbefore-described method of constructing a combined gear wheel and pinion, consisting, first, in forming at the center of a wheel-blank an internally-toothed opening which corresponds in size and shape to the like transverse features of the desired pinion, next punching or otherwise forming a pinion-blank which has a length greater than the thickness of said wheel-blank, next pressing said pinion-blank into said opening, and, lastly, forming at or around the periphery of said wheel-blank gear-teeth and within said pinion-blank an axial opening, substantially as and for the purpose specified.

338,963. MANUFACTURE OF MAINSPRING-BARRELS. GEORGE E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed July 30, 1885. (No model.)

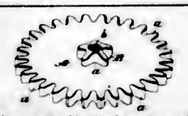


Claim.—1. The method employed for constructing mainspring barrels for watches, consisting, first, in cutting a disk-shaped blank from a sheet of metal, next in giving to said blank a cup shape by means of dies, and finally, by means of other dies, in throwing out around the periphery of said blank a radial flange from which to form gear-teeth, substantially as and for the purpose specified.

2. The method employed for constructing mainspring-barrels for watches, consisting, first, in cutting a disk-shaped blank from a sheet of metal, next in giving to said blank a cup shape by means of dies, next, by means of other dies, in throwing out around the periphery of said blank a radial flange, and finally cutting gear-teeth from and within such flange, substantially as and for the purpose set forth.

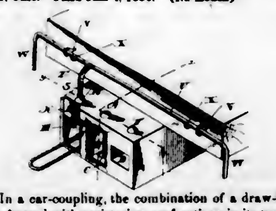
338,964. MANUFACTURE OF DIAL-WHEELS. GEORGE E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed Jan. 2, 1886. (No model.)

Claim.—The hereinbefore-described method of constructing a combined gear wheel and pinion, which consists, first, in punching from sheet metal a wheel having peripheral teeth and an axial opening which corresponds in size and shape to the like transverse features of the desired pinion, next punching or otherwise forming a pinion-blank that has a length



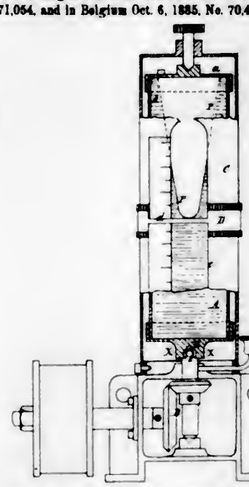
greater than the thickness of said wheel, next pressing said pinion-blank into and securing it within the said axial opening in said wheel, and lastly forming within said pinion-blank a round axial opening, substantially as and for the purpose specified.

338,965. CAR-COUPLING. RICHARD F. HAUGHT and JOHN J. FISHER, Manchester, Ohio. Filed Jan. 4, 1886. (No model.)



Claim.—In a car-coupling, the combination of a draw-head having a central recess formed with registering perforations in its top and bottom and a small recess at one side having registering vertical perforations, and a larger recess at the other side formed with grooves in the upper ends of its sides and with registering perforations in its top and bottom, a pin and link fiting in the small recess, a plate sliding in the grooves of the large recess and having a perforation corresponding to the perforations of the recess, and an upwardly-bent flange at the outer end and a downwardly-bent lip at the inner end, formed with a rearwardly-projecting pin, a spring coiled around the pin and bearing against the lip and against the inner end of the recess, a coupling-pin fitting through the perforations in the recess and plate, and a transverse rock-shaft having an arm movably connected to the upper end of the coupling-pin, as and for the purpose shown and set forth.

338,966. SPEED-INDICATOR. KILLINGWORTH W. HEDGES, Westminster, County of Middlesex, England. Filed Jan. 27, 1886. (No model.) Patented in England Feb. 18, 1885, No. 2,244; in France Sept. 7, 1885, No. 171,054, and in Belgium Oct. 6, 1885, No. 70,414.

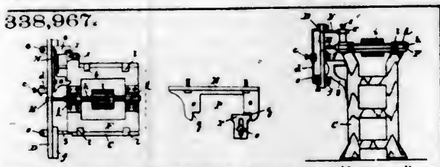


Claim.—A speed-indicator consisting of a glass tube partly filled with liquid and caused to revolve on a vertical axis, the tube having at the top a flat cover to arrest the rise of the liquid, and being inclosed in a stationary casing graduated with equal divisions, substantially as herein described.

338,967. MORTISING-MACHINE. AUGUST J. HESS, Baltimore, Md. Filed Jan. 30, 1886. (No model.)

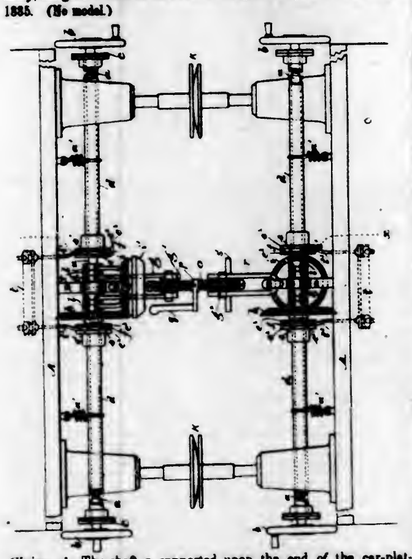
Claim.—In a mortising-machine, the combination of a mortising-bit which rotates on a slide-frame, a holder device for the wood to be mortised by the bit, and which has movement crosswise of or at right angles therewith, and the herein-described governor to control the cut of the mortising-bit, consisting of the plate N, having two right-angled arms, *o*, with a space, *p*, between them, and both arms provided on their confronting edges with a right-angled notch, *q*, and a stop device, *r*, to act

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on the said notches and the confronting edges of the said arms, all arranged and co-operating substantially as set forth.

338,968. CAR-COUPLING. JULIUS HIRSCH, Jr., Dresden, Saxony, Germany, assignor to himself and Alevin Tirpe, same place. Filed Dec. 2, 1885. (No model.)



Claim.—1. The shaft *a*, supported upon the end of the car-platforms and extending from side to side of the car, the tubes *d*, loose upon said shaft, an arm upon each tube for turning the same, and a disk at the inner end of each tube with pins thereon, in combination with the levers *f*, suspended from the shaft *a*, the coupling-frame also suspended from said shaft *a*, the screw and loop carried by said frame, and the pins *s'* upon the body of the loop for the levers *f* to act against, substantially as specified.

2. The combination, with the shaft *a*, tubes *d*, pins *e e'*, and levers *f f*, of the coupling-frame *g*, nuts g' g^3, screw *o*, loop *r*, pins *s'*, and arms *s*, rigidly connected to the loop *r*, for directing said loop upon the draft-hook of the adjoining car, substantially as set forth.

3. The combination, with the shaft *a* and wheel *h*, fixed thereon, of the wheel *i*, meshing with said wheel *h*, a bearing for said wheel on arms supported by the shaft *a*, the coupling-frame *g*, passing through said wheel *i*, the screw *o*, and nuts g' g^3, the loop *r*, pivoted to the nut g^3, the arm *p*, fixed to the wheel *i*, and the arm *q*, fixed to the screw *o*, substantially as and for the purposes specified.

4. The combination, with the shaft *a* and wheel *h*, fixed thereon, of the yoke-frame *l*, supported by the shaft *a*, the flanged bearing *k* upon said yoke-frame, the wheel *i*, supported by and turning upon said bearing *k*, the disk *m*, for holding the wheel *i* upon the bearing, and the coupling-frame *g*, passing through openings in the bearing *k*, and disk *m*, substantially as and for the purposes specified.

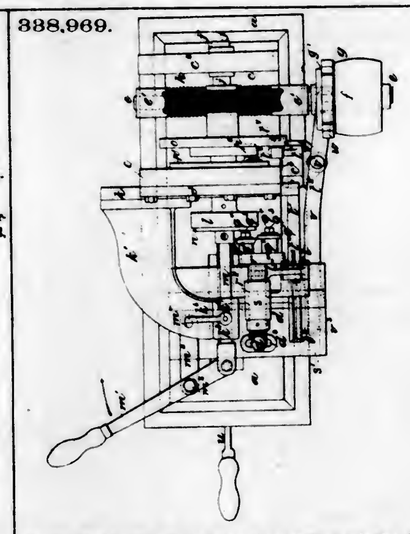
5. The combination, with the shaft *a*, tubes *d*, pins *e e'*, levers *f*, wheels *h i*, coupling-frame *g*, and parts carried by it, of the cross-bar *t*, connected with the arms t^2 of the levers *f*, and the spare hook T, substantially as and for the purposes specified.

338,969. MACHINE FOR TRIMMING THE EDGES OF HOLLOW ARTICLES. EDWARD S. HIGGIN, London, England, assignor to Claud Thornton Cayley, same place. Filed Dec. 9, 1885. (No model.) Patented in England Feb. 11, 1885, No. 1,918.

Claim.—1. In a machine for trimming the edges of hollow articles of sheet metal, or for similar purposes, the combination of means for moving the work laterally to and fro while it is rotating, and means for automatically adjusting the cutters according to the shape of the article to be trimmed, as and for the purposes above specified.

2. The combination, with the live spindle *j*, of the cam *o*, fixed on

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the said spindle, and the stationary pin or stud *p*, projecting into the groove *o'* of the said cam, whereby a lateral reciprocating motion is imparted to the said spindle, for the purpose specified.

3. The combination of the lever *u*, the block d', the bracket *d*, the levers *v w*, and the clutch *g*, substantially as set forth, whereby the cutters are moved to or from the work and the machine started or stopped by a single movement of the said lever *u*, as above specified.

4. The combination of the cutter-carrier *r*, the shaft t', the arms t t^4, the link r^4, and the cam *o*, provided with the groove o^3, substantially as set forth, for automatically adjusting the cutters relatively to the work, as and for the purpose specified.

5. The cutter-barrier *r*, having a slot, *r'*, parallel with its shaft r^3, to receive the bolts q^3, which support the cutters *q q'*, substantially as and for the purpose set forth.

6. The hollow cylinders or distance-pieces q^3, formed in two parts, which are united by screwing or otherwise, substantially as described, so that the cutters *q q'* can be adjusted relatively to each other to compensate for wear, as above specified.

7. The combination, with the cam *o*, cutters *q q'*, and plate *p'*, provided with the groove or channel p^3, of the screw p^3, and the pin or stud *p*, fixed or formed on the sliding block p^2, substantially as described, whereby I provide for moving the work to and from the cutters, as and for the purpose specified.

8. The combination of the driving-shaft *z*, having worm *k*, the spindle *j*, provided with worm-wheel *i*, the cam *o*, carried by said spindle, and having grooves o' o^3, one of which has an outer edge, o^3, of the same size and configuration as the outer edge or periphery of the article to be acted on by the cutters, the shaft t', having arms t t^4, the shaft r^3, having arms r^3, means for connecting the arms r^3 and *t*, the cutter-carrier *r*, and the cutters *q q'*, substantially as described.

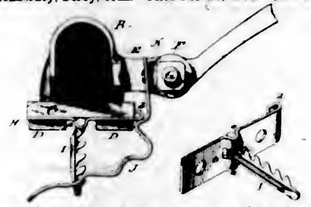
9. The combination of the live spindle *j*, the chuck *l*, the holder *n*, shaft *m*, levers m' *u*, and nut k^2, substantially as described.

10. The combination of a live spindle supported in sliding bearings, a cam fixed upon said spindle and having a groove corresponding in shape with the periphery of the article to be trimmed, a chuck or work-support carried by said spindle, and a fixed pin or stud engaged with the cam, whereby the rotating spindle is caused to move laterally to and fro in such a manner that the article to be acted on will always be kept in its proper position relatively to the cutting tool or tools, substantially as described.

11. The combination of a live spindle, a chuck and a cam carried by said spindle, adjustable cutters, and means for connecting said cutters and cam, whereby the said cutters are automatically adjusted relatively to the work, substantially as described.

12. The combination of a live spindle supported in sliding bearings, a cam carried by said spindle and grooved to correspond with the configuration of the article to be acted on, a fixed pin engaged with the cam, whereby the rotating spindle is caused to move laterally to and fro in such a manner as to cause the article to be always kept in proper position with relation to the cutting devices, a work-supporting chuck carried by the spindle, adjustable cutter, and means for connecting the cutters and cam so as to effect an automatic adjustment of said cutters with relation to the work, substantially as described.

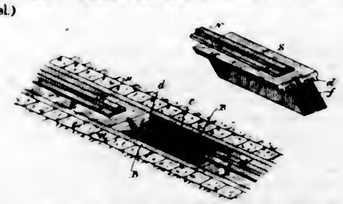
338,970. THILL-COUPLING. HENRY J. ILER, Seymour, assignor to John McEnerney, Derby, Conn. Filed Feb 23, 1886. (No model.)



Claim.—1. In a thill-coupling substantially such as described, the combination therewith of the spring J, one end arranged to bear against the shaft-eye, the other extending beneath the clip, with a fulcrum between the two ends, and a toothed rack hinged to the clip, the teeth of the rack adapted to engage said spring, substantially as described.

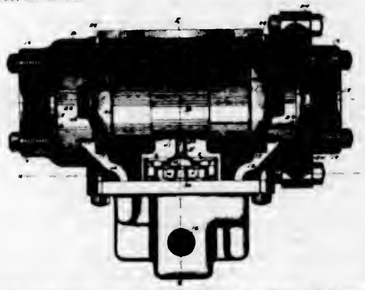
2. In a thill-coupling substantially such as described, the combination therewith of the spring J, one end arranged to bear against the shaft-eye, the other extending beneath the clip, the plate H, secured to the clip-bar and extending forward to form a fulcrum for the spring, the said plate constructed with transverse recesses, and the toothed rack I, constructed with trunnions resting in said recesses, the teeth of said rack arranged to adjustably engage said spring, substantially as described.

338,971. UNDERGROUND CONDUIT FOR ELECTRIC CONDUCTORS. JULIUS M. JAGEL, Brooklyn, N. Y. Filed July 13, 1885. (No model.)



Claim.—The combination, in a case or inclosure for electric conductors, of a range of boxes connected together end to end to form a continuous case open at the top, removable covers with ribs entering corresponding grooves in the edges of the case, and removable sections having inclined and interlocking ends, substantially as set forth.

338,972. PISTON WATER-METER. FRANK W. JENKINS, Brooklyn, assignor to William A. Perry and Charles C. Worthington, New York, N. Y. Filed June 23, 1885. (No model.) Patented in England Dec. 19, 1885, No. 15,642.

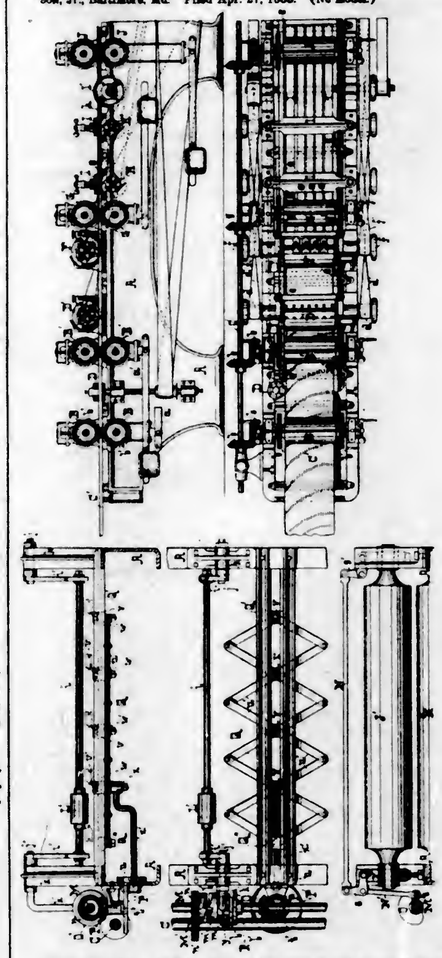


Claim.—1. The combination, with the two cylinders A B and their plungers C D, of the base portion of the meter, cast in a single piece and removable from the cylinders, and containing the passages 10 11, arranged to cross each other, and the passages 12 13, arranged to cross each other and the passages 10 11, and the two D slide-valves E F, seated upon the top of the base portion, beneath the plungers, substantially as described.

2. The combination, with the two valves E F, of the seats 50, for the two valves, formed in a single casting, which extends transversely across the top of the base of the meter and is removable therefrom, substantially as described.

3. The combination, with the two valves E F, of the seats 50, for the two valves, formed in a single casting, which extends transversely across the top of the base of the meter and is removable therefrom, and the removable guides 7 8, the latter of said guides being located between the valves and arranged to extend over the adjoining ends of the two valves, substantially as described.

338,973. PLANING AND MATCHING MACHINE. GREENLEAF JOHNSON, Jr., Baltimore, Md. Filed Apr. 27, 1885. (No model.)



Claim.—1. In a machine for making tongue-and-groove flooring, the combination of the frame thereof, suitable feed-rolls to carry the plank to be operated on longitudinally of the said frame, rotary shafts carrying surface-dressing cutters, rotary shafts with cutters adapted to groove the plank longitudinally thereof arranged above and below the said plank, rotary shafts carrying circular saws arranged to rip the plank at the channels into boards, grasping devices to engage with the boards and separate them laterally and parallelly, and vertical rotary shafts provided with cutters arranged to groove the edges of the separated boards which are not furnished with tongues, all the said elements being located in consecutive order, as described, and means to effect their joint operation, substantially as specified.

2. In a machine for making tongue-and-groove flooring, the combination of the frame thereof, and suitable feed-rolls to carry the plank to be operated on longitudinally of the said frame, rotary shafts carrying surface-dressing cutters, rotary shafts with cutters adapted to groove the plank longitudinally thereof, arranged above and below the said plank, rotary shafts carrying circular saws arranged to rip the plank at the channels into boards, grasping devices to engage with the boards and separate them laterally and parallelly, vertical rotary shafts provided with cutters arranged to groove the edges of the separated boards which are not furnished with tongues, and vertical revoluble shafts fitted with cutters against which the said boards are forced by means of rolls, to bevel the edges of the boards and round the tongues, all the said elements being located in consecutive order, as described, and means to effect their joint operation, substantially as specified.

3. In a machine for making tongue-and-groove flooring, the combination of the frame thereof, and suitable feed-rolls to carry the plank to be operated on longitudinally of the said frame, circular saws to rip up the said plank into boards, and devices to receive and laterally and parallelly separate the boards, which consists, substantially, of a series of diagonal bars pivoted together and attached to a stationary part of the machine, grasping devices situated at the intersection of the pivoted diagonal bars to engage with the boards, guides for the grasping-fingers, and means to effect the extension and contraction of the diagonal pivoted bars, substantially as specified.

4. In a machine for making tongue-and-groove flooring, devices for laterally separating boards cut from a plank to admit of their being grooved at the edges, which consists of a series of diagonal bars pivoted together and attached to a stationary part of the machine to which the boards are delivered, grasping devices situated at the intersection of the pivoted diagonal bars to engage with the boards, guides for the engaging-fingers, and means to effect the extension and contraction of the said pivoted bars, all combined, substantially as specified.

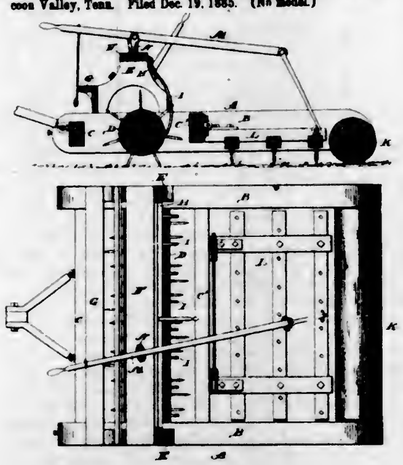
5. In a machine for making tongue-and-groove flooring, devices for laterally separating boards cut from a plank to admit of their being grooved at the edge, which consists in the combination of diagonal bars pivoted together and attached to a stationary part of the machine to which the boards are delivered, grasping devices situated at the intersection of the pivoted diagonal bars to engage with the boards, guides for the grasping devices, a revoluble crank-disk having a crank-pin, and a rod which connects the said pin with the said pivoted diagonal bars, whereby the same are alternately distended and contracted, substantially as and for the purpose specified.

6. In a machine for making tongue-and-groove flooring, devices for laterally separating boards cut from a plank to admit of their being grooved at the edge, which consists of the combination of diagonal bars pivoted together and attached to a stationary part of the machine to which the boards are delivered, grasping devices situated at the intersection of the pivoted diagonal bars to engage with the boards, guides for the grasping devices, means to effect the alternate extension and contraction of the said pivoted diagonal bars, and a roller situated near the said diagonal bars and transversely of the path of the moving boards, with suitable mechanism to alternately raise and lower the same to release and hold the boards and to coact with the distensible diagonal pivoted bars, substantially as and for the purpose specified.

7. As means to effect the rotation of the shaft M, for the purpose described, from the boards while the same are moving longitudinally of the machine, the continuously-rotating shaft C, having the gear n', loose gear-wheel n on the shaft M in engagement with the one n', the clutch M', fastened to the gear n, the sliding clutch m' on the shaft M, a roller suspended over the path of the boards and slightly below their upper surface, and suitable levers and rods to connect the said roller with the clutch m', whereby in the elevation of the said roller the clutch m' is forced to engage with the one M', all combined substantially as specified.

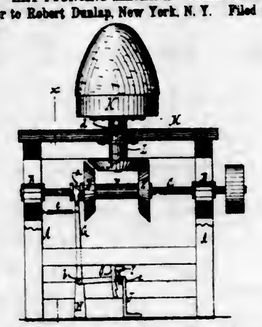
8. As a means to force and hold the clutches m' and M' in full engagement after the one, m', has been brought in contact with the other, M', through the agency of the roller L and its connections, the combination, with the shaft M, and clutch m', of the cam R, keyed to the said shaft and in engagement with the collar and its mechanism, whereby the clutch m' is moved toward the one M', substantially as specified.

338,974. CLOD-CRUSHER AND HARROW. JAMES P. JOHNSON, Raccoon Valley, Tenn. Filed Dec. 19, 1885. (No model.)



Claim.—In a clod-crusher and harrow, the combination of the frame A, carrying the spiked roller D and the plain roller K, the rock-bar H, having the teeth I bearing on the roller D, the harrow L, hinged to the frame between the rollers, and the lever M, for raising the harrow, substantially as described.

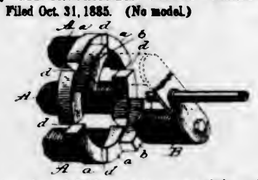
338,975. HAT-POUNCING MACHINE. CHARLES E. KEATOR, Brooklyn, assignor to Robert Dunlap, New York, N. Y. Filed Dec. 10, 1885. (No model.)



Claim.—1. In a hat-pouncing machine, the combination, with the pouncing-block K, of the gears D E N, the shaft C, bell-crank lever G, foot-lever I, and the spring e, substantially as shown and described.

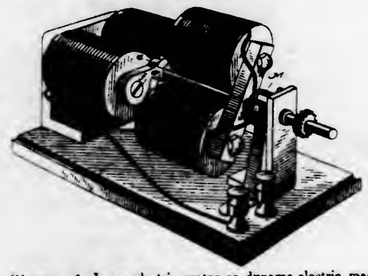
2. In hat-pouncing machine, the combination, with the pouncing-block K, of the gears D E N, the shaft C, the bell-crank lever G, foot-lever I, the spring e, and the rack-plate O, substantially as shown and described.

338,976. ELECTRO-MAGNETIC MOTOR. VINCENT B. KEEGAN, Boston, Mass. Filed Oct. 31, 1885. (No model.)



Claim.—A series of field-magnets arranged in a circle, in combination with a revolving armature outside of the field-magnets, and having its poles parallel therewith, the poles of said armature being in the direction of their movement of greater extent than the spaces between the poles of the field-magnets, each pole and the armature being arranged to be acted upon simultaneously by attraction and repulsion of the four poles of two field-magnets, substantially as described.

338,977. ELECTRIC MOTOR. VINCENT B. KEEGAN, Boston, Mass. Filed Oct. 31, 1885. (No model.)



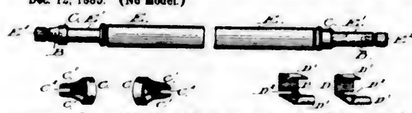
Claim.—1. In an electric motor or dynamo-electric machine, a cylindrical core having longitudinal slots and a central connecting part, combined with coils wound circumferentially around the core, all substantially as described.

2. In an electric motor or dynamo-machine, and in combination with stationary and moving magnets, one arranged to revolve in front of the other, the plain polar pieces all of the same shape and size, as described, fixed to the ends of the cores of the magnets and extending inwardly, these polar pieces being arranged near each other and with their faces in parallel planes, as shown.

3. In an electric motor or dynamo-machine, the plain polar pieces having lateral extensions g, as described, fixed to the ends of the cores of the stationary magnet and extending inwardly, in combination with like polar pieces fixed to the ends of the cores of the moving magnet.

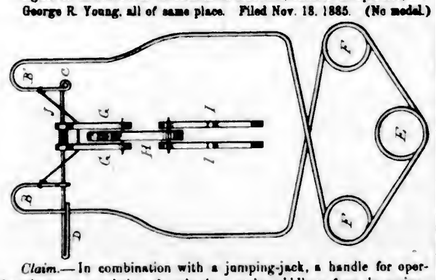
these polar pieces being arranged near each nther with their faces in parallel planes, as shown.

338,978. STAIR-ROD SECURER. DAVID KEISER, Reading, Pa. Filed Dec. 12, 1885. (No model.)



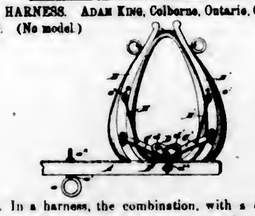
Claim.—In combination with a stair-rod, as described, and nails or screws driven diagonally in the angle of the tread and riser, an integral cast or formed fastener, C, adapted to receive said stair-rod ends, and provided at the angle of the same with a slot, C^2, adapted to the shanks of said nail or screw, and a nose-piece, C', whereby the same may be slid in contact with or released from the said nail or screw, substantially as and for the purpose set forth.

338,979. JUMPING-JACK. JOHN A. KIENARDT, Dayton, Ohio, assignor of three-fourths to Charles L. Hubbard, Charles E. Spindler, and George R. Young, all of same place. Filed Nov. 18, 1885. (No model.)



Claim.—In combination with a jumping-jack, a handle for operating the same, consisting of a wire bent at its middle to form the spring-coil E and side coils, F, the arms being crossed above said finger-openings, then bent upward with return-bends at the top, one end being bent into an eye, and the other being bent at right angles to form a pivot for the jumping-jack, passing through said eye and formed at its extremity into the arresting-loop D, inclosing the opposite arm, and the operating-cord J, secured to the return-bends above the pivot, and passing through holes in the arms of the jumping-jack below their pivotal points, substantially as set forth.

338,980. HARNESS. ADAM KING, Colborne, Ontario, Canada. Filed Dec. 15, 1885. (No model.)



Claim.—1. In a harness, the combination, with a draft-bar and hames, of a clevis attached to said draft-bar and the hinged or pivoted inclined metallic bars C C', attached to the hames and having a pivotal connection with said clevis, substantially as described.

2. In a harness, the combination of the draft-bar A, the hames B B', the clevis D, secured to the draft-bar, the inclined bars C C', connecting the clevis and hames, and the braces E E', connecting the hames and bars C C', substantially as described.

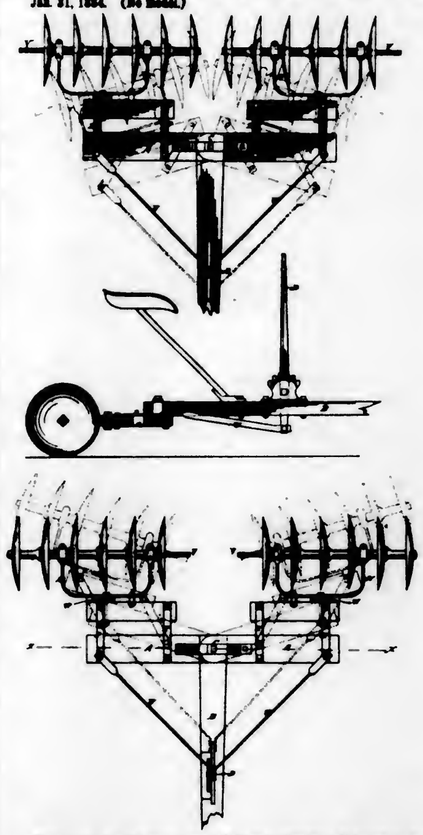
338,981. SAFETY-STRAP FOR RUBBER OR OTHER SHOES. OREN G. KING, Newark, Ohio. Filed Feb. 4, 1886. (No model.)



Claim.—1. A shoe or overshoe provided with an elastic retaining strap or band secured inside to the sole and adapted to be brought over the instep or heel of the wearer, substantially as described.

2. A shoe or overshoe provided with an elastic retaining-strap made of a single piece and secured inside to the shank of the shoe, whereby when not in use it can be folded out of sight.

338,982. DISK-HARROW. CHARLES LA DOW, Albany, N. Y. Filed Jan. 21, 1884. (No model.)



Claim.—1. In a harrow, reversible and vibratory disk-gangs, each connected by its frame to the draft-frame by a single pivot, which is unequally distant from a point midway between the ends of the disk-gang axles.

2. In a harrow, the combination of a draft-frame with a disk-gang united thereto by a single pivot, which permits the disk-gang to vibrate to follow the inequalities of the ground, and also to be reversed for the purpose of throwing the earth in opposite directions.

3. In a harrow, a reversible journal-box containing chambers capable of supplying oil to the bearing in either position of the disk-gang.

4. A pole, main frame, and disk-gang capable of vertical vibration, angular adjustment, and of being reversed relatively to each other, in combination with an anti-friction device or other equivalent mechanism which permits the vibration and both adjustments of the gang and resists their side-thrust.

5. The combination of a main frame, angularly-adjustable vertically-vibrating gangs of concavo-convex disks connected therewith, arranged to throw the earth from the center of the machine, the gangs being arranged so that when their inner ends are adjusted to a working angle relatively to the draft-line the forward edges of the inner disks of the gangs will be in the desired proximity without making contact between the gangs, and so as to adapt the said inner disks to split a row of corn-hills and throw the earth in opposite directions, and mechanism for adjusting the angle of the gangs relatively to the draft-line.

6. In a disk-harrow, a draft-frame, disk-gangs vibrating to follow the inequalities of the ground, and capable of being set to throw the earth either toward or from each other, flexible connections between the gangs and frame which can be adjusted laterally relatively to each other, in combination with mechanism for adjusting the outer ends of the gang either in front or in rear of a right angle relatively to the pole.

7. In a disk-harrow, the arrangement of a pole, cross-bar, two gangs of concavo-convex disks attached to the cross-bar, and having their convex ends adapted to vibrate up and down in close proximity to each other, but without contact.

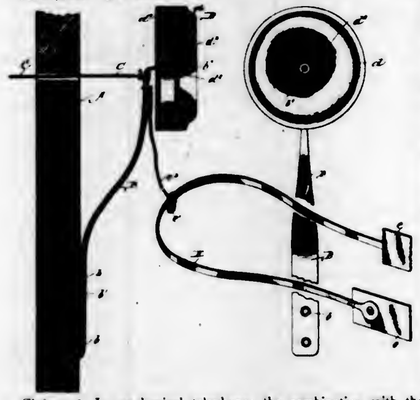
8. In a disk-harrow, the combination of concavo-convex disks in two gangs, having the convex end of one gang placed adjacent to the convex end of its fellow gang, an axle for each gang having an enlargement at the convex end of its gang, spacing-spools between the disks, a nut at the concave end of the gang for clamping the axle, disks, and spools together, a pole and cross-bar on which the gangs are mounted, and flexible connections between the cross-bar and gangs, which permit the convex ends of the gangs to vibrate up and down in close proximity without contact between the enlargement of their axles, and said enlargements being adapted to oppose the strain of the nuts on the axles.

9. In a disk-harrow, the combination of a pole, a cross-bar, disk-gangs vibrating up and down independently of each other, and capable of being set to throw the earth either toward or from each other, pivots between the gangs and frame which are laterally adjustable on the frame relatively to each other, mechanism mounted on the gang-bar for taking the side-thrust of the gangs directly on the ends of the gang-axles, and devices for holding the outer ends of the gangs either in front or in rear of a right angle relatively to the pole.

10. In a disk-harrow, the combination of a pole, a cross-bar, disk-gangs vibrating vertically independently of the cross-bar and of each other, and a stop for one gang adapted to limit the upward motion of said gang independently of the stop for its fellow gang.

11. In a disk-harrow, the combination of a draft-frame, two concavo-convex disks revolving independently of each other, and having the portions of the convex sides in front of the axle adapted to operate in substantially parallel planes and in close proximity to each other, but without contact, and mechanism for simultaneously adjusting the angle of both disks.

338,983. MECHANICAL TELEPHONE. HUBB LAMONT, Blissfield, Mich., assignor of three-eighths to William Hubbard, Elgin, Ill. Filed Oct. 27, 1885. (No model.)



Claim.—1. In mechanical telephones, the combination, with the line-wire, of the vibrant bar in tense connection therewith, said bar serving to receive and transmit the molecular impulses from and to the line-wire, substantially as described.

2. In mechanical telephones, the combination, with the line-wire of the vibrant bar in tense connection therewith and the sound-transmitter mounted upon said bar, substantially as described.

3. In mechanical telephones, the combination, with the line-wire and with the vibrant bar in tense connection therewith, of the vibrant receiver for said bar, the same being capable of application to the ear of the operator, substantially as described.

4. In mechanical telephones, the combination, with the line-wire and with the vibrant bar in tense connection therewith, of the elastic vibrant receiver for said bar, the same being capable of application to the ear of the operator, substantially as described.

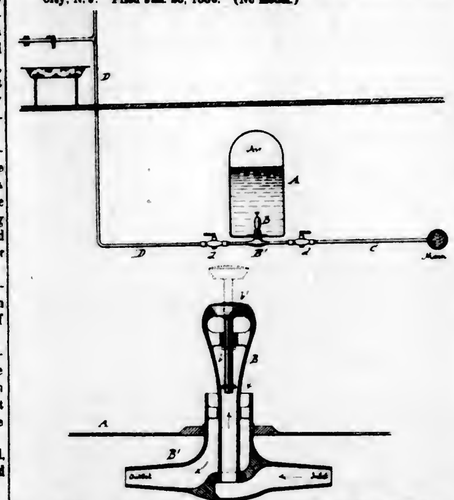
5. In mechanical telephones, the combination, with the line-wire, of the vibrant bar in tense connection therewith and the telephone-box, the diaphragm of which bears freely upon said bar, substantially as described.

6. In mechanical telephones, the combination, with the line-wire, of the vibrant bar in tense connection therewith and the telephone-box, the diaphragm of which is loosely and pivotally set upon said bar, substantially as described.

7. In mechanical telephones, a vibrant receiver adapted to conduct the molecular vibrations from the vibrant bar to the ear of the operator, substantially as described.

8. In mechanical telephones, the combination, with the line-wire, of the vibrant bar in tense connection therewith and the telephone-box having paper-pulp diaphragm to bear against said bar, substantially as described.

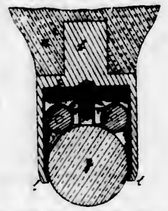
338,984. SELF-ACTING SUPPLY-TANK. JOHN H. LAWLESS, Jersey City, N. J. Filed Jan. 28, 1886. (No model.)



Claim.—1. A hermetically-closed water-supply tank provided at the bottom with a combined inlet and outlet pipe, the inlet-pipe passing centrally through the outlet-pipe and having a valve-seat and valve at its upper end, substantially as set forth.

2. The combination of a hermetically-closed supply-tank, a combined inlet and outlet pipe, the inlet-pipe extending centrally through the outlet-pipe and having a valve, a supply-pipe connecting the inlet-pipe with the main, and a service-pipe connected to the outlet-pipe, substantially as set forth.

338,985. FURNITURE-CASTER. FRANCIS M. LECHNER, Columbus, Ohio. Filed Jan. 31, 1884. Renewed Feb. 27, 1886. (No model.)



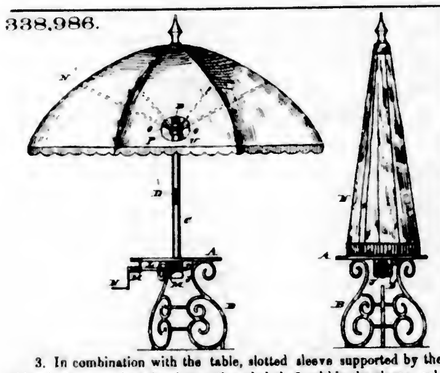
Claim.—In a furniture-caster, the combination, with a ball or spherical roller, of a bearing-disk having a central pivotal point on which it can rotate, and four anti-friction rollers arranged at right angles to each other, the axes of the two opposite rolls being parallel and at right angles to the axes of the other pair, whereby the disk can rotate to bring the line of movement on the diagonal of the quadrilateral formed by the axes of the wheels, so that all the wheels will rotate, substantially as and for the purposes specified.

338,986. GARDEN-TABLE. PAUL LIEBTHER, St. Louis, Mo. Filed May 25, 1885. (No model.)

Claim.—1. The combination, with a table, of a support secured thereto, a canopy secured to the upper end of the support, a ring sliding up and down on the support, rods connecting the ring to the canopy, and an adjustable collar having a lug supporting the ring, substantially as set forth.

2. The combination, with a table, of a sleeve having a vertical slot and secured to the table, a canopy secured to the upper end of the sleeve, a ring sliding on said sleeve, rods connecting the ring to the canopy, a threaded shaft within the sleeve projecting downwardly through the table, frame secured to the table and supporting the lower end of the shaft, a collar working on the shaft and having a lug projecting through the slot to support the ring, and means by which the shaft is turned to raise and lower the collar for opening and closing the canopy, substantially as set forth.

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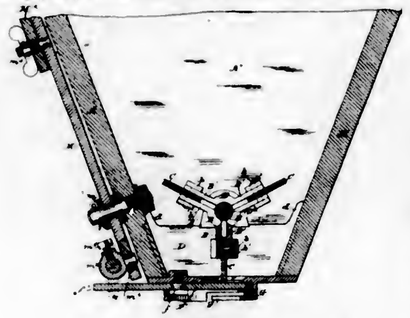


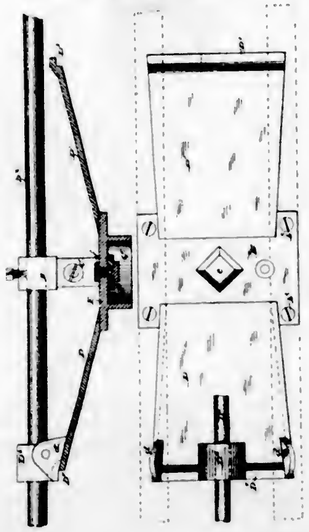
3. In combination with the table, slotted sleeve supported by the table, shade secured to the sleeve, threaded shaft within the sleeve, collar on the shaft with a lug projecting through the slot in the sleeve beneath a ring of the shade that surrounds the sleeve, and gearing for turning the threaded shaft whereby the shade is raised, as set forth.

338,987. SEEDER. CHRISTOPHER W. LEVALLEY, St. Paul, Minn. Filed July 13, 1883. (No model.)

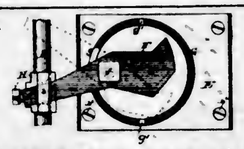
Claim.—1. In a seeding-machine, the combination, with the detachable sections having wings D D', of the seed-hopper sides provided with inclined grooves adapted to receive and support the edges of the wings, substantially as set forth.

2. In a seeding-machine, a hopper provided in the bottom with a series of discharge-openings, in combination with a series of horizontally-vibrating gates pivoted to the lower face of the hopper, a horizontally-





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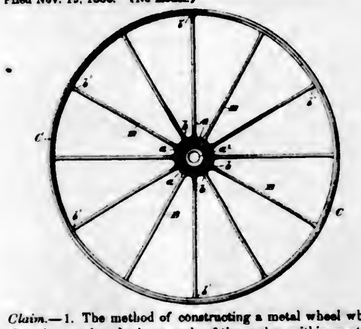


sliding bar, and means for adjustably connecting each of the gates to the sliding bar, whereby each gate may be separately adjusted relative to its adjacent discharge-opening, and after such adjustment has been made the series may be operated simultaneously to regulate the sizes of all the openings through the hopper-bottom, substantially as set forth.

3. In a seeder, a wheel formed in sections divided on a line parallel with the axis of the driving-shaft, substantially as set forth.

4. In a seeder, a feed-wheel formed in sections divided on a line parallel with the axis of the driving-shaft, in combination with flexible blades secured between the sections of the feed-wheel, substantially as set forth.

338,988. MANUFACTURE OF METAL WHEELS. JAMES R. LITTLE, Quincy, Ill., assignor to the Quincy Metal Wheel Company, same place. Filed Nov. 19, 1885. (No model.)



Claim.—1. The method of constructing a metal wheel which consists, first, in securing the inner ends of the spokes within mortises in a hub, next in placing upon the outer ends of said spokes a solid rim provided with spoke-mortises, and, lastly, by longitudinal compression expanding the ends of said spokes laterally within and causing the same to closely fill said rim-mortises, substantially as specified.

2. The method of constructing a metal wheel which consists, first, in expanding the inner ends of the spokes within and causing the same to closely fill the mortises of a hub, next placing upon the outer ends of said spokes a solid rim provided with spoke-mortises, and, lastly, by longitudinal compression expanding the ends of said spokes laterally within and causing the same to closely fill said rim-mortises, substantially as shown.

3. In the construction of metal wheels, the method of combining a solid mortised rim with the outer ends of spokes, which are secured within and project radially from a hub, consisting in placing said rim over the outer ends of the contiguous spokes at one side of the hub, and then springing it radially outward over the end of each of the remaining spokes, substantially as set forth.

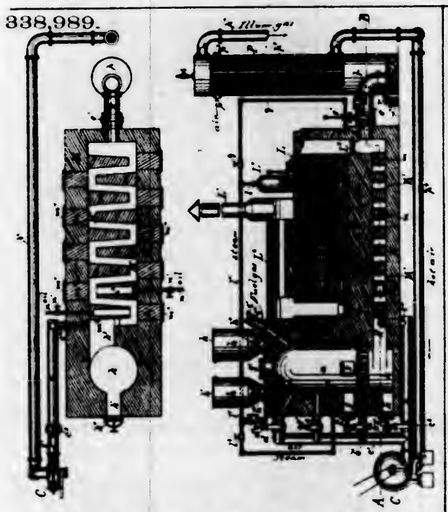
4. The method of constructing a metal wheel which consists, first, in securing the inner ends of the spokes within a mortised hub, next placing a solid mortised rim over the outer ends of the contiguous spokes at one side of said hub and then springing said rim radially outward over the end of each of the remaining spokes, and, lastly, expanding said spokes within and causing the same to fill said rim-mortises, substantially as shown and described

5. The method of constructing metal wheels which consists, first, in securing the ends of the spokes within a mortised hub, next placing a solid mortised rim over the outer ends of the contiguous spokes at one side of said hub and then springing said rim radially outward over the end of each of the remaining spokes, and, lastly, securing the latter within said rim by compressing the outer portion of each spoke longitudinally until it closely fills its mortise and is enlarged at each end of the same, substantially as specified.

338,989. APPARATUS FOR THE MANUFACTURE OF ILLUMINATING AND HEATING GAS. BURDETT LOOMIS, Hartford, Conn. Filed Feb. 2, 1885. (No model.)

Claim.—1. In a gas apparatus, the generator *a*, having the air-blast pipe and steam-supply pipe connecting with its top, in combination with the regenerator for fixing gas or superheating steam, connected with said generator by means of the ash-pit or combustion-chamber below the grate, and a blast-pipe connected to supply air between the fuel and regenerator, for the purpose set forth.

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2. The fuel and generating chamber having an air-blast pipe connecting with its upper portion, in combination with the horizontally-arranged regenerator connecting with said generating-chamber below the grate, and containing the vertical check-walls extending alternately from opposite side walls of the chamber, and an escape-flue for the products of combustion from the rear end of the regenerator, for the purpose set forth.

3. The combination of the generator with the regenerator or superheater M, connecting with such generator at its base, and having a series of vertical check-walls, *m*, made of fire-brick or other refractory material, projecting alternately from opposite sides of said regenerator, so as to form the tortuous passage M', and such regenerator having cleaning-openings and closing devices in its side walls, for the purpose described.

4. In combination with a gas-generator, the regenerator M, having a series of check-walls projecting alternately from opposite side walls, one or more of such check-walls being made hollow and open at the inner end to form oil-vaporizers, and the connecting oil-supply pipes *n*, as and for the purpose set forth.

5. In a gas apparatus, the fuel and generating chamber *a*, having one or more self-feeders, *h h'*, and one or more blast-pipes connecting with it at the top, in combination with the hollow perforated grate-bars and connecting blast-pipe, the ash-pit or combustion-chamber *k*, and the connected regenerator M, with its check-walls *m m*, as and for the purpose set forth.

6. In a gas apparatus, the generator *a* and superheater or regenerator M, in combination with the steam-generator L, connected to the exit end of the regenerator, the auxiliary fire-pot or furnace L^2, connected with the tubes of the boiler, and the cut-off dampers L^4 L^5, arranged as described, and for the purpose set forth.

7. In a gas apparatus, the combination of generator *a*, regenerator M, boiler L, air-heater P, a flue having a cut-off damper connecting the regenerator with the boiler, and a gas take-off pipe having a valve connecting the regenerator with air-heater, as and for the purpose described.

8. A down-blast gas-generator having an air-blast pipe connecting with its top, in combination with a regenerator for fixing gas or superheating steam, provided with check-walls extending alternately from opposite side walls of the chamber, so as to form a tortuous passage.

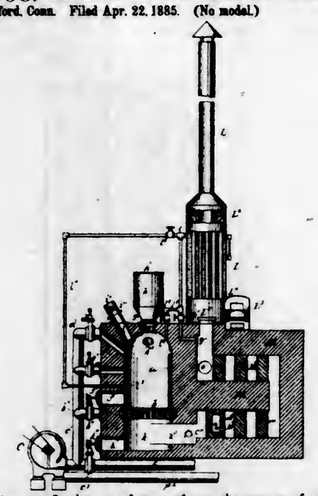
9. A down-blast gas-generator having an air-blast pipe connecting with its top, in combination with a regenerator for fixing gas or superheating steam, connected with its bottom, and provided with check-walls, as described, and a steam-supply pipe, for the purpose described.

10. The fuel and generating chamber having a fuel-supply opening and a blast-pipe connecting with its top, in combination with the hollow perforated grate-bars and connecting blast-pipe and a connecting regenerator, for the purpose described.

11. A fuel and generating chamber having one or more self fuel-feeders, one or more air-blast pipes and a gas-exit pipe connecting with its top, and a steam-supply pipe connecting with its bottom, for the purpose described.

12. A fuel and generating chamber having a self fuel-feeder, a blast-pipe, and a gas-exit pipe connecting with its top, in combination with a regenerator connecting with its bottom, and having a steam-supply pipe, for the purpose described.

338,990. PROCESS OF MANUFACTURING GAS. BURDETT LOOMIS, Hartford, Conn. Filed Apr. 22, 1885. (No model.)



Claim.—1. In the manufacture of gas, the process of coking bituminous coal and heating such coked coal to incandescence for decomposing steam, which consists in passing the air-blast or draft down through the ignited fuel and periodically charging fresh bituminous coal on top of the fuel-body, whereby the ashes and dust are blown down into the ash-pit, leaving the body of the coal porous for the passage of steam and preventing the formation of choker, and whereby the formation of a tarry coating on top of the fuel is prevented and improved results secured.

2. The process of manufacturing gas, which consists in coking bituminous coal and suitably heating such coked coal by passing the air-blast or draft down through it for keeping it clear of ash and clinker, adding fresh bituminous coal as required, and decomposing steam by passing it through the heated fuel and distilling coal, whereby a mixture of water-gas and carbureted hydrogen is produced.

3. The process of making illuminating-gas by forcing air downward into and through fuel thereby better coking it and heating it to the decomposing temperature for steam, causing combustion of the resulting gaseous products in the ash-pit and conducting the hot products through the regenerator and boiler for heating them, then decomposing steam by passing it downward through the fuel and conducting the resulting water-gas through the ash-pit into the regenerator or fixing-chamber, there adding hydrocarbon liquid or vapor and then fixing the gas by passing it in contact with the heated refractory material.

338,991. APPARATUS FOR MANUFACTURING GAS. BURDETT LOOMIS, Hartford, Conn. Filed May 12, 1885. (No model.)

Claim.—1. The combination of a fuel and steam decomposing chamber with two superheating-chambers, both of which connect directly by passages through the same division-wall with the fuel-chamber, as described, whereby both may be heated up at the same time.

2. The fuel-chamber having a grating in its front wall and a grating in the opposite side wall, in combination with two superheating-chambers connected directly with the fuel-chamber through the perforated side wall.

3. The fuel-chamber having a cellular or perforated front wall, an air-chamber outside thereof, and a connecting air-blast pipe and a perforated rear wall, in combination with the two superheating-chambers, both connecting with the fuel-chamber through the perforated rear wall.

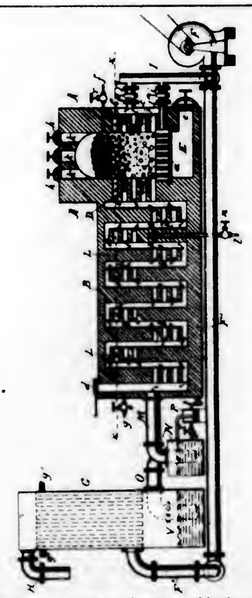
4. The combination of a fuel and decomposing chamber with a superheating-chamber constructed with vertical check-walls extending alternately from the top and bottom of the chamber to near the opposite side, forming a tortuous passage extending up and down through the chamber.

5. The superheating-chamber of a gas-generator, having a filling of perforated vertical check-walls extending alternately from opposite sides of the chamber, so as to form a tortuous channel, for the purpose described.

6. In combination with a gas-generator having two gas-outlet pipes, the connected seal-box down into which the gas-pipes project, said box having two chambers and water supply and discharge pipes arranged to flush or draw off water from either box for sealing or unsealing either connecting gas-pipe at will, for the purpose described.

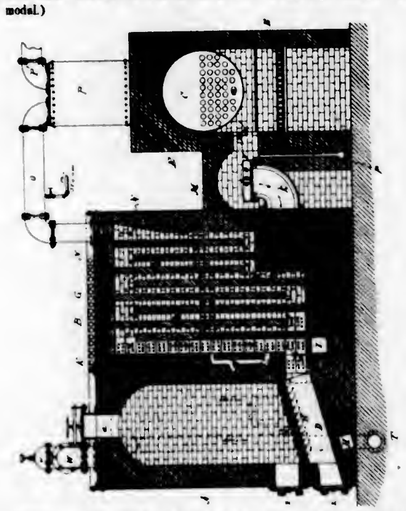
7. The combination of a generating-chamber, two superheating-chambers connecting therewith, a seal-box having two chambers, two

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gas-pipes connecting the superheating-chambers with the chambers of the seal-box, and water supply and discharge pipes arranged to flush or draw off water from either box for sealing or unsealing either connecting gas-pipe at will, for the purpose described.

338,992. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. BURDETT LOOMIS, Hartford, Conn. Filed Sept. 5, 1885. (No model.)



Claim.—1. The process of manufacturing heating-gas which consists in heating two bodies of fuel by downward blasts of air, heating two superheating and fixing chambers by burning the resulting gaseous products, then superheating steam by passing it through one of the superheating-chambers, decomposing it by passing it through one body of heated fuel, then passing the resulting gases through the other body of heated fuel for converting the carbonic acid into carbonic oxide.

2. The process of manufacturing gas which consists in heating two bodies of fuel by downward blasts of air, heating two superheating and fixing chambers by burning the resulting gaseous products, then superheating steam by passing it through one of the superheating-chambers, decomposing it by passing it through one body of heated fuel, then passing the resulting gases through the other body of heated fuel for converting the carbonic acid into carbonic oxide, then carbureting the water-gas and fixing it by passing it through the heated fixing-chamber.

3. The process of generating gas which consists in passing superheated steam up through a body of incandescent fuel for decomposing it, then admitting crude oil, tar, or liquid asphaltum into the resulting hot gas and passing it down through a second body of heated fuel for converting such oil, tar, or asphaltum into gas, then carbureting the gas, if required, and fixing it by passing it through the heated fixing-chamber.

4. The two generating-chambers connected at the top, in combination with the two superheating and fixing chambers connecting with the bases of the generating-chambers, as and for the purpose described.

5. In combination with the fuel and generating chamber of a gas apparatus having an air-blast pipe connecting with its top, the connected air-flues below the ash-pit for heating the air, as described.

6. In combination with the generating-chamber of a gas apparatus having an outlet-passage for gases leading from the ash-pit, the system of air-heating flues arranged below the ash-pit, and the connecting blast-pipe, substantially as described.

7. In combination with the superheating and fixing chamber, the air-flues arranged in its walls and opening into different portions of such chamber by suitable perforations, for causing a better distribution of air and causing more uniform and complete combustion of gaseous products for heating such chamber.

8. The combination of the generating-chamber, the superheating and fixing chamber, the air-heating flues arranged below the ash-pit, and the connected perforated flues opening into different portions of the superheating and fixing chamber.

9. In combination with the superheating and fixing chamber having flues and partitions, as described, the elongated oil-vaporizing chamber located in the wall near the gas-inlet to the superheating-chamber, and opening at both ends into such chamber, for the purpose described.

10. The combination of the oil-vaporizing chamber, the superheating and fixing chamber, and the oil-heating coil placed on top of the superheating and fixing chamber.

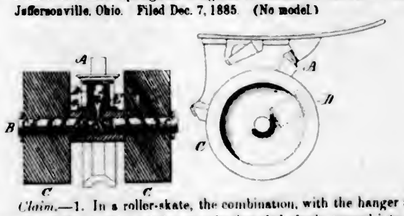
11. The superheating and fixing chamber having a compartment heated by the combustion of gaseous products, and an escape-pipe for products of combustion leading therefrom, and a second compartment heated by the fixed gas, and gas-eduction pipe leading therefrom, for the purpose described.

12. The combination of the superheating and fixing chamber, valve-chamber M, pipe *k*, leading from the former to the latter, a slide-valve in chamber M for closing the pipe, and the connected steam-boiler furnace.

13. The combination of two generating-chambers, two superheating and fixing chambers, a chamber, M, two pipes for products of combustion, opening into chamber M and having valves, and the connected steam-boiler furnace, for the purpose described.

14. In combination with pipe *k*, conducting gaseous products from the superheating and fixing chamber, the air-supply pipe *p*, opening near pipe *k*, and the connected steam-boiler furnace, for the purpose described.

338,993. ROLLER-SKATE. JOHN F. MAINS, Jeffersonville, and BOLIVAR C. CONVERSE, Springfield, assignors of one-half to Charles W. Gray, Jeffersonville, Ohio. Filed Dec. 7, 1885. (No model.)



Claim.—1. In a roller-skate, the combination, with the hanger and the axle, of the double-ended reversely-threaded nipple tapped into the bearing, and the closed reservoir D, having an internal oil-chamber and screwed upon the outer end of the nipple, substantially as set forth.

2. In a roller-skate, the combination, with the hanger and the rollers, of the horizontal axle, spirally grooved in one direction only from the middle toward the journal of one roller, and spirally grooved in the same direction only from the middle toward the other roller, the grooves terminating within the rollers, and a closed oil-reservoir communicating with the middle of said axle, and adapted, by reason of atmospheric pressure, to deliver but a limited quantity of oil to said grooves, whereby each roller may receive continually a limited supply of fresh oil, substantially as set forth.

338,994. PNEUMATIC ACOUSTIC TELEPHONE. JAMES A. MALONEY, Washington, D. C., assignor of one-half to Henry D. Cooke, same place. Filed July 2, 1885. (No model.)

Claim.—1. In a pneumatic telephone, means for transmitting and reproducing articulate or other sounds, consisting of an interchangeable transmitter and receiver provided with a free or unobstructed diaphragm

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fixed at one point only, and operating in either direction by the impact of sound-waves, substantially as described.

2. Means for transmitting and reproducing articulate or other sounds, consisting of a tube containing free air, in combination with a free unobstructed diaphragm fixed at one point in its circumference only, and adapted to either transmit or receive said sounds, substantially as described.

3. Means for transmitting and reproducing articulate or other sounds, consisting of an interchangeable transmitter and receiver provided with a fixed perforated diaphragm, and a free vibrating diaphragm fixed at one point only, substantially as described.

4. In a pneumatic telephone, means for transmitting and reproducing articulate or other sounds, consisting of a resonating-chamber, and a free unobstructed diaphragm fixed at one point in its circumference only, and operating in either direction by impact of sound-waves, substantially as described.

5. Means for transmitting and reproducing articulate or other sounds, consisting of a free unobstructed diaphragm fixed at one point only, in combination with two resonating-chambers, substantially as described.

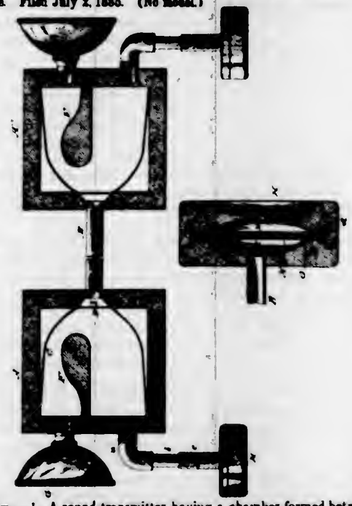
6. Means for transmitting and reproducing articulate or other sounds, consisting of a fixed perforated diaphragm and a free vibrating diaphragm fixed at one point only, in combination with a resonating-chamber, substantially as described.

7. Means for transmitting and reproducing articulate or other sounds, consisting of a fixed perforated diaphragm and a free vibrating diaphragm fixed at one point only, interposed between two resonating-chambers, substantially as described.

8. The combination of a tube or sound conveyer containing free air with two interchangeable transmitters and receivers, each provided with a free diaphragm fixed at one point only, and operating in both directions by impact of sound-waves, substantially as described.

9. An interchangeable transmitter and receiver composed of two sections, one of which is provided with an aperture and an annular shoulder, in combination with a fixed perforated diaphragm and a free vibrating diaphragm fixed at one point only, substantially as described.

338,995. PNEUMATIC ACOUSTIC TELEPHONE. JAMES A. MALONEY, Washington, D. C., assignor of one-half to Henry D. Cooke, same place. Filed July 2, 1885. (No model.)



Claim.—1. A sound-transmitter having a chamber formed between its walls and provided with a partition dividing the chamber throughout a portion of its length into two channels, one of which transmits and the other conducts articulate or other sounds to a receiver, substantially as described.

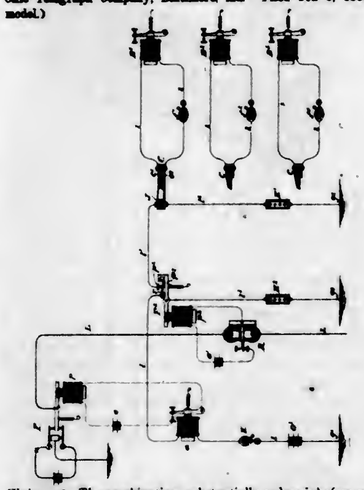
2. A sound-transmitter provided with a partition attached to one side of the case, projecting part way across the chamber and forming separate channels leading to a mouth-piece and a receiver, substantially as described.

3. A sound-transmitter provided with a partition having a curved deflecting-surface formed on one side and a plain surface on the opposite side, substantially as described.

4. A sound-transmitter having a chamber provided with curved walls and a deflecting partition, substantially as described.

5. A sound-transmitter provided with a partition projecting into the chamber and forming separate channels communicating with a sound-conveying tube, in combination with a mouth-piece and a receiver attached to the transmitter, substantially as described.

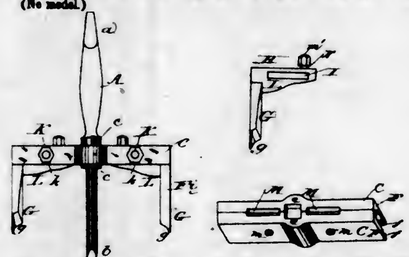
338,996. BRANCH CIRCUIT FOR QUADRUPLEX TELEGRAPHS. WILLIAM MAVER, Jr., Jersey City, N. J., assignor to the Baltimore and Ohio Telegraph Company, Baltimore, Md. Filed Oct. 9, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a relay, a transmitter controlled thereby, a battery the circuit-connections of which are controlled by the movements of said transmitter, an artificial resistance included in the said circuit, a series of relays and means for including the same in said circuit between the transmitter and the earth.

2. The combination, substantially as hereinbefore set forth, with the main line of a telegraph system and a relay included therein, of a series of relays for controlling branch circuits, a battery, a continuously-preserving transmitter for controlling the connections of said battery, an artificial resistance through which the circuit of said battery is completed, and means for inserting more or less of said series of relays in the circuit of said battery.

338,997. EXPANSIBLE AUGER. PATRICK MCCAULEY, Braddock, Pa., assignor of one-half to B. P. McKenna, same place. Filed Nov. 4, 1885. (No model.)



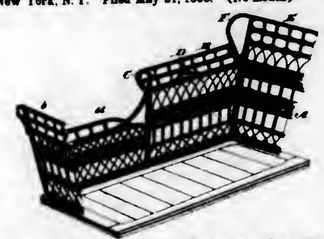
Claim.—1. In an auger, the combination, with bit A and cross-arms C C, embracing said bit and formed with the flanges F *f*, of the vertical blades G G, having the lateral shanks H H, longitudinally slotted at I, and adapted to fit between said cross-arms, and the screws K K, passing through holes in said cross-arms and the slots in the lateral shanks, and serving to secure the cross-arms together and permitting adjustment of the cutting-blades toward and from said bit, substantially as described.

2. The combination, with the bit A and the cross-arms C C embracing the same, with the blade G, having the shank H, and the blade

L on the lower edge of said shank, of the screw K, passing through said cross-arms and securing them together and the blade in position, substantially as described.

3. In an expansible sager, the combination, with a bit, A, cross-pieces C C, embracing said bit and formed with flanges F F on their upper edges, of the cutting-blades G, having slotted lateral shanks, and pins N on said shanks passing through slots M, formed in the flanges F F, and serving to steady the blades in the cross-arms, and the screws K K, passing through said cross-arms and the slotted shanks, substantially as described.

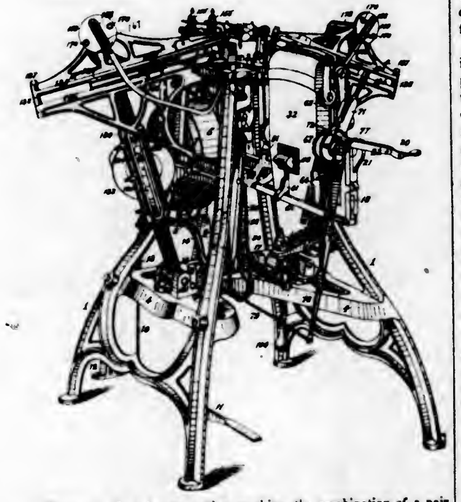
338,998. CHILD'S CARRIAGE. URIAH MCCLINCHIE and JAY F. BUTLER, New York, N. Y. Filed May 21, 1885. (No model.)



Claim.—1. In a child's carriage, the combination, with the carriage-body sides and a carriage-back extended above said sides, of outward and upward inclined wings on each side of said carriage-body, said wings being adapted to serve as wheel-fenders, arm-rests, and guards, and intermediate braces for connecting the carriage-back to the rear ends of said wings, substantially as described.

2. In a child's carriage, the combination, with the body A, having a back, E, extended above the carriage-sides, of the outward and upward inclined wings B, adapted to serve as combined arm-rests, wheel-fenders, and guards, and the loops C and F, whereby said wings are braced, substantially as described.

338,999. BROOM-SEWING MACHINE. GEORGE F. MCCOMBS, Allegheny, assignor to the Hand Stitch Broom Sewing Machine Company, (Limited,) Pittsburg, Pa. Filed Sept. 13, 1884. (No model.)



Claim.—1. In a broom-sewing machine, the combination of a pair of hinged main or outer vise-jaws, a pair of auxiliary jaws located between said main jaws and adapted to be clamped upon a broom by the closing thereof, and a lever pivoted to one of said main jaws and supporting the auxiliary jaws, these members being combined for joint operation to admit of the lowering of the auxiliary jaws coincidently with the slackening of the main jaws by the prior movement of the supporting-lever, substantially as set forth.

2. In a broom-sewing machine, the combination of a pair of hinged main or outer vise-jaws, a pair of auxiliary jaws located between said main jaws, a lever pivoted to one of said main jaws and supporting the auxiliary jaws, and an adjustable lever-rack or series of catches fixed upon the main jaw, which carries the supporting-lever, and adapted to retain said lever in different vertical planes, substantially as set forth.

3. In a broom-sewing machine, the combination of a vise-jaw, a lever pivoted to one end thereof, and an adjustable lever-rack composed of a series of plates secured one above the other to the opposite end of the jaw, said plates being provided with lateral teeth or projections, and (except the one nearest the jaw) having longitudinal slots for the passage of the bolts by which they are connected to the jaw, substantially as set forth.

4. In a broom-sewing machine, the combination of a pair of vise-jaws and a pair of shelf-hinge plates connected adjustably to lugs or flanges on the jaws, said plates being recessed on their adjacent faces to serve as bearings for a pair of hinge pins or trunnions, upon which the vise-jaws are pivoted one to the other, substantially as set forth.

5. In a broom-sewing machine, the combination of a pair of vise-jaws having hinge-plates provided with sockets or bearings on their lower ends, a broom-guide or funnel-piece located between said jaws and having trunnions fitting the bearings thereof, and a vise-supporting carriage upon which said funnel-piece is pivoted in a plane perpendicular to the axis of the trunnions, substantially as set forth.

6. In a broom-sewing machine, the combination of a pair of vise-jaws having hinge sockets or bearings on their lower ends, a broom-guide or funnel-piece located between said jaws and having trunnions fitting the bearings thereof, a guide piece or tongue projecting from one side of the funnel-piece and fitting a vertical slot or mortise on one of the vise-jaws, a pivot-socket formed on the opposite side of the funnel-piece and projecting through an opening in the adjacent vise-jaw, a supporting-carriage having a pivot fitting in said socket, a guide-bolt passing through a segmental slot on the carriage concentric with said pivot and through an opening in the adjacent vise-jaw and secured to the funnel-piece, and a segmental gear secured to the funnel-piece concentric with said pivot and slot, substantially as set forth.

7. In a broom-sewing machine, the combination of a vise-supporting carriage fitted to slide on ways or guides, a broom-clamping vise the jaws of which are hinged together in a plane parallel with the plane of traverse of said carriage and which is pivoted to the carriage in a plane perpendicular thereto, a pair of centering-bars bearing against the jaws of the vise near their free ends, a pair of centering-wedges bearing against fixed abutments and against said centering-bars, and a rock-shaft adapted to be vibrated in its bearings by the supporting-carriage and having arms coupled to the rods which carry the centering-wedges, these members being combined for joint operation to effect the clamping of the vise-jaws with uniform pressure and at equal distances from a central plane upon brooms of different thicknesses, substantially as set forth.

8. In a broom-sewing machine, the combination of a vise-supporting carriage fitted to slide on ways or guides, a rock-shaft adapted to be vibrated in its bearings by said carriage in the traverse thereof and to actuate mechanism, substantially as described, for clamping the jaws of the vise uniformly and at equal distances from a central plane upon a broom within the same, gearing by which intermittent movement is imparted from a feed-shaft to the vise about its pivot on the carriage, a pawl mounted freely on the feed-shaft and engaging a ratchet-wheel thereon, and a cam fitting on said feed-shaft and adjusted in position thereon by the movement of the rock-shaft, said cam being adapted to vary the period of engagement of the pawl and ratchet and thereby to vary the length of the feeding movements of the vise in accordance with the thickness of the broom which is operated on, substantially as set forth.

9. In a broom-sewing machine, the combination of a vise-supporting carriage and a broom-holding vise pivoted thereto, a pair of horizontal guides or ways, a pair of wedge-blocks interposed between the faces of said guides and the carriage, one of said wedge-blocks having an inclined series of end teeth and being coupled to the carriage by a connection admitting of independent longitudinal movement of the carriage relatively to the wedge-block, an equalizing-lever pivoted at its center to the carriage and coupled at its ends to the wedge-blocks, a rock-shaft adapted to be vibrated in its bearings by the carriage in the traverse thereof, and a pivoted segment coupled to and adjusted in position by the rock-shaft, said segment having a series of teeth adapted to set as abutments to the end teeth of the wedge-block and arrest the longitudinal movement thereof upon its guide, substantially as set forth.

10. In a broom-sewing machine, the combination of a vise-supporting carriage fitted to slide on ways or guides, a broom-holding vise pivoted to said carriage, a rock-shaft mounted in bearings transversely to the line of traverse of the carriage, mechanism, substantially as described, actuated by said rock-shaft for clamping the vise-jaws upon a broom with uniform pressure and at equal distances from a central plane, and a lever mounted loosely on said rock-shaft and held by frictional contact to an arm or post thereon, said lever being adapted to be moved about the axial line of the rock-shaft by an arm on the carriage in the traverse thereof, substantially as set forth.

11. In a broom-sewing machine, the combination of a vise-supporting carriage fitted to slide on ways or guides, a broom-holding vise pivoted to said carriage, a link coupling said carriage to a hand-lever pivoted to the frame of the machine, a stop fixed to the frame and adapted to abut against a stop on the vise adjacent to its top, and a chain or cord connected to the lower end of the vise and to the frame, substantially as set forth.

12. In a broom-sewing machine, the combination of a pair of hinged vise-jaws, clamping-chains secured to one of said jaws and passing around pulleys on the jaws to winding-drums on a shaft mounted in bearings on the jaw to which they are secured, a clamping-lever mounted loosely on said shaft and carrying a pivoted driving-pawl engaging the teeth of a ratchet-wheel fixed thereon, and a detent-pawl pivoted on a fixed stud and engaging the teeth of the ratchet-wheel, said pawl having a projecting tail-piece adapted to be moved outwardly when pressed upon by the clamping-lever and thereby release the detent-pawl from the ratchet-lever for relaxing the vise-jaws, substantially as set forth.

13. In a broom-sewing machine, the combination of a needle-race composed of an upper guide-bar having a longitudinal V-shaped tenon or projection on its lower side, a lower guide-bar having a corresponding V-shaped recess on its upper side, end-connecting bolts and distance-pieces, and a needle block or carrier having a recess on its upper side and a tenon on its lower side corresponding, respectively, in transverse section with the tenon and recess of the guide-bars, substantially as set forth.

14. In a broom-sewing machine, the combination of a needle-box having a lateral pivot, a needle block or carrier having a socket fitting said pivot, and bolts passing through slots in the carrier and engaging the needle-block, substantially as set forth.

15. In a broom-sewing machine, the combination of two guide-rods, each carrying a threading-rod, said threading-rods being provided, respectively, with a threading-ring and a threading-loop, and said guide-rods being connected with the capacity of a limited range of independent longitudinal movement, a guide-block pivoted to a fixed standard and fitting freely around the guide-rod of the rod carrying the threading-ring, a divided clamp fitting around the guide-rod of the rod carrying the threading-loop in a recess in the guide-block, a bow or U-shaped spring having its arms adjacent to the outer sides of said clamp, and set-screws bearing on the clamp and engaging the arms of said spring, substantially as set forth.

16. In a broom-sewing machine, the combination of a threading-rod having a loop-head fixed upon its end, a threading-loop fitting between said head and a detachable jaw, and a clamping-screw connecting the head and jaw, substantially as set forth.

17. In a broom-sewing machine, the combination of an unthreading-arm, a plate having a socket in which said arm is fitted and secured, a disk fixed upon an operating rock-shaft, slots formed in the socket-plate and curved concentrically with the axis of the rock-shaft, and bolts passing through said slots and connecting the disk and socket-plate, substantially as set forth.

18. In a broom-sewing machine, the combination of a needle-operating arm adapted to be vibrated about an end bearing, a rock-shaft and an unthreading-arm secured thereto, a grooved cam-arm fixed upon said rock-shaft, and a roller journaled upon the needle-operating arm and fitting in the groove of said cam-arm, substantially as set forth.

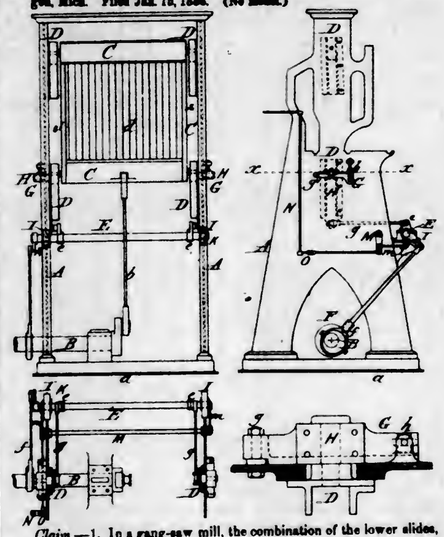
19. In a broom-sewing machine, the combination of a vise-supporting carriage, a broom-holding vise pivoted thereto, a worm-segment fixed upon the vise concentric with its pivot, a shaft carrying a worm adapted to engage said segment, a bearing journaled upon a shaft or pivot at right angles to said worm-shaft and supporting the end thereof farthest from the worm, a bearing connected to a vertical weighted rod and supporting the opposite end of the worm-shaft, and a lever pivoted to the frame of the machine and coupled to said weighted rod, substantially as set forth.

20. In a broom-sewing machine, the combination of a worm-shaft and a worm fixed thereto, a bearing journaled upon a shaft or pivot at right angles to said worm-shaft and supporting the end thereof farthest from the worm, a bearing provided with a lateral pivot and supporting the opposite end of the worm-shaft, a socket fitting said pivot and secured upon a vertical weighted rod, and a lever pivoted to the frame of the machine and coupled to said weighted rod, substantially as set forth.

21. In a broom-sewing machine, the combination of a reciprocating vise-supporting carriage, a broom-clamping vise pivoted thereto, a pair of centering-bars fitted to slide in guides perpendicularly to the plane of traverse of the carriage and vise and to bear against the outer sides of the vise-jaws, springs bearing against fixed abutments and against said centering-bars and tending to move the centering-bars out of contact with the vise-jaws, centering-wedges bearing against fixed abutments and against said centering-bars and tending to press the centering-bars against the vise, and a rock-shaft adapted to be vibrated by the carriage in its traverse and carrying arms coupled to rods which are secured to the centering-wedges, substantially as set forth.

22. In a broom-sewing machine, the combination of a feed-shaft, a segmental gear fixed upon a sleeve or carrier mounted loosely thereon, a feed-pawl pivoted to said carrier, a bell-crank lever adapted to be vibrated by a cam on a driving-shaft and carrying a segmental gear meshing with the gear of the feed-pawl carrier, a ratchet-wheel fixed upon the feed-shaft and adapted to be engaged by the feed-pawl, a cam mounted loosely on the feed-shaft adjacent to the ratchet-wheel in position to be overhung by the toe of the feed-pawl, the periphery of said cam being partly of greater radius than the feed-pawl and partly of less radius than the distance from the center of the feed-shaft to the bottom of the teeth of the ratchet-wheel, a segmental gear connected to the hub of said cam, and an internally-toothed segment formed upon an arm fixed to an adjusting rock-shaft, said segment engaging the teeth of the segmental gear and acting to vary the axial position of the cam relatively to the initial position of the feed-pawl, substantially as set forth.

339,000. RECIPROCATING-SAW MILL. HENRY MCEVILLA, Muskegon, Mich. Filed Jan. 15, 1886. (No model.)



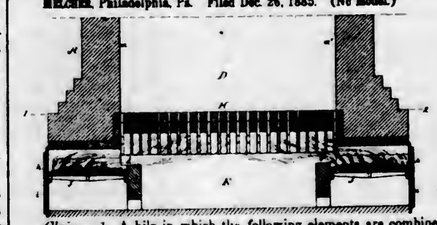
Claim.—1. In a gang-saw mill, the combination of the lower slides, D D, arranged to oscillate on pins whose centers are below the centers of the pins on the lower girder of the gate when the latter is at the upper limit of its stroke, the rock-shaft E, connecting with slides by rods *g*, and having levers L, and the lever M, connecting with the said levers L, and also with the rod N, substantially as and for the purposes specified and shown.

2. The combination of the movable lower slides, D D, the rock-shaft E, eccentric boxes K K, which oscillate in the bearings I I, the rods *g*, connecting the slides with the rock-shaft, the levers L, fastened to the eccentric boxes, and the shaft M, having short levers on each end which connect by links with levers L, and by levers with rod N, all arranged and operating substantially as shown and described.

3. The combination of the gate carrying the saws, the rock-shaft E, levers *g*, the levers L on each extremity of the rock-shaft, shaft M, connecting with rock-shaft by links *m*, and to rod N by levers, the crank-shaft B, and pitman *b*, all arranged substantially as shown, and for the purposes set forth.

4. The combination, with the lower slides and the rock-shaft carried by the eccentric boxes, of the shaft M, provided on each end with short levers which connect by links *m* with the levers L on the eccentric boxes, and by levers with the rod N, all arranged and operating to adjust the rake of the saws in proportion to the feed, as shown and set forth.

339,001. KILN FOR BRICKS, LIME, POTTERY, &c. WILLIAM H MELCHER, Philadelphia, Pa. Filed Dec. 26, 1885. (No model.)



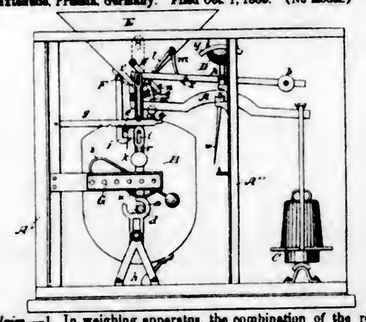
Claim.—1. A kiln in which the following elements are combined, namely: first, a chamber for containing the bricks or other articles to be burned; second, a combustion-chamber beneath the said burning-cham-

ber; third, fire-places communicating with said combustion-chamber; and, fourth, a floor for supporting the articles to be burned, said floor having openings graduated in area in accordance with their relation to the fire-places, all substantially as described.

2. A kiln in which the following elements are combined, namely: first, a chamber for containing the bricks or other articles to be burned; second, a combustion-chamber beneath the said burning-chamber; third, furnaces G, communicating with the combustion-chamber; and, fourth, a floor composed of arches separated by spaces which vary in area in accordance with their relation to the fire-places, all substantially as specified.

3. In a kiln, the combination of the end walls, *b b'*, portions of which are below the level of the ground, the combustion-chamber F, the burning-chamber D, the arched floor H, for supporting the bricks or other articles to be burned, and abutments *d'*, built in the end walls, *b b'*, and having the same or substantially the same radius as the end arches, all substantially as and for the purpose described.

339,002. GRAIN-WEIGHING APPARATUS. FRIEDRICH C. M. MEYER, Bartelsdo, Prussia, Germany. Filed Oct. 1, 1885. (No model.)



Claim.—1. In weighing apparatus, the combination of the receptacle B and the projection *q* with the flaps *n* and *o*, the arms *n'* and *o'*, and the weight n^2, substantially as and for the purpose specified.

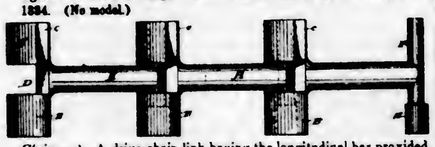
2. In weighing apparatus, the combination of the supports *a*, the slide-piece *r*, provided with slits *i* and *i'*, the beam *p*, and the pin *s*, with the bell-crank *l m*, projection o^2, arms *o'*, and flap *o*, substantially as set forth.

3. In weighing apparatus, the combination of the lever *g* and the hook *f* with the pivoted receptacle B, the hook *e*, the scale-beam A, and the scale-pan C, substantially as and for the purpose specified.

4. In weighing apparatus, the combination of the toothed pivots *d* of the receptacle B with the toothed parts of the support *a*, substantially as and for the purpose specified.

5. In weighing apparatus, the combination of the slotted plates 1 2 3 and the bolt *t* with the scale-beam A, substantially as and for the purpose specified.

339,003. DRIVE-CHAIN. CHARLES W. MILLER, Columbus, Ohio, assignor of one-half to Joseph Andrew Jeffrey, same place. Filed Sept. 19, 1884. (No model.)



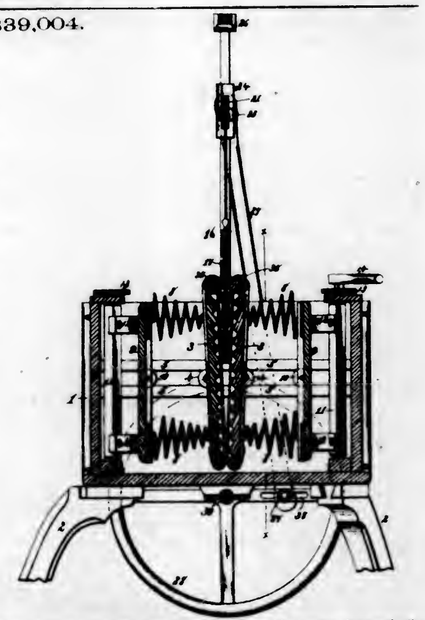
Claim.—1. A drive-chain link having the longitudinal bar provided at one end with a centrally-attached transverse bar, the ends of which are of different diameters, and at its opposite end with an open hook having a throat as wide as the diameter of the smaller end of the transverse bar, and with a closed eye adapted to receive and retain the larger end of the said bar, substantially as set forth.

2. A drive-chain link having the longitudinal bar provided at one end with a centrally-attached transverse bar and at its opposite end with an open hook adapted to receive one end of the transverse bar, and with a closed eye adapted to receive the other end of the transverse bar, a portion of the said bar adjacent to the end of the longitudinal bar being smaller than an adjacent portion of the said bar and of such size as to pass through the throat of the open hook when the links are placed at an angle to each other, substantially as set forth.

339,004. WASHING-MACHINE. JAMES H. MITCHELL, Sewall's Station, W. Va. Filed Sept. 12, 1885. (No model.)

Claim.—1. The combination, in a washing-machine, of a tub or box having its sides provided with interior guideways, a pair of vibratory yielding wash-boards or rubbers each provided at their ends with central

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rollers supported by and movable along the guideways, and a vertically-reciprocating clothes-holder between said wash-boards or rubbers, substantially as described.

2. The combination, in a washing-machine, of a tub or box having its sides provided with interior guideways, a pair of vibratory wash-boards or rubbers each provided at their ends with central rollers supported by and movable along the guideways, an adjustable rest-board arranged behind each wash-board or rubber, springs bearing against the rest-boards and against the rubbers above and below their end roller-supports, and a vertically-reciprocating clothes-holder between the rubbers, substantially as described.

3. The combination, in a washing-machine, of a tub or box, a pair of yielding rubbers therein, a vertically-reciprocating sash-frame between the rubbers having a rack at each side, and a series of slats carried by the sash-frame, the upper slat having spring-pawls at its ends which engage the racks, substantially as described.

4. In a washing-machine, the combination of a tub or box, yielding wash-boards or rubbers centrally supported therein, vertical rest-boards adjustably supported in each end of said box, springs for connecting said wash-boards and rest-boards, vertical shafts journaled in the ends of the box and provided with arms 12 and gears 13, the lever 14, catch 15, and a vertically-reciprocating clothes-holder, substantially as described.

5. In a washing-machine, the combination of a tub or box having flanged ways 5, wash-boards or rubbers 3, centrally supported in said tub or box and having grooved rollers 4, engaged with said flanged ways, the rest-boards 9, having grooved rollers 10, also engaged with the flanged ways, the springs 8, reciprocating clothes-holder 16, means for adjusting the rest-boards 9, and means for actuating the clothes-holder, substantially as described.

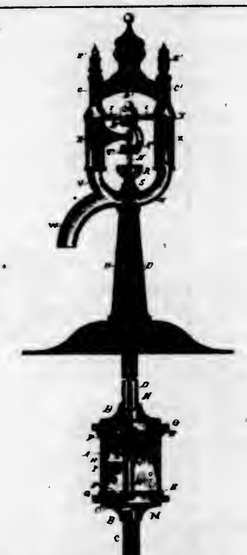
6. In a washing-machine, the combination of the box 1, having vertical guide-rods 25, the cross-bar 21, movable on said rods, the adjustable pitmen 27, fly-wheel 28, gear 29, and actuating mechanism, the reciprocating sash or clothes-holder detachably connected to the bar 21, and the yielding wash-boards 3, centrally mounted in the tub, substantially as described.

339,005. PUMP. ELIJAH NEFF, Rochester, Ind., assignor to Christopher C. Wolf and William H. Green, both of same place. Filed Oct. 5, 1885. (No model.)

Claim.—1. Combined with a vibrating piston consisting of a radial plate on a pump-rod, a cylinder consisting of a barrel, a sector-frame divided into two chambers provided with valves and contained in said barrel, perforated diaphragms at each end of said barrel, and heads connected centrally to the inlet and outlet pipes of the pump, substantially as and for the purpose specified.

2. A pump having a pump-rod with a vibrating movement, a rock-shaft connected by gearing to said rod, bearings for the shaft, consisting of a branched pipe and air-chambers on the same, on top of which cham

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bers the shaft rests, caps resting on said chambers, and lubricator-cups on said caps, substantially as and for the purpose specified.

3. A pump consisting of a cylinder with valved chambers, a central rod having a vibrative movement, a radial plate on said rod, forming a piston, an outlet-pipe surrounding said rod, a branched pipe on top of said outlet, air-chambers on said branched pipe, a rock-shaft resting on said chambers and connected to said rod, and caps with oil-cups surmounting said chambers, substantially as and for the purpose specified.

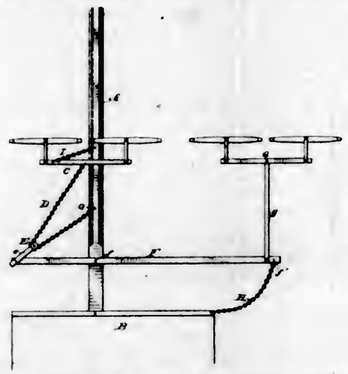
339,006. HOOP-FASTENER. NELSON NEWMAN, Springfield, Ill. Filed Mar. 25, 1885. (No model.)



Claim.—1. As an article of manufacture, a cast-metal hoop-fastener having on its inner face one or more ratchet-shaped teeth with sharp longitudinal edges, substantially as and for the purpose described.

2. As an article of manufacture, the hoop-fastener flat and sharp at one end, at the other end having an outwardly-projecting lug, and provided on its inner face with longitudinally-extending ratchet-shaped teeth, with their inner faces or edges made sharp, substantially as and for the purpose described.

339,007. DRAFT-EQUALIZER. L. T. NICHOLS, Claremont, Minn. Filed Jan. 30, 1886. (No model.)



Claim.—1. In combination with a four-horse evener consisting of the double-tree C, the chain D, running round a pulley on the inner and short end of the lever F, the lever F, straps *g* on its long end, the double-tree G, and the chain H, all as and for the purpose set forth.

2. In an equalizer substantially as set forth, the combination, with the pole or tongue A and the double-tree C, of the chain I, attached near the inside of the double-tree C and to the pole, all substantially as described.

3. In a four-horse evener, the combination of the tongue A, the harvester B, the double-tree C, the chain I, connecting the double-tree C to the pole, the chain D, connecting with the double-tree C and the tongue, the pulley E, bar F, pivoted to the tongue, as described, the double-tree G, connected with the end of the longer arm of F, and the chain H, all as and for the purposes set forth.

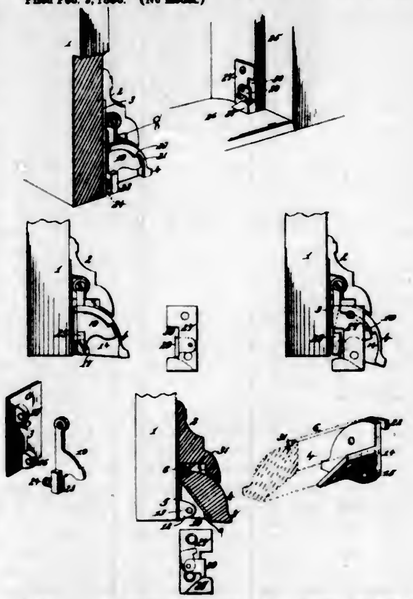
4. In a draft-equalizer, a double-tree connected to the tongue by means of a chain extending nearly to its inside end and allowing the horses to be attached one on each side of the pole and centered on a chain attachment extending to a lever near the inner end of the pole, substantially as described.

339,008. CORD OR ROPE FASTENER. WESSEL NIEDLAY, Jersey City, N. J. Filed May 28, 1885. (No model.)



Claim.—A rope or cord fastener formed of one piece having at one end a ring or hole, a yoke at its other end, and a spar extending upward from one arm of the yoke toward the ring or hole and forming a tapering crotch with the shank of the fastener, substantially as shown and described.

339,009. WEATHER-STRIP. JAMES M. OSBORN, Fall River, Mass. Filed Feb. 9, 1886. (No model.)



Claim.—1. A weather-strip composed of a stationary portion having a rabbeted and flanged lower edge, and provided at or near its ends with lug-carrying plates, a movable portion or strip having a pivotal connection with said lugs and provided at one end with a segmental flanged plate having a catch, and a spring-latch pivoted to the stationary portion or strip and having a lateral leg or projection adapted to come in contact with a striker, whereby the latch and catch are disengaged, substantially as described.

2. A striker for a pivoted weather-strip, composed of a recessed plate having a pivoted button and a laterally-projecting lug provided with a curved or beveled upper surface, substantially as described.

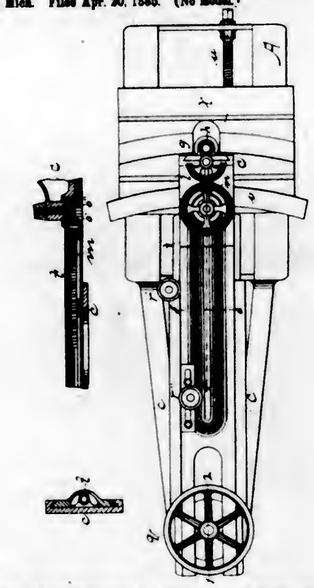
3. The combination, with a door, of a fixed strip secured thereto and provided with a flanged and rabbeted lower edge, a movable strip pivoted beneath and in engagement with the fixed strip, said movable

strip being provided with a catch at one end, a spring-latch pivoted to the fixed strip and adapted to engage said catch, and a striker-plate secured to the door-frame and adapted to actuate the movable strip both in opening and closing the door, substantially as described.

4. The combination, with a door, of the fixed strip 2, having a lower rabbeted edge, the movable strip 4, having a catch-plate secured to one end and pivotally connected to the fixed strip, a spring-latch, 19, pivoted to the fixed strip and having a laterally-projecting lug, 23, and a striker-plate secured to the door-frame and provided with lug 28, pivoted button 29, and recess 30, substantially as described.

5. The combination, with a door, of the fixed strip 2, having a lower rabbeted edge, the hinged or movable strip 4, having at its upper edge a flange, 6, and cushion 31, and provided at one end with a catch, 20, a spring-latch, 19, pivoted to the fixed strip and adapted to engage said catch, and a striker secured to the door-frame for disengaging the latch, substantially as described.

339,010. **LINK-GRINDING MACHINE.** BYRON E. PARKS, Perrysburg, Mich. Filed Apr. 20, 1885. (No model.)



Claim.—The combination, in a machine for finishing work in metal to a true arc of any desired radius, of the center piece, *a*, the cylindrical piece *b*, with the radial arms *c* attached, the sliding arm *f*, and its longitudinal adjusting-screw *m*, with the bevel-gear and pinion *o' o''*, and the vertical shaft and hand-wheel *n*, the head C, provided with the vertically-sliding piece *g*, having the journal-bearings *h' h''*, carrying the grinder-spindle *i*, and the vertically-adjusting screw and hand-wheel *l*, the platen *t*, and screw *u*, for adjusting said platen longitudinally, all substantially as set forth, for the purposes specified.

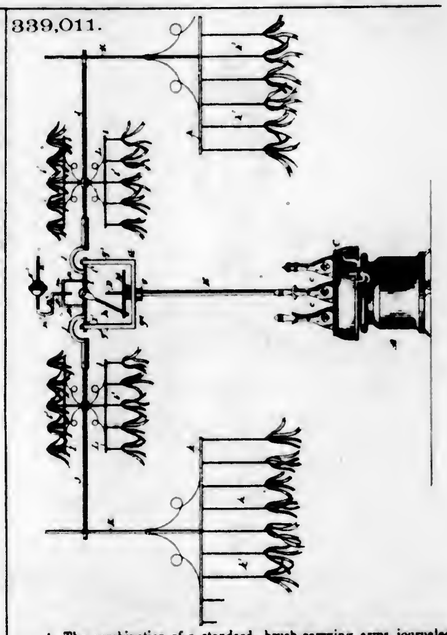
339,011. **AUTOMATIC FAN.** JOHN M. PEAY, Pembroke, Ky., WILLIAM A. PEAY, Milton, Tenn., and J. HAM HELSLEY, Paradise, Ky. Filed Dec. 24, 1885. (No model.)

Claim.—1. The combination of a tubular standard having a base at its lower end and a frame at or near its upper end, a driving mechanism inclosed within the base, horizontal brush-carrying arms journaled on the frame, a driving-shaft arranged within the tubular standard and rotated by the driving mechanism, and a device for transmitting and converting the motion of the driving-shaft to the brush-carrying arms, substantially as described.

2. The combination of a tubular standard having a base, driving mechanism inclosed within the same, a driving-shaft rotated by said mechanism, horizontal brush-carrying arms journaled on the standard, a crank-wheel supported on the driving-shaft, and a rod connecting the crank-wheel and brush-arms, substantially as described.

3. The combination of a standard having a base, the driving mechanism inclosed within the base, a shaft, the horizontal brush-arms journaled on the standard and oscillated by mechanism intermediate of the arms and shaft, a bracket mounted on the arms, and a weighted vertically-adjustable standard supported in the bracket, substantially as described.

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4. The combination of a standard, brush-carrying arms journaled thereon, mechanism for oscillating the arms, a bracket, M, supported on the arms, and a vertically-adjustable standard mounted in the bracket and carrying a laterally-movable balance-weight, substantially as described.

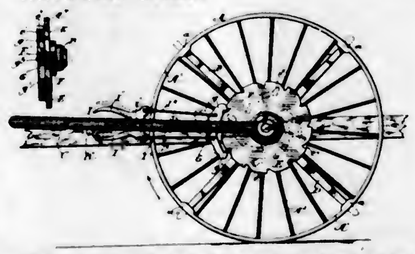
5. The combination of a tubular standard having a base, a driving mechanism inclosed within the base, a driving-shaft carrying a crank-wheel, a frame, G, secured on the standard, the bearings I, supported in the frame, the horizontal brush-carrying arms journaled on the said bearings, and a rod, *h*, connected to the crank-wheel and brush-arms, substantially as described.

6. The combination of the driving-shaft, the oscillating brush-supporting arms connected to the shaft and driven thereby, and a horizontally-adjustable weight over the driving-shaft, substantially as described.

7. The combination of a supporting-standard, a frame mounted thereon, a driving-shaft carrying a crank, the oscillating brush-supporting arms, a crank pin or rod, a vertically-adjustable shaft on the oscillating arms, and a laterally-movable balance-weight on an arm of said adjustable shaft, substantially as described.

8. The combination of a base, a tubular standard, a horizontally-rotating caster-ring mounted on the base, a driving mechanism located in the base, a rotating shaft operated by said mechanism and carrying a crank-wheel, a frame, G, having the journals, the oscillating shafts mounted on the journals and provided with the brushes K L, and a crank-pin connected with the crank-wheel and having bifurcated arms pivoted on the oscillating brush-arms, substantially as described.

339,012. **TRACTION-WHEEL.** HENRY C. REAGAN, Salisbury, Mo. Filed Feb. 4, 1886. (No model.)



Claim.—1. The combination, in a traction-wheel, with the peripheral rim, spokes, and hub, of radial endwise-moving spur-arms supported at their outer ends in the peripheral rim and at their inner ends in radial sockets upon the wheel-hub, and a cam-track disk having involute cam-tracks which coact with lateral lugs projecting from the spur-arms, substantially as and for the purpose specified.

2. In a traction-wheel, the combination, with the wheel hub, spokes, and rim, of spur-arms supported upon said hub and rim to move endwise therein, provided with lugs *d*, projecting laterally from their inner ends, a disk formed with track-ribs arranged eccentrically upon its face, and stops d^2, formed upon the outer extremities of the track-ribs, substantially as and for the purpose described.

3. The combination, in a traction-wheel, of the wheel hub, spokes, and rim, with spur-arms supported thereon, trip-lugs *d*, cam-track disk E, track-ribs e', stops e^2, and a pawl, G, adapted to engage with and be disengaged from the stops e^2, substantially as and for the purpose described.

4. The combination, in a traction-engine, of the frame and axle with a traction-wheel, endwise-moving spur-arms, the cam-track disk engaged with the spur-arms by means of lugs which project laterally from each spur-arm, and a hand-lever fulcrumed upon the axle and provided with a pawl to engage with the cam-track disk, substantially as and for the purpose described.

5. In a traction-engine, the combination, with the hub, rim, and spokes, of endwise-moving spur-arms, a disk formed with track and stop ribs projecting from its face, and with notches e^4 upon its periphery, and a double-hooked pawl, G, supported upon a lever and adapted to engage either with the notches or stop-ribs, substantially as for the purpose described.

6. The combination, with the axle, of a cam-track disk adapted to engage with and actuate spur-arms, provided with projections upon its face and notches upon its periphery, a hand-lever fulcrumed upon the axis of the disk, a double pawl, G, adapted to engage either with the said projections or notches upon the disk, and a spring, H, secured to the hand-lever and pawl, substantially as and for the purpose described.

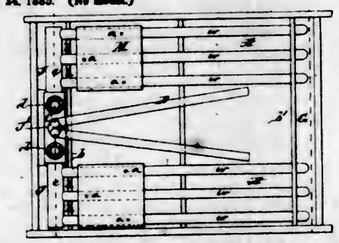
7. The combination, with the ratchet-notched cam-track disk E, of the hand-lever F and pawl G, provided, respectively, with slots f^3 and g^3, and plate-spring H, engaged and supported at its ends within said slots, substantially as and for the purpose described.

8. In a traction-wheel, the combination, with the cam-track disk E, of the hand-lever F, double pawl G, spring H, double thumb-lever I, and rods I^2 I^4, substantially as and for the purpose described.

9. The combination, with the disk E, of the hand-lever F, double pawl G, double thumb-lever I, spring H, and a butt-plate, F', secured upon said hand-lever, to hold the thumb-lever, spring, and pawl thereon, substantially as described.

10. In a traction-wheel, in combination, a wheel, a disk having eccentric cams, with stops e^2 and notched periphery, a hand-lever provided with a double-armed pawl, G, and a thumb-lever, I, connected therewith, for actuating said pawl, and spur-arms provided with lugs *d* and *d'*, substantially as and for the purpose specified.

339,013. **INCUBATOR.** EDWARD S. RENWICK, Millburn, N. J. Filed Jan. 24, 1885. (No model.)



Claim.—1. The combination, substantially as before set forth, of the upright heater, the branch pipes thereof, and the U-formed circulating-pipes, whose upper and lower members are connected, respectively, with the upper and lower branch pipes of the heater.

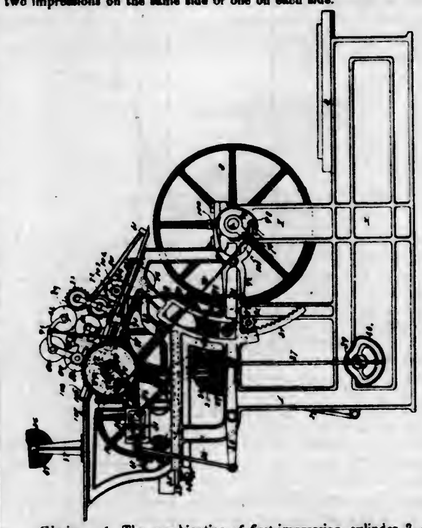
2. The combination, substantially as before set forth, of the incubating-chamber, the egg-trays thereof, the upright heater, the branch pipes of the heater, and the U-formed circulating-pipes, whose upper and lower legs are connected, respectively, with the upper and lower branch pipes of the heater, and are arranged, respectively, in the upper and lower parts of the incubating-chamber above and below the egg-trays therein.

3. The combination, substantially as before set forth, of the incubating-chamber, the ventilating-chimney connected with the lower portion of the said chamber, and the U-formed circulating-pipes having their upright portions arranged in the ventilating-chimney.

4. The combination, substantially as before set forth, of the incubating-chamber, the top thereof provided with a ventilating-opening, and the ventilating-pipe arranged in the upper part of the incubating-chamber, and communicating with the part of the incubator which is horizontally distant from the said ventilating-opening.

339,014. **PRINTING-MACHINE.** JOHN P. REMARK and STEWART SCOTT, St. Louis, Mo. Filed Apr. 9, 1884. (No model.)

Brief.—The parts are adjustable, so that a sheet may receive either two impressions on the same side or one on each side.



Claim.—1. The combination of first-impression cylinder 3, second-impression cylinder 9, type-cylinder 12, and a movable cylinder, 16, the impression-cylinders being separable and the movable cylinder adjustable to and from a position between the impression-cylinders.

2. The combination of the first-impression cylinder 3, second-impression cylinder 9, and heating-roller 26, bearing on the second-impression cylinder.

3. The combination of the first-impression cylinder 3, second-impression cylinder 9, heating-roller 26, type-cylinder 12, and a movable roller, 16.

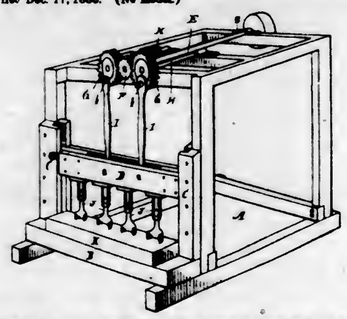
4. The combination of the first-impression cylinder 3, second-impression cylinder 9, heating-roller 26, type-cylinder 12, movable roller 16, and heating-roller 22.

5. The combination of impression-cylinders 3 and 9, reciprocating form-bed 2, form-cylinder 12, and heating-rollers 16 and 22, having grippers 27 28.

6. The combination of type-bed 2, cylinder 3, a movable frame, 42, supporting cylinders 9 and 12, rollers 22 and 26 and the roller 16.

7. The combination of impression-cylinder 3, impression-cylinder 9, type-cylinder 12, having journals 11, frames 31, journal-boxes 30, yokes 32, cams 33, arms 34, and rods 35.

339,015. **PAVING-BLOCK MACHINE.** DONALD G. ROSS, Hatton, Mich. Filed Dec. 17, 1885. (No model.)

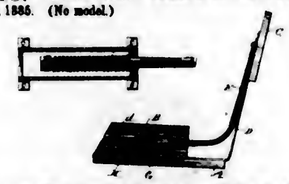


Claim.—1. In a machine for the purpose described, a supporting-frame provided with guides, combined with a vertically-reciprocating cross-head and a series of independent cutters carried by said cross-head, said cutters being formed upon the segments of circles of different radii, substantially as and for the purpose specified.

2. In a machine for the purpose described, the combination, with the frame A, having guides C and bed-plate B, of the shaft E, journaled in bearings in said frame and carrying pinion F, shafts H, also journaled

in said frame—one upon either side of the shaft E—the pinions G, carried by said shafts H and meshing with the pinion F, cross-head D, working in said guides, cutters J, carried thereby, and the pitmen I I, connecting said cross-head with wrist-pins on the pinions G, all substantially as and for the purpose specified.

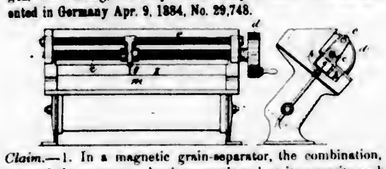
339,016. VEHICLE-SEAT. GEORGE H. SAWYER, Lamoille, Ill. Filed Dec. 2, 1885. (No model.)



Claim.—1. The combination, with a vehicle-seat, of a back connected therewith by spring-bars, and arms, one on each end of the seat, their upper ends connected with the back, their lower ends passed through a barrel secured to the sides of the seat below their upper edge, and coil-springs inclosed within such barrels and surrounding the ends of the arms and held thereon by adjusting-nuts, substantially as set forth.

2. The combination of the seat having sides, a barrel secured to each side below its upper edge, a spiral spring located within each barrel, the back spring-bars connecting the same to the seat, elbow-shaped arms having their upper ends bent at nearly right angles and secured by keepers to the back, one at each end, the lower ends of said arms being passed through the ends of said barrels and within the coil-springs, a packing interposed between the springs and the ends of the barrels, and nuts on the ends of the arms to adjustably confine the springs thereon, substantially as and for the purposes set forth.

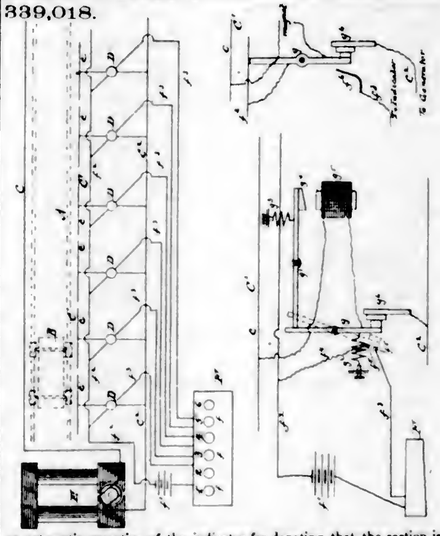
339,017. MAGNETIC SEPARATOR. GOTTLOB SCHAEFFER, Göppingen, Würtemberg, Germany. Filed May 1, 1884. (No model.) Patented in Germany Apr. 9, 1884, No. 29,748.



Claim.—1. In a magnetic grain-separator, the combination, with the frame of the separator having openings *h* at its opposite ends, the magnets *m*, and a non-magnetic conveying surface or covering, *k*, applied over the poles of the magnets on a line with said end openings, *h*, of a reciprocating wiper arranged to transverse over the non-magnetic conveying-surface *k* and sweep the metallic particles adhering thereto into one of the openings *h* at each reciprocation, and reversing devices for automatically reversing the traversing motion of the wiper at each reciprocation, substantially as and for the purposes specified.

2. In a magnetic grain-separator, the combination, with the frame of the separator having openings *h* in its opposite ends, the magnets *m*, the non-magnetic conveying-surface *k*, the guide-rod *e*, the wiper *g*, its stock *a*, and the reversing-dog *b*, arranged in said stock, of the shaft *c*, having right and left handed screw-threads, and means for rotating said shaft, said parts being constructed and operated substantially as described, and for the purposes specified.

339,018. ELECTRIC RAILWAY. WILLIAM M. SCHLEDINGER, Philadelphia, Pa. Filed Nov. 25, 1885. (No model.)



Claim.—1. An electric line-circuit having disconnected or insulated sections of wire or circuit, safety devices with feeding-conductors for said sections, in combination with an indicator-box having an individual call or indicator for each said section, and circuit-connections between the safety devices and indicator-box, substantially as set forth.

2. A line-circuit having safety devices for different points along the same, separate feeding conductor or conductors for the safety devices, in combination with an indicator, and circuit-connections between the indicator and safety devices, substantially as set forth.

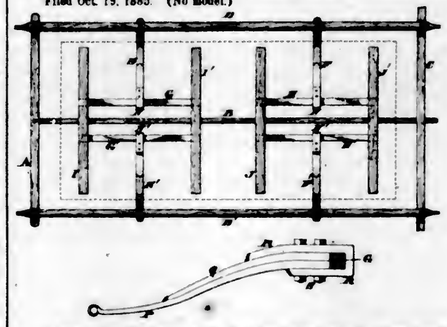
3. An electric railway having a line-circuit, disconnected or insulated sections in said circuit, safety devices with feeding-conductors for said sections, and connection between the safety devices and an indicator-box, substantially as and for the purpose set forth.

4. A line-conductor having a section provided with safety device having a feeding-conductor, which device acts by excess of current to cut said section out of the line-conductor, in combination with an indicator attachment which is operated by the safety device simultaneously with the cutting of the section out of the line-conductor, substantially as set forth.

5. In combination with an insulated section or point of a line-circuit, a safety device having a feeding-conductor, circuit-connections, and an indicator, and operating by excess of current passing through it to simultaneously cut said section out of the line-circuit and produce an automatic operation of the indicator for denoting that the section is cut out of the line of circuit, as set forth.

6. In an electric railway, a line-conductor divided into sections, current safety-devices for said sections, and feeding-conductor for the safety devices, in combination with an indicator box or alarm, and circuit-connection through the safety devices to indicator-box, substantially as and for the purpose set forth.

339,019. VEHICLE-SPRING. DANIEL M. SECHLER, Cincinnati, Ohio. Filed Oct. 19, 1885. (No model.)



Claim.—1. The combination, in a four-wheel vehicle, of two pairs of longitudinal bars or plates, G G' H H', having all their extremities immovably secured to transverse bearers, as I I' J J', the inner ends of transverse yielding arms E E' F F' being firmly attached to said longitudinal bars G G' H H', and the outer ends of the arms E F being fastened to the side bar D adjacent to the longitudinal bars G H, while the outer ends of the other arms, E' F', are connected to the side bar D' adjacent to the longitudinal bars G' H', thereby avoiding the crossing of said arms, as herein described.

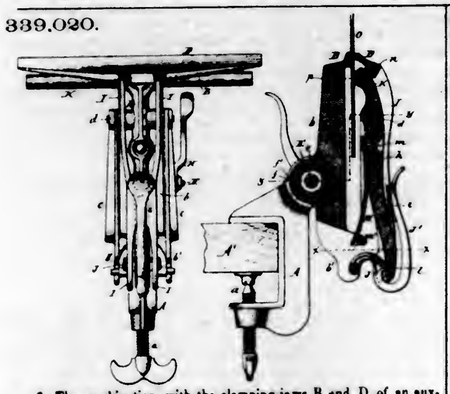
2. A carriage-spring composed of a series of leaves, as Q P, whose fixed ends abut against one side of a bar, G, in combination with an outer leaf, R, surrounding the three other sides of said bar and secured to said leaves Q P, for the purpose described.

339,020. SAW-VISE. ORADIAH SEELY, Syracuse, N. Y., assignor to E. C. Stearns & Co., same place. Filed Jan. 27, 1886. (No model.)

Claim.—1. The combination, with the support A, provided with a spherical socket, G, of a vise provided with a spherical knuckle, F, seated in said socket, a screw-bolt, E, connecting the knuckle of the vise with the socket G, and a screw-nut, H, applied to the bolt E, substantially as set forth.

2. The combination, with the support A, provided with a spherical socket, G, of a vise provided with a separate spherical washer, F, which is attached to the vise and seated in the socket G, a screw-bolt, E, and nut H, substantially as set forth.

339,020.



3. The combination, with the clamping-jaws B and D, of an auxiliary jaw, K, which bears against the clamped article and springs or deflects the same, substantially as set forth.

4. The combination, with the stationary clamping-jaw B, of the pivoted clamping-jaw D, and a pivoted auxiliary jaw, K, adapted to bear against the clamped article below the jaws B and D, substantially as set forth.

5. The combination, with the stationary clamping-jaw B, provided with a depending arm, *b*, having ascending arms *c*, of the clamping-jaw D and the auxiliary jaw K, both pivoted to the arms *c*, substantially as set forth.

6. The combination, with the stationary clamping-jaw B, provided with a depending arm, *b*, of the pivoted clamping-jaw D, provided with arms I, the pivoted auxiliary jaw K, provided with an arm, *k*, and the cam J, which closes the jaw D, and which is provided with a raised portion, *l*, whereby the auxiliary jaw K is closed, substantially as set forth.

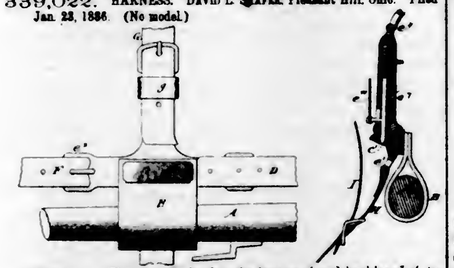
7. The combination, with the stationary clamping-jaw B, provided with a depending arm, *b*, of the pivoted clamping-jaw D, provided with arms I, the pivoted auxiliary jaw K, provided with an arm, *k*, the cam-lever J J', spring M, attached to the jaw K, and a spring, *n*, interposed between the jaws D and K, substantially as set forth.

339,021. DRILL-SHAFT GRAPPLE. WILLIAM SEELY, Port Hope, Mich. Filed Oct. 14, 1885. (No model.)



Claim.—In a drill-rod grapple, the combination of the bail A, having a sleeve, B, provided internally with a double conical taper, stops *g g* within said sleeve, and stop-screws *f f*, projecting inward from the bail-arms, and the spring grapple-yoke D, provided with barbs *d' d²*, and having longitudinal slots *e* for engaging the stop-screws *f*, substantially as described.

339,022. HARNESS. DAVID L. SHAFER, Pleasant Hill, Ohio. Filed Jan. 23, 1886. (No model.)



Claim.—1. The plate E, having the loops *e e'* and buckles *e² e³*, to connect with the breeching holdback-straps, the belly-band, the breast-strap, and the saddle-strap, as shown and described

2. The plate E, having the aperture *e⁴*, in combination with the shaft-loop and trace-plate C, having the side stud, *c*, whereby said plates C E may be connected, as described.

3. The spring-bolt *e*, having the eye-stud *e⁴*, in combination with the plate E, having slot *e⁵*, provided with the socket *e⁶*, and the strap or cord *e'*, as and for the purpose specified.

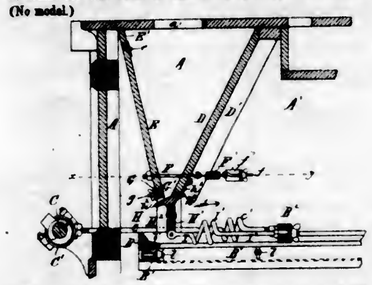
4. The plate C, having a vertical hole, *c'*, in its side stud, *c*, in combination with the spring-bolt *e⁷* on plate E, whereby said plates C E are locked together, as shown and described.

5. The combination, with the belly-band I and plate E, having the loop *e'*, of the strap H, connecting said parts, as and for the purpose set forth.

6. The combination of the plate E, having the spring-bolt *e⁷*, the plate C, having the vertically-perforated stud *c*, and the rest J, as shown and described.

7. The combination, with the plate E, having buckle *e⁸* and rivet *e⁹*, of the keeper *g*, whereby the saddle-strap G may be secured, as described.

339,023. FEEDING DEVICE FOR MIDDLINGS-PURIFIERS. GEO. F. SHERWOOD and CHAS. A. SMITH, Jackson, Mich. Filed Mar. 1, 1884. (No model.)



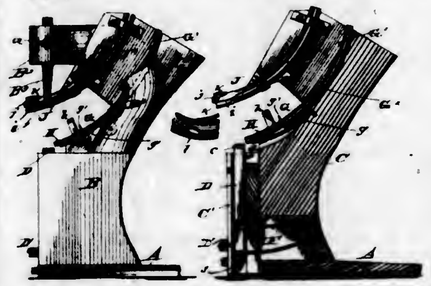
Claim.—1. In a middlings-purifier, the combination of the shaker, the feed-hopper, the vibrating feeder, and pivots arranged eccentrically to the upper curved surface of the feeder and supporting the feeder upon the frame-work of the purifier, substantially as set forth.

2. In a middlings-purifier, the combination of the shaker, the feed-hopper, the vibrating feeder, and the extensible link connecting the feeder with the shaker, substantially as set forth.

3. In a middlings-purifier, the combination of the shaker, a vibrating feeder, the feed-hopper having one side movable, the link F, connected with the movable part of the feed-hopper, the part *f*, connected with the stationary casing of the machine, and the spring F', interposed between parts F *f*.

4. In a middlings-purifier, the combination of the shaker, a vibrating feeder, the feed-hopper having one side movable, the link F, connected with the movable part of the feed-hopper, the bracket *f'*, supported upon the casing of the machine, the screw-threaded part *f*, passing through bracket *f'*, the spring F', interposed between the parts F and *f*, and a thumb-nut mounted upon the screw-threaded end of part *f*, by means of which the tension of spring F' may be regulated.

339,024. BUTTON-ATTACHING MACHINE. WARREN G. SLATER and JEREMIAH LAMOREAUX, Fremont, Mich. Filed Jan. 11, 1886. (No model.)



Claim.—1. In a button-fastening machine, the combination, with the button and fastener feeders constructed as described, of the vertically-movable feeder D, provided with the stop *c*, pin *d*, and notched lower end, and the U-shaped vertically-movable spring provided with the inwardly-turned lips *e e*, the whole adapted to operate as shown and described.

2. In a button-fastening machine, the combination, with the vertically-movable feeder and its gripping-spring, of a spring stop-tongue on the front of and at the upper end of the said feeder, as and for the purpose described.

3. The combination, with the feeder and its gripping-spring actuated as described, of the pin *d*, the fastener-feeder, the spring check-tongue, and the lifting-spring therefor arranged in the path of said spring, substantially as described.

4. In a button-fastening machine, the combination of the fastener-feeder and gripping-lips with the inclined fastener-feeding trough and button-feeding trough and adjustable anvil-rod, substantially as described.

5. The fastener-feeding trough and button-feeding trough, the former provided with the spring-stop *g'* and the latter with the spring-tongue *k* and button-seat *l*, and each having removable filling-sections, in combination with the feeder D and operating mechanism therefor, substantially as described, and for the purpose set forth.

6. In a button-fastening machine, an inclined slotted button-carrier provided with a curved slot, a spring-tongue, and a perforated button-seat at its delivery end, substantially in the manner and for the purposes described.

7. In a button-fastening machine, the combination of the main frame, the button and fastener feeders, spring H, tongue *g'*, feeder D, having the V-shaped notch, pin *d*, and spring-stop *c*, U-shaped lipped spring E, spring F, anvil B², and pitman D', the whole adapted to operate in connection with one another, as shown and described.

339,025. CLASP FOR BOLTING-CLOTHS. GEORGE T. SMITH, Jackson, Mich. Filed Apr. 13, 1883. (No model.)



Claim.—1. A clasp for bolting-cloth provided at its inner end with projecting spurs adapted to be attached to the cloth, and provided at its outer end with an inwardly-turned lip adapted to engage with the vertical face of the reel-head, substantially as set forth.

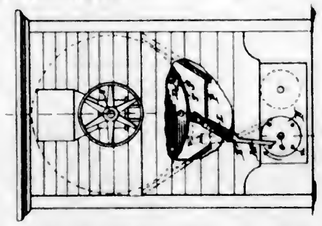
2. The combination, with the reel-frame and the sliding ring, of a bolting-cloth surrounding the frame, and cloth-clasps carried by the bolt-cloth and adapted to detachably unite it with the sliding ring, substantially as set forth.

3. In a flour-bolt, the combination, with the reel-head C, of the bolting-cloth, the clasps, and the tightening-ring provided upon its outer vertical face with a projection adapted to receive and retain the outer ends of the clasps, substantially as set forth.

4. In a flour-bolt, the combination, with the reel-head C, of the bolting-cloth, the adjustable tightening-ring, and the clasps provided at one end with spurs adapted to receive and retain the bolting-cloth, substantially as set forth.

5. In a flour-bolt, the combination, with the bolt-cloth, of the stationary reel-head B, clasps carried by the bolt-cloth and connecting it with said head, a stationary head at the opposite end of the reel, a sliding ring movable in relation to said head, and clasps carried by the bolt-cloth and connecting it with said sliding ring, substantially as set forth.

339,026. FLOUR-BOLT. GEORGE T. SMITH, Jackson, Mich. Filed June 5, 1883. (No model.)



Claim.—1. In a flour-bolt, the combination, with the bolt-cloth, of the rock-shaft, the brush supported upon the rock-shaft, a plate attached to and carried by the conveyer, a pin projecting horizontally from the face of the plate, an arm connected to the rock-shaft and actuated by the pins, and a spring for moving the rock-shaft and brush in one direction, substantially as set forth.

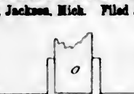
2. In a flour-bolt, the combination of the bolt-cloth, the rock-shaft mounted in the casing and having one end projecting outside thereof, a brush supported upon the rock-shaft and arranged to sweep the bolt-cloth, an arm, M, connected to the end of the rock-shaft outside of the casing, and projecting pins carried by the conveyer arranged to engage with arm M, and through it to move the brush, substantially as set forth.

3. In a flour-bolt, the combination of the bolt-cloth, a rock-shaft mounted in the casing and having one end projecting outside thereof, a brush supported upon the rock-shaft and arranged to sweep the bolt-cloth, an arm, M, connected to the end of the rock-shaft outside of the casing, pins *n*, which move the arm M and the brush in one direction, and a spring which moves the brush in the opposite direction, substantially as set forth.

4. In a flour-bolt, the combination of the bolt-cloth, a rock-shaft mounted in the casing and having one end projecting outside thereof, a brush supported upon the rock-shaft and arranged to sweep the bolt-cloth, an arm, M, connected to the end of the rock-shaft outside of the casing, pins *n*, which move the arm M and the brush in one direction, and a spring, P, within the casing, and connecting the brush-back with some stationary part of the machine, substantially as set forth.

5. In a flour-bolt, the combination of the bolt-cloth, a rock-shaft, a brush supported upon the rock-shaft and arranged to sweep the bolt-cloth, an arm, M, keyed to the rock-shaft, pins which move the arm M and brush in one direction, a spring which moves the brush and arm in the opposite direction, and a stop which limits the movement of the arm caused by the spring, substantially as set forth.

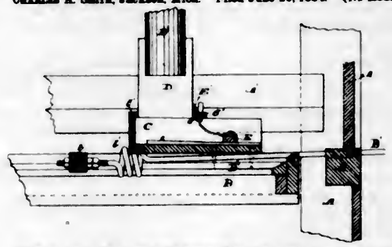
339,027. CLASP FOR ATTACHING BOLT-CLOTHS. GEORGE T. SMITH, Jackson, Mich. Filed Sept. 6 1883. (No model.)



Claim.—1. The combination of the following elements, namely: a reel-frame having its head provided with spurs, a bolting-cloth, and a series of clasps, each connected at one end to the cloth, and provided at its opposite end with a perforation adapted to engage with a spur carried by the reel-head, substantially as set forth.

2. The combination of the following elements, namely: a bolt-frame, a bolting-cloth, a circular tightener provided with a series of spurs, *i*, a series of cloth-clasps, each connected at one end to the cloth and provided at its opposite end with a perforation, *h*, adapted to engage with one of the spurs *i*, and means for moving the circular tightener to vary the tension of the cloth, substantially as set forth.

339,028. SEEDING MECHANISM FOR MIDDLINGS-PURIFIERS. CHARLES A. SMITH, Jackson, Mich. Filed June 26, 1884. (No model.)



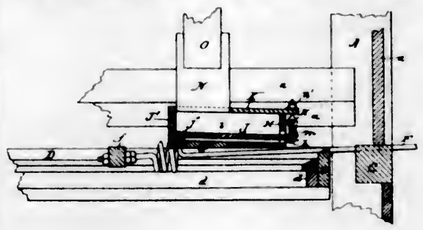
Claim.—1. In a middlings-purifier, the combination, with the shaker, of a vibrating shoe, a movable gage-bar arranged above the bottom of the shoe and in close proximity thereto, supports for the gage-bar inclined relatively to the bottom of the shoe, and means for adjusting the position of the gage-bar upon said supports, whereby the width of the throat through which the middlings are fed may be regulated, substantially as set forth.

2. In a middlings-purifier, the combination, with the shaker, of a vibrating shoe, the gage-bar, and the adjustable straps adapted to support the gage-bar against the pressure of the middlings, substantially as set forth.

3. In a middlings-purifier, the combination, with the shaker, of a feed-spout and a vibrating shoe provided upon its upper surface with a series of ribs diverging from the feed-spout to that end of the shoe over which middlings are discharged to the shaker, substantially as set forth.

4. In a middlings-purifier, the combination, with the shaker, of a vibrating shoe provided upon the upper surface of its bottom board with a series of distributing-ribs, *c c*, which are inclined relatively to the bottom board of the shoe, they being higher at their rear ends than at their front ends, a gage-bar supported upon said ribs, and means for adjusting the position of said gage-bar upon the ribs, whereby the size of the throat through which the middlings are fed is regulated, substantially as set forth.

339,029. FEEDING DEVICE FOR MIDDLINGS-PURIFIERS. CHARLES A. SMITH, Jackson, Mich. Filed July 9, 1884. (No model.)



Claim.—1. In a vibrating feeder, the combination of an inclosed box, a movable carrier situated above the bottom of said box and adapted to adjust the width of the throat through which the middlings are discharged, and a tension device which regulates the position of the movable carrier and therefore the width of the discharge-throat, but which permits the carrier to move when subject to unusual pressure, substantially as set forth.

2. In a vibrating feeder, the combination of an inclosed box having an upper board and a lower board, between which the material passes, and of which one is pivoted and has one edge movable about its pivot to increase or diminish the throat through which material passes, means for adjusting one edge of the movable board relative to the adjacent portion of the other board, and a spring applied to the movable board and adapted to maintain a uniform width of the feeding-throat, but which permits the edge of the movable board to yield under pressure, substantially as set forth.

3. In a vibrating feeder, the combination of an inclosed box having an upper board and a lower board, between which the material passes, and of which one is pivoted and has one edge movable about its pivot to increase or diminish the throat through which material passes, the spout-section supported upon the inclosed box and opening into the box, and a feed-spout of less diameter than the spout-section, and having its lower end arranged within the spout-section and supported independently of the vibrating parts of the feeder, substantially as set forth.

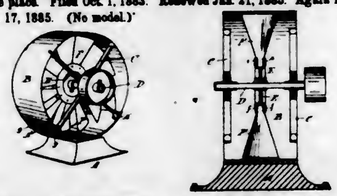
4. In a vibrating feeder, the combination of an inclosed box having four vertical walls and a closed top, the inclined vibrating board arranged within the box to receive and support the middlings, a horizontal throat at the front edge of the vibrating board for the passage of the middlings, the spout-section connected to the top of the inclosed box and adapted to receive the material and to deliver it to the interior of the box, and spring devices which support the front edge of the inclosed board and permit it to yield under the weight of the middlings, substantially as set forth.

5. In a vibrating feeder, the combination of an inclosed box, the vibrating board arranged within the box, a discharging-throat at the front edge of the vibrating board, the adjusting-bolts and the springs connecting the adjusting-bolts with the vibrating board to regulate the width of the feeding-throat, substantially as set forth.

6. In a vibrating feeder, the combination of an inclosed box, the vibrating board within the box, a discharging-throat at the front edge of the vibrating board, devices for adjusting vertically the front edge of the vibrating board, a spout-section attached to and vibrating with the inclosed box, a feed-spout of less diameter than the spout-section and having its lower end arranged within the spout section and supported independently of the inclosed vibrating box, substantially as set forth.

7. In a vibrating feeder, the combination, with the vibrating carrier, the front vertical wall, the rear wall, and the side walls, of the hangers, the bars projecting from the vibrating carrier, and the yielding links connecting the hangers with the projecting bars, substantially as set forth.

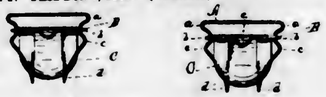
339,030. ROTARY VENTILATING-FAN. WRIGHT D. SMITH, Detroit, Mich., assignor to the Hayett & Smith Manufacturing Company, same place. Filed Oct. 1, 1883. Renewed Jan. 21, 1885. Again renewed Dec. 17, 1885. (No model.)



Claim.—1. The combination, with the base A, provided with the extensions A' and the case B, of the hangers C, supporting the fan-case and fan-shaft, and firmly secured to said extensions by the bolts *g*, passing through said case and extension into the ends of said hangers, substantially as described.

2. In a rotary fan, the combination, with the base A, case B, hangers C, supporting said case, shaft D, and disk E, having a hub fitting the shaft and circumferential flanges *e*, of the spiral blades F, provided at their inner ends with flanges *f*, extending in opposite directions and at right angles to said inner ends, and secured between the flanges *e* of the hub by bolts passing through said flanges *e* and *f*, substantially as and for the purpose specified.

339,031. BUCKLE FOR SUPPORTERS. LOTTIE W. THROOP, Syracuse, N. Y. Filed Dec. 7, 1885. (No model.)
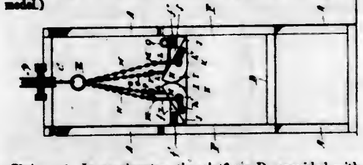


339,031.



Claim.—A buckle consisting of a body having a loop at one end, sharpened hooks at the other, and an intermediate centrally-curved cross-bar and a spring-shield mounted thereon, constructed and operating together substantially as described.

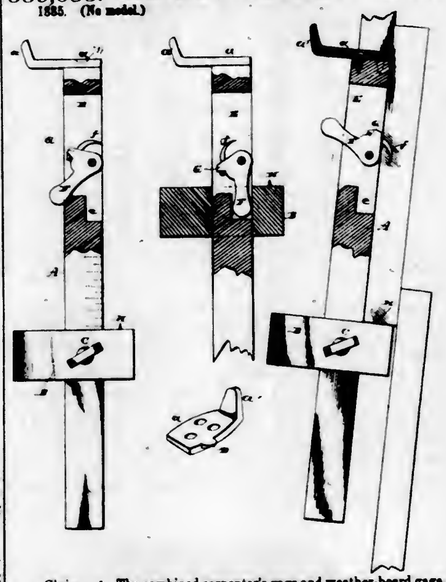
339,032. SAFETY LOCK OR CATCH FOR SHAFTS OR ELEVATORS. CASE C. THOMAS, Evansville, Ind. Filed Jan. 13, 1886. (No model.)



Claim.—1. In an elevator, the platform D, provided with a frame consisting of the uprights F, transverse pieces *f*, and short pieces *f'*, in combination with the castings H, having the rounded bearing-surfaces I, and serrated points J, pivoted to said frame, the springs Q, and the frame A, substantially as described, and for the purposes set forth.

2. In an elevator, the frame A, having at the top thereof the pulley B, the platform D, having uprights F, transverse pieces *f*, and short pieces *f'*, in combination with the hoisting-rope C, ring E, chains N O, yoke-shape pieces L, and bolts K, the castings H, and springs Q, all arranged and operated in the manner herein described.

339,033. GAGE. HARRY V. VOST, Millville, N. J. Filed Dec. 2, 1885. (No model.)



Claim.—1. The combined carpenter's gage and weather-board gage, consisting, essentially, of a bar having an adjustable abutment, a marking-point on one end of said bar, a shouldered cap, and a swinging pin mounted on the bar for locking the bar to a weather-board, substantially as set forth.

2. The combination, with a bar provided with an adjustable abutment having a spur or pin therein, and a shouldered cap secured to one end of said bar, of a lever pivoted to said bar, and a curved pin, substantially as described, rigidly secured to the lever, substantially as set forth.

3. The combined carpenter's and weather-board gage, consisting, essentially, of the graduated stock or bar, a sliding abutment secured to said stock or bar and provided with a retaining-spur, the shouldered cap

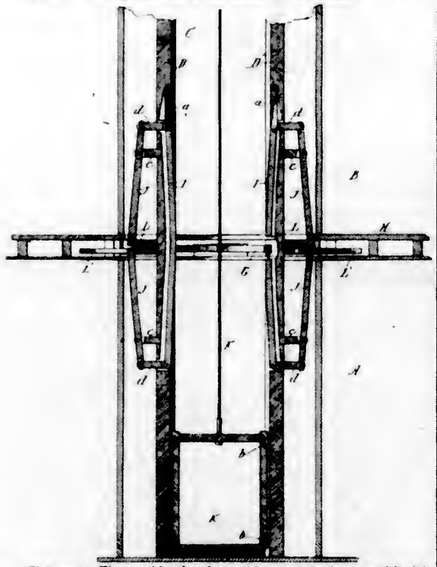
secured to one end of the bar, a marking-point secured to the shouldered cap, and the curved pin, pivotally secured to the bar, substantially as set forth.

339,034. PREPARATION OF ANIMAL FIBER FOR FELTING. JOHN T. WARING, Yonkers, N. Y. Filed Dec. 11, 1885. (No specimens.)

Claim.—1. The within-described process for assisting the development of or increasing the felting property of animal fibers, consisting in subjecting such fibers preparatory to felting to the action of sulphurous oxide gas or sulphurous acid, substantially as herein described.

2. The within-described process for assisting the development of the felting property of animal fiber in hat-bodies or increasing such property by subjecting the hat-bodies after they have been formed, but before the felting is performed or completed, to the action of sulphurous oxide gas or sulphurous acid, substantially as herein described.

339,035. SAFETY ATTACHMENT FOR ELEVATORS. CHARLES A. WESTBERG, Chicago, Ill. Filed Oct. 27 1885. (No model.)



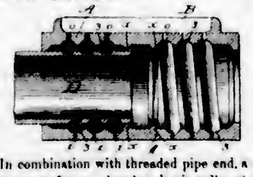
Claim.—1. The combination, in an elevator attachment, with sliding hatches and bow-shaped bars suspended in the guide-standards, of suitable levers intermediate the bars and hatches, as and for the purposes set forth.

2. The combination, in an elevator attachment, with sliding hatches and bow-shaped bars suspended in the guide-standards, of suitable levers intermediate the bars and hatches and counterbalancing-weights connected to the hatches, as set forth.

3. The combination, in an elevator attachment, with sliding hatches G G', of bars I, suspended from links *a*, levers J, pivoted to bars I by links *d*, bell-cranks L, and cords *f*, as set forth.

4. The combination, in an elevator attachment, with sliding hatches G G', of bars I, suspended from links *a*, levers J, pivoted to bars I by links *d*, bell-cranks L, cords *f*, and weights N, as set forth.

339,036. PIPE-COUPLING. ALFRED WILSON, Allegheny City, Pa. Filed Aug. 22, 1885. (No model.)

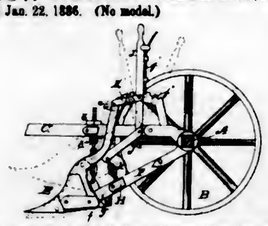


Claim.—1. In combination with threaded pipe end, a sleeve covering the same, recesses to form a chamber having ribs *x' x*, said sleeve also having unthreaded ends fitting closely around the pipe and closing the opening to the interior of the sleeve, the spaces between the ends of the sleeve and the ribs containing a suitable filling, substantially as described.

2. The method of combining the described chambered coupling-sleeve with the described threaded pipe end, the same consisting in first heating the sleeve and then, while it is still hot and expanded, slipping it into its proper place upon the threaded pipe end, then pouring in the melted lead and allowing it to cool, whereby the lead is compressed, all as set forth.

3. In combination with threaded pipe ends, a sleeve covering the same, having internal threads, 3, ribs *x x*, unthreaded ends fitting closely around the pipe and closing the opening to the interior of the sleeve, the spaces between the ends of the sleeve and the ribs *x x* containing a suitable filling, substantially as described.

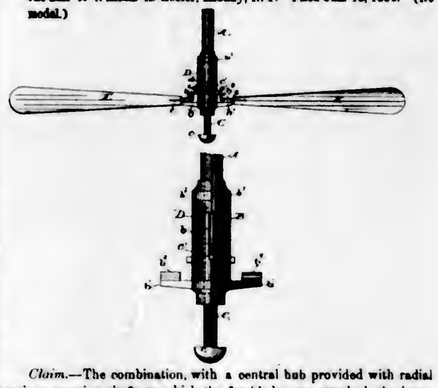
339,037. WHEEL-PLOW. JOSEPH M. YOUNG, Bean's Station, Tenn. Filed Jan. 22, 1886. (No model.)



Claim.—1. In a wheel-plow, the combination of the axle, a support hinged thereto, a tongue, the plow pivoted at its heel to the outer end of the support, an adjustable connection interposed between the support and tongue, the lever for adjusting the support, and a connection uniting the lever with the front end of the plow to regulate the pitch of the point, as and for the purposes specified.

2. The combination of the axle, a tongue projected therefrom, the support hinged at its inner end to the axle, the plow pivoted at its heel to the outer end of the support and having an arm projected upward from its front portion, an adjustable connection interposed between the support and the tongue, a lever having a forwardly-projecting arm connected with the support, and a connection uniting the arm of the plow with the lever, all constructed and operating in the manner hereinbefore set forth.

339,038. ROTARY FAN. EDMOND ANTHONY, Castleton, assignor of one-half to William H. Keeler, Albany, N. Y. Filed Jan. 18, 1886. (No model.)



Claim.—The combination, with a central hub provided with radial bearings carrying shafts to which the fan-blades are attached, the inner ends of said shafts being provided with cranks, as herein described, of an outer sleeve provided with parallel snugs which engage with the pins of said cranks, the said outer sleeve being adapted to receive a partial rotative movement that is independent of the rotations of the fan-blades, as and for the purpose herein specified.

339,039. SNAP-HOOK. GUSTAVE BERND, Macon, Ga. Filed Jan. 2, 1886. (No model.)

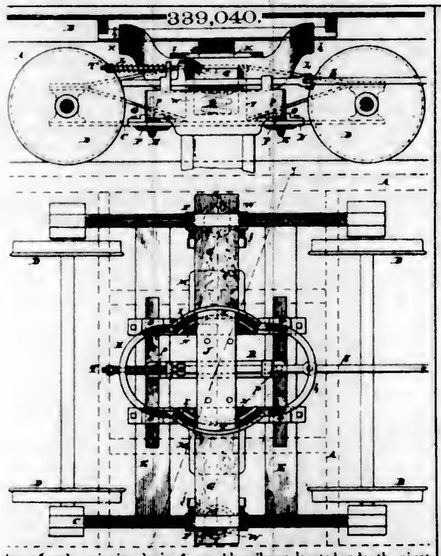


Claim.—A snap-hook consisting of a hook and spring provided with a straight shank combined with a round swivel, a socket eccentric to the shank and adapted to receive the knot of the rope, as shown.

339,040. CAR-TRUCK. GEORGE M. BRILL and JAMES RAWLE, Philadelphia, Pa. Filed Nov. 23, 1885. (No model.)

Claim.—1. The combination of a car-body with a pivoted four-wheeled truck provided with a bolster having an opening within the pivot

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thereof, and a gripping device for a cable railway, located under the pivot-center and extending up within the opening in the bolster, substantially as and for the purpose specified.

2. A truck having a divided bolster, the two end sections thereof being united by an annular or ring-shaped casting, which also acts as the pivot for the car-body, substantially as and for the purpose specified.

3. A truck having a divided bolster, the two end sections thereof being united by an annular or ring-shaped casting, which also acts as the pivot for the car-body, in combination with a gripping device for cable railways supported within said annular casting and between the two sections of the bolster, substantially as and for the purpose specified.

4. In a car-truck, the axles and side trusses or bracing provided with suitable vertical bolster-guides, in combination with the bolster adapted to support the car-body and move vertically and longitudinally in said guides, springs supported upon said side trusses and arranged under said bolster, and auxiliary springs arranged between the bolster and guides or trusses to receive the longitudinal thrust of the bolster due to the lateral swinging of the car-body in going around curves, whereby the desired results are attained, and the truck under the bolster is left clear and unobstructed, cross-bars connecting the lower parts of said side trusses, and gripping devices for cable railways supported upon said cross-bars and under the pivot of the truck, substantially as and for the purpose specified.

5. The combination, in a car-truck, of the bolster G, having its center cut away and its ends united by an annular casting or forging, H, provided with pivot-bearings I, with the pivot-shoe J, substantially as and for the purpose specified.

6. In a car-truck, the bolster G, having its center cut away and its ends united by an annular casting or forging, H, having its front and rear parts, A, raised, and provided with the pivot-bearings I, in combination with a gripping device for a cable railway supported by said truck and extended up within said annular casting, substantially as and for the purpose specified.

7. The combination of side trusses, C, axles and wheels D, with cross-bars E, connecting the said trusses, guides F in said trusses, springs W in said guides and under the bolster, divided bolster G, annular casting or forging H, uniting the bolster ends and having the bearings I, pivot-shoe J, carried by the car-body, slide-bars P, carried in guides upon bars N, and a gripping device for cable railways carried upon said slide-bars, substantially as and for the purpose specified.

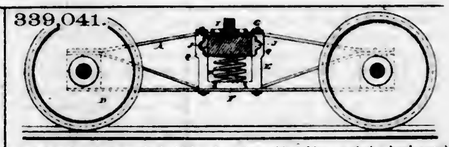
8. A bolster for a car-truck, consisting of the two separated or end sections, G G, of wood, in combination with an annular casting or forging of metal provided with the pivot-bearings and uniting the end sections, substantially as and for the purpose specified.

9. The bolster for a car-truck, consisting of the end sections, G G, of wood, in combination with the annular casting or forging H, having the raised part A, and sectional pivot-bearings I, substantially as shown.

339,041. CAR-TRUCK. GEORGE M. BRILL, Philadelphia, Pa., assignor of one-half to James Rawle, same place. Filed Nov. 23, 1885. (No model.)

Claim.—1. In a car-truck, the side trusses, A, axle-boxes B, axles C, and car-wheels D, in combination with the guides E, springs H, carried thereby, bolster G, held in place by said guides, and the horizontal auxiliary springs K, to receive the lateral thrust of the bolster, substantially as and for the purpose specified.

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2. In a car-truck, the side trusses, A, axle-boxes B, axles C, and car-wheels D, in combination with the guides E, having the deep faces e, springs H, carried thereby, bolster G, held in place by said guides, thrust-blocks J, to receive one end of the auxiliary springs, and the horizontal auxiliary spring K, to receive the lateral thrust of the bolster, substantially as and for the purpose specified.

339,042. SEAL-PRESS. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Feb. 28, 1885. (No model.)

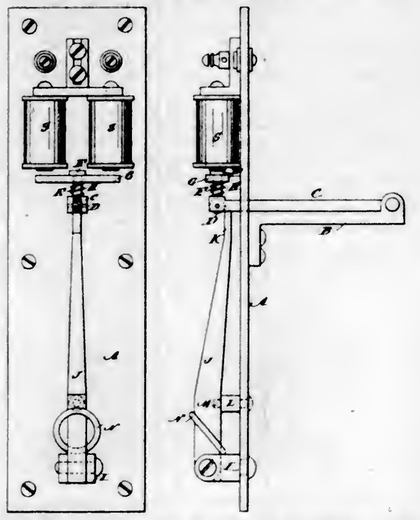


Claim.—1. The combination, in a seal-press, of a sliding die having its rear end bifurcated and provided with stud-pins, a grooved cam receiving said stud-pins, and a lever-handle rigidly united with said cam, whereby said die is moved positively both outward and inward by the lever-handle, as herein specified.

2. In a seal-press, the combination, substantially as herein specified, of a sliding die having its rear end bifurcated and provided with stud-pins, a grooved cam receiving said stud-pins, a pair of lever-handles and a blade-spring of uniform or substantially uniform width attached to the inner surface of one lever-handle and coacting with a stud on that of the other, one lever-handle being rigidly united with said cam while the other is relatively fixed, for the purposes set forth.

3. In a lead seal-press, a head which is horizontal in the working position of the press, constructed with a mouth in its front edge to receive the seal-disks laterally, and a grooved gage-stop at the top of said mouth, in combination with a pair of dies having their faces within said mouth, substantially as herein specified.

339,043. ELECTRIC HORSE-UNHITCHER. ANDREW J. COFFER, Portland, Oreg. Filed Nov. 9, 1885. (No model.)



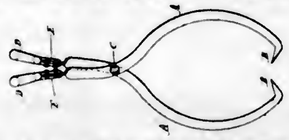
Claim.—1. In an electric horse-unhitcher, the combination, with an electro-magnet, of the lever C, the stem E on the same, the armature G, held loosely on said stem, the spring H, for pressing the armature up-

ward, and the lever J, which can be engaged with the lever C, substantially as herein shown and described.

2. In an electric horse-unhitcher, the combination, with the electro-magnet, of the lever C, the stem E on the same, the armature G, held loosely on the stem, the spring H, pressing the armature upward, the roller D in the end of the lever C, and the lever J, which can be engaged with the roller D in the lever C, substantially as herein shown and described.

3. In an electric horse-unhitcher, the combination, with the plate A, of the arm B on the same, the lever C, pivoted on the arm B, the electro-magnet S, the armature G, held on the end of the lever C, and of the lever J, pivoted on the plate A and adapted to engage with the lever C, substantially as herein shown and described.

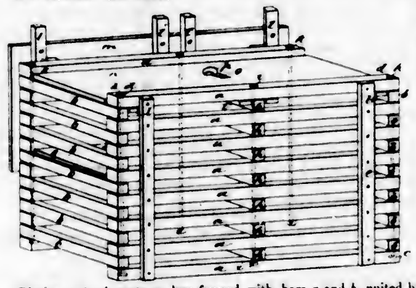
339,044. ICE-TONGS. ELI A. COLLINS, Huntington, Ind., assignor to himself and Cyrus E. Bryant, same place. Filed Sept. 3, 1885. (No model.)



Claim.—1. As a new and improved article of manufacture, a pair of ice-tongs constructed substantially as herein described, consisting of the prongs A, having a quarter-twist near their upper ends, and provided with independent handles secured thereto, as and for the purpose set forth.

2. In a pair of ice-tongs, the independent handles D, with straps E, and spaces between the straps to receive the ends of the prongs to be secured thereto, substantially as herein described.

339,045. RETURN-CRATE. JOHN COLVILLE, Brunswick, Ga. Filed Nov. 20, 1885. (No model.)

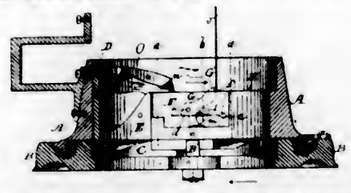


Claim.—1. A crate or box formed with bars *a* and *b*, united by rods *k*, the bars *a* being provided with cleats *c*, formed with beveled faces *f*, and the cover and bottom of the crate being provided with bevel-faced cleats *l*, substantially as described, and for the purpose specified.

2. The box or crate formed of bars *a b*, united by rods *k*, and being provided with beveled-faced cleats *s s*, in combination with covers *n* and *m*, provided with bevel-faced cleats *l l*, substantially as described.

3. The box or crate formed of outer bars *a* and *b*, united by rods *k* and with inner bars, *h*, united to the bars *a* by rods *i*, said crate being provided with cleats *s*, in combination with the cover and bottom *m* and *n*, provided with cleats *l*, and formed with slot *p* and screws *o*, substantially as described.

339,046. CIRCULAR-KNITTING MACHINE. GEORGE C. CONVERSE, Brookfield, Mass., assignor, by mesne assignments, to Lucy Converse, same place. Filed May 29, 1885. (No model.)

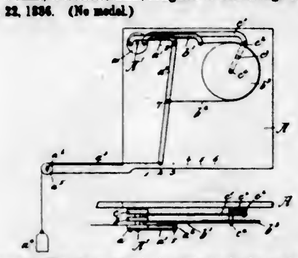


Claim.—1. The combination, with a needle-cylinder for supporting and guiding the needles, a series of knitting-needles, a cam-cylinder equipped with needle-operating cams, and cam O, of an automatic needle-lifting mechanism consisting of spring *d* and hinged needle-lifter G, provided with finger O', substantially as described.

2. The combination, with cam-cylinder A, needles and needle-cylinder of a circular-knitting machine, provided with needle-lifters G G, of springs *d d*, spindles I I, and cams I' I', substantially as and for the purposes set forth.

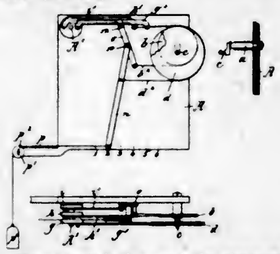
3. The combination, with the cam-cylinder, needle-cylinder, and needles in a circular-knitting machine, of springs *d d* and lifters G G, having their outer under edges projecting out and rounded off, and also provided with fingers G' G', the backs of which project out and are rounded off, all for operation with the needles, substantially as and for the purposes described.

339,047. MECHANICAL MOVEMENT. GEORGE CROMPTON and HORACE WYMAN, Worcester, Mass., assignors to said George Crompton. Filed Jan. 22, 1886. (No model.)



Claim.—The three wheels having crank-pins and three attached connecting-rods, combined with a main lever of the third order, a lever of the first order, a pulley or block mounted on and carried by the lever of the first order, and a cord or chain attached to one of the said connecting-rods and passed over the said pulley or block and joined to the said main lever, the semi-rotation of the said wheels in one or the other direction enabling the end of the said main lever to be left in any one of six positions, substantially as described.

339,048. MECHANICAL MOVEMENT. GEORGE CROMPTON and HORACE WYMAN, Worcester, Mass., assignors to said George Crompton. Filed Jan. 22, 1886. (No model.)



Claim.—Three wheels having crank-pins, three connecting-rods joined to the said crank-pins, two pulleys, and a main and an auxiliary lever of the third order, one having its fulcrum on the other, combined with two cords or chains, each extending from one connecting-rod about one of the said pulleys, and being joined at its opposite end to one of the said levers below its fulcrum, to operate substantially as described.

339,049. SOLE-EDGE-BURNISHING MACHINE. J. WESLEY DODGE, Malden, Mass. Filed Nov. 21, 1885. (No model.)

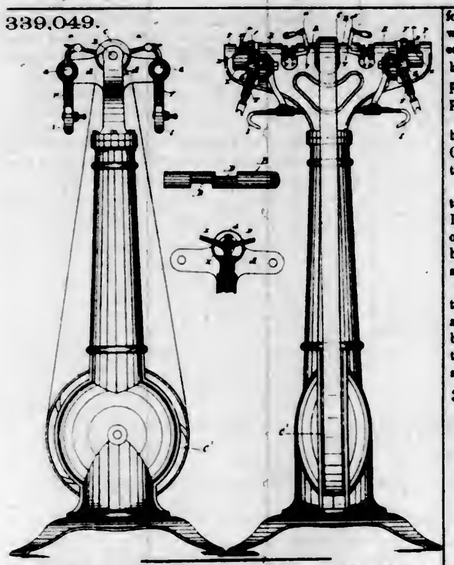
Claim.—1. In an edge-burnishing machine, the combination, with a shaft having two eccentrics or crank-pins on opposite sides thereof, of connecting-rods pivoted at one end to each eccentric and at the other to a tool-carrying lever, said tool-carrying levers each pivoted to a fixed stud, said studs being set on the frame on opposite sides of said shaft, for the purposes and substantially as set forth.

2. The combination, in a burnishing-machine, of two or more burnishing-irons and their operating-levers mounted on fixed studs G, shaft B, provided with double eccentric-rods E, and the finger-rest S, for the purposes and substantially as described.

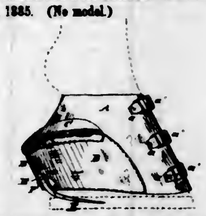
3. In a burnishing-machine, the combination of a shaft having two eccentrics, one on either side thereof, and jointed each with a pitman and a tool-carrying lever, said pitmen being oppositely inclined toward the shaft and their inner ends resting within an oil-box, substantially as herein described, and for the purpose specified.

4. The combination, in a double or twin machine for burnishing the edges of the soles of boots and shoes, of a sectional shaft provided with one or more eccentrics, at or near the outer ends thereof, connecting-rods pivoted to tool-carrying levers, and said tool-carrying levers and a clutch or clutches, whereby the sections of the shaft may be connected or disconnected, substantially as set forth.

339,049.



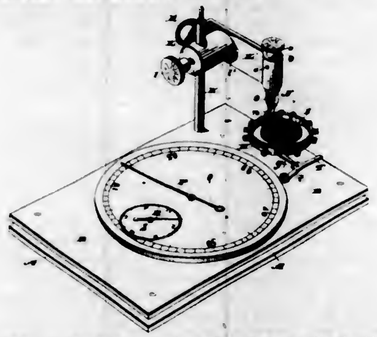
339,050. QUARTER-BOOT FOR HORSES. CHARLES DREW, St. Louis, Mo. Filed May 1, 1885. (No model.)



Claim.—1 The combination, with a quarter-boot, of the central tooth, E, secured to the rear part of the boot and adapted to fit the frog-recess, substantially as set forth.

2. A quarter-boot consisting of a sock, A, a piece, B, pieces C and C, secured to the upper edge of said piece B, re-enforce strips D D, covering the joints between said pieces B and C C, and a central tooth, E, the said tooth adapted to fit the frog-recess, substantially as set forth.

339,051. MECHANISM FOR TIMING BALANCES. HERMANN J. EBEL, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed Dec. 18, 1883. (No model.)



Claim.—1. An apparatus for determining the proper length of hair-springs for watches, composed of a spring-driven time-train having a balance-wheel arbor which is adapted to receive and engage axially with one end of the arbor of an ordinary balance-wheel, in combination with means for confining the outer coil of the hair-spring in a fixed position, substantially as and for the purpose specified.

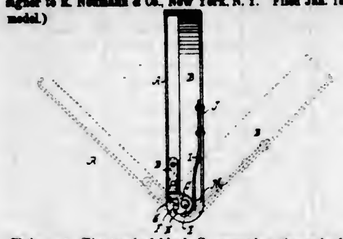
2. An apparatus for determining the proper length of hair-springs for watches, in which the arbor, that corresponds to the usual balance-wheel arbor, is adapted at one end to receive and engage with the lower end of a balance-wheel arbor, and is provided with a radial arm that may be engaged by a stop, whereby said engaging arbor is locked in a central position with relation to its vibrations, substantially as and for the purpose shown.

3. As a means for fastening the outer end of a hair-spring, the holder N, having the spring-jaws *n*, in combination with the push-pin O, which is adapted to pass between and separate said jaws, substantially as set forth.

4. As a means for supporting and adjusting the spring-holder N, the head L, adapted to fit over and be secured upon the stud K, the bar L', secured upon said head and made longitudinally adjustable by means of the screw M, and provided with the boss P, for the reception of said holder, said parts being combined in the manner substantially as shown and described.

5. The hereinbefore-described apparatus, in which are combined a time-train provided with indicating-hands, a permanent balance-wheel arbor adapted to receive and contain the lower end of the arbor of the balance-wheel to be tested, means, substantially as shown, for confining the outer end of the hair-spring, and means for locking said permanent arbor in a central position, substantially as specified.

339,052. BAG, SATCHEL, &c. ROBERT FLOCK, Newark, N. J., assignor to R. Neumann & Co., New York, N. Y. Filed Jan. 18, 1886. (No model.)

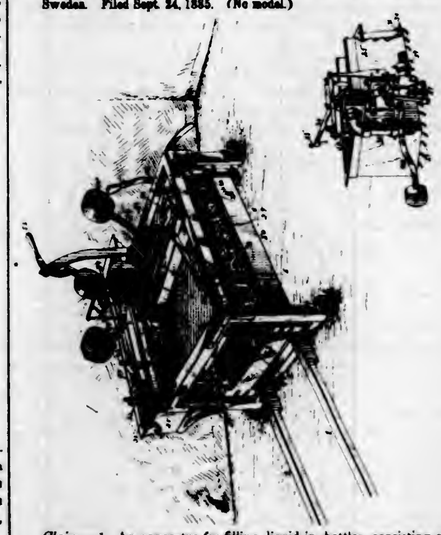


Claim.—1. The toothed block C, secured at the end of the jaw A of a bag or satchel frame, in combination with the spring-plate I, secured to the outer jaw, B, the block C being placed on the pintle of the hinge which connects the two jaws to each other, substantially as shown and described.

2. The combination of the block C, having a recess, F, and teeth G H on one edge, the slotted spring-plate I, the jaws A B, and the hinge on which the said jaws and the block turn, substantially as shown and described.

3. The jaw having a recessed and toothed prolongation beyond its hinged end, in combination with the jaw B and the slotted spring-plate I, substantially as described.

339,053. BOTTLING-MACHINE. ERNST F. GÖRANSSON, Stockholm, Sweden. Filed Sept. 24, 1885. (No model.)



Claim.—1. An apparatus for filling liquid in bottles, consisting of a vertically-moving plate having apertures for the passage of the necks

of a number of bottles, and clamps for clasping the necks of the bottles, pipes corresponding and registering with the apertures in the plate, and automatic valves for opening and closing the pipes, as and for the purpose shown and set forth.

2. In an apparatus for filling liquid in bottles, the combination of a frame having a track for the bottle-receptacle, a plate sliding vertically in the frame and having a number of apertures registering with the compartments in the bottle-receptacle, levers for raising and lowering the said plate, tongs having their legs projecting around the apertures and having springs for drawing the legs together, levers for forcing the legs of the tongs apart, hooks for supporting the bottle-receptacle from the lifting-plate, a reservoir for containing the quantity of liquor for one filling, pipes extending from the bottom of the reservoir and having their ends registering with the centers of the apertures in the lifting-plate, means for simultaneously opening and closing the said pipes by raising and lowering the lifting-plate, and a valve for automatically cutting off the supply to the reservoir at its desired height, as and for the purpose shown and set forth.

3. In an apparatus for filling liquid in bottles, the combination of a plate having a number of perforations for the reception of the necks of bottles, tongs pivoted upon the said plate and having their legs surrounding the apertures and having springs forcing them together and provided with laterally-projecting arms, one arm projecting from each leg, bars sliding transversely upon the lifting-plate and having lugs engaging the arms of the tongs, longitudinal rods connecting the sliding bars, a rock-shaft journaled upon the side edge of the plate and provided with a hand-lever and with a number of eccentric disks and connecting-rods attached to the sliding bars and to the eccentric disks, and a filling-pipe registering with each aperture in the lifting-plate, as and for the purpose shown and set forth.

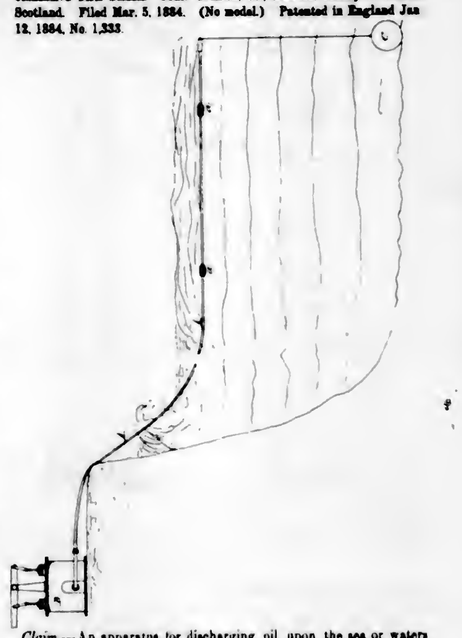
4. In an apparatus for filling liquid in bottles, the combination of a lifting-plate having a number of apertures for the reception of necks of bottles, a frame having a track for sliding a receptacle with bottles under the said plate, tongues for clamping the necks of the bottles and having laterally-projecting arms upon their legs, transverse sliding rods having lugs engaging the said arms, a rock-shaft in bearings at the side edge of the plate and having a hand-lever at one end and a number of eccentric disks, connecting-rods attached to the sliding rods and to the eccentric disks, shafts journaled at the side edges of the plate, and having cranks at their ends and downwardly-projecting hooks, a short lever pivoted at its middle upon the lifting-plate and having its upper end attached to one of the sliding rods, and pitmen attached to the cranks at one end and at the other end one to a sliding rod and the other to the lower end of the short lever, and a filling-pipe registering with each aperture in the lifting-plate, as and for the purpose shown and set forth.

5. In an apparatus for filling liquid in bottles, and having a number of downwardly-projecting filling-pipes, the combination of a plate having apertures and tongs for clasping the necks of bottles and having hooks for supporting the bottle-receptacle under the lifting-plate, transverse rock-shafts having pinions meshing with each other and provided with divergingly-projecting arms, upright rods projecting from the lifting-plate and pivotally connected to the arms, and weighted levers projecting from the rock-shafts and having a handle projecting from one of them, as and for the purpose shown and set forth.

6. In an apparatus for filling liquid in bottles, the combination of a lifting-plate having means for clamping the necks of bottles and provided with a laterally-projecting lip at one end and with upwardly-projecting rods, rock-shafts above the plate having intermeshing pinions and arms connected to the upright rods of the plate and formed with laterally-projecting lips and provided with levers having counterpoises, and one lever having a handle, a reservoir having a number of pipes for filling the bottles, provided with valves, a cover for the receptacle having wires for supporting the valves closing the filling-pipes, levers pivoted at one end and provided with set-screws at the other end and having rods attached to them and to the cover, the said levers being engaged by the lips upon the plate-supporting arms, a supply-pipe for the reservoir having a cut-off valve, and a lever attached to the stem of the said valve and having its end resting against the lip upon the lifting-plate, closing the valve when the plate is raised, as and for the purpose shown and set forth.

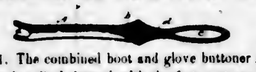
7. In an apparatus for filling liquid in bottles, the combination of a lifting-plate, supporting-arms for raising the same and provided with laterally-projecting lips, a reservoir having filling-pipes opening from its bottom, a cover for the receptacle having wires supporting valves for the apertures of the said pipes, levers pivoted at one end and having set-screws at their other ends adapted to be struck by the lips upon the supporting-arms and having rods supporting the cover, a supply-pipe provided with a regulating-valve and a cut-off valve, a lever attached to the cut-off valve and bearing with its free end against a lip upon the lifting-plate, closing the valve when the plate is lifted, a float supported in the reservoir and having an upright, a lever pivoted at one end, an extensible rod pivoted to the lever, and a short lever pivoted to the lower end of the extensible rod and to the stem of the regulating-valve, closing the valve when the float is raised, as and for the purpose shown and set forth.

339,054. APPARATUS FOR DISCHARGING OIL ON WATER FOR CALMING THE SAME. JOHN GORDON, Jr., Dundee, County of Forfar, Scotland. Filed Mar. 5, 1884. (No model.) Patented in England Jan 12, 1884, No. 1,333.



Claim.—An apparatus for discharging oil upon the sea or waters when agitated, consisting of a flexible tube or flexible tubes in connection at one end with a pump or forcing device and provided at or toward the other end with an outlet or outlets for the oil, and with a weight or projectile or weights or projectiles which can be projected from a gun or other projecting apparatus to the place where the oil is to be discharged, carrying with it or them the outer end or ends of the tube or tubes, through which tube or tubes and the outlet or outlets thereof the oil is subsequently forced, substantially as hereinbefore described.

339,055. COMBINED BOOT AND GLOVE BUTTONER. FRANCIS G. L. HENDERSON, Newton, Mass. Filed Dec. 22, 1885. (No model.)



Claim.—1. The combined boot and glove buttoner A, composed of a flat shank, as described, formed with the fork *a* at one end and elongated eye *c* at the other end, and the reduced neck *d* between the said two parts, substantially as described.

2. As an improved article of manufacture, the combined boot and glove buttoner A, composed of the flat shank, as described, formed with the fork *a*, enlargement *b*, elongated eye *c*, and reduced neck *d* between said enlargement and eye, substantially as described.

339,056. SIEVE. WILLIAM HOLMES, West Salem, Ohio. Filed Nov. 17, 1885. (No model.)



Claim.—1. The sheet-metal sieve having the large and small opposed rectangular cuts, forming openings, the intermediate slanted double tongues connected at the sides, and the bent margins of the re-entrants forming guards, substantially as specified.

2. The reversible sheet-metal sieve having its passage formed by large and small rectangular cuts opposed to each other, and tongues formed by the rectangular intermediate pieces connected at the sides, and marginal guards formed by bends of the re-entrants between offset cuts extending from the main cuts, substantially as specified.

3. The combination, with a shoe and a sieve, of the slotted hanger-lever pivoted to said shoe on one side and having a bolt-and-nut fastening, the opposite stationary hanger connected to the middle portion of the sieve-frame, and the slotted hanger, also arranged on the opposite side of the sieve-frame from the lever-hanger, substantially as specified.

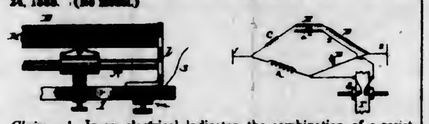
339,057. NATURE-PRINTING. THOS. HOSTWOOD, Hepham, County of Sussex, England. Filed May 22, 1885. (No specimens.) Patented in England Feb. 18, 1884, No. 2,531.

Claim.—1. In the production of nature-prints, the dissection of the object to be represented, and obtaining prints from the segments, one by one, in their proper relative positions, so that the prints of the separate pieces may combine to produce a representation of the whole object.

2. In the production of nature-prints from objects of uneven, curved, or angular surfaces, by inking them, the employment of a flexible vehicle composed of tracing-paper or other suitable material for receiving the imprint of the object, and transferring the print so obtained to the receiving-surface through or with the assistance of a mask or guard, in the manner and for the purpose substantially as set forth.

3. In the production of nature-prints, the dissection of the same and treating the parts separately, by inking them and obtaining impressions on tracing-paper or other similar flexible material, and transferring the print so obtained to the receiving-surface through or with the assistance of a mask or guard employed to stop out, or to limit or define the print in certain directions.

339,058. ELECTRICAL INDICATOR. JOHN W. HOWELL, New Brunswick, assignor to the Edison Lamp Company, Harrison, N. J. Filed Dec. 24, 1885. (No model.)



Claim.—1. In an electrical indicator, the combination of a resistance sensitive to changes in temperature and a resistance practically constant under such changes in one side of a Wheatstone bridge, and two such constant resistances in the other side, and a current-indicator connected between the two sides, substantially as set forth.

2. In an electrical indicator, the combination of an incandescing electric lamp and a wire resistance in one side of a Wheatstone bridge, two wire resistances in the other side, and a current-indicator connected between the two sides, substantially as set forth.

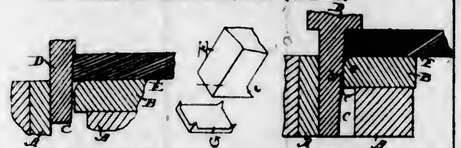
3. In an electrical indicator, the combination of an incandescing electric lamp and a wire resistance in one side of a Wheatstone bridge, three wire resistances in the other side, and a current-indicator connected between the two sides, one of whose terminals is connected with a contact adjustable upon the middle one of the three resistances, substantially as set forth.

4. In an electrical indicator, the combination of an incandescing electric lamp and a high wire resistance in opposite sides of a Wheatstone bridge, other resistances—one in each side—similarly proportioned to the lamp and high wire resistances, and a current-indicator connected between the two sides, substantially as set forth.

5. In an electrical indicator of the character described, the combination of a box or case inclosing the galvanometer and resistance-coils, and the incandescing electric lamp mounted upon the outside of said box or case, substantially as set forth.

6. In an electrical indicator, the combination of sensitive resistances and practically constant resistances in opposite sides of a Wheatstone bridge and an indicator and recorder of current changes connected between said sides, substantially as set forth.

339,059. DEVICE FOR MAKING CLAW-HATCHETS. JOHN U. HOBBARD, Oakland, Me. Filed Dec. 29, 1885. (No model.)



Claim.—1. In the manufacture of claw-hatchets, the method of making the steel-faced claw-head by forming on the end of a bar of iron a projecting edge, substantially as shown, and then welding thereto a flat steel clip, and afterward shaping the claw projection by pressing it into a grooved die constructed for the purpose, substantially as described.

2. In a device or machine for making claw-hatchets, the combination of the plunger D, having an offset, *d*, for shearing the end of the bar and pressing a part of the material between the end of the die B and the face of the plunger, with the bed-piece A and the die B, having a curved face, substantially as and for the purposes described.

339,060. HEEL FOR BOOTS AND SHOES. JACOB J. JOSEPH, New York, N. Y. Filed July 27, 1885. (No model.)

Claim.—The india-rubber top lift having a transverse shoulder running entirely across its upper surface, so that the back portion is thicker than the front portion, in combination with a boot or shoe heel correspondingly shouldered and recessed to receive said top lift, substantially as set forth.

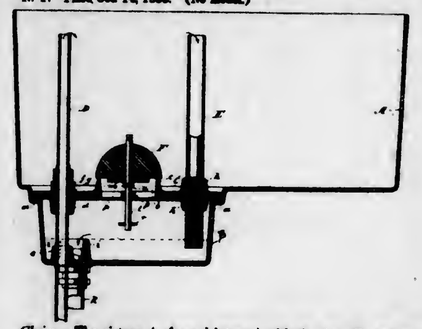


339,061. FURNITURE-CLAMP. CHARLES JOSEPH, Jeffersonville, Ind. Filed Oct. 15, 1885. (No model.)



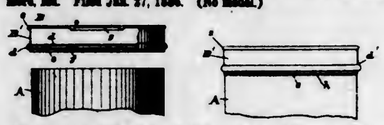
Claim.—A clamp for detachable attachments for furniture, having a hollow main stem, A, clutches B D, and extending brace-arm C, in combination with thumb-screw E, substantially as described.

339,062. WATER-CLOSET CISTERN. JOS. KAUFMANN, New York, N. Y. Filed Oct. 14, 1885. (No model.)



Claim.—The cistern A, formed integral with the box B, and constructed with the shoulder *a*, the plate C, constructed with the opening *b* and flanges *c d* A, the valve F, the outlet-pipe *k*, and overflow-pipe E and inlet-pipe D, the said box being formed with the tube *e* and *i*, the upper edge of the latter being higher than the lower end of said overflow, substantially as set forth.

339,063. METAL PACKAGE OR CAN. GEORGE W. KNAPP, Baltimore, Md. Filed Jan. 27, 1886. (No model.)



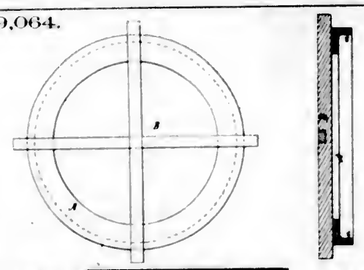
Claim.—1. A metal package consisting of a body, A, and a severable top, B, having a rim-flange which slips down around the body, and is provided with an internal groove, and an iron-wire ring which occupies the said groove, as set forth.

2. A metal package consisting of a body, A, and a severable top, B, having a rim flange which slips down around the body, and is provided with an internal groove and a short edge below the groove, and an iron-wire ring which occupies the said groove, as set forth.

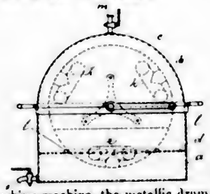
339,064. MECHANISM FOR PREVENTING A MOLDED BARREL-BODY FROM SHRINKING. GEORGE W. LARAWAY, Boston, Mass., assignor, by mesne assignments, to himself and John Seiberling, Akron, Ohio. Filed Sept. 19, 1885. (No model.)

Claim.—As a new article of manufacture, for the purpose described, the pulp barrel end supporter substantially as represented, consisting of the cross and the flanged ring, substantially as set forth.

339,064.



339,065. WASHING-MACHINE. WILLIAM V. LAWLOR, San Francisco, Cal. Filed Mar. 5, 1885. (No model.)



Claim.—In a washing-machine, the metallic drum *c*, and provided with perforated pipes *k*, attached inside, and deflecting-plate *d* and rubber rollers *l*, substantially as described and set forth.

339,066. PLAYING-CARD. EDGAR J. LEVEY, New York, N. Y. Filed May 6, 1885. (No specimens.)



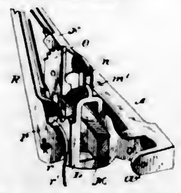
Claim.—1. A playing-card having a distinguishing-mark applied upon its spot symbol to readily distinguish it from a playing-card in the other suit of the same color, substantially as described.

2. A playing-card having a distinguishing-mark applied upon the miniature marginal spot symbol to readily distinguish it from a playing-card in the other suit of the same color, substantially as described.

339,067. PROCESS OF REDUCING ORES OF NICKEL AND COBALT WITH OXIDE OF MANGANESE. FRITZ LOTTER, Altona, Westphalia, Prussia, Germany. Filed Mar. 7, 1883. (No specimens.)

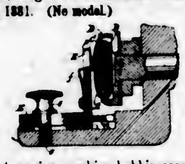
Claim.—The process herein described of reducing nickel and cobalt from their ores, the same consisting in mixing with such ores in powder oxide of manganese in powder, in about the proportions named, forming the mass into blocks or cakes, and submitting the said blocks, surrounded by pulverized charcoal, to a temperature less than the point of fusion of metallic nickel or cobalt until reduction takes place, substantially as and for the purposes specified.

339,068. MOWING-MACHINE. WILLIAM A. MORGAN, Jr., Cambria, Iowa. Filed July 23, 1885. (No model.)



Claim.—In a mowing-machine, the combination, with the frame having the portion A'' and vertical guide or keeper L, cast integral therewith, of a draft-pole secured pivotally to said frame in rear of the keeper and passing forward through said keeper, and devices, substantially such as indicated, for moving the body relative to said pole, substantially as set forth.

339,069. BOBBIN-CASE FOR SEWING-MACHINES. GEORGE M. MORRIS, Cohoes, assignor to the National Machine Company, Troy, N. Y. Filed Dec. 22, 1881. (No model.)



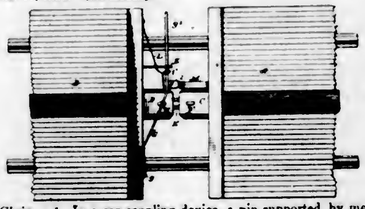
Claim.—1. A sewing-machine bobbin-case consisting of two circular parts having opposite annular peripheral bearings, an axial journal for a bobbin, an axial socket in one part and corresponding axial journal on the other, and said socket and journal so constructed as to permit free rotation of one part on the other while said annular bearings remain in contact, and to allow free bodily movement of one part toward and away from the other part, substantially as set forth.

2. In a sewing-machine, the combination, with its recessed revolving hook, bobbin-case holder, and pressing-spring, of a bobbin-case pressed in the revolving hook by said spring, and consisting of two circular parts having opposite annular peripheral bearings, an axial journal for the bobbin, an axial socket in one part and corresponding axial journal on the other, and said socket and journal so constructed as to permit free bodily movement of one part toward and away from the other, and to allow free rotation of one part on the other part while said annular bearings are in contact, substantially as set forth.

339,070. MIXED PAINT. CHARLES J. MOUNTFORD, Birmingham, County of Warwick, England. Filed Mar. 10, 1885. (Specimens.)

Claim.—A paint composition consisting of powdered asbestus, barytes, zinc oxide, and an alkaline silicate solution, substantially as and for the purpose herein set forth.

339,071. CAR-COUPLING. L. T. NICHOLS, Claremont, Minn. Filed Feb. 17, 1886. (No model.)



Claim.—1. In a car-coupling device, a pin supported by means of a horizontal rod and spring underneath the same, substantially as shown and described.

2. In a car-coupling device, the combination of a draw-head, a coupling-pin, a horizontal rod connected to said pin and pivoted at one end and having a handle at the other, a spring-support under said rod, and a stop to limit the movement of said rod, all as shown and described.

3. In a car-coupling device, the combination of a draw-head having a link supported at any desirable horizontal height or level and a spring-operating boss with a draw-head having a pin and horizontal connecting rod and spring-support under the same, all substantially in the manner shown.

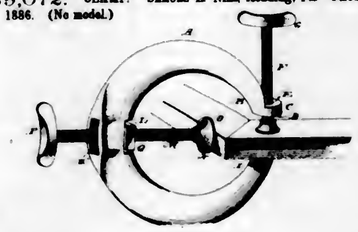
4. In a car-coupler, a link embedded at one end in rubber and secured thereto by a pin, substantially as described.

5. A car-coupling link embedded at one end in rubber, substantially as and for the purposes described.

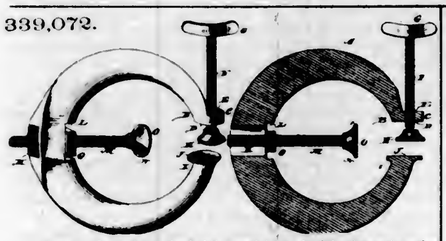
6. In a car-coupling device, the combination of the link E and rubber D with the draw-head C and pin F, substantially as and for the purposes set forth.

7. In a car-coupling device, the combination of the draw-head C, having therein the link E, supported at the proper level, the pin C, and boss M, with the draw-head D, pin H, rod G, and spring L, substantially as and for the purposes described.

339,072. CLAMP. SAMUEL E. NIES, Reading, Pa. Filed Feb. 20, 1886. (No model.)

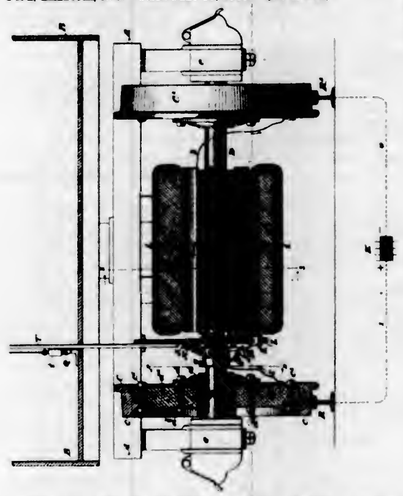


339,072.



Claim.—In a clamp for holding articles to be joined together, the combination of a round frame having one end formed with a head provided with a screw-threaded perforation, and having a head at the other end formed with a flat head and formed with a longitudinal slot at a point diametrically opposite to the aperture in the frame formed with a recess upon the inner side of the frame, a screw fitting in the threaded perforation and having a handle at its outer end and a head swiveled by a ball-and-socket joint to its inner end, a screw passing through the slot and having a head at its inner end swiveled to it by a ball-and-socket joint and having a handle at its outer end, and a nut fitting upon the inner portion of the screw bearing in the recess in the frame, as and for the purpose shown and set forth.

339,073. ELECTRICALLY-ACTUATED LOCOMOTIVE. FRANK L. POPE, Elizabeth, N. J. Filed June 13, 1885. (No model.)



Claim.—1. A movable vehicle propelled by an electric motor, in which the stationary armature is attached, to the body or frame of the vehicle or truck, and the revolving field-magnet to the propelling or supporting wheels, as set forth.

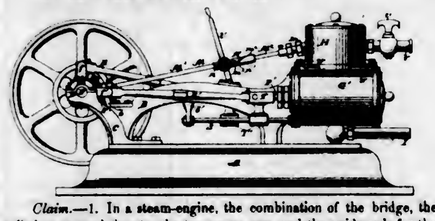
2. A movable vehicle propelled by an electric motor, in which the stationary armature is attached to the body or frame of the vehicle or truck and receives its currents from brushes revolving with the driving-wheels, and the revolving field-magnet is mechanically connected to said driving-wheels and receives its current therefrom through a permanent electrical connection.

3. In an electric locomotive, the combination, substantially as hereinbefore set forth, of a metallic axle, a wheel rigidly fixed to said axle and having its tire electrically insulated therefrom, a field-magnet rigidly attached to and revolving with said axle, and an electrical connection between one terminal of the coils of said field-magnet and said insulated tire.

4. In an electric locomotive, the combination, substantially as hereinbefore set forth, of a revolving metallic axle, a wheel rigidly fixed to said axle and having its tire electrically insulated therefrom, a commutator attached to a fixed support, insulated commutator-brushes mounted upon and revolving with said axle, and electrical connections between said brushes and the insulated tire.

5. In an electric locomotive, the combination, substantially as hereinbefore set forth, of a revolving metallic axle, a wheel rigidly fixed to said axle and having its tire electrically insulated therefrom, a commutator attached to a fixed support and capable of a movement of rotation upon its axis, insulated commutator-brushes mounted upon and revolving with said axle, and electrical connections between said brushes and the insulated tire.

339,074. STEAM-ENGINE. OSCAR F. RODEHAVER, Zanesville, assignor of one-half to Edward Ellis, Ellis, and Thomas W. Lewis, Zanesville, Ohio. Filed Dec. 7, 1885. (No model.)

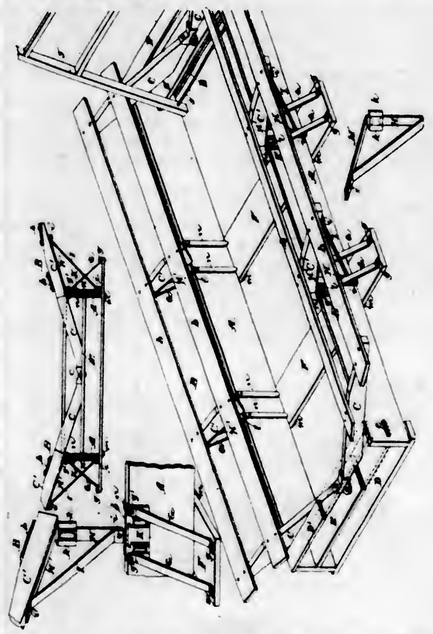


Claim.—1. In a steam-engine, the combination of the bridge, the cylinders secured thereto, the transverse arm, and the guide-rods for the cross-heads secured to the said arm and to the cylinder-heads, substantially as described.

2. The combination, with the steam cylinder or cylinders having the exhaust-port, of the steam-chest, the rotary valve therein having the openings l', l^2, and l^3, and the channels on its under side communicating with the exhaust-port, the shaft geared with the valve and having a geared connection with the driving-shaft, said gear-connection allowing the latter shaft to revolve three times to every one revolution of the rotary valve, as set forth.

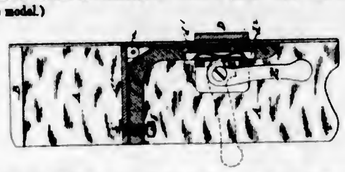
3. In a steam-engine having two cylinders and a common exhaust-port for both cylinders, the combination of the rotating valve having the openings l' l^2 l^3, the central depending stud having the central bore or cavity, and the radial channels on the under side of the valve intermediate between the openings therein and communicating with the depending stud, and the valve-seat having the countersunk opening to receive the stud, substantially as described.

339,075. HAY-RACK. GEORGE H. RUMDLE, Palmyra, Wis. Filed Jan. 13, 1886. (No model.)



Claim.—In a hay-rack, a main body portion consisting of longitudinal side sills having their ends united by top and bottom transverse sills and interposed inwardly-extended brace-pieces, the latter centrally provided with double socket-plates, in combination with intermediate laterally-extended transverse sills secured against the under edges of said longitudinal sills, and removable side frames having their end braces designed to engage the socket-plates on the interposed brace-pieces, substantially as set forth.

339,076. COMPOSING-STICK. HENRY SEGER, New York, N. Y., assignor of one-half to Ferdinand Wessel, same place. Filed July 21, 1884. (No model.)

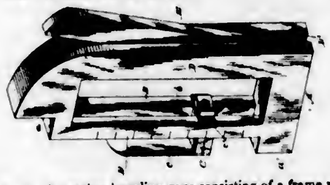


Claim.—1. The combination, in a composing-stick, of a supporting-frame having a fixed head-piece with a movable knee-piece provided with an adjustable steel face, substantially as set forth.

2. The combination of the supporting-frame, having a fixed head-piece, with a movable knee-piece having a steel face hinged to the corner of the knee-piece, and provided at the other end with a set-screw that engages the steel face, substantially as set forth.

3. The combination of the supporting-frame having a fixed head-piece, a movable knee-piece, a flanged U-shaped clamp extending around the knee-piece and the side flange of the frame, a cam-lever fulcrumed to the clamp, and a spring interposed between the cam of the clamping-lever and the leg of the movable knee-piece, substantially as set forth.

339,077. WEATHER-BOARD GAGE. JOHN H. SNYDER, Halfenstein, Pa. Filed Feb. 11, 1886. (No model.)

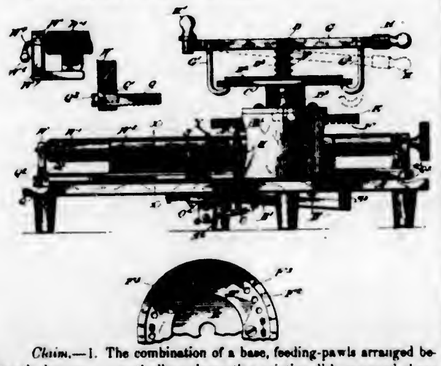


Claim.—1. A weather-boarding gage consisting of a frame which is notched at its upper end and provided with parallel side pieces between which is located an adjustable gage having a flat tongue which projects therefrom, and a slotted end grasping portion carrying a lever with a pin for preventing downward movement of the implement, substantially as shown, and for the purpose set forth.

2. In a weather-boarding gage, the frame A, made of a single piece and provided with a hand-grasping portion, which is slotted for the reception of a pivoted lever, said lever carrying a pin which is adapted to be forced under the frame, and an adjustable gage, substantially as shown, and for the purpose set forth.

3. A casting or frame consisting of a single piece and provided with parallel members B B, a notch, *a*, located above said members, and a projecting portion, *a'*, below the lower ends thereof, a hand-grasping portion, D, having a longitudinal slot within which is pivoted a lever, a spring for throwing the upper end of said lever outwardly, and a movable pin, F, connected to said lever, the parts being organized substantially as shown, and for the purpose set forth.

339,078. TYPE-WRITING MACHINE. CHARLES SPIRO, New York, N. Y. Filed Aug. 19, 1885. (No model.)



Claim.—1. The combination of a base, feeding-pawls arranged beneath the same, a vertically-reciprocating printing-disk arranged above the feeding-pawls, and a single rigid intermediate vertically-movable rod having direct contact with the printing-disk and with the feed-pawl arm, substantially as specified.

2. The combination, with a base, of a paper-carriage mounted to move longitudinally thereon, and provided with a central longitudinal rack-bar, a feeding-pawl arranged to mesh with said rack-bar and mounted upon a rock-shaft crossing the path of the carriage, and provided with a rock-arm projecting to a point beneath the printing-disk, and a single rigid vertical rod resting upon said rock-arm and arranged to receive movement from the printing-disk, substantially as specified.

3. The combination of a base and bracket, a vertical spindle mounted in the bracket and carrying a printing-disk, a dial mounted on the bracket, and an impression-lever pivotally mounted in the spindle and having a rigid depending hook projecting beneath the dial and having contact therewith, substantially as specified.

4. The combination of a base, a bracket supporting a dial, a printing-disk, and a locking-wheel mounted on a vertical spindle passing through said bracket and dial, and an impression-rod pivotally mounted in the spindle, extending completely across said bracket, and provided near each of its ends with a depending hook which projects beneath the dial, and a spring arranged between the lever and the dial, substantially as specified.

5. The combination, with a base and bracket, of a printing-disk, a locking-wheel, a longitudinally-grooved spindle, and a dial supported by the bracket, an indicator embracing the spindle and entering the groove thereof, a lifting-spring mounted on the spindle, and an impression-lever extending across the dial, pivotally secured to the spindle, and provided with hooks taking under the dial, substantially as specified.

6. The combination of an upper and lower case printing disk and upper and lower case indicating dial, a spindle secured to the disk and passing through the dial, a double-pointed indicator, and an impression-lever pivotally mounted in the spindle and provided with a hook and a handle at each end taking under the dial, the impression-lever and indicator being so relatively arranged that one end of said double indicator operates in connection with one handle of the impression-lever and the other end of said indicator operates in connection with the other handle of the same to indicate upper and lower case characters, substantially as specified.

7. The combination, with the type-disk, of a bracket, a locking-wheel, a detent-spring supported upon the bracket, and an adjustably-supported flanged locking-bracket adapted to mesh with the locking-wheel, substantially as specified.

8. The combination of a vertically-reciprocating printing-disk provided with an oscillating inker-arm having a depending inclined lug, and a fixed stud mounted upon the base of the machine and adapted to operate the inclined lug of the inker-arm, substantially as specified.

9. The combination of a vertically-reciprocating printing-disk provided with an oscillating inker-arm having an inclined lug, and a removable ink-pad carrier mounted at the free end of said arm, a fixed stud adapted to impart oscillatory motion in one direction of said arm, and a spring secured to said arm and to said stud for giving motion to said arm in the opposite direction, substantially as specified.

10. The removable ink-pad carrier, consisting of a sleeve adapted to embrace the end of the inker-arm, formed as a handle and having a plate for supporting the pad, substantially as specified.

11. The combination, with the brackets of a paper-carriage, slotted as described, of the rack-bar entering said slots and the binding-screws bridging said slots, substantially as specified.

12. The combination, with the paper-carriage and its roller, of a guide-rod pivoted at one end thereon and a spring arranged to bear upon the pivoted portion of the rod, whereby the free end of said rod may be swung upwardly and away from the carriage, substantially as specified.

13. The combination, with a carriage and its roller, of a guide-rod pivoted at one end of the carriage, held in its pivotal bearing by a spring, and retained in connection with its bearing at its free end by means of a spring, substantially as specified.

14. In a carriage, the combination of the roll or platen, a guide-plate passing from the rear beneath and upwardly in front of the roll, and a guide-rod removably arranged opposite the guide-plate, substantially as specified.

15. The combination of the base A, bracket B, dial C, rigidly mounted on the bracket, and the printing-disk F and locking-wheel E, mounted on the spindle D in an inclined position, the spring D', and the impression-rod G, having the hooks G' G² and handles H H', substantially as shown and described.

16. The combination, with the printing-disk, of the spindle D, having the groove D², the dial C, the indicator D³, having a lug entering the groove D², the spring D', and the lever G, having the hooks G², substantially as shown and described.

17. The combination of the impression-rod G, having the hooks G' G², the spindle D, the spring D', the disk C, the bracket B, the rod N, the feed devices, and the rock-arm O, connected with the feed devices, substantially as shown and described.

18. The combination of the base A, provided with the standard M, the rod N, the bracket T, the feed-rack and pawl, and the rock-arm O, connected therewith, substantially as shown and described.

19. The combination, with the base A, provided with the standard

M and projection P², of the rod N, the rock-shaft O', supported in depending brackets O², and provided with the rock-arms O O², the latter having the check-pawl O³, and pivotally-supported pawl P, having the cam-extension P', substantially as shown and described.

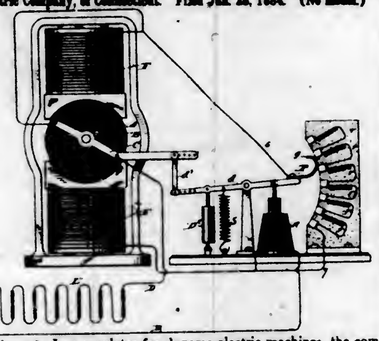
20. The combination, with the base A, provided with the stud J, having the inclined lug J', of the vertically-reciprocating spindle D, locking-wheel E, and printing-disk F, the oscillating inker-arm I', the pivot I² thereof, and the removable sleeve I³, carrying the ink-pad K, substantially as shown and described.

21. The combination, with the inker-arm I, of the sleeve I³, provided with the pad-supporting plate K' and the handle I⁴, substantially as shown and described.

22. The combination of the brackets W, the pivoted rod W⁴, and the spring W³ W' and roller W', substantially as shown and described.

23. The combination, with the feed-pawl arm and with a single rod for operating the same, of a type-disk having directly-interposed space-varying devices, substantially as specified.

339,079. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. E. THOMSON and E. W. RICE, Lynn, Mass., assignors to the Thomson-Houston Electric Company, of Connecticut. Filed Jan. 23, 1884. (No model.)



Claim.—1. In a regulator for dynamo-electric machines, the combination of means for adjusting the commutator, and means for varying at the same time the strength of the magnetic field independently of any variation in strength that would be produced by an adjustment of the commutator, as and for the purpose described.

2. In a dynamo-electric machine, the combination of an adjustable commutator, means for varying the strength of the field, and automatic regulating devices governed by the current of said machine for effecting a simultaneous movement of the commutator-adjusting and field-varying devices.

3. In a dynamo-electric machine, the combination of means for varying the strength of the magnetic field, an adjustable commutator, and a governing electro magnet or magnets excited by the current of said machine for governing the devices, whereby the strength of the field and the adjustment of the commutator are determined.

4. The combination, in a dynamo-electric machine, of means for varying the strength of the magnetic field, an adjustable commutator, and devices for imparting movement thereto at the same time, whereby an adjustment of the commutator is made to accompany a variation of the strength of the magnetic field.

5. In a dynamo-electric machine, the combination, with means for varying the strength of the magnetic field, of an adjustable commutator, and means for causing the same to follow the shifting neutral point as it shifts with the change in the field strength.

6. The combination, in a dynamo-electric machine, of a regulating magnet or magnets with mechanism controlling the position of the commutator and the strength of the magnetic field.

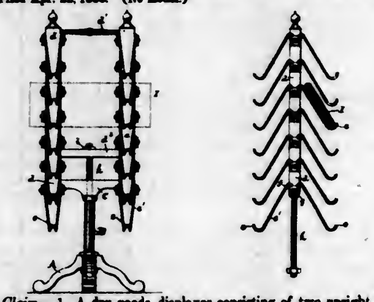
7. The combination, with a magnet, of a lever actuated thereby in opposition to a suitable retractor, a movable commutator-brush support connected with said lever, and devices for varying the strength of the magnetic field connected with the same lever, as and for the purpose described.

339,080. PLOW. ALBERT R. TOMLINSON, Severy, Kans. Filed Jan. 21, 1886. (No model.)



Claim.—The combination of a triangular pointed share having a notched recess upon its land side, a bar having a recess at its point upon the land side, and a vertical colter having a notched recess at its lower front portion and a notch and a lip at its rear, said pieces being provided with holes for securing the same to the plow, as shown and described.

339,081. DRY-GOODS DISPLAY-RACK. ROBERT W. WHITEHURST, Norfolk, Va., assignor of one-half to McDonald L. Wren, same place. Filed Apr. 22, 1885. (No model.)

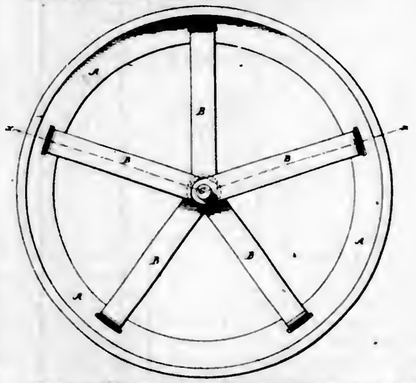


Claim.—1. A dry-goods displayer consisting of two upright bars, each provided with hooks having two branches, which from the hook spread V shape, and each branch made fast to one of the said bars, as set forth.

2. A dry-goods displayer having an upright bar, *d*, provided on each of two opposite sides with an attached metal plate, *f*, each plate having a socket and a hook provided with two branches, which spread, the end of one branch being entered in a socket on one side of the said bar, and the end of the other branch in a socket on the opposite side, as set forth.

3. A dry-goods displayer having in combination a pedestal, A, an upright tube, B, having its lower end fixed in the pedestal, a frame composed of two upright bars, *d*, connected by two cross-bars, d^9 and C, the lower one of which rests on the upper end of said tube, and a bolt, *k*, which passes through the two cross-bars of the frame and the tube and has its lower end made fast in the pedestal, as set forth.

339,082. TENSION-WHEEL. SAMUEL T. WILLIAMS, Red Bank, N. J. Filed Feb. 8, 1886. (No model.)



Claim.—1. The combination of the rim and axle of a wheel with spokes consisting of flat strips of metal having openings at their ends for the reception of the axle, substantially as set forth.

2. A wheel having a rim and axle, and spokes connected directly to the axle and provided with a tension-adjusting device, substantially as specified.

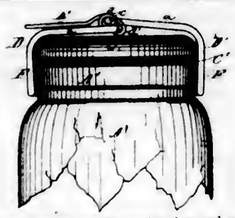
3. The combination of the rim and axle of a wheel with spokes having at their opposite ends openings fitted directly over the axle, substantially as specified.

4. A wheel having an axle and a rim, and spokes connected directly to the axle at one end to a fixed point, and having at the other end a tension device, substantially as set forth.

339,083. CLAMP FOR JARS. HERMANN BOEHMOLA, Pittsburg, Pa., assignor of one-half to Henry Miller, same place. Filed Dec. 19, 1885. (Model.)

Claim.—1. A clamp or fastening for preserving-jars, consisting of two wire loops, each bent in two directions at right angles to each other, and forming catches to engage with a shoulder or with lugs on the neck

339,083.



of a jar, and a locking-lever pivotally connected to and coupling the two loops together, substantially as described.

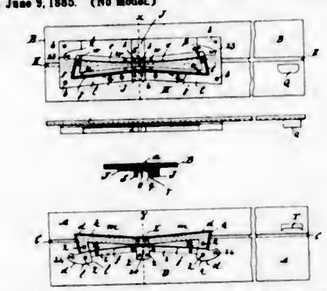
2. In fastenings for preserving-jars, the combination of the clamping-loops, each formed of a length of wire bent in two directions at right angles to each other, so as to form catches and pivotally-connecting portions, said loops being coupled together pivotally and adapted for application to a jar unprovided with an encircling wire or cord, substantially as described.

3. The detachable clamp or fastening for preserving-jars, consisting of two wire loops, each bent horizontally and vertically, and provided with a locking-lever, said loops and lever being pivotally connected together, substantially as described.

4. A clamp or fastening for preserving-jars, consisting of two wire loops, each bent horizontally and vertically, and a connecting and locking lever, one of said loops having its ends bent to form pintles and the other having its ends bent to form eyes, the lever having its ends bent so as to form both eyes and pintles, which are coupled, respectively, with the pintles and eyes of the loops, substantially as described.

5. The combination, with a jar having a sealing-cap and formed with a collar or lugs to receive a clamp, of a detachable clamp or fastening consisting of two loops bent vertically and horizontally, and a locking-lever, said loops and lever being pivotally coupled together, substantially as described.

339,084. DIE. ROBERT BUTTERWORTH, Somerville, assignor, by mesne assignments, to the Fiberlene Collar Company, Worcester, Mass. Filed June 9, 1885. (No model.)



Claim.—In a die for cutting out paper or cloth-faced paper collars, the bed A, a lower die, D, thereon, the stock B, and a complementary upper die, H, supported by said stock, said dies being adapted to complete the formation of an entire collar every time they are brought together, in combination with a cutter, T, on said bed and a complementary cutter, Q, supported by said stock, said cutters being disposed the length of a collar away from said dies, so that as one collar is cut out by said dies the waste piece of the collar previously cut is severed from the stock.

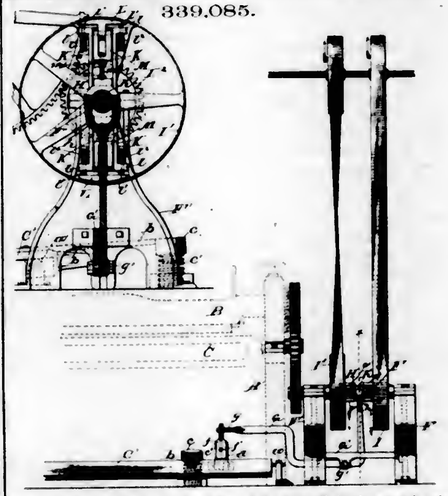
339,085. REVERSING-GEARING FOR MACHINERY. JACOB CRYDERMAN, Milwaukee, Wis. Filed Apr. 23, 1885. (No model.)

Claim.—1. In a reversing-gear for leather-splitting or other machinery, the combination, with vertical standards united by a cross-bar and having suitable bearings for a drive-shaft carrying loose pulleys, and a lever fulcrumed to the cross-bar and terminating at one end in a spanner adapted to engage a clutch-sleeve operative on said drive-shaft to be thrown in and out of gear with the loose pulleys thereon, of weighted arm and a treadle united to said arm and adjustably connected to the clutch-operating lever, as set forth.

2. In a reversing-gear for leather-splitting or other machinery, a treadle having weighted arm and adjustably connected with a lever adapted to engage the sleeve of a clutch mechanism operative on the driving-shaft, in combination with suitable spring adapted to impinge against the weighted end of said treadle-arm, as set forth.

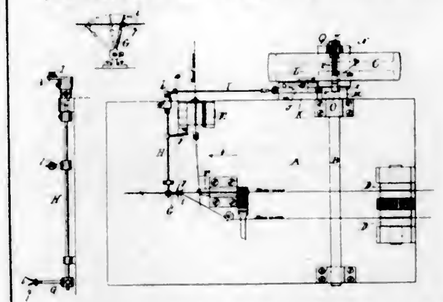
3. The combination, with a driving-shaft carrying loose pulleys I I' and a sliding sleeve, H, of the bifurcated arms K, brakes L, having flanges L', toggle-links M, pivoted to said flanges L', screw-bolts m, having jam-nuts m' and heads o, and connecting the sleeve and toggle-

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arms, the pins l', having springs l^2, and the lever G, having span A, substantially as described.

339,086. BARB-FENCE MACHINE. JOHN D. CURTIS, Worcester, Mass., assignor to the Washburn & Moen Manufacturing Company, same place. Filed Dec. 20, 1884. (No model.)



Claim.—1. In a machine for making barbed fencing, a device operated by the barb or barbs, in combination with a device for disconnecting the driving mechanism from the main shaft of the machine from which the barbing mechanism is operated, and intervening mechanism connecting said devices, whereby when the first device fails to be operated in a proper manner the machine will be automatically stopped, substantially as set forth.

2. The combination, with arm G, sliding bar J, and intervening parts, substantially as described, and pawl L, for the purpose stated, of the collar M, and driving-wheel C, provided with driving-pin O and cam P, substantially as and for the purposes set forth.

3. The combination, with hinged or pivoted arm G, sliding bar J, and intervening parts, substantially as described, of the loose driving-wheel C, provided with driving-pin O, and collar M, secured upon the driving-shaft B, all constructed and operated substantially as shown, and for the purpose stated.

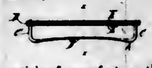
4. In a machine for making barbed fencing, the combination, with the wire-barbing mechanism, the driving mechanism, the main shaft, and the driving-pin for connecting the driving mechanism and main shaft, of a device arranged to be struck by a projection of said pin, and thereby disengage the driving mechanism, said device being connected with an arm or lever operated by the barbs to withdraw the said device from the path of said projection at the proper time to prevent such contact so long as the barbs are properly applied, substantially as described.

5. In a machine for making barbed fencing, the combination, with the barbing mechanism, driving-pulley, main shaft, and pin connecting said pulley and shaft and having a suitable projection, of the sliding bar arranged in the path of said projection, the pivoted arm or lever actuated by the barbs on the fence-wire, and the connections between the sliding bar and arm or lever, whereby the former is withdrawn from the

path of said projection at the proper time to prevent disengagement of the main shaft and driving-pulley so long as the barbs are properly applied, substantially as described.

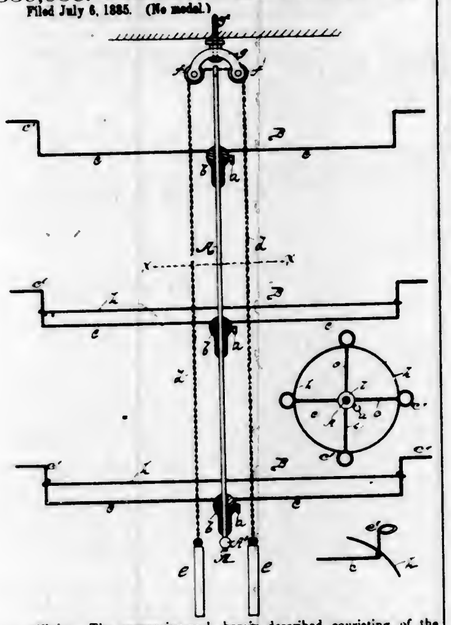
6. The combination, with the barbing device, of an arm or lever hinged or pivoted in the path of the barb or barbs, and intermediate mechanism, substantially as described, connecting it with means for stopping the machine when said lever fails to be acted upon by the barb moving forward, substantially as set forth.

339,087. HAIR-CRIMPER. JOSEPH DEGRAY, Elizabeth, N. J. Filed Sept. 28, 1885. (No model.)



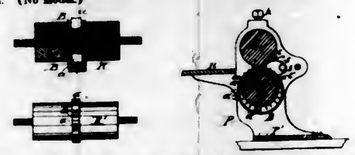
Claim.—As a new article of manufacture, the herein-described hair-crimper, consisting of the spring-back B, having arms C and C' of equal length, the arm C bearing two parallel rounded cross-pieces, E, said pieces being perforated at their free ends and arranged to engage with a projection having a shoulder, D, upon arm C', substantially as shown and described.

339,088. SUSPENSION-RACK. MARTIN E. DYE, Fayetteville, N. C. Filed July 6, 1885. (No model.)



Claim.—The suspension-rack herein described, consisting of the central rod, A, the swiveled bracket *g*, chain *d*, its weights *e e*, and pulleys *f f*, a rack composed of radial arms c, having the ring h, and the holders therefor vertically adjustable on the central rod, as shown and described.

339,089. MACHINE FOR TREATING LEAF-TOBACCO. REMARD E. ELLIS, Syracuse, N. Y., assignor of two-thirds to George N. Kuntsch, same place, and Thomas W. Meachem, Onondaga, N. Y. Filed Oct. 10, 1884. (No model.)

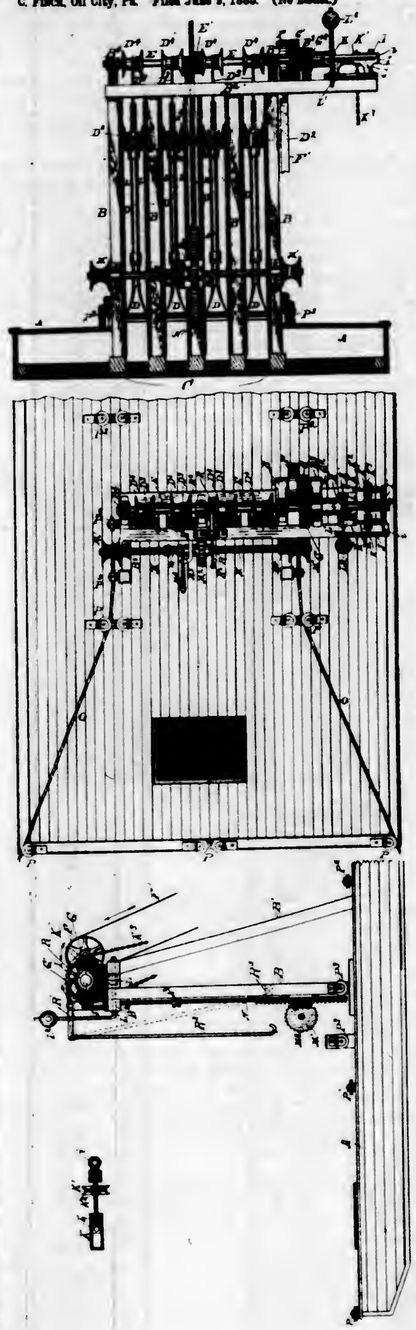


Claim.—1. In combination with the roller R', provided with a circumferential row of knives, *a a*, and the annular clearing-band B, hung on said roller, the roller R, arranged in proximity to the roller R', to press the tobacco-stem against the knives *a a*, substantially as set forth.

2. The roller R', composed of three sections of equal diameters, the central section thereof provided with a circumferential row of transverse slots, *b b*, and the knives *a a* set into said slots and held by the frictional hold therein and by the abutment of the end sections of the roller against the side edges of the knives, substantially as described and shown.

3. In combination with the rollers R R', knives *a a*, and slotted band B, the scraper *c*, held against the upper roller, and the scraper *c'*, held against the lower roller, R', and band B, and provided with the notch *d*, substantially as and for the purpose set forth.

339,090. MACHINE FOR BREAKING SUBMERGED ROCK. HENRY C. FINCH, Oil City, Pa. Filed June 9, 1885. (No model.)

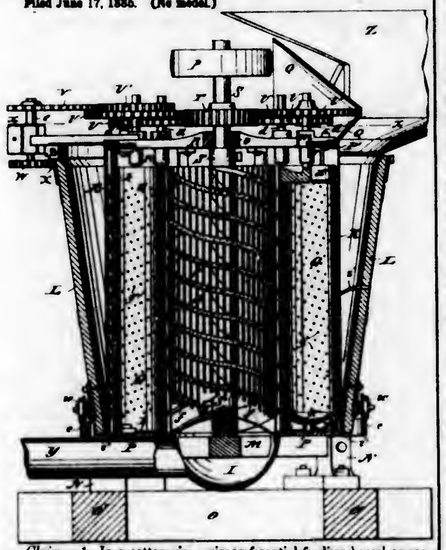


Claim.—1. In a machine for breaking submerged rock, the combination, substantially as set forth, of the float A, the well or opening O through said float, the derrick B B' B^2, erected over said well, the stamps D D' D^2, moving vertically on the guides *b b* on said derrick and through said well, the shaft E on the top of said derrick, having thereon the spools D^3, the ropes D^3, connected with said stamps and winding upon said spools, and gearing, substantially as set forth, for operating the said shaft E to wind said ropes upon said spools and lift said stamps, and when so wound to release said shaft, so that said stamps can descend by gravity.

2. In a machine for breaking submerged rocks, the combination, substantially as set forth, of a boat or float having thereon a derrick, a stamping device rigged upon said derrick substantially as set forth, and a windlass or winch for towing said float, which is actuated from the said stamping device when the stamps are hoisted up.

3. In a machine for breaking submerged rock, the combination, substantially as set forth, of a float, a derrick mounted on said float, a series of stamps rigged upon said derrick and operating vertically through a well or opening in said float upon the rocks below, a hoisting device for lifting up said stamps, consisting of the ropes D^3, spools D^4, shaft E, and gearing, substantially as shown, for rotating said shaft, and a releasing device for allowing said shaft E to revolve backward by the weight of the said stamps, said releasing device consisting of the screw I, yoke I', yokes K K, screws K^3 K^3, yoke L, shaft L', and ball L^3, yoke H', and clutch-sleeve H.

339,091. COTTON-GIN. SAMUEL D. FREEMAN, Fort Thomas, Ariz. Filed June 17, 1885. (No model.)



Claim.—1. In a cotton-gin, a circumferential feeding barrel or casing combined with several gratings, and several toothed cylinders arranged to run adjacent to the gratings, and a central fan for removing the lint from the teeth of the cylinders, substantially as described.

2. The revolving conical barrel L, to which the cotton to be ginned is fed, in combination with the gratings K, cylinders G, fan H, and brush *f*, the cylinders being provided with teeth *t*, substantially as and for the purposes set forth.

3. The barrel L, to which the cotton to be ginned is fed, made conical and provided upon its inner surfaces with agitating-arms, in combination with the curved gratings K, toothed cylinders G, and central fan, H, substantially as and for the purposes set forth.

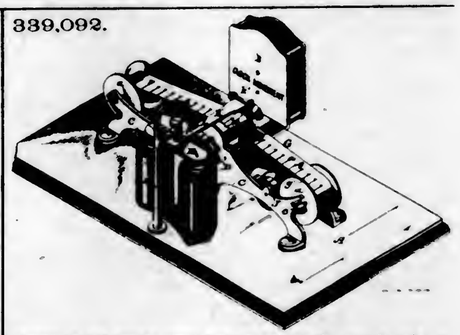
4. The conical feed-barrel L, a circular track, *c*, the vertical curved gratings K, vertical toothed cylinders G, and vertical central fan, H, all arranged as described, in combination with means, substantially as described, for revolving the feed-barrel, toothed cylinders, and fan, as and for the purposes set forth.

339,092. ELECTRIC TIME-RECORDER. ALBERT C. FREDERICK, Jacksonville, Fla. Filed Dec. 7, 1885. (No model.)

Claim.—1. A watchman's time-detector comprising the following elements in combination: a fillet, feed-regulator therefor, registering-magnet, and a circuit-changer to shift the circuit from one line to the other, in succession, to prevent registering being done from any one point, substantially as described, and for the purposes specified.

2. In a time-detector, the combination of a register and a circuit-

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changer to shift the line-circuit from one point to the next in order, to prevent registering from any one point, substantially as set forth.

3. The combination, with the register and its actuating-magnet, of a series of stationary contacts, each forming a terminal for a corresponding number of line-circuits, and a moving point forming a common terminal for all the line-circuits, to successively break and establish each line-circuit, whereby the circuit having been closed at one point is shifted and can only be closed at the next consecutive point, substantially as described, and for the purposes set forth.

4. The combination, with the register and its actuating-magnet, of a series of contacts electrically insulated from each other, arranged in a circle, and each forming the terminal of a series of line-circuits, of a point forming a common terminal for all the circuits, an arm connected therewith to carry it around in a circle from one contact to the other, and provisions, substantially as described, to move said arm forward to shift the circuit from one line to the next, to prevent registering being done from any one point, as and for the purposes set forth.

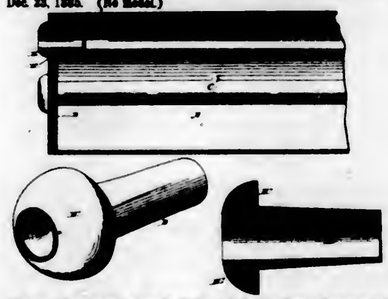
5. The combination of the fillet, a feeder continuously exerting a force to draw said fillet forward at a great impetus, and a retarder to stay the impetus of the fillet to govern its movement and regulate the force of the feeder, substantially as and for the purpose set forth

6. In a time-detector, the combination, with a fillet divided into sections representing intervals of an hour and having each section perforated to correspond with an equal fractional division of an hour's time, of a feed-regulating wheel having teeth corresponding to the number of perforations in each section of the fillet and making a complete revolution in one hour's time to feed a section of the fillet, whereby the hour and fractional part thereof may be readily ascertained at which a register is made on the fillet, substantially as set forth.

7. The combination of the fillet, perforated to correspond with equal divisions of time, a feeder continuously exerting a force to draw the fillet forward at a high rate of speed, a retarding-wheel having teeth corresponding with such perforations, and having a movement corresponding with the time represented by the perforations to check the speed of the fillet and govern the force of the feeder, substantially as set forth.

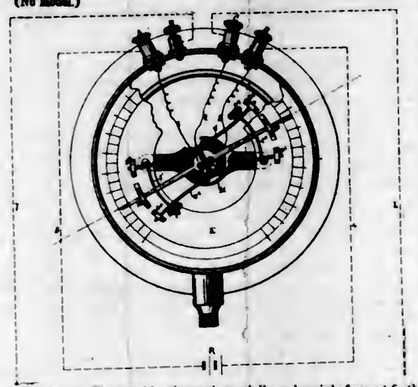
8. In a time-detector, the combination, with a series of contacts, each forming the terminal of a line-circuit and arranged in close proximity to each other and electrically insulated, of a point forming a common terminal for all the lines and a pawl operated by the movement of the armature to move the point and contacts relatively to each other, whereby the line-circuits are successively established, substantially as and for the purposes set forth.

339,093. STEAM-BOILER. JOSHUA G. S. GARWOOD, Mount Victory, Ohio, assignor of one-half to James H. McGaughey, same place. Filed Dec. 23, 1885. (No model.)



Claim.—The herein-described thimble for the flues of steam-boilers, consisting of a tapering sleeve adapted to fit into the flue, having a cylindrical bore, and provided at its larger end with a curved or cup-shaped flange adapted to overlap the end of the flue where it is expanded in the fire-sheet, the edge of said flange being sharp, so as to be forced into the face of the flue-sheet, substantially as and for the purpose set forth.

339,094. CIRCUIT-CLOSING ATTACHMENT FOR PRESSURE-GAGES. NELSON W. GROVESTEEN, New York, N. Y. Filed Dec. 17, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a pressure-gage, of two insulated circuit-closing arms, two pairs of contact-arms respectively applied thereto, conductors connecting one of the circuit-closing arms with the earth and the other with a main line, and conductors connecting one contact-arm of each pair with one pole of a battery and the remaining contact-arms with the other pole.

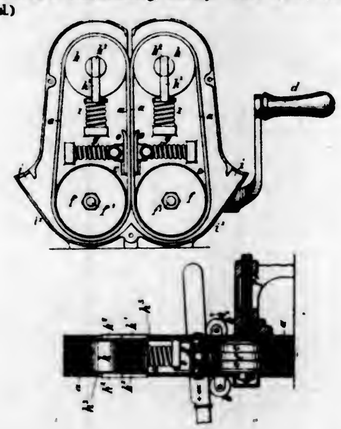
2. The combination, substantially as hereinbefore set forth, with a pressure-gage, of two insulated circuit-closing arms moving therewith, two insulated contact-arms, the ends of which respectively extend upon opposite sides of the circuit-closing arms, and means for adjusting the positions of said contact-arms with reference to the circuit-closing arms

3. The combination, substantially as hereinbefore set forth, with a pressure-gage, of two circuit-closing arms, contact-arms extending upon opposite sides of each, and means for adjusting the separation from each other of the contact-arms applied to each circuit-closing arm.

4. The combination, substantially as hereinbefore set forth, with a pressure-gage, of two circuit-closing arms respectively connected with the earth and a main line, two contact-arms applied to each circuit-closing arm, a battery having one pole connected with one of the contact-arms applied to each circuit-closing arm and the other pole applied to the remaining contact-arms, and means for adjusting the positions of said contact-arms with reference to the other and to the corresponding circuit-closing arm.

5. The combination, substantially as hereinbefore set forth, with a pressure-gage, of the insulated contacts p' and p^3, the flexible contact-arms s' and s^3, carrying the contacts p^2 p^4 and p^1 p^3, the adjusting-rods t' and t^3, and the adjustable support for said contact-arms.

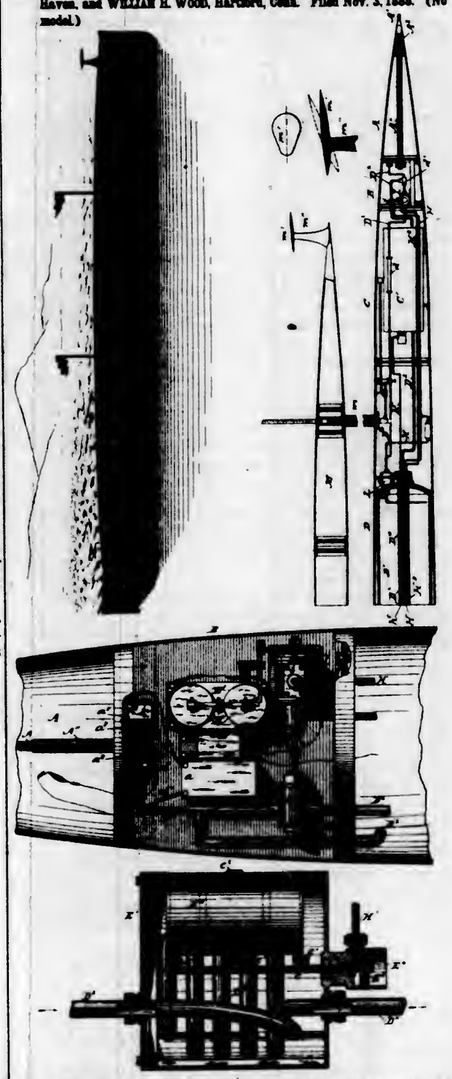
339,095. MACHINE FOR CLEANING AND POLISHING KNIVES. HERMANN A. H. GUHL, Hamburg, Germany. Filed Oct. 30, 1885. (No model.)



Claim.—1. In a knife-cleaning machine, the combination of two endless belts or straps running partly parallel to each other, yielding abutment-plates for pressing the parallel parts of the belts toward each other, revolving pulleys for driving and supporting the belts, and two rollers for supporting the knife-blade, one of which is in contact with and receives rotary motion from the edges of the said belts, substantially as and for the purpose set forth.

2. In a knife-cleaning machine, the combination of two endless belts or straps running partly parallel to each other, yielding abutment-plates for pressing the parallel parts of the belts toward each other, two rollers for supporting the knife-blade, one of which is in contact with and receives rotary motion from the edges of the said belts, the rollers *h*, and driving-pulleys *f*, over which the belts are stretched, and the forks *h'*, and springs *z*, for keeping the said belts tightly stretched, substantially as and for the purpose set forth.

339,096. SUBMARINE TORPEDO-BOAT. GEORGE E. HAMMET, New Haven, and WILLIAM H. WOOD, Hartford, Conn. Filed Nov. 3, 1885. (No model.)



Claim.—1. In combination with a submerged torpedo-boat, a pointed cylindrical float with its stern overhanging the stern and propeller of the boat and with its bow projected beyond midships, all substantially as described.

2. In combination with a submerged torpedo-boat, a surface-float with its stern overhanging the stern and propeller of the boat, all substantially as described.

3. In combination with a submerged boat, a surface-float with its stern overhanging the stern and propeller of the boat and its bow bearing a drag to prevent diving, all substantially as described.

4. In combination with the submerged boat, the surface-float bearing on a standard the tilting drag having a limited motion in a vertical plane, all substantially as described.

5. In a torpedo-boat, the firing-pin inclosed within a tube extending entirely through the magazine and protected from contact with its contents, all substantially as described.

6. In combination with the sliding firing-pin of the torpedo-boat, the local battery within the boat, the break in its circuit closed by the movement of the firing-pin at the inner end of its play, and the safety-break closed through suitable means by the gaseous motive power running the engine, all substantially as described.

7. In combination with the sliding firing-pin of the torpedo-boat, the battery-circuit with a break opened and closed by the movement of the firing-pin and a safety-break opened by the pressure of the motive power running the engine, taken from the engine side of the throttle-valve, all substantially as described.

8. In combination with the battery-circuit, the firing-pin A', the points a', adapted to be joined by the inward movement of the pin, the spring-seated posts a^3 a^4, and the rod a^5, bearing the disk a^7 and fast to a piston in the cylinder a^8 on the branch from the supply-pipe D'', all substantially as described.

9. In a boat propelled by the expansion of gas or fluid, the gas-heating chamber, the partible lime-tube within the chamber, the spring for opening said tube, and a device connecting the lock of the tube with the gas-supply, whereby the tube is opened and the lime is dumped automatically by the opening of a valve in the steering-cylinder, all substantially as described.

10. In combination, in a boat propelled by the expansion of gas or fluid, the pipe system connecting with the valves of the starting and steering cylinders, the cut-off valve interposed between the steering-cylinder and the pipes branching to the unlocking-cylinders of the lime-tubes, all substantially as described.

11. In a boat propelled by the expansion of gas or the like fluid, the reservoir, the heating and expanding chambers, the pipe system, the starting and stopping cylinder and its connected valves, the steering-cylinder with its valves, and the cut-off valve H'', interposed between the steering-cylinder and the branched pipes to the several heating-chambers of the pipe leading from the opening side of the starting-cylinder and the closing-chamber of the cut-off valve, all substantially as described.

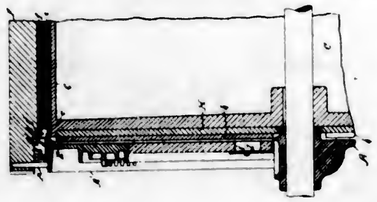
12. In combination with the electrical devices for opening and closing the slide-valve of the steering-cylinder, the spring j^3, held between the shoulders on the valve-stem and collar on the inner end of the stem, whereby the spring is compressed by a movement of the valve in opening the ports to both sides of the piston, and by its recoil closes the ports, all substantially as described.

13. In combination with the rudder-post and connecting-rods, the piston-rods of the steering-cylinder bearing on both sides of the piston, the adjustable set-nuts, and the cylinder-heads with the inward-opening sockets, all substantially as described.

14. In a torpedo-boat, the magazine, as A, provided with a fixed tube, as A'', having its ends fixed in the bow and through the bulk-head of the magazine, in combination with the firing-pin having its stem projected through the said tube into the firing-chamber, substantially as described.

339,097. CARDING-ENGINE. CHARLES L. HARMON, Lowell, Mass., assignor to Edward B. Howe, trustee, same place. Filed Oct. 16, 1884. (No model.)

Brief.—The object of the improvement is to prevent the floating fiber from passing laterally beyond the card-clothed edges of the main cylinder. In combination with the side frames, main cylinder, and top flats are arranged two shields, one bridging the space between the side frames and main cylinder between the cylinder and top flats, to divert a side current of air, produced by the described means, against the edges of the card-clothing, the other bridging the space between the first shield and the top flats to prevent the escape of the side current and floating fiber.



Claim.—1. The side frames or arches, the card-clothed main cylinder, and the series of card-clothed flats, combined with a stationary shield or deflector arranged about the unclothed margin of the main cylinder between the feed-rolls and the doffer and bridging the spaces between the heads of the main cylinder and the inner sides of the frame or arches to deflect inward over the ends of the cylinder a current of air, substantially as described.

2. The side frames or arches, the card-clothed main cylinder, the series of card-clothed flats, and a main shield or deflector arranged to divert a current of air against the side edges of the card-clothing, combined with, means to generate or maintain a secondary or independent current of air to overcome the machine-current and aid in keeping the loose fiber on or in the space between the card-clothed surfaces, substantially as described.

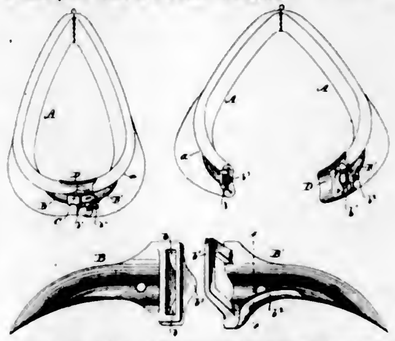
3. The frame sides or arches, the card-clothed main cylinder, the card-clothed flats, and the main shields or deflectors to overlap a portion of the periphery or unclothed margin of the main cylinder near its ends and bridge the spaces between the ends of the said main cylinder and the inner sides of the side frames or arches, combined with an auxiliary shield or deflector to bridge the space between the main shield or deflector and the inner sides of the flats, and to operate substantially as described.

4. The frame sides or arches, the card-clothed main cylinder, the card-clothed flats, and the main shields or deflectors to overlap a portion of the periphery or unclothed margin of the main cylinder near its ends and bridge the space between the ends of said main cylinder and the inner sides of the side frames or arches, combined with an auxiliary shield or deflector to bridge the space between the main shield or deflector and the inner sides of the flats, and with mechanism, substantially as described, to generate or maintain a secondary current of air and discharge it from the space between the ends or heads of the main cylinder under the said main shield or deflector over and upon the main cylinder from its ends or heads toward its peripheral center, to operate substantially as described.

5. The side frames or arches, the main cylinder, and the series of flats provided at their under sides with transverse grooves, combined with the main and auxiliary shields or deflectors, the auxiliary shield or deflector entering the said grooves, substantially as described.

6. The side frames or arches, the main cylinder, the flats, the doffer, and the feed-rolls, combined with the main shield or deflector, one end of which is made to embrace and shield the necks of the upper feed-roll, to operate substantially as described.

339,098. HORSE-COLLAR. MILES T. HAYES, Burlington, Wis., assignor of two-thirds to Albert F. Ransom and Jacob W. Wambold, both of same place. Filed Nov. 6, 1885. (No model.)



Claim.—1. A fastener for separable horse-collars, consisting of two parts which are doubly-flanged or V-shaped in cross-section, one of said parts being provided with a slot and the other with a loop or staple adapted to enter and project through said slot, substantially as set forth.

2. The combination, with a horse-collar formed in two portions hinged together, of a fastener consisting of two parts which are doubly-flanged or V-shaped in cross-section, one of said parts having a slot and also bearing-surfaces for a key on its face, adjacent to said slot, and a V-pointed end, and the other having at one end a loop or staple adapted to enter and project through said slot, substantially as set forth.

3. A horse-collar formed in two parts hinged together, and a fastener for said collar made in two parts which are V-shaped in cross-section, one of said parts having a slot and the other being provided with a loop or staple adapted to enter and project through said slot, combined with a guard or throat-protector on the inside of the collar at the front thereof, said guard or throat-protector being attached to one of the parts of the collar in position to project across the joint where the two parts thereof come together, as set forth.

339,099. VENTILATOR AND CHIMNEY-TOP. HENRY O. HERRMANN, Philadelphia, Pa., assignor to Warren Webster, same place. Filed Oct. 21, 1885. (No model.)



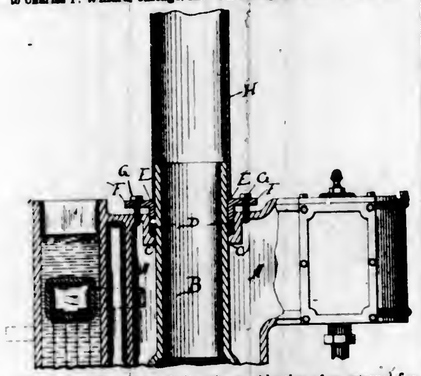
Claim.—1. A ventilator and chimney-top having the corrugated deflector B, secured to the outer surface of the pipe A, at the top thereof, the conical cap D, the tabular band E, and the intermediate deflector, C, all of said parts being arranged and combined substantially as described.

2. A lower deflector secured to the top of the pipe, in combination with an upper deflector, a conical cap, and a tubular band surrounding the upper deflector and the rim of the base of the said cap, said parts being arranged and combined substantially as and for the purpose set forth.

3. A chimney-cowl having a bottom deflector, B, secured to the top of pipe A, an intermediate deflector, C, and a conical top cap, D, the diameter of the base of the top cap being greater than that of either of the said deflectors, and a cylindrical tabular band, E, surrounding said deflector C and the base of said top cap, D, substantially as and for the purpose set forth.

4. The tube A, in combination with the deflector B, closely secured to the top thereof, as described, the conical cap D, the inclined deflector C, and cylindrical tabular band E, encircling said deflector C and of greater diameter than the base of the deflector B, substantially as and for the purpose set forth.

339,100. STEAM-PACKING. EDWIN J. HOSKINS, Austin, assignor to Charles P. Willard, Chicago, Ill. Filed July 2, 1885. (No model.)

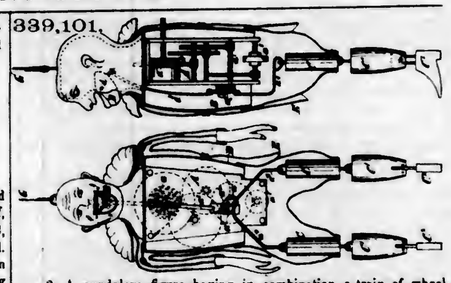


Claim.—1. In a steam-boiler, the combination of an internal fire box and flue, a surrounding boiler shell or case, a packing in the annular space between such shells where the flue-shell extends out of or above the boiler-shell, and a ring around the flue-shell, on which ring the smoke-stack is placed and rests, extending into such annular space and adjustable up or down, pressing the packing with more or less tightness against the flue-shell, as desired, whereby the joint between the two shells at the point where the flue-shell emerges from the boiler-shell is rendered steam-tight, and the flue-shell allowed to move up and down as expanded or contracted, substantially as described.

2. In a steam-boiler, the combination of an internal fire-box and flue, a surrounding boiler shell or case, an annular space around the flue-shell above the point of contact between the boiler and flue-shell, a ring around the flue-shell, on which the smoke-stack is placed and rests, adjustable up and down, and extending into such annular space, the boiler-shell or the ring flaring away from the flue-shell, and leaving room for the packing wider next to the flue-shell than away from it when the parts are together, and a packing in the annular space between the boiler and the flue-shell, and packed with more or less tightness against the flue-shell as the ring is adjusted up or down, whereby the joint between the two shells at the point where the flue-shell emerges from the boiler-shell is rendered steam-tight and the flue-shell allowed to move up and down as expanded or contracted, substantially as described.

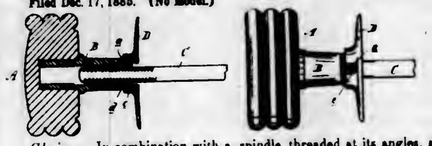
339,101. TOY. CHARLES A. HOTCHKISS, Bridgeport, Conn., assignor to Ives, Blakeslee & Co., same place. Filed Jan. 14, 1886. (No model.)

Claim.—1. A pendulous figure having, in combination, a train of wheel-work operated by a prime mover, a crank operated by said wheel-work, a rod connected to said crank, and legs hanging from the rod and deriving an up-and-down motion therefrom, said legs having no other support from the body, substantially as specified.



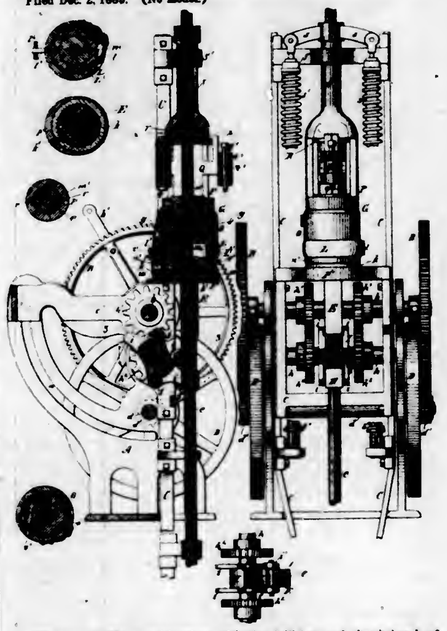
2. A pendulous figure having, in combination, a train of wheel-work operated by a prime mover, a crank operated by said wheel-work, a rod connected to said crank, a jaw-lever connected to said rod, and legs hanging from the rod, both the jaw and legs deriving motion from said rod, substantially as specified.

339,102. KNOB ATTACHMENT. HENRY H. HUMPHREY, Detroit, Mich. Filed Dec. 17, 1885. (No model.)



Claim.—In combination with a spindle threaded at its angles, a door-knob provided with a hollow shank threaded interiorly and exteriorly, a rose sleeved on said spindle and provided with a flange, c, internally threaded to engage the external thread on the knob-shank and provided in said flange with an open-ended slot, e, and a set-screw passing through a hole in the shank and bearing against one of the faces of the spindle, substantially as described.

339,103. ROCK-DRILL MACHINE. SILVANUS HORSEY, Buffalo, N. Y. Filed Dec. 2, 1885. (No model.)



Claim.—1. The combination, with the drill-bar and clutch-head, of a rotating driving-head provided with primary lifters *i* and a secondary lifter, *j*, and a reciprocating sleeve or carrier, E, surrounding the drill-bar and bearing against the clutch-head, and provided with bearings against which the lifters *i* and *j* engage successively in lifting the sleeve or carrier and the drill-bar, substantially as set forth.

2. The combination, with the drill-frame, drill-bar, and clutch-head, of a rotating driving-head provided with primary lifting-arms *i* and a

secondary lifting-roller, *j*, and a sleeve, E, having a reciprocating motion in the drill-frame, while being prevented from turning, and provided with bearings *i'* and *j'*, against which the arms *i* and the roller *j* engage successively in lifting the sleeve and the drill-bar, substantially as set forth.

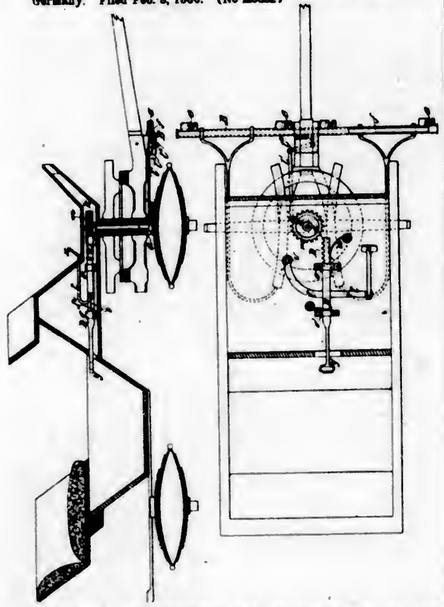
3. The combination, with the drill-bar and drill-frame, of a clutch-head, G, capable of turning with and on the drill-bar, and a lifting-sleeve, E, having a vertical reciprocating movement in the drill-frame, and held in the drill-frame against turning with the drill-bar, substantially as set forth.

4. The combination, with the drill-bar, clutch-head G, and detached lifting-sleeve E, of a drill-frame provided with a head, F, having two concentric cushion-rings, *k k'*, on which the clutch-head G and lifting-sleeve are cushioned separately, substantially as set forth.

5. The combination, with the drill-frame and the drill-bar, having a longitudinal groove, *m'*, of the flanged clutch-head body N, provided at its lower end with a removable collar, *n'*, the ratchet-ring L', provided with a feather, *m*, entering the groove *m'*, the pawl-ring L, provided with a pawl, *l*, and pin *l'*, and the curved feed-guide *l²*, secured to the drill-frame, substantially as set forth.

6. The combination, with the drill-bar provided with a longitudinal groove, *m'*, and the drill-frame, of the clutch-head body N, the pawl-ring L, the ratchet-ring L', provided with a feather, *m*, the tubular cap O, secured to the body N and provided with pawl *o*, the sleeve O', on which the cap O loosely rests, and which is provided with a ratchet-rim, *o'*, the frame P, secured to the sleeve O', the supporting-cap R, held in the frame P against turning, and the divided nut Q, having its parts pivoted to the cap R in the frame P, substantially as set forth.

339,104. **HORSE-DETACHER.** JACOB F. C. JÜRGENSEN, Malderf, Germany. Filed Feb. 8, 1886. (No model.)



Claim.—1. The combination, with the carriage-body and front running-gear, and the king-bolt having fast to it a pinion, of the hollow single-tree, the longitudinally-moving trace-connecting rod within said single-tree, lever-connections, substantially as herein described, between the said rod and the king-bolt, and a movable rack gearing with said pinion for the purpose of turning the king-bolt, substantially as herein set forth.

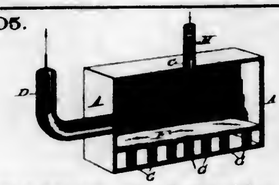
2. The combination, with the pole and the tube *g*, and springs 4, attached to the head thereof, of the cross-bar *g*, having a stem, 3, in which are recesses for the engagement of the said springs, substantially as and for the purpose herein described.

339,105. **PNEUMATIC TUBE.** JOHN L. KNIGHT, New York, N. Y., assignor to Alfred Nicholson, same place. Filed Sept. 22, 1885. (No model.)

Claim.—1. The combination of the pneumatic tube C with the escape-outlet D and the receptacle A, either with or without the cushion F and springs G G, substantially as described, and for the purpose specified.

2. The combination of the pneumatic tube C with the receptacle

339,105.

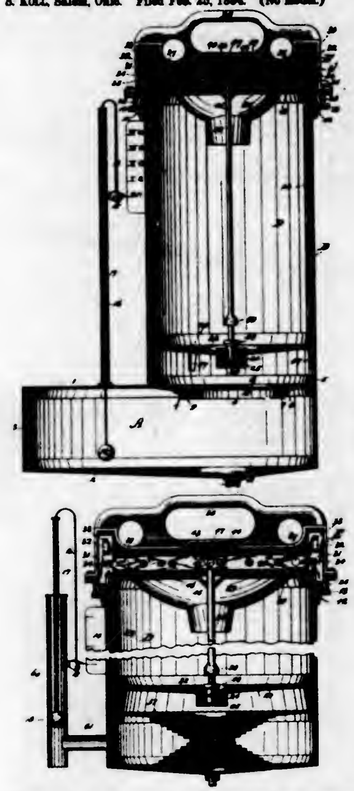


A, having one or more escape-outlets, D, substantially as described, and for the purpose specified.

3. The combination of the pneumatic tube C with the carrier H, receptacle A, cushion F, and springs G G, substantially as described, and for the purpose specified.

4. The combination of the pneumatic tube C, receptacle A, door B, and outlet D, substantially as described, and for the purpose specified.

339,106. **SAFETY-TANK AND AUTOMATIC FILLER.** BENJAMIN S. KOLL, Salem, Ohio. Filed Feb. 25, 1884. (No model.)



Claim.—1. A storage-tank having, in combination, a reservoir for holding the liquid, a receiver for holding a filling-vessel while being emptied, and a diaphragm composed of wire-gauze and chamois-skin, substantially as set forth.

2. A combined reservoir and receiver, in combination with a diaphragm composed of gauze and chamois-skin and a spring, substantially as set forth.

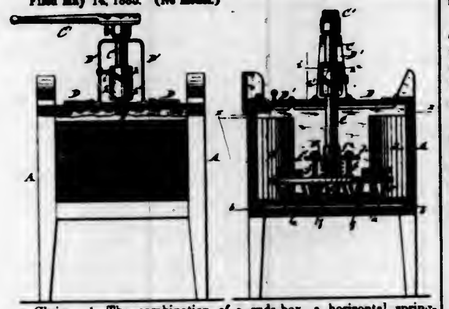
3. A storage-tank consisting of a reservoir and receiver open at the top, in combination with a filling-vessel having a suitable outlet, a valve for closing said outlet, and a slide or bolt mounted at the top of the filling-vessel with its lower end in line with the upper edge of the receiver, and connections between the slide and valve, whereby the valve will be operated when the filling-vessel is placed on or within the receiver, substantially as set forth.

4. A storage-tank consisting of a reservoir and receiver, in combination with a filling-vessel having a suitable outlet, a valve for closing said outlet, a rod movably attached to the valve and provided at its upper end with block, system of articulated levers, and sliding bolts, substantially as described.

5. A storage-tank consisting of a reservoir and a receiving-chamber having the ring 12, with its upper edge projecting from the upper part of said chamber, in combination with a filler, D, having an outlet in its bottom, valve 48, spring-actuated rod 45, a slide or bolt mounted at the top of the filler, with one end in line with the upper edge of ring 12, and connections to rod 45, whereby the slide will engage the ring and operate the valve when the filler is placed within the receiver, substantially as set forth.

6. A storage-tank consisting of a reservoir and receiver having the rim 12, in combination with a filler having a suitable outlet, the valve 48, rod 45, movably connected with the valve, the block 44, levers 39 and 36, and bolts 31, said block, levers, and bolts being pivotally connected, as described, and the spring 47, substantially as set forth.

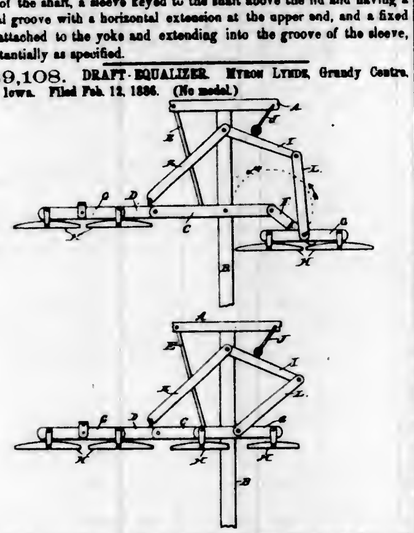
339,107. **WASHING-MACHINE.** ADAM LÖTTSSER, New York, N. Y. Filed May 14, 1885. (No model.)



Claim.—1. The combination of a suds-box, a horizontal spring-cushioned rubber having downwardly-projecting teats, a vertical shaft to which the rubber is attached, a handle attached to the upper end of the shaft, a spirally-grooved sleeve keyed to the shaft above the lid, and a supporting-yoke having a fixed pin along which the sleeve is guided, substantially as set forth.

2. The combination of a suds-box, a horizontal spring-cushioned rubber, a shaft connected to the rubber and guided in bearings of the lid, and of a yoke attached to the lid, a handle attached to the upper end of the shaft, a sleeve keyed to the shaft above the lid and having a spiral groove with a horizontal extension at the upper end, and a fixed pin attached to the yoke and extending into the groove of the sleeve, substantially as specified.

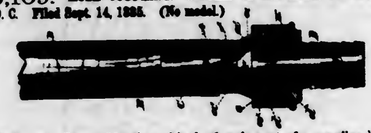
339,108. **DRAFT-EQUALIZER.** MYRON LYNDE, Grundy Centre, Iowa. Filed Feb. 12, 1886. (No model.)



Claim.—1. The combination, with the tongue, the evener-bar, and a draft-arm pivoted between its ends to one end of the evener-bar, of a brace-bar connecting the inner end of the draft-arm with the tongue-supporting sill, substantially as shown, and for the purpose set forth.

2. The herein shown and described equalizer, consisting of the following elements, in combination: the tongue, the evener-bar, draft-arms pivoted to each end of the bar, the one between its ends, a brace-bar connecting the inner end of such arm with the tongue-supporting sill, an equalizing-lever flexibly connected with the sill, and connections uniting the ends of said lever with the middle of the draft-arm connected with the sill by the brace and with the free end of the other draft-arm, substantially and for the purpose set forth.

339,109. **HOSE-COUPLING.** CHARLES A. MUDDIMAN, Washington, D. C. Filed Sept. 14, 1885. (No model.)



Claim.—1. In combination with the female part of a coupling having the conical bearing-surface and an annular groove beyond such surface, the hollow conical elastic washer fitting over the bearing-surface and provided with an annular rib to engage the groove within the coupling, substantially as and for the purpose specified.

2. A hose-coupling provided with corresponding male and female conical bearing-surfaces, in combination with a conical elastic washer fitting and adapted to be compressed between such bearing-surfaces, and having a portion interlocking with a part of one of the coupling halves beyond the bearing-surface thereof, so as to attach it to such part of the coupling, substantially as and for the purpose described.

3. The thimble A, having the conical face *a'* and circumferential recess *a²* within, and the threaded sleeve E, journaled upon said thimble, in combination with the plug D, provided with the conical face *d* and threaded exteriorly, and with the conical elastic washer F, having the rib *f*, substantially as and for the purpose shown and described.

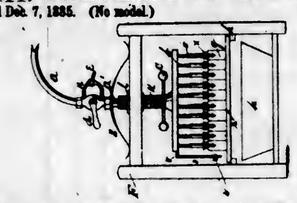
339,110. **CAR-COUPLING.** JOHN A. MURRAY, Scranton, Pa. Filed Aug. 27, 1885. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-head having a conical recess or concavity and an opening or slot, of the coupling-hook having its beak inclined inward and beveled at the point of junction of the beak and the shank or rod portion and provided with a handle, substantially as shown and described.

2. In a car-coupling, the coupling-hook having its beak inclined inwardly and its shank or rod portion beveled, and the draw-head having a conical recess or concavity adapted to receive said coupling-hook, substantially as set forth.

339,111. **BOTTLING-MACHINE.** JOSEPH K. NYE, Fairhaven, Mass. Filed Dec. 7, 1885. (No model.)



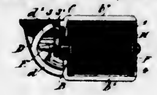
Claim.—1. In a bottling-machine, the combination of the supply-pipe *a*, cock *d*, having pipe *n* with cock *e*, pipe *a'*, chamber *b*, provided with tubes *o*, with means to adjustably suspend the same, substantially as and for the purpose described.

2. In a bottling-machine, the combination of the supply-pipe *a*, cock *d*, pipe *a'*, chamber *b*, tubes *o*, having orifices *q* and beads *i* and provided with springs *t*, and sleeve *m*, having projections *x*, and means to adjustably suspend the same, with hollow screw *k* and nut *l*, substantially as and for the purpose described.

3. In a bottling-machine, the combination of the supply-pipe *a*, cock *d*, pipe *a'*, chamber *b*, provided with tubes *o*, the draw-off tube *v*, having stop-cock *w*, with means to adjustably suspend the same, substantially as and for the purpose described.

4. In a bottling-machine, the combination of the supply-pipe *a*, cock *d*, pipe *a'*, chamber *b*, provided with tubes *o* and draw-off tube *v*, and means to adjustably suspend the same, with rack *r*, substantially as and for the purpose shown and described.

339,112. **SHUTTLE FOR SEWING-MACHINES.** JOHN B. PEEK, Wollaston, Mass., assignor to the Bispool Sewing Machine Company, Kittery, Me. Filed Sept. 21, 1885. (No model.)

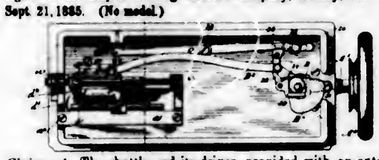


Claim.—1. The shuttle-body and its skeleton frame-work provided with a journal-bearing, C, and having two arms, b' b^4, the latter extending out through the sides of the shuttle-body to form keels or ribs adapted to fit into guideways or grooves in the shuttle-race, substantially as described.

2. The shuttle-body and its skeleton frame-work provided with a journal-bearing, C, and having two arms, b' b^4, the arms extending out through the sides of the shuttle-body to form keels or ribs adapted to fit into guideways or grooves in the shuttle-race, combined with a tension-spring and means to hold the spool in place, substantially as described.

3. The shuttle-body *b*, its attached tension-spring A', and guide R, combined with the skeleton frame, the spring *s*, and spool-carrying spindle E, notched to receive the said spring, substantially as described.

339,113. **SEWING-MACHINE.** JOHN B. PECK, Wollaston, Mass., assignor to the Bispool Sewing Machine Company, Kittery, Me. Filed Sept. 21, 1885. (No model.)



Claim.—1. The shuttle and its driver, provided with an extension or loop, *f*, combined with an oscillating shaft, f', the hub *h*, sleeve h', and hook h^3, the latter being provided with prongs to engage and open a loop of needle-thread prior to the entrance of the point of the shuttle into said loop, substantially as described.

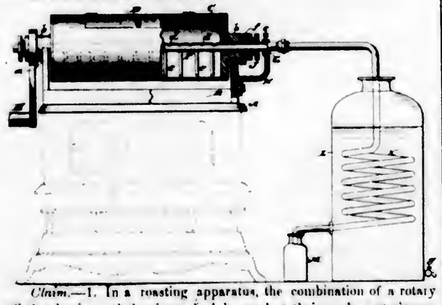
2. The oscillating shaft f', its attached hub *h*, sleeve h', and hook h^3, provided with prongs and having a projection, 10, combined with the link 13, and cam to reciprocate the link and oscillate the said hook, substantially as described.

3. The shuttle-driver provided with an extension or loop, *f*, and the spirally-twisted shaft f', embraced by the said extension or loop, the hub *h*, the sleeve and hook, the link 13, and cam *n*, to operate the link, combined with the rod *g* and with means to operate the shuttle-driver, substantially as described.

4. The shuttle-driver provided with the horn d^2, combined with the loop-guard d^3, the same being extended horizontally beyond the end of the said horn, substantially as represented, to prevent the needle-thread as it escapes from the heel of the shuttle from being caught by the said horn, substantially as set forth.

5. The combination, with the throat-plate and its attached depending needle-guard n^3, of the wire n^3, shaped substantially as described, and extended below the said needle-guard, as represented, to prevent the loop or thread from being caught by the needle-guard, as set forth.

339,114. **COFFEE-ROASTER.** THOMAS J. RUNDEL, Brooklyn, N. Y. Filed Feb. 18, 1886. (No model.)

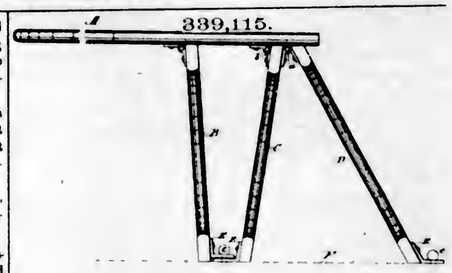


Claim.—1. In a roasting apparatus, the combination of a rotary cylinder having tubular journals *b b*, cored at their ends, a stationary perforated pipe passed through the tubular journals and having stirrers depending therefrom, the washers or packings *f f*, stuffing-boxes J J, and a condenser having its coil in communication with the perforated pipe, substantially as described.

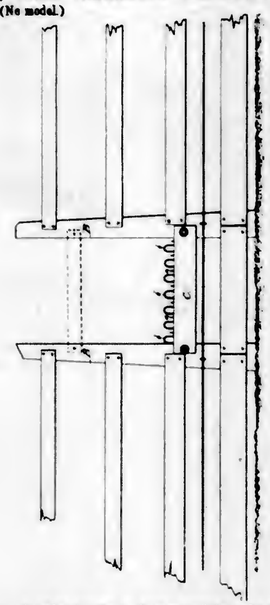
2. In a roasting apparatus, the combination of the rotary cylinder C, having tubular journals *b b*, the supporting-frame B, the stationary pipe F, passing through said cylinder and having perforations *d*, the stirrers *e*, depending from said pipe, the condenser L, having coil K, and the receiving-vessel M, substantially as described.

339,115. **IRONING-TABLE.** EMANUEL RUBE, Lovettsville, Va. Filed Sept. 28, 1885. (No model.)

Claim.—The combination, with the hinged legs B C, of the angle-irons E, each having an aperture, and one of them arranged, as shown, to adapt it to lap on the other, and a pin, *e*, for securing both irons to the floor, as specified.



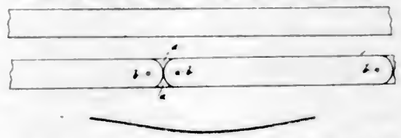
339,116. **FENCE.** JOSEPH R. STANDLEY, Platteville, Iowa. Filed Sept. 2, 1885. (No model.)



Claim.—1. A swine barrier or fence, consisting of a horizontal bar having a row of alternating spikes and staples set in its upper side, as shown and described.

2. The combination, with a cattle-fence, A, having a passage-way as specified, of a swine-barrier consisting of a bar spanning said passage-way about twenty inches above the ground, and having a row of alternating spikes and staples set in its upper side, as and for the purpose specified.

339,117. **MANUFACTURE OF METALLIC SHANKS FOR BOOTS AND SHOES.** CHARLES T. STETSON, Rockland, assignor of one-half to Oscar W. Whitcher, Hyde Park, Frank W. Whitcher, Boston, and J. Henry Emery, Quincy, Mass. Filed Jan. 23, 1886. (No model.)

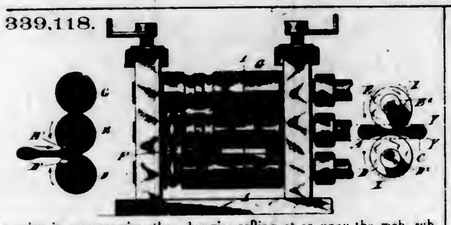


Claim.—The method of manufacturing metallic shanks for boots and shoes, consisting in first cutting the metal into strips of the width of a shank in the direction in which the metal is rolled, then cutting the shank from the strips so formed and punching the securing-hole therein, then bending the shanks so formed to shape, substantially as set forth.

339,118. **METHOD OF REDUCING OLD RAILROAD-RAILS TO PLATES.** EDGAR B. STOCKING, Washington, D. C. Filed Feb. 18, 1886. (No model.)

Claim.—1. A step in a method of reducing old rails to plates, which

339,118.



consists in commencing the edgewise rolling at or upon the web, substantially as specified.

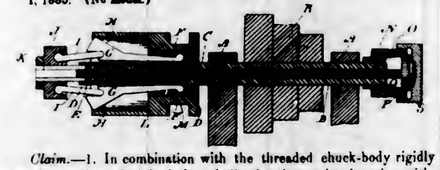
2. The method of reducing old rails to plates, which consists in, first, preliminarily reducing the head and flange portions of the rail to form a blank; second, rolling said blank edgewise, commencing said rolling at or upon the web; and, third, rolling said blank longitudinally to reduce it to a proper thickness, substantially as specified.

339,119. **BAND-CUTTER AND FEEDER.** JAMES R. STONE, Sarnsville, Ill., assignor of three-fourths to Thomas J. Wilhite, Edmond S. Wilhite, and Herman Wagner. Filed Oct. 5, 1885. (No model.)



Claim.—The herein-described band-cutter and grain-feeder comprising a hopper, a series of downwardly-inclined knives secured therein at one side, and a toothed roller journaled opposite to and in substantially the same horizontal plane with the knives, whereby the sheaf is compressed directly against the knives and the band cut by the pressure and traction, substantially as set forth.

339,120. **CHUCK.** JOHN W. STRONG, Bridgeport, Conn. Filed June 1, 1885. (No model.)



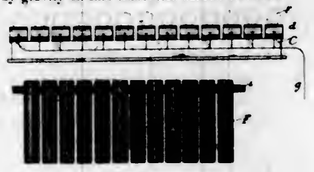
Claim.—1. In combination with the threaded chuck-body rigidly secured upon the end of the lathe-spindle, the plunger-head resting within the chuck, the rod extending axially through the lathe-spindle and secured to said plunger-head, and the levers and their connections operating the rod, and by means of which the plunger may be moved against or away from the work, all arranged as described, and for the purpose set forth.

2. In a chuck as described, the body externally threaded to accommodate work and having an internal abutment, in combination with the rod extending axially through the lathe-spindle, the toggle-joint levers, the cylinder, and the stationary collar J, whereby the binding between the levers and cylinder is reduced to a minimum, and the latter is left free to be moved in releasing the abutment from contact with the work, substantially as specified.

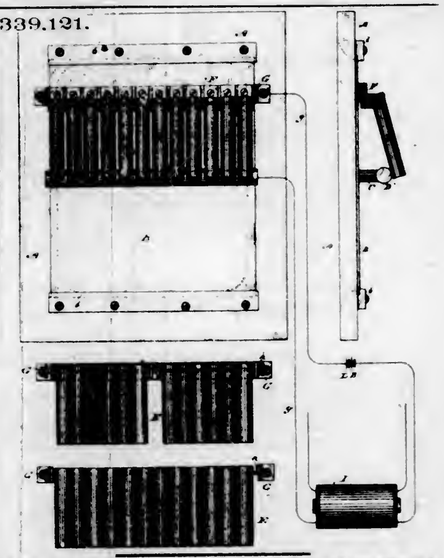
339,121. **TELEPHONE-TRANSMITTER.** WILLIAM C. TURNBULL, Baltimore, Md. Filed Apr. 18, 1885. (No model.)

Claim.—1. The combination of the transmitting-diaphragm secured at the top and bottom and free at its side edges, the transverse carbon electrode carried thereby, and a series of pendent carbon electrodes resting by gravity on the electrode carried by the diaphragm, substantially as and for the purpose set forth.

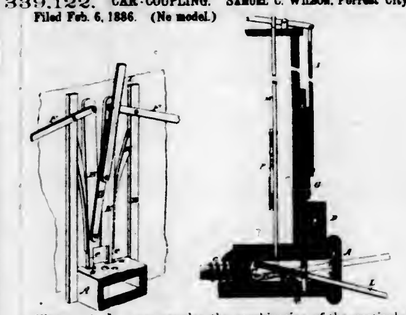
2. The combination of the diaphragm confined at the top and bottom and free at its side edges, the carbon electrode carried thereby and arranged transversely across its face, and a series of carbon electrodes which rest by gravity on said transverse carbon electrode.



339,121.



339,122. **CAR-COUPLING.** SAMUEL C. WILSON, Forrest City, Ark. Filed Feb. 6, 1886. (No model.)



Claim.—1. In a car-coupler, the combination of the vertical standards having their lower ends adapted to pass through the draw-head and serve as coupling-pins, the horizontal levers for operating the same, the draw-head, and the coupling-link, substantially as and for the purpose described.

2. In a car-coupler, the vertical standards terminating in coupling-pins, the draw-head, the horizontal levers, the pivoted plate connecting the vertical standards, and the coupling-link, all combined and operating substantially as and for the purpose described.

3. In a car-coupler, the vertical standards terminating in coupling-pins, the connecting-plate, the horizontal operating-levers, the springs bearing against the standards, the draw-head, and the link, all combined and operating substantially as and for the purpose described.

4. In a car-coupler, the combination of the draw-head provided with an interior projecting rib, the link, and the vertical rod pivoted to horizontal weighted levers and projecting through the draw-head over the rear end of the link, substantially as and for the purpose described.

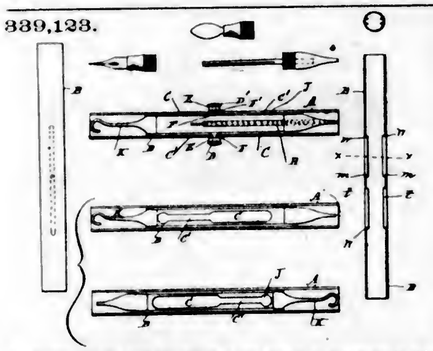
5. In a coupling device for cars, the combination of the draw-head, the vertical standards terminating in coupling-pins and connected by the pivoted plate G, the springs H, the horizontal operating-levers F, the lever K, and its connecting-rod I, arranged substantially as and for the purpose described.

6. In a car-coupling device, the vertical standards connected by the pivoted plate, the horizontal levers, the springs H, and the draw-head, in combination with the vertical rod M, having pivoted thereto the horizontal weighted levers P, and the link, substantially as and for the purpose described.

339,123. **PEN AND PENCIL CASE.** STEPHEN W. WOOD, New York N. Y., assignor to the Anser Pencil Company, same place. Filed Dec. 10 1885. (No model.)

Claim.—1. The pocket implement herein described and shown, consisting of a casing open at both ends, a sliding tool-carrier within said casing capable of movement back and forth, a stop or stops on the cas-

339,123.



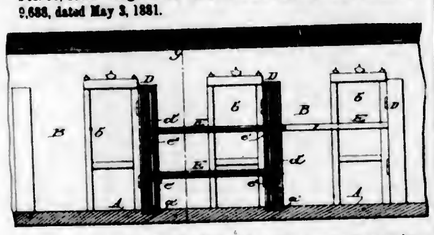
ing to engage and hold the carrier at the limit of its movement in either direction and in a central position, as set forth.

2. In an implement of the character described, a sliding hollow tool-carrier with longitudinal openings in its side or sides, the edges of said openings turned inward to form substantially radial flanges, in combination with an inclosing-casing and stops projecting into said openings, as set forth.

3. In an implement of the character herein described and shown, the combination of a tubular casing, a tool-carrier capable of moving back and forth therein, and having slots in its opposite sides, each slot having a wide and narrow part, the wide portions being on opposite sides of a central point, and headed stops on the casing, the heads adapted to the wide parts of the slots and the necks to the narrow parts, whereby the slide is engaged and held in a central position, substantially as set forth.

REISSUES.

10,703. SLEEPING-CAR. GUSTAVE LEVE, New York, N. Y., assignor, by mesne assignments, to Asariah B. Harris, Springfield, Mass. Filed Feb. 16, 1886. Original No. 181,857, dated Sept. 5, 1876; Reissue No. 9,688, dated May 3, 1881.

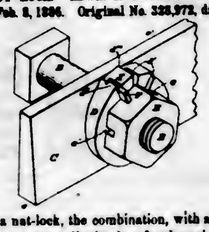


Claim.—1. The frames D, divided into two compartments by a central partition, *d'*, and hinged to the side walls, B, of a car in such a way that they may be swung in against the said walls or swung out at right angles with them, substantially as herein shown and described.

2. The combination, with the hinged frames D, of the berths E, the stop-pins *e'*, and the spring-stops e^2, in such a way that the said berths may be placed in a vertical position within said frames D or turned down into a horizontal position between two adjacent frames D substantially as herein shown and described.

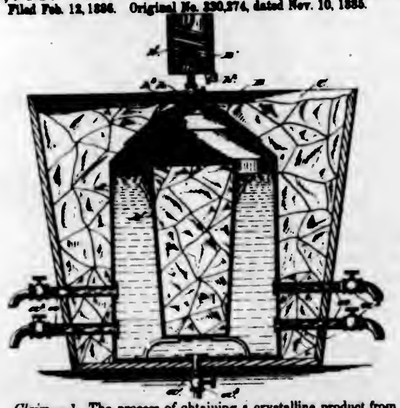
3. A car-floor provided with recesses *a'* at right angles with the walls B, to receive the lower ends of the frames D when said frames are swung outward, substantially as herein shown and described

10,704. NUT-LOCK. EDWIN R. PROCTER, Washington Court-House, Ohio. Filed Feb. 8, 1886. Original No. 328,972, dated Oct. 27, 1885.



Claim.—In a nut-lock, the combination, with a laterally-chamfered fish-plate, C, of a correspondingly-chamfered washer, D, having in its crown a series of radial notches, *d'*, a screw-nut, E, having in its sole a series of like notches, *e*, of slightly-different angular separation to the said washer-notches, and a key or cotter, F, adapted to be driven into the hole formed by the coincidence of any two of such notches *d'* and *e*, and to be locked therein by the upsetting of one or both the salient angles of such notch *d'*, as and for the purposes set forth.

10,705. OBTAINING MENTHOL. ALBERT H. TODD, Nottawa, Mich. Filed Feb. 12, 1886. Original No. 330,574, dated Nov. 10, 1885.



Claim.—1. The process of obtaining a crystalline product from the oil of *Mentha piperita* by first congealing it or rendering it in a semi-solid or jelly-like form, then separating or isolating it by gradually draining off the oil therefrom, and, thirdly, perfecting or hardening the crystalline mass by fusing the crystals and subjecting to a second congealing and a gradual raising in temperature, substantially as and for the purposes specified.

2. The process of obtaining a crystalline product from the oil *Mentha piperita* by first congealing or rendering it into a semi-solid or jelly-like form, then isolating the crystalline portion by separating the oil therefrom, and, thirdly, perfecting or hardening the crystalline product by a gradual raising in temperature, substantially as described.

3. The process of obtaining a crystalline product from the oil *Mentha piperita*, which consists in first congealing it into a semi-solid or jelly-like form, then isolating the crystals by separating the fluid portion thereof by drainage at a temperature at or below freezing, substantially as described.

4. The hereinbefore-described concentrated and crystalline product, obtained, as stated, from the oil of *Mentha piperita* fusible only at high temperatures, and having the properties of remaining dry and hard and of not liquefying at ordinary atmospheric temperatures.

PHOTO LITH. NORRIS PETERS WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

PRESTON *v.* MANARD *et al.*

Decided March 1, 1886.

1. "This was a bill in equity for the infringement of letters patent granted October 10, 1876, and reissued February 28, 1882, for an improved fountain hose-carriage."

2. "The first claim in the original patent was as follows: '1. The hose-reel, mounted upon a wheeled carriage, which is provided with a foot or brace, by means of which it may be sustained in an upright vertical position, whereby the device becomes capable of use, both as a hose-carriage and as a fountain-standard, substantially as specified.'" A former suit under the original patent was dismissed for want of novelty. The specification in reissue patent is exactly like that in original, but with different claims, the only material one of which was in these words: "1. The combined hose-carriage and fountain-standard, consisting in the combination of the following elements, viz: a wheeled carriage provided with a foot or brace by means of which it may be sustained in an upright vertical position, a nozzle-holding device, and a reel of large diameter to allow the water to flow through the hose when partially wound thereon, substantially as specified." "The hose-reel, the standard, the brace, the nozzle-holder, and their use in combination being all old, the description of the hose-reel in the specification and claim as 'a reel of large diameter to allow the water to pass through the hose when partially wound thereon' is not sufficient to sustain the patent." "The fact that water will flow through a hose wound on a reel, if the diameter of the reel is large enough and the curves or angles are not too abrupt, is a matter of common knowledge, which no one can appropriate to his own use to the exclusion of the public. In any view of the case the specification describes nothing that the patentee is entitled to claim, but only what every one has a right to use without his assistance." "To sustain this patent would be to deprive the public of the right to arrange and use a well-known apparatus in the only way in which its purpose can be beneficially accomplished."

APPEAL from the Circuit Court of the United States for the Northern District of Illinois.

Mr. J. W. Munday for the appellants.

Mr. John F. Farnsworth for the appellees.

Mr. Justice GRAY delivered the opinion of the Court.

This was a bill in equity for the infringement of letters patent granted October 10, 1876, and reissued February 28, 1882, for an improved fountain hose-carriage. The specification of the original patent, after describing the apparatus as consisting of a standard mounted upon an axle, to which are applied two wheels and a foot so contrived that when the device rests upon the tripod formed by the wheels and the foot the standard will assume an upright position to serve as a suitable fountain-standard, and the standard, for this purpose, having at its upper end a nozzle-holding contrivance, and at a suitable height from the ground a collar turning loosely upon it, to which is affixed the spindle of the hose-reel, a set-screw through one of the hubs of the reel entering a groove in the spindle, and serving to hold the reel from slipping off, and also by applying more or less friction as a means of locking the reel from turning, or as a brake to prevent its turning too freely; on the face of the outer four arms of the reel clasps, which serve as a means not only for holding the nozzle, when desired, but also for holding the butt of the hose when it is all reeled in, or an intermediate part when the butt is connected with the hydrant; two handles near the top of the standard to afford a grasp in wheeling the apparatus about from place to place, and another handle projecting to the rear from the collar, to serve as a hold for the hand in shifting about and adjusting; proceeded as follows:

In operation, the butt of the hose may be attached to the hydrant, and the body of the hose being upon the reel, the standard and reel may be wheeled along to the place desired, paying out hose as it goes. More or less hose may be thus paid out, and the nozzle being poised to its work, it may remain in operation for a time in a fixed position or at rest; or the apparatus may be moved about from place to place, and the hose taken up or paid out to suit, while the water is playing as well as when shut off. The reel being supported at a considerable height from the ground, renders it possible to employ a reel of a sufficient diameter so that the water will freely flow through the portion of the hose wound thereon. It will be seen, therefore, that the apparatus may be used as a lawn fountain or sprinkler, and moved from place to place without touching the hose with the hands, thus avoiding the dirt and wet; and also that the hose may be taken up or paid out from the standard itself as it is moved about, which is a better way than having the standard at one place and the reel at another, or than having no reel, because the work may be all attended to at the standard, and no more hose left on the ground than is absolutely necessary.

With a view to this method of using the apparatus, a peculiar feature of the reel consists in the fact that the hose is wound upon four separate points or bars. This, in connection with the large diameter of the reel, facilitates the discharge of the water. To make this clear, it is necessary to understand that each bar is liable to make a dent upon the inner side of the hose. This dent the water passing through will straighten out; but the effort to straighten the dent will cause a tendency of the hose to rise at this point, and in the part of the hose between the bars to recurve or bend toward the center of the reel. Now, if a solid drum is employed, or a reel composed of a large number of bars, this rising and recurving tendency is resisted by the intermediate points or bars, and the dent or flattening or compression resists the water and will not straighten out. By sufficiently loosening the set-screw so that it will clear the groove in the spindle, the reel may be taken entirely off from the standard, and the latter, in such case, may be used as a plain reelless fountain-standard.

The first claim in the original patent was as follows:

1. The hose-reel, mounted upon a wheeled carriage, which is provided with a foot or brace, by means of which it may be sustained in an upright vertical position, whereby the device becomes capable of use, both as a hose-carriage and as a fountain-standard, substantially as specified.

A former suit, brought March 29, 1880, by the plaintiff against the defendants, under the original patent, was heard upon pleadings and proofs, and dismissed by the court on January 6, 1882, for want of novelty. On January 21, 1882, the plaintiff applied to the Patent Office for a reissue, which was granted on February 28, 1882, with a specification exactly like that in the original patent, but with different claims, the first and only material one of which was in these words:

1. The combined hose-carriage and fountain-standard, consisting in the combination of the following elements, viz: a wheeled

carriage provided with a foot or brace by means of which it may be sustained in an upright vertical position, a nozzle-holding device, and a reel of large diameter to allow the water to flow through the hose when partially wound thereon, substantially as specified.

The present bill was filed April 13, 1882. By the evidence taken in the cause it appeared that a fountain-standard and hose-reel mounted upon a wheeled carriage provided with a foot or brace to sustain it in an upright position, and with a nozzle-holder, were known and used in combination with each other before the plaintiff's alleged invention. This bill also was dismissed, and the plaintiff appealed to this court.

It is unnecessary to consider the difference between the claim in the reissue and the claim in the original patent, because, assuming the reissue not to be invalidated thereby, yet it sets forth no patentable invention. The hose-reel, the standard, the brace, the nozzle-holder, and their use in combination being all old, the description of the hose-reel in the specification and claim as "a reel of large diameter to allow the water to pass through the hose when partially wound thereon" is not sufficient to sustain the patent. The requisite diameter of the reel and its proportion to the size of the hose are not defined in the specification, but are left to be ascertained by experiment or from general knowledge. If the patentee had discovered anything new in the size or proportions of the reel requisite to allow the water to flow through the hose, he should have described it with such precision as to enable others to construct the apparatus. The fact that water will flow through a hose wound on a reel, if the diameter of the reel is large enough and the curves or angles are not too abrupt, is a matter of common knowledge, which no one can appropriate to his own use to the exclusion of the public. In any view of the case the specification describes nothing that the patentee is entitled to claim, but only what every one has a right to use without his assistance. (*Guidet* v. *Brooklyn*, 105 U. S., 550; *Flood* v. *Hicks*, 2 Bissell, 169; *S. C.*, 4 Fisher Pat. Cas., 156; *The King* v. *Wheeler*, 2 B. & Ald., 345, 354; *Macnamara* v. *Hulse*, Car. & M., 471, 477; *Kay* v. *Marshall*, 7 Scott, 548; *S. C.*, 5 Bing. N. C., 492; 1 Beavan, 535; 8 Cl. & Fin., 245; West H. L., 682; 2 Webster Pat. Cas., 34, 68, 75, 77, 82, 84.)

To sustain this patent would be to deprive the public of the right to arrange and use a well-known apparatus in the only way in which its purpose can be beneficially accomplished.

Decree affirmed.

U. S. Circuit Court—Southern District of New York.

ARON v. THE MANHATTAN RAILWAY COMPANY.

Decided January 26, 1886.

1. NOVELTY—GATE-OPERATING DEVICE.

A device for opening and closing the gates of railway-cars, consisting of a link connecting a sliding rod with the gate, and a rod sliding in or on bearings secured to the guard-rail, and having a handle located within convenient reach of the attendant, does not possess patentable novelty.

2. JUDICIAL NOTICE OF MECHANICAL DEVICES.

Courts will take judicial notice of mechanical devices of common knowledge.

3. PATENTABILITY RESTS ON MEANS FOR CARRYING OUT A CONCEPTION.

Although the patentee was the first to conceive of the convenience and utility of a mechanism for opening and closing the gates of railway-car platforms, his right to a patent must rest upon the novelty of the means he contrived to carry his ideas into practical application.

4. INVENTION—MECHANICAL SKILL.

It rarely happens that old instrumentalities are so perfectly adapted for a use for which they were not originally intended as not to require alteration or modification for such use; but if the changes involve only the exercise of mechanical skill they do not sanction a patent.

5. DUPLICATION.

The mere duplication of a device for operating a gate for the platforms of railway-cars, whereby the gates of two adjoining platforms may be operated simultaneously, does not require invention.

6. ROSENFIELD—RAILWAY-CAR GATE.

The first five claims of Letters Patent No. 288,494, granted November 13, 1883, to William W. Rosenfield for an improvement on railway-car gates, declared void for want of patentable novelty.

Messrs. Munson & Phillips for the complainant.

Mr. Edwin H. Brown for the defendant.

WALLACE, *J.*:

This suit is brought to restrain infringement of Letters Patent No. 288,494, granted November 13, 1883, to William W. Rosenfield, assignor. The patent relates to gates of cars in which the passengers get on and off at the sides of the platform, the gates being arranged to close the side entrances to the car-platform, except when the passengers are getting on and off. Such cars are in use upon the elevated railways in the city of New York. The patent describes two improvements in these gates, only one of which is involved in this controversy. This consists in operating mechanism by which the guard or attendant upon the platform of the car while standing out of the way of incoming or outgoing passengers and in the passage-way between two cars can simultaneously open and close the gates of both cars.

The only question litigated is whether there was any patentable novelty in this improvement. In the general preliminary statement of the object of the invention the patentee states in his specification that—

> In many classes of railway-cars, and particularly in those used upon the elevated and other city railways, it has been found necessary, in order to prevent passengers from falling from the train, and also to prevent persons from attempting to get off or on the car while in motion, to provide the entrances on the car-platform with gates, by which they can be closed, except at the proper times. * * * As there is usually but one guard or attendant stationed between each two adjoining cars, it follows that to open or close both gates he must pass around from one to the other of the adjoining platforms. * * *
>
> It is the object of the present invention, among other things, to provide means by which the guard or attendant can, without changing his position, open or close both gates simultaneously and with the least possible delay. To that end one feature of the invention consists in providing the gates with connections so arranged that any two adjoining gates can be simultaneously opened or closed by the guard while standing in the passage-way leading from one of the cars to the other.

In the detailed description illustrated by the drawing the platforms are arranged so that the entrances to them from the station are at the side, and are provided with the usual guard-rails, which extend across the ends, except a space at the middle, which is left open to afford a passage-way from one car to the other. The side entrances to the platform are closed by gates which are hinged to posts at the outer ends of the guard-rails, and are arranged to swing inward against the rails in opening. The devices for operating the gates are a link connecting a sliding rod with the gate and a rod which slides in or on bearings secured to the guard-rail with a handle which is located near the passage-way. When the platforms of two cars adjoin each other the handles can be simultaneously grasped by the guard standing in the passage-way, one with each hand. Two arrangements of these co-operating connections are suggested in the description, and are shown in the drawing. In one the sliding rods extend along the outside of the guard-rails, and are connected by the links to levers or arms which extend outward from the gates, the opening of the gates being effected by pushing the sliding rod. In the other the sliding rods extend along the inside of the guard-rails, and are connected by the links directly to the gates, the opening being effected by pulling upon the sliding-rod. The patentee states that the sliding rods will preferably be provided with some form of locking mechanism by which the gates can be fastened in the open or closed condition.

The claims of the patent are six in number, five of which only are in controversy, and they are as follows:

> 1. The combination, with a gate arranged to close the side entrance to a car-platform, of an operating-handle located at or near the inner end of the platform guard-rail, and means connecting said gate and handle, whereby the attendant may open and close the gate while standing at the end of said guard-rail, substantially as described.
>
> 2. The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of operating-handles located at or near the inner ends of the platform guard-rails, and means connecting said gates and handles, whereby the attendant may open or close both gates simultaneously while standing at the ends of said guard-rails, substantially as described.
>
> 3. The combination, with a railway-car and its platform, having an end guard-rail, by which a side entrance thereto is provided, of a gate for closing said entrance, a rod, as *f*, sliding in or on guides secured to said guard-rail, and a link, as *e*, connected to said gate and rod, all substantially as described.
>
> 4. The combination, with a railway-car and its platform, having an end guard-rail, by which a side entrance thereto is provided, of a swinging gate for closing said entrance, a rod, as *f*, sliding in or on a guide secured to said rail, a link, as *e*, connected to said gate and rod, and means for locking said gate in its closed position, all substantially as described.
>
> 5. The combination, with gates arranged to close the side entrances to the adjoining platforms of two cars, of rods, as *f*, sliding in or on guides secured to the guard-rails of said platforms, and links, as *e*, connected to said gates and rods, substantially as described.

A brief reference to the prior state of the art will indicate that the combinations referred to in the several claims are merely an application to a new situation of old devices which had previously been applied to analogous uses.

Devices to open and close an aperture at a distance from the operator in a great variety of forms were old. As illustrations of those things which are matters of common knowledge, and of which the court will take judicial notice, it is sufficient to allude to the strap used by the driver at the front of an omnibus to open and close the rear door, to the devices for opening or closing valves at a distance in steam and hydraulic apparatus, and to the devices used at railway-switches for opening and closing the rails.

Referring to the prior state of the art, as shown by various prior patents which have been introduced in evidence, it appears also that mechanism to open and close the entrance to passenger-cars at a point distant from the operator was likewise old, as where the operator standing upon the front platform employed such mechanism to open or close a door at the rear platform. One prior patent alone—the one granted to John Stephenson, September 15, 1874—shows five methods of closing and opening the rear doors of street-cars from the front platform.

Mechanism for closing and opening apertures at a distance from the operator in which the same devices were employed as are employed by the patentee was old, and is disclosed in a number of earlier patents which have been put in evidence. It will suffice to refer to two only. The patent to Woolensak of March 11, 1873, for an improvement in transom-lifters, describes the means for opening and closing the transom as consisting of a sliding rod which is connected by a pivoted link to the arm of the transom-frame. The patent to Carrigan, granted April 16, 1878, for an improvement in blind-adjusters, whereby outside blinds are opened and closed without lifting the window-sash, describes as the mechanism employed a sliding bar connected by a pivoted link with a hinged shutter. In both of these patents the aperture to be opened and closed at a distance from the operator—in the one case a shutter and in another a transom—is opened and closed, as is the case in the patent in suit, by pushing and pulling the sliding rod or bar. In both of these patents there is likewise described a locking device, by means of which the sliding rod or bar is retained in a fixed position, so that the shutter or the transom will remain fastened when opened or closed, at the option of the operator, thus showing opening, closing, and locking apparatus in all essentials like that of the patent in suit. Moreover, the patent to Carrigan shows this apparatus arranged to open and close the two shutters of the window, at the option of the operator, simultaneously, the sliding bars being so arranged as to be pushed or pulled each by one hand of the operator.

Mechanism for opening and closing apertures distant from the operator, in which the devices used for the purpose are the mechanical equivalents of those employed by the patentee, is shown to be old by a large number of patents which have been put in evidence.

This partial exhibit of the prior state of the art demonstrates that what the patentee did was to adapt well-known devices to the special purpose to which he contemplated their application. It was necessary that the gate should swing inward to open and outward to close; that the sliding rod should be located where it would be out of the way of passengers entering or leaving the platform, and that the end or handle of the rod should be located where it could be conveniently operated by the attendant without inconveniencing outgoing or incoming passengers. The new situation required adequate modifications of existing devices for opening and closing an aperture at a distance from the operator appropriate to the new occasion. Accordingly the patentee located the rods on bearings secured to the guard-rails with their handles near the passage-way formed by the space or opening near the middle of the guard-rail. If this required invention, his improvement was the proper subject of a patent. He did nothing more and nothing less than this. It seems impossible to doubt that any competent mechanic familiar with devices well known in the state of the art could have done this readily and successfully upon the mere suggestion of the purpose which it was desirable to effect. When it was done as to one car-platform, it was only requisite to duplicate it upon another to make the improvement of the patentee in all its length and breadth.

The patentee is entitled to the merit of being the first to conceive of the convenience and utility of a gate opening and closing mechanism which could be operated efficiently by an attendant in the new situation. His right to a patent, however, must rest upon the novelty of the means he contrives to carry his idea

into practical application. It rarely happens that old instrumentalities are so perfectly adapted for a use for which they were not originally intended as not to require any alteration or modification. If these changes involve only the exercise of ordinary mechanical skill, they do not sanction the patent, and in most of the adjudged cases, where it has been held that the application of old devices to a new use was not patentable, there were changes of form, proportion, or organization of their character which were necessary to accommodate them to the new occasion. The present case falls within this category. The bill is therefore dismissed.

U. S. Circuit Court—Southern District of New York.

BOGART *v.* HINDS.

Decided December 29, 1885.

1. CONSTRUCTION OF CLAIM.
   The first claim of Letters Patent No. 119,561, to Abraham L. Bogart, October 3, 1871, for "an insulated gas-burner having its insulated section of or from glass or similar vitreous material, substantially as and for the purpose specified," cannot be construed, in view of the state of the art, as a broad claim for a gas-burner in an electric lighting system having an insulated section of the material mentioned.
2. But this claim should not be limited to an insulated burner having all the details of construction described in the specification, as such a construction of the claim, in view of the prior state of the art, would unduly narrow the scope of the real invention of the patentee.
3. The essential novelty of the patentee's invention consists in selecting an appropriate insulating material, and making from it the upper part of a gas-burner which will serve both to support and insulate the electrical conductor and as a gasway from the gas-pipe to the place where the spark is communicated to the gas.
4. The claim, as construed, is valid, although an entire gas-burner made of substantially the same material, but with no thought of its utility for insulating purposes in an electric lighting system, was old, and although other inventors had inserted insulating material in electric lighting burners employing independent insulators and independent insulated sections.
5. INVENTION.
   In view of the comparatively unsuccessful efforts of those who preceded patentee and of the manifest improvement which resulted from the changes made by him, *held* that what he did involved invention.

Mr. Walter D. Edmonds for the complainant.
Van Santvoord & Hauff for the defendant.

WALLACE, *J.*:

Infringement is alleged of the first claim of Letters Patent No. 119,561, granted to Abraham L. Bogart, October 3, 1871, for an improvement in apparatus for lighting gas-jets by induced currents of electricity. The claim is:

1. An insulated gas-burner having its insulated section of or from glass or similar vitreous material, substantially as and for the purpose specified.

This claim cannot be construed as a broad claim for a gas-burner in an electric lighting system having an insulated section of the material mentioned. The patentee was not the first to discover the peculiar value of such material for insulating purposes in gas-burners intended for use in electric gas-lighting apparatus, and the novelty of the claim would be negatived by the patent to Bean and Mumler, of June 4, 1867, and the patent to Barbarin, of June 1, 1869. On the other hand, upon correct principles of construction, the claim should not be limited to an insulated burner having all the details of construction which are described in the specification of the patent. The second claim of the patent makes various details of construction constituents of the claim. Clearly, these details are not to be incorporated into the comprehensive language of the first claim. Such a construction, in view of the prior state of the art, would also unduly narrow the scope of the real invention of the patentee.

The essential novelty of the patentee's invention consists in selecting an appropriate insulating material and making from it the upper part of a gas-burner which will serve both to support and insulate the electrical conductors, and as a gasway from the gas-pipe to the place where the spark is communicated to the gas. The patent to Arnold and Irving, of March 12, 1867, shows an entire gas-burner made of substantially the same material as that employed by the patentee. This gas-burner, however, was made with no thought of its utility for insulating purposes in an electric lighting system. It was an ordinary gas-burner. Other inventors had inserted insulating material in electric lighting burners employing independent insulators and independent insulated sections. By substituting a burner similar to that of Arnold and Irving, and making a slight modification in its exterior construction, so as to form a shoulder upon which the electrical conductors could be firmly and securely fastened, the patentee was enabled to dispense with the complicated parts employed by those who preceded him, and made a simple, compact, and efficient burner, which would serve both as an insulator for the conductors, a gasway from the metal pipe to the point of ignition, and a firm support for the conductors. It is quite apparent that in strength, rigidity, and simplicity of construction it is a much better practical burner than those which were devised by preceding inventors who were striving to make an efficient burner. In view of the comparatively unsuccessful efforts of those who preceded him and of the manifest improvement which resulted from the change it is not doubted that what he did involved invention.

The language of the claim does not necessarily limit the patentee to a narrower invention than he really made, and by selecting the essential features of his improvement as described in the specification and discarding non-essentials it can be read so as to secure him to the extent of his invention, in the light of pre-existing patents and the prior state of the art.

The defendant has appropriated this invention. He has changed the mode of fastening the conductors to the burner, but they rest upon a shoulder [illegible] insulated part of the burner, which serves as a gasway from the gas-pipe to the point of ignition. The complainant is entitled to a decree.

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, &c.

OFFICIAL GAZETTE—January—March, 1886.

DIGEST OF DECISIONS.

[Decisions of the U. S. courts designated by an asterisk (*), and of Canadian courts by a section-mark (§).]

ABANDONED EXPERIMENTS.

(See Priority of Invention, 1, 2.)

ABANDONMENT.

(See Division of Application; Enlargement of Claims, 2.)

"The defense of abandonment to the public is not confined to reissued patents, but is given generally by the statute to all patents."

[*Railway Register Manufacturing Company v. Broadway and Seventh Avenue Railroad Company, 921.

AFFIDAVITS.

(See Injunction, 4.)

ANALOGOUS DEVICE.

(See Infringement, 1, 2, 3, 4, 6.)

APPEALS.

(See Practice in the Patent Office, 7.)

APPLICATIONS.

(See Division of Application; Practice in the Patent Office, 1, 2, 3, 4.)

"The authority to grant a patent appears to depend on an application made and pending for that purpose."

[*Railway Register Manufacturing Company v. Broadway and Seventh Avenue Railroad Company, 921.

BILL IN EQUITY.

(See Injunction, 1, 2.)

BURDEN OF PROOF.

(See Infringement, 7.)

CANADIAN COURTS.

(See Practice in Canadian Courts, 1, 2, 3, 4, 5.)

CERTIFICATE OF CORRECTION.

(See Construction of Specifications and Patents, 1; Reissues, 1, 2.)

CLAIMS.

(See Construction of Specifications and Patents, 9, 10, 11, 12; Practice in the Patent Office, 2, 4, 5, 6, 7.)

COMBINATION.

(See Enlargement of Claims, 1, 2; Infringement, 6, 12; Particular Patents, 11, 14; Patentability.)

CONSTRUCTION OF RULES.

(See Practice in the Patent Office, 1, 2, 3, 4, 5, 6, 7.)

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

(See Abandonment; Applications; Enlargement of Claims, 1, 2; Improvements; Infringement, 1, 3, 4, 5, 6; Invention; Invention shown in Drawing but not in Specification; Old Devices; Particular Patents; Priority of Invention; Reissues.)

1. It was also insisted by the defendant that the complainant's reissue was void because in expressing the claim the word "woof" was used for "warp." *Held*: "Such a casual misuse of words could not mislead any one who would read the claim in connection with the specifications and drawings of the patent, to which he is referred by the words 'substantially as described.'"

[*Reed v. Street, 339.

2. NOVELTY.

Although the question of patentable invention may be open to doubt, the court will not reverse the decision of the Patent Office, except upon clear evidence.

[*Fraim v. Keen, 1048.

3. Whether the thing devised is due to the genius of an inventor or to the mechanical skill of a workman is often a difficult question to determine. The line between them is not always clearly drawn. Invention indicates genius and the production of a new idea. Mechanical skill is applied to an idea and suggests how it may be modified and made more practical.

[*New York Belting and Packing Company v. Magowan *et al.*, 1159.

4. The complainant's patent is nearly on the line dividing invention from mechanical skill; but a new and better method of obtaining a tight joint between the packing and the piston-rod was obtained, and the fact that it went at once into extensive public use, superseding other methods, is pregnant evidence of its novelty, value, and usefulness.

[*Id.

5. The claim in controversy is as follows: "1. The method of making hydrogen peroxide by cooling the acid solution, imparting thereto a continuous movement of rotation, as well in vertical as in horizontal planes—such, for example, as imparted by a revolving screw in a receptacle—and adding to said acid solution the binoxide in small quantities while maintaining the low temperature and the rotary or eddying movements, substantially as described."

[*Marchand v. Emken, 1275.

6. "The defenses are lack of novelty and invention and non-infringement." "As every device, apparatus, formula, law of nature, motion, and ingredient adopted by the complainant was old, the patent must be held invalid, unless it can be said that giving to oxygenated water a well-known rotary motion springs 'from that intuitive faculty of the mind put forth in the search of new results of new methods, creating what had not before existed or bringing to light what lay hidden from vision.' No such faculty has been tasked in giving form to this patent."

[*Id.

7. JUDICIAL NOTICE OF MECHANICAL DEVICES.

Courts will take judicial notice of mechanical devices of common knowledge.

[*Aron v. The Manhattan Railway Company, 1508.

8. PATENTABILITY RESTS ON MEANS FOR CARRYING OUT A CONCEPTION.

Although the patentee was the first to conceive of the convenience and utility of a mechanism for opening and closing the gates of railway-car platforms, his right to a patent must rest upon the novelty of the means he contrived to carry his ideas into practical application.

[*Id.

9. CONSTRUCTION OF CLAIM.

The first claim of Letters Patent No. 119,561, to Abraham L. Bogart, October 3, 1871, for "an insulated gas-burner having its insulated section of or from glass or similar vitreous material, substantially as and for the purpose specified," cannot be construed, in view of the state of the art, as a broad claim for a gas-burner in an electric lighting system having an insulated section of the material mentioned.

[*Bogart v. Hinds, 1510.

10. But this claim should not be limited to an insulated burner having all the details of construction described in the specification, as such a construction of the claim, in view of the prior state of the art, would unduly narrow the scope of the real invention of the patentee.
[*Id.

11. The essential novelty of the patentee's invention consists in selecting an appropriate insulating material, and making from it the upper part of a gas-burner which will serve both to support and insulate the electrical conductor and as a gasway from the gas-pipe to the place where the spark is communicated to the gas.
[*Id.

12. The claim, as construed, is valid, although an entire gas-burner made of substantially the same material, but with no thought of its utility for insulating purposes in an electric lighting system, was old, and although other inventors had inserted insulating material in electric lighting burners employing independent insulators and independent insulated sections.
[*Id.

CORPORATIONS.

(See Parties to Suit.)

CORRECTION OF CLERICAL ERROR IN A PATENT.

(See Reissues, 1, 2.)

DAMAGES AND PROFITS.

(See Infringement, 8; Injunction, 6, 7.)

1. There was infringement before any license-fee or royalty had been established. The orator insists that the amount of the license-fee should be applied as a rule of damages to that infringement, as it does not appear but that the value was the same then as afterward. The master has found the profits of that infringement to the defendant's firm, and has not found damages otherwise. *Held:* "It is understood that an established royalty or license-fee is evidence and not an absolute test of value. Whether the situation was such that the value was equal to the license-fee before the latter became established was a question of fact for the master. The weight of the evidence was for him. The court cannot say, as a matter of law, that the license-fee, which did not become established until afterward, should govern." (*Suffolk Co.* v. *Hayden*, 3 Wall., 315; *Packet Co.* v. *Sickles*, 19 Wall., 611; *Birdsall* v. *Coolidge*, 93 U. S., 64.)
[*Wooster v. Thornton, 560.

2. INFRINGEMENT—PROFITS—DAMAGES—EVIDENCE.
Complainants received Letters Patent Nos. 64,404 and 80,269 for improvements in tuck-markers, which proved to be of little value. Defendant made improvements on same which cured the defects and rendered the device marketable. Complainants obtained a decree for assessment of damages and profits for infringement of the above patents. *Held*, that complainants must show what proportion of profits arising from the sale of the improved tuck-markers was due to the original invention, and that, failing in that, they were entitled to nominal damages only.
[*Bostock and Wife v. Goodrich, 1047.

DEFECTIVE SPECIFICATIONS.

(See Invention shown in Drawings but not in Specification.)

DELAY IN APPLYING FOR REISSUE.

(See Reissues, 3, 4, 5, 6, 7.)

DEMURRER.

(See Injunction, 1.)

DIVISION OF APPLICATION.

(See Practice in the Patent Office, 4.)

Where a division is made, what is not reserved out of an original application to go into a division is left in original application, and if disposed of then, is not left pending anywhere.
[*Railway Register Manufacturing Company v. Broadway and Seventh Avenue Railroad Company, 921.

DRAWINGS.

(See Invention shown in Drawings but not in Specification.)

ENLARGEMENT OF CLAIMS.

(See Reissues, 3, 4, 5, 6, 7.)

1. When an applicant for a patent to cover a new combination is compelled by the rejection of his application by the Patent Office to narrow his claim by the introduction of a new element, he cannot, after the issue of the patent, broaden his claim by dropping the element which he was compelled to include in order to secure his patent.
[*Shepard *et al.* v. Carrigan, 1157.

2. If an applicant, in order to get his patent, accepts one with a narrower claim than that contained in his original application, he is bound by it.
[*Id.

EQUIVALENTS.

(See Improvements; Infringement, 3.)

EVIDENCE.

(See File-Wrapper; Master's Report, 1, 2; Priority of Invention, 1, 2; Rehearing, 1, 2.)

EXAMINATION OF APPLICATIONS.

(See Practice in the Patent Office.)

EXAMINERS.

(See Practice in the Patent Office; Reissues, 3.)

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(See Practice in the Patent Office, 5, 6, 7.)

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(See Injunction, 1, 6, 7.)

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FILE-WRAPPER.

HOE PRINTING-PRESS—CONSTRUCTION OF PATENT NO. 131,217—REGULARITY OF ISSUE OF PATENT.
Where it was sought to be shown by the file-wrapper and contents that an oath sworn to by applicant March 12, 1872, was not taken before a proper officer, the court said: "Showing what were the contents of the file-wrapper in January, 1861, or what are its contents now, or what was the practice of the Patent Office in regard to preserving papers filed in applications for patents, and letters to and from the Office, and in regard to the record of the proceedings and the dates of filing papers, and of receiving and sending communications, and the scope and functions of a file-wrapper and contents in the matter of a patent, is not sufficient to rebut the presumption that the Commissioner required and received a proper preliminary oath from Mr. Hoe. The affirmative probative force of a paper in a file-wrapper, to show the existence of its contents, is one thing, but its negative probative force, to show that a paper or a fact not shown by anything in its contents did not exist, is quite a different thing. The fact that papers known to have existed, and which properly belonged in a file-wrapper, are missing therefrom is a fact of such frequent occurrence in patent suits as to have become a matter of judicial cognizance."
[*Hoe *et al.* v. Kahler, 127.

FORMER DECISIONS AFFIRMED.

(See Injunction, 3; Labels, 1; Particular Patents, 11.)

Decision of United States Circuit Court, Southern District of New York, in *Field* v. *De Comeau et al.* (17 O. G., 568) affirmed.
[*Field v. De Comeau *et al.*, 559.

FORMER DECISIONS REVERSED.

(See Particular Patents, 6.)

IMPROVEMENTS.

EQUIVALENTS.
An inventor who is only an improver and not the first in the art is not entitled to invoke, broadly, the doctrine of mechanical equivalents so as to cover devices not specifically claimed.
[*Tobey Furniture Company v. Colby *et al.*, 1276.

INFRINGEMENT.

(See Damages and Profits, 1, 2; Injunction, 1, 2, 6, 7; Invention, 2; Masters Report, 1, 2; Particular Patents, 3, 5, 6, 7; Reissues, 1, 6.)

1. Where a bill in equity was brought to restrain the defendants from infringement of the claims of Reissued Letters Patent No. 7,628, granted April 24, 1877, to the Bradley & Hubbard Manufacturing Company, as assignee of John A. Evarts, the inventor, for an improvement in extension lamp-fixtures, *held* not to be the construction "that shade-ring and weight-ring must be directly connected to each other by the claims," because the court could "not find in the patent a suggestion that the patentee thought that this peculiarity of construction was a distinctive feature of his invention." Patentee "made a universally popular lamp, where none which met the public demand had previously existed, and had he known or appreciated the particulars wherein his lamp was, in fact, an advance, he probably would have stated them in his patent. In consequence of the omission I think that his patent states and claims nothing which the public did not have previously, and that title of his assignee to exclusive use of his actual improvement is therefore defective."
[*The Bradley & Hubbard Manufacturing Company v. The Charles Parker Company, 249.

2. Upon question of infringement, *held*, "he [defendant] has taken the essence of the complainant's patent, and it is no reply to the charge of infringement to say that he has improved upon it." Decree for complainant, with an injunction and an account.
[*Reed v. Street, 339.

3. The view taken that, "claim 2 was infringed because the defendants use a rod the end of which is pushed and pulled by the hand of the operator, while in the patent the lever H pulls and pushes the end of the rod." *Held:* "But the lever, or its equivalent, as a mechanical instrument, is made an essential element in claim 2, and dispensing with the lever and using instead the human hand is not the use of an equivalent, although in the plaintiffs' machine the hand is applied to work the lever." Cases cited: *Water Meter Co.* v. *Desper*, (101 U. S., 332, 337;) *Gage* v. *Herring*, (107 Id., 640, 648;) *Fay* v. *Cordesman*, (109 Id., 408, 420, 421;) *Sargent* v. *Hall Safe and Lock Co.*, (114 Id., 63, 86.)
[*Brown *et al.* v. Davis *et al.*, 435.

4. The patent is for a spring shaped to hold together the parts of the wrist of the glove, and is not infringed by a device consisting of two stiff arms with a spring on one operating on the cam-shaped end of the other to hold them tight when closed a certain distance.
[*Field v. De Comeau *et al.*, 559.

5. When, from the evidence, it appears that the defendant is simply pursuing the same process of manufacturing which he followed before the patent in question was issued, the court will not restrain him from continuing to use the same means.
[*Dorlan v. Guie, 702.

6. When a patent has been issued for an invention which consists in a peculiar arrangement of old elements or parts, it must be construed strictly and the monopoly limited substantially to the special character of the parts and the particular organization described. A machine which may be forced to produce a similar result will not be regarded as an infringement if that was not the object of its construction.
[*Buzzell v. Andrews *et al.*, 830.

7. BURDEN OF PROOF.
Although not free from doubt, the court concluded that the defendants had made their drooping hoops by bending alone, without torsion, and the plaintiff, upon whom is the burden of proof, not having clearly established the fact of infringement, the bill was dismissed.
[*Mallory Manufacturing Company v. Hickok *et al.*, 923.

Two bills in equity brought for infringement of Letters Patent No. 24,915, granted to Freeborn Adams, August 2, 1859, for improvement in casting copper cylinders. One suit brought for infringement during the original term of patent, the other for infringement during the extended term. The original term of patent expired August 2, 1873.

8. Defense urged that court had no jurisdiction of the suit covering the original term. *Held:* "This objection well taken. A bill in equity for a naked account of profits and damages against an infringer of a patent cannot be sustained. * * * In actions of tort the mere intricacy of the account does not furnish a ground for equitable interference."
[*Adams *et al.* v. Bridgewater Iron Company *et al.*, 1045.

9. Upon question of infringement *held:* "The complainants have made out a case of infringement, and a decree should be entered in their favor in the bill covering the extended term of the Adams patent. The bill brought upon the original term of the patent must * * * be dismissed."
[*Id.

10. Action for infringement of Patent No. 125,044, issued to James F. Guthrie, March 26, 1872.
[*American Tube Works v. Bridgewater Iron Company *et al.*, 1047.

11. Specification and claims of said patent examined, construed, and defendants *held* to have infringed claim 1 and not to have infringed claim 2.
[*Id.

12. COMBINATION CLAIM.
A claim for a combination of three elements is not infringed by the use of only two of them where the omitted element has a function of its own not performed by the elements used in the device claimed to infringe.
[*Tobey Furniture Company v. Colby *et al.*, 1276.

13. DEFECTIVE PLEADINGS—PRACTICE.
By taking issue upon a plea the complainants admitted its sufficiency, and the defendants, having established the truth of the facts alleged in their plea, are entitled to a judgment.
[*Birdseye *et al.* v. Heilner *et al.*, 1392.

INJUNCTION.

(See Labels, 1.)

1. PATENT ABOUT TO EXPIRE—INJUNCTION.
A suit in equity was brought on May 5, 1885, on letters patent which expired on the 16th of June next succeeding. There was service on the defendants on May 7, but no steps were taken to secure a preliminary injunction. The bill, however on its face disclosing a case cognizable in equity, on demurrer, *held*, that the court would not dismiss the bill because of the expiration of the patent.
[*Dick *et al.* v. Struthers *et al.*, 131.

2. To the second suit, covering the extended term, the defendants urge the same objection of want of jurisdiction. Suit was begun July 10, 1880, and the extended term of the patent expired August 2, 1880. The bill prays for a perpetual, but not for a provisional, injunction. The fact that no preliminary injunction was asked for is not deemed material. The bill prays for a perpetual injunction, and the plaintiffs had a right at any moment to amend their bill and ask for a provisional one. The case was cognizable in equity at the time the bill was filed, and it was not impossible to have obtained equitable relief during the life of the patent. It was not a mere device to transfer a plain jurisdiction at law to a court of equity, as the courts have held where the patent has only several days to run. A special contract between defendants and patentee *held* not to affect the rights of complainant.
[*Adams *et al.* v. Bridgewater Iron Company *et al.*, 1045.

3. PRELIMINARY INJUNCTION.
No new facts appearing from defendant's affidavit, a preliminary injunction was granted in this case, without an examination of the merits or any expression of opinion upon the validity of the patent, following the ruling in *Cary* v. *Wolf*, (24 Fed. Rep., 139.)
[*Cary *et al.* v. Domestic Spring Bed Company *et al.*, 1158.

4. MOTION TO DISSOLVE PRELIMINARY INJUNCTION.
Upon a motion to dissolve the preliminary injunction the defendants conceded the utility of the invention, but sought to show by affidavits that the patentee was not the first inventor. The court, not deciding that such evidence was conclusive as to the prior use, *held* that it was of a character to suggest grave doubts on this point and dissolved the injunction.
[*Id.

5. RULE AS TO DISSOLVING INJUNCTIONS.
It is a good rule that evidence which would prevent the issuing of an injunction ought to be regarded as sufficient to dissolve one already granted.
[*Id.

6. "The question raised in this case is whether, after the expiration of the patent sued on, the court ought to include in the decree an injunction against the defendants using or selling the infringing articles manufactured by them during the life of the patent."
[*The New York Belting and Packing Company v. Magowan *et al.*, 1278.

7. *Held:* "That the court would interfere after a patent had expired to restrain the sale of articles manufactured previous to its expiration in infringement of a patent right."
[*Id.

INVALIDITY OF PATENTS.

(See Construction of Specifications and Patents, 6.)

INVENTION.

(See Construction of Specifications and Patents, 3, 4, 6, 7, 8; Old Devices; Patentability.)

1. As to question raised, "whether the production of the new article of manufacture claimed required the exercise of invention in view of what was shown," *held* "that this [invention] is considerable is evidenced by the fact that fire-hose thus constructed has driven all the older forms from the market."
[*Reed v. Street, 339.

2. "The question then seems to be narrowed down to this: Does it constitute invention to stir by a well-known and simple mechanical device what had before been stirred by hand," and the court decides it does not. The case being disposed of upon the question of novelty and invention the question of infringement is not considered. The bill is dismissed.
[*Marchand v. Emken, 1275.

3. DUPLICATION.
The mere duplication of a device for operating a gate for the platforms of railway-cars, whereby the gates of two adjoining platforms may be operated simultaneously, does not require invention.
[*Aron v. The Manhattan Railway Company. 1508.

4. INVENTION.
In view of the comparatively unsuccessful efforts of those who preceded patentee and of the manifest improvement which resulted from the changes made by him, *held* that what he did involved invention.
[*Bogart v. Hinds. 1510.

INVENTION SHOWN BUT NOT CLAIMED.

(See Infringement, 1.)

INVENTION SHOWN IN DRAWINGS BUT NOT IN SPECIFICATION.

Although a mechanical feature of a device is shown in the drawings, if the specification does not describe nor the patent claim it it is not a distinctive part of the patented improvement.
[*The Bradley & Hubbard Manufacturing Co. v. The Charles Parker Company, 249.

JURISDICTION.

(See Infringement, 8.)

LABELS.

1. The rule "that if a manufacturer has applied a peculiar and distinctive label to designate his goods, and has so used it that his goods are identified by it, a court of equity will restrain another party from adopting and using one so similar that its use is likely to lead to confusion by purchasers exercising the ordinary degree of caution, which purchasers are in the habit of exercising with respect to such goods," (*McLean* v. *Fleming*, 96 U. S., 245.) affirmed.
[*Anheuser-Busch Brewing Association v. Clarke, 562.

2. Complainant "was the first to use for beer a label with a diagonal red band, with the name of the kind of beer appearing in white letters on the red band." Respondent used "diagonal red label." *Held* "that it is a strong case of similarity likely to deceive," and injunction granted.
[*Id.

LICENSE-FEE.

(See Damages and Profits, 1.)

MACHINE.

(See Infringement, 6.)

MASTER'S REPORT.

This suit is brought upon Reissued Letters Patent No. 5,180, dated December 10, 1872, and granted to the orator, as assignee of Alexander Douglass, for an improved folding-guide for turning in the edges of cloth or other material preparatory to sewing for binding and other purposes. The defendant offered no evidence, and did not appear at the hearing.

1. The patent had been several times adjudged to be valid. The evidence of the orator showed infringement by the defendant, and a decree was entered adjudging that the patent was valid, that the defendant had infringed, and that an account be taken, by a master appointed, of the profits and damages due to the infringement. The original patent was not put in evidence for the hearing in chief. The defendant offered it in evidence before the master for the purpose of showing that there was no infringement of the reissue upon any construction of it that would be valid on comparison with the original. The master rejected this evidence, and took an account of the damages due to the extent of what was shown by the orator's evidence in chief, and adjudged by the decree to be an infringement. The question is as to the propriety of this ruling by the master, raised by exceptions to his report. The argument is that the question is one of infringement, and that such questions are always open before the master. *Held*: "If there was something claimed to be an infringement which had not been passed upon by the decree, then the question concerning that would be open before the master to be passed upon by him. Here there was nothing before the master that was substantially different from the device covered by the decree. The question whether these things were infringements or not could not be passed upon by the master without reviewing the decree in that respect. This was not within his province, and his decision that he would not enter upon it appears to be correct."
[*Wooster v. Thornton, 560.

2. Exceptions overruled, report accepted and confirmed, and decree to be entered accordingly.
[*Id.

MECHANICAL CHANGE.

(See Infringement, 3, 4, 7.)

MECHANICAL SKILL.

(See Construction of Specifications and Patents, 3, 4; Invention 4; Old Devices; Patentability; Priority of Invention, 4.)

NOVELTY.

(See Patentability.)

OATH.

(See File-Wrapper.)

OLD DEVICES.

(See Construction of Specifications and Patents, 6, 7, 13; Invention, 3.)

INVENTION—MECHANICAL SKILL.
It rarely happens that old instrumentalities are so perfectly adapted for a use for which they were not originally intended as not to require alteration or modification for such use; but if the changes involve only the exercise of mechanical skill they do not sanction a patent.
[*Aron v. The Manhattan Railway Company, 1508.

ORIGINAL INVENTOR.

(See Priority of Invention, 1, 3, 4.)

PARTIAL USE.

(See Infringement, 12.)

PARTICULAR PATENTS.

(See Infringement, 1, 8, 10, 11.)

1. ADAMS—CASTING COPPER CYLINDERS.
Letters Patent No. 24,915, granted August 2, 1859, to Freeborn Adams, for an improvement in casting copper cylinders, construed, and upon this question of novelty *held* "that the defendants have failed to make out want of novelty in the Adams invention, based upon the prior state of the art."
[*Adams *et al.* v. Bridgewater Iron Company *et al.*, 1045

2. BENTON—FARE-REGISTER.
Letters Patent No. 260,526, granted to John B. Benton, July 4, 1882, for an improvement in fare-registers, declared void.
[*Railway Register Manufacturing Company v. Broadway and Seventh Avenue Railroad Company, 921.

3. BLACKMORE AND GREEN—WARDROBE-BEDSTEADS.
The patent to Blackmore and Green, assignees of Hand and Caulier, No 204,321, of May 28, 1878, for wardrobe-bedsteads, construed and *held* not infringed by a bedstead made under the patent to Robert F. Meissner, No. 270,327, of January 9, 1883.
[*Tobey Furniture Company v. Colby *et al.*, 1276.

4. BRAY—RIVET-SETTING MACHINES.
Reissued Letters Patent No. 8,276, granted to Mellen Bray, June 11, 1878, for an improvement in rivet-setting machines, construed, and the seventh claim declared void, it not being found in the original patent.
[*Tubular Rivet Company v. Copeland, 1277.

5. CLARK—LUBRICATOR.
The second claim of Letters Patent No. 187,964, granted to William A. Clark, March 6, 1877, for an improvement in lubricators, in view of the prior state of the art, must be limited to a drip-tube with one side at its end cut off slanting, and located with its slanting end so near the side of the glass cylinder that the drops of condensed water will be delivered against the side of the glass, or so near it as to practically displace the oil between the end of the tube and the glass, and when so construed it is not infringed by defendant.
[*Jenks *et al.* v. Swift, 699.

6. DAVIS—GRAIN-DRILLS.
Reissued Letters Patent No. 8,589, granted to Charles F. Davis and William Allen, February 18, 1879, for improvement in grain-drills—the original patent, No. 74,515, having been granted to said Davis as inventor February 18, 1868, and application for reissue filed January 24, 1879,—construed, and the decision of the circuit court "declaring the reissued patent to be valid, and to have been infringed as to all its claims, and awarding a recovery of profits and damages and a perpetual injunction," reversed and the case remanded with a direction to dismiss the bill, with costs.
[*Brown *et al.* v. Davis *et al.*, 435.

7. FIELD—GLOVE-FASTENINGS.
Letters Patent No. 155,077, granted to J. F. Field, September 15, 1874, for improvements in glove-fastenings, does not cover, broadly, the use of springs to close the wrists of gloves, but only his style of spring.
[*Field v. De Comeau *et al.*, 559.

8. FRAIM AND FRAIM—SCANDINAVIAN PADLOCKS.
Reissued Letters Patent No. 10,272, granted to Edward T. Fraim (inventor) jointly with Miller W. Fraim, (assignee,) January 16, 1883, for an improvement in Scandinavian padlocks, *held* not void for want of novelty and invention.
[*Fraim v. Keen, 1048.

9. GATELY—PACKING FOR STUFFING-BOXES OF PISTONS.
Letters Patent No. 86,296, granted January 26, 1869, to Dennis C. Gately for an improvement in packing for stuffing-boxes of pistons construed, *held* to be valid and infringed by the defendants.
[*New York Belting and Packing Company v. Magowan *et al.*, 1159.

10. MACDONALD—DRESS PROTECTORS.
Letters Patent No. 155,534, granted September 29, 1874, to Helen M. Macdonald for an improvement in dress-protectors, construed, and *held* to include a fluted or plaited band or border as one of the essential elements of the invention, and is not infringed by a skirt-protector manufactured under a patent granted March 23, 1875, to Theodore D. Day, No. 161,012, having neither plaited or fluted bands or borders.
[*Shepard *et al.* v. Carrigan, 1157.

11. MALLORY—HAT.
The claim of Letters Patent No 74,392, of February 11, 1868, was for "the combination of the brim of a hat with a drooping hoop, so that the brim is caused to droop at the front and rear, and to rise at the sides, substantially as described." The definition of the drooping hoop given in *Mallory Manufacturing Co.* v. *Marks*, (11 Fed. Rep., 887, S. C., 20 Blatchf., 34,) adopted, and *held*, that the droop must be imparted by twisting the wire and not by bending.
[*Mallory Manufacturing Company v. Hickok *et al.*, 923.

12. MARCHAND—MANUFACTURE OF HYDROGEN PEROXIDE.
Letters Patent No. 273,569, granted March 6, 1883, to Charles Marchand, for an improvement in the manufacture of hydrogen peroxide, declared invalid for lack of novelty and invention.
[*Marchand v. Emken, 1275.

13. MCGAFFEY—FOUNTAIN HOSE-CARRIAGES.
"This was a bill in equity for the infringement of letters patent granted October 10, 1876, and reissued February 28, 1882, for an improved fountain hose-carriage."
[*Preston v. Munard *et al.*, 1507.

14. "The first claim in the original patent was as follows: '1. The hose-reel, mounted upon a wheeled carriage, which is provided with a foot or brace, by means of which it may be sustained in an upright vertical position, whereby the device becomes capable of use, both as a hose-carriage and as a fountain-standard, substantially as specified.'" A former suit under the original patent was dismissed for want of novelty. The specification in reissue patent is exactly like that in original, but with different claims, the only material one of which was in these words: "1. The combined hose-carriage and fountain-standard, consisting in the combination of the following elements, viz: a wheeled carriage provided with a foot or brace by means of which it may be sustained in an upright vertical position, a nozzle holding device, and a reel of large diameter to allow the water to flow through the hose when partially wound thereon, substantially as specified." "The hose-reel, the standard, the brace, the nozzle-holder, and their use in combination being all old, the description of the hose-reel in the specification and claim as 'a reel of large diameter to allow the water to pass through the hose when partially wound thereon' is not sufficient to sustain the patent." "The fact that water will flow through a hose wound on a reel, if the diameter of the reel is large enough and the curves or angles are not too abrupt, is a matter of common knowledge, which no one can appropriate to his own use to the exclusion of the public. In any view of the case the specification describes nothing that the patentee is entitled to claim, but only what every one has a right to use without his assistance." "To sustain this patent would be to deprive the public of the right to arrange and use a well-known apparatus in the only way in which its purpose can be beneficially accomplished."
[*Id.

15. RANSOME—FARE-REGISTER.
Letters Patent No. 265,145, granted to Newman A. Ransome, September 26, 1882, for an improvement in fare-registers, construed and claims 12 to 17 held to be invalid.
[*Railway Register Manufacturing Company v. Broadway and Seventh Avenue Railroad Company, 921.

16. ROSENFIELD—RAILWAY-CAR GATE.
The first five claims of Letters Patent No. 288,494, granted November 13, 1883, to William W. Rosenfield for an improvement on railway-car gates, declared void for want of patentable novelty.
[*Aron v The Manhattan Railway Company, 1508.

PARTIES TO SUIT.

SUIT BY RECEIVER OF CORPORATION.
In Pennsylvania a receiver of a corporation is the mere custodian of its property, and, not being invested with the title of the corporation to letters patent, he cannot maintain suit thereon in his own name.
[*Dick *et al.* v. Struthers *et al.*, 131.

PATENTABILITY.

(See Construction of Specifications and Patents, 2, 3, 4, 5, 6, 8, 12; Invention; Particular Patents, 1.)

NOVELTY—GATE-OPERATING DEVICE.
A device for opening and closing the gates of railway-cars, consisting of a link connecting a sliding rod with the gate, and a rod sliding in or on bearings secured to the guard-rail, and having a handle located within convenient reach of the attendant, does not possess patentable novelty.
[*Aron v. The Manhattan Railway Company, 1508.

PATENTED ARTICLES MANUFACTURED DURING THE TERM OF A PATENT WILL BE ENJOINED FROM SALE THEREAFTER.

(See Injunction, 6, 7.)

PATENTS.

(See Applications; Construction of Specifications and Patents.)

PLEA.

(See Infringement, 13.)

PRACTICE IN CANADIAN COURTS.

1. In a dispute raised against a patent under section 28 of the Canadian patent act of 1872, the Minister of Agriculture or his Deputy has sole jurisdiction.
[§Telephone Manufacturing Company of Toronto v. Bell Telephone Company of Canada, 250.

2. When forfeiture, on account of illegal importation and non-manufacture, is specially pleaded as a matter of defense in any suit for infringement, it simply becomes a *question préjudicielle*, which has to be determined by the arbitrator appointed by the law, whose decision, being final, is the only evidence to establish or countermand the fact of forfeiture alleged in the case. It does not vest the court seized of the suit for infringement with the jurisdiction of another tribunal, but it resolves itself into a simple question of the kind of evidence which is admissible on that specific point.
[§Id.

3. The legal meaning of the words "carry on in Canada the construction or manufacture of the invention or discovery patented" has been announced in *Smith* v. *Goldie*, and is not necessary to enter in this decision into details on the subject.
[§Id.

4. A patentee is within the meaning of the law, in regard of his obligation to manufacture, when he has kept himself ready either to furnish the patented article or to sell the right of using, though, may be, not a single specimen of the article has been produced and he may have voided his patent by refusal to sell, although his patents were in general use.
[§Id.

5. Thomas Alva Edison's patents, No. 8,026, for telephonic communication, No. 9,922, for improvements in telephone, and No. 9 923, for improvements in telephones and circuits, have not become null and void under the provisions of section 28 of the patent act of 1872.
[§Id.

PRACTICE IN THE COURTS.

(See Construction of Specifications and Patents, 2, 7; Infringement, 5, 13; Injunction, 1, 2, 5; Master's Report, 1, 2.)

PRACTICE IN THE PATENT OFFICE.

1. RULE 63.
Upon receiving and examining an application for patent the examiner in charge should in his first letter to applicant state all his objections, formal or otherwise.
[*Ex parte* Silliman, 1389.

2. SAME.
"All formal matters and all preliminary and intermediate questions should be settled before any of the claims are rejected upon the merits, and there should be no *rejection in terms* until such formal, preliminary, and intermediate questions are disposed of."
[Id.

3. SAME.
In such first letter the examiner should advise applicant "of all preliminary requirements, cite all his references, (ordinarily,) and then advise him that action upon the merits will be postponed until all preliminary and intermediate questions are settled."
[Id.

4. SAME.
Such examination need not be made or references cited, *first*, when it is manifest that the case cannot proceed without division until such question of division be settled; *second*, when there are objections as to form which are "vital," as, for instance, when an important and indispensable element is omitted from the claims, and for that reason an intelligent examination is impossible; and, *third*, when one examination has been had and certain formal and preliminary objections made and references cited, which formal and preliminary objections have not been disposed of.
[Id.

5. RULE 134.
Rule 134 does not intend to direct that the Examiners-in-Chief shall absolutely determine the form of a claim to be passed or acted upon by the principal examiner.
[*Ex parte* Dysart, 1390.

6. SAME.
When the Examiners-in-Chief are not satisfied with simply affirming or overruling a rejection by the principal examiner, but are of the opinion that a different form of claim should be allowed, they should "annex to their decision a statement to that effect, with such recommendation as they shall deem proper." The principal examiner, however, is not bound by such recommendation. He may act upon it or not, but he is at liberty to treat the claim so suggested "the same as though it had been proposed by the applicant in the first instance."
[Id.

7. NEW REFERENCES.
When new references are cited by the principal examiner after appeal to and decision by the Examiners-in-Chief, applicant should be permitted to again appeal without payment of fee unless the citation of such new references has been made necessary by an amendment after such decision of the Board.
[Id.

PRIORITY OF INVENTION.

1. FAILURE TO MAKE PRACTICABLE MACHINE.
Where the alleged prior invention was shown to be very near the realization of the invention, but could not, at a period long subsequent, make a practical machine embodying the invention, it was *held* that his operations were not sufficient to defeat a patent, although witnesses testified that they were successful.
[*American Bell Telephone Company v. People's Telephone Company *et al.*, 561.

2. BELL TELEPHONE.
Drawbaugh's talking-machine, *held* insufficient as a prior use.
[*Id.

3. INFRINGEMENT.
Where one party stands by and permits another to take out a patent, and then takes out a patent for a different invention, he cannot set up that he is the inventor of the first improvement.
[*Fraim v. Keen, 1048.

4. PRIORITY—INFRINGEMENT—COMBINATION PATENT.
The employment of mechanical skill to construct a machine in accordance with ideas furnished by another gives no right to the invention. The entire merit is in him whose inventive suggestiveness conceived the invention.
[*Yoder v. Mills, 1048.

PRIOR USE.

(See Injunction, 4.)

PUBLIC RECOGNITION OF VALUE OF AN INVENTION.

(See Construction of Specifications and Patents, 4; Invention, 1.)

RECEIVERS.

(See Parties to Suit.)

RECORD OF THE PATENT OFFICE.

(See File-Wrapper.)

REDUCTION TO PRACTICE.

(See Priority of Invention, 1, 2.)

REFERENCE.

(See Practice in the Patent Office, 3.)

REHEARING.

1. EVIDENCE—PRIOR USE.
Where the evidence of new witnesses (as to a prior use) introduced on rehearing was merely cumulative and less persuasive than the evidence to the same point on the former trial, *held* that the decree should not be disturbed.
[*American Bell Telephone Company v. People's Telephone Company *et al.*, 561.

2. REDUCTION TO PRACTICAL USE.
The testimony of witnesses as to the practicability of alleged prior devices incredible where a test of reproductions of those devices showed them to be practically inoperative.
[*Id.

REISSUES.

1. Bill of complaint was filed against defendant for infringing two reissued letters patent, numbered 7,442 and 7,443, bearing date December 19, 1876. Original letters patent were issued March 23, 1875. These were surrendered and reissued in two divisions, Division A, No. 7,442, being for the hose therein described as a new manufacture. This was division claimed to be infringed.
[*Reed v. Street, 339.

2. The first defense rests mainly upon the fact that the patent in suit is stated upon its face to be the reissue of a former patent, No. 161,273, which patent is found to be for a different invention. Complainant held two patents, numbered, respectively, 161,272 and 161,273. "The former was in truth surrendered, but the statement was made upon the face, and before the specifications of the reissue, that the same was founded upon the latter. The Secretary of the Interior has given to the patentee, under seal of the Department, a certificate, which is exhibited in the case, stating that he has rectified the mistake 'by canceling in the caption of the specification No 161,273, and in lieu thereof inserting No. 161,272, the said correction being made for the purpose of remedying a clerical error.'" *Held*: "Expense and trouble would be involved in requiring a new surrender and reissue to correct mere clerical errors of this sort." *Woodworth* v. *Hall*, (1 W. & M., 260,) cited by court.
[*Id.

The complainant is the owner of letters patent granted to Marcus Marks for an improvement in caps. The original patent (No. 166,395) is dated August 3, 1875. It was reissued July 24, 1877, in two divisions, A and B, Nos. 7,807 and 7,808. The application for the reissue was filed May 14, 1877—one year nine months and ten days from the date of the original. Division B of the reissue is alone to be considered. Division A is substantially a reproduction of the original patent. The first clause of the reissue is alone in controversy.

3. After stating the precise difference between the original and reissue claim, the court *held*: "That the reissue is broadened is too clear for controversy. It was broadened with full knowledge on the part of the inventor that after his patent had been issued caps in large numbers had been put upon the market having an improved swinging protector which did not infringe his patent. His solicitor, to whom he had given a full and ample power of attorney to represent him in all matters before the Commissioner, knew that the broad claim had been rejected, and the claim, including the band C, allowed. No appeal was taken. No murmur of disapprobation for nearly two years was heard. Upon what theory, therefore, can this reissue be upheld? Every argument in its favor is met and answered by some controlling authority. At every turn the complainant is confronted by a decision of the Supreme Court. It is said that there was a mistake in not allowing the broad claim, but the proof shows that the matter was clearly understood and the ruling of the examiner, including the band C, acquiesced in by the solicitors." *Leggett* v. *Avery*, (101 U. S., 256;) *Mahn* v. *Harwood*, (30 O. G., 657, 112 U. S., 354,) cited.
[*Arnheim v. Finster *et al.*, 700.

4. But it is urged that the inventor did not acquiesce. He knew nothing of the rejection, for the reason that he never examined the letters patent from the time he received them until the spring of 1877. *Held*: This will not do. The law will not permit a party to relieve himself from the charge of negligence by asserting that he closed his eyes and ears at the time when he was required to keep his faculties awake. The inquiry is not what the inventor knew, but what he ought to have known—what he could have ascertained by the exercise of ordinary care and diligence. To hold otherwise would be to place a premium upon carelessness, stupidity, and fraud." (*Mahn* v. *Harwood*, *supra*; *Wollensak* v. *Reiker*, 31 O. G., 1301, 115 U. S., 96; *Eachus* v. *Broomall*, decided November 16, 1885, 33 O. G., 1265.)
[*Id.

5. "To paraphrase the language of *Coon* v. *Wilson*, (113 U. S., 268,) although this reissue was applied for a little over twenty-one months after the original patent was granted, the case is one where it is sought merely to enlarge the claim of the original patent by expanding that claim and adding others; where no mistake or inadvertence, such as the law recognizes, is shown, so far as the forward band and the tape are concerned; where the patentee waited until others had produced caps without the forward band and with the continuous interlining, and then applied for such enlarged claims as to embrace the defendants' cap, which was not covered by the claim of the original patent, and where it is apparent from a comparison of the two patents that the reissue was made to enlarge the scope of the original." The bill should be dismissed.
[*Id.

6. This suit is brought for the infringement of Reissued Patent No. 8,276 granted to Mellen Bray, June 11, 1878, for an improvement in rivet-setting machines. The original patent was granted April 6, 1875. The application for the reissue was made May 27, 1878, more than three years after the issue of the original patent. The seventh and eighth claims of the reissue form the subject-matter of the present controversy. The seventh claim is not found in the original patent, and is held to be void, as it broadened the original patent. The eighth claim is held not to have been infringed. The bill is dismissed.
[*Tubular Rivet Company v. Copeland, 1277.

7. Motion for preliminary injunction to restrain defendant from infringing Reissued Patent No. 7,659, dated May 8, 1877, for an improvement in lamp-chimneys, original Patent No. 79,958 having been granted to Robert R. Crosby, July 14, 1868. The validity of the reissue is disputed by the defendant upon the ground that the claim of the original patent has been expanded in the reissue, and the reissue, having been obtained nearly nine years subsequent to the issue of the original, must be held void upon the authority of *Mahn* v. *Harwood*, (30 O. G., 657; 112 U. S., 362,) where the court says: "If a patentee has not claimed as much as he is entitled to claim, he is bound to discover the defect in a reasonable time, or he loses all right to a reissue." *Held* that the claim of the original patent has been substantially expanded, and that more than nine years' delay is an unreasonable time, and defendant thereby loses the right to reissue. Motion for injunction denied.
[*Shirley v. Mayer, 1391.

REJECTED APPLICATIONS.

(See Practice in the Patent Office, 2.)

REJECTED CLAIMS.

(See Enlargement of Claims, 1, 2.)

RESERVATION.

(See Division of Application.)

RESULTS.

(See Infringement, 6.)

SALE OF PATENTED ARTICLES.

(See Injunction, 6, 7.)

SUGGESTIONS TO AN INVENTOR.

(See Priority of Invention, 4.)

SUITS FOR INFRINGEMENT AFTER EXPIRATION OF PATENT.

(See Infringement, 8, 9; Injunction, 2, 6, 7.)

VALID PATENTS.

(See Particular Patents, 3, 5, 8, 9.)

VOID CLAIMS.

(See Particular Patents, 4, 15; Reissues, 6.)

VOID PATENTS.

(See Particular Patents, 2, 8, 12, 13, 14; Reissues, 7.)

WITNESSES.

(See Priority of Invention, 1, 2; Rehearing, 1, 2.)

ALPHABETICAL LIST OF PATENTEES

FOR

THE QUARTER ENDING MARCH 31, 1886.

[Claims and drawings of Designs do not appear in the Monthly Volumes or the Gazette. Separate indexes for Designs, Trade-Marks, Labels, and Disclaimers follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
Abbott, Henry, Newark, N. J. Stem winding and setting watch	335,731	Feb. 9	908	240	34	611
Abbott, Henry, Newark, N. J. Stem winding and setting mechanism for watches	335,732	Feb. 9	912	240	34	611
Abbott, Henry, Newark, N. J. Stem winding and setting attachment for watches	335,733	Feb. 9	914	240, 241	34	612
Abbott, Pascbal J., Dexter, Me. Carriage-jack	338,807	Jan. 5	494	115	34	80
Abbott, Phillips, Brooklyn, assignor to W. M. Ducker, New York, N. Y. Combined match-box and cigar-cutter	337,807	Mar. 16	1945	338	34	1163
Abbott, Warren N. (See Knight, John A., assignor.)						
Abell, William P., Kirkby Lodge, Hinckley, county of Leicester, England. Lever cotton-press	335,871	Feb. 9	1108	292	34	647
Abernethy, Robert S., Rutherford College, N. C. Keying-clamp	338,458	Mar. 23	2139	559	34	1334
Abney, Henry, Crawford, Miss. Grinding attachment for sewing-machines	337,911	Mar. 16	1378	358	34	1187
Acheson, William, assignor of one-fourth to W. D. Young, Pittsburg, Pa. Metallurgical furnace	338,907	Mar. 30	2781	732	34	1452
Acheson, William J., Denver, Colo. Fluid-pressure regulator	334,396	Jan. 12	1188	319	34	289
Ackermann, Albert H. (See Palmer, Noyes F., assignor.)						
Ackerson, Garret G., and J. F. Shy, St. Louis, Mo. Door-lock	337,108	Mar. 2	300	79	34	963
Acme Hay Harvester Company. (See Alden, Horace A., assignor.)						
Acton, John, New York, N. Y. Pressure-regulator	335,784	Feb. 9	916	241	34	612
Adair, Addison A., *et al.* (See Byrkit, Edwin M., assignor.)						
Adam, William, Kidderminster, county of Worcester, England. Loom for weaving chenille or fur pile fabrics	336,197	Feb. 16	1595	418, 419	34	738
Adams, A. Bigelow, and E. S. Dodge, Providence, R. I. Ear-knob	335,160	Feb. 2	1	1	34	441
Adams, A. Lemuel, New York, N. Y. Roller and extension axle	338,459	Mar. 23	2140	559, 560	34	1334
Adams, Abe L., Bridgeport, Conn. Exhibition-drawer	336,615	Feb. 23	2189	571, 572	34	848
Adams, Edwin, Newburyport, Mass., assignor to Eppler & Adams Sewing Machine Company, Saco, Me. Boot and shoe sewing machine	337,291	Mar. 2	552	145, 146	34	1098
Adams, Edwin L. (See Dales and Adams.)						
Adams, George, Sherburne, Minn. Flaxseed-separator	338,911	Jan. 5	565	158	34	106
Adams, George B. (See Walter, Willie C., assignor.)						
Adams, George B., assignor of one-half to C. Campbell, Newark, N. J. Purse, bag, &c	336,541	Feb. 23	2061	547	34	831
Adams, George Q., Quincy, Ill. Supporting-frame for wire-reels of wire-twisting machines	334,408	Jan. 19	1297	351	34	255
Adams, H. Raymond, Marseilles, Ill. Double-acting pump	333,808	Jan. 5	495	116	34	80
Adams, John B. (See Myers, William R., assignor.)						
Adams, John M., and W. F. Carter, San Francisco, Cal. Ore-concentrator	337,471	Mar. 9	823	200	34	1080
Adams, John S., Elgin, Ill., assignor to Detroit Iron Tower Company, Detroit, Mich. Pipe-coupling	335,101	Feb. 2	1	1	34	441
Adams, John S., assignor to Detroit Iron Tower Company, Detroit, Mich. Tower	335,102	Feb. 2	2	1	34	441
Adams, John S., assignor to Detroit Iron Tower Company, Detroit, Mich. Skeleton tower for electric lights	336,371	Feb. 16	1651	485, 486	34	788
Adams, Samuel W., Chicago, Ill. Machine for polishing the interior of metal tubes	335,966	Feb. 2	255	67, 68	34	486
Adams, Thomas, Jr., Highland, N. Y. Folding clothes-rack	338,011	Mar. 16	1539	397	34	1214
Adams, William G., Philadelphia, Pa. Device for converting reciprocating into rotary motion	336,978	Mar. 2	196	34	34	948
Adams, William L., and A. A. Hasson, assignors to A. & H. Flexible Flooring Company, Baltimore, Md. Flexible flooring	337,292	Mar. 2	555	146	34	1098
Adamson, J. Arthur, Philadelphia, Pa. Suspenders	335,411	Feb. 2	455	118	34	592
Adamson, Robert Auburn, N. Y. Safety-switch	338,012	Mar. 16	1583	398	34	1214
Adee & Co., Fred. (See Smith, Benjamin C., assignor.)						
Adler, Abraham S., Baltimore, Md. Shoe-maker's measure	337,039	Mar. 2	212	56	34	964
Adler, Adolph C. O., Brooklyn, N. Y. Bracket-lamp	334,631	Jan. 19	1613	429	34	312
Adler, Joseph, Leipsic, Saxony, Germany. Compass attachment for maps	336,963	Mar. 2	1	1	34	927
Advertising Alarm Sign Company. (See Newman, Nelson, assignor.)						
Agar, Alexander, Brooklyn, N. Y. Copy-book	335,108	Feb. 2	4	2	34	441
Ahemdorff, Louis. (See Wahler, Henry, assignor.)						
Aiken, John H., *et al.* (See Laughton, Joseph B., assignor.)						
Aiken, Walter, Franklin Falls, N. H. Welt-guide for sewing-machines	334,404	Jan. 19	1297	351	34	255
Aitken, Thomas D., Bradford, Ill. Stirrup for sulkies	337,357	Mar. 9	689	169	34	1051
Aktiebolaget Separator Company. (See Johansson, Carl A., assignor.)						
Alabaster, Henry, and T. E. Gatehouse, London, England. Telephone-transmitter	335,791	Feb. 9	1009	265	34	636

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Albert, Charles F., Philadelphia, Pa. Mute for stringed instruments	335,872	Feb. 9	1105	293	34	647
Albert, Charles F., Philadelphia, Pa. String-gage	337,224	Mar. 2	453	118	34	1010
Albert, Henry, Crescent City, Cal. Elevator	333,713	Jan. 5	305	83, 84	34	57
Albright, Samuel, assignor to W. Albright, Nevada, Mo. Windmill	338,816	Mar. 30	2646	697 698	34	1429
Albright, William. (See Albright, Samuel, assignor.)						
Alden, Charles E., Philadelphia, Pa. Drive-chain	336,779	Feb. 23	2413	634	34	891
Alden, Charles S., Rochester, N. Y. Combined cigar-cutter and match-box	334,405	Jan. 19	1298	351	34	255
Alden, Horace A., assignor to Acme Hay Harvester Company, Peoria, Ill. Horse hay-rake	338,460	Mar. 23	2141	560	34	1334
Alden Type Machine Company. (See Johnson, Louis K., assignor.)						
Alden Type Machine Company. (See Johnson and Low, assignors.)						
Aldom, Edward. (See Schmitz and Aldom.)						
Aldrich, William H., Whitinsville, Mass. Bed-rest	335,412	Feb. 2	456	118	34	523
Aletter, Henry, *et al.* (See Young, William A., assignor.)						
Alexander, Andrew J., Mayfield, Ky. Remedy for hog and chicken cholera	338,013	Mar. 16	1535	.....	34	1214
Alexander, John R. (See Blasell, Simeon, assignor.)						
Alexander, Julius A., Monticello, Ark. Car-coupling	338,014	Mar. 16	1535	398	34	1214
Alexander, Samuel G., Detroit, Mich., assignor to Merino Shoe Company, Kennebunk, Me. Felt boot	336,542	Feb. 23	2092	547	34	831
Allaben, Orson M., Margaretville, N. Y. Fence-post	337,646	Mar. 9	1036	266	34	1119
Alldridge, Arthur H., assignor of one-half to S. J. Davis, Birmingham, county of Warwick, England. Velocipede	336,372	Feb. 16	1852	486	34	783
Allen, Alonzo W. (See Culp and Allen.)						
Allen Brothers. (See Cole, Hiram, assignor.)						
Allen, Cotton H., St. Louis, Mo. Hame	338,988	Jan. 12	677	185	34	135
Allen, Edward E. (See Nichols, Benjamin F., assignor.)						
Allen, Erasmus W., Seneca, Kans. Washing apparatus	335,413	Feb. 2	456	118	34	523
Allen, Ethan. (See Butler, Jeremiah C., assignor.)						
Allen, Ethan, and W. H. Harrod, Sellersburg, Ind. Mail-bag catcher	334,921	Jan. 26	1968	529	34	390
Allen, John, London, county of Middlesex, England. Carriage-spring	336,464	Feb. 16	1980	519	34	806
Allen, Louisia A. (See McCoy, Oscar, assignor.)						
Allen, Marshall J., New York, N. Y., and W. R. Bradley, Frankfort, Ky., assignors to Frankfort Whisky Process Company. Making whisky	335,267	Feb. 2	258	68	34	486
Allen, Richard N., Cleveland, Ohio. Motor-car	337,109	Mar. 2	302	79	34	992
Allen, Samuel L., Cinnaminson, N. J. Cultivator	334,327	Jan. 12	1189	319	34	229
Allen, Stephen M., Duxbury, Mass. Composition of matter for making molded articles	337,472	Mar. 9	825	.....	34	1061
Allen, Thomas L., East Windham, Me. Fertilizer-distributer	336,373	Feb. 16	1854	486	34	784
Allfree, James B., assignor of one-half to H. Swartzwelder and R. Shriver, Cumberland, Md. Grinding-mill	336,979	Mar. 2	127	34	34	949
Allgire, James R., Indianapolis, Ind. Barrel-head	338,379	Mar. 23	2034	534	34	1314
Allington, David K., East Saginaw, Mich. Band-saw mill	337,647	Mar. 9	1037	266	34	1119
Allington, David K., East Saginaw, Mich. Convolute log-planing machine	337,648	Mar. 9	1039	267	34	1120
Allington, David K., East Saginaw, Mich. Band-saw machine	337,912	Mar. 16	1379	358 359	34	1187
Allington, David K., East Saginaw, Mich. Band-saw mill	337,913	Mar. 16	1381	359	34	1188
Allinson, Robert T., Solomon's Island, Md. Oyster-tongs	337,358	Mar. 9	639	169	34	1051
Allis & Co., Edward P. (See Hinkley, George M., assignor.)						
Allis & Co., Edward P. (See Peck, Theron W., assignor.)						
Allstatter, Robert, assignor to Long & Allstatter Company, Hamilton, Ohio. Punching device	334,554	Jan. 19	1507	403	34	292
Allyn, William M., assignor to himself and C. Espenchied, Hastings, Minn. Wooden barrel	337,110	Mar. 2	303	80	34	992
Alston, Mathew, Adrian, Ill. Adjustable bail and cover-holder for jars	334,922	Jan. 26	1989	530	34	390
Altmaier, Peter A., Harrisburg, Pa. Magazine fire-arm	334,731	Jan. 26	1749	467	34	345
Amberg, Gustav. (See Zachiegner, Friedrich, assignor.)						
Ambler, Augustin I., Chicago, Ill. Vapor-fuel apparatus	338,461	Mar. 23	2142	560 561	34	1335
American Bell Telephone Company. (See Gilliland, Ezra T., assignor.)						
American Bell Telephone Company. (See Keller and Lyon, assignors.)						
American Bell Telephone Company. (See Mason, Howell R., assignor.)						
American Bell Telephone Company. (See Thornberry, Henry S., assignor.)						
American Button Fastener Company. (See Merrill, Oliver H., assignor.)						
American Button Fastener Company. (See Richards, Francis H., assignor.)						
American Electric Arms and Ammunition Company. (See Russell, Samuel, assignor.)						
American Electric Headlight Company. (See Lynn, Mirabeau N. assignor.)						
American Magnetic Electric Company, *et al.* (See Hunnans, William, assignor.)						
American Manufacturing Company. (See Leopold, Charles F., assignor.)						
American Marble Cutting Company. (See Maloy, James W., assignor.)						
American Press Association. (See Cummings, John R., assignor.)						
American Saw Company. (See Risdon, William B., assignor.)						
American Screw Company. (See Olsen, Olaf R., assignor.)						
American Sulphite Pulp Company. (See Springer, Charles C., assignor.)						
American Tack Company. (See Paull, Elbridge G., assignor.)						
American Water Bar Grate Company. (See Swallow, Isaac W., assignor.) (Reissue.)						
American Writing Machine Company. (See Yost, George W. N., assignor.)						
Ames, Charles H., and M. Harris, Jamestown, N. Y. Sash-balance	338,817	Mar. 30	2649	698	34	1429
Ames, Charles L., Ridgeland, Ill. Bed-bottom	333,809	Jan. 5	427	116	34	80
Ames, Charles L., Ridgeland, Ill. Bed-bottom	336,616	Feb. 23	2191	572	34	848
Ames & Frost. (See Briggs, Orlando P., assignor.)						
Ames, Irvin W., Bethel, Me. Spring bed-bottom	335,873	Feb. 9	1106	293	34	647
Amick, Myron J., Portland, Oreg. Gas-regulator	333,584	Jan. 5	118	32	34	25
Ammenheuser, Hermann, Albany, N. Y. Machine for molding flower-pots	334,406	Jan. 19	1299	351 352	34	255
Ammon, Jacob S. (See Gnss, Samuel M., assignor.)						
Ammon, James W., East Lynn, Mo., assignor of two-thirds to G. W. Farrow and G. W. Swinehart. Hame-attachment	337,649	Mar. 9	1041	267	34	1120
Ammon, John. (See Bésaler, Vetal, assignor.)						
Amon, Nathaniel, Sandy Lake, Pa. Weather-strip	335,874	Feb. 9	1108	293	34	647
Amouroux, Elie, assignor to A. La Roche and A. J. Champion, Paris, France. Feed-water alarm for steam-boilers	338,015	Mar. 16	1536	399	34	1215
Andersen, Christian, New York, N. Y., and A. Woolner, Jr., Peoria, Ill. Preparing whole grain for fermentation	338,579	Mar. 23	2294	601	34	1360
Anderson, Alexander, Boston, Mass. Portable window-crane	337,225	Mar. 2	454	118	34	1010
Anderson, Alexander, and R. Rutherford, Brush Creek, Iowa. Two-horse hay-rake	337,111	Mar. 2	304	80	34	992

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Anderson, Anton G., Chicago, Ill. Bung-bush-molding machine	335,331	Feb. 2	343	89	34	503
Anderson, Charles E., London, Ontario, Canada. Head-rest	335,554	Feb. 9	655	173	34	565
Anderson, Charles E., London, Ontario, Canada. Invalid-chair	338,330	Mar. 23	1957	515	34	1301
Anderson, George K., Memphis, Tenn. Recording speech	335,171	Feb. 2	112	29, 30	34	462
Anderson, George W., Westport, Ind. Cut-off valve	335,172	Feb. 2	117	30	34	462
Anderson, Homer, Peekskill, N. Y. Spring-jack wedge	338,131	Mar. 16	1689	440	34	1244
Anderson, John W., Lancaster, Pa. Meat and vegetable slicing machine	337,545	Mar. 9	915	234 235	34	1097
Anderson, Lee, assignor of one-half to R. Wooldridge, Paris, Tex. Hame-lock	335,985	Feb. 9	1965	335	34	673
Anderson, Louis. (See Myers and Anderson.)						
Anderson, Palmer D., Waterport, N. Y. Plow-point	334,837	Jan. 26	1882	501	34	370
Andrew, John, Birmingham, Conn., assignor to himself and T. F. Stevenson, Brooklyn, N. Y. Braiding-machine	337,473	Mar. 9	896	209	34	1061
Andrews, Charles S., assignor to Hatters Supplies Company, Danbury, Conn. Hat-wire	334,993	Jan. 26	1990	530	34	390
Andrews, David H., Chelsea, Mass. Railway turn-table	333,912	Jan. 5	566	153	34	106
Andrews, Nathaniel S., and H. F. Burnap, Dubuque, Iowa. Cream-testing churn	334,924	Jan. 26	1991	530	34	390
Andrews, William P., Dana, Ind. Pump	337,040	Mar. 2	213	56	34	964
Andrews, William P., assignor to himself, F. Taylor, J. Osborn, and T. S. Hood, Dana, Ind. Building-wall	336,465	Feb. 16	1980	519	34	806
Aneshaensel & Strong. (See Jacob, Frank A., assignor.)						
Angell, Edmund R., Derry, N. H. Privy	337,546	Mar. 9	918	235	34	1098
Angell, George H., and C. L. Leslie, Omaha, Nebr. Seal-lock	334,407	Jan. 19	1301	352	34	255
Anner Pencil Company. (See Wood, Stephen W., assignor.)						
Annis, Alviras W., *et al.* (See Brownell, Stephen C., assignor.)						
Antboine, Joseph H., and F. H. Thorndike, Wakefield, Mass. Machine for washing clothes, &c	338,331	Mar. 23	1959	515	34	1302
Anthony & Co., E. & H. T. (See Atkinson, Richard, assignor.)						
Anthony & Co., E. & H. T. (See Lewis and Barker, assignors.)						
Anthony, Edmond, Castleton, assignor of one-half to W. H. Keeler, Albany, N. Y. Rotary fan	339,038	Mar. 30	2972	786	34	1486
Anthony, Gardner C., Providence, R. I. Gas-engine	337,226	Mar. 2	455	119	34	1010
Anthony, Philip, Cleveland, Ohio. Privy and attachments	334,151	Jan. 12	914	250	34	178
Anthony, William G., Lynn, Mass. Burnishing-machine	335,671	Feb. 9	817	218	34	594
Appleby, Charles O., New Haven, Conn. Making cutlery	336,198	Feb. 16	1596	419	34	738
Appleby, John F., assignor to Minneapolis Harvester Works, Minneapolis, Minn. Knotting mechanism for grain-binders	335,332	Feb. 2	344	90	34	503
Appleby, John F., assignor to Minneapolis Harvester Works, Minneapolis, Minn. Combined harvester and binder	336,075	Feb. 16	1403	371 372	34	705
Appleby, Joseph, Birmingham, England. Lead or crayon holder	338,332	Mar. 23	1959	516	34	1302
Arbogast, Albert, and W. Hains, Selin's Grove, Pa. Washing-machine	334,555	Jan. 19	1509	404	34	292
Archibald, Isaac W., Elgin, Ill. Thill-coupling	334,838	Jan. 26	1883	501	34	370
Arens, August. (See Mix and Arens.)						
Armour, Robert J., *et al.* (See Osborne, Theodore R., assignor.)						
Armitage, Barclay M., Minnedosa, Manitoba, Canada. Utilizing water-power	337,727	Mar. 9	1136	293 294	34	1136
Armstrong, Frank. (See Barnes, George A., assignor.)						
Armstrong, Frank, and N. W. Vandegrift, Bridgeport, Conn.; said Vandegrift assignor to said Armstrong. Wrench	335,986	Feb. 9	1965	335	34	674
Armstrong, John A. (See Beale and Armstrong.)						
Armstrong, John S., St. John, New Brunswick, Canada. Form of building material	334,401	Jan. 12	1287	346 347	34	256
Armstrong, William C., Springfield, Ohio. Burial-casket	335,672	Feb. 9	818	218	34	594
Arndt, Daniel, Cleveland, Ohio. Lawn-mower	338,132	Mar. 16	1692	440	34	1245
Arnold, Benjamin, East Greenwich, R. I. Mariner's signal-compass	338,160	Mar. 16	1727	451	34	1272
Arnold, Bion J., Hillsdale, Mich. Traction-engine	335,497	Feb. 2	567	148	34	542
Arnold, James T., trustee, *et al.* (See Carlin, Thomas H., assignor.)						
Arnold, John A. J., assignor to L. E. Arnold, Stilesville, Ind. Lift-pump	338,687	Mar. 30	2459	649	34	1395
Arnold, Louisa E. (See Arnold, John A. J., assignor.)						
Arnold, Louis L., Buffalo, N. Y. Pocket cigarette machine	338,580	Mar. 23	2297	601	34	1361
Arnold, Samuel, London, county of Middlesex, England, assignor to Johnston Harvester Company, Batavia, N. Y. Harvester-rake trip	338,906	Mar. 30	2782	733	34	1453
Arnold, Theodore A. (See Storms and Arnold.)						
Arnold, William B., North Abington, Mass. Boot or shoe	335,555	Feb. 9	656	173	34	565
Arnold, William P., *et al.* (See Cardwell, George A., assignor.)						
Arns, Carl A., Remscheid, Prussia, Germany. Pneumatic hammer	337,728	Mar. 9	1136	294	34	1136
Arthur, Samuel T., Creek, Ill. Washing-machine	336,617	Feb. 23	2192	572	34	849
Artmann, Fredrick, Lexington, Miss. Combined cooking-stove and baking and warming oven	333,714	Jan. 5	307	84	34	57
Artés, Frederick. (See Jones, Crooker, and Artés.)						
Ash, John S., Buckingham, Pa. Valve-motion	337,293	Mar. 2	556	147	34	1098
Ash, John W. (See Tucker, James W., assignor.)						
Ashby, Delmar E., San Francisco, Cal. Fruit-jar	333,715	Jan. 5	308	84	34	58
Ashby, Delmar E., San Francisco, Cal. Fruit-jar	333,716	Jan. 5	309	84	34	58
Ashby, Delmar E., San Francisco, Cal. Fruit-jar	333,717	Jan. 5	310	85	34	58
Ashby, George, Harrison, Ohio. Drip-cup	335,007	Jan. 26	2102	559	34	410
Aspinwall, John. (See Treadwell, William B., assignor.)						
Atherton, Frank, and M. T. Bentley, Paterson, N. J. Hose-coupling	333,913	Jan. 5	567	154	34	106
Atherton Machine Company. (See Diman, Charles C., assignor.)						
Atherton Machine Company. (See Potter, James C., assignor.)						
Atkinson, James, Hampstead, county of Middlesex, England. Gas-engine	336,505	Feb. 16	2026	592	34	814
Atkinson, Richard E., assignors to E. & H. T. Anthony & Co., New York, N. Y. Tray for developing photographic plates	337,547	Mar. 9	919	235	34	1097
Atwood, Charles H. (See Hathaway, William A., assignor.)						
Atwood, Eugene. (See Atwood and Bradley.)						
Atwood, James B., Boston, and S. H. Howes, Chelsea, Mass. Gage-cock	338,215	Mar. 16	1800	469	34	1266
Atwood, James F., Boston, Mass. Cuff-holder	333,494	Jan. 5	1	1	34	3
Atwood, James F., Boston, Mass. Garment-supporting clasp	333,495	Jan. 5	1	1	34	3
Atwood, John E., Stonington, Conn. Spinning-frame	338,216	Mar. 16	1801	470	34	1266
Atwood, John E. and E., and E. E. Bradley, Stonington, Conn., assignors to said John E. and E. Atwood. Swift for silk, &c	338,627	Mar. 23	2364	622	34	1373
Atwood, Washington I., Amesbury, Mass. Dash-frame for vehicles	337,294	Mar. 2	558	147	34	1029
Aubin, Philip, assignor, by mesne assignments, to W. M. Green, Lowell, Mass. Apparatus for clearing waste from the spindles of spinning-mules	335,498	Feb. 2	567	148	34	542
Auble, James H., Lawrenceburg, Ind., assignor of one-half to J. Cloke, Cincinnati, Ohio. Apparatus for graining	337,729	Mar. 9	1137	294	34	1136

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Audirsch, Carl, assignor to himself and W. W. Strickland, Gurdon, Ark. Combined plow, cultivator, and harrow	335,008	Jan. 26	2102	560	34	410
Auge, George W. (See Zwoyer, Ellsworth B. A., assignor.)						
Anger, Robert, New York, N. Y. Rotary engine	336,668	Mar. 30	2460	649	34	1305
Angier, Newell G., Stuart, Nebr. Folding bed	337,730	Mar. 9	1128	295	34	1136
Austin, Franklin H., Onoomea, Hilo, Hawaii. Cultivator	336,884	Mar. 2	1	1	34	927
Austin, Harry K., Carn Brea Villa, Washwood Heath Road, county of Warwick, England. Car-axle box	336,685	Feb. 23	2295	600	34	869
Austin, Josiah, and R. Chamberlain, East Liberty, Ohio. Gate	336,081	Feb. 9	1327	351	34	684
Austin, Kenneth S., Havelock Cottage, Washwood Heath Road, county of Warwick, England. Car-axle box	336,831	Feb. 23	2479	652	34	903
Automatic Car Brake, Starter, and Propeller Company. (See Morell, James F., assignor.)						
Automatic Shoe Beader Company. (See Hatfield, Charles B., assignor.)						
Avery Planter Company. (See Avery, Robert H., assignor.)						
Avery Planter Company. (See Berrien, Leonard B., assignor.)						
Avery, Robert H., assignor to Avery Planter Company, Peoria, Ill. Plow-fender	334,408	Jan. 19	1302	{358 359	34	256
Avery, William. (See Kimball and Avery.)						
Awalt, Jesse C., Steward's Mills, Tex. Cotton-sweep	334,409	Jan. 19	1303	358	34	256
Aydelott, Jacob S., Xenia, Ind. Parlor base-ball game	336,076	Feb. 16	1405	372	34	705
Ayer, Edwin W., Cumberland Mills, Me. Apparatus for winding and rewinding paper	336,686	Feb. 23	2297	{600 601	34	869
Ayer, George S., Saco, Me. Combined force and lift pump	338,669	Mar. 30	2461	649	34	1305
Aylworth, George H., Jacksonville, Fla. Summer fan	334,664	Jan. 19	1664	450	34	325
Ayres, Hobart, Chicago, Ill. Ladder-step	335,051	Jan. 26	2160	576	34	421
Babcock, Charles, assignor of one-fourth to J. M. Foster, Troy, N. Y. Potato-digger	338,133	Mar. 16	1692	{440 441	34	1945
Babcock, Charles E., Troy, N. Y. Toboggan	334,925	Jan. 26	1992	531	34	991
Babcock, George H., Plainfield, N. J. Air or gas engine	334,152	Jan. 12	915	250	34	178
Babcock, George H., Plainfield, N. J. Air or gas engine	334,153	Jan. 12	919	251	34	179
Babcock, George H., Plainfield, N. J. Operating air or gas engines	334,154	Jan. 12	924	251	34	179
Babcock, George H., Plainfield, N. J. Operating air and gas engines	334,155	Jan. 12	928	251	34	179
Babcock, Holland C., New York, N. Y. Machinery-belt	338,016	Mar. 16	1537	399	34	1215
Babcock, William H., assignor of one-half to P. Goeble, Alton, Iowa. Bolt-lock	333,718	Jan. 5	110	25	34	58
Babcox, Hiram M. D. L., San Francisco, Cal. Pump	334,211	Jan. 19	1093	279	34	199
Babendreier, Albert, Baltimore, Md., assignor of one-half to F. L. Babendreier, Washington, D. C. Triturator	336,618	Feb. 23	2193	{572 573	34	849
Babendreier, Fred L. (See Babendreier, Albert, assignor.)						
Bachand, Levi N., assignor to J. H. Whipple, Chicago, Ill. Frame for draping fringe, &c	334,413	Jan. 19	1307	354	34	256
Bachman, Joseph A. (See Clark and Bachman.)						
Backlund, Johan F., assignor to P. Ostberg, Stockholm, Sweden. Fire-bar for liquid-fuel furnaces	338,690	Mar. 30	2462	{649 650	34	1305
Backus, Absalom, Jr., Detroit, Mich. Boiler-furnace	338,462	Mar. 23	2145	561	34	1335
Backus, Quimby S., Winchendon, Mass. Combined bedstead and fire-place	334,504	Jan. 19	1437	386	34	280
Bacon, Earle C., assignor to Copeland & Bacon, New York, N. Y. Winch-engine	333,496	Jan. 5	2	1	34	3
Bacon, Earle C., New York, N. Y., assignor to Sea Island Chemical Company, Beaufort, S. C. Machine for washing phosphate rock	335,673	Feb. 9	890	218	34	594
Bacon, Robert A., New York, N. Y. Light-regulator	337,548	Mar. 9	990	236	34	1098
Badger, Gardner F., Brooklyn, N. Y. Dredging apparatus	336,619	Feb. 23	2197	{573 574	34	850
Badger, George A., and W. F. Lakin, Quincy, Mass. Toy pistol	335,104	Feb. 2	5	2	34	441
Badger, Sheridan S., Chicago, Ill. Lemon-squeezer	334,212	Jan. 12	1084	272	34	198
Badis, Joseph S., Philadelphia, Pa. Life-preserver	335,173	Feb. 2	118	30, 31	34	462
Badische Anilin and Soda Fabrik. (See Kern, Alfred, assignor.)						
Baer, Adolphus, Zurich, Switzerland. Hydraulic ram	337,112	Mar. 2	305	80, 81	34	962
Baer, Lucien, and D. Kraemer, New York, N. Y. Ornamental fabric	335,792	Feb. 9	1001	265	34	697
Bagby, Nathaniel, Mound Station, assignor of one-half to W. M. Cox, Mount Sterling, Ill. Car-coupling	334,410	Jan. 19	1305	353	34	256
Bailey, Charles D., Hartland, Vt. Fender for vehicle-bodies	333,497	Jan. 5	3	2	34	3
Bailey, Franklin H., Hilladale, assignor of one-half to Michigan School Furniture Company, Northville, Mich. Terrestro-sidereal globe	336,980	Feb. 16	1725	451	34	750
Bailey, Leon O. (See Harbin, James W., assignor.)						
Bailey, Thomas, New York, N. Y. Water-closet cistern	337,359	Mar. 9	640	169	34	1051
Bailey, Walter M., New York, N. Y. Apparatus for bending the ribs or frames of metallic ships	337,113	Mar. 2	306	81	34	963
Bailey, William H., New York, N. Y. Fire-escape	335,414	Feb. 2	458	118	34	522
Baillie, Charles, Montreal, Quebec, Canada. Folding-machine	337,914	Mar. 16	1384	{359 360	34	1168
Baily, Oscar W., Enterprise, Fla. Plant-protector	333,810	Jan. 5	498	116	34	80
Bain, Forée, Chicago, Ill. Dynamo-electric machine	337,041	Mar. 2	915	57	34	965
Bain, Forée, Chicago, Ill. Armature for dynamo-electric machines	337,042	Mar. 2	917	57	34	965
Baines, Hugh, Toronto, Ontario, Canada. Tricycle	334,889	Jan. 26	1884	502	34	971
Baird, John, New York, N. Y. Steam-boiler	334,156	Jan. 12	931	{251 252 253	34	180
Baird, William F., Burlington, Iowa. Picket-fence	338,818	Mar. 30	2650	698	34	1429
Bairstow, John, and T. E. Keavy, Kent; said Bairstow assignor, by mesne assignments, to A. A. Tillitson, Akron, Ohio. Button-setting instrument	336,838	Feb. 23	2480	658	34	903
Baker, Charles H., Meadville, Pa. Slide-valve	336,980	Mar. 2	129	35	34	949
Baker, Edward E., Morgantown, W. Va. Paper-file	336,909	Mar. 30	2784	{733 734	34	1453
Baker, Ellis B., *et al.* (See Hilton, Charles H., assignor.)						
Baker, Ellis L. (See Bates, Franklin P., assignor.)						
Baker, George H., Morenci, Mich. Curtain-fixture	337,043	Mar. 2	217	57	34	965
Baker, James H., Westville, Ohio. Die and die-block for forge-hammers. (Reissue)	10,660	Jan. 26	2941	594	34	434
Baker, James M., Freeport, Ill. Carriage-curtain fastening	333,811	Jan. 5	429	117	34	81
Baker, John W., Philadelphia, Pa., assignor to Regenerative Gas Light Company, Camden, N. J. Gas-lamp	334,328	Jan. 12	1180	320	34	239
Baker, Mattie J., San José, Cal. Ironing-table	336,077	Feb. 16	1406	373	34	705
Baker, Nelson. (See Currin, John, assignor.)						
Baker, Warren J., *et al.* (See Hardenbergh, Henry D., assignor.)						
Baker, William A., New Matamoras, Ohio. Speed-regulator for shafts of circular saws, &c	334,329	Jan. 12	1191	320	34	239
Baker, William A., New Matamoras, Ohio. Speed-regulator for shafts of circular saws, &c	338,693	Mar. 30	2467	651	34	1307
Balch, Charles J., East Minneapolis, Minn. Device for setting saws	335,735	Feb. 9	916	241	34	612
Baldauf, Louis, Mequon, Wis. Washing-machine						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Baldridge & Co., A. (See Jacobus, Pierson, assignor.)						
Baldrige, George W., St. Louis, Mo. Telegraph-transmitter	338,691	Mar. 30	2463	650	34	1306
Baldwin, Charles E., assignor to W. B. Shryock, New York, N. Y. Alarm cash-indicator and check-receiver	337,915	Mar. 16	1387	360	34	1188
Baldwin, Chester M., assignor of three-fourths to S. Holmes, M. E. Bissell, and C. H. Warren, Bronson, Mich. Car-coupling	336,486	Feb. 16	1368	519	34	808
Baldwin, Henry R. (See Householder, Henry L., assignor.)						
Baldwin, Louis W., Jersey City, N. J. Engine for running sewing-machines	333,719	Jan. 5	311	85	34	58
Baldwin, Luther C., Manchester, N. H. Machine for painting bobbins, &c	338,380	Mar. 23	2085	534	34	1214
Ball, A. E. (See Bradshaw, Ira H., assignor.)						
Ball, Charles E., New York, N. Y. Digester for paper-pulp	336,078	Feb. 16	1407	373	34	706
Ball, Jacob, Waterloo, Ontario, Canada. Automatic weighing-scale	338,654	Mar. 23	2090	532	34	1279
Ball, Royal E., New York, N. Y. Dynamo-electric machine	336,780	Feb. 23	2414	635	34	891
Ball, Royal E., New York, N. Y. Regulator for dynamo-electric machines	338,333	Mar. 23	1961	516	34	1208
Ball, Royal E., New York, N. Y. Dynamo-electric machine	338,692	Mar. 30	2465	{650 651	34	1306
Ball, Royal E., New York, N. Y. Dynamo-electric machine	338,910	Mar. 30	2785	734	34	1453
Ball, Silas W., assignor of one-half to J. L. Spangler, Canton, Ohio. Rolling colter	337,995	Mar. 9	558	147	34	1060
Ballard, John K., Grayling, Mich. Gun-barrel	337,916	Mar. 16	1388	360	34	1189
Ballentine, John C., assignor of one-half to J. R. Mills, Thornton, Tex. Car-coupling	335,975	Feb. 9	1109	288	34	647
Ballou, Russell A., Newton, Mass., assignor to Chemical Hand Fire Extinguisher Company, Portland, Me. Chemical fire-extinguisher	338,242	Mar. 23	1957	488	34	1281
Baltimore and Ohio Telegraph Company. (See Maver, William, Jr., assignor.)						
Baltimore, John T., and J. F. Paddleford, Nora Springs, Iowa. Swinging gate	337,980	Mar. 9	641	169	34	1051
Bamberger, J. Henry. (See Bouchy and Bamberger.)						
Bancroft, J. Sellers, assignor to W. Sellers, Philadelphia, Pa. Machine for pointing drills	337,549	Mar. 9	921	236	34	1096
Bance, Charles H. (See Hering, Carl, assignor.)						
Banks, Robert H., Fort Lewis, Colo. Land-channeling roller	334,213	Jan. 12	1085	278	34	199
Banister, George, Warren, Vt. Spring for vehicles	336,543	Feb. 23	2083	547	34	830
Bannan, John M., Chetopa, Kans. Reel	336,985	Mar. 2	3	1	34	927
Bannister, Lemuel, Philadelphia, Pa. Collecting waste gas from leaks at the joints of gas-conduits	336,199	Feb. 16	1397	419	34	736
Barber, Amzi L., assignor to Barber Asphalt Paving Company, Washington, D. C. Concrete pavement	338,381	Mar. 23	2086	534	34	1215
Barber, Amzi L., assignor to Barber Asphalt Paving Company, Washington, D. C. Construction of concrete pavements	338,382	Mar. 23	2087	534	34	1215
Barber Asphalt Paving Company. (See Barber, Amzi L., assignor.)						
Barber, James T., Hannibal, Mo. Device for binding together lumber	338,334	Mar. 23	1969	516	34	1303
Barber, Thurston B., Norwich, Conn. Stump or stone puller	337,114	Mar. 2	309	81	34	963
Barber, William E., Wyoming, R. I. Rein-holder	334,067	Jan. 12	795	218	34	186
Barden, John S., Warren, assignor to J. O. Draper, Pawtucket, R. I. Piston-meter	336,082	Feb. 9	1298	{351 352	34	695
Barden, Merritt C., West Pawlet, Vt. Apparatus for automatically feeding liquids to evaporators	337,227	Mar. 2	457	{119 120	34	1011
Barker, Augustus M., *et al.* (See Tyler, George, assignor.)						
Barker, Erastus B. (See Lewis and Barker.)						
Barker, J. S., *et al.* (See Houlehan, James, assignor.)						
Barker, Orson, Braidwood, Ill. Self-lubricating car-wheel	338,694	Mar. 30	2468	651	34	1307
Barley, James H., Sedalia, Mo. Combined horse-rake and carrier-truck	337,226	Mar. 2	456	120	34	1011
Barley, James H., Sedalia, Mo., assignor of one-half to G. Ferrell, Wichita, Kans. Blotter	335,674	Feb. 9	880	219	34	594
Barlow, Charles K., Poughkeepsie, N. Y. Dental-instrument rubber cover	336,781	Feb. 23	2415	635	34	892
Barlow, Charles K., Poughkeepsie, N. Y. Rein-handle	338,561	Mar. 23	2286	602	34	1361
Barnard, Andrew B., Kansas City, Mo. Lock for freight-car doors	334,840	Jan. 26	1886	502	34	971
Barnard, Edward, Rome, N. Y. Hame-clip	334,411	Jan. 19	1306	353	34	256
Barnard, George D. (See Shock, Floyd, assignor.)						
Barnard, George E. (See Hodges, Samuel H., assignor.)						
Barnard, William G., Bellaire, Ohio. Apparatus for loading coal	333,585	Jan. 5	119	23	34	25
Barnes, Charles O. and L. Barnes, Sr., Syracuse, N. Y. Car-coupling	335,675	Feb. 9	882	219	34	594
Barnes, Charles O. and L., Sr., Syracuse, N. Y. Car-coupling	337,650	Mar. 9	1041	267	34	1120
Barnes, Dennis, *et al.* (See Hellem, William, assignor.)						
Barnes, Elbridge F., New Haven, Conn. Cutter-head	338,695	Mar. 30	2469	651	34	1307
Barnes, Erastus H., Brooklyn, N. Y. Gang-edger	336,782	Feb. 23	2416	{635 636	34	892
Barnes, George A., New Haven, assignor to F. Armstrong, Bridgeport, Conn. Chuck	335,009	Jan. 26	2102	560	34	410
Barnes, John B., Greencastle, Ind. Safety attachment	334,996	Jan. 26	1998	531	34	991
Barnes, John H., and J. H. Woolaston, assignors to Barnes Manufacturing Company, New Haven, Conn. Night-latch	337,115	Mar. 2	310	81	34	963
Barnes, Lucien, Sr. (See Barnes, Charles O. and L., Sr.)						
Barnes Manufacturing Company. (See Barnes and Woolaston, assignors.)						
Barnes, Porter, *et al.* (See Hellem, William, assignor.)						
Barnett, Americus M., assignor of one-half to J. B. Wright, Elkton, Ky. Shears	337,917	Mar. 16	1389	361	34	1189
Barnett, James P. (See Clark, Frank E., assignor.)						
Barnett, John, New York, and C. S. Bavier, Brooklyn, N. Y. Steam-radiator	338,911	Mar. 30	2786	734	34	1454
Barnette, William J. (See Yale, Holman, and Barnette.)						
Barney, Everett H., Springfield, Mass. Skate-fastening	335,556	Feb. 9	657	173	34	565
Barnhurst, Henry R. (See Griswold and Barnhurst.)						
Barnhurst, Henry R., Erie, Pa. Band-saw mill	338,017	Mar. 16	1538	399	34	1215
Barns, John P. (See Vandyke and Barns.)						
Barnum, Theodore F., Troy, N. Y. Dry-board hook	334,927	Jan. 26	1994	531	34	991
Barr, George D., Greenville, S. C. Blotting-pad, ruler, and paper-cutter	337,651	Mar. 9	1043	268	34	1120
Barr, James L. H. (See Ranson and Barr.)						
Barr, John, St. Louis, Mo. Washing-machine	336,981	Feb. 16	1727	{451 452	34	750
Barr, Mathew, Aitkin, Minn. Grab-hook for chains	336,687	Feb. 23	2299	601	34	869
Barr, William H., assignor of one-half to A. J. Beatty & Sons, Steubenville, Ohio. Finishing glass articles	335,987	Feb. 9	1067	296	34	674
Barrett, Alfred E., London, England. Indicator-bolt	336,463	Mar. 23	2147	561	34	1336
Barrett, John A., Brooklyn, N. Y. Ammeter	336,688	Feb. 23	2300	601	34	869
Barringer, James F., Bennettsville, S. C. Broom-holder	334,214	Jan. 12	1086	278	34	199
Bartlett, Elbridge G. W., Yonkers, N. Y. Reversible filter	333,499	Jan. 5	4	2	34	4
Bartlett, Marcus J. (See Wilkins and Bartlett.)						
Barry, Charles, Corning, N. Y. Railway time-signal	337,229	Mar. 2	463	121	34	1011
Barry, Michael, Valparaiso, Ind. Vehicle-spring	336,544	Feb. 23	2085	547	34	831
Barstow, Calvin J., Cheneyville, La. Machine for making brick, tile, &c	338,018	Mar. 16	1540	400	34	1215

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Bartels, William H., assignor of two-thirds to G. Edmunds, Carthage, Ill., and G. Vote, Fairfield, Iowa. Grass and weed cutting machine for railway-tracks	337,361	Mar. 9	641	170	34	1051
Bartholomew, Charles M., Plainwell, Mich. Pump-rod coupling	336,783	Feb. 23	2418	636	34	892
Bartholomew, Francis A., Bloomfield, N. J., assignor to Riley Railway Construction Company of New Jersey. Car-truck	336,963	Mar. 2	133	36	34	950
Bartholomew, Miles M., Belleville, Ill. Type-writing machine	335,736	Feb. 9	918	242	34	612
Bartlett, James F., Cleveland, Ohio. Brush	335,876	Feb. 9	1110	294	34	647
Bartlett, Leander L., assignor to Montague City Rod Company, Montague, Mass. Fishing-rod	337,474	Mar. 9	827	209	34	1061
Bartlett, Wallace A., Washington, D. C. Fire-extinguishing projectile	336,981	Mar. 2	130	35	34	949
Barton, Henry J. (See Musgrave and Barton.)						
Barton, Jesse H., Brownsville, Tenn. Gate	338,912	Mar. 30	2787	735	34	1454
Bartram, Ferdinand S., New York, N. Y. Fountain-pen and fountain pen-holder	338,019	Mar. 16	1541	400	34	1215
Basim, Henry T., Decatnrville, Ohio. Log-turner	334,330	Jan. 12	1198	320	34	299
Bassell, John Y., assignor to R. G. Bassell, Leesburg, Va. Sash-fastener	334,685	Jan. 19	1685	450	34	395
Bassell, Rebecca G. (See Bassell, John Y., assignor.)						
Bassett, Charles F. (See Hunter and Bassett.)						
Bassett, Charles F., Chicago, Ill. Corn-harvester	335,877	Feb. 9	1112	294 / 295	34	648
Bassett, Ira, Chicago, Ill. Pneumatic action for organs	336,992	Mar. 2	131	35	34	949
Bassett, Nathan, Haddonfield, N. J., assignor to B. R. Leeds, Philadelphia, Pa. Mixing-machine for paints	336,079	Feb. 16	1409	373 / 374	34	706
Batchelor, Charles, New York, N. Y. Dynamo-electric machine	338,383	Mar. 23	2038	535	34	1315
Batchelor, Charles D., Pillsbury, assignor of one-half to G. N. Bressler, Long Prairie, Minn. Snow-plow	336,833	Feb. 23	2481	653	34	903
Batchelor, Telford C., West Kensington, county of Middlesex, England. Metal rope	338,913	Mar. 30	2788	735	34	1454
Bate, Wallace H., Melrose, Mass. Handle or pull for water-closets, &c	334,412	Jan. 19	1206	354	34	256
Bates, Franklin P., assignor of one-half to E. L. Baker, Syracuse, N. Y. Die for making fifth-wheels	338,217	Mar. 16	1804	470	34	1066
Bates, William M. (See Norton, William T., assignor.)						
Baner, Friedrich, Orange, N. J. Hat sizing or felting machine	338,464	Mar. 23	2148	562	34	1336
Baner, George, St. Louis, Mo. Swing	336,080	Feb. 16	1411	374	34	706
Baughman, Delmer L., Albion, Ind. Tube-cutter	334,928	Jan. 26	1995	531	34	391
Baum, Charles, Washington, D. C. Store-service ticket	334,157	Jan. 12	934	253	34	189
Baum, Philip, *et al.* (See Powell and Nolan, assignors.)						
Banman, Henry G., assignor to himself and J. T. McMaster, Pittsburg, Pa. Electric leak-alarm for pipes	337,116	Mar. 2	311	82	34	984
Baumgarten, Albert, *et al.* (See Tobias and Shoesmith, assignors.)						
Bavier, Charles S. (See Barnett and Bavier.)						
Bayer, Joseph, and E. Puchta, Washington, Mo. Manufacture of tiles	338,465	Mar. 23	2149	562	34	1336
Bayler, Charles A., and B. F. Strickler, York, Pa. Cigar-perforator	334,686	Jan. 19	1687	450	34	326
Bayler, Charles A., and B. F. Strickler, York, Pa. Cigar-bunch turner and perforator	334,687	Jan. 19	1688	451	34	326
Bayler, Charles A., York, Pa. Machine for bunching cigars	337,731	Mar. 9	1140	295	34	1137
Bayley, William. (See Whiteley and Bayley.)						
Bayley, William. (See Whiteley, Bayley, and Dyer.)						
Baylis, James. (See Warren, David H., assignor.)						
Baylor, John J., North Manlius, N. Y. Sofa and bedstead combined	337,652	Mar. 9	1044	268	34	1121
Bayrhoffer, Theodore C. H., Rising City, Nebr. Door-latch	336,374	Feb. 16	1856	486	34	784
Beach, Allen J., deceased, Flint, Mich.; C. E. Beach administratrix. Running-gear for vehicles. (Reissue)	10,679	Jan. 19	1746	466	34	338
Beach, Clara E., administratrix. (See Beach, Allen J.) (Reissue.)						
Beach, Clifton B., Cleveland, Ohio. Utilizing old wheel-tires	335,878	Feb. 9	1118	295 / 296	34	648
Beach, Clifton B., Cleveland, Ohio. Apparatus for converting steel tires into bars or billets	335,879	Feb. 9	1121	296 / 297	34	649
Beach, James C., *et al.* (See Coles, David H., assignor.)						
Beach, William H., Minneapolis, Minn. Packing-box	333,720	Jan. 5	312	86	34	58
Beal, Frank A., Haverhill, Mass. Nailing-machine for boots or shoes	333,812	Jan. 5	431	117	34	81
Beale, Joseph G., and J. A. Armstrong, Leechburg, Pa. Automatic pressure-regulator	337,918	Mar. 16	1390	361	34	1189
Beall, John A., *et al.*, executors. (See Benham, Henry W.)						
Bean, John, Los Gatos, Cal. Spraying-pump	337,919	Mar. 16	1391	361	34	1189
Bean, Roscoe, Springfield, Ohio. Pump	334,732	Jan. 26	1754	467	34	346
Bean, Theodore W., Norristown, Pa. Machine for rolling car-wheels	337,230	Mar. 2	465	121	34	1012
Beard, George M., assignor of one-half to W. H. Rakestraw, Auburn, Ind. Windmill regulator	338,914	Mar. 30	2789	735 / 736	34	1454
Beard, George W., Baltimore, Md. Sewer trap or ventilator	334,158	Jan. 12	936	253	34	180
Beardslee, William F., Boston, Mass. Thread-controlling mechanism for sewing-machines	333,586	Jan. 5	120	33	34	25
Beardslee, William F., Boston, Mass., assignor to Manufacturers Special Machine Company, Danbury, Conn. Worm-gearing	336,900	Feb. 16	1509	420	34	739
Beardsley, Backus A., Waterville, N. Y. Press	336,545	Feb. 23	2085	548	34	831
Beardsley, James L. (See Walker and Beardsley.)						
Beardsley, Levi A., Dodge City, Kans. Ship for aerial navigation	336,984	Mar. 2	134	36	34	950
Beardsley, Melvin W. (See Pearce and Beardsley.)						
Beatty, Samuel A., New York, N. Y. Gas-pressure regulator	333,587	Jan. 5	123	34	34	26
Beatty & Sons, A. J. (See Barr, William H., assignor.)						
Beaudette, Philogène E., Boston, Mass. Hair-clipper	334,733	Jan. 26	1755	468	34	346
Beaver, Thomas, and W. G. Jewitt, Toronto, Ontario, Canada. Street-indicator for cars	334,331	Jan. 12	1194	321	34	230
Becker, Anthony W., Chapin, Ill. Combined bolt-holder and pipe-wrench	336,965	Mar. 2	135	37	34	950
Becker, Christopher, Sr., New Rochelle, N. Y. Clock-escapement	334,068	Jan. 12	796	218	34	156
Becker, Ernst, New York, N. Y. Analytical balance	336,546	Feb. 23	2087	548	34	832
Becker, Frederick G., assignor to D. S. Morgan & Co., Brockport, N. Y. Harvester-reel	338,020	Mar. 16	1546	400	34	1216
Becker, Victor H., Chicago, Ill. Distributing-valve	337,362	Mar. 9	644	170	34	1052
Becker, Victor H., Chicago, Ill. Ammonia-evaporator for refrigerators	337,363	Mar. 9	645	171	34	1052
Bedbury Divided Car Axle Company of California. (See Bedbury, George W., assignor.)						
Bedbury, George W., assignor to Bedbury Divided Car Axle Company of California, San Francisco, Cal. Divided car-axle	335,737	Feb. 9	919	242	34	612
Bedell, George E., Herkimer, N. Y. Bed-bottom	334,556	Jan. 19	1509	404	34	292
Bedell, George E., Herkimer, N. Y. Folding cot-bed	338,698	Mar. 30	2470	652	34	1397
Bedell, Lorana. (See Conover, Stephen B., assignor.)						
Bedlington, Peter R. (See Roe and Bedlington.)						
Beebe, Joseph E., Adair, Iowa. Harrow draft-bar	336,375	Feb. 16	1857	487	34	784
Beebee, Henry, assignor to C. F. Waldron, Boston, Mass. Harness-ornament	337,732	Mar. 9	1141	296	34	1137
Beedle & Kelly Company. (See Doolittle, Merritt E., assignor.)						
Beehler, Charles W., assignor of one-half to H. Gans, Jr., St. Louis, Mo. Box-fastener	338,698	Mar. 30	2474	652	34	1398

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Beer, Peter, Detroit, Mich. Match-machine	335,416	Feb. 2	461	119	34	522
Beerling, Henry E., Jackson, Mich. Centrifugal reel	338,466	Mar. 23	2150	562	34	1336
Beers, James L., New York, N. Y. Electric hotel call-bell system	338,607	Mar. 30	2471	652	34	1397
Beers, William F. (See Tull, Kuehn, and Beers.)						
Beeson, Isaac R. M. (See Shearer, Amanda E., assignor.)						
Bebel, Aquilla O., Rockford, Ill., assignor to J. B. Young, Sioux Falls, Dak. Ter. Time-lock	335,174	Feb. 2	124	31, 32	34	462
Behlen, Charles A., Cincinnati, Ohio. Vehicle-spring	333,588	Jan. 5	124	34	34	26
Behmer, Daniel, Santa Rosa, Cal. Saw-setting device	336,201	Feb. 16	1600	420	34	739
Beidler, Henry M., Texarkana, Ark. Galvanic belt	335,417	Feb. 2	463	119	34	594
Beisel, Franklin P., Pottstown, assignor of one-half to J. H. Egolf, Douglassville, Pa. Nut-lock	337,653	Mar. 9	1045	268	34	1121
Bekofsky, Vladimir S., Jenchuan, Corea. Brushing-machine	335,793	Feb. 9	1002	265	34	627
Belcher, Orlando F., Winthrop, Mass. Device for crimping cartridge-shells	333,589	Jan. 5	125	34	34	26
Belcher, Orlando F., Winthrop, Mass. Cartridge-loading machine	336,669	Feb. 23	2301	601 / 602	34	870
Belcher, Orlando F., Winthrop, Mass. Wad-feed attachment for cartridge-loading machines	337,117	Mar. 2	313	82	34	984
Belden, Annie M., Fairbury, Ill. Bustle	334,382	Jan. 12	1195	321	34	230
Belden, Emerson, assignor of one-half to A. Crampton, Green Island, N. Y. Planing-machine	337,654	Mar. 9	1046	269	34	1121
Belden, Leslie, New York, N. Y. Hydraulic apparatus	337,118	Mar. 2	315	82	34	984
Beliale, Robert S., assignor of part to T. Ott, C. D. Freeman, H. A. Duhring, and P. Scull, Philadelphia, Pa. Alarm mechanism for railway-switches	338,915	Mar. 30	2793	736	34	1455
Belk, John C., assignor of one-half to R. F. Hafford, Tombstone, Ariz. Ter. Manufacturing textile fibers from the yucca or other cacti	336,376	Feb. 16	1857	.....	34	784
Belknap, Charles E., Grand Rapids, Mich. Sleigh-knee	338,384	Mar. 23	2039	535	34	1315
Bell, Alonzo, Philadelphia, Pa. Spring bed-bottom	336,202	Feb. 16	1601	420	34	739
Bell, Chichester A., Washington, D. C. Transmitter for electric telephone-lines	336,081	Feb. 16	1412	375	34	707
Bell, Chichester A., Washington, D. C. Jet microphone or apparatus for transmitting sounds by means of jets	336,082	Feb. 16	1417	375	34	707
Bell, Chichester A., Washington, D. C. Telephone-transmitter	336,083	Feb. 16	1419	375 / 376	34	707
Bell, Chichester A., Washington, D. C. Method of and apparatus for transmitting, reproducing, and recording speech	336,903	Feb. 16	1602	420 / 421	34	739
Bell, Henry. (See Fonerden and Bell.)						
Bell, John B., Pittsburg, Pa. Washing-machine	335,860	Feb. 9	1123	297	34	649
Bell, William N., Morenci, Mich. Horse-block	336,986	Mar. 2	136	37	34	950
Bellamy, Charles T., Prompton, Pa. Follower for packing barrels	336,690	Feb. 23	2303	602	34	870
Bellamy, James E., *et al.* (See Henry, John, assignor.)						
Belleville, Julien F., Paris, France. Steam-generator	336,282	Feb. 16	1729	452 / 453	34	759
Belleville, Julien F., Paris, France. Feed-water heater	336,283	Feb. 16	1733	453 / 454	34	760
Bellows, Daniel A., Mulberry, Ga. Millstone-bush	335,418	Feb. 2	464	119	34	524
Bellrood, William F., Madison, Dak. Ter. Type-galley	336,377	Feb. 16	1859	487	34	784
Bemis, John A., Oneida, N. Y. Stocking-supporter	338,467	Mar. 23	2151	562	34	1336
Benary, Robert H., New York, N. Y. Tail-piece for banjos	334,734	Jan. 26	1756	468	34	346
Benary's Sons, Henry. (See Dobson, Charles E., assignor.)						
Benda, Sydney. (See Roberts, Frank W., assignor.)						
Bender, Henry C., Montgomeryville, Pa. Ship's propeller	334,632	Jan. 19	1614	430	34	312
Bendix, Josef, Berlin, Germany. Filtering alcohol	333,721	Jan. 5	313	86	34	58
Benedict, Marsena, New York, N. Y. Seat	337,364	Mar. 9	646	171	34	1052
Beneke, John O., New Orleans, La. Combined dust-pan and ash-sifter	337,550	Mar. 9	925	237	34	1099
Bengert, John F., Brooklyn, N. Y. Revolving sign	334,557	Jan. 19	1512	405	34	292
Benham, Cornelius W., assignor of one-half to W. E. Fanson, Enterprise, Kans. Feeder for thrashing-machines	335,988	Feb. 9	1268	336	34	674
Benham, Henry H. (See Benham, Henry W., assignor.)						
Benham, Henry W., deceased; J. A. Beall, New York, and C. W. Sloane, Sands Point, N. Y., executors, and assignors to H. H. Benham, U. S. Army. Device for pulling on boots	335,415	Feb. 2	460	119	34	523
Benjamin, Edwin, South Evanston, Ill. Band-saw mill	334,735	Jan. 26	1757	468	34	346
Benjamin, George H., *et al.* (See Thury, René, assignor.)						
Bennett, Benjamin F., Lockport, N. Y. Jointed boat-oar	336,896	Mar. 2	4	2	34	927
Bennett, Eleazer C., East Bridgewater, Mass. Machine for forming and driving compound pegs	336,547	Feb. 23	2088	548 / 549 / 550	34	832
Bennett, Eleazer C., East Bridgewater, Mass. Uniting the soles and uppers of boots or shoes	336,548	Feb. 23	2093	550	34	832
Bennett, Franklin, assignor of one-third to L. S. Zimmerman, Marshallville, Ohio. Drilling-machine	338,021	Mar. 16	1548	401	34	1216
Bennett, John M., assignor to S. C. Tatum & Co., Cincinnati, Ohio. Barrel-truck	336,620	Feb. 23	2199	574	34	850
Bennett, Livingston O., Baltimore, Md. Dumping-wagon	334,633	Jan. 19	1615	430	34	313
Bennett, Orson W., assignor of one-half to J. Sherman, Washington, D. C. Automatic gas-generator	336,378	Feb. 16	1859	487	34	784
Bennett, William H., Peru, Ind. Saw-mill dog	335,419	Feb. 2	465	120	34	524
Benna, George, Chicago, Ill., assignor of one-half to J. J. Mitchell, New York, N. Y. Heating-stove	335,490	Feb. 2	466	120	34	524
Benna, George, Chicago, Ill., assignor of one-half to J. J. Mitchell, New York, N. Y. Flat-iron heater	335,491	Feb. 2	467	130	34	525
Benoit, Alphonse, Chaux-de-Fonds, Switzerland. Watch	338,385	Mar. 23	2040	535	34	1316
Benson, Arza M., Cleveland, Ohio. Key-seat cutter	335,333	Feb. 2	346	90	34	503
Benson, Benjamin S., Baltimore, Md. Traction-engine	334,338	Jan. 12	1196	321 / 322 / 323	34	230
Benson, Henry C., assignor to Eagle Pencil Company, New York, N. Y. Pencil-clasp	333,590	Jan. 5	127	35	34	26
Benster, Joshua G., Duncan, Nebr. Windmill	336,784	Feb. 23	2419	636	34	892
Bentley, Charles D., Eaton Rapids, Mich. Acoustic telephone	334,069	Jan. 12	796	219	34	156
Bentley, Edward M., Brooklyn, N. Y. Electric railway	338,022	Mar. 16	1549	401	34	1217
Bentley, Edward M., Brooklyn, N. Y. Electric motor	338,023	Mar. 16	1551	401	34	1217
Bentley, John, Manchester, county of Lancaster, England. Box for alimentary and other substances	335,861	Feb. 9	1125	297	34	649
Bentley, Manton T. (See Atherton and Bentley.)						
Bentley, Richard, Corning, Iowa. Chicken-house	336,379	Feb. 16	1861	488	34	785

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Benton, Herbert A., Farmington, Cal. Combined header and thrasher	338,699	Mar. 30	2475	653, 654	34	1398
Beretz, Ludwig, assignor of one-half to C. Stolzle's Söhne, Vienna, Austria-Hungary. Soda-water apparatus	334,150	Jan. 12	987	253	34	161
Bergenheim, Gottfrid, South Butte, Cal. Wash-boiler	334,736	Jan. 26	1756	468, 469	34	347
Berger, Wilson C., Canton, Ohio. Eaves-trough	334,160	Jan. 12	989	254	34	161
Bergh, Bror F., New York, N. Y. Hand-truck	334,505	Jan. 19	1438	386	34	280
Bergman, Henry J. (See Dougherty, Tiberius, assignor.)						
Bergmann & Co. (See Bergmann, Sigmund, assignor.)						
Bergmann & Company. (See Klein, Philip H., Jr., assignor.)						
Bergmann, Sigmund. (See Edison, Thomas A., assignor.)						
Bergmann, Sigmund, New York, N. Y. Telephone	337,231	Mar. 2	466	121	34	1012
Bergmann, Sigmund, New York, N. Y. Telephone-receiver	337,232	Mar. 2	467	122	34	1012
Bergmann, Sigmund, assignor to Bergmann & Co., New York, N. Y. Electric-light fixture	337,296	Mar. 2	560	147	34	1029
Bergstresser, Samuel, Philadelphia, Pa. Covering for feed-rolls of spinning machinery	333,813	Jan. 5	432	117	34	81
Bernard, William M. (See Coon, Hedges, and Bernard.)						
Bernd, Gustave, Macon, Ga. Snap-hook	339,039	Mar. 30	2973	786	34	1486
Berndt, Henry, *et al.* (See Long, William, assignor.)						
Berrenberg, Adolph. (See Berrenberg, William and A.)						
Berrenberg, William and A., Boston, Mass., assignors to Positive Pump and Water Meter Company, Kittery, Me. Rotary engine	337,551	Mar. 9	926	237	34	1099
Berrien, Leonard B., assignor to Avery Planter Company, Peoria, Ill. Corn-planter	335,905	Feb. 2	167	43, 44	34	471
Berry, John, assignor to National Needle Company, Springfield, Mass. Machine for swaging metal bars	337,297	Mar. 2	561	148	34	1029
Berry, John A. (See Dyer and Berry.)						
Berry, Mary H., and F. H. Butler, San Francisco, Cal. Ointment	334,634	Jan. 19	1616	.....	34	313
Berryhill, Andrew J. (See Shropshire and Berryhill.)						
Berthon, Pierre, and A. Debenoit, St. Etienne, Loire, France. Piston water-meter	338,243	Mar. 23	1838	483, 484	34	1281
Bertram, Alexander, Toronto, Ontario, Canada. Saw	336,380	Feb. 16	1862	488	34	785
Bessler, Vetal, assignor to himself and J. Ammon, New York, N. Y. Pianissimo-stop for piano-fortes	337,552	Mar. 9	927	237	34	1099
Best, William J., *et al.* (See Hunter, Thomas M., assignor.)						
Bethel, John. (See Sewell, Hulton, and Bethel.)						
Bethell, Lionel B., Chelsea Lodge, Tite Street, Chelsea Embankment, London, England. Carving-fork	334,841	Jan. 26	1867	502	34	371
Bettendorf, William P., Peru, Ill. Machine for securing spokes in wheels	335,882	Feb. 9	1125	297, 298	34	649
Betts, Robert W., assignor to S. Crump, Montclair, N. J. Box	334,506	Jan. 19	1440	387	34	280
Betts, Stephen N., Adams, Mich. Casing for hot-air furnaces	333,989	Jan. 12	678	185	34	135
Beuerlein, Peter, Newtown, N. Y. Artificial mother	335,422	Feb. 2	469	121	34	525
Beuttell, Henry, Halifax, county of York, England. Bedstead	337,655	Mar. 9	1048	269	34	1121
Beverly, Sarah M. (See Millard, Sarah M. B.)						
Bevier, James, assignor of two-thirds to C. F. Hankey and R. C. Dart, Petoskey, Mich. Speed-regulating device	338,916	Mar. 30	2794	736	34	1455
Bex, Frederick, and E. F. Heunsch, Washington, D. C. Two-wheeled cab	336,467	Feb. 16	1963	519	34	806
Bickerstaff, Doctor W., Cochranton, Pa. Sheep-feeding rack	333,729	Jan. 5	314	86	34	59
Bicknell, William A. P., assignor to D. S. Hines, W. A. Perry, and C. C. Worthington, New York, N. Y. Piston-rod packing	338,700	Mar. 30	2477	654	34	1399
Bidwell, Julius A., Ivanpah, Cal. Ore-grinding pan	336,691	Feb. 23	2304	602	34	870
Bidwell, Julius A., Ivanpah, Cal. Attachment for amalgamating-pans	336,692	Feb. 23	2304	602	34	870
Bien, Hermann, M., Vicksburg, Miss. Automatic fan for furniture	335,863	Feb. 9	1132	298	34	650
Bien, Joseph, San Francisco, Cal. Fire-escape	336,867	Mar. 2	5	2	34	927
Bierce, Calvin A., *et al.* (See Jeffray and Liver, assignors.)						
Biersach, Paul C., Milwaukee, Wis. Caster for trunks	335,537	Feb. 9	658	173	34	565
Bigelow, Edmond B., assignor to himself, S. L. Bignall, and C. J. Glenn, Chicago, Ill. Lamp	334,556	Jan. 19	1513	405	34	298
Bigelow, George W., New Haven, Conn. Direct-acting engine	335,884	Feb. 9	1134	299	34	650
Bigelow, William H., Worthington, Minn. Machine for building wire fences	337,119	Mar. 2	317	83	34	985
Bigger, James F., Rushville, Ind. School-desk	338,468	Mar. 23	2151	563	34	1336
Biggs, Henry, assignor to W. J. Reilly, Montpelier, Vt. Carriage-standard	338,655	Mar. 23	2400	632	34	1379
Bignall, Solomon L., *et al.* (See Bigelow, Edmond B., assignor.)						
Bike, James C. (See Milliken, George, assignor.)						
Billbrough, William H., Lansingburg, N. Y. Lady's undershirt	338,024	Mar. 16	1552	401	34	1217
Billings, Frank. (See Dallibs and Billings.)						
Billings, Frank, Cleveland, Ohio, and W. R. Hinsdale, Brooklyn, N. Y., assignors to Compressed Steel Company, Cleveland, Ohio. Compressing fluid metal	333,591	Jan. 5	128	35	34	26
Billings, George B., Lebanon, N. H. Combined fertilizer-distributer and planter	333,723	Jan. 5	315	86, 87	34	59
Billings, Jasper. (See Meredith, John H., assignor.)						
Bimm, Joseph E., Dayton, Ohio. Vehicle-curtain	337,120	Mar. 2	319	83	34	985
Bingham, Daniel, Hawley, Pa. Carpet-fastener	336,381	Feb. 16	1863	488	34	785
Birchall, George W., assignor to Union Manufacturing Company, Toledo, Ohio. Feed-mechanism for sewing-machines	336,786	Feb. 23	2422	637	34	893
Bird, Joseph, administrator. (See Green, Henry.)						
Birkenhead, John, Mansfield, Mass. Boring-tool	335,206	Feb. 2	171	44	34	471
Birkmann, Georg, New York, N. Y. Bedstead	337,930	Mar. 16	1392	361	34	1189
Bisbee, Albert, Plainville, Mass., assignor to Lincoln, Bacon & Co. and Bisbee, Swift & Burrows. Machine for making hollow metallic balls	338,656	Mar. 23	2401	632	34	1379
Bisbee, Swift & Burrows, *et al.* (See Bisbee, Albert, assignor.)						
Bishop, Adolphus F., *et al.* (See Laughton, Joseph B., assignor.)						
Bishop & Babcock. (See Thomas, William, assignor.)						
Bishop, John E., San Marcos, Tex. Fire-tongs	337,733	Mar. 9	1142	296	34	1137
Bispool Sewing Machine Company. (See Price, John B., assignor.)						
Bissell Carpet Sweeper Company. (See Bissell and Drew, assignors.)						
Bissell, Mary E., *et al.* (See Baldwin, Chester M., assignor.)						
Bissell, Melville R., and W. J. Drew, assignors to Bissell Carpet Sweeper Company, Grand Rapids, Mich. Carpet-sweeper	335,010	Jan. 26	2105	560, 561	34	410
Bissell, Simeon, assignor of one-half to J. R. Alexander, Pittsburg, Pa. Furnace	335,558	Feb. 9	659	174	34	565
Bittenbender, Eli, Nanticoke, Pa. Drill-frame anchor	338,469	Mar. 23	2153	563	34	1337
Black, Horatio N., Philadelphia, Pa. Vehicle-spring	333,814	Jan. 5	433	117	34	81
Black, Robert H., Kendall Creek, Pa. Sucker-rod	334,929	Jan. 26	1906	502	34	391
Blackall, Robert C., Albany, N. Y. Safety-gate for railway-crossings	334,930	Jan. 26	1906	502	34	391
Blackmer, Henry A., Clarksville, Ark. Double-spiral-bed-spring machinery	338,702	Mar. 30	2469	655	34	1339

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Blaine Car and Manufacturing Company. (See Blaine, George E., assignor.)						
Blaine, George E., assignor to Blaine Car and Manufacturing Company, Dayton, Ohio. Dumping-car	335,885	Feb. 9	1136	300, 301, 302	34	651
Blair, Frank L., Allegheny, Pa. Applying cloth to insoles	333,499	Jan. 5	5	2	34	4
Blair, George W., Wabash, Ind. Anti-rattler for thill-couplings	334,843	Jan. 26	1867	502	34	371
Blair, George W., Wabash, Ind. Thill-coupling	335,676	Feb. 9	893	219	34	595
Blair, George W., Pittsburg, Pa. Manufacture of glassware	337,656	Mar. 9	1049	270	34	1121
Blair, Robert, New York, N. Y. Inside shutter	337,121	Mar. 2	320	83	34	985
Blake and Johnson. (See Lester, Harry B., assignor.)						
Blake, Francis H., assignor to himself and C. Espenschied, Pinal, Ariz. Ter. Machine for concentrating ores, &c.	337,122	Mar. 2	321	84	34	985
Blakely, George C., and J. B. Gilpatrick, Piano, Ill. Tension device for grain-binders	335,677	Feb. 9	894	219	34	595
Blakesley, Alpheus M., Rock Island, Ill. Stove or range damper	337,233	Mar. 2	466	122	34	1012
Blakesley, Alpheus M., Rock Island, Ill. Stove or range	336,701	Mar. 30	2478	655	34	1399
Blanchard, William H., Gainesville, Ga. Machine for filing cotton-gin saws	336,025	Mar. 16	1552	402	34	1217
Blaney, William H., assignor to F. D. Hall, Attleborough, Mass. Fastening for lacing-cords	338,470	Mar. 23	2154	563	34	1337
Blank, Henry F., Quincy, Ill. Hay-press	334,843	Jan. 26	1898	503	34	371
Blankenmeister, Albert L., Marissa, Ill. Watch-case spring	337,365	Mar. 9	648	171	34	1059
Blathwayt, Charles R., Chelmarsh, Bridgenorth, county of Salop, England. Latch for doors, windows, &c.	335,175	Feb. 2	128	32	34	468
Blau, Moris, New York, N. Y. Shirt	337,553	Mar. 9	998	237	34	1099
Blickensderfer, George C., Erie, Pa. Conveyer apparatus	338,703	Mar. 30	2482	655, 656	34	1399
Blickensderfer, George C., Erie, Pa. Conveyer apparatus	338,704	Mar. 30	2484	656	34	1400
Blickensderfer, George C., Erie, Pa. Conveyer apparatus	338,706	Mar. 30	2486	657, 658, 659	34	1400
Blickensderfer, George C., and H. Smith, Erie, Pa. Track for conveyer apparatus	338,705	Mar. 30	2485	657	34	1400
Bliesner, William, East St. Louis, Ill. Vapor-burner	334,737	Jan. 26	1759	469	34	347
Blish, Roger D., *et al.* (See Hilton, Charles H., assignor.)						
Bliss, George H., Pittsfield, Mass. Fastening device for boots or shoes	334,738	Jan. 26	1760	469	34	347
Blodgett, Frank M., New York, N. Y. Micro-andiphone	333,724	Jan. 5	317	87	34	60
Blocser, John, St. Louis, Mo. Apparatus for drawing corks from bottles	337,921	Mar. 16	1393	362	34	1189
Blocser, Rudolph, Scranton, Pa. Bottle-stopper	334,834	Jan. 12	1900	324	34	221
Bloomer, John P., Philadelphia, Pa. Fence-guard	336,917	Mar. 30	2796	737	34	1455
Bloomfield, Ellis S., Jr., Jersey City, N. J. Door-bell	337,657	Mar. 9	1050	270	34	1122
Bloomfield, Ellis S., Jr., Jersey City, N. J. Door-bell	337,658	Mar. 9	1051	270	34	1122
Blount, Eugene I., Cambridge, C. A. Kimpton, and W. H. Gilman, assignors to Gilman Cash Railway Company, Boston, Mass. Cash and parcel transmitting apparatus for store-service	337,808	Mar. 16	1946	323, 394	34	1163
Blount, Eugene I., Cambridge, and C. A. Kimpton, assignors to Gilman Cash Railway Company, Boston, Mass. Cash and parcel carrier for store-service	337,809	Mar. 16	1949	394	34	1163
Blount & Kimpton. (See Perry, William L., assignor.)						
Blum, George, Newark, N. J. Roller-skate	334,739	Jan. 26	1769	469	34	347
Blum, George, Orlando, Fla. Artificial stone	338,026	Mar. 16	1554	.....	34	1218
Blum, Peter, Orrville, Mo. Vegetable-grater	334,931	Jan. 26	1997	533	34	392
Blumenthal, Moritz, Grunau, near Berlin, Germany. Manufacture of pure non-organized ferments	338,471	Mar. 23	2155	.....	34	1337
Boardman, Anson P. (See Elmer and Boardman.)						
Boas, Feodor. (See Murphy, Alexander A., assignor.)						
Bock, Anton H., Meissen, Saxony, Germany. Journal-bearing for velocipedes	333,592	Jan. 5	130	35	34	26
Bock, Martin, Hazleton, Pa. Engraving-machine	334,507	Jan. 19	1440	387, 388	34	280
Bodine, R. E., *et al.* (See Weaver, Edward P., assignor.)						
Body, Michel, Liege, Belgium. Obtaining gold, silver, copper, nickel, and cobalt from their ores by electrolytic action	333,615	Jan. 5	434	118	34	81
Boehm, David J. (See Cameron, James W., assignor.)						
Boës, Fritz, and H. Winter, Helena, Mont. Ter. Bread and vegetable cutter	336,819	Mar. 30	2651	698	34	1429
Bogle, John A., Milton, Pa. Clothes-drier	334,559	Jan. 19	1515	405	34	298
Bohannan, Wilson, Brooklyn, N. Y. Door-lock	337,044	Mar. 2	218	57, 58	34	985
Boileau, Etienne, St. Louis, Mo. Boiler-furnace	335,207	Feb. 2	171	45	34	471
Boissier, Herman R., New York, N. Y. Armature for dynamo-electric machines	335,105	Feb. 2	5	2	34	442
Boland, James, assignor to Hopkins & Allen Manufacturing Company, Norwich, Conn. Revolving fire-arm	333,725	Jan. 5	318	87	34	60
Bolton, George W., and L. Jargensen, Milwaukee, Wis. Ruler for slates	334,923	Jan. 26	1998	533	34	392
Boman, Claes W., assignor to Eagle Pencil Company, New York, N. Y. Lead or crayon holder	338,620	Mar. 30	2652	699	34	1430
Bon, John T., Syracuse, N. Y. Folding table	333,500	Jan. 5	6	2, 3	34	4
Bonehill, Christopher G., Birmingham, county of Warwick, England. Breech-loading fire-arm	337,810	Mar. 16	1251	394	34	1164
Bond, John F., Warsaw, Ind. Grain separator and cleaner	337,234	Mar. 2	470	123	34	1012
Bond, Nathan O., Fairfax Court-House, Va., assignor of one-half to J. J. Gould, Washington, D. C. Cook-stove	338,472	Mar. 23	2157	563	34	1337
Bonnichsen, Christian, and M. R. Chrystal, Newburg, N. Y. Pipe-wrench	336,468	Feb. 16	1984	520	34	806
Bonsall, Emmor, Davenport, Iowa. Learner's telegraphic instrument	336,294	Feb. 16	1736	454	34	760
Bonta, James W., assignor to J. D. Eby, trustee, Philadelphia, Pa. Telephone	333,816	Jan. 5	435	118	34	81
Bookwalter Bros. & Company. (See Bookwalter, Daniel, assignor.)						
Bookwalter, Daniel, assignor to Bookwalter Bros. & Company, Miamisburg, Ohio. Vehicle-hub	334,508	Jan. 19	1445	388	34	281
Boot and Shoe Sole Laying Company. (See Coupal and Wood, assignors.)						
Boover, William L., San Francisco, Cal. Miter-box	335,738	Feb. 9	922	242	34	613
Borden, William A., Boston, Mass. Newspaper-file	337,366	Mar. 9	649	172	34	1058
Borel, François, Cortaillod, and E. Paccaud, Lausanne, Switzerland. Meter for electric currents	337,123	Mar. 2	322	84	34	986
Bornarth, Charles, Shakopee, Minn. Gate-hinge	336,469	Feb. 16	1985	520	34	807
Bornstein, Henry, Boston, Mass. Wrench	338,707	Mar. 30	2490	659	34	1401
Boshert, Rufus E. (See Murray, James D., assignor.)						
Boston Wheel Company. (See White, Frederick, assignor.)						
Bostwick & Burgess. (See Hinkley, Jonas, assignor.) (Reissue.)						
Boswell, John L., near Chase City, Va. Combined seed-planter and fertilizer-distributer	336,285	Feb. 16	1737	454, 455	34	760
Boswell, William F., Atchison, Kans. Upright steam-heater	334,325	Jan. 12	1902	394	34	221
Bosworth, Charles B., Everett, assignor to New England Manufacturing Company, Boston, Mass. Governor	333,817	Jan. 5	437	118	34	82

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Bosworth, Charles B., Everett, assignor to New England Manufacturing Company, Boston, Mass. Automatic pressure-regulator	333,818	Jan. 5	439	119	34	89
Bosworth, Emory, and J. Schmidt, Cleveland, Ohio. Branding implement	336,286	Feb. 16	1739	455	34	760
Bosworth & Schmidt. (See Oppmann and Smith, assignors.)						
Bott, Joseph E., Manchester, county of Lancaster, England, assignor of one-half to J. Howard, Nicetown, Pa. Stop and check valve	335,886	Feb. 9	1139	302	34	651
Bouchard, Ell. (See Phillips, Bonchard, and Charbonneau.)						
Bouché, Jean. (See Lagosse and Bouché.)						
Bonchy, Henry, and J. H. Bamberger, Newark, N. J. Belt-punch	334,215	Jan. 12	1098	272	34	199
Boughton, Darius F., Chicago, Ill., assignor to H. W. Hartman, Beaver Falls, Pa. Wire bale-tie	336,084	Feb. 16	1424	376	34	708
Boulé, Louis, Bourges, France. Treating hops to obtain extracts therefrom	338,027	Mar. 16	1554	.....	34	1218
Boulicault, Jean B., and J. Lehnbeuter, St. Louis, Mo. Furnace	335,176	Feb. 2	129	32	34	464
Bourcart, Jean J., Zurich, Switzerland. Ring-spinning frame	333,819	Jan. 5	441	{119 190	34	89
Bourcart, Jean J., Zurich, Switzerland. Spinning-machine	335,208	Feb. 2	172	45, 46	34	472
Bourne, Charles E. (See Bourne, William and C. E.)						
Bourne, William, deceased, (C. E. Bourne, administrator,) and C. E. Bourne, Boston, Mass. Upright-piano-action frame	338,918	Mar. 30	2796	737	34	1456
Bousfield, Edward T. (See Howard and Bousfield.)						
Bousfield, Edward T. (See Howard, Bousfield, and Gibbs.)						
Bovard, Lafayette. (See Scott and Bovard.)						
Bowditch, John F., Revere, Mass. Brush	334,336	Jan. 12	1203	324	34	282
Bowen, Ephraim N., assignor of one-half to W. S. Bull, Buffalo, N. Y. Exercising-machine	334,635	Jan. 19	1616	{430 431	34	313
Bowen, Francis C., New York, N. Y. Hat-ventilator	337,124	Mar. 2	324	84, 85	34	986
Bowen, Henry S. (See Utley, Hiram S., assignor.)						
Bowen, James H., Philadelphia, Pa. Toy money-box	337,125	Mar. 2	325	85	34	986
Bowen, John J., San Francisco, Cal. Band sawing-machine	336,693	Feb. 23	2305	603	34	870
Bower, Buckland P., Cleveland, Ohio. Pipe connection	337,126	Mar. 2	326	85	34	986
Bower, Henry. (See Michaelis, Otho E., assignor.)						
Bower, Henry, Philadelphia, Pa. Utilization of natural gas	338,028	Mar. 16	1556	{402 408	34	1218
Bowers, Cile W., Fort Atkinson, assignor of one-half to E. P. May, Jefferson County, Wis. Sediment-receiver for steam-boilers	335,559	Feb. 9	661	174	34	566
Bowers, George W. (See Bowers, John R., assignor.)						
Bowers, John H., Mound City, Mo. Device for propelling boats	336,787	Feb. 23	2423	637	34	893
Bowers, John R., assignor of one-half to G. W. Bowers, Pittsburg, Pa. Device for holding and locking chimneys on burners	334,161	Jan. 12	939	254	34	181
Bowker, Daniel F. (See Bowker, Leo E. and D. F.)						
Bowker, Leo E. and D. F., Keene, N. H. Composition for coating the inside of vessels for holding oil, &c	336,085	Feb. 16	1426	.....	34	708
Bowman, Winthrop H., Boston, Mass. Air-heating device for beds and rooms	333,820	Jan. 5	443	120	34	83
Bown, Albert. (See Plumb, Fawcett, assignor.)						
Boxendale, Frederick W. (See Boxendale, Peter and F. W.)						
Boxendale, Peter and F. W., Flanagan, Ill. Seed-planter	334,414	Jan. 19	1308	354	34	257
Boyce, Joseph B., Lockport, N. Y. Bench-hook	335,423	Feb. 2	470	121	34	525
Boyd, Angus, Moberly, Mo. Railway-switch	335,209	Feb. 2	175	46	34	472
Boyd, James T., Cooper, Miss. Scraper	333,990	Jan. 12	678	185	34	135
Boyd, Thomas C., Chicago, Ill. Frost-proof ventilator for soil and other pipes	334,337	Jan. 12	1204	324	34	232
Boyd, Trustin B., St. Louis, Mo. Copying-press	336,086	Feb. 16	1427	376	34	708
Boyden, Byron E., Bridgeport, Conn. Banjo	338,335	Mar. 23	1363	516	34	1303
Boyle, Eugene O., Champlain, N. Y. Glass-cutting gage	336,834	Feb. 23	2469	653	34	904
Boyle, John, trustee. (See Fowler, Joseph C., assignor.)						
Boylen, James F. (See Cheney and Boylen.)						
Boynton, Charles A. (See Morse, George, assignor.)						
Boynton, Nathaniel A., New York, N. Y. Plate-joint for stoves or ranges	337,127	Mar. 2	327	86	34	986
Brackelaberg, Ernst W., Hagen, Prussia, Germany. Type-writing machine	335,887	Feb. 9	1140	{302 303 304	34	652
Brackman, George H., Lake Run, Pa. Wire-stretcher	333,821	Jan. 5	445	120	34	89
Bradford, Charles K., Lynnfield, assignor to G. H. P. Flagg, trustee, Boston, Mass. Abrading-machine	333,991	Jan. 12	679	185	34	135
Bradford, Charles K., Lynnfield, assignor to G. H. P. Flagg, trustee, Boston, Mass. Buffing-roll for boots or shoes	334,162	Jan. 12	940	254	34	181
Bradford, Charles W., Thorndike, Me. Key-fastener	336,788	Feb. 23	2424	638	34	893
Bradford, Chester. (See Leonard, Charles N., assignor.)						
Bradford, George A., Bergen Point, N. J. Sauce-pan and cover	334,560	Jan. 19	1516	406	34	298
Bradley, Byron C., Chicago, Ill. Tongueless cultivator	334,698	Jan. 19	1669	{451 452	34	326
Bradley, Charles S., Yonkers, and F. B. Crocker, New York, N. Y., assignors to Cowles Electric Smelting and Aluminium Company, Cleveland, Ohio. Heating and reducing ores by electricity	335,499	Feb. 2	569	149	34	542
Bradley, Charles T., *et al.* (See Shaw and Walden, assignors.)						
Bradley, Edward E. (See Atwood and Bradley.)						
Bradley, Edward E., Stonington, Conn., assignor to G. Draper & Sons, Hopedale, Mass. Sleeve-whirl spindle for spinning-frames	333,822	Jan. 5	446	121	34	83
Bradley, Edward E., Stonington, Conn., assignor to G. Draper & Sons, Hopedale, Mass. Spindle	333,914	Jan. 5	568	154	34	106
Bradley & Hubbard Manufacturing Company. (See Buxton, Antony, assignor.)						
Bradley & Hubbard Manufacturing Company. (See Evarts, John A., assignor.)						
Bradley, William. (See Allen and Bradley.)						
Bradshaw, Ira H., assignor of one-half to A. E. Ball, San Francisco, Cal. Car-coupling	338,821	Mar. 30	2654	699	34	1430
Brady, James, Brooklyn, N. Y. Machinist's jig	334,340	Jan. 12	1209	326	34	282
Brady, James, Brooklyn, N. Y. Making dies	335,334	Feb. 2	347	90	34	503
Brady, Thomas H., New Britain, Conn. Suspending electric lights	338,919	Mar. 30	2797	737	34	1456
Brady, Thomas H., New Britain, Conn. Apparatus for suspending electric lights	338,920	Mar. 30	2798	737	34	1456
Brady, William J., San Francisco, Cal. Forming curved metallic pipes	337,475	Mar. 9	888	210	34	1061
Braidwood, John R., and S. Oswalt, Pittsburg, Kans. Shaft and elevator for mines	337,734	Mar. 9	1143	{296 297	34	1137
Brambach, Stephan, New York, N. Y. Upright-piano case	334,933	Jan. 26	1999	533	34	299
Brammer, Henry F., and R. H. Schmidt, Davenport, Iowa. Churn	335,739	Feb. 9	923	243	34	613
Bramwell, William C., Hyde Park, Mass. Mechanical movement	334,341	Jan. 12	1211	327	34	283
Branch, Robert H., Martinsville, Ind. Dumping-wagon	337,476	Mar. 9	889	210	34	1061

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Branchler, Henry, assignor of one-half to J. Wimer, Greensburg, Pa. Blacksmith's hearth	337,735	Mar. 9	1145	297	34	1138
Brand, Frederick J., Southington, Conn. Reed-plate for musical instruments	338,336	Mar. 23	1964	517	34	1303
Branson, James L., Philadelphia, Pa. Knitting-machine	334,338	Jan. 12	1205	{325 326	34	282
Branson, James L., and H. Brinton, Philadelphia, Pa. Stocking-blank	334,339	Jan. 12	1206	326	34	282
Brantigam, Joseph A., New York, N. Y. Sweat-band sewing-machine	336,204	Feb. 16	1610	{421 422	34	740
Bray, George, Blackman Lane, Leeds, county of York, England. Gas-regulator	333,823	Jan. 5	447	121	34	83
Brehmer, August, Leipsic, Germany. Book-sewing machine	335,210	Feb. 9	177	{46 47 48	34	472
Breimier, P. C., *et al.* (See Brubaker, John H., assignor.)						
Bremner, William, Georgetown, Ontario, Canada. Knitting-machine	333,824	Jan. 5	448	122	34	84
Brenizer, Charles L., Johnstown, Pa. Ratchet-drill	336,470	Feb. 16	1986	590	34	907
Brennan & Co. Southwestern Agricultural Works. (See Wolfe, Harvey R., assignor.)						
Brenner, Francis X., Philadelphia, Pa. Hoisting-machine	334,740	Jan. 26	1763	470	34	347
Bressler, George, Huntington, Ind. Swinging and rolling farm-gate	333,915	Jan. 5	569	154	34	106
Bressler, George N. (See Batchelor, Charles D., assignor.)						
Brett, William P., Decatur, Ill. Friction-clutch	335,106	Feb. 2	7	2	34	442
Bretzfield, Samuel, New York, N. Y. Buckle	335,794	Feb. 9	1003	266	34	627
Breuer, August, assignor to E. Matthes & Weber, Duisburg, Prussia, Germany. Filter	336,621	Feb. 23	2200	574	34	850
Brewer, Frank, Marseilles, Ill. Steam-condensing doctor for paper-machines	334,415	Jan. 19	1309	355	34	257
Brewer, Horatio J., New York, N. Y. Galvanic battery	337,477	Mar. 9	831	210	34	1061
Brewer, Roland L., assignor to E. Miller & Co., Meriden, Conn. Suspension device for lamps, &c	335,107	Feb. 2	8	3	34	442
Brewster, Samuel W., and L. Sherwood; said Sherwood assignor to S. E. Sherwood, Southeast, N. Y. Boot-drier	336,987	Mar. 2	137	37	34	951
Breyer, Friedrich, Vienna, Austria-Hungary. Filtering material	336,305	Feb. 16	1613	422	34	741
Breyer, Friedrich, Vienna, Austria-Hungary. Producing filtering media	336,306	Feb. 16	1616	422	34	741
Brian, William F., Parkville, Ill. Hay-derrick	335,888	Feb. 9	1142	304	34	652
Bridges, Henry R., Greencastle, Ind. Sash-balance	333,902	Jan. 12	660	186	34	135
Briesen, Arthur v., New York, N. Y. Bracelet	334,844	Jan. 26	1869	503	34	371
Briggs, Edwin F., Brooklyn, N. Y. Rotary ventilator	338,473	Mar. 23	2157	564	34	1337
Briggs, George S., Rockford, Ill. Corn-planter wheel	333,503	Jan. 5	131	36	34	27
Briggs, Orlando P., assignor to Ames & Frost, Chicago, Ill. Feeding device for wire-coiling and other machines	335,869	Feb. 9	1144	304	34	652
Briggs, Orlando P., assignor to Thorn Wire Hedge Company, Chicago, Ill. Wire-spooling machine	338,244	Mar. 23	1639	{284 285	34	1281
Brigham, Lamson & Co. (See Seely, Samuel F., assignor.)						
Brighams, Cortes T. (See Butler, Beauman, assignor.)						
Bright, James H., St. Louis, Mo. Tool for finishing joints of brick walls, &c	338,029	Mar. 16	1559	403	34	1218
Brill, George M., assignor of one-half to J. Rawle, Philadelphia, Pa. Car-truck	339,041	Mar. 30	2975	787	34	1487
Brill, George M., and J. Rawle, Philadelphia, Pa. Car-truck	339,040	Mar. 30	2973	787	34	1486
Brimer, Benjamin F. (See Brimer, Jacob, B. F., W. M., and J. B.)						
Brimer, Jacob, B. F., W. M., and J. B., Richland Centre, Wis. Hay-loader	337,811	Mar. 16	1252	325	34	1164
Brimer, Jacob B. (See Brimer, Jacob, B. F., W. M., and J. B.)						
Brimer, William M. (See Brimer, Jacob, B. F., W. M., and J. B.)						
Brin, Arthur. (See Brin, Léon Q. and A.)						
Brin, Léon Q. and A., Paris, France, assignors to S. W. Cragg, Baltimore, Md. Manufacture of anhydrous oxide of barium	338,628	Mar. 23	2365	622	34	1373
Bringold, John H., Albany, N. Y. Package for belt-dressing compounds	337,235	Mar. 2	471	193	34	1013
Brinkerhoff, Samuel, assignor to Fremont Cultivator Company, Fremont, Ohio. Standard-clamp for cultivators	336,506	Feb. 16	2028	{532 533	34	815
Brinton, Caleb, Chicago, Ill. Roller-skate	337,922	Mar. 16	1394	362	34	1190
Brinton, Henry. (See Branson and Brinton.)						
Briskin, Eugene, Weston, Ohio. Wire-fence post	338,030	Mar. 16	1559	404	34	1218
Briabois, Alfred. (See Federmeyer, Leon P., assignor.)						
Briscoe, John, Bolivar, N. Y. Relief-valve	337,236	Mar. 2	472	123	34	1013
Bristol Brass and Clock Company. (See Taplin, Alvin, assignor.)						
Broadhurst, George H., Brooklyn, N. Y. Finger-nail polisher	338,245	Mar. 23	1843	485	34	1282
Brock, Granville, Sparta, Ky. Wheel for vehicles	336,207	Feb. 16	1620	422	34	741
Brock, William H. (See Diamond and Brock.)						
Brockschmidt, Henry. (See Seng, Wendelin, assignor.)						
Brockway, Damon W., Dover, Me. Valise	337,367	Mar. 9	649	172	34	1053
Brockway, Richard B. (See Thurber and Brockway.)						
Brodnax, John T., New Orleans, La. Suspenders	334,509	Jan. 19	1446	388	34	281
Broge, William W., Otis, Mass. Key-hole guard	336,789	Feb. 23	2425	638	34	894
Bromley, Daniel, Carrollton, Ky. Door-securer	334,636	Jan. 19	1618	431	34	313
Brooklyn Electric Construction Company. (See Moffatt, Richard R., assignor.)						
Brooklyn Rail Way Supply Company. (See Campbell, Neil, assignor.)						
Brooks, Albert A., Seneca, Kans. Clothes-pounder	333,916	Jan. 5	570	154	34	107
Brooks, Charles E., Brooklyn, N. Y. Dental appliance	336,790	Feb. 23	2426	638	34	894
Brooks & Co., E. J. (See Brooks, Edward J., assignor.)						
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Seal-press	339,042	Mar. 30	2976	787	34	1487
Brooks, Heman P., Brooklyn, N. Y., assignor to himself and J. L. Carson, Torrington, Conn. Bottle-stopper fastening	334,100	Jan. 12	845	231	34	164
Brooks, John T., *et al.* (See Wilson, David, assignor.)						
Brooks, Jonathan W., Jr., Chicago, Ill. Reel for drying fishing-lines	336,888	Mar. 2	6	2	34	928
Brooks, Karmell, New York, N. Y. Folding bed	337,554	Mar. 9	929	238	34	1099
Brooks, William D., assignor of one-third to D. D. Mallory, Baltimore, Md. Can-soldering machine	335,011	Jan. 26	2106	561	34	411
Brooks, William D., assignor of one-third to D. D. Mallory, Baltimore, Md. Can-soldering machine	335,012	Jan. 26	2108	{561 562	34	411
Broomell, Albert P., York, Pa. Governor for engines	336,892	Mar. 30	2675	699	34	1430
Brosnan, Cornelius J., assignor of two-thirds to H. A. Gibbs and W. E. Wright, Springfield, Mass. Machine for attaching buttons	335,211	Feb. 2	179	48, 49	34	473
Brosnan, Cornelius J., assignor of two-thirds to H. A. Gibbs and W. E. Wright, Springfield, Mass. Button-feeding device	335,212	Feb. 2	183	49	34	473
Brosnan, Patrick J., Chicago, Ill. Window-sash	338,474	Mar. 23	2159	564	34	1338
Brostrom, Charles A., Rock Island, Ill. Harrow	334,342	Jan. 12	1212	327	34	283
Broun, Nicholas H., Mobile, Ala., assignor of one-fourth to E. M. Hudson, New Orleans, La. Car-coupling	336,791	Feb. 23	2427	639	34	894
Brown, Alvia K., Newton, Iowa. Garbage-destroyer	338,134	Mar. 16	1695	441	34	1245

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Brown, Arthur F., and F. E. Stratton, San Francisco, Cal. Automatic cable road switch	336,823	Mar. 30	9657	699 700	34	1430
Brown, Charles R. (See Brown, Elisha S. and C. R.)						
Brown, Charles R. (See Madden and Brown.)						
Brown, David O. (See Reed, George W., assignor.)						
Brown, Edwin L., Chicago, Ill. Elevator-shaft	335,678	Feb. 9	895	220	34	595
Brown, Elbridge M. (See Whitman and Brown.)						
Brown, Elisha S. and C. R., Santa Rosa, Mo. Cultivator	338,709	Mar. 30	9492	659	34	1401
Brown, F. Barton, Boston, Mass. Bathing apparatus	338,031	Mar. 16	1560	404	34	1219
Brown, Francis H. (See Brown, Harold P. and F. H.)						
Brown, Francis R., Boulder, Colo. Ore-separator	336,507	Feb. 16	9029	533	34	815
Brown, Frank E., and G. P. Frain, Three Rivers, Mich. Vapor-burning apparatus for cook-stoves	338,366	Mar. 23	9040	535	34	1216
Brown, George E. (See Coombs, Thomas P., assignor.)						
Brown, George V. I., St. Paul, Minn. Dental bridge-work	337,812	Mar. 16	1254	325	34	1164
Brown, George W., and J. E. Wilson, Durvea, Pa. Car-coupling	338,135	Mar. 16	1696	441	34	1246
Brown, Harold P., Chicago, Ill. Registering-valve for water-supply pipes	335,213	Feb. 2	185	50	34	473
Brown, Harold P., Chicago, Ill. Incandescent electric lighting apparatus	337,923	Mar. 16	1398	362 363	34	1190
Brown, Harold P. and F. H., Chicago, Ill. Artificial electric resistance	338,708	Mar. 30	9491	659	34	1401
Brown, Heston & Co. (See Heston, David, assignor.)						
Brown, James F., Lansing, Mich. Ice-cream freezer	338,246	Mar. 23	1844	485	34	1282
Brown, James L., Brookville, Pa. Ventilating apparatus	337,368	Mar. 9	650	172	34	1053
Brown, Joel W. (See Bulman, Adam, assignor.)						
Brown, John, assignor to J. W. Tufts, Medford, Mass. Sirup-gage	333,993	Jan. 12	680	186	34	136
Brown, Paris C. (See Morris, William R., assignor.)						
Brown, Perry, Louisville, Ky. Freight-car door	335,989	Feb. 9	1269	336	34	674
Brown, Perry, Louisville, Ky. Lock	335,990	Feb. 9	1270	336	34	674
Brown, Robert T., Boston, assignor, by mesne assignments, to Clinton Wire Cloth Company, Clinton, Mass. Fastening wire lathing to iron frames of buildings. (Reissue)	10,684	Feb. 9	1295	369	34	697
Brown, Samuel E., assignor to Cleveland Hardware Company, Cleveland, Ohio. Roll for rolling toe-rails	335,968	Feb. 9	960	68	34	487
Brown, Thomas R., and W. C. Meeker, Jersey City, N. J. Railway switch-stand	336,988	Mar. 2	138	38	34	951
Brown, Thomas S., Poughkeepsie, N. Y. Combined hay sweep and tedder	333,917	Jan. 5	571	155	34	107
Brown, William, assignor of one-half to W. H. Pennel, Duncannon, Pa. Fire-escape	335,108	Feb. 2	10	3	34	442
Brown, William H. (See Seymour, Frederick J., assignor.)						
Brown, William H., New York, N. Y., assignor to Brown's Seamless Metal Company, Jersey City, N. J. Joint for cylinders or cylindrical vessels	333,726	Jan. 5	319	87	34	60
Brown, William H., Dunedin, Fla. Pruning implement	336,694	Feb. 23	2306	603	34	871
Browne, Frank E., Los Angeles, Cal. Vermin-exterminator	338,699	Mar. 23	2366	623	34	1372
Browne, Horace A., *et al.* (See Rain, Adrian, Fils, assignor.)						
Browne, William J., Fort Madison, Iowa. Spring-cultivator	335,013	Jan. 26	2110	562	34	411
Brownell, Stephen C., assignor of one-half to G. H. Seelye and A. W. Anuis, Lapeer, Mich. Sleigh-runner	333,918	Jan. 5	573	155	34	107
Browning, John M. and M. S., Ogden City, Utah Ter., assignors to Winchester Repeating Arms Company, New Haven, Conn. Magazine fire-arm	336,967	Feb. 16	1740	455 456	34	761
Browning, Matthew S. (See Browning, John M. and M. S.)						
Brown's Seamless Metal Company. (See Brown, William H., assignor.)						
Brownson, Edward S., Brooklyn, N. Y. Distance-registering device for wheeled vehicles	336,969	Mar. 2	141	38, 39	34	951
Broyles, James C., Tupelo, Miss. Breech-loading fire-arm	338,247	Mar. 23	1845	485	34	1282
Brubaker, John H., assignor to G. W. Ney, J. P. Reedy, and P. C. Breimier, Shamokin, Pa. Monument	335,991	Feb. 9	1271	337	34	674
Brubaker, Martin K., Mount Joy, Pa. Cider-machine	334,343	Jan. 12	1213	327	34	233
Bruckner, Franz J., New York, N. Y. Combined scroll-saw and lathe	336,208	Feb. 16	1621	428	34	741
Bruggemann, Henry L., and C. G. Orth, Cleveland, Ohio. Striking-clock	337,736	Mar. 9	1146	297	34	1138
Bruegger, Abraham, Jr., Chicago, Ill. Manufacture of rubber-lined and rubber-covered hose	334,510	Jan. 19	1447	389	34	281
Brueningsen, Fredrick, and E. Quinn, Hastings, Nebr. Fire-escape	334,741	Jan. 26	1764	470	34	349
Bruner, Joseph A. (See Wiscbeart, Jacob H., assignor.)						
Brunson, Dan. (See Fenner and Brunson.)						
Brunswick, Balke, and Collender Company. (See Scheef, Charles, assignor.)						
Brush, Charles F., Cleveland, Ohio. Electrical switch	335,969	Feb. 2	900	68	34	487
Brush, Charles F., Cleveland, Ohio. Armature for dynamo-electric machines	336,087	Feb. 16	1427	377	34	709
Brush, Charles F., Cleveland, Ohio. Secondary battery	337,298	Mar. 2	564	148 149	34	1030
Brush, Charles F., Cleveland, Ohio. Secondary battery	337,299	Mar. 2	565	149	34	1030
Brush, George, Wakefield, assignor, by mesne assignments, of one-half to G. E. Scherer, Chapman, Kans. Churn	338,136	Mar. 16	1697	442	34	1246
Bryan, St. George T., University of Virginia, Va. Separating precious metals from speiss	336,792	Feb. 23	9428	.....	34	894
Bryan, Walter S., assignor to himself and G. D. Johnson, Kosse, Tex. Baling-press	337,237	Mar. 2	473	124	34	1013
Bryant, Charles F. (See Null, John C., assignor.)						
Bryant, Cyrus E. (See Collins, Eli A., assignor.)						
Bryant, Edson L., assignor of one-half to Wallace & Sons, Ansonia, Conn. Argand lamp	338,137	Mar. 16	1699	442	34	1246
Bryant, George B., Philadelphia, Pa. Gripper for cable railways	334,845	Jan. 26	1890	503 504	34	372
Buchanan, Charles H., Philadelphia, Pa. Shoe	334,561	Jan. 19	1517	406	34	293
Buchanan, Charles H., Philadelphia, Pa. Manufacture of shoes and slippers	334,562	Jan. 19	1518	406	34	294
Buchanan, Charles H., Philadelphia, Pa. Hand-bag	338,475	Mar. 22	2160	564	34	1338
Buchanan Manufacturing Company. (See Munson, Frank, assignor.)						
Bucher, Gibbs & Co. (See Gibbs, Lewis, assignor.)						
Buchheit, John, assignor of one-half to M. Haseman, St. Louis, Mo. Bottle-washing brush	335,052	Jan. 26	2170	577	34	421
Buchholz, Hermann, assignor of one-half to H. Miller, Pittsburg, Pa. Clamp for jars	339,063	Mar. 30	3032	801	34	1495
Buck, Christian, Fleming, Pa. Combined handle and holder for brushes	338,476	Mar. 23	2161	565	34	1338
Buck, Henry A., assignor to E. L. Motte, Boston, Mass., and J. M. Kay, St. John, New Brunswick, Canada, trustees. Apparatus for operating railway danger-signals	333,919	Jan. 5	574	155 156	34	108
Buck, Horatio B., *et al.* (See Connett, Matthew F., Jr., assignor.)						
Buckeye Engine Company. (See Hunt, Nathan, assignor.)						
Buckeye Iron and Brass Works. (See Krutzsch, William, assignor.)						
Buckland, Thomas A., St. Louis, Mo. Locomotive-furnace	334,689	Jan. 19	1691	452	34	326
Buckley, William F., assignor of two-thirds to L. E. Holden and E. H. Cowles, Cleveland, Ohio. Electric-arc light	337,737	Mar. 9	1148	298	34	1136
Budlong, J. Jerome. (See Le Dow, Budlong, and Hoyt.)						
Buell, Charles E., Springfield, Mass. Apparatus for conveying parcels or grain by atmospheric pressure	338,138	Mar. 16	1700	442 443	34	1246

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Buffington, John W., Goodnight, Mo. Check-rower and corn-planter	334,946	Jan. 26	1899	504	34	372
Buffum, Fred T., Providence, R. I. Slide for sword-belts	334,101	Jan. 19	845	231	34	164
Bugbee, George W., and F. Danner, assignors to Egan Company, Cincinnati, Ohio. Blind-slat-tenoning machine	336,835	Feb. 23	9494	653	34	904
Bugbee, George W., and F. Danner, assignors to Egan Company, Cincinnati, Ohio. Sawset	338,161	Mar. 16	1729	451	34	1258
Buhrer, Casper, Cambridge City, Ind. Safety frog and switch	336,549	Feb. 23	9084	551	34	632
Buick, David D., Detroit, Mich. Ball-valve	338,477	Mar. 23	2163	565	34	1288
Bull, William S. (See Bowers, Ephraim N., assignor.)						
Bullard, Aldis F., and G. A. Langmaid, St. Albans, Vt. Coal-sifter	338,562	Mar. 23	2389	603	34	1361
Bullard, Charles W., Chicago, Ill. Door-hanger	334,344	Jan. 12	1216	328	34	233
Bullard, Isaac, Hyde Park, Mass. Piano-action	334,511	Jan. 19	1448	389	34	289
Bullard, James H., assignor to C. P. Fay, Springfield, Mass. Calipers	335,740	Feb. 9	998	243	34	618
Bullock, Chester, Kansas City, Mo. Ring for cable-coverings	335,679	Feb. 9	886	220	34	595
Bullock, Chester, assignor of one-half to R. Gillham, Kansas City, Mo. Double-track cable or electric road	335,580	Feb. 9	668	174	34	506
Bullock, De Forest, Sumner, Wash. Ter. Vegetable-cutter	335,500	Feb. 2	571	149	34	543
Bullock, John S., *et al.* (See Conway, Jesse, assignor.)						
Bulman, Adam, assignor to himself and J. W. Brown, Jersey City, N. J. Device for centering vessels in dry docks	334,568	Jan. 19	1580	406	34	294
Bunce, Lewis D., assignor to himself, C. F. Decker, and C. M. Donelson, Salt Lake City, Utah Ter. Churn	337,238	Mar. 2	475	124 125	34	1013
Bunch, Henry, Garrettsville, Ohio. Button-fastener	337,738	Mar. 9	1149	298	34	1139
Bunell, Jesse G. (See Harte, Albert, assignor.)						
Bunker, William I., Chicago, Ill. Attachment for rocking-chairs	334,109	Jan. 12	846	229	34	164
Bunker, William I., Chicago, Ill. Attachment for rocking-chairs	334,345	Jan. 12	1218	328	34	234
Bunker, William I., Chicago, Ill. Attachment for rocking-chairs	334,346	Jan. 12	1219	328	34	234
Bunn, Simeon, Belleville, Ill. Nail-plate furnace	334,216	Jan. 12	1097	273	34	199
Bunton, William A., *et al.* (See Houlehan, James, assignor.)						
Burbank, Charles O., Waltham, Mass. Anchor	335,561	Feb. 9	663	175	34	506
Burch, Jonathan J., and J. B. Scovill, Carthage, Mo. Pump-valve	334,105	Jan. 12	850	234	34	165
Burgess, Andrew, Owego, N. Y. Magazine-gun	337,239	Mar. 2	476	125	34	1013
Burgess, Charles M., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Sash-fastening device	338,337	Mar. 23	1965	517	34	1308
Burgess, Edward T., Meriden, Conn. Wheel	334,163	Jan. 12	941	254	34	181
Burk, Leander, deceased, White Cloud; C. B. Wilcox, Newaygo County, Mich., administrator. Cultivator-tooth	336,508	Feb. 16	9031	533	34	815
Burke, Augustus W., *et al.* (See Rogers, William, assignor.)						
Burke, John, Newburyport, Mass. Carriage	335,741	Feb. 9	994	243	34	618
Burke, John Y. (See Bywater and Burke.)						
Burkert, John M., Atlanta, Ga. Sash-fastening device	337,969	Mar. 9	652	172	34	1058
Burkhard, Thomas, Brooklyn, N. Y. Mixing and heating and cooling kettle for candy, &c	338,568	Mar. 23	2390	602	34	1361
Burkhard, Thomas, Jr., assignor of one-half to T. Burkhard, Sr., Brooklyn, N. Y. Apparatus for cooling or heating candy	337,303	Mar. 2	570	150	34	1031
Burkholder, Isaac, Farmersville, Pa. Gate	336,988	Feb. 16	1745	456 457	34	762
Burkley, Martin, Moline, Ill. Steam-engine	333,990	Jan. 5	577	156	34	108
Burlingame, Simon D., Berrien Springs, Mich. Hot-air furnace	336,083	Feb. 9	1229	352	34	685
Burman, William. (See Phippe and Burman.)						
Burmester, Heinrich F., Chicago, Ill. Extension-table	333,501	Jan. 5	7	3	34	4
Burmester, Heinrich F., Chicago, Ill. Extension-table	334,103	Jan. 12	847	232 233 234	34	164
Burmester, Heinrich F., Chicago, Ill. Extension-table	334,104	Jan. 12	849	232 234	34	165
Burnap, Gaius C., *et al.* (See Leake, Albert Y., assignor.)						
Burnap, George S., *et al.* (See Leake, Albert Y., assignor.)						
Burnap, George S., Marietta, Ga. Cleaner for bolting-reel clothe	338,630	Mar. 23	2367	623	34	1373
Burnap, Hiram F. (See Andrews and Burnap.)						
Burnette, Eliphas C., and W. H. Porter, Parsons, Kans. Portable hay-press	335,058	Jan. 26	2171	577	34	421
Burnham, Byron C. (See Guild and Burnham.)						
Burnham, George W., Lincoln, assignor to Easton & Burnham, Pawtucket, R. I. Machine for winding yarn on bobbins	338,631	Mar. 23	2369	623	34	1374
Burnham, James S., Jersey City, N. J. Heat-regulating device	336,088	Feb. 16	1428	377	34	709
Burnham, Nathan F., York, Pa. Governor for steam-engines	336,836	Feb. 23	9486	653 654	34	904
Burnham, Nathan F., York, Pa. Steam-engine	336,837	Feb. 23	9488	654 655	34	905
Burnham, Nathan F., York, Pa. Lubricating steam-engines	336,838	Feb. 23	9491	656	34	905
Burnley, William, assignor of two-thirds to C. A. Hitchcock, North East, and L. F. Watson, Warren, Pa. Telephone-transmitter	335,501	Feb. 2	572	149 150	34	543
Burnley, William, assignor of two-thirds to C. A. Hitchcock, North East, and L. F. Watson, Warren, Pa. Telephone-transmitter	335,502	Feb. 2	574	150	34	543
Burns, Charles M., Jr., Philadelphia, Pa. Drawing-pen	333,504	Jan. 5	132	36	34	27
Burns, Joseph, Montezuma, Ind. Fence-post	336,869	Mar. 2	7	2	34	928
Burns, William H., St. Louis, Mo. Propelling and steering vessels	338,162	Mar. 16	1731	451	34	1259
Burpee, Thomas B. C., Philadelphia, Pa. Coffee-roaster	334,742	Jan. 26	1765	470	34	348
Burrall, William D., *et al.* (See De Zeng, Henry L., assignor.)						
Burrell, David H. (See Naylor, James, Jr., assignor.)						
Burrell, David H. (See Sedgwick and Naylor, assignors.)						
Burridge, Lee S. (See Dawson, John F., assignor.)						
Burrows, Joseph M., Hawkinsville, Ga. Plow	334,106	Jan. 12	851	234	34	165
Burrows, William, Brooklyn, N. Y. Manger	336,209	Feb. 16	1623	423	34	742
Burt, Townsend W., Mineola, N. Y. Cable-tension device	338,387	Mar. 23	2041	536	34	1316
Burt, Townsend W., Mineola, N. Y. Automatic setting apparatus	338,694	Mar. 30	9659	700	34	1431
Burton, Charles C., Utica, N. Y. Injector and extractor	338,710	Mar. 30	9494	660	34	1402
Burton, Charles C., Utica, N. Y. Fluid-gate	338,711	Mar. 30	9496	660	34	1402
Burton, Charles F., *et al.* (See Tomlinson, James, assignor.)						
Burton, George D., New Ipswich, N. H. Stock-car	335,109	Feb. 2	13	4	34	443
Burton, George D., New Ipswich, N. H. Stock-car	337,940	Mar. 2	478	126	34	1014
Burton, George D., New Ipswich, N. H. Anti-friction bearing	338,657	Mar. 23	9402	592	34	1279
Burton, Henry, assignor of one-half to J. Burton, Port Huron, Mich. Cut-off valve	337,730	Mar. 9	1150	298	34	1139
Burton, James. (See Burton, Henry, assignor.)						
Burwell, Samuel W., Port Huron, Mich. Hair-clipper	336,890	Mar. 2	9	3	34	926

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Burwell, Stephen B., Cincinnati, Ohio. Attachment for fire-places	333,921	Jan. 5	579	156	34	108
Bush, Charles F., Erie, Pa. Hog-scraping machine	335,742	Feb. 9	925	243, 244	34	613
Bushnell Pump Company. (See Wheeler and Duntley, assignors.)						
Bushnell, Samuel M. (See Coen, George W., assignor.)						
Butler, Almanzor B., St. Albans, Vt. Garment-supporter	338,219	Mar. 16	1806	471	34	1267
Butler, Beaaman, assignor of one-half to C. T. Brigham, St. Johnsbury Centre, Vt. Street-sanding machine	337,300	Mar. 2	567	149, 150	34	1031
Butler, Eli T., Philadelphia, Pa. Middlings-purifier	337,370	Mar. 9	653	173	34	1054
Butler, Frank H. (See Berry and Butler.)						
Butler, Jay F. (See McClinchi and Butler.)						
Butler, Jeremiah C., assignor to himself and E. Allen, Lexington, Mo. Check-rower	337,301	Mar. 2	568	150	34	1031
Butler, John R., assignor, by mesne assignments, of one-half to J. C. Zimmerman, Oshkosh, Wis. Adjustable lamp-bracket	335,503	Feb. 2	576	150	34	543
Butler, Joseph J., near Select, Ky. Combined pitchfork and rake	337,740	Mar. 9	1151	299	34	1139
Butler, Thomas O., Chicago, Ill. Rein-holder	335,504	Feb. 2	577	151	34	543
Butler, Warren T., Chelsea, and G. H. Hathaway, Fairhaven, Mass. Track-sanding apparatus for street-cars	336,891	Mar. 2	9	3	34	928
Butler, William P., Chicago, Ill. Lamp-reservoir	337,302	Mar. 2	569	150	34	1031
Butler, William P., Chicago, Ill. Street-lamp	338,058	Mar. 23	2404	633	34	1390
Butler, William P., Chicago, Ill. Street-lamp	336,034	Feb. 9	1331	352	34	685
Butlin, Charles H., Camborne, county of Cornwall, England. Umbrella	335,054	Jan. 26	2173	577	34	422
Butterfield, Francis O., Lynn, Mass. Wrapper for coins and other small articles	333,595	Jan. 5	133	36	34	27
Butterfield, George F., Stoneham, Mass. Rubber sole and heel	335,055	Jan. 26	2174	578	34	422
Butterfield, Henry R., Waterville, Me. Machine for forming pails from paper-pulp	337,806	Mar. 9	1253	320	34	1153
Butterfield, Samuel K., Swanton, Vt. Bed-spring				157		
Butterfield, William, Auburn, assignor to D. M. Osborne & Company, New York, N. Y. Grain-binding machine	333,922	Jan. 5	580	158, 159, 160	34	109
Butterworth, Robert, Somerville, Mass., assignor, by mesne assignments, to Fiberlene Collar Company, Portland, Me. Making music-strips	337,304	Mar. 2	571	151	34	1031
Butterworth, Robert, Somerville, assignor, by mesne assignments, to Fiberlene Collar Company, Worcester, Mass. Die	338,084	Mar. 30	3084	801	34	1498
Button, Theodore E., Waterford, N. Y. Steam-boiler	335,680	Feb. 9	827	220	34	595
Butz, Samuel, Easton, Pa. Shirt	335,505	Feb. 2	578	151	34	544
Buxton, Anthony P., assignor to Bradley & Hubbard Manufacturing Company, Meriden, Conn. Hanging lamp	336,035	Feb. 9	1332	353	34	685
Byers, Joseph W., assignor to himself and O. P. Weiss, Charleston, Ill. Flexible abrasive or polishing disk	336,695	Feb. 23	2307	603	34	871
Byler, David L., Clinton, Mo. Tree-protector	334,743	Jan. 26	1766	470	34	348
Byrkett, Abijah R., Troy, Ohio. Magazine fire-arm	336,289	Feb. 16	1747	457	34	762
Byrkit, Edwin M., assignor of one-half to J. H. Murry and A. A. Adair, Indianapolis, Ind. Dovetailing-machine	335,335	Feb. 2	350	91	34	504
Byrkit, Edwin M., assignor of one-half to J. H. Murry and A. A. Adair, Indianapolis, Ind. Saw-mandrel	335,336	Feb. 2	351	91	34	504
Bywater, Joseph K., and J. Y. Burke, Paris, Tex. Car-seat recorder	337,305	Mar. 2	572	151	34	1032
Cabot, John A., *et al.* (See Steiger, Andrew W., assignor.)						
Cadbury, Joel, *et al.* (See McIlvenna and Rollason, assignors.)						
Cade, John T. (See Johnson and Cade.)						
Cadwell, Lydia J., Chicago, Ill. Drier	333,925	Jan. 5	450	122, 123	34	84
Calantarients, Johannes A., Scarborough, county of York, England. Construction of surfaces for skating, &c	337,128	Mar. 2	398	86	34	987
Caldwell, James. (See Smith and Caldwell.)						
Caldwell, James, and W. M. Smith, Philadelphia, Pa. Mechanism for the manufacture of picture-mats, &c	337,129	Mar. 2	333	86, 87	34	987
Caldwell, John K., Porter Station, Ind. Brick-drying structure	334,107	Jan. 12	852	234	34	165
Caldwell, William, assignor of three-eighths to J. Shill, Buffalo, N. Y. Steam-boiler	336,036	Feb. 9	1333	353	34	685
Calender, James M., Milton, Ohio. Nut-lock	336,892	Mar. 2	11	3	34	929
Calhoun, Andrew J., Socorro, N. Mex. Ter. Combination-lock	335,337	Feb. 2	358	91, 92	34	504
Calkins, George L., Toledo, Ohio. Land-roller	334,744	Jan. 26	1767	471	34	348
Call, Edward B., Peoria, Ill. Root-dresser for dentists	335,890	Feb. 9	1146	305	34	653
Callahan, John, Milwaukee, Wis. Billiard-cue clamp	337,659	Mar. 9	1052	270	34	1122
Calley, Freeman A., Pawtucket, R. I. Knitting-machine	338,478	Mar. 23	2113	565	34	1338
Calpin, Thomas S., St. Johns, Newfoundland. Anchor	337,241	Mar. 2	479	126	34	1014
Cameron, James W., assignor to D. J. Boehm, New York, N. Y. Cigar-rolling machine	338,921	Mar. 30	2799	738	34	1456
Camp, David C. and H. P., Gainesville, Ga. Gearing	333,896	Jan. 5	454	123	34	84
Camp, Henry P. (See Camp, David C. and H. P.)						
Camp, Jacob, *et al.* (See James, Winfield E., assignor.)						
Campl, Lucas M., New York, N. Y. Vertical rotary swing	336,696	Feb. 23	2308	603, 604	34	871
Campbell, Alonzo C., Nashville, Tenn. Ore-separator	335,338	Feb. 2	357	93	34	505
Campbell, Arthur S., Manchester, N. H. Palette-knife and brush-supporter	337,660	Mar. 9	1059	271	34	1122
Campbell, Charles. (See Adams, George B., assignor.)						
Campbell, Charles H., *et al.* (See Campbell, Joseph H., assignor.)						
Campbell, George T., San Francisco, Cal. Bellows	334,934	Jan. 26	2000	533	34	392
Campbell, Harry C., Pittsburg, Pa. Regenerative gas-burner	337,130	Mar. 2	335	87	34	987
Campbell, James L., Lockport, Ill. Speed-regulator for the rolls of a paper-mill	333,827	Jan. 5	455	124	34	85
Campbell, James L., West Elizabeth, Pa. Incubator	333,828	Jan. 5	457	124	34	85
Campbell, John H., New York, N. Y. Ornamental wall-covering	333,727	Jan. 5	320	88	34	60
Campbell, Joseph H., assignor of three-eighths to C. H. Campbell and J. McLain, New York, N. Y. Engine and method of operating the same	337,371	Mar. 9	655	173	34	1054
Campbell, Joseph H., assignor of three-eighths to C. H. Campbell and J. McLain, New York, N. Y. Utilizing aqua-ammonia as a motive power in engines	337,372	Mar. 9	659	173	34	1054
Campbell, Joseph H., assignor of three-eighths to C. H. Campbell and J. McLain, New York, N. Y. Vapor-engine	337,373	Mar. 9	661	173	34	1055
Campbell, Joseph H., assignor of three-eighths to C. H. Campbell and J. McLain, New York, N. Y. Utilizing aqua-ammonia as a motive power in engines	337,374	Mar. 9	664	174	34	1055
Campbell, Neil, assignor to Brooklyn Rail Way Supply Company, Brooklyn, N. Y. Journal-box for snow-sweepers	333,596	Jan. 5	133	36	34	27
Campbell, Neil, assignor to Brooklyn Rail Way Supply Company, Brooklyn, N. Y. Draw-bar for snow-sweepers	333,597	Jan. 5	134	37	34	27
Campbell, Neil, assignor to Brooklyn Rail Way Supply Company, Brooklyn, N. Y. Snow-sweeper	333,598	Jan. 5	135	37	34	27

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Campbell, Neil, assignor to Brooklyn Rail Way Supply Company, Brooklyn, N. Y. Snow-sweeper	333,599	Jan. 5	136	37	34	28
Campbell, Parker, Denton, assignor to I. T. Pryor, Austin, Tex. Mail bag or pouch	335,494	Feb. 2	471	121, 122	34	596
Campbell, Robert L., Chicago, Ill. Last	337,131	Mar. 2	336	87	34	988
Campbell, Septimus R., and C. H. Finch, assignors of one-half to W. Hewitt, Toronto, Ontario, Canada. Lawn-mower	338,479	Mar. 23	2164	566	34	1339
Campbell, William. (See Matthews, William, assignor.)						
Campbell, William C., St. Louis, Mo. Sectional kitchen-safe	335,014	Jan. 26	2119	562	34	411
Campbell, William H., Ridge Farm, Ill. Gate	337,375	Mar. 9	665	174	34	1055
Campbell, William H. H., Wichita, Kans. Stone-sawing machine	337,661	Mar. 9	1053	271	34	1122
Campiche, Louis, assignor to Mermod Freres, St. Croix, Switzerland. Musical box	336,210	Feb. 16	1698	424	34	742
Canfield, Charles S., assignor of one-half to S. M. Utter, Minneapolis, Minn. Horseshoe	338,139	Mar. 16	1701	443	34	1247
Canfield Rubber Company. (See Hines, Charles A., assignor.)						
Canfield Rubber Company. (See Hiscott, Alva J., assignor.)						
Canton Manufacturing Company. (See Toppan, Charles, assignor.)						
Capel, Herbert C., London, England. Baling-press	338,712	Mar. 30	2497	660, 661	34	1402
Capron, Franklin S., Taunton, Mass. Broom-support	338,948	Mar. 23	1848	486	34	1283
Card, George F., assignor to H. K. Lindsey, Covington, Ky. Car-brake	334,637	Jan. 19	1690	431, 432	34	313
Cardwell, George A., Brooklyn, assignor of two-thirds to F. K. Fitch, New York, N. Y., and J. T. Murray, Newark; said Murray assignor of one-half to W. P. Arnold, Elizabeth, N. J. Multiple harmonic printing-telegraph	335,681	Feb. 9	828	221	34	596
Cardwell, George A., Brooklyn, and F. K. Fitch, New York, N. Y., assignors of one-third to J. T. Murray, Newark, N. J. Transmitter for harmonic printing-telegraphs	335,682	Feb. 9	833	221	34	596
Carey, Julian E., New York, N. Y., assignor to Ide Electric Time Company. Electric clock	334,745	Jan. 26	1769	471, 472	34	349
Carey, Michael, Kalamazoo, Mich. Calendar	337,478	Mar. 9	833	211	34	1062
Cargill & Co. (See Schilling, Frederick, assignor.)						
Carlin, Frederick W., Brooklyn, N. Y. Combined carriage-step and receiver for garbage and other refuse	338,825	Mar. 30	2663	700, 701	34	1432
Carlin, Thomas H., assignor of two-thirds to W. J. Carlin and J. T. Arnold, trustee, Allegheny, Pa. Wheel	338,922	Mar. 30	2800	738	34	1457
Carlin, William J., *et al.* (See Carlin, Thomas H., assignor.)						
Carll, Charles W., Camden, N. J. Chimney-top	338,949	Mar. 23	1849	486	34	1283
Carman, John W., Madison, Wis. Window-screen	337,741	Mar. 9	1151	299	34	1139
Carnes, Ira, assignor to Lima Machine Works, Lima, Ohio. Steam car-brake	338,039	Mar. 16	1561	404	34	1219
Carney, Thomas, St. Paul, Minn. Self-registering cash-box	334,347	Jan. 12	1220	328, 329	34	234
Carpenter, Charles C. (See Phillips, Mary, assignor.)						
Carpenter, Charles C., New York, N. Y. Bustle	334,638	Jan. 19	1692	432	34	314
Carpenter, James W. (See Maxon, Thomas, assignor.)						
Carr, Charles, Hyde Park, Ill. Farina-cooker	337,813	Mar. 16	1255	326	34	1164
Carr, Joseph, Elk Falls, Kans. Clothes-drier	338,923	Mar. 30	2801	739	34	1457
Carr, Louis P. D. (See Johnston and Carr.)						
Carricaburu, Leon B., New York, N. Y. Steam-actuated valve	336,211	Feb. 16	1694	424	34	742
Carrico, Thomas W., San Antonio, Tex. Construction of privy-vaults and apparatus for use therewith	335,177	Feb. 2	131	33	34	464
Carrico, Thomas W., San Antonio, Tex. Apparatus for use in dry out-houses	338,480	Mar. 23	2165	566	34	1339
Carrico, Thomas W., San Antonio, Tex. Dry out-house	338,896	Mar. 30	2664	701	34	1432
Carskadon, Thomas R., Keyser, W. Va. Traveling-cap	338,083	Mar. 16	1572	405	34	1219
Carson, James L. (See Brooks, Heman P., assignor.)						
Carson, James W., Philadelphia, Pa., and F. P. Harned, Camden, N. J., assignors to said Carson. Manufacture of blocks of bicarbonate of soda	338,924	Mar. 30	2802	.....	34	1457
Carter, Ezra W., Cohoes, N. Y. Shirt board or hanger	336,290	Feb. 16	1749	457	34	762
Carter, Foster, Shreveport, La. Fan attachment for sewing-machines	338,925	Mar. 30	2802	739	34	1457
Carter, George, Le Mars, Iowa. Draft attachment for wheeled vehicles	337,376	Mar. 9	666	174	34	1056
Carter, James. Lockport, N. Y. Tinner's fire-pot	336,893	Mar. 2	11	3	34	929
Carter, John B. (See Moore and Carter.)						
Carter, John T., North Deanville, Va. Machine for making barrel-heads	338,926	Mar. 30	2803	739	34	1457
Carter, John W., Brooklyn, N. Y. Cell for electric batteries	337,045	Mar. 2	220	58	34	966
Carter, Rice & Co. (See Daniels, Henry C., assignor.)						
Carter, Robert E., Jr. (See Fletcher, Augustus, assignor.)						
Carter, Thomas H. (See Tyler and Carter.)						
Carter, William F. (See Adams and Carter.)						
Cartier, Jean P. F., Doussard, France. Oil-press	338,034	Mar. 16	1563	405	34	1219
Carty, Jerome. (See Lemaire, Jean T., assignor.)						
Cary, Walter M., San Francisco, Cal. Steam-actuated valve	334,108	Jan. 12	863	235	34	165
Casaday, George B., Hudson, Ind. Plow-jointer	338,481	Mar. 23	2166	566, 567	34	1339
Case, Frederick L. (See Case, Henry F. and F. L.)						
Case, George F., Denver, Colo. Feed mechanism for rock-drills	335,891	Feb. 9	1146	305	34	653
Case, Henry F. and F. L., South Manchester, Conn. Paper-finishing machine	335,562	Feb. 9	664	175	34	596
Case, Homer W., and J. Dushane, South Bend, Ind. Paper box	335,178	Feb. 2	132	33	34	464
Case, Orlando, *et al.* (See Snowberger, Jacob, assignor.)						
Case & Willard Thresher Company. (See Gilkeson, Thomas E., assignor.)						
Casey, Patrick, *et al.* (See O'Riordan, James, assignor.)						
Casho, Joseph, Thurlow, Pa. Governor	335,270	Feb. 2	261	69	34	487
Cason, George W., Glasgow, Mo. Stretching fence-wire and other strands	338,035	Mar. 16	1564	405	34	1219
Cass, Arad F., assignor of one-half to E. M. Cass, Twin Bluffs, Wis. Sulky-plow	334,348	Jan. 12	1221	329	34	234
Cass, Eugene M. (See Cass, Arad F., assignor.)						
Cassan, Mathew S. (See Gillespie and Cassan.)						
Cassidy, Jacob H., and B. H. Oldfield, Leavenworth, Kans. Tongue-support for vehicles	336,382	Feb. 16	1864	498	34	785
Castagneto, Gaetano S., Dannemora, N. Y. Sad-iron	337,555	Mar. 9	929	238	34	1100
Castell, James, Blue Rapids, Kans. Ice-receptacle for refrigerators	335,495	Feb. 2	472	122	34	596
Casterlin, George C., and F. D. Mosher, Dalton, Pa. Pruning implement	336,382	Feb. 16	1865	489	34	786
Castle, George P. (See Dower, James A., assignor.)						
Castle, Oliver H., Indianapolis, Ind. Ice-machine	338,482	Mar. 23	2167	567, 568	34	1339
Castle, Orlando L., Upper Alton, Ill. Nut-lock	334,070	Jan. 12	798	219	34	156
Castro, Angel, New York, assignor of one-half to G. A. Seward, Brooklyn, N. Y. Railway-signal	336,927	Mar. 30	2804	740	34	1458
Caswell, Erastus. (See Goodwin, Oliver H., assignor.)						
Catlin, Frederick, assignor to M. Lowenstein, New York, N. Y. Funnel	334,564	Jan. 19	1521	407	34	294

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Caulk, Henry T. (See Walker and Caulk.)						
Cavley, Cland T. (See Higgins, Edward S., assignor.)						
Cellérier, Louis J. H., Paris, France. Carbon photography for colored impressions	335,888	Feb. 9	1150	.....	34	654
Challoner, John, Sr., Omro, Wis. Welt-guide for sewing-machines	338,928	Mar. 30	2806	740	34	1456
Chamberlain, Roscoe. (See Austin and Chamberlain.)						
Chamberland, Charles E., Paris, France. Filter	336,089	Feb. 16	1429	377	34	709
Chamberland, Charles E., Paris, France. Filtering compound	336,385	Feb. 16	1869	.....	34	787
Chamberland, Charles E., Paris, France. Filtering compound	336,386	Feb. 16	1870	.....	34	787
Chamberlin, Frank P., Carlisle, Ohio. Shaft-support for vehicles	335,339	Feb. 2	356	98	34	505
Chamberlin, Franklin L., Cleveland, Ohio. Cartridge-loading machine	336,384	Feb. 16	1866	{489 490}	34	786
Chambers, Thaddeus, assignor of one-half to D. K. Gilbert, Philadelphia, Pa. Steering apparatus	336,291	Feb. 16	1750	458	34	768
Chambers, William B., assignor of one-half to W. J. Quinlan, Decatur, Ill. Check-row corn-planter	334,416	Jan. 19	1310	355	34	257
Champion, Antoine J., *et al.* (See Amouroux, Elie, assignor.)						
Champion Bar and Knife Company. (See Webster, John F., assignor.)						
Champion, John P., assignor of two-thirds to J. L. Green and J. A. Smith, Gainesville, Ga. Nut-lock	333,509	Jan. 5	8	3	34	4
Champion, John P., assignor of one-half to R. C. Little & Co., Gainesville, Ga. Car-brake	336,090	Feb. 16	1430	378	34	709
Champion Safety Lock and Novelty Company. (See Rosentreter, Frank L., assignor.)						
Champlin, Henry W., Chelsea, Mich. Hoisting apparatus	338,929	Mar. 30	2807	740	34	1456
Chandler, Frank B. (See Fillebrown and Chandler.)						
Chantrell, John, assignor to Reading Hardware Company, Reading, Pa. Tool-handle	337,942	Mar. 2	480	196	34	1014
Chantrell, John, assignor to Reading Hardware Company, Reading, Pa. Brace-chuck	337,943	Mar. 2	481	197	34	1015
Chantrell, John, assignor to Reading Hardware Company, Reading, Pa. File-handle	337,944	Mar. 2	482	197	34	1015
Chantrell, John, assignor to Reading Hardware Company, Reading, Pa. File-handle	337,945	Mar. 2	483	197	34	1015
Chaplin, Orril R., Boston, Mass. Shoe-nail	335,563	Feb. 9	666	175	34	506
Chapman & Armstrong Manufacturing Company. (See Chapman and Dalton, assignors.)						
Chapman, George E., London, England. Scrap-album	335,683	Feb. 9	834	221	34	506
Chapman, Joseph L., Haddonfield, N. J. Stop-off valve for gas	334,639	Jan. 19	1698	432	34	314
Chapman, Joseph L., Haddonfield, N. J. Automatic stop-valve	334,640	Jan. 19	1694	{432 433}	34	314
Chapman, Samuel A., and D. F. Dalton, assignors to Chapman & Armstrong Manufacturing Company, Waterbury, Conn. Suspender-buckle	335,056	Jan. 26	2175	578	34	422
Chapman, Thomas L., Richmond, Va., assignor of one-half to C. Lloyd, Williamsport, Pa. Lifting-jack	336,783	Feb. 23	2429	699	34	894
Chappée, Armand, Le Mans, France. Portable baking-oven	336,550	Feb. 23	2095	551	34	833
Charbonneau, Treffé. (See Phillip, Bouchard, and Charbonneau.)						
Charbonnier, Lucie. (See Paillot and Charbonnier.)						
Charter, John, Sterling, Ill. Gas-engine	335,564	Feb. 9	667	176	34	567
Chase, Edwin R. (See Thuston and Chase.)						
Chase, Enoch, Milwaukee, Wis. Brick or other kiln	338,036	Mar. 16	1565	406	34	1290
Chase, Frank, Boston, Mass. Lasting tack-strip	337,662	Mar. 9	1055	271	34	1123
Chase, Frank, Boston, Mass. Nipper or wiper for lasting-machines	337,924	Mar. 16	1400	363	34	1191
Chase, Frank, Boston, Mass. Lasting-machine for boots or shoes	337,925	Mar. 16	1402	{363 364}	34	1191
Chase, Frank, Boston, Mass. Pegging-machine	338,930	Mar. 30	2808	{740 741}	34	1456
Chase, J. Herbert, Brooklyn, assignor to Mechanical Orguinette Company, New York, N. Y. Valve for musical instruments	335,271	Feb. 2	363	99	34	487
Chase, J. Herbert, Brooklyn, assignor to Mechanical Orguinette Company, New York, N. Y. Mechanical musical instrument	335,272	Feb. 2	363	99	34	487
Chase, Nehemiah, *et al.* (See Harty, William, assignor.)						
Chase, Richard F. M., New York, N. Y. Belting for machinery	336,990	Mar. 2	143	39	34	951
Chase, William D., Hackensack, N. J. Clock	337,377	Mar. 9	667	174	34	1056
Chemical Hand Fire Extinguisher Company. (See Ballou, Russell A., assignor.)						
Cheney, Norman H., and J. F. Boylen, Taunton, Mass. Saddle for top-rolls	333,600	Jan. 5	127	37	34	26
Cherry, John A., Roads, Mo. Corn-planter	334,746	Jan. 26	1774	472	34	350
Chester, Samuel M., Cincinnati, Ohio. Carriage-top	335,426	Feb. 2	478	122	34	526
Chew, Matthias M., Williamstown, N. J. Cranberry-picker	334,565	Jan. 19	1521	407	34	394
Chicago Raw Hide Manufacturing Company. (See Krueger, August C., assignor.)						
Chicago Stamping Company. (See Flint, William W., assignor.)						
Chichester, Lewis S., assignor to C. M. E. Schroeder, Jersey City, N. J. Air-compressor	333,994	Jan. 12	692	{186 187}	34	126
Child, George F., Springfield, Ohio. Adjustable chair	336,387	Feb. 16	1871	{490 491}	34	787
Children, Edwin, Dunleith, Ill. Cultivator	334,641	Jan. 19	1625	433	34	314
Chilson, Joseph N., Streator, Ill. Draw-bar	336,388	Feb. 16	1878	491	34	788
Chipman, Willard W., Everett, Mass. Door-hanger	338,931	Mar. 30	2810	741	34	1459
Chope, Robert C., Syracuse, N. Y. Railway-gate	333,829	Jan. 5	459	125	34	85
Christy, Thomas J., Lebanon, Ill. Whiffletree-evener spring-casing	336,991	Mar. 2	144	39	34	952
Christy, William T., and J. W. Kohn, Newark, N. J. Pillow-sham holder	336,509	Feb. 16	2082	584	34	615
Chrystal, Michael R. (See Bonnichsen and Chrystal.)						
Church, James E., Minneapolis, Minn. Burglar-alarm	338,388	Mar. 23	2044	536	34	1316
Church, Louis J., Washington, D. C. Nutmeg-grater	337,378	Mar. 9	668	175	34	1056
Churchill, James D. (See Durham and Churchill.)						
Ciencoski, William, Konta, Ind. Rowing apparatus	334,985	Jan. 26	2002	534	34	398
Cifre, Andres, Haverhill, Mass. Necktie-fastener	336,894	Mar. 2	12	4	34	949
Cilley, George W., Norwich, Conn. Fire-arm						
Cincinnati Screw and Tap Company. (See Holz and Mueller, assignors.)						
Cissel, Richard S. T., *et al.* (See Murray, Peter, Jr., assignor.)						
Cissel, Robert B., *et al.* (See Murray, Peter, Jr., assignor.)						
Citizens Match Company. (See Norris and Hagan, assignors.)						
Clacher, Neil A., Chicago, Ill. Losenge-machine	336,483	Mar. 23	2174	568	34	1340
Clair, Joshua R., Philadelphia, Pa. Tension-wheel	336,484	Mar. 23	2177	569	34	1341
Clapp, Bela P., Pawtucket, R. I. Apparatus for distilling ammoniacal waters	335,427	Feb. 2	474	{122 123}	34	526
Clark, Alexander H., Fond du Lac, Wis. Stuffing-box	337,663	Mar. 9	1056	271	34	1122
Clark, Benjamin S. (See Freeman, Warren P., assignor.)						
Clark, Champ, *et al.* (See Platt, Albert L., assignor.)						
Clark, David O., assignor of one-half to E. E. Dow, Haverhill, Mass. Shoe-nail	337,614	Mar. 16	1257	326	34	1164
Clark, Frank A., Lawrence, Mass. Machine for balling yarn	336,389	Feb. 16	1879	491	34	788
Clark, Frank E., assignor of one-half to J. P. Barnett, Brooklyn, N. Y. Bundling wall-paper	335,664	Feb. 9	835	223	34	567

Alphabetical list of patentees, January to March, inclusive—Continued.

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Clark, Frank M., Tilton, N. H., and F. R. Low, Chelsea, Mass. Boiler-tube cleaner	336,202	Feb. 16	1751	458	34	763
Clark, Frank P. (See Partrick, Hawley, assignor.)						
Clark, Frank S., and J. A. Beckman, Austin, Tex. Locking device for baling-press doors	336,288	Feb. 16	1752	458	34	763
Clark, Gates A., Rochester, N. Y. Furnace	333,985	Jan. 12	663	187	34	126
Clark, George W., Brooklyn, N. Y. Pulley-block	334,071	Jan. 12	790	219	34	156
Clark, Henry A., Brookline, assignor, by mesne assignments, to Eastern Electric Cable Company, Boston, Mass. Electrical conductor	336,902	Mar. 2	145	39	34	952
Clark, Henry D., assignor to himself and B. P. Ward, Rochester, N. Y. Combined fare-box and lantern	335,240	Feb. 2	359	98	34	506
Clark, Henry F., Poughkeepsie, N. Y. Cartridge	333,728	Jan. 5	281	86	34	60
Clark, Herbert M., Oshkosh, Wis. Vehicle-axle	334,506	Jan. 19	1523	407	34	295
Clark, John, *et al.* (See Stevens, Charles V., assignor.)						
Clark, John, Greenville, Cal. Automatic gate	337,556	Mar. 9	830	236	34	1100
Clark, Joseph, Brooklyn, N. Y. Steering-propeller	337,479	Mar. 9	734	211	34	1062
Clark, Warren G., Troy, N. Y. Curry-comb	335,994	Feb. 9	1151	306	34	654
Clarke, Charles M., Pittsburg, Pa. Bicycle-seat	334,164	Jan. 12	942	255	34	181
Clarke, Francis R., Reddish, county of Lancaster, England. Mechanism for actuating signal-wires	338,389	Mar. 23	2045	536	34	1317
Clarke, Henry, Chicago, Ill. Permutation-lock	338,338	Mar. 23	1968	{517 518}	34	1303
Clarke, Joseph H. (See Millard and Clarke.)						
Clarke, Joseph H. (See Way and Clarke.)						
Clarke, Samuel, Child's Hill Works, county of Middlesex, England. Infant's food-warmer or night-light apparatus	334,747	Jan. 26	1775	472	34	350
Clarke, William H., Jr., assignor of one-third to C. C. Poole, Chicago, Ill. Plow	333,601	Jan. 5	138	38	34	98
Clarkson, William H., New York, N. Y. Copy-holder for type-writers	336,551	Feb. 23	2096	{551 552}	34	832
Clason, Abraham T., Danbury, Conn. Machine for felting hats	338,140	Mar. 16	1703	443	34	1247
Clans, Carl F., London, England. Purifying coal-gas and obtaining ammonia and other products therefrom	337,946	Mar. 2	484	127	34	1015
Clausen, Adler C. (See Slafter and Clausen.)						
Clausen, Edward E. (See Kimmel and Clausen.)						
Clay, Henry T., Philadelphia, Pa. Street-conduit for electric and cable railways	338,485	Mar. 23	2177	569	34	1341
Clay, John, Camptonville, Cal. Roller-cultivator	337,480	Mar. 9	835	211	34	1063
Clay, John, Jr., *et al.* (See Thomson, John T., assignor.)						
Clay, Thomas, Paterson, N. J. Warping-machine	338,713	Mar. 30	2490	{661 662}	34	1402
Clarcomb, William T., Stephensport, Ky. Turn-plow and double-shovel frame	334,647	Jan. 26	1893	505	34	373
Clayton, Robert G., deceased, (A. K. Russell administrator,) Chicago, Ill., assignor of one-half to R. G. Hill, Lebanon, Ky. Rocking-chair	335,498	Feb. 2	475	122	34	526
Cleary, Richard, St. Charles, Mo. Combined harrow and pulverizer	336,794	Feb. 23	2430	630	34	894
Cleaveland, John B., Indianapolis, Ind. Wire-stretcher	338,486	Mar. 23	2178	569	34	1341
Cleaver & Hollis. (See Salmon and Haslett, assignors.)						
Clebert, Zenon O., Donaldsonville, La. Plow	338,032	Mar. 30	2811	741	34	1459
Clemens, Julius, *et al.* (See Lindner, Ferdinand, assignor.)						
Clemson, George N., Middletown, N. Y. Saw	334,567	Jan. 19	1523	407	34	295
Clemson, George N., Middletown, N. Y. Saw	336,697	Feb. 23	2200	604	34	871
Clere, Frank L., assignor of one-half to G. T. Lewis, Philipsburg, Pa. Coal-mining machine	334,642	Jan. 19	1696	433	34	315
Cleveland Electric Motor Company. (See Stockwell, Levi W., assignor.)						
Cleveland Hardware Company. (See Brown, Samuel E., assignor.)						
Cleveland, Thomas B., Newark, N. J. Button or stud	334,849	Jan. 12	1298	339	34	234
Cliff, Edward, Oswego, assignor of one-half to R. Voss, New York, N. Y. Combined rule, calipers, and square	335,565	Feb. 9	670	176	34	567
Clifford, John, assignor to L. Wolff Manufacturing Company, Chicago, Ill. Water-closet	335,895	Feb. 9	1152	306	34	654
Clifford, Patrick, and J. Coupal, Wollaston Heights, Mass. Micrometer-gage	335,110	Feb. 2	13	4	34	443
Clifton, Charley D. (See Shugart and Clifton.)						
Clifton, Joseph E., Geneseo, Ill. Spring rail-frog for railways	335,341	Feb. 2	361	98	34	506
Clifton, Joseph H., Weston, W. Va. Fire-escape	335,896	Feb. 9	1154	306	34	654
Cline, George J., assignor to I. X-L. Pump Company, Goshen, Ind. Wash-basin	335,057	Jan. 26	2176	578	34	422
Cline, Leon, St. Louis, Mo. Washing-machine	338,714	Mar. 30	2502	662	34	1403
Clingman, John, Dayton, Ohio. Gas-stove	337,379	Mar. 9	669	175	34	1056
Clinton, James H., St. Louis, Mo. Extracting glycerine from fatty substances	336,795	Feb. 23	2431	.....	34	894
Clinton Wire Cloth Company. (See Brown, Robert T., assignor.) (Reissue.)						
Cloke, John. (See Auble, James H., assignor.)						
Close, Phillip C., Augusta, Ga. Pitman	337,380	Mar. 9	670	175	34	1056
Close, Phillip C., Augusta, Ga. Pitman	337,557	Mar. 9	933	239	34	1100
Clough, Jefferson M., assignor to Winchester Repeating Arms Company, New Haven, Conn. Machine for finishing gun-barrels	337,947	Mar. 2	489	128	34	1016
Closs, William L., Reading, Pa. Ironing-board	336,696	Feb. 23	2209	604	34	871
Cloutier, Bernard, Minneapolis, Minn. Cockle-separator	334,643	Jan. 19	1698	434	34	315
Clow, William M., East Wheatland, Ill. Anchoring device for wire fences	338,037	Mar. 16	1568	406	34	1290
Cloyd, Henry C., Union City, Ind. Flooring-jack	338,933	Mar. 30	2811	741	34	1459
Clune, Michael, Indianapolis, Ind. Sofa-bed	337,481	Mar. 9	836	212	34	1063
Clute, Charles E., Waterford, N. Y. Box covering and trimming machine	335,429	Feb. 2	476	{123 124}	34	526
Coale, Joseph M., Baltimore, Md. Safety-valve	338,687	Mar. 30	2665	{701 702}	34	1438
Cobb, Chauncey, *et al.* (See Fisher, John R. and L. T., assignors.)						
Cobb, Delphin B., Brooklyn, N. Y. Tube-packing for surface-condensers	334,512	Jan. 19	1450	389	34	262
Cobb, Edward S., Terre Haute, Ind. Micrometer-calipers	335,214	Feb. 2	186	50	34	474
Cobbley, James, *et al.* (See Cotter, Edward J., assignor.)						
Coble, Thomas H. (See Ritzman, Jackson, assignor.)						
Cochran, John C., Ripley, Ohio. Sewing-machine stand	337,381	Mar. 9	671	176	34	1056
Cochrane, Horace, Philadelphia, Pa. Hat-tip	336,213	Feb. 16	1627	425	34	742
Cochrane, James, and H. F. Kirk, New York, N. Y.; said Kirk assignor to said Cochrane. Cabinet-bedstead	338,993	Mar. 2	146	40	34	952
Coddington, George W., Middletown, Ohio. Fruit-can fastener	336,796	Feb. 23	2432	630	34	895
Codman & Shurtleff. (See Shurtleff, Azabel M., assignor.)						
Coe, James E. (See Johnston, Lysander, assignor.)						
Coen, George W., assignor to himself and S. M. Bushnell, Monticello, Ind. Reclining rocking-chair	338,036	Mar. 16	1567	406	34	1290
Coerper, Carl, Cologne, Germany. Armature for dynamo-electric machines	337,556	Mar. 9	834	239	34	1100
Coffee, Andrew J., Portland, Oreg. Electric horse-whitcher	339,043	Mar. 30	2977	767	34	1467

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Coffin, Charles L., Detroit, Mich. Purifying and crystallizing essential oils	336,622	Feb. 23	2200	.....	34	830
Coffin, Francis A., Indianapolis, Ind. Cabinet-desk	338,639	Mar. 16	1568	407	34	1220
Coffin, Francis A., Indianapolis, Ind. Cabinet-desk	338,632	Mar. 23	2371	624	34	1374
Coffin, Francis H., Portland, Me. Temporary binder	337,664	Mar. 9	1057	272	34	1126
Coggins, O. Chester, assignor to C. Pierpont & Co., New Haven, Conn. Carriage-top	337,926	Mar. 16	1404	364	34	1192
Cohn, Sigmund, Milwaukee, Wis. Cigar-molding machine	337,665	Mar. 9	1058	272	34	1123
Colt, John W. L., and J. R. McNamara, Norwich, Conn. Beer-drawing apparatus	335,566	Feb. 9	671	177	34	567
Colbert, Daniel G., Grand Rapids, Ohio. Washing-machine	337,046	Mar. 2	221	58	34	906
Colby, Calvin, *et al.* (See Houghton, Darius, assignor.)						
Colby, Joseph O., Boston, Mass. Lamp	338,830	Mar. 30	2670	{702 703}	34	1433
Coldren, William P., Philadelphia, Pa. Fruit-jar	336,552	Feb. 23	2098	552	34	833
Cole, Cary O. (See Jordan and Cole.)						
Cole, Edward C., *et al.* (See Robbins, Arthur C., assignor.)						
Cole, H. Earl, Allegheny City, Pa. Seed or grain distributing device	336,390	Feb. 16	1880	492	34	788
Cole, Hiram, assignor to Allen Brothers, Sandy Hill, N. Y. Fiber-cleaning separator	336,204	Feb. 16	1753	{458 459}	34	763
Cole, James W., Nashville, Tenn. Oil-stone holder	337,559	Mar. 9	935	239	34	1100
Cole, James W., assignor of two-thirds to G. T. Moore and C. J. King, Westfield, Mass. Car-coupling	338,828	Mar. 30	2668	702	34	1432
Cole, James W., assignor of two-thirds to G. T. Moore and C. J. King, Westfield, Mass. Draw-bar for cars	338,829	Mar. 30	2669	702	34	1432
Cole, P. Fletcher, Newark, N. J. Glove, &c	334,513	Jan. 19	1451	389	34	289
Coleman, Francis W., Rodney, Miss. Handle for cans	336,689	Feb. 23	2310	604	34	872
Coleman, Henry G., Gordonton, N. C. Tether	336,295	Feb. 16	1755	459	34	763
Coler, Peter P., Clyman, Wis. Grain-binder	336,895	Mar. 2	13	4, 5, 6	34	929
Coles, David H., New York, N. Y. Feeding mechanism for sewing-machines	335,018	Jan. 26	2110	564	34	413
Coles, David H., New York, N. Y., assignor to himself, A. G. Darwin, Glen Ridge, J. B. Beach, Bloomfield, N. J., and H. W. Guernsey, Brooklyn, N. Y. Shuttle-carrying mechanism for sewing-machines	335,017	Jan. 26	2115	{563 564}	34	412
Colesworthy, Charles W., *et al.* (See Russell, Manuel, assignor.)						
Collamore, Gilman, *et al.* (See Humana, William, assignor.)						
Collier, John W., Lockport, N. Y. Pump	334,986	Jan. 26	2003	534	34	393
Collier, Robert B. (See Good and Collier.)						
Collings, William H., Collingswood, N. J. Construction and operation of vacuum-pans	335,430	Feb. 9	478	124	34	597
Collins, David M., Lowell, Mass. Operating picker-staffs in power-looms	333,729	Jan. 5	321	88	34	60
Collins, Eli A., assignor to himself and C. E. Bryant, Huntington, Ind. Ice-tongs	339,044	Mar. 30	2978	788	34	1488
Collins, Eugene F., Anson, Me. Hoof-pad	338,250	Mar. 23	1850	486	34	1283
Collins, Franklin H., *et al.* (See Russell, Manuel, assignor.)						
Collum, George S., assignor, by mesne assignments, to S. A. Collum, Hartford, Conn. Candy-manufacturing machine	336,839	Feb. 23	2492	656	34	906
Collum, Sarah A. (See Collum, George S., assignor.)						
Colman, Hutson B., and G. Turner, Kalamazoo, Mich.; said Turner assignor to said Colman. Power-windmill	337,482	Mar. 9	838	212	34	1083
Colony, Josiah D., Philadelphia, Pa. Writing-case	336,391	Feb. 16	1882	492	34	788
Colts Patent Fire Arms Manufacturing Company. (See Franklin and Ebbets, assignors.)						
Columbus Watch Company. (See Owen, Walter W., assignor.)						
Colville, John, Brunswick, Ga. Return-crate	339,045	Mar. 30	2979	788	34	1488
Combes, Frank A., Cleveland, Ohio. Ruler	336,700	Feb. 23	2311	605	34	872
Combs, Hiram S., assignor to F. H. Leavenworth, Detroit, Mich. Roller-skate	333,996	Jan. 19	685	187	34	137
Commercial Telegram Company. (See Dyer, Dehard N., assignor.)						
Commercial Telegram Company. (See Field, Stephen D., assignor.)						
Compagnie de Fives Lille. (See Dunmoulin, Adrien J. A., assignor.)						
Compressed Steel Company. (See Billings and Hinsdale, assignors.)						
Compton, William A., Liberty Corner, N. J. Indented embossing-cutter	335,897	Feb. 9	1155	306	34	655
Compton, William A., Liberty Corner, N. J. Recessed embossing-tool	335,898	Feb. 9	1156	307	34	655
Compton, William A., Liberty Corner, N. J. Embossing wood. (Reissue)	10,685	Feb. 9	1396	369	34	697
Compton, William A., Liberty Corner, N. J. Embossing wood. (Reissue)	10,686	Feb. 9	1397	369	34	697
Comstock, William H., Norwich, Conn. Door-knob	334,937	Jan. 26	2004	534	34	393
Condit, Alonzo S. (See Higgins and Condit.)						
Condit, Ezekiel C., Kansas City, Mo. Heating-furnace	334,644	Jan. 19	1630	434	34	315
Condon, John T., Kingsley, Iowa. Hame-tug	337,248	Mar. 2	492	128	34	1016
Conkle, William H., Washington, D. C. Syringe	337,249	Mar. 2	492	128	34	1017
Conklin, Ledun M., and S. Terwilliger, Matteawan, N. Y. Hat-forming machine	337,382	Mar. 9	672	176	34	1057
Conkling, Edward A., Madisonville, Ohio. Bottle-packing box	334,748	Jan. 26	1776	472	34	351
Conley, John, Pullman, Ill. Compound tool	333,830	Jan. 5	460	125	34	85
Conner, Allen. (See Dare, John S., Sr., assignor.)						
Conner, Frederick H., Worcester, Mass. Pipe-cutter	338,716	Mar. 30	2504	663	34	1403
Conner, William P., assignor to School Furnishing Company, Bloomsburg, Pa. Foot-rest for school-desks	338,487	Mar. 23	2179	570	34	1341
Conner, William P., assignor to School Furnishing Company, Bloomsburg, Pa. Folding top for school-desks	338,715	Mar. 30	2503	662	34	1403
Connett, Matthew F., Jr., assignor of one-half to H. B. Buck and W. Schulze, Springfield, Ill. Machine for turfing fabrics	337,306	Mar. 2	573	151	34	1032
Connolly, William, South Norwalk, Conn. Bobbin-winder	335,019	Jan. 26	2118	564	34	413
Connolly, William, South Norwalk, Conn. Bobbin-winder	336,296	Feb. 16	1755	459	34	764
Conover & Co., J. S. (See MacKusick, Elmer F., assignor.)						
Conover, Stephen B., assignor to himself and L. Bedell, New York, N. Y. Machine for cutting oval shell dishes	335,431	Feb. 2	479	{124 105}	34	527
Conprogat, Thomas M., Boston, Mass., assignor to Singer Manufacturing Company of New Jersey. Presser-foot for sewing-machines	338,163	Mar. 16	1732	452	34	1253
Conrad, Martin, Chicago, Ill. Wagon	334,350	Jan. 12	1224	330	34	235
Conroy, Thomas J. (See Wells, Henry P., assignor.)						
Conroy, Thomas J., New York, N. Y. Fishing-fly hook	335,506	Feb. 2	579	151	34	544
Conver, Peter, assignor of one-half to L. B. Young, Farmington, Ill. Watch-movement	334,749	Jan. 26	1777	473	34	351
Converse, Bolivar C. (See Maina and Converse.)						
Converse, George C., assignor, by mesne assignments, to L. Converse, Brookfield, Mass. Circular-knitting machine	339,046	Mar. 30	2980	788	34	1488
Converse, Lucy. (See Converse, George C., assignor.)						
Converse, Lyman P., New York, N. Y. Air-heater for stoves	336,392	Feb. 16	1883	492	34	789
Convert, Adolf, and E. Rueff, New York, N. Y. Apparatus for distributing, &c., liquid carbonic acid	334,351	Jan. 12	1227	330	34	235
Conway, Jesse, assignor of two-thirds to J. N. Conway and J. S. Bullock, Baltimore, Md. Nut-lock	336,037	Feb. 9	1334	353	34	686

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Conway, John N., *et al.* (See Conway, Jesse, assignor.)						
Cook, Egbert C., Oak Park, Ill. Hammock stretcher or adjuster	337,815	Mar. 16	1258	326	34	1165
Cook, Francis H., Rutland, Vt. Feed mechanism for stone-sawing machines	336,840	Feb. 23	2494	{656 657}	34	906
Cook, Frederick. (See Warner and Cook.)						
Cook, Joseph A., Auburn, N. Y. Salt-drier	337,560	Mar. 9	936	239	34	1101
Cook, Richard T., Virginia City, Mont. Ter. Neck-yoke	334,938	Jan. 26	2005	534	34	393
Cooke, Edward C., assignor of one-half to W. W. Woodford, Unionville, Conn. Frame for neck-wear	334,352	Jan. 12	1228	330	34	225
Cooke, George E., Clarksville, Tenn. Riving-machine	335,795	Feb. 9	1004	266	34	627
Cooke, Henry D. (See Maloney, James A., assignor.)						
Cooke, John W., Plainville, Conn. Artificial mother	333,602	Jan. 5	140	38	34	28
Cooley, Henry W. (See Loomis and Cooley.)						
Cooley, Orville, assignor to Johnston Harvester Company, Batavia, N. Y. Cord-holder for grain-binders	335,272	Feb. 2	264	69, 70	34	488
Coombs, Thomas P., assignor of one-half to G. E. Brown, Woburn, Mass. Rotary engine	336,696	Mar. 2	19	6	34	930
Coon, Roscoe, J. H. Hedges, and W. M. Bernard, San Francisco, Cal. Car-coupling	336,091	Feb. 16	1431	378	34	709
Cooper, Albert. (See Metager and Cooper.)						
Cooper, Albert C., *et al.* (See Eddleman, Francis N., assignor.)						
Cooper, Charles J., Chicago, Ill. Buckle	334,750	Jan. 26	1778	473	34	351
Cooper, George N., Haverhill, assignor, by mesne assignments, to Wire Goods Company, Worcester, Mass. Wire-nail machine	333,730	Jan. 5	323	89	34	60
Cooper, James C., *et al.* (See Eddleman, Francis N., assignor.)						
Cooper, James H., *et al.* (See Eddleman, Francis N., assignor.)						
Cooper, John. (See Smith, Philip, assignor.)						
Cooper, Jordon, Lansdale, Pa. Strap clamping and stretching device	335,179	Feb. 2	133	32	34	465
Cooper, Richard, Greenville, Tex. Cotton-scraper	335,507	Feb. 2	560	152	34	544
Cooper, Thomas G., Jarvis, Ontario, Canada. Memorandum-book	336,393	Feb. 16	1884	493	34	789
Copeland & Bacon. (See Bacon, Earle C., assignor.)						
Copeland, George W. (See Woodward and Copeland.)						
Copeland Manufacturing Company. (See Preston, King H. C., assignor.)						
Copes, Robert. (See Zeigler and Copes.)						
Coram, Joseph A. (See Dennis and Coram.)						
Corbett, Henry H. (See Parker, John J., assignor.)						
Corbett, William J., Tucson, Ariz. Ter. Swimming apparatus	335,015	Jan. 26	2112	563	34	412
Corbin Cabinet Lock Company. (See Mix, Frank W., assignor.)						
Corbin, P. & F. (See Mix and Arana, assignors.)						
Corcoran, Patrick W., Seneca, Ill. Harness-saddle	337,047	Mar. 2	222	58	34	906
Cordes, August W. (See De Lemos and Cordes.)						
Cordon, François. (See Scotland and Cordon.)						
Corliss, George H., Providence, R. I. Dash-pot	333,631	Jan. 5	461	125	34	86
Corliss, George H., Providence, R. I. Stuffing-box for steam-engines	333,632	Jan. 5	463	125	34	86
Corliss, George H., Providence, R. I. Steam-boiler	333,633	Jan. 5	464	126	34	86
Corliss, George H., Providence, R. I. Governor-regulation	333,634	Jan. 5	465	126	34	86
Corliss, George H., Providence, R. I. Steam-engine governor	333,635	Jan. 5	466	126	34	87
Cornely, Emil, Paris, France. Feed-motion for sewing or embroidering machines	336,554	Feb. 23	2100	552	34	834
Cornely, Emil, Paris, France. Embroidering-machine	338,668	Mar. 23	2190	570	34	1342
Cortright, Lewis D., Chicago, Ill. Ridge and valley for roofing	333,602	Jan. 5	141	38	34	28
Cosart, John H., Lyons, N. Y. Shoe	336,214	Feb. 16	1628	425	34	749
Cosford, Joseph C., and J. P. Kern, Marquette, Mich. Steam-engine governor	335,898	Feb. 9	1147	305	34	653
Costain, Richard J., assignor of one-half to A. Whitney, Hartford, Conn. Roller-skate	337,749	Mar. 9	1153	299	34	1139
Côté, Misaël. (See Rousseau, Goodale, and Côté.)						
Cotter, Cyrus H., *et al.* (See Lottridge, William, assignor.)						
Cotter, Edward J., Frackville, assignor to J. J. Keating, M. J. Wayne, and J. Cobbley, Mahanoy Plane, Pa. Squib	337,307	Mar. 2	576	151	34	1032
Cottran, Alfredo, Naples, Italy. Bridge, pier, or similar structure	337,666	Mar. 9	1059	{272 273 274}	34	1123
Cottrell, Calvert B. (See Stillman, Charles A., assignor.)						
Cottrell, Calvert B. (See Taylor, George F., assignor.)						
Cottrell, Calvert B., Stonington, Conn. Stop-cylinder printing-machine	338,390	Mar. 23	2047	537	34	1317
Cottrell, Calvert B., Stonington, Conn. Sheet-straightener for sheet-delivery apparatus for printing-machines	338,391	Mar. 23	2052	538	34	1318
Cottrell, Calvert B., Stonington, Conn. Cylinder printing-machine	338,392	Mar. 23	2053	538	34	1318
Coughlin, William J. (See Curtin, Richard J., assignor.)						
Coulston, J. Warren. (See Walton, Thomas H., assignor.)						
Coultaus, Joseph A., Brooklyn, N. Y. Lamp-burner	336,297	Feb. 16	1758	{459 460}	34	764
Coultaus, Joseph A., assignor to himself, D. M. and A. W. Rollins, Brooklyn, N. Y. Machine for winding wire upon hose	338,489	Mar. 23	2181	{570 571}	34	1342
Coulter, Joseph F., Burlington, Iowa. School desk and seat	335,508	Feb. 2	561	152	34	544
Coupal, Joseph. (See Clifford and Coupal.)						
Coupal, Peter A., Boston, Mass., and C. D. Wood, Lincoln, R. I., assignors to Boot and Shoe Sole Laying Company, Portland, Me. Sole-laying machine	335,016	Jan. 26	2113	563	34	412
Court, Charles, assignor to S. Hersee, H. C. Williams, and S. Hersey, London, England. Operating on and treatment of vegetable fibrous substances	333,721	Jan. 5	325	89	34	61
Courtenay, William. (See Putnam, Theodore A. B., assignor.)						
Covell, Edgar C., *et al.* (See Sheehan, William E., assignor.)						
Cowan, Hugh C., Oxford, Ohio. Brick, concrete-block, &c.	338,490	Mar. 23	2183	571	34	1342
Cowen, William C., Hyde Park, Mass. Car-coupling	334,751	Jan. 26	1779	473	34	351
Cowell, Newell P., and J. W. Pinkham, assignors to Cowell Platform and Coupling Company, Cleveland, Ohio. Car-coupling	335,902	Feb. 9	1272	337	34	674
Cowell Platform and Coupling Company. (See Cowell, Rensselaer A., assignor.)						
Cowell Platform and Coupling Company. (See Cowell and Pinkham, assignors.)						
Cowell Platform and Coupling Company. (See Marden and Littlefield, assignors.)						
Cowell, Rensselaer A., assignor to Cowell Platform and Coupling Company, Cleveland, Ohio. Car-coupling	335,903	Feb. 9	1273	337	34	675
Cowl, Walter Y., New York, N. Y. Incubator	337,308	Mar. 2	577	152	34	1032
Cowles, Alfred H. (See Cowles, Eugene H. and A. H.)						
Cowles, Alfred H., Cleveland, Ohio. Electric furnace and operating the same	335,058	Jan. 26	2177	{578 579}	34	493
Cowles Electric Smelting and Aluminium Company. (See Bradley and Crocker, assignors.)						
Cowles, Eugene H., *et al.* (See Buckley, William F., assignor.)						
Cowles, Eugene H. and A. H., Cleveland, Ohio. Electric furnace for metallurgic operations	335,059	Jan. 26	2180	579	34	493
Cox, Charles B., San Marcial, N. Mex. Ter. Irrigation of land	334,645	Jan. 19	1631	435	34	315

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cox, H. M. (See Miles, Edward J., assignor.)						
Cox, Henry F., Philadelphia, Pa. Railway switch and signal interlocking apparatus	336,701	Feb. 23	2211	605	34	873
Cox, Henry F., Philadelphia, Pa. Railway switch and signal interlocking	336,702	Feb. 23	2214	606	34	874
Cox, John H., and E. S. Willey, Fairmount, Md. Steering apparatus	333,923	Jan. 5	585	160	34	110
Cox, William H., Virden, Ill. Gate	336,471	Feb. 16	1987	590 591	34	807
Cox, William M. (See Bagby, Nathaniel, assignor.)						
Coyle, Andrew M., Washington, D. C. Steam-trap	333,994	Jan. 5	586	161	34	110
Coyle, Charles J., assignor to E. Jennings, A. B. Pullman, and A. Longstreet, Chicago, Ill. Securing bosoms to shirt-bodies	337,389	Mar. 9	674	176 177	34	1057
Coype, James F., Chicago, Ill. Marble-sawing machine	334,217	Jan. 12	1098	274	34	199
Crabb, William. (See Nourse, James K. P., assignor.)						
Crabb, William, Newark, N. J. Corkscrew	337,309	Mar. 2	579	152	34	1033
Crabbe, James W., Brooklyn, N. Y. Siding and roofing board	337,310	Mar. 2	581	153	34	1033
Crabtree, Hamilton S., Anna, Ill. Wagon end-gate	335,685	Feb. 9	836	222	34	507
Craft, William S., Washington, Pa. Guard or screen for fire-places	333,925	Jan. 5	589	161	34	110
Crafts, Francis H., Williamsport, Pa. Hat	338,584	Mar. 23	2301	602	34	1302
Crafts, Samuel P., Hamden, Conn. Portable brick-kiln furnace	337,927	Mar. 16	1405	364	34	1192
Cragg, Samuel W. (See Brin, Leon Q. and A., assignors.)						
Craig, Elisabeth A., Arlington, Kans. Feed-trough	333,604	Jan. 5	142	38	34	29
Craig, Ellsworth. (See Siegenthaler and Craig.)						
Craig, George W., Grimm's Landing, W. Va. Weighing-scale	336,472	Feb. 16	1988	521	34	807
Craig, John C., assignor of one-half to E. D. Hand, Fenelon Falls, Ontario, Canada. Combined latch and lock	338,141	Mar. 16	1704	443 444	34	1247
Craig, John P., and T. F. Strachan, Jr., Buffalo, N. Y. Extension fire-ladder	338,717	Mar. 30	2505	663	34	1403
Craik, Andrew, Williamsport, Pa. Sectional steam-boiler	334,566	Jan. 19	1594	408	34	295
Craik, Andrew, assignor to Riley & Melhuish, Williamsport, Pa. Balanced valve	334,690	Jan. 19	1692	458	34	396
Crain, Edmund C. (See Dassell, David E., assignor.)						
Cram, Elisha S., *et al.* (See Sheehan, William E., assignor.)						
Crampton, Albert. (See Belden, Emerson, assignor.)						
Crandal, George L., Binghamton, N. Y. Fishing-line reel	336,092	Feb. 16	1432	378	34	710
Crandall, Nathan W., and G. W. Jopson, Meriden, Conn. Pocket-knife	338,251	Mar. 23	1852	486	34	1284
Crane, Mary, administratrix. (See Platts and Crane.)						
Crane, Richard T. (See Hayden, James T., assignor.)						
Crary, Cushman W. (See Gage and Crary.)						
Crawford, Edward F., Honey Bend, Ill. Check-rowing attachment for corn-planters	338,339	Mar. 23	1971	518	34	1304
Crawford, Jay B., trustee. (See Goodale, John, assignor.)						
Crawford, Middleton, Brooklyn, N. Y. Boiler-feed regulator	334,691	Jan. 19	1694	452	34	327
Crayton, William E. (See Walker and Crayton.)						
Creamer, John F. (See Van Buskirk, Leonidas H., assignor.)						
Creamer, Lewis L., and F. A. Sparks, Millville, N. J. Boat-detaching device	338,164	Mar. 16	1733	452	34	1253
Creighton, J. M., *et al.* (See Wright, William A., assignor.)						
Crescon, George V. (See Possano, Antonio C., assignor.)						
Criado, Louis F., Brooklyn, assignor to Stout, Meadowcroft & Co., New York, N. Y. Electric mouth and throat illuminator	336,510	Feb. 16	2084	534	34	816
Crist, John, and F. M. Ogle, Brownlng, Mo. Harvester guard-finger	336,473	Feb. 16	1989	521	34	808
Crocker, Eugene B., Pawtucket, R. I. Easel	338,165	Mar. 16	1734	452	34	1253
Crocker, Francis B. (See Bradley and Crocker.)						
Crofoot, Adelbert B. (See Stelle, Edward T., assignor.)						
Crofoot, Charles G. (See Earle and Crofoot.)						
Crompton, George. (See Wyman, Horace, assignor.)						
Crompton, George, Worcester, Mass. Woven fabric	335,567	Feb. 9	673	177	34	567
Crompton, George, and H. Wyman, Worcester, Mass., assignors to said Crompton. Mechanical movement	336,623	Feb. 23	2201	574 575	34	850
Crompton, George, and H. Wyman, Worcester, Mass., assignors to said Crompton. Mechanical movement	336,624	Feb. 23	2203	575	34	850
Crompton, George, and H. Wyman, Worcester, Mass., assignors to said Crompton. Mechanical movement	336,625	Feb. 23	2204	575	34	851
Crompton, George, and H. Wyman, Worcester, Mass., said Wyman assignor to said Crompton. Mechanical movement	336,626	Feb. 23	2205	576	34	851
Crompton, George, and H. Wyman, Worcester, Mass., said Wyman assignor to said Crompton. Mechanical movement	336,627	Feb. 23	2206	576	34	851
Crompton, George, and H. Wyman, Worcester, Mass., assignors to said Crompton. Mechanical movement	339,047	Mar. 30	2962	789	34	1488
Crompton, George, and H. Wyman, Worcester, Mass., assignors to said Crompton. Mechanical movement	339,048	Mar. 30	2963	789	34	1488
Crooker, Herman D. (See Hill and Crooker.)						
Crooker, William W. (See Jones, Crooker, and Artóa.)						
Crooks, Thomas R. (See Welch and Crooks.)						
Crosby, Stephen M., executor. (See Dennis and Coram, assignors.)						
Crosselmire, Charles F. (See Thiéry and Crosselmire.)						
Croskey, Albert B. (See Ormerod and Croskey.)						
Crosley, Powel. (See English, Andrew J., assignor.)						
Cross, Charles G., Longsight, Manchester, England. Implement for brushing and scraping ships' hulls	333,508	Jan. 5	9	4	34	5
Cross, Samuel B., Wellington, Kans. Field-fence-making machine	334,574	Jan. 19	1452	390	34	223
Cross, William C., Boston, Mass. Lasting-tool	333,605	Jan. 5	143	39	34	29
Cross, William C., Boston, Mass. Lasting boots and shoes	333,606	Jan. 5	144	39	34	29
Cross, William C., Boston, Mass. Machinery for the manufacture of satchel-bottom paper bags	336,474	Feb. 16	1991	521 522	34	808
Cross, William C., Boston, Mass. Lasting boots and shoes	337,483	Mar. 9	638	212	34	1063
Crossley, Cecelia S. (See Crossley, Harry A., assignor.)						
Crossley, Clarence W., London, county of Middlesex, England. Apparatus for the propulsion movement and suction of air, fluids, and gases	336,218	Feb. 16	1629	425	34	743
Crossley, Harry A., assignor to C. S. Crossley, Rockport, Ohio. Combined gage-wheel and colter	336,475	Feb. 16	1988	522	34	808
Crouse, Henry M., Syracuse, N. Y. Combined tag and envelope	336,841	Feb. 23	2495	657	34	906
Crowe, Charles P., assignor of one-half to H. M. Smith, Mount Gilead, Ohio. Side-bar spring	338,585	Mar. 23,	2302	603	34	1302
Crowley, George G., assignor to Warrior Mower Company, Little Falls, N. Y. Harrow	333,926	Jan. 5	590	161 162	34	111
Crown Manufacturing Company. (See Sheldon and Peacock, assignors.)						
Crump, Samuel. (See Betts, Robert W., assignor.)						
Crump, Samuel. (See Rifer, Daniel J., assignor.)						
Cryderman, Jacob, Milwaukee, Wis. Reversing-gearing for machinery	339,065	Mar. 30	3085	891 892	34	1496

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Culbertson, Charles M., Sr., Chicago, Ill. Snow plow and scraper	337,561	Mar. 9	996	240	34	1101
Cullen, Alexander, Lindsay, Ontario, Canada. Parturition-shears	335,796	Feb. 9	1006	266	34	688
Culmer, Jethro C., Spencer, Ind. Combination-lock	338,596	Mar. 23	2363	663	34	1368
Culp, Andrew J., and A. W. Allen, Philadelphia, Pa. Winding-machine	334,569	Jan. 19	1595	408	34	295
Culp, James D., San Felipe, Cal. Electrical brush	338,897	Mar. 2	21	6	34	930
Culp, James D., San Felipe, Cal. Electrical torch for lighting gas	338,898	Mar. 2	23	7	34	931
Cumming, William B. (See McColl and Cumming.)						
Cummings, Henry H., Malden, Mass. Button holding and feeding attachment for sewing-machines	334,728	Jan. 26	1780	473	34	351
Cummings, James, *et al.* (See O'Riordan, James, assignor.)						
Cummings, John R., assignor to American Press Association, Chicago, Ill. Clamping-tool	337,743	Mar. 9	1153	200 200	34	1139
Cummings, John R., assignor to American Press Association, Chicago, Ill. Type	337,744	Mar. 9	1154	200	34	1140
Cummings, Patrick, assignor to P. J. Cummings, Newton, Mass. Paddle-wheel	333,807	Jan. 5	145	40	34	29
Cummings, Patrick J. (See Cummings, Patrick, assignor.)						
Cummins, John E., *et al.* (See Faires, Joseph J., assignor.)						
Cunning, James, Indianapolis, Ind. Machine for cleaning intestines	337,928	Mar. 16	1407	365	34	1192
Cunningham, Arthur, Louisville, Ky. Mold for casting solder-joints	337,569	Mar. 9	987	240	34	1101
Cunningham, George A. (See Cunningham, J. Calder and G. A.)						
Cunningham, J. Calder and G. A., Washington, Kans. Low-binding grain-harvester	338,319	Mar. 16	1997	471 472	34	1287
Cunningham, William S., *et al.* (See Helms, William M., assignor.)						
Cunta, Friedrich, Carlsbad, Bohemia, Austria-Hungary. Apparatus for rinsing or washing bottles, &c.	338,567	Mar. 23	2304	603	34	1302
Curley, Thomas, Troy, N. Y. Lemon-squeezer	336,398	Feb. 16	1759	469	34	764
Curlin, Seth, Louisville, Ky., assignor to Curlin Switch and Crossing Company. Switch	337,745	Mar. 9	1155	200 201	34	1140
Curlin Switch and Crossing Company. (See Curlin, Seth, assignor.)						
Curran, Franklin J., Stanford, Ky. Flying target	338,633	Mar. 23	2371	624	34	1374
Curran, John J., Chicago, Ill. Lumber-drier	336,511	Feb. 16	2085	534	34	816
Currey, Thomas, *et al.* (See Megathey, William, assignor.)						
Currier, John O., assignor to L. E. Currier, Sangerville, Me. Disk-cultivator	333,927	Jan. 5	588	160	34	111
Currier, Lewis E. (See Currier, John O., assignor.)						
Currin, John, assignor of one-half to N. Baker, Southbridge, Mass. Eyeglasses	333,998	Jan. 5	588	160	34	111
Curtin, Frank. (See Wilkinson and Curtin.)						
Curtin, Richard J., assignor of one-half to W. J. Coughlin, Lowell, Mass. Rotary brush	336,848	Feb. 23	2496	656	34	906
Curtis, Henry, Chicago, Ill. Grain-adjusting device	336,753	Feb. 23	2098	559	34	833
Curtis, Henry C., Troy, N. Y. Sewing-machine gage	334,218	Jan. 12	1099	274	34	199
Curtis, John D., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Barb-fence machine	339,036	Mar. 30	3086	802	34	1496
Curtis, John H. (See Curtis, William E. and J. H.)						
Curtis, Lewis E., assignor to E. B. and G. E. Preston, Chicago, Ill. Turn-table extension-ladder	336,512	Feb. 16	2088	535	34	816
Curtis, Nelson, Boston, Mass. Steam-trap	336,649	Feb. 23	2207	576	34	851
Curtis, Robert W., *et al.* (See Matteson, Eugene L., assignor.)						
Curtis, William E. and J. H., Taunton, Mass. Tap and faucet connection for beer and other barrels	335,743	Feb. 9	927	244	34	614
Cushing, Alston, *et al.* (See Killam, Robert C., assignor.)						
Cushing, George W., St. Paul, Minn. Car-door fastener	337,929	Mar. 16	1408	365	34	1192
Cushman, Henry D., Three Rivers, Mich. Inhaler	333,808	Jan. 5	146	40	34	30
Cushman, Henry D., Three Rivers, Mich. Inhaler	333,809	Jan. 5	147	40	34	30
Cussins, Lucian A. (See Overpeck, Shank, and Cussins.)						
Cussins, Lucian A., and J. M. Overpeck, New Paris, Ohio. Wrench for twisting wire	338,659	Mar. 23	2406	633	34	1390
Cutler, James G., Rochester, N. Y. Letter-box connection	336,098	Feb. 9	1325	354	34	686
Cutler, Joseph H., West Medway, Mass. Polishing-machine	335,568	Feb. 9	674	177	34	568
Cutter, Martin A., Galveston, Tex. Sash-holder	334,679	Jan. 19	1695	458	34	327
Cutter, Martin A., Galveston, Tex. Shutter-fastener	337,746	Mar. 9	1158	201	34	1140
Cutting, Robert S., Providence, R. I. Lever-button	337,747	Mar. 9	1159	201	34	1140
Cypert, Joseph A., assignor of one-half to J. Kelley, Willow Springs, Mo. Track-clearer for locomotives	335,509	Feb. 2	662	159	34	544
Daelen, Lambert A., Cologne, Prussia, Germany, assignor, by mesne assignments, to J. Merrill, G. Patten, and J. A. Woodbury, Boston, Mass. Caloric engine	336,098	Feb. 16	1483	378	34	710
Daft, Leo, Greenville, N. J. Electric motor	336,699	Feb. 23	2200	576	34	851
Dages, Wendell. (See Swank and Dages.)						
Dailey, Abram H., Brooklyn, N. Y. Fishing rod and reel	335,797	Feb. 9	1007	267	34	628
Dailey, Abram H., Brooklyn, N. Y. Fish-line reel	335,798	Feb. 9	1010	267	34	628
Daimler, Gottlieb, Cannstadt, Würtemberg, Germany. Motor-engine worked by combustible gases or petroleum	334,109	Jan. 12	855	225	34	166
Dales, Joseph R., and E. L. Adams, Philadelphia, Pa. Electric-arc lamp	334,353	Jan. 12	1229	330	34	285
Dalese, John, *et al.* (See Richardson, George W., assignor.)						
Dalliba, James H., and F. Billings, Cleveland, Ohio. Casting metal ingots	333,929	Jan. 5	594	162	34	111
Dalpé, Frederick A., Philadelphia, Pa. Adhesive re-enforce washer	335,569	Feb. 9	675	177	34	568
Dalton, Daniel F. (See Chapman and Dalton.)						
Dalzell, Charles N., Waddington, N. Y. Office-desk	335,432	Feb. 2	482	135	34	388
Dalzell, John H., and T. J. McTighe, Pittsburg, Pa. Conveying gas in an inexplosive condition	337,667	Mar. 9	1051	.....	34	1194
Dalzell, John H., and T. J. McTighe, Pittsburg, Pa. Distributing gas	337,668	Mar. 9	1052	274	34	1194
Daman, Oscar, Minneapolis, Minn. Stove-hook	338,252	Mar. 23	1853	487	34	1284
Damerel, William, Brooklyn, N. Y. Candle-lamp	335,669	Jan. 29	2120	545	34	413
Damm, Frederick C., Peoria, Ill. Flying target	334,848	Jan. 26	1694	565	34	372
Damm, Frederick C., Peoria, Ill. Arm for flying-target traps	334,849	Jan. 26	1695	565	34	372
Dana, Charles H., West Lebanon, N. H. Road scraper and grader	337,930	Mar. 16	1409	365	34	1192
Danford, Ebenezer, Geneva, Ill. Felly for vehicle-wheels	333,722	Jan. 5	236	90	34	61
Daniels, Henry C., Somerville, assignor to Carter, Rice & Co., Boston, Mass. Merchandise-tag	335,574	Feb. 2	395	70	34	488
Daniels, Thomas R., *et al.* (See Largent, James J., assignor.)						
Daniels, William H., Southsea, England. Tube-motor for propelling vessels	338,040	Mar. 16	1568	407	34	1220
Danielson, Samuel, Pittsville, Mo. Washing-machine	333,610	Jan. 5	148	40	34	30
Dann, John E., and J. Lapp, Honeoye Falls, N. Y. Telephone-receiver	338,401	Mar. 23	2185	571	34	1242
Dann, John E., and J. Lapp, Honeoye Falls, N. Y. Telephone-transmitter	338,402	Mar. 23	2186	572	34	1242
Dann, John E., and J. Lapp, Honeoye Falls, N. Y. Telephone-transmitter	338,699	Mar. 23	2404	633	34	1390
Danner, Frederick. (See Burghee and Danner.)						
Darby, Frank B., Elmira, N. Y. Dental capsicum plaster	335,799	Feb. 9	1013	267	34	629
Dare, John S., Sr., assignor of one-half to A. Conner, Bloomingdale, Ind. Hasp-lock	336,294	Feb. 16	1865	498	34	789

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Darling, Bernard P., assignor of one-half to J. H. Pettit, Shortsville, N. Y. Hoisting-machine	336,630	Feb. 23	2210	577	34	852
Darling, John, Glasgow, county of Lanark, Scotland. Car-coupling	336,041	Mar. 16	1569	407, 408, 409	34	1221
Darling, Joseph, Karns City, Pa. Check-hook	337,563	Mar. 9	988	240	34	1101
Darling, William H., assignor of one-half to G. P. Harrington, New York, N. Y. Electro-magnetic motor	337,931	Mar. 16	1410	365, 366	34	1193
Darnell, David E., Moorestown, N. J., assignor of one-half to E. C. Crain, Philadelphia, Pa. Pump	336,099	Feb. 9	1339	354	34	686
Darr, Emory Q., Shelbyville, Ind. Combined fish-net and umbrella	335,433	Feb. 2	483	126	34	508
Dart, Rollin C., *et al.* (See Bevier, James, assignor.)						
Darwin, A. G., *et al.* (See Coles, David H., assignor.)						
Daugherty, Albert C., assignor to himself and J. J. Jones, North Belle Vernon, Pa. Siding for buildings	335,342	Feb. 2	362	94	34	506
Daugherty, Albert C., assignor to himself and J. J. Jones, North Belle Vernon, Pa. Siding for buildings	337,564	Mar. 9	939	240	34	1101
Daughton, John B. (See Schroeder, George G., assignor.)						
Dausch, Pierre G., Baltimore, Md. Thill-coupling	338,493	Mar. 23	2187	572	34	1343
Daveggio, John B., Paicines, Cal. Orchard-guard	333,611	Jan. 5	149	41	34	30
Davenny, James E., assignor of one-third to H. Hittle, Cornforth, Iowa. Buckle	333,930	Jan. 5	595	163	34	112
Davenport, William H., Uxbridge, Mass. Cocking mechanism for breech-loading guns	334,570	Jan. 19	1526	408	34	296
Davey, Henry, Leeds, county of York, England. Low-pressure steam-boiler	338,494	Mar. 23	2188	572	34	1343
Davey, Henry, Leeds, county of York, England. Low-pressure steam-motor	338,934	Mar. 30	2812	742	34	1460
David, Augustin O., Paris, France, assignor to E. Miannay, Elizabeth, N. J. Manufacture of weidless chains	335,899	Feb. 9	1156	307, 308	34	655
Davies, Andrew J. (See Higbee, Charles H., assignor.)						
Davies, Howell, Coal Creek, Tenn. Mine-ventilator	338,495	Mar. 23	2189	572, 573	34	1343
Davies, James, Mitchell, assignor of one-half to F. M. Pratt, White Lake, Dak. Ter. Ventilating-cover for milk-pans	337,816	Mar. 16	1259	326	34	1165
Davies, John R., Whitewater, Wis. Pattern-plate for molders	334,753	Jan. 26	1782	474	34	358
Davies, William E., and W. C. Gayley, Deringer, Pa. Two-wheeled vehicle	334,219	Jan. 12	1030	274	34	200
Davis, Andrew J., Hartford, Mich. Weather-strip for doors	337,250	Mar. 2	493	128	34	1017
Davis, Arthur W. S., assignor to F. Taylor, Lowell, Mass. Individual electric signal	336,095	Feb. 16	1436	379	34	710
Davis, Daniel, Jr., Auburndale, and G. F. Gale, Revere, Mass., assignors to Electrical Development and Manufacturing Company, Portland, Me. Signal or call box	337,356	Mar. 2	633	167	34	1043
Davis, Denzel W. (See Spence, Hamilton, assignor.)						
Davis, George H., Washington, D. C. Electric alarm-clock	338,935	Mar. 30	2813	742	34	1460
Davis, Henry T., New York, N. Y. Quilting-frame for sewing-machines	334,646	Jan. 19	1632	435	34	316
Davis, James E., Palmyra, Ohio. Pipe-wrench	333,836	Jan. 5	468	126	34	87
Davis, James E., Palmyra, assignor of one-half to T. C. Snyder, Canton, Ohio. Earth-boring machine	333,931	Jan. 5	596	163	34	112
Davis, John, Providence, R. I. Bobbin-holder for spindles of spinning-machines	333,997	Jan. 12	687	188	34	137
Davis, John, Albany, N. Y. Carving-machine	336,096	Feb. 16	1438	379	34	711
Davis, John H., Covington, Ky. Spring	337,048	Mar. 2	282	59	34	966
Davis, John K., Philadelphia, Pa. Machine for sizing, straightening, and finishing tubes	336,999	Mar. 2	27	7	34	931
Davis, John R., Bristol, Wis. Whiffletree-hook	333,837	Jan. 5	468	127	34	87
Davis, Johnson C., Athens, Ga. Water-elevator	337,251	Mar. 2	494	129	34	1017
Davis, Joseph B., Monroeville, Ind. Saw-mill dog	334,515	Jan. 19	1453	390	34	282
Davis, Leroy G. (See Lent, Addison, assignor.)						
Davis, Lewis, Jackson, Ohio. Reclining-chair	337,132	Mar. 2	337	88	34	988
Davis, Nathan H., Philadelphia, Pa. Spring	337,669	Mar. 9	1063	274	34	1124
Davis, Robert C., Indianapolis, Ind. Heel	333,612	Jan. 5	151	41	34	30
Davis, Samuel. (See Garrigues and Davis.)						
Davis, Samuel J. (See Alldridge, Arthur H., assignor.)						
Davis Sewing Machine Company. (See Poor, Nelson P., assignor.)						
Davis, Solomon P., Napa, Cal. Lifting-jack	337,484	Mar. 9	840	213	34	1084
Davis, Stephen S., Chicago, Ill. Tilting gate	333,504	Jan. 5	10	4	34	5
Davis, Theodore D., Williamsport, Pa. Spring chair and seat	333,998	Jan. 12	667	188	34	137
Davis, Theodore D., Syracuse, N. Y. Hand-rake	337,932	Mar. 16	1412	366	34	1193
Davis, Theodore D., Williamsport, Pa. Hand-rake	337,933	Mar. 16	1415	366	34	1193
Davis, Thomas, and W. W. Tyler, Cleveland, Ohio. Feed-water heater	337,670	Mar. 9	1064	274	34	1124
Davis, William B., assignor of one-half to J. W. Stephens, Norfolk, Va. Kitchen-boiler cleaner	337,748	Mar. 9	1160	301	34	1140
Davis, William E., Chelsea, assignor to J. Grant, Boston, Mass. Billiard-chalk holder	337,311	Mar. 2	581	153	34	1033
Davis, William H., Fort Wayne, Ind. Letter and index holder	337,671	Mar. 9	1065	275	34	1124
Dawson, John F., assignor to L. S. Burridge, New York, N. Y. Type-writing machine	334,693	Jan. 19	1607	453	34	327
Day, Andrew J., Pittsburg, Pa., assignor to himself and W. F. Thompson, Cleveland, Ohio. Attachment for rod-rolling mills	336,703	Feb. 23	2315	606	34	873
Day, Charles B. (See Geery, Jackson, and Day.)						
Day, Edward G., Riverside, Conn. Lemon holder and squeezer	335,343	Feb. 2	363	94	34	506
Day, Frank P., Jackson, Mich. Bath-tub	336,797	Feb. 23	2433	640	34	895
Day, Luther. (See Knipe and Day.)						
Day, Robert E. (See Lord, Henry S., assignor.)						
Dayton, Melville E., Chicago, Ill. Car-wheel-truing machine	334,647	Jan. 19	1633	435, 436, 437	34	316
D'Esté, Julian, Medford, Mass. Valve for water-closets	335,022	Jan. 26	2124	566	34	414
D'Heureuse, Rudolph, New York, N. Y. Drill for wood and other materials	334,757	Jan. 26	1786	475	34	359
De Aguirre y Lizaola, José M., Bilbao, Spain. Lift or hoist	337,049	Mar. 2	223	59, 60	34	966
De Buell, Arthur. (See Noyes and Gardner, assignors.)						
De Ferranti, Sebastian Z., 5 Stanwick Road, West Kensington, county of Middlesex, England. Mechanism for making spectacle-frames	338,340	Mar. 23	1972	518, 519, 520	34	1305
De Ferranti, Sebastian Z., West Kensington, county of Middlesex, England. Electric meter	338,568	Mar. 23	2305	603, 604	34	1362
De Guerre, Peter, Toronto, Ontario, Canada. Base-plate for rail-chairs	338,569	Mar. 23	2308	604	34	1362
De Hardt, John, Kansas City, Mo. Burning brick	337,672	Mar. 9	1066	275	34	1125
De Jean, Fred. E., Newburyport, Mass. Can or box	336,094	Feb. 16	1434	379	34	710
De Kinder, Joseph J. (See Globeler, Ernst A. C., assignor.)						
De Kinder, Joseph J., Philadelphia, Pa. Pump	335,111	Feb. 2	14	5	34	443
De Kinder, Joseph J., Philadelphia, Pa. Valve	335,112	Feb. 2	16	5	34	443
De la Bastie, François, B. A. R., Paris, France. Manufacture of articles made from toughened glass	334,754	Jan. 26	1783	474	34	358

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
De Lamar, John R. (See Hooper, William, assignor.)						
De Laval, Gustaf, Stockholm, Sweden. Centrifugal creamer	335,344	Feb. 2	363	94, 95	34	507
De Lemos, Theodore, and A. W. Cordes, New York, N. Y. Construction of buildings	334,694	Jan. 19	1698	453	34	327
De Lisser, Richard L., Brooklyn, N. Y. Centrifugal filter	337,050	Mar. 2	225	60	34	967
De Logerot, Richard, New York, N. Y. Ventilator	334,571	Jan. 19	1529	409	34	296
De Meuron & Cuénod, A., *et al.* (See Thury, René, assignor.)						
De Neve, Anthony P. (See Mets, Elisha, assignor.)						
De Quillfeldt, Charles, New York, N. Y. Tool for forming threads, &c., upon bottles, &c.	333,733	Jan. 5	327	90	34	61
De Redon, Constant F., assignor to J. F. Moreau, Paris, France. Electric bell	333,614	Jan. 5	153	42	34	31
De Rycke, J. Joseph, New York, N. Y. Water-closet	334,941	Jan. 26	2009	536	34	394
De Silva, Dwight M., assignor to M. Olcott and H. H. Kendall, Corning, N. Y. Combined tobacco box and cutter	335,425	Feb. 2	485	126	34	529
De Souza, Antoine, Paris, France. System of utilizing wave-power	335,113	Feb. 2	18	6	34	444
De St. Aubin, Charles A. A. T., St. Louis, Mo. Galvanic battery and switch for telephone systems	338,938	Mar. 30	2816	743	34	1460
De Steiger, Edward A., La Salle, Ill. Fruit-jar	336,890	Feb. 23	2437	641	34	895
De Tamble, Martin, assignor to Roth, McMahon & Co., Chicago, Ill. Cake, jumble, and snap machine. (Reissue)	10,691	Feb. 23	2559	675, 676	34	918
De Valin, William H., San Rafael, Cal. Variable crank and eccentric	335,745	Feb. 9	990	245	34	614
De Witt, Augustus, Birdsborough, Pa. Eaves-trough brace and hanger	336,718	Mar. 30	2506	663	34	1404
De Witt, Caleb S., Lockport, Ill. Spool for barbed wire	336,043	Mar. 16	1579	409	34	1221
De Zeng, Henry L., Geneva, assignor to himself, A. G. Lucas, Utica, and W. D. Burrall, Waterloo, N. Y. Fastening for rail way-rails	334,696	Jan. 19	1700	454	34	328
Deal, Jacob J., Jonesville, Mich. Two-wheeled vehicle	334,989	Jan. 26	2006	535	34	398
Deal, Josiah J., assignor to W. M. Johnston, Wilmot, Ohio. Force-pump	337,749	Mar. 9	1161	302	34	1141
Dean, George W., New York, N. Y. Exercise rocking-chair	337,934	Mar. 16	1416	366	34	1194
Dear, James W., Dayton, Ohio. Corn-planter	337,485	Mar. 9	841	213	34	1084
Death, William E., Brixton, county of Surrey, England. Apparatus for scutching and cleaning fibrous stems, leaves, and the like	336,395	Feb. 16	1686	403	34	769
Debenoit, Auguste. (See Berthon and Debenoit.)						
Debuysère, Carl, Stuttgart, Wurtemberg, Germany. Finger-exercising device	336,216	Feb. 16	1630	425, 426	34	743
Decker, Charles F., *et al.* (See Bunce, Lewis D., assignor.)						
Decker, Charles F., Salt Lake City, Utah Ter. Washing-machine	336,299	Feb. 16	1760	460	34	764
Decker, Cornelius, assignor, by mesne assignments, of one-half to A. Trombly, Pullman, Ill. Car-axle box	337,565	Mar. 9	940	241	34	1102
Dederick, Peter K., Loudonville, N. Y. Baling-press	333,999	Jan. 12	668	188	34	137
Dederick, Peter K., Loudonville, N. Y. Baling-press	334,000	Jan. 12	669	189	34	137
Dederick, Peter K., Loudonville, N. Y. Baling-press	334,001	Jan. 12	691	189, 190	34	138
Dederick, Peter K., Loudonville, N. Y. Baling-press	334,002	Jan. 12	693	190	34	138
Dederick, Peter K., Loudonville, N. Y. Baling-press	334,003	Jan. 12	695	191	34	138
Dederick, Peter K., Loudonville, N. Y. Baling-press	334,004	Jan. 12	696	191, 192	34	138
Dederick, Peter K., Loudonville, N. Y. Baling-press	334,005	Jan. 12	699	192	34	139
Dederick, Peter K., Loudonville, N. Y. Baling-press	337,935	Mar. 16	1416	367	34	1194
Dederick, Peter K., Loudonville, N. Y. Baling-press	338,936	Mar. 30	2814	742	34	1460
Deeble, John, assignor of one-half to J. B. Savage, Southington, Conn. Manufacture of ox-shoes	336,900	Mar. 2	27	7	34	932
Deeble, John, assignor of one-half to J. B. Savage, Southington, Conn. Die for trimming ox-shoes	336,901	Mar. 2	28	7	34	932
Deeble, John, assignor of one-half to J. B. Savage, Southington, Conn. Ox-shoe	338,937	Mar. 30	2815	742	34	1460
Deck, Henry, Swanton, Ohio. Carpenter's and painter's scaffold	336,253	Mar. 23	1654	467	34	1264
Deeley, John, Jr., Aston, county of Warwick, England. Cartridge-extractor for break-down guns	335,021	Jan. 26	2121	565	34	414
Deering, William. (See Noyes, La Verne W., assignor.)						
Delahunty, James, Merrimac, Mass. Carriage-body	337,252	Mar. 2	495	129	34	1017
Delamare-Debouteville, Edouard, and L. P. C. Malandin, Fontaine-le-Bourg, Seine-Inférieure, France. Gas-engine	333,838	Jan. 5	469	127	34	87
Delamater & Co., C. H. (See Frenzel, Arthur B., assignor.)						
Delancy, Edward J., San José, Cal. Spray-nozzle	334,110	Jan. 12	857	226	34	166
Delano, William W., Jr., Waterbury, Vt. Churn	336,217	Feb. 16	1634	427	34	743
Delanoy, Charles H., Jr., New York, N. Y. Towel-holder	336,704	Feb. 23	2316	606	34	873
Del Genovese, Virgilio. (See Ghezzi, Romeo E., assignor.)						
Delitsch, Bernhard. (See Voigt, F. Herman, assignor.)						
Dell, William H., New York, N. Y. Folding bed	335,434	Feb. 2	484	126	34	508
Delmage, William A., assignor of one-half to A. A. Hanscom, Lowell, Mass. Spindle-step for spinning-machines	336,300	Feb. 16	1761	460	34	765
Demarest, John, assignor to J. L. Mott Iron Works, New York, N. Y. Cistern for water-closets	337,133	Mar. 2	338	88	34	988
Deming, Ernest, Middletown, Conn. Halter-trimming	334,755	Jan. 26	1785	474	34	358
Deming, Ernest, Middletown, Conn. Suspender-end	336,396	Feb. 16	1686	403	34	769
Deming, Ernest, Middletown, Conn. Suspender-end	337,750	Mar. 9	1161	302	34	1141
Deming, William L. (See Haydn, George, assignor.)						
Demmer, Mathew N. (See Wilhelm and Demmer.)						
Denise, O. H. (See McNeill, Solomon, assignor.)						
Denison, Henry, *et al.* (See Graves, John, assignor.)						
Denison, Russel A., Providence, R. I. Insulating electric cables	334,850	Jan. 26	1897	506	34	378
Denn, Clayton, Philadelphia, Pa. Stop-motion for warping-machines	338,042	Mar. 16	1571	409	34	1221
Denney, Harmer, Brooklyn, N. Y. Tag-making machine	334,220	Jan. 12	1031	274, 275	34	200
Dennis, Fred F., Worcester, Mass. Metal-planing machine	335,744	Feb. 9	998	245	34	614
Dennis, John, and J. A. Coram, Lowell, assignors to said Coram and S. M. Crosby, executor of N. Crosby, deceased, Boston, Mass. Soap-press	333,505	Jan. 5	10	5	34	5
Denslow, William H., assignor of one-half to J. Joralemon, Troy, Pa. Heater	334,695	Jan. 19	1699	453	34	328
Denton, James E., Hoboken, N. J. Rock-drill	335,900	Feb. 9	1150	308, 309	34	655
Denton, James E., Hoboken, N. J. Foot for rock-drills	335,901	Feb. 9	1161	309	34	655
Denton, James E., Hoboken, N. J. Bushing for rock-drill chucks	336,397	Feb. 16	1687	494	34	790
Denton, Joseph B., Newtown, N. Y. Fertilizer-distributer	336,798	Feb. 23	2434	640	34	895
Denver, James, New Haven, Conn. Car-seat arm	334,756	Jan. 26	1785	474	34	358
Denzer, Solomon, *et al.* (See Powell and Nolan, assignors.)						
Dopp, Hezekiah E., Sedalia, Mo. Air-compressor	333,613	Jan. 5	152	41	34	30

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Depp, Thomas, Moore's Station, and E. H. Selby, Marysville, Cal. Gate	334,516	Jan. 19	1454	390, 391	34	283
Derby, George H., Somerville, Mass. Lumber-drier	334,940	Jan. 26	2007	585	34	398
Derby, Scott B., Utica, Nebr. Bird-cage bracket	336,218	Feb. 16	1635	427	34	743
Derham, Samuel G., New York, assignor to C. P. Lenk, Brooklyn, N. Y. Filtering fabric	336,799	Feb. 23	2436	640	34	895
Derham, Samuel G., New York, assignor to C. P. Lenk, Brooklyn, N. Y. Pressure-filter	337,486	Mar. 9	842	213	34	1084
Deroulin, Alfred. (See Millen and Deroulin.)						
Dery, Jules E., Brussels, Belgium. Carburetting-lamp	334,851	Jan. 26	1898	506	34	378
Desmond, John, Cleveland, Ohio, assignor to R. Stephens, Detroit, Mich. Steam-injector	334,354	Jan. 12	1232	331	34	236
Desmond, John, assignor to R. Stephens, Detroit, Mich. Injector	336,398	Feb. 16	1888	494	34	790
Detroit Iron Tower Company. (See Adams, John S., assignor.)						
Detterer, John T., Willshire, Ohio. Bedstead	337,936	Mar. 16	1419	367	34	1194
Devany, James M., Hoboken, N. J. Machine for scraping rattan	335,800	Feb. 9	1012	268	34	629
Deverell, Persee, assignor to himself and J. B. Robinson, Rousville, Pa. Clothes-drier	337,566	Mar. 9	942	241	34	1102
Devereux, Walter B., Aspen, Colo. Slag-buggy	335,114	Feb. 2	21	7	34	444
Devers, James M., *et al.* (See Devers, William J., assignor.)						
Devers, William J., assignor to himself, J. M. Devers, and W. T. O'Malley, Providence, Pa. Vehicle-brake	337,134	Mar. 2	339	88	34	988
Dew, Martin, Casa City, Mich. Self-raking attachment for reapers and harvesters	337,751	Mar. 9	1102	302	34	1141
Dewey, Charles L. (See Dewey, Pliuney F., assignor.)						
Dewey, Pliuney F., assignor of one-half to C. L. Dewey, Minneapolis, Minn. Odorless excavating apparatus	336,902	Mar. 2	29	8	34	932
Dewey, William C., *et al.* (See Kenney, Thomas M., assignor.)						
Dexter, George A., and E. J. Patterson, Waltham, Mass. Device for supporting the drop-rolls of warping-machines	336,301	Feb. 16	1762	461	34	765
Diamond, Matthew, Tarrytown, and W. H. Brock, Newtown, N. Y. Making drill-bits	333,506	Jan. 5	13	5	34	6
Dibble, Seymour H., assignor of one-half to M. I. Weller, Washington, D. C. Heating attachment for lamps	337,135	Mar. 2	340	88	34	988
Dickenson, Charles, Portland, Oreg. Automatic marine governor	337,817	Mar. 16	1951	507	34	1165
Dickinson, Elmer, Belair, Mich. Mower	334,758	Jan. 26	1788	475	34	353
Dickinson, Silas C., Wilton, Iowa. Electric-clock movement	334,517	Jan. 19	1456	391	34	283
Dickson, Robert M. (See Jewell and Dickson.)						
Dickson, Spartan C., Greenville, S. C. Cotton-thinner	335,180	Feb. 2	134	34	34	465
Diefendorf, Abram. (See Eckerson, David I., assignor.)						
Diehl, Philip. (See Greene and Diehl.)						
Diehl, Philip, Elizabeth, N. J., assignor to Singer Manufacturing Company of New Jersey. Sewing-machine shuttle	337,818	Mar. 16	1962	507	34	1165
Dieter, Louis F. (See Kelly and Dieter.)						
Dietz, Joseph A., assignor of one-half to E. J. Wimmer, St. Mary's, Pa. Making leather water-proof	334,518	Jan. 19	1457	.....	34	283
Dilg, Henry W. (See Thielsen, Giroux, and Dilg.)						
Dill, Mathew, Piqua, Ohio. Car-coupling	334,365	Jan. 12	1233	331	34	236
Dill, Richard M., Morgantown, Ind. Combined waste way and drain for ponds	337,819	Mar. 16	1963	507	34	1165
Dillenbeck, Jerome, and J. W. Neahr, Palatine Bridge, N. Y. Hop-box awning	335,115	Feb. 2	23	7	34	444
Dilley, Martin A., Waseepi, Mich. Railway-crossing	337,253	Mar. 2	496	129, 130	34	1017
Dillon, Daniel, Nashville, Tenn. Fan	338,839	Mar. 30	2817	743	34	1461
Dillon, William H., Glasgow, Ky. Shoe-fastening	338,044	Mar. 16	1573	410	34	1221
Dilworth, J. C. (See Laverty, Charles E., assignor.)						
Dinan, Charles C., Fall River, assignor to Atherton Machine Company, Lowell, Mass. Traveler-cleaner for ring-spinning frames	338,831	Mar. 30	2671	703	34	1433
Dingee, Samuel. (See Hennessy, Thomas B., assignor.)						
Dingman, William R., Niantic, Ill. Refrigerator attachment for wells	335,086	Feb. 9	837	222	34	597
Dinsmore, Sewall A., *et al.* (See Houghton, Darius, assignor.)						
Dinsmore, William G., Oakland, Cal. Oil-can	338,832	Mar. 30	2672	703	34	1433
Dishmaker, John B., Carlton, Wis. Cockle and grain separator	337,051	Mar. 2	227	60	34	967
Dissett, Thomas, Rochester, N. Y. Delivery-wagon	334,759	Jan. 26	1789	475	34	358
Diver, James B., *et al.* (See Matteson, Eugene L., assignor.)						
Dixon, Ellis W., Yakima, Wash. Ter. Washing-machine	337,136	Mar. 2	341	89	34	989
Dixon, Henry M., New York, assignor to himself and H. S. Hollingsworth, Brooklyn, N. Y. Soldering-iron	334,942	Jan. 26	2013	536	34	394
Doane, William H., Cincinnati, Ohio. Planing and matching machine	336,994	Feb. 9	1275	338, 339	34	675
Doane, William H., Cincinnati, Ohio. Cutter-head	337,487	Mar. 9	843	213	34	1084
Dobbins, David P., Buffalo, N. Y. Alarm-whistle for steam-boilers	334,519	Jan. 19	1457	391	34	283
Dobson, Charles E., assignor to H. Benary's Sons, New York, N. Y. Banjo	338,142	Mar. 16	1705	444	34	1247
Dodd, Union, South Bend, assignor to W. Holland, Plymouth, Ind. Bridge-gate	336,843	Feb. 23	2497	658	34	907
Dodds, Joseph H. and T., Cedartown, Ga. Fertilizer-distributer	337,312	Mar. 2	582	153	34	1033
Dodds, Thomas. (See Dodds, Joseph H. and T.)						
Dodge, A. Edgar, Woburn, Mass. Leather-splitting machine	337,820	Mar. 16	1964	327, 328	34	1166
Dodge, Charles F., Philadelphia, Pa. Car-starter	334,111	Jan. 12	858	236	34	166
Dodge, Christopher G., Jr., Baltimore, Md. Vent-bung and faucet-plug	334,590	Jan. 19	1458	391	34	284
Dodge, Ezra S. (See Adams and Dodge.)						
Dodge, J. Wesley, Malden, Mass. Sole-edge-burnishing machine	339,049	Mar. 30	2965	789, 790	34	1488
Dodge, Theodore A., trustee. (See Shaler, Nathaniel S., assignor.)						
Dodge, Theodore A., Brookline, Mass. Machine for manufacturing bottle-covers	336,097	Feb. 16	1440	360	34	711
Dodge, Thomas H., Worcester, Mass. Stocking	338,341	Mar. 23	1975	520	34	1305
Dodson, Roy, Central, Mo. Nut-lock	333,839	Jan. 5	471	128	34	87
Dodson, Watkins H. (See Jarrell, William, assignor.)						
Doerfler, Frederick, Springfield, Ill. Brick-machine	337,137	Mar. 2	342	89	34	989
Doerflinger, Chris, assignor to Fahys Watch Case Company, Sag Harbor, N. Y. Watch-case spring	333,840	Jan. 5	471	128	34	87
Doherty, Patrick W., Boston, Mass. Soil or drain pipe	336,470	Feb. 16	1994	522	34	808
Doll, August, Lena, Ill. Plane	334,943	Jan. 26	2013	536	34	394
Doll, August, Lena, Ill. Sleigh-knee	336,555	Feb. 23	2102	553	34	534
Dombrowski, Fredrich, and J. Woltmann, St. Louis, Mo. Lasting-machine	337,752	Mar. 9	1164	302, 303	34	1141
Donaldson, Walter H., San Francisco, Cal. Compound engine	333,507	Jan. 5	15	5, 6	34	6
Donelson, Charles M., *et al.* (See Bunce, Lewis D., assignor.)						
Donnell, Edward P., Chicago, Ill. Perforating attachment for ruling-machines	335,570	Feb. 9	676	178	34	598
Donnell, Edward P., Chicago, Ill. Folding-machine	337,937	Mar. 16	1490	367	34	1194

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Donovan, James F., Fall River, Mass. Stench-trap	333,841	Jan. 5	473	128	34	88
Donovan, John E., Cincinnati, Ohio. Sewing-machine table-frame and treadle	334,521	Jan. 19	1459	392	34	284
Dooley, Maurice J., Chicago, Ill. Argand burner for lamps	334,417	Jan. 19	1311	355	34	257
Dooley, Samuel B., Beatrice, Nebr. Combined counter and show-case	334,356	Jan. 12	1234	331	34	236
Doolittle, Merritt E., assignor to Beedle & Kelly Company, Troy, Ohio. Corn-planter	337,313	Mar. 2	583	153, 154	34	1033
Doolittle, Thomas B., Bridgeport, Conn. Telephone-circuit	335,436	Feb. 2	487	127	34	529
Doolittle, William E., New Haven, Conn. Manufacture of matches	337,821	Mar. 16	1966	508	34	1166
Dooly, John E., St. Louis, Mo. Gas-burner attachment for stoves	334,143	Mar. 16	1705	444	34	1247
Dootson, William. (See Lucas and Dootson.)						
Dordinger, William F., New York, N. Y. Bottling-machine	334,357	Jan. 12	1235	332	34	236
Dormitzer, Anna, New York, N. Y. Window-cleaning chair	335,215	Feb. 2	188	50	34	474
Dormitzer, Anna, New York, N. Y. Ornamental step-ladder	336,219	Feb. 16	1636	427	34	744
Dorsey, Albert G. P., Clarksburg, Ind. Clothes-line	336,705	Feb. 23	2317	606	34	873
Derward, William B., Marion, Ohio. Oil-cup for skate and other journals	337,822	Mar. 16	1966	508	34	1166
Doten, Charles C., Plymouth, Mass. Nail	335,181	Feb. 2	135	34	34	465
Doty, Charles E., Rock Falls, Ill. Steel-wire brush	338,719	Mar. 30	2507	664	34	1404
Doty, James, Marion, Wis. Device for coupling and splicing railway-rails	333,842	Jan. 5	474	128	34	88
Doubleday, Harry M., New York, N. Y., assignor of three-fourths to J. S. Humbird, F. S. Marr, Harrisburg, Pa., and J. Lyman, Middlefield, Conn. System of electric lighting	335,060	Jan. 26	2181	579	34	423
Dougherty, Edward D., Philadelphia, Pa. Automatic railway-signal	338,720	Mar. 30	2508	664	34	1404
Dougherty, Tiberius, assignor of one-half to H. J. Bergman, Philadelphia, Pa. Cue-tip fastener	334,648	Jan. 19	1638	427	34	317
Dougherty, William, and J. P. Feeley, Chester, Pa. Steam-boiler	337,138	Mar. 2	343	89	34	989
Douglas, Archibald D. B., Seafield, Ardrossan, county of Ayr, Scotland. Link-motion for working valves	336,844	Feb. 23	2498	658	34	907
Douglas, Richard B., New York, N. Y. Projectile	336,556	Feb. 23	2102	553	34	834
Douglass, Addison H., Memphis, Tenn. Metallic wrapping for cotton, &c	335,216	Feb. 2	191	50	34	474
Dougrey, Howard M. (See Fleming, James, assignor.)						
Doutney, George, Brooklyn, N. Y. Automatic safety gas-burner	334,572	Jan. 19	1531	409	34	297
Dow, Edward E. (See Clark, David O., assignor.)						
Dow, Josiah, Lowell, Mass. Governor for motors	334,112	Jan. 12	859	236	34	167
Dow, Orrin C., Orange, Mass. Mainspring-winder	335,023	Jan. 26	2125	566	34	414
Dowell, Reuben H., Waverly, Nebr. Punching-machine	337,139	Mar. 2	345	89	34	989
Dower, James A., assignor of one-half to G. P. Castle, Honolulu, Hawaii. Machine for bending, shaping, and setting the timbers or frames of boats or small vessels	333,615	Jan. 5	154	42	34	31
Dowling, North, Philadelphia, Pa. Telephone-receiver	333,992	Jan. 5	507	163	34	112
Dowling, North, Philadelphia, Pa. Telephone-transmitter	335,510	Feb. 2	583	152, 153	34	545
Dowling, North, Philadelphia, Pa. Telephone-transmitter	335,511	Feb. 2	585	153	34	545
Dowling, North, Philadelphia, Pa. Diaphragm for telephone-receivers	337,753	Mar. 9	1166	303	34	1141
Downing, J. J., *et al.* (See Smith, George W., assignor.)						
Downing, John S., *et al.* (See James, Winfield E., assignor.)						
Drainage Construction Company. (See Waring, George E., Jr., assignor.)						
Drake, Charles C., Trenton, N. J. Telegraph and telephone protector	336,040	Feb. 9	1341	355	34	687
Drake, John I., Providence, R. I. Electric meter	335,687	Feb. 9	838	222	34	597
Drake, Walter D., Santa Fé, Mo. Breast-strap hook	333,734	Jan. 5	330	90	34	62
Drake, William P., Brown County, Ohio. Pitman eye and connection	334,418	Jan. 19	1313	356	34	258
Draper, James O. (See Barden, John S., assignor.)						
Draper & Sons, George. (See Bradley, Edward E., assignor.)						
Draper & Sons, George. (See Greene and Young, assignors.)						
Draver, Emil R., Stillwater, Minn. Centrifugal reel. (Reissue)	10,696	Mar. 9	1234	320, 321	34	1154
Drayer, Adam U., and V. C. Hatfield, Middletown, Ohio. Machine for casing tobacco	333,933	Jan. 5	598	163	34	112
Drayton, Benjamin A., New York, N. Y. Bird-cage	334,573	Jan. 19	1532	409, 410	34	297
Dresser, Samuel P., Pleasant Mount, Mo. Wood-sawing machine	334,574	Jan. 19	1533	410	34	297
Drew, Charles, St. Louis, Mo. Quarter-boot for horses	339,050	Mar. 30	2966	790	34	1489
Drew, John. (See Major, Charles G., assignor.)						
Drew, Walter J. (See Bissell and Drew.)						
Dreyfus, Jules R. (See Graves and Dreyfus.)						
Drill, Charles, St. Louis, Mo. Street-sweeping machine	338,721	Mar. 30	2510	664, 665	34	1404
Driskell, Madison M., assignor of one-half to S. A. and S. C. Haseltine, Springfield, Mo. Drag-saw	337,754	Mar. 9	1166	304	34	1142
Dronak, Joseph, Elizabeth, N. J. Hair-crimper	339,067	Mar. 30	3039	802	34	1497
Dryer, Bernhard A., New York, N. Y. Automatic apparatus for dry disinfecting materials	333,934	Jan. 5	509	164	34	112
Dryfoos & Co., L. (See Hildt, August, assignor.)						
Dryfoos, Louis, New York, N. Y. Combined skirt and bustle	338,634	Mar. 23	2372	624	34	1374
Dubber, John F., Brooklyn, N. Y. Jeweler's box	335,746	Feb. 9	932	245	34	614
Ducker, William M. (See Abbott, Phillips, assignor.)						
Dudgeon, Addelbert, Bradenville, Pa. Window-fastening device	336,302	Feb. 16	1763	461	34	765
Dudgeon, Richard. (See Weeks and Traver, assignors.)						
Duffey, James H., St. Paul, Minn. Steam-engine relief-valve	333,616	Jan. 5	156	42	34	31
Duffy, Walter B. (See Feely, Lawrence, assignor.)						
Dugan, Robert C., Millersburg, Ohio. Water-elevator	335,061	Jan. 26	2183	580	34	423
Dugar, Delano H., Cedartown, Ga. Cut-off valve	335,995	Feb. 9	1280	340	34	676
Duhamel, Léon, Paris, France. Apparatus for starting and propelling wheeled vehicles	335,062	Jan. 26	2184	580	34	424
Dohring, Henry A., *et al.* (See Bellale, Robert S., assignor.)						
Dukehart, Thomas M. (See Reilly and King, assignors.)						
Dula, Jacob, Charlotte, N. C. Combined bag and twine holder	334,358	Jan. 12	1236	332	34	236
Dumke, Charles, Portland, Wis. Horse marsh-shoe	338,166	Mar. 16	1735	453	34	1253
Dumler, Andrew P. (See Frausmann, John H., assignor.)						
Dummer, Edward, Boston, Mass. Spinning-spindle and bearing therefor	336,903	Mar. 2	30	8	34	932
Dumontier, Alexander C., and A. Plourde, assignors of three-fifths to H. W. Harding, A. Dumontier, and W. M. Dwight, Detroit, Mich. Chip-breaker	336,845	Feb. 23	2499	658	34	907
Dumontier, Arthur, *et al.* (See Dumontier and Plourde, assignors.)						
Dumoulin, Adrien J. A., Paris, France, assignor to Compagnie de Fives Lille. Continuous apparatus operated by centrifugal power	338,393	Mar. 23	2055	539	34	1318
Duncan, Charles I. (See Richmond, Henry T., assignor.)						
Duncan, Robert D., assignor of one-half to A. Wallace, Omaha, Nebr. Strainer for catch-basins	333,935	Jan. 5	600	164	34	112
Dunham, Kate, Holloway, Mich. Corset	334,359	Jan. 12	1237	332	34	237
Dunham, Ralph C., New Britain, Conn. Artificial leg	336,904	Mar. 2	32	8	34	932

Alphabetical list of patentees, January to March, inclusive—Continued.

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Dunlap, Robert. (See Keator, Charles E., assignor.)						
Dunn, Henry F., Eagle Lake, Tex. Clevis	334,760	Jan. 26	1790	476	34	353
Dunn, J. Paris, New York, N. Y. Apparatus for printing tickets	334,697	Jan. 19	1701	454	34	328
Dunn, Leonard F., Community, N. Y. Animal-trap	335,512	Feb. 2	586	153	34	545
Dunning, Frank A., Blue Island, Ill. Seal-lock	337,938	Mar. 16	1421	367 / 368	34	1194
Duntley, Silas Q. (See Wheeler and Duntley.)						
Durançon, Pierre, Lyons, France. Mechanism for opening and separating threads of hanks or skeins	334,113	Jan. 12	862	237	34	167
Durand, Albert A., New York, N. Y. Cow-milker	335,182	Feb. 2	135	34, 35	34	465
Durand, Jean B., St. Chamond, France, assignor to E. and J. Wright, C. S. Howe, G. T. Morey, Philadelphia, Pa., and H. Filson, New York, N. Y. Retainer for umbrellas	336,846	Feb. 23	2500	650	34	907
Durham, Frederick W., and J. D. Churchill, London, England. Apparatus for effecting intermittent action of fog and other signals	336 041	Feb. 9	1343	355	34	667
Durling, Jacob C., Marine City, Mich. Wire hoop	336,706	Feb. 23	2318	607	34	873
Durrans, Thomas, London, England. Connecting water apparatus with soil-pipes	335,513	Feb. 2	587	153	34	545
Duryea, Charles E., St. Louis, Mo. Bicycle	333,936	Jan. 5	601	164	34	113
Duschanek, Karl, Freiburg, Germany. Calculating-machine	334,419	Jan. 19	1314	356 / 357	34	258
Dushane, James. (See Case and Dushane.)						
Duvall, W. C. (See Kirkbride, Frederick L., assignor.)						
Dwight, E. E., *et al.* (See Houlehan, James, assignor.)						
Dwight, William M., *et al.* (See Dumontier and Plourde, assignors.)						
Dwight, William M., Detroit, Mich. Sheathing-lath	338,220	Mar. 16	1809	472	34	1267
Dye, Martin E., Fayetteville, N. C. Suspension-rack	339,088	Mar. 30	3039	803	34	1497
Dyer, James L., and J. A. Berry, Elmira, N. Y. Two-wheeled vehicle	336,513	Feb. 16	2040	535 / 536	34	817
Dyer, Richard N., assignor to Commercial Telegram Company, New York, N. Y. Printing-telegraph	335,775	Feb. 2	266	70	34	488
Dyer, Samuel. (See Whiteley, Bayley, and Dyer.)						
Dyott, Charles G. (See Dyott, Michael B. and C. G.)						
Dyott, Michael B. and C. G., Philadelphia, Pa. Lamp	334,698	Jan. 19	1704	454 / 455	34	329
Dyson, Thomas. (See Matthews, Dyson, and Ormerod.)						
Eagle Pencil Company. (See Benson, Henry C., assignor.)						
Eagle Pencil Company. (See Boman, Claes W., assignor.)						
Eagle Pencil Company. (See Fischer, Frederick J. W., assignor.)						
Eagle Pencil Company. (See Kraus, Samuel, assignor.)	335,163	Feb. 2	137	35	34	465
Eames, Gardner T., Cincinnati, Ohio. Loose pulley	336,349	Mar. 23	1976	520	34	1205
Eames, Hiram W., Milford, Mass. Ball fastening or clutch	335,801	Feb. 9	1014	268	34	629
Earl, Rasselas E., Dunkirk, N. Y. Carriage-top	338,940	Mar. 30	2818	743	34	1461
Earle, William L., and C. G. Crofoot, Tully, N. Y. Spring-vehicle	334,165	Jan. 12	943	255	34	189
Easley, Henry L., Fredericksville, Ill. Wheel-harrow						
Eastern Electric Cable Company. (See Clark, Henry A., assignor.)						
Eastman, Sylvester, Providence, R. I., assignor to Synchronous Time Company of Portland, Me. Clock-pendulum	337,384	Mar. 9	676	177	34	1057
Eastman, Sylvester, Providence, R. I., assignor to Synchronous Time Company of Portland, Me. Electric regulator for pendulum clocks	337,385	Mar. 9	677	177	34	1057
Easton & Burnham. (See Burnham, George W., assignor.)						
Easton, Thomas S., New York, N. Y. Tempering-bulb for syringes, &c	338,045	Mar. 16	1574	410	34	1231
Eastwood, James W., Thorold, Ontario, Canada. Trimming attachment for sewing-machines	334,114	Jan. 12	864	237	34	168
Eaton, Cole & Burnham Company. (See Tomlinson, Edwin R., assignor.)						
Eberhard, George F., Cleveland, Ohio. Harness-trimming	334,006	Jan. 12	701	193	34	139
Eberhard, George F., Cleveland, Ohio. Harness trimming	334,007	Jan. 12	702	193	34	139
Eberhard, George F., assignor to Eberhard Manufacturing Company, Cleveland, Ohio. Harness-terret	335,116	Feb. 2	23	7	34	445
Eberhard Manufacturing Company. (See Eberhard, George F., assignor.)						
Eberman, Albert S., Cleveland, Ohio. Injector	334,858	Jan. 26	1902	507	34	874
Ebken, John G., Pittsburg, Pa. Fifth-wheel gear for vehicles	338,394	Mar. 23	2057	539	34	1318
Eby, J. Daniel, trustee. (See Bonta, James W., assignor.)						
Eccleston, William H., Southbridge, Mass. Nose-guard for eyeglasses	333,843	Jan. 5	475	129	34	88
Eckardt, Johannes C., Stuttgart, Germany. Mechanism for turning Christmas-trees with or without accompaniment of music	333,617	Jan. 5	157	42, 43	34	31
Eckersall, Walter, Hyde Park, Ill. Burglar-alarm	334,761	Jan. 26	1791	476	34	853
Eckerson, David I., assignor of one-half to A. Diefendorf, Worcester, N. Y. Machine for making wire bale-ties	337,939	Mar. 16	1423	368 / 369 / 370	34	1195
Economy Kindling Wood Stove Company. (See Wiegand, S. Lloyd, assignor.)						
Eddleman, Francis N., assignor of three-fourths to W. J. Howard, J. C., A. C., and J. H. Cooper, Mount Pleasant, Tenn. Car-coupling	338,823	Mar. 16	1267	328	34	1166
Eddy, George D., assignor of one-half to B. E. Valentine, Brooklyn, N. Y. Printing on resawed lumber	338,046	Mar. 16	1575	410	34	1222
Eddy, Irvine H. (See Williams and Eddy.)						
Eddy, Oscar H., *et al.* (See McCall, William H., assignor.)						
Eddy, Walden G., *et al.* (See McCall, William H., assignor.)						
Edel, Theodore S. (See Green, Edel, and Pagel.)						
Edison Electric Light Company. (See Edison, Thomas A., assignor.)						
Edison Electric Light Company. (See Sprague, Frank J., assignor.)						
Edison Electric Light Company. (See Wheeler, Schuyler S., assignor.)						
Edison Lamp Company. (See Howell, John W., assignor.)						
Edison, Thomas A., Menlo Park, N. J., assignor to Edison Electric Light Company, New York, N. Y. Mold for carbonizing	334,853	Jan. 26	1904	507	34	874
Edison, Thomas A., Menlo Park, N. J., and S. Bergmann, New York, N. Y. Telephone	337,254	Mar. 2	499	130	34	1018
Edlebrock, William F. (See Parker, John J., assignor.)						
Edmiston, Levi Q., assignor of one-half to F. L. Wright, Smithton, Mo. Bag and twine holder	335,063	Jan. 26	2186	561	34	494
Edmunds, George, *et al.* (See Bartels, William H., assignor.)	336,557	Feb. 23	2103	553	34	834
Edson, William, Somerville, Mass. Disinfecting-mat	335,902	Feb. 9	1162	309	34	655
Edwards, Charles D., Albert Lea, Minn. Cockle separating machine						
Edwards, Charles M., *et al.* (See Rawbone, Joseph L., assignor.)						
Edwards, Thomas, Amherst, Nova Scotia, Canada. Chimney-cap	336,707	Feb. 23	2318	607	34	873
Edwards, William F., Summit, N. J. Paper-making machine	334,072	Jan. 12	801	219 / 220	34	157

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Egan Company. (See Bugbee and Danner, assignors.)						
Eggers, Ferdinand, Milwaukee, Wis. Whiffletree-hook	337,255	Mar. 2	500	130	34	1018
Egli, Eugene. (See Phillips, Theodore, assignor.)						
Egnew, Alvin, near Leesburg, Ky. Poke	337,386	Mar. 9	679	178	34	1058
Egolf, John H. (See Beisel, Franklin P., assignee.)						
Ehbets, Carl J. (See Franklin and Ehbets.)						
Ehlermann, Charles, St. Louis, Mo., and C. G. Mayer, Nauvoo, Ill. Grain-drier	336,905	Mar. 2	34	9	34	933
Ehrlich, Friedrich E. P., Gohlis, near Leipsic, Saxony, Germany. Mechanical musical instrument	335,903	Feb. 9	1163	309 / 310	34	656
Ehrlich, Friedrich E. P., Gohlis, near Leipsic, Saxony, Germany. Mechanical musical instrument	338,496	Mar. 23	2189	573	34	1344
Ehrlich, Leo, St. Louis, Mo. Safety-razor	338,047	Mar. 16	1575	410	34	1222
Ehrlich, Leo, St. Louis, Mo. Razor	338,167	Mar. 16	1736	453	34	1254
Eickemeyer, Rudolf, Yonkers, N. Y. Hat-brim-curling machine	334,221	Jan. 12	1034	275 / 276	34	801
Eickemeyer, Rudolf, Yonkers, N. Y. Hat-brim-heating machine	338,497	Mar. 23	2190	573	34	1244
Eickemeyer, Rudolf, Yonkers, N. Y. Setting-press for curling hat-brims	338,498	Mar. 23	2192	574	34	1344
Eickemeyer, Rudolf, Yonkers, N. Y. Hat-brim-curling machine	338,499	Mar. 23	2195	574 / 575	34	1344
Eickemeyer, William C., *et al.* (See Wickiser, Samuel, assignor.)						
Ells, Bette E. J., Washington, D. C. Duplex telegraph	337,314	Mar. 2	565	154	34	1034
Eisen, Hermann J., assignor to Waterbury Watch Company, Waterbury, Conn. Mechanism for timing balances	339,051	Mar. 30	2967	790	34	1489
Eisenstein, Julius D. (See Krones, Ernest A., assignor.)						
Eklund, Carl A., and J. F. Westin, Worcester, Mass. Lathe-tool	337,673	Mar. 9	1068	275	34	1125
Elder, Joseph, Peoria, Ill. Traction-wheel	335,904	Feb. 9	1164	310	34	656
Elder, Niles C., Fergus Falls, Minn. Combination wash-sink	335,437	Feb. 2	488	127	34	529
Eldon, Mayberrie S., Williamsport, Pa. Clamp for holding dynamo-electric brushes while being filed	337,824	Mar. 16	1268	329	34	1166
Electric Time Company. (See Carey, Julian E., assignor.)						
Electric Time Company. (See Sweet, D. Fred, assignor.)						
Electrical Development and Manufacturing Company. (See Davis and Gale, assignors.)						
Elkins, Jedediah K. (See Kuykendall and Elkins.)						
Eller, James H., Canton, Ohio. Metal roofing	336,098	Feb. 16	1441	380	34	711
Ellinger, John F. (See Shaw and Ellinger.)						
Elliot, John W., Toronto, Ontario, Canada. Fire-proof garment	334,360	Jan. 19	1227	332	34	237
Elliott, Francis E., U. S. Army. Car-step	338,048	Mar. 16	1577	411	34	1222
Elliott, John C., Rittman, Ohio. Car starter and brake	335,217	Feb. 2	191	51	34	474
Elliott & Moseley Watch Spring Company. (See Elliott, Myron W., assignor.)						
Elliott, Myron W., assignor to Elliott & Moseley Watch Spring Company, Elgin, Ill. Die for drawing watch-springs	333,735	Jan. 5	331	91	34	62
Elliott, Walter S., Brooklyn, N. Y., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Rubber-dam clamp	335,747	Feb. 9	932	246	34	615
Ellis, Charles C (See Rettberg and Ellis.)						
Ellis, Edward, *et al.* (See Rodehaver, Oscar F., assignor.)						
Ellis, George A., Gardner, Mass., assignor to Haywood Bros. & Co., New York, N. Y. Baby-carriage	336,303	Feb. 16	1763	461	34	765
Ellis, George B. (See Ellis, John, assignor.)						
Ellis, James M., New Haven, Conn. Machine for capping nails	336,994	Mar. 2	148	40	34	932
Ellis, John, assignor to G. B. Ellis, East Coventry, Pa. Thrashing-machine	336,339	Feb. 16	1889	494 / 495 / 496	34	790
Ellis, John, assignor to G. B. Ellis, East Coventry, Pa. Thrashing-machine	336,400	Feb. 16	1893	494 / 495 / 496	34	790
Ellis, Richard E., assignor of two-thirds to G. N. Kuntzsch, Syracuse, and T. W. Meachem, Onondaga, N. Y. Machine for treating leaf-tobacco	339,069	Mar. 30	3040	803	34	1497
Ellis, William F., New York, N. Y. Book-cutting machine	336,304	Feb. 16	1764	462	34	766
Ellison, Charles A., Mineola, N. Y. Two-wheeled vehicle	338,500	Mar. 23	2208	605	34	1362
Elrich, Robert C., Southington, Conn. Pipe-cutter	333,618	Jan. 5	158	43	34	32
Elmer, William H., and A. P. Boardman, Berlin, Wis. Wood-polishing machine	335,117	Feb. 2	24	7, 8	34	445
Elmore, Benton, Shasta, Cal. Mowing-machine	334,762	Jan. 26	1791	476	34	853
Ely, Lewellen A., Muir, Mich. Exhibitor for paper-hangings, &c	337,315	Mar. 2	567	154	34	1034
Emden, Victor. (See Joas, César F., assignor.)						
Emerson, Francis, *et al.* (See Faires, Joseph J., assignor.)						
Emerson, John W., assignor to himself and C. W. Mills, Opopka, Fla. Rotary engine	334,854	Jan. 26	1905	507	34	874
Emerson, Ralph, *et al.* (See Nelson, J. and A., assignors.)						
Emerson, Robert R., Pilot Oak, Ky. Churn-motor	334,522	Jan. 19	1461	392	34	284
Emerson, Talcott & Co. (See Jones, James H., assignor.)						
Emerson, Victor H., New York, N. Y. Hand-stamp	334,008	Jan. 12	702	193	34	139
Emery-Gates Sectional Ladder and Manufacturing Company of New York. (See Gates, Frank W., assignor.)						
Emery, J. Henry, *et al.* (See Stetson, Charles T., assignor.)						
Emery, Stephen, Cameron, Mo. Gate	337,674	Mar. 9	1069	276	34	1125
Emmons, Melvin A., Wauseon, Ohio. Flood-gate	334,490	Jan. 19	1390	357 / 358	34	256
Emons, Fowler W., Philadelphia, Pa. Fire-escape	337,940	Mar. 16	1498	370	34	1196
Empire Drill Company. (See Sheldon and Patterson, assignors.)						
Endicott, George M., Canton, Mass. Playing-card	337,755	Mar. 9	1168	304	34	1142
Engelberg, Arthur L., Omaha, Nebr. Horse-detaching device for vehicles	338,049	Mar. 16	1579	411	34	1222
Engelbrekison, Andrew, Worcester, Mass. Skate	335,438	Feb. 2	489	127	34	529
Engelhardt, John. (See Schmidt, Christian, assignor.)						
Engle, Stephen D., Hazleton, Pa. Magazine spring-gun	334,575	Jan. 19	1534	410	34	297
English, Andrew J., assignor of one-half to P. Crosley, Cincinnati, Ohio. Carburetor	333,508	Jan. 5	17	6	34	6
English, James G., New Haven, Conn. Carriage-curtain fastening	337,140	Mar. 2	346	90	34	989
English, John C., New York, N. Y. Gas-burner	335,439	Feb. 2	490	128	34	529
Enright, Joseph, San José, Cal. Bridge-wall or fire-arch support	337,941	Mar. 16	1430	371	34	1196
Ensign, Hermon L. (See Smith, William T., assignor.)						
Ensign, Theodore W. (See Getchell, Augustus W., assignor.)						
Ensling, Philipp, assignor of one-half to J. Stambly, Norwich, Conn. Head-rest	336,514	Feb. 16	9041	536	34	817
Ents, George W., Washington, D. C. Latch-guard attachment for knitting-machines	334,491	Jan. 19	1321	358	34	259
Entwistle, Thomas C., Melrose, Mass. Warping-machine	336,477	Feb. 16	1996	522	34	809
Eppler & Adams Sewing Machine Company. (See Adams, Edwin, assignor.)						
Eppler, Andrew, Jr., Boston, Mass. Boot and shoe nail	334,361	Jan. 12	1239	333	34	227
Eppler, Andrew, Jr., Boston, Mass. Wire-burring machine	334,362	Jan. 12	1239	333	34	227

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Epsteyn, Nathan H. (See Marcus and Epsteyn.)						
Equitable Electric Company. (See Holcombe, Alfred G., assignor.)						
Erlander, Frank C., Rockford, Ill. Table-leaf support	338,254	Mar. 23	1855	487	34	1994
Erlanger, Charles, Baltimore, Md. Overalls	337,816	Mar. 2	588	155	34	1035
Ernest, Harry, *et al.* (See Wickizer, Samuel, assignor.)						
Ernst, Victor H., Jersey City, N. J. Tapping-machine	338,937	Jan. 5	608	164 / 165	34	112
Ernst, Victor H., Jersey City, N. J. Machine for easing the levers of type-writers	335,118	Feb. 2	26	8	34	445
Ertel, George, Quincy, Ill. Baling-press	336,806	Feb. 16	1766	462	34	766
Ertel, George, Quincy, Ill. Baling-press	337,567	Mar. 9	942	241	34	1102
Ervin, William, Argentine, Kans. Gage and clamp for weather-boarding, &c	334,363	Jan. 12	1241	334	34	237
Ervin, William, Argentine, Kans. Bracket-clamp for shingling	337,825	Mar. 16	1989	329	34	1167
Eschbach, Francis L., New York, N. Y. Machine for cutting cloth	335,996	Feb. 9	1989	340	34	677
Escherich, Frank X., Buffalo, N. Y. Combined faucet and beer-pump	338,650	Mar. 16	1580	411	34	1222
Espenschied, Charles. (See Allyn, William M., assignor.)						
Espenschied, Charles. (See Blake, Francis H., assignor.)						
Esplin, Charles, Minneapolis, Minn. Nose-guard for saw-mill head-blocks	336,631	Feb. 23	2212	577	34	852
Estabrook, Alanson C., assignor to Florence Manufacturing Company, Florence, Mass. Dental-plate brush	335,345	Feb. 2	365	95	34	507
Estell, Samuel F., Chicago, Ill. Combined latch and lock	335,064	Jan. 26	2186	561	34	494
Esterly Harvesting Machine Company. (See Vandewater, Joseph, assignor.)						
Ethridge Lasting Machine Company. (See Ethridge, Martin V. B., assignor.)						
Ethridge, Martin V. B., Boston, Mass., assignor to Ethridge Lasting Machine Company, Kittery, Me. Tack-filling machine	335,514	Feb. 2	589	154	34	545
Ethridge, Martin V. B., Boston, Mass., assignor to Ethridge Lasting Machine Company, Kittery, Me. Tack-driving machine	335,515	Feb. 2	590	154	34	545
Evans, Austin C., Springfield, Ohio. Harrow	336,906	Mar. 2	36	9	34	933
Evans, Benjamin D., Byhalia, Ohio. Stove-pipe drum	338,145	Mar. 16	1706	445	34	1948
Evans, Edward, assignor of one-half to J. H. Whitbread, Quincy, Ill. Pattern for molding stove-lids	337,052	Mar. 2	228	60	34	967
Evans, Richard A., and A. Turner, Statesville, N. C. Tobacco-package	336,801	Feb. 23	2438	641	34	905
Evans, Thomas R., Philadelphia, Pa. Shoe	338,144	Mar. 16	1706	444	34	1948
Evans, William, Philadelphia, Pa. Drilling-machine	335,184	Feb. 2	138	35, 36	34	465
Evarts, John A., assignor to Bradley & Hubbard Manufacturing Company, Meriden, Conn. Extension lamp-fixture	335,997	Feb. 9	1223	340	34	677
Everitt, Percival, London, England. Weighing-machine	336,042	Feb. 9	1344	355 / 356	34	687
Everitt, Percival, London, England. Recorder for weighing-machines	336,043	Feb. 9	1346	356 / 357	34	688
Evers, Johannes, New York, N. Y. Chisel-bar for scraping soda-kettles, &c	337,488	Mar. 9	844	214	34	1084
Evertz, Otto. (See Ruge and Evertz.)						
Evinger, Noah, Terre Haute, Ind. Corn-husking device	337,141	Mar. 2	347	90	34	990
Ewan, Evan, Bridgeton, N. J. Roof cleaner and trimmer	338,140	Mar. 16	1707	445	34	1248
Ewart, Otto, Cleveland, Ohio. Vapor-burner	334,166	Jan. 12	944	255	34	162
Ewing Brothers. (See Preston, Richard, assignor.)						
Eynon, William R., assignor of one-half to J. W. Field, Cleveland, Ohio. Grinding-mill	338,221	Mar. 16	1810	472	34	1267
Eyre, Walter, 167 Ellesmere Road, Sheffield, county of York, England. Making wheels	338,108	Mar. 16	1737	453	34	1254
Faas, Rudolph, assignor of one-half to M. Wineman, Chicago, Ill. Car-axle lubricator	338,051	Mar. 16	1581	412	34	1223
Faber, Henri. (See Paulus and Faber.)						
Fahey, Michael, Oakland, Cal. Receptacle attachment for dash-boards	338,833	Mar. 30	2673	703	34	1433
Fahey, Michael, Oakland, Cal. Receptacle attachment for dash-boards	337,896	Mar. 16	1969	529	34	1167
Fairner, Andrew, Milledgeville, Ill. Mechanical movement						
Fairy Watch Case Company. (See Doerflinger, Chris, assignor.)						
Fairbanks, Crawford M., Lincoln, R. I. Machine for cutting files	334,115	Jan. 12	865	237	34	168
Fairbanks, Henry, St. Johnsbury, Vt., assignor to Feed-Water Heater Company, Portland, Me. Feed-water heater	337,756	Mar. 9	1168	304	34	1142
Fairbanks, Thaddeus, St. Johnsbury, Vt. Feed-water heater	336,902	Feb. 23	2439	641	34	906
Fairos, Joseph J., assignor of two-thirds to F. Emerson and J. R. Cummins, McKinney, Tex. Stalk and weed cutter	333,938	Jan. 5	605	165	34	113
Fairless, William H., Portsmouth, Va. Lathe-center	333,619	Jan. 5	159	43	34	32
Falconnet, Eugene F., assignor of one-half to H. M. Pierce, Nashville, Tenn. Apparatus for the manufacture of iron and steel	338,722	Mar. 30	2512	665	34	1405
Falconnet, Eugene F., assignor of one half to H. M. Pierce, Nashville, Tenn. Manufacturing steel	338,723	Mar. 30	2515	665	34	1405
Falk, Edward, Gilbertville, Iowa. Sulky-plow	338,634	Mar. 30	2675	704	34	1434
Fanson, William E. (See Benham, Cornelius W., assignor.)						
Fanyo, Frank, and W. H. Wright, Watseka, Ill. Harness	335,440	Feb. 2	492	128	34	530
Farber, J. Frederick. (See Klippert, Charles, assignor.)						
Farbfabriken formerly Brönner. (See Martius, C. Alexander, assignor.)						
Farley, Almer, Coomer, N. Y. Churn	335,802	Feb. 9	1016	269	34	630
Farley, Bernard, San Francisco, Cal. Exercising-machine	337,942	Mar. 16	1431	371	34	1196
Farley, John C., Hearne, Tex. Cotton-chopper	338,255	Mar. 23	1853	467 / 468	34	1284
Farmer, Henry. (See Henley and Farmer.)						
Farmer, Moses G., New York, N. Y. Adjustable bed for invalids	335,441	Feb. 2	493	128 / 129	34	530
Farmer, Moses G., New York, N. Y. Apparatus for forming sheet-metal by electro-deposition	335,905	Feb. 9	1165	310	34	656
Farmer, Moses G., New York, N. Y. Apparatus for forming wire by electrolysis	338,941	Mar. 30	2819	744	34	1461
Farmer, Moses G., New York, N. Y. Apparatus for computing proportion	335,906	Feb. 9	1167	310	34	656
Farnham, E. Wilson, Chicago, Ill. Apparatus for computing proportion						
Farnham, Eunice A. (See Farnham, Frederick W., assignor.)						
Farnham, Frederick W., assignor to E. A. Farnham, White Mills, Pa. Match	335,065	Jan. 26	2189	561	34	425
Farnham, Moses G., Germantown, Cal. Wheel-plow	336,395	Mar. 23	2057	539	34	1319
Farnsworth, Frederick B. (See Kenna, Thomas M., assignor.)						
Farnsworth, George. (See Schmid, Charles, assignor.)						
Farr, Hiram G., Boston, Mass. Axle-lubricator	338,052	Mar. 16	1583	412	34	1223
Farr, Willis M., Dowagiac, Mich. Sand-band for vehicles	336,558	Feb. 23	2104	553	34	834
Farr, Willis M., Dowagiac, Mich. Vehicle seat-lock	338,256	Mar. 23	1857	488	34	1285
Farrar, John N., New York, N. Y. Dentist's chair	336,230	Feb. 16	1637	427	34	744
Farrar & Trefts. (See Hoffman, William M., assignor.)						
Farrow, George W., *et al.* (See Ammon, James W., assignor.)						
Farrow, George W. (See Swinehart, George W., assignor.)						
Farson, Enoch S., Philadelphia, Pa. Refrigerator	337,256	Mar. 2	501	130	34	1019
Fasoldt, Charles, Albany, N. Y. Microscope	334,009	Jan. 12	703	193	34	140

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Faust, James A., Salt Lake City, Utah Ter. Stove for railway-cars	336,221	Feb. 16	1639	428	34	744
Fawkes, Joseph W., Oak Park, Ill. Advertising apparatus	336,478	Feb. 16	1998	523	34	909
Fay, Charles N., Chicago, Ill. Building and system for laying electric conductors therein	334,763	Jan. 26	1793	477	34	854
Fay, Charles P. (See Bullard, James H., assignor.)						
Fay, Charles P., Springfield, Mass. Rapidly-adjusting nut for calipers and dividers	334,764	Jan. 26	1795	478	34	854
Fay, Daniel A., West Brattleborough, Vt. Folding table	338,835	Mar. 30	2676	704	34	1434
Fay, W. Lamartine, Elyria, Ohio. Wheeled dirt-scraper	334,422	Jan. 19	1322	358	34	259
Federmeyer, Leon P., assignor to himself and A. Brisbois, Leadville, Colo. Hair-tonic	338,942	Mar. 30	2690	.....	34	1461
Feed-Water Heater Company. (See Fairbanks, Henry, assignor.)						
Feeley, James P. (See Dougherty and Feeley.)						
Feely, Lawrence, assignor of one-half to W. B. Duffy, Rochester, N. Y. Receptacle for carrying beer	338,053	Mar. 16	1584	412	34	1221
Feeney, John J., Amesbury, Mass. Boot or shoe	334,364	Jan. 12	1241	334	34	238
Fehn, John E., St. Clair, Pa. Combined blasting-barrel, measuring-rule, and drill-hole scraper	334,765	Jan. 26	1796	478	34	855
Felbel, Jacob, New York, N. Y. Blotter	337,675	Mar. 9	1070	276	34	1125
Felder, John L., Leesburg, Tex. Plow	338,054	Mar. 16	1585	412	34	1223
Feldmann, Alfred, Bremen, Germany. Manufacturing ammonia	337,387	Mar. 9	680	.....	34	1058
Fellheimer, Louis. (See Nagle, Ella, assignor.)						
Felmlee, John H., Greeley, assignor of one-half to G. C. Norris, Denver, Colo. Sash-holder	335,094	Jan. 26	2127	506	34	414
Felps, Thomas, Near Kent's Store, La. Cotton-scraper attachment	336,903	Feb. 23	2441	641	34	906
Felsenthal, Gabe, Louisville, Ky. Button	338,055	Mar. 16	1585	413	34	1223
Fenner, George P., New London, Conn. Sheet-delivery apparatus for printing-machines	335,066	Jan. 26	2189	581 / 582	34	425
Fenner, James E., and D. Brunson, Kansas City, Mo. Oat-hulling machine	335,668	Feb. 9	841	223	34	507
Fennerty, John M., Memphis, Tenn. Car-window	333,620	Jan. 5	161	43 44	34	32
Fennerty, John M., Washington, D. C. Railway-chair	335,067	Jan. 26	2192	562	34	425
Ferchland, Ernst, Brooklyn, N. Y. Fastening for billiard-cue tips	338,724	Mar. 30	2517	666	34	1405
Ferguson, Arthur C., Saratoga, N. Y. Electric lighting apparatus	334,366	Jan. 12	1242	334 / 335	34	238
Ferguson, Arthur C., Saratoga, N. Y., assignor, by mesne assignments, to D. R. Noble, Jersey City, N. J. Multiplex electric light	334,365	Jan. 12	1242	334	34	238
Ferguson, George, Glidden, Iowa. Show-cover for boxes	338,943	Mar. 30	2821	744	34	1461
Ferguson, James, Bridgewater, Mass. Engine-valve	335,571	Feb. 9	677	178 / 179	34	568
Ferguson, James, Bridgewater, Mass. Packing for pistons	336,223	Feb. 16	1641	428 / 429	34	745
Ferguson, James H., assignor to Lovejoy, Son & Co., New York, N. Y. Stereotype-shaving machine	335,276	Feb. 2	268	70, 71	34	488
Ferguson, James H., Brooklyn, assignor to Lovejoy, Son & Co., New York, N. Y. Edge-guard for planes	336,222	Feb. 16	1640	428	34	744
Ferguson, James H., Brooklyn, assignor to Lovejoy, Son & Co., New York, N. Y. Machine for bending metal plates	338,944	Mar. 30	2822	745	34	1462
Ferguson, James R. and J., Chester, Conn. Bill-holder	335,907	Feb. 9	1168	311	34	657
Ferguson, John. (See Ferguson, James R. and J.)						
Ferguson, Judah H., Battle Run, Mich. Dumping-wagon	333,844	Jan. 5	476	129	34	88
Ferguson, William B., Rochester, N. Y. Remedy for skin diseases	338,725	Mar. 30	2517	.....	34	1406
Fernald, Alexander B. and D. T. Lawson, Jersey City, N. J. Apparatus for transferring grain, &c	337,388	Mar. 9	681	178	34	1058
Ferrell, George. (See Barley, James H., assignor.)						
Ferris, Hiram R., Cleveland, Ohio. Safety attachment for elevators	337,317	Mar. 2	569	155	34	1032
Ferron, Exist X., Cornwall, Ontario, Canada. Pool-rack and game-counter	335,089	Feb. 9	842	223	34	598
Ferry, Dexter M. (See Morrow, George L. K., assignor.)						
Ferry, Edwin R., New Haven, Conn. Sash-fastener	336,100	Feb. 16	1445	381	34	712
Fesca, Albert, Berlin, Germany. Manufacturing sugar bars and plates	334,855	Jan. 26	1906	508	34	375
Fevrot, Claude M., Lyons, France, assignor to Wanner & Fevrot, St. Paul, Minn. Apparatus for compressing air	336,224	Feb. 16	1642	429	34	745
Fiberlene Collar Company. (See Butterworth, Robert, assignor.)						
Fiberlene Collar Company. (See March, George N., assignor.)						
Field, Albert D., New York, N. Y. Curtain-pole ring	337,053	Mar. 2	229	61	34	967
Field, Hiram, Smithville, Ontario, assignor to himself and J. H. Smith, North Grimsby, Canada. Pump	336,147	Mar. 16	1708	445	34	1248
Field, James W. (See Eynon, William R., assignor.)						
Field, John S., Chicago, Ill. Slush-remover from ice-elevators	337,318	Mar. 2	591	155	34	1035
Field, Stephen D., assignor to Commercial Telegram Company, New York, N. Y. Printing-telegraph	338,343	Mar. 23	1977	521	34	1305
Field, Stephen D., assignor to Commercial Telegram Company, New York, N. Y. Printing-telegraph	338,344	Mar. 23	1978	521	34	1306
Fielden, John. (See Petrie and Fielden.)						
Fielding, John. (See Tweddell, Platt, and Fielding.)						
Fielding, John, Gloucester, county of Gloucester, England. Valve-gear for duplex engines	334,576	Jan. 19	1536	411	34	298
Fifield, Levi W., Worcester, Mass. Book-binding attachment	336,796	Mar. 30	2518	666 / 667	34	1406
Figueiredo, Francisco D., *et al.* (See Morrell, Augustine, assignor.)						
Fillebrown, Luther W., Piqua, Ohio, and F. B. Chandler, Wayne, Me. Invalid-bedstead	335,218	Feb. 2	193	51	34	475
Fillmore, Charles W., Marengo, Ill. Vehicle-hub	335,442	Feb. 2	495	129	34	530
Filson, Harris, *et al.* (See Durand, Jean B., assignor.)						
Finch, Charles H. (See Campbell and Finch.)						
Finch, Henry, Manistee, Mich. Rowlock	338,845	Mar. 23	1979	521	34	1306
Finch, Henry C., Oil City, Pa. Machine for breaking submerged rock	339,080	Mar. 30	2041	803 / 804	34	1497
Fink, Catharine, Baltimore, Md. Lubricating compound	335,443	Feb. 2	497	.....	34	530
Finkensieper, Charles, *et al.* (See Lindner, Ferdinand, assignor.)						
Finneran, Charles C., assignor of three-fourths to O. G. Tuttle, M. J. Wilson, and W. C. Reed, Painesville, Ohio. Machine for coiling metal strips	333,509	Jan. 5	20	6	34	6
Finney, James J., Junction City, Tex. Buggy-top support	334,856	Jan. 26	1909	508	34	375
Fischel, Daniel C., Troy, N. Y. Parasol or umbrella	334,368	Jan. 12	1245	335	34	238
Fischer, August, assignor of one-half to J. F. Potts, White Hall, Ill. Striking mechanism for clocks	336,985	Mar. 2	150	41	34	952
Fischer, August, Winchester, assignor of one-half to J. F. Potts, White Hall, Ill. Striking mechanism for clocks	336,986	Mar. 2	151	41	34	953
Fischer, Frederick J. W., Jersey City, N. J., assignor to Eagle Pencil Company, New York, N. Y. Pencil or crayon holder	335,908	Feb. 9	1169	311	34	657

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Fischer, Frederick J. W., Jersey City, N. J., assignor to Eagle Pencil Company, New York, N. Y. Lead or crayon holder	336,044	Feb. 9	1348	257	34	668
Fischer, Henry, New York, N. Y. Steam rock-drill	336,401	Feb. 16	1894	496	34	791
Fischer, Sigfried M. (See Street, John W., assignor.)	336,257	Mar. 23	1858	488	34	1265
Fish, Burton M., Hamburg, N. Y. Necktie-fastener						
Fisher, Charles H., *et al.* (See Lawrence, Alvin, assignor.)						
Fisher, Edda A. (See Fisher, William N. and E. A.)						
Fisher, Ernest G. (See Needles and Fisher.)						
Fisher, Frank E., Detroit, Mich. Electric motor	335,998	Feb. 9	1284	340	34	677
Fisher, Frank E., Detroit, Mich. Magneto-electric bell	335,999	Feb. 9	1285	341	34	677
Fisher, Frank E., Detroit, Mich. Magneto-electric machine	336,000	Feb. 9	1286	341	34	677
Fisher, Frank E., Detroit, Mich. Annunciator	336,001	Feb. 9	1287	341	34	678
Fisher, Frank E., Detroit, Mich. Telephone call-bell system	336,002	Feb. 9	1288	342	34	678
Fisher, Frank E., Detroit, Mich. Push-button	336,003	Feb. 9	1291	343	34	678
Fisher, Frank E., Detroit, Mich. Electric-clock system	336,004	Feb. 9	1291	344	34	678
Fisher, Frank E., Detroit, Mich. Mechanism for extracting steel and iron fragments from grain	336,402	Feb. 16	1895	496	34	791
Fisher, Frank E., assignor to Merchants Store Railway Company, Detroit, Mich. Cash-carrier propelling mechanism	334,649	Jan. 19	1639	438	34	317
Fisher, Harvey L., Toledo, Iowa. Weighing-scale	335,909	Feb. 9	1171	311	34	657
Fisher, Henry. (See Prentiss, Stone, and Fisher.)						
Fisher, John J. (See Haught and Fisher.)						
Fisher, John R., and L. T. Knobnoster, assignors to themselves, J. C. and A. P. Winkler, C. Cobb, G. Hardey, and A. E. Vest, Johnson County, Mo. Duplex propeller-pump	336,148	Mar. 16	1710	445	34	1248
				446		
Fisher, Leander T. (See Fisher, John R. and L. T.)						
Fisher, Lewis W., Rockville, Ind. Portable fence	334,577	Jan. 19	1537	411	34	298
Fisher, Peter, Oak Creek, Wis. Feed-chain for feed-cutters	334,367	Jan. 12	1244	325	34	238
Fisher, Willett, Homer, N. Y. Bob-sled	336,632	Feb. 23	2213	577	34	852
Fisher, William N. and E. A., Xenia, Ind. Kitchen-cabinet	338,836	Mar. 30	2677	704	34	1434
Fisk, Clark & Flagg. (See Heath, Henry, assignor.)						
Fiske, Henry G., assignor of one-half to A. K. Patton, Jr., Springfield, Mass. Razor-guard	333,736	Jan. 5	334	91	34	62
Fitch, E. T., *et al.* (See Hubbard, George M., assignor.)						
Fitch, Frederick K. (See Cardwell and Fitch.)						
Fitch, Frederick K., *et al.* (See Cardwell, George A., assignor.)						
Fitch, Horace A., New York, N. Y. Apparatus for aging spirituous liquors, wines, &c	334,222	Jan. 12	1037	276	34	201
Fitch, W., *et al.* (See Hubbard, George M., assignor.)						
Fitts, Isaac, Nashua, N. H. Rod-cutter	338,396	Mar. 23	2059	540	34	1319
Fitz Gerald, Walter H., Brooklyn, N. Y. Making watch-case stems	338,500	Mar. 23	2200	575	34	1345
				576		
Fitz Gerald, Walter H., Brooklyn, N. Y. Die for making watch-case stems	338,501	Mar. 23	2201	576	34	1345
				577		
Fitz Gerald, Walter H., Brooklyn, N. Y. Die for making watch-case stems	338,502	Mar. 23	2202	577	34	1345
Fitz Gerald, Walter H., Brooklyn, N. Y. Watch-case stem	338,503	Mar. 23	2203	577	34	1345
Fitz Gerald, Walter H., Brooklyn, N. Y. Stem winding and setting mechanism for watches	338,945	Mar. 30	2894	745	34	1462
Fitz Gerald, Walter H., Brooklyn, N. Y. Stem winding and setting watch	338,947	Mar. 30	2899	746	34	1463
Fitz Gerald, Walter H., Brooklyn, N. Y., and E. A. Marsh, West Newton, Mass. Stem winding and setting watch	338,946	Mar. 30	2897	746	34	1462
Fitzhugh, Benjamin G., Frederick, assignor to V. Gaddess, Baltimore, Md. Blacking-brush	338,504	Mar. 23	2203	578	34	1345
Fitzhugh, Henry A. (See McComas and Fitzhugh.)						
Fitzhugh, Henry H. (See McComas and Fitzhugh.)						
Fitzpatrick, Daniel. (See Worn, Frank, assignor.)						
Fitzpatrick, Thomas J., Monticello, Ohio. Weather strip	336,907	Mar. 2	36	9	34	933
Flach, Arthur B., assignor, by mesne assignments, to T. L. Flach, New York, N. Y. Adjustable and balancing seesaw	335,846	Feb. 2	366	95	34	507
Flach, Theresa L. (See Flach, Arthur B., assignor.)						
Flagg, Elisha, New York, N. Y. Rivet	337,149	Mar. 2	348	90	34	990
Flagg, G. H. P., trustee. (See Bradford, Charles K., assignor.)						
Flagg, George C., Columbus, Ill. Draft-equalizer	336,708	Feb. 23	2319	607	34	874
Flagg, George H. P. (See Fullerton, George A., assignor.)						
Flatau, Louis S., Pittsburg, Tex. Seed-planter	334,223	Jan. 12	1038	276	34	201
Fleeming, John G. W., Emerson, Iowa. Stove-hood or heat-collector	336,559	Feb. 23	2104	554	34	834
Fleming, James, Troy, assignor of one-half to H. M. Dougrey, Lansingburg, N. Y. Apparatus for brushing and shaping sand cores	334,493	Jan. 19	1395	358	34	259
Fleming Manufacturing Company. (See Lathrop, Elisa, assignor.)						
Flemmings, Robert F., Jr., assignor of one-fourth to C. L. Sprague, Melrose, Mass. Guitar	336,727	Mar. 30	2521	667	34	1406
Flersheim, Lemuel H. (See Potter, James, assignor.)						
Flesher, Henry, St. Louis, Mo. Mop-wringer	337,676	Mar. 9	1071	276	34	1195
Fletcher, Augustus, assignor to himself and R. E. Carter, Jr., Hazleton, Pa. Condenser	336,306	Feb. 16	1767	462	34	766
Fletcher, Daniel C., Grand Rapids, Mich. Folding ironing-table	337,389	Mar. 9	983	178	34	1058
Fletcher, George, Litchurch, county of Derby, England. Centrifugal machine	335,690	Feb. 9	844	223	34	598
Flewwelling, Gilford, and G. J. Harris, Hampton, New Brunswick, Canada. Making matches	335,516	Feb. 2	593	154	34	546
Flexible Flooring Company, A. & H. (See Adams and Hasson, assignors.)						
Fliegel, Josef. (See Püttmann and Fliegel.)						
Flint, Edwin H., Cincinnati, Ohio. Safe-lock	336,505	Mar. 23	2204	578	34	1345
				579		
Flint, Jarvis M., Thayer, Kans. Device for converting motion	337,568	Mar. 9	945	241	34	1109
Flint, Marietta, New York, N. Y. Bouquet-holder	337,569	Mar. 9	946	242	34	1109
Flint, William W., assignor to Chicago Stamping Company, Chicago, Ill. Folding lunch-box	335,119	Feb. 2	97	8, 9	34	445
Flocke, Robert, Newark, N. J., assignor to R. Neumann & Co., New York, N. Y. Bag, satchel, &c	339,052	Mar. 30	2969	791	34	1489
Florence Manufacturing Company. (See Estabrook, Alanson C., assignor.)						
Floyd, Charles A., Eastbourn, county of Sussex, England. Hanson cab	333,845	Jan. 5	477	129	34	88
Foley, James B. (See Holdsworth and Foley.)						
Follett, David, Weedsport, N. Y. Wrench	334,010	Jan. 12	704	194	34	140
Fonerden, Clarence A., and H. Bell, New York, N. Y. Insect-powder gun	337,943	Mar. 16	1433	371	34	1197
Fontaine, Allen S., New York, N. Y. Speaking-tube	336,479	Feb. 16	2000	584	34	899
Foos, John. (See Rein, Bernard, assignor.)						
Foote, Edward H., Somerville, Mass. Bicycle	334,578	Jan. 19	1538	411	34	298
Foote, Henry R., New York, N. Y. Grain-drier	333,939	Jan. 5	605	165	34	113

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Forbes, Alston J., assignor of one-half to V. H. Henderson, Campbell, Tex. Railway nut-wrench	336,908	Mar. 2	37	10	34	934
Forbes, George, London, county of Middlesex, England. Dynamo-electric machine	338,169	Mar. 16	1737	453	34	1254
				454		
Forbes, William A., *et al.* (See Kellogg, William H., assignor.)						
Forbis, Arthur F., McLeansville, N. C. Tobacco-drier	337,677	Mar. 9	1071	276	34	1195
Ford, Johnson P., Frazier, Cal. Pump	338,501	Mar. 23	2209	605	34	1363
Ford, Joseph S., Philadelphia, Pa. Lamp	338,728	Mar. 30	2585	667	34	1407
Ford, Luke R., *et al.* (See O'Riordan, James, assignor.)						
Ford, Thomas J., assignor of one-half to F. S. Turner, Geneva, Ohio. Oven for vapor-stoves	337,757	Mar. 9	1170	305	34	1142
Forder, Milton. (See McCollom and Forder.)						
Forderer, Joseph F., San Francisco, Cal. Skylight	334,650	Jan. 19	1640	438	34	317
Forderer, Joseph F., San Francisco, Cal. Skylight	334,651	Jan. 19	1642	438	34	318
Foreman, Ebenezer M., assignor of one-half to J. W. Keyhoe, Fairmount, Ill. Wagon-stake	336,847	Feb. 23	2501	659	34	907
Foreman, Lydie K. (See Foreman, Milton, assignor.)						
Foreman, Milton, assignor to L. K. Foreman, Philadelphia, Pa. Steam generator and superheater	338,229	Mar. 16	1811	472	34	1267
Forg, Peter, Somerville, Mass. Mirror-hinge	334,944	Jan. 26	2014	536	34	395
Forman, Sands, Gold Hill, Nev. Railway-car signal	334,766	Jan. 26	1797	478	34	355
Forrest, William H., *et al.* (See Thomson, John T., assignor.)						
Forster, Albert G. (See Forster, Ferdinand E., assignor.)						
Forster, Ferdinand E., New York, N. Y. Nursing-bottle	335,347	Feb. 9	367	96	34	507
Forster, Ferdinand E., assignor to himself and A. G. Forster, New York, N. Y. Snell for fishing	337,944	Mar. 16	1434	372	34	1197
Forstner, Benjamin, assignor of one-half to J. Walton, Salem, Oreg. Anger	336,709	Feb. 23	2319	607	34	874
Forsyth, Joseph, Pittsburg, Pa. Rotary engine	335,120	Feb. 2	98	9	34	446
Forsyth, Joseph, Pittsburg, Pa. Rotary steam-engine	335,121	Feb. 2	99	9	34	446
Forsyth, Joseph, Pittsburg, Pa. Rotary steam-engine	335,122	Feb. 2	31	9	34	446
Fort Wayne Electric Light Company. (See Jenney, James A., assignor.)						
Fortier, Charles L. (See Johnson and Fortier.)						
Foss, Leonard P., Kalamazoo, Mich. Feed-water regulator	336,307	Feb. 16	1768	463	34	767
Foster, John D., Fulton, N. Y. Meat-tenderer	338,258	Mar. 23	1859	488	34	1265
Foster, John M. (See Babcock, Charles, assignor.)						
Foster, John W., Central Falls, assignor to himself and J. T. Wilmarth, Pawtucket, R. I. Stop-motion for spooling-machines	335,572	Feb. 9	679	179	34	589
Foster, Oliver S., Mount Vernon, Iowa. Honey-box case and clamp	337,143	Mar. 2	348	90	34	990
Fougeadoire, Auguste, Paris, France. Apparatus for enlarging and reducing drawings	333,737	Jan. 5	335	91	34	63
Foulks, John W., Brooklyn, N. Y. Roll for forming toe-calks	335,910	Feb. 9	1172	311	34	657
Fowle, William B., Newton, Mass. Metallic thermometer	333,738	Jan. 5	338	92	34	63
Fowler, Forman F., assignor of one-half to M. V. B. Waldorf, Wolcott, N. Y. Seat-spring for wagons	334,425	Jan. 19	1337	359	34	260
Fowler, George H., Tanghannock Falls, N. Y. Sulky-plow	334,424	Jan. 19	1336	359	34	259
Fowler, John W., Brooklyn, N. Y. Car-axle box	335,691	Feb. 9	845	224	34	508
Fowler, Joseph C., Washington, D. C., assignor to J. Boyle, trustee, St. Louis, Mo. Car-coupling	338,635	Mar. 23	2373	635	34	1374
Fowler, Robert F., assignor of one-half to C. A. Rex, Canton, Ohio. Clothes-line reel and house	337,758	Mar. 9	1171	305	34	1142
Fowler, Thaddeus. (See Mower and Fowler.)						
Fowler, William R., Lafayette, Ind. Milk-cooler	334,767	Jan. 26	1798	478	34	355
Fralkin, John J., Fort Wayne, Ind. Check-row corn-planter and fertilizer-distributer	337,759	Mar. 9	1172	305	34	1142
Frain, George P. (See Brown and Frain.)						
Frampton, George M., Kansas City, Mo. Rein-holder	337,760	Mar. 9	1173	306	34	1143
France, A. L., *et al.* (See Murray, William A., assignor.)						
France, Samuel, Bourbon, Ind. Electro-medical battery	333,739	Jan. 5	339	92	34	63
France, Simon W., Brooklyn, N. Y. Boiler and steamer	333,740	Jan. 5	340	92	34	63
France, William C., *et al.* (See Murray, William A., assignor.)						
Francis, Allan R., Cleveland, Ohio. Roller-skate	336,308	Feb. 16	1769	463	34	767
Frank, August, New York, N. Y. Combined cane, umbrella, and hat rack	333,741	Jan. 5	341	92	34	64
Frank, Rudolph, Hamburg, Germany. Book-sewing machine	334,945	Jan. 26	2015	537	34	395
				538		
Frank, William A., Pinal, Ariz. Ter. Ore-concentrator	335,219	Feb. 2	194	51	34	475
Frankel, Alexander C., assignor to J. Lacowitz, Newark, N. J. Caster	336,636	Mar. 23	2374	625	34	1375
Frankfort Whisky Process Company. (See Allen and Bradley, assignors.)						
Franklin, Benjamin, Bradford, Pa. Gas or water regulator	334,011	Jan. 12	705	194	34	140
Franklin, William B., and C. J. Ebbets, assignors to Colts Patent Fire Arms Manufacturing Company, Hartford, Conn. Magazine fire-arm	335,517	Feb. 2	594	155	34	546
Fraser, Aaron E., Lockport, N. Y. Bottle-stopper	336,848	Feb. 23	2502	650	34	907
Fraumann, John H., assignor of one-half to A. P. Dumler, Cincinnati, Ohio. Vegetable-cutter	336,909	Mar. 2	39	10	34	934
Frazee, John W., and A. J. Thomas, Kansas City, Mo. Combined cooler and filter	334,426	Jan. 19	1328	359	34	260
Fray, John S., Bridgeport, Conn. Screw-driver	336,560	Feb. 23	2105	554	34	835
Frech, William, Chicago, Ill. Drilling machine	336,649	Feb. 23	2503	650	34	908
Frecker, Charles, Brooklyn, N. Y. Composing-stick	338,259	Mar. 23	1859	489	34	1265
Fredericks, Daniel D., Rossville, Ind. Washing-machine	337,144	Mar. 2	350	91	34	990
Fredericks, William. (See Schüssler and Fredericks.)						
Free, Lewis W., Chevney, Pa. Wheelwright's clamp	336,633	Feb. 23	2214	577	34	852
Freeman, Benjamin S., Jr., Attleborough Falls, Mass. Button	335,803	Feb. 9	1018	269	34	630
Freeman, Charles D., *et al.* (See Belisle, Robert S., assignor.)						
Freeman, Edwin P. J., Roslyn, N. Y. Railway-tie and securing guards and rails to the same	335,804	Feb. 9	1018	269	34	630
Freeman, Edwin P. J., Roslyn, N. Y. Railway-tie and rail-fastening	335,805	Feb. 9	1019	269	34	630
Freeman, Samuel D., Fort Thomas, Ariz. Ter. Cotton-gin	339,091	Mar. 30	3043	804	34	1494
Freeman, Warren P., assignor to B. S. Clark, New York, N. Y. Telephone-transmitter	335,906	Feb. 9	1020	270	34	631
Freeman, William, Southbridge, Mass. Nose-guard for eyeglasses	335,277	Feb. 2	269	71	34	489
Freemann, Mahlon S., Norristown, Pa. Axle-nut	336,710	Feb. 23	2220	608	34	874
Frees, Chancy A., New York, N. Y. Artificial leg	335,748	Feb. 9	934	246	34	615
Freese, Daniel T., North Amherst, Ohio. Necktie-fastener	334,284	Jan. 12	1040	276	34	201
Freinkelstein, Wolf. (See Ovenu and Freinkelstein.)						
Freligh, Benjamin M., Saugerties, N. Y. Axle-lubricator	338,661	Mar. 23	2408	633	34	1380
Frellsohr, Julius, assignor to himself and W. Riddell, San Francisco, Cal. Chenille	336,515	Feb. 16	2042	536	34	817
Fremont Cultivator Company. (See Brinkerhoff, Samuel, assignor.)						
Fremont Cultivator Company. (See Stahl and Rosebaugh, assignors.)						
French, Albert, East Rockport, Ohio, assignor of one-half to A. French, Washington, D. C. Thill-coupling	337,761	Mar. 9	1174	306	34	1143

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
French, Alfred. (See French, Albert, assignor.)						
French, Frank E., Laconia, N. H. Shears	338,346	Mar. 23	1981	522	34	1306
French, Stephen H., and W. J. Maltby, Baird, Tex. Wheel-hub	337,319	Mar. 2	502	155	34	1035
Frenier, John H., Rutland, Vt. Apparatus for sawing stone	333,510	Jan. 5	90	7	34	7
Frenier, John H., Rutland, Vt. Stone-sawing machine	336,099	Feb. 16	1442	380 / 381	34	711
Frenzel, Arthur B., assignor of one-third to C. H. Delamater & Co., New York, N. Y. Vacuum-pan	338,692	Mar. 23	2460	634	34	1360
Frey, Enos, G. F. Motter, and J. Reichley, York, Pa. Steam-boiler	333,846	Jan. 5	477	122	34	69
Frey, John, Cincinnati, Ohio. School-blackboard	336,397	Mar. 23	2058	540	34	1319
Friederici, Charles, Chicago, Ill. Lubricator for steam-engines	336,045	Feb. 9	1350	357	34	668
Friedgen, Fredrick, Philadelphia, Pa. Dumb-waiter	336,046	Feb. 9	1351	357	34	668
Fries, Henry E., Salem, N. C. Hand planter and distributer	337,390	Mar. 9	684	179	34	1058
Fries, William A., Brooklyn, assignor to H. W. Johns Manufacturing Company, New York, N. Y. Spool	335,692	Feb. 9	847	224	34	599
Fries, William A., Philadelphia, Pa., assignor to H. W. Johns Manufacturing Company, New York, N. Y. Spool	335,749	Feb. 9	935	246	34	615
Friesecke, Albert C., Jacksonville, Fla. Electric time-recorder	339,092	Mar. 30	3044	805	34	1406
Frisbee, Ernest L. (See Frisbee, Robert H., assignor.)	337,570	Mar. 9	947	242	34	1108
Frisbee, Gideon, New York, N. Y. Mill for pulverizing quarts	336,516	Feb. 16	2043	536	34	817
Frisbie, Robert H., assignor to E. L. Frisbee, Union City, Pa. Cover for baskets	333,940	Jan. 5	607	165	34	114
Frisbie, Henry R., Cromwell, assignor to Pratt & Cady Company, Hartford, Conn. Valve	333,941	Jan. 5	609	166	34	114
Frisbie, Henry R., Cromwell, assignor to Pratt & Cady Company, Hartford, Conn. Valve	334,099	Jan. 19	1705	455	34	329
Frist, James, Baltimore, Md. Mechanical movement						
Fritchey, Joseph U. (See Osborn and Fritchey.)	335,290	Feb. 2	196	51	34	475
Fritsch, Emil, Leipsic, Saxony, Germany. Wheat cleaning and polishing machine	337,054	Mar. 2	229	61	34	967
Fritz, George J., St. Louis, Mo. Bottle-washer	334,593	Jan. 19	1469	393	34	984
Frizell, Joseph P., Boston, Mass. Turbine water-wheel	336,309	Feb. 16	1770	468	34	767
Frost, Daniel W., Keokuk, Iowa. Door-spring						
Frost, Edson L. (See Whiting, Lewis D., assignor.)	335,807	Feb. 9	1021	270	34	631
Frushour, Calvin G., La Gro, Ind. Automatic water-service system for windmills						
Fuller Electrical Company. (See Wood, James J., assignor.)	336,910	Mar. 2	40	10	34	934
Fuller, George P., Minneapolis, Minn. Wash-board	338,729	Mar. 30	2586	668	34	1407
Fuller, George P., assignor of one-half to A. A. Kelly, Minneapolis, Minn. Nut-lock						
Fuller, Jacob C. (See Norton and Rouse, assignors.)	338,398	Mar. 23	2061	540	34	1319
Fuller, Watson, Atlanta, Ga. Station-indicator	335,573	Feb. 9	681	179 / 180	34	569
Fuller, Willard M., New York, and J. J. Hayes, Brooklyn, N. Y. Pulverizing-machine	335,574	Feb. 9	683	180	34	569
Fuller, Willard M., New York, and J. J. Hayes, Brooklyn, N. Y. Pulverizing machine	335,185	Feb. 2	140	36	34	466
Fullerton, George A., assignor of one-half to G. H. P. Flagg, Boston, Mass. Burnishing-tool holder	336,517	Feb. 16	2044	537	34	817
Fulton, Harmon H., Indianapolis, Ind. Lathing	336,225	Feb. 16	1643	429	34	745
Funk, Edward F., Decatur, Ill. Calf-feeder	336,226	Feb. 16	1644	429 / 430	34	745
Funk, John B., Columbia, assignor of one-half to E. Light, Lebanon, Pa. Tricycle	336,850	Feb. 23	2504	660	31	908
Funk, John S., assignor of one-fourth to J. J. Hudson, Philadelphia, Pa. Spinning-machine	334,763	Jan. 26	1709	479	34	355
Fuso, Ignazio, Boston, Mass. Upright-piano action	337,257	Mar. 2	501	131	34	1019
Gabel, Alfred N., Jr., and A. L., Onarga, Ill. Car-coupling						
Gabel, Arthur L. (See Gabel, Alfred N., Jr., and A. L.)						
Gaddess, Virginius. (See Fitzhugh, Benjamin G., assignor.)	335,278	Feb. 2	271	71	34	489
Gadsby, Elijah H., San Francisco, Cal. Progressive climbing device for the use of painters, &c.	334,073	Jan. 12	802	220	34	157
Gage, George A., and C. W. Crary, Chicago, Ill. Electric-arc light	334,946	Jan. 26	2019	538	34	395
Gage, James P., Fairfield, Iowa. Folding table	336,634	Feb. 23	2214	578	34	853
Gage, Wellesley W., New York, N. Y. Fence	333,742	Jan. 5	342	93	34	64
Gaillard, Ella N., New York, N. Y. Electric illuminating apparatus	334,652	Jan. 19	1642	438	34	319
Gailor, James D., Alhuapec, Wis. Bin	338,960	Mar. 23	1860	499	34	1295
Gaiser, Charles A., Edwardsville, Ill. Armature for electro-magnets	338,961	Mar. 23	1861	499	34	1295
Gaiser, Charles A., Edwardsville, Ill. Armature for electro-magnets	338,506	Mar. 23	2206	579	34	1346
Gaitley, John E., Troy, N. Y. Kettle-bail	338,507	Mar. 23	2207	579	34	1346
Gaitley, John E., Troy, N. Y. Knob and handle for stove-doors	333,511	Jan. 5	23	7	34	7
Galbraith, George M., Oxford, Ky. Tobacco-drier						
Gale, George F. (See Davis and Gale.)	336,805	Feb. 23	2444	643	34	906
Gallagher, Joseph P., St. Louis, Mo. Stench-trap	335,808	Feb. 9	1022	270	34	631
Gallagher, Richard D., Plattsmouth, Nebr. Broom	336,711	Feb. 23	2321	608	34	874
Galt, Thomas A., and G. S. Tracy, Sterling, Ill. Disk-seeder						
Galusha, J. M., *et al.* (See Vladyka, Joseph, assignor.)						
Galvin, John. (See Galvin, Thaddeus and J.)	337,945	Mar. 16	1435	372	34	1197
Galvin, Thaddeus and J., Detroit, Mich. Hydrant	337,827	Mar. 16	1271	329	34	1167
Galvin, William H., Ottawa, Ill. Bob-sleigh	336,911	Mar. 2	41	11, 12	34	934
Gambaro, Paul A., Paris, France. Car-brake						
Gamble, John, East Newark, assignor of one-half to E. R. Parsil, Newark, N. J. Curtain-fixture	336,851	Feb. 23	2505	660	34	908
Gans, Henry, Jr. (See Beebler, Charles W., assignor.)	333,621	Jan. 5	162	44	34	32
Garben, Adolph F. C., Minneapolis, Minn. Hub-attaching device	333,512	Jan. 5	24	7	34	7
Gardner, Edward, Allegheny, Pa. Meat-block						
Gardner, Elmer S. (See Noyes and Gardner.)						
Gardner, Ernest M., Brookline, assignor to J. L. Little, Jr., Boston, Mass. Composition for secondary-battery electrodes	336,101	Feb. 16	1446	.....	34	712
Gardner, Ernest M., Brookline, assignor to J. L. Little, Jr., Boston, Mass. Electrode for secondary batteries	336,102	Feb. 16	1447	361	34	712
Gardner, George, Winsted, Conn. Clock gong and bell	334,012	Jan. 12	706	194	34	140
Gardner, Marshall, assignor of one-half to J. Stone, Aurora, Ill. Eye for corset-clasps	335,911	Feb. 9	1172	312	34	656
Gardner, William F., Washington, D. C. Time ball and apparatus	334,167	Jan. 12	945	256	34	162
Gardner, William F., Washington, D. C. Time controlling and correcting system	335,186	Feb. 2	141	36, 37	34	466
Garland, Charles W., Oakland, Cal. Sewer-gas-trap mold	335,279	Feb. 2	272	71	34	489
Garland, Michael. (See Merrill, Charles A., assignor.)	333,847	Jan. 5	478	130	34	99
Garland, Michael, Bay City, Mich. Double and gang edger	334,579	Jan. 19	1539	412	34	298
Garlock, Olin J., Palmyra, N. Y. Piston-rod packing	334,368	Jan. 12	1246	335	34	226
Garlock, William H., Missoula, Mont. Ter. Smoke-stack	333,622	Jan. 5	163	44	34	32
Garman, Adam M., Sinking Creek, Va. Gate-hinge	338,056	Mar. 16	1586	413	34	1223
Garner, Isaac F., and W. B. Hill, Carthage, Mo. Limekiln						
Garnier, Emile. (See Lecouteux and Garnier.)						
Garratt, Charles R., Bridgeport, Conn. Mechanism for cutting double pile fabrics	334,947	Jan. 26	2080	588 / 589	34	395

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Garrigues, George L., *et al.* (See Morehouse, Charles L., assignor.)						
Garrigues, Norman B., and S. Davis, Salem, Ohio. Machine for boring wells	336,403	Feb. 16	1397	496	34	791
Garst, Horace, Council Bluffs, Iowa. Head-screen	336,712	Feb. 23	2323	608	34	874
Gartshore, William M. (See Herrick, James H., assignor.)						
Garwood, Justice G. S., assignor of one-half to J. H. McGaughey, Mount Victory, Ohio. Steam-boiler	339,093	Mar. 30	3047	805	34	1408
Gasmotoren Fabrik Deutz. (See Otto, Nicolaus A., assignor.)						
Gass, William G., Philadelphia, Pa. Device for transmitting power	336,404	Feb. 16	1398	497	34	791
Gatehouse, Tom E. (See Alabaster and Gatehouse.)						
Gates, Frank W., New York, N. Y., assignor to Emery-Gates Sectional Ladder and Manufacturing Company of New York. Sectional ladder	336,227	Feb. 16	1645	430	34	745
Gathright, John R., Jeffersonville, Ind. Freight-car	337,898	Mar. 16	1271	330	34	1167
Gay, Joshua G., Ottawa, Ill. Two-wheeled vehicle	337,256	Mar. 2	502	131	34	1019
Gayley, William C. (See Davies and Gayley.)						
Gaynor, Thomas F., assignor to Lexington Manufacturing Company, Lexington, Ky. Fire-alarm box	335,095	Jan. 26	2127	566	34	414
Gaynor, Thomas F., assignor to Lexington Manufacturing Company, Lexington, Ky. Fire-alarm telegraphy	335,096	Jan. 26	2129	567	34	415
Gaynor, Thomas F., assignor to Lexington Manufacturing Company, Lexington, Ky. Fire-alarm signal	335,097	Jan. 26	2132	567	34	415
Gayton, Howard T., Lower Argyle, Nova Scotia, Canada. Windlass	337,571	Mar. 9	948	242	34	1108
Gear, Lester H., Mentor, Iowa. Mouse-trap	336,390	Mar. 23	2059	540	34	1319
Gearon, John, assignor to H. V. & T. Sluts, Alta, Iowa. Railway-tie	336,057	Mar. 16	1567	413	34	1223
Geary, John, *et al.* (See Harmer, Henry A., assignor.)						
Gedge, Burton H., Covington, Ky. Die for making wire nails	336,730	Mar. 30	2527	668	34	1407
Geer, George, Peterborough, N. H. Pneumatic door-check	335,575	Feb. 9	685	180 / 181	34	570
Geery, Samuel W., Newark, F. W. Jackson and C. B. Day, East Orange, N. J. Shutter for photographic cameras	335,518	Feb. 2	509	153 / 156	34	547
Gehl, Henry, *et al.* (See Rogers, William, assignor.)						
Gelatt, Wallace W., Kansas City, Mo. Blotting-pad holder	337,391	Mar. 9	685	179	34	1059
George, William E., and H. Horney, Harlan, Iowa. Stock-wagon	338,508	Mar. 23	2208	579	34	1346
Georgie, F. Moritz, Sr., Chatsworth, Ill. Curtain and screen holder	337,572	Mar. 9	949	243	34	1109
Gerald, Amos F., Fairfield, Me. Cabinet-stand	335,576	Feb. 9	687	181	34	570
Gérard-Lescuyer, Jean M. A., Paris, France. Electric-arc lamp	336,635	Feb. 23	2216	578	34	853
Gérard-Lescuyer, Jean M. A., Paris, France. Dynamo-electric machine	336,636	Feb. 23	2218	578 / 579	34	853
Gérard-Lescuyer, Jean M. A., Paris, France. Incandescent electric lamp	336,637	Feb. 23	2221	579	34	853
Gerbling, Lorenzo F., assignor to himself and C. W. Widney, Wymore, Nebr. Cabinet	337,055	Mar. 2	230	61	34	968
Gere, Emily H. (See Truesdell, Lewis W., assignor.)						
Gerken, John H., Inwood-on-the-Hudson, N. Y. Churn	337,573	Mar. 9	950	243	34	1103
Gerlach, Rudolph P., Cleveland, Ohio. Lubricator	337,392	Mar. 9	686	179	34	1059
Gerrard, Edward A., assignor to himself and C. W. Zeigler, Columbus, Nebr. Hay rake and loader	335,519	Feb. 2	801	156	34	547
Getchell, Augustus W., assignor of one-eighth to T. W. Ensign, Cleveland, Ohio. Car-truck	333,628	Jan. 5	164	44	34	32
Geyer, George, Brooklyn, N. Y. Cabbage-cutting machine	335,912	Feb. 9	1174	312	34	658
Ghezzi, Romeo E., assignor to himself and V. Del Genovese, New York, N. Y. Umbrella-casing	337,145	Mar. 2	350	91	34	990
Gholson, William C., Cincinnati, Ohio. Wire-fence stay	337,269	Mar. 2	503	131	34	1019
Ghormley, Justus M. (See Sweeney and Ghormley.)						
Gibbins, James, Springfield, Mass. Hydraulic elevator-engine	337,056	Mar. 2	232	61, 62	34	968
Gibbon, Richard, Mobeetie, Tex. Sash-fastener	336,837	Mar. 30	2678	705	34	1434
Gibbons, John, assignor to Mencely Hardware Company, West Troy, N. Y. Car-axle oiler	334,013	Jan. 12	707	194 / 195	34	140
Gibbons, John, assignor to Mencely Hardware Company, West Troy, N. Y. Roller-bearing for shafts and axles	336,103	Feb. 16	1448	361	34	713
Gibbons, Robert E. (See Maaring and Gibbons.)						
Gibbs, Elmer W. (See Gibbs, William and E. W.)						
Gibbs, Eugene H., assignor to Ludlow Toy Manufacturing Company, Ludlow, Vt. Draw-iron for wagons	337,393	Mar. 9	688	179	34	1059
Gibbs, George. (See Howard, Bousfield, and Gibbs.)						
Gibbs, H. A., *et al.* (See Brosman, Cornelius J., assignor.)						
Gibbs, Lewis, assignor to Bucher, Gibbs & Co., Canton, Ohio. Plow	335,348	Feb. 2	368	96	34	507
Gibbs, Lewis, assignor to Bucher, Gibbs & Co., Canton, Ohio. Gang-plow	335,913	Feb. 9	1175	313	34	658
Gibbs, Sam. (See Whitmore, Samuel K., assignor.)						
Gibbs, William and E. W., Canton, Ohio. Post-hole digger	334,653	Jan. 19	1643	439	34	318
Gibson, George G., St. Louis, Mo. Street-scraper and snow-plow	336,262	Mar. 23	1863	489 / 490	34	1295
Giebeler, Ernst A. C., Berlin, Germany, assignor to J. J. De Kinder, Philadelphia, Pa. Valve	335,221	Feb. 2	196	52	34	475
Gilbert, David K. (See Chambers, Thaddeus, assignor.)						
Gilbert, Orvellas H., Newark, N. J. Door knob and escutcheon	335,349	Feb. 2	371	96	34	508
Gilbert, Orvellas H., Newark, N. J. Latch-operating device	335,914	Feb. 9	1177	313	34	658
Giles, David, Chattanooga, Tenn. Pipe-testing machine	334,594	Jan. 19	1462	392	34	284
Giles, Delos, Cheshire, Mich. Gate	335,028	Jan. 26	2133	567	34	415
Giles, Edwin L., Lowell, Mass. Three-way switch for store-service	333,743	Jan. 5	344	93	34	64
Giles, Edwin L., Lowell, Mass. Switch for store-service	333,744	Jan. 5	346	93, 94	34	65
Giles, Edwin L., Lowell, Mass. Three-way switch	333,745	Jan. 5	347	94	34	65
Gilkeson, Thomas E., Loda, Ill., assignor to Case & Willard Thresher Company, Battle Creek, Mich. Thrashing-machine	334,857	Jan. 26	1910	509	34	375
Gill, John L., Jr., Philadelphia, Pa. Steam-boiler	335,750	Feb. 9	936	247	34	615
Gillespie, Thomas G., Campbellford, and M. S. Cassan, Seymour, county of Northumberland, Ontario, Canada. Horse-collar fastening	334,370	Jan. 12	1246	336	34	228
Gillett, George M., Larned, Kans. Pipe-wrench	336,731	Mar. 30	2529	668	34	1407
Gillette, Mott G., New York, N. Y. Construction of barrels, &c.	338,948	Mar. 30	2632	747	34	1463
Gillham, Robert. (See Bullock, Chester, assignor.)						
Gillham, Robert, Kansas City, Mo. Cable railway	336,561	Feb. 23	2107	554	34	835
Gilliam, Algernon, Canton, Ohio. Harness-saddle	334,116	Jan. 12	886	227	34	168
Gilliam, Algernon, Canton, Ohio. Harness-saddle	335,809	Feb. 9	1022	270	34	631
Gilliam, Algernon, Canton, Ohio. Tool-handle	336,264	Mar. 23	1866	490	34	1296
Gillies, William. (See Krieto and Gillies.)						
Gilliland, Ezra T., Boston, Mass. Electric-call generator	335,693	Feb. 9	848	224	34	599
Gilliland, Ezra T., assignor to American Bell Telephone Company, Boston, Mass. Automatic circuit-changer	334,014	Jan. 12	709	195	34	140

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Gilliland, Ezra T., assignor to American Bell Telephone Company, Boston, Mass. Electric signaling apparatus	336,562	Feb. 23	2109	554 555	34	835
Gilliland, Ezra T., assignor to American Bell Telephone Company, Boston, Mass. Looping-in switch	336,563 337,574	Feb. 23 Mar. 9	2116 951	555 944	34 34	836 1104
Gilliland, Samuel B., Monroe City, Mo. Horse hay-rake	337,575	Mar. 9	958	944	34	1104
Gillinder, Frederick R., Philadelphia, Pa. Muffle for earthenware, &c.	336,058	Mar. 16	1568	413	34	1294
Gillis, Cyrus W., San Antonio, Tex. Gate						
Gilman Cash Railway Company. (See Blount and Kimpton, assignors.)						
Gilman Cash Railway Company. (See Blount, Kimpton, and Gilman, assignors.)						
Gilman Cash Railway Company. (See Gilman, Willard H., assignor.)						
Gilman, Charles C., Eldora, Iowa. Fire-proof ceiling	337,629	Mar. 16	1273	330	34	1167
Gilman, Charles C., Eldora, Iowa. Construction of wooden buildings	338,509	Mar. 22	2209	560	34	1346
Gilman, Charles C., Eldora, Iowa. Fire-proof floor	338,510	Mar. 22	2209	560	34	1347
Gilman, Charles C., Eldora, Iowa. Pavement	338,511	Mar. 22	2211	560	34	1347
Gilman, Charles C., Eldora, Iowa. Fire-proof post and column	338,512	Mar. 22	2212	560	34	1347
Gilman, Charles C., Eldora, Iowa. Fire-proof floor and ceiling	338,513	Mar. 23	2214	561	34	1347
Gilman, Charles C., Eldora, Iowa. Outer wall of buildings	338,514	Mar. 23	2214	561	34	1347
Gilman, Charles C., Eldora, Iowa. Roof	338,515	Mar. 23	2215	561	34	1347
Gilman, Charles C., Eldora, Iowa. Floor-arch	338,516	Mar. 23	2216	561	34	1347
Gilman, Charles C., Eldora, Iowa. Construction of fire-proof floors and ceilings	338,517	Mar. 23	2216	562	34	1348
Gilman, Charles C., Eldora, Iowa. Electrical anbway	338,518	Mar. 23	2218	562	34	1348
Gilman, John H., assignor to King & Hamilton Company, Ottawa, Ill. Wheel-cultivator	336,310	Feb. 16	1770	463	34	767
Gilman, Willard H. (See Blount, Kimpton, and Gilman.)						
Gilman, Willard H., assignor to Gilman Cash Railway Company, Boston, Mass. Cash and parcel transmitting apparatus	337,630	Mar. 16	1274	330	34	1168
Gilmore, James, De Witt, Iowa. Fire-wood-sawing machine	333,848	Jan. 5	482	130	34	89
Gilpatrick, John B. (See Blakely and Gilpatrick.)	335,187	Feb. 2	142	37	34	467
Gingras, Timothy, Buffalo, N. Y. Belting	337,057	Mar. 2	233	62	34	968
Gingras, Timothy, Buffalo, N. Y. Curry-comb						
Ginna & Co. (See Hipperling, William, assignor.)						
Ginna, Michael, New York, N. Y. Sofa-bed	338,949	Mar. 30	2833	747	34	1463
Ginna, Michael, New York, N. Y. Sofa-bed	336,405	Feb. 16	1899	497	34	791
Ginther, Henry S., Bridgeport, Ill. Fence	333,513	Jan. 5	24	.....	34	8
Girdwood, John, Carrickfergus, Ireland. Remedy for asthma	338,950	Mar. 30	2835	747	34	1464
Girdwood, Norman W., Asheville, N. C. Injector						
Girsin, Frans, Barly-Jacky, near Sheet-of-Bark, county of Bathurst, New South Wales. Propulsion of ships	334,580	Jan. 19	1539	412	34	299
Giroux, Eugene L. (See Thielsen, Giroux, and Dilg.)						
Gish, Rufus G., Redfield, Kans. Medical compound	333,746	Jan. 5	348	.....	34	65
Given, Carl E. (See Soule and Given, assignors.)						
Given, Philonzo F. (See Soule and Given.)						
Gjers, John, Middlesbrough-on-Tees, England. Soaking-pit for steel ingots	335,915	Feb. 9	1179	313	34	908
Gjers, John, Middlesbrough-on-Tees, England. Soaking-pit for steel ingots	335,751	Feb. 9	936	247	34	615
Glaister, Thomas S., Sonoma, Cal. Valve attachment for wine-casks	337,678	Mar. 9	1072	277	34	1125
Glaser, Jacob and J., Philadelphia, Pa. Newspaper-file						
Glaser, John. (See Glaser, Jacob and J.)	335,916	Feb. 9	1180	314	34	659
Glass, David W., Baltimore, Md. Copying-book or the like	335,350	Feb. 2	872	97	34	508
Gleason, Charles H., Kalamazoo, Mich. Two-wheeled vehicle						
Glen Cove Machine Company. (See Gray, William H., assignor.)						
Glenn, Charles J., *et al.* (See Bigelow, Edmond B., assignor.)	338,293	Mar. 16	1612	473	34	1298
Glenn, Edmund L., assignor to Wright Brothers & Co., Philadelphia, Pa. Umbrella-tie	335,168	Feb. 2	144	37	34	467
Glenn, John S., Chicago, Ill. Balanced rotary valve						
Globe Drug and Capsule Company. (See Krebbiel, John, assignor.)						
Globe Files Company. (See Leaman, Robert F., assignor.)	338,400	Mar. 23	2062	541	34	1319
Glock, Rudolph, and S. Moon, Green, Kans. Hoof-parer	335,280	Feb. 2	273	72, 73	34	490
Glover, Almon B., Birmingham, Conn. Machine for heading bolts	337,146	Mar. 2	352	91	34	991
Glueckmann, Joseph, St. Louis, Mo. Spring-shoe						
Gocht, Karl L., Chemnitz, Saxony, Germany. Locking device for securing wood, &c., to iron beams	338,059	Mar. 16	1569	414	34	1294
Goddard, James R., assignor of one-half to W. Goddard, New Bedford, Mass. Device for operating steam-engine indicators	337,147	Mar. 2	353	91	34	991
Goddard, William. (See Goddard, James R., assignor.)						
Godfrey, Charles H., Fremont, Nebr. Water-supply system	336,997	Mar. 2	153	41	34	953
Godfrey, Henry M., Jonesburg, Mo. Plow	335,917	Feb. 9	1181	314	34	659
Goding, Marshall R., Portland, Me. Centrifugal speed-governor	334,561	Jan. 19	1540	413	34	299
Godman, Solomon H., assignor of one-half to W. C. Whitehead, Indianapolis, Ind. Bridge	336,104	Feb. 16	1449	382	34	713
Goeble, Peter. (See Babcock, William H., assignor.)						
Goertz, August, Newark, N. J. Bag-frame fastening	334,654	Jan. 19	1645	439	34	318
Goessmann, Benno, Saginaw, Mich. Hame	335,123	Feb. 2	31	10	34	446
Goets, George W., Cleveland, Ohio. Tapping-hole for furnaces	334,015	Jan. 12	710	195	34	141
Goetzenberger, Joseph J., and O. S. Wangsness, Minneapolis, Minn. Sod-cutting attachment for plows	333,849	Jan. 5	483	131	34	90
Goff, Daniel. (See Morell and Goff.)						
Goforth, William, Windsor, Mo. Washing-machine	336,480	Feb. 16	2002	504	34	810
Gogin, George W., Boston, Mass., and G. Jones, Washington, D. C.; said Jones assignor to said Gogin. Gas apparatus	336,912	Mar. 2	46	13	34	935
Golde, Charles, Union, N. J. Shed construction	335,577	Feb. 9	688	181 182	34	570
Golden, Thomas, New York, N. Y. Horse-boot	336,105	Feb. 16	1451	382	34	713
Goldman, Moses, Pittsfield, Mass. Sprinkler	334,655	Jan. 19	1645	439	34	318
Goldsmith, Gustavus A. (See Pusey, Joshua, assignor.)						
Goldsmith, John S., New York, N. Y. Check-ticket for messenger service	337,702	Mar. 9	1175	306	34	1143
Goldwater, Henry, New York, N. Y. Apparatus for vaporizing liquids	335,961	Feb. 2	277	73	34	490
Golt, Almon. (See Livingstone, Frederick D., assignor.)						
Gomersall, James H. (See Smalley, Joseph, assignor.)						
Good, Christian and S., Wengerlawn, Ohio. Car-coupling	335,752	Feb. 9	939	247	34	615
Good, George P., and R. B. Collier, Columbus, Ohio. Railway-car cover	337,631	Mar. 16	1277	331	34	1168
Good, Martin R., New Holland, Pa. Harness-bridle	334,168	Jan. 12	947	256	34	183
Good, Solomon. (See Good, Christian and S.)						
Goodale, Henry B. (See Rousseau, Goodale, and Cate.)						
Goodale, John, Cambridge, assignor to J. B. Crawford, trustee, Boston, Mass. Refrigerator	337,394	Mar. 9	669	180	34	1059
Goodell & Waters. (See McLellan, Charles H., assignor.)	336,226	Feb. 16	1647	430	34	746
Goodenow, Albert L., Utica, N. Y. Damper						
Goodman Manufacturing Company, R. (See Smith, William E., assignor.)	333,514	Jan. 5	25	8	34	8
Goodnough, John, Indianapolis, Ind. Cultivator	333,515	Jan. 5	27	8	34	8
Goodrich, Harry C., Chicago, Ill. Ruffling attachment for sewing-machines						

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Goodrich, Harry C., Chicago, Ill. Ruffling attachment for sewing-machines	333,516	Jan. 5	29	8	34	8
Goodwillie, Walter S., Cambridge, Mass. Fire-escape	333,624	Jan. 5	165	45	34	33
Goodwin, Charles S., *et al.* (See Heath, Henry R., assignor.)						
Goodwin, Charles S., *et al.* (See Palmer, Noyes F., assignor.)						
Goodwin, Oliver H., assignor to E. Caswell, San Francisco, Cal. Musical-key indicator	337,220	Mar. 2	593	156	34	1035
Goodyer, Charles, and W. Morse, Warren, Pa. Clothes-drier	334,656	Jan. 19	1646	440	34	318
Göranseon, Erast F., Stockholm, Sweden. Bottling-machine	339,053	Mar. 30	2860	791 792	34	1469
Gord, Axel, Grant Park, Ill. Hay-press	338,592	Mar. 23	2211	885 886	34	1363
Gordon, Alma C, Dunlap, Ill. Fire-alarm	338,593	Mar. 23	2214	886	34	1364
Gordon, Fred, Sioux Falls, Dak. Ter. Spark-arrester	336,811	Feb. 16	1779	464	34	767
Gordon, James T., and J. H. Hamilton, Concord, N. H. Sliding-door latch	336,630	Feb. 23	2231	579	34	654
Gordon, John, Jr., Dundee, county of Forfar, Scotland. Apparatus for discharging oil on water for calming the same	339,054	Mar. 30	2862	792	34	1469
Gordon, Melvin B. and W. Y., Daviaville, Cal. Gate	338,601	Mar. 23	2063	541	34	1320
Gordon, William Y. (See Gordon, Melvin B. and W. Y.)						
Gorly, John A., Pattonville, Mo. Check-rein hook	334,769	Jan. 26	1800	479	34	356
Gorrell, Charles L., assignor of two-thirds to A. B. and O. M. Whitaker, Belair, Md. Stock-car	333,747	Jan. 5	349	94, 95	34	65
Gorton, Charles, New York, N. Y. Steam-generator	334,657	Jan. 19	1647	440	34	319
Gotrel, Thomas A. (See Sanford, George W., assignor.)						
Gott, Arthur O., San Francisco, Cal. Dial for time-pieces	334,525	Jan. 19	1463	393	34	265
Gould, Charles A., assignor of one-half to G. A. Gould, St. Louis, Mo. Vehicle-stake	335,918	Feb. 9	1181	314	34	659
Gould, George A. (See Gould, Charles A., assignor.)						
Gould, John J. (See Bend, Nathan O., assignor.)						
Gould, Simeon L., Gardiner, Me., assignor of one-half to W. A. Russell, Lawrence, Mass. Paper-pulp-finishing engine	337,489	Mar. 9	844	214	34	1084
Goulding, George P., Rochester, N. Y. Bottle-washer	335,008	Jan. 26	2193	583	34	495
Graeter, Charles A. (See Lang and Graeter.)						
Graff, Andrew, Brooklyn, N. Y. Seamless shoe	336,913	Mar. 2	47	13	34	935
Graff, Louis, St. Louis, Mo. Apparatus for handling freight	338,951	Mar. 30	2835	748	34	1464
Graff, Louis, St. Louis, Mo. Hoisting and conveying apparatus	338,952	Mar. 30	2837	748	34	1464
Grafke, August, Vallsburg, N. J. Barbed candle-holder	338,594	Mar. 23	2216	606	34	1364
Graham, William J., Toronto, Ontario, Canada. Breech-loading fire-arm	338,739	Mar. 30	2529	668 669	34	1407
Grand Rapids Electric Light and Power Company. (See Thomas, William M., assignor.)						
Granger, Arthur O., assignor to United Gas Improvement Company, Philadelphia, Pa. Gas apparatus	334,700	Jan. 19	1706	455	34	329
Granger, Arthur O., assignor to United Gas Improvement Company, Philadelphia, Pa. Manufacturing gas	334,701	Jan. 19	1708	456	34	330
Grant, Charles, Jr. (See Stearns and Grant.)						
Grant, George A., Eddyville, Iowa. Gate	337,148	Mar. 2	354	92	34	991
Grant, George B., Malden, Mass. Micrometer-gage	334,770	Jan. 26	1801	479	34	356
Grant, John, Omaha, Nebr. Artificial stone	338,069	Mar. 16	1560	.....	34	1294
Grant, Jott. (See Davis, William E., assignor.)						
Grassman, John A., Henry, Ill. Hay-rack	337,321	Mar. 2	594	156	34	1036
Grathvohl, Joseph, *et al.* (See Ralu, Adrien, Fils, assignor.)						
Grathwol, Leopold, Troy, N. Y. Machine for stamping cigars	337,322	Mar. 2	595	156	34	1036
Grätzel, Richard, Hanover, Prussia, Germany. Making fluorine salts	336,061	Mar. 16	1561	.....	34	1294
Graumlich, Solomon M., Ashville, Ohio. Band-cutter and feeder for thrashing-machines	336,637	Mar. 23	2275	625	34	1375
Graveline, David U., Byron, Ill. Car-coupling	333,850	Jan. 5	484	131	34	90
Graves, Francis C., Hartford, Conn. Printer's quoin	335,988	Feb. 2	278	73	34	490
Graves, John, New York, N. Y., assignor of two-thirds to H. Denison, Elizabeth, N. J., and C. B. Payne, Tarrytown, N. Y. Can for liquids	335,060	Jan. 26	2196	583	34	496
Graves, John, Green Point, and J. R. Dreyfus, New York, N. Y., said Graves assignor to said Dreyfus. Hand-truck	335,810	Feb. 9	1094	271	34	631
Graves, Louis L., and J. Kangley, Streator, Ill. Apparatus for ventilating mines	336,914	Mar. 2	46	13	34	935
Gray, Charles G. (See Leonard and Gray.)						
Gray, Charles W. (See Maina, John F., assignor.)						
Gray, Charles W. (See Maina and Converse, assignors.)						
Gray, Delbert B., Philadelphia, Pa. Car-coupling	338,149	Mar. 16	1712	446	34	1249
Gray, Frederic W., Leominster, Mass. Hose-spanner	336,915	Mar. 2	49	13	34	936
Gray, Harriette A., Brooklyn, N. Y. Composition to be added to starch to improve its quality	337,490	Mar. 9	846	.....	34	1085
Gray, Henry F., assignor to L. T. Strader and F. W. Hawkes, Columbus, Ohio. Hat and coat rack	335,189	Feb. 2	145	37	34	467
Gray, James E., Elyria, Ohio. Washing-machine	334,702	Jan. 19	1709	456	34	330
Gray, Josiah, Chicago, Ill. Railway-crossing	334,427	Jan. 19	1529	380	34	260
Gray, Josiah, assignor to himself and C. Smith, Chicago, Ill. Railway-track clearer	334,428	Jan. 19	1530	380	34	261
Gray, Nelson A., *et al.* (See Stubbs, Jesse, assignor.)						
Gray, Thomas J., assignor of two-thirds to J. T. Greene and G. M. Gross, Chicago, Ill. Ore-concentrator	333,851	Jan. 5	485	131	34	90
Gray, William H., Brooklyn, assignor to Glen Cove Machine Company, (limited,) Green Point, N. Y. Presser-bar for planing-machines	337,491	Mar. 9	847	215	34	1085
Greeley, Mary A., Ottumwa, Iowa. Candlestick	332,517	Jan. 5	31	8	34	8
Green, George F., Kalamazoo, Mich., assignor to himself, O. S. Kelly, and S. J. Houck, Springfield, Ohio. Electric cash and parcel car	338,150	Mar. 16	1712	446 447	34	1249
Green, George F., Kalamazoo, Mich., assignor to himself, O. S. Kelly, and S. J. Houck, Springfield, Ohio. Electric cash and parcel transfer system	338,294	Mar. 16	1813	473 474	34	1308
Green, George F., Kalamazoo, Mich., assignor to himself, O. S. Kelly, and S. J. Houck, Springfield, Ohio. Electric cash and parcel transfer system	338,663	Mar. 23	2413	625	34	1381
Green, Henry, deceased, (J. Bird administrator,) assignor of one-half to J. Bird, Osakis, Minn. Pipe-joint	334,586	Jan. 19	1464	393	34	265
Green, John J., Boonton, N. J. Electric-current meter	337,679	Mar. 9	1073	277	34	1125
Green, Joseph L., *et al.* (See Champion, John P., assignor.)						
Green, Raphael S., T. S. Edel, and M. Pagel, Philadelphia, Pa. Ice-boat	335,194	Feb. 2	32	10	34	446
Green, Webster M. (See Aubin, Philip, assignor.)						
Green, William H., *et al.* (See Neff, Elijah, assignor.)						
Greene, Darwin A., New York, N. Y. Machine for bundling wood	337,946	Mar. 16	1437	372 373	34	1197
Greene, Darwin A., New York, N. Y. Circular-sawing machine	337,947	Mar. 16	1439	373	34	1198
Greene, Darwin A., New York, N. Y. Drier	337,948	Mar. 16	1442	374	34	1198
Greene, Frank B., Providence, R. I. Treatment of fiber and fibrous matter	338,595	Mar. 23	2217	.....	34	1364
Greene, James G., and P. Diehl, Elizabeth, N. J., assignors to Singer Manufacturing Company of New Jersey. Button-hole attachment for sewing-machines	335,195	Feb. 2	34	10	34	447

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Pages.
Greene, John T., *et al.* (See Gray, Thomas J., assignor.)						
Greene, Patrick R., Brooklyn, N. Y. Beer-pump	336,838	Mar. 30	2678	705	34	1434
Greene, Stephen P., and A. R. Young, Jewett City, Conn., assignors of one-half to G. Draper & Sons, Hopedale, Mass. Spindle-bolster	334,871	Jan. 19	1947	336	34	289
Greener, George W., assignor of one-half to J. L. Pringle, Streator, Ill. Thill-coupling	333,518	Jan. 5	23	9	34	8
Greenland, Frank, Brooklyn, N. Y. Mat	333,942	Jan. 5	610	166	34	114
Greenland, Frank, Brooklyn, N. Y. Machine for stapling matting-strands	333,943	Jan. 5	611	166	34	114
Greenleaf, John F. (See Ransom, Newman A., assignor.)						
Greenwood, John T., Kalamazoo, Mich. Heating attachment for furnaces and stoves	334,429	Jan. 19	1331	360	34	961
Gregg & Co. (See La Dow, John, assignor.)						
Gregory, Arthur F. (See Osborn and Gregory.)						
Gresham, James, Manchester, England, assignor to Nathan Manufacturing Company, New York, N. Y. Injector. (Reissue)	10,697	Mar. 9	1237	321	34	1154
Griest, John M., Chicago, Ill., assignor to Singer Manufacturing Company of New Jersey. Button-hole attachment for sewing-machines	335,196	Feb. 2	37	11	34	447
Griffin, Horace, New Haven, Conn. Copying-press	336,564	Feb. 23	2117	555	34	836
Griffin, John W., Toronto, Ontario, Canada. Baby-carriage	334,372	Jan. 12	1948	336	34	289
Griffin, Thomas A., Chicago, Ill. Car-axle box	337,949	Mar. 16	1445	374	34	1199
Griffin, Thomas A., Chicago, Ill. Rail-brace	338,953	Mar. 30	2838	748	34	1464
Griffiths, John A., Coventry, England. Velocipede	336,151	Mar. 16	1716	447, 448	34	1250
Grilley, Charles T., Boston, Mass. Manufacture of washers	338,347	Mar. 23	1961	529	34	1306
Grime, John, Minneapolis, Minn. Valve-gear for engines	335,578	Feb. 9	699	188	34	570
Grimes, Joseph, Perry, Ill. Hay-rack	333,944	Jan. 5	612	166	34	114
Griswold, Albert F., and H. R. Barnhurst, Erie, Pa. Band-saw mill	336,170	Mar. 16	1739	454	34	1254
Griswold, Norman W., Alameda, Cal. Rack or holder for tooth-brushes, &c	338,409	Mar. 23	2065	541	34	1320
Groff, Israel M., Middletown, Pa. Washing-machine	337,950	Mar. 16	1446	375	34	1199
Gronemeyer, John P., St. Louis, and J. Polster, Warrenton, Mo. Coffee or tea pot	335,070	Jan. 26	2197	584	34	426
Groom, Wallace P., Brooklyn, N. Y. Cuff	334,587	Jan. 19	1465	393	34	295
Groom, Wallace P., Brooklyn, N. Y. Set of blanks for effecting the intertransfer of ownership of property	336,005	Feb. 9	1293	344	34	678
Groom, Wallace P., Brooklyn, N. Y. Collar or cuff	336,006	Feb. 9	1294	344	34	679
Groom, Wallace P., Brooklyn, N. Y. Business-blank	336,007	Feb. 9	1295	345	34	679
Groslean, James E., Fredericksburg, Ohio. Well-refrigerator	337,058	Mar. 2	234	62	34	969
Gross, George M., *et al.* (See Gray, Thomas J., assignor.)						
Grossman, George, Lancaster, Pa. Stock-car	337,393	Mar. 2	596	156, 157	34	1036
Grout, Charles P., New York, N. Y. Dental engine	336,229	Feb. 16	1648	431	34	746
Grout, Charles P., New York, N. Y. Artificial tooth	336,230	Feb. 16	1651	431	34	747
Grout, Charles P., New York, N. Y. Applying artificial tooth-crowns	336,231	Feb. 16	1653	431	34	747
Groux, Henry A., Montclair, N. J. Lawn-mower	336,639	Feb. 23	2229	580	34	854
Grevesteen, Milton W., New York, N. Y. Circuit-closing attachment for pressure-gages	339,004	Mar. 30	3048	805	34	1499
Grow, Mary E., Washington, D. C. Pin	334,373	Jan. 12	1949	337	34	289
Grube, John K., New Bloomfield, Pa. Well-refrigerator	338,664	Mar. 23	2415	636	34	1361
Gründler, Bernhard, Petersdorf, Prussia, Germany. Apparatus for moistening stamps, &c.	335,590	Feb. 9	690	182, 183	34	571
Grüner, Carl F., New York, N. Y. Street-sweeping machine	338,225	Mar. 16	1815	474, 475	34	1268
Gruner, Henry, *et al.* (See Poell, Hermann, assignor.)						
Guastavino, Francesco R., *et al.* (See Guastavino, Rafael, assignor.)						
Guastavino, Rafael, assignor to F. R. Guastavino and B. S. Levy, New York, N. Y. Fire-proof building	336,047	Feb. 9	1353	358	34	669
Guastavino, Rafael, assignor to F. R. Guastavino and B. S. Levy, New York, N. Y. Construction of fire-proof buildings	336,048	Feb. 9	1354	358	34	669
Guernsey, David W., St. Louis, Mo. Electric-lamp reflector	334,858	Jan. 26	1911	509	34	875
Guernsey, Henry W., *et al.* (See Coles, David H., assignor.)						
Guhl, Heinrich A. H., Hamburg, Germany. Machine for cleaning and polishing knives	339,095	Mar. 30	3059	806	34	1499
Guild, George M., and B. C. Bornham, Boston, Mass. Piano-forte	336,565	Feb. 23	2118	555	34	837
Guild, Henry M., Woodbury, N. J. Preserve-jar fastening	335,444	Feb. 2	497	129	34	530
Guild, Henry M., Woodbury, N. J. Jar-fastening	335,445	Feb. 2	498	129	34	530
Guinnip, Lyman, Chicago, Ill. Making butter	334,490	Jan. 19	1328	.....	34	961
Gulick, John H., Syracuse, N. Y. Basket	337,763	Mar. 9	1177	306	34	1143
Gulliver, William H., Phillipsburg, Pa. Glass-mold	337,764	Mar. 9	1179	307	34	1143
Gunn, George P., Herkimer, N. Y. Air-gun	337,395	Mar. 9	691	180	34	1060
Gunn, Walter C. (See Hardy, Lewis W., assignor.)						
Gusa, Samuel M., Steelton, assignor of one-half to J. S. Ammon, Reading, Pa. Cut nail	337,765	Mar. 9	1180	307	34	1144
Guthrie, James T., Leesburg, Ohio. Telephonic transmitting apparatus	338,963	Mar. 23	1864	490	34	1296
Gutridge, Samuel W., Johnstown, Mo. Sulky-plow	334,117	Jan. 12	867	238	34	168
Gutsice, August, Chicago, Ill. Field-game marker	335,579	Feb. 9	690	182	34	571
Haas, William L., Charles City, Iowa. Twine and wire cutter	334,582	Jan. 19	1542	412	34	299
Haberkorn, Theodore H., Fort Wayne, Ind. Valve for air-brakes	335,446	Feb. 2	499	130	34	531
Habig, Damian, Cumberland, Md. Stove	338,954	Mar. 30	2840	749	34	1465
Habirshaw, William M., New York, N. Y. Covered or insulated wire	336,733	Mar. 30	2539	660	34	1408
Hackenberg, Jacob A., Kimberton, Pa. Oil-cabinet	337,576	Mar. 9	953	244	34	1104
Hackett, Seth, Bronson, Mich. Hand corn-planter	334,583	Jan. 19	1543	413	34	299
Häckler, Philip, Minneapolis, Minn. Lubricator	337,396	Mar. 9	692	180	34	1060
Hadesty, George W., Drifton, Pa. Tamping-bar	337,492	Mar. 9	848	215	34	1095
Hadfield, Robert, Sheffield, county of York, England. Self-hardening manganese steel	333,748	Jan. 5	350	.....	34	65
Hadley, Charles F., assignor to Overman Wheel Company, Chicopee, Mass. Loop-frame for tricycles	335,811	Feb. 9	1025	271	34	631
Hadley, Jacob B. (See Taft, Daniel F., assignor.)						
Hafford, Roderick F. (See Belk, John C., assignor.)						
Hafner, Joseph, Fowler, Mich. Land-roller	337,577	Mar. 9	954	244	34	1104
Hafner, William E., *et al.* (See Palm, Peter, assignor.)						
Hagan, Hugh. (See Marland, George, assignor.)						
Hagan, William E. (See Norris and Hagan.)						
Hagarty, Woodward E., Arrow Rock, Mo. Spring double-tree	337,397	Mar. 9	698	181	34	1060
Hagerty, John C., Santa Cruz, Cal. Bark-cutting machine	334,859	Jan. 26	1912	509	34	875
Hagerty, Thomas F., San Francisco, Cal. Button-hole sewing-machine	335,099	Jan. 26	2124	568, 569	34	415
Haggin, Joseph B. (See Tennent, Thomas, assignor.)						
Hagmayer, John A. (See Schaefer and Hagmayer.)						
Haigh, Harry B., Brooklyn, assignor to Iron Clad Manufacturing Company, New York, N. Y. Elevator-bucket	336,916	Mar. 2	50	13	34	936

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Pages.
Haight, George E., New Haven, and W. H. Wood, Hartford, Conn. Submarine torpedo-boat	339,096	Mar. 30	3051	806, 807, 808, 809	34	1499
Haight, Washington Z., Winnebago City, Minn. Valve for pumps, &c	336,406	Feb. 16	1900	497	34	792
Hailes, Robert. (See Hallum, David, assignor.)						
Haines, George B., Chicago, Ill. Car-starter	336,229	Feb. 16	1654	432	34	747
Haine, William. (See Arbogast and Haine.)						
Haslett, William E. (See Salmon and Haslett.)						
Hake, Philipp, Hoboken, N. J., and F. Oechsli, New York, N. Y.; said Oechsli assignor to said Hake. Ornamentation of cards, &c	338,955	Mar. 30	2840	749	34	1465
Hake, Samuel E., Niles, Ohio. Potato-planter	336,312	Feb. 16	1773	464	34	767
Hake, Samuel E., Niles, Ohio. Corn-planter	338,403	Mar. 23	2066	542	34	1320
Halbiah, George C., Chicago, Ill. Safety-stop for elevators	337,306	Mar. 9	694	181	34	1060
Hale, Perley, Burlington, Iowa. Pendent-car elevated-railway system	337,149	Mar. 2	355	92, 93	34	991
Haley, Christina J., New York, N. Y. Stocking-supporter	336,917	Mar. 2	50	13	34	936
Hall, A. Wilford, New York, N. Y. Mechanical telephone	336,640	Feb. 23	2223	580, 581	34	854
Hall, Charles, New York, N. Y. Screw	338,956	Mar. 30	2841	749	34	1465
Hall, Francis P., and J. H. Smith, Brewer, Me. Screw-press	335,447	Feb. 2	501	130	34	531
Hall, Frank D. (See Blaney, William H., assignor.)						
Hall, George F., Long Branch Village, assignor of one-half to W. R. Warwick, Long Branch, N. J. Hammer	336,404	Mar. 23	2067	542	34	1320
Hall, Isaac E., Lancaster, Ohio. Guard for cutter-heads	337,499	Mar. 9	849	215	34	1095
Hall, Lewis, Worth, Ill. Harvester-reel	338,957	Mar. 30	2842	749	34	1465
Hall, Milan W., Plainfield, N. J., assignor to Hall Steam Pump Company, New York, N. Y. Engine-cylinder lubricator	334,860	Jan. 26	1913	509	34	876
Hall Steam Pump Company. (See Hall, Milan W., assignor.)						
Hall, Thomas, assignor to Hall Type Writer Company, New York, N. Y. Type-plate for type-writing machines	336,481	Feb. 16	2003	525	34	810
Hall, Thomas O., Brooklyn, N. Y. Pliers	335,694	Feb. 9	850	294	34	599
Hall Type Writer Company. (See Hall, Thomas, assignor.)						
Hall, William L., Troy, N. Y. Securing bosoms to shirt-bodies	336,106	Feb. 16	1452	382, 383	34	713
Hallock, Richard F., New York, N. Y. Pattern-lining	335,919	Feb. 9	1182	314	34	659
Haller, W. L. (See Moss, Robert T., assignor.)						
Hallidie, Andrew S., San Francisco, Cal. Tramway for curves and cable-grips. (Reissue)	10,681	Feb. 2	648	170	34	557
Hallock, David, New York, N. Y. Weighing-scale	336,641	Feb. 23	2225	581	34	854
Hallowell, Albert, assignor to Lowell Faucet Company, Lowell, Mass. Filter	335,581	Feb. 9	691	188	34	571
Hallum, David, East Liverpool, Ohio, assignor of one-half to R. Hailes. Mold-bed for crockery-ware	338,296	Mar. 16	1816	475	34	1269
Halpin, Cornelius, North Tarrytown, N. Y. Car-coupling	336,906	Feb. 23	2446	642	34	897
Ham, Lemuel M., Boston, Mass. Device for fastening prison-doors	333,749	Jan. 5	252	95	34	65
Hambay, James T., Pittsburg, Pa. Switch and signal apparatus	333,852	Jan. 5	487	132	34	91
Hamill, Joseph, Montrose, Lot 9, Prince Edward Island, Canada. Striping-machine	338,734	Mar. 30	2535	669	34	1408
Hamilton, C. Kennedy, Jr., New Brighton, N. Y. Bottle-stopper	338,348	Mar. 23	1963	528	34	1306
Hamilton, Catharine M., Decatur, Ill. Convertible chair	335,283	Feb. 2	279	74	34	490
Hamilton, John H. (See Gordon and Hamilton.)						
Hamilton, Miles E., and E. L. Perrigo, Auburn, N. Y. Attachment for finger-bars of harvesters	334,374	Jan. 12	1949	337	34	289
Hamilton, Samuel R. (See Willcoxson, Coulmon W., assignor.)						
Hammond, George R., Snodland, county of Kent, England. Miter-frame clamp	334,435	Jan. 19	1337	362	34	962
Hammond, Henry, New Haven, Conn. Ax-blank	334,948	Jan. 26	2022	539	34	896
Hammond, Joseph C., Jr., Rockville, and T. E. King, Westport, Conn. Shoe-clasp	334,434	Jan. 19	1336	362	34	962
Hammond, M. Burdett. (See Taylor and Hammond.)						
Hammick, Joseph T., Rhinebeck, N. Y. Car-coupling	338,405	Mar. 23	2068	542	34	1321
Hamner, William C., Morganfield, Ky. Farm-gate	338,069	Mar. 16	1592	414	34	1225
Hamprecht, August, Wellsburg, W. Va. Decorated glassware	337,324	Mar. 2	508	157	34	1036
Hamprecht, August, Wellsburg, W. Va. Manufacture of decorated glassware	337,325	Mar. 2	509	157	34	1037
Hanchett, Fred P., Madison, Wis. Car-door fastener	338,519	Mar. 23	2219	562	34	1348
Hand, Edward D. (See Craig, John C., assignor.)						
Hand Stitch Broom Sewing Machine Company. (See McCombs, George F., assignor.)						
Handy, Richard F., New York, N. Y. Railway-car furniture	333,853	Jan. 5	489	132	34	91
Hanford, Peckham & McCance Company. (See Hanford, Robert G., Jr., assignor.)						
Hanford, Peckham & McCance Company. (See McCance, David, assignor.)						
Hanford, Robert G., Jr., assignor to Hanford, Peckham & McCance Company, Newark, N. J. Bridle-bit	337,578	Mar. 9	955	245	34	1104
Hankey, Christopher F., *et al.* (See Bevier, James, assignor.)						
Hankin, William, Sr., Williamsburg, N. Y. Buck-saw frame	337,399	Mar. 9	695	181	34	1061
Hanks, Francis M., and H. N. Sibley, Midway, La. Band-saw mill	336,407	Feb. 16	1901	497	34	792
Hanley, William, Chicago, Ill. Safety-gate for railway-crossings	338,063	Mar. 16	1593	414, 415	34	1225
Hanlon, George O. (See Hanlon, Joseph P. A., J. F., and G. O.)						
Hanlon, John F. (See Hanlon, Joseph P. A., J. F., and G. O.)						
Hanlon, John J., Allentown, Pa. Apparatus for preserving beer	338,958	Mar. 30	2844	750	34	1465
Hanlon, Joseph P. A., J. F., and G. O., Boston, Mass. Train-signaling apparatus	337,260	Mar. 2	504	131	34	1019
Hanneman, Charles F., Ahnapee, Wis. Steamer	338,064	Mar. 16	1595	415	34	1225
Hannum, Henry A., Cazenovia, N. Y. Hunting-boat	335,190	Feb. 2	147	38	34	467
Hansard, Joseph L., and G. W. Tribby, Oroville, Cal. Distance-instrument	338,625	Jan. 5	166	45	34	83
Hanscom, Alvin A. (See Delmage, William A., assignor.)						
Hansen, Ludvig, and A. Smith, Wilmington, N. C. Apparatus for distilling wood	333,750	Jan. 5	353	95	34	66
Hansen, Ludwig, *et al.* (See Smith, Henry H., assignor.)						
Hansen, Ole, Walnut Grove, Cal. Fire-escape	336,713	Feb. 23	2323	609	34	874
Hanson, Dempsy B. (See Stephens and Hanson.)						
Hanson, Edward H., Philadelphia, Pa. Machine for washing electrotype-molds	335,990	Feb. 9	1183	315	34	659
Hanson, Joseph, Philadelphia, Pa. Apparatus for dyeing	338,839	Mar. 30	2679	705, 706	34	1435
Hapgood Plow Company. (See Pates, Thomas, assignor.)						
Happersberger, Frederik, Madison, Ind. Countersinking-tool	336,566	Feb. 23	2119	556	34	837
Harbin, James W., Vincennes, assignor of one-half to L. O. Bailey, Indianapolis, Ind. Corn-planter	337,361	Mar. 2	505	132	34	1019
Hardenbergh, Henry D., Union City, assignor of one-half to W. Schaeffer and W. J. Baker, Jamton, Ohio. Kitchen-safe	335,921	Feb. 9	1184	315	34	660
Harder, Victor A., New York, N. Y. Bathing apparatus	336,642	Feb. 23	2227	561	34	855

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Hardey, Gordon, *et al.* (See Fisher, John R. and L. T., assignors.)						
Harding, Henry W., *et al.* (See Dumontier and Plourde, assignors.)						
Hardy, Lewis W., assignor to W. C. Gunn, Chicago, Ill. Steam-engine	335,191	Feb. 2	148	38	34	467
Harkins, James J. and J., Pittsburg, Pa. Car-brake	337,579	Mar. 9	956	245	34	1104
Harkins, John. (See Harkins, James J. and J.)						
Harmer, Henry A., East Newark, assignor to himself, J. Geary, and C. H. Price, Newark, N. J. Billiard-cue-tip fastener	334,861	Jan. 26	1915	510	34	376
Harmon, Charles L., assignor to E. B. Howe, trustee, Lowell, Mass. Carding-engine	339,097	Mar. 30	3056	809	34	1500
Harmon, I. M. (See Woodward and Copeland, assignors.)						
Harmon, Orville S., Brooklyn, N. Y. Plate-printing machine	334,925	Jan. 19	1040	277	34	301
Harmon, Osceola D., Holmesburg, Pa. Combination-tool	334,862	Jan. 26	1916	510	34	376
Harned, Francis P. (See Carson and Harned.)						
Harrington, Chauncey F., Lowell, Mass. Device for securing violin-bows	337,059	Mar. 2	935	63	34	969
Harrington, Gardner P. (See Darling, William H., assignor.)						
Harrington, Humphrey, Indianapolis, Ind. Gate-latch	336,714	Feb. 23	2324	609	34	874
Harrington, John H., New Bedford, Mass. Car-coupling	337,150	Mar. 2	358	93	34	992
Harrington, Mark W. (See Smith, James M., assignor.)						
Harris, Azariah B. (See Leve, Gustave, assignor.) (Reissue.)						
Harris, Azariah B., Springfield, Mass. Ventilator for railway-cars	335,448	Feb. 2	502	131	34	531
Harris, David M., Douglass, Kans. Car-coupling	334,169	Jan. 12	948	256 257	34	163
Harris, Edward, Cambria, Wis. Folding box or crate	334,375	Jan. 12	1250	337	34	239
Harris, Edward, Cambria, Wis. Box-fastener	335,812	Feb. 9	1026	271	34	632
Harris, Elmer S., Haverhill, Mass. Attachment for sewing-machines	334,118	Jan. 12	868	228	34	168
Harris, Elmer S., Haverhill, Mass. Sole for boots or shoes	337,060	Mar. 2	936	63	34	969
Harris, Gilbert J. (See Flewwelling and Harris.)						
Harris, James B., Jr., Geneseo, N. Y. Roller-skate	333,751	Jan. 5	354	96	34	66
Harris, James B., Jr., Geneseo, N. Y. Floor-grinding machine	336,918	Mar. 2	51	14	34	936
Harris, James B., Jr., Geneseo, N. Y. Roller-skate	337,151	Mar. 2	359	94	34	992
Harris, James E. (See Knowlton and Harris.)						
Harris, Jonathan, Grand Ledge, Mich. Spring curtain-roller	338,065	Mar. 16	1596	415	34	1225
Harris, Milo. (See Ames and Harris.)						
Harris, Nelson E., Orange, Mass. Hydraulic motor	337,766	Mar. 9	1181	307	34	1144
Harrison Brothers & Co. (See Semper, Conrad, assignor.)						
Harrison, William F. (See Lynch and Harrison.)						
Harrison, William H., assignor to Street Car Money Drawer Company, Louisville, Ky., Money-drawer for fare-boxes	337,262	Mar. 2	508	132 133	34	1020
Harrison, William M., Baltimore, Md. Hand fire-extinguisher	338,520	Mar. 23	2220	582	34	1348
Harrod, Perry, West Warsaw, assignor of one-fourth to J. Price, Sidney, Ohio. Device for gaining leverage	334,771	Jan. 26	1802	479	34	356
Harrod, William H. (See Allen and Harrod.)						
Harstrom, Carl G., Peekskill, N. Y. Collar-button	333,752	Jan. 5	355	96	34	66
Hart, Amos D., Elmira, N. Y. Building-bracket	334,772	Jan. 26	1803	480	34	356
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Combined wheel and pinion for watches	338,959	Mar. 30	2844	750	34	1465
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Mainspring-barrel for watches	338,960	Mar. 30	2845	750	34	1466
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Manufacture of a combined pinion and ratchet	338,961	Mar. 30	2846	750	34	1466
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Manufacture of a combined wheel and pinion	338,962	Mar. 30	2846	751	34	1466
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Manufacture of mainspring-barrels	338,963	Mar. 30	2847	751	34	1466
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Manufacture of dial-wheels	338,964	Mar. 30	2848	751	34	1466
Hart, Henry C., Detroit, Mich. Wash-bowl and pump for sleeping-cars	335,922	Feb. 9	1185	315	34	660
Hart, Hubert C., Unionville, Conn. Manufacture of knife-handles	338,591	Mar. 23	2221	563	34	1349
Hart, William A., La Salle, assignor to J. E. Robie, Buffalo, N. Y. Handle for blowers	338,227	Mar. 16	1817	475	34	1269
Hart, William H., assignor to Stanley Works, New Britain, Conn. Strap-hinge	333,854	Jan. 5	491	133	34	91
Hartford Fruit Jar Company. (See Taylor, Frederick D., assignor.)						
Hartley, James, Brooklyn, N. Y. Water-tube for boilers	335,695	Feb. 9	850	225	34	599
Hartley, James, Brooklyn, N. Y. Steam-boiler	335,696	Feb. 9	852	225 226	34	599
Hartley, James, Brooklyn, N. Y. Steam-boiler	335,697	Feb. 9	865	226 227	34	600
Hartman, Henry W. (See Boughton, Darius F., assignor.)						
Hartman, Jacob, assignor of one-half to A. H. Moore, Philadelphia, Pa. Fastening for railway-rails	338,066	Mar. 16	1597	415	34	1226
Hartmann, Bernhard, Belleville, Ill. Refrigerator	333,855	Jan. 5	491	133	34	91
Hartsfeld, Charles L., Newport, Ky. Furnace for precious metals	338,965	Mar. 23	1867	490 491	34	1226
Hartshorn, Stewart, Millburn, N. J. Spring shade-roller	335,449	Feb. 2	503	131	34	531
Hartson, La Fayette, Wyoming, Iowa. Wear-plate for harness	336,313	Feb. 16	1775	464	34	768
Harty, William, assignor to N. Chase, F. A. Taylor, M. B. Shaw, and F. J. Henry, Kalamazoo, Mich. Harrow-tooth	337,951	Mar. 16	1447	375	34	1199
Harts, Albert, assignor of one-half to J. G. Bunell, Richland Centre, Wis. Combined pad-buckle and trace-loop	338,406	Mar. 23	2070	542	34	1321
Harts, Henry V., Cleveland, Ohio. Machine for making hooks	334,429	Jan. 19	1333	361	34	261
Harts, Henry V., Cleveland, Ohio. Machine for forming eyes for metal bolts and hooks	334,433	Jan. 19	1335	361	34	261
Harvey, Amasa. (See Shavalier and Harvey.)						
Harvey, Patrick, Chicago, Ill. Valve	334,431	Jan. 19	1333	360	34	261
Haseltine, Seward A., *et al.* (See Driskell, Madison M., assignor.)						
Haseltine, Sumner C., *et al.* (See Driskell, Madison M., assignor.)						
Haseman, Max. (See Buchheit, John, assignor.)						
Haskell, Charles S. (See Roosevelt and Haskell.)						
Haskell, Charles S., Philadelphia, Pa., assignor to H. L. Roosevelt, New York, N. Y. Pneumatic action for organs	337,396	Mar. 2	600	157	34	1037
Haskell, Luther D., Jr., Beverly, Mass. Thill-coupling	338,067	Mar. 16	1598	416	34	1226
Haskins, Clothier P. (See Lewis, George W., assignor.)						
Hass, Theodore M., New York, N. Y. Album-stand	335,450	Feb. 2	504	131	34	532
Hassard, William R., Union, N. J. Coffin	335,451	Feb. 2	506	132	34	532
Hassell, Richard L., Chicago, Ill. Scale-beam	338,266	Mar. 23	1869	491	34	1226
Hassler, Frank, *et al.* (See Wickiser, Samuel, assignor.)						
Hasson, Albert A. (See Adams and Hasson.)						
Hastings, Charles W., Brooklyn, N. Y. Electro-magnetic poise-adjuster	338,523	Mar. 23	2222	563	34	1349

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drfs.	Official Gazette. Vol.	Official Gazette. Page.
Hatch, Andrew J., San Francisco, Cal. Fruit-drier	335,351	Feb. 2	373	97	34	533
Hatfield, Charles B., assignor to Automatic Shoe Beader Company, Rochester, N. Y. Machine for beading shoe-uppers	334,376	Jan. 12	1251	327 328	34	239
Hatfield, Charles B., assignor of one-half to J. C. Heughes, H. Loewer, and A. S. McNab, Rochester, N. Y. Button-fly-scalloping machine	338,665	Mar. 23	2416	636 637	34	1361
Hatfield, James. (See Tatum and Hatfield.)						
Hatfield, Robert F., New York, N. Y. Gas-pressure regulator	334,773	Jan. 26	1804	480	34	356
Hatfield, Vermont C. (See Drayer and Hatfield.)						
Hatfield, William B., assignor to J. Rodgers & Sons, (limited,) Sheffield, England. Knife	336,814	Feb. 16	1775	464	34	768
Hathaway, Charles, Cleveland, Ohio. Railway tranafer-table	338,407	Mar. 23	2071	543	34	1321
Hathaway, George H. (See Butler and Hathaway.)						
Hathaway, William A., North Kingstown, assignor to C. H. Atwood, Apponaug, R. I. Wrench	335,192	Feb. 2	150	38	34	466
Hatters Supplies Company. (See Andrews, Charles S., assignor.)						
Haubtman, Leon F., New Orleans, La. Defecator for cane-juice	335,358	Feb. 2	375	97, 98	34	506
Haught, Richard F., and J. J. Fisher, Manchester, Ohio. Car-coupling	336,965	Mar. 30	2849	751	34	1466
Hauserman, Louis J., Chicago, Ill. Animal-trap	336,998	Mar. 2	154	42	34	953
Havell, George, Newark, N. J. Knife-bolster	336,107	Feb. 16	1453	383	34	714
Hawes, Arnold C., Noroton, Conn. Duplex horseshoe	334,658	Jan. 19	1648	440	34	319
Hawes, Arnold C., Noroton, Conn. Duplex horseshoe	334,659	Jan. 19	1650	441	34	319
Hawes, Arnold C., Noroton, Conn. Duplex horseshoe	334,660	Jan. 19	1653	441	34	319
Hawk, Jacob, Canton, Ohio. Grain-thrashing machine	335,753	Feb. 9	940	248	34	616
Hawk, Jacob, Canton, Ohio. Fan for grain-separators	336,567	Feb. 23	2190	556	34	857
Hawkenson, Nels W., Litchfield, Minn. Car-coupling	334,863	Jan. 26	1917	510	34	376
Hawkes, Frederick W., *et al.* (See Gray, Henry F., assignor.)						
Hawkins, John T., Taunton, Mass. Sheet-delivery for printing-machines	335,698	Feb. 9	858	227	34	600
Hawkins, John T., Taunton, Mass. Sheet-delivery apparatus for printing-machines	336,108	Feb. 16	1454	383	34	714
Hawkins, John T., Taunton, Mass. Sheet-delivery apparatus for printing-machines	336,109	Feb. 16	1455	383	34	714
Hawkins, John T., Taunton, Mass. Chromatic-printing machine	338,666	Mar. 23	2418	637 638	34	1362
Hawksley, Thomas, Brighton, county of Sussex, England. Dry system of disposing of sewage, &c	334,436	Jan. 19	1337	362 363	34	262
Hawley, Eli J., Manchester, Vt. Centrifugal pump	336,807	Feb. 23	2447	642	34	897
Hawley, Henry, Culpeper, assignor of one-half to W. F. Latham, Culpeper County, Va. Window-blind	337,152	Mar. 2	359	94	34	992
Hawley, Theodore, Fairfield, Conn. Joining pieces of rubber cloth	338,068	Mar. 16	1599	416	34	1226
Hawley, Theodore, Fairfield, Conn. Mechanism for joining pieces of rubber cloth	338,069	Mar. 16	1600	416 417	34	1226
Hawn, David, Swedesborough, N. J. Tug	337,963	Mar. 2	509	133	34	1020
Haworth, James W., Decatur, Ill. Metallic felly for wheels	334,949	Jan. 26	2023	539	34	296
Hayden, Henry F., Washington, D. C. Purifier and feeder for boilers	334,774	Jan. 26	1806	480	34	357
Hayden, James T., assignor to R. T. Crane, Chicago, Ill. Pipe-wrench	335,193	Feb. 2	151	39	34	466
Haydn, George, Baltimore, Md., assignor to W. L. Deming, Salem, Ohio. Bilge-water ejector	333,753	Jan. 5	356	96	34	67
Haydn, George, Baltimore, Md., assignor of one-half to W. L. Deming, Salem, Ohio. Motor	338,408	Mar. 23	2072	543	34	1321
Hayes, George, New York, N. Y. Blind-slat, &c	335,853	Feb. 2	376	98	34	509
Hayes, George, New York, N. Y. Slat for louvers and blinds	335,854	Feb. 2	377	98	34	509
Hayes, John J. (See Fuller and Hayes.)						
Hayes, Miles T., assignor of two-thirds to A. F. Ransom and J. W. Wambold, Burlington, Wis. Horse-collar	339,098	Mar. 30	3060	810	34	1500
Haynes, Carlos B., North Adams, Mass. Canopy for carriages	334,584	Jan. 19	1544	413	34	300
Hayward, Adelaide M., Boston, Mass. Soap-dish	337,153	Mar. 2	360	94	34	993
Hayward, Calvin D., New York, N. Y. Window-sash fastener	335,197	Feb. 2	41	11	34	448
Hayward, Emma L. (See Hayward, John H., assignor.)						
Hayward, John H., New York, assignor to E. L. Hayward, Port Richmond, N. Y. Gropling and dredging bucket	336,408	Feb. 16	1802	498	34	792
Hayward, Walter S., *et al.* (See Kenney, Thomas M., assignor.)						
Haywood Bros. & Co. (See Ellis, George A., assignor.)						
Hazard, James S. (See Taylor, Edward E., assignor.)						
Heacock, Joel, Brighton, Iowa. Roller-skate	338,070	Mar. 16	1602	417	34	1227
Head, Charles, Quincy, Ill. Transfer-bevel	336,409	Feb. 16	1904	498	34	793
Headen, John S., Pleasant Hill, Mo. Washing-machine	338,840	Mar. 30	2861	706	34	1435
Headley, Elwood, New York, N. Y. Fare-receiver	336,410	Feb. 16	1904	499	34	793
Hearle, Charles C., Montreal, Quebec, Canada. Spring	338,267	Mar. 23	1870	491	34	1227
Heartwell, Oscar F., Jr., Joliet, Ill. Broadcast seed-sower	337,838	Mar. 16	1279	331	34	1169
Heath, Henry, assignor to Fisk, Clark & Flagg, New York, N. Y. Making sailor-knot scarfs	335,071	Jan. 26	2198	564	34	426
Heath, Henry R., *et al.* (See Palmer, Noyes F., assignor.)						
Heath, Henry R., Brooklyn, assignor of two-thirds to C. S. Goodwin, New York, and N. F. Palmer, Jamaica, N. Y. Button	338,409	Mar. 23	2073	543	34	1322
Heath, John, Janesville, Wis. Filtering device for feed-water pipes	337,154	Mar. 2	361	94	34	993
Heavner, Andrew J., and R. Thornton, Pittsfield, Ill. Wheel-cultivator	337,400	Mar. 9	996	188	34	1061
Hedden, Charles I. (See Teed, William P., assignor.)						
Hedges, John H. (See Coon, Hedges, and Bernard.)						
Hedges, Killingworth W., Westminster, county of Middlesex, England. Speed-indicator	336,966	Mar. 30	2850	752	34	1466
Hege, Constantine A., Salem, N. C. Cotton-press	335,194	Feb. 2	152	39	34	466
Hegener, Rudolph, South Chicago, Ill. Cutter-head	335,582	Feb. 9	692	183 184	34	571
Heiles, Gustav. (See Prahar, Louis B., assignor.)						
Heilman, Frederick W., assignor to J. Lagowitz, Newark, N. J. Metal hub for locks	337,494	Mar. 9	950	215	34	108
Heim, Frederick, assignor of one-half to W. Robbins, Philadelphia, Pa. Hose-bridge	336,492	Feb. 16	2004	585	34	810
Heimann, Salomon, New York, N. Y. Treating peat	337,495	Mar. 9	851	.....	34	1065
Heinemann, Arnold H., Chicago, Ill. Table and desk	333,936	Jan. 5	166	45	34	33
Heinfelden, Curt. (See Wagner, Michael, assignor.)						
Heise, August J., Baltimore, Md. Mortising-machine	338,967	Mar. 30	2851	752	34	1466
Heiser, William, Buffalo, N. Y. Device for making nuts	335,195	Feb. 2	155	40	34	466
Heiser, William, Buffalo, N. Y. Beer-cask	337,401	Mar. 9	996	188	34	1061
Heisey, Augustus H. (See Miller, John E., assignor.)						
Heiss, Charles E., assignor of one-half to J. N. Raymond, Chicago, Ill. Reel for coiling lead pipe	334,585	Jan. 19	1545	413	34	300
Heitmann, Heinrich P., Ableman, Wis. Heating-stove	338,856	Jan. 5	492	133	34	92
Hellem, William, assignor of one-half to P. and D. Barnes, Allentown, N. Y. Clamp for sucker-rods	334,226	Jan. 12	1043	277	34	202
Hellem, William, assignor of one-half to P. and D. Barnes, Allentown, N. Y. Pipe-wrench	334,227	Jan. 12	1044	277	34	202

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Hellerstedt, Peter F., Morrison, Ill. Buggy-spring	338,071	Mar. 16	1603	417	34	1227
Helliwell, Robert B., Philadelphia, Pa. Neck-wear retainer	333,754	Jan. 5	357	96	34	67
Hellmuth, Frederick C., assignor to himself and J. Muns, Jr., Brooklyn, N. Y. Carpet-fastener	334,170	Jan. 12	949	257	34	188
Helm, Charles, and J. Nickenich, Toledo, Ohio. Land-roller	337,964	Mar. 2	510	133 134	34	1099
Helm, Richard, St. Louis, Mo. Baby-carriage	338,171	Mar. 16	1741	455	34	1254
Helms, Francis M., Veedersburg, Ind. Cultivator	335,292	Feb. 2	198	59	34	475
Helms, Lewis E., *et al.* (See Helms, William M., assignor.)						
Helms, William M., assignor of two-thirds to L. E. Helms and W. S. Cunningham, Steubenville, Ohio. Tire-upsetter	337,265	Mar. 2	511	134	34	1021
Helsley, J. Ham. (See Peay and Helsley.)						
Hemingway, Frederick B., assignor to Hemingway & Kelley, Clinton, Iowa. Folding woven-wire cot and mattress	336,110	Feb. 16	1456	384	34	714
Hemingway & Kelley. (See Hemingway, Frederick B., assignor.)						
Hemmenway, Eugene S., Boston, Mass. Bed-lounge	334,598	Jan. 19	1466	393	34	285
Hemphill, James, Pittsburg, Pa. Expanding joint for tubes	337,560	Mar. 9	957	245 246	34	1105
Henderson, Albert H. (See Ries, Elias E., assignor.)						
Henderson, Francis G. L., Newton, Mass. Combined boot and glove buttoner	339,055	Mar. 30	2993	792	34	1490
Henderson, George A., Decatur, Ill. Water-gage	338,737	Mar. 30	2541	670	34	1409
Henderson, Robert W., Newark, N. J. Plaiting-machine	336,999	Mar. 2	155	42	34	953
Henderson, Vincent H. (See Forbes, Alston J., assignor.)						
Hendrick, Augustus D., *et al.* (See Whiting, Henry B., assignor.)						
Hendrick, Eli E., Carbondale, Pa. Machine for the manufacture of ice and for refrigerating purposes	336,233	Feb. 16	1655	432 433	34	747
Hendrick, Eli E., Carbondale, Pa. Reducing temperature	336,234	Feb. 16	1662	433	34	748
Hendrick, Eli E., Carbondale, Pa. Machine for cooling liquids and other articles, commonly called "ice-machines"	336,235	Feb. 16	1666	433 434	34	748
Hendrick, George W., *et al.* (See Whiting, Henry B., assignor.)						
Hendrickson, Robert T., Brooklyn, N. Y. Handle attachment for planes	337,581	Mar. 9	959	246	34	1105
Henke, Henry, Houston, Tex. Funnel for forcing molasses, &c	335,452	Feb. 2	506	132	34	532
Henkel, George, Springfield, Ohio. Combined pool-rack and ball-spotter	338,735	Mar. 30	2536	670	34	1408
Henley, James M. (See Thomas, Hugh, assignor.)						
Henley, Micajah C., Richmond, Ind. Roller-skate	338,736	Mar. 30	2538	670	34	1409
Henley, Micajah C., and H. Farmer, Richmond, Ind. Tension device for fence-machines	338,738	Mar. 30	2541	671	34	1409
Hennessy, Thomas B., Chicago, assignor to S. Dingee, Wilmette, Ill. Extension-table	335,453	Feb. 2	507	132	34	532
Hennig, Henry, Paterson, N. J. Spark-arrester	335,923	Feb. 9	1186	315	34	660
Henning, George C., Washington, D. C. Label	334,437	Jan. 19	1339	363	34	963
Henrie, George V., assignor of one-half to M. V. B. Watson, San Francisco, Cal. Fruit-jar fastening	335,754	Feb. 9	941	248	34	616
Henry, Frank J., *et al.* (See Harty, William, assignor.)						
Henry, George W. (See Miller, Thomas J., assignor.)						
Henry, John, assignor to himself, W. T. Sheppard, and J. E. Bellamy, Ardoch, Dak. Ter. Band-cutter	335,813	Feb. 9	1027	271	34	632
Henry, Theodore W., Sanford, Fla. Key-ring	338,268	Mar. 23	1871	492	34	1287
Henze, Julius, Jr., assignor to himself and A. Türpe, Dresden, Saxony, Germany. Car-coupling	338,968	Mar. 30	2852	752 753	34	1467
Herbert, Michael E., St. Joseph, Mo. Steam-boiler	336,315	Feb. 16	1776	465	34	768
Herbertson, William H., Brownsville, Pa. Car-axle lubricator	337,327	Mar. 2	601	158	34	1037
Herden, Henry, Corning, N. Y. Centrifugal speed-indicator	338,841	Mar. 30	2682	706	34	1436
Hering, Carl, assignor of one-half to C. H. Banes, Philadelphia, Pa. Dynamo-electric machine	335,355	Feb. 2	379	98	34	509
Herline, Edward, Jr., Hoboken, N. J. Attachment for tape-measures	338,410	Mar. 23	2073	543	34	1322
Herman, John M., Mallard, Iowa. Expanding pulley	334,377	Jan. 19	1252	338	34	240
Hermann, Samuel, Cincinnati, Ohio. Trunk	337,328	Mar. 2	602	158	34	1037
Herreshoff, John B. F., assignor to himself, G. H., and W. H. Nichols, Brooklyn, N. Y. Sulphuric-acid tower	335,699	Feb. 9	861	228	34	601
Herrick, James H., assignor of one-half to W. M. Gartshore, London, Ontario, Canada. Stove-door	333,857	Jan. 5	493	134	34	92
Herrmann, Henry O., assignor to W. Webster, Philadelphia, Pa. Ventilator and chimney-top	339,099	Mar. 30	3061	810	34	1501
Herron, John, assignor of one-third to F. T. Phillips, Olney, Ill. Music-leaf turner	332,519	Jan. 5	33	9	34	9
Hersee, Sidney, *et al.* (See Court, Charles, assignor.)						
Hersey, Sidney, *et al.* (See Court, Charles, assignor.)						
Hertenstein, Michael, Columbus, Ohio. Reservoir cooking-stove	338,739	Mar. 30	2543	671	34	1410
Hescock, Henry W., Hubbard, Ohio. Evaporating-pan	335,568	Feb. 9	694	184	34	572
Hess, Alfred. (See Hess, Elmer J., assignor.)						
Hess, Elmer J., assignor of one-half to A. Hess, Cincinnati, Ohio. Vehicle-spring	338,072	Mar. 16	1604	418	34	1227
Hess, George H., Chicago, Ill. Fire-pot for stoves and furnaces	333,027	Jan. 5	168	45, 46	34	33
Hess, John, and G. Jensen, Newark, N. J. Oil-can	335,520	Feb. 2	602	156	34	547
Hess, John M., Philadelphia, Pa. Air-heating furnace	334,661	Jan. 19	1655	443	34	320
Hessler, Jacob, Chicago, Ill. Reed-board	335,700	Feb. 9	863	228	34	601
Hessler, Jacob R., Chicago, Ill. Combined organ and sewing-machine	338,740	Mar. 30	2545	671 672	34	1410
Hester, Thomas H., Troy, Miss. Churn	334,586	Jan. 19	1547	414	34	300
Heston, David, assignor to Brown, Heston & Co., Philadelphia, Pa. Grease-proof paper	337,155	Mar. 2	362	95	34	993
Heston, Watson, Carthage, Mo. Combined tool for raking, hoeing, shoveling, and pitching	334,438	Jan. 19	1341	363	34	263
Hetherington & Berner. (See Hetherington, Fredrick A., assignor.)						
Hetherington, Fredrick A., assignor to Hetherington & Berner, Indianapolis, Ind. Inking apparatus for cylinder printing-machines	335,196	Feb. 2	156	40	34	469
Hetherington, John S., Dallas, Tex. Power-stand	335,128	Feb. 2	42	12	34	448
Heuer, August, *et al.* (See Seng, Wendelin, assignor.)						
Heughes, John C., *et al.* (See Hatfield, Charles B., assignor.)						
Heunsch, Edmund F. (See Box and Heunsch.)						
Hewett, Robert J., St. Louis, Mo. Biscuit-cutter	337,329	Mar. 2	603	158	34	1037
Hewitt, Silas F., New York, N. Y. Sleigh	336,411	Feb. 16	1907	499	34	793
Hewitt, William. (See Campbell and Finch, assignors.)						
Hewitt, William, assignor to Trenton Iron Company, Trenton, N. J. Metallic-spring mattress	335,924	Feb. 9	1187	316	34	660
Hexamer, Charles J., Philadelphia, Pa. Fire-bucket low-water alarm	335,923	Feb. 2	199	59	34	476
Hey, Robert H., Philadelphia, Pa. Strainer for water and other fluids	338,520	Mar. 23	2224	583	34	1349
Heysinger, Isaac W., Philadelphia, Pa. Spring clamping device	334,016	Jan. 12	712	196	34	141
Heywood, Henry, Gardner, Mass. Covered frame for furniture	333,628	Jan. 5	170	46	34	33

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Heywood, Warren A., Bucksport, Me. Hame-staple	338,073	Mar. 16	1605	418	34	1227
Hickok, William O. (See Metzger and Cooper, assignors.)						
Hicks, Bohn C., Minneapolis, Minn. Stock-car	338,743	Mar. 30	2549	673	34	1411
Hicks, Henry C., Minneapolis, Minn. Stock-car	338,741	Mar. 30	2546	672 673	34	1410
Hicks, Henry C., Minneapolis, Minn. Stock-car	338,742	Mar. 30	2548	678	34	1411
Hicks, Israel, Yonkers, N. Y. Peanut-roaster	337,952	Mar. 16	1448	375	34	1199
Hicks, Oliver H., Chicago, Ill. Toilet-paper and fixture	334,864	Jan. 26	1918	510	34	377
Hicks, William S., New York, N. Y. Button-hook	337,833	Mar. 16	1281	331	34	1169
Higbee, Charles H., assignor to A. J. Davies, New York, N. Y. Lamp	333,520	Jan. 5	34	9, 10	34	9
Higbee, Charles H., assignor to A. J. Davies, New York, N. Y. Coal-oil lamp	333,521	Jan. 5	35	10	34	9
Higbee, Charles H., assignor to A. J. Davies, New York, N. Y. Lamp-burner	334,017	Jan. 12	714	196	34	141
Higbee, Charles H., assignor to A. J. Davies, New York, N. Y. Lamp	334,018	Jan. 12	716	196	34	141
Higgin, Henry, Newport, Ky. Prop-nut	336,808	Feb. 23	2448	643	34	897
Higgins, Campbell P., Philadelphia, Pa. Machine for forming and punching polygonal tubes	336,852	Feb. 23	2506	660	34	908
Higgins, Campbell P., Philadelphia, Pa. Machine for forming and punching polygonal tubes	336,853	Feb. 23	2507	661	34	909
Higgins, Campbell P., Philadelphia, Pa. Machine for forming serpentine tubes	336,854	Feb. 23	2508	661	34	909
Higgins, Campbell P., Philadelphia, Pa. Tube-punching machine	337,330	Mar. 2	604	158	34	1038
Higgins, Daniel, Boston, Mass. Sewer-trap	334,378	Jan. 12	1253	338	34	240
Higgins, Edward S., assignor to C. T. Cayley, London, England. Machine for trimming the edges of hollow articles	338,969	Mar. 30	2853	753 754	34	1467
Higgins, H. Ambrose. (See Higgins, Mason A., assignor.)						
Higgins, Joseph C., New Brunswick, N. J. Filter	338,411	Mar. 23	2074	544	34	1322
Higgins, Mason A., assignor to H. A. Higgins, Aurora, Ill. Carpet-stretcher	335,856	Feb. 2	380	99	34	509
Higgins, Oliver, and A. S. Condit, Napoleon, Ohio. Device for driving and bending headless tacks	337,061	Mar. 2	237	63	34	969
Higgins, Solomon S. (See Lakin, Rinaldo S., assignor.)						
Higgins, Sylvester W., St. Louis, Mo. Washing-machine	338,594	Mar. 23	2225	563	34	1349
Higley, Eben N., Somersworth, N. H. Railway-tie	334,226	Jan. 12	1045	278	34	262
Hildreth, Elmer J., New Haven, Conn. Hitching device	337,582	Mar. 9	960	246	34	1105
Hildreth, Elmer J., and T. R. Miller, New Haven, Conn. Universal marker	335,857	Feb. 2	382	99	34	510
Hildreth, Francis, Townsend's Inlet, N. J. Vehicle running gear	334,429	Jan. 19	1342	363	34	263
Hildt, August, assignor to L. Dryfoos & Co., New York, N. Y. Quilting-machine	338,595	Mar. 23	2295	584	34	1349
Hill, Abraham, Marlborough, county of Wilts, England. Valve-gear for steam-pumps	338,152	Mar. 16	1718	448 449	34	1250
Hill, Alexander H., Oskaloosa, Iowa. Window-blind. (Reissue)	10,692	Feb. 23	2563	676 677	34	919
Hill, Benjamin B., Philadelphia, Pa. Blotter-bath	335,564	Feb. 9	695	184	34	572
Hill, Benjamin B., Philadelphia, Pa. Blotter-bath	335,565	Feb. 9	695	184	34	572
Hill, Benjamin B., Philadelphia, Pa. Self-inking hand-stamp	338,153	Mar. 16	1720	449	34	1250
Hill, Charles F., Springfield, Wis. Pliers	336,715	Feb. 23	2396	609	34	875
Hill, David. (See Pohlé and Hill.)						
Hill, George, administrator. (See Hill, S. Ambrose.)						
Hill, Harry W., Beloit, Wis. Pulley-bearing	337,953	Mar. 16	1449	375	34	1199
Hill, John R., Washington, D. C. Engraved plate	335,814	Feb. 9	1098	272	34	632
Hill, Justin H., Chicago, Ill. Hame-fastener	336,111	Feb. 16	1457	384	34	714
Hill, R. G. (See Clayton, Robert G., assignor.)						
Hill, S. Ambrose, deceased, (G. Hill, administrator,) Sunbury, Pa. Rheostat for incandescent electric lights	336,716	Feb. 23	2396	610	34	875
Hill, Samuel C., Richmond, Ind., and H. D. Crooker, Battle Creek, Mich. Clothes-pounder	334,379	Jan. 12	1254	338	34	240
Hill, Terelius A., and J. Peelle, Maryville, Tenn. Quilting attachment for sewing-machines	338,154	Mar. 16	1721	449	34	1251
Hill, W. H. (See Rhentan, Abram A., assignor.)						
Hill, William B. (See Garner and Hill.)						
Hillery, Benjamin F., New York, N. Y. Fastening for boxes, satchels, &c	336,316	Feb. 16	1777	465	34	769
Hilton, Charles H., assignor of two-thirds to E. B. Baker and R. D. Blish, New Haven, Conn. Electric alarm apparatus	334,380	Jan. 12	1255	339	34	240
Himebaugh, Eli A. (See Patterson and Himebaugh.)						
Himmer, Vitalis, assignor to Standard Electric Clock Company, New York, N. Y. Secondary electric clock	337,563	Mar. 9	961	246	34	1105
Hinchey, Emeline. (See Underhill, Andrew J., 2d, assignor.)						
Hinderer, Gustav L., assignor of one-half to C. Kaufmann, Philadelphia, Pa. Bake-pan	334,602	Jan. 19	1656	442	34	320
Hine, Charles A., New Haven, assignor to Canfield Rubber Company, Bridgeport, Conn. Hose-supporter	337,954	Mar. 16	1450	376	34	1200
Hines, Dauphin S., *et al.* (See Bicknell, William A. P., assignor.)						
Hines, Patrick D., Summit Station, Ohio. Pump	337,402	Mar. 9	699	192	34	1061
Hinkley, George M., assignor of one-half to E. P. Allis & Co., Milwaukee, Wis. Circular sawing machine	334,663	Jan. 19	1656	442 443	34	320
Hinkley, George M., assignor of one-half to E. P. Allis & Co., Milwaukee, Wis. Feed-carriage for saw-mills	334,664	Jan. 19	1658	443	34	320
Hinkley, Jonas, assignor to Bostwick & Burgess, Norwalk, Ohio. Carpet-sweeper. (Reissue)	10,701	Mar. 23	2455	647	34	1388
Hinman, George W., Paducah, Ky. Churn	333,629	Jan. 5	170	46	34	33
Hinsdale, William R. (See Billings and Hinsdale.)						
Hipperling, William, assignor to Ginna & Co., New York, N. Y. Sheet-metal can	333,945	Jan. 5	618	167	34	115
Hiscott, Alva J., assignor to Canfield Rubber Company, Bridgeport, Conn. Dress-shield	338,744	Mar. 30	2550	674	34	1411
Hiscott, Alva J., assignor to Canfield Rubber Company, Bridgeport, Conn. Dress-shield	338,745	Mar. 30	2551	674	34	1411
Hitchcock, Charles A., *et al.* (See Burnley, William, assignor.)						
Hitchcock, Daniel W., Oskaloosa, Iowa. Coffee or peanut roaster	337,403	Mar. 9	700	183	34	1061
Hitchcock, Edward A. (See Smith and Hitchcock.)						
Hitchcock, Peter M., Cleveland, Ohio. Operating gas-wells	336,317	Feb. 16	1778	465	34	769
Hittle, Harry. (See Davenny, James E., assignor.)						
Hoadley, George E. (See Hoyt, Abram G., assignor.)						
Hoard, Frederick R. (See Hoard, John W., and F. R.)						
Hoard, John W. and F. R., Providence, R. I. Paint and varnish	334,019	Jan. 12	717	.....	34	142
Hobbs, Joseph D., Joliet, Ill. Governor	336,318	Feb. 16	1780	465 466	34	769
Hochstadt, Carl, assignor to Marder, Luse & Co., Chicago, Ill. Type-casting mold	336,483	Feb. 16	2004	525	34	810
Hodges, Harlan, Keota, Iowa. Grain weighing and delivering apparatus	338,638	Mar. 23	2377	626	34	1375
Hodges, Samuel H., Parish of Street, county of Somerset, England, assignor of one-third to G. E. Barnard, Lynn, Mass. Tree for boots or shoes	333,630	Jan. 5	171	47	34	34
Hodges, Samuel H., Parish of Street, county of Somerset, England, assignor of one-half to G. E. Barnard, Lynn, Mass. Paper-making machine	335,080	Jan. 26	2139	569	34	416

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Hodgkins, William A., Lawrence, Mass. Steam-generator	334,260	Jan. 26	2088	549	34	326
Hodson, George, Bradford, Pa. Piston for deep-well pumps	337,496	Mar. 9	852	215	34	1065
Hoekstra, Sjoerd G., Sheboygan, Wis. Horse-power	334,074	Jan. 12	804	230	34	157
Hoelsel, Phillip, *et al.* (See Rogers, William, assignor.)						
Hoffman, Henry C. (See Hough and Hoffman.)						
Hoffman, Henry C. (See Putnam and Hoffman.)						
Hoffman, William M., assignor to Farrar & Trefts, Buffalo, N. Y. Fleshing and unhairing machine	335,197	Feb. 2	157	40	34	469
Hoffman, William M., assignor to Farrar & Trefts, Buffalo, N. Y. Putting-out and striking-out machine for hides or skins	335,198	Feb. 2	158	41	34	469
Hoffmeister, Louis C., Philadelphia, Pa. Creeper for boots or shoes	334,361	Jan. 19	1256	339	34	241
Hofmann, Fredrick P., Lima, Ohio. Combined envelope and letter-sheet	336,746	Mar. 30	2552	674	34	1412
Hogan, John, St. Louis, Mo. Reclining-chair	335,815	Feb. 9	1029	272	34	633
Hogeboom, Franklin R., and G. C. Woolcocks, Brooklyn, N. Y. Heel-plate for boots or shoes	333,522	Jan. 5	26	10	34	9
Hogen, Andrew C., Cleveland, Ohio. Apparatus for clarifying molten metal	336,236	Feb. 16	1670	434	34	749
Hogland, John. (See Olson and Hogland.)						
Hohneck, Elise. (See Hohneck, Ernst and E.)						
Hohneck, Ernst and E., St. Paul, Minn. Carpet-fastener	335,925	Feb. 9	1168	316	34	660
Hoke, Frank P., Avon, Pa. Corn-roaster	336,227	Feb. 16	1671	435	34	749
Holbrook, Frank B., *et al.* (See Jeffrey and Liver, assignors.)						
Holbrook, Giles J., Jersey City, N. J. Musical toy	337,497	Mar. 9	852	216	34	1066
Holcomb, Fred A., Grand Rapids, Mich. District-telegraph signal-box	335,701	Feb. 9	864	228	34	601
Holcombe, Alfred G., assignor to Equitable Electric Company, New York, N. Y. Electrical call or signaling apparatus	336,643	Feb. 23	2298	581	34	855
Holcombe, Alfred G., assignor to Equitable Electric Company, New York, N. Y. Electrical communicating system for hotels	336,809	Feb. 23	2449	643	34	897
Holden, L. E., *et al.* (See Buckley, William F., assignor.)						
Holden, William, Baldwinsville, Mass. Stool and seat	335,927	Feb. 9	1190	317	34	661
Holdsworth, John W., and J. B. Foley, St. Louis, Mo. Spring-clasp	338,596	Mar. 23	2297	564	34	1350
Holdsworth, Thomas, Elyria, Ohio. Combined eraser and knife	336,119	Feb. 16	1456	384	34	714
Holland, Harold, Lynn, Mass. Patten	334,383	Jan. 12	1257	339	34	241
Holland, John P., Brooklyn, N. Y. Hydrocarbon-engine	337,000	Mar. 2	157	42, 43	34	953
Holland, William. (See Dodd, Union, assignor.)						
Hollenberger, John A., assignor of one-fourth to T. Schlosser, Hagerstown, Md. Door-latch	336,810	Feb. 23	2453	643	34	896
Holler, John M., Albany, N. Y. Tedder	336,319	Feb. 16	1781	466	34	769
Hollerith, Herman, St. Louis, Mo. Electro-magnetically-operated air-brake for railway-cars	334,090	Jan. 12	719	196, 197	34	142
Hollerith, Herman, St. Louis, Mo. Electro-magnetically-operated air-brake for railway-cars	334,021	Jan. 12	723	198	34	143
Hollerith, Herman, St. Louis, Mo. Electro-magnetically-operated air-brake for railway-cars	334,022	Jan. 12	726	198	34	143
Hollingsworth, Albert, Shawnee, Kans. Combined clod-crusher, stalk-cutter, marker, and rake	335,996	Feb. 9	1189	316	34	660
Hollingsworth, Henry S. (See Dixon, Henry M., assignor.)						
Hollis Spring Company. (See Moore, Hollis W., assignor.)						
Holloway, Lewis W., Indianapolis, Ind. Dust-arrester	336,238	Feb. 16	1672	435	34	749
Hollwede, Charles, assignor to C. Hollwede, St. Louis, Mo. Pen-holder	336,644	Feb. 23	2230	562	34	855
Hollwede, Charlotte. (See Hollwede, Charles, assignor.)						
Holman, George F. W. (See Yale, Holman, and Barnette.)						
Holmes, Booth & Haydens. (See Rigney and Wolff, assignors.)						
Holmes, Britain. (See Holmes, Edward and B.)						
Holmes, Edward and B., Buffalo, N. Y. Sugar-cane planter	335,199	Feb. 2	43	12	34	448
Holmes, Moses M., Gower, Mo. Lister corn-planter	337,156	Mar. 2	362	95	34	993
Holmes, Nathan L., Racine, Wis. Circle-iron for wagons	337,404	Mar. 9	703	183	34	1062
Holmes, Samuel, *et al.* (See Baldwin, Chester M., assignor.)						
Holmes, William, West Salem, Ohio. Sieve	339,056	Mar. 30	2904	792, 793	34	1490
Holmgreen, Julius H., San Antonio, Tex. Press	335,816	Feb. 9	1032	272	34	633
Holt, Albert T., Brooklyn, assignor to R. A. Loewenthal and A. G. Morganstern, New York, N. Y. Hose	334,951	Jan. 26	2024	540	34	396
Holt, George C., Hartford, Conn. Letter-opener	337,660	Mar. 9	1074	277	34	1126
Holt, Horace, Brooklyn, N. Y., assignor to J. F. Tenney, Chicago, Ill. Printing-stamp	337,331	Mar. 2	604	159	34	1038
Holt, Noah W., assignor to G. T. Smith Middlings Purifier Company, Jackson, Mich. Flour-bolt	335,454	Feb. 2	508	132, 133	34	532
Holt, Noah W., assignor to G. T. Smith Middlings Purifier Company, Jackson, Mich. Dust-collector	338,639	Mar. 23	2379	626, 627	34	1375
Holt, Robert B., and I. N. Walton, Allensville, Ky. Device for converting reciprocating into rotary motion	335,702	Feb. 9	866	226, 228, 229	34	602
Holton, Edward T., The Plains, Va. Cattle-pen	337,681	Mar. 9	1075	277, 278	34	1126
Holtzer, Charles W., Brookline, Mass. Electric gas-lighting burner	338,747	Mar. 30	2553	674	34	1412
Holtzer, Charles W., Brookline, Mass. Electric gas-lighting apparatus	338,748	Mar. 30	2554	675	34	1412
Holtzman, James O., Beaver Creek, Md. Feed-cutter	336,220	Feb. 16	1782	466	34	769
Holtzmann, Philip, and R. Mayer, New York, N. Y. Portable steam-boiler	336,113	Feb. 16	1458	384	34	715
Holz, Fred, and G. A. Mueller, Anderson's Ferry, assignors to Cincinnati Screw and Tap Company, Cincinnati, Ohio. Universal head for milling-machines	333,631	Jan. 5	172	47, 48	34	34
Homan, William C., Middletown, Conn. Call-bell	337,157	Mar. 2	363	95	34	993
Homero, Paul, Trieste, Austria-Hungary. Medicinal tea	333,632	Jan. 5	176	.....	34	35
Honeycutt, John T., Vancouver, Wash. Ter. Automatic brake	334,384	Jan. 19	1258	340	34	251
Honigmann, Morits, Aix-la-Chapelle, Germany. Fireless steam-engine	337,092	Mar. 2	237	63	34	969
Honiss, William H. (See Lorens and Honiss.)						
Honiss, William H., Hartford, Conn., assignor to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Paper bag	333,523	Jan. 5	37	10, 11	34	9
Honywood, Thomas, Horsham, county of Sussex, England. Nature-printing	339,057	Mar. 30	2905	.....	34	1491
Hood, Cornelius, Chicago, Ill. Wash-board rubber	337,834	Mar. 16	1269	332	34	1169
Hood, Gustave, Newark, N. J., assignor to D. M. Read, New York, N. Y. Fastening for hand-bag, pocket-book, and purse frames	337,662	Mar. 9	1076	278	34	1126
Hood, Gustave, Newark, N. J., assignor to D. M. Read, New York, N. Y. Lock for pocket-books	338,412	Mar. 23	2075	544	34	1322
Hood, John, and S. H. Reynolds, Boston, Mass. Dental vulcanizing apparatus	334,220	Jan. 19	1468	394	34	285
Hood, Thomas S., *et al.* (See Andrews, William P., assignor.)						
Hooper, Mary P. C., New York, N. Y. Device for numbering houses	335,130	Feb. 2	44	12	34	449

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Hooper, William, Ticonderoga, N. Y., assignor to himself and J. R. De Lamar, Denver, Colo. Ore-concentrator	337,683	Mar. 9	1077	276, 279	34	1126
Hooper, William, Ticonderoga, N. Y., assignor to himself and J. R. De Lamar, Denver, Colo. Ore-concentrator	337,684	Mar. 9	1079	279	34	1126
Hooper, William J. (See Price, George W., assignor.)						
Hope, Benjamin F., Sag Harbor, N. Y. Watch-case pendant	335,456	Feb. 2	510	123	34	583
Hopf, Carl F. (See Horn and Hopf.)						
Hopkins & Allen Manufacturing Company. (See Boland, James, assignor.)						
Hopkins, Cabel B., Louisville, Ky. Till-lock	335,456	Feb. 2	511	123, 124	34	583
Hopkins, Sylvanus C., Boston, Mass. Folding table	336,717	Feb. 23	2367	610	34	875
Horey, John, and C. Marsh, Rosendale, Wis. Seeding-machine	334,998	Feb. 9	1198	317	34	661
Horn, Adolph, Chicago, Ill. Steam-generator	336,114	Feb. 16	1459	385	34	715
Horn, John C., and C. F. Hopf, Chicago, Ill. Folding bed	337,158	Mar. 2	364	95, 96	34	994
Hornbostel, Ernst A., Oskaloosa, Iowa. Billiard-table leveler	336,667	Mar. 23	2433	639	34	1362
Horne, Alexander, Liverpool, county of Lancaster, England. Valve	337,498	Mar. 9	853	216	34	1066
Horner, William H., New York, and F. Hyde, Brooklyn, assignors to United States Waterproofing Fibre Company, New York, N. Y. Composition for treating cordage	336,718	Feb. 23	2399	.....	34	875
Horney, Henry. (See George and Horney.)						
Horsey, John G., London, England. Machinery for making brooms and brushes	333,946	Jan. 6	614	167	34	115
Horton, George T., assignor of one-half to G. D. Lockhart, Winnipeg, Manitoba, Canada. Car-brake	335,521	Feb. 2	603	157	34	548
Horton Manufacturing Company. (See Peters, John C., assignor.)						
Hoskins, Edwin J., Austin, assignor to C. P. Willard, Chicago, Ill. Steam-packing	339,100	Mar. 30	3062	810	34	1501
Hostetter, J. D., *et al.* (See Platt, Albert L., assignor.)						
Hotchkiss, Charles A., assignor to Ives, Blakeslee & Co., Bridgeport, Conn. Toy	339,101	Mar. 30	3063	810	34	1501
Hotchkiss & Co. (See Koerner, Alfred C., assignor.)						
Hots, Christoph, Chicago, Ill. Wagon	334,385	Jan. 12	1260	340	34	241
Houchin, Thomas W., C. B. Riker, and W. P. Houchin, New York, N. Y. Insect-powder distributer	335,617	Feb. 9	1033	273	34	633
Houchin, Waldo P. (See Houchin, Riker, and Houchin.)						
Houck, Sol. J., *et al.* (See Green, George F., assignor.)						
Hough, Romeyn B., Lowville, N. Y. Wooden card for business and other purposes	335,708	Feb. 9	868	229	34	602
Hough, William W., and H. C. Hoffman, Mound City, Ill. Strainer and cut-off	334,386	Jan. 12	1261	340	34	241
Houghtaling, William, assignor to E. Parmly, Bridgeport, Conn. Sewing-machine	338,947	Jan. 5	615	168	34	115
Houghton, Darius, Skowhegan, Me. Wire-cutting machine	335,618	Feb. 9	1034	273	34	633
Houghton, Darius, Skowhegan, assignor to C. Colby and S. A. Dinsmore, Bingham, Me. Wire-cutter	337,159	Mar. 2	367	96	34	994
Houghton, Louis S., *et al.* (See McMurray, Louis, assignor.)						
Houlehan, James, Toledo, Ohio, assignor of one-half to W. A. Bunton, Boston, Mass., and seven-sixteenths to J. S. Barker and E. E. Dwight, Toledo, Ohio. Telephony	335,529	Feb. 2	604	157	34	548
Hoult, Cyrus, assignor to A. H. Parker, Chicago, Ill. Elastic hose	335,704	Feb. 9	869	229	34	602
House, John B., Milwaukee, Wis. Broom-rack	337,767	Mar. 9	1162	308	34	1144
Houser, Samuel R., Upper Sandusky, Ohio. Combined roller and pulverizer	334,708	Jan. 19	1710	456	34	330
Householder, Henry L., assignor of one-half to H. R. Baldwin, Hebron, Ill. Pipe-wrench	334,387	Jan. 12	1262	341	34	241
House, Luc, Meadville, Pa. Apparatus for flattening window-glass	336,855	Feb. 23	2509	662	34	909
Hover, R. E. (See Letulip, Frederick, assignor.)						
Hovey, John S., Rome, N. Y. Button	338,969	Mar. 23	1873	492	34	1287
Howard, Cyrus, assignor of one-third to W. W. Patrick, Pittsburg, Pa. Snow-plow	338,948	Jan. 5	616	168, 169	34	115
Howard, Cyrus, assignor of one-third to W. W. Patrick, Pittsburg, Pa. Excavator	338,949	Jan. 5	619	169	34	116
Howard, James. (See Bett, Joseph E., assignor.)						
Howard, James, and E. T. Bousfield, Bedford, England. Railway sleeper and chair	335,523	Feb. 2	604	157	34	548
Howard, James, E. T. Bousfield, and G. Gibbs, Bedford, England; said Bousfield and Gibbs assignors to said Howard. Cord-holder-operating mechanism	338,228	Mar. 16	1818	475	34	1269
Howard, Willis J., *et al.* (See Eddleman, Francis N., assignor.)						
Howe, Charles S., *et al.* (See Durand, Jean B., assignor.)						
Howe, Edward B., trustee. (See Harmon, Charles L., assignor.)						
Howe, Frank I. Medfield, Mass. Curry-comb	335,073	Jan. 26	2199	564	34	427
Howell, John H. B., Newton, N. J. Bottle and stopper	334,865	Jan. 26	1919	511	34	377
Howell, John W., New Brunswick, assignor to Edison Lamp Company, Harrison, N. J. Electrical indicator	339,058	Mar. 30	2999	793	34	1491
Howes, Robert C., East Orange, assignor to F. O. Matthiessen & Weichers Sugar Refining Company, Jersey City, N. J. Bone-black discharger for continuous filters	335,586	Feb. 9	697	185	34	572
Howes, Samuel H. (See Atwood and Howes.)						
Howland, William H., Englewood, N. J. Pulverizer	336,321	Feb. 16	1784	466	34	770
Howse, Henry L., assignor of one-half to W. H. Wiester, San Francisco, Cal. Oil-stove	338,642	Mar. 30	2663	707	34	1436
Hoxsie, George L., Holloway, Mich. Valve-gear	335,199	Feb. 2	150	41	34	469
Hoyle, John V. B., Springfield, Ohio. Case for embroidery-silks	334,704	Jan. 19	1712	456	34	331
Hoyt, Abram G., Kingston, Pa., assignor of one-half to G. E. Hoadley, New Haven, Conn. Telegraphic code	335,929	Feb. 9	1194	317	34	661
Hoyt Brothers & Co. (See Hoyt, Joseph M., assignor.)						
Hoyt, Charles A. (See McCorkle, Samuel B., assignor.)						
Hoyt, Joseph M., assignor to Hoyt Brothers & Co., Lynn, Mass. Brush-holder for bottle-washing machines	337,332	Mar. 2	606	159	34	1038
Hoyt, Lucius H., Danbury, Conn. Apparatus for shaping hat-brims	338,273	Mar. 23	1874	493	34	1287
Hoyt, Lucius P. (See Le Dow, Budlong, and Hoyt.)						
Hoyt, Montraville, Jamaica, N. Y. Tire-heating furnace	334,952	Jan. 26	2025	540	34	396
Hubbard, Arthur O., Sauk Centre, Minn. Adjustable reclining-chair	336,115	Feb. 16	1460	385	34	715
Hubbard, Charles L., *et al.* (See Kienardt, John A., assignor.)						
Hubbard, Charles W., Pittsburg, Pa. Making axes	338,270	Mar. 23	1872	492	34	1287
Hubbard, Frederick J. (See Sleeper and Hubbard.)						
Hubbard, George M., assignor to W. and E. T. Fitch, New Haven, Conn. Whip-socket	335,594	Feb. 2	605	157	34	548
Hubbard, John U., Oakland, Me. Device for making claw-hatchets	339,059	Mar. 30	3001	793	34	1491
Hubbard, William. (See Lamont, Hugh, assignor.)						
Hubbell, John J., Benzonia, Mich. Machine for pearling wheat and other grain	337,160	Mar. 2	368	96, 97	34	994
Huber, Joseph L., Hamburg, Germany. Apparatus for measuring electrical currents	338,596	Mar. 23	2319	607	34	1364
Huber, Joseph L., Hamburg, Germany. Apparatus for measuring electric currents	338,597	Mar. 23	2320	608	34	1365
Hubert, Philippe G., New York, N. Y. Water-closet tank	337,405	Mar. 9	706	184	34	1062
Hudson, Edward M. (See Brous, Nicholas H., assignor.)						
Hudson, J. Jones. (See Funk, John S., assignor.)						
Huebner, Charles, Brooklyn, N. Y. Hydraulic jack	338,598	Mar. 23	2321	608	34	1365
Huey, William G., and T. J. Lovegrove, Philadelphia, Pa. Gripping device for cable railways	333,632	Jan. 5	177	48	34	35

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hughes, Henry A., Collinsville, Tex. Hame	334,775	Jan. 26	1808	481	34	357
Hughes, James L., New Plymouth, assignor of one-half to Motherwell Iron and Steel Company, Logan, Ohio. Wagon-seat	337,063	Mar. 2	239	64	34	969
Hughes, John F., *et al.* (See Wickizer, Samuel, assignor.)						
Hughes, John H. (See Smith and Hughes.)						
Hughes, Marshall J., Jersey City, N. J. Pen-holder	336,856	Feb. 23	2510	668	34	909
Hughes, Samuel T., Cannonsburg, Pa. Expansion-joint for pipes	338,509	Mar. 23	2383	606	34	1305
Hugle, Andrew J., Chicago, Ill. Watch-case	336,271	Mar. 23	1873	493	34	1287
Hulbert, George S. (See Thayer, Henry A., assignor.)						
Hull, Liverus, Boston, Mass. Skate	336,919	Mar. 2	58	14	34	836
Hulse, Edwin M., Chicago, Ill. Shoddy-purifier	334,776	Jan. 26	1809	481	34	357
Hulse, Edwin M., Chicago, Ill. Shoddy-purifier	334,777	Jan. 26	1810	481	34	357
Hulton, Eustace. (See Sewell, Hulton, and Bethel.)						
Hultz, Charles, Torch Lake, Mich. Locomotive-whistle alarm	338,413	Mar. 23	2076	544	34	1329
Hultz, James, Greely, Kans. Churn	338,179	Mar. 16	1742	455	34	1255
Humana, William, Cambridgeport, assignor to G. Collamore, Boston, Mass., and American Magnetic Electric Company, Jersey City, N. J. Magnetic electric door-pull	336,518	Feb. 16	2045	537	34	618
Humbird, James S., *et al.* (See Doubleday, Harry M., assignor.)						
Humphrey, Henry H., Detroit, Mich. Knob attachment	339,102	Mar. 30	3064	811	34	1501
Humphrey, Henry P., Lowell, Mass., assignor to Lowell Oiler Company, Nashua, N. H. Mechanical oiler and journal-box for shafting	333,950	Jan. 5	620	160	34	117
Humphrey, James D., Towanda, Pa. Leather-skiving machine	334,119	Jan. 12	870	228	34	169
Humphreys, John, Jr., Mansfield, Ohio. Pump	336,857	Feb. 23	2511	662	34	910
Hunnicutt, Hurgar, Malvern, Ark. Aerial ship	334,866	Jan. 26	1920	511	34	377
Hunsicker, Henry J., Laurelton, Pa. Bolt for shutters, &c	334,953	Jan. 26	2026	541	34	396
Hunt, James, assignor to United States Exhaust, Filling and Carbonating Company, Philadelphia, Pa. Bottle-filling machine	333,524	Jan. 5	89	11, 12	34	10
Hunt, James E., Chicago, Ill. Barbed fence-wire	338,229	Mar. 16	1880	476	34	1269
Hunt, Nathan, assignor of one-half to Buckeye Engine Company, Salem, Ohio. Lathe for turning spherical surfaces	338,749	Mar. 30	2556	675	34	1412
Hunter, George D., Terre Haute, assignor of one-half to T. C. Van Nuys and one-sixth to M. C. Hunter, Bloomington, Ind. Spark-arrester. (Reissue)	10,698	Mar. 9	1940	{231 / 232}	34	1135
Hunter, James W., and C. F. Bassett, Chicago, Ill. Step-ladder	336,008	Feb. 9	1296	345	34	679
Hunter, Morton C., *et al.* (See Hunter, George D., assignor.) (Reissue.)						
Hunter, Nathaniel W., Cincinnati, Ohio. Harness-coupling	333,634	Jan. 5	178	48	34	35
Hunter, Thomas M., assignor of one-half to W. J. Best and L. Jordan, New York, N. Y. Safety attachment for elevators	337,768	Mar. 9	1183	308	34	1144
Huntington, Lawson D., *et al.* (See Osborne, Theodore B., assignor.)						
Huntington, William H. (See Tilton, James E., assignor.)						
Hurd, Edward G., Seneca, Kans. Clothes-rack	335,073	Jan. 26	2300	584	34	427
Huse, Warren D., Laconia, assignor to O. Twombly, Lake Village, N. H., and T. S. Nowell, Boston, Mass. Knitting-machine	335,587	Feb. 9	698	{185 / 186}	34	573
Hushaw, Samuel, Industry, Ill. Gate	336,049	Feb. 9	1356	358	34	690
Hussey, Silvanus, Buffalo, N. Y. Rock-drill machine	339,103	Mar. 30	3065	811	34	1501
Huston, Thomas, Ceylon, Pa. Monument	337,760	Mar. 9	1185	309	34	1145
Hutchins, Carleton B., Detroit, Mich. Wall for refrigerator-cars	337,770	Mar. 9	1186	309	34	1145
Huyett & Smith Manufacturing Company. (See Smith, Wright D., assignor.)						
Hyatt, John W., Newark, N. J. Filter	338,414	Mar. 23	2077	{544 / 554}	34	1323
Hyatt, William F., Brooklyn, N. Y. Safety-pin	335,284	Feb. 2	260	74	34	490
Hyde, Alfred T., Oil City, Pa. Tape-measure	338,597	Mar. 23	2298	585	34	1350
Hyde, Alfred T., Oil City, Pa. Ladder	338,598	Mar. 23	2298	585	34	1350
Hyde, Alfred T., Oil City, Pa. Hollow street-connection	338,668	Mar. 23	2494	630	34	1363
Hyde, Daniel W., Boston, Mass. Apparatus for flushing water-closets	333,951	Jan. 5	622	170	34	117
Hyde, Francis. (See Horner and Hyde.)						
Hyde, Francis, Detroit, Mich. Car-axle-box cover	334,705	Jan. 19	1713	457	34	331
Hyde, William F., assignor to E. B. and G. E. Preston, Chicago, Ill. Turn-table truck fire extension-ladder	336,519	Feb. 16	2047	537	34	618
Ide, Ferdinand F., Springfield, Ill. Adjustable filing-block	335,930	Feb. 9	1195	318	34	662
Iles, Henry J., Seymour, assignor to J. McEnerney, Derby, Conn. Thill-coupling	336,970	Mar. 30	2637	754	34	1466
Iles, Malvern W., and F. Kelper, Denver, Colo.; said Kelper assignor of one-half to said Iles. Matte-pot for smelting-furnaces	335,294	Feb. 2	260	52	34	476
Illingworth, Harry R. (See Illingworth, Joseph J. and H. R.)						
Illingworth, Joseph J. and H. R., Utica, N. Y. Steam-engine recorder	334,778	Jan. 26	1811	481	34	358
Illingworth, Joseph J. and H. R., Utica, N. Y. Steam-engine recorder	334,779	Jan. 26	1812	482	34	358
Illingworth, Joseph J. and H. R., Utica, N. Y. Steam-engine recorder	338,843	Mar. 30	2685	707	34	1436
Ilse, Augustus, Evanston, Wyo. Ter. Fire-escape	338,669	Mar. 23	2494	630	34	1363
Ingalls, William, Mobile, Ala. Log-turner	336,328	Feb. 16	1785	467	34	770
Ingersoll, Charles M., Summit Hill, Pa. Car-coupling	333,635	Jan. 5	180	40	34	36
Ingersoll, Luther J., Denver, Colo. Toy pistol						
Ingold, Eugene. (See Stern, William A., assignor.)						
Inman, Thomas O., Williamsport, Pa. Frying-pan	334,867	Jan. 26	1921	511	34	377
Iredale, William J. (See Newland, Iredale, and Newland.)						
Ireland, A. Bertsell, Greene, N. Y. Saw	334,440	Jan. 19	1249	364	34	263
Ireland, Richard B., Trenton, N. J. Compensator for wire ropes and cables	338,415	Mar. 23	2080	545	34	1323
Iron Clad Manufacturing Company. (See Haigh, Harry B., assignor.)						
Irons, Edward P., Baltimore, Md. Gas-cock	337,161	Mar. 2	369	97	34	994
Irvin, Andy B., assignor of one-half to J. Rannells, Twelve Mile, Ind. Combined adjustable desk and seat	334,171	Jan. 19	950	257	34	183
Irvine, Thomas, Beef Slough, Wis. Plug for rafts and booms	336,920	Mar. 2	53	14	34	936
Irwin, John H., trustee. (See Voelker, William L., assignor.)						
Isaacs, John D., Oakland, Cal. Molding concrete tubes for cable railways	333,755	Jan. 5	358	97	34	67
Isaacson, David, Providence, R. I. Making pictures	335,755	Feb. 9	943		34	616
Isard, Robert S., Hudson, Ohio. Extension-ladder	337,955	Mar. 16	1450	376	34	1200
Isham, Willard S., Burlington, Vt. Rock-drilling machine	335,358	Feb. 2	383	99	34	510
Ives, Blakeslee & Co. (See Hotchkiss, Charles A., assignor.)						
Ives, Blakeslee & Co. (See Ritchie, Charles F., assignor.)						
Ives, Frederick E., Philadelphia, Pa. Magic lantern	338,074	Mar. 16	1606	418	34	1227
Ives, John N., Brooklyn, N. Y. Automatic attachment for gas-stoves	338,155	Mar. 16	1722	449	34	1251
I. X-L. Pump Company. (See Cline, George J., assignor.)						
Jackson, Charles A., assignor to D. F. Robinson, Lawrence, Mass. Telephone system	335,588	Feb. 9	702	{166 / 167}	34	573
Jackson, Francis, Raisinville, Mich. Mechanical movement	337,956	Mar. 16	1458	376	34	1200
Jackson, Francis W. (See Geery, Jackson, and Day.)						
Jackson, John P., Liverpool, England. Appliance for filtering water and other liquids	337,584	Mar. 9	963	247	34	1106

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Jackson, Thaddeus A., New York, N. Y. Inserting diamond or carbon points in tools	336,568	Feb. 23	2121	556	34	837
Jackson, William. (See Kittell and Jackson.)						
Jackson, William W., Chicago, Ill. Bung for beer kegs, casks, &c	337,169	Mar. 2	370	97	34	994
Jacob, Frank A., assignor to Ancshaensel & Strong, Indianapolis, Ind. Water-closet cistern	337,835	Mar. 16	1283	338	34	1169
Jacobs, Henry, Evansville, Ind. Wagon-box	335,359	Feb. 2	384	99	34	510
Jacobs, Samuel, assignor of one-half to J. F. Mathai, Baltimore, Md. Car-wheel	336,059	Feb. 9	1357	359	34	690
Jacobsen, David, Norwich, Conn. Bracket	335,821	Feb. 9	1196	318	34	662
Jacobus, Pierson, Varick, assignor of one-third to A. Baldridge & Co., McDougalls, N. Y. Harrow and cultivator	336,051	Feb. 9	1356	359	34	690
Jacot, Charles H., Hoboken, N. J. Automatic safety-check for musical boxes	337,585	Mar. 9	964	247	34	1106
Jahant, August, and D. Parker, Akron, Ohio. Coffee-pot handle	336,822	Feb. 16	1786	467	34	770
Jäger, Julius M., Brooklyn, N. Y. Underground conduit for electric conductors	338,971	Mar. 30	2656	755	34	1468
James, Thomas, and C. M. Schwab, Braddock, Pa. Heating and melting furnace	335,200	Feb. 2	160	41	34	470
James, Winfield E., assignor of two-thirds to J. S. Downing and J. Camp, South Oil City, Pa. Check-rein attachment	338,230	Mar. 16	1880	476	34	1269
Jamison, B. K., *et al.* (See Wright, William A., assignor.)						
Jamison, John P., Cambridgeport, Mass. Wood-ornamentation	335,589	Feb. 9	707	188	34	574
Janowitz, Julius, assignor to I. B. Kleinert, New York, N. Y. Dress-shield	335,225	Feb. 2	203	53	34	476
Janvier, Edwin P., Still Pond, Md. Gage-wheel attachment for drill-teeth	333,858	Jan. 5	498	134	34	92
Japtok, Carl, New York, N. Y. Ash-sifter	334,172	Jan. 12	951	257	34	183
Jarecki Manufacturing Company. (See McFeely, Ronald F., assignor.)						
Jargensen, Lars. (See Bolton and Jargensen.)						
Jarnagin, John S., Mossy Creek, Tenn. Machine for filing prescriptions	335,457	Feb. 2	513	134	34	533
Jarrell, William, assignor of one-half to W. H. Dodson, Humboldt, Tenn. Churn	334,229	Jan. 12	1046	278	34	202
Jarvis, John G. (See Kipper and Jarvis.)						
Jarvis, Samuel E., Lansing, Mich. Traction-engine	336,412	Feb. 16	1908	500	34	794
Jarvis, William D. F., Philippi, W. Va. Calculating device	338,075	Mar. 16	1607	419	34	1228
Jebb, William T. (See Schuman, John C., assignor.)						
Jeffers, Annie M., Chicago, Ill. Fire-escape	334,230	Jan. 12	1047	278	34	203
Jeffery, Alfred, Brooklyn, N. Y. Gearing for operating pumps	335,201	Feb. 2	161	42	34	470
Jeffery, Joseph A. (See Miller, Charles W., assignor.)						
Jeffery, Thomas B., Ravenswood, Ill. Velocipede	335,590	Feb. 9	709	188	34	574
Jefferys, John C. W., Holloway, county of Middlesex, England. Button	335,298	Feb. 2	203	53	34	476
Jeffrey, Henry D., and J. Liver, assignors to themselves, C. A. Bierce, and F. B. Holbrook, Winona, Minn. Bob-sleigh	337,866	Mar. 9	965	247	34	1106
Jeffrey, Joseph A., Columbus, Ohio. Drive-chain	336,921	Mar. 2	54	14	34	936
Jencks, Welcome, Manchester, N. H. Thread-guide support for ring-spinning frames	334,441	Jan. 19	1248	364	34	263
Jenkens, Charles A., New Berne, N. C. Adjustable bedstead	335,360	Feb. 2	385	100	34	511
Jenkins, Frank W., Brooklyn, assignor to W. A. Perry and C. C. Worthington, New York, N. Y. Piston water-meter	338,972	Mar. 30	2650	{755 / 756}	34	1468
Jenkins, Joel, Montclair, N. J. Pencil-sharpener	335,819	Feb. 9	1084	273	34	638
Jenkins, Theodore D., Jersey City, N. J. Fire-escape	337,064	Mar. 2	240	64	34	970
Jenkins, William H., Irwin, Colo. Mining-drill	335,591	Feb. 9	710	189	34	574
Jenney, James A., assignor to Fort Wayne Electric Light Company, Fort Wayne, Ind. Arc-lamp regulator	334,022	Jan. 12	728	{198 / 199}	34	144
Jenni, Thomas, Allegheny, Pa. Steam-engine	336,076	Mar. 16	1609	419	34	1228
Jennings, Arthur O., Southport, Conn., assignor of one-half to M. E. Seawell, Washington, D. C. Cab-register	334,780	Jan. 26	1812	482	34	358
Jennings, Benton L., Manhattan, Kans. Clevis	336,484	Feb. 16	2005	536	34	810
Jennings, Ebenezer, *et al.* (See Coyle, Charles J., assignor.)						
Jennings, Linson D. (See Tourgee and Jennings.)						
Jennings, Linson D., *et al.* (See Tourgee, Albion W., assignor.)						
Jensen, Goodmand. (See Hess and Jensen.)						
Jeralds, Silas E., and E. R. Lawton, Cheshire, Conn. Handle for cutlery	336,116	Feb. 16	1462	385	34	715
Jerszmanowski, Erasm J., New York, N. Y. Process of and apparatus for producing gas	333,859	Jan. 5	494	{134 / 135}	34	92
Jerszmanowski, Erasm J., New York, N. Y. Producing gas	333,860	Jan. 5	495	{135 / 136}	34	92
Jessop, George W., Pittsburg, Pa. Safety device for inclined railways	336,117	Feb. 16	1463	{385 / 386}	34	715
Jewell, Ammi M., San Francisco, Cal. Stave-jointing attachment for molding-machines	335,756	Feb. 9	944	248	34	616
Jewell, Gustavus W., and R. M. Dickson, Earl Park, Ind. Check-rower for corn-planters	335,361	Feb. 2	386	100	34	511
Jewell, William H. (See Rankin, Abram G. W., assignor.)						
Jewett, Edward M., assignor to himself and E. Michael, Buffalo, N. Y. Machine for jointing compressed beat staves	335,074	Jan. 26	2201	585	34	427
Jewitt, William G. (See Beaver and Jewitt.)						
Jillson, James D., Willimantic, Conn. Adjustable chimney	334,567	Jan. 19	1548	414	34	300
Jinkins, William M., Redding, Miss. Bale-tie	335,992	Feb. 9	1196	318	34	662
Jöhansson, Carl A., assignor to Company Aktiebolaget Separator, Stockholm, Sweden. Device for taking up end-pressure of rotating shafts	335,757	Feb. 9	945	249	34	616
Johansson, Carl A., Stockholm, Sweden. Apparatus for effecting emulsion of fats with milk, &c	336,394	Feb. 16	1787	467	34	770
John, August, assignor of two-thirds to F. and A. Krauser, Massillon, Ohio. Drilling-machine	335,758	Feb. 9	946	249	34	617
Johns, James M., Glenmore, Ga. Automatic fan	337,567	Mar. 9	967	248	34	1106
Johns Manufacturing Company, H. W. (See Fries, William A., assignor.)						
Johns, Will R., assignor to F. M. Rowe and R. Sager, Rockford, Ill. Trace-carrier	337,957	Mar. 16	1453	376	34	1200
Johnson, Andrew F., Dassell, Minn. Sash-balance	334,868	Jan. 26	1922	511	34	377
Johnson, Andrew G. (See Maloney and Johnson.)						
Johnson, Andrew J., assignor to Pocket and Stationary Fire Escape Company, Chicago, Ill. Fire-escape	338,750	Mar. 30	2557	{675 / 676}	34	1412
Johnson, Charles A., assignor of one-half to C. H. Von Stockenstrom, St. Paul, Minn. Fastening device for vehicle-hubs	336,590	Feb. 16	2049	538	34	818
Johnson, Charles C., Springfield, Vt., assignor to Morgan Envelope Company, Springfield, Mass. Paper-roll holder and cutter	335,908	Feb. 2	162	42	34	470
Johnson, Charles H., West Sutton, Mass. Vessel for condensing beer and other liquors	333,899	Jan. 5	623	170	34	117
Johnson, Charles R., and L. P. D. Carr, St. Mary's, Ohio. Barrel-head fastening	337,695	Mar. 9	1060	279	34	1127
Johnson, Cornelia, Cleveland, Ohio. Apparatus for assisting roller-skaters	335,681	Jan. 26	2141	569	34	416
Johnson, Edward H., New York, N. Y. Device for transmitting power from electric motors	338,985	Feb. 2	261	74	34	490
Johnson, George D. (See Bryan, Walter S., assignor.)						
Johnson, George R., Albion, Ind. Gasometer	337,065	Mar. 2	241	64	34	970
Johnson, George R., Albion, Ind. Mixing and vaporizing device for inhalers	337,066	Mar. 2	242	65	34	970
Johnson, George F., Philadelphia, Pa. Roller-skate	334,231	Jan. 12	1048	{278 / 279}	34	203

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Johnson, Greenleaf, Jr., Baltimore, Md. Planing and matching machine	336,978	Mar. 30	2983	{756 757 758}	34	1466
Johnson, Henry and H. A., and J. T. Cade, Flixton, county of Lancaster, England. Mechanism for controlling signals, &c	334,222	Jan. 12	1049	{279 280}	34	208
Johnson, Henry A. (See Johnson and Cade.)						
Johnson, Henry J., assignor to Providence Steam Engine Company, Providence, R. I. Mechanism for regulating steam-engines	335,963	Feb. 9	1197	{818 819}	34	662
Johnson, Hiram S., Portland, Me. Spring-connection for bed-springs and spring-beds	333,756	Jan. 5	850	97	34	67
Johnson, James P., Virden, Ill. Whiffletree	336,389	Mar. 23	2239	565	34	1350
Johnson, James P., Raccoon Valley, Tenn. Clod-crusher and harrow	336,974	Mar. 30	2986	756	34	1469
Johnson, Jonathan, Lowell, Mass. Boiler for steam-heaters	336,670	Mar. 23	2425	{639 640}	34	1363
Johnson, Louis K., Brooklyn, assignor to Alden Type Machine Company, New York, N. Y. Compositor's type-case	336,646	Feb. 23	2234	562	34	856
Johnson, Louis K., Brooklyn, assignor to Alden Type Machine Company, New York, N. Y. Compositor's type-case	336,647	Feb. 23	2236	563	34	856
Johnson, Louis K., and A. A. Low, Brooklyn, assignors to Alden Type Machine Company, New York, N. Y. Type-distributing apparatus	336,645	Feb. 23	2231	562	34	855
Johnson, Louis K., and A. A. Low, Brooklyn, assignors to Alden Type Machine Company, New York, N. Y. Compositor's type and space holder	336,719	Feb. 23	2330	{610 611 612}	34	875
Johnson, Louis K., and A. A. Low, Brooklyn, assignors to Alden Type Machine Company, New York, N. Y. Type-distributing apparatus	337,406	Mar. 9	707	{184 185}	34	1062
Johnson, Louis K., and A. A. Low, Brooklyn, assignors to Alden Type Machine Company, New York, N. Y. Type-distributing apparatus	337,407	Mar. 9	712	185	34	1063
Johnson, Lucius E., Aurora, Ill. Lantern	338,077	Mar. 16	1609	419	34	1298
Johnson, Monroe E., Pittsburg, Kans. Weather-boarding gage	338,156	Mar. 16	1723	450	34	1251
Johnson, Thomas N., Rome, N. Y. Ironing-table	337,696	Mar. 9	1061	260	34	1127
Johnson, Tom L., Cleveland, Ohio. Cable-railway construction	333,953	Jan. 5	624	{170 171}	34	117
Johnson, Virginia M. T. (See Randon, François, assignor.)						
Johnson, Warren S., Whitewater, and C. L. Fortier, Milwaukee, Wis. Signal system for telephone-exchanges	335,984	Feb. 9	1200	319	34	662
Johnson, William H., Westborough, Mass. Cream-separator	337,986	Mar. 2	512	134	34	1021
Johnson, William J., Newton, assignor to National Manufacturing Company, Boston, Mass. Vegetable-masher	338,000	Mar. 23	2384	609	34	1365
Johnson, Willis H., Springfield, Ill. Car-starter	336,922	Mar. 2	55	15	34	936
Johnston, Allen, Ottumwa, Iowa. Screw-machine	337,499	Mar. 9	854	{216 217}	34	1066
Johnston, George, Detroit, Mich. Lens-tester	337,333	Mar. 2	607	159	34	1038
Johnston Harvester Company. (See Arnold, Samuel, assignor.)						
Johnston Harvester Company. (See Cooley, Orville, assignor.)						
Johnston, Joseph. (See Scovill, George W., assignor.)						
Johnston, Lysander, assignor of one-half to J. E. Coe, Danville, Ill. Steam-boiler furnace	333,954	Jan. 5	625	171	34	117
Johnston, Samuel, Brockport, N. Y. Harvesting and binding machine	338,278	Mar. 23	1678	494	34	1268
Johnston, William M. (See Deal, Josiah J., assignor.)						
Johnston, William M. (See Merrifield, Charles E., assignor.)						
Johnstone, William H., Philadelphia, Pa. Stretcher for conveying wounded persons	336,349	Mar. 23	1964	{562 563}	34	1307
Joliet Wire Check Row Company. (See Peacock, Elijah P., assignor.)						
Jolliffe, William H., Baltimore, Md. Combined awning and blind	336,009	Feb. 9	1299	345	34	669
Jones, Arthur J., Middleburg, Va. Planter	335,525	Feb. 2	606	159	34	548
Jones, Charles S., Chicago, W. W. Crooker, Waukegan, and F. Artés, Chicago, Ill. Applying electricity for destroying living organisms in the bodies of slaughtered animals	337,334	Mar. 2	608	159	34	1038
Jones, Charles T., Utica, N. Y. Driving mechanism for sewing-machines	336,648	Feb. 23	2237	563	34	856
Jones, David L., Chicago, Ill. Heating-furnace	334,781	Jan. 26	1814	{462 463}	34	356
Jones, George W., Brooklyn, N. Y. Umbrella or parasol	334,566	Jan. 19	1549	414	34	300
Jones, Gomer. (See Gorin and Jones.)						
Jones, Henry Z. (See Zehring and Jones.)						
Jones, Horace K., Hartford, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Manufacture of screw-nails	335,131	Feb. 2	46	13	34	449
Jones, Horace K., Hartford, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Manufacture of drive-screws	335,132	Feb. 2	48	13	34	449
Jones, Horace K., Hartford, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Wire stock for nails	335,133	Feb. 2	49	13	34	449
Jones, Horace K., Hartford, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Drive-screw	335,986	Feb. 9	983	75	34	691
Jones, Jacob J., New York, N. Y. Heel for boots and shoes	339,060	Mar. 30	3002	794	34	1491
Jones, James, Dublin, county of Dublin, Ireland. Hose	334,233	Jan. 12	1051	260	34	204
Jones, James H., assignor to Emerson, Talcott & Co., Rockford, Ill. Stalk-cutter	336,611	Feb. 23	2454	644	34	898
Jones, James H., assignor to Emerson, Talcott & Co., Rockford, Ill. Stalk-cutter	337,335	Mar. 2	609	160	34	1038
Jones, John J. (See Daugherty, Albert C., assignor.)						
Jones & Laughlins. (See Kennedy, Robert W., assignor.)						
Jones, Owen W., New Cambria, Mo. Device for preserving eggs	338,686	Jan. 5	181	49	34	34
Jones, Richard W., Syracuse, N. Y. Combined buckle and strap-loop	334,870	Jan. 26	1928	519	34	377
Jones, Richard W., Syracuse, N. Y. Hame-clip staple and tug-iron	336,751	Mar. 30	2559	676	34	1413
Jones, Robert R., Blossburg, Pa. Carpet-stretcher	334,665	Jan. 19	1660	443	34	321
Jones, Thomas E., Centre Star, Ala. Plow	338,844	Mar. 30	2986	708	34	1457
Jones, Thomas O., 1 Welford Terrace, Brooke Road, Upper Clapton, county of Middlesex, England. Apparatus for cleaning boots and shoes	336,157	Mar. 16	1734	459	34	1251
Jones, William, San Francisco, Cal. Kiln for burning bricks, &c	336,730	Feb. 23	2336	612	34	876
Jones, Woodruff & Co. (See Shaffer, Charles H., assignor.)						
Jongewaard, Ringert, Harrison, Dak. Ter. Aerial navigation	336,173	Mar. 16	1743	{455 456}	34	1255
Jönsson, Oscar F., Stockholm, Sweden. Automatic safety circuit-controller	336,788	Mar. 30	2561	676	34	1413
Jopson, George W. (See Crandall and Jopson.)						
Joralemon, Joseph. (See Denslow, William H., assignor.)						
Jordan, Joseph, Bridgeport, Pa. Composition for sizing paper	336,569	Feb. 23	2122	.....	34	857
Jordan, Louis P., Stanberry, and C. B. Stough, King City, Mo. Mechanical motor	335,896	Feb. 9	434	119	34	519
Jordan, Louise, *et al.* (See Hunter, Thomas M., assignor.)						
Jordan, Martin V., and C. O. Cole, Letts, Iowa. Check-row attachment for corn-planters	335,075	Jan. 26	2209	585	34	427
Joseph, Charles, Jeffersonville, Ind. Furniture-clamp	339,061	Mar. 30	3003	794	34	1491

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Joss, César F., Bockenheim, assignor to V. Emden, Frankfort-on-the-Main, Germany. Producing printing-plates	334,224	Jan. 12	1052	.....	34	204
Jovine, Giuseppe, Naples, Italy. Letter-box and collecting-pouch	336,052	Feb. 9	1289	{359 360}	34	660
Joy, Lewis B., Bath, N. Y. Grinding-mill	336,416	Mar. 23	2081	{545 546}	34	1298
Joyner, Isaac. (See Walther, Henry, assignor.)						
Judd, John, Cherry Valley, N. Y. Trellis-hook	334,706	Jan. 19	1715	457	34	321
Judge, George. (See Phenix, William, assignor.)						
Julian, John H., Troy, Ohio. Permutation-padlock	336,858	Feb. 23	2512	663	34	910
Jullien, Alfred, Paris, France. Making blanks for the bottoms of cartridge-cases	337,771	Mar. 9	1168	.....	34	1145
Jürgensen, Christopher P., Copenhagen, Denmark. Rotary engine	334,235	Jan. 12	1058	260	34	204
Jürgensen, Jacob F. C., Meldorf, Germany. Horse-detacher	339,104	Mar. 30	3006	811	34	1502
Kacsander, Leopold, New York, and R. Ruddy, Mount Vernon, assignors to Nathan Manufacturing Company, New York, N. Y. Lubricator	337,500	Mar. 9	859	217	34	1067
Kaemp, Reinhold H. (See Nagel, Kaemp, and Linnenbrugge.)						
Kaiser, Alexander, Freyburg, Switzerland. Mechanical movement for converting motion	334,173	Jan. 12	953	258	34	184
Kangley, John. (See Graves and Kangley.)						
Karns, David M., Bluffton, Ind. Paper-bag holder	338,274	Mar. 23	1989	{494 495}	34	1360
Karp, Ida, New York, assignor to herself and M. Rubin, Brooklyn, N. Y. Corset	336,413	Feb. 16	1911	560	34	794
Kaufman, Charles. (See Hinderer, Gustav L., assignor.)						
Kaufmann, Joseph, New York, N. Y. Water-closet cistern	339,062	Mar. 30	3004	794	34	1491
Kauth, Martin. (See Witzig, Charles, assignor.)						
Kauth, Martin, Buffalo, N. Y. Suspending and detaching device	333,757	Jan. 5	860	97	34	67
Kay, James M., *et al.*, trustees. (See Buck, Henry A., assignor.)						
Kay, William V., Belton, Tex. Manufacture of oil-cake	338,580	Mar. 23	2220	565	34	1350
Kayser, Charles. (See Kayser, William J. and C.)						
Kayser, William J. and C., Chicago, Ill. Chimney cap and ventilator	335,902	Feb. 9	987	100	34	511
Kearns, George T., and J. H. Noble, Hamilton, Ontario, Canada. Smoothing-iron	337,267	Mar. 2	514	134	34	1021
Kearns, John E., Peoria, Ill. Device for preventing the freezing of gas in pipes	337,408	Mar. 9	714	186	34	1063
Keating, Alphonso S., Corry, Pa. Telegraph-sounder	334,871	Jan. 26	1928	{512 513}	34	378
Keating, John J., *et al.* (See Cotter, Edward J., assignor.)						
Keator, Charles E., Brooklyn, N. Y. Finishing-block for hats	334,226	Jan. 12	1054	260	34	204
Keator, Charles E., Brooklyn, assignor to R. Dunlap, New York, N. Y. Hat-pouncing machine	336,975	Mar. 30	2986	756	34	1469
Keavy, Thomas E. (See Bairstow and Keavy.)						
Keavy, Thomas E., *et al.* (See Megathey, William, assignor.)						
Keavy, Thomas E., Kent, assignor, by mesne assignments, of one-half to A. A. Tillitson, Akron, Ohio. Button-setting instrument	336,839	Feb. 23	2513	663	34	910
Keech, Thomas, New York, N. Y. Dirt collector and remover for wash-basins	335,963	Feb. 9	988	100	34	511
Keedy, John H., West Alexandria, Ohio. Force-feed seed-planter	337,268	Mar. 2	515	135	34	1021
Keegan, Vincent E., Boston, Mass. Electro-magnetic motor	338,976	Mar. 30	2987	756	34	1469
Keegan, Vincent E., Boston, Mass. Electric motor	338,977	Mar. 30	2988	759	34	1469
Keeler, Calvin, Hobart, N. Y. Car-coupling	337,266	Mar. 16	1453	377	34	1200
Keeler, David L., Grand Rapids, Mich. Sewing-machine	334,442	Jan. 19	1644	364	34	264
Keeler, Noah, Wallace, N. Y. Potato coverer and cultivator	337,501	Mar. 9	861	217	34	1067
Keeler, William H. (See Anthony, Edmond, assignor.)						
Keene, Samuel D., assignor of one-half to New England Butt Company, Providence, R. I. Mote and dirt collecting attachment for carding-machines	334,672	Jan. 26	1926	513	34	378
Keiper, Fredrick. (See Iles and Keiper.)						
Keiser, David, Reading, Pa. Stair-rod securer	338,978	Mar. 30	2870	759	34	1470
Keller, Albert K., Boston, and E. H. Lyon, Chelsea, assignors to American Bell Telephone Company, Boston, Mass. Telephone-transmitter	335,864	Feb. 2	890	101	34	511
Keller, Edouard, assignor to Keller & Gruring-Dutoit, Bienne, Switzerland. Machine for making watch-case rings	333,758	Jan. 5	861	97, 98	34	67
Keller & Gruring-Dutoit. (See Keller, Edouard, assignor.)						
Keller, John H. (See Waltjen and Keller.)						
Keller, John H., and T. Wiley, Clyde, Ohio. Carpet-stretcher	334,174	Jan. 12	953	{258 259}	34	184
Kelley, Charles H., Revere, assignor of one-half to F. C. Perkins, Somerville, Mass. Seat for wash-tubs	337,001	Mar. 2	162	43	34	954
Kelley, John. (See Cypert, Joseph A., assignor.)						
Kelley, John L., Erie, Pa. Boiler-flue cleaner	335,890	Feb. 9	1085	274	34	662
Kellner, Charles. (See Ritter and Kellner.)						
Kellogg, Edwin M., Waupun, Wis. Grain-binder	336,417	Mar. 23	2082	546	34	1324
Kellogg Newspaper Company, A. N. (See Pratt and Partridge, assignors.)						
Kellogg, William H., Lawton, assignor of one-half to M. O. Sebring and W. A. Forbes, Kalamazoo, Mich. Base for posts	337,163	Mar. 2	374	97	34	995
Kellow, Joseph, Pen Argyl, Pa. Railway-joint	335,456	Feb. 2	514	134	34	583
Kells, Edward, Cleveland, Ohio. Faucet and filler	336,731	Feb. 23	2326	612	34	877
Kelly, Andrew H. (See Fuller, George P., assignor.)						
Kelly, Oliver S., *et al.* (See Green, George F., assignor.)						
Kelly, Oliver W., and L. F. Dieter, assignors to Springfield Engine and Thresher Company, Springfield, Ohio. Traction-wheel	336,649	Feb. 23	2230	562	34	856
Kelly, Oliver W., and L. F. Dieter, assignors to Springfield Engine and Thresher Company, Springfield, Ohio. Traction-wheel	336,650	Feb. 23	2230	564	34	857
Kelsey, Frank N., assignor of one-half to J. B. Rathbun, New Haven, Conn. Railway signaling apparatus	337,269	Mar. 2	516	135	34	1022
Kelsey, Orlando, Philadelphia, Pa. Steam-generator	335,184	Feb. 2	50	13, 14	34	449
Kelsey, William A., Meriden, Conn. Card-cutting machine	337,270	Mar. 2	519	135	34	1022
Kelso, Robert, Beverly, N. J. Bustle	334,707	Jan. 19	1716	457	34	321
Kendall, Hugh H., *et al.* (See De Silva, Dwight M., assignor.)						
Kendall, Walter S., Grand Rapids, Ohio. Bag-holder	334,569	Jan. 19	1550	414	34	301
Kenna, Charles P., Chicago, Ill. Folding cradle	335,908	Feb. 2	163	42	34	470
Kenna, Joseph W., Chicago, Ill., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Convertible chair	338,231	Mar. 16	1691	476	34	1270
Kenna, Joseph W., Chicago, Ill., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Convertible chair	338,232	Mar. 16	1692	476	34	1270
Kenna, Thomas M., assignor of one-half to F. B. Farnsworth, New Haven, Conn. Automatic reversing mechanism	333,565	Jan. 5	41	12	34	10
Kennedy, Burr A., Lake View, Ill. Die for swaging screws	336,276	Mar. 23	1686	495	34	1269
Kennedy, Daniel, New York, N. Y. Stop-valve	338,275	Mar. 23	1694	495	34	1269

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Kennedy, John, Montreal, Quebec, Canada. Endless-chain dredger	333,637	Jan. 5	184	49	34	36
Kennedy, Robert W., Pittsburg, Pa., assignor to Jones & Laughlins, (limited.) Gas-heating furnace	336,485	Feb. 16	2006	596	34	810
Kennedy, William B., Silver Reef, Utah Ter. Tobacco-pipe stem	335,705	Feb. 9	869	229	34	602
Kenney, Augustus R., San Francisco, Cal. Ice-machine	334,120	Jan. 12	870	238	34	169
Kenney, Lester B., Charlotte, Mich. Car-coupling	334,388	Jan. 12	1263	341	34	242
Kenney, Thomas M., Cambridge, assignor to W. S. Hayward, Lynn, and W. C. Dewey, Brookline, Mass. Card or sheet transferring apparatus	335,204	Feb. 2	165	42	34	471
Kennish, William, assignor to J. E. Simpson, Jr., Brooklyn, N. Y. Shell	333,955	Jan. 5	626	171	34	118
Kenyon, R. S., *et al.* (See Young, Jacob J., assignor.)						
Kepler, Isaiah H., New Hampton, Iowa. Gate	337,409	Mar. 9	715	186	34	1064
Kern, Alfred, Basle, Switzerland, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Manufacture of soluble methyl-blue from rosaniline	333,861	Jan. 5	497	.....	34	93
Kern, John P. (See Cosford and Kern.)						
Kerr, William A., Vienna, N. J. Fire-escape	336,414	Feb. 16	1911	{500 501	34	794
Kessler, John U., Philadelphia, Pa. Machine for coiling wire	337,598	Mar. 9	967	248	34	1107
Ketcham, David L., New York, N. Y. Tailor's cutting-table	338,601	Mar. 23	2295	609	34	1366
Ketcham, William G., Augusta, Ill. Fire-escape	334,227	Jan. 12	1055	281	34	204
Ketchum, William G., Augusta, Ill. Fire-escape	337,959	Mar. 16	1454	377	34	1200
Keuffel, William, Hoboken, N. J. Surveyor's target	338,602	Mar. 23	2296	609	34	1366
Keuffel, William, Hoboken, N. J. Tape-measure case						
Keyhoe, John W. (See Foreman, Ebenezer M., assignor.)						
Keyser, Ephraim C., Abilene, Kans. Roller-mill	334,389	Jan. 12	1264	341	34	242
Keyworth, Thomas, Brooklyn, N. Y. Packing-joint	335,592	Feb. 9	712	189	34	575
Kibler, John B., assignor of one-half to L. R. Townsend, Minneapolis, Minn. Pot-lifter	334,666	Jan. 19	1061	444	34	321
Kidder, John B., assignor of one-half to L. R. Townsend, Minneapolis, Minn. Carbureting attachment for gas-fixtures	333,962	Jan. 5	498	126	34	93
Kidd, Joshua, Newark, N. J. Carbureting attachment for gas-fixtures	337,960	Mar. 16	1455	377	34	1200
Kidd, Michael F., Baltimore, Md. Pea-sheller	337,164	Mar. 2	375	98	34	995
Kidney, Alfred H., Philadelphia, Pa. Device for disinfecting	338,418	Mar. 23	2086	546	34	1394
Kisley, Timothy J., New York, N. Y. Automatic pressure-regulating valve	336,923	Mar. 2	56	15	34	937
Kienardt, John A., assignor of one-half to J. B. Meixell, Dayton, Ohio. Jumping-jack						
Kienardt, John A., assignor of three-fourths to C. L. Hubbard, C. E. Spindler, and G. R. Young, Dayton, Ohio. Jumping-jack	338,979	Mar. 30	2871	759	34	1470
Kift, Robert, Philadelphia, Pa. Flower-vase with background	338,845	Mar. 30	2687	708	34	1437
Kilbourn, A. C., *et al.* (See Tourgee, Albion W., assignor.)						
Kilbourn, A. C., *et al.* (See Tourgee and Jennings, assignors.)						
Kilbourn, S. E., *et al.* (See Tourgee, Albion W., assignor.)						
Kilbourn, S. E., *et al.* (See Tourgee and Jennings, assignors.)						
Kilby, Joseph F. (See Royce, Wesley, assignor.)						
Killam, Robert C., assignor to A. L. Wright and A. Cushing, Moncton, New Brunswick, Canada. Presser-roll	335,593	Feb. 9	713	190	34	575
Kimball, Henry W., Wallaburg, Ohio. Portable tobacco-press	337,410	Mar. 9	716	186	34	1064
Kimball, Israel V., *et al.* (See Wilson, David, assignor.)						
Kimball, Joseph E., and W. Avery, Milford, Mass. Machine for making wire nails	333,863	Jan. 5	500	{136 137	34	93
Kimber, Arthur C., New York, N. Y. Securing satchels, bags, &c., to car-seats	338,846	Mar. 30	2687	708	34	1437
Kimble, Fred., Peoria, Ill. Making targets	334,782	Jan. 26	1815	.....	34	350
Kimble, James E., Vicksburg, Mich. Grain-cleaner for thrashing-machines	337,502	Mar. 9	861	218	34	1067
Kimble, Marcus N., Lima, N. Y. Heating-drum	334,075	Jan. 12	805	221	34	157
Kimmel, Ernest, and E. E. Claussen, Providence, R. I. Instrument for measuring the mean height of steam-engine indicator-diagrams	336,812	Feb. 23	2455	644	34	899
Kimpton, Charles A. (See Blount and Kimpton.)						
Kimpton, Charles A. (See Blount, Kimpton, and Gilman.)						
Kindermann, August, Cleveland, Ohio. Wrench	338,078	Mar. 16	1610	420	34	1298
King, Adam, Colborne, Ontario, Canada. Harness	338,960	Mar. 30	2872	760	34	1470
King, Cyprian J., *et al.* (See Cole, James W., assignor.)						
King, Francis. (See Reilly and King.)						
King, George S., Pittsburg, Pa. Reversing-gear	334,938	Jan. 19	1059	281	34	205
King, George W., Marion, Ohio. Supporter for ditching-machines	335,759	Feb. 9	947	249	34	617
King & Hamilton Company. (See Gilman, John H., assignor.)						
King, Job, *et al.* (See Magner, Thomas J., assignor.)						
King, Joseph V., Roberts, Ill. Seal-lock	336,118	Feb. 16	1464	386	34	716
King, Oren G., Newark, Ohio. Safety-strap for rubber or other shoes	338,981	Mar. 30	2873	760	34	1470
King, Sidney D., Pittston, Pa. Dumping-car	336,119	Feb. 16	1466	386	34	716
King, Theodore E. (See Hammond and King.)						
King, William H. K., Mount Sterling, Ill. Tablet	337,508	Mar. 9	862	218	34	1067
Kingsley, Herbert B., Cleveland, Ohio. Oil-cup	336,895	Feb. 16	1788	467	34	771
Kingston, Edward S., Little Falls, N. Y. Coasting-skate	334,954	Jan. 26	2028	541	34	397
Kinner, Gustave, Paterson, N. J. Pantaloons-protector	334,788	Jan. 26	1815	484	34	350
Kinney, Charles A., assignor to E. Miller & Co., Meriden, Conn. Lamp-hanger	336,896	Feb. 16	1789	468	34	771
Kinsman, Frank L. (See Sampson, Wright, and Kinsman.)						
Kinsman, John H., Salem, Mass. Individual telephone-call	334,890	Jan. 12	1265	342	34	242
Kintner, Simon A., Ney, Ohio. Door-bolt	338,640	Mar. 23	2381	627	34	1376
Kipper, Emil, Adams, Mass. Device for inserting bristles in brush-backs	334,121	Jan. 19	871	239	34	169
Kipper, Emil, Adams, Mass. Collar or cuff	334,590	Jan. 19	1552	415	34	301
Kipper, Emil, Adams, Mass. Pressing and molding articles of plastic material	335,596	Feb. 2	607	158	34	548
Kipper, Emil, Adams, Mass. Manufacture of solid rings from pyroxyline compounds and other plastic materials	335,935	Feb. 9	1201	320	34	663
Kipper, Emil, and J. G. Jarvis, Adams, Mass. Collar or cuff	336,521	Feb. 16	2050	538	34	818
Kipper, Emil, Adams, Mass. Collar or cuff	335,287	Feb. 2	264	75	34	491
Kirby, Joe H., Lawler, Iowa. Milking-machine	337,951	Mar. 16	1456	377	34	1201
Kirby, Josiah, Cincinnati, Ohio. Bung	334,667	Jan. 19	1062	444	34	321
Kircher, William F., Covington, Ky. Grapple						
Kirk, Henry F. (See Cochrane and Kirk.)						
Kirkaldy, John, 40 West India Dock Road Poplar, county of Middlesex, England. Donkey-engine pump and condenser	336,522	Feb. 16	2051	{538 539	34	819
Kirkbride, Frederick L., Wyandotte, Kans., assignor of one-half to W. C. Duvall, Kansas City, Mo. Vehicle-wheel	333,759	Jan. 5	363	99	34	66
Kirn, U. Grant, *et al.* (See Snowberger, Jacob, assignor.)						
Kirstein, Henry E., Rochester, N. Y. Eyeglass-frame	336,722	Feb. 23	2239	613	34	877
Kistler, Casper, Sterling, Ill. Watch-case pendant	338,753	Mar. 30	2561	677	34	1413
Kittell, George W., and W. Jackson, Springfield, assignors to Star Automatic Fire Extinguisher Company, Boston, Mass. Automatic sprinkler	337,636	Mar. 16	1283	332	34	1169
Kitto, John, Llanidloes, county of Montgomery, A. Paul, Devil's Bridge, county of Cardigan, and R. R. Nancarrow, Llanidloes, county of Montgomery, England. Discharging and righting skips or wagons	334,076	Jan. 12	805	221	34	156

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Kittredge, Anson O., Slate Hill, N. Y., and G. A. Ohl; said Kittredge assignor to G. A. Ohl, Jr., Newark, N. J. Cornice-bending machine	338,679	Mar. 16	1612	420	34	1299
Kizer, Isaac H., Riverside, Cal. Fruit-bag holder	335,076	Jan. 26	2208	{585 586	34	427
Klaber, Augustus D., New York, N. Y. Stencil-holder	333,864	Jan. 5	502	127	34	93
Klaucke, Julius, Solingen, Prussia, Germany. Fountain-pen	337,838	Mar. 16	1286	333	34	1170
Klein, Adolph A., Philadelphia, Pa. Elevator-hatchway	333,536	Jan. 5	42	12	34	10
Klein, John S., Oil City, Pa. Steam-valve gear for duplex steam-pumps	336,924	Mar. 2	57	15	34	937
Klein, Philip H., Jr., assignor to Bergmann & Company, New York, N. Y. Shade for electric lamps	337,336	Mar. 2	611	160	34	1039
Kleinert, Isaac B. (See Janowitz, Julius, assignor.)						
Kline, William, Piqua, Ohio. Table-leaf support	334,239	Jan. 12	1061	282	34	205
Kline, William D. (See Solt and Kline.)						
Kling, William L., St. Cloud, Minn. Device for converting motion	337,902	Mar. 16	1458	378	34	1201
Klippert, Charles, assignor of one-half to J. F. Farber, Rochester, N. Y. Microscopist's turn-table	334,530	Jan. 19	1460	394	34	285
Klopp, Hans F., Chicago, Ill. Operating gates	333,865	Jan. 5	503	127	34	93
Klostermann, Friedrich, Vienna, Austria-Hungary. Electric-arc lamp	335,459	Feb. 2	515	125	34	534
Klueber, John, Sandusky, Ohio. Guitar	337,337	Mar. 2	611	160	34	1039
Knapp, George W., Baltimore, Md. Metal package or can	339,083	Mar. 30	3005	794	34	1491
Knapp, John H., New York, N. Y. Fishing-rod ferrule	337,589	Mar. 9	968	248	34	1107
Knight, Charles A., Glasgow, county of Lanark, Scotland. Steam-boiler	333,956	Jan. 5	628	{171 172	34	118
Knight, John A., assignor to W. N. Abbott, New York, N. Y. Pillow-sham holder	336,052	Feb. 9	1263	320	34	601
Knight, John L., assignor to A. Nicholson, New York, N. Y. Pneumatic tube	339,105	Mar. 30	3008	812	34	1502
Knight, Octavius. (See Mason, George W., assignor.)						
Knight, Walter H., New York, N. Y. Electric railway	338,060	Mar. 16	1616	421	34	1299
Knight, Walter H., New York, N. Y. Electric railway	338,061	Mar. 16	1617	421	34	1230
Knight, Walter H., New York, N. Y. Electric railway	338,062	Mar. 16	1618	421	34	1230
Knight, Walter H., New York, N. Y. Electric railway	338,063	Mar. 16	1619	421	34	1230
Knight, Walter H., New York, N. Y. Safety-catch for electrical translating devices	338,064	Mar. 16	1620	422	34	1230
Knight, Walter H., New York, N. Y. Electric motor	338,065	Mar. 16	1622	422	34	1231
Knight, Walter H., New York, N. Y. Electric railway	338,175	Mar. 16	1748	457	34	1256
Knight, Walter H., Cleveland, Ohio. Electric railway	338,174	Mar. 16	1746	457	34	1255
Knight, William W., Jersey City, N. J. Clamp for stopping leaks and bursts in pipes	334,873	Jan. 26	1968	513	34	379
Knipe, William A., and L. Day, Haverhill, Mass. Boot or shoe sole	334,668	Jan. 19	1662	444	34	321
Knorr, Jacob F., Orange, N. J. Hame	337,338	Mar. 2	612	160	34	1039
Knowles, Eli W., Francisco, assignor of one-half to F. M. Knowles, Owensville, Ind. Land-roller	335,077	Jan. 26	2204	586	34	427
Knowles, Franklin M. (See Knowles, Eli W., assignor.)						
Knowles, John A., Jr., deceased; S. M. Knowles, executrix, and assignor to W. H. Thompson, Lowell, Mass. Weighing-scale	337,772	Mar. 9	1189	309	34	1146
Knowles, Susan M., executrix. (See Knowles, John A., Jr.)						
Knowlton, Daniel C., and J. E. Harris, Boston, Mass. Car-brake	336,120	Feb. 16	1467	387	34	716
Knowlton, Mark D., Chicago, Ill. Machine for making paper tubes	337,165	Mar. 2	376	98	34	995
Kobelke, Charles F. A., Chicago, Ill. Rat trap	334,443	Jan. 19	1345	364	34	264
Koch, Edouard A. (See Patis, Justin, assignor.)						
Koch, Edouard A., assignor of one-half to G. Stambaugh, Waterloo, Ia. Cutting-share for plows	335,936	Feb. 9	1203	320	34	663
Koch, George, Burlington, Iowa. Seal-lock	336,925	Mar. 2	59	16	34	937
Koch, John C., Berlin, Germany. Binder for music, periodicals, &c	338,350	Mar. 23	1986	523	34	1307
Koch, William, New York, N. Y. Quilting-machine	334,955	Jan. 26	2029	{541 542	34	397
Kochs, Theodore A., Chicago, Ill. Foot-rest	335,504	Feb. 9	714	190	34	575
Koelkebeck, Charles W. A., Camden, N. J. Automatic speed-regulator	335,460	Feb. 2	518	125	34	534
Koerner, Alfred C., assignor to Hotchkiss & Co., Paris, France. Apparatus for protecting vessels against torpedo attacks	338,241	Mar. 16	1833	{478 479 480 481 482	34	1273
Köbler, Arthur, Chemnitz, Saxony, Germany. Button or glove fastener	334,669	Jan. 19	1663	444	34	322
Kohler, Frederick E., Canton, Ohio. Cuff-holder	334,391	Jan. 12	1271	343	34	243
Kohler, Frederick E., Canton, Ohio. Hay-tedder	336,723	Feb. 23	2339	613	34	877
Kohler, Frederick E., Canton, Ohio. Tree-protector	338,158	Mar. 16	1725	450	34	1251
Kohn, Ignaz, assignor of one-fourth to J. Zuber, New York, N. Y. Clothes-line fastener	338,159	Mar. 16	1726	450	34	1252
Kohn, Jacob W., Newark, N. J. Shutter-fastener	336,054	Feb. 9	1364	360	34	601
Kohn, William. (See Christy and Kohn.)						
Koll, Benjamin S., Salem, Ohio. Safety-tank and automatic filler	339,106	Mar. 30	3008	812	34	1502
Kölzer, Joseph, Duisburg-on-the-Rhine, Prussia, Germany. Telegraphic repeater	337,590	Mar. 9	969	{348 349	34	1107
Konold, Christian, Ross, Pa. Die for making vise-jaws	337,339	Mar. 2	613	161	34	1039
Konold, Christian, Ross, Pa. Machine for making vise-jaws, &c	337,340	Mar. 2	614	161	34	1039
Korfhage, Charles, Brooklyn, N. Y. Electric alarm-clock	337,067	Mar. 2	243	65	34	971
Kosinski, Wladyslaw T., Brooklyn, N. Y. Device for converting reciprocating into rotary grip and slip motion	334,392	Jan. 12	1271	343	34	243
Koster, John L., San Francisco, Cal. Heater for barrels	336,239	Feb. 16	1674	435	34	749
Kraemer, David. (See Baer and Kraemer.)						
Kratzer, Wayne, Allentown, Pa. Anti-friction journal-bearing	334,670	Jan. 19	1664	445	34	322
Kratzer, Wayne, Allentown, Pa. Anti-friction bearing	335,527	Feb. 2	609	159	34	549
Kratzer, Wayne, assignor of one-half to T. Schadt, Allentown, Pa. Band-saw guide	334,175	Jan. 12	954	259	34	184
Kraus, Samuel, assignor to Eagle Pencil Company, New York, N. Y. Lead-pencil	333,638	Jan. 5	186	50	34	37
Kraus, Samuel, assignor to Eagle Pencil Company, New York, N. Y. Pen-holder	333,639	Jan. 5	186	50	34	37
Krauser, August, *et al.* (See John, August, assignor.)						
Krauser, Frank, *et al.* (See John, August, assignor.)						
Krauz, Hugo, *et al.* (See Young, William A., assignor.)						
Krehbiel, John, assignor to Globe Drug and Capsule Company, Detroit, Mich. Capsule-machine	334,240	Jan. 12	1063	283	34	205
Krehbiel, John, assignor to Globe Drug and Capsule Company, Detroit, Mich. Capsule-filling machine	336,010	Feb. 9	1300	346	34	660
Krehbiel, John, assignor to Globe Drug and Capsule Company, Detroit, Mich. Making gelatine capsules	338,754	Mar. 30	2563	677	34	1414
Kremer, Franklin W., Wadsworth, Ohio. Injector	335,227	Feb. 2	204	53	34	476
Krepp, John. (See Lennox and Krepp.)						
Krick, Irwin S., Conneautville, Pa. Animal-trap	334,784	Jan. 26	1616	484	34	350

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kriebel, Hosea K., assignor of one-half to F. Light, Jr., West Point, Pa. Hot-water heater	337,068	Mar. 2	345	65	34	978
Krieger, Andrew, assignor to J. Ohlen, Columbus, Ohio. Insertible saw-tooth	334,941	Jan. 12	1064	289	34	206
Krieto, Henry C., Chicago, and W. Gillies, South Chicago, Ill. Machine for stamping rails	337,537	Mar. 16	1325	233	34	1170
Krispin, Edward, Chicago, Ill. Manufacture of bas-reliefs for ceilings, walls, &c	336,055	Feb. 9	1365	361	34	691
Kritch, Jacob, Cleveland, Ohio. Die for forging axles	337,504	Mar. 9	663	918	34	1067
Kroeber, Frederick W., St. Helena, Cal. Safety-rail and rein-grip for vehicles	335,289	Feb. 9	299	75	34	491
Krom, Stephen R., Plainfield, N. J. Screen for ores and mineral substances	338,847	Mar. 30	2666	709	34	1437
Kromer, Otto, Sandusky, Ohio. Lathe for turning irregular forms	336,818	Feb. 23	2457	644 645	34	899
Krones, Ernest A., assignor to himself and J. D. Eisenstein, New York, N. Y. Shirt	337,341	Mar. 2	616	169	34	1040
Kronsberg, August. (See Nahrung, William, assignor.)						
Krueger, August C., assignor to Chicago Raw Hide Manufacturing Company, Chicago, Ill. Leather-stretching machine	335,795	Feb. 9	715	190	34	576
Kruegermann, Friedrich, Scranton, Pa. Wrench	338,419	Mar. 23	2067	547	34	1335
Kruesi, John, Brooklyn, and J. Langton, Jr., New York, N. Y. Underground electrical cable	334,708	Jan. 19	1716	457	34	331
Kruesi, John, Brooklyn, and J. Langton, Jr., New York, N. Y. Machine for making electrical cables	334,709	Jan. 19	1717	458	34	332
Krum, David C., Grand Rapids, Mich. Presser-bar for planing-machines	336,860	Feb. 23	2514	662	34	910
Krusi, Hermann, San Francisco, Cal. Bridge	338,755	Mar. 30	2564	677	34	1414
Krusi, John, St. Gall, Switzerland. Making embroidery-laces	337,687	Mar. 9	1068	.....	34	1197
Krutzsch, William, assignor to Buckeye Iron and Brass Works, Dayton, Ohio. Oil-cup	334,710	Jan. 19	1719	458	34	332
Kuehn, Herman. (See Tull, Kuehn, and Beers.)	337,009	Mar. 2	163	43	34	954
Kuhn, David B., Norwalk, Ohio. Belt-reel	336,861	Feb. 23	2515	663	34	910
Kuhn, Jean G., Degersheim, Switzerland. Woven embroidery fabric						
Kuntzsch, George N., *et al.* (See Ellis, Richard E., assignor.)	333,640	Jan. 5	187	50	34	87
Kunze, Charles, Newark, N. J. Clasp for cigar-boxes	338,756	Mar. 30	2565	677	34	1414
Kupferle, John C., St. Louis, Mo. Hydrant	334,176	Jan. 12	956	259	34	184
Kürten, Hubert C., Aix-la-Chapelle, Prussia, Germany. Water-closet	337,349	Mar. 2	617	162	34	1040
Kutzner, John D., Wilkes-Barré, Pa. Pill-roller	338,233	Mar. 16	1894	477	34	1251
Kuykendall, John H., and J. K. Elkins, Sedalia, Mo. Weather-board gage	333,957	Jan. 5	629	178	34	118
Kyte, Thomas J., Deckertown, N. J. Sled-brake						
La Ban, John H., assignor to New Haven Clock Company, New York, N. Y. Telegraph call-box	334,785	Jan. 26	1817	484	34	359
La Ban, John H., assignor to New Haven Clock Company, New York, N. Y. Attaching composition letters to composition surfaces	334,786	Jan. 26	1818	484	34	359
La Baw, George W., Rahway, N. J. Thill-coupling	335,289	Feb. 2	267	76	34	491
La Dow, Charles, Albany, N. Y. Eraser	337,505	Mar. 9	864	218	34	1068
La Dow, Charles, Albany, N. Y. Wheel-harrow	337,773	Mar. 9	1190	309 310	34	1146
La Dow, Charles, Albany, N. Y. Spring-tooth harrow	338,176	Mar. 16	1759	458	34	1257
La Dow, Charles, Albany, N. Y. Disk-harrow	338,969	Mar. 30	2874	760 761 762	34	1470
La Dow, Charles, Albany, N. Y., J. J. Budlong and L. P. Hoyt, Aurora, Ill. Wheel-harrow	338,066	Mar. 16	1623	422	34	1231
La Dow, John, assignor to Gregg & Co., Trumansburg, N. Y. Baling-press	335,290	Feb. 2	267	76, 77	34	492
La Roche, Alfred, *et al.* (See Amouroux, Elie, assignor.)						
Lacey, Albert R. (See Ludlow, Charles A., assignor.)						
Ladt, Carlos M. P., Brighton, county of Sussex, England. Cock and tap	334,787	Jan. 26	1819	485	34	359
Lagosse, Etienne, and J. Bouché, Paris, France. Multitubular steam-boiler	337,506	Mar. 9	865	219 220	34	1068
Lagowita, Jacob. (See Frankel, Alexander C., assignor.)						
Lagowitz, Jacob. (See Heilman, Frederick W., assignor.)						
Laidlan, John, Glasgow, county of Lanark, Scotland. Centrifugal machine	337,166	Mar. 2	380	99	34	996
Laidlaw, James M., Bay City, Mich. Pump	337,167	Mar. 2	382	99	34	996
Laing, James M., Bay City, Mich. Pump	334,729	Jan. 19	1743	465	34	337
Lakin, Rinaldo S., Boston, assignor to S. S. Higgins, Somerville, Mass. Tooth-brush						
Lakin, Wilber F. (See Badger and Lakin.)						
Lalance & Grosjean Manufacturing Company. (See Le Page, Matthew, assignor.)						
Lamb, Charles A., Deer Creek, Mich. Railway-signal	335,891	Feb. 9	1087	274	34	633
Lamb, George B., assignor to Waterbury Farrel Foundry and Machine Company, Waterbury, Conn. Hydraulic valve	336,724	Feb. 23	2341	613	34	877
Lamb, Thomas, Philadelphia, Pa. Sewing-machine	335,365	Feb. 2	392	101	34	519
Lamb, Thomas, Philadelphia, Pa. Feeding device for sewing-machines	338,430	Mar. 23	2068	547	34	1335
Lamont, Hugh, Blissfield, Mich., assignor of three-eighths to W. Hubbard, Elgin, Ill. Mechanical telephone	338,963	Mar. 30	2881	762 763	34	1471
Lamoreaux, Jeremiah. (See Slater and Lamoreaux.)						
Lampson, Daniel, Rockford, Ill. Wringer-roll	334,956	Jan. 26	2082	542	34	897
Lamson, Warren H., Lynn, Mass. Pencil-sharpener	334,242	Jan. 12	1065	282	34	206
Land, James P., assignor of one-half to C. P. Ring, Philadelphia, Pa. Apparatus for carbonizing and destroying vegetable-matter in wool	336,121	Feb. 16	1468	387	34	717
Lander, Harris P., Kingfield, Me. Rake	334,444	Jan. 19	1346	365	34	264
Landfear, William R., Brooklyn, N. Y. Stop-motion mechanism for machines for doubling and spinning silk, &c	336,570	Feb. 23	2124	556 557	34	837
Landgraf, Casper, Chicago, Ill. Saw-setting machine	335,596	Feb. 9	716	191	34	576
Landis, Abraham B., Waynesborough, Pa. Feed mechanism for saw-mills	337,507	Mar. 9	867	220	34	1068
Landis, Frank F., Waynesborough, Pa. Traction and other engines	337,840	Mar. 16	1988	334	34	1170
Landis, Frank F., Waynesborough, Pa. Traction-engine	337,841	Mar. 16	1990	334	34	1171
Landis, Jeremiah, Brookville, Ohio. Swinging gate	335,987	Feb. 9	1204	320	34	663
Lane, William J., Poughkeepsie, N. Y. Harrow	338,531	Mar. 23	2232	586	34	1350
Lane, Zenas M., Rockland, Mass. Machine for arranging shoe-blanks	338,277	Mar. 23	1867	495 496	34	1289
Lang, Edward M., Jr., Falmouth, Me. Soldering-tool	337,842	Mar. 16	1992	335	34	1171
Lang, Henry, and C. A. Graeter, Andover, Mass. Extension device for lamps	334,243	Jan. 12	1066	282	34	206
Langborne, John S., Lynchburg, Va. Device for picking fruit, flowers, &c	337,168	Mar. 2	383	100	34	996
Langmaid, George A. (See Bullard and Langmaid.)	334,874	Jan. 26	1929	514	34	879
Langston, Joseph M., Berlin, Ill. Draft-equalizer						
Langton, John, Jr. (See Kruesi and Langton.)						
Lanier, Thomas W., Guyton, Ga. Self cooler and strainer for strup and sugar	335,706	Feb. 9	870	220	34	602
Lanner, Charles, assignor of one-half to G. Starks, Minneapolis, Minn. Harrow	336,415	Feb. 16	1913	501	34	795
Lans, Charles, Pittsburg, Pa. Brick-kiln	336,348	Feb. 16	1792	468	34	771
Lapp, John. (See Dann and Lapp.)						
Laraway, George W., Boston, Mass., assignor, by mesne assignments, to himself and J. Seiberling, Akron, Ohio. Mechanism for preventing a molded barrel-body from shrinking	339,064	Mar. 30	3006	795	34	1491

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Largent, James J., assignor of two-thirds to T. R. Daniels and M. Wils, Peoria, Ill. Car-coupling	337,508	Mar. 9	870	221	34	1069
Larkin, John D., *et al.* (See Robbins, Arthur C., assignor.)						
Larkin, Mathew, Jr., *et al.* (See O'Riordan, James, assignor.)						
Larsen, August L., and C. E. Winterros, Liege, Belgium. Magazine fire-arm	334,944	Jan. 12	1068	283 284	34	206
Larsen, Hans A., Minneapolis, Minn. Wrench	334,077	Jan. 12	906	231	34	158
Larson, Chris, assignor to Larson, Torgerson & Co., Chicago, Ill. Desk	333,760	Jan. 5	364	99	34	66
Larson, Torgerson & Co. (See Larson, Chris, assignor.)						
Lasar, Godfrey H., St. Louis, Mo. Looking device for key-boards of type-writing machines	336,725	Feb. 23	2343	614	34	878
Lasar, Godfrey H., St. Louis, Mo. Telegraph-transmitter	338,757	Mar. 30	2566	678	34	1414
Laska, Mathias A., New Orleans, La. Automatic water-works	336,227	Feb. 16	1790	468	34	771
Laskey, Philip B., Marblehead, Mass. Candy-crimping machine	337,509	Mar. 9	871	221	34	1069
Latch, Arthur, Westminster, county of Middlesex, England. Manufacture of metal tubes	334,531	Jan. 19	1470	374	34	298
Latham, W. F. (See Hawley, Henry, assignor.)						
Lathrop, Elias, assignor to Fleming Manufacturing Company, Fort Wayne, Ind. Road-scraper	334,177	Jan. 12	957	260	34	185
Lathrop, Frank L., Brooklyn, N. Y. Galvanic battery	334,758	Jan. 26	1690	485	34	359
Latimer, Lewis H., New York, N. Y. Apparatus for cooling and disinfecting	334,078	Jan. 12	907	223	34	158
Latta, Adrian C. (See Latta, Emmit G., assignor.)						
Latta, Emmit G., assignor of one-half to A. C. Latta, Friendship, N. Y. Velocipede	337,271	Mar. 2	580	136	34	1022
Latulip, Frederick, assignor to R. E. Hover, Syracuse, N. Y. Chair seat and back	335,461	Feb. 2	519	135	34	534
Lauchli, Henri, St. Imier, Switzerland. Dial for speed-measures	333,641	Jan. 5	188	50, 51	34	87
Lauer, John E., New York, N. Y. Preparing gluten flour and bread	334,945	Jan. 12	1072	.....	34	207
Laughton, Joseph B., Brooklyn, N. Y., assignor to himself, A. F. Bishop, and J. H. Aiken, Norwalk, Conn. Buffer and polisher	334,671	Jan. 19	1665	445	34	322
Lauhoff, Frank, Detroit, Mich. Roller-mill	333,866	Jan. 5	505	138	34	94
Lauhoff, Frank, Detroit, Mich. Machine for flattening tobacco-stems	333,867	Jan. 5	507	138 139	34	94
Lauhoff, Joseph, Detroit, Mich. Lubricating device	333,868	Jan. 5	508	139	34	94
Lauth, Bernard, Howard, Pa. Reducing old steel railway-rails to steel plates	335,288	Feb. 9	1906	231	34	663
Lautner, William C., Detroit, Mich. Coffin	336,416	Feb. 16	1914	503	34	795
Laverty, Charles E., Allegheny, assignor to J. C. Dilworth, Pittsburg, Pa. Bung-pan	336,466	Feb. 16	2007	503	34	811
Lavery, George L., East Boston, Mass. Mouth-piece for telephone-transmitters	336,529	Feb. 16	1783	469	34	773
Law, Robert, Toledo, Ohio. Mortar-bed	333,527	Jan. 5	69	19	34	11
Law, Thomas, Manhattan, Kans. Weather-strip for doors	335,289	Feb. 9	1907	231	34	664
Law, Thomas, Moulton, Iowa. Plastic compound to be used in the manufacture of burial-caskets, furniture, &c	336,726	Feb. 23	2344	.....	34	878
Lawless, John H., Jersey City, N. J. Self-acting supply-tank	338,984	Mar. 30	2884	763	34	1471
Lawlor, William Y., San Francisco, Cal. Washing-machine	339,065	Mar. 30	3007	795	34	1492
Lawrence, Alvin, assignor of one-half to C. Whitaker and C. H. Fisher, Lowell, Mass. Speed-governor	335,288	Feb. 2	266	53, 54	34	476
Lawrence, Arthur B., New Haven, Conn. Laundry fork or washer	336,128	Feb. 16	1470	367	34	717
Lawrence, George C., Brooklyn, N. Y. Manufacture of vulcanized fiber and similar materials	336,230	Feb. 16	1794	469	34	772
Lawrence, Joseph A., Sherman, Tex. Band-stretcher	336,571	Feb. 23	2125	557	34	898
Lawrence, Samuel E., Utica, N. Y. Smoker's appliance	338,421	Mar. 23	2069	547	34	1335
Lawrie, Jefferson, Boston, Mass. Check-rein holder	333,528	Jan. 5	44	13	34	11
Lawry, Ira F., Taunton, Mass. Machine for condensing warps for being dyed	334,128	Jan. 12	873	229	34	160
Lawshe, John. (See Leede, Julius, assignor.)						
Lawshe, John. (See Leede and Lawshe.)						
Lawson, David T. (See Fernald and Lawson.)						
Lawson, Ishmael, Butte, Mont. Ter. Knife-cleaner	333,761	Jan. 5	365	99	34	66
Lawton, Arthur W., *et al.* (See McMurray, Louis, assignor.)						
Lawton, Edwin R. (See Jeralds and Lawton.)						
Lawton, William, *et al.* (See O'Riordan, James, assignor.)						
Le Page, Matthew, Woodhaven, assignor to Lalance & Grosjean Manufacturing Company, New York, N. Y. Coffee-mill	333,870	Jan. 5	511	139	34	95
Le Page, Matthew, Woodhaven, assignor to Lalance & Grosjean Manufacturing Company, New York, N. Y. Press for the manufacture of sheet-metal goods	333,871	Jan. 5	512	140	34	95
Le Roy, Charles J., St. Louis, Mo. Horseshoe	337,844	Mar. 16	1994	335	34	1171
Leach, Leander, Joliet, Ill. Windmill	334,445	Jan. 19	1347	365	34	264
Leake, Albert Y., assignor of one-half to G. C. and G. S. Burnap, Marietta, Ga. Flour-bolt	334,946	Jan. 12	1073	284	34	207
Leaman, Robert F., assignor to Globe Files Company, Cincinnati, Ohio. Distributing-file	334,592	Jan. 19	1471	394	34	298
Leavenworth, Frank H. (See Combs, Hiram S., assignor.)						
Leavitt, Charles, Cleveland, Ohio. Gripping device for cable railways	336,945	Feb. 16	1679	437	34	750
Lechner, Francis M., Columbus, Ohio. Furniture-caster	338,985	Mar. 30	2884	763	34	1471
Lechner Manufacturing Company. (See Pederson, Ole, assignor.)						
Leckie, James B., Chicago, Ill. Copying-roller	336,998	Mar. 2	60	16	34	837
Lecouteux, Hippolyte, and E. Garnier, Paris, France. Flexible joint or connection-pipe	338,848	Mar. 30	2690	709	34	1437
Ledan, John T. (See Manners, Stephen H. and C. E., assignors.)						
Lee, A. Virgil, Chicago, Ill. Street-car	334,391	Jan. 19	1558	415	34	301
Lee, C. Smith, New York, N. Y. Torpedo-boat	338,762	Jan. 5	366	99	34	66
Lee, E. D. (See Moore, Henry T., assignor.)						
Lee, James H., Canandaigua, N. Y. Lawn-tennis-net support	337,591	Mar. 9	973	249	34	1007
Lee, James J., Worcester, Mass. Apparatus for coating wire	335,135	Feb. 2	51	14	34	449
Lee, James R. (See Torsch and Lee.)						
Lee, Louis S. (See Phipps and Burman, assignors.)						
Lee, Thomas, Cincinnati, Ohio. Combined strainer and trap for water-pipes, &c	335,906	Feb. 9	303	101	34	512
Lee, William J., Newport, Ky. Magazine-holder	336,758	Mar. 30	2668	678	34	1415
Leech, William A., and J. Little, Lamar, Mo. Attachment for harrows	337,592	Mar. 9	973	249	34	1107
Leede, Julius, Washington, D. C., assignor to J. Lawshe, Colton, Cal. Automatic carbureting-lamp	336,572	Feb. 23	2126	557	34	898
Leede, Julius, Washington, D. C., assignor to J. Lawshe, Colton, Cal. Automatic carbureting-lamp	336,574	Feb. 23	2126	558	34	898
Leede, Julius, Washington, D. C., and J. Lawshe, Colton, Cal.; said Leede assignor to said Lawshe. Attachment for gas-service conduits	336,573	Feb. 23	2126	558	34	898
Leeds, Barclay R. (See Bassett, Nathan, assignor.)						
Leeds, Lewis W., London, England. Breakwater	334,093	Jan. 26	2142	569 570	34	416
Lees, Robert, Providence, R. I. Condenser for steam-engines	333,763	Jan. 5	367	100	34	66
Leffingwell, John G., Newark, N. J. Mitering-machine	334,947	Jan. 12	1076	285	34	208

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Leggett, Clinton H., New York, N. Y. Package for liquid glue and other substances	334,592	Jan. 19	1554	415	34	302
Leggett, David T., and W. S. Sanders, Fishersburg, Ind. Shingling-bracket	336,727	Feb. 23	2344	614	34	878
Leggitt, John W., Sharon, Miss. Meat-hook	336,123	Feb. 16	1470	388	34	717
Lehman, Otto A., Brooklyn, N. Y. Clasp for satchels and pocket-books	338,351	Mar. 23	1987	523	34	1307
Lehnbeuter, Joseph. (See Boulicault and Lehnbeuter.)						
Lehy, Geoffrey B., Boston, Mass. Box-fastening	335,922	Feb. 9	1038	274	34	633
Leigh, Evan A., Manchester, county of Lancaster, England. Carding-engine	335,760	Feb. 9	948	250 / 251	34	617
Leigh, Evan A., Manchester, county of Lancaster, England. Carding-machine	335,761	Feb. 9	953	251 / 252 / 253	34	618
Leinbach, Felix W., *et al.* (See Honias, William H., assignor.)						
Leinbach, Felix W., *et al.* (See Lorenz, William A., assignor.)						
Leinbach, Felix W., *et al.* (See Lorenz and Honias, assignors.)						
Leistner, Paul, St. Louis, Mo. Garden-table	338,986	Mar. 30	2986	763	34	1471
Leizure, Enoch H. (See Russell, George, assignor.)						
Lemaire, Jean T., assignor to J. Carty, Philadelphia, Pa. Feeding mechanism for carding-machines	333,869	Jan. 5	509	139	34	95
Lemman, John, Wakefield, Mass. Reversible car-seat	334,957	Jan. 26	2032	543	34	397
Lemos, Leon, San Francisco, Cal. Necktie-fastener and reversible scarf-band holder	333,642	Jan. 5	189	51	34	87
Lenk, Carl P. (See Derham, Samuel G., assignor.)						
Lennox, Andrew J., and J. Krepp, Allegheny, Pa. Furnace	335,367	Feb. 2	895	101 / 102	34	512
Lenoir, Jean J. E., Paris, France. Gas-engine	335,462	Feb. 2	921	136	34	535
Lent, Addison, assignor of one-half to L. G. Davis, Sleepy Eye, Minn. Grain-separator	336,246	Feb. 16	1681	438	34	751
Leonard, Charles H., and C. G. Gray, Grand Rapids, Mich.; said Gray assignor to said Leonard. Refrigerator-shelf	335,136	Feb. 2	59	14	34	450
Leonard, Charles N., assignor of one-half to C. Bradford, Indianapolis, Ind. Straw-stacker	334,402	Jan. 12	1288	347 / 348	34	246
Leonard, Henry W., Syracuse, and J. Stevens, Port Byron, assignors to Syracuse Fibre Ware Company, Syracuse, N. Y. Machine for trimming the ends of paper vessels	335,078	Jan. 26	2205	566	34	426
Leonard, Henry W., Syracuse, and J. Stevens, Port Byron, assignors to Syracuse Fibre Ware Company, Syracuse, N. Y. Machine for bending pail-bottoms	335,079	Jan. 26	2206	566 / 567	34	428
Leonhardt, William, Waverly, Md. Carriage-curtain fastener	337,843	Mar. 16	1993	335	34	1171
Leopold, Charles F., assignor to American Manufacturing Company, Philadelphia, Pa. Can-opener	333,764	Jan. 5	368	100	34	69
Leslie, Charles L. (See Angell and Leslie.)						
Leslie, Edward, Orangeville, Ontario, Canada, assignor to Rotary Steam Snow Shovel Manufacturing Company, Paterson, N. J. Snow-plow	338,759	Mar. 30	2570	678	34	1415
Lester, Harry B., Waterbury, Conn., assignor to Blake and Johnson. Wire-nail machine	334,248	Jan. 12	1077	285 / 286	34	208
Letz, Charles M., assignor of one-half to A. Zeese & Co., Chicago, Ill. Machine-table gage	336,814	Feb. 23	2459	645	34	899
Levalley, Christopher W., St. Paul, Minn. Seeder	338,987	Mar. 30	2986	764	34	1479
Levan, Thaddeus P., Ness City, Kans. Windmill	338,529	Mar. 23	2333	596	34	1351
Leve, Gustave, New York, N. Y., assignor, by mesne assignments, to A. B. Harris, Springfield, Mass. Sleeping-car. (Reissue)	10,703	Mar. 30	2091	817	34	1506
Levey, Edgar J., New York, N. Y. Playing-card	339,066	Mar. 30	3007	795	34	1492
Levinson, John, San Francisco, Cal. Embroidery-frame	335,762	Feb. 9	956	253	34	618
Levison, Chancellor G., assignor to T. B. Mills, Brooklyn, N. Y. Fly-book	337,593	Mar. 9	973	249	34	1108
Levison, Tinne. (See Morgenroth and Levison.)						
Levison, W. Goold, Brooklyn, N. Y. Electric lamp	335,368	Feb. 2	397	102	34	513
Levy, Bernard, New York, N. Y. Combined cape and jacket	336,124	Feb. 16	1471	388	34	717
Levy, Bernard S., *et al.* (See Guastavino, Rafael, assignor.)						
Lewin, George W., assignor of one-fourth to C. P. Haskins, Fall River, Mass. Combined window-spring and weather-strip	336,575	Feb. 23	2129	558	34	836
Lewis, Alfred. (See Mobbs and Lewis.)						
Lewis, Alfred N., *et al.* (See Murray, Peter, Jr., assignor.)						
Lewis, George T. (See Clerc, Frank L., assignor.)						
Lewis, Henry, New Liberty, Ill. Fire-escape	337,594	Mar. 9	975	250	34	1108
Lewis, James H., Detroit, Mich. Potato-digger	337,169	Mar. 2	385	100	34	997
Lewis, Thomas W., *et al.* (See Rodehaver, Oscar F., assignor.)						
Lewis, William H., and E. B. Barker, assignors to E. & H. T. Anthony & Co., New York, N. Y. Stand for photographic cameras	336,815	Feb. 23	2461	646	34	900
Lewis, William H., and E. B. Barker, assignors to E. & H. T. Anthony & Co., New York, N. Y. Case for photographic sensitized paper	337,963	Mar. 16	1459	378	34	1201
Lewis, William W., Cincinnati, Ohio. Balanced steam-valve	337,688	Mar. 9	1063	280	34	1127
Lewis, William W. D., Camden, N. J. Paper box	333,643	Jan. 5	190	51	34	87
Lexington Manufacturing Company. (See Gaynor, Thomas F., assignor.)						
Leyburn, Edward J., Lexington, Va. Bottle-washing implement	337,595	Mar. 9	976	250	34	1108
Leydorf, Henry C., Hoskins, Ohio. Cultivator	337,596	Mar. 9	976	250	34	1108
Libbey, Edward D., Winchester, Mass. Glassware	337,170	Mar. 2	388	101	34	997
Libbey, Hosea W., Boston, Mass. Exercising-machine	335,597	Feb. 9	718	191	34	576
Libbey, Hosea W., Boston, Mass. Combined window-screen and ventilator	338,278	Mar. 23	1848	496	34	1210
Liddell, Walter J. F., Charlotte, N. C. Machine for molding pulleys	333,765	Jan. 5	368	100	34	69
Lieb, Charles A., New York, N. Y. Book and pamphlet trimming machine	334,672	Jan. 19	1666	445	34	329
Liedke, Edward L., Sandusky, Ohio. Cheese-cutter	338,533	Mar. 23	2234	596	34	1351
Lifsey, John A., White House, Ga. Combined plow-stock and cultivator	337,069	Mar. 2	946	65, 66	34	971
Light, Frederick, Jr. (See Kriebel, Hosea K., assignor.)						
Light, James P., *et al.* (See Richter, Peter J., assignor.)						
Light, Ezekiel. (See Funk, John B., assignor.)						
Lightfoot, John W., Keswick, Iowa. Gate	337,597	Mar. 9	977	250	34	1108
Lilienthal, Gustav, Melbourne, Australia. Manufacturing artificial stone	335,707	Feb. 9	870	.....	34	603
Lillibridge, Freeman, Cedar Rapids, Iowa. Saddle for bicycles	337,171	Mar. 2	388	101	34	997
Lillie, S. Morris, Philadelphia, Pa. Process of and apparatus for drying bone-black	335,137	Feb. 2	53	15	34	450
Lillie, S. Morris, Philadelphia, Pa. Utilizing the waste heat from bone-black-revivifying kilns	337,411	Mar. 9	717	186 / 187	34	1064
Lima Machine Works. (See Carnes, Ira P., assignor.)						
Lincoln, Bacon & Co., *et al.* (See Bisbee, Albert, assignor.)						
Lindgren, August, assignor to Moline Plow Company, Moline, Ill. Wheel-cultivator	333,766	Jan. 5	370	101	34	69
Lindner, Ferdinand, assignor to himself, E. Melchior, J. Clemens, and C. Finkensieper, Chicago, Ill. Meat-cutting machine	334,789	Jan. 26	1921	485 / 486	34	359
Lindner, Moritz, Meuselwitz, Saxony, Germany. Lubricator	338,087	Mar. 16	1625	423	34	1231
Lindsey, Henry K. (See Card, George F., assignor.)						
Lindsley, Milton F., West Hoboken, N. J. Explosive compound	333,873	Jan. 5	514	.....	34	96

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Link, Willis E., Radcliffe, Iowa. Detachable coupling	334,256	Jan. 12	1099	284	34	211
Linnenbrugge, Adolf W. F. G. (See Nagel, Kaemp, and Linnenbrugge.)						
Linscott, John M., Lewiston, Me. Piston water-meter	337,845	Mar. 16	1994	336	34	1171
Linthicum, Louisa B., Helena, Ark. Attachment for bake-ovens	338,979	Mar. 23	1989	496	34	1290
Litch, Lemuel W. (See Riedell and Litch.)						
Litchfield, William H. (See Rakow, Louis, assignor.)						
Little & Co., R. C. (See Champion, John P., assignor.)						
Little, James L., Jr. (See Gardner, Ernest M., assignor.)						
Little, James R., assignor, by mesne assignments, to Quincy Metal Wheel Company, Quincy, Ill. Metallic wheel	334,249	Jan. 12	1083	287	34	209
Little, James R., assignor, by mesne assignments, to Quincy Metal Wheel Company, Quincy, Ill. Machine for manufacturing metal wheels	334,250	Jan. 12	1084	287 / 288	34	209
Little, James R., assignor, by mesne assignments, to Quincy Metal Wheel Company, Quincy, Ill. Mechanism for manufacturing metal wheels	334,251	Jan. 12	1088	289 / 290 / 291	34	210
Little, James R., assignor, by mesne assignments, to Quincy Metal Wheel Company, Quincy, Ill. Metallic wheel	334,252	Jan. 12	1092	291	34	210
Little, James R., assignor to Quincy Metal Wheel Company, Quincy, Ill. Making metal wheels	334,253	Jan. 12	1093	292	34	210
Little, James R., assignor to Quincy Metal Wheel Company, Quincy, Ill. Mechanism for the manufacture of metal wheels	334,254	Jan. 12	1095	292	34	211
Little, James R., assignor to Quincy Metal Wheel Company, Quincy, Ill. Machine for upsetting tires	334,255	Jan. 12	1096	293 / 294	34	211
Little, James R., assignor to Quincy Metal Wheel Company, Quincy, Ill. Friction-clutch	335,463	Feb. 9	922	137	34	535
Little, James R., assignor to Quincy Metal Wheel Company, Quincy, Ill. Mechanism for the manufacture of metal wheels	337,172	Mar. 2	391	101	34	998
Little, James R., assignor to Quincy Metal Wheel Company, Quincy, Ill. Manufacture of metal wheels	338,988	Mar. 30	2988	765	34	1472
Little, Joseph. (See Leech and Little.)						
Little, Robert L., *et al.* (See Morrell, Augustine, assignor.)						
Littlefield, Richmond H. (See Marden and Littlefield.)						
Littleton, Charles M., assignor of one-half to H. W. Quinn, Shirley, Ill. Car-coupling	337,598	Mar. 9	978	251	34	1109
Lively, Alexander, Sardis, Ga. Fertilizer-distributer	336,068	Mar. 16	1626	423	34	1232
Liver, Jacob. (See Jeffrey and Liver.)						
Livesey, John, Jr., *et al.* (See McAneny and Risley, assignors.)						
Livingston, John S., and A. McBride, Orange Springs, Fla. Cotton-gin	334,875	Jan. 26	1930	514	34	379
Livingston, Reason C., Spring Valley, Minn. Grain-measuring apparatus and sack-holder	335,940	Feb. 9	1906	521	34	664
Livingstone, Frederick D., assignor of one-half to A. Golt, Springfield, Mass. Sash-fastener	338,534	Mar. 23	2235	587	34	1351
Lloyd, Clinton. (See Chapman, Thomas L., assignor.)						
Lloyd, Cyrus W., assignor to W. A. Warrington & Co., Salisbury, Md. Fruit-crate	335,269	Feb. 2	400	102	34	512
Lloyd, George E., Chicago, Ill. Machine for shaving stereotype-plates	333,599	Jan. 5	45	12	34	11
Lloyd, George E., Chicago, Ill. Machine for fitting stereotype-plates and their backing	333,590	Jan. 5	46	12	34	11
Lochmann, Paul, Leipsic, Gohlis, Saxony, Germany. Air-engine	333,644	Jan. 5	191	51, 52	34	88
Lochner, John, New York, N. Y. Combined table and clothes-rack	338,089	Mar. 16	1647	413	34	1232
Locke, Nathaniel C., Salem, Mass. Diaphragm for pressure regulators	335,083	Jan. 26	2143	570	34	416
Locke, Nathaniel C., Salem, Mass. Damper-regulator	335,080	Jan. 26	2088	567	34	493
Lockhart, Alexander W., Stockton, Cal. Feed-regulator for thrashing-machines	334,094	Jan. 12	720	199	34	144
Lockhart, G. D. (See Horton George T., assignor.)						
Lockwood, Samuel M., New York, N. Y. Inclined-wheel earth-excavator	335,229	Feb. 2	210	54	34	477
Lockwood, Samuel M., New York, N. Y. Inclined-wheel excavator	335,230	Feb. 2	211	54	34	477
Lockwood, Thomas D., Malden, Mass. Automatic telephone-exchange system	335,708	Feb. 9	871	220	34	602
Loehner, August, St. Louis, Mo. Railway-track drill	336,487	Feb. 16	2008	508	34	811
Loewenthal, Rudolph A., *et al.* (See Holt, Albert T., assignor.)						
Lower, Henry, *et al.* (See Hatfield, Charles B., assignor.)						
Logan, John, Waltham, Mass. Machine for filing metallic ribbons	337,689	Mar. 9	1085	281	34	1128
Logan, John, Waltham, Mass. Making watch-springs	337,690	Mar. 9	1088	281	34	1129
Logan, John, Waltham, Mass. Machine for polishing metal wire or ribbon	338,608	Mar. 23	2327	600	34	1366
Long & Allstatter Company. (See Allstatter, Robert, assignor.)						
Long, Alvin A. (See Long, George A. and A. A.)						
Long, George A. and A. A., Northfield, Mass. Animal-trap	335,661	Jan. 26	2212	587 / 588	34	429
Long, George S., assignor to G. W. Williams, Hartford, Conn. Bicycle	337,774	Mar. 9	1193	310	34	1146
Long, John, Brighton, Iowa. Fifth-wheel anti-rattler	336,927	Mar. 2	62	16	34	997
Long, William, assignor of two-thirds to T. Manwaring and H. Berndt, Covington, Ky. Drawer-pull	337,419	Mar. 9	721	187	34	1065
Longbottom, Christopher, Bradford, county of York, England. Device for securing door-knobs to their spindles	335,894	Feb. 9	1040	275	34	634
Longstreet, Aaron, *et al.* (See Coyle, Charles J., assignor.)						
Loomis, Burdett, Hartford, Conn. Apparatus for the manufacture of illuminating and heating gas	338,989	Mar. 30	2989	765 / 766	34	1472
Loomis, Burdett, Hartford, Conn. Manufacturing gas	338,990	Mar. 30	2992	766	34	1473
Loomis, Burdett, Hartford, Conn. Apparatus for manufacturing gas	338,991	Mar. 30	2995	766 / 767	34	1473
Loomis, Burdett, Hartford, Conn. Process of and apparatus for manufacturing gas	338,992	Mar. 30	2997	767 / 768	34	1474
Loomis, John S., Brooklyn, N. Y. Boiler-furnace	335,925	Feb. 9	1040	275	34	634
Loomis, Lyman U., McPherson, Kans. Wind-wheel gearing	336,651	Feb. 23	2240	564	34	857
Loomis, M. De Witt, Pittsburg, Pa. Cast wheel, pulley, &c.	334,178	Jan. 19	960	260	34	185
Loomis, Mahlon, Terra Alta, W. Va. Electrical thermostat	338,090	Mar. 16	1638	424	34	1229
Loomis, Osborn P., and H. W. Cooley, Lynn, Mass. Regulator for dynamo-electric machines	337,775	Mar. 9	1194	310	34	1146
Loomis, Osborn P., and H. W. Cooley, Lynn, Mass. Regulator for dynamo-electric machines	337,776	Mar. 9	1196	311	34	1147
Loomis, Osborn P., and H. W. Cooley, Lynn, Mass. Electric motor	337,777	Mar. 9	1197	311	34	1147
Loop, A. Irwin, assignor of one-half to W. H. Stetson and C. Loop, North East, Pa. Saw-mill set-works	338,684	Mar. 23	2448	646 / 647	34	1387
Loop, Charles, *et al.* (See Loop, A. Irwin, assignor.)						
Lord, Henry S., assignor to R. E. Day, Hartford, Conn. Water-closet valve	336,523	Feb. 16	2052	539 / 540	34	819
Lorentz, Heinrich, Stettin, Prussia, Germany. Mechanical musical instrument	333,645	Jan. 5	192	52	34	88
Lorenz, Robert, New York, N. Y. Clamp for strings, &c	334,711	Jan. 19	1780	459	34	382
Lorenz, Wilhelm, *et al.* (See Nolte, August, assignor.)						
Lorenz, Wilhelm, Carlsruhe, Germany. Manufacture of compound projectiles	335,464	Feb. 2	563	137	34	535

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lorenz, Wilhelm, Carlsruhe, Baden, Germany. Compound projectile	338,849	Mar. 30	2091	709	34	1436
Lorenz, William A., Hartford, Conn., assignor to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Paper-bag machine	333,646	Jan. 5	194	58, 59	34	86
Lorenz, William A., and W. H. Honiss, Hartford, Conn., assignors to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Paper-bag machine	333,647	Jan. 5	194	58, 54	34	86
Lorenz, William A., and W. H. Honiss, Hartford, Conn., assignors to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Paper-bag machine	337,964	Mar. 16	1461	378, 379	34	1201
Lorenz, William A., and W. H. Honiss, Hartford, Conn., assignors to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Paper-bag machine	337,965	Mar. 16	1463	379, 380	34	1202
Lorenz, William A., and W. H. Honiss, Hartford, Conn., assignors to F. W. Leinbach and C. A. Wolle, Bethlehem, Pa. Paper-bag machine	337,966	Mar. 16	1466	380, 381	34	1202
Lorimer, John H., Philadelphia, Pa. Wool-drying machine	336,998	Mar. 2	62	17	34	938
Loring, Samuel. (See Morton, Ephraim S., assignor.)						
Losee, Jacob C., Summit, N. J. Thermostat for incubators	336,125	Feb. 16	1473	388, 389	34	718
Lothrop, Llewellyn D., Gloucester, Mass. Fishing-tackle	333,648	Jan. 5	198	55, 424	34	39
Lotter, Frita, Altona, Westphalia, Prussia, Germany. Reducing ores of nickel and cobalt with oxide of manganese	339,067	Mar. 30	3008	.....	34	1492
Lottridge, William, assignor of twelve-eighteenths to M. V. Nichols and C. H. Cotter, Osage, Iowa. Grain-binder	338,091	Mar. 16	1629	425, 426, 427	34	1232
Louden, William, Fairfield, Iowa. Hay-carrier	337,173	Mar. 2	392	102	34	998
Louderback, Edwin, Philadelphia, Pa. Window-screen	334,876	Jan. 26	1981	514	34	879
Louvet, John B. (See Mahoney and Louvet.)						
Love, George W., Pere Cheney, Mich. Double strawberry-runner cutter	337,174	Mar. 2	396	102	34	999
Lovegrove, Thomas J. (See Huey and Lovegrove.)						
Lovejoy, Son & Co. (See Ferguson, James H., assignor.)						
Loveland, Edwin B. (See Smith, Frank B., assignor.)						
Lovelidge, Thomas, Philadelphia, Pa. Nut-lock	335,941	Feb. 9	1209	322	34	664
Lovell, David H., Renovo, Pa. Spring-frog	338,177	Mar. 16	1754	458	34	1258
Lovell, John W., New York, N. Y. Guard for books, pamphlets, and other publications	334,446	Jan. 19	1348	366	34	204
Lovick, George, Temple, Tex. Seed-planter	335,370	Feb. 2	400	108	34	513
Lovin, William M., Greenville, Tex. Seeder	335,709	Feb. 9	879	231	34	604
Low, A. Augustus. (See Johnson and Low.)						
Low, Fred. R. (See Clark and Low.)						
Low, John F. (See Low, John G., assignor.)						
Low, John G., Chelsea, Mass. Tile-making machine	336,240	Feb. 16	1674	435, 436	34	750
Low, John G., Chelsea, Mass. Making tiles	336,241	Feb. 16	1676	436	34	750
Low, John G., Chelsea, Mass. Tile decoration	336,242	Feb. 16	1677	436	34	750
Low, John G., Chelsea, Mass. Tile decoration	336,243	Feb. 16	1677	437	34	750
Low, John G., Chelsea, Mass. Tile with holes to serve as frames or supports	336,244	Feb. 16	1678	437	34	750
Low, John G., assignor of one-half to J. F. Low, Chelsea, Mass. Clock-case	333,873	Jan. 5	515	140	34	96
Low, John G., and E. E. Streeter, Chelsea, Mass. Plastic article	335,598	Feb. 2	610	159	34	549
Lowcock, Arthur, Shrewsbury, county of Salop, and T. Sykes, Manchester, county of Lancaster, England. Fuel-economizer	334,533	Jan. 19	1472	395	34	226
Lowe, Charles, Reddish, near Stockport, county of Lancaster, England. Manufacture of derivatives of aurin	333,649	Jan. 5	199	.....	34	39
Lowe, Harry, Montpelier, Vt. Check-bar for bridles	335,465	Feb. 2	523	137	34	535
Lowell Faucet Company. (See Hallowell, Albert, assignor.)						
Lowell Oiler Company. (See Humphrey, Henry P., assignor.)						
Lowenstein, Max. (See Catlin, Frederick, assignor.)						
Lowenthal, Herman, *et al.* (See Powell and Nolan, assignors.)						
Lucas, Albert G., *et al.* (See De Zeng, Henry L., assignor.)	338,850	Mar. 30	2092	709	34	1438
Lucas, Christian E., Atlanta, Ga. Ventilating cars	335,598	Feb. 9	719	192	34	576
Lucas, Heman S., Chester, Mass. Manufacture of compound mica sheets	333,960	Jan. 5	632	173, 174	34	119
Lucas, John, assignor to W. M. Stewart, trustee, Philadelphia, Pa. Mining-machine	336,011	Feb. 9	1301	346	34	680
Lucas, Robert, and W. Deotson, Athens, Ga. Churn	336,012	Feb. 9	1302	346	34	680
Luckey, George E., Paris, Tenn. Pea-thrasher	336,594	Feb. 16	2055	540	34	819
Ludlow, Charles A., assignor of one-half to A. R. Lacey, Bridgeport, Conn. Making rugs, fringe, &c., and material therefor	336,126	Feb. 16	1474	389	34	718
Ludlow Toy Manufacturing Company. (See Gibbs, Eugene H., assignor.)						
Ludlum, William, Marion, Ind. Conveyer and elevator for straw, hay, &c	337,272	Mar. 2	522	136	34	1023
Ludwig, John C., San Francisco, Cal. Polarized telegraphic relay	337,003	Mar. 2	165	44	34	955
Luedemann, Albert, New York, N. Y. Bottle-stopper	337,273	Mar. 2	525	136, 137, 138	34	1023
Lufkin, John W., Chelsea, Mass. Button-hole sewing-machine	334,179	Jan. 12	961	260	34	185
Lugrin, Henry A., New York, N. Y. Stem winding and setting watch	336,056	Feb. 9	1267	361	34	691
Lundqvist, Alexius T., Brooklyn, N. Y. Refrigerator for oysters	338,178	Mar. 16	1755	459	34	1258
Lundstedt, O. Emil, Brooklyn, N. Y. Galvanometer	336,576	Feb. 23	2130	558	34	839
Lungren, Charles M., New York, N. Y. Incandescent gas-light	333,961	Jan. 5	634	174	34	120
Lussier, Joseph, assignor of one-half to W. F. Williams, Minneapolis, Minn. Wrench	339,107	Mar. 30	3071	813	34	1503
Lüttinger, Adam, New York, N. Y. Washing-machine	338,604	Mar. 23	2329	610	34	1367
Luyster, William W., New York, N. Y. Hand-grenade extinguisher						
Lyman, James, *et al.* (See Doubleday, Harry M., assignor.)						
Lynch, Daniel, Glens Falls, N. Y. Mop-wringer	337,274	Mar. 2	528	139	34	1024
Lynch, Michael, and W. F. Harrison, Florence, Ala. Permutation-lock	338,234	Mar. 16	1826	477	34	1271
Lynch, Thomas P., New York, N. Y. Spring bed-bottom	333,958	Jan. 5	630	173	34	118
Lynde, Myron, Grundy Centre, Iowa. Draft-equalizer	339,106	Mar. 30	3072	813	34	1503
Lyne, Charles, Chicago, Ill. Baby-carriage	337,343	Mar. 2	617	162, 163	34	1040
Lynn, Mirabeau N., Rising Sun, assignor to American Electric Headlight Company, Indianapolis, Ind. Pitman attachment for multiple-cylinder steam-engines	334,025	Jan. 12	731	200	34	144
Lynn, Mirabeau N., Rising Sun, assignor to American Electric Headlight Company, Indianapolis, Ind. Steam-engine	335,530	Feb. 2	612	159, 160, 161	34	549
Lynn, Mirabeau N., Rising Sun, assignor to American Electric Headlight Company, Indianapolis, Ind. Cut-off valve for steam-engines	336,862	Feb. 23	2516	664	34	910
Lyon, Edward H. (See Keller and Lyon.)						
Lyon, Henrietta J., Newark, N. J. Attachment for pants	338,641	Mar. 23	2382	627	34	1376

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lyon, James E. (See Whitaker, David W., assignor.)						
Lyons, Thomas, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Meat-cutter	334,123	Jan. 12	874	239	34	170
Lytle, Albert E., Chicago, Ill. Hand-grenade fire-extinguisher	337,344	Mar. 2	619	163	34	1040
Lytle, Albert E., assignor of one-third to R. B. Smith, Chicago, Ill. Railway water-tank	333,959	Jan. 5	631	173	34	119
Maas, A. H., *et al.* (See Müller, Armand, assignor.)						
Mabbett, Truman, Jr., Beideman Station, N. J. Alarm-lock	336,851	Mar. 30	2094	710	34	1438
Macdonald, James, Chicago, Ill. Friction-clutch	334,448	Jan. 19	1352	366	34	205
Macdonald, Malcom, Oakland, Cal. Joint marking and dressing tool for cement pavements	334,125	Jan. 12	875	240	34	170
Macdonald, William C., assignor, by mesne assignments, to himself and A. F. Petree, Reading, Mass. Life-preserver	335,599	Feb. 9	720	192	34	576
Macgowan, Robert W., New York, N. Y. Foaming device for railway-cars	333,767	Jan. 5	371	101	34	70
Mack, William B., Boston, Mass. Injector	334,194	Jan. 12	874	240	34	170
Mack, William B., Boston, Mass. Elevated railway	336,947	Feb. 16	1662	438	34	761
Mack, William H., Milwaukee, Wis. Lawn-cleaner	336,798	Feb. 23	2246	614	34	978
Mackenzie, Philip W., New York, N. Y. Apparatus for producing gas	334,447	Jan. 19	1349	366	34	205
Mackenzie, Oscar C., Chicago, Ill. File-holder	336,577	Feb. 23	2181	559	34	839
Mackie, Robb, Troy, assignor to J. B. Tibbits, Hoosick, N. Y. Circuit for electric lighting	337,005	Mar. 2	167	44	34	955
Mackie, Robb, Troy, and N. McCarty, assignors to J. B. Tibbits, Hoosick, N. Y. System of electric lighting	337,004	Mar. 2	166	44	34	955
Mackintosh, Edward D., Brooklyn, assignor to P. Pryibil, New York, N. Y. Machine for making compressed bungs	336,639	Feb. 23	2242	565	34	857
MacKusick, Elmer F., assignor to J. S. Conover & Co., New York, N. Y. Gas-burning fireplace	334,577	Jan. 26	1982	514	34	879
Macomber, Ellwood G., Portsmouth, R. I. Fertiliser-distributer	338,858	Mar. 30	2096	710	34	1438
Macrone, William, Glasgow, Scotland. Machine for varnishing or sizing and applying colors to paper, &c	336,331	Feb. 16	1796	470	34	778
Macy, Thomas E., Berne, Ind. Churn	338,289	Mar. 23	1890	497	34	1280
Madden, John, and C. E. Brown, Cleveland, Ohio; said Madden assignor to said Brown. Lock for whip-sockets	337,846	Mar. 16	1695	336	34	1171
Maginnis, Arthur J., Liverpool, England. Steam steering-gear for vessels	334,598	Jan. 19	1356	416	34	208
Maginnis, Arthur J., Liverpool, England. Steam-winch	337,175	Mar. 2	397	103	34	999
Magner, Thomas J., Hornellsville, assignor of part to J. King and G. W. Rockwell, Buffalo, N. Y. Vehicle-spring	335,942	Feb. 9	1210	322	34	664
Magnette, Jules, Long Island City, N. Y. Ratchet-drill	337,599	Mar. 9	980	251	34	1109
Maguire, Charles R., Baltimore, Md. Spring-balance scale	336,535	Mar. 23	2236	567	34	1351
Maguire, Frank W. (See Whitehead and Maguire.)						
Maguire, Michael, New York, N. Y. Fish line reel	335,600	Feb. 9	721	192	34	577
Mahaffey, Charles M., *et al.* (See Tyler, George, assignor.)						
Mahin, Mathew T., Grenola, Kans. Corn-shock-compressing device	338,092	Mar. 16	1642	427	34	1235
Mahon, David C. and J. G., Chicago, Ill. Bending-block	337,006	Mar. 2	168	45	34	955
Mahon, John G. (See Mahon, David C. and J. G.)						
Mahoney, Patrick F., and J. B. Louvet, Sandwich, Mass. Forming-block for making lamp-shades, &c	334,126	Jan. 12	877	240	34	170
Mahony, Charles A., Philadelphia, Pa. Pendulum	334,958	Jan. 26	2083	542	34	397
Mahony, James, New York, N. Y. Feed-water heater	336,999	Mar. 2	63	17	34	938
Mahrenholz, Carl L., *et al.* (See Stubbs, Jesse, assignor.)						
Main, Samuel A. (See Main, Samuel M., assignor.)						
Main, Samuel M., Brooklyn, N. Y., assignor of one-half to S. A. Main, Danbury, Conn. Lubricator	336,578	Feb. 23	2132	559	34	839
Main, William, Brooklyn, N. Y. Incandescent electric lamp	336,739	Feb. 23	2347	614	34	979
Maine, John F., assignor of one-half to C. W. Gray, Jeffersonville, Ohio. Roller-skate	336,579	Feb. 23	2133	559	34	839
Maine, John F., Jeffersonville, and B. C. Converse, Springfield, assignors of one-half to C. W. Gray, Jeffersonville, Ohio. Roller-skate	336,993	Mar. 30	2901	709	34	1474
Maitland, George, *et al.* (See Tomlinson, James, assignor.)						
Maize, George W. (See Thompson, Robert A., assignor.)						
Major, Charles G. (See Stevens and Major.)						
Major, Charles G., assignor of one-half to J. Drew, London, England. Lift or hoist	336,536	Mar. 23	2236	567, 568	34	1351
Major, Emanuel, Rochester, N. Y. Elastic coupling for steam-pipes	335,871	Feb. 2	401	108	34	513
Makin, John, Glossop, county of Derby, England, assignor to C. C. Springer, Boston, Mass. Boiler for treating wood, &c., for paper-pulp	335,943	Feb. 9	1211	322	34	664
Malandin, Leon P. C. (See Delamare-Debouteville and Malandin.)						
Malcolm, Archibald, Chicago, Ill. Washing-machine	336,930	Mar. 2	65	17, 18	34	938
Malin, Edgar, *et al.* (See McMurray, Louis, assignor.)						
Mallory, D. D. (See Brooks, William D., assignor.)						
Maloney, James, Providence, R. I. Cartridge capper and decapper	334,449	Jan. 19	1354	367	34	205
Maloney, James A., assignor of one-half to H. D. Cooke, Washington, D. C. Pneumatic acoustic telephone	338,994	Mar. 30	2902	709	34	1474
Maloney, James A., assignor of one-half to H. D. Cooke, Washington, D. C. Pneumatic acoustic telephone	338,995	Mar. 30	2904	709	34	1475
Maloney, James A., and A. G. Johnson, Washington, D. C.; said Johnson assignor to said Maloney. Convertible telegraph-key	336,653	Feb. 23	2248	566	34	859
Maloy, James W., Somerville, assignor, by mesne assignments, to American Marble Cutting Company, Boston, Mass. Cutter-head for stone-cutting machines	334,594	Jan. 19	1357	416	34	209
Maloy, James W., Somerville, assignor, by mesne assignments, to American Marble Cutting Company, Boston, Mass. Stone-cutter head	334,595	Jan. 19	1358	416	34	209
Maltby, William J. (See French and Maltby.)						
Manchester, Frank L., *et al.* (See Richardson, John D., assignor.)						
Mancer, Samuel, Craigvale, Ontario, Canada. Neck-yoke coupling	333,768	Jan. 5	372	101	34	70
Manhes, Pierre, Lyons, France. Extracting gold and silver from ores and mattes	337,967	Mar. 16	1468	.....	34	1203
Mankel, Henry, Jr., McKean, Pa. Detachable back for carriage-seats	336,537	Mar. 23	2239	568	34	1351
Manley, William, Rochester, N. Y. Boot or shoe edge trimming machine	336,332	Feb. 16	1797	470, 471	34	778
Mann, Thomas W., Holyoke, Mass. Urinal	335,601	Feb. 9	722	192, 196	34	577
Manners, Charles E. (See Manners, Stephen H. and C. E.)						
Manners, Stephen H. and C. E., assignors of one-half to J. T. Ledan, Adelaid, South Australia. Rope-holder	334,878	Jan. 26	1933	515	34	879
Manning, Cephas, Boston, Mass. Feed-water heater	337,510	Mar. 9	873	221	34	1069
Manning, Eben J. (See Rudd and Manning.)						
Manning, Frank, Ardmore, Pa. Rock-drill	337,968	Mar. 16	1469	361	34	1203

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Manning, William P., assignor of one-half to F. S. Presbrey, Youngstown, Ohio. Combined shoe scraper and brush	336,931	Mar. 2	66	18	34	938
Manring, Bofford A., and R. E. Gibbons, Gunnison, assignors of one-third to W. Wigles-worth, Telluride, Colo. Washing-machine	334,596	Jan. 19	1559	416	34	903
Manufacturers Special Machine Company. (See Beardslee, William F., assignor.)						
Manville, Charles B., Milwaukee, Wis. Steam boiler and pipe covering	334,959	Jan. 26	2034	543	34	398
Manwaring, Thomas, *et al.* (See Long, William, assignor.)						
March, George N., Watertown, Mass., assignor, by mesne assignments, to Fiberlene Collar Company, Portland, Me. Collar	337,176	Mar. 2	398	103	34	999
March, Jacob M., Washington D. C. Inside trunk-brace	337,413	Mar. 9	723	187	34	1065
Marchand, Charles, New York, N. Y. Treatment of rancid butter and other materials	338,538	Mar. 23	2240	589	34	1352
Marchand, Henry E., Pittsburg, Pa. Spring-motor	337,177	Mar. 2	399	104	34	999
Marcus, Martin H., Baltimore, Md. Quilting-machine	337,178	Mar. 2	401	104	34	1000
Marcus, Michaelis D., and N. H. Epeteyn, assignors of one-fifth to A. M. Plato, Portland, Oreg. Electric fire-escape	335,371	Feb. 2	402	108	34	514
Marcy, Rufus G., Kansas City, Mo. Rock-drill	335,372	Feb. 2	403	103	34	514
Marcy, Rufus G., Kansas City, Mo. Machine for drilling wells	338,539	Mar. 23	2242	589	34	1352
Marden, John W., Waltham, and R. H. Littlefield, Somerville, Mass., assignors to Cowell Platform and Coupling Company, Cleveland, Ohio. Car-coupling	335,944	Feb. 9	1213	392	34	665
Marder, Luse & Co. (See Hochstadt, Carl, assignor.)						
Mark, Charlie E., Flint, Mich., assignor, by mesne assignments, to Mark's Automatic Car Coupler Company, Cleveland, Ohio. Car-coupling. (Reissue)	10,702	Mar. 23	2456	648	34	1388
Mark's Automatic Car Coupler Company. (See Mark, Charlie E., assignor.) (Reissue.)						
Marks, George E., Sound Beach, Conn. Combined knife and fork	338,853	Mar. 30	2697	710	34	1439
Marland, George, assignor of one-half to H. Hagan, Pittsburg, Pa. Coupling for joints of gas-conduits	338,093	Mar. 16	1643	427	34	1235
Marlin, John M., New Haven, Conn. Clutch for tricycles	333,531	Jan. 5	47	13, 14	34	11
Marlin, John M., New Haven, Conn. Magazine-gun	334,535	Jan. 19	1477	396	34	987
Marqua, George, Cincinnati, Ohio. School-desk	336,417	Feb. 16	1916	502	34	759
Marr, Frank S., *et al.* (See Doubleday, Harry M., assignor.)						
Marsh, Canfield. (See Horey and Marsh.)						
Marsh, Edward A. (See Fitz Gerald and Marsh.)						
Marsh, John A., Long Lake, Ill. Steam-jet pump	334,597	Jan. 19	1560	417	34	908
Marshal, Franklin J., assignor to O. F. Marshal, Jr., Wheeler, N. Y. Harrow	334,180	Jan. 12	962	261	34	186
Marshal, Otto F., Jr. (See Marshal, Franklin J., assignor.)						
Marshall, Holmes, Cleveland, Ohio. Fare recorder and register	334,534	Jan. 19	1473	{395 396	34	986
Marshall, Justice W., Cazenovia, N. Y. Self-oiling axle	333,532	Jan. 5	49	14	34	12
Marti, Casper, Minneapolis, Minn. Egg-register	336,333	Feb. 16	1800	471	34	773
Martin, Aaron J., Evansville, Ind. Combined pole and shafts for vehicles	336,334	Feb. 16	1801	471	34	773
Martin, Albert L., Concordia, Kans. Egg-case	336,094	Mar. 16	1644	428	34	1236
Martin, Elisha J., Rockville, Conn. Reel for fishing-rods	335,826	Feb. 9	1042	275	34	634
Martin, Joanna. (See Martin, Richard M., assignor.)						
Martin, Joseph C., Florence, Mass. Cash-carrier	334,599	Jan. 19	1562	417	34	908
Martin Manufacturing Company. (See Martin, Thomas F., assignor.)						
Martin, Richard M., assignor to J. Martin, Minneapolis, Minn. Blind-slat adjuster	337,275	Mar. 2	530	139	34	1024
Martin, Stephen J. (See Walsh and Martin.)						
Martin, Taylor, Sturm's Mill, W. Va. Washing-machine	334,596	Jan. 19	1561	417	34	908
Martin, Thomas F., Newburg, assignor to Martin Manufacturing Company, New York, N. Y. Gas-making apparatus	334,127	Jan. 12	879	241	34	171
Martina, C. Alexander, Berlin, assignor to Farbfabriken, formerly Brönner, Frankfort-on-the-Main, Prussia, Germany. Manufacture of archil red azo colors	334,257	Jan. 12	1100	.....	34	212
Marvil, Joshua H., Laurel, Del. Cover for fruit-baskets	338,179	Mar. 16	1757	450	34	1258
Mason, Alvin C., Hyde Park, Ill. Stove and range door	334,258	Jan. 12	1101	205	34	212
Mason, Charles T., Jr., Sumter, S. C. Cotton-harvesting machine	337,007	Mar. 2	170	45, 46	34	956
Mason, George W., assignor of one-half to O. Knight, Washington, D. C. Dish-washing mop	333,650	Jan. 5	199	55	34	89
Mason, Howell R., Chelsea, assignor to American Bell Telephone Company, Boston, Mass. Manufacture of electrical conductors	334,450	Jan. 19	1354	367	34	965
Mason Regulator Company. (See Mason, William B., assignor.)						
Mason, William B., assignor to Mason Regulator Company, Boston, Mass. Steam-pump pressure-regulator	334,079	Jan. 12	808	222	34	158
Mason, William B., assignor to Mason Regulator Company, Boston, Mass. Steam-pump pressure-regulator	334,080	Jan. 12	812	222	34	158
Mason, William B., assignor to Mason Regulator Company, Boston, Mass. Steam-trap	338,854	Mar. 30	2698	710	34	1439
Mason, William B., Boston, E. J. Wescott, Hyde Park, and W. L. Stevens, Boston, Mass. Apparatus for indicating the speed of shafting, machinery, &c.	334,960	Jan. 26	2035	{543 544	34	398
Masse, Francis M., Buffalo, N. Y. Trunk-strap	336,560	Feb. 23	2134	559	34	839
Masterman, William H., Newark, assignor of one-sixth to A. H. Walker, Oakland, Cal. Car-brake	333,874	Jan. 5	516	141	34	96
Mather Electric Company. (See Mather, Richard H., assignor.)						
Mather, Richard H. (See Van Depoele, Charles J., assignor.)						
Mather, Richard H., Windsor, Conn. Regulator for dynamo-electric machines	337,778	Mar. 9	1198	311	34	1147
Mather, Richard H., Windsor, assignor to Mather Electric Company, Manchester, Conn. Regulator for dynamo-electric machines	334,712	Jan. 19	1721	459	34	332
Mather, William, Salford, county of Lancaster, England. Bleaching	333,875	Jan. 5	517	.....	34	96
Mather, William, Salford, county of Lancaster, England. Apparatus for treating textile materials with liquids, gases, or vapors	333,876	Jan. 5	517	141	34	96
Mathews, Joseph H., Canton, Ohio. Desulphurizing gold and silver ores	334,961	Jan. 26	2037	544	34	398
Mathison, Joseph, Lynn, Mass., assignor to Standard Button Fastening Company, Portland, Me. Machine for sewing on buttons	336,880	Feb. 23	2550	{671 672 673	34	917
Mathison, Joseph, Lynn, Mass., assignor to Standard Button Fastening Company, Portland, Me. Machine for sewing on buttons	336,881	Feb. 23	2555	{673 674	34	917
Mattes, William F., Scranton, Pa. Pump	336,654	Feb. 23	2250	586	34	859
Matteson, Don C., Stockton, Cal. Harvester	333,533	Jan. 5	50	15	34	12
Matteson, Eugene L., Wever, assignor of one-half to R. W. Curtis and J. B. Diver, Keokuk, Iowa. Car-coupling	334,962	Jan. 26	2039	544	34	398
Matthai, Joseph F. (See Jacobs, Samuel, assignor.)						
Matthes & Weber, E. (See Breuer, August, assignor.)						
Matthews, John. (See Matthews, Dyson, and Ormerod, assignors.)						
Matthews, John H., Brooklyn, T. Dyson, New York, and J. Ormerod, Brooklyn, assignors to J. Matthews, New York, N. Y. Cock for soda-water fountains	333,651	Jan. 5	200	55	34	89

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Matthews, William, assignor of one-fourth to W. Campbell, Sedalia, Mo. Tuck-folder for sewing-machines	333,877	Jan. 5	518	141	34	97
Matthiessen, Frans O. (See Soxhlet, Franz, assignor.)						
Matthiessen, Frans O., Irvington, N. Y. Transforming soft sugar into hard block sugar	333,632	Jan. 5	202	.....	34	40
Matthiessen, Frans O., Irvington, N. Y. Bone-black discharger for continuous filters	335,602	Feb. 9	724	193	34	577
Matthiessen, Frans O., Irvington, N. Y. Bone-black discharger for continuous filters	335,603	Feb. 9	725	{193 194	34	577
Matthiessen, Frans O., Irvington, N. Y. Apparatus for decolorizing sugar-liquor by filtration through bone-black	335,763	Feb. 9	956	254	34	618
Matthiessen & Weichers Sugar Refining Company, F. O. (See Howes, Robert C., assignor.)						
Matthiessen & Wiechers Sugar Refining Company, F. O. (See Quimby, Edward E., assignor.)						
Mattice, John C. (See Williams and Mattice.)						
Mauk, William G., Basil, Ohio. Hitching device	334,963	Jan. 26	2040	545	34	398
Maultby, William E., Cheboygan, Mich., assignor to Oneida Community, (limited,) Community, N. Y. Animal-trap	334,259	Jan. 12	1102	295	34	212
Mayer, William, Jr., Jersey City, N. J., assignor to Baltimore and Ohio Telegraph Company, Baltimore, Md. Branch circuit for quadruplex telegraphs	338,996	Mar. 30	2905	770	34	1475
Maxey, Thomas W., Nevada, Mo. Adding-machine	335,874	Feb. 2	404	104	34	514
Maxon, Thomas, assignor of one-half to J. W. Carpenter, Dayton, Ohio. Lifting-jack	333,678	Jan. 5	521	142	34	97
Maxson, Charles B., Westerly, R. I. Sheet-delivery apparatus for printing-machines	333,679	Jan. 5	522	142	34	97
Maxson, Charles B., Westerly, R. I. Sheet-delivery apparatus for printing-machines	334,964	Jan. 26	2042	545	34	399
Maxwell, Charles C., Watertown, Dak. Ter. Washing-machine	335,945	Feb. 9	1214	323	34	665
Maxwell, John, Oneida, N. Y. Cloth-covered molding	337,008	Mar. 2	176	46	34	957
Maxwell, John, Oneida, N. Y. Coffin	337,009	Mar. 2	176	46	34	957
Maxwell, John, Oneida, N. Y. Coffin	336,856	Mar. 30	2700	711	34	1439
Maxwell, Marvin R., Peoria, Ill. Coat-hanger	337,345	Mar. 2	630	163	34	1049
May, Eli P. (See Bowers, Cile W., assignor.)						
May, Leander, Lock Haven, Pa. Kitchen-cabinet	334,260	Jan. 12	1103	295	34	212
Mayer, Alfred M., South Orange, N. J. Heliostat	332,769	Jan. 5	373	{101 102	34	70
Mayer, Charles G. (See Ehlermann and Mayer.)						
Mayer, Joseph, Yonkers, N. Y. Galvanic body-wear	334,879	Jan. 26	1934	515	34	379
Mayer, Rudolph. (See Holtzmann and Mayer.)						
Maynard, C. S. (See Stanton, Bradley W., assignor.)						
Mayo Electric Manufacturing Company. (See Mayo, George A., assignor.)						
Mayo, George A., Lynn, assignor, by means assignments, to Mayo Electric Manufacturing Company, Boston, Mass. Electric lamp	338,352	Mar. 23	1988	523	34	1307
McAdams, George B. (See Walter, Willie C., assignor.)						
McArdle, Henry J., Philadelphia, Pa. Traveling suspension-truck	337,179	Mar. 2	402	104	34	1000
McArthur, Jerome, Mount Morris, N. Y. Paint composition	338,540	Mar. 23	2344	.....	34	1352
McAneny, Michael, and W. L. Bieley, assignors of one-half to W. Thompson and J. Livesey, Jr., Denver, Colo. Ore-concentrator	338,856	Mar. 30	2702	711	34	1439
McBride, Andrew. (See Livingston and McBride.)						
McBride, Charles, Victor, Iowa. Spade	337,602	Mar. 9	983	252	34	1110
McBride, James, Bevington, Pa. Washing-machine	337,603	Mar. 9	983	252	34	1110
McCall, Angus D., Laurinburg, N. C. Sash-fastener	336,932	Mar. 2	67	18	34	939
McCall, William H., assignor of one-half to O. H. and W. G. Eddy, Greenwich, N. Y. Potato-digging machine	334,456	Jan. 19	1367	370	34	968
McCance, David, assignor to Hanford, Peckham & McCance Company, Newark, N. J. Rein-holder	337,414	Mar. 9	724	188	34	1065
McCandlish, James M., Bradford, Pa. Drill-jar	338,857	Mar. 30	2703	711	34	1440
McCann, James D., Falls City, Nebr. Measure for drafting garments	334,457	Jan. 19	1368	370	34	968
McCarty, Norman. (See Mackie and McCarty.)						
McCarty, Norman, assignor to J. B. Tibbits, Hoosick, N. Y. Circuit-connection for dynamo-electric machines	337,010	Mar. 2	178	47	34	957
McCauley, John C. F., Crooked Creek, Kans. Car-coupling	337,847	Mar. 16	1297	337	34	1171
McCauley, Patrick, assignor of one-half to B. P. McKenna, Braddock, Pa. Expansible auger	338,997	Mar. 30	2906	770	34	1475
McClellan, Ezra S., Paterson, N. J. Trap for baths, basins, &c.	334,129	Jan. 12	881	241	34	171
McClellan, Oscar D., assignor to A. Wasserman, Philadelphia, Pa. Gas-burner	336,418	Feb. 16	1916	502	34	795
McClelland, Robert E., Williamsville, Ill. Wagon-brake	336,127	Feb. 16	1475	389	34	718
McClinchie, Uriah, and J. F. Butler, New York, N. Y. Child's carriage	338,998	Mar. 30	2908	770	34	1476
McCloy, Eli C., Mount Vernon, Ohio. Gas-regulator	338,422	Mar. 23	2080	547	34	1325
McClure, John, Indian Grove, Mo. Washing-machine	338,671	Mar. 23	2427	640	34	1383
McColl, Gavin, and W. B. Cumming, Liverpool, county of Lancaster, England. Liquid rudder-brake	334,061	Jan. 12	814	223	34	159
McComas, Arthur W., and H. A. Fitzhugh, Austin, Tex. Fan attachment for rocking furniture	336,128	Feb. 16	1476	390	34	718
McComas, Arthur W., and H. A. Fitzhugh, Austin, Tex. Portable fan and operating machinery for same	337,848	Mar. 16	1298	337	34	1179
McCombs, George F., Allegheny, assignor to Hand Stitch Broom Sewing Machine Company, (limited,) Pittsburg, Pa. Broom-sewing machine	336,999	Mar. 30	2909	{771 772	34	1476
McCollom, Charles A., and M. Forder, Dassel, Minn. Cockle-separator	336,655	Feb. 23	2251	586	34	859
McCorkle, Samuel B., assignor of one-fourth to C. A. Hoyt, Chattanooga, Tenn. Swing	334,965	Jan. 26	2043	{545 546	34	399
McCormick, Francis J., Dayton, Ohio. Making paper-pulp	335,466	Feb. 2	524	.....	34	535
McCormick, Junius A., Pittsburg, Pa. System for conveying gas under pressure	335,467	Feb. 2	524	137	34	535
McCoy, Oscar, Versailles, Ill., assignor of one-half to L. A. Allen, Laclede, Mo. Dryings-hed for bricks, &c.	337,180	Mar. 2	402	105	34	1000
McCray, Millard F., Glasgville, Mo. Cultivator	334,181	Jan. 12	964	261	34	186
McCreary, John, and D. R. Smith, Cohoes, N. Y. Machine for radial crimping	336,656	Feb. 23	2253	{587 588	34	869
McCreary, William L., *et al.* (See Steiger, Andrew W., assignor.)						
McCullough, James, Jersey City, N. J. Dredging-machine	336,248	Feb. 16	1683	439	34	751
McCune, Joseph B., Chicopee, Mass. Wheel	334,393	Jan. 12	1272	343	34	343
McCurry, Abraham T., Goodland, Ind. Combination folding bed	334,880	Jan. 26	1935	515	34	380
McDannell, Otto C., Lowell, Mich. Stove-pipe thimble	335,291	Feb. 2	291	77	34	492
McDannold, Alexander, *et al.* (See Platt, Albert L., assignor.)						
McDonald, Alexander, Centralia, Ill. Combined plow and harrow	335,089	Jan. 26	2213	588	34	429
McDonald, Charles A., and C. W. Townsend, Portland, Oreg., said McDonald assignor of one-half to said Townsend. Damper-regulator for steam-boilers	334,600	Jan. 19	1564	418	34	804
McDonald, Charles A., and C. W. Townsend, Portland, Oreg., said McDonald assignor of one-half to said Townsend. Damper-regulator	334,601	Jan. 19	1566	418	34	804

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
McDonald, Gilbert, Augusta, Kans. Combined punching and shearing device	336,235	Feb. 16	1802	471	34	774
McDonough, Daniel, Eagle River, Wis. Combined saw setting and gumming tool	336,933	Mar. 2	66	18	34	870
McDonough, T. Milner, Pittsburg, Pa. Automatic horse-bed	337,070	Mar. 2	347	66	34	971
McDonough, T. Milner, Pittsburg, Pa. Manure-pouch	337,181	Mar. 2	404	105	34	1000
McElroy, David W., Keokuk, Iowa. Portable shelving and counter	334,267	Jan. 19	1113	296	34	214
McEnerney, John. (See Iles, Henry J., assignor.)						
McErlin, Henry, Muskegon, Mich. Reciprocating-saw mill	339,000	Mar. 30	2918	772	34	1477
McEwen, John, Lawrence, Kans. Rail-joint truss	335,292	Feb. 2	302	77	34	498
McFarland, Abram L., Palatka, Fla. Track-laying machine	333,770	Jan. 5	375	102	34	70
McFarland, Edward, and L. Passmore, Philadelphia, Pa. Grate for furnaces, heaters, &c.	337,849	Mar. 16	1289	337	34	1172
McFarland, Will F., assignor to himself and E. Rowles, Pleasantville, Ohio. Jar-cover	336,730	Feb. 23	2349	615	34	879
McFeely, Ronald F., assignor of one-half to Jarecki Manufacturing Company, (limited,) Erie, Pa. Roller-skate	332,771	Jan. 5	377	108	34	71
McGaffey, Ives W., assignor to E. E. and G. E. Preston, Chicago, Ill. Machine for winding wire upon hose	334,026	Jan. 12	783	201	34	145
McGahan, Fred L., Indianapolis, Ind. Pipe-coupling	336,199	Feb. 16	1477	380	34	719
McGaubey, James H. (See Garwood, Justice G. S., assignor.)						
McGill, George W. (See Winter, John F., assignor.)						
McGill, George W., Riverdale, N. Y. Metallic fastener	337,182	Mar. 2	404	105	34	1000
McGill, George W., Riverdale, N. Y. Metallic fastener	337,968	Mar. 16	1470	382	34	1203
McGill, George W., Riverdale, N. Y. Suspending device	337,970	Mar. 16	1472	382	34	1203
McGovern, Bernard. (See Tyler and McGovern.)						
McGowan, William S., Jr., assignor to Neversslip Horseshoe Company, Boston, Mass. Horseshoe	336,863	Feb. 23	2519	664	34	911
McGrath, Robert M., Lafayette, Ind. Car-axle box	334,540	Jan. 19	1498	396	34	298
McGregor, Barnett, Earlington, Ky. Dumping-cart	337,011	Mar. 2	178	47	34	957
McHale, William I. B., New York, N. Y. Tube-expander	338,423	Mar. 23	2091	548	34	1325
McHale, William I. B., New York, N. Y. Tube-expander	338,424	Mar. 23	2092	548	34	1326
McHale, William I. B., New York, N. Y. Tube-expander	338,425	Mar. 23	2093	548	34	1326
McIlvenna, Felix, Manchester, county of Lancaster, and J. G. Rollason, assignors to J. Cadbury, Birmingham, and W. P. Thompson, Liverpool, England. Trousers-stretcher	337,971	Mar. 2	248	66	34	972
McIndoe, George F., Everett, Mass. Mechanical movement	338,541	Mar. 23	2244	589	34	1252
McKaig, Merwin. (See Muncaster, Walter J., assignor.)						
McKay, George P., trustee. (See Mead and Thomson, assignors.)						
McKelvey, William L., assignor of one-half to J. Megown, Youngstown, Ohio. Towel-rack	337,604	Mar. 9	984	252	34	1110
McKendree, Albert C., Conneaut, Ohio. Lifting attachment for mowers	335,764	Feb. 9	959	254	34	618
McKenna, B. P. (See McCauley, Patrick, assignor.)						
McKenna, Michael J. (See Miller and McKenna.)						
McKenna, William P., Detroit, Mich. Sectional sign	334,602	Jan. 19	1568	419	34	304
McKenney, James, New York, N. Y. Metallic bayonet-scabbard	334,969	Jan. 12	1115	299	34	214
McKenzie, John, West Troy, N. Y. Barrel-filler	334,208	Jan. 12	1114	{298 299	34	214
McKenzie, John, West Troy, N. Y. Faucet	337,511	Mar. 9	874	232	34	1060
McKeough, John, Burlington, Vt. Portable folding camp-bedstead	337,415	Mar. 9	725	188	34	1065
McKeown, John H., assignor of one-half to M. C. McKeown, Barnesville, Ohio. Ash-pan	336,934	Mar. 2	69	19	34	939
McKeown, Mathew C. (See McKeown, John H., assignor.)						
McKinney, Henry D., Janesville, Wis. Check-rein hook	333,880	Jan. 5	523	142	34	98
McKinney, James M., Lima, Ohio. Bevel attachment for squares	335,293	Feb. 2	293	77, 78	34	493
McKinnon, Lachlan E., St. Catharines, Ontario, Canada. Carriage-top prop	338,281	Mar. 23	1890	497	34	1290
McLain, James, *et al.* (See Campbell, Joseph H., assignor.)						
McLain, John, Indiana, Pa. Attachment for grain-drills	335,468	Feb. 2	526	138	34	535
McLaren, John R., Jr., Montreal, Quebec, Canada. Toboggan	336,892	Feb. 23	2559	675	34	918
McLaughlin, Henry, Bangor, Me. Automatic signal-buoy	337,971	Mar. 16	1473	382	34	1203
McLaughlin, James C., Cincinnati, Ohio. Electrical call system for hotels	335,604	Feb. 9	727	194	34	578
McLaughlin, James E., Portland, Oreg. Reflector	334,270	Jan. 12	1116	299	34	215
McLaughlin, James F., Philadelphia, Pa. Telephonic transmitter	335,294	Feb. 2	294	78	34	493
McLaughlin, Robert, Ashawa, Ontario, Canada. Axle for vehicles	337,605	Mar. 9	985	253	34	1110
McLean, James H., St. Louis, Mo. Nut-lock	338,095	Mar. 16	1645	428	34	1236
McLean, Malcolm, New York, N. Y. Window-guard	334,881	Jan. 26	1936	515	34	360
McLellan, Charles H., Tom's River, N. J., assignor to Goodell & Waters, Philadelphia, Pa. Tripod for life-saving apparatus	335,063	Jan. 26	2215	588	34	490
McMaster, James T. (See Bauman, Henry G., assignor.)						
McMillan, William W., Hurleton, Cal. Apple parer, slicer, and corer	334,130	Jan. 12	883	242	34	172
McMullin, William and W. R. Adel, Iowa. Corn-planter	337,850	Mar. 16	1301	338	34	1179
McMullin, William R. (See McMullin, William and W. R.)						
McMurray, Louis, assignor of three-fourths to E. Malin, A. W. Lawton, and L. S. Houghton, Baltimore, Md. Apparatus for preserving by gas	334,966	Jan. 26	2044	546	34	400
McMurray, Louis, assignor of three-fifths to E. Malin, A. W. Lawton, and L. S. Houghton, Baltimore, Md. Apparatus for preserving fruits	334,967	Jan. 26	2046	546	34	400
McNab, Anson S., *et al.* (See Hatfield, Charles B., assignor.)						
McNabb, Alexander, Big Creek, Tenn. Tobacco-fertilizer dropper	334,458	Jan. 19	1370	370	34	266
McNamara, John R. (See Colt and McNamara.)						
McNeal, Andrew C., assignor of one-half to W. H. Tyree, Geigersville, Ky. Automatic circuit-closer for telegraph-keys	335,605	Feb. 9	728	194	34	578
McNeal, Herbert W., Ferndale, Cal. Calf-weaner	334,131	Jan. 12	886	242	34	172
McNeill, Solomon, assignor of one-half to O. H. Denise, Burlington, Iowa. Cartridge decapper, recapper, and reloader	335,221	Feb. 2	211	55	34	477
McPherson, James A., Brunswick, N. Y. Whip-rack	335,765	Feb. 9	961	254	34	619
McQuaide, John, Staunton, Va. Elevator	336,581	Feb. 23	2135	500	34	630
McQuarry, Hector, Allandale, Ontario, Canada. Axle-gage	337,606	Mar. 9	986	253	34	1110
McQuiston, Albert, Elsie, Mich. Barrel-holder	336,419	Feb. 16	1917	502	34	790
McPike, W. B., *et al.* (See Platt, Albert L., assignor.)						
McRae, Peter. (See Ritch and McRae.)						
McTighe, James J., Pittsburg, Pa. Manufacture of hard carbon	338,542	Mar. 23	2246	590	34	1253
McTighe, James J., Pittsburg, Pa. Apparatus for producing hard carbon from hydrocarbon vapor	338,605	Mar. 23	2230	610	34	1267
McTighe, Thomas J. (See Dalzell and McTighe.)						
McTighe, William J., Pittsburg, Pa. Nut-lock	334,790	Jan. 26	1895	487	34	360
McVicar, Peter A., Auburndale, Mass. Wagon-body	334,271	Jan. 12	1116	299	34	215
McWilliams, John, New Lebanon, N. Y. Mop-holder	335,295	Feb. 2	295	78	34	493
Meachem, Thomas W., *et al.* (See Ellis, Richard E., assignor.)						
Mead, Albert G. (See Wood and Mead.)						
Mead, Edward G., assignor to Prang Educational Company, Boston, Mass. Sketching-easel	337,512	Mar. 9	875	228	34	1069

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Mead, George, Detroit, Mich. Pulveriser	335,827	Feb. 9	1042	276	34	634
Mead, John T., and J. Thomson, assignors to G. P. McKay, trustee, Cleveland, Ohio. Feed-water purifier	336,949	Feb. 16	1684	439	34	751
Meaker, John W., assignor to Railway Register Company, Chicago, Ill. Fare-register	336,498	Mar. 23	2094	{548 549 550	34	1326
Mechanical Orguinette Company. (See Chase, J. Herbert, assignor.)						
Mechanical Orguinette Company. (See Palm, Robert W., assignor.)						
Meech, Harrison B., Cleveland, Ohio. Agitator for steam-boilers	334,188	Jan. 12	965	961	34	186
Meeker, Frederick, W., New York, N. Y. Manufacture of earthenware tanks or cells for galvanic batteries	334,087	Jan. 12	735	201	34	145
Meeker, Walter C. (See Brown and Meeker.)						
Meese, Arthur G., Redhill, county of Surrey, England. Apparatus for measuring and continuously registering physical power	336,336	Feb. 16	1803	472	34	774
Meese, Arthur G., Redhill, county of Surrey, England. Apparatus for measuring and continuously registering physical power	336,337	Feb. 16	1806	{472 473 474	34	774
Mefford, David M., Toledo, Ohio, assignor to National Heavy Ordnance Company. Ordnance	335,606	Feb. 9	729	194	34	578
Mefford, David M., Toledo, Ohio, assignor to National Heavy Ordnance Company. Ordnance	335,607	Feb. 9	730	195	34	578
Megrathey, William, assignor of two-thirds to T. Currey, Cleveland, and T. E. Keavy, Kent, Ohio. Car-axle lubricator	337,779	Mar. 9	1200	311	34	1147
Megown, John. (See McKelvey, William L., assignor.)						
Mehew, Stephen D., Peabody, Kans. Neck-yoke	334,701	Jan. 26	1926	467	34	360
Meigs, Montgomery C., Washington, D. C. Crayon or pencil holder	336,250	Feb. 16	1685	440	34	752
Meikle, James, Providence, R. I. Bleaching apparatus	336,096	Mar. 16	1646	428	34	1236
Meinzer, Charles L., Pitt, Ohio. Grain-drill	336,420	Feb. 16	1916	503	34	796
Meisselbach, August F., Newark, N. J. Fishing-reel	336,657	Feb. 23	2256	588	34	880
Meixell, John B. (See Kienardt, John A., assignor.)						
Mekelburg, August, Milwaukee, Wis. Fanning-mill	334,188	Jan. 19	965	{961 962	34	186
Melcher, John C., O'Quinn, Tex. Honey-extractor	335,698	Feb. 9	1044	276	34	635
Melcher, William H., Philadelphia, Pa. Kiln for bricks, lime, pottery, &c.	339,001	Mar. 30	2940	773	34	1477
Melchior, Edward, *et al.* (See Lindner, Ferdinand, assignor.)						
Mellor, Charles H. (See Mellor, Charles R., assignor.)						
Mellor, Charles R., assignor of one-fourth to C. H. Mellor, Philadelphia, Pa. Centrifugal machine for separating liquids	334,713	Jan. 19	1795	{459 460	34	333
Mencke, Frederick, New York, N. Y. Ornamenting fabrics for covering walls	333,861	Jan. 5	594	.....	34	98
Meneely Hardware Company. (See Gibbons, John, assignor.)						
Menke, Henry, Jr., De Witt, Nebr. Revolving fan	337,600	Mar. 9	981	251	34	1109
Merchants Store Railway Company. (See Fisher, Frank E., assignor.)						
Meredith, John H., assignor of one-half to J. Billings, Toledo, Ohio. Hay-press	335,296	Feb. 2	296	78	34	494
Mericle, James, assignor to himself and W. T. Shaw, Patchogue, N. Y. Device for withdrawing the pipes from driven wells	338,427	Mar. 23	2099	550	34	1326
Merino Shoe Company. (See Alexander, Samuel G., assignor.)						
Mermod Freres. (See Campiche, Louis, assignor.)						
Merrifield, Charles E., Indianapolis, Ind., assignor to W. M. Johnston, Wilmot, Ohio. Lathing	334,603	Jan. 19	1569	419	34	305
Merrihew, Joseph R., New York, N. Y. Coffee-huller	337,691	Mar. 9	1090	{281 282	34	1128
Merrill, Anson P., Fall River, Mass. Bicycle-lock	337,183	Mar. 2	405	105	34	1000
Merrill, Benjamin N., Lisbon, Me. Wash-board holder	337,601	Mar. 9	982	252	34	1109
Merrill, Charles A., assignor of one-half to M. Garland, Bay City, Mich. Gang-edger	333,882	Jan. 5	525	{142 143	34	98
Merrill, Edwin C., Pittsburg, Pa. Stop-valve for gas-supply systems	334,882	Jan. 26	1907	516	34	380
Merrill, Joshua, *et al.* (See Daelen, Lambert A., assignor.)						
Merrill, Oliver H., Manchester, assignor to American Button Fastener Company, New Britain, Conn. Needle	335,138	Feb. 2	57	15	34	451
Merritt, Benjamin, Newton, Mass. Revolving fire-arm	338,760	Mar. 30	2571	{678 679	34	1415
Merryman, Joseph, Delphos, Ohio. Hat-stand	333,779	Jan. 5	379	103	34	71
Mertens, Louis, Erie, Pa. Water-indicator for steam-boilers	335,139	Feb. 2	57	16	34	451
Mers, Theodore C., Detroit, Mich. Capsule-machine	334,792	Jan. 26	1927	467	34	360
Messer, Fred, Beloit, Wis. Machine for dressing grinding-rolls	334,262	Jan. 12	1104	296	34	213
Messer, George E., Boston, Mass. Safety-stop for throttle-valves	334,261	Jan. 12	1103	295	34	212
Messer, John P., Ceder Rapids, Iowa. Cleaning out conduits	335,608	Feb. 9	732	195	34	579
Messinger, William T., Cambridge, Mass. Apparatus for lifting and controlling the flow of fluids	334,798	Jan. 26	1928	488	34	361
Metcalf, Theodore S., Cedar Rapids, Iowa. Printer's quoin	337,851	Mar. 16	1302	338	34	1173
Metcalf, William H., *et al.* (See Shaw and Walden, assignors.)						
Metcalfe, John T., Quincy, Pa. Steam-engine	337,184	Mar. 2	407	106	34	1001
Mets, Elisha, assignor of one-half to A. P. De Neve, Rochester, N. Y.. Knockdown table	335,140	Feb. 2	58	16	34	451
Metzger, Gustav, assignor to J. B. Stobaeus, Newark, N. J. Fluid-pressure regulator	334,714	Jan. 19	1727	460	34	333
Metzger, Martin L., and A. Cooper, assignors to W. O. Hickok, Harrisburg, Pa. Gage for paper-cutters	335,766	Feb. 9	962	{254 255	34	619
Meyer, Anton, Empire City, Nev. Salve	334,098	Jan. 12	736	.....	34	145
Meyer, August, Baltimore, Md. Automatic safety gas-burner	338,653	Jan. 5	203	56	34	40
Meyer, Friedrich C. M., Buxtehude, Prussia, Germany. Grain-weighing apparatus	339,002	Mar. 30	2921	{773 774	34	1478
Meyer, Joseph O., and W. Strickler, Buffalo, N. Y. Machine for baking wafers	334,451	Jan. 19	1356	367	34	266
Meyer, Philipp, Jr., Magdeburg, Prussia, Germany. Umbrella	337,276	Mar. 2	530	139	34	1004
Meyer, William C., Vallejo, Cal. Flour-bolting reel	338,658	Mar. 30	2704	711	34	1440
Meyers, Hemerie, Rush City, Minn. Spool-holder for sewing-machines	337,658	Mar. 16	1303	338	34	1173
Miannay, Eugene. (See David, Augustin O., assignor.)						
Michael, Edward. (See Jewett, Edward M., assignor.)						
Michael, William E., Reading, Pa. Window sash and frame	333,654	Jan. 5	204	56	34	40
Michaelis, Otho E., Philadelphia, assignor of one-half to H. Bower, Gray's Ferry Road, Philadelphia, Pa. Obturating-primer	333,655	Jan. 5	206	56	34	40
Micheletti, Pietro, San Francisco, Cal. Buoy attachment for vessels	338,859	Mar. 30	2705	712	34	1440
Michigan School Furniture Company. (See Bailey, Franklin H., assignor.)						
Middaugh, Jacob, and C. M. Wilcox, New Paris, Ohio. Portable fence-machine. (Reissue.)	10,697	Feb. 9	1296	{869 870	34	697
Middleditch, Walter, Detroit, Mich. Lathe attachment	335,609	Feb. 9	733	195	34	579

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Middlemas, George, San Francisco, Cal. Apparatus for rolling leather	333,773	Jan. 5	379	103	34	72
Middleton, Robert O., Camden Point, Mo. Mechanical telephone	336,731	Feb. 23	2350	615	34	879
Miehle, Robert, Chicago, Ill. Cushioning apparatus for printing-machines	337,853	Mar. 16	1304	{338 339}	34	1173
Mikel, Jane, Gillum, Ill. Combined squeezer and strainer	337,165	Mar. 2	408	106	34	1001
Miles, Edward J., assignor of one-half to H. M. Cox, Kellogg, Iowa. Fence-wire stretcher	334,596	Jan. 19	1480	397	34	287
Miles, Jackson B., assignor to himself, T. H. Remsen, and W. T. Murray, Lincolnton, Ga. Motor	334,263	Jan. 12	1107	296	34	213
Miles, Walter, Chilton, Wis. Toaster	336,097	Mar. 16	1649	428	34	1196
Millard, George W., and J. H. Clarke, Providence, R. I., assignors to Synchronous Time Company of Portland, Me. Regulating pendulum-clocks from a distance	337,416	Mar. 9	726	188	34	1065
Millard, George W., and J. H. Clarke, Providence, R. I., assignors to Synchronous Time Company of Portland, Me. Regulating pendulum-clocks from a distance	337,417	Mar. 9	729	188	34	1066
Millard, George W., Providence, R. I., and J. H. Clarke, Boston, Mass., assignors to Synchronous Time Company of Portland, Me. Regulating marine clocks from a distance	337,418	Mar. 9	733	189	34	1066
Millard, George W., Providence, R. I., and J. H. Clarke, Boston, Mass., assignors to Synchronous Time Company of Portland, Me. Apparatus for regulating pendulum-clocks from a distance	337,419	Mar. 9	735	189	34	1067
Millard Manufacturing Company. (See Turner, William A., assignor.)						
Millard, Sarah M. B., (formerly Sarah M. Beverly,) Rochester, Ind. Auxiliary seat for vehicles	336,795	Feb. 23	2421	627	34	893
Millen, George H., and A. Dercuin, Hull, Quebec, Canada. Dovetailing-machine	336,130	Feb. 16	1478	{300 391}	34	719
Miller, Charles R., Lansingburg, N. Y. Holdback attachment for harness	334,863	Jan. 26	1939	516	34	360
Miller, Charles W., assignor of one-half to J. A. Jeffery, Columbus, Ohio. Drive-chain	339,003	Mar. 30	2923	774	34	1478
Miller & Co., Edward. (See Brewer, Roland L., assignor.)						
Miller & Co., Edward. (See Kinney, Charles A., assignor.)						
Miller, Eli, Canton, Ohio. Fence-making machine	337,490	Mar. 9	738	189	34	1067
Miller, Gebhard, Newark, N. J. Truss	334,988	Jan. 26	2048	546	34	400
Miller, George W., Clarinda, Iowa. Attachment for windmills	337,421	Mar. 9	740	190	34	1067
Miller, Henry. (See Buchholz, Hermann, assignor.)						
Miller, I. Amos, Westminster, Md. Harness breast-strap	334,198	Jan. 12	880	241	34	171
Miller, James, Detroit, Mich. Telephone mouth-piece	337,972	Mar. 16	1474	363	34	1204
Miller, James T., Atlanta, Ga. Loose pulley	333,962	Jan. 5	635	175	34	120
Miller, John, Cambridgeport, Mass. Screw-threading device	338,392	Mar. 23	1801	497	34	1220
Miller, John E., assignor of one-half to A. H. Helsey, Pittsburg, Pa. Gas-regulator	337,012	Mar. 2	180	47	34	957
Miller, John F., Martin's Ferry, Ohio, assignor of one-half to A. W. Paull, Wheeling, W. Va. Manufacture of lantern-globes, &c	337,692	Mar. 9	1091	282	34	1198
Miller, John H., assignor of one-half to C. A. Zerbe, Lewistown, Pa. Wrench	333,963	Jan. 5	637	175	34	120
Miller, John S. (See Norris, Schuyler C., assignor.)						
Miller, Jonas N., Decatur, Ill. Handkerchief-exhibitor	337,423	Mar. 9	741	190	34	1068
Miller, Joseph A., Galva, Ill. Display-rack	336,935	Mar. 2	70	19	34	939
Miller, Levi M. S., Findlay, Ohio. Washing-machine	336,338	Feb. 16	1609	474	34	775
Miller, Lewis, Akron, Ohio. Grain-binding harvester	335,610	Feb. 9	734	{195 196}	34	579
Miller, Robert B., Chicago, Ill. Wall-protector for steam-coils	334,794	Jan. 26	1831	488	34	361
Miller, Samuel, Pierre, Dak. Ter. Bundle-carrier	336,251	Feb. 16	1606	440	34	758
Miller, Samuel A., Philadelphia, Pa. Composition for making sewer invert-blocks	334,732	Feb. 23	2351	615	34	879
Miller, Samuel J., and M. J. McKenna, Minneapolis, Minn. Carpet-cleaning reel	336,936	Mar. 2	71	19	34	939
Miller, Thomas J., assignor of one-half to G. W. Henry, North Manchester, Ind. Broadcast seed-sower	336,491	Feb. 16	1919	503	34	796
Miller, Thomas R. (See Hildreth and Miller.)						
Miller, William, Grand Rapids, Mich. Oven	336,937	Mar. 2	72	19	34	939
Miller, William B., Hampton, Ark. Combination scraper, clod-guard, and gage	334,092	Jan. 12	816	225	34	159
Miller, William G., Arkansas City, Kans. Tuyere	338,543	Mar. 23	2247	590	34	1353
Miller, William H., South Bend, Ind. Street-sprinkler	336,252	Feb. 16	1608	440	34	758
Miller, Zachary T. (See Taylor, James H., assignor.)						
Milligan, Thomas P., South Orange, N. J. Gelatinized pelt	333,964	Jan. 5	637	.....	34	120
Milligan, William A., Wheeling, W. Va. Door-bell	336,864	Feb. 23	2520	664	34	911
Milliken, George, assignor of one-half to J. C. Bike, Oneco, Ill. Device for supplying salt to stock	338,761	Mar. 30	2575	679	34	1416
Milliken, George F., Boston, Mass. Apparatus for automatically testing electrical circuits	334,989	Jan. 26	2049	547	34	402
Mills, Chauncey W., Rochester, N. Y. Car-coupling	336,422	Feb. 16	1920	503	34	796
Mills, Columbus W. (See Emerson, John W., assignor.)						
Mills, James R. (See Ballentine, John C., assignor.)						
Mills, Thomas B. (See Levison, Chancellor G., assignor.)						
Milton, Samuel A., Clinton, Mo. Percolator for coffee-pots	335,946	Feb. 9	1215	323	34	665
Miner, Ephraim. (See Walker and Miner.) (Reissue.)						
Miner, Russell H., Atkinson, Nebr. Hay-burning apparatus	337,854	Mar. 16	1307	339	34	1173
Minger, John A., Sabetha, Kans. Harrow	337,186	Mar. 2	409	106	34	1001
Minneapolis Harvester Works. (See Appleby, John F., assignor.)						
Minnitt, John E., and J. H. Vickers, Nottingham, England. Apparatus for automatically closing the tap-holes of casks	334,970	Jan. 26	2053	547	34	401
Minton, Harry C., assignor of one-half to T. Staniland, Dayton, Ohio. Hame-fastener	335,375	Feb. 2	406	104	34	514
Mitchell, Harvey J., Hatborough, Pa. Steam-boiler	334,673	Jan. 19	1667	445	34	322
Mitchell, James H., Sewall's Station, W. Va. Washing-machine	339,004	Mar. 30	2924	{774 775}	34	1478
Mitchell, John, Louisville, Ky. Steam-boiler attachment	335,947	Feb. 9	1216	323	34	665
Mitchell, John E., Fowler, Ind. Device for raising barrels	335,376	Feb. 2	407	104	34	514
Mitchell, John J. (See Benna, George, assignor.)						
Mitchell, Joseph H., Kansas City, Mo. Metal-faced building-block	337,693	Mar. 9	1093	282	34	1129
Mitchell, Robert, Atlanta, Ga. Mosquito canopy	338,428	Mar. 23	2100	550	34	1327
Mitchell, Thomas S., Chicago, Ill. Rein-holder	335,141	Feb. 2	59	16	34	451
Mitchell, Willis M., *et al.* (See Vladyka, Joseph, assignor.)						
Mitchum, John R., Munfordville, Ky. Tobacco-plant setter	334,029	Jan. 12	737	201	34	145
Mitscherlich, Alexander, Freiburg, Baden, Germany. Sizing paper	336,013	Feb. 9	1302	.....	34	669
Mitscherlich, Alexander, Freiburg, Baden, Germany. Boiling fibers with sulphites for the manufacture of paper-pulp	337,694	Mar. 9	1093	282	34	1129
Mix, Frank W., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Trunk-lock	337,187	Mar. 2	410	107	34	1001
Mix, Frank W., and A. Arena, assignors to P. & F. Corbin, New Britain, Conn. Cupboard-latch	333,656	Jan. 5	207	56	34	40

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Mobbs, Harry W., and A. Lewis, Kettering, county of Northampton, England. Last for boots or shoes	336,339	Feb. 16	1610	475	34	775
Moeller, Henry F., Davenport, Iowa. Cylinder washing-machine	335,710	Feb. 9	879	231	34	604
Moffatt, Richard R., assignor to Brooklyn Electric Construction Company, Brooklyn, N. Y. Reversible switch for incandescent lamps	333,657	Jan. 5	208	57	34	40
Moffitt, George W., Frankfort, Kans. Listed-corn cultivator	338,180	Mar. 16	1758	459	34	1259
Moline Plow Company. (See Lindgren, August, assignor.)						
Monger, Augustus C. and C., Amboy, Ill. Device for converting reciprocating into rotary motion	337,973	Mar. 16	1475	383	34	1204
Monger, Clifton. (See Monger, Augustus C. and C.)						
Monroe, Charles W., Bay City, Mich. Refrigerator	336,057	Feb. 9	1367	361	34	691
Monroe, David M., Baltimore, Md. Hand fire-extinguisher	336,658	Feb. 23	2357	588	34	861
Monroe, David M., Baltimore, Md. Can-soldering machine	336,659	Feb. 23	2358	{588 589}	34	861
Monroe, David M., Baltimore, Md. Can-soldering machine	337,277	Mar. 2	532	140	34	1025
Monroe, David M., Baltimore, Md. Can-soldering machine	338,672	Mar. 23	2428	{640 641}	34	1388
Montague City Rod Company. (See Bartlett, Leander L., assignor.)						
Montague, Francis D., Milford, Mass. Apparatus for distributing oil upon seas	335,035	Jan. 26	2145	570	34	417
Montgomery, Harry C., Cleveland, Ohio. Pump	334,795	Jan. 26	1631	436	34	361
Montgomery, Harry M., Boston, Mass. Expansible connecting-pin	337,072	Mar. 2	249	66	34	972
Montgomery, James M., Jr., Columbus, Ohio. Check-punching machine	334,364	Jan. 19	1108	297	34	213
Montrose, Alvin N., Clay Centre, Kans. Metallic shingle	336,733	Feb. 23	2351	615	34	879
Moody, Cyrus M., Greenfield, Mass. School and business tablet	334,537	Jan. 19	1481	397	34	287
Moody, Henry T., assignor to Victor Manufacturing Company, Newburyport, Mass. Door-hanger	335,232	Feb. 2	219	55	34	478
Moon, Stover. (See Glock and Moon.)						
Moore, A. H. (See Hartman, Jacob, assignor.)						
Moore, Columbus F., Waveland, Ind. Wagon-brake lever	337,974	Mar. 16	1476	383	34	1204
Moore, Daniel, Brooklyn, N. Y. Sabot for high-explosive projectiles	338,702	Mar. 30	2576	679	34	1416
Moore, Edward J., Baltimore, Md. Water-tube boiler	338,429	Mar. 23	2102	{550 551}	34	1327
Moore, Edward Y., Chicago, Ill. Car-door	334,452	Jan. 19	1357	368	34	266
Moore, Franklin D., Bloomfield, Iowa. Ribbon-holder	334,796	Jan. 26	1632	489	34	361
Moore, George H., Norwich, Conn. Cleansing filters	337,423	Mar. 9	742	{190 191}	34	1068
Moore, George T., *et al.* (See Cole, James W., assignor.)						
Moore, George W., Ercildoun, Pa. Composition for removing paint	338,544	Mar. 23	2248	.....	34	1258
Moore, Hollis W., assignor to Hollis Spring Company, Olean, N. Y. Carriage-spring	336,131	Feb. 16	1469	391	34	720
Moore, Jesse B., El Dorado, Ark. Back-band hook	334,884	Jan. 26	1940	516	34	361
Moore, Jesse B., El Dorado, Ark. Back-band hook	338,763	Mar. 30	2578	680	34	1416
Moore, John R., Newton, Mass. Baby-carriage	334,030	Jan. 12	738	201	34	145
Moore, John R., assignor of one-half to J. B. See, Brooklyn, N. Y. Steam-generator	337,073	Mar. 2	251	67	34	972
Moore, John S., New Orleans, La. Rice-huller and cuticle-remover	333,965	Jan. 5	638	175	34	120
Moore, William, and J. B. Carter, Kokomo, Ind. Ventilator for houses	335,629	Feb. 9	1045	276	34	635
Moore, William H., Palmyra, Mich. Potato-sprinkler	336,936	Mar. 2	73	20	34	940
Moorman, James F., Ohio, Iowa. Car-coupling	335,611	Feb. 9	737	196	34	579
Moose, Jasper M., Knoxville, Iowa. Farm-gate	334,797	Jan. 26	1634	489	34	361
Moran, Ambrose, Amsterdam, N. Y. Apparatus for dyeing	334,796	Jan. 26	1635	489	34	362
Moran, John, Bradford, Pa. Device for drawing standing valves in wells	336,489	Feb. 16	2009	527	34	811
Moran, Peter, New Orleans, La. Safety device for elevators	334,062	Jan. 12	816	224	34	159
Morand, Augustus, Philadelphia, Pa. Method of and apparatus for manipulating comminuted substances	338,430	Mar. 23	2103	551	34	1327
Morand, Augustus, Philadelphia, Pa. Clarifying extracts	338,431	Mar. 23	2106	.....	34	1327
Moreau, Eugène, San Francisco, Cal., assignor to T. W. Sterling, New York, N. Y. Rock-drill	335,469	Feb. 2	527	138	34	536
Moreau, Eugène, San Francisco, Cal., assignor to T. W. Sterling, New York, N. Y. Rock-drill	335,470	Feb. 2	528	138	34	536
Moreau, Jean F. (See De Redon, Constant F., assignor.)						
Moree, Albert F., Milford, Conn. Machine for manufacturing boxes	336,340	Feb. 16	1811	475	34	775
Morehouse, Charles L., Brooklyn, N. Y., assignor to M. E. Morgan and G. L. Garrigues. Journal-box	336,341	Feb. 16	1813	476	34	775
Moreland, Silas W., Geneva, Ohio. Injector	333,534	Jan. 5	52	15	34	12
Morell, James F., Philadelphia, Pa., assignor to Automatic Car Brake, Starter, and Propeller Company. Car brake and starter	337,278	Mar. 2	535	140	34	1025
Morell, James F., Philadelphia, Pa., and D. Goff, Millville, N. J., assignors to National Car Starter Manufacturing Company of New Jersey. Car motor and brake	338,642	Mar. 23	2383	628	34	1376
Morère, Eliacim, New Orleans, La. Faucet	338,980	Mar. 30	2706	712	34	1440
Moreton, Charles B., Moscow, Ohio. Toy	334,885	Jan. 26	1940	516	34	361
Morey, De Witt C., Jr., assignor of one-half to G. M. Tourtellotte, Worcester, Mass. Can	338,432	Mar. 23	2100	552	34	1328
Morgan, Charles H., Worcester, Mass. Reeling mechanism	334,453	Jan. 19	1359	366	34	267
Morgan, Charles H., Worcester, Mass. Wire-rod-rolling mill	334,454	Jan. 19	1362	369	34	267
Morgan & Co., Dayton S. (See Becker, Frederick G., assignor.)						
Morgan Envelope Company. (See Johnson, Charles C., assignor.)						
Morgan, John F., Lynn, Mass. Bicycle-leg	335,297	Feb. 2	297	79	34	494
Morgan, Joseph, West Springfield, Mass. Cultivator	333,535	Jan 5	53	15	34	12
Morgan, Joseph E., Columbus, N. C., and T. C. Morgan, Kinderhook, Ark. Seed-planter and fertilizer-distributer	335,890	Feb. 9	1046	{276 277}	34	635
Morgan, Mary E., *et al.* (See Morehouse, Charles L., assignor.)						
Morgan, Nicholas C. (See Roden and Morgan.)						
Morgan, Schuyler W., East Concord, N. H. Velocipede	337,975	Mar. 16	1477	383	34	1204
Morgan, Tench C. (See Morgan, Joseph E. and T. C.)						
Morgan, William A., Jr., Cambria, Iowa. Mowing-machine	339,068	Mar. 30	3010	{795 796}	34	1492
Morganstern, Albert G., *et al.* (See Holt, Albert T., assignor.)						
Morgenroth, Pauline, and T. Levison, Brooklyn, N. Y. Flour-sifter	333,906	Jan. 5	639	176	34	120
Moriarty, Michael J., Muskegon, Mich. Car-brake	338,283	Mar. 23	1892	497	34	1220
Morlet, Charles, assignor to himself and P. Nordmann, New York, N. Y. Watch-winding mechanism	335,471	Feb. 2	529	{138 139}	34	536
Morley, Charles F., Tecumseh, Mich. Animal-catching device	338,606	Mar. 23	2231	610	34	1267
Morrell, Augustine, assignor to himself, R. L. Little, and F. D. Figuedredo, St. Louis, Mo. Tag	338,685	Mar. 23	2452	647	34	1388
Morrell, Robert, Summit, N. J. Fire-engine	337,494	Mar. 9	745	191	34	1068

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Morris, Benjamin, Newark, N. J. Coffin	338,607	Mar. 23	2399	610	34	1367
Morris, Charles N., Cincinnati, Ohio. Machine for surfacing lithographic stones	336,562	Feb. 23	2135	560	34	840
Morris, Charles N., Cincinnati, Ohio. Machine for surfacing lithographic stones	336,563	Feb. 23	2138	560	34	840
Morris & Co., R. J. (See Van Dolsen, Augustus F., assignor.)						
Morris, David and T., assignors to Morris Manufacturing Company, San Francisco, Cal. Faucet	338,353	Mar. 23	1991	594	34	1208
Morris, E. Walter, Bloomfield, N. J. Sash-holder	337,695	Mar. 9	1098	288	34	1139
Morris, Francis S., London, England. Multitubular steam-boiler	336,861	Mar. 30	2706	712	34	1440
Morris, George M., Cohoes, assignor to National Machine Company, Troy, N. Y. Bobbin-case for sewing-machines	339,069	Mar. 30	3011	796	34	1492
Morris, James H., assignor of one-half to J. H. Simonson, Albany, N. Y. Tobacco-pipe support	335,612	Feb. 9	738	196	34	580
Morris Manufacturing Company. (See Morris, David and T., assignors.)						
Morris, Theodore. (See Morris, David and T.)						
Morris, William R., Cincinnati, Ohio, assignor of one-half to P. C. Brown, Newport, Ky. Roller-skate	336,816	Feb. 23	2468	646	34	900
Morrison, James C., West Ham, county of Essex, and R. Smith, Bromley, county of Middlesex, England. Oil-burner	338,869	Mar. 30	2706	713	34	1440
Morrison, James D., Reinbeck, Iowa. Platform for handling stock	337,495	Feb. 23	747	191	34	1089
Morrison, James N., Fort Scott, Kans. Chain-pump	336,817	Feb. 23	2463	646	34	900
Morrison, Robert B., Oakdale, Ga. Brick-kiln	337,696	Mar. 9	1098	283	34	1139
Morrison, Willard A., Chicago, Ill. Wardrobe-bedstead	336,818	Feb. 23	2464	647	34	901
Morrow, George L. K., assignor to D. M. Ferry, Detroit, Mich. Carriage-pole tip	338,608	Mar. 23	2334	611	34	1368
Morse, George, Gloucester, assignor to himself and C. A. Boynton, Boston, Mass. Thill-coupling	335,767	Feb. 9	963	235	34	619
Morse, Henry T., assignor to E. D. Lee, Boston, Mass. Jack for boots and shoes	336,489	Feb. 16	2010	527	34	811
Morse, James F. M., Evansville, Ind. Nut-lock	334,081	Jan. 12	788	202	34	146
Morse Twist Drill and Machine Company. (See Morton, James A., assignor.)						
Morse Twist Drill and Machine Company. (See Stetson, George R., assignor.)						
Morse, William. (See Goodyear and Morse.)						
Morton, Ephraim S., Plymouth, assignor of one-half to S. Loring, Duxbury, Mass. Wire-nail machine	334,604	Jan. 19	1570	419	34	305
Morton, James A., assignor to Morse Twist Drill and Machine Company, New Bedford, Mass. Machine for clearing twist-drills	337,279	Mar. 9	537	141	34	1085
Morton, Walter S., St. Paul, Minn. Automatic draw-bridge gate	334,084	Jan. 12	617	294	34	160
Moscoponlos, Basilios K., New York, N. Y. Sponge-gathering net. (Reissue)	10,668	Feb. 16	2074	545	34	893
Moscoponlos, Basilios K., New York, N. Y. Manufacture of incandescent electric lamps	335,831	Feb. 9	1048	277	34	635
Mosher, Frank D. (See Casterlin and Mosher.)						
Mosiman, Joel, Falls City, Nebr. Traction-engine	333,656	Jan. 5	210	57	34	41
Moss, John, Brooklyn, N. Y. House-service and street-washer connection	336,253	Feb. 16	1690	441	34	758
Moss, Robert T., Cambridge, Ohio, assignor of one-half to W. L. Haller, Buffalo, N. Y. Horse-tail holder	336,254	Feb. 16	1692	441	34	753
Motherwell, David and R. B., Logan, Ohio. Cultivator	336,939	Mar. 2	74	20	34	940
Motherwell Iron and Steel Company. (See Hughes, James L., assignor.)						
Motherwell, Robert B. (See Motherwell, David and R. B.)						
Motley, Francis F., assignor to Reynolds & Co., New Haven, Conn. Screw-machine	337,976	Mar. 16	1479	384	34	1204
Mott, Elias H., Sangerfield, N. Y. Railway-signal	337,855	Mar. 16	1307	339	34	1173
Mott Iron Works, J. L. (See Demarest, John, assignor.)						
Mott Iron Works, J. L. (See Taylor, George, assignor.)						
Mott, Samuel D., New York, N. Y., assignor to Schuyler Electric Light Company of New York. Electric meter	336,122	Feb. 16	1481	301	34	790
Mott, Samuel D., New York, N. Y., assignor to Schuyler Electric Light Company of New York. Electric meter	336,123	Feb. 16	1482	302	34	790
Motte, Ellis L., *et al.*, trustees. (See Buck, Henry A., assignor.)						
Motter, George F. (See Frey, Motter, and Reichley.)						
Moulton, Charles H., Washington, D. C. File-cabinet for papers, &c	338,643	Mar. 23	2384	608	34	1276
Mountford, Charles J., Birmingham, county of Warwick, England. Mixed paint	339,070	Mar. 30	3013	.....	34	1492
Mower, Jacob K. (See Normand, Joseph M., assignor.)						
Mower, Samuel E., and T. Fowler, New Haven, assignors to H. G. Thompson, Milford, H. G. Thompson, New Haven, Conn., and A. G. Thompson, New York, N. Y. Saw-making machine	337,977	Mar. 16	1484	385	34	1205
Mower, Samuel E., and T. Fowler, New Haven, assignors to H. G. Thompson, Milford, H. G. Thompson, New Haven, Conn., and A. G. Thompson, New York, N. Y. Tempering metal bands or strips	337,978	Mar. 16	1486	386	34	1206
Mower, Samuel E., New Haven, assignor to H. G. Thompson, Milford, H. G. Thompson, New Haven, Conn., and A. G. Thompson, New York, N. Y. Tempering metal	337,979	Mar. 16	1487	386	34	1206
Mower, Samuel E., New Haven, assignor to H. G. Thompson, Milford, H. G. Thompson, New Haven, Conn., and A. G. Thompson, New York, N. Y. Process of tempering	337,980	Mar. 16	1488	386	34	1206
Mower, Samuel E., New Haven, assignor to H. G. Thompson, Milford, H. G. Thompson, New Haven, Conn., and A. G. Thompson, New York, N. Y. Apparatus for tempering	337,981	Mar. 16	1489	386 387	34	1206
Mowrer, Martin L., Newark, N. J. Grain-drier	338,673	Mar. 23	2430	641	34	1284
Moxey, George T., *et al.* (See Durand, Jean B., assignor.)						
Moxham, Arthur J., Johnstown, Pa. Splice-bar rail-chair for street-railway tracks	334,265	Jan. 12	1110	297	34	214
Moxham, Arthur J., Johnstown, Pa. Making wire cables	337,513	Mar. 9	876	233	34	1090
Moxham, Arthur J., Johnstown, Pa. Railway-frog	338,181	Mar. 16	1750	459	34	1250
Moxham, Arthur J., Johnstown, Pa. Railway-frog	334,083	Jan. 12	739	209	34	146
Moyer, Harvey A., Syracuse, N. Y. Spring-vehicle	334,715	Jan. 19	1728	460	34	333
Mudd, George W., Columbus, Ohio. Stove-pipe damper	339,109	Mar. 30	3073	813	34	1503
Muddiman, Charles A., Washington, D. C. Hose-coupling	338,284	Mar. 23	1898	.....	34	1290
Mueller, Berthold, Cincinnati, Ohio. Compound for purifying beer	337,780	Mar. 9	1201	312	34	1147
Mueller, Charles L., Humboldt, Minn. Car-coupling						
Mueller, George A. (See Hols and Mueller.)						
Mullen, John A., Georgetown, Ky. Kitchen-cabinet	335,084	Jan. 26	2144	570	34	417
Müller, Armand, assignor of two-thirds to M. E. Waldstein and A. H. Maas, New York, N. Y. Tanning with sulpholeic acid	338,189	Mar. 16	1760	.....	34	1259
Müller, Axel M., and J. S. Ritter, Copenhagen, Denmark. Car-starter	335,479	Feb. 2	530	139	34	536
Muller, George, New York, N. Y. Veneering with fabric	337,346	Mar. 2	621	.....	34	1041
Mullins, Fenton P. F., Philadelphia, Pa. Paper-weight	338,235	Mar. 16	1897	477	34	1271
Mullins, Richard W. (See Thomson and Mullins.)						
Muncaster, Walter J., assignor of one-half to M. McKaig, Cumberland, Md. Metal bending and straightening machine	334,455	Jan. 19	1364	369 370 397 398	34	267
Muncaster, Walter J., assignor of one-half to M. McKaig, Cumberland, Md. Lathe for turning shafting	334,538	Jan. 19	1461	397 398	34	267
Munshower, George W., Bowling Green, Ohio. Foot-rest for reclining-chairs	333,659	Jan. 5	211	57	34	41

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Munson, Frank, assignor to Buchanan Manufacturing Company, Buchanan, Mich. Folding bed	336,325	Feb. 16	2057	540	34	819
Muns, John, Jr. (See Hollmuth, Frederick C., assignor.)						
Murdock, Edwin H., Cincinnati, Ohio. Mold for casting stench-traps	334,032	Jan. 12	740	208	34	146
Murdock, Horace B., assignor of one-half to J. Trix, Detroit, Mich. Injector	334,986	Jan. 19	1112	298	34	214
Murdock, William M., Gilwern, county of Brecon, England, assignor to H. W. Oliver, Jr., and J. P. Witherow, Pittsburg, Pa. Converter	335,613	Feb. 9	739	197	34	580
Murphy, Alexander A., assignor of one-half to F. Boas, Montreal, Quebec, Canada. Spool-holder	338,764	Mar. 30	2679	689	34	1417
Murphy, Andrew, Columbus, Ohio. Safety attachment for hydraulic elevators	337,781	Mar. 9	1208	312	34	1147
Murphy, Daniel H., Hartford, assignor of one-fourth to E. M. Steele, Newington, Conn. Kettle-cover	334,716	Jan. 19	1726	460	34	333
Murphy, William, St. John, New Brunswick, Canada. Octave-coupler for organs	336,134	Feb. 16	1463	382	34	780
Murray, Charles H., assignor of one-half to O. F. Myers, Denver, Colo. Furnace for reducing and distilling zinc from its ores	333,967	Jan. 5	640	176	34	191
Murray, James D., Canandaigua, assignor of one-half to R. E. Boebert, Syracuse, N. Y. Vinegar-generator	338,183	Mar. 16	1762	460	34	1250
Murray, John A., Scranton, Pa. Car-coupling	339,110	Mar. 30	3074	813	34	1503
Murray, Joseph L., Weimar, Tex. Cotton-chopper and cultivator combined	336,865	Feb. 23	2361	665	34	911
Murray, Joseph T. (See Cardwell and Fitch, assignors.)						
Murray, Joseph T., *et al.* (See Cardwell, George A., assignor.)						
Murray, Peter, Jr., Newark, assignor to himself, R. S. T. and R. B. Cissel, Elizabeth, and A. N. Lewis, Newark, N. J. Automatic fan	334,717	Jan. 19	1729	461	34	334
Murray, Peter, Jr., Newark, assignor to himself, R. S. T. and R. B. Cissel, Elizabeth, and A. N. Lewis, Newark, N. J. Fan attachment	336,866	Feb. 23	2363	665	34	911
Murray, William A., Covington, Ky., assignor of three-fourths to A. L. France, Covington, Ohio, W. C. France, New York, N. Y., and F. Spinning, Cincinnati, Ohio. Making butter	335,064	Jan. 26	2216	.....	34	450
Murray, William T., *et al.* (See Miles, Jackson B., assignor.)						
Murry, John H., *et al.* (See Byrkit, Edwin M., assignor.)						
Musgrave, Mark, and H. J. Barton, Oak Bar, Cal. Ointment	334,520	Jan. 19	1467	.....	34	288
Muth, Charles F. (See Weitzel, Jacob F., assignor.)						
Mütti, Samuel, Mishawaka, Ind. Wagon-body lifter	335,223	Feb. 2	214	55	34	478
Myers, Oscar F. (See Murray, Charles H., assignor.)						
Myers, William H., and L. Anderson, Oregon, Wis. Fence-post	335,226	Feb. 2	227	79	34	494
Myers, William M., Hannibal, Mo. Bee-hive	338,285	Mar. 23	1893	498	34	1290
Myers, William R., assignor of eleven-twentieths to J. B. Adams, Camden, N. J. Fire-kindler and fuel-block	337,789	Mar. 9	1206	313	34	1146
Nachfolger, F. Von Heyden. (See Schmitt, Rudolf, assignor.)						
Naffziger, Joseph S., Wheatland, Mo. Hay rake and loader	337,697	Mar. 9	1100	283	34	1139
Nagel, August C., R. H. Kaemp, and A. W. F. G. Linnenbrugge, assignors to Nagel and Kaemp, Hamburg, Germany. Driving-gear	335,622	Feb. 9	1049	277	34	636
Nagle, Ella, assignor to L. Fellheimer, New York, N. Y. Underwaist or strengthening-corset for children	337,260	Mar. 2	536	141	34	1086
Nahrung, William, Brooklyn, assignor to A. Kronsberg, New York, N. Y. Bung-lifter	336,342	Feb. 16	1814	476	34	776
Nancarrow, Robert R. (See Kitto, Paul, and Nancarrow.)						
Naramore, Truman C., Los Angeles, Cal. Baling-press	338,660	Jan. 5	212	58	34	41
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Journal-bearing for crank-connecting rods	334,034	Jan. 12	742	208	34	146
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Connecting-rod for pistons, &c	334,035	Jan. 12	743	203	34	146
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Bearing-pin connecting-rod	334,036	Jan. 12	745	204	34	147
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Plunger-packing for engines	334,037	Jan. 12	746	204	34	147
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Governor for gas-engines	334,038	Jan. 12	747	204	34	147
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Gas-engine	334,039	Jan. 12	749	205	34	147
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Feeding and operating gas-engines	334,040	Jan. 12	752	205 206	34	148
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Operating explosive vapor-engines	334,041	Jan. 12	755	207 208	34	149
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Proportional water-meter	336,135	Feb. 16	1485	392	34	790
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Operating proportional water-meters	336,136	Feb. 16	1486	393	34	791
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Proportional water-meter	336,137	Feb. 16	1488	393	34	791
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Proportional water-meter	336,138	Feb. 16	1490	393	34	791
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Operating proportional water-meters	336,139	Feb. 16	1494	394	34	721
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Oscillating water-meter	336,140	Feb. 16	1497	394 395	34	722
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Oscillating water-meter	336,141	Feb. 16	1499	395 396	34	722
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Water-meter with revolving piston	336,142	Feb. 16	1502	396 397	34	722
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Water-meter with revolving piston	336,143	Feb. 16	1504	397	34	723
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Water-meter with revolving piston	336,144	Feb. 16	1507	398 399	34	723
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Operating proportional water-meters	336,145	Feb. 16	1510	399 400	34	723
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Proportional water-meter	336,146	Feb. 16	1515	400 401	34	724
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Operating proportional water-meters	336,147	Feb. 16	1520	401	34	724
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Proportional water-meter	336,148	Feb. 16	1522	401	34	724
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Oscillating meter	336,422	Feb. 16	1922	503 504	34	796

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Nason, Albert D. (See Olmstead and Nason.)						
Nason, Carleton W., New York, N. Y. Safety apparatus for automatic draft-regulators	337,013	Mar. 2	181	48	34	958
Nathan Manufacturing Company. (See Gresham, James, assignor.) (Reissue.)						
Nathan Manufacturing Company. (See Kacsander and Ruddy, assignors.)						
Nathan Manufacturing Company. (See Ruddy, Robert, assignor.)						
National Car Starter Manufacturing Company of New Jersey. (See Morell and Goff, assignors.)						
National Heavy Ordnance Company. (See Mefford, David M., assignor.)						
National Machine Company. (See Morris, George M., assignor.)						
National Manufacturing Company. (See Johnson, William J., assignor.)						
National Meter Company. (See Nash, Lewis H., assignor.)						
National Needle Company. (See Berry, John, assignor.)						
Naylor, James, Jr. (See Sedgwick and Naylor.)						
Naylor, James, Jr., Poughkeepsie, assignor, by mesne assignments, to D. H. Burrell, Little Falls, N. Y. Stop-motion for printing-machines	335,768	Feb. 9	964	255, 256	34	619
Neacy, Thomas J., Milwaukee, Wis. Saw-mill dog	337,856	Mar. 16	1309	330	34	1174
Neahr, Jacob W. (See Dillenbeck and Neahr.)						
Neal, Oliver L., Waltham, Mass. Watch-maker's screw-driver	334,886	Jan. 26	1941	517	34	381
Neal, Sarah C., New York, N. Y. Bath or bathing apparatus	334,674	Jan. 19	1668	446	34	322
Needles, George M., Stuart, Nebr., and E. G. Fisher, Atlantic, Iowa. Plow	336,734	Feb. 23	2352	616	34	880
Neff, Elijah, assignor to C. C. Wolf and W. H. Green, Rochester, Ind. Pump	339,005	Mar. 30	2926	775	34	1478
Neider, Fred A., Augusta, Ky. Box-loop	336,735	Feb. 23	2353	616	34	880
Neisler, Oscar L., Indianapolis, Ind. Combined latch and lock	334,687	Jan. 26	1942	517	34	381
Nellis, Aaron J., Pittsburg, Pa. Wire-fastening device for fence-posts	337,857	Mar. 16	1310	340	34	1174
Nelson, Adolph, Brooklyn, N. Y. Button	337,607	Mar. 9	968	253	34	1111
Nelson, Alfred. (See Nelson, J. and A.)						
Nelson, Allen. (See Nickle and Nelson.)						
Nelson, Charles R., New York, N. Y. Window-head fastener	338,433	Mar. 23	2110	552	34	1328
Nelson, George W., New York, N. Y. Burglar-alarm	334,888	Jan. 26	1943	517	34	381
Nelson, Hugh, assignor of one-half to D. M. Shumo, Philadelphia, Pa. Machine for burnishing boots and shoes	334,394	Jan. 12	1873	343	34	243
Nelson, J., deceased, (A. Nelson, administrator,) and A. Nelson, assignors to A. Nelson, administrator, R. Emerson, and W. A. Talcott, Rockford, Ill. Spooling-machine	335,478	Feb. 2	531	139	34	536
Nelson, Peter M., Minneapolis, Minn. Dust-collector	338,765	Mar. 30	2580	680	34	1417
Nesler, Charles F., Newark, N. J. Razor-guard	338,864	Mar. 30	2711	713	34	1441
Neuhaus, Ferdinand, Solingen, Prussia, Germany. Pocket-cutlery	337,858	Mar. 16	1311	340	34	1174
Neumann & Co., R. (See Flocke, Robert, assignor.)						
Nenss, Hubert F., Aix-la-Chapelle, Germany. Safety-pin	334,541	Jan. 19	1489	399	34	289
Neverslip Horseshoe Company. (See McGowan, William S., Jr., assignor.)						
Neverslip Horseshoe Company. (See Stone, Samuel, assignor.)						
Neverslip Horseshoe Company. (See Warren, B. Howard, assignor.)						
Nevins, John H., Minneapolis, Minn. Combined self-feeding cooking and heating stove	334,971	Jan. 26	2054	548	34	401
New England Butt Company. (See Keene, Samuel D., assignor.)						
New England Manufacturing Company. (See Boswerth, Charles B., assignor.)						
New Haven Clock Company. (See La Ban, John H., assignor.)						
New Haven Clock Company. (See Winterhalder, Louis, assignor.)						
New Haven Clock Company. (See Wood, Frank B., assignor.)						
Newbery, John H., Waterford, Conn. Sash-holder	335,711	Feb. 9	881	231	34	604
Newhall, George M., Philadelphia, Pa. Dissolving and straining sugar	334,972	Jan. 26	2055	548	34	401
Newhard, Franklin H. D., Hokendauqua, Pa. Automatic car-brake	335,377	Feb. 2	408	104, 105	34	514
Newhard, Franklin H. D., Hokendauqua, Pa. Car-brake	335,378	Feb. 2	409	105	34	515
Newhard, Franklin H. D., Hokendauqua, Pa. Car-brake	335,379	Feb. 2	411	105, 106	34	515
Newhard, Franklin H. D., Hokendauqua, Pa. Car-brake	335,380	Feb. 2	412	106	34	515
Newkirk, Abram, Cleveland, Ohio. Fence	334,973	Jan. 26	2057	548	34	401
Newland, Alonzo H. (See Newland, Iredale, and Newland.)						
Newland, Ivanho W., W. J. Iredale, and A. H. Newland, Boulder, Colo. Automatic railway-switch	336,058	Feb. 9	1369	361	34	692
Newman, George H., administrator. (See Newman, James W.)						
Newman, James W., deceased, (G. H. Newman, administrator,) Fayetteville, Tenn. Riding-saddle	335,474	Feb. 2	532	139	34	537
Newman, Nelson, Springfield, Ill. Hoop-fastener	339,006	Mar. 30	2927	775	34	1479
Newman, Nelson, assignor to Advertising Alarm Sign Company, Springfield, Ill. Hoop-fastener	338,644	Mar. 23	2386	628	34	1376
Newton, Collins F., assignor of one-half to W. S. Wing, Omaha, Nebr. Train-signal	333,774	Jan. 5	380	104	34	72
Newton, Robert, Providence, R. I. Steam-trap	334,272	Jan. 12	1118	300	34	215
Ney, Georg W., *et al.* (See Brubaker, John H., assignor.)						
Ney, Jacob, assignor to Ney Manufacturing Company, Canton, Ohio. Hay-fork	335,036	Jan. 26	2146	571	34	417
Ney Manufacturing Company. (See Ney, Jacob, assignor.)						
Nichol, John C., Montreal, Quebec, Canada. Axle-lubricator	338,987	Mar. 23	1895	498	34	1291
Nichols, Ambrose J., New Market, N. H. Spooler-guide	334,799	Jan. 26	1836	490	34	362
Nichols, Benjamin F., Brookline, assignor of one-half to E. E. Allen, Watertown, Mass. Whip-stock	336,255	Feb. 16	1692	441	34	755
Nichols, George H., *et al.* (See Herreshoff, John B. F., assignor.)						
Nichols, L. T., Claremont, Minn. Draft-equalizer	339,007	Mar. 30	2928	775	34	1479
Nichols, L. T., Claremont, Minn. Car-coupling	339,071	Mar. 30	3013	796	34	1492
Nichols, Martin V., *et al.* (See Lottridge, William, assignor.)						
Nichols, William H., *et al.* (See Herreshoff, John B. F., assignor.)						
Nicholson, Alfred. (See Knight, John L., assignor.)						
Nickenich, Jacob (See Helm and Nickenich.)						
Nickerson, Luke ..., Rockford, Ill. Shears	338,286	Mar. 23	1894	498	34	1291
Nickle, John, and A. Nelson, Grand Forks, Dak. Ter. Steam-boiler filter	335,948	Feb. 9	1217	323, 324	34	666
Nickle, Robert, Jr., assignor to C. W. Shouk, Chicago, Ill. Sign	337,188	Mar. 2	411	107	34	1002
Nicol, Robert, Jr., assignor to C. W. Shouk, Chicago, Ill. Sign	339,008	Mar. 30	2929	776	34	1479
Nicolay, Wendel, Jersey City, N. J. Cord or rope fastener	338,354	Mar. 23	1992	524, 525	34	1308
Nielsen, Otto, Jersey City, N. J. Safety collecting-box	339,072	Mar. 30	3014	797	34	1492
Nies, Samuel E., Reading, Pa. Clamp						
Niles Tool Works. (See Williams, John R., assignor.)						
Nixon, Francis M., Lena, Ill. Mechanical movement	335,531	Feb. 2	615	161	34	550
Nixon, George W., Rockwood, assignor of one-half to W. M. Nixon, Chattanooga, Tenn. Ratchet mining-drill	338,863	Mar. 30	2709	713	34	1441

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Nixon, William M. (See Nixon, George W., assignor.)						
Noble, D. Rogers. (See Ferguson, Arthur C., assignor.)						
Noble, George H., Providence, R. I., assignor to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Trimming attachment for sewing-machines	334,718	Jan. 19	1731	461, 462	34	834
Noble, James, New York, N. Y. Plumber's fitting	334,542	Jan. 19	1489	399	34	289
Noble, James, New York, N. Y. Plumber's fitting	334,543	Jan. 19	1490	399	34	289
Noble, John H. (See Kearns and Noble.)						
Noble, Oscar L., assignor to H. Rogers, trustee, Boston, Mass. Rotary cutter	337,698	Mar. 9	1101	284	34	1130
Noe, Marsh, Davenport, Iowa. Hame-fastener	337,699	Mar. 9	1101	284	34	1130
Nöel, Pierre, New York, N. Y. Folding chair	335,087	Jan. 26	2147	571, 572	34	417
Nolan, John F., San Francisco, Cal. Composition for preventing and removing rust	333,988	Jan. 5	527	.....	34	90
Nolan, William F. (See Powell and Nolan.)						
Nolin, Gervais, Skowhegan, Me. Manufacture of grass-hooks	336,819	Feb. 23	2465	647	34	901
Nolte, August, assignor of two-thirds to A. Schmals and W. Lorens, Dundee, Ill. Fastener for shoes, &c.	337,753	Mar. 9	1304	313	34	1148
Norcross, William M., Brooklyn, N. Y. Governor	337,514	Mar. 9	978	222	34	1060
Norden, Charles J., De Kalb, Ill. Coffin	337,426	Mar. 9	746	199	34	1060
Nordenfelt, Thorsten, Westminster, England. Ordnance-carriage	336,766	Mar. 30	2582	681	34	1417
Nordmann, Prosper. (See Moriot, Charles, assignor.)						
Nordyke, Emanuel, Heppner, Oreg. Lifting-jack	333,908	Jan. 5	643	177	34	131
Normand, Joseph M., assignor of one-half to J. K. Mower, Springfield, Ohio. Pump	336,940	Mar. 2	76	20, 21	34	940
Normandy, Henry, Providence, R. I. Clothes-drier	338,998	Mar. 23	1896	498	34	1291
Norris, George C. (See Felmlee, John H., assignor.)						
Norris, George E., and W. E. Hagan, assignors to Citizens Match Company, Troy, N. Y. Match-making machine	336,494	Feb. 16	1925	504, 505	34	797
Norris, George E., and W. E. Hagan, assignors, by mesne assignments, to Citizens Match Company, Troy, N. Y. Machine for making matches	337,074	Mar. 2	253	67, 68	34	973
Norris, Schuyler C., South Whitley, assignor of one-half to J. S. Miller, Warsaw, Ind. Vegetable-slicer	338,674	Mar. 23	2431	641	34	1384
North, Aaron E., and W. K. Sheldon, West Rutland, Vt. Machine for cutting stone	336,256	Feb. 16	1694	441, 442	34	788
Northrop, Homer F., assignor to Waterbury Clock Company, Waterbury, Conn. Striking-clock	337,784	Mar. 9	1305	313	34	1148
Northwestern Wire Mattress Company. (See Seymour, William S., assignor.)						
Norton, Edwin, assignor to himself and O. W. Norton, Chicago, Ill. Can-counting machine	334,273	Jan. 12	1119	300	34	215
Norton, Edwin, assignor to himself and O. W. Norton, Chicago, Ill. Automatic can-delivering device	334,274	Jan. 12	1119	300	34	215
Norton, Edwin, assignor to himself and O. W. Norton, Chicago, Ill. Paint-can	338,767	Mar. 30	2583	681	34	1417
Norton, James W., and F. H. Rouse, assignors of one-third to J. C. Fuller, Kinsua, Pa. Process of and apparatus for distilling oil	336,941	Mar. 2	78	21	34	941
Norton, Oliver W. (See Norton, Edwin, assignor.)						
Norton, William T., assignor of one-half to W. M. Bates, New Bedford, Mass. Currycomb	336,490	Feb. 16	2011	527	34	813
Nott, Sampson H., Holland, N. Y. Dumping-wagon	335,614	Feb. 9	741	197	34	660
Nottingham, Lloyd, Norfolk, Va. Grain-register	337,859	Mar. 16	1312	340	34	1174
Nourse, James K. P., West Medway, Mass., assignor to W. Crabb, Newark, N. J. Clothes-pin	335,299	Feb. 2	296	79	34	494
Nowell, Thomas S., *et al.* (See Huse, Warren D., assignor.)						
Noxon, Samuel. (See Pettet and Noxon.)						
Noyes, Adelbert H., and E. S. Gardner, assignors to themselves and A. De Buell, Jefferson, Wis. Wagon end-gate	336,545	Mar. 23	2348	590	34	1353
Noyes, Benjamin, Boston, Mass. Ruching for decorative purposes	336,149	Feb. 16	1524	401, 402	34	725
Noyes, Edward F., Hamilton, Ontario, Canada. Tool-holder	334,042	Jan. 12	757	208	34	149
Noyes, Edward P., Seville, Ohio. Planter and cultivator	336,014	Feb. 9	1304	346	34	660
Noyes, Horatio J., Ashtabula, Ohio. Machine for seaming sheet metal	337,427	Mar. 9	749	199	34	1060
Noyes, La Verne W., Chicago, Ill. Book-holder	335,085	Jan. 26	2217	569	34	430
Noyes, La Verne W., assignor to W. Deering, Chicago, Ill. Grain-harvester	333,536	Jan. 5	54	16	34	12
Noyes, William H., Rochester, N. Y. Shaft-tug for harness	337,982	Mar. 16	1491	387	34	1208
Null, John C., assignor of one-half to C. F. Bryant, Dayton, Ohio. Anti-rattler for thill-couplings	336,150	Feb. 16	1526	402	34	725
Numan, Isaac W., Canton, Ohio. Pump	334,605	Jan. 19	1572	420	34	985
Nusbaum, Levi H., Goshen, Ind. Spring-tug fastener	337,347	Mar. 2	621	163	34	1041
Nye, Joseph K., Fairhaven, Mass. Bottling-machine	339,111	Mar. 30	3075	814	34	1503
Nyrop, Johan E., Copenhagen, Denmark. Milking-machine	338,098	Mar. 16	1650	429	34	1326
Nysewander, David J., New Carlisle, Ohio. Valve-seat	338,009	Mar. 23	2334	611	34	1269
O'Boylan, Bernard M., Corning, Ohio. Candle-holder	338,099	Mar. 16	1651	429	34	1327
O'Brien, John, and S. J. Weaver, St. Louis, Mo. Feed-water heater	337,189	Mar. 2	412	107	34	1002
O'Connell, John, and F. E. Weeden, Providence, R. I. Apparatus for dyeing	334,989	Jan. 26	1945	517	34	361
O'Donel, Irvin M., Allegheny, Pa. Leak-detector for gas	334,890	Jan. 26	1946	518	34	382
O'Donnell, John, Chicago, Ill. Hose-nozzle	334,800	Jan. 26	1837	490	34	362
O'Kane, William H. (See Smith, George, assignor.)						
O'Keefe, Thomas A., Brooklyn, N. Y. Check-file	337,983	Mar. 16	1492	387	34	1208
O'Malley, William T., *et al.* (See Devers, William J., assignor.)						
O'Neil, Michael S., Rock Island, Ill. Harrow	338,768	Mar. 30	2584	681	34	1417
O'Neil, Philip, Milwaukee, Wis. Lathe-rest	338,291	Mar. 23	1900	500	34	1328
O'Reilly, Thomas H., Canandaigua, N. Y. Gate	333,694	Jan. 5	528	143	34	90
O'Roark, Lorenza D., Louisa, Ky. Stirrup	334,976	Jan. 26	2060	549	34	402
O'Rourke, Daniel, Selma, Ala. Car-coupling	336,736	Feb. 23	2354	616	34	880
O'Riordan, Angelina, *et al.* (See O'Riordan, James, assignor.)						
O'Riordan, Columbia, *et al.* (See O'Riordan, James, assignor.)						
O'Riordan, Daniel, *et al.* (See O'Riordan, James, assignor.)						
O'Riordan, Ellen, *et al.* (See O'Riordan, James, assignor.)						
O'Riordan, Eugene, *et al.* (See O'Riordan, James, assignor.)						
O'Riordan, James, Ulster, assignor to L. R. Ford, P. Casey, W. Ryan, M. Larkin, Jr., E. O'Riordan, J. Cummings, W. Lawton, Kingston, J., Sr., E., D., J., Jr., A., C., and J. O'Riordan, Ulster, N. Y. Car-coupling	335,381	Feb. 2	413	106	34	516
O'Riordan, John, *et al.* (See O'Riordan, James, assignor.)						
Obenchain, Bruce, Springfield, Ohio. Beam pumping-engine	335,475	Feb. 2	533	140	34	537
Obenchain, John T., Logansport, Ind. Roller-mill	334,460	Jan. 19	1378	371, 372	34	289

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Obermaier, Julius O., Lambrecht, Bavaria, Germany. Apparatus for dyeing	335,712	Feb. 9	868	222	34	604
Obermann, August W., Chicago, Ill. Cooking-vessel	334,459	Jan. 19	1371	371	34	289
Oberndorfer, Abraham, Norfolk, Va. Sash-cord fastener	333,775	Jan. 5	361	104	34	72
Ockershausen, John H., Greenwich, Conn. Liquid-strainer for purifying sugar, &c	336,425	Feb. 16	1496	505	34	797
Odell, Albert P., Bradford, Pa. Roller for skates	336,491	Feb. 16	2013	527	34	812
Odell, John B., Chicago, Ill. Mold	333,661	Jan. 5	219	58	34	41
Oechsli, Frans. (See Hake and Oechsli.)						
Oetzel, John G., Brooklyn, N. Y. Dovetailing-machine	335,883	Feb. 9	1051	277 / 278	34	636
Offutt, Joseph E. (See Thomas and Offutt.)						
Ogden, George H., Cleveland, Ohio. Machine for attaching covers to pamphlets	337,608	Mar. 9	969	253 / 254	34	1111
Ogden, Russell R., Bradford, Pa. Water-wheel	335,713	Feb. 9	869	223	34	605
Ogle, Francis M. (See Crist and Ogle.)						
Ohl, George A. (See Kittredge and Ohl.)						
Ohl, George A., Newark, N. J. Metal-bending machine	336,100	Mar. 16	1652	429 / 430	34	1387
Ohlen, James. (See Krieger, Andrew, assignor.)						
Ohlsen, August. (See Ohlsen, Hans C., assignor.)						
Ohlsen, August, *et al.* (See Ohlsen, Heinrich C., Sr., assignor.)						
Ohlsen, Hans C., Covington, Ky., assignor of one-half to A. Ohlsen, Cincinnati, Ohio. Vehicle-coupling	336,546	Mar. 23	2940	590 / 591	34	1353
Ohlsen, Heinrich C., Sr., assignor to H., Jr., and A. Ohlsen, Cincinnati, Ohio. Delivery-wagon	333,776	Jan. 5	369	104 / 105	34	78
Ohlsen, Henry, Jr., *et al.* (See Ohlsen, Heinrich C., Sr., assignor.)						
Olcott, Marvin, *et al.* (See De Silva, Dwight M., assignor.)						
Oldfield, Benjamin H. (See Cassidy and Oldfield.)						
Oliver, A. Atwood, Brooklyn, assignor of one-fourth to A. F. Scott, New York, N. Y. Composition of matter for roofing, furniture, &c	334,974	Jan. 26	2058	.....	34	402
Oliver Brothers & Phillips. (See Rosenstock, William W., assignor.)						
Oliver, Francisco J., Brooklyn, N. Y. Barrel-head	337,964	Mar. 16	1493	367	34	1207
Oliver, Frederick. (See Tompkins and Oliver.)						
Oliver, Henry M., assignor of one-half to T. Oliver, Newark, N. J. Horseshoe	335,476	Feb. 9	596	140	34	537
Oliver, Henry W., Jr., *et al.* (See Murdock, William M., assignor.)						
Oliver, Thomas. (See Oliver, Henry M., assignor.)						
Oliver, William Y., Franklin County, Ark. Combination-plow	338,289	Mar. 23	1807	499	34	1291
Olmstead, Chauncey L., West Brookfield, Mass., and A. D. Nason, New York, N. Y. Corset	336,184	Mar. 16	1768	460	34	1259
Olsen, Olaf R., Indianapolis, Ind., assignor to American Screw Company, Providence, R. I. Machine for fastening barbs on wire	338,290	Mar. 23	1808	499 / 500	34	1292
Olsen, Ulrik, Boston, Mass. Skate-fastening	334,975	Jan. 26	2059	549	34	402
Olson, Holcom, and J. Hogland, Kansas City, Mo. Cornstalk-cutter	335,949	Feb. 9	1218	324	34	666
Olson, Samuel, Cyrus, Minn. Combined hay rake and cocker	335,834	Feb. 9	1053	278 / 279	34	637
Onderdonk, John P., Philadelphia, Pa. Manufacture of paper bags	333,537	Jan. 5	56	16	34	13
Onderdonk, John P., Philadelphia, Pa. Paper-bag machine	333,538	Jan. 5	57	16	34	13
Oneida Community. (See Maultby, William E., assignor.)						
Oppmann, Andrew W., and J. Smith; said Smith assignor to Bosworth & Schmidt, Cleveland, Ohio. Branding apparatus	336,343	Feb. 16	1614	476	34	776
Oppy, William, Westerly, R. I. Bush-hammer	338,865	Mar. 30	2712	713	34	1441
Ormerod, John. (See Matthews, Dyson, and Ormerod.)						
Ormerod, Thomas, and A. B. Croskey, Leadville, Colo. Snow-plow	337,075	Mar. 2	256	68	34	973
Orphy, John W., Rochester, N. Y. Making side tubes for lanterns	335,234	Feb. 9	215	55, 56	34	478
Orphy, John W., Rochester, N. Y. Tube for lanterns	335,235	Feb. 9	216	56	34	478
Orth, Charles G. (See Braggemann and Orth.)						
Ortmayer, Andrew, Chicago, Ill. Harness-saddle	335,142	Feb. 9	60	16, 17	34	451
Ortmayer, Andrew, Chicago, Ill. Horse-collar pad	335,143	Feb. 9	62	17	34	451
Orton, Lyman O., Philadelphia, Pa. Machine for rolling saws	338,434	Mar. 23	2110	532	34	1398
Osborn, George R., New York, N. Y. Bannerette	338,356	Mar. 23	1985	505 / 506	34	1308
Osborn, George R., and A. F. Gregory, New York, N. Y. Easel	338,355	Mar. 23	1984	505	34	1308
Osborn, Henry E., Meriden, Conn., and J. U. Fritchey, Lancaster, Pa. Strup-pitcher	338,435	Mar. 23	2111	533	34	1398
Osborn, James, *et al.* (See Andrews, William P., assignor.)						
Osborn, James M., Fall River, Mass. Weather-strip	339,009	Mar. 30	2930	776	34	1479
Osborne & Company, D. M. (See Butterfield, William, assignor.)						
Osborne, David M., Auburn, N. Y. Grain harvesting and binding machine	335,950	Feb. 9	1219	324 / 325	34	666
Osborne, John W., Washington, D. C. Damping lithographic-printing surfaces	338,769	Mar. 30	2585	661 / 662	34	1417
Osborne, Theodore B., Plainfield, N. J., assignor to A. Osterhoudt, Brooklyn, N. Y., R. J. Armour, Orange, N. J., and L. D. Huntington, New York, N. Y. Switch-lamp	335,951	Feb. 9	1221	325	34	666
Osgood, Isaac, Chicago, Ill. School desk and seat	338,645	Mar. 23	2386	608 / 609	34	1376
Osman, Aquilla G., Bucyrus, Ohio. Picking up and carrying bricks	336,737	Feb. 23	2356	616	34	880
Osman, Aquilla G., Bucyrus, Ohio. Implement for edging or turning bricks	336,890	Feb. 23	2466	647	34	901
Osmer, William H., St. Louis, Mo. Horse-collar pad	335,362	Feb. 9	414	107	34	516
Ostberg, Petter. (See Backlund, Johan F., assignor.)						
Osterhoudt, Alfred, *et al.* (See Osborne, Theodore B., assignor.)						
Osterloh, Adolph, San Francisco, Cal. Automatic weight-motor	337,428	Mar. 9	751	198	34	1069
Ostrander, James S., Richmond, Ind. Fountain-lamp	336,015	Feb. 9	1305	347	34	690
Oswalt, Samuel. (See Braidwood and Oswalt.)						
Otstot, John D., Springfield, Ohio. Wrench	334,065	Jan. 19	891	225	34	161
Ott, Benedict, La Crosse, Wis. Bark-shaving machine	335,532	Feb. 2	616	161	34	550
Ott, Benedict, La Crosse, Wis. Bark-shaving machine	335,533	Feb. 2	618	162	34	550
Ott, George F., Philadelphia, Pa. Pressure-regulator	336,584	Feb. 23	2140	561	34	841
Ott, Thomas, *et al.* (See Bellaie, Robert S., assignor.)						
Otterson, John H. (See Otterson, Thomas G. and J. H.)						
Otterson, Thomas G. and J. H., Woodbury, N. J. Fruit-jar	338,185	Mar. 16	1764	460	34	1259
Otterson, Thomas G. and J. H., Woodbury, N. J. Fruit-jar	338,770	Mar. 30	2569	668	34	1418
Otto, Gustav, Jersey City, N. J. Pocket-battery						
Otto, Nicolaus A., assignor to Gasmotoren Fabrik Deutz, Deutz-on-the-Rhine, Germany. Slide and passage for gas-motor engines	335,038	Jan. 26	2150	572 / 573	34	418
Ovens, Moses, and W. Freinkelstein, Chicago, Ill. Head-covering	335,900	Feb. 2	899	79	34	495
Overell, Joseph M., Evansville, Ind. Transom-lifter	335,066	Jan. 26	2290	589	34	430
Overman, John W., Fort Fetterman, Wyo. Ter. Washing-machine	336,059	Feb. 9	1370	362	34	692

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Overman Wheel Company. (See Hadley, Charles F., assignor.)						
Overpeck, John M. (See Cussins and Overpeck.)						
Overpeck, John M., O. D. Shank, and L. A. Cussins, New Paris, Ohio. Tension apparatus for fence-wire	338,610	Mar. 23	2336	611	34	1393
Overton, Harmon D., Missouri Valley, Iowa. Thill-coupling	333,909	Jan. 5	644	177	34	131
Owen, Walter W., assignor to Columbus Watch Company, Columbus, Ohio. Watch-regulator	336,060	Feb. 9	1370	362	34	692
Owner, Joseph S., Hagerstown, Md. Rubber boot or shoe	337,190	Mar. 2	413	107 / 108	34	1009
Paccaud, Emile. (See Borel and Paccaud.)						
Paddleford, John F. (See Baltimore and Paddleford.)						
Page, Bennett, Evergreen, Ala. Floor-clamp	337,191	Mar. 2	414	108	34	1009
Page, Ransom C., and F. H. Sedon, Chicago, Ill. Valve	338,771	Mar. 30	2590	669	34	1418
Page, Thomas H., Watertown, Mass. Cleansing-machine	334,128	Jan. 12	667	242	34	178
Pagel, Marx. (See Green, Edel, and Pagel.)						
Paget, Joseph T., assignor to Peet Valve Company, Boston, Mass. Straight-way valve	334,184	Jan. 12	966	269	34	186
Paige, James H., Salida, Colo. Device for opening envelopes	337,965	Mar. 16	1494	368	34	1207
Pallot, Elvire S., and L. Charbonnier, Compiègne, France. Teaching sewing	337,609	Mar. 9	968	254	34	1111
Pain, Robert W., assignor, by mesne assignments, to Mechanical Orguinette Company, New York, N. Y. Mechanical musical instrument	335,584	Feb. 2	619	162	34	550
Paisley, John, Burlington, Iowa. Nut-lock	338,866	Mar. 30	2713	714	34	1442
Palm, Peter, assignor to W. E. Hafner and H. Will, Chicago, Ill. Sirup-gage	336,351	Feb. 16	1598	402	34	795
Palmer, Charles W., Cleveland, Ohio. Glass slide for microscopes	336,257	Feb. 16	1606	442	34	753
Palmer, Edward H., *et al.* (See Russell, Manuel, assignor.)						
Palmer, Edwin C., Cleveland, Ohio. Wrench	337,966	Mar. 16	1495	368	34	1207
Palmer, Francis L., New York, N. Y. Summer-house and bath-house	335,835	Feb. 9	1056	279	34	636
Palmer, Frank L., New London, Conn. Machine for quilting bed-comfortables, &c	334,875	Jan. 12	1120	300 / 301	34	216
Palmer, Horace, Lebanon, Conn. Saw-buck	333,777	Jan. 5	368	105	34	78
Palmer, Isaac E., Middletown, Conn. Spreader for spreading and stretching fabrics	337,967	Mar. 16	1496	368	34	1207
Palmer, James J., Fall Brook, Pa. Pipe-tongs	334,376	Jan. 12	1195	301	34	217
Palmer, John H., Philadelphia, Pa. Button-hole attachment for sewing-machines	335,836	Feb. 9	1059	280	34	636
Palmer, John R., Dayton, Ohio. Feed-regulator for roller-mills	334,891	Jan. 26	1947	518	34	362
Palmer, Noyes F., *et al.* (See Heath, Henry R., assignor.)						
Palmer, Noyes F., Jamaica, assignor of two-thirds to C. S. Goodwin and H. R. Heath, New York, N. Y. Button	336,061	Feb. 9	1371	362	34	692
Palmer, Noyes F., Jamaica, assignor of two-thirds to C. S. Goodwin and H. R. Heath, New York, N. Y. Button	336,062	Feb. 9	1371	362	34	692
Palmer, Noyes F., Jamaica, assignor of two-thirds to C. S. Goodwin and H. R. Heath, New York, N. Y. Button	336,063	Feb. 9	1372	363	34	692
Palmer, Noyes F., Jamaica, assignor of two-thirds to C. S. Goodwin and H. R. Heath, New York, N. Y. Button	336,064	Feb. 9	1372	363	34	692
Palmer, Noyes F., Jamaica, assignor of one-fourth to A. H. Ackermann, East New York, N. Y. Fountain-pen	337,610	Mar. 9	969	255	34	1111
Palmer, Peter L., White Cloud, Kans. Apparatus for localising and extinguishing fires in houses and vessels	334,461	Jan. 19	1370	372	34	270
Palmer, Stephen J., Dover, N. J. Combined step-ladder and adjustable platform	337,968	Mar. 16	1498	369	34	1207
Palmer, Timothy G., Schultzville, N. Y. Torpedo railway-signal	334,123	Jan. 12	666	243	34	178
Palmer, Wilford L., New York, N. Y. Tobacco-pipe	334,469	Jan. 19	1380	372	34	270
Palmer, William, Jacksonville, Ohio. Combined tie and rail holder and spike-puller	332,539	Jan. 5	58	16	34	13
Palmer, William B., Greenwich, N. Y. Lamp-collar	334,043	Jan. 12	759	208	34	149
Paraffine Paint Company. (See Pearce and Beardsley, assignors.)						
Paris, Daniel E., Troy, N. Y. Stove-leg	334,124	Jan. 12	669	243	34	178
Paris, Daniel E., Troy, N. Y. End shelf for stoves	334,125	Jan. 12	690	244	34	178
Parke, Horace D., Syracuse, N. Y. Combined step-ladder and ironing-board	335,714	Feb. 9	868	223	34	605
Parke, Sarah A., Bay City, Mich. Saw-tooth-swaging device	333,540	Jan. 5	59	17	34	14
Parker, Andrew H. (See Hoult, Cyrus, assignor.)						
Parker, Arthur A., Jersey City, N. J. Fence-post	334,719	Jan. 19	1733	469	34	335
Parker Company, Charles. (See Parker, Dexter W., assignor.)						
Parker Company, Charles. (See Slater, Edmond B., assignor.)						
Parker, Charles J., Alberton, Md. Cooking-vessel	336,547	Mar. 23	2350	591	34	1363
Parker, De Forest. (See Jahant and Parker.)						
Parker, Dexter W., assignor to C. Parker Company, Meriden, Conn. Extension-lamp	336,736	Feb. 23	2357	617	34	880
Parker, Frederick A., West Gardner, Mass. Child's chair	336,942	Mar. 2	89	23	34	941
Parker, George, Bay City, Mich. Automatic stop for steam-engines	337,611	Mar. 9	969	255	34	1112
Parker, John J., Aitkin, assignor to H. H. Corbett, St. Cloud, Minn. Crosscut-saw	335,087	Jan. 26	2321	590	34	451
Parker, John J., Aitkin, assignor to W. F. Edlebrock, St. Cloud, Minn. Saw	336,739	Feb. 23	2358	617	34	881
Parker, Ralsemond A., *et al.* (See Tomlinson, James, assignee.)						
Parker, Samuel. (See Rudd, John N., assignor.)						
Parkhurst, Emily R. (See Parkhurst, Stephen R., assignor.)						
Parkhurst, Stephen R., assignor to E. R. Parkhurst, Montclair, N. J. Machine for feeding, opening, and mixing wool	336,660	Feb. 23	2360	589	34	881
Parkhurst, Stephen R., assignor to E. R. Parkhurst, Montclair, N. J. Doffing apparatus for picking or ginning machines	337,014	Mar. 2	183	46	34	958
Parkinson, Thomas. (See Schlegel, Israel, assignor.)						
Parks, Byron E., Perrysburg, Mich. Link-grinding machine	339,010	Mar. 30	2931	776	34	1480
Parks, David P. (See Smith, Harman H., assignor.)						
Parmelee, John W., Englewood, Ill. Disintegrator	334,615	Feb. 9	741	197	34	589
Parmly, Eleazar. (See Houghtaling, William, assignor.)						
Parnell, Edward A., Swansea, county of Glamorgan, England. Ferrated cake of chocolate	335,928	Feb. 9	1221	.....	34	666
Parrish, John H., near Saundersville, Tenn. Feed-cutter	337,429	Mar. 9	759	198	34	1070
Parrish, William N., Richmond, Ind. Tension apparatus for wire fences	334,801	Jan. 26	1838	490	34	362
Parry, George T., Philadelphia, Pa. Turn-table	336,267	Mar. 23	1996	526	34	1308
Parsell, Edwin R. (See Gamble, John, assignor.)						
Parsons, Samuel W., Ypsilanti, Mich. Washing-machine	333,778	Jan. 5	364	105	34	78
Parsons, William B., Jr., New York, N. Y. Automatic flushing-siphon	334,606	Jan. 19	1573	420	34	305
Parsons, William C., Akron, Ohio. Hydrometric conveyer	335,286	Feb. 2	216	56, 57	34	479
Partington, John, Winnipeg, Manitoba, Canada. Packing for rods	336,159	Feb. 16	1597	402	34	795
Partrick, Hawley, assignor of one-half to F. P. Clark, Danbury, Conn. Surgical splint	336,740	Feb. 23	2359	617	34	881
Partridge, Charles S. (See Pratt and Partridge.)						
Passmore, Levis. (See McFarland and Passmore.)						
Patent Paper Cigar Box Company. (See Powers, Daniel, assignor.)						
Pates, Thomas, assignor to Hapgood Plow Company, Altos, Ill. Planting-plow	338,186	Mar. 16	1765	460	34	1260
Patin, Justin, New Roads, assignor of one-half to E. A. Koch, Waterloo, La. Steamboat-stage	337,981	Mar. 2	530	141	34	1009

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Paton, Mary A., Paris, Ky. Head-dress	338,101	Mar. 16	1655	430	34	1237
Patrick, Benjamin D., Appleton City, Mo. Bumper for doors	335,616	Feb. 9	742	198	34	560
Patrick, Theodore L., assignor to himself and L. Sprague, Paw Paw, Ill. Gate	337,612	Mar. 9	994	255	34	1112
Patrick, William W. (See Howard, Cyrus, assignor.)						
Pattee, Davis, Des Moines, Iowa. Steam-engine	337,860	Mar. 16	1313	341	34	1174
Patten, George, *et al.* (See Daelen, Lambert A., assignor.)						
Patten, George M., Jersey City, N. J. Caster	335,301	Feb. 2	300	80	34	495
Patterson, A. H. (See Roth, Elias D., assignor.)						
Patterson, Aaron R. (See Sheldon and Patterson.)						
Patterson, Elbridge J. (See Dexter and Patterson.)						
Patterson, James K., Crete, Nebr. Automatic railway-gate	334,892	Jan. 26	1948	518, 519	34	393
Patterson, James M., and E. A. Himebaugh, Tipton, Cal. Track-clearer for mowers	335,769	Feb. 9	967	256	34	680
Patterson, John G., *et al.* (See Scott, John O., assignor.)						
Patterson, John M., Ridge Farm, Ill. Fence-machine	337,989	Mar. 16	1498	389	34	1208
Patterson, John W., Madisonville, Ky. Vehicle-spring	335,953	Feb. 9	1222	325	34	667
Patterson, Myron F., *et al.* (See Scott, John O., assignor.)						
Patterson, William, San Francisco, Cal. Auger for cutting square holes	333,662	Jan. 5	214	59	34	42
Patterson, William C., Elizabeth, N. J. Electrical meter	333,779	Jan. 5	385	105	34	73
Pattison, Henry, St. John, New Brunswick, Canada. Press	338,867	Mar. 30	2714	714	34	1442
Patton, Asa K., Jr. (See Flake, Henry G., assignor.)						
Paul, Abel. (See Kitto, Paul, and Nancarrow.)						
Paul, Almarin B., San Francisco, Cal. Circular ore-stamp battery	334,675	Jan. 19	1671	446	34	393
Paull, Archibald W. (See Miller, John F., assignor.)						
Paull, Elbridge G., assignor to American Tack Company, Fairhaven, Mass. Tack	336,496	Feb. 16	1928	505	34	797
Paulsen, Julius M., Troy, N. Y. Making razor-strops	333,663	Jan. 5	216	59	34	42
Paulus, Peter, and H. Faber, Milwaukee, Wis. Window-screen	334,676	Jan. 19	1672	446	34	393
Payler, John W., Detroit, Mich. Slide-valve	337,613	Mar. 9	995	255	34	1112
Payne, Cornelius B., *et al.* (See Graves, John, assignor.)						
Payne & Co., Walter S. (See Payne, Walter S., assignor.)						
Payne, Walter S., assignor to W. S. Payne & Co., Fostoria, Ohio. Stop or curb box	338,102	Mar. 16	1656	430	34	1237
Payne, Walter S., assignor to W. S. Payne & Co., Fostoria, Ohio. Safety-valve	338,436	Mar. 23	2112	553	34	1393
Peace, John G., Salem, Mo. Combined table and desk	334,977	Jan. 26	2061	549, 550	34	402
Peacock, Elijah P., Chicago, assignor to Joliet Wire Check Row Company, Joliet, Ill. Machine for making check-row wire	337,430	Mar. 9	752	193, 194, 195, 196	34	1070
Peacock, Joseph V. (See Sheldon and Peacock.)						
Pearce, Truman J., and M. W. Beardsley, Oakland, assignors to Paraffine Paint Company, San Francisco, Cal. Mixed paint	338,868	Mar. 30	2715	.....	34	1442
Pearson, John M., Neoga, Ill. Harrow	335,617	Feb. 9	744	198	34	560
Pease, Chauncey D., New York, N. Y. Ornamental glass panel	334,677	Jan. 19	1673	447	34	393
Pease, Durell O., Hampden, Mass. Head for continuous drawing and twisting	337,015	Mar. 2	184	48	34	958
Peay, John M., Pembroke, Ky., W. A. Peay, Milton, Tenn., and J. H. Helsley, Paradise, Ky. Automatic fan	339,011	Mar. 30	2933	777	34	1480
Peay, William A. (See Peay and Helsley.)						
Peck, T. S. (See Stevens, Benjamin D., assignor.)						
Peck, Theodore S., Burlington, Vt. Adjustable extension-screen	337,192	Mar. 2	415	108	34	1003
Peck, Theron W., assignor to E. P. Allis & Co., Milwaukee, Wis. Saw-mill carriage	333,664	Jan. 5	217	59	34	42
Peck, Theron W., assignor to E. P. Allis & Co., Milwaukee, Wis. Saw-hanging	336,661	Feb. 23	2261	589, 590	34	861
Peckham, Peter W., New York, N. Y. Educational device	335,837	Feb. 9	1061	280	34	638
Peckover, James, Philadelphia, Pa. Stone-saw	334,678	Jan. 19	1675	447	34	393
Pedder, John, Pittsburg, Pa. Rolling-mill	334,044	Jan. 12	760	208, 209	34	150
Pederson, Ole, assignor to Lechner Manufacturing Company, Columbus, Ohio. Riveting-machine	333,780	Jan. 5	387	106	34	73
Pedigo, Jesse W. (See Pedigo, William and J. W.)						
Pedigo, William and J. W., Norwood, Iowa. Hay tedder and cocker combined	335,618	Feb. 9	744	198, 199	34	561
Pedrick, Joseph B., Columbus, Ind. Corn-planter attachment	333,541	Jan. 5	61	17	34	14
Pedrick, Joseph B., Columbus, Ind. Corn-planter	335,954	Feb. 9	1223	325	34	667
Peelle, Jesse. (See Hill and Peelle.)						
Peet, Warren L., Maple Rapids, Mich. Ticket-holder	336,258	Feb. 16	1698	449	34	753
Peet Valve Company. (See Paget, Joseph T., assignor.)						
Pegg, John A., Jonestown, Miss. Sample box or package	337,785	Mar. 9	1206	313	34	1146
Peffley, Artis I., Ladoga, Ind. Wheel-cultivator	337,861	Mar. 16	1314	341	34	1174
Peirce, Augustus F. (See Macdonald, William C., assignor.)						
Peloubet, Francis W., Newark, N. J. Walking doll	335,302	Feb. 2	301	80	34	495
Pement, Edward, Esmond, Dak. Ter. Lathe-chuck	334,893	Jan. 26	1949	519	34	388
Pement, Edward, Esmond, Dak. Ter. Lathe-chuck	335,619	Feb. 9	746	199	34	561
Pendergast, John, Franklin, Mass. Harness-pad	335,477	Feb. 2	537	140	34	537
Penfield, Edwin H., Santa Barbara, Cal. Farm-gate	338,869	Mar. 30	2716	714	34	1442
Penley, Julia, Bangor, Me. Dress-chart	337,016	Mar. 2	185	49	34	958
Penn, Worden P., St. Louis, Mo. Grain-drill	336,427	Feb. 16	1929	506	34	797
Pennel, William H. (See Brown, William, assignor.)						
Pennell, Lloyd W., Braintree, Mass., assignor to Tarbox Time Register Company, Portland, Me. Watchman's time-detector	338,292	Mar. 23	1902	500, 501	34	1292
Pennell, Lloyd W., Braintree, Mass., assignor to Tarbox Time Register Company, Portland, Me. Circuit-controlling device for watchmen's time-recorders	338,293	Mar. 23	1904	501	34	1293
Penner, Herman, Milwaukee, Wis. Feather-sorter	335,144	Feb. 2	63	17	34	452
Penney, Edgar, Waynesborough, Pa. Incased gearing	333,542	Jan. 5	62	17, 18	34	14
Penney, Edgar, Waynesborough, Pa. Traction-engine	334,978	Jan. 26	2062	550	34	402
Pennock, Frederick M., Kennett Square, Pa. Road-grader	336,821	Feb. 23	2467	648	34	901
Pennock, William C., Cardington, Ohio. Boiler	334,277	Jan. 12	1125	302	34	217
Pepé, Guiseppe, Walworth, county of Surrey, England. Apparatus for drying stereotype-matrices	334,544	Jan. 19	1491	399	34	269
Percival, Charles F., Barton, Vt. Pillow-sham holder	334,278	Jan. 12	1126	302	34	217
Peregrine, John M. (See Romans and Peregrine.)						
Perin, Samuel H. (See Renshaw and Perin.)						
Perkins, Alfred H., Leominster, Mass. Foot-tub	335,938	Feb. 9	1002	280	34	638
Perkins, Charles H., Providence, R. I. Horseshoe-machine	338,870	Mar. 30	2718	714, 715	34	1442

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Perkins, Charles H., Providence, R. I. Horseshoe-machine	338,871	Mar. 30	2725	716, 717	34	1443
Perkins, Francis C. (See Kelley, Charles H., assignor.)						
Perkins, John M., South Bend, Ind. Slat-iron for vehicle-tops	333,865	Jan. 5	529	143	34	99
Perkins, John M., South Bend, Ind. Bow-socket for vehicle-tops	334,979	Jan. 26	2064	550	34	403
Perkins, John M., South Bend, Ind. Carriage-bow socket	337,614	Mar. 9	996	256	34	1112
Perkins, John M., South Bend, Ind. Vehicle-dash	337,990	Mar. 16	1499	389	34	1208
Perkins, Paul B., North Springfield, Mo. System of water-works	335,303	Feb. 2	302	80	34	495
Perkins, Willis J., Grand Rapids, Mich. School seat and desk	334,902	Jan. 26	1840	490, 491	34	363
Perrigo, Edward L. (See Hamilton and Perrigo.)						
Perring, Merrick E., Berrien Springs, Mich. Feeder for thrashing and other machines	336,153	Feb. 16	1529	403	34	795
Perry, Austin, Florence, Kans. Clasp	337,982	Mar. 16	1315	341	34	1175
Perry, David L., Mount Solon, Va. Washing-machine	333,866	Jan. 5	530	144	34	99
Perry, Frederick A. S., New York, N. Y. Shutter-fastener	337,076	Mar. 2	257	68	34	974
Perry, Joseph R., Wilkes-Barré, Pa. Violin tail-piece	336,498	Feb. 16	1980	506	34	798
Perry, William A., *et al.* (See Bicknell, William A. P., assignor.)						
Perry, William A., *et al.* (See Jenkins, Frank W., assignor.)						
Perry, William H., Sharon, Pa. Grooved and barbed rod	333,867	Jan. 5	530	144	34	99
Perry, William H., Sharon, Pa. Roll for rolling barbed rods	333,868	Jan. 5	531	144	34	99
Perry, William H., Sharon, Pa. Nail or spike	333,869	Jan. 5	532	144	34	100
Perry, William L., Chelsea, assignor, by mesne assignments, of one-half to Blount & Kimpton, Boston, Mass. Foot-power machine	338,437	Mar. 23	2113	553	34	1238
Perry, William V., Chicago, Ill. Glass barrel	336,344	Feb. 16	1816	476	34	776
Persohn, John W., McKinney, Tex. Churn	334,790	Jan. 19	1735	462, 463	34	335
Pesano, Antonio C., assignor to G. V. Cresson, Philadelphia, Pa. Shaft-hanger	335,689	Feb. 9	1063	281	34	638
Pesano, Antonio C., assignor to G. V. Cresson, Philadelphia, Pa. Drip-cup and self-oiling attachment for bearings	335,840	Feb. 9	1064	281	34	639
Peters & Calhoun Company. (See Webster, William S., assignor.)						
Peters, James W., and J. H. Skinner, Troy, Ohio. Cultivator	338,294	Mar. 23	1905	501	34	1293
Peters, John C., assignor to Horton Manufacturing Company, Fort Wayne, Ind. Washing-machine	337,700	Mar. 9	1103	264	34	1130
Peters, William C., Hicksville, N. Y. Cultivator	334,045	Jan. 12	709	209	34	150
Petersen, Charles J., Port Chester, N. Y. Suspension device	335,478	Feb. 2	537	141	34	537
Petersen, Edward A. C., Chicago, Ill. Baker's oven	336,741	Feb. 23	2261	617	34	861
Peterson, John, Watson, Mich. Plow	335,690	Feb. 9	748	199	34	561
Peterson, Albert E., *et al.* (See Whiting, Henry W., assignor.) (Reissue.)						
Peterson, Nicholas P., Chicago, Ill. Blind-stapling machine	335,304	Feb. 2	305	81	34	495
Petrie, John, Jr., and J. Fielden, Rochdale, county of Lancaster, England. Machine for drying wool	337,863	Mar. 16	1315	342	34	1175
Pettengill, Howard M. (See Weddell, John W., assignor.)						
Pettet, Miles, Wellington, Ontario, Canada. Car-coupling	336,259	Feb. 16	1698	442	34	753
Pettet, Miles, and S. Noxon, Wellington, Ontario, Canada. Car-coupling	336,260	Feb. 16	1699	443	34	754
Petitbone, John B., Farmington, Mich. Carriage-top	335,841	Feb. 9	1064	281	34	639
Petitbone, W. H. (See Whited, Charles W., assignor.)						
Pettit, John H. (See Darling, Bernard P., assignor.)						
Pets, John, assignor to himself, J. Phillips, and E. W. Rowley, Detroit, Mich. Machine for making bungs	335,955	Feb. 9	1224	326	34	667
Pevey, Abiel, Lowell, Mass. Railway-switch alarm	333,865	Jan. 5	218	60	34	43
Pfleger, Frank P., Joliet, Ill. Stretcher-frame for paintings	335,383	Feb. 2	415	107	34	516
Pheney, John R., Owatonna, Minn. Signal apparatus	334,980	Jan. 26	2065	551	34	403
Phelps, George H., Newton, Mass. Pencil-sharpener	334,803	Jan. 26	1842	491	34	363
Phelps, Lucius J., assignor to Railway Telegraph Company, New York, N. Y. Polarized relay	334,185	Jan. 12	968	262	34	187
Phelps, Lucius J., assignor to Railway Telegraph Company, New York, N. Y. Railway-car telegraph	334,186	Jan. 12	970	262, 263	34	187
Phelps, Lucius J., assignor to Railway Telegraph Company, New York, N. Y. Railway-car telegraph	334,187	Jan. 12	975	263	34	188
Phelps, Lucius J., assignor to Railway Telegraph Company, New York, N. Y. Railway-car telegraph	334,188	Jan. 12	977	263	34	188
Phelps, Lucius J., assignor to Railway Telegraph Company, New York, N. Y. Railway-car telegraph	334,189	Jan. 12	979	264	34	189
Phelps, Lyman E., and R. K. Swift, assignors of one-third to J. J. A. Zeller, Rochelle, Ill. Disk-harrow	337,017	Mar. 2	186	49	34	959
Phelps, Thomas V., Worcester, Mass. Fence-wire stretcher	335,842	Feb. 9	1065	281, 282	34	639
Phelps, Scott I., Cincinnati, Ohio. Molding-polisher	337,515	Mar. 9	879	228	34	1090
Phenix, William, assignor of one-half to G. Judge, Chicago, Ill. Carrying traction-cables around curves	337,786	Mar. 9	1207	314	34	1148
Philbrick, Andrew J. (See Wood and Philbrick.)						
Philbrick, Josiah J., Birmingham, Ala. Barrel-making machine	334,607	Jan. 19	1575	420	34	305
Philbrook, Emmeline W., Boston, Mass. Clothes-hook	335,227	Feb. 2	217	57	34	479
Philips, Ferdinand, Philadelphia, Pa. Bolt-heading machine	334,464	Jan. 19	1382	373	34	271
Philips, Ferdinand, Philadelphia, Pa. Bolt-heading machine	334,465	Jan. 19	1385	374	34	271
Philips, Ferdinand, Philadelphia, Pa. Apparatus for burning gaseous fuel	337,516	Mar. 9	880	229, 224	34	1090
Phillips, Denzil, Cochranton, Pa. Animal-trap	335,039	Jan. 26	2152	573	34	418
Phillips, Denzil, Cochranton, Pa. Sheep-feeding rack	335,384	Feb. 2	417	107	34	516
Phillips, F. T. (See Herron, John, assignor.)						
Phillips, Gilbert K., Westfield, Mass. Reclining-chair	336,662	Feb. 23	2262	590	34	862
Phillips, Mary, assignor to C. C. Carpenter, New York, N. Y. Bosom-form	334,721	Jan. 19	1736	463	34	325
Phillips, John, *et al.* (See Pets, John, assignor.)						
Phillips, Theodore, assignor of one-half to E. Egli, Whiting, Iowa. Washing-machine	333,666	Jan. 5	221	60	34	43
Phillips, Thomas, E. Bouchard, and T. Charbonneau, Worcester, Mass. Horseshoe	336,154	Feb. 16	1530	403	34	796
Phillips, William J. (See Shepard, Charles S., assignor.)						
Philp, John W., Humboldt, Tenn. Machine for manufacturing barrels	337,701	Mar. 9	1104	264, 265	34	1130
Phippa, Thomas L., and W. Burman, Birmingham, county of Warwick, England, assignors to L. S. Lee, Philadelphia, Pa. Hair-clipper	335,956	Feb. 9	1227	326	34	668
Pickering, Joseph M., Philadelphia, Pa. Brush-making machine	334,096	Jan. 12	823	225	34	161
Pickering, Philip, Boone, Iowa. Valve for operating air-brakes	334,466	Jan. 19	1388	374	34	272
Pidgeon, George S., San Diego, Cal. Hydraulic motor	337,864	Mar. 16	1318	342, 343	34	1175

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr's.	Vol.	Page.
Pfefke, Carl W. E., Berlin, Germany. Filter	335,040	Jan. 26	2153	573	34	418
Pierce, Henry M. (See Falconnet, Eugene F., assignor.)						
Pierce Manufacturing Company. (See Tatro, William B., assignor.)						
Pierpont & Co., C. (See Coggins, O. Chester, assignor.)						
Pihlström, John S., Chicago, Ill. Window	337,193	Mar. 2	416	{106 / 109}	34	1003
Pilkington, George J., Chester, Pa. Apparatus for refining tallow and other lubricating-oils	335,957	Feb. 9	1228	327	34	666
Pinckney, Charles C., assignor of one-half to T. W. Terry, Valdosta, Ga. Fifth-wheel for vehicles	335,068	Jan. 26	2228	590	34	431
Pinkham, Charles S., assignor to R. G. Pinkham, Boston, Mass. Mucilage-holder	334,046	Jan. 12	763	209	34	150
Pinkham, Etta G. (See Pinkham, Charles S., assignor.)						
Pinkham, George F. (See Taylor and Tirrell, assignors.)						
Pinkham, Joseph W. (See Cowell and Pinkham.)						
Pintsch, Julius, Berlin, Prussia, Germany. Apparatus for heating railway-cars with gas	336,585	Feb. 23	2141	{561 / 562}	34	841
Pintsch, Oscar, Berlin, Germany. Fluid-pressure regulator	337,431	Mar. 9	770	196	34	1072
Pior, Carl, deceased; M. Pior, Chicago, Ill., administratrix. Alarm-lock	336,155	Feb. 16	1531	408	34	736
Pior, Maria, administratrix. (See Pior, Carl.)						
Piper, Edwin S., assignor, by mesne assignments, to W. E. Strong, Bristol, Conn. Bottle-washing machine	337,615	Mar. 9	907	{256 / 257}	34	1112
Pisch, Francis L., New York, N. Y. Illuminated glass sign	335,305	Feb. 2	209	81	34	496
Pitt, John E., Brooklyn, N. Y. File and binder for pamphlets, bills, &c.	336,675	Mar. 23	2433	641	34	1384
Planta, Henry, New York, N. Y. Gage	336,749	Feb. 23	2361	618	34	881
Plato, Arthur M. (See Marcus and Epstein, assignors.)						
Platt, Albert L., assignor to W. B. McPike, C. Clark, A. McDannold, E. T. Smith, and J. D. Hostetter, Bowling Green, Mo. Nutmeg-grater	334,279	Jan. 12	1127	302	34	217
Platt Brothers & Company. (See Platt, Clark M., assignor.)						
Platt Brothers & Company. (See Platt, Irving G., assignor.)						
Platt, Charles J. W., Philadelphia, Pa. Weather-strip	334,463	Jan. 19	1381	372	34	271
Platt, Clark M., assignor to Platt Brothers & Company, Waterbury, Conn. Machine for punching and feeding scraps of sheet metal	334,190	Jan. 19	961	264	34	189
Platt, Irving G., assignor to Platt Brothers & Company, Waterbury, Conn. Button	334,191	Jan. 19	969	264	34	189
Platt, James, *et al.* (See Tweddell, Platt, and Fielding.)						
Platts, Thomas M., and M. Crane, (administratrix of O. B. Crane, deceased,) Newark, N. J. Punch	337,077	Mar. 2	258	69	34	974
Pleasty, Josephus, Jersey City, N. J. Horticultural building	335,145	Feb. 2	64	18	34	458
Plourde, Arthur. (See Dumontier and Plourde.)						
Pluck, James H., Wareeville, Tex. Tire-tightener	335,585	Feb. 2	690	162	34	551
Plumb, Fawcett, assignor of one-half to A. Bown, Streator, Ill. Twin-cylinder single-acting engine	336,743	Feb. 23	2363	618	34	881
Plummer, Samuel A. (See Williston, Benjamin F., assignor.)						
Pocket and Stationary Fire Escape Company. (See Johnson, Andrew J., assignor.)						
Poe, Hamilton, St. Louis, Mo. Feed-water heater	334,192	Jan. 12	984	265	34	189
Poell, Hermann, assignor of one-half to H. Gruner and A. Schmidt, Philadelphia, Pa. Tinner's seaming-machine	336,187	Mar. 16	1766	461	34	1260
Pohl, Henry U., Hiawatha, Kans. Desk	336,345	Feb. 16	1817	{476 / 477}	34	776
Pohlé, Julius G., and D. Hill, Georgetown, Colo. Pneumatic water-elevator	336,295	Mar. 23	1906	502	31	1203
Poindexter, Robert E., Indianapolis, Ind. Handle for tobacco-knives	336,429	Feb. 16	1931	506	34	798
Poitras, John M., Deseronto, Ontario, Canada. Snow-plow	337,078	Mar. 2	259	69	34	974
Pole, Benjamin C., Philadelphia, Pa. Duplex locomotive	335,479	Feb. 2	539	{141 / 142}	34	536
Polhemeus, Garret A., Nyack, N. Y. Roller cable-grip. (Reissue)	10,677	Jan. 12	1291	346	34	246
Polk, John E. (See Robburts, George W., assignor.)						
Pollard, James H., Clarence, Mo. Railway-gate	337,079	Mar. 2	260	69	34	975
Pollard, Moses. (See Pollard, Wright and M.)						
Pollard, Wright and M., Pawtucket, R. I. Machine for dyeing and washing wool and cotton	338,438	Mar. 23	2114	553	34	1329
Polle, Friederich W., Greenville, Miss. Turning plug	334,722	Jan. 19	1738	463	34	235
Polley, Charles L., Sandusky, Ohio. Device for filing saws and drilling	337,432	Mar. 9	772	197	34	1072
Polleys, William H., Melrose, Wis. Spiked skid	338,572	Mar. 30	2796	717	34	1442
Polster, John. (See Gronemeyer and Polster.)						
Polte, Eugen, Magdeburg, Germany. Oil-separator for steam and water	338,772	Mar. 30	2593	663	34	1418
Pomeroy, Julian, Springfield, Mass. Rein-hook	335,306	Feb. 2	210	82	34	496
Pommernake, William, Painted Wood City, Dak. Ter. Combined harrow and seed-planter	337,991	Mar. 16	1500	389	34	1208
Pond, Charles L., Buffalo, N. Y. Seal-press	334,295	Jan. 12	1274	344	34	244
Pond, Charles L., Buffalo, N. Y. Seal-press	336,663	Feb. 23	2365	590	34	862
Pond, Chester H., Brooklyn, N. Y. Circuit-closer for electric clocks	338,773	Mar. 30	2593	663	34	1418
Pond, Joseph F. (See Weber, Charles, assignor.)						
Pontius, Albert C. (See Warstler and Pontius.)						
Pool, Frank V., Newark, N. J. Manufacturing nitro-cellulose	336,822	Feb. 23	2468	.....	34	901
Pool, Henry W., Providence, R. I. Music-leaf turner	338,103	Mar. 16	1658	{430 / 431}	34	1238
Poole, C. Clarence. (See Clarke, William H., Jr., assignor.)						
Poole, Robert B., Utica, N. Y. Clamp	333,667	Jan. 5	221	61	34	43
Poor, Nelson P., Cleveland, Ohio, assignor to Davis Sewing Machine Company, Watertown, N. Y. Binding attachment for sewing-machines	338,774	Mar. 30	2595	663	34	1419
Poore, Townsend, Scranton, Pa. Steam-blower for stacks of boiler-furnaces	333,543	Jan. 5	63	18	34	14
Poore, Townsend, Scranton, Pa. Boiler-furnace	333,544	Jan. 5	64	18	34	15
Poore, Townsend, Scranton, Pa. Endless-chain grate	334,047	Jan. 12	764	210	34	150
Poore, Townsend, Scranton, Pa. Furnace	335,691	Feb. 9	749	200	34	582
Poore, Townsend, Scranton, Pa. Fire-box for boilers	335,715	Feb. 9	885	244	34	605
Poore, Townsend, Scranton, Pa. Steam-boiler	336,430	Feb. 16	1932	{506 / 507}	34	798
Poore, Townsend, Scranton, Pa. Boiler	336,431	Feb. 16	1933	507	34	798
Poore, Townsend, Scranton, Pa. Boiler	333,970	Jan. 5	645	177	34	121
Pope, Frank L., Elisabeth, N. J. Circuit for electric railways	334,608	Jan. 19	1577	430	34	306
Pope, Frank L., Elisabeth, N. J. Circuit for electric railways	338,073	Mar. 30	2015	797	34	1493
Pope, Frank L., Elisabeth, N. J. Electrically-actuated locomotive	335,716	Feb. 9	887	244	34	605
Pope, John F., Ottumwa, Iowa. Necktie-fastener						
Pope Manufacturing Company. (See Wallace, Albert E., assignor.)	335,717	Feb. 9	888	224	34	606
Pope, William B., New York, N. Y. Adjustable holder for scarfs for neck-wear	334,467	Jan. 19	1389	375	34	272
Popper, Simon, San Francisco, Cal. Neckscarf						

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr's.	Vol.	Page.
Porter, Edward N., Burlington, Vt. Corner or plate attachment for extension window-screens	337,633	Mar. 9	773	197	34	1073
Porter, Henry K., Boston, Mass. Whiffletree-iron	336,016	Feb. 9	1305	347	34	661
Potter, Hobert B., North Adams, Mass. Switch-lock	338,873	Mar. 30	2727	{717 / 718}	34	1443
Porter, John F., Mount Washington, Ky. Sash-fastener	338,548	Mar. 23	2251	591	34	1353
Porter, John K., Philadelphia, Pa. Violin tuning-peg	338,296	Mar. 23	1909	508	34	1294
Porter, Joseph E., Chicago, Ill. Hay-carrier	333,545	Jan. 5	66	18	34	15
Porter, William H. (See Burnette and Porter.)						
Positive Pump and Water Meter Company. (See Berrenberg, William and A., assignors.)						
Potes, Claudius, Somerford, Ohio. Clearer attachment for harvester-cutters	334,723	Jan. 19	1739	463	34	236
Potock, James E., Wortham, Tex. Harvesting-sack supporter	337,194	Mar. 2	417	109	34	1003
Potter, Charles, Holyoke, Mass. Stock-regulator for paper-machines	337,080	Mar. 2	261	69, 70	34	975
Potter, Charles, Jr., Plainfield, N. J. Sheet-delivery apparatus for printing-machines	333,668	Jan. 5	223	61	34	43
Potter, Charles M. (See Warren and Potter.)						
Potter, George D., Deming, N. Mex. Ter. Fire-arm	338,188	Mar. 16	1768	461	34	1260
Potter, George D., Deming, N. Mex. Ter. Safety-catch for fire-arms	338,189	Mar. 16	1771	462	34	1261
Potter, James, assignor of one-half to L. H. Flersheim, Chicago, Ill. Barbed wire	336,684	Feb. 23	2366	591	34	863
Potter, James C., assignor to Atherton Machine Company, Lowell, Mass. Cotton opener and lapper	335,069	Jan. 26	2222	590	34	431
Potter, Thomas O., Boston, Mass. Buckle	337,517	Mar. 9	892	234	34	1091
Potts, James F. (See Fischer, August, assignor.)						
Powel, Harford W. H., trustee. (See Powel, Samuel, assignor.)						
Powel, Samuel, Newport, R. I., assignor to H. W. H. Powel, trustee. Making iron pictures	337,703	Mar. 9	1106	.....	34	1131
Powell, Edwin, Williamsport, Pa. Machine for sawing hoop-poles	335,060	Jan. 26	2226	591	34	433
Powell, James, Cincinnati, Ohio. Lubricator	333,146	Feb. 2	65	18	34	458
Powell, Joseph M., Tipton, assignor to P. H. Young, Kokomo, Ind. Tile-machine table	335,536	Feb. 2	690	162	34	551
Powell, Joseph N., Springfield, Ohio. Device for converting motion	335,147	Feb. 2	67	18	34	453
Powell Perfect Coupler Company. (See Powell, Robert, assignor.)						
Powell, Richard J., and W. F. Nolan, assignors to themselves, P. Baum, H. Lowenthal, Evansville, Ind., and S. Denzer, New York, N. Y. Fastening for attaching buttons to garments	337,195	Mar. 2	418	109	34	1003
Powell, Robert, Kansas City, Mo., assignor to Powell Perfect Coupler Company. Car-coupling	334,604	Jan. 26	1943	491	34	264
Powell, William, Oneida, Ill. Car-coupling	336,897	Mar. 23	1910	503	34	1294
Powers, Daniel E., assignor to Patent Paper Cigar Box Company, New York, N. Y. Cigar-box	336,432	Feb. 16	1935	507	34	799
Powers, Daniel E., assignor to Patent Paper Cigar Box Company, New York, N. Y. Cigar-box	336,433	Feb. 16	1936	507	34	799
Powles, John L., Goodland, Ind. Draft-equalizer	334,260	Jan. 12	1198	302	34	217
Prahar, Louis B., assignor to himself and C. S. Shepard, Brooklyn, N. Y. Bag or satchel fastening	335,907	Feb. 2	811	82	34	496
Prahar, Louis B., Brooklyn, assignor to G. Heiles, New York, N. Y. Combined button-hook and coat and hat hanger	337,786	Mar. 9	1309	314	34	1148
Prahar, Louis B., Brooklyn, assignor to Prahar & Shephard, New York, N. Y. Fastening for hand-bag, pocket-book, and purse frames	337,787	Mar. 9	1308	314	34	1148
Prahar, Louis B., Brooklyn, assignor to Prahar & Shephard, New York, N. Y. Fastening for hand-bag, pocket-book, and purse frames	337,789	Mar. 9	1309	315	34	1149
Prahar, Louis B., and C. S. Shepard, Brooklyn, N. Y. Bag or satchel catch	336,017	Feb. 9	1307	347	34	661
Prahar, Louis B., and C. S. Shepard, Brooklyn, N. Y. Combined buttoner and cigar-cutter	336,667	Feb. 23	2594	666	34	912
Prahar & Shephard. (See Prahar, Louis B., assignor.)						
Prang Educational Company. (See Mead, Edward G., assignor.)						
Pratt & Cady Company. (See Frisbie, Henry R., assignor.)						
Pratt, Edwin E., and C. S. Partridge, assignors to A. N. Kellogg Newspaper Company, Chicago, Ill. Stereotype-casting box	334,048	Jan. 12	768	210	34	151
Pratt, Fred. M. (See Davies, James, assignor.)						
Pratt, George M., Middletown, Conn. Dividers	336,868	Feb. 23	2225	606	34	919
Pratt, Henry C., Canandaigua, N. Y. Wire-holder for fences	338,775	Mar. 30	2596	664	34	1419
Pratt, Nathaniel W., Brooklyn, N. Y. Forming serpentine tubes	337,288	Mar. 2	540	{141 / 142}	34	1086
Pratt, Nathaniel W., Brooklyn, N. Y. Steam-generator	338,676	Mar. 23	2435	642	34	1384
Pratt, Philip W., Abington, Mass. Furniture-pad	336,346	Feb. 16	1818	477	34	776
Pratt, Rufus N., Hartford, Conn. Asbestus packing	338,356	Mar. 23	1908	595	34	1300
Pratt & Whitney Company. (See Richards, Francis H., assignor.)						
Pratt & Whitney Company. (See Tucker, George D., assignor.)						
Prentice, George W., Providence, R. I. Button-fastener	336,943	Mar. 2	84	22	34	941
Prentice, Henry N. (See Wadsworth and Prentice.)						
Prentice, John, New York, N. Y. Combined toy and cigar-cutter	333,669	Jan. 5	224	61	34	44
Prentiss, Charles F., L. G. Stone, and H. Fisher, Woodland, Cal. Sacking attachment for threshing-machines	336,665	Feb. 23	2367	591	34	863
Prentiss, Charles H., Otsego, and P. Walker, Lawton, Mich. Fanning-mill hopper	333,546	Jan. 5	66	19	34	15
Presbrey, Frank S. (See Manning, William P., assignor.)						
Preston, Everett B., *et al.* (See Curtis, Lewis E., assignor.)						
Preston, Everett B., *et al.* (See Hyde, William F., assignor.)						
Preston, Everett B., *et al.* (See McGaffey, Ives W., assignor.)						
Preston, George E., *et al.* (See Curtis, Lewis E., assignor.)						
Preston, George E., *et al.* (See Hyde, William F., assignor.)						
Preston, George E., *et al.* (See McGaffey, Ives W., assignor.)						
Preston, King H. C., Syracuse, assignor to Copeland Manufacturing Company, New York, N. Y. Gate	338,296	Mar. 23	1912	{503 / 504}	34	1294
Preston, Richard, assignor of one-half to Ewing Brothers, Chelsea, Mass. Bottle-rinser	334,605	Jan. 26	1946	492	34	264
Price, Bruce, New York, N. Y. Passenger-car	335,770	Feb. 9	909	{256 / 257}	34	620
Price, Charles B., Pittsburg, Pa. Switching device for railways	335,228	Feb. 2	218	57, 58	34	479
Price, Charles H., *et al.* (See Harmer, Henry A., assignor.)						
Price, George W., assignor of one-half to W. J. Hooper, Baltimore, Md. Steam-engine	337,518	Mar. 9	893	{224 / 225}	34	1091
Price, James. (See Harrod, Perry, assignor.)						
Price, James W., Ogden City, Utah Ter. Chair	334,087	Jan. 12	832	225	34	161
Price, John B., Wollaston, Mass., assignor to Bispool Sewing Machine Company, Kittery, Me. Shuttle for sewing-machines	339,112	Mar. 30	3076	814	34	1563
Price, John B., Wollaston, Mass., assignor to Bispool Sewing Machine Company, Kittery, Me. Sewing-machine	339,113	Mar. 30	3077	814	34	1563

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Price, William H., Columbus, Ohio. Car-cover	335,719	Feb. 9	889	284	34	606
Price, William H., Jr., Cleveland, Ohio. Combination organ stop-action	337,348	Mar. 2	622	164	34	1041
Price, William M., Crystal Springs, Miss. Gate	336,190	Mar. 16	1779	462	34	1261
Priday, Henry, Houston, Tex. Wire-stretching device for fence-posts	337,865	Mar. 16	1319	343	34	1175
Pridham, Emma L., Philadelphia, Pa. Wash-board	337,349	Mar. 2	625	164	34	1041
Pries, Fredrick. (See Williamson and Pries.)						
Prince, Frederick H., Chicago, Ill. Elevator	335,239	Feb. 2	220	58	34	479
Pringle, Andrew L., San Francisco, Cal. Iron bedstead	337,519	Mar. 9	884	225	34	1091
Pringle, Eugene, Gloversville, N. Y. Button-setting machine	338,776	Mar. 30	2597	684	34	1419
Pringle, James L. (See Greener, George W., assignor.)						
Prinz, Faustin. (See Wohlrab, Sylvan, assignor.)						
Procter, Edwin R., Washington Court-House, Ohio. Corn-planter	333,547	Jan. 5	67	19	34	15
Procter, Edwin R., Washington Court-House, Ohio. Nut-lock	333,548	Jan. 5	69	20	34	15
Procter, Edwin R., Washington Court-House, Ohio. Fire-place	334,088	Jan. 12	824	225 / 226	34	161
Procter, Edwin R., Washington Court-House, Ohio. Nut-lock. (Reissue)	10,704	Mar. 30	3099	718	34	1506
Providence Steam Engine Company. (See Johnson, Henry J., assignor)						
Pruner, Lorenso H., Dean, Dak. Ter. Wagon end-gate	336,492	Feb. 16	9013	598	34	612
Pryibil, Paul. (See Mackintosh, Edward D., assignor.)						
Pryor, Lucas T. (See Campbell, Parker, assignor.)						
Puchta, Emil. (See Bayer and Puchta.)						
Pueta, Tillman, Jr., St. Louis, Mo. Plug-tobacco machine	336,526	Feb. 16	9059	541	34	620
Pueta, Tillman, Jr., St. Louis, Mo. Plug-tobacco machine	336,527	Feb. 16	9061	541 / 542	34	620
Pueta, Tillman, Jr., St. Louis, Mo. Cam	336,528	Feb. 16	9063	542	34	621
Pullman, Albert B., *et al.* (See Coyle, Charles J., assignor.)						
Pumphrey, Robert B., Baltimore, Md. Meat-slicing machine	337,790	Mar. 9	1810	315	34	1149
Punches, Oscar J., Plymouth, Mich. Roller-skate	334,981	Jan. 12	1128	303	34	217
Pursell, John, Sr., Thomaston, Conn. Folding adjustable music-stool	336,156	Feb. 16	1532	404	34	726
Pusey, Joshua, Philadelphia, Pa. Lead or crayon holder	338,611	Mar. 23	2337	611	34	1366
Pusey, Joshua, Philadelphia, Pa. Inserting cords in the seams of textile and other fabrics	338,613	Mar. 23	2341	612	34	1366
Pusey, Joshua, Philadelphia, Pa. Hemstitching and cording attachment for sewing-machines	338,614	Mar. 23	2343	612	34	1366
Pusey, Joshua, Philadelphia, Pa. Wrench	338,674	Mar. 30	2729	718	34	1444
Pusey, Joshua, Philadelphia, Pa., assignor to G. A. Goldsmith, New York, N. Y. Eraser	338,299	Mar. 23	1913	504	34	1294
Pusey, Joshua, Philadelphia, Pa., assignor to G. A. Goldsmith, New York, N. Y. Pocket-knife	338,612	Mar. 23	2338	612	34	1366
Putman, John H., Daingerfield, Tex. Plow	335,537	Feb. 9	621	163	34	551
Putnam, Doula C., Wayne Centre, N. Y. Oscillating engine	334,282	Jan. 12	1130	303	34	216
Putnam, Salmon W., Fitchburg, Mass. Metal-planing machine	336,065	Feb. 9	1373	363	34	693
Putnam, Theodore A. B., assignor of one-half to W. Courtenay, New York, N. Y. Underground conduit	335,091	Jan. 23	2227	501	34	422
Putnam, William B., and H. C. Hoffman, Lamar, Mo.; said Hoffman assignor to said Putnam. Pocket-book	334,609	Jan. 19	1580	421	34	306
Püttmann, Eduard, and J. Fliegel, Hagen, Prussia, Germany. Enameling metallic roofing-plates	336,157	Feb. 16	1534	404	34	726
Putsker, Wilhelm. (See Zemann, Anton, assignor.)						
Quackenbush, Henry M., Herkimer, N. Y. Breech-loading gun	336,586	Feb. 23	2145	562	34	841
Quigley, George, St. Louis, Mo. Machine for making paper boards	333,761	Jan. 5	391	106	34	74
Quimby, Edward E., Orange, assignor to F. O. Matthiessen & Wiechers Sugar Refining Company, Jersey City, N. J. Continuous filter for purifying sugar-liquors by bone-black	335,622	Feb. 9	751	200	34	562
Quincy Metal Wheel Company. (See Little, James R., assignor.)						
Quinlan, William J. (See Chambers, William B., assignor.)						
Quinn, Edward. (See Bruentingsen and Quinn.)						
Quinn, Hiram W. (See Littleton, Charles M., assignor.)						
Rabiger, C. Robert G. (See Rabiger, Emil A. H. and C. R. G.)						
Rabiger, Emil A. H. and C. R. G., Philadelphia, Pa. Awning	338,675	Mar. 30	2731	718 / 719	34	1444
Raddin, John, Lynn, Mass. Vehicle-hub and axle-coupling	334,049	Jan. 12	789	210	34	161
Rafter Embroidery Machine Company. (See Rafter, Madison A., assignor.)						
Rafter, Madison A., assignor to Rafter Embroidery Machine Company, Lockport, N. Y. Fabric-tufting implement	337,196	Mar. 2	419	109	34	1003
Rahn, Carl H., Chicago, Ill. Zither	336,158	Feb. 16	1535	404 / 405	34	726
Rahsskopff, Carl, assignor to Schmidt Label and Lithographic Company, San Francisco, Cal. Machine for drying varnished labels	335,771	Feb. 9	969	257 / 258	34	621
Railway Register Company. (See Meaker, John W., assignor.)						
Railway Speed Recorder Company. (See Wilkins and Bartlett, assignors.)						
Railway Telegraph Company. (See Phelps, Lucius J., assignor.)						
Rakestraw, William H. (See Beard, George M., assignor.)						
Rakow, Louis, assignor to W. H. Litchfield, Elmhurst, Ill. Spoke-driver	335,308	Feb. 2	311	82	34	497
Ralston, David, Troy, N. Y. Machinery for sanding brick-molds	334,610	Jan. 19	1580	421	34	306
Raln, Adrien, Fils, Paris, assignor to himself, H. A. Browne, New Brighton, and J. Grathvohl, Paris, France. Preparing and treating sirups and molasses	335,940	Feb. 2	221	.....	34	490
Rampe, William, Jr., Ottawa, Ohio. Label	334,961	Jan. 26	2066	551	34	403
Randall, Amelia A. (See Randall, Silas G., assignor.)						
Randall, Bellville L., Boston, Mass. Car-brake	337,616	Mar. 9	1000	257	34	1113
Randall, Charles A., New York, N. Y. Telephone	336,744	Feb. 23	2364	618 / 619	34	862
Randall, George H., Jersey City, N. J. Printer's form-clamp	338,777	Mar. 30	2598	685	34	1419
Randall, Harry A., Terryville, Conn. Copper-tipped hammer	334,283	Jan. 12	1132	304	34	218
Randall, Henry R., Brooklyn, N. Y. Separating the fiber of cocoons	335,958	Feb. 9	1249	.....	34	668
Randall, Silas G., assignor to A. A. Randall, Greene, N. Y. Combined disk harrow and seeder	333,670	Jan. 5	234	62	34	44
Randel, Charles D., Troy, N. Y. Curry-comb	335,772	Feb. 9	974	258	34	622
Randolph, Jane F., Blanchester, Ohio. Kitchen-cabinet	334,894	Jan. 26	1950	519	34	363
Randon, Francois, New Orleans, La., assignor, by mesne assignments, of one-half to V. M. T. Johnson, New York, N. Y. Apparatus for the production of pure sulphurous gas	337,197	Mar. 2	420	110	34	1004
Rankin, Abram G. W., Hudson, N. J., assignor to W. H. Jewell, New York, N. Y. Packing for steam-condenser tubes	337,434	Mar. 9	774	197	34	1075
Rankin, William H., Lawrence, Mass. Carding-machine	336,587	Feb. 23	2146	562	34	841
Rannells, Jacob. (See Irvin, Andy B., assignor.)						
Ransom, Albert F., *et al.* (See Hayes, Miles T., assignor.)						
Ransom, Albert F., Burlington, Wis. Blind for bridles	334,050	Jan. 12	770	211	34	151
Ransom, Frances A., East Palatka, Fla. Combination of blind and wire screens	336,944	Mar. 2	84	23	34	942
Ransom, Newman A., assignor of one-half to J. F. Greenleaf, Chicago, Ill. Gas-burner and carburetor	338,671	Jan. 5	229	63	34	45
Ransom, Joseph W., and J. L. H. Barr, Batavia, Ohio. Book-holder	337,435	Mar. 9	776	197	34	1075
Rappleyea, Nicholas. (See Sparks and Rappleyea.)						
Rasmussen, Rasmus, Chicago, Ill. Rotary engine	338,778	Mar. 30	2600	685	34	1420
Rathbun, John B. (See Kelsey, Frank N. assignor.)						
Ratliff, John W., Lewisville, Tex. Seed-planter	335,959	Feb. 9	1229	327	34	668
Ravekes, David, San Francisco, Cal. Apparatus for cooling white lead	335,778	Feb. 9	975	258	34	622
Raven, Gustav, Dresden, Saxony, Germany. Smoke-consuming furnace	337,436	Mar. 9	776	198	34	1076
Rawbone, Joseph L., assignor of two-thirds to W. G. Rawbone and C. M. Edwards, Toronto, Ontario, Canada. Keyless canvas-stretcher	335,480	Feb. 2	544	143	34	538
Rawbone, William G., *et al.* (See Rawbone, Joseph L., assignor.)						
Rawle, James. (See Brill, George M., assignor.)						
Rawle, James. (See Brill and Rawle.)						
Rawlings, Radd M., and C. A. Williamson, St. Louis, Mo. Street-car	337,617	Mar. 9	1001	257	34	1113
Raworth, John S., Manchester, county of Lancaster, assignor to Siemens Brothers & Company, (limited,) 12 Queen Anne's Gate, Westminster, county of Middlesex, England. Electric meter	338,549	Mar. 23	2252	591 / 592	34	1354
Raworth, John S., Manchester, county of Lancaster, assignor to Siemens Brothers & Company, (limited,) Westminster, county of Middlesex, England. Automatic electric coupler	338,550	Mar. 23	2253	592 / 593	34	1354
Rawson, George W., and G. E. Worthen, Cambridge, Mass. Hoisting apparatus	337,606	Mar. 16	1320	343	34	1176
Ray, William F., Springfield, Mass. Electric signaling apparatus for railway-trains	338,439	Mar. 23	2115	554	34	1339
Raydt, Wilhelm. (See Schmitz, Albert, assignor.)						
Rayl, James S., Green Camp, Ohio. Hay-stacker	334,198	Jan. 12	965	265	34	190
Raymond, Daniel E., Dixon, Ill. Tile and brick machine	336,434	Feb. 16	1937	508	34	799
Raymond, Freeborn F., 2d, Newton, Mass. Attaching heels	335,941	Feb. 2	222	58	34	490
Raymond, Freeborn F., 2d, Newton, Mass. Heel-nailing machine	335,942	Feb. 2	223	59	34	490
Raymond, James N. (See Heiss, Charles E., assignor.)						
Raymond, Perley B., Indianapolis, Ind. Lumber-drier	338,440	Mar. 23	2118	554	34	1339
Read, Daniel M. (See Hood, Gustave, assignor.)						
Reade, Henry W., Chicago, Ill. Cabinet for holding paper-files	338,300	Mar. 23	1915	504	34	1295
Reading Hardware Company. (See Chantrell, John, assignor.)						
Reagan, Henry C., Salisbury, Mo. Traction-wheel	339,012	Mar. 30	2935	777	34	1490
Reamy, Thomas J., Nashville, Tenn. Head-block for saw-mills	334,284	Jan. 12	1133	304	34	218
Reamy, Thomas J., Nashville, Tenn. Feed mechanism for saw-mills	334,285	Jan. 12	1135	304	34	219
Reaser, Eben N. (See Reaser, Matthew H., J. G., and E. N.)						
Reaser, Joseph G. (See Reaser, Matthew H., J. G., and E. N.)						
Reaser, Matthew H., J. G., and E. N., St. Louis, Mo. Shutter-fastener	335,960	Feb. 9	1230	327	34	668
Rebbeck, Henry H., Cleveland, Ohio. Attachment for fire-alarm boxes	337,198	Mar. 2	422	110	34	1004
Reddaway, Frank, Pendleton, county of Lancaster, England. Woven belting	334,895	Jan. 26	1951	519	34	363
Redick, Reubin F., Spencerville, Ohio. Clothes-drier	334,962	Jan. 26	2066	551 / 552	34	403
Redington, William H., assignor of one-half to W. Rodiger, Chicago, Ill. Mucilage-bottle	336,945	Mar. 2	85	23	34	942
Redline, Joseph S., Derry, Pa. Pivot-scale	334,651	Jan. 19	771	211	34	151
Reed, Edwards A., Oliver Springs, Tenn. Flooring and ceiling clamp	334,612	Jan. 19	1581	421	34	306
Reed, Frederick, Solomon City, Kans. Mechanical movement	334,896	Jan. 26	1847	492	34	364
Reed, George W., assignor of one-half to D. O. Brown, Saltsburg, Pa. Gas-saving device	334,286	Jan. 12	1136	304	34	219
Reed, John W., Chicago, Ill. Piano-string bridge	338,779	Mar. 30	2601	685	34	1420
Reed, W. C., *et al.* (See Finneran, Charles C., assignor.)						
Reed, William B. S., Brooklyn, N. Y. Operating mechanism for railway-switches	334,619	Jan. 19	1582	421 / 422	34	307
Reed, William B. S., Brooklyn, N. Y. Switch-lock and throw-bar	338,441	Mar. 23	2118	554	34	1339
Reedy, John P., *et al.* (See Brubaker, John H., assignor.)						
Rees, B. F. (See Timms, James, assignor.)						
Rees, Frank, New York, N. Y. Repeating fire-arm	337,992	Mar. 16	1502	390	34	1208
Rees, Frank, New York, N. Y. Repeating fire-arm	337,993	Mar. 16	1506	390 / 391	34	1209
Reese, Adam R., Phillipsburg, N. J. Tree-box	334,907	Jan. 26	1648	492	34	364
Reese, Jacob, Pittsburg, Pa. Apparatus for drawing wire	338,359	Mar. 23	2000	526	34	1309
Reese, Jacob, Pittsburg, Pa. Machine for rolling metal rods	338,360	Mar. 23	2001	527	34	1310
Reese, Jacob, Pittsburg, Pa. Machine for reducing wire	338,361	Mar. 23	2004	527	34	1310
Reese, Jacob, Pittsburg, Pa. Apparatus for reducing metal rods or wire	338,362	Mar. 23	2005	528	34	1310
Reese, Jacob, Pittsburg, Pa. Apparatus for drawing wire, strips, or rods	338,363	Mar. 23	2007	528	34	1310
Reesor, Nicholas E., Markham, county of York, Ontario, Canada. Gate-opening device	337,618	Mar. 9	1002	257	34	1113
Regenerative Gas Light Company. (See Baker, John W., assignor.)						
Regester, Robert A., Baltimore, Md. Boiler-tube cleaner	334,468	Jan. 19	1390	375	34	272
Register, Henry C., Philadelphia, Pa. Artificial tooth	333,782	Jan. 5	392	107	34	74
Regnier, Theophile J., Springfield, Mass. Bicycle-saddle	334,469	Jan. 19	1391	375	34	272
Reichley, Jacob. (See Frey, Metter, and Reichley.)						
Reid, John, Almonte, Ontario, Canada. Band-tightener	337,061	Mar. 2	962	70	34	975
Reid, Samuel, and J. C. Thayer, Chicago, Ill.; said Reid assignor to said Thayer. Spirit-level	334,052	Jan. 12	772	211	34	151
Reilly, Robert M., and F. King, assignors of one-third to T. M. Dukehart, Baltimore, Md. Faucet	336,159	Feb. 16	1536	405	34	727
Reilly, William J. (See Biggs, Henry, assignor.)						
Rein, Bernard, Urbana, assignor to J. Foos, Springfield, Ohio. Vaporizer for gasoline and oil stoves	335,719	Feb. 9	890	235	34	606
Rein, Bernard, Urbana, assignor to J. Foos, Springfield, Ohio. Vaporizer and burner for gasoline and oil stoves	336,745	Feb. 23	2366	619	34	862
Reinmann, Albert L., Pittsburg, Pa. Pump for the production of high vacuums	338,552	Mar. 23	2256	593	34	1354
Reinmann, Albert L. and C. F., Pittsburg, Pa. Apparatus for the production of high vacuums	338,551	Mar. 23	2255	593	34	1354
Reinmann, Charles F. (See Reinmann, Albert L. and C. F.)						
Reisor, Andrew S., Reisor, La. Lamp-chimney cleaner	336,746	Feb. 23	2367	619	34	862
Reitenour, George U., *et al.* (See Smith, George W., assignor.)						
Reitenour, H., *et al.* (See Smith, George W., assignor.)						
Remmers, Bernhard H., and J. Williamson, Glasgow, county of Lanark, Scotland. Filter-press	338,553	Mar. 23	2259	593	34	1355
Remsen, Thomas H., *et al.* (See Miles, Jackson B., assignor.)						
Rendall, William G., Portland, Oreg. Cutter-head	335,309	Feb. 2	313	82	34	497
Rendall, William G., Portland, Oreg. Tree-feller and pile-cutter	337,018	Mar. 2	187	50	34	959

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Renshaw, John W., and S. H. Perin, Jeffersonville, Ind. Machine for grinding rod-irons	336,301	Mar. 23	1918	564, 565	34	1295
Rensselaer Manufacturing Company. (See Rowe, Ellis L., assignor.)						
Renwick, Edward S., Millburn, N. J. Incubator	335,961	Feb. 9	1221	288	34	668
Renwick, Edward S., Millburn, N. J. Incubator	339,013	Mar. 26	2837	777	34	1461
Requa, Elias B., Jersey City, N. J. Lamp	334,546	Jan. 19	1494	400	34	329
Retzberg, Ernest F., and C. C. Ellis, San Antonio, Tex. Wrench	335,461	Feb. 2	544	143	34	586
Reuter, Heinrich, Hanover, Hanover, Germany. Combined fluting and smoothing iron	336,425	Feb. 16	1969	506	34	789
Revercomb, Charles. (See Schmidt and Revercomb.)						
Rex, Charles A. (See Fowler, Robert F., assignor.)						
Reyner, Francis, Lathrop, Cal. Plow	336,946	Mar. 2	86	23	34	942
Reynolds, Andrew J., Chicago, Ill. Self-loading dumping-car	335,682	Feb. 9	753	201	34	562
Reynolds, Charles S., and J. H. Weldon, Lawrence, Mass. Stand for holding and sealing bottles	334,988	Jan. 26	2066	552	34	408
Reynolds & Co. (See Motley, Francis F., assignor.)						
Reynolds, Dexter, Albany, N. Y. Reducing magnetic oxide-of-iron ores	335,694	Feb. 9	755	.....	34	562
Reynolds, Earl H., Prophetstown, Ill. Check-row corn-planter	334,470	Jan. 19	1391	375	34	272
Reynolds, Gilbert, Ridgefield, Conn. Coffin	334,898	Jan. 26	1846	492	34	364
Reynolds, Joseph G., Providence, R. I. Bed-pan	336,436	Feb. 16	1940	506	34	800
Reynolds, Nathan M., South Chicago, Ill. Railway-signal	335,948	Feb. 2	625	59	34	460
Reynolds, Stephen H. (See Hood and Reynolds.)						
Rheutan, Abram A., assignor to W. H. Hill, Worcester, Mass. Presser for envelope-machines	335,944	Feb. 2	296	59	34	461
Rheutan, Abram A., assignor to W. H. Hill, Worcester, Mass. Envelope-counting machinery	335,945	Feb. 2	297	60	34	461
Rice, Calvin B., East Oakland, Cal. Camping-chest	336,347	Feb. 16	1819	477, 478	34	776
Rice, D. Burt. (See Rice, Wallace E., assignor.)						
Rice, David H., Brookline, Mass. Clutch for tricycles	336,568	Feb. 23	2148	563	34	842
Rice, E. Wilbur. (See Thomson and Rice.)						
Rice, Edwin W., Jr. (See Thomson and Rice.)						
Rice, Kenese F., Eureka Springs, Ark. Bustle	335,625	Feb. 9	756	201	34	562
Rice, Mary E., administratrix. (See Rice, Wallace E.)						
Rice, Mathew, Oakland, Cal. Commutation-ticket holder	336,493	Feb. 16	2014	568	34	812
Rice, Wallace E., deceased; M. E. Rice, administratrix, and assignor to D. B. Rice, Chicago, Ill. Fruit-wrapping machine	336,823	Feb. 23	2469	648, 649	34	901
Richard, Jules, assignor to Société Richard Frères, Paris, France. Recording apparatus for barometers, &c.	334,613	Jan. 19	1564	422	34	307
Richards, Francis H., Springfield, Mass. Mechanical movement	336,302	Mar. 23	1918	505	34	1295
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Stand and treadle mechanism for machinery	335,696	Feb. 9	759	202	34	563
Richards, Francis H., Springfield, Mass., assignor to Pratt & Whitney Company, Hartford, Conn. Reamer-relieving machine	336,066	Feb. 9	1374	364	34	668
Richards, Francis H., Springfield, Mass., assignor to Pratt & Whitney Company, Hartford, Conn. Reamer-relieving machine	336,067	Feb. 9	1376	364	34	694
Richards, Francis H., Springfield, Mass., assignor to Pratt & Whitney Company, Hartford, Conn. Reamer-relieving machine	336,068	Feb. 9	1377	365	34	694
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Button-fastener packing-case	336,589	Feb. 23	2151	563	34	842
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Button-fastener packing-case	337,590	Mar. 9	885	225	34	1091
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Button-fastener-setting instrument	338,554	Mar. 23	2260	594	34	1355
Richards, Henry J., Wilkes-Barré, Pa. Miner's lamp	335,041	Jan. 26	2155	573	34	419
Richards, John, San Francisco, Cal. Shaft-coupling	334,547	Jan. 19	1497	401	34	330
Richards, John, San Francisco, Cal. Steam-engine governor	336,747	Feb. 23	2367	619, 620	34	882
Richards, William H., McKeesport, Pa. Pipe-joint	337,867	Mar. 16	1322	343	34	1176
Richardson, Charles J., Team Valley Paper Mills, Gateshead-on-Tyne, England. Apparatus for the manufacture of paper	338,364	Mar. 23	2009	528	34	1310
Richardson, Frederick, Providence, R. I. Clasp-fastening for overshoes	338,535	Mar. 23	2262	594	34	1355
Richardson, Frederick E., Uniontown, Iowa. Washing-machine	338,442	Mar. 23	2130	554	34	1330
Richardson, George W., Plano, Ill. Device for converting motion	336,789	Mar. 30	2002	685	34	1460
Richardson, George W., assignor to J. H. Shepard and J. Dalese, Chicago, Ill. Stone-conveyer	334,471	Jan. 19	1398	376	34	272
Richardson, Isaac C., Nashua, N. H. Combined heating and cooking apparatus	333,672	Jan. 5	231	63	34	45
Richardson, John D., Brooklyn, assignor to himself, F. L. Manchester, and J. W. Sullings, New York, N. Y. Tripod-standard	335,774	Feb. 9	976	258	34	688
Richardson, Marcus F. (See Wisner, Andrew J., assignor.)						
Richardson, Millard F., Liberty, Ind. Roller-skate	336,437	Feb. 16	1941	509	34	800
Richardson, Robert, Detroit, Mich. Musical top	336,843	Feb. 9	1067	282	34	630
Richars, John P., and S. Scott, St. Louis, Mo. Printing-machine	339,014	Mar. 30	2940	778	34	1461
Richmond, Henry T., assignor to C. I. Duncan, Malvern, Iowa. Harness	336,494	Feb. 16	2015	538	34	812
Richmond, Samuel H., Norwalk, Conn. Stove-lid holder	335,627	Feb. 9	760	202	34	563
Richter, F. (See Schmidt, Carl M., assignor.)						
Richter, Peter J., assignor to L. T. Wilcox and J. P. Light, Bay City, Mich. Wagon-gearing	338,676	Mar. 30	2739	719	34	1444
Rickard, Ira, Cobleskill, assignor of one-half to W. H. Sidney, Schoharie, N. Y. Revolving signal for railway-trains	337,283	Mar. 2	541	142	34	1096
Ricker, Wentworth G., Rochester, N. Y. Hay-carrier	334,614	Jan. 19	1566	422, 423	34	307
Ricks, James, Washington, D. C. Horseshoe	338,781	Mar. 30	2803	696	34	1490
Riddell, William. (See Freliechr, Julius, assignor.)						
Riddle, John J., Madisonville, Ohio. Molder's facing	335,628	Feb. 9	761	.....	34	562
Rider, Alexander K., Walden, N. Y. Hydrocarbon-vapor engine	335,639	Feb. 9	761	202	34	564
Rider, John T., South Oil City, Pa. Railway-switch	336,348	Feb. 16	1821	476	34	777
Ridgeway, George, Towanda, Pa. Blacking-box	336,748	Feb. 23	2369	620	34	882
Ridgway, Charles L., Boston, Mass. Automatic damper for stoves and furnaces	336,961	Feb. 16	1700	443	34	754
Riedell, John H., and L. W. Litch, Lynn, Mass. Machine for making box-toes and stiffeners for boots or shoes	337,092	Mar. 2	263	70, 71	34	975
Rieley, William L. (See McAneny and Rieley.)						
Ries, Elias E., assignor of one-fourth to A. H. Henderson, Baltimore, Md. Automatic alarm signaling and safety device for railways	334,194	Jan. 12	906	265, 266	34	190
Ries, Elias E., assignor of one-half to A. H. Henderson, Baltimore, Md. Conduit for electric and cable railways	338,556	Mar. 23	2263	594	34	1356

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Rigney, William J., Brooklyn, N. Y., and J. Wolf, Hoboken, N. J., assignors to Holmes, Booth & Haydens, Waterbury, Conn. Composition for insulating electric wires	336,018	Feb. 9	1208	.....	34	661
Riker, Charles B. (See Houchin, Riker, and Houchin.)						
Riker, Daniel J., assignor to S. Crump, Montclair, N. J. Granulating molten metal	336,590	Feb. 23	2158	.....	34	842
Riker, Daniel J., assignor to S. Crump, Montclair, N. J. Matrix	336,684	Feb. 23	2471	649	34	902
Riley, Bernard J., East Newark, N. J. Traveling-bag	336,589	Feb. 16	2064	542	34	821
Riley & Melhuish. (See Craik, Andrew, assignor.)						
Riley Railway Construction Company. (See Bartholomew, Francis A., assignor.)						
Riley, Walker, Lowell, Mass. Cap spinning and twisting machine	335,985	Feb. 2	418	108	34	516
Rinehart, Alfred E., Denver, Colo. Camera-shutter	336,788	Mar. 30	2983	686	34	1460
Ring, Charles P. (See Land, James P., assignor.)						
Ringen, John, St. Louis, Mo. Sad-iron heater	336,591	Feb. 23	2158	563	34	843
Rinman, Gustaf O., Cincinnati, Ohio. Ice-machine	335,986	Feb. 2	419	108	34	517
Ripley, Daniel C., Pittsburg, Pa. Shaping glassware	336,606	Feb. 23	2208	591, 592	34	863
Rippey, William, Allegheny City, Pa. Furnace for the combustion of natural gas	337,808	Mar. 16	1382	344	34	1176
Ripson, John D., Toronto, Ontario, Canada. Car-coupling	336,530	Feb. 16	2065	542, 543	34	821
Risdon, William B., Trenton, N. J., assignor to American Saw Company, New York, N. Y. Saw-tooth	337,063	Mar. 2	266	71	34	976
Ritch, Milton M., and P. McRae, Laurinburg, N. C. Cotton and corn sweep	336,160	Feb. 16	1537	405	34	727
Ritchel, Charles F., assignor to Ives, Blakeslee & Co., Bridgeport, Conn. Toy	335,588	Feb. 2	622	163	34	551
Ritchey, Adelbert L. (See Wolfe, Jacob W., assignor.)						
Ritchie, Benjamin F., assignor of one-half to J. Staley, Pittsburg, Pa. Pipe-coupling	336,783	Mar. 30	2805	686	34	1461
Ritchie, David A., Cambridgeport, Mass. Sheet-metal pipe	338,677	Mar. 30	2734	719	34	1444
Rittase, E. Nelson, Baltimore, Md. Oven-peel	337,809	Mar. 16	1394	344	34	1176
Ritter, Charles H., Chicago, Ill. Dioramic or panoramic structure	336,557	Mar. 23	2264	595	34	1356
Ritter, Eugen, and C. Kellner, Geors, Austria-Hungary, assignors to W. A. Russell, trustee, Lawrence, Mass. Apparatus for the manufacture of sulphurous acid, &c	336,558	Mar. 23	2267	595	34	1356
Ritter, Eugen, and C. Kellner, Geors, Austria-Hungary, assignors to W. A. Russell, trustee, Lawrence, Mass. Manufacturing sulphites	338,784	Mar. 30	2805	686	34	1461
Ritzman, Jackson, Madison, assignor of one-half to T. H. Cobb, Franklin County, Iowa. Brace for threshing-machines and separators	337,199	Mar. 2	422	110	34	1004
Robb, James T., New York, N. Y. Extension-electrolier	336,947	Mar. 2	87	23	34	942
Robbins, Alfred L., Chicago, Ill. Frictional electrical machine	335,482	Feb. 2	546	143, 144	34	538
Robbins, Arthur C., Buffalo, assignor of one-half to E. C. Cole, Albion, and J. D. Larkin, Buffalo, N. Y. Printing-telegraph	336,948	Mar. 2	88	24	34	942
Robbins, Lewis H., McCool, Ind. Hay-loader						
Robbins, William. (See Helm, Frederick, assignor.)						
Robburts, George W., assignor of one-half to J. E. Polk, Elmo, Tex. Track-raiser	336,161	Feb. 16	1538	405, 406	34	727
Robburts, George W., assignor of one-half to J. E. Polk, Elmo, Tex. Baling-press	336,785	Mar. 30	2806	687	34	1461
Roberts, Benjamin P., Boston, Mass. Registering ticket-stamp	336,162	Feb. 16	1539	406	34	727
Roberts, Benjamin P., Boston, Mass. Hand implement for corking bottles	337,457	Mar. 9	777	198	34	1073
Roberts, Frank W., assignor of one-half to S. Benda, Syracuse, N. Y. Barrel-truck	337,670	Mar. 16	1365	344	34	1177
Roberts, George A., Three Rivers, Mich. Thrashing-machine tooth	335,987	Feb. 2	422	108	34	517
Roberts, George C., New Haven, Conn. Cold-storage chamber or refrigerator	336,949	Mar. 2	90	24	34	942
Roberts, Jacob, Brooklyn, N. Y. Apparatus for distilling wood, &c	333,673	Jan. 5	233	63	34	45
Roberts, John S., assignor to Stein Manufacturing Company, Rochester, N. Y. Ornamenting glass surfaces	334,472	Jan. 19	1394	376	34	272
Roberts, Robert T., Racine, Wis. Machine for blacking boots and shoes	336,598	Feb. 23	2153	563	34	843
Roberts, Robert T., Racine, Wis. Potato-digger	336,667	Feb. 23	2270	592, 593	34	863
Robertson, Hugh R., St. John, New Brunswick, Canada. Rafting logs, timbers, &c	338,104	Mar. 16	1660	431	34	1238
Robertson, John A. (See Stewart and Robertson.)						
Robie, John E. (See Hart, William A., assignor.)						
Robinson, Arthur E., St. Paul, Minn. Soap-holder	335,589	Feb. 2	622	163	34	551
Robinson, Clarence E. (See Wales, Walter H., assignor.)						
Robinson, David F. (See Jackson, Charles A., assignor.)						
Robinson, Edward E., Deering, Me. Combined portfolio and binder	337,704	Mar. 9	1107	285	34	1131
Robinson, Fred. C., New York, N. Y. Sash and door bolt	334,545	Jan. 19	1493	400	34	329
Robinson, Fred. C., New York, N. Y. Transom-pivot	335,810	Feb. 2	316	82	34	490
Robinson, Fred. C., New York, N. Y. Game-board and sectional stand	335,775	Feb. 9	978	259	34	688
Robinson, Henry A., Foxcroft, Me. Postal packet	336,690	Jan. 5	233	145	34	109
Robinson, James B., Chicago, Ill. Railway-car-door cleat or fastener	335,092	Jan. 26	2238	591	34	422
Robinson, John T., Hyde Park, Mass. Paper-cutting machine	333,788	Jan. 5	233	107	34	74
Robinson, Joseph B. (See Deverell, Persse, assignor.)						
Robinson, Peter, Farmland, Ind. Gate	335,690	Feb. 9	764	203	34	564
Robinson, Samuel F., Columbus, Ohio. Humming toy	337,671	Mar. 16	1386	344	34	1177
Robinson, Stillman W., Columbus, Ohio. Mechanism for winding wire, &c	334,809	Jan. 26	1849	493	34	365
Robinson, William, Boston, Mass. Roller-skate	334,696	Jan. 26	1952	520	34	393
Robison, Charles H., Maywood, Ill. Churn	336,786	Mar. 30	2807	687	34	1461
Rock, Andrew J., Washington, D. C. Coal-hod	335,776	Feb. 9	980	259	34	688
Rockford Boot and Shoe Manufacturing Company. (See Tribou, Samuel C., assignor.)						
Rockwell, G. W., *et al.* (See Magner, Thomas J., assignor.)						
Rodecker, Thomas, Mendon, Ohio. Gate	334,987	Jan. 12	1136	305	34	219
Rodehaver, Oscar F., Zanesville, assignor to E. Ellis, Ellis, and T. W. Lewis, Zanesville, Ohio. Steam-engine	339,074	Mar. 30	3017	797, 798	34	1493
Rodes, James A., and N. C. Morgan, Deerbrook, Miss. Seed-planter	334,697	Jan. 26	1954	520	34	393
Rodgers, Alexander, Muskegon, Mich. Log-turner	337,705	Mar. 9	1108	286	34	1131
Rodgers & Sons, Joseph. (See Hatfield, William B., assignor.)						
Rodiger, William. (See Rodington, William H., assignor.)						
Rodrian, Jacob G. (See Silbermann and Rodrian.)						
Roe, John O., *et al.* (See Young, Jacob J., assignor.)						
Roe, John P., and P. R. Bedlington, Bilbao, Spain. Clip apparatus for transporting loads by means of ropes or cables	338,615	Mar. 23	2344	612, 613, 614, 615, 616, 617	34	1360
Roelofs, Anthony, Philadelphia, Pa. Car-door retainer	336,019	Feb. 9	1209	347	34	661
Roemer, William, Newark, N. J. Traveling-bag clip	334,195	Jan. 12	1008	266	34	194
Roemer, William, Newark, N. J. Handle for satchels, &c	334,196	Jan. 12	1008	267	34	194
Roemhildt, Henry, Baltimore, Md. Barrel-bung	337,084	Mar. 2	267	71	34	976

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Rogers, Charles D., Providence, R. I. Nail-feeding mechanism	334,898	Jan. 26	1956	531	34	894
Rogers Fence Company. (See Rogers, Timothy, assignor.)						
Rogers, Frederick O., Boston, Mass. Elastic spring-coupling	336,593	Feb. 23	2155	564	34	843
Rogers, Homer, trustee. (See Noble, Oscar L., assignor.)						
Rogers, Isaac N., New York, N. Y. Spring-latch for scuttles, &c	333,674	Jan. 6	226	64	34	46
Rogers, James S. (See Scripture, Frank, assignor.)						
Rogers, Lovejoy, Burlington, Iowa. Practice-case for postal clerks	334,473	Jan. 19	1395	376	34	278
Rogers, Preston E., Mullin's Depot, S. C. Seeding-machine	334,396	Jan. 12	1276	344	34	244
Rogers, Samuel C., Hamilton, Ontario, Canada. Saw-filing machine	336,787	Mar. 30	2068	687	34	1421
Rogers, Timothy, assignor, by mesne assignments, to Rogers Fence Company, Springfield, Ohio. Lawn-mower	333,549	Jan. 5	69	20	34	16
Rogers, Timothy, assignor, by mesne assignments, to Rogers Fence Company, Springfield, Ohio. Lawn-mower	333,550	Jan. 5	70	20	34	16
Rogers, William, assignor to himself, A. W. Burke, H. Warner, H. Gehl, and P. Hoelzel, New Orleans, La. Feeding fine fuel	338,105	Mar. 16	1661	432	34	1236
Roggy, Josef, Saar-Louis, Prussia, Germany. Money-till	337,994	Mar. 16	1511	391 / 392	34	1210
Rohme, James H., Newburg, N. Y. Controlling mechanism for power-driven machinery	336,350	Feb. 16	1823	479	34	778
Roll, Leonard, Wilkes-Barré, Pa. Grate-bar	335,540	Feb. 2	624	163	34	552
Rollason, Joseph G. (See McIlvenna and Rollason.)						
Rolle, Friedrich B., Ischopenthal, Saxony, Germany. Grain hulling and scouring machine	337,284	Mar. 2	549	142	34	1096
Rollins, Alice W., *et al.* (See Coultaus, Joseph A., assignor.)						
Rollins, Daniel M., *et al.* (See Coultaus, Joseph A., assignor.)						
Rollins, Samuel G., Boston, Mass. Ore-crusher	337,085	Mar. 2	268	72	34	976
Romadka, Anton V., Milwaukee, Wis. Caster for trunks	335,148	Feb. 2	66	18	34	458
Romadka, Anton V., Milwaukee, Wis. Caster for trunks	335,149	Feb. 2	69	19	34	458
Romans, Abijah L., and J. M. Peregrine, Jamestown, N. Y. Thill-coupling	335,844	Feb. 9	1068	282	34	640
Roney, John A., Corning, N. Y. Furnace-door	338,616	Mar. 23	2349	617 / 618	34	1370
Rood, Edwin O., Maple Park, Ill. Hoisting apparatus	334,810	Jan. 26	1851	498	34	865
Rood, H. W. (See Weber, Adolph, assignor.)						
Roosevelt, Hilborne L. (See Haskell, Charles S., assignor.)						
Roosevelt, Hilborne L., New York, N. Y., and C. S. Haskell, Philadelphia, Pa.; said Haskell assignor to said Roosevelt. Pneumatic action for organs	336,351	Feb. 16	1824	479	34	778
Root, John B., Port Chester, N. Y. Pipe	335,631	Feb. 9	765	208	34	584
Roovers, Alexander H. and A. W., New York, and R. G. Williams, Brooklyn, N. Y. Galvanic battery	336,352	Feb. 16	1827	479	34	778
Roovers, Alfred W. (See Roovers and Williams.)						
Röper, Victor, Duisburg-on-the-Rhine, Prussia, Germany. Chain-machine	338,106	Mar. 16	1663	432	34	1236
Ropp, Jerome W., Elyria, Ohio. Loop and bar for harness	336,594	Feb. 23	2156	564	34	843
Rose, Andrew L., West Troy, N. Y. Pipe-vise	334,615	Jan. 19	1589	423	34	908
Rose, Herman O. (See Spencer, Ralph L., assignor.)						
Rose, John H., Prairie du Sac, Wis. Adjustable reel for harvesters	337,285	Mar. 2	543	143	34	1097
Rose, William P. (See Tinsley and Rose.)						
Rosebaugh, John C. (See Stahl and Rosebaugh.)						
Rosecrans, James H., Cincinnati, Ohio. Scale-indicator	336,595	Feb. 23	2156	564	34	843
Rosensteel, William W., Pittsburg, Pa. Coal-tipple	335,632	Feb. 9	766	208	34	584
Rosensteel, William W., Vancepert, assignor to Oliver Brothers & Phillips, Pittsburg, Pa. Coal-tipple	333,891	Jan. 5	533	145	34	100
Rosentreter, Frank L., assignor to Champion Safety Lock and Novelty Company, Cleveland, Ohio. Sash-fastener	334,899	Jan. 26	1900	521	34	884
Ross, Donald G., Hatton, Mich. Paving-block machine	339,015	Mar. 30	2942	778	34	1481
Ross, George P., Chicago, Ill. Reversible mitten	334,900	Jan. 26	1961	521	34	884
Ross, James B., Toronto, assignor of one-half to H. T. Watkins, St. Bernice, Ind. Convertible chair	333,892	Jan. 5	535	145 / 146	34	100
Ross, Lyon P., Rockford, Ill. Combined wash-stand and table	338,646	Mar. 23	2389	629 / 630	34	1377
Rossell, James M. (See Stoddard and Rossell.)						
Rotary Steam Snow Shovel Manufacturing Company. (See Leslie, Edward, assignor.)						
Roth, Elias D., assignor of one-half to A. H. Patterson, Fort Collins, Colo. Vehicle-spring	337,791	Mar. 9	1212	315	34	1140
Roth, McMahon & Co. (See De Tamble, Martin, assignor.) (Reissue.)						
Roth, Renben D., Mummasburg, Pa. Cow-milker	335,042	Jan. 26	2156	574	34	419
Rothgiesser, Georg, Bielefeld, Westphalia, Germany. Bicycle-saddle	335,246	Feb. 2	228	60	34	481
Rothrock, Oscar, New York, N. Y. Feed-water heater	334,197	Jan. 12	1004	267	34	194
Rotthoff, William, Pittsburg, Pa. Blast-furnace appliance	336,749	Feb. 23	2369	620 / 621	34	883
Rouse, Franklin H. (See Norton and Rouse.)						
Rousseau, François E., H. B. Goodale, Au Sable, and M. Côté, Oscoda, Mich. Car-coupling	336,950	Mar. 2	91	25	34	943
Rowe, Ellis L., assignor to Rensselaer Manufacturing Company, Lansingburg, N. Y. Proportional weighing-scale	334,288	Jan. 12	1138	305	34	220
Rowe, Frank M., *et al.* (See Johns, Will R., assignor.)						
Rowland, Christian, Lanark, Ill. Power and speed regulator	335,541	Feb. 2	625	164	34	552
Rowles, Eli. (See McFarland, Will F., assignor.)						
Rowley, Edward W., *et al.* (See Pets, John, assignor.)						
Roy, François, Aylmer, Quebec, Canada. Hoop for vessels	335,720	Feb. 9	891	235	34	606
Royall, John P., Columbia, Mo. Globe for showing the directions of the winds	333,971	Jan. 5	649	178	34	122
Royce, Wesley, Toledo, assignor of one-half to J. F. Kilby, Sandusky, Ohio. Stop-valve for water and gas mains	337,438	Mar. 9	778	198	34	1074
Royds, John, Chester, Pa. Extension-ladder	333,784	Jan. 6	395	107	34	75
Rubenstein, Nathan, Chicago, Ill. Clothes-hook	338,677	Mar. 23	2435	642	34	1385
Rubin, Eduard, Thun, Switzerland. Bullet	338,191	Mar. 16	1773	462	34	1961
Rubin, Eduard, Thun, Switzerland. Barrel for fire-arms	338,192	Mar. 16	1774	462	34	1961
Rubin, Max. (See Karp, Ida, assignor.)						
Rucker, William L., Martinsville, Mo. Corn-planter	336,750	Feb. 23	2172	621	34	883
Rudd, Charles L., and E. J. Manning, Lake City, Minn. Portable folding hammock-stand	337,792	Mar. 9	1213	315	34	1140
Rudd, John N., assignor of one-half to S. Parker, Sparta, Tenn. Fruit-gatherer	338,303	Mar. 23	1919	505	34	1295
Ruddy, Robert. (See Kacsander and Ruddy.)						
Ruddy, Robert, Mount Vernon, assignor to Nathan Manufacturing Company, New York, N. Y. Lubricator	334,679	Jan. 19	1676	448	34	894
Rueff, Emil. (See Convert and Rueff.)						
Ruckstuhl, John, Matteawan, N. Y. Ripping-tool	334,734	Jan. 19	1740	464	34	896
Ruffin, Robert. (See Ruffin, William and R.)						
Ruffin, William and R., Como, Miss. Wheel cultivator and fertilizer-distributer	336,163	Feb. 16	1541	406 / 407	34	727

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Rupe, William G., and O. Everts, Washington, Mo. Horse-collar	336,869	Feb. 23	2226	606	34	912
Rummell, Richard W., Buffalo, N. Y. Ellipsograph	333,972	Jan. 5	651	178	34	122
Ramsey, Arthur W., New Kiowa, Kans. Prairie-fire extinguisher	337,086	Mar. 2	269	72	34	976
Rundel, Thomas J., Brooklyn, N. Y. Coffee-roaster	339,114	Mar. 30	3079	815	34	1504
Rundle, George H., Palmyra, Wis. Hay-rack	339,075	Mar. 30	3019	798	34	1493
Rundle, Thomas, Jr., Iron Mountain, Mich. Smoke-conductor	337,067	Mar. 2	272	72	34	977
Rundquist, Peter, New York, N. Y. Blind-slat adjuster	335,098	Jan. 26	2230	592	34	432
Ring, Georg A., Copenhagen, Denmark. Pneumatic speed-indicator	336,069	Feb. 9	1379	365	34	604
Runyan, Charles C., Mansfield, Ohio. Wrench	336,993	Feb. 16	1701	449	34	754
Ruse, Emanuel, Lovettsville, Va. Ironing-table	339,115	Mar. 30	3080	815	34	1504
Russell, A. E., administrator. (See Clayton, Robert G.)						
Russell, Clement, Massillon, Ohio. Grain-drill	335,791	Feb. 9	891	235	34	607
Russell & Erwin Manufacturing Company. (See Burgess, Charles M., assignor.)						
Russell & Erwin Manufacturing Company. (See Jones, Horace K., assignor.)						
Russell & Erwin Manufacturing Company. (See Lyons, Thomas, assignor.)						
Russell & Erwin Manufacturing Company. (See Spencer, William D., assignor.)						
Russell, George, assignor to E. H. Leisure, McKeesport, Pa. Gas-supply pipe	337,350	Mar. 2	696	164	34	1041
Russell, George A. (See Sparrow, Alphonso B., assignor.)						
Russell, Manuel, Boston, assignor of one-half to E. H. Palmer, Reading, F. H. Collins, Revere, and C. W. Colesworthy, Boston, Mass. Pump	336,263	Feb. 16	1702	443	34	754
Russell, Milo M., Hayward, Wis. Tongue-support	334,289	Jan. 12	1139	305	34	220
Russell, Samuel, Brooklyn, assignor to American Electric Arms and Ammunition Company, New York, N. Y. Electric fire-arm	337,872	Mar. 16	1327	345	34	1177
Russell, Samuel, Brooklyn, assignor to American Electric Arms and Ammunition Company, New York, N. Y. Electric gun	337,873	Mar. 16	1331	345	34	1178
Russell, William A. (See Gould, Simeon L., assignor.)						
Russell, William A., trustee. (See Ritter and Kellner, assignors.)						
Russell, William F., New York, N. Y. Bustle	336,870	Feb. 23	2227	606	34	912
Russell, William J. (See Simmons, Edward M., assignor.)						
Rust, Oscar, Ithaca, N. Y. Well-drilling machine	336,353	Feb. 16	1698	479 / 480	34	778
Rüter, Johan S. (See Müller and Rüter.)						
Rutherford, Robert. (See Anderson and Rutherford.)						
Ryan, William, *et al.* (See O'Riordan, James, assignor.)						
Rykard, John W., Abbeville, S. C. Automatic fan	334,053	Jan. 12	774	211 / 219	34	152
Ryle, John, Paterson, N. J. Machine for singeing fabrics	334,474	Jan. 19	1396	377	34	278
Sabin, Almer L., Washington, Ind. Burglar-alarm	337,995	Mar. 16	1513	392	34	1210
Safety Steam Generator Company. (See Zell, Robert R., assignor.) (Reissue.)						
Sage, John, *et al.* (See Sweet, Welcome F., assignor.)						
Sager, Rockwood, *et al.* (See Johns, Will R., assignor.)						
Salmon, William C., Portland, Oreg. Steam engine or pump	333,675	Jan. 5	226	64, 65	34	46
Salmon, William S., and W. E. Halslett, assignors to Cleaver & Hollis, Wilmington, Del. Grater	337,619	Mar. 9	1008	258	34	1114
Sample, George W., York, Pa. Oil mixer and emulsifier	336,438	Feb. 16	1942	509	34	800
Sampson, Adolph, W. H. Wright, and F. L. Kinsman, Buffalo, N. Y. Thill-coupling	334,476	Jan. 19	1398	377	34	278
Samuel, Edward, Philadelphia, Pa. Transfer-truck and turn-table	335,483	Feb. 2	551	144 / 145	34	529
Samuel, Edward, Philadelphia, Pa. Treating metals	336,489	Feb. 16	1943	509	34	800
Samuel, Edward, assignor to W. Wharton, Jr., & Co., (limited,) Philadelphia, Pa. Railway-switch	335,484	Feb. 2	552	145	34	540
Samuel, Edward, assignor to W. Wharton, Jr., & Co., (limited,) Philadelphia, Pa. Device for controlling the motive power and brakes of power-driven cars	336,751	Feb. 23	2378	621 / 622	34	883
Sandelbach, John L., Mount Ida, Wis. Roller and pulverizer	334,984	Jan. 26	2069	552	34	404
Sandelin, Nils F., Chicago, Ill. Window frame and sash	335,633	Feb. 9	767	208	34	585
Sanders, Eliza. (See Sanders, Louis, assignor.)						
Sanders, Harry A. (See Sanders, Louis and H. A.)						
Sanders, Louis, assignor to E. Sanders, Brooklyn, N. Y. Fastening for hand-bags and other articles	335,311	Feb. 2	317	88	34	496
Sanders, Louis, Brooklyn, and H. A. Sanders, New York, N. Y. Waist-belt buckle	334,901	Jan. 26	1963	522	34	885
Sanders, William S. (See Leggett and Sanders.)						
Sanderson, Frederick, Prospect, Ill. Carpet-cover	336,951	Mar. 2	92	25	34	943
Sandmann, Bernhard, Brooklyn, N. Y. Paper-cutting machine	337,266	Mar. 2	544	143	34	1027
Sanford, Albert, Oshkosh, Wis. Die for forming pikes	337,020	Mar. 9	1004	258	34	1114
Sanford, Benjamin, Smartsville, Cal. Fly-trap	333,676	Jan. 5	227	65	34	46
Sanford, George W., assignor of one-half to T. A. Gotrel, Thomaston, Conn. Sweat-scraper for horses	334,198	Jan. 12	1005	267	34	195
Sanford, L. Arthur, assignor of two-thirds to L. A. and R. A. Sanford, Bristol, Conn. Spirit-level	337,021	Mar. 9	1005	258	34	1114
Sanford, Leverett A., *et al.* (See Sanford, L. Arthur, assignor.)						
Sanford, Rufus A., *et al.* (See Sanford, L. Arthur, assignor.)						
Sanford, Sidney J., Barrie, Ontario, Canada. Fire-telegraphy	337,439	Mar. 9	779	199	34	1074
Sargent & Co. (See Shaw, John H., assignor.)						
Sargent & Co. (See Sparks, William E., assignor.)						
Sargent, Frank P., New Haven, Conn. Bed-clothes holder	337,200	Mar. 2	423	111	34	1004
Sasenot, Louis R., New Orleans, La. Apparatus for emptying privy-vaults	336,878	Mar. 30	2735	720	34	1445
Sater, Hans H., Dubuque, Iowa. Harrow	334,054	Jan. 12	775	213	34	152
Sauder, John M., Harrisburg, Pa. Map and window-shade case	338,679	Mar. 30	2736	720	34	1445
Saunders, Charles R. P., assignor of one-half to M. H. Webber and A. T. Sinker, Boston, Mass. Rope-serving machine	333,677	Jan. 5	229	65	34	47
Saunders, Ira J., Union City, Mich. Button-fastener	333,551	Jan. 5	71	21	34	16
Savage, Julius B. (See Deeble, John, assignor.)						
Saward, George A. (See Castro, Angel, assignor.)						
Sawyer, Charles H., assignor to Sawyer Steam Plow Company, Mapleton, Dak. Ter. Traction-engine	336,440	Feb. 16	1945	510	34	800
Sawyer, George H., Lamoille, Ill. Corn-knife and shield. (Reissue)	10,693	Feb. 23	2564	677	34	919
Sawyer, George H., Lamoille, Ill. Vehicle-seat	339,016	Mar. 30	2943	779	34	1482
Sawyer, Henry F., Providence, R. I. Ax-helve wedge	338,193	Mar. 16	1774	463	34	1262
Sawyer Steam Plow Company. (See Sawyer, Charles H., assignor.)						
Sayers, Walter S., Chicago, Ill. Ventilator	338,304	Mar. 23	1990	505 / 506	34	1295
Scarles, Benjamin, assignor to himself and C. Swinscoe, Clinton, Mass. Ventilator	335,963	Feb. 9	1235	328	34	609
Scarles, Benjamin, assignor to himself and C. Swinscoe, Clinton, Mass. Lantern	336,596	Feb. 23	2157	564	34	843
Scarritt, Sanford G., St. Louis, Mo. Reclining-chair	337,521	Mar. 9	886	226	34	1091

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Schaal, Eugen, Stuttgart, Würtemberg, Germany. Manufacture of resin-acid ethers	335,485	Feb. 2	552	.....	34	540
Schadt, Tilghman. (See Kratzer, Wayne, assignor.)						
Schaefer, John C., and J. A. Hagmayer, New York, N. Y. Safety-valve for beer-casks	337,622	Mar. 9	1006	256	34	1114
Schaeffer, Gottlob, Göppingen, Würtemberg, Germany. Magnetic separator	339,017	Mar. 30	2944	779	34	1468
Schaeffer, Wilkison, *et al.* (See Hardenbergh, Henry D., assignor.)						
Schaffer, John T., and B. L. Steefel, Rochester, N. Y. Paper satchel	335,777	Feb. 9	960	250	34	632
Schall, Eugene, Stuttgart, Würtemberg, Germany. Converting petroleum and similar hydrocarbons into acids	335,969	Feb. 9	1284	.....	34	669
Schallehn, Henry, assignor of one-half to H. B. Wareing, London, England. Repetition-action for pianos	338,617	Mar. 23	2350	618	34	1370
Scharar, Christian H., Scranton, Pa. Speed and time recorder	335,312	Feb. 2	318	88	34	499
Scheef, Charles, assignor of one-half to Brunswick, Balke, and Collender Company, Chicago, Ill. Shaking-grate for furnaces	338,305	Mar. 23	1929	506	34	1326
Scheel, John H., New York, N. Y. Convertible keg	338,443	Mar. 23	2121	555	34	1339
Scheel, John H., New York, N. Y. Convertible keg	338,890	Mar. 30	2737	720	34	1445
Schefold, Frank, New Albany, Ind. Annealing-oven for glass	335,964	Feb. 9	1227	320	34	669
Scheidler, Reinhard, Newark, Ohio. Wheel	333,678	Jan. 5	240	66	34	47
Schellenberg, Herman, and E. Stiemke, Horn's Corners, Wis. Egg-register	335,778	Feb. 9	961	260	34	623
Schenck, Robert C., Jr., Dayton, Ohio. Car-door lock						
Scherer, George E. (See Brush, George, assignor.)						
Scherr, Frederick, Brooklyn, N. Y. Steam-boiler	336,441	Feb. 16	1948	{510 511}	34	801
Scherr, Frederick, Brooklyn, N. Y. Steam-boiler	338,618	Mar. 23	2351	618	34	1370
Scheuer, Simon, New York, N. Y. Fan	339,861	Mar. 30	2737	721	34	1445
Schifferly, Conrad, Fort Wayne, Ind. Churn	337,440	Mar. 9	782	199	34	1074
Schilling, Frederick, assignor to Cargill & Co., Minneapolis, Minn. Wire-netting machine	336,060	Feb. 9	1310	348	34	661
Schillinger, Fredrick, Toledo, Ohio. Machine for mixing asphalt	336,164	Feb. 16	1543	407	34	798
Schillinger, John J., New York, N. Y. Cable railway	337,622	Mar. 9	1006	256	34	1115
Schillinger, John J., New York, N. Y. Underground conduit for electric wires	337,624	Mar. 9	1009	256	34	1115
Schillinger, John J., New York, N. Y. Underground conduit for electric wires	337,592	Mar. 9	987	226	34	1091
Schimmel, Oscar, Chemnitz, Saxony, Germany. Apparatus for disinfecting	338,559	Mar. 23	2270	595	34	1356
Schinneller, Jacob, Pittsburg, Pa. Gas-conveying conduit	335,947	Feb. 9	939	60	34	481
Schlag, Charles, New York, N. Y. Clasp for chains						
Schlegel, Israel, assignor of one-half to T. Parkinson, Topeka, Kans. Tongue-support for vehicles	335,313	Feb. 2	319	83	34	499
Schlegelmilch, George E., Philadelphia, Pa. Station-indicator	334,909	Jan. 26	1963	522	34	295
Schlesinger, William M., Philadelphia, Pa. Electric railway	339,018	Mar. 30	2945	779	34	1468
Schlicht & Field. (See Schlicht, Paul J., assignor.)						
Schlicht, Paul J., assignor to Schlicht & Field, Rochester, N. Y. Bill-file	338,798	Mar. 30	2909	668	34	1422
Schlichting, Albert T., New York, N. Y. Umbrella-handle	335,314	Feb. 2	320	84	34	499
Schloesser, Tobias. (See Hollenberger, John A., assignor.)						
Schlund, Henry, Aston Cross, county of Warwick, England. Revolver	337,901	Mar. 2	494	111	34	1005
Schmals, Arthur, *et al.* (See Nolte, August, assignor.)						
Schmed, John. (See Schmidt, August, assignor.)						
Schmid, Charles, assignor of one-half to G. Farnsworth, Chicago, Ill. Slide-valve	337,441	Mar. 9	768	200	34	1074
Schmid, Joseph, New Orleans, La. Railway-station indicator	334,478	Jan. 19	1400	378	34	273
Schmidt, Andrew, and C. Revercomb, Winnipeg, Manitoba, Canada. Hose-reel	337,592	Mar. 9	988	226	34	1092
Schmidt, Anton, *et al.* (See Poell, Hermann, assignor.)						
Schmidt, August, assignor of one-half to J. Schmed, Cincinnati, Ohio. Machine for producing ornamental surfaces on textile fabrics	334,477	Jan. 19	1399	377	34	273
Schmidt, Carl M., Berlin, Germany, assignor to F. Richter, Lille, France. Producing water-marks	334,199	Jan. 12	1006	.....	34	195
Schmidt, Christian, assignor of one-fourth to J. Engelhardt, Blue Island, Ill. Cutting apparatus for harvesters	337,625	Mar. 9	1010	250	34	1115
Schmidt, Christian A., Hoboken, N. J. Chenille ornament	335,315	Feb. 2	321	84	34	499
Schmidt, E. Hugo. (See Brammer and Schmidt.)						
Schmidt, Gustav, New York, N. Y. Safety-vent	336,442	Feb. 16	1950	511	34	801
Schmidt, Joseph. (See Bosworth and Schmidt.)						
Schmidt Label and Lithographic Company. (See Rahaskopff, Carl, assignor.)						
Schmitt, Robert, Indianapolis, Ind. Machine for sponging cloth	336,752	Feb. 23	2375	622	34	884
Schmitt, Rudolf, assignor to F. Von Heyden, Dresden, Saxony, Germany. Manufacture of salicylic acid	334,290	Jan. 12	1140	.....	34	220
Schmitt, Rudolf, Dresden, Saxony, assignor to F. V. Nachfolger, Radebeul, near Dresden, Germany. Manufacture of salicylic-acid compounds	338,365	Mar. 23	2010	.....	34	1311
Schmits, Albert, Essen-on-the-Ruhr, assignor to W. Raydt, Hanover, Prussia, Germany. Production of cold and manufacture of ice and apparatus therefor	336,958	Mar. 2	83	25, 26	34	943
Schmits, Henry E., and E. Aldom, Brooklyn, N. Y. Embroidering-machine	337,088	Mar. 2	873	73, 73	34	977
Schneider, Alois, San Francisco, Cal. Bomb-lance	333,552	Jan. 5	72	21	34	16
Schnelle, Fridolin, West Hoboken, N. J. Embroidering-machine	335,094	Jan. 26	2081	598	34	433
Schnoor, August, San Francisco, Cal. Weed gatherer and turner	337,442	Mar. 9	786	200	34	1075
Schoch, Caspar, Truckee, Cal. Machine for jointing and dressing circular saws	334,730	Jan. 19	1744	466	34	337
Schoenauer, Otto, Steyr, Austria-Hungary. Magazine fire-arm	336,443	Feb. 16	1951	511	34	801
Schofield, Peter, Pomona, N. J. Faucet	334,291	Jan. 12	1141	304	34	220
School Furnishing Company. (See Conner, William P., assignor.)						
Schooley, Wilson D., Richmond, Ind. Machine for constructing fences	336,869	Mar. 30	2738	721	34	1445
Schott, Arnold. (See Schreiner, Friedrich, assignor.)						
Schott Button Hole Attachment Company. (See Schott, William, assignor.)						
Schott, William, assignor to Schott Button Hole Attachment Company, New York, N. Y. Button-hole attachment for sewing-machines	336,165	Feb. 16	1545	{407 408}	34	798
Schreiber, Josef, Vienna, Austria-Hungary. Flasher	337,594	Mar. 9	989	227	34	1092
Schreiner, Friedrich, assignor to himself and A. Schott, Philadelphia, Pa. Type-case for stereotype-matrix-making machines	336,753	Feb. 23	2376	623	34	884
Schreiner, Friedrich, assignor to himself and A. Schott, Philadelphia, Pa. Machine for making stereotype-matrix impressions	336,754	Feb. 23	2376	623	34	884
Schroeder, C. M. Edward. (See Chichester, Lewis S., assignor.)						
Schroeder, George G., assignor of one-half to J. B. Daughton, Washington, D. C. Horse-shoe	334,200	Jan. 12	1006	{267 268}	34	195
Schuhle, Jacob, San Antonio, Tex. Refrigerating-machine	337,874	Mar. 16	1333	346	34	1178
Schuhmann, George, Reading, Pa. Valve for engines	334,089	Jan. 19	895	226	34	161
Schulze, William, *et al.* (See Connett, Matthew F., Jr., assignor.)						
Schumacher, Joseph G., assignor to himself and C. W. Wall, Buffalo, N. Y. Steam-engine slide	334,811	Jan. 26	1858	490	34	365
				{226 227}	34	161
Schuman, John C., Akron, assignor to W. T. Jebb, Buffalo, N. Y. Manufacture of starch	334,090	Jan. 12	897	227	34	161
Schureb, Albert, assignor of one-half to S. Stemmer, San Francisco, Cal. Clasp	333,679	Jan. 5	941	66	34	47

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Schureman, Howard B., Newark, N. J. Horseshoe	338,788	Mar. 30	2911	668	34	1469
Schüssler, John P., Jr., and W. Fredericks, New York, N. Y. Suspension-clasp for poultry, game, &c	337,019	Mar. 2	193	51	34	960
Schutte, Louis, Philadelphia, Pa. Steam-ejector	337,443	Mar. 9	787	200	34	1075
Schutz, Joseph M., Minneapolis, Minn. Belt-gearing for roller-mills	337,444	Mar. 9	788	201	34	1075
Schuyler Electric Light Company of New York. (See Mott, Samuel D., assignor.)						
Schuyler Electric Light Company of New York. (See Tregening, John, assignor.)						
Schuyler Electric Light Company of New York. (See Waterhouse, Addison G., assignor.)						
Schuyler Electric Light Company of New York. (See Wightman, Merle J., assignor.)						
Schuyler, William D., New York, N. Y. Drain-pipe connection for wash-bowls, water-closets, &c	337,445	Mar. 9	789	201	34	1075
Schwab, Charles M. (See James and Schwab.)						
Schweizer, Ferdinand, Paterson, N. J. Stretching device for clothes-lines	337,020	Mar. 2	193	51	34	960
Scofield, Edward. (See Slocum, John C., assignor.)						
Scollay, George W., New York, N. Y. Treating ores	333,785	Jan. 5	206	.....	34	75
Scotland, James, and F. Cordon, St. Pierre, near Miquelon. Fishing-hook and device for capturing fish	336,963	Mar. 2	96	29	34	943
Scott, Amelia F. (See Oliver, A. Atwood, assignor.)						
Scott, Charles S., Cadiz, Ohio. Clutch	337,021	Mar. 2	194	51	34	961
Scott, John D., Petaluma, Cal. Agricultural implement	337,595	Mar. 9	991	227	34	1092
Scott, John O., Waupaca, assignor of two-thirds to M. F. and J. G. Patterson, Milwaukee, Wis. Dental engine	334,985	Jan. 26	2070	{552 553}	34	404
Scott Manufacturing Company of Baltimore City. (See Winebrenner, Henry C., assignor.)						
Scott, Stewart. (See Richars and Scott.)						
Scott, Thomas, and L. Bovard, Kansas City, Mo. Refrigerating-trough	337,446	Mar. 9	791	202	34	1075
Scott, Walter, Plainfield, N. J. Sheet-gage for printing-machines	335,634	Feb. 9	768	204	34	565
Scott, Walter, Plainfield, N. J. Inking apparatus for printing-machines	336,366	Mar. 23	2011	569	34	1311
Scovill, George W., assignor of one-half to J. Johnston, Chicago, Ill. Nose-bag	336,597	Feb. 23	2150	545	34	844
Scovill, Joseph B. (See Burch and Scovill.)						
Scoville, Horace B., Austinburg, Ohio. Dish-washing machine	337,875	Mar. 16	1234	346	34	1179
Scriptare, Frank, assignor, by mesne assignments, to himself and J. S. Rogers, Rockport, Mass. Dumping-scow	335,816	Feb. 2	322	84	34	499
Scull, Paul, *et al.* (See Bellsle, Robert S., assignor.)						
Scully, Benjamin B., Lynn, Mass. Necktie-supporter	333,553	Jan. 5	73	21	34	16
Sea Island Chemical Company. (See Bacon, Earle C., assignor.)						
Seargent, William F., Marshall, Mo. Combined square, miter, and circle-scriber	338,444	Mar. 23	2121	555	34	1330
Searls, Anson, assignor to Searls Manufacturing Company, Newark, N. J. Whip-socket fastener	335,150	Feb. 2	70	19	34	453
Searls Manufacturing Company. (See Searls, Anson, assignor.)						
Sears, Henry C., Boston, Mass. Two-wheeled vehicle	335,948	Feb. 9	939	60, 61	34	481
Sears, James N., Galloway Station, Ark. Attachment for shingle-machines for edging shingles	335,635	Feb. 9	769	204	34	565
Seawell, Molly E. (See Jennings, Arthur C., assignor.)						
Sebring, Marcena O., *et al.* (See Kellogg, William H., assignor.)						
Seehler, Daniel M., Cincinnati, Ohio. Vehicle-spring	339,019	Mar. 30	2947	780	34	1468
Sedgwick, Alonzo, and J. Naylor, Jr., Poughkeepsie, assignors, by mesne assignments, to D. H. Burrell, Little Falls, N. Y. Paper-feeding machine	336,070	Feb. 9	1360	{366 367}	34	694
Sedgwick, Alonzo, and J. Naylor, Jr., Poughkeepsie, assignors, by mesne assignments, to D. H. Burrell, Little Falls, N. Y. Paper-feeder	336,071	Feb. 9	1387	{367 368}	34	695
See, Joseph B. (See Moore, John R., assignor.)						
Seegmueller, Charles A., Hamilton, Ohio. Vegetable-cutter	338,306	Mar. 23	1923	506	34	1326
Seeley, Marquis F., Fremont, Nebr. Grain-elevator	336,755	Feb. 23	2378	623	34	884
Seely, Obediah, assignor to E. C. Stearns & Co., Syracuse, N. Y. Saw-vise	339,020	Mar. 30	2948	780	34	1468
Seely, Samuel F., assignor of one-half to Brigham, Lamson & Co., Toledo, Ohio. Folding canvas cot and stretcher	334,986	Jan. 26	2071	553	34	404
Seely, William, Port Hope, Mich. Drill-shaft grapple	339,021	Mar. 30	2950	780	34	1468
Seelye, George H., *et al.* (See Brownell, Stephen C., assignor.)						
Seger, Henry, assignor of one-half to F. Wessl, New York, N. Y. Composing-stick	339,076	Mar. 30	3020	798	34	1494
Seger, Robert W., Milwaukee, Wis. Pulverizer for drugs, &c	334,292	Jan. 12	1143	306	34	220
Segur, Daniel, Toledo, Ohio. Register for elevators, &c	336,756	Feb. 23	2361	623	34	885
Seiberling, John. (See Laraway, George W., assignor.)						
Seiberling, John F., Akron, Ohio. Grain-binding harvester	335,723	Feb. 9	892	{225 226 227}	34	607
Seibold, Otto F., Brooklyn, N. Y. Target	334,293	Jan. 12	1144	306	34	221
Seidel, Henry F., New York, N. Y. Chimney-cowl	337,022	Mar. 2	195	51	34	961
Seiwert, Johann J., Detroit, Mich. Beer-pump	336,560	Mar. 23	2372	595	34	1357
Selby, Edward H. (See Depp and Selby.)						
Sellers, William. (See Bancroft, J. Sellers, assignor.)						
Sellner, Leopold, Vienna, Austria-Hungary. Signaling apparatus	337,626	Mar. 9	1011	{259 260}	34	1115
Sellon, John S., Hatton Garden, county of Middlesex, England. Solder for aluminum	333,786	Jan. 5	208	.....	34	75
Semper, Conrad, assignor to Harrison Brothers & Co., Philadelphia, Pa. Manufacture of sizing compounds for paper-makers' use	333,660	Jan. 5	942	.....	34	47
Seng, Wendelin, assignor to A. Heuer and H. Brockschmidt, Chicago, Ill. Table-leaf support	336,757	Feb. 23	2383	623	34	885
Senior, Luke, Cleveland, Ohio. Elevator attachment	334,991	Jan. 19	1008	258	34	195
Sensiba, Fred. W., Talbot, Mich. Gate	337,069	Mar. 2	875	73	34	977
Sentenney, James L., Cook's Mills, Ill. Ditching-machine	334,908	Jan. 26	1964	522	34	295
Sepulchre, Louis, Herstal, Belgium. Lamp	336,264	Feb. 16	1703	444	34	754
Serdinke, John, New Braunfels, Tex. Wind-engine	335,388	Feb. 2	422	106	34	517
Sergeant, Henry C., New York, N. Y. Steam-actuated valve. (Reissue)	10,982	Feb. 2	649	170	34	557
Sergeant, Henry C., New York, N. Y. Support for rock-drills	337,596	Mar. 9	992	228	34	1092
Sergeson, James C., Philadelphia, Pa. Loom-shuttle	334,616	Jan. 19	1590	424	34	308
Serramoglia, Giuseppe, Turin, Italy. Air-forcing apparatus	337,447	Mar. 9	792	202	34	1076
Serrell, Edward W., Jr., New York, N. Y. Silk-reeling machinery	334,617	Jan. 19	1591	424	34	308
Serrell, Edward W., Jr., New York, N. Y. Silk-reeling machinery	334,618	Jan. 19	1592	{424 425}	34	309
Serrell, Edward W., Jr., New York, N. Y. Silk-reeling machine	334,619	Jan. 19	1594	{425 426}	34	309
Serrell, Edward W., Jr., New York, N. Y. Silk-reeling machine	334,620	Jan. 19	1597	{425 426}	34	309
Serrell, Edward W., Jr., New York, N. Y. Silk-reeling machinery	334,621	Jan. 19	1598	426	34	309
Serrell, Lemuel W., Plainfield, N. J. Combustion of fluid fuel for the development of steam	338,883	Mar. 30	2740	{721 722}	34	1446

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Serson, James, assignor of one-half to W. Walsh, Boston, Mass. Galvanic battery	338,194	Mar. 16	1775	463	34	1302
Sessions, Egbert G., Rice, Tex. Car-coupling	338,107	Mar. 16	1664	433	34	1239
Sewell, John C., E. Hulton, and J. Bethel, Manchester, England. Sectional warping and beaming machine	335,636	Feb. 9	770	204	34	585
Sexton, Deming W., East Hampton, Conn. Sleigh-bell attachment	335,151	Feb. 2	71	19	34	453
Seyberlich, Alfred, and A. Trampedach, Riga, Russia. Manufacture of glucose	337,448	Mar. 9	794	.....	34	1076
Seymour, Frederick H., Detroit, Mich. Pipe-wrench attachment for monkey-wrenches	337,627	Mar. 9	1012	260	34	1115
Seymour, Frederick J., Wolcottville, Conn., assignor of one-half to W. H. Brown, New York, N. Y. Obtaining aluminium from aluminous ores and earths	337,996	Mar. 16	1514	392	34	1211
Seymour, Frederick W., Wheeling, W. Va. Stopper-fastener	337,202	Mar. 2	425	111	34	1005
Seymour, Henry A., Washington, D. C. Garment-supporter	337,997	Mar. 16	1516	392	34	1211
Seymour, James M., Newark, N. J. Vacuum-well	333,681	Jan. 5	243	66	34	47
Seymour, William S., assignor to Northwestern Wire Mattress Company, Kenosha, Wis. Fastening bed-bottoms	335,542	Feb. 2	625	164	34	552
Shafer, David L., Pleasant Hill, Ohio. Harness	339,022	Mar. 30	2950	780	34	1483
Shaffer, Charles H., Rockford, Ill., assignor to J. B. Young, Sioux Falls, Dak. Ter. Time-lock	333,692	Jan. 5	245	67, 68	34	48
Shaffer, Charles H., assignor of one-half to Jones, Woodruff & Co., Rockford, Ill. Can	336,072	Feb. 9	1391	368	34	696
Shaler, Nathaniel S., Cambridge, assignor to T. A. Dodge, trustee, Brookline, Mass. Magnetic friction device for locomotives	333,554	Jan. 5	74	21	34	16
Shallenberger, Oliver B. (See Stanley and Shallenberger.)						
Shallenberger, Oliver B., Rochester, Pa. Regulator for dynamo-electric machines	337,628	Mar. 9	1013	260 / 261	34	1115
Shank, John, Las Vegas, N. Mex. Ter. Car-coupling	337,449	Mar. 9	795	202	34	1076
Shank, Orey D. (See Overpeck, Shank, and Cussins.)						
Shannon, Oscar M., Chicago, Ill. Laundry-drier	336,758	Feb. 23	2383	624	34	885
Sharp, Benjamin B., San Francisco, Cal. Altitude-instrument	333,555	Jan. 5	75	22	34	17
Sharpless, William C., assignor to himself and D. H. Watts, Philadelphia, Pa. Tile-lined structure	337,629	Mar. 9	1015	261	34	1116
Shavalier, James, and A. Harvey, Muskegon, Mich. Band-saw mill	337,630	Mar. 9	1016	261	34	1116
Shaver, Alfred, assignor of one-half to L. E. Shaver, Troy, N. Y. Yarn-stripper	334,904	Jan. 26	1965	523	34	886
Shaver, Lewis E. (See Shaver, Alfred, assignor.)						
Shaw, Alexander B., St. Louis, Mo. Instrument for attaching torpedoes to railway-rails	338,307	Mar. 23	1923	506	34	1296
Shaw, Charles A. (See Shute, Samuel E., assignor.)						
Shaw, Charles A. (See Shute and Stevens, assignors.)						
Shaw, Daniel F., Brookfield, Mass. Toy bird	334,812	Jan. 26	1858	493	34	865
Shaw, Edgar, Lynn, Mass. Vise-jaw	334,055	Jan. 12	777	213	34	159
Shaw, Elijah, and F. D. Walden, assignors of one-half to C. T. Bradley and W. H. Metcalf, Milwaukee, Wis. Knife-sharpener	337,023	Mar. 2	196	52	34	961
Shaw, George R. (See Shaw, John W. and G. R.)						
Shaw, Harry M., Boston, Mass., assignor to Walworth Manufacturing Company. Pipe-ring	338,445	Mar. 23	2122	555	34	1331
Shaw, James E., and J. T. Simpson, Holden, Mo. Churn	336,354	Feb. 16	1829	480	34	779
Shaw, James E., Williamsport, and J. F. Ellinger, Armstrong, assignors to Williamsport Kindling Wood Company, (limited,) Williamsport, Pa. Machine for bundling kindling-wood	336,759	Feb. 23	2385	624	34	886
Shaw, John H., assignor to Sargent & Co., New Haven, Conn. Extension-key	337,203	Mar. 2	426	111	34	1005
Shaw, John H., assignor to Sargent & Co., New Haven, Conn. Mincing-machine	337,631	Mar. 9	1018	262	34	1116
Shaw, John L., Grand Rapids, Mich. Water-gun	334,475	Jan. 19	1397	377	34	278
Shaw, John L., Grand Rapids, Mich. Machine for affixing postage-stamps	337,450	Mar. 9	796	202	34	1076
Shaw, John W. and G. R., Little Rock, Minn. Fanning-mill	333,683	Jan. 5	250	68	34	49
Shaw, Joseph W., St. Louis, Mo. Furnace-grate	337,527	Mar. 9	894	236	34	1093
Shaw, Marshall B., *et al.* (See Harty, William, assignor.)						
Shaw, Sumner, Boston, Mass. Lock	335,965	Feb. 9	1238	329	34	669
Shaw, Sumner, Boston, Mass. Pulverizer and seeder	335,966	Feb. 9	1240	329	34	669
Shaw, Sumner, Boston, Mass. Combined shutter-fastener and shutter-bower	336,355	Feb. 16	1830	480	34	779
Shaw, William A., Pittsburg, Pa. Lead-press	338,561	Mar. 23	2273	596	34	1357
Shaw, William T. (See Mericle, James, assignor.)						
Shear, William H., Albany, N. Y. Breech-loading fire-arm	335,043	Jan. 26	2157	574	34	419
Shearer, Amanda E., Humphreys, assignor of one-half to I. R. M. Beeson, Milan, Mo. Gem-type fixer	333,684	Jan. 5	251	.....	34	49
Sheid, Charles F., Fairfield, Nebr. Grain-drier	334,967	Jan. 26	2072	553	34	404
Shedlock, Alfred, Jersey City, N. J., assignor of one-half to C. G. Singer, New York, N. Y. Pressure indicator and recorder	336,668	Feb. 23	2272	593 / 594	34	864
Sheehan, William E., assignor to E. C. Covell and E. S. Cram, Laconia, N. H. Knitting-stockings, &c.	337,706	Mar. 9	1110	2-6 / 2-7 / 306 / 307	34	1131
Sheehy, Robert J., New York, N. Y. Printing-telegraph	334,294	Jan. 12	1145	305	34	221
Sheffield, George S. (See Stewart, Andrew T., assignor.)						
Shehan, Thomas, Cleveland, Ohio. Sewer-gas and stench trap	335,967	Feb. 9	1241	329	34	669
Shelbourne, Robison W., Blandville, Ky. Log-pusher for saw-mills	338,884	Mar. 30	2747	722	34	1446
Sheldon, Benjamin F., Red Wing, Minn. Potter's wheel	337,532	Mar. 9	1020	262	34	1117
Sheldon, James H., Zanesville, Ohio. Waterproofing cloth	337,528	Mar. 9	895	.....	34	1093
Sheldon, Mark A., Corry, Pa. Pinch-bar	335,389	Feb. 2	494	109	34	517
Sheldon, Richard B., Shortsville, N. Y., and A. R. Patterson, Orangeville, Pa., assignors to Empire Drill Company, Shortsville, N. Y. Fertilizer-distributer	335,159	Feb. 2	71	19, 20	34	453
Sheldon, Richard B., and J. V. Peacock, Shortsville, assignors to Crown Manufacturing Company, Phelps, N. Y. Seeding-machine	335,779	Feb. 9	962	260	34	698
Sheldon, William E. (See North and Sheldon.)						
Shellaberger, Charles D., Indianapolis, Ind. Fence-stretcher	336,669	Feb. 23	2275	594	34	864
Shellaberger, Edward F., Mount Vernon, Ohio. Fence	334,968	Jan. 26	2073	553	34	404
Shellenberger, Samuel L., Tyler, Tex. Device for converting motion	334,969	Jan. 26	2074	554	34	405
Shepard, Charles S. (See Prahar, Louis B., assignor.)						
Shepard, Charles S. (See Prahar and Shepard.)						
Shepard, Charles S., assignor of one-half to W. J. Phillips, Cherry Creek, N. Y. Steam-boiler	333,685	Jan. 5	251	66	34	49
Shepard, Jason H., *et al.* (See Richardson, George W., assignor.)						
Shepardson, Cornelius, Canonovia, N. Y. Hammock	334,990	Jan. 26	2076	554	34	405
Shepherd, Frank, Frenlandville, Ind. Adjustable attachment for camera-stands, school-desks, &c.	337,676	Mar. 16	1236	346	34	1179
Sheppard, William T., *et al.* (See Henry, John, assignor.)						
Sherman, John. (See Bennett, Orson W., assignor.)	334,622	Jan. 19	1600	426	34	310
Sherman, John W., San Francisco, Cal. Toy theater	334,091	Jan. 12	889	237	34	162

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Sherman, Samuel S., West McHenry, Ill. Gate	337,633	Mar. 9	1081	288	34	1117
Sherman, Willis S., assignor of one-third to A. Witmeyer, Marinette, Wis. Hame-tug attachment	335,496	Feb. 2	553	145	34	540
Sherrard, John H., Delphos, Ohio. Revolving or stationary rack or case	336,166	Feb. 16	1547	408	34	728
Sherriff, William J., Allegheny, Pa. Injector	337,877	Mar. 16	1336	346	34	1179
Sherwood, Allen, Syracuse, N. Y. Harness	333,556	Jan. 5	76	23	34	17
Sherwood, Alvin, Hampden, Kans. Windmill	334,813	Jan. 26	1853	494	34	865
Sherwood, Andrew T., San Francisco, Cal. Voltaic belt	335,637	Feb. 9	773	205	34	586
Sherwood, Andrew T., San Francisco, Cal. Electric belt and truss	335,638	Feb. 9	775	205	34	586
Sherwood, Andrew T., San Francisco, Cal. Electric-truss pad	335,639	Feb. 9	776	205	34	586
Sherwood, George F., and C. A. Smith, Jackson, Mich. Feeding device for middlings-purifiers	339,083	Mar. 30	2951	781	34	1483
Sherwood, Lyman. (See Brewster and Sherwood.)						
Sherwood, Sarah E. (See Brewster and Sherwood, assignors.)						
Shickle, Frederick, St. Louis, Mo. Feed-water heater	335,217	Feb. 2	323	84	34	499
Shields, David, Quincy, Ill. Cutting apparatus for harvesters	336,670	Feb. 23	2276	594	34	865
Shields, John, Perth, county of Perth, Scotland. Apparatus for distributing oil upon the sea at harbors, docks, &c	334,985	Jan. 12	1147	307	34	221
Shill, Jacob. (See Caldwell, William, assignor.)						
Shipley, John, Sayre, Pa. Rail-joint	334,056	Jan. 12	778	213	34	159
Shipman, Edward L., assignor to A. L. Shipman's Sons, New York, N. Y. Temporary binder for papers	336,954	Mar. 2	96	26	34	943
Shipman's Sons, Asa L. (See Shipman, Edward L., assignor.)						
Shirk, Jonas S., Columbus, Kans. Power-converter	336,985	Feb. 16	1704	444	34	754
Shirley, Frederick S., New Bedford, Mass. Glass-maker's mold	337,204	Mar. 2	427	112	34	1005
Shobe, Abraham A., Jerseyville, Ill. Feed-water apparatus	335,988	Feb. 9	1242	330	34	669
Shobe, Abraham A., Jerseyville, Ill. Cable railway	337,451	Mar. 9	797	203	34	1076
Shock, Floyd, Weatherford, Tex., assignor of one-half to G. D. Barnard, St. Louis, Mo. Riding-saddle	338,195	Mar. 16	1777	463	34	1302
Shoesmith, Edward W. (See Tobias and Shoesmith.)						
Shogren, Hans, East Portland, Oreg. Two-wheeled vehicle	334,991	Jan. 26	2077	555	34	405
Shouk, Charles W. (See Nicol, Robert, Jr., assignor.)						
Shriver, Robert, *et al.* (See Allfree, James B., assignor.)						
Shroeder, Leopold C., Jamestown, N. Y. Feed-regulator	334,099	Jan. 12	890	227	34	162
Shropshire, Zebedee B., Ooltewah, and A. J. Berryhill, Cleveland, Tenn. Car-coupling	338,108	Mar. 16	1665	433	34	1239
Shryock, William B. (See Baldwin, Charles E., assignor.)						
Shuck, John M., Des Moines, Iowa. Device for inverting bee-hives	335,153	Feb. 2	73	20	34	453
Shuck, John M., Des Moines, Iowa. Bee-hive	339,647	Mar. 23	2389	630	34	1577
Shugart, T. Woodward, and C. D. Clifton, Dublin, Tex. Insecticide	333,693	Jan. 5	537	.....	34	120
Shuler, Andrew F., Arcanum, Ohio. Jump-seat iron	334,905	Jan. 26	1966	522	34	886
Shuler-Shuts & Co. (See Shuler-Shuts, Louis P., assignor.)						
Shuler-Shuts, Louis P., assignor to Shuler-Shuts & Co., New York, N. Y. Handkerchief-box	335,723	Feb. 9	898	237	34	698
Shults, John A. J., assignor to M. E. Shults, St. Louis, Mo. Leather stuffing	337,987	Mar. 2	545	.....	34	1087
Shults, Mary E. (See Shults, John A. J., assignor.)						
Shumo, Daniel M. (See Nelson, Hugh, assignor.)						
Shupe, Charles C., Mendon, Ill. Hill-marking attachment for corn-planters	337,998	Mar. 16	1517	393	34	1211
Shurtleff, Asahel M., assignor to Codman & Shurtleff, Boston, Mass. Atomizer	338,367	Mar. 23	2013	539	34	1311
Shute, Samuel E., Richmond, Ind., assignor, by mesne assignments, to C. A. Shaw, Boston, Mass. Roller-skate	337,205	Mar. 2	429	112	34	1005
Shute, Samuel E., Richmond, Ind., assignor to C. A. Shaw, Boston, Mass. Roller-skate	337,878	Mar. 16	1337	347	34	1179
Shute, Samuel E., and G. C. Stevens, Richmond, Ind., assignors to C. A. Shaw, Boston, Mass. Roller-skate	334,892	Jan. 26	2078	555	34	406
Shy, Julius F. (See Ackerson and Shy.)						
Sibley, E. Ripley, and H. P. Wells, Salisbury, Mass. Ventilated spring-cushion for vehicles and furniture	333,557	Jan. 5	77	22	34	17
Sibley, Horace N. (See Hanks and Sibley.)						
Sickler, Edward E. (See Sickler, Jacob and E. E.)						
Sickler, Jacob, Otterbein, and E. E. Sickler, Indianapolis, Ind. Wire-stretcher	338,787	Jan. 5	299	106	34	75
Sidney, William H. (See Rickard, Ira, assignor.)						
Siebert, Frederick, St. Louis, Mo. Belt-pulley	337,024	Mar. 2	197	52	34	961
Siegenthaler, Harvey N., and E. Craig, Springfield, Ohio. Embalming-syringe	337,707	Mar. 9	1111	287	34	1131
Siemens Brothers & Company. (See Raworth, John S., assignor.)						
Silbermann, John A., and J. G. Rodrigan, Frackville, Pa. Scoop	335,990	Feb. 2	495	109	34	517
Silbernik, Joseph, New York, N. Y. Toilet-fan	335,318	Feb. 2	324	85	34	499
Silk, Francis E. (See Williams and Silk.)						
Silver, Marvin C., New Brunswick, N. J. Spring bed-bottom	337,206	Mar. 2	431	112	34	1006
Simmon, Gustav H. W., assignor to J. F. Vogt & Brother, St. Louis, Mo. Barrel leveling and trussing machine	336,760	Feb. 23	2386	625	34	886
Simmons, Edward M., assignor of one-half to W. J. Russell, Grand Rapids, Mich. Fifth-wheel	338,562	Mar. 23	2275	596	34	1357
Simmons, George W., assignor of one-half to E. F. Thomas, Youngstown, Ohio. Running-gear for carriages	335,909	Feb. 9	1243	330	34	670
Simmons, James W. L., Baltimore, Md. Propeller-wheel	335,640	Feb. 9	777	205	34	587
Simmons, John P., San Francisco, Cal. Cut-off valve	337,025	Mar. 2	198	52	34	961
Simmons, William, and J. F. Sprague, Providence, R. I.; said Sprague assignor to said Simmons. Draft attachment for frying-pans	333,694	Jan. 5	537	142	34	120
Simonds, Ames B., Youngstown, Ohio. Measuring-pump	336,761	Feb. 23	2388	626	34	887
Simonson, James H. (See Morris, James H., assignor.)						
Simonson, James H., Albany, N. Y. Dickey for shirts	338,563	Mar. 23	2275	597	34	1357
Simpson, James E., Jr. (See Kenaish, William, assignor.)						
Simpson, James T. (See Shaw and Simpson.)						
Simpson, Thomas J., Worthington, Minn. Spark arrester and conductor	334,860	Jan. 19	1677	448	34	334
Simpson, William B., Holden, Mo. Escapement-lever for watches	337,589	Mar. 9	896	238	34	1093
Singer, Charles A., New York, N. Y. Centering-tool	335,845	Feb. 9	1060	282 / 283	34	640
Singer, Charles G. (See Shedlock, Alfred, assignor.)						
Singer Manufacturing Company of New Jersey. (See Compropst, Thomas M., assignor.)						
Singer Manufacturing Company of New Jersey. (See Diehl, Philip, assignor.)						
Singer Manufacturing Company of New Jersey. (See Greene and Diehl, assignors.)						
Singer Manufacturing Company of New Jersey. (See Griest, John M., assignor.)						
Singletary, Don, Union City, Tenn. Horse-detacher	338,308	Mar. 23	1925	507	34	1296
Sinker, Alfred T., *et al.* (See Saunders, Charles R. P., assignor.)						
Sintzenich, Edwin B., Rochester, N. Y. Balanced valve	334,126	Jan. 12	892	244	34	176
Sisum, William H. H., Brooklyn, N. Y. Car-truck	338,309	Mar. 23	2015	539	34	1321

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Skelton, Henry, Cabery, Ill. Cultivator	334,479	Jan. 19	1401	378	34	274
Skinner, Charles E. (See Skinner, Halcyon and C. E.)						
Skinner, Charles E., Yonkers, N. Y. Electrical igniter for gas-engines	335,970	Feb. 9	1244	330	34	670
Skinner, Halcyon and C. E., Yonkers, N. Y. Gas-engine	335,971	Feb. 9	1245	331	34	670
Skinner, Joseph H. (See Peters and Skinner.)						
Slack, Martha W., Sandwich, Ill. Sleeve and glove protector	338,790	Mar. 30	2612	688	34	1422
Slafter, James C., and A. C. Clausen, Minneapolis, Minn. Dust-guard for railway-cars	337,999	Mar. 16	1519	393	34	1211
Slaght, Charles P., Tiffin, Iowa. Hay rake and loader	334,093	Jan. 12	831	{227 228}	34	162
Slater, Edmond B., assignor to C. Parker Company, Meriden, Conn. Key	334,814	Jan. 26	1255	494	34	366
Slater, Warren G., and J. Lamoreaux, Fremont, Mich. Button-attaching machine	339,024	Mar. 30	2654	781	34	1483
Slauson, Willis D., Racine, Wis. Baling-press	333,895	Jan. 5	539	146	34	101
Sleeman Gas Saving Company. (See Sleeman, Nathaniel, assignor.)						
Sleeman, Nathaniel, Birmingham, assignor, by mesne assignments, to Sleeman Gas Saving Company, Waterbury, Conn. Gas-regulator	335,156	Feb. 2	79	29	34	454
Sleeper, Charles T., and F. J. Hubbard, assignors to Sleeper Manufacturing Company, Chicago, Ill. Metallic packing for piston and valve rods	334,480	Jan. 19	1404	379	34	274
Sleeper Manufacturing Company. (See Sleeper and Hubbard, assignors.)						
Slinn, Benjamin S., Spring Valley, N. Y. Fetter for cows' tails	334,906	Jan. 26	1967	523	34	386
Sloan, Alfred J., Clyde, N. Y. Clothes-fork	338,109	Mar. 16	1666	433	34	1230
Sloan, James F., Toronto, Ontario, Canada. Frame for woven mattresses	336,444	Feb. 16	1954	512	34	801
Sloan, Thomas J., St. Monde, France. Machine for making threaded wire nails, wood-screws, &c.	338,446	May 23	2123	{555 556}	34	1331
Sloane, Charles W., *et al.*, executors. (See Benham, Henry W.)						
Slocum, John C., assignor of one-half to E. Scofield, Marinette, Wis. Gang-saw mill	335,319	Feb. 2	325	85	34	500
Slocum, William H., Buffalo, N. Y. Type-writing machine	335,972	Feb. 9	1247	{331 332}	34	670
Slocumb, John L., Edwards, Miss. Cotton-scraper	335,973	Feb. 9	1250	332	34	671
Slintz, H. V. & T. (See Gearon, John, assignor.)						
Smalley, Joseph, assignor of one-half to J. H. Gomersall, Philadelphia, Pa. Knitting-machine	334,681	Jan. 19	1681	449	34	325
Smart, Hezekiah, *et al.* (See Springer, William N., assignor.)						
Smethells, John F., Chicago, Ill. Bilge-water indicator	333,686	Jan. 5	252	68	34	49
Smith, A. Beverly, Philadelphia, Pa. Stapling-machine	335,154	Feb. 2	74	20, 21	34	454
Smith, A. Hyatt. (See Smith, Maurice, assignor.)						
Smith, Alexander G., assignor to Withington, Cooley & Co., Jackson, Mich. Swaging-machine	335,320	Feb. 2	326	85, 86	34	500
Smith, Alonzo F., Milwaukee, Wis. Spelling-board	336,266	Feb. 16	1705	444	34	755
Smith, Alphonso B. (See Strong and Smith.)						
Smith, Amanda R., Prophetstown, Ill. Splasher-holder	338,309	Mar. 23	1926	507	34	1297
Smith, Andrew. (See Hansen and Smith.)						
Smith, Andrew, *et al.* (See Smith, Henry H., assignor.)						
Smith, Benjamin C., Brooklyn, assignor to F. Adee & Co., New York, N. Y. Stop-cock box	334,137	Jan. 12	893	244	34	174
Smith, Carter. (See Gray, Josiah, assignor.)						
Smith, Charles A. (See Sherwood and Smith.)						
Smith, Charles A., Jackson, Mich. Feeding mechanism for middlings-purifiers	339,028	Mar. 30	2959	{782 783}	34	1484
Smith, Charles A., Jackson, Mich. Feeding device for middlings-purifiers	339,029	Mar. 30	2961	{783 784}	34	1484
Smith, Charles G., Washington, D. C. Leveling-instrument	338,791	Mar. 30	2613	688	34	1422
Smith, Christian N., Dayton, Ohio. Middlings-purifier	337,307	Mar. 9	432	113	34	1006
Smith, Daniel W., Long Lake, Mich. Sawing-machine	334,297	Jan. 12	1152	308	34	238
Smith, David R. (See McCreary and Smith.)						
Smith, E. T., *et al.* (See Platt, Albert L., assignor.)						
Smith, Edward S., Ovid, Mich. Vehicle-spring	338,564	Mar. 23	2276	597	34	1357
Smith, Edward S., Waterbury, Conn. Buckle or clasp	337,708	Mar. 9	1113	287	34	1122
Smith, Edward S., Waterbury, Conn. Clasp or buckle	338,792	Mar. 30	2615	689	34	1423
Smith, Eugene C., New York, N. Y. Belt-fastener	338,565	Mar. 23	2277	597	34	1358
Smith, Evelyn L., New Haven, and E. A. Hitchcock, Waterbury, Conn. Manufacture of watch-crowns	335,846	Feb. 9	1073	283	34	640
Smith, Fernando B., Canton, Ohio. Handle	334,998	Jan. 26	2060	556	34	406
Smith, Frank B., assignor of one-half to E. B. Loveland, North Springfield, Mo. Track-clearer	336,445	Feb. 16	1954	512	34	801
Smith, Frank W., Leominster, Mass. Book-leaf holder	336,495	Feb. 16	2016	{528 529}	34	812
Smith, Franklin A., Jr., Providence, R. I. Button-fastener	336,167	Feb. 16	1548	408	34	729
Smith, Franklin A., Jr., Providence, R. I. Making buttons	336,955	Mar. 2	97	26, 27	34	943
Smith, George, assignor of one-half to W. H. O'Kane, Rochester, N. Y. Alarm-signal for railway-crossings	335,643	Feb. 9	782	{207 208 109 110}	34	567
Smith, George K., Chicago, Ill. Grinding-mill	335,391	Feb. 2	425	91	34	454
Smith, George T., Jackson, Mich. Device for tightening bolting-cloth	335,155	Feb. 2	78	{164 165}	34	598
Smith, George T., Jackson, Mich. Flour-bolt	335,543	Feb. 2	627	206	34	567
Smith, George T., Jackson, Mich. Brushing mechanism for reels	335,641	Feb. 9	778	{206 207}	34	587
Smith, George T., Jackson, Mich. Flour-bolt	335,642	Feb. 9	779	781	34	1484
Smith, George T., Jackson, Mich. Clasp for bolting-cloths	339,025	Mar. 30	2956	782	34	1484
Smith, George T., Jackson, Mich. Flour-bolt	339,026	Mar. 30	2957	782	34	1484
Smith, George T., Jackson, Mich. Clasp for attaching bolt-cloths	339,027	Mar. 30	2958	630	34	1377
Smith, George W., assignor of one-half to J. J. Downing, H. and G. U. Reitenour, Union City, Ind. Post-hole auger	338,648	Mar. 23	2391	166	34	553
Smith, H. M. (See Crowe, Charles P., assignor.)						
Smith, Harman H., Navarre, assignor of one-half to D. P. Parks, Bolivar, Ohio. Maul and fence-post driver	335,544	Feb. 2	631	{307 308}	34	221
Smith, Harry W., Newark, N. J. Feeder for polishing material	334,296	Jan. 12	1149	.....	34	902
Smith, Henry H., Wilmington, N. C. Purifying water	337,026	Mar. 2	199	.....	34	1339
Smith, Henry H., assignor of two-thirds to A. Smith and L. Hansen, Wilmington, N. C. Making insecticides, &c	338,110	Mar. 16	1666	.....	34	1339
Smith, Hervey. (See Blickensderfer and Smith.)						
Smith, Howard M., St. Louis, Mo. Device for ejecting sparks	334,902	Jan. 12	1009	288	34	195
Smith, James F., Danville, Ill. Cultivator	335,644	Feb. 9	784	208	34	568

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Smith, James H. (See Hall and Smith.)						
Smith, James M., Sycamore, Ill., assignor of one-half to M. W. Harrington, Ann Arbor, Mich. Armor for rubber hose	338,310	Mar. 23	1927	507	34	1297
Smith, James T., New York, N. Y. Umbrella or parasol	338,566	Mar. 23	2278	597	34	1358
Smith, James T., Baltimore, Md. Machine for making thimbles for bolts	338,567	Mar. 23	2279	598	34	1358
Smith, John, Kansas City, Mo. Coal-bucket	335,949	Feb. 2	231	61	34	481
Smith, John A., *et al.* (See Champion, John P., assignor.)						
Smith, John F., Pontiac, Mich. Harness-ring	338,568	Mar. 23	2280	598	34	1358
Smith, John H. (See Field, Hiram, assignor.)						
Smith, John M., Kansas City, Mo. Seal-lock	333,858	Jan. 5	79	29, 30	34	17
Smith, John M., Kansas City, Mo. Seal-lock for car-doors	335,950	Feb. 2	232	61	34	482
Smith, John M., Kansas City, Mo. Seal-lock	337,879	Mar. 16	1339	347	34	1179
Smith, John M., Kansas City, Mo. Seal-lock	336,091	Feb. 9	1312	348	34	681
Smith, John T., Rockfall, Conn. Lock for revolvers	335,780	Feb. 9	984	260	34	624
Smith, John W., Newport, R. I. Dental tool						
Smith, Joseph. (See Oppmann and Smith.)						
Smith, Joseph D., Rising City, Nebr. Filter	333,896	Jan. 5	539	147	34	101
Smith, Josephine L., Davenport, Iowa. Household-press	336,956	Mar. 2	98	27	34	944
Smith, Kirk A., and J. E. Woodard, Kalamazoo, Mich. Detachable guide-bearing for reciprocating rods of windmills	338,798	Mar. 30	2616	689	34	1423
Smith, Louis A., *et al.* (See Seowberger, Jacob, assignor.)						
Smith, Margret, Baltimore, Md. Satchel-holder	337,709	Mar. 9	1114	287	34	1138
Smith, Maurice, assignor of one-half to A. H. Smith, Janesville, Wis. Tobacco-transplanter	335,724	Feb. 9	899	237	34	608
Smith, Michael J., New York, N. Y. Air-vent valve	338,196	Mar. 16	1777	464	34	1302
Smith Middlings Purifier Company, George T. (See Holt, Noah W., assignor.)						
Smith, Obediah J., Iola, Kans. Washing-machine	333,559	Jan. 5	80	29	34	17
Smith, Oberlin, Bridgeton, N. J. Drill-press	336,598	Feb. 23	2161	565	34	944
Smith, Oberlin, Bridgeton, N. J. Tool for drill-presses	336,762	Feb. 23	2389	624	34	987
Smith, Philip, assignor of one-half to J. Cooper, New York, N. Y. Combined match-box and cigar-holder	337,880	Mar. 16	1340	347	34	1180
Smith, Robert. (See Morrison and Smith.)						
Smith, Robert B. (See Lytle, Albert E., assignor.)						
Smith, Ruben J. (See Webster and Smith.)						
Smith, Rudolph C., Yonkers, N. Y. Controlling the valves of elevators	334,907	Jan. 26	1968	{523 524}	34	386
Smith, Samuel E., Brooklyn, N. Y. Changeable button	338,111	Mar. 16	1667	433	34	1230
Smith & Smart. (See Spencer, John E., assignor.)						
Smith, Stephen G., Hannibal, Mo. Vehicle-spring	335,645	Feb. 9	785	208	34	568
Smith, Stephen G., Hannibal, Mo. Thill-coupling	337,710	Mar. 9	1115	288	34	1132
Smith, Stephen W. Dean, Brooklyn, N. Y. Vehicle	334,908	Jan. 26	1969	524	34	387
Smith, William, Cicero, Ind. Flour scoop and sifter	337,711	Mar. 9	1116	288	34	1132
Smith, William, San Francisco, Cal. Effluvia-ejector for water-closets	338,794	Mar. 30	2616	689	34	1423
Smith, William A., and J. H. Hagelin, Woodlawn, Nebr. Hame-coupling	336,763	Feb. 23	2390	626	34	987
Smith, William E., Ansonia, assignor to B. Goodman Manufacturing Company, Bridgeport, Conn. Buckle	337,458	Mar. 9	798	203	34	1077
Smith, William G., Minneapolis, Minn. Combined tablet and file	338,795	Mar. 30	2617	689	34	1423
Smith, William M. (See Caldwell and Smith.)						
Smith, William M., and J. Caldwell, Philadelphia, Pa. Automatic fan	338,311	Mar. 23	1928	507	34	1297
Smith, William T., Providence, R. I. Safety-seal for gas-traps	338,112	Mar. 16	1668	434	34	1230
Smith, William T., London, England, assignor to H. L. Ensign, New York, N. Y. Stereotype-plate and block or bed for the same	336,029	Feb. 9	1314	348	34	682
Smith, Wright D., assignor to Huyett & Smith Manufacturing Company, Detroit, Mich. Rotary ventilating-fan	339,030	Mar. 30	2963	784	34	1485
Smitten, Thomas W. F., Brooklyn, N. Y. Multiple-pointed pen	337,712	Mar. 9	1117	288	34	1132
Smout, Jules, Guatemala, Guatemala, Central America. Machine for hulling and polishing coffee	333,788	Jan. 5	400	108	34	75
Smyth, David M., assignor to Smyth Manufacturing Company, Hartford, Conn. Book-sewing	338,000	Mar. 16	1590	393	34	1212
Smyth, David M., assignor to Smyth Manufacturing Company, Hartford, Conn. Book-sewing machine	338,001	Mar. 16	1591	394	34	1212
Smyth, David M., and J. E., Hartford, Conn. Fastening for carpets, &c	334,138	Jan. 12	894	244	34	174
Smyth, John M. Windsor, Ontario, Canada. Nutmeg-grater	334,298	Jan. 12	1153	308	34	238
Smyth, Joseph E. (See Smyth, David M. and J. E.)						
Smyth Manufacturing Company. (See Smyth, David M., assignor.)						
Snedekum, Charles, Bay City, Mich. Fork-drill	337,351	Mar. 2	628	165	34	1042
Snee, John A., West Elizabeth, Pa. Method of and apparatus for regulating the temperature of a substance passing through a line of piping	338,447	Mar. 23	2196	556	34	1331
Sniffen, Samuel F., New York, N. Y. Fender for vehicles	335,646	Feb. 9	787	209	34	568
Snow, Elmer W. and J. F., Pawtucket, R. I. Combined book-cover and removable leaf	337,027	Mar. 2	200	53	34	962
Snow, Fred W., Hillburn, N. Y. Rail-support	338,796	Mar. 30	2618	690	34	1423
Snow, George K., Watertown, Mass. Collar	336,957	Mar. 2	99	27	34	944
Snow, James F. (See Snow, Elmer W. and J. F.)						
Snowberger, Jacob, assignor of three-fourths to O. Case, U. G. Kirn, and L. A. Smith, Akron, Ohio. Oiler and wiper for commutators	338,197	Mar. 16	1777	464	34	1262
Snyder, John H., Helfenstein, Pa. Weather-board gage	339,077	Mar. 30	3021	798	34	1494
Snyder, Thomas C. (See Davis, James E., assignor.)						
Snypp, Theodore, Newport, Ohio. Label-holding device for bottles	337,713	Mar. 9	1118	288	34	1133
Sochefsky, William, New York, N. Y. Decorating wall-hangings and other fabrics	334,299	Jan. 12	1154	.....	34	222
Sochefsky, William, New York, N. Y. Embossed fabric for upholstery, &c	334,300	Jan. 12	1155	309	34	222
Société Richard Frères. (See Richard, Jules, assignor.)						
Soden, Francis H. (See Page and Soden.)						
Solinger, Moses, assignor to Solinger, Schindler & Co., New York, N. Y. Machine for calendering paper	337,028	Mar. 2	201	53	34	962
Solinger, Schindler & Co. (See Solinger, Moses, assignor.)						
Solliday, James. (See Vail and Solliday.)						
Solt, William, Sr., and W. D. Kline, Freeland, Pa. Grate-bar	333,867	Jan. 5	253	69	34	49
Sombart, Julius, Boonville, Mo. Feed-regulator	336,496	Feb. 16	2017	529	34	813
Somerville, William, Sr., Buffalo, N. Y. Horseshoe	337,090	Mar. 2	277	73	34	978
Somers, Lyman B., Danbury, Conn. Wire frame for hat-brims	333,698	Jan. 5	255	69	34	49
Sone, Louis V., New York, N. Y. Vessel for transporting liquid cargoes in bulk	334,461	Jan. 19	1407	379	34	275
Sooy, Ephraim C., Kansas City, Mo. Pulley	336,958	Mar. 2	100	28	34	944
Sorgan, Otto, New York, N. Y. Machine for winding bobbins for sewing-machines, &c	336,168	Feb. 16	1549	{408 409}	34	720
Sortor, Hobart B., Kalamazoo, Mich. Vehicle for delivering mail	336,764	Feb. 23	2391	{626 627}	34	988

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sotter, Jacob C., Pottstown, Pa. Steam-boiler	336,497	Feb. 16	2018	529	34	813
Soule, Buren M., and P. F. Given; said P. F. Given assignor to C. E. Given, Cedar Rapids, Iowa. Foot-guard for railways	335,847	Feb. 9	1074	284	34	641
Soxhlet, Franz, Munich, Germany, assignor to F. O. Matthiessen, Irvington, N. Y. Manufacturing grape-sugar	335,044	Jan. 26	2158	.....	34	419
Spadone, Amadee, New York, N. Y. Mat, stair, or step tread or pad	334,994	Jan. 26	2080	556	34	406
Spadone, Amadee, New York, N. Y. Rubber-covered hose	338,319	Mar. 23	1929	508	34	1297
Spangler, Jacob W., York, Pa. Harness	338,797	Mar. 30	2620	690	34	1423
Spangler, John L. (See Ball, Silas W., assignor.)						
Sparks, Frank A. (See Creamer and Sparks.)						
Sparks, William A., assignor to Stein Manufacturing Company, Rochester, N. Y. Coffin	335,848	Feb. 9	1075	284	34	641
Sparks, William A., and N. Rappleyea, assignors to Stein Manufacturing Company, Rochester, N. Y. Coffin	338,198	Mar. 16	1778	464	34	1262
Sparks, William A., and N. Rappleyea, assignors to Stein Manufacturing Company, Rochester, N. Y. Coffin	338,199	Mar. 16	1779	464	34	1263
Sparks, William E., assignor to Sargent & Co., New Haven, Conn. Reversible latch	334,815	Jan. 26	1856	494	34	366
Sparrow, Alphonso B., Malden, assignor of one-half to G. A. Russell, Newton, Mass. Baking-pan	335,251	Feb. 2	233	62	34	482
Spatzler, August W., Leipsic, Germany. Journal-bearing	333,560	Jan. 5	81	23	34	18
Spaulding, Edward, Brooklyn, N. Y. Machine for setting bands on elliptic springs	334,397	Jan. 12	1277	344	34	944
Spear, Alexander F., San Francisco, Cal. Drum attachment for pin-rails	337,029	Mar. 2	202	53	34	962
Spear, Robert, New York, N. Y. Transmitting power	333,789	Jan. 5	401	108	34	76
Spear, Warren, Aurora, Ill. Attachment for sliding doors	334,903	Jan. 12	1010	268, 269	34	196
Spence, Hamilton, Minneapolis, assignor of one-half to D. W. Davis, Hastings, Minn. Steam boiler	338,113	Mar. 16	1669	434	34	1240
Spence, William H., Losantville, Ind. Band-cutter and feeder for thrashing-machines	334,725	Jan. 19	1740	464	34	336
Spencer, George W., St. James, Nebr. Harrow attachment for plows	336,023	Feb. 9	1316	349	34	669
Spencer, John E., assignor of one-half to Smith & Smart, Salem, Mass. Automatic damper-regulator	338,686	Mar. 23	2453	647	34	1368
Spencer, Lloyd G., Chicago, Ill. Child's carriage	338,798	Mar. 30	2921	690, 691	34	1494
Spencer, Ralph L., Hartford, assignor of one-half to H. O. Rose, Essex, Conn. Sun-dial	335,647	Feb. 9	788	209	34	568
Spencer, William, Cheboygan, Mich. Grapple	336,498	Feb. 16	2018	529	34	813
Spencer, William D., Middletown, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock	335,648	Feb. 9	789	209	34	589
Spilker, John J., Cincinnati, Ohio. Vise	334,816	Jan. 26	1857	495	34	366
Spindler, Charles E., *et al.* (See Kienardt, John A., assignor.)						
Spinning, Frank, *et al.* (See Murray, William A., assignor.)						
Spiro, Charles, New York, N. Y. Type-writing machine	335,398	Feb. 2	427	110, 111	34	518
Spiro, Charles, New York, N. Y. Type-writing machine	339,078	Mar. 30	3022	799	34	1494
Spitler, David A., Flora, Ind. Combined harrow and replanter	338,114	Mar. 16	1671	434	34	1240
Spitzer, Sigmund, Vienna, Austria-Hungary. Barley-machine	333,561	Jan. 5	82	24	34	18
Spooner, Frederick B., Brooklyn, N. Y. Buckle	335,252	Feb. 2	234	62	34	482
Sprague, Charles L. (See Flemmings, Robert F., Jr., assignor.)						
Sprague Electric Railway and Motor Company. (See Sprague, Frank J., assignor.)						
Sprague, Frank J., New York, N. Y. Electro-dynamic motor	335,781	Feb. 9	985	261	34	694
Sprague, Frank J., New York, N. Y. Electro-dynamic motor	337,793	Mar. 9	1214	316	34	1149
Sprague, Frank J., New York, N. Y. Electro-dynamic motor	337,794	Mar. 9	1216	316, 317	34	1150
Sprague, Frank J., New York, N. Y. Electric railway	338,619	Mar. 23	2353	619	34	1371
Sprague, Frank J., assignor to Edison Electric Light Company, New York, N. Y. System of electrical distribution	335,045	Jan. 26	2159	574, 575	34	419
Sprague, Frank J., New York, N. Y., assignor to Sprague Electric Railway and Motor Company. Electric railway system	338,313	Mar. 23	1930	508, 509	34	1297
Sprague, James F. (See Simmons and Sprague.)						
Sprague, Lawren. (See Patrick, Theodore L., assignor.)						
Spratley, Hiram S., North Springfield, Mo. Drill attachment	334,817	Jan. 26	1858	495	34	366
Springer, Charles C. (See Makin, John, assignor.)						
Springer, Charles C., Yarmouth, assignor to American Sulphite Pulp Company, Portland, Me. Pulp-digester for paper-making	335,046	Jan. 26	2162	575	34	420
Springer, Frederick J., Edwardsville, Ill. Carriage-pole	337,453	Mar. 9	799	203	34	1077
Springer, Jacob M., Mount Erie, Ill. Fruit-drying rack	333,697	Jan. 5	540	147	34	101
Springer, John, Clinton, Wis. Furnace	336,765	Feb. 23	2392	627	34	888
Springer, Thomas L., *et al.* ((See Springer, William N., assignor.)						
Springer, William N., assignor of one-half to T. L. Springer and H. Smart, Indianapolis, Ind. Wagon-jack	334,057	Jan. 12	779	213	34	153
Springfield Engine and Thresher Company. (See Kelly and Dieter, assignors.)						
Spurgin, Robert, Chicago, Ill. Index for letter-books	337,454	Mar. 9	800	203	34	1077
Squier, Walter W., Buffalo, N. Y. Dust-pan holder	335,545	Feb. 2	632	166	34	533
Staar, Henry C., Pittsburg, Pa. Manufacture of eye-bars	337,881	Mar. 16	1341	347	34	1180
Stadelman, William A., Lower Merion, Pa. Thill-coupling	333,973	Jan. 5	652	178	34	122
Stahl, Harlow C., and J. C. Rosebaugh, assignors to Fremont Cultivator Company, Fremont, Ohio. Vehicle-wheel	334,301	Jan. 12	1156	309	34	922
Stair, John G., Manteno, Ill. Thill-coupling	336,825	Feb. 23	2472	649	34	902
Staley, Jefferson. (See Ritchie, Benjamin F., assignor.)						
Stalnaker, Lloyd C., York, Pa. Corn and seed planter	337,795	Mar. 9	1217	317	34	1150
Stambaugh, George. (See Koch, Edouard A., assignor.)						
Stambly, John. (See Ensling, Philipp, assignor.)						
Standard Button Fastening Company. (See Matchison, Joseph, assignor.)						
Standard Electric Clock Company. (See Himmer, Vitalis, assignor.)						
Standeford, David W., Oakland, Cal. Saw-table gage	333,502	Jan. 5	83	24	34	18
Standish, George O., Boston, Mass. Horseshoe	333,974	Jan. 5	653	178	34	123
Standish, Syranus, Pacheco, Cal. Windmill	338,799	Mar. 30	2623	691	34	1494
Standley, Joseph R., Plattsville, Iowa. Fence	339,116	Mar. 30	3081	815	34	1504
Stange, Julius, Chicago, Ill. Machine for embossing picture-frame molding	338,800	Mar. 30	2624	691	34	1494
Staniland, Thomas. (See Minton, Harry C., assignor.)						
Stanley, James D., Wilmington, N. C. Apparatus for distilling turpentine and for the purification of the crude products of distillation thereof. (Reissue)	10,669	Feb. 16	2076	546	34	822
Stanley Rule and Level Company. (See Trant, Justus A., assignor.)						
Stanley, William, Jr., Pittsburg, Pa. System of electric lighting	333,564	Jan. 5	85	25	34	18
Stanley, William, Jr., and O. B. Shallenberger, Pittsburg, Pa. Armature for dynamo-electric machines	333,563	Jan. 5	84	24, 25	34	18

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stanley Works. (See Hart, William H., assignor.)						
Stansbury, Alfred D., Colliers, W. Va. Broom-holder	337,091	Mar. 2	278	74	34	978
Stanton, Bradley W., assignor of one-half to C. S. Maynard, Paw Paw, Mich. Fence-post	337,882	Mar. 16	1342	348	34	1180
Staples, Arthur, Lowell, Mass. Cesspool and catch-basin	338,801	Mar. 30	2626	691	34	1425
Staples, Charles. (See Staples, Levi and C.)						
Staples, Elial M., Springfield, Mass. Box for receiving and holding papers	335,782	Feb. 9	969	261	34	694
Staples, John E., York, Me. Marine way	334,094	Jan. 12	886	228, 229	34	163
Staples, Levi, Barrington, and C. Staples, Providence, R. I. Nut-lock	334,058	Jan. 12	780	213	34	153
Stapp, Robert B., Denver, Colo. Machine for manufacturing fences	335,253	Feb. 2	236	62, 63	34	482
Star Automatic Fire Extinguisher Company. (See Kittell and Jackson, assignors.)						
Stark, Andrew, Chicago, Ill. Harvester-reel	336,959	Mar. 2	102	28	34	944
Starks, George. (See Lanner, Charles, assignor.)						
Statter, George F., Sioux City, Iowa. Shaft-support for vehicles	336,531	Feb. 16	2066	543	34	821
Staus, Henry F., Chester, Pa. Electric mail-box and indicator	337,796	Mar. 9	1219	317	34	1151
Steadman, George H., Hopewell Cape, New Brunswick, Canada. Seal-lock	334,302	Jan. 12	1157	309	34	223
Stearns & Co., E. C. (See Seely, Obediah, assignor.)						
Stearns, Norman W., and C. Grant, Jr., Boston, Mass. Cash and parcel transmitting apparatus for store-service	338,369	Mar. 23	2016	530	34	1312
Steefel, Barnard L. (See Schaffer and Steefel.)						
Steel, Robert, Philadelphia, Pa. Apparatus for filling bottles with liquids	337,883	Mar. 16	1342	348	34	1180
Steele, Edward D. (See Wooster, Frederick J., assignor.)						
Steele, Edward D., Waterbury, Conn. Button-fastener	335,393	Feb. 2	432	111	34	518
Steele, Elias M. (See Murphy, Daniel H., assignor.)						
Steeneken, Diedrich, San Antonio, Tex. Safety oil-can	336,926	Feb. 23	2473	650	34	902
Steenrod, Irvin, Union City, Pa. Bag-holder	334,492	Jan. 19	1410	360	34	275
Steiger, Andrew W., assignor to J. A. Cabot and W. L. McCreary, New York, N. Y. Mechanical telephone	338,620	Mar. 23	2354	619	34	1371
Stein Manufacturing Company. (See Roberts, John S., assignor.)						
Stein Manufacturing Company. (See Sparks, William A., assignor.)						
Stein Manufacturing Company. (See Sparks and Rappleyea, assignors.)						
Steinbrecher, Charles. (See Steinbrecher, William H. and C.)						
Steinbrecher, William H. and C., Detroit, Mich. Combined double and single seated sleigh	335,649	Feb. 9	790	209, 210	34	589
Steinmetz, Uriah G., Philadelphia, Pa. Umbrella	336,532	Feb. 16	2067	543	34	821
Stelle, Edward T., assignor to himself and A. B. Crofoot, Chicago, Ill. Felt boot	338,901	Mar. 16	1781	465	34	1263
Stemmer, Salomon. (See Schurch, Albert, assignor.)						
Stephen, Andrew, Clinton, Iowa. Broom	336,169	Feb. 16	1551	409	34	729
Stephens, Edward J., Pawtucket, R. I. Yarn-printing machine	338,314	Mar. 23	1935	509	34	1298
Stephens, Judson W. (See Davis, William B., assignor.)						
Stephens, Roe. (See Desmond, John, assignor.)						
Stephens, Samuel, and D. B. Hanson, Indianapolis, Ind. Band-saw guide	334,818	Jan. 26	1859	495	34	366
Stephenson, James, East St. Louis, Ill. Refrigerator	334,726	Jan. 19	1741	465	34	336
Stephenson, John, New York, N. Y. Lamp-door latch for cars	336,170	Feb. 16	1551	409	34	729
Sterling, Theodore W. (See Moreau, Eugene, assignor.)						
Stern, Aaron, New York, N. Y. Bustle	335,849	Feb. 9	1077	284	34	641
Stern, William A., assignor of one-half to E. Ingold, Pittsburg, Pa. Municipal alarm service	333,975	Jan. 5	653	179	34	123
Sternbergh, James H. (See Vaughan, Aaron C., assignor.)						
Stetser, Henry. (See Vangerzell and Stetser.)						
Stetson, Charles T., Rockland, assignor of one-half to O. W. Whitcher, Hyde Park, F. W. Whitcher, Boston, and J. H. Emery, Quincy, Mass. Manufacture of metallic shanks for boots and shoes	339,117	Mar. 30	3082	815	34	1504
Stetson, George R., assignor to himself and Morse Twist Drill and Machine Company, New Bedford, Mass. Machine for clearing twist-drills	333,689	Jan. 5	255	69, 70	34	49
Stetson, William H., *et al.* (See Loop, A. Irwin, assignor.)						
Stevens, Amos, Philadelphia, Pa. Hand force-pump	334,483	Jan. 19	1411	360	34	275
Stevens, Benjamin A., Toledo, Ohio. Meat-hook	336,671	Feb. 23	2277	595	34	865
Stevens, Benjamin D., assignor of one-half to T. S. Peck, Burlington, Vt. Blind, shutter, or screen	333,565	Jan. 5	86	25	34	19
Stevens, Charles V., assignor of four-fifths to J. Clark and H. Wright, Somonauk, Ill. Windmill	333,566	Jan. 5	87	25	34	19
Stevens, Charles V., assignor of four-fifths to J. Clark and H. Wright, Somonauk, Ill. Windmill	333,567	Jan. 5	89	26	34	20
Stevens, Frank M., New York, N. Y. Automatic lathe	337,580	Mar. 9	897	229	34	1093
Stevens, George C. (See Shute and Stevens.)						
Stevens, John. (See Leonard and Stevens.)						
Stevens, John S., and C. G. Major, Battersea, county of Surrey, England. Combined door spring and check	333,568	Jan. 5	90	26	34	20
Stevens, Joshua, Chicopee Falls, Mass. Calipers and dividers	337,531	Mar. 9	900	229	34	1094
Stevens, William L. (See Mason, Wescott, and Stevens.)						
Stevenson, Albert R., and J. Stuempges, Stevenson's Pier, Wis. Saw-gummer	337,532	Mar. 9	901	229	34	1094
Stevenson, Charles M., Syracuse, N. Y. Beading-tool	333,690	Jan. 5	257	70	34	50
Stevenson, Thomas F. (See Andrew, John, assignor.)						
Stevenson, William M., Adelaide, South Australia. Ticket-case	335,095	Jan. 26	2223	592	34	433
Stewart, Andrew T., Concord, assignor of one-half to G. S. Sheffield, Three Rivers, Mich. Land-marker	337,092	Mar. 2	278	74	34	978
Stewart, James O., Spirit Lake, Iowa. Wood-type case	335,850	Feb. 9	1077	284	34	641
Stewart, John, Newark, N. J. Press	334,485	Jan. 19	1413	380, 381	34	276
Stewart, John L., Philadelphia, Pa. Apparatus for manufacturing gas	333,691	Jan. 5	258	70, 71	34	50
Stewart, John L., Philadelphia, Pa. Manufacturing gas	333,692	Jan. 5	262	71, 72	34	51
Stewart, John L., Philadelphia, Pa. Apparatus for manufacturing gas	333,693	Jan. 5	267	72, 73	34	51
Stewart, John M., and J. A. Robertson, Spencer, Ind. Book-holder	338,200	Mar. 16	1780	465	34	1263
Stewart, Scott, Rivesville, W. Va. Key-board	334,484	Jan. 19	1412	380	34	275
Stewart, William M., trustee. (See Lucas, John, assignor.)						
Stiemke, Edward. (See Schellenberg and Stiemke.)						
Stiff, Charles W., Foxborough, Mass. Timing attachment for photographic cameras	336,356	Feb. 16	1831	480, 481	34	779
Stigler, Augusto, Milan, Italy. Bearing	337,884	Mar. 16	1344	348	34	1180
Stiles, William C., *et al.* (See Tyler, George, assignor.)						
Stillman, Charles A., Westerly, R. I., assignor to C. B. Cottrell, Stonington, Conn. Inking apparatus for lithographic machines	338,370	Mar. 23	2020	531	34	1312
Stillman, Charles F., New York, N. Y. Trotting-sulky	335,650	Feb. 9	791	210	34	589

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stillman, Charles F., New York, N. Y. Trotting-sulky	335,651	Feb. 9	792	210	34	589
Stillman, Charles F., New York, N. Y. Trotting-sulky	335,652	Feb. 9	793	210 211	34	589
Stines, Michael W., Dayton, Ohio. Stencil	338,921	Mar. 23	2355	619	34	1371
Stirgis, Herbert M., Hillsborough, Tex. Combination-lock for money-drawers, &c	338,905	Mar. 16	1785	466	34	1264
St. John, A. J. (See Zeller, Melancthon E., assignor.)						
St. John, Roswell H., assignor to Union Manufacturing Company, Toledo, Ohio. Tension for sewing-machines	336,827	Feb. 23	2475	651	34	902
St. Lawrence, Henry, Northampton, Mass. Power-hammer	335,394	Feb. 2	432	111	34	518
Stobaeus, John B. (See Metzger, Gustav, assignor.)						
Stocker, Matilda, New York, N. Y. Pattern-lining	337,030	Mar. 2	203	54	34	963
Stocking, Edgar B., Washington, D. C. Reducing old railway-rails to plates	339,118	Mar. 30	3082	816	34	1504
Stockinger, Philip J., San José, Cal. Bale and box hook	338,885	Mar. 30	2749	723	34	1447
Stockwell, Levi W., assignor to Cleveland Electric Motor Company, Cleveland, Ohio. Commutator-brush	337,985	Mar. 16	1345	349	34	1180
Stoddard & Co., J. W. (See Stoddard and Rossell, assignors.)						
Stoddard, E. Fowler, and J. M. Rossell, assignors to J. W. Stoddard & Co., Dayton, Ohio. Mowing-machine	336,267	Feb. 16	1707	445	34	755
Stoddard, Oscar, Detroit, Mich. Knob attachment	334,819	Jan. 26	1860	495	34	367
Stoll, Jacob, Milwaukee, Wis. Tayere	337,886	Mar. 16	1347	349	34	1181
Stolzle's Söhne, C. (See Berets, Ludwig, assignor.)						
Stone, Charles F., Chicago, Ill. Holding dies	338,902	Mar. 16	1782	465	34	1263
Stone, James. (See Gardner, Marshall, assignor.)						
Stone, James R., Sawsville, Ill., assignor of three-fourths to T. J. and E. S. Wilhite and H. Wagner. Band-cutter and feeder	339,119	Mar. 30	3084	816	34	1505
Stone, John, Plattsburg, Mo. Railway supply-tank	335,851	Feb. 9	1078	285	34	641
Stone, Lorenzo, Providence, R. I. Spool and bobbin	335,783	Feb. 9	969	262	34	625
Stone, Lyman G. (See Prentiss, Stone, and Fisher.)						
Stone, Samuel, North Manchester, Conn., assignor to Neverslip Horseshoe Company, Boston, Mass. Horseshoe-calk	335,395	Feb. 2	433	111	34	519
Stoneman, William J., Albany, N. Y. Awning	333,569	Jan. 5	93	27	34	20
Stonemets, John H., Erie, Pa. Paper-folding machine	335,096	Jan. 26	2233	593	34	433
Stoner, Augustus, New York, N. Y. Permutation-lock	338,886	Mar. 30	2750	723	34	1447
Storck, Frank, Cincinnati, Ohio. Dumping-cart	338,902	Mar. 30	2627	692	34	1425
Storm, George, New York, N. Y. Treating tobacco	337,456	Mar. 9	802	204	34	1077
Storm, George, New York, N. Y. Treating tobacco	337,457	Mar. 9	805	204	34	1077
Storms, James A., and T. A. Arnold, North Tarrytown, N. Y. Car-coupling	336,871	Feb. 23	2528	667	34	912
Stough, Charlie B. (See Jordan and Stough.)						
Stough, John G. and U. C., Dover, Pa. Windmill	338,903	Mar. 16	1783	465	34	1263
Stough, Urias C. (See Stough, John G. and U. C.)						
Stout, George H., Chapel Hill, N. J. Electric motor	338,922	Mar. 23	2356	620	34	1371
Stout, Meadowcroft & Co. (See Criado, Louis F., assignor.)						
Strachan, Thomas F., Jr. (See Craig and Strachan.)						
Strader, Levi T., *et al.* (See Gray, Henry F., assignor.)						
Stratton, Francis E. (See Brown and Stratton.)						
Straub, Theodore F., Allegheny, Pa. Clarifying beer and charging the same with carbonic-acid gas	336,073	Feb. 9	1392	368	34	695
Streator, Henry D., Galesburg, Mich. Refrigerator-safe for bread, cake, &c	335,157	Feb. 2	81	22	34	456
Streck, Sullivan S., New Orleans, La. Time-calculator	337,533	Mar. 9	902	230	34	1094
Street Car Money Drawer Company. (See Harrison, William H., assignor.)						
Street, John W., Chicago, Ill. Apparatus for feeding stock on cars	336,873	Feb. 23	2540	669	34	915
Street, John W., assignor of one-half to S. M. Fischer, Chicago, Ill. Stock-car	336,872	Feb. 23	2530	667 668	34	913
Streeter, Herbert E. (See Low and Streeter.)						
Strickland, William W. (See Audirsch, Carl, assignor.)						
Strickler, Benjamin F. (See Bayler and Strickler.)						
Strickler, Walter. (See Meyer and Strickler.)						
Strobel, Charles L., Pittsburg, Pa. Apparatus for rolling eye-bars	338,923	Mar. 23	2357	620 621	34	1371
Strock, John L., Franklin Grove, Ill. Grass-seed-sowing machine	338,904	Mar. 16	1784	466	34	1264
Strom, Axel, Austin, Ill. Switch-stand	337,352	Mar. 2	629	165	34	1042
Strom, Axel A., Chicago, Ill. Frame for track-drills	337,455	Mar. 9	802	204	34	1077
Strong, Eli, Kalamazoo, Mich. Feed-regulator for roller-mills	333,570	Jan. 5	95	27	34	21
Strong, John W., Bridgeport, Conn. Chuck	339,120	Mar. 30	3085	816	34	1505
Strong, Lena, and A. B. Smith, San Francisco, Cal. Fruit-picker	334,486	Jan. 19	1416	361	34	276
Strong, Walter E. (See Piper, Edwin S., assignor.)						
Strong, Walter E. (See Piper, Edwin S., assignor.)	333,976	Jan. 5	657	179	34	123
Strothoff, Johann G., Jr., Bremen, Germany. Cigar-machine	336,171	Feb. 16	1553	409	34	730
Struck, Henry F., Cincinnati, Ohio. Vault-light	336,874	Feb. 23	2542	669	34	915
Struns, Stephen, Pittsburg, Pa. Fluid-pressure regulator						
Stuart, C. D. (See Ward, Frank F., assignor.)						
Stubbs, Jesse, Mount Pleasant, assignor of two-thirds to N. A. Gray and C. L. Mahrenholz, Red Oak, Iowa. Kiln for and method of burning clay	338,906	Mar. 16	1787	467	34	1264
Stuempges, John. (See Stevenson and Stnempges.)						
Sturla, Jacob J., Memphis, Tenn. Lemon-squeezer	336,672	Feb. 23	2278	595	34	865
Sturtevant, Charles A., Cleveland, Ohio. Tobacco-cutting machine	334,820	Jan. 26	1861	496	34	367
Stuyvesant, Robert, New York, N. Y. Cuff holder and adjuster	337,534	Mar. 9	903	230	34	1094
Suffern, James B., Suffern, N. Y. Railway-switch	338,649	Mar. 23	2392	630	34	1377
Sugg, George, Chicago, Ill. Dressing-case or bureau	333,977	Jan. 5	658	180	34	123
Sullings, Joseph W., *et al.* (See Richardson, John D., assignor.)						
Sullivan, Hugh J., Milwaukee, Wis. Skylight-frame	334,487	Jan. 19	1417	361	34	276
Sullivan, James, Newton Upper Falls, Mass. Manufacturing flanged castings	334,821	Jan. 26	1863	496	34	367
Sullivan, Michael, *et al.* (See Sweet, Welcome F., assignor.)						
Sullivan, Timothy J., Bowling Green, Ky. Treating smoke economically	335,653	Feb. 9	794	211	34	590
Sullivant, Harry, Archie, Ill. Tile-ditching machine	338,678	Mar. 23	2436	642	34	1385
Sulser, Henry H. (See Vetter, Caspar, assignor.)						
Surerus, Jacob, Newark, N. J. Machine for finishing hats	333,694	Jan. 5	273	74	34	53
Sutcliffe, William W., New Orleans, La. Bagasse-furnace	334,204	Jan. 12	1011	269 270	34	196
Sutherland, Daniel A., Lynn, Mass. Proportional measuring attachment for faucets	336,172	Feb. 16	1554	410	34	730
Sutton, William, St. Louis, Mo. Car-axle box	334,205	Jan. 12	1013	270	34	196
Swain, Hadwen, Denver, Colo. Hand rock-drill	337,887	Mar. 16	1347	349 350	34	1181
Swallow, Isaac W., Kingston, Pa., assignor to American Water Bar Grate Company. Grate-bar for locomotives, &c. (Reissue)	10,700	Mar. 16	1835	482	34	1274

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Swan, James, Seymour, Conn. Bit-holder	337,888	Mar. 16	1349	330	34	1181
Swank, Jackson S., Sheep Ranch, and W. Dages, Big Trees, Cal. Insertible oscillating saw-tooth	334,303	Jan. 12	1158	309	34	223
Swartzwelder, Harrison, *et al.* (See Alfree, James B., assignor.)						
Sweeney, Samuel B., Rochdale, and J. M. Ghormley, Waveland, Ind. Endless reaping-sickle	334,304	Jan. 12	1159	310	34	223
Sweeney, Thomas W., Reading, Pa. Cabinet for jewelers	337,798	Mar. 9	1222	318	34	1151
Sweet, Benjamin F., Fond du Lac, Wis. Coupling-joint	334,305	Jan. 12	1160	310	34	223
Sweet, D. Fred, assignor to Electric Time Company, Grand Rapids, Mich. Self-winding electric clock	337,797	Mar. 9	1221	318	34	1151
Sweet, Stephen, Jr., *et al.* (See Sweet, Welcome F., assignor.)						
Sweet, Welcome F., Grand Rapids, Mich., assignor to himself, M. Sullivan, J. Sage, and S. Sweet, Jr., Chicago, Ill. Electro-magnetic device for winding clocks	334,822	Jan. 26	1864	496 497	34	367
Sweetland, William W., Edwardsburg, Mich. Farm-gate	333,685	Jan. 5	274	74	34	52
Sweetser, Jewett B., Danvers, Mass. Stocking-supporter	335,784	Feb. 9	990	262	34	625
Swengel, Samuel and W. E., Oakland, Nebr. Trace-carrier	338,679	Mar. 23	2438	642	34	1385
Swengel, Willard E. (See Swengel, Samuel and W. E.)						
Swift, Charles N., New York, N. Y. Cabinet for tobacco, cigars, &c	335,097	Jan. 26	2235	593	34	434
Swift, R. K. (See Phelps and Swift.)						
Swindell, William, Allegheny City, Pa. Gas-furnace	334,306	Jan. 12	1161	310 311	34	223
Swinehart, George W., *et al.* (See Ammon, James W., assignor.)						
Swinehart, George W., assignor to G. W. Farrow, East Lynne, Mass. Ring-holder for harness	337,031	Mar. 2	204	54	34	963
Swinscoe, Charles. (See Scarles, Benjamin, assignor.)						
Sykes, Edmund T., Minneapolis, Minn. Boiler	333,571	Jan. 5	96	27	34	21
Sykes, Thomas. (See Lowcock and Sykes.)						
Sylvester, Charles W. (See Sylvester, Henry E. and C. W.)						
Sylvester, George P. (See Ward and Sylvester.)						
Sylvester, Henry E. and C. W., Marengo, Ill. Millstone-dress	336,533	Feb. 16	2068	543	34	822
Symonds, Clarence M., San Francisco, Cal. Machine for jointing and seeming tin-can bodies	338,887	Mar. 30	2752	723 724 725	34	1447
Synchronous Time Company of Portland, Me. (See Eastman, Sylvester, assignor.)						
Synchronous Time Company of Portland, Me. (See Millard and Clarke, assignors.)						
Syracuse Fibre Ware Company. (See Leonard and Stevens, assignors.)						
Taber, Lacell C. (See Taber, Niles C. and L. C.)						
Taber, Loyal C., Danforth, assignor to Wood, Taber & Morse, Eaton, N. Y. Traction-engine	334,623	Jan. 19	1601	426 427	34	310
Taber, Niles C. and L. C., Marilla, N. Y. Potato-digger	338,907	Mar. 16	1789	467	34	1264
Taft, Daniel F., assignor of one-half to J. B. Hadley, New Bedford, Mass. Sight-feeding lubricator	338,650	Mar. 23	2393	631	34	1378
Taft, George W., Abington, Conn. Machine for making, repairing, and cleaning roads	333,572	Jan. 5	97	28	34	21
Taft, Gustavus E., assignor to Whitin Machine Works, Whitinsville, Mass. Ring-spinning machine	333,898	Jan. 5	541	147	34	101
Tainter, Sumner, Washington, D. C. Telephone-transmitter	336,173	Feb. 16	1556	410	34	730
Talcott, Elizabeth. (See Talcott, Richard H. L. and E.)						
Talcott, Richard H. L. and E., Boston, Mass. Mount for pictures and photographs	338,651	Mar. 23	2395	631	34	1377
Talcott, William A., *et al.* (See Nelson, J. and A., assignors.)						
Taplin, Alvin, Forrestville, assignor to Bristol Brass and Clock Company, Bristol, Conn. Friction-pulley for lamps	335,654	Feb. 9	795	211	34	590
Tarbox, James E., and E. H. Taylor, Lynn, Mass., assignors to Tarbox Time Register Company, Portland, Me. Watchman's time-recorder	338,315	Mar. 23	1936	510 511	34	1298
Tarbox Time Register Company. (See Pennell, Lloyd W., assignor.)						
Tarbox Time Register Company. (See Tarbox and Taylor, assignors.)						
Tasker, Stephen P. M., Philadelphia, Pa. Machine for rolling tubes	334,548	Jan. 19	1498	401	34	290
Tate, William J., Philadelphia, Pa. Ice-cream freezer	337,634	Mar. 9	1022	262	34	1117
Tatham, Henry B., Jr., Philadelphia, Pa. Automatic regulating mechanism for heating and ventilating apparatus	333,790	Jan. 5	402	108 109	34	76
Tatham, Henry B., Jr., Philadelphia, Pa. Automatic regulating mechanism for heating and ventilating apparatus	333,791	Jan. 5	404	110	34	76
Tatham, Henry B., Jr., Philadelphia, Pa. Heat-regulating device	333,899	Jan. 5	542	147	34	101
Tatro, William B., Hartford, Conn., assignor to Pierce Manufacturing Company, New York, N. Y. Friction-clutch	337,032	Mar. 2	204	54	34	962
Tatum, Charles A., assignor to Whitall, Tatum & Co., New York, N. Y. Valve for syringes	334,059	Jan. 12	780	214	34	153
Tatum & Co., S. C. (See Tatum and Hatfield, assignors.)						
Tatum & Co., Samuel C. (See Bennett, John M., assignor.)						
Tatum, Samuel C., Jr., and J. Hatfield, assignors to S. C. Tatum & Co., Cincinnati, Ohio. Broom-rack	333,900	Jan. 5	544	148	34	102
Taussig, Hubert P., St. Louis, Mo. Railway-switch	333,901	Jan. 5	545	148	34	102
Tay, Hans, Arcola, Ill. Punching-machine	334,139	Jan. 12	804	245	34	174
Taylor, Amos B., Wollaston, and J. P. Tirrell, Chelsea, assignors to said Taylor and G. F. Pinkham, Wollaston, Mass. Loom-shuttle	336,599	Feb. 23	2162	565	34	844
Taylor, Edward E., assignor of one-half to J. S. Hazard, Newport, R. I. Combined barrel clamp and hook	336,357	Feb. 16	1834	481	34	780
Taylor, Edward W. (See Van Stone and Taylor.)						
Taylor, Elbert C., Stockton, Mo. Target	335,655	Feb. 9	795	212	34	590
Taylor, Eugene H. (See Tarbox and Taylor.)						
Taylor, Frederick, *et al.* (See Andrews, William P., assignor.)						
Taylor, Frederick. (See Davis, Arthur W. S., assignor.)						
Taylor, Frederick, Lowell, Mass. Wire hat and coat hook	336,960	Mar. 2	103	28	34	945
Taylor, Frederick A., *et al.* (See Harty, William, assignor.)						
Taylor, Frederick D., assignor to Hartford Fruit Jar Company, Hartford, Conn. Bottle-stopper	337,458	Mar. 9	808	204	34	1078
Taylor, Frederick W., Philadelphia, Pa. Tennis-racket	335,656	Feb. 9	796	212	34	590
Taylor, George and J. H., Nottingham, county of Nottingham, England. Plaiting-machine	334,060	Jan. 12	781	214 215	34	153
Taylor, George, Jersey City, N. J., assignor to J. L. Mott Iron Works, New York, N. Y. Needle or spray bath	335,785	Feb. 9	992	262 263	34	625
Taylor, George A., New Hampton, Iowa. Stove	335,974	Feb. 9	1251	332	34	671
Taylor, George F., Brooklyn, N. Y., assignor to C. B. Cottrell, Stonington, Conn. Printing-machine	336,673	Feb. 23	2278	595 596	34	865
Taylor, James H. (See Taylor, George and J. H.)						
Taylor, James H., and Z. T. Miller, Philadelphia, Pa. Railway safety-gate	338,316	Mar. 23	1939	511	34	1299

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Taylor, James S., Danbury, Conn. Hat scalding and felting machine	335,657	Feb. 9	797	219	34	500
Taylor, M. S. (See Taylor, William S., assignor.)						
Taylor, Serell, Chicago, Ill. Stallion-testicle supporter	338,371	Mar. 23	2022	531	34	1313
Taylor, Serell, Chicago, Ill. Horse-boot	338,372	Mar. 23	2023	531	34	1313
Taylor, Simon, Newburg, Ind. Calipers	335,497	Feb. 2	554	145	34	540
Taylor, Thomas B., and M. B. Hammond, Bridgeport, Conn. Corset-cover	338,009	Mar. 16	1522	394	34	1212
Taylor, Thomas M., Atlanta, Ga. Platform for railway-track scales	334,995	Jan. 26	2061	556	34	406
Taylor, William, Niles, Mich. Mechanical telephone-diaphragm	335,321	Feb. 2	327	86	34	500
Taylor, William, Chicago, Ill. Bung	336,766	Feb. 23	2393	627	34	848
Taylor, William O., Cambridge, Mass. Machine for cleaning casks or barrels	334,488	Jan. 19	1418	382	34	277
Taylor, William R., Bridgeport, Conn. Handle for furniture	337,869	Mar. 16	1350	351	34	1181
Taylor, William S., assignor to M. S. Taylor, Huntingdon, Pa. Reciprocating harvester-knife	335,397	Feb. 2	435	112	34	519
Teed, William P., Livingston, assignor of one-half to C. I. Hedden, Newark, N. J. Thill-coupling	335,398	Feb. 2	436	112	34	519
Teed, William P., Livingston, assignor of one-half to C. I. Hedden, Newark, N. J. Nut-lock	338,448	Mar. 23	2128	556	34	1332
Tegethoff, Frank C., Cleveland, Ohio. Metal roofing	334,624	Jan. 19	1603	427	34	310
Teller, Ida A., Unadilla, N. Y. Kitchen utensil	338,449	Mar. 23	2129	557	34	1332
Ten Winkle, Augustus, Detroit, Mich. Printing-surface	337,725	Mar. 9	1133	292	34	1135
Tennent, Thomas, assignor to J. B. Haggin, San Francisco, Cal. Velocipede-skate	336,600	Feb. 23	2164	566	34	844
Tenney, J. Frank. (See Holt, Horace, assignor.)						
Terry, Charles H., Riga, N. Y. Vehicle-spring	337,208	Mar. 2	434	114	34	1006
Terry, Samuel H., Brooklyn, N. Y. Metallic pole for use as a telegraph-pole	338,115	Mar. 16	1672	434	34	1240
Terry, Thomas W. (See Pinckney, Charles C., assignor.)						
Terry, Thomas W., Baltimore, Md. Letter envelope-sheet	336,446	Feb. 16	1956	512	34	802
Terwilliger, Silas. (See Conklin and Terwilliger.)						
Tesla Electric Light and Manufacturing Company. (See Tesla, Nikola, assignor.)						
Tesla, Nikola, Smiljan Lika, Austria-Hungary, assignor to Tesla Electric Light and Manufacturing Company, Rahway, N. J. Commutator for dynamo-electric machines	334,823	Jan. 26	1866	497	34	367
Tesla, Nikola, Smiljan Lika, Austria-Hungary, assignor to Tesla Electric Light and Manufacturing Company, Rahway, N. J. Electric-arc lamp	335,786	Feb. 9	994	263	34	625
Tesla, Nikola, Smiljan Lika, Austria-Hungary, assignor to Tesla Electric Light and Manufacturing Company, Rahway, N. J. Electric-arc lamp	335,787	Feb. 9	995	263 / 264	34	626
Tesla, Nikola, Smiljan Lika, Austria-Hungary, assignor to Tesla Electric Light and Manufacturing Company, Rahway, N. J. Regulator for dynamo-electric machines	336,961	Mar. 2	103	28, 29	34	945
Tesla, Nikola, Smiljan Lika, Austria-Hungary, assignor to Tesla Electric Light and Manufacturing Company, Rahway, N. J. Regulator for dynamo-electric machines	336,962	Mar. 2	105	29	34	945
Thau, Henry, New York, N. Y. Electrical signaling apparatus	333,852	Feb. 9	1079	285	34	642
Thayer, Eugene, New York, N. Y. Music-satchel	338,569	Mar. 23	2281	598	34	1358
Thayer, Henry A., New York, N. Y., assignor, by mesne assignments, to G. S. Hulbert, East Orange, N. J. Folding bed	337,238	Mar. 9	1022	263	34	1117
Thayer, James F., Providence, R. I. Manufacture of ornamental nails	334,625	Jan. 19	1603	427	34	310
Thayer, James F., Providence, R. I. Machine for securing buttons to fabrics	337,636	Mar. 9	1024	263	34	1117
Thayer, James F., Providence, R. I. Making buttons	338,373	Mar. 23	2024	531	34	1313
Thayer, John C. (See Reid and Thayer.)						
Thie, Otto, Union Hill, N. J. Finger-ring	333,696	Jan. 5	275	74	34	52
Thielsen, Julius E. E., E. L. Giroux, and H. W. Dilg, Portland, Oreg. Amalgamating apparatus	337,535	Mar. 9	903	230	34	1094
Thiéry, Edward A., and C. F. Crosselmire, Newark, N. J. Article of jewelry and ornamenting the same	333,697	Jan. 5	275	75	34	52
Thies, Carl A., Concord, N. C. Cam for stamp-mills	336,447	Feb. 16	1958	512	34	802
Thies, John B., Dayton, Ohio. Fence-making machine	335,399	Feb. 2	436	112	34	519
Thies, John B., Dayton, Ohio. Reel for fence-making machines	337,637	Mar. 9	1026	263	34	1117
Thies, John B., Dayton, Ohio. Fence-making machine	337,638	Mar. 9	1026	264	34	1118
Thistle, Edward, West Hoboken, N. J. Door-knob	337,093	Mar. 2	280	74	34	978
Thoman, Henry, Leesville Cross Roads, Ohio. Straw-carrier	336,448	Feb. 16	1958	513	34	802
Thomas, Addison C., Chicago, Ill. Feed-guide for type-writing machines	335,488	Feb. 2	556	146	34	540
Thomas, Allen W., and G. W. Way, Portland, Me. Burglar-alarm	336,449	Feb. 16	1960	513 / 514	34	802
Thomas, Andrew J. (See Frazee and Thomas.)						
Thomas, Cash C., Evansville, Ind. Safety lock or catch for shafts or elevators	339,032	Mar. 30	2965	784	34	1485
Thomas, Charles R., Lyons, Mich. Sulky-plow	335,400	Feb. 2	438	113	34	519
Thomas, Edward F. (See Simmons, George W., assignor.)						
Thomas, George J., Newton, Mass. Combined sash balance and fastener	337,536	Mar. 9	905	231	34	1095
Thomas, Hugh, assignor of one-half to himself and J. M. Henley, New York, N. Y. Combined inhaler and atomizer	335,322	Feb. 2	328	86	34	500
Thomas, James W., Muncie, Ind. Steamboat and water wheel	334,624	Jan. 26	1867	497	34	367
Thomas, John, Cedar Rapids, Iowa. Harness-saddle	335,161	Feb. 2	89	24	34	456
Thomas, John H., and J. E. Offutt, Springfield, Ohio; said Offutt assignor to said Thomas. Combined hay rake and tedder	337,891	Mar. 16	1352	351 / 352	34	1182
Thomas, William, Jersey City, N. J., assignor to Bishop & Babcock, Cleveland, Ohio. Hydraulic air-compressor	337,209	Mar. 2	434	114	34	1006
Thomas, William M., assignor of one-half to Grand Rapids Electric Light and Power Company, Grand Rapids, Mich. Regulator for electric-light circuits	333,696	Jan. 5	276	75	34	52
Thomlinson, John, Knothill Works, Carlisle, England. Plaster or cement	334,489	Jan. 19	1419	.....	34	277
Thompson, Arthur G., *et al.* (See Mower, Samuel E., assignor.)						
Thompson, Arthur G., *et al.* (See Mower and Fowler, assignors.)						
Thompson, Columbus E., Baltimore, Md. Lubricating compound	335,546	Feb. 2	633	.....	34	554
Thompson, Edwin, Providence, R. I. Garment-supporter	334,307	Jan. 12	1162	311	34	204
Thompson Gas Kiln and Oven Company. (See Thompson, William H., assignor.)						
Thompson, Harry G., *et al.* (See Mower, Samuel E., assignor.)						
Thompson, Harry G., *et al.* (See Mower and Fowler, assignors.)						
Thompson, Henry G., *et al.* (See Mower, Samuel E., assignor.)						
Thompson, Henry G., *et al.* (See Mower and Fowler, assignors.)						
Thompson, Milton R., Bartow, Fla. Plotter for drafting	335,853	Feb. 9	1062	286	34	642
Thompson, Perley & Waite. (See Kenna, Joseph W., assignor.)						
Thompson, Phillip K. (See Wilkinson, Horatio S., assignor.)						
Thompson, Robert A., assignor of one-third to G. W. Maize, Weaubleau, Mo. Draft-equalizer	335,975	Feb. 9	1251	332	34	671
Thompson, Taylor, *et al.* (See Weaver, Edward P., assignor.)						
Thompson, William, *et al.* (See McAneny and Rieley, assignors.)						
Thompson, William F. (See Day, Andrew J., assignor.)						
Thompson, William H. (See Knowles, John A., Jr., assignor.)						
Thompson, William H., Leeds, county of York, England, assignor to Thompson Gas Kiln and Oven Company. Baker's oven	336,767	Feb. 23	2394	628	34	888

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Thompson, William P., *et al.* (See McIlvenna and Rollason, assignors.)						
Thompson, William P., Philadelphia, Pa. Furnace and grate	335,658	Feb. 9	798	218	34	501
Thomson, Alexander, Fitchburg, Mass. Riveting-machine	335,976	Feb. 9	1252	333	34	671
Thomson, Archie, Chattanooga, Tenn. Balanced slide-valve	337,714	Mar. 9	1120	289	34	1133
Thomson, Elihu, Lynn, Mass. Dynamo-electric machine	333,573	Jan. 5	102	29	34	28
Thomson, Elihu, Lynn, Mass. Electric motor	335,547	Feb. 2	634	166	34	554
Thomson, Elihu, Lynn, Mass. Switch or turn-off for electric circuits	335,548	Feb. 2	635	166	34	554
Thomson, Elihu, New Britain, Conn., assignor to Thomson-Houston Electric Company, Boston, Mass. Incandescent electric lamp	335,158	Feb. 2	83	22	34	455
Thomson, Elihu, New Britain, Conn., assignor to Thomson-Houston Electric Company, Boston, Mass. System of electric distribution	335,159	Feb. 2	84	22, 23	34	455
Thomson, Elihu, New Britain, Conn., assignor to Thomson-Houston Electric Company, Boston, Mass. Incandescent electric lamp	335,160	Feb. 2	88	23, 24	34	456
Thomson, Elihu, and E. W. Rice, Jr., Lynn, Mass., assignors to Thomson-Houston Electric Company, of Connecticut. Automatic cut-out for electric lamps	338,208	Mar. 16	1790	467	34	1264
Thomson, Elihu, and E. W. Rice, Lynn, Mass., assignors to Thomson-Houston Electric Company, of Connecticut. Regulator for dynamo electric machines	339,079	Mar. 30	3096	799 / 800	34	1495
Thomson, Frederick W., Maitland, county of Hants, Nova Scotia, Canada. Windlass	334,682	Jan. 19	1662	449	34	325
Thomson-Houston Electric Company. (See Thomson, Elihu, assignor.)						
Thomson-Houston Electric Company. (See Thomson and Rice, assignors.)						
Thomson, John. (See Mead and Thomson.)						
Thomson, John, Aledo, Ill. Check-row attachment for corn-planters	333,699	Jan. 5	277	75	34	53
Thomson, John, Brooklyn, N. Y. Staple-machine	334,909	Jan. 26	1971	524 / 525	34	387
Thomson, John, Brooklyn, N. Y. Counting-register	337,690	Mar. 16	1351	351	34	1182
Thomson, John, and R. W. Mullins, Kansas City, Mo.; said Thomson assignor to said Mullins. Excavating apparatus	338,603	Mar. 30	2998	692	34	1425
Thomson, John T., Invercargill, New Zealand, assignor to J. Clay, Jr., and W. H. Forrest, Chicago, Ill. Wind-wheel	337,094	Mar. 2	282	74, 75	34	979
Thomson, Judson L., Syracuse, N. Y. Rivet	333,700	Jan. 5	278	75	34	53
Thomson, Judson L., Syracuse, N. Y. Applying wear-points to rubber boots and shoes	335,393	Feb. 2	330	87	34	501
Thomsen, Gustave H., St. Louis, Mo. Picture-frame	337,033	Mar. 2	206	54	34	963
Thora, Theodore, St. Clair, Pa. Clamping-bracket	334,625	Jan. 26	1868	497	34	368
Thorn, Thomas B., Vincennes, Ind. Farm-gate	334,727	Jan. 19	1742	465	34	337
Thorn Wire Hedge Company. (See Briggs, Orlando P., assignor.)						
Thornberry, Henry S., assignor to American Bell Telephone Company, Boston, Mass. Telephone-transmitter	336,968	Feb. 16	1709	446	34	755
Thorndike, Frank H. (See Anthoine and Thorndike.)						
Thornton, John C., Mount Vernon, Ind. Apparatus for cleaning oil	337,459	Mar. 9	809	205	34	1078
Thornton, Joseph F., assignor to Union Eyelet Company, Providence, R. I. Button-fastener	335,162	Feb. 2	90	24	34	456
Thornton, Richard. (See Heavner and Thornton.)						
Thowles, Orlando M., Newark, N. J. Alloy	338,317	Mar. 23	1941	.....	34	1299
Thunborg, Jakob, Evansville, Minn. Nursery-chair	335,394	Feb. 2	331	87	34	501
Thurber, Milton R., and R. B. Brockway, Scranton, Pa. Car-axle lubricator	335,163	Feb. 2	91	24	34	456
Thury, René, assignor, by mesne assignments, to A. De Meuron & Cuénod, Geneva, Switzerland, and G. H. Benjamin, New York, N. Y. Magneto or dynamo electric machine	333,902	Jan. 5	546	148 / 149	34	102
Thuston, Lycurgus, and E. R. Chase, Findlay, Ohio. Sliding gate	336,601	Feb. 23	2165	566	34	844
Tibbits, John B. (See McCarty, Norman, assignor.)						
Tibbits, John B. (See Mackie, Robb, assignor.)						
Tibbits, John B. (See Mackie and McCarty, assignors.)						
Tibbitts, Charles N., Denver, Colo. Device for automatically gaging the flow of water	334,695	Jan. 12	688	220	34	163
Tibbitts, Frank R., Cleveland, Ohio. Force and drain faucet	337,210	Mar. 2	436	114	34	1007
Tibbitts, Frank R. and G. W., Cleveland, Ohio. Venting-bung	337,211	Mar. 2	437	114	34	1007
Tibbitts, George W. (See Tibbitts, Frank R. and G. W.)						
Tiefel, Charles G. and L., Rochester, N. Y. Elevator	333,701	Jan. 5	279	76, 77	34	53
Tiefel, Leonard. (See Tiefel, Charles G. and L.)						
Tietze, Gustav, San Francisco, Cal. Camp-chair	337,715	Mar. 9	1121	289	34	1133
Tillison, Hosea R., assignor to S. A. Woods Machine Company, Boston, Mass. Reamer	336,318	Mar. 23	1941	511	34	1299
Tillitson, Augustine A. (See Bairstow and Keavy, assignor.)						
Tillitson, Augustine A. (See Keavy, Thomas E., assignor.)						
Tillman, William A., Grape Vine, Tex. Fence	336,499	Feb. 16	2019	530	34	813
Tillotson & Co., L. G. (See Waldo, Leonard, assignor.)						
Tilton, James E., Ashland, assignor to himself and W. H. Huntington, Boston, Mass. Rubber boot	337,892	Mar. 16	1356	352	34	1182
Tilton, John, San Francisco, Cal. Faucet for shipping and service cans	336,174	Feb. 16	1560	411	34	781
Timmons, Lottie W., Syracuse, N. Y. Buckle for supporters	339,031	Mar. 30	2964	784	34	1485
Timms, James, assignor of one-half to B. F. Rees, Columbus, Ohio. Dust-guard for axle-boxes	338,604	Mar. 30	2631	693	34	1426
Tindell, Henry, Harrison, N. J. Door-saddle	335,654	Feb. 9	1063	286	34	643
Tinsley, Charles L., and W. P. Rose, Baltimore, Md. Breeching attachment for thills	335,401	Feb. 2	439	113	34	519
Tintle, George, Newark, N. J. Reaewing-machine	336,500	Feb. 16	2020	530	34	813
Tipton, Nelson F., Baldwin City, Kans. Egg-tray	334,896	Jan. 26	1869	498	34	368
Tirrell, Jacob P. (See Taylor and Tirrell.)						
Titus, Hazen, Toledo, Ohio. Water-motor	338,116	Mar. 16	1674	435	34	1241
Tixier, John, San Francisco, Cal. Stop-watch	333,792	Jan. 5	406	110	34	77
Tobey, William L., Boston, Mass. Steam-boiler	338,605	Mar. 30	2631	693	34	1426
Tobias, Cyrus, Freeport, and E. W. Shoesmith, Lena, assignors to A. Baumgarten and C. Tobias, Freeport, Ill. Cork-extractor	334,061	Jan. 12	785	215	34	164
Todd, Albert M., Nottawa, Mich. Apparatus for treating essential oils, &c	337,716	Mar. 9	1122	289 / 290	34	1133
Todd, Albert M., Nottawa, Mich. Obtaining menthol. (Reissue)	10,705	Mar. 30	3092	718	34	1506
Toffler, Simon, New York, N. Y. Basket	333,798	Jan. 5	408	111	34	77
Tolliver, Gillum T. (See Valiant, Placito F., assignor.)						
Tomlinson, Albert R., Severy, Kans. Plow	339,080	Mar. 30	3029	800	34	1495
Tomlinson, Edwin R., assignor to Eaton, Cole & Burnham Company, Bridgeport, Conn. Jet and spray nozzle	336,602	Feb. 23	2166	566	34	845
Tomlinson, James, assignor of one-half to G. Maitland, R. A. Parker, and C. F. Burton, Detroit, Mich. Cylindrical wooden package	336,963	Mar. 2	106	29	34	945
Tompkins, Daniel A., and F. Oliver, Charlotte, N. C. Oil-seed-meal-heating machinery	336,175	Feb. 16	1561	411	34	781
Tompkins, Myron, Attica, Ohio. Fifth-wheel	337,460	Mar. 9	810	205	34	1078
Toms, George W., Newark, N. J. Button	333,794	Jan. 5	409	111	34	77
Tonks, Joseph, Malden, Mass. Breech-loading fire-arm	333,795	Jan. 5	410	111	34	77
Tonner, A. Clarke, Canton, Ohio. Burglar-alarm	336,319	Mar. 23	1942	511	34	1299
Toof, Edwin J., New Haven, Conn. Needle-case	337,693	Mar. 16	1357	352	34	1183
Toole, John T., East Saginaw, Mich. Steam-actuated valve	335,655	Feb. 9	1063	286	34	643

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Toope, Charles, London, England. Fire-proof ceiling	334,996	Jan. 26	2083	556	34	406
Toppan, Charles, Salem, assignor to Canton Manufacturing Company, Boston, Mass. Scouring wool	338,606	Mar. 30	2633	.....	34	1426
Torrey, Francis B., Bath, Me. Journal and bearing	335,047	Jan. 26	2163	575	34	420
Torsch, Edward L., and J. R. Lee, Baltimore, Md. Badge	337,717	Mar. 9	1196	290	34	1134
Totman, Edsell, Hinsdale, Ill. Construction of houses	333,903	Jan. 5	550	149	34	106
Totman, Edsell, Hinsdale, Ill. Constructing frame houses. (Reissue)	10,678	Jan. 12	1202	349	34	947
Tourgee, Albion W., assignor to L. D. Jennings, S. E. Kilbourn, Mayville, N. Y., and A. C. Kilbourn, Erie, Pa. Harness	333,978	Jan. 5	659	180	34	194
Tourgee, Albion W., and L. D. Jennings, assignors to said Jennings, S. E. Kilbourn, Mayville, N. Y., and A. C. Kilbourn, Erie, Pa. Vehicle pole and shaft	333,979	Jan. 5	661	181	34	194
Tourgee, Albion W., and L. D. Jennings, assignors to said Jennings, S. E. Kilbourn, Mayville, N. Y., and A. C. Kilbourn, Erie, Pa. Vehicle running-gear	336,534	Feb. 16	2069	544	34	822
Tourtellotte, George M. (See Morey, De Witt C., Jr., assignor.)						
Touya, Jean B., Fils, Tarbes, France. Grinding-mill or decorticator	333,980	Jan. 5	662	181	34	194
Tower, John J., Brooklyn, N. Y. Pipe-wrench	337,694	Mar. 16	1358	353	34	1183
Towle, Rossetter L., Gunnison, Colo. Safety-wheel for roller-skates	336,603	Feb. 23	2167	566	34	845
Towner, James F., Aurora, Ill. Gate	335,254	Feb. 2	239	63	34	468
Townley, Charles E., South Lansing, N. Y. Corn-planter	335,255	Feb. 2	239	63	34	468
Townsend, Charles W. (See McDonald and Townsend.)						
Townsend, Lucius R. (See Kibler, John B., assignor.)						
Trabue Arms Company. (See Trabue, William, assignor.) (Reissue.)						
Trabue, William, assignor to Trabue Arms Company, Louisville, Ky. Magazine fire-arm. (Reissue)	10,690	Feb. 16	2078	546	34	824
Tracy, George S. (See Galt and Tracy.)						
Tracy, John A., Weston, W. Va. Billiard-cue	338,888	Mar. 30	2756	725	34	1448
Trampedach, Alexander. (See Seyberlich and Trampedach.)						
Traut, Justus A., New Britain, Conn. Plane	336,674	Feb. 23	2280	596	34	865
Traut, Justus A., assignor to Stanley Rule and Level Company, New Britain, Conn. Face-plate for marking-gages	334,308	Jan. 12	1168	311	34	294
Traut, Justus A., assignor to Stanley Rule and Level Company, New Britain, Conn. Beading-tool	335,856	Feb. 9	1085	286	34	643
Traut, Justus A., assignor to Stanley Rule and Level Company, New Britain, Conn. Bench-plane	338,570	Mar. 23	2282	598	34	1358
Traver, Alva H., Jackson, Mich. Corset	336,768	Feb. 23	2296	628	34	869
Traver, Harrison. (See Weeks and Traver.)						
Travis, Charles L., Minneapolis, Minn. Wash-board	335,977	Feb. 9	1254	333	34	672
Travis, Charles L., Minneapolis, Minn. Insulator	336,828	Feb. 23	2476	651	34	903
Travis, Charles L., Minneapolis, Minn. Carpet-sweeping machine	337,288	Mar. 2	546	144	34	1027
Travis, David W., Athens, N. Y. Clothes-line reel	337,799	Mar. 9	1223	318	34	1152
Traylor, Robert W., Richmond, Va. Journal-box	334,490	Jan. 19	1490	389	34	277
Treadwell, William B., assignor to himself and J. Aspinwall, New York, N. Y. Honey-extractor	335,857	Feb. 9	1066	287	34	643
Treat, James E., Boston, Mass. Mechanical musical instrument	335,549	Feb. 2	637	167 / 168	34	554
Treat, James E., Boston, Mass. Parallel drop-bracket for gas, &c	338,117	Mar. 16	1675	435	34	1941
Tregoning, John, Brooklyn, N. Y., assignor to Schuyler Electric Light Company of New York. Electric-arc lamp	336,176	Feb. 16	1562	411	34	781
Trenton Iron Company. (See Hewitt, William, assignor.)						
Trenton Iron Company. (See Withington, James, assignor.)						
Trescott, Charles B., New York, N. Y. Machine for polishing silk and other thread	334,309	Jan. 12	1164	312	34	294
Tribby, George W. (See Hansard and Tribby.)						
Tribou, Samuel C., assignor to Rockford Boot and Shoe Manufacturing Company, Rockford, Ill. Shoe	334,398	Jan. 12	1279	345	34	344
Trix, John. (See Murdock, Horace B., assignor.)						
Trombly, Alexander. (See Decker, Cornelius, assignor.)						
Trout, Silas E., assignor to H. S. Wendell, Philadelphia, Pa. Manufacturing wall-paper	335,725	Feb. 9	900	.....	34	608
Truesdell, Lewis W., assignor of one-half to E. H. Gere, Owego, N. Y. Fluid-pressure regulator	337,461	Mar. 9	812	205	34	1078
Tucker, George D., assignor to Pratt & Whitney Company, Hartford, Conn. Screw-threading tool	336,024	Feb. 9	1317	349	34	682
Tucker, James W., Springville, assignor of one-half to J. W. Ash, Beaver Valley, Ala. Car-axle box	333,981	Jan. 5	663	181	34	194
Tucker, Morris W., Sumner, Mich. Nut-lock	338,624	Mar. 21	2361	621	34	1372
Tucker, Sampson E. (See Wakeman, Bryan S., assignor.)						
Tucker, William A., New York, N. Y. Capsule-joining machine	336,177	Feb. 16	1563	411 / 412	34	731
Tufts, James W. (See Brown, John, assignor.)						
Tull, Frank S., H. Kuehn, and W. F. Beers; said Beers assignor to J. E. Wallis, Galveston, Tex.; said Tull and Kuehn assignors of one-fourth of their right to said Wallis. Process of and machine for the use of compressed air as a motive power	338,209	Mar. 16	1793	467 / 468	34	1955
Tunis Gang Flooring Machine Company. (See Tunis, Henry C., assignor.)						
Tunis, Henry C., assignor to Tunis Gang Flooring Machine Company, Baltimore, Md. Cutter for molding-machines	337,353	Mar. 2	630	166	34	1042
Tupper, Charles, Ridgeland, Ill. Grain-cleaner	338,236	Mar. 16	1828	477	34	1271
Turley, John A., Cog Hill, Tenn. Car-coupling	336,875	Feb. 23	2544	670	34	915
Turman, William B., Waldron, Ark. Permutation-lock	336,358	Feb. 16	1835	481	34	780
Turman, William B., Waldron, Ark. Permutation-padlock	337,800	Mar. 9	1224	318	34	1152
Turnbull, George and J., Chicago, Ill. Privy-seat	334,491	Jan. 19	1490	382	34	277
Turnbull, John. (See Turnbull, George and J.)						
Turnbull, Thomas P., Englewood, Ill. Feathering paddle-wheel	335,726	Feb. 9	901	227 / 228	34	609
Turnbull, William C., Baltimore, Md. Telephone-transmitter	336,876	Feb. 23	2545	670	34	916
Turnbull, William C., Baltimore, Md. Telephone-transmitter	336,877	Feb. 23	2546	670	34	916
Turnbull, William C., Baltimore, Md. Telephone-switch	338,889	Mar. 30	2757	725	34	1448
Turnbull, William C., Baltimore, Md. Telephone-transmitter	339,121	Mar. 30	3086	816 / 817	34	1565
Turnesare, Peter R., Rockford, Ill. Horse-collar	336,964	Mar. 2	107	30	34	945
Turner, Alfred. (See Evans and Turner.)						
Turner Beard Automatic Brake Company. (See Turner, William B., assignor.)						
Turner, Chester B. (See Turner, Isaac A., assignor.)						
Turner, Frank S. (See Ford, Thomas J., assignor.)						
Turner, George. (See Colman and Turner.)						
Turner, Isaac A., assignor of one-half to C. B. Turner, Detroit, Mich. Steam-engine	336,025	Feb. 9	1318	349	34	663

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Turner, William A., assignor to Millard Manufacturing Company, Providence, R. I. Atomizer	335,550	Feb. 2	643	168	34	555
Turner, William B., assignor to Turner Beard Automatic Brake Company, New York, N. Y. Car-brake	336,096	Feb. 9	1319	340 / 350	34	663
Turnure, Frank H., Graham, Mo. Horse-tail holder	336,359	Feb. 16	1838	482	34	780
Türpe, Alevin. (See Henze, Julius, Jr., assignor.)						
Tuttle, George L., Aurora, Ill. Watch-regulator	336,360	Feb. 16	1838	482	34	780
Tuttle, O. G. *et al.* (See Finneran, Charles C., assignor.)						
Twambley, George E., Saco, Me. Toe-weight	336,680	Mar. 23	2438	643	34	1365
Tweddell, Ralph H., Westminster, county of Middlesex, J. Platt, and J. Fielding, Gloucester, county of Gloucester, England. Hydraulic forging-press	336,604	Feb. 23	2168	567	34	845
Twohig, Patrick, Cleveland, Ohio. Steam-accumulator	338,237	Mar. 16	1829	478	34	1272
Tyler, Abel D., South Abington, Mass. Tongue-support	336,605	Feb. 23	2169	567	34	845
Tyler, George, assignor to A. M. Barker, W. W. Watkins, C. M. Mahaffey, Rock Creek, and W. C. Stiles, Rome, Ohio. Thill-coupling	334,910	Jan. 26	1974	525	34	387
Tyler, Hiram A., Stamford, and B. McGovern, Bridgeport, Conn. Billiard-chalk holder	336,098	Feb. 9	1324	350	34	664
Tyler, James L., Jr., Boston, Mass. Rubber boot	335,256	Feb. 2	241	63, 64	34	468
Tyler, Matthias S., and T. H. Carter, Mount Sterling, Ky.; said Carter assignor to said Tyler. Chain-pump	337,354	Mar. 2	631	166	34	1043
Tyler, William W. (See Davis and Tyler.)						
Tynan, Joseph E., Paterson, N. J. Belt-tightener for spinning-machines, &c	336,027	Feb. 9	1322	350	34	663
Tyree, William H. (See McNeal, Andrew C., assignor.)						
Tyson, Allen H., Leasdale, Pa. Horse-boot	333,982	Jan. 5	664	182	34	195
Tyson, Jennie M., executrix. (See Uebele, Conrad.)	336,269	Feb. 16	1711	446	34	756
Uebele, Conrad, deceased; J. M. Uebele, executrix, Chicago, Ill. Rocking-horse						
Uhlich, Ferdinand G., St. Louis, Mo. Case for physicians' prescription-papers, &c	338,807	Mar. 30	2633	693	34	1426
Ulrich, Max, Easthampton, Mass. Oscillating steam-engine	338,690	Mar. 30	2757	726	34	1448
Unbehend, Jacob J., Syracuse, N. Y. Spring-clasp	336,769	Feb. 23	2297	628	34	869
Underhill, Andrew J., 2d, Gasport, assignor to himself and E. Hinchey, Middleport, N. Y. Bundle-carrier	333,796	Jan. 5	412	111	34	78
Underwood, Marshall H., South Riley, Ill. Thill-coupling	337,695	Mar. 16	1359	353	34	1183
Union Bag Machine Company. (See Weyburn, Elbert D., assignor.)						
Union Eyelet Company. (See Thornton, Joseph F., assignor.)						
Union Manufacturing Company. (See Birchall, George W., assignor.)						
Union Manufacturing Company. (See St. John, Roswell H., assignor.)						
United Gas Improvement Company. (See Granger, Arthur O., assignor.)						
United States Electric Lighting Company. (See Weston, Edward, assignor.)						
United States Exhaust, Filling and Carbonating Company. (See Hunt, James, assignor.)						
United States Waterproofing Fibre Company. (See Horner and Hyde, assignors.)						
Upton, King, Salem, Mass. Manufacturing glue	336,374	Mar. 23	2025	532	34	1313
Urann, Frederic W., Painesville, Ohio. Sectional and folding boat	338,450	Mar. 23	2130	557	34	1339
Utley, Hiram S., assignor of one-half to H. S. Bowen, Chicago, Ill. Producing imitation-stone	336,675	Feb. 23	2281	.....	34	866
Utter, Stanley M. (See Canfield, Charles S., assignor.)						
Vail, Samuel S., and J. Solliday, St. Louis, Mo. Gang-edger	334,997	Jan. 26	2084	556	34	407
Valentin, Charles A., Philadelphia, Pa. Cigar-mold	344,492	Jan. 19	1421	382	34	277
Valentine, Benjamin E. (See Eddy, George D., assignor.)						
Valentine, Richard L., Brooklyn, N. Y., assignor to J. W. Van Dyke. Portable derrick	337,469	Mar. 9	813	205 / 206	34	107
Valentine, Samuel W., Boston, Mass. Clip for leaves of music-folios, &c	337,639	Mar. 9	1029	264	34	1118
Valiant, Placito F., assignor of one-half to G. S. Toliver, Jefferson, Iowa. Electric belt	336,450	Feb. 16	1902	514	34	803
Van Aradale, Theodore C., Montclair, N. J. Paint-exhibitor	337,034	Mar. 2	206	55	34	983
Van Depoele, Charles J., Chicago, Ill. Overhead conductor for electric railways	334,062	Jan. 12	787	216	34	154
Van Depoele, Charles J., Chicago, Ill. Regulator for dynamo-electric machines	335,650	Feb. 9	790	213	34	591
Van Depoele, Charles J., Chicago, Ill. Electric-arc lamp	336,452	Feb. 16	1965	515	34	803
Van Depoele, Charles J., Chicago, Ill. Overhead conductor for electric railways	336,453	Feb. 16	1966	515 / 516	34	803
Van Depoele, Charles J., Chicago, Ill. Electro-magnetic reciprocating engine	337,897	Mar. 16	1362	354	34	1184
Van Depoele, Charles J., Chicago, Ill. Carriage for rock-drills	337,898	Mar. 16	1366	354	34	1184
Van Depoele, Charles J., Chicago, Ill. Carbon for incandescent lamps	337,899	Mar. 16	1367	354	34	1185
Van Depoele, Charles J., Chicago, Ill. Dynamo-electric generator	338,320	Mar. 23	1944	512	34	1299
Van Depoele, Charles J., Chicago, Ill. System of generating electrical currents	338,321	Mar. 23	1945	512	34	1300
Van Depoele, Charles J., Chicago, Ill. Electro-magnetic reciprocating engine	338,375	Mar. 23	2096	532	34	1313
Van Depoele, Charles J., Chicago, Ill., assignor of one-half to R. H. Mather, Windsor, Conn. Dynamo-electric machine	337,896	Mar. 16	1360	353	34	1183
Van Dolsen, Augustus F., Liberal, assignor to R. J. Morris & Co., Dennison, Mo. Weather-strip	335,098	Jan. 26	2236	593	34	434
Van Dusen, Charles E., Oneonta, N. Y. Staple-holding implement	337,212	Mar. 2	438	115	34	1007
Van Dyke, John W. (See Valentine, Richard L., assignor.)						
Van Etten, Helen M., Moravia, N. Y. Stiffener for corsets	336,606	Feb. 23	2170	567	34	846
Van Gelder, Pieter, Sowerby Bridge, county of York, England. Feed mechanism for roller grinding-mills, &c	335,257	Feb. 2	243	64	34	484
Van Guyaling, Aaron, West Albany, N. Y. Oscillating engine	336,454	Feb. 16	1969	516	34	804
Van Horn, David E., Elkhart, Ind. Meat-tenderer	336,455	Feb. 16	1970	516	34	804
Van Keuren, George C., Duquoin, Ill. Vehicle-axle and axle-nut	335,856	Feb. 9	1067	287	34	643
Van Nuys, Thomas C., *et al.* (See Hunter, George D., assignor.) (Reissue.)						
Van Range Company, John. (See Ziegle, Louis E., assignor.)						
Van Stone, Edwin D., Syracuse, and E. W. Taylor, Albion, N. Y. Hot-air furnace	334,310	Jan. 12	1165	312	34	294
Van Syckle, Leonidas H., assignor to himself and J. F. Creamer, Fort Lee, N. J. Cartridge-loading machine	336,676	Feb. 23	2282	586 / 587	34	866
Van Vliet, Warren R., East Stroudsburg, Pa. Wire-bending machine	336,361	Feb. 16	1840	482	34	780
Van Voorhis, George S., Bucyrus, Ohio. Refrigerator	336,501	Feb. 16	2021	530	34	813
Van Wie, Daniel D., Indianapolis, Ind. Combined map, chart, and book case	337,095	Mar. 2	283	75	34	979
Van Winkle, John A., St. Joseph, Mo. Compound for softening and dyeing broom-corn	334,140	Jan. 12	895	.....	34	174
Vance, Samuel J., Macomb, Ill. Window-screen	336,178	Feb. 16	1566	412	34	732
Vandegrift, Nathaniel W. (See Armstrong and Vandegrift.)						
Vandemark, Archibald B., New York, N. Y. Gas or oil stove	333,797	Jan. 5	413	112	34	78
Vanderbeugle, Maurice, New York, N. Y. Overalls	338,118	Mar. 16	1677	435	34	1241
Vandewater, Eulalie M., administratrix. (See Vandewater, Joseph.)						
Vandewater, Joseph, deceased; E. M. Vandewater, administratrix, and assignor to Esterly Harvesting Machine Company, Whitewater, Wis. Mowing-machine	336,451	Feb. 16	1963	514	34	803
Vandyke, James F., and J. P. Barns, Anderson, Ind. Pruning-knife	336,270	Feb. 16	1712	446	34	756
Vanes, Arthur B., Uitenhage, Cape of Good Hope. Valve-stopper for bottles	338,571	Mar. 23	2263	599	34	1339
Vangesell, Ezekiel, and H. Stetser, Camden, N. J. Four-way valve and branch pipe	337,718	Mar. 9	1126	290	34	1134

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Vanhorn, Joseph S., Jersey City, N. J., assignor to W. H. Woglom, Brooklyn, N. Y. Bill and letter file	337,213	Mar. 2	439	115	34	1007
Vanhorn, Joseph S., Jersey City, N. J., assignor to W. H. Woglom, Brooklyn, N. Y. Bill and letter filing device	337,214	Mar. 2	440	115	34	1008
Vanneit, Jasper, assignor of one-third to G. S. Yingling, Tiffin, Ohio. Oscillating hook for sewing-machines	336,456	Feb. 16	1971	516	34	804
Varian, Samuel T., East Orange, N. J. Screen for coal and other material	336,271	Feb. 16	1713	446	34	756
Vasseur, Joseph, Jr., Ontanagon, Mich. Spring-trap	334,311	Jan. 19	1167	313	34	225
Vaughan, Aaron C., Shane's Crossing, Ohio, assignor of one-half to J. H. Sternbergh, Reading, Pa. Nut-lock	337,801	Mar. 9	1226	318	34	1139
Vaughn, Gary H., Hannibal, Mo. Garden-plow	338,119	Mar. 16	1677	435	34	1242
Vaughn, William H., Quincy, Ill. Hitching device	334,867	Jan. 26	1870	498	34	366
Vellines, Benton H., Norfolk, Va. Machine for cleaning peanuts	335,402	Feb. 2	440	113	34	520
Venema, Tjark J., Grand Rapids, Mich. Mixed paint	334,448	Jan. 19	1423	.....	34	277
Vest, Arthur E., *et al.* (See Fisher, John R. and L. T., assignors.)						
Vestal, Addison F. and C. A. Savoy, Tex. Holder for shades and reflectors	335,788	Feb. 9	998	264	34	696
Vestal, Charles A. (See Vestal, Addison F. and C. A.)						
Veater, Adolph, Providence, R. I. Whip-socket	336,770	Feb. 23	2300	699	34	889
Veteto, George M., Mills, Tex. Car-coupling	337,096	Mar. 2	285	75	34	979
Vetter, Caspar, assignor to H. H. Sulser, Louisville, Ky. Catch for casting hearth-plate catches and grate-hooks	338,210	Mar. 16	1794	468	34	1265
Vickers, John H. (See Minnitt and Vickers.)						
Victor Manufacturing Company. (See Moody, Henry T., assignor.)						
Victor, Walter M., Marinette, Wis. Logging-motor	335,258	Feb. 2	246	65	34	484
Viele, Platt B., Rochester, N. Y. Locomotive head-light	335,278	Feb. 9	1255	333	34	672
Viele, Platt B., Rochester, N. Y. Locomotive head-light	335,279	Feb. 9	1256	334	34	672
Villeneuve, Charles, Boise City, Idaho Ter. Horse-power	333,708	Jan. 5	282	77	34	53
Vincent, William O., New Foundland, Ky. Bee-hive	337,007	Mar. 2	286	76	34	979
Vitalis, Baptiste, Pittsburg, Pa. Portable platform for smoke-stacks	335,164	Feb. 2	92	25	34	457
Vladyka, Joseph, assignor of one-half to J. M. Galusha and W. M. Mitchell, Newton, Iowa. Water-closet	334,911	Jan. 26	1975	{525 526	34	366
Voelker, William L., assignor to J. H. Irwin, trustee, Morton, Pa. Dynamo-electric machine or motor	335,395	Feb. 2	332	87	34	501
Voelker, William L., assignor to J. H. Irwin, trustee, Morton, Pa. Dynamo-electric machine and motor	335,396	Feb. 2	334	88	34	501
Voester, Gottlob F., Pomona, Cal. Animal-trap	334,096	Jan. 12	839	229	34	163
Vogel, Arie, Lake, Ill. Steam-valve	337,537	Mar. 9	906	231	34	1095
Vogel, Charles, Fort Lee, N. J. Combined door-check and alarm	337,538	Mar. 9	908	232	34	1095
Vogelsang, A. F. Alexander, Philadelphia, Pa. Game apparatus	333,708	Jan. 5	282	77	34	54
Vogelsang, A. F. Alexander, Philadelphia, Pa. Game apparatus	336,179	Feb. 16	1568	413	34	732
Vogt & Brother, J. F. (See Simmon, Gustav H. W., assignor.)						
Vogt, Harry V., Millville, N. J. Gage	339,033	Mar. 30	2966	785	34	1485
Voigt, Carl H., Pegau, Saxony, Germany. Preparing food for animals	336,965	Mar. 2	107	.....	34	945
Voigt, F. Herman, assignor of one-half to B. Delitsch, Buffalo, N. Y. Device for projecting marbles	336,535	Feb. 16	2070	544	34	822
Voigt, Ferdinand F., Walla Walla, Wash. Ter. Machine for making screw-threads for pipe-joints	333,904	Jan. 5	255	150	34	103
Voigt, Ferdinand F., Walla Walla, Wash. Ter. Machine for making threads on sheet-metal pipes	335,727	Feb. 9	904	238	34	609
Volke, Charles A., Stapleton, N. Y. Signal-horn	337,098	Mar. 2	287	76	34	980
Vom Eigen, Benno, Newark, N. J. Bag-lock	336,536	Feb. 16	2070	544	34	822
Von der Linden, Charles, Rhinebeck, N. Y. Folding camp-stool	335,823	Feb. 9	1039	275	34	634
Von Heyden, Friedrich. (See Schmitt, Rudolf, assignor.)						
Von Stockenstrom, Carl H. (See Johnson, Charles A., assignor.)						
Voss, Richard. (See Cliff, Edward, assignor.)						
Voss, Richard, New York, N. Y. Car-spring	333,983	Jan. 5	065	182	34	125
Vote, Gus, *et al.* (See Bartels, William H., assignor.)						
Wade, Oron W., Cave Spring, Mo. Device for releasing horses from harness and vehicles	334,097	Jan. 12	840	{229 230	34	163
Wadsworth, Francis, and H. N. Prentice, Venice, Ohio. Grain-separator	334,312	Jan. 12	1168	313	34	225
Wadsworth, Joseph, Paterson, N. J. Swivel-loom	338,891	Mar. 30	2750	727	34	1446
Wagner, Herman, *et al.* (See Stone, James R., assignor.)						
Wagner, Michael, assignor of one-half to C. Heinfelden, Belleville, Ill. Thill-coupling	337,463	Mar. 9	815	206	34	1079
Wahler, George H., Littlestown, Pa. Tool-handle	337,464	Mar. 9	816	206	34	1079
Wahler, Henry, assignor of one-half to L. Ahsendorff, Freeport, Ill. Cork-extractor	337,465	Mar. 9	817	206	34	1079
Waite, Enoch, Franklin, Mass. Packing for car-axle boxes	336,966	Mar. 2	108	30	34	945
Wakeman, Bryan S., Batavia, assignor of eleven-twentieths to S. E. Tucker, Albany, N. Y. Can-opener	338,211	Mar. 16	1795	468	34	1265
Waldecker, Henry C., Austin, Minn. Safety-lock for fire-arms	338,451	Mar. 23	2131	557	34	1332
Walden, Frank D. (See Shaw and Walden.)						
Waldo, Leonard, New Haven, Conn., assignor to L. G. Tillotson & Co., New York, N. Y. Volt-ampère meter	338,190	Mar. 16	1678	436	34	1242
Waldorf, M. V. B. (See Fowler, Forman F., assignor.)						
Waldron, Charles F. (See Beebee, Henry, assignor.)						
Waldron, Cornelius J., Medusa, N. Y. Hoisting-machine	333,574	Jan. 5	106	29	34	23
Waldstein, M. E., *et al.* (See Müller, Armand, assignor.)						
Wales, Harry A., Bridgeport, Conn. Artificial ear-drum	335,660	Feb. 9	801	213	34	591
Wales, Walter H., assignor to himself and C. E. Robinson, Providence, R. I. Buckle	336,502	Feb. 16	2022	531	34	814
Walker, Alford H. (See Masterman, William H., assignor.)						
Walker, Chauncy H., Sandy Lake, Pa. Soap	337,035	Mar. 2	208	.....	34	963
Walker, Francis H., Chicago, Ill. Folding spring bed-lounge	334,549	Jan. 19	1501	{401 402	34	290
Walker, Francis H., Chicago, Ill. Folding bed-lounge	334,550	Jan. 19	1502	402	34	290
Walker, James, and H. T. Caulk, Iantha, Mo. Sickle-driver attachment for mowing-machines	334,828	Jan. 26	1871	498	34	368
Walker, John, Cleveland, Ohio. Tool-holder	336,362	Feb. 16	1841	482	34	781
Walker, John W., Florence, Ala. Cotton-basket	338,892	Mar. 30	2763	727	34	1449
Walker, Malcom, and E. Miner, Yankton, Dak. Ter. Portable brick-back. (Reissue)	10,694	Feb. 23	2565	677	34	990
Walker, Peter. (See Prentiss and Walker.)						
Walker, Randall W., and J. L. Beardsley, Oxford, N. Y. Thill-coupling	334,494	Jan. 19	1422	363	34	277
Walker, Theodore C., Penfield, and W. E. Crayton, Lima, Ohio. Folding book rest and stand	334,313	Jan. 12	1169	313	34	225
Walker, Thomas G., Morristown, N. J. Separating sulphate of lime from saline solutions	337,900	Mar. 16	1368	355	34	1185
Walker, William L., Brooks, Cal. Draft-pole for vehicles	336,180	Feb. 16	1569	413	34	732

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Wall, Charles W. (See Schumacher, Joseph G., assignor.)						
Wall, Enos A., Bullion, Idaho Ter. Pulverizing-mill	337,901	Mar. 16	1369	355	34	1185
Wall, Joseph, Bootle, county of Lancaster, England. Night signaling apparatus	335,489	Feb. 2	537	146	34	541
Wallace, Albert E., assignor to Pope Manufacturing Company, Hartford, Conn. Wheel for velocipedes	334,829	Jan. 26	1872	498	34	368
Wallace, Alexander. (See Duncan, Robert D., assignor.)						
Wallace Manufacturing Company. (See Wallace, William W., assignor.)						
Wallace & Sons. (See Bryant, Edson L., assignor.)						
Wallace, William V., Boston, Mass. Air-moistening apparatus for factories	335,408	Feb. 2	441	{112 114	34	500
Wallace, William W., assignor to Wallace Manufacturing Company, Frankfort, Ind. Pug-mill	336,121	Mar. 16	1679	436	34	1242
Wallis, Joseph E. (See Tull, Kuehn, and Beers, assignors.)						
Wallis, Reva P., Oakland, Cal. Flexible lead-pencil	337,466	Mar. 9	816	.....	34	1080
Walmsley, Robinson, Fall River, Mass. Spinning-machine	334,690	Jan. 26	1873	499	34	369
Walsh, James, Jr., Philadelphia, Pa. Valve	334,314	Jan. 19	1170	313	34	225
Walsh, James, Jr., Philadelphia, Pa. Stop-valve	334,315	Jan. 19	1171	314	34	225
Walsh, Richard, and S. J. Martin, Detroit, Mich. Cut-off or waste valve	335,404	Feb. 2	442	114	34	500
Walsh, William. (See Sercon, James, assignor.)						
Walter, Robert F., Peoria, Ill. Barber's pole	334,912	Jan. 26	1976	506	34	388
Walter, Willie C., assignor of two-thirds to G. B. Adams, Richmond, Va. Bed-clothes securer	333,905	Jan. 5	558	150	34	104
Walter, Willie C., assignor of two-thirds to G. B. McAdams, Richmond, Va. Fire-alarm indicator	334,399	Jan. 12	1980	{345 346	34	944
Walther, Henry, assignor to himself and L. Joyner, Clinton, Ind. Lifting-jack	335,859	Feb. 9	1067	267	34	644
Walther, Hugo. (See Walther, Richard and H.)						
Walther, Richard and H., Werdau, Saxony, Germany. Electric-arc lamp	338,122	Mar. 16	1681	{436 437	34	1242
Waltjen, William H., and J. H. Keller, Baltimore, Md. Refrigerator	335,327	Feb. 2	327	88	34	502
Walton, Isaac N. (See Holt and Walton.)						
Walton, James. (See Forstner, Benjamin, assignor.)						
Walton, Thomas H., Ashland, assignor of one-half to J. W. Coulston, Philadelphia, Pa. Mining-drill	333,798	Jan. 5	415	112	34	78
Walworth Manufacturing Company. (See Shaw, Harry M., assignor.)						
Wambold, Jacob W., *et al.* (See Hayes, Miles T., assignor.)						
Wanda, John C., St. Louis, Mo. Apparatus for making gas	335,405	Feb. 2	444	{114 115	34	500
Wangaaes, Ole S. (See Goetzenberger and Wangaaes.)						
Wanner & Fevrot. (See Fevrot, Claude M., assignor.)						
Ward, Anthony, Brooklyn, N. Y. Cap	336,003	Mar. 16	1583	394	34	1212
Ward, Benjamin P. (See Clark, Henry D., assignor.)						
Ward, Frank F., assignor of one-half to C. D. Stuart, Otsego, Mich. Fisherman's minnow-boat	336,967	Mar. 2	109	30	34	945
Ward, Henry C., assignor of one-half to A. W. Wells, St. Joseph, Mich. Machine for making and driving staples in handles of baskets	334,913	Jan. 26	1977	{526 527	34	388
Ward, James W., and G. P. Sylvester, Galt, Ontario, Canada. Syringe	334,816	Jan. 12	1171	314	34	225
Ward, John D., Rochester, N. Y. Thermometer	336,181	Feb. 16	1571	413	34	733
Ward, John F., Jersey City, N. J. Splice for metal beams or rails	335,165	Feb. 2	93	25	34	457
Ward, Moses N., assignor of one-half to Z. Ward, Vicksburg, Mich. Bee-hive	334,914	Jan. 26	1978	527	34	388
Ward, Robert, Lawrence, Mass. Parasol-holder for children's carriages	336,863	Feb. 16	1841	483	34	781
Ward, Seth, Princeton, Ind. Back-band book	337,215	Mar. 2	442	115	34	1008
Ward, Thomas H., Tipton, county of Stafford, England. Balanced valve	333,799	Jan. 5	415	{112 113	34	78
Ward, Thomas H., Tipton, county of Stafford, England. Differential pulley-block	336,364	Feb. 16	1842	{483 484	34	781
Ward, Thomas H., Tipton, county of Stafford, England. Valve for steam-engines	336,004	Mar. 16	1583	{394 395	34	1212
Ward, Zenas. (See Ward, Moses N., assignor.)						
Warden, Henry, Philadelphia, Pa. Punching-machine table	336,677	Feb. 23	2284	597	34	866
Wardwell, Clinton S., Stamford, Conn. Pulley	334,908	Jan. 26	2065	557	34	407
Ware, Theodore E., Clifton, Bristol, county of Gloucester, England. Bicycle-bell	334,495	Jan. 19	1422	362	34	278
Wareing, Henry E. (See Schallehn, Henry, assignor.)						
Waring, George E., Jr., Newport, R. I., assignor to Drainage Construction Company, Boston, Mass. Siphon and outlet or weir chamber for flush-tanks	336,182	Feb. 16	1572	413	34	733
Waring, John T., Yonkers, N. Y. Preparation of animal fiber for felting	339,034	Mar. 30	2967	.....	34	1486
Warner, Alexander, New York, N. Y. Metal can, &c	337,599	Mar. 9	909	232	34	1095
Warner, Charles D., Ansonia, Conn. Electric-clock system	335,860	Feb. 9	1069	{267 268	34	644
Warner, Henry, *et al.* (See Rogers, William, assignor.)						
Warner, John F., and F. Cook, Taylorville, Ill. Hay-stacker	336,771	Feb. 23	2289	699	34	889
Warner, Leonard K., Claremont, N. H. Ladder	337,640	Mar. 9	1030	264	34	1118
Warner, William A., Syracuse, N. Y. Manufacture of spoons	337,099	Mar. 2	288	76	34	980
Warren, Charles H., *et al.* (See Baldwin, Chester M., assignor.)						
Warren, B. Howard, Quincy, assignor to Neversslip Horseshoe Company, Boston, Mass. Horseshoe-calk	335,259	Feb. 2	246	65	34	484
Warren, David H., assignor of one-half to J. Baylis, Montreal, Quebec, Canada. Apparatus for indicating the load on railway-cars	336,457	Feb. 16	1972	517	34	804
Warren, Ira B., and C. M. Potter, Waucoma, Iowa. Drag-saw	339,005	Mar. 16	1525	395	34	1212
Warren, John R., assignor of one-half to J. H. Williams, Plainwell, Mich. Spring bed-bottom	337,902	Mar. 16	1370	355	34	1185
Warren, Orris H., Syracuse, N. Y. Oil-can	333,575	Jan. 5	107	30	34	22
Warrick, Silas E., Macon, Ill. Tile-ditching machine	336,183	Feb. 16	1574	414	34	733
Warrington & Co., W. A. (See Lloyd, Cyrus W., assignor.)						
Warrior Mower Company. (See Crowley, George G., assignor.)						
Warstler, Levi, and A. C. Pontius, Louisville, Ohio. Pavement	333,576	Jan. 5	109	30	34	23
Warwick, William R. (See Hall, George F., assignor.)						
Wash, Benjamin S., assignor of one-half to J. M. Wash, St. Louis, Mo. Buckle	335,490	Feb. 2	559	147	34	541
Wash, John M. (See Wash, Benjamin S., assignor.)						
Washburn, Benjamin D., Boston, Mass. Blind-adjusting device	335,861	Feb. 9	1091	268	34	644
Washburn & Moen Manufacturing Company. (See Curtis, John D., assignor.)						
Wassell, Ann I. (See Wassell, Edwin D., assignor.)						
Wassell, Edwin D., assignor to A. I. Wassell, Pittsburg, Pa. Roll for rerolling old rails	336,272	Feb. 16	1714	447	34	756
Wasserman, Adolph. (See McClellan, Oscar D., assignor.)						
Waste, Alphonso D., Galesburg, Ill. File-box	337,903	Mar. 16	1371	355	34	1185

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Waterberry, William W., Watertown, Wis. Draft-coupling	334,909	Jan. 26	2087	557	34	407
Waterbury Clock Company. (See Northrop, Homer F., assignor.)						
Waterbury Farrel Foundry and Machine Company. (See Lamb, George B., assignor.)						
Waterbury Watch Company. (See Eisen, Hermann J., assignor.)						
Waterbury Watch Company. (See Hart, George E., assignor.)						
Waterhouse, Addison G., Hartford, Conn. Electric-arc lamp	336,503	Feb. 16	2022	531	34	814
Waterhouse, Addison G., New York, N. Y., assignor, by mesne assignments, to Schuyler Electric Light Company of New York. Electric-arc lamp	336,184	Feb. 16	1575	414	34	734
Waterhouse, Frank G., Sacramento, Cal. Electric lamp	334,317	Jan. 12	1179	214	34	225
Waterhouse, Richard E., Warwick, R. I. Let-off mechanism for looms	334,063	Jan. 12	788	216	34	155
Waterman, Lewis E., Moline, Ill. Corn-planter	336,772	Feb. 23	2400	629, 630, 631	34	889
Waterman, William H., Providence, R. I. Sewing-machine	336,607	Feb. 23	2171	568	34	846
Waters, Elisha, Troy, N. Y. Tool-holder	338,392	Mar. 23	1948	512	34	1300
Watkins, H. T. (See Ross, James B., assignor.)						
Watkins, Thomas P., New Bedford, Mass. Easel-shelf bracket	334,065	Jan. 12	792	217	34	155
Watkins, William W., *et al.* (See Tyler, George, assignor.)						
Watson, Edward C. (See Weideman, Uriah M., assignor.)						
Watson, Elias M., Beloit, Wis. Pipe-lifting machine	333,577	Jan. 5	110	30	34	23
Watson, Elijah W., McLean, N. Y. Calculating-machine	334,064	Jan. 12	789	216, 217	34	155
Watson, John E., Louisville, Ky. Regulator for dynamo-electric machines	336,608	Feb. 23	2172	568	34	846
Watson, John R., Sacramento, Cal. Clinching-punch	337,036	Mar. 2	208	55	34	964
Watson, Lewis F., *et al.* (See Burnley, William, assignor.)						
Watson, Martin V. B. (See Henric, George V., assignor.)						
Watson, Sam, Straughn, Ind. Fence-machine	338,893	Mar. 30	2763	728	34	1449
Watt, William R., Somerville, Tenn. Spring-balance	338,894	Mar. 30	2765	728	34	1449
Wattles, Joseph W., Canton, Mass. Spinning-frame ring and holder	335,406	Feb. 2	446	116	34	521
Wattles, Joseph W., Canton, Mass. Duplex race-ring holder	335,728	Feb. 9	905	239	34	610
Wattles, Joseph W., Canton, Mass. Mechanism for supporting and lubricating the spindles of ring-spinning frames	335,980	Feb. 9	1257	334	34	672
Watts, David H. (See Sharpless, William C., assignor.)						
Wawrinsky, Thure E., Stockholm, Sweden. Making forks	334,551	Jan. 19	1508	402	34	201
Way, Frank K. (See Way and Clarke.)						
Way, George W. (See Thomas and Way.)						
Way, Thomas R. and F. K., and J. H. Clarke, Springfield, Ohio. Can-opener	337,719	Mar. 9	1127	290	34	1134
Wayne, Michael J., *et al.* (See Cotter, Edward J., assignor.)						
Wayne, William J., Decatur, Ill. Phaeton-spring	338,452	Mar. 23	2132	557	34	1333
Weathers, James, Indianapolis, Ind. Combined anvil, vise, and drill	334,626	Jan. 19	1605	427, 428	34	310
Weathers, James, Indianapolis, Ind. Lifting-jack	334,627	Jan. 19	1606	428	34	311
Weathers, James, Indianapolis, Ind. Sash-balance	334,628	Jan. 19	1607	428	34	311
Weaver, Edward P., assignor of one-half to T. Thompson and R. E. Bodine, Shelbina, Mo. Device for moving cars	336,609	Feb. 23	2175	568	34	846
Weaver, Henry M., Mansfield, Ohio. Self-binding harvester	338,808	Mar. 30	2634	693, 694, 695	34	1426
Weaver, Henry M., Mansfield, Ohio. Self-binding harvester	338,809	Mar. 30	2638	695	34	1427
Weaver, Samuel J. (See O'Brien and Weaver.)						
Webb, John P., Wakenda, Mo. Corn-planter	334,318	Jan. 12	1174	314	34	226
Webb, John T., Courtney, Tex. Cane-mill	335,802	Feb. 9	1092	288	34	644
Webb, Rodolphus L., New Britain, Conn. Graduating dials	338,123	Mar. 16	1681	437	34	1242
Webber, Moses H., *et al.* (See Saunders, Charles R. P., assignor.)						
Webber, William O., Lawrence, Mass. Centrifugal pump	337,216	Mar. 2	442	116	34	1008
Weber, Adolph, assignor of one-half to H. W. Rood, Detroit, Mich. Core-box	336,458	Feb. 16	1973	517	34	805
Weber, Charles, assignor to J. F. Pond, Cleveland, Ohio. Forge	336,674	Feb. 9	1394	368	34	696
Weber, John H., Detroit, Mich. Churn-closing device	338,006	Mar. 16	1525	396	34	1213
Weber, Louis, Brooklyn, N. Y. Curtain-fixture	336,610	Feb. 23	2177	568, 569	34	846
Webster, Daniel W., and R. J. Smith, Osceola, Iowa. Broadcast-seeder	335,661	Feb. 9	802	213, 214	34	591
Webster, John F., assignor to Champion Bar and Knife Company, Springfield, Ohio. Tempering-machine	335,551	Feb. 2	644	168, 169	34	555
Webster, John F., assignor to Champion Bar and Knife Company, Springfield, Ohio. Machine for finishing harvester-fingers	337,802	Mar. 9	1227	319	34	1159
Webster, Warren. (See Herrmann, Henry O., assignor.)						
Webster, William S., assignor of one-half to Peters & Calhoun Company, Newark, N. J. Harness-saddle	337,217	Mar. 2	444	116	34	1008
Weddel, John W., assignor of one-half to H. M. Pettengill, Toledo, Ohio. Fabric-turning implement	334,915	Jan. 26	1960	597, 598	34	388
Weeden, Frank E. (See O'Connell and Weeden.)						
Weeden, Henry C., Boston, Mass. Portable fire-work stand	334,496	Jan. 19	1424	383	34	278
Weeden, Henry C., Boston, Mass. Chair	338,895	Mar. 30	2766	728	34	1449
Weeden, Henry C., Boston, Mass. Chair	335,960	Feb. 2	247	65	34	485
Weeks, Horace, Boston, Mass. Making cut nails	335,961	Feb. 2	248	65, 66	34	485
Weeks, Horace, Boston, and E. Woodward, Somerville, Mass., said Woodward assignor to said Weeks. Nailing-machine	334,206	Jan. 12	1014	270	34	196
Weeks, John, New York, and H. Traver, Brooklyn, assignors to R. Dudgeon, Oyster Bay, N. Y. Hydraulic jack	338,896	Mar. 30	2766	729	34	1450
Wegmann, Friedrich, Zurich, Switzerland. Driving-belt	336,185	Feb. 16	1576	414	34	734
Weideman, Uriah M., assignor to E. C. Watson, Brooklyn, N. Y. Bee-hive	336,773	Feb. 23	2404	632	34	890
Weil, Leopold, New York, N. Y. Alarm for detecting water-overflow						
Weinberg, Harry I. (See Weinberg, Solomon, assignor.)						
Weinberg, Solomon, Newark, N. J., assignor to H. I. Weinberg, Rochester, N. Y. Automatic damper-regulator	335,662	Feb. 9	803	214	34	591
Weir, Daniel P., Salem, Mass. Water-motor	338,572	Mar. 23	2285	599	34	1359
Weis, Joseph, Jersey City, N. J. Electric motor	335,963	Feb. 9	1093	288	34	645
Weisell, Nelson E., Warren, Ohio. Fence	338,573	Mar. 23	2287	600	34	1359
Weiser, John W., Chicago, Ill. Wringer	335,961	Feb. 9	1256	334	34	672
Weiss, Carolina. (See Weiss, Frederick W., assignor.)						
Weiss, Frederick W., assignor to C. Weiss, Mount Vernon, N. Y. Tool-holder	338,658	Mar. 23	2297	601	34	1378
Weiss, Otto P. (See Byers, Joseph W., assignor.)						
Weitzel, Henry, Ithaca, Wis. Hoop-splitting machine	335,000	Jan. 26	2087	557	34	407
Weitzel, Jacob F., assignor to C. F. Muth, Cincinnati, Ohio. Bellows	334,319	Jan. 12	1175	315	34	226

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Welch, James F., Brooklyn, N. Y. Circular sawing machine	334,141	Jan. 12	895	945, 946	34	174
Welch, S. Frank, Mount Pleasant, Iowa. Excavator	334,497	Jan. 19	1425	383, 384	34	278
Welch, Thomas, and T. R. Crooks, Philadelphia, Pa. Water-heating apparatus for boilers	336,453	Mar. 23	2138	558	34	1333
Welch, William, Moss Point, Miss. Center-board for vessels	336,365	Feb. 16	1844	484	34	781
Weldon, James H. (See Reynolds and Weldon.)						
Weller, Michael I. (See Dibble, Seymour H., assignor.)						
Wellesley, Charles. (See Wellesley, Edwin P. and C.)						
Wellesley, Edwin P. and C., Colon, Mich. Windmill	337,641	Mar. 9	1031	265	34	1118
Wells, A. W. (See Ward, Henry C., assignor.)						
Wells, Clinton W., Lucas, Iowa. Wash-board	336,186	Feb. 16	1577	414	34	734
Wells, George, Annapolis, Md. Signal-lantern	336,574	Mar. 23	2288	600	34	1350
Wells, Harlan P. (See Sibley and Wells.)						
Wells, Henry P., Brooklyn, assignor to T. J. Conroy, New York, N. Y. Fishing-fly book	335,491	Feb. 2	550	147	34	541
Wells, Joseph L., Philadelphia, Pa. Spring	336,774	Feb. 23	2406	632, 633	34	890
Wells, Joseph L., Philadelphia, Pa., assignor to Weston and Wells Manufacturing Company, Camden, N. J. Hair-roll	337,642	Mar. 9	1032	265	34	1119
Wells, Willet C., Tiffin, Ohio. Well-drill	336,187	Feb. 16	1578	415	34	734
Wendell, Horace S. (See Trout, Silas E., assignor.)						
Wenzel, Philipp, Mentz, Germany. Enameled slate	333,578	Jan. 5	110	30	34	23
Wernet, Henry, Canton, Ohio. Steam-kettle	335,663	Feb. 9	805	215	34	592
Wernicke, Eugenia, Berlin, Germany. Hand-weaving apparatus	334,320	Jan. 12	1177	315	34	226
Wescott, Edwin J. (See Mason, Wescott, and Stevens.)						
Wesel, Ferdinand. (See Seger, Henry, assignor.)						
West, E. S. (See Wheeler, Jesse, assignor.)						
West, Francis H., Milwaukee, Wis. Steam-trap	333,579	Jan. 5	112	31	34	24
West, James J. (See Yaggy, Levi W., assignor.)						
West, W. Scott, New York, N. Y. Elevated filter-bed	334,629	Jan. 19	1607	428, 429	34	311
Westberg, Charles A., Chicago, Ill. Safety attachment for elevators	339,035	Mar. 30	2908	785	34	1466
Westcott, John H., Oneida, N. Y. Lathe-chuck	335,962	Feb. 9	1261	334	34	673
Westin, John F. (See Eklund and Westin.)						
Westinghouse, George, Jr., Pittsburg, Pa. Conveying and supplying gas	338,800	Jan. 5	417	113	34	78
Westling, Adolph, Ortonville, Minn. Plow	336,897	Mar. 30	2767	729	34	1450
Weston and Wells Manufacturing Company. (See Wells, Joseph L., assignor.)						
Weston, Edward, Newark, N. J. Testing incandescent electric lamps	334,147	Jan. 12	908	249	34	177
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Incandescent	334,142	Jan. 12	899	.....	34	175
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Switch or circuit controller	334,143	Jan. 12	900	246	34	175
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electric-arc lamp	334,144	Jan. 12	901	247, 248	34	175
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electrical indicator	334,145	Jan. 12	904	248	34	176
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Apparatus for treating carbons	334,146	Jan. 12	905	248	34	176
Weston, James W., New York, N. Y. Fastener for barrel-heads, &c	333,704	Jan. 5	284	77	34	54
Weston, Thomas A., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Hoisting-machine	333,906	Jan. 5	558	150, 151	34	104
Westover, Charles H. and G. D., Cadillac, Mich. Car-coupling	337,540	Mar. 9	910	239	34	1086
Westover, George D. (See Westover, Charles H. and G. D.)						
Wetherby, Isaac A., Iowa City, Iowa. Revolving photographic background and foreground	337,904	Mar. 16	1371	356	34	1186
Wetherill, John P., Bethlehem, Pa. Apparatus for filtering and separating metals	334,907	Jan. 19	1015	270, 271	34	196
Wetherill, John P., Bethlehem, Pa. Filtering and separating metals	334,908	Jan. 19	1017	271	34	197
Wetmore, William H., Raleigh, N. C. Boot or shoe	336,775	Feb. 23	2408	633	34	891
Wetmore, William W., assignor to Winchester Repeating Arms Company, New Haven, Conn. Sight for fire-arms	338,898	Mar. 30	2768	729	34	1450
Wetsell, Horace A., Tracy, Minn. Threshing-machine	336,366	Feb. 16	1646	484	34	782
Weyburn, Elbert D., assignor to himself and Union Bag Machine Company, Chicago, Ill. Cording and boxing attachment for sewing-machines	336,454	Mar. 23	2133	558	34	1333
Weymouth, Sandford K., Gardiner, Me. Combination-lock	336,188	Feb. 16	1579	415	34	735
Wezel, Julius, Reudnitz, near Leipsic, Germany. Artificial lithographic stone	333,801	Jan. 5	418	.....	34	79
Wharton & Co., William, Jr. (See Samuel, Edward, assignor.)						
Wharton & Co., William, Jr. (See Wharton, William, Jr., assignor.)						
Wharton, William, Jr., assignor to W. Wharton, Jr., & Co., (limited,) Philadelphia, Pa. Railway-switch	334,916	Jan. 26	1962	598	34	389
Wheeler, Albion, Ridgeway, Iowa. Draft-equalizer	333,705	Jan. 5	286	78	34	54
Wheeler, E. A. (See Wood, Hermon G., assignor.)						
Wheeler, Edgar L., Marlborough, Mass. Nail-driving machine	334,552	Jan. 19	1504	402	34	291
Wheeler, Frank L., Westfield, Mass. Double-acting pump	336,459	Feb. 16	1974	517	34	805
Wheeler, Frank W., Richford, Vt. Nail	335,963	Feb. 9	1092	335	34	673
Wheeler, Jesse, assignor of one-half to E. S. West, Brownsville, Mo. Wheel-plow	335,492	Feb. 2	561	147	34	541
Wheeler, Lambert, assignor to L. Wheeler, Allentown, N. Y. Rope-jar	335,493	Feb. 2	562	147	34	541
Wheeler, Lizzie. (See Wheeler, Lambert, assignor.)						
Wheeler, Marshal, Washington, D. C. Auxiliary governing-spring for time-pieces	336,460	Feb. 16	1975	518	34	805
Wheeler, Richmond W., and S. Q. Duntley, assignors to Bushnell Pump Company, Bushnell, Ill. Pump-bucket	333,802	Jan. 5	418	113	34	79
Wheeler, Schuyler S., New York, N. Y. System of electrical distribution	335,090	Jan. 26	2227	504	34	494
Wheeler, Schuyler S., assignor to Edison Electric Light Company, New York, N. Y. System of electrical distribution	335,648	Jan. 26	2164	575, 576, 589, 590	34	490
Wheeler, William H., Beloit, Wis. Windmill	335,864	Feb. 9	1694	290	34	645
Wheelock, Aaron L., Buffalo, N. Y. Nail-holder	337,905	Mar. 16	1372	356	34	1186
Wheelwright, Charles S., Providence, R. I. Digester or converter, &c	337,720	Mar. 9	1128	291	34	1134
Wheelwright, Charles S., Providence, R. I. Digester or converter	337,721	Mar. 9	1129	291	34	1134
Wherry, David G., Alexandria, Nebr. Rotary steam-engine	335,001	Jan. 26	2069	556	34	408
Wherry, John, Jr., Putnam, Ill. Automatic grain-weighing apparatus	337,906	Mar. 16	1373	356, 357	34	1186
Whipple, John H. (See Bachand, Levi N., assignor.)						
Whitaker, Aquilla B., *et al.* (See Gorrell, Charles L., assignor.)						
Whitaker, Channing, *et al.* (See Lawrence, Alvin, assignor.)						
Whitaker, David W., assignor of one-half to J. E. Lyon, Durham, N. C. Printer's galley	335,494	Feb. 2	563	148	34	542

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Whitaker, David W., assignor of one-half to J. E. Lyon, Durham, N. C. Printer's galley	337,218	Mar. 2	445	116	34	1008
Whitaker, John H., Davenport, Iowa. Harness	336,367	Feb. 16	1847	484	34	782
Whitaker, Octavian M., *et al.* (See Gorrell, Charles L., assignor.)						
Whitall, Tatum & Co. (See Tatum, Charles A., assignor.)						
Whitbread, John H. (See Evans, Edward, assignor.)						
Whitby, Joseph, Yeovil, county of Somerset, England. Making button-holes in leather gloves	335,865	Feb. 9	1096	290	34	645
Whitcher, Frank W., *et al.* (See Stetson, Charles T., assignor.)						
Whitcher, Oscar W., *et al.* (See Stetson, Charles T., assignor.)						
Whitcomb, George D., Chicago, Ill. Mining-machine	335,328	Feb. 2	337	88, 89	34	502
White, Corbin & Company. (See Woodford, Edwin H., assignor.)						
White Dental Manufacturing Company, S. S. (See Elliott, Walter S., assignor.)						
White, Edward H., Meriden, Conn. Apparatus for bending and voicing musical reeds	336,368	Feb. 16	1848	485	34	782
White, Frank C., Woodbury, N. J. Bottle-stopper	337,541	Mar. 9	911	223	34	1096
White, Frederick, Westborough, Mass., assignor to Boston Wheel Company, Bangor, Me. Tricycle	336,908	Mar. 2	110	30, 31	34	946
White, Frederick A., Rochester, N. Y. Hay-carrier	334,917	Jan. 26	1983	528	34	289
White, Frederick S., Cleveland, Ohio. Grinding apparatus	336,984	Feb. 9	1962	335	34	673
White, George A., Boston, Mass. Knitting-machine	336,611	Feb. 23	2180	{569 570}	34	847
White, George W., Belle Mina, Ala. Nut-lock	333,580	Jan. 5	114	31	34	24
White, John W., Elkhart, Ind. Gate	337,907	Mar. 16	1374	357	34	1186
White, Joseph B., Brooklyn, N. Y. Stop for expansion-joints	337,037	Mar. 2	210	55	34	964
White, Nicholas, Chicago, Ill. Lever and fulcrum	336,189	Feb. 16	1561	415	34	735
White, Patrick F., Western Port, Md. Car-wheel lubricator	336,461	Feb. 16	1977	518	34	805
White, Solomon, Toledo, Ohio. Sun-shield for horses	338,890	Mar. 30	2770	729	34	1450
White, William, Jr., Pittsburg, Pa. Packing	337,100	Mar. 2	290	77	34	980
White, William A., Staatsburg, N. Y. Trellis for garden-crops	334,918	Jan. 26	1984	529	34	289
Whited, Charles W., assignor of one half to W. H. Pettibone, Battle Creek, Mich. Automatic railway-track key	336,190	Feb. 16	1562	416	34	735
Whited, Charles W., assignor of one-half to W. H. Pettibone, Battle Creek, Mich. Electric time register and alarm	338,323	Mar. 23	1949	513	34	1301
Whited, Willis, Lachine, Quebec, Canada. Punching-machine	335,866	Feb. 9	1097	290	34	646
Whitehead, Lewis, Chicago, Ill. Merchandise-receptacle	338,810	Mar. 30	2639	695	34	1427
Whitehead, William, and F. W. Maguire, Philadelphia, Pa. Clutch for machinery	336,273	Feb. 16	1714	447	34	757
Whitehead, William C. (See Godman, Solomon C., assignor.)						
Whitehurst, Robert W., assignor of one-half to M. L. Wrenn, Norfolk, Va. Dry-goods display-rack	339,061	Mar. 30	2030	800	34	1495
Whiteley, William N., Springfield, Ohio. Drive-chain	333,603	Jan. 5	420	113	34	79
Whiteley, William N., Springfield, Ohio. Drive-chain	333,604	Jan. 5	421	114	34	79
Whiteley, William N., Springfield, Ohio. Main wheel for harvesters	338,376	Mar. 23	2029	592	34	1314
Whiteley, William N., W. Bayley, and S. Dyer, Springfield, Ohio. Knotting device for grain-binders	333,907	Jan. 5	560	{151 152}	34	105
Whiteley, William N., and W. Bayley, Springfield, Ohio; said Bayley assignor to said Whiteley. Harvester and binder	337,220	Mar. 2	449	117	34	1009
Whitin Machine Works. (See Taft, Gustavus E., assignor.)						
Whiting, Henry B., assignor to A. D. and G. W. Hendrick, New Haven, Conn. Line-holder	338,212	Mar. 16	1796	468	34	1965
Whiting, Henry W., assignor of two-thirds to A. E. Peterson and J. H. C. Whiting, Philadelphia, Pa. Apparatus for burning hydrocarbon oils. (Reissue)	10,699	Mar. 9	1941	382	34	1156
Whiting, John H. C., *et al.* (See Whiting, Henry W., assignor.) (Reissue.)						
Whiting, Lewis D., assignor of one-half to E. L. Frost, Southington, Conn. Sled	336,274	Feb. 16	1715	{447 448}	34	757
Whiting, William F., Norwood, B. I. Watch-chain swivel	337,906	Mar. 16	1375	357	34	1186
Whiting, William H. H., Chelsea, Mass. Apparatus for washing photographic negatives	335,002	Jan. 26	2091	558	34	408
Whiting, William M., Elizabeth, N. J. Grain-binder elevator	337,643	Mar. 9	1032	265	34	1119
Whitlock, James G., Richmond, Va. Stove-door handle	338,455	Mar. 23	2136	558	34	1333
Whitlock, James G., Richmond, Va. Stove-door handle	338,456	Mar. 23	2138	559	34	1334
Whitlock, James G., Richmond, Va. Sad-iron	338,457	Mar. 23	2139	559	34	1334
Whitlock, James H., Bremond, Tex. Sash-holder	335,962	Feb. 2	251	66	34	485
Whitman, James E., and E. M. Brown, Spring Valley, Minn. Ink-well cover	334,148	Jan. 12	909	949	34	177
Whitman, Orrin M., Boston, Mass. Refrigerator	337,909	Mar. 16	1376	357	34	1187
Whitmore, Edwin W., Worcester, Mass. Boot-tree	338,575	Mar. 23	2229	600	34	1359
Whitmore, Samuel K., assignor of one-third to S. Gibbs, Knox, Pa. Sucker-rod for oil-wells	338,633	Mar. 23	2309	631	34	1379
Whitmore, William R., Newburyport, Mass. Printer's quoin	334,500	Jan. 19	1431	385	34	279
Whitner, Hiram K., New York, N. Y. Automatic brake for railway-cars	338,213	Mar. 16	1796	469	34	1965
Whitner, Hiram K., New York, N. Y. Brake	338,900	Mar. 30	2771	730	34	1450
Whitney, Amos. (See Costain, Richard J., assignor.)						
Whitney, Charles, Sycamore, Ill. Harvesting-machine	334,498	Jan. 19	1427	384	34	278
Whitney, Charles, Sycamore, Ill. Grain-binder	334,499	Jan. 19	1429	385	34	278
Whitney, Erastus P., New York, N. Y. Button and fastening	338,377	Mar. 23	2030	533	34	1314
Whitney, Howard C., Albany, N. Y. Combined blotting-pad and memorandum-book	337,101	Mar. 2	290	77	34	980
Whitney, James A., Brooklyn, N. Y. Apparatus for making plumbers' traps	335,407	Feb. 2	447	116	34	521
Whitney, Josiah D., Brattleborough, Vt. Manufacture of reeds for musical instruments	338,007	Mar. 16	1596	306	34	1213
Whitney, Moses W., Bristol, R. I. Method of and apparatus for forming bottoms of rubber shoes	337,467	Mar. 9	618	207	34	1060
Whittaker, Henry B., Philadelphia, Pa. Piston water-meter	336,678	Feb. 23	2285	587	34	866
Whittaker, William H., Seneca, Ill. Band-tightener	338,811	Mar. 30	2639	696	34	1428
Whittic, John W., Syracuse, N. Y. Overdraw-check for bridles	333,561	Jan. 5	115	31	34	24
Whitzel, Rnssel B., Columbus, Ohio. Roller for skates	338,576	Mar. 23	2291	600	34	1360
Wicker, John C., Danville, Ill. Corn-slicer	335,664	Feb. 9	806	215	34	602
Wickers, Barney C. (See Wickers, Lewis F. and B. C.)						
Wickers, Lewis F. and B. C., Lebanon, Ind. Tile-kiln	335,665	Feb. 9	807	215	34	602
Wickes, James H., New York, N. Y. Stock-car	336,776	Feb. 23	2400	633	34	891
Wickiser, Samuel, assignor to W. C. Eickemeyer, F. Hassler, J. F. Hughes, and H. Ernest, Pierre, Dak. Ter. Ground-screw for boring wells	334,919	Jan. 26	1985	529	34	289
Widney, Charles W. (See Gerbing, Lorenzo F., assignor.)						
Wiedling, Hermann, Baltimore, Md., assignor of twenty-four one-hundredths to Wiedling Motor Company, New York, N. Y. Railway system	338,681	Mar. 23	2440	{643 644 645}	34	1365
Wiedling Motor Company. (See Wiedling, Hermann, assignor.)						
Wiegand, S. Lloyd, Philadelphia, Pa., assignor to Economy Kindling Wood Stove Company. Portable furnace	334,400	Jan. 12	1264	346	34	245
Wiesebrock, Frederick W., New York, N. Y. Grain-drier	333,908	Jan. 5	562	153	34	105
Wiester, William H. (See Howse, Henry L., assignor.)						
Wiggers, Albert, West Hoboken, N. J. Sash-lifter	337,038	Mar. 2	211	66	34	964

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Wight, George R., New York, N. Y. Mucilage-bottle	335,239	Feb. 2	241	69	34	502
Wightman, Merle J., Hartford, Conn., assignor to Schuyler Electric Light Company of New York. Switch and holder for incandescent lamps	336,191	Feb. 16	1565	416	34	736
Wigleworth, William. (See Manring and Gibbons, assignors.)						
Wilbur, Alfred, Allegheny City, Pa. Pipe-coupling	339,086	Mar. 30	2060	788	34	1466
Wilcox, Charles B., administrator. (See Burk, Leander.)						
Wilcox, Charles M. (See Middaugh and Wilcox.)						
Wilcox, Harvey, Los Gatos, Cal. Fruit-jar	335,230	Feb. 2	242	69	34	502
Wilcox, Harvey, Elizabeth, N. J. Tool for expanding horseshoes	337,221	Mar. 2	450	117	34	1009
Wilcox, Joseph R., San Francisco, Cal. Water-level indicator	337,910	Mar. 16	1377	358	34	1187
Wilcox, Lewis T., *et al.* (See Richter, Peter J., assignor.)						
Wilcox, S. Rollin, Bennington, Vt. Digital forceps	338,304	Mar. 23	1951	513	34	1301
Wilcox, William R., Nashua, N. H. Eaves-trough support	334,221	Jan. 26	1574	409	34	289
Wiley, Philip W., Raleigh, N. C. Machine for attaching labels to packages	335,166	Feb. 2	94	25, 26	34	457
Wiley, Thomas. (See Keller and Wiley.)						
Wilhelm, Albert, Pleasant Hill, Tex. Plow	336,395	Mar. 23	1958	513	34	1301
Wilhelm, Peter, and M. N. Decamer, Portland, Oreg. Car-axle	335,003	Jan. 26	2092	558	34	408
Wilhite, Edmond S., *et al.* (See Stone, James R., assignor.)						
Wilhite, Thomas J., *et al.* (See Stone, James R., assignor.)						
Wilkin, Theodore S., Milwaukee, Wis. Smoke-consuming furnace	334,086	Jan. 12	792	218	34	155
Wilkin, Theodore S., Milwaukee, Wis. Gang-saw mill	335,167	Feb. 2	99	26	34	459
Wilkin, Theodore S., Milwaukee, Wis. Saw-mill set-works	335,169	Feb. 2	102	27	34	459
Wilkin, William M., Erie, Pa. Gang-saw mill	336,192	Feb. 16	1566	416	34	736
Wilkin, William M., Erie, Pa. Combined edger and cant sawing machine	336,193	Feb. 16	1566	{416 417}	34	736
Wilkin, William M., Erie, Pa. Saw-mill dog	336,194	Feb. 16	1569	417	34	737
Wilkin, William M., Erie, Pa. Reciprocating-saw mill	336,194	Mar. 16	1662	457	34	1942
Wilkin, William M., Erie, Pa. Saw-sash for reciprocating-saw mills	336,196	Mar. 16	1663	457	34	1943
Wilkins, Alexander G., Meadville, Pa., and M. J. Bartlett, Chardon, assignors to Railway Speed Recorder Company, Kent, Ohio. Button-setting machine	334,221	Jan. 12	1179	{315 316 317}	34	227
Wilkins, Joseph, Baltimore, Md. Amalgamator	338,970	Mar. 2	115	28	34	946
Wilkinson, Horatio S., Jefferson Parish, assignor of one-half to P. K. Thompson, New Orleans, La. Harvester	337,542	Mar. 9	912	{233 234}	34	1086
Wilkinson, Jasper, and F. Curtis, Kentuck, Ala. Cotton-cultivator	337,223	Mar. 2	452	116	34	1010
Will, Herman, *et al.* (See Palm, Peter, assignor.)						
Willard, Charles P. (See Hoskins, Edwin J., assignor.)						
Willard, George, Chicago, Ill. Steam-plow	336,969	Mar. 2	113	31	34	946
Willans, Peter W., Thames Ditton, county of Surrey, England. Motive-power engine	338,378	Mar. 23	2031	533	34	1314
Willcox & Gibbs Sewing Machine Company. (See Noble, George H., assignor.)						
Willcoxson, Coulmon W., assignor of one-half to S. R. Hamilton, Farmersville, Tex. Harvester-truck	333,909	Jan. 5	563	{152 153}	34	105
Willey, Edward S. (See Cox and Willey.)						
Willgeaux, Christian, Little Stony, Cal. Grading-level	334,149	Jan. 12	910	249	34	177
Williams, Aaron. (See Williams, George W., assignor.)						
Williams Car Coupler Company. (See Williams, John H., assignor.)						
Williams, Charles H., Cleveland, Ohio. Blank for turn-buckles	338,813	Mar. 30	2642	694	34	1466
Williams, David F., Plattsburg, N. Y. Machine for forging horseshoe-nails	333,984	Jan. 5	686	{188 189}	34	125
Williams, Francis O., and J. C. Mattice, Cohocton, N. Y. Potato-digger	338,812	Mar. 30	2640	695	34	1428
Williams, George B., Las Vegas, N. Mex. Ter. Seal-lock	335,987	Feb. 9	1098	290	34	646
Williams, George J., Birmingham, and F. R. Silk, Sparkbrook, county of Warwick, England. Manufacture of screw-hooks	337,722	Mar. 9	1120	291	34	1125
Williams, George M., Newark, Del. Drill-tube for seeding-machines	334,663	Jan. 19	1684	449	34	295
Williams, George W. (See Long, George S., assignor.)						
Williams, George W., assignor to A. Williams, Chicago, Ill. Copying-press	338,695	Mar. 23	2368	622	34	1372
Williams, Henry, 2 Duke Street, London Bridge, county of Surrey, England. Bedstead or cot	336,679	Feb. 23	2286	{597 598}	34	867
Williams, Herbert C., *et al.* (See Court, Charles, assignor.)						
Williams, James B., San Francisco, Cal. Composition of matter for insulating material	335,495	Feb. 2	564	.....	34	542
Williams, James W., and I. H. Eddy, Louisville, Ky. Wash-board	335,668	Feb. 9	1100	291	34	646
Williams, James W., and I. H. Eddy, Louisville, Ky. Wash-board	335,669	Feb. 9	1101	291	34	646
Williams, John H. (See Warren, John R., assignor.)						
Williams, John H., Rockville, Mo. Ironing-board	338,139	Mar. 16	1684	438	34	1943
Williams, John H., Brattleborough, Vt., assignor to Williams Car Coupler Company, Concord, N. H. Car-coupling	334,501	Jan. 19	1431	385	34	279
Williams, John J., Vernon, Mich. Wagon-jack	338,698	Mar. 23	2363	622	34	1379
Williams, John K., Newark, N. J. Combined cigar-rolling table and wrapper-cutter	335,923	Feb. 2	351	96	34	695
Williams, John R., Kansas City, Mo. Wheeled dirt-scraper	336,196	Feb. 16	1567	416	34	737
Williams, John R., Chicago, Ill., assignor to Niles Tool Works, Hamilton, Ohio. Car-wheel lathe	334,892	Jan. 26	1675	469	34	369
Williams, Owen, Woonsocket, R. I. Lubricator	334,233	Jan. 12	1184	318	34	289
Williams, Percy G. (See Roovers and Williams.)						
Williams, Richard S., New York, N. Y. Dental plugger	336,777	Feb. 23	2411	634	34	891
Williams, Robert B., Janesville, Wis. Carriage-spring	338,971	Mar. 2	116	30	34	947
Williams, Samuel T., Red Bank, N. J. Wheel	337,223	Mar. 2	453	116	34	1010
Williams, Samuel T., Red Bank, N. J. Tension-wheel	339,092	Mar. 30	2031	800	34	1495
Williams, Samuel T., Red Bank, assignor to Williams Tension Wheel Company, Newark, N. J. Flanging-machine	338,901	Mar. 30	2774	{730 731}	34	1451
Williams Tension Wheel Company. (See Williams, Samuel T., assignor.)						
Williams, Thomas B., Orange, Mass. Ice-tire for vehicle-wheels	334,222	Jan. 12	1183	318	34	227
Williams, Wilbur F. (See Lassiter, Joseph, assignor.)						
Williamson, Catharine A. (See Rawlings and Williamson.)						
Williamson, Henry C., and F. Price, Michigan City, Ind. Car-door	335,169	Feb. 2	104	27, 28	34	459
Williamson, John. (See Rommers and Williamson.)						
Williamsport Kindling Wood Company. (See Shaw and Ellinger, assignors.)						
Willistead, Benjamin F., assignor of one-half to S. A. Plummer, West Bay City, Mich. Piston-rod packing	333,562	Jan. 5	116	33	34	24
Willmarth, John T. (See Foster, John W., assignor.)						
Wilson, Theodore B., Chicago, Ill. Letter-scale	336,275	Feb. 16	1716	448	34	757
Wilson, Theodore B., Chicago, Ill. Lamp-burner	337,168	Mar. 2	391	77	34	980
Wilson, Augustine J., New York, N. Y. Button	337,722	Mar. 9	1131	293	34	1125
Wilson, Carlos G., Milledgeville, Ga. Spark-arrester	336,504	Feb. 16	2025	521	34	814
Wilson, Christopher J., Knoxville, Tenn. Saw-tooth	337,103	Mar. 2	393	77	34	980

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Wilson, David, assignor of one-third to J. T. Brooks, Richmond, and I. V. Kimball, Indianapolis, Ind. Station-indicator	335,004	Jan. 26	2094	558	34	409
	335,005	Jan. 26	2100	559	34	410
Wilson, Erl F., Rochester, N. Y. Mop	336,196	Feb. 16	1594	418	34	736
Wilson, Henry B., Paw Paw, Mich. Fence-post						
Wilson, Henry H. (See Wilson, John J., assignor.)						
Wilson, Hervey M., Fullerton, Nebr. Pipe-wrench	336,386	Mar. 23	1952	513	34	1301
Wilson, John, New York, N. Y. Insulator for telegraph-wires	336,276	Feb. 16	1718	448	34	758
Wilson, John C. (See Wilson, William L. and J. C.)						
Wilson, John C., Boston, Mass. Telephone-call	336,972	Mar. 2	117	33	34	947
Wilson, John D., Greenleaf, Kans. Road-cart	336,973	Mar. 2	190	33	34	947
Wilson, John E. (See Brown and Wilson.)						
Wilson, John J., Green Precinct, assignor of one-half to H. H. Wilson, Lincoln, Nebr. Fan-blast regulator	336,537	Feb. 16	2071	544	34	888
	336,538	Feb. 16	2073	545	34	893
Wilson, John M., Chicago, Ill. Spring bed-bottom	336,778	Feb. 23	2412	634	34	891
Wilson, John T., Pittsburg, Pa. Car-coupling						
Wilson, M. J., *et al.* (See Finneran, Charles C., assignor.)						
Wilson & McCallay. (See Wilson, Robert, assignor.)						
Wilson, McDowell, Haskins, Ohio. Fence	336,902	Mar. 30	2775	731	34	1451
Wilson, Newton S., West Butte, Cal. Traveling thrasher	334,983	Jan. 26	1876	499	34	369
				500		
Wilson, Robert, assignor to Wilson & McCallay, Middletown, Ohio. Tobacco-drier	333,985	Jan. 5	669	183	34	125
Wilson, Robert H., Montezuma, Ind. Thill-coupling	338,008	Mar. 16	1597	396	34	1213
Wilson, Samuel C., Forrest City, Ark. Car-coupling	338,122	Mar. 30	3068	817	34	1506
Wilson, William, Bloomington, Ill. Valve-gear	333,706	Jan. 5	287	78	34	54
Wilson, William, Edgewater, N. J. Manufacturing wall-paper	336,964	Feb. 2	253	67	34	485
Wilson, William G., and G. Zimmermann, Philadelphia, Pa. Combined spring-bed and fire-escape	336,127	Mar. 16	1665	436	34	1043
Wilson, William H., Westfield, N. Y. Sectional steam-boiler	336,198	Mar. 16	1666	436	34	1044
				439		
Wilson, William L. and J. C., Cynthiana, Ind. Gate	337,104	Mar. 2	204	78	34	960
Wils, Michael, *et al.* (See Largent, James J., assignor.)						
Wimer, James. (See Branchler, Henry, assignor.)						
Wimmer, Ernest J. (See Dietz, Joseph A., assignor.)						
Winans, Henry E., and G. N. Wooden, Newark, N. J. Shot-concentrator	336,660	Feb. 23	2269	598	34	667
Winans, Ira, Rochester, N. Y. Table-leaf support	335,985	Feb. 2	254	67	34	486
Winchester Repeating Arms Company. (See Browning, John M. and M. S., assignors.)						
Winchester Repeating Arms Company. (See Clough, Jefferson M., assignor.)						
Winchester Repeating Arms Company. (See Wetmore, William W., assignor.)						
Windler, Ferdinand, Keokuk, Iowa. Car-coupling	333,986	Jan. 5	671	184	34	196
Windler, Ferdinand, Keokuk, Iowa. Car-coupling	336,029	Feb. 9	1395	350	34	664
Winebrenner, Henry C., Baltimore, Md., assignor to Scott Manufacturing Company of Baltimore City. Steam-crane	337,794	Mar. 9	1132	292	34	1135
Wineman, Marx. (See Faas, Rudolph, assignor.)						
Wing, William S. (See Newton, Collins F., assignor.)						
Winkler, Alphens, *et al.* (See Fisher, John R. and L. T., assignors.)						
Winkler, John C., *et al.* (See Fisher, John R. and L. T., assignors.)						
Winship, William F., Albany, N. Y. Newspaper-file	336,662	Mar. 23	2446	645	34	1366
Winter, David T., assignor to H. W. Winter, Peabody, Mass. Automatic door-closer	334,834	Jan. 26	1878	500	34	870
Winter, Helena W. (See Winter, David T., assignor.)						
Winter, Herman, Brooklyn, N. Y. Apparatus for towing and securing hawsers or lines of vessels	336,829	Feb. 23	2477	651	34	908
	336,830	Feb. 23	2478	652	34	903
Winter, Herman, Brooklyn, N. Y. Towing vessels						
Winter, Hermann. (See Boös and Winter.)						
Winter, John F., assignor to G. W. McGill, New York, N. Y. Buckle	336,327	Mar. 23	1953	514	34	1301
Winterhalder, Louis, Brooklyn, assignor to New Haven Clock Company, New York, N. Y. Telegraph-register	336,398	Mar. 23	1954	514	34	1302
Winterroe, Clas E. (See Larsen and Winterroe.)						
Winterwerber, Heinrich, Offenbach-on-the-Main, Germany. Paper-drier	334,150	Jan. 12	912	249	34	178
				250		
Winterwerber, Heinrich, Offenbach-on-the-Main, Germany. Machine for winding fabrics	335,870	Feb. 9	1102	291	34	646
				292		
Wire Goods Company. (See Cooper, George N., assignor.)						
Wiseheart, Jacob H., Chico, assignor of one-half to J. A. Bruner, San Rafael, Cal. Elevator	335,408	Feb. 2	451	117	34	522
	335,666	Feb. 9	809	215	34	592
Wiseman, Arthur G., Webster Groves, Mo. Winding-indicator for watches	335,049	Jan. 26	2108	576	34	420
Wisner, Andrew J., assignor of one-half to M. F. Richardson, Philadelphia, Pa. Air-brake.						
Wiswell Electric Mining Machinery Company. (See Wiswell, Jacob C., assignor.)						
Wiswell, Jacob C., Medford, Mass., assignor to Wiswell Electric Mining Machinery Company, Portland, Me. Apparatus for treating ores	336,080	Feb. 9	1337	351	34	664
Wiswell, Jacob C., Medford, Mass., assignor to Wiswell Electric Mining Machinery Company, Portland, Me. Ore-crusher	337,736	Mar. 9	1134	292	34	1136
				293		
Witherow, James P., *et al.* (See Murdock, William M., assignor.)						
Withington, Cooley & Co. (See Smith, Alexander G., assignor.)						
Withington, James, Chambersburg, assignor to Trenton Iron Company, Trenton, N. J. Machine for straightening wire	333,707	Jan. 5	288	78	34	55
				79		
				80		
Withrow, Jesse P., Kammerer, Pa. Corn-husker	336,974	Mar. 2	122	33	34	948
Withrow, Joseph A., Scranton City, Iowa. Hay-rack	337,106	Mar. 2	295	78	34	961
Witman, Harry A., Wernersville, Pa. Door-securer	338,214	Mar. 16	1799	469	34	1266
Witmeyer, August. (See Sherman, Willis S., assignor.)						
Wittemann, Rudolph A., New York, N. Y. Sulphuring-tube	335,050	Jan. 26	2109	576	34	421
Wittram, Frederick, San Francisco, Cal. Slate-cleaner	336,612	Feb. 23	2186	570	34	648
Wittstadt, Friedrich, Würsburg, Bavaria, Germany. Accordion	335,552	Feb. 2	646	169	34	556
Witzel, Charles, Brooklyn, N. Y. Sash-fastener	335,409	Feb. 2	453	117	34	522
Witzig, Charles, assignor to M. Kauth, Buffalo, N. Y. Baking-machine	336,661	Feb. 23	2280	598	34	667
Wogiom, William H. (See Vanborn, Joseph S., assignor.)						
Wohlrab, Sylvan, assignor to F. Prins, Milwaukee, Wis. Smut-machine	337,219	Mar. 2	446	117	34	1000
Wolcott, Anson, Wolcott, Ind. Conveying apparatus	333,987	Jan. 5	673	184	34	195
Wolf, Christopher C., *et al.* (See Neff, Elijah, assignor.)						
Wolf, John L., Springfield, Ohio. Corn-harvester	335,170	Feb. 2	105	28, 29	34	460
Wolfe, Harvey R., assignor to Brennan & Co. Southwestern Agricultural Works, Louisville, Ky. Circular-saw mill	335,799	Feb. 9	906	239	34	610
Wolfe, Jacob W., assignor of one-half to A. L. Ritchey, Nashville, Tenn. Fire-place	336,622	Feb. 23	2391	599	34	667
Wolff, Joseph G., Paris, France. Article of furniture	335,667	Feb. 9	810	216	34	593

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Wolff, Justus. (See Rigney and Wolff.)						
Wolff Manufacturing Company, L. (See Clifford, John, assignor.)						
Wolle, Clarence A., *et al.* (See Homles, William H., assignor.)						
Wolle, Clarence A., *et al.* (See Lorenz, William A., assignor.)						
Wolle, Clarence A., *et al.* (See Lorenz and Homles, assignors.)						
Wollensak, John F., Chicago, Ill. Transom-lifter	336,975	Mar. 2	122	33	34	948
Woltmann, Jacob. (See Dombrowski and Woltmann.)						
Womer, Mileden, Kingston, Kans. Grain-drill	337,543	Mar. 9	913	234	34	1060
Wood, Charles D. (See Coupal and Wood.)						
Wood, Edmund M., Natick, and A. G. Mead, Boston, Mass. Bottling-machine	333,708	Jan. 5	288	80	34	55
				81		
				82		
Wood, Francis, Brooklyn, N. Y. Machine for gathering the folded sheets or signatures of a book for binding	336,878	Feb. 23	2548	671	34	916
Wood, Frank B., New York, N. Y., assignor to New Haven Clock Company, New Haven, Conn. Telegraph-register	336,929	Mar. 23	1956	514	34	1302
				515		
Wood, Hermon G., assignor of one-fourth to E. A. Wheeler, Sharon, Pa. Type-writing machine	334,930	Jan. 26	1936	509	34	890
Wood, James J., Brooklyn, assignor to Fuller Electrical Company, New York, N. Y. Electric-arc lamp	337,929	Mar. 9	547	144	34	1067
Wood, John, Jr., Beverly, and A. J. Philbrick, Salem, Mass. Pedal for velocipedes	336,977	Feb. 16	1719	449	34	758
Wood, Stephen W., assignor to Annex Pencil Company, New York, N. Y. Pen and pencil case	339,123	Mar. 30	3069	817	34	1505
Wood, Taber & Morse. (See Taber, Loyal C., assignor.)						
Wood, William H. (See Haight and Wood.)						
Wood, William H., Hartford, Conn. Vapor-engine	338,614	Mar. 30	3043	807	34	1498
Woodard, John E. (See Smith and Woodard.)						
Woodburn, James R., St. John, New Brunswick, Canada. Pulverising-machine	334,098	Jan. 12	841	220	34	168
				221		
				500		
				501		
Woodbury, Daniel A., Rochester, N. Y. Balanced valve	334,885	Jan. 26	1889		34	870
Woodbury, Daniel A., Rochester, N. Y. Fastening soft-metal wearing-surfaces in journal-boxes	337,468	Mar. 9	890	207	34	1060
Woodbury, James A., *et al.* (See Deales, Lambert A., assignor.)						
Wooden, George N. (See Winans and Wooden.)						
Woodford, Edwin H., assignor to White, Corbin & Company, Rockville, Conn. Drying attachment for envelope-machines	336,976	Mar. 2	194	33	34	948
Woodford, W. W. (See Cooke, Edward C., assignor.)						
Woodmancy, Henry F., Whitinsville, Mass. Bolster for spinning-machine spindles	338,238	Mar. 16	1630	478	34	1272
Woodmansee, Harrison, Freeport, Ill. Windmill	334,553	Jan. 19	1506	408	34	291
Woodring, Gideon, Du Bois, Pa. Nut-lock	334,836	Jan. 26	1882	501	34	870
Woodruff, Edmund W., Washington, D. C. Cabinet for file-holders	335,668	Feb. 9	811	216	34	593
Woods, John, Columbia, Tenn. Plane	334,894	Jan. 12	1185	318	34	998
Woods Machine Company, S. A. (See Tillison, Hosea R., assignor.)						
Woodward, Erastus. (See Weeks and Woodward.)						
Woodward, Erastus, Somerville, and G. W. Copeland, Malden, Mass. Tack-strip	333,709	Jan. 5	290	82	34	56
Woodward, Erastus, Somerville, and G. W. Copeland, Malden, assignors to I. M. Harmon, Boston, Mass. Tack-strip	336,899	Feb. 16	2078	545	34	888
Woodward, Henry S., Philadelphia, Pa. Decorticating-machine	337,469	Mar. 9	821	207	34	1060
				208		
Woodward, James H., Seward, Nebr. Electric belt	336,683	Mar. 23	2447	645	34	1366
Woodward, Samuel S., Guide Rock, Nebr. Lamp-shade support	334,568	Jan. 19	1484	385	34	270
Woodworth, Laurin D., Youngstown, Ohio. Fence-post	336,903	Mar. 30	2776	731	34	1451
Woolaston, Joseph H. (See Barnes and Woolaston.)						
Woolcocks, George O. (See Hogeboom and Woolcocks.)						
Wooldridge, Richard. (See Anderson, Lee, assignor.)						
Woolner, Adolph, Jr. (See Anderson and Woolner.)						
Wooster, Frederick J., assignor of one-half to E. D. Steele, Waterbury, Conn. Machine for scouring and drying sheet metal	334,909	Jan. 12	1019	271	34	197
Worrall, Harvey, Topeka, Kans. Music sheet and book supporter for pianos and organs	336,613	Feb. 23	2187	571	34	648
Worrall Manufacturing Company. (See Worrall, Thomas D., assignor.)						
Worrall, Thomas D., Washington, D. C. Type-writing machine	335,669	Feb. 9	812	216	34	593
				217		
Worrall, Thomas D., Washington, D. C. Type-writing machine	335,670	Feb. 9	815	217	34	593
				218		
Worrall, Thomas D., Washington, D. C. Type-writing machine	336,278	Feb. 16	1730	449	34	756
				450		
Worrall, Thomas D., Washington, D. C., assignor to Worrall Manufacturing Company, Boston, Mass. Type-writing machine	334,508	Jan. 19	1435	396	34	279
Worn, Frank, assignor to D. Fitzpatrick, Philadelphia, Pa. Pencil-sharpener	338,904	Mar. 30	2777	731	34	1452
Worth, Albert B., Greenport, N. Y. Electric air-pump	337,803	Mar. 9	1229	319	34	1153
Worth, Albert B., Greenport, N. Y. Electric air-pump	337,804	Mar. 9	1231	320	34	1153
Worthen, George E. (See Rawson and Worthen.)						
Worthington, Charles C., *et al.* (See Bicknell, William A. P., assignor.)						
Worthington, Charles C., *et al.* (See Jenkins, Frank W., assignor.)						
Wrenn, McDonald L. (See Whitehurst, Robert W., assignor.)						
Wright, Alexander L., *et al.* (See Killam, Robert C., assignor.)						
Wright Brothers & Co. (See Glenn, Edmund L., assignor.)						
Wright, Edmund, *et al.* (See Durand, Jean B., assignor.)						
Wright, Frank L. (See Edmisten, Levi Q., assignor.)						
Wright, Harrison, *et al.* (See Stevens, Charles V., assignor.)						
Wright, Henry, Sigourney, Iowa. Clothes-washer	336,369	Feb. 16	1849	485	34	782
Wright, James R., Portland, Oreg. Vehicle-spring	338,905	Mar. 30	2778	732	34	1452
Wright, John B. (See Barnett, Americus M., assignor.)						
Wright, Joseph, *et al.* (See Durand, Jean B., assignor.)						
Wright, Joseph, Philadelphia, Pa. Umbrella for children's carriages	336,879	Feb. 23	2549	671	34	916
Wright, Silas, Washington, N. J. Device for molding brick	333,710	Jan. 5	300	82	34	56
Wright, W. E., *et al.* (See Brosnan, Cornelius J., assignor.)						
Wright, William A., Centreton, N. J., assignor of one-half to J. M. Creighton and B. K. Jamison, Philadelphia, Pa. Cable-conduit	335,553	Feb. 2	647	169	34	586
				170		
Wright, William H. (See Fanyo and Wright.)						
Wright, William H. (See Sampson, Wright, and Kinsman.)						
Wuensche, August O., Chicago, Ill. Safety device for elevators	337,355	Mar. 2	632	166	34	1043

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wyant, Eli M. (See Wyant, John E. and E. M.)						
Wyant, John E. and E. M., Waterloo, Iowa. Curtain-fixture	335,789	Feb. 9	999	264	34	626
Wyche, John L., Rusk, Tex. Hand-support for use in writing	336,939	Mar. 16	1631	478	34	1272
Wyckoff, Arcalous, Elmira, N. Y. Railway-gate	335,790	Feb. 9	999	264	34	626
Wyman, Horace. (See Crompton and Wyman.)						
Wyman, Horace, assignor to G. Crompton, Worcester, Mass. Shedding mechanism for looms	336,683	Feb. 23	2292	599	34	866
Wyman, Richard H., Evanston, Ill. Railway-car	337,106	Mar. 2	296	78	34	961
Wynn, John C., Hunt County, Tex. Sorghum boiler and evaporator	336,279	Feb. 16	1794	450	34	756
Wyttenbach, John, Rockport, Ind. Bifurcated pen-holder	336,540	Feb. 16	2074	545	34	822
Yaggy, Levi W., assignor to L. W. Yaggy and J. J. West, Chicago, Ill. Portfolio or case for anatomical charts	337,544	Mar. 9	914	234	34	1097
Yagn, Nicholas, St. Petersburg, Russia. Screw-propeller	333,805	Jan. 5	421	114 115	34	79
Yale, Charles O., Rome, N. Y., G. F. W. Holman, and W. J. Barnette, U. S. Navy; said Holman assignor to said Barnette. Electrical vote recording and indicating apparatus	336,009	Mar. 16	1528	396 397	34	1213
Yale & Towne Manufacturing Company. (See Weston, Thomas A., assignor.)						
Yarger, John A., New Hampton, Iowa. Roller-skate	333,583	Jan. 5	117	32	34	95
Yarnall, Albin P., Eagle Station, Pa. Convertible chair	335,410	Feb. 2	453	117	34	592
Yates, John W., Bourbon, Ind. Spout for tea-kettles	336,977	Mar. 2	125	34	34	948
Yingling, George S. (See Vannett, Jasper, assignor.)						
Yingst, Nathan, Reistville, Pa. Creamery	336,577	Mar. 23	2292	601	34	1360
York, Levi D., Portsmouth, Ohio. Machine for drawing metal bars	335,496	Feb. 2	565	148	34	542
Yost, George W. N., New York, N. Y., assignor to American Writing Machine Company, of New York. Type-writing machine	336,614	Feb. 23	2188	571	34	848
Yost, Joseph L., Chicopee, Mass. Bicycle	334,325	Jan. 12	1186	319	34	228
Young, Adelbert R. (See Greene and Young.)						
Young, Daniel C., Hanover, Kans. Educational device for the illustration of longitude and time. (Reissue)	10,683	Feb. 2	652	171	34	558
Young, Elizabeth M., Dansville, N. Y. Hand plaiting attachment	333,711	Jan. 5	301	88	34	56
Young, George R., *et al.* (See Kienardt, John A., assignor.)						
Young, Jackson B. (See Behel, Aquilla O., assignor.)						
Young, Jackson B. (See Shaffer, Charles H., assignor.)						
Young, Jacob J., assignor to R. S. Kenyon and J. O. Roe, Rochester, N. Y. Gang-plow	337,107	Mar. 2	298	79	34	961
Young, James D., Elgin, Tex. Rein-holder	336,462	Feb. 16	1978	518	34	805
Young, John, Newark, N. J. Dash-pot for steam-engines	337,644	Mar. 9	1033	265	34	1119
Young, Joseph M., Bean's Station, Tenn. Wheel-plow	339,037	Mar. 30	2971	786	34	1486
Young, L. H. (See Conver, Peter, assignor.)						
Young, Parsalla H. (See Powell, Joseph M., assignor.)						
Young, William A., assignor to H. Krans and H. Aletter, Berlin, Ontario, Canada. Stretcher for felt boots, shoes, or stockings	338,910	Jan. 5	564	153	34	105
Young, William D. (See Acheson, William, assignor.)						
Yule, George, Newark, N. J. Rubber tube for batters' irons	338,815	Mar. 30	2645	697	34	1426
Zachos, John C., New York, N. Y. Type-writer for stenographic purposes	334,020	Jan. 19	1609	429	34	311
Zadek, Charles W. A., Barlow-on-the-Sound, N. Y. Explosive compound	335,006	Jan. 26	2101	.....	34	410
Zaehringer, William, New Orleans, La. Billiard-chalk holder	334,099	Jan. 19	844	231	34	164
Zeese & Co., Alexander. (See Lets, Charles M., assignor.)						
Zehring, Jacob D., and H. Z. Jones, Codorus, Pa. Invalid-bedstead	333,712	Jan. 5	302	83	34	56
Zeigler, Charles W. (See Gerrard, Edward A., assignor.)						
Zeigler, Daniel G., and R. Copes, Orangeburg, S. C. Vehicle-thill	338,129	Mar. 16	1687	439	34	1244
Zeigler, Daniel G., and R. Copes, Orangeburg, S. C. Hoeing-machine	338,130	Mar. 16	1687	439	34	1244
Zell, Robert R., Essex, N. J., assignor, by mesne assignments, to Safety Steam Generator Company, New York, N. Y. Sectional steam-boiler. (Reissue)	10,695	Mar. 2	636	167	34	1044
Zeller, J. J. A. (See Phelps and Swift, assignors.)						
Zeller, Melancthon E., assignor of one-half to A. J. St. John, Bluffton, Ohio. Harness-saddle	337,645	Mar. 9	1036	266	34	1119
Zeller, Melancthon E., assignor of one-half to A. J. St. John, Bluffton, Ohio. Buckle	338,240	Mar. 16	1832	478	34	1273
Zemann, Anton, Vienna, Austria-Hungary, assignor of one-half to W. Putzker, Olbernhau, Saxony, Germany. Rose-engine	334,210	Jan. 12	1020	272	34	197
Zerbe, Charles A. (See Miller, John H., assignor.)						
Zerr, Francis. (See Zerr, John, J., and F.)						
Zerr, John, J., and F., Keokuk, Iowa. Boiler-furnace	336,370	Feb. 16	1850	485	34	783
Zerr, Joseph. (See Zerr, John, J., and F.)						
Ziegle, Louis E., assignor to J. Van Range Company, Cincinnati, Ohio. Catch for oven-doors	334,728	Jan. 19	1743	465	34	337
Ziegler, William F., Longswamp, Pa. Fruit-picker	338,010	Mar. 16	1531	397	34	1214
Zies, Charles, Baltimore, Md. Meat-cutter	335,730	Feb. 9	907	239	34	610
Zimmer, Chrysostom, Rochester, N. Y. Abdominal truss	337,290	Mar. 2	551	145	34	1028
Zimmerman, Frank T., Auburn, Ind. Windmill-regulator	333,806	Jan. 5	423	115	34	79
Zimmerman, John C. (See Butler, John R., assignor.)						
Zimmerman, Lemman S. (See Bennett, Franklin, assignor.)						
Zimmermann, George. (See Wilson and Zimmermann.)	338,578	Mar. 23	2293	601	34	1360
Zimmermann, Henry, Detroit, Mich. Device for branding kegs	337,805	Mar. 9	1232	320	34	1153
Zitko, Charles, St. Louis, Mo. Rain-water cut-off	336,684	Feb. 23	2293	599 600	34	866
Zschiegner, Friedrich, Hoboken, N. J., assignor of one-third to G. Amberg, New York, N. Y. Propelling attachment for boats	337,470	Mar. 9	823	206	34	1080
Zuber, Jacob. (See Kohn, Ignaz, assignor.)						
Zumpe, Adolph, Berlin, Germany. Memorandum-calendar and stand	336,463	Feb. 16	1979	518	34	805
Zwietasch, Otto, Milwaukee, Wis. Bottle-stopper	338,906	Mar. 30	2779	732	34	1458
Zwoyer, Ellsworth B. A., assignor of one-half to G. W. Auge, Reading, Pa. Liquid-cooler						

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
Alexander, James H., assignor to T. Devlin & Co., Philadelphia, Pa. Trunk-iron	16,505	Feb. 9	34	563
Alexander, James H., assignor to T. Devlin & Co., Philadelphia, Pa. Trunk-iron	16,567	Mar. 16	34	1162
Arnold, John T., Hicksville, Ohio. Wash-board	16,537	Feb. 23	34	830
Atterbury, Thomas B., Pittsburg, Pa. Tureen or dish	16,556	Mar. 9	34	1050
Backus, Quimby S., Winchendon, Mass. Fire-place back	16,489	Jan. 26	34	344
Barnhart, Alson E., *et al.* (See Barnhart, Warren, assignor.)				
Barnhart, Alson E., *et al.* (See Guildenstine, Julius, assignor.)				
Barnhart, Alson E., *et al.* (See Heyer, Charles E., assignor.)				
Barnhart, Alson E., *et al.* (See Jackson, William W., assignor.)				
Barnhart, Alson E., *et al.* (See Lanschke, Ernst, assignor.)				
Barnhart, Arthur M., *et al.* (See Barnhart, Warren, assignor.)				
Barnhart, Arthur M., *et al.* (See Guildenstine, Julius, assignor.)				
Barnhart, Arthur M., *et al.* (See Heyer, Charles E., assignor.)				
Barnhart, Arthur M., *et al.* (See Jackson, William W., assignor.)				
Barnhart, Arthur M., *et al.* (See Lanschke, Ernst, assignor.)				
Barnhart, Warren, assignor to A. M. and A. E. Barnhart, Chicago, Ill. Printing-type	16,490	Jan. 26	34	344
Bast, Nicklas. (See Huttig and Bast.)				
Baumgarten, Joseph, assignor to Manhattan Wall Paper Company, New York, N. Y. Wall-paper	16,454	Jan. 12	34	134
Basin & Sargent. (See Zacharie, Elly, assignor.)				
Berry, Henry, Huntington, Conn. Pitcher, &c	16,538	Feb. 23	34	830
Bidwell, Julius A., Ivanpah, Cal. Scarf-pin	16,569	Mar. 30	34	1394
Boesen, James P., Hoboken, N. J. Gimp	16,558	Mar. 2	34	926
Boylston, Samuel F., Newark, N. J. Gear for children's carriages	16,539	Feb. 23	34	830
Bradley, Charles H., Pittsburg, Pa. Heating-stove	16,519	Feb. 16	34	704
Bradley, Daniel R., New York, N. Y. Perfumery-bottle	16,512	Feb. 9	34	563
Bromley & Sons, John. (See Finck, Henry, assignor.)				
Bromley & Sons, John. (See Petzold, Adolph, assignor.)				
Brown, George, Washington, D. C. Table-fountain	16,451	Jan. 5	34	9
Bruce, Wallace, Poughkeepsie, N. Y. Panorama or map case	16,540	Feb. 23	34	830
Buchanan, Charles H., Philadelphia, Pa. Belt	16,495	Feb. 2	34	440
Bunker, William L., *et al.* (See Kenna, Joseph W., assignor.)				
Bunker, William L., Chicago, Ill. Bracket	16,541	Feb. 23	34	830
Carr, Martin W., Somerville, Mass. Vase	16,542	Feb. 23	34	830
Casper, Charles, Meriden, Conn. Handle for spoons, &c	16,506	Feb. 9	34	563
Casper, Charles, Meriden, Conn., assignor to Meriden Silver Plate Company. Clock-case	16,559	Mar. 9	34	1050
Cox Stove Company, Abram. (See Motts and McLaughlin, assignors.)				
Craighead & Kintz Manufacturing Company. (See Hardy, Emile, assignor.)				
Crampton, Harry I., assignor to Goodyears Metallic Rubber Shoe Company, Naugatuck, Conn. Overshoe	16,455	Jan. 12	34	134
Crossman, Charles S., New York, N. Y. Badge	16,513	Feb. 9	34	563
Davids Company, Thaddeus. (See Davids, David F., assignor.)				
Davids, David F., assignor to T. Davids Company, New York, N. Y. Bottle	16,520	Feb. 16	34	704
Davis, William. (See Espinosa, Jose M., assignor.)				
Devlin & Co., Thomas. (See Alexander, James H., assignor.)				
Dey, Charles E., Denver, Colo. Indicator-cover	16,560	Mar. 30	34	1394
Dreyfus, Bernhard, New York, N. Y. Curtain-loop	16,543	Feb. 23	34	830
Dryfoos & Co., L. (See Hildt, August, assignor.)				
Duncan & Sons, George. (See Miller, John E., assignor.)				
Ellean, Henry, San Francisco, Cal. Badge	16,544	Feb. 23	34	830
Espinosa, Jose M., assignor to W. Davis, San Francisco, Cal. Check or side piece for bridle-bits	16,521	Feb. 16	34	704
Estes, Webster C., Brooklyn, N. Y. Box	16,578	Mar. 23	34	1280
Estey Organ Company. (See Fuller, Levi K., assignor.)				
Felgly, David, Medway, Ohio. Shovel for potato-diggers	16,464	Jan. 12	34	134
Finck, Henry, New York, N. Y., assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	16,496	Feb. 2	34	440
Finck, Henry, New York, N. Y., assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	16,545	Feb. 23	34	830
Fisher, Edwin, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,470 to 16,476	Jan. 19	34	254
Fitch, W. & E. T. (See Hubbard, George M., assignor.)				
Flanagen, James I., Philadelphia, Pa. Ornamentation of buckets	16,477	Jan. 19	34	254
Fogelstrand, Otto F., assignor to Textile Manufacturing Company, Westfield, Mass. Ear for casket-handles	16,465	Jan. 12	34	134
Fraser, Alexander, New Glasgow, Nova Scotia, Canada. Pen-protector	16,491	Jan. 26	34	344
Fry, George W., Beaver, assignor to Rochester Tumbler Company, Pittsburg, Pa. Table-vessel	16,546	Feb. 23	34	830
Fuller, Levi K., assignor to Estey Organ Company, Brattleborough, Vt. Organ-case	16,497 16,498	Feb. 2	34	440
Goodyears Metallic Rubber Shoe Company. (See Crampton, Harry I., assignor.)				
Graham, John, Chicago, Ill. Combination type ornament	16,522	Feb. 16	34	704
Grinberg, Paul J., New York, N. Y. Stove-pipe	16,547	Feb. 23	34	830
Groujean, Charles T., assignor to Tiffany & Co., New York, N. Y. Spoon-handle	16,560 16,561	Mar. 9	34	1050
Guildenstine, Julius, New York, N. Y., assignor to A. M. and A. E. Barnhart, Chicago, Ill. Font of type	16,514	Feb. 9	34	563
Hall, Zachary T., Philadelphia, Pa. Knob	16,515	Feb. 9	34	563
Hardy, Emile, Andover, assignor to Craighead & Kintz Manufacturing Company, Ballard Vale, Mass. Mantel-piece	16,579	Mar. 23	34	1280
Harris Stove Pattern and Machinery Company. (See Kahn, Lazard, assignor.)				
Haviland, Charles E., Limoges, France. Dishes for table-service	16,452	Jan. 5	34	9
Hayward, Sterling F., New York, N. Y. Bottle	16,508	Feb. 2	34	440
Hayward, Sterling F., New York, N. Y. Bottle	16,562	Mar. 9	34	1050
Heyer, Charles E., assignor to A. M. and A. E. Barnhart, Chicago, Ill. Font of type	16,516	Feb. 9	34	563

Alphabetical list of patentees of designs, January to March, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Hildt, August, assignor to L. Dryfoos & Co., New York, N. Y. Quilting	16,563	Mar. 9	34	1050
Hiller, Louis C., assignor to Meriden Silver Plate Company, Meriden, Conn. Clock-case	16,501	Mar. 30	34	1394
Hirschfeld, Henry W., assignor to Meriden Britannia Company, Meriden, Conn. Spoon or fork handle	16,566	Mar. 16	34	1162
Hubbard, George M., assignor to W. & E. T. Fitch, New Haven, Conn. Harness-terret	16,478	Jan. 19	34	254
Hubbard, George M., assignor to W. & E. T. Fitch, New Haven, Conn. Harness-terret	16,569	Mar. 16	34	1162
Huttig, William, Sr., and N. Bast, Muscatine, Iowa. Sash-fastener	16,507	Feb. 9	34	563
Ihlenburg, Herman, assignor to MacKellar, Smiths & Jordan Company, Philadelphia, Pa. Font of printing-type	16,508	Feb. 9	34	563
Jackson, William W., Philadelphia, Pa., assignor to A. M. and A. E. Barnhart, Chicago, Ill. Font of printing-type	16,536	Feb. 16	34	704
Kahn & Brothers, F. & L. (See Kahn, Felix, assignor.)				
Kahn, Felix, Cincinnati, assignor to F. & L. Kahn & Brothers, Hamilton, Ohio. Stove	16,581	Mar. 23	34	1280
Kahn, Lazard, assignor to Harris Stove Pattern and Machinery Company, Hamilton, Ohio. Stove	16,580	Mar. 23	34	1280
Kaldenberg, Frederick J., Tarrytown, N. Y. Tobacco-pipe	16,570	Mar. 16	34	1162
Kenna, Joseph W., assignor to W. I. Bunker and C. L. Miller, Chicago, Ill. Bracket for springs	16,571	Mar. 16	34	1162
Kitchenman, James. (See Phippa, John, assignor.)				
Larzarus, Augustus A., *et al.* (See Lipper, Benjamin, assignor.)				
Lauschke, Ernst, assignor to A. M. and A. E. Barnhart, Chicago, Ill. Type	16,553	Mar. 2	34	926
Lenox, Walter S. (See Willets and Lenox.)				
Lipper, Benjamin, assignor to himself, A. A. Larzarus, and I. A. Schwarz, Philadelphia, Pa. Trimming	16,499	Feb. 2	34	440
	16,492	Jan. 26	34	344
Litchfield, Isaac W., Warwick, N. Y. Zinc for electric batteries	16,484 to 16,485	Jan. 19	34	254
Little, Andrew, New York, N. Y. Font of printing-type	16,562 to 16,563	Mar. 30	34	1394
Loewenhers, Sigmund, New York, N. Y. Ornamentation of leather, &c				
Lowell Manufacturing Company. (See Fisher, Edwin, assignor.)				
Lowell Manufacturing Company. (See Sauer, Emil G., assignor.)				
MacKellar, Smiths & Jordan Company. (See Ihlenburg, Herman, assignor.)				
Maddock, Henry. (See Maddock, Thomas, assignor.)				
Maddock, Thomas, assignor to H. Maddock, New York, N. Y. Table-ware	16,572	Mar. 16	34	1162
Manhattan Wall Paper Company. (See Baumgarten, Joseph, assignor.)				
Mankey, Frederick, Williamsport, Pa. Molding	16,456 to 16,457	Jan. 12	34	134
Mankey, Frederick, Williamsport, Pa. Surface ornamentation of walls, &c	16,458	Jan. 12	34	134
Mankey, Frederick, Williamsport, Pa. Open-work panel	16,459 to 16,461	Jan. 12	34	134
Mankey, Frederick, Williamsport, Pa. Panel	16,462	Jan. 19	34	134
Mankey, Frederick, Williamsport, Pa. Molding	16,523 to 16,527	Feb. 16	34	704
Mankey, Frederick, Williamsport, Pa. Surface ornamentation of walls, &c	16,528	Feb. 16	34	704
Mankey, Frederick, Williamsport, Pa. Surface ornamentation of walls	16,529	Feb. 16	34	704
Mankey, Frederick, Williamsport, Pa. Surface ornamentation of walls, &c	16,530	Feb. 16	34	704
Mankey, Frederick, Williamsport, Pa. Surface ornamentation of walls	16,531	Feb. 16	34	704
Maris, Jared, Columbus, Ohio. Ornamentation of hubs	16,467 to 16,468	Jan. 12	34	134
Marsh, Edward A., Newton, Mass. Watch-crown	16,466	Jan. 19	34	134
Marx, Zero, Chicago, Ill. Ash-bowl	16,573	Mar. 16	34	1162
McFaddin, Harrison G., Brooklyn, N. Y. Lamp or gas globe	16,509	Feb. 9	34	563
McGill, George W., Riverdale, N. Y. Paper-fastener	16,548	Feb. 23	34	830
McKee & Brothers. (See Proeger, Julius, assignor.)				
McLaughlin, John K. (See Mott and McLaughlin.)				
Mebl, John, Sr., Hoboken, N. J. Embossed leather for hand-bags and other fancy leather goods	16,486	Jan. 19	34	254
Melville, David G., Medford, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	16,510	Feb. 9	34	563
Melville, David G., Medford, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	16,554	Mar. 2	34	926
Meriden Britannia Company. (See Hirschfeld, Henry W., assignor.)				
Meriden Britannia Company. (See Smith, William M., assignor.)				
Meriden Silver Plate Company. (See Casper, Charles, assignor.)				
Meriden Silver Plate Company. (See Hiller, Louis C., assignor.)				
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	16,479	Jan. 19	34	254
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	16,582 to 16,585	Mar. 23	34	1280
Meyer, Victor E. (See Meyer, Charles T. and V. E.)				
Miller, Charles L., *et al.* (See Kenna, Joseph W., assignor.)				
Miller, John E., assignor to G. Duncan & Sons, Pittsburg, Pa. Vessel or dish	16,564	Mar. 9	34	1050
Mix, Frank W., New Britain, Conn. Ornamentation of keys	16,517	Feb. 9	34	564
Mott, Abram C., Philadelphia, Pa. Fire-place plate	16,566	Mar. 23	34	1280
Mott, Abram C., and J. K. McLaughlin, assignors to A. Cox Stove Company, Philadelphia, Pa. Stove or range				
Mott Iron Works, J. L. (See Peet, William C., assignor.)				
Murphy, John, Brooklyn, N. Y. Rubber mat	16,574	Mar. 16	34	1162
Payson, Joseph E., Sr., Chicago, Ill. Latch-case	16,595	Mar. 30	34	1394
Peet, William C., assignor to J. L. Mott Iron Works, New York, N. Y. Stall-guard	16,576	Mar. 16	34	1162
Petzold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	16,487	Jan. 19	34	254
Petzold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	16,500	Feb. 2	34	440
Petzold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	16,553	Mar. 2	34	926
Pfahl, Frank, New York, N. Y. Bottle	16,549	Feb. 23	34	830
Phillips, Joseph J., Brooklyn, N. Y. Memorial-tablet	16,565	Mar. 9	34	1050
Phippa, John, assignor to J. Kitchenman, Philadelphia, Pa. Hosiery	16,501	Feb. 2	34	440
Pike, William A., New York, N. Y. Inkstand	16,453	Jan. 5	34	2
Pinkus, Frederick S., New York, N. Y. Cloth	16,532	Feb. 16	34	704
Place, Charles, Cambridge, Mass. Jewelry-rack	16,556	Mar. 2	34	926
Prindle, Edward T., Aurora, Ill. Wheel for carpet-sweepers	16,480	Jan. 19	34	254
Proeger, Julius, assignor to McKee & Brothers, Pittsburg, Pa. Coach-bowl	16,488	Jan. 19	34	254
Provenzano, Joseph N., New York, N. Y. Knob or handle for canes	16,502	Feb. 2	34	440
Richardson, Dwight S., Brooklyn, N. Y. Range	16,518	Feb. 9	34	564
Rider, John P., Matteawan, N. Y. India-rubber rattle	16,481	Jan. 19	34	254
Riker, William P., Newark, N. J. Bridle-rosette	16,596	Mar. 30	34	1394
Ringen, John, St. Louis, Mo. Saucepan	16,566	Mar. 9	34	1050
Rochester Tumbler Company. (See Fry, George W., assignor.)				
Roux, Alexander J., New York, N. Y. Drawer-handle	16,587	Mar. 23	34	1280

Alphabetical list of patentees of designs, January to March, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Roxbury Carpet Company. (See Melville, David G., assignor.)				
Roxbury Carpet Company. (See Stearns, Thomas J., assignor.)				
Sampson, Edward C. (See Meyer, Charles T. and V. E., assignors.)				
Sargent & Co. (See Stevens, William E., assignor.)				
Sauer, Emil G., Brooklyn, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,482	Jan. 19	34	254
Schindler, Charles A., West Hoboken, N. J. Posing-chair	16,493	Jan. 26	34	344
Schneider, Bennett B., New York, N. Y. Pendant for lamps	16,550	Feb. 23	34	830
Schwarz, Isaac A., *et al.* (See Lipper, Benjamin, assignor.)				
Séguin, Mercom L., Philadelphia, Pa. Parasol or umbrella top	16,597	Mar. 30	34	1394
Smedes, Levi K., Mount Vernon, N. Y. Casket	16,483	Jan. 19	34	134
Smith, John E., New York, N. Y. Cake of soap	16,569	Mar. 23	34	1280
Smith, William M., assignor to Meriden Britannia Company, Meriden, Conn. Coffin-handle socket	16,576	Mar. 16	34	1162
Stearns, Thomas J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	16,494	Jan. 26	34	344
Stearns, Thomas J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	16,557	Mar. 2	34	926
Stevens, William E., assignor to Sargent & Co., New Haven, Conn. Coffin-plate	16,577	Mar. 16	34	1162
Textile Manufacturing Company. (See Fugelstrand, Otto F., assignor.)				
Thorp, James H., Brooklyn, N. Y. Gimp	16,551	Feb. 23	34	830
Tiffany & Co. (See Greatsean, Charles T., assignor.)				
Tobias, Francis H., New York, N. Y. Easel	16,511	Feb. 9	34	563
Warner, William E., Philadelphia, Pa. Wire stand	16,533	Feb. 16	34	704
Wehrle, August F., Denver, Colo. Scarf-pin	16,504	Feb. 2	34	440
Wheeler, Candace, Jamaica, N. Y. Hangings, coverings, &c	16,489	Jan. 19	34	134
White, Thomas, Quincy, Ill. Heating-stove	16,488	Jan. 19	34	254
Willets, Joseph, and W. S. Lenox, Trenton, N. J. Table-ware	16,534	Feb. 16	34	704
Zacharie, Elly, assignor to Bazin & Sargent, New York, N. Y. Cake soap	16,535	Feb. 16	34	704

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Adrot, Christello & Co., Chicago, Ill. Soap	12,981	Jan. 12	34	134
Akron Twine and Cordage Company, Akron, Ohio. Manila and sisal cordage and binders' twine	12,982	Jan. 12	34	134
Albert Nail Company, New York, N. Y. Wire nails	13,089	Mar. 2	34	926
Aldrich, George W., Burlington, N. J. Certain canned goods	13,109	Mar. 16	34	1162
Allen Company, Charles W., Chicago, Ill. Smoking and chewing tobacco	13,061	Mar. 2	34	926
Allen, Thomas W. (See Weidler and Allen.)				
Altman, Benjamin, New York, N. Y. Corset-covers	13,118	Mar. 23	34	1280
American Eagle Tobacco Company, Detroit, Mich. Chewing and smoking tobacco	12,910	Jan. 5	34	2
American Enamel Company, Providence, R. I. Articles having a surface in imitation of agate	12,951	Jan. 19	34	254
Amsinck & Co., G., New York, N. Y. Whisky	13,103	Mar. 16	34	1162
Armor Lithographing Company, (limited,) Pittsburg, Pa. Lithographs	12,992	Jan. 26	34	344
Bailey, Harry, Philadelphia, Pa. Certain-named hair tonic or wash	12,994	Feb. 2	34	440
Bauernschmidt & Marr, Baltimore, Md. Beer, ale, porter, and stout	12,983	Jan. 12	34	134
Bay State Corset Company, West Brookfield, Mass. Corsets	12,911	Jan. 5	34	2
Bay State Corset Company, West Brookfield, Mass. Corsets	12,912	Jan. 5	34	2
Beatty Starch Company, New Haven, Conn. Starch for laundry purposes	13,083	Mar. 9	34	1050
Blakeslee, Elisha, and J. E. Darby, Cleveland, Ohio. Prepared chamois-skins for polishing metal	13,044	Feb. 23	34	630
Blodgett & Osgood, St. Paul, Minn. Refrigerators	13,104	Mar. 16	34	1162
Blood Balm Company, Atlanta, Ga. Botanic blood balm	13,045	Feb. 23	34	630
Bobst, Samuel S. (See Miller and Bobst.)				
Booth & Kent, New York and Gloversville, N. Y. Shoe and glove leather	13,046	Feb. 23	34	630
Boyer, John M. (See Riley and Boyer.)				
Bradley, J. Payson, Boston, Mass. Lamps	12,980	Feb. 2	34	440
Bragdon, Rufus H., New York, N. Y. Various geometric forms made of copper and lacquered or enameled to simulate jewels	12,978	Feb. 2	34	440
Bragdon, Rufus H., New York, N. Y. Colored powder of the nature of flock	12,979	Feb. 2	34	440
Brokaw, William B., Newburg, N. Y. Shirts and shirt-waists	12,938	Jan. 19	34	254
Brooks, John H. (See Brooks, William C. and J. H.)				
Brooks, William C. and J. H., Chicago, Ill. Felt boots	13,129	Mar. 30	34	1304
Brown & Co., J. Morton, Norristown, Pa. Cotton and woolen cassimeres	12,943	Jan. 12	34	134
Butler Bros., New York, N. Y. Catalogues	12,934	Jan. 12	34	134
Butler Bros., New York, N. Y. Catalogues	12,935	Jan. 12	34	134
Button & Ottley, New York, N. Y. Dressing, polish, or blacking for shoes or leather	13,092	Mar. 2	34	926
Cabot, Samuel, Boston, Mass. Wood and shingle stains	13,028	Feb. 9	34	564
Carter & Churchill, Lebanon, N. H. Overalls	13,105	Mar. 16	34	1162
Carter, Hawley & Co., New York, N. Y. Japan tea	12,981	Feb. 2	34	440
Carter, Hawley & Co., New York, N. Y. Japan tea	12,990	Feb. 2	34	440
Carter, Hawley & Co., New York, N. Y. Japan tea	13,084	Mar. 9	34	1050
Carter, Hawley & Co., New York, N. Y. Japan tea	13,085	Mar. 9	34	1050
Cater, Richard B., Bath, county of Somerset, England. Aerated water	12,912	Jan. 5	34	2
Central Milling Company, Niagara Falls, N. Y. Wheat-flour	12,914	Jan. 5	34	2
Chadwick & Brother, James, Eagley Mills, near Bolton, county of Lancaster, England. Thread on spools	12,984	Jan. 26	34	344
Chadwick & Brother, James, Eagley Mills, near Bolton, county of Lancaster, England. White and colored thread on spools	12,985	Jan. 26	34	344
Chadwick & Brother, James, Eagley Mills, near Bolton, county of Lancaster, England. White and colored cotton thread on spools	12,986	Jan. 26	34	344
Chadwick & Brother, James, Eagley Mills, near Bolton, county of Lancaster, England. White and colored cotton thread on spools	12,987	Jan. 26	34	344
Chicago Varnish Company, Chicago, Ill. Surfacers, japans, stains, paints, and varnishes	12,988	Jan. 26	34	344
Chicago Varnish Company, Chicago, Ill. Varnishes, stains, japans, surfacers, and kindred goods	12,989	Feb. 2	34	440
Chicago Varnish Company, Chicago, Ill. Varnishes, stains, japans, surfacers, and kindred goods	12,993	Feb. 2	34	440
Chicago Varnish Company, Chicago, Ill. Varnishes, stains, japans, surfacers, and kindred goods	12,994	Feb. 2	34	440
Chicago Varnish Company, Chicago, Ill. Varnishes, stains, japans, surfacers, and kindred goods	12,995	Feb. 2	34	440
Clark, Charles E., Philadelphia, Pa. Liniment	13,130	Mar. 30	34	1304
Clarke, Samuel, Pyramid Works, London, England. Lamps, candle-holders, candles, and night-lights	13,031	Feb. 16	34	704
Classen & Son Brewing Company, H., New York, N. Y. Beer	12,996	Feb. 2	34	440
Clewley, William H., Brooklyn, N. Y. Medicine for the cure of rheumatism, to be taken internally	13,062	Mar. 2	34	926
Climax Fuse Company, Avon, Conn., and New York, N. Y. Safety-fuse for exploding gunpowder, &c.	12,997	Feb. 2	34	440
Coldewey, Aug., Louisville, Ky. Whisky	13,030	Feb. 16	34	704
Conrad & Co., C., Mainz, Geisenheim-on-the-Rhine, Germany, and St. Louis, Mo. Lager-beer	13,054	Mar. 2	34	926
Coughlin, Peter R. J., New York, N. Y. Boys' hats	13,047	Feb. 23	34	630
Crofut & Co., E. B., Syracuse, N. Y. Shelled corn	13,106	Mar. 16	34	1162
Darby, John E. (See Blakeslee and Darby.)				
Dawson, Martin, Chicago, Ill. Candy	13,032	Feb. 16	34	704
Demuth & Co., William, New York, N. Y. Pipes, pipe-stems, and cigar-holders	13,033	Feb. 16	34	704
Dill, Joseph G., Richmond, Va. Chewing-tobacco in plug or other form, smoking-tobacco, cigars, and cigarettes	13,004	Feb. 9	34	564
Dillern & Ackermann, New York, N. Y. Soap in cakes or bars	13,065	Mar. 2	34	926
Duke Sons & Company, W., Durham, N.C. Cigars, cigarettes, and smoking and chewing tobacco	13,119	Mar. 23	34	1280
Dunlop & McCance, Richmond, Va. Wheat-flour	13,034	Feb. 16	34	704
Dunlop & McCance, Richmond, Va. Wheat-flour	13,035	Feb. 16	34	704
Dunlop & McCance, Richmond, Va. Wheat-flour	13,036	Feb. 16	34	704
Dunlop & McCance, Richmond, Va. Wheat-flour	13,037	Feb. 16	34	704
Empire Soap Company, St. Louis, Mo. Laundry and toilet soap	12,985	Feb. 2	34	440
Empire Soap Company, St. Louis, Mo. Laundry and other soaps	13,048	Feb. 23	34	630
Empire Soap Company, St. Louis, Mo. Laundry and other soaps	13,049	Feb. 23	34	630

Alphabetical list of registrants of trade-marks, January to March, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Einstein & Co., Chicago, Ill. Gents' and children's suits and overcoats	13,107	Mar. 16	34	1163
Engelman, Frank E., Philadelphia, Pa. Cure for nasal catarrh, cold, and hay-fever	12,915	Jan. 5	34	2
Evans, Cornelius H., Hudson, N. Y. Ale	13,066	Mar. 2	34	926
Fairbank & Company, N. K., Chicago, Ill. Laundry-soap	12,916	Jan. 5	34	2
Fischler & Co., Philadelphia, Pa. Polishing-powder for metal, glass, &c	12,996	Feb. 2	34	440
Flagg Cutlery Company, (limited,) New York, N. Y. Pocket-knives, shears, scissors, and razors	13,050	Feb. 23	34	830
Foerster & Co., William, New York, N. Y., and Hamburg, Germany. Mohair-plush	13,131	Mar. 30	34	1394
Foley, James, and J. R. Poor, Boston, Mass. Wine	13,108	Mar. 16	34	1162
Fontanel, Jean B., Chicago, Ill. Imported French wines and champagnes	12,917	Jan. 5	34	2
Ford Acme Renovator Company, Baltimore, Md. Saponaceous cleansing compound	13,142	Mar. 30	34	1394
Foulds & Son, Thomas, Trevorton, Pa. Bitters	13,067	Mar. 2	34	926
Fowler, William, New York, N. Y. Punch	12,918	Jan. 5	34	2
Fryer, Derrick F., Oroville, Cal. Abietene or extract from the gum of pinus sabiniana	12,919	Jan. 5	34	2
Gallais & Co., A., Paris, France. Furniture-nails	12,960	Jan. 26	34	344
Gambrill Sons & Co., Baltimore and Woodbury, Md. Duck	12,955	Jan. 19	34	254
Gary Manufacturing Company, Baltimore, Md. Awning-stripes—a woven cotton fabric	13,005	Feb. 9	34	564
Gelpi & Bro., Paul, New Orleans, La. Cigars	13,068	Mar. 2	34	926
Girardeau, Alexander B., and B. W. Johnson, Monticello, Fla. Medicine for the cure of chills and fever	12,997	Feb. 2	34	440
Goodyear Rubber Company, New York, N. Y. Rubber boots and shoes and other articles of clothing	12,998	Feb. 2	34	440
Goodyear Rubber Company, New York, N. Y. Rubber interment-sacks	13,069	Mar. 2	34	926
Grace & Co., W. R., New York, N. Y. Refined petroleum	13,132	Mar. 30	34	1394
Greenway Brewing Company, Syracuse, N. Y. Ale, porter, and stout	13,006	Feb. 9	34	564
Hagstos & Co., T. B., Philadelphia, Pa. Spectacles, eyeglasses, opera, field, and marine glasses, telescopes, microscopes, and lenses	12,999	Feb. 2	34	440
Hagstos & Co., T. B., Philadelphia, Pa. Spectacles, eyeglasses, opera, field, and marine glasses, telescopes, microscopes, and lenses	13,000	Feb. 2	34	440
Hanna, Horton H. (See Hanna, Xenophon and H. H.)				
Hanna, Xenophon and H. H., Dayton, Ohio. Smoking-tobacco, cigars, and cigarettes	12,953	Jan. 19	34	254
Harper, Thomas H., Redditch, England. Needles, pins, crochet and knitting needles, and fish-hooks	12,989	Feb. 2	34	440
Havana Tobacco Company, (limited,) New York, N. Y., and Havana, Cuba. Tobacco in its raw state	12,936	Jan. 12	34	134
Heath, George, London, England. Felt and silk hats	12,996	Feb. 2	34	440
Heesen Brothers & Co., Tecumseh, Mich. Hog-rings	13,007	Feb. 9	34	564
Heisel, Charles T., Cleveland, Ohio. Chewing-gum	13,133	Mar. 30	34	1394
Henderson & Co., Peter, New York, N. Y. Garden and other seeds	13,009	Feb. 16	34	704
Henriot & Co., Rheims, France. Biscuits	12,967	Jan. 12	34	134
Herberg, Xavier, Cincinnati, Ohio. Blood-purifiers, tonics, pills, teas, powders, and drops	13,109	Mar. 16	34	1162
Heyman & Co., Monroeville, Ohio. Roller-process wheat-flour	13,110	Mar. 16	34	1162
Heywood & Williams, Sandusky, Ohio. Wheat-flour	12,954	Jan. 19	34	254
Hinrichs, Theodore, Baltimore, Md. Cough-drops	13,008	Mar. 9	34	1050
Hiscox & Co., New York, N. Y. Remedy for the cure of corns	13,134	Mar. 30	34	1394
Hogan, Evans & Co., (limited,) Pittsburg, Pa. Lamp-chimneys	13,087	Mar. 9	34	1050
Hoogland, B. T., New York, N. Y. Medicated Manila paper for water-closets	12,970	Jan. 26	34	344
Hyde & Burton, New York, N. Y. Three-leaf twilled silesias and other cotton linings	13,143	Mar. 30	34	1394
Hyde & Burton, New York, N. Y. Three-leaf twilled silesias and other cotton linings	13,144	Mar. 30	34	1394
Ireland & Vannatta, Lexington, Ky. Whisky	13,001	Feb. 2	34	440
Johnson, Benjamin W. (See Girardeau and Johnson.)				
Johnston, Frank A., Winona, Minn. Straight family flour	12,930	Jan. 5	34	2
Johnston Oatmeal Company, A. M., Rockford, Ill. Flakes or grits prepared from the cereals	13,089	Mar. 9	34	1050
Kearney & Foot Company, New York, N. Y., and Paterson, N. J. Horse-rasps	13,111	Mar. 16	34	1162
Kemp, Day & Co., New York, N. Y. Canned corn	13,112	Mar. 16	34	1162
Kernan, Francis, Jr. (See Wheeler and Kernan.)				
Keuffel & Esser, New York, N. Y. Drawing-paper and paper for photographic processes	12,956	Jan. 19	34	254
Kirk & Co., James S., Chicago, Ill. Laundry-soap	12,957	Jan. 19	34	254
Kreychie, John L., Iroquois, Dak. Ter. Horse medicines or condition powders	13,070	Mar. 2	34	926
Lantz Bros. & Co., Buffalo, N. Y. Laundry and toilet soap	12,958	Jan. 19	34	134
Lantz Bros. & Co., Buffalo, N. Y. Laundry and toilet soap	12,959	Jan. 19	34	134
Lantz Bros. & Co., Buffalo, N. Y. Laundry and toilet soaps	12,950	Jan. 19	34	134
Lea & Sons Company, William, Wilmington, Del. Wheat-flour	13,071	Mar. 2	34	926
Lea & Sons Company, William, Wilmington, Del. Kiln-dried cornmeal	13,100	Mar. 9	34	1050
Lea & Sons Company, William, Wilmington, Del. Wheat-flour	13,128	Mar. 23	34	1280
Lefranc & Co., Paris, France. Driers for paints and varnishes	12,971	Jan. 26	34	344
Lorenz Bros., Toledo, Ohio. Perfumery for the handkerchief and toilet	12,940	Jan. 12	34	134
Lowe & Co., Charles, Piccadilly, Manchester, county of Lancaster, England. Coloring-matter and chemical goods to which such coloring-matter is applied	12,962	Jan. 19	34	254
Lowenbach, Morits, Baltimore, Md. Whisky	12,921	Jan. 5	34	2
Machen & Co., Liverpool, England. Malt liquors	13,113	Mar. 16	34	1162
MacKellar, Smiths & Jordan Company, Philadelphia, Pa. Printing-type	13,072	Mar. 2	34	926
Mack & Co., J. J., San Francisco, Cal. Preparation for treatment of the circulation and organs connected therewith	13,120	Mar. 23	34	1280
Manhattan Wall Paper Company, New York, N. Y. Embossed or relief wall-paper	12,972	Jan. 26	34	344
McCobb, Henry, New York, N. Y. Various preparations of chocolate and cream and of cocoa and cream	13,145	Mar. 30	34	1394
McCorkle & Co., Robert G., Louisville, Ky. Whisky	13,146	Mar. 30	34	1394
McCreery & Co., James, New York, N. Y. Hosiery other than white	13,090	Mar. 9	34	1050
McMurray, Samuel B., Indianapolis, Ind. Pills for purifying the blood	12,922	Jan. 5	34	2
McMurray, Samuel B., Indianapolis, Ind. Pills for purifying the blood	12,923	Jan. 5	34	2
Meyer, Adolph C., Baltimore, Md. Certain-named proprietary medicines	13,003	Feb. 9	34	564
Monce, Samuel G., Bristol, Conn. Glass-cutters	13,052	Feb. 23	34	830
Moro, Wilhelm, London, England. Hair-reviver	13,121	Mar. 23	34	1280
Miller, Franklin K., and S. S. Bobst, Reading, Pa. Soap-powders	12,973	Jan. 26	34	344
Milnor & Co., William H., Baltimore, Md. Coffees, roasted or green	12,924	Jan. 5	34	2
Milnor & Co., William H., Baltimore, Md. Teas	12,925	Jan. 5	34	2
Mirills, Francis C., Manchester, N. H. Tonic	12,941	Jan. 12	34	134
Mohr's Sons, H., Philadelphia, Pa. Filled watch-cases	12,958	Jan. 19	34	254
Mulford, Cary & Conklin, New York, N. Y. Kid and goat skins	12,926	Jan. 5	34	2
Mülhens & Kropff, New York, N. Y. Perfumery	12,942	Jan. 12	34	134
Mülhens & Kropff, New York, N. Y. Perfumery	12,944	Jan. 12	34	134
Mülhens & Kropff, New York, N. Y. Perfumery	12,945	Jan. 12	34	134
New York Condensed Milk Company, New York, N. Y. Condensed milk	13,054	Feb. 23	34	830

Alphabetical list of registrants of trade-marks, January to March, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
New York Knife Company, Walden, N. Y. Pocket and table cutlery	13,000	Feb. 9	34	564
Newburne & Co., J. W., Beardstown, Ill. Cough-sirup	13,053	Feb. 23	34	830
Newhall, Joseph A., Saugus, Mass. Digestive lozenges or troches	12,999	Feb. 16	34	704
Newman, Anton E., New York, N. Y., and Newark, N. J. Vegetable fiber and cloth manufactured therefrom	12,927	Jan. 5	34	2
Nichols, Reuben E., Philadelphia, Pa. Compound for preserving and rendering water-proof brick, stone, wood, paper, cloth, &c	13,091	Mar. 9	34	1050
Noerdlinger & Brother, Trieste, Austria-Hungary. Dried fruits	13,135	Mar. 30	34	1394
Norton, Francis P., Boston, Mass. Cigars	13,122	Mar. 23	34	1280
Oberne, Hosick & Co., Chicago, Ill. Soap for laundry and general purposes	13,010	Feb. 9	34	564
Olry, Louise H. L. R., Rheims, France. Champagne-wine	13,073	Mar. 2	34	926
Openhym & Sons, William, New York, N. Y. Velveteens, corduroys, and cotton-velvet fabrics	13,011	Feb. 9	34	564
Openhym & Sons, William, New York, N. Y. All kinds of veilings and tulle	13,012	Feb. 9	34	564
Openhym & Sons, William, New York, N. Y. Bareges and parisinas	13,013	Feb. 9	34	564
Openhym & Sons, William, New York, N. Y. Sewing-silk veiling	13,014	Feb. 9	34	564
Openhym & Sons, William, New York, N. Y. Grenadine veiling	13,015	Feb. 9	34	564
Openhym & Sons, William, New York, N. Y. Cashmeres	13,016	Feb. 9	34	564
Openhym & Sons, William, New York, N. Y. Silk, velvet, and silk plushes	13,017	Feb. 9	34	564
Orr & Co., R. L., (limited,) Pittsburg, Pa. Grinding-mills	13,018	Feb. 9	34	564
Owen, Tubal-Cain, Ypsilanti, Mich. Ypsilanti mineral water and all the various products of the same	13,127	Mar. 23	34	1280
Pace Tobacco Company, J. B., Richmond, Va. Plug, twist, and smoking tobacco	12,946	Jan. 12	34	134
Palmer, David, Lodi, Ohio. Remedy for cutaneous diseases	13,019	Feb. 9	34	564
Payne, George F., Macon, Ga. Vermifuge	13,136	Mar. 30	34	1394
Peabody, Selwin B., Tilton, N. H. Woven woolen fabrics	13,074	Mar. 2	34	926
Perkins, Elisha H., Baltimore, Md. Liniment	12,974	Jan. 26	34	344
Phillips, Seth, London, England. Food for calves	12,991	Feb. 2	34	440
Phœnix Plumbago Mining Company, Philadelphia, Pa. Stove-polish	13,075	Mar. 2	34	926
Plymouth Silica Company, Plymouth, Mass. Silica cleaning and polishing preparations	13,020	Feb. 9	34	564
Poddebard Silk Manufacturing Company, Jersey City, N. J. Fancy-colored silks, armures, satin-faced goods, serges, or other silken fabrics	13,137	Mar. 30	34	1394
Poor, John R. (See Foley and Poor.)				
Porter Specific Company, Boston, Mass. Preparation for relieving whooping-cough	12,947	Jan. 12	34	134
Pray, Benjamin S., Boston, Mass. Petroleum-oil	13,138	Mar. 30	34	1394
Prince, James F., Fort Reed, Fla. Fertiliser for diseased orange-trees	13,092	Mar. 9	34	1050
Pugsley, Dingman & Co., Toronto, Ontario, Canada. Laundry-soap	13,123	Mar. 23	34	1280
Quarrie, George, Ulverston, county of Lancaster, England. Liquid medicine for the cure of rheumatism and other like complaints	13,139	Mar. 30	34	1394
Reardon & Sons, John, Boston, Mass. Hard soap	13,076	Mar. 2	34	926
Reed & Barton, Taunton, Mass. Metal, electroplated, and silver ware of all kinds	13,021	Feb. 9	34	564
Reed & Barton, Taunton, Mass. Metal, electroplated, and silver ware of all kinds	13,022	Feb. 9	34	564
Reid, Murdoch & Fischer, Chicago, Ill. Dried fruits	13,114	Mar. 16	34	1162
Richardson & Boynton Company, New York, N. Y. Stoves, ranges, heaters, and furnaces, and the parts thereof	13,124	Mar. 23	34	1280
Riley, John, and J. M. Boyer, London, Ohio. Liniment	12,992	Feb. 2	34	440
Rudge & Co., D., Coventry, county of Warwick, England. Bicycles, tricycles, and other velocipedes	12,961	Jan. 19	34	254
Samoset Manufacturing Company, Boston, Mass. Laundry-soap	13,149	Mar. 30	34	1394
Sanford & Sons, Stephen, Amsterdam, N. Y. Velvet carpets	13,060	Mar. 2	34	926
Scaramelli Fils et Cie., F., Marseilles, France. Macaroni, vermicelli, &c	13,093	Mar. 9	34	1050
Schaefer, Henry T., Syracuse, N. Y. Lubricants for vehicles and other like purposes	13,040	Feb. 16	34	704
Schayer, Simon, New York, N. Y. Macaroons	12,993	Feb. 2	34	440
Schoenhofen Brewing Company, Peter, Chicago, Ill. Lager-beer	13,055	Feb. 23	34	830
Schoenhofen Brewing Company, Peter, Chicago, Ill. Lager-beer	13,147	Mar. 30	34	1394
Schoenhofen Brewing Company, Peter, Chicago, Ill. Lager-beer	13,148	Mar. 30	34	1394
Schwab & Bros., G., New York, N. Y. Ladies' jerseys	13,077	Mar. 2	34	926
Scott, George A., New York, N. Y. Cigars and cigarettes	13,125	Mar. 23	34	1280
Seymour Cutlery Company, Henry, Holyoke, Mass. Shears and scissors	13,088	Mar. 9	34	1050
Simpson, Crawford & Simpson, New York, N. Y. Ladies' corsets	13,078	Mar. 2	34	926
Skilton, Foote & Co., Somerville, Mass. Highly-spiced pickles	13,115	Mar. 16	34	1162
Société Hygiénique Alimentaire, New York, N. Y. Olive-oil	12,948	Jan. 12	34	134
Soltmann, E. G., New York, N. Y. Certain named artists' and draftsmen's materials	13,056	Feb. 23	34	830
Soltmann, E. G., New York, N. Y. Certain drawing materials and instruments	13,094	Mar. 9	34	1050
Smith, Fred W., New York, N. Y. Flour	13,079	Mar. 2	34	926
Spaethe, Wilhelm, Gera, Reuss, Germany. Accordions	12,959	Jan. 19	34	254
Spear, Charles, Jr., New York, N. Y. Guano	13,126	Mar. 23	34	1280
Spiro, Charles, New York, N. Y. Type-writers	13,057	Feb. 23	34	830
Spiro, Charles, New York, N. Y. Type-writers	13,058	Feb. 23	34	830
Standard Cordage Company, Boston, Mass. Binder's twine and rope	12,928	Jan. 5	34	2
Stelwagon, John W., Philadelphia, Pa. Certain roofing materials	13,095	Mar. 9	34	1050
Steves & Sons, Ed., San Antonio, Tex. Lumber, doors, and sash	13,059	Feb. 23	34	830
Stiger, Oliver M., New York, N. Y. Tonic	13,022	Feb. 9	34	564
Stowell, O. G., Delavan, Wis. Windmills and tanks	13,097	Mar. 9	34	1050
Straw & Ellsworth Manufacturing Company, Milwaukee, Wis. Hats for men and boys	13,024	Feb. 9	34	564
Strickland & Co., Chicago, Ill. Liquid tonics	13,025	Feb. 9	34	564
Summerill & Bro., John, South Penn's Grove, N. J. Gilling-thread	13,098	Mar. 9	34	1050
Taylor, Richard, Detroit, Mich. Metal for boxes and journal-bearings	13,026	Feb. 9	34	564
Toledo Spice Company, Toledo, Ohio. Baking-powder	13,027	Feb. 9	34	564
Trask Fish Company, St. Louis, Mo. Mackerel	13,116	Mar. 16	34	1162
Ulman, Alfred A., Ulmanville, Bay St. Louis, Miss. Stomach bitters and tonic	12,975	Jan. 26	34	344
Union Stove and Machine Works, Leavenworth, Kans. Stoves and ranges	13,096	Mar. 9	34	1050
Valls, Guadalupe S., St. Augustine, Fla. Fruit-preserves, lime-juice, fruit-sirups, canned fish, oysters, and turtles	13,051	Feb. 23	34	830
Wallach's Nephews, A., New York, N. Y. Gold chains	13,117	Mar. 16	34	1162
Warren, Edward K., Three Oaks, Mich., and Chicago, Ill. Corsets, dress-stiffenings, and waists	13,140	Mar. 30	34	1394
Warren, Edward K., Three Oaks, Mich., and Chicago, Ill. Whips and whip-lashes	13,150	Mar. 30	34	1394
Weidler, Samuel W., and T. W. Allen, Cincinnati, Ohio. Flour	13,028	Feb. 9	34	564
Weidler, Samuel W., and T. W. Allen, Cincinnati, Ohio. Flour	13,029	Feb. 9	34	564
Weidler, Samuel W., and T. W. Allen, Cincinnati, Ohio. Flour	13,042	Feb. 16	34	704
Weidler, Samuel W., and T. W. Allen, Cincinnati, Ohio. Flour	13,043	Feb. 16	34	704
West India Manufacturing Company, New York, N. Y. Salve	13,041	Feb. 16	34	704
Western Stove Manufacturing Company, St. Louis, Mo. Heating and cooking stoves, including gasoline and oil stoves	12,976	Jan. 26	34	344

Alphabetical list of registrants of trade-marks, January to March, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Western Stove Manufacturing Company, St. Louis, Mo. Heating and cooking stoves and ranges and gasoline and oil stoves	13,008	Feb. 9	34	564
Wheeler, Frank E. (See Wheeler and Kernan.)				
Wheeler, Russel and F. E., and F. Kernan, Jr., Utica, N. Y. Hot-air furnaces	13,089	Mar. 9	34	1050
White, William J., Cleveland, Ohio. Chewing-gum	12,960	Jan. 19	34	254
Wight, George R., New York, N. Y. Refrigerators	12,989	Jan. 5	34	2
Wilbur & Sons, H. O., Philadelphia, Pa. Preparation of chocolate	13,141	Mar. 30	34	1394
Wilson, Bros. & Co., Harrisburg, Pa. Hay, fodder, and straw cutters	13,068	Mar. 2	34	936
Wilson, William C., Philadelphia, Pa. Pocket-battery used as a curative appliance for diseases of the eye, the ear, the nasal organs, &c	13,081	Mar. 2	34	936
Wood, Pollard & Co., Boston, Mass. Bitters	12,980	Jan. 5	34	2
Woodruff, Henry G., New Brighton, N. Y. Cotton piece-goods	12,949	Jan. 19	34	134
Worthington, S., Springfield, Mass. Fine writing-paper	12,977	Jan. 26	34	344
Worthington, Solomon, Springfield, Mass. Fine writing-paper	13,101	Mar. 9	34	1050

ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Abbey, Perley L., and W. C. Tuthill, Kalamazoo, Mich. "Kalamazoo Celery Bitters"	4,719	Feb. 9	34	564
Angelo, Theodore, New York, N. Y. "Bacon's Canadian Emollient"	4,727	Feb. 9	34	564
Bolton, Valentine F., Glen Gardner, N. J. "Bolton's Burn Water and Burn Salve, a Quick Cure for Burns and Inflammatory Sores, on Man and Beast"	4,730	Feb. 9	34	564
Bombright, George C., Harrisburg, Pa. "Yellow Burlap" (for Covers or Bags for Hams and other Pork and Beef Products)	4,759	Mar. 23	34	1280
Bubbins, John B., Chicago, Ill. "Bubbin's Great French Oil"	4,728	Feb. 9	34	564
Buntin, William C., Terre Haute, Ind. "Dr. Todd's Tolu & Tar"	4,767	Mar. 30	34	1394
Cahill, Richard, Brooklyn, N. Y. "The Bristle Whisk Brush"	4,713	Feb. 2	34	440
Canterbury Society of Shakers, Shaker Village, N. H. "Shaker Sarsaparilla Lozenges"	4,721	Feb. 9	34	564
Canterbury Society of Shakers, Shaker Village, N. H. "Corbett's Shakers' Compound"	4,722	Feb. 9	34	564
Carpenter, Ezra S., North Cohocton, N. Y. "Emmons' Pain Tincture"	4,701	Jan. 19	34	254
Carter & Churchill, Lebanon, N. H. "Lebanon Overalls"	4,750	Mar. 9	34	1050
Caswell, Massey & Co., New York, N. Y., and Newport, R. I. "Massey's Elder Flower and Cucumber Cream" (for Cosmetics)	4,751	Mar. 9	34	1050
Church, Melvin B., Grand Rapids, Mich. "Anti-Kalsomine is all the Name implies"	4,743	Mar. 2	34	936
Cronk, Albert. (See West and Cronk.)				
D'Alton & Bain, Petersburg, Va. "D'Alton & Bain" (for Ginger Ale, Soda Water, and Sarsaparilla)	4,734	Feb. 16	34	704
Dieriamm, Henry, Waterloo, Ontario, Canada. "Diphtheria Remedy"	4,714	Feb. 2	34	440
Dowden & Co., J. B., Richmond, Va. "Dowden's Dental Fluid"	4,760	Mar. 23	34	1280
Drake, Reason, La Grange, Ind. "Rheumatic Specific"	4,756	Mar. 16	34	1162
Dryfoos & Co., L., New York, N. Y. "Our Extra" (for Skirts)	4,744	Mar. 2	34	936
Dyer, John F., Burnham, Me. "Dr. D. Dyer." (for Gelatin or Sugar-Coated Pills)	4,761	Mar. 23	34	1280
Dyer, John F., Burnham, Me. "Dr. D. Dyer's Gelatin or Sugar-Coated Headache, Dyspeptic and Liver Pills"	4,762	Mar. 23	34	1280
Eastern Distilling Company, New York, N. Y. "Eastern Distilling Co's D. D. Rye Gin"	4,699	Jan. 12	34	134
Eastman & Co., J. D., Deer Lodge, Mont. Ter. "Oregon Grape Root Bitters"	4,737	Feb. 23	34	830
Eastman Dry Plate and Film Company, Rochester, N. Y. "Permanent Chloride Paper"	4,702	Jan. 19	34	254
Eastman Dry Plate and Film Company, Rochester, N. Y. "Cooper's Improved Developer" (for Photographic Plates and Films)	4,749	Mar. 2	34	936
Fairfield, Albert A., Battle Creek, Mich. "The Indelible Crayon"	4,695	Jan. 12	34	134
Fay, Hiram G., Albany, N. Y. "Howard's Compound Soap"	4,729	Feb. 16	34	704
France, Thomas J., Brooklyn, N. Y. "Rose-Sandal" (for Perfumes)	4,723	Feb. 9	34	564
Fryer, Derrick F., Oroville, Cal. "Abietene Cough Balsam"	4,745	Mar. 2	34	936
Gem City Tobacco Works, Quincy, Ill. "Oyster Plug" (for Tobacco)	4,746	Mar. 2	34	936
Grover, Charles S., Lynn, Mass. "Soft Shoes for Tender Feet"	4,747	Mar. 2	34	936
Halliday, Thomas W., Mansfield, Mass. "Honey Extract" (for a Cough Syrup)	4,757	Mar. 16	34	1162
Heath, Francis J., Victor, N. Y. "Mrs Clayton's Family Medicine"	4,715	Feb. 2	34	440
Hegeman & Co., New York, N. Y. "Rudolph's Soluble Iron Pills"	4,735	Feb. 16	34	704
Henninger, J. G., Hamilton, Ohio. "Emrick's Compound" (for Preventing and Curing Disease in Hogs and Poultry)	4,752	Mar. 9	34	1050
Hochstadter & Co., New York, N. Y. "Leiwziger Burgunder Wein Bitter"	4,768	Mar. 30	34	1394
Hood, Bonbright & Co., Philadelphia, Pa. "Bristol Mfg. Co" (for Ingrain Carpets)	4,738	Feb. 23	34	830
Hoxsie, Anna P., Buffalo, N. Y. "Dr. A. C. Hoxsie's Certain Croup Cure"	4,716	Feb. 2	34	440
Hubbard, James A., Gelena, Kans. "J. A. Hubbard's Ash Remedy"	4,769	Mar. 30	34	1394
Jenks & Jefferis, Philadelphia, Pa. "Williams' Emulsion of Cod Liver Oil with Hypophosphite of Lime"	4,733	Feb. 16	34	704
Keefe, John C., and J. B. Nichols, Milwaukee, Wis. "Nichols' Dyspepsia Specific"	4,739	Feb. 23	34	830
Kelly, A. F., Macon, Ga. "Georgia Climatic Tonic Blood Purifier"	4,740	Feb. 23	34	830
Kessler, Henry, Yreka, Cal. "That Red Liniment"	4,700	Jan. 12	34	134
Klein, Goodhart & Koch, Cleveland, Ohio. "Extension and Adjustable Clothing"	4,703	Jan. 19	34	254
Koenig, Kate L., Philadelphia, Pa. "Sarah Buckby Pearson's Remedy"	4,763	Mar. 23	34	1280
Lahy, Robert H., East New York, N. Y. "Roberts Positive Cure for Rheumatism"	4,712	Jan. 26	34	344
Larrabee & Co., E. J., Albany and New York, N. Y. "Larrabee's Snow Flake Biscuits"	4,770	Mar. 30	34	1394
Larrabee & Co., E. J., Albany and New York, N. Y. "Larrabee's Snow Flake Biscuits"	4,771	Mar. 30	34	1394
Lester & Co., Binghamton, N. Y. "Strongest Made Lester Boot"	4,753	Mar. 9	34	1050
Lobben, Peder J., Worcester, Mass. "Warren's Standard Tracing Composition"	4,704	Jan. 19	34	254
Matson, Charles J., Meadville, Pa. "Florida Cough Balm and Liniment"	4,754	Mar. 9	34	1050
Metzger, William J., Minneapolis, Minn. "F. H. Metzger's Pain Eradicator"	4,717	Feb. 2	34	440
Miller, Robert T., Sedalia, Mo. "Harris' Cough Bitters"	4,764	Mar. 23	34	1280
Morgan, Robert W., Lynchburg, Va. "Dental Chewing Gum"	4,772	Mar. 30	34	1394
Moschcowitz Brothers, New York, N. Y. "Moschcowitz Improved Bustle Springs"	4,724	Feb. 9	34	564
Nichols, John B. (See Keefe and Nichols.)				
Nichols, Mathew S., Plainfield, Conn. "Nichols' Carbolized Tooth Powder"	4,707	Jan. 26	34	344
Pease, Charles G., New York, N. Y. "Honey, Horehound, Licorice, and Tar." (for Coughs and Colds)	4,748	Mar. 2	34	936
Perkins, Elisha H., Baltimore, Md. "Prescription Number 7907"	4,708	Jan. 26	34	344
Pevey, John M., Lowell, Mass. "Suspenders"	4,765	Mar. 23	34	1280
Plymouth Silica Company, Plymouth and Chiltonville, Mass. "Silica Polish" (for Cleaning and Polishing Compounds)	4,741	Feb. 23	34	830
Ross, William S., Pittsburg, Pa. "Ross' Oxygenated Water" (for a Beverage)	4,709	Jan. 26	34	344
Roth & Co., Charles, Louisville, Ky. "Carbonated Sweet Cider"	4,710	Jan. 26	34	344
Rumaldue & Son, J. A., Norfolk, Va. "All Havana" (for Cigars)	4,725	Feb. 9	34	564
Sallade & Co., New York, N. Y. "The Magic Mosquito Bite Cure"	4,711	Jan. 26	34	344
Sallade & Eppinger, Chicago, Ill. "Glasscock's Concentrated Cocaine Remedies"	4,718	Feb. 2	34	440
Shotwell & Co., Geo. W., Centralia, Ill. "G. W. Shotwell & Co's Cereal Compound" (for the Lungs)	4,696	Jan. 12	34	134
Spear, Benjamin, Springfield, Mass. "The Spear Perfect Fertiliser"	4,698	Jan. 12	34	134
Springfield Paper Company, Rainbow, Conn. "Fibre Label" (for Paper)	4,755	Mar. 9	34	1050
Stafford, Milton, Victor, N. Y. "Stafford's Vegetable Blood Purifier"	4,766	Mar. 23	34	1280
Stevenson, Rollin E., New York, N. Y. "Fowler's Compound Syrup Hypophosphites"	4,773	Mar. 30	34	1394

Alphabetical list of registrants of labels, January to March, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Stevenson, Rollin E., New York, N. Y. "Dr. La Tour's Hospital Injection"	4,774	Mar. 30	34	1394
Stevenson, Rollin E., New York, N. Y. "The Great English Remedy, Dr. Fowler's Kidney Cure"	4,775	Mar. 30	34	1394
Stevenson, Rollin E., New York, N. Y. "Dr. Parker's Vegetable Cure"	4,776	Mar. 30	34	1394
Strontia Spring Company, Baltimore, Md. "Strontia Mineral Spring Water"	4,697	Jan. 12	34	134
Taylor, W. Scott, Trenton, N. J. "De Kalb's Pennyroyal Pills"	4,730	Feb. 16	34	704
Ticonderoga Pulp and Paper Company, Ticonderoga and New York, N. Y. "White Railroad Manilla." (for Paper)	4,777	Mar. 30	34	1394
Ticonderoga Pulp and Paper Company, Ticonderoga and New York, N. Y. "White Manilla"	4,778	Mar. 30	34	1394
Trowbridge & Huxley, Brooklyn, N. Y. "Champagne Pop" (for a Beverage)	4,736	Feb. 16	34	704
Tuthill, William C. (See Abbey and Tuthill.)				
Vail Brothers, Philadelphia, Pa. "Quinine and Sulphur" (for Soap)	4,779	Mar. 30	34	1394
Waters, Edward E., New York, N. Y. "Albumenoid Food"	4,706	Jan. 19	34	254
West, Lucius B. (See West and Crook.)				
West, Thomas J. and L. B., and A. Cronk, Detroit, Mich. "Ginger Champagne" (for Ginger Ale)	4,726	Feb. 9	34	564
Westlake, William, Lima, N. Y. "Westlake's Vegetable Ointment"	4,758	Mar. 16	34	1162
Wharton & Co., (limited,) William, Jr., Philadelphia, Pa. "The Durable Shovel"	4,742	Feb. 23	34	830
Whitmore, J. E., Rochester, N. Y. "Whitmore's Refined Pancreatic Emulsion"	4,705	Jan. 19	34	254
Wilson & Co., D. G., Theresa, N. Y. "Wilson's Vegetable Oil"	4,731	Feb. 16	34	704
Woolson, L. B., Atwater, Minn. "Dr. Woolson's Universal Salve"	4,733	Feb. 16	34	704

DISCLAIMERS.

Name, residence, and invention.	No.	Filed.	Official Gazette. Vol.	Page.
Gardner, William, Toledo, Ohio, assignor to Pratt and Whitney Company; disclaimer filed by assignee. Machine-gun	174,130	Mar. 11, 1886	34	1162
Roemer, William, Newark, N. J. Lock for satchels	208,541	Jan. 2, 1886	34	134

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abrading-machine	C. K. Bradford	333,991	Jan. 12	679	185	34	185
Abrasive or polishing disk. Flexible	J. W. Byers	336,685	Feb. 23	2307	683	34	671
Accordion	F. Wittstadt	335,552	Feb. 2	646	169	34	558
Acid. Apparatus for distributing, &c., liquid carbonic	A. Convert and E. Rueff	334,351	Jan. 12	1227	330	34	285
Acid, &c. Apparatus for the manufacture of sulphurous	E. B. Ritter and C. Kellner	338,557	Mar. 23	2364	595	34	1356
Acid compounds. Manufacture of salicylic	B. Schmitt	338,365	Mar. 23	2010	.....	34	1311
Acid. Manufacture of salicylic	R. Schmitt	334,290	Jan. 12	1140	.....	34	220
Acid towers. Sulphuric	J. B. F. Herreshoff	335,699	Feb. 9	861	228	34	601
Adding-machine	T. W. Maxey	335,874	Feb. 9	404	104	34	514
Adjustable chair	G. F. Child	336,387	Feb. 16	1871	490 / 491	34	787
Advertising apparatus	J. W. Fawkes	336,478	Feb. 16	1998	522	34	809
Aerial navigation	R. Jongewaard	338,173	Mar. 16	1743	455 / 456	34	1255
Aerial navigation. Ship for	L. A. Beardsley	336,964	Mar. 2	134	36	34	250
Aerial ship	H. Hunnicutt	334,866	Jan. 26	1920	511	34	377
Aging spirituous liquors, wines, &c. Apparatus for	H. A. Fitch	334,222	Jan. 12	1037	276	34	201
Agricultural implement	J. D. Scott	337,525	Mar. 9	891	227	34	1092
Air and gas engines. Operating	G. H. Babcock	334,155	Jan. 12	928	251	34	179
Air as a motive power. Process of and machine for the use of compressed	F. S. Tull, H. Kuehn, and W. F. Beers.	338,900	Mar. 16	1793	467 / 468	34	1265
Air-brake	A. J. Wisner	335,049	Jan. 26	2168	576	34	490
Air-brake for railway-cars. Electro-magnetically-operated	H. Hollerith	334,020	Jan. 12	719	196 / 197	34	142
Air-brake for railway-cars. Electro-magnetically-operated	H. Hollerith	334,021	Jan. 12	723	196	34	143
Air-brake for railway-cars. Electro-magnetically-operated	H. Hollerith	334,022	Jan. 12	726	196	34	143
Air-brake valve	T. H. Haberkorn	335,446	Feb. 2	499	130	34	531
Air-brakes. Valve for operating	P. Pickering	334,466	Jan. 19	1368	374	34	279
Air-compressing apparatus	C. M. Fevrot	336,234	Feb. 16	1643	429	34	745
Air-compressor	L. S. Chichester	333,994	Jan. 12	682	186 / 187	34	136
Air-compressor	H. E. Depp	333,613	Jan. 5	152	41	34	30
Air-compressor. Hydraulic	W. Thomas	337,200	Mar. 2	434	114	34	1008
Air-engine	P. Lochmann	333,644	Jan. 5	191	51, 52	34	38
Air, fluids, and gases. Apparatus for the propulsion, movement, and suction of	C. W. Crossley	336,215	Feb. 16	1629	425	34	743
Air-forcing apparatus	G. Serramoglia	337,447	Mar. 9	792	202	34	1076
Air-moistening apparatus for factories	W. V. Wallace	335,408	Feb. 2	441	113 / 114	34	580
Air or gas engine	G. H. Babcock	334,152	Jan. 12	915	250	34	178
Air or gas engine	G. H. Babcock	334,153	Jan. 12	919	251	34	179
Air or gas engines. Operating	G. H. Babcock	334,154	Jan. 12	924	251	34	179
Alarm: *See* Burglar-alarm. Electric leak-alarm. Feed-water alarm. Fire-alarm. Locomotive-whistle alarm. Low-water alarm. Railway-switch alarm.							
Alarm-lock	T. Mabbett, Jr	336,851	Mar. 30	2694	710	34	1430
Alarm-lock	M. Pior	336,156	Feb. 16	1531	403	34	736
Alarm service. Municipal	W. A. Stern	335,975	Jan. 5	653	179	34	158
Album. Scrap	G. E. Chapman	335,693	Feb. 9	934	251	34	586
Album-stand	T. M. Haas	335,450	Feb. 2	504	131	34	532
Alloy	O. M. Thowless	338,317	Mar. 23	1941	.....	34	1290
Altitude-instrument	B. B. Sharp	333,555	Jan. 5	75	22	34	17
Aluminium from aluminous ores and earths. Process of obtaining	F. J. Seymour	337,996	Mar. 16	1514	392	34	1211
Amalgamating apparatus	J. E. Thielsen, E. L. Giroux, and H. W. Dilg.	337,535	Mar. 9	903	230	34	1094
Amalgamating-pans. Attachment for	J. A. Bidwell	336,692	Feb. 23	2304	602	34	870
Amalgamator	J. Wilkins	336,970	Mar. 2	115	32	34	946
Ammeter	J. A. Barrett	336,688	Feb. 23	2300	601	34	869
Ammonia. Manufacturing	A. Feldmann	337,387	Mar. 9	680	.....	34	1058
Anchor	C. O. Burbank	335,561	Feb. 9	663	175	34	566
Anchor	T. S. Calpin	337,241	Mar. 2	479	126	34	1014
Animal-catching device	C. F. Morley	336,606	Mar. 23	2331	610	34	1367
Animal-trap	L. F. Dunn	335,512	Feb. 2	568	153	34	545
Animal-trap	L. J. Hauserman	336,998	Mar. 2	154	42	34	953
Animal-trap	I. S. Krick	334,784	Jan. 26	1816	484	34	339
Animal-trap	G. A. and A. A. Long	335,081	Jan. 26	2212	567 / 568	34	489
Animal-trap	W. E. Maultby	334,259	Jan. 12	1102	295	34	212
Animal-trap	D. Phillips	335,039	Jan. 26	2158	573	34	418
Animal-trap	G. F. Vooster	334,096	Jan. 12	889	239	34	163
Annunciator	F. E. Fisher	336,001	Feb. 9	1287	341	34	678

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Anvil, vise, and drill. Combined	J. Weathers	334,696	Jan. 19	1605	427, 428	34	310
Artificial mother	P. Beuerlein	335,422	Feb. 2	469	121	34	595
Artificial mother	J. W. Cooke	333,602	Jan. 5	140	38	34	38
Ash-pan	J. H. McKeown	336,934	Mar. 2	69	19	34	939
Asphalt-mixing machine	F. Schlilinger	336,164	Feb. 16	1543	407	34	727
Atmospheric pressure. Apparatus for conveying parcels or grain by	C. E. Buell	338,138	Mar. 16	1700	442, 443	34	1246
Atomizer	A. M. Shurtleff	338,367	Mar. 23	2013	529	34	1311
Atomizer	W. A. Turner	335,550	Feb. 2	643	168	34	555
Auger	B. Forstner	336,709	Feb. 23	2119	607	34	874
Auger	P. McCauley	338,997	Mar. 30	2906	770	34	1475
Auger. Expansible	W. Patterson	333,662	Jan. 5	214	56	34	42
Auger for cutting square holes	G. W. Smith	338,648	Mar. 23	2391	630	34	1377
Auger. Post-hole	C. Lowe	333,649	Jan. 5	199	.....	34	39
Aurin. Manufacture of derivatives of	J. T. Honeycutt	334,384	Jan. 12	1258	340	34	241
Automatic brake	J. Clark	337,556	Mar. 9	930	238	34	1100
Automatic gate	G. W. Kittell and W. Jackson	337,836	Mar. 16	1263	322	34	1169
Automatic sprinkler	E. A. H. and C. R. G. Rabiger	338,875	Mar. 30	2731	718, 719	34	1444
Awning	W. J. Stoneman	333,569	Jan. 5	93	27	34	20
Awning	W. H. Jolliffe	336,009	Feb. 9	1299	345	34	660
Awning and blind. Combined	J. Dillenbeck and J. W. Neahr	335,115	Feb. 2	28	7	34	444
Awning. Hop box	H. Hammond	334,946	Jan. 26	2022	530	34	396
Ax-blank	C. W. Hubbard	338,270	Mar. 23	1872	492	34	1287
Axes. Making	G. C. Van Keuren	335,958	Feb. 9	1067	287	34	643
Axle and axle-nut. Vehicle	H. K. Austin	336,685	Feb. 23	2295	600	34	889
Axle box. Car	K. S. Austin	336,831	Feb. 23	2479	652	34	903
Axle box. Car	C. Decker	337,565	Mar. 9	940	241	34	1102
Axle box. Car	J. W. Fowler	335,691	Feb. 9	845	224	34	586
Axle box. Car	T. A. Griffin	337,949	Mar. 16	1445	374	34	1199
Axle box. Car	R. M. McGrath	334,540	Jan. 19	1488	398	34	288
Axle box. Car	W. Sutton	334,905	Jan. 12	1013	270	34	196
Axle box. Car	J. W. Tucker	333,961	Jan. 5	863	181	34	194
Axle box. Car	F. Hyde	334,705	Jan. 19	1713	457	34	331
Axle-box cover. Car	J. Timma	338,804	Mar. 30	2631	693	34	1426
Axle-boxes. Dust-guard for	P. Wilhelm and M. N. Demmer	335,003	Jan. 26	2093	558	34	406
Axle. Car	G. W. Redbury	335,737	Feb. 9	919	242	34	612
Axle. Divided car	H. McQuarry	337,606	Mar. 9	986	253	34	1110
Axle-gage	H. G. Farr	337,052	Mar. 16	1583	412	34	1223
Axle-lubricator	B. M. Freligh	339,661	Mar. 23	2408	633	34	1380
Axle-lubricator	J. C. Nichol	338,267	Mar. 23	1995	498	34	1291
Axle-lubricator	R. Faas	338,051	Mar. 16	1581	412	34	1223
Axle lubricator. Car	W. H. Herbertson	337,327	Mar. 2	801	158	34	1037
Axle lubricator. Car	W. Megathey	337,779	Mar. 9	1200	311	34	1147
Axle lubricator. Car	M. R. Thurber and R. B. Brockway	335,163	Feb. 2	91	24	34	456
Axle lubricator. Car	M. S. Freeman	336,710	Feb. 23	2320	608	34	874
Axle-nut	A. L. Adams	338,459	Mar. 23	2140	559, 560	34	1334
Axle. Roller and extension	J. W. Marshall	333,532	Jan. 5	49	14	34	12
Axle. Self-oiling	H. M. Clark	334,566	Jan. 19	1523	407	34	295
Axle. Vehicle	R. McLaughlin	337,605	Mar. 9	985	253	34	1110
Axle. Vehicle	J. B. Moore	334,884	Jan. 26	1940	516	34	381
Back-band hook	J. B. Moore	338,763	Mar. 30	2578	680	34	1416
Back-band hook	S. Ward	337,215	Mar. 2	442	115	34	1008
Back-band hook	E. L. Torsch and J. R. Lee	337,717	Mar. 9	1126	290	34	1124
Badge							
Bag: *See* Hand-bag. Traveling-bag. Paper bag.							
Bag and twine holder	L. O. Edmiston	335,063	Jan. 26	2186	581	34	494
Bag and twine holder. Combined	J. Dula	334,858	Jan. 12	1236	332	34	226
Bag-frame fastening	A. Goerts	334,654	Jan. 19	1645	439	34	318
Bag-holder	W. S. Kendall	334,589	Jan. 19	1550	414	34	301
Bag holder	I. Steenrod	334,482	Jan. 19	1410	380	34	275
Bag holder. Fruit	I. H. Kizer	335,076	Jan. 26	2003	585	34	497
Bag-lock	B. Vom Eigen	336,536	Feb. 16	2070	544	34	839
Bag or satchel catch	L. B. Prahar and C. S. Shepard	336,017	Feb. 9	1307	347	34	661
Bag or satchel fastening	L. B. Prahar	335,807	Feb. 2	311	82	34	496
Bag, satchel, &c	R. Flocke	339,032	Mar. 30	2989	791	34	1489
Bags and other articles. Fastening for band	L. Sanders	335,311	Feb. 2	317	83	34	496
Bagasse-furnace	W. W. Sutcliffe	334,204	Jan. 12	1011	269, 270	34	198
Bail fastening or clutch	H. W. Eames	338,342	Mar. 23	1976	520	34	1305
Bail. Kettle	J. E. Gaitley	338,506	Mar. 23	2206	579	34	1346
Bake-pan	G. L. Hinderer	334,662	Jan. 19	1656	442	34	320
Baking-machine	C. Witzig	336,681	Feb. 23	2290	596	34	887
Baking-pan	A. B. Sparrow	335,251	Feb. 2	233	62	34	488
Baking wafers. Machine for	J. O. Meyer and W. Strickler	334,451	Jan. 19	1356	357	34	266
Balance. Analytical	E. Becker	336,546	Feb. 23	2087	548	34	832
Balance. Spring	W. R. Watt	338,894	Mar. 30	2765	728	34	1449
Balances. Mechanism for timing	H. J. Eisen	339,051	Mar. 30	2987	790	34	1489
Bale and box hook	P. J. Stockinger	338,895	Mar. 30	2749	723	34	1447
Bale-tie	W. M. Jinkins	335,932	Feb. 9	1196	318	34	668
Bale-tie. Wire	D. F. Boughton	336,084	Feb. 16	1494	376	34	708
Bale-ties. Machine for making wire	D. I. Eckerson	337,939	Mar. 16	1423	368, 369, 370	34	1195
Baling-press	W. S. Bryan	337,937	Mar. 2	473	194	34	1013
Baling-press	H. C. Capel	338,712	Mar. 30	2497	660, 661	34	1408
Baling-press	P. K. Dederick	333,999	Jan. 12	698	188	34	127
Baling-press	P. K. Dederick	334,000	Jan. 12	699	189	34	127
Baling-press	P. K. Dederick	334,001	Jan. 12	691	189, 190	34	126

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Baling-press	P. K. Dederick	334,002	Jan. 12	693	190	34	126
Baling-press	P. K. Dederick	334,003	Jan. 12	695	191	34	126
Baling-press	P. K. Dederick	334,004	Jan. 12	696	191, 192	34	126
Baling-press	P. K. Dederick	334,005	Jan. 12	699	192	34	126
Baling-press	P. K. Dederick	337,935	Mar. 16	1416	367	34	1194
Baling-press	P. K. Dederick	338,936	Mar. 30	2814	742	34	1460
Baling-press	G. Ertel	336,305	Feb. 16	1766	462	34	766
Baling-press	G. Ertel	337,567	Mar. 9	942	241	34	1102
Baling-press	J. La Dow	335,290	Feb. 2	627	76, 77	34	492
Baling-press	T. C. Nargamore	333,660	Jan. 5	212	58	34	41
Baling-press	G. W. Robberts	338,765	Mar. 30	2606	667	34	1421
Baling-press	W. D. Slauson	333,695	Jan. 5	539	146	34	101
Band-cutter	J. Henry	335,913	Feb. 9	1027	271	34	632
Band-cutter and feeder	J. R. Stowe	339,119	Mar. 30	3064	816	34	1505
Band-stretcher	J. A. Lawrence	336,571	Feb. 23	2125	557	34	838
Band-tightener	J. Reid	337,061	Mar. 2	1 92	70	34	975
Band-tightener	W. H. Whittaker	338,611	Mar. 30	2639	696	34	1428
Banjo	B. E. Boyden	338,335	Mar. 23	1963	516	34	1303
Banjo	C. E. Dobson	338,142	Mar. 16	1705	444	34	1247
Banjo tail-piece	R. H. Bemary	334,784	Jan. 26	1756	468	34	346
Bannerette	G. R. Osborn	338,356	Mar. 23	1995	525, 526	34	1309
Bar: *See* Draft-bar. Planing-machine presser-bar. Draw-bar. Pinch-bar. Tamping-bar.							
Barber's pole	R. F. Walter	334,912	Jan. 26	1976	526	34	368
Barium. Manufacture of anhydrous oxide of	L. Q. and A. Brin	338,698	Mar. 23	2365	622	34	1373
Bark-cutting machine	J. C. Hagerty	334,859	Jan. 26	1913	509	34	275
Bark-shaving machine	B. Otis	335,529	Feb. 2	616	161	34	550
Bark-shaving machine	B. Otis	335,530	Feb. 2	618	162	34	550
Barley-machine	S. Spitzer	333,561	Jan. 5	88	24	34	16
Barometers, &c. Recording apparatus for	J. Richard	334,618	Jan. 19	1584	422	34	307
Barrel-body from shrinking. Mechanism for preventing a molded	G. W. Laraway	338,064	Mar. 30	3006	785	34	1491
Barrel clamp and hook. Combined	E. E. Taylor	336,357	Feb. 16	1784	481	34	780
Barrel-filler	J. McKenzie	334,908	Jan. 12	1114	298, 299	34	214
Barrel-head	J. R. Allgire	338,379	Mar. 23	2084	534	34	1314
Barrel-head	F. J. Oliver	337,964	Mar. 16	1468	387	34	1207
Barrel-head fastening	C. R. Johnson and L. P. D. Carr	337,685	Mar. 9	1060	279	34	1127
Barrel-heads, &c. Fastener for	J. W. Weston	333,704	Jan. 5	284	77	34	54
Barrel-heads. Machine for making	J. T. Carter	338,928	Mar. 30	2803	739	34	1457
Barrel-heater	J. L. Koster	336,259	Feb. 16	1674	435	34	749
Barrel-holder	A. McQuiston	336,419	Feb. 16	1917	503	34	799
Barrel leveling and trussing machine	G. H. W. Simmons	336,709	Feb. 23	2268	625	34	905
Barrel-making machine	J. J. Philbrick	334,607	Jan. 19	1575	420	34	305
Barrel. Wooden	W. M. Allyn	337,110	Mar. 2	303	60	34	988
Barrels, &c. Construction of	M. G. Gillette	338,948	Mar. 30	2832	747	34	1463
Barrels. Device for raising	J. R. Mitchell	335,876	Feb. 2	407	104	34	514
Barrels. Follower for packing	C. T. Bellamy	336,690	Feb. 23	2303	602	34	870
Barrels. Machine for manufacturing	J. W. Philp	337,701	Mar. 9	1104	284, 285	34	1120
Bas-reliefs for ceilings, walls, &c. Manufacture of	E. Krispin	336,055	Feb. 9	1365	361	34	691
Basins. Dirt collector and remover for wash	T. Keech	335,963	Feb. 2	388	100	34	511
Basket	J. H. Gulick	337,763	Mar. 9	1177	306	34	1142
Basket	S. Toffler	333,793	Jan. 5	408	111	34	77
Basket. Cotton	J. W. Walker	338,992	Mar. 30	2763	727	34	1449
Basket-cover	R. H. Frisbee	336,516	Feb. 16	2043	536	34	817
Baskets. Machine for making and driving staples in handles of	H. C. Ward	334,913	Jan. 26	1977	526, 527	34	366
Bath: *See* Blotter-bath. Needle and spray bath.							
Bath or bathing apparatus	S. C. Neal	334,674	Jan. 19	1668	446	34	322
Bath-tub	F. P. Day	336,797	Feb. 23	2432	640	34	895
Bathing apparatus	F. B. Brown	338,031	Mar. 16	1560	404	34	1219
Bathing apparatus	V. A. Harder	336,642	Feb. 23	2227	581	34	655
Battery: *See* Electro-medical battery. Secondary battery. Galvanic battery. Stamp-battery.							
Beading-tool	C. M. Stevenson	333,690	Jan. 5	257	70	34	50
Beading-tool	J. A. Traut	335,856	Feb. 9	1065	286	34	648
Beams. Locking device for securing wood, &c., to iron	K. L. Gocht	338,059	Mar. 16	1589	414	34	1294
Beams or rails. Splice for metal	J. F. Ward	335,165	Feb. 2	93	25	34	487
Bearing	A. Stigler	337,864	Mar. 16	1344	348	34	1180
Bearing. Anti-friction	G. D. Burton	338,657	Mar. 23	2402	632	34	1379
Bearing. Anti-friction	W. Kratzer	335,527	Feb. 2	609	159	34	549
Bearings. Drip-cup and self-oiling attachment for	A. C. Pecsano	335,840	Feb. 9	1064	281	34	630
Bed and fire-escape. Combined spring	W. G. Wilson and G. Zimmermann	338,127	Mar. 16	1685	438	34	1243
Bed-bottom	C. L. Ames	333,909	Jan. 5	497	116	34	80
Bed-bottom	C. L. Ames	336,616	Feb. 23	2191	572	34	846
Bed-bottom	G. E. Bedell	334,556	Jan. 19	1509	404	34	292
Bed-bottom. Spring	I. W. Ames	335,873	Feb. 9	1106	298	34	647
Bed-bottom. Spring	A. Bell	336,202	Feb. 16	1601	420	34	780
Bed-bottom. Spring	T. P. Lynch	333,958	Jan. 5	630	172	34	116
Bed-bottom. Spring	M. C. Silver	337,206	Mar. 2	431	112	34	1066
Bed-bottom. Spring	J. R. Warren	337,902	Mar. 16	1370	355	34	1185
Bed-bottom. Spring	J. M. Wilson	336,538	Feb. 16	2072	545	34	833
Bed-bottoms. Fastening	W. S. Seymour	335,542	Feb. 2	625	164	34	552
Bed-clothes holder	F. P. Sargent	337,900	Mar. 2	423	111	34	1064
Bed-clothes securer	W. C. Walter	333,905	Jan. 5	558	150	34	104

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bed. Combination folding	A. T. McCurry	334,860	Jan. 26	1986	515	34	880
Bed. Folding	N. G. Augier	337,780	Mar. 9	1128	295	34	1126
Bed. Folding	K. Brooks	337,554	Mar. 9	999	236	34	1099
Bed. Folding	W. H. Dell	335,434	Feb. 2	464	126	34	598
Bed. Folding	J. C. Horn and C. F. Hopf	337,158	Mar. 2	364	95, 96	34	994
Bed. Folding	F. Munson	336,525	Feb. 16	2057	540	34	819
Bed. Folding	H. E. Thayer	337,635	Mar. 9	1093	262	34	1117
Bed. Folding cot	G. E. Bedell	336,606	Mar. 30	2470	672	34	1397
Bed for invalids. Adjustable	M. G. Farmer	335,441	Feb. 2	498	{128 / 129}	34	530
Bed-lounge	E. S. Hemmenway	334,528	Jan. 19	1466	383	34	285
Bed-lounge. Folding	F. H. Walker	334,550	Jan. 19	1502	402	34	290
Bed-lounge. Folding spring	F. H. Walker	334,549	Jan. 19	1501	{401 / 402}	34	290
Bed-pan	J. G. Reynolds	336,496	Feb. 16	1940	508	34	800
Bed-rest	W. H. Aldrich	335,419	Feb. 2	456	118	34	582
Bed. Sofa	M. Clune	337,481	Mar. 9	896	212	34	1088
Bed. Sofa	M. Ginna	336,949	Mar. 30	2832	747	34	1463
Bed-spring	S. K. Butterfield	337,806	Mar. 9	1233	320	34	1153
Bed-spring machinery. Double-spiral	H. A. Blackmer	338,702	Mar. 30	2480	655	34	1399
Bed-springs and spring-beds. Spring-connection for	H. S. Johnson	333,756	Jan. 5	359	97	34	67
Bedstead	H. Bentzell	337,655	Mar. 9	1048	269	34	1121
Bedstead	G. Birkmann	337,990	Mar. 16	1392	361	34	1189
Bedstead	J. T. Detterer	337,936	Mar. 16	1419	367	34	1194
Bedstead. Adjustable	C. A. Jenkens	335,360	Feb. 2	385	100	34	511
Bedstead and fire-place. Combined	O. S. Backus	334,504	Jan. 19	1437	366	34	280
Bedstead. Cabinet	J. Cochrane and H. F. Kirk	336,983	Mar. 2	146	40	34	952
Bedstead. Invalid	L. W. Fillebrown and F. B. Chandler.	335,218	Feb. 2	198	51	34	475
Bedstead. Invalid	J. D. Zehring and H. Z. Jones	333,712	Jan. 5	309	88	34	56
Bedstead. Iron	A. L. Pringle	337,519	Mar. 9	884	225	34	1091
Bedstead or cot	H. Williams	336,679	Feb. 23	2288	{597 / 598}	34	867
Bedstead. Portable folding camp	J. McKeough	337,415	Mar. 9	795	188	34	1065
Bedstead. Wardrobe	W. A. Morrison	336,918	Feb. 23	2464	647	34	901
Bee-hive	W. M. Myers	338,385	Mar. 23	1893	498	34	1290
Bee-hive	J. M. Shuck	338,647	Mar. 23	2389	630	34	1377
Bee-hive	W. O. Vincent	337,097	Mar. 2	286	76	34	979
Bee-hive	M. N. Ward	334,914	Jan. 26	1978	527	34	388
Bee-hive	N. M. Weidman	336,185	Feb. 16	1576	413	34	734
Bee-hive	J. M. Shuck	335,152	Feb. 2	73	20	34	453
Bee-hives. Device for inverting	T. F. Straub	336,073	Feb. 9	1392	368	34	696
Beer and charging the same with carbonic-acid gas. Clarifying	C. H. Johnson	333,958	Jan. 5	698	170	34	117
Beer and other liquors. Vessel for condensing	B. Mueller	338,284	Mar. 23	1863	.....	34	1280
Beer. Compound for purifying	J. W. L. Colt and J. R. McNamara	335,566	Feb. 9	671	177	34	567
Beer-drawing apparatus	J. J. Hanlon	338,956	Mar. 30	2644	750	34	1465
Beer-preserving apparatus	L. Feely	338,053	Mar. 16	1584	419	34	1225
Beer. Receptacle for carrying	D. W. Sexton	335,151	Feb. 2	71	19	34	453
Bell attachment. Sleigh	T. E. Ware	334,495	Jan. 19	1422	383	34	278
Bell. Bicycle	W. C. Homan	337,157	Mar. 2	363	96	34	993
Bell. Call	E. S. Bloomfield, Jr.	337,657	Mar. 9	1050	270	34	1122
Bell. Door	E. S. Bloomfield, Jr.	337,656	Mar. 9	1051	270	34	1123
Bell. Door	W. A. Milligan	336,764	Feb. 23	2590	664	34	911
Bell. Electric	C. F. De Redon	333,614	Jan. 5	158	42	34	31
Bell. Magneto-electric	F. E. Fisher	335,909	Feb. 9	1285	341	34	677
Bell system. Electric hotel call	J. L. Beers	338,697	Mar. 30	2471	652	34	1397
Bellows	G. T. Campbell	334,934	Jan. 26	2000	533	34	392
Bellows	J. F. Weitzel	334,319	Jan. 12	1175	315	34	226
Belt and truss. Electric	A. T. Sherwood	335,638	Feb. 9	775	205	34	586
Belt. Driving	F. Wegmann	338,696	Mar. 30	2766	739	34	1450
Belt. Electric	P. F. Valiant	336,450	Feb. 16	1962	514	34	808
Belt. Electric	J. H. Woodward	338,683	Mar. 23	2447	645	34	1396
Belt-fastener	E. C. Smith	338,565	Mar. 23	2277	597	34	1356
Belt. Galvanic	H. M. Beidler	335,417	Feb. 2	468	119	34	594
Belt. Machinery	H. C. Babcock	338,016	Mar. 16	1537	399	34	1215
Belt-reel	D. B. Kuhn	337,009	Mar. 2	163	43	34	954
Belt-tightener for spinning-machines, &c	J. E. Tynan	336,087	Feb. 9	1292	350	34	668
Belt. Voltaic	A. T. Sherwood	335,637	Feb. 9	773	205	34	586
Belts. Slide for sword	F. T. Buffum	334,101	Jan. 12	845	221	34	164
Belting	T. Gingras	335,187	Feb. 2	143	37	34	467
Belting. Machinery	R. F. M. Chase	336,990	Mar. 2	143	39	34	951
Belting. Woven	F. Reddaway	334,895	Jan. 26	1951	519	34	383
Bench: *See* Wash-bench.							
Bench-hook	J. B. Boyce	335,493	Feb. 2	470	121	34	525
Bending-block	D. C. and J. G. Mahon	337,006	Mar. 2	168	45	34	965
Bevel. Transfer	C. Head	336,409	Feb. 16	1904	498	34	793
Bicycle	C. E. Duryea	333,936	Jan. 5	601	164	34	112
Bicycle	E. H. Foote	334,578	Jan. 19	1538	411	34	298
Bicycle	G. S. Long	337,774	Mar. 9	1183	310	34	1140
Bicycle	J. L. Yost	334,325	Jan. 12	1186	319	34	228
Bicycle	J. F. Morgan	335,297	Feb. 2	397	79	34	494
Bicycle-leg	A. P. Merrill	337,163	Mar. 2	406	105	34	1000
Bicycle-lock	F. Lillibridge	337,171	Mar. 2	388	101	34	997
Bicycle-saddle	T. J. Regnier	334,489	Jan. 19	1391	375	34	273
Bicycle-saddle	G. Rothgiesser	335,946	Feb. 2	298	60	34	461
Bicycle-saddle	C. M. Clarke	334,164	Jan. 12	942	255	34	181
Bicycle-seat	G. Haydu	333,753	Jan. 5	356	96	34	67
Bilge-water ejector	J. F. Smethells	333,686	Jan. 5	252	68	34	49
Bilge-water indicator	J. R. and J. Ferguson	335,907	Feb. 9	1168	311	34	657
Bill-holder	W. E. Davis	337,311	Mar. 2	581	153	34	1033
Billiard-chalk holder	H. A. Tyler and B. McGovern	336,038	Feb. 9	1394	350	34	664
Billiard-chalk holder	W. Zaehringer	334,099	Jan. 12	844	231	34	164

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Billiard-cue	J. A. Tracy	338,868	Mar. 30	2756	735	34	1446
Billiard-cue clamp	J. Callahan	337,659	Mar. 9	1032	270	34	1122
Billiard-cue-tip fastener	H. A. Harner	334,861	Jan. 26	1915	510	34	376
Billiard-cue-tip fastening	E. Ferchland	336,794	Mar. 30	2517	666	34	1405
Billiard-table leveler	E. A. Hornbostel	338,667	Mar. 23	2402	630	34	1382
Bin	J. D. Geller	334,652	Jan. 19	1442	426	34	316
Binder for music, periodicals, &c	J. C. Koch	338,350	Mar. 23	1908	503	34	1307
Binder for papers. Temporary	E. L. Shipman	336,954	Mar. 2	96	28	34	943
Binder. Temporary	F. H. Conn	337,664	Mar. 9	1057	272	34	1118
Bird-cage	B. A. Drayton	334,573	Jan. 19	1532	{409 / 410}	34	307
Bird-cage bracket	S. B. Derby	336,218	Feb. 16	1635	427	34	742
Biscuit-cutter	R. J. Hewitt	337,389	Mar. 2	603	156	34	1037
Bit: *See* Bridle-bit.							
Bit-holder	J. Swan	337,866	Mar. 16	1249	350	34	1181
Blackboard. School	J. Frey	338,397	Mar. 23	2050	540	34	1319
Blacking-box	G. Ridgeway	336,748	Feb. 23	2260	620	34	882
Blacking-machine. Boot and shoe	R. T. Roberts	336,598	Feb. 23	2133	583	34	843
Blacksmith's hearth	H. Branchler	337,725	Mar. 9	1145	297	34	1130
Blank. Business	W. P. Groom	336,007	Feb. 9	1295	345	34	679
Blanks for effecting the intertransfer of ownership of property. Set of	W. P. Groom	336,005	Feb. 9	1293	344	34	678
Blast-furnace appliance	W. Rotthoff	336,749	Feb. 23	2369	{620 / 621}	34	883
Blast regulator. Fan	J. J. Wilson	336,537	Feb. 16	2071	544	34	822
Blasting-barrel, measuring-rule, and drill-hole scraper. Combined	J. E. Fehn	334,765	Jan. 26	1796	478	34	355
Bleaching	W. Mather	333,875	Jan. 5	517	.....	34	96
Bleaching apparatus	J. Meikle	338,096	Mar. 16	1646	428	34	1236
Blind and wire screen. Combination of	F. A. Ransom	336,944	Mar. 2	84	23	34	942
Blind-adjusting device	B. D. Washburn	335,861	Feb. 9	1091	288	34	644
Blind, shutter, or screen	B. D. Stevens	333,565	Jan. 5	86	25	34	19
Blind-slat, &c	G. Hayes	335,253	Feb. 2	376	96	34	580
Blind-slat adjuster	R. M. Martin	337,275	Mar. 2	530	139	34	1084
Blind-slat adjuster	P. Rundquist	334,088	Jan. 26	2230	592	34	432
Blind-slat-tenoning machine	G. W. Bugbee and F. Danner	336,835	Feb. 23	2484	653	34	904
Blind-stapling machine	N. P. Peterson	335,304	Feb. 2	365	91	34	495
Blind. Window	H. Hawley	337,198	Mar. 2	339	94	34	998
Blind. Window	A. H. Hill. (Reissue)	10,692	Feb. 23	2563	{676 / 677}	34	919
Block: *See* Bending-block. Meat-block. Filing-block. Pulley-block. Hat-finishing block. Saw-mill head-block. Horse-block.							
Blotter	J. H. Barley	335,674	Feb. 9	880	219	34	594
Blotter	J. Felbel	337,675	Mar. 9	1070	276	34	1125
Blotter-bath	B. B. Hill	335,564	Feb. 9	695	184	34	573
Blotter-bath	B. B. Hill	335,565	Feb. 9	695	184	34	573
Blotting-pad and memorandum-book. Combined	H. C. Whitney	337,101	Mar. 2	290	77	34	988
Blotting-pad holder	W. W. Gelatt	337,391	Mar. 9	685	179	34	1059
Blotting-pad, ruler, and paper-cutter	G. D. Barr	337,651	Mar. 9	1043	268	34	1120
Blower for stacks of boiler-furnaces. Steam	T. Poore	333,543	Jan. 5	63	18	34	14
Blower-handle	W. A. Hart	336,237	Mar. 16	1817	475	34	1269
Board: *See* Game-board. Siding and roofing board. Ironing-board. Spelling-board. Shirt-board. Wash-board.							
Boat: *See* Fisherman's minnow-boat. Sectional and folding boat. Hunting-boat. Submarine torpedo-boat. Ice-boat. Torpedo-boat.							
Boat-detaching device	L. L. Creamer and F. A. Sparks	336,164	Mar. 16	1783	456	34	1253
Boats or small vessels. Machine for bending, shaping, and setting the timbers or frames of	J. A. Dower	333,615	Jan. 5	154	42	34	31
Bobbin-winder	W. Connolly	335,019	Jan. 26	2118	564	34	413
Bobbin-winder	W. Connolly	336,296	Feb. 16	1755	459	34	783
Boiler: *See* Sorghum-boiler. Wash-boiler. Steam-boiler. Water-tube boiler. Steam-heater boiler.							
Boiler	W. C. Pennock	334,277	Jan. 12	1125	302	34	217
Boiler	T. Poore	336,431	Feb. 16	1933	507	34	796
Boiler	E. T. Sykes	333,571	Jan. 5	96	27	34	21
Boiler and steamer	S. W. France	333,740	Jan. 5	340	92	34	68
Boiler cleaner. Kitchen	W. B. Davis	337,748	Mar. 9	1160	301	34	1140
Boiler fire-box	T. Poore	335,715	Feb. 9	885	234	34	605
Boiler-flue cleaner	J. L. Kelley	335,890	Feb. 9	1035	274	34	633
Boiler-furnace	A. Backus, Jr.	338,462	Mar. 23	2145	561	34	1335
Boiler-furnace	E. Boileau	335,207	Feb. 2	171	45	34	471
Boiler-furnace	J. S. Loomis	335,825	Feb. 9	1040	275	34	634
Boiler-furnace	T. Poore	333,544	Jan. 5	64	18	34	15
Boiler-furnace	J., J., and F. Zerr	336,370	Feb. 16	1850	485	34	783
Boiler furnace. Steam	L. Johnston	333,954	Jan. 5	625	171	34	117
Boiler purifier and feeder	H. F. Hayden	334,774	Jan. 26	1806	480	34	307
Boiler-tube cleaner	F. M. Clark and F. B. Low	336,292	Feb. 16	1751	458	34	782
Boiler-tube cleaner	R. A. Regester	334,468	Jan. 19	1390	375	34	272
Boiler water-tube	J. Hartley	335,695	Feb. 9	850	225	34	560
Boilers. Water-heating apparatus for	T. Welch and T. R. Crooks	336,453	Mar. 23	2178	556	34	1333
Bolt: *See* Door-bolt. Indicator-bolt. Flour-bolt. Sash and door bolt.							
Bolt-cloths. Clasp for attaching	G. T. Smith	338,027	Mar. 30	2658	732	34	1494

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bed. Combination folding	A. T. McCurry	334,880	Jan. 26	1985	515	34	380
Bed. Folding	N. G. Angier	337,780	Mar. 9	1128	295	34	1126
Bed. Folding	K. Brooks	337,554	Mar. 9	920	236	34	1099
Bed. Folding	W. H. Dell	335,434	Feb. 2	484	126	34	598
Bed. Folding	J. C. Horn and C. F. Hopf	337,158	Mar. 2	364	95, 96	34	994
Bed. Folding	F. Munson	336,525	Feb. 16	2057	540	34	819
Bed. Folding	H. E. Thayer	337,635	Mar. 9	1083	283	34	1117
Bed. Folding	G. E. Bedell	338,606	Mar. 30	9470	652	34	1397
Bed for invalids. Adjustable	M. G. Farmer	335,441	Feb. 2	498	{126 / 129}	34	590
Bed-lounge	E. S. Hemmenway	334,528	Jan. 19	1466	382	34	295
Bed-lounge. Folding	F. H. Walker	334,550	Jan. 19	1502	402	34	290
Bed-lounge. Folding spring	F. H. Walker	334,549	Jan. 19	1501	{401 / 402}	34	290
Bed-pan	J. G. Reynolds	336,496	Feb. 16	1940	508	34	800
Bed-rest	W. H. Aldrich	335,419	Feb. 2	456	118	34	582
Bed. Sofa	M. Clune	337,481	Mar. 9	836	212	34	1068
Bed. Sofa	M. Ginna	338,949	Mar. 30	2832	747	34	1463
Bed-spring	S. K. Butterfield	337,806	Mar. 9	1233	320	34	1153
Bed-spring machinery. Double-spiral	H. A. Blackmer	338,702	Mar. 30	2480	655	34	1399
Bed-springs and spring-beds. Spring-connection for	H. S. Johnson	333,756	Jan. 5	359	97	34	67
Bedstead	H. Bentiell	337,655	Mar. 9	1046	269	34	1121
Bedstead	G. Birkmann	337,920	Mar. 16	1392	361	34	1180
Bedstead	J. T. Detterer	337,936	Mar. 16	1419	367	34	1194
Bedstead	C. A. Jenkens	335,360	Feb. 2	385	100	34	511
Bedstead. Adjustable	O. S. Backus	334,504	Jan. 19	1437	386	34	280
Bedstead and fire-place. Combined	J. Cochrane and H. F. Kirk	336,983	Mar. 2	146	40	34	952
Bedstead. Cabinet	L. W. Fillebrown and F. B. Chandler.	335,218	Feb. 2	198	51	34	475
Bedstead. Invalid	J. D. Zehring and H. Z. Jones	333,719	Jan. 5	302	68	34	56
Bedstead. Iron	A. L. Pringle	337,519	Mar. 9	884	225	34	1081
Bedstead or cot	H. Williams	336,679	Feb. 23	2488	{587 / 594}	34	867
Bedstead. Portable folding camp	J. McKeough	337,415	Mar. 9	795	188	34	1065
Bedstead. Wardrobe	W. A. Morrison	336,818	Feb. 23	2464	647	34	901
Bee-hive	W. M. Myers	338,985	Mar. 23	1893	498	34	1290
Bee-hive	J. M. Shuck	338,647	Mar. 23	2369	630	34	1377
Bee-hive	W. O. Vincent	337,097	Mar. 2	286	76	34	979
Bee-hive	M. N. Ward	334,914	Jan. 26	1978	527	34	388
Bee-hive	N. M. Weidman	336,185	Feb. 16	1576	413	34	734
Bee-hive	J. M. Shuck	335,153	Feb. 2	73	20	34	453
Bee-hives. Device for inverting	T. F. Straub	336,073	Feb. 9	1392	368	34	686
Beer and charging the same with carbonic-acid gas. Clarifying	C. H. Johnson	333,958	Jan. 5	628	170	34	117
Beer and other liquors. Vessel for condensing	B. Mueller	338,284	Mar. 23	1863	.....	34	1280
Beer. Compound for purifying	J. W. L. Colt and J. R. McNamara	335,566	Feb. 9	671	177	34	567
Beer-drawing apparatus	J. J. Hanlon	338,956	Mar. 30	2644	750	34	1465
Beer-preserving apparatus	L. Feely	338,053	Mar. 16	1584	412	34	1228
Beer. Receptacle for carrying	D. W. Sexton	335,151	Feb. 2	71	19	34	453
Bell attachment. Sleigh	T. E. Ware	334,495	Jan. 19	1428	383	34	278
Bell. Bicycle	W. C. Homan	337,157	Mar. 2	363	95	34	993
Bell. Call	E. S. Bloomfield, Jr	337,657	Mar. 9	1050	270	34	1122
Bell. Door	E. S. Bloomfield, Jr	337,658	Mar. 9	1051	270	34	1122
Bell. Door	W. A. Milligan	336,764	Feb. 23	2520	664	34	911
Bell. Door	C. F. De Redon	333,614	Jan. 5	153	42	34	91
Bell. Electric	F. E. Fisher	335,999	Feb. 9	1285	341	34	677
Bell. Magneto-electric	J. L. Beers	338,697	Mar. 30	2471	652	34	1397
Bell system. Electric hotel call	G. T. Campbell	334,934	Jan. 26	2000	533	34	392
Bellows	J. F. Weitzel	334,319	Jan. 12	1175	315	34	226
Bellows	A. T. Sherwood	335,638	Feb. 9	775	205	34	586
Belt and truss. Electric	F. Wegmann	338,896	Mar. 30	2766	739	34	1450
Belt. Driving	P. F. Valiant	336,450	Feb. 16	1962	514	34	803
Belt. Electric	J. H. Woodward	338,683	Mar. 23	2447	645	34	1396
Belt. Electric	E. C. Smith	338,565	Mar. 23	2277	597	34	1356
Belt-fastener	H. M. Reidler	335,417	Feb. 9	463	119	34	594
Belt. Galvanic	H. C. Babcock	338,016	Mar. 16	1537	399	34	1215
Belt. Machinery	D. B. Kuhn	337,002	Mar. 2	163	43	34	954
Belt-reel	J. E. Tynan	336,087	Feb. 9	1392	350	34	668
Belt-tightener for spinning-machines, &c	A. T. Sherwood	335,637	Feb. 9	773	205	34	586
Belt. Voltaic	F. T. Buffum	334,101	Jan. 12	845	231	34	164
Belts. Slide for sword	T. Gingras	335,187	Feb. 2	143	37	34	467
Belting	R. F. M. Chase	336,990	Mar. 2	143	39	34	951
Belting. Machinery	F. Reddaway	334,895	Jan. 26	1951	519	34	383
Bench: *See* Wash-bench.							
Bench-hook	J. B. Boyce	335,423	Feb. 2	470	121	34	585
Bending-block	D. C. and J. G. Mahon	337,006	Mar. 2	168	45	34	965
Bevel. Transfer	C. Head	336,409	Feb. 16	1904	498	34	793
Bicycle	C. E. Duryea	333,996	Jan. 5	601	164	34	113
Bicycle	E. H. Foote	334,578	Jan. 19	1538	411	34	299
Bicycle	G. S. Long	877,774	Mar. 9	1193	310	34	1146
Bicycle	J. L. Yost	334,925	Jan. 19	1186	319	34	228
Bicycle	J. F. Morgan	335,997	Feb. 2	997	79	34	604
Bicycle-leg	A. P. Merrill	337,163	Mar. 2	406	105	34	1000
Bicycle-lock	F. Lillibridge	337,171	Mar. 2	386	101	34	997
Bicycle-saddle	T. J. Regnier	334,469	Jan. 19	1391	375	34	272
Bicycle-saddle	G. Rothgiesser	335,946	Feb. 2	998	80	34	461
Bicycle-saddle	C. M. Clarke	334,164	Jan. 12	942	255	34	181
Bicycle-seat	G. Haydn	333,758	Jan. 5	356	96	34	67
Bilge-water ejector	J. F. Smethells	333,686	Jan. 5	252	68	34	49
Bilge-water indicator	J. R. and J. Ferguson	336,907	Feb. 9	1168	311	34	657
Bill-holder	W. E. Davis	337,311	Mar. 2	581	153	34	1033
Billiard-chalk holder	H. A. Tyler and B. McGovern	336,076	Feb. 9	1394	350	34	664
Billiard-chalk holder	W. Zaehringer	334,099	Jan. 12	844	231	34	164

Alphabetical list of inventions, January to March, inclusive—Continued.

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Binder for papers. Temporary	E. L. Shipman	336,954	Mar. 2	96	28	34	943
Binder. Temporary	F. H. Coffin	337,664	Mar. 9	1057	272	34	1123
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Bit: *See* Bridle-bit.							
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Blackboard. School	J. Frey	338,397	Mar. 23	2059	540	34	1319
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Blind-slat, &c	G. Hayes	336,258	Feb. 2	376	98	34	509
Blind-slat adjuster	R. M. Martin	337,375	Mar. 2	530	139	34	1004
Blind-slat adjuster	P. Rundquist	334,068	Jan. 26	2220	589	34	422
Blind-slat-tenoning machine	G. W. Bugbee and F. Danner	336,635	Feb. 23	2484	653	34	904
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Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bolt for shutters, &c.	H. J. Hunsicker	334,958	Jan. 26	2026	541	34	406
Bolt-heading machine	A. B. Glover	335,260	Feb. 2	273	72, 73	34	469
Bolt-heading machine	F. Philips	334,464	Jan. 19	1382	373	34	271
Bolt-heading machine	F. Philips	334,465	Jan. 19	1385	374	34	271
Bolt-heading machine	A. W. Becker	336,985	Mar. 2	135	37	34	950
Bolt-holder and pipe-wrench. Combined	W. H. Babcock	333,718	Jan. 5	310	85	34	58
Bolt-lock	H. V. Harts	334,433	Jan. 19	1335	361	34	261
Bolts and hooks. Machine for forming eyes for metal	J. T. Smith	338,567	Mar. 23	2979	598	34	1358
Bolts. Machine for making thimbles for	G. T. Smith	335,155	Feb. 2	78	21	34	454
Bolting-cloth. Device for tightening	G. T. Smith	339,025	Mar. 30	2956	781	34	1484
Bolting-cloths. Clasp for	G. S. Burnap	338,630	Mar. 23	2967	623	34	1373
Bolting-reel cloths. Cleaner for	S. M. Lillie	335,137	Feb. 2	53	15	34	450
Bone-black. Process of and apparatus for drying	S. M. Lillie	337,411	Mar. 9	717	186, 187	34	1064
Bone-black-revivifying kilns. Utilizing the waste heat from	C. A. Lieb	334,672	Jan. 19	1666	445	34	322
Book and pamphlet trimming machine	L. W. Fifield	338,726	Mar. 30	2518	666, 667	34	1406
Book-binding machine	A. Agar	335,103	Feb. 2	4	2	34	441
Book. Copy	E. W. and J. F. Snow	337,027	Mar. 2	200	53	34	969
Book-cover and removable leaf. Combined	W. F. Ellis	336,304	Feb. 16	1764	462	34	766
Book-cutting machine	F. Wood	336,878	Feb. 23	2548	671	34	916
Book for binding. Machine for gathering the folded sheets or signatures of a	L. W. Noyes	335,085	Jan. 26	2217	589	34	430
Book-holder	J. W. Ranson and J. L. H. Barr	337,435	Mar. 9	775	197	34	1073
Book-holder	J. M. Stewart and J. A. Robertson	338,900	Mar. 16	1780	465	34	1263
Book-holder	F. W. Smith	336,495	Feb. 16	2016	528, 529	34	812
Book-leaf holder	T. G. Cooper	336,393	Feb. 16	1884	493	34	789
Book. Memorandum	D. W. Glase	335,916	Feb. 9	1180	314	34	659
Book or the like. Copying	T. C. Walker and W. E. Crayton	334,313	Jan. 12	1169	313	34	225
Book rest and stand. Folding	J. W. Lovell	334,446	Jan. 19	1348	366	34	264
Books, pamphlets, and other publications. Guard for	H. Nelson	334,394	Jan. 12	1273	343	34	243
Boot and shoe burnishing machine	J. J. Jones	339,060	Mar. 30	3002	794	34	1491
Boot and shoe heel	H. T. Morse	336,489	Feb. 16	2010	527	34	811
Boot and shoe jack	A. Eppler, Jr	334,361	Jan. 12	1237	333	34	237
Boot and shoe nail	S. W. Brewster and L. Sherwood	336,987	Mar. 2	137	37	34	951
Boot-drier	S. G. Alexander	336,542	Feb. 23	2992	547	34	831
Boot. Felt	E. T. Stelle	338,201	Mar. 16	1761	465	34	1263
Boot. Felt	W. B. Arnold	335,555	Feb. 9	656	173	34	565
Boot or shoe	J. J. Feeney	334,364	Jan. 12	1241	334	34	238
Boot or shoe	W. H. Wetmore	336,775	Feb. 23	2408	633	34	891
Boot or shoe	C. K. Bradford	334,102	Jan. 12	940	254	34	181
Boot or shoe buffing roll	L. C. Hoffmeister	334,361	Jan. 12	1256	339	34	241
Boot or shoe creeper	W. Manley	336,382	Feb. 16	1797	470, 471	34	772
Boot or shoe edge trimming machine	G. H. Bliss	334,738	Jan. 26	1760	469	34	347
Boot or shoe fastening device	F. R. Hogeboom and G. O. Woolcocks	333,522	Jan. 5	36	10	34	9
Boot or shoe heel-plate	H. W. Mobbs and A. Lewis	336,339	Feb. 16	1810	475	34	775
Boot or shoe last	F. Chase	337,925	Mar. 16	1402	363, 364	34	1191
Boot or shoe lasting machine	F. A. Beal	333,812	Jan. 5	431	117	34	81
Boot or shoe nailing machine	J. S. Owner	337,190	Mar. 2	413	107, 108	34	1002
Boot or shoe. Rubber	E. S. Harris	337,060	Mar. 2	236	63	34	969
Boot or shoe sole	W. A. Knipe and L. Day	334,668	Jan. 19	1662	444	34	321
Boot or shoe sole	E. C. Bennett	336,548	Feb. 23	2093	550	34	832
Boot or shoe soles and uppers. Uniting	S. H. Hodges	333,630	Jan. 5	171	47	34	34
Boot or shoe tree	J. E. Tilton	337,892	Mar. 16	1356	352	34	1192
Boot. Rubber	J. L. Tyler, Jr	335,256	Feb. 2	241	63, 64	34	463
Boot. Rubber	E. W. Whitmore	338,575	Mar. 23	2989	600	34	1359
Boot-tree	T. O. Jones	338,157	Mar. 16	1724	450	34	1251
Boots and shoes. Apparatus for cleaning	J. L. Thomson	335,323	Feb. 2	330	87	34	501
Boots and shoes. Applying wear-points to rubber	W. C. Cross	333,606	Jan. 5	144	39	34	29
Boots and shoes. Lasting	W. C. Cross	337,463	Mar. 9	838	212	34	1083
Boots and shoes. Lasting	C. T. Stetson	339,117	Mar. 30	3062	815	34	1504
Boots and shoes. Manufacture of metallic shanks for	H. W. Benham	335,415	Feb. 2	460	119	34	522
Boots. Device for pulling on	J. H. Riedell and L. W. Litch	337,082	Mar. 2	263	70, 71	34	975
Boots or shoes. Machine for making box-toes and stiffeners for	W. A. Young	333,910	Jan. 5	564	153	34	105
Boots, shoes, or stockings. Stretcher for felt	J. Birkenhead	335,206	Feb. 2	171	44	34	471
Boring-tool	M. Phillips	334,721	Jan. 19	1736	463	34	335
Bosom-form	J. H. B. Howell	334,865	Jan. 26	1919	511	34	377
Bottle and stopper	T. A. Dodge	336,097	Feb. 16	1440	380	34	711
Bottle-covers. Machine for manufacturing	J. Hunt	333,524	Jan. 5	39	11, 12	34	10
Bottle-filling machine	G. R. Wight	335,329	Feb. 2	341	89	34	502
Bottle. Mucilage	F. E. Forster	335,347	Feb. 2	367	96	34	507
Bottle. Nursing	E. A. Conkling	334,748	Jan. 26	1776	472	34	351
Bottle-packing box	R. Preston	334,805	Jan. 26	1846	492	34	364
Bottle-rinser	R. Blocsser	334,334	Jan. 19	1300	324	34	231
Bottle-stopper	A. E. Fraser	336,848	Feb. 23	2502	659	34	907
Bottle-stopper	C. K. Hamilton, Jr	338,348	Mar. 23	1963	522	34	1306
Bottle-stopper	A. Luedemann	337,003	Mar. 2	165	44	34	955
Bottle stopper	F. D. Taylor	337,458	Mar. 9	908	201	34	1078
Bottle-stopper	F. C. White	337,541	Mar. 9	911	233	34	1096
Bottle-stopper	O. Zwietusch	336,463	Feb. 16	1979	518	34	805
Bottle stopper	H. P. Brooks	334,100	Jan. 12	845	231	34	164
Bottle-stopper fastening	G. J. Fritz	337,054	Mar. 2	229	61	34	967
Bottle-washer	G. P. Goulding	335,068	Jan. 26	2193	583	34	425
Bottle-washer	E. J. Leyburn	337,595	Mar. 9	976	250	34	1108
Bottle-washing implement	E. S. Piper	337,615	Mar. 9	997	256, 257	34	1112
Bottle-washing machine	J. M. Hoyt	337,332	Mar. 2	606	159	34	1038
Bottle-washing machines. Brush-holder for	J. Blocsser	337,921	Mar. 16	1393	362	34	1189
Bottles. Apparatus for drawing corks from	F. Cunts	338,587	Mar. 23	2304	603	34	1362
Bottles, &c. Apparatus for rinsing or washing	T. Snypp	337,713	Mar. 9	1118	288	34	1133

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bottles. Stand for holding and sealing	C. S. Reynolds and J. H. Weldon	334,963	Jan. 26	2068	552	34	408
Bottles, &c. Tool for forming threads, &c., upon	C. De Quillfeldt	333,732	Jan. 5	327	90	34	61
Bottles. Valve-stopper for	A. B. Vanes	338,571	Mar. 23	2283	599	34	1359
Bottles with liquids. Apparatus for filling	R. Steel	337,883	Mar. 16	1342	348	34	1189
Bottling-machine	W. F. Dorflinger	334,257	Jan. 12	1225	332	34	226
Bottling-machine	E. F. Göransson	339,053	Mar. 30	2990	791, 792	34	1489
Bottling-machine	J. K. Nye	339,111	Mar. 30	3075	814	34	1503
Bottling-machine	E. M. Wood and A. G. Mead	333,708	Jan. 5	293	80, 81, 82	34	55
Bouquet-holder	M. Flint	337,569	Mar. 9	946	242	34	1102
Box:							
See Axle-box. Lunch-box.							
Blacking-box. Match-box.							
Bottle-packing box. Miter-box.							
Cash-box. Musical box.							
Cigar-box. Packing-box.							
Core-box. Paper box.							
Fare-box. Safety collecting-box.							
File-box. Signal or call box.							
Folding box. Stop or curb box.							
Handkerchief-box. Stuffing-box.							
Jeweler's box. Tobacco-box.							
Journal-box. Toy money-box.							
Letter-box. Wagon-box.							
Box	R. W. Betts	334,506	Jan. 19	1440	337	34	320
Box covering and trimming machine	C. E. Cinte	335,429	Feb. 2	476	123, 124	34	526
Box-fastener	C. W. Beebler	338,608	Mar. 30	3474	852	34	1396
Box-fastener	E. Harris	335,812	Feb. 9	1096	271	34	622
Box-fastening	G. B. Leby	335,822	Feb. 9	1038	274	34	622
Box for alimentary and other substances	J. Bentley	335,881	Feb. 9	1125	297	34	649
Box for receiving and holding papers	E. M. Staples	335,789	Feb. 9	969	251	34	624
Box-loop	F. A. Neider	336,735	Feb. 23	2353	616	34	880
Boxes. Machine for manufacturing	A. F. Morse	336,240	Feb. 16	1811	475	34	775
Brace:							
See Rail-brace.							
Bracelet	A. v. Briesen	334,844	Jan. 26	1889	508	34	371
Bracket:							
See Bird-cage bracket. Lamp-bracket.							
Easel-shelf bracket. Shingling-bracket.							
Bracket	D. Jacobsen	335,931	Feb. 9	1196	318	34	662
Bracket-clamp for shingling	W. Ervin	337,925	Mar. 16	1909	339	34	1167
Braiding-machine	J. Andrew	337,473	Mar. 9	896	209	34	1061
Brake:							
See Air-brake. Sled-brake.							
Automatic brake. Vehicle-brake.							
Car-brake. Wagon-brake.							
Brake	H. K. Whitner	338,900	Mar. 30	2771	730	34	1450
Branding apparatus	A. W. Oppmann and J. Smith	336,343	Feb. 16	1815	476	34	776
Branding implement	E. Bosworth and J. Schmidt	336,286	Feb. 16	1739	455	34	760
Bread and vegetable cutter	F. Boës and H. Winter	338,819	Mar. 30	2651	698	34	1429
Breakwater	L. W. Leeds	335,092	Jan. 26	2142	569, 570	34	416
Breast-strap hook	W. D. Drake	333,734	Jan. 5	330	90	34	62
Brick. Burning	J. D. Hardt	337,672	Mar. 9	1066	275	34	1125
Brick, concrete block, &c	H. C. Cowan	338,490	Mar. 23	2183	571	34	1343
Brick-drying structure	J. K. Caldwell	334,107	Jan. 19	852	234	34	165
Brick-hack. Portable	M. Walker and E. Miner. (Reissue)	10,694	Feb. 23	2565	677	34	920
Brick-kiln	C. Lanz	336,398	Feb. 16	1792	468	34	771
Brick-kiln	R. B. Morrison	337,696	Mar. 9	1088	283	34	1129
Brick-kiln furnace. Portable	S. P. Crafts	337,927	Mar. 16	1405	364	34	1192
Brick-machine	F. Doerfler	337,127	Mar. 2	342	89	34	989
Brick-molding device	S. Wright	333,710	Jan. 5	300	82	34	56
Brick-molds. Machinery for sanding	D. Ralston	334,610	Jan. 19	1580	421	34	306
Brick or other kiln	E. Chase	338,036	Mar. 16	1565	406	34	1290
Brick, tile, &c. Machine for making	C. J. Barstow	338,018	Mar. 16	1540	400	34	1215
Brick walls, &c. Tools for finishing joints of	J. H. Bright	338,029	Mar. 16	1559	403	34	1218
Bricks, &c. Drying-shed for	O. McCoy	337,180	Mar. 2	402	105	34	1000
Bricks. Implement for edging or turning	A. G. Oasman	336,920	Feb. 23	2465	647	34	901
Bricks. Picking up and carrying	A. G. Oasman	336,737	Feb. 23	2156	616	34	880
Bridge	S. H. Godman	336,104	Feb. 16	1449	382	34	713
Bridge	H. Krusi	338,755	Mar. 30	2564	677	34	1414
Bridge-gate	U. Dodd	336,843	Feb. 23	2497	656	34	907
Bridge gate. Automatic draw	W. S. Morton	334,084	Jan. 12	817	224	34	160
Bridge, pier, or similar structure	A. Cottrau	337,666	Mar. 9	1059	272, 273, 274	34	1123
Bridge-wall or fire-arch support	J. Enright	337,941	Mar. 16	1430	371	34	1196
Bridle-bit	R. G. Hanford, Jr	337,578	Mar. 9	955	245	34	1104
Bridle-blind	A. F. Ransom	334,050	Jan. 12	770	211	34	151
Bridle. Harness	M. R. Good	334,168	Jan. 12	947	256	34	183
Broom	R. D. Gallagher	335,808	Feb. 9	1022	270	34	631
Broom	A. Stephen	336,169	Feb. 16	1551	409	34	739
Broom-corn. Compound for softening and dyeing	J. A. Van Winkle	334,140	Jan. 12	895	.....	34	174
Broom-holder	J. F. Barringer	334,214	Jan. 12	1026	273	34	199
Broom-holder	A. D. Stansbury	337,091	Mar. 2	978	74	34	978
Broom-rack	J. B. House	337,767	Mar. 9	1192	308	34	1144
Broom-rack	S. C. Tatum, Jr., and J. Hatfield	333,900	Jan. 5	544	148	34	109
Broom-support	F. S. Capron	338,248	Mar. 23	1848	486	34	1283
Brooms and brushes. Machinery for making	J. G. Horsey	333,946	Jan. 5	614	167	34	115
Brush	J. F. Bartlett	335,876	Feb. 9	1110	294	34	647
Brush	J. F. Bowditch	334,336	Jan. 12	1203	324	34	228

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Brush-backs. Device for inserting bristles in	E. Kipper	334,191	Jan. 19	871	929	34	189
Brush. Blacking	B. G. Fitzhugh	336,504	Mar. 23	2993	578	34	1345
Brush. Bottle-washing	J. Buchheit	335,059	Jan. 26	2170	577	34	421
Brush. Commutator	L. W. Stockwell	337,995	Mar. 16	1345	349	34	1160
Brush. Dental-plate	A. C. Estabrook	335,945	Feb. 9	965	96	34	507
Brush. Dental-plate	J. D. Culp	336,597	Mar. 2	21	6	34	930
Brush. Electrical	C. Buck	336,476	Mar. 23	2161	565	34	1339
Brush handle and holder combined	J. M. Pickering	334,068	Jan. 12	888	225	34	161
Brush-making machine	R. J. Curtin	336,842	Feb. 23	2496	658	34	906
Brush. Rotary	C. E. Doty	336,719	Mar. 30	2507	664	34	1404
Brush. Steel-wire	R. S. Lakin	334,729	Jan. 19	1743	465	34	337
Brush. Tooth	N. W. Griswold	336,402	Mar. 23	2065	541	34	1290
Brushes while being filed. Clamp for holding dynamo-electric	M. S. Eldon	337,894	Mar. 16	1958	389	34	1166
Brushing-machine	V. S. Bekofsky	335,798	Feb. 9	1002	265	34	627
Buckle	S. Bretsfield	335,794	Feb. 9	1003	266	34	627
Buckle	C. J. Cooper	334,750	Jan. 26	1778	473	34	351
Buckle	J. E. Davenny	333,980	Jan. 5	595	159	34	119
Buckle	T. O. Potter	337,517	Mar. 9	662	224	34	1091
Buckle	W. E. Smith	337,453	Mar. 9	799	268	34	1077
Buckle	F. B. Spooner	335,923	Feb. 9	934	98	34	498
Buckle	W. H. Wales	336,502	Feb. 16	2023	531	34	814
Buckle	B. S. Wash	335,490	Feb. 2	559	147	34	541
Buckle	J. F. Winter	336,387	Mar. 23	1959	514	34	1301
Buckle	M. E. Zeller	336,940	Mar. 16	1832	478	34	1273
Buckle	R. W. Jones	334,870	Jan. 26	1923	512	34	377
Buckle and strap loop. Combined	A. Harts	336,406	Mar. 23	2070	542	34	1291
Buckle and trace-loop. Combined pad	L. W. Timmons	339,031	Mar. 30	2964	784	34	1485
Buckle for supporters	E. S. Smith	337,708	Mar. 9	1113	287	34	1132
Buckle or clasp	S. A. Chapman and D. F. Dalton	335,056	Jan. 26	2175	578	34	422
Buckle. Suspender	L. and H. A. Sanders	334,901	Jan. 26	1962	522	34	385
Buckle. Waist-belt	J. B. Laughton	334,671	Jan. 19	1665	445	34	322
Buffer and polisher	P. F. Hellerstedt	336,071	Mar. 16	1803	417	34	1227
Buggy-spring	J. J. Finney	334,856	Jan. 26	1900	508	34	375
Buggy-top support	C. N. Fay	334,763	Jan. 26	1793	477	34	354
Building and system for laying electric conductors therein	J. H. Mitchell	337,693	Mar. 9	1093	292	34	1129
Building-block. Metal-faced	A. D. Hart	334,772	Jan. 26	1803	480	34	356
Building-bracket	R. Guastavino	336,047	Feb. 9	1253	356	34	669
Building. Fire-proof	J. S. Armstrong	334,401	Jan. 12	1987	{346 347	34	246
Building material. Form of	W. P. Andrews	336,465	Feb. 16	1960	519	34	806
Building-wall	T. De Lemos and A. W. Cordes	334,694	Jan. 19	1698	453	34	327
Buildings. Construction of	R. Guastavino	336,048	Feb. 9	1253	356	34	669
Buildings. Construction of fire-proof	C. C. Gilman	338,509	Mar. 23	2309	560	34	1346
Buildings. Construction of wooden	C. C. Gilman	338,514	Mar. 23	2314	561	34	1347
Buildings. Outer wall of	E. Rubin	338,191	Mar. 16	1773	402	34	1261
Bullet	S. Miller	336,251	Feb. 16	1666	410	34	752
Bundle-carrier	A. J. Underhill, 2d	333,796	Jan. 5	419	111	34	78
Bundle-carrier	J. Kirby	337,961	Mar. 16	1456	377	34	1201
Bung	W. Taylor	336,766	Feb. 23	2303	627	34	868
Bung	C. G. Dodge, Jr	334,520	Jan. 19	1458	391	34	264
Bung and faucet-plug. Vent	H. Roemhildt	337,064	Mar. 2	267	71	34	976
Bung. Barrel	W. W. Jackson	337,169	Mar. 2	370	97	34	994
Bung for beer kegs, casks, &c	W. Nahrung	336,342	Feb. 16	1814	476	34	776
Bung-lifter	C. E. Laverty	336,486	Feb. 16	2007	526	34	811
Bung-pan	F. R. and G. W. Tibbitts	337,211	Mar. 2	437	114	34	1007
Bung. Venting	J. Pets	335,955	Feb. 9	1224	326	34	667
Bungs. Machine for making	E. D. Mackintosh	336,652	Feb. 23	2242	585	34	857
Bungs. Machine for making compressed	H. McLaughlin	337,971	Mar. 16	1473	382	34	1203
Buoy. Automatic signal	J. E. Church	338,388	Mar. 23	2044	536	34	1316
Burglar-alarm	W. Eckersall	334,761	Jan. 26	1791	476	34	353
Burglar-alarm	G. W. Nelson	334,888	Jan. 26	1943	517	34	381
Burglar-alarm	A. L. Sabin	337,995	Mar. 16	1518	392	34	1210
Burglar-alarm	A. W. Thomas and G. W. Way	336,449	Feb. 16	1960	{513 514	34	802
Burglar-alarm	A. C. Tonner	338,319	Mar. 23	1942	511	34	1299
Burial-casket	W. C. Armstrong	335,672	Feb. 9	818	218	34	594
Burial-caskets, furniture, &c. Plastic compound to be used in the manufacture of	T. Law	336,726	Feb. 23	2344	------	34	878
Burner: *See* Gas-burner. Vapor-burner. Lamp-burner.							
Burnishing-machine	W. G. Anthony	335,671	Feb. 9	817	218	34	594
Burnishing-tool holder	G. A. Fullerton	335,185	Feb. 2	140	36	34	466
Bush-molding machine. Bung	A. G. Anderson	335,331	Feb. 2	343	89	34	508
Bustle	A. M. Belden	334,339	Jan. 12	1195	321	34	290
Bustle	C. C. Carpenter	334,638	Jan. 19	1629	432	34	314
Bustle	R. Kelso	334,707	Jan. 19	1716	457	34	331
Bustle	K. F. Rice	335,695	Feb. 9	758	201	34	563
Bustle	W. F. Russell	336,870	Feb. 23	2527	666	34	919
Bustle	A. Stern	335,849	Feb. 9	1077	264	34	641
Butter and other materials. Treatment of rancid	C. Marchand	338,538	Mar. 23	2340	569	34	1352
Butter. Making	L. Guinnip	334,430	Jan. 19	1332	------	34	261
Butter. Making	W. A. Murray	335,064	Jan. 26	2216	------	34	430
Button	B. S. Freeman, Jr	335,808	Feb. 9	1018	269	34	630
Button	G. Felsenthal	338,055	Mar. 16	1565	413	34	1223
Button	H. R. Heath	338,409	Mar. 23	2073	543	34	1292
Button	J. S. Hovey	338,209	Mar. 23	1872	492	34	1287
Button	J. C. W. Jefferys	335,226	Feb. 2	208	53	34	476
Button	A. Nelson	337,647	Mar. 9	988	253	34	1111
Button	N. F. Palmer	336,061	Feb. 9	1371	362	34	692
Button	N. F. Palmer	336,062	Feb. 9	1372	362	34	692
Button	N. F. Palmer	336,063	Feb. 9	1372	363	34	693

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Button	N. F. Palmer	336,364	Feb. 9	1373	363	34	693
Button	I. G. Platt	334,191	Jan. 12	869	204	34	189
Button	G. W. Tome	333,794	Jan. 5	400	111	34	77
Button	A. J. Wilcox	337,223	Mar. 9	1131	288	34	1135
Button	E. P. Whitney	336,377	Mar. 23	2030	533	34	1314
Button and fastening	C. J. Brosnan	335,321	Feb. 2	179	68, 69	34	473
Button-attaching machine	W. G. Slater and J. Lamoreaux	339,004	Mar. 30	2954	781	34	1483
Button-attaching machine	S. E. Smith	336,111	Mar. 16	1667	433	34	1230
Button. Changeable	C. G. Harstrom	333,758	Jan. 5	355	96	34	66
Button. Collar	H. Bunch	337,736	Mar. 9	1140	288	34	1139
Button-fastener	G. W. Prentice	336,943	Mar. 2	84	22	34	941
Button-fastener	I. J. Saunders	333,551	Jan. 5	71	21	34	16
Button-fastener	F. A. Smith, Jr	336,167	Feb. 16	1548	408	34	789
Button-fastener	E. D. Steele	335,288	Feb. 2	432	111	34	518
Button-fastener	J. F. Thornton	335,169	Feb. 2	90	24	34	466
Button-fastener packing-case	F. H. Richards	336,568	Feb. 23	2151	568	34	849
Button-fastener packing-case	F. H. Richards	337,880	Mar. 9	885	235	34	1091
Button-fastener-setting instrument	F. H. Richards	338,854	Mar. 23	2260	594	34	1325
Button-feeding device	C. J. Brosnan	335,218	Feb. 2	168	49	34	473
Button-fly-scalloping machine	C. B. Hatfield	338,065	Mar. 23	2416	{626 627	34	1361
Button-hook	W. S. Hicks	337,833	Mar. 16	1981	331	34	1169
Button-hook and coat and hat hanger. Combined	L. B. Prahar	337,788	Mar. 9	1209	314	34	1148
Button. Lever	R. S. Cutting	337,747	Mar. 9	1159	301	34	1140
Button or glove fastener	A. Köhler	334,668	Jan. 19	1668	444	34	322
Button or stud	T. B. Cleveland	334,349	Jan. 12	1208	329	34	284
Button-setting instrument	J. Bairstow and T. E. Keavy	336,838	Feb. 23	2460	652	34	903
Button-setting instrument	T. E. Keavy	336,859	Feb. 23	2513	663	34	910
Button-setting machine	E. Pringle	338,776	Mar. 30	2597	664	34	1419
Button-setting machine	A. G. Wilkins and M. J. Bartlett	334,221	Jan. 12	1179	{215 216 217	34	227
Buttons. Making	F. A. Smith, Jr	336,955	Mar. 2	97	26, 27	34	943
Buttons. Making	J. F. Thayer	336,373	Mar. 23	2024	531	34	1313
Buttons to fabrics. Machine for securing	J. F. Thayer	337,698	Mar. 9	1094	283	34	1117
Buttons to garments. Fastening for attaching	R. J. Powell and W. F. Nolan	337,196	Mar. 2	416	109	34	1003
Buttoner and cigar-cutter combined	L. B. Prahar and C. S. Shepard	336,687	Feb. 23	2294	606	34	919
Buttoner. Combined boot and glove	F. G. L. Henderson	339,055	Mar. 30	2963	793	34	1490
Cab. Hansom	C. A. Floyd	333,845	Jan. 5	477	139	34	98
Cab. Two-wheeled	F. Bex and E. F. Heunsch	336,467	Feb. 16	1963	519	34	806
Cab-register	A. O. Jennings	334,780	Jan. 26	1812	488	34	358
Cabbage-cutting machine	G. Geyer	335,912	Feb. 9	1174	312	34	656
Cabinet	L. F. Gerbing	337,055	Mar. 2	230	61	34	986
Cabinet-stand	A. F. Gerald	335,576	Feb. 9	887	181	34	570
Cable-conduit	W. A. Wright	335,553	Feb. 2	647	{169 170	34	556
Cable-coverings. Ring for	C. Bullock	335,679	Feb. 9	896	220	34	595
Cable-grip. Roller	G. A. Polhemeus. (Reissue)	10,677	Jan. 12	1291	343	34	346
Cable or electric road. Double-track	C. Bullock	335,560	Feb. 9	698	174	34	568
Cable-road switch. Automatic	H. F. Brown and F. E. Stratton	338,823	Mar. 30	2657	{699 700	34	1430
Cable-tension device	T. W. Burt	338,387	Mar. 23	2041	538	34	1318
Cables around curves. Carrying traction	W. Phenix	337,786	Mar. 9	1207	314	34	1148
Cables. Making wire	A. J. Moxham	337,513	Mar. 9	876	223	34	1090
Cake, jumble, and snap machine	M. De Tamble. (Reissue)	10,691	Feb. 23	2569	{675 676	34	918
Calculating device	W. D. F. Jarvis	338,075	Mar. 16	1607	419	34	1228
Calculating-machine	K. Duschanek	334,419	Jan. 19	1314	{256 257	34	256
Calculating-machine	E. W. Watson	334,664	Jan. 12	789	{216 217	34	155
Calculator. Time	S. S. Streck	337,533	Mar. 9	902	230	34	1094
Calendar	M. Carey	337,478	Mar. 9	873	211	34	1088
Calendar and stand. Memorandum	A. Zumpe	337,470	Mar. 9	893	226	34	1089
Calipers	J. H. Bullard	335,740	Feb. 9	993	243	34	612
Calipers	S. Taylor	335,467	Feb. 2	554	145	34	540
Calipers and dividers	J. Stevens	337,851	Mar. 9	900	229	34	1094
Calipers and dividers. Rapidly-adjusting nut for	C. P. Fay	334,764	Jan. 26	1795	478	34	354
Calipers. Micrometer	E. S. Cobb	335,214	Feb. 2	186	50	34	474
Caloric engine	L. A. Deelen	336,998	Feb. 16	1433	378	34	710
Cam	T. Puetz, Jr	336,586	Feb. 16	2088	542	34	821
Camera-shutter	A. E. Rinehart	338,788	Mar. 30	2608	686	34	1480
Camera-stands, school-desks, &c. Adjustable attachment for	F. Shepherd	337,876	Mar. 16	1336	346	34	1179
Camp-chair	G. Pletze	337,715	Mar. 9	1121	289	34	1133
Camping-chest	C. B. Rice	336,347	Feb. 16	1819	{477 478	34	776
Can: *See* Liquid-can. Paint-can. Metal can. Sheet-metal can. Oil-can.							
Can	D. C. Morey, Jr	338,438	Mar. 23	2109	538	34	1298
Can	C. H. Shaffer	336,078	Feb. 9	1391	366	34	696
Can bodies. Machine for jointing and seaming tin	C. M. Symonds	338,887	Mar. 30	2752	{723 724 725	34	1447
Can-counting machine	E. Norton	334,273	Jan. 12	1119	300	34	215
Can-delivering device. Automatic	E. Norton	334,274	Jan. 12	1119	300	34	215
Can fastener. Fruit	G. W. Coddington	336,796	Feb. 23	2432	639	34	895
Can-handle	F. W. Coleman	338,689	Mar. 23	2310	604	34	872
Can-opener	C. F. Leopold	333,764	Jan. 5	366	100	34	69
Can-opener	B. S. Wakeman	338,811	Mar. 16	1795	468	34	1265
Can-opener	T. R. and F. K. Way and J. H. Clarke	337,719	Mar. 9	1127	290	34	1134
Can or box	F. E. De Jean	336,094	Feb. 16	1434	379	34	710

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Candle-holder	B. M. O'Boylan	336,089	Mar. 16	1651	429	34	1237
Candle-holder. Barbed	A. Grafke	336,584	Mar. 23	2316	606	34	1964
Candlestick	M. A. Greeley	333,517	Jan. 5	81	8	34	8
Candy. Apparatus for cooling and heating	T. Burkhard, Jr	337,308	Mar. 9	570	150	34	1031
Candy-crimping machine	P. B. Laskey	337,509	Mar. 9	871	221	34	1089
Candy-manufacturing machine	G. S. Collum	336,839	Feb. 23	2492	656	34	906
Candy, &c. Mixing and heating and cooling kettle for	T. Burkhard	336,563	Mar. 23	2300	602	34	1361
Cane-juice defecator	L. F. Haubtman	335,252	Feb. 2	375	97, 98	34	508
Cane-mill	J. T. Webb	335,883	Feb. 9	1099	288	34	642
Cane, umbrella, and hat rack. Combined	A. Frank	333,741	Jan. 5	341	92	34	64
Canvas-stretcher. Keyless	J. L. Rawbone	335,460	Feb. 2	544	143	34	558
Cap	A. Ward	336,008	Mar. 16	1523	394	34	1219
Cap. Traveling	T. R. Carskadon	336,033	Mar. 16	1562	405	34	1219
Cape and jacket. Combined	B. Levy	336,194	Feb. 16	1471	388	34	717
Capsule-filling machine	J. Krehbiel	336,010	Feb. 9	1200	346	34	680
Capsule-joining machine	W. A. Tucker	336,177	Feb. 16	1563	411, 419	34	731
Capsule-machine	J. Krehbiel	334,940	Jan. 12	1063	288	34	305
Capsule-machine	T. C. Mers	334,792	Jan. 26	1827	467	34	360
Capsules. Process of making gelatine	J. Krehbiel	336,754	Mar. 30	2563	677	34	1414
Car-brake	G. F. Card	334,687	Jan. 19	1680	431, 432	34	313
Car-brake	J. P. Champion	336,090	Feb. 16	1430	378	34	709
Car-brake	P. A. Gambaro	336,911	Mar. 9	41	11, 12	34	984
Car-brake	J. J. and J. Harkins	337,579	Mar. 9	956	245	34	1104
Car-brake	G. T. Horton	335,821	Feb. 2	603	157	34	548
Car-brake	D. C. Knowlton and J. E. Harris	336,190	Feb. 16	1467	387	34	716
Car-brake	W. H. Masterman	333,674	Jan. 5	516	141	34	96
Car-brake	M. J. Moriarty	336,363	Mar. 23	1892	497	34	1200
Car-brake	F. H. D. Newhard	335,378	Feb. 2	409	105	34	515
Car-brake	F. H. D. Newhard	335,379	Feb. 2	411	105, 106	34	515
Car-brake	F. H. D. Newhard	335,380	Feb. 2	412	106	34	515
Car-brake	B. L. Randall	337,616	Mar. 9	1000	257	34	1113
Car-brake	W. B. Turner	336,098	Feb. 9	1319	349, 350	34	683
Car brake and starter	J. F. Morell	337,278	Mar. 2	535	140	34	1025
Car-brake. Automatic	F. H. D. Newhard	335,377	Feb. 2	408	104, 105	34	514
Car brake. Steam	I. P. Carnes	338,039	Mar. 16	1561	404	34	1219
Car-coupling	J. A. Alexander	338,014	Mar. 16	1535	398	34	1214
Car-coupling	N. Bagby	334,410	Jan. 19	1305	353	34	256
Car-coupling	C. M. Baldwin	336,466	Feb. 16	1992	519	34	806
Car-coupling	J. C. Ballentine	335,875	Feb. 9	1109	288	34	647
Car-coupling	C. O. and L. Barnes, Sr	335,675	Feb. 9	893	219	34	594
Car-coupling	C. O. and L. Barnes, Sr	337,650	Mar. 9	1041	267	34	1120
Car-coupling	I. H. Bradshaw	338,821	Mar. 30	2654	699	34	1430
Car-coupling	N. H. Broun	336,791	Feb. 23	2427	639	34	894
Car-coupling	G. W. Brown and J. E. Wilson	338,135	Mar. 16	1696	441	34	1246
Car-coupling	J. W. Cole	338,928	Mar. 30	2668	702	34	1432
Car-coupling	R. Coon, J. H. Hedges, and W. M. Bernard.	336,091	Feb. 16	1431	378	34	709
Car-coupling	N. P. Cowell and J. W. Pinkham	335,992	Feb. 9	1272	337	34	674
Car-coupling	R. A. Cowell	335,993	Feb. 9	1273	337	34	675
Car-coupling	W. C. Cowen	334,751	Jan. 26	1779	473	34	351
Car-coupling	J. Darling	338,041	Mar. 16	1569	407, 408, 409	34	1221
Car-coupling	M. Dill	334,356	Jan. 12	1233	331	34	236
Car-coupling	F. N. Eddleman	337,923	Mar. 16	1967	528	34	1166
Car-coupling	J. C. Fowler	338,635	Mar. 23	2378	625	34	1374
Car-coupling	A. N., Jr., and A. L. Gabel	337,257	Mar. 2	501	131	34	1019
Car-coupling	C. and S. Good	335,759	Feb. 9	939	247	34	615
Car-coupling	D. U. Graveline	333,850	Jan. 5	484	131	34	90
Car-coupling	D. B. Gray	338,149	Mar. 16	1712	446	34	1249
Car-coupling	C. Halpin	336,906	Feb. 23	2446	642	34	897
Car-coupling	J. T. Hammick	338,405	Mar. 23	2068	542	34	1321
Car-coupling	J. H. Harrington	337,150	Mar. 2	358	93	34	992
Car-coupling	D. M. Harris	334,169	Jan. 19	948	256, 257	34	183
Car-coupling	R. F. Haught and J. J. Fiaher	338,965	Mar. 30	2649	751	34	1466
Car-coupling	N. W. Hawkenson	334,863	Jan. 26	1917	510	34	376
Car-coupling	J. Henze, Jr	338,968	Mar. 30	2652	752, 753	34	1467
Car-coupling	C. M. Ingersoll	336,322	Feb. 16	1795	467	34	770
Car-coupling	C. Keeler	337,956	Mar. 16	1453	377	34	1200
Car-coupling	L. B. Kenney	334,368	Jan. 19	1263	341	34	242
Car-coupling	J. J. Largent	337,508	Mar. 9	870	221	34	1068
Car-coupling	C. M. Littleton	337,586	Mar. 9	978	251	34	1109
Car-coupling	J. W. Marden and R. H. Littlefield	335,944	Feb. 9	1213	322	34	665
Car-coupling	C. E. Mark. (Reissue)	10,702	Mar. 23	9456	648	34	1366
Car-coupling	E. L. Matteson	334,962	Jan. 26	2039	544	34	398
Car-coupling	J. C. F. McCauley	337,647	Mar. 16	1297	337	34	1171
Car-coupling	C. W. Mills	336,423	Feb. 16	1920	503	34	796
Car-coupling	J. F. Moorman	335,611	Feb. 9	737	196	34	579
Car-coupling	C. L. Mueller	337,780	Mar. 9	1201	312	34	1147
Car-coupling	J. A. Murray	338,110	Mar. 30	3074	813	34	1508
Car-coupling	L. T. Nichols	339,071	Mar. 30	3013	796	34	1498
Car-coupling	J. O'Riordan	335,341	Feb. 2	413	106	34	516
Car-coupling	D. O'Rourke	338,736	Feb. 23	2254	616	34	960
Car-coupling	M. Pettet	338,259	Feb. 16	1696	442	34	753
Car-coupling	M. Pettet and S. Noxon	338,260	Feb. 16	1699	443	34	754
Car-coupling	R. Powell	334,804	Jan. 26	1843	491	34	364

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Car-coupling	W. Powell	336,207	Mar. 23	1910	503	34	1294
Car-coupling	J. D. Ripson	336,330	Feb. 16	2065	542, 543	34	881
Car-coupling	F. E. Rousseau, H. B. Goodale, and M. Côté.	336,950	Mar. 2	91	25	34	943
Car-coupling	E. G. Sessions	338,107	Mar. 16	1664	433	34	1239
Car-coupling	J. Shenk	337,449	Mar. 9	795	203	34	1076
Car-coupling	Z. B. Shropshire and A. J. Berryhill	338,108	Mar. 16	1665	433	34	1239
Car-coupling	J. A. Storms and T. A. Arnold	336,871	Feb. 23	2288	607	34	919
Car-coupling	J. A. Turley	338,675	Feb. 23	2544	670	34	915
Car-coupling	G. M. Veteto	337,606	Mar. 2	965	75	34	979
Car-coupling	C. H. and G. D. Westover	337,540	Mar. 9	910	238	34	1096
Car-coupling	J. H. Williams	334,501	Jan. 19	1431	385	34	279
Car-coupling	J. T. Wilson	336,778	Feb. 23	2412	634	34	891
Car-coupling	S. C. Wilson	339,129	Mar. 30	3088	817	34	1505
Car-coupling	F. Windler	333,966	Jan. 5	671	184	34	126
Car-coupling	F. Windler	336,029	Feb. 9	1295	350	34	684
Car-cover	W. H. Price	335,718	Feb. 9	889	234	34	606
Car cover. Railway	G. P. Good and R. B. Collier	337,831	Mar. 16	1277	331	34	1168
Car-door	E. Y. Moore	334,459	Jan. 19	1357	368	34	208
Car-door	H. C. Williamson and F. Price	335,169	Feb. 2	104	27, 28	34	460
Car-door cleat or fastener. Railway	J. B. Robinson	335,092	Jan. 26	2238	591	34	432
Car-door fastener	G. W. Cushing	337,920	Mar. 16	1406	365	34	1192
Car-door fastener	F. P. Hanchett	336,519	Mar. 23	2219	582	34	1348
Car door. Freight	P. Brown	335,980	Feb. 9	1260	326	34	674
Car-door lock	R. C. Schenck, Jr	335,778	Feb. 9	961	260	34	623
Car-door lock. Freight	A. B. Barnard	334,840	Jan. 26	1886	502	34	371
Car-door retainer	A. Roelofs	336,019	Feb. 9	1309	347	34	681
Car draw-bar	J. W. Cole	338,929	Mar. 30	2660	709	34	1433
Car. Dumping	G. E. Blaine	335,885	Feb. 9	1136	300, 301, 302	34	651
Car. Dumping	S. D. King	336,119	Feb. 16	1466	386	34	716
Car. Freight	J. R. Gathright	337,898	Mar. 16	1271	330	34	1167
Car furniture. Railway	R. F. Handy	333,853	Jan. 5	489	132	34	91
Car. Motor	R. N. Allen	337,109	Mar. 2	302	79	34	962
Car motor and brake	J. F. Morell and D. Goff	336,642	Mar. 23	2383	628	34	1376
Car. Passenger	B. Price	335,770	Feb. 9	909	256, 257	34	620
Car. Railway	R. H. Wyman	337,106	Mar. 2	296	78	34	961
Car-seat arm	J. Denver	334,756	Jan. 26	1785	474	34	352
Car-seat recorder	J. K. Bywaters and J. G. Burke	337,305	Mar. 2	572	151	34	1032
Car-seat. Reversible	J. Lemman	334,957	Jan. 26	2032	543	34	397
Car-seats. Means for securing satchels, bags, &c., to	A. C. Kimber	338,846	Mar. 30	2667	708	34	1437
Car. Self-loading dumping	A. J. Reynolds	335,692	Feb. 9	753	201	34	582
Car. Sleeping	G. Leve. (Reissue)	10,708	Mar. 30	3091	817	34	1506
Car-spring	R. Voce	333,988	Jan. 5	665	182	34	125
Car-starter	C. F. Dodge	334,111	Jan. 12	858	236	34	166
Car-starter	G. B. Haines	336,239	Feb. 16	1654	432	34	747
Car-starter	W. H. Johnson	336,992	Mar. 2	55	15	34	936
Car-starter	A. M. Müller and J. S. Räter	335,479	Feb. 2	530	139	34	536
Car starter and brake	J. C. Elliott	335,217	Feb. 2	191	51	34	474
Car-step	F. E. Elliott	338,048	Mar. 16	1577	411	34	1232
Car. Stock	G. D. Burton	335,109	Feb. 2	12	4	34	443
Car. Stock	G. D. Burton	337,940	Mar. 2	478	126	34	1014
Car. Stock	C. L. Gorrell	333,747	Jan. 5	349	94, 95	34	65
Car. Stock	G. Grossman	337,323	Mar. 2	506	156, 157	34	1036
Car. Stock	H. C. Hicks	338,741	Mar. 30	2546	672, 673	34	1410
Car. Stock	H. C. Hicks	338,742	Mar 30	2548	673	34	1411
Car. Stock	B. C. Hicks	338,743	Mar. 30	2549	673	34	1411
Car. Stock	J. W. Street	336,872	Feb. 23	2530	667, 668	34	912
Car. Stock	J. H. Wickes	336,776	Feb. 23	2409	633	34	891
Car. Street	A. V. Lee	334,591	Jan. 19	1553	415	34	301
Car. Street	B. M. Rawlings and C. A. Williamson.	337,617	Mar. 9	1001	257	34	1113
Car-truck	G. M. Brill	339,041	Mar. 30	2975	787	34	1487
Car-truck	G. M. Brill and J. Rawle	339,040	Mar. 30	2973	787	34	1486
Car ventilator. Railway	A. B. Harris	335,448	Feb. 2	509	131	34	531
Car-wheel	S. Jacobs	336,050	Feb. 9	1357	359	34	690
Car-wheel lathe	J. R. Williams	334,892	Jan. 26	1875	499	34	369
Car-wheel lubricator	P. F. White	336,461	Feb. 16	1977	518	34	805
Car-wheel. Self-lubricating	O. Barker	338,694	Mar. 30	2468	651	34	1397
Car-wheel-truing machine	M. E. Dayton	334,647	Jan. 19	1633	435, 436, 437	34	316
Car-wheels. Machine for rolling	T. W. Bean	337,230	Mar. 2	465	121	34	1012
Car-window	J. M. Fennerty	333,620	Jan. 5	161	43, 44	34	32
Cars. Apparatus for indicating the load on railway	D. H. Warren	336,457	Feb. 16	1972	517	34	804
Cars. Automatic brake for railway	H. K. Whitmer	338,213	Mar. 16	1796	469	34	1265
Cars. Device for controlling the motive power and brakes of power-driven	E. Samuel	336,751	Feb. 23	2373	621, 622	34	883
Cars. Device for moving	E. P. Weaver	338,609	Feb. 23	2175	568	34	846
Cars. Dust-guard for railway	J. C. Slafter and A. C. Clausen	337,999	Mar. 16	1519	393	34	1211
Cars. Fanning device for railway	R. W. Macgowan	333,767	Jan. 5	371	101	34	70
Cars. Lamp-door latch for	J. Stephenson	336,170	Feb. 16	1551	409	34	729
Cars. Street-indicator for	T. Beaver and W. G. Jewitt	334,231	Jan. 12	1194	321	34	200
Cars. Track-sanding apparatus for street	W. T. Butler	336,891	Mar. 2	9	3	34	926
Cars. Ventilating	C. E. Lucas	338,850	Mar. 30	2692	709	34	1436
Cars. Wash-bowl and pump for sleeping	H. C. Hart	335,923	Feb. 9	1185	315	34	660

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Cars with gas. Apparatus for heating railway	J. Pintsch	336,565	Feb. 23	2141	561	34	841
					562		
Carbon from hydrocarbon vapor. Apparatus for producing hard	J. J. McTighe	336,695	Mar. 23	2390	610	34	1367
Carbon. Manufacture of hard	J. J. McTighe	336,548	Mar. 23	2346	590	34	1353
Carbons. Apparatus for treating	E. Weston	334,146	Jan. 12	906	248	34	176
Carbonizing-mold	T. A. Edison	334,853	Jan. 26	1904	507	34	374
Carbureting attachment for gas-fixtures	J. Kidd	333,669	Jan. 5	498	136	34	98
Carbureting-lamp	J. E. Dery	334,651	Jan. 26	1898	506	34	378
Carburetor	A. J. English	333,508	Jan. 5	17	6	34	6
Card-cutting machine	W. A. Kelsey	337,270	Mar. 2	519	135	34	1022
Card for business and other purposes. Wooden	R. B. Hough	335,703	Feb. 9	868	239	34	602
Card or sheet transferring apparatus	T. M. Kenney	335,204	Feb. 2	165	42	34	471
Card. Playing	G. M. Endicott	337,755	Mar. 9	1168	304	34	1142
Card. Playing	E. J. Levey	339,066	Mar. 30	3007	795	34	1492
Cards, &c. Ornamentation of	P. Hake and F. Oechali	338,975	Mar. 30	2840	749	34	1465
Carding-engine	C. L. Harmon	339,097	Mar. 30	3056	809	34	1500
Carding-engine	E. A. Leigh	335,760	Feb. 9	948	250	34	617
					251		
Carding-machine	E. A. Leigh	335,761	Feb. 9	953	251	34	618
					252		
					253		
Carding-machine	W. H. Rankin	336,567	Feb. 23	2146	564	34	841
Carding-machine feeding mechanism	J. T. Lemaire	333,869	Jan. 5	500	139	34	95
Carding-machines. Mote and dirt collecting attachment for	S. D. Keene	334,872	Jan. 26	1926	513	34	378
Carpet-cleaning reel	S. J. Miller and M. J. McKenna	336,936	Mar. 2	71	19	34	939
Carpet-cover	F. Sanderson	336,951	Mar. 2	92	25	34	943
Carpet-fastener	D. Bingham	336,381	Feb. 16	1863	498	34	785
Carpet-fastener	F. C. Hellmuth	334,170	Jan. 12	949	257	34	183
Carpet-fastener	E. and E. Hobneck	335,925	Feb. 9	1178	316	34	660
Carpet-stretcher	M. A. Higgins	335,356	Feb. 2	380	99	34	509
Carpet-stretcher	R. R. Jones	334,665	Jan. 19	1660	443	34	321
Carpet-stretcher	J. H. Keller and T. Wiley	334,174	Jan. 12	953	258	34	184
					259		
Carpet-sweeper	M. R. Bissell and W. J. Drew	335,010	Jan. 26	2105	560	34	410
					561		
Carpet-sweeper	J. Hinkley. (Reissue)	10,701	Mar. 23	2455	647	34	1368
Carpet-sweeping machine	C. L. Travis	337,266	Mar. 2	546	144	34	1027
Carpets, &c. Fastening for	D. M. and J. E. Smyth	334,138	Jan. 12	894	244	34	174
Carriage	J. Burke	335,741	Feb. 9	924	243	34	613
Carriage. Baby	G. A. Ellis	336,308	Feb. 16	1753	461	34	765
Carriage. Baby	J. W. Griffin	334,372	Jan. 12	1248	326	34	230
Carriage. Baby	R. Helm	336,171	Mar. 16	1741	455	34	1254
Carriage. Baby	C. Lyne	337,343	Mar. 2	617	162	34	1040
					163		
Carriage. Baby	J. R. Moore	334,030	Jan. 12	738	201	34	145
Carriage-body	J. Delahunty	337,229	Mar. 2	495	129	34	1017
Carriage-bow socket	J. M. Perkins	337,614	Mar. 9	996	256	34	1112
Carriage-canopy	C. B. Haynes	334,584	Jan. 19	1544	413	34	300
Carriage. Child's	U. McClinchie and J. F. Butler	336,996	Mar. 30	2906	770	34	1476
Carriage. Child's	L. G. Spencer	338,798	Mar. 30	3021	690	34	1494
					691		
Carriage-curtain fastener	W. Leonhardt	337,843	Mar. 16	1293	345	34	1171
Carriage-curtain fastening	J. M. Baker	333,811	Jan. 5	429	117	34	81
Carriage-curtain fastening	J. G. English	337,140	Mar. 2	346	90	34	989
Carriage-jack	P. J. Abbott	333,807	Jan. 5	494	115	34	80
Carriage running-gear	G. W. Simmons	335,999	Feb. 9	1243	330	34	670
Carriage-seats. Detachable back for	H. Mankel, Jr	338,537	Mar. 23	2239	588	34	1351
Carriage-spring	J. Allen	336,464	Feb. 16	1980	519	34	808
Carriage-spring	H. W. Moore	336,131	Feb. 16	1490	391	34	790
Carriage-spring	R. B. Williams	336,971	Mar. 2	116	33	34	947
Carriage-standard	H. Biggs	336,655	Mar. 23	2400	632	34	1379
Carriage-step and receiver for garbage and other refuse. Combined	F. W. Carlin	338,825	Mar. 30	3063	700	34	1432
					701		
Carriage-top	S. M. Chester	335,496	Feb. 2	473	122	34	526
Carriage-top	O. C. Coggins	337,226	Mar. 16	1404	364	34	1198
Carriage-top	R. E. Earl	335,801	Feb. 9	1014	268	34	629
Carriage-top	J. B. Pettibone	335,841	Feb. 9	1064	281	34	639
Carriage-top prop	L. E. McKinnon	338,981	Mar. 23	1800	497	34	1290
Carriages. Parasol-holder for children's	R. Ward	336,363	Feb. 16	1841	483	34	781
Carriages. Umbrella for children's	J. Wright	336,879	Feb. 23	2549	671	34	916
Carrier: *See* Bundle-carrier. Straw-carrier. Cash-carrier. Trace-carrier. Hay-carrier.							
Cart. Dumping	B. McGregor	337,011	Mar. 2	178	47	34	957
Cart. Dumping	F. Storck	338,809	Mar. 30	2937	692	34	1425
Cart. Dumping	J. D. Wilson	336,973	Mar. 2	190	33	34	947
Cart. Road	H. F. Clark	333,728	Jan. 5	321	88	34	60
Cartridge	J. Maloney	334,449	Jan. 19	1354	367	34	265
Cartridge capper and decapper	A. Jullien	337,771	Mar. 9	1188	.....	34	1145
Cartridge-cases. Making blanks for the bottoms of	S. McNeill	335,981	Feb. 2	211	55	34	477
Cartridge decapper, recapper, and reloader	J. Deeley, Jr	335,091	Jan. 26	2121	565	34	414
Cartridge-extractor for breakdown guns	O. F. Belcher	336,669	Feb. 23	2301	601	34	870
					602		
Cartridge-loading machine	F. L. Chamberlin	336,284	Feb. 16	1886	489	34	786
					490		
Cartridge-loading machine	L. H. Van Syckle	336,676	Feb. 23	2282	596	34	866
					597		
Cartridge-loading machines. Wad-feed attachment for	O. F. Belcher	337,117	Mar. 2	313	82	34	984
Cartridge-shell-crimping device	O. F. Belcher	333,569	Jan. 5	125	34	34	96
Carving-fork	L. B. Bethell	334,841	Jan. 26	1887	508	34	371

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Carving-machine	J. Davis	336,006	Feb. 16	1438	379	34	711
Case: *See* Button-fastener packing-case. Needle-case. Pen and pencil case. Dressing-case. Ticket-case. Honey-box case. Trace-case. Map and window-shade case. Type-case. Watch-case. Measure-case. Writing-case.							
Case for embroidery-silks	J. V. B. Hoyle	334,704	Jan. 19	1712	456	34	331
Cash and parcel car. Electric	G. F. Green	338,150	Mar. 16	1712	446	34	1949
					447		
Cash and parcel carrier for store-service	E. I. Blount and C. A. Kimpton	337,809	Mar. 16	1949	394	34	1163
Cash and parcel transfer system. Electric	G. F. Green	338,294	Mar. 16	1812	473	34	1998
					474		
Cash and parcel transfer system. Electric	G. F. Green	338,663	Mar. 23	2413	635	34	1361
Cash and parcel transmitting apparatus	W. H. Gilman	337,830	Mar. 16	1974	330	34	1168
Cash and parcel transmitting apparatus for store-service	E. I. Blount, C. A. Kimpton, and W. H. Gilman.	337,808	Mar. 16	1946	393	34	1163
					394		
Cash and parcel transmitting apparatus for store-service	N. W. Stearns and C. Grant, Jr	338,369	Mar. 23	2016	530	34	1312
Cash-box. Self-registering	T. Carney	334,347	Jan. 12	1220	328	34	234
					329		
Cash-carrier	J. C. Martin	334,509	Jan. 19	1562	417	34	308
Cash-carrier-propelling mechanism	F. E. Fisher	334,649	Jan. 19	1639	436	34	317
Cash-indicator and check-receiver. Alarm	C. E. Baldwin	337,915	Mar. 16	1367	360	34	1188
Cask. Beer	W. Heiser	337,401	Mar. 9	696	182	34	1061
Casks or barrels. Machine for cleaning	W. O. Taylor	334,498	Jan. 19	1418	369	34	277
Casks. Safety-valve for beer	J. C. Schaefer and J. A. Hagmayer	337,692	Mar. 9	1006	256	34	1114
Casks. Valve attachment for wine	T. S. Glaister	335,751	Feb. 9	938	247	34	615
Cast wheel, pulley, &c	M. D. Loomis	334,178	Jan. 12	960	260	34	185
Caster	A. C. Frankel	338,636	Mar. 23	2374	625	34	1375
Caster	G. M. Patten	335,301	Feb. 2	300	80	34	495
Caster. Furniture	F. M. Lechner	338,985	Mar. 30	2884	763	34	1471
Caster. Trunk	P. C. Biersach	335,567	Feb. 9	656	173	34	585
Caster. Trunk	A. V. Romadka	335,148	Feb. 2	68	18	34	453
Caster. Trunk	A. V. Romadka	335,149	Feb. 2	69	19	34	453
Casting box. Stereotype	E. E. Pratt and C. S. Partridge	334,048	Jan. 12	768	210	34	151
Casting hearth-plate catches and grate-hooks. Catch for	C. Vetter	338,210	Mar. 16	1794	468	34	1265
Casting metal ingots	J. H. Dalliba and F. Billings	333,929	Jan. 5	594	162	34	111
Casting mold. Type	C. Hochstadt	335,463	Feb. 16	2004	525	34	810
Casting solder-joints. Mold for	A. Cunningham	337,562	Mar. 9	937	240	34	1101
Casting stench-traps. Mold for	E. H. Murdock	334,033	Jan. 12	740	202	34	146
Castings. Manufacturing flanged	J. Sullivan	334,821	Jan. 26	1863	496	34	367
Ceiling. Fire-proof	C. C. Gilman	337,329	Mar. 16	1273	330	34	1167
Ceiling. Fire-proof	C. Toope	334,996	Jan. 26	2063	556	34	400
Center-board for vessels	W. Welch	336,365	Feb. 16	1844	484	34	781
Centering-tool	C. A. Singer	335,845	Feb. 9	1069	282	34	640
					283		
Centrifugal machine	G. Fletcher	335,690	Feb. 9	844	223	34	598
Centrifugal machine	J. Laidlaw	337,166	Mar. 2	390	99	34	996
Centrifugal power. Continuous apparatus operated by	A. J. A. Dumonlin	336,393	Mar. 23	2055	539	34	1318
Centrifugal reel	H. E. Beerling	338,466	Mar. 23	2150	562	34	1336
Centrifugal reel	E. E. Draver. (Reissue)	10,696	Mar. 9	1234	320	34	1154
					321		
Cesspool and catch-basin	A. Staples	336,801	Mar. 30	2936	691	34	1425
Chain-clasp	C. Schlag	335,247	Feb. 2	229	60	34	481
Chain. Drive	C. E. Alden	336,779	Feb. 23	2413	634	34	891
Chain. Drive	J. A. Jeffrey	336,921	Mar. 2	54	14	34	936
Chain. Drive	C. W. Miller	339,003	Mar. 30	2923	774	34	1478
Chain. Drive	W. N. Whiteley	333,803	Jan. 5	490	113	34	79
Chain. Drive	W. N. Whiteley	333,804	Jan. 5	491	114	34	79
Chain-machine	V. Röper	336,106	Mar. 16	1663	432	34	1239
Chains. Manufacture of weldless	A. O. David	335,899	Feb. 9	1158	307	34	655
					308		
Chair: *See* Adjustable chair. Nursery-chair. Camp-chair. Rail-chair. Child's chair. Reclining-chair. Convertible chair. Rocking-chair. Dentist's chair. Spring-chair. Folding chair. Window-cleaning chair. Invalid-chair.							
Chair	J. W. Price	334,087	Jan. 12	893	225	34	161
Chair	H. C. Weeden	336,885	Mar. 30	2766	728	34	1449
Chair seat and back	F. Latulip	335,461	Feb. 2	519	135	34	534
Chair. Dress	J. Penley	337,016	Mar. 2	185	49	34	958
Charts. Portfolio or case for anatomical	L. W. Yaggy	337,544	Mar. 9	914	234	34	1097
Check-bar for bridles	H. Lowe	335,465	Feb. 2	528	137	34	535
Check for bridles. Overdraw	J. W. Whittie	333,561	Jan. 5	115	31	34	24
Check-hook	J. Darling	337,563	Mar. 9	938	240	34	1101
Check-rein hook	J. A. Gorly	334,709	Jan. 26	1800	479	34	356
Check-rein hook	H. D. McKinney	333,880	Jan. 5	562	142	34	98
Check-row wire. Machine for making	E. P. Peacock	337,430	Mar. 9	752	193	34	1070
					194		
					195		
					196		
Check-rower	J. C. Butler	337,301	Mar. 2	568	150	34	1031
Check-rower and corn-planter	J. W. Beffington	334,846	Jan. 26	1892	504	34	372
Cheese-cutter	E. L. Liedke	338,533	Mar. 23	2224	598	34	1351
Chenille	J. Frelloehr	336,515	Feb. 16	2049	536	34	817
Chenille ornament	C. A. Schmidt	335,315	Feb. 2	321	84	34	499

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Chest: *See* Camping-chest.							
Chicken-house	R. Benfley	336,379	Feb. 16	1861	488	34	786
Child's chair	F. A. Parker	336,942	Mar. 2	82	22	34	941
Chimney. Adjustable	J. D. Jillson	334,587	Jan. 19	1548	414	34	300
Chimney-cap	T. Edwards	336,707	Feb. 23	2318	607	34	873
Chimney-cap and ventilator	W. J. and C. Kayser	335,302	Feb. 2	387	100	34	511
Chimney-cowl	H. F. Seidel	337,023	Mar. 2	195	51	34	961
Chimney-top	C. W. Carll	338,249	Mar. 23	1849	486	34	1283
Chimneys on burners. Device for holding and locking	J. R. Bowers	334,161	Jan. 12	939	254	34	181
Chip-breaker	A. C. Dumontier and A. Plourde	336,845	Feb. 23	2499	656	34	907
Chisel-bar for scraping soda-kettles, &c	J. Evers	337,488	Mar. 9	844	214	34	1064
Chocolate. Ferrated cake of	E. A. Parnell	335,959	Feb. 9	1221	.....	34	666
Chopper: *See* Cotton-chopper.							
Christmas-trees with or without accompaniment of music. Mechanism for turning	J. C. Eckardt	333,617	Jan. 5	157	42, 43	34	31
Chuck	G. A. Barnes	335,009	Jan. 26	2103	560	34	410
Chuck	J. W. Strong	339,120	Mar. 30	3085	816	34	1505
Chuck. Brace	J. Chantrell	337,943	Mar. 2	481	127	34	1015
Chuck. Lathe	E. Pement	334,893	Jan. 26	1949	519	34	383
Chuck. Lathe	E. Pement	335,619	Feb. 9	746	199	34	581
Chuck. Lathe	J. H. Westcott	335,962	Feb. 9	1261	334	34	673
Chucks. Bushing for rock-drill	J. E. Denton	336,397	Feb. 16	1887	494	34	790
Churn	H. F. Brammer and E. H. Schmidt	335,739	Feb. 9	923	243	34	613
Churn	L. D. Bunce	337,238	Mar. 2	474	124, 125	34	1013
Churn	G. Brush	338,136	Mar. 16	1697	442	34	1946
Churn	W. W. Delano, Jr	336,217	Feb. 16	1634	427	34	743
Churn	A. Farley	335,802	Feb. 9	1016	269	34	630
Churn	J. H. Gerken	337,573	Mar. 9	950	243	34	1103
Churn	T. H. Hester	334,586	Jan. 19	1547	414	34	300
Churn	G. W. Hinman	333,629	Jan. 5	170	46	34	33
Churn	J. Hultz	338,179	Mar. 16	1742	455	34	1955
Churn	W. Jarrell	334,229	Jan. 12	1046	278	34	202
Churn	R. Lucas and W. Dootson	336,011	Feb. 9	1301	346	34	660
Churn	T. E. Macy	338,980	Mar. 23	1890	497	34	1290
Churn	J. W. Persohn	334,730	Jan. 19	1735	462, 463	34	835
Churn	C. H. Robison	338,786	Mar. 30	2607	687	34	1421
Churn	C. Schifferly	337,440	Mar. 9	782	199	34	1074
Churn	J. E. Shaw and J. T. Simpson	336,354	Feb. 16	1829	480	34	779
Churn	J. H. Weber	337,006	Mar. 16	1525	396	34	1213
Churn	N. S. Andrews and H. F. Burnap	334,924	Jan. 26	1991	530	34	390
Churn. Cream-testing	R. R. Emerson	334,522	Jan. 19	1461	392	34	284
Churn-motor	M. K. Brubaker	334,343	Jan. 12	1213	327	34	233
Cider-machine	C. Kunze	333,640	Jan. 5	187	50	34	37
Cigar-box clasp	D. E. Powers	336,432	Feb. 16	1935	507	34	799
Cigar-box	D. E. Powers	336,433	Feb. 16	1936	507	34	799
Cigar-bunch turner and perforator	C. A. Bayler and B. F. Strickler	334,687	Jan. 19	1668	451	34	326
Cigar-bunching machine	C. A. Bayler	337,781	Mar. 9	1140	295	34	1137
Cigar-cutter and match-box. Combined	C. S. Alden	334,405	Jan. 19	1298	351	34	255
Cigar-machine	J. G. Strothoff, Jr	333,976	Jan. 5	657	179	34	122
Cigar-mold	C. A. Valentin	334,492	Jan. 19	1471	382	34	277
Cigar-molding machine	S. Cohn	337,055	Mar. 9	1059	272	34	1121
Cigar-perforator	C. A. Bayler and B. F. Strickler	334,686	Jan. 19	1667	450	34	326
Cigar-rolling machine	J. W. Cameron	338,921	Mar. 30	2799	738	34	1456
Cigar-rolling table and wrapper-cutter. Combined	J. R. Williams	335,963	Feb. 2	251	66	34	485
Cigars. Machine for stamping	L. Grafhwol	337,322	Mar. 2	595	156	34	1036
Cigarette-machine. Pocket	L. L. Arnold	338,580	Mar. 23	2297	601	34	1361
Circuit-changer. Automatic	E. T. Gilliland	334,014	Jan. 12	709	185	34	140
Circuit-controller. Automatic safety	O. F. Jönsson	338,752	Mar. 30	2561	676	34	1413
Clamp: *See* Barrel-clamp. Billiard-cue clamp. Floor-clamp. Flooring and ceiling clamp. Furniture-clamp. Keying-clamp. Miter-frame clamp. Printer's form-clamp. Sucker-rod clamp. Wheelwright's clamp.							
Clamp	S. E. Nies	339,072	Mar. 30	3014	797	34	1492
Clamp	R. B. Poole	333,667	Jan. 5	221	61	34	43
Clamp for strings, &c	R. Lorenz	334,711	Jan. 19	1720	459	34	332
Clamping-bracket	T. Thorn	334,895	Jan. 26	1958	497	34	368
Clamping device. Spring	I. W. Heysinger	334,016	Jan. 12	712	196	34	141
Clamping-tool	J. R. Cummings	337,743	Mar. 9	1153	299, 300	34	1139
Clarifying extracts	A. Morand	338,431	Mar. 23	2106	.....	34	1398
Clasp: *See* Chain-clasp. Cigar-box clasp. Garment-supporting clasp. Pencil-clasp. Shoe-clasp. Spring-clasp.							
Clasp	A. Perry	337,892	Mar. 16	1315	341	34	1175
Clasp	A. Schurch	333,679	Jan. 5	241	66	34	47
Clasp for poultry, game, &c. Suspension	J. P. Schüssler, Jr., and W. Fredericks	337,019	Mar. 2	193	51	34	960
Clasp or buckle	E. S. Smith	338,792	Mar. 30	2615	680	34	1423
Cleaner: *See* Boiler-cleaner. Boiler-flue cleaner. Boiler-tube cleaner. Grain-cleaner. Knife-cleaner. Lamp chimney cleaner. Lawn cleaner. Slate-cleaner.							
Cleansing-machine	T. H. Page	334,182	Jan. 12	867	243	34	178
Clevis	H. F. Dunn	334,760	Jan. 26	1790	476	34	353

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Clevis	B. L. Jennings	336,484	Feb. 16	2005	536	34	810
Clip: *See* Hame-clip. Traveling-bag clip.							
Clip apparatus for transporting loads by means of ropes or cables.	J. P. Roe and P. R. Bedlington	338,615	Mar. 23	2344	612, 613, 614, 615, 616, 617	34	1369
Clipper. Hair	P. E. Beaudette	334,733	Jan. 26	1735	468	34	346
Clipper. Hair	S. W. Burwell	336,890	Mar. 2	9	3	34	928
Clipper. Hair	T. L. Phipps and W. Burman	335,956	Feb. 9	1227	326	34	668
Clock	W. D. Chase	337,377	Mar. 9	667	174	34	1056
Clock-case	J. G. Low	333,873	Jan. 5	515	140	34	96
Clock. Electric	J. E. Carey	334,745	Jan. 26	1769	471, 472	34	349
Clock. Electric alarm	G. H. Davis	338,935	Mar. 30	2613	742	34	1469
Clock. Electric alarm	C. Korfhage	337,067	Mar. 2	943	65	34	971
Clock-escapement	C. Becker, Sr	334,098	Jan. 12	796	218	34	176
Clock gong and bell	G. Gardner	334,012	Jan. 12	706	194	34	140
Clock movement. Electric	S. C. Dickinson	334,517	Jan. 19	1456	391	34	268
Clock-pendulum	S. Eastman	337,384	Mar. 9	676	177	34	1057
Clock. Secondary electric	V. Himmer	337,583	Mar. 9	961	246	34	1105
Clock. Self-winding electric	D. F. Sweet	337,797	Mar. 9	1221	317	34	1151
Clock. Striking	H. L. Bruggemann and C. G. Orth	337,736	Mar. 9	1146	297	34	1130
Clock. Striking	H. F. Northrop	337,784	Mar. 9	1205	313	34	1148
Clock striking mechanism	A. Fischer	336,995	Mar. 2	150	41	34	962
Clock striking mechanism	A. Fischer	336,996	Mar. 2	151	41	34	963
Clock system. Electric	F. E. Fisher	336,004	Feb. 9	1291	343, 344	34	678
Clock system. Electric	C. D. Warner	335,880	Feb. 9	1089	287, 288	34	644
Clocks. Circuit-closer for electric	C. H. Pond	338,773	Mar. 30	2593	683	34	1418
Clocks. Electric regulator for pendulum	S. Eastman	337,385	Mar. 9	677	177	34	1057
Clocks. Electro-magnetic device for winding	W. F. Sweet	334,822	Jan. 26	1864	496, 497	34	367
Clocks from a distance. Apparatus for regulating pendulum	G. W. Millard and J. H. Clarke	337,419	Mar. 9	735	189	34	1067
Clocks from a distance. Means for regulating marine	G. W. Millard and J. H. Clarke	337,418	Mar. 9	733	189	34	1066
Clocks from a distance. Means for regulating pendulum	G. W. Millard and J. H. Clarke	337,416	Mar. 9	726	188	34	1065
Clocks from a distance. Means for regulating pendulum	G. W. Millard and J. H. Clarke	337,417	Mar. 9	729	188	34	1066
Clod-crusher and harrow	J. P. Johnson	338,974	Mar. 30	2866	758	34	1469
Clod-crusher, stalk-cutter, marker, and rake. Combined	A. Hollingsworth	335,936	Feb. 9	1189	316	34	660
Cloth-cutting machine	F. L. Eschbach	335,996	Feb. 9	1262	340	34	677
Cloth-sponging machine	R. Schmitt	338,752	Feb. 23	2375	622	34	884
Clothes-drier	J. A. Bogle	334,559	Jan. 19	1515	405	34	298
Clothes-drier	J. Carr	338,923	Mar. 30	2801	739	34	1457
Clothes-drier	P. Deverell	337,566	Mar. 9	942	241	34	1102
Clothes-drier	C. Goodyer and W. Morse	334,656	Jan. 19	1646	440	34	318
Clothes-drier	H. Normandy	338,268	Mar. 23	1896	498	34	1291
Clothes-drier	R. F. Redick	334,962	Jan. 26	2006	551, 552	34	408
Clothes-fork	A. J. Sloan	338,109	Mar. 16	1666	433	34	1239
Clothes-hook	E. W. Philbrook	335,237	Feb. 2	217	57	34	479
Clothes-hook	N. Rubenstein	338,677	Mar. 23	2435	642	34	1385
Clothes-line	A. G. P. Dorsey	336,705	Feb. 23	2317	606	34	878
Clothes-line fastener	I. Kohn	338,150	Mar. 16	1726	450	34	1228
Clothes-line reel	D. W. Travis	337,799	Mar. 9	1223	318	34	1158
Clothes-line reel and house	R. F. Fowler	337,758	Mar. 9	1171	305	34	1142
Clothes-line stretching device	F. Schweizer	337,020	Mar. 2	198	51	34	960
Clothes-pin	J. K. P. Nourse	335,209	Feb. 2	298	79	34	494
Clothes-pounder	A. A. Brooks	333,916	Jan. 5	570	154	34	107
Clothes-pounder	S. C. Hill and H. D. Crocker	334,379	Jan. 12	1274	338	34	240
Clothes-rack	E. G. Hurd	335,073	Jan. 26	2200	584	34	427
Clothes-rack. Folding	T. Adams, Jr	338,011	Mar. 16	1532	397	34	1214
Clothes-washer	H. Wright	336,869	Feb. 16	1849	485	34	782
Clutch	C. S. Scott	337,021	Mar. 2	194	51	34	961
Clutch for machinery	W. Whitehead and F. W. Maguire	336,273	Feb. 16	1714	447	34	757
Clutch. Friction	W. P. Brett	335,106	Feb. 2	7	2	34	442
Clutch. Friction	J. R. Little	335,462	Feb. 9	892	137	34	525
Clutch. Friction	J. Macdonald	334,448	Jan. 19	1359	346	34	265
Clutch. Friction	W. B. Tatro	337,032	Mar. 2	204	54	34	963
Coal-bucket	J. Smith	335,949	Feb. 2	231	61	34	481
Coal-hod	A. J. Rock	335,776	Feb. 9	980	250	34	623
Coal-loading apparatus	W. G. Barnard	333,585	Jan. 5	119	33	34	25
Coal-tipple	W. W. Rosensteel	333,891	Jan. 5	533	145	34	100
Coal-tipple	W. W. Rosensteel	335,632	Feb. 9	766	203	34	584
Coat-hanger	M. R. Maxwell	337,345	Mar. 2	690	163	34	1040
Coating the inside of vessels for holding oil, &c. Composition for	L. E. and D. F. Bowker	336,085	Feb. 16	1496	.....	34	708
Cock and tap	C. M. P. Lafit	334,787	Jan. 26	1819	485	34	350
Cock box. Stop	B. C. Smith	334,137	Jan. 12	893	244	34	174
Cock. Gage	J. B. Atwood and S. H. Howes	338,215	Mar. 16	1800	469	34	1266
Cock. Gas	E. P. Irons	337,161	Mar. 2	369	97	34	994
Cockle and grain separator	J. B. Dishmaker	337,051	Mar. 2	227	60	34	967
Cockle-separating machine	C. D. Edwards	335,902	Feb. 2	1162	309	34	655
Cockle-separator	B. Cloutier	334,643	Jan. 19	1628	434	34	315
Cockle-separator	C. A. McCollom and M. Forder	336,655	Feb. 23	2251	596	34	859
Cocoons. Separating the fiber of	H. R. Randall	335,958	Feb. 9	1229	.....	34	668
Coffee-huller	J. R. Merrihew	337,691	Mar. 9	1060	281, 282	34	1128

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Dr'g.	Official Gazette. Vol.	Page.
Coffee hulling and polishing machine	J. Smout	333,788	Jan. 5	400	108	34	75
Coffee-mill	M. Lepage	333,670	Jan. 5	511	139	34	95
Coffee or peanut roaster	D. W. Hitchcock	337,403	Mar. 9	700	183	34	1061
Coffee or tea pot	J. P. Gronemeyer and J. Polster	335,070	Jan. 26	2197	564	34	426
Coffee-pot handle	A. Jahant and D. Parker	336,393	Feb. 16	1786	467	34	770
Coffee-pot percolator	S. A. Milton	335,946	Feb. 9	1215	293	34	665
Coffee-roaster	T. B. C. Burpee	334,742	Jan. 26	1765	470	34	348
Coffee-roaster	T. J. Rundel	339,114	Mar. 30	3079	815	34	1504
Coffin	W. R. Hassard	335,451	Feb. 2	506	122	34	532
Coffin	W. C. Lantner	336,416	Feb. 16	1914	502	34	795
Coffin	J. Maxwell	337,009	Mar. 2	176	46	34	957
Coffin	J. Maxwell	338,855	Mar. 30	2700	711	34	1439
Coffin	B. Morris	338,607	Mar. 23	2332	610	34	1367
Coffin	C. J. Norden	337,426	Mar. 9	748	192	34	1062
Coffin	G. Reynolds	334,806	Jan. 26	1848	499	34	364
Coffin	W. A. Sparks	335,848	Feb. 9	1075	284	34	641
Coffin	W. A. Sparks and N. Rappleyea	338,198	Mar. 16	1778	464	34	1262
Coffin	W. A. Sparks and N. Rappleyea	338,199	Mar. 16	1779	464	34	1263
Cold and manufacture of ice and apparatus therefor. Production of	A. Schmits	336,959	Mar. 2	93	25, 26	34	943
Cold-storage chamber or refrigerator	G. C. Roberts	336,949	Mar. 2	90	24	34	942
Collar	G. N. March	337,176	Mar. 2	398	108	34	999
Collar	G. K. Snow	336,957	Mar. 2	99	27	34	944
Collar and cuff	W. P. Groom	336,006	Feb. 9	1294	344	34	679
Collar fastening. Horse-	T. G. Gillespie and M. S. Cassan	334,370	Jan. 12	1246	336	34	298
Collar. Horse-	M. T. Hayes	339,096	Mar. 30	3060	810	34	1500
Collar. Horse-	W. G. Ruge and O. Everts	336,869	Feb. 23	2396	666	34	912
Collar. Horse-	P. R. Turneaure	336,964	Mar. 2	107	30	34	945
Collar or cuff	E. Kipper	334,590	Jan. 19	1552	416	34	301
Collar or cuff	E. Kipper and J. G. Jarvis	336,521	Feb. 16	2050	538	34	818
Collar pad. Horse-	A. Ortmayer	335,143	Feb. 2	62	17	34	451
Collar pad. Horse-	W. H. Osmer	335,388	Feb. 2	414	107	34	516
Colors. Manufacture of archil-red azo	C. A. Martius	334,257	Jan. 12	1100	.....	34	212
Colter. Rolling	S. W. Ball	337,295	Mar. 2	858	147	34	1020
Comb: *See* Curry-comb.							
Combination-lock	A. J. Calhoun	335,337	Feb. 2	352	91, 92	34	504
Combination-lock	J. C. Culmer	338,546	Mar. 23	2303	603	34	1362
Combination-lock	S. K. Weymouth	336,188	Feb. 16	1579	415	34	735
Combination-lock for money-drawers, &c	H. M. Sturgis	338,205	Mar. 16	1785	466	34	1264
Comminuted substances. Method of and apparatus for manipulating	A. Morand	338,490	Mar. 23	2103	551	34	1327
Compass attachment for maps	J. Adler	336,893	Mar. 2	1	1	34	927
Compass. Mariner's signal	B. Arnold	338,160	Mar. 16	1727	451	34	1252
Compass. Mariner's signal	C. Frecker	338,259	Mar. 23	1850	489	34	1285
Composing-stick	H. Seger	339,076	Mar. 30	3020	798	34	1494
Composing-stick	W. H. Donaldson	333,507	Jan. 5	15	5, 6	34	6
Compound engine	A. Fletcher	336,306	Feb. 16	1767	462	34	766
Condenser	H. Lees	333,763	Jan. 5	367	100	34	69
Condenser. Steam-engine	J. P. Measer	335,608	Feb. 9	732	195	34	579
Conduits. Cleaning out	H. M. Montgomery	337,072	Mar. 2	949	66	34	972
Connecting-pin. Expansible	L. H. Nash	334,096	Jan. 12	745	204	34	147
Connecting-rod. Bearing-pin	L. H. Nash	334,085	Jan. 12	743	203	34	146
Connecting-rod for pistons, &c	J. H. Rohme	336,350	Feb. 16	1823	479	34	778
Controlling mechanism for power-driven machinery	W. M. Murdock	335,613	Feb. 9	739	197	34	580
Converter	C. M. Hamilton	335,283	Feb. 2	379	74	34	490
Convertible chair	J. W. Kenna	338,231	Mar. 16	1831	476	34	1270
Convertible chair	J. W. Kenna	338,238	Mar. 16	1832	476	34	1270
Convertible chair	J. B. Ross	333,892	Jan. 5	535	{145 146	34	100
Convertible chair	A. P. Yarnall	335,410	Feb. 2	453	117	34	532
Conveyer apparatus	G. C. Blickensderfer	338,703	Mar. 30	2482	{655 656	34	1399
Conveyer apparatus	G. C. Blickensderfer	338,704	Mar. 30	2484	656	34	1400
Conveyer apparatus	G. C. Blickensderfer	338,706	Mar. 30	2486	{657 658 659	34	1400
Conveyer apparatus. Track for	G. C. Blickensderfer and H. Smith	338,705	Mar. 30	2485	657	34	1400
Conveying apparatus	A. Wolcott	333,987	Jan. 5	673	184	34	126
Cooker. Farina-	C. Carr	337,813	Mar. 16	1255	326	34	1164
Cooking-vessel	A. W. Obermann	334,459	Jan. 19	1371	371	34	269
Cooking-vessel	C. J. Parker	338,547	Mar. 23	2256	561	34	1353
Cooler: *See* Milk-cooler.							
Cooler and filter. Combined	J. W. Frazee and A. J. Thomas	334,426	Jan. 19	1328	359	34	260
Cooler and strainer for sirup and sugar. Self-	T. W. Lanier	335,706	Feb. 9	870	230	34	602
Cooling and disinfecting apparatus	L. H. Latimer	334,078	Jan. 12	807	222	34	158
Cooling liquids and other articles, commonly called "ice-machines." Machine for	E. E. Hendrick	336,226	Feb. 16	1666	{433 434	34	748
Copying-press	T. B. Boyd	336,086	Feb. 16	1427	376	34	708
Copying-press	H. Griffin	336,564	Feb. 23	2117	555	34	896
Copying-press	G. W. Williams	338,695	Mar. 23	2362	622	34	1372
Copying-press	J. B. Leckie	336,926	Mar. 2	60	16	34	937
Copying-roller	J. Howard, E. T. Bousfield, and G. Gibbs	338,238	Mar. 16	1818	475	34	1269
Cord-holder-operating mechanism	W. Nicolay	339,008	Mar. 30	2929	776	34	1479
Cord or rope fastener	J. Pusey	338,613	Mar. 23	2341	612	34	1369
Cords in the seams of textile and other fabrics. Method of inserting	W. H. Horner and F. Hyde	336,718	Feb. 23	2229	.....	34	875
Cordage. Composition for treating	A. Weber	336,458	Feb. 16	1973	517	34	805
Core-box	J. Fleming	334,423	Jan. 19	1325	358	34	259
Cores. Apparatus for brushing and shaping sand	C. Tobias and E. W. Shoesmith	334,061	Jan. 12	785	215	34	154
Cork-extractor	H. Wahler	337,465	Mar. 9	817	206	34	1079
Cork-extractor	B. P. Roberts	337,437	Mar. 9	777	196	34	1073
Corking bottles. Hand implement for	W. Crabb	337,309	Mar. 2	579	152	34	1033
Corkscrew	J. P. Withrow	336,974	Mar. 2	122	33	34	949
Corn-husker	M. Evinger	337,141	Mar. 2	347	90	34	999
Corn-husking device	G. H. Sawyer. (Reissue)	10,698	Feb. 23	2564	677	34	919
Corn-knife and shield	F. P. Hoke	336,227	Feb. 16	1671	435	34	749
Corn-roaster	M. T. Mahin	338,092	Mar. 16	1643	427	34	1235
Corn-shock-compressing device	J. C. Wicker	335,664	Feb. 9	896	215	34	588
Corn-slicer	H. Olson and J. Hogland	335,949	Feb. 9	1218	324	34	666
Cornstalk-cutter	A. O. Kittredge and G. A. Ohl	336,079	Mar. 16	1612	420	34	1289
Corn-stalk-bending machine	K. Dunham	334,859	Jan. 12	1287	338	34	227
Corset	I. Karp	336,413	Feb. 16	1911	500	34	794
Corset	A. H. Traver	336,766	Feb. 23	2296	608	34	889
Corset	C. L. Olmstead and A. D. Nason	338,184	Mar. 16	1763	460	34	1259
Corset-clasps. Eye for	M. Gardner	335,911	Feb. 9	1172	312	34	658
Corset-cover	T. P. Taylor and M. B. Hammond	338,002	Mar. 16	1382	364	34	1219
Corset-stiffener	H. M. Van Etten	336,606	Feb. 23	2170	567	34	846
Cot and mattress. Folding woven-wire	F. B. Hemingway	336,110	Feb. 16	1456	384	34	714
Cot and stretcher. Folding canvas	S. F. Seely	334,966	Jan. 26	2071	553	34	404
Cotton and corn sweep	M. M. Ritch and P. McRae	336,169	Feb. 16	1537	405	34	727
Cotton-chopper	J. C. Farley	338,255	Mar. 23	1856	{467 468	34	1284
Cotton chopper and cultivator. Combined	J. L. Murray	336,885	Feb. 23	2521	665	34	911
Cotton-gin	S. D. Freeman	339,091	Mar. 30	3043	804	34	1498
Cotton-gin	J. S. Livingston and A. McBride	334,875	Jan. 26	1990	514	34	279
Cotton, &c. Metallic wrapping for	A. H. Douglass	335,616	Feb. 9	1151	80	34	474
Cotton opener and lapper	J. C. Potter	335,089	Jan. 26	2028	500	34	431
Cotton-press	C. A. Hege	335,194	Feb. 2	152	30	34	468
Cotton-press. Lever	W. P. Abell	335,871	Feb. 9	1108	288	34	647
Cotton-scraper	R. Cooper	335,507	Feb. 2	580	152	34	544
Cotton-scraper	J. L. Slocumb	335,973	Feb. 9	1250	329	34	671
Cotton-scraper attachment	T. Felps	336,808	Feb. 23	2441	641	34	896
Cotton-sweep	J. C. Awalt	334,409	Jan. 19	1308	353	34	256
Cotton-thinner	S. C. Dickson	335,180	Feb. 2	134	34	34	465
Counter and show-case. Combined	S. B. Dooley	334,856	Jan. 12	1224	321	34	226
Countersinking-tool	F. Happersberger	336,508	Feb. 23	2119	556	34	827
Counting-register	J. Thomson	337,890	Mar. 16	1351	351	34	1158
Coupling: *See* Car-coupling. Pipe-coupling. Detachable coupling. Pump-rod coupling. Draft-coupling. Shaft-coupling. Hame-coupling. Spring-coupling. Harness-coupling. Thill-coupling. Hose-coupling. Yoke-coupling. Hub and axle coupling.							
Coupling-joint	B. F. Sweet	334,805	Jan. 12	1160	310	34	223
Cover. Kettle-	D. H. Murphy	334,716	Jan. 19	1798	400	34	236
Cow-tail fetter	B. S. Slina	334,906	Jan. 26	1967	522	34	395
Cowl: *See* Chimney-cowl.							
Cradle. Folding	C. P. Keane	335,202	Feb. 2	163	42	34	470
Cranberry-picker	M. M. Chew	334,565	Jan. 19	1521	407	34	294
Crane. Portable window	A. Anderson	337,225	Mar. 2	454	118	34	1019
Crane. Steam	H. C. Winebrenner	337,784	Mar. 9	1183	299	34	1125
Crank and eccentric. Variable	W. H. De Valin	335,745	Feb. 9	930	245	34	614
Crate. Fruit-	C. W. Lloyd	335,999	Feb. 9	999	198	34	513
Crate. Return-	J. Colville	339,045	Mar. 30	3079	788	34	1493
Crayon or pencil holder	M. C. Meigs	336,250	Feb. 16	1685	440	34	788
Cream-separator	W. H. Johnson	337,966	Mar. 9	512	134	34	1021
Creamer. Centrifugal	G. De Laval	335,344	Feb. 2	368	94, 95	34	507
Creamery	N. Yingst	336,577	Mar. 23	2299	601	34	1340
Crimping-machine. Radial	J. McCreary and D. R. Smith	336,656	Feb. 23	2253	{587 588	34	880
Crockery-ware. Mold-bed for	D. Hallum	338,226	Mar. 16	1816	475	34	1269
Cue-tip fastener	T. Dougherty	334,648	Jan. 19	1688	457	34	317
Cuff	W. P. Groom	334,597	Jan. 19	1465	393	34	285
Cuff-holder	J. F. Atwood	333,494	Jan. 5	1	1	34	3
Cuff-holder	F. E. Kohler	334,391	Jan. 12	1271	343	34	243
Cuff holder and adjuster	R. Stuyvesant	337,384	Mar. 9	908	220	34	1094
Cultivator	S. L. Allen	334,237	Jan. 12	1189	319	34	220
Cultivator	F. H. Austin	336,694	Mar. 2	1	1	34	927
Cultivator	E. S. and C. E. Brown	338,709	Mar. 30	2492	650	34	1401
Cultivator	E. Children	334,641	Jan. 19	1625	433	34	314
Cultivator	J. Goodnough	333,514	Jan. 5	25	8	34	8
Cultivator	F. M. Helms	335,222	Feb. 2	198	52	34	475
Cultivator	H. C. Leydorf	337,596	Mar. 9	976	250	34	1108
Cultivator	M. F. McCray	334,181	Jan. 12	964	261	34	188
Cultivator	J. Morgan	333,535	Jan. 5	58	15	34	13
Cultivator	D. and R. B. Motherwell	336,939	Mar. 2	74	20	34	940
Cultivator	W. C. Peters	334,045	Jan. 12	702	200	34	150
Cultivator	J. W. Peters and J. H. Skinner	338,294	Mar. 23	1905	501	34	1293
Cultivator	H. Skelton	334,479	Jan. 19	1401	378	34	274
Cultivator	J. F. Smith	335,644	Feb. 9	784	208	34	588
Cultivator and fertiliser-distributer. Wheel	W. and R. Ruffin	336,168	Feb. 16	1541	{406 407	34	727
Cultivator. Cotton-	J. Wilkinson and F. Curtin	337,222	Mar. 2	452	118	34	1010
Cultivator. Disk-	J. O. Currier	333,927	Jan. 5	592	162	34	113
Cultivator. Listed-corn	G. W. Moffitt	338,180	Mar. 16	1758	459	34	1260
Cultivator. Roller-	J. Clay	337,490	Mar. 9	695	211	34	1082
Cultivator. Spring-	W. J. Browne	335,013	Jan. 26	2110	562	34	411
Cultivator. Tongueless	B. C. Bradley	334,698	Jan. 19	1689	{451 458	34	236
Cultivator-tooth	L. Burk	336,508	Feb. 16	2081	533	34	815
Cultivator. Wheel	J. H. Gilman	336,210	Feb. 16	1770	463	34	767

Alphabetical list of inventions, January to March, inclusive—Continued.

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Cultivator. Wheel	A. J. Heavner and R. Thornton	337,400	Mar. 9	496	182	34	1061
Cultivator. Wheel	A. Lindgren	338,766	Jan. 5	370	101	34	69
Cultivator. Wheel	A. I. Pedley	337,861	Mar. 16	1314	341	34	1174
Cultivators. Standard-clamp for	S. Brinkerhoff	336,506	Feb. 16	2088	538, 533	34	815
Cup: *See* Oil-cup.							
Curry-comb	W. G. Clark	335,894	Feb. 9	1151	306	34	654
Curry-comb	T. Gingras	337,057	Mar. 9	223	69	34	968
Curry-comb	F. I. Howe	335,072	Jan. 26	2199	564	34	497
Curry-comb	W. T. Norton	336,490	Feb. 16	2011	527	34	812
Curry-comb	C. D. Randel	336,772	Feb. 9	974	258	34	922
Curtain and screen holder	F. M. Georgie, Sr	337,572	Mar. 9	949	243	34	1103
Curtain-fixture	G. H. Baker	337,043	Mar. 2	217	57	34	965
Curtain-fixture	J. Gamble	336,851	Feb. 23	2506	660	34	906
Curtain-fixture	L. Weber	336,610	Feb. 23	2177	569, 569	34	846
Curtain fixture	J. E. and E. M. Wyant	335,789	Feb. 9	899	234	34	696
Curtain-pole ring	A. D. Field	337,053	Mar. 2	220	61	34	967
Curtain-roller. Spring	J. Harris	336,065	Mar. 16	1586	415	34	1225
Cushion for vehicles and furniture. Ventilated spring	E. R. Sibley and H. P. Wells	333,557	Jan. 5	77	22	34	17
Cut nail	S. M. Guss	337,765	Mar. 9	1180	307	34	1144
Cut-off or waste valve	R. Walsh and S. J. Martin	335,404	Feb. 2	443	114	34	560
Cut-off. Rain-water	C. Zitko	337,805	Mar. 9	1232	320	34	1153
Cut-off valve	G. W. Anderson	335,173	Feb. 2	117	30	34	482
Cut-off valve	H. Burton	337,739	Mar. 9	1150	298	34	1139
Cut-off valve	D. H. Dugar	335,995	Feb. 9	1280	340	34	676
Cut-off valve	J. P. Simmons	337,025	Mar. 2	198	52	34	961
Cut-off valve for steam-engines	M. N. Lynn	336,892	Feb. 23	2516	664	34	910
Cutlery. Handle for	S. E. Jeralds and E. R. Lawton	336,116	Feb. 16	1462	385	34	715
Cutlery. Making	C. O. Appleby	336,198	Feb. 16	1596	419	34	736
Cutlery. Pocket	F. Neuhaus	337,858	Mar. 16	1311	340	34	1174
Cutter: *See* Band-cutter. Biscuit-cutter. Bread and vegetable cutter. Cheese-cutter. Cigar cutter. Cornstalk-cutter. Embossing-cutter. Feed-cutter. Key-seat cutter. Meat-cutter. Pipe-cutter. Rod-cutter. Stalk-cutter. Stalk and weed cutter. Strawberry-runner cutter. Tube-cutter. Twine and wire cutter. Vegetable-cutter. Wire-cutter.							
Cutter-head	E. F. Barnes	336,695	Mar. 30	2469	651	34	1307
Cutter-head	W. H. Doane	337,487	Mar. 9	843	213	34	1064
Cutter-head	R. Hegener	335,582	Feb. 9	692	183, 184	34	571
Cutter-head	W. G. Randall	335,309	Feb. 2	313	82	34	497
Cutter-head guard	I. E. Hall	337,493	Mar. 9	849	215	34	1065
Cutting double pile fabrics. Mechanism for	C. R. Garratt	334,947	Jan. 26	2020	538, 539	34	395
Cylinders or cylindrical vessels. Joint for	W. H. Brown	333,726	Jan. 5	319	87	34	60
Damper	A. L. Goodenow	336,228	Feb. 16	1647	420	34	746
Damper for stoves and furnaces. Automatic	C. L. Ridgway	336,961	Feb. 16	1700	443	34	754
Damper-regulator	N. C. Locke	335,060	Jan. 26	2206	567	34	498
Damper-regulator	C. A. McDonald and C. W. Townsend.	334,601	Jan. 19	1566	418	34	304
Damper-regulator. Automatic	J. E. Spencer	336,626	Mar. 23	2453	647	34	1368
Damper-regulator. Automatic	S. Weinberg	335,662	Feb. 9	893	214	34	591
Damper-regulator for steam-boilers	C. A. McDonald and C. W. Townsend.	334,600	Jan. 19	1564	418	34	304
Damper. Stove or range	A. M. Blakesley	337,233	Mar. 2	466	122	34	1012
Damper. Stove-pipe	G. W. Mudd	334,715	Jan. 19	1728	460	34	333
Dash-boards. Receptacle attachment for	M. Fahey	338,833	Mar. 30	2673	703	34	1438
Dash-pot	G. H. Corliss	333,831	Jan. 5	461	125	34	86
Decorticating-machine	H. S. Woodward	337,469	Mar. 9	821	207, 208	34	1060
Dental appliance	C. E. Brooks	336,790	Feb. 23	2426	636	34	804
Dental bridge-work	G. V. I. Brown	337,812	Mar. 16	1254	325	34	1164
Dental capsicum plaster	F. B. Darby	335,799	Feb. 9	1012	267	34	629
Dental engine	C. P. Grout	336,229	Feb. 16	1648	431	34	746
Dental engine	J. O. Scott	334,965	Jan. 26	2070	552, 553	34	404
Dental-instrument rubber cover	C. K. Barlow	336,781	Feb. 23	2415	635	34	804
Dental plugger	R. S. Williams	336,777	Feb. 23	2411	634	34	891
Dental tool	J. W. Smith	335,780	Feb. 9	964	260	34	624
Dental vulcanizing apparatus	J. Hood and S. H. Reynolds	334,529	Jan. 19	1468	394	34	295
Dentist's chair	J. N. Farrar	336,200	Feb. 16	1657	427	34	744
Dentists. Root-dresser for	E. B. Call	335,890	Feb. 9	1146	305	34	653
Derrick. Portable	R. L. Valentine	337,492	Mar. 9	813	206	34	1079
Desk	C. Larson	333,760	Jan. 5	364	99	34	68
Desk	H. U. Pohl	336,345	Feb. 16	1617	476, 477	34	776
Desk and seat. Combined adjustable	A. B. Irvin	334,171	Jan. 12	950	257	34	188
Desk and seat. School	J. F. Coulter	335,508	Feb. 2	581	153	34	544
Desk and seat. School	I. Osgood	336,645	Mar. 23	2186	588, 589	34	1376
Desk. Cabinet	F. A. Coffin	338,039	Mar. 16	1568	407	34	1220
Desk. Cabinet	F. A. Coffin	338,672	Mar. 23	2371	634	34	1374
Desk. Office	C. N. Dalsell	335,472	Feb. 2	488	125	34	506
Desk. School	J. F. Bigger	336,469	Mar. 23	2151	563	34	1336

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Desk. School	G. Marqua	336,417	Feb. 16	1916	508	34	785
Desks. Folding top for school	W. P. Conner	338,715	Mar. 30	2503	662	34	1403
Desks. Foot-rest for school	W. P. Conner	336,467	Mar. 23	2179	570	34	1341
Detachable coupling	W. E. Link	334,256	Jan. 12	1090	294	34	211
Detector: *See* Gas-leak detector.							
Dial-wheels. Manufacture of	G. E. Hart	336,964	Mar. 30	2648	751	34	1406
Dials. Method of graduating	R. L. Webb	338,193	Mar. 16	1681	437	34	1242
Diamond or carbon points in tools. Inserting	T. A. Jackson	336,468	Feb. 23	2121	556	34	837
Die	R. Butterworth	338,084	Mar. 30	2084	801	34	1406
Dies. Holding	C. F. Stone	338,902	Mar. 16	1782	465	34	1263
Dies. Making	J. Brady	335,324	Feb. 2	347	90	34	502
Digester or converter, &c	C. S. Wheelwright	337,730	Mar. 9	1139	291	34	1134
Digester or converter	C. S. Wheelwright	337,731	Mar. 9	1139	291	34	1134
Digger: *See* Post-hole digger. Potato-digger.							
Dioramic or panoramic structure	C. H. Ritter	337,809	Mar. 16	1394	344	34	1176
Direct-acting engine	G. W. Bigelow	335,984	Feb. 9	1134	290	34	650
Dish. Soap	A. M. Hayward	337,153	Mar. 2	240	94	34	998
Dish-washing machine	H. B. Scoville	337,875	Mar. 16	1334	346	34	1179
Dishes. Machine for cutting oval shell	S. B. Conover	335,431	Feb. 2	479	194, 195	34	527
Disinfecting apparatus	O. Schimmel	337,522	Mar 9	887	26	34	1091
Disinfecting device	A. H. Kidney	337,164	Mar. 2	375	98	34	995
Disinfecting-mat	W. Edson	336,557	Feb. 23	2103	553	34	834
Disinfecting materials. Automatic apparatus for dry	B. A. Dryer	333,934	Jan. 5	509	164	34	112
Disintegrator	J. W. Parmelee	335,615	Feb. 9	741	197	34	580
Display-rack	J. A. Miller	336,935	Mar. 2	70	18	34	959
Display-rack. Dry-goods	R. W. Whitehurst	339,061	Mar. 30	3060	800	34	1495
Distance-instrument	J. L. Hansaird and G. W. Tribby	333,625	Jan. 5	166	45	34	33
Distance-registering device for wheeled vehicles	E. S. Brownson	336,969	Mar. 2	141	38, 39	34	951
Distilling ammoniacal waters. Apparatus for	B. P. Clapp	335,497	Feb. 2	474	128, 129	34	526
Distilling oil. Process of and apparatus for	J. W. Norton and F. H. Rouse	336,941	Mar. 2	78	21	34	941
Distilling turpentine and for the purification of the crude products of distillation thereof. Apparatus for	J. D. Stanley. (Reissue)	10,089	Feb. 16	2078	546	34	893
Distilling wood. Apparatus for	L. Hansen and A. Smith	333,750	Jan. 5	353	95	34	66
Distilling wood, &c. Apparatus for	J. Roberts	333,673	Jan. 5	333	63	34	45
Distributer: *See* Fertiliser-distributer.							
Ditching-machine	J. L. Senteney	334,908	Jan. 26	1964	522	34	385
Ditching-machine supporter	G. W. King	335,759	Feb. 9	947	249	34	617
Ditching machine. Tile	H. Sullivant	338,678	Mar. 23	2436	642	34	1385
Ditching machine. Tile	S. E. Warrick	336,189	Feb. 16	1574	414	34	736
Dividers	G. M. Pratt	336,869	Feb. 23	2525	666	34	919
Doll. Walking	F. W. Pelouhet	335,302	Feb. 2	301	80	34	495
Door attachment. Sliding	W. Spear	334,203	Jan. 12	1010	266, 269	34	196
Door-bolt	S. A. Kintner	338,640	Mar. 23	2381	627	34	1376
Door-bumper	B. D. Patrick	335,616	Feb. 9	742	198	34	580
Door-check and alarm. Combined	C. Vogel	337,538	Mar. 9	908	239	34	1085
Door-check. Pneumatic	G. Geer	335,575	Feb. 9	685	180, 181	34	570
Door-closer. Automatic	D. T. Winter	334,634	Jan. 26	1878	500	34	570
Door-hanger	C. W. Bullard	334,344	Jan. 12	1216	328	34	232
Door-hanger	W. W. Chipman	338,931	Mar. 30	2810	741	34	1459
Door-hanger	H. T. Moody	335,232	Feb. 2	219	55	34	478
Door-lock	G. G. Ackerson and J. F. Shy	337,108	Mar. 2	300	79	34	988
Door-lock	W. Bohannan	337,044	Mar. 2	218	57, 58	34	965
Door-pull. Magneto-electric	W. Humans	336,518	Feb. 16	2045	537	34	818
Door-saddle	H. Tindell	335,854	Feb. 9	1063	286	34	643
Door-securer	D. Bromley	334,636	Jan. 19	1618	431	34	313
Door-securer	H. A. Witman	338,214	Mar. 16	1799	469	34	1266
Door-spring	D. W. Frost	336,909	Feb. 16	1770	459	34	767
Door spring and check. Combined	J. S. Stevens and C. G. Major	333,566	Jan. 5	90	26	34	20
Doors. Device for fastening prison-	L. M. Ham	333,749	Jan. 5	352	95	34	65
Double-tree. Spring	W. E. Hagarty	337,307	Mar. 9	698	181	34	1060
Doubling and splaying silk, &c. Stop-motion mechanism for machines for	W. R. Landfear	336,570	Feb. 23	2124	556, 557	34	837
Dovetailing-machine	E. M. Byrkit	335,335	Feb. 2	850	92	34	504
Dovetailing-machine	G. H. Millen and A. Derouin	336,130	Feb. 16	1478	390, 391	34	719
Dovetailing-machine	J. G. Oetzel	335,833	Feb. 9	1051	277, 278	34	636
Draft attachment for wheeled vehicles	G. Carter	337,376	Mar. 9	666	174	34	1056
Draft-bar. Harrow	J. E. Beebe	336,375	Feb. 16	1857	487	34	784
Draft-coupling	W. W. Waterberry	334,909	Jan. 26	2087	557	34	407
Draft-equaliser	G. C. Flagg	336,708	Feb. 23	2319	607	34	874
Draft-equaliser	J. M. Langston	334,874	Jan. 26	1929	514	34	379
Draft-equaliser	M. Lynde	339,108	Mar. 30	3072	813	34	1502
Draft-equaliser	L. T. Nichols	339,007	Mar. 30	2998	775	34	1479
Draft-equaliser	J. L. Powles	334,960	Jan. 12	1128	302	34	217
Draft-equaliser	R. A. Thompson	335,975	Feb. 9	1051	282	34	671
Draft-equaliser	A. Wheeler	333,705	Jan. 5	286	78	34	54
Draft-regulators. Safety apparatus for automatic	C. W. Nason	337,013	Mar. 2	181	46	34	956
Draw-bar	J. N. Chilson	336,388	Feb. 16	1878	491	34	788
Drawer. Exhibition	A. L. Adams	336,615	Feb. 23	2189	571, 572	34	848
Drawer-pull	W. Long	337,412	Mar. 9	721	187	34	1065
Drawing and twisting. Head for continuous	D. O. Pease	337,015	Mar. 2	184	48	34	956
Drawings. Apparatus for enlarging and reducing	A. Fougeadoire	333,737	Jan. 5	335	91	34	68
Dredger. Endless-chain	J. Kennedy	333,637	Jan. 5	184	49	34	39

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Pages.
Dredging apparatus	G. F. Badger	336,619	Feb. 23	2197	{573 574}	34	850
Dredging-machine	J. McCollough	336,948	Feb. 16	1668	439	34	751
Dress-shield	A. J. Hiscott	338,744	Mar. 30	2550	674	34	1411
Dress-shield	A. J. Hiscott	338,745	Mar. 30	2551	674	34	1411
Dress-shield	J. Janowitz	335,225	Feb. 2	202	53	34	476
Dressing case or bureau	G. Sugg	333,977	Jan. 5	658	180	34	198
Drier:							
See Boot-drier. Clothes-drier. Fruit-drier. Grain-drier. Laundry-drier. Lumber-drier. Salt-drier. Tobacco-drier.							
Drier	L. J. Cadwell	333,895	Jan. 5	450	{122 123}	34	84
Drier	D. A. Greene	337,948	Mar. 16	1442	374	34	1198
Drill:							
See Fork-drill. Grain-drill. Grinding-drill. Mining-drill. Railway-track drill. Ratchet-drill. Ratchet mining-drill. Rock-drill. Well-drill.							
Drill attachment	H. S. Spratley	334,817	Jan. 26	1858	495	34	366
Drill-bits. Making	M. Diamond and W. H. Brock	333,506	Jan. 5	13	5	34	8
Drill for wood, &c	R. D'Heureuse	334,757	Jan. 26	1796	475	34	352
Drill-frame anchor	E. Bittenbender	336,469	Mar. 23	2153	563	34	1337
Drill-jar	J. M. McCandlish	334,857	Mar. 30	2703	711	34	1440
Drill-pointing machine	J. S. Bancroft	337,549	Mar. 9	921	236	34	1098
Drill-press	O. Smith	336,598	Feb. 23	2161	565	34	844
Drill-press tool	O. Smith	336,768	Feb. 23	2349	626	34	867
Drill-teeth. Gage-wheel attachment for	E. P. Janvier	333,858	Jan. 5	498	134	34	92
Drills. Machine for clearing twist-	J. A. Morton	337,279	Mar. 2	537	141	34	1025
Drilling-machine	F. Bennett	338,081	Mar. 16	1548	401	34	1216
Drilling-machine	W. Evans	335,184	Feb. 2	188	35, 36	34	465
Drilling-machine	W. Frech	336,849	Feb. 23	2508	659	34	908
Drilling-machine	A. John	335,758	Feb. 9	946	249	34	617
Drilling-machine	G. Ashby	335,007	Jan. 26	2109	550	34	410
Drip-cup							
Dropper:							
See Fertilizer-dropper.							
Drum. Heating	M. N. Kimble	334,075	Jan. 12	805	221	34	157
Drum. Stove-pipe	B. D. Evans	336,145	Mar. 16	1706	445	34	1048
Dry-board hook	T. F. Barnum	334,927	Jan. 26	1994	581	34	391
Dumb-waiter	F. Friedgen	336,046	Feb. 9	1351	357	34	662
Dust-arrester	L. W. Holloway	336,238	Feb. 16	1672	435	34	749
Dust-collector	N. W. Holt	338,630	Mar. 23	2379	{696 697}	34	1375
Dust-collector	P. M. Nelson	338,765	Mar. 30	2580	680	34	1417
Dust-pan and ash-sifter. Combined	J. O. Beneke	337,550	Mar. 9	925	237	34	1099
Dust-pan holder	W. W. Squier	335,545	Feb. 2	632	166	34	553
Dyed. Machine for condensing warps for being	I. F. Lawry	334,122	Jan. 12	873	239	34	169
Dyeing and washing wool and cotton. Machine for	W. and M. Pollard	338,438	Mar. 23	2114	563	34	1389
Dyeing apparatus	J. Hanson	338,839	Mar. 30	2679	{705 706}	34	1435
Dyeing apparatus	A. Moran	334,798	Jan. 26	1835	489	34	362
Dyeing apparatus	J. O. Obermaier	335,712	Feb. 9	882	232	34	604
Dyeing apparatus	J. O'Connell and F. E. Weeden	334,889	Jan. 26	1945	517	34	381
Dyeing apparatus	H. A. Wales	335,660	Feb. 9	801	213	34	591
Ear-drum. Artificial	A. B. Adams and E. S. Dodge	335,100	Feb. 2	1	1	34	441
Ear-knob	J. E. Davis	333,981	Jan. 5	506	163	34	119
Earth-boring machine	F. R. Gillinder	337,575	Mar. 9	959	244	34	1104
Earthenware, &c. Muffle for	E. B. Crocker	338,165	Mar. 16	1734	459	34	1258
Easel	G. R. Osborn and A. F. Gregory	338,355	Mar. 23	1994	525	34	1306
Easel	T. P. Watkins	334,065	Jan. 12	799	217	34	155
Easel-shelf bracket	E. G. Mead	337,512	Mar. 9	875	222	34	1089
Easel. Sketching	W. C. Berger	334,160	Jan. 12	989	264	34	181
Eaves-trough	A. De Witt	338,718	Mar. 30	2506	663	34	1404
Eaves-trough brace and hanger	W. R. Wilcox	334,831	Jan. 26	1874	499	34	369
Eaves-trough support	W. M. Wilkin	336,193	Feb. 16	1588	{416 417}	34	736
Edger and cant sawing machine. Combined	M. Garland	338,647	Jan. 5	478	130	34	89
Edger. Double and gang	E. H. Barnes	336,789	Feb. 23	2416	{635 636}	34	892
Edger. Gang	C. A. Merrill	333,869	Jan. 5	525	{142 143}	34	98
Edger. Gang	S. S. Vail and J. Solliday	334,997	Jan. 26	2084	556	34	407
Edger. Gang	P. W. Peckham	335,537	Feb. 9	1061	280	34	638
Educational device	D. C. Young. (Reissue)	10,648	Feb. 2	658	171	34	538
Educational device for the illustration of longitude and time.	A. L. Martin	338,004	Mar. 16	1644	426	34	1236
Egg-case	O. W. Jones	333,636	Jan. 5	181	49	34	36
Egg-preserving device	C. Marti	336,333	Feb. 16	1800	471	34	773
Egg-register	H. Shellenberg and E. Stiemke	333,678	Jan. 5	340	66	34	47
Egg-register	N. F. Tipton	334,926	Jan. 26	1869	498	34	368
Egg-tray	L. Schutte	337,443	Mar. 9	787	200	34	1075
Ejector. Steam	C. H. Hilton	334,380	Jan. 12	1255	339	34	240
Electric alarm apparatus	W. F. Buckley	337,737	Mar. 9	1148	298	34	1138
Electric-arc light	G. A. Gage and C. W. Crary	334,073	Jan. 12	802	220	34	157
Electric-arc light	J. W. Carter	337,045	Mar. 2	220	58	34	986
Electric-battery cell	E. T. Gilliland	335,603	Feb. 9	848	224	34	590
Electric call-generator	E. Thomson	335,548	Feb. 2	635	166	34	554
Electric circuits. Switch or turn-off for	J. M. Jägel	338,971	Mar. 30	2858	755	34	1468
Electric conductors. Underground conduit for	J. S. Raworth	338,550	Mar. 23	2253	{562 563}	34	1354
Electric coupler. Automatic	F. Borel and E. Paccaud	337,123	Mar. 2	392	84	34	996
Electric-current meter	J. J. Green	337,679	Mar. 9	1073	277	34	1125

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Pages.
Electric distribution. System of	E. Thomson	335,159	Feb. 2	84	22, 23	34	486
Electric furnace and operating the same	A. H. Cowles	335,058	Jan. 26	2177	{578 579}	34	422
Electric furnace for metallurgic operations	E. H. and A. H. Cowles	335,059	Jan. 26	2180	579	34	422
Electric generator. Dynamo	C. J. Van Depoele	338,380	Mar. 23	1944	512	34	1290
Electric leak-alarm for pipes	H. G. Bauman	337,116	Mar. 2	311	88	34	984
Electric-light circuits. Regulator for	W. M. Thomas	333,696	Jan. 5	276	75	34	32
Electric-light fixture	S. Bergmann	337,206	Mar. 2	560	147	34	1029
Electric light. Multiplex	A. C. Ferguson	338,365	Jan. 12	1942	334	34	288
Electric lights. Apparatus for suspending	T. H. Brady	338,920	Mar. 30	2798	737	34	1456
Electric lights. Means for suspending	T. H. Brady	338,919	Mar. 30	2797	737	34	1456
Electric lights. Rheostat for incandescent	S. A. Hill	336,716	Feb. 23	2296	610	34	875
Electric lights. Skeleton tower for	J. S. Adams	336,371	Feb. 16	1851	{485 486}	34	768
Electric lighting apparatus	A. C. Ferguson	334,866	Jan. 12	1943	{234 235 362 363}	34	288
Electric lighting apparatus. Incandescent	H. P. Brown	337,923	Mar. 16	1398		34	1190
Electric lighting circuit	R. Mackie	337,005	Mar. 2	167	44	34	955
Electric lighting system	H. M. Doubleday	335,080	Jan. 26	2181	579	34	422
Electric lighting system	R. Mackie and N. McCarty	337,004	Mar. 2	166	44	34	955
Electric lighting system	W. Stanley, Jr	333,564	Jan. 5	85	25	34	18
Electric machine and motor. Dynamo	W. L. Voelker	335,396	Feb. 2	334	98	34	501
Electric machine. Dynamo	F. Bain	337,041	Mar. 2	215	57	34	985
Electric machine. Dynamo	R. E. Ball	336,780	Feb. 23	2414	635	34	891
Electric machine. Dynamo	R. E. Ball	338,692	Mar. 30	2465	{650 651}	34	1306
Electric machine. Dynamo	R. E. Ball	338,910	Mar. 30	2785	734	34	1453
Electric machine. Dynamo	C. Batchelor	338,383	Mar. 23	2038	535	34	1315
Electric machine. Dynamo	G. Forbes	338,169	Mar. 16	1737	{453 454 578 579}	34	1254
Electric machine. Dynamo	J. M. A. Gérard-Lécuyer	336,636	Feb. 23	2218		34	889
Electric machine. Dynamo	C. Hering	335,355	Feb. 2	870	99	34	580
Electric machine. Dynamo	E. Thomson	333,572	Jan. 5	109	29	34	98
Electric machine. Dynamo	C. J. Van Depoele	337,996	Mar. 16	1360	353	34	1188
Electric machine or motor. Dynamo	W. L. Voelker	335,925	Feb. 2	338	87	34	501
Electric-machine regulator. Dynamo	R. E. Ball	338,333	Mar. 23	1961	516	34	1303
Electric-machine regulator. Dynamo	O. P. Loomis and H. W. Cooley	337,775	Mar. 9	1194	310	34	1146
Electric-machine regulator. Dynamo	O. P. Loomis and H. W. Cooley	337,776	Mar. 9	1196	311	34	1147
Electric-machine regulator. Dynamo	R. H. Mather	334,712	Jan. 19	1721	459	34	328
Electric-machine regulator. Dynamo	R. H. Mather	337,778	Mar. 9	1196	311	34	1147
Electric-machine regulator. Dynamo	O. B. Shallenberger	337,698	Mar. 9	1013	{260 261}	34	1115
Electric-machine regulator. Dynamo	N. Tesla	336,961	Mar. 2	103	28, 29	34	945
Electric-machine regulator. Dynamo	N. Tesla	336,962	Mar. 2	105	29	34	945
Electric-machine regulator. Dynamo	E. Thomson and E. W. Rice	339,079	Mar. 30	3096	{799 800}	34	1495
Electric-machine regulator. Dynamo	C. J. Van Depoele	335,659	Feb. 9	799	213	34	591
Electric-machine regulator. Dynamo	J. E. Watson	336,609	Feb. 23	2172	568	34	848
Electric machines. Armature for dynamo	F. Bain	337,042	Mar. 2	217	57	34	985
Electric machines. Armature for dynamo	H. B. Boissier	335,105	Feb. 2	5	2	34	449
Electric machines. Armature for dynamo	C. F. Brush	336,967	Feb. 16	1437	377	34	700
Electric machines. Armature for dynamo	C. Coerper	337,556	Mar. 9	934	239	34	1100
Electric machines. Armature for dynamo	W. Stanley, Jr., and O. B. Shallenberger.	333,563	Jan. 5	84	24, 25	34	18
Electric machines. Circuit-connection for dynamo	N. McCarty	337,010	Mar. 2	178	47	34	957
Electric machines. Commutator for dynamo	N. Tesla	334,893	Jan. 26	1806	497	34	367
Electric meter	S. Z. de Ferranti	338,568	Mar. 23	2805	{603 604}	34	1362
Electric meter	J. I. Drake	335,667	Feb. 9	838	222	34	597
Electric meter	S. D. Mott	336,132	Feb. 16	1481	391	34	730
Electric meter	S. D. Mott	336,133	Feb. 16	1482	392	34	730
Electric meter	J. S. Raworth	338,549	Mar. 23	2859	{561 562}	34	1354
Electric motor	E. M. Bentley	338,023	Mar. 16	1551	401	34	1217
Electric motor	L. Daft	336,629	Feb. 23	2209	576	34	851
Electric motor	F. E. Fisher	335,998	Feb. 9	1284	340	34	677
Electric motor	V. E. Keegan	338,977	Mar. 30	2868	759	34	1469
Electric motor	W. H. Knight	338,085	Mar. 16	1622	422	34	1230
Electric motor	O. P. Loomis and H. W. Cooley	337,777	Mar. 9	1197	311	34	1147
Electric motor	G. H. Stout	338,022	Mar. 23	2356	620	34	1371
Electric motor	E. Thomson	335,547	Feb. 2	634	166	34	554
Electric motor	J. Wels	335,983	Feb. 9	1093	289	34	645
Electric motors. Device for transmitting power from	E. H. Johnson	335,925	Feb. 2	261	74	34	490
Electric resistance. Artificial	H. P. and F. H. Brown	339,708	Mar. 30	3491	659	34	1401
Electric signal. Individual	A. W. S. Davis	336,095	Feb. 16	1436	379	34	710
Electric wires. Underground conduit for	J. J. Schillinger	337,694	Mar. 9	1009	259	34	1115
Electrical cable. Underground	J. Kruesi and J. Langton, Jr	334,708	Jan. 19	1716	457	34	331
Electrical cables. Machine for making	J. Kruesi and J. Langton, Jr	334,709	Jan. 19	1717	458	34	332
Electrical call or signaling apparatus	A. G. Holcombe	336,643	Feb. 23	2298	589	34	855
Electrical call system for hotels	J. C. McLaughlin	335,604	Feb. 9	727	194	34	578
Electrical circuits. Apparatus for automatically testing	G. F. Milliken	334,969	Jan. 26	2049	547	34	400
Electrical communicating system for hotels	A. G. Holcombe	336,809	Feb. 23	2449	643	34	897
Electrical conductor	H. A. Clark	336,992	Mar. 2	145	39	34	962
Electrical conductors. Manufacture of	H. R. Mason	334,450	Jan. 19	1354	367	34	265
Electrical currents. System of generating	C. J. Van Depoele	338,321	Mar. 23	1945	512	34	1300
Electrical distribution. System of	F. J. Sprague	335,045	Jan. 26	2139	{574 575}	34	419
Electrical distribution. System of	S. S. Wheeler	335,048	Jan. 26	2164	{575 576}	34	420
Electrical distribution. System of	S. S. Wheeler	335,099	Jan. 26	2287	594	34	434
Electrical indicator	J. W. Howell	339,056	Mar. 30	2999	793	34	1481

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Electrical indicator	E. Weston	334,145	Jan. 12	904	946	34	176
Electrical machine. Frictional	A. L. Robbins	336,947	Mar. 2	67	23	34	942
Electrical meter	W. C. Patterson	333,779	Jan. 5	365	105	34	73
Electrical signaling apparatus	H. Thon	335,862	Feb. 9	1079	265	34	642
Electrical subway	C. C. Gilman	336,518	Mar. 23	2218	568	34	1348
Electrical switch	C. F. Brush	335,909	Feb. 9	900	66	34	487
Electrical translating devices. Safety-catch for	W. H. Knight	338,064	Mar. 16	1680	428	34	1314
Electricity for destroying living organisms in the bodies of slaughtered animals. Applying	C. S. Jones, W. W. Crooker, and F. Artôs.	337,834	Mar. 2	608	150	34	1036
Electro-dynamic motor	F. J. Sprague	335,781	Feb. 9	965	261	34	634
Electro-dynamic motor	F. J. Sprague	337,793	Mar. 9	1214	316	34	1149
Electro-dynamic motor	F. J. Sprague	337,794	Mar. 9	1216	316 317	34	1150
Electro-magnetic motor	W. H. Darling	337,981	Mar. 16	1410	365 366	34	1193
Electro-magnetic motor	V. E. Keegan	338,976	Mar. 30	2867	756	34	1469
Electro-magnetic pulse-adjuster	C. W. Hastings	336,803	Mar. 23	2223	563	34	1349
Electro-magnetic reciprocating engine	C. J. Van Depoele	337,807	Mar. 16	1362	354	34	1184
Electro-magnetic reciprocating engine	C. J. Van Depoele	336,375	Mar. 23	2080	538	34	1313
Electro-medical battery	S. France	333,729	Jan. 5	339	92	34	62
Electrode. Secondary-battery	E. M. Gardner	336,102	Feb. 16	1447	381	34	712
Electrodes. Composition for secondary-battery	E. M. Gardner	336,101	Feb. 16	1446	.....	34	712
Electroller. Extension	J. T. Robb	337,199	Mar. 2	422	110	34	1004
Electrotype-molds. Machine for washing	E. H. Hanson	335,930	Feb. 9	1188	315	34	659
Elevator: *See* Grain-elevator. Register-elevator. Grain-binder elevator. Water-elevator.							
Elevator	H. Albert	333,712	Jan. 5	305	68, 84	34	57
Elevator	J. McQuaide	336,561	Feb. 23	2135	560	34	839
Elevator	F. H. Prince	335,989	Feb. 9	990	56	34	679
Elevator	C. G. and L. Tiefel	333,701	Jan. 5	279	76, 77	34	53
Elevator	J. H. Wiseheart	335,408	Feb. 9	451	117	34	503
Elevator attachment	L. Senior	334,901	Jan. 12	1008	263	34	195
Elevator-bucket	H. B. Haigh	336,916	Mar. 2	50	13	34	938
Elevator safety attachment	H. R. Ferris	337,717	Mar. 2	589	155	34	1035
Elevator safety attachment	T. M. Hunter	337,766	Mar. 9	1123	308	34	1144
Elevator safety attachment	C. A. Westberg	339,635	Mar. 30	2966	785	34	1496
Elevator safety attachment. Hydraulic	A. Murphy	337,781	Mar. 9	1202	312	34	1147
Elevator safety device	P. Moran	334,068	Jan. 19	816	224	34	159
Elevator safety device	A. O. Wuenesche	337,355	Mar. 2	632	166	34	1043
Elevator safety-stop	G. C. Halbland	337,398	Mar. 9	694	181	34	1060
Elevator-shaft	E. L. Brown	335,678	Feb. 9	695	200	34	595
Elevator-valves. Controlling	R. C. Smith	334,907	Jan. 26	1966	523 524	34	886
Elevators, &c. Register for	D. Segur	336,756	Feb. 23	2361	623	34	985
Ellipsograph	R. W. Rummell	333,972	Jan. 6	651	178	34	122
Elliptic springs. Machine for setting bands on	E. Spaulding	334,897	Jan. 12	1977	544	34	244
Embossed fabric for upholstery, &c	W. Sochefsky	334,300	Jan. 12	1155	309	34	220
Embossing-cutter. Indented	W. A. Compton	335,897	Feb. 9	1155	306	34	655
Embossing-tool. Recessed	W. A. Compton	335,898	Feb. 9	1156	307	34	655
Embroidering-machine	E. Cornely	338,498	Mar. 23	2180	570	34	1342
Embroidering-machine	H. E. Schmitz and E. Aldom	337,066	Mar. 2	372	72, 73	34	977
Embroidering-machine	F. Schnelle	335,094	Jan. 26	2231	592	34	433
Embroidery fabric. Woven	J. G. Kuhn	336,861	Feb. 23	2515	663	34	910
Embroidery-frame	J. Levinson	335,762	Feb. 9	956	253	34	618
End-gate. Wagon	H. S. Crabtree	335,685	Feb. 9	896	222	34	597
End-gate. Wagon	A. H. Noyes and E. S. Gardner	338,545	Mar. 23	2248	590	34	1358
End-gate. Wagon	L. H. Pruner	336,492	Feb. 16	2013	528	34	813
Engine: *See* Air-engine. Air or gas engine. Caloric-engine. Carding-engine. Compound engine. Dental engine. Direct-acting engine. Electro-magnetic reciprocating engine. Fire-engine. Gas-engine. Hydraulic elevator-engine. Hydrocarbon-engine. Hydrocarbon-vapor engine. Motive-power engine. Motor-engine. Oscillating engine. Pumping-engine. Rose-engine. Rotary engine. Rotary steam-engine. Single-acting engine. Steam-engine. Traction-engine. Vapor-engine. Winch-engine. Wind-engine.							
Engine and method of operating the same	J. H. Campbell	337,371	Mar. 9	655	173	34	1054
Engine-cylinder lubricator	M. W. Hall	334,860	Jan. 26	1912	509	34	876
Engine for running sewing-machines	L. W. Baldwin	333,719	Jan. 5	311	85	34	56
Engines. Utilizing aqua-ammonia as a motive power in	J. H. Campbell	337,372	Mar. 9	659	173	34	1054
Engines. Utilizing aqua-ammonia as a motive power in	J. H. Campbell	337,374	Mar. 9	664	174	34	1055
Engraved plate	J. R. Hill	335,814	Feb. 9	1098	272	34	682
Engraving-machine	M. Bock	334,507	Jan. 19	1440	357 358	34	980
Envelope and letter-sheet. Combined	F. P. Hofmann	338,746	Mar. 30	2552	674	34	1412
Envelope-counting machinery	A. A. Rheutan	335,945	Feb. 9	227	60	34	481
Envelope-machine presser	A. A. Rheutan	335,944	Feb. 9	226	59	34	481
Envelope-machines. Drying attachment for	E. H. Woodford	336,976	Mar. 2	124	33	34	946
Envelope-sheet. Letter	T. W. Terry	336,446	Feb. 16	1956	512	34	882
Envelopes. Device for opening	J. H. Paige	337,985	Mar. 16	1494	386	34	1207
Eraser	C. La Dow	337,505	Mar. 9	684	918	34	1066
Eraser	J. Pusey	336,290	Mar. 23	1913	504	34	1294

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Eraser and knife. Combined	T. Holdsworth	336,112	Feb. 16	1458	384	34	716
Ethers. Manufacture of resin-acid	E. Schaal	335,495	Feb. 2	558	.....	34	540
Evaporating-pan	H. W. Hescock	335,563	Feb. 9	694	184	34	578
Evaporators. Apparatus for automatically feeding liquids to	M. C. Barden	337,287	Mar. 2	457	119 120	34	1011
Excavating apparatus	J. Thomson and R. W. Mullins	338,603	Mar. 30	2886	692	34	1485
Excavating apparatus. Odorless	P. F. Dewey	336,902	Mar. 2	99	2	34	932
Excavator	C. Howard	333,949	Jan. 5	619	169	34	116
Excavator	S. F. Welch	334,497	Jan. 19	1425	368 384	34	278
Excavator. Inclined-wheel	S. M. Lockwood	335,280	Feb. 2	211	54	34	477
Excavator. Inclined-wheel earth-	S. M. Lockwood	335,289	Feb. 2	210	54	34	477
Exercising-machine	E. N. Bowen	334,685	Jan. 19	1616	420 421	34	313
Exercising-machine	B. Farley	337,942	Mar. 16	1431	371	34	1196
Exercising-machine	H. W. Libbey	335,397	Feb. 9	716	191	34	576
Explosive compound	M. F. Lindsley	333,878	Jan. 5	514	.....	34	86
Explosive compound	C. W. A. Zadek	335,006	Jan. 26	2101	.....	34	410
Extension-key	J. H. Shaw	337,903	Mar. 9	698	111	34	1005
Extension-screen. Adjustable	T. S. Peck	337,192	Mar. 2	415	108	34	1003
Extension-table	H. F. Burmester	333,501	Jan. 5	7	2	34	4
Extension-table	H. F. Burmester	334,103	Jan. 12	847	222 223 224	34	184
Extension-table	H. F. Burmester	334,104	Jan. 12	849	222 223 224	33	185
Extension-table	T. B. Hennessy	335,453	Feb. 2	507	130	34	522
Extractor: *See* Cork-extractor. Honey-extractor.							
Eye-bars. Apparatus for rolling	C. L. Strobel	336,622	Mar. 23	2367	620 621	34	1371
Eye-bars. Manufacture of	H. C. Starr	337,681	Mar. 16	1341	347	34	1189
Eyeglass-frame	H. E. Kirstein	336,728	Feb. 23	2539	613	34	877
Eyeglass nose-guard	W. H. Eccleston	333,843	Jan. 5	475	120	34	88
Eyeglass nose-guard	W. Freeman	335,977	Feb. 9	989	71	34	469
Eyeglasses	J. Currin	333,998	Jan. 5	502	103	34	111
Fabric: *See* Embroidery fabric. Ornamental fabric. Filtering fabric. Woven fabric.							
Fabric-turfing implement	M. A. Rafter	337,196	Mar. 2	419	109	34	1003
Fabric-turfing implement	J. W. Weddel	334,915	Jan. 26	1760	587 588	34	868
Fabric-turfing machine	M. F. Connett, Jr	337,306	Mar. 9	573	151	34	1030
Fabrics. Machine for singeing	J. Ryle	334,474	Jan. 19	1296	277	34	273
Fabrics. Spreader for spreading and stretching	I. E. Palmer	337,967	Mar. 16	1495	388	34	1207
Fan	D. Dillon	338,939	Mar. 30	2817	743	34	1481
Fan	S. Scheuer	338,881	Mar. 30	2787	721	34	1445
Fan and operating machinery for same. Portable	A. W. McComas and H. A. Fitzhugh	337,848	Mar. 16	1298	337	34	1172
Fan attachment	P. Murray, Jr	336,988	Feb. 23	2563	665	34	911
Fan attachment for rocking furniture	A. W. McComas and H. A. Fitzhugh	336,198	Feb. 16	1476	380	34	718
Fan. Automatic	J. M. Johns	337,567	Mar. 9	967	248	34	1106
Fan. Automatic	P. Murray, Jr	334,717	Jan. 19	1799	461	34	334
Fan. Automatic	J. M. and W. A. Peay and J. H. Helsley	339,011	Mar. 30	2933	777	34	1499
Fan. Automatic	J. W. Rykard	334,053	Jan. 12	774	211 218	34	152
Fan. Automatic	W. M. Smith and J. Caldwell	338,311	Mar. 23	1998	507	34	1297
Fan for furniture. Automatic	H. M. Bien	335,868	Feb. 9	1132	298	34	650
Fan. Revolving	H. Menke, Jr	337,600	Mar. 9	981	251	34	1109
Fan. Rotary	E. Anthony	339,038	Mar. 30	2973	486	34	1486
Fan. Rotary ventilating	W. D. Smith	339,030	Mar. 30	2963	784	34	1485
Fan. Summer	G. H. Aylworth	334,694	Jan. 19	1694	450	34	325
Fan. Toilet	J. Silbernik	335,318	Feb. 2	334	85	34	499
Fanning-mill	A. Mekelburg	334,188	Jan. 12	965	261 262	34	186
Fanning-mill	J. W. and G. R. Shaw	333,668	Jan. 5	250	68	34	49
Fanning-mill hopper	C. H. Prentiss and P. Walker	333,546	Jan. 5	66	19	34	15
Fare-box and lantern. Combined	H. D. Clark	335,340	Feb. 2	259	98	34	506
Fare-boxes. Money-drawer for	W. H. Harrison	337,292	Mar. 2	508	132 133	34	1030
Fare-receiver	E. Headley	336,410	Feb. 16	1904	492	34	798
Fare recorder and register	H. Marshall	334,584	Jan. 19	1473	375 396 548	34	286
Fare-register	J. W. Meaker	338,426	Mar. 23	2094	548 549 550	34	1296
Farm-gate	W. C. Hamner	338,088	Mar. 16	1592	414	34	1225
Farm-gate	J. M. Moose	334,797	Jan. 26	1834	489	34	361
Farm-gate	E. H. Penfield	338,869	Mar. 30	2716	714	34	1442
Farm-gate	W. W. Sweetland	333,695	Jan. 5	274	74	34	52
Farm-gate	T. B. Thorn	334,727	Jan. 19	1742	465	34	327
Farm-gate. Swinging and rolling	G. Bressler	333,915	Jan. 5	569	154	34	104
Fastener. Metallic	G. W. McGill	337,152	Mar. 2	404	105	34	1000
Fastener. Metallic	G. W. McGill	337,989	Mar. 16	1470	382	34	1203
Fastening for boxes, satchels, &c	B. F. Hillery	336,316	Feb. 16	1777	465	34	769
Fats with milk, &c. Apparatus for effecting emulsion of	C. A. Johansson	336,394	Feb. 16	1787	467	34	770
Faucet	J. McKenzie	337,511	Mar. 9	874	228	34	1089
Faucet	E. Morère	338,860	Mar. 30	2706	712	34	1440
Faucet	D. and T. Morris	338,353	Mar. 23	1991	504	34	1300
Faucet	R. M. Reilly and F. King	336,159	Feb. 16	1536	405	34	787
Faucet	P. Schofield	334,201	Jan. 12	1141	306	34	209
Faucet and beer-pump. Combined	F. X. Escherich	336,050	Mar. 16	1560	411	34	1222

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Faucet and filler	E. Kells	336,721	Feb. 23	2338	612	34	877
Faucet for shipping and service cans	J. Tilton	336,174	Feb. 16	1560	411	34	731
Faucet. Force and drain	F. R. Tibbitts	337,210	Mar. 2	436	114	34	1007
Faucets. Proportional measuring attachment for	D. A. Sutherland	336,172	Feb. 16	1554	410	34	730
Feather-sorter	H. Penner	335,144	Feb. 2	63	17	34	452
Feed-cutter	J. O. Holtzman	336,890	Feb. 16	1788	466	34	769
Feed-cutter	J. H. Parriah	337,429	Mar. 9	752	198	34	1070
Feed-cutter	P. Fisher	334,367	Jan. 12	1244	325	34	238
Feed-cutter feed-chain	J. Lombart	336,496	Feb. 16	2017	529	34	813
Feed-regulator	L. C. Shroeder	334,092	Jan. 12	830	227	34	102
Feed-regulator	M. Crawford	334,091	Jan. 19	1604	452	34	327
Feed regulator. Boiler-	E. A. Craig	333,604	Jan. 5	142	38	34	29
Feed-trough	E. Amouronx	338,015	Mar. 16	1536	399	34	1215
Feed-water alarm for steam-boilers	A. A. Shobe	335,968	Feb. 9	1242	330	34	689
Feed-water apparatus	J. F. Belleville	336,283	Feb. 16	1733	{453 454	34	760
Feed-water heater	T. Davis and W. W. Tyler	337,670	Mar. 9	1064	274	34	1124
Feed-water heater	H. Fairbanks	337,756	Mar. 9	1168	304	34	1142
Feed-water heater	T. Fairbanks	336,909	Feb. 23	2439	641	34	896
Feed-water heater	J. Mahoney	336,929	Mar. 2	63	17	34	936
Feed-water heater	C. Manning	337,510	Mar. 9	873	221	34	1089
Feed-water heater	J. O'Brien and S. J. Weaver	337,189	Mar. 2	412	107	34	1002
Feed-water heater	H. Poe	334,192	Jan. 12	984	265	34	189
Feed-water heater	O. Rothrock	334,197	Jan. 12	1004	267	34	194
Feed-water heater	F. Shirkie	335,317	Feb. 2	323	84	34	499
Feed-water heater	J. T. Mead and J. Thomson	336,249	Feb. 16	1684	439	34	751
Feed-water purifier	L. P. Foss	336,307	Feb. 16	1768	463	34	767
Feed-water regulator	E. F. Funk	336,225	Feb. 16	1643	429	34	745
Feeder. Calf-	D. W. Bickerstaff	333,722	Jan. 5	314	86	34	59
Feeding rack. Sheep-	D. Phillips	335,384	Feb. 2	417	107	34	516
Feeding rack. Sheep-	J. W. Street	336,873	Feb. 23	2540	669	34	915
Feeding stock on cars. Apparatus for	J. W. Haworth	334,049	Jan. 26	2032	539	34	306
Felly for wheels. Metallic	E. Danford	333,732	Jan. 5	326	90	34	61
Felly. Vehicle-wheel	J. T. Waring	339,034	Mar. 30	2967	.....	34	1486
Felting. Preparation of animal fiber for	W. W. Gage	336,634	Feb. 23	2214	578	34	853
Fence	H. S. Ginther	336,405	Feb. 16	1899	497	34	791
Fence	A. Newkirk	334,973	Jan. 26	2057	548	34	401
Fence	E. F. Shellaberger	334,988	Jan. 26	2073	553	34	404
Fence	J. R. Standley	339,116	Mar. 30	3081	815	34	1504
Fence	W. A. Tillman	336,499	Feb. 16	2019	530	34	813
Fence	N. E. Weisell	338,573	Mar. 27	2287	600	34	1359
Fence	M. Wilson	338,902	Mar. 30	2775	731	34	1451
Fence	J. P. Bloomer	338,917	Mar. 30	2796	737	34	1455
Fence-guard	J. M. Patterson	337,989	Mar. 16	1498	389	34	1208
Fence-machine	S. Watson	338,893	Mar. 30	2763	728	34	1449
Fence-machine	J. D. Curtis	339,086	Mar. 30	3036	802	34	1496
Fence-machine. Barb-	J. Middaugh and C. M. Wilcox. (Reissue.)	10,687	Feb. 9	1398	{369 370	34	607
Fence-machine. Portable	M. C. Henley and H. Farmer	338,738	Mar. 30	2541	671	34	1409
Fence-machines. Tension device for	E. Miller	337,420	Mar. 9	738	189	34	1067
Fence-making machine	J. B. Thiea	335,399	Feb. 2	436	112	34	519
Fence-making machine	J. B. Thiea	337,638	Mar. 9	1026	264	34	1118
Fence-making machine	J. B. Thiea	334,514	Jan. 19	1452	390	34	282
Fence-making machine. Field-	S. B. Cross	337,637	Mar. 9	1026	263	34	1117
Fence-making machines. Reel for	J. B. Thiea	338,818	Mar. 30	2650	698	34	1429
Fence. Picket	W. F. Baird	334,577	Jan. 19	1537	411	34	298
Fence. Portable	L. W. Fisher	337,646	Mar. 9	1036	266	34	1119
Fence-post	O. M. Allaben	336,889	Mar. 2	7	2	34	928
Fence-post	J. Burns	335,298	Feb. 2	297	79	34	494
Fence-post	W. H. Myers and L. Anderson	334,719	Jan. 19	1733	462	34	335
Fence-post	A. A. Parker	337,862	Mar. 16	1342	348	34	1180
Fence-post	B. W. Stanton	336,196	Feb. 16	1594	418	34	738
Fence-post	H. B. Wilson	338,903	Mar. 30	2776	731	34	1451
Fence-post	L. D. Woodworth	338,030	Mar. 16	1559	404	34	1218
Fence-post	E. Brisbin	337,857	Mar. 16	1310	340	34	1174
Fence-post	A. J. Nellis	337,865	Mar. 16	1319	343	34	1175
Fence-posts. Wire-fastening device for	H. Priday	337,250	Mar. 2	503	121	34	1019
Fence-posts. Wire-stretching device for	W. C. Gholson	336,669	Feb. 23	2275	594	34	864
Fence stay. Wire-	C. D Shellaberger	334,901	Jan. 26	1858	490	34	362
Fence-stretcher	W. N. Parrish	338,035	Mar. 16	1564	405	34	1219
Fence tension apparatus. Wire-	G. W. Cason	338,229	Mar. 16	1820	476	34	1269
Fence-wire and other strands. Stretching	J. E Hunt	334,536	Jan. 19	1480	397	34	287
Fence-wire. Barbed	E. J. Miles	335,842	Feb. 9	1065	{291 292	34	639
Fence-wire stretcher	T. V. Phelps	338,610	Mar. 23	2296	611	34	1368
Fence-wire stretcher	J. M. Overpeck, O. D. Shank, and L. A. Cussins.	338,037	Mar. 16	1566	406	34	1220
Fence-wire. Tension apparatus for	W. M. Clow	337,119	Mar. 2	317	83	34	985
Fences. Anchoring device for wire	W. H. Bigelow	338,822	Mar. 30	2738	721	34	1445
Fences. Machine for building wire	W. D. Schooley	335,253	Feb. 2	236	62, 63	34	492
Fences. Machine for constructing	R. B. Stapp	338,775	Mar. 30	2596	684	34	1419
Fences. Machine for manufacturing	H. C. Pratt						
Fences. Wire-holder for							
Fender: *See* Plow-fender. Vehicle-body fender. Vehicle-fender.							
Ferments. Manufacture of pure non-organized	M. Blumenthal	338,471	Mar. 23	2155	.....	34	1337
Ferrule. Fishing-rod	J. H. Knapp	337,569	Mar. 9	968	248	34	1107
Fertilizer-distributer	T. L. Allen	336,373	Feb. 16	1854	486	34	784
Fertilizer-distributer	J. B. Denton	336,796	Feb. 23	2434	640	34	895
Fertilizer-distributer	J. H. and T. Dodds	337,312	Mar. 2	582	153	34	1033
Fertilizer-distributer	A. Lively	338,068	Mar. 16	1626	423	34	1232
Fertilizer-distributer	E. G. Macomber	338,852	Mar. 30	2696	710	34	1438
Fertilizer-distributer	R. B. Sheldon and A. R. Patterson	335,152	Feb. 2	71	19, 20	34	453
Fertilizer-distributer	G. B. Billings	333,732	Jan. 5	315	86, 87	34	59
Fertilizer-distributer and planter. Combined							

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fertilizer dropper. Tobacco-	A. McNabb	334,456	Jan. 19	1370	370	34	288
Fiber and fibrous matter. Treatment of	F. B. Greene	338,595	Mar. 23	2317	.....	34	1364
Fiber-cleaning separator	H. Cole	336,294	Feb. 16	1733	{458 459	34	763
Fiber from the yucca or other cacti. Manufacturing textile	J. C. Balk	336,376	Feb. 16	1857	.....	34	784
Fibrous substances. Operating on and treatment of vegetable	C. Court	333,731	Jan. 5	325	89	34	61
Fifth-wheel	E. M. Simmons	338,502	Mar. 23	2275	596	34	1357
Fifth-wheel	M. Tompkins	337,460	Mar. 9	810	205	34	1078
Fifth-wheel anti-rattler	J. Long	336,927	Mar. 2	62	16	34	937
Fifth-wheel gear for vehicles	J. G. Ebken	338,394	Mar. 23	2057	539	34	1316
Fifth-wheel. Vehicle	C. C. Pinckney	335,099	Jan. 26	2026	509	34	321
Fifth-wheels. Die for making	F. P. Bates	338,217	Mar. 16	1904	470	34	1266
File and binder for pamphlets, bills, &c.	J. R. Pitt	338,675	Mar. 23	2433	641	34	1384
File. Bill-	P. J. Schlicht	338,788	Mar. 30	2809	696	34	1492
File. Bill and letter	J. S. Vanhorn	337,313	Mar. 2	439	115	34	1007
File-box	H. D. Waste	337,903	Mar. 16	1371	355	34	1185
File-cabinet for papers, &c.	C. H. Moulton	338,643	Mar. 23	2364	608	34	1376
File. Check-	T. A. O'Keefe	337,983	Mar. 16	1492	387	34	1206
File-cutting machine	C. M. Fairbanks	334,115	Jan. 12	865	227	34	166
File. Distributing-	R. F. Leaman	334,532	Jan. 19	1471	394	34	286
File-handle	J. Chantrell	337,944	Mar. 2	468	127	34	1015
File-handle	J. Chantrell	337,945	Mar. 2	463	127	34	1015
File-holder	O. C. Mackenzie	336,577	Feb. 23	2131	550	34	830
File-holders. Cabinet for	E. W. Woodruff	335,668	Feb. 9	811	216	34	562
File. Newspaper-	W. A. Borden	337,306	Mar. 9	649	172	34	1053
File. Newspaper-	J. and J. Glaser	337,678	Mar. 9	1072	277	34	1125
File. Newspaper-	W. F. Winship	338,682	Mar. 23	2446	645	34	1380
File. Paper-	E. E. Baker	338,809	Mar. 30	2784	{733 734	34	1453
Files. Cabinet for holding paper-	H. W. Reade	338,300	Mar. 23	1915	504	34	1295
Filing-block. Adjustable	F. Ide	335,930	Feb. 9	1195	319	34	609
Filing device. Bill and letter	J. S. Vanhorn	337,214	Mar. 2	440	115	34	1008
Filing metallic ribbons. Machine for	J. Logan	337,849	Mar. 9	1085	281	34	1128
Filing prescriptions. Machine for	J. S. Jarnagin	335,457	Feb. 2	513	134	34	533
Filter	A. Breuer	336,621	Feb. 23	2200	574	34	850
Filter	C. E. Chamberland	336,089	Feb. 16	1429	377	34	769
Filter	A. Hallowell	335,561	Feb. 9	691	188	34	571
Filter	J. C. Higgins	338,411	Mar. 23	2074	544	34	1383
Filter	J. W. Hyatt	338,414	Mar. 23	2077	{544 545	34	1383
Filter	C. W. E. Pieske	335,040	Jan. 26	2158	573	34	418
Filter	J. D. Smith	333,896	Jan. 5	532	147	34	101
Filter-bed. Elevated	W. S. West	334,629	Jan. 19	1607	{498 499	34	311
Filter. Centrifugal	R. L. De Lisser	337,650	Mar. 2	225	60	34	987
Filter for purifying sugar-liquors by bone-black. Continuous	E. E. Quimby	335,622	Feb. 9	751	200	34	562
Filter-press	B. H. Remmers and J. Williamson	338,553	Mar. 23	2259	583	34	1355
Filter. Pressure-	S. G. Derham	337,486	Mar. 9	842	213	34	1084
Filter. Reversible	E. G. W. Bartlett	333,498	Jan. 5	4	2	34	4
Filters. Bone-black discharger for continuous	R. C. Howes	335,586	Feb. 9	697	185	34	578
Filters. Bone-black discharger for continuous	F. O. Matthiessen	335,602	Feb. 9	724	192	34	577
Filters. Bone-black discharger for continuous	F. O. Matthiessen	335,603	Feb. 9	725	{188 189 190 191	34	577
Filters. Cleansing	G. H. Moore	337,493	Mar. 9	742	194	34	1068
Filtering device for feed-water pipes	J. Heath	337,154	Mar. 2	361	94	34	983
Filtering alcohol	J. Bendix	333,721	Jan. 5	313	86	34	58
Filtering compound	C. E. Chamberland	336,385	Feb. 16	1869	.....	34	787
Filtering compound	C. E. Chamberland	336,386	Feb. 16	1870	.....	34	787
Filtering fabric	S. G. Derham	336,799	Feb. 23	2436	640	34	895
Filtering material	F. Breyer	336,905	Feb. 16	1612	422	34	741
Filtering media. Producing	F. Breyer	336,906	Feb. 16	1616	422	34	741
Filtering water and other liquids. Appliance for	J. P. Jackson	337,584	Mar. 9	963	247	34	1106
Filtration through bone-black. Apparatus for decolorizing sugar-liquors by	F. O. Matthiessen	335,763	Feb. 9	958	254	34	618
Finger-exercising device	C. Debuysére	336,216	Feb. 16	1630	{425 426	34	743
Finger-nail polisher	G. H. Broadhurst	338,245	Mar. 23	1843	485	34	1289
Finger-ring	O. Thie	333,696	Jan. 5	275	74	34	52
Fire-alarm	A. C. Gordon	338,503	Mar. 23	2314	606	34	1364
Fire-alarm box	T. F. Gaynor	335,025	Jan. 26	2127	566	34	414
Fire-alarm boxes. Attachment for	H. H. Rebbeck	337,198	Mar. 2	422	110	34	1004
Fire-alarm indicator	W. C. Walter	334,399	Jan. 12	1280	{345 346	34	244
Fire-alarm signal	T. F. Gaynor	335,027	Jan. 26	2132	567	34	415
Fire-arm	G. W. Cilley	336,894	Mar. 2	12	4	34	920
Fire-arm	G. D. Potter	338,188	Mar. 16	1768	461	34	1260
Fire-arm barrel	E. Rubin	338,192	Mar. 16	1774	462	34	1261
Fire-arm. Breech-loading	C. G. Bonehill	337,810	Mar. 16	1851	394	34	1164
Fire-arm. Breech-loading	J. C. Broyles	338,947	Mar. 23	1845	485	34	1282
Fire-arm. Breech-loading	W. J. Graham	338,732	Mar. 30	2529	{668 669	34	1407
Fire-arm. Breech-loading	W. H. Shear	335,043	Jan. 26	2157	574	34	419
Fire-arm. Breech-loading	J. Tonks	333,795	Jan. 5	410	111	34	77
Fire-arm. Electric	S. Russell	337,872	Mar. 16	1327	345	34	1177
Fire-arm. Magazine	P. A. Altmaier	334,731	Jan. 26	1749	467	34	345
Fire-arm. Magazine	J. M. and M. S. Browning	336,287	Feb. 16	1740	{455 456	34	761
Fire-arm. Magazine	A. R. Byrkett	336,289	Feb. 16	1747	457	34	762
Fire-arm. Magazine	W. B. Franklin and C. J. Ebbets	335,517	Feb. 2	504	165	34	546

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Fire-arm. Magazine	A. L. Larsen and C. E. Winterros	334,944	Jan. 12	1068	283, 284	34	206
Fire-arm. Magazine	O. Schoenauer	336,443	Feb. 16	1951	511	34	601
Fire-arm. Magazine	W. Trabue. (Reissue)	10,690	Feb. 16	2078	546	34	894
Fire-arm. Repeating	F. Rees	337,992	Mar. 16	1502	390	34	1206
Fire-arm. Repeating	F. Rees	337,993	Mar. 16	1502	390, 391	34	1209
Fire-arm. Revolving	J. Boland	333,725	Jan. 5	318	67	34	60
Fire-arm. Revolving	B. Merritt	338,760	Mar. 30	2571	678, 679	34	1415
Fire-arm safety-lock	H. C. Waldecker	338,451	Mar. 23	2131	557	34	1338
Fire-arms. Safety-catch for	G. D. Potter	338,189	Mar. 16	1771	469	34	1261
Fire-arms. Sight for	W. W. Wetmore	338,898	Mar. 30	2768	729	34	1450
Fire-engine	R. Morrell	337,424	Mar. 9	745	191	34	1068
Fire-escape	W. H. Bailey	335,414	Feb. 2	458	118	34	523
Fire-escape	J. Bien	336,867	Mar. 2	5	2	34	927
Fire-escape	W. Brown	335,108	Feb. 2	10	3	34	442
Fire-escape	F. Brueningsen and E. Quinn	334,741	Jan. 26	1764	470	34	348
Fire-escape	J. H. Clifton	335,896	Feb. 9	1154	306	34	654
Fire-escape	F. W. Emons	337,940	Mar. 16	1428	370	34	1196
Fire-escape	W. S. Goodwillie	333,624	Jan. 5	165	45	34	33
Fire-escape	O. Hansen	336,713	Feb. 23	2323	609	34	874
Fire-escape	A. Ilse	338,843	Mar. 30	2685	707	34	1436
Fire-escape	A. M. Jeffers	334,230	Jan. 12	1047	278	34	203
Fire-escape	J. D. Jenkins	337,064	Mar. 2	240	64	34	970
Fire-escape	A. J. Johnson	338,750	Mar. 30	2557	675	34	1412
Fire-escape	W. A. Kerr	336,414	Feb. 16	1911	500, 501	34	794
Fire-escape	W. G. Ketchum	334,237	Jan. 19	1055	281	34	204
Fire-escape	H. Lewis	337,594	Mar. 9	975	250	34	1106
Fire-escape	M. D. Marcus and N. H. Epstein	335,372	Feb. 2	402	103	34	514
Fire-escape. Electric	R. A. Ballou	338,249	Mar. 23	1837	483	34	1281
Fire-extinguisher. Chemical	W. M. Harrison	338,520	Mar. 23	2220	582	34	1348
Fire-extinguisher. Hand	D. M. Monroe	336,658	Feb. 23	2257	588	34	861
Fire-extinguisher. Hand-grenade	A. E. Lytle	337,344	Mar. 2	619	163	34	1040
Fire extinguisher. Prairie	A. W. Rumsey	337,096	Mar. 2	269	72	34	976
Fire-extinguishing projectile	W. A. Bartlett	336,981	Mar. 2	130	35	34	949
Fire-kindler and fuel-block	W. R. Myers	337,782	Mar. 9	1203	313	34	1148
Fire-place	E. R. Procter	334,088	Jan. 12	824	225, 226	34	161
Fire-place	J. W. Wolfe	336,682	Feb. 23	2291	599	34	867
Fire-place attachment	S. B. Burwell	333,921	Jan. 5	579	156	34	108
Fire-place. Gas-burning	E. F. MacKusick	334,877	Jan. 26	1932	514	34	370
Fire-place guard or screen	W. S. Craft	333,925	Jan. 5	569	161	34	110
Fire-pot. Tinner's	J. Carter	336,893	Mar. 2	11	3	34	929
Fire-proof garment	J. W. Elliot	334,360	Jan. 12	1237	332	34	227
Fire-proof post and column	C. C. Gilman	338,512	Mar. 23	2212	580	34	1347
Fire-work stand. Portable	H. C. Weeden	334,496	Jan. 19	1494	363	34	278
Fires in houses and vessels. Apparatus for localizing and extinguishing	P. L. Palmer	334,461	Jan. 19	1379	372	34	270
Fish-line reel	A. H. Dalley	335,798	Feb. 9	1010	267	34	628
Fish-line reel	M. Maguire	335,600	Feb. 9	721	192	34	577
Fisherman's minnow-boat	F. F. Ward	336,967	Mar. 2	109	30	34	945
Fishing-fly book	T. J. Conroy	335,506	Feb. 2	579	151	34	544
Fishing-fly book	H. P. Wells	335,491	Feb. 2	559	147	34	541
Fishing-hook and device for capturing fish	J. Scotland and F. Corlon	336,953	Mar. 2	96	26	34	943
Fishing-line reel	G. L. Crandal	336,092	Feb. 16	1432	378	34	710
Fishing-lines. Reel for drying	J. W. Brooks, Jr	336,868	Mar. 2	6	2	34	928
Fishing-reel	A. F. Meisselbach	336,657	Feb. 23	2256	588	34	860
Fishing-rod	L. L. Bartlett	337,474	Mar. 9	827	209	34	1081
Fishing rod and reel	A. H. Dalley	335,797	Feb. 9	1007	267	34	628
Fishing-rod reel	E. J. Martin	335,826	Feb. 9	1042	275	34	634
Fishing. Snell for	F. E. Forster	337,944	Mar. 16	1434	372	34	1197
Fishing-tackle	L. D. Lothrop	333,648	Jan. 5	198	55	34	39
Flanging-machine	S. T. Williams	338,901	Mar 30	2774	730, 731	34	1451
Flasher	J. Schreiber	337,594	Mar. 9	989	227	34	1092
Flat-iron heater	G. Benns	335,421	Feb. 2	467	130	34	525
Fleshing and unhairing machine	W. M. Hoffman	335,197	Feb. 2	157	40	34	469
Flexible joint or connection-pipe	H. Lecouteux and E. Garnier	338,848	Mar. 30	2690	709	34	1437
Flood-gate	M. A. Emmons	334,420	Jan. 19	1320	357, 358	34	258
Floor and ceiling. Fire-proof	C. C. Gilman	338,513	Mar. 23	2214	581	34	1347
Floor-arch	C. C. Gilman	338,516	Mar. 23	2216	581	34	1347
Floor-clamp	B. Page	337,191	Mar. 2	414	108	34	1002
Floor. Fire-proof	C. C. Gilman	338,510	Mar. 23	2209	580	34	1346
Floor-grinding machine	J. B. Harris, Jr	336,918	Mar. 2	51	14	34	936
Floors and ceilings. Construction of fire-proof	C. C. Gilman	338,517	Mar. 23	2216	582	34	1346
Flooring and ceiling clamp	E. A. Reed	334,611	Jan. 19	1561	421	34	306
Flooring. Flexible	W. I. Adams and A. A. Hasson	337,202	Mar. 2	555	146	34	1028
Flooring-jack	H. C. Cloyd	338,933	Mar. 30	2811	741	34	1450
Flour and bread. Preparing gluten	J. E. Lauer	334,245	Jan. 12	1072	.....	34	207
Flour-bolt	N. W. Holt	335,454	Feb. 2	506	132, 133	34	532
Flour-bolt	A. Y. Leake	334,246	Jan. 12	1073	284	34	207
Flour-bolt	G. T. Smith	335,543	Feb. 2	627	164, 165, 206	34	532
Flour-bolt	G. T. Smith	335,642	Feb. 9	779	207	34	587
Flour-bolt	G. T. Smith	339,036	Mar. 30	2957	782	34	1464
Flour-bolting reel	W. C. Meyer	338,858	Mar. 30	2704	711	34	1440
Flour scoop and sifter	W. Smith	337,711	Mar. 9	1116	288	34	1132
Flower-vase with background	R. Kift	338,845	Mar. 30	2687	708	34	1437

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Fluid-gate	C. C. Burton	338,711	Mar. 23	2496	660	34	1402
Fluids. Apparatus for lifting and controlling the flow of	W. T. Messinger	334,798	Jan. 26	1889	498	34	341
Fluting and smoothing iron. Combined	H. Reuter	336,435	Feb. 16	1839	508	34	689
Fly-book	C. G. Levison	337,593	Mar. 9	972	249	34	1108
Fly-trap	B. Sanford	333,676	Jan. 5	227	65	34	46
Folding box or crate	E. Harris	334,375	Jan. 12	1250	337	34	220
Folding chair	P. Nöel	335,037	Jan. 26	2147	571, 572, 259	34	417
Folding-machine	C. Baillie	337,914	Mar. 16	1384	360	34	1188
Folding-machine	E. P. Donnell	337,937	Mar. 16	1490	387	34	1194
Folding table	J. T. Bon	333,500	Jan. 5	6	2, 3	34	4
Folding table	D. A. Fay	338,835	Mar. 30	2676	704	34	1434
Folding table	J. P. Gage	334,946	Jan. 26	2019	538	34	385
Folding table	S. C. Hopkins	336,717	Feb. 23	2327	610	34	875
Food for animals. Preparing	C. H. Voigt	336,965	Mar. 2	107	.....	34	945
Food-warmer or night-light apparatus. Infant's	S. Clarke	334,747	Jan. 26	1775	472	34	350
Foot-power machine	W. L. Perry	338,437	Mar. 23	2113	553	34	1288
Foot-rest	T. A. Kochs	335,594	Feb. 9	714	190	34	575
Foot-tub	A. H. Perkins	335,688	Feb. 9	1002	280	34	638
Forceps. Digital	S. R. Wilcox	338,394	Mar. 23	1951	513	31	1301
Forge	C. Weber	336,674	Feb. 9	1394	368	34	606
Forging axles. Die for	J. Kritch	337,504	Mar. 9	863	218	34	1087
Forging-press. Hydraulic	R. H. Tweddell, J. Platt, and J. Fielding.	336,604	Feb. 23	2108	547	34	845
Fork: *See* Carving-fork. Hay-fork. Clothes-fork. Laundry-fork.							
Fork-drill	C. Snedekum	337,351	Mar. 2	698	165	34	1043
Forks. Making	T. E. Wawrinsky	334,551	Jan. 19	1503	403	34	291
Frame: *See* Embroidery-frame. Skylight-frame. Eyeglass-frame. Spinning-frame. Neck-wear frame. Track-drill frame. Picture-frame.							
Frame for draping fringe, &c	L. N. Bachand	334,413	Jan. 19	1307	354	34	256
Freight. Apparatus for handling	L. Graff	338,951	Mar. 30	2685	748	34	1464
Frog and switch. Safety	C. Buhrer	336,549	Feb. 23	2094	551	34	832
Frog. Spring	D. H. Lovell	338,177	Mar. 16	1754	456	34	1256
Fruit-basket cover	J. H. Marvil	338,179	Mar. 16	1757	459	34	1258
Fruit-drier	A. J. Hatch	335,351	Feb. 2	378	97	34	508
Fruit-drying rack	J. M. Springer	333,897	Jan. 5	540	147	34	101
Fruit, flowers, &c. Device for picking	J. S. Langhorne	337,166	Mar. 2	383	100	34	996
Fruit-gatherer	J. N. Rudd	338,304	Mar. 23	1919	505	34	1296
Fruit-jar	D. E. Ashby	333,715	Jan. 5	308	84	34	58
Fruit-jar	D. E. Ashby	333,716	Jan. 5	309	84	34	58
Fruit-jar	D. E. Ashby	333,717	Jan. 5	310	85	34	58
Fruit-jar	W. P. Coldren	336,539	Feb. 23	2098	559	34	833
Fruit-jar	E. A. De Steiger	336,800	Feb. 23	2437	641	34	895
Fruit-jar	T. G. and J. H. Otterson	338,185	Mar. 16	1764	460	34	1259
Fruit-jar	H. Wilcox	335,320	Feb. 2	342	89	34	502
Fruit-picker	L. Strong and A. B. Smith	334,486	Jan. 19	1416	381	34	276
Fruit-picker	W. F. Ziegler	338,010	Mar. 16	1531	397	34	1214
Fruit-wrapping machine	W. E. Rice	336,823	Feb. 23	2469	648, 649	34	901
Frying-pan	T. O. Inman	334,867	Jan. 26	1921	511	34	377
Frying-pan-draft attachment	W. Simmons and J. F. Sprague	333,894	Jan. 5	537	146	34	100
Fuel. Apparatus for burning gaseous	F. Philips	337,516	Mar. 9	880	222, 224	34	1090
Fuel apparatus. Vapor	A. I. Ambler	338,461	Mar. 23	2142	560, 561	34	1235
Fuel-economizer	A. Lowcock and T. Sykes	334,533	Jan. 19	1472	395	34	286
Fuel. Feeding fine	W. Rogers	336,105	Mar. 16	1661	432	34	1238
Fuel for the development of steam. Combustion of fluid	L. W. Serrell	338,863	Mar. 30	2740	721, 722	34	1446
Funnel	F. Catlin	334,564	Jan. 19	1521	407	34	294
Funnel for forcing molasses, &c	H. Henke	335,452	Feb. 2	506	132	34	522
Furnace: *See* Bagasse-furnace. Locomotive-furnace. Boiler-furnace. Metallurgical furnace. Brick-kiln furnace. Nail-plate furnace. Electric furnace. Portable furnace. Heating-furnace. Smoke-consuming furnace. Heating and melting furnace. Tire-heating furnace. Hot-air furnace.							
Furnace	S. Bissell	335,558	Feb. 9	659	174	34	565
Furnace	J. B. Boulicault and J. Lehnbeuter	335,176	Feb. 2	129	32	34	464
Furnace	G. A. Clark	333,995	Jan. 12	683	187	34	196
Furnace	A. J. Lennox and J. Krepp	335,367	Feb. 2	395	101, 102	34	512
Furnace	T. Peore	335,621	Feb. 9	749	200	34	562
Furnace	J. Springer	336,765	Feb. 23	2393	627	34	868
Furnace and grate	W. P. Thompson	335,658	Feb. 9	798	213	34	591
Furnace-door	J. A. Roney	338,616	Mar. 23	2349	617, 618	34	1370
Furnace for precious metals	C. L. Hartsfeld	338,985	Mar. 23	1867	490, 491	34	1266
Furnace for reducing and distilling zinc from its ores	C. H. Murray	333,947	Jan. 5	640	176	34	121
Furnace-grate	J. W. Shaw	337,527	Mar. 9	804	228	34	1088
Furnaces and stoves. Heating attachment for	J. T. Greenwood	334,499	Jan. 19	1351	360	34	261

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Furnaces. Fire-bar for liquid-fuel	J. F. Backlund	338,690	Mar. 30	2462	649 / 650	34	1395
Furnaces. Shaking-grate for	C. Scheef	338,305	Mar. 23	1923	506	34	1296
Furnaces. Tapping-hole for	G. W. Goetz	334,015	Jan. 19	710	195	34	141
Furniture. Article of	J. G. Wolff	335,667	Feb. 9	610	216	34	506
Furniture-clamp	C. Joseph	339,061	Mar. 30	2003	794	34	1491
Furniture. Covered frame for	H. Heywood	333,698	Jan. 5	170	46	34	33
Furniture-handle	W. R. Taylor	337,869	Mar. 16	1350	351	34	1161
Furniture-pad	P. W. Pratt	336,346	Feb. 16	1818	477	34	776
Gage: *See* Axle-gage. Saw-table gage. Glass-cutting gage. Sewing-machine gage. Machine-table gage. Syrup-gage. Micrometer-gage. Water-gage. Paper-cutter gage. Weather-board gage. Printing-machine sheet-gage. Weather-boarding gage.							
Gage	H. Plante	336,742	Feb. 23	2361	618	34	881
Gage	H. V. Vogt	339,033	Mar. 30	2966	785	34	1485
Gage and clamp for weather-boarding, &c	W. Ervin	334,863	Jan. 12	1941	334	34	357
Gage-wheel and colter. Combined	H. A. Crossley	336,475	Feb. 16	1903	523	34	909
Gages. Face-plate for marking	J. A. Traut	334,308	Jan. 19	1163	311	34	234
Galvanic batteries. Manufacture of earthenware tanks or cells for	F. W. Meeker	334,027	Jan. 19	735	201	34	145
Galvanic battery	H. J. Brewer	337,477	Mar. 9	831	210	34	1061
Galvanic battery	F. L. Lathrop	334,788	Jan. 26	1890	485	34	579
Galvanic battery	A. H. and A. W. Roovers	336,359	Feb. 16	1827	479	34	778
Galvanic battery	J. Serson	338,194	Mar. 16	1775	463	34	1202
Galvanic battery	J. Mayer	334,879	Jan. 26	1934	515	34	379
Galvanic body-wear	O. E. Lundstedt	336,178	Mar. 16	1755	459	34	1258
Galvanometer	A. F. A. Vogelsang	333,703	Jan. 5	283	77	34	54
Game apparatus	A. F. A. Vogelsang	336,179	Feb. 16	1508	413	34	732
Game apparatus	F. C. Robinson	335,775	Feb. 9	978	259	34	622
Game-board and sectional stand	A. Gutzloe	335,579	Feb. 9	690	182	34	571
Game marker. Field	J. S. Aydelott	336,076	Feb. 16	1405	372	34	705
Game. Parlor base-ball	A. K. Brown	338,134	Mar. 16	1695	441	34	1245
Garbage-destroyer	P. Leistner	338,998	Mar. 30	2896	763	34	1471
Garden-table	A. B. Butler	334,218	Mar. 16	1806	471	34	1267
Garment-supporter	H. A. Seymour	337,997	Mar. 16	1516	392	34	1211
Garment-supporter	E. Thompson	334,307	Jan. 19	1169	311	34	234
Garment-supporting clasp	J. F. Atwood	333,495	Jan. 5	1	1	34	5
Gas and obtaining ammonia and other products therefrom. Purifying coal-	C. F. Claus	337,946	Mar. 2	484	127	34	1015
Gas apparatus	G. W. Gogin and G. Jones	336,912	Mar. 2	46	12	34	935
Gas apparatus	A. O. Granger	334,700	Jan. 19	1706	455	34	229
Gas. Apparatus for manufacturing	B. Loomis	338,991	Mar. 30	2895	766 / 767	34	1473
Gas. Apparatus for manufacturing	J. L. Stewart	333,691	Jan. 5	258	70, 71	34	50
Gas. Apparatus for manufacturing	J. L. Stewart	333,693	Jan. 5	267	72, 73	34	51
Gas. Apparatus for producing	P. W. Mackenzie	334,447	Jan. 19	1349	366	34	285
Gas. Apparatus for the manufacture of illuminating and heating	B. Loomis	338,989	Mar. 30	2889	765 / 766	34	1472
Gas. Apparatus for the production of pure sulphurous	F. Randon	337,197	Mar. 2	490	110	34	1004
Gas-burner	J. C. English	335,439	Feb. 2	490	128	34	529
Gas-burner	O. D. McClellan	336,418	Feb. 16	1916	502	34	795
Gas-burner and carburetor	N. A. Ransom	333,671	Jan. 5	229	62, 63	34	45
Gas-burner. Automatic safety	G. Dominey	334,572	Jan. 19	1531	400	34	297
Gas-burner. Automatic safety	A. Meyer	333,653	Jan. 5	203	56	34	40
Gas-burner. Regenerative	H. C. Campbell	337,130	Mar. 2	335	87	34	967
Gas-conduits. Coupling for joints of	G. Marland	338,003	Mar. 16	1643	427	34	1235
Gas. Conveying and supplying	G. Westinghouse, Jr.	333,900	Jan. 5	417	113	34	78
Gas-conveying conduit	J. Schinneller	338,559	Mar. 23	2270	595	34	1356
Gas. Distributing	J. H. Dalzell and T. J. McTighe	337,668	Mar. 9	1002	274	34	1124
Gas. Electrical torch for lighting	J. D. Culp	336,898	Mar. 2	23	7	34	931
Gas-engine	G. C. Anthony	337,226	Mar. 2	455	119	34	1010
Gas-engine	J. Atkinson	336,505	Feb. 16	2026	532	34	814
Gas-engine	J. Charter	335,564	Feb. 9	667	176	34	567
Gas-engine	E. Delamare-Debouteville and L. P. C. Malandin.	333,838	Jan. 5	409	127	34	67
Gas-engine	J. J. E. Lenoir	335,462	Feb. 2	590	136	34	535
Gas-engine	L. H. Nash	334,089	Jan. 12	749	205	34	147
Gas-engine	H. and C. E. Skinner	335,971	Feb. 9	1945	331	34	670
Gas-engine	L. H. Nash	334,088	Jan. 12	747	204	34	147
Gas-engine governor	C. E. Skinner	335,970	Feb. 9	1944	330	34	670
Gas-engines. Electrical igniter for	L. H. Nash	334,040	Jan. 12	752	305 / 306	34	148
Gas-engines. Feeding and operating	L. Bannister	336,199	Feb. 16	1597	419	34	738
Gas from leaks at the joints of gas-conduits. Means for collecting waste	W. Swindell	334,306	Jan. 12	1161	310 / 311	34	223
Gas-furnace	W. Rippey	337,868	Mar. 16	1322	344	34	1176
Gas. Furnace for the combustion of natural	O. W. Bennett	336,878	Feb. 16	1859	487	34	784
Gas-generator. Automatic	J. H. Dalzell and T. J. McTighe	337,667	Mar. 9	1061	.....	34	1124
Gas in an inexplosive condition. Conveying	J. E. Kearns	337,408	Mar. 9	714	186	34	1063
Gas in pipes. Device for preventing the freezing of	I. M. O'Donel	334,690	Jan. 26	1946	518	34	382
Gas-leak detector	C. M. Lungren	336,576	Feb. 23	2130	558	34	839
Gas-light. Incandescent	C. W. Holtzer	338,748	Mar. 30	2554	675	34	1412
Gas-lighting apparatus. Electric	C. W. Holtzer	338,747	Mar. 30	2553	674	34	1412
Gas-lighting burner. Electric	B. Loomis	338,990	Mar. 30	2892	766	34	1473
Gas. Manufacturing	T. F. Martin	334,127	Jan. 12	879	241	34	171
Gas-making apparatus	J. C. Wanda	335,405	Feb. 2	444	114 / 115	34	500
Gas-making apparatus							

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gas. Manufacturing	A. O. Granger	334,701	Jan. 19	1708	456	34	230
Gas. Manufacturing	J. L. Stewart	333,692	Jan. 5	262	71, 72	34	51
Gas-motor engines. Slide and passage for	N. A. Otto	335,088	Jan. 26	2150	572 / 573	34	418
Gas or water regulator	B. Franklin	334,011	Jan. 12	705	194	34	140
Gas, &c. Parallel drop-bracket for	J. E. Treat	338,117	Mar. 16	1675	435	34	1241
Gas-pressure regulator	S. A. Beatty	333,587	Jan. 5	192	84	34	38
Gas-pressure regulator	R. F. Hatfield	334,773	Jan. 26	1804	480	34	356
Gas. Process of and apparatus for manufacturing	B. Loomis	338,992	Mar. 30	2897	767 / 768	34	1474
Gas. Process of and apparatus for producing	E. J. Jerzmanowski	333,859	Jan. 5	494	124 / 125 / 185	34	92
Gas. Producing	E. J. Jerzmanowski	333,860	Jan. 5	495	126	34	93
Gas-regulator	M. J. Amick	333,564	Jan. 5	118	32	34	25
Gas-regulator	G. Bray	333,888	Jan. 5	447	121	34	88
Gas-regulator	E. C. McCloy	338,499	Mar. 23	2060	547	34	1385
Gas-regulator	J. E. Miller	337,012	Mar. 2	180	47	34	957
Gas-regulator	N. Sleeman	335,156	Feb. 2	79	22	34	454
Gas-regulator	G. W. Reed	334,266	Jan. 12	1136	304	34	219
Gas-saving device	J. Leede and J. Lawabe	336,573	Feb. 23	2198	556	34	838
Gas-service conduits. Attachment for	J. L. Chapman	334,639	Jan. 19	1632	432	34	314
Gas. Stop-off valve for	G. Russell	337,350	Mar. 2	636	164	34	1041
Gas-supply pipe	E. C. Merrill	334,889	Jan. 26	1937	516	34	380
Gas-supply systems. Stop-valve for	W. T. Smith	338,112	Mar. 16	1666	434	34	1239
Gas-traps. Safety-seal for	J. A. McCormick	335,467	Feb. 2	584	127	34	535
Gas under pressure. System for conveying	H. Bower	338,098	Mar. 16	1556	402 / 403	34	1218
Gas. Utilization of natural	P. M. Hitchcock	336,817	Feb. 16	1778	465	34	789
Gas-wells. Operating	G. E. Johnson	337,065	Mar. 2	941	64	34	970
Gasometer							
Gate: *See* Automatic gate. Railway-crossing safety-gate. Bridge-gate. End-gate. Railway safety-gate. Farm-gate. Sliding gate. Flood-gate. Swinging gate. Fluid-gate. Tilting gate. Railway-gate. Wagon end-gate.							
Gate	J. Austin and R. Chamberlain	336,031	Feb. 9	1397	351	34	684
Gate	J. H. Barton	338,912	Mar. 30	2787	735	34	1454
Gate	I. Burkholder	336,288	Feb. 16	1745	456 / 457	34	782
Gate	W. H. Campbell	337,375	Mar. 9	665	174	34	1055
Gate	W. H. Cox	336,471	Feb. 16	1987	580 / 581	34	807
Gate	T. Depp and E. H. Selby	334,516	Jan. 19	1454	390 / 391	34	283
Gate	S. Emery	337,674	Mar. 9	1069	276	34	1125
Gate	D. Giles	335,098	Jan. 26	2123	567	34	415
Gate	C. W. Gillis	338,058	Mar. 16	1586	413	34	1224
Gate	M. B. and W. Y. Gordon	338,401	Mar. 23	2063	541	34	1330
Gate	G. A. Grant	337,148	Mar. 2	354	92	34	991
Gate	S. Hushaw	336,049	Feb. 9	1356	358	34	680
Gate	I. H. Kepler	337,409	Mar. 9	715	186	34	1064
Gate	J. W. Lightfoot	337,597	Mar. 9	977	259	34	1108
Gate	T. H. O'Reilly	333,884	Jan. 5	398	142	34	99
Gate	T. L. Patrick	337,612	Mar. 9	994	255	34	1112
Gate	K. H. C. Preston	338,286	Mar. 23	1912	503 / 504	34	1294
Gate	W. M. Price	338,190	Mar. 16	1772	462	34	1261
Gate	P. Robinson	335,690	Feb. 9	764	203	34	564
Gate	T. Rodecker	334,267	Jan. 12	1136	305	34	219
Gate	F. W. Sensiba	337,069	Mar. 2	975	73	34	977
Gate	S. S. Sherman	337,533	Mar. 9	1021	268	34	1117
Gate	J. F. Towner	335,254	Feb. 2	289	63	34	493
Gate	J. W. White	337,907	Mar. 16	1374	357	34	1186
Gate	W. L. and J. C. Wilson	337,104	Mar. 2	294	78	34	980
Gate-opening device	N. E. Recsor	337,618	Mar. 9	1002	257	34	1113
Gates. Operating	H. F. Klopp	333,865	Jan. 5	508	137	34	93
Gear. Driving	A. C. Nagel, R. H. Kaemp, and A. W. F. G. Linnenbrügge.	335,882	Feb. 9	1049	277	34	636
Gear. Reversing	G. S. King	334,226	Jan. 12	1059	281	34	205
Gearing	D. C. and H. P. Camp	333,826	Jan. 5	454	123	34	84
Gearing for machinery. Reversing	J. Cryderman	339,065	Mar. 30	3035	801 / 802	34	1496
Gearing for roller-mills. Belt	J. M. Schutz	337,444	Mar. 9	788	201	34	1075
Gearing. Incased	E. Penney	333,542	Jan. 5	62	17, 18	34	14
Gearing. Worm	W. F. Beardslee	336,200	Feb. 16	1509	420	34	739
Gelatinized pelt	T. P. Milligan	333,964	Jan. 5	637	.....	34	190
Generator: *See* Electric generator. Gas-generator. Electric call-generator. Steam-generator.							
Glass-annealing oven	F. Schefold	338,880	Mar. 30	2737	720	34	1445
Glass. Apparatus for flattening window	L. House	336,855	Feb. 23	2509	662	34	900
Glass articles. Finishing	W. H. Barr	335,967	Feb. 9	1267	336	34	674
Glass barrel	W. V. Perry	336,344	Feb. 16	1816	476	34	776
Glass-cutting gage	E. O. Boyle	336,534	Feb. 23	2482	653	34	904
Glass-maker's mold	F. S. Shirley	337,204	Mar. 2	427	112	34	1005
Glass. Manufacture of articles made from toughened	F. B. A. R. De la Bastie	334,754	Jan. 26	1788	474	34	352
Glass-mold	W. H. Gulliver	337,764	Mar. 9	1179	307	34	1143

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Pags.
Glass panel. Ornamental	C. D. Pease	334,677	Jan. 19	1673	447	34	328
Glass surfaces. Ornamenting	J. S. Roberts	334,472	Jan. 19	1394	376	34	273
Glassware	E. D. Libbey	337,170	Mar. 2	288	101	34	997
Glassware. Decorated	A. Hamprecht	337,394	Mar. 2	596	157	34	1026
Glassware. Manufacture of	G. W. Blair	337,656	Mar. 9	1049	270	34	1121
Glassware. Manufacture of decorated	A. Hamprecht	337,395	Mar. 2	599	157	34	1057
Glassware. Shaping	D. C. Ripley	336,666	Feb. 28	2288	501 599	34	863
Globe for showing the directions of the winds	J. P. Royall	333,971	Jan. 5	649	178	34	122
Globe. Terrestro-sidereal	F. H. Bailey	336,260	Feb. 16	1725	451	34	759
Glove, &c	P. F. Cole	334,513	Jan. 19	1451	389	34	282
Gloves. Making button-holes in leather	J. Whitby	335,665	Feb. 9	1096	290	34	645
Glucose. Manufacture of	A. Seyberlich and A. Trampedach	337,448	Mar. 9	794	.....	34	1076
Glue. Manufacturing	K. Upton	338,374	Mar. 23	2025	532	34	1313
Glycerine from fatty substances. Extracting	J. H. Clinton	336,795	Feb. 23	2431	.....	34	894
Gold and silver from ores and mattes. Extracting	P. Manhes	337,967	Mar. 16	1468	.....	34	1203
Gold and silver ores. Desulphurizing	J. H. Mathews	334,961	Jan. 26	2037	544	34	398
Gold, silver, copper, nickel, and cobalt from their ores by electrolytic action. Obtaining	M. Body	333,815	Jan. 5	434	118	34	81
Governor	C. B. Bosworth	333,817	Jan. 5	437	118	34	82
Governor	J. Casho	335,970	Feb. 9	961	69	34	487
Governor	J. D. Hobbs	336,318	Feb. 16	1780	465 466	34	760
Governor	W. M. Nororose	337,514	Mar. 9	878	222	34	1090
Governor. Automatic marine	C. Dickenson	337,817	Mar. 16	1261	327	34	1165
Governor. Engine	A. P. Broomell	338,622	Mar. 30	2855	699	34	1420
Governor for motors	J. Dow	334,119	Jan. 12	859	236	34	167
Governor regulation	G. H. Corliss	333,834	Jan. 5	465	126	34	86
Governor. Steam-engine	N. F. Burnham	336,836	Feb. 23	2486	653 654	34	904
Governor. Steam-engine	G. H. Corliss	333,835	Jan. 5	466	126	34	87
Governor. Steam-engine	J. C. Coaford and J. P. Kern	335,892	Feb. 9	1147	305	34	653
Governor. Steam-engine	J. Richards	336,747	Feb. 23	2367	619 620	34	882
Grab-hook for chains	M. Barr	336,687	Feb. 23	2299	601	34	869
Grader. Road	F. M. Pennock	336,921	Feb. 23	2467	648	34	901
Grain-adjusting device	H. Curtis	336,553	Feb. 23	2098	552	34	833
Grain, &c. Apparatus for transferring	A. B. Fernald and D. T. Lawson	337,388	Mar. 9	681	178	34	1058
Grain-binder	P. P. Coler	336,895	Mar. 2	13	4, 5, 6	34	929
Grain-binder	E. M. Kellogg	338,417	Mar. 23	2062	546	34	1394
Grain-binder	W. Lottridge	338,091	Mar. 16	1629	424 425 426	34	1282
Grain-binder	C. Whitney	334,499	Jan. 19	1429	385	34	278
Grain-binder cord-holder	O. Cooley	335,273	Feb. 2	264	69, 70	34	486
Grain-binder elevator	W. M. Whiting	337,643	Mar. 9	1032	265	34	1119
Grain-binder knotting device	W. N. Whiteley, W. Bayley, and S. Dyer	333,907	Jan. 5	560	151 152	34	105
Grain-binder knotting mechanism	J. F. Appleby	335,332	Feb. 2	344	90	34	508
Grain-binder tension device	G. C. Blakely and J. B. Gilpatrick	335,677	Feb. 9	624	219	34	595
Grain-binding machine	W. Butterfield	333,922	Jan. 5	580	157 158 159 160	34	109
Grain-cleaner	C. Tupper	338,236	Mar. 16	1828	477	34	1271
Grain-drier	C. Ehlermann and C. G. Mayer	336,905	Mar. 2	34	9	34	933
Grain-drier	H. R. Foote	333,939	Jan. 5	605	165	34	113
Grain-drier	M. L. Mowrer	338,673	Mar. 23	2430	641	34	1384
Grain-drier	C. F. Shedd	334,987	Jan. 26	2072	553	34	404
Grain-drier	F. W. Wiesebrock	333,908	Jan. 5	562	152	34	105
Grain-drier	C. L. Meinser	336,420	Feb. 16	1918	503	34	796
Grain-drill	W. P. Penn	336,427	Feb. 16	1929	506	34	797
Grain-drill	C. Russell	335,721	Feb. 9	891	235	34	607
Grain-drill	M. Wonser	337,543	Mar. 9	913	234	34	1096
Grain-drill attachment	J. McLain	335,468	Feb. 2	526	138	34	535
Grain-elevator	M. F. Seeley	336,755	Feb. 23	2378	623	34	884
Grain for fermentation. Preparing whole	C. Andersen and A. Woolner, Jr	338,579	Mar. 23	2294	601	34	1360
Grain hulling and scouring machine	F. B. Rolle	337,284	Mar. 2	542	142	34	1036
Grain. Mechanism for extracting steel and iron fragments from	F. E. Fisher	336,402	Feb. 16	1895	496	34	791
Grain-register	L. Nottingham	337,859	Mar. 16	1312	340	34	1174
Grain-separator	A. Leut	336,246	Feb. 16	1681	438	34	751
Grain-separator	F. Wadsworth and H. N. Prentice	334,312	Jan. 12	1168	313	34	225
Grain-separator	J. P. Bond	337,234	Mar. 2	470	123	34	1012
Grain separator and cleaner	J. Hawk	336,567	Feb. 23	2120	556	34	837
Grain separators. Fan for	J. H. Auble	337,729	Mar. 9	1137	294	34	1136
Graining apparatus	W. F. Kircher	334,667	Jan. 19	1662	444	34	321
Grapple	W. Spencer	336,498	Feb. 16	2018	529	34	813
Grapple	W. Seely	339,041	Mar. 30	2950	780	34	1483
Grapple. Drill-shaft	J. H. Hayward	336,408	Feb. 16	1902	498	34	792
Grappling and dredging bucket	G. Nolin	336,819	Feb. 23	2465	647	34	901
Grease-books. Manufacture of	L. Roll	335,540	Feb. 2	624	163	34	552
Grate-bar	W. Solt, Sr., and W. D. Kline	333,667	Jan. 5	253	69	34	49
Grate-bar	T. Poore	334,047	Jan. 12	764	210	34	150
Grate. Endless-chain	E. McFarland and L. Passmore	337,849	Mar. 16	1299	337	34	1172
Grate for furnaces, heaters, &c	W. S. Salmon and W. E. Haislett	337,619	Mar. 9	1003	258	34	1114
Grater	L. J. Church	337,378	Mar. 9	669	175	34	1056
Grater. Nutmeg	A. L. Platt	334,279	Jan. 12	1147	309	34	217
Grater. Nutmeg	J. M. Smyth	334,298	Jan. 12	1153	308	34	222
Grater. Nutmeg	P. Blum	334,931	Jan. 26	1997	533	34	392
Grater. Vegetable	F. S. White	335,964	Feb. 9	1262	335	34	678
Grinding apparatus	J. B. Allfree	336,979	Mar. 2	127	34	34	949
Grinding-mill	W. R. Eynon	338,221	Mar. 16	1810	472	34	1267

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Pags.
Grinding-mill	L. B. Joy	336,416	Mar. 23	2081	545 546	34	1283
Grinding-mill	G. K. Smith	335,301	Feb. 2	425	109 110	34	517
Grinding-mill or decorticator	J. B. Touya, Fils	333,960	Jan. 5	662	181	34	124
Grinding-mills, &c. Feed mechanism for roller	P. Van Gelder	336,257	Feb. 2	243	64	34	494
Grinding-rolls. Machine for dressing	F. Messer	334,282	Jan. 19	1104	296	34	213
Grooved and barbed rod	W. H. Perry	333,987	Jan. 5	530	144	34	99
Guard: *See* Cutter-head guard. Eyeglass nose-guard. Fence-guard. Fire-place guard. Key-hole guard. Orchard-guard. Railway foot-guard. Razor-guard. Window-guard.							
Guitar	R. F. Flemmings, Jr	336,727	Mar. 30	2921	697	34	1466
Guitar	J. Klueber	337,397	Mar. 2	611	160	34	1020
Gun. Air	G. P. Gunn	337,395	Mar. 9	691	189	34	1060
Gun-barrel	J. K. Ballard	337,916	Mar. 16	1388	360	34	1189
Gun-barrels. Machine for finishing	J. M. Clough	337,947	Mar. 2	469	128	34	1016
Gun. Breech-loading	H. M. Quackenbush	336,586	Feb. 23	2145	568	34	841
Gun. Electric	S. Russell	337,873	Mar. 16	1231	345	34	1178
Gun. Magazine	A. Burgess	337,230	Mar. 2	476	125	34	1013
Gun. Magazine	J. M. Marlin	334,535	Jan. 19	1477	396	34	297
Gun. Magazine spring	S. D. Engle	334,575	Jan. 19	1524	410	34	307
Gun. Water	J. L. Shaw	334,475	Jan. 19	1397	377	34	272
Guns. Cocking mechanism for breech-loading	W. H. Davenport	334,570	Jan. 19	1508	406	34	296
Hair-crimper	J. Dvorak	338,097	Mar. 30	2089	603	34	1407
Hair-roll	J. L. Wells	337,642	Mar. 9	1088	285	34	1119
Hair-tonic	L. P. Federmeyer	338,942	Mar. 30	2990	.....	34	1461
Halter-trimming	E. Deming	334,755	Jan. 26	1785	474	34	339
Hame	C. H. Allen	339,998	Jan. 12	677	185	34	125
Hame	B. Geesmann	335,128	Feb. 2	81	10	34	446
Hame	H. A. Hughes	334,775	Jan. 26	1999	481	34	357
Hame	J. F. Knorr	337,238	Mar. 2	612	160	34	1009
Hame attachment	J. W. Ammon	337,649	Mar. 9	1041	287	34	1130
Hame-clip	E. Bernard	334,411	Jan. 19	1305	353	34	256
Hame-clip staple and tug-iron	R. W. Jones	336,751	Mar. 30	2559	676	34	1413
Hame-coupling	W. A. Smith and J. H. Hughes	336,763	Feb. 23	2390	626	34	887
Hame-fastener	J. H. Hill	336,111	Feb. 16	1457	384	34	714
Hame-fastener	H. C. Minton	335,375	Feb. 2	406	104	34	514
Hame-fastener	M. Noe	337,609	Mar. 9	1101	284	34	1130
Hame-lock	L. Anderson	335,995	Feb. 9	1265	335	34	672
Hammer	G. F. Hall	333,404	Mar. 23	2067	542	34	1280
Hammer. Bush	W. Oppy	338,865	Mar. 30	2712	713	34	1441
Hammer. Copper-tipped	H. A. Randall	334,268	Jan. 12	1132	304	34	218
Hammer. Pneumatic	C. A. Arns	337,726	Mar. 9	1136	294	34	1136
Hammer. Power	H. St. Lawrence	335,304	Feb. 2	432	111	34	518
Hammers. Die and die-block for forge	J. H. Baker. (Reissue)	10,690	Jan. 26	2241	594	34	424
Hammock	C. Shepardson	334,990	Jan. 26	2076	554	34	405
Hammock-stand. Portable folding	C. L. Rudd and E. J. Manning	337,792	Mar. 9	1213	315	34	1140
Hammock stretcher or adjuster	E. C. Cook	337,815	Mar. 16	1256	336	34	1165
Hand-bag	C. H. Buchanan	336,475	Mar. 23	2160	564	34	1338
Hand-bag, pocket-book, and purse frames. Fastening for	G. Hood	337,662	Mar. 9	1076	278	34	1126
Hand-bag, pocket-book, and purse frames. Fastening for	L. B. Prahar	337,787	Mar. 9	1208	314	34	1148
Hand-bag, pocket-book, and purse frames. Fastening for	L. B. Prahar	337,789	Mar. 9	1209	315	34	1149
Hand-grenade extinguisher	W. W. Luyster	338,604	Mar. 23	2389	610	34	1367
Hand-rake	T. D. Davis	337,932	Mar. 16	1412	366	34	1193
Hand rake	T. D. Davis	337,933	Mar. 16	1415	366	34	1193
Handkerchief-box	L. P. Shuler-Shuts	335,728	Feb. 9	898	237	34	608
Handkerchief-exhibitor	J. N. Miller	337,422	Mar. 9	741	190	34	1068
Handle: *See* Blower-handle. Can-handle. Coffee-pot handle. Cutlery-handle. File-handle. Furniture-handle. Knife-handle. Rein-handle. Stove-door handle. Tool-handle. Umbrella-handle.							
Handle	F. B. Smith	334,993	Jan. 26	2080	555	34	408
Handle for satchels, &c	W. Roemer	334,196	Jan. 12	1008	267	34	194
Hanger: *See* Coat-hanger. Door-hanger. Lamp-hanger. Shaft-hanger.							
Harness	F. Fanyo and W. H. Wright	335,440	Feb. 2	492	128	34	580
Harness	A. King	338,960	Mar. 30	2872	760	34	1470
Harness	H. T. Richmond	336,494	Feb. 16	2015	528	34	819
Harness	D. L. Shafer	339,022	Mar. 30	2950	780	34	1483
Harness	A. Sherwood	333,556	Jan. 5	76	22	34	17
Harness	J. W. Spangler	338,797	Mar. 30	2930	690	34	1423
Harness	A. W. Tourgee	338,978	Jan. 5	650	180	34	124
Harness	J. H. Whitaker	336,367	Feb. 16	1847	484	34	788
Harness breast-strap	I. A. Miller	334,128	Jan. 12	980	241	34	171
Harness-coupling	N. W. Hunter	333,634	Jan. 5	178	48	34	35
Harness holdback attachment	C. R. Miller	334,888	Jan. 26	1939	510	34	380
Harness loop and bar	J. W. Ropp	336,594	Feb. 23	2156	564	34	843
Harness-ornament	H. Beebee	337,732	Mar. 9	1141	296	34	1137
Harness-pad	J. Pendergast	335,477	Feb. 2	537	140	34	537
Harness-ring	J. F. Smith	336,568	Mar. 23	2329	599	34	1356
Harness ring-holder	G. W. Swinehart	337,031	Mar. 9	994	54	34	963
Harness-trimming	G. F. Eberhard	334,006	Jan. 12	701	193	34	130
Harness-trimming	G. F. Eberhard	334,007	Jan. 12	702	193	34	130

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Harness. Wear-plate for	L. Hartson	336,313	Feb. 16	1775	464	34	769
Harrow	C. A. Brostrom	334,342	Jan. 12	1212	327	34	223
Harrow	G. G. Crowley	333,926	Jan. 5	590	161 168	34	111
Harrow	A. C. Evans	336,906	Mar. 2	36	9	34	983
Harrow	W. J. Lane	338,531	Mar. 23	2838	586	34	1350
Harrow	C. Lanner	336,469	Feb. 16	1913	501	34	795
Harrow	F. J. Marshal	334,189	Jan. 12	962	261	34	126
Harrow	J. A. Minger	337,186	Mar. 2	488	105	34	1001
Harrow	M. S. O'Neil	338,766	Mar. 30	2584	625	34	1417
Harrow	J. M. Pearson	335,617	Feb. 9	744	199	34	560
Harrow	H. H. Sater	334,054	Jan. 12	775	212	34	152
Harrow	P. Jacobus	336,051	Feb. 9	1356	359	34	690
Harrow and cultivator	R. Cleary	336,794	Feb. 23	2430	699	34	894
Harrow and pulverizer. Combined	D. A. Spitler	338,114	Mar. 16	1671	434	34	1240
Harrow and replanter. Combined	W. Pommerenke	337,901	Mar. 16	1500	389	34	1208
Harrow and seed-planter. Combined	S. G. Randall	333,670	Jan. 5	294	63	34	44
Harrow and seeder. Combined disk	W. A. Leech and J. Little	337,599	Mar. 9	972	249	34	1167
Harrow attachment	C. La Dow	338,988	Mar. 30	2674	760 761 762	34	1470
Harrow. Disk	L. E. Phelps and R. K. Swift	337,017	Mar. 2	186	49	34	959
Harrow. Disk	C. La Dow	338,176	Mar. 16	1752	458	34	1257
Harrow. Spring-tooth	W. Harty	337,951	Mar. 16	1447	375	34	1199
Harrow-tooth	H. L. Easley	334,165	Jan. 12	943	255	34	169
Harrow. Wheel	C. La Dow	337,773	Mar. 9	1190	309 310	34	1146
Harrow. Wheel	C. La Dow, J. J. Budlong, and L. P. Hoyt	338,086	Mar. 16	1693	433	34	1231
Harvester	D. C. Matteson	333,583	Jan. 5	50	15	34	13
Harvester	H. S. Wilkinson	337,542	Mar. 9	912	233 234	34	1096
Harvester and binder	W. N. Whiteley and W. Bayley	337,220	Mar. 2	449	117	34	1009
Harvester and binder. Combined	J. F. Appleby	336,075	Feb. 16	1408	371 372 294 295	34 34	705 648
Harvester. Corn	C. F. Bassett	335,877	Feb. 9	1112			
Harvester. Corn	J. I. Wolf	335,170	Feb. 2	105	28, 29	34	480
Harvester-cutters. Clearer attachment for	C. Potee	334,723	Jan. 19	1739	463	34	336
Harvester cutting apparatus	C. Schmidt	337,695	Mar. 9	1010	259	34	1115
Harvester cutting apparatus	D. Shields	336,670	Feb. 23	2276	594	34	885
Harvester finger-bar attachment	M. E. Hamilton and E. L. Perrigo	334,374	Jan. 12	1249	337	34	289
Harvester-fingers. Machine for finishing	J. F. Webster	337,802	Mar. 9	1237	319	34	1158
Harvester. Grain	L. W. Noyes	333,536	Jan. 5	54	16	34	13
Harvester. Grain-binding	L. Miller	335,610	Feb. 9	734	195 196 335 336	34	579
Harvester. Grain-binding	J. F. Selberling	335,792	Feb. 9	892	226 227	34	607
Harvester-guard finger	J. Crist and F. M. Ogle	336,473	Feb. 16	1969	501	34	808
Harvester-knife. Reciprocating	W. S. Taylor	335,597	Feb. 2	435	113	34	519
Harvester. Low-binding grain	J. C. and G. A. Cunningham	338,219	Mar. 16	1807	471 472	34	1267
Harvester-rake trip	S. Arnold	338,908	Mar. 30	2782	733	34	1453
Harvester-reel	F. G. Becker	338,090	Mar. 16	1546	400	34	1216
Harvester-reel	L. Hall	338,957	Mar. 30	2842	749	34	1465
Harvester-reel	A. Stark	336,959	Mar. 2	102	28	34	944
Harvester-reel	J. H. Rose	337,286	Mar. 2	542	143	34	1027
Harvester-reel. Adjustable	H. M. Weaver	338,808	Mar. 30	2634	693 694 695	34	1436
Harvester. Self-binding	H. M. Weaver	338,809	Mar. 30	2638	695	34	1437
Harvester. Self-binding	C. W. Willcoxson	333,909	Jan. 5	563	152 153	34	105
Harvester-truck	W. N. Whiteley	338,376	Mar. 23	2029	533	34	1314
Harvesters. Main wheel for	S. Johnston	338,973	Mar. 23	1878	494	34	1226
Harvesting and binding machine	D. M. Osborne	335,950	Feb. 9	1219	324 325	34	666
Harvesting and binding machine. Grain	C. Whitney	334,498	Jan. 19	1427	884	34	278
Harvesting-machine	C. T. Mason, Jr	337,007	Mar. 2	170	45, 46	34	956
Harvesting machine. Cotton	J. E. Poteet	337,194	Mar. 2	417	109	34	1003
Harvesting-sack supporter	J. S. Dare, Sr	336,394	Feb. 16	1845	493	34	789
Hasp-lock	F. H. Crafts	338,584	Mar. 23	2301	602	34	1302
Hat	F. Taylor	336,980	Mar. 2	103	28	34	945
Hat and coat hook. Wire	H. F. Gray	335,189	Feb. 2	145	37	34	467
Hat and coat rack	R. Eickemeyer	334,221	Jan. 12	1084	275 276 574 575	34	201
Hat-brim-curling machine	R. Eickemeyer	338,499	Mar. 23	2195	573	34	1344
Hat-brim-curling machine	R. Eickemeyer	338,497	Mar. 23	2190	573	34	1344
Hat-brim-beating machine	L. H. Hoyt	338,972	Mar. 23	1874	493	34	1227
Hat-brims. Apparatus for shaping	R. Eickemeyer	338,498	Mar. 23	2192	574	34	1344
Hat-brims. Setting-press for curling	L. B. Somers	333,668	Jan. 5	255	69	34	49
Hat-brims. Wire frame for	A. T. Clason	338,140	Mar. 16	1703	443	34	1247
Hat-felting machine	C. E. Keator	334,236	Jan. 12	1054	290	34	204
Hat-finishing block	J. Surerus	333,694	Jan. 5	273	74	34	58
Hat-finishing machine	L. M. Conklin and S. Terwilliger	337,392	Mar. 9	672	176	34	1057
Hat-forming machine	C. E. Keator	338,975	Mar. 30	2866	758	34	1469
Hat-pouncing machine	J. S. Taylor	335,657	Feb. 9	797	212	34	590
Hat scalding and felting machine	F. Bauer	336,464	Mar. 23	2148	562	34	1336
Hat sizing or felting machine	J. Mersman	333,778	Jan. 5	379	103	34	71
Hat-stand	H. Cochrane	336,213	Feb. 16	1627	425	34	742
Hat-tip	F. C. Bowen	337,194	Mar. 2	334	84, 85	34	986
Hat-ventilator							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Hat-wire	C. S. Andrews	334,923	Jan. 26	1920	530	34	899
Hatters' irons. Rubber tube for	G. Yule	338,815	Mar. 30	2845	607	34	1423
Hatchets. Device for making claw	J. U. Hubbard	339,069	Mar. 30	3001	793	34	1491
Hatchway. Elevator	A. A. Klein	333,298	Jan. 5	49	19	34	10
Hay-burning apparatus	R. H. Miner	337,854	Mar. 16	1307	339	34	1173
Hay-carrier	W. Louden	337,173	Mar. 2	309	109	34	998
Hay-carrier	J. E. Porter	333,545	Jan. 5	66	18	34	15
Hay-carrier	W. G. Ricker	334,414	Jan. 19	1566	422 423	34	307
Hay-carrier	F. A. White	334,917	Jan. 26	1969	538	34	889
Hay-derrick	W. F. Brian	335,998	Feb. 9	1143	304	34	632
Hay-fork	J. Ney	335,096	Jan. 26	2146	571	34	417
Hay-loader	J., B. F., W. M., and J. B. Brimer	337,811	Mar. 16	1258	325	34	1164
Hay-loader	L. H. Robbins	336,948	Mar. 2	88	24	34	942
Hay-press	H. F. Blank	334,643	Jan. 26	1866	508	34	371
Hay-press	A. Gord	338,592	Mar. 23	2311	605 606	34	1363
Hay-press	J. H. Meredith	335,396	Feb. 2	296	78	34	494
Hay-press. Portable	E. C. Burnette and W. H. Porter	335,058	Jan. 26	2171	577	34	631
Hay-rack	J. A. Grassman	337,321	Mar. 2	504	156	34	1096
Hay-rack	J. Grimes	333,944	Jan. 5	612	168	34	114
Hay-rack	G. H. Rundle	339,075	Mar. 30	3019	798	34	1493
Hay-rack	J. A. Withrow	337,105	Mar. 2	295	78	34	961
Hay rake and cocker. Combined	S. Olson	335,634	Feb. 9	1053	278 279	34	587
Hay rake and loader	E. A. Gerrard	338,519	Feb. 2	601	156	34	647
Hay rake and loader	J. S. Naffziger	337,607	Mar. 9	1100	283	34	1129
Hay rake and loader	C. P. Slaght	334,093	Jan. 12	881	227 228 351 352	34	102
Hay rake and tedder. Combined	J. H. Thomas and J. E. Offutt	337,891	Mar. 16	1352		34	1188
Hay-rake. Horse	H. A. Alden	338,460	Mar. 23	2141	560	34	1234
Hay-rake. Horse	S. B. Gilliland	337,574	Mar. 9	951	244	34	1104
Hay-rake. Two-horse	A. Anderson and R. Rutherford	337,111	Mar. 2	304	80	34	982
Hay-stacker	J. S. Rayl	334,198	Jan. 12	985	265	34	190
Hay-stacker	J. F. Warner and F. Cook	336,771	Feb. 23	2290	629	34	889
Hay sweep and tedder. Combined	T. S. Brown	333,917	Jan. 5	571	155	34	107
Hay-tedder	F. E. Kohler	336,723	Feb. 23	2230	613	34	877
Hay tedder and cocker combined	W. and J. W. Pedigo	335,618	Feb. 9	744	198 199	34	581
Head-covering	M. Ovenu and W. Freinkelstein	335,300	Feb. 2	229	79	34	495
Head-dress	M. A. Paton	333,101	Mar. 16	1635	430	34	1227
Head-light. Locomotive	P. B. Viele	335,978	Feb. 9	1255	334	34	673
Head-light. Locomotive	P. B. Viele	335,979	Feb. 9	1256	334	34	673
Head-rest	C. E. Anderson	335,554	Feb. 9	655	173	34	565
Head-rest	P. Enaling	336,514	Feb. 16	20o1	536	34	817
Head-screen	H. Garst	336,712	Feb. 23	2223	608	34	874
Header and thresher. Combined	H. A. Benton	336,699	Mar. 30	2475	653 654	34	1388
Heat-regulating device	J. S. Burnham	336,088	Feb. 16	1428	377	34	769
Heat-regulating device	H. B. Tatham, Jr	333,899	Jan. 5	542	147	34	101
Heater: *See* Barrel-heater. Feed-water heater. Flat-iron heater. Hot-water heater. Sad-iron heater. Steam-heater.							
Heater	W. H. Denslow	334,695	Jan. 19	1609	453	34	398
Heating and cooking apparatus. Combined	L. C. Richardson	333,672	Jan. 5	231	63	34	45
Heating and ventilating apparatus. Automatic regulating mechanism for	H. B. Tatham, Jr	333,790	Jan. 5	402	108 109	34	76
Heating and ventilating apparatus. Automatic regulating mechanism for	H. B. Tatham, Jr	333,791	Jan. 5	404	110	34	76
Heating and melting furnace	T. James and C. M. Schwab	335,200	Feb. 2	160	41	34	479
Heating device for beds and rooms. Air	W. H. Bowman	333,890	Jan. 5	443	120	34	62
Heating-furnace	E. C. Condit	334,644	Jan. 19	1630	434	34	315
Heating-furnace	D. L. Jones	334,781	Jan. 26	1814	482 483	34	358
Heating furnace. Air	J. M. Hess	334,661	Jan. 19	1655	442	34	320
Heating furnace. Gas	R. W. Kennedy	336,485	Feb. 16	2006	526	34	810
Heel	R. C. Davis	333,612	Jan. 5	151	41	34	30
Heel-nailing machine	F. F. Raymond, 2d	335,242	Feb. 2	223	58, 59	34	469
Heels. Attaching	F. F. Raymond, 2d	335,241	Feb. 2	222	58	34	469
Heliostat	A. M. Mayer	332,769	Jan. 5	378	101 102	34	70
Hides or skins. Putting-out and striking-out machine for	W. M. Hoffman	335,198	Feb. 2	158	41	34	469
Hinge. Gate	C. Bornarth	336,469	Feb. 16	1965	520	34	807
Hinge. Gate	A. M. Garman	333,622	Jan. 5	163	44	34	32
Hinge. Mirror	P. Forg	334,944	Jan. 26	2014	536	34	905
Hinge. Strap	W. H. Hart	333,854	Jan. 5	491	123	34	91
Hitching device	E. J. Hildreth	337,562	Mar. 2	960	246	34	1105
Hitching device	W. G. Mauk	334,963	Jan. 26	2040	545	34	398
Hitching device	W. H. Vaughn	334,527	Jan. 26	1870	498	34	363
Hod. Mortar	R. Law	333,527	Jan. 5	42	12	34	11
Hoeing-machine	D. G. Zeigler and R. Copes	338,130	Mar. 16	1687	439	34	1244
Hog and chicken cholera remedy	A. J. Alexander	338,013	Mar. 16	1535		34	1214
Hog-scraping machine	C. F. Bush	335,742	Feb. 9	925	243 244	34	613
Hoisting and conveying apparatus	L. Graff	338,958	Mar. 30	2837	748	34	1464
Hoisting apparatus	H. W. Champlin	338,939	Mar. 30	2807	740	34	1458
Hoisting apparatus	G. W. Rawson and G. E. Worthen	337,866	Mar. 16	1390	343	34	1176
Hoisting apparatus	E. O. Rood	334,810	Jan. 26	1851	493	34	365
Hoisting-machine	F. X. Brenner	334,740	Jan. 26	1763	470	34	347
Hoisting-machine	B. P. Darling	336,630	Feb. 23	2210	577	34	858

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hoisting-machine	C. J. Waldron	333,574	Jan. 5	108	20	34	23
Hoisting-machine	T. A. Weston	333,906	Jan. 5	558	150 151	34	104
Holder: *See* Bag-holder. Letter and index holder. Bag and twine holder. Line-holder. Barrel-holder. Magazine-holder. Bed-clothes holder. Mop-holder. Bill-holder. Mucilage-holder. Billiard-chalk holder. Nail-holder. Bit-holder. Paper-bag holder. Bolt-holder. Paper-roll holder. Book-holder. Pen-holder. Book-leaf holder. Pencil or crayon holder. Bouquet-holder. Pillow-sham holder. Broom-holder. Rein-holder. Burnishing-tool holder. Ribbon-holder. Candle-holder. Rope-holder. Card-holder. Sash-holder. Crayon and pencil holder. Satchel-holder. Cuff-holder. Sewing-machine spool-holder. Dust-pan holder. Shade and reflector holder. File-holder. Stencil-holder. Harness ring-holder. Stove-lid holder. Horse-tail holder. Splasher-holder. Lead and crayon holder. Spool-holder. Lead or crayon holder. Ticket-holder. Lemon-holder. Tool-holder. Towel-holder. Type and space holder.							
Honey-box case and clamp	O. S. Foster	337,143	Mar. 2	348	90	34	990
Honey-extractor	J. C. Melcher	335,826	Feb. 9	1044	276	34	635
Honey-extractor	W. B. Treadwell	335,857	Feb. 9	1086	287	34	643
Hoof cleaner and trimmer	E. Ewan	338,146	Mar. 16	1707	445	34	1948
Hoof-pad	E. F. Collins	338,250	Mar. 23	1850	486	34	1283
Hoof-parer	E. Glock and S. Moon	338,400	Mar. 23	2062	541	34	1319
Hook: *See* Back-band hook. Fishing-hook. Bale and box hook. Grab-hook. Bench-hook. Hat and coat hook. Breast-strap hook. Meat-hook. Button-hook. Rein-hook. Check-hook. Snap-hook. Clothes hook. Trellis-hook. Dry-board hook. Whiffletree-hook.							
Hooks. Machine for making	H. V. Harts	334,439	Jan. 19	1333	361	34	261
Hooks. Manufacture of screw	G. J. Williams and F. R. Silk	337,722	Mar. 9	1130	291	34	1135
Hoop: *See* Wire hoop.							
Hoop-fastener	N. Newman	338,644	Mar. 23	2366	698	34	1376
Hoop-fastener	N. Newman	339,006	Mar. 30	2927	775	34	1479
Hoop-fastener	F. Roy	335,720	Feb. 9	891	235	34	606
Hoop for vessels	E. Powell	335,090	Jan. 26	2296	591	34	432
Hoop-pole-sawing machine	H. Weitzel	335,000	Jan. 26	2067	557	34	407
Hoop-splitting machine	L. Boulé	338,027	Mar. 16	1554	------	34	1918
Hops to obtain extracts therefrom. Treating	T. M. McDonough	337,070	Mar. 2	947	66	34	971
Horse-bed. Automatic	W. N. Bell	336,986	Mar. 2	136	37	34	950
Horse-block	T. Golden	336,105	Feb. 16	1451	388	34	713
Horse-boot	S. Taylor	338,372	Mar. 23	2023	531	34	1313
Horse-boot	A. H. Tyson	333,982	Jan. 5	664	189	34	185
Horse-boot	J. F. C. Jürgensen	339,104	Mar. 30	3006	811	34	1508
Horse-detacher	D. Singletary	338,308	Mar. 23	1995	507	34	1296
Horse-detacher	A. L. Engelberg	338,049	Mar. 16	1579	411	34	1923
Horse-detaching device for vehicles	C. Dumke	338,166	Mar. 16	1735	453	34	1953
Horse marah-shoe	S. G. Hoekstra	334,074	Jan. 12	804	220	34	157
Horse-power	C. Villeneuve	333,709	Jan. 5	392	77	34	53
Horse-power	C. Drew	339,050	Mar. 30	2986	790	34	1489
Horse quarter-boot	J. H. Barley	337,298	Mar. 2	460	120	34	1011
Horse-rake and carrier-truck. Combined	R. T. Moss	336,254	Feb. 16	1692	441	34	753
Horse-tail holder	F. H. Turnure	336,259	Feb. 16	1838	482	34	760
Horse-tail holder	A. J. Coffee	339,043	Mar. 30	2977	787	34	1487
Horse-unhitcher. Electric	O. W. Wade	334,097	Jan. 12	840	229 230	34	168
Horses from harness and vehicles. Device for releasing	S. White	338,899	Mar. 30	2770	729	34	1450
Horses. Sun-shield for	G. W. Sanford	334,198	Jan. 12	1005	267	34	195
Horses. Sweat-scraper for	C. S. Canfield	338,139	Mar. 16	1701	443	34	1947
Horseshoe	C. J. Le Roy	337,844	Mar. 16	1294	335	34	1171
Horseshoe	W. S. McGowan, Jr	336,463	Feb. 23	2519	664	34	911
Horseshoe	H. M. Oliver	335,476	Feb. 2	526	140	34	587
Horseshoe	T. Phillips, E. Bouchard, and T. Charbonneau	336,154	Feb. 16	1530	408	34	736
Horseshoe	J. Ricks	338,781	Mar. 30	2608	696	34	1490
Horseshoe	G. G. Schroeder	334,200	Jan. 12	1006	267 268	34	195
Horseshoe	H. B. Schureman	338,789	Mar. 30	2611	688	34	1492
Horseshoe	W. Somerville, Sr	337,090	Mar. 2	977	73	34	978
Horseshoe	G. O. Standish	333,974	Jan. 5	653	178	34	128
Horseshoe	S. Stone	335,895	Feb. 2	433	111	34	519
Horseshoe-calk	B. H. Warren	335,259	Feb. 2	946	65	34	464
Horseshoe-calk	A. C. Hawes	334,658	Jan. 19	1648	440	34	319
Horseshoe. Duplex	A. C. Hawes	334,659	Jan. 19	1652	441	34	319
Horseshoe. Duplex	A. C. Hawes	334,660	Jan. 19	1653	441	34	319

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Horseshoe-machine	C. H. Perkins	338,870	Mar. 30	2718	714 715 716	34	1442
Horseshoe-machine	C. H. Perkins	338,871	Mar. 30	2725	716 717	34	1443
Horseshoe-nails. Machine for forging	D. F. Williams	333,984	Jan. 5	666	182 183	34	195
Horseshoes. Tool for expanding	H. Wilcox	337,221	Mar. 2	450	117	34	1009
Horticultural building	J. Plenty	335,145	Feb. 2	64	18	34	458
Hose	A. T. Holt	334,951	Jan. 26	2024	540	34	396
Hose	J. Jones	334,233	Jan. 12	1051	280	34	204
Hose-bridge	F. Heim	336,482	Feb. 16	2004	525	34	810
Hose-coupling	F. Atherton and M. T. Bentley	333,913	Jan. 5	567	154	34	106
Hose-coupling	C. A. Muddiman	339,109	Mar. 30	3073	813	34	1503
Hose. Elastic	C. Honft	335,704	Feb. 9	860	229	34	602
Hose. Machine for winding wire upon	J. A. Coultane	338,489	Mar. 23	2181	570 571	34	1342
Hose. Machine for winding wire upon	I. W. McGaffey	334,026	Jan. 12	733	201	34	145
Hose. Manufacture of rubber-lined and rubber-covered	A. Bruegger, Jr	334,510	Jan. 19	1447	389	34	261
Hose-nozzle	J. O'Donnell	334,800	Jan. 26	1837	490	34	368
Hose-reel	A. Schmidt and C. Revercomb	337,588	Mar. 9	888	226	34	1092
Hose-spanner	F. W. Gray	336,915	Mar. 2	49	13	34	936
Hose-supporter	C. A. Hine	337,954	Mar. 16	1450	376	34	1900
Hot-air furnace	S. D. Burlingame	336,083	Feb. 9	1329	352	34	665
Hot-air furnace	E. D. Van Stone and E. W. Taylor	334,310	Jan. 12	1165	312	34	294
Hot-air-furnace casing	S. N. Betts	333,989	Jan. 12	678	185	34	135
Hot-water heater	H. K. Kriebel	337,068	Mar. 2	945	65	34	971
House: *See* Chicken-house.							
House. Dry out	T. W. Carrico	338,826	Mar. 30	2664	701	34	1432
House-service and street-washer connection	J. Moss	336,258	Feb. 16	1690	441	34	758
House. Summer and bath	F. I. Palmer	335,885	Feb. 9	1056	279	34	638
House-ventilator	W. Moore and J. B. Carter	335,829	Feb. 9	1045	276	34	635
Houses. Apparatus for use in dry out	T. W. Carrico	338,460	Mar. 23	2165	566	34	1339
Houses. Constructing frame	E. Totman. (Reissue)	10,678	Jan. 12	1299	349	34	947
Houses. Construction of	E. Totman	333,903	Jan. 5	550	149	34	108
Household-press	J. L. Smith	336,956	Mar. 2	98	27	34	944
Hub and axle-coupling. Vehicle	J. Reddin	334,049	Jan. 12	769	210	34	151
Hub-attaching device	A. F. C. Garben	333,921	Jan. 5	162	44	34	82
Hub fastening device. Vehicle	C. A. Johnson	336,580	Feb. 16	2049	538	34	818
Hub. Vehicle	D. Beckwalter	334,508	Jan. 19	1445	388	34	261
Hub. Vehicle	C. W. Fillmore	335,442	Feb. 2	495	129	34	530
Hub. Wheel	S. H. French and W. J. Maltby	337,319	Mar. 2	592	155	34	1035
Huller: *See* Coffee-huller. Rice-huller.							
Hunting-boat	H. A. Hannum	335,190	Feb. 2	147	38	34	467
Hydrant	T. and J. Galvin	337,945	Mar. 16	1435	372	34	1197
Hydrant	J. C. Kupferle	338,754	Mar. 30	2565	677	34	1414
Hydraulic apparatus	L. Belder	337,118	Mar. 2	315	82	34	984
Hydraulic elevator-engine	J. Gibbins	337,056	Mar. 2	232	61, 62	34	968
Hydraulic jack	C. Huebner	336,598	Mar. 23	2321	606	34	1365
Hydraulic jack	J. Weeks and H. Traver	334,206	Jan. 12	1014	270	34	196
Hydraulic motor	N. E. Harris	337,766	Mar. 9	1181	307	34	1144
Hydraulic motor	G. S. Pidgeon	337,864	Mar. 16	1318	342 343	34	1175
Hydrocarbon-engine	J. P. Holland	337,000	Mar. 2	157	42, 43	34	958
Hydrocarbon-vapor engine	A. K. Rider	335,029	Feb. 9	761	202	34	584
Hydrometric conveyer	W. C. Parsons	335,236	Feb. 2	216	56, 57	34	479
Ice and for refrigerating purposes. Machine for the manufacture of	E. E. Hendrick	336,233	Feb. 16	1655	432 433	34	747
Ice-boat	R. S. Green, T. S. Edel, and M. Pagel	335,124	Feb. 2	32	10	34	446
Ice-cream freezer	J. F. Brown	338,246	Mar. 23	1844	485	34	1282
Ice-cream freezer	W. J. Tate	337,634	Mar. 9	1022	262	34	1117
Ice-elevators. Slush-remover for	J. S. Field	337,318	Mar. 2	591	155	34	1035
Ice-machine	O. H. Castle	338,489	Mar. 23	2167	567 568	34	1339
Ice-machine	A. R. Kenney	334,190	Jan. 12	870	238	34	169
Ice-machine	G. O. Rinman	335,388	Feb. 2	419	108	34	517
Ice-tongs	E. A. Collins	339,044	Mar. 30	2978	798	34	1498
Illuminating apparatus. Electric	E. N. Gaillard	333,742	Jan. 5	342	93	34	64
Incandescent	E. Weston	334,143	Jan. 12	999	------	34	175
Incubator	J. L. Campbell	333,822	Jan. 5	457	124	34	85
Incubator	W. Y. Cowl	337,306	Mar. 2	577	158	34	1022
Incubator	E. S. Renwick	335,961	Feb. 9	1231	328	34	668
Incubator	E. S. Renwick	339,013	Mar. 30	2937	777	34	1481
Index for letter-books	R. Spurgin	337,454	Mar. 9	800	203	34	1077
Indicator: *See* Bilge-water indicator. Scale-indicator. Speed-indicator. Electrical indicator. Station-indicator. Fire-alarm indicator. Steam-boiler water-indicator. Musical indicator. Watch-winding indicator. Pressure-indicator.							
Indicator-bolt	A. E. Barrett	338,463	Mar. 23	2147	561	34	1336
Inhaler	H. D. Cushman	333,608	Jan. 5	146	40	34	30
Inhaler	H. D. Cushman	333,609	Jan. 5	147	40	34	30
Inhaler and atomizer. Combined	H. Thomas	335,322	Feb. 2	328	86	34	500
Inhalers. Mixing and vaporizing device for	G. E. Johnson	337,066	Mar. 2	243	65	34	970
Injector	J. Desmond	336,398	Feb. 16	1886	494	34	790
Injector	A. S. Eberman	334,852	Jan. 26	1902	507	34	374
Injector	N. W. Girdwood	338,950	Mar. 30	2835	747	34	1484
Injector	J. Gresham. (Reissue)	10,697	Mar. 9	1237	321	34	1134

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Injector	F. W. Kremer	335,227	Feb. 2	204	53	34	476
Injector	W. B. Mack	334,124	Jan. 12	874	240	34	170
Injector	S. W. Moreland	333,534	Jan. 5	52	15	34	12
Injector	H. B. Murdock	334,266	Jan. 12	1119	298	34	214
Injector	W. J. Sherriff	337,877	Mar. 16	1336	346	34	1179
Injector	C. C. Burton	338,710	Mar. 30	2494	660	34	1402
Injector and extractor	J. Deamond	334,254	Jan. 12	1232	331	34	236
Injector. Steam	J. E. Whitman and E. M. Brown	334,148	Jan. 12	909	249	34	177
Ink-well cover	T. W. Houchin, C. B. Riker, and W. P. Houchin	335,817	Feb. 9	1683	273	34	633
Insect-powder distributer	C. A. Fonerden and H. Bell	337,943	Mar. 16	1433	371	34	1197
Insect-powder gun	T. W. Shugart and C. D. Clifton	333,893	Jan. 5	537	.....	34	100
Insecticide	H. H. Smith	338,110	Mar. 16	1666	.....	34	1239
Insecticides, &c. Making	R. A. Denison	334,850	Jan. 26	1897	506	34	373
Insulating electric cables. Composition for	W. J. Rigney and J. Wolff	336,018	Feb. 9	1308	.....	34	681
Insulating electric wires. Composition for	J. B. Williams	335,495	Feb. 2	564	.....	34	542
Insulating material. Composition of matter for	C. L. Travis	336,928	Feb. 23	2476	651	34	903
Insulator	J. Wilson	336,276	Feb. 16	1718	448	34	758
Intestines. Machine for cleaning	J. Cunning	337,928	Mar. 16	1407	365	34	1192
Invalid-chair	C. E. Anderson	338,330	Mar. 23	1957	515	34	1302
Iron: *See* Fluting and smoothing iron. Sad-iron. Smoothing-iron. Soldering-iron.							
Iron and steel. Apparatus for the manufacture of	E. F. Falconnet	338,792	Mar. 30	2512	665	34	1405
Ironing-board	W. I. Cloud	336,686	Feb. 23	2309	604	34	871
Ironing-board	J. H. Williams	338,128	Mar. 16	1684	438	34	1243
Ironing-table	M. J. Baker	336,077	Feb. 16	1406	373	34	705
Ironing-table	T. N. Johnson	337,686	Mar. 9	1081	280	34	1127
Ironing-table	E. Rose	339,115	Mar. 30	3060	815	34	1504
Ironing table	D. C. Fletcher	337,389	Mar. 9	663	178	34	1056
Ironing-table. Folding	C. B. Cox	334,645	Jan. 19	1631	435	34	315
Irrigation of land							
Jack: *See* Boot and shoe jack. Carriage-jack. Flooring-jack. Hydraulic jack. Jumping-jack. Lifting-jack. Wagon-jack.							
Jar: *See* Drill-jar. Fruit-jar. Rope-jar.							
Jar-clamp	H. Buchholz	339,063	Mar. 30	3082	801	34	1495
Jar-cover	W. F. McFarland	336,730	Feb. 23	2349	615	34	879
Jar-fastening	H. M. Guild	335,445	Feb. 2	498	129	34	530
Jar fastening. Fruit	G. B. Henrie	335,754	Feb. 9	941	248	34	616
Jar fastening. Preserve	H. M. Guild	335,444	Feb. 2	497	129	34	530
Jars. Adjustable bail and cover-holder for	M. Alston	334,922	Jan. 26	1969	530	34	390
Jeweler's box	J. F. Dubber	335,746	Feb. 9	932	245	34	614
Jeweler's cabinet	T. W. Sweney	337,796	Mar. 9	1222	318	34	1151
Jewelry and ornamenting the same. Article of	E. A. Thiéry and C. F. Croselmire	333,697	Jan. 5	275	75	34	52
Jig. Machinist's	J. Brady	334,340	Jan. 12	1209	326	34	232
Joint: *See* Coupling-joint. Packing-joint. Pipe-joint. Rail-joint. Railway-joint.							
Joints. Stop for expansion	J. B. White	337,037	Mar. 2	210	55	34	964
Journal and bearing	F. B. Torrey	335,047	Jan. 26	2163	575	34	420
Journal-bearing	A. W. Spatzier	333,560	Jan. 5	61	23	34	18
Journal-bearing. Anti-friction	W. Kratzer	334,670	Jan. 19	1664	445	34	322
Journal-bearing for crank-connecting rods	L. H. Nash	334,084	Jan. 12	742	203	34	146
Journal-box	C. L. Morehouse	336,341	Feb. 16	1813	475	34	775
Journal-box	R. W. Traylor	334,490	Jan. 19	1490	382	34	277
Journal-box	D. A. Woodbury	337,468	Mar. 9	890	207	34	1060
Journal-boxes. Fastening soft-metal wearing-surfaces in	A. F. Shuler	334,905	Jan. 26	1966	522	34	386
Jump-seat iron	J. A. Kienardt	336,923	Mar. 2	56	15	34	937
Jumping-jack	J. A. Kienardt	338,979	Mar. 30	2871	759	34	1470
Jumping-jack	J. H. Scheel	338,443	Mar. 23	2121	555	34	1330
Keg. Convertible	H. Zimmermann	338,578	Mar. 23	2288	601	34	1360
Kegs. Device for branding	H. Wernet	335,663	Feb. 9	805	215	34	592
Kettle. Steam							
Key: *See* Extension-key. Railway-track key. Telegraph-key.							
Key	E. B. Slater	334,814	Jan. 26	1855	494	34	366
Key-board	S. Stewart	334,484	Jan. 19	1412	380	34	275
Key-fastener	C. W. Bradford	336,788	Feb. 23	2494	638	34	886
Key-hole guard	W. W. Broga	336,789	Feb. 23	2425	638	34	894
Key-ring	T. W. Henry	338,268	Mar. 23	1871	492	34	1287
Key-seat cutter	A. M. Benson	335,333	Feb. 2	346	90	34	503
Keying-clamp	R. S. Abernethy	338,458	Mar. 23	2139	559	34	1334
Kiln: *See* Brick-kiln. Brick or other kiln. Limekiln. Tile-kiln.							
Kiln for and method of burning clay	J. Stubbs	338,206	Mar. 16	1787	467	34	1264
Kiln for bricks, lime, pottery, &c	W. H. Melcher	339,001	Mar. 30	3220	773	34	1477
Kiln for burning bricks, &c	W. Jones	336,720	Feb. 23	2336	612	34	876
Kitchen-cabinet	W. N. and E. A. Fisher	338,896	Mar. 30	2677	704	34	1434
Kitchen-cabinet	L. May	334,360	Jan. 12	1103	295	34	212
Kitchen-cabinet	J. A. Mullen	335,034	Jan. 26	2144	570	34	417
Kitchen-cabinet	J. F. Randolph	334,894	Jan. 26	1950	519	34	383
Kitchen utensil	I. A. Teller	338,449	Mar. 23	2129	557	34	1332
Knife: *See* Pocket-knife.							
Knife	W. B. Hatfield	336,814	Feb. 16	1775	464	34	768
Knife and fork. Combined	G. E. Marks	338,853	Mar. 30	2697	710	34	1429

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Knife-bolster	G. Havell	336,107	Feb. 16	1453	383	34	714
Knife-cleaner	I. Lawson	333,761	Jan. 5	365	99	34	68
Knife handle. Tobacco	R. E. Poindexter	336,429	Feb. 16	1931	506	34	796
Knife-handles. Manufacture of	H. C. Hart	336,521	Mar. 23	2221	563	34	1349
Knife-sharpener	E. Shaw and F. D. Walden	337,022	Mar. 2	196	52	34	961
Knives. Machine for cleaning and polishing	H. A. H. Guhl	339,095	Mar. 30	3050	806	34	1499
Knitting-machine	J. L. Branson	334,338	Jan. 12	1205	325 / 326	34	232
Knitting-machine	W. Bremner	333,894	Jan. 5	448	122	34	84
Knitting-machine	F. A. Calley	338,478	Mar. 23	2163	565	34	1338
Knitting-machine	W. D. Huse	335,587	Feb. 9	698	185 / 186	34	578
Knitting-machine	J. Smalley	334,681	Jan. 19	1681	449	34	325
Knitting-machine	G. A. White	336,611	Feb. 23	2181	569 / 570	34	847
Knitting machine. Circular	G. C. Converse	339,046	Mar. 30	2980	788	34	1468
Knitting-machine latch-guard attachment	G. W. Ents	334,421	Jan. 19	1391	358	34	259
Knitting stockings, &c	W. E. Sheehan	337,706	Mar. 9	1110	296 / 297	34	1131
Knob and escutcheon. Door	O. H. Gilbert	335,349	Feb. 2	371	96	34	508
Knob attachment	H. H. Humphrey	339,108	Mar. 30	3064	811	34	1501
Knob attachment	O. Stoddard	334,819	Jan. 26	1860	495	34	367
Knob. Door	W. H. Comstock	334,937	Jan. 26	2004	534	34	393
Knob. Door	E. Thistle	337,093	Mar. 2	280	74	34	978
Knobs to their spindles. Device for securing door	C. Longbottom	335,894	Feb. 9	1040	275	34	634
Knockdown table	E. Meta	335,140	Feb. 2	58	16	34	441
Label	G. C. Heaning	334,437	Jan. 19	1339	353	34	263
Label	W. Rampe, Jr	334,961	Jan. 26	2066	551	34	403
Labels. Machine for drying varnished	C. Rahaskopff	335,771	Feb. 9	989	257 / 258	34	631
Labels to packages. Machine for attaching	P. W. Wiley	335,166	Feb. 2	84	25, 26	34	457
Laces. Making embroidery	J. Krüsi	337,667	Mar. 9	1062	.....	34	1137
Lacing-cords. Fastening for	W. H. Blaney	338,470	Mar. 23	2154	563	34	1337
Ladder	A. T. Hyde	336,598	Mar. 23	2228	585	34	1350
Ladder	L. K. Warner	337,640	Mar. 9	1030	264	34	1118
Ladder and adjustable platform. Combined step	S. J. Palmer	337,998	Mar. 16	1498	389	34	1207
Ladder and ironing-board. Combined step	H. D. Parke	335,714	Feb. 9	863	233	34	605
Ladder. Extension	R. S. Isard	337,955	Mar. 16	1450	376	34	1200
Ladder. Extension	J. Royds	333,784	Jan. 5	395	107	34	75
Ladder. Extension fire	J. P. Craig and T. F. Strachan, Jr.	338,717	Mar. 30	2505	663	34	1403
Ladder. Ornamental step	A. Dormitzer	336,219	Feb. 16	1636	427	34	744
Ladder. Sectional	F. W. Gates	336,227	Feb. 16	1645	430	34	745
Ladder-step	H. Ayres	335,051	Jan. 26	2169	576	34	421
Ladder. Step	J. W. Hunter and C. F. Bassett	336,008	Feb. 9	1296	345	34	679
Ladder. Turn-table extension	L. E. Curtis	336,512	Feb. 16	2036	535	34	816
Ladder. Turn-table truck fire extension	W. F. Hyde	336,519	Feb. 16	2047	537	34	818
Lamp	E. B. Bigelow	334,558	Jan. 19	1513	405	34	288
Lamp	J. O. Colby	338,830	Mar. 30	2670	702 / 703 / 454 / 455	34	1433
Lamp	M. B. and C. G. Dyott	334,696	Jan. 19	1704	454 / 455	34	339
Lamp	J. S. Ford	338,798	Mar. 30	2525	667	34	1407
Lamp	C. H. Higbee	333,520	Jan. 5	34	9, 10	34	9
Lamp	C. H. Higbee	334,018	Jan. 12	716	196	34	141
Lamp	E. B. Requa	334,546	Jan. 19	1494	400	34	289
Lamp	L. Sepulchre	336,964	Feb. 16	1703	444	34	754
Lamp. Argand	E. L. Bryant	338,187	Mar. 16	1699	443	34	1246
Lamp. Automatic carbureting	J. Leede	336,572	Feb. 23	2126	557	34	838
Lamp. Automatic carbureting	J. Leede	336,574	Feb. 23	2128	558	34	838
Lamp. Bracket	A. C. O. Adler	334,631	Jan. 19	1613	429	34	312
Lamp-bracket. Adjustable	J. R. Butler	335,503	Feb. 2	576	150	34	543
Lamp-burner	J. A. Coultaus	336,257	Feb. 16	1758	459 / 460	34	764
Lamp-burner	C. H. Higbee	334,017	Jan. 12	714	196	34	141
Lamp burner	T. B. Willson	337,102	Mar. 2	291	77	34	980
Lamp-burner. Argand	M. J. Dooley	334,417	Jan. 19	1311	355	34	257
Lamp. Candle	W. Damerel	335,020	Jan. 26	2120	565	34	413
Lamp-chimney cleaner	A. S. Reisor	336,746	Feb. 23	2367	619	34	862
Lamp. Coal-oil	C. H. Higbee	333,521	Jan. 5	35	10	34	9
Lamp-collar	W. B. Palmer	334,043	Jan. 12	759	208	34	149
Lamp. Electric	W. G. Levison	335,868	Feb. 2	397	102	34	513
Lamp. Electric	G. A. Mayo	338,352	Mar. 23	1968	563	34	1307
Lamp. Electric	F. G. Waterhouse	334,817	Jan. 12	1172	314	34	225
Lamp. Electric-arc	J. R. Dales and E. L. Adams	334,358	Jan. 12	1249	330	34	225
Lamp. Electric-arc	J. M. A. Gérard-Lescuyer	336,635	Feb. 23	2216	578	34	853
Lamp. Electric-arc	F. Klostermann	335,459	Feb. 2	515	135	34	534
Lamp. Electric-arc	N. Tesla	335,786	Feb. 9	994	262	34	625
Lamp. Electric-arc	N. Tesla	335,787	Feb. 9	995	262 / 264	34	626
Lamp. Electric-arc	J. Tregoning	336,176	Feb. 16	1562	411	34	731
Lamp. Electric-arc	C. J. Van Depoele	336,452	Feb. 16	1965	515	34	808
Lamp. Electric-arc	R. and H. Walther	338,122	Mar. 16	1681	436 / 437	34	1242
Lamp. Electric-arc	A. G. Waterhouse	336,184	Feb. 16	1575	414	34	734
Lamp. Electric-arc	A. G. Waterhouse	336,503	Feb. 16	2022	531	34	814
Lamp. Electric-arc	E. Weston	334,144	Jan. 12	901	247 / 248	34	175
Lamp. Electric-arc	J. J. Wood	337,299	Mar. 2	547	144	34	1067
Lamp. Extension	D. W. Parker	336,736	Feb. 23	2357	617	34	860
Lamp-extension device	H. Lang and C. A. Graeter	334,243	Jan. 12	1066	283	34	206
Lamp-fixture. Extension	J. A. Evarts	335,997	Feb. 9	1228	340	34	677
Lamp. Fountain	J. S. Ostrander	336,015	Feb. 9	1305	347	34	680
Lamp. Gas	J. W. Baker	334,398	Jan. 12	1190	320	34	229

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lamp-hanger	C. A. Kinney	336,326	Feb. 16	1789	466	34	771
Lamp. Hanging	A. P. Buxton	336,035	Feb. 9	1332	353	34	686
Lamp. Incandescent electric	J. M. A. Gérard-Lescuyer	336,637	Feb. 23	2291	579	34	853
Lamp. Incandescent electric	W. Main	336,729	Feb. 23	2347	614	34	879
Lamp. Incandescent electric	E. Thomson	335,158	Feb. 2	82	23	34	455
Lamp. Incandescent electric	E. Thomson	335,160	Feb. 2	86	23, 94	34	456
Lamp. Incandescent electric	H. J. Richards	335,041	Jan. 26	2155	573	34	419
Lamp. Miner's	J. A. Jenney	334,093	Jan. 12	786	{198 199	34	144
Lamp regulator. Arc	W. P. Butler	337,302	Mar. 2	569	150	34	1031
Lamp-reservoir	P. H. Klein, Jr	337,336	Mar. 2	611	160	34	1039
Lamp shade. Electric	S. S. Woodward	334,502	Jan. 19	1434	385	34	279
Lamp-shade support	P. F. Mahoney and J. B. Louvet	334,126	Jan. 12	877	240	34	170
Lamp-shades, &c. Forming-block for making	W. P. Butler	338,658	Mar. 23	2404	633	34	1389
Lamp. Street	T. B. Osborne	335,951	Feb. 9	1221	325	34	686
Lamp. Switch	E. Thomson and E. W. Rice, Jr	338,308	Mar. 16	1790	467	34	1264
Lamps. Automatic cut-out for electric	C. J. Van Depoele	337,899	Mar. 16	1367	354	34	1185
Lamps. Carbon for incandescent	A. Taplin	335,654	Feb. 9	795	211	34	590
Lamps. Friction-pulley for	S. H. Dibble	337,135	Mar. 2	340	88	34	988
Lamps. Heating attachment for	O. A. Moses	335,531	Feb. 9	1048	277	34	635
Lamps. Manufacture of incandescent electric	R. R. Moffatt	339,657	Jan. 5	208	57	34	40
Lamps. Reversible switch for incandescent	R. L. Brewer	335,107	Feb. 2	8	3	34	449
Lamps, &c. Suspension device for	M. J. Wightman	336,191	Feb. 16	1585	416	34	736
Lamps. Switch and holder for incandescent	E. Weston	334,147	Jan. 12	908	249	34	177
Lamps. Testing incandescent electric	A. Schneider	333,569	Jan. 5	79	21	34	16
Lance. Bomb	R. H. Banks	334,213	Jan. 12	1025	273	34	198
Land-channeling roller	G. L. Calkins	334,744	Jan. 26	1767	471	34	348
Land-roller	J. Hafner	337,377	Mar. 9	954	244	34	1104
Land-roller	C. Helm and J. Nickenich	337,264	Mar. 2	510	{133 134	34	1030
Land-roller	E. W. Knowles	335,077	Jan. 26	2204	586	34	427
Lantern	L. E. Johnson	338,077	Mar. 16	1609	419	34	1248
Lantern	B. Searles	336,596	Feb. 23	2157	564	34	843
Lantern	J. F. Miller	337,682	Mar. 9	1091	282	34	1195
Lantern-globes, &c. Manufacture of	F. E. Ives	338,074	Mar. 16	1606	418	34	1247
Lantern. Magic	G. Wells	336,374	Mar. 23	2298	600	34	1359
Lantern. Signal	J. W. Orphy	335,235	Feb. 2	210	56	34	478
Lantern-tube	J. W. Orphy	335,234	Feb. 2	215	55, 56	34	478
Lanterns. Making side tubes for	R. L. Campbell	337,131	Mar. 2	336	87	34	988
Last	F. Dombrowski and J. Woltmann	337,752	Mar. 9	1164	{302 303	34	1141
Lasting-machine	W. C. Cross	333,605	Jan. 5	143	39	34	99
Lasting-tool							
Latch: *See* Gate-latch.							
Latch and lock. Combined	J. C. Craig	338,141	Mar. 16	1704	{443 444	34	1247
Latch and lock. Combined	S. F. Estell	335,064	Jan. 26	2198	581	34	424
Latch and lock. Combined	O. L. Meisler	334,867	Jan. 26	1942	517	34	381
Latch. Cupboard	F. W. Mix and A. Arens	333,656	Jan. 5	207	56	34	40
Latch. Door	T. C. H. Bayrhoffer	336,374	Feb. 16	1856	486	34	784
Latch-door	J. A. Hollenberger	336,810	Feb. 23	2453	643	34	896
Latch for doors, windows, &c	C. R. Blathwayt	335,175	Feb. 2	128	32	34	463
Latch for scuttles, &c. Spring	I. N. Rogers	333,674	Jan. 5	236	64	34	46
Latch. Gate	H. Harrington	336,714	Feb. 23	2294	609	34	874
Latch. Night	J. H. Barnes and J. H. Woolaston	337,115	Mar. 2	310	81	34	968
Latch-operating device	O. H. Gilbert	335,914	Feb. 9	1177	313	34	656
Latch. Reversible	W. E. Sparks	334,815	Jan. 26	1856	494	34	360
Latch. Sliding-door	J. T. Gordon and J. H. Hamilton	336,638	Feb. 23	2221	579	34	854
Lath. Sheathing	W. M. Dwight	338,220	Mar. 16	1809	472	34	1267
Lathing	H. H. Fulton	336,517	Feb. 16	2045	537	34	817
Lathing	C. E. Merrifield	334,608	Jan. 19	1569	419	34	305
Lathing to iron frames of buildings. Fastening wire	R. T. Brown. (Reissue)	10,684	Feb. 9	1395	369	34	697
Lathe attachment	W. Middleditch	335,609	Feb. 9	733	195	34	579
Latho. Automatic	F. M. Stevens	337,530	Mar. 9	897	239	34	1063
Lathe-center	W. H. Fairless	333,619	Jan. 5	150	43	34	93
Lathe for turning irregular forms	O. Kromer	336,813	Feb. 23	2457	{644 645	34	900
Lathe for turning shafting	W. J. Muncaster	334,538	Jan. 19	1481	{397 398	34	987
Lathe for turning spherical surfaces	N. Hunt	338,749	Mar. 30	2556	675	34	1412
Lathe-rest	P. O'Neil	338,291	Mar. 23	1900	500	34	1292
Lathe-tool	C. A. Eklund and J. F. Westin	337,673	Mar. 9	1068	275	34	1125
Laundry-drier	O. M. Shannon	336,758	Feb. 23	2263	694	34	885
Laundry fork or washer	A. B. Lawrence	336,122	Feb. 16	1470	387	34	717
Lawn-cleaner	W. H. Mack	336,798	Feb. 23	2346	614	34	878
Lawn-tennis-net support	J. H. Lee	337,591	Mar. 9	978	249	34	1107
Lead. Apparatus for cooling white	D. Ravekes	335,773	Feb. 9	975	258	34	622
Lead or crayon holder	J. Appleby	338,332	Mar. 23	1959	516	34	1302
Lead or crayon holder	C. W. Boman	336,880	Mar. 30	2652	690	34	1430
Lead or crayon holder	F. J. W. Fischer	336,044	Feb. 9	1348	357	34	688
Lead or crayon holder	J. Pusey	338,611	Mar. 23	2337	611	34	1356
Lead or crayon holder	W. A. Shaw	338,561	Mar. 23	2273	596	34	1357
Lead-press	G. Middlemas	333,773	Jan. 5	379	103	34	72
Leather-rolling apparatus	J. D. Humphrey	334,119	Jan. 12	870	228	34	169
Leather-skiving machine	A. E. Dodge	337,820	Mar. 16	1964	{297 298	34	1166
Leather-splitting machine	A. C. Krueger	335,595	Feb. 9	715	190	34	576
Leather-stretching machine	J. A. J. Shultz	337,267	Mar. 2	545	.....	34	1027
Leather-stuffing	J. A. Dietz	334,518	Jan. 19	1457	.....	34	263
Leather water-proof. Making	R. C. Dunham	336,904	Mar. 2	32	8	34	982
Leg. Artificial	C. A. Frees	335,748	Feb. 9	934	246	34	615
Leg. Artificial	E. G. Day	335,343	Feb. 2	363	94	34	506
Lemon holder and squeezer	S. S. Badger	334,212	Jan. 12	1094	272	34	198

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lemon-squeezer	T. Curley	336,296	Feb. 16	1739	460	34	784
Lemon-squeezer	J. J. Staria	336,672	Feb. 23	2278	585	34	885
Lens-tester	G. Johnston	337,333	Mar. 2	607	159	34	1038
Letter and index holder	W. H. Davis	337,671	Mar. 9	1065	275	34	1194
Letter-box and collecting-pouch	G. Jovine	336,052	Feb. 9	1239	{259 260	34	690
Letter-box connection	J. G. Cutler	336,088	Feb. 9	1235	254	34	686
Letter-opener	G. C. Holt	337,680	Mar. 9	1074	277	34	1196
Letters to composition surfaces. Attaching composition	J. H. La Bau	334,786	Jan. 26	1818	484	34	259
Level. Grading	C. Willganss	334,149	Jan. 12	910	240	34	177
Level. Spirit	S. Reid and J. C. Thayer	334,059	Jan. 12	779	211	34	151
Level. Spirit	L. A. Sanford	337,621	Mar. 9	1005	258	34	1114
Leveling-instrument	C. G. Smith	338,791	Mar. 30	2613	668	34	1428
Lever and fulcrum	N. White	336,189	Feb. 16	1581	415	34	735
Leverage. Device for gaining	P. Harrod	334,771	Jan. 26	1802	479	34	356
Life-preserver	J. S. Badia	335,173	Feb. 2	116	30, 31	34	462
Life-preserver	W. C. Macdonald	335,599	Feb. 9	730	192	34	576
Life-saving apparatus. Tripod for	C. H. McLellan	335,088	Jan. 26	2215	588	34	430
Lift or hoist	J. M. de Aguirre y Lisaola	337,049	Mar. 2	223	59, 60	34	988
Lift or hoist	C. G. Major	336,536	Mar. 23	2236	{557 558	34	1351
Lifter: *See* Bung-lifter. Pot-lifter. Saah-lifter. Transom-lifter. Wagon-body lifter.							
Lifting-jack	T. L. Chapman	336,793	Feb. 23	2429	639	34	894
Lifting-jack	S. P. Davis	337,464	Mar. 9	840	213	34	1084
Lifting-jack	T. Maxon	333,878	Jan. 5	581	142	34	97
Lifting-jack	E. Nordyke	333,968	Jan. 5	643	177	34	121
Lifting-jack	H. Walther	335,859	Feb. 9	1067	267	34	644
Lifting-jack	J. Weathers	334,627	Jan. 19	1606	498	34	311
Light: *See* Electric light. Electric-arc light. Gas-light. Head-light. Vault-light.							
Light-regulator	R. A. Bacon	337,548	Mar. 9	990	236	34	1098
Limekiln	I. F. Garner and W. B. Hill	336,056	Mar. 16	1586	413	34	1223
Line-holder	H. B. Whiting	338,219	Mar. 16	1796	468	34	1265
Link-grinding machine	B. E. Parks	338,010	Mar. 30	2621	776	34	1460
Liquid-can	J. Graves	335,089	Jan. 26	2196	582	34	426
Liquid-cooler	E. B. A. Zwoyer	338,906	Mar. 30	2779	739	34	1452
Liquids. Centrifugal machine for separating	C. R. Mellor	334,713	Jan. 19	1725	{459 460	34	333
Lithographic machines. Inking apparatus for	C. A. Stillman	336,370	Mar. 23	2020	531	34	1312
Lithographic stone. Artificial	J. Wezel	333,801	Jan. 5	418	.....	34	79
Lithographic stones. Machine for surfacing	C. N. Morris	336,562	Feb. 23	2125	560	34	840
Lithographic stones. Machine for surfacing	C. N. Morris	336,588	Feb. 23	2188	560	34	840
Lock: *See* Alarm-lock. Bag-lock. Bicycle-lock. Bolt-lock. Car-door lock. Combination-lock. Door-lock. Fire-arm safety-lock. Hame-lock. Hasp-lock. Nut-lock. Permutation-lock. Pocket-book lock. Rowlock. Safe-lock. Seal-lock. Switch-lock. Till-lock. Time-lock. Trunk-lock. Vehicle-seat lock. Whip-socket lock.							
Lock	P. Brown	335,990	Feb. 9	1270	336	34	674
Lock	S. Shaw	335,965	Feb. 9	1238	329	34	669
Lock	W. D. Spencer	335,648	Feb. 2	799	209	34	589
Locks. Metal hub for	F. W. Heilman	337,494	Mar. 9	850	215	34	1065
Locking device for baling-press doors	F. S. Clark and J. A. Bachman	336,293	Feb. 16	1762	458	34	763
Locomotive. Duplex	B. C. Pole	335,479	Feb. 2	539	{141 142	34	538
Locomotive. Electrically-actuated	F. L. Pope	339,073	Mar. 30	2615	797	34	1493
Locomotive-furnace	T. A. Buckland	334,659	Jan. 19	1691	459	34	326
Locomotive track-clearer	J. A. Cypert	335,509	Feb. 2	528	139	34	544
Locomotive-whistle alarm	C. Hults	338,413	Mar. 23	2076	544	34	1322
Locomotives, &c. Grate-bar for	I. W. Swallow. (Reissue)	10,700	Mar. 16	1815	492	34	1274
Locomotives. Magnetic friction device for	M. S. Shaler	333,554	Jan. 5	74	21	34	16
Log-turner	H. T. Basim	334,320	Jan. 12	1193	320	34	229
Log-turner	W. Ingalls	336,669	Mar. 23	2494	639	34	1383
Log-turner	A. Rodgers	337,705	Mar. 9	1108	286	34	1131
Logging-motor	W. M. Victor	335,258	Feb. 2	246	65	34	484
Loom for weaving chenille or fur pile fabrics	W. Adam	336,197	Feb. 16	1595	{418 419	34	738
Loom let-off mechanism	R. E. Waterhouse	334,013	Jan. 12	788	216	34	155
Loom shedding mechanism	H. Wyman	336,683	Feb. 23	2292	599	34	868
Loom-shuttle	J. C. Sergeson	334,616	Jan. 19	1590	424	34	308
Loom-shuttle	A. B. Taylor and J. B. Tirrell	336,599	Feb. 23	2162	565	34	844
Loom. Swivel	J. Wadsworth	338,891	Mar. 30	2759	727	34	1448
Looms. Operating picker-staffs in power	D. M. Collins	338,739	Jan. 5	321	88	34	60
Looping-in switch	E. T. Gilliland	336,563	Feb. 23	2116	555	34	836
Louver and blind slat	G. Hayes	335,354	Feb. 2	377	98	34	509
Low-water alarm. Fire-bucket	C. J. Hexamer	335,223	Feb. 2	199	52	34	476
Lozenge-machine	N. A. Clacher	338,428	Mar. 23	2174	568	34	1340
Lubricating compound	C. Fink	335,443	Feb. 2	497	.....	34	520
Lubricating compound	C. E. Thompson	335,546	Feb. 2	633	.....	34	554
Lubricating device	J. Lauhoff	333,868	Jan. 5	506	129	34	94
Lubricating steam-engines	N. F. Burnham	336,838	Feb. 23	2491	655	34	905

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lubricator: *See* Axle-lubricator. Car-wheel lubricator. Engine-cylinder lubricator. Sight-feeding lubricator. Steam-engine lubricator.							
Lubricator	R. P. Gerlach	337,892	Mar. 9	666	179	34	1059
Lubricator	P. Häckler	337,896	Mar. 9	699	180	34	1060
Lubricator	L. Kaczander and R. Ruddy	337,500	Mar. 9	859	217	34	1087
Lubricator	M. Lindner	336,067	Mar. 16	1695	423	34	1281
Lubricator	S. M. Main	336,576	Feb. 23	2139	550	34	830
Lubricator	J. Powell	335,146	Feb. 2	65	18	34	452
Lubricator	R. Ruddy	334,679	Jan. 19	1676	448	34	324
Lubricator	O. Williams	334,282	Jan. 12	1184	318	34	228
Lubricator	J. T. Barber	336,334	Mar. 23	1962	516	34	1308
Lubricator	J. J. Curran	336,511	Feb. 16	2085	534	34	816
Lubricator	G. H. Derby	334,940	Jan. 26	2007	535	34	308
Lubricator	P. B. Raymond	336,440	Mar. 23	2116	554	34	1329
Lubricator	W. W. Flint	335,119	Feb. 2	27	8, 9	34	445
Lunch-box. Folding	C. M. Letz	336,814	Feb. 23	2459	645	34	809
Machine-table gage	F. H. Richards	335,696	Feb. 9	759	202	34	563
Machinery. Stand and treadle mechanism for	W. J. Lee	336,756	Mar. 30	2568	678	34	1415
Magazine-holder	C. A. Gaiser	338,260	Mar. 23	1860	489	34	1285
Magnets. Armature for electro	C. A. Gaiser	338,261	Mar. 23	1861	489	34	1285
Magnets. Armature for electro	G. Schaeffer	339,017	Mar. 30	2944	779	34	1492
Magnetic separator	F. E. Fisher	336,000	Feb. 9	1286	341	34	677
Magneto-electric machine	R. Thury	333,902	Jan. 5	546	{148 / 149}	34	102
Magneto or dynamo electric machine	E. Allen and W. H. Harrod	334,921	Jan. 26	1968	529	34	390
Mail-bag catcher	P. Campbell	335,494	Feb. 2	471	{121 / 122}	34	536
Mail bag or pouch	H. F. Staus	337,796	Mar. 9	1219	317	34	1151
Mail-box and indicator. Electric	H. B. Sorter	336,764	Feb. 23	2291	{626 / 627}	34	868
Mail. Vehicle for delivering	G. E. Hart	338,963	Mar. 30	2847	751	34	1406
Mainspring-barrels. Manufacture of	O. C. Dow	335,023	Jan. 26	2125	566	34	414
Mainspring-winder	E. M. Byrkit	335,336	Feb. 2	351	91	34	504
Mandrel. Saw	W. Burrows	336,209	Feb. 16	1622	428	34	742
Manger	T. M. McDonough	337,181	Mar. 2	404	105	34	1000
Manure-pouch	J. M. Sander	338,879	Mar. 30	2736	720	34	1445
Map and window-shade case	D. D. Van Wie	337,095	Mar. 2	283	75	34	979
Map, chart, and book case. Combined	J. F. Coyne	334,217	Jan. 19	1028	274	34	199
Marble-sawing machine	F. H. Voigt	336,535	Feb. 16	2070	544	34	822
Marbles. Device for projecting	A. T. Stewart	337,092	Mar. 2	279	74	34	978
Marker. Land	E. J. Hildreth and T. R. Miller	335,357	Feb. 2	382	99	34	510
Marker. Universal	J. E. Staples	334,094	Jan. 12	836	{228 / 229}	34	163
Marine way	W. J. Johnson	338,600	Mar. 23	2394	609	34	1365
Masher. Vegetable	F. Greenland	333,942	Jan. 5	610	166	34	114
Mat: *See* Disinfecting-mat.							
Mat	A. Spadone	334,994	Jan. 26	2060	556	34	406
Mat, stair, or step tread or pad	F. Greenland	333,943	Jan. 5	611	166	34	114
Matting-strands. Machine for stapling	F. W. Farnham	335,065	Jan. 26	2189	581	34	425
Match	P. Abbott	337,807	Mar. 16	1945	328	34	1163
Match-box and cigar-cutter. Combined	P. Smith	337,860	Mar. 16	1340	347	34	1180
Match-box and cigar-holder. Combined	P. Beer	335,416	Feb. 2	461	119	34	523
Match-machine	G. E. Norris and W. E. Hagen	336,494	Feb. 16	1925	{504 / 505}	34	797
Match-making machine	G. E. Norris and W. E. Hagan	337,074	Mar. 2	253	67, 68	34	973
Matches. Machine for making	G. Flewwelling and G. J. Harris	335,516	Feb. 2	503	154	34	546
Matches. Making	W. E. Doolittle	337,921	Mar. 16	1966	328	34	1166
Matches. Manufacture of	W. Hewitt	335,924	Feb. 9	1187	316	34	660
Mattress. Metallic-spring	J. F. Sloan	336,444	Feb. 16	1954	519	34	801
Mattresses. Frame for woven	D. J. Riker	336,824	Feb. 23	2471	649	34	902
Mairix	H. H. Smith	335,544	Feb. 2	631	166	34	553
Maul and fence-post driver	W. Keuffel	338,602	Mar. 23	2396	609	34	1366
Measure case. Tape	J. D. McCann	334,457	Jan. 19	1368	370	34	268
Measure for drafting garments	A. S. Adler	337,039	Mar. 2	212	56	34	964
Measure. Shoe-maker's	A. T. Hyde	338,527	Mar. 23	2228	585	34	1350
Measure. Tape	E. Herline, Jr	338,410	Mar. 23	2073	543	34	1322
Measures. Attachment for tape	H. Lauchli	333,641	Jan. 5	188	50, 51	34	37
Measures. Dial for speed	A. G. Meeze	336,336	Feb. 16	1803	479	34	774
Measuring and continuously registering physical power. Apparatus for	A. G. Meeze	336,337	Feb. 16	1806	{472 / 473 / 474}	34	774
Measuring apparatus and sack-holder. Grain	R. C. Livingston	335,940	Feb. 9	1208	321	34	664
Measuring electric currents. Apparatus for	J. L. Huber	338,507	Mar. 23	2320	608	34	1365
Measuring electrical currents. Apparatus for	J. L. Huber	338,506	Mar. 23	2319	607	34	1364
Meat and vegetable slicing machine	J. W. Anderson	337,545	Mar. 9	915	{234 / 235}	34	1097
Meat-block	E. Gardner	333,519	Jan. 5	94	7	34	7
Meat-cutter	T. Lyons	334,123	Jan. 12	874	239	34	170
Meat-cutter	C. Zies	335,730	Feb. 9	907	239	34	610
Meat-cutting machine	F. Lindner	334,789	Jan. 26	1821	{485 / 486}	34	359
Meat-hook	J. W. Leggitt	336,193	Feb. 16	1470	388	34	717
Meat-hook	B. A. Stevens	336,671	Feb. 23	2277	595	34	865
Meat-slicing machine	R. B. Pumphrey	337,790	Mar. 9	1211	315	34	1140
Meat-tenderer	J. D. Foster	338,258	Mar. 23	1859	488	34	1285
Meat-tenderer	D. E. Van Horn	336,455	Feb. 16	1970	516	34	804
Mechanical motor	L. P. Jordan and C. B. Stough	335,206	Feb. 2	434	112	34	519
Mechanical movement	W. C. Bramwell	334,341	Jan. 12	1211	317	34	223

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Mechanical movement	G. Crompton and H. Wyman	336,638	Feb. 23	2201	{574 / 575}	34	830
Mechanical movement	G. Crompton and H. Wyman	336,634	Feb. 23	2203	575	34	850
Mechanical movement	G. Crompton and H. Wyman	336,635	Feb. 23	2204	575	34	851
Mechanical movement	G. Crompton and H. Wyman	336,636	Feb. 23	2205	576	34	851
Mechanical movement	G. Crompton and H. Wyman	336,637	Feb. 23	2206	576	34	851
Mechanical movement	G. Crompton and H. Wyman	339,047	Mar. 30	2982	789	34	1488
Mechanical movement	G. Crompton and H. Wyman	339,048	Mar. 30	2983	789	34	1488
Mechanical movement	A. Fahrney	337,886	Mar. 16	1989	329	34	1167
Mechanical movement	J. Friet	334,699	Jan. 19	1705	455	34	289
Mechanical movement	F. Jackson	337,956	Mar. 16	1452	376	34	1200
Mechanical movement	G. F. McIndoe	338,541	Mar. 23	2344	580	34	1329
Mechanical movement	F. M. Nixon	335,531	Feb. 2	615	161	34	550
Mechanical movement	F. Reed	334,806	Jan 26	1847	492	34	264
Mechanical movement	F. H. Richards	338,309	Mar. 23	1918	505	34	1295
Mechanical movement for converting motion	A. Kaiser	334,173	Jan. 12	952	258	34	184
Medical compound	B. G. Gish	333,746	Jan. 5	348	.....	34	65
Medicinal tea	P. Homero	333,639	Jan. 5	176	.....	34	35
(Medicine.) Asthma remedy	J. Girdwood	333,513	Jan. 5	24	.....	34	8
(Medicine.) Skin diseases. Remedy for	W. B. Ferguson	338,725	Mar. 30	2517	.....	34	1406
Menthol. Obtaining	A. M. Todd. (Reissue)	10,705	Mar. 30	3092	818	34	1506
Merchandise-receptacle	L. Whitehead	338,810	Mar. 30	2839	695	34	1407
Metal. Apparatus for clarifying molten	A. C. Hogen	336,298	Feb. 16	1670	434	34	749
Metal bars. Machine for drawing	L. D. York	335,496	Feb. 2	585	148	34	548
Metal bars. Machine for swaging	J. Berry	337,297	Mar. 2	561	148	34	1089
Metal bending and straightening machine	W. J. Muncaster	334,455	Jan. 19	1364	{369 / 370 / 429 / 430}	34	287
Metal-bending machine	G. A. Ohl	338,100	Mar. 16	1658	{429 / 430}	34	1287
Metal can, &c	A. Warner	337,539	Mar. 9	909	232	34	1095
Metal. Compressing fluid	F. Billings and W. R. Hinsdale	333,501	Jan. 5	128	35	34	26
Metal. Granulating molten	D. J. Riker	336,590	Feb. 23	2159	.....	34	842
Metal package or can	G. W. Knapp	339,063	Mar. 30	3005	794	34	1491
Metal plates. Machine for bending	J. H. Ferguson	338,944	Mar. 30	2882	745	34	1462
Metal rods or wire. Apparatus for reducing	J. Reese	338,362	Mar. 23	2005	528	34	1310
Metal stripe. Machine for coiling	C. C. Finneran	333,509	Jan. 5	20	6	34	6
Metal tubes. Machine for polishing the interior of	S. W. Adams	335,266	Feb. 2	255	67, 68	34	486
Metal tubes. Manufacture of	A. Latch	334,531	Jan. 19	1470	394	34	286
Metal wheels. Making	J. R. Little	334,253	Jan. 12	1093	292	34	210
Metal wheels. Mechanism for manufacturing	J. R. Little	334,250	Jan. 12	1084	{287 / 288 / 289}	34	209
Metal wheels. Mechanism for manufacturing	J. R. Little	334,251	Jan. 12	1088	{289 / 290 / 291}	34	210
Metal wheels. Mechanism for the manufacture of	J. R. Little	334,254	Jan. 12	1095	293	34	211
Metal wheels. Mechanism for the manufacture of	J. R. Little	337,172	Mar. 2	391	101	34	998
Metals. Apparatus for filtering and separating	J. P. Wetherill	334,207	Jan. 12	1015	{270 / 271}	34	196
Metals. Filtering and separating	J. P. Wetherill	334,208	Jan. 12	1017	271	34	197
Metals. Treating	E. Samuel	336,439	Feb. 16	1943	509	34	800
Metallic balls. Machine for making hollow	A. Blabee	338,656	Mar. 23	2401	632	34	1379
Metallic wheel	J. R. Little	334,249	Jan. 12	1083	287	34	209
Metallic wheel	J. R. Little	334,252	Jan. 12	1092	291	34	210
Metallurgical furnace	W. Acheson	338,907	Mar. 30	2781	732	34	1452
Meter: *See* Electric meter. Electric-current meter. Electrical meter. Oscillating meter. Piston water-meter. Volt-ampère meter. Water-meter.							
Methyl-blue from rosaniline. Manufacture of soluble	A. Kern	333,861	Jan. 5	497	.....	34	93
Mica sheets. Manufacture of compound	H. S. Lucas	335,598	Feb. 9	719	192	34	576
Micro-audiphone	F. M. Blodgett	333,794	Jan. 5	317	87	34	60
Micrometer-gage	P. Clifford and J. Coupal	335,110	Feb. 2	13	4	34	443
Micrometer-gage	G. B. Grant	334,770	Jan. 26	1801	479	34	356
Microphone or apparatus for transmitting sounds by means of jets. Jet	C. A. Bell	336,062	Feb. 16	1417	375	34	707
Microscope	C. Fasoldt	334,009	Jan. 12	708	198	34	140
Microscopes. Glass slide for	C. W. Palmer	336,257	Feb. 16	1696	442	34	753
Microscopist's turn-table	C. Klippert	334,580	Jan. 19	1469	394	34	285
Middlings-purifier	E. T. Butler	337,370	Mar. 9	653	172	34	1054
Middlings-purifier	C. N. Smith	337,907	Mar. 9	438	113	34	1006
Middlings-purifiers. Feeding device for	G. F. Sherwood and C. A. Smith	339,023	Mar. 30	2951	781	34	1483
Middlings-purifiers. Feeding device for	C. A. Smith	339,029	Mar. 30	2961	{783 / 784}	34	1484
Middlings-purifiers. Feeding mechanism for	C. A. Smith	339,028	Mar. 30	2959	{782 / 783}	34	1484
Milk-cooler	W. R. Fowler	334,767	Jan. 26	1798	478	34	355
Milk-pans. Ventilating-cover for	J. Davies	337,816	Mar. 16	1959	326	34	1165
Milker. Cow	A. A. Durand	335,188	Feb. 2	125	34, 35	34	465
Milker. Cow	R. D. Roth	335,042	Jan. 26	2156	574	34	419
Milking-machine	J. H. Kirby	335,287	Feb. 2	284	75	34	491
Milking-machine	J. E. Nyrop	338,098	Mar. 16	1650	429	34	1236
Mill: *See* Band-saw mill. Cane-mill. Coffee-mill. Fanning-mill. Grinding-mill. Pug-mill. Pulverizing-mill. Roller-mill. Rolling-mill. Saw-mill. Windmill.							
Milling-machines. Universal head for	F. Hols and G. A. Mueller	333,681	Jan. 5	179	47, 48	34	24
Millstone-bush	D. A. Bellows	335,418	Feb. 2	464	119	34	524
Millstone-dress	H. E. and C. W. Sylvester	336,533	Feb. 16	2068	543	34	822
Mincing-machine	J. H. Shaw	337,631	Mar. 9	1018	262	34	1116

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Mine-ventilator	H. Davies	338,495	Mar. 23	2189	572	34	1343
					573		
Mines. Shaft and elevator for	J. R. Braidwood and S. Oswalt	337,734	Mar. 9	1148	296	34	1127
					297		
Mining-drill	W. H. Jenkins	335,591	Feb. 9	710	169	34	574
Mining-drill	T. H. Walton	333,796	Jan. 5	415	112	34	78
Mining-machine	J. Lucas	333,960	Jan. 5	632	173	34	119
					174		
Mining-machine	G. D. Whitcomb	335,398	Feb. 2	337	88, 89	34	502
Mining machine. Coal-	F. L. Clero	334,642	Jan. 19	1696	433	34	315
Miter-box	W. L. Booyer	335,738	Feb. 9	922	242	34	612
Miter-frame clamp	G. R. Hammond	334,435	Jan. 19	1337	362	34	262
Mitering-machine	J. G. Leffingwell	334,247	Jan. 12	1078	285	34	206
Mitten. Reversible	G. P. Ross	334,200	Jan. 26	1961	521	34	384
Mixer: *See* Oil-mixer.							
Mold: *See* Carbonizing-mold. Casting-mold. Cigar-mold. Glass-mold. Glass-maker's mold. Sewer-gas-trap mold.							
Mold	J. B. Odell	333,661	Jan. 5	213	58	34	41
Molded articles. Composition of matter for making	S. M. Allen	337,479	Mar. 9	925	.....	34	1081
Molder's facing	J. J. Riddle	335,698	Feb. 9	761	.....	34	598
Molder's pattern-plate	J. R. Davies	334,758	Jan. 26	1784	474	34	352
Molding. Cloth-covered	J. Maxwell	337,008	Mar. 2	176	46	34	967
Molding flower-pots. Machine for	H. Ammenheuser	334,406	Jan. 19	1299	251	34	255
					252		
Molding-machines. Cutter for	H. C. Tunis	337,363	Mar. 2	630	166	34	1042
Molding-polisher	S. I. Phelps	337,515	Mar. 9	879	223	34	1090
Monument	J. H. Brubaker	335,991	Feb. 9	1271	337	34	674
Monument	T. Huston	337,769	Mar. 9	1185	309	34	1145
Mop	E. F. Wilson	335,005	Jan. 26	2100	550	34	410
Mop. Dish-washing	G. W. Mason	333,650	Jan. 5	199	55	34	29
Mop-holder	J. McWilliams	335,295	Feb. 2	295	78	34	493
Mop-wringer	H. Flesher	337,676	Mar. 9	1071	276	34	1125
Mop-wringer	D. Lynch	337,274	Mar. 2	528	139	34	1024
Mortising-machine	A. J. Heise	338,967	Mar. 30	2851	752	34	1466
Mosquito-canopy	R. Mitchell	338,498	Mar. 23	2100	550	34	1327
Motion. Device for converting	J. M. Flint	337,568	Mar. 9	945	241	34	1102
Motion. Device for converting	W. L. Kling	337,992	Mar. 16	1458	378	34	1201
Motion. Device for converting	J. N. Powell	335,147	Feb. 2	67	18	34	453
Motion. Device for converting	G. W. Richardson	338,780	Mar. 30	2602	685	34	1490
Motion. Device for converting	S. L. Shellenberger	334,989	Jan. 26	2074	554	34	405
Motion. Device for converting reciprocating into rotary	W. G. Adams	336,978	Mar. 2	126	34	34	949
Motion. Device for converting reciprocating into rotary	R. B. Holt and I. N. Walton	335,702	Feb. 9	866	228	34	602
					229		
Motion. Device for converting reciprocating into rotary	A. C. and C. Monger	337,973	Mar. 16	1475	383	34	1204
Motion. Device for converting reciprocating into rotary grip and slip	W. T. Kosinski	334,392	Jan. 12	1271	343	34	243
Motive-power engine	P. W. Willans	338,378	Mar. 23	2031	533	34	1314
Motor: *See* Car-motor. Churn-motor. Electric motor. Electric magnetic motor. Electro-dynamic motor. Hydraulic motor. Logging-motor. Mechanical motor. Spring-motor. Steam-motor. Water-motor. Weight-motor.							
Motor	G. Haydn	338,408	Mar. 23	2072	543	34	1291
Motor	J. B. Miles	334,263	Jan. 12	1107	296	34	213
Motor-engine worked by combustible gases or petroleum.	G. Daimler	334,109	Jan. 12	855	225	34	166
Mouse-trap	L. H. Gear	338,399	Mar. 23	2062	540	34	1319
Mouth and throat illuminator. Electric	L. F. Criado	336,510	Feb. 16	2034	534	34	816
Mower	E. Dickinson	334,758	Jan. 26	1788	475	34	353
Mower. Lawn-	D. Arndt	338,138	Mar. 16	1698	440	34	1245
Mower. Lawn-	S. R. Campbell and C. H. Finch	338,479	Mar. 23	2164	566	34	1339
Mower. Lawn-	H. A. Groux	336,639	Feb. 23	2222	580	34	854
Mower. Lawn-	T. Rogers	333,549	Jan. 5	69	20	34	16
Mower. Lawn-	T. Rogers	333,550	Jan. 5	70	20	34	16
Mower-lifting attachment	A. C. McKendree	335,764	Feb. 9	959	254	34	618
Mower track-clearer	J. M. Patterson and E. A. Himebaugh.	335,769	Feb. 9	967	256	34	620
Mowing-machine	B. Elmore	334,762	Jan. 26	1791	478	34	353
Mowing-machine	W. A. Morgan, Jr	339,068	Mar. 30	2010	795	34	1492
					796		
Mowing-machine	E. F. Stoddard and J. M. Rossell	336,287	Feb. 16	1707	445	34	755
Mowing-machine	E. M. Vandewater	336,451	Feb. 16	1963	514	34	808
Mowing-machines. Sickle-driver attachment for	J. Walker and H. T. Caulk	334,928	Jan. 26	1871	498	34	368
Mucilage-bottle	W. H. Redington	336,945	Mar. 2	85	23	34	942
Mucilage-holder	C. S. Pinkham	334,046	Jan. 12	763	209	34	150
Music-folios, &c. Clip for leaves of	S. W. Valentine	337,639	Mar. 9	1029	264	34	1116
Music-leaf turner	J. Herron	333,519	Jan. 5	33	9	34	9
Music-leaf turner	H. W. Pool	338,103	Mar. 16	1656	430	34	1236
					431		
Music-satchel	E. Thayer	338,569	Mar. 23	2281	598	34	1356
Music-strips. Making	R. Butterworth	337,304	Mar. 2	571	151	34	1031
Musical box	L. Campioni	336,210	Feb. 16	1628	424	34	742
Musical boxes. Automatic safety-check for	C. H. Jacot	337,585	Mar. 9	964	247	34	1106
Musical instrument. Mechanical	J. H. Chase	335,272	Feb. 2	263	69	34	487
Musical instrument. Mechanical	F. E. P. Ehrlich	335,903	Feb. 9	1163	309	34	656
					310		

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Musical instrument. Mechanical	F. E. P. Ehrlich	338,496	Mar. 23	2189	573	34	1344
Musical instrument. Mechanical	H. Lorentz	333,645	Jan. 5	192	52	34	88
Musical instrument. Mechanical	R. W. Pain	335,534	Feb. 2	619	169	34	550
Musical instrument. Mechanical	J. E. Treat	335,549	Feb. 2	637	167	34	554
					168		
Musical-instrument valve	J. H. Chase	335,271	Feb. 2	263	69	34	487
Musical instruments. Manufacture of reeds for	J. D. Whitney	338,007	Mar. 16	1598	396	34	1213
Musical instruments. Reed-plate for	F. J. Brand	338,336	Mar. 23	1964	517	34	1303
Musical-key indicator	O. H. Goodwin	337,320	Mar. 2	863	156	34	1035
Musical reeds. Apparatus for bending and voicing	E. H. White	336,208	Feb. 16	1848	485	34	782
Mute for stringed instruments	C. F. Albert	335,572	Feb. 9	1105	293	34	647
Nail: *See* Boot and shoe nail. Shoe-nail. Cut nail.							
Nail	C. C. Doten	335,181	Feb. 2	135	34	34	465
Nail	F. W. Wheeler	335,963	Feb. 9	1302	335	34	672
Nail-capping machine	J. M. Ellis	336,994	Mar. 2	148	40	34	952
Nail-driving machine	E. L. Wheeler	334,538	Jan. 19	1504	403	34	291
Nail-feeding mechanism	C. D. Rogers	334,808	Jan. 26	1956	521	34	384
Nail-holder	A. L. Wheelock	337,905	Mar. 16	1379	356	34	1186
Nail machine. Wire-	G. N. Cooper	333,730	Jan. 5	323	89	34	60
Nail machine. Wire-	H. B. Lester	334,948	Jan. 12	1077	285	34	208
					286		
Nail machine. Wire-	E. S. Morton	334,604	Jan. 19	1570	419	34	305
Nail or spike	W. H. Perry	333,889	Jan. 5	532	144	34	100
Nail-plate furnace	S. Bunn	334,216	Jan. 12	1027	273	34	199
Nails. Die for making wire	B. H. Gedge	338,730	Mar. 30	2527	668	34	1407
Nails. Machine for making wire	J. E. Kimball and W. Avery	333,883	Jan. 5	500	136	34	93
					137		
Nails. Making cut	H. Weeks	335,260	Feb. 2	247	65	34	485
Nails. Manufacture of ornamental	J. F. Thayer	334,025	Jan. 19	1603	427	34	310
Nails. Manufacture of screw-	H. E. Jones	335,181	Feb. 2	46	12	34	449
Nails. Wire stock for	H. E. Jones	335,123	Feb. 2	49	13	34	449
Nailing-machine	H. Weeks and E. Woodward	335,261	Feb. 2	249	65, 66	34	485
Neck-wear frame	E. C. Cooke	334,359	Jan. 12	1298	330	34	225
Neck-wear retainer	R. B. Helliwell	333,754	Jan. 5	357	96	34	67
Necktie-fastener	A. Cifre	334,219	Feb. 16	1628	404	34	742
Necktie-fastener	B. M. Flah	339,257	Mar. 23	1856	488	34	1365
Necktie-fastener	D. T. Freese	334,294	Jan. 12	1040	276	34	201
Necktie-fastener	J. F. Pope	335,716	Feb. 9	887	234	34	605
Necktie-fastener and reversible scarf-band holder	L. Lemos	333,642	Jan. 5	189	51	34	37
Necktie-supporter	B. B. Scully	333,553	Jan. 5	73	21	34	16
Needle	O. H. Merrill	335,138	Feb. 2	57	15	34	451
Needle-case	E. J. Toof	337,893	Mar. 16	1357	352	34	1183
Needle or spray bath	G. Taylor	335,785	Feb. 9	992	262	34	625
					263		
Net and umbrella. Combined fish-	E. Q. Derr	335,433	Feb. 2	463	126	34	528
Net. Sponge-gathering	B. K. Moscopoulos. (Reissue)	10,668	Feb. 16	2074	545	34	862
Nipper or wiper for lasting-machines	F. Chase	337,924	Mar. 16	1400	363	34	1191
Nitro-cellulose. Manufacturing	F. V. Pool	336,622	Feb. 23	2468	.....	34	901
Nose-bag	G. W. Scovill	336,597	Feb. 23	2159	565	34	844
Nozzle. Jet and spray	E. R. Tomlinson	336,602	Feb. 23	2166	566	34	845
Nozzle. Spray	E. J. Delaney	334,110	Jan. 12	857	236	34	166
Numbering houses. Device for	M. P. C. Hooper	335,130	Feb. 2	44	12	34	449
Nursery-chair	J. Thunborg	335,334	Feb. 2	321	87	34	501
Nut-lock	F. P. Beisel	337,633	Mar. 9	1045	288	34	1121
Nut-lock	J. M. Calendar	336,892	Mar. 2	11	3	34	939
Nut-lock	O. L. Castle	334,070	Jan. 12	798	219	34	156
Nut-lock	J. P. Champion	333,502	Jan. 5	8	2	34	4
Nut-lock	J. Conway	336,037	Feb. 9	1334	353	34	666
Nut-lock	R. Dodson	333,689	Jan. 5	471	128	34	87
Nut-lock	G. P. Fuller	338,729	Mar. 30	2596	668	34	1407
Nut-lock	T. Lovelidge	335,941	Feb. 9	1209	322	34	664
Nut-lock	J. H. McLean	338,095	Mar. 16	1645	428	34	1236
Nut-lock	W. J. McTighe	334,790	Jan. 26	1825	487	34	360
Nut-lock	J. F. M. Morse	334,031	Jan. 12	738	202	34	146
Nut-lock	J. Paisley	338,866	Mar. 30	2713	714	34	1442
Nut-lock	E. R. Procter	333,548	Jan. 5	69	20	34	15
Nut-lock	E. R. Procter. (Reissue)	10,704	Mar. 30	3092	818	34	1506
Nut-lock	L. and C. Staples	334,656	Jan. 12	780	213	34	158
Nut-lock	W. P. Teed	338,448	Mar. 23	2128	556	34	1328
Nut-lock	M. W. Tucker	336,694	Mar. 23	2361	621	34	1372
Nut-lock	A. C. Vaughan	337,901	Mar. 9	1236	318	34	1152
Nut-lock	G. W. White	333,569	Jan. 5	114	31	34	24
Nut-lock	G. Woodring	334,896	Jan. 26	1868	501	34	370
Nut. Prop-	H. Higgin	336,808	Feb. 23	2448	643	34	897
Nuts. Device for making	W. Heiser	335,195	Feb. 2	155	40	34	469
Oar. Jointed boat-	B. F. Bennett	336,886	Mar. 2	4	2	34	927
Oat-hulling machine	J. E. Fenner and D. Brunson	335,668	Feb. 9	841	223	34	597
Oil. Apparatus for cleaning	J. C. Thornton	337,450	Mar. 9	809	205	34	1078
Oil-burner	J. C. Morrison and R. Smith	338,898	Mar. 30	2708	713	34	1440
Oil-cabinet	J. A. Hackenberg	337,576	Mar. 9	953	244	34	1104
Oil-cake. Manufacture of	W. V. Kay	338,530	Mar. 23	2230	585	34	1350
Oil-can	W. G. Dinsmore	338,632	Mar. 30	2672	703	34	1423
Oil-can	J. Hess and G. Jensen	335,520	Feb. 2	602	156	34	547
Oil-can	O. H. Warren	333,575	Jan. 5	107	30	34	23
Oil-can. Safety	D. Steeneken	336,898	Feb. 23	2473	650	34	902
Oil-cup	H. B. Kingsley	336,225	Feb. 16	1788	467	34	771
Oil-cup	W. Krutzsch	334,710	Jan. 19	1719	458	34	329
Oil-cup for skate and other journals	W. B. Dorward	337,823	Mar. 16	1266	338	34	1163
Oil mixer and emulsifier	G. W. Sample	336,438	Feb. 16	1942	509	34	800
Oil on water for calming the same. Apparatus for discharging	J. Gordon, Jr.	339,054	Mar. 30	2992	792	34	1490
Oil-press	J. P. F. Cartier	338,034	Mar. 16	1563	405	34	1219
Oil-seed-meal-heating machinery	D. A. Tompkins and F. Oliver	336,175	Feb. 16	1561	411	34	731

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Oil-separator for steam and water	E. Polte	338,772	Mar. 30	2592	683	34	1418
Oil-stone holder	J. W. Cole	337,550	Mar. 9	935	239	34	1100
Oil upon the sea at harbors, docks, &c. Apparatus for distributing	J. Shields	334,295	Jan. 12	1147	307	34	221
Oil upon seas. Apparatus for distributing	F. D. Montague	335,035	Jan. 26	2145	570	34	417
Oils. Apparatus for burning hydrocarbon	H. W. Whiting. (Reissue)	10,699	Mar. 9	1241	322	34	1156
Oils. Apparatus for refining tallow and other lubricating	G. J. Pilkington	335,957	Feb. 9	1228	327	34	668
Oils, &c. Apparatus for treating essential	A. M. Todd	337,716	Mar. 9	1122	289, 290	34	1133
Oils. Purifying and crystallising essential	C. L. Coffin	336,622	Feb. 23	2200	.....	34	850
Oiler and journal-box for shafting. Mechanical	H. P. Humphrey	333,950	Jan. 5	620	169	34	117
Oiler and wiper for commutators	J. Snowberger	338,197	Mar. 16	1777	464	34	1202
Oiler. Car-axle	J. Gibbons	334,013	Jan. 12	707	194, 195	34	140
Ointment	M. H. Berry and F. H. Butler	334,634	Jan. 19	1616	.....	34	313
Ointment	M. Musgrave and H. J. Barton	334,589	Jan. 19	1487	.....	34	288
Orchard-guard	J. B. Daveggio	333,611	Jan. 5	149	41	34	30
Ordnance	D. M. Mefford	335,606	Feb. 9	729	194	34	578
Ordnance	D. M. Mefford	335,607	Feb. 9	730	195	34	578
Ordnance-carriage	T. Nordenfelt	338,766	Mar. 30	2592	681	34	1417
Ore-concentrator	J. M. Adams and W. F. Carter	337,471	Mar. 9	992	269	34	1060
Ore-concentrator	W. A. Frank	335,219	Feb. 2	194	51	34	475
Ore-concentrator	T. J. Gray	333,851	Jan. 5	485	131	34	90
Ore-concentrator	W. Hooper	337,683	Mar. 9	1077	278, 279	34	1126
Ore-concentrator	W. Hooper	337,684	Mar. 9	1079	279	34	1126
Ore-concentrator	M. McAneny and W. L. Rieley	338,856	Mar. 30	2702	711	34	1439
Ore-concentrator	S. G. Rollins	337,065	Mar. 2	968	72	34	976
Ore-crusher	J. C. Wiswell	337,726	Mar. 9	1134	292, 293	34	1135
Ore-crusher	J. A. Bidwell	336,691	Feb. 23	2304	602	34	870
Ore-grinding pan	F. R. Brown	336,507	Feb. 16	2029	533	34	815
Ore-separator	A. C. Campbell	335,338	Feb. 2	357	93	34	503
Ore-separator	S. R. Krom	338,847	Mar. 30	2688	709	34	1437
Ores and mineral substances. Screen for	J. C. Wiswell	336,030	Feb. 9	1207	351	34	664
Ores. Apparatus for treating	C. S. Bradley and F. B. Crocker	335,499	Feb. 2	569	149	34	542
Ores by electricity. Heating and reducing	F. H. Blake	337,122	Mar. 2	321	84	34	985
Ores, &c. Machine for concentrating	F. Lotter	339,067	Mar. 30	3008	.....	34	1492
Ores of nickel and cobalt with oxide of manganese. Reducing	D. Reynolds	335,624	Feb. 9	755	.....	34	583
Ores. Reducing magnetic oxide-of-iron	G. W. Scollay	333,785	Jan. 5	396	.....	34	75
Ores. Treating	J. R. Hessler	338,740	Mar. 30	2545	671, 672	34	1410
Organ and sewing-machine. Combined	W. H. Price, Jr.	337,348	Mar. 2	622	164	34	1041
Organ stop-action. Combination	W. Murphy	336,134	Feb. 16	1483	392	34	720
Organs. Octave-coupler for	I. Bassett	336,992	Mar. 2	131	35	34	949
Organs. Pneumatic action for	C. S. Haskell	337,326	Mar. 2	600	157	34	1037
Organs. Pneumatic action for	H. L. Roosevelt and C. S. Haskell	336,351	Feb. 16	1824	479	34	778
Organs. Pneumatic action for	L. Baer and D. Kraemer	335,792	Feb. 9	1001	265	34	627
Ornamental fabric	D. C. Putnam	334,282	Jan. 12	1130	303	34	218
Oscillating engine	A. Van Guyaling	336,454	Feb. 16	1969	516	34	804
Oscillating meter	L. H. Nash	336,423	Feb. 16	1922	503, 504	34	796
Oven	W. Miller	336,937	Mar. 2	72	19	34	939
Oven. Baker's	E. A. C. Petersen	336,741	Feb. 23	2361	617	34	881
Oven. Baker's	W. H. Thompson	336,767	Feb. 23	2394	628	34	888
Oven-door catch	L. E. Ziegle	334,728	Jan. 19	1743	465	34	337
Oven-peel	E. N. Rittase	336,349	Feb. 16	1892	478	34	777
Oven. Portable baking	A. Chappée	336,550	Feb. 23	2095	551	34	833
Ovens. Attachment for bake	L. B. Linthicum	338,979	Mar. 23	1889	496	34	1290
Overalls	C. Erlanger	337,316	Mar. 2	588	155	34	1035
Overalls	M. Vanderbeugle	338,118	Mar. 16	1677	435	34	1241
Overshoes. Clasp-fastening for	F. Richardson	338,555	Mar. 23	2262	594	34	1355
Ox-shoe	J. Deeble	338,937	Mar. 30	2815	742	34	1460
Ox-shoes. Die for trimming	J. Deeble	336,901	Mar. 2	28	7	34	932
Ox-shoes. Manufacture of	J. Deeble	336,900	Mar. 2	27	7	34	932
Oyster-tongs	R. T. Allinson	337,358	Mar. 9	639	169	34	1051
Package. Cylindrical wooden	J. Tomlinson	336,963	Mar. 2	106	29	34	945
Package for belt-dressing compounds	J. H. Bringold	337,235	Mar. 2	471	123	34	1013
Package for liquid glue, &c	C. H. Leggett	334,592	Jan. 19	1554	415	34	302
Packing	W. White, Jr.	337,100	Mar. 2	290	77	34	980
Packing. Asbestus	R. N. Pratt	338,358	Mar. 23	1998	526	34	1309
Packing-box	W. H. Beach	333,720	Jan. 5	312	86	34	58
Packing for car-axle boxes	E. Waite	336,966	Mar. 2	108	30	34	945
Packing for engines. Plunger	L. H. Nash	334,037	Jan. 12	746	204	34	147
Packing for piston and valve rods. Metallic	C. T. Sleeper and F. J. Hubbard	334,480	Jan. 19	1404	379	34	274
Packing for pistons	J. Ferguson	336,293	Feb. 16	1641	428, 429	34	745
Packing for rods	J. Partington	336,159	Feb. 16	1527	402	34	725
Packing for steam-condenser tubes	A. G. W. Rankin	337,434	Mar. 9	774	197	34	1073
Packing for surface-condensers. Tube	D. B. Cobb	334,512	Jan. 19	1450	389	34	282
Packing-joint	T. Keyworth	335,592	Feb. 9	712	180	34	575
Packing. Piston-rod	W. A. P. Bicknell	338,700	Mar. 30	2477	654	34	1399
Packing. Piston-rod	O. J. Garlock	334,579	Jan. 19	1539	412	34	298
Packing. Piston-rod	B. F. Williston	333,582	Jan. 5	116	32	34	24
Packing. Steam	E. J. Hoskins	339,100	Mar. 30	3062	810	34	1501
Pad: *See* Blotting-pad. Collar-pad. Furniture-pad. Harness-pad. Truss-pad.							
Paddle-wheel	P. Cummings	333,607	Jan. 5	145	40	34	29
Paddle-wheel. Feathering	T. P. Turnbull	335,796	Feb. 9	901	237, 238	34	609
Padlock. Permutation	J. H. Julian	336,858	Feb. 23	2519	663	34	910

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Padlock. Permutation	W. B. Turman	337,800	Mar. 9	1284	318	34	1159
Pail-bottoms. Machine for bending	H. W. Leonard and J. Stevens	335,079	Jan. 26	2306	586	34	498
Paint and varnish	J. W. and F. R. Hoard	334,019	Jan. 12	717	.....	34	142
Paint-can	E. Norton	338,767	Mar. 30	2583	681	34	1417
Paint composition	J. McArthur	336,540	Mar. 23	2944	.....	34	1358
Paint. Composition for removing	G. W. Moore	336,544	Mar. 23	2948	.....	34	1358
Paint-exhibitor	T. C. Van Aradale	337,634	Mar. 9	996	55	34	983
Paint. Mixed	C. J. Mountford	339,070	Mar. 30	3013	.....	34	1492
Paint. Mixed	T. J. Pearce and M. W. Beardsley	338,868	Mar. 30	2715	.....	34	1442
Paint. Mixed	T. J. Venema	334,498	Jan. 19	1498	.....	34	277
Paint-mixing machine	N. Bassett	336,079	Feb. 16	1469	373, 374	34	706
Painters, &c. Progressive climbing device for the use of	E. H. Gadsby	335,278	Feb. 2	271	71	34	489
Painting bobbins, &c. Machine for	L. C. Baldwin	336,390	Mar. 23	2035	534	34	1314
Paintings. Stretcher-frame for	F. P. Pfleger	335,383	Feb. 2	415	107	34	516
Palette-knife and brush-supporter	A. S. Campbell	337,660	Mar. 9	1059	271	34	1122
Pamphlets. Machine for attaching covers to	G. H. Ogden	337,608	Mar. 9	989	253, 254	34	1111
Pan: *See* Ash-pan. Bake-pan. Bed-pan. Bung-pan. Evaporating-pan. Frying-pan. Ore-grinding pan. Vacuum-pan.							
Pantaloons-protector	G. Kinner	334,788	Jan. 26	1815	484	34	350
Pants. Attachment for	H. J. Lyon	336,641	Mar. 23	2388	627	34	1376
Paper and fixture. Toilet	O. H. Hicks	334,864	Jan. 26	1918	510	34	377
Paper. Apparatus for the manufacture of	C. J. Richardson	338,364	Mar. 23	2009	598	34	1310
Paper. Apparatus for winding and rewinding	E. W. Ayer	336,686	Feb. 23	2297	600, 601	34	869
Paper bag	W. H. Honiss	333,523	Jan. 5	37	10, 11	34	9
Paper-bag holder	D. M. Karns	336,274	Mar. 23	1883	494, 495	34	1269
Paper-bag machine	W. A. Lorenz	333,646	Jan. 5	194	52, 53	34	38
Paper-bag machine	W. A. Lorenz and W. H. Honiss	333,647	Jan. 5	194	53, 54	34	38
Paper-bag machine	W. A. Lorenz and W. H. Honiss	337,964	Mar. 16	1461	378, 379	34	1201
Paper-bag machine	W. A. Lorenz and W. H. Honiss	337,965	Mar. 16	1463	379, 380	34	1202
Paper-bag machine	W. A. Lorenz and W. H. Honiss	337,966	Mar. 16	1466	380, 381	34	1202
Paper-bag machine	J. P. Onderdonk	333,538	Jan. 5	57	16	34	13
Paper bags. Machinery for the manufacture of satchel-bottom	W. C. Cross	336,474	Feb. 16	1991	521, 522	34	808
Paper bags. Manufacture of	J. P. Onderdonk	333,537	Jan. 5	56	16	34	13
Paper boards. Machine for making	G. Quigley	333,781	Jan. 5	201	106	34	74
Paper box	H. W. Case and J. Dushane	335,178	Feb. 2	132	33	34	464
Paper box	W. W. D. Lewis	333,643	Jan. 5	190	51	34	37
Paper-calendering machine	M. Solinger	337,098	Mar. 2	901	53	34	992
Paper-cutter gage	M. L. Metzger and A. Cooper	335,766	Feb. 9	992	254, 255	34	619
Paper-cutting machine	J. T. Robinson	333,783	Jan. 5	203	107	34	74
Paper-cutting machine	B. Sandmann	337,296	Mar. 2	544	143	34	1027
Paper-drier	H. Winterwerber	334,150	Jan. 12	912	249, 250	34	178
Paper-feeder	A. Sedgwick and J. Naylor, Jr.	336,071	Feb. 9	1387	367, 368	34	695
Paper-feeding machine	A. Sedgwick and J. Naylor, Jr.	336,070	Feb. 9	1380	366, 367	34	694
Paper-finishing machine	H. F. and F. L. Case	335,592	Feb. 9	664	175	34	566
Paper-folding machine	J. H. Stonemets	335,096	Jan. 26	2223	598	34	432
Paper. Grease-proof	D. Heaton	337,155	Mar. 2	362	95	34	993
Paper-hangings, &c. Exhibitor for	L. A. Ely	337,315	Mar. 2	567	154	34	1034
Paper, &c. Machine for varnishing or sizing and applying colors to	W. Macrone	336,331	Feb. 16	1796	470	34	772
Paper-machines. Steam-condensing doctor for	F. Brewer	334,415	Jan. 19	1309	355	34	257
Paper-machines. Stock-regulator for	C. Potter	337,060	Mar. 2	261	69, 70	34	975
Paper-makers' use. Manufacture of sizing compounds for	C. Semper	333,680	Jan. 5	242	..., ...	34	47
Paper-making machine	W. F. Edwards	334,072	Jan. 12	801	219, 220	34	167
Paper-making machine	S. H. Hodges	335,030	Jan. 26	2139	569	34	416
Paper-making. Pulp-digester for	C. C. Springer	335,046	Jan. 26	2162	575	34	420
Paper-mill. Speed-regulator for the rolls of a	J. L. Campbell	333,827	Jan. 5	455	124	34	85
Paper-pulp. Boiler for treating wood, &c., for	J. Makin	335,943	Feb. 9	1211	322	34	664
Paper-pulp. Boiling fibers with sulphites for the manufacture of	A. Mitscherlich	337,694	Mar. 9	1093	282	34	1129
Paper-pulp digester	C. E. Ball	336,078	Feb. 16	1407	373	34	706
Paper-pulp-finishing engine	S. L. Gould	337,480	Mar. 9	844	214	34	1084
Paper-pulp. Machine for forming pails from	H. R. Butterfield	335,055	Jan. 26	2174	578	34	422
Paper-pulp. Making	F. J. McCormick	335,466	Feb. 2	594	.....	34	535
Paper-roll holder and cutter	C. C. Johnson	335,208	Feb. 2	162	42	34	470
Paper satchel	J. T. Schaffer and B. L. Steefel	335,777	Feb. 9	980	259	34	623
Paper. Sizing	A. Mitscherlich	336,013	Feb. 9	1303	.....	34	660
Paper-sizing composition	J. Jordan	336,589	Feb. 23	2122	.....	34	837
Paper tubes. Machine for making	M. D. Knowlton	337,165	Mar. 2	376	98	34	995
Paper vessels. Machine for trimming the ends of	H. W. Leonard and J. Stevens	335,078	Jan. 26	2205	586	34	428
Paper-weight	F. P. F. Mullins	338,235	Mar. 16	1627	477	34	1271
Parasol or umbrella	D. C. Fischel	334,368	Jan. 12	1245	335	34	238
Parer, slicer, and corer. Apple	W. W. McMillan	334,120	Jan. 12	883	242	34	172
Parturition-shears	A. Cullon	335,798	Feb. 9	1006	266	34	628
Patten	H. Holland	334,388	Jan. 12	1257	339	34	241
Pattern-lining	R. F. Halleck	335,919	Feb. 9	1182	314	34	659
Pattern-lining	M. Stocker	337,030	Mar. 2	203	54	34	968

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pavement	C. C. Gilman	338,511	Mar. 23	2211	580	34	1347
Pavement	L. Warstler and A. C. Pontius	333,576	Jan. 5	109	30	34	23
Pavement	A. L. Barber	338,381	Mar. 23	2036	534	34	1315
Pavement. Concrete	A. L. Barber	338,382	Mar. 23	2037	534	34	1315
Pavements. Construction of concrete	M. Macdonald	334,125	Jan. 12	875	240	34	170
Pavements. Joint marking and dressing tool for cement	D. G. Ross	339,015	Mar. 30	2942	778	34	1461
Paving-block machine	M. F. Kidd	337,960	Mar. 16	1455	377	34	1200
Pea-sheller	B. H. Vellines	335,402	Feb. 2	440	113	34	520
Peanut-cleaning machine	I. Hicks	337,852	Mar. 16	1448	375	34	1199
Peat. Treating	S. Helmann	337,495	Mar. 9	851	.....	34	1085
Pegs. Machine for forming and driving compound	E. C. Bennett	336,547	Feb. 23	2088	{548 549 550}	34	892
Pegging-machine	F. Chase	338,930	Mar. 30	2808	{740 741}	34	1458
Pen and fountain pen-holder. Fountain	F. S. Bartram	338,019	Mar. 16	1541	400	34	1215
Pen and pencil case	S. W. Wood	339,123	Mar. 30	3089	817	34	1505
Pen. Cattle	E. T. Holton	337,681	Mar. 9	1075	{277 278}	34	1126
Pen. Drawing	C. M. Burns, Jr.	333,504	Jan. 5	132	36	34	27
Pen. Fountain	J. Kiancke	337,838	Mar. 16	1286	333	34	1170
Pen. Fountain	N. F. Palmer	337,610	Mar. 9	992	255	34	1111
Pen-holder	C. Hollowede	336,644	Feb. 23	2230	582	34	855
Pen-holder	M. J. Hughes	336,856	Feb. 23	2510	662	34	909
Pen-holder	S. Kraus	333,639	Jan. 5	186	50	34	37
Pen-holder	J. Wyttenbach	336,540	Feb. 16	2074	545	34	823
Pen-holder. Bifurcated	T. W. F. Smitten	337,713	Mar. 9	1117	288	34	1132
Pen. Multiple-pointed	H. C. Benson	333,500	Jan. 5	127	35	34	26
Pencil-clasp	R. P. Wallis	337,466	Mar. 9	818	.....	34	1080
Pencil. Flexible lead	S. Kraus	333,638	Jan. 5	186	50	34	37
Pencil. Lead	F. J. W. Fischer	335,908	Feb. 9	1109	311	34	657
Pencil or crayon holder	J. Jenkins	335,819	Feb. 9	1034	273	34	633
Pencil-sharpener	W. H. Lamson	334,242	Jan. 12	1065	292	34	206
Pencil-sharpener	G. H. Phelps	334,803	Jan. 26	1942	491	34	363
Pencil-sharpener	F. Worn	338,704	Mar. 30	2777	731	34	1452
Pendulum	C. A. Mahony	334,958	Jan. 26	2033	543	34	397
Permutation-lock	H. Clarke	338,338	Mar. 23	1966	{517 518}	34	1303
Permutation-lock	M. Lynch and W. F. Harrison	338,234	Mar. 16	1826	477	34	1271
Permutation-lock	A. Stoner	338,886	Mar. 30	2750	723	34	1447
Permutation-lock	W. B. Turman	336,358	Feb. 16	1935	481	34	780
Petroleum and similar hydrocarbons into acids. Converting	E. Schaal	335,962	Feb. 9	1224	.....	34	669
Phaeton-spring	W. J. Wayne	339,452	Mar. 23	2132	557	34	1333
Phosphate rock. Machine for washing	E. C. Bacon	335,673	Feb. 9	820	218	34	594
Photographic background and foreground. Revolving	I. A. Wetherby	337,904	Mar. 16	1371	356	34	1186
Photographic-camera shutter	S. W. Geery, F. W. Jackson, and C. B. Day	335,518	Feb. 2	599	{155 156}	34	547
Photographic-camera stand	W. H. Lewis and E. B. Barker	336,815	Feb. 23	2461	646	34	900
Photographic cameras. Timing attachment for	C. W. Stiff	336,356	Feb. 16	1831	{480 481}	34	779
Photographic negatives. Apparatus for washing	W. H. H. Whiting	335,002	Jan. 26	2091	558	34	408
Photographic plates. Tray for developing	R. E. Atkinson	337,547	Mar. 9	919	235	34	1098
Photographic sensitized paper. Case for	W. H. Lewis and E. B. Barker	337,963	Mar. 16	1459	378	34	1201
Photography for colored impressions. Carbon	L. J. H. Cellérier	335,893	Feb. 9	1150	.....	34	654
Physicians' prescription-papers, &c. Case for	F. Uhlich	338,807	Mar. 30	2633	693	34	1426
Piano-action	I. Bullard	334,511	Jan. 19	1448	389	34	282
Piano-action frame. Upright	W. and C. R. Bourne	338,918	Mar. 30	2796	737	34	1456
Piano action. Upright	I. Fuso	334,768	Jan. 26	1799	479	34	355
Piano case. Upright	S. Brambach	334,983	Jan. 26	1999	533	34	392
Piano-forte	G. M. Gnild and B. C. Burnham	336,565	Feb. 23	2118	535	34	837
Piano-fortes. Pianissimo stops for	V. Bessler	337,559	Mar. 9	927	227	34	1099
Piano-string bridge	J. W. Reed	338,779	Mar. 30	2601	685	34	1420
Pianos and organs. Music sheet and book supporter for	H. Worrall	336,613	Feb. 23	2187	571	34	848
Pianos. Repetition-action for	H. Schallehn	338,617	Mar. 23	2350	618	34	1370
Picker: *See* Cranberry-picker. Fruit-picker.							
Picking or ginning machines. Doffing apparatus for	S. R. Parkhurst	337,014	Mar. 2	183	48	34	958
Picture-frame	G. H. Thomssen	337,033	Mar. 2	206	54	34	963
Picture-frame molding. Machine for embossing	J. Stange	338,800	Mar. 30	2624	691	34	1424
Picture-mats, &c. Mechanism for the manufacture of	J. Caldwell and W. M. Smith	337,129	Mar. 2	333	86, 87	34	987
Pictures and photographs. Mount for	R. H. L. and E. Talcott	338,651	Mar. 23	2395	631	34	1378
Pictures. Making	D. Isaacson	335,755	Feb. 9	943	.....	34	616
Pictures. Making iron	S. Powel	337,703	Mar. 9	1106	.....	34	1131
Pikes. Die for forming	A. Sanford	337,620	Mar. 9	1004	258	34	1114
Pillow-sham holder	W. T. Christy and J. W. Kohn	336,509	Feb. 16	2032	534	34	815
Pillow-sham holder	J. A. Knight	336,063	Feb. 9	1363	360	34	691
Pillow-sham holder	C. F. Percival	334,278	Jan. 12	1126	302	34	217
Pill-roller	J. D. Kutzner	337,349	Mar. 2	617	162	34	1040
Pin: *See* Clothes-pin. Safety-pin. Connecting-pin.							
Pin	M. E. Grow	334,373	Jan. 12	1249	337	34	239
Pin-rails. Drum attachment for	A. F. Spear	337,029	Mar. 2	203	53	34	962
Pinch-bar	M. A. Sheldon	335,380	Feb. 2	424	109	34	517
Pinion and ratchet. Manufacture of combined	G. E. Hart	338,961	Mar. 30	2846	750	34	1446
Pipe: *See* Gas-supply pipe. Soil or drain pipe. Sheet-metal pipe. Tobacco-pipe.							
Pipe	J. B. Root	335,631	Feb. 9	765	203	34	584
Pipe-connection	B. P. Bower	337,196	Mar. 2	326	85	34	966

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pipe-coupling	J. S. Adams	335,101	Feb. 2	1	1	34	441
Pipe-coupling	F. L. McGahan	336,129	Feb. 16	1477	390	34	719
Pipe-coupling	B. F. Ritchie	338,783	Mar. 30	2005	686	34	1431
Pipe-coupling	A. Wilbur	339,036	Mar. 30	2969	798	34	1489
Pipe-cutter	F. H. Conner	338,716	Mar. 30	2504	663	34	1409
Pipe-cutter	R. C. Ellrich	333,618	Jan. 5	158	43	34	33
Pipe-joint	H. Green	334,598	Jan. 19	1464	393	34	285
Pipe-joint	W. H. Richards	337,867	Mar. 16	1393	343	34	1179
Pipe-joints. Machine for making screw-threads for	F. P. Voigt	333,904	Jan. 5	555	150	34	108
Pipe-lifting machine	E. M. Watson	333,570	Jan. 5	110	30	34	23
Pipe-ring	H. M. Shaw	339,445	Mar. 23	2122	555	34	1331
Pipe-testing machine	D. Giles	334,524	Jan. 19	1402	392	34	294
Pipe-wrench	C. Bonnichsen and M. E. Chrystal	336,468	Feb. 16	1964	520	34	886
Pipe-wrench	J. E. Davis	333,936	Jan. 5	468	126	34	87
Pipe-wrench	G. M. Gillett	338,731	Mar. 30	2529	668	34	1407
Pipe-wrench	J. T. Hayden	335,198	Feb. 2	151	39	34	468
Pipe-wrench	W. Hellem	334,227	Jan. 12	1044	277	34	202
Pipe-wrench	H. L. Householder	334,887	Jan. 12	1268	341	34	241
Pipe-wrench	J. J. Tower	337,894	Mar. 16	1358	353	34	1183
Pipe-wrench	H. M. Wilson	338,826	Mar. 23	1952	513	34	1301
Pipes. Clamp for stopping leaks and bursts in	W. W. Knight	334,473	Jan. 26	1928	513	34	379
Pipes. Connecting water apparatus with soil	T. Durrans	335,513	Feb. 2	567	153	34	545
Pipes. Elastic coupling for steam	E. Major	335,371	Feb. 2	401	103	34	512
Pipes. Expansion-joint for	S. T. Hughes	338,599	Mar. 23	2323	608	34	1365
Pipes. Forming curved metallic	W. J. Brady	337,475	Mar. 9	898	210	34	1081
Pipes. Frost-proof ventilator for soil and other	T. C. Boyd	334,387	Jan. 19	1304	394	34	283
Piston-meter	J. S. Barden	336,032	Feb. 9	1328	{351 352}	34	695
Pitcher. Syrup	H. E. Osborn and J. U. Fritchey	338,435	Mar. 23	2111	559	34	1382
Pitchfork and rake combined	J. J. Butler	337,740	Mar. 9	1151	299	34	1139
Pitman	P. C. Close	337,360	Mar. 9	670	175	34	1056
Pitman	P. C. Close	337,557	Mar. 9	933	239	34	1100
Pitman eye and connection	W. P. Drake	334,418	Jan. 19	1313	356	34	238
Plaiting attachment. Hand	E. M. Young	333,711	Jan. 5	901	83	34	56
Plaiting-machine	R. W. Henderson	336,999	Mar. 2	155	42	34	953
Plaiting-machine	G. and J. H. Taylor	334,060	Jan. 12	781	{214 215}	34	189
Plane	A. Doll	334,943	Jan. 26	2013	536	34	394
Plane	J. A. Trant	336,674	Feb. 23	2260	596	34	885
Plane	J. Woods	334,324	Jan. 12	1185	318	34	228
Plane. Bench	J. A. Trant	336,570	Mar. 23	2262	598	34	1356
Planes. Edge-guard for	J. H. Ferguson	336,222	Feb. 16	1640	428	34	744
Planes. Handle attachment for	R. T. Hendrickson	337,561	Mar. 9	959	246	34	1105
Planing and matching machine	W. H. Doane	335,994	Feb. 9	1275	{338 339}	34	675
Planing and matching machine	G. Johnson, Jr	338,973	Mar. 30	2863	{756 757 758}	34	1466
Planing-machine	E. Belden	337,654	Mar. 9	1046	269	34	1121
Planing machine. Convolute log	D. K. Allington	337,648	Mar. 9	1039	267	34	1120
Planing machine. Metal	F. F. Dennis	335,744	Feb. 9	928	245	34	614
Planing machine. Metal	S. W. Putnam	335,085	Feb. 9	1373	363	34	668
Planing-machine presser-bar	W. H. Gray	337,491	Mar. 9	847	215	34	1085
Planing-machines. Presser-bar for	D. C. Krum	336,860	Feb. 23	2514	663	34	910
Plant-protector	O. W. Baily	333,610	Jan. 5	428	116	34	80
Planter	A. J. Jones	335,795	Feb. 2	606	158	34	549
Planter and cultivator	E. P. Noyes	336,014	Feb. 9	1304	346	34	690
Planter and distributer. Hand	H. E. Fries	337,900	Mar. 9	684	179	34	1059
Planter and fertilizer-distributer. Check-row corn	J. J. Fraikin	337,759	Mar. 9	1172	305	34	1143
Planter and fertilizer-distributer. Combined seed	J. I. Boswell	336,285	Feb. 16	1737	{454 455 276 277}	34	760
Planter and fertilizer-distributer. Seed	J. E. and T. C. Morgan	335,830	Feb. 9	1046	{276 277}	34	635
Planter attachment. Corn	J. B. Pedrick	338,541	Jan. 5	61	17	34	14
Planter check-row attachment. Corn	M. V. Jordan and C. O. Cole	335,075	Jan. 26	2202	585	34	427
Planter check-row attachment. Corn	J. Thomson	333,699	Jan. 5	277	75	34	53
Planter. Check-row corn	W. B. Chambers	334,416	Jan. 19	1310	355	34	257
Planter. Check-row corn	E. H. Reynolds	334,470	Jan. 19	1301	375	34	272
Planter check-rower. Corn	G. W. Jewell and R. M. Dickson	335,861	Feb. 2	386	100	34	511
Planter. Corn	L. B. Berrien	335,205	Feb. 2	167	43, 44	34	471
Planter. Corn	J. A. Cherry	334,746	Jan. 26	1774	472	34	350
Planter. Corn	J. W. Dear	337,485	Mar. 9	841	213	34	1064
Planter. Corn	M. E. Doolittle	337,313	Mar. 2	583	{153 154}	34	1033
Planter. Corn	S. E. Hake	338,403	Mar. 23	2066	542	34	1390
Planter. Corn	J. W. Harbin	337,961	Mar. 9	505	133	34	1019
Planter. Corn	W. and W. R. McMullin	337,850	Mar. 16	1301	338	34	1172
Planter. Corn	J. B. Pedrick	335,954	Feb. 9	1292	325	34	667
Planter. Corn	E. R. Procter	333,547	Jan. 5	67	19	34	15
Planter. Corn	W. L. Rucker	336,770	Feb. 23	2272	621	34	863
Planter. Corn	C. E. Townley	335,255	Feb. 2	229	62	34	463
Planter. Corn	L. E. Waterman	336,772	Feb. 23	2400	{629 630 631}	34	869
Planter. Corn	J. P. Webb	334,318	Jan. 12	1174	314	34	236
Planter. Corn and seed	L. C. Stalnaker	337,795	Mar. 9	1217	317	34	1150
Planter. Force-feed seed	J. H. Keedy	337,268	Mar. 2	515	135	34	1021
Planter. Hand corn	S. Hackett	334,562	Jan. 19	1543	413	34	299
Planter. Lister corn	M. M. Holmes	337,156	Mar. 2	362	95	34	993
Planter. Potato	S. E. Hake	336,312	Feb. 16	1773	464	34	767
Planter. Seed	P. and F. W. Boxendale	344,414	Jan. 19	1308	354	34	257
Planter. Seed	L. S. Flatau	334,223	Jan. 12	1038	276	34	201
Planter. Seed	G. Lovick	335,370	Feb. 2	400	102	34	513
Planter. Seed	J. W. Ratliff	335,950	Feb. 9	1289	327	34	666

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Planter. Seed	J. A. Roden and N. C. Morgan	334,897	Jan. 26	1954	520	34	393
Planter. Sugar-cane	E. and B. Holmes	335,129	Feb. 2	43	12	34	448
Planter wheel. Corn	G. S. Briggs	333,503	Jan. 5	131	36	34	97
Planters. Check-rowing attachment for corn	E. F. Crawford	336,339	Mar. 23	1971	518	34	1304
Planters. Hill-marking attachment for corn	C. C. Shupe	337,998	Mar. 16	1517	393	34	1211
Plaster or cement	J. Thomlinson	334,469	Jan. 19	1419	.....	34	277
Plastic article	J. G. Low and H. E. Streeter	335,598	Feb. 2	610	159	34	549
Plastic material. Pressing and molding articles of	E. Kipper	335,596	Feb. 2	607	158	34	548
Pliers	T. G. Hall	335,694	Feb. 9	850	224	34	599
Pliers	C. F. Hill	336,715	Feb. 23	2326	609	34	875
Plotter for drafting	M. E. Thompson	335,853	Feb. 9	1062	286	34	642
Plow	J. M. Burrows	334,106	Jan. 12	851	234	34	165
Plow	W. H. Clarke, Jr	333,601	Jan. 5	138	38	34	98
Plow	Z. O. Clebert	338,932	Mar. 30	2811	743	34	1459
Plow	J. L. Felder	338,054	Mar. 16	1585	419	34	1228
Plow	L. Gibbs	335,348	Feb. 2	368	96	34	507
Plow	H. M. Godfrey	335,917	Feb. 9	1181	314	34	650
Plow	T. E. Jones	338,844	Mar. 30	2686	708	34	1437
Plow	G. M. Needles and E. G. Fisher	336,734	Feb. 23	2332	616	34	880
Plow	J. Peterson	335,620	Feb. 9	748	199	34	561
Plow	J. H. Putman	335,537	Feb. 9	691	183	34	551
Plow	F. Reyner	336,946	Mar. 2	96	23	34	942
Plow	A. R. Tomlinson	339,060	Mar. 30	3029	800	34	1495
Plow	A. Westling	338,897	Mar. 30	2767	729	34	1450
Plow	A. Wilhelm	338,325	Mar. 23	1959	513	34	1301
Plow	W. T. Claycomb	334,847	Jan. 26	1893	505	34	373
Plow and double-abovel frame. Turn	A. McDonald	335,092	Jan. 26	2213	588	34	429
Plow and harrow. Combined	W. Y. Oliver	338,289	Mar. 23	1897	499	34	1291
Plow. Combination	C. Andirsch	335,006	Jan. 26	2102	560	34	410
Plow, cultivator, and harrow. Combined	E. A. Koch	335,936	Feb. 9	1203	320	34	663
Plow cutting-share	R. H. Avery	334,408	Jan. 19	1302	352; 353	34	256
Plow-fender	L. Gibbs	335,913	Feb. 9	1175	312	34	658
Plow. Gang	J. J. Young	337,107	Mar. 2	208	79	34	921
Plow. Gang	G. H. Vaughn	338,119	Mar. 16	1677	435	34	1242
Plow. Garden	G. W. Spencer	336,023	Feb. 9	1316	349	34	682
Plow harrow attachment	G. B. Casaday	338,481	Mar. 23	2166	566; 567	34	1339
Plow-jointer	T. Pates	338,186	Mar. 16	1765	460	34	1260
Plow. Planting	P. D. Anderson	334,837	Jan. 26	1892	501	34	370
Plow-point	J. J. Goetzenberger and O. S. Wanganes.	333,849	Jan. 5	483	131	34	90
Plow sod-cutting attachment	G. Willard	336,969	Mar. 2	113	31	34	946
Plow. Steam	J. A. Lifsey	337,009	Mar. 2	246	65, 66	34	971
Plow-stock and cultivator combined	A. F. Case	334,348	Jan. 12	1221	329	34	224
Plow. Sulky	E. Falk	338,234	Mar. 30	2675	704	34	1434
Plow. Sulky	G. H. Fowler	334,424	Jan. 19	1396	359	34	259
Plow. Sulky	S. W. Gutridge	334,117	Jan. 12	867	238	34	168
Plow. Sulky	C. R. Thomas	335,400	Feb. 2	438	113	34	519
Plow. Sulky	M. P. Farnham	338,395	Mar. 23	2057	539	34	1319
Plow. Wheel	J. Wheeler	335,492	Feb. 2	561	147	34	541
Plow. Wheel	J. M. Young	339,087	Mar. 30	2971	786	34	1485
Plow. Wheel	F. W. Polle	334,722	Jan. 19	1738	463	34	335
Plug. Turning	J. Noble	334,542	Jan. 19	1489	399	34	289
Plumber's fitting	J. Noble	334,543	Jan. 19	1490	399	34	289
Plumber's fitting	J. A. Whitney	335,407	Feb. 2	447	116	34	521
Plumbers' traps. Apparatus for making	J. L. Knight	339,105	Mar. 30	3068	812	34	1502
Pneumatic tube	G. Otto	338,770	Mar. 30	2580	682	34	1418
Pocket-battery	W. B. Putnam and H. C. Hoffman	334,609	Jan. 19	1580	421	34	306
Pocket-book	G. Hood	338,412	Mar. 23	2075	544	34	1392
Pocket-book lock	N. W. Crandall and G. W. Jopson	338,251	Mar. 23	1892	486	34	1284
Pocket-knife	J. Pusey	338,619	Mar. 23	2338	612	34	1368
Pocket-knife	A. Egneu	337,366	Mar. 9	679	176	34	1058
Poke	A. J. Martin	336,334	Feb. 16	1801	471	34	773
Pole and shafts for vehicles. Combined	A. W. Tourgee and L. D. Jennings	333,979	Jan. 5	661	181	34	124
Pole and shafts. Vehicle	F. J. Springer	337,453	Mar. 9	799	203	34	1077
Pole. Carriage	W. L. Walker	336,190	Feb. 16	1569	413	34	732
Pole for vehicles. Draft	G. L. K. Morrow	338,608	Mar. 23	2334	611	34	1368
Pole tip. Carriage	J. H. Cutler	335,568	Feb. 9	674	177	34	568
Polishing-machine	H. W. Smith	334,996	Jan. 12	1149	307; 308	34	221
Polishing material. Feeder for	G. Henkel	338,735	Mar. 30	2536	670	34	1408
Pool-rack and ball-spotter. Combined	E. X. Ferron	335,689	Feb. 9	842	223	34	598
Pool-rack and game-counter	S. L. Wiegand	334,400	Jan. 12	1284	346	34	245
Portable furnace	E. B. Robinson	337,704	Mar. 9	1107	285	34	1131
Portfolio and binder. Combined							
Post: *See* Fence-post. Wire-fence post. Fire-proof post.							
Post-hole digger	W. and E. W. Gibbs	334,658	Jan. 19	1643	439	34	318
Posts. Base for	W. H. Kellogg	337,163	Mar. 9	374	97	34	995
Postal clerks. Practice-case for	L. Rogers	334,473	Jan. 19	1395	376	34	278
Postal packet	H. A. Robinson	333,890	Jan. 5	533	145	34	100
Pot: *See* Fire-pot. Tea or coffee pot.							
Pot-lifter	J. B. Kibler	334,666	Jan. 19	1661	444	34	321
Potato coverer and cultivator	N. Keeler	337,501	Mar. 9	861	217	34	1067
Potato-digger	C. Babcock	338,133	Mar. 16	1699	440; 441	34	1245
Potato-digger	J. H. Lewis	337,169	Mar. 9	385	100	34	997
Potato-digger	R. T. Roberts	336,667	Feb. 23	2276	592; 593	34	868
Potato-digger	N. C. and L. C. Taber	338,207	Mar. 16	1789	467	34	1264
Potato-digger	F. O. Williams and J. C. Mattice	338,812	Mar. 30	2640	686	34	1423
Potato-digger	W. H. McCall	334,456	Jan. 19	1267	370	34	226
Potato-digging machine							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Potato-sprinkler	W. H. Moore	336,938	Mar. 9	73	20	34	940
Potter's wheel	B. F. Sheldon	337,639	Mar. 9	1080	262	34	1117
Power: *See* Horse-power.							
Power and speed regulator	C. Rowland	335,541	Feb. 2	625	164	34	532
Power-converter	J. S. Shirk	336,965	Feb. 16	1704	444	34	754
Power. Device for transmitting	W. G. Gass	336,404	Feb. 16	1606	497	34	791
Power-stand	J. S. Hetherington	335,198	Feb. 2	42	12	34	448
Power. Transmitting	R. Spear	333,789	Jan. 5	401	108	34	76
Precious metals from specs. Separating	S. T. Bryan	336,792	Feb. 23	2428	.....	34	894
Preserving by gas. Apparatus for	L. McMurray	334,966	Jan. 26	2044	546	34	400
Preserving fruits. Apparatus for	L. McMurray	334,967	Jan. 26	2046	546	34	400
Press: *See* Baling-press. Household-press. Copying-press. Lead-press. Cotton-press. Oil-press. Drill-press. Screw-press. Filter-press. Seal-press. Forging-press. Soap-press. Hay-press. Tobacco-press.							
Press	B. A. Beardsley	336,545	Feb. 23	2065	546	34	881
Press	J. H. Holmgreen	335,616	Feb. 9	1029	273	34	623
Press	H. Pattison	338,867	Mar. 30	2714	714	34	1442
Press	J. Stewart	334,485	Jan. 19	1413	380; 381	34	276
Presser-roll	R. C. Killam	335,593	Feb. 9	713	190	34	575
Pressure-gages. Circuit-closing attachment for	M. W. Grovesteen	339,094	Mar. 30	3048	805	34	1499
Pressure indicator and recorder	A. Shedlock	336,668	Feb. 23	2272	594; 594	34	864
Pressure-regulator	J. Acton	335,734	Feb. 9	916	241	34	612
Pressure-regulator	G. F. Ott	336,564	Feb. 23	2140	561	34	841
Pressure-regulator. Automatic	J. G. Beale and J. A. Armstrong	337,918	Mar. 16	1380	361	34	1169
Pressure-regulator. Automatic	C. B. Bosworth	333,618	Jan. 5	439	119	34	82
Pressure regulator. Fluid	W. J. Acheson	334,326	Jan. 12	1188	319	34	228
Pressure regulator. Fluid	G. Metzger	334,714	Jan. 19	1727	460	34	333
Pressure regulator. Fluid	O. Pintsch	337,431	Mar. 9	770	196	34	1072
Pressure regulator. Fluid	S. Struns	336,874	Feb. 23	2542	669	34	915
Pressure regulator. Fluid	L. W. Truesdell	337,461	Mar. 9	812	205	34	1078
Pressure-regulators. Diaphragm for	N. C. Locke	335,083	Jan. 26	2143	570	34	416
Primer. Obturating	O. E. Michaelis	333,655	Jan. 5	266	54	34	40
Printer's form-clamp	G. H. Randall	338,777	Mar. 30	2998	685	34	1419
Printer's galley	D. W. Whitaker	335,494	Feb. 2	563	148	34	542
Printer's galley	D. W. Whitaker	337,218	Mar. 2	445	116	34	1006
Printer's quoin	F. C. Graves	335,982	Feb. 9	278	73	34	490
Printer's quoin	T. S. Metcalf	337,651	Mar. 16	1209	338	34	1173
Printer's quoin	W. R. Whitmore	334,500	Jan. 19	1421	385	34	279
Printing-machine	J. P. Richars and S. Scott	339,014	Mar. 30	2940	778	34	1481
Printing-machine	G. F. Taylor	336,673	Feb. 23	2278	595	34	865
Printing machine. Chromatic	J. T. Hawkins	338,666	Mar. 23	2418	637; 638	34	1362
Printing-machine. Cylinder	C. B. Cottrell	338,392	Mar. 23	2053	538	34	1318
Printing machine. Plate	O. S. Harmon	334,225	Jan. 12	1040	277	34	201
Printing-machine sheet-delivery	J. T. Hawkins	335,698	Feb. 9	858	227	34	600
Printing-machine sheet-delivery apparatus	G. P. Tenner	335,066	Jan. 26	2189	561; 562	34	435
Printing-machine sheet-delivery apparatus	J. T. Hawkins	336,108	Feb. 16	1454	388	34	714
Printing-machine sheet-delivery apparatus	J. T. Hawkins	336,109	Feb. 16	1455	388	34	714
Printing-machine sheet-delivery apparatus	C. B. Maxson	332,879	Jan. 5	522	142	34	97
Printing-machine sheet-delivery apparatus	C. B. Maxson	334,964	Jan. 26	2042	545	34	399
Printing-machine sheet-delivery apparatus	C. Potter, Jr	333,668	Jan. 5	222	61	34	42
Printing-machine sheet-gage	W. Scott	335,634	Feb. 9	768	204	34	585
Printing-machine. Stop-cylinder	C. B. Cottrell	338,390	Mar. 23	2047	537	34	1317
Printing-machine stop-motion	J. Naylor, Jr	335,768	Feb. 9	964	255; 256	34	619
Printing machine. Yarn	E. J. Stephens	338,314	Mar. 23	1935	509	34	1296
Printing-machines. Cushioning apparatus for	R. Miehle	337,853	Mar. 16	1304	338; 339	34	1173
Printing-machines. Inking apparatus for	W. Scott	338,366	Mar. 23	2011	529	34	1311
Printing-machines. Inking apparatus for cylinder	F. A. Hetherington	335,196	Feb. 2	156	40	34	469
Printing-machines. Sheet-straightener for sheet-delivery apparatus of	C. B. Cottrell	338,391	Mar. 23	2052	538	34	1318
Printing. Nature	T. Honywood	339,057	Mar. 30	2995	.....	34	1491
Printing on resawed lumber	G. D. Eddy	338,046	Mar. 16	1575	410	34	1222
Printing-plates. Producing	C. F. Joes	334,284	Jan. 12	1062	.....	34	204
Printing-surface	A. Ten Winkel	337,795	Mar. 9	1123	292	34	1125
Printing surfaces. Damping lithographic	J. W. Osborne	338,769	Mar. 30	2565	681; 682	34	1417
Printing tickets. Apparatus for	J. P. Dunn	334,697	Jan. 19	1701	454	34	328
Privy	E. R. Angell	337,546	Mar. 9	918	235	34	1098
Privy and attachments	P. Anthony	334,151	Jan. 19	914	250	34	178
Privy-seat	G. and J. Turnbull	334,401	Jan. 19	1420	382	34	277
Privy-vaults and apparatus for use therewith. Construction of	T. W. Carrico	335,177	Feb. 2	121	33	34	464
Privy-vaults. Apparatus for emptying	L. R. Sassinot	338,878	Mar. 30	2735	720	34	1445
Projectile	R. B. Douglas	336,556	Feb. 23	2102	553	34	834
Projectile. Compound	W. Lorens	338,849	Mar. 30	2891	709	34	1438
Projectiles. Manufacture of compound	W. Lorens	335,464	Feb. 2	523	.....	34	585
Projectiles. Sabot for high-explosive	D. Moore	336,762	Mar. 30	2576	679	34	1416
Propeller. Screw	N. Yaga	333,805	Jan. 5	421	114; 115	34	79
Propeller. Ship's	H. C. Bender	334,632	Jan. 19	1614	430	34	312
Propeller. Steering	J. Clark	337,479	Mar. 9	834	211	34	1062
Propeller-wheel	J. W. L. Simmons	335,640	Feb. 9	777	205	34	587
Propelling and steering vessels	W. H. Burns	338,168	Mar. 16	1731	451	34	1232

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Propelling attachment for boats	F. Zachiegner	336,684	Feb. 23	2293	{509 / 600}	34	868
Propelling boats. Device for	J. H. Bowers	336,787	Feb. 23	2423	637	34	893
Propelling vessels. Tube-motor for	W. H. Daniels	338,040	Mar. 16	1568	407	34	1220
Proportions. Apparatus for computing	E. W. Farnham	335,906	Feb. 9	1167	310	34	656
Propulsion of ships	F. Girein	334,580	Jan. 19	1539	412	34	299
Protector:							
See Pantaloons-protector.							
Plant-protector.	Telegraph and telephone protector.						
Sleeve and glove protector.	Tree-protector.						
	Wall-protector.						
Pruning implement	W. H. Brown	336,694	Feb. 23	2306	603	34	871
Pruning implement	G. C. Casterlin and F. D. Mosher	336,388	Feb. 16	1965	489	34	786
Pruning-knife	J. F. Vandyke and J. P. Barns	336,270	Feb. 16	1712	446	34	756
Pug-mill	W. W. Wallace	336,121	Mar. 16	1679	436	34	1242
Puller:							
See Stump or stone puller.							
Pulley	E. C. Sooy	336,958	Mar. 2	100	28	34	944
Pulley	C. S. Wardwell	334,998	Jan. 26	2065	557	34	407
Pulley-bearing	H. W. Hill	337,953	Mar. 16	1449	375	34	1190
Pulley. Belt-	F. Siebert	337,024	Mar. 2	197	52	34	961
Pulley-block	G. W. Clark	334,071	Jan. 12	799	219	34	156
Pulley-block. Differential	T. H. Ward	336,364	Feb. 16	1842	{483 / 484}	34	781
Pulley. Expanding	J. M. Herman	334,377	Jan. 12	1252	338	34	240
Pulley. Loose	G. T. Eames	335,193	Feb. 2	137	35	34	465
Pulley. Loose	J. T. Miller	333,962	Jan. 5	635	175	34	120
Pulley. Loose	W. J. F. Liddell	333,765	Jan. 5	968	100	34	69
Pulleys. Machine for molding	W. H. Howland	336,321	Feb. 16	1784	466	34	770
Pulverizer	G. Mead	335,827	Feb. 9	1042	276	34	634
Pulverizer	S. Shaw	335,906	Feb. 9	1240	329	34	609
Pulverizer and seeder	R. W. Seger	334,292	Jan. 12	1143	306	34	220
Pulverizer for drugs, &c	W. M. Fuller and J. J. Hayes	335,573	Feb. 9	661	{179 / 180}	34	569
Pulverizing-machine	W. M. Fuller and J. J. Hayes	335,574	Feb. 9	663	180	34	569
Pulverizing-machine	J. R. Woodburn	334,008	Jan. 12	841	{230 / 231}	34	163
Pulverizing-mill	E. A. Wall	337,901	Mar. 16	1369	355	34	1185
Pump	W. P. Andrews	337,040	Mar. 9	813	56	34	964
Pump	H. M. D. L. Babcox	334,211	Jan. 12	1052	272	34	198
Pump	R. Bean	334,732	Jan. 26	1754	457	34	346
Pump	J. W. Collier	334,996	Jan. 26	2003	534	34	393
Pump	D. E. Darnell	336,029	Feb 9	1339	354	34	686
Pump	J. J. De Kinder	335,111	Feb. 2	14	5	34	443
Pump	H. Field	338,147	Mar. 16	1708	445	34	1248
Pump	J. P. Ford	338,591	Mar. 23	2309	605	34	1362
Pump	P. D. Hines	337,402	Mar. 9	699	182	34	1061
Pump	J. Humphreys, Jr	336,857	Feb. 23	2511	662	34	910
Pump	J. M. Laing	337,167	Mar. 2	382	99	34	996
Pump	W. F. Mattes	336,654	Feb. 23	2250	586	34	859
Pump	H. C. Montgomery	334,795	Jan. 26	1831	488	34	361
Pump	E. Neff	339,605	Mar. 30	3926	775	34	1478
Pump	J. M. Normand	336,940	Mar. 2	76	20, 21	34	940
Pump	I. W. Numan	334,605	Jan. 19	1572	420	34	305
Pump	M. Russell	336,963	Feb. 16	1702	443	34	754
Pump	J. Kirkaldy	336,592	Feb. 16	2051	{538 / 539}	34	819
Pump and condenser. Donkey-engine	P. R. Greene	338,838	Mar. 30	3618	705	34	1434
Pump. Beer-	J. J. Seiwert	338,560	Mar. 23	2272	595	34	1357
Pump. Beer-	R. W. Wheeler and S. Q. Duntley	333,802	Jan. 5	418	113	34	79
Pump-bucket	E. J. Hawley	336,807	Feb. 23	2447	642	34	897
Pump. Centrifugal	W. O. Webber	337,216	Mar. 2	449	116	34	1008
Pump. Centrifugal	J. N. Morrison	336,817	Feb. 23	2463	646	34	900
Pump. Chain-	M. S. Tyler and T. H. Carter	337,354	Mar. 2	631	166	34	1043
Pump. Chain-	G. S. Ayer	338,699	Mar. 30	3461	649	34	1395
Pump. Combined force and lift	H. R. Adams	333,808	Jan. 5	425	116	34	80
Pump. Double-acting	F. L. Wheeler	336,459	Feb. 16	1974	517	34	805
Pump. Double-acting	J. R. and L. T. Fisher	338,148	Mar. 16	1710	{445 / 446}	34	1248
Pump. Duplex propeller	A. B. Worth	337,803	Mar. 9	1229	319	34	1153
Pump. Electric air-	A. B. Worth	337,804	Mar. 9	1231	320	34	1153
Pump. Electric air-	J. J. Deal	337,749	Mar. 9	1161	302	34	1141
Pump. Force-	A. L. Reinmann	338,552	Mar. 23	2256	593	34	1354
Pump for the production of high vacuums	A. Stevens	334,483	Jan. 19	1411	380	34	275
Pump. Hand force-	J. A. J. Arnold	338,687	Mar. 30	3459	649	34	1395
Pump. Lift-	A. B. Simonds	336,761	Feb. 23	2388	626	34	887
Pump. Measuring-	G. Hodson	337,496	Mar. 9	852	215	34	1025
Pump-pistons. Deep-well	W. B. Mason	334,079	Jan. 12	808	222	34	158
Pump pressure-regulator. Steam-	W. B. Mason	334,080	Jan. 12	819	222	34	158
Pump pressure-regulator. Steam-	C. M. Bartholomew	336,788	Feb. 23	2418	636	34	892
Pump-rod coupling	J. Bean	337,919	Mar. 16	1391	361	34	1189
Pump. Spraying-	J. A. Marsh	334,597	Jan. 19	1560	417	34	308
Pump. Steam-jet	J. J. Burch and J. B. Scovill	334,105	Jan. 12	850	234	34	165
Pump-valve	A. Jeffery	335,901	Feb. 9	161	42	34	470
Pumps. Gearing for operating	J. S. Klein	336,994	Mar. 2	57	15	34	937
Pumps. Steam-valve gear for duplex steam-	W. Z. Haight	336,406	Feb. 16	1900	497	34	792
Pumps, &c. Valve for	B. Obenchain	335,475	Feb. 2	533	140	34	537
Pumping-engine. Beam	T. M. Platts and O. B. Crane	337,077	Mar. 2	258	69	34	974
Punch	H. Bouchy and J. H. Bamberger	334,215	Jan. 12	1096	273	34	190
Punch. Belt-	J. R. Watson	337,036	Mar. 2	208	55	34	964
Punch. Clinching-	C. M. Platt	334,190	Jan. 19	961	264	34	189
Punching and feeding scraps of sheet metal. Machine for	G. McDonald	336,235	Feb. 16	1803	471	34	774
Punching and shearing device. Combined							

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Punching device	R. Allstatter	334,554	Jan. 19	1507	403	34	299
Punching-machine	R. H. Dowell	337,139	Mar. 2	345	89	34	989
Punching-machine	H. Tay	334,139	Jan. 12	894	245	34	174
Punching-machine	W. Whited	335,866	Feb. 9	1097	290	34	646
Punching-machine. Check-	J. M. Montgomery, Jr	334,264	Jan. 12	1108	297	34	213
Punching-machine table	H. Warden	336,677	Feb. 23	2284	597	34	886
Purse, bag, &c	G. B. Adams	336,541	Feb. 23	2081	547	34	831
Push-button	F. E. Fisher	336,003	Feb. 9	1291	343	34	678
Pyroxyline compounds and other plastic materials. Manufacture of solid rings from	E. Kipper	335,985	Feb. 9	1901	390	34	662
Quarts. Mill for pulverizing	G. Frisbee	337,570	Mar. 9	947	242	34	1103
Quilting bed-comfortables, &c. Machine for	F. L. Palmer	334,975	Jan. 12	1120	{300 / 301}	34	216
Quilting-machine	A. Hildt	338,525	Mar. 23	2225	584	34	1349
Quilting-machine	W. Koch	334,955	Jan. 26	2089	{541 / 542}	34	387
Quilting-machine	M. H. Marcus	337,178	Mar. 2	401	104	34	1000
Race-ring holder. Duplex	J. W. Wattles	335,798	Feb. 9	905	239	34	610
Rack:							
See Broom-rack.	Hay-rack.						
Clothes-rack.	Revolving or stationary rack.						
Display-rack.							
Feeding-rack.	Suspension-rack.						
Folding-rack.	Towel-rack.						
Fruit-drying rack.	Whip-rack.						
Hat and coat rack.							
Radiator. Steam-	J. Barnett and C. S. Bavier	338,911	Mar. 30	2786	734	34	1454
Rafting logs, timbers, &c	H. R. Robertson	338,104	Mar. 16	1660	421	34	1238
Rafts and booms. Plug for	T. Irvine	336,990	Mar. 2	53	14	34	936
Rail-brace	T. A. Griffin	338,963	Mar. 30	3838	748	34	1464
Rail-chair. Base-plate for a	P. De Guerre	338,569	Mar. 23	2308	604	34	1362
Rail-joint	J. Shipley	334,056	Jan. 12	778	213	34	152
Rail-joint truss	J. McEwen	335,292	Feb. 2	292	77	34	492
Rail-support	F. W. Snow	338,796	Mar. 30	3618	690	34	1423
Rails. Machine for stamping	H. C. Kriete and W. Gillies	337,627	Mar. 16	1285	333	34	1170
Railway. Cable	R. Gillham	336,561	Feb. 23	2107	554	34	835
Railway. Cable	J. J. Schillinger	337,623	Mar. 9	1008	259	34	1115
Railway. Cable	A. A. Shobe	337,451	Mar. 9	797	203	34	1078
Railway-car signal	S. Forman	334,766	Jan. 26	1797	478	34	255
Railway-chair	J. M. Fennerty	335,067	Jan. 26	2192	582	34	625
Railway circuit. Electric-	F. L. Pope	333,970	Jan. 5	645	177	34	121
Railway circuit. Electric-	F. L. Pope	334,608	Jan. 19	1577	420	34	306
Railway construction. Cable-	T. L. Johnson	333,958	Jan. 5	624	{170 / 171}	34	117
Railway-crossing	M. A. Dilley	337,253	Mar. 2	496	{129 / 130}	34	1017
Railway-crossing	J. Gray	334,427	Jan. 19	1229	360	34	260
Railway-crossing alarm-signal	G. Smith	335,643	Feb. 9	782	{207 / 208}	34	587
Railway-crossing safety-gate	R. C. Blackall	334,980	Jan. 26	1996	532	34	391
Railway-crossing safety-gate	W. Hanley	338,663	Mar. 16	1593	{414 / 415}	34	1225
Railway danger-signals. Apparatus for operating	H. A. Buck	333,919	Jan. 5	574	{155 / 156}	34	108
Railway. Electric	E. M. Bentley	338,022	Mar. 16	1549	401	34	1217
Railway. Electric	W. H. Knight	338,060	Mar. 16	1616	421	34	1229
Railway. Electric	W. H. Knight	338,061	Mar. 16	1617	421	34	1230
Railway. Electric	W. H. Knight	338,062	Mar. 16	1618	421	34	1230
Railway. Electric	W. H. Knight	338,063	Mar. 16	1619	421	34	1230
Railway. Electric	W. H. Knight	338,174	Mar. 16	1746	457	34	1255
Railway. Electric	W. H. Knight	338,175	Mar. 16	1748	457	34	1256
Railway. Electric	W. M. Schlesinger	339,018	Mar. 30	2945	779	34	1462
Railway. Electric	F. J. Sprague	338,619	Mar. 23	2353	619	34	1371
Railway. Elevated	W. B. Mack	336,347	Feb. 16	1699	438	34	751
Railway foot-guard	B. M. Soule and P. F. Given	335,847	Feb. 9	1074	284	34	641
Railway-frog	A. J. Morham	338,181	Mar. 16	1759	459	34	1259
Railway-gate	R. C. Chope	333,829	Jan. 5	459	125	34	85
Railway-gate	J. H. Pollard	337,079	Mar. 2	260	69	34	975
Railway-gate	A. Wyckoff	335,790	Feb. 9	999	264	34	626
Railway-gate. Automatic	J. K. Patterson	334,892	Jan. 26	1948	{518 / 519}	34	382
Railway gripper. Cable-	G. B. Bryant	334,845	Jan. 26	1890	{503 / 504}	34	372
Railway gripping device. Cable-	W. G. Huey and T. J. Lovegrove	333,633	Jan. 5	177	48	34	35
Railway-joint	J. Kellow	335,458	Feb. 2	514	134	34	533
Railway nut-wrench	A. J. Forbes	336,908	Mar. 2	37	10	34	934
Railway-rail coupling and splicing device	J. Doty	333,842	Jan. 5	474	128	34	88
Railway-rail fastening	H. L. De Zeng	334,696	Jan. 19	1700	454	34	328
Railway-rail fastening	J. Hartman	338,066	Mar. 16	1597	415	34	1226
Railway-rails to plates. Reducing old	E. B. Stocking	339,118	Mar. 30	3082	816	34	1504
Railway-rails to steel plates. Reducing old steel	B. Lauth	335,938	Feb. 9	1206	321	34	663
Railway safety-gate	J. H. Taylor and Z. T. Miller	338,316	Mar. 23	1939	511	34	1289
Railway-signal	A. Castro	338,927	Mar. 30	2804	740	34	1456
Railway-signal	C. A. Lamb	335,881	Feb. 9	1057	274	34	633
Railway-signal	E. H. Mott	337,655	Mar. 16	1307	339	34	1173
Railway-signal	N. M. Reynolds	335,943	Feb. 2	225	59	34	480
Railway-signal. Automatic	E. D. Dougherty	338,720	Mar 30	2508	664	34	1404
Railway signaling apparatus	F. N. Kelsey	337,289	Mar. 2	516	135	34	1023
Railway sleeper and chair	J. Howard and E. T. Bousfield	335,523	Feb. 2	604	157	34	548
Railway supply-tank	J. Stone	335,851	Feb. 9	1078	285	34	641
Railway-switch	A. Boyd	335,209	Feb. 2	175	46	34	472
Railway-switch	J. T. Rider	336,348	Feb. 16	1821	478	34	777
Railway-switch	E. Samuel	335,484	Feb. 2	552	145	34	540
Railway-switch	J. B. Suffern	338,649	Mar. 23	2302	630	34	1377

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Railway-switch	H. P. Tanasig	333,901	Jan. 5	545	148	34	106
Railway-switch	W. Wharton, Jr	334,916	Jan. 26	1982	528	34	389
Railway-switch alarm	A. Pevey	333,665	Jan. 5	218	60	34	43
Railway switch and signal interlocking	H. F. Cox	336,702	Feb. 23	2314	606	34	872
Railway switch and signal interlocking apparatus	H. F. Cox	336,701	Feb. 23	2311	605	34	872
Railway-switch. Automatic	I. W. Newland, W. J. Iredale, and A. H. Newland.	336,058	Feb. 9	1369	361	34	692
Railway switch-stand	T. R. Brown and W. C. Meeker	336,988	Mar. 2	138	38	34	951
Railway-switches. Alarm mechanism for	R. S. Bellale	338,915	Mar. 30	2793	736	34	1455
Railway-switches. Operating mechanism for	W. B. S. Reed	334,612	Jan. 19	1582	421, 422	34	307
Railway switching device	C. B. Price	335,238	Feb. 2	218	57, 58	34	479
Railway system	H. Wiedling	338,681	Mar. 23	2440	643, 644	34	1385
Railway system. Electric	F. J. Sprague	338,813	Mar. 23	1990	506, 509	34	1397
Railway system. Pendent-car elevated	P. Hale	337,149	Mar. 2	355	92, 93	34	991
Railway-tie	J. Gearon	338,057	Mar. 16	1587	413	34	1223
Railway-tie	E. N. Higley	334,228	Jan. 12	1045	276	34	209
Railway-tie and rail-fastening	E. P. J. Freeman	335,805	Feb. 9	1019	269	34	630
Railway-tie and securing guards and rails to the same	E. P. J. Freeman	335,804	Feb. 9	1018	269	34	630
Railway time-signal	C. Barry	337,229	Mar. 2	463	121	34	1011
Railway-track cleaner	J. Gray	334,428	Jan. 19	1330	360	34	261
Railway-track drill	A. Loehner	336,487	Feb. 16	2008	526	34	811
Railway-track key. Automatic	C. W. Whited	336,190	Feb. 16	1582	416	34	735
Railway-tracks. Grass and weed cutting machine for	W. H. Bartels	337,361	Mar. 9	641	170	34	1051
Railway tracks. Splice-bar rail-chair for street	A. J. Moxham	334,265	Jan. 12	1110	297	34	214
Railway-trains. Electric signaling apparatus for	W. F. Ray	338,439	Mar. 23	2115	554	34	1329
Railway-trains. Revolving signal for	I. Rickard	337,283	Mar. 2	541	142	34	1026
Railway transfer-table	C. Hathaway	338,407	Mar. 23	2071	543	34	1321
Railway turn-table	D. H. Andrews	333,919	Jan. 5	566	153	34	106
Railways. Automatic alarm signaling and safety device for	E. E. Rice	334,194	Jan. 12	966	265, 266	34	190
Railways. Conduit for electric and cable	E. E. Rice	338,556	Mar. 23	2063	594	34	1355
Railways. Gripping device for cable	C. Leavitt	336,245	Feb. 16	1679	437	34	750
Railways. Molding concrete tubes for cable	J. D. Isaacs	333,755	Jan. 5	358	97	34	67
Railways. Overhead conductor for electric	C. J. Van Depoele	334,062	Jan. 12	787	216	34	154
Railways. Overhead conductor for electric	C. J. Van Depoele	336,453	Feb. 16	1966	515, 516	34	808
Railways. Safety device for inclined	G. W. Jessop	336,117	Feb. 16	1463	385, 386	34	715
Railways. Spring-rail frog for	J. E. Clifton	335,341	Feb. 2	361	93	34	506
Railways. Street-conduit for electric and cable	H. T. Clay	338,485	Mar. 23	2177	569	34	1341
Rake: *See* Hand-rake. Hay-rake. Horse-rake.							
Rake	H. P. Lander	334,444	Jan. 19	1343	365	34	264
Raking, hoeing, shoveling, and pitching. Combined tool for	W. Heston	334,438	Jan. 19	1341	363	34	263
Ram. Hydraulic	A. Baer	337,112	Mar. 2	305	80, 81	34	982
Rat-trap	C. F. A. Kobelke	334,443	Jan. 19	1345	364	34	264
Ratchet-drill	C. L. Breniser	336,470	Feb. 16	1986	520	34	807
Ratchet-drill	J. Magnette	337,509	Mar. 9	990	251	34	1109
Ratchet mining-drill	G. W. Nixon	338,863	Mar. 30	2709	713	34	1441
Rattan-scraping machine	J. M. Devany	335,800	Feb. 9	1012	268	34	629
Razor	L. Ehrlich	338,167	Mar. 16	1736	453	34	1254
Razor-guard	H. G. Fiske	333,736	Jan. 5	334	91	34	63
Razor-guard	C. F. Nesler	338,864	Mar. 30	2711	713	34	1441
Razor. Safety	L. Ehrlich	338,047	Mar. 16	1577	410	34	1222
Razor-strops. Making	J. M. Paulsen	333,663	Jan. 5	216	59	34	42
Reamer	H. R. Tillison	338,318	Mar. 23	1941	511	34	1299
Reamer-relieving machine	F. H. Richards	336,066	Feb. 9	1374	364	34	663
Reamer-relieving machine	F. H. Richards	336,067	Feb. 9	1376	364	34	664
Reamer-relieving machine	F. H. Richards	336,068	Feb. 9	1377	365	34	664
Reapers and harvesters. Self-raking attachment for	M. Dew	337,751	Mar. 9	1162	302	34	1141
Reclining-chair	L. Davis	337,132	Mar. 2	337	88	34	988
Reclining-chair	J. Hogan	335,815	Feb. 9	1029	272	34	632
Reclining-chair	G. K. Phillips	336,662	Feb. 23	2263	590	34	862
Reclining-chair	S. G. Scarritt	337,521	Mar. 9	866	226	34	1091
Reclining-chair. Adjustable	R. O. Hubbard	336,115	Feb. 16	1460	385	34	715
Reclining-chair foot-rest	G. W. Munshower	333,659	Jan. 5	211	57	34	41
Recorder: *See* Car-seat recorder. Electric time-recorder. Fare-recorder. Speed and time recorder. Steam-engine recorder. Watchman's time-recorder. Weighing-machine recorder.							
Recording speech	G. K. Anderson	335,171	Feb. 2	112	29, 30	34	462
Reed-board	J. Hessler	335,700	Feb. 9	863	238	34	601
Reel: *See* Belt-reel. Carpet-cleaning reel. Centrifugal reel. Clothes-line reel. Fishing-reel. Fishing-line reel. Fishing-rod reel. Flour-bolting reel. Harvester-reel.							
Reel	J. M. Bannan	336,885	Mar. 2	3	1	34	927
Reel-brushing mechanism	G. T. Smith	335,641	Feb. 9	778	206	34	587
Reel for coiling lead pipe	C. E. Heiss	334,585	Jan. 19	1545	413	34	300
Reeling machine. Silk	E. W. Serrell, Jr	334,619	Jan. 19	1596	425	34	309
Reeling machine. Silk	E. W. Serrell, Jr	334,620	Jan. 19	1597	425, 426	34	309
Reeling machinery. Silk	E. W. Serrell, Jr	334,617	Jan. 19	1591	424	34	308

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Reeling machinery. Silk	E. W. Serrell, Jr	334,618	Jan. 19	1593	424, 425	34	308
Reeling machinery. Silk	E. W. Serrell, Jr	334,621	Jan. 19	1596	426	34	309
Reeling mechanism	C. H. Morgan	334,453	Jan. 19	1359	368	34	267
Reflector	J. E. McLaughlin	334,370	Jan. 12	1116	299	34	215
Reflector. Electric-lamp	D. W. Guernsey	334,858	Jan. 26	1911	509	34	375
Refrigerating-machine	J. Schuhle	337,874	Mar. 16	1333	346	34	1178
Refrigerating-trough	T. Scott and L. Bovard	337,446	Mar. 9	791	202	34	1075
Refrigerator	E. S. Farson	337,256	Mar. 2	501	130	34	1019
Refrigerator	J. Goodale	337,394	Mar. 9	669	180	34	1050
Refrigerator	B. Hartmann	333,855	Jan. 5	491	128	34	91
Refrigerator	C. W. Monroe	336,057	Feb. 9	1367	361	34	691
Refrigerator	J. Stephenson	334,726	Jan. 19	1741	455	34	326
Refrigerator	G. S. Van Voorhis	336,501	Feb. 16	2021	530	34	813
Refrigerator	W. H. Waltjen and J. H. Keller	335,927	Feb. 2	337	98	34	502
Refrigerator	O. M. Whitman	337,909	Mar. 16	1376	357	34	1187
Refrigerator attachment for wells	W. R. Dingman	335,686	Feb. 9	887	229	34	597
Refrigerator-cars. Wall for	C. B. Hutchins	337,770	Mar. 9	1186	309	34	1145
Refrigerator for oysters	A. T. Lundqvist	336,056	Feb. 9	1367	361	34	691
Refrigerator ice-receptacle	J. Castell	335,495	Feb. 2	478	122	34	396
Refrigerator-safe for bread, cake, &c	H. D. Streator	335,157	Feb. 2	81	22	34	455
Refrigerator-shelf	C. H. Leonard and C. G. Gray	335,136	Feb. 2	52	14	34	450
Refrigerator. Well	J. E. Grosjean	337,058	Mar. 2	284	62	34	969
Refrigerator. Well	J. K. Grube	338,664	Mar. 23	2415	636	34	1261
Refrigerators. Ammonia-evaporator for	V. H. Becker	337,263	Mar. 9	645	171	34	1052
Register: *See* Cab-register. Counting-register. Egg-register. Fare-register. Grain-register. Telegraph-register.							
Regulator: *See* Blast-regulator. Damper-regulator. Electric-machine regulator. Feed-regulator. Feed-water regulator. Gas-regulator. Gas or water regulator. Gas-pressure regulator. Governor-regulator. Lamp-regulator. Light-regulator. Power and speed regulator. Pressure-regulator. Pump pressure-regulator. Roller-mill feed-regulator. Speed-regulator. Watch-regulator. Windmill-regulator.							
Rein attachment. Check	W. E. James	338,230	Mar. 16	1880	476	34	1269
Rein-handle	C. K. Barlow	338,561	Mar. 23	2208	602	34	1361
Rein-holder	W. E. Barber	334,067	Jan. 12	795	218	34	156
Rein-holder	T. O. Butler	335,504	Feb. 2	577	151	34	542
Rein-holder	G. M. Frampton	337,760	Mar. 9	1173	306	34	1143
Rein-holder	D. McCance	337,414	Mar. 9	794	188	34	1065
Rein-holder	T. S. Mitchell	335,141	Feb. 2	59	16	34	451
Rein-holder	J. D. Young	336,462	Feb. 16	1978	518	34	805
Rein holder. Check	J. Lawrie	332,598	Jan. 5	44	13	34	11
Rein-hook	J. Pomeroy	335,206	Feb. 2	310	82	34	496
Relay. Polarized	L. J. Phelps	334,185	Jan. 12	968	262	34	187
Resawing-machine	G. Tintle	336,500	Feb. 16	2020	530	34	813
Reversing mechanism. Automatic	T. M. Kenna	333,525	Jan. 5	41	12	34	10
Revolver	H. Schlund	337,201	Mar. 2	424	111	34	1005
Revolver-lock	J. T. Smith	336,021	Feb. 9	1312	348	34	681
Revolving or stationary rack or case	J. H. Sherrard	336,166	Feb. 16	1547	408	34	728
Ribbon-holder	F. D. Moore	334,796	Jan. 26	1832	489	34	361
Rice-huller and cuticle-remover	J. S. Moore	332,965	Jan. 5	638	175	34	120
Ring: *See* Curtain-pole ring. Finger-ring. Key-ring. Pipe-ring. Spinning-frame ring.							
Ripping-tool	J. Ruckstuhl	334,724	Jan. 19	1740	464	34	326
Rivet	E. Flagg	337,142	Mar. 2	348	90	34	990
Rivet	J. L. Thomson	338,700	Jan. 5	278	75	34	53
Riveting-machine	O. Pederson	333,780	Jan. 5	387	106	34	73
Riveting-machine	A. Thomson	335,976	Feb. 9	1252	333	34	671
Riving-machine	G. E. Cooke	335,795	Feb. 9	1004	266	34	627
Roads. Machine for making, repairing, and cleaning	G. W. Taft	333,572	Jan. 5	97	28	34	21
Roaster: *See* Coffee-roaster. Coffee and peanut roaster. Corn-roaster. Peanut-roaster.							
Rock-drill	J. E. Denton	335,900	Feb. 9	1159	308, 309	34	655
Rock-drill	F. Manning	337,968	Mar. 16	1469	381	34	1203
Rock-drill	R. G. Marcy	335,873	Feb. 2	403	103	34	514
Rock-drill	E. Moreau	335,469	Feb. 2	527	138	34	536
Rock-drill	E. Moreau	335,470	Feb. 2	528	138	34	536
Rock-drill feed mechanism	G. F. Case	335,891	Feb. 9	1146	305	34	653
Rock-drill foot	J. E. Denton	335,901	Feb. 9	1161	309	34	655
Rock-drill. Hand	H. Swain	337,887	Mar. 16	1347	349, 350	34	1181
Rock-drill machine	S. Hussey	339,103	Mar. 30	3054	811	34	1501
Rock-drill. Steam	H. Fischer	336,401	Feb. 16	1894	496	34	791
Rock-drill support	H. C. Sergeant	337,526	Mar. 9	892	228	34	1092
Rock-drills. Carriage for	C. J. Van Depoele	337,898	Mar. 16	1366	354	34	1184
Rock-drilling machine	W. S. Isham	335,258	Feb. 2	388	99	34	510
Rock. Machine for breaking submerged	H. C. Finch	339,090	Mar. 30	3041	803, 804	34	1497
Rocking-chair	R. G. Clayton	335,428	Feb. 2	475	123	34	588
Rocking-chair attachment	W. I. Bunker	334,102	Jan. 12	840	222	34	184

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Rocking-chair attachment	W. I. Bunker	334,345	Jan. 12	1218	328	34	234
Rocking-chair attachment	W. I. Bunker	334,346	Jan. 12	1219	328	34	234
Rocking-chair. Exercise	G. W. Dean	337,934	Mar. 16	1416	366	34	1194
Rocking-chair. Reclining	G. W. Coen	338,038	Mar. 16	1567	406	34	1290
Rocking-horse	C. Uebele	336,209	Feb. 16	1711	446	34	756
Rod: *See* Fishing-rod. Grooved and barbed rod.							
Rod-cutter	I. Fitta	338,396	Mar. 23	2059	540	34	1319
Roll for rerolling old rails	E. D. Wassell	336,272	Feb. 16	1714	447	34	756
Roller: *See* Land-roller. Pill-roller. Land-channeling roller. Shade-roller.							
Roller and pulverizer	J. L. Sandelbach	334,264	Jan. 26	2069	552	34	404
Roller and pulverizer. Combined	S. R. Houser	334,703	Jan. 19	1710	456	34	330
Roller-mill	E. C. Keyser	334,380	Jan. 12	1264	341	34	242
Roller-mill	F. Lauhoff	333,866	Jan. 5	505	136	34	94
Roller-mill	J. T. Obenchain	334,460	Jan. 19	1372	{371 / 372}	34	269
Roller-mill feed-regulator	J. R. Palmer	334,691	Jan. 26	1947	518	34	382
Roller-mill feed-regulator	E. Strong	333,570	Jan. 5	95	27	34	21
Rolling barbed rods. Roll for	W. H. Perry	333,868	Jan. 5	531	144	34	99
Rolling metal rods. Machine for	J. Reese	338,360	Mar. 23	2001	527	34	1310
Rolling-mill	J. Pedder	334,044	Jan. 12	760	{208 / 209}	34	150
Rolling-mill attachment. Rod-	A. J. Day	336,703	Feb. 23	2315	606	34	873
Rolling mill. Wire-rod-	C. H. Morgan	334,454	Jan. 19	1362	369	34	267
Rolling toe-rails. Roll for	S. E. Brown	335,988	Feb. 2	260	68	34	487
Rolling tubes. Machine for	S. P. M. Tasker	334,548	Jan. 19	1498	401	34	290
Roof	C. C. Gilman	336,515	Mar. 23	2215	561	34	1347
Roofing, furniture, &c. Composition of matter for	A. A. Oliver	334,974	Jan. 26	2058	.....	34	402
Roofing. Metal	J. H. Eller	336,098	Feb. 16	1441	380	34	710
Roofing. Metal	F. C. Tegethoff	334,624	Jan. 19	1603	427	34	310
Roofing-plates. Enameling metallic	E. Püttmann and J. Fliegel	336,157	Feb. 16	1534	404	34	796
Roofing ridge and valley	L. D. Cortright	333,603	Jan. 5	141	38	34	28
Rope-holder	S. H. and C. E. Manners	334,878	Jan. 26	1993	515	34	379
Rope-jar	L. Wheeler	335,498	Feb. 2	562	147	34	541
Rope. Metal	T. C. Batchelor	338,913	Mar. 30	2788	735	34	1454
Rope-serving machine	C. R. P. Saunders	333,677	Jan. 5	239	65	34	47
Rose-engine	A. Zemann	334,210	Jan. 12	1020	272	34	197
Rotary cutter	O. L. Noble	337,698	Mar. 9	1101	284	34	1130
Rotary engine	R. Auger	338,688	Mar. 30	2460	649	34	1395
Rotary engine	W. and A. Berrenburg	337,561	Mar. 9	926	237	34	1099
Rotary engine	T. P. Coombs	336,896	Mar. 2	19	6	34	930
Rotary engine	J. W. Emerson	334,254	Jan. 26	1905	507	34	374
Rotary engine	J. Forsythe	335,120	Feb. 2	28	9	34	446
Rotary engine	C. P. Jürgensen	334,325	Jan. 12	1053	280	34	204
Rotary engine	R. Rasmussen	338,778	Mar. 30	2600	685	34	1420
Rotary engine	J. Forsythe	335,121	Feb. 2	29	9	34	446
Rotary steam-engine	J. Forsythe	335,122	Feb. 2	31	9	34	446
Rotary steam-engine	D. G. Wherry	335,001	Jan. 26	2089	558	34	408
Rotary steam-engine	E. F. Briggs	338,473	Mar. 23	2157	564	34	1337
Rotary ventilator	W. Ciencoski	334,935	Jan. 26	2002	534	34	393
Rowing apparatus	H. Finch	338,345	Mar. 23	1979	521	34	1306
Rowlock	T. Hawley	338,068	Mar. 16	1599	416	34	1226
Rubber cloth. Joining pieces of	T. Hawley	338,069	Mar. 16	1600	{416 / 417}	34	1226
Rubber cloth. Mechanism for joining pieces of	A. Spadone	338,312	Mar. 23	1929	508	34	1297
Rubber-covered hose	W. S. Elliott	335,747	Feb. 9	932	246	34	615
Rubber-dam clamp	J. M. Smith	338,310	Mar. 23	1927	507	34	1297
Rubber hose. Armor for	B. Noyes	336,149	Feb. 16	1524	{401 / 402}	34	725
Rubbing for decorative purposes	G. McColl and W. B. Cumming	334,061	Jan. 12	814	222	34	159
Rudder-brake. Liquid	C. A. Ludlow	336,594	Feb. 16	2055	540	34	819
Rugs, fringe, &c., and material therefor. Making	E. Cliff	335,565	Feb. 9	670	176	34	567
Rule, calipers, and square. Combined	F. A. Combes	336,700	Feb. 23	2311	605	34	872
Ruler	G. W. Bolton and L. Jargensen	334,932	Jan. 26	1998	533	34	392
Ruler for slates	E. P. Donnell	335,570	Feb. 9	676	178	34	568
Ruling-machine perforating attachment	J. F. Nolan	333,863	Jan. 5	527	.....	34	99
Rust. Composition for preventing and removing	G. S. Castagneto	337,555	Mar. 9	929	238	34	1100
Sad-iron	J. G. Whitlock	338,457	Mar. 23	2139	559	34	1334
Sad-iron heater	J. Ringen	336,591	Feb. 23	2152	563	34	843
Sad-irons. Machine for grinding	J. W. Renshaw and S. H. Perin	338,301	Mar. 23	1918	{504 / 505}	34	1295
Saddle. Harness	P. W. Corcoran	337,047	Mar. 2	222	58	34	966
Saddle. Harness	A. Gilliam	334,116	Jan. 12	866	237	34	168
Saddle. Harness	A. Gilliam	335,809	Feb. 9	1023	270	34	631
Saddle. Harness	A. Ortmayer	335,142	Feb. 2	60	16, 17	34	451
Saddle. Harness	J. Thomas	335,161	Feb. 2	89	24	34	456
Saddle. Harness	W. S. Webster	337,217	Mar. 2	444	116	34	1008
Saddle. Harness	M. E. Zeller	337,645	Mar. 9	1036	266	34	1119
Saddle. Riding	J. W. Newman	335,474	Feb. 2	502	139	34	507
Saddle. Riding	F. Shock	338,195	Mar. 16	1777	463	34	1262
Safe. Kitchen	H. D. Hardenbergh	335,921	Feb. 9	1184	315	34	660
Safe-lock	E. H. Flint	338,505	Mar. 23	2204	{578 / 579}	34	1345
Safe. Sectional kitchen	W. C. Campbell	335,014	Jan. 26	2112	562	34	411
Safety attachment	J. H. Barnes	334,926	Jan. 26	1993	531	34	391
Safety collecting-box	O. Nielsen	338,354	Mar. 23	1992	{524 / 525}	34	1308
Safety-pin	W. F. Hyatt	335,284	Feb. 2	280	74	34	490
Safety-pin	H. F. Neuss	334,541	Jan. 19	1469	399	34	289
Safety-switch	R. Adamson	338,012	Mar. 16	1583	398	34	1214
Safety-tank and automatic filler	B. S. Koll	339,108	Mar. 30	3068	812	34	1508

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Salt-drier	J. A. Cook	337,560	Mar. 9	986	239	34	1101
Salt to stock. Device for supplying	G. Milliken	336,781	Mar. 30	2575	679	34	1416
Salts. Making fluorine	R. Grätzel	336,061	Mar. 16	1591	.....	34	1224
Salve	A. Meyer	334,099	Jan. 12	737	.....	34	145
Sample box or package	J. A. Pegg	337,795	Mar. 9	1208	313	34	1148
Sash and door bolt	F. C. Robinson	334,545	Jan. 19	1498	400	34	289
Sash and frame. Window	W. E. Michael	336,654	Jan. 5	264	56	34	40
Sash-balance	C. H. Ames and M. Harris	336,817	Mar. 30	2640	698	34	1429
Sash-balance	H. R. Bridges	333,992	Jan. 12	660	186	34	135
Sash-balance	A. F. Johnson	334,868	Jan. 26	1923	511	34	377
Sash-balance	J. Weathers	334,686	Jan. 19	1607	428	34	311
Sash balance and fastener. Combined	G. J. Thomas	337,536	Mar. 9	905	231	34	1095
Sash-cord fastener	A. Oberndorfer	333,775	Jan. 5	381	104	34	72
Sash-fastener	J. Y. Bassell	334,685	Jan. 19	1605	450	34	325
Sash-fastener	E. R. Ferry	336,100	Feb. 16	1445	381	34	712
Sash-fastener	R. Gibbon	338,537	Mar. 30	2678	705	34	1434
Sash-fastener	F. D. Livingstone	336,534	Mar. 23	2325	567	34	1351
Sash-fastener	A. D. McCall	336,982	Mar. 2	67	18	34	939
Sash-fastener	J. F. Porter	338,548	Mar. 23	2251	591	34	1353
Sash-fastener	F. L. Rosentreter	334,890	Jan. 26	1990	521	34	394
Sash-fastener	C. Witsel	335,409	Feb. 2	458	117	34	588
Sash fastener. Window	C. D. Hayward	335,127	Feb. 2	41	11	34	448
Sash-fastening device	C. M. Burgess	336,337	Mar. 23	1965	517	34	1303
Sash-fastening device	J. M. Burkert	337,369	Mar. 9	658	172	34	1053
Sash-holder	M. A. Cutter	334,698	Jan. 19	1695	453	34	327
Sash-holder	J. H. Felmlee	335,084	Jan. 26	2127	566	34	414
Sash-holder	E. W. Morris	337,695	Mar. 9	1086	283	34	1139
Sash-holder	J. H. Newbory	335,711	Feb. 9	881	231	34	604
Sash-holder	J. H. Whitlock	335,988	Feb. 2	251	66	34	485
Sash-lift	A. Wiggers	337,088	Mar. 2	211	56	34	964
Sash. Window	P. J. Brosnan	338,474	Mar. 23	2150	564	34	1338
Satchel-holder	M. Smith	337,700	Mar. 9	1114	287	34	1130
Satchels and pocket-books. Clasp for	O. A. Lehman	338,351	Mar. 23	1967	523	34	1307
Saucepan and cover	G. A. Bradford	334,560	Jan. 19	1516	406	34	293
Saw	A. Bertram	336,260	Feb. 16	1668	488	34	785
Saw	G. N. Clemson	334,567	Jan. 19	1528	407	34	295
Saw	G. N. Clemson	336,007	Feb. 23	2309	604	34	871
Saw	A. B. Ireland	334,440	Jan. 19	1342	364	34	203
Saw	J. J. Parker	336,739	Feb. 23	2358	617	34	881
Saw and lathe. Combined scroll	F. J. Bruckner	336,208	Feb. 16	1681	492	34	741
Saw-back	H. Palmer	333,777	Jan. 5	268	185	34	73
Saw. Crosscut	J. J. Parker	335,087	Jan. 26	2251	590	34	421
Saw. Drag	M. M. Driskell	337,754	Mar. 9	1186	304	34	1149
Saw. Drag	I. B. Warren and C. M. Potter	338,005	Mar. 16	1585	395	34	1212
Saw-filing machine	S. C. Rogers	338,787	Mar. 30	2608	687	34	1421
Saw frame. Buck	W. Hankin, Sr.	337,399	Mar. 9	995	261	34	1060
Saw guide. Band	W. Kratzer	334,175	Jan. 12	954	250	34	184
Saw guide. Band	S. Stephens and D. B. Hanson	334,818	Jan. 26	1859	495	34	366
Saw-gummer	A. B. Stevenson and J. Stuempges	337,532	Mar. 9	901	229	34	1094
Saw-hanging	T. W. Peck	336,661	Feb. 23	2361	{580 / 580}	34	861
Saw machine. Band	D. K. Allington	337,912	Mar. 16	1379	{358 / 359}	34	1187
Saw-making machine	S. E. Mower and T. Fowler	337,977	Mar. 16	1484	385	34	1205
Saw mill. Band	D. K. Allington	337,647	Mar. 9	1037	266	34	1119
Saw mill. Band	D. K. Allington	337,913	Mar. 16	1361	350	34	1188
Saw mill. Band	H. R. Barnhurst	338,017	Mar. 16	1538	399	34	1215
Saw mill. Band	E. Benjamin	334,735	Jan. 26	1757	469	34	346
Saw mill. Band	A. F. Griswold and H. R. Barnhurst	338,170	Mar. 16	1730	454	34	1254
Saw mill. Band	F. M. Hanks and H. N. Sibley	336,407	Feb. 16	1901	497	34	792
Saw mill. Band	J. Shavalier and A. Harvey	337,630	Mar. 9	1016	261	34	1116
Saw-mill carriage	T. W. Peck	333,664	Jan. 5	217	59	34	42
Saw mill. Circular	H. R. Wolfe	335,729	Feb. 9	906	239	34	610
Saw-mill dog	W. H. Bennett	335,419	Feb. 2	465	120	34	594
Saw-mill dog	J. B. Davis	334,515	Jan. 19	1453	390	34	282
Saw-mill dog	T. J. Neacy	337,856	Mar. 16	1309	339	34	1174
Saw-mill dog	W. M. Wilkin	336,194	Feb. 16	1589	417	34	737
Saw-mill feed-carriage	G. M. Hinkley	334,664	Jan. 19	1658	443	34	320
Saw-mill feed mechanism	A. B. Landis	337,507	Mar. 9	967	250	34	1088
Saw-mill feed mechanism	T. J. Reamy	334,285	Jan. 12	1135	304	34	219
Saw mill. Gang	J. C. Slocum	335,319	Feb. 2	325	85	34	500
Saw mill. Gang	T. S. Wilkin	335,167	Feb. 2	99	26	34	458
Saw mill. Gang	W. M. Wilkin	336,192	Feb. 16	1586	416	34	736
Saw-mill head-block	T. J. Reamy	334,284	Jan. 12	1133	304	34	218
Saw-mill head-blocks. Nose-guard for	C. Esplin	336,631	Feb. 23	2212	577	34	852
Saw mill. Reciprocating	H. McEvilla	339,000	Mar. 30	2916	772	34	1477
Saw mill. Reciprocating	W. M. Wilkin	338,194	Mar. 16	1662	437	34	1242
Saw-mill set-works	A. I. Loop	338,684	Mar. 23	2448	{646 / 647}	34	1387
Saw-mill set-works	T. S. Wilkin	335,166	Feb. 2	102	27	34	450
Saw-mills. Log-pusher for	R. W. Shelbourne	338,864	Mar. 30	2747	722	34	1446
Saw mills. Saw-sash for reciprocating	W. M. Wilkin	338,195	Mar. 16	1663	437	34	1243
Saw-set	G. W. Bugbee and F. Danner	338,161	Mar. 16	1729	451	34	1252
Saw setting and gumming tool. Combined	D. McDonough	336,933	Mar. 2	66	18	34	939
Saw-setting device	C. J. Balch	338,603	Mar. 30	2467	651	34	1397
Saw-setting device	D. Behmer	336,901	Feb. 16	1600	420	34	739
Saw-setting machine	C. Landgraf	335,586	Feb. 9	716	191	34	579
Saw-table gage	D. W. Standeford	333,562	Jan. 5	83	24	34	18
Saw-tooth	W. B. Riedle	337,063	Mar. 2	266	71	34	976
Saw-tooth	C. J. Wilson	337,108	Mar. 2	293	77	34	980
Saw-tooth. Insertible	A. Krieter	334,341	Jan. 12	1064	282	34	206
Saw-tooth. Insertible oscillating	J. S. Swank and W. Dages	334,302	Jan. 12	1156	309	34	282
Saw-tooth-swaging device	S. A. Parke	333,540	Jan. 5	30	17	34	14
Saw-vise	O. Seely	339,020	Mar. 30	2948	780	34	1488

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Saws and drilling. Device for filing	C. L. Polley	337,432	Mar. 9	772	197	34	1079
Saws. Machine for filing cotton-gin	W. H. Blanchard	338,025	Mar. 16	1552	402	34	1217
Saws. Machine for jointing and dressing circular	C. Schoch	334,730	Jan. 19	1744	466	34	837
Saws. Machine for rolling	L. O. Orton	338,434	Mar. 23	2110	552	34	1328
Sawing-machine	D. W. Smith	334,297	Jan. 19	1152	308	34	222
Sawing-machine. Band	J. J. Bowen	336,693	Feb. 23	2305	603	34	870
Sawing machine. Circular	D. A. Greene	337,947	Mar. 16	1439	373	34	1198
Sawing machine. Circular	G. M. Hinkley	334,663	Jan. 19	1656	442, 443	34	220
Sawing machine. Circular	J. F. Welch	334,141	Jan. 12	895	245, 246	34	174
Sawing machine. Fire-wood	J. Gilmore	333,848	Jan. 5	482	130	34	89
Sawing machine. Wood	S. P. Dresser	334,574	Jan. 19	1533	410	34	297
Scabbard. Metallic bayonet	J. McKenney	334,269	Jan. 12	1115	299	34	214
Scaffold. Carpenter's and painter's	H. Deck	338,253	Mar. 23	1854	487	34	1284
Scale. Automatic weighing	J. Ball	338,654	Mar. 23	2390	632	34	1379
Scale-beam	R. L. Hassell	338,266	Mar. 23	1869	491	34	1286
Scale-indicator	J. H. Rosecrans	336,595	Feb. 23	2156	564	34	843
Scale. Letter	T. B. Willson	336,375	Feb. 16	1716	448	34	757
Scale. Pivot	J. S. Redline	334,051	Jan. 12	771	211	34	151
Scale. Proportional weighing	E. L. Rowe	334,228	Jan. 12	1138	305	34	220
Scale. Spring-balance	C. R. Maguire	338,535	Mar. 23	2236	587	34	1351
Scale. Weighing	G. W. Craig	336,472	Feb. 16	1968	521	34	807
Scale. Weighing	H. L. Fisher	335,909	Feb. 9	1171	311	34	657
Scale. Weighing	D. Hallock	336,641	Feb. 23	2225	581	34	854
Scale. Weighing	J. A. Knowles, Jr	337,772	Mar. 9	1189	309	34	1146
Scales. Platform for railway-track	T. M. Taylor	334,995	Jan. 26	2061	556	34	406
Scarf. Neck	S. Popper	334,467	Jan. 19	1389	375	34	272
Scarfs for neck-wear. Adjustable holder for	W. B. Pope	335,717	Feb. 9	988	234	34	606
Scarfs. Making sailor-knot	H. Heath	335,071	Jan. 26	2198	584	34	426
School seat and desk	W. J. Perkins	334,802	Jan. 26	1840	490, 491	34	363
Scoop	J. A. Silbermann and J. G. Rodrüan	335,390	Feb. 2	425	109	34	517
Scow. Dumping	F. Scripture	335,316	Feb. 2	329	84	34	499
Scraper	J. T. Boyd	333,990	Jan. 19	678	185	34	135
Scraper and brush. Combined shoe	W. P. Manning	336,931	Mar. 2	66	18	34	936
Scraper and grader. Road	C. H. Dana	337,930	Mar. 16	1409	365	34	1192
Scraper, clod-guard, and gage. Combination	W. B. Miller	334,089	Jan. 12	816	223	34	159
Scraper. Road	E. Lathrop	334,177	Jan. 12	957	260	34	185
Scraper. Wheeled dirt	W. L. Fay	334,422	Jan. 19	1322	358	34	259
Scraper. Wheeled dirt	J. R. Williams	336,195	Feb. 16	1591	418	34	737
Screen: *See* Extension-screen. Window-screen. Head-screen.							
Screen for coal and other materials	S. T. Varian	336,271	Feb. 16	1713	446	34	756
Screens. Corner or plate attachment for extension window	E. N. Porter	337,433	Mar. 9	773	197	34	1073
Screw	C. Hall	338,956	Mar. 30	2841	749	34	1465
Screw. Drive	H. K. Jones	335,286	Feb. 2	283	75	34	491
Screw-driver	J. S. Fray	336,560	Feb. 23	2105	554	34	835
Screw-driver. Watch-maker's	O. L. Neal	334,886	Jan. 26	1941	517	34	361
Screw-machine	A. Johnston	337,499	Mar. 9	854	216, 217	34	1066
Screw-machine	F. F. Motley	337,976	Mar. 16	1479	384	34	1204
Screw-press	F. P. Hall and J. H. Smith	335,447	Feb. 2	501	130	34	531
Screw-threading device	J. Miller	338,229	Mar. 23	1801	497	34	1280
Screw-threading tool	G. D. Tucker	336,094	Feb. 9	1317	349	34	682
Screws. Die for swaging	B. A. Kennedy	338,276	Mar. 23	1885	495	34	1289
Screws. Manufacture of drive	H. K. Jones	335,132	Feb. 2	48	13	34	449
Scutching and cleansing fibrous stems, leaves, and the like. Apparatus for	W. E. Beath	336,395	Feb. 16	1886	493	34	789
Seal-lock	G. H. Angell and C. L. Leslie	334,407	Jan. 19	1301	352	34	253
Seal-lock	F. A. Dunning	337,938	Mar. 16	1421	368	34	1194
Seal-lock	J. V. King	336,118	Feb. 16	1464	386	34	716
Seal-lock	G. Koch	336,925	Mar. 2	50	16	34	937
Seal-lock	J. M. Smith	333,558	Jan. 5	79	22, 23	34	17
Seal-lock	J. M. Smith	337,879	Mar. 16	1339	347	34	1179
Seal-lock	G. H. Steadman	334,302	Jan. 12	1157	309	34	223
Seal-lock	G. B. Williams	335,867	Feb. 9	1098	290	34	646
Seal-lock for car-doors	J. M. Smith	335,250	Feb. 2	393	61	34	499
Seal-press	E. J. Brooks	339,043	Mar. 30	2976	787	34	1487
Seal-press	C. L. Pond	334,395	Jan. 12	1274	344	34	244
Seal-press	C. L. Pond	336,663	Feb. 23	2265	590	34	862
Seal-press	C. L. Pond	338,187	Mar. 16	1766	461	34	1260
Seaming-machine. Tinner's	H. Poell	337,427	Mar. 9	749	192	34	1069
Seaming sheet metal. Machine for	H. J. Noyes						
Seat: *See* School-seat. Wagon-seat. Valve-seat. Wash-tub seat. Vehicle-seat.							
Seat	M. Benedict	337,364	Mar. 9	646	171	34	1052
Secondary battery	C. F. Brush	337,298	Mar. 2	564	148, 149	34	1030
Secondary battery	C. F. Brush	337,299	Mar. 2	565	149	34	1030
Sectional and folding boat	F. W. Urann	338,450	Mar. 23	2130	557	34	1332
Seed or grain distributing device	H. E. Cole	336,390	Feb. 16	1840	492	34	788
Seed separator. Flax	G. Adams	333,911	Jan. 5	565	173	34	106
Seeder	C. W. Levalley	338,967	Mar. 30	2896	764	34	1472
Seeder	W. M. Lovin	335,709	Feb. 9	879	231	34	604
Seeder. Broadcast	D. W. Webster and R. J. Smith	335,661	Feb. 9	802	213, 214	34	591
Seeder. Disk	T. A. Galt and G. S Tracy	336,711	Feb. 23	2321	608	34	874
Seeding-machine	J. Horey and C. Marsh	335,928	Feb. 9	1192	317	34	661
Seeding-machine	P. E. Rogers	334,396	Jan. 12	1276	344	34	244
Seeding-machine	R. B. Sheldon and J. V. Peacock	335,779	Feb. 9	962	260	34	698

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Seeding-machine drill-tube	G. M. Williams	334,663	Jan. 19	1654	449	34	325
Seesaw. Adjustable and balancing	A. B. Flach	335,846	Feb. 2	386	95	34	507
Separator: *See* Cockle-separator. Grain-separator. Cockle and grain separator. Magnetic separator. Ore-separator. Cream-separator. Seed-separator. Fiber-cleaning separator.							
Setting apparatus. Automatic	T. W. Burt	338,894	Mar. 30	2859	700	34	1431
Sewage, &c. Dry system of disposing of	T. Hawksley	334,436	Jan. 19	1337	362, 363	34	202
Sewer-gas and stench trap	T. Shehan	335,967	Feb. 9	1941	329	34	669
Sewer-gas-trap mold	C. W. Garland	335,279	Feb. 2	372	71	34	499
Sewer invert-blocks. Composition for making	S. A. Miller	336,736	Feb. 23	2351	615	34	879
Sewer-trap	D. Higgins	334,878	Jan. 19	1373	336	34	240
Sewer trap or ventilator	G. W. Beard	334,158	Jan. 12	996	253	34	189
Sewing. Book	D. M. Smyth	338,000	Mar. 16	1590	393	34	1212
Sewing-machine	W. Houghtaling	333,947	Jan. 5	615	164	34	115
Sewing-machine	D. L. Keeler	334,442	Jan. 19	1344	364	34	264
Sewing-machine	T. Lamb	335,865	Feb. 2	392	101	34	512
Sewing-machine	J. B. Price	339,113	Mar. 30	3077	814	34	1504
Sewing-machine	W. H. Waterman	336,607	Feb. 23	2171	568	34	846
Sewing-machine attachment	E. S. Harris	334,118	Jan. 12	868	238	34	169
Sewing-machine bobbin-case	G. M. Morris	339,069	Mar. 30	3011	796	34	1492
Sewing machine. Book	A. Brahmer	335,210	Feb. 2	177	46, 47, 48	34	472
Sewing machine. Book	R. Frank	334,945	Jan. 26	2015	537, 538	34	395
Sewing machine. Book	D. M. Smyth	338,001	Mar. 16	1521	394	34	1212
Sewing-machine. Boot and shoe	E. Adams	337,991	Mar. 2	559	145, 146	34	1098
Sewing machine. Broom	G. F. McCombe	338,999	Mar. 30	2909	771, 772	34	1476
Sewing-machine. Button-hole	T. F. Hagerty	335,029	Jan. 26	2134	568, 569	34	415
Sewing-machine. Button-hole	J. W. Lufkin	337,273	Mar. 2	525	136, 137, 138	34	1023
Sewing-machine button-hole attachment	J. G. Greene and P. Diehl	335,195	Feb. 2	24	10	34	447
Sewing-machine button-hole attachment	J. M. Griest	335,196	Feb. 2	27	11	34	447
Sewing-machine button-hole attachment	J. H. Palmer	335,586	Feb. 9	1059	280	34	638
Sewing-machine button-hole attachment	W. Schott	336,165	Feb. 16	1545	407, 408	34	732
Sewing-machine button holding and feeding attachment	H. H. Cummings	334,752	Jan. 26	1760	473	34	351
Sewing-machine cording and boning attachment	E. D. Weyburn	336,454	Mar. 23	2133	556	34	1333
Sewing-machine driving mechanism	C. T. Jones	336,648	Feb. 23	2237	583	34	856
Sewing-machine feed mechanism	G. W. Birchall	336,786	Feb. 23	2492	667	34	903
Sewing-machine feeding device	T. Lamb	338,420	Mar. 23	2088	547	34	1295
Sewing-machine feeding mechanism	D. H. Coles	335,018	Jan. 26	2116	564	34	413
Sewing-machine gage	H. C. Curtis	334,218	Jan. 12	1029	274	34	199
Sewing-machine hemstitching and cording attachment	J. Pusey	338,614	Mar. 23	2343	612	34	1349
Sewing-machine presser-foot	T. M. Conpropst	338,163	Mar. 16	1732	458	34	1253
Sewing-machine quilting attachment	T. A. Hill and J. Peelle	338,154	Mar. 16	1721	449	34	1251
Sewing-machine quilting-frame	H. T. Davis	334,646	Jan. 19	1632	435	34	316
Sewing-machine ruffling attachment	H. C. Goodrich	333,515	Jan. 5	27	8	34	8
Sewing-machine ruffling attachment	H. C. Goodrich	333,516	Jan. 5	29	8	34	8
Sewing-machine shuttle	P. Diehl	337,818	Mar. 16	1292	337	34	1165
Sewing-machine shuttle	J. B. Price	339,112	Mar. 30	3076	814	34	1503
Sewing-machine shuttle-carrying mechanism	D. H. Coles	335,017	Jan. 26	2115	563, 564	34	412
Sewing-machine spool-holder	H. Meyers	337,852	Mar. 16	1303	338	34	1173
Sewing-machine stand	J. C. Cochran	337,581	Mar. 9	671	176	34	1056
Sewing-machine. Sweat-band	J. A. Brautigam	336,204	Feb. 16	1610	421, 422	34	740
Sewing-machine table-frame and treadle	J. E. Donovan	334,521	Jan. 19	1459	399	34	284
Sewing-machine tension	R. H. St. John	336,697	Feb. 23	2475	651	34	902
Sewing-machine thread-controlling mechanism	W. F. Beardslee	333,586	Jan. 5	120	33	34	25
Sewing-machine trimming attachment	J. W. Eastwood	334,114	Jan. 12	864	237	34	168
Sewing-machine trimming attachment	G. H. Noble	334,718	Jan. 19	1731	461, 462	34	334
Sewing-machine tuck-folder	W. Matthews	333,877	Jan. 5	518	141	34	97
Sewing-machine welt-guide	W. Aiken	334,404	Jan. 19	1297	351	34	255
Sewing-machines. Binding attachment for	N. P. Poor	338,774	Mar. 30	2595	683	34	1419
Sewing-machines. Fan attachment for	F. Carter	338,925	Mar. 30	2802	730	34	1457
Sewing-machines. Grinding attachment for	H. Abney	337,911	Mar. 16	1378	358	34	1187
Sewing-machines. Machine for winding bobbins for	O. Sorgan	336,168	Feb. 16	1549	408, 409	34	729
Sewing-machines. Oscillating hook for	J. Vannett	336,456	Feb, 16	1971	516	34	904
Sewing-machines. Welt-guide for	J. Challoner, Sr	338,928	Mar. 30	2806	740	34	1458
Sewing on buttons. Machine for	J. Mathison	336,660	Feb, 23	2550	671, 672, 673	34	917
Sewing on buttons. Machine for	J. Mathison	336,661	Feb. 23	2555	673, 674	34	917
Sewing or embroidering machines. Feed-motion for	E. Cornely	336,554	Feb. 23	2190	552	34	834
Shade-roller. Spring	S. Hartshorn	335,449	Feb. 2	508	131	34	525
Shade and reflector holder	A. F. and C. A. Vestal	335,788	Feb. 9	998	264	34	626
Shaft-coupling	J. Richards	334,547	Jan. 19	1497	401	34	290
Shaft-hanger	A. C. Pessano	335,839	Feb. 9	1068	281	34	633
Shaft-support. Vehicle	F. P. Chamberlin	335,339	Feb. 2	358	93	34	505
Shaft-support. Vehicle	G. F. Statter	336,581	Feb. 16	2066	548	34	881

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Shafts and axles. Roller-bearing for	J. Gibbons	336,108	Feb. 16	1448	381	34	713
Shafts. Device for taking up end-pressure of rotating	C. A. Johansson	335,757	Feb. 9	945	249	34	616
Shafts or elevators. Safety lock or catch for	C. C. Thomas	339,038	Mar. 30	2965	784	34	1485
Shears: *See* Parturition-shears.							
Shears	A. M. Barnett	337,917	Mar. 16	1388	361	34	1189
Shears	F. E. French	336,346	Mar. 23	1961	522	34	1206
Shears	L. A. Nickerson	338,986	Mar. 29	1884	496	34	1291
Shed construction	C. Golde	335,577	Feb. 9	668	{161 / 189}	34	570
Sheet metal by electro-deposition. Apparatus for forming	M. G. Farmer	335,906	Feb. 9	1165	310	34	656
Sheet-metal can	W. Hipperling	333,945	Jan. 5	613	167	34	115
Sheet-metal goods. Press for the manufacture of	M. Lepage	333,871	Jan. 5	519	140	34	95
Sheet metal. Machine for scouring and drying	F. J. Wooster	334,909	Jan. 19	1019	271	34	197
Sheet-metal pipe	D. A. Ritchie	338,877	Mar. 30	2734	719	34	1444
Sheet-metal pipes. Machine for making threads on	F. F. Voigt	335,797	Feb. 9	904	238	34	609
Shell	W. Kennish	338,955	Jan. 5	636	171	34	118
Shelving and counter. Portable	D. W. McElroy	334,987	Jan. 12	1113	296	34	214
Shingle. Metallic	A. N. Montrose	336,733	Feb. 23	2351	615	34	879
Shingle-machines for edging shingles. Attachment for	J. N. Sears	335,635	Feb. 9	769	204	34	585
Shingling-bracket	D. T. Leggett and W. S. Sanders	336,727	Feb. 23	2344	614	34	878
Ships. Apparatus for bending the ribs or frames of metallic	W. M. Bailey	337,112	Mar. 2	306	81	34	968
Ships' hulls. Implement for brushing and scraping	C. G. Cross	333,508	Jan. 5	9	4	34	5
Shirt	M. Blan	337,553	Mar. 9	998	227	34	1099
Shirt	S. Buts	335,505	Feb. 2	578	151	34	544
Shirt	E. A. Krones	337,341	Mar. 2	616	161	34	1040
Shirt board or hanger	E. W. Carter	336,990	Feb. 16	1749	457	34	762
Shirt-bodies. Securing bosoms to	C. J. Coyle	337,383	Mar. 9	674	{176 / 177}	34	1057
Shirt-bodies. Securing bosoms to	W. L. Hall	336,106	Feb. 16	1432	{388 / 389}	34	713
Shirt-dickey	J. H. Simonson	338,563	Mar. 23	2275	597	34	1357
Shoddy-purifier	E. M. Hulse	334,776	Jan. 26	1809	481	34	357
Shoddy-purifier	E. M. Hulse	334,777	Jan. 26	1810	481	34	357
Shoe	C. H. Buchanan	334,561	Jan. 19	1517	406	34	293
Shoe	J. H. Cosart	336,214	Feb. 16	1698	425	34	743
Shoe	T. R. Evans	338,144	Mar. 16	1706	444	34	1248
Shoe	S. C. Tribon	334,398	Jan. 12	1279	345	34	244
Shoe-blanks. Machine for arranging	Z. M. Lane	338,277	Mar. 23	1887	{496 / 496}	34	1389
Shoe-clasp	J. C. Hammond, Jr., and T. E. King	334,434	Jan. 19	1336	362	34	262
Shoe-fastening	W. H. Dillon	338,044	Mar. 16	1573	416	34	1221
Shoe-nail	O. R. Chaplin	335,563	Feb. 9	666	175	34	566
Shoe-nail	D. O. Clark	337,614	Mar. 16	1957	396	34	1164
Shoe	A. Graff	336,913	Mar. 2	47	19	34	935
Shoe. Seamless	J. Glueckemann	337,146	Mar. 2	252	91	34	981
Shoe. Spring	C. B. Hatfield	334,376	Jan. 12	1251	{337 / 338}	34	220
Shoe-uppers. Machine for beading	C. H. Buchanan	334,562	Jan. 19	1518	406	34	294
Shoes and slippers. Manufacture of	A. Nolte	337,783	Mar. 9	1204	313	34	1148
Shoes, &c. Fastener for	M. W. Whitney	337,467	Mar. 9	818	207	34	1060
Shoes. Method of and apparatus for forming bottoms of rubber	O. G. King	336,961	Mar. 30	2873	760	34	1470
Shoes. Safety-strap for rubber or other	H. E. Winans and G. N. Wooden	336,680	Feb. 23	2389	598	34	867
Shot-concentrator	G. Ferguson	338,943	Mar. 30	2821	744	34	1461
Show-cover for boxes	M. A. Cutter	337,746	Mar. 9	1156	301	34	1140
Shutter-fastener	J. W. Kohn	336,054	Feb. 9	1364	360	34	601
Shutter-fastener	F. A. S. Perry	337,076	Mar. 2	257	68	34	974
Shutter-fastener	M. H., J. G., and E. N. Reaser	335,960	Feb. 9	1230	327	34	608
Shutter-fastener	S. Shaw	336,355	Feb. 16	1690	480	34	779
Shutter-fastener and shutter-bower. Combined	R. Blair	337,121	Mar. 2	220	83	34	965
Shutter. Inside	S. B. Sweeney and J. M. Ghormley	334,304	Jan. 12	1159	310	34	232
Sickle. Endless reaping	C. P. Crewe	338,565	Mar. 23	2302	608	34	1362
Side-bar spring	J. W. Crabbe	337,310	Mar. 2	561	153	34	1083
Siding and roofing board	A. C. Daugherty	335,342	Feb. 2	362	94	34	506
Siding for buildings	A. C. Daugherty	337,564	Mar. 9	989	240	34	1101
Sieve	W. Holmes	339,056	Mar. 30	2994	{792 / 793}	34	1490
Sifter. Ash	C. Japtok	334,172	Jan. 12	951	257	34	193
Sifter. Coal	A. F. Bullard and G. A. Langmaid	338,582	Mar. 23	2299	602	34	1361
Sifter. Flour	P. Morgenroth and T. Levison	333,966	Jan. 5	659	176	34	129
Sight-feeding lubricator	D. F. Taft	338,650	Mar. 23	2393	631	34	1378
Sign	R. Nicol, Jr	337,188	Mar. 2	411	107	34	1002
Sign. Illuminated glass	F. L. Pisch	335,305	Feb. 2	309	81	34	496
Sign. Revolving	J. F. Bengert	334,557	Jan. 19	1519	405	34	292
Sign. Sectional	W. P. McKenna	334,602	Jan. 19	1568	419	34	304
Signal: *See* Electric signal. Fire-alarm signal. Railway-signal. Railway-car signal. Railway-crossing alarm-signal. Railway time-signal. Torpedo railway-signal. Train-signal.							
Signal apparatus	J. R. Pheeney	334,980	Jan. 26	2065	551	34	408
Signal-horn	C. A. Volke	337,098	Mar. 2	287	76	34	980
Signal or call box	D. Davis, Jr., and G. F. Gale	337,356	Mar. 2	633	167	34	1043
Signal-wires. Mechanism for actuating	F. R. Clarke	338,369	Mar. 23	2045	536	34	1317
Signals. Apparatus for effecting intermittent action of fog and other	F. W. Durham and J. D. Churchill	336,041	Feb. 9	1343	355	34	687
Signals, &c. Mechanism for controlling	H. and H. A. Johnson and J. T. Cade	334,222	Jan. 12	1049	{279 / 280}	34	208
Signaling apparatus	L. Sellner	337,696	Mar. 9	1011	{259 / 260}	34	1115

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Signaling apparatus. Electric	E. T. Gilliland	336,562	Feb. 23	2109	{554 / 555}	34	835
Signaling apparatus. Night	J. Wall	335,489	Feb. 2	557	146	34	541
Silk, &c. Swift for	J. E. and E. Atwood and E. E. Bradley	338,027	Mar. 23	2364	622	34	1373
Single-acting engine. Twin-cylinder	F. Plumb	336,743	Feb. 23	2363	618	34	881
Sink. Combination wash	N. C. Elder	335,437	Feb. 2	488	127	34	529
Siphon and outlet or weir chamber for flush-tanks	G. E. Waring, Jr	336,182	Feb. 16	1572	413	34	723
Siphon. Automatic flushing	W. B. Parsons, Jr	334,606	Jan. 19	1572	420	34	305
Sirup-gage	J. Brown	333,993	Jan. 12	889	196	34	136
Sirup-gage	P. Palm	336,151	Feb. 16	1696	402	34	725
Syrups and molasses. Preparing and treating	A. Rain, Fils	335,940	Feb. 9	921	.....	34	480
Skate	A. Engelbrektson	335,438	Feb. 2	489	127	34	529
Skate	L. Hull	336,919	Mar. 2	52	14	34	936
Skate. Coasting	E. S. Kingston	334,954	Jan. 26	2028	541	34	397
Skate-fastening	E. H. Barney	335,556	Feb. 9	657	173	34	565
Skate-fastening	U. Olsen	334,975	Jan. 26	2050	549	34	402
Skate. Roller	G. Blum	334,739	Jan. 26	1762	469	34	347
Skate. Roller	C. Brinton	337,922	Mar. 16	1394	362	34	1190
Skate. Roller	H. S. Combs	333,996	Jan. 12	685	187	34	137
Skate. Roller	R. J. Costain	337,742	Mar. 9	1153	299	34	1139
Skate. Roller	A. E. Francis	336,308	Feb. 16	1769	463	34	767
Skate. Roller	J. B. Harris, Jr	333,751	Jan. 5	354	96	34	66
Skate. Roller	J. B. Harris, Jr	337,151	Mar. 2	259	94	34	992
Skate. Roller	J. Heacock	338,070	Mar. 16	1602	417	34	1227
Skate. Roller	M. C. Henley	338,736	Mar. 30	2536	670	34	1469
Skate. Roller	G. F. Johnson	334,231	Jan. 12	1048	{278 / 279}	34	208
Skate. Roller	J. F. Mains	336,579	Feb. 23	2133	559	34	839
Skate. Roller	J. F. Mains and B. C. Converse	338,983	Mar. 30	2901	769	34	1474
Skate. Roller	R. F. McFeely	333,771	Jan. 5	377	108	34	71
Skate. Roller	W. R. Morris	336,816	Feb. 23	2402	646	34	900
Skate. Roller	O. J. Punches	334,261	Jan. 12	1128	303	34	217
Skate. Roller	M. F. Richardson	336,437	Feb. 16	1941	509	34	890
Skate. Roller	W. Robinson	334,690	Jan. 26	1952	520	34	383
Skate. Roller	S. E. Shute	337,205	Mar. 2	499	119	34	1005
Skate. Roller	S. E. Shute	337,878	Mar. 16	1337	347	34	1179
Skate. Roller	S. E. Shute and G. C. Stevens	334,902	Jan. 26	2078	555	34	406
Skate. Roller	J. A. Yarger	333,563	Jan. 5	117	32	34	25
Skate-roller	A. P. Odell	336,401	Feb. 16	2013	527	34	812
Skate-roller	R. B. Whitsel	338,576	Mar. 23	2201	600	34	1360
Skate. Velocipede	T. Tennent	336,600	Feb. 23	2164	586	34	844
Skates. Safety-wheel for roller	R. I. Towle	336,603	Feb. 23	2167	566	34	845
Skaters. Apparatus for assisting roller	C. Johnson	335,031	Jan. 26	2141	569	34	416
Skating, &c. Means for the construction of surfaces for	J. A. Calantariente	337,128	Mar. 2	398	96	34	987
Skid. Spiked	W. H. Polleys	338,872	Mar. 30	2796	717	34	1443
Skips or wagons. Discharging and righting	J. Kitto, A. Paul, and R. R. Nancarrow	334,076	Jan. 12	865	221	34	158
Skirt and bustle. Combined	L. Dryfoos	339,034	Mar. 23	2372	624	34	1374
Skylight	J. F. Forderer	334,650	Jan. 19	1640	438	34	317
Skylight	J. F. Forderer	334,651	Jan. 19	1642	438	34	318
Skylight-frame	H. J. Sullivan	334,487	Jan. 19	1417	361	34	276
Slag-buggy	W. B. Devereux	335,114	Feb. 2	21	7	34	444
Slate-cleaner	F. Wittram	336,612	Feb. 23	2186	570	34	848
Slate. Enameled	P. Wenzel	333,578	Jan. 5	110	30	34	23
Sled	L. D. Whiting	336,274	Feb. 16	1715	{447 / 448}	34	757
Sled. Bob	W. Fisher	336,639	Feb. 23	2213	577	34	852
Sled-brake	T. J. Krte	333,957	Jan. 5	629	173	34	116
Sleeve and glove protector	M. W. Slack	338,790	Mar. 30	2612	698	34	1422
Sleigh	S. F. Hewitt	336,411	Feb. 16	1907	499	34	793
Sleigh. Bob	W. H. Galvin	337,927	Mar. 16	1271	329	34	1167
Sleigh. Bob	H. D. Jeffrey and J. Liver	337,586	Mar. 9	965	247	34	1106
Sleigh. Combined double and single seated	W. H. and C. Steinbrecher	335,649	Feb. 9	790	{209 / 210}	34	589
Sleigh-knee	C. E. Belknap	338,384	Mar. 23	2039	535	34	1315
Sleigh-knee	A. Doll	336,555	Feb. 23	2102	553	34	834
Sleigh-runner	S. C. Brownell	333,918	Jan. 5	573	155	34	107
Sliding gate	L. Thuston and E. R. Chase	336,601	Feb. 23	2165	566	34	844
Smelting-furnaces. Matte-pot for	M. W. Iles and F. Keiper	335,224	Feb. 2	200	52	34	476
Smoke-conductor	T. Randle, Jr	337,067	Mar. 2	272	72	34	977
Smoke-consuming furnace	G. Raven	337,496	Mar. 9	776	198	34	1073
Smoke-consuming furnace	T. S. Wilkin	334,066	Jan. 12	792	218	34	155
Smoke economically. Treating	T. J. Sullivan	335,653	Feb. 9	794	211	34	580
Smoke-stack	W. H. Garlock	334,369	Jan. 12	1246	335	34	238
Smoke-stacks. Portable platform for	B. Vitalis	335,164	Feb. 2	92	25	34	457
Smoker's appliance	S. E. Lawrence	338,421	Mar. 23	2089	547	34	1325
Smoothing-iron	G. T. Kearns and J. H. Noble	337,987	Mar. 2	514	134	34	1021
Smut-machine	S. Wohlrab	337,219	Mar. 2	446	117	34	1009
Snap-hook	G. Bernd	339,039	Mar. 30	2973	786	34	1486
Snow-plow	C. D. Batchelor	336,833	Feb. 23	2481	653	34	905
Snow-plow	C. Howard	333,948	Jan. 5	616	{168 / 169}	34	115
Snow-plow	E. Leslie	338,759	Mar. 30	2570	678	34	1415
Snow-plow	T. Ormerod and A. B. Croskey	337,075	Mar. 2	256	68	34	973
Snow-plow	J. M. Poitras	337,078	Mar. 2	259	69	34	974
Snow plow and scraper	C. M. Culbertson, Sr	337,561	Mar. 9	936	240	34	1101
Snow-sweeper	N. Campbell	333,506	Jan. 5	135	37	34	27
Snow-sweeper	N. Campbell	333,509	Jan. 5	136	37	34	28
Snow-sweeper draw-bar	N. Campbell	333,507	Jan. 5	134	37	34	27
Snow-sweeper journal-box	N. Campbell	333,508	Jan. 5	133	36	34	27
Soap	C. H. Walker	337,085	Mar. 2	208	.....	34	963
Soap-holder	A. E. Robinson	335,539	Feb. 2	623	163	34	551
Soap-press	J. Dennis and J. A. Coram	333,505	Jan. 5	10	5	34	5

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Soda. Manufacture of blocks of bicarbonate of	J. W. Carson and F. P. Harned	338,924	Mar. 30	2802	.....	34	1457
Soda-water apparatus	L. Beretz	334,159	Jan. 12	237	23	34	181
Soda-water fountains. Cock for	J. H. Matthews, T. Dyson, and J. Ormerod.	333,651	Jan. 5	200	55	34	39
Sofa and bedstead combined	J. J. Baylor	337,652	Mar. 9	1044	298	34	1121
Soil or drain pipe	P. W. Doherty	336,476	Feb. 16	1994	522	34	808
Solder for aluminum	J. S. Sellon	333,786	Jan. 5	398	.....	34	75
Soldering-iron	H. M. Dixon	334,942	Jan. 26	2013	536	34	394
Soldering machine. Can-	W. D. Brooks	335,011	Jan. 26	2106	561	34	411
Soldering machine. Can-	W. D. Brooks	335,012	Jan. 26	2108	561; 562	34	411
Soldering machine. Can-	D. M. Monroe	336,659	Feb. 23	2258	588	34	861
Soldering machine. Can-	D. M. Monroe	337,277	Mar. 2	538	140	34	1025
Soldering machine. Can-	D. M. Monroe	338,672	Mar. 23	2428	640; 641	34	1383
Soldering-tool	E. M. Lang, Jr	337,842	Mar. 16	1292	335	34	1171
Sole and heel. Rubber	G. F. Butterfield	333,595	Jan. 5	133	36	34	27
Sole-edge-burnishing machine	J. W. Dodge	339,049	Mar. 30	2985	789; 790	34	1488
Sole-laying machine	P. A. Coupal and C. D. Wood	335,016	Jan. 26	2113	562	34	412
Soles. Applying cloth to in-	F. L. Blair	333,499	Jan. 5	5	2	34	4
Sorghum boiler and evaporator	J. C. Wynn	336,279	Feb. 16	1724	450	34	758
Sower. Broadcast seed-	O. F. Heartwell, Jr	337,832	Mar. 16	1279	331	34	1169
Sower. Broadcast seed-	T. J. Miller	336,421	Feb. 16	1919	503	34	796
Sowing-machine. Grass-seed	J. L. Strock	336,204	Mar. 16	1784	466	34	1264
Spade	C. McBride	337,609	Mar. 9	963	252	34	1110
Spark-arrester	F. Gordon	336,311	Feb. 16	1779	464	34	767
Spark-arrester	H. Hennig	335,923	Feb. 9	1186	315	34	660
Spark-arrester	G. D. Hunter. (Reissue)	10,698	Mar. 9	1240	321	34	1155
Spark-arrester	C. G. Wilson	336,504	Feb. 16	9025	531	34	814
Spark arrester and conductor	T. J. Simpson	334,680	Jan. 19	1677	448	34	324
Spark-ejecting device	H. M. Smith	334,202	Jan. 12	1009	268	34	195
Speaking-tube	A. S. Fontaine	336,479	Feb. 16	9000	524	34	809
Spectacle-frames. Mechanism for making	S. Z. De Ferranti	338,340	Mar. 23	1972	518; 519; 520	34	1305
Speech. Method of and apparatus for transmitting, reproducing, and recording	C. A. Bell	336,203	Feb. 16	1602	420; 421	34	739
Speed and time recorder	C. H. Scharar	335,312	Feb. 2	318	83	34	498
Speed-governor	A. Lawrence	335,228	Feb. 2	206	53, 54	34	476
Speed-governor. Centrifugal	M. R. Goding	334,581	Jan. 19	1540	412	34	299
Speed-indicator	K. W. Hedges	338,966	Mar. 30	2850	752	34	1466
Speed-indicator. Centrifugal	H. Herden	338,841	Mar. 30	2692	706	34	1436
Speed-indicator. Pneumatic	G. A. Rüng	336,069	Feb. 9	1379	365	34	694
Speed of shafting, machinery, &c. Apparatus for indicating the	W. B. Mason, E. J. Wescott, and W. L. Stevens.	334,960	Jan. 26	2035	543; 544	34	398
Speed-regulating device	J. Bevier	338,916	Mar. 30	2794	736	34	1455
Speed-regulator. Automatic	C. W. A. Koelkebeck	335,460	Feb. 2	518	135	34	534
Speed regulator for shafts of circular saws, &c	W. A. Baker	334,329	Jan. 12	1191	320	34	229
Spelling-board	A. F. Smith	336,266	Feb. 16	1705	444	34	755
Spindle: *See* Spinning-spindle.							
Spindle	E. E. Bradley	333,914	Jan. 5	568	154	34	106
Spindle-bolster	S. P. Greene and A. R. Young	334,371	Jan. 12	1247	336	34	239
Spinning and twisting machine. Cap	W. Riley	335,385	Feb. 2	418	108	34	516
Spinning-frame	J. E. Atwood	338,216	Mar. 16	1801	470	34	1266
Spinning frame. Ring-	J. J. Bourcart	333,819	Jan. 5	441	119; 120	34	82
Spinning-frame ring and holder	J. W. Wattles	335,406	Feb. 2	446	116	34	521
Spinning frames. Mechanism for supporting and lubricating the spindles of ring-	J. W. Wattles	335,980	Feb. 9	1257	334	34	672
Spinning-frames. Sleeve whirl spindle for	E. E. Bradley	333,822	Jan. 5	446	121	34	83
Spinning frames. Thread-guide support for ring-	W. Jencks	334,441	Jan. 19	1343	364	34	263
Spinning frames. Traveler-cleaner for ring-	C. C. Diman	338,831	Mar. 30	2671	703	34	1433
Spinning-machine	J. J. Bourcart	335,208	Feb. 2	172	45, 46	34	472
Spinning-machine	J. S. Funk	336,850	Feb. 23	2504	660	34	908
Spinning-machine	R. Walmsley	334,630	Jan. 26	1873	499	34	369
Spinning machine. Ring-	G. E. Taft	333,898	Jan. 5	541	147	34	101
Spinning-machine-spindle bolster	H. F. Woodmancy	336,238	Mar. 16	1830	458	34	1272
Spinning-machine spindles. Bobbin-holder for	J. Davis	333,997	Jan. 12	687	188	34	137
Spinning-machines. Spindle-step for	W. A. Delmage	336,300	Feb. 16	1761	460	34	765
Spinning machinery. Covering for feed-rolls of	S. Bergstresser	333,813	Jan. 5	432	117	34	81
Spinning-mules. Apparatus for clearing waste from the spindles of	P. Aubin	335,498	Feb. 2	567	148	34	542
Spinning-spindle and bearing therefor	E. Dummer	336,903	Mar. 2	30	8	34	932
Splasher-holder	A. R. Smith	338,309	Mar. 23	1926	507	34	1297
Spoke-driver	L. Rakow	335,308	Feb. 2	311	82	34	497
Spokes in wheels. Machine for securing	W. P. Bettendorf	335,882	Feb. 9	1125	297; 298	34	649
Spool	W. A. Fries	335,692	Feb. 9	847	224	34	599
Spool	W. A. Fries	335,749	Feb. 9	935	246	34	615
Spool and bobbin	L. Stone	335,783	Feb. 9	989	262	34	625
Spool-holder	A. A. Murphy	338,764	Mar. 30	2579	680	34	1417
Spooler-guide	A. J. Nichols	334,799	Jan. 26	1836	490	34	362
Spooling-machine	J. and A. Nelson	335,473	Feb. 2	531	139	34	536
Spooling-machine stop-motion	J. W. Foster	335,572	Feb. 9	679	179	34	569
Spoons. Manufacture of	W. A. Warner	337,099	Mar. 2	298	76	34	980
Spring: *See* Bed-spring. Buggy-spring. Carriage-spring. Door-spring. Phaeton-spring. Side-bar spring. Vehicle-spring. Wagon-seat spring. Watch case spring. Window-spring.							
Spring	J. H. Davis	337,048	Mar. 2	222	59	34	906
Spring	N. H. Davis	337,069	Mar. 2	1063	274	34	1194

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Spring	C. C. Hearle	338,967	Mar. 23	1870	491	34	1267
Spring	J. L. Wells	336,774	Feb. 23	2406	632; 633	34	890
Spring chair and seat	T. D. Davis	333,998	Jan. 12	687	188	34	137
Spring-clasp	J. W. Holdsworth and J. B. Foley	338,536	Mar. 23	2227	584	34	1350
Spring-clasp	J. J. Unbehend	336,769	Feb. 23	2397	628	34	889
Spring-coupling. Elastic	F. O. Rogers	336,508	Feb. 23	2155	564	34	843
Spring-motor	H. E. Marchand	337,177	Mar. 2	399	104	34	989
Spring-trap	J. Vasseur, Jr	334,811	Jan. 12	1167	313	34	225
Sprinkler: *See* Automatic sprinkler. Street-sprinkler. Potato-sprinkler.							
Sprinkler	M. Goldman	334,655	Jan. 19	1645	439	34	318
Square bevel attachment	J. M. McKinney	335,298	Feb. 2	293	77, 78	34	493
Square-miter and circle-scriber combined	W. F. Seargeant	338,444	Mar. 23	2121	555	34	1330
Squeezer and strainer. Combined	J. Mikel	337,195	Mar. 2	408	106	34	1001
Squib	E. J. Cotter	337,307	Mar. 2	576	151	34	1032
Stair-rod securer	D. Keiser	338,978	Mar. 30	2870	739	34	1470
Stalk and weed cutter	J. J. Faffee	333,938	Jan. 5	605	165	34	113
Stalk-cutter	J. H. Jones	336,811	Feb. 23	2454	644	34	898
Stalk-cutter	J. H. Jones	337,335	Mar. 2	609	160	34	1038
Stamp battery. Circular ore-	A. B. Paul	334,675	Jan. 19	1671	446	34	323
Stamp. Hand-	V. H. Emerson	334,008	Jan. 12	702	193	34	139
Stamp-mills. Cam for	C. A. Thies	336,447	Feb. 16	1958	512	34	802
Stamp. Registering ticket-	B. P. Roberts	336,162	Feb. 16	1539	406	34	727
Stamp. Self-inking hand-	B. B. Hill	338,153	Mar. 16	1790	449	34	1250
Stamp. Printing-	H. Holt	337,831	Mar. 2	604	159	34	1038
Stamps, &c. Apparatus for moistening	B. Gründler	335,580	Feb. 9	690	182; 183	34	571
Stamps. Machine for affixing postage	J. L. Shaw	337,450	Mar. 9	796	202	34	1076
Stand: *See* Hat-stand. Railway switch-stand. Power-stand. Switch-stand.							
Staple. Hame-	W. A. Heywood	338,073	Mar. 16	1605	418	34	1227
Staple-holding implement	C. E. Van Dusen	337,212	Mar. 2	438	115	34	1007
Staple-machine	J. Thomson	334,909	Jan. 26	1971	564; 565	34	387
Stapling-machine	A. B. Smith	335,154	Feb. 2	74	20, 21	34	454
Starch. Manufacture of	J. C. Schuman	334,090	Jan. 12	827	226; 227	34	161
Starch to improve its quality. Composition to be added to	H. A. Gray	337,490	Mar. 9	846	.....	34	1065
Station-indicator	W. Fuller	338,398	Mar. 23	2061	540	34	1319
Station-indicator	G. E. Schlegelmilch	334,902	Jan. 26	1963	562	34	385
Station-indicator	D. Wilson	335,004	Jan. 26	2094	558; 559	34	409
Station indicator. Railway-	J. Schmid	334,478	Jan. 19	1400	378	34	273
Stave-jointing attachment for molding-machines	A. M. Jewell	335,756	Feb. 9	944	248	34	616
Staves. Machine for jointing compressed bent	E. M. Jewett	335,674	Jan. 26	2901	585	34	427
Steam-accumulator	P. Twohig	338,237	Mar. 16	1829	478	34	1272
Steam-boiler	J. Baird	334,156	Jan. 12	931	251; 252; 253	34	180
Steam-boiler	T. E. Button	335,680	Feb. 9	827	220	34	595
Steam-boiler	W. Caldwell	336,096	Feb. 9	1233	353	34	685
Steam-boiler	G. H. Corliss	333,833	Jan. 5	464	126	34	86
Steam-boiler	W. Dougherty and J. P. Feeley	337,138	Mar. 2	343	89	34	989
Steam-boiler	E. Frey, G. F. Motter, and J. Reichley	333,846	Jan. 5	477	129	34	89
Steam-boiler	J. G. S. Garwood	339,093	Mar. 30	3047	805	34	1498
Steam-boiler	J. L. Gill, Jr	335,750	Feb. 9	936	247	34	615
Steam-boiler	J. Hartley	335,696	Feb. 9	852	225; 226; 226; 227	34	599
Steam-boiler	J. Hartley	335,697	Feb. 9	855	227	34	600
Steam-boiler	M. E. Herbert	336,315	Feb. 16	1776	465	34	768
Steam-boiler	C. A. Knight	333,956	Jan. 5	628	171; 172	34	118
Steam-boiler	H. J. Mitchell	334,673	Jan. 19	1667	445	34	322
Steam-boiler	T. Poore	336,430	Feb. 16	1932	506; 507; 510; 511	34	798
Steam-boiler	F. Scherr	336,441	Feb. 16	1948	511	34	801
Steam-boiler	F. Scherr	338,618	Mar. 23	2351	618	34	1370
Steam-boiler	C. S. Shepard	333,685	Jan. 5	251	68	34	49
Steam-boiler	J. C. Sotter	336,497	Feb. 16	2018	529	34	813
Steam-boiler	H. Spence	338,118	Mar. 16	1669	434	34	1240
Steam-boiler	W. L. Tobey	338,805	Mar. 30	2631	693	34	1426
Steam-boiler agitator	H. B. Meech	334,182	Jan. 12	965	261	34	186
Steam-boiler and pipe-coupling	C. B. Manville	334,959	Jan. 26	2034	543	34	398
Steam-boiler attachment	J. Mitchell	335,947	Feb. 9	1216	329	34	665
Steam-boiler filter	J. Nickle and A. Nelson	335,948	Feb. 9	1217	322; 324	34	666
Steam-boiler. Low-pressure	H. Davey	338,494	Mar. 23	2188	572	34	1343
Steam-boiler. Multitubular	E. Lagosse and J. Bouché	337,506	Mar. 9	865	219; 220	34	1068
Steam-boiler. Multitubular	F. S. Morris	338,861	Mar. 30	2706	712	34	1440
Steam-boiler. Portable	P. Holtzmann and R. Mayer	336,113	Feb. 16	1458	384	34	715
Steam-boiler. Sectional	A. Craik	334,568	Jan. 19	1524	408	34	295
Steam-boiler. Sectional	W. H. Wilson	338,128	Mar. 16	1686	438; 439	34	1244
Steam-boiler. Sectional	R. R. Zell. (Reissue)	10,695	Mar. 2	636	167	34	1044
Steam-boiler sediment-receiver	C. W. Bowers	335,569	Feb. 9	661	174	34	566
Steam-boiler water-indicator	L. Mertens	335,139	Feb. 2	57	16	34	451
Steam-engine	M. Burkley	333,990	Jan. 5	577	156	34	108

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Steam-engine	N. F. Burnham	336,837	Feb. 23	2488	654, 655	34	905
Steam-engine	L. W. Hardy	335,191	Feb. 9	148	38	34	467
Steam-engine	T. Jenni	338,076	Mar. 16	1609	419	34	1298
Steam-engine	M. N. Lynn	335,530	Feb. 2	612	159, 160, 161	34	549
Steam-engine	J. T. Metcalfe	337,184	Mar. 2	407	106	34	1001
Steam-engine	D. Pattee	337,860	Mar. 16	1313	341	34	1174
Steam-engine	G. W. Price	337,518	Mar. 9	882	224, 225	34	1091
Steam-engine	O. F. Rodehaver	339,074	Mar. 30	3017	797, 798	34	1493
Steam-engine	I. A. Turner	336,025	Feb. 9	1318	349	34	683
Steam-engine dash-pot	J. Young	337,644	Mar. 9	1033	265	34	1119
Steam-engine. Fireless	M. Honigmann	337,062	Mar. 2	237	63	34	969
Steam-engine indicator-diagrams. Instrument for measuring the mean height of	E. Kimmel and E. E. Clausen	336,812	Feb. 23	2455	644	34	899
Steam-engine indicators. Device for operating	J. R. Goddard	337,147	Mar. 2	353	91	34	991
Steam-engine lubricator	C. Friederici	336,045	Feb. 9	1350	357	34	689
Steam engine or pump	W. C. Salmon	333,675	Jan. 5	236	64, 65	34	46
Steam-engine. Oscillating	M. Ulrich	338,890	Mar. 30	2757	726	34	1448
Steam-engine recorder	J. J. and H. R. Illingworth	334,778	Jan. 26	1811	481	34	358
Steam-engine recorder	J. J. and H. R. Illingworth	334,779	Jan. 26	1812	482	34	358
Steam-engine slide	J. G. Schumacher	334,811	Jan. 26	1852	493	34	365
Steam-engine stuffing-box	G. H. Corliss	333,892	Jan. 5	463	125	34	86
Steam-engines. Automatic stop for	G. Parker	337,611	Mar. 9	993	255	34	1112
Steam-engines. Mechanism for regulating	H. J. Johnson	335,933	Feb. 9	1197	318, 319	34	602
Steam-engines. Pitman attachment for multiple-cylinder	M. N. Lynn	334,025	Jan. 12	731	200	34	144
Steam-generator	J. F. Belleville	336,262	Feb. 16	1729	452, 453	34	759
Steam-generator	C. Gorton	334,657	Jan. 19	1647	440	34	319
Steam-generator	W. A. Hodgkins	334,950	Jan. 26	2052	540	34	396
Steam-generator	A. Horn	336,114	Feb. 16	1459	385	34	715
Steam-generator	O. Kelsey	335,134	Feb. 2	50	13, 14	34	449
Steam-generator	J. R. Moore	337,073	Mar. 2	251	67	34	972
Steam-generator	N. W. Pratt	338,676	Mar. 23	2435	642	34	1384
Steam generator and superheater	M. Foreman	338,222	Mar. 16	1811	479	34	1267
Steam-heater boiler	J. Johnson	338,670	Mar. 23	2425	639, 640	34	1383
Steam-heater. Upright	W. F. Boswell	334,335	Jan. 19	1909	324	34	231
Steam-motor. Low-pressure	H. Davey	338,934	Mar. 30	2812	742	34	1460
Steam-trap	A. M. Coyle	333,924	Jan. 5	580	161	34	110
Steam-trap	N. Curtis	336,628	Feb. 23	2207	576	34	851
Steam-trap	W. B. Mason	338,854	Mar. 30	2698	710	34	1439
Steam-trap	R. Newton	334,272	Jan. 12	1118	300	34	215
Steam-trap	F. H. West	333,579	Jan. 5	112	31	34	24
Steamboat and water-wheel	J. W. Thomas	334,824	Jan. 26	1867	497	34	367
Steamboat-stage	J. Patin	337,281	Mar. 2	539	141	34	1026
Steamer	C. F. Hanneman	338,064	Mar. 16	1595	415	34	1225
Steel ingots. Soaking-pit for	J. Gjers	335,915	Feb. 9	1179	313	34	658
Steel. Manufacturing	E. F. Falconnet	338,723	Mar. 30	2515	665	34	1405
Steel. Self-hardening manganese	R. Hadfield	333,748	Jan. 5	350	.....	34	65
Steering apparatus	T. Chambers	336,291	Feb. 16	1750	458	34	763
Steering apparatus	J. H. Cox and E. S. Willey	333,923	Jan. 5	585	160	34	110
Steering-gear for vessels. Steam	A. J. Maginnis	334,598	Jan. 19	1556	416	34	302
Stench-trap	J. F. Donovan	333,841	Jan. 5	473	128	34	88
Stench-trap	J. P. Gallagher	336,895	Feb. 23	2444	642	34	896
Stencil	M. W. Stines	338,621	Mar. 23	2355	619	34	1371
Stencil-holder	A. D. Klaber	333,864	Jan. 5	502	137	34	93
Stereotype-matrices. Apparatus for drying	G. Pepé	334,544	Jan. 19	1491	399	34	289
Stereotype-matrix impressions. Machine for making	F. Schreiner	336,754	Feb. 23	2377	622	34	884
Stereotype-plate and block or bed for the same	W. T. Smith	336,022	Feb. 9	1314	348	34	682
Stereotype-plates and their backing. Machine for fitting	G. E. Lloyd	333,530	Jan. 5	46	13	34	11
Stereotype-plates. Machine for shaving	G. E. Lloyd	333,529	Jan. 5	45	13	34	11
Stereotype-shaving machine	J. H. Ferguson	335,976	Feb. 2	268	70, 71	34	488
Stirrup	L. D. O'Roark	334,976	Jan. 26	2060	549	34	402
Stirrup for sulkies	T. D. Aitken	337,357	Mar. 9	639	169	34	1051
Stock. Platform for handling	J. D. Morrison	337,425	Mar. 9	747	191	34	1069
Stocking	T. H. Dodge	338,341	Mar. 23	1975	520	34	1305
Stocking-blank	J. L. Branson and H. Brinton	334,339	Jan. 12	1208	326	34	252
Stocking-supporter	J. A. Bemis	338,467	Mar. 23	2151	562	34	1336
Stocking-supporter	C. J. Haley	336,917	Mar. 2	50	13	34	936
Stocking-supporter	J. B. Sweetser	335,784	Feb. 7	990	262	34	625
Stone. Artificial	G. Blum	339,026	Mar. 16	1554	.....	34	1218
Stone. Artificial	J. Grant	338,060	Mar. 16	1590	.....	34	1224
Stone-conveyer	G. W. Richardson	334,471	Jan. 19	1393	376	34	272
Stone-cutter head	J. W. Maloy	334,595	Jan. 19	1558	416	34	302
Stone-cutting machine	A. E. North and W. K. Sheldon	336,256	Feb. 16	1694	441, 442	34	753
Stone-cutting machines. Cutter-head for	J. W. Maloy	334,594	Jan. 19	1557	416	34	302
Stone. Manufacturing artificial	G. Lilienthal	335,707	Feb. 9	870	.....	34	603
Stone. Producing imitation	H. S. Utley	336,675	Feb. 23	2981	.....	34	866
Stone-saw	J. Peckover	334,678	Jan. 19	1675	447	34	323
Stone-sawing apparatus	J. H. Frenier	333,510	Jan. 5	20	7	34	7
Stone-sawing machine	W. H. H. Campbell	337,661	Mar. 9	1053	271	34	1122
Stone-sawing machine	J. H. Frenier	336,099	Feb. 16	1442	380, 381, 656, 657	34	711
Stone-sawing machines. Feed mechanism for	F. H. Cook	336,840	Feb. 23	2494	656, 657	34	906
Stool and seat	W. Holden	335,927	Feb. 9	1190	317	34	661

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Stool. Folding adjustable musical	J. Pursell	336,156	Feb. 16	1532	404	34	726
Stool. Folding camp	C. von der Linden	335,893	Feb. 9	1039	275	34	624
Stop or curb box	W. S. Payne	338,102	Mar. 16	1656	430	34	1237
Stopper: *See* Bottle-stopper.							
Stopper-fastener	F. W. Seymour	337,902	Mar. 2	435	111	34	1005
Store-service. Three-way switch for	E. L. Giles	333,743	Jan. 5	244	93	34	64
Store-service switch	E. L. Giles	333,744	Jan. 5	246	93, 94	34	65
Stove	D. Habig	338,954	Mar. 30	2840	749	34	1465
Stove	G. A. Taylor	335,974	Feb. 9	1251	332	34	671
Stove and baking and warming oven. Combined cooking-	F. Artmann	333,714	Jan. 5	307	84	34	57
Stove and furnace fire-pot	G. H. Hess	333,627	Jan. 5	168	45, 46	34	23
Stove and range door	A. [illegible] Mason	334,258	Jan. 12	1101	295	34	212
Stove-back	O. [illegible]man	336,252	Mar. 23	1853	487	34	1324
Stove. Combined self-feeding cooking and heating	J. H. Nevins	334,971	Jan. 26	2054	548	34	401
Stove. Cook	N. O. Bond	338,472	Mar. 23	2157	563	34	1337
Stove-door	J. H. Herrick	333,857	Jan. 5	469	124	34	92
Stove-door handle	J. G. Whitlock	338,455	Mar. 23	2136	558	34	1333
Stove-door handle	J. G. Whitlock	338,456	Mar. 23	2138	559	34	1334
Stove-door knob and handle	J. E. Gaitley	338,507	Mar. 23	2207	579	34	1346
Stove for railway-cars	J. A. Fanst	336,221	Feb. 16	1639	428	34	744
Stove. Gas-	J. Clingman	337,879	Mar. 9	669	175	34	1056
Stove. Gas or oil	A. B. Vandemark	333,797	Jan. 5	413	112	34	78
Stove. Heating	G. Benns	335,490	Feb. 2	466	120	34	542
Stove. Heating	H. P. Heitmann	333,856	Jan. 5	492	133	34	92
Stove-hood or heat-collector	J. G. W. F. Fleeming	336,559	Feb. 23	2104	554	34	834
Stove-leg	D. E. Paris	334,124	Jan. 12	889	243	34	173
Stove-lid holder	S. H. Richmond	335,627	Feb. 9	760	202	34	583
Stove-lids. Pattern for molding	E. Evans	337,052	Mar. 2	228	60	34	967
Stove. Oil-	H. L. Howse	338,842	Mar. 30	2683	707	34	1436
Stove or range	A. M. Blakesley	338,701	Mar. 30	2478	655	34	1389
Stove oven. Vapor-	T. J. Ford	337,757	Mar. 9	1170	305	34	1142
Stove-pipe thimble	O. C. McDannell	335,291	Feb. 2	291	77	34	492
Stove. Reservoir cooking-	M. Hertenstein	338,730	Mar. 30	2543	671	34	1410
Stoves. Air-heater for	L. P. Converse	336,399	Feb. 16	1663	492	34	789
Stoves. Automatic attachment for gas-	J. N. Ives	338,155	Mar. 16	1729	449	34	1251
Stoves. End shelf for	D. E. Paris	334,125	Jan. 12	890	244	34	173
Stoves. Gas-burner attachment for	E. Dooly	338,143	Mar. 16	1705	444	34	1247
Stoves or ranges. Plate-joint for	N. A. Boynton	337,197	Mar. 2	327	98	34	986
Stoves. Vapor-burning apparatus for cook-	F. E. Brown and G. P. Frain	338,366	Mar. 23	2040	535	34	1316
Stoves. Vaporizer and burner for gasoline and oil	B. Rein	336,745	Feb. 23	2366	619	34	862
Stoves. Vaporizer for gasoline and oil	B. Rein	335,719	Feb. 9	990	235	34	606
Strainer and cut-off	W. W. Hough and H. C. Hoffman	334,396	Jan. 12	1961	340	34	241
Strainer and trap for water-pipes, &c. Combined	T. Lee	335,366	Feb. 2	398	101	34	512
Strainer for catch-basins	R. D. Duncan	333,935	Jan. 5	660	164	34	112
Strainer for purifying sugar, &c. Liquid	J. H. Ockershausen	336,425	Feb. 16	1926	505	34	797
Strainer for water and other fluids	R. H. Hey	338,563	Mar. 23	2294	583	34	1349
Strap: *See* Harness breast-strap. Trunk-strap.							
Strap clamping and stretching device	J. Cooper	335,179	Feb. 2	133	33	34	465
Straw-carrier	H. Thoman	336,448	Feb. 16	1958	513	34	902
Strawberry-runner cutter. Double	G. W. Love	337,174	Mar. 2	396	102	34	999
Straw, hay, &c. Conveyer and elevator for	W. Ludlum	336,196	Feb. 16	1474	389	34	718
Straw-stacker	C. N. Leonard	334,402	Jan. 12	1288	347, 348, 349	34	946
Street-sanding machine	B. Butler	337,300	Mar. 2	567	149, 150, 489, 490	34	1081
Street-scraper and snow-plow	G. G. Gibson	338,902	Mar. 23	1883	490	34	1285
Street-sprinkler	W. H. Miller	336,259	Feb. 16	1668	440	34	752
Street-sweeping machine	C. Drill	338,721	Mar. 30	2510	664, 665	34	1404
Street-sweeping machine	C. F. Grüner	338,225	Mar. 16	1815	474, 475	34	1268
Stretcher for conveying wounded persons	W. H. Johnstone	338,349	Mar. 23	1984	522, 523	34	1307
String-gage	C. F. Albert	337,294	Mar. 2	453	118	34	1010
Striping-machine	J. Hamill	338,734	Mar. 30	2535	669	34	1408
Strut-connection. Hollow	A. T. Hyde	338,668	Mar. 23	2424	630	34	1383
Stuffing-box	A. H. Clark	337,663	Mar. 9	1066	271	34	1123
Stump or stone puller	T. B. Barber	337,114	Mar. 2	309	81	34	963
Submarine torpedo-boat	G. E. Haight and W. H. Wood	339,096	Mar. 30	3051	806, 807, 808, 809	34	1499
Sucker-rod	R. H. Black	334,920	Jan. 26	1906	532	34	391
Sucker-rod clamp	W. Hellem	334,226	Jan. 12	1043	277	34	202
Sugar bars and plates. Manufacturing	A. Fesca	334,655	Jan. 26	1906	508	34	375
Sugar. Dissolving and straining	G. M. Newhall	334,972	Jan. 26	2055	548	34	401
Sugar into hard block sugar. Transforming soft	F. O. Matthiessen	333,652	Jan. 5	202	.....	34	40
Sugar. Manufacturing grape-	F. Soxhlet	335,044	Jan. 26	2158	.....	34	419
Sulky. Trotting	C. F. Stillman	335,650	Feb. 9	791	210	34	589
Sulky. Trotting	C. F. Stillman	335,651	Feb. 9	792	210	34	589
Sulky. Trotting	C. F. Stillman	335,652	Feb. 9	793	210, 211	34	589
Sulphate of lime from saline solutions. Separating	T. G. Walker	337,900	Mar. 16	1368	355	34	1185
Sulphites. Manufacturing	E. B. Ritter and C. Kellner	338,358	Mar. 23	2287	595	34	1356
Sulphuring-tube	R. A. Wittemann	335,060	Jan. 26	2169	576	34	421
Sun-dial	R. L. Spencer	335,647	Feb. 9	788	209	34	588
Supply-tank. Self-acting	J. H. Lawless	338,984	Mar. 30	2884	763	34	1471
Supporter: *See* Garment-supporter. Stallion-testicle supporter. Hose-supporter. Stocking-supporter.							
Surgical splint	H. Partrick	336,740	Feb. 23	2359	617	34	861

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Surveyor's target	W. Keuffel	337,959	Mar. 16	1454	377	34	1200
Suspender-end	E. Deming	336,396	Feb. 16	1c86	493	34	789
Suspender-end	E. Deming	337,750	Mar. 9	1161	302	34	1141
Suspenders	J. A. Adamson	335,411	Feb. 2	455	118	34	529
Suspenders	J. T. Brodnax	334,509	Jan. 19	1446	388	34	281
Suspenders	M. Kauth	333,757	Jan. 5	360	97	34	67
Suspending and detaching device	G. W. McGill	337,970	Mar. 16	1472	382	34	1203
Suspending device	C. J. Petersen	335,478	Feb. 2	537	141	34	537
Suspension device	M. E. Dye	339,068	Mar. 30	3039	803	34	1497
Suspension-rack	A. G. Smith	335,320	Feb. 2	326	85, 86	34	509
Swaging-machine	W. J. Corbett	335,015	Jan. 26	2112	563	34	412
Swimming apparatus	G. Bauer	336,060	Feb. 16	1411	374	34	706
Swing	S. B. McCorkle	334,965	Jan. 26	2043	{545 / 546}	34	389
Swing. Vertical rotary	L. M. Campi	336,696	Feb. 23	2308	{603 / 604}	34	871
Swinging gate	J. T. Baltimore and J. F. Paddleford	337,360	Mar. 9	641	169	34	1051
Swinging gate	J. Landis	335,937	Feb. 9	1204	320	34	663
Switch: *See* Automatic cable-road switch. Railway-switch. Store-service switch. Telephone-switch. Three-way switch.							
Switch	S. Curlin	337,745	Mar. 9	1155	{300 / 301}	34	1140
Switch and signal apparatus	J. T. Hambay	333,852	Jan. 5	487	132	34	91
Switch-lock	H. B. Potter	338,873	Mar. 30	2727	{717 / 718}	34	1443
Switch-lock and throw-bar	W. B. S. Reed	338,441	Mar. 23	2118	554	34	1330
Switch or circuit-controller	E. Weston	334,143	Jan. 12	900	246	34	175
Switch-stand	A. A. Strom	337,352	Mar. 2	629	165	34	1042
Syringe	W. H. Conkle	337,249	Mar. 2	402	128	34	1017
Syringe	J. W. Ward and G. P. Sylvester	334,316	Jan. 19	1171	314	34	325
Syringe. Embalming	H. N. Siegenthaler and E. Craig	337,707	Mar. 9	1111	287	34	1131
Syringe-valve	C. A. Tatum	334,059	Jan. 12	760	214	34	153
Syringes, &c. Tempering-bulb for	T. S. Easton	338,045	Mar. 16	1574	410	34	1221
Table: *See* Extension-table. Folding table. Garden-table. Ironing-table. Knockdown table. Railway transfer-table. Tailor's cutting-table. Turn-table.							
Table and clothes-rack. Combined	J. Lochner	338,069	Mar. 16	1627	423	34	1232
Table and desk	A. H. Heinemann	333,696	Jan. 5	168	45	34	33
Table and desk. Combined	J. G. Peace	334,977	Jan. 26	2061	{549 / 550}	34	402
Table-leaf support	F. C. Erlander	338,254	Mar. 23	1855	487	34	1294
Table-leaf support	W. Kline	334,239	Jan. 12	1061	282	34	205
Table-leaf support	W. Seng	336,757	Feb. 23	2389	623	34	895
Table-leaf support	I. Winans	335,365	Feb. 2	254	67	34	486
Table-leaf support	W. H. K. Klug	337,503	Mar. 9	889	218	34	1067
Tablet	W. G. Smith	338,795	Mar. 30	2617	689	34	1423
Tablet and file. Combined	C. M. Moody	334,537	Jan. 19	1481	397	34	287
Tablet. School and business	G. Faull	336,426	Feb. 16	1928	505	34	797
Tack	M. V. B. Ethridge	335,515	Feb. 2	590	154	34	545
Tack-driving machine	M. V. B. Ethridge	335,514	Feb. 2	589	154	34	545
Tack-filling machine	E. Woodward and G. W. Copeland	333,709	Jan. 5	299	82	34	56
Tack-strip	E. Woodward and G. W. Copeland	336,539	Feb. 16	2073	545	34	823
Tack-strip	F. Chase	337,602	Mar. 9	1055	271	34	1123
Tack-strip. Lasting	O. Higgins and A. S. Condit	337,061	Mar. 2	237	63	34	969
Tacks. Device for driving and bending headless	A. Morrell	338,665	Mar. 23	2452	647	34	1388
Tag	H. M. Crouse	336,841	Feb. 23	2495	657	34	906
Tag and envelope. Combined	H. Denney	334,220	Jan. 12	1081	{274 / 275}	34	300
Tag-making machine	H. C. Daniels	335,274	Feb. 2	265	70	34	488
Tag. Merchandise	D. L. Ketcham	338,601	Mar. 23	2325	609	34	1366
Tailor's cutting-table	G. W. Hadesty	337,472	Mar. 9	848	215	34	1085
Tamping-bar							
Tank: *See* Railway supply-tank. Water-closet tank. Safety-tank.							
Tanning with sulphoketic acid	A. Müller	338,182	Mar. 16	1760	.....	34	1259
Tap and faucet connection for beer and other barrels	W. E. and J. H. Curtis	335,743	Feb. 9	927	244	34	614
Tap-holes of casks. Apparatus for automatically closing	J. E. Minnitt and J. H. Vickers	334,970	Jan. 26	2053	547	34	401
Tapping-machine	V. H. Ernst	333,937	Jan. 5	603	{164 / 165}	34	113
Target	O. F. Seibold	334,298	Jan. 12	1144	306	34	221
Target	E. C. Taylor	335,655	Feb. 9	795	212	34	500
Target. Flying	F. J. Curran	338,633	Mar. 23	2371	624	34	1374
Target. Flying	F. C. Damm	334,848	Jan. 26	1894	505	34	373
Target trape. Arm for flying	F. C. Damm	334,849	Jan. 26	1895	505	34	373
Targets. Making	F. Kimble	334,782	Jan. 26	1815	.....	34	359
Tea-kettle spout	J. W. Yates	336,977	Mar. 2	125	34	34	948
Teaching sewing. Means for	E. S. Paillot and L. Charbonnier	337,609	Mar. 9	999	254	34	1111
Tedder	J. M. Holler	336,319	Feb. 16	1781	466	34	709
Telegraph and telephone protector	C. C. Drake	336,040	Feb. 9	1341	355	34	687
Telegraph call-box	J. H. La Ban	334,785	Jan. 26	1817	484	34	359
Telegraph. Duplex	B. E. J. Ells	337,314	Mar. 2	545	154	34	1034
Telegraph-key. Convertible	J. A. Maloney and A. G. Johnson	336,653	Feb. 23	2248	586	34	850
Telegraph-keys. Automatic circuit-closer for	A. C. McNeal	335,605	Feb. 9	798	194	34	578
Telegraph. Multiple harmonic printing	G. A. Cardwell	335,681	Feb. 9	828	221	34	596
Telegraph-pole. Metallic pole for use as a	S. H. Terry	338,115	Mar. 16	1672	434	34	1240
Telegraph. Printing	R. N. Dyer	335,275	Feb. 2	266	70	34	488
Telegraph. Printing	S. D. Field	338,343	Mar. 23	1977	521	34	1305
Telegraph. Printing	S. D. Field	338,344	Mar. 23	1978	521	34	1306
Telegraph. Printing	A. C. Robbins	335,488	Feb. 2	546	{143 / 144}	34	586

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Telegraph. Printing	R. J. Sheehy	334,294	Jan. 12	1145	{306 / 307}	34	221
Telegraph. Railway-car	L. J. Phelps	334,186	Jan. 12	970	{262 / 263}	34	187
Telegraph. Railway-car	L. J. Phelps	334,187	Jan. 12	975	263	34	188
Telegraph. Railway-car	L. J. Phelps	334,188	Jan. 12	977	263	34	188
Telegraph. Railway-car	L. J. Phelps	334,189	Jan. 12	979	264	34	189
Telegraph-register	L. Winterhalder	338,328	Mar. 23	1954	514	34	1302
Telegraph-register	F. B. Wood	338,329	Mar. 23	1956	{514 / 515}	34	1302
Telegraph signal-box. District	F. A. Holcomb	335,701	Feb. 9	864	228	34	601
Telegraph-sounder	A. S. Keating	334,871	Jan. 26	1923	{512 / 513}	34	378
Telegraph-transmitter	G. W. Baldrige	338,691	Mar. 30	2463	650	34	1396
Telegraph-transmitter	G. H. Lasar	338,757	Mar. 30	2566	678	34	1414
Telegraphs. Branch circuit for quadruplex	W. Maver, Jr.	338,996	Mar. 30	2905	770	34	1475
Telegraphs. Transmitter for harmonic printing	G. A. Cardwell and F. K. Fitch	335,682	Feb. 9	833	221	34	596
Telegraphic code	A. G. Hoyt	335,929	Feb. 9	1194	317	34	661
Telegraphic instrument. Learners	E. Bonsall	336,284	Feb. 16	1736	454	34	760
Telegraphic relay. Polarized	J. C. Ludwig	337,272	Mar. 2	522	136	34	1023
Telegraphic repeater	J. Kölzer	337,590	Mar. 9	969	{248 / 249}	34	1107
Telegraphy. Fire	S. J. Sanford	337,439	Mar. 9	779	199	34	1074
Telegraphy. Fire-alarm	T. F. Gaynor	335,026	Jan. 26	2129	567	34	415
Telephone	S. Bergmann	337,231	Mar. 2	466	121	34	1012
Telephone	J. W. Bonta	333,816	Jan. 5	435	118	34	81
Telephone	T. A. Edison and S. Bergmann	337,254	Mar. 2	499	130	34	1018
Telephone	C. A. Randall	336,744	Feb. 23	2364	{616 / 619}	34	882
Telephone. Acoustic	C. D. Bentley	334,069	Jan. 12	796	219	34	156
Telephone-call	J. C. Wilson	336,973	Mar. 2	117	32	34	947
Telephone call-bell system	F. E. Fisher	336,002	Feb. 9	1288	349	34	678
Telephone-call. Individual	J. H. Kinsman	334,390	Jan. 12	1265	343	34	249
Telephone-circuit	T. B. Doolittle	335,436	Feb. 2	487	127	34	509
Telephone diaphragm. Mechanical	W. Taylor	335,321	Feb. 2	327	86	34	500
Telephone-exchange system. Automatic	T. D. Lockwood	335,708	Feb. 9	871	230	34	603
Telephone-exchanges. Signal system for	W. S. Johnson and C. L. Fortier	335,934	Feb. 9	1900	319	34	662
Telephone-lines. Transmitter for electric	C. A. Bell	336,081	Feb. 16	1412	375	34	707
Telephone. Mechanical	A. W. Hall	336,640	Feb. 23	2283	{580 / 581}	34	854
Telephone. Mechanical	H. Lamont	338,963	Mar. 30	2681	{762 / 763}	34	1471
Telephone. Mechanical	R. O. Middleton	336,731	Feb. 23	2350	615	34	879
Telephone. Mechanical	A. W. Steiger	338,030	Mar. 23	2354	619	34	1271
Telephone mouth-piece	J. Miller	337,973	Mar. 16	1474	383	34	1204
Telephone. Pneumatic acoustic	J. A. Maloney	338,994	Mar. 30	2902	769	34	1474
Telephone. Pneumatic acoustic	J. A. Maloney	338,995	Mar. 30	2904	769	34	1475
Telephone-receiver	S. Bergmann	337,232	Mar. 2	467	122	34	1012
Telephone-receiver	J. E. Dann and J. Lapp	338,491	Mar. 23	2185	571	34	1343
Telephone-receiver	N. Dowling	333,932	Jan. 5	597	163	34	112
Telephone-receivers. Diaphragm for	N. Dowling	337,753	Mar. 9	1166	303	34	1141
Telephone-switch	W. C. Turnbull	338,869	Mar. 30	2757	725	34	1448
Telephone system	C. A. Jackson	335,588	Feb. 9	702	{186 / 187}	34	573
Telephone systems. Galvanic battery and switch for	C. A. A. T. de St. Aubin	338,938	Mar. 30	2816	743	34	1460
Telephone-transmitter	H. Alabaster and T. E. Gatehouse	335,791	Feb. 9	1000	265	34	626
Telephone-transmitter	C. A. Bell	336,063	Feb. 16	1419	{395 / 396}	34	707
Telephone-transmitter	W. Burnley	335,501	Feb. 2	572	{149 / 150}	34	543
Telephone-transmitter	W. Burnley	335,502	Feb. 2	574	150	34	543
Telephone-transmitter	J. E. Dann and J. Lapp	338,492	Mar. 23	2186	572	34	1343
Telephone-transmitter	J. E. Dann and J. Lapp	338,660	Mar. 23	2406	633	34	1380
Telephone-transmitter	N. Dowling	335,510	Feb. 2	582	{152 / 153}	34	545
Telephone-transmitter	N. Dowling	335,511	Feb. 2	585	153	34	545
Telephone-transmitter	W. P. Freeman	335,806	Feb. 9	1020	270	34	631
Telephone-transmitter	A. K. Keller and E. H. Lyon	335,364	Feb. 2	290	101	34	511
Telephone-transmitter	S. Tainter	336,173	Feb. 16	1556	410	34	730
Telephone-transmitter	H. S. Thornberry	336,268	Feb. 16	1709	446	34	755
Telephone-transmitter	W. C. Turnbull	336,876	Feb. 23	2545	670	34	916
Telephone-transmitter	W. C. Turnbull	336,877	Feb. 23	2546	670	34	916
Telephone-transmitter	W. C. Turnbull	339,121	Mar. 30	3086	{816 / 817}	34	1505
Telephone-transmitters. Mouth-piece for	G. L. Lavery	336,329	Feb. 16	1793	469	34	772
Telephonic transmitter	J. F. McLaughlin	325,294	Feb. 2	294	78	34	492
Telephonic transmitting apparatus	J. T. Guthrie	338,263	Mar. 23	1864	490	34	1286
Telephony	J. Houlehan	335,528	Feb. 2	604	157	34	548
Temperature of a substance passing through a line of piping. Method of and apparatus for regulating the	J. A. Snee	338,447	Mar. 23	2196	556	34	1321
Temperature. Process of reducing	E. E. Hendrick	336,234	Feb. 16	1662	433	34	748
Tempering. Apparatus for	S. E. Mower	337,981	Mar. 16	1489	{386 / 387}	34	1206
Tempering-machine	J. F. Webster	335,551	Feb. 2	644	{168 / 169}	34	555
Tempering metal bands or strips. Method of	S. E. Mower and T. Fowler	337,978	Mar. 16	1486	385	34	1206
Tempering metal. Method of	S. E. Mower	337,979	Mar. 16	1487	385	34	1206
Tempering. Process of	S. E. Mower	337,980	Mar. 16	1488	386	34	1206
Tennis-racket	F. W. Taylor	335,656	Feb. 9	796	212	34	590
Tension-wheel	J. R. Clair	338,484	Mar. 23	2177	569	34	1341
Tension-wheel	S. T. Williams	339,092	Mar. 30	3021	800	34	1495
Terret. Harness	G. F. Eberhard	335,116	Feb. 2	23	7	34	445

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Testicle supporter. Stallion	S. Taylor	338,371	Mar. 23	9022	531	34	1313
Tether	H. G. Coleman	336,295	Feb. 16	1755	459	34	768
Textile fabrics. Machine for producing ornamental surfaces on	A. Schmidt	334,477	Jan. 19	1399	377	34	973
Textile materials with liquids, gases, or vapors. Apparatus for treating	W. Mather	333,876	Jan. 5	517	141	34	96
Thermometer	J. D. Ward	336,181	Feb. 16	1571	413	34	733
Thermometer. Metallic	W. B. Fowle	333,738	Jan. 5	338	92	34	62
Thermostat. Electrical	M. Loomis	338,090	Mar. 16	1628	424	34	1332
Thermostat for incubators	J. C. Losee	336,125	Feb. 16	1473	{388 389	34	718
Thill-breeching attachment	C. L. Tinsley and W. P. Rose	335,401	Feb. 2	439	113	34	519
Thill-coupling	I. W. Archibald	334,838	Jan. 26	1863	501	34	870
Thill-coupling	G. W. Blair	335,676	Feb. 9	823	219	34	595
Thill-coupling	P. G. Dausch	338,493	Mar. 23	2167	572	34	1342
Thill-coupling	A. French	337,761	Mar. 9	1174	306	34	1143
Thill-coupling	G. W. Greener	333,518	Jan. 5	33	9	34	6
Thill-coupling	L. D. Haskell, Jr	338,067	Mar. 16	1598	416	34	1326
Thill-coupling	H. J. Iles	338,970	Mar. 30	2857	754	34	1468
Thill-coupling	G. W. La Baw	335,289	Feb. 9	287	76	34	491
Thill-coupling	G. Morse	335,767	Feb. 9	963	255	34	619
Thill-coupling	H. D. Overton	333,969	Jan. 5	644	177	34	121
Thill-coupling	A. L. Romans and J. M. Peregrine	335,644	Feb. 9	1068	289	34	640
Thill-coupling	A. Sampson, W. H. Wright, and F. L. Kinsman	334,476	Jan. 19	1398	377	34	973
Thill-coupling	S. G. Smith	337,710	Mar. 9	1115	298	34	1132
Thill-coupling	W. A. Stadelman	333,973	Jan. 5	652	178	34	123
Thill-coupling	J. G. Stair	336,825	Feb. 23	2472	649	34	902
Thill-coupling	W. P. Teed	335,398	Feb. 2	436	112	34	519
Thill-coupling	G. Tyler	334,910	Jan. 26	1974	525	34	867
Thill-coupling	M. H. Underwood	337,895	Mar. 16	1350	358	34	1163
Thill-coupling	M. Wagner	337,468	Mar. 9	815	206	34	1079
Thill-coupling	R. W. Walker and J. L. Beardsley	334,494	Jan. 19	1402	383	34	977
Thill-coupling	R. H. Wilson	338,008	Mar. 16	1557	396	34	1313
Thill-coupling	G. W. Blair	334,649	Jan. 26	1867	502	34	871
Thill-couplings. Anti-rattler for	J. C. Null	336,150	Feb. 16	1598	402	34	725
Thill-couplings. Anti-rattler for	D. G. Zeigler and R. Copes	338,192	Mar. 16	1687	439	34	1344
Thill. Vehicle	G. E. Luckey	336,019	Feb. 9	1302	346	34	660
Thrasher. Pea	N. S. Wilson	334,833	Jan. 26	1876	{499 500	34	369
Thrasher. Traveling	M. E. Perring	336,153	Feb. 16	1529	403	34	725
Thrashing and other machines. Feeder for	J. Ellis	336,399	Feb. 16	1689	{494 495	34	790
Thrashing-machine	J. Ellis	336,400	Feb. 16	1893	{495 496	34	790
Thrashing-machine	T. E. Gilkeson	334,857	Jan. 26	1910	509	34	375
Thrashing-machine	H. A. Wetsell	336,306	Feb. 16	1846	484	34	782
Thrashing-machine	W. H. Spence	334,725	Jan. 19	1740	464	34	336
Thrashing-machine band-cutter and feeder	A. W. Lockhart	334,024	Jan. 12	730	199	34	144
Thrashing-machine feed-regulator	C. W. Benham	335,968	Feb. 9	1268	336	34	674
Thrashing-machine feeder	J. Hawk	335,753	Feb. 9	940	248	34	616
Thrashing machine. Grain	G. A. Roberts	335,387	Feb. 2	422	108	34	517
Thrashing-machine tooth	J. Ritzman	336,784	Mar. 30	2605	686	34	1421
Thrashing-machines and separators. Brace for	S. M. Grammlich	336,637	Mar. 23	2375	625	34	1375
Thrashing-machines. Band-cutter and feeder for	J. E. Kimble	337,502	Mar. 9	861	218	34	1087
Thrashing-machines. Grain-cleaner for	C. F. Prentiss, L. G. Stone, and H. Fisher	336,865	Feb. 23	2267	591	34	863
Thrashing-machines. Sacking attachment for	C. B. Trescott	334,309	Jan. 12	1164	312	34	294
Thread. Machine for polishing silk and other	F. Durançon	334,113	Jan. 12	862	237	34	167
Threads of hanks or skeins. Mechanism for opening and separating	E. L. Giles	333,745	Jan. 5	347	94	34	65
Three-way switch	W. M. Stevenson	335,095	Jan. 26	2233	592	34	433
Ticket-case	J. S. Goldsmith	337,762	Mar. 9	1175	306	34	1143
Ticket for messenger service. Check	W. L. Peet	336,256	Feb. 16	1498	448	34	753
Ticket-holder	M. Rice	336,493	Feb. 16	2014	528	34	812
Ticket holder. Commutation	C. Banm	334,157	Jan. 12	984	257	34	180
Ticket. Store-service							
Tie: *See* Bale-tie. Railway-tie. Umbrella-tie.							
Tie and rail holder and spike-puller. Combined	W. Palmer	333,539	Jan. 5	58	16	34	13
Tile and brick machine	D. B. Raymond	336,434	Feb. 16	1937	508	34	799
Tile decoration	J. G. Low	336,242	Feb. 16	1677	436	34	750
Tile decoration	J. G. Low	336,243	Feb. 16	1677	437	34	750
Tile decoration	L. F. and B. C. Wickers	335,665	Feb. 9	807	215	34	592
Tile-kiln	W. C. Sharpless	337,029	Mar. 9	1015	261	34	1116
Tile-lined structure	J. M. Powell	335,596	Feb. 2	690	162	34	551
Tile-machine table	J. G. Low	336,240	Feb. 16	1674	{435 436	34	750
Tile-making machine	J. G. Low	336,244	Feb. 16	1678	437	34	750
Tile with holes to serve as frames or supports	J. G. Low	336,241	Feb. 16	1676	436	34	750
Tiles. Making	J. Bayer and E. Puchta	338,465	Mar. 23	2149	562	34	1336
Tiles. Manufacture of	C. B. Hopkins	335,456	Feb. 2	511	{123 124	34	533
Till-lock	J. Rogky	337,994	Mar. 16	1511	{391 392	34	1210
Till. Money	S. S. Davis	333,504	Jan. 5	10	4	34	5
Tilting gate	W. F. Gardner	334,167	Jan. 12	1945	256	34	182
Time-ball and apparatus	W. F. Gardner	336,186	Feb. 2	141	34, 37	34	466
Time controlling and correcting system	A. O. Bebel	335,174	Feb. 9	124	31, 32	34	462
Time-lock	C. H. Shaffer	333,689	Jan. 5	345	87, 88	34	48
Time-lock	A. O. Gott	334,595	Jan. 19	1463	398	34	995
Time-piece dial	M. Wheeler	336,460	Feb. 16	1975	518	34	805
Time-pieces. Auxiliary governing-spring for	A. C. Frieseke	339,092	Mar. 30	3044	805	34	1498
Time-recorder. Electric	C. W. Whited	336,392	Mar. 23	1949	513	34	1201
Time register and alarm. Electric							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Tire for vehicle-wheels. Ice	T. B. Williams	334,329	Jan. 12	1188	318	34	227
Tire-heating furnace	M. Hoyt	334,959	Jan. 26	2025	540	34	896
Tire-tightener	J. H. Fleck	335,585	Feb. 9	690	182	34	551
Tire-upsetter	W. M. Helms	337,385	Mar. 2	511	134	34	1081
Tire-upsetting machine	J. R. Little	334,255	Jan. 12	1096	{322 324	34	211
Tires into bars or billets. Apparatus for converting steel	C. B. Beach	335,879	Feb. 9	1121	{326 327 325	34	649
Tires. Utilizing old wheel	C. B. Beach	335,878	Feb. 9	1118	{326 327 325	34	648
Toaster	W. Miles	338,007	Mar. 16	1649	423	34	1326
Tobacco box and cutter. Combined	D. M. De Silva	335,435	Feb. 2	485	126	34	529
Tobacco-casing machine	A. U. Drayer and V. C. Hatfield	333,953	Jan. 5	508	133	34	112
Tobacco, cigars, &c. Cabinet for	C. N. Swift	335,607	Jan. 26	2235	568	34	434
Tobacco-cutting machine	C. A. Sturtevant	334,889	Jan. 26	1861	466	34	867
Tobacco-drier	A. F. Forbis	337,677	Mar. 9	1071	276	34	1125
Tobacco-drier	G. M. Galbraith	333,511	Jan. 5	33	7	34	7
Tobacco-drier	R. Wilson	333,965	Jan. 5	649	168	34	125
Tobacco. Machine for treating leaf	R. E. Ellis	339,089	Mar. 30	3040	803	34	1497
Tobacco machine. Plug	T. Puetz, Jr	336,586	Feb. 16	2059	541	34	839
Tobacco machine. Plug	T. Puetz, Jr	336,587	Feb. 16	2061	{541 542	34	840
Tobacco-package	R. A. Evans and A. Turner	336,801	Feb. 23	2438	641	34	895
Tobacco-pipe	W. L. Palmer	334,462	Jan. 19	1380	372	34	970
Tobacco-pipe stem	W. B. Kennedy	335,705	Feb. 9	860	223	34	602
Tobacco-pipe support	J. H. Morris	335,612	Feb. 9	738	194	34	569
Tobacco-plant setter	J. B. Mitchum	334,020	Jan. 12	757	201	34	145
Tobacco-press. Portable	H. W. Kimball	337,410	Mar. 9	776	195	34	1084
Tobacco-stems. Machine for fattening	F. Louhoff	333,897	Jan. 5	507	{120 120	34	94
Tobacco-transplanter	M. Smith	335,794	Feb. 9	880	227	34	606
Tobacco. Treating	G. Storm	337,456	Mar. 9	802	204	34	1077
Tobacco. Treating	G. Storm	337,457	Mar. 9	805	204	34	1077
Toboggan	C. E. Babcock	334,925	Jan. 26	1902	531	34	891
Toboggan	J. E. McLaren, Jr	336,888	Feb. 23	2550	675	34	918
Toe-calks. Roll for forming	J. W. Foulks	335,910	Feb. 9	1172	311	34	667
Toe-weight	G. E. Twambley	338,680	Mar. 23	2436	643	34	1385
Tongs. Fire	J. E. Bishop	337,738	Mar. 9	1142	296	34	1137
Tongs. Pipe	J. J. Palmer	334,276	Jan. 12	1135	301	34	217
Tongue-support	M. M. Russell	334,289	Jan. 19	1139	295	34	220
Tongue-support	A. D. Tyler	336,695	Feb. 23	2189	567	34	845
Tongue-support for vehicles	J. H. Cassidy and B. H. Oldfield	336,289	Feb. 16	1864	488	34	785
Tongue-support for vehicles	L. Schlegel	335,213	Feb. 2	319	83	34	488
Tool. Combination	O. D. Harmon	334,888	Jan. 26	1916	510	34	878
Tool. Compound	J. Conley	333,890	Jan. 5	490	125	34	95
Tool-handle	J. Chancrell	337,942	Mar. 9	486	128	34	1014
Tool-handle	A. Gilliam	336,264	Mar. 23	1886	490	34	1326
Tool-handle	G. H. Wahler	337,464	Mar. 9	816	206	34	1079
Tool-holder	E. F. Noyes	334,043	Jan. 12	757	208	34	149
Tool-holder	J. Walker	336,382	Feb. 16	1641	482	34	781
Tool-holder	E. Waters	336,388	Mar. 23	1948	512	34	1300
Tool-holder	F. W. Weiss	338,656	Mar. 23	2397	631	34	1378
Tooth. Artificial	C. P. Grout	336,290	Feb. 16	1651	431	34	747
Tooth. Artificial	H. C. Register	333,788	Jan. 5	392	107	34	74
Tooth-crowns. Applying artificial	C. P. Grout	336,291	Feb. 16	1653	431	34	747
Top. Musical	R. Richardson	335,843	Feb. 9	1067	282	34	639
Top rolls. Saddle for	N. H. Cheney and J. F. Boylen	333,900	Jan. 5	127	37	34	28
Torpedo-boat	C. S. Lee	333,702	Jan. 5	366	99	34	69
Torpedo railway-signal	T. G. Palmer	334,133	Jan. 12	868	243	34	173
Torpedoes to railway-rails. Instrument for attaching	A. B. Shaw	338,907	Mar. 23	1923	548	34	1326
Towel-holder	C. H. Delaney, Jr	336,704	Feb. 23	2316	606	34	873
Towel-rack	W. L. McKelvey	337,694	Mar. 9	984	252	34	1110
Tower	J. S. Adams	335,102	Feb. 2	3	1	34	441
Towing and securing hawsers or lines of vessels. Apparatus for	H. Winter	336,889	Feb. 23	2477	651	34	903
Towing vessels	H. Winter	336,890	Feb. 23	2479	652	34	903
Toy	C. A. Hotchkiss	339,101	Mar. 30	3063	810	34	1501
Toy	C. B. Moreton	334,665	Jan. 26	1940	516	34	881
Toy	C. F. Ritchel	335,538	Feb. 2	622	163	34	551
Toy and cigar-cutter. Combined	J. Prentice	333,669	Jan. 5	294	61	34	44
Toy bird	D. F. Shaw	334,812	Jan. 26	1858	493	34	865
Toy. Humming	S. F. Robinson	337,871	Mar. 16	1296	344	34	1177
Toy money-box	J. H. Bowen	337,195	Mar. 2	385	85	34	966
Toy. Musical	G. J. Holbrook	337,407	Mar. 9	852	216	34	1066
Toy pistol	G. A. Badger and W. F. Lakin	335,104	Feb. 2	5	2	34	441
Toy pistol	L. J. Ingersoll	333,685	Jan. 5	180	49	34	96
Toy theater	J. W. Sherman	334,022	Jan. 19	1000	426	34	310
Trace-carrier	W. R. Johns	337,957	Mar. 16	1453	376	34	1200
Trace-carrier	S. and W. E. Swengel	338,679	Mar. 23	2428	642	34	1386
Track-cleaner	F. B. Smith	336,445	Feb. 16	1954	512	34	801
Track-drill frame	A. A. Strom	337,455	Mar. 9	802	204	34	1077
Track-laying machine	A. L. McFarland	333,770	Jan. 5	375	102	34	70
Track-raiser	G. W. Robberts	336,161	Feb. 16	1538	{405 406	34	727
Traction and other engines	F. F. Landis	337,849	Mar. 16	1288	334	34	1170
Traction-engine	B. J. Arnold	335,497	Feb. 2	567	148	34	542
Traction-engine	B. S. Benson	334,333	Jan. 12	1196	{321 322 328	34	220
Traction-engine	F. F. Landis	337,841	Mar. 16	1290	334	34	1171
Traction-engine	S. E. Jarvis	336,412	Feb. 16	1908	500	34	794
Traction-engine	J. Moulman	333,656	Jan. 5	210	57	34	41
Traction-engine	E. Penney	334,978	Jan. 26	2068	550	34	898
Traction-engine	C. H. Sawyer	336,440	Feb. 16	1945	510	34	800

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Traction-engine	L. C. Taber	334,623	Jan. 19	1601	426, 427	34	310
Traction-wheel	J. Elder	335,904	Feb. 9	1164	310	34	656
Traction-wheel	O. W. Kelly and L. F. Dieter	336,649	Feb. 23	2338	563	34	856
Traction-wheel	O. W. Kelly and L. F. Dieter	336,650	Feb. 23	2339	564	34	857
Traction-wheel	H. C. Reagan	339,019	Mar. 30	2935	777	34	1499
Train-signal	C. F. Newton	338,774	Jan. 5	260	104	34	72
Train-signaling apparatus	J. P. A., J. F., and G. O. Hanlon	337,260	Mar. 2	504	121	34	1019
Tramway for curves and cable-grips	A. S. Hallidie. (Reissue)	10,681	Feb. 2	648	170	34	557
Transom-lifter	J. M. Overell	335,086	Jan. 26	2230	589	34	420
Transom-lifter	J. F. Wollensak	336,975	Mar. 2	122	33	34	948
Transom-pivot	F. C. Robinson	335,310	Feb. 2	316	88	34	496
Trap: *See* Animal-trap. Fly-trap. Mouse-trap. Sewer-trap. Sewer-gas and stench trap. Steam-trap. Stench-trap.							
Trap for baths, basins, &c	E. S. McClellan	334,129	Jan. 12	881	241	34	171
Traveling-bag	B. J. Riley	336,529	Feb. 16	2064	542	34	681
Traveling-bag clip	W. Roemer	334,195	Jan. 12	1002	266	34	194
Tree-box	A. R. Reese	334,607	Jan. 26	1848	498	34	364
Tree-feller and pile-cutter	W. G. Rendall	337,018	Mar. 2	187	50	34	959
Tree-protector	D. L. Byler	334,743	Jan. 26	1766	470	34	348
Tree-protector	F. E. Kohler	336,158	Mar. 16	1725	459	34	1251
Trellis for garden-crops	W. A. White	334,918	Jan. 26	1964	520	34	399
Trellis-hook	J. Judd	334,706	Jan. 19	1715	457	34	331
Tricycle	H. Baines	334,839	Jan. 26	1884	502	34	371
Tricycle	J. B. Funk	336,226	Feb. 16	1644	429, 430	34	745
Tricycle	F. White	336,968	Mar. 2	110	30, 31	34	946
Tricycle-clutch	J. M. Marlin	333,581	Jan. 5	47	13, 14	34	11
Tricycle loop-frame	C. F. Hadley	335,811	Feb. 9	1025	271	34	631
Tricycles. Clutch for	D. H. Rice	336,586	Feb. 23	2148	568	34	842
Trimming the edges of hollow articles. Machine for	E. S. Higgins	338,969	Mar. 30	2953	753, 754	34	1467
Tripod-standard	J. D. Richardson	335,774	Feb. 9	976	256	34	622
Triturator	A. Babendreier	336,618	Feb. 23	2193	572, 573	34	849
Trough: *See* Feed-trough.							
Trousers-stretcher	F. McIlvenna and J. G. Rollason	337,071	Mar. 2	248	66	34	972
Truck and turn-table. Transfer	E. Samuel	335,488	Feb. 2	551	144, 145	34	539
Truck. Barrel	J. M. Bennett	336,690	Feb. 23	2189	574	34	850
Truck. Barrel	F. W. Roberts	337,870	Mar. 16	1395	344	34	1177
Truck. Hand	B. F. Bergh	334,505	Jan. 19	1438	396	34	280
Truck. Hand	J. Graves and J. R. Dreyfus	335,810	Feb. 9	1094	271	34	631
Truck. Car	F. A. Bartholomew	336,962	Mar. 2	133	36	34	950
Truck. Car	A. W. Getchell	333,628	Jan. 5	164	44	34	33
Truck. Car	W. H. H. Sisum	338,366	Mar. 23	2015	530	34	1311
Truck. Traveling suspension	H. J. McArdle	337,179	Mar. 2	402	104	34	1009
Trunk	S. Hermann	337,398	Mar. 2	602	158	34	1087
Trunk-brace. Inside	J. M. March	337,413	Mar. 9	728	187	34	1065
Trunk-lock	F. W. Mix	337,197	Mar. 2	410	107	34	1001
Trunk-strap	F. M. Masse	336,589	Feb. 23	2134	559	34	839
Truss	G. Miller	334,966	Jan. 26	2048	540	34	400
Truss. Abdominal	C. Zimmer	337,290	Mar. 2	551	145	34	1038
Truss-pad. Electric	A. T. Sherwood	335,639	Feb. 9	776	205	34	596
Tub: *See* Bath-tub. Foot-tub.							
Tube: *See* Boiler water-tube. Paper tube. Pneumatic tube. Speaking-tube.							
Tube-cutter	D. L. Baughman	334,998	Jan. 26	1905	531	34	391
Tube-punching machine	C. P. Higgins	337,870	Mar. 2	604	158	34	1088
Tube-expander	W. I. B. McHale	338,423	Mar. 23	2091	548	34	1325
Tube-expander	W. I. B. McHale	338,424	Mar. 23	2092	548	34	1326
Tube-expander	W. I. B. McHale	338,425	Mar. 23	2093	548	34	1326
Tubes. Expanding joint for	J. Hemphill	337,580	Mar. 9	957	245, 246	34	1105
Tubes. Forming serpentine	N. W. Pratt	337,282	Mar. 2	540	141, 142	34	1026
Tubes. Machine for forming and punching polygonal	C. P. Higgins	336,859	Feb. 23	2506	660	34	908
Tubes. Machine for forming and punching polygonal	C. P. Higgins	336,863	Feb. 23	2507	661	34	909
Tubes. Machine for forming serpentine	C. P. Higgins	336,854	Feb. 23	2508	661	34	909
Tubes. Machine for sizing, straightening, and finishing	J. K. Davis	336,899	Mar. 2	95	7	34	931
Tug	D. Hawn	337,963	Mar. 2	509	133	34	1080
Tug attachment. Hame	W. S. Sherman	335,466	Feb. 2	553	145	34	540
Tug fastener. Spring	L. H. Nusbaum	337,347	Mar. 2	621	162	34	1041
Tug for harness. Shaft	W. H. Noyes	337,992	Mar. 16	1491	387	34	1206
Tug. Hame	J. T. Condon	337,248	Mar. 2	492	128	34	1016
Turn-buckles. Blank for	C. H. Williams	338,813	Mar. 30	2942	696	34	1428
Turn-table	G. T. Parry	338,357	Mar. 23	1996	526	34	1308
Tuyere	W. G. Miller	338,543	Mar. 23	2247	590	34	1353
Tuyere	J. Stoll	337,866	Mar. 16	1347	349	34	1181
Twine and wire cutter	W. L. Haas	334,592	Jan. 19	1542	413	34	299
Twist-drills. Machine for clearing	G. R. Stetson	333,689	Jan. 5	255	69, 70	34	49
Type	J. R. Cummings	337,744	Mar. 9	1154	300	34	1140
Type and space holder. Compositor's	L. K. Johnson and A. A. Low	336,719	Feb. 23	2330	610, 611, 612	34	875
Type-case. Compositor's	L. K. Johnson	336,646	Feb. 23	2334	598	34	856
Type-case. Compositor's	L. K. Johnson	336,647	Feb. 23	2336	598	34	856

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Type-case for stereotype-matrix-making machines	F. Schreiner	336,753	Feb. 23	2376	622	34	864
Type case. Wood	J. O. Stewart	335,850	Feb. 9	1077	284	34	641
Type-distributing apparatus	L. K. Johnson and A. A. Low	336,645	Feb. 23	2281	562	34	855
Type-distributing apparatus	L. K. Johnson and A. A. Low	337,406	Mar. 9	707	184, 185	34	1063
Type-distributing apparatus	L. K. Johnson and A. A. Low	337,407	Mar. 9	712	186	34	1063
Type fixer. Gem	A. E. Shearer	333,664	Jan. 5	251	.....	34	48
Type-galley	W. F. Bellrood	336,377	Feb. 16	1859	487	34	784
Type-writer for stenographic purposes	J. C. Zachos	334,630	Jan. 19	1609	429	34	311
Type-writers. Copy-holder for	W. H. Clarkson	336,551	Feb. 23	2096	551, 552	34	883
Type-writers. Machine for easing the levers of	V. H. Ernst	335,118	Feb. 9	96	6	34	445
Type-writing machine	M. M. Bartholomew	335,796	Feb. 9	918	242	34	612
Type-writing machine	E. W. Brackelsberg	335,867	Feb. 9	1140	302, 304	34	858
Type-writing machine	J. F. Dawson	334,688	Jan. 19	1607	453	34	337
Type-writing machine	W. H. Slocum	335,972	Feb. 9	1247	331, 332	34	670
Type-writing machine	C. Spiro	335,892	Feb. 2	497	110, 111	34	618
Type-writing machine	C. Spiro	339,078	Mar. 30	3032	799	34	1494
Type-writing machine	H. G. Wood	334,980	Jan. 26	1966	520	34	390
Type-writing machine	T. D. Worrall	334,508	Jan. 19	1435	386	34	279
Type-writing machine	T. D. Worrall	335,669	Feb. 9	812	216, 217	34	586
Type-writing machine	T. D. Worrall	335,670	Feb. 9	815	217, 218	34	586
Type-writing machine	T. D. Worrall	336,278	Feb. 16	1780	449, 450	34	758
Type-writing machine	G. W. N. Yost	336,614	Feb. 23	2198	571	34	849
Type-writing machine feed-guide	A. C. Thomas	335,493	Feb. 2	558	146	34	540
Type-writing machines. Locking device for key-boards of	G. H. Lasar	336,725	Feb. 23	2343	614	34	878
Type-writing machines. Type-plate for	T. Hall	338,621	Feb. 16	2008	525	34	810
Umbrella	C. H. Butlin	336,084	Feb. 9	1331	352	34	695
Umbrella	P. Meyer, Jr	337,276	Mar. 2	530	139	34	1034
Umbrella	U. G. Steinmetz	336,582	Feb. 16	2067	543	34	831
Umbrella-casing	R. E. Ghezzi	337,145	Mar. 2	351	91	34	980
Umbrella-handle	A. T. Schlichting	335,814	Feb. 2	320	84	34	499
Umbrella or parasol	G. W. Jones	334,568	Jan. 19	1549	414	34	300
Umbrella or parasol	J. T. Smith	338,546	Mar. 23	2278	567	34	1356
Umbrella-retainer	J. B. Durand	336,846	Feb. 23	2300	630	34	907
Umbrella-tie	E. L. Glenn	338,323	Mar. 16	1812	473	34	1266
Underground conduit	T. A. B. Putnam	335,091	Jan. 26	2227	591	34	423
Undershirt. Lady's	W. H. Bilbrough	338,094	Mar. 16	1559	401	34	1217
Underwaist or strengthening-corset for children	E. Nagle	337,289	Mar. 2	538	141	34	1036
Urinal	T. W. Mann	335,601	Feb. 9	792	198, 199	34	577
Vacuum-pan	A. B. Frensel	338,668	Mar. 23	2409	634	34	1360
Vacuum-pans. Construction and operation of	W. H. Collings	335,480	Feb. 2	478	124	34	507
Vacuums. Apparatus for the production of high	A. L. and C. F. Reizmann	338,551	Mar. 23	2265	566	34	1354
Valise	D. W. Brockway	337,367	Mar. 9	640	172	34	1093
Valve	J. J. De Kinder	335,112	Feb. 2	16	5	34	442
Valve	H. R. Frisbie	333,940	Jan. 5	607	165	34	114
Valve	H. R. Frisbie	333,941	Jan. 5	609	166	34	114
Valve	E. A. C. Glebeler	335,321	Feb. 2	196	52	34	475
Valve	P. Harvey	334,431	Jan. 19	1332	360	34	261
Valve	A. Horne	337,493	Mar. 9	852	214	34	1060
Valve	R. C. Page and F. H. Soden	338,771	Mar. 30	2590	669	34	1416
Valve	J. Walsh, Jr	334,214	Jan. 12	1170	313	34	225
Valve. Air-vent	M. J. Smith	338,196	Mar. 16	1777	464	34	1262
Valve and branch-pipe. Four-way	E. Vangezell and H. Stetser	337,718	Mar. 9	1126	290	34	1134
Valve. Automatic pressure-regulating	T. J. Kieley	338,418	Mar. 23	2066	546	34	1324
Valve. Automatic stop	J. L. Chapman	334,640	Jan. 19	1624	432, 433	34	314
Valve. Balanced	A. Craik	334,690	Jan. 19	1662	458	34	336
Valve. Balanced	E. B. Sintzenich	334,186	Jan. 12	992	244	34	174
Valve. Balanced	T. H. Ward	333,799	Jan. 5	415	112, 113, 500, 501	34	78
Valve. Balanced	D. A. Woodbury	334,685	Jan. 26	1880	501	34	370
Valve. Balanced rotary	J. S. Glenn	335,188	Feb. 2	144	37	34	467
Valve. Balanced slide	A. Thomson	337,714	Mar. 9	1120	289	34	1133
Valve. Balanced steam	W. W. Lewis	337,698	Mar. 9	1063	280	34	1127
Valve. Ball	D. D. Buick	338,477	Mar. 23	2169	565	34	1336
Valve. Distributing	V. H. Becker	337,962	Mar. 9	644	170	34	1059
Valve. Engine	J. Ferguson	335,571	Feb. 9	677	178, 179	34	568
Valve. Engine	G. Schuhmann	334,069	Jan. 12	825	226	34	161
Valve-gear for steam-pumps	A. Hill	338,158	Mar. 16	1718	448, 449	34	1250
Valve-gear	G. L. Hoxsie	335,199	Feb. 2	159	41	34	469
Valve-gear	W. Wilson	333,706	Jan. 5	387	78	34	54
Valve-gear. Engine	J. Grime	335,578	Feb. 9	689	182	34	570
Valve-gear for duplex engines	J. Fielding	334,576	Jan. 19	1536	411	34	296
Valve. Hydraulic	G. B. Lamb	336,794	Feb. 23	2341	613	34	877
Valve-motion	J. S. Ash	337,396	Mar. 2	556	147	34	1038
Valve. Relief	J. Briscoe	337,226	Mar. 2	478	123	34	1013
Valve. Safety	J. M. Coale	336,697	Mar. 30	2965	701, 702	34	1430
Valve. Safety	W. S. Payne	338,436	Mar. 23	2112	538	34	1328
Valve-seat	D. J. Nysewander	336,609	Mar. 23	2334	611	34	1268
Valve. Slide	C. H. Baker	336,960	Mar. 2	120	35	34	949
Valve. Slide	J. W. Payler	337,613	Mar. 9	985	253	34	1113

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Valve. Slide	C. Schmid	337,441	Mar. 9	788	200	34	1074
Valve. Steam	A. Vogel	337,337	Mar. 9	906	231	34	1095
Valve. Steam-actuated	L. B. Carricaburu	336,211	Feb. 16	1084	484	34	742
Valve. Steam-actuated	W. M. Cary	334,108	Jan. 12	853	235	34	185
Valve. Steam-actuated	H. C. Sergeant. (Reissue)	10,688	Feb. 2	649	170	34	557
Valve. Steam-actuated	J. T. Toole	335,865	Feb. 9	1686	388	34	648
Valve. Steam-engine	T. H. Ward	338,004	Mar. 16	1583	{384 395	34	1212
Valve. Steam-engine relief	J. H. Duffey	333,618	Jan. 5	156	42	34	81
Valve. Stop	D. Kennedy	338,275	Mar. 23	1884	495	34	1289
Valve. Stop	J. Walsh, Jr	334,315	Jan. 12	1171	314	34	295
Valve. Stop and check	J. E. Bott	335,696	Feb. 9	1130	302	34	651
Valve. Straight-way	J. T. Paget	334,194	Jan. 12	966	259	34	186
Valves. Link-motion for working	A. D. B. Douglas	334,544	Feb. 23	2466	656	34	907
Vapor-burner	G. E. Messer	334,261	Jan. 12	1168	295	34	212
Vapor-burner	W. Bliesner	334,737	Jan. 26	1750	469	34	547
Vapor-burner	O. Ewert	334,166	Jan. 12	944	255	34	188
Vapor-engine	J. H. Campbell	337,373	Mar. 9	661	172	34	1055
Vapor-engine	W. H. Wood	338,814	Mar. 30	2643	697	34	1498
Vapor engines. Operating explosive	L. H. Nash	334,041	Jan. 12	755	{297 308	34	149
Vaporising liquids. Apparatus for	H. Goldwater	335,261	Feb. 2	277	78	34	490
Vault-light	H. F. Struck	336,171	Feb. 16	1568	409	34	730
Vegetable-cutter	D. Bullock	335,500	Feb. 2	571	149	34	543
Vegetable-cutter	J. H. Franmann	336,909	Mar. 2	30	10	34	934
Vegetable-cutter	C. A. Seegmueller	338,366	Mar. 23	1923	506	34	1296
Vegetable-slicer	S. C. Norris	338,674	Mar. 23	2431	641	34	1384
Vehicle	W. D. Smith	334,906	Jan. 26	1960	504	34	387
Vehicle-body fender	C. D. Bailey	333,497	Jan. 5	2	2	34	2
Vehicle-brake	W. J. Devers	337,134	Mar. 2	339	86	34	968
Vehicle-coupling	H. C. Ohlsen	338,546	Mar. 23	2240	{800 801	34	1252
Vehicle-curtain	J. E. Bimm	337,190	Mar. 2	319	83	34	985
Vehicle-dash	J. M. Perkins	337,980	Mar. 16	1499	389	34	1208
Vehicle dash-frame	W. I. Atwood	337,294	Mar. 2	556	147	34	1089
Vehicle-fender	S. F. Sniffen	335,646	Feb. 9	787	209	34	598
Vehicle running-gear	A. J. Beach. (Reissue)	10,679	Jan. 19	1746	466	34	338
Vehicle running-gear	F. Hildreth	334,429	Jan. 19	1343	363	34	253
Vehicle running-gear	A. W. Tourgee and L. D. Jennings	336,534	Feb. 16	2069	544	34	822
Vehicle sand-band	W. M. Farr	336,556	Feb. 23	2104	553	34	834
Vehicle-seat	G. H. Sawyer	339,016	Mar. 30	2943	779	34	1468
Vehicle-seat lock	W. M. Farr	338,256	Mar. 23	1857	486	34	1285
Vehicle. Spring	W. L. Earle and C. G. Crofoot	338,040	Mar. 30	2618	743	34	1461
Vehicle. Spring	H. A. Moyer	334,092	Jan. 12	739	202	34	146
Vehicle-spring	G. Banister	336,543	Feb. 23	2068	547	34	831
Vehicle-spring	M. Barry	336,544	Feb. 23	2065	547	34	831
Vehicle-spring	C. A. Beblen	333,566	Jan. 5	194	54	34	26
Vehicle-spring	H. N. Black	333,514	Jan. 5	433	117	34	91
Vehicle-spring	E. J. Hess	338,079	Mar. 16	1604	418	34	1227
Vehicle-spring	T. J. Magner	335,942	Feb. 9	1210	322	34	664
Vehicle-spring	J. W. Patterson	335,953	Feb. 9	1222	325	34	667
Vehicle-spring	E. D. Roth	337,701	Mar. 9	1219	315	34	1149
Vehicle-spring	D. M. Sechler	339,018	Mar. 30	2947	780	34	1468
Vehicle-spring	E. S. Smith	338,564	Mar. 23	2276	597	34	1257
Vehicle-spring	S. G. Smith	335,645	Feb. 9	785	208	34	598
Vehicle-spring	C. H. Terry	337,208	Mar. 2	434	114	34	1006
Vehicle-spring	J. P. Wright	338,005	Mar. 30	2778	732	34	1458
Vehicle-stake	C. A. Gould	335,918	Feb. 9	1181	314	34	650
Vehicle-top-bow socket	J. M. Perkins	334,979	Jan. 26	2064	550	34	403
Vehicle-top slat-iron	J. M. Perkins	333,885	Jan. 5	599	143	34	99
Vehicle. Two-wheeled	W. E. Davies and W. C. Gayley	334,219	Jan. 12	1080	274	34	200
Vehicle. Two-wheeled	J. J. Deal	334,989	Jan. 26	2006	535	34	398
Vehicle. Two-wheeled	J. L. Dyer and J. A. Berry	336,513	Feb. 16	2040	{335 336	34	817
Vehicle. Two-wheeled	C. A. Ellison	338,560	Mar. 23	2308	605	34	1288
Vehicle. Two-wheeled	J. G. Gay	337,258	Mar. 2	502	131	34	1019
Vehicle. Two-wheeled	C. H. Gleason	335,260	Feb. 2	272	97	34	500
Vehicle. Two-wheeled	H. C. Sears	335,948	Feb. 2	239	60, 61	34	481
Vehicle. Two-wheeled	N. W. Sherman	334,091	Jan. 12	826	227	34	168
Vehicle. Two-wheeled	H. Shogren	334,991	Jan. 26	2077	555	34	405
Vehicle-wheel	G. Brock	336,307	Feb. 16	1660	423	34	741
Vehicle-wheel	F. L. Kirkbride	333,756	Jan. 5	363	99	34	68
Vehicle-wheel	H. C. Stahl and J. C. Rosebaugh	334,301	Jan. 19	1158	309	34	223
Vehicles. Apparatus for starting and propelling wheeled	L. Duhamel	335,069	Jan. 26	2184	580	34	494
Vehicles. Auxiliary seat for	S. M. B. Millard	336,785	Feb. 23	2421	637	34	883
Vehicles. Safety-rail and rein-grip for	F. W. Kroeber	335,988	Feb. 2	286	75	34	491
Velocipede	A. H. Alldridge	336,372	Feb. 16	1838	488	34	788
Velocipede	J. A. Griffiths	338,151	Mar. 16	1716	{447 448	34	1250
Velocipede	T. B. Jeffery	335,500	Feb. 9	709	188	34	574
Velocipede	E. G. Latta	337,371	Mar. 2	580	136	34	1022
Velocipede	S. W. Morgan	337,975	Mar. 16	1477	383	34	1204
Velocipede journal-bearing	A. H. Book	333,592	Jan. 5	130	35	34	26
Velocipede-pedal	J. Wood, Jr., and A. J. Philbrick	336,377	Feb. 16	1719	449	34	756
Velocipede-wheel	A. E. Wallace	334,889	Jan. 26	1873	496	34	366
Veneering with fabric	G. Muller	337,346	Mar. 2	681	.....	34	1041
Vent. Safety	G. Schmidt	336,442	Feb. 16	1950	511	34	801
Ventilating apparatus	J. L. Brown	337,368	Mar. 2	650	172	34	1053
Ventilating mines. Apparatus for	L. L. Graves and J. Kangley	336,914	Mar. 2	48	13	34	985
Ventilator: *See* Car-ventilator. Hat-ventilator. House-ventilator. Mine-ventilator. Rotary ventilator.							
Ventilator	R. De Logerot	334,571	Jan. 19	1589	409	34	296

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ventilator	W. S. Sayers	338,304	Mar. 23	1980	{585 586	34	1295
Ventilator	B. Scarles	335,963	Feb. 9	1265	332	34	689
Ventilator and chimney-top	H. O. Herrmann	339,089	Mar. 30	3061	819	34	1501
Vermin-exterminator	F. E. Browne	338,089	Mar. 23	2262	632	34	1273
Vessel for transporting liquid cargoes in bulk	L. V. Sone	334,461	Jan. 19	1407	370	34	275
Vessels against torpedo attacks. Apparatus for protecting	A. C. Koerner	338,941	Mar. 16	1833	{379 380 381 382	34	1273
Vessels. Buoy attachment for	P. Micheletti	338,689	Mar. 30	2705	712	34	1440
Vessels in dry-dock. Device for centering	A. Bulman	334,562	Jan. 19	1380	406	34	294
Vinegar-generator	J. D. Murray	338,163	Mar. 16	1788	469	34	1259
Violin-bows. Device for securing	C. F. Harrington	337,059	Mar. 2	335	63	34	949
Violin tail-piece	J. R. Perry	336,469	Feb. 16	1980	566	34	788
Violin tuning-peg	J. K. Porter	338,298	Mar. 23	1900	563	34	1294
Vise	J. J. Spilker	334,816	Jan. 26	1857	495	34	397
Vise-jaw	E. Shaw	334,055	Jan. 12	777	213	34	152
Vise-jaws. Die for making	C. Konold	337,339	Mar. 2	613	161	34	1030
Vise-jaws. Machine for making	C. Konold	337,340	Mar. 2	614	161	34	1030
Vise. Pipe	A. L. Rose	334,615	Jan. 19	1569	422	34	308
Volt-ampère meter	L. Waldo	338,190	Mar. 16	1678	452	34	1262
Vote recording and indicating apparatus. Electrical	C. O. Yale, G. F. W. Holman, and W. J. Barnette.	338,009	Mar. 16	1589	{366 367	34	1213
Vulcanized fiber and similar materials. Manufacture of	G. C. Lawrence	336,389	Feb. 16	1794	480	34	772
Wagon	M. Conrad	334,250	Jan. 19	1394	380	34	285
Wagon	C. Hotz	334,385	Jan. 19	1960	540	34	941
Wagon-body	P. A. McVicar	334,371	Jan. 12	1116	289	34	215
Wagon-body lifter	S. Mütti	335,283	Feb. 2	214	55	34	478
Wagon-box	H. Jacobs	335,339	Feb. 2	364	99	34	510
Wagon-brake	R. E. McClelland	336,127	Feb. 16	1475	389	34	718
Wagon-brake lever	C. F. Moore	337,974	Mar. 16	1476	363	34	1204
Wagon circle-iron	N. L. Holmes	337,404	Mar. 9	703	184	34	1062
Wagon. Delivery	T. Dissett	334,759	Jan. 26	1789	475	34	358
Wagon. Delivery	H. C. Ohlsen, Sr	338,776	Jan. 5	869	{104 105	34	72
Wagon draw-iron	E. H. Gibbs	337,393	Mar. 9	698	179	34	1060
Wagon. Dumping	R. H. Branch	337,476	Mar. 9	889	219	34	1091
Wagon. Dumping	L. O. Bennett	334,633	Jan. 19	1615	430	34	319
Wagon. Dumping	J. H. Ferguson	333,844	Jan. 5	476	120	34	88
Wagon. Dumping	S. H. Nott	335,614	Feb. 9	741	197	34	589
Wagon-gearing	P. J. Richter	336,376	Mar. 30	2788	719	34	1444
Wagon-jack	W. N. Springer	334,357	Jan. 12	779	213	34	158
Wagon-jack	J. J. Williams	333,602	Mar. 23	2263	633	34	1273
Wagon-seat	J. L. Hughes	337,049	Mar. 2	329	84	34	949
Wagon-seat spring	F. F. Fowler	334,425	Jan. 19	1327	349	34	249
Wagon-stake	E. M. Foreman	336,847	Feb. 23	2501	639	34	997
Wagon. Stock	W. E. George and H. Horney	338,688	Mar. 23	2208	579	34	1246
Wall-covering. Ornamental	J. H. Campbell	333,737	Jan. 5	830	86	34	80
Wall-hangings, &c. Decorating	W. Sochefsky	334,380	Jan. 12	1154	.....	34	223
Wall-paper. Bundling	F. E. Clark	335,684	Feb. 9	635	228	34	597
Wall-paper. Manufacturing	S. E. Trout	335,788	Feb. 9	900	.....	34	608
Wall-paper. Manufacturing	W. Wilson	335,364	Feb. 2	253	67	34	485
Wall-protector for steam-coils	R. B. Miller	334,734	Jan. 26	1831	488	34	361
Walls. Ornamenting fabrics for covering	F. Mencke	333,551	Jan. 5	384	.....	34	98
Warping and beaming machine. Sectional	J. C. Sewell, E. Hulton, and J. Bethel	335,490	Feb. 9	770	204	34	585
Warping-machine	T. Clay	338,713	Mar. 30	2490	{661 662	34	1402
Warping-machine	T. C. Entwistle	336,477	Feb. 16	1906	522	34	809
Warping-machine. Device for supporting the drop-rolls of	G. E. Dexter and E. J. Patterson	336,301	Feb. 16	1788	461	34	765
Warping-machines. Stop-motion for	C. Dean	338,049	Mar. 16	1571	409	34	1231
Wash-bench	G. J. Cline	335,057	Jan. 26	2178	578	34	462
Wash-board	G. P. Fuller	336,910	Mar. 2	40	10	34	934
Wash-board	E. L. Pridham	337,249	Mar. 2	695	164	34	1041
Wash-board	C. L. Travis	335,977	Feb. 9	1254	333	34	673
Wash-board	C. W. Wells	336,188	Feb. 16	1577	414	34	734
Wash-board	J. W. Williams and I. H. Eddy	335,888	Feb. 9	1100	291	34	646
Wash-board	J. W. Williams and I. H. Eddy	335,889	Feb. 9	1101	291	34	646
Wash-board holder	B. N. Merrill	337,691	Mar. 9	968	258	34	1109
Wash-board rubber	C. Hood	337,534	Mar. 16	1283	338	34	1149
Wash-boiler	G. Bergenheim	334,736	Jan. 26	1758	{468 469	34	347
Wash-bowls, water-closets, &c. Drain-pipe connection for	W. D. Schuyler	337,445	Mar. 9	789	201	34	1075
Wash-stand and table. Combined	L. P. Ross	338,646	Mar. 23	2389	{689 690	34	1377
Wash-tub seat	C. H. Kelley	337,001	Mar. 2	169	43	34	954
Washer: *See* Bottle-washer. Clothes-washer.							
Washer. Adhesive re-enforce	F. A. Delpé	335,569	Feb. 9	675	177	34	569
Washers. Manufacture of	C. T. Grilley	336,347	Mar. 23	1961	532	34	1305
Washing apparatus	E. W. Allen	335,413	Feb. 2	456	118	34	502
Washing clothes, &c. Machine for	J. H. Anthoine and F. H. Thorndike	336,251	Mar. 23	1859	515	34	1300
Washing-machine	A. Arbogast and W. Haine	334,555	Jan. 19	1509	404	34	302
Washing-machine	L. T. Arthur	336,617	Feb. 23	2192	573	34	849
Washing-machine	L. Baldauf	335,735	Feb. 9	916	241	34	612
Washing-machine	J. Barr	336,261	Feb. 16	1787	{451 452	34	759
Washing-machine	J. B. Bell	336,660	Feb. 9	1128	287	34	649
Washing-machine	L. Cline	338,714	Mar. 30	2602	662	34	1460
Washing-machine	D. G. Colbert	337,046	Mar. 2	321	58	34	962
Washing-machine	S. Danielson	333,610	Jan. 5	148	40	34	30

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Washing-machine	C. F. Decker	336,299	Feb. 16	1760	460	34	746
Washing-machine	E. W. Dixon	337,126	Mar. 9	341	89	34	968
Washing-machine	D. D. Fredericks	337,144	Mar. 9	350	91	34	966
Washing-machine	W. Goforth	336,480	Feb. 16	2008	594	34	810
Washing-machine	J. E. Gray	334,709	Jan. 19	1709	456	34	289
Washing-machine	I. M. Groff	337,950	Mar. 16	1446	375	34	1199
Washing-machine	J. S. Headen	338,840	Mar. 30	2661	706	34	1485
Washing-machine	S. W. Higgins	336,594	Mar. 23	2225	583	34	1349
Washing-machine	W. V. Lawlor	339,065	Mar. 30	3007	795	34	1492
Washing-machine	A. Lüttinger	339,107	Mar. 30	3071	813	34	1503
Washing-machine	A. Malcolm	336,980	Mar. 2	65	17, 18	34	280
Washing-machine	B. A. Manring and R. E. Gibbons	334,596	Jan. 19	1559	416	34	302
Washing-machine	T. Martin	334,598	Jan. 19	1561	417	34	302
Washing-machine	C. C. Maxwell	335,945	Feb. 9	1214	322	34	625
Washing-machine	J. McBride	337,603	Mar. 9	963	252	34	1110
Washing-machine	J. McClure	338,671	Mar. 23	2427	640	34	1383
Washing-machine	L. M. S. Miller	336,338	Feb. 16	1809	474	34	775
Washing-machine	J. H. Mitchell	339,004	Mar. 30	2994	{774 / 775}	34	1478
Washing-machine	J. W. Overman	336,059	Feb. 9	1370	362	34	602
Washing-machine	S. W. Parsons	333,778	Jan. 5	384	105	34	73
Washing-machine	D. L. Perry	333,866	Jan. 5	530	144	34	99
Washing-machine	J. C. Peters	337,700	Mar. 9	1103	294	34	1130
Washing-machine	T. Phillips	333,686	Jan. 5	221	60	34	43
Washing-machine	F. E. Richardson	338,443	Mar. 23	2120	554	34	1330
Washing-machine	O. J. Smith	333,559	Jan. 5	80	33	34	17
Washing-machine	H. F. Moeller	335,710	Feb. 9	979	231	34	604
Washing-machine. Cylinder	R. M. Dill	337,819	Mar. 16	1963	327	34	1165
Wasteway and drain for ponds. Combined	A. Benoit	338,365	Mar. 23	2040	535	34	1316
Watch	A. J. Hugle	338,971	Mar. 23	1878	498	34	1267
Watch-case	B. F. Hope	335,455	Feb. 2	510	133	34	533
Watch-case pendant	C. Kistler	338,752	Mar. 30	2561	677	34	1413
Watch-case pendant	E. Keller	333,758	Jan. 5	361	97, 98	34	67
Watch-case rings. Machine for making	A. L. Blankenmeister	337,365	Mar. 9	648	171	34	1053
Watch-case spring	C. Doerflinger	333,840	Jan. 5	471	128	34	87
Watch-case spring	W. H. Fitz Gerald	338,503	Mar. 23	2903	577	34	1345
Watch-case stem	W. H. Fitz Gerald	338,501	Mar. 23	2901	{576 / 577}	34	1345
Watch-case stems. Die for making	W. H. Fitz Gerald	338,502	Mar. 23	2902	577	34	1345
Watch-case stems. Die for making	W. H. Fitz Gerald	338,500	Mar. 23	2900	{575 / 576}	34	1345
Watch-case stems. Making	W. F. Whiting	337,908	Mar. 16	1375	357	34	1186
Watch-chain swivel	E. L. Smith and E. A. Hitchcock	335,846	Feb. 9	1073	268	34	640
Watch-crowns. Manufacture of	P. Conver	334,749	Jan. 26	1777	473	34	351
Watch-movement	W. W. Owen	336,060	Feb. 9	1370	362	34	602
Watch-regulator	G. I. Tuttle	336,360	Feb. 16	1888	482	34	780
Watch-regulator	M. W. Elliott	333,735	Jan. 5	331	91	34	62
Watch-springs. Die for drawing	J. Logan	337,690	Mar. 9	1068	281	34	1128
Watch-springs. Making	H. Abbott	335,731	Feb. 9	908	240	34	611
Watch. Stem winding and setting	W. H. Fitz Gerald	338,947	Mar. 30	2929	746	34	1463
Watch. Stem winding and setting	W. H. Fitz Gerald and E. A. Marsh	338,946	Mar. 30	2927	746	34	1462
Watch. Stem winding and setting	H. A. Lugrin	334,179	Jan. 12	961	260	34	185
Watch stem winding and setting attachment	H. Abbott	335,733	Feb. 9	914	{940 / 941}	34	612
Watch stem winding and setting mechanism	H. Abbott	335,732	Feb. 9	912	940	34	611
Watch stem winding and setting mechanism	W. H. Fitz Gerald	338,945	Mar. 30	2894	745	34	1462
Watch. Stop	J. Tixier	333,792	Jan. 5	406	110	34	77
Watch-winding indicator	A. G. Wiseman	335,666	Feb. 9	809	215	34	592
Watch-winding mechanism	C. Morlet	335,471	Feb. 2	529	{138 / 139}	34	536
Watches. Combined wheel and pinion for	G. E. Hart	338,959	Mar. 30	2949	750	34	1465
Watches. Escapement-lever for	W. B. Simpson	337,599	Mar. 9	896	228	34	1093
Watches. Mainspring-barrel for	G. E. Hart	338,960	Mar. 30	2945	750	34	1466
Watchman's time-detector	L. W. Pennell	338,209	Mar. 23	1902	{500 / 501}	34	1292
Watchman's time-recorder	J. E. Tarbox and E. H. Taylor	338,315	Mar. 23	1986	{510 / 511}	34	1298
Watchmen's time-recorders. Circuit-controlling device for	L. W. Pennell	338,208	Mar. 23	1904	501	34	1293
Water and gas mains. Stop-valve for	W. Royce	337,438	Mar. 9	778	196	34	1074
Water-closet	J. Clifford	335,895	Feb. 9	1159	306	34	654
Water-closet	J. J. De Rycke	334,941	Jan. 26	2000	536	34	304
Water-closet	H. C. Kürten	334,176	Jan. 12	956	259	34	184
Water-closet	J. Vladyka	334,911	Jan. 26	1975	{525 / 526}	34	308
Water-closet cistern	T. Bailey	337,359	Mar. 9	640	169	34	1051
Water-closet cistern	J. Demarest	337,133	Mar. 2	298	88	34	968
Water-closet cistern	F. A. Jacob	337,835	Mar. 16	1983	339	34	1169
Water-closet cistern	J. Kaufmann	339,009	Mar. 30	3004	794	34	1491
Water-closet cistern	P. G. Hubert	337,405	Mar. 9	706	184	34	1069
Water-closet tank	J. D'Eaté	335,923	Jan. 26	2194	566	34	414
Water-closet valve	H. S. Lord	336,593	Feb. 16	2032	{539 / 540}	34	819
Water-closets. Apparatus for flushing	D. W. Hyde	333,951	Jan. 5	622	170	34	117
Water-closets. Effluvia-ejector for	W. Smith	338,794	Mar. 30	2616	669	34	1422
Water-closets, &c. Handle or pull for	W. H. Bate	334,412	Jan. 19	1306	354	34	256
Water. Device for automatically gaging the flow of	C. N. Tibbitts	334,095	Jan. 12	838	229	34	168
Water-elevator	J. C. Davis	337,251	Mar. 2	494	129	34	1017
Water-elevator	R. C. Dugan	335,061	Jan. 26	2183	580	34	423
Water-elevator. Pneumatic	J. G. Pohlé and D. Hill	338,295	Mar. 23	1906	502	34	1293
Water-gage	G. A. Henderson	338,737	Mar. 30	2541	670	34	1409
Water-level indicator	J. R. Wilcox	337,910	Mar. 16	1377	358	34	1187
Water-marks. Producing	C. M. Schmidt	334,199	Jan. 12	1008	.....	34	195

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Water-meter. Oscillating	L. H. Nash	336,140	Feb. 16	1497	{384 / 385}	34	782
Water-meter. Oscillating	L. H. Nash	336,141	Feb. 16	1499	{384 / 385}	34	782
Water-meter. Piston	P. Berthon and A. Debenoit	338,943	Mar. 23	1836	{494 / 756}	34	1261
Water-meter. Piston	F. W. Jenkins	338,973	Mar. 30	2939	{756 / 757}	34	1468
Water-meter. Piston	J. M. Linscott	337,845	Mar. 16	1984	336	34	1171
Water-meter. Piston	H. B. Whittaker	336,678	Feb. 23	2265	597	34	866
Water-meter. Proportional	L. H. Nash	336,135	Feb. 16	1485	382	34	780
Water-meter. Proportional	L. H. Nash	336,137	Feb. 16	1488	383	34	781
Water-meter. Proportional	L. H. Nash	336,138	Feb. 16	1490	383	34	781
Water-meter. Proportional	L. H. Nash	336,146	Feb. 16	1515	{490 / 491}	34	784
Water-meter. Proportional	L. H. Nash	336,148	Feb. 16	1520	491	34	784
Water-meter with revolving piston	L. H. Nash	336,149	Feb. 16	1502	{386 / 387}	34	782
Water-meter with revolving piston	L. H. Nash	336,143	Feb. 16	1504	387	34	783
Water-meter with revolving piston	L. H. Nash	336,144	Feb. 16	1507	{388 / 389}	34	783
Water-meters. Operating proportional	L. H. Nash	336,136	Feb. 16	1486	382	34	781
Water-meters. Operating proportional	L. H. Nash	336,139	Feb. 16	1494	384	34	781
Water-meters. Operating proportional	L. H. Nash	336,145	Feb. 16	1510	{488 / 489}	34	783
Water-meters. Operating proportional	L. H. Nash	336,147	Feb. 16	1380	491	34	784
Water-motor	H. Titus	336,116	Mar. 16	1674	435	34	1041
Water-motor	D. P. Weir	336,578	Mar. 23	2265	599	34	1339
Water-overflow. Alarm for detecting	L. Weil	336,773	Feb. 23	2494	632	34	890
Water-power. Utilizing	B. M. Armitage	337,737	Mar. 9	1126	{283 / 284}	34	1126
Waterproofing cloth	J. H. Sheldon	337,382	Mar. 9	895	.....	34	1089
Water. Purifying	H. H. Smith	337,098	Mar. 2	199	.....	34	968
Water-supply pipes. Registering-valve for	H. P. Brown	335,918	Feb. 2	185	50	34	473
Water-supply system	C. H. Godfrey	336,997	Mar. 2	152	41	34	953
Water-tank. Railway	A. E. Lytle	333,959	Jan. 5	631	173	34	119
Water-tube boiler	E. J. Moore	336,499	Mar. 23	2108	{548 / 551}	34	1327
Water-wheel	R. R. Ogden	335,713	Feb. 9	882	233	34	605
Water-wheel. Turbine	J. P. Frizell	334,588	Jan. 19	1468	393	34	294
Water-works system	P. B. Perkins	335,208	Feb. 2	202	80	34	495
Water-works. Automatic	M. A. Laska	336,387	Feb. 16	1790	468	34	771
Wave-power. System for utilizing	A. De Sousa	335,118	Feb. 2	18	6	34	444
Weaner. Calf	H. W. McNeal	334,181	Jan. 12	886	242	34	173
Weather-board gage	J. H. Kuykendall and J. K. Elkins	338,933	Mar. 16	1694	477	34	1271
Weather-board gage	J. H. Snyder	339,077	Mar. 30	3021	798	34	1494
Weather-boarding gage	M. E. Johnson	338,156	Mar. 16	1723	450	34	1251
Weather-strip	N. Amon	335,874	Feb. 9	1108	298	34	647
Weather-strip	T. J. Fitzpatrick	336,987	Mar. 2	96	9	34	933
Weather-strip	J. M. Osborn	339,089	Mar. 30	2930	776	34	1479
Weather-strip	C. J. W. Platt	334,463	Jan. 19	1361	372	34	271
Weather-strip	A. F. Van Dolsen	335,698	Jan. 26	2236	598	34	434
Weather-strip for doors	A. J. Davis	337,250	Mar. 2	498	126	34	1017
Weather-strip for doors	T. Law	335,980	Feb. 9	1207	321	34	664
Weaving apparatus. Hand	E. Wernicke	334,230	Jan. 12	1177	315	34	226
Wedge. Ax-helve	H. F. Sawyer	338,193	Mar. 16	1774	463	34	1262
Wedge. Spring-jack	H. Anderson	338,131	Mar. 16	1689	449	34	1244
Weed gatherer and turner	A. Schnoor	337,443	Mar. 9	786	200	34	1075
Weighing and delivering apparatus. Grain	H. Hodges	338,688	Mar. 23	2377	628	34	1375
Weighing apparatus. Automatic grain	J. Wherry, Jr	337,906	Mar. 16	1373	{356 / 357}	34	1186
Weighing apparatus. Grain	F. C. M. Meyer	339,002	Mar. 30	2991	{773 / 774}	34	1478
Weighing-machine	P. Everitt	336,042	Feb. 9	1344	{855 / 856}	34	687
Weighing-machine recorder	P. Everitt	336,043	Feb. 9	1346	{856 / 857}	34	688
Weight-motor. Automatic	A. Osterloh	337,498	Mar. 9	751	192	34	1089
Well-boring machine	N. B. Garrigues and S. Davis	336,403	Feb. 16	1697	496	34	791
Well-drill	W. C. Wells	336,167	Feb. 16	1578	415	34	734
Well-drilling machine	R. G. Marcy	338,589	Mar. 23	2243	569	34	1252
Well-drilling machine	O. Rust	336,853	Feb. 16	1888	{479 / 480}	34	778
Well. Vacuum	J. M. Seymour	333,681	Jan. 5	243	66	34	47
Wells. Device for drawing standing valves in	J. Moran	336,488	Feb. 16	2009	527	34	811
Wells. Device for withdrawing the pipes from drives	J. Merticle	336,427	Mar. 23	2009	550	34	1336
Wells. Ground-screw for boring	S. Wickiser	334,919	Jan. 26	1965	529	34	309
Wells. Sucker-rod for oil	S. K. Whitmore	338,653	Mar. 23	2396	631	34	1379
Wheat and other grain. Machine for pearling	J. J. Hubbell	337,160	Mar. 2	368	96, 97	34	994
Wheel cleaning and polishing machine	E. Fritsch	335,230	Feb. 2	196	51	34	475
Wheel:							
See Car-wheel. Fifth-wheel. Metal wheel. Metallic wheel. Paddle-wheel. Planter-wheel. Potter's wheel. Propeller-wheel. Steamboat and water wheel. Tension-wheel. Traction-wheel. Vehicle-wheel. Velocipede-wheel. Water-wheel. Wind-wheel.							
Wheel	E. T. Burgess	334,168	Jan. 12	941	254	34	181
Wheel	T. H. Carlin	338,922	Mar. 30	2800	736	34	1457
Wheel	J. B. McCune	334,388	Jan. 12	1272	343	34	248
Wheel	R. Scheidler	335,964	Feb. 9	1237	329	34	629
Wheel	S. T. Williams	337,283	Mar. 2	453	118	34	1010

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Wheel and pinion. Manufacture of combined	G. E. Hart	336,962	Mar. 30	2646	751	34	1466
Wheels. Making	W. Eyre	336,166	Mar. 16	1737	453	34	1254
Wheels. Manufacture of metal	J. R. Little	336,986	Mar. 30	2666	765	34	1478
Wheelwright's clamp	L. W. Free	336,638	Feb. 23	2314	577	34	838
Whiffletree	J. P. Johnson	336,589	Mar. 23	2289	585	34	1339
Whiffletree-evener spring-casing	T. J. Christy	336,991	Mar. 2	144	39	34	932
Whiffletree-hook	J. R. Davis	333,837	Jan. 5	468	127	34	67
Whiffletree-hook	F. Eggers	337,255	Mar. 2	509	130	34	1018
Whiffletree-iron	H. K. Porter	336,016	Feb. 9	1306	347	34	661
Whip-rack	J. A. McPherson	335,765	Feb. 9	961	254	34	619
Whip-socket	G. M. Hubbard	335,584	Feb. 2	695	157	34	548
Whip-socket	A. Vester	336,770	Feb. 23	2269	603	34	899
Whip-socket fastener	A. Searls	335,150	Feb. 2	70	18	34	452
Whip-socket lock	J. Madden and C. R. Brown	337,046	Mar. 16	1595	338	34	1171
Whip-stock	B. F. Nichols	336,255	Feb. 16	1692	441	34	753
Whisky. Making	M. J. Allen and W. E. Bradley	335,267	Feb. 2	256	68	34	456
Whistle for steam-boilers. Alarm-	D. P. Dobbins	334,519	Jan. 19	1457	391	34	288
Winch-engine	E. C. Bacon	333,494	Jan. 5	9	2	34	9
Winch. Steam-	A. J. Maginnis	337,175	Mar. 2	397	103	34	999
Wind-engine	J. Serdinko	335,369	Feb. 2	498	108	34	517
Wind-wheel	J. T. Thomson	337,094	Mar. 2	969	74, 75	34	979
Wind-wheel gearing	L. U. Loomis	336,651	Feb. 23	2240	584	34	857
Winding fabrics. Machine for	H. Winterwerber	335,870	Feb. 9	1102	{291 292}	34	646
Winding-machine	A. J. Culp and A. W. Allen	334,569	Jan. 19	1595	408	34	295
Winding yarn on bobbins. Machine for	G. W. Burnham	336,631	Mar. 23	2249	683	34	1374
Windlass	H. T. Gayton	337,571	Mar. 9	948	242	34	1108
Windlass	F. W. Thomson	334,669	Jan. 19	1682	449	34	325
Windmill	S. Albright	338,816	Mar. 30	2646	{597 598}	34	1499
Windmill	J. G. Benster	336,784	Feb. 23	2419	636	34	892
Windmill	L. Leach	334,445	Jan. 19	1347	365	34	264
Windmill	T. P. Levan	336,582	Mar. 23	2233	598	34	1351
Windmill	A. Sherwood	334,813	Jan. 26	1852	494	34	365
Windmill	S. Standish	338,799	Mar. 30	2632	691	34	1494
Windmill	C. V. Stevens	333,586	Jan. 5	87	25	34	19
Windmill	C. V. Stevens	333,587	Jan. 5	89	26	34	20
Windmill	J. G. and U. C. Stough	336,908	Mar. 16	1763	465	34	1263
Windmill	E. P. and C. Wellesley	337,641	Mar. 9	1081	285	34	1118
Windmill	W. H. Wheeler	335,864	Feb. 9	1094	{289 290}	34	646
Windmill	H. Woodmanse	334,553	Jan. 19	1506	408	34	291
Windmill attachment	G. W. Miller	337,421	Mar. 9	740	196	34	1067
Windmill. Power-	H. B. Colman and G. Turner	337,482	Mar. 9	836	219	34	1063
Windmill-regulator	G. M. Beard	338,914	Mar. 30	2789	{735 736}	34	1454
Windmill-regulator	F. T. Zimmerman	333,806	Jan. 5	428	115	34	79
Windmills. Automatic water-service system for	C. G. Frushour	335,707	Feb. 9	1021	270	34	631
Windmills. Detachable guide-bearing for reciprocating rods of	K. A. Smith and J. E. Woodard	338,793	Mar. 30	2616	689	34	1488
Window	J. S. Pihlström	337,193	Mar. 9	416	{108 109}	34	1003
Window-bead fastener	C. R. Nelson	336,483	Mar. 23	2110	558	34	1308
Window-cleaning chair	A. Dormitzer	335,215	Feb. 2	166	50	34	474
Window-fastening device	A. Dudgeon	336,309	Feb. 16	1763	461	34	765
Window frame and sash	N. P. Sandelin	335,633	Feb. 9	767	203	34	585
Window-guard	M. McLean	334,861	Jan. 26	1986	515	34	380
Window-screen	J. W. Carman	337,741	Mar. 9	1151	299	34	1139
Window-screen	E. Louderback	334,676	Jan. 26	1981	514	34	379
Window-screen	P. Panlus and H. Faber	334,676	Jan. 19	1672	446	34	323
Window-screen	S. J. Vance	336,178	Feb. 16	1566	412	34	732
Window-screen and ventilator. Combined	H. W. Libbey	336,278	Mar. 23	1868	496	34	1290
Window-spring and weather-strip. Combined	G. W. Lewin	336,575	Feb. 23	2129	558	34	886
Wire. Apparatus for drawing	J. Reese	336,350	Mar. 23	2060	539	34	1309
Wire. Barbed	J. Potter	336,064	Feb. 23	2266	591	34	863
Wire-bending machine	W. R. Van Vliet	336,261	Feb. 16	1640	433	34	760
Wire-burring machine	A. Eppler, Jr.	334,362	Jan. 12	1389	358	34	227
Wire by electrolysis. Apparatus for forming	M. G. Farmer	336,941	Mar. 30	2619	744	34	1461
Wire-coating apparatus	J. J. Lee	335,135	Feb. 2	51	14	34	449
Wire-coiling and other machines. Feeding device for	O. P. Briggs	335,869	Feb. 9	1144	304	34	652
Wire-coiling machine	J. U. Kessler	337,568	Mar. 9	967	248	34	1107
Wire. Covered or insulated	W. M. Habirshaw	338,732	Mar. 30	2589	669	34	1466
Wire-cutter	D. Houghton	337,150	Mar. 2	367	96	34	994
Wire-cutting machine	D. Houghton	335,818	Feb. 9	1034	273	34	638
Wire hoop	J. C. Durling	336,706	Feb. 23	2318	607	34	873
Wire. Machine for fastening barbs on	O. R. Olsen	338,290	Mar. 23	1886	{499 500}	34	1292
Wire. Machine for reducing	J. Reese	338,361	Mar. 23	2004	527	34	1310
Wire, &c. Mechanism for winding	S. W. Robinson	334,309	Jan. 26	1849	488	34	365
Wire nails, wood-screws, &c. Machine for making threaded	T. J. Sloan	338,446	Mar. 23	2123	{555 556}	34	1331
Wire-netting machine	F. Schilling	336,099	Feb. 9	1310	348	34	681
Wire or ribbon. Machine for polishing metal	J. Logan	338,603	Mar. 23	2327	609	34	1366
Wire ropes and cables. Compensator for	R. B. Ireland	338,415	Mar. 23	2060	545	34	1328
Wire. Spool for barbed	C. S. De Witt	338,043	Mar. 16	1572	409	34	1221
Wire-spooling machine	O. P. Briggs	338,344	Mar. 23	1839	{484 495}	34	1281
Wire-straightening machine	J. Withington	333,707	Jan. 5	398	{78 79 80}	34	55
Wire-stretcher	G. H. Brackman	333,821	Jan. 5	445	120	34	93
Wire-stretcher	J. B. Cleaveland	336,486	Mar. 23	2178	569	34	1341
Wire-stretcher	J. and E. E. Sickler	333,787	Jan. 5	509	108	34	75
Wire, stripe, or rods. Apparatus for drawing	J. Reese	338,362	Mar. 23	2007	528	34	1310

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Wire-twisting machines. Supporting-frame for wire-reels of	G. Q. Adams	334,408	Jan. 19	1297	351	34	255
Wood. Embossing	W. A. Compton. (Reissue)	10,685	Feb. 9	1286	339	34	627
Wood. Embossing	W. A. Compton. (Reissue)	10,686	Feb. 9	1297	349	34	627
Wood. Machine for bundling	D. A. Greene	337,946	Mar. 16	1437	{372 373}	34	1197
Wood. Machine for bundling kindling	J. E. Shaw and J. F. Ellinger	336,750	Feb. 23	2265	594	34	886
Wood ornamentation	J. P. Jamieson	335,569	Feb. 9	707	198	34	574
Wood-polishing machine	W. H. Elmer and A. P. Beardman	335,117	Feb. 2	24	7, 8	34	445
Wool. Apparatus for carbonizing and destroying vegetable matter in	J. P. Land	336,121	Feb. 16	1468	387	34	716
Wool-drying machine	J. H. Lorimer	336,926	Mar. 2	68	17	34	986
Wool-drying machine	J. Petrie, Jr., and J. Fielden	337,663	Mar. 16	1315	342	34	1175
Wool. Machine for feeding, opening, and mixing	S. R. Parkhurst	336,660	Feb. 23	2260	589	34	881
Wool. Scouring	C. Toppan	338,606	Mar. 30	2633	.....	34	1486
Woven fabric	G. Crompton	335,567	Feb. 9	673	177	34	567
Wrapper for coins and other small articles	F. O. Butterfield	335,054	Jan. 26	2173	577	34	432
Wrench: *See* Pipe-wrench. Railway nut-wrench.							
Wrench	F. Armstrong and N. W. Vandegrift	335,988	Feb. 9	1265	335	34	674
Wrench	H. Bornstein	338,707	Mar. 30	2469	659	34	1491
Wrench	D. Follett	334,010	Jan. 12	704	194	34	149
Wrench	W. A. Hathaway	335,192	Feb. 2	150	38	34	466
Wrench	A. Kindermann	336,078	Mar. 16	1610	429	34	1253
Wrench	F. Kruegermann	336,419	Mar. 23	2227	547	34	1325
Wrench	E. A. Larsen	334,077	Jan. 12	698	221	34	158
Wrench	J. Lussier	333,961	Jan. 5	634	174	34	139
Wrench	J. H. Miller	333,969	Jan. 5	637	175	34	130
Wrench	J. D. Otstot	334,085	Jan. 12	691	225	34	161
Wrench	E. C. Palmer	337,986	Mar. 16	1495	388	34	1207
Wrench	J. Pusey	338,874	Mar. 30	2739	718	34	1444
Wrench	E. F. Rettberg and C. C. Ellis	335,481	Feb. 2	544	143	34	536
Wrench	C. C. Runyan	336,982	Feb. 16	1701	443	34	754
Wrench for twisting wire	L. A. Cussins and J. M. Overpeck	338,659	Mar. 23	2465	633	34	1360
Wrenches. Pipe-wrench attachment for monkey-	F. H. Seymour	337,687	Mar. 9	1012	260	34	1115
Wringer: *See* Mop-wringer.							
Wringer	J. W. Weiser	335,961	Feb. 9	1258	334	34	672
Wringer-roll	D. Lampson	334,956	Jan. 26	2038	542	34	397
Writing-case	J. D. Colony	336,391	Feb. 16	1669	402	34	786
Writing. Hand-support for use in	J. L. Wyche	336,289	Mar. 16	1831	478	34	1272
Yarn. Machine for balling	F. A. Clark	336,289	Feb. 16	1879	491	34	788
Yarn-stripper	A. Shaver	334,904	Jan. 26	1965	503	34	386
Yoke coupling. Neck	S. Maneer	333,768	Jan. 5	878	101	34	70
Yoke. Neck-	R. T. Cook	334,988	Jan. 26	2005	534	34	393
Yoke. Neck-	S. D. Mebew	334,791	Jan. 26	1898	497	34	360
Zither	C. H. Rahn	336,158	Feb. 16	1585	{404 405}	34	736

ALPHABETICAL LIST OF DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Ash-bowl	Z. Marx	16,573	Mar. 16	34	1162
Badge	C. S. Crossman	16,513	Feb. 9	34	563
Badge	H. Ellcan	16,544	Feb. 23	34	830
Belt	C. H. Buchanan	16,495	Feb. 2	34	440
Bottle	D. F. Davids	16,520	Feb. 16	34	704
Bottle	S. F. Hayward	16,508	Feb. 2	34	440
Bottle	S. F. Hayward	16,562	Mar. 9	34	1050
Bottle	F. Pfahl	16,549	Feb. 23	34	830
Bottle. Perfumery	D. R. Bradley	16,512	Feb. 9	34	563
Box	W. C. Estes	16,578	Mar. 23	34	1280
Bracket	W. I. Bunker	16,541	Feb. 23	34	830
Bracket for springs	J. W. Kenna	16,571	Mar. 16	34	1162
Bridle-bits. Cheek or side piece for	J. M. Espinosa	16,521	Feb. 16	34	704
Bridle-rosette	W. F. Riker	16,596	Mar. 30	34	1394
Buckets. Ornamentation of	J. L. Flanagan	16,477	Jan. 19	34	254
Cane knob or handle	J. N. Provenzano	16,503	Feb. 2	34	440
Carriages. Gear for children's	S. F. Boylston	16,589	Feb. 23	34	830
Carpet	E. Fisher	16,470 to 16,476	Jan. 19	34	254
Carpet	D. G. Melville	16,510	Feb. 9	34	563
Carpet	D. G. Melville	16,554	Mar. 2	34	926
Carpet	E. G. Sauer	16,493	Jan. 19	34	254
Carpet	T. J. Stearns	16,494	Jan. 26	34	344
Carpet	T. J. Stearns	16,557	Mar. 2	34	926
Carpet-sweeper wheel	E. T. Prindle	16,480	Jan. 19	34	254
Casket	L. K. Smedes	16,488	Jan. 12	34	134
Casket-handle ear	O. F. Fogelstrand	16,485	Jan. 12	34	134
Clock-case	C. Casper	16,539	Mar. 9	34	1050
Clock-case	L. C. Hiller	16,501	Mar. 30	34	1394
Cloth	F. S. Pinkus	16,532	Feb. 16	34	704
Coach-bowl	J. Proeger	16,498	Jan. 19	34	254
Coffin-handle socket	W. M. Smith	16,576	Mar. 16	34	1162
Coffin-plate	W. E. Stevens	16,577	Mar. 16	34	1162
Curtain-loop	B. Dreyfus	16,543	Feb. 23	34	830
Dishes for table-service	C. E. Haviland	16,452	Jan. 5	34	2
Drawer-handle	A. J. Roux	16,567	Mar. 23	34	1280
Easel	F. H. Tobias	16,511	Feb. 9	34	563
Electric-battery zinc	I. W. Litchfield	16,492	Jan. 26	34	344
Fire-place hook	O. S. Backus	16,469	Jan. 26	34	344
Fire-place plate	A. C. Mott	16,517	Feb. 9	34	564
Gimp	J. P. Boesen	16,503	Mar. 2	34	926
Gimp	J. H. Thorp	16,551	Feb. 23	34	830
Hangings, coverings, &c	C. Wheeler	16,469	Jan. 12	34	134
Harness-terret	G. M. Hubbard	16,569	Mar. 16	34	1162
Hosiery	J. Phipps	16,501	Feb. 2	34	440
Hubs. Ornamentation of	J. Maris	16,467 to 16,468	Jan. 12	34	134
Indicator-cover	C. E. Dey	16,590	Mar. 30	34	1394
Inkstand	W. A. Pike	16,453	Jan. 5	34	2
Jewelry-rack	C. Place	16,556	Mar. 2	34	926
Keys. Ornamentation of	F. W. Mix	16,564	Mar. 9	34	1050
Knob	Z. T. Hall	16,515	Feb. 9	34	563
Lamp or gas globe	H. G. McFadden	16,509	Feb. 9	34	563
Lamp-pendant	B. B. Schneider	16,550	Feb. 23	34	830
Latch-case	J. R. Payson, Sr	16,595	Mar. 30	34	1394
Leather for hand-bags and other fancy leather goods. Embossed	J. Mehl, Sr	16,486	Jan. 19	34	254
Leather, &c. Ornamentation of	S. Loewenhers	16,592 to 16,598	Mar. 30	34	1394
Mantel-piece	E. Hardy	16,579	Mar. 23	34	1280
Molding	F. Mankey	16,456 to 16,457	Jan. 12	34	134
Molding	F. Mankey	16,522 to 16,527	Feb. 16	34	704
Oil-cloth	C. T. and V. E. Meyer	16,479	Jan. 19	34	254
Oil-cloth	C. T. and V. E. Meyer	16,533 to 16,535	Mar. 23	34	1280
Organ-case	L. K. Fuller	16,497 to 16,498	Feb. 2	34	440
Ornamentation of walls, &c. Surface	F. Mankey	16,458	Jan. 12	34	134
Overshoe	H. I. Crampton	16,455	Jan. 12	34	134
Panel	F. Mankey	16,462	Jan. 12	34	134
Panel. Open-work	F. Mankey	16,459 to 16,461	Jan. 12	34	134
Panorama or map case	W. Bruce	16,540	Feb. 23	34	830
Paper-fastener	G. W. McGill	16,548	Feb. 23	34	830
Parasol or umbrella top	N. L. Séguin	16,597	Mar. 30	34	1394

Alphabetical list of designs, January to March, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Pen-protector	A. Fraser	16,491	Jan. 26	34	344
Pin. Scarf	J. A. Bidwell	16,589	Mar. 30	34	1304
Pitcher, &c	H. Berry	16,538	Feb. 23	34	630
Posting-chair	C. A. Schindler	16,492	Jan. 26	34	344
Potato-digger shovel	D. Feigly	16,464	Jan. 12	34	134
Quilting	A. Hildt	16,562	Mar. 9	34	1050
Range	D. S. Richardson	16,518	Feb. 9	34	564
Rattle. India-rubber	J. P. Rider	16,461	Jan. 19	34	254
Rubber mat	J. Murphy	16,574	Mar. 16	34	1162
Rug	H. Finck	16,496	Feb. 2	34	440
Rug	H. Finck	16,545	Feb. 23	34	630
Rug	A. Petzold	16,467	Jan. 19	34	254
Rug	A. Petzold	16,500	Feb. 2	34	440
Rug	A. Petzold	16,555	Mar. 2	34	998
Sash-fastener	W. Huttig, Sr., and N. Bast	16,507	Feb. 9	34	563
Saucepan	J. Ringen	16,566	Mar. 9	34	1050
Scarf-pin	A. F. Wehrle	16,504	Feb. 2	34	440
Soap. Cake	E. Zacharie	16,585	Feb. 16	34	704
Soap. Cake of	J. E. Smith	16,588	Mar. 23	34	1260
Spoon-handle	C. T. Grosjean	16,560 16,561	Mar. 9	34	1050
Spoon or fork handle	H. W. Hirschfeld	16,586	Mar. 16	34	1162
Spoons, &c. Handle for	C. Casper	16,506	Feb. 9	34	563
Stall-guard	W. C. Peet	16,575	Mar. 16	34	1162
Stove	F. Kahn	16,581	Mar. 23	34	1260
Stove	L. Kahn	16,590	Mar. 30	34	1304
Stove. Heating	C. H. Bradley	16,519	Feb. 16	34	704
Stove. Heating	T. White	16,468	Jan. 19	34	254
Stove or range	A. C. Mott and J. K. McLaughlin	16,586	Mar. 23	34	1260
Stove-pipe	P. J. Grinberg	16,547	Feb. 23	34	630
Table-fountain	G. Brown	16,451	Jan. 5	34	2
Table-vessel	G. W. Fry	16,546	Feb. 23	34	630
Table-ware	T. Maddock	16,572	Mar. 16	34	1162
Table-ware	J. Willets and W. S. Lenox	16,534	Feb. 16	34	704
Tablet. Memorial	J. J. Phillips	16,565	Mar. 9	34	1050
Terret. Harness	G. M. Hubbard	16,478	Jan. 19	34	254
Tobacco-pipe	F. J. Kaldenberg	16,570	Mar. 16	34	1162
Trimming	B. Lipper	16,499	Feb. 2	34	440
Trunk-iron	J. H. Alexander	16,505	Feb. 9	34	563
Trunk-iron	J. H. Alexander	16,567	Mar. 16	34	1162
Tureen or dish	T. B. Attenbury	16,558	Mar. 9	34	1050
Type	E. Lauschke	16,553	Mar. 2	34	998
Type. Font of	J. Guildenstine	16,514	Feb. 9	34	563
Type. Font of	C. E. Heyer	16,516	Feb. 9	34	563
Type. Font of printing	H. Ihlenburg	16,506	Feb. 9	34	563
Type. Font of printing	W. W. Jackson	16,596	Feb. 16	34	704
Type. Font of printing	A. Little	16,484 16,485	Jan. 19	34	254
Type ornament. Combination	J. Graham	16,523	Feb. 16	34	704
Type. Printing	W. Barnhart	16,490	Jan. 26	34	344
Vase	M. W. Carr	16,542	Feb. 23	34	630
Vessel or dish	J. E. Miller	16,504	Mar. 30	34	1304
Wall-paper	J. Baumgarten	16,454	Jan. 12	34	134
Walls, &c. Surface ornamentation of	F. Mankey	16,598	Feb. 16	35	704
Walls. Surface ornamentation of	F. Mankey	16,599	Feb. 16	34	704
Walls, &c. Surface ornamentation of	F. Mankey	16,530	Feb. 16	34	704
Walls. Surface ornamentation of	F. Mankey	16,531	Feb. 16	34	704
Wash-board	J. T. Arnold	16,537	Feb. 23	34	630
Watch-crown	E. A. Marsh	16,466	Jan. 13	34	134
Wire stand	W. R. Warner	16,589	Feb. 16	34	704

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Abietene or extract from the gum of pinus sabiniana	D. F. Fryer	12,919	Jan. 5	34	2
Accordions	W. Speethe	12,939	Jan. 19	34	254
Aerated water	R. B. Cater	12,913	Jan. 5	34	2
Agate. Articles having a surface in imitation of	American Enamel Company	12,951	Jan. 19	34	254
Ale	C. H. Evans	13,008	Mar. 2	34	998
Ale, porter, and stout	Greenaway Brewing Company	13,006	Feb. 9	34	564
Artists' and draftsmen's materials. Certain named	E. G. Soltmann	13,056	Feb. 23	34	630
Awning-stripes—a woven cotton fabric	Gary Manufacturing Company	13,005	Feb. 9	34	564
Baking-powder	Toledo Spice Company	13,007	Feb. 9	34	564
Barèges and parisians	W. Openhym & Sons	13,013	Feb. 9	34	564
Battery used as a curative appliance for diseases of the eye, the ear, the nasal organs, &c. Pocket	W. C. Wilson	13,061	Mar. 2	34	998
Beer	H. Clausen & Son Brewing Company	12,966	Feb. 2	34	440
Beer, ale, porter, and stout	Bamerschmidt & Marr	12,988	Jan. 12	34	134
Beer. Lager	C. Conrad & Co	13,064	Mar. 2	34	998
Beer. Lager	P. Schoenhofen Brewing Company	12,955	Feb. 23	34	630
Beer. Lager	Peter Schoenhofen Brewing Company.	12,147	Mar. 30	34	1304
Beer. Lager	Peter Schoenhofen Brewing Company.	13,148	Mar. 30	34	1304
Bicycles, tricycles, and other velocipedes	D. Rudge & Co	12,961	Jan. 19	34	254
Biscuits	Heartet & Co	12,987	Jan. 12	34	134
Bitters	T. Foulds & Son	13,067	Mar. 2	34	998
Bitters	Wood, Pollard & Co	12,930	Jan. 5	34	2
Bitters and tonic. Stomach	A. A. Ulmato	12,975	Jan. 26	34	344
Blood balm. Botanic	Blood Balm Company	13,045	Feb. 23	34	630
Blood-purifiers, tonics, pills, teas, powders, and drops	X. Herberg	13,149	Mar. 16	34	1162
Boots. Felt	W. C. and J. H. Brooks	13,139	Mar. 30	34	1304
Candy	M. Dawson	13,003	Feb. 16	34	704
Canned corn	Kemp, Day & Co	13,113	Mar. 16	34	1162
Canned goods. Certain	G. W. Aldrich	13,109	Mar. 16	34	1162
Carpets. Velvet	S. Sanford & Sons	13,060	Mar. 2	34	998
Cashmeres	W. Openhym & Sons	13,010	Feb. 9	34	564
Cassimeres. Cotton and woolen	J. M. Brown & Co	12,948	Jan. 12	34	134
Catalogues	Butler Bros	12,984	Jan. 12	34	134
Catalogues	Butler Bros	12,985	Jan. 12	34	134
Chains. Gold	A. Wallach's Nephews	13,117	Mar. 16	34	1162
Chamois-skins for polishing metal. Prepared	E. Blakesles and J. E. Darby	13,044	Feb. 23	34	630
Chewing-gum	W. J. White	12,960	Jan. 19	34	254
Chocolate. Preparation of	H. O. Wilbur & Sons	13,141	Mar. 30	34	1304
Chocolate and cream and of cocoa and cream. Various preparations of	H. McCobb	13,145	Mar. 30	34	1304
Cigars	P. Golpi & Bro	13,068	Mar. 2	34	998
Cigars	F. P. Norton	13,122	Mar. 23	34	1260
Cigars and cigarettes	G. A. Scott	13,125	Mar. 23	34	1260
Cigars, cigarettes, and smoking and chewing tobacco	W. Duke, Sons & Company	13,119	Mar. 23	34	1260
Coffee, roasted or green	W. H. Milnor & Co	12,934	Jan. 5	34	2
Colored powder of the nature of flock	R. H. Bragdon	12,979	Feb. 2	34	440
Coloring-matter and chemical goods to which such coloring-matter is applied.	C. Lowe & Co	12,962	Jan. 19	34	254
Cordage and binders' twine. Manila and sisal	Akron Twine and Cordage Company	12,989	Jan. 12	34	134
Corn. Shelled	E. B. Crofut & Co	13,106	Mar. 16	34	1162
Corset-covers	B. Altman	13,110	Mar. 23	34	1260
Corsets	Bay State Corset Company	12,911	Jan. 5	34	2
Corsets	Bay State Corset Company	12,912	Jan. 5	34	2
Corsets, dress-stiffenings, and waists	E. K. Warren	13,140	Mar. 30	34	1304
Corsets. Ladies'	Simpson, Crawford & Simpson	12,978	Mar. 2	34	998
Cotton piece-goods	H. G. Woodruff	12,949	Jan. 12	34	134
Cough-drops	T. Hinrichs	13,066	Mar. 9	34	1050
Cough-syrup	J. W. Newburne & Co	12,998	Feb. 23	34	630
Cure for nasal catarrh, cold, and hay-fever	F. E. Engelman	12,915	Jan. 5	34	2
Cutlery. Pocket and table	New York Knife Company	12,999	Feb. 9	34	564
Drawing materials and instruments. Certain	E. G. Soltmann	13,054	Mar. 9	34	1050
Dressing, polish, or blacking for shoes or leather	Button & Ottley	13,002	Mar. 2	34	998
Duck	Gambrill Sons & Co	12,955	Jan. 19	34	254
Fertiliser for diseased orange-trees	J. F. Prince	13,052	Mar. 9	34	1050
Flakes or grits prepared from the cereals	A. M. Johnston Oatmeal Company	13,059	Mar. 9	34	1050
Flour	F. W. Smith	12,970	Mar. 2	34	998
Flour	S. W. Weidler and T. W. Allen	13,032	Feb. 9	34	564
Flour	S. W. Weidler and T. W. Allen	13,033	Feb. 9	34	564
Flour	S. W. Weidler and T. W. Allen	13,048	Feb. 16	34	704
Flour	S. W. Weidler and T. W. Allen	13,049	Feb. 16	34	704
Flour. Roller-process wheat	Heyman & Co	13,110	Mar. 16	34	1162
Flour. Straight family	F. A. Johnston	12,930	Jan. 5	34	2
Flour. Wheat	Central Milling Company	12,914	Jan. 5	34	2
Flour. Wheat	Dunlop & McCance	13,034	Feb. 16	34	704
Flour. Wheat	Dunlop & McCance	13,035	Feb. 16	34	704
Flour. Wheat	Dunlop & McCance	13,036	Feb. 16	34	704
Flour. Wheat	Dunlop & McCance	13,037	Feb. 16	34	704
Flour. Wheat	Heywood & Williams	12,954	Jan. 19	34	254
Flour. Wheat	W. Lee & Sons Company	13,071	Mar. 9	34	998

Alphabetical list of trade-marks, January to March, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Flour. Wheat	W. Lea & Sons Company	13,128	Mar. 23	34	1280
Food for calves	S. Phillips	12,991	Feb. 2	34	440
Fruit-preserves, lime-juice, fruit-sirups, canned fish, oysters, and turtles.	G. S. Valls	13,051	Feb. 23	34	830
Fruits. Dried	Noerdlinger & Brother	13,135	Mar. 30	34	1394
Fruits. Dried	Reid, Murdoch & Fischer	13,114	Mar. 16	34	1162
Furniture-nails	A. Gallais & Co	12,969	Jan. 26	34	344
Fuse for exploding gunpowder, &c. Safety	Climax Fuse Company	12,987	Feb. 2	34	440
Glass-cutters	S. G. Monce	13,052	Feb. 23	34	830
Guano	C. Spear, Jr	13,126	Mar. 23	34	1280
Gum. Chewing	C. T. Heisel	13,133	Mar. 30	34	1394
Hair-reviver	W. Moro	13,121	Mar. 23	34	1280
Hair tonic or wash. Certain-named	H. Bailey	12,994	Feb. 2	34	440
Hats. Boys'	P. R. J. Coughlin	13,047	Feb. 23	34	830
Hats. Felt and silk	G. Heath	12,998	Feb. 2	34	440
Hats for men and boys	Straw & Ellsworth Manufacturing Company.	13,094	Feb. 9	34	564
Hay, fodder, and straw cutters	Willson Bros. & Co	13,069	Mar. 2	34	926
Hog-rings	Heesen Brothers & Co	13,007	Feb. 9	34	564
Horse-rasps	Kearney & Foot Company	13,111	Mar. 16	34	1162
Hosiery other than white	J. McCreery & Co	13,090	Mar. 9	34	1050
Hot-air furnaces	R. and F. E. Wheeler and F. Kernan, Jr.	13,099	Mar. 9	34	1050
Interment-sacks. Rubber	Goodyear Rubber Company	13,069	Mar. 2	34	926
Jerseys. Ladies'	G. Schwab & Bros	13,077	Mar. 2	34	926
Jewels. Various geometric forms made of copper and lacquered or enameled to simulate	R. H. Bragdon	12,978	Feb. 2	34	440
Kiln-dried cornmeal	W. Lea & Sons Company	13,100	Mar. 9	34	1050
Lamp-chimneys	Hogan, Evans & Co., (limited)	13,087	Mar. 9	34	1050
Lamps	J. P. Bradley	12,980	Feb. 2	34	440
Lamps, candle-holders, candles, and night-lights	S. Clarke	13,081	Feb. 16	34	704
Leather. Shoe and glove	Booth & Kent	13,046	Feb. 23	34	830
Liniment	C. E. Clark	13,130	Mar. 30	34	1394
Liniment	E. H. Perkins	12,974	Jan. 26	34	344
Liniment	J. Riley and J. M. Boyer	12,992	Feb. 2	34	440
Liquors. Malt	Machen & Co	13,113	Mar. 16	34	1162
Lithographs	Armor Lithographing Company	12,963	Jan. 26	34	344
Lozenges or troches. Digestive	J. A. Newhall	13,039	Feb. 16	34	704
Lubricants for vehicles and other like purposes	H. T. Schaefer	13,040	Feb. 16	34	704
Lumber, doors, and sash	E. Steves & Sons	13,050	Feb. 23	34	830
Macaroni, vermicelli, &c	F. Scaramelli Fils & Cie	13,093	Mar. 9	34	1050
Macaroons	S. Schaver	12,993	Feb. 2	34	440
Mackerel	Trask Fish Company	13,116	Mar. 16	34	1162
Medicine for the cure of chills and fever	A. B. Girardeau and B. W. Johnson.	12,997	Feb. 2	34	440
Medicine for the cure of rheumatism and other like complaints. Liquid	G. Quarrie	13,139	Mar. 30	34	1394
Medicine for the cure of rheumatism, to be taken internally	W. H. Clewley	13,063	Mar. 2	34	926
Medicine or condition powders. Horse	J. L. Kreychie	13,070	Mar. 2	34	926
Medicines. Certain-named proprietary	A. C. Meyer	13,008	Feb. 9	34	564
Metal, electroplated, and silver ware of all kinds	Reed & Barton	13,021	Feb. 9	34	564
Metal, electroplated, and silver ware of all kinds	Reed & Barton	13,022	Feb. 9	34	564
Metal for boxes and journal-bearings	R. Taylor	13,026	Feb. 9	34	564
Milk. Condensed	New York Condensed Milk Company.	13,054	Feb. 23	34	830
Mohair-plush	W. Foerster & Co	13,131	Mar. 30	34	1394
Nails. Wire	Albert Nail Company	13,060	Mar. 2	34	926
Needles, pins, crochet and knitting needles, and fish-hooks	T. H. Harper	12,989	Feb. 2	34	440
Oil. Olive	Société Hygiénique Alimentaire	12,948	Jan. 12	34	134
Oil. Petroleum	B. S. Pray	13,138	Mar. 30	34	1394
Overalls	Carter & Churchill	13,105	Mar. 16	34	1162
Paints and varnishes. Drier for	Lefranc & Co	12,971	Jan. 26	34	344
Paper and paper for photographic processes. Drawing	Kenffel & Esser	12,956	Jan. 19	34	254
Paper. Fine writing	S. Worthington	12,977	Jan. 26	34	344
Paper. Fine writing	S. Worthington	13,101	Mar. 9	34	1050
Paper for water-closets. Medicated Manila	B. T. Hoogland	12,970	Jan. 26	34	344
Perfumery	Mülhens & Kropff	12,942	Jan. 12	34	134
Perfumery	Mülhens & Kropff	12,944	Jan. 12	34	134
Perfumery	Mülhens & Kropff	12,945	Jan. 12	34	134
Perfumery for the handkerchief and toilet	Lorens Bros	12,940	Jan. 12	34	134
Petroleum. Refined	W. R. Grace & Co	13,132	Mar. 30	34	1394
Pickles. Highly-spiced	Shilton, Foote & Co	13,115	Mar. 16	34	1162
Pills for purifying the blood	S. B. McMurray	12,922	Jan. 5	34	2
Pills for purifying the blood	S. B. McMurray	12,923	Jan. 5	34	2
Pipes, pipe-stems, and cigar-holders	W. Demuth & Co	13,083	Feb. 16	34	704
Pocket-knives, shears, scissors, and razors	Flagg Cutlery Company	13,050	Feb. 23	34	830
Polishing powder for metal, glass, &c	Fischler & Co	12,996	Feb. 2	34	440
Preparation for relieving whooping-cough	Porter Specific Company	12,947	Jan. 12	34	134
Preparation for treatment of the circulation and organs connected therewith.	J. J. Mack & Co	13,120	Mar. 23	34	1280
Preserving and rendering water-proof brick, stone, wood, paper, cloth, and other fabrics. Compound for	R. E. Nichols	13,091	Mar. 9	34	1050
Punch	W. Fowler	12,918	Jan. 5	34	2
Refrigerators	Blodgett & Osgood	13,104	Mar. 16	34	1162
Refrigerators	G. R. Wight	12,929	Jan. 5	34	2
Remedy for cutaneous diseases	D. Palmer	13,019	Feb. 9	34	564
Remedy for the cure of corns	Hiscox & Co	13,134	Mar. 30	34	1394
Roofing materials. Certain	J. W. Stelwagon	13,095	Mar. 9	34	1050
Rubber boots and shoes and other articles of clothing	Goodyear Rubber Company	12,988	Feb. 2	34	440
Salve	West India Manufacturing Company	13,041	Feb. 16	34	704
Saponaceous cleansing compound	Ford Acme Renovator Company	13,142	Mar. 30	34	1394
Seeds. Garden and other	P. Henderson & Co	13,088	Feb. 16	34	704
Shears and scissors	Henry Seymour Cutlery Company	13,088	Mar. 9	34	1050
Shirts and shirt-waists	W. B. Brokaw	12,932	Jan. 19	34	254
Silica cleaning and polishing preparations	Plymouth Silica Company	13,030	Feb. 9	34	564

Alphabetical list of trade-marks, January to March, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Silk, velvet, and silk plushes	W. Openhym & Sons	13,017	Feb. 9	34	564
Silks, armures, satin-faced goods, serges, or other silken fabrics. Fancy-colored	Poidebard Silk Manufacturing Company.	13,137	Mar. 30	34	1394
Skins. Kid and goat	Milford, Cary & Conklin	12,926	Jan. 5	34	2
Soap	Adret, Christello & Co	12,981	Jan. 12	34	134
Soap for laundry and general purposes	Oberne, Hosick & Co	13,010	Feb. 9	34	564
Soap. Hard	J. Reardon & Sons	13,076	Mar. 2	34	926
Soap in cakes or bars	Dillern & Ackermann	13,085	Mar. 2	34	926
Soap. Laundry	N. K. Fairbank & Company	12,916	Jan. 5	34	2
Soap. Laundry	J. S. Kirk & Co	12,957	Jan. 19	34	254
Soap. Laundry	Pugsley, Dingman & Co	13,123	Mar. 23	34	1280
Soap. Laundry	Sanscost Manufacturing Company	13,149	Mar. 30	34	1394
Soap. Laundry and toilet	Empire Soap Company	12,985	Feb. 2	34	440
Soap. Laundry and toilet	Lautz Bros. & Co	12,938	Jan. 12	34	134
Soap. Laundry and toilet	Lautz Bros. & Co	12,939	Jan. 12	34	134
Soap. Laundry and toilet	Lautz Bros. & Co	12,950	Jan. 12	34	134
Soap-powders	F. K. Miller and S. S. Bobst	12,973	Jan. 26	34	344
Soaps. Laundry and other	Empire Soap Company	13,048	Feb. 23	34	830
Soaps. Laundry and other	Empire Soap Company	13,049	Feb. 23	34	830
Spectacles, eyeglasses, opera, field, and marine glasses, telescopes, microscopes, and lenses.	T. B. Hagstos & Co	12,999	Feb. 2	34	440
Spectacles, eyeglasses, opera, field, and marine glasses, telescopes, microscopes, and lenses.	T. B. Hagstos & Co	13,000	Feb. 2	34	440
Stains. Wood and shingle	S. Cabot	13,002	Feb. 9	34	564
Starch for laundry purposes	Beatty Starch Company	13,063	Mar. 9	34	1050
Stove-polish	Phœnix Plumbago Mining Company	13,075	Mar. 2	34	926
Stoves and ranges	Union Stove and Machine Works	13,096	Mar. 9	34	1050
Stoves and ranges and gasoline and oil stoves. Heating and cooking	Western Stove Manufacturing Company.	13,008	Feb. 9	34	564
Stoves. Heating and cooking stoves, including gasoline and oil	Western Stove Manufacturing Company.	12,976	Jan. 26	34	344
Stoves, ranges, heaters, and furnaces, and the parts thereof	Richardson & Boynton Company	13,124	Mar. 23	34	1280
Suits and overcoats. Gents' and children's	Einstein & Co	13,107	Mar. 16	34	1162
Surfacers, japans, stains, paints, and varnishes	Chicago Varnish Company	12,968	Jan. 26	34	344
Tea. Japan	Carter, Hawley & Co	12,981	Feb. 2	34	440
Tea. Japan	Carter, Hawley & Co	12,990	Feb. 2	34	440
Tea. Japan	Carter, Hawley & Co	13,084	Mar. 9	34	1050
Tea. Japan	Carter, Hawley & Co	13,085	Mar. 9	34	1050
Teas	W. H. Milnor & Co	12,925	Jan. 5	34	2
Thread. Gilling	J. Summerill & Bro	13,098	Mar. 9	34	1050
Thread on spools	J. Chadwick & Brother	12,964	Jan. 26	34	344
Thread on spools. White and colored	J. Chadwick & Brother	12,965	Jan. 26	34	344
Thread on spools. White and colored cotton	J. Chadwick & Brother	12,966	Jan. 26	34	344
Thread on spools. White and colored cotton	J. Chadwick & Brother	12,967	Jan. 26	34	344
Three-leaf twilled allesias and other cotton linings	Hyde & Burton	13,143	Mar. 30	34	1394
Three-leaf twilled allesias and other cotton linings	Hyde & Burton	13,144	Mar. 30	34	1394
Tobacco. Chewing and smoking	American Eagle Tobacco Company	12,910	Jan. 5	34	2
Tobacco, cigars, and cigarettes. Smoking	X. and H. H. Hanna	12,953	Jan. 19	34	254
Tobacco in its raw state	Havana Tobacco Company	12,936	Jan. 12	34	134
Tobacco in plug or other form, smoking-tobacco, cigars, and cigarettes. Chewing	J. G. Dill	13,004	Feb. 9	34	564
Tobacco. Plug, twist, and smoking	J. B. Pace Tobacco Company	12,946	Jan. 12	34	134
Tobacco. Smoking and chewing	C. W. Allen Company	13,061	Mar. 2	34	926
Tonic	F. C. Miville	12,941	Jan. 12	34	134
Tonic	O. M. Stiger	13,023	Feb. 9	34	564
Tonics. Liquid	Strickland & Co	13,025	Feb. 9	34	564
Twine and rope. Binder's	Standard Cordage Company	12,928	Jan. 5	34	2
Type. Printing	MacKellar, Smiths & Jordan Company.	13,072	Mar. 2	34	926
Type-writers	C. Spiro	13,057	Feb. 23	34	830
Type-writers	C. Spiro	13,058	Feb. 23	34	830
Varnishes, stains, japans, surfacers, and kindred goods	Chicago Varnish Company	12,982	Feb. 2	34	440
Varnishes, stains, japans, surfacers, and kindred goods	Chicago Varnish Company	12,983	Feb. 2	34	440
Varnishes, stains, japans, surfacers, and kindred goods	Chicago Varnish Company	12,984	Feb. 2	34	440
Varnishes, stains, japans, surfacers, and kindred goods	Chicago Varnish Company	12,985	Feb. 2	34	440
Vegetable fiber and cloth manufactured therefrom	A. E. Newman	12,927	Jan. 5	34	2
Veiling. Grenadine	W. Openhym & Sons	13,015	Feb. 9	34	564
Veiling. Sewing-silk	W. Openhym & Sons	13,014	Feb. 9	34	564
Veilings and tulle. All kinds of	W. Openhym & Sons	13,012	Feb. 9	34	564
Velveteens, corduroys, and cotton-velvet fabrics	W. Openhym & Sons	13,011	Feb. 9	34	564
Vermifuge	G. F. Payne	13,136	Mar. 30	34	1394
Wall-paper. Embossed or relief	Manhattan Wall Paper Company	12,972	Jan. 26	34	344
Watch-cases. Filled	H. Muhr's Sons	12,958	Jan. 19	34	254
Whips and whip-lashes	E. K. Warren	13,150	Mar. 30	34	1394
Whisky	G. Amsinck & Co	13,103	Mar. 16	34	1162
Whisky	A. Coldewey	13,080	Feb. 16	34	704
Whisky	M. Lowenbach	12,921	Jan. 5	34	2
Whisky	Ireland & Vannatta	13,001	Feb. 9	34	440
Whisky	R. G. McCorkle & Co	13,146	Mar. 30	34	1394
Windmills and tanks	O. G. Stowell	13,097	Mar. 9	34	1050
Wine	J. Foley and J. R. Poor	13,108	Mar. 16	34	1162
Wine. Champagne	L. H. L. R. Olry	13,073	Mar. 2	34	926
Wines and champagnes. Imported French	J. B. Fontanel	12,917	Jan. 5	34	2
Woolen fabrics. Woven	S. B. Peabody	13,074	Mar. 2	34	926
Ypsilanti mineral water and all the various products of the same.	T. C. Owen	13,127	Mar. 26	34	1280

ALPHABETICAL LIST OF LABELS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"Abietene Cough Balsam"	D. F. Fryer	4,745	Mar. 2	34	928
"Albumenoid Food"	E. R. Waters	4,706	Jan. 19	34	254
"All Havana" (for Cigars)	J. A. Ramaldine & Son	4,725	Feb. 9	34	564
"Anti-Kalsomine is all the Name implies"	M. B. Church	4,743	Mar. 2	34	928
"Bacon's Canadian Emollient"	T. Angelo	4,727	Feb. 9	34	564
"Bolton's Burn Water and Burn Salve, a Quick Cure for Burns and Inflammatory Sores, on Man and Beast."	V. F. Bolton	4,730	Feb. 9	34	564
"Bristol Mfg. Co" (for Ingrain Carpets)	Hood, Bonbright & Co	4,736	Feb. 23	34	870
"Babbin's Great French Oil"	J. B. Babbins	4,726	Feb. 9	34	564
"Carbonated Sweet Cider"	C. Roth & Co	4,719	Jan. 26	34	344
"Champagne Pop" (for a Beverage)	Trowbridge & Huxley	4,736	Feb. 16	34	704
"Cooper's Improved Developer" (for Photographic Plates and Films.)	Eastman Dry Plate and Film Company.	4,749	Mar. 2	34	928
"Corbett's Shakers' Compound"	Canterbury Society of Shakers	4,728	Feb. 9	34	564
"D'Alton & Bain" (for Ginger Ale, Soda Water, and Sarsaparilla.)	D'Alton & Bain	4,734	Feb. 16	34	704
"De Kalb's Pennyroyal Pills"	W. S. Taylor	4,739	Feb. 16	34	704
"Dental Chewing Gum"	R. W. Morgan	4,773	Mar. 30	34	1294
"Diphtheria Remedy"	H. Dieriamm	4,714	Feb. 2	34	440
"Dowden's Dental Fluid"	J. B. Dowden & Co	4,760	Mar. 23	34	1280
"Dr. A. C. Hozzie's Certain Croup Cure"	A. P. Hozzie	4,716	Feb. 2	34	440
"Dr. D. Dyer." (for Gelatin or Sugar-Coated Pills)	J. F. Dyer	4,761	Mar. 23	34	1280
"Dr. D. Dyer's Gelatin or Sugar-Coated Headache, Dyspeptic and Liver Pills."	J. F. Dyer	4,762	Mar. 23	34	1280
"Dr. La Tour's Hospital Injection"	R. E. Stevenson	4,774	Mar. 30	34	1294
"Dr. Parker's Vegetable Cure"	R. E. Stevenson	4,776	Mar. 30	34	1294
"Dr. Todd's Tola & Tar"	W. C. Buntin	4,767	Mar. 30	34	1294
"Dr. Woolson's Universal Salve"	L. B. Woolson	4,733	Feb. 16	34	704
"Eastern Distilling Co's D. D. Rye Gin"	Eastern Distilling Company	4,689	Jan. 12	34	134
"Emmons' Pain Tincture"	E. S. Carpenter	4,701	Jan. 19	34	254
"Emrick's Compound" (for Preventing and Curing Disease in Hogs and Poultry.)	J. G. Henninger	4,752	Mar. 9	34	1050
"Extension and Adjustable Clothing"	Klein, Goodhart & Koch	4,703	Jan. 19	34	254
"F. H. Metzger's Pain Eradicator"	W. J. Metzger	4,717	Feb. 2	34	440
"Fibre Label" (for Paper)	Springfield Paper Company	4,755	Mar. 9	34	1050
"Florida Cough Balm and Liniment"	C. J. Matson	4,754	Mar. 9	34	1050
"Fowler's Compound Syrup Hypophosphites"	R. E. Stevenson	4,772	Mar. 30	34	1294
"G. W. Shotwell & Co's Cereal Compound" (for the Lungs)	G. W. Shotwell & Co	4,695	Jan. 12	34	134
"Georgia Climatic Tonic Blood Purifier"	A. F. Kelly	4,740	Feb. 23	34	870
"Ginger Champagne" (for Ginger Ale)	T. J. and L. B. West and A. Cronk	4,726	Feb. 9	34	564
"Glasscock's Concentrated Cocaine Remedies"	Sallade & Eppinger	4,718	Feb. 2	34	440
"Harris' Cough Bitters"	R. T. Miller	4,764	Mar. 23	34	1280
"Honey Extract" (for a Cough Sirup)	T. W. Halliday	4,757	Mar. 16	34	1102
"Honey, Horehound, Licorice, and Tar." (for Coughs and Colds.)	C. G. Pease	4,748	Mar. 2	34	928
"Howard's Compound Soap"	H. G. Fay	4,729	Feb. 16	34	704
"J. A. Hubbard's Ash Remedy"	J. A. Hubbard	4,769	Mar. 30	34	1294
"Kalamazoo Celery Bitters"	F. L. Abbey and W. C. Tuthill	4,719	Feb. 9	34	564
"Larrabee's Snow Flake Biscuits"	E. J. Larrabee & Co	4,770	Mar. 30	34	1294
"Larrabee's Snow Flake Biscuits"	E. J. Larrabee & Co	4,771	Mar. 30	34	1294
"Lebanon Overalls"	Carter & Churchill	4,750	Mar. 9	34	1050
"Leipziger Burgunder Wein Bitter"	Hochstadter & Co	4,768	Mar. 30	34	1294
"Massey's Elder Flower and Cucumber Cream" (for Cosmetics.)	Caswell, Massey & Co	4,751	Mar. 9	34	1050
"Moschcowitz Improved Bustle Springs"	Moschcowitz Brothers	4,724	Feb. 9	34	564
"Mrs. Clayton's Family Medicine"	F. J. Heath	4,715	Feb. 2	34	440
"Nichols' Carbolized Tooth Powder"	M. S. Nichols	4,707	Jan. 26	34	344
"Nichols' Dyspepsia Specific"	J. C. Keefe and J. B. Nichols	4,720	Feb. 23	34	870
"Oregon Grape Root Bitters"	J. D. Eastman & Co	4,727	Feb. 23	34	870
"Our Extra" (for Skirts)	L. Dryfoos & Co	4,744	Mar. 2	34	928
"Oyster Plug" (for Tobacco)	Gem City Tobacco Works	4,746	Mar. 2	34	928
"Permanent Chloride Paper"	Eastman Dry Plate and Film Company.	4,702	Jan. 19	34	254
"Prescription Number 7907"	E. H. Perkins	4,708	Jan. 26	34	344
"Quinine and Sulphur" (for Soap)	Wall Brothers	4,779	Mar. 30	34	1294
"Rheumatic Specific"	R. Drake	4,756	Mar. 16	34	1102
"Roberts Positive Cure for Rheumatism"	R. H. Lahy	4,712	Jan. 26	34	344
"Rose-Sandal" (for Perfumes)	T. J. France	4,722	Feb. 9	34	564
"Rose' Oxygenated Water" (for a Beverage)	W. S. Rose	4,709	Jan. 26	34	344
"Radelph's Soluble Iron Pills"	Hegeman & Co	4,735	Feb. 16	34	704
"Sarah Buckby Pearson's Remedy"	K. L. Koenig	4,763	Mar. 23	34	1280
"Shaker Sarsaparilla Lozenges"	Canterbury Society of Shakers	4,721	Feb. 9	34	564
"Silica Polish" (for Cleaning and Polishing Compounds)	Plymouth Silica Company	4,741	Feb. 23	34	870
"Soft Shoes for Tender Feet"	C. S. Grover	4,747	Mar. 2	34	928
"Stafford's Vegetable Blood Purifier"	M. Stafford	4,765	Mar. 23	34	1280
"Strongest Made Lester Boot"	Lester & Co	4,753	Mar. 9	34	1050
"Strontia Mineral Spring Water"	Strontia Spring Company	4,697	Jan. 12	34	134
"Suspenders"	J. M. Povey	4,765	Mar. 23	34	1280
"That Red Liniment"	H. Kessler	4,700	Jan. 12	34	134
"The Bristle Whisk Brush"	R. Cahill	4,713	Feb. 2	34	440
"The Durable Shovel"	W. Wharton, Jr., & Co	4,742	Feb. 23	34	870

Alphabetical list of labels, January to March, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"The Great English Remedy, Dr. Fowler's Kidney Cure"	R. E. Stevenson	4,775	Mar. 30	34	1304
"The Indelible Crayon"	A. F. Fairfield	4,695	Jan. 12	34	134
"The Magic Mosquito Bite Cure"	Sallade & Co	4,711	Jan. 26	34	344
"The Spear Perfect Fertiliser"	B. Spear	4,698	Jan. 12	34	134
"Warren's Standard Treeing Composition"	P. J. Lobben	4,704	Jan. 19	34	264
"Westlake's Vegetable Ointment"	W. Westlake	4,758	Mar. 16	34	1169
"White Manilla"	Ticonderoga Pulp and Paper Company.	4,778	Mar. 30	34	1304
"White Railroad Manilla." (for Paper)	Ticonderoga Pulp and Paper Company.	4,777	Mar. 30	34	1304
"Whitmore's Refined Pancreatic Emulsion"	J. E. Whitmore	4,705	Jan. 19	34	264
"Williams' Emulsion of Cod Liver Oil with Hypophosphite of Lime."	Janks & Jefferis	4,722	Feb. 16	34	704
"Wilson's Vegetable Oil"	D. G. Wilson & Co	4,731	Feb. 16	34	704
"Yellow Burlap" (for Covers or Bags for Hams and other Pork and Beef Products.)	G. C. Bonbright	4,759	Mar. 23	34	1320

DISCLAIMERS.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Vol.	Page.
Gun, Machine	William Gardner	174,130	Feb. 29, 1876	Mar. 11, 1886	34	1169
Satchel lock	William Roemer	208,541	Oct. 1, 1878	Jan. 2, 1886	34	134

OFFICIAL GAZETTE

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UNITED STATES PATENT OFFICE.

VOLUME XXXV.

APRIL 6 TO JUNE 29, INCLUSIVE.

1886.

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1886.

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DIGEST OF DECISIONS OF THE COMMISSIONER OF PATENTS AND OF THE UNITED STATES COURTS IN PATENT CASES.

INDEX OF PATENTS AND PATENTEES FOR THE QUARTER YEAR, APRIL TO JUNE, 1886.

ERRATA.

339,380, page 71, in title, name of inventor, for "Eugene H. Cochen" read *Eugene H. Cochen.*

339,665, page 154, in title, name of inventor, for "William M. Krure" read *William M. Kruse.*

339,745, page 174, fourth claim, line 8, for "charged" read *changed.*

339,930, page 219, in title, name of assignee, for "Geo. Westinghouse" read *George Westinghouse, Jr.*

340,219, page 300, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

340,227, page 303, fourth claim, line 4, for the reference-letter "H" read F F².

340,228, page 303, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

340,552, page 395, in title, name of inventor, for "Ordella Brumble" read *Ordella Bramble.*

340,606, page 407, in claim, line 4, strike out the comma after the word "straps," and strike out hyphen between the words "socket" and "rollers" and insert comma instead.

340,617, page 410, in drawing, the steering-rod-supporting arm should be lettered *b.*

340,813, page 458, in title, name of assignee, for "Frederick R. Maddox" read *Frederick R. Maddock.*

340,988, page 510, in claim, line 2, for "bottoms" read *battens.*

341,486, page 645, in title, name of assignee, for "Daniel Duel" read *Daniel Dull.*

341,859, page 744, in title, after residence of inventor, insert *assignor to Hinds, Ketchum & Co., Brooklyn, N. Y.*

342,465, page 917, in claim, line 4, for "twisting" read *bursting.*

342,882, page 1034, in title, for "Combined Writing-Desk" read *Combined Writing-Desk and Bureau or other Piece of Furniture.*

343,157, page 1117, strike out all after number—title, drawing, and claim—and insert WITHDRAWN.

343,186, page 1125, in title, name of assignee, for "James R. Davis" read *James R. Davies.*

343,372, page 1177, in title, residence of assignees, for "Rochester, N. Y.," read *New York, N. Y.*

343,821, page 1296, in title, name of inventor, for "Paul Kühne" read *Paul Kühne.*

13,446, (trade-mark,) page 1342, date of use, for "March 1, 1866," read *March* 1, 1886.

344,063, page 1365, in title, name of inventor, for "Benjamin F. Tabor" read *Benjamin F. Taber.*

344,122, 344,123, and **344,124,** pages 1380 and 1381, strike out all after numbers—titles, drawings, and claims—and insert WITHDRAWN.

344,693, page 1530, in title, names of inventors, for "Daniel W. Aura" read *Daniel W. Arra.*

344,710, page 1534, in title, name of assignee, for "Edward P. Mervin" read *Edward P. Mervin.*

344,765, page 1546, in title, after residence of inventor, insert *assignor of one-half to Edward Beach Lansing.*

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OFFICIAL GAZETTE

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APRIL–JUNE, 1886.

THE OFFICIAL GAZETTE

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[BY AUTHORITY OF CONGRESS.]

VOL. 35—No. 1. TUESDAY, APRIL 6, 1886. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Attorneys.

DEPARTMENT OF THE INTERIOR,
Washington, March 29, 1886.

SIR: I am directed by the Secretary of the Interior to inform you that the order of the Department dated May 26, 1884, disbarring Robert J. Dyer, of Shady Hill, Tennessee, from practice before this Department and its bureaus, has this day been rescinded.

Very respectfully,

S. A. JONAS,
Acting Chief Clerk.

The Commissioner of Patents.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth.....$10 00

INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 190 pp.—

Bound half-turkey	2 50
Bound in cloth	1 25
Paper covers	1 00

Issue of April 6, 1886.

Patents	488	No. 339,124 to No. 339,611, inclusive.
Designs	10	No. 16,598 to No. 16,607, inclusive.
Trade-Marks	21	No. 13,151 to No. 13,171, inclusive.
Labels	6	No. 4,780 to No. 4,785, inclusive.
Reissues	5	No. 10,706 to No. 10,710, inclusive.
Total issue	530	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	3	1	Nebraska	6	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	2	.....	New Hampshire	7	.....
California	13	1	New Jersey	16	.....
Colorado	1	.....	New Mexico Territ'y	.....	.....
Connecticut	18	.....	New York	89	7
Dakota Territory	.....	.....	North Carolina	1	.....
Delaware	.....	.....	Ohio	37	2
District of Columbia	3	.....	Oregon	3	.....
Florida	.....	.....	Pennsylvania	46	4
Georgia	.....	.....	Rhode Island	1	1
Idaho Territory	.....	.....	South Carolina	2	.....
Illinois	38	4	Tennessee	2	.....
Indiana	12	.....	Texas	5	.....
Indian Territory	.....	.....	Utah Territory	1	.....
Iowa	11	.....	Vermont	2	.....
Kansas	10	.....	Virginia	6	.....
Kentucky	5	.....	Washington Territ'y	.....	.....
Louisiana	1	.....	West Virginia	3	.....
Maine	7	.....	Wisconsin	13	.....
Maryland	1	.....	Wyoming Territory	.....	.....
Massachusetts	39	4	United States Army	.....	.....
Michigan	22	.....	United States Navy	.....	.....
Minnesota	8	1			
Mississippi	1	.....	Total to citizens of the United States	446	26
Missouri	14	1			
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	9	.....
Austria-Hungary	2	.....	Guatemala	1	.....
Barbadoes	.....	.....	Holland	.....	.....
Belgium	2	.....	Italy	.....	.....
Bermuda	.....	.....	New South Wales	1	.....
British Columbia	.....	.....	New Zealand	1	.....
Canada	8	.....	Scotland	.....	.....
Cape of Good Hope	.....	.....	Spain	1	.....
Colombia, U. S. of	.....	.....	Switzerland	1	.....
Cuba	.....	1	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	52	1
England	19	.....			
France	7	.....			

DESIGNS.

16,598.—STOVE-PLATE LIFTER.—*James H. Alexander*, Philadelphia, Pa., assignor to *Thomas Devlin & Co.*, same place. Application filed February 18, 1886. Serial No. 192,460. Term of patent 7 years.

16,599.—TYPE.—*Henry Brehmer*, Stapleton, assignor to *David Wolfe Bruce*, New York, N. Y. Application filed March 4, 1886. Serial No. 194,071. Term of patent 14 years.

16,600.—TYPE.—*Henry Brehmer*, Stapleton, assignor to *David Wolfe Bruce*, New York, N. Y. Application filed March 4, 1886. Serial No. 194,070. Term of patent 14 years.

16,601.—CHENILLE PENDANT.—*Bernhard Dreyfus*, New York, N. Y. Application filed February 17, 1886. Serial No. 192,310. Term of patent 7 years.

16,602.—HUB-BAND.—*Henry M. Fraser*, Cincinnati, Ohio, assignor to *The Royer Wheel Company*, same place. Application filed November 30, 1885. Serial No. 184,371. Term of patent 14 years.

16,603.—ORNAMENTATION OF HUB-BANDS.—*Solomon Marks*, Cincinnati, Ohio, assignor to *Post & Co.*, same place. Application filed December 26, 1885. Serial No. 186,817. Term of patent 3½ years.

16,604.—BOX-OPENER.—*Fredrick C. Miller*, Newport, Ky. Application filed February 15, 1886. Serial No. 192,041. Term of patent 14 years.

16,605.—WATCH-CASE.—*John D. Planchamp*, Chicago, Ill. Application filed October 24, 1885. Serial No. 180,876. Term of patent 7 years.

16,606.—SUPPORT FOR THE WEIGH-BEAMS OF SCALES.—*William W. Reynolds*, Rutland, Vt. Application filed December 17, 1885. Serial No. 186,014. Term of patent 14 years.

16,607.—GLASS VESSEL.—*William G. Walter*, Pittsburg, Pa., assignor to *Campbell, Jones & Co.*, same place. Application filed February 15, 1886. Serial No. 192,043. Term of patent 3½ years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

13,151.—EXTRACT OF ACID IRON EARTH.—*The Acid Earth Mining and Manufacturing Company*, Mobile, Ala. Application filed February 4, 1886. Used since January 1, 1886.

"A circular design formed by a serpent having its tail in its mouth, which incloses another circle, in the center of which is the monogram of 'A I E,' and between the two circles are the words 'NATURE'S OWN REMEDY,' and above the whole are the words 'ACID IRON EARTH.'"

13,152.—PLUG-TOBACCO.—*Adler, Goldman & Co.*, St. Louis, Mo. Application filed February 23, 1886. Used since January 1, 1885.

"A tin-tag representing a baby's head."

13,153.—RHEUMATISM AND DIPHTHERIA CURE.—*Martin L. Armstrong*, Harshaville, Pa. Application filed March 4, 1886. Used since February 4, 1885.

"The phrase 'I CURE YOU,' as expressed by the picture of an eye, the word 'CURE,' and the capital letter 'U.'"

13,154.—CIGARS.—*Bances & Suarez*, Havana, Cuba. Application filed February 6, 1886. Used since September 15, 1885.

"The words 'LA HIJA DE LA HABANA.'"

13,155.—SMOKING-TOBACCO.—*August Beck & Company*, Chicago, Ill. Application filed February 25, 1886. Used since May 1, 1883.

"The words 'DUTCH MIKE.'"

13,156.—KNITTED UNDERWEAR.—*R. Berry & Co.*, Providence, R. I. Application filed February 16, 1886. Used since November 1, 1885.

"The representation of a child clad in a knitted garment."

13,157.—HOSIERY.—*Le Boutillier Brothers*, New York, N. Y. Application filed March 4, 1886. Used since November 1, 1884.

"The words 'ROCK DYE.'"

13,158.—VARNISHES, STAINS, JAPANS, SURFACERS, AND KINDRED GOODS.—*Chicago Varnish Company*, Chicago, Ill. Application filed March 5, 1886. Used since February 16, 1886.

"The word 'SUPREMIS.'"

13,159.—DIGESTIVE PREPARATION.—*Fairchild Brothers & Foster*, New York, N. Y. Application filed March 6, 1886. Used since June 16, 1885.

"The word 'ZYMINE.'"

13,160.—PERFUMERY.—*E. W. Hoyt & Co.*, Lowell, Mass. Application filed March 6, 1886. Used since January 29, 1886.

"The representation of a boy writing on a wall and of a girl holding a doll in her arms."

13,161.—MEDICINE FOR THE CURE OF CATARRH, HAY FEVER, AND LEUCORRHŒA.—*William T. Jones*, Columbia, Cal. Application filed February 10, 1886. Used since January 1, 1886.

"The word 'JONES'S,' accompanied by the portrait and autograph signature of the registrant."

13,162.—BLEACHED, BROWN, AND COLORED COTTON GOODS.—*Lowe, Harriman & Co.*, New York, N. Y. Application filed March 6, 1886. Used since August 30, 1883.

"The words 'FIRST CALL.'"

13,163.—MEDALS, SEALS, STAMPS, AND BADGES.—*Anthony M. Michael*, Albany, N. Y. Application filed March 2, 1886. Used since January 20, 1886.

"The word 'BI-CENTENNIAL.'"

13,164.—DYSPEPSIA AND MALARIA CURE.—*William J. Miesimer*, Pottstown, Pa. Application filed February 20, 1886. Used since November 1, 1884.

"The representation of a female figure standing on an eminence and having a bundle of herbs on the left shoulder and a sickle suspended from the right arm and the words 'WINE OF HERBS.'"

13,165.—SPOOL-COTTON.—*Charles F. Murphy*, Boston, Mass. Application filed March 8, 1886. Used since December 1, 1885.

"The word-symbol 'BONNE SOIE.'"

13,166.—PAINT.—*New York Fire Proof Paint Company*, New York, N. Y. Application filed March 10, 1886. Used since February 1, 1886.

"The word 'SOTERIA.'"

13,167.—HAMES AND SADDLERY HARDWARE.—*The P. Hayden Saddlery Hardware Company*, Columbus, Ohio. Application filed March 10, 1886. Used since August 1, 1875.

"The letters 'H. B.'"

13,168.—CHEWING-GUM.—*H. D. Smith & Co.*, Cincinnati, Ohio. Application filed March 12, 1886. Used since October, 1885.

"The words 'RED RIDING HOOD.'"

13,169.—WASHING CRYSTAL OR POTASH.—*Peter Cooley Tomson*, Philadelphia, Pa. Application filed February 26, 1886. Used since December 1, 1885.

"The word-symbol 'SOAP FOAM.'"

13,170.—WHEAT-FLOUR.—*Washburn Mill Company*, Minneapolis and Anoka, Minn. Application filed February 6, 1886. Used since September 1, 1885.

"The words 'LIBERTY BELL' and the representation of a bell."

13,171.—PICKLES AND MUSTARD.—*Henry Wichert*, Chicago, Ill. Application filed March 2, 1886. Used since February 18, 1886.

"The word 'LUCULLEAN.'"

LABELS.

4,780.—Title: "CIDER SYRUP."—*Arthur H. Bailey*, Boston, Mass. Application filed March 15, 1886.

4,781.—Title: "E. & J. BURKE, FINEST PALE ALE."—*Edward & John Burke*, New York, N. Y., Dublin, Ireland, and Liverpool, England. Application filed March 6, 1886. (Trade-Mark Registered.)

4,782.—Title: "PARIS BRAID GOLD MEDAL."—*Lesher, Whitman & Co.*, New York, N. Y. Application filed March 15, 1886.

4,783.—Title: "EGG SHAMPOO CREAM."—*William F. Russell*, Boston, Mass. Application filed February 9, 1886.

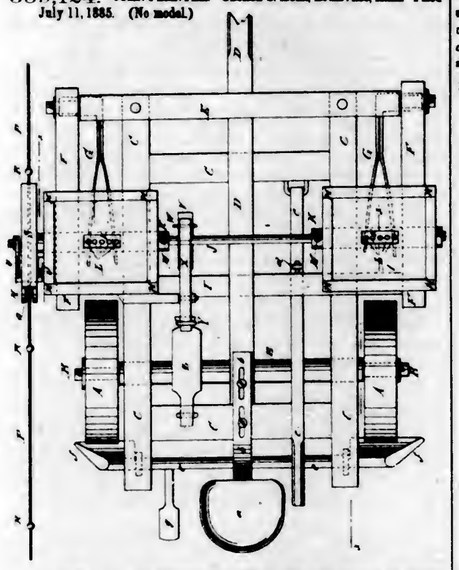
4,784.—Title: "SEAVER'S UTERINE LOTION."—*De Witt C. Seaver* and *Mary B. Seaver*, Rock Island, Ill. Application filed March 13, 1886.

4,785.—Title: "THE PHILADELPHIA PRUNING SHEARS."—*Isaac B. Seeley*, Philadelphia, Pa. Application filed March 12, 1886.

PATENTS

GRANTED APR. 6, 1886.

339,124. CORN-PLANTER. GEORGE S. AGEE, Louisville, Kans. Filed July 11, 1885. (No model.)



Claim.—1. The combination, with a seed-box having an oblong opening in its bottom, of a revoluble shaft held from longitudinal movement below the said opening, and a laterally-adjustable cylinder on the shaft and provided with series of rows of cavities of approximately uniform size, the width of the opening in the seed-box bottom being the same as that of the series of cavities in the cylinder, whereby one or more rows of the said cavities may register with the said opening, substantially as set forth.

2. The combination, with the dropper-shaft and the laterally-adjustable seed-dropping cylinder having a series of rows of cavities, of the check-wheel having a peripheral groove and transverse notches corresponding in number with the rows of said cavities, substantially as set forth.

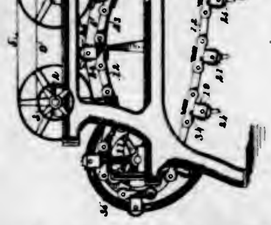
3. The combination, with the dropper-shaft J, of the peripherally-grooved and transversely-notched check-wheel N, and the pivoted latch S, having a projection, T, substantially as and for the purpose set forth.

4. The combination, with the frame, the shaft J, the seed-dropping cylinders thereon, and the peripherally and transversely grooved check-wheel N, of the notched wheel V, the pivoted lever X, the link W, connecting the lever and notched wheel, the foot-lever Z, extended near the driver's seat, and the link Y, connecting said foot-lever and the rear end of lever X, substantially as set forth.

5. The combination, with the dropper-shaft J and the grooved check-wheel N thereon, of the U-shaped support U, extending on opposite sides of said check-wheel and secured at one end to the framework and at the other to the dropper-shaft outside of the check-wheel, and the latch S, pivoted on the support U at the bend thereof, substantially as set forth.

6. The combination of the frame C, the rock-shaft *e*, journaled at the front end thereof, the runners G, secured thereto, the top runner-bars, F, the cross-bar I, connecting the rear ends of the bars F, the seed-boxes H, mounted on said runner-bars, the shaft J, the laterally-adjustable seed-cylinders thereon, the lever *c*, connected to the front cross-bar of the frame C, extended back to the driver's seat, and a link, *d*, connecting the lever and cross-bars I of the runners, substantially as set forth.

339,125. SPOKE-POLISHING MACHINE. JOHN W. ALLEN, Milwaukee, Wis. Filed Jan. 23, 1885. (No model.)



Claim.—1. In a spoke-polishing machine, a sinuous guide, 37, in combination with a spoke-carrying mandrel, 20, said mandrel being provided with a rigid crank end, which crank is directed by the sinuous guide 37, whereby an oscillating motion is given to the mandrel as it travels forward, substantially as set forth.

2. In a spoke-polishing machine, the sinuous guide 37, the hanger 38, provided with pin *b*, and guides 23, having a downward curve opposite hanger 38, in combination with the spoke-carrying mandrel 20, traveling on an endless chain, running in guides 23, and provided with a pinion adapted to mesh with pin *b*, substantially as and for the purpose specified.

3. In a spoke-polishing machine, a spoke-carrying mandrel, 20, provided with crank-arm 24 and a spindle, 21, said mandrel and spindle traveling on an endless chain, in combination with the sinuous guide 37, adapted to receive the crank-arm 24, whereby the spoke is caused to oscillate as it is carried forward, and the polishing-belt 8, having a longitudinal motion only, substantially as and for the purpose described.

4. The combination of the endless chain having rigid thereon the bracket 18, the mandrel 20, provided with pinion 25, and the hanger 38, provided with a pin, *b*, meshing with pinion 25, substantially as set forth.

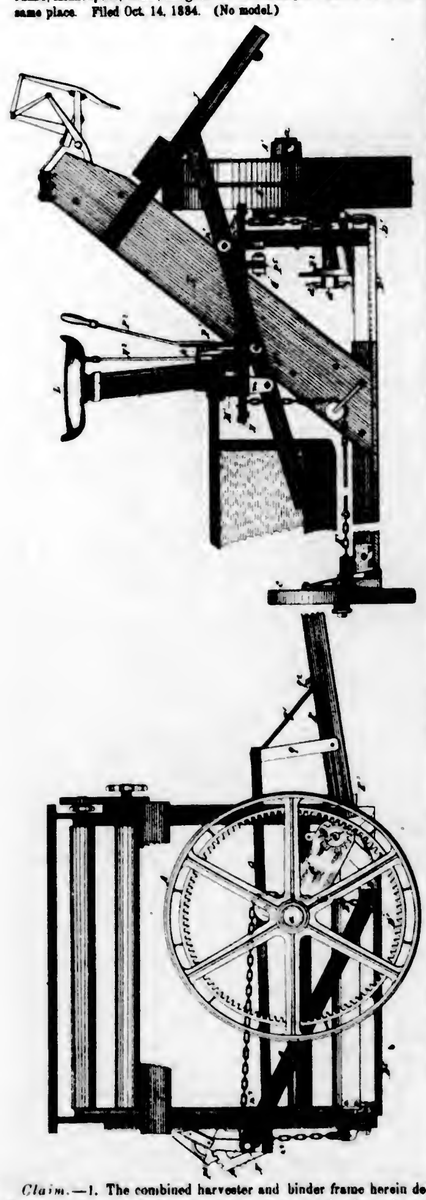
5. The combination of the spindle 21, having an encompassing spiral spring and rigid pin 30, the pivoted centrally-slotted lever 29.

provided with arm 31, the incline 32, and the bracket 19, substantially as and for the purpose set forth.

6. The combination of the spindle 21, having a reciprocal movement in bracket 19, and provided with a resisting-spring and the rigid pin 30, the pivoted centrally-slotted lever 29, the spring-catch 33, and the thereto-connected centrally-pivoted lever 34, the incline *a*, and the bracket 19, substantially as and for the purpose set forth.

7. The radial arms 40, rigid on the shaft of sprocket-wheels 11, located and adjusted on said shaft, as described, substantially as and for the purpose set forth.

339,126. **COMBINED HARVESTER AND BINDER.** JOHN F. APPLEBY, Minneapolis, Minn., assignor to the Minneapolis Harvester Works, same place. Filed Oct. 14, 1884. (No model.)



Claim.—1. The combined harvester and binder frame herein described, consisting, essentially, of a platform-frame having its grain end suitably supported upon the grain-wheel, and its opposite or stubble end supported upon the axle of a drive-wheel which is outside the platform-frame, an elevator-frame secured to the platform-frame, and extending upward and sidewise therefrom to a point over the top of the said drive-wheel, and a binder-deck frame suitably fastened to the elevator-frame, and inclining outwardly and downwardly from the upper part thereof.

2. In a harvester-platform frame, the drive-wheel end of which is supported upon the inner end of the axle of the drive-wheel, the horizontal brace D^6, extending from the point of connection of the drive-wheel end of the platform with the windlass-chain backward in a diagonal direction to the rear sill of the platform, as shown and described.

3. In a harvester in which the windlass-shaft is arranged in the rear of the axial line of the drive-wheel, and in which the drive-wheel end of the platform is suspended from a windlass-chain which extends upward over a pulley suitably supported by the axle of the drive-wheel, and thence backward to the windlass-shaft, the stretcher or brace O, extending from the point of suspension of the platform, or from near that point, backward to the drive-wheel end of the windlass-shaft, or to the bearing which supports the end of the windlass-shaft adjoining the drive-wheel, substantially as and for the purpose described.

4. The stretcher or brace O, extending from the point of suspension of the platform, or from near that point, backward to the drive-wheel end of the windlass-shaft, or to the bearing supporting the drive-wheel end of the windlass-shaft, in combination, substantially as herein described, with mechanism for tilting the platform, occupying a vertical plane in close proximity to the vertical plane occupied by the stretcher O, and consisting, essentially, of a rock-shaft provided with a crank-arm having a pitman-connection with a pole pivoted to the front of the platform, and means for operating the said rock-shaft.

5. In a harvester, the combination of the platform-frame and the drive-wheel with a crank-arm affixed to or formed in one piece with the axle of the drive-wheel, and having its free end pivotally connected with the platform, a windlass arranged in the rear of the axial line of the drive-wheel, a windlass-chain extending forward from the windlass-shaft, and over a pulley pivotally supported upon or by the axle of the drive-wheel, and extending downward from the said pulley to the platform, and means for operating the windlass to take up or slack off the said chain, and thereby raise or lower the drive-wheel end of the platform.

6. A horizontal windlass-shaft arranged in the rear of the axial line of the drive-wheel, and means for operating the said shaft, in combination with a chain affixed to the drive-wheel end of the windlass-shaft, and extending forward therefrom over a pulley suitably supported upon or by the axle of the drive-wheel, and thence extending downward to the platform, and a chain affixed to the grain-wheel end of the windlass-shaft, led by suitable guide-pulleys downward, sidewise, and forward to the free end of a crooked lever affixed to the axle of the grain-wheel, and having its angle pivotally connected with the grain end of the platform.

7. The gear-frame U, cast in one piece, provided with flanges for the reception of the bolts by which it is secured to the bed-plate D^2, having formed in it a vertical aperture to serve as the bearing for the vertical crank-shaft d^4, and having its front upright member and the front side of the tubular bearing of the vertical shaft transversely perforated to receive the pin U^2, which serves as the axis for the bevel-wheel *s*, and sprocket-wheel S, by means of which power is transmitted from the counter-shaft *d* to the main sprocket-chain S'.

8. The gear-frame U, cast in one piece and bolted at the bottom to the bed-plate D^2, and stayed at the top by the horizontal tie-bolt U', and otherwise constructed to afford the bearing for the vertical crank-shaft d^4, and to receive the pin U^2, which serves as the axis for the bevel-wheel *s*, and sprocket-wheel S, substantially as set forth.

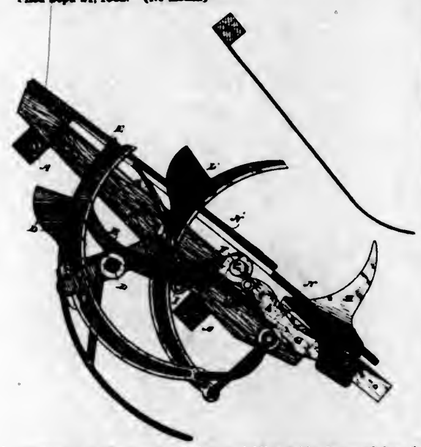
9. The flanged socket G and end guard, G', cast in one piece, in combination with the finger-bar and grain-end member of the platform, and the crooked arm F of the grain-wheel axle.

339,127. **SIPHON.** GEORGE W. ARPER, Oakland, Cal. Filed Apr. 17, 1885. (No model.)



Claim.—In siphons, the siphon described, comprising a can, a pipe, and adjusting-screw H, braces J, recessed to receive the corners of the can and the pipes, a valve-chamber screwed on the lower end of the pipe and having ports D, the valve F, the arm L, attached to the valve-chamber, and the nozzle, substantially as set forth.

339,128. **GRAIN-BINDER.** WILLIAM R. BAKER, Chicago, Ill., assignor to the McCormick Harvesting Machine Company, same place. Filed Sept. 21, 1883. (No model.)



Claim.—1. In a grain-binder, a yielding table for receiving the grain, arranged to rest upon an arm of the tripping mechanism, in combination with the tripping mechanism adapted to be thrown into engagement by the action of the accumulated grain upon the table.

2. The combination, with a tripping-clutch to start the binder, and packing or feeding devices to compress the grain into the binding-receptacle, of a decking forming one wall of said receptacle, having a yielding section, and a connection between said section and the clutch to trip the latter by the yielding of the section.

3. The combination, with the grain-receptacle, of a yielding decking, and a connection between said decking and the trip-clutch, and a second or collateral tripping arm or surface against which the gavel presses as it accumulates, also connected with the tripping-clutch to start the binder by the yielding of either said decking or said arm, or of both.

4. In combination with the grain-receptacle, packers feeding the grain therein, two yielding surfaces against which the gavel is piled by the packers in their action, and connections between said surfaces and the trip-clutch to start the binder by their yielding.

5. In combination with the tripping-clutch to start the binder, and with packing and feeding devices to deliver the grain into the binding-receptacle, a decking for said receptacle having a yielding section, a yielding arm or compressor closing the exit from said receptacle, and connections between said section and arm and the clutch, whereby the binder will be equally started by the yielding of one or the other, or of both.

6. In combination with the tripping-clutch to start the binder, and with the rock-shaft by which said clutch is dogged or shipped, a decking for the packing-chamber having a yielding section resting upon an arm from said rock-shaft, whereby the yielding of the decking as the grain is packed thereon will move the shaft and cause the engagement of the clutch.

7. In combination with the tripping-clutch to start the binder, and with the rock-shaft by which said clutch is dogged or shipped, a decking for the grain-receptacle, having a yielding section, an arm from the rock-shaft upon which said section rests, and a movable arm or outside compressor engaging with another arm from said rock-shaft, whereby the shaft will be moved by the accumulation of grain against both the yielding section and the movable compressor.

8. The combination, substantially as described, of the hinged decking, the arm upon which it rests, the rock-shaft to which said arm is fixed, the latch operated by said rock-shaft, and the clutch.

9. The combination, substantially as described, of the yielding decking, the arm upon which it rests, the rock-shaft to which said arm is fixed, the latch operated by said rock-shaft, the clutch, and the outside compressor closing the exit from the grain-receptacle and adapted to be withdrawn from said passage-way at the conclusion of the binding operation.

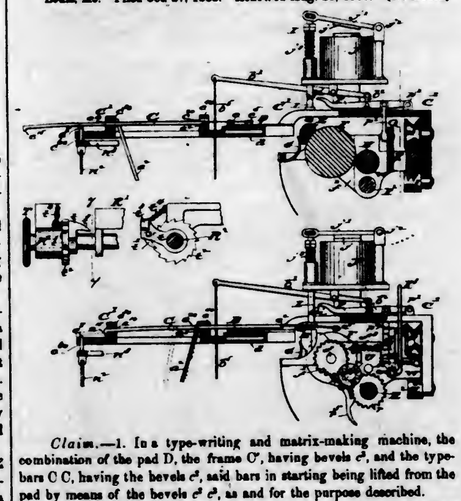
10. The combination, substantially as described, of the tripping-clutch, two yielding surfaces in the grain-receptacle against which the accumulating gavel presses, connections between each of said surfaces and the clutch, and a compensating device in said connection, whereby either surface may be actuated at the proper time without interference by the other, or both operated concurrently.

11. The combination, substantially as described, of the tripping-clutch, its rock-shaft, the yielding decking and the compressing-arm, both connected to said rock-shaft, and a compensating device in such connection to avoid interference of the one with the timely action of the other.

12. The combination, substantially as described, of the hinged section, the arm upon which it rests, the rock-shaft to which said arm is fixed, the latch operated by said rock-shaft, the clutch dogged or shipped by said latch, the outside compressor closing the exit from the receptacle, the movable supporting-bar to which it is pivoted, and an arm extending from an eye in said compressor to the rock-shaft which moves the latch under such arrangement that the clutch may be thrown into engagement by the yielding of either or both the hinged section and the compressor.

13. The combination, substantially as described, of the yielding decking, the shouldered arm upon which it rests, the rock-shaft to which said arm is fixed, the latch and tripping-clutch, the outside compressor pivoted to a movable supporting-bar, and a shouldered arm running from an eye in the base of said compressor to a sleeve-connection with the rock-shaft.

339,129. **TYPE-WRITING MACHINE.** GEORGE W. BALDRIDGE, St. Louis, Mo. Filed Oct. 27, 1883. Renewed Aug. 25, 1885. (No model.)



Claim.—1. In a type-writing and matrix-making machine, the combination of the pad D, the frame C', having bevels c^3, and the type-bars C C, having the bevels c^3, said bars in starting being lifted from the pad by means of the bevels c^3 c^3, as and for the purpose described.

2. In a type-writing and matrix-making machine, the combination of the magnet J, the plunger I, the elastic type-bar C, and the bearing E, substantially as described.

3. In a type-writing and matrix-making machine, the combination of the frame C', the elastic type-bars C C, the pad D, the magnet J, the plunger I, and the bearing E, substantially as described.

4. In a type-writing and matrix-making machine, the combination of the frame C', the keys A A, the connections a' a^2, the type-bars C C, the pad D, the magnet J, the plunger I, and the bearing E, substantially as described.

5. In a type-writing and matrix-making machine, the combination of the keys A A, the upper-case lever N, and the contact-bar K, substantially as described.

6. In a type-writing and matrix-making machine, the combination of the lever B, the rod b^2, the lever b', the link b^3, the lever P, the link p^2, the dog Q, and the rack R, substantially as described.

7. In a type-writing and matrix-making machine, the combination of the keys A A, the connections a' a^2, movable contact-bar K, type-bars C C, lever N, the rod n^2, the frame C', and the stop c^4, for the purpose described.

8. In a type-writing and matrix-making machine, the combination of the carriage R', the feed-rolls H F, the pinions connecting the feed-rolls, the shaft R^2, the lever *t*, the pawl *t'*, and the ratchet t^2, as and for the purpose described.

9. In a type-writing and matrix-making machine, the combination of the keys A' A^2 A^3 and the yoke S, substantially as and for the purpose set forth.

10. In a type-writing and matrix-making machine, the combination of the severally-movable elastic type-bars C C, the plunger I, and the bearing-surface E, substantially as described.

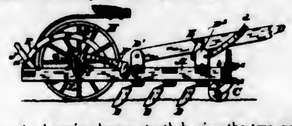
11. The combination of the key A, the elastic connections a' a^2, the frame C', and the type-bar C, to allow the plunger to rise sufficiently to clear the type-bar before said connection acts to draw the type-bar back.

12. In a type-writing and matrix-making machine, the combination of the connection a^2, the type-bar C, and the flanges c^{20} c^{20}, said connection a^2 being jointed to said type-bar between said flanges for the purpose of moving the type-bar properly.

13. In a type-writing and matrix-making machine, the combination of the shaft R^3, the arms W W, the bar W', the frame C', and the rollers w^3 w^3, substantially as described.

14. In a type-writing and matrix-making machine, the combination of the shaft R^3, the arm f^3 f^3 W W, and the hooks f^3 f^3, as and for the purpose described.

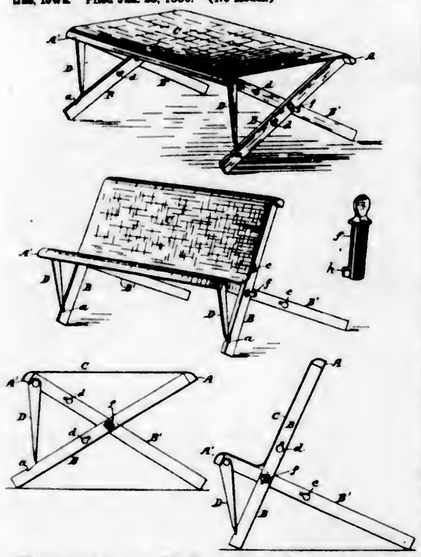
339,130. **COMBINED ROLLER AND HARROW.** ALBERT BALL, Canton, Ohio. Filed July 6, 1885. (No model.)



Claim.—1. A spring harrow-tooth having the two parallel horizontal portions e e' and the lower twisted portion with its edges at right angles to the portions e e', and provided with a cutting-edge, e^3, substantially as described.

2. In a harrow, the combination, with the frame, of the arms F F, pivoted to frame A, and having projections L' fitting in recesses L in the frame, the shaft G of the roller having its bearings in projections L', and lever J, pivoted to frame A and connected with arms F, substantially as described.

339,131. **CONVERTIBLE COT AND SEAT.** LYMAN BAKER, Muscatine, Iowa. Filed Jan. 28, 1886. (No model.)



Claim.—1. In a convertible frame, the combination of the supporting-legs B B', each provided with bolt-holes c d, located in positions relative to each other, as set forth, and the coupling-bolts f, adapted to couple the legs together, to form a cot or a seat frame, substantially as and for the purposes described.

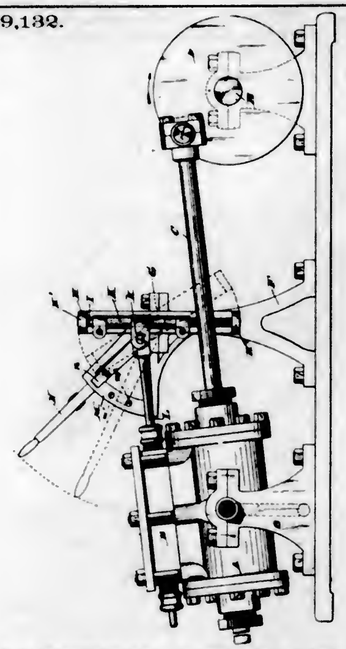
2. The combination of the rails A A', the legs B B', provided with the key-hole openings c d, located in relative positions to each other, as set forth, to enable the legs to be coupled together to form a cot or a seat frame by changing the crossing-places of the legs, the coupling-bolts f, having the locking-hooks h, the notches a a in legs B, and the pivoted supports D, substantially as and for the purposes described.

339,132. **VALVE-GEAR FOR OSCILLATING ENGINES.** THEODORE J. RAUH, Cincinnati, Ohio. Filed Dec. 7, 1885. (No model.)

Claim.—1. In an oscillating engine, a stationary rod, I, in combination with a sleeve, K, pivoted to the end of the valve-stem, substantially as and for the purposes specified.

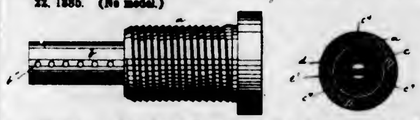
2. In an oscillating engine, the rod I, attached to the rock-shaft G by appropriate intervening device, in combination with the sleeve K, valve-stem L, lever N, and arc M, substantially as and for the purposes specified.

339,132.



3. In an oscillating engine, the combination of a hollow trunnion provided with a port communicating in all positions of the engine with an exhaust-delivery conduit in the standard supporting the trunnion, substantially as and for the purposes specified.

339,133. **FAUCET.** JAMES F. BOGAN, East Boston, Mass. Filed May 22, 1885. (No model.)

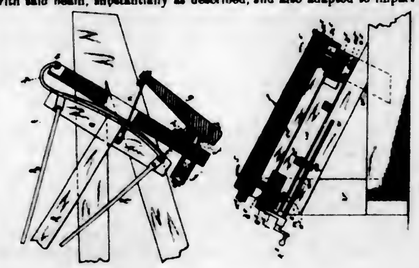


Claim.—1. In a faucet, the outer shell, a, having rear inwardly-projecting flange, a', in combination with the detachable perforated strainer b, having flange b' and cross-bar b^2, as and for the purpose set forth.

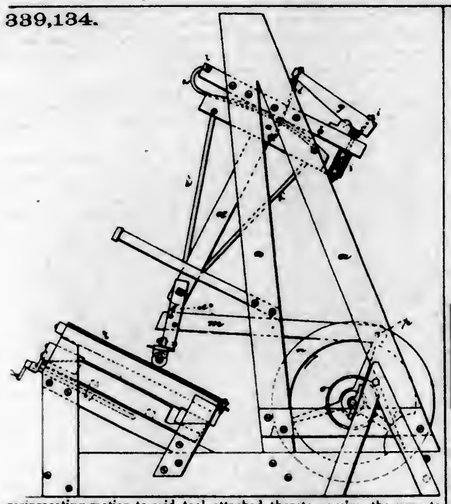
2. In a faucet, the outer shell, a, having annular flange or lip a', for the support of the detachable perforated strainer b, in combination with the screw-threaded valve-shell c, having valve-seat c^3, and the longitudinal passages c^4 c^4 c^4, and screw-threaded adjustable valve-plug d, having the valve d' and packing d'' in its inner end, and recesses d^4 d^4 in its front end adapted to receive the projection e' on cock E, substantially in a manner and for the purpose set forth.

339,134. **LEATHER-FINISHING MACHINE.** ALBERT M. BOWERS, Newark, N. J. Filed June 8, 1885. (No model.)

Claim.—1. In a leather-finishing machine, the combination, with the parallelly-arranged leather-holding bed and rocker-tread, of a pendulum consisting of a rocker working on said tread, having a beam, d, secured thereto, and mechanism adapted to hold a finishing-tool connected with said beam, substantially as described, and also adapted to impart a



339,134.



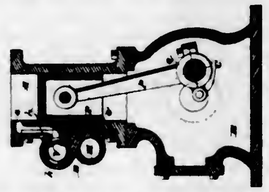
reciprocating motion to said tool attached thereto, causing the same to engage with the leather bed in one stroke and be lifted from said bed in its return-stroke, for the purpose set forth.

2. In a leather-finishing machine, in combination, an adjustable leather-holding bed, a rocker-tread parallelly arranged in relation to said bed, a pendulum consisting of a rocker working on said tread and having a beam, d, extending therefrom, a spring-actuated lever connected with said rocker and secured upon the tread, a finishing-tool carriage pivotally attached to said beam d, a crank-wheel, and a pitman rigidly secured to said tool-carriage, for the purpose set forth.

3. In combination, in a leather-finishing machine, an adjustable leather-holding bed, a rocker-tread parallelly arranged in relation to said leather-holding bed, a pendulum consisting of a rocker working on said tread and having a beam, d, extending therefrom, a spring-actuated lever secured upon said rocker-tread and connected with the rocker, a rod, as k, one end of which is fastened to the tread and the other end to the rocker, to prevent longitudinal movement thereof, a tool-carriage pivotally attached to the lower end of the beam d, a crank-wheel, and a pitman rigidly secured to said carriage, for the purposes set forth.

4. In a leather-finishing machine, the combination, with a finishing-tool carriage, of a finishing-roll and its holding mechanism, consisting of a head or plate, q, adapted to be bolted to said carriage, an adjustable plate, r, and roller-journals r', secured to said adjustable plate, substantially as and for the purpose set forth.

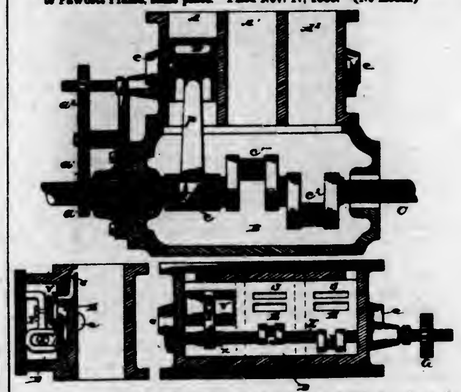
339,135. **STEAM-ENGINE.** ALBERT BOWN, Streator, Ill., assignor of one-half to Fawcett Plumb, same place. Filed Nov. 14, 1885. (No model.)



Claim.—1. The combination, with a set of cylinders, a valve chamber and steam-chest common to said cylinders, steam-ports leading from the chamber to the cylinders, and exhaust-ports leading from the chamber to a common exhaust-chamber, of a hollow valve located within the valve-chamber, and provided with a set of steam-ports arranged to successively open into the steam-ports in the cylinders, and with a set of exhaust-ports, each adapted to connect one steam with one exhaust port, and control the passage of exhaust-steam into the exhaust-chamber, substantially as set forth.

2. The combination, with a cylindrical valve-seat, a hollow continuously-rotating valve adapted to receive steam at one end thereof, and an exhaust-chamber distinct from the valve-chamber and located outside of the casing, of two or more cylinders adapted to be opened and closed to the steam and exhaust at the proper interval, substantially as set forth.

339,136. **ENGINE.** ALBERT BOWN, Streator, Ill., assignor of one-half to Fawcett Plumb, same place. Filed Nov. 17, 1885. (No model.)

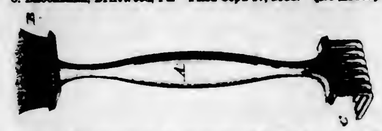


Claim.—1. The combination, with a series of cylinders located side by side, a valve-chamber common to said series of cylinders, a single port connecting each cylinder with the valve-chamber, and an exhaust-port for each cylinder opening into the valve-chamber, of a slide-valve for each cylinder, and a single shaft located within the valve-chamber, and having a series of cranks adapted to operate the valves, substantially as set forth.

2. The combination, with two or more cylinders, pistons working in the cylinders and adapted to receive steam on one side only, and a cranked engine-shaft driven by the pistons, of a valve-operating shaft having a series of cranks or eccentrics thereon and located within the valve-chamber, a series of sliding valves operated by said valve-operating shaft, and gearing connecting the engine-shaft and valve-operating shaft, substantially as set forth.

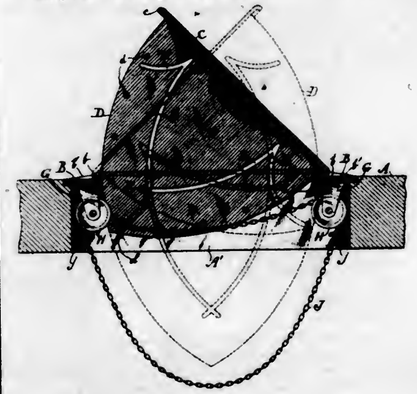
3. The combination, with sliding valves located in a valve-chamber common to two or more cylinders, of yokes to which the valves are adjustably secured, and a rotary shaft passing longitudinally through the valve-chamber, and provided with eccentric or cranked portions adapted to engage the yokes and operate the valves, substantially as set forth.

339,137. **DEVICE FOR CLEANING BRUSHES AND COMBS.** JAMES O. BROOKBANK, Driftwood, Pa. Filed Sept. 17, 1885. (No model.)

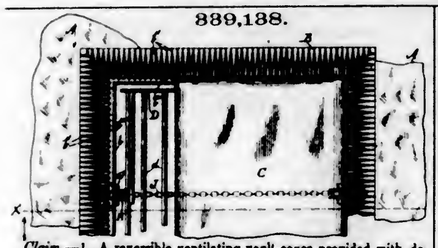


Claim.—The instrument for cleaning combs and brushes, consisting of the handle A, the bristles B, applied to one end of said handle, and the angular elastic teeth C, secured to the opposite end, as described and shown.

339,138. **VENTILATING VAULT-COVER.** EDWIN LEE BROWN, Chicago, Ill. Filed Aug. 10, 1885. (No model.)



339,138.



Claim.—1. A reversible ventilating vault-cover provided with depending flanges, whereby a hood or cowl may be formed thereof, upon whichever side the same may be opened, substantially as described.

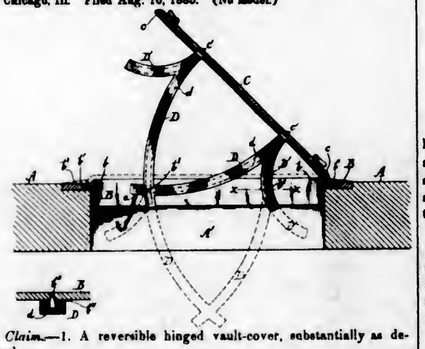
2. A reversible ventilating vault-cover provided with depending flanges having curved slots concentric with the hinge-bearings of the cover, and arranged to engage with stationary guiding-studs or friction-rollers attached to the frame, substantially as and for the purposes set forth.

3. The combination, with a reversible vault-cover, of depending flanges, slotted as described, and stationary guide-studs F, substantially as and for the purposes set forth.

4. A reversible vault-cover having depending shield-shaped flanges D D, provided with slots E E E' E', studs F F, and bars *d*, substantially as and for the purposes specified.

5. The combination, with a reversible vault-cover provided with depending flanges and one or more cross-bars, *d*, of a chain or rope connected therewith and trained over pulleys upon the respective sides of the vault-opening, substantially as described.

339,139. REVERSIBLE VAULT-COVER. EDWIN LEE BROWN, Chicago, Ill. Filed Aug. 10, 1885. (No model.)

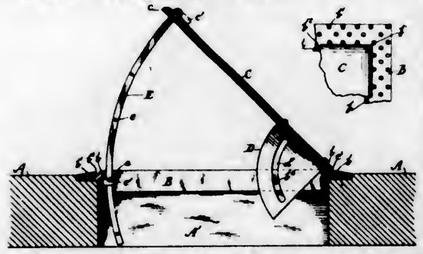


Claim.—1. A reversible hinged vault-cover, substantially as described.

2. A reversible vault-cover provided with depending guide-bars having slots or grooves concentric, respectively, with the opposite axes of the cover, and arranged to engage with stationary studs in the frame, substantially as set forth.

3. The combination, with a vault-cover, of the guide-frame D D D' D', slotted or grooved, as described, and stationary guide-studs b^3 b^3, whereby the same may be alternately opened from opposite sides, substantially as specified.

339,140. HINGE FOR VAULT-COVERS. EDWIN LEE BROWN, Chicago, Ill. Filed Aug. 10, 1885. (No model.)



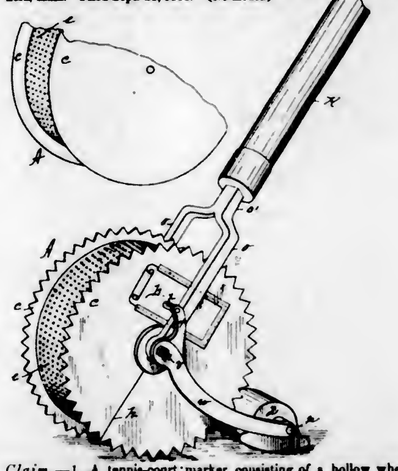
Claim.—1. A hinge for vault and other covers, consisting of a flange upon the edge of the cover, fitted loosely in a groove in the frame, and depending sector-shaped flanges provided with circular slots arranged to engage stationary guide-studs, substantially as described.

2. The combination, with a vault-cover having the depending flange *c*, of the sector-shaped flanges D D, having slots concentric with the axis of said cover, and the coacting stationary studs b^3 and projections *b'*, substantially as and for the purposes set forth.

3. In a vault-cover, the flange *c*, having a bearing in the groove b^3, the depending sector-shaped flanges D D, provided with slots *d'*, and the stationary studs b^3 of the frame, all arranged and combined substantially as specified.

4. The combination, with a vault-cover having depending flanges *c* and guide-flanges D D beneath, of the projections *b'* upon the frame of said cover, substantially as and for the purposes described.

339,141. TENNIS-COURT MARKER. JAMES H. BULLARD, Springfield, Mass. Filed Sept. 21, 1885. (No model.)



Claim.—1. A tennis-court marker consisting of a hollow wheel having a perforated face and sides, one of which is provided with a suitable door, substantially as described, whose peripheries extend beyond said perforated face, to prevent the contact of the latter with the ground, and a handle having bifurcated arms, between which said wheel is hung to rotate, combined and operating substantially as described.

2. A tennis-court marker consisting of a hollow wheel having a perforated face and sides, one of which is provided with a suitable door, substantially as described, whose peripheries extend beyond said face and are serrated, and a handle having bifurcated arms, between which said wheel is hung to rotate, combined and operating substantially as set forth.

3. A tennis-court marker and measurer consisting of a hollow wheel, substantially as described, having a perforated face and a given circumference, and the radial line A thereon, extending between its axis and its periphery, and a handle having bifurcated arms, between which said wheel is hung to rotate, combined and operating substantially as set forth.

4. A tennis-court marker consisting of a hollow wheel, substantially as described, having a perforated face, and a suitable door, through which to supply marking material to the wheel, a handle having the bifurcated arms *o o*, a bolt passing through the ends of the latter and said wheel, on which the latter rotates, an arm, *w*, having the arm *x* thereon, pivoted on said bolt on each side of the wheel and engaging with said arms *o*, and the drag *d*, pivoted between said arms *w*, and adapted to rest on the ground near said wheel, combined and operating substantially as set forth.

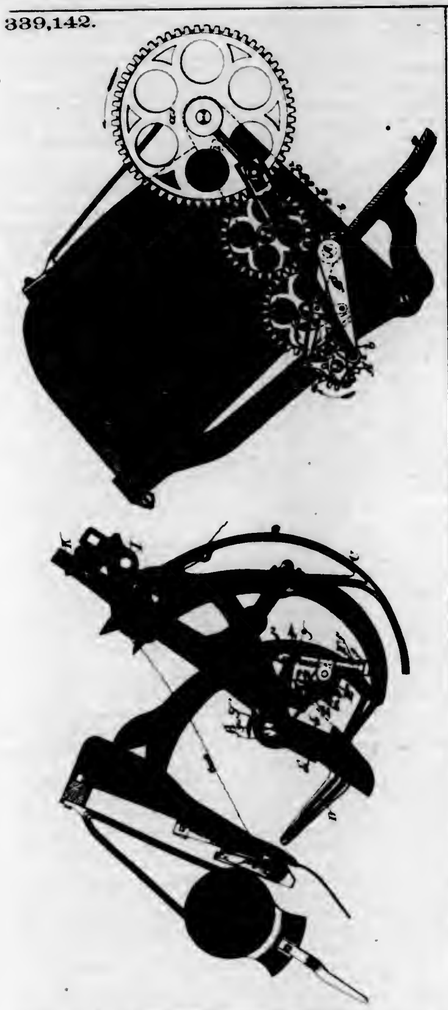
339,142. GRAIN-BINDER. JOSEPH P. BULLOCK, Milwaukee, Wis., assignor to the Deering Harvesting Machine Company (Limited) and the Milwaukee Harvester Company, both of same place. Filed July 31, 1884. (No model.)

Claim.—1. The combination, with the needle having a lug at or near its hub, of the bell-crank carrying the compressor upon one arm, a spring-catch for engagement with the inner end of the other arm of the bell-crank while the bundle is being compressed, and a finger connecting the lug of the needle with the frame of the spring-catch, for tripping the bell-crank and allowing the compressor to fall, as and for the purpose set forth.

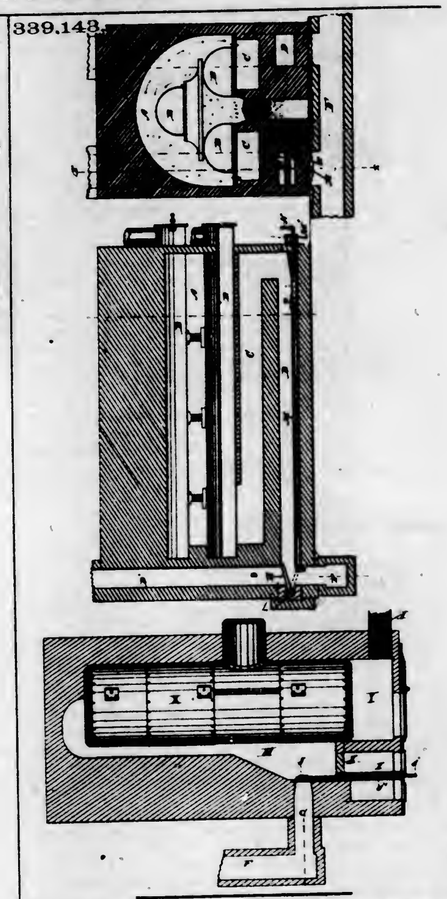
2. The frame F and the bracket to which it is pivoted, in combination with spring E^2, spring-catch F', arm C', finger *g'*, needle having lug *c*, and compressor, as and for the purpose set forth.

3. The combination of the frame F, bracket E', spring E^2, spring-catch F', arm C', finger *g'*, and spring g^2, as and for the purpose set forth.

339,142.



339,143.



339,143. STEAM-BOILER FURNACE. JAMES CARMAN, Elgin, Ill. Filed Nov. 21, 1885. (No model.)

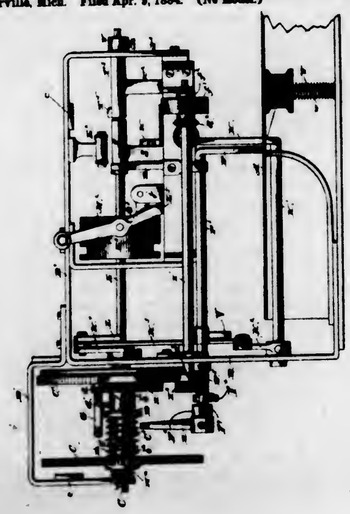
Claim.—1. The combination, with a gas-generating apparatus and the furnace thereof, of a conduit leading from said furnace to the combustion-chamber of a steam-boiler, and a supplemental conduit within the first-mentioned conduit and communicating therewith, into which a portion of the gases are diverted and mingled with air, steam, or other material, whereby a combustible gas will be generated and a more perfect combustion of the gases and products from the gas-generating furnace will be secured, substantially as described.

2. The combination, with a gas-generating apparatus and the furnace thereof, of a conduit leading from said furnace to the combustion-chamber of a steam-boiler or other furnace, a supplemental conduit placed within the former and communicating therewith and with the external air, and having a steam-jet therein, and a damper for regulating the amount of hot air and gases admitted to said supplemental conduit, substantially as described.

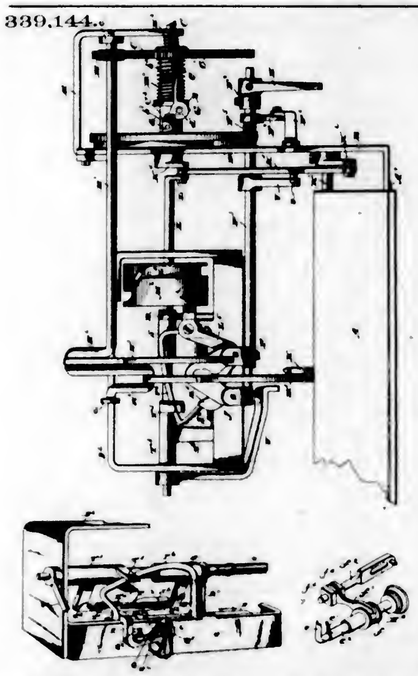
3. The combination, with the furnace, of a gas-generator, the conduit F, the supplemental conduit therein communicating with the external air, and the steam-jet, substantially as described.

4. The combination, with the furnace, of a gas-generator, the conduit connecting it with a steam-boiler or other furnace, the damper J, having the operating-rod extending to the outside of the furnace, and the removable partition K, substantially as described.

339,144. GRAIN-BINDING HARVESTER. ALVIN O. CARMAN, Potterville, Mich. Filed Apr. 9, 1884. (No model.)



339,144.



Claim.—1. In a grain-binding harvester, the combination, with a platform and the main driving-shaft situated above the platform, of a gear-wheel loosely mounted on the main shaft, a combined cam and mutilated gear-wheel, also loosely mounted on said shaft, intermediate devices for locking one of said wheels to the main shaft, packers operated by the gear-wheel, and the binding mechanism operated by the combined cam and gear wheel.

2. In a grain-binding harvester, the combination, with the main driving-shaft, a combined cam and gear wheel loosely mounted thereon, the said wheel being provided with a hub having a crank secured thereto, and mechanism for locking the wheel to the shaft, of a needle or binder-arm shaft having an arm projecting therefrom, and a pitman connecting the said arm to the crank on the hub of the wheel, substantially as set forth.

3. In a grain-binding harvester, the combination, with a platform and a standard secured thereto, of a main driving-shaft, a gear wheel loosely journaled thereon and provided with a toothed hub, a combined cam and mutilated gear-wheel journaled on the said shaft, one end of the hub of said wheel being provided with teeth, while the opposite end thereof passes through the standard and is provided with a crank for operating the needle, and suitable mechanism for locking one of said wheels to the main shaft.

4. In a grain-binding harvester, the combination, with the driving-shaft, combined cam and mutilated gear-wheel for operating the binding mechanism, and the gear-wheel for operating the packers, a sliding sleeve or clutch, and a spring for holding the sleeve in contact with one of the wheels, and a lever secured to the combined cam and gear wheel for moving the sleeve, of a compressor-arm shaft, a crank loosely journaled to the shaft, a spring one end of which is secured to the shaft, while the opposite end is secured to the crank, a stop rigidly secured to the compressor-arm shaft, a trip-lever rigidly secured to the outer end of said shaft, and a lever and pitman connecting the combined cam and gear wheel with the yielding crank, substantially as set forth.

5. In a grain-binding harvester, the combination, with a needle-shaft and a vertically-movable pitman for operating said shaft, the said pitman being provided with a projecting lug, of a compressor-arm shaft provided with a projecting arm, which latter is adapted to come in contact with the lug on the pitman, substantially as set forth.

6. In a grain-binding harvester, the combination, with the main driving-shaft and a combined cam and mutilated gear-wheel mounted thereon, the said wheel being provided with an elongated hub, to which a crank is secured, of a needle-shaft provided with a rigid arm, a pitman connecting the arm with the crank, the said pitman being provided with a lug, and the compressor-arm shaft provided with an arm, which latter is adapted to come in contact with the lug on the pitman, substantially as set forth.

7. The combination, with the main shaft, the combined cam and mutilated gear-wheel loosely journaled thereon, and automatic devices for locking the wheel to the shaft, of a lever engaging the cam-groove of the wheel for operating the compressor-arm, and a shaft provided with a pinion, which latter engages the teeth of the wheel, the said shaft being provided with a bevel-gear for turning the tying-bill, substantially as set forth.

8. The combination, with the combined cam and gear wheel, of a lever engaging the cam-groove of the wheel for operating the compressor-arm, a shaft provided at its front end with a pinion for engaging the teeth of the wheel and at its rear end with a bevel-wheel for operating the tying-bill, and a cam-wheel for moving one of the jaws of the bill toward and away from the other jaw of the tying-bill, substantially as set forth.

9. The combination of a non-sliding shaft having a rigid jaw at one end and a pinion at its opposite end, a movable sleeve encircling said shaft between the jaw and the pinion and provided with a rigid jaw, an arm connected with the sleeve and a rod adjustably connected to said arm and operated by a cam-wheel for reciprocating the rod, and a pinion on the shaft of the cam-wheel for operating the knotter, substantially as set forth.

10. The combination, with the main driving-shaft and the combined cam and mutilated gear-wheel journaled thereon and provided with a crank, of the shaft L, connected to the crank of the combined cam and gear wheel, the pitman connected to said crank for operating the needle or binder arm, a cam-wheel secured on said shaft L, cord-cutting mechanism operated by said cam-wheel, and the bell-cranked cord-stripping arm pivoted to the machine-frame and operated by the cam-wheel, substantially as set forth.

11. The combination, with a suitable frame, B^2, supported by a standard, and the shaft L, journaled in said frame and provided with the cam-wheel M^2, of suitable cord-tyer journaled in the frame B^2, the face-plate of which latter is provided with a slot and a hook-shaped cutter, the plate P, situated alongside of the face-plate of the frame and provided with a slot and a hook-shaped cutter, and a pivoted lever connecting the cam-wheel M^2 and the plate P, whereby the latter is moved longitudinally, substantially as set forth.

12. The combination, with a cord-knotter and cord-cutting devices, of a swinging cord-holder acting in conjunction with the non-swinging cutters, devices for opening and closing the jaws of the cord-holder, devices for opening and closing the jaws of the cutters, and a device for swinging the cord-holding jaws toward and away from the cord-cutting jaws, substantially as set forth.

13. The combination, with a knot-tyer and devices for operating the same, of the shaft L, located above the tyer, the cam M^2, secured on said shaft, stationary and sliding cord-cutting jaws, a lever connecting the cam and sliding cutting-jaw, and cord-holding devices, substantially as described, connected to and operated by said sliding cutting-jaw, substantially as set forth.

14. The combination, with the shaft L, having the cam-wheel M^2 rigidly secured thereto, and a suitable tying-bill, of the plate J, the plate P, provided with the cord-guiding arm, and the pivoted lever connecting the cam-wheel and plate P, whereby movement is imparted to the latter, substantially as set forth.

15. The combination, with the shaft L and the cord-holding plates S^2 T', loosely journaled thereon, of the stationary plate J, provided with a cutter, the plate P, provided with a cutter, the cam-wheel mounted on said shaft, a lever connecting the cam-wheel and plate P, a bar connecting said plate P and one of the cord-holding plates for moving said cord-holding plate longitudinally, and devices for moving both cord-holding plates laterally, substantially as set forth.

16. The combination, with the shaft L, a cam-wheel thereon, and cord-cutters, of the swinging plate T', provided with a groove and a shoulder, and the sliding and swinging plate provided with a hook, which latter moves in the groove of the plate T', devices indirectly connecting the plate S^2 with the cam-wheel for moving said plate longitudinally, and a device engaging one of said plates for moving both plates laterally, substantially as set forth.

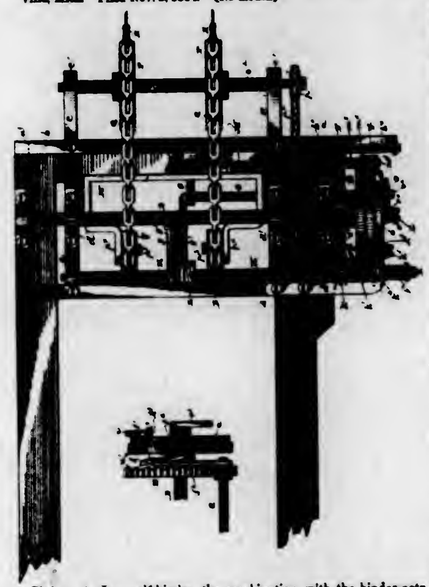
17. The combination, with a plate provided with a rigid cutter and a movable plate having a cutter thereon, of a swinging plate, T', provided with a groove, a swinging plate, S^2, provided with a cord-holding hook, which latter moves in the groove, and an arm rigidly secured to the movable cutter-plate and engaging the plate S^2, whereby the latter is moved longitudinally simultaneously with the movable cutter-plate, substantially as set forth.

18. The combination, with a rigid plate provided with a cutter, and a movable plate provided with a cutter, and with a guiding-bar, inclined as shown, of cord-holding devices provided with the lug T^2, whereby the said latter devices are moved toward and away from the cutters, substantially as set forth.

19. The combination, with a cord-knotter, of a cord-guiding arm, stationary and movable cutting-jaws located behind the cord-knotter, cord-holding devices located behind and operated by the sliding cutting-jaw, and a cord-clearing arm rigidly secured to the sliding cutting-jaw, all of the above parts combined substantially as set forth.

20. The combination, with suitable cord tying, holding, and cutting mechanism, of the shaft L, situated above said mechanism and provided at its rear end with a rigid ejector-arm, which latter is curved or bent toward the center of the shaft so that its free end strikes the center of the bundle while ejecting the latter, substantially as set forth.

339,145. **SELF-BINDING HARVESTER.** ALVIN O. CARMAN, Pottersville, Mich. Filed Nov. 2, 1885. (No model.)



Claim.—1. In a self-binder, the combination, with the binder-actuating shaft, of a spur-wheel mounted loosely thereon, a cam-wheel rigidly secured thereon, a dog pivotally secured to the inner face of the cam-wheel and adapted to engage teeth on the adjacent face of the spur-wheel, and devices, substantially as described, for holding the dog out of contact with the spur-wheel.

2. In a self-binder, the combination, with the binder-actuating shaft, of a combined spur and ratchet wheel mounted loosely thereon, a cam-wheel for operating the knotter, the binder-arm and ejector mounted rigidly thereon, and a dog secured to the cam-wheel adapted to engage the ratchet-notches on the spur-wheel, thereby causing the wheels to rotate together, substantially as set forth.

3. In a self-binder, the combination, with the binder-actuating shaft having a spur-wheel provided with ratchet-notches mounted loosely thereon, and a cam-wheel for operating the knotter, binder-arm, and ejector mounted rigidly thereon, of a dog secured to the cam-wheel and adapted to engage the ratchet-notches on the spur-wheel, and a releasing-finger secured on the trip-shaft adapted to hold the dog out of contact with the spur-wheel while the gavel is forming, substantially as set forth.

4. In a self-binder, the combination, with the binder-actuating shaft having a spur-wheel and a cam-wheel mounted thereon, the former loosely and the latter rigidly secured on the binder-shaft, devices, substantially as described, for locking the spur-wheel to the shaft, and the packer-shaft geared with the spur-wheel and provided with a clutch, of a clutch-operating arm adapted to engage the face of the cam-wheel for the purpose of throwing the packer-shaft out of gear while the binder is in motion, substantially as set forth.

5. In a self-binder, the combination, with the binder-shaft having the spur-wheel mounted loosely thereon and the cam-wheel mounted rigidly thereon, and the packer-shaft provided with a loose pinion geared with the said spur-wheel and with a clutch, of the dog, its releasing-arm, a shaft, and a trip-finger for operating the releasing-arm, and the clutch-operating arm, whereby the packer mechanism and the binder mechanism are alternately set in motion and stopped, substantially as set forth.

6. In a self-binder, the combination, with a cam-wheel rigidly secured on the binder-shaft, said cam-wheel having a shouldered dog secured on one side and a notch formed on the opposite side, of a dog-releasing finger and a clutch-operating lever adapted to engage the shoulder and notch, respectively, thereby locking the cam-wheel against displacement, substantially as set forth.

7. In a self-binder, the combination, with a cam-wheel rigidly mounted on the binder-shaft, having a notch on the side of its rim, a spur-wheel loosely mounted on said shaft, and a packer-shaft provided with a loose pinion gearing with the spur-wheel, of a spring-actuated clutch secured on the packer-shaft, and a clutch-operating arm provided with a lug adapted to engage the notch on the cam-wheel, thereby locking the loose pinion to the packer-shaft and causing the shaft to rotate, substantially as set forth.

8. In a self-binder, the combination, with a cam-wheel rigidly secured on the binder-shaft, the compressor-arm, compressor-arm shaft, and the spring for raising the compressor-arm, of the crank loosely mounted on said shaft, the rigid collar having a projecting arm, a lever adapted to engage a cam-groove on said cam-wheel, and a rod connecting the lever and the crank, all of the above parts combined operating substantially as set forth.

9. In a self-binding harvester, the combination, with a binder-actuating shaft, a spur-wheel mounted loosely thereon, a cam-wheel rigidly secured thereon, and a dog secured to the rigid wheel and adapted to engage the adjacent face of the loose wheel, of a chain-driving wheel rigidly secured on the binder-actuating shaft, the shaft c^3, having chain-wheels thereon, the wheels q and the chains Q, the ejector-arms pivotally secured to the chains, and a packer-shaft and packers, the parts being arranged substantially as described, whereby when the packers are operating the binding mechanism and ejectors are at rest, substantially as set forth.

339,146. **SHOE-FASTENING.** ALVIN O. CARMAN, Pottersville, Mich. Filed Jan. 22, 1886. (No model.)



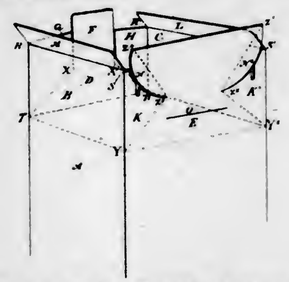
Claim.—1. In a fastener for shoes, the combination, with a catch plate secured to one flap of the shoe and having an opening or slot therein, of a lever loosely secured to the other flap of the shoe and provided with a stud adapted to engage the slot or opening in the catch-plate, all arranged to operate substantially as set forth.

2. The lever having arms c c', arranged as described, and provided with the stud c^3 upon its arm c, substantially as and for the purpose set forth.

3. The combination, with the transversely-slotted plate b, of the lever having arms c c' and stud c^3, substantially as and for the purpose specified.

4. A shoe having a flap carrying the slotted plate b, and an opposite flap carrying the eccentrically-pivoted lever having the arms c c' and T-shaped stud c^3, as described.

339,147. **PAPER BOX.** HARVEY N. CARPENTER, Philadelphia, Pa. Filed Feb. 10, 1886. (Model.)

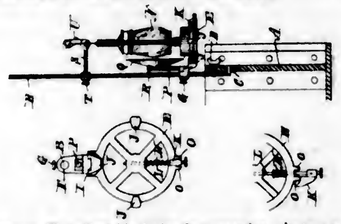


Claim.—1. A box of paper, pasteboard, enameled card-board, sheet-lead, or other suitable material, having a lining cut to match said box, made of the material specified, having flaps B and C, with lips M and L, moving on lines R S and R' S', respectively, and the curbs or smaller flaps G and K H and K', said flaps B C being bent to fold on lines T Y, T X, Y Z^2, T R, Y S, and Y^2 T^2, Y^2 S', Y^2 Z^2 T^2 R', T^2 X', respectively, curbs G and K, folding on lines T R, T X, and Y Z^2, Y S, respectively, and the other of said curbs, H and K', folding on lines T^2 R', T^2 X', and Y^2 Z^2, Y^2 S', respectively, in combination with each other

and flaps D and E, the whole being arranged to close substantially as described and set forth.

2. In a box of any suitable form and material, the flap D, bent to fold on line T T^2, T X, T^2 X', with end or tongue F, and flap E, bent to fold on line Y Y^2, Y Z^2, Y^2 Z^2, with curved lips N and N', folding on lines Z^2 Z^2, Z' Z^2, with slip or opening O, in combination with curbs K and K', and flaps D, and curbs G and H, and flaps B and C, substantially as and for the purpose described.

339,148. DEVICE FOR SUPPORTING LANTERNS. FRANK CEVALA, Cooperstown, Wis. Filed Jan. 21, 1886. (No model.)



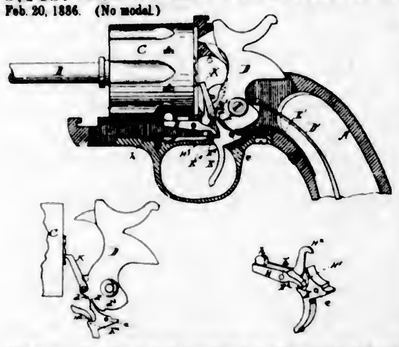
Claim.—1. The adjustable device for supporting a lantern on a vehicle, consisting of a standard, B, having means to affix it to a vehicle, a bracket adjustable up or down on the standard B, the bracket being provided with lugs J J and clutch K, and the arm S, adjustable up and down on the standard B, the arm being provided with the spring-hook U, substantially as described.

2. The combination, with the end-board of a wagon, of a standard, B, affixed removably to the end-board by a set-screw, D, a bracket, E, adjustable up and down on standard B, and provided with means for holding the bottom of a lantern, and an arm, S, adjustable up and down on standard B, and provided with a hook adapted to receive and hold the bail of a lantern, substantially as described.

3. The standard B, attached to a vehicle, in combination with the bracket E, said bracket being adjustable up and down on standard B, and made fast thereto by a set-screw, G, and having the lugs J J, spring-clutch K, post P, and reflector Q, substantially as described.

4. The standard B, removably attached to a vehicle, in combination with a bracket, E, provided with lugs J J, spring-clutch K, post P, reflector Q, and the arm S, provided with spring-hook U, substantially as described.

339,149. REVOLVER. GEORGE W. CILLEY, Norwich, Conn. Filed Feb. 20, 1886. (No model.)



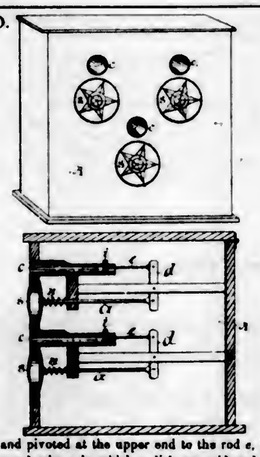
Claim.—1. In a fire-arm, the combination of the revolver-chamber C, revolver-lever K, its ratchet and hammer D, said hammer having upon its lower limb a safety-notch, *d*, half-cock notch *d'*, and a full-cock notch, d^2, all so placed that the hammer may move from the firing-point to half-cock without causing any movement of the revolver-cylinder, and that the movement of the hammer from half-cock to full-cock will give the revolver-lever K sufficient motion to operate the revolver-chamber, with the trigger E, having a shoulder, E^2, and a stop-lever, H, all operating together, substantially as described, and for the purpose set forth.

2. In a fire-arm, the combination of the trigger E, having a shoulder, E^2, and the stop-lever H, having an arm, H^2, with the projection D^2 on the rear of the hammer D, all operating together substantially as described, and for the purpose set forth.

339,150. BALL-TARGET. RUFUS T. CROUCH and MOSES L. CROUCH, Plymouth, Ill. Filed Sept. 29, 1885. (No model.)

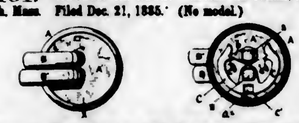
Claim.—In a ball-target, in combination with a supporting-frame therefor, the rod *a*, having firmly attached at its outer end the target-head *s*, the lever *d*, pivoted near its center, and pivoted at the lower end

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to the rod *a*, and pivoted at the upper end to the rod *e*, in combination with the rod *e* and tube *c*, in which a disk on said rod plays, substantially as shown and described, for the purpose set forth.

339,151. BUTTON OR STUD. HENRY H. CURTIS, North Attleborough, Mass. Filed Dec. 21, 1885. (No model.)

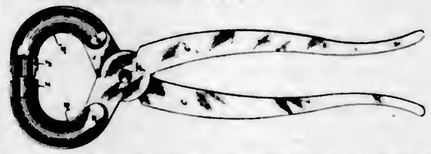


Claim.—1. In a button or stud, the combination, with the head, of two L-shaped arms attached thereto, side by side, one of which is adapted to be revolved axially, a locking tooth or plate secured to the inner end of the latter arm, a locking spring or springs located in the head for engaging said tooth or plate and locking the said movable arm, as described, and a stop or stops for limiting the movement of said arm, substantially as set forth.

2. The combination, with the head, of the L-shaped arms B B', arranged side by side thereon, the former arm rigidly secured to the head and the latter arm mounted to revolve axially thereon, the tooth or plate *b*, secured to the arm B', and a spring, C, provided with a stop or stops for limiting the movement of said tooth or plate and locking the arm B' in position, substantially as set forth.

3. The combination, with the head, of the L-shaped arms B B', arranged side by side thereon, the former riveted to the head and the latter mounted to revolve axially, the locking tooth or plate *b*, riveted to the arm B' and securing it rotatively to the head, the locking-springs C, provided with stops c^3 c^3 and notch *c'*, and riveted to the head on the arm B, and a spur, a^2, on the head engaging the notch *c'*, substantially as set forth.

339,152. NOSE-RINGING TOOL. CHARLES H. DANA, West Lebanon, N. H. Filed Jan. 23, 1886. (No model.)



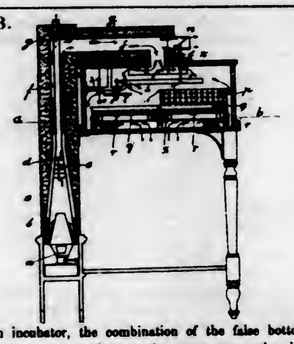
Claim.—The combination of the semicircular jaw A, having the curved knife I and groove D, with the corresponding jaw, A', provided with a curved cutting-block, J, and groove D', said jaws being jointed at F, and operated by the handles C C', as set forth.

339,153. INCUBATOR. GEORGE E. DAVIS and CHARLES R. LOOK, East Oakland, assignors, by mesne assignments, to George E. Davis, Brooklyn, Cal. Filed Feb. 20, 1885. (No model.)

Claim.—1. In an incubator, the combination, with the heating device, chimney *d*, and hot-air flue *f*, of the labyrinth *e*, consisting of plates of metal united by partial partitions, and having heat passages or openings on alternating sides of the partitions, the deflector-plate f^*, as described, and egg containing or supporting devices, as set forth.

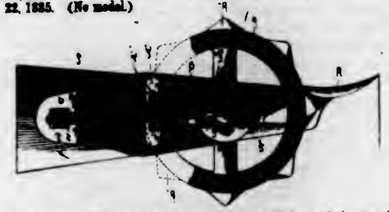
2. In an incubator, the combination, with the egg trays or supports, of the cages *p*, having hinged perforated sides, and a supporting wire or frame to which the same are hinged, as and for the purpose set forth

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3. In an incubator, the combination of the false bottom *s*, the evaporating-pans *r*, placed thereon, the egg-trays *q*, placed over the evaporating-pans, and the folding hatching-cages *p*, placed over the trays, as set forth.

339,154. DRILL-HOE. ALLEN DILLARD, Old Church, Va. Filed Dec 22, 1885. (No model.)



Claim.—1. The combination, with the drill-hoe, of the standard having the slot D, the opening E, and the spindle projecting at right angles from one side of the standard, the bolt H, extending from one side of the drill-hoe and working in the slot D, the bolt I, extending from one side of the drill-hoe and working in the opening E, whereby the standard is secured to one side of the drill-hoe, and may be adjusted vertically and laterally thereon, and the supporting-wheel journaled on the spindle and running alongside the hoe, substantially as described.

2. The combination, with the drill-hoe, of the standard secured on one side thereof, and adjustable vertically and laterally thereon, and the supporting-wheel journaled on a spindle projecting from the lower end of the standard, substantially as described.

3. The combination of the drill-hoe, the standard having the slot D, the opening E, and the spindle F, the slotted bridge-bar spanning the opening E, the bolt I, passed through the said bar and opening E and entering the side of the drill-hoe, and the bolt H, projecting from the side of the drill-hoe and working in the slot D, and the supporting-wheel journaled on the spindle F, substantially as described.

339,155. COMPOSITION FOR BLACKBOARD WALLS. JOHN A. DIXON, Chicago, Ill. Filed Nov. 24, 1884. (No specimens.)

Claim.—The composition herein described for making blackboard walls, consisting of powdered slate, silica, and plaster-of-paris, mixed and applied substantially as set forth.

339,156. CAR-COUPLING. ROBERT H. DOWLING, Newark, Ohio, assignor of one-half to Charles H. Follett, same place. Filed Aug. 13, 1885. (No model.)

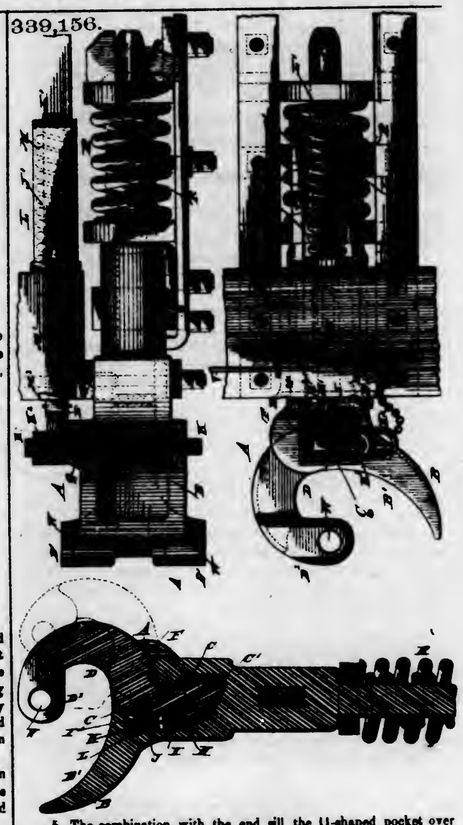
Claim.—1. In a car-coupling, a draw-head having a hook or claw and a movable S-shaped jaw, and a pin or key having a projecting guard working in the outer circle of the hook or claw and engaging a shouldered key-hole in the movable S-shaped jaw, substantially as specified.

2. In a car-coupling, the combination, with the stem of the draw-head having the arc-shaped recess, the arc-shaped shoulder, and the integral hook or claw having a portion of a key-seat in its inner circle, of the S-shaped movable jaw having a shouldered key-seat in the longer arc of its inner end, and the key with the horizontally-projecting guard, substantially as specified.

3. The combination, with the draw-head stem having the arc-shaped shoulder, the arc-shaped recess, and the integral recessed guide-hook, of the S-shaped movable jaw having a shouldered key-seat in the longer arc of its inner end, substantially as specified.

4. The combination, with the draw-head stem having the arc-shaped recess, the arc-shaped shoulder, and the integral recessed guide-hook, of the S-shaped movable jaw having the key-seat in the longer arc of its inner end and the pin-hole in its outer end, and the shouldered key with the horizontally-projecting guard, substantially as specified.

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5. The combination, with the end sill, the U-shaped pocket over and above the stem of the draw-head, the buffer-rod, and the encircling-spring, of the U-shaped piece in the U-shaped pocket, the sill-plate, and the securing-nuts, substantially as specified.

6. The combination, with the draw-head provided with the projection Q, of the U-shaped pocket provided with U-shaped piece M, the buffer-rod N, the encircling-spring, and the U-shaped piece in the U-shaped pocket, substantially as specified.

7. The combination, with the draw-head having the projection Q, of the spring-actuated buffer-rod, substantially as specified.

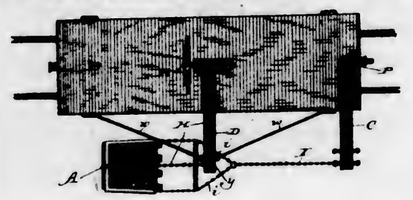
8. The combination, with the draw-head having the stationary jaw, the S-shaped movable jaw, the locking-key, and projection Q, of the spring-actuated buffer-rod, substantially as specified.

9. The combination, with the draw-head having the stationary recessed hook or jaw and the movable recessed S-shaped jaw, of the locking-key, and the U-shaped pocket, the U-shaped piece in said pocket, and the spring-actuated buffer-rod, substantially as specified.

339,157. RAILROAD DITCHING-MACHINE. GEORGE W. DYE, Washington, Iowa. Filed July 16, 1885. (No model.)

Claim.—1. In a ditching-machine, the combination, with the car, of a scraper provided with a rear draft-chain attachment to the car, said chain being readily regulable as to its length to adapt it to assist in operating the scraper, substantially as specified.

2. In a railroad ditching-machine, the car, in combination with the



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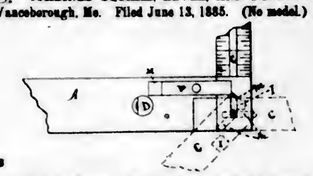


scraper, front and rear draft-chains, and a windlass for regulating the rear chain, substantially as specified.

3. The ditching-machine consisting of the car, the rigidly-secured draft-arms C and D, the draft-chains H and I, the windlass, and the scraper, all combined and operating substantially as specified.

4. In a ditching-machine, the combination, with the car, of the rigid draft-arms C and D, pivoted at their ends to the longitudinal center of the car, and detachably secured at the edge of the car, substantially as specified, whereby said arms are adapted to be used at either side of the car.

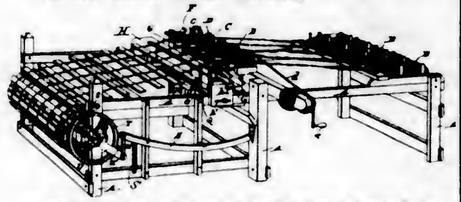
339,158. COMBINED SQUARE, LEVEL, AND BEVEL. JOHN A. FINLEY, Vanceborough, Me. Filed June 13, 1885. (No model.)



Claim.—1. In a try-square, the combination of the part A of the level-arm A B, rabbeted longitudinally and across the end adjoining the bevel-arm C, as shown, and provided with the groove or channel M, slide F, plate B, having slot G, bevel-arm C, provided with slot *m* and recess I, and bolt *h* with nut H.

2. The herein-described combination-tool, consisting of the combination of the part A of the level-arm A B, rabbeted longitudinally and across the end adjoining the bevel-arm C, as shown, and provided with the groove or channel M, slide F, plate B, having slot G, bevel-arm C, provided with slot *m* and recess I, bolt *h*, with nut H, plumb D, and level E, all as shown and described, and substantially as and for the purposes specified.

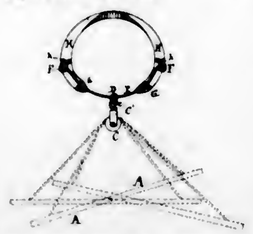
339,159. WIRE-FENCE MACHINE. BENJAMIN L. FLETCHER, Cincinnati, Ohio. Filed Nov. 13, 1885. (No model.)



Claim.—1. The combination of the table H, pins R, yoke K, levers L, M, and P, and connecting-rod O, substantially as and for the purposes specified.

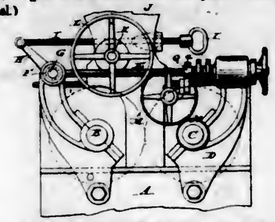
2. The twisting-head having spring-pieces C', each consisting of a piece, X, flange *y*, and having opening *h*, and extension piece or lip Z, substantially as and for the purposes set forth.

339,160. FRACTURE APPARATUS. WILLIAM W. GALT, Norfolk, Va. Filed Aug. 25, 1885. (No model.)



Claim.—In a fracture apparatus, the combination of a rest, cords supported by a pulley suspended to an adjustable cord, and the hooks and eyes fastened to a band, collar, or strap, substantially as and for the purpose described.

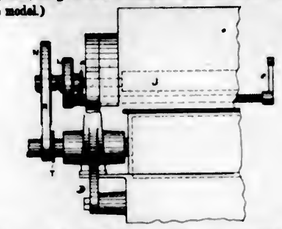
339,161. ROLLER GRINDING-MILL. WILLIAM D. GRAY, Milwaukee, Wis., assignor to E. P. Allis & Co., same place. Filed June 23, 1884. (No model.)



Claim.—1. In a grinding-mill, the combination of a hopper and feed-roll, a movable and a stationary grinding-roll, roll-adjusting mechanism, a pulley attached to the feed-roll, a driving-pulley attached to one of the grinding-rolls, and an intermediate movable pulley carried by the said roll-adjusting mechanism and engaging directly with the first-named pulleys, as described and shown.

2. In a grinding-mill, the combination of the hopper, the feed-roll, the stationary and the movable grinding-rolls, the friction driving-pulley secured to one of the grinding-rolls, the friction-pulley secured to the feed-roll, the movable roll-bearing D, its adjusting-rod E, and the pulley M, carried by said rod and arranged to engage directly with both of the first-named pulleys, as described and shown.

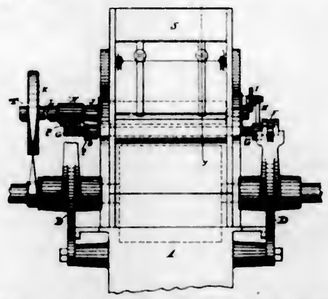
339,162. ROLLER GRINDING-MILL. WILLIAM D. GRAY, Milwaukee, Wis., assignor to E. P. Allis & Co., same place. Filed July 19, 1884. (No model.)



Claim.—1. In a roller grinding-mill, the combination of the hopper, the stationary and movable grinding-rolls, the feed-roll, the grinding-roll-adjusting shaft provided with a spiral flange, P, and a driving-clutch on the feed-roll shaft engaged directly by the spiral flange, whereby the rotation of the shaft G in the proper direction is caused to effect the disengagement of the clutch.

2. In a roller-mill, the combination of a hopper, a feed-roll, a movable and a stationary grinding-roll, supports D for the movable roll, the rock-shaft G, devices, substantially as shown, connecting said shaft with the movable roll-supports, the spiral flange P, applied to said shaft, the driving pulley and clutch mounted on the feed-roll shaft, the clutch being in direct engagement with the flange P, and the spring to throw the clutch into engagement, whereby the operation of the rock-shaft to adjust the grinding-roll is caused to effect the stopping and starting of the feed-roll.

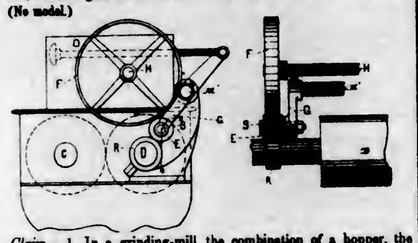
339,163. ROLLER GRINDING-MILL. WILLIAM D. GRAY, Milwaukee, Wis., assignor to E. P. Allis & Co., same place. Filed July 25, 1884. (No model.)



Claim.—1. In a grinding-mill, the combination of two grinding-rolls, roll-adjusting mechanism, a hopper, a feed-roll, a driving pulley and clutch on the feed-roll shaft, the rotatable longitudinally-movable sleeve, as described, encircling the shaft to control the clutch, and a connection between said sleeve and the roll-adjusting mechanism.

2. In a grinding-mill, the grinding-rolls, the hopper, the feed-roll, the driving pulley and clutch on the feed-roll shaft, and the spring, in combination with the fixed support J and the encircling-sleeve N, swiveled to the clutch and connected with said fixed support J by a pin and spiral slot, substantially as described, whereby the rotation of the sleeve is caused to control the action of the clutch.

339,164. ROLLER GRINDING-MILL. WILLIAM D. GRAY, Milwaukee, Wis., assignor to E. P. Allis & Co., same place. Filed July 25, 1884. (No model.)



Claim.—1. In a grinding-mill, the combination of a hopper, the feed-roll, two grinding-rolls, one of which is movable, a pulley attached to one of the grinding-rolls, a pulley attached to the feed-roll, an intermediate friction-pulley to transmit motion directly from the roll-pulley to the feed-roll pulley, a movable arm supporting said intermediate pulley, a rock-shaft acting directly on said arm to adjust the same, and devices, substantially as described, connecting said shaft with the movable grinding-roll, whereby the adjustment of the grinding-roll is caused to stop or start the feed-roll.

2. In a grinding-mill, the combination of a hopper, a feed-roll, two grinding-rolls, one of which is movable, a rock-shaft connected by means substantially as described with the movable roll, pulleys applied to the feed-roll and grinding-roll, respectively, an intermediate friction-pulley, and a pivoted supporting-arm for said pulley connected with and operated directly from the rock-shaft, substantially as described.

339,165. STOOL. PETER T. GRAVES, Milwaukee, Wis., assignor to the Milwaukee Chair Company, same place. Filed Aug. 24, 1885. (No model.)



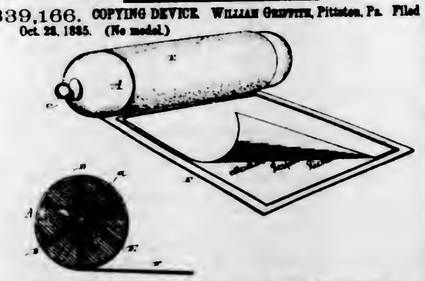
Claim.—1. In a stool, the combination of the legs *a*, the brace-block *c*, the outer edge of which is in contact with the legs, and the staying-rods *d d*, each of which rods passes through two legs, and through the intervening staying-block, *c*, substantially as described.

2. In a stool, the combination of the legs *a*, brackets *f f*, rigid on the legs *a*, and an encompassing foot-rest, *e*, supported on the brackets at a distance from the legs, substantially as described.

3. In a stool, the combination of the legs *a*, the staying-rods *d*, and the brackets *f*, said brackets being so located and attached to the legs as to cover and hide the ends of the staying-rods, substantially as described.

4. In a stool, the combination of the legs *a*, brace-block *c*, the outer edge of which block is against the legs *a*, rods *d*, each passing through two legs and the intervening block, *c*, with the brackets *f*, rigid on the legs *a*, and the encompassing foot-rest *s*, supported at a distance from the legs on the brackets, substantially as set forth.

339,166. COPYING DEVICE. WILLIAM GRIFFITH, Pittston, Pa. Filed Oct. 22, 1885. (No model.)



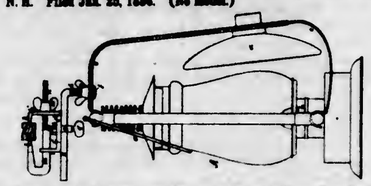
Claim.—1. The combination, with a roller and absorbent envelope or sheet for receiving and retaining moisture, of a flexible flap secured thereto and adapted to form a rest for the letter and leaf and hold the latter in contact with the moistened envelope, substantially as set forth.

2. The combination, with a roller and absorbent envelope or sheet for receiving and retaining moisture and means, substantially as described, for furnishing a constant supply of moisture to the said envelope, of a flexible flap secured to the roller and adapted to hold the leaf and letter in contact with each other and the leaf in contact with the moistened envelope, substantially as set forth.

3. The combination, with a roller having a central reservoir and passages from said reservoir to the periphery of the roller, of an absorbent envelope or sheet and a flap secured to the roller and adapted to hold the leaf and letter in contact with each other and the leaf in contact with the moistened envelope.

4. The combination, with a roller having a central reservoir, passages leading from said reservoir to the periphery of the roller, and absorbent material located within said passages, of an absorbent envelope surrounding the roller and a flap secured to the roller, substantially as set forth.

339,167. LANTERN ATTACHMENT. ESSENE H. HADLEY, Bradford, N. H. Filed Jan. 25, 1886. (No model.)



Claim.—The lantern attachment substantially as described, consisting of the arm or yoke c, bent arm B, with its clamp-screw *d* and nut e, the slide or swivel D, applied to such arm B, and provided with a clamp-screw, *e'*, the screw *g*, and nut *h*, and the vise C, applied as explained to such swivel, all being arranged and to operate essentially as represented.

339,168. COATING FOR WIRE-DRAWING. CHARLES S. HALL, ADDISON R. CLEMENCE, and H. F. AUGUST SMITHWALL, Worcester, Mass. Filed Sept. 19, 1885. (No specimens.)

Claim.—1. A coating for wire, consisting of acetate of iron.

2. A coating for wire-drawing, consisting of acetate of iron and lime, meal, flour, or any other common well-known lubricant suitable for the purpose, substantially as described.

339,169. MUSIC-REST FOR PIANOS. JOHN HARDMAN, New York, N. Y., assignor to Hardman, Peck & Co., same place. Filed Apr. 22, 1885. (No model.)



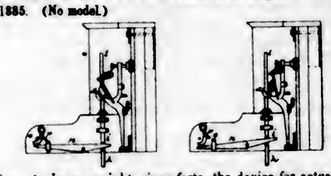
Claim.—1. In a music-rest for an upright piano-forte, the following elements, in combination with the action-case of the instrument: the cut-away panel C, the hinged cam-rest B, cut away on its top edge by the depression, as shown and described, so as to form a sharp frictionless bearing against the upper rail, *c*, and hinged and oscillated upon the back side of the rail by the curved cleats *d*, as described, the lugs *i i*, the arms *e'*, and rest-plate *e*, with the rail *c*, when constructed and actuated in the manner substantially as described.

2. In an upright piano-forte action-case, a music-rest having the following elements, in combination: a cut-away portion of the front paneling of the instrument, combined with a vibrating cover hinged at the top by the curved cleats *d*, made fast at their lower end to the back of the swinging cover-rest B, and secured to and oscillating upon hinges at the top end of the cleats and back of the rail, as described, the cover B, grooved at the top to form the narrow bearing-line of oscillation, as described, and the rest-plate *e*, when constructed and actuated in the manner substantially as set forth.

3. In a music-rest for an upright piano-forte, the combination of the cut-away front or panel of the action-case, the hinged cover or oscillating rest B, the rest-plate *e* with its attachments, and the spring *h*, secured to the frame-work below the cover-rest B, and which, by its action at the bottom of the cover, forces the parts outward, when arranged, constructed, and actuated as described.

4. A music-rest for an upright piano-forte, when composed of the following elements, in combination: the front casing of the instrument having a portion cut away, an oscillating door or cover, B, to fit and close the same and to swing outward therefrom and from the music-rest proper, such rest having an oscillating rest or ledge, *e*, at the lower edge, arranged and actuated as described, the cover B being suspended by curved brackets hinged at the top and secured against the back or inside of the rest B at their lower end, and cut away at the top, as described, for the hinges made fast to the inside of the panel-frame, as set forth, the ledge *e*, spring *h*, and lugs *i*, when arranged and actuated as and for the purpose described.

339,170. HARP-STOP FOR UPRIGHT PIANOS. JOHN HARDMAN, New York, N. Y., and WILLIAM H. DUTTON, Philadelphia, Pa. Filed May 28, 1885. (No model.)



Claim.—1. In an upright piano-forte, the device for actuating the soft-pedal bar, consisting of the hand-crank *p*, rock-plate *n*, sliding rod or plate *i*, and lifting-rod *h*, constructed, arranged, and actuated in the manner substantially as described.

2. In an upright piano-forte, the oscillating soft-pedal bar *b*, the forked plate *i*, lifting-rod *h*, and a lifting device, as *p n*, connected to said forked plate, whereby the soft-pedal bar may be operated either by hand-crank or the ordinary pedal, substantially as described.

3. In an upright piano-forte, the following elements in combination: the hand-crank locking device *p*, lever *n*, the forked plate *i*, the lifting-rod *h*, having collar *m*, the re-enforce bar *d*, having plates *e*, support for said re-enforce bar, and the soft-pedal bar *b*, having plates *c*, all constructed, arranged, and operating as shown and described.

4. In an upright piano-forte, the following elements in combination: the oscillating soft-pedal bar *b*, perforated plate *c*, re-enforce bar *d*, damper lifting-rod *h*, actuating-lever *n*, and vertical plate or rod *i*, all arranged and operated as and for the uses described.

339,171. PLATFORM-GATE FOR RAILWAY-CARS. JAMES P. HARRISON, Danville, Va. Filed July 20, 1885. (No model.)

Claim.—1. A series of gates or similar structures attached to the platforms of railroad or other cars, in combination with a pneumatic-brake system and intermediate connecting devices, whereby the operation of the pneumatic brakes opens and closes the said gates simultaneously with the movement of the brake-shoes, substantially as set forth.

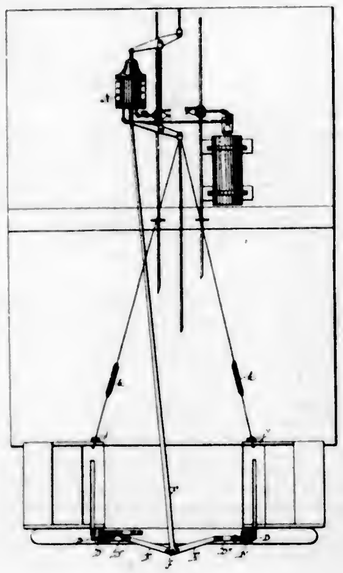
2. The car-platform gate consisting of a series of pivoted bars, *d*, arranged to move in a vertical arc, substantially as described.

3. The hollow slotted post C, secured to the platform, in combination with the pivoted vertically-swinging bars *d*, and devices, substantially as described, for operating said bars, for the purpose specified.

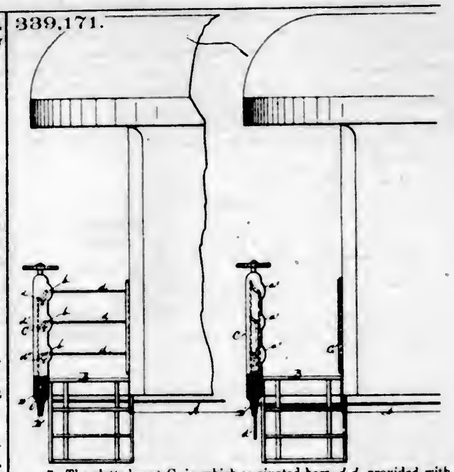
4. The gate consisting of the vertically-moving pivoted bars *d*, in combination with a series of automatic locking devices, *h h*, to secure the free ends of the bars, substantially as set forth.

5. The casting G, provided with the slot cut with flaring sections to guide the free ends of bars *d* to place, substantially as described.

6. The casting G, in combination with the spring locking-bolts *h*, and the unlocking-bar H, provided with the wedge-shaped sections *i i*, and means for automatically operating said unlocking-bar, for the purpose set forth.



339,171.

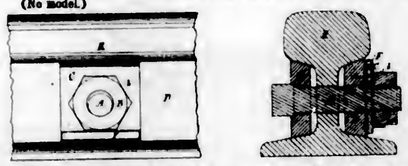


7. The slotted post C, in which is pivoted bars *d d*, provided with the slotted lumps or projections *a' a'*, to steady the bars in their oscillation, as specified.

8. The pivoted bars *d d*, in combination with connecting-bars D, bell-crank levers D', toggle-joint D'' E, and rod F, to connect said toggle-joint to the operating-lever of the air-cylinder N of the brake system, substantially as set forth.

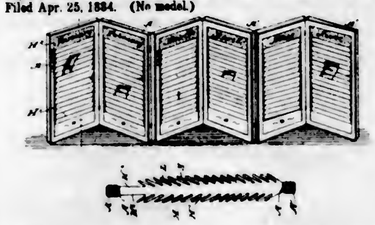
9. The locking-bolts *h*, provided with lugs *h''* and their case, in combination with bar H, provided with wedge-shaped projections *i i*, cord *i'*, and interposed spring *k*, to connect said bar H to the brake system, for the purpose described.

339,172. NUT-LOCK. JOB HAYES, Dover, N. H. Filed Feb. 8, 1886. (No model.)



Claim.—In combination with the screw-bolt and its nut, and with the nut-lock consisting of the rectangular plate C, bent or folded at its middle, and perforated, as described, to receive the bolt, the elastic plate F, fitting the space between the laps of the plate, and also perforated to receive the bolt, the whole being so that when the plates C and F are used on a screw-bolt going through a rail and its fish-plates one lap of the plate C shall extend down to or closely to the base of the rail and the other lap be bent against the edge of the nut, as represented.

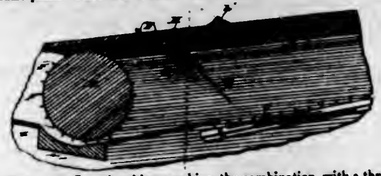
339,173. BANKER'S NOTE-CASE. DANIEL HEATON, Greenfield, Iowa. Filed Apr. 25, 1884. (No model.)



Claim.—1. A banker's note-case consisting of a frame having secured thereto a series of overlapped wide and narrow folds facing each other and plaited in parallel folds to form pockets, the folds being secured together at their ends, the pockets being arranged into groups for months, each group having a pocket for each day, there being a wide fold before each group, having affixed thereto the name of the month, and numbers at the ends of the pockets to correspond with the number of the day each pocket represents, all of the folds being formed of one continuous piece of fabric, substantially as and for the purpose set forth.

2. A banker's note-case consisting of a frame having secured thereto a series of overlapped folds plaited parallel and facing each other to form pockets, the pockets being arranged into groups to represent the months of the year, there being before each group a fold having affixed thereto the name of the month, and between the center groups of the piece a wide fold or strip to rest on the top of the frame, the several folds being composed of one continuous piece of material, the groups being suspended from the frame and secured one or more to each side thereof, and having numbers at the ends of the pockets to correspond with the number of the day each pocket represents, substantially as shown and set forth.

339,174. THRASHING-MACHINE. WILLIAM D. HESSNER, Lansdale, Pa., assignor of two-thirds to David S. Hessner and Isaac D. Hessner, same place. Filed Dec. 9, 1885. (No model.)



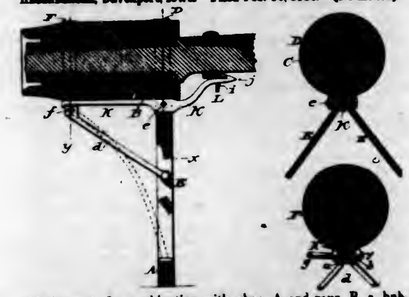
Claim.—1. In a thrashing-machine, the combination, with a thrashing-cylinder and straw-carrier, of the shaft having the extension or arm on one side of its center and the adjustable counterweight mounted thereon, and the deflector mounted upon the shaft on the side opposite the extension and weight, substantially as described.

2. In a thrashing-machine, the combination, with the casing and the inclined beveled cleats secured to the sides thereof, of the deflector pivoted within said casing and resting upon the cleats at opposite sides, substantially as described.

3. In a thrashing-machine, the combination, with the casing and the inclined cleats secured to the sides thereof, of the deflector secured to the shaft, and the transverse cleat secured to the top of the casing and directly in front of the shaft, substantially as described.

4. The combination, with the pivoted counterbalanced deflector, of the flexible material—such as canvas—secured to its lower side, substantially as described.

339,175. SLEIGH-RUNNER. GEORGE HESSENBRUCH and WILLIAM HESSENBRUCH, Davenport, Iowa. Filed Feb. 16, 1886. (No model.)



Claim.—1. In combination with shoe A and rave B, a hub, C, resting upon said rave, and a band, D, passing about said hub and extended down to the shoe, substantially as shown.

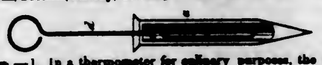
2. In combination with shoe A, rave B, hub C, band D, and brace E, constructed substantially as herein described, band F, and bracing-arms *d d*, integral with said band F.

3. In combination with shoe A, rave B, hub C, band D, and brace E, constructed substantially as described, band F at the outer end of the hub, arms *d d*, secured to said band and extending inward to form a brace or support for the outer end of the hub, and bolt *f*, passing through arms *d d* and extended forward to form a brace, *g*, as and for the purpose set forth.

4. In combination with an axle and a perforated plate secured thereto, a detachable runner constructed substantially as described and shown, and provided with a rod having a hooked end to engage the perforated plate.

5. In combination with an axle and a perforated plate secured thereto, the detachable runner provided with a rod having a yielding hooked end, arranged and operating as described.

339,176. THERMOMETER FOR CULINARY PURPOSES. WALTHER HEMPEL, Dresden, Saxony, Germany. Filed Mar. 27, 1885. (No model.)

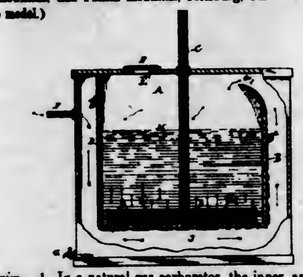


Claim.—1. In a thermometer for culinary purposes, the combination of the outer shell or case, *a*, with the inner or interior case or shell or protection-cover, *b*, and with the glass capsule *c*, said glass capsule *c* being provided with a filling of appropriate fusible matter, material, or alloy, substantially as described and shown.

2. In a thermometer for culinary purposes, the combination of the glass thermometer-capsule *c* with the case or shell *b*, having a handle, *d*, and perforations *e* of the shell or case *b*, substantially as described and shown.

3. In a thermometer for culinary purposes, the combination of the case or shell *b*, said case or shell being provided with the perforations *e*, with the glass capsule *c*, and the outer shell or case, *a*, substantially as described and shown.

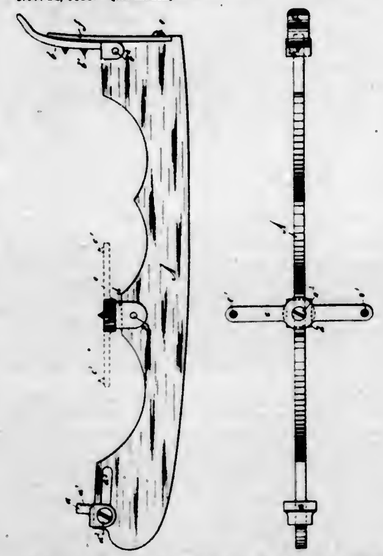
339,177. NATURAL-GAS CARBURETOR. WILLIAM HERLEMY, JAMES O. MCGINNIS, and FRANK MCGINNIS, Pittsburg, Pa. Filed May 6, 1885. (No model.)



Claim.—1. In a natural-gas carburetor, the inner and outer tanks or reservoirs, A B, constructed as described, inverted-T-shaped head or spray C D, constructed as described, carbureting compound H, and avenue or conduit J, the whole combined and arranged to operate substantially as described.

2. In a natural-gas carburetor, the inner and outer tanks or reservoirs, A B, constructed as described, inverted-T-shaped head C D, constructed as described, carbureting compound H, avenue or conduit J, and indicator M N, the whole constructed, combined, and arranged to operate substantially as described.

339,178. SKATE. MAX HILLGER, Dohna, Saxony, Germany. Filed Nov. 24, 1885. (No model.)



Claim.—1. In skates, the combination of the blade A with the adjustable toe-plate *a*, teeth *a'*, pressure-nut a^2, and slot a^3, substantially as described and shown.

2. In skates, the combination of the blade A with the movable heel-plate *b*, pegs or pointed studs *b'*, and pivot b^3, substantially as described and shown.

3. In skates, the combination of the blade A with the rail or brace *c*, the bolt, screw, or pivot c^3, and the pegs or pointed studs *c'*, substantially as described and shown.

4. In skates, the combination of the blade A, rail or brace c, pointed

studs or pegs c', and the bolt, screw, or pivot c^3, with the bearing d, and rivet, bolt, or screw d', substantially as described and shown.

5. In skates, the combination of the blade A with the spring f, screw e, and heel-plate b, substantially as and for the purpose set forth in the foregoing specification and shown in the accompanying drawings.

6. In skates, the combination of the blade A, toe-piece a, teeth a', winged nut a^2, slot a^3, heel-plate b, brace or rail c, bearing d, and spring f, substantially as described in the foregoing specification and shown in the accompanying drawings.

339,179. CLASP FOR SHOES OR OTHER WEARING-APPAREL.

JOSEPH HOLLELY, Brooklyn, N. Y. Filed Dec. 5, 1885. (No model.)



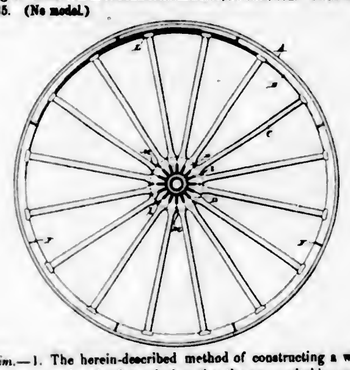
Claim.—1. In a clasp, the base-plate A, having two incisions made lengthwise therein, so as to form three spring portions connected together at their opposite ends, substantially as and with the result set forth.

2. In a clasp, the base-plate having two incisions formed lengthwise therein, making three divisions or springs, all connected at their opposite ends, and the central one of which is swaged downward, while the side portions are struck upward and transversely indented at their mid-length to provide pivot-bearings for the lever, as specified.

3. The combination, with the base-plate having three divisions or springs connected at opposite ends, of a lever whose pivots are held in indentations in the outer divisions by pressure of the said springs, the outer portions acting downward upon the pivots and the central portion acting upward on the head of the lever, whereby the lever is elastically maintained in position, substantially as and for the purpose described.

339,180. VEHICLE-WHEEL.

HENRY M. HORNER, Blossom Prairie, assignor of one-fourth to John C. Rutherford, Dowlin, Tex. Filed May 12 1885. (No model.)



Claim.—1. The herein-described method of constructing a wheel, which method consists in first placing the tire on a suitable support, next inserting the spokes into the felly-sections, and placing said sections against the inner face of the tire with the inner ends of the spokes raised above the plane of the tire and felly, and placed side by side in a circle in immediate contact with one another, next pressing the raised central portion of the wheel down to the required plane, and, lastly, applying the hub to the inner ends of the spokes and thereby binding them firmly together, as set forth.

2. In the process of constructing wheels, the method of tightening the felly and spokes, which consists in placing the felly-sections against the interior of the tire with the outer ends of the spokes inserted in the felly-sections and their inner ends placed side by side and in immediate contact with one another in a plane above the plane of the tire and felly, and then forcing the inner ends of the spokes simultaneously and equally toward the plane of the tire and felly, whereby the outward pressure is effected by the spokes wholly independent of the hub.

3. A wheel provided with a removable hub and removable spokes, and a removable bearing plate or washer interposed between the shoulder of the spoke and the felly, whereby the spokes and felly may be made tight at any time by removing the plate or washer and substituting a thicker one.

4. In a wheel, the combination, with the felly and spokes, of bearing plates or washers interposed between the felly and spoke-shoulder and provided with a raised rib to embed itself in said shoulder, substantially as described and shown.

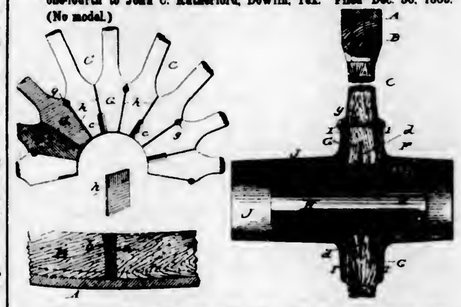
5. In a wheel, the combination of a tire having a concave inner face, a sectional felly having its outer face made to conform to the inner face of the tire, spokes having their outer ends seated in mortises in the felly-sections and their inner ends bearing against each other side by side, and a divided hub clamping the inner ends of the spokes, substantially as described and shown.

6. In a wheel, the combination of tire, felly, and spokes, and a hub consisting of part G, having disk K with radial ribs m, body l, provided with threaded portion i, sleeve g, and notches r, disk J, provided with ribs l, nut n, box H, provided with lugs e and nut f, applied to the end of the box and serving to retain the same in place, substantially as set forth.

7. The combination, in a wheel, of a tire, a felly, a series of spokes having their corners cut away to form bevel-faces d e at their inner ends, disks J K, provided with V-shaped ribs projecting from their faces to enter between the bevel-faces d e, and bolts for drawing the disks together, said disks being adapted to move to and from each other without turning.

339,181. VEHICLE-WHEEL.

HENRY M. HORNER, Paris, assignor of one-fourth to John C. Rutherford, Dowlin, Tex. Filed Dec. 30, 1885. (No model.)



Claim.—1. In combination with a tire, A, having a concave seat, a felly, B, composed of sections seated therein and having their ends rounded, and blocks a, inserted between the ends of the felly-sections and conforming in shape to the felly-sections and tire.

2. In combination with a tire, a felly made in sections and seated therein, a dowel-block between the ends of the felly-sections, and a spring-catch to retain said block in place.

3. In combination with tire A, felly B, spokes C, abutting at their inner ends and provided on one of their adjacent faces with inclines c c, disks I, provided with wedges e to correspond therewith, sleeve H, and collars J, all arranged substantially as shown.

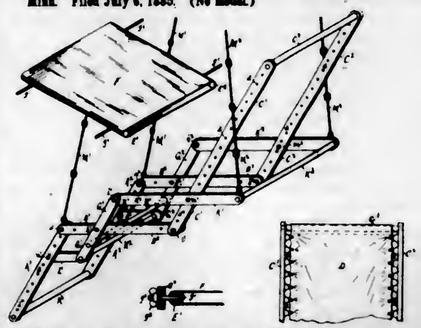
4. In combination with tire A, felly B, spokes C, abutting at their inner ends, provided with inclines c c on one face only, and wedges d, disks I, provided with wedges e and incline f, and sleeve H and collar J.

5. In combination with tire A, felly B, spokes C, abutting at their inner ends and provided with inclines c c on one face only, disks I, provided with wedges e, bolts g, passing between each pair of spokes and alternating with the wedges e and collars J, all arranged as shown.

6. In combination with a wheel constructed substantially as herein described and shown, and provided with wedges e and bolts g, alternating as shown, the plates or wedges h, inserted between the plain beveled faces of the spokes above the wedges e and below the bolts g, as and for the purpose set forth.

339,182. HAMMOCK-CHAIR.

ARTHUR O. HUBBARD, Scott Centre, Minn. Filed July 6, 1885. (No model.)



Claim.—1. In a hammock-chair, seat, foot, and back sections pivoted together, arms G' G^2, pivoted near their centers to the seat-section, links L' L^2, connecting the lower ends of said arms with the foot-section, and arms K' K^2, pivoted near their centers to the back-section and at their forward ends to the upper ends of the arms G' G^2, in combination with cross-bars connecting the lower free ends of the sides of the foot-section, the upper free ends of the sides of the back-section, the lower ends of arms G' G^2, and the rear ends of arms K' K^2, and a fabric attached by its edges to the sides of the sections and to the said cross-bars connecting the sides of the foot and back sections, substantially as set forth, whereby said fabric is at all times out of contact with any bar or rod throughout its length.

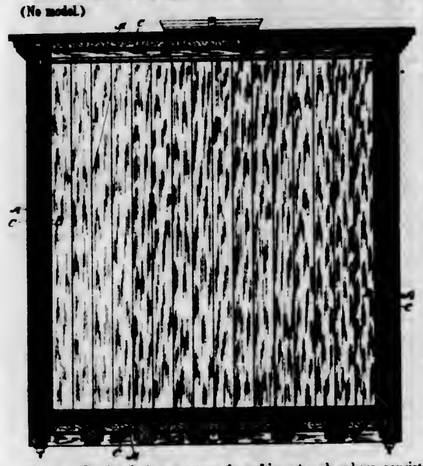
2. A hammock-chair frame consisting of a foot-section, a seat-section, and back-section hinged together and covered with a fabric or web, in combination with pivoted arms G' G^2, connected by rounds H' H^2, arms K' K^2, pivoted to said arms G' G^2 and to said back-section and connected by rounds K^3, and arms L' L^2, pivoted to said foot-section and adapted to be hooked over said round H^2, substantially as and for the purpose set forth.

3. A hammock-chair frame consisting of a foot-section, a seat-section, and a back-section hinged together, in combination with arms G' G^2, pivoted near their centers to the seat-section, rounds H' H^2, connecting said arms, links L' L^2, connecting the lower ends of said arms G' G^2 with the foot-section, arms K' K^2, pivoted near their centers to the back-section and at their front ends to the upper ends of the arms G' G^2, a cross-bar, K^3, connecting the outer ends of said arms K' K^2, and suspending cords or rods attached to the front ends of the seat-section and to the outer ends of the arms K' K^2, substantially as set forth.

4. The combination, with seat side bars, B' B^2, of the endless web F, having supporting-bars E' E^2, and connected adjustably to said bars B' B^2 by bolts g' and nuts g^3, substantially as and for the purpose set forth.

339,183. HEAT-INSULATING WALL FOR REFRIGERATORS AND CARS.

CARLETON B. HUTCHINS, Detroit, Mich. Filed Sept. 29, 1885. (No model.)

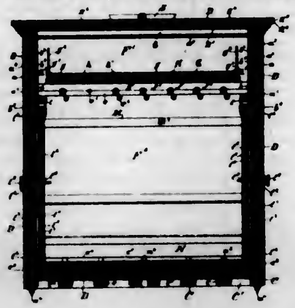


Claim.—The insulating structure for refrigerator-chambers, consisting of an inner and an outer wall and a filling of woolen shreds or small woolen rags, substantially as specified.

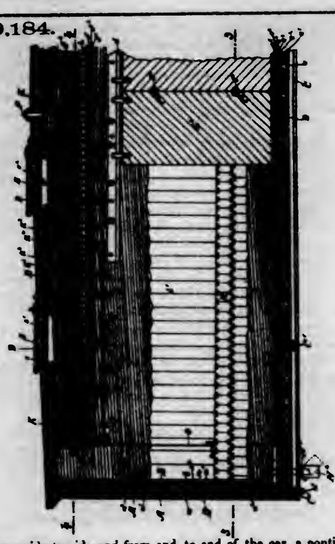
339,184. REFRIGERATOR-CAR.

CARLETON B. HUTCHINS, Detroit, Mich. Filed Sept. 29, 1885. (No model.)

Claim.—1. The combination, in a refrigerator-car, of a preserving-chamber with a continuous ice pan or chamber above the same extending from side to side and from end to end of the car, a continuous non-heat-conducting or insulating sheathing between said ice-pan and preserving-chamber, likewise extending from side to side and from end to end of the car, and a continuous space all around said ice-pan and insulating-sheathing both at sides and ends, for communication between said ice and preserving chambers, substantially as specified.



339,184.



2. The combination, in a refrigerator-car, with a preserving-chamber, of an ice-chamber above the same and a ventilator-opening at or near the highest point of the car opening directly into the ice-chamber, said ventilator-opening at said point being the only opening or air-communication between the inside and outside of the car, so as to prevent all drafts or circulation within the car, substantially as specified.

3. The combination, in a refrigerator-car, of double walls A B, packing D between the same, cross-beams E, non-heat-conducting or insulating sheathing F, laid upon said cross-beams, ice-pan G, resting on said insulating-sheathing, an open space, G', surrounding said ice-pan and insulating-sheathing, for communication between the ice and preserving chambers, and side walls g^2, for said ice-pan, consisting of wire screen or open-work, substantially as specified.

4. The combination, with a flat corrugated ice-pan, G, extending from one end of the car to the other, of a rack, H, laid thereon for supporting the ice, substantially as specified.

5. The combination of a flat ice-pan, G, extending from one end of the car to the other, and a wire screen, g^2, forming the side walls of the ice-chamber, substantially as specified.

6. In a refrigerator-car, the combination, with an ice-pan, G, having wire screen side walls, g^2, of open gratings M at each end of the car to support the ice, substantially as specified.

7. In a refrigerator-car, the combination, of an ice-pan, G, having wire screen side walls, g^2, with gratings M at each end of the car arranged below the ice-pan, to increase the space for the ice, substantially as specified.

8. In a refrigerator-car, the combination with ice-pan G, of wire screens g^2, gratings M, troughs N, and curtains or guards O, substantially as specified.

9. In a refrigerator-car, the combination of an ice-pan, G, extending nearly from one end of the car to the other, with a water-trough, N, and curtain or guard O, depending from the end of said ice-pan having a groove or channel, o, at its bottom edge, substantially as specified.

10. The combination, with the walls of a refrigerator-car, of cross-beams E and insulating or non-heat-conducting sheathing F laid thereon, ice-pan G, having side walls composed of wire screens g^2, an open space, G', surrounding said ice-pan G and sheathing F at sides and ends, and open gratings M at the ends of the car, substantially as specified.

11. The combination, with the walls of a refrigerator-car, of cross-beams E, and insulating or non-heat-conducting sheathing F laid thereon, ice-pan G, having side walls composed of wire screens g^2, an open space, G', surrounding said ice-pan G and sheathing F at sides and ends, open gratings M at the ends of the car, and water-troughs N, substantially as specified.

12. The combination of the double walls A B of a refrigerator-car, having non-heat-conducting packing D between the same, with preserving-chamber F^2, ice-chamber F', non-heat-conducting sheathing F be-

tween said preserving and ice chambers, ice-pan G, having open side walls, *g*, and gratings M at each end, sheet-metal linings *n* at each end of the car, water-troughs N, having galvanized iron sheathing *n'*, extended up to the top of the car, with a space, n^2, between the same, and said sheet-metal lining *n* at the end of the car, said space communicating with the preserving-chamber under the water-trough N, substantially as specified.

13. A refrigerator-car having a ventilator-opening and ventilated only at or near the highest point thereof, to preserve equilibrium of gaseous pressure between the air inside and outside the chamber, whereby the liability of currents passing through the walls of the chamber is diminished, said car having no other opening or communication with the outside air, and said ventilator-opening operating neither as an injector nor an ejector, substantially as specified.

14. A refrigerator-car having a preserving-chamber and an ice-chamber, and having a ventilator-opening communicating only with the ice-chamber near the highest point thereof, and said car having no other communication with the outside air, substantially as specified.

15. A refrigerator-car provided with a preserving-chamber, an ice-chamber above the same having a free and open communication with said preserving-chamber all around the inside walls of the car, and a ventilator-opening communicating only with the ice-chamber near the highest point thereof, said car having no other communication with the outside air, substantially as specified.

16. The refrigerator-car having double walls A B, composed of flat pieces *a b*, laid one on top of another without frame-work, insulating material between said walls, composed of woolen rags D, a preserving-chamber, F^2, an ice-chamber, F', and a ventilator-opening, P, communicating directly with said ice-chamber near the highest point thereof, said car having no other communication with the outside air, substantially as specified.

17. The refrigerator-car having double walls A B, composed of flat pieces *a b*, laid one on top of another without frame-work, insulating material between said walls, composed of woolen rags D, a preserving-chamber, F^2, an ice-chamber, F', and a ventilator-opening, P, communicating directly with said ice-chamber near the highest point thereof, and a non-heat-conducting or insulating sheathing, F, interposed between said ice-chamber and said preserving-chamber, said car having no other communication with the outside air, substantially as specified.

18. The refrigerator-car having double walls A B, composed of flat pieces *a b*, laid one on top of another without frame-work, insulating material between said walls, composed of woolen rags D, a preserving-chamber, F^2, an ice-chamber, F', and a ventilator-opening, P, communicating directly with said ice-chamber near the highest point thereof, and a non-heat-conducting or insulating sheathing, F, interposed between said ice-chamber and said preserving-chamber, said non-heat-conducting sheathing having an open space, G', surrounding the same at its sides and ends, for communication between said ice-chamber and said preserving-chamber, substantially as specified.

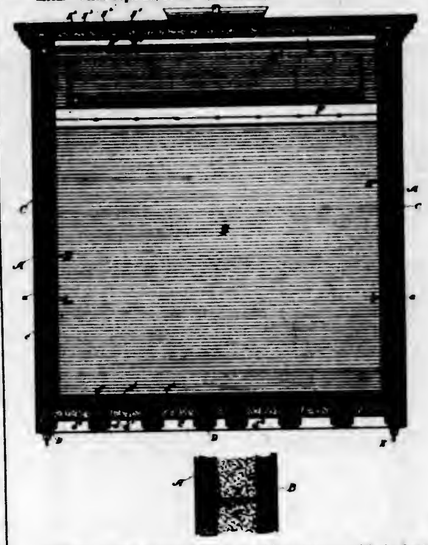
19. The refrigerator-car having double walls A B, composed of flat pieces *a b*, laid one on top of another without frame-work, insulating material between said walls, composed of woolen rags D, a preserving-chamber, F^2, an ice-chamber, F', a ventilator-opening, P, communicating directly with said ice-chamber near the highest point thereof, and a non-heat-conducting or insulating sheathing, F, interposed between said ice-chamber and said preserving-chamber, said non-heat-conducting sheathing having an open space, G', surrounding the same at its sides and ends, for communication between said ice-chamber and said preserving-chamber, and said ice-chamber having a bottom or pan, G, provided with longitudinal grooves or corrugations *g*, extending from one end of the car to the other, substantially as specified.

20. The refrigerator-car having double walls A B, composed of flat pieces *a b*, laid one on top of another without frame-work, insulating material between said walls, composed of woolen rags D, a preserving-chamber, F^2, an ice-chamber, F', a ventilator-opening, P, communicating directly with said ice-chamber near the highest point thereof, and a non-heat-conducting or insulating sheathing, F, interposed between said ice-chamber and said preserving-chamber, said non-heat-conducting sheathing having an open space, G', surrounding the same at its sides and ends, for communication between said ice-chamber and said preserving-chamber, and said ice-chamber having a bottom or pan, G, provided with longitudinal grooves or corrugations *g*, extending from one end of the car to the other, and open or wire screen sides g^2, substantially as specified.

21. The refrigerator-car having double walls A B, composed of flat pieces *a b*, laid one on top of another without frame-work, insulating material between said walls, composed of woolen rags D, a preserving-chamber, F^2, an ice-chamber, F', a ventilator-opening, P, communicating directly with said ice-chamber near the highest point thereof, and a non-heat-conducting or insulating sheathing, F, interposed between said ice-chamber and said preserving-chamber, said non-heat-conducting sheathing having an open space, G', surrounding the same at its sides and ends for communication between said ice-chamber and said preserving-chamber, and said ice-chamber having a bottom or pan, G, provided with longitudinal grooves or corrugations *g*, extending from one end of the car to the other, and open or wire screen sides g^2, and gratings M, substantially as specified.

22. The refrigerator-car having double walls A B, composed of flat pieces *a b*, laid one on top of another without frame-work, insulating material between said walls, composed of woolen rags D, a preserving-chamber, F^2, an ice-chamber, F', and a ventilator-opening, P, communicating directly with said ice-chamber near the highest point thereof, and a non-heat-conducting or insulating sheathing, F, interposed between said ice-chamber and said preserving-chamber, said non-heat-conducting sheathing having an open space, G, surrounding the same at its sides and ends, for communication between said ice-chamber and said preserving-chamber, said ice-chamber having a bottom or pan, G, provided with longitudinal grooves or corrugations *g*, extending from one end of the car to the other, and open or wire screen sides g^2, gratings M, and racks H, substantially as specified.

339,185. REFRIGERATOR-CAR. CARLETON B. HUTCHINS, Detroit, Mich. Filed Sept. 29, 1885. (No model.)



Claim.—1. The combination, in a refrigerator-car, with the bottom or base frame-work, D D', of double walls A B, consisting of straight flat pieces *a b*, laid one on top of another, roof-supporting beams G, vertical tie-rods E, and cross tie-rods E', substantially as specified.

2. A refrigerator-car having double walls A B, each consisting of straight flat strips laid one on top of another, without frame-work, and stays or braces *c*, extending between and connecting said walls, substantially as specified.

3. The combination, with the double walls A B of a refrigerator-car, consisting of flat strips *a b*, laid one on top of another, of wooden stays or braces *c*, extending between and rigidly connecting said double walls A B, substantially as specified.

4. The combination, with the double walls of a refrigerator-car, of stays between the same consisting of wood-screws, forming rigid connections between the two parts of said double walls, substantially as specified.

5. The combination, with double walls of a refrigerator-car having screw-threaded holes therein, of wood-screw stays inserted in said threaded holes, substantially as specified.

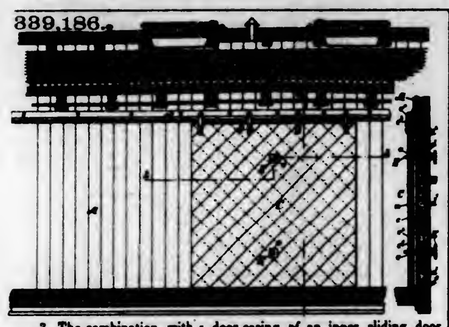
339,186. DOOR FOR REFRIGERATING-CARS. CARLETON B. HUTCHINS, Detroit, Mich. Filed Sept. 29, 1885. (No model.)

Claim.—1. The combination of the outer hinged doors, D and D', having inclined meeting edges, with an inner sliding door, and a screw-connection between the two, substantially as specified.

2. The combination, with the door-casing of a refrigerator-car, having vertical grooves *b* filled with an elastic material, of outwardly-opening doors D D' hinged thereto, and provided with inclined meeting edges and beveled ends, an inner sliding door, C, and a screw or threaded bolt connecting the inner and outer doors, substantially as specified.



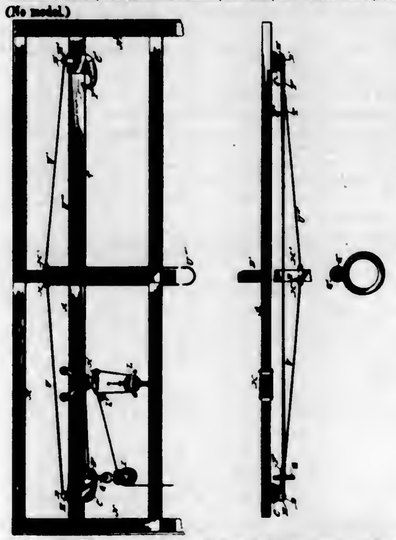
339,186.



3. The combination, with a door-casing, of an inner sliding door fitting against the inner face or side of said casing, a pair of outwardly-opening hinged doors, and means for binding the inner and outer doors together, substantially as specified.

4. The combination, with the double walls of a refrigerator-car, of a pair of outwardly-opening hinged doors, and an inner sliding door, substantially as specified.

339,187. HAY ELEVATOR AND CARRIER. CHARLES E. HUNT, NATHAN B. HELM, and HERBERT L. FISHER, Harvard, Ill. Filed Jan. 5, 1886. (No model.)



Claim.—1. The combination, with a track for hay-carriers, of two pulley-supports attached to the track near the opposite ends thereof, and means, substantially as shown and described, for detaching a pulley from one of said supports and transferring it to the other.

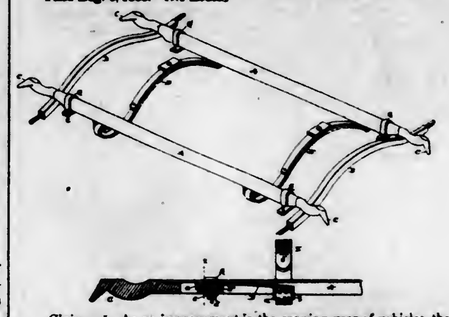
2. The combination, with a carrier-track, of two pulley-supporting hooks fastened to the track near its opposite ends, and means, substantially as shown and described, for lifting a pulley from one of said hooks and transferring it to the other.

3. The combination, with a carrier-track, of two castings fastened to the track near its opposite ends, and each provided with a pulley-supporting hook, two pulleys mounted on said castings, respectively, above said hooks, a pulley-ring adapted to engage either of said hooks, and a cord having its ends fastened to said ring and passing over said pulleys and through a suitable stationary eye or eyes, substantially as and for the purpose set forth.

4. The combination of the track A, the castings C C', provided with hooks F F', the pulleys E E', mounted on said castings, the pulley-ring G, and stationary eyes H H', and the cord passing through the eyes H H', over the pulleys E E' and having its ends fastened to the ring G.

5. The combination of the track A, the castings C C', fastened thereto and having hooks F F', the pulley-track T, joining said hooks, the pulleys E E', mounted on the castings C C', and the cord passing through stationary eyes and over the pulleys E E' and having its ends fastened to a pulley or pulley-ring, substantially as shown and described, and for the purpose set forth.

339,188. SIDE-BAR VEHICLE. RUDOLPH S. ROSSMEISL, Pittsburg, Pa., assignor to the Pittsburg Spring Company, (Limited,) same place. Filed Aug. 6, 1885. (No model.)

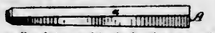


Claim.—1. As an improvement in the running-gear of vehicles, the side bars constructed of steel plates struck up or stamped into U shape in cross-section, in combination with the strap-springs confined at one end in the hollow of the bars and extending below the same at the other end, where they are provided with connections for the transverse springs which support the body of the vehicle, substantially as specified.

2. The hollow side bars, A, having the springs D located therein, in combination with the blocks F, clip G, and cross-bar *c*, whereby the said springs are confined at one end within the body of the side bars, and the free end allowed to project below the same to be secured to the transverse supporting-springs of the vehicle, substantially as and for the purpose specified.

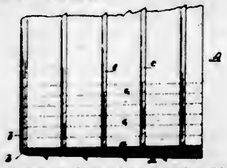
3. In running-gear for vehicles, the hollow steel side bars, the leaf-springs secured at one end within said side bars and at the other ends to the transverse supporting-springs of the body of the vehicle to which the side bars are fastened, substantially as and for the purposes specified.

339,189. BLANK FOR NAILS. JOHN T. JONES, Iron Mountain, Mich. Filed Nov. 12, 1883. (No model.)



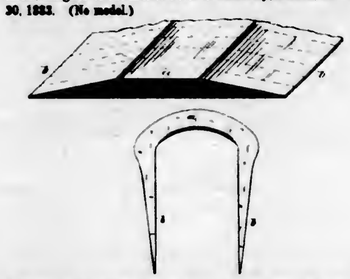
Claim.—A nail plate or blank having tapering sides, both said sides being beveled off, as shown, to form a knife-edge, substantially as set forth.

339,190. BLANK FOR NAILS. JOHN T. JONES, Iron Mountain, Mich. Filed Nov. 12, 1883. (No model.)



Claim.—A nail plate or blank having tapering sides *a*, bevels *b*, to form a longitudinal knife-edge along the thinner edge of the plate, and longitudinal ribs or teeth *c* on each of said sides, as herein shown and described.

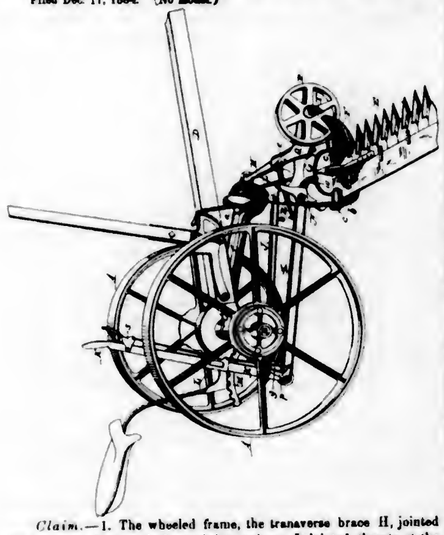
339,191. BLANK FOR STAPLES. JOHN T. JONES, Iron Mountain, Mich., assignor of one-half to Peter L. Kimberly, Sharon, Pa. Filed Nov. 30, 1883. (No model.)



Claim.—1. A staple plate or blank having parallel faces throughout the central portion, *a*, corresponding in length to the bow of the staple, and thence beveled toward each edge for a length corresponding to that of the legs of the staple, substantially as hereinbefore set forth.

2. The improvement in the manufacture of staples, consisting in first forming a staple plate or blank with a central portion, *a*, having parallel faces and beveled end portions *b*, then cutting said blank transversely into strips, and then bending each strip into staple form, so that the tapered portions *b* shall form the legs, and the portion *a* shall form the bow of the staple, as hereinbefore set forth.

339,192. MOWING-MACHINE. WILLIAM A. KIRBY, Auburn, N. Y. Filed Dec. 17, 1884. (No model.)



Claim.—1. The wheeled frame, the transverse brace H, jointed thereto at the front, and the push-bar or brace I, jointed thereto at the rear, in combination with a shoe-supporting head, G, provided with a sleeve loosely encircling the brace H, and united to the push-bar by a horizontal pivot in rear of the transverse brace, as described and shown.

2. The wheeled frame, the transverse brace jointed thereto, the push-bar, also jointed to the frame, the head G, jointed to the push-bar and provided with the elongated sleeve encircling the brace, the main shoe hinged to the head, the rod J, and the lever K, all combined for joint operation substantially as described and shown.

3. In combination with the main shoe having the finger-bar attached, the carrying-wheel therefor and the intermediate spring-connection, substantially as described, whereby the shoe is carried with an elastic or yielding action.

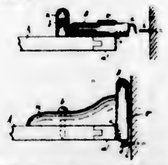
4. In combination with the shoe, the carrying-head hinged thereto, the arm hinged to the head, the wheel mounted on the arm, the rod attached to the arm, and the spring, applied substantially as shown.

5. In a mowing-machine, the combination of the rolling finger-bar and the rod to effect said motion, the lever to actuate the rod, the locking devices, for the lever, the latch to sustain the finger-bar in an upright position, and the operating devices common to the latch, and the locking devices, whereby the hand-lever and the finger-bar may be unlocked simultaneously.

6. The rolling finger-bar, its controlling-rod, and the hand-lever for actuating said rod, combined with the thumb-lever *s*, rod L, elbow-lever *p*, latch N, and connecting-rods, substantially as described and shown.

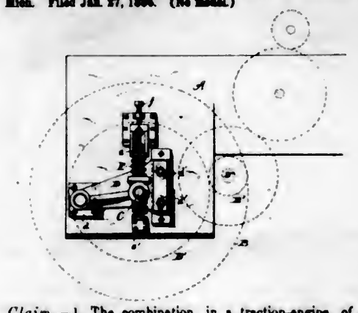
7. In a mowing-machine, the combination of a rolling finger-bar, a latch directly engaging the finger-bar to sustain the same in an upright position, a lever connected to the latch to operate the same, and a lever connected to the finger-bar to effect its rolling motion, the two levers having a common axis, substantially as described

339,193. IRONING-TABLE. ASA P. LACEY, Minneapolis, Minn. Filed Feb. 9, 1885. (No model.)



Claim.—The board A, in combination with the cleat *a'*, the hinged board B, the cushions *r r*, hooks *s s*, screw-eyes *t t*, button *u*, and brace *u*.

339,194. TRACTION-ENGINE. MINARD LAFEVER, Battle Creek, Mich. Filed Jan. 27, 1886. (No model.)



Claim.—1. The combination, in a traction-engine, of traction-wheel spindles or axles and links or vibrating arms carrying said spindles pivoted to the body or fire-box shell at a point opposite the driving-pinion shaft, substantially as described.

2. The combination, in a traction-engine, of links pivoted at one end to the body or fire-box shell at a point opposite the pinion-shaft, and sustained at their spindle ends upon springs for giving a yielding support to the machine, as specified.

3. The combination, as set forth, of links pivoted to the body or fire-box shell at a point opposite the pinion-shaft, provided with slots for support against lateral movements, and springs for elastic or yielding vertical support, substantially as described.

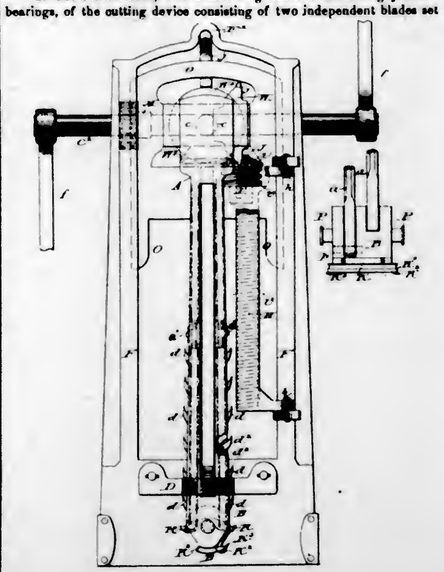
4. The combination of spindle-carrying arms or links pivoted at one end to the body or fire-box shell at a point opposite the pinion-driving shafts, of supporting-springs above and below the movable head on said links, and means for sustaining them against lateral strain, substantially as described.

5. The combination, with the free end of a vibrating spindle-carrying arm pivoted to the fire-box shell or boiler, of a spring, and an adjustable spring-support for giving the springs an initial tension, substantially as described.

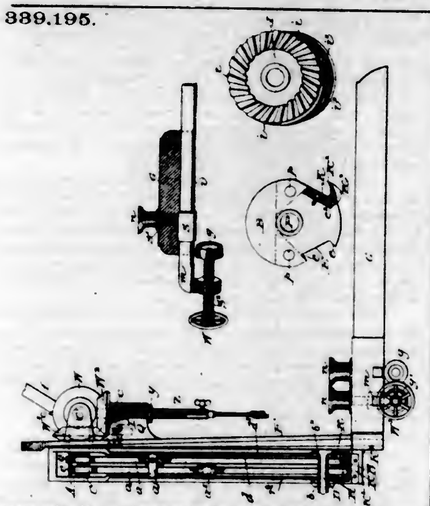
339,195. SQUARE-HOLE-BORING MACHINE. ABRAHAM E. LAKE, Wooster, and JOHN C. LAKE, Big Prairie, assignors to the Square Hole Auger Company, Wooster, Ohio. Filed July 29, 1885. (No model.)

Claim.—1. The combination, with a mortising cutter-head having journal-bearings provided with a cutting device having parallel side cutting-edges and parallel end cutters, of the operating device consisting of opposite reciprocating bars *a*, connected with the cutter-head to oscillate the same upon said journal-bearings, substantially as and for the purpose specified.

2. The combination, with a mortising cutter-head having journal-bearings, of the cutting device consisting of two independent blades set



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into opposite sides of the cutter-head to cut upwardly only, said blades provided with end cutters to cut across the grain, substantially as set forth.

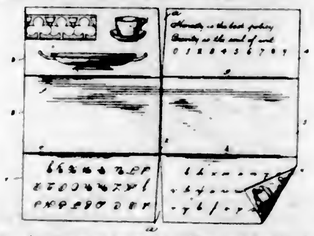
3. In combination with stock A and oscillating cutter-head B, the shaving-catches R, connected with bars d^{1}, having an up-and-down movement along the stock above the cutters corresponding with the swing of the cutter-head, substantially as and for the purpose specified.

4. In combination with stock A and oscillating cutter-head B, the sliding bars d^{2}, provided with a series of catches, *d*, having an up-and-down movement along the stock above the cutters, substantially as and for the purpose specified.

5. In combination with sliding frame O, gear-wheel W, having teeth or lugs J, hinged rack H, having worm-gear j^{3}, of the feed-wheel I, provided with beveled and oblique gear *j* on its upper surface, and worm-thread j^{2} upon its rim, said gear and thread fitted to coact with the lugs J and worm-gear j^{3}, respectively, substantially as and for the purpose specified.

6. The combination, in a square-hole-boring machine, with the slide-stock A, of a feed-wheel, I, pivoted in the frame O, and having a worm-thread upon its periphery, and beveled cogs upon its upper surfaces standing obliquely to the diameter thereof, a rack, H, hinged to the stationary frame F, and meshing with said worm-wheel, a wheel, W, mounted upon the main shaft, having upon its rim at intervals teeth or lugs to mesh with the beveled cogs upon the pivoted feed-wheel, whereby an intermittent movement is communicated to said sliding frame, substantially as set forth.

339,196. WRITING AND DRAWING BOOK. WARREN H. LAMSON, Lynn, Mass. Filed Feb. 12, 1884. (No model.)

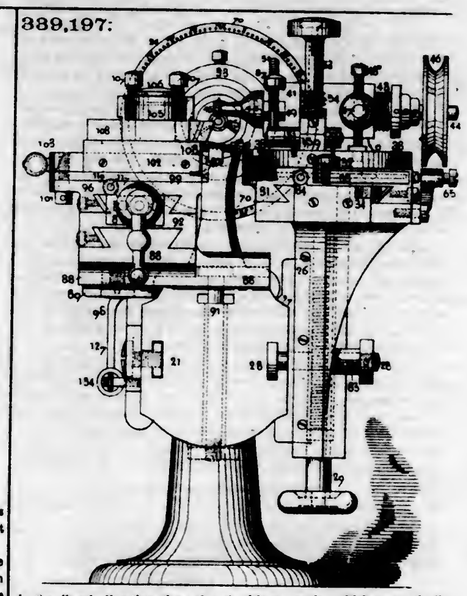


Claim.—A wrapper or cover for writing and drawing books, having folds 2 5, and laps, substantially as described, said laps being provided with specimens of writing or drawing, with similar specimens on the two diagonally-opposite laps, and the whole adapted to be folded about and positioned relatively to the pages of the inclosed book, substantially as and for the purposes stated.

339,197. MACHINE FOR FORMING COUNTERBORES, REAMERS, AND COUNTERSINKS. ALBERT LATHAM, Waltham, Mass. Filed Sept. 25, 1884. (No model.)

Claim.—1. The combination, with a duly organized lathe adapted to hold and rotate the counterbore-blank, of a milling-fixture adapted and arranged to be secured to the bed of the lathe to be moved and adjusted

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in the lineal direction thereof, and with means by which to vertically adjust it, a slide mounted on said milling-fixture, with means for reciprocating the same in the lineal direction of the lathe-bed, and a tool-carrying arbor journaled upon said slide, with its axis transverse to the line of the lathe-bed, and arranged to be rotated in position on said slide, all substantially as specified.

2. In a combined lathe and milling-machine, substantially as specified, the milling-tool arbor mounted upon a bed, constructed, combined, and arranged to be moved and adjusted in a rotary path upon the reciprocating slide, whereby said arbor may be arranged at varied angles relatively to the line of movement of the slide, substantially as specified.

3. In a combined lathe and milling-machine, substantially as specified, the milling-tool arbor and its journal-bearing, combined and arranged to be raised and lowered independent of its supporting-slide, with devices adapted and arranged to automatically liberate said arbor and its said bearing when the intended termination of its grooved path is reached, substantially as specified.

4. In a combined lathe and milling-machine, a milling-fixture adapted and arranged to be adjusted and locked at varied angles relatively to the horizontal plane of the lathe-bed, whereby the reciprocating slide arranged on said fixture may be moved in a line either parallel with or oblique to said plane of the lathe-bed, substantially as specified.

5. In a milling mechanism, in combination with the pivotal arbor-carrying frame 41, having the threaded segment 54 formed thereon, the coincidently-threaded sleeve 53, pivotally arranged to be moved into contact with said threaded segment, and to act therein to depress and lock said frame, substantially as specified.

6. In combination with said frame 41 and sleeve 53, threaded and arranged to co-operate, as specified, pivotal lever 52, having finger 56, the spring 57, acting thereon, and a tripping device adapted and arranged to automatically lock and liberate said pivotal lever, substantially as specified.

7. In combination with pivotal lever 52, its threaded sleeve, and frame 41, the screw or rack 64, with a suitable tripper, 65, to engage and actuate the same, tangent-wheel 60, engaged and rotated by said rack, stud 63, rotated coincidently with wheel 60, slide 58, engaged and actuated by said stud and arranged to lock and trip said lever 52, and a reacting spring to return said rack, slide, and tangent-wheel to first position, substantially as specified.

8. The combination of bed 21 of the lathe, a base-plate, 88, constructed and arranged to be secured thereto, a screw, 93, journaled in said base-plate and carrying a nut, 94, a plate, 92, arranged to slide on base-plate 88 and carrying a stud or stop, 95, to engage said nut, and also carrying a screw, 97, a plate, 96, mounted to slide on plate 92, and having a threaded stud, 98, engaged by screw 97, a plate, 99, pivoted upon and arranged to be rotated and locked on said plate 96, and carrying a screw, 103, and a plate, 102, mounted upon plate 99, and arranged to be actuated in a direction transverse to the axis of the lathe, and provided with devices for holding the cutting-tool, substantially as specified.

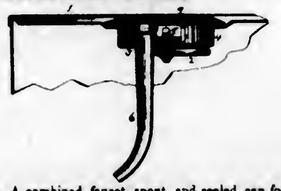
9. In combination with the devices arranged to be moved both transversely to and in the direction of the axis of the lathe, and to so move the cutting-tool, as specified, a cam arranged upon the lathe-arbor and subdivided coincidently with the number of grooves in the counterbore, a lever arranged to be engaged and actuated by said cam, and a connecting-rod actuated by said lever and connected with and arranged to actuate the devices carrying the cutting-tool, substantially as specified.

10. The combination of a suitably-subdivided cam arranged upon the lathe-arbor, lever 127, pivoted in adjustable plate 120, link 129, having rod 123, connected with plate 92, and an adjustable pivot connecting said lever and link, whereby the motion imparted to said lever by the cam may be imparted to said link and its reciprocating rod 123 in varied degrees, as desired, substantially as specified.

11. The combination of the non-traveling screw 93 and its nut 94, sliding plate 92, having a stud, 95, arranged to encounter said nut when reciprocated, and also carrying the transversely-moving tool-carrying devices, a cam duly formed, spaced, and mounted to rotate, and connected with slide 92 by interposed devices adapted and arranged to impart thereto a reciprocating movement graduated by the position of said nut upon its actuating-screw, substantially as specified.

12. The combination of sliding plates 92 and 96 with screw 97, arranged to actuate plate 96, the tool-carrying and transversely-actuating devices mounted on slide 96, a cam duly formed, spaced, and mounted to rotate, and connected with slide 92 by interposed devices adapted and arranged to impart thereto a reciprocating movement produced by the rotation of the cam independently of the feeding movement imparted to the cutting-tool by the action of said screw upon slide 96, substantially as specified.

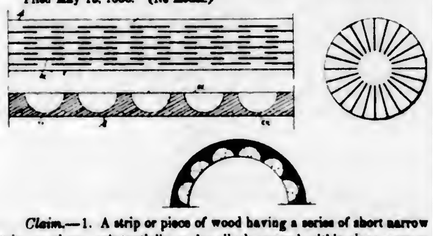
339,198. SEALED CAP AND FAUCET. WALTER LONGMAN, Brooklyn, N. Y. Filed Jan. 22, 1886. (No model.)



Claim.—1. A combined faucet, spout, and sealed cap for oil-cans, the faucet consisting of the coarse-threaded screw, with internal gate and external operating-handle, adapted to open and close the orifice with but one-half a revolution of the handle, the reversible spout and the soldered cap, the movable parts adapted to be placed in a cup beneath the cap, flush with the top of the can, and the cup and cap adapted to be soldered to the can-body at one operation, substantially as described.

2. The combination of the flush faucet 3 7 8 2, the cap 4, the reversible spout 6, the rim 5, and the sealed cap 9, substantially as described

339,199. COMPOUND LUMBER. JARED MARR, Philadelphia, Pa. Filed May 15, 1885. (No model.)



Claim.—1. A strip or piece of wood having a series of short narrow strips or pieces, substantially as described, secured within short narrow slots formed with the strip or piece, substantially as and for the purpose set forth.

2. The method of manufacturing compound lumber, consisting, essentially, in forming a series of narrow slots in one or more faces of a piece of wood and securing within said slots thin strips or pieces of wood, the said thin strips being arranged to break joints with one another.

3. The method of manufacturing articles or structures of bent wood, consisting in first bending the wood into the desired form, and then forming narrow slots therein and inserting within the slots thin strips of wood, substantially as set forth.

4. A piece of wood provided with narrow slots arranged to break joints one with another, and thin strips of wood secured within said slots so as to break joints, substantially as set forth.

5. A piece of wood provided with narrow slots extending partly through the piece, and narrow strips of material secured within said slots so as to break joints, substantially as set forth.

6. A piece of wood having narrow semicircular grooves therein and thin strips of wood semicircular in shape inserted in said grooves.

339,200. LUBRICANT. EDWARD S. MARSHALL and ROBERT W. SAVAGE, Tyler, Tex. Filed Jan. 2, 1886. (No specimens.)

Claim.—1. The process of preparing a lubricant, consisting of the following steps: first, removing from the cactus-plant the thorns thereon; second, reducing said plant by cutting or crushing into sections or pieces, and, third, mixing the cacti so prepared with oil, all substantially as described.

2. The process of preparing a lubricant from the common cactus-plant and crude or refined animal, vegetable, or mineral oil, consisting of the following steps: first, removing from the said plants the thorns thereon; second, reducing said plants by cutting or crushing into sections or pieces; third, placing the cacti so processed as above in tubs or vats and allowing it to there remain until it forms a substantially homogeneous mass, and, fourth, mixing such mass with oil, substantially as described, and for the purpose set forth.

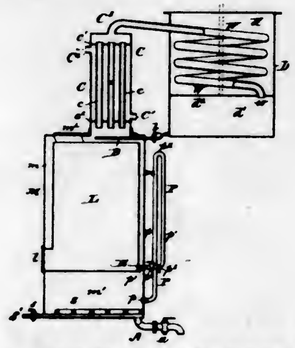
3. The process of obtaining a lubricant from the common cactus-plant and animal, vegetable, or mineral oil, consisting of the following steps: first, removing from said plants the thorns thereon; second, reducing said plant by cutting or crushing into sections or pieces; third, placing the same in tubs and allowing it to remain until it forms a fibrous gelatinous mass, and, fourth, separating the gelatinous and fibrous portions thereof and mixing such gelatinous portion with an animal, vegetable, or mineral oil, substantially as described.

4. The process of obtaining a lubricant from the common cactus-plant and animal, vegetable, or mineral oil, consisting of the following steps: first, removing the thorns from said cactus; second, reducing it by crushing or cutting into sections or pieces; third, mixing the said cacti so processed with crude or refined animal, vegetable, or mineral oil, and, fourth, of allowing the same to remain in tubs until an oily, gelatinous, and fibrous mass is obtained, and then removing said fibrous portion therefrom by pressure, all substantially as described.

5. As a new article of manufacture, a lubricant consisting of a mixture of crude or refined animal, vegetable, or mineral oil and a gelatinous material obtained from the cactus-plant, all substantially as described.

6. As a new article of manufacture, a lubricant consisting of a mixture of crude or refined animal, vegetable, or mineral oil and the fibrous and gelatinous material obtained from the cactus-plant, all substantially as described, and for the purpose set forth.

339,201. APPARATUS FOR MAKING EXTRACTS. JOSEF MIES, Brünn, Austria-Hungary. Filed Oct. 2, 1885. (No model.) Patented in Germany May 18, 1883, No. 20,742; in France May 23, 1883, No. 149,103; in Austria-Hungary Sept. 11, 1883, No. 17,570 and No. 35,783, and in Italy May 29, 1885, XIX, 18,396, and XXXVI, 214.



Claim.—1. In an apparatus of the class described, the combination, with an outer closed vessel, a vessel of smaller dimensions and open at top arranged within the outer vessel so as to leave a space all around the inclosed vessel, a heater located below the latter vessel, and a cooler or condenser mounted on the outer vessel arranged to discharge into the inclosed vessel, of the siphon-pipe P, substantially as and for the purpose specified.

2. In an apparatus of the class described, the combination, with an outer inclosed vessel, a heater and a cooler or condenser arranged at opposite ends of said vessel, and a vessel of smaller dimensions open at top arranged within the outer vessel to leave a space between the two and receive the products of condensation from the cooler or condenser, of the siphon-pipe P, the steam-pipe S', and a solvent-reservoir discharging into the inclosed vessel, substantially as and for the purpose specified.

3. The combination, with the vessels M L, steam-pipe S, and the cooler or condenser C, of the condenser D, said parts being arranged for operation substantially as and for the purpose specified.

339,202. LEAF-HOLDER AND SUPPORT FOR BOOKS. JAMES P. MORTON, Newton Centre, Mass. Filed Jan. 11, 1886. (No model.)



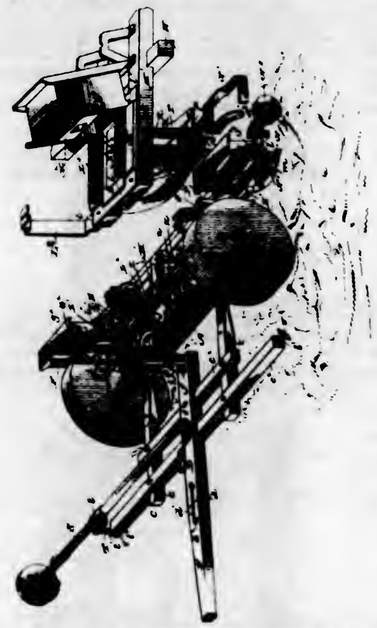
Claim.—1. A portable leaf-holder containing the following elements, viz: a light flat bar, a clamp for securing said bar to the lid of a book, a rocker-shaft provided with two curved leaf-holding arms and one or more crank offsets, and a spring or springs constructed and arranged to act upon said offset or offsets to hold said arms in contact with the leaves of the book, or in their retracted position, substantially as described.

2. The combination of the bar A, the clamping device *b*, the rocker-shaft *d*, provided with the crank offsets d^2 d^3, and mounted in bearings secured to the bar A, the curved arms *d' d'*, mounted upon said shaft, and the springs *e*, all arranged and adapted to operate substantially as described.

3. The combination of the bar A, provided with the recess *a*, the clamp *b*, the rocker-shaft *d*, mounted in bearings upon said bar and provided with a crank offset, d^3, the curved arms *d' d'*, and the spring *e*, all arranged and adapted to operate substantially as described.

4. The combination of a thin flat bar, a clamp secured thereon and adapted to secure said bar to the lid of a book, a rocker-shaft mounted in bearings upon said bar and provided with two radiating leaf-holding arms, a spring or springs for pressing said arms upon the book, and one or more supporting-arms hinged to the under side of said bar and adapted to project at right angles therefrom and support the book in an inclined position, or to be folded toward each other against said bar, substantially as described.

339,203. CORN-PLANTER. JOHN NELSON, Sandwich, Ill. Filed Aug. 27, 1885. (No model.)



Claim.—1. In a seeding-machine, and in combination with the front axle thereof, a tongue-frame pivoted to the axle and having a tongue-section rigidly secured thereto, and a draft-tongue yieldingly secured to one end of the tongue-section, substantially as and for the purpose herein described.

2. In a seeding-machine, the combination of the axle, a tongue-frame pivotally connected to the axle and having a tongue-section, a draft-tongue pivoted to the tongue-section, and a securing-bolt for rigidly securing the sections of the tongue together, substantially as described.

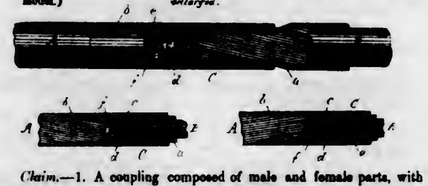
3. In a seeding-machine, the combination of the axle, a tongue-frame pivoted thereto, a sectional flexibly-connected draft-tongue secured to said frame, a vertical supporting-lever connected to the pivoted tongue-frame, and a spring-actuated lever pivoted to the main frame and bearing against the supporting-lever, to elevate the same and the tongue-frame, substantially as and for the purpose herein set forth.

4. In a seeder, the combination, with the axle, a tongue-frame pivoted thereto, a seat-platform, a vertical vibrating lever pivoted to the tongue-frame and moving in a bracket carrying a friction-roller, a pivoted lever in engagement with the supporting-lever, and a pivoted spring-actuated pressure-plate embracing said levers, substantially as described.

5. In a seeder, the combination, with the axle, a hopper-frame pivoted thereto, pivoted lever or levers Q, for elevating and depressing said frame, the seed-tubes suspended from the frame, and yielding pressure-rolls secured to the tube, and having a vertical and lateral swinging movement, substantially as described.

6. In a seeding-machine, the combination of the main frame, a pivoted frame, the seed-tubes, a vertically-yielding roller-frame pivoted to each tube, a roller-bracket carrying a pressure-roller pivoted to the roller-frame and having a lateral swinging movement, the pressure-springs bearing on the roller-frame, a pivoted operating-lever, O, for elevating and depressing the pivoted frame, a link, P', connected to the roller-bracket, and an intermediate link or lever, P, pivoted to the link P' and lever O, substantially as described.

339,204. COUPLING. BENJAMIN F. NICHOLS, Brookline, assignor of one-half to Julian Pomeroy, Springfield, Mass. Filed Dec. 9, 1885. (No model.)



Claim.—1. A coupling composed of male and female parts, with the engaging screw-stud of the male adapted to compress an elastic medium contained within the female part of such coupling when the latter is made up, and for the purposes stated.

2. The combination, with the ferrule *a* and screw-threaded stud *c*, of the ferrule *b*, screw-threaded bushing *d*, bearing-plate *e*, and elastic medium *f*, by means of which pressure is maintained against the stud to prevent unlocking of the parts, substantially as described.

3. In combination with two contiguous end-to-end lengths, A B, the coupling C, composed of the parts *a b* and their interlocking devices *c d e f*, all co-operating substantially for the purposes herein set forth.

339,205. EXTENSION LAMP-FIXTURE. DEXTER W. PARKER, Meriden, Conn., assignor to the Charles Parker Company, same place. Filed Mar. 2, 1885. (No model.)

Claim.—1. In combination with a rod and a counterbalance-weight sliding thereon, a rotary friction device carried by said weight and in contact with said rod, an extension-lamp and chains counterbalanced by said weight, supports for said lamp and chains, and a detent engaging the friction device, substantially as set forth.

2. In combination with a rod, H, and a counterbalance-weight, A, sliding thereon, a friction-plate journaled in said weight and in contact with said rod, an extension-lamp and chains counterbalanced by said weight, a detent engaging said friction-plate, and supports for the lamp and chains, substantially as set forth.

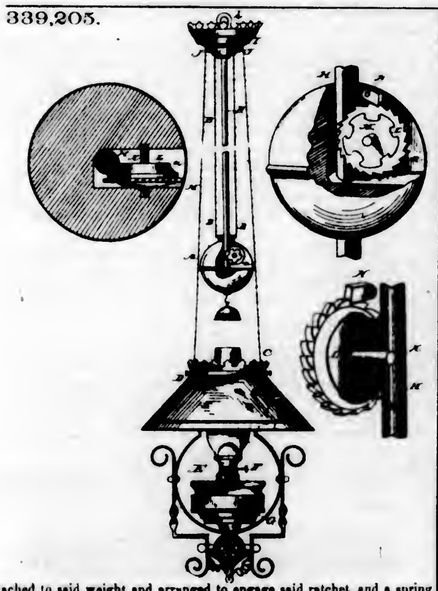
3. In combination with a rod, lamp-chains, and counterbalance-weight; a friction-disk attached to said weight provided with peripheral ratchet-teeth, and a pawl which engages with said teeth and holds said disk stationary when the lamp descends, said disk being in contact with said rod and acting as a friction device, substantially as set forth.

4. In an extension lamp-fixture, in combination with a rod and a counterbalance-weight sliding thereon, a disk or plate journaled in said weight and in contact with said rod, a spring which holds said disk thus in contact, a clutch which engages with said disk and prevents said disk from turning when the weight ascends, and the lamp, lamp-harp, and suspending-chains counterbalanced by said weight, substantially as and for the purpose set forth.

5. As an article of manufacture, a globular weight having within it a disk, and a spring bearing against the latter, substantially as set forth.

6. In an extension-fixture for a lamp or chandelier, the combination of a rod and a counterbalance-weight sliding thereon with a friction plate or disk journaled in said weight and recessed to fit said rod, a ratchet having backwardly-facing teeth carried by said disk, a pawl at-

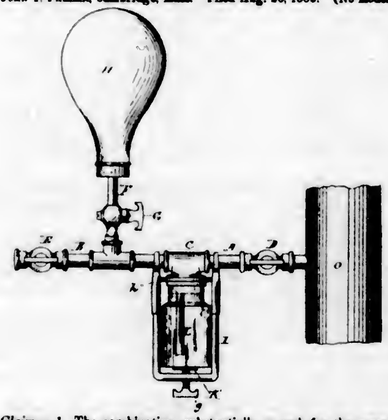
339,205.



tached to said weight and arranged to engage said ratchet, and a spring which is in contact with said disk, for the purpose set forth.

7. As an article of manufacture, a globular weight having within it a ratchet-toothed disk, a spring, and a pawl, arranged substantially as set forth.

339,206. APPARATUS FOR DETECTING LEAKS IN SOIL-PIPES. JOHN T. PHELAN, Cambridge, Mass. Filed Aug. 20, 1885. (No model.)



Claim.—1. The combination, substantially as and for the purpose set forth, of the pipes A and B, the cocks E and D, the elastic bag H, connected to the pipe B by a suitable pipe provided with a cock, and a receptacle for a volatile and strong-smelling substance—such as oil of peppermint or its equivalent—connected to the pipes A B, as described, whereby the current of air passing through the pipes is caused to pass over or through the substance contained in the receptacle.

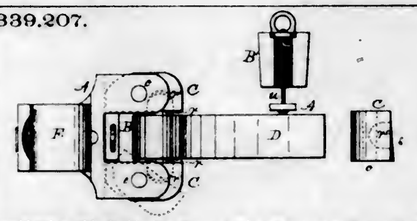
2. The combination, substantially as and for the purpose set forth, of the pipes A and B, the joint C, connecting the same, the openings *a* and *b* in said joint, separated by the partition *c*, the extension *d* of said joint, provided with perforations, as described, and a suitable receptacle, as described, attached to said joint.

3. The combination, substantially as and for the purpose set forth, of the pipes A and B, the joint C, constructed as described, the flask L, bar I, washer *h*, support K, and set-screw *q*.

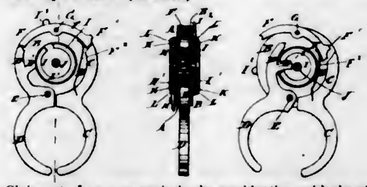
339,207. THILL-COUPLING. CHARLES M. PRUARD and LESTER H. CHAPPEL, Dayton, Ohio. Filed Feb. 8, 1886. (No model.)

Claim.—The key B', with inclining edges, and the spring *w*, in combination with the block or frame A, the pivotal arms C C, and the thill-iron D, substantially as set forth.

339,207.



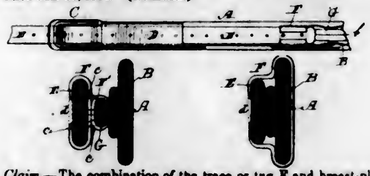
339,208. GARMENT-LOCK. ANDERS POSTEN, New York, N. Y. Filed Sept. 4, 1885. (No model.)



Claim.—1. In a garment-lock, the combination, with the plates A B, having circles of numerals and provided with a stationary hook, C, of the pivoted hook D, having prong D', the lever F, pivoted to the said plates between the shanks of the said hooks, and the cap-plates H, I, pivoted to the main plates, and having open-ring flanges upon their inner sides and fingers upon their outer edges, substantially as herein shown and described.

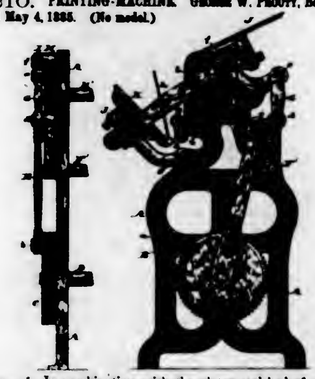
2. In a garment-lock, the combination, with the plates A B, having circles of numerals and corresponding circles of recesses, and provided with a stationary hook, C, a movable hook, D, having prong D', of the cap-plates H I, pivoted to the main plates, and having open-ring flanges H' I' and annular recessed grooves K, and the single-coil spiral springs L, substantially as herein shown and described, whereby the said lock can be readily fastened and unfastened and will give notice when the fingers of the cap-plates are opposite the numerals of the main plates, as set forth.

339,209. HARNESS. SAMUEL A. PERKOTT, Wilkinsonville, Mass. Filed Jan. 20, 1886. (No model.)



Claim.—The combination of the trace or tug E and breast-plate A, having the strip or way G fastened thereto, with a sliding loop, F, made and adapted to slide longitudinally on said strip or way, substantially as and for the purpose set forth.

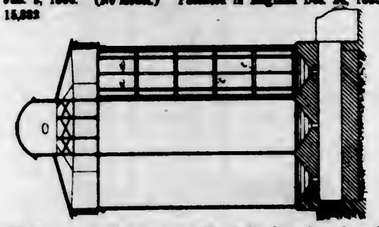
339,210. PRINTING-MACHINE. GEORGE W. PROUTY, Boston, Mass. Filed May 4, 1885. (No model.)



Claim.—1. In combination with the platen and bed of a printing-press, and arm or lever provided in its movable end with two wrist-pins, a pitman connecting one of said wrist-pins with the operating crank-pin by a closely-fitting bearing, an elbow-lever provided with a wrist-pin in the movable end of each arm, a link connecting one of said wrist-pins with the second wrist-pin in the first-mentioned arm or lever, and a draw-bar connecting the wrist-pin in the other arm of the elbow-lever with the platen-yoke, substantially as described.

2. In combination with the platen and type-bed of a printing-press, the shaft D, crank-pin *b*, the pitman E, the arm or lever F, provided with the wrist-pins *c* and *d*, the link G, the levers H L, the draw-bar I, all connected together by positive and unyielding connections, and the saddle *j*, connected to the lever L by a yielding connection, all arranged and adapted to operate substantially as and for the purposes described.

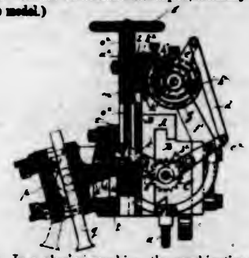
339,211. RECEPTACLE FOR THE PRESERVATION OF GRAIN AND SUCCULENT MATERIALS. CARL RABES, Berlin, Germany. Filed Jan. 9, 1886. (No model.) Patented in England Dec. 24, 1885, No. 15,583.



Claim.—1. A silo or receiver the walls whereof are formed of a metallic skeleton frame composed of vertical rods or bars *a* and a reticulated connecting-netting secured to the rods or bars, made of wire or metal rods and lined with a suitable material or compound, such as mortar, cement, asphalt, compounds, &c., or with tiles or flags, substantially as described.

2. The grouping of two or more silos by the interlacing of their skeleton walls at the contacting points of the reticulated or net-work surfaces of said skeleton wall, to firmly interlace the several structures, substantially as described.

339,212. TOOL-HOLDER OSCILLATING DEVICE FOR PLANING-MACHINES. GUSTAV R. REINHARDT, Leipsic, Germany. Filed July 22, 1885. (No model.)

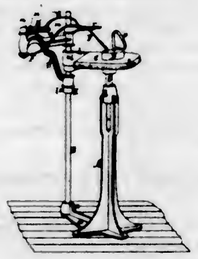


Claim.—1. In a planing-machine, the combination of reciprocating spindle o^2 with hub *n*, having projection *n'*, and with tool-holder *p*, having socket *p'*, and with rod *l* and collar *m*, substantially as and for the purpose described.

2. The combination of cross-slide A, operated by feed-screw C, with the spindle o^2, bevel-gear r^2, wheels k' k^2, rod *l*, and shaft *f*, the shaft *f* and screw C receiving motion from rod *a* by means of intermediate gearing, substantially as specified.

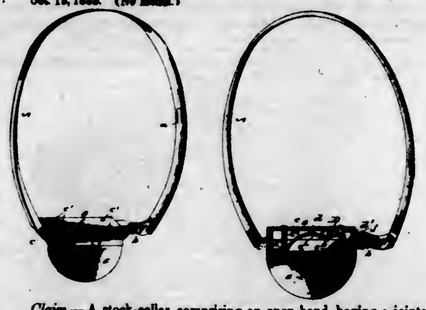
3. The combination of tool-holder *p*, oscillating on centers r' r^2, with reciprocating spindle o^2, rod *l*, collars *m n*, and with screw *o'* and wheels u' u^2, as and for the purpose set forth.

339,213. IRONING-MACHINE. HERBERT L. RICHARDSON, Woburn, Mass. Filed July 6, 1885. (No model.)



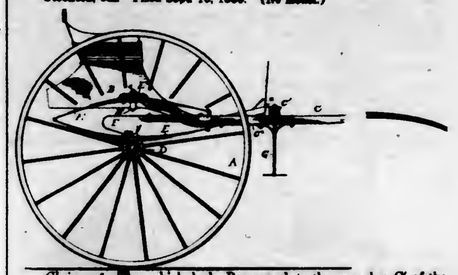
Claim.—The ironing-machine, substantially as described, composed of the standard, the adjustable table, the arm projecting from such table, the rod extending upward from the base of the standard and through the said arm, the crane and its supporting adjustable collar applied to the rod, and the two arched rods and the spiral spring applied to each other and the sad-iron, all being essentially as set forth.

339,214. STOCK-COLLAR. JOHN H. ROSSMER, Hempstead, Tex. Filed Oct. 19, 1885. (No model.)



Claim.—A stock-collar comprising an open band having a jointed notched locking-arm, a lock-case rigidly secured to the opposite end of the collar, and carrying a spring-bolt adapted to engage the notched arm, and a metallic name-plate secured to the lock-casing, substantially as described.

339,215. TWO-WHEELED VEHICLE. SAMUEL RÖTHLISBERGER, Stockton, Cal. Filed Sept. 10, 1885. (No model.)



Claim.—1. The vehicle-body B, secured to the cross-bar C' of the shafts C by the hinge *c* at its front, and at its rear by the angular iron standard B' to the blocks E', attached to the springs E by the bolts *e*, the springs E being attached to the straps C' and to the hook-shaped springs F, said springs F being attached, as shown, to the shafts G and the axle D, and the springs E to the axle D, as set forth.

2. The combination, substantially as described, with the axle D, the shafts C, and the springs E, of the hook-shaped springs F, having slots at their lower ends engaging by means of bolts with the eyes in the heads of the standards, of the clips *f*, secured to the axle D, substantially as and for the purposes described and herein set forth.

339,216. MOP-WRINGER. LEMUEL SARGENT and CHARLES CRASE, Upton, Me. Filed Apr. 20, 1885. (No model.)

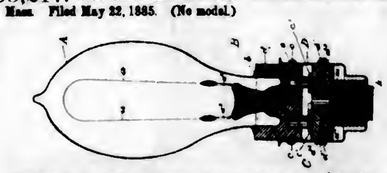


Claim.—1. The frame, wringer-rolls, and operating-crank, in combination with the inclined plates E, secured to the frame at the ends, each plate being arranged in an inclined direction above each roller, to prevent the water from splashing over, and also allow the guiding of the mop, as set forth.

2. The combination, with the pail, of the wringer-frame resting in a horizontal position upon the same, a curved frame or band provided with angular arms at its ends where it is secured to the wringer-frame and adapted to partially encircle the upper outer edge of the pail, and the clamping-blocks with operating-screws connected to the wringer-frame opposite to the curved band, as and for the purpose set forth.

3. The combination, with the pail, of the wringer-frame resting in a horizontal position upon the same, a curved frame or band secured at its end to the wringer-frame and adapted to partially encircle the upper outer edge of the pail, and the clamping-screws connected to the wringer-frame opposite to the curved band, for the purpose set forth.

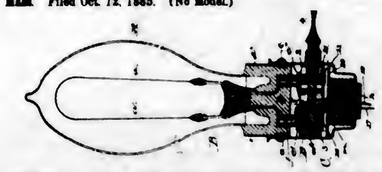
339,217. **ELECTRIC-LAMP HOLDER.** FREDERICK SCHAEFER, Boston, Mass. Filed May 22, 1885. (No model.)



Claim.—1. In an incandescent lamp, a sleeve or case having stops to control the extent of outward movement of an inclosed insulating-block, and provided with a socket, combined with the insulating-block having contact-pieces, and with a spring supported in the bottom of the sleeve or case, and acting at one end upon the under side of and moving the said insulating-block outward, substantially as described.

2. The lamp provided at its neck with terminal electrodes and having projections c c^3, combined with a sleeve or case having a groove, e, slotted at n' n', to enable the said projections to enter the said groove, and having stops and a socket connected with the said sleeve or case, a spring located in the said sleeve or case and supported by it at or near the said socket, and the insulating-block provided with contact-pieces, whereby when the projections on the neck of the lamp are entered into and made to follow in the groove e the terminal electrodes act against the contact-pieces c' c' and force the insulating-block back into the sleeve or case, compressing the said spring, the terminal electrodes rubbing or sliding over the contact-pieces as the lamp is being turned to secure it in place, substantially as described.

339,218. **ELECTRIC-LAMP SWITCH.** FREDERICK SCHAEFER, Boston, Mass. Filed Oct. 12, 1885. (No model.)



Claim.—1. A switch for incandescent lamps, consisting of a key provided with a collar composed of metal and insulating material, substantially as described, combined with the insulating-disk a^3, provided with the slot 2, in which to receive the said collar, and with contact-pieces secured to the said insulating-disk to co-operate with the said collar, as and for the purpose set forth.

2. The key provided with a collar of metal and insulating material, substantially as described, and provided with grooves 15 16, combined with the insulating-disk a^3, slotted to receive the said collar, and with the contact-pieces c', c^3, and 7, the latter having a projection to enter one of the said grooves to lock the switch, substantially as described.

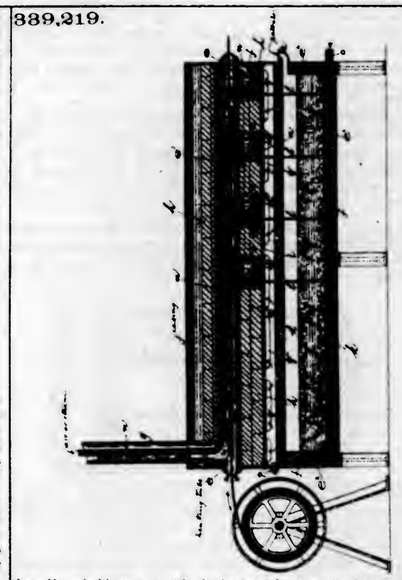
339,219. **APPARATUS FOR HEATING WIRE.** GEORGE H. SCOTT, Worcester, Mass. Filed June 18, 1885. (No model.)

Claim.—1. In a furnace for heating wire, the outside casing, f, having the horizontal division-plate i, and side openings f' g, the fire-brick casing h, provided with side openings h', and chimney g, in combination with the horizontal tube s, having openings at both ends thereof and provided with side openings s', the conducting-pipes l, reservoir k, and supply-pipes n, provided with nozzles m, and ordinary regulating-valves, s, all constructed and arranged substantially as shown and described.

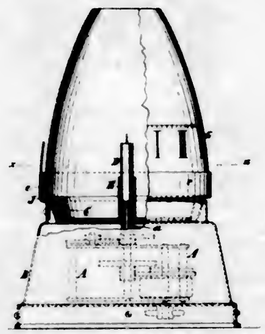
2. The combination of the reels B D, the outside casing, f, having the horizontal division-plate i, and side openings, f' g, the fire-brick casing h, provided with side openings h', and chimney g, with the horizontal tube s, having openings at both ends thereof and provided with side openings s', the conducting-pipes l, reservoir k, and supply-pipes n, provided with nozzles m, and ordinary regulating-valves, s, substantially as and for the purposes set forth.

3. The combination of the reel B, an ordinary tempering apparatus, C, reel D, the outside casing, f, having the horizontal division-plate i, and side openings f' g, the fire-brick casing h, provided with side openings h', and chimney g, with the horizontal tube s, having openings at both ends thereof and provided with side openings s', the conducting-pipes l, reservoir k, and supply-pipes n, provided with nozzles m, with ordinary regulating-valves, s, and extending from one end of said tube to the other, in close proximity thereto, and thence up through the inside of the chimney g, substantially as shown and described, for the purpose stated.

339,219.



339,220. **NIGHT-CLOCK.** CHARLES H. SHAW, Brooklyn, N. Y., assignor to John P. Adams, trustee, same place. Filed June 29, 1885. (No model.)



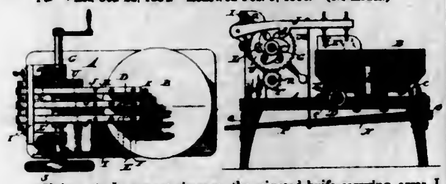
Claim.—In a clock, the combination of a train of time-registering wheels arranged in such position that the hour shaft or arbor is vertical, a platform carried by said hour shaft or arbor, a translucent globe or shade arranged on the platform and marked with numbers in opaque or semi-opaque material, an illuminating device inside the globe or shade, and a stationary hand, substantially as specified.

339,221. **MEDICINE-SPOON.** BOBBE SHERWIN, New York, N. Y. Filed June 24, 1884. (No model.)



Claim.—A pocket-spoon struck up from a single piece of metal, with a broad short horizontal flange and a support for the flange, substantially as set forth.

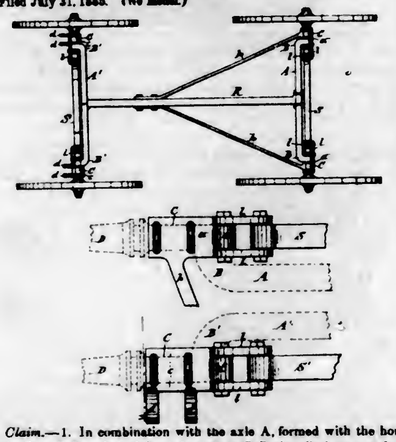
339,222. **MEAT-CHOPPING MACHINE.** PETER E. SHIRK, Blue Ball, Pa. Filed Oct. 22, 1884. Renewed Feb. 9, 1886. (No model.)



Claim.—1. In a meat-chopper, the pivoted knife-carrying arms J and their lifting-cams L, in combination with a transverse rock-shaft, O, a series of elastic arms or springs, N, secured to said shaft, cords or like connections extended from their respective springs to the knife-arms, the lever P, secured to the rock-shaft, and the locking device for said lever.

2. In a meat-chopping machine, the combination of the fixed upright pivot b, the series of rollers c, the worm-wheel encircling the pivot and sustained upon the rollers, the worm and the removable chopping-block seated upon the worm-wheel, and provided with the central hole to receive the pivot and with the stud to engage the wheel, as described and shown.

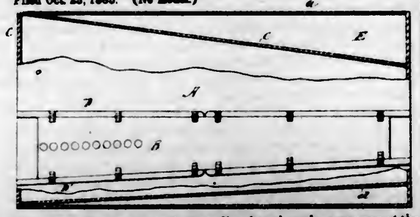
339,223. **SPRING-VEHICLE.** ORVILLE E. SHORT, Syracuse, N. Y. Filed July 31, 1885. (No model.)



Claim.—1. In combination with the axle A, formed with the horizontal offsets B B and straight end portions C C, the clip-bars a a, fastened on the axle portions C C, and formed integral with the reach-braces b b and with the ears c, projecting from the clip-bars in range with the axle-spindles, and the spring S, hung on said ears, substantially as described and shown.

2. The combination of the forward axle, A', formed with the horizontal offsets B' B' and with the straight portions C C, adjacent to and in line with the spindles, the clip-bars c c, fastened to the axle portions C C, and formed integral with the ears d d, projecting from the front of the clip-bars, and with the ears f, projecting from the clip-bars and in range with the spindles, links l l, coupled to the ears f, and the spring S', hung on said links and standing in range with the axle-spindles, substantially as described and shown.

339,224. **ORGAN SOUND-BOARD.** JOHN G. C. SIEFERT, Chicago, Ill. Filed Oct. 23, 1885. (No model.)



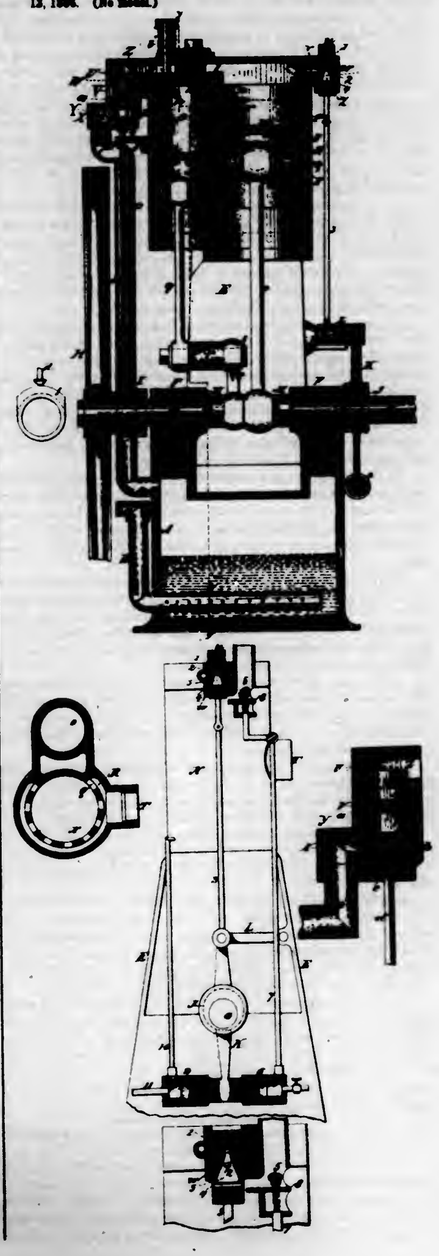
Claim.—1. In an organ, the sounding-board made narrower at the treble than the bass end thereof, substantially as described, and for the purposes set forth.

2. In an organ, the sounding-board wherein the vibrating board between the reed-tongues and the supports shall be widest at the bass, and taper to the treble end thereof, where it shall be narrowest, substantially as described.

3. In an organ, the sounding-board thickest at the bass end, and gradually decreasing in thickness to the treble end thereof, substantially as described.

4. In an organ, the sounding-board so constructed as to be both thicker and wider at the bass than the treble end, and gradually decreasing in thickness and width from the former to the latter, substantially as described, and for the purpose set forth.

339,225. **GAS-ENGINE.** CLARK SMITH, Springfield, Ohio. Filed Jan. 13, 1886. (No model.)



Claim.—1. In a gas-engine, the combination, with a charging-cylinder provided with a piston, an inlet-valve, and a check-valve, of a power-cylinder in direct communication with the charging-cylinder, save by a valve between the two, and having a piston and an exploding or igniting valve, means to operate the said inlet and exploding valve, and a crank-shaft with which the pistons connect, and suitable machinery to cause one of the pistons to reach its upper dead-point and begin its return by the time the other piston reaches its upper dead-point.

2. In a gas-engine, the combination, with the charging-cylinder provided with a piston, and a mixing-valve, constructed of a shell and a cut-off having, respectively, a plurality of ports and varying the proportions of the explosive admitted through it, of the power-cylinder provided with a piston, and an exploding-valve consisting of a shell and a slide having an internal chamber and ports extending therefrom, and an explosive generating-tank in communication with the mixing-valve, whereby the explosive is generated by the operation of the engine.

3. In a gas-engine, the combination, with the power-cylinder, of a valve-shell in direct communication therewith, and a valve fitted within said shell and having an internal conical chamber whose base is below the said communication, and from which extend a lower igniting-port and two upper ports which discharge an ignited portion of the motive agent into the power-cylinder.

4. In a gas-engine, the combination, with the shell of the inlet mixing-valve having a plurality of ports, of the cut-off having a plurality of ports, one of which is adapted to register with one of the ports of the shell while the other port of the shell is not registering with the other port of the cut-off, yet adapted to admit of communication of the respective shell-ports with the respective cut-off ports, and an adjustable stop to limit the downward movement of the cut-off.

5. In a gas-engine, the combination, with a charging-cylinder provided with a piston, an inlet-valve, and a check-valve, and a power-cylinder in direct communication with the charging-cylinder, save by a valve between the two, and having a piston and an exploding-valve, of the generating-tank in communication with the inlet-valve, whereby the explosive is generated by the operation of the engine and directly introduced from the charging-cylinder into the power-cylinder, and thence caught up by the exploding-valve, ignited without, and the flame carried back into contact with the charge in the power-cylinder.

6. In a gas-engine, the combination, with the power-cylinder and the exploding-valve, whose shell communicates with the same and whose slide has a stem, of the arm pivotally connected at one end and mounted upon an eccentric, the pump having its piston connected with the other end of the arm, and the supply-pipe leading from the pump to near the valve.

7. In a gas-engine, the combination, with the power-cylinder, of a shell having an opening communicating with it, and a slide having an internal opening communicating with a transverse port and with other ports which communicate alternately with the power-cylinder through the shell-port, the said transverse port being adapted to communicate with the flame when the slide is down.

8. In a gas-engine, the combination, with an explosive-generating tank, a pump in communication therewith, and means to actuate the pump, of a pipe-burner and an exploding-valve located in proximity to each other, and a pipe leading from the pump to the burner, and a flame established near the said valve.

9. In a gas-engine, the combination, with the generating-tank, the pump communicating therewith, the arm, the shaft and eccentric which actuate the arm, and the pivotal connection at the upper end of the arm, of the pipe leading from the pump to near the exploding-valve.

10. In a gas-engine, the combination, with the shaft having an eccentric, and a pivoted arm mounted upon the eccentric, of a pump communicating with the water-space about the cylinder and actuated by the said arm.

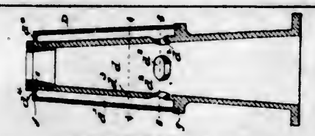
11. In a gas-engine, the combination, with the crank, of the piston and connecting-rods, one of said rods having a joint between its piston end and the crank, and a link or device to throw said joint out of a straight line drawn between the crank-shaft center and the piston-center, whereby one of the pistons reaches its upper dead-point and begins to return by the time the other piston reaches its upper dead-point.

12. In a gas-engine, the combination, with a charging and power cylinder, of a piston in each and their connecting-rods, one of said rods having a joint between its piston end and the crank, and a link or device to throw said joint out of a straight line drawn from the crank-shaft center to the piston-center, whereby one of the pistons is caused to commence its upward stroke and allowed to pass the exhaust-port by the time the other of said pistons begins its upward stroke.

339,226. EXHAUST-NOZZLE FOR LOCOMOTIVES. HOWARD M SMITH, St. Louis, Mo. Filed Sept. 30, 1884. (No model.)

Claim.—In an exhaust-nozzle, the combination of the inner and outer shells combined to form an annular chamber, d', the inner shell being provided with upwardly-inclined apertures d^3, leading into said chamber, and one or both shells having a flange for sharply contracting the annular exit from said chamber, substantially as set forth.

339,226.

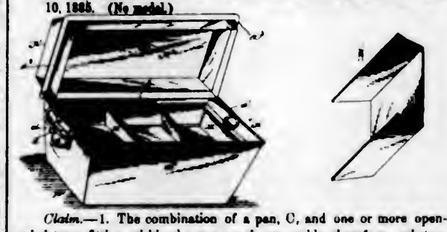


339,227. TRUNK-TOP. BENJAMIN T. SMITH, JOHN C. STEINBRUCK, and CHARLES J. PETRY, St. Louis, Mo. Filed Feb. 20, 1885. (No model.)



Claim.—A barrel trunk-top of concavo-convex shape having the apex of the arc in a central longitudinal line, consisting of two equal transverse sections with the grain of the wood running transversely or the shorter way of the top, and having a saw-cut in the grain ends or sides of the top, and a strip-filler inserted therein to prevent the sides of the top checking or splitting, substantially as described.

339,228. APPARATUS FOR BAKING. WORTHINGTON SMITH, Troy, Ohio, assignor of one-half to John M. Jackson, same place. Filed Aug. 10, 1885. (No model.)



Claim.—1. The combination of a pan, C, and one or more open-ended trays fitting within the same and removable therefrom, substantially as described.

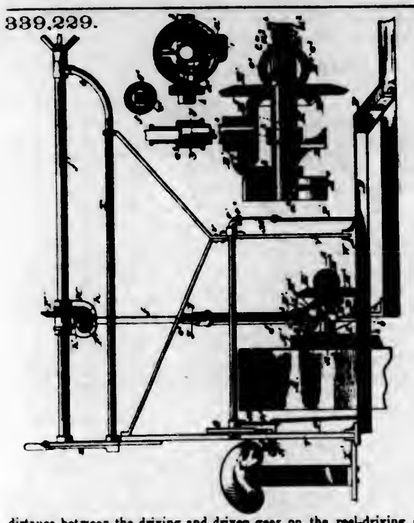
2. As an article of manufacture, a baking device comprising an inclosing-vessel, a pan or tray, C, located within and fitted tightly in the upper part of the same, one or more open-ended trays arranged transversely within the pan or tray C and removable therefrom, and the tightly-fitting cover, substantially as described.

339,229. HARVESTER-REEL. ANDREW STARK, Chicago, Ill. Filed May 5, 1884. (No model.)

Claim.—1. The reel-sustaining frame and the reel-shaft journaled therein, and means for adjusting the position of said reel-frame and reel relatively to the main frame of the machine, in combination with a reel-driving shaft at right angles to the reel-shaft, a bearing-piece for the same vibrating about the axis of the main driving-shaft, a yoke having bearings at right angles to each other for the reel-shaft and the reel-driving shaft, whereby the said shafts are retained in the same plane, bevel gear-wheels on the main driving-shaft, reel-driving shaft, and reel-shaft, respectively, by which power is transmitted directly from the main driving-shaft to the reel-driving shaft and thence directly to the reel-shaft, and means for varying the distance between the carrying and the carried gear on said reel-driving shaft automatically as the reel-frame is adjusted to different positions, substantially as set forth.

2. A compound reel-sustaining frame, a reel-shaft journaled in the outer or upper member thereof, means for adjusting the position of the entire frame relatively to the main frame, and means for adjusting the position of the outer member of said frame relatively to the lower or inner member, in combination with a reel-driving shaft at right angles to the reel-shaft, a bearing-piece for the same vibrating about the axis of the main driving-shaft, a yoke having bearings at right angles with each other for the reel-shaft and the reel-driving shaft, whereby the said shafts are retained in the same plane, the bevel gear-wheels on the main driving-shaft, reel-driving shaft, and reel-shaft, respectively, by which power is transmitted directly from the main driving-shaft to the reel-driving shaft and thence directly to the reel-shaft, and means for varying the

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distance between the driving and driven gear on the reel-driving shaft automatically as the reel-frame is adjusted to different positions, substantially as set forth.

3. A vibrating reel-sustaining frame capable of being made rigid throughout, and pivoted at its lower extremity to the main frame, or some fixed adjunct thereof, the reel-shaft journaled in the outer portion of said frame, means for rocking said frame over its pivot on the main frame, and means for securing it adjusted in any desired position, in combination with a reel-driving shaft at right angles to the reel-shaft, a bearing-piece for said shaft vibrating about the axis of the main driving-shaft, a yoke having bearings at right angles to each other for the reel-shaft and the reel-driving shaft, whereby said shafts are retained in the same plane, the bevel-gears by which power is transmitted from the main driving-shaft to the reel-driving shaft and thence to the reel-shaft, and means for varying the distance between the carrying and carried gear on said reel-driving shaft automatically as the reel-frame is adjusted to different positions, substantially as set forth.

4. In a harvesting-machine, a vibrating frame pivoted at one extremity to the main frame of the machine, or some fixed adjunct thereof, means for vibrating such frame over its pivotal support on the main frame, means for securing it adjusted in any desired position, a secondary reel-sustaining frame sustained upon and adjustable in relation to said vibrating frame, means for adjusting the position of said secondary frame relatively to said vibrating frame and for securing it adjusted in any desired position, and the reel-shaft journaled in said secondary frame, in combination with a reel-driving shaft at right angles to the reel-shaft, a bearing-piece for the same vibrating about the axis of the main driving-shaft, a yoke having bearings at right angles with each other for the reel-shaft and the reel-driving shaft, whereby the said shafts are retained in the same plane, the bevel-gears by which power is transmitted from the main driving-shaft to the reel-driving shaft and thence to the reel-shaft, and means for varying the distance between the driving and the driven gears on the reel-driving shaft automatically as the reel-frame is adjusted to different positions, substantially as set forth.

5. In a harvesting-machine, a vibrating frame pivoted at one extremity to the main frame of the machine, or some fixed adjunct thereof, means for vibrating such frame over its pivotal support on the main frame, and means for securing it adjusted in any desired position, a secondary vibrating reel-sustaining frame pivoted to the outer portion of said primary vibrating frame, means for vibrating it about its said pivotal support, and means for securing it adjusted in any desired position in relation to said primary frame, and the reel-shaft journaled in the outer portion of said secondary frame, in combination with a reel-driving shaft at right angles to the reel-shaft, a bearing-piece for the same vibrating about the axis of the main driving-shaft, a yoke having bearings at right angles with each other for the reel-shaft and the reel-driving shaft, whereby said shafts are retained in the same plane, the bevel-gears whereby power is transmitted from the main driving-shaft to the reel-driving shaft and thence to the reel-shaft, and means for varying the distance between the driving and the driven gears on the reel-driving shaft, substantially as set forth.

6. In a grain-harvester, the reel-sustaining frame, the reel-shaft journaled therein, means for adjusting the position of said reel-frame and reel relatively to the main frame of the machine, a telescoping reel-driving shaft, a yoke having bearings at right angles to each other for the reel-shaft and the reel-driving shaft, whereby said shafts are retained in the same plane, a bearing-piece for said reel-driving shaft vibrating about the axis of the main driving-shaft, and the bevel gear-wheels on the main driving-shaft, reel-driving shaft, and reel-shaft, respectively, whereby power is transmitted directly from the main driving-shaft to the reel-driving shaft and thence directly to the reel-shaft, all combined and operating substantially as set forth.

7. In a grain-harvester, the reel-shaft journaled therein, and means for adjusting the position of said reel and reel-frame relatively to the main frame of the machine, in combination with a yoke or frame pivoted upon and rocking about the main driving-shaft, the reel-driving shaft at right angles to the reel-shaft, a yoke or frame swinging upon said reel-shaft and swiveled upon the upper end of the reel-driving shaft, the bevel gear-wheels on the main driving-shaft, reel-driving shaft, and reel-shaft, respectively, by which power is transmitted directly from the main driving-shaft to the reel-driving shaft and thence directly to the reel-shaft, and means for varying the distance between the driving and the driven gear-wheels on the reel-driving shaft, substantially as set forth.

8. In a grain-harvester, the reel-sustaining frame, the reel journaled therein, and means for adjusting the position of the reel and reel-frame relatively to the main frame of the machine, in combination with a telescoping reel-driving shaft at right angles to the reel-shaft, a yoke or frame swinging upon the reel-shaft and swiveled upon the upper end of the reel-driving shaft, a yoke or frame pivoted upon and rocking about the main driving-shaft and having a bearing for the reel-driving shaft, and the bevel gear-wheels on the main driving-shaft, reel-driving shaft, and reel-shaft, respectively, by which power is transmitted directly from the main driving-shaft to the reel-driving shaft and thence directly to the reel-shaft, substantially as set forth.

9. In a grain-harvester, the reel-driving train, a wheel, from which the motion of such train is derived, revolving about the axis of the main driving-shaft, the clutch mechanism, whereby the cutting mechanism is thrown in and out of gear, located in the main driving-train preceding the wheel which imparts motion to the reel-driving train, all combined and operating as and for the purpose set forth.

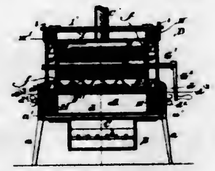
10. In a grain-harvester, in combination with the reel-shaft, the reel-driving shaft, and the driven and driving gears on them, respectively, the yoke H, having the interior lug, h', substantially as and for the purpose set forth.

11. In a grain-harvester, in combination with the reel-shaft, the reel-driving shaft, and the driven and driving gears on them, respectively, the yoke H, having its arms embracing the gear on the reel-shaft, and having the lug h', located as shown, with reference to the bow of the yoke, whereby the gear is embraced between said lug and bow, substantially as and for the purpose set forth.

12. In a grain-harvester, in combination with a rocking reel-frame, the shaft O', journaled therein, and having the cranks N and D', the links M and M', connecting said cranks, respectively, to fixed pivots on the main frame, or some fixed adjunct thereof, in line parallel to the shaft O', means for swinging said cranks and turning said shaft about the axis of the shaft, and means for securing them in any desired position, substantially as and for the purpose set forth.

13. In combination with the main driving-shaft, the reel-driving shaft, the intermeshing gears thereon, and the yoke D', made as described, in two pieces, d' and d^3, having respectively the branches 1 and 2, each with a bearing for the driving-shaft, and arranged to form their junction in a plane which longitudinally bisects the reel-driving shaft, substantially as and for the purpose set forth.

339,230. COMBINED WASHING AND WRINGING MACHINE. ELI C. STANBROUGH, Lead Hill, Ark. Filed Nov. 27, 1885. (No model.)



Claim.—The combination, with the receptacle A, having its side walls of uniform width, of a wringing attachment mounted on the side walls and adjustable longitudinally thereof, hollow uprights D', upper and lower adjustable rollers mounted in the standards, an intermediate driving-roller, springs for normally pressing the adjustable rollers in contact with the driving-roller, and a hinged flap for bearing against and releasing the tension of the springs of the upper roller, substantially as described.

339,231. PROCESS OF SEPARATING SUGAR FROM SACCHARINE FLUIDS. LOTHAR STEINBERG, Brunswick, Germany, assignor to Carl Uhl & Co., same place. Filed Dec. 21, 1885. (No specimens.)

Claim.—1. The process for precipitating or separating out sugar from saccharine fluids, (the juice of plants, molasses, sirups, spent lyes, from processes for obtaining sugar from molasses, &c.,) as lime saccharate, in such manner that ammonia in the form of gas or aqueous solution is added to a saccharine fluid previously thoroughly saturated with lime, substantially as described.

2. A novel process for precipitating or separating out sugar from saccharine fluids, as lime saccharate, by adding caustic potash to a saccharine fluid previously thoroughly saturated with lime, substantially as described.

3. A novel process for precipitating or separating out sugar from saccharine fluids, as lime saccharate, by adding caustic soda to a saccharine fluid previously thoroughly saturated with lime, substantially as described in the foregoing specification.

339,232. TRANSFERABLE LETTER FOR SIGNS. NELLIE S. STOWELL, New York, N. Y. Filed June 29, 1883. (No model.)

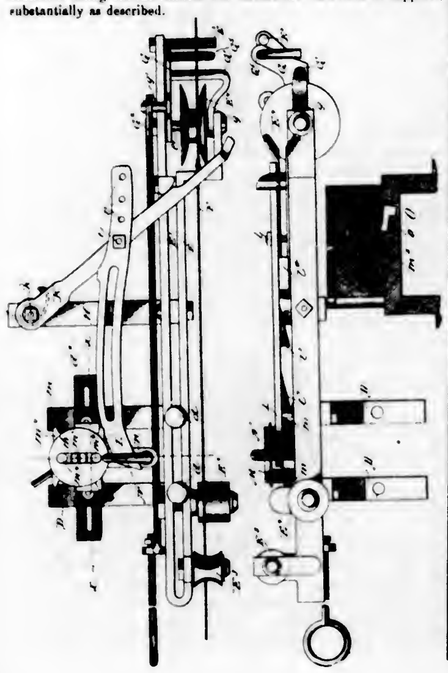


Claim.—1. As a new article of manufacture, a transferable letter or symbol for forming signs, consisting of a body of rigid material having a suitable concavity or recess at the back and a rubber strip or equivalent material around its edges, the whole adapted to be placed against a smooth surface to form an air-chamber, as and for the purpose set forth.

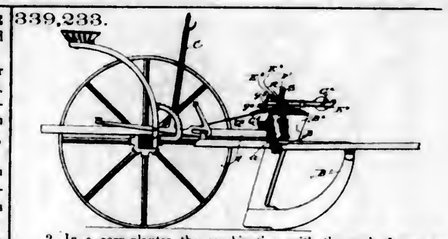
2. The method of forming signs which consists in attaching transferable letters and other characters composed of rigid material concaved or recessed on their under side, and having the edges of their concaved portions provided with strips of elastic material practically impervious to air, by applying said letters with their concaved sides to a smooth surface or support to form air-chambers, and then extracting the air from the air-chambers, whereby the letters are held in place by atmospheric pressure, substantially as set forth.

339,233. CORN-PLANTER. CHARLES E. SWEENEY, Piercetон, Ind., assignor of two-thirds to Charles R. Long, same place, and Theodore J. Heagy, Kosciusko County, Ind. Filed July 16, 1885. (No model.)

Claim.—1. In a corn-planter, the combination, with the main frame, the runners, the "lift-out" mechanism for the runners, and a check-rower having suitable supports for the tappet-wire, of a throw-off device for releasing the tappet-wire connected to the planter, whereby the operation of lifting out the runners will release the wire from its supports, substantially as described.



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2. In a corn-planter, the combination, with the main frame, the runners, the lift-out mechanism for the runners, and a check-rower having suitable supports for the tappet-wire, of a throw-off device comprising a swinging plate or arm connected with the main frame of the planter, and provided with a projection for releasing the tappet-wire when the swinging plate is operated, substantially as described.

3. In a corn-planter, the combination, with the main frame, the runners, the lift-out lever, and the check-rower having suitable supports for the tappet-wire, of a throw-off device comprising a swinging plate or arm having a projection for retaining the tappet, and a guard hook or projection for holding the wire, and a rod connecting the swinging plate with the main frame of the planter, substantially as described.

4. In a check-rower corn-planter, the combination, with the supports for the tappet-wire, of a throw-off device for said wire, comprising a swinging plate or arm having a projection for lifting the wire as the plate is swung, and having a guard hook or projection for holding the wire in place while in operation, substantially as described.

5. In a check-rower corn-planter, the combination, with the supports for the tappet-wire, of the swinging plate G, having the projection G', the guard G^2, and the rod G^3, suitably connected to the main frame of the machine, substantially as described.

6. In a check-rower corn-planter, the combination, with the main brackets of the check-rower, of the frame for the wire-supports adjustably sustained upon said brackets, whereby said frame can be shifted independently of the brackets, substantially as described.

7. In a check-rower corn-planter, the combination, with the main brackets of the check-rower, of the frame for the wire-supports adjustably sustained upon said brackets, whereby said frame can be shifted independently of the brackets, the forked lever, the driving-pawl adjustably connected to the forked lever, and suitable operating mechanism whereby said driving-pawl imparts motion to the shake-bar of the seed-slides, substantially as described.

8. In a check-rower corn-planter, the combination, with the forked lever for the tappet-wire, of mechanism for imparting movement from said lever to the seed-slides, comprising a driving-pawl connected with the forked lever, a driving-wheel, and an operating-rod extending from said wheel and connected with the rocking lever that moves the shake-bar, substantially as described.

9. In a check-rower corn-planter, the combination, with the forked lever for the tappet-wire, of mechanism for imparting movement from said lever to the feed-slides, comprising a driving-pawl connected with the forked lever, a driving-wheel adapted for engagement with said pawl, said pawl and wheel being sustained in horizontal position, and an operating-rod extending from said wheel and connected to the rocking lever that operates the shake-bar, substantially as described.

10. In a check-rower corn-planter, the combination, with the forked lever for the tappet-wire, of mechanism for imparting movement from said lever to the feed-slides, comprising a driving-pawl, a driving-wheel for engagement with said pawl, and provided with a suitable check-pawl to guard against backward movement, and a rod connecting said wheel with the shake-bar, substantially as described.

11. In a check-rower corn-planter, the combination, with the forked lever for the tappet-wire, of mechanism for imparting movement from said forked lever to the seed-slides, comprising a driving-pawl provided with teeth, a driving-wheel having arms projecting therefrom to engage with the pawl, said pawl having its teeth arranged to be disengaged from the arms of the wheel during the backward movement of the forked lever, substantially as described.

12. In a check-rower corn-planter, the combination, with the forked lever for the tappet-wire, of mechanism for imparting movement from said forked lever to the seed-slides, comprising a driving-pawl connected with the forked lever, a driving-wheel having projecting arms for co-operation with said pawl, and having stops or flanges for holding the wheel and pawl in engagement during the forward movement of the forked lever, and an operating-rod connecting said wheel with the rocking lever that moves the shake-bar, substantially as described.

13. In a check-rower corn-planter, the combination, with the forked lever for the tappet-wire, of mechanism for imparting movement from said lever to the seed-slides, comprising a driving-pawl having stops at its front and rear ends, a driving-wheel having arms adapted to engage

with said stops to prevent the accidental turning of the wheel, and an operating-rod connecting said wheel with the rocking lever that operates the shake-bar, substantially as described.

14. In a corn-planter, the combination, with the forked lever K, of the driving-pawl L, the driving-wheel M, the operating-rod P, and the rock-lever S, substantially as described.

15. In a check-rower corn-planter, the combination, with the rocking lever that moves the shake-bar, of an operating-rod connected to said lever, extending across the machine, and detachably connected with the check-rower mechanism at each side of the machine, and suitable means for throwing said rod out of engagement with the operating mechanism at either side of the machine, substantially as described.

16. In a check-rower corn-planter, the combination, with the rocking lever that moves the shake-bar, of an operating-rod in connection with said lever and detachably connected to the check-rower mechanism at each side of the machine, and suitable means for simultaneously throwing said rod out of engagement with the operating mechanism at one side of the machine and into engagement with the operating mechanism at the other side of the machine, substantially as described.

17. In a check-rower corn-planter, the combination, with the rocking lever that moves the shake-bar, of an operating-rod for connecting said lever with the check-rower mechanism at each side of the machine, and a disengaging device for said operating-rod, comprising pivoted levers adapted to lift said operating-rod, said levers being connected together, so that when the operating mechanism is thrown into engagement at one side of the machine it will be thrown out of engagement at the opposite side, substantially as described.

18. In a check-rower corn-planter, the combination, with the rocking lever that moves the shake-bar, of an operating-rod for said lever, detachably connected with the check-rower mechanism at each side of the machine, and a disengaging device for said operating-rod, having a connection extending in a position to be moved as the tappet-wire is placed upon its supports, substantially as described.

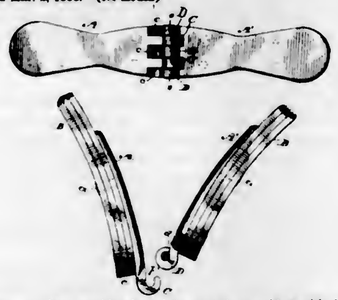
19. In a check-rower corn-planter, the combination, with the rocking lever that moves the shake-bar, of an operating-rod for said lever, detachably connected with the check-rower mechanism at each side of the machine, and a disengaging device for said operating-rod, comprising two pivoted levers connected together and one at each side of the machine, and a connection extending from each of said levers into a position to be moved by the tappet-wire as it is placed upon its supports, substantially as described.

20. In a check-rower corn-planter, the combination, with the forked lever and suitable connecting mechanism at each side of the machine, of the operating-rod P, the pivoted lifting-levers V, connected together, and the arms W, substantially as described.

21. In a check-rower corn-planter, the combination, with the rocking lever that moves the shake-bar, of an operating-rod in connection with the check-rower mechanism at each side of the planter and detachably connected to the rocking lever, whereby said operating-rod can be readily removed when the planter is to be worked by hand, substantially as described.

22. In a check-rower corn-planter, the combination, with the rocking lever that moves the shake-bar, of an operating-rod in connection with the check-rower mechanism at each side of the planter and an adjustable connecting or bearing pin between the operating-rod and rocking lever, whereby the extent of throw of the shake-bar may be varied, substantially as described.

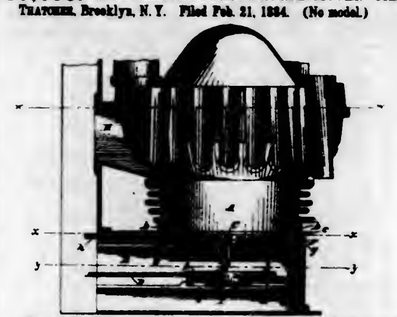
339,234. HARNESS-BUCKLE. SIMEON U. TARNEY, Auburn, Ind. Filed Mar. 2, 1885. (No model.)



Claim.—1. The combination of the part A, provided with lugs C, forming about two-thirds of a circle, and angular shoulder *c*, terminating at right angles thereto, with part A', provided with lugs D and pin *d*, substantially as described and specified, and for the purpose set forth.

2. A buckle made in two parts hinged together, the one provided with a pin and annular enlargements surrounding same, in combination with a second part provided with hooks having a space between the ends of the hooks and its body portion, channels cut on either side of the hooks to form lateral abutting shoulders, the end of said channeled portions adapted to impinge against the under side of the enlargements around the pin of the first part when the parts are together, to form a stop and limit the backward folding of the parts substantially as and for the purposes specified.

339,235. FIRE-GRATE FOR FURNACES AND STOVES. JOHN M. TRATCHER, Brooklyn, N. Y. Filed Feb. 21, 1884. (No model.)

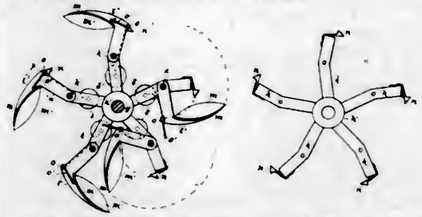


Claim.—1. The combination, with an ash-pit having an open front of full width and provided with ledges, of a fire-pot, a conical grate-section, and a fire-bed, said conical grate-section and fire-bed being supported on the ledges in the ash-pit, and being movable thereon independently of said fire-pot, substantially as described.

2. The combination, with the ash-pit, of a conical grate-section, a fire-bed, and a supporting frame or frames upheld by ledges or flanges on the walls of the ash-pit, said ash-pit having an open front of full width, so that the parts supported on said ledges can be moved laterally or horizontally out of said ash-pit, substantially as described.

3. The combination of the fire-pot, ash-pit, conical grate-section, fire-bed, dumping-center, supporting frame or frames, and the ledges or flanges on the walls of the ash-pit for upholding said supporting frame or frames, substantially as described.

339,236. STEAM PLOWING-MACHINE. LEWIS WAKEFIELD, Minneapolis, Minn. Filed Sept. 12, 1885. (No model.)

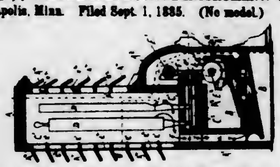


Claim.—1. In a plowing-machine, a series of spiders, a series of concavo-convex shares pivoted to said spiders, rods connected to said shares, and catches on the spider-arms engaging therewith, cranks on said rods, and trips for engaging said cranks to cant the rods, substantially as and for the purpose set forth.

2. In a plowing-machine, a series of spiders, means for rotating said spiders, a series of concavo-convex shares pivoted to the arms of said spiders, rods connected to said shares, and catches on the spider-arms engaging therewith, cranks on the ends of said rods and trips for engaging said cranks to cant the rods, and springs attached to said rods and to the spider-arms, substantially as and for the purpose set forth.

3. In combination, the spider-arms A, the pivoted arms *i*, having curved projecting portions *i'*, provided with flanges i^2, and the shares *m*, having colters *m'*, substantially as and for the purpose set forth.

339,237. MECHANICAL MUSICAL INSTRUMENT. ARTHUR WALSH, Minneapolis, Minn. Filed Sept. 1, 1885. (No model.)

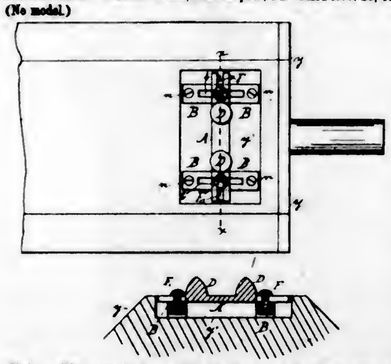


Claim.—1. In combination with the main case, perforated strip, and bellows of a mechanical musical instrument, an air-tight case containing a series of organ-pipes and conduits leading into the said organ-pipes,

the said air-tight case being removable from and replaceable in the main case, for the purpose herein specified

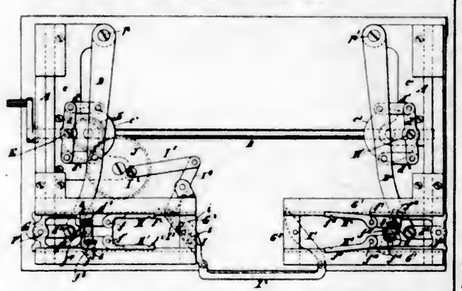
2. In combination with the main case, perforated strip, and bellows of a mechanical musical instrument, a removable air-tight case provided with a series of organ-pipes located therein, the said air-tight case having swell-shutters outside of its walls or close sides, substantially as and for the purpose herein set forth.

339,238. CARD-STEADYING PIN FOR PRISMS OF JACQUARD MECHANISMS. WILLIAM WEBB, Philadelphia, Pa. Filed Nov. 29, 1884. (No model.)



Claim.—The combination, with the rigid parallel slotted bars B B, of the transverse sliding slotted or forked bar A, supplied with steadying or retaining pins D D, and the locking-bolts F F, substantially as set forth.

339,239. SHUTTLE-MOTION FOR LOOMS. THEODORE A. WEBER, New York, N. Y. Filed Oct. 22, 1884. (No model.)



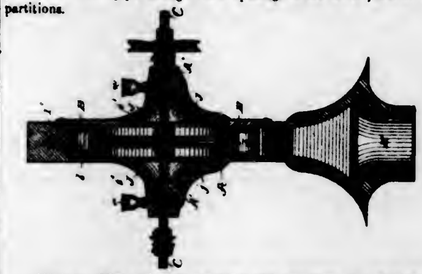
Claim.—1. The combination of carriages provided with pairs of shuttle-gripper levers, guides for said carriages, means, substantially such as described, for reciprocating said carriages, oscillating bars connected with the said shuttle-gripper levers, arms connected to the said oscillating bars, so as to move in unison therewith, movable levers for shifting the said arms, and mechanism, substantially such as described, having a connection with one of said levers, which will enable it to be caused to act nearer to or farther from the fulcrum of said lever, substantially as specified.

2. The combination, with carriages provided with pairs of shuttle gripper levers, of guides for said carriages, means, substantially such as described, for reciprocating the carriages, bars provided with projections engaging with the said shuttle-gripper levers, rock-shafts, to which said bars are affixed, arms affixed to said rock-shafts, movable levers, by contact with which said arms are shifted to operate the said shuttle-gripper levers, and mechanism, substantially such as described, for shifting the said movable levers, substantially as specified.

3. The combination, with reciprocating carriages F F', provided with pairs of shuttle-gripper levers H H' and H^2 H^3, of shafts C C' and levers D D', for imparting motion to said carriages, crank-pins E E', carried by the shafts C C', link-connections between the crank-pins E E' and the levers D D', bars f^8 f^{16}, provided with pins or screws f^9 f^{15} f^{14}, entering slots in said shuttle-gripper levers, rock-shafts f^7 f^{12}, to which said bars f^8 f^{13} are affixed, arms f^6 f^{17} on said rock-shafts, levers I I', a connection between them, a gear-wheel, J, a connection between the lever I and the gear-wheel J, and a wheel, J', on the shaft C, imparting motion to the gear-wheel J, substantially as specified.

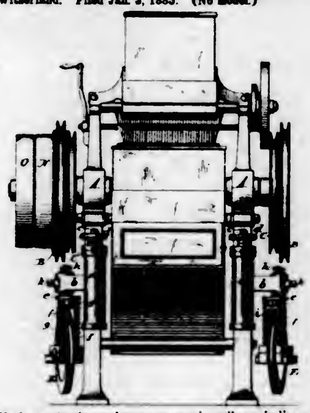
339,240. LIQUID-MOTOR. DANIEL W. WEBSTER, Christiana, Pa. Filed Oct. 20, 1885. (No model.)

Brief.—The interior of the casing has three compartments, the central one being occupied by the wheel, and those at the sides forming drip-chambers, from which the water that follows the shaft is permitted to pass to the outlet-pipe through small openings in the lower parts of the partitions.



Claim.—The casing A, provided with partitions *f*, which have openings at their bottoms and divide the interior of said casing into a middle compartment and two lateral drip-compartments, in combination with the wheel B and the inlet and outlet pipes, substantially as set forth.

339,241. ROLLER GRINDING-MILL. FRIEDRICH WEBMANN, Zurich, Switzerland. Filed Jan. 3, 1883. (No model.)



Claim.—1. As an improvement in roller grinding-mills, the combination of two co-operating rolls, each provided with a driving-pulley, a single driving-belt acting upon both of said pulleys, and two oblique pulleys, substantially as described, acting to guide said belt from one of the driving-pulleys to the other.

2. The combination of the two overlapping pulleys revolved in parallel planes, the driving-belt, and the two oblique guiding-pulleys arranged one beneath each of the main pulleys, substantially as described.

3. In a grinding-mill, the two co-operating grinding-rolls and their respective driving-pulleys, in combination with the driving-belt, the two oblique guide-pulleys, and the vertically-journaled supports for said pulleys, substantially as described.

4. The combination of two grinding-rolls, two pulleys secured to the respective rolls in different vertical planes, a belt passing from one of said pulleys to the other, and a guide-pulley, F, arranged to carry the belt at a point between the roller-pulleys, said guide-pulley arranged obliquely with reference to the main pulleys, substantially as described.

5. In a grinding-mill, two driving-pulleys in parallel planes, a belt passing from one to the other of said pulleys, an intermediate oblique belt-guiding pulley, and an adjustable support for said pulley, substantially as shown, whereby the pulley is adapted to serve the twofold purpose of guiding the belt and regulating its tension.

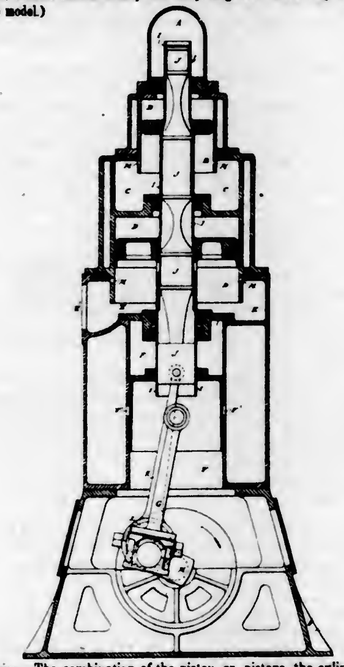
6. In a grinding-mill, the combination of the roller-driving pulleys B' and C', the single belt G, the two oblique guide-pulleys, and elastic or yielding supports for said pulleys, substantially as described.

7. In combination with the two pulleys revolved in parallel planes, the connecting-belt, the oblique pulleys, the plates *e*, their locking-bolts, the springs *f*, and the sliding pulley-supports *i*, sustained by the plates.

8. In combination with a support, *b*, the vertically-journaled plate *e*, its rods *g*, springs *f*, sliding pulley-frame *i*, provided with neck *k*, and with bearings for the guide-pulley.

9. In combination with the pulleys B' and C', revolving in parallel planes, a connecting-belt, the oblique pulleys, the movable arms *b*, the screws for adjusting and fixing said arms, and the pulley-supports journaled to the arms, substantially as described.

339,242. FLUID-PRESSURE ENGINE AND PUMP. PETER W. WILLANS, Thames Ditton, County of Surrey, England. Filed May 11, 1885. (No model.)



Claim.—The combination of the piston or pistons, the cylinder or cylinders, the tubular piston-rod to which the piston or pistons are fixed, the piston-valve capable of being moved endwise in the tubular piston-rod, the crank-shaft, the main connecting rods or rod, the eccentric or crank on the crank-pin, and the link connecting the eccentric or crank and the piston-valve, substantially as and for the purpose set forth.

339,243. CHURN. ROBERT A. WOOLDRIDGE, East Lynne, Mo. Filed Dec. 30, 1885. (No model.)



Claim.—In a reciprocating dasher-churn, the combination of the cylinder A with the removable head B, provided with openings *b* for the passage of the closely-fitting dasher-staffs, the hollow dasher-staffs C, jointed, as described, and connected by the metallic slides *e*, which are provided with a series of openings, *e'*, and the pivot-pins *f f'*, and the mechanism whereby motion is imparted to the said shafts, all substantially as herein shown and described.

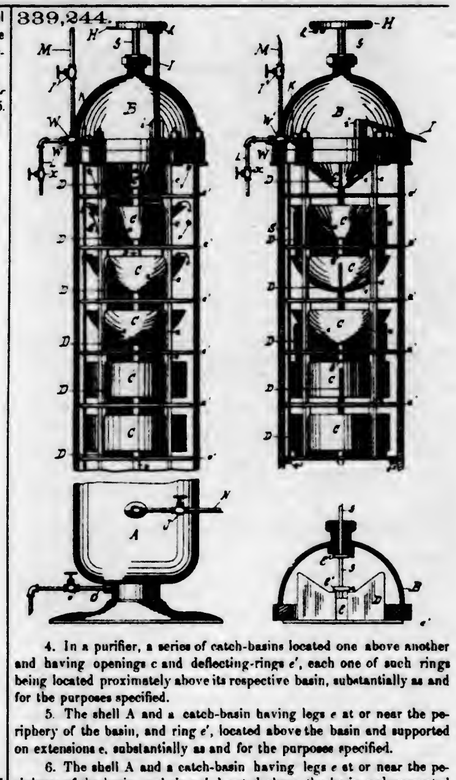
339,244. PURIFIER OF THE WATER OF STEAM-BOILERS. EZRA W. VANDUZEN, Newport, Ky. Filed July 3, 1884. (No model.)

Claim.—1. In a purifier, the catch-basin having an opening or openings, *c*, in its lower portion, and valve for closing said opening or openings, substantially as and for the purposes specified.

2. In a purifier, a shell, A, and a series of catch-basins located within the shell and placed one above the other, the basins having openings *c* in their bottom or lower portions, and a valve or valves for closing and opening said openings, substantially as and for the purposes specified.

3. In a purifier, the catch-basin having opening *c* and valve for closing said opening and deflecting ring or device *e'*, located above the edge of the basin, substantially as and for the purposes specified.

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4. In a purifier, a series of catch-basins located one above another and having openings *c* and deflecting-rings *e'*, each one of such rings being located proximately above its respective basin, substantially as and for the purposes specified.

5. The shell A and a catch-basin having legs *e* at or near the periphery of the basin, and ring *e'*, located above the basin and supported on extensions *e*, substantially as and for the purposes specified.

6. The shell A and a catch-basin having legs *e* at or near the periphery of the basin, and ring *e'*, located above the basin and supported on extensions *e*, all cast together in one piece, and the basin having openings *c* and valve, substantially as and for the purposes specified.

7. The shell A and catch-basins having legs *e* and rings *e'*, supported on extensions *e*, resting on the upper legs of its respective basin, the legs *e* of all except the lowest basin resting on the ring *e'* of the basin next below, substantially as and for the purposes specified.

8. The shell A, having ring e^2 affixed to its interior, and catch basin or basins having legs *e*, and a ring, *e'*, located above its respective catch-basin, the legs *e* and the periphery of the ring *e'* being in substantially the same annular vertical plane, substantially as and for the purposes specified.

9. The shell A and catch-basins having legs *e* and rings *e'*, supported on extensions *e*, resting on the upper legs of its respective basin, the legs *e* of all except the lowest basin resting on the ring *e'* of the basin next below, the basins having openings *c*, and valves for closing and opening same, substantially as and for the purposes specified.

10. In a purifier, two or more catch-basins arranged one above another and having openings *c*, and valve for closing and opening said openings, the opening in the one catch-basin being located to one side of (that is, not directly over) the opening in the catch-basin next below, substantially as and for the purposes specified.

11. In a purifier, two or more catch-basins arranged one above another and having openings *c*, and valve for closing and opening said opening, the opening in the one catch-basin being located to one side of (that is, not directly over) the opening in the catch-basin next below, and rings *e'*, one of such rings being near and above its respective catch-basin, substantially as and for the purposes specified.

12. In a purifier, two or more catch-basins arranged one above another and having openings *c* and valves, the openings *c* of one catch-basin being located therein, so as to be to one side of (that is, not directly over) the opening in the catch-basin next above, each basin being provided with notch or notches *t* in its periphery, and the shell A, provided with bead or rib S, for engaging said notch, substantially as and for the purposes specified.

13. In a purifier, a catch basin or basins having openings *c* and rotatable valves *d*, and shaft G, for rotating said valves, substantially as and for the purposes specified.

14. In a purifier, the catch-basins provided with openings and

valves, the valves having collar E, and the shaft G, for rotating said valves, substantially as and for the purposes specified.

15. In a purifier, the catch basin or basins having opening or openings *c*, each basin having a valve, *d*, and the shaft G, for rotating the valve or valves, and a locking device for locking the shaft G and the valves, so that they cannot rotate, substantially as and for the purposes specified.

16. In a purifier, the catch basin or basins having opening or openings *c*, each basin having a valve, *d*, and the shaft G, for rotating the valve or valves, and the arm I, pivoted at *i*, and the hand-wheel H, provided with recess *h*, for locking the shaft G and the valves, substantially as and for the purposes specified.

17. In a purifier, the catch basin or basins having one or more openings, *c*, and one or more scrapers for cleaning the basin, substantially as and for the purposes specified.

18. In a purifier, the catch-basin having opening or openings in the bottom and valve or valves for controlling said opening or openings, and one or more scrapers for cleaning the upper surface of the bottom of the basin, substantially as and for the purposes specified.

19. In a purifier, the catch-basin having openings *c* and valve *d*, and scrapers D, touching the upper surface of the bottom of the basin where the valve does not touch, substantially as and for the purposes specified.

20. In a purifier, the catch-basins having openings *c* and valve *d*, and scrapers D, touching the under surface of the basin next above, substantially as and for the purposes specified.

21. In a purifier, the catch-basins having openings *c* and valve *d*, and scrapers D, touching the upper surface of one basin and the under surface of the basin next above, substantially as and for the purposes specified.

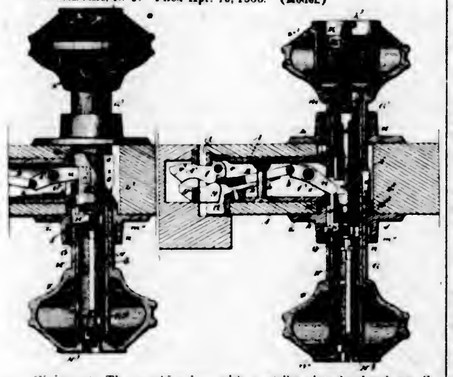
22. In a purifier, the catch-basins having openings *c* and valve *d*, and rings *c'*, and scrapers D, touching the rings *c'* and the basins, substantially as and for the purposes specified.

23. The series of catch-basins provided with opening or openings *c*, valves and scrapers, and rings *c'*, and fresh feed-supply at pipe K, exit water-pipe N, leading to the pump, and exhaust-steam inlet Y and outlet Z, substantially as and for the purposes specified.

24. The series of stationary catch-basins provided with opening or openings *c* and central opening, T, and shaft G, and scrapers, substantially as and for the purposes specified.

25. The series of stationary catch-basins provided with opening or openings *c* and central opening, T, and shaft G, and scrapers and the valves, substantially as and for the purposes specified.

339,245. COMBINED LATCH AND LOCK. GEORGE H. VAN WINKLE, Hornellsville, N. Y. Filed Apr. 15, 1885. (Model.)



Claim.—1. The combination, with a strike-plate having inwardly and outwardly projecting lugs, of a pivoted latch, and devices for operating the latch.

2. The combination, with a strike-plate having a lug projecting outwardly from the face of the plate at right angles thereto, of a latch-casing, and a latch, substantially as described, pivoted within said casing and adapted to be turned outward by contact with said lug.

3. The combination, with a strike-plate having inwardly and outwardly projecting lugs, of a pivotal latch having a beveled face, and devices for operating the latch.

4. The combination, with a strike-plate having a lug projecting outwardly from the face of the plate at right angles thereto, of a latch-casing having a recess at its outer end, and a latch adapted when closed to rest within said recess flush with the outer surface of the latch-casing.

5. The combination, with a strike-plate provided with a lug having a rounded bearing-face, the said lug projecting outwardly from said plate at right angles thereto, of a latch-casing, a latch, substantially as described, pivoted to said casing and adapted to be moved outwardly by contact with said lug.

6. The combination, with a strike-plate having outwardly and inwardly projecting lugs, of a pivoted latch having an inclined face, and a latch-casing having a recess for the reception of the pivoted latch.

7. The combination, with a latch-casing and a pivoted latch having a groove formed therein near its pivotal point, of an operating-lever pivoted within the case, a lever connecting the operating-lever and pivoted latch, and a ringle spring bearing against the connecting-lever for holding the latch in open and closed adjustment.

8. The combination, with a latch-casing and a pivoted latch having a groove formed therein, of a lever pivoted within the latch-casing and projecting through one end thereof, a lever connecting the lever and latch, a spring bearing against and forming a fulcrum for said connecting-lever, and a longitudinally-sliding spindle for operating the lever.

9. The combination, with a two-part casing and a latch pivoted therein, of an operating-lever partly located within said casing and projecting through one end thereof, a lever connecting the latch and lever, a screw connecting the two parts of the casing and passing through a slot in the connecting-lever, and a spring forming a fulcrum for said connecting-lever, substantially as set forth.

10. The combination, with a latch and a longitudinally-sliding spindle for operating the latch, of a bolt located within the spindle and adapted to lock the same against movement.

11. The combination, with a latch and a longitudinally-sliding spindle for operating the same, of a bolt for locking the spindle against longitudinal movement, and devices located within the spindle for operating said bolt.

12. In a latch operated by a longitudinally-movable spindle, the combination, with a latch, two knobs having independent shanks, and devices connecting the said shanks and forming a spindle, of a lock located within said hollow shanks for locking the outer knob against movement, and devices for operating said lock either on the inside or outside of the door, substantially as set forth.

13. A rose-washer provided with an inwardly-projecting sleeve, the latter having an opening for the reception of the inner end of a latch-casing.

14. The combination, with a latch and a latch-casing, of a rose-washer having an inwardly-projecting sleeve, the latter provided with an opening for the reception of the inner end of the latch-casing, and a longitudinally-sliding spindle for operating the latch.

15. The combination, with a latch and latch-casing, a rose-washer, and a sleeve secured to said rose-washer and provided with an opening for the reception of one end of the latch-casing, and with a V-shaped slot, of a sliding spindle carrying a cam adapted to move against the surfaces of the V-shaped slot.

16. The combination, with a latch and a rose-washer having a shoulder thereon, of a longitudinally-sliding spindle, and a bolt located within said spindle and adapted to engage the shoulder on the washer and lock the spindle against longitudinal movement.

17. The combination, with a latch and a lever for operating the latch, of knobs, each having a shank, and devices, substantially as described, connecting the knobs, whereby they are permitted to move simultaneously for operating the latch, or the inner knob is permitted to move independently of the outer knob for operating said latch.

18. The combination, with a latch, a lever for operating the latch, and the knobs and knob-shanks, of a tube rigidly secured to one shank and passing through the other shank, and provided with a slot for the end of the latch-operating lever, a cam secured to said tube, and a rigid device having a cam-slot with which the cam on the tube engages, whereby the tube is moved longitudinally, substantially as set forth.

19. The combination, with a latch having an operating-lever, knobs, and knob-shanks, of a tube rigidly secured to one knob-shank and loosely connected with the other shank, a device, substantially as described, located within said tube and provided with a cam, and a bolt operated by said cam and adapted to engage a stationary object secured to the door, whereby the outer knob can be locked against movement, substantially as set forth.

20. The combination, with a latch having an operating-lever, the knobs and knob-shanks, of a tube connecting the shanks, a shaft located within the tube, a bolt operated by said shaft for locking the outer knob against longitudinal movement, and tumblers operated by a key for locking the shaft against rotary movement, substantially as set forth.

21. The combination, with a latch having an operating-lever, and the knobs having separate shanks, of the shaft, the nut secured on one end thereof, the tumbler-carrier connected to the opposite end of said shaft, tumblers for locking said shaft against movement, and a key for operating the tumblers, substantially as set forth.

22. A latch-casing made of two elongated separable sections, each section being semicircular in cross-section, and each provided with registering semi-cylindrical depressions, forming bearings for the latch and operating-lever trunnions, substantially as set forth.

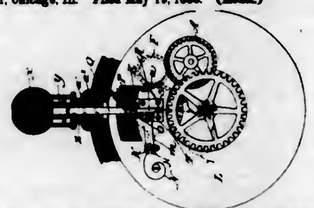
23. The combination, with a tumbler-carrier and tumblers and the shaft, of a washer located in a slot in the periphery of the carrier, and springs bearing against said washer and tumblers, substantially as set forth.

24. The combination, with a pivoted bolt and a lever, of a lever connecting the lever and bolt, and a yielding fulcrum for said connecting-lever, substantially as set forth.

25. The combination, with a latch having an operating-lever, knobs, and knob-shanks, of a tube connecting the shanks, a shaft located within the tube, a bolt operated by said shaft for locking the outer knob, tumblers for locking the shaft, and the guard N², substantially as set forth.

26. The combination, with a latch having an operating-lever, the knobs and knob-shanks, of a tube connecting the shanks, a shaft located within the tube, a bolt operated by said shaft for locking the outer knob against longitudinal movement, tumblers operated by a key, and a coupling, O, having slots *n*², substantially as and for the purpose set forth.

339,246. STEM WINDING AND SETTING MECHANISM. HENRY VIET, Chicago, Ill. Filed May 19, 1885. (Model.)



Claim.—1. The combination, with a pivoted yoke of a watch-movement, its wheels, and the winding and setting wheels, of a pivoted arm connected with such yoke and provided on one end with a lug, a winding-pinion, a bar situated in an opening in such pinion and provided with a lug to engage the lug of the pivoted arm, and a winding-bar arranged to operate the parts, but with no positive connection therewith as set forth.

2. The combination, with winding-bar Q and bar R, provided with lug T, of pivoted arm M, provided with lug O, and yoke C, connected with such arm M, as set forth.

3. The combination, with winding-bar Q and bar R, provided with lug T and stud V, of spring W, pivoted arm M, provided with lug O, spring N, and yoke C, as set forth.

4. The combination, with winding-bar Q, bar R, provided with lug T and stud V, of grooved guide-block S, spring W, pivoted arm M, provided with lug O, spring N, and yoke C, as set forth.

5. The combination, with notched winding-bar Q, yoke C, and intermediate mechanism for operating the yoke from the winding-bar, of spring-arm Z, as set forth.

339,247. SAD-IRON. MAXIME VIENOOMB, San Francisco, Cal. Filed Dec. 16, 1884. (No model.)



Claim.—1. The combination, with the sad-iron, of a detachable thermometer secured thereupon in the manner set forth.

2. The combination, with the sad-iron having the studs *d d*, of a thermometer, A, and plate A', having the flexible metallic tongue or extension *b*, and wires C C, secured to the plate A', substantially as and for the purpose set forth.

339,248. COMBINED RULER AND BOOK-HOLDER. ROBERT F. H. WILLIAMS, Camden, N. J. Filed Oct. 7, 1885. (No model.)

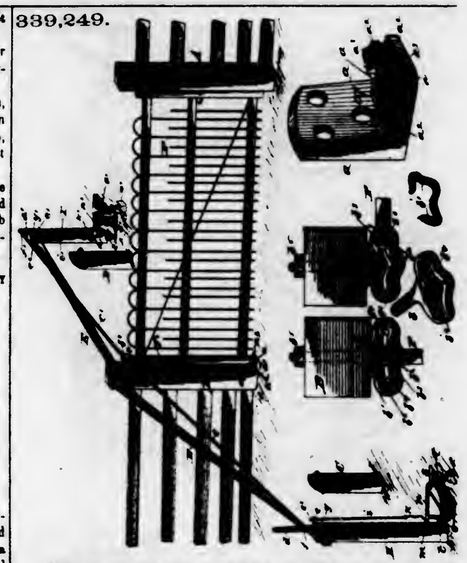


Claim.—The combination of the rod or holder B, having ends bent at right angles to the main portion, with the ruler A, the returned ends of the rod being sprung into orifices in the ends of the ruler, substantially in the manner herein shown and described, for the purpose set forth.

339,249. AUTOMATIC GATE. THOMAS E. WILSON, Farmland, Ind. Filed Dec. 18, 1884. (No model.)

Claim.—1. The combination, with the gate-frame provided with the hinge-pin, substantially as herein described, of the bracket *a*, composed of the horizontal plate provided with ears a^2 and the vertical fastening-plate, a bearing-block supported on said horizontal portion of the block, and adjusting-screws passing through said ears and bearing against the said block, as set forth.

339,249.



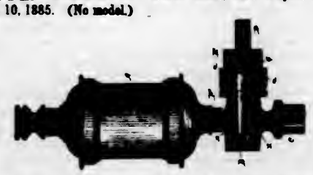
2. In an automatic gate, the combination, with the gate-post and the gate provided with the pin b^2 and roller b^3, of the upper bracket herein shown, consisting of the plate secured to the post having the double-curved slot, as shown, a flange surrounding said plate, and the rim *b'*, secured to said flange, all substantially as shown and described.

339,250. IRONING-MACHINE. FRIEDRICH A. ZSCHIESCHE, Cottbus, Germany. Filed Mar. 24, 1885. (No model.) Patented in Germany Feb. 14, 1884, No. 28,163, and Sept. 8, 1884, No. 30,812; in France Sept. 16, 1884, No. 164,310; in England Sept. 18, 1884, No. 12,535; in Belgium Sept. 30, 1884, No. 66,307, and in Austria-Hungary Dec. 6, 1884, No. 34,170 and No. 56,622.



Claim.—The device for suspending and adjusting the sad-iron a, which consists of the screw *h*, adjusting-wheels *g g'*, the box *e*, with shoulders *i*, the spring *f*, and the washer *k*, as and for the purpose set forth.

339,251. LUBRICATOR. RUFUS AMES, Fort Wayne, Ind. Filed Aug. 10, 1885. (No model.)



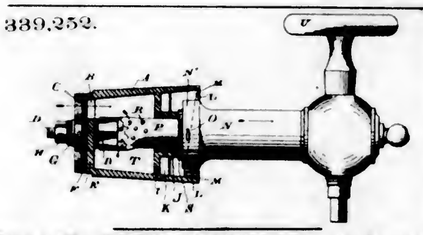
Claim.—Combined with an oil-reservoir, a case connected therewith, provided with a tapering bore and having a steam-escape opening in one side, a taper plug having recesses and resting within the bore, and a spring for retaining the plug snugly therein, substantially as and for the purpose specified.

339,252. FAUCET AND BUSHING. MARK ANTHONY, San Francisco, Cal. Filed Jan. 17, 1883. Renewed May 29, 1885. (No model.)

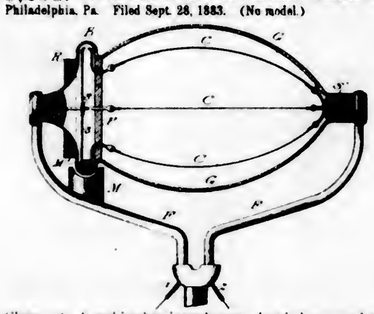
Claim.—1. The combination, with the bushing A, having head E, spindle D, valve C, and diaphragm I, carrying a cylinder, J, provided with notches or grooves Q', of the faucet-pipe N, having a reduced portion, P, provided with perforations R and terminating in a triangular end having wards Q, substantially as shown and described.

2. The combination of the bushing A, having head E, inclined lugs L L, provided with openings M M, and diaphragm I, provided with cylinder J and ribs K K, the spindle D, carrying a segmental disk-valve, C, and the faucet N, having perforated pipe P and collar N', provided with lugs O O, substantially as shown and described.

339,252.



339,253. INCANDESCENT ELECTRIC LAMP. CRAIG R. ARNOLD, Philadelphia, Pa. Filed Sept. 28, 1883. (No model.)



Claim.—1. A multicarbon incandescent electric lamp consisting of a globe or receiver, G, from which the air is exhausted, having a partition, P, in the neck thereof, and provided with two or more carbons of high resistance electrically connected together at one end of the lamp with a leading-out or circuit wire, and each separately connected at the other end with an electrode passing through said partition and terminating in the chamber formed in the neck of the receiver in a drop of mercury or other substance that will form an electrical connection inserted therein, and a series of electrodes corresponding in number and placed opposite the first series and terminating in the mercury or contact substance in said chamber, said second series radiating from a common center electrically connected with a leading-in wire, the whole being constructed, arranged, and operating substantially as described.

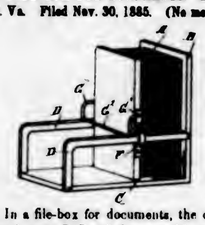
2. The combination, in an incandescent electric lamp, of an oblong glass receiver terminating at each end in sealed tubes inclosing circuit wires, and having a neck near one end containing a drop of mercury or other contact substance, and a chamber formed by a partition, P, supporting two or more electrodes passing through the same and connected at one end with a corresponding number of carbon filaments contained in said receiver, and a supporting-frame provided with journal-bearings at each of its terminal ends, whereby electrical contact is produced in said chamber between the leading-in circuit-wire and each of said electrodes successively on the rotation of said receiver, as set forth.

3. An oblong glass receiver terminating at each end in sealed tubes inclosing circuit-wires and having a neck near one of its ends, containing a drop of mercury or other contact substance, and a partition, P, supporting two or more electrodes passing through the same from said neck to a corresponding number of carbon filaments contained in said receiver, a frame, F, having journal-bearings at each of its terminal ends, in which said receiver is supported and rotated, said glass receiver having permanently affixed to it near its neck an annular ring provided on its periphery with ratchet-teeth, in combination with mechanism for rotating the globe by means of said toothed ring, substantially as set forth.

4. In combination with an electric lamp provided with an annular ring having ratchet-teeth on its periphery and capable of being rotated in a supporting-frame, the mechanism for rotating the same by means of the electric current on the extinguishment or breakage of the incandescent carbon, consisting of the coils C^{α} C', of high and low resistance, respectively, with the core A and armatures A' and A^2, spring S^2, lever R, fulcrum F'', and pawl R^2, constructed, arranged, and operating substantially as described.

5. A hollow supporting-frame, F, containing the wires of an electric circuit provided with journals at each of its opposite terminal ends, in combination with an oblong glass receiver having sealed terminal tubular ends inclosing leading-in and leading-out wires, respectively, and a separate chambered neck near one of its ends, containing a drop of mercury or other contact substance, a partition, P, supporting two or more electrodes passing through the same from said neck to a corresponding number of carbon filaments contained in said receiver, whereby electrical connection is formed between the leading-in wire and each of said electrodes successively by contact of both with said mercury on the rotation of said receiver, as set forth.

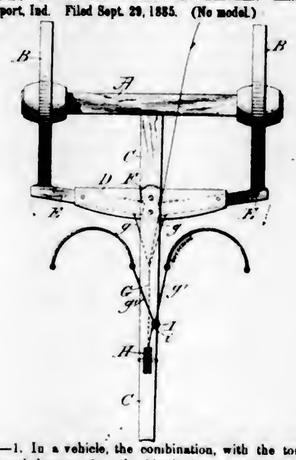
339,254. FILE-BOX FOR DOCUMENTS. EDWARD E. BAKER, Morgantown, W. Va. Filed Nov. 30, 1885. (No model.)



Claim.—1. In a file-box for documents, the combination, with the board B and curved arms D D, of the movable compressor-board provided with straps F, which inclose the arms D D, the inclosing portion of said straps being so inclined or bent that when the compressor is in a vertical position the inner opposite edges of said portions will be in contact with the arms, and when the compressor is thrown back into an inclined position the parallel sides of said portions will be in contact with the arms, substantially as shown and described.

2. The combination of sides B and C, the curved arms D D, the movable compressor-board, the inclined inclosing-strap F, whose opposite edges touch the arms when the compressor is vertical, and whose parallel sides uphold the compressor when thrown back, and the handle G, which forms a lock and support for the binding-board, substantially as shown and described.

339,255. AUTOMATIC BRAKE FOR VEHICLES. HENRY J. BANTA, Logansport, Ind. Filed Sept. 29, 1885. (No model.)



Claim.—1. In a vehicle, the combination, with the tongue and a cross-bar secured thereto, of a pair of brake-bars pivotally secured to the cross-bar, and a U-shaped band-spring secured to and connecting the ends of the brake-bars, substantially as set forth.

2. In a vehicle, the combination, with the tongue, a cross-bar secured thereto, and a pair of brake-bars pivotally secured to the cross-bar, of a U shaped band-spring connecting the ends of the brake-bars, a pulley journaled in the tongue, and a chain extending through said pulley and connected with the brake-bars for automatically actuating the same, substantially as set forth.

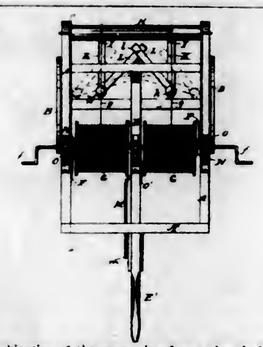
3. In a vehicle, the combination, with the tongue and a cross-bar secured thereto, of a pair of brake-bars pivotally secured to the cross-bar, and a U-shaped band-spring secured to and connecting the ends of the brake-bars, and a rod or chain secured to the bars and connecting with the driver, whereby he may actuate the brakes, substantially as set forth.

339,256. DEVICE FOR TAKING DOWN AND PUTTING UP AND STRETCHING WIRE. GEORGE S. BIRDSEY, Mayflower, Ark. Filed Dec. 8, 1885. (No model.)

Claim.—1. The combination of the supporting-frame, the shafts upon which the spools are mounted, the guides I, supports K for said guides, and links L L, connected to supports K at their outer ends and to each other at their inner ends, substantially as set forth.

2. The combination of the supporting-frame having the guiding and steering handle E', the shaft upon which the spools are mounted, the guides I, over which the wire is delivered to the spools, mechanism for moving the guides in lines substantially parallel with the axes of the spools, and the rod M, by which said mechanism is operated, extending along said handle E', substantially as set forth.

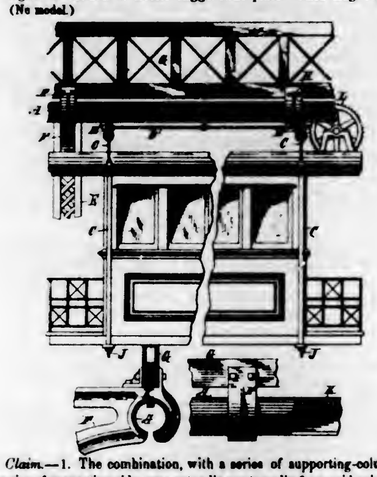
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3. The combination of the supporting-frame, the shafts adapted to support two spools carrying wire, guides I, one situated opposite to each spool, and mechanism, substantially such as described, for moving said guides simultaneously, substantially as set forth.

4. The combination of the supporting-frame, a spool-supporting shaft mounted therein, a guide, I, opposite said spool-supporting shaft, a bar or guide, K, which carries the guide and is pivoted upon the frame, and a handle, by which said bar K is moved to change the position of the guide, substantially as set forth.

339,257. TRAMWAY. ALBERT G. BIRRBACH, Milwaukee, Wis., assignor of one-half to Hector Riggs, same place. Filed Aug. 13, 1885. (No model.)



Claim.—1. The combination, with a series of supporting-columns, of a series of supporting side arms extending outwardly from said columns, a metallic frame-work resting upon the outer ends of said arms and extending from one arm to another, a slotted tubular tramway, a series of hangers or brackets securing said tramway to said metal frame-work, a truck consisting of rollers and hangers connected together, and a car suspended from said truck, operating in said tramway, substantially as and for the purpose specified.

2. The combination, with the slotted tubular tramway A, suspended from a series of suitable columns along a highway, of a toothed bar, K, and with a car suspended by rollers and hangers from said tubular tramway, of a toothed wheel, L, operating in said toothed bar and adapted to be operated by a motive power within said car, whereby the car is propelled along said way, substantially as set forth.

339,258. OVERSHOE-LIFT. SIDNEY BLENKHORN, Canning, Nova Scotia, Canada. Filed Sept. 7, 1885. (No model.)

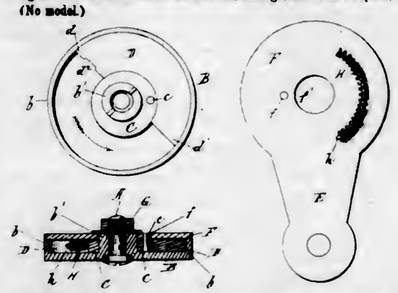
Brief.—The device is provided with a roller upon the inner jaw, which acts as a fulcrum for the jaws and travels up the back of the boot or shoe when the overshoe is being placed upon the foot.

Claim.—An overshoe-lift consisting of the two-part handle A A', having a spring-connection at one end and coinciding curved jaws B B' at the opposite end, to grip the back of the overshoe, spring-catch C, to hold the jaws closed, and roller E, to travel up the back of the boot when the overshoe is being pulled on, as set forth.

339,258.



339,259. FRICTION-CLUTCH. JOHN W. BLODGETT, Highwood, assignor of one-half to Franklin M. Blair, Chicago, Ill. Filed Sept. 7, 1885. (No model.)



Claim.—1. In a friction-clutch, a cup attached to one of the moving parts, in combination with an eccentric ring movable about the center of the cup and connected to the companion moving part, and a ring-segment arranged loosely between the eccentric ring and the flange of the cup, substantially as and for the purposes set forth.

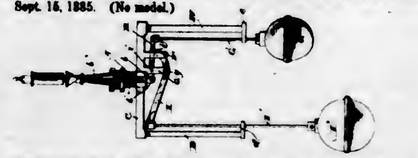
2. The disk B, provided with the flange *b* and central boss, *b'*, in combination with the eccentric ring C, mounted loosely on the boss, and the loose ring-segment D, fitting against the flange on its exterior surface, and the eccentric ring on its interior surface, substantially as and for the purposes set forth.

3. The eccentric ring C, provided with a stud, *c*, in combination with the cover-disk F, provided with an aperture, *f*, to receive the stud, substantially as and for the purposes set forth.

4. The cup-disk B, in combination with the eccentric ring C, the loose ring-segment D, the cover-disk F, to which the eccentric ring is connected, and a follower connected to the cover and arranged behind the ring-segment, substantially as and for the purposes set forth.

5. The cup-disk B, in combination with the eccentric ring C, the ring-segment D, the cover F, and the spring H, substantially as and for the purposes set forth.

339,260. WATER-ALARM. FRANK J. BORT, Cleveland, Ohio. Filed Sept. 16, 1885. (No model.)

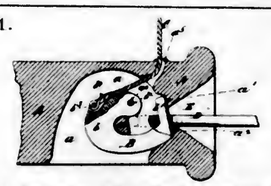


Claim.—1. In a high and low water alarm, the combination, with an alarm-whistle having a valve-stem extending inwardly into the boiler, of a lever pivotally connected to said stem, a float suspended from the outer end of said lever, a second lever adapted to bear against the first-mentioned lever, and a float suspended from the second lever, all of the above parts being combined substantially as set forth.

2. In a high and low water alarm, the combination, with a hollow plug secured to and extending through the walls of a steam-boiler, a whistle attached to the outer end of said plug, the stem of the whistle-valve located inside the plug and extending into the boiler, a cross-bar and arms attached to the inner end of the plug for supporting the mechanism inside of the boiler, floats connected with levers that directly or indirectly operate the valve-stem, with the arrangement of levers such that the whistle-valve is opened by the elevation of one float or by the depression of the other float, substantially as set forth.

339,261. CAR-COUPLING. JOHN BRADLEY, Newark, N. J., assignor to the Bradley Automatic Coupler Company of the City of New York. Filed Aug. 7, 1885. (No model.)

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Claim.—1. In a car-coupling substantially such as described, the counterpoised coupler B, formed with the eccentric portion *b*, the upper side of which is formed with a longitudinal groove, *b*⁴, and pull-bolt *b*³, for the reception of the pull C, in combination with a draw-head, A, formed in its upper side with the pull-hole *a*², substantially in the manner and for the purpose described.

2. In a car-coupler substantially such as described, the counterpoise B, formed with the elongated slot *b*³, for the reception of the pivot *a*³, the longitudinal groove *b*⁴, pull-bolt *b*³, and pull C, and the coupling-hook *b'*, in combination with the draw-head formed with the draft-seats *a'* and *a*², and the pull-hole C, substantially in the manner and for the purpose described.

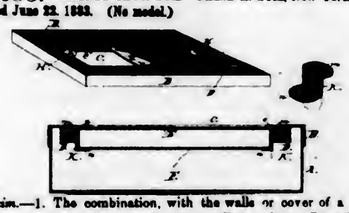
3. In a car-coupling substantially such as designated, the combination with the counterpoised coupling-pin, of a back rest or cross-bar formed in the draw-head in such relation to the body of the said counterpoise coupling as to afford a support for the inner end of the coupling-link, substantially in the manner and for the purpose described.

339,262. **PREPARATION OF EXTRACT OF COCA.** GEO. BROWNEN, Althorp Road, Upper Tooting, County of Surrey, England. Filed Sept. 15, 1885. (No specimens.)

Claim.—1. As an improvement in the process of preparing beverages from extracts of the leaves of the coca-plant, the method of obtaining such extracts in purified condition, consisting in reducing the leaves to powder, macerating with spirit of wine, percolating with additional spirit of wine, removing this alcoholic percolate, displacing the absorbed spirit of wine from the marc by an aqueous solution of citric acid, concentrating this second percolate, mixing it with water, adding to the second percolate the first obtained or alcoholic percolate and a precipitant, (such as magnesia,) agitating the mixture, allowing it to subside, and removing the purified fluid from the precipitate, substantially as set forth.

2. The process described of preparing beverages from extracts of the leaves of the coca-plant, consisting in obtaining the extract, adding to it a precipitant, (such as magnesia,) agitating the mixture, allowing it to subside, removing the thus purified fluid from the precipitate, diluting it, and aerating it, substantially as set forth.

339,263. **SAMPLE SHOW-BOX.** FRANK R. BUCK, New York, N. Y. Filed June 22, 1885. (No model.)



Claim.—1. The combination, with the walls or cover of a show-box having an opening therein and with an offset or frame, D, encircling said opening on the inner side of the box, and a marginal flange, *e*, left between the opening and the offset, of a glass-covered detachable receptacle, F, fitting closely within the offset to rest against and be supported by the ledge or flange, and thereby close the opening, substantially in the manner and for the purpose herein set forth.

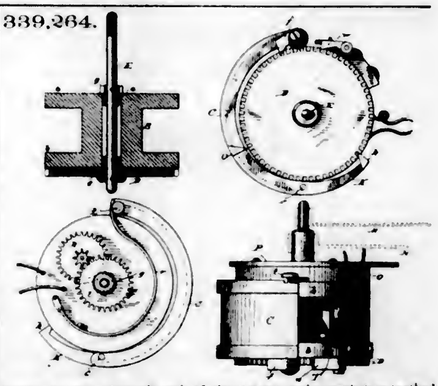
2. The combination, with a show-box having an opening in its walls or cover, an inner re-enforcing frame secured thereto to encircle said opening, and a detachable receptacle adapted to fit within said frame, of a detachable fastening for said receptacle, consisting of a metallic strip, K, adapted to be inserted at one end between the frame and the box or cover and to pass between the frame and the inserted receptacle and be bent over the edge of the latter, substantially in the manner and for the purpose herein set forth.

339,264. **STEP-BY-STEP MECHANISM FOR ELECTRIC CLOCKS.** JULIAN E. CAREY, New York, N. Y., assignor to the Electric Time Company. Filed Dec. 18, 1884. (No model.)

Claim.—1. The combination, with an electro-magnet, of a wheel operated by said magnet and mounted on a shaft whose axis is on a line passing through the core of said magnet parallel with the magnetic axis.

2. The combination of the electro-magnet having flanged or rectangular polar extensions, a curved armature bridging the flanges and vi-

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brating transversely to the axis of the magnet, and a ratchet or toothed wheel supported on the face of the magnet-head, and an operating-pawl for the same actuated by the armature.

3. The combination, with an electro-magnet having a perforated core, of a spindle passing through the core and mounted in the poles thereof, a wheel upon said spindle parallel with the face of one pole, and an armature vibrating transversely to the core, and carrying an operating-pawl that engages with the wheel.

4. The combination, with the magnet consisting of a spool whose body and heads are of magnetic material and constitute the poles for the magnet, of an armature bridging the heads, a wheel suitably mounted on the magnet and parallel with one of the spool-heads, and an actuating-pawl operated by the armature.

5. The combination, with an electro-magnet, of a spindle passing through the core, a wheel mounted on the spindle at one end of the core, an actuating-armature operated by rectangular polar extensions from the core, and at the other end of the core a second wheel or pinion gearing with wheels mounted on the head of the electro-magnet.

6. An electric-clock mechanism consisting of the electro-magnet, the time-train, the main shaft in a line parallel or coinciding with the axis of the magnet's core, an armature hung to vibrate in a plane parallel with the plane of rotation of the wheel upon said shaft, and devices for operating the train from the vibrations of the armature.

7. The combination, with the armature, of the adjustable stop mounted in a spring-arm and placed in position to receive the blow of the armature as the latter moves up under the influence of the magnet.

8. The combination, with the spool-magnet, of the wheel-work upon the spool-head, the operating curved armature, and the retracting-spring secured to the spool-head.

9. The combination, with the magnet and its attached clock mechanism, of the plate P, extended, as described, to furnish a means whereby the magnet and its operated mechanism may be readily placed in a clock-case of any size.

10. The combination, with an electro-magnet, of a wheel operated by said magnet and carried on a shaft with its axis in a line substantially parallel with the axis of the magnet.

11. An iron spool suitably wound with an electric conductor, in combination with an armature shaped to conform to the spool-flanges, and a shaft fixed in a line parallel with the spool's axis and carrying a driven wheel.

12. The electro-magnet having a hollow center and provided at its ends with journal-bearings *s* for a shaft, E.

13. The combination, with an electro-magnet, of electric-clock mechanism operated by said magnet and mounted thereon.

14. The combination, with a single-spool electro-magnet, of a rotating shaft operated thereby and mounted in a bearing or bearings attached to said magnet.

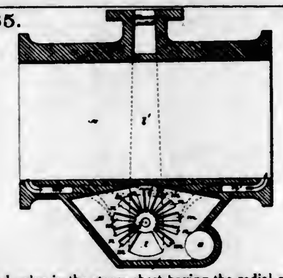
15. An electro-magnet having upon one end a time-train inclosed in a casing or frame, and at the other end a driven wheel connected with said train, in combination with devices operated by the armature of the magnet for actuating or controlling said driven wheel.

339,265. **BALANCED ROCKER-VALVE.** ADDISON R. CARLL, Bradford, Pa. Filed Jan. 8, 1886. (No model.)

Claim.—1. The combination, in a steam-engine, of the steam-chest having the radial openings *m n* in its side walls and arranged alternately and communicating with opposite ends of the cylinder, and an inlet and an exhaust port, with the cylindrical oscillating valve in the steam-chest having the radial openings *f* to align alternately with the openings *m n* and the radial notches or passages *g* between the openings *f*, for the purpose set forth, substantially as described.

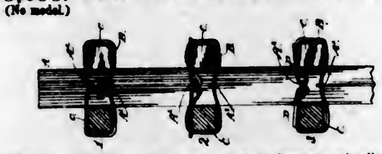
2. The combination, in a steam-engine, of the steam-chest having the radial alternate series of ports *m n* in its side walls and the oscillat-

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ing cylindrical valve in the steam-chest having the radial openings *f*, to register alternately with the ports *m* and *n*, and the end flanges having the radial passages or notches *g* between the openings *f*, substantially as described.

339,266. **FENCE.** (No model.) JAS. W. CLARK, Etna, Ohio. Filed Sept. 9, 1885.



Claim.—1. In a fence, the combination of the post and rails with the herein-described means for securing the rails to the posts, consisting of a pair of staples secured to a side of the post near each other, the one transversely to, the other in line with, the length of the post, and a binding-wire extended through the vertical staple and around the rail or rails, and having its ends passed around the legs of the horizontal staple and fastened, substantially as shown and described.

2. The combination of the posts A, a pair of staples arranged on the side thereof at right angles relatively to each other, and at a distance apart slightly less than the width of the rail, the lower staple being vertically arranged, rails one on each side of the post, and a binding-wire passed through the lower staple, wrapped around the rails, its ends passed down through the upper staple between the post and lower cross portion of the binding-wire, and then bent up, substantially as shown and described.

339,267. **EYEGLASS-CASE.** PETER CLOSS, Cambridgeport, assignor to Andrew J. Lloyd, Boston, Mass. Filed Nov. 1, 1884. (No model.)



Claim.—1. As a new article of manufacture, the herein-described eyeglass-case, consisting of the two leaves hinged together, one of said leaves being provided with a central projection formed and arranged to be clasped by the spring or nose-piece of the glasses.

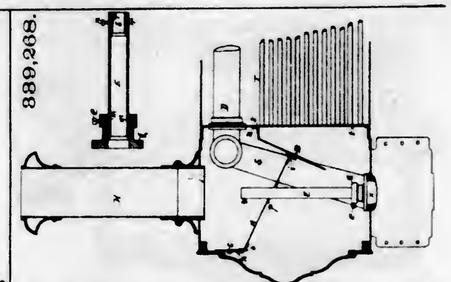
2. The herein-described case for eyeglasses, consisting of the flat leaf A, having the central projection, D, thereon, and the concave leaf B, hinged to the leaf A, and formed with the concavo *g* therein.

3. A pocket-case for the protection of eyeglasses, consisting of two leaves hinged together, and adapted to close flatly together without overlapping or interlocking at the periphery, one of said parts provided with a central projection adapted to be grasped by the nose-piece or spring of the glasses, as described, whereby the glasses are retained in position without the use of peripheral flanges or locking devices on the case.

339,268. **SPARK-ARRESTER.** JAMES D. CONNELL, New Orleans, La. Filed Dec. 26, 1885. (No model.)

Claim.—1. In a spark-arrester for locomotives, the combination of a short smoke-box with the baffling-plates B, secured by angle-iron *a* to front tube-sheet, *t*, of boiler, and constructed in two sections and secured together by bolts working in slots *s*, wire-netting N, secured to angle-irons *i* and *o*, the cover C, provided with the hand-hole A, and the exhaust-nozzles E, constructed of wrought-iron pipe, provided with cast-

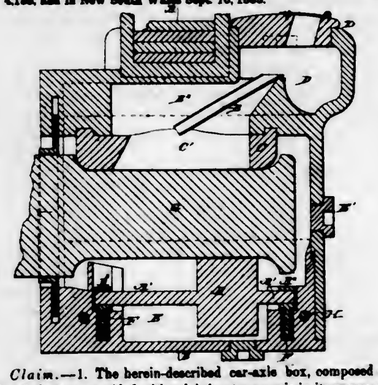
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ing *g*, set-screw *e*, plate *p*, bushing *b*, set-screw *n*, and recesses *r* and *m*, all substantially as set forth, and for the purpose specified.

2. In a spark-arrester for locomotives, the wrought-iron exhaust-nozzles E, secured to casting *g* by set-screw *e*, and provided with recess *m* and bushing *b*, set-screw *n*, and recess *r*, all substantially as set forth.

339,269. **CAR-AXLE BOX.** GEORGE COWDERY, Burwood, THOMAS PERRY, Dubbo, and JOHN B. HYSLOP, Nyngan, New South Wales. Filed Sept. 21, 1885. (No model.) Patented in Victoria July 27, 1885, No. 4,155, and in New South Wales Sept. 10, 1885.



Claim.—1. The herein-described car-axle box, composed of the body of the box provided with a lubricant-reservoir in its upper portion and a bearing for the axle-journal, in combination with a bottom in which is formed a lubricating-reservoir, said bottom being secured to the body of the box by means of horizontal bolts in contradistinction to the vertical bolts heretofore used, substantially as and for the purpose specified.

2. A car-axle box provided above and below the journal-bearings with lubricant-reservoirs, in combination with a siphon for delivering the lubricant from the upper reservoir to the journal, and a roller for delivering the lubricant from the lower reservoir to said journal, substantially as and for the purpose specified.

3. A car-axle box provided above and below the journal-bearings with oil-reservoirs, a siphon for delivering the lubricant from the upper reservoir to the journal, and a roller for delivering the lubricant from the lower reservoir to said journal, in combination with the brasses C, provided with an enlarged slot, C', into which the siphon dips, substantially as and for the purpose specified.

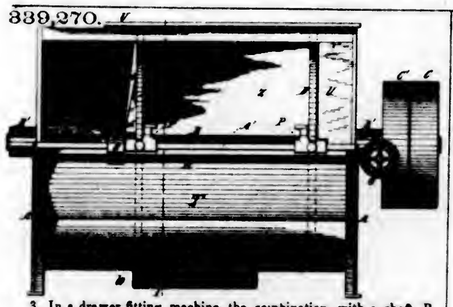
4. A car-axle box having lubricant-reservoirs above and below the journal-bearings and feed-openings on top and in front of the box, respectively, leading to said reservoirs, and longitudinally-slotted brasses C, in combination with a roller supported from spring-bearings for delivering the oil from the lower reservoir directly to the axle-journal, and a siphon for delivering the lubricant from the upper reservoir to said journal through the slotted brasses, substantially as and for the purpose specified.

339,270. **DRAWER-FITTING MACHINE.** LOUIS C. CROS, Piqua, Ohio. Filed Nov. 6, 1884. (No model.)

Claim.—1. In a wood-dressing machine, the combination of shaft B, disks D D', and carrier G, shafts H H', and means, substantially such as described, for revolving said shafts H H', whereby the carrier may be moved to move the disk D' up on the shaft B to or from the disk D, substantially as set forth.

2. In a wood-dressing machine, the combination, with shaft B and disk D', mounted thereon and provided with a flanged hub, of carrier G, plate S, and set-screws *s*, substantially as set forth.

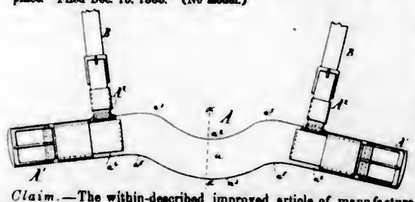
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3. In a drawer-fitting machine, the combination, with a shaft, B, and two disks mounted thereon, to present vertical, parallel faces, of a hood or jacket having exhaust-openings, and an opening in one side, whereby the drawer is passed to be acted on by said vertical disk-faces, and adjustable guides P P, located adjacent to said drawer-opening, substantially as set forth.

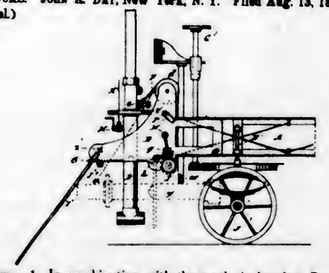
4. In a wood-dressing machine, the combination, with a supporting frame or case having an opening, through which the drawers are to be introduced, of the vertical disks provided with parallel grinding or reducing faces, and each having an annular marginal portion beveled toward the periphery of the disk, to form conjointly a flaring reducing portion, substantially as set forth.

339,271. **BREAST COLLAR OR STRAP FOR HARNESS.** AARON G. DAY, Colebrook, N. H., assignor of one-half to James I. Parsons, same place. Filed Dec. 15, 1885. (No model.)



Claim.—The within-described improved article of manufacture, consisting of a breast collar or strap for horses having the usual buckles and suspending neck-strap, and made of a stout piece of flexible harness-leather of a single thickness of about a uniform width throughout its length, and formed with a concavo-convex middle portion adapted to the shape and fitting the breast and shoulders of a horse, and having its end portions inclined downwardly with respect to a horizontal line, substantially as and for the purpose described.

339,272. **TOWER-PIPE ATTACHMENT FOR HOOK-AND-LADDER TRUCKS.** JOHN R. DAY, New York, N. Y. Filed Aug. 13, 1885. (No model.)



Claim.—1. In combination with the truck A, bracket B, and pipe D, attached to the platform C, the roller *f*, crank H, pulley *d*, and rope or chain F, connected to said pipe, all as shown and described.

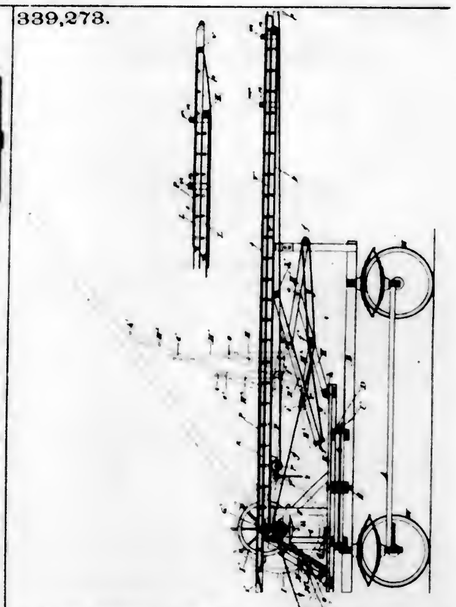
2. In combination with the truck A, bracket B, and platform C, the pipe D, attached to said platform, roller *f*, crank H, pulley *d*, rope or chain F, and gear-wheels I and *g*, as shown and described.

3. The brace or braces L, each composed of the pieces *n o p q r s*, connected with the cord *m* and pipe, as shown and described.

339,273. **CARRIAGE FIRE-LADDER.** LEVI DIEDERICH, Albany, N. Y. Filed Jan. 12, 1886. (No model.)

Claim.—1. In fire-escapes, the combination, with a ladder having its foot end pivoted to a stationary part of the apparatus, of the lever mechanism H, H′, and H^3, and a windlass-power operating said mechanism, substantially as and for the purposes set forth.

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2. The combination, with the elevating mechanism composed of lever-bars H H, H′ H′, and H^3, jointed together, substantially as described, of the parallel bars H^2 H^2 and windlass-power above described, substantially as and for the purpose set forth.

3. The combination, with the elevating mechanism above described, composed of lever-bars H, H′, and H^3, arranged and jointed together as described, of the parallel bars H^2, provided with slots *i*, and windlass-rope and windlass operating with said levers, substantially as and for the purposes set forth.

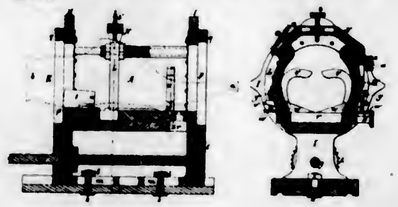
4. The combination, with platform E, supporting a ladder which is pivoted thereto, and the elevating mechanism H H′ H^3, and windlass-power, above described, arranged between said platform and ladder, of a turn-table operated at will, and which is secured to said platform, substantially as and for the purpose set forth.

5. The combination, with the pivoted main ladder L and elevating mechanism H H′ H^3, above described, and its operating-windlass G, and its ropes, of the sliding ladder L′, windlass G′, sheaves K, secured to the rear end of the main ladder, and ropes *k*, connecting the sliding ladder with the drum of said windlass, whereby the two ladders can be at will simultaneously elevated at the time the sliding ladder is being extended, substantially as and for the purposes set forth.

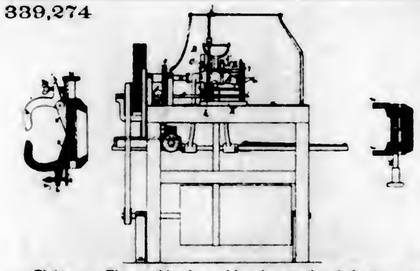
6. In a fire-escape having a ladder and mechanism which will elevate the same to any desired angle, of tracks *s s*, secured to said ladders, and the escape-carriage N, made with the folding piece N′, which can be set at any preferred angle in relation to the ladder, substantially as and for the purposes set forth.

7. The combination, with ladder L, provided with tracks *s s*, and ladder L′, provided with similar tracks *s s*, and inclined tracks *s′ s′*, for connection of the tracks of the latter ladder with those of the former, and the mechanism to elevate and extend at will said ladders, of the escape-carriage N, above described, windlass P, and ropes *p*, substantially as and for the purposes set forth.

339,274. **LATHE FOR TURNING LASTS AND OTHER ARTICLES.** SAMUEL J. DE LUE, Natick, Mass., assignor, by mesne assignments, to himself and Joseph Rich Atwood, same place. Filed Dec. 29, 1885. (No model.)



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Claim.—1. The combination, with a last-turning lathe-frame and the pattern and cutter-wheels thereof, provided with the usual mechanism for operating them, relatively to the pattern and to a blank to be turned, of mechanisms, substantially as described, applied to the ways of such frame, as set forth, and being to support and revolve a pattern-last and a partially-turned last, in order to enable the latter to be automatically turned at its heel and toe by the cutter-wheel, each of such mechanism consisting of the bed-plate K, the open standards H I, and the revoluble annuli *p* and their clamps, as described, such annuli and clamps being provided with mechanism for operating them, essentially as set forth, and the said annuli being not only extended and pivoted within the said standards, so as to be revolvable therein, but provided with clamps *t t* and *v v*, as described, one set thereof being to grasp the last or pattern on the flanks of its heel portion and the other in front of its instep, all being as specified.

2. The mechanism, substantially as described, for supporting and revolving either a pattern-last or a partially-turned last, as explained, such mechanism consisting of the bed-plate K, the open standard H I, and the revoluble annuli *p* and their clamps, as described, such annuli and clamps being provided with mechanism for operating them, as set forth, and the said annuli being not only extended and pivoted within the said standards, so as to be revolvable therein, but provided with clamps *t t* and *v v*, as described, one set thereof being to grasp the last or pattern on the flanks of its heel portion and the other in front of its instep, all being as specified.

3. The combination of the posts L and M, (projecting from the shelf *r*,) and the arched arm N, hinged to one of the said posts and provided with the screw *b′*, as set forth, with the bed-plate K, the open standards H I, and the revoluble annuli *p* and their clamps, as described, such annuli and clamps being provided with mechanism for operating them, as set forth, and the post M having the screw *a′* and nut *z*, for holding to it the said arm N, as specified.

339,275. **RAILROAD-TIE.** JACOB DE MOTT, Frenchtown, N. J. Filed Feb. 6, 1886. (No model.)



Claim.—1. A railroad-tie having an abutment for a rail, and a recess around its ends for the reception of a securing-staple, substantially as specified.

2. The combination of a rail with a tie having an abutment, and a staple arranged about the end of the tie and bent over and shrunk upon the base of the rail, substantially as specified.

3. The combination of a tie having an abutment, a rail, an interposed key, and a staple embracing the end of the tie and bent over and shrunk upon the base of the rail, substantially as specified.

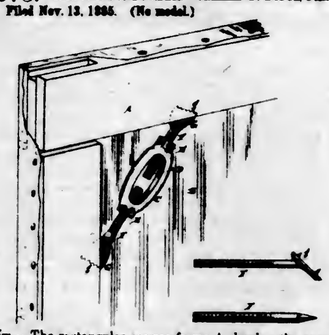
4. A tie having an abutment at each end, a rail arranged against one abutment, a removable key arranged against the other abutment, a rail arranged against the key, and staples arranged to embrace each end of the tie and bent over and upon the bases of the rails, substantially as specified.

5. The combination of a tie having abutments B^2 B^4, the rails E, the key C, and the staples D, embracing the ends of the tie and the bases of the rails, substantially as specified.

6. The combination of the tie having the abutment B^2, the rail E, and the staple D, embracing the end of the tie and bent upon the base of the rail at each side of the tie, substantially as specified.

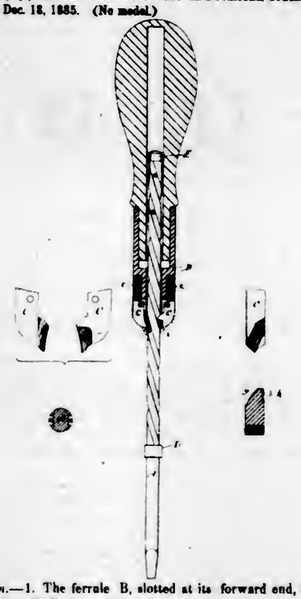
7. The combination of a tie having an abutment, a key having a stop and adapted to fit the abutment and the rail, with a rail, and with a staple adapted to embrace the end of the tie and the base of the rail, and to serve as a stop to the movement of the key in one direction, its movement in the opposite direction being stopped by the tie, substantially as specified.

339,276. **CANVAS-STRETCHER.** CHARLES F. DODGE, Philadelphia, Pa. Filed Nov. 13, 1885. (No model.)



Claim.—The rectangular canvas-frame A, having the corner joints extensible, in combination with a stretcher consisting of a body-section or socket-piece, and a right and left hand screw, F, adapted to work in the ends of the socket-piece, and provided on their outer ends with flattened serrated knife-edges G *g*, to catch in the inner edges of the wooden frame and prevent the said screws from rotating when the socket-piece is rotated to stretch the frame, the said stretcher being arranged diagonally across the corner of the frame, substantially as and for the purpose specified.

339,277. **SCREW-DRIVER.** JOS. R. DOOLITTLE, Southington, Conn. Filed Dec. 12, 1885. (No model.)

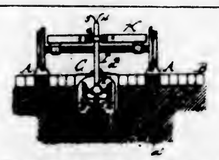


Claim.—1. The ferrule B, slotted at its forward end, in combination with a pawl, C, pivoted in this slot, the spirally-grooved shank A, engaging with said pawl, and spring *e*, set into a recess of said ferrule and pressing against said pawl at the rear end thereof, substantially as set forth.

2. The ferrule B, slotted at its forward end, in combination with a pawl, C, pivoted in this slot, the spirally-grooved shank A, having a collar at the end of the groove, the groove of the former engaging with said pawl, and a spring, *e*, set into a recess of said ferrule and operating against the rear end of said pawl, substantially as set forth.

339,278. **ELECTRIC RAILWAY.** THOMAS A. EDISON, Menlo Park, N. J., assignor to the Edison Electric Light Company, New York, N. Y. Filed Aug. 14, 1882. (No model.)

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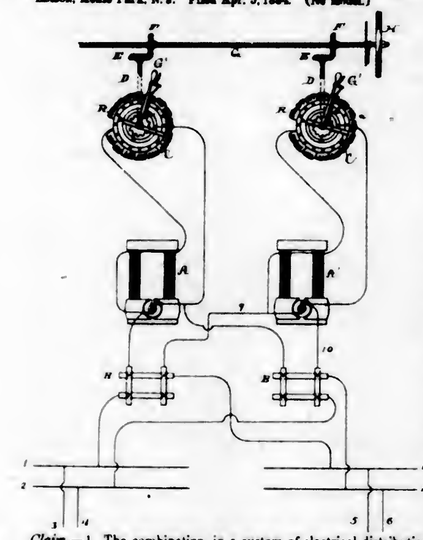


Claim.—1. In an electrical railroad, the combination, with the parallel conductors inclosed within and concealed by a sunken slotted tube, of a car, a contact-truck attached to the car and having wheels traveling upon such parallel conductors, and connections from the wheels of the contact-truck to the motor on the car, substantially as set forth.

2. In an electrical railroad, the combination, with the parallel conductors inclosed within and concealed by a sunken slotted tube, of a contact-truck, an arm extending from such contact-truck to the car, and insulated conductors inclosed within such arm and protected thereby from contact with the sides of the slot, substantially as set forth.

3. In an electrical railroad, the combination, with the parallel conductors inclosed within and concealed by a sunken slotted tube, of a contact-truck riding upon such conductors, and an arm from such truck attached to the car by a pivoted or loose joint and permitting of an independent movement of the car and contact-truck, substantially as set forth.

339,279. SYSTEM OF ELECTRICAL DISTRIBUTION. THOMAS A EDISON, Menlo Park, N. J. Filed Apr. 5, 1884. (No model.)



Claim.—1. The combination, in a system of electrical distribution, of two or more feeding-circuits for supplying current to the translating devices, two or more independent generators, means for connecting said generators separately with said feeders, means for separately regulating each generator, and means for simultaneously regulating all said generators, substantially as set forth.

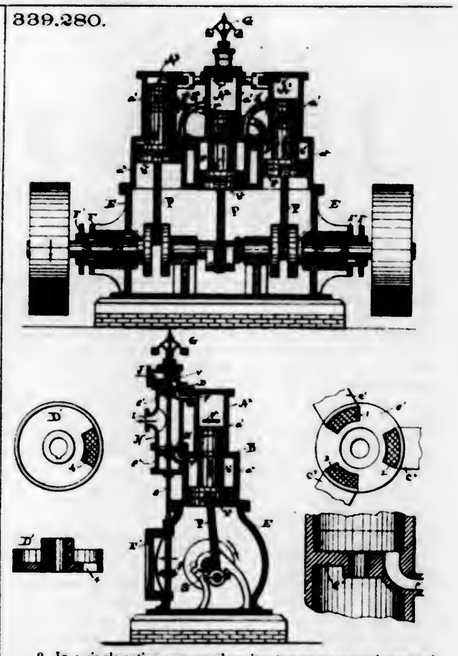
2. In a system of electrical distribution, the combination of the two or more feeding-circuits supplying current to different parts of the district, two or more independent generators, means for connecting each generator separately with the feeders, an adjustable resistance in the field-circuit of each generator, means for adjusting each resistance separately, and means for adjusting all said resistances simultaneously, substantially as set forth.

3. The combination of two or more dynamo-electric machines, an adjustable resistance in the field-circuit of each machine, means for adjusting all said resistances simultaneously, and means for adjusting each resistance separately, substantially as set forth

339,280. SINGLE-ACTING COMPOUND ENGINE. JOHN H. ECKERSHOFF, Cincinnati, Ohio. Filed Sept. 7, 1885. (No model.)

Claim.—1. In a single-acting steam-engine, two or more cylinders, each having two diameters, with corresponding double pistons, and provided with ports p', p^2, and p^3, the intermediate port, p^3, of each cylinder being interconnected directly and without the intervention of a receiver or valves with the adjacent cylinder, substantially as and for the purpose set forth.

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2. In a single-acting compound engine, two or more continuous cylinders, each of two diameters, with suitable port-connections for admitting live steam into the smaller or high-pressure end, and for exhausting the spent steam ultimately from the larger or expansion end, in combination with a piston in the larger end extended as a close-fitting plunger acting as a piston into the smaller end, and an intermediate port governed by said piston as a valve for permitting the expansion of the live steam after a partial stroke of the piston into an adjoining cylinder, substantially as and for the purpose set forth.

3. In a single-acting steam-engine, the combination of two or more cylinders, A, as constructed, having ports p' p^2 p^3, arranged as shown, and connections d, with pistons B, as constructed, and suitable induction and eduction valves, substantially as and for the purpose set forth.

4. In a single-acting steam-engine, the combination of three cylinders, A' A^2 A^3, as constructed, provided with ports p' p^2 p^3, and connections d' d^2 d^3, and with double pistons B' B^2 B^3, arranged for operation substantially as set forth.

5. In a multiple-cylinder single-acting compound engine, the combination and arrangement of the continuous two-diameter cylinders, the double pistons or piston-plungers, the intermediate expansion-ports, and connecting-pipes, with the sole independent exhaust-ports at the larger ends of the cylinders, and the common induction-valve and eduction-valve, operating substantially as set forth.

6. In a multiple-cylinder single-acting steam-engine, a valve-chest having two parallel seats with ports, respectively, for induction and eduction, connected with the cylinders, and two disk-valves carried upon a single stem projecting through the seats and arranged to govern the ports by rotation, substantially as set forth.

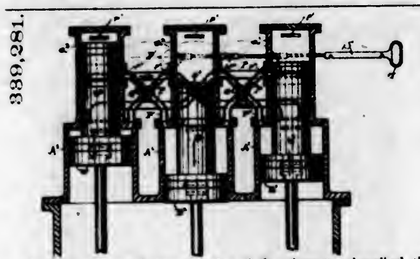
7. In a three-cylinder single-acting engine, in combination with the cylinders and their working connections, a cylindrical valve-chest, H, having port-seats e' e^3, disk-valves D' D^3, and a stem, s, projecting through and operating both valves, the valves and seats arranged in relation to the steam-connections, substantially as set forth.

339,281. REVERSIBLE SINGLE-ACTING COMPOUND ENGINE. JOHN H. ECKERSHOFF, Cincinnati, Ohio. Filed Nov. 14, 1885. (No model.)

Claim.—1. In a compound engine of the character described, duplicated steam-passages connecting the intermediate ports of each high-pressure cylinder with two low-pressure cylinders in series, provided with controlling-valves for regulating the order of admission from one to the other, substantially as set forth.

2. In a compound engine of the character described, the crossed steam-passages connecting the intermediate ports of adjacent high-pressure cylinders with the low-pressure cylinders in series, provided at each crossing with a single-way valve adapted to control the passages and open only one such passage at a time.

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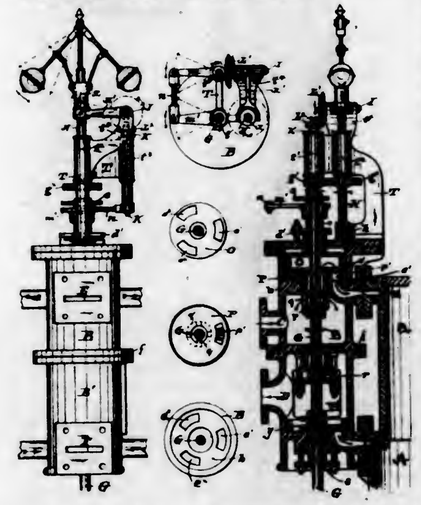
3. In a compound steam-engine of the character described, the crossed steam-passages connecting the cylinders, as and for the purpose described, said crossings being provided with controlling-valves with actuating-cranks connected with a single actuating-lever operating the same in unison, substantially as set forth.

4. In a compound steam-engine of the character described, in combination with the rotary induction and eduction valves mounted upon a common valve-rod, the divided valve-rod K K', provided with a collar covering the point of division of said rod, in which said rods may be adjustably secured in relatively different radial positions, substantially as set forth.

5. The combination of the two-part valve-rod K K', the collar L, segment-rack L', and engaging catch C and arm m, substantially as set forth.

6. The combination of the cylinders A' a' A^2 a^2 A^3 a^3, connecting-pipe P, valves G' G^2 G^3, cranks r' r^2 r^3, and actuating-rod S, substantially as set forth.

339,282. CUT-OFF DEVICE FOR ENGINES. JOHN H. ECKERSHOFF, Cincinnati, Ohio. Filed Nov. 14, 1885. (No model.)



Claim.—1. In a steam-engine, the combination of a circular seat with one or more concentric radial ports, a hollow adjustable cut-off valve, into and through which the live steam passes, having a face with ports corresponding with the valve-seat, and an interposed disk or plate, rotary induction-valve having an aperture corresponding with one of the seat-ports, substantially as and for the purpose set forth.

2. The combination of the steam-chest B, valve-seat b, valve-rod G, induction-valve P, cut-off valve O, having the hollow stem o, and the adjusting-collar d, substantially as set forth.

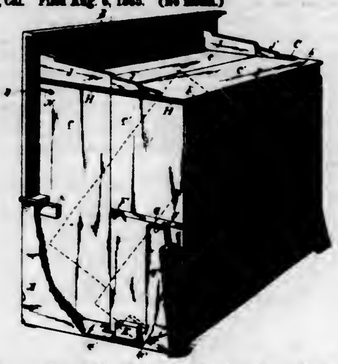
3. The combination of the steam-chest B, valve-seat P, with enlarged central perforation, valve-rod G, valve P, with down-projecting hollow stem p, cut-off valve O, with lower central orifice and vertical hollow stem, o, adjustable bearing-collar d', and actuating-arm m', substantially as set forth.

4. In combination with the steam-chest, valve-rod, induction-valve, and cut-off valve, the supporting-frame T, the independent governor-shaft and governor H, driving-gears g' g^3, and interposed connecting mechanism for transmitting the vertical movement of the collar x of the governor to the adjusting-arm m' of the cut-off valve, substantially as set forth.

5. The combination of the frame T, with extensions t' t^2 t^3 t^4, the governor-shaft H and its collar x, the arm x' and its rock-shaft I, gears L' L^3, shaft K, arm m, connecting-rod n, and arms m' of the cut-off valve, substantially as set forth.

6. The combination of the separable steam-chest in two parts, B B', with the valves O y, valve-rod G, and stuffing-boxes r s, constructed and arranged as set forth.

339,283. FOLDING BEDSTEAD. BENJAMIN F. FARRAR, San Francisco, Cal. Filed Aug. 6, 1885. (No model.)



Claim.—1. In a folding bedstead, a head-casing, A, having bearing cleats or shoulders a', and a bed-frame, C, consisting of sections hinged together and folding the one upon the other, said bed-frame being adapted to be folded into and extended from the head-casing, in combination with vertical cleats forming a fulcrum or pivot-connection between the bed-frame and ends of the head-casing, on which the bed-frame turns through a portion of its movement, the cleats a' serving as a bearing between the bed-frame and head-casing, on which it turns through the remainder of its action, substantially as herein described.

2. In a folding bedstead, a head-casing having bearing-cleats a', and a bed-frame adapted to fold therein and to be extended therefrom, in combination with vertical cleats forming a fulcrum or pivot-connection between the bed-frame and upper forward portion of the ends of the head-casing, on which the bed-frame turns through a portion of its movement, the cleats or shoulders a' forming a fulcrum between the bed-frame and lower portion of the base of the ends, through which it turns and moves through the remainder of its action, substantially as herein described.

3. In a folding bedstead, the head-casing A, having bearing cleats or shoulders a' on the lower inner edges of its sides or ends, and bearing plates or irons G on the upper forward edges of said ends, in combination with the sectional bed-frame C, the bolts F on the head-section of the bed-frame, and adapted to bear and pivot on the bearing-plates G through a portion of the movement of said frame, and the cleats E on said section adapted to pivot and move on the shoulders a' through the remainder of its action, substantially as and for the purpose herein described.

4. In a folding bedstead, the head-casing A, having bearing cleats or shoulders a' on the lower inner edges of its sides or ends, bearing cleats or irons G on the upper forward edges, and limiting-stops a on the upper rear edges of said ends, in combination with the sectional bed-frame C, the bolts F thereon, adapted to bear and pivot on the plates G during a portion of the movement of the bed-frame, and the cleats E, adapted to pivot and move on the shoulders a' through the remainder of its action and when the bed-frame is extended to bear under the stops a, substantially as and for the purpose herein described.

5. In a folding bedstead, the head-casing A, having cleats or shoulders a' and stops a^3 at its bottom and bearing-plates G at its top, in combination with the bed-frame C, consisting of the hinged foot and head sections c c', bolts F on the head-section, pivoting on irons G through a portion of the movement of the bed-frame, and the cleats E in said section, adapted to pivot on the shoulders a' through the remainder of its action and to be limited by the stops a^3, whereby it is moved to position, substantially as herein described.

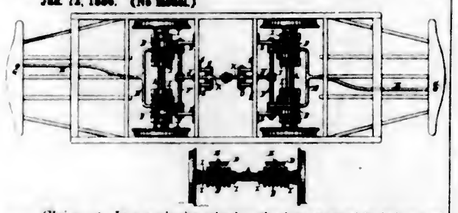
6. In a folding bedstead, the head-casing A, having bearing cleats or shoulders a', and stops a^3 at its bottom bearing plates or irons G, with shoulders g, and the limiting-stops a at its top, as described, in combination with the sectional bed-frame C, the bolts F thereon pivoting on plates G and limited by their shoulders during a portion of the movement of the bed-frame, and the cleats E, adapted to pivot on the shoulders a' and bear against the stops a^3 through the remainder of its action and when the bed-frame is extended to bear under the stops a, all arranged and adapted to operate substantially as and for the purpose herein described.

7. In a folding bedstead, the sectional and folding bed-frame C, in combination with the plates I, crossing the line of the joint of the sections of the bed-frame, said plates having slots in each end, and the fixed pins which secure the plates, substantially as herein described.

8. In a folding bedstead, the adjustable bed-frame C, consisting of sections hinged together and adapted to fold the one on the other, in combination with the plates or pieces H, hinged to the edges of the sections and to each other, said plates forming a top when the sections are in a vertical position, and acting as a support or transverse leg for the bed-frame when extended, substantially as herein described.

9. In a folding bedstead, the adjustable bed-frame C, consisting of sections hinged together, and adapted to fold the one on the other, in combination with the plates or pieces H, hinged to said sections and to each other and adapted to serve and operate as described, and the pieces J on the ends of one of the plates which serve as guards for the top, and as supports for the extended bed, substantially as herein described.

339,284. CAR-BRAKE. GEORGE FLETCHER, Brooklyn, N. Y. Filed Jan. 12, 1886. (No model.)



Claim.—1. In a car-brake, a brake-wheel constructed in halves and fitted on the axle, and having on its periphery a series of grooves, in combination with a brake-shoe having a contact-surface corresponding to the periphery of the said brake-wheel, substantially as described.

2. In a car-brake, a brake-wheel having on its periphery a series of grooves, and provided with a brake-shoe having a contact-surface corresponding to the periphery of said wheels, substantially as described.

3. A car-brake consisting of grooved brake-wheels mounted on the axles of the running-wheels, in combination with grooved brake-shoes corresponding in number to said brake-wheels, levers pivoted to a frame or frames depending from the car between the running-wheels, said levers extending to the platforms of the car, a series of toggle-levers connected to said pivoted levers and adapted to operate the same at the same time from either platform of the car, substantially as described.

4. In a car-brake, a brake-wheel secured to each of the car-axles, brake-levers E, transmitting-levers J K, connecting the brake-levers together, brake-shoes secured to the brake-levers, respectively, and a means for operating either of the brake-levers, the whole combined substantially as hereinbefore described.

5. In a car-brake, two pairs of brake-wheels secured to the car-axles, respectively, bifurcated brake-levers E, transmitting-levers J K, connecting the brake-levers together, pivots F, constituting the fulcra of the brake-levers and the main transmitting-levers, two pairs of brake-shoes secured to the brake-levers, respectively, and a means for operating either of the brake-levers, the whole combined substantially as hereinbefore described.

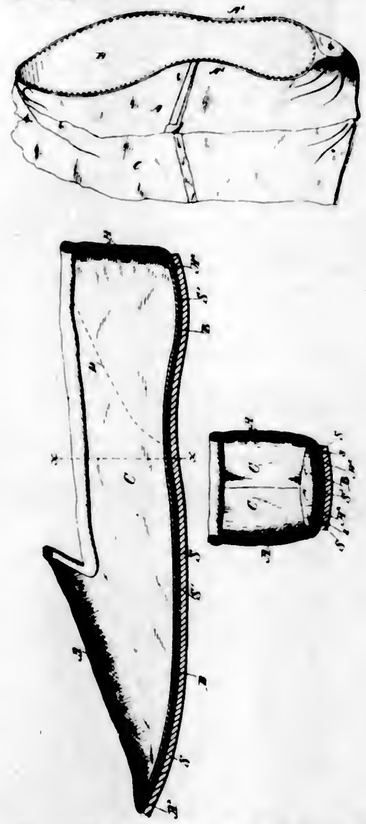
339,285. METHOD OF MAKING TIN-PLATE SHEETS. WILLIAM GARRETT, Pittsburg, Pa. Filed Dec. 7, 1885. (No model.)



Claim.—1. As an improvement in the art of manufacturing steel sheets or tin plates, the herein-described method, which consists in reducing steel ingots in suitable rolls directly to plates of the thickness of sheet-bars, or approximately so, at a single heat, cutting such plates into sheet-bars, and finally reducing the sheet-bars so formed into sheets or tin plates by cross-rolling, substantially as set forth.

2. As an improvement in the art of manufacturing steel sheets or tin plates, the herein-described method, which consists in reducing steel ingots in suitable rolls to plates of the thickness of sheet-bars, or approximately so, at a single heat, cutting such plates into sheet-bar by a series of cut parallel to the direction in which the plates were rolled, and finally reducing the sheet-bar so formed into sheets or tin plates by cross-rolling in suitable rolls, substantially as set forth.

339,286. MANUFACTURE OF BOOTS AND SHOES. JOHN J. GASCOIGNE and GEORGE A. ROTOR, Leicester, England. Filed Nov. 24, 1885. (No model.)



Claim.—1. The herein-described mode or process of making boots and shoes, which consists of sewing a center piece, B, to the reversed upper, turning the latter right side out and inserting the stiffener, adjusting and securing the lining in position and inserting an insole, shaping the article on an expanding-last, and sewing thereto the outsole, as described.

2. The herein-described mode or process of making boots and shoes, which consists in sewing a center piece, B, smaller than the outsole, to the reversed upper, turning the latter right side out and inserting the stiffener, adjusting and securing the lining in position, inserting the insole, shaping the article on an expanding-last, and sewing thereto the outsole with the line of stitches that secure the said outsole to the upper outside or clear of the line of stitches that secure the latter to the center piece, as described.

339,287. COMBINED PLUMB, LEVEL, AND SQUARE. CHARLES GATES, Lebanon, Pa. Filed Jan. 18, 1886. (No model.)

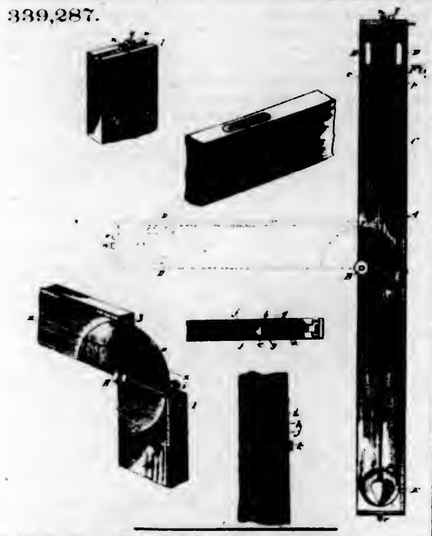
Claim.—1. A rectangular plumb-level having a groove or seat in one end thereof, in combination with a head or block provided with a line-support and adapted to slide in said groove, substantially as described.

2. A rectangular plumb-level having a groove or seat in one end thereof, in combination with a head or block provided with a line-support and a locking device, substantially as described.

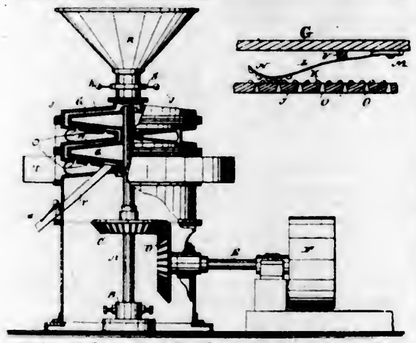
3. A plumb-level formed in two sections, arranged in the same plane, and provided with a hinge on one side, in combination with flanged end plates connected to the upper section, and a flanged sector-plate for supporting the upper section when in position to form a square, substantially as described.

4. A plumb-level formed in two sections, and provided with a hinge, a flanged sector-plate, and flanged end plates, in combination with an automatic locking device, substantially as described.

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339,288. COFFEE-HULLER. JOSE GUARDIOLA, Chocola, Guatemala. Filed June 18, 1885. (No model.)



Claim.—1. In a coffee-huller, the combination, with a vertical revolving shaft, of disks mounted on the same and having their top and bottom surfaces beveled or tapered from their centers toward their rims, on which surfaces projections or teats are formed, and a casing conforming to the shape of the disks and provided with projections or teats on its inner surfaces, substantially as herein shown and described.

2. In a coffee-huller, the combination, with a vertical revolving shaft, of disks mounted on the same and provided with teats or projections on the surfaces, a casing conforming to the shape of the disks and having teats or projections, and plates hung on the disks and having teats or projections on their free ends, substantially as herein shown and described.

3. In a coffee-huller, the combination, with a vertical revolving shaft, of the disks G on the same, the casing J, the plates L, and the flexible pieces M, substantially as herein shown and described.

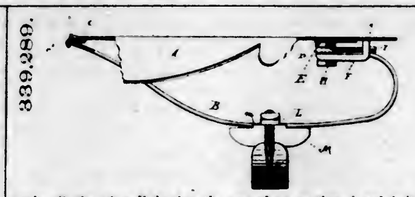
4. In a coffee-huller, the combination, with a vertical revolving shaft, of disks mounted on the same and having their top and bottom surfaces beveled from their centers to their rims, and also having teats or projections on said surfaces, a casing conforming to the shape of the disks and having teats or projections, and also apertures O in the parts below the disks, substantially as herein shown and described.

339,289. BICYCLE-SADDLE. WILLIAM H. HALE, New Haven, Conn. Filed Dec. 16, 1885. (No model.)

Claim.—1. The seat A, provided with the fixed plate D, having the pieces or lugs E, the curved spring B, having one end secured at the forward end of the seat, the plate F, bolted to the spring at its other end, so as to turn freely thereon, combined with screw-bolts I, passing through said plate F on each side of the bolt, upon which the plate turns, and threading into the lugs or pieces E, substantially as described.

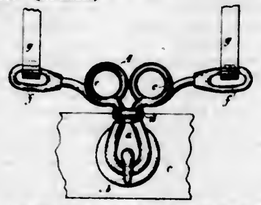
2. The plate D, having lugs or pieces E, combined with the curved

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spring B, the plate F, having the turned-up portions *i*, and bolted to said spring, so as to turn freely thereon, and the screw-bolts I, passing through said plate F and threading into the lugs or pieces E, substantially as described.

339,290. CHECK-EASE. ROBERT G. HANFORD, Jr., Newark, N. J., assignor to the Hanford, Peckham & McCance Company, same place. Filed June 11, 1885. (No model.)

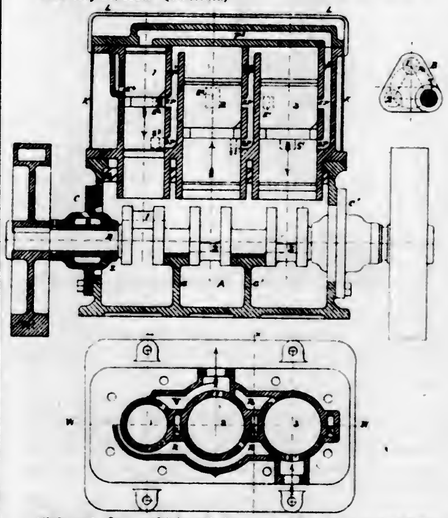


Claim.—A check-ease made of one piece of metal doubled in the middle to form a loop for engaging with a hook on a saddle-tree, the two portions of the piece of metal being secured together beyond the loop, a coil or coils in each of said portions beyond the point where they are secured together constituting springs, said portions terminating in diverging resilient arms provided with loops, substantially as specified.

339,291. WOOD WOOL. PAUL HARTMANN, Heidenheim, Wirtemberg, Germany. Filed Jan. 20, 1885. (Specimens.) Patented in Germany Jan. 26, 1883, No. 26,903; in Austria-Hungary Feb. 16, 1883, No. 17,111 and No. 26,901; in Belgium Sept. 17, 1883, No. 62,611; in France Sept. 17, 1883, No. 157,591; in England Sept. 17, 1883, No. 4,444, and in Italy Feb. 6, 1884, No. 16,363.

Claim.—An absorbent consisting of wood wool composed of carded wood pulp, substantially as described.

339,292. STEAM-ENGINE. WILLIAM M. HENDERSON, Morton, Pa. Filed May 20, 1885. (No model.)



Claim.—1. In a multiple-cylinder compound engine, as described, the combination of the two low-pressure cylinders 2 and 3 with the high-pressure cylinder 1, all fitted with trunk-pistons, each having a circumferential groove playing over steam and exhaust ports and controlling the operation of the piston attached to the next following crank, substantially in the manner and for the purpose herein set forth.

2. In a multiple-cylinder compound engine, as described, the com-

bination of the circumferentially-grooved trunk-pistons with the steam and exhaust ports, the groove alternately matching the steam-inlet, and the steam-port leading to another cylinder in its downstroke, and the exhaust-port leading from that cylinder and the exhaust outlet-port on its upstroke, arranged substantially as specified and shown.

3. In a multiple-cylinder compound engine, as described, the combination of the high-pressure cylinder, the steam-passage P^a, and the groove in the piston 3, matching on its upstroke the exhaust-aperture E', cut through the wall of cylinder No. 3 directly into the intermediate receiver, R, arranged substantially in the manner and for the purpose specified and shown.

4. In combination with the pistons and connecting-rods of a multiple-cylinder engine, the shaft B, having balanced triangular crank-cheeks, the center of gravity coinciding with the center of motion, substantially as represented.

5. The combination of the inclosed crank-case A with the slotted cover-plates H, attached to the lower ends of the trunk-pistons, substantially in the manner and for the purpose specified.

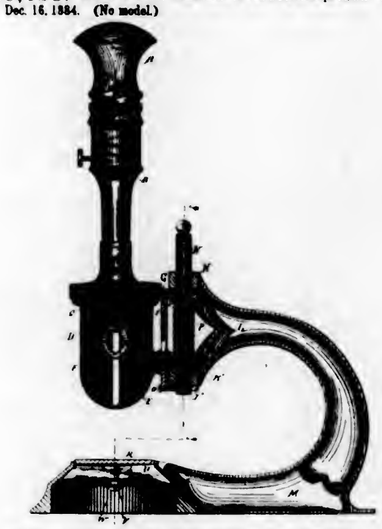
6. The combination of the inclosed crank-case A with the interposed non-conducting shield M, arranged substantially in the manner and for the purpose described.

7. As an improvement in an engine, the combination of the inclosed crank-case A with the hollow heads C C', formed with cavities in the body of the hub, and sleeve-journal bearings and oil-hole Z, leading from the interior of the case to the annular cavity in the hub, arranged substantially in the manner and for the purpose set forth.

8. As an improvement in an engine, the combination of the hollow trunk-piston, the cap perforated at O, the recessed follower F, and ball-jointed connecting-rod D, arranged substantially in the manner and for the purpose herein described.

9. The combination of the cylinders, their ports and grooved pistons, with a double or divided receiver, substantially as set forth.

339,293. HAND-STAMP. BENJAMIN B. HILL, Philadelphia, Pa. Filed Dec. 16, 1884. (No model.)



Claim.—1. In a self-inking hand-stamp, a base, a yielding support connected with the same, a frame resting on said support and carrying a turning device for an oscillating die, in combination with said oscillating die, a moving frame carrying said die, and a handle for operating the same, substantially as described.

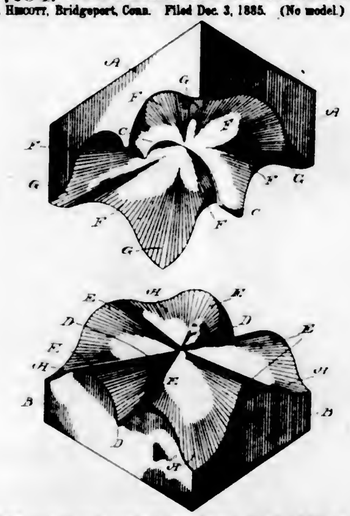
2. In a self-inking stamp, a base, a yielding support connected to the same, a frame resting on said yielding support and carrying an inking-pad, and a turning device for an oscillating die-plate, in combination with said oscillating die-plate, a moving frame and handle for operating the same, and a spring constructed to assist in reversing said die after each impression, substantially as described.

3. The combination, in a self-inking stamp, of the base M, supporting an impression-plate, R, a standard, L, carrying the yielding support P and rising from said base, a frame, F, carrying an oscillating die-plate, inking-pad, and operating-fork, B, and mounted on said yielding support, substantially as described.

4. The combination, in a self-inking stamp, of the base M, the impression-plate R, the standard L, rising from said base and having the arms K K', with the frame F, carrying the inking-pad and die-plate, rods N, connected with the frame F and passing through the arms K K', and the spring P, substantially as described.

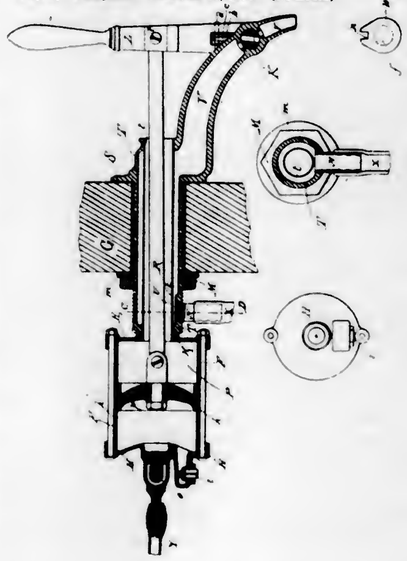
5. The combination, in a self-inking stamp, of the base M, the impression-plate R, the standard M, rising from said base and having the arms K K', of the frame F, carrying the die-plate and inking-pad, the plate I, having lugs J, the rods N, passing through said lugs J, and arms K K' and the springs P, surrounding said rods, substantially as described.

339,294. DIES FOR MAKING SEAMLESS DRESS-SHIELDS. ALVA J. HESCOTT, Bridgeport, Conn. Filed Dec. 3, 1885. (No model.)



Claim.—As a new article of manufacture, a pair of dies for manufacturing seamless dress-shields, the male die having a crescent-formed shaper and the female die a corresponding depression, whereby the concavity is given to the upper edge of the shield, both dies being heated and having corresponding male and female corrugations and depressions which radiate from a common vertical center, whereby the cockles or wrinkles incident to the operation of the crescent shaper are taken up, and creasing thereby prevented, substantially as set forth.

339,295. COMBINED FAUCET AND BEER-PUMP. EMIL M. HOGENTOBLER, New York, N. Y., assignor to the Standard Pump Manufacturing Company, same place. Filed Jan. 11, 1886. (No model.)



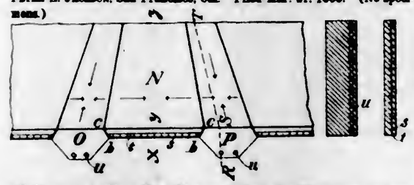
Claim.—1. In a combined beer pump and faucet to be used in connection with an ice-box the wall of which is perforated with a single round hole through which the apparatus is secured, the faucet-body composed of a cylindrical straight part, T, tapped at one end at U to receive the nipple N, of an offset-spout, V, carrying the cock K, and of a straight tube, *t*, in the core of the straight part of the faucet-body and concentric therewith, all substantially as and for the purpose set forth.

2. In a combined beer pump and faucet to be used in connection with an ice-box the wall of which is perforated with a single round hole through which the apparatus is secured, the combination, with the faucet-body constructed as described, flange S, nut M, washer *m*, and detatchable nipple N, of the bodily-detachable air-pump P, set in line with and secured to said faucet-body, all substantially as described.

3. In a combined beer pump and faucet to be used in connection with an ice-box the wall of which is perforated with a single round hole through which the apparatus is secured, the combination, with the faucet-body constructed as described, of a single-acting air-pump, P, attached to and in line with said faucet-body, the connecting-rod R, running through the tube *t*, and the lever L, to operate said pump, said lever being pivoted on the shank *f* of the cock K on the offset part or spout V of the faucet-body, substantially as and for the purpose specified.

4. In a combined beer pump and faucet, the combination, with the lever L, operating an air-pump, P, and pivoted on the shank *f* of the cock K, of the washer W, permanently secured to the shank *f*, the notch *n* on the periphery of said washer W, the latch *b*, pivoted on the pin *a*, and having the projection *d* bearing on the spring *c*, all connected and operated in such a manner that the lever L, while remaining at all times pivoted on the shank *f* of the cock K, may at will be caused to operate said cock or to swing independently of it, substantially as and for the purpose set forth.

339,296. FORMING ARTIFICIAL-STONE OR CONCRETE ARCHES. PETER H. JACKSON, San Francisco, Cal. Filed Mar. 21, 1885. (No specimens.)



Claim.—1. A sidewalk or floor consisting of artificial-stone or concrete arches supported by transverse arches of the same material, combined with metallic ties to resist the horizontal thrust, substantially as herein described.

2. A sidewalk or floor consisting of artificial-stone or concrete arches supported by transverse arches composed of artificial stone for the top, and the bottom of brick, and combined with metallic ties to resist the horizontal thrust, substantially as herein described.

3. A sidewalk or floor consisting of artificial-stone or concrete arches supported by transverse arches of the same material, combined with tie-rods and struts to resist both the horizontal thrust and deflection, substantially as herein described.

4. A sidewalk or floor consisting of artificial stone or concrete arches or slabs resting on the sloping sides of the supporting side sections of the same material, combined with metallic ties tensilely employed in sustaining the structure, substantially as herein described.

5. A sidewalk or floor consisting of artificial-stone or concrete arches resting on the sloping sides of the supporting side sections of the same material, from which it is separated by tarred paper, sheet metal, parting-sand, or other equivalent separating material, the side sections combined with metallic ties tensilely employed in sustaining the structure, substantially as herein described.

6. A sidewalk or floor consisting of artificial-stone or concrete slabs with metallic ties built in them at or near the bottom and resting on transverse artificial-stone or concrete beams or arches combined with metallic ties, substantially as herein described.

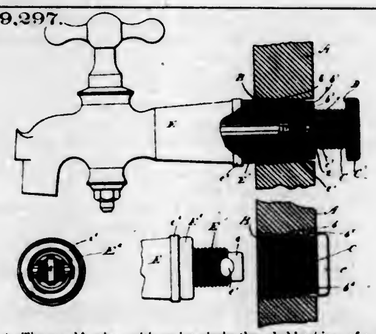
339,297. BUSHING-VALVE AND FAUCET ATTACHMENT FOR CASKS. WILLIAM W. JACKSON, Chicago, Ill. Filed Oct. 18, 1884. (No model.) Patented in Canada Mar. 17, 1885, No. 16,512.

Claim.—1. The combination of the interiorly-threaded bushing having axial channels on the interior surface of the rear end thereof and the exteriorly-threaded valve adapted to fit within the bushing and having a flanged end to close said channels, substantially as described.

2. The combination, with the bushing having its interior surface screw-threaded from end to end, and having axial channels in the rear portion of said interior surface, of the threaded valve adapted to fit within the bushing and close said channels, substantially as described.

3. The combination, with an interiorly-threaded bushing having axial channels on its inner surface and an exteriorly-threaded valve, of a faucet having a threaded portion to engage with the threads of the bushing and having cut-away spaces in its sides, substantially as described.

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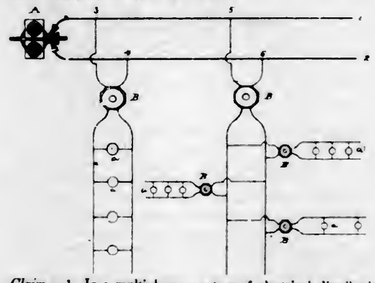


4. The combination, with an interiorly-threaded bushing, of a valve having an exteriorly-threaded solid stem of practically the same length and diameter as the bushing, whereby when the valve is closed its stem will be flush with the face of the bushing in such manner as to fill the bushing and protect all threads against fouling, substantially as described.

5. The combination, with the interiorly-threaded bushing, of a valve having a solid screw-threaded stem adapted to fill the bore of the bushing at its face when the valve is closed, and a faucet having a threaded end adapted to enter the bushing a distance less than the entire length of the bushing, said valve and faucet being provided with suitable means—such as a lug and seat—for engagement, substantially as described.

6. The combination, with the interiorly-threaded bushing having the reduced rim at its rear end, of the exteriorly-threaded valve having a flanged end provided with an annular seat to receive a packing-ring, substantially as described.

339,298. ELECTRICAL SWITCH. EDWARD H. JOHNSON, New York, N. Y. Filed Jan. 3, 1883. (No model.)

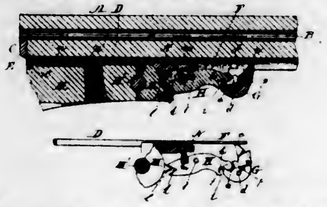


Claim.—1. In a multiple-arc system of electrical distribution, the combination, with a circuit, of a circuit making and breaking device for each side or pole of said circuit, substantially as set forth.

2. In a multiple-arc system of electrical distribution, the combination, with a circuit, of a switch adapted to make or break both sides or poles of the circuit simultaneously and by the same movement, substantially as set forth.

3. In a multiple-arc system of electrical distribution, the combination, with a circuit, of a switch comprising a base, contacts upon such base forming the terminals of the several sides or poles of the circuit, and means carried by said base for connecting the contacts of each side or pole together simultaneously with the connection together of the contacts of the other pole, substantially as set forth.

339,299. EJECTOR FOR FIRE-ARMS. IVER JOHNSON, Worcester, Mass. Filed Sept. 14, 1885. (No model.)



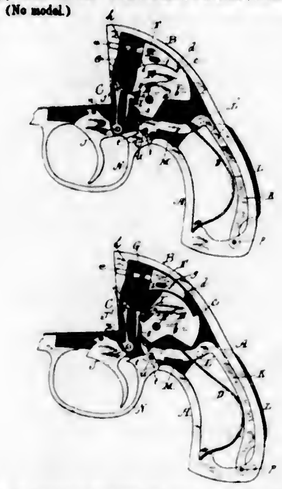
Claim.—1. The combination, with the front end of hinged fore hand M, provided with lug *l* on the forward end, and cartridge-ejector

rod D F, of hinged lever H, provided with a V-shaped opening, *k*, to receive lugs *l* on the forward end of fore hand M, and a curved opening, *h*, on its forward end, and hinged dog G, provided with hooked end *i* to enter opening *h* in the front end, *f*, of lever H, said parts being arranged in relation to each other substantially as described, whereby, when the fore hand of the arm is depressed, hinged lever H and hinged dog G will be operated as described, and the ejector-rod D F moved out by point *c* of hinged dog G to eject the cartridge-shells, substantially as described.

2. The combination, with fore hand M, provided with lug *l*, of ejector-rod D F, lever H, and hinged dog G, provided with hinged point *c* and spring *p*, substantially as and for the purposes set forth.

3. The combination, with hinged fore hand M, lug *l*, and cartridge-ejector rod D F, provided with a V-shaped opening, *k*, in its rear end, and a curved opening, *h*, in its forward end, of hinged dog G, provided with groove, *e*, hooked end *i*, hinged point *c*, and spring *p*, said parts being constructed and arranged in relation to each other substantially as and for the purposes set forth.

339,300. **REVOLVER.** IVER JOHNSON, Worcester, Mass. Filed Oct. 12, 1885. (No model.)

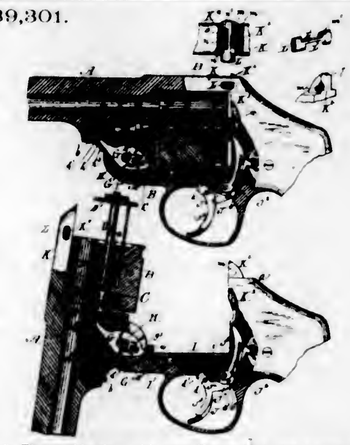


Claim.—1. In revolving fire-arms, the combination, with bow safety-lever K L', provided with projection L, extending through a slot in the scalloped part of the handle, within which said lever is hinged, of slotted guard N, guide-pin *u*, and fingers *t* on the end L' of lever K, said fingers straddling pin *u* and working in said slot in guard N, all substantially as and for the purposes set forth.

2. In revolving fire-arms, the combination, with chamber or receiver B and handle A, of mainspring D, provided with a slot for the passage of the end L' of lever K, and hammer E, provided with a projection, *s*, to engage with the lug or catch *g* on the inner end of lever K L', substantially as and for the purposes set forth.

3. In revolving fire-arms, the combination, with hammer E, provided with a circular forwardly-projecting part for the rear curved part of the firing-pin to rest and slide upon, and an upward projection, *c*, for striking the firing-pin, of firing-pin F, fitted to rest upon the forward curved part of the hammer, and provided with slot *f*, to receive pin *g* to limit its motion, and spring G, for retracting the firing-pin, all substantially as described.

339,301. **REVOLVER.** IVER JOHNSON, REINHARD T. TORKELSON, and ANDREW FYRBERG, Worcester, Mass.; said Torkelson and Fyrberg assignors to said Johnson. Filed Jan. 4, 1886. (No model.)

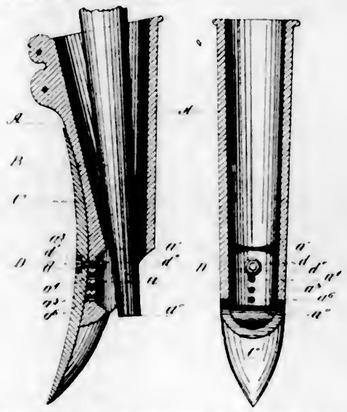


Claim.—1. The combination, with the lock mechanism of a fire-arm and firing-trigger hinged to the forearm, of a firing-trigger-locking lever, J², pivoted in the firing-trigger below the firing-trigger pivot, and spring *k'*, arranged in a hole in the upper part of the firing-trigger, the lower end of said spring pressing down upon the upper edge of arm J⁴ of trigger-locking lever J², and in rear of its pivot *k* in the firing-trigger, substantially as described, and for the purpose set forth.

2. The combination, with the ejector-rod D, stationary cam G', and hinged forearm I, provided with projection *e'*, which forms the top of a pocket for the reception of lip *e²*, of slotted lever G, provided with lip *e²*, to engage with projection *e'*, pivot H, upon which both forearm I and lever G turn, the flanged cap H', to fit the slot in lever G, pivot H, and spring *g³*, for keeping lip *e²* in position to engage with projection *e'*, and movable lever G, to throw out ejector-rod D to eject the cartridge-shells when forearm I is turned down, substantially as described.

3. The combination, with strap K, provided with a transverse slot, K⁴, and slotted projection K' on breech part K², of the notched locking thumb-piece L, arranged in transverse slot K⁴, spring *n*, and holding-pin *o*, substantially as and for the purposes set forth.

339,302. **GRAIN-DRILL.** JOHN F. KELLER, Shepherdstown, W. Va. Filed Sept. 10, 1884. (No model.)



Claim.—1. A drill-boot which upon its inner front surface above the inner end of the tooth-securing bolt is provided with a shoulder which is rounded or curved at its point of greatest projection.

2. The combination, in a drill-boot which is provided with a flexible seed-tube, of a securing-bolt, a shoulder above such securing-bolt, and a shoulder below such securing-bolt.

3. The combination, in a drill-boot, of a tooth-securing bolt, a flexible seed-tube, and a rounded deflecting-shoulder upon the boot.

4. The combination, in a drill-boot which has a series of securing-orifices, of a securing-bolt, a rounded deflecting-shoulder, and a flexible seed-tube.

5. The combination, in a drill-boot which has an inner front flat securing-surface, of a tooth-securing bolt which extends through the boot and projects beyond such surface, a deflecting-shoulder which is rounded or curved, and a flexible seed-tube.

6. A drill-boot which is provided with tooth-securing orifices, and with protecting-shoulders, one of the shoulders being above and the other shoulder being below the tooth-securing orifices.

7. A drill-boot which is provided in its front portion with orifices or perforations which are arranged one above another, with a tooth-securing bolt which is adapted to the orifices, with a nut which is adapted to the tooth-securing bolt, with an inner flat surface around the orifices to permit the nut to fit closely, with a seed-tube, and with two rounded shoulders, one above and the other below the flat surface to protect the seed-tube from injury through contact with the end of the bolt or with the nut.

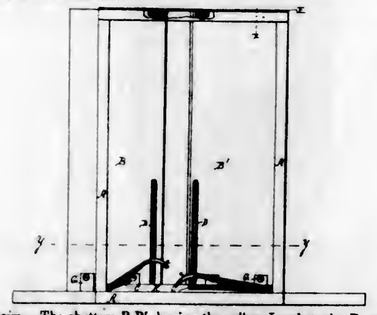
8. The combination, in a drill-boot which is provided with a flexible seed-tube, of a drill-tooth, a bolt, an upper rounded shoulder, and a lower shoulder.

9. The combination, in a drill-boot, of a discharging-tube, an adjustable tooth, a securing-bolt, a shoulder above the securing-bolt, and a shoulder below the securing-bolt.

10. A drill-boot which is provided with tooth-securing orifices and with protecting-shoulders, one of the shoulders being above and the other shoulder being below the tooth-securing orifices, and which is provided also with an inner flat securing-surface between the two shoulders.

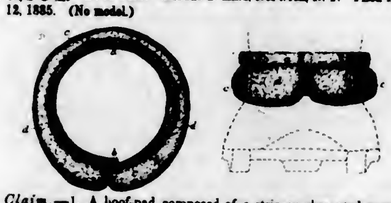
11. A drill-boot which is provided with a flexible seed-tube, a drill-tooth, an adjustable bolt for the drill-tooth, an inner flat securing-surface for the bolt and its securing-nut, an upper rounded shoulder, and a lower shoulder.

339,303. **SHUTTER-WORKER.** SYLVESTER KENNEDY, Gap, Pa. Filed July 7, 1885. (Model.)



Claim.—The shutters B B', having the rollers I and staples D, and connected with the bearing-rod H by means of the staples G and the said rod H, in combination with the actuating-levers C, having their fulcrums in the weather-plate K, all constructed and operating substantially as herein set forth.

339,304. **HOOF-PAD.** ALBERT B. KING, Norwich, N. Y. Filed Nov. 12, 1885. (No model.)



Claim.—1. A hoof-pad composed of a strip or elongated narrow mass of absorbent material, in combination with a strap from which the absorbent material is freely suspended, so that the said pad, when in place, rests lightly around the crown of the hoof, substantially as described.

2. The combination, substantially as set forth, of the absorbent material, the strap, and the sack of reticulated fabric filled with absorbent material.

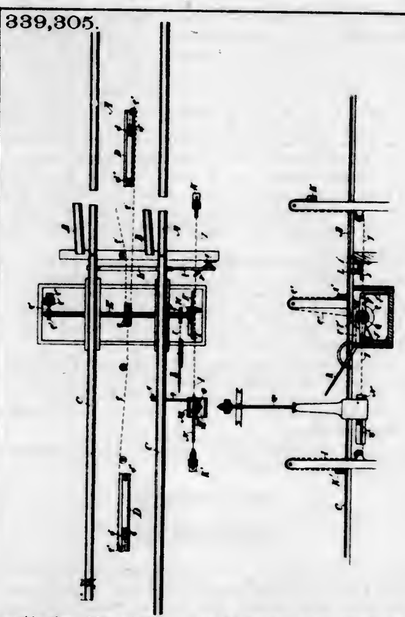
339,305. **AUTOMATIC RAILWAY SWITCH AND SIGNAL.** EDWARD Y. KNAPP, Arcata, Cal., assignor of one-half to George W. B. Young, same place. Filed Nov. 12, 1885. (No model.)

Claim.—1. In a railway switch and signal, the oscillating transverse shaft E, the rotating lever F, and a pawl-and-ratchet connection between them, whereby the return of the shaft effects a half-revolution of the lever, in combination with a trip in the road-bed engaged by an arm on the locomotive, connecting devices between said trip and the shaft, whereby the latter is partially rotated, a weight to return said shaft, connecting mechanism between the lever and the throw-rails, and a weight attached to said mechanism, substantially as described.

2. In a railway switch and signal, the oscillating transverse shaft E, the rotating lever F, a pawl-and-ratchet mechanism between them, whereby the return of the shaft effects a half-revolution of the lever, a support for holding said lever in position, and an eccentric-arm on the shaft for tripping the support, in combination with a trip in the road-bed engaged by an arm on the locomotive, connecting devices between said trip and the shaft, whereby the latter is partially rotated, a weight to return said shaft, connecting mechanism between the lever and the throw-rails, and a weight attached to said mechanism, substantially as described.

3. In a railway switch and signal, the oscillating transverse shaft E, the rotating lever F, and a pawl-and-ratchet connection between them, whereby the return of the shaft effects a half-revolution of the lever, in

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combination with a trip in the road-bed engaged by an arm on the locomotive, connecting devices between said trip and the shaft, whereby the latter is partially rotated, a weight to return said shaft, a semaphore-signal, connecting mechanism between the lever and the semaphore-signal, and a weight attached to said mechanism, substantially as described.

4. In a railway switch and signal, the oscillating transverse shaft E, the rotating lever F, and a pawl-and-ratchet connection between them, whereby the return of the shaft effects a half-revolution of the lever, a support for holding said lever in position, and an eccentric-arm on the shaft for tripping the support, in combination with a trip in the road-bed engaged by an arm on the locomotive, connecting devices between said trip and the shaft, whereby the latter is partially rotated, a weight to return said shaft, connecting mechanism between the lever and the throw-rails, and a weight attached to said mechanism, a semaphore-signal, connecting mechanism between the lever and the semaphore-signal, and a weight attached to said mechanism, substantially as described.

5. In a railway switch and signal, the oscillating shaft E, by which the switching and signaling are effected, in combination with the sliding pivoted trip d', with which an arm on the locomotive engages, the opening or slot d^3 in the bed, on which said trip slides and by which it is relieved, the chain or line e', attached to the trip, the pulley e on the shaft, to which the chain or line is attached, and the suspended weight e^4, for returning the shaft, substantially as herein described.

6. In a railway switch and signal, the oscillating transverse shaft E, as described, having a ratchet, G, in combination with the lever F, loose on the shaft, and having a pawl, *g*, engaging the ratchet, and the line I, connecting the lever F with mechanism for operating the throw-rails, substantially as described.

7. In a railway switch and signal, the oscillating shaft E, having a ratchet, G, in combination with the lever F, loose on the shaft, and having a pawl, *g*, engaging the ratchet, the line or wire I, having a wrist, *i*, on the lever, and the weight K, suspended by said line, the pivoted two-armed lever J, to which the line is attached, the slide-bar L, in which the throw-rails are seated, and the rod *l*, connecting said bar with the two-armed lever, substantially as herein described.

8. In a railway switch and signal, the oscillating shaft E, having ratchet G and eccentric H, with arm *h*, in combination with the lever F, having pawl *g*, the pivoted standard *f*, for one end of the lever, tripped by the arm *h*, and the spring-standard f'' for its other end, and connecting devices between the lever and the throw-rails, substantially as herein described.

9. In a railway switch and signal, the semaphore M, having stem *m*, and the two-pointed arm m' on said stem, the points of said arm being out of line and in different vertical planes, in combination with the reciprocating plate N, having two slots parallel and in different vertical planes, their ends overlapping, substantially as described.

10. In a railway switch and signal, the oscillating shaft E and the rotating lever F, operated thereby, in combination with the semaphore

M, having a stem, *m*, and the two-pointed arm *m'* on said stem, the sliding double-slotted plate N, engaging the arm, the line I, into which the plate is let, one end of said line being connected with the lever F, and the weight K', suspended by its other end, substantially as described.

11. In a railway switch and signal, the throw-rails C, the semaphore M, having a stem, *m*, with double-pointed arm *m'*, the oscillating shaft E, and tripe *d'*, engaged by an arm on the locomotive for operating the shaft, in combination with the rotating lever F, operated by the shaft E, the line I, connected with the lever and suspending the weights K K', the two-armed pivoted lever J, connected with the line I, and the slide-bar L, carrying the throw-rails and connected with the two-armed lever, and the sliding double-slotted plate N, engaging the points of the arm of the semaphore-stem and let into the line I, substantially as described.

12. In a railway switch and signal, the oscillating shaft E and rotating lever F, operated thereby, in combination with the semaphore-stem *m*, and connections between it and the lever F, whereby the stem is rotated, the horizontally-reciprocating bar or rod *o*, connected with the stem, and the loose pendant *o'* in the road-bed, held or relieved by said bar, substantially as herein described.

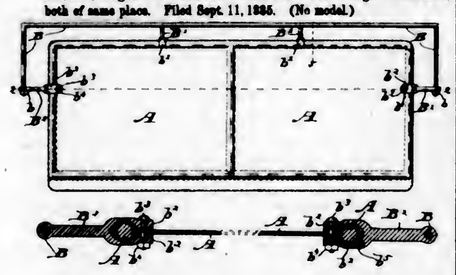
13. In a railway switch and signal, the oscillating shaft E and lever F, operated thereby, and connections between said lever and the throw-rails and signal, in combination with the switch-lever R, the line *r*, and the pulley *r'*, whereby the switch and signal may be operated by hand, substantially as described.

339,306. CARTRIDGE-SHELL. HOSEA W. LIBBEY, Boston, Mass. Filed July 20, 1885. (No model.)



Claim.—The combination, with a cartridge-shell having the ordinary closed base as adapted for breech-loading guns, of an external coating of material having a fibrous or fuzzy surface, as described, said coating being firmly secured to the shell and extending forward from the flange or base nearly to the front of the shell, as set forth.

339,307. RAIL FOR DASH-BOARDS. ROBERT W. LOGAN, Indianapolis, Ind., assignor to Fernandina M. Simmonds and George K. Schofield, both of same place. Filed Sept. 11, 1885. (No model.)



Claim.—1. The combination, with a dash-board consisting of the ordinary metallic frame and leather covering, of a detachable rail provided with supports having clamps, whereby it is secured to the finished edges of said dash-board and held free therefrom, substantially as shown and described

2. The combination, with the dash-board A, of the rail B, provided with the supports B', said supports B', engaging with the top edge of said dash-board, and the supports B^2, engaging with the ends of said dash-board at one end and being secured to the ends of said rail at the other, substantially as set forth.

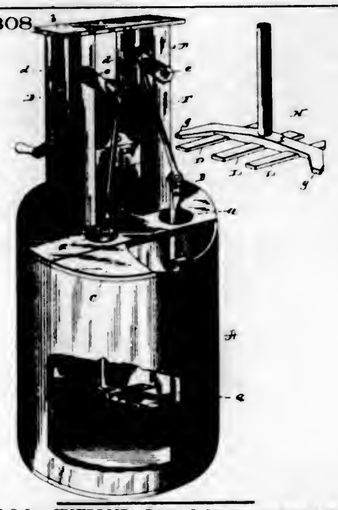
3. The combination of the dash-board A, rail B, supports B', and supports B^2, said supports B^2 having clamps formed on one end thereof, one jaw of which is provided with a hinge, substantially as set forth.

4. The combination, with a dash-board, of a detachable rail constructed of two parts which are adjustable upon each other and provided with clamps, whereby it can be secured to or removed from the finished dash-board, substantially as set forth.

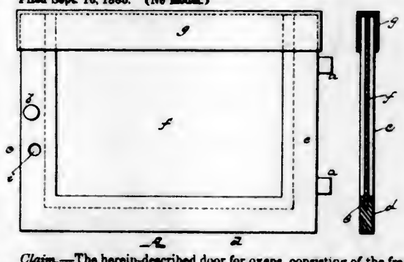
339,308. CHURN. CHARLES A. LORENZ, Kimerton, Pa. Filed Oct. 29, 1885. (No model.)

Claim.—The combination, with the churn-top carrying the operating mechanism, of the dashers, constructed as described, and composed of the approximately arc-shaped strips having interned opposite ends, and the blades arranged to pass each other, and the body having the diametrically arranged vertical guide-strips to be engaged by the said interned strips, substantially as specified.

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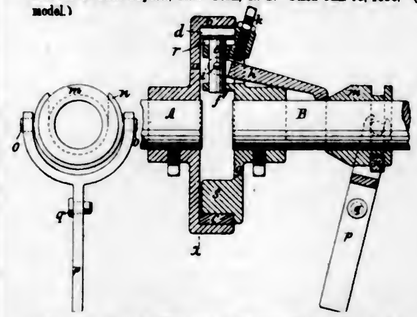


339,309. STOVE-DOOR. DANIEL L. LUDDINGTON, Grass Valley, Cal. Filed Sept. 16, 1885. (No model.)



Claim.—The herein-described door for ovens, consisting of the frame provided with the grooves, adapted to receive the glass plate, the cap-plate having the longitudinal groove and closed ends, and removably applied to the frame, substantially as and for the purpose set forth.

339,310. CLUTCH. EDWARD D. MACKINTOSH, Brooklyn, assignor of one-half to Paul Pryibil, New York, N. Y. Filed Jan. 18, 1886. (No model.)

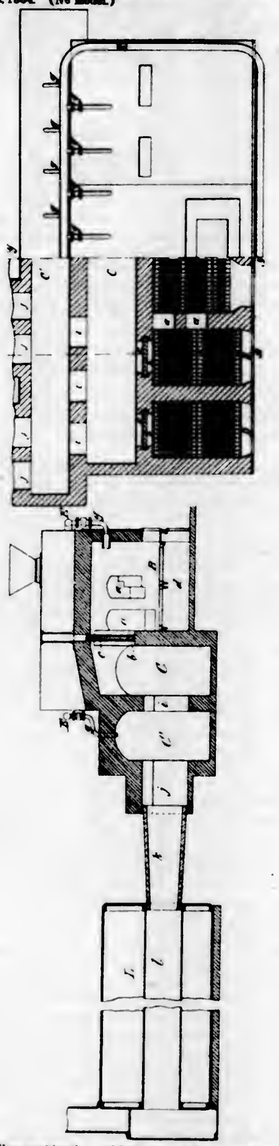


Claim.—1. In a shafting-clutch, the combination of a divided ring with inwardly-converging ends, a wedge-shaped block fitting between the ends of the divided ring and provided with an inwardly-extending stem, and bearings confining the stem and permitting only a radial movement of the wedge-shaped block, substantially as described, and for the purpose specified.

2. In a shafting-clutch, the combination of a divided ring with inwardly-converging ends, a wedge-shaped block fitting between the ends of the divided ring and provided with an inwardly-extending stem, bearings confining the stem and permitting only a radial movement of the wedge, and a lever pivoted to the stem and arranged to move the wedge radially inward, substantially as described, and for the purpose specified.

3. The combination, in a shafting-clutch, of a divided ring with inwardly-converging ends, a wedge-shaped block fitting between the ends of the divided ring and provided with an inwardly-extending stem, bearings confining the stem and permitting only a radial movement of the wedge-shaped block, a lever pivoted to the stem and arranged to move the wedge radially inward, and a screw forming an adjustable fulcrum outside of the lever, substantially as described, and for the purpose specified.

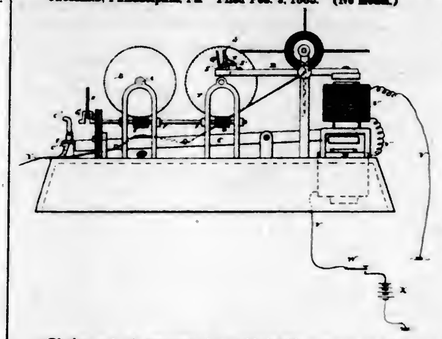
339,311. BAGASSE-FURNACE. RAMON MARRÁ, Salebrosa, Spain. Filed Oct. 22, 1884. (No model.)



Claim.—1. The combination, with the central bagasse-furnace and a flue or combustion-chamber with which it communicates, of side furnaces for dry fuel in communication with said central furnace, and passages and dampers for opening and closing communication between said side furnaces and said flue or chamber, substantially as herein described.

2. The combination, with the central bagasse-furnace, A, the main flue or combustion-chamber C, with which it communicates, the side furnaces B B in constant communication with the said central furnace, the additional side furnaces, D D, having no direct communication with the other furnaces, and the passages and dampers for opening and closing communication between the said furnaces B B and D D and said flue or chamber C, all substantially as herein described.

339,312. PRINTING-TELEGRAPH RECEIVER. WILLIAM J. MCCAUSLAND, Philadelphia, Pa. Filed Feb. 9, 1885. (No model.)



Claim.—1. A type-wheel provided with a worm-wheel secured thereto, in combination with a worm adapted to rotate said worm-wheel, substantially as and for the purpose specified.

2. A type-wheel provided with a worm-wheel secured thereto, in combination with a worm adapted to rotate said worm-wheel, and an electric motor to rotate said worm-wheel, substantially as and for the purpose specified.

3. The combination of a type-wheel, a worm-wheel secured thereto, a worm adapted to rotate said worm-wheel, an electric motor to rotate said worm-wheel, and mechanism to overcome the dead-centers in the rotation of said worm, substantially as and for the purpose specified.

4. In a printing-telegraph, a motor-shaft and a worm secured thereon, in combination with a worm-wheel provided with a pin or finger, an armature-lever having a catch to project into the path of said finger, and an electro-magnet adapted to actuate said armature, substantially as and for the purpose specified.

5. In a printing-telegraph, a motor-shaft and a worm secured thereon, in combination with a worm-wheel provided with a pin or finger, an armature-lever having a catch to project into the path of said finger, and an electro-magnet controlled by the printing-circuit, substantially as and for the purpose specified.

6. In a printing-telegraph, a motor-shaft and a worm secured thereon, in combination with a worm-wheel provided with a pin or finger, an armature-lever having a movable catch to project into the path of said finger and be pushed in one direction, a spring to throw said catch back to the other side of said finger upon its being freed therefrom, substantially as and for the purpose specified.

7. In a printing-telegraph, a type-wheel and a worm-wheel secured thereto, in combination with a worm and a unison device actuated by said worm, substantially as and for the purpose specified.

8. In a printing-telegraph, a motor-shaft and a worm secured thereon, in combination with a worm-wheel provided with a pin or finger, an armature-lever having a catch to project into the path of said finger, an electro-magnet to operate said armature, and gearing to cause said worm-wheel to rotate synchronously with said type-wheel, substantially as and for the purpose specified.

9. The combination of type-wheel A', shaft A therefor, worm-wheel B, secured to said shaft, power-shaft worms E O, secured thereto, worm-wheel P, having finger Q, lever R, stop S, hinged to said lever, and magnet U, to actuate said lever, substantially as and for the purpose specified.

10. The combination of type-wheel A', shaft A therefor, worm-wheel B, secured to said shaft, power-shaft F, worms E O, secured thereto, worm-wheel P, having finger Q, lever R, stop S, hinged to said lever and having feet S', spring T, acting on said stop and magnet U to actuate said lever, substantially as and for the purpose specified.

11. The combination of power-shaft F, worm O, secured thereto, worm-wheel P, having finger Q, lever R, having stop S, and electro-magnet U, to actuate said lever, the said stop arresting the rotation of the wheel B and its finger, substantially as and for the purpose specified.

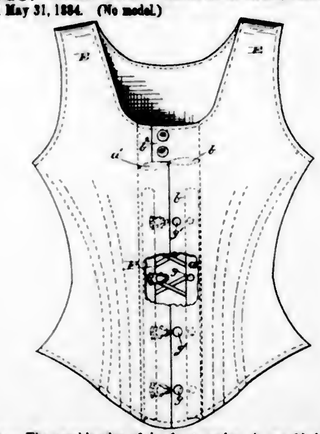
12. The combination of power-shaft F, worm O, secured thereto, worm-wheel P, having finger Q, lever R, having pivoted stop S, having feet S', spring T, acting on said stop, and electro-magnet U, to actuate said lever, the said stop arresting the rotation of the wheel B and its finger, substantially as and for the purpose specified.

13. The combination of shaft F, worm O, worm-wheel P, lever R, having pivoted stop S, having feet S', and spring T, substantially as and for the purpose specified.

14. The combination of pivoted press-lever C with paper-stop lever C', adapted to be rocked to clamp or unclamp the free end of paper by the said press-lever, according as it is raised or allowed to fall, substantially as and for the purpose specified.

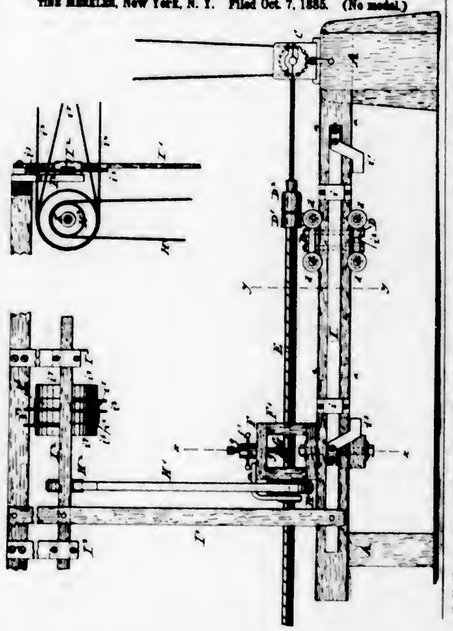
15. The combination of pivoted press-lever C, having pin *c*, with paper-stop lever C', having lugs C^3, adapted to clamp or unclamp the free end of paper with each movement of the press-lever, according as it is raised or allowed to fall, substantially as and for the purpose specified.

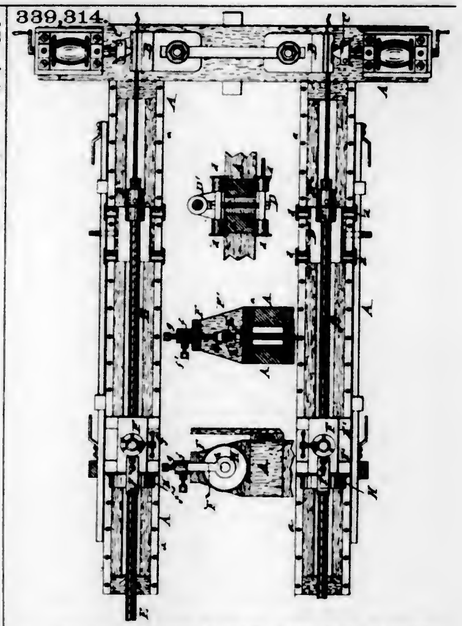
339,313. CORSET-WAIST. CHARLOTTE A. MOSER, Jackson, Mich.
Filed May 31, 1884. (No model.)



Claim.—The combination of the front section, A, provided with the pocket *a*, having slits in its front edge, the steel F, provided with loops *f*, which project through the slits in the pocket *a*, the front section, B, provided with pocket *b*, and the steel G, provided with pins *g*, which project through openings in pocket *b*, said pockets *a* and *b* being wider than the steels F and G and their projections *f* and *g*, whereby they (the steels) may be removed, substantially in the manner described.

339,314. MACHINE FOR TURNING WOODEN SPIRALS. VALENTINE MERKLEN, New York, N. Y. Filed Oct. 7, 1885. (No model.)





Claim.—1. In a machine for turning wooden spirals, the combination of a guide-rest, a rotary cutter the axis of which is located at an angle to and in the same plane with the axis of the guide-rest, and the cutting tool or tools of which operate upon the stock opposite said guide-rest, a rotary feed-rod, and mechanism, substantially as described, for imparting traversing motion to the feed-rod.

2. In a machine for turning wooden spirals, the combination of a laterally-adjustable guide-rest, a laterally-adjustable rotary cutter the axis of which is arranged at an angle to and in one plane with the axis of the guide-rest, the cutting tool or tools of which operate upon the stock opposite said guide-rest, and a rotary and longitudinally-traversing feed-rod having a chuck for the blank.

3. In a machine for turning wooden spirals, the combination of a guide-rest, a rotary cutter the axis of which is located at an angle to and in the same plane with the axis of the guide-rest, the cutting-edges of said cutter being endwise of said axis and operating upon the stock opposite said guide-rest, a rotary feed-rod, and mechanism, substantially as described, for imparting traversing motion to the feed-rod.

4. In a machine for turning wooden spirals, the combination of a laterally-adjustable guide-rest, a laterally-adjustable rotary cutter the axis of which is arranged at an angle to and in one plane with the axis of the guide-rest, the cutting-edges of said cutter being endwise of its axis and operating upon the stock opposite said guide-rest, and a rotary and longitudinally-traversing feed-rod having a chuck for the blank.

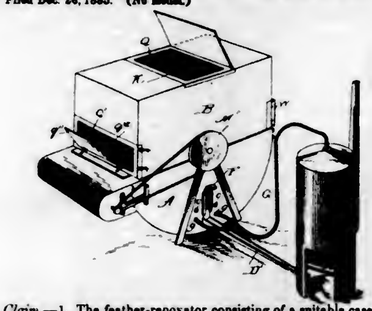
5. The combination of a guide-rest, a rotary cutter arranged at right angles to said guide-rest, a rotary feed-rod having a chuck for the blank, mechanism, substantially as described, for imparting a traversing motion to the feed-rod, and a carriage for supporting the front end of the feed-rod, substantially as set forth.

6. The combination of a guide-rest, a rotary cutter arranged at right angles thereto, a feed-rod, a carriage supporting the front end of the feed-rod, mechanism, substantially as described, for imparting simultaneously a rotating and a traversing motion to the feed-rod, and a lug against which said carriage strikes, whereby the motion of the feed-rod is automatically stopped when the spiral is finished.

7. The combination of a supporting-frame having guideways, a guide-rest, a rotary cutter at right angles to the guide-rest, a rotary feed-rod having a longitudinal and a spiral groove, a carriage supporting the front end of the feed-rod, a motion-transmitting pulley splined to the feed-rod, and a fork engaging the spiral groove of the feed-rod, whereby a rotary and traversing motion is imparted to the same, substantially as set forth.

8. The combination of a supporting-frame, a guide-rest, a rotary cutter arranged at right angles to the guide-rest, a rotary and longitudinally-traversing feed-rod, a carriage supporting the front end of the feed-rod, a belt-shifting rod having lugs operated by said carriage for automatically stopping the feed-rod, substantially as set forth.

339,315. FEATHER-RENOVATOR. CARL MORITZ, Dubuque, Iowa.
Filed Dec. 26, 1885. (No model.)



Claim.—1. The feather-renovator consisting of a suitable case having bottom *t*, and steam or air chamber beneath said bottom, combined with a movable perforated bottom, C, curved to conform to the shape of the bottom of the renovator, and agitating-arms, substantially as described.

2. In combination with the renovator-chamber, the fan-chamber and fan, the air-passage from the air-chamber to the renovator-chamber, the steam-chamber T, and the air passage or chamber V, substantially as described.

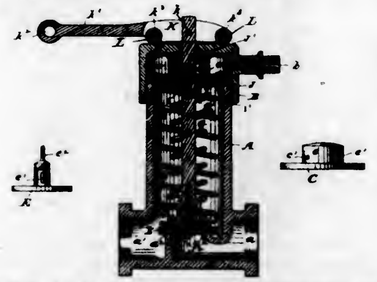
3. In combination, the renovator-chamber, the bottom C, the steam-chamber T, the air-passage V, valves at R', R^3, and *i*, and the fan and fan-chamber, all substantially as described.

4. In combination, the renovator-chamber having a suitable fan and passages for the air, a perforated movable bottom, C, chambers beneath the same for air and steam, suitable pipes connecting with said chambers, openings Q Q' Q^3, and removable covers and screens therefor, substantially as described.

5. In combination with the renovator-chamber, the fan and air-passages leading from the fan to the renovator-chamber, steam-chamber, and an air-passage contiguous to the steam-chamber leading to the fan-chamber, substantially as described.

6. In a feather-renovator, a removable perforated bottom, C, having hinged ends adapted to attach the bottom to its seat and to connect it to the revolving arms, substantially as described.

339,316. STOP AND WASTE COCK. DANIEL J. MURPHY and HAMILTON F. LOW, Manchester, N. H.; said Low assignor to said Murphy.
Filed Sept. 14, 1885. (No model.)



Claim.—1. In a stop and waste cock, the combination, with a valve-stem having a concentric chamber running lengthwise of the same, and inlet and outlet orifices connecting therewith for the passage of waste water, and a spring exerting a downward pressure thereon, of a disk-valve movably connected to the lower end of said valve-stem, and a spring exerting a downward pressure thereon, all constructed and operating in the manner and for the purpose set forth.

2. In a stop and waste cock constructed substantially as described, the combination, with a valve-stem and a spring exerting a downward pressure thereon, of a disk-valve movably connected to the lower end of said valve-stem, and a spring exerting a downward pressure thereon, and suitable waste-passages adapted to close automatically with the upward motion of said valve-stem and before the admission of water to said cock, as and in the manner shown and described.

339,317. ROLLER-SKATE. JOHN A. PEER, Brooklyn, N. Y., assignor of one-half to Thompson & Norris, same place. Filed Apr. 20, 1885. (No model.)

Claim.—1. In a skate, the combination of rollers connected to a bearing-piece, E, the inclined bracket or projection B, the inclined surfaces *e f*, and the center-pin or screw P, passing loosely through the bearing-piece E and engaging with the bracket or projection B, substantially as specified.



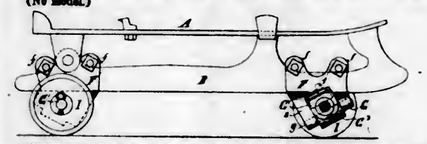
2. In a skate, the combination of rollers connected to a bearing-piece, E, the inclined bracket or projection B, the inclined surfaces *e f*, the block H, and the center-pin or screw P, passing loosely through the bearing-piece E and engaging with the bracket or projection B, substantially as specified.

3. In a skate, the combination of rollers connected to a bearing-piece, E, the inclined bracket or projection B, the inclined surfaces *e f*, the spheroidal protuberance *c*, the flange *h*, the cavity *i*, the center-pin or screw P, passing loosely through the bearing-piece E and engaging with the bracket B and the block H, substantially as specified.

4. In a skate, the combination of rollers connected to a bearing-piece, E, the inclined bracket B, the inclined surfaces *e f*, the spheroidal protuberance c, the flange *h*, the flange *d*, the cavity *g*, and the center-pin P, the ends of the flange *d* constituting stops to limit the lateral movement of the bearing-piece E, substantially as specified.

5. In a skate, the combination of rollers connected to a bearing-piece, E, the inclined bracket or projection B, the inclined surfaces *e f*, the spheroidal protuberance *c*, the flange *h*, the flange *d*, the cavity *g*, the center-pin or screw P, the pin or screw K, and the block J, for resisting the lateral movement of the bearing-piece E, substantially as specified.

339,318. ROLLER-SKATE. JOHN A. PEER, Brooklyn, N. Y., assignor of one-half to Thompson & Norris, same place. Filed Jan. 18, 1886. (No model.)

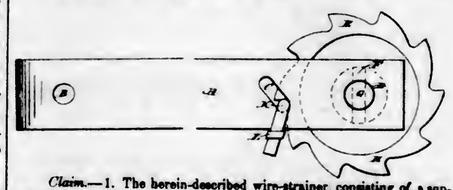


Claim.—1. In a skate provided with a runner, the combination of bearing-pieces formed of single pieces of metal, and comprising the loop, G, lugs *f*, and laterally-extending flanges, *j*, of axles supporting rollers and springs or cushions between said axles and the flanges *j*, substantially as specified.

2. In a skate, the combination, with rollers journaled upon axles, of bearing-pieces for supporting the same, consisting of single pieces of sheet metal stamped and bent into the required shape, cases or shells mounted upon said axles independent of said bearing-pieces and extending into spaces formed therein, and springs or cushions within said cases or shells, substantially as specified.

3. In a skate, the combination, with rollers journaled upon axles, of bearing-pieces for supporting the same, consisting of single pieces of sheet metal stamped or bent into the required shape, cases or shells mounted upon said axles independent of said bearing-pieces and extending into spaces formed therein, springs or cushions within said cases or shells, and locking-pins extending through said bearing-pieces and cases or shells for locking the axles against endwise movement, substantially as specified.

339,319. WIRE-STRETCHER. JOHN REID, Dunedin, Otago, New Zealand. Filed Sept. 17, 1885. (No model.) Patented in New Zealand Jan. 24, 1885, No. 1,966; in Victoria July 15, 1885, No. 4,140; in South Australia July 29, 1885, No. 563; in New South Wales Aug. 4, 1885; in Tasmania Aug. 22, 1885, No. 366; in England Aug. 31, 1885, No. 10,286, and in Queensland Oct. 5, 1885, No. 28.

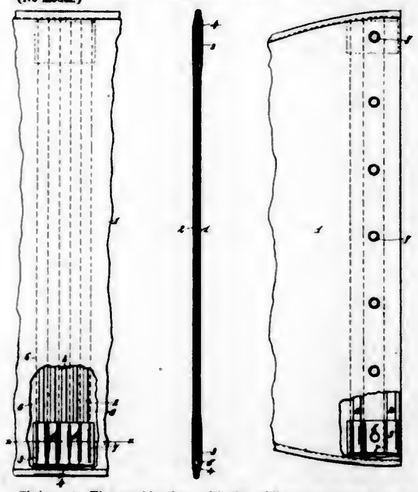


Claim.—1. The herein-described wire-strainer, consisting of a supporting-frame provided in its side bars with oblique slots, and a spool or windlass having ratchet-flanges E at opposite ends journaled in said side bars of the frame, in combination with a locking-pin having its bearings in said slots O, and adapted to engage the teeth of the ratchet-flanges, substantially as and for the purpose specified.

2. The herein-described wire-strainer, consisting of a supporting-frame provided in its side bars with oblique slots, and a spool or windlass having ratchet-flanges E at opposite ends journaled in said side bars of the frame, in combination with a locking-pin, K, passing through the oblique slots C, and having its ends bent at right angles, substantially as and for the purpose specified.

3. The herein-described wire-strainer, consisting of the forked frame A, having holes B at one end, and oblique slots C near its opposite end, and a spool or windlass having a hole, F, and ratchet-flanges at opposite sides journaled in the forked end of the frame in proximity to the slots C, in combination with the locking-pin K, having its bearings in slots C, and adapted to engage the teeth of the ratchets F, and an elastic device to return said pin into its normal position when displaced, as set forth.

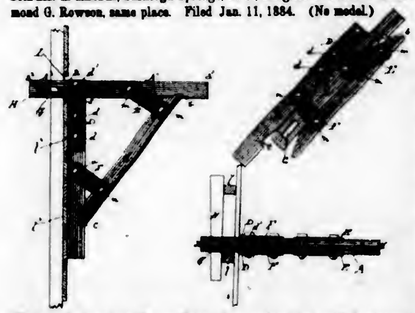
339,320. CORSET. JAS. R. RHEUBOTTOM, Woodsport, N. Y., assignor of one-half to Frank M. Mack, same place; Homer E. Rheubottom administrator of said James R. Rheubottom, deceased. Filed Aug. 25, 1885. (No model.)



Claim.—1. The combination, with the stiffeners or stays of a corset, of a clasp or shield consisting of a doubled strip of thin metal formed with a series of elongated pockets, in which the ends of the stiffeners or stays are loosely arranged to slide longitudinally therein independent of any movement of the clasp or shield, substantially as described.

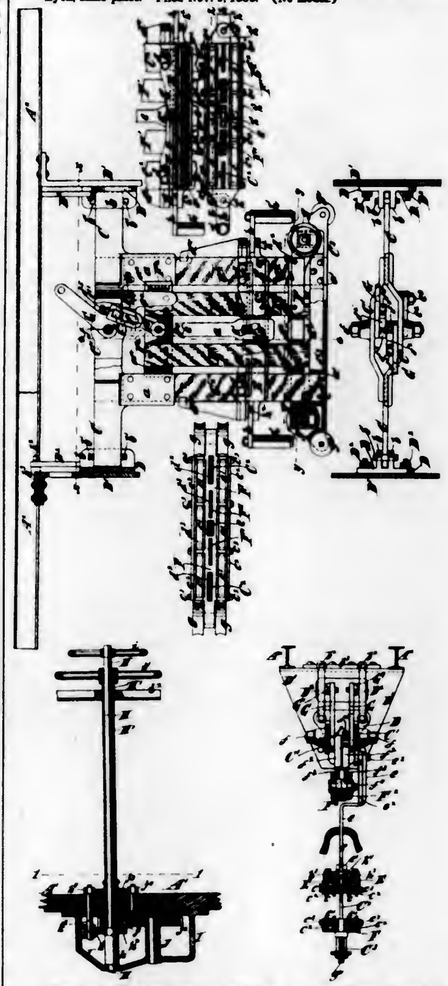
2. The combination, with a corset and its stiffeners 2, of the clasps 3, securely stitched in a stationary position to the corset, and having a series of elongated pockets, 5, closed at one end, for receiving the ends of said stiffeners, substantially as described.

339,321. MECHANIC'S AND BUILDER'S SCAFFOLD-BRACKET. STEPHEN E. RHODES, Saratoga Springs, N. Y., assignor of one-half to Edmond G. Rowson, same place. Filed Jan. 11, 1884. (No model.)



Claim.—In brackets for scaffolds, the combination, with horizontal bar A, provided with notches *b* and *b'* and keying perforations G, and the vertical bar B, having notch *c*, and suspended from notch *b'* in bar A by rigid straps having opening I between, of a bracing-bar having its ends corresponding with notches *b* and *c* in bars A and B, and connected with the same by pivoted straps E and F, substantially as and for the operations and purposes set forth.

339,322. TRACTION ROPE RAILWAY. JOHN H. ROBERTSON and JULIUS JOHNSON, New York, N. Y.; said Julius Jonson assignor to Lewis Lyon, same place. Filed Nov. 9, 1885. (No model.)



Claim.—1. The combination, with a car, of a grip-frame extending lengthwise thereof and suspended from the car by pairs of links, whereby provision is afforded for its lateral movement without swinging from its vertical position, substantially as herein described.

2. The combination, with a car and a grip-frame, of hangers wherein the frame is supported at opposite ends, and plates depending from the car, between which the hangers and grip-frame may move laterally, and by which the hangers and frame are supported in a direction lengthwise of the car, substantially as herein described.

3. The combination, with a car and grip-frame, of hangers at opposite ends of the frame suspended by pairs of links D^2, and the plates D', for guiding the hangers in their lateral movement, and sustaining them against movement lengthwise of the car, substantially as herein described.

4. The combination, with a car and a grip-frame, of hangers at opposite ends of the frame, plates D', guiding the hangers in their lateral movement and preventing their movement lengthwise of the car, and pairs of links D^2, suspending the hangers and swinging on pivots supported by the plates D', substantially as herein described.

5. The combination, with a grip-frame comprising the head-piece C, of hangers at opposite ends thereof having forks or pairs of flanges open at top and bottom and between which the head-piece C is supported by pins or bolts, substantially as herein described.

6. The combination, with a grip-frame comprising the head-piece C, of the hangers D, having pairs of flanges *b*, receiving the piece C between them, and pins or bolts *b'*, inserted through the flanges above and below the piece C, substantially as herein described.

7. The combination, with a car and the plates D' depending therefrom, of the hangers D, constructed with the pairs of flanges *b*, and guided by the plates D' in their lateral movements, the pairs of links D^2, by which the hangers are suspended, and the grip-frame comprising a head-piece, C, secured at the ends by pins or bolts between the pairs of flanges *b*, substantially as herein described.

8. The combination, with a car and a stationary grip-frame and fixed jaws, of a movable frame fitted thereto and carrying a movable jaw, bell-crank levers connected with operating devices at opposite ends of the car, and slotted links or rods forming a connection between the bell-crank levers and the movable grip-frame, substantially as herein described.

9. The combination, with a car and a fixed grip-frame and fixed jaw, of a movable frame carrying a movable jaw, bell-crank levers connected with operating devices at opposite ends of the car, and links or rods f^3, pivoted to the movable frame and having a slotted connection, f^4, with the bell-crank levers, substantially as herein described.

10. The combination, with a car and a fixed grip-frame and fixed jaw, of a movable grip-frame carrying a movable jaw, bell-crank levers G, connected with operating devices at opposite ends of the car and having square blocks f', pivoted to their arms, and the links or rods f^3, pivoted in the movable grip-frame and slotted or yoked at f^4, to receive the blocks f', substantially as herein described.

11. The combination, with a car and fixed grip-frame and fixed jaw, of a movable grip-frame carrying a movable jaw, bell-crank levers G, connected with operating devices at opposite ends of the car, and the links or rods f^3, forming a connection between the movable grip-frame and said lever, constructed with slots or yokes f^4, and provided with adjusting-screws f^5, substantially as herein described.

12. The combination, with hollow jaw-holders provided with removable cap-plates on their sides and with internal hubs or bosses, of renewable jaws having their ends notched or recessed to fit said hubs or bosses and held laterally in place by said cap-plates, substantially as herein described.

13. The combination, with a fixed grip-frame comprising a base portion provided with rollers for moving cable-supporting sheaves arranged in their path, and a fixed upper jaw secured to said frame, of a movable lower jaw fitted to slide on the fixed frame and carrying at the ends cable-supporting pulleys, substantially as herein described.

14. The combination, with the fixed frame composed of the head-piece C, the parallel uprights C^2, and the base portion C^3, of the fixed upper jaw-holder secured to the uprights C^2, the lower jaw-holder, F, mortised to slide on the uprights C^2, and the cross-head F^2, and connecting-bars F', for operating the jaw-holder F, substantially as herein described.

15. The combination, with the fixed frame composed of the head-piece C, the uprights C^2, and the base portion C^3, of the movable frame composed of the lower jaw-holder, F, the bars F', and cross-head F^2, the jaw-holder F being secured to the lower ends of the plates F' and mortised to slide on the uprights C^2, and the upper fixed jaw-holder, E, secured to the uprights C^2, and mortised to receive the plates F', substantially as herein described.

16. The combination, with a grip-frame, of bell-crank levers pivoted to swing horizontally near opposite ends thereof, and provided with rollers or projections for engaging one or other of two cables, of a vertically-movable bar having an inclined slot, a cross bar or pin fitting said slot, and rods connecting opposite ends of the said bar or pin with said bell-crank levers, substantially as herein described.

17. The combination, with the fixed grip-frame and the fixed upper jaw-holder secured thereon, of the bell-crank levers A, fulcrumed to swing horizontally in opposite ends of said holder, and provided with projections or rollers h', for engaging a cable, the vertically-movable bar *e*, guided in said holder, and having an inclined slot, *e'*, and the cross bar or pin h^4, fitting said slot and connected at opposite ends by rods h^3, with the levers h, substantially as herein described.

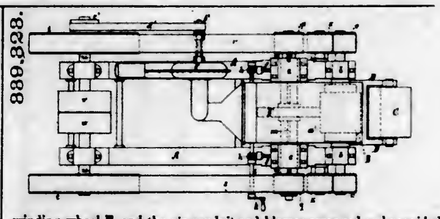
18. The combination, with the inner spindle, H, and outer tubular spindle, H', of the grip-operating windlass or wheel J, geared to the tubular spindle H', the brake-operating windlass or wheel *k* on the spindle H, and locking devices for both spindles, substantially as herein described.

19. The combination, with a fixed grip-frame provided with a fixed jaw, of a movable grip-frame carrying a movable jaw and comprising at the upper end a cross-head fitted to and sliding upon the fixed frame, and anti-friction rollers interposed between the cross-head and the fixed frame, substantially as herein described.

339,323. MACHINE FOR SHAVING SKINS. JOHN ROOD, Salem, Mass., assignor, by mesne assignments, to Reed & Vaughan, same place. Filed Aug. 17, 1885. (No model.)

Claim.—1. The machine substantially as described, consisting of the cutter-cylinder B, having a series of knives, the presser-roller C, the

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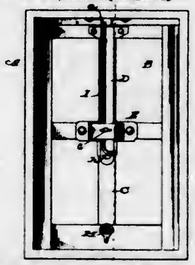


grinding-wheel F, and the air-conduit and blower arranged and provided with mechanism, substantially as explained, for operating such cylinder, roller, wheel, and blower, as set forth.

2. The cutter-cylinder having the elastic or spring knives, as described, in combination with the presser-roller, the grinding-wheel, and the air-conduit and blower arranged and provided with mechanism, substantially as explained, for operating such cylinder, roller, wheel, and blower, as set forth.

3. The cutter-cylinder having the elastic or spring knives, as described, arranged so that those of each row shall break joints with those of the next preceding row, in combination with the presser-roller, the grinding-wheel, and the air-conduit and blower arranged and provided with mechanism, substantially as explained, for operating such cylinder, roller, wheel, and blower, as set forth.

339,324. SASH-FASTENER. ALLISON M. ROSCOE, Du Bois, Pa., assignor of two-thirds to George D. Hamer and Emanuel Kantz, both of same place. Filed Jan. 7, 1886. (No model.)



Claim.—1. The combination of a sliding sash, a bar having a longitudinal serrated portion and a longitudinal smooth portion, a keeper having corresponding serrated and smooth portions, a spring fastened to the keeper and bearing on the smooth portion of the bar to keep the serrations of the bar and keeper normally out of engagement, and a set-screw to overcome the tension of the spring and cause the serrated portion of the bar to interlock with the serrated portion of the keeper, substantially as described, and for the purposes specified.

2. The combination of a sliding sash, a bar having a longitudinal serrated portion, and a keeper provided with a corresponding serrated portion, the aperture through the keeper being sufficient to permit the disengagement of the serrated parts of the bar and keeper, substantially as and for the purposes set forth.

3. The combination of the upper and lower sash, a bar secured to the upper sash, a keeper fastened to the lower sash to engage the bar, and hooks attached to the lower sash to engage perforations in the bar when the keeper is not in convenient reach, substantially as set forth.

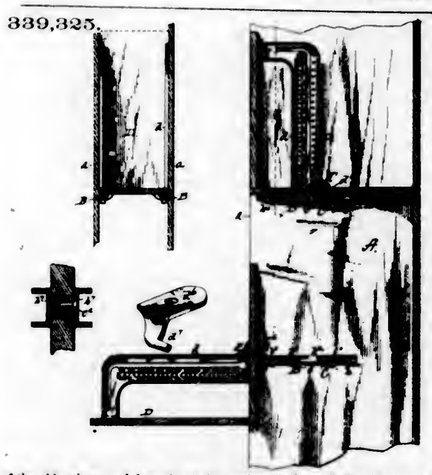
339,325. FILE-CASE. JOSEPH W. ROUTZAHN, Washington, D. C., assignor to M. J. Wine, same place. Filed June 27, 1885. (No model.)

Claim.—1. The combination, with the vertical walls of a file-case having seats formed therein, of the suspension-bars, as B, having side lugs formed thereon to set in the seats in the said walls, and perforations extended through the side lugs, one of said perforations being provided with interior screw-threads, and a fastening-screw projected through both of said side lugs, whereby both suspension-bars are held to the case by a single screw at that point, substantially as described.

2. In combination with the front and end boards of a file-box, the side pieces, *d*, formed with vertical bracket-arms *d'*, projected above the upper edge of the side piece, and having an inwardly-turned perforated side ear, d^2, at their upper ends, the suspension-lugs d^3, and fastening-bolts d^4, projected through the ears of the bracket, the end boards, and the suspension-lugs, substantially as described.

3. In combination with the front and end boards of a file-box, said end boards having seats formed therein to receive the ears of the side pieces, the side pieces formed with vertical bracket-arms projected above the upper edge of the side piece, and having perforated side ears projected from the upper ends of the bracket-arms and set at right angles to the side pieces, with their inner face extended beyond the end face

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of the side piece, and fastening-bolts projected through the side ears of the bracket, the end board, and the suspension-lugs, substantially as described.

4. In combination with the suspension-bar of a file-case, the adjustable stop-plate, substantially as described, and for the purpose stated.

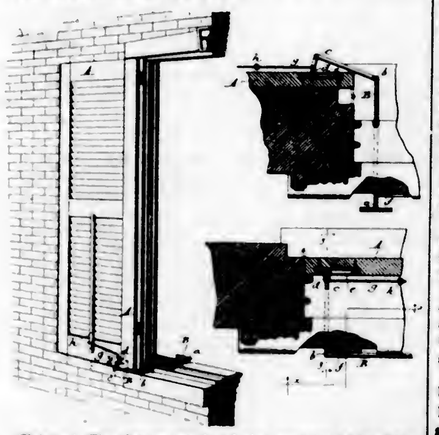
5. In combination with a file-case, the suspension-bar B, formed with the perforated lug b^1, and cut-away portion b^2, and an adjustable stop-plate, C, having horizontal slot c', all arranged and combined substantially as described, and for the purpose stated.

6. In combination with the vertical walls of a file-case, the suspension-bars arranged on opposite faces of said wall, and formed with perforated lugs at their forward ends and perforations at their rear ends, and cut-away parts in the horizontal flange thereof, the adjustable sliding plates, C, having central slots, and clamping-screws projected through both suspension-bars and the partition of the file-case, substantially as described.

7. In combination with a file-box provided with suspension-lugs on the end boards thereof, and a file-case provided with suspension-bars having horizontal flanges with a portion cut away, a stopping-plate or stud adjustably secured to the suspension-bars of the case, whereby the position of the file-boxes in the case is arranged and determined, substantially as described.

8. The improved cross-bar E, formed with a projection, e^4, extended from the inner face of the finger-piece e^3, substantially as described, and for the purpose stated.

339,326. BLIND-OPERATING DEVICE. DAVID H. ROYER, Millmont, Pa. Filed Aug. 24, 1885. (No model.)

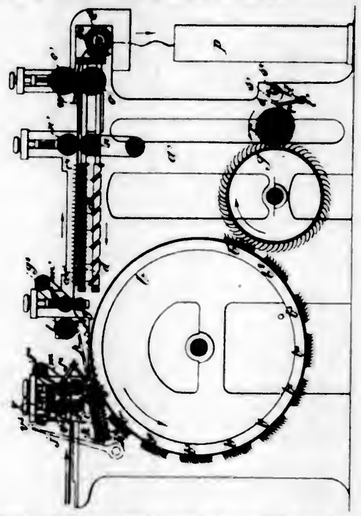


Claim.—1. The shutter-operating device consisting of the sliding rod provided with joints *b* and *c*, the ear *d*, jointed to its extremity, and the slotted plate *e*, connected to the ear *d*.

2. In combination with the swinging blind and the window-sill, the sliding and rotating rod B, provided with joints *b* and *c*, the ear *d*, arranged to slide horizontally on the blind, and the arm *g*, applied at one end as a pivotal connection between the rod and the ear *d*, and connected at its opposite end to the slat A, whereby the arm is permitted to accommodate itself to the changing position of the rod with reference to the blind.

339,327. MACHINE FOR COMBING RHEA, &c. THÉODORE E. SCHIEPPER, Rouennes, Department of Seine-et-Oise, France. Filed Sept. 24, 1885. (No model.)

Brief.—A certain length of fibers is passed through the feed-rolls, which then stop. The ends of the fibers fall upon and are combed by a combing-cylinder armed on a determinate portion of its periphery with cards of progressively-increasing fineness, the first serving merely to open and the last to comb. When the last card has passed through the fibers, a reciprocating table carries the ends of the fibers forward beneath a conveying-roller, which assists in conveying them to delivery-rollers, whence they are carried by gill-bars to drawing-rollers, from which they are passed into a can. When the table moves forward, the feed-rolls begin to revolve. A beater is then caused to fall upon the fibers thus extended from feed to delivery rolls, and the ends thereby allowed to fall upon the cylinder, when the operations are resumed.



Claim.—1. The continuously-rotating combing-cylinder provided on a portion only of its periphery with teeth gradually increasing in fineness, as described, in combination with the intermittently-operating feed and delivery mechanisms and the beater, under the arrangement and for operation substantially as hereinbefore described.

2. The combination of the continuously-rotating combing-cylinder provided with teeth on a portion only of its periphery, the intermittently-operating feed and delivery mechanisms, a beater or breaker whereby the sliver or web of fibers extending between the said delivery and feed rolls is intermittently separated or divided, and the intermittently-reciprocating carrier-table, these elements being arranged and having the mode of operation substantially as hereinbefore set forth.

3. The combination, with the feed mechanisms and the delivery mechanisms, of the intermittently-reciprocating carrier-table, substantially as and for the purposes hereinbefore set forth.

4. The combination of the feed and delivery rolls, the intermittently-reciprocating carrier-table, the conveying-roller, and mechanism for actuating said parts, substantially as and for the purposes hereinbefore set forth.

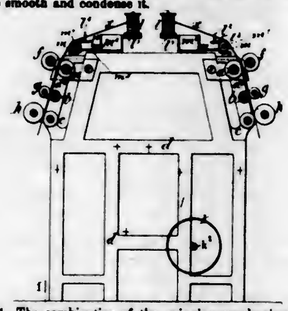
5. The continuously-rotating combing-cylinder armed on a portion only of its periphery with teeth, and the intermittently-operating feed and delivery mechanisms, in combination with the beater, the intermittently-reciprocating carrier-table, and the conveying-roller, substantially as and for the purposes hereinbefore set forth.

6. The combination, with the intermittently-operating feed and delivery rolls and the continuously-rotating combing-cylinder armed on a portion only of its periphery with teeth, of the drawing-rolls, and the gill-bars located between the said rolls and the delivery-rolls, together with mechanism for imparting appropriate movement to said parts, under the arrangement and for operation substantially as hereinbefore set forth.

7. The continuously-rotating combing-cylinder armed on a portion only of its periphery with teeth gradually increasing in fineness, as described, in combination with the intermittently-operating feeding, delivery, and drawing mechanisms, these elements being arranged and timed in their movements relatively to one another substantially as and for the purposes hereinbefore set forth.

339,328. MACHINE FOR SPINNING RHEA, &c. THÉODORE E. SCHIEPPER, Rouennes, Department of Seine-et-Oise, France. Filed Sept. 24, 1885. (No model.)

Brief.—Between the devices for softening the fiber and the spinning mechanism are placed three pairs of rolls. The drawing of the roving is performed by the first and third pairs, while the second pair revolve by contact with the roving, and serve not only to support the roving, but to smooth and condense it.



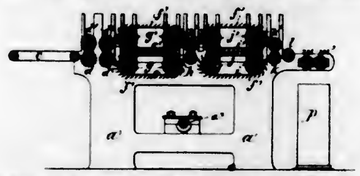
Claim.—1. The combination of the spinning mechanism, the two power-driven drawing-rolls *a c* and their fellow rolls, and the intermediate condensing and carrier rolls revolved by contact with the roving or fiber which passes between them, substantially as and for the purposes hereinbefore set forth.

2. The combination of the spinning mechanism, the two drawing-rolls and their fellow-rolls, the intermediate condensing and carrier rolls revolved by contact with the roving or fiber which passes between them, and the steeping or vaporizing device, whereby the rovings as they are drawn from their spools are steeped and softened prior to the drawing operation, substantially as and for the purposes hereinbefore set forth.

3. The combination, with two pairs of drawing-rolls between which the drawing takes place, of intermediate condensing and carrier rolls revolved by contact with the roving or fiber which passes between them on its way from one to the other pair of drawing-rolls, substantially as and for the purposes set forth.

339,329. MACHINE FOR PREPARING RAMIE, &c. THÉODORE E. SCHIEPPER, Rouennes, Department of Seine-et-Oise, France. Filed Sept. 24, 1885. (No model.)

Brief.—A more perfect drawing and straightening of the fibers is obtained by the arrangement of the parts acting upon them in the order named, to wit, a feeding-apron, two pairs of fluted feed-rolls, two pairs of carding-belts, with intermediate fluted drawing-rolls and final fluted drawing-rolls. Each set of instrumentalities moves at a greater speed than the preceding, whereby a continuous drawing action is secured.

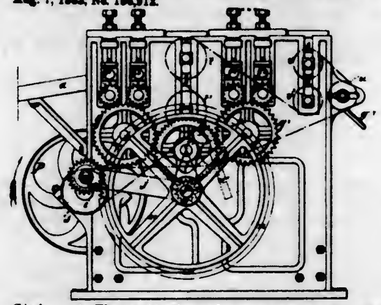


Claim.—1. The combination of the two pairs of fluted or ribbed rolls $d\,d'$ and $d^2\,d^3$, moving at different speeds, as described, so as to exercise a drawing action on the fibers, with the two continuously-moving endless carding-belts $e\,e'$, having a faster rate of movement than that of the terminal pair of said rolls, and mechanism for imparting appropriate movement to the several parts, substantially as and for the purposes hereinbefore set forth.

2. The combination of the two pairs of carding-belts $e\,e'$ and $i\,i'$, the intermediate fluted or ribbed conducting and drawing rolls $h\,h'$, and mechanism for actuating these parts to move at different speeds relatively to one another, substantially as and for the purposes hereinbefore set forth.

3. The combination, substantially as hereinbefore set forth, of the two pairs of rolls $d\,d'$ and $d^2\,d^3$, the two pairs of carding-belts $e\,e'$ and $i\,i'$, the conducting and drawing rolls $h\,h'$, located between said pairs of belts, the final drawing-rolls, $k\,k'$, located beyond the second pair of belts, and actuating mechanism, whereby these parts are speeded relatively to one another, substantially as and for the purposes hereinbefore set forth.

339,330. MACHINERY FOR DECORTICATING RHEA OR RAMIE, NETTLES, &c. THÉODORE E. SCHIEPPER, Rouennes, Department of Seine-et-Oise, France. Filed Sept. 24, 1885. (No model.) Patented in France Aug. 7, 1883, No. 156,912.



Claim.—1. The combination and grouping of the four front and grooved rollers, *b b' b² b³*, the cleaning-brush *c*, the four other grooved rollers, *f f' f² f³*, and the last cleaning-brush, *h*.

2. The means for transmission of motion by wheel-work to the grooved rollers *b b' b² b³* and *f f' f² f³*, which by couples strictly follow the same course and are animated with the same speed, this transmission of motion being moreover characterized by the forward movement imparted to the said grooved rollers being more ample than that of the backward motion, thus producing the progressive to and fro movements of the matter under treatment.

3. The combination of the toothed wheel-work *m*, *n*, *o*, and *k*, producing the rotatory reciprocating movements of the grooved decorticating-rollers.

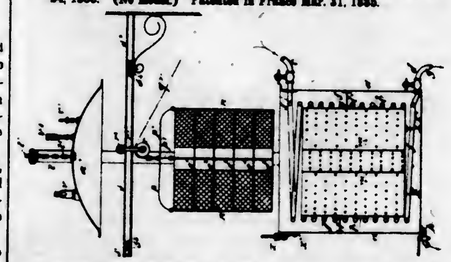
4. The mode of transmitting motion by means of an endless belt to the cleaning-brushes, by which means they move in precisely the same direction and at the same speed.

5. The general construction, consisting of the grooved rollers, eccentric guide-tables, and endless belt, and the arrangement of the frame which admits of the machine being worked at the works or on the very spot where the crop is cut or gathered.

339,331. PROCESS OF TREATING RAMIE OR RHEA, NETTLES, &c. THÉODORE E. SCHIEPPER, Rouennes, Department of Seine-et-Oise, France. Filed Sept. 24, 1885. (No model.) Patented in France Apr. 16, 1885.

Claim.—The new treatment herein set forth, for ramie, &c., and any other textile matter more or less similar—such as rhea, pita, yucca, pine-apple, jute, ananas, guister, flax, hemp, &c.—consisting, successively, first, in submitting the matter previously broken and decorticated to a bath composed of hydrochloric acid; second, in washing it by means of cold water made to flow so as to spread all over the fibers; third, in placing the matter in a basket of galvanized wire-gauze, movable or rolling, in order to bring it and its contents successively into a bath of carbonate of soda or soda salt and spirits of turpentine, heating it with steam. After the bath has been emptied, it is then washed in pure hot water, then washed in running water, then submitted to the action of a hydrochloric-acid bath and to another bath of neutral soap. After drainage the matter is submitted to a fresh washing with soap, after which it is dried or pressed, and is finally placed in the drying-room.

339,332. BOILER FOR TREATING RHEA, RAMIE, &c. THÉODORE E. SCHIEPPER, Rouennes, Department of Seine-et-Oise, France. Filed Sept. 24, 1885. (No model.) Patented in France Mar. 31, 1885.



Claim.—1. The combination of two concentric vats, leaving between them a sufficient space to receive and fill with the requisite lye or other suitable chemical composition.

2. The arrangement of the internal perforated vat and tube, placed vertically with its axis, so as to allow the liquid to circulate freely.

3. The arrangement of a basket with several superposed compartments made of galvanized-iron wire intended for the reception of the fibers to be operated on in each compartment.

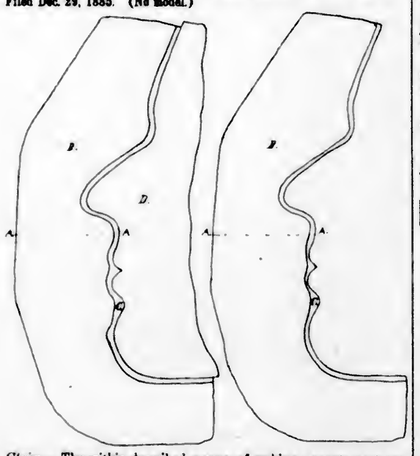
4. The arrangement of the serpentine pipe surrounding the internal vat, in order to heat the liquid mass.

339,333. TRUSS. ADOLPH SCHRÖDER, Rendsburg, Prussia, Germany. Filed Jan. 29, 1886. (No model.)



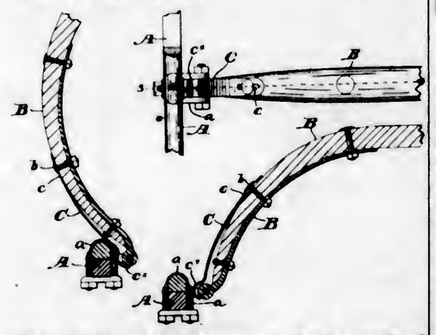
Claim.—The combination, with the front pad and the belt-spring, and the ball-and-socket connection *r s* between the said pad and spring, of the pad-spring attached to the bolt or stud *c* of said connection, and capable of turning thereon to apply its pressure to various parts of the pad, substantially as and for the purpose herein described.

339,334. PROCESS OF MAKING A REVERSED PROFILE-PATTERN OF THE HUMAN FACE. HENRY SEARLE, Washington, D. C. Filed Dec. 29, 1885. (No model.)



Claim.—The within-described process of making a counterpart profile-pattern by introducing soft material between an approximate counterpart and the face and causing it to harden and adhere, all substantially as and for the purposes herein specified.

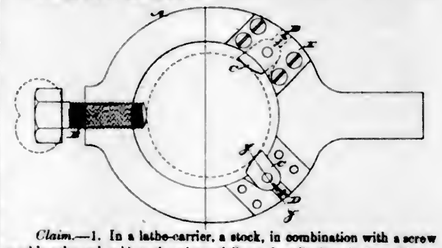
339,335. TONGUE-SUPPORT. THOMAS B. SHIBERT, Wayne, Marion County, Ind., assignor of one-half to Ulysses G. Glidewell, same place. Filed Feb. 10, 1886. (No model.)



Claim.—1. A combined shaft-support and anti-rattler consisting of a spring secured to the top of the shaft and extending back into the coupling at its lower end, said lower end having a curved-out part formed thereon, whereby, when said shafts are raised, the hollow formed at the top of said curved-out part will engage with the corner of the axle-clip, substantially as described, and for the purposes specified.

2. The combination of the shaft or tongue A and the spring C, said spring having a slot, *c*, in its upper end, whereby it may be adjusted, and a curved-out portion, *c'*, on its lower end, whereby it is adapted to act as a shaft support and anti-rattler, substantially as set forth.

339,336. CHUCK. CHARLES W. SEARLE, Philadelphia, Pa. Filed Jan. 23, 1886. (No model.)

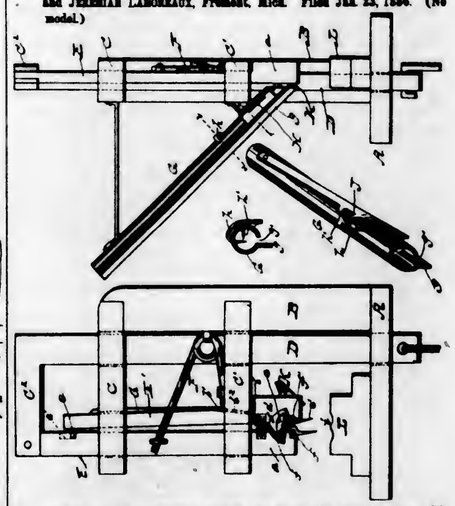


Claim.—1. In a lathe-carrier, a stock, in combination with a screw working through said stock, substantially as described, and pivoted jaws, the latter having working-faces, substantially as and for the purpose set forth.

2. A lathe-carrier having the stock A, the set-screw B, the pivoted jaws C, and spring D, said jaws having working-faces, substantially as described.

3. A lathe carrier or stock having a set-screw working through said stock, pivoted jaws, and springs pressing against said jaws, all combined and operating substantially as described.

339,337. BUTTON-ATTACHING MACHINE. WARREN G. SLATER and JEREMIAH LAMOREAUX, Fremont, Mich. Filed Jan. 23, 1886. (No model.)



Claim.—1. In a button-fastening machine, the combination, with the main guide-frame, of gripping-jaws formed, as described, on vertically-movable stocks, the spring-actuated stock E', independently movable of the stock E, and also movable with it, and the means, as described, for causing the jaw *a'* to close and grip a button and its fastener, substantially as described.

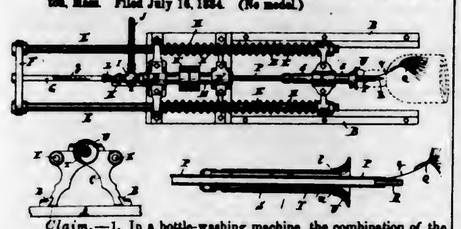
2. The combination, with the vertically-movable angular guide, as described, of the jaw-stock E, pivoted to this bar, the jaw-stock E', having a limited vertical movement independently of the stock E, and also vertically movable with it, the spring between the jaw-stocks, and the closing bevel on the stock E, substantially as described.

3. The combination, with the main frame, constructed as described, of the jaw-stocks recessed and rabbeted, and provided with the spring *b'*, pin *e*, and recess *d'*, and the stock E', having the inclined surface *b*[3] on its rear side, adapted to operate upon the beveled surface *b*[3] of the arm C', whereby the two jaws are brought together in their downward stroke, thereby gripping the fastener and button, as described, and for the purpose specified.

4. In a button-attaching machine, the combination, with the gripping-jaws and clinching-anvil, as described, of the inclined feeding-tube having the slot *g'* and guide-pin *g*, arranged vertically and running parallel with said slot, the spring J, provided with the releasing points or stops *h h'*, entering the perforations in the tube, and the arm K, secured to the jaw-stock *a*, the whole adapted to operate as described, and for the purpose specified.

5. In a machine for fastening buttons to cloth or leather, the combination of the following elements: the main guide-frame, the gripping-jaws and their stocks, actuated as described, a feed-tube, a sheath therefor, from which the tube is removable, a device for regulating automatically the feed of the buttons with their fasteners attached to the said gripping-jaws, and an anvil for clinching the fasteners, all constructed and adapted to operate substantially in the manner and for the purposes set forth.

339,338. BOTTLE-WASHING MACHINE. FRANK J. SNYDER, Boston, Mass. Filed July 16, 1884. (No model.)

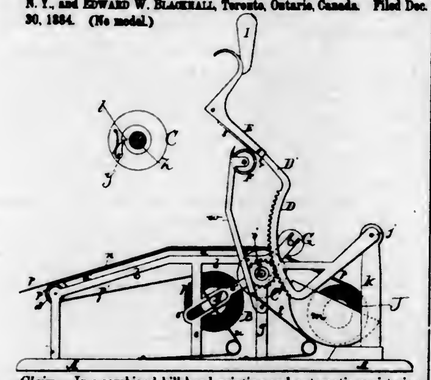


Claim.—1. In a bottle-washing machine, the combination of the guiding and supporting rails B B, the sliding frame C, the rods E E, surrounded by the spiral springs H H, cross-head F, and stationary frames D D', as and for the purpose set forth.

2. The combination, with the rotating shaft M and valve I, of the lever L, pivoted to the bracket K on the standard D, and the cam-bar G, provided with the recess *g*, substantially as and for the purpose set forth.

3. The combination of the sliding frame C, supported upon the rails B B, the rods E E, and surrounding springs H H, the frame D D', hollow shaft M, tube P, provided with the brush Q, sleeve S, cam-bar G, lever L, and the valve I, all arranged and operating substantially as shown and described.

339,339. BILL-HEAD-PRINTING DEVICE. JOHN H. SMITH, Buffalo, N. Y., and EDWARD W. BLACKHALL, Toronto, Ontario, Canada. Filed Dec. 30, 1884. (No model.)



Claim.—In a combined bill-head-printing and automatic registering apparatus, the combination of a paper-dispensing reel, a storing-reel caused to impinge against the roller C by a spring, a printing-stamp mounted on a lever provided with a segment, D, cog *i*, ratchet *l*, spring-pawl *y*, loose shaft A, pressure-roller C, and roller G, all substantially as specified.

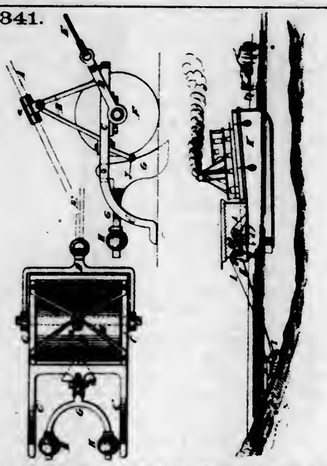
339,340. COMPOSITION OF MATTER FOR PAVING. PAUL C. SMITH, Topeka, Kans. Filed Mar. 7, 1884. (No specimens.)

Claim.—In the preparation of a composition of matter for paving purposes, the combination of crushed stone, coal-ashes, plumbago, soapstone, mica, asphalt, and rosin, substantially in the proportions respectively given.

339,341. APPARATUS FOR LAYING SUBMARINE CABLES UNDERGROUND. HENRY C. SPALDING, Boston, Mass. Filed June 1, 1885. (No model.)

Claim.—1. The combination, with a submarine plow having a guide for a cable, and means for connecting the plow to a ship, of a cable delivery or paying-out apparatus placed on the ship and provided with means for regulating the tension of the cable between the ship and plow, essentially as set forth.

339,341.



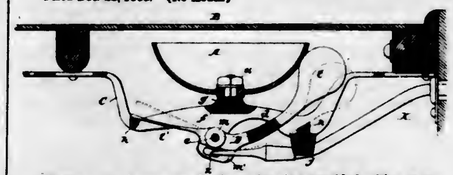
2. A submarine plow consisting of a frame and means for connecting the same to a ship, in combination with a pivoted blade or plow-share arranged to engage the earth and to yield rearwardly and upwardly on encountering extraordinary obstacles, essentially as set forth.

3. A submarine plow consisting of a frame and means for connecting the same to a ship, in combination with a pivoted blade or plow-share having weighted arms extending rearwardly therefrom, substantially as described.

4. A submarine plow consisting of a body or frame and means for connecting the same to a ship, in combination with a pivoted share having weighted arms extending rearwardly from the same, and a roller or rollers journaled in the frame for supporting the same, and the tail-pieces C' C', which, with the roller, form means for regulating the depth of the furrow, as set forth.

5. The combination, with the frame of a submarine plow, of a pivoted blade or share, and a tube or guide for a cable pivoted to the frame independently of the plow, substantially as described.

339,342. CAR GONG-BELL. JOHN STEPHENSON, New York, N. Y. Filed Dec. 23, 1885. (No model.)



Claim.—1. A car-gong having a housing provided with a cross-bar, a hammer hung on an axis about midway of the length of its helve, the section of the helve remote from the hammer-head forming a spring, and the tail end of said spring being arranged to make contact with said cross-bar, as and for the purpose set forth.

2. A car-gong having at either side of its helve a wing or arm extending outward laterally, provided with an eye or other convenience at the end for attaching the pull-cord in a plane above or below the plane of the axis of the helve, substantially as and for the purpose described.

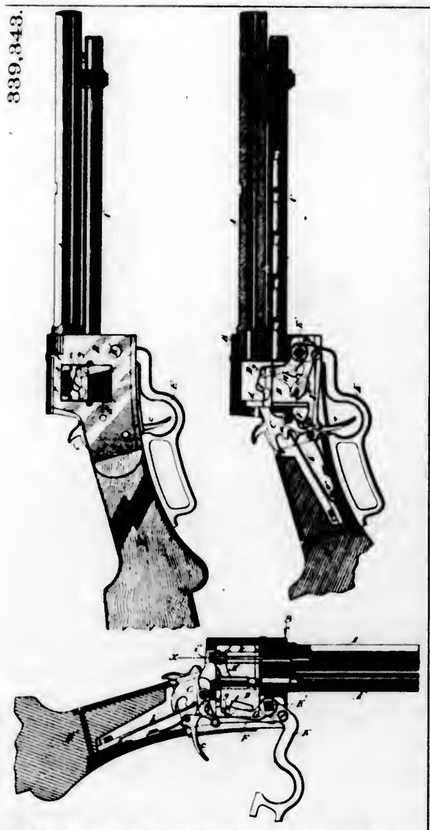
3. A car-gong provided with a housing having a cross-bar, a cushion of flexible material supported by the cross-bar, and a hammer the helve of which is pivotally connected to the housing and adapted to rest upon said cushion when the gong is not in operation, as and for the purpose set forth.

4. The combination, in a car-gong, of a housing provided with a cross-bar, a bell, and a helve pivoted in said housing and terminating at one end in a hammer-head and at the opposite end in a spring-tail, arranged to make contact with the cross-bar when the gong is operated, and an elastic cushion, *k*, substantially as set forth.

339,343. MAGAZINE-GUN. I. N. PHELPS STOKES, New York, N. Y. Filed Dec. 7, 1885. (No model.)

Claim.—1. In a magazine-gun, the combination, with a breech-block capable of a movement at right angles to the barrel, and adapted to close the breech when in its highest or firing position, of a lever pivoted to the breech-case in position to be turned or operated by hand, an arm operated by said lever and engaging with a slot in the side of the breech-block, the said slot being formed substantially at right angles to

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the movement of the arm or lever and while the extractor or injector is operating, as herein set forth.

5. The combination, in a magazine-gun, with a vertically-movable breech-block adapted, when in its highest position, to close the breech, and provided with a slot in its side, of an arm or lever pivoted within the breech-case and engaging with the slot, which is so formed as to cause an intermittent movement to be imparted to the breech-block by a continuous movement of the lever, a second lever placed on the opposite side of the breech-block, an extracting and injecting device operated thereby, and a hand-lever without the breech-case connecting with and operating the two levers, these parts being constructed and arranged for operation in substantially the manner set forth.

6. The combination, in a magazine-gun, with a breech-block adapted to be moved vertically in the breech-case and in its highest position to close the breech, of an arm or lever engaging with a slot in the side of the breech-block, a guide supported in the breech-case, an extractor and injector arranged to slide therein, an arm or lever for operating the said extractor and injector, and a hand-lever operatively connected with the two arms or levers, all as set forth.

7. A breech mechanism for magazine-guns, consisting of the following devices combined for operation in the manner set forth, to wit: a vertically-movable breech-block adapted in its highest position to close the breech, and having a slot, substantially as described, in one of its sides, an extractor and injector arranged to slide in a guide placed beside the breech-block and in line with the bore or chamber, a rock-shaft in the lower forward part of the breech-case, a lever or arm connected therewith and engaging with the slot in the breech-block, a system of levers operated by the rock-shaft and connecting with the extractor and injector, and a hand-lever without the breech-case for imparting movement to the rock-shaft, all as set forth.

8. A breech mechanism for magazine-guns, consisting of the following instrumentalities combined for operation in the manner set forth, to wit: a breech-block arranged to move vertically in the breech-case and having a slot in one of its sides, an extractor and injector arranged to slide in a guide placed beside the breech-block and in line with the bore or chamber, a rock-shaft in the lower forward part of the breech-case, an arm or lever rigidly connected therewith and engaging with the slot in the breech-block, a lever connected with the extractor and pivoted in the lower part of the breech-case, an arm or lever operated by the rock-shaft and connected with the extractor-lever, whereby a movement of the rock-shaft is caused to move the extractor and injector in its guide, and a lever without the breech-case for imparting movement to the rock-shaft, as described.

9. In a magazine-gun, the combination, with the vertically-movable breech-block and mechanism for operating the same, consisting of a hand-lever and rock-shaft operating an arm that engages with a slot in the side of the breech-block, of an extractor and injector arranged to move in a guide on one side of the breech-block and in line with the barrel, a bifurcated lever pivoted below the guide and engaging with the extractor, and a bifurcated connecting arm or lever operated by the rock-shaft and hand-lever and engaging with the extractor-lever, as and for the purpose set forth.

10. The combination, with the breech-block arranged to move vertically within the breech-case and to close, when in its highest position, the breech, of a rock-shaft below and in front of the breech-block, an arm or lever carried by said rock-shaft and entering or engaging with a slot in the side of the breech-block, which slot has such shape that for a certain time during the movement of the lever or arm the latter moves in the slot without imparting movement to the breech-block, and extracting and injecting devices adapted to be operated or brought into operation by the rock-shaft during the time when the breech-block is at rest, as and for the purpose described.

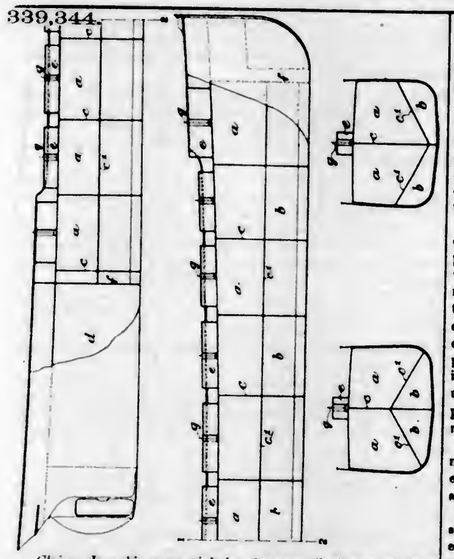
11. The combination, with a breech-case, of a vertically-movable breech-block, an extractor and injector placed to one side of the breech-block, means for imparting an intermittent movement to the breech-block and for operating the extractor and injector while the breech-block is stationary, a firing-pin passing through the breech-block, and a hammer pivoted in the rear of the breech-case, all as set forth.

12. In a magazine-gun, the combination, with a breech-block and mechanism for imparting a vertical movement thereto, of an extractor and injector moving in line with the barrel or chamber, and a breech-case inclosing the parts named and having an opening in its rear and above the hammer to permit the ejection of the shells withdrawn by the extractor, as set forth.

13. In a magazine-gun, the combination, with a vertically-movable breech-block and the operating mechanism associated therewith, of a breech-case containing the said mechanism, and provided with an opening in its rear and above the hammer for permitting the insertion and ejection of the shells, and provided with a movable cover or lid, as herein set forth.

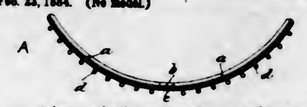
339,344. CONSTRUCTION OF NAVIGABLE VESSELS FOR CARRYING LIQUIDS IN BULK. HENRY F. SWAN, North Jesmond, Newcastle-upon-Tyne, County of Northumberland, England. Filed Feb. 9, 1886. (No model.)

339,344.



Claim.—In a ship or vessel designed to carry liquid cargo in bulk, a series of cells or compartments (for receiving the liquid cargo) formed by longitudinal and transverse bulk-heads, and divided from an underlying series of cells or compartments (for the reception of water ballast in sufficient quantity to avoid the necessity of putting sea-water into the cargo-compartments) by means of inclined longitudinal division plates or floors, as described, such floors, by their disposition, serving to insure to the vessels a proper degree of metacentric height both in a laden and ballast condition.

339,345. HAMMOCK-STICK. JAMES F. THAYER, Providence, R. I. Filed Feb. 23, 1884. (No model.)



Claim.—1. A hammock stick or spreader severed transversely into sections and provided with fastenings to endwise connect said sections, for the purpose specified.

2. A hammock stick or spreader consisting of transverse sections provided with fastenings to connect them together and having a series of rings for retaining the cords of a hammock to said sections, as specified.

3. A hammock stick or spreader consisting of transverse sections, the adjacent ends of said sections being provided one with a ferrule having a slot and the other with a stud to enter said slot, as specified.

4. A hammock stick or spreader consisting of detachable transverse sections, each having one or more rings to retain it to the suspension-cords of a hammock, as set forth.

5. A hammock stick or spreader made in detachable sections, as and for the purpose specified.

339,346. REVOLVER. REINHARD T. TORKELSON, Worcester, Mass., assignor to Iver Johnson, same place. Filed Oct. 12, 1885. (No model.)



Claim.—1. In revolving fire-arms, the combination, with the frame or receiver part B, and hinged handle A A', the part A'' being provided with cross-slot *b*, of stationary pin *c*, and safety-catch *d*, arranged in a slot, whereby when the handle A A' is depressed safety-catch *d* will be operated while it is retained in its proper relative position by pin *c*, substantially as and for the purposes set forth.

2. In revolving fire-arms, the combination, with the frame or receiver part B and hammer D, pivoted therein and provided with notch *c'''*, of hinged handle part A A'', provided with cross-slot *b*, to receive the stop-pin *c*, and longitudinal slot in its end for safety-catch *d* to work in, and stop-pin *c*, substantially as and for the purposes set forth.

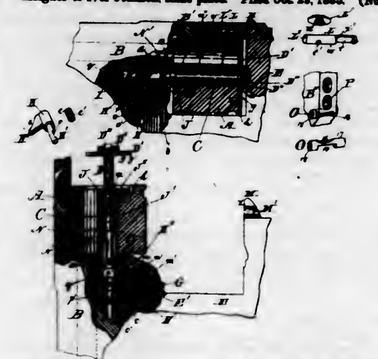
3. In revolving fire-arms, the combination, with the frame or receiver part B, of mainspring C, handle A A'', hinged to the frame, hammer D, pivoted to the receiver part and provided with notch *c'''*, to receive safety-catch *d*, which is fitted to vibrate or travel in a slot in the end of handle part A'', pin *c* and *e* for working the connection of safety-catch *d* with the handle and limiting the motion of the handle, substantially as and for the purposes set forth.

4. In fire-arms, the combination, with hammer D and cylinder-rest or recoil-plate provided with a cam or beveled groove below the firing-pin hole, of trigger E, and firing-pin E', hinged to the trigger and provided with an under beveled point, *t*, a back projection, *b'*, and with its upper end toward the hammer made in wedge form, whereby when the trigger is drawn back in the act of firing the arm, the firing-pin, as it is elevated, will be forced forward by its upper beveled or wedge shaped end coming in contact with the hammer and beveled top, and its firing-point guided into the firing-pin hole, while when the trigger returns to its normal position and the firing-pin depressed to its safety position its under beveled point *t*, pressing against the beveled groove in the recoil-plate, forces projection *b* against the hammer and moves it back to its normal position, substantially as described.

5. In fire-arms, and in combination with the co-operative lock mechanism, a firing-pin, substantially as described, pivoted at its lower end to the rear upper part of the firing-trigger, combined and operating substantially as and for the purposes set forth.

6. The combination, with the hammer D and its pivot D', of mainspring C, and curved fingers or lips *s'*, integral with the head or large end of the spring, and which lips straddle the lower part of the hammer and extend in under the hammer-pivot and rest against it when the mainspring and hammer are in their normal positions, thereby relieving the hammer from the pressure of the mainspring, substantially as described.

339,347. REVOLVER. REINHARD T. TORKELSON, Worcester, Mass., assignor to Iver Johnson, same place. Filed Oct. 29, 1885. (No model.)



Claim.—1. The combination, with the top piece or strap which connects the barrel with the frame, and having a spiral spring inserted in a longitudinal hole extending in from the rear end thereof, and the hinged frame provided with the projection M, having a groove, M', on one side and in line with the barrel, of a notched locking pin or piece, L, inserted from the rear against the spiral spring in the hole in the top piece or strap, B', and provided with a thumb-piece, L', whereby, when the frame is turned up and its projection M passes up through the slot in strap B', locking-pin L will be forced back by its spring, so that one side of its middle part will enter groove M' in one side of projection M, thereby locking the parts securely together and bringing its rear end to the end of the longitudinal hole in the strap-piece B', in full sight of the operator, substantially as and for the purposes set forth.

2. In a revolving fire-arm, the combination, with the rear lower part of the barrel and forward end of the cylinder, provided with a grooved hub for receiving a locking-pin, of a locking-pin inserted in a hole or slot running transversely under the grooved hub of the cylinder, and provided with a recess on its lower side to receive an operating-spring and a stop-screw, and with a concavity on its upper side to receive the grooved hub on the cylinder, whereby, when the locking-pin is pressed out by the operating-spring, the cylinder will be locked, but released when the operator pushes locking-pin in, so as to bring its concavity under the grooved hub of the cylinder, substantially as described.

3. In a revolving fire-arm, the combination, with the ejector-rod

provided with grooves *d d*, one on each side, of a cartridge-shell-ejecting spider, D', provided with a cored boss or shoulder, D'', for receiving nut D''', an opening for the passage of the screw end of the ejector-rod, two projections, *f f*, to fit the grooves in the ejector-rod, and two projections at rear of center hole in cylinder, to also fit the grooves in the ejector-rod, all substantially as described, whereby, when the ejector-spider D' and nut D''' are in position upon the ejector-rod, spider D' will not be liable to wabble or twist out of its relative position when in use.

4. In a fire-arm, the combination of the hinged frame E, ejector-rod D, a sliding part, H, provided with a notched stem, H', and projection H'', acted upon by flat spring *m* and spiral spring *m'*, substantially as shown and described, and for the purposes stated.

5. The combination, with the ejector-rod D and hinged-frame part E, of sliding part H, provided with notched stem H', cam projection H'', finger *c*, and spring *p*, arranged in relation to each other, as described, whereby, when the hinged frame E E' is unlocked and turned down, finger *c* will come in contact with the end of ejector-rod and force it out until cam projection H'' depresses it, thereby releasing ejector-rod, which then returns to its normal position, substantially as described.

6. In a breech-loading fire-arm, the combination, with the hinged frame by which the cylinder is locked in position, said frame being provided with a slotted tongue, G, at its inner end, for both hinging the frame to the rear under side of the barrel and for supporting the devices for forcing out the ejector-rod, the ejector-rod fitted to slide back and forth in the sleeve upon which the cylinder turns, and a stationary projection, K, on the rear under side of the barrel, located above and in rear of the frame-pivot and in the path of the ejector devices, of part H, fitted to slide in the slot in that part of tongue G which extends beyond the frame-pivot, flat spring *m*, arranged in the slot in the tongue-piece G, with one end pivoted thereto, its free end pressing up against cam projection H'' of the slide-piece H, spiral spring *m'*, fitted in a hole in tongue G, one end resting on the bottom of said hole, the other end pressing up against the flat spring *m*, and finger *c*, fitted in a hole in the outer end of sliding piece H, all arranged and combined substantially as described.

339,348. PROCESS OF PREPARING FUR FOR FELTING.

EDMUND TWEEDY, Danbury, Conn., and HENRY L. BREVOORT and ISAIAH L. ROBERTS, Brooklyn, N. Y. Filed May 20, 1885. (No specimens.)

Claim.—1. The process of preparing fur so that it may be in a condition suitable for felting, which consists in treating the fur with permanganate of potash or other permanganate in solution, substantially as described.

3. The process of preparing fur for felting, which consists in treating fur upon the skins by a solution of permanganate of potash in water, and, second, drying the skins by artificial heat, substantially as described.

3. The treatment of fur prior to felting by means of a solution of permanganate of potash in water, to which is added a proportion of acid, substantially in the manner described.

4. As a new article of manufacture, fur prepared for felting by the process herein described.

339,349. PROCESS OF PREPARING FUR FOR FELTING.

EDMUND TWEEDY, Danbury, Conn., and HENRY L. BREVOORT and ISAIAH L. ROBERTS, Brooklyn, N. Y. Filed May 20, 1885. (No specimens.)

Claim.—1. The process of preparing fur for felting, which consists in subjecting the same to the action of finely-powdered materials, substantially in the manner described.

2. The process of preparing fur for felting by subjecting it to the action of finely-powdered materials—such as silica mixed with lime—substantially as described

3. The process of preparing fur for felting, which consists in treating the same by the use of finely-powdered materials in a tumbling-barrel while the fur is still upon the skins, then subsequently cutting the fur from the skins, and, lastly, felting the same in the usual manner.

4. The process of preparing fur for felting by treating it with a mass of powdered material, which mass is composed of powdered absorbent material, substantially as described.

5. The process of preparing fur for felting, which consists in treating it with powdered materials, substantially as described, when the same is mixed with hard bodies—such as pebbles, marbles, or the like—substantially as described.

6. The process of treating or operating on fur, as herein described, which consists in first tumbling it in a suitable receptacle in the presence of finely-powdered material (in excess of what the fur will take up) adapted to attack or cleanse the surface of the fibers or remove their anti-felting coating, then dusting out the powdered material, and then felting the fur in the usual manner.

7. As a new article of manufacture, fur prepared for felting in the manner herein described.

339,350. PREPARING FUR FOR FELTING.

EDMUND TWEEDY, Danbury, Conn., and HENRY L. BREVOORT and ISAIAH L. ROBERTS, Brooklyn, N. Y. Filed May 20, 1885. (No specimens.)

Claim.—1. The process of preparing fur for felting by treating it with a solution of peroxide of hydrogen, substantially as described.

2. As a new article of manufacture, fur prepared for felting, with peroxide of hydrogen.

339,351. PROCESS OF PREPARING FUR FOR FELTING.

EDMUND TWEEDY, Danbury, Conn., and HENRY L. BREVOORT and ISAIAH L. ROBERTS, Brooklyn, N. Y. Filed May 20, 1885. (No specimens.)

Claim.—1. Subjecting fur to prepared oxidizing fumes or vapors, substantially as described.

2. The process of treating fur, which consists, first, in the manufacture of suitable oxidizing-fumes, and then, second, submitting the fur to the action of such fumes, substantially as described.

3. The process of treating fur, which consists in subjecting it to the action of oxidizing vapors or fumes when the fur is contained in a chamber to which the fumes are admitted, so that they may be brought into contact with the fur to be treated, substantially as described.

4. The process of treating fur, which consists in forming oxidizing vapors or fumes in a suitable apparatus outside of the chamber in which the fur is placed, and then conducting the said fumes and vapors into the chamber and permitting them to act upon the fur contained in said chamber, substantially as described.

5. The process of treating fur, which consists in forming oxidizing fumes or vapors, subjecting the fur in a chamber or receptacle to such vapors for the desired length of time, then emptying the said chamber of the fumes, and subsequently removing the fur therefrom, substantially as described.

6. The process of treating fur, which consists in subjecting it to oxidizing-fumes which are the product of a material or materials not placed upon or in contact with the fur fibers themselves, substantially as described.

7. The process of treating fur, which consists of the following steps: first, placing the fur in a chamber or receptacle; second, closing the said chamber or receptacle; third, causing oxidizing-fumes to fill its interior; fourth, causing the oxidizing-fumes to flow out of the chamber after the fur has been treated; fifth, opening the chamber and removing the treated fur.

8. As a new article of manufacture, fur prepared for felting in the manner herein described.

339,352. PROCESS OF TREATING FUR WITH PREPARED OXIDIZING-VAPORS.

EDMUND TWEEDY, Danbury, Conn., and HENRY L. BREVOORT and ISAIAH L. ROBERTS, Brooklyn, N. Y. Filed Oct. 30, 1885. (No specimens.)

Claim.—1. As an improvement in the art of treating fur with oxidizing-vapors to adapt it for felting, the process which consists in first preparing the oxidizing fumes or vapors from proper material or materials, and then in causing the fumes or vapors to flow in a current around, in contact with, and past the fur to be treated, substantially as described.

2. As an improvement in the art of treating fur with oxidizing fumes or vapors to adapt it for felting, the process which consists in first preparing the oxidizing vapors or fumes from proper material or materials, and then in moving or passing the fur to be treated through the said fumes, substantially as described.

339,353. PROCESS OF TREATING FUR TO PREPARE IT FOR FELTING.

EDMUND TWEEDY, Danbury, Conn., and HENRY L. BREVOORT and ISAIAH L. ROBERTS, Brooklyn, N. Y. Filed Dec. 22, 1885. (No specimens.)

Claim.—As an improvement in the art of treating fur with prepared oxidizing fumes or vapors to adapt it for felting, the process which consists in first dampening the fur with water and then submitting it in the damp condition to the action of prepared oxidizing fumes or vapors, substantially as described.

339,354. PROCESS OF TREATING FUR TO PREPARE IT FOR FELTING.

EDMUND TWEEDY, Danbury, Conn., and HENRY L. BREVOORT and ISAIAH L. ROBERTS, Brooklyn, N. Y. Filed Dec. 22, 1885. (No specimens.)

Claim.—As an improvement in the art of treating fur with oxidizing-vapors to adapt it for felting, the process which consists in preparing oxidizing fumes or vapors from proper material or materials, and in mixing the said vapors with the vapor of water, and submitting the fur to the action of the commingled vapors, substantially as described.

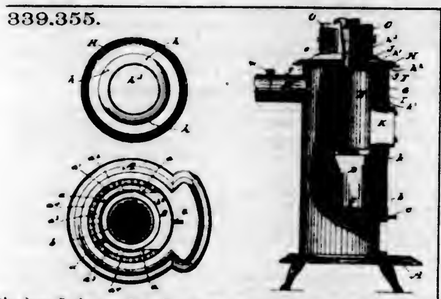
339,355. STOVE.

MATTHEW VAN WORMER, Maldea, Mass. Filed Aug. 26, 1885. (No model.)

Claim.—1. The combination, with the base-plate A, having perforations a^3 a^4, of the ash-box B, the lining D, supported on said ash-box, the radiating-cylinder E, having plate F, the drum G, perforated circumferentially at *g g*, the drum I, and the top plate, H, as and for the purpose set forth.

2. The combination of the base and fire-pot of a stove with cylinder E, having plate F and smoke-pipe N, the drum G, perforated at *g g*,

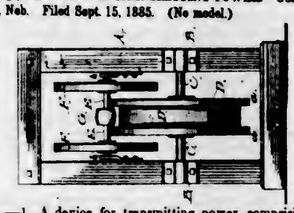
339,355.



the drum I, the top plate, H, and the air-pipe O, having slide *o*, as set forth.

339,356. DEVICE FOR TRANSMITTING POWER.

GUSTAV WELK, Seward, Neb. Filed Sept. 15, 1885. (No model.)



Claim.—1. A device for transmitting power, comprising a main shaft with a drum mounted thereon, and a secondary shaft driven by frictional contact with the main drum, substantially as herein described.

2. A device for transmitting power, comprising a main shaft and a drum mounted thereon, a secondary shaft loosely supported above the main shaft and driven by frictional contact with the drum, and the fly-wheels upon the secondary shaft, substantially as herein described.

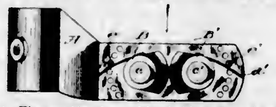
3. In a device for transmitting power, the combination, with a main shaft and a flanged drum mounted thereon, of a secondary shaft loosely mounted above the main shaft, suitable fly-wheels on the secondary shaft for keeping the latter in contact with the main drum, and a pulley on the shaft between the fly-wheel, substantially as herein described.

4. In a device for transmitting motion, the frame, the main shaft, and the drum having peripheral flanges, in combination with a secondary shaft driven by frictional contact with the drum, the open brackets or bearings for the ends of the shaft, the fly-wheels near each end of said shaft, and the centrally-placed pulley, substantially as herein described.

339,357. STRAND FORMER OR DIE.

FREDERICK A. WHWELL, Montreal, Quebec, Canada. Filed Aug. 20, 1884. (No model.)

Brief.—A pair of quadrant-shaped dies which are pivoted to a base or frame have an increasing half-circular groove in their peripheries, extending from their back to front edges, whereby when their peripheries are contiguous a complete circle will be formed. A pair of springs, one for each die, projecting back of the pivotal point of the die and attached to the front edge thereof, serve to hold the dies in any position by bearing against a pin in the base-piece, whereby the dies are capable of yielding to the size of the strand being drawn through them.



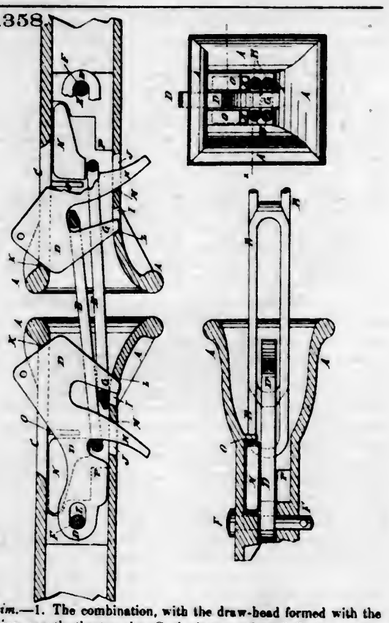
Claim.—1. The combination, with a holder, of a pair of oppositely-arranged movable dies pivoted to said holder and provided with partially circular contiguous faces, the face of each die having a semicircular groove of increasing diameter and depth from one end to the other, a pair of springs secured one to each die, and suitable known adjusting means to retain the springs in variable position and provide the dies with variable spring resistance, substantially as and for the purpose set forth.

2. The combination, with a frame or holder provided with two series of holes and the pins, of a pair of oppositely-arranged dies pivoted to the holder and provided with partially circular faces having the semicircular grooves of increasing diameter and depth from end to end, and a pair of springs secured one to each die, as and for the purpose specified.

339,358. CAR-COUPLING.

WILLIAM H. ADAMS, JAMES D. FELTSCOHEN, and ALBERT LAWTENSLAGER, Albany, N. Y. Filed Feb. 3, 1886. (No model.)

339,358

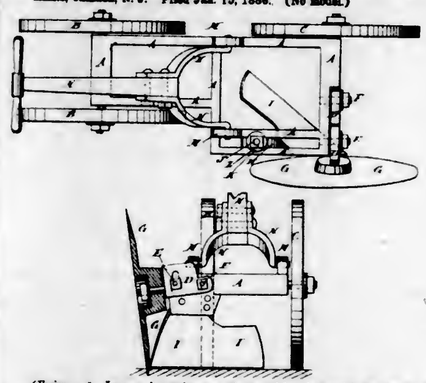


Claim.—1. The combination, with the draw-head formed with the open flaring mouth, the top slot, C, the bottom slots, I J, the weight-recesses on its inner sides, and the ribs O, projecting from said inner sides in front of the said recesses, of the weights N in said recesses, the pin F in rear of the recesses, the coupling-hook D, having a shank projecting rearward between the ribs O to its pivot-pin F, and having the two hooks G H at its forward end, and the permanent link B, substantially as set forth.

2. In a car-coupling, the combination, with the draw-head A, having slots C I J, and beveled seats K L M at the forward ends of the said slots, of the double hook D, beveled at the upper part of its forward end, and having a short forward hook, G, and a longer rear hook, H, on its lower side, and the fastening-pin F, substantially as herein shown and described, whereby two coupling-links can be connected independently with the said draw-head, as set forth.

339,359. EDGE-TRIMMER FOR WALKS AND BEDS.

THOMAS AKINS, Camden, N. J. Filed Jan. 15, 1886. (No model.)



Claim.—1. In an edge-trimmer, the combination, with the frame A, rabbeted upon the off side of its rear part, supported by three wheels, B B C, and having its front cross-bar rabbeted, widened, and perforated, of the widened, perforated, and slotted axle D, the fastening-bolts E F, and the rotary cutter G, substantially as herein shown and described, whereby the said cutter can be readily adjusted in a vertical or an inclined position, as set forth.

2. In an edge-trimmer, the combination, with the frame A, having slotted side bar and mounted upon three wheels, B B C, the ad-

justable axle D, and the rotary cutter G, of the plow-standard H, the plow-plate I, and an adjustable fastening, substantially as herein shown and described, whereby the sod and soil cut off by the said cutter will be loosened and moved to the middle part of the walk, as set forth.

3. In an edge-trimmer, the combination, with the frame A, mounted upon three wheels, B B C, and provided with bearings M, the adjustable axle D, the rotary cutter G, attached to the said axle, and the adjustable plow H I, of the handle N, forked at its inner end, substantially as herein shown and described, whereby the machine can be readily propelled, as set forth.

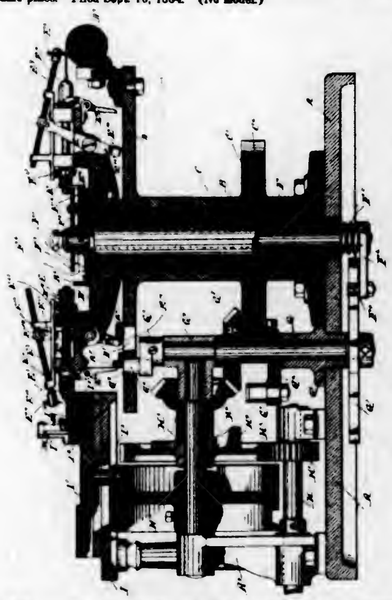
339,360. **BASIC LINING FOR OPEN-HEARTH STEEL AND IRON FURNACES.** WILLIAM F. BATHO, Westminster, County of Middlesex, England. Filed Oct. 12, 1885. (No model.) Patented in England Feb. 26, 1884, No. 3,921; in France May 31, 1884, No. 162,496; in Belgium June 3, 1884, No. 65,370; in Germany June 5, 1884, No. 29,488, and in Austria-Hungary May 26, 1885, No. 2,126.



Claim.—1. A metallurgical furnace provided with a lime lining containing pieces of metallic iron or steel admixed therewith, substantially as and for the purposes described.

2. A basic lining for metallurgical furnaces, composed of lime admixed with pieces of metallic iron or steel, substantially as and for the purposes described.

339,361. **NEEDLE-POINTING MACHINE.** PHILO M. BEERS, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place. Filed Sept. 10, 1884. (No model.)



Claim.—1. The combination, with the sliding plate, of a hopper which carries the needles, an intermittently acting spring which presses them out singly, two cross-slides between which the needle is received, and a spring presser-foot which registers the needles, whereby each is presented to the chuck with the grooves at the top and bottom.

2. The fixed cam, the sliding plate carrying a roller engaging therewith, and cam K^7, in combination with the hopper, the cross-slides, and the spring presser-foot, all carried by the sliding plate

3. The combination, with the bridge carrying grooved block L^6, cam-plate K, and switch-cam K^4, of the sliding plate carrying the cross-slides, the hopper, and the presser-foot.

4. The combination, with the hopper, of cross-slides I^8 I^7, between which the needle is received, and mechanism—for example, lever I^{16}, cam-plate K, and switch-cam K^4, and roller I^9, and cam K^7—operating as described, whereby the slides, with the needle between them, are moved forward at a slight distance apart, then brought close together to line up the needle, the reciprocation of said slides being wholly independent of each other.

5. The sliding plate carrying lever I^{16}, which is provided with arm I^{15}, in combination with cross-slide I^6, operated by said lever, and the cam-plate having walls K^2 K^3, and pivoted switch-cam K^4.

6. Cross-slide I^6 and lever I^{16}, having rollers at each end, and arm I^{15}, in combination with cam-wall K^3, and the switch-cam having cam-wall K^4, by which the forward movement is imparted to said cross-slide, and bridge I^{11}, which is engaged by arm I^{15} to impart the backward movement thereto.

7. The bridge, the cam-plate having walls K^2 K^3, the switch-cam pivoted between said walls, and having wall K^5, and cut-away portion K^{10}, and spring K^9, which acts on the switch-cam, in combination with lever I^{16}, which is carried by the sliding plate, and is provided with arm I^{15} and rollers at each end.

8. The hopper and two cross-slides between which the needles drop singly, in combination with mechanism—for example, a cam and lever, as shown—for carrying said slides forward at varying speed, and mechanism, as a swinging spring presser-foot, for registering the needles with the grooves at top and bottom, after which the plates close together to line up the needle.

9. The combination, with the cross-slides and hopper, of a registering device, the same consisting of a swinging arm, a presser-foot pivoted to said arm by a pin, M^3, and a spring acting to force the presser-foot down, said registering device being actuated by a pin upon one of the slides which engages pin M^2.

10. Cross-slide I^6, adapted to slide in ways I^5, cross-slide I^7, adapted to have independent motion within slide I^6, and having projections K^9 K^{11}, a spring between slide I^6 and projection K^9, and a set-screw in projection K^{11}, to adjust the relative position of the slides in lining up the needle.

11. The sliding plate, the hopper, the cross-slides having spring K^8 between them, and a set-screw to adjust their positions relatively to each other, in combination with the swinging arm pivoted to a standard upon the sliding plate, a spring presser-foot pivoted to the swinging arm and adjustable by a set-screw, M^5, and means, as a pin, upon one of the cross-slides to engage the sliding plate.

12. The hopper, cross-slides which receive the needles therefrom, and a spring presser-foot which registers the needles, in combination with a series of chucks carried by an intermittently-rotating table, by which the needles are presented to the stones.

13. The cross-slides, swinging spring presser-foot, and a series of chucks carried by an intermittently-rotating table, in combination with a series of stones carried by an oscillating table.

14. In a needle-pointing machine, a series of needle-chucks which are closed by spring-actuated sleeves, levers pivoted to the rotating table, which engage the sleeves, and a cam, A^2, upon the oscillating table, which is engaged by said levers to open the chucks at a predetermined time.

15. In a needle-pointing machine, a series of chucks upon table E, which seize the needles, a series of presser-bars above said chucks, which carry adjustable gages, and levers pivoted to said table which engage the presser-bars, in combination with springs E^{15}, which act to throw the presser-bars forward, and a cam, A^6, upon the oscillating table, which is engaged by said levers to remove the pressure of the gages upon the needles.

16. In a needle-pointing machine, the cross-slides, and a spring presser-foot which registers the needles, in combination with a series of chucks which seize the needles, said chucks having spindles with cranks at their inner ends, and a cam, B^3, which is engaged by said cranks a the instant a needle is seized, and which acts to register the chuck relatively to the needle, whereby the style of point to be ground is determined.

17. A series of needle-chucks carried by an intermittently-rotating table, said chucks having spindles provided with cranks, as shown, and a series of stones upon another table, in combination with a notched flange at the top of shaft F, with which the crank engages, and means, as cam G', for oscillating said shaft, whereby the needle is oscillated on its axis while being acted on by the stones.

18. The chucks carried by table E, said chucks having spindles provided with pinions E^{21}, springs E^{14}, pins E^{20}, and cranks E^{19}, having notches E^{18}, in combination with stationary sections of gear-teeth B^4, and plates F' and F^2, whereby at predetermined times the chucks are caused to make a half-revolution to present both sides of the points to the stones.

19. In a needle-pointing machine, a series of intermittently-oscillating needle-chucks carried by an intermittently-rotating table, and a series of stones upon another table, in combination with a spring presser-foot which registers the needles, and a stationary cam which registers the chuck as it seizes the needle, whereby the style of point is determined.

20. A series of needle-carrying chucks carried by a rotating table, and a series of stones upon another table, in combination with a series of presser-bars carrying adjustable gages, which press the points of the needles against the stones, and pivoted levers connected to said presser-bars and engaging a cam upon the oscillating table, whereby the presser-bar is drawn inward after passing the last stone and held until a new needle is seized.

21. A series of intermittently-oscillating needle-carrying chucks carried by a rotating table, and a series of stones upon another table, in combination with stationary sections of gear-teeth which engage pinions upon the chuck-spindles, and at predetermined times impart to said spindles a half-rotation, whereby both sides of the points are ground alike.

22. Table E, which carries a series of needle-chucks, and table D, which carries a series of revolving stones, in combination with mechanism, as a star-wheel engaged by an arm, whereby intermittent rotary motion is imparted to table E, and mechanism, as a sliding block and crank, for imparting oscillatory motion to table D, whereby each needle is carried to a stone which is moved backward under the needle, then the needle passes forward to the next stone, the first stone moving with it to its former position.

23. A series of needle-carrying chucks upon an intermittently-rotating table, and a series of stones upon an oscillating table, in combination with mechanism, as cranks upon the chuck-spindles, which engage a notched oscillating plate, whereby the needle-points are oscillated on the stones.

24. A series of rotating stones upon an oscillating table, a series of chucks upon an intermittently-rotating table, and spring-actuated sleeves which close said chucks upon the needles, in combination with levers pivoted to the rotating table, and a cam upon the oscillating table, which engages said levers, whereby said chucks are opened and held open during part of each revolution.

25. In a needle-pointing machine, the cross-slides which feed the needles, a series of chucks which seize and hold them, an intermittently-rotating table which carries said chucks, a series of stones upon an oscillating table, which grind the points, and jaws actuated by a rock-shaft, which remove the needles from the chucks.

26. The combination, with the cross-slides and the registering mechanism—for example, a swinging presser-foot—of the chucks carried by a rotating table, and the grinding-stones.

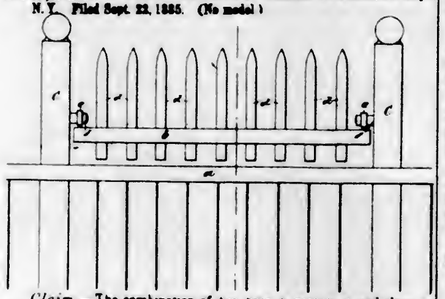
27. Feeding mechanism, as the hopper and cross-slides, and registering mechanism, as a spring presser-foot, in combination with a series of carrying-chucks upon a rotating table, a series of grinding-stones, and an extractor.

28. In a needle-pointing machine, the combination, with feeding mechanism—for example, a hopper and cross-slides, as shown, and independent chucks which grasp the needles—of a device—for example, a swinging spring presser-foot—whereby the needles are partially turned to register them with the grooves at top and bottom, so that each needle occupies the same relative position when grasped by a chuck.

29. The combination, with the cross-slides, chucks, rotating table, and stones, of an extractor consisting of a sliding block, a rigid jaw upon said block, a pivoted spring-lifted jaw having an incline, and an arm upon a rock-shaft, which bears against the rigid jaw to carry the extractor forward, and against the incline to carry it back and to close the jaw.

30. In a needle-machine, a device for registering the needles, the same consisting of a cross-slide, a swinging presser-foot, whereby the needles are rolled upon the cross-slide, and means—for example, pins i^3 and M^3—for actuating the presser-foot, substantially as and for the purpose set forth.

339,362. **CAPPING FOR FENCES.** CHARLES W. BARNES, Brooklyn, N. Y. Filed Sept. 22, 1885. (No model.)

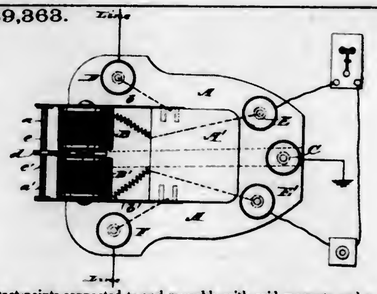


Claim.—The combination of the base *b*, pickets *a*, and rings or staples *e*, with the posts *c* and pins *f*, substantially as described, for the purpose specified.

339,363. **AUTOMATIC CUT-OUT AND LIGHTNING-ARRESTER.** PERLEY P. BELT, Columbus, Kans. Filed Sept. 12, 1885. (No model.)

Claim.—1. The combination, with two magnets located in a main circuit, movable toward each other, and having their poles adjacent, and

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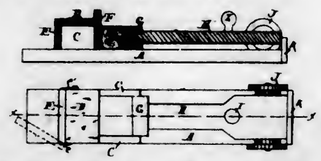


contact-points connected to and movable with said magnets and projecting toward each other, of a body in electrical connection with the earth and extending between the said contact-points, whereby when an abnormally-strong current passes over the line the magnets will be drawn together, thereby bringing their contact-points against the body in electrical connection with the ground, and the abnormal current allowed to pass off without breaking the line-circuit, substantially as set forth.

2. In a cut-out and lightning-arrester, the combination, with two coarsely-wound magnets located in a main circuit and mounted on springs with their poles approaching, of a body in electric connection with the earth and provided with contact-points arranged to co-operate with the points carried by the magnets, whereby any abnormally-strong current will actuate the magnets and ground the line, substantially as described.

3. The combination, with two coarsely-wound electro-magnets, as B B', mounted on spring-arms, as *b b'*, with their pole-pieces *c c'* approaching, said magnets being provided with contact-points *a a'*, of a standard, as *d*, in electric connection with the earth and provided with two contact-points, as *e e'*, substantially as described.

339,364. **BUTTER-MOLDING MACHINE.** ALBERT H. BINGHAM, Boston, Ma. Filed May 23, 1885. (No model.)



Claim.—1. In a butter-press, the smooth bed-piece A, the sides C C, top D, which extends only a short distance along the press, and door E, in combination with the carriage H, provided with the follower G, and sliding freely on the bed-piece A, and constructed substantially as described, whereby the follower may be moved rapidly backward and forward, and the handle I, secured to said carriage, substantially as and for the purposes explained.

2. In a butter-press, the smooth bed-piece A, sides C C, top D, which extends only a short distance along the press, and door E, in combination with the carriage H, provided with the follower G, the handle I, secured to the top of said carriage, and the rollers J J, secured to the bottom of the carriage, substantially as described.

3. In a butter-press, the smooth bed piece A, sides C C, top D, board F, and the door E, in combination with the carriage H, provided with the follower G, and sliding freely on the bed-piece A, and free to be moved rapidly backward and forward, substantially as set forth.

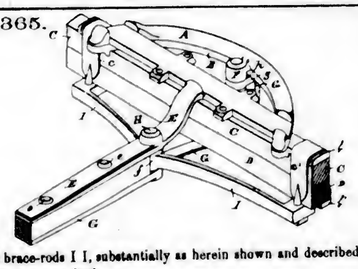
4. In a butter-press, the bed-piece A, provided with a stop, K, the sides C C, top D, and the door E, in combination with the carriage H, provided with the follower G, and sliding freely on the bed-piece A, substantially as set forth.

5. In a butter-press, the main bed-piece A, provided with the stop K, the sides C C, top D, board F, and the door E, in combination with the carriage H, having the follower G thereon, and sliding freely on the bed-piece, substantially as set forth.

339,365. **FIFTH-WHEEL.** FERDINAND G. RITTER, St. Louis, Mo., assignor to James McClure and Louis Von Froben, both of same place. Filed Dec. 21, 1885. (No model.)

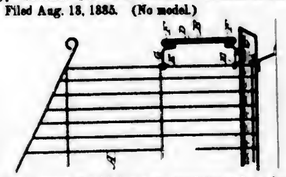
Claim.—In a fifth-wheel, the combination of the upper member, A, the upper and lower perch plates or irons, E and G, and lug F, the upper perch iron or plate forming part of said upper member, and extending from the rear of same to the perch-pole, the lower perch-iron being bolted to the front of said member at its lug *f*, and extending down and curving back under the axle to the perch-pole, the king-bolt H, with the lower member, B, of the fifth-wheel secured to the bed-piece by clips *c* and *c'*,

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and the brace-rods I I, substantially as herein shown and described, and for the purpose set forth.

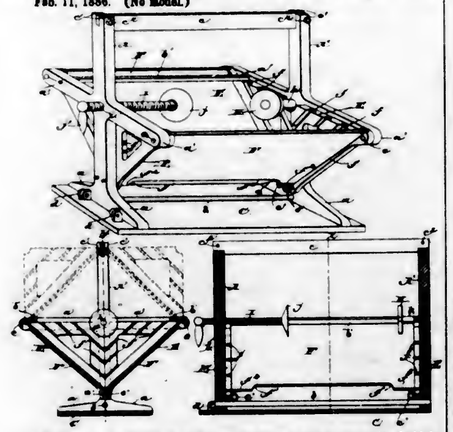
339,366. SCREEN FOR BIRD-CAGES. SAMUEL A. BISHOP, Smethport, Pa. Filed Aug. 18, 1885. (No model.)



Claim.—1. A screen for bird-cages, consisting of a plate or board and a support having seats to receive and hold said plate or board, and provided with hooks for securing it to a bird-cage, as set forth.

2. The screen-support D, consisting of a single wire bent to form hooks E at it ends, and two opposite seats, F, at equal distances from said ends, substantially as shown and described.

339,367. CLAMP. JOHN K. BITTENBENDER, Bloomsburg, Pa. Filed Feb. 11, 1886. (No model.)



Claim.—1. A clamp or press comprising a frame normally held in a horizontal and adapted to be turned to an upright position, removable and adjustable squaring-boards held in the frame at an angle to each other, and a clamping-screw and disk carried by the frame, substantially as described.

2. A press or clamp comprising a horizontally-disposed frame pivoted or hinged at one end to adapt it to be turned or adjusted to an upright position, the adjustable regulating-boards arranged in the frame at substantially right angles to each other, and a binding-screw and disk carried by the frame, substantially as described.

3. A press or clamp comprising a frame, pivoted end pieces carrying regulating-boards arranged at an angle to each other, a binding-screw, and a disk, substantially as described.

4. A press or clamp comprising a frame, a binding-screw, and a disk, and regulating-boards pivotally mounted therein, and arranged at substantially right angles to each other, and adapted to be swung on their pivots out of position in opposite directions, substantially as described.

5. A press or clamp comprising a frame, and pieces pivotally connected thereto at one end and detachably at another end, squaring or regulating boards supported in and connecting the end pieces, a binding-screw, and a disk, substantially as described.

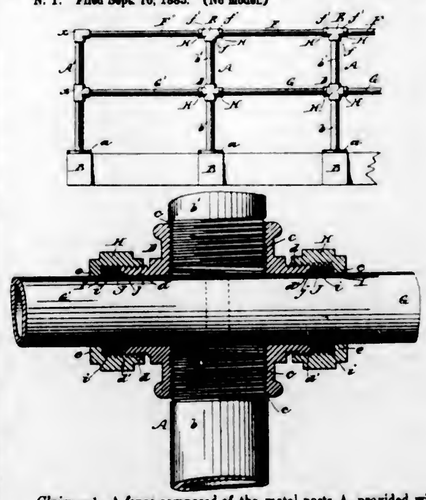
6. A press or clamp comprising a frame, grooved end pieces connected thereto, interchangeable boards fitted in the grooves, a disk, and a binding-screw carried by the frame, substantially as described.

7. A press or clamp comprising a frame, the grooved adjustable end pieces having squaring or regulating boards arranged at an angle to and adjustable toward and away from each other, and a pressure-screw, substantially as described.

8. In a press or clamp, a frame comprising the upright standards having the right-angled arms, and rods connecting the standards and arms, in combination with the pivoted end pieces permanently attached to the arms and detachably connected to the standards, the removable and adjustable regulating-boards supported in the end pieces, a disk, and a pressure-screw mounted in one of the standards, substantially as described.

9. In a press or clamp, a frame hinged at one end to adapt it to assume an upright position, and comprising the upright standards having the right-angled arms and the connecting-rods, in combination with the pivoted end pieces, E, detachably connected at one end to the standards, the squaring or regulating boards mounted in and carried by the end pieces, a rotatable disk, H, mounted on one of the standards, and a pressure-screw working in a socket in the opposite standard, substantially as described.

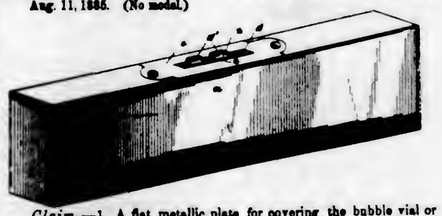
339,368. FENCE. ROBERT BLACK and JOHN STRACHAN, New York, N. Y. Filed Sept. 10, 1885. (No model.)



Claim.—1. A fence composed of the metal posts A, provided with the couplings E, screwed upon the upper ends of the posts, and the horizontal rails held in the couplings at right angles to the posts, in combination with the screw-caps H and beveled rings J, placed upon the rails, the ends of the coupling being beveled, substantially as and for the purposes set forth.

2. The metal post A, composed of the upper and lower posts, *b b'*, joined by the coupling D, formed with the externally-screw-threaded ports and beveled ports *d*, in combination with the tubes G, cap H, and clasp-ring J, placed in the caps H, substantially as and for the purposes set forth.

339,369. SPIRIT-LEVEL. GEORGE BLYTHE, Chillicothe, Mo. Filed Aug. 11, 1885. (No model.)



Claim.—1. A flat metallic plate for covering the bubble vial or tube of a leveling-instrument, having a longitudinal slot, *d*, and provided in the edge at one side of said slot with the lateral notches or recesses *d' d'*, forming a projection, *e*, between the recesses, substantially as set forth.

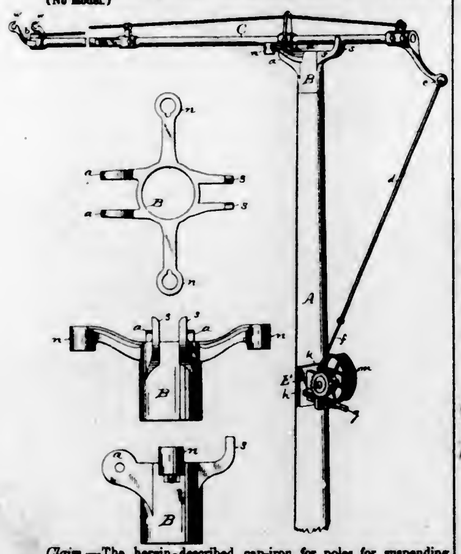
2. The combination, in a leveling-instrument, with the stock and tube, of a flat metallic plate arranged horizontally above the tube, and having a slot extending longitudinally with relation to the tube, and provided at one side of said slot with lateral notches or recesses *d' d'*, forming a projection, *e*, between said notches, substantially as set forth.

339,370. EYEGLASS-SUSPENDER. FRANCIS C. BOWEN, Brooklyn, N. Y. Filed Jan. 14, 1886. (No model.)



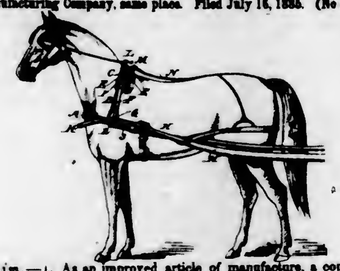
Claim.—A suspending device for eyeglasses, consisting of a spring-clasp, substantially as shown, the same having a shape to conform approximately to the outline of the base of the external ear, and having attached thereto a cord or chain for its connection with the eyeglasses, substantially as described.

339,371. CAP-IRON FOR POLES FOR SUSPENDING ELECTRIC LIGHTS. THOMAS H. BRADY, New Britain, Conn. Filed Sept. 8, 1885. (No model.)



Claim.—The herein-described cap-iron for poles for suspending electric lights, the same consisting of the tubular body, the pivotal lugs *s*, the insulator-arms *n n*, and the upwardly-projecting lugs *s s* opposite the pivotal lugs, all formed integral, substantially as described, and for the purpose specified.

339,372. COMBINED BREAST-COLLAR AND SADDLE. CHRISTOPHER G. CALO, New York, N. Y., assignor to the Bradley, Voorhees & Day Manufacturing Company, same place. Filed July 16, 1885. (No model.)



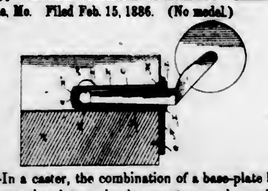
Claim.—1. As an improved article of manufacture, a combined neck-strap and saddle for breast-strap harness, consisting of the saddle E, having a loop, K, a check-hoop, terrets, and end loops, D, the neck-strap B on the under side of the saddle, passed through loops D, and constructed to be attached at its ends to a breast-strap, the pad O below the neck-strap B, and having loops embracing the said neck-strap and saddle, and the thill-supporting strap F, passed through the loops of the saddle and pad, and having its ends constructed to be connected with the vehicle-thills, substantially as set forth.

2. The neck-saddle E, hinged as described, and provided with the loop K above the hinged connection, the check-hook L over the loop K, the intermediate loops, I, and the end loops, D, substantially as set forth.

3. A combined neck-strap and saddle for breast-strap harness, comprising the hinged saddle E, having the check-hook, terrets, loops I, and end loops, D, the pad O beneath the saddle and having top loops, P, embracing the saddle at opposite sides of the hinge, and loops Q at its ends, the neck-strap B, held between the pad and saddle, and having its end parts passed outward through the saddle-loops D and through the pad-loops Q, the thill-supporting strap F on top of the saddle, passing through the upper pad-loops, then through the saddle-loops I, and down through the lower pad-loops, Q, over neck-strap B, substantially as set forth.

4. The combination, with the neck-strap of the breast-collar, of the saddle-tree having side flanges to receive and retain in place the thill-supporting strap, and the neck-pad having loops passing around the saddle-tree and the neck and thill-supporting straps, substantially as and for the purpose set forth.

339,373. CASTER. JOSEPH L. CARROLL and WILLIAM H. CREIGHTON, Clarksville, Mo. Filed Feb. 15, 1886. (No model.)



Claim.—In a caster, the combination of a base-plate having a rectangular recess opening into a circular aperture, and a socket consisting of two parts, the lower end of one of which parts is provided with a semi-annular flange, and the upper end with a ridge upon one side and a recess upon the other, the other part being provided with a lip and a semi-annular flange at its lower end, and two perforated oppositely-extending ears and a lug upon its upper end, said lug fitting within said recess upon the other part, as shown and described.

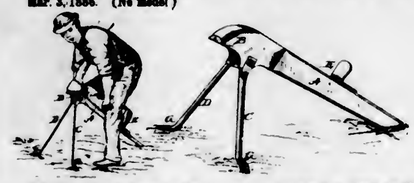
339,374. SUSPENDER-BUCKLE AND BUTTON-HOLE CLAMP. WILLIAM S. CARTER and FRANK C. CHURCHILL, Lebanon, N. H. Filed Feb. 15, 1886. (No model.)



Claim.—1. The combined suspender-buckle and button-hole fastener consisting of the buckle-frame having a transverse rigid bar provided with teeth projecting down and outward from its under side, and the cord-button-hole shank or fastener forming an extension of the lower bar of the buckle-frame, and having saw-tooth sides for biting into the cord, all made from a single piece of metal, as set forth.

2. The combination, with the buckle-frame A, having central rigid bar, *a*, provided with two or more teeth, *b b*, extending down and outward from its under side, and the cord-button-hole fastener C, having its sides and lower end terminating in saw-teeth *c c*, of the suspender B and cord button-hole D, the said buckle and button-hole fastener being integral, as set forth.

339,375. HORSESHOEING-STAND. FRANCIS E. CHERRIER, Francestown, N. H., assignor of one-half to Geo. H. Bixby, Boston, Mass. Filed Mar. 3, 1886. (No model.)



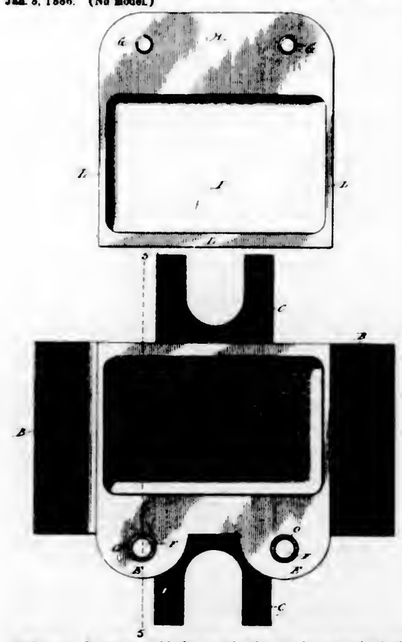
Claim.—1. A foot-rest for horses, consisting of a single inclined beam, one end of which is adapted to rest upon the ground and the other to receive the horse's hoof, and a pair of supporting-legs, all arranged as and for the purpose set forth.

2. In a foot-rest for shoeing horses, the combination of the inclined beam A, the portion B, shaped to receive the hoof of the horse, and the legs C and D, made adjustable, as described, for the purpose of raising and lowering the rest, all as and for the purpose described.

3. In a foot-rest for horses, the combination of the inclined beam A, with the corrugations *b* thereon, the legs C and D, with corrugations *c* at their upper ends, and the bolt *e* and screw-cap *d*, all as and for the purpose described.

4. In a foot-rest for horses, the combination of the inclined beam A, with corrugations *b* thereon, the foot-rest lug E for the operator, the legs C and D, with corrugations *c*, and the flat projecting lower portions, G, of the legs, all as and for the purpose described.

339,376. SOAP-MOLD. FREDERICK C. CHERRY, Chicago, Ill. Filed Jan. 8, 1886. (No model.)



Claim.—1. In a soap-mold, the combination of a box, provided with a lower die, and an operating-die of a size to enter and accurately fit the interior of the said box, and provided with projections adapted to engage with the top edges of the said box and arrest the motion of the operating die at a predetermined point, substantially as described and shown.

2. In a mold, the combination of a box, provided with a lower die, with an operating-die of a size to enter and accurately fit the interior of the said box, and guide-projections and guideways arranged to control the relative motion of the operating-die with reference to the box, substantially as described and shown.

3. In a mold, the combination of a box with a lower die placed therein, said box being provided on one side with guideways, and an operating-die of a size to enter and fit accurately the interior of the said box, said operating-die being provided with guide-projections adapted to enter the said guideways of the box, and being also provided with projecting rests or shoulders for engaging with other sides of the box, substantially as described and shown.

4. In a mold, the combination of a box provided with a lower die and an operating-die, said box being also provided with a guideway, and said operating-die being provided with a guide-extension beveled or rounded at its point, substantially as described and shown.

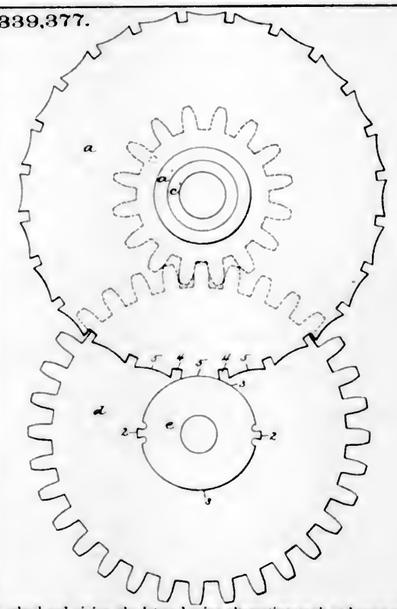
5. In a soap-mold, the combination of a box provided with metallic projections formed on the side thereof and extending half-way down, or thereabout, from the top to the bottom of the box, said projections being provided with passage-ways extending entirely through them, and an operating-die, said die being provided with guide projections adapted to enter said passage-ways, substantially as described and shown.

339,377. DIAL-TRAIN FOR TIME-PIECES. DUANE H. CHURCH, Waltham, Mass. Filed Mar. 7, 1885. (No model.)

Claim.—1. In a time-movement, the combination, with a continuously-impelled center arbor, of an hour-hand driving-train, formed, substantially as described, to alternately move and hold the hour-hand, as set forth.

2. In a time-movement, the combination, with a continuously-impelled center arbor, of an hour-hand driving-train composed in part of

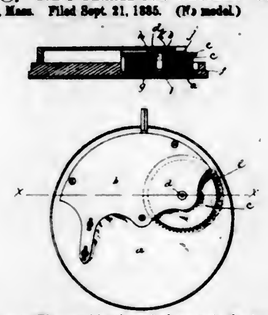
339,377.



a wheel and pinion, the latter having alternating teeth and convex surfaces, and the former having alternating recesses and concave surfaces, as set forth.

3. In a time-movement, the combination, with the continuously-impelled center arbor and minute-wheel, of the minute-pinion having alternating teeth and convex surfaces, and the hour-wheel having alternating recesses and concave surfaces, as set forth.

339,378. GOING-BARREL FOR WATCHES. DUANE H. CHURCH, Newton, Mass. Filed Sept. 21, 1885. (No model.)



Claim.—1. The combination of plates *a b*, the barrel having the arbor *d*, journaled in said plates, the winding-wheel having a central hub journaled upon a boss formed on the plate *a*, and the mainspring secured to said hub and barrel, as set forth.

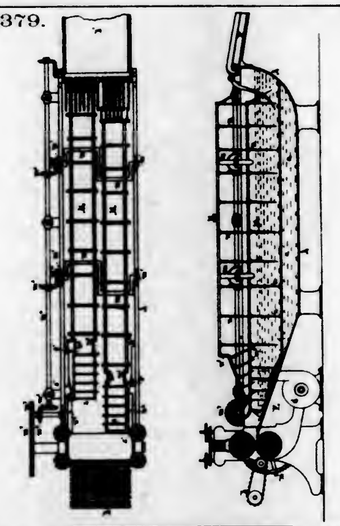
2. In a watch-movement, the winding-wheel having the central spring-holding hub journaled on a boss formed on one of the movement-plates, combined with the going-barrel bearing on said hub, and having an arbor journaled independently in the movement-plates and passing through said hub, as set forth.

339,379. WOOL-WASHING MACHINE. HENRY W. CHURCH, Graniteville, Mass. Filed June 12, 1884. (No model.)

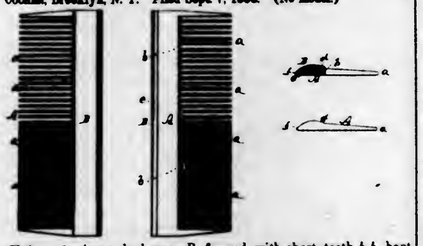
Claim.—1. The combination, in a wool-washing machine, of two forks, M M, mounted side by side upon the same shaft, and arranged, substantially as described, to move backward and forward and up and down alternately through and above the washing-liquor with the bowl containing the latter, substantially as described.

2. In combination with the bowl, the alternately-moving forks M M, operating side by side, the carriers *s s*, connected thereto and moving alternately side by side back and forth, and the carrier-bed E, substantially as described.

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339,380. COMBINED COMB AND COMB-CLEANER. EUGENE H. COGHILL, Brooklyn, N. Y. Filed Sept. 7, 1885. (No model.)



Claim.—1. A comb-cleaner, B, formed with short teeth *b b*, bent substantially at right angles to its body, and with a bolding-flange, *c*, in combination with a comb, A, substantially as and for the purpose herein specified.

2. A comb, A, formed with one side of the back raised more than the teeth, with the inner edge, *d*, thereof rounded or beveled inward to the teeth, in combination with a comb-cleaner, B, formed to fit the comb thus constructed, substantially as and for the purpose herein preferred.

3. A comb, A, formed with its back edge, *f*, made thin and rounded on one side, in combination with a comb-cleaner, B, formed to fit the same, substantially as and for the purpose herein specified.

339,381. ELECTRIC-SIGNAL RECORDER. ANDREW J. COFFIN, Portland, Oreg. Filed Nov. 24, 1885. (No model.)

Claim.—1. The combination, with a clock-work, of an electro-magnet for releasing it, a printing-lever operated by the clock-work, an additional clock-work for feeding a strip of paper on which the impressions are made by the printing-lever, and of a rod for releasing the paper-shifting clock-work from the clock-work operating the printing device, substantially as herein shown and described.

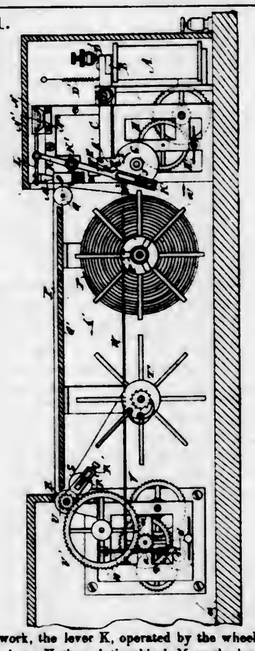
2. The combination, with a clock-work, of a printing device operated by the same, an additional clock-work for feeding the paper on which the impressions are made, a reel containing the strip of paper, and a spring-reel on which the paper is wound, substantially as herein shown and described.

3. The combination, with a clock-work, of the wheel G, operated by it, the pivoted lever K, acted on by the wheel G, the lever L, pivoted to the upper end of the lever K, the printing-block M on one end of the lever L, the pin N on the opposite end of the lever L, and the plates N', having the slots N', the ends of which are inclined upward from each other, substantially as herein shown and described.

4. The combination, with a clock-work, of the wheel G, operated by it, the lever K, operated by the wheel G, the lever L, pivoted to the upper end of the lever K, and mounted to swing and move in the direction of its length, and of the printing-block M and ink-pad O, substantially as herein shown and described.

5. The combination, with a clock-work, of the wheel G, operated

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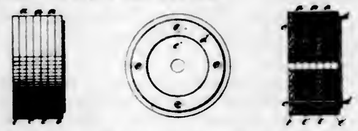
by the clock-work, the lever K, operated by the wheel G, the lever L, pivoted to the lever K, the printing-block M on the lever L, the inking-pad O, and the roller Q, over which the paper on which the impressions are to be made is passed, substantially as herein shown and described.

6. The combination, with a clock-work, of the wheel G, provided with the pins or studs E E', the electro-magnet A, the lever C, carrying the armature B, the stud or pin F on the lever C, the lever K, operated by the wheel G, the lever L, pivoted to the upper end of the lever K, and of a printing-block on the said lever L, substantially as herein shown and described.

7. The combination, with a clock-work mechanism, of the wheel G, provided with the pin I, a printing mechanism operated by the wheel G, an electro-magnet for releasing the said clock-work mechanism, the additional clock-work mechanism V, for feeding a strip of paper, and the rod W, for releasing the clock-work mechanism, on which rod W the pin I acts, substantially as herein shown and described.

8. The combination, with a clock-work mechanism, of the wheel G, operated by the same, a printing mechanism operated by the wheel G, an electro-magnet for releasing the clock-work mechanism, the paper-reels P' and T, the rollers Q, R, and S, and an additional clock-work mechanism for revolving the roller R, substantially as herein shown and described.

339,382. ROLLER-SKATE WHEEL. LYMAN S. COLBURN, Oberlin, Ohio. Filed Aug. 13, 1885. (No model.)



Claim.—1. A roller-skate wheel composed of layers of wood veneers and corresponding or alternate layers of compressed paper, paper-board, or mill-board, all securely cemented together, as described.

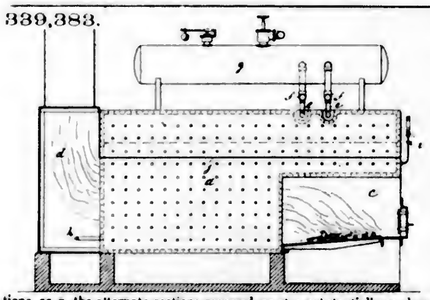
2. A roller-skate wheel composed of a plurality of wood layers and a plurality of paper layers, the wood layers having their grains or growths crossed or placed at right angles with each other, the whole being securely cemented together.

3. A roller-skate wheel composed of alternate or intervening layers of wood and compressed paper, having a metallic face plate or ring on the outer face of the wheel, to protect the corner from bruising, securely fastened thereto by rivets.

339,383. STEAM-BOILER. GEORGE H. COOPER, New Westminster, British Columbia, Canada. Filed Aug. 20, 1884. (No model.)

Claim.—1. In a steam-boiler composed of a series of vertical sec-

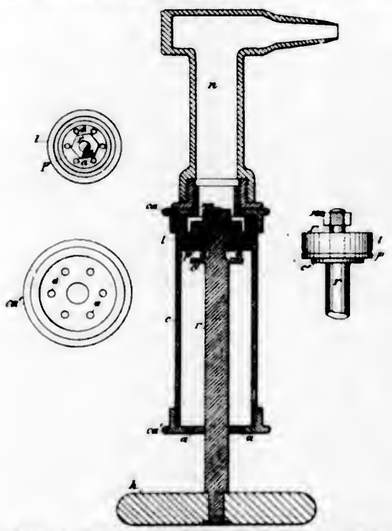
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tions, as *a*, the alternate sections recessed, as at *s*, substantially as shown and described, whereby the steam-pipes connecting the said sections with the steam-dome may be connected at the sides of the sections, as set forth.

2. In a sectional steam-boiler composed of a series of vertical flat box-like sections, as *a*, the combination, with said sections, of the bars *j*, placed longitudinally in the spaces between the sections below the water-line, and extended upward at the rear of the sections, as at *j'*, substantially as shown and described.

339,384. AIR VENT AND PUMP. JAMES F. DAVIS, Indianapolis, Ind. Filed Dec. 14, 1885. (No model.)



Claim.—1. The air-pump composed of the cylinder *c* with upper and lower caps, and the rod *r*, provided with the collar *c'*, for closing the openings *a* in the plunger, its lower end passing through the plunger, which fits loosely thereon, allowing the free movement through the plunger of the lower end of such rod, all combined substantially as described.

2. The air-pump composed of the cylinder *c*, having upper and lower caps, and having a piston-rod which passes through the plunger, the latter fitting loosely upon the lower end of such rod and provided with air-holes to admit the passage of air in either direction, the rod provided with a flange or collar which closes the air-holes in the plunger when the rod is pressed downward upon it, and the nozzle *n*, adapted to be secured to the lower end of the air-pump and to be connected with the keg containing the fermenting liquid, all combined substantially as described.

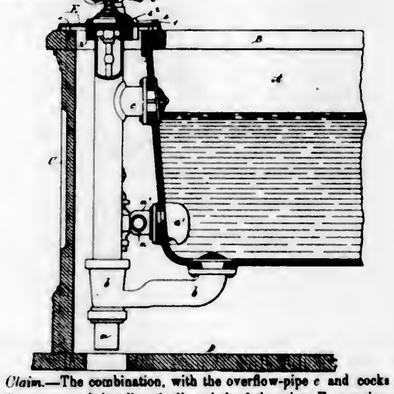
339,385. SHEAF-DUMPER FOR HARVESTERS. JOHN M. DAVIS, Staunton, Ill. Filed Nov. 26, 1884. (No model.)

Claim.—In combination with a self-binding harvester, the beams B B', loosely pivoted to the harvester-frame and provided at their outer ends with a supporting-wheel, a platform pivoted to the beam B so that its major portion will project in front of the same, crank-arm *k'*, connecting-bar *k*, double-crank shaft *j*, and an operating lever connected to said shaft *j*, substantially as set forth.

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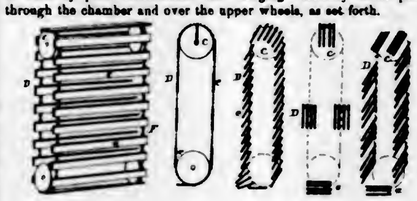
339,386. BATH-TUB FITTINGS. JOHN DEHARNEY, New York, N. Y., assignor to the J. L. Mott Iron Works, same place. Filed July 22, 1885. (No model.)



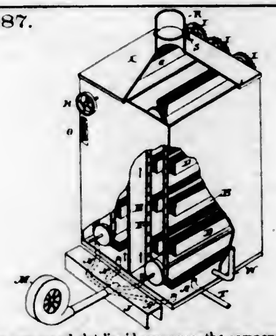
Claim.—The combination, with the overflow-pipe *c* and cocks a^3, and the stems and handles *f*, *f'*, and *d*, of the plate E, covering an opening in the wooden rim B of the bath-tub, said plate having screw-flanges projecting downwardly around the openings therein, and the removable caps e e' e^3, screwed into the said openings in the plate E, and through which the respective stems pass, substantially as set forth.

339,387. APPARATUS FOR EXPOSING LARGE SURFACES OF LIQUID TO AIR OR VAPOR OR GAS. ALBERT A. DENTON, Bavaria, Kans. Filed Feb. 23, 1885. (No model.)

Claim.—1. In a liquid-conveyer, single slats attached to the chains or belts by pivot attachments and hanging vertically while passing through the chamber and over the upper wheels, as set forth.



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2. In a compound-slat liquid-conveyer, the compound surface-multiplying slats, consisting of several single strips of metal or of wood of suitable width and placed parallel to each other a proper distance apart, to allow gas or vapor or air to circulate between them, with collars or equivalent between them and attached to the chains or belts by pivot attachments near their upper edge and in the center of their width, so as to hang vertically while passing through the chamber and while passing over the upper wheels, as set forth.

3. In an apparatus for exposing large surfaces of liquid in thin fibers to air, gas, or vapor, the combination of a series of blades and endless bands or chains, the said blades being hinged or attached at one edge only to said chains, substantially as and for the purposes described.

4. The combination, with a chamber, B, of endless belts bearing blades, which are attached to the belts at their edges, as described

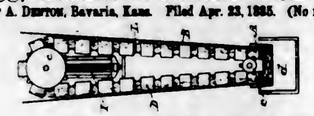
5. The combination, with a drying or evaporating chamber, of a series of connected blades pivoted or fixed by their edges to endless belts, as described.

6. The combination, in an evaporator, of a series of blades or slats, linked together and depending from their points of attachment in such manner that they shall consecutively catch the drips and at the same time allow a free circulation of air between them, as described.

7. The combination, in a desiccator, of a number of blades hinged at or near their edges to endless chains, as described, with pulleys for moving said chains, a heating-chamber, a blast-engine, and a heater, substantially as described.

8. The combination, with a drying-chamber, a hood or cap thereon having a contracted outlet provided with a damper, of a series of single or a multiple of slats hinged or otherwise connected by their edges to endless bands, substantially as and for the purposes described.

339,388. APPARATUS FOR EVAPORATING LIQUID BY AIR. ALBERT A. DENTON, Bavaria, Kans. Filed Apr. 23, 1885. (No model.)



Claim.—1. An oblong elongated liquid-conveyer composed of chains or belts passing over two axes or centers of motion, these chains attached to compound slats, the compound slats so attached to the chains or belts that they may hang in any suitable position, and so attached that there may be a vacant central space between the ascending and the descending sides of the liquid-conveyer, or may closely fill all the available space in the air-chamber, as desired, and as set forth.

2. In an oblong liquid-conveyer having two centers of motion, a compound slat consisting of single strips of metal or of wood, and placed a proper distance apart to allow air to circulate between them, and attached to the chains or belts by double pivot attachments, as set forth.

3. In a compound slat, single strips of metal or of wood rigidly attached to a cross-bar, or to a double cross-bar, and placed a proper distance apart to allow air to circulate freely between them, with collars or blocks or equivalent between them, and the whole firmly fastened together, this compound slat having a crosswise position with reference to the chains or belts, while the single strips of which this compound slat is composed have a direction parallel with the chains or belts, and this compound slat so attached to the chains or belts as to hang in any suitable position, so that it always presents its edges to the currents of air and also to the liquid, as set forth.

4. In the liquid-conveyer of an evaporating apparatus, the combination of slats having slots or bearings in each end, as described, with the carrying chains or belts, and pivot attachments, whereby said attachments will engage in two slots of each slat, or in one bearing and in one slot, or in two bearings.

5. The basin A, having a metallic bottom, combined with the hot-air chamber *d*, in the manner and for the purposes described.

6. In an evaporating liquid-conveyer as described, the combination of the conveyers or slats with the basin containing the liquid and the heating-chamber beneath and about its ends, as and for the purposes set forth, whereby the heated air passes under the basin about its ends and into the open or vacant space between the ascending and descending liquid-conveyers.

7. In an evaporating apparatus as described, having ascending and descending conveyers, the provision of heat-deflectors in the spaces between the conveyers.

8. In an evaporating apparatus, a liquid-conveyer combined with its conveying chains or belts, as described, whereby the slats may hang outside the chains or belts, or centrally therein, or partly outside and partly inside, all as set forth and described.

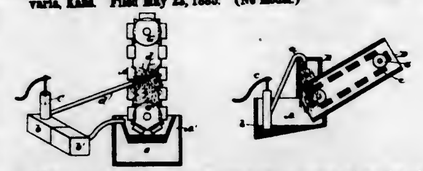
9. In an evaporating apparatus, the compound slats of the liquid-conveyer combined with chains or belts and wheels at top and bottom, said wheels being of different diameters, whereby a vacant central space is provided between the inner edges or sides of the ascending and descending slats or conveyers, substantially as described.

10. The combination of the liquid-basin with the lower driving-wheels, whereby the weight of the basin and its contents will give suitable tension to the conveying belt or chain, substantially as described.

11. The basin A, confined by guides or side walls, as described, whereby it will have suitable vertical and adjusting movement, but no other, substantially as set forth.

12. In an evaporating apparatus, an oblong liquid-conveyer having two centers of motion, the single strips or slats composing each alternate compound slat being staggered or alternated, substantially as and for purposes described.

339,389. EVAPORATING APPARATUS. ALBERT A. DENTON, Bavaria, Kans. Filed May 22, 1885. (No model.)



Claim.—1. In an evaporating apparatus, a system of moving slats or liquid-conveyers, combined with spraying or wetting devices whereby the moving surfaces of said slats or conveyers are moistened or wet by sprinkling, spraying, or pouring the liquid thereon, substantially as described.

2. In combination with a system of moving slats or liquid-conveyers and a spraying or wetting device, means for forcing the liquid from the reservoir to and through the said spraying or wetting device, substantially as described.

3. A rotary cylinder liquid-conveyer with or without a casing or air-chamber, as set forth.

4. In combination with a system of liquid-conveyers, a spraying or wetting device and means for forcing the liquid through said device, a reservoir divided into two parts whereby one can be used as the other is filled, substantially as described.

5. The liquid-elevator *c*, the perforated basin *a*, or the slotted basin *a*, with the regulating-slides *e e*, or substantial equivalent, and the atomizer or nozzle *d*, as set forth.

6. In an evaporating device, an inclined air-chamber combined with inclined moving liquid-conveyers, substantially as described.

7. In combination with ascending and descending liquid conveyers, a spraying or sprinkling device located within or between said ascending and descending conveyers, substantiallly as described.

8. Spraying or pouring the liquid between the ascending and the descending sides of the liquid-conveyer, as set forth.

9. The guide-wheels *m*, Fig. 4, in a vertical liquid-conveyer, having an inclined part or portion, as set forth.

10. The overflow-pipe *n* of the basin A, and the overflow pipe or outlet, Fig. 1, as set forth.

11. In an evaporating apparatus, as described, the provision of larger wheels to support the liquid-conveyer at the top and smaller wheels at the bottom of the air-chamber, and still smaller wheels to support the liquid-conveyer in the basin, thus reducing as far as possible the size of the basin and allowing a central air-space, and also wetting the sides of the air-chamber, as set forth.

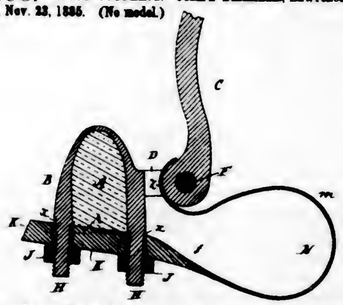
12. The hood or cowl *r*, as set forth.

13. In an evaporating apparatus, as described, the provision of side spaces or air-spaces on the walls of the air-chamber, as also a central air-space, thus largely increasing the quantity of dry air in the air-chamber, as set forth.

14. Placing deflectors in the air-spaces on the sides of the air-chamber near the upper part of the spaces, thus furnishing dry air to the upper slats of the liquid-conveyer, and also in a central air-space, as set forth.

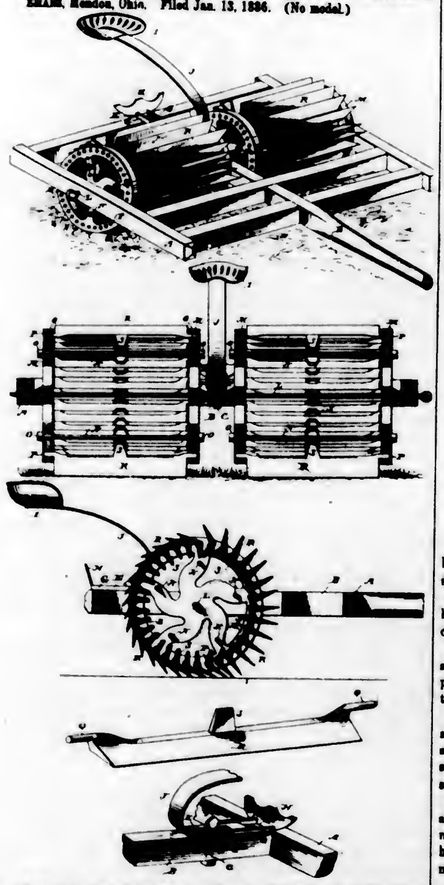
15. In an evaporating apparatus, revolving liquid-conveyers arranged staggering, each slat separated from its contiguous slats and combined with a spraying device, substantially as shown and described.

339,390. THILL-COUPLING. JOSEPH DEBHARAIS, Lawrence, Mass. Filed Nov. 23, 1885. (No model.)



Claim.—In a thill-coupling, the axle A, provided with a recess in its under side inclined downwardly toward the front, the clip B, having brackets D, and the thill-iron C', pivoted in said brackets, in combination with the clip-plate K, adapted to rest in said recess, the C-spring N, integral with said clip-plate, adapted to bear against the eye of said thill-iron, and nuts J, for securing said clip-plate in place.

339,391. CLOD CRUSHER AND PULVERIZER. THEODORE F. EVANS, Mendon, Ohio. Filed Jan. 13, 1886. (No model.)

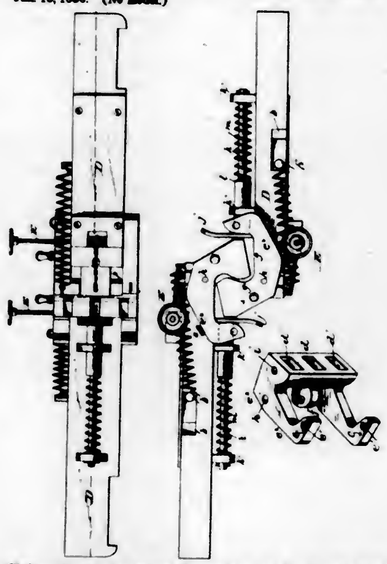


Claim.—1. In a clod-crusher and soil-pulverizer, the combination of wheels having transversely-perforated rims, and suitably journaled in a frame, with cutters having journals or trunnions fitting in the perforations of the wheels projecting from the ends of their inner edges, and having obliquely-projecting arms upon the said inner edges, as and for the purpose shown and set forth.

2. In a clod-crusher and soil-pulverizer, the combination of a frame having a tongue projecting from it and dividing it in two halves by its rear end, an axle fitting in transverse perforations in the side pieces of the frame and through the rear portion of the tongue, wheels having their rims transversely perforated and journaled in pairs upon the axle, being secured at their proper distance from each other by means of nutted bolts passing through the spokes of the wheels and bearing upon both sides of the spokes with the nuts, and cutters having journals projecting from the ends of the inner edges, fitting in the perforations in the wheels, and having obliquely-projecting arms projecting from their inner edges, as and for the purpose shown and set forth.

3. In a clod-crusher and soil-pulverizer, the combination of a frame having the rear end of the tongue dividing it and formed with a vertical perforation at the rear end, a plate having a foot-rest at its rear end, and having a longitudinal slot and upwardly-projecting flanges at its side edges, and downwardly-projecting-guide-flanges at the forward ends, of its side edges clamping the sides of the rear end of the tongue, a seat-support having its lower end bent rearward and slotted longitudinally, fitting between the upwardly-projecting flanges of the foot-rest plate, and a nutted bolt fitting into the perforation of the tongue and having its upper headed end securing the slotted end of the seat-support and the slotted foot-rest plate, as and for the purpose shown and set forth.

339,392. CAR-COUPLING. THOMAS P. EVANS, Denver, Colo. Filed Jan. 18, 1886. (No model.)



Claim.—1. In a car-coupler, the combination of a pivoted coupling-hook, a spring-actuated slide, and a spring-actuated curved buffer-plate, substantially as described.

2. For the purpose described, a coupling-hook having a flat-faced heel, the angular abutting surfaces, the hooked portion, and the curved crotch, substantially in the manner and for the purposes described.

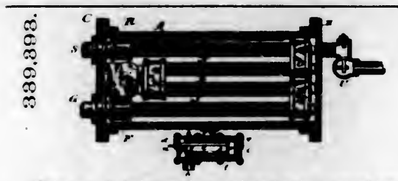
3. A coupling-hook consisting of a heel having a flattened abutting surface slotted horizontally and perforated vertically, as and for the purpose described, in combination with the posterior angular surfaces c^2 c^3, the hooking portion, and the curved crotch, as shown and described.

4. The combination, in a car-coupler, of the draw-bar, the spring-actuated locking bolt or slide, the pivoted hooked coupler, constructed substantially as described, the spring connecting this coupler with the said draw-bar, and a device for retracting said locking-bolt or slide, substantially as described.

5. The combination, in a car-coupler, of a coupling-hook having a slotted heel and pivoted to the end of a draw-bar, a locking-bolt connected to said hook by means of a spring, a retracting device for the hook, and a buffer-plate guided and cushioned, substantially in the manner and for the purpose described.

339,393. FEED-WATER HEATER. HENRY FAIRBANKS and CHARLES H. MASON, St. Johnsbury, Vt. Filed Oct. 26, 1885. (No model.)

339,393.



Claim.—1. A feed-water heater adapted to be arranged beneath a locomotive-boiler, combined with a steam-trap attached to and suspended directly from the heater, substantially as described.

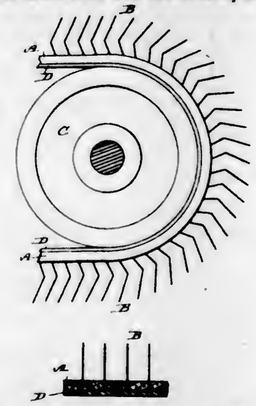
2. A feed-water heater adapted to be arranged beneath a locomotive, said heater consisting of a chamber having openings thereto leading from the respective exhaust-passages of the locomotive, combined with series of tubes within said chamber arranged to receive water and conduct it in a circuitous passage through said chamber to the exit, with a steam-trap below said chamber and opening therefrom, substantially as described.

3. The herein-described steam-trap, consisting of the casing T, having an inlet-opening, *a*, and an outlet-opening, *b*, a slide-valve arranged within the casing, and so as to be moved over said outlet to open or close the same, a series of expansion-rods arranged within the casing, the first of the series taking a fixed bearing or abutment in the casing, the said first rod connected to the second by a lever, and the second to the third, and so on, the last of the series connected to the said slide-valve, substantially as described, and whereby the expansion and contraction of the said rods will impart a sliding movement to the said valve.

4. A feed-water heater adapted to be arranged beneath a locomotive, said heater consisting of a chamber having branch pipes thereto leading from the respective exhaust-passages of the locomotive, combined with a series of tubes within said chamber, arranged to receive water and conduct it in a circuitous passage through said chamber to the exit, with a steam-trap below said chamber and opening therefrom, and a check-valve in each of the branch pipes to the said chamber, said valves opening toward said chamber, substantially as described.

339,394. CARD-CLOTHING FOR CARDING-ENGINES. JOHN T. FALLOWS, Denton, County of Lancaster, England. Filed Sept. 28, 1885. (No model.)

Brief.—To prevent the teeth of the card-clothing from working back through the foundation, a supplementary belt of thin metal is placed between the ordinary clothing and the cylinders on which it runs. The improvement is particularly applicable to those engines in which an endless belt is employed instead of the usual card-clothed cylinders.

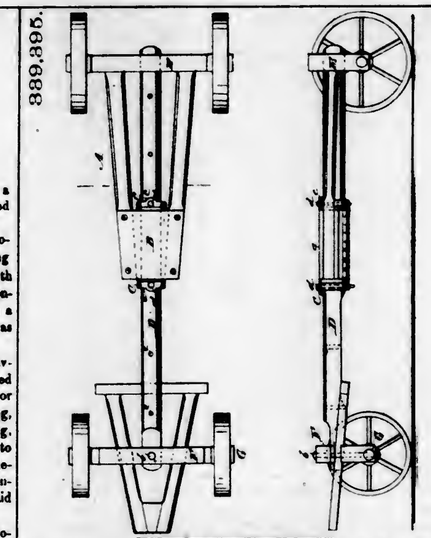


Claim.—The combination, with a carding-band on which carding-teeth are held, of an additional or supplementary belt, made of metal, substantially as herein shown and described.

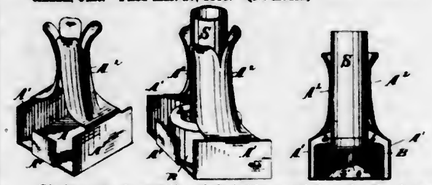
339,395. WAGON-COUPLING. BENJAMIN L. FARQUHAR, Gratis, Ohio. Filed Jan. 8, 1886. (No model.)

Claim.—The combination, with the rear bound and apertured reach, of the casting having extending centrally through it and projecting from its ends a sleeve to receive the reach and flanges at its sides to receive the bound side bars, and apertured rings resting against the projecting ends of said sleeve of casting, and receiving, adjusting, and holding pins, also passing through the reach, substantially as and for the purpose set forth.

339,395.



339,396. CARTRIDGE-SHELL HOLDER. WILLIAM H. FRENCH, Cincinnati, Ohio. Filed Mar. 27, 1885. (No model.)



Claim.—1. A cartridge-shell holder consisting of a flat base of sheet metal and two spring-arms extending upward from the base, then approaching each other, then extending upward and flared outward at the top, substantially as described.

2. A cartridge-shell holder formed of a single piece of sheet metal having a flat base and spring-arms extending up from opposite sides thereof, said arms approaching each other a little above the base and being flared outwardly at the top, substantially as described.

3. The combination, with a base, of upwardly-extending arms at opposite sides thereof, and a perforated cartridge-decapping seat inclosed between said arms, substantially as described.

4. The combination, with a flat metallic base-piece, of two spring-arms extending upward from opposite sides thereof, said arms integral with said base, and a projection, as A^4, extending upward from another side of the base to a less height than the spring-arms, as set forth.

339,397. MACHINE FOR BUILDING COMBINED PALING AND WIRE FENCES. PERRY C. FLORA, Eaton, Ohio. Filed Feb. 1, 1886. (No model.)

Claim.—1. The combination of the bar having the hinged blocks, and the spring-actuated pivoted arm attached to the bar, and having the hinged block, for the purpose set forth, substantially as described.

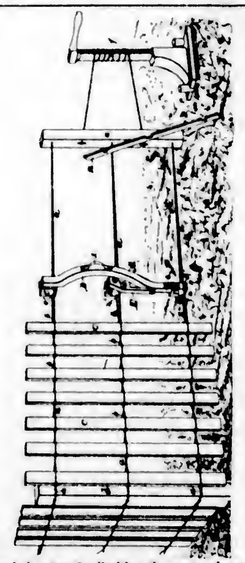
2. The combination of the bar B, having the handle I, and the hinged blocks C and D, and the arm pivoted to the bar, the flexible band connecting the bar and the arm, the spring bearing between the arm and the bar, and the hinged block H, attached to the free end of the arm, for the purpose set forth, substantially as described.

3. The movable bar having the oscillating blocks connected directly thereto, the pivoted arm attached to the bar, and the intermediate oscillating block attached to the said arm, substantially as described.

4. The combination of the bar having the oscillating blocks, the spring-actuated arm attached to the bar and carrying the intermediate

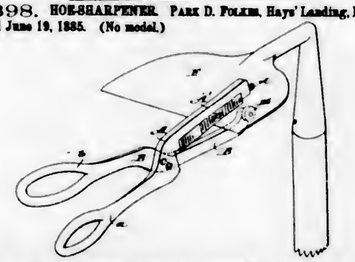


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oscillating block, and the stop for limiting the outward movement of the said arm, substantially as described.

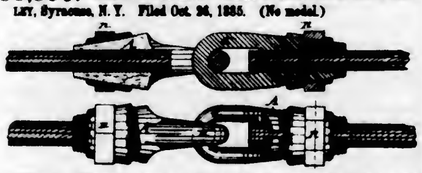
339,398. HOE-SHARPENER. PARK D. FOLEY, Hays' Landing, Miss. Filed June 19, 1885. (No model.)



Claim.—1. A sharpening implement comprising a pair of jaws pivoted together, a whetstone or sharpening device secured along the inner edge of one jaw, and an anti-friction roller journaled on the other jaw, substantially as herein set forth.

2. A sharpening implement comprising a pair of lever-bars, A B, pivoted together at C, and provided with extensions back of the pivot, forming handles *a b*, and with forward jaws, A' B', a whetstone or sharpening device, D, secured in jaw A', and an anti-friction roller, E, journaled on jaw B', substantially as herein set forth.

339,399. CABLE-COUPLING. HENRY F. GALE and LEWIS A. HAWLEY, Syracuse, N. Y. Filed Oct. 26, 1885. (No model.)

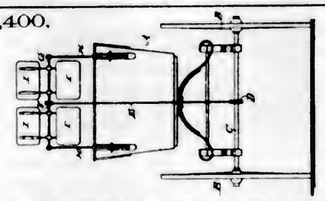


Claim.—The improved cable-coupling consisting of the tapered externally-screw-threaded spring-jaws A A, formed in one piece, with the intervening flexible loop, *a*, connecting said jaws at one end, and the nut *n*, working on the exterior of the opposite end of said jaws, substantially as described and shown.

339,400. CHILD'S CARRIAGE. PATRICK GALLAGHER, New York, N. Y., assignor to himself and James Murtaugh, same place. Filed Jan. 23, 1886. (No model.)

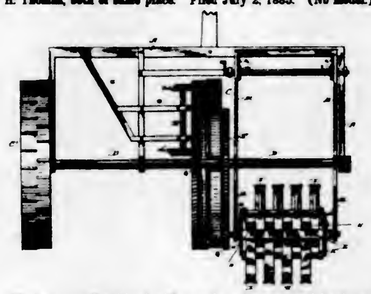
Claim.—1. In a fan attachment for children's carriages, the rotating fan supported above the rear part of the carriage and actuated by a belt and pulley which are attached to a rotating axle fixed rigidly to one set of the carriage-wheels, substantially as herein shown and described.

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2. In a fan attachment for children's carriages, the carriage-wheels B, fixed rigidly on the shaft C, provided with the grooved pulley D and the belt E, in combination with the pulley F, fixed on the fan-shaft G, provided with two sets of fan-leaves, and held adjustably on the carriage by means of slotted bearings H, substantially as herein shown and described.

339,401. SOD-CUTTER AND CULTIVATOR COMBINED. CHARLES GEISER, York, Pa., assignor of three-fourths to Lewis C. Erwin and John H. Thomas, both of same place. Filed July 2, 1885. (No model.)



Claim.—1. Combined with a series of cutters and hooks mounted on a shaft, a series of clearing-arms mounted on shafts, coinciding with the hooks, said shafts having their ends encircling the cutter-shaft and engaging one with the other, to cause a simultaneous movement, substantially as and for the purpose specified.

2. A combined hook and cutter for cultivators, consisting of a right-angle bar having the end of one arm bent into a hook, and the end of the other arm formed into a cutter, substantially as and for the purpose specified.

3. A cutter-head for cultivators, consisting of a series of cutters and a series of hooks mounted alternately upon the same shaft, substantially as and for the purpose specified.

4. Combined with the cutter-head, a driving-gear for the same, consisting of a main drive-wheel with an internal gear, an axle or shaft turning loosely in said drive-wheel, a bevel-gear thereon, a shaft carrying bevel-gears intermeshing with the gear on the drive-wheel and the gear on the axle, a large gear on the axle, and a small gear on the cutter-shaft, with which the large gear meshes, substantially as and for the purpose specified.

339,402. APPARATUS FOR PRODUCING CAST-METAL PIPE. DAVID GILES, Chattanooga, Tenn. Filed Jan. 4, 1886. (No model.)

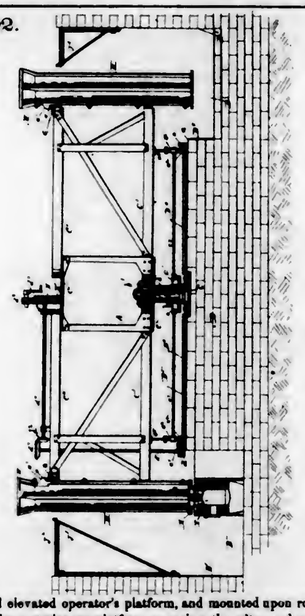
Claim.—1. The improved apparatus for making cast-metal pipes, consisting in a circular platform adapted to bear numerous removable flasks, a segmental furnace located beneath the said platform, a central stand on the platform for the operator thereof, and gearing whereby the operator may rotate the platform intermittently and carry on the entire operation continuously, substantially as described.

2. The improvement herein described in apparatus for making cast-metal tubes, consisting in a rotative table having a central conductor's platform, stationary platforms surrounding the same, means operative from the platform, whereby the conductor can give rotary movements to said table, means for vertically sustaining removable flasks on the periphery of said platform, a sectional drying-furnace extending from the blackwash-pot to the place for introducing the cores, a stationary platform, and the common delivery, all substantially in the manner and for the purposes specified.

3. In a plant for the production of cast-metal pipes, the combination of the intermittently-rotative table carrying numerous removable flasks, a centrally-arranged conductor's stand, an index located thereon, mechanism, as described, operative from the conductor's stand for enabling the conductor to move the table at will, and a segmental furnace concentric to the axis of the table, provided with outlet-flues, substantially as described.

4. In a plant for casting pipes, a centrally-stepped turn-table having a central elevated operator's platform, and mounted upon rollers and surrounded by a stationary platform covering the pits, as described, in combination with mechanism whereby the turn-table can be rotated from said operator's platform, and means for hanging the removable flasks from the fixed ring G, substantially as specified.

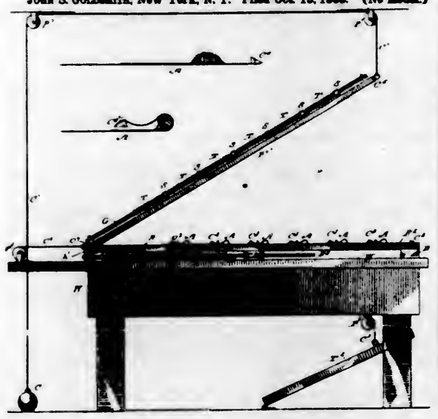
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5. In a plant for casting metal pipes, the combination, with annular pits, and a circular stationary platform, of a concentric gang of furnaces in the pit B², provided with outlets for the heat through their roof, a turn-table mounted upon a central pivot, and rolling bearings, the central operator's platform, gearing provided with an index, for enabling the operator to turn the table from said platform properly, and a series of removable flasks suspended from the periphery of the turn-table and provided with inlets at their lower ends adapted to register with the outlets of the said furnaces, substantially as described.

6. In a plant for the production of cast-metal pipes, the combination, with a circular pit, a concentric furnace in one part thereof and an elevated platform at its top, of a base, B, capped by metal plates surrounded by cog-teeth, a turn-table provided with a central operator's platform and mounted upon rolling supports and a central pivot, a sleeve adapted to turn about said pivot and having radial arms on which said rolling supports are journaled, the gearing arranged to allow the operator to turn the table, the annular flanged binder G, the extended beams C², and flasks suspended from this binder, all substantially as and for the purposes described.

339,403. CHEROOT, CIGARETTE, AND CIGAR BUNCH MACHINE. JOHN S. GOLDSMITH, New York, N. Y. Filed Oct. 15, 1885. (No model.)



Claim.—1. In a machine for making cheroots, cigarettes, or cigar-bunches, the combination, substantially as herein specified, of one or more rolling-beds, one or more series of rolling-aprons, shapers crossing said aprons, and tension-springs parallel with said aprons, said aprons being attached to said beds at one end of each apron and provided with cross-bars at their free ends, and a pulling-frame adapted to engage with said cross-bars for pulling the several aprons simultaneously, for the purpose set forth.

2. The combination, substantially as herein specified, of one or more rolling-beds, one or more series of rolling-aprons, shapers crossing said aprons, and tension-springs parallel with said aprons, said aprons being attached to said beds at one end of each apron and provided with cross-bars at their free ends, a pulling-frame in the plane of said beds to coact with said cross-bars, and a shaper and tension-spring frame carrying said shapers and tension-springs and adapted to be elevated while making ready for the rolling operation.

3. The combination, substantially as herein specified, of one or more rolling-beds, one or more series of rolling-aprons attached to said beds at one end of each apron and provided with cross-bars at their free ends, a pulling-frame to coact with said cross-bars, and a shaper and tension-spring frame provided with shapers, and tension-springs applied to said shapers, said shapers being arranged to correspond with the respective aprons and constructed with matrical cavities to receive and coact with the tobacco-containing bights of the aprons for shaping the product with uniformity, in the manner set forth.

4. The combination, substantially as herein specified, of one or more rolling-beds, one or more series of rolling-aprons attached to said beds at one end of each apron and provided with cross-bars at their free ends, a pulling-frame to coact with said cross-bars, and a shaper and tension-spring frame provided with longitudinal guide-rods, and series of shapers and tension-springs thereon corresponding with said series of aprons, each tension-spring being proportioned to its work and supported longitudinally independently of the others for equalizing the density or tightness of each kind of product.

5. In a machine for making cheroots, cigarettes, or cigar-bunches, the combination, with rolling-aprons, of transverse reversible shapers, each constructed with diagonally-opposite matrical cavities lengthwise thereof, one of said cavities being adapted to shape cheroots or cigar-bunches and the other to shape cigarettes, substantially as herein specified.

6. The within-described reversible shapers, each constructed with diagonally-opposite matrical cavities lengthwise thereof, and cylindrically-bored ends, one of said cavities being adapted to shape double-length cigarettes, in combination with rolling-aprons extending substantially at right angles to said shapers, and guide-rods parallel with said aprons fitted to the bores in the ends of the shapers, substantially as specified.

7. In combination with one or more rolling-beds, and a pulling-frame in the plane thereof, one or more series of rolling-aprons attached to said beds at one end of each apron, and provided at their free ends with metallic cross-bars, triangular in cross-section, attached to the aprons along the entire edge of each and coacting with said pulling-frame, substantially as herein specified.

8. In combination with one or more rolling-beds and one or more series of rolling-aprons attached to said beds at one end of each apron, and provided at their free ends with metallic cross-bars triangular in cross-section and having notched projecting ends, a pulling-frame having longitudinal pull-rods provided with stud-pins or hooks adapted to fit said notched ends, and projecting obliquely in the direction of the rolling movement and serving to hold down the cross-bars to their work, substantially as herein specified.

9. In combination with a pair of rolling-beds parallel with each other, and two corresponding series of rolling-aprons, shapers crossing said aprons, and tension-springs parallel with said aprons, said shapers provided with outwardly-tapering cavities for shaping cheroots, a pulling-frame and means for connecting said frame with said aprons, said frame comprising longitudinal pull-rods and a cross-bar to which the power is applied, and having an adjustable connection between said cross-bar and the outer pull-rods, substantially as herein specified, for the purpose set forth.

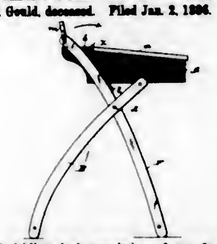
10. One or more rolling-beds provided with longitudinal track-rods pinned fast thereto, in combination with one or more series of rolling-aprons attached to said beds at one end of each apron and provided at their free ends with cross-bars, means for pulling the same, and a corresponding series of shapers arranged to coact with said aprons and supported out of interfering contact therewith by said track-rods, substantially as herein specified.

11. The combination of two or more rolling-beds parallel with each other, corresponding series of rolling-aprons, shapers crossing said aprons, and tension-springs parallel with said aprons, a pulling-frame common to all, comprising two or more pairs of pull-rods, and a cross-bar common to all, means for connecting said pulling-frame with said aprons, and a shaper and tension-spring frame comprising longitudinal frame-pieces,

which carry said shapers and springs, united by a cross-bar, substantially as herein specified.

12. The combination of one or more rolling-beds, one or more series of rolling-aprons, shapers crossing said aprons, and tension-springs parallel with said aprons, a pulling-frame common to all said aprons, means for connecting said pulling-frame with said aprons, a shaper and tension-spring frame, which carries all said shapers and springs, a treadle and connections and a retracting-spring for actuating said pulling-frame, and a counter-weight and connections for elevating said shaper and tension-spring frame, substantially as herein specified, for the purpose set forth.

339,404. FOLDING DESK. ABSALL D. GOULD, Walton, N. Y., executrix of W. C. Gould, deceased. Filed Jan. 2, 1886. (No model.)

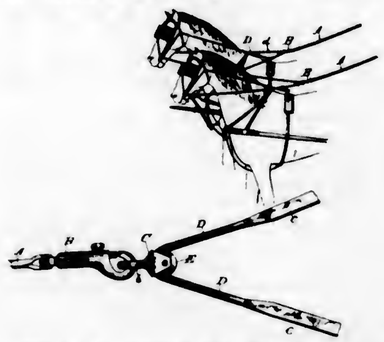


Claim.—1. A folding desk consisting of two frames, pivoted together as described, a desk-body pivoted between the sides of the outer frame, and two cross-pieces extending between the legs of the inner frame and receiving between them the rear end of the desk-body, substantially as set forth.

2. The combination of the frame F, provided with a cross-piece, *l*, and back piece, *m*, and the frame B, pivoted to the frame F, and the desk-body A, pivoted between the sides of the frame B, and extending between the cross-piece *l* and the back piece, *m*, substantially as set forth.

3. The combination of the frame F, cross-piece *l*, and back piece, *m*, and the frame B and pivotal rod A, supporting and connected to the desk-body, substantially as set forth.

339,405. DOUBLE DRIVING-REIN. ABSALOM J. HALL, Montgomery, Ala. Filed Jan. 20, 1886. (No model.)



Claim.—1. The combination of the driving-reins A, the check-lines D, each of which is formed in one continuous piece, and the pulleys, substantially as and for the purpose described.

2. The combination of the driving-reins, the clips, the pulleys, and the check-lines, substantially as and for the purpose described.

3. The hereinbefore-described check-line for double driving-reins, formed in one continuous piece and adapted to connect the bit-rings.

4. The combination of the double driving-reins, the pulleys, means for attaching the ends of the reins to the pulleys, and the check-lines, substantially as and for the purpose described.

5. The combination, in a double driving-rein, of the pulleys, the partly-round check-line, and means for limiting the play of the pulleys on the check-line, as and for the purpose set forth.

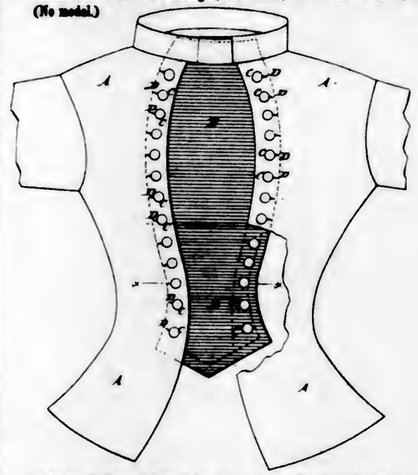
6. The combination of the double driving-reins, the pulleys, the check-lines, and suitable stops, *d*, substantially as and for the purpose described.

7. A pair of check-lines for double driving-reins, provided with stops, substantially as described.

8. A pair of check-lines for double driving-reins, consisting of the rounded lines and the buttons, substantially as and for purpose described.

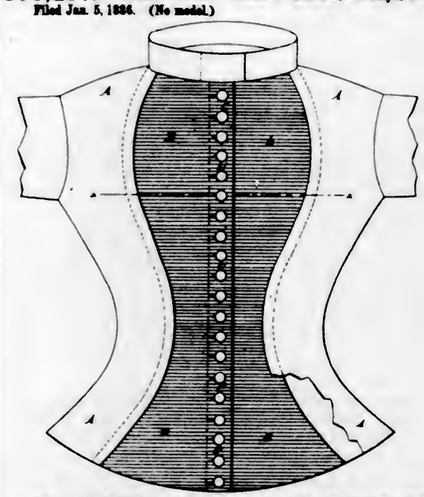
9. As a new article of manufacture, the driving-reins having their ends provided with pulley-wheels, substantially as described.

339,406. JERSEY-WAIST. DAVID F. HALSTED, Brooklyn, assignor to himself and Gilbert H. Finger, New York, N. Y. Filed Dec. 19, 1885. (No model.)



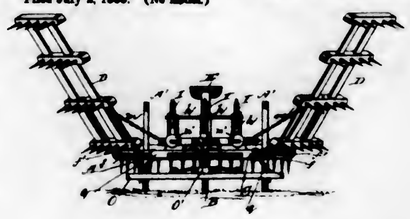
Claim.—A knitted jersey having a space between its front edges and a separate woven fabric front having approximately the contour of the said space and detachably connected at its side edges to the front edges of the jersey, substantially as set forth.

339,407. JERSEY-WAIST. DAVID F. HALSTED, Brooklyn, N. Y. Filed Jan. 5, 1886. (No model.)

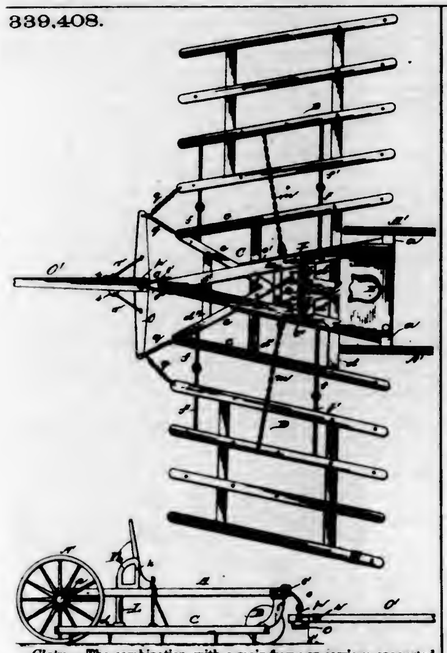


Claim.—A knitted jersey having a space between its front edges, and a two-part front of woven fabric conforming to the said space and secured permanently to the front edges of the jersey, the adjacent edges of the parts forming the front having securing devices, substantially as set forth.

339,408. HARROW. STEPHEN A. D. HARTMAN, Charles City, Iowa. Filed July 2, 1885. (No model.)

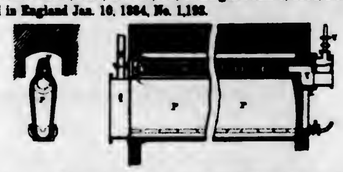


339,408.



Claim.—The combination, with a main frame or carriage supported at its front by a caster, of a harrow-section located beneath said main frame or carriage, and provided at its front with converging bars *e e*, and devices for raising and lowering said harrow-section, substantially as set forth.

339,409. PROCESS OF AND APPARATUS FOR PRODUCING GAS FOR LIGHTING AND HEATING PURPOSES. FELIX HERSENT and EDMOND HERSENT, Paris, France. Filed Dec. 26, 1885. (No model.) Patented in France Oct. 9, 1883, No. 157,921; in Belgium Jan. 9, 1884, No. 63,800, and in England Jan. 10, 1884, No. 1,192.



Claim.—1. The improvement in gas manufacture consisting in distilling coal in the ordinary manner in a retort, treating the coke remaining in the retort while incandescent with steam for the production of water-gas after the ordinary distilling operation, and heating said water-gas with a new supply of steam to oxidize the carbonic oxide, substantially as described.

2. The improvement in gas manufacture consisting in forming water-gas in the retort, and oxidizing the carbonic oxide in another part of the same retort with steam by mixing the steam with the water-gas, and causing the mixture to traverse a chamber in the upper part of the retort, substantially as described.

3. In the manufacture of gas from coal, the improvement consisting in introducing coke-powder or small particles of coke resulting from the distillation of coal into ordinary retorts, injecting steam into the mass through numerous small openings, and then in the same retort heating the mixed gases with a second supply of steam to oxidize the carbonic oxide, substantially as described.

4. The combination, with a retort for the production of gases of different qualities, of two outlets or mains, a valve in each main, and mechanism connecting the valves with each other, so that one is closed when the other is opened, substantially as described.

5. The combination, with an ordinary retort for the manufacture of gas from coal, of a perforated pipe for the introduction of steam or hydrocarbon into said retort, and two outlets or mains provided each with a valve for closing the same when the other main is in use, substantially as described.

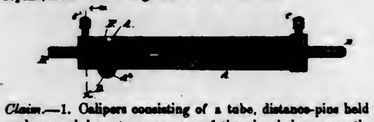
6. The combination, with a gas-retort for use in decomposing a fluid—such as steam—by contact with hot solid material in small pieces—such as the coke-powder described—of a perforated pipe running the length of said retort at the bottom of the same for injecting the fluid, and a perforated refractory plate immediately above the pipe for supporting the solid material out of contact with said pipe and permitting the free flow of the fluid into said retort and into and through the said solid material, the perforations being distributed the whole length of said plate, so that the decomposition may take place throughout the length of said retort, substantially as described.

7. The combination, with a gas-retort for use in decomposing a fluid by contact with hot solid material in small pieces, of a series of perforated pipes at the bottom of the said retort for injecting the fluid, and an undulated plate or series of inverted troughs over said pipes for supporting the solid material out of contact with said pipes, said plate or inverted troughs being perforated for the free passage of the fluid into the solid material resting on the same, substantially as described.

8. A horizontal retort provided at the lower part with one or more pipes or passages running the length of said retort, and provided with openings or perforations for injecting a fluid in numerous streams into the said retort, and at the upper part with a mixing-chamber opening into the retort at one end, and with a pipe for introducing a fluid into the gas in passing or before passing through said mixing-chamber, substantially as described.

9. A gas-retort provided with two outlets, and having also pipes for injecting steam, and a mixing-chamber, substantially as described.

339,410. ADJUSTABLE INTERIOR-CALIPERS. ADOLPH HEYDRICK, Topeka, Kans. Filed Aug. 6, 1885. (No model.)

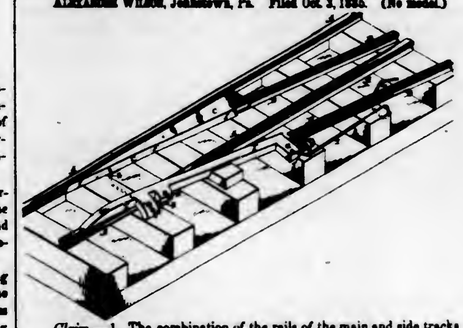


Claim.—1. Calipers consisting of a tube, distance-pins held in the tube and secured by set-screws, one of the pins being screw-threaded, and mechanism, substantially as described, for adjusting the screw-threaded pin, as and for the purposes set forth.

2. The combination, in calipers, of a tube provided with a hollow enlargement near one end, a worm-screw journaled in the under side of the enlargement, an adjusting-wheel held in engagement with the worm-screw, and the screw-threaded distance-pin inserted through and supporting the adjusting-wheel, substantially as and for the purposes specified.

3. The combination of the tube provided near one end with a hollow enlargement, a worm-screw journaled in the under side of the enlargement, and adjusting-wheel held in engagement with the worm-screw, the screw-threaded distance-pin inserted through and supporting the adjusting-wheel, the operating-knob formed on the end of the worm-screw, provided with a graduated scale around its base, and the side of the hollow enlargement provided with an index-notch, substantially as specified.

339,411. AUTOMATIC RAILROAD-SWITCH. WILLIAM A. HEBER and ALEXANDER WILSON, Johnstown, Pa. Filed Oct. 3, 1885. (No model.)



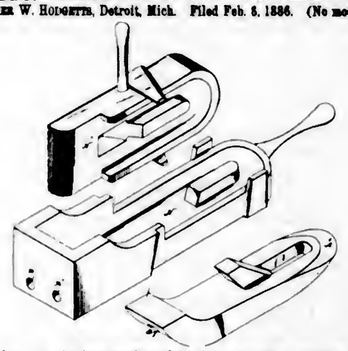
Claim.—1. The combination of the rails of the main and side tracks with the two switch-rails, one of which is pivoted upon the rails of the main track and the other hinged outside of and beyond the rails of the main track, so as to have a hinged rising and falling movement, substantially as shown.

2. The combination of the rails of the main and side tracks with the two switch-rails, one of the rails being pivoted eccentrically at its end and upon one end of one of the rails of the side track, and the other rail having a rising and falling movement and being pivoted outside of the main track and at an angle thereto, the two rails being connected together so that they will move simultaneously, substantially as described.

3. The combination of the rails of the main and side tracks, the pivoted rail C, the hinged rail F, rod I, and connecting-rod D, which

rod 1 has bent ends for the purpose of throwing the rail F down upon the main track, substantially as set forth.

339,412. MANUFACTURE OF CAR-COUPLING LINKS. CHRISTOPHER W. HODGETTS, Detroit, Mich. Filed Feb. 8, 1886. (No model.)



Claim.—1. An improved method of constructing coupling-links, consisting of subjecting a bar of metal to the different steps herein described, substantially as set forth.

2. The herein described method of constructing coupling-links, consisting, first, of shaping a bar of metal with a tongue, *a*, and recesses *a'* and a^2; next, drawing down one end of said bar, cutting away the sides of said tongue, giving to the tongue an inclination, cutting away a groove at the rear of the bar, giving an incline to the sides of the rear, puncturing the link-orifice, rounding the front of the link, and beveling its forward edges, substantially as described.

3. An improvement in the process of constructing car-coupling links by subjecting the bar of metal to the force of a die, B, under a hammer, leaving said bar with an upstanding tongue, *a*, and recesses *a'* a^2, substantially as described.

4. An improvement in the construction of car-coupling links by subjecting a bar of metal to the operation of a die, B, under a hammer, leaving the bar with an upstanding tongue, *a*, and recesses *a'* a^2, and drawing down by a subsequent blow of the hammer the point A', substantially as described.

5. In the construction of car-coupling links, the process of cutting away the sides of the tongue *a*, formed upon a metallic bar, substantially as and in the manner described.

6. In the construction of car-coupling links, the process of giving an incline to the tongue *a* by the application of a die, E, under a hammer, substantially as described.

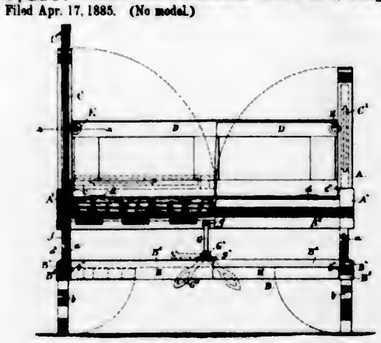
7. In the construction of car-coupling links, the process of cutting down and grooving the rear end of a bar of metal by the application of a tool, F', under a hammer, substantially as described.

8. In the construction of car-coupling links, the process of forming a link-orifice, consisting of locating the metallic bar from which the link is constructed upon a perforated bed, K, and the application to said bar of a perforated die, I, and punching out said orifice by a tool, J, substantially as described

9. In the construction of car-coupling links, the process of rounding the forward end of the link by the application thereto of a tool, L, under a hammer, substantially as described.

10. In the construction of car-coupling links, the process of beveling the forward edge or edges of the link, consisting of locating said link in suitable dies under pressure, substantially as described.

339,413. CHILD'S CRIB OR CRADLE. CARL F. HOFF, Chicago, Ill. Filed Apr. 17, 1885. (No model.)

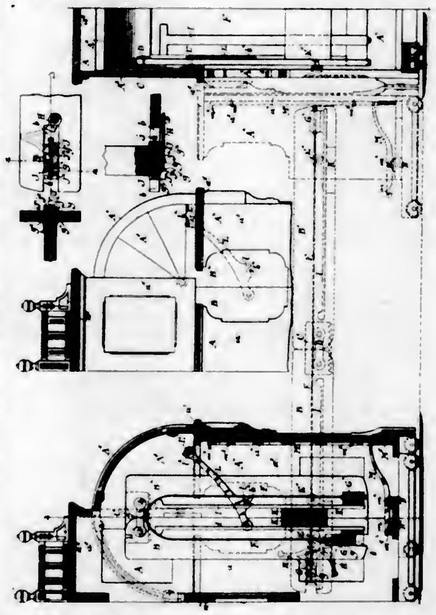


Claim.—1. The combination, with a cradle provided with rockers *a*, and having pins *g* at its sides, and a base-frame supporting the cradle, of a rock-shaft, G', arranged transversely of the base-frame and supported in bearings thereon, and provided at both ends with hooks G, adapted to engage the pins *g*, and with handles G^2, whereby both hooks may be engaged and disengaged at once from either side of the cradle, substantially as described.

2. The combination, with a cradle, of a base-frame consisting of end pieces, B', and longitudinal rails B^2, and provided at each end with legs *b b*, united by a cross-bar, B^3, hinged to the end pieces, B', of longitudinal bars H, pivoted at their ends to the cross-bars B', adjacent to the rails B^2, and adapted to turn downwardly between the inner faces of the cross-bars B^2, substantially as and for the purpose set forth.

3. The combination, with the main frame of a crib or cradle, of folding head and foot pieces, C and C', provided upon their inner faces with vertical grooves or notches *c*, and folding side pieces, D D, constructed to rest against the inner faces of the head and foot pieces when the parts are in position for use, and a locking device for the side pieces, consisting of flat vertically-arranged plates E, pivoted upon the sides of the side pieces by pivot-pins inserted through the plates near their upper margins, said plates being constructed to hang by gravity normally in position for engagement of their side edges with the notches *c*, substantially as described.

339,414. FOLDING BED. CARL F. HOFF, Chicago, Ill., assignor of two-thirds to John C. Hora and Jacob M. Horn, same place. Filed July 6, 1885. (No model.)



Claim.—1. The combination, with the head-section of the casing of a folding bed, having suitable side and top walls, and a foot-section lower than the head-section, comprising suitable front and side walls and open at its top, of a cylindric top or cover pivoted to the head-section, provided with side walls, and constructed to rest upon or against the top of the foot-section, so as to close the casing when the parts are brought together, substantially as described.

2. The combination, in a folding-bed casing, with a foot-section and a head-section comprising vertical side walls and a back wall, *a'*, of a cylindric top pivotally connected with the head-section, the rear portion of the top and back wall, *a'*, being constructed to meet edge to edge when the said top is thrown backward, substantially as described.

3. The combination, with a stationary part of a bed-casing and side rails, B B', pivoted thereto, of a cross-rail, G, castings J, having sliding connection with the ends of the cross-rail and with the said rails B B', said castings being provided with studs *g* and also with slots *j*, headed studs or projections *g'*, secured in the ends of the rails and engaged with the said slots, adjusting devices applied between the said castings and the cross-rail, and hooks H, pivoted upon the bed-casing and engaging the said studs *g*, substantially as described.

4. The combination, with a stationary part of the bed-casing and side rails, B B', pivoted thereto, of a cross-rail, G, castings J, having sliding connection with the ends of the said cross-rail and with the side rails, said castings being provided with studs *g*, and also with slots *j''*, plates g^3, secured in slots in the cross-rail, and provided with headed studs *g'*, engaged with the slots *j''*, adjusting devices applied between the castings and the cross-rail, and hooks H, pivoted upon the said casing and engaged with the studs *g*, substantially as described.

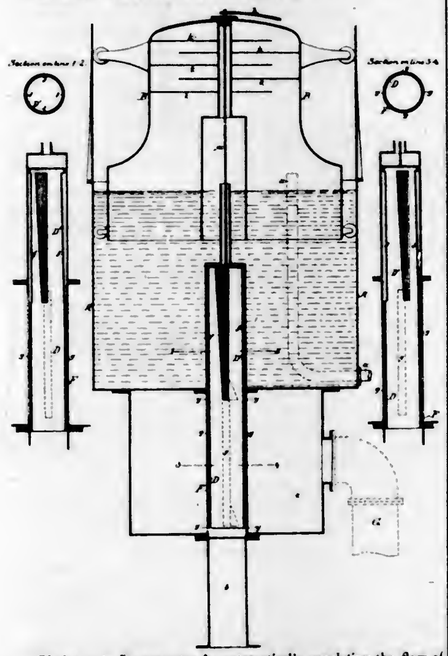
5. The combination, with a stationary part of the bed-casing, of slotted side rails, B B', pivoted to the said casing, a cross-rail, G, castings J, provided with side flanges, J', and fitted upon the end of the cross-rail, said castings being provided with studs *g*, slots *j'*, and set-screws *j*, studs *g'* upon the end of the rail engaged with the said slots, and hooks H upon the casing engaged with the said studs *g*, substantially as described.

6. The combination, with the head and foot sections of the casing of a folding bed, and jointed side rails, B B', one of said side rails being provided with a pin, *b'*, of a lever, L, pivoted to the other side rail, and having a notch, *l*, to engage the said pin *b'*, and also a notch, *l'*, at its free end, and a movable top or cover, as A^3, provided with a pin, L', constructed to engage the notch *b'*, substantially as described.

7. The combination, with the head-section A and foot-section A', of a horizontal lever, M, pivoted upon the lower part of the foot-section, a catch, m^2, upon the lower part of the head-section, constructed to engage said lever, a vertical rod, M', mounted to slide upon the inner face of the vertical wall of the foot-section and engaged with the lever M at its lower end, and a spiral spring, M^2, applied to the lower part of the rod to lift the latter, substantially as described.

8. The combination, with the cross-rail G and hooks H, of slides or bolts J^3 upon said cross-rail, substantially as described.

339,415. GAS-PRESSURE GOVERNOR. THOMAS C. HOPPER, Philadelphia, Pa. Filed Dec. 14, 1885. (No model.)



Claim.—1. In apparatus for automatically regulating the flow of gas, the combination of a valve and valve-chest having ports, as described, whereby the area for the passage of gas is governed by the movement of the valve, with an adjustable regulator, whereby the area of said governing-ports may be increased or diminished independently of the regulation due to the movement of the valve.

2. In apparatus for automatically regulating the flow of gas, the combination of a ported valve or valve-chest, an adjustable port-regulator, whereby the flow of gas can be governed independently of the regulation of gas due to the movement of the valve, a float connected to the valve, and means, substantially as described, whereby the normal pressure upon the gas is varied as the float changes its position, all substantially as specified.

3. In apparatus for automatically regulating the flow of gas, the combination of a ported valve or valve-chest, an adjustable port-regulator, whereby the flow of gas can be governed independently of the regulation due to the movement of the valve, and constructed as described, whereby it presents different internal areas, all substantially as specified.

4. In apparatus for automatically regulating the flow of gas, the combination of the ported valve or valve-chest, an adjustable port-regulator, whereby the flow of gas can be governed independently of the regulation due to the movement of the valve, and an operating-rod, pointer, and dial, whereby the proper adjustment of the port-regulator is determined, all substantially as specified.

5. In apparatus for automatically regulating the flow of gas, the combination of the ported valve or valve-chest, the float for operating the valve, an adjustable port-regulator, whereby the flow of gas is governed independently of the regulation due to the movement of the valve, and a valve-suspending rod carrying said port-regulator, and provided with a pointer for use in connection with a dial on the top of the float, all substantially as specified.

6. In apparatus for automatically regulating the flow of gas, the combination of a valve and valve-chest having ports, as described, whereby the area of the gas-passage is governed by the movement of the valve, with a regulator carried by the valve, but movable to increase or diminish the area of said governing-ports independently of the regulation due to the movement of the valve, all substantially as set forth.

7. In apparatus for automatically regulating the flow of gas, the combination of the ported cylindrical valve or valve-chest with a port-regulator in the form of a ported sleeve fitted to said valve or chest, all substantially as specified.

8. In apparatus for automatically regulating the flow of gas, the combination of a valve and valve-chest having ports, as described, whereby the area of the gas-passage is governed by the movement of the valve, with a regulator movable to increase or diminish the area of said governing-ports, and adjustable in a plane at right angles to that in which the valve moves in governing the flow of gas, all substantially as set forth.

9. In apparatus for automatically regulating the flow of gas, the combination of the ported valve or valve-chest with an adjustable regulator, whereby the area of the ports of said valve or chest can be governed independently of the regulation due to the movement of the valve, said regulator or the ports of the valve or chest having an inclined side or sides, all substantially as specified.

10. In apparatus for automatically regulating the flow of gas, the combination of the ported valve or valve-chest with an adjustable port-regulator, the ports of which or of the valve or chest have one side vertical and one side inclined, all substantially as specified.

11. In apparatus for automatically regulating the flow of gas, the combination of a valve controlled by a float and a valve-chest having ports abruptly enlarged in area at and near one end, all substantially as specified.

12. The within-described bell-float, polygonal in cross-sectional plan, and composed of stepped side plates secured together at the corners, all substantially as specified.

13. The combination of the bell-float with retarding plates or diaphragms within the same, as set forth.

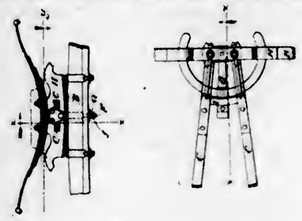
14. The combination, in a gas-pressure governor, of the valve for controlling the flow of gas, and bell-float operating said valve and having differential internal areas, and the liquid-vessel having a drain cock and gage, all substantially as specified.

339,416. WAGON. CHRISTOPH HOTZ and MARTIN CONRAD, Chicago, Ill. Filed Jan. 13, 1886. (No model.)

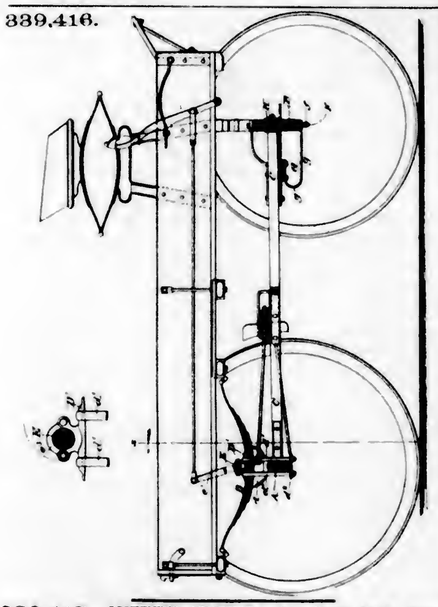
Claim.—1. The combination, with the rear axle and with springs placed transversely to said axle, of a brake-roller occupying a position immediately over and sustained upon the axle, substantially as described.

2. The combination, with the rear axle, springs placed transversely to said axle, and a brake-roller, of clip-plates constructed to afford bearings for the brake-roller and resting upon the springs at their junction with the axle, and clips which secure said clip-plates, springs, and axles to each other, substantially as described.

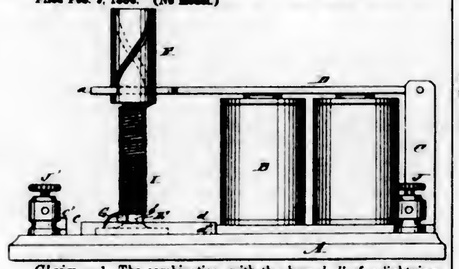
3. The combination, with the front axle, its bolster, a reach connected with the bolster, and a pivoted king-bolt passing downwardly through the axle, of a spring-brace secured to the reach and bearing upwardly at its free end against the axle, substantially as described.



339,416.



339,417. LIGHTNING-ARRESTER. JOHN HOREM, Omaha, Nebr. Filed Feb. 9, 1886. (No model.)



Claim.—1. The combination, with the bars *d d'* of a lightning-arrester, of the bar G, the ground-connections, the electro-magnet B, placed in the dynamo-circuit, and devices intermediate between the magnet and the bar G, for causing the bar G to turn on its pivot when the electro-magnet ceases to become active, substantially as herein shown and described.

2. The combination of the electro-magnet B, placed in the main dynamo-circuit, the lightning-arrester bar *d'*, connected with the line-wire *e*, the bar *d*, arranged parallel with the bar *d'*, the spiral cam F, the bar G, arranged to be moved thereby, the metallic block *c* and ground-connections, and the pivoted armature D, placed above the magnet B and provided with the arm *a*, extending through the cam F, substantially as herein shown and described.

3. The combination, in a lightning-arrester for the circuits of dynamo-electric machines, of the electro-magnet B, placed in the circuit, the lightning-arrester H, formed of the bars *d d'*, the bar *d'* being connected with the line-wire, the armature D, pivoted in the post C, held within the field of the magnet B and provided with the arm *a*, the sleeve E, turning on the vertical post *b*, the cam F, secured to the sleeve and receiving in its slots the arm *a*, the spiral spring I, surrounding the sleeve and arranged to turn the sleeve and cam in opposition to the armature D, the bar G, secured to the sleeve E, and the metallic block *c*, provided with ground-connections, the bar G being arranged to be swung by the turning of the sleeve E into and out of contact with the bar *d* and the block *c*, substantially as herein shown and described.

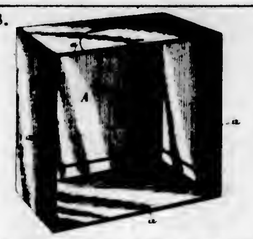
339,418. PARAFFINE-COATED PAPER BOX. WARREN B. HOWE, Chicago, Ill. Filed Oct. 12, 1885. (No model.)

Claim.—1. A box or vessel the walls of which are composed of a single thickness or two or more permanently-united thicknesses of paper or other permeable material, and which are provided with a layer or coating of glue or its equivalent, and which contain paraffine occupying only part of the thickness of the walls, substantially as described.

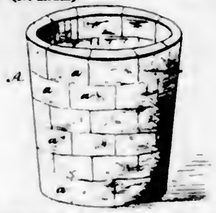
2. A paraffined box or vessel the walls of which are made of paper or other permeable material, and which are provided with one or more permeable or porous layers or coatings containing glue or its equivalent, substantially as described.

3. The method of constructing paraffined boxes of permeable material, which consists in forming and joining the body or foundation of the box of unparaffined material, then applying a layer or substance containing glue or its equivalent, and finally applying the paraffine over said added layer or substance, substantially as described.

339,418.



339,419. HOLLOW WARE. WILLIAM H. HOYT, Stamford, Conn. Filed Nov. 11, 1885. (No model.)



Claim.—As a new article of manufacture, hollow ware made of the pith of cornstalks, the latter being in the form of blocks joined or connected together, substantially as set forth.

339,420. CASH-BOX. WILLIAM C. HUBBARD, Durham, Conn., and WILLIAM M. BROWNELL, Brooklyn, N. Y. Filed Jan. 12, 1886. (No model.)



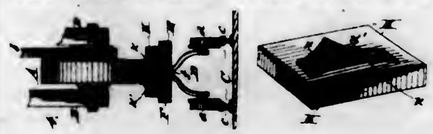
Claim.—1. The body A of the box, made open at the top and front, in combination with the cover and the falling panel, hinged together, the panel being hinged to the bottom of the body A, substantially as and for the purposes set forth.

2. The body A, made open at the top and front, in combination with the till B, sliding tray C, and the falling front D and cover E, hinged to each other, the falling front being hinged to the edge of the bottom *c* of the body A, whereby the cover or front may be folded under the body A, substantially as and for the purpose described.

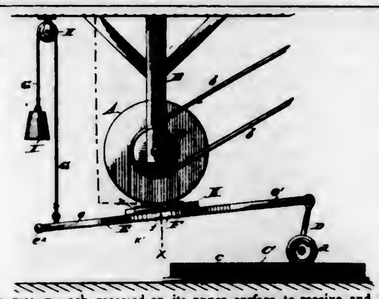
3. The body A, made open at the top and front, in combination with the falling front D, hinged to the bottom *c* of the body by an open-back hinge, and the cover E, hinged to the edge of the falling front, substantially as and for the purposes set forth.

339,421. MACHINE FOR GRINDING PLOW-POINTS. JOHN B. HUMM, South Bend, Ind. Filed June 16, 1885. (No model.)

Claim.—1. In mechanism to grind plow-points, the combination of a vertically-rotating grindstone, and a lever arranged to reciprocate vertically below the same in the plane of its rotation, with a rope or cord secured to said lever, and having a weight attached and adapted to draw the lever up toward the grindstone, a bed-piece made on the said lever,



339,421.



and a matrix-block recessed on its upper surface to receive and hold the plow-point to be ground, and pivoted on the bed-piece in such manner that friction between the surfaces makes it adhere to the bed-piece with sufficient force to prevent its being turned thereon by the action of the grindstone, substantially as specified.

2. The combination of the rotating grindstone A, the lever E, pivoted on the bed-plate F, the rope or cord G, passing over the pulley H, and having the weight I attached to its descending end, sufficiently heavy to pull the attached end of the lever E upward, the matrix K, pivoted on the bed-piece F, and recessed on its upper surface to receive the plow-point to be ground, the handle e^2, by means of which the lever E is reciprocated, the truck D, pivoted to the ends of the lever E opposite the handle, the rails *c c*, upon which the wheels of the truck travel, all constructed and arranged substantially as set forth.

339,422. WHEEL FOR VELOCIPEDES. JAMES HUDSON, Birmingham, County of Warwick, England. Filed Aug. 21, 1885. (No model.) Patented in England Apr. 16, 1885, No. 4,675.



Claim.—A tubular wheel-rim provided with a circumferentially-grooved surface concaved and semicircular in cross-section, and having its under side convexed and formed with a series of longitudinal corrugations, in combination with a rubber tire set in the grooved periphery of said rim, as set forth.

339,423. PROCESS OF PHOTO-ENGRAVING. CHARLES T. IAGO, 55 Riversdale Road, Highbury, County of Middlesex, England. Filed Mar. 11, 1885. (No specimens.) Patented in England Oct. 15, 1884, No. 13,640; in France Feb. 19, 1885, No. 167,159, and in Belgium Feb. 21, 1885, No. 67,970

Claim.—1. The process of producing relief-blocks for surface-printing, which consists in first engraving the subject on wood in intaglio (*i. e.*, in the manner of a copper-plate) and then producing the necessary contrast of color between the lines and the surface of the block, as described, then photographing direct from the block so prepared, and producing the relief-block from the photographic negative by any known photochemical or other method, substantially as specified.

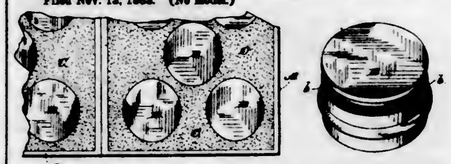
2. The process of producing relief-blocks for surface-printing, which consists in first engraving the subject on wood in intaglio (*i. e.*, in the manner of a copper-plate) and then taking an impression, in the manner of a copper-plate, from the lines of the wood-engraving (or from an electrotype reproduction of the same) and photographing the impression and producing the relief-block from the negative by any known photochemical or other method, substantially as specified.

3. The process of producing relief-blocks for surface-printing, which consists in first engraving the subject on wood in intaglio (*i. e.*, in the manner of a copper-plate) and taking a surface-print from the wood block, photographing such print, obtaining a reversed negative, and producing the relief-block from such negative by any known photochemical method, substantially as specified.

4. The process of producing relief-blocks for surface-printing, which consists in first engraving the subject on wood in intaglio (*i. e.*, in the manner of a copper-plate) and taking a transfer-print by surface-printing from the wood block, transferring the same to varnished glass, and using the mechanical negative thus produced in the same way as a photographic negative for producing a relief-block by any known photochemical method, substantially as specified.

5. The process of producing relief-blocks for surface-printing, which consists in first engraving the subject on wood in intaglio, (*i. e.*, in the manner of a copper-plate,) taking an impression in transfer-ink from the wood-engraving (or from an electrotype reproduction of the wood-engraving) by the copper-plate-printing process, transferring the impression to zinc, and engraving the zinc by chemical action in the ordinary way.

339,424. ILLUMINATING-TILE. JACOB JACOBS, New York, N. Y. Filed Nov. 12, 1883. (No model.)



Claim.—1. The lens for illuminating-tiles, having its lower portion elongated diametrically and provided with a circumferential groove, substantially as and for the purpose specified.

2. In combination with the lens-supporting portion of an illuminating-tile provided with an elongated lens-opening, the lens having its lower portion correspondingly shaped and adapted to be passed through the lens-opening, and having a circumferential groove adapted to allow the lens to be turned after its lower portion has been passed through the opening, all substantially as and for the purpose shown.

3. In combination with a lens-support of an illuminating-tile provided with one or more elongated openings, one or more lenses having their lower portions shaped to correspond with such openings and provided with circumferential grooves adapted to allow the lenses to be turned in the openings to bring their longest diameters at right angles to the longest diameters of the openings, and a body of cement surrounding the lenses, substantially as and for the purpose described.

4. In combination with the lens-supporting portion of the tile provided with elongated openings, the lenses correspondingly shaped and grooved to receive the edges of the openings, turned to bring their longest diameters at right angles to the longest diameters of the openings, and cement in the grooves in the lenses, substantially as and for the purpose specified.

5. In combination with the lens-support of illuminating-tile provided with an elongated lens-opening, the lens correspondingly shaped and having the cylindrical neck adapted to allow the lens to be rotated in the opening to bring the longer diameter of the lens across the opening, substantially as and for the purpose described.

6. In combination with a supporting-frame, an illuminating-tile having in its edge a groove and an illuminating-tile having in its edge a rib entering the groove in the other tile, cement placed between the engaging edges of the tiles, and bolts passing through the lower portions of the tiles and portions of the supporting-frame, substantially as and for the purpose described.

339,425. ILLUMINATING-TILE. JACOB JACOBS, New York, N. Y. Filed Feb. 16, 1884. (No model.)



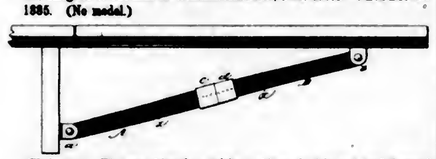
Claim.—1. An illuminating-tile composed of a metal bottom web constructed from interwoven wire or rods with openings for the reception of the lower ends of glass lenses, in combination with lenses which fit into said openings, and are each provided with a horizontal flange that extends over and rests upon the upper side of said web, and with cement which fills the space between and around said lenses, substantially as and for the purpose specified.

2. A vault or area cover composed of a supporting-frame and one or more tiles, which are fitted into or rest upon the same, and are each composed of an interwoven web of wire or rods having light-openings of predetermined size and relative arrangement, glass lenses which are adapted to fit into and extend through said openings, and are each provided with a radial flange that extends over and rests upon the upper side of said web, and cement which fills the space between and around the upper portions of said lenses, substantially as and for the purpose shown.

339,426. METAL-POLISHING COMPOSITION. ZEBULON JACOBS and WILLIAM HORNE, Salt Lake City, Utah. Filed Nov. 11, 1885. (No specimens.)

Claim.—The herein-described metal polish, consisting of tripoli, coal-oil, camphor, spirits of ammonia, and spermaceti, in the proportions specified.

339,427. LEAF-SUPPORT FOR TABLES. CHARLES KADE, Chicago, Ill., assignor of one-half to William Kreicker, same place. Filed Dec. 22, 1885. (No model.)



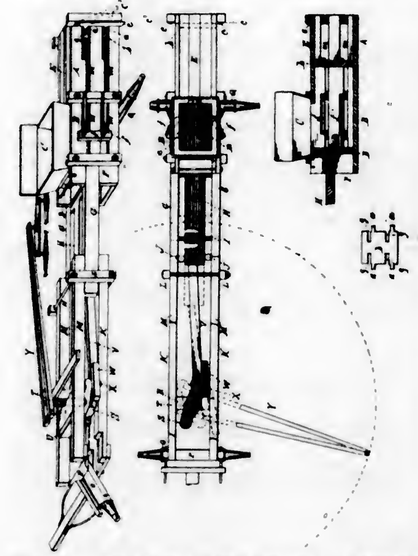
Claim.—1. The combination, with a table and a hinged leaf thereof, of an arm secured to the table-frame and provided at one end with a loop, a second arm pivoted to the leaf and provided with a loop, the arms arranged to slide each in the loop of the other, and a suitable locking device for such parts, as set forth.

2. A table-leaf support consisting of bars A and B, each provided with a loop, *c* and *d*, forming guides for such bars, and of a suitable locking device for holding such bars in their extended position, substantially as described, to operate as specified.

3. A table-leaf support consisting of bars, A and B, each provided with a loop, *c* and *d*, forming guides for such bars, and of leaf-spring C, secured to bar B, and engaging with a notch or shoulder of bar A, all substantially as described, to operate as specified.

4. A table-leaf support consisting of bar A, pivotally secured to the table-frame, and provided with a loop, *c*, and notch or shoulder *e*, and of bar B, pivotally secured to the table-leaf and provided with loop *d*, and leaf-spring C, the whole being constructed and arranged substantially as described, to operate as specified.

339,428. HAY-PRESS. JAMES KEMP, Kempton, Ill. Filed Nov. 28, 1885. (No model.)



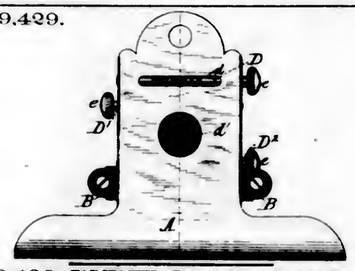
Claim.—1. The follower *b*, which is provided with tenons *a a*, fitted to slide in the longitudinal openings *m m*, in combination with the pivoted stop-plates *c*, press-box A, hopper B, and piston D, as and for the purpose specified.

2. The cam S, in combination with the pivoted connecting-plate X, the pitman V, having a notch formed on its end for engaging the cam by means of the side piece or block, W, the piston-rod H, piston D, hopper B, and press-box A, as specified, and for the purpose set forth.

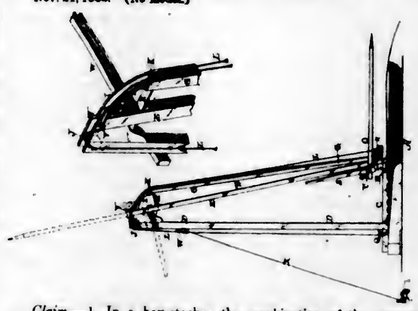
339,429. COMBINED LETTER-CLIP AND CALENDAR. MARION H. KIMBER, New York, N. Y. Filed Oct. 3, 1885. (No model.)

Claim.—The spring-jaw of a letter-clip having an aperture or apertures in its face, and having its sides bent down and perforated to constitute the bearings of rollers exhibiting signs or marks beneath said aperture or apertures, substantially as described, whereby one plate serves both as the clamp of the letter-clip and as the frame and bearings of a roller calendar or other indicator, as hereinbefore set forth.

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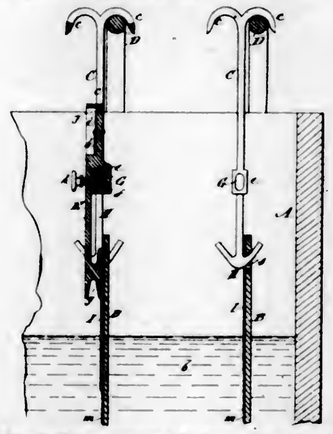
339,430. HAY-STACKER. WILLIAM T. KING, Houghton, Iowa. Filed Nov. 21, 1885. (No model.)



Claim.—1. In a hay-stacker, the combination of the runners or sills A, the standards D E, placed at a suitable angle to each other, the guides G, placed at an angle to the standards E, the curved guides connected to the upper ends of the guides, the hoisting-ropes, the hay-carriage, and the guiding-pulleys, substantially as shown.

2. The combination of the hay-carriage provided with the pulley-frames and pulleys, the standards placed at an angle to each other, the guides placed at an angle to the standards, curved guides or ways, the pulleys at the top of the frame, hoisting-ropes, and the stops or shoulders, substantially as described

339,431. APPARATUS FOR ELECTROTYPING. WILLIAM J. LADD, New York, N. Y. Filed June 30, 1885. (No model.)



Claim.—1. The combination of the insulated lower hooks, H, with the slotted hanger C, having reverse upper hooks, *c c*, and a lower electric connecting-piece, substantially as and for the purposes described.

2. The combination, with a mold-hanger having insulated lower hooks, of a detachable plate-conductor for passage of the electric current, and a carbon or copper strip for continuing the passage of the current to the mold, essentially as specified.

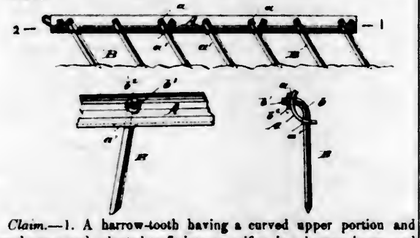
3 The removable and reversible plate-conductor E, having a hook, *f*, to provide for its suspension and attachment, and a lower arm, *g*, for establishing electric connection with the mold, substantially as described.

4. The combination of a reversible mold-hanger having insulated lower hooks, and a reversible plate-conductor for passing the electric current to the mold, essentially as specified.

5. The combination of the mold-hanger C, having reverse upper hooks, *c c*, a slot, *d*, and lower cross-piece, *e*, with the detachable and reversible plate-conductor E, having a hook, *f*, constructed to engage with said cross-piece, and a lower arm, *g*, for continuing the current to the mold, substantially as described.

6. In apparatus for suspending electrotype-molds in the bath which provides for deposit of the metal over the face of the molds, the combination, with said apparatus, of a dial-indicator for determining the period of exposure of the molds to the action of the electric current, essentially as herein set forth.

339,432. HARROW. JOHN C. LAFRENZ, Rock Island, Ill., assignor of one-half to Christian Einfeldt, same place. Filed June 19, 1885. (No model.)



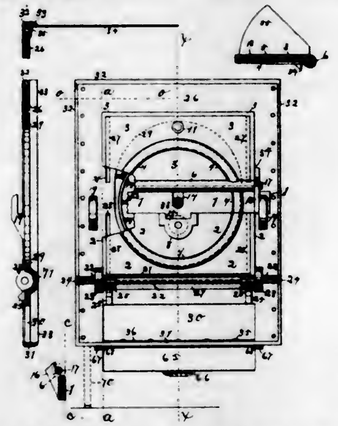
Claim.—1. A harrow-tooth having a curved upper portion and tenoned upper end adapted to fit into an orifice in a harrow-beam, and provided with a washer and fastening key or pin, in combination with an inclined curved harrow-beam with holes in its upper portion and angular slots in its lower part, substantially as described.

2. An inclined curved harrow-beam with holes in its upper portion and angular slots in its lower part, in combination with harrow-teeth having their upper portions curved inversely to the curve of the beam, tenoned upper ends adapted to fit into the upper beam-holes, and provided with washers and pins or spring-keys beyond such holes and working within the angular slots in such beams, substantially as described.

3. A harrow-frame composed of metallic beams of curve form in cross-section, said beams being inclined transversely, substantially as and for the purpose set forth.

4. In combination with a harrow-frame composed of the transversely-curved beams A, having perforations in one web and angular slots in the other, the tooth B, having its upper bent end tenoned, and a fastening device for said tooth.

339,433. PEANUT-ROASTER. MICHAEL LALLEY, THOMAS J. LALLEY, and WILLIAM A. LANE, West Covington, and ANTHONY J. STEPHENS, Covington, assignors to Michael Lalley, West Covington, Ky. Filed Sept. 23, 1885. (No model.)



Claim.—1. In a peanut-roaster, a front for the box body, having a central opening adjacent to and corresponding in size to the end of the roasting-cylinder, half-doors closing corresponding portions of the said opening and having a circular groove, and a roasting-cylinder open at the end adjacent the said doors and having its end adapted to turn within the said groove, substantially as and for the purposes set forth.

2. In a peanut-roaster, the combination of a cast front for the box-body, having a central opening adjacent to and corresponding in size to the end of the roasting-cylinder, a horizontal cross-bar over the center of the said opening removably attached to the said cast front, a door covering the opening above the said cross-bar, and another door covering the opening below the bar, substantially as and for the purposes set forth.

3. In a peanut-roaster, the combination of a front for the box-body, having a central opening, 29, adjacent to and corresponding in size to the end of the roasting-cylinder, and vertical slots at the sides of the said opening, and a chute-door closing the corresponding part of the said opening and having side walls adapted to rotate through the said vertical slots and hinged to turn about an axis in or near its lower edge, substantially as and for the purposes set forth.

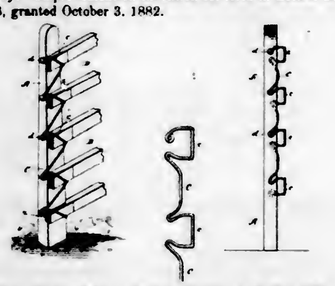
4. In a peanut-roaster, the combination of a front for the box-body, having a central opening, 29, adjacent to and corresponding in size to the end of the roasting-cylinder, and a cross-recess, 71, below the said cylinder-opening, and a chute or delivery door closing the corresponding part of the said opening and hinged to turn about an axis in or near its lower edge and in or near the said cross-recess 71, and the said door having a curved projection or a curved lower edge adapted to turn within the said recess 71, substantially as and for the purposes set forth.

5. The cross-bar 1, having a central bearing-gap, 14, and hinge-lugs 16, in combination with the cast box-body front 26, having a central opening, 29, and the door 3, having laterally-projecting hinge-pins 17, turning within the said hinge-lugs 16 on the cross-bar 1.

6. In a peanut-roaster, the combination of a front for the box-body, having a central opening, 29, adjacent to and corresponding in size to the end of the roasting-cylinder, a bar across the said opening and removably held in suitable recessed fastening devices cast in common with the said front or attached thereto, and the bar having a bearing for the corresponding end of the roasting-cylinder, and a roasting-cylinder open at the end adjacent the said cross-bar, substantially as and for the purposes set forth.

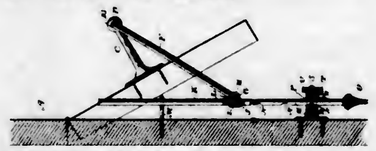
339,434. FENCE. ISRAEL L. LANDIS, Lancaster, Pa. Filed Oct. 15, 1885. (No model.)

Brief.—Improvement on invention set forth in Letters Patent No. 265,518, granted October 3, 1882.



Claim.—In a rail fence, the combination, with the rails, arranged as described, and the posts, of the wires extending obliquely across the front of the rails and over and under the lapped ends of the same, where they are looped, the loops extending downward below the upper edges of the rails and upward under the lower edges of the same, and being secured to the posts by nails or pins, substantially as specified.

339,435. TRANSOM-LIFTER. ALBERT LANGSTROM, Council Bluffs, Iowa. Filed Jan. 21, 1886. (No model.)

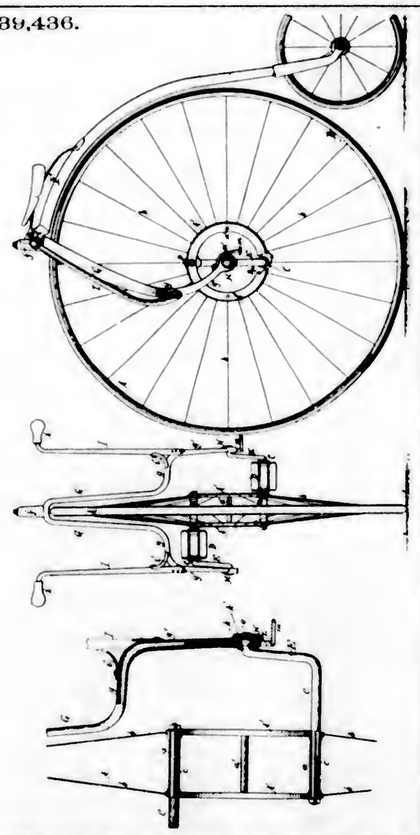


Claim.—In a transom-lifter, the combination of an outwardly-projecting arm or bracket upon the transom, a vertically-sliding operating-rod having a rounded notch, a block having a smooth perforation fitting upon the rod, and a screw-threaded perforation intersecting the other perforation at a right angle with its side and registering with the notch, and a connecting-rod fitting in the threaded bearing and perforation, as and for the purpose shown and set forth.

339,436. VELOCIPEDE. ERNST G. LATTA and ADRIAN C. LATTA, Friendship, N. Y. Filed Sept. 21, 1885. (No model.)

Claim.—1. In a velocipede-wheel, the combination, with the rim and spokes, of an annular hub constructed with unobstructed open ends,

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and cranks secured to the hub outside of the axis thereof, whereby the hub is adapted to receive loggage, &c., substantially as set forth.

2. The combination, with the wheel and fork, of cranks secured with their inner ends to the wheel, and provided at their outer ends with arms which are journaled in the fork-arms, substantially as set forth.

3. The combination, with the wheel having an annular hub and the fork-arms, of cranks secured to the hollow hub, and provided at their outer ends with arms which are journaled in the fork-arms, substantially as set forth.

4. The combination, with the wheel and fork-arms, of cranks secured to the wheel, pedals mounted on the cranks between the wheel and fork-arms, and journal-arms formed at the outer ends of the cranks, and journaled in bearings in the fork-arms outside of the pedals, substantially as set forth.

5. The combination, with the wheel, of fork-arms having their lower ends provided with spherical bearings, and cranks secured with their inner ends to the wheel, and provided at their outer ends with arms which terminate in spherical journals, substantially as set forth.

6. The combination, with the wheel provided with cranks, of a fork having its arms composed of upper portions, which are arranged closely against the sides of the wheel, outwardly-projecting portions *g*, forming foot-rests, and outer depending portions, *g'*, provided with journal-bearings, substantially as set forth.

7. The combination, with the crank-wheel, of fork-arms curved or bent forwardly from the center of the wheel, and upright handle-bars secured with their lower ends to the forwardly-curved portion of the fork-arms, and arranged at a suitable distance outwardly from the fork-arms, to permit the rider's legs to pass between the handle-bars and fork-arms, whereby the rider's legs are prevented from coming in contact with the bars which connect the handle-bars and fork-arms, substantially as set forth.

8. The combination, with the fork-arm and upright handle-bar, of a connecting foot-rest, *g*, arranged above the crank-wheel bearings, substantially as set forth.

9. The combination, with the fork-arm provided with an outwardly-turned lower portion, *g*, and a depending arm, *g'*, of an upright handle-bar, I, secured with its lower portion to the arm *g'*, substantially as set forth.

10. The combination, with the wheel provided with cranks which carry journals at their outer ends, of a fork having its upper portions arranged closely against the wheel and provided with outwardly-turned portions, which extend over the cranks and terminate in depending arms provided with bearings, and upright handle-bars secured with their lower ends to the fork-arms at a suitable distance outwardly, to permit the rider's legs to pass between the fork and handle-bars, substantially as set forth.

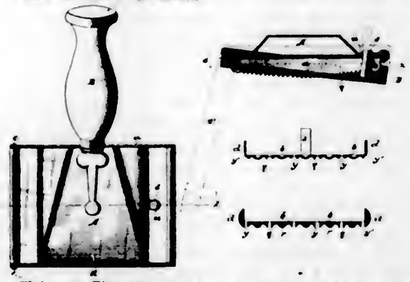
11. The combination, with the wheel and fork, of an upright handle-bar arranged outwardly from the fork, and having its lower end made vertically adjustable on the fork, substantially as set forth.

12. The combination, with the spherical journal, of a grooved or recessed bearing surrounding the journal, and several rows of balls arranged in the groove of the bearing side by side, and in contact with each other, whereby the spherical journal is supported in the bearing, substantially as set forth.

13. The combination, with the fork provided with a spherical bearing having an opening in one side, of a spherical journal inserted in the bearing through said opening, and balls interposed between the bearing and the journal, substantially as set forth.

14. The combination, with the fork having a lower portion, *g*, arranged outside of the pedal, of a step secured to said lower portion of the fork, substantially as set forth.

339,437. CURRY-COMB. WILLIAM E. LAWRENCE, New York, N. Y. Filed Jan. 6, 1886. (No model.)

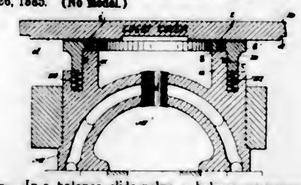


Claim.—1. The combination, in a curry-comb, of comb-bars, having rounded ends and notches *x*, and a scraper-plate hinged to the body, and with slots *y* and bearings arranged to make contact with the rounded ends of the comb-bars, substantially as set forth.

2. The combination, in a curry-comb, of comb-bars, having rounded ends and notches, and a hinged and slotted scraper-plate provided with a projection, *s*, substantially as and for the purpose set forth.

3. The combination, with the body of a curry-comb provided with comb-bars, of a scraper-plate hinged to said body and having scraper-bars *b*, intervening slots *y*, and side flanges, *d*, at right angles to the body of the plate, arranged to move close to the outer comb-bars, and separated from the adjacent blades *b* by slots *y'*, the edges of the scraper-bars moving close to each side of each comb-bar, substantially as set forth.

339,438. BALANCE SLIDE-VALVE. PULASKI LEEDS, Louisville, Ky., assignor to the Railway Speed Recorder Company, Kent, Ohio. Filed Dec. 26, 1885. (No model.)



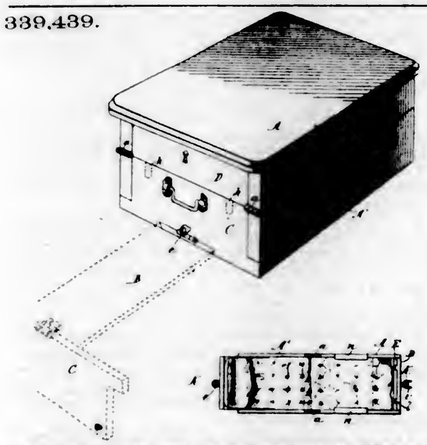
Claim.—In a balance slide-valve, a balance-ring arranged to slide on the valve-chest cover or on a seat connected to said cover and provided with a flange, the latter having continuous series of holes through the same, substantially as set forth.

339,439. FOLDING BED. ISAAC LEVY, Chicago, Ill. Filed Apr. 24, 1885. (No model.)

Claim.—1. The combination, with bed A A', of the bottom sliding extension, B, provided with slot *c* and pin *d*, its hinged extension C, and the head-board F, as set forth.

2. The combination, with bed A A', of the bottom sliding extension, B, provided with slot c and pin *d*, its hinged extension C, and the strip D, as set forth.

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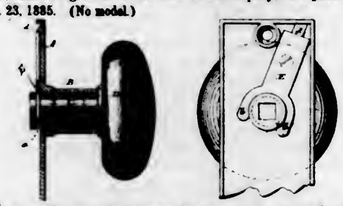


3. The combination, with bed A A', of the bottom sliding extension, B, provided with slot *c* and pin *d*, its hinged extension C, and the strips D and E, as set forth.

4. The combination, with bed A A', of the bottom sliding extension, B, provided with hinged extension C, and slot *c* and pin *d*, as set forth.

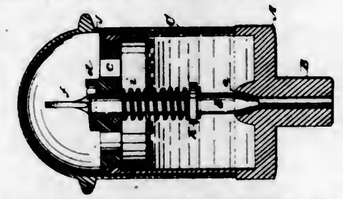
5. The combination, with bed A A' and the bottom sliding extension, B, provided with hinged extension C, of the hook *e*, eye *e'*, and arm *g*, as set forth.

339,440. KNOB ATTACHMENT. BENJAMIN F. LIBBY, South Norwalk, Conn., assignor to the Norwalk Lock Company, same place. Filed Nov. 23, 1885. (No model.)



Claim.—The combination of the rose A, constructed with the tubular sleeve B, the knob D, constructed with the neck C, corresponding to and so as to revolve freely in said sleeve, the neck of the knob extending through the rose, and at its inner end constructed with an annular groove, *a*, a fork, E, adapted to embrace the neck of the knob within said groove upon the inside of the rose, and the inside of the rose provided with a bearing against which said fork may rest to secure it in place, substantially as described.

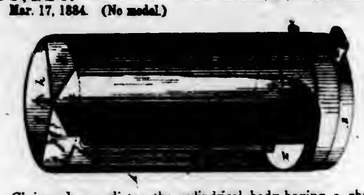
339,441. OIL-CUP. WILLIAM A. MAHAN and CHARLES ROSSETTER, Marquette, Mich. Filed Jan. 12, 1886. (No model.)



Claim.—1. In an oiler, the combination, with the cup A, provided with the nipple B and valve-seat *a*, of the valve *b*, the flange *h*, and cross-bar *f*, the rim *d*, having the inclined surfaces or cams *e e'* formed thereon, the cross-bar *f*, arranged to engage the inclined surfaces, the spring *i*, surrounding the valve-spindle and arranged to press the valve to its seat, and the cover C, inclosing the oil-cup and valve-operating devices, substantially as herein shown and described.

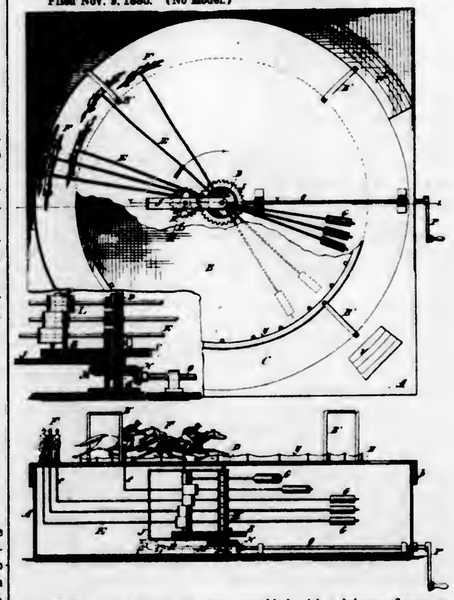
2. In an oiler, the combination, with the cup A, provided with the nipple B and valve-seat *a*, of the valve *b*, having the cross-bar *f*, the rim *d*, having formed thereon the inclined surfaces or cams *e e'*, one or both of the inclined surfaces or cams being provided with notches *g*, and the cover C, inclosing the oil-cup and valve-operating devices, substantially as herein shown and described.

339,442. RADIATOR. FRANCIS MARAK, Jr., Everest, Kans. Filed Mar. 17, 1884. (No model.)



Claim.—In a radiator, the cylindrical body having a chamber in its base and inlet and outlet necks at its ends, in combination with the division plates or partitions provided with longitudinal slits or incisions and united substantially as described and shown.

339,443. TOY RACE-COURSE. JONAH T. MARRAN, Brooklyn, N. Y. Filed Nov. 9, 1885. (No model.)



Claim.—1. A toy race-course provided with miniature figures attached to wires or arms journaled on a central post, as described, in combination with a follower made to revolve about the axis of such post, having a rotating shaft provided with cams which bear respectively against the several arms and successively project the figures one beyond the other as the follower revolves and the shaft rotates.

2. A toy race-course provided with the horizontal wires or arms and the figures and counterbalancing-weights, in combination with the follower journaled on the same post as the horizontal arms, and provided with the cam-shaft and cams and the pinion-wheel gearing into the stationary pinion-wheel on the aforesaid central post.

339,444. CARVING-MACHINE. REUBEN T. MARKER, Philadelphia, Pa. Filed July 20, 1885. (No model.)

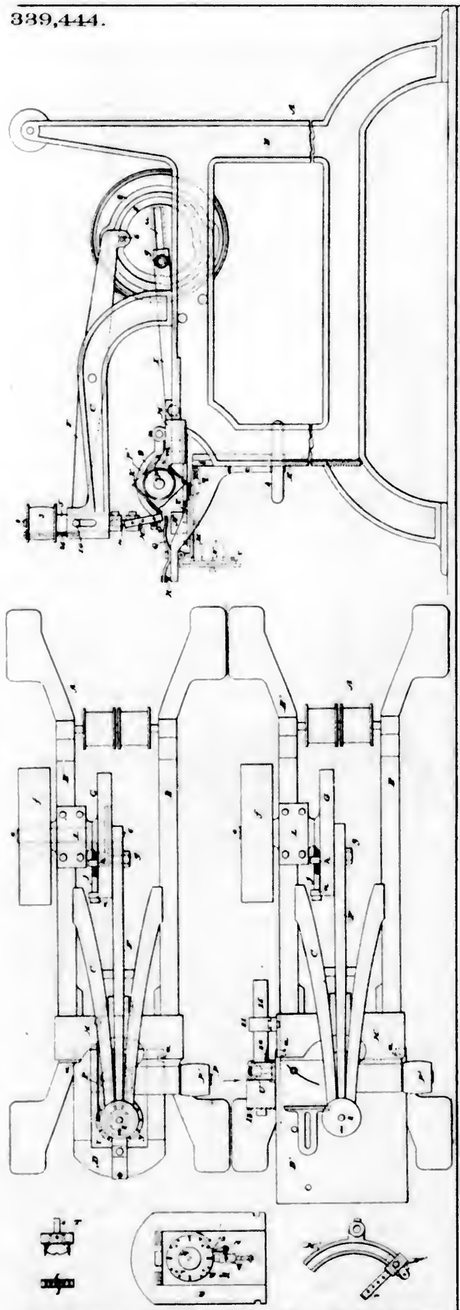
Claim.—1. The combination, in a wood-working machine, of a cross-head having a definite reciprocating movement, and carrying a revolving cutter, and a table supporting the blank to be formed, and a feed device connected to be operated by the reciprocation of the cross-head, substantially as described.

2. The combination of the frame, cross-head having a definite reciprocating movement, revolving cutter-head carried by the cross-head, and an adjustable table connected detachably to the frame, substantially as described.

3. The combination of the frame, cross-head having a definite reciprocating movement, cutter carried thereby, table and hub adapted to receive a blank, and a feed device directly connected to the cross-head for rotating the hub intermittently, substantially as described.

4. The combination of the reciprocating cross-head carrying a cutter, the table, hub having a notched flange, and catch carried by the cross-head and engaging with said flange, substantially as described.

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by the hinged leaf and provided with a projection or stud, 13, detent supporting said leaf when in its elevated position, and lever 14, adapted to be struck by the stud 13, to retract the detent, and means, substantially as described, for rotating said hub, as set forth.

7. The combination, in a wood-working machine provided with a reciprocating cross-head carrying a cutter, of a table carrying a hinged leaf provided with a hub, connections, substantially as described, between said cross-head and hub for intermittently rotating the latter, a detent supporting the hinged leaf when elevated, and connections, as described, between the hub and detent to release said leaf when the hub completes a revolution, as set forth.

8. The combination of the blank holding and feeding devices, reciprocating cross-head carrying a cutter-head, K, and graver v, and support therefor connected to the cross-head, substantially as described.

9. The combination of the blank holding and feeding devices, reciprocating cross-head and cutter, graver and support connected to the cross-head, and a lever connected to vertically reciprocate said graver-support, substantially as described.

10. The combination, with the frame of a wood-working machine, of a graver, means, substantially as described, for horizontally reciprocating the same, vertically-sliding graver-support carried by the frame, cam-wheel G, having two or more grooves, pivoted lever F, connected to said graver-support and cam-wheel, and an adjustable connecting-pin, 6, substantially as described.

11. The combination of the reciprocating cross-head and cutter, a table supporting the blank, a guide, a graver connected to a support on said guide, and an arm connecting said support and the cross-head, substantially as described.

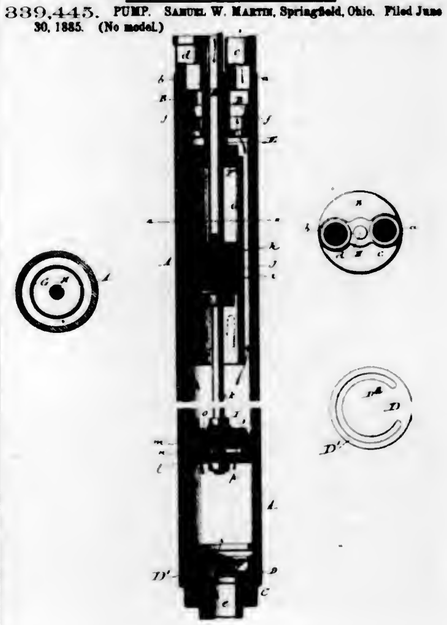
12. The combination of the reciprocating cross-head carrying a cutter at its forward end, table arranged in the path of and below said cutter, and vertical shaft turning in bearings above the table and constructed to support a cutter-head, T, substantially as described.

13. The combination of the reciprocating cross-head carrying a cutter, table, overhanging arm, shaft 2, turning in a sliding bearing in said arm, cam-wheel, pivoted lever connected to said wheel and sliding bearing to reciprocate the latter, and a graver supported by said shaft and connected to the cross-head, substantially as described.

14. The combination, with the reciprocating cross-head, of the overhanging arm, vertical shaft and its sliding bearing supported thereby, pin 10, projecting laterally from said bearing, reciprocating graver, and interchangeable supports for the graver constructed to be hung to said pin, and connections, substantially as described, between said graver and cross-head, as and for the purpose set forth.

15. The combination, with the table, reciprocating cross-head, and cutter, of supports having straight and curved guides, a graver carried by said supports, and a connection between said graver and the cross-head, substantially as described.

339,445. PUMP. SAMUEL W. MARTIN, Springfield, Ohio. Filed June 30, 1885. (No model.)



5. The combination, with the frame, of the positively-reciprocating cross-head, table adjustable upon said frame and provided with a hinged leaf and detent therefor, and hub carried by the leaf, and means, substantially as described, for operating said detent, as and for the purpose set forth.

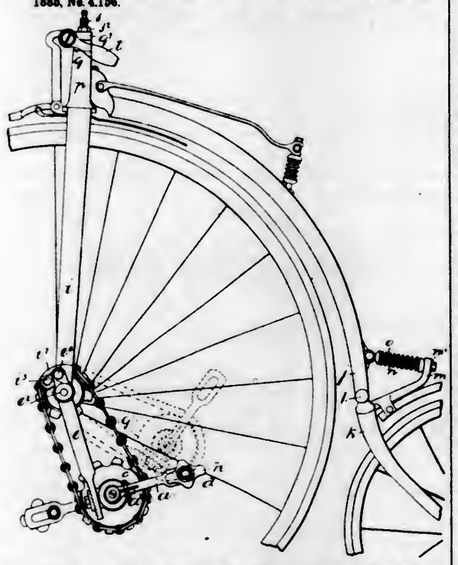
6. The combination, in a wood-working machine, of a reciprocating cross-head carrying a cutter, a table having a hinged leaf, hub carried

Claim.—1. The main cylinder, the cap B, screwed within the cylinder and flush externally therewith, with ti. vertical ports in its interior, in combination with the internal cylinder closed at its top and connected with the cap by the tube E of smaller diameter, as shown and described, whereby the reduction of the cap to enter the cylinder is permitted without reducing the size of the ports or impeding the upward passage of the water therethrough.

2. In combination with the internally-threaded barrel A, and the foot C, having an externally-threaded flange with an opening in its side, the flexible sheet D, having its central portion inserted through and within the flange, and its peripheral portion extended around the same.

3. In a force-pump, the combination of the main barrel, the top screwed therein flush with its exterior and provided with internal vertical ports, the pipes *c d*, screwed into the cap within the circumference of the pump, the internal cylinder closed at its top and suspended from the cap B by the cylindrical connection E, the piston-rod H, and the two pistons connected therewith.

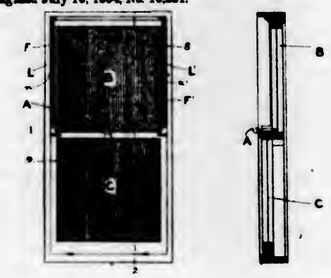
339,446. VELOCIPEDE. STEPHEN MARTIN, Birchfield Road, Locelle, near Birmingham, County of Warwick, England. Filed Nov. 25, 1885. (No model.) Patented in England Dec. 16, 1884, No. 16,496, and Apr. 2, 1885, No. 4,156.



Claim.—1. In a velocipede, the combination, with the driving-axle e^2 and the fork *i*, having a slotted bracket at its lower end, of the pedal-carrying arm *l*, pivoted to the shaft i^2, and provided with the short arm e^3 and the screw e^4, passing through said short arm and a slot, i^3, said short arm being continued or extended above the driving-axle e^2, substantially as described.

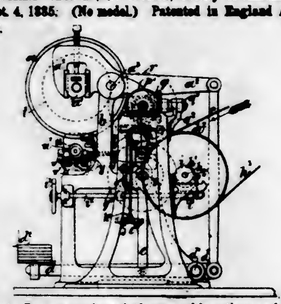
2. In a velocipede, the combination, with a divided backbone consisting of the sections *j k*, jointed together at *l*, of the rearwardly-projecting arm *m*, the rod *n*, secured to the said arm and hinged or pivoted to the section *j*, and the spiral spring *o*, coiled upon said rod, substantially as described.

339,447. WINDOW. RICHARD MASON, Hemsworth, near Pontefract, County of York, England. Filed Dec. 21, 1885. (No model.) Patented in England July 16, 1884, No. 10,221.



Claim.—The combination of pivoted spring-actuated strips F F with a pivoted sash, said strips bearing against the side edges of said sash, substantially as set forth.

339,448. MACHINE FOR PRINTING SAMPLES ON TEXTILE FABRICS. WILLIAM MATHER, Manchester, County of Lancaster, England. Filed Sept. 4, 1885. (No model.) Patented in England Apr. 26, 1884, No. 6,338.



Claim.—1. In a sample-printing machine, the combination, with the pivoted sample-roll arms and the driving mechanism of the sample-roll, substantially as described, of the cam mounted on a shaft geared to the driving-shaft and the weighted pivoted rod-connections, substantially as described, of said arms actuated by said cams, together with the driving-shaft, reversing-gear, and the pivoted rod-connections between said latter gear and the said weighted rod-connections, substantially as and for the purpose set forth.

2. In a sample-printing machine, the combination, with the engraved circumferentially-adjustable roll, of the sample-roll and mechanism for automatically raising and lowering the latter roll alternately and for reversing its motion, substantially as described.

3. In a sample-printing machine, the combination, with the engraved roll circumferentially adjustable by the pitching pin or pointer and rotatably supported, of the sample-roll mounted to have an automatic alternately rising and falling motion, and to be reversed in its rotary motion, substantially as and for the purpose set forth.

4. In a sample-printing machine, the combination, with the pivoted sample-roll-supporting arms, of the pivoted weighted rod-connections, substantially as described, and the cam mounted on a shaft geared to the driving-shaft, and the rod-connection between the cam and the weighted rod-connection, substantially as and for the purpose set forth.

5. In a sample-printing machine, the combination, with the pivoted sample-roll arms, the pivoted weighted rod-connections, substantially as described, the driving-wheel with its clutch, the cam with its shaft geared to the driving-shaft, and the gear-shifting mechanism, substantially acting in conjunction with the sample-roll shaft, and connected to a lever with the free end resting in a slot in a rod acted upon by said cam, and connected to the said weighted rod-connection, substantially as and for the purpose specified.

339,449. MULTIPLE TELEGRAPHIC REPEATER. WILLIAM MAVER, Jr., Jersey City, N. J. Filed Apr. 22, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, with two series of main-line conductors, of a source of electricity applied thereto, and means, substantially such as described, for automatically repeating from any line of either series into all of the lines of the other series.

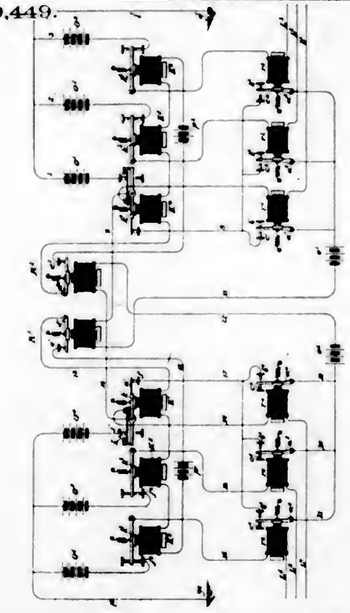
2. The combination, substantially as hereinbefore set forth, with two series of main lines, of a repeating-magnet applied to each of said lines, means for automatically operating the repeating-magnets of either series by currents from any one of the lines of the other series, and means, substantially such as described, whereby the operation of one series of repeating-magnets temporarily prevents the operation of the other series.

3. The combination, substantially as hereinbefore set forth, of two series of lines, two series of repeating-magnets, means for repeating from any line of either series into all the lines of the other series, means, substantially such as described, whereby the operating-repeaters prevent the other repeaters from operating, and means, substantially such as described, whereby a receiving-line prevents the operation of its repeater at the completion of a signal.

4. The combination, substantially as hereinbefore set forth, of a main line, a relay-magnet included in the circuit thereof, a battery the connections of which are made and interrupted by the movements of the key applied to said main line, a reversing-magnet, a battery applied thereto, the circuit-connections of which are made and interrupted by the operation of said relay, and a series of repeating-instruments, all of which are controlled by the operation of said reversing-instrument.

5. The combination, substantially as hereinbefore set forth, of two reversing-instruments, two series of main lines respectively correspond-

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ing to said instruments, means, substantially such as described, operated by currents traversing said main lines for operating said instruments, and means, substantially such as described, for normally preventing one of said instruments from operating while the other instrument is in use.

6. The combination, substantially as hereinbefore set forth, of two series of lines, two reversing-instruments respectively corresponding thereto, means for operating either of said instruments by currents traversing one of the lines of the corresponding series and for preventing one of said instruments from operating while the other is in use, and means for interrupting the operation of the first instrument and bringing the second into operation at the termination of a signal.

7. The combination, substantially as hereinbefore set forth, with a telegraphic main line, of an electro-magnet included therein, a series of lines, a battery for applying currents to said series of lines, a local battery and its circuit, the connections of which are controlled by said electro-magnet, an electro-magnet included in said circuit, and a series of circuit-controlling magnets applied to series of lines, respectively, and controlled by the operation of the last-named electro-magnet.

8. The combination, substantially as hereinbefore set forth, with a series of main lines, of a reversing-instrument, means, substantially such as described, for actuating the same, a local battery, its circuit, the connections of which are controlled by said reversing-magnet, armature-levers respectively applied to electro-magnets and serving to control the connections of the series of main lines, respectively, a second reversing-instrument, a local circuit for operating the same, and means, substantially such as described, applied to one of said series of electro-magnets, whereby the circuit-connections of said second local battery may be interrupted when the circuit of said first-named local battery is interrupted.

9. The combination, substantially as hereinbefore set forth, of the main-line battery O', and the electro-magnet r', its armature and rear contact-point, the local battery o', the reversing-magnet R', included in the circuit of said local battery, a main line, the local battery p', the circuit-connections of which are controlled by the operation of the repeating-magnet R', the series of electro-magnets included in the circuit of said battery p', and the series of main lines having their circuit-connections controlled by the armature-levers of said series of electro-magnets, respectively.

10. The combination, substantially as hereinbefore set forth, of a main line, a battery, an electro-magnet included in the main-line circuit, its armature and rear contact-point, the local battery o', the circuit-connections of which are controlled by the operation of said electro-magnet, the series of electro-magnets controlled by the opening and closing of the circuit of said local battery, a series of main lines having their circuit-connections controlled by the armature-levers of said series of electro-magnets, respectively, a second local battery having its circuit-connections substantially the same as those of the first-named local battery, and means, substantially such as described, for preventing the second local circuit from being completed by the operation of the first-named electro-magnet.

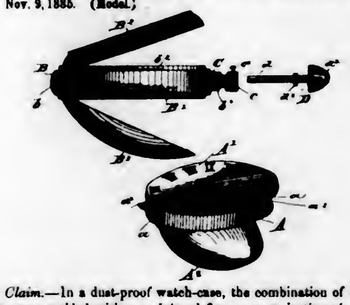
11. The combination, substantially as hereinbefore set forth, of the instruments R' and R², the two series of instruments K', K², and K³, and K⁴, K⁵, and K⁶, means, substantially such as described, for operating the instruments R' and R², and thereby controlling the movements of the two series of instruments, respectively, and two series of main lines, the connections of which are controlled by the respective armatures of said series of electro-magnets.

12. The combination, substantially as hereinbefore set forth, with two independent series of telegraphic main lines, of means for repeating from any line of one series into the other series of lines, and means, substantially such as described, whereby signals may be automatically transmitted from any of the last-named series of lines back into the first-named line.

13. The combination, substantially as hereinbefore set forth, of two series of lines, a relay-magnet included in the circuit of each of said lines, two series of repeating-instruments respectively applied to the lines of said series, two local batteries respectively controlled by any relay of the corresponding series, and two circuit-controlling devices respectively controlled by the local batteries, whereby during the operation of a relay belonging to one series of lines the repeating-instruments of that line are prevented from operating.

14. The combination, substantially as hereinbefore set forth, with two independent series of main lines, of a transmitter, a reversing-magnet, and a relay for each series, a local circuit for each reversing-magnet, each transmitter being arranged to break the local circuit of the reversing-magnet of the other transmitter before the main-line circuit is broken, whereby one transmitter is inoperative while the other is being operated, substantially as described.

339,450. WATCH-CASE. FRANK MAYR, South Bend, Ind. Filed Nov. 9, 1885. (Model.)



Claim.—In a dust-proof watch-case, the combination of the movement-case provided with a peripheral flange, *a*, projection *a'*, and opening *a²*, and having the hinged lid A² on the opposite side from its dial, the outer case composed of the hinged covers B² B³, and rim B', provided with the recess *b* and opening *b'*, and inner circumferential groove *b²*, and stem C rising from the rim around the opening *b'* and provided with the recess *c* and holding-screw *c'*, and the push-pin or stem D, having a proper head and provided with a squared end, *d*, and circumferential flange *d²*, all constructed and arranged substantially as and for the purpose specified.

339,451. LAMP FOR MAGIC LANTERNS. THOMAS H. MCALLISTER, New York, N. Y. Filed Jan. 22, 1886. (No model.)

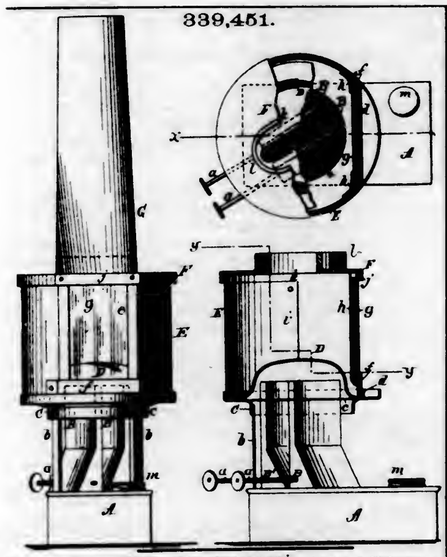
Claim.—1. In a lamp for lanterns and other optical instruments, two or more wick-tubes arranged diagonally with reference to the axis of the lenses of the instrument, substantially as herein shown and described.

2. In a lamp for optical instruments, the combination, with the diagonally-arranged wick-tubes, of the chimney-support C, provided with the stop *d*, the cone D, having a portion of one edge cut away to cause it to register with the wick-tubes, a metallic chimney-body, E, open in one edge thereof and provided with a glass plate, *g*, the cap F, having the elliptical opening *k*, and the chimney-top G, fitted to the elliptical collar, substantially as herein shown and described.

3. The combination, in a lamp for optical instruments, of the reservoir A, provided with the diagonally-arranged wick-tubes B, the chimney-support C, the chimney-body E, open in one side, the glass plate *g*, the cone D, the centrally-apertured cap F, and the chimney-top G, substantially as herein shown and described.

4. As an improved article of manufacture, a lamp formed of the reservoir A, diagonally-arranged wick-tubes B, wick-operating spindles *a*, the chimney-support C, provided with the stop *d*, the chimney-body E, open in one side, the glass plate *g*, fitted to the opening, the curved reflector *i*, the cap F, and the chimney-top G, substantially as herein shown and described.

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339,452. LISTED-CORN CULTIVATOR. ALBERT I. MCCANDLESS, Vining, Kans. Filed Feb. 10, 1886. (No model.)

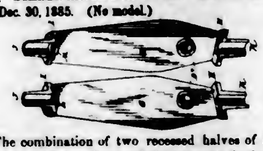


Claim.—1. In a cultivator, the combination, with the cross-bars, of a stationary and a movable trough provided with pins *a a*, substantially as described.

2. In a cultivator, the combination, with a frame, of a stationary and a movable trough carrying teeth *a a*, arranged in sets D E, substantially as described.

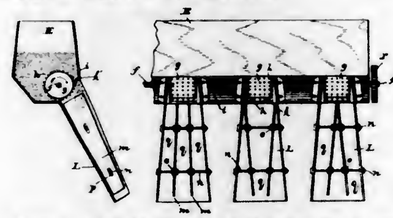
3. In a cultivator, the combination, with cross-bars, one of which carries a stationary trough, A, and a movable trough, F, of cutters A', both troughs being provided with pins, substantially as described.

339,453. ROLLER-HINGE FOR GATES. EDDY T. MCKANE, Chicago, Ill. Filed Dec. 30, 1885. (No model.)



Claim.—The combination of two recessed halves of a gate-hinge, the lower pintle of which is hollow and the upper pintle closed by means of a projection upon one of the halves fitting within a recess upon the other half, eyebolts for said pintles, and a roller journaled in bearings in said halves, as shown and described.

339,454. FERTILIZER-DISTRIBUTER. WILLIAM A. MCWHORTER, Norfolk, Va. Filed Jan. 13, 1886. (No model.)

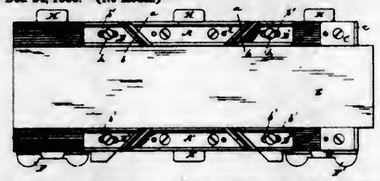


Claim.—1. A fertilizer-distributer having in combination a hopper provided in its vertical side with an opening, *k*, and a feed-drum, *g*, to turn in a vertical plane, projecting partly through said opening, and leaving at the upper part thereof an elevated discharge-outlet, *k'*, whereby the fertilizer will be discharged by the action of the upper surface of the feed-drum, as set forth.

2. A fertilizer-distributer having a discharge-chute provided with movable partitions, and means for holding said partitions in any desired position, whereby the fertilizer descending the chute may be delivered on the ground in a prescribed manner, as set forth.

3. A fertilizer-distributer having a discharge-chute provided with cross-rods, partitions which are movable on the cross-rods, and holding devices, substantially as described, for retaining the partitions in any desired position, as set forth.

339,455. MITER-BOX. LEVERETT H. OLMSTED, Corona, N. J. Filed Dec. 24, 1885. (No model.)



Claim.—1. A miter-box having angular slots, the upper walls of said slots being formed of metal plates secured to the box and separated by a space less than the width of the slot below said plates, as set forth.

2. The combination, with a miter-box, as described, of metal plates having vertical extensions, as *a b*, secured to the upper surface of the slotted sides and having bearing-faces corresponding to the angle of the slots, as set forth.

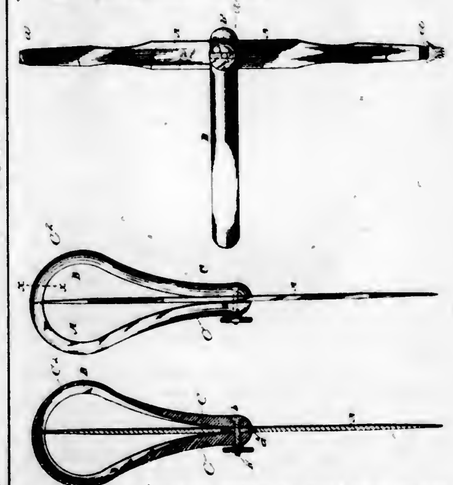
3. The combination, with a miter-box, as described, of metal plates secured to the top or upper surface of the slotted sides, having bearing-faces corresponding to the angle of the slots and arranged in pairs, and provisions for adjusting one plate of each pair to accommodate different thicknesses of saw-blade, as set forth.

4. The combination, with a miter-box, as described, having angular slots or kerfs, as shown, of metal plates having upward extensions and bearing-faces corresponding with the angles of the slots, the said plates being applied to the sides of the box and arranged in pairs to form bearing-walls to the slots, one plate of each pair having an elongated slot to allow of ready adjustment, and a securing-screw, as *h*, as and for the purposes set forth.

5. The combination, with a miter-box, as described, having its base extend beyond the end of its sides, of metal plates C, secured to the ends of said sides, and having vertical bearing-faces *c*, arranged at right angles to the longitudinal plane of the box, as set forth.

6. The combination, with a miter-box, of folding or otherwise movable arms carried at or near one edge of the box, and arranged to be projected and engaged with the edge of a bench or table or to be thrown back within the limits of the box at will, as specified.

339,456. SCREW-DRIVER. WILLIAM L. PARMELEE, Birmingham, Conn. Filed Feb. 2, 1886. (No model.)



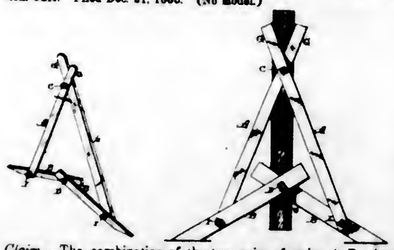
Claim.—1. A screw-driver consisting of a handle having the yielding clamping-arms, and a longitudinally-adjustable blade pivoted in and clamped between said arms, substantially as described.

2. A screw-driver comprising a handle provided with yielding binding-arms, and a slotted blade having longitudinal adjustment between

said arms, the inner end of the blade adapted to be retained against lateral displacement within the bow which connects said arms, substantially as described.

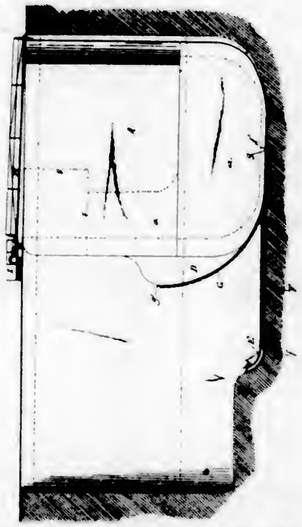
3. In a screw-driver, a handle made or formed of a single piece of metal, and comprising the tapering binding-arms having the straight inner faces, and the hollow or curved bow-shaped arm connecting the binding-arms, in combination with a reversible and longitudinally-adjustable blade having a slot, and a threaded pin or bolt provided with a binding-screw, substantially as described.

339,457. FENCE. WALTER PEARSON and WILLIS PEARSON, West Milton, Ohio. Filed Dec. 21, 1885. (No model.)



Claim.—The combination of the two pairs of strips A B, pivoted together at C D I, the upper strips, A, being provided with the ends G, which are adapted to close upon the upper strip which connects the two panels together, with the two panels of the fence and the connecting-strips H O', the upper strip, H, being made to catch in the crotch formed by the upper ends of the strips A, and the lower strip being made to catch underneath the upper ends of the lower strips, B, for the purpose of preventing the strips from closing downward, substantially as shown and described.

339,458. LOCK-GATE. ROBERT E. PEARY, Cape Elizabeth Depot, Me. Filed Oct. 31, 1885. (No model.)



Claim.—1. A tilting rolling gate for canal-locks, docks, and the like, provided with a substantially water-tight side or sides for controlling the passage of water and vessels through the lock or chamber, as set forth.

2. A tilting rolling gate for locks, docks, and similar structures, having a shifting ballast, as set forth.

3. A tilting rolling gate having a shifting ballast, in combination with a gate-receiving recess in the side of the chamber or lock.

4. A tilting rolling gate, in combination with a gate-receiving recess in the side of the lock or chamber, both the gate and recess being made substantially water-tight, whereby the passage of water and vessels through the chamber may be controlled, for the purposes set forth.

5. The combination of a lock, dock, caisson, or like chamber, and a tilting rolling gate, substantially as set forth.

6. The combination of a lock, dock, caisson, or similar chamber, a gate-recess communicating with the chamber, and a rolling tilting gate for operation within the chamber and gate-recess, substantially as set forth.

7. A tilting rolling gate for locks, docks, and similar structures having a water-ballast, as set forth.

8. A tilting rolling gate for locks and the like, having means, substantially as described, upon the gate and gate-sill for preventing any slipping of the gate in its operative movements.

9. A canal-lock, dock, or the like having a tilting rolling gate provided with a shifting ballast, in combination with a track laid upon its operating-sill, as set forth.

10. A tilting rolling gate, a sill upon which it operates, and a chain or rope attached to the outer end or part of the sill and to the bottom of the gate, all in combination, as set forth.

11. A tilting rolling gate, a sill upon which the gate operates, and a chain attached to the outer edge of the gate at one end and to the sill at the other, all in combination, as set forth.

12. A tilting rolling gate, a sill upon which the gate operates, a chain or rope attached to the gate-bottom and to the sill, and a second chain attached to the outer edge of the gate and to the sill, all in combination, as set forth.

13. A gate having an arc-shaped edge upon which it rolls in opening or closing and provided with a shifting ballast, as set forth.

14. A tilting rolling gate, a chain attached to the sill and outer edge of gate, and another chain attached to sill and to bottom of gate, a track upon the gate-sill, and corresponding flanges upon the gate, all combined to operate as set forth.

15. A water-chamber and, in combination, a tilting rolling gate for locks and similar structures, having a curved extension frame-work attached to the side and edge of the gate, and upon which it tilts and rolls, as set forth.

16. A gate having a shifting ballast and an arc-shaped edge upon which it rolls, in combination with a hinged connecting-arm for operating the gate.

17. A water-chamber and a gate having an arc-shaped edge upon which it rolls, in combination with a hinged operating-arm pivoted to the gate at a point substantially opposite the segmental bearing of the gate.

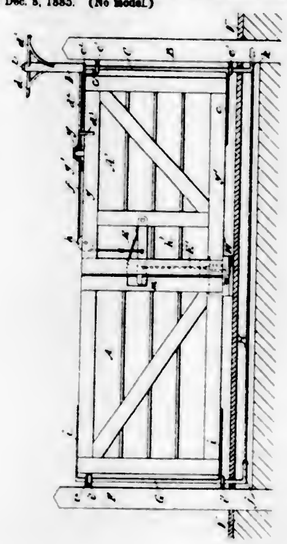
18. A gate, a gate-recess in the side of the lock, a car spanning the gate-recess, means, as described, for moving the car, and a connecting-rod attached to the car and gate, all in combination, as set forth.

19. A gate, in combination with an operating connecting-rod having adjustable guy-lines for correcting any deflection of the gate.

20. A rolling tilting gate for docks, locks, and the like, provided with means, substantially as described, for holding the gate against its seat when shut.

21. A gate, a lock, dock, caisson, or like chamber, a gate-recess, a car spanning said recess and adapted to travel thereover, means, as described, for moving the car, and a connection between the car and gate, all in combination, as set forth.

339,459. FARM-GATE. EDWIN H. PENFIELD, Santa Barbara, Cal. Filed Dec. 8, 1885. (No model.)



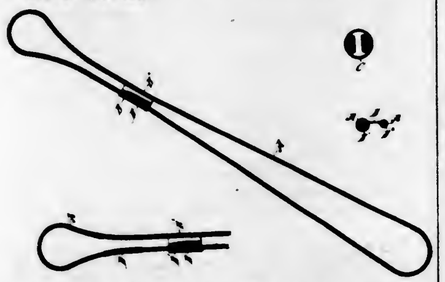
Claim.—1. The hinge-rod C for gates, carrying at its upper end the oppositely-projecting arms d d', and the arm d^2 below the arms d d', having the downwardly-projecting fingers d^3 d^3, substantially as and for the purpose set forth.

2. The combination, with the hinge-rod C, provided with the plates c c, of the tube D, fitting loosely on the upper end of the said rod, and provided at its upper end with the arms d d', and the arm d^2 below the arms d d', provided with the fingers d^3 d^3, substantially as herein shown and described.

3. The combination, with a gate and its latch, of the hinge-rod C, provided with the plates c, for securing the rod to the gate, the tube D, provided with the arms d d', the arm d^2, having the fingers d^3 d^3 projecting down on opposite sides of the top rail of the gate, and the cord f, connected to the latch and the outer end of said arm d^3, substantially as herein shown and described.

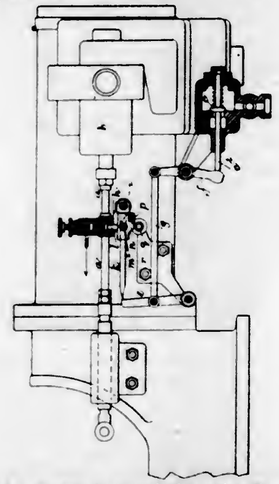
4. The combination, with the gates A A', the posts B F, the latch E, and the rod E', pivoted to the latch E, of the hinge-rod G, provided with the arm j at its lower end, the hinge-rod C, provided with arm k at its lower end, and carrying the oppositely-projecting arms d' d' at its upper end, and the arm d^2 below the said arms, having downwardly-projecting fingers d^3 d^3, the rope or cord f, connected to the latch and to the arm d^3, and the rod H, connecting the arms j k, substantially as herein shown and described.

339,460. SLEEVE-HOLDER. JOSEPH W. PILKINGTON, Bridgeport, Conn., assignor of one-half to Edward R. Ives, same place. Filed July 20, 1885. (No model.)



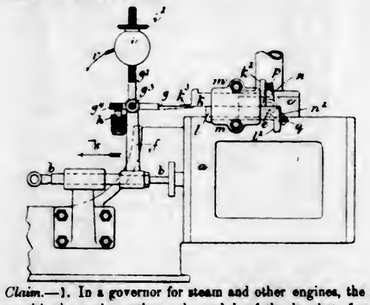
Claim.—A clasp consisting, essentially, of two tubes, in combination with a cord which passes freely through one of said tubes, and both ends of which enter the other tube from opposite directions and are secured therein, whereby adjustable loops are formed both sides of the clasp.

339,461. GOVERNOR FOR STEAM AND OTHER ENGINES. CHAS. W. PINKNEY, Smethwick, County of Stafford, England. Filed Oct. 26, 1885. (No model.) Patented in England Jan. 23, 1885, No. 1,218, and in France Oct. 9, 1885, No. 171,566.



Claim.—In a governor for gas and other engines, the combination, with the reciprocating rod a of the gas-ignition valve, of the adjustable block m, supported by and moving with said rod, and having the incline n, horizontal portion p, and cross-pin m^3, the spring-bolt l, roller q, lever k, and levers e and f, connected with the gas-valve, the construction being such that the movement of the lever k automatically opens the gas-admission valve at the proper times, substantially as described.

339,462. GOVERNOR FOR STEAM AND OTHER ENGINES. CHAS. W. PINKNEY, Smethwick, County of Stafford, England. Filed Oct. 26, 1885. (No model.) Patented in England Jan. 21, 1885, No. 878, and in France Oct. 9, 1885, No. 171,564.



Claim.—1. In a governor for steam and other engines, the combination, with the reciprocating valve-rod b, of the bracket f, carrying the pivoted bell-crank lever g g^2, one end of which engages with the lip k^2 on the sliding bolt k, the heel g^4, and spring-bolt h, substantially as described.

2. In a governor of the construction shown, the two sliding bolts k l, operated upon by the horizontal arm of the cranked lever g g^2, for automatically closing and opening the throttle-valve of the engine, the said bolts operating upon branches of a lever on the axis or spindle of the throttle-valve, substantially as hereinbefore described, and illustrated in the accompanying drawings.

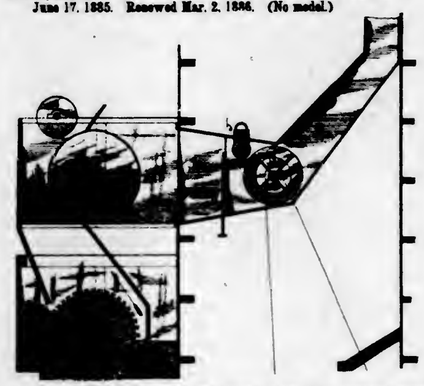
339,463. WATERPROOFING AND PRESERVATION OF FABRICS. MARIE V. PIROU, Brussels, Belgium, assignor to Carlos Delattre, Lille, France. Filed Nov. 23, 1885. (No specimens.) Patented in Belgium Nov. 6, 1884, No. 66,902, and May 22, 1885, No. 68,977; in France May 26, 1885, No. 169,152, and in England May 28, 1885, No. 6,509.

Claim.—1. The process of waterproofing fabrics and other vegetable fibrous and textile articles, consisting in subjecting the same to a hot bath of oil and an antiseptic substance, then drying such articles and subjecting the same to a second bath of oil containing a non-metallic pigment and a ceraceous material, substantially as described.

2. The process of waterproofing fabrics and other vegetable fibrous articles, consisting in subjecting the same to a hot bath of a siccative oil and a tannic substance, then treating the same with a bath of oil containing a non-metallic pigment, essence of birch-bark, and a ceraceous material, substantially as described.

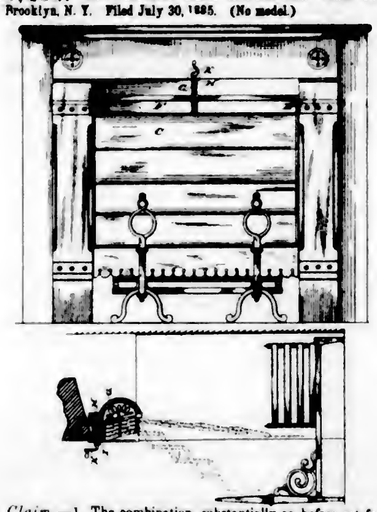
3. A fabric having a water-proof and antiseptic filling and coating of oil, tannic substance, essence of birch-bark, a waxy substance, and a pigment matter, substantially as described.

339,464. COTTON-CLEANER. JOHN H. POSTON, Eufaula, Ala. Filed June 17, 1885. Renewed Mar. 2, 1886. (No model.)



Claim.—The combination, in a cotton-cleaner, of a revolving screen, an air-exhausting device, a passage leading therefrom to the said screen, a gate in the passage, another passage leading from the gin-room to the exhausting device, and a gate therefor, substantially as shown and described.

339,465. BLOWER AND HEAT-REGULATOR. NIELS POULSON, Brooklyn, N. Y. Filed July 30, 1885. (No model.)



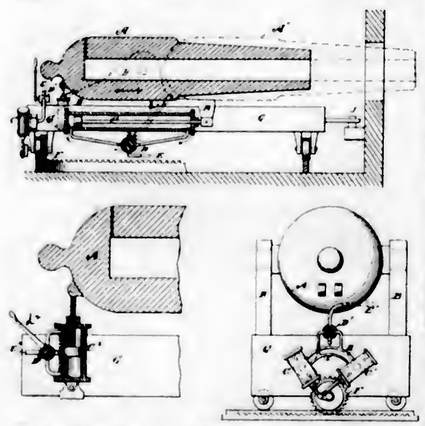
Claim.—1. The combination, substantially as before set forth, of the rock-bar provided with lever-arms, and the lazy-tongs blower, which is by two of its upper levers suspended from the fire-place and by its other two upper levers pivoted to the said lever-arms.

2. The combination, substantially as before set forth, of the rock-bar provided with lever-arms, the worm-gearing for operating the rock-bar, and the lazy-tongs blower, which is by two of its upper levers suspended from the fire-place and by its other two upper levers pivoted to the said lever-arms.

3. The combination, substantially as before set forth, of the case, the rock-bar provided with lever-arms, and the lazy-tongs blower, which is by two of its upper levers pivoted to said case and by its other two upper levers pivoted to said lever-arms.

4. The combination, substantially as before set forth, of the case, the rock-bar provided with lever-arms, the worm-gearing for operating the rock-bar, and the lazy-tongs blower, which is by two of its upper levers pivoted to said case and by its other two upper levers pivoted to said lever-arms.

339,466. PNEUMATIC CARRIAGE FOR ORDNANCE. JAMES A. POWLETT, New York, N. Y., assignor, by direct and mesne assignments, to the Pneumatic Gun Carriage Company, Baltimore, Md. Filed July 31, 1884. Renewed Feb. 7, 1885. Again renewed Sept. 21, 1885. (No model.)



Claim.—1. In mechanism for operating guns, the combination, with the gun-carriage and with a supply or reservoir of compressed aeriform fluid, of a cylinder provided with suitable inlet or exhaust ports, and having its piston connected with the carriage, whereby a gun may be run out or to battery or be run in entirely by pneumatic pressure, as described.

2. In mechanism for operating guns, the combination, with the supporting-frame of the gun-carriage and with a supply or reservoir of compressed aeriform fluid, of a cylinder located beneath the gun, and thus protected, and having its piston-rod connected to the sliding portion of the carriage and provided with suitable ports for the admission and discharge of compressed aeriform fluid, of conduits for conducting such compressed fluid to the cylinder and conveying it away therefrom, and of means for controlling the flow of the fluid, whereby the device is operated by compressed aeriform fluid alone, substantially as set forth.

3. As a means of traversing a gun-carriage, two cylinders mounted upon the carriage and having their piston-rods connected to a crank upon one of the supporting-wheels, the said cylinders being provided with inlet and outlet ports and suitable means for regulating the inlet and outlet of compressed fluid by which the pistons are operated.

4. In mechanism for operating guns, the combination, with the gun-carriage and with a supply or reservoir of compressed aeriform fluid, of a cylinder provided on opposite sides of the piston with inlet and exhaust ports, and having its piston connected to the breech of the gun, whereby a gun may be directly elevated or directly depressed entirely by pneumatic pressure, substantially as described.

5. In combination with a gun-carriage or gun, and with a supply or reservoir of compressed aeriform fluid, of a cylinder containing a body of compressible aeriform fluid, and valve mechanism to admit such fluid to either side of the piston to act as a buffer and counter-check, substantially as described.

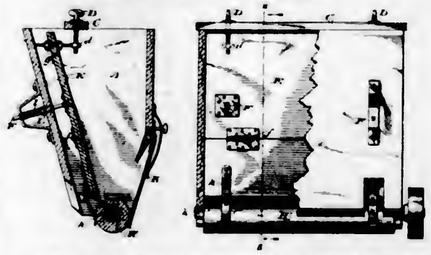
6. In mechanism for operating guns, the combination, with a gun-carriage and gun and with a supply or reservoir of compressed aeriform fluid, of a cylinder or cylinders provided with suitable inlet or exhaust ports, and having the piston or pistons connected to the part to be operated, of conduits for conducting the compressed aeriform fluid to the cylinder or cylinders, means for controlling the flow of such fluid, and a reversing cock or cocks, whereby the compressed aeriform fluid may be admitted to either side of a piston and allowed to escape from the other, substantially as described.

339,467. BUTTON-FASTENER. JAMES RAMSAY, Cleveland, Ohio. Filed Dec. 15, 1885. (No model.)

Claim.—1. The combination, with a button, one or more wires passing through the eyes or astride the cross-bar of the button, said wires being bent as shown, having substantially the form of an ordinary safety-pin, of the loose plate C, perforated as described and located next below the button, said wires passing through the perforations of said plate, the parts being arranged substantially as set forth.

2. The combination of a button, a perforated plate, wires passing over the bar of the button and through the button and plate, said wires formed into a loop, and an independent loop having a pointed end and hook arranged, substantially as described, for engaging the button in place of a button-hole.

339,468. FEED MECHANISM FOR ROLLER-MILLS, &c. WALTER M. RAND, Olney, Ill. Filed July 7, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a feed-hopper, of a valve suspended therein, a bridge or support across the top of the hopper, and screws passing therethrough and taking into eyes on the valve, whereby the latter is adjusted vertically

2. The combination, substantially as hereinbefore set forth, with a feed-hopper, of a valve suspended therein, screws set in overhead supports, whereby it is vertically adjustable, and screws passing through the side of the hopper to a universal connection with the valve, whereby it is adjustable in and out toward and from the feed-roll.

3. The combination, substantially as hereinbefore set forth, in a feed-hopper, of a feed-roll, a vertically-adjustable valve, a lower section hinged to said valve, and springs which tend to close said lower section toward the feed-roll.

4. The combination, substantially as hereinbefore set forth, in a feed-hopper, of a feed-roll, a vertically-adjustable valve, a lower section hinged to said valve, springs pressing said lower section toward the feed-roll, and tension-bolts passing through lateral supports and acting against the main section to adjust it toward the feed-roll.

5. The combination, substantially as hereinbefore set forth, of a feed-hopper, a valve therein, overhead supports for said valve, adjustable screws suspending the valve from said overhead supports, tension-bolts passing through the sides of the hopper and acting upon the valve to adjust it toward and from the feed-roll, and a hinged lower section to the valve, adjacent to the feed-roll, which is pressed toward said roll by springs.

6. In combination with a feed-hopper, an eccentric feed-roll placed at the discharge-point thereof, substantially as hereinbefore set forth.

7. The combination, substantially as hereinbefore set forth, in a feed-hopper, of an eccentric feed-roll placed along the bottom thereof, a cut-off valve at the rear of the hopper pressing against the feed-roll to prevent the escape of material at that point, and a hinged feed-valve at the front of the hopper.

8. The combination, substantially as hereinbefore set forth, in a feed-hopper, of an eccentric feed-roll, a hinged cut-off valve along the rear of the hopper spring-pressed against the feed-roll to prevent the escape of material at that point, a hinged feed-valve at the front of the feed-roll spring-pressed toward said feed-roll, and adjusting devices to move said valve toward or from the roll while permitting it to yield from any given adjustment.

9. The combination, substantially as hereinbefore set forth, in a feed-hopper, of the eccentric feed-roll, the hinged valve pressing against it at the rear to prevent the escape of material at that point, the vertically-adjustable feed-valve, and the hinged section along the foot of said valve spring-pressed toward the feed-roll.

10. The combination, substantially as hereinbefore set forth, in a a feed-hopper, of the eccentric feed-roll, the cut-off valve pressing against it at the rear to prevent the escape of material at that point, the vertically-adjustable feed-valve, the tension-bolts whereby said valve is moved in and out, and the hinged section along the foot of said valve spring-pressed toward the feed-roll.

11. The combination, substantially as hereinbefore set forth, in a feed-hopper, of the eccentric feed-roll, the cut-off valve closing the escape of material at the rear of said roll, the hinged feed-valve spring-pressed toward the feed-roll, and the feet from said feed-valve pressing against the periphery of the roll.

12. The combination, substantially as hereinbefore set forth, with a feed-hopper and feed-roller, of a feed-valve suspended from overhead by means of eyes which project from its inner side near the top, whereby the foot tends to swing inward against the feed-roll to establish equilibrium.

13. The combination, substantially as hereinbefore set forth, with a feed-hopper, of a feed-valve suspended from overhead by means of supports which project from its inner side near the top, and means whereby said supports may be adjusted in length to shift the center of gravity of the valve.

14. The combination, substantially as hereinbefore set forth, with a feed-hopper, of a feed-valve suspended from overhead by means of supports which project from its inner side near the top, means whereby the supporting-point may be shifted toward or from the body of the valve to change the center of gravity, and means whereby said valve may be raised and lowered.

339,469. WIRE-FENCE MACHINE. WILLIAM J. RAYMOND, Cherry Vale, Kans. Filed Sept. 18, 1885. (No model.)

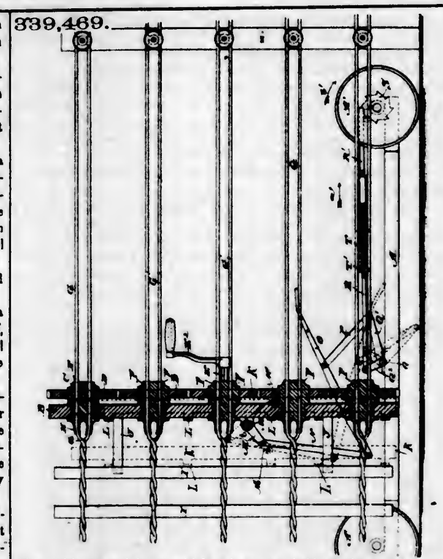
Claim.—1. In a machine for making wire and picket fences, the combination, with a truck, a series of twisters mounted thereon, and mechanism for beating up the pickets, of devices for moving the truck operated by the beating-up mechanism, substantially as herein shown and described.

2. In a machine for making wire and picket fences, the combination, with a truck, a series of twisters mounted thereon, arms for beating up the pickets, and a treadle for operating the beating-up arms, of a ratchet-wheel on one of the drive-wheels and intermediate mechanism for operating the ratchet-wheel from the treadle, substantially as herein shown and described.

3. In a machine for making wire and picket fences, the combination, with a suitable support, a standard projecting from the same and provided with guide-arms, a series of twisters journaled in the standard, and means for operating the twisters, of a bar at one side of the standard having beating-up arms, a shaft journaled to the said standard and provided with crank-arms, one of which is connected to said bar, a treadle, and a rod connected to the other crank-arm of the said shaft and to the treadle, substantially as herein shown and described.

4. In a machine for making wire and picket fences, the combination, with a platform, of a standard on the same, twisters on the standard, a bar having arms for pressing the pickets from the standard, a lever for operating said bar, and a rod connected with said lever and operating a ratchet-wheel on one of the axles, substantially as herein shown and described.

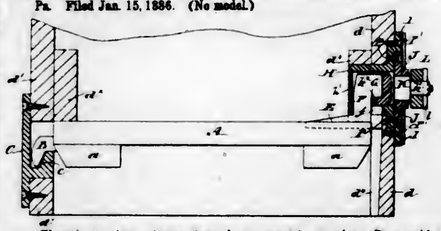
339,469.



5. In a machine for making wire and picket fences, the combination, with a platform, of a standard on the same, twisters on the standard, a bar having arms for pressing the pickets from the standard, a lever for operating said bar, and a rod connected with said lever and operating a ratchet-wheel on one of the axles, substantially as herein shown and described.

6. In a machine for making wire and picket fences, the combination, with a platform, of an upright, twisters in the upright, a lever connected with and operating devices for pressing the pickets from the upright, and a gear for propelling the machine, and mechanism connected with the gear and operated from the lever for moving the bar that presses the pickets from the uprights, substantially as herein shown and described.

339,470. END-GATE FASTENER. JOSEPH M. REAMS, Carwensville, Pa. Filed Jan. 15, 1886. (No model.)



Claim.—1. An end-gate fastening comprising a plate, E, provided with a stud, as at G, and fixed to the end-gate, a hub, H, having a side opening, *h*, and fixed to the wagon-body, a head, K, held in the hub H, and adapted to be rotated therein, and provided with a flange, k^3, having a side opening, as at O, substantially as herein set forth.

2. An end-gate fastening comprising a plate, E, provided with a stud, G, and fixed to the end-gate, a hub, H, having a side opening, *h*, and fixed to the wagon-body, and a head, K, held loosely in hub H, and having a flange, k^3, formed at its inner face as a cam, and provided with a side opening, O, substantially as herein shown and described, and for the purposes set forth.

3. The combination, in an end-gate fastening, of a plate, E, provided with a stud, G, and fixed to the end-gate, a plate, I, having notches i' i^2, a hub, H, having a side opening, *h*, and fixed to the wagon-body, a head, K, held loosely in hub H, and having a flange, k^3, provided with a side opening, O, and a spring-pressed button, L, fitted on head K, and having a stud, N, adapted to the notches of plate I, substantially as herein set forth.

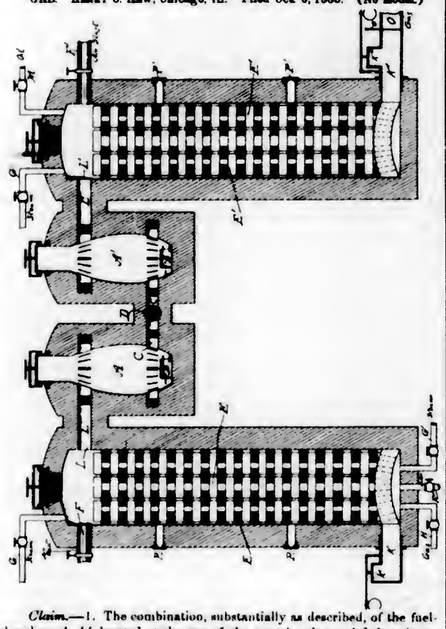
4. The combination, in an end-gate fastening, of a plate, E, provided with a stud, G, and fixed to the end-gate, a plate, I, having a hub, H, provided with a side opening, *h*, and a closed inner end, h', a head,

K, held loosely in hub H, and having a flange, k^2, provided with a side opening, O, and a plate, J, held to plate I, and on the shank of head K substantially as and for the purposes herein set forth.

5. The combination, in an end-gate fastening, of a plate, E, provided with a stud, G, and fixed to the end-gate, a plate, I, notched at i' i^2, a hub, H, having a side opening, h, and a closed inner end, h', a head, K, held loosely in hub H, and having a flange, k^2, provided with a side opening, O, a plate, J, held to plate I, and head K, a spring-pressed button, L, fitted on head K, and held by a pin, l, and having a stop, N, adapted to lock into the notches of plate I, substantially as herein set forth.

6. The combination, in an end-gate fastening, of a plate, C, having a socket, c, and fixed to one side of the wagon-body, a hook, B, on the end-gate, a plate, E, on the gate, and provided with a stud, G, a plate, I, on the wagon-body, and provided with a hub, H, having a side opening, h, a head, K, held loosely in hub H, and having a flange, k^2, provided with a side opening, O, and means, substantially as described, for holding the head K to hub H, as and for the purposes herein set forth.

339,471. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. HENRY C. REW, Chicago, Ill. Filed Oct. 6, 1885. (No model.)



Claim.—1. The combination, substantially as described, of the fuel-chambers A A', located at the top of the superheating and fixing chambers E E', and connected at the base by the flue C, the chambers E E', having outlets for products of combustion at the bottom, steam and gas inlets pipes G' and H, connecting with the base of chamber E, and the flues L L', connecting the tops of the generating-chambers with the tops of the superheating and fixing chambers.

2. The superheating-chamber E, connected by flue L at the top with the generating-chamber A, and having the steam-inlet G and air-inlet F at the top, and the steam-inlet G', the air-inlet F', and the gas-inlet H at the bottom, and the outlet K, for products of combustion at the bottom, as shown, the parts being combined as set forth.

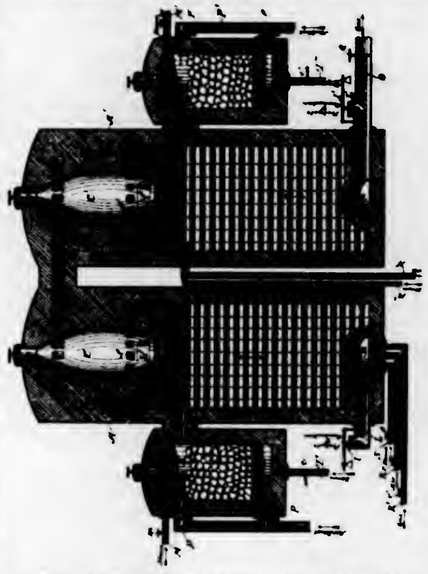
3. The enriching and fixing chamber E', connected by flue L' at the top with the generating-chamber A', and having the steam-inlet G' and the oil-inlet M, and the air-inlet F' at the top and the outlet K' at the bottom, for products of combustion, and the outlet O, controlled by valve o, for carrying off the gas to the main, all in combination, as shown.

4. The combination of chambers A A', having a gas-tight wall or walls between them and the chambers E E', with the connecting-flues C L L', as shown, the generating-chambers being located at the top of the superheating and fixing chambers, as shown, and for the purpose described.

5. The chambers A A' E E', connected by the flues C L L', having the gas, air, steam, and oil inlets, as shown, and the outlets K K', and gas-outlet O, all combined as described, for the purpose described.

6. The process of generating gas, which consists in blasting simultaneously two connected generating-furnaces with air, admitting air also above the fires, and burning the products of combustion, and carrying the resulting hot gases downward through a superheating and a fixing chamber loosely filled with refractory material, thereby heating the brick-work; then forcing air, gas, or steam, or any mixture of the same, upward through the superheating-chamber and through the two connecting furnaces, thereby decomposing the air, gas, or steam and carbureting the resulting gases with the volatile hydrocarbons contained in the solid carbonaceous material, and with other liquid hydrocarbons, if desired; then forcing the resulting gases downward through the heated brick-work in the fixing-chamber, thereby fixing and combining the gases into a homogeneous gas.

339,472. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. HENRY C. REW, Chicago, Ill. Filed Dec. 8, 1885. (No model.)



Claim.—1. The combination of the superheating-chamber 1, having a steam-supply pipe connecting with its base, the fuel-chamber C, located at the top thereof, the connecting-flues F f, and separate means for supplying heating-gases to the superheating-chamber, for the purpose described.

2. The combination of the superheating-chamber 1, having steam, gas, and air supply pipes and outlet for products of combustion connecting with its base, the fuel-chamber C, located at the top thereof, the connecting-flues F f, and separate means for supplying heating-gases to the superheating-chamber, for the purpose described.

3. The combination of the superheating-chamber 1, having one or more supply pipes for gaseous fluids connecting with its base, the fuel-chamber C, located at the top thereof, the connecting-flues F f, and an auxiliary heating-furnace, E, connecting with the top of the superheating-chamber, for the purpose described.

4. The superheating and fixing chamber 1, having a steam-supply pipe connecting with its base and separate means for supplying it with heating-gases, the fuel and generating chamber located above such superheating-chamber, and the connecting-flues F f, in combination with a fixing-chamber, 1°, connecting with the top of the generating-chamber, whereby the hot gases rising in chamber 1 will impart their heat to the lower portion of the fuel, while the hot gases rising in chamber 1° will impart their heat to the upper portion of the fuel till it is highly heated for generating gas.

5. The combination of the auxiliary heating-furnaces E E', connecting with the top of superheating-chamber 1, and gas-fixing chamber 1°, with chambers 1, C, and 1°, and connecting-flues, for the purpose described.

6. The combination of furnaces E E', the superheating and gas-fixing chambers 1 and 1°, the generating-chamber C, and connecting-flues, with the steam, fuel, air, oil, and gas supply pipes and gas-outlets having controlling-valves, as and for the purpose described.

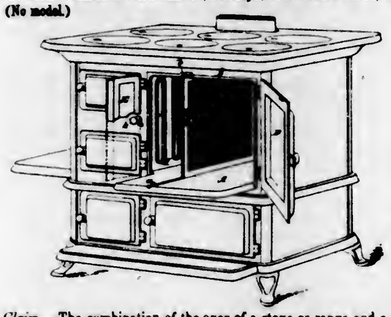
7. The superheating and fixing chamber 1, having a steam-supply pipe connecting with its base, and means for heating it, the fuel and generating chamber located above such superheating-chamber, and connecting-flues F f, in combination with a second fuel-chamber, a fixing-chamber located below it, connecting-flues G F' f', and an oil-supply pipe connecting with the fixing-chamber, whereby double the quantity of fuel is subjected to the action of direct heat, for the purpose described.

8. The chambers 1 and 1°, connected at their tops, in combination with means for supplying heating-gases to the tops thereof, and the steam, gas, and oil inlet pipes, and the outlets for products of combustion and gas-connecting, as described, and for the purpose set forth.

9. The process of manufacturing gas, which consists in simultaneously heating a superheating and a fixing chamber loosely filled with refractory material by hot gases driven downward through the refractory material, then admitting mixed steam and gas at the bottom of the superheating-chamber and passing them upward through such chamber, thereby forming carbonic-acid and hydrogen gases, then admitting oil vapors and mixing them with the gases, forming carbonic oxide and hydrogen, and carbureting them and fixing the mixed gases and vapors into a homogeneous gas by passing them downward through the heated fixing-chamber.

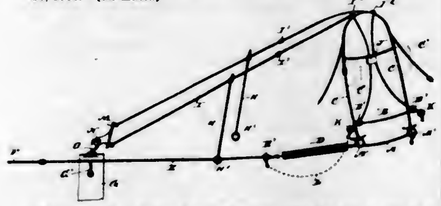
10. The process of manufacturing gas, which consists in heating a superheating-chamber and a fixing-chamber loosely filled with refractory material, by passing hot gases down through the brick-work, thereby storing the heat of the gases in the brick-work, and heating an intermediate body of fuel by allowing the heat to rise, then passing steam, air, or gas, or any mixture of the same upward through the superheating-chamber into the intermediate chamber containing carbonaceous material and situated above both the superheating and fixing chambers, then combining and fixing the gases thus produced by passing them from the intermediate or generating chamber downward through the heated fixing-chamber.

339,473. ROASTING AND BAKING OVEN FOR STOVES AND RANGES. JEREMIAH J. RICHARDSON, Brooklyn, N. Y. Filed Feb. 12, 1885. (No model.)



Claim.—The combination of the oven of a stove or range and a removable wire-gauze frame arranged within said oven, the said oven being provided with openings into the fire-box, substantially as and for the purposes set forth.

339,474. BRIDLE. ROBERT RICHARDSON, Detroit, Mich. Filed Jan. 20, 1886. (No model.)



Claim.—1. In a bridle, the combination, with the bits A and B, of the straps I, passed through the rings of the bit B and connected by straps with the reins, and of the springs D, connected with straps connected with the reins and with the rings of the lower bit, A, substantially as herein shown and described.

2. In a bridle, the combination, with the head-gear C, of the straps I, passed through loops on the same, the bit B, having rings through which the front ends of the straps I are passed, and straps connecting the front ends of the straps I with the reins, substantially as herein shown and described.

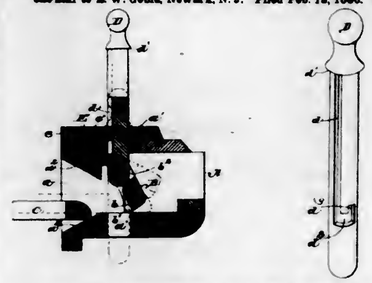
3. In a bridle, the combination, with the bits A and B, of the straps I, connected with the rings B' of the bit B, and with the straps H, having the rings H' at their lower ends, and of the springs D, connected with the rings of the bit A, and with rings E' on the ends of the reins E, passed through the rings H', substantially as herein shown and described

4. In a bridle, the combination, with the head-gear C, of the straps I, passed through loops on the same and through the bolding-piece J, and having the adjusting-buckles I', the bit B, having rings B', connected with the straps I, the straps H, buckled to the straps I, and having the rings H' on their lower ends, the reins E, passed through said rings H', and having rings E' on their ends, and the bit A, connected by springs D with the springs E' of the reins E, substantially as herein shown and described.

5. In a bridle, the combination, with the head-gear C and the bits A B, of the block J, the straps I, passed through loops on the head-gear, through the block J, and through the rings B' on the ends of the bit B, the rings K on the front ends of the straps I, the straps L, connected with said rings and with straps connected with the reins, and the springs D, connected with the bit A and with straps connected with the reins, substantially as herein shown and described.

6. The combination, with the head-gear, of the bits A B, having rings at their ends, the straps I, passed through loops on the head-gear and through rings on the bit B, rings on the front ends of the straps I, and springs connected with the bit A, substantially as herein shown and described.

339,475. CAR-COUPLING. THOMAS L. RIVERS, Montclair, assignor of one-half to E. W. Goble, Newark, N. J. Filed Feb. 13, 1886. (No model.)



Claim.—1. In a car-coupling, a draw-head having an inclined abutment, a^2, in combination with a gravitating wing provided with the perforated lugs b^2, pivotally supported in rear of and protected by the abutment, said wing having a curved seat, b^2, on its upper edge between the lugs b^2 and the curved outer face, b, between the ribs b', at the lower edge thereof, and a coupling-pin resting on the curved seat b^2, substantially as described.

2. In a car-coupling, a draw-head having a socket, in combination with a grooved coupling-pin, and a removable block seated in the socket flush with the draw-head, and having a tongue fitting in the groove of the pin, substantially as described.

3. In a car-coupling, a draw-head, in combination with a pin having the longitudinal connected grooves, and a tongue fitted in one of the grooves, substantially as described.

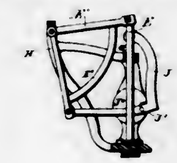
4. In a car-coupling, a draw-head having a tapering socket, in combination with a pin having longitudinal grooves d d^3 and a lateral groove, d^2, a tapering block, E, detachably secured in the socket and having a tongue, f, and the lateral shoulders f', and a screw or bolt for holding the block in place, substantially as described.

5. A coupling-pin having the longitudinal grooves and a transverse groove connecting the longitudinal grooves, substantially as described, for the purpose set forth.

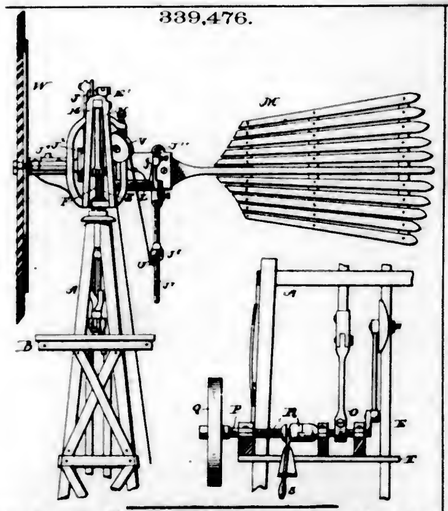
339,476. WINDMILL. DANIEL SAUDER, Pettisville, Ohio. Filed Sept. 16, 1885. (No model.)

Claim.—1. In a windmill, the combination, with the derrick and the casting journaled thereon and provided with the slotted guides for the pitmen, of the crank-levers respectively connected with the pitmen, the wheel-shaft, the disk secured to the inner end thereof, and the crank-pin connecting one of the sector-shaped levers with the said disk, substantially as specified.

2. In a windmill, the combination, with a derrick and casting C, constructed as described, of the crank-lever E^2, having the arm E', the pitman connected with the said arm, the pitman F, wheel-shaft disk on the inner end of the wheel, and the crank-lever having a hinge-joint and connected with the said disk, substantially as specified.



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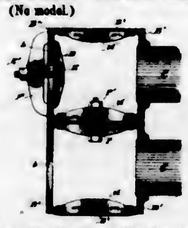


339,477. RECLINING-CHAIR. SANFORD G. SCARRITT, St. Louis, Mo. Filed Jan. 18, 1886. (No model.)



Claim.—In a reclining-chair, the combination of the movable arms *a*, having shoulders *k*, extension or head-rest brackets *f*, secured to sides of back *g*, and carrying head-rest *h*, with studs or pins *j*, hinge *c*, and slotted arms *d*, substantially as shown, and for the purpose described.

339,478. STEAM-BOILER. FREDERICK SCHERR, Brooklyn, N. Y. Filed Oct. 1, 1885. (No model.)

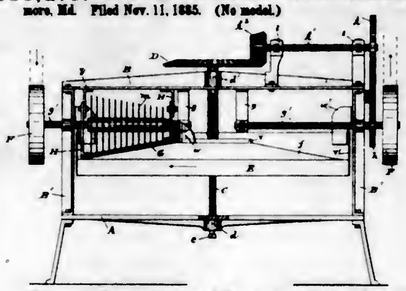


Claim.—1. In a sectional steam-boiler, the headers B B, having matched faces and spiders or skeleton cross-frames M and separately removable bolts P, arranged centrally with both ends in the spaces under pressure, as and for the purposes herein specified.

2. In a sectional boiler, the headers B, of elliptical form, casing two tubes each, and having connections, arranged as shown, whereby, when placed together, the tubes will be joggled and the communication between adjacent headers will be in vertical lines, as set forth.

3. The headers B, matched and secured together in joggled vertical series, with communicating passages *m*, arranged in vertical lines, and having hand-holes with suitable securing means, combined with each other and with securing-bolts P, arranged to allow the headers and tubes to be separately removed and replaced, as set forth.

339,479. MEAT-CUTTING MACHINE. CHARLES SCHILLER, Baltimore, Md. Filed Nov. 11, 1885. (No model.)



Claim.—1. The combination of the revolving knives, the cutting-plate supported below the knives, and means, substantially as described, to carry the meat between the knives and plate, as set forth.

2. The combination of the revolving knives secured to a shaft, the cutting-plate supported below the knives, and the rotating block, as set forth.

3. The combination of the block, means to rotate and support the block, circular knives supported and rotated above the block, and the cutting-plate supported between the knives and block, as set forth.

4. The combination of the circular knives, the rotating block, and the cutting-plate provided with a beveled edge, and supported between the knives and block, as set forth.

5. The combination of a cutting-plate provided with slots, each having tapered ends, and circular knives to revolve above the plate, with the lower part of each knife constantly occupying and filling one of said slots, as set forth.

6. The combination of a stationary cutting-plate, a series of circular knives to revolve above the plate, and vertically-adjustable hangers, by which the cutting-plate is suspended, as set forth.

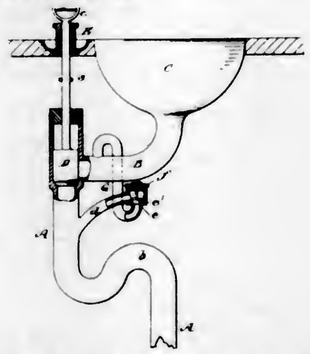
7. The combination of the revolving knives, the rotating block, the cutting-plate between the knives and block, and means to regulate the vertical position of the cutting-plate, as set forth.

8. The combination of the rotating block, circular knives mounted on a shaft above the block, a cutting-plate between the rotary block and the knives, and hangers having a lateral curve and supporting the said cutting-plate, as set forth.

9. The combination of the rotating block supported on an upright shaft, which has at its upper end a miter gear-wheel, D, a horizontal shaft, *g'*, carrying circular knives, a cutting-plate vertically adjustable between the said block and knives, a horizontal shaft, *k'*, above the knives, and provided with a miter-pinion, k^2, which engages with the said miter-wheel on the upright shaft, and gearing *h h' k*, connecting the knife-shaft with the said horizontal upper shaft, as set forth.

10. The combination of the rotating block supported on an upright shaft, revolving knives mounted above the block, a cutting-plate vertically adjustable between the said block and knives, and means, substantially as described, to vertically adjust the rotary block, as set forth.

339,480. WATER-CLOSET. WILLIAM D. SCHUYLER, New York, N. Y. Filed June 3, 1885. (No model.)



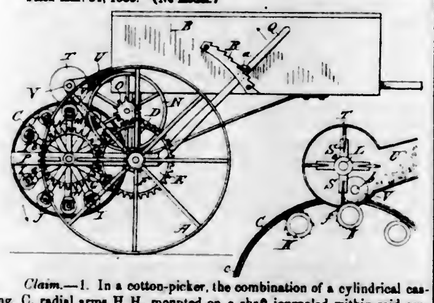
Claim.—The overflow S-trap pipe G and its self-closing valve *c'*, in combination with the discharge-pipe B, the branch pipe *d*, drain-pipe A, with its plug or stopper trap valve capable of manipulation by hand and the basin, pan, or receptacle C, essentially as described.

339,481. SHOE. FRED I. SCHWENDEMAN, Boston, Mass. Filed Jan. 4, 1886. (No model.)



Claim.—The herein-described shoe, composed of the sole, the quarters *c*, the crimped vamp having the narrow tongue, and the tongue stays or extensions *d*, stitched to the tongue and quarter-pieces, the parts of the shoe being cut and arranged, as shown, so that the seam which connects the tongue-stays and tongue defines the line of fold of the lacing-flaps, all substantially as described.

339,482. COTTON-HARVESTER. WILLIAM G. SEARS, Chattanooga, Tenn., assignor of one-half to Hiram Sanborn Chamberlain, same place. Filed Mar. 31, 1885. (No model.)



Claim.—1. In a cotton-picker, the combination of a cylindrical casing, C, radial arms H H, mounted on a shaft journaled within said casing, and the picker-stems K and friction-wheels J, mounted on horizontal spindles journaled in the ends of said radial arms, said friction-wheels being in contact with the inner circumference of the cylindrical casing, whereby the rotation of the radial arms produces in the picker-stems a rotation of each on its own axis and of all around their common axis, substantially as described.

2. A cotton-harvester consisting, essentially, of cylindrical casings, rotary central shafts, radial arms mounted on said shafts, and rotating picker-stems carried on the extremities of said arms and within the casings, a combined brush and exhaust fan, the drive-wheels, and means for operating the said parts, all combined, arranged, and operating substantially as and for the purpose set forth.

3. The combination of the driving-wheels, having the gears E E, the bars P P, the shafts journaled in said bars and having gears G G, radial arms H H, provided with the bearings I I, picker-stems K K, journaled in said bearings and carrying friction-wheels J J, and the casings C C, substantially as and for the purpose set forth.

4. The combination of the rotary shafts, the radial arms mounted thereon, the picker-stems K, carried by said arms and having friction-wheels J, casing C, surrounding said friction-wheels, the casing T, the shaft *b*, provided with the pulley W, and friction-wheel V, the fan-shaft having the pulley Y, the hand-wheel N, belt M, the fans and brushes L S, the drive-wheels, and the intermediate gearing for driving the whole, substantially as and for the purpose shown and described.

5. The combination, with the casings C C and the picker-stems K, of the fan-casings T T, provided with the longitudinal openings *f*, and also with the draft-passages U, the friction-wheels V, the fans and brushes L S, and the receptacle B, substantially as and for the purpose set forth.

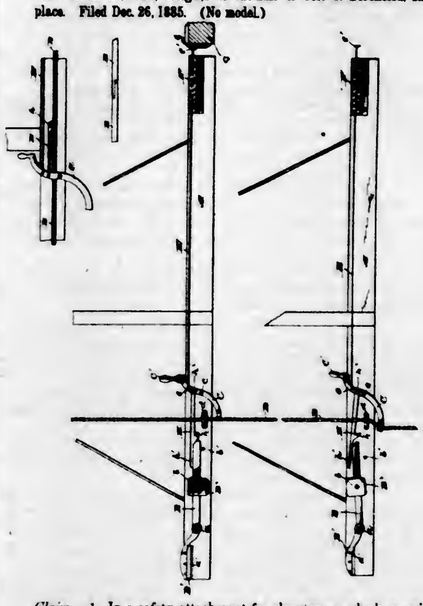
6. The combination of the revolving horizontal shaft, the radial arms mounted thereon, the bearings I, carried in the extremities of the said arms, the springs *e*, the revolving picker-stems K, journaled in said bearings and provided with the friction-wheels J, the surrounding casing C, upon which said friction-wheels roll, and means for rotating said shaft, whereby said picker-stems are caused to revolve about a common horizontal axis and at the same time about their own axes, substantially as described.

7. In a cotton-harvester, the combination, with the picking mechanism described and shown, of pawls and ratchets and levers Q, by which the said mechanism is adjusted and held at any desired height above the plants during the picking operation, substantially as described.

339,483. LUBRICATING-OIL. JAKOB SIEBERT, Vienna, Austria-Hungary, assignor of one-half to August Backmeyer & Co., Berlin, Germany. Filed Jan. 15, 1886. (No specimens.) Patented in Austria-Hungary Nov. 24, 1883, XXXIII, 2,363; in England Oct. 13, 1884, No. 13,512, and in France Feb. 20, 1885, No. 167,184.

Claim.—A lubricating-oil prepared by dissolving potash-soap in hot water to which alcohol is added, by mixing this solution with melted tallow into which oil of turpentine and cod-liver oil have been incorporated, by stirring the mass thus obtained until it has cooled down to about 90° Fahrenheit, and by finally adding rape-seed oil, substantially as hereinbefore described.

339,484. SAFETY ATTACHMENT FOR ELEVATORS. LUKE SENIOR, Cleveland, Ohio, assignor of one-half to Otto C. Berchtold, same place. Filed Dec. 26, 1885. (No model.)



Claim.—1. In a safety attachment for elevators, a plank or suitable device held suspended and depressible with suitable connecting mechanism, substantially as shown, whereby the depression of the plank causes the elevator to stop.

2. In a safety attachment for elevators, the combination, with an elevator-platform, of a depressible plank or suitable device extending along the front side of the platform and held in its normal position elevated more or less from the platform, substantially as set forth.

3. In a safety attachment for elevators, the combination, with an elevator-platform, and a plank or suitable device arranged along the front side of the platform, of tilting-levers secured to the plank and arranged to hold the plank depressibly elevated more or less from the platform, substantially as set forth.

4. In a safety attachment for elevators, a plank connected with tilting-levers, said plank being held suspended and depressible, of a spring-actuated lever for cramping the shifting-cable, a dog for holding the cramping-lever against the action of the spring, with the arrangement of parts substantially as described, whereby the dog is released by the depression of the suspended plank.

5. In a safety attachment for elevators, the combination, with a plank held depressibly suspended from its seat on the elevator platform, of a lever for cramping the shifting-cable, a spring-actuated rod connected with the cramping-lever, and a dog for holding the lever against the action of the spring, said spring-actuated rod having a head that passes in close proximity to the hatchway and arranged substantially as described, whereby, when the elevator is opposite a hatchway, the spring for operating the cramping-lever is held inoperative.

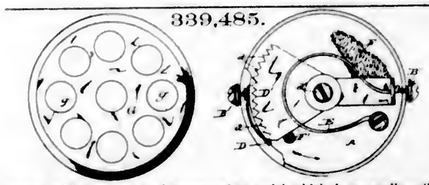
339,485. FIRE-ALARM TRANSMITTER. WILLIAM C. SHAFFER, Chicago, Ill. Filed Aug. 24, 1885. (No model.)

Claim.—1. The combination of a movable multi-contact electrode and a fusible plug applied directly to said electrode, substantially as shown and described.

2. The combination of a movable electrode and a retarding material for controlling the movement of said electrode, substantially as shown and described.

3. The combination of a movable electrode, a spring or weight to

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actuate said electrode, and a mass of material which is normally solid and holds said electrode out of action, but which becomes viscous or semi-solid from abnormal heat, whereby the electrode is retarded in its movement, substantially as shown and described.

4. The combination of a movable multi-contact electrode, a spring or weight to actuate said electrode, and a mass of material which is normally solid and holds said electrode out of action, but which becomes viscous or semi-solid from abnormal heat, whereby the electrode is retarded in its movement, substantially as shown and described.

5. The combination of a movable electrode, a spring or weight to actuate said electrode, and a mass of material which under abnormal heat changes abruptly from the solid to the liquid form, and a material which becomes plastic or viscous under abnormal heat, substantially as shown, and for the purpose set forth.

6. The combination of a movable multi-contact electrode a spring or weight to actuate said electrode, and a mass of material which under abnormal heat changes abruptly from the solid to the liquid form, and a material which becomes plastic or viscous under abnormal heat, substantially as shown, and for the purpose set forth.

7. The combination of the base A, electrodes D D', spring E, and material F, which becomes viscous or plastic under abnormal heat, substantially as shown and described.

8. The combination of the base A, electrodes D D', spring E, material F, which becomes viscous or plastic under abnormal heat, and the alloy F', which changes abruptly from the solid to the liquid state, substantially as shown, and for the purpose described.

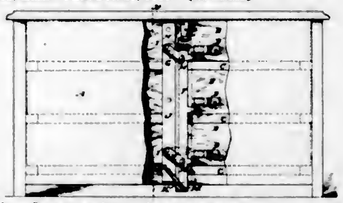
9. The combination of a movable electrode, an alloy plug to stay said electrode, and an oxidation and corrosion proof coating for said alloy plug, substantially as shown and described.

10. The combination of a movable electrode, an alloy plug for staying said electrode, and a coating of paraffine for said alloy plug, substantially as shown and described.

11. The combination, with a fire-alarm transmitter having an electrode which is moved under heat of which an alarm is to be given, of a cover, G, held in place by a material, G', which melts and allows said cover to fall, thereby more effectually exposing said transmitter to the action of the heat, substantially as shown and described.

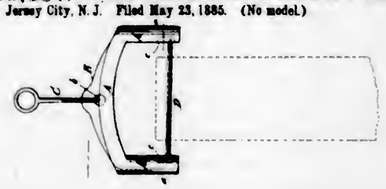
12. The combination, with the base A, electrodes D D', spring E, and fusible material F, of a cover, G, held in place by a material, G', which is fusible at a temperature lower than that at which the material F fuses, substantially as and for the purposes described.

339,486. GANG-DRAWER FASTENING OR LOCK. SUMNER SHAW, Boston, Mass. Filed Dec. 23, 1885. (No model.)

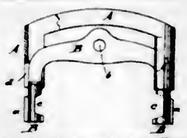


Claim.—In a gang-drawer-fastening device simultaneously fastening a series of receptacles, the stationary bar J, bearing supporting swing-straps G G, the vertically-sliding locking-bar F, having projecting arms E E and projecting lip N, combined to operate with the elliptical supporting-catch O, the draw-catch D, and actuating-lever L, with the reflexed arm K, substantially as and for the purpose herein specified.

339,487. HOLDER FOR PAPER BAGS. SYLVESTER W. SHELDON, Jersey City, N. J. Filed May 23, 1885. (No model.)



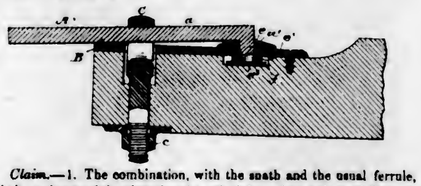
339,487.



Claim.—1. In a holder for paper bags, toilet-paper, and other articles, the combination, with the slotted and grooved U-shaped outer piece, A, of the U-shaped inner piece, B, having flanges *a* on the outer sides of its ends, the perforation *b* in its middle part, and recesses *c* in the inner sides of its ends, the beaded and pointed pin D, placed in the recesses *c*, and a supporter, C, placed in the perforation *b*, substantially as herein shown and described, whereby the said holder can be readily applied to the article to be held, as set forth.

2. In a holder for paper bags and other articles, the slotted and grooved U-shaped outer piece, A, the U-shaped inner piece, B, having flanges *a*, recesses *c*, and perforation *b*, and the pin D, combined for operation substantially as shown and described.

339,488. SCYTHE-SNATH. JOHN SIMPSON, Cleveland, Ohio, assignor to the Cleveland Malleable Iron Company, same place. Filed May 12, 1885. (No model.)



Claim.—1. The combination, with the snath and the usual ferrule, eyebolt, and nut, of the slotted and toothed face-plate, substantially such as specified, and the toothed sliding socket or shoe piece E, that is provided with a hole for the accommodation of the claw of the scythe-tang, the whole constructed and operating substantially as and for the purposes hereinbefore set forth.

2. The combination, with the snath and the usual ferrule, eyebolt, and nut, of the slotted toothed face-plate and the toothed sliding socket or shoe piece E, that is formed or provided with means for retaining it in connection with the said face-plate, all substantially in the manner hereinbefore set forth.

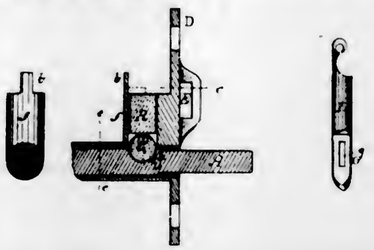
339,489. OIL-CUP. FRANK O. SLAMMER, Pomona, Cal., assignor to himself and James Harvey, same place. Filed Nov. 24, 1885. (No model.)



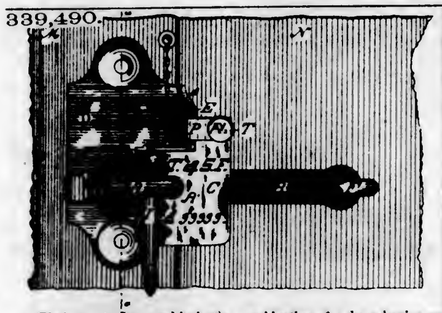
Claim.—1. An oil-cup comprising a body or oil-receiving vessel, A, provided with a subjacent oil-chamber, G, an outlet, *b'*, and a valve-seat, *b*, below said outlet, and a spring-pressed spindle, E, having a valve, F, at its lower end and adapted to close the outlet *b'*, and said spindle having a shoulder at *e*, forming a plunger to eject the oil from the chamber G when the spindle is depressed, substantially as herein set forth.

2. The combination, in an oil-cup, of the body or vessel A, having a screw-neck, B, and a removable cap, D, an oil-chamber, G, in the neck B, and an outlet, *b'*, a spindle, E, a spring, H, on the spindle, and said spindle having an oil-ejecting shoulder at *e*, and a valve, F, adapted to close the outlet *b'*, substantially as herein set forth.

339,490. SEAL-LOCK. JOHN M. SMITH, Kansas City, Mo. Filed Jan. 26, 1886. (Model.)



339,490.



Claim.—1. In a seal-lock, the combination of a hasp having an opening for the reception of the main bolt, a main bolt, a ball engaging therewith, a yielding substance located in the casing of the lock for holding said ball in engagement with the bolt, and a seal having a perforation that is engaged by the point of the main bolt, substantially as described.

2. As an article of manufacture, a sheet-metal seal having a central perforation for the reception of the main bolt, and having a perforated sealing-strip, P, formed integral with the upper portion of its main body, substantially as described.

3. In a seal-lock, the combination of a main bolt, a ball engaging therewith, a metal plate having an eye formed upon it, a seal having a sealing-strip formed integral with its body, and passing through said eye, and perforated for the reception of a soft-metal rivet, and a hasp, arranged substantially as described.

4. The combination, in a seal-lock, of a casing provided with a movable locking-bolt, a chamber located above said bolt and provided with an elastic locking device, and a lug or projection formed upon the upper edge of the wall of said chamber, and adapted to be bent down upon the elastic part of said locking device to retain the same in its proper position, substantially as described.

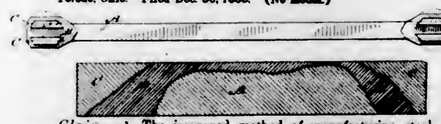
339,491. DASH-RAIL. JOSEPH N. SMITH, Windsor, Ontario, Canada. Filed Sept. 21, 1885. (No model.)



Claim.—1. A sectional dash-rail consisting of the following elements: the brackets having supporting-arms formed integral therewith, the hollow connecting-rod, and central stud, substantially as and for the purposes specified.

2. In combination with the dash of a sleigh, the brackets B B, attached thereto, said brackets provided with the arms *h h*, formed integrally therewith, the central stud having a screw-point, said stud adapted to receive the tube R, said tube fitting at its ends over the arms *h h* of the brackets, as and for the purposes set forth.

339,492. ART OF MAKING STEEL EYE-BARS. ROBERT W. SMITH, Toledo, Ohio. Filed Dec. 30, 1885. (No model.)



Claim.—1. The improved method of manufacturing steel eye-bars herein described, which consists in applying a re-enforce plate of wrought-iron to the end of a steel bar, heating it to a degree for perfect welding, and then forging it into form by the use of dies, as set forth.

2. As an improved article of manufacture, a steel eye-bar re-enforced by wrought-iron forged and spread around the neck and bolt-hole substantially as set forth.

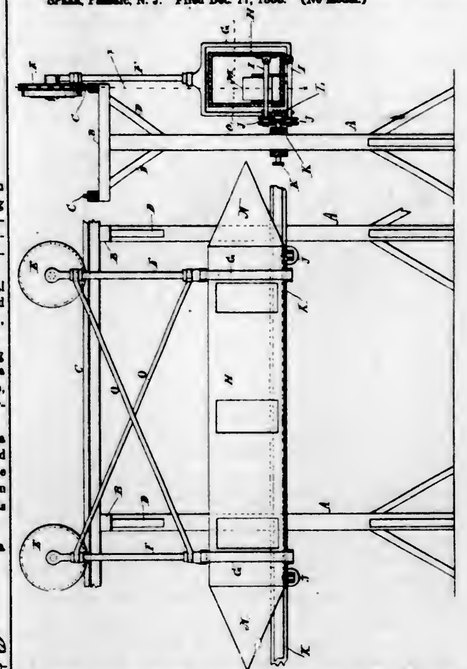
3. In a steel eye-bar, the combination of the steel bar A, the wrought-iron plate B, and the re-enforce scraps C, substantially as set forth.

339,493. MANUFACTURE OF BLEACHING-POWDER. ERNEST SOLVAY, Brussels, Belgium. Filed May 20, 1884. (No specimens.) Patented in Belgium May 6, 1884, No. 65,070; in England May 6, 1884, No. 7,259; in France May 6, 1884, No. 161,938; in Austria-Hungary May 6, 1884, No. 23,725 and No. 2,210, and in Germany May 7, 1884, No. 31,219.

Claim.—1. The process herein described of chloridizing lime, said process consisting in placing the lime upon porous or pulverulent beds arranged one above another in a closed receptacle, and then drawing or forcing chlorine gas in a downward direction through the lime, substantially as described.

2. The process hereinbefore described of chloridizing lime, said process consisting in placing the lime in a pulverized condition upon one or more porous beds in a closed chamber, and then drawing or forcing the chlorine gas in a downward direction through the lime and the porous or pulverulent beds, substantially as described.

339,494. ELEVATED-RAILWAY TRACK AND CAR. ALFRED SPEER, Passaic, N. J. Filed Dec. 17, 1885. (No model.)



Claim.—1. In an elevated railway constructed and operating substantially as herein described, in combination with the suspended cars H, the yielding steady-wheels J and guide-rails K, as and for the purpose set forth.

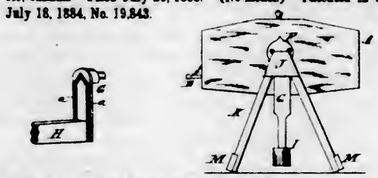
2. In an elevated railway constructed, arranged, and operating substantially as herein described, the yielding steady-wheels J, mounted upon axles secured to the body of a car or to the yokes, and a guide-rail, K, as and for the purpose set forth.

3. In an elevated railway constructed, arranged, and operating substantially as herein described and shown, in combination with the suspension-wheels E and suspension-rods F, the yokes G, to receive and support the body of a car, as herein set forth.

4. In an elevated railway, in combination with the suspension-wheels E, suspension-rods F, and car H, the cross-braces O O, constructed and arranged substantially as and for the purposes set forth.

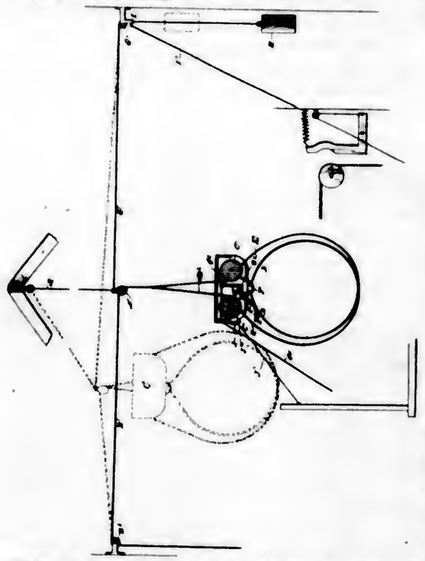
5. In an elevated suspension-railway, a car suspended in yokes steadied by steadying-wheels working on a guide on the railway structure, substantially as shown and described.

339,495. CHURN. JAMES L. TAYLOR, Hamilton, assignor of one-half to Robert Bruce Muirhead, Barton Township, Wentworth County, Ontario, Canada. Filed July 20, 1885. (No model.) Patented in Canada July 18, 1884, No. 19,843.



Claim.—In an oscillating churn, the combination, with the churn-body, having a notch, L, and provided with bearing-plates F upon its sides, of the trunnion-plates G, having ribs *a a* projecting from their inner faces, the cross-bar H, and the frame K, having bearings J, substantially as described.

339,496. HAY-ELEVATOR. THOMAS TEMPLE, Hudson, Mich. Filed July 8, 1885. (No model.)



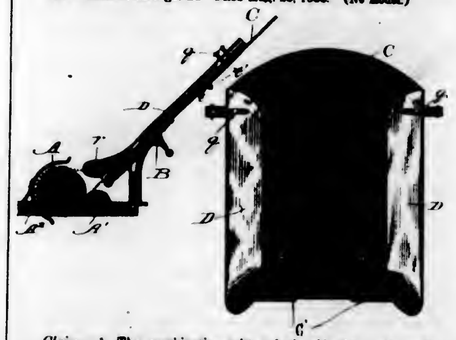
Claim.—1. As an improvement in hay-elevators, the combination, with the draft-ropes and the slings having the loops formed at their free ends, of the box or casing having the two pulleys journaled therein at each end and formed with a transverse projection between the said pulleys, the key-lever centrally pivoted within the said casing, and having the operating-cord and the short band or chain secured at one end in the said casing, and provided at its free end with a link or ring, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

2. As an improvement in hay-elevators, the combination, with the draft-ropes and the slings having the loops formed at their free ends, of the box or casing having the two pulleys journaled therein at each end and formed with the end tension-spring having the lower curved end and the transverse projection between the said pulleys, the key-lever centrally pivoted within the said casing and provided with the operating-cord, the short band or chain secured at one end in the said casing and provided at its free end with a link or ring, and the tension-cord adapted to be fastened at one end to the rack on the hay-wagon and provided at its other or free end with a loop adapted to fit over the lower curved free end of the tension-spring on the end of the box or casing, all constructed, combined, and arranged to operate in the manner and for the purpose shown and described.

3. The combination of the supporting-rope having the pulley at its lower end, the draft-ropes arranged as described, the slings having the loops formed at their free ends, the box or casing having the pulleys journaled therein at each end and formed with a transverse projection between the said pulleys, the key-lever centrally pivoted within the said casing and provided with the operating-cord, the short band or chain secured at one end in the said casing and provided at its free end with a link or ring, the auxiliary rope passing over a pulley, arranged as described, and provided at its lower free end with a suitable weight, and a spring-clutch having a releasing-cord and adapted to engage with the said rope for the purpose set forth, all constructed, combined, and arranged to operate in the manner and for the purpose herein shown and specified.

4. The combination of the supporting-rope having the pulley at its lower end, the draft-ropes arranged as described, the slings having the loops formed at their free ends, the box or casing having the pulleys journaled therein at each end and formed with the end tension-spring having the lower curved end and the transverse interior projection, the key-lever centrally pivoted within the said casing and provided with the operating-cord, the short band or casing secured at one end in the said casing and provided at its free end with a link or ring, the tension-cord having the loop at its free end and adapted to be arranged as described, the auxiliary rope, arranged as described, and having a suitable weight at its lower free end, and the spring-clutch having a releasing-cord and adapted to engage with the said rope, all constructed, combined, and arranged to operate in the manner and for the purpose shown and set forth.

339,497. FEED-GUIDE FOR TYPE-WRITING MACHINES. ADDISON C. THOMAS, Chicago, Ill. Filed Aug. 25, 1885. (No model.)



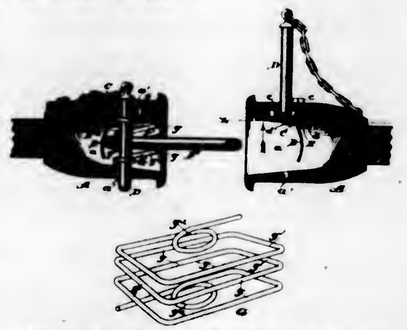
Claim.—1. The combination, with a feed-guide for a type-writing machine having a bed-plate provided with lateral guides, of delivery-guides secured to the lateral guides to receive and guide the paper after passing through the machine, as and for the purpose set forth.

2. The combination, with a feed-guide for type-writing machines having a bed-plate provided with adjustable lateral guides, of delivery-guides secured to the adjustable lateral guides to receive and guide the paper after passing through the machine, as and for the purpose set forth.

3. In a feed-guide for type-writing machines, the combination of the bed-plate C, having lateral guides, and holders *q*, for the manuscript, substantially as described.

4. The combination, with a feed-guide for a type-writing machine having a bed-plate provided with lateral guides, of delivery-guides D, secured to the lateral guides and provided with upward-projecting ears *r*, to receive and guide the paper after passing through the machine, as and for the purpose set forth.

339,498. CAR-COUPLING. JOHN W. THOMASON, Salado, Tex. Filed Jan. 14, 1886. (No model.)



Claim.—1. In a car-coupling, the combination of a draw-head, the laterally-movable pin-retaining arms supported therein, and a pivoted wing normally held in the path of an approaching link, and arranged to distend the arms to drop the pin when acted on by the links, substantially as described.

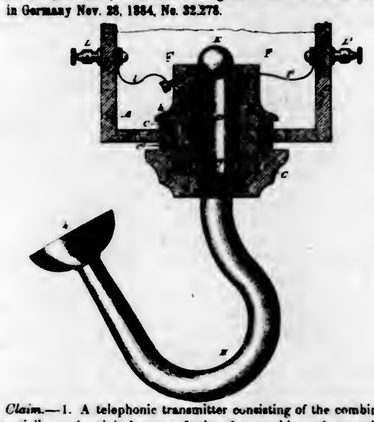
2. In a car-coupling, the combination of a draw-head, a rod supported in the same, a movable wing journaled on the rod and having a cam-lug, and the yielding pin-retaining arms, substantially as described.

3. In a car-coupling, the combination of a draw-head, a rod, E, supported therein, a movable wing journaled on the rod and depending therefrom in the path of an approaching link and carrying a cam, and laterally-movable pin-retaining spring-arms supported on the rod and adapted to be acted on by the cam of the wing, substantially as described.

4. In a car-coupling, the combination of a draw-head, a rod, E, supported therein, a movable wing depending from and journaled on the rod and having a cam-lug, *d'*, and the spring pin-retaining arms coiled at their ends around the rod on opposite sides of the lug *d'*, and having the outwardly-flared ends *e*, substantially as described.

5. In a car-coupling, a link-support detachably fitted in one of the draw-heads, and comprising a series of horizontally-disposed connected bars *g*, and the loops g^3, arranged within the bars, all bent or formed from a single piece of wire, substantially as described.

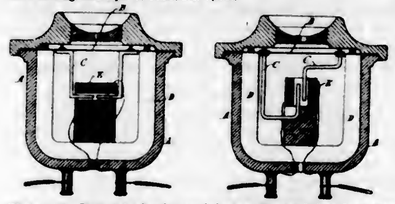
339,499. TELEPHONE-TRANSMITTER. SILVANUS P. THOMPSON and PHILIP JOLIN, Bristol, County of Gloucester, England. Filed Nov. 22, 1884. (No model.) Patented in England June 3, 1884, No. 8,534, and in Germany Nov. 28, 1884, No. 32,278.



Claim.—1. A telephonic transmitter consisting of the combination, substantially as hereinbefore set forth, of a speaking-tube, a spherical valve partially closing the same, and one or more contact-pins supporting said valve.

2. The combination, substantially as hereinbefore set forth, with a speaking-tube, of a spherical conducting-valve, adjustable contact-pins supporting said valve at the end of said tube, and means for completing an electric circuit from said pins through said valve.

339,500. MAGNETO-TELEPHONE. SILVANUS P. THOMPSON, University College, Bristol, England. Filed Aug. 15, 1885. (No model.) Patented in England Apr. 9, 1885, No. 4,423.

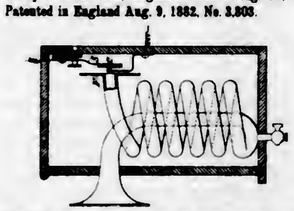


Claim.—1. In a telephonic receiving or transmitting instrument, the combination, substantially as hereinbefore set forth, of a non-magnetic elastic piece or spring for receiving or transmitting vibrations, supported at or near its edges and having its central portion unconstrained and free to vibrate, and movable magnetic pieces forming portions of a magnetic circuit secured thereto, substantially as hereinbefore described.

2. In a telephonic receiving or transmitting instrument, the combination of an unconstrained non-magnetic elastic piece or spring for receiving or transmitting vibrations, movable magnetic pieces forming portions of a magnetic circuit, and a surrounding coil or coils of wire, substantially as hereinbefore described.

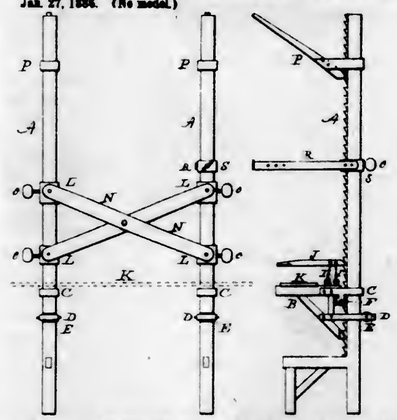
3. In a telephonic receiving or transmitting instrument, the combination, substantially as hereinbefore set forth, of the annular main body or core of the magnet situated in the upper portion of the case, the non-magnetic diaphragm having its central portion free to vibrate, and the attached magnetic pieces.

339,501. TELEPHONE-TRANSMITTER. SILVANUS P. THOMPSON, London, County of Middlesex, England. Filed Aug. 15, 1885. (No model.) Patented in England Aug. 9, 1882, No. 3,903.



Claim.—In a telephone-transmitter, the combination, with an electric circuit, of electrodes interposed in said circuit, movable with reference to each other, a tube for causing the air-waves to impinge directly upon one or both of said electrodes, and a flat flange attached to or formed upon the inner end of said tube and extending immediately above the electrodes, substantially as described.

339,502. SCAFFOLD. DAVID UNVERFERTH, Dayton, Ohio. Filed Jan. 27, 1886. (No model.)

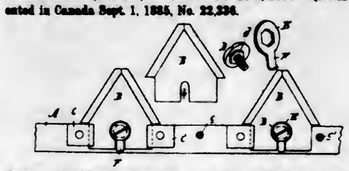


Claim.—1. The movable bracket B, with pointed brace and stirrups C and D, the latter carrying the roller E, and the roller F, in arrangement with a notched upright to form an adjustable scaffold, substantially as set forth.

2. The combination of the pointed lever J, with hooks I I', the movable bracket B, with eyebolts, and the notched upright, substantially as and for the purpose set forth.

3. The adjustable cross-brace composed of pivotal bars N N, to the ends of which are pivotal clamps L with binding-screws, these parts in combination with uprights, substantially as set forth.

339,503. HARVESTER SICKLE-BAR. THOMAS W. VANSICKLE and JOHN TURNBULL, Detroit, Mich. Filed June 4, 1885. (No model.) Patented in Canada Sept. 1, 1885, No. 22,336.



Claim.—1. The combination, with the knife-bar A and the plates C, removably secured thereto, and provided with flanges *a*, of the knife B, having an open-ended slot, washer E, and screw D, said washer being provided with a tongue to engage said slot, substantially as and for the purpose specified.

2. In combination with a knife-bar, A, provided with the plates C, having flanges *a*, the knives B, each having an open-ended slot, screws D, each provided with a many-sided shoulder upon the under face of its head, and washers E, each having a central opening corresponding with the shoulder on said screw, and provided with a tongue, F, formed integral therewith, adapted to engage one of the open-ended slots in the knives, all constructed, arranged, and operating substantially in the manner and for the purposes described.

339,504. DAMPER-REGULATOR. THOMAS WALKER, Philadelphia, Pa. Filed Oct. 7, 1885. (No model.)

Claim.—1. The combination of the casing H, having a passage, *t*, and diaphragm *i*, the block *m*, connected to said diaphragm, and the valve *w*, adapted to close said passage *t*, and having a slight lateral play in the block *m*, all substantially as specified.

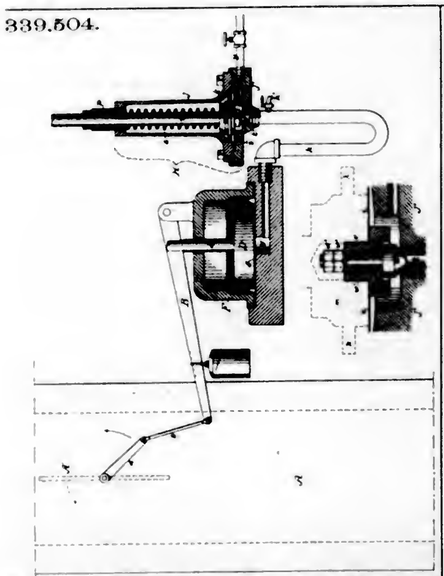
2. The combination of the diaphragm *i*, the block *m*, the plug *v*, secured to said block, the valve *w*, having a stem adapted to an enlarged opening in said plug, and the nuts w^2, whereby said valve is confined vertically to the plug, all substantially as specified.

3. The combination of the damper-regulator, the casing H, having a diaphragm and valve, and the pipe *h*, connecting the damper-regulator and the casing H, and forming a water-reservoir between the two, all substantially as specified.

4. The combination of the damper-regulator, the casing H, having a diaphragm and valve, and the pipe *h*, connecting the regulator and casing H, and having a cock, *h'*, as set forth.

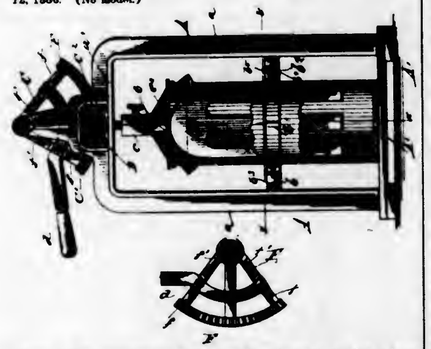
5. The combination of the casing H, the diaphragm *i*, the block *m*,

339,504.



and its valve *w*, and a stop, *k*, whereby the rise of the diaphragm and valve is restricted, all substantially as specified.

339,505. CHURN. ISAAC W. WALTER, Newberry, S. C. Filed Jan. 12, 1886. (No model.)



Claim.—The combination of the cast-iron frame A, having a base, A', and securing-bands *b b'*, and Y-shaped bracket C, cast integral with the frame, segmental rack F, provided with stop-lugs *f'*, journaled in the upper end of said bracket-shaft C', journaled in the lower portion of bracket C and in the top bar of the frame, pinion D, engaging rack F, a suitable retaining device formed on the end of shaft C', for securing the churn-dasher thereto, and bracket G, having an arm, *g*, to prevent lateral disengagement of the rack and pinion, all substantially a sand for the purpose specified.

339,506. STEAM-ENGINE. BENJAMIN T. WEBB, Beaufort, N. C. Filed Nov. 21, 1885. (No model.)

Claim.—1. In a steam-engine, the combination, with the main cylinder, piston, and piston-rod of the engine, of a yoke embracing a friction-wheel on the main shaft of the engine, and one or more steam-actuated pistons for bringing the yoke into engagement with the sides of the friction-wheel, substantially as herein specified.

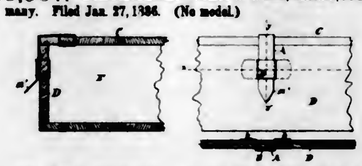
2. The combination, with the steam-cylinder A and its piston and piston-rod, of a yoke, I, having parallel side bars, J J', and connected movably with the piston-rod, steam-cylinders N N', pistons O, and friction-rollers Q, and steam-pipes *g g'*, connecting the cylinders N N' with opposite ends of the main cylinder A, as herein specified.

3. The combination, with the cylinders N N' and steam-pipes *g g'*, leading thereto, of cross-pipes *i i'* and valves *h h'*, substantially as herein shown and described.

4. In a steam-engine, the combination of the main cylinder A and its piston and piston-rod, the yoke I, friction-wheel L, cylinders N N', pistons O, and friction-rollers Q, the pipes *g g'*, cross-pipes *i i'*, and the valves *h h'*, as herein specified.

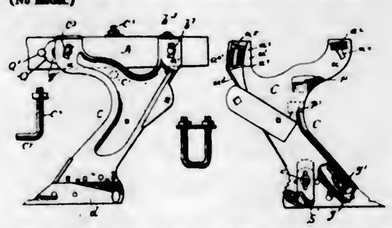
5. In a steam-engine, the combination, with the main cylinder A and its piston and piston-rod, of the standard F, yoke I, friction-wheel L, cylinders N N' and their pistons, pipes *g g'*, connecting the cylinders N N' with opposite ends of the main cylinder A, and the tappet R, valve-rod S, provided with collars *k k'*, the lever T, and slide-valve C, substantially as specified.

339,507. BOX-FASTENER. JULIUS T. WEBER, Herford, Prussia, Germany. Filed Jan. 27, 1886. (No model.)



Claim.—The combination, with the front or side boards of a box, or both, slotted as described, and provided with a strip or strips of flexible metal, of the cover C, also slotted, as described, and provided with a strip or strips of metal, the corresponding strips on the front or sides and cover being united by bending one over the other, substantially as and for the purpose specified.

339,508. PLOW. LEWIS R. WHITE, Norfolk, Va. Filed Nov. 6, 1885. (No model.)



Claim.—1. The combination, with the standard having front and rear beam-supports, one or both of which are extended vertically alongside of the beam, of a vertically-tilting beam secured to and having its fulcrum or center of motion located between the beam-supports, and a bolt or fastening arranged at the tilting-point or center of motion, whereby the beam is securely held at said point or center, substantially as set forth.

2. The combination, with the standard provided with front and rear beam-supports slotted inversely to each other, and having a beam rest or fulcrum projected laterally under the beam and arranged between the beam-supports, of a beam arranged alongside the beam-supports and tilting on the intermediate beam-rest, substantially as set forth.

3. The combination of the beam, the standard projected along the side thereof, and a wedge adjustably inserted between the side of the beam and the standard, said wedge having a flange to extend over and rest upon the upper side of the beam, substantially as and for the purposes set forth.

4. The combination of a standard having front and rear bearings, and a beam-rest laterally projected therefrom between the bearings, a beam resting on said beam-rest and against the bearings, bolts passed transversely through the beam and bearings, and a bolt extending vertically through the beam and beam-rest.

5. The combination of the standard having front and rear bearings, and a beam-rest projected laterally therefrom, a bolt passed vertically through the beam and beam-rest, and a bolt passed transversely through the beam and the standard-bearing.

6. The combination of the standard having front and rear bearings and a laterally-projecting beam-rest, a beam supported on said rest and free to have a pivotal and lateral adjustment thereon, and bolts to secure the beam vertically and laterally to the standard, substantially as described.

7. In combination, the standard having a lateral stud, a beam pivotally secured to and supported by the stud, a wedge adjustably interposed between the standard and beam, to adjust the latter laterally, and bolts passed transversely through the beam and standard to bind the parts together, substantially as set forth.

8. The combination of the standard having front and rear bearings, one or both of which are provided with raised guideways, the beam, and a guide having lateral flanges to embrace and fit the sides of the guideway, substantially as set forth.

9. The combination of the standard, the beam vertically adjustable, a wedge interposed between the beam and standard and adjustable vertically and horizontally, the standard and wedge being provided with approximately vertical grooves formed in the one and an interlocking tooth or teeth formed on the other.

10. In a plow, a standard provided with a front bearing, and with a rear support or bearing, a beam pivotally adjustable, a transverse bolt for securing the beam to the front bearing, a vertical bolt held in the standard and passed through the beam at the pivotal center thereof, and means for pivotally adjusting the beam.

11. The combination, with a beam having a vertical oscillating or tilting movement, of a standard having bearings arranged in front and rear of the center of motion of the beam, and provided with curved guideways or slots having their centers in the center of motion of the beam.

12. In a plow, a vertically-tilting beam, in combination with a standard extending alongside thereof, and provided with a slotted arm to support and form the fulcrum about which the beam tilts, a bolt passing vertically through the slotted arm and beam, to hold the latter in contact with the arm, and movable laterally with the beam when adjusted sidewise, and a transverse bolt to hold the rear edge or portion of the standard in a nearly-fixed relative position during the lateral adjustment of the beam relative to the forward edge of the standard, substantially as set forth.

13. The combination of the tilting beam, a standard lapped alongside thereof, a bolt passing transversely through the standard and beam, a guide-bearing interposed between the standard and the side of the beam and provided with a lip lapping upon the beam, and a bolt passing vertically through the lip and beam, to hold the guide-bearing in place and strengthen the beam against the lateral strain of the transverse bolt, substantially as set forth.

14. In a plow, a standard having a front bearing extended upward alongside the beam, and having a lateral stud or arm integral therewith, and projected below and close to the under side of the beam and curved or rounded on its front face, whereby the angle between the beam and standard is closed, and the lodgment of trash and foreign substance is prevented, substantially as set forth.

15. The herein shown and described wedge, longitudinally slotted, and having a flange or lip projected laterally from its upper edge to guide its movement, substantially as described.

16. In a plow, the combination, with the standard having indentations formed in the side thereof, near its lower end, of an invertible landside having a rib projected from its side to engage one of the said indentations in the standard, substantially as and for the purposes set forth.

17. The combination, with the standard having teeth or indentations formed therein, of a landside or heel pivoted by its front end, and provided with corresponding teeth or corrugations to interlock with those of the standard, and an adjusting-bolt, substantially as set forth.

18. The combination, with the standard having on its side one or more teeth, corrugations, or indentations, of a landside pivoted at its forward end to the standard, and provided with a lateral flange or tooth projected at or near its edge, to engage the toothed or corrugated or indented surface of the standard, substantially as set forth.

19. The combination, with the standard having a series of teeth or corrugations radially formed on its side, of an invertible landside having lips or flanges of corresponding shape formed on its opposite sides and projected from its opposite edges, and adapted to engage the radially-formed teeth on the standard, and an adjusting-bolt, substantially as set forth.

20. The combination, with the standard and the mold-boards or share, of the sweeps secured to the standard and adjustable horizontally to and from the mold-board independently of each other, substantially as shown and described.

21. The combination of the standard provided with a bolt hole or slot and having lugs adjacent to said slot, a sweep having a shank against the side of the standard and slotted vertically, and provided with a series of teeth to engage the lugs, and a bolt passing through the slot or hole in the standard and sweep-shank, whereby the sweep may be adjusted vertically and pivotally on the bolt at one and the same operation.

22. The combination of the standard having a series of openings therethrough and lugs adjacent to said openings, a sweep on each side of the standard and having teeth to interlock with the lugs, and a bolt passing through one of the openings in the standard, to secure the sweeps in place and form the center about which the sweeps have a pivotal adjustment independent of each other, substantially as specified.

23. The combination, with the standard provided with a landside-seat formed in its sides at its lower end and provided with a bolt-hole arranged above the said seat, of a sweep-stock (having its shank slotted) vertically adjustable and held by a suitable bolt to the standard, and the landside pivoted by its forward end within the seat and adjustable vertically at its rear end between the standard and the shank of the sweep-stock, substantially as shown and described.

24. The combination, with the sweep-stock having a sweep-supporting arm provided with a spur and a bolt-hole, of the reversible and invertible sweep provided with a bolt-hole corresponding to that in the arm, and having a series of holes on each side arranged in the arc of a circle concentric with the bolt-hole, and adapted to engage with the spur and positively hold the sweep in its adjusted position, substantially as shown and set forth.

25. The sweep hereinbefore described, having its outer end made concave-convex and its inner end adapted to be inverted on its seat, whereby the concave or the convex surface may be turned to the front, substantially as set forth.

26. The combination, with the standard having a wing, *g*, provided with a socket, *g'*, and a removable mold-board or casting having a slotted and recessed projection, D', formed on its back, the sides of the recess converging, of a retaining-bolt having an enlarged head tapered in conformity to the taper of the recess D^2 in the projection, substantially as shown, and for the purposes set forth.

27. The combination, with a wing, *g*, having a socket, *g'*, formed therein, and a bolt-opening, g^2, cut through from the bottom of the socket, of a plow-casting having a projection, D', fitted into the socket and recessed for the passage of a bolt, the inner side, D^4, of the bolt-opening being sloped inward, and a bolt, D^5, having its head correspondingly sloped to engage the inner sloped end, D^4, of the recessed projection, substantially as shown and described.

339,509. CAR-COUPLING. PENDLETON YERGER, Danville, Ky. Filed Aug. 21, 1885. (No model.)



Claim.—1. The combination of a car draw-head having a guide-pin, as hereinbefore described, projecting from its two sides, and a car-link support consisting of a cross-bar provided at each end with an arm slotted to engage the said guide-pins, the slots being enlarged at their forward ends, substantially as shown and described.

2. The combination of a car draw-head having a guide-pin, herein-before described, projecting from its two sides, and a car-link support consisting of a cross-bar provided at each end with an arm slotted to engage the said guide-pins, the slots being enlarged at their forward ends, and the main body of the slots located above the said cross-bar when in a horizontal position, substantially as shown and described.

3. The combination of the draw-head A, provided with projecting pins *b b'*, and the support D, consisting of the cross-bar *a*, the side pieces, *e*, provided with the slots *f* and *g*, the slot *f* being enlarged at *h*, substantially as shown and described.

339,510. HARNESS-ROSETTE. GEORGE ZAHN, Newark, N. J. Filed Dec. 30, 1885. (No model.)

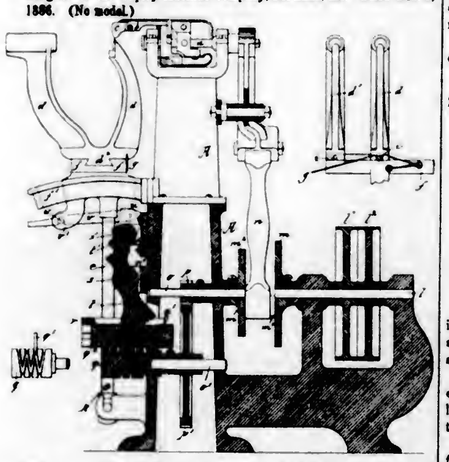
339,510.



Claim.—1. The improved bridle-rosette consisting, essentially, of two metallic plates correspondingly indented or impressed with the design or ornament, the inner plate having a loop secured thereto and lying against the outer plate to re-enforce the same, and the outer plate having its edges turned over those of the inner plate to conceal the latter and bind the parts together.

2. The improved harness-rosette herein described, combining therein an inner metallic body-plate having perforations therein to receive the loop, and having said loop secured therein, the ends of said loop lying flush with or not projecting beyond the front face of said body-plate, to allow said plate to lie face to face with a covering-plate, and said covering of thinner metal having its edges turned over those of the body-plate, the two plates being correspondingly indented, all said parts being arranged and combined substantially as and for the purposes set forth.

339,511. BURNISHING-MACHINE. CHARLES J. ADDY, Malden, Mass., assignor to the Tapley Machine Company, Portland, Me. Filed Feb. 1, 1886. (No model.)



Claim.—1. In a burnishing-machine, a jack having two or more movable shoe-holders and a vibrating burnishing-tool, combined with the double screw, its traveler, and rack q^3, and with intermediate connecting mechanism, substantially as described, to move the jack to and fro while being acted upon by the burnishing-tool, whereby the jack is given a substantially uniform reciprocation.

2. In a burnishing-machine, the pivoted post *e* and its attached plate *f*, combined with two or more shoe-holders carried by and made movable upon or with relation to the said post and plate, substantially as described.

3. In a burnishing-machine, a vibrating burnishing-tool, the pivoted post, its attached plate, and two or more shoe-holders made movable thereon, combined with a centering device to retain the said shoe-holders in proper position on the said plate with relation to the movement of the burnishing-tool, substantially as described.

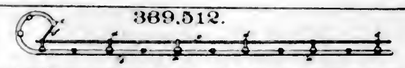
4. In a burnishing-machine, the vibrating tool, the yoke or guide, the post *e*, its attached plate, two or more shoe-holders loosely connected thereto, the double screw, its traveler, the rack q^3, the double segment, combined with the segment *t'*, shaft *s*, arm *u*, and link to engage and move the jack, substantially as described.

5. In a heel-burnishing machine, the rocker-shaft *a*, its attached arm, and burnishing-tool *c* carried by it, combined with a jack having two or more movable shoe-holders adjustably mounted thereon, whereby the tool may be made to burnish in succession the heels of shoes laid in each of the said shoe-holders, and whereby the operator, while the heel of one shoe laid in one holder is being burnished, may readily jack a shoe in the other shoe-holder, substantially as set forth.

339,512. TOBOGGAN. SEYMOUR AINSWORTH, Saratoga Springs, N. Y. Filed Jan. 22, 1886. (No model.)

Claim.—1. A skeleton toboggan-sleigh constructed with round, oval, square, or wedge-shaped runners disposed parallel with each other and fastened together at right angles with cross-beams made in two sections, and with canvas, paper, felt, or other suitable material extending

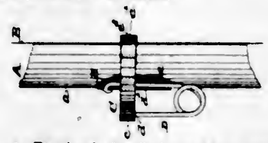
339,512.



over said runners and passing between the sections of the cross-beams and properly fastened, substantially as specified above, and shown on the accompanying drawings.

2. The combination, in a toboggan or toboggan-sleigh, of runners cross-beams made in two sections, and canvas, paper, felt, or other suitable material extended over and between them, forming a skeleton toboggan-sleigh, as specified, and shown in the accompanying drawings.

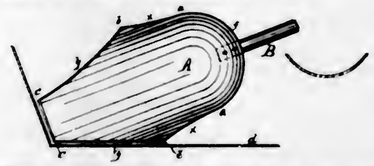
339,513. CAPODASTRO FOR GUITARS. JAS. M. ALLEN, St. Louis Mo. Filed Sept. 17, 1885. (No model.)



Claim.—1. The herein-described capodastro, consisting of the clamp, the spring, and the presser-plate, the parts of said clamp being made to open apart, as described.

2. The combination of the clamp C, having the bar *c'* hinged to open from the part *c*, the spring D, and the presser-plate E, as described.

339,514. COMBINED SPOON AND SCRAPER. EMERY J. AVERILL, Bangor, Me. Filed Nov. 7, 1885. (No model.)

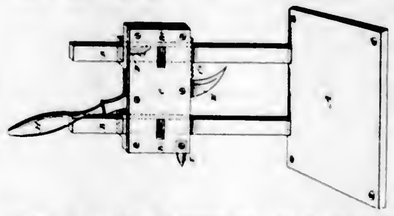


Claim.—1. A spoon-bowl formed with a truncated point and having its side edges concaved from the extremities of the point to points at or near the line of greatest width of the bowl, substantially as described.

2. A spoon-bowl formed with a truncated point and having its side edges concaved from the extremities of the point to points at or near the line of greatest width of the bowl, and thence again concaved toward the butt-end of the bowl, substantially as described.

3. The combination, with a shank or handle, of a spoon-bowl formed with a truncated point and having its side edges concaved from the extremities of the point to points at or near the line of greatest width of the bowl, substantially as described.

339,515. CAN-OPENER. ROBERT AYTEN, London, England. Filed Dec. 11, 1885. (No model.)



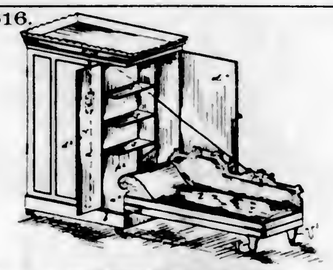
Claim.—1. In a device for opening tins, a pair of rigid uprights, a plate or knife-box moving thereon, a knife pivoted to said knife-box, and a lever for operating the knife, the parts being combined as set forth.

2. The combination, in a tin-opener, of a pair of rigid uprights, a plate or knife-box having two pairs of slots or perforations at right angles to each other adapted to engage said uprights, and a knife pivoted to said knife-box and provided with a suitable operating-lever, whereby the knife may be operated either vertically or horizontally, as set forth.

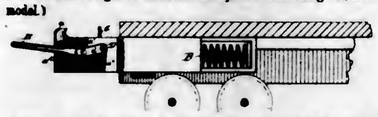
339,516. COMBINED WARDROBE AND LOUNGE. GERHARD L. BAAR, Indianapolis, Ind., assignor to Michael Claus, same place. Filed Sept. 7, 1885. (No model.)

Claim.—A wardrobe having the receptacle *a'* and partition *p'*, forming apartment a^3, in combination with the lounge *l* and pulley *p*, and cord and weight *w*, as and for the purpose set forth.

339,516.



339,517. CAR-COUPLING. ALFRED D. BABCOCK, Leon, N. Y., assignor to himself and Edgar A. Hubbell, same place. Filed Aug. 18, 1885. (No model.)



Claim.—1. A car-coupling comprising a draw-bar having a hook and lateral shoulders a^3, a shaft journaled to said draw-bar and having crank-arms *d*, and the bail supported on the outer ends of said arms and arranged to rest on the shoulders a^3, substantially as set forth.

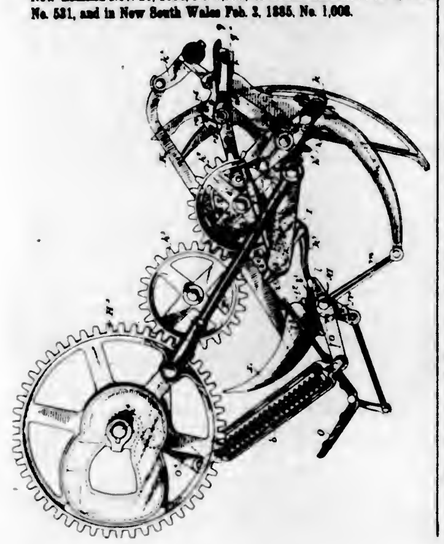
2. In a car-coupling, the combination of the draw-head A, provided with shoulder *a*, the stops *a'* and a^3, and the bail-rests a^3, the shaft D, having the spring *d''* and arms *d*, and the bail E, provided with ends *e* and pivoted to the said arms, substantially as described and shown, and for the purpose set forth.

3. In a car-coupling, the combination of the spring-plate F, provided with a ring and chain for raising it, the bail E, having ends *e*, the arms *d*, the shaft D, provided with spring *d''*, and a draw-head, A, having shoulder *a*, stops *a'* and a^3, and the bail-rests a^3, substantially as described and shown, and for the purpose set forth.

4. The improved car-coupling, substantially as herein described and shown, consisting of the socketed draw-head having a pin-opening and provided with shoulders *a* and stops *a'* and a^3, and the bail-rests a^3, the spring-actuated shaft having crank-arms, the bails pivoted to said arms, and the plate F, substantially as set forth.

5. The combination, with the draw-head having stops *a'* a^3, of the spring-actuated shaft journaled in the draw-head and having crank-arms movable between shoulders *a'* a^3, and a bail supported on the outer ends of said arms, substantially as set forth.

339,518. GRAIN-BINDER. WILLIAM R. BAKER and HENRY E. PRIDMORE, Chicago, Ill., assignors to the McCormick Harvesting Machine Company, same place. Filed Sept. 29, 1884. (No model.) Patented in England July 19, 1884, No. 10,230; in Victoria Oct. 2, 1884, No. 3,854; in New Zealand Nov. 20, 1884, No. 1,300; in South Australia Feb. 2, 1885, No. 531, and in New South Wales Feb. 3, 1885, No. 1,008.



Claim.—1. The combination, substantially as hereinbefore set forth, of the metal post-frame formed as a single casting with overhanging and subtending arms, the metallic transverse frame-bars rivoted to the subtending arm of said post-frame, and the upper and lower longitudinal frame-bars bolted to said transverse bars, near the ends of the latter.

2. The combination, substantially as hereinbefore set forth, of the metal post-frame formed as a single casting with overhanging and subtending arms, the metallic transverse frame-bars provided with integral bearings for the driving-shaft, trip-shaft, and trip-finger shaft and bolted to the subtending arm of the post-frame, and the upper and lower longitudinal tubular frame-bars bolted to said transverse bars.

3. The metal post-frame formed, substantially as described, as an integral casting with overhanging and subtending arms or sleeves, vertical web or flange supporting the stub-axles for the idle-gears, lugs or ears near each end of the subtending arm for the attachment of the transverse frame-bars, and offset *c'*, to afford a seat for the decking.

4. The combination, substantially as hereinbefore set forth, of the bracket formed upon the outer end of the rear transverse metal frame-bar for the support of the decking, the bracket cast integral with the subtending arm of the post-frame in practically the same plane with the former, and the corresponding brackets or risers bolted to the metal frame-work, as described and shown.

5. The combination, substantially as hereinbefore set forth, of the metal post-frame, the transverse metal bar with its integral bearings bolted to the front of said frame, the second transverse metal bar with like bearings bolted to the rear of said frame alongside the binder-arm, the tubular frame-bars extending from front to rear of the binding attachment and bolted to the ends of said transverse metal bars, and the transverse wooden bars bolted to said tubular frame-bars in rear of the binder-arm.

6. The combination, substantially as hereinbefore set forth, of the metal table-trip extending along the slot in the decking and hinged at its upper end with the trip-finger from the trip-shaft, upon which finger said table-trip rests.

7. The combination, substantially as hereinbefore set forth, of the slotted metal table-trip fitting within and playing in the slot in the wooden decking, the binding-arm playing therethrough, the trip-finger from the rock-shaft, upon which finger said table-trip rests, the trip-dog, and the trip-clutch.

8. The combination, substantially as hereinbefore set forth, of the pivoted outside trip-fingers mounted upon a rock-shaft and rocking therewith, their heel extension and the lug therefrom, and the trip-arm from the trip-shaft resting upon said lug, whereby the trip-shaft is actuated by the rocking of said fingers.

9. The combination, substantially as hereinbefore set forth, of the outside trip-fingers, against which the grain is packed, the rock-shaft, upon which they are loosely mounted, a stop, which checks their independent vibration upon said shaft, and the pitman from the gear and cam wheel connected with a crank from said rock-shaft and actuating it after the binding mechanism is started to rock it in the direction in which said fingers yield in order to carry them beneath the decking and open the way for the discharge of the bound sheaf.

10. The combination, substantially as hereinbefore set forth, of the outside trip-fingers, the block to which they are secured with capacity of in and out adjustment, the heel-extension from said block, the rock-shaft upon which the block is mounted, the crank and pitman operated from the gear and cam wheel, and the trip-arm from the rock-shaft.

11. The combination, substantially as set forth, of the pivoted outside trip-fingers, the rock-shaft upon which they are mounted and by which they are swung beneath the decking, their heel-extension, the trip-arm from the trip-shaft resting on a lug from said heel-extension, the trip-dog and the connection between trip-dog and binder-arm shaft, whereby said fingers are forced back to position for action upon the recession of the binder-arm shaft after a sheaf is tied.

12. The combination, substantiallly as hereinbefore set forth, of the pivoted outside trip-fingers, the rock-shaft upon which they are mounted and by which they are swung beneath the decking, their heel-extension, the trip-arm from the trip-shaft resting on a lug from said heel-extension, the trip-dog, the curved rod connecting said dog with the crank from the binder-arm shaft, and the spring pressing it theretoward.

13. The combination, substantially as hereinbefore set forth, of the trip-fingers, the rock-shaft upon which they are pivoted, the trip-arm resting upon a lug from their heel-extension, the casting keyed to the rock-shaft and having a lateral projection taking into a slot near the base of said fingers, and the link connecting an arm from said casting with an arm from the hinged tail-board of the grain-chute or binding-receptacle, whereby the trip-fingers are permitted to yield a suitable distance and the tail-board is opened in the ensuing movement of the gear and cam wheel.

14. The combination, substantially as hereinbefore set forth, of the trip-fingers, the rock-shaft upon which they are pivoted, the trip-arm resting upon a leg from their heel-extension, the casting keyed to the rock-shaft and having a lateral projection taking into a slot near the base of said fingers, the link connecting an arm from said casting with an arm

from the hinged tail-board of the binding-receptacle, the trip-dog, and the binder-arm and its shaft connected with said dog, in such manner as to restore the fingers to their farthest limit of inward play after each binding operation.

15. The combination, substantially as hereinbefore set forth, of the hinged table-trip, the arm upon which it rests, the trip-shaft to which said arm is fixed, the trip-dog and clutch, the outside pivoted trip-fingers, and a second arm fixed to the trip-shaft or integral with the first-mentioned arm and extended to rest against a heel-extension from said trip-finger.

16. The combination, substantially as hereinbefore set forth, with the binding mechanism, of the slack-lever arranged to dog said mechanism and hold it steady when out of action.

17. The combination, substantially as hereinbefore set forth, with the binding mechanism, of the slack-lever and the notched or recessed cam upon one of the wheels in the train driving said mechanism arranged to act upon the heel of said lever and receive it into the recess to actuate the lever and cause it to dog the binding mechanism.

18. The combination, substantially as hereinbefore set forth, of the pivoted slack-lever, the cam upon the first idle-gear in the train driving the binder, against which cam the heel of the lever rests, the notch in said cam to permit the lever to fall, formed to receive and embrace the anti-friction roll on the heel of said lever, and the spring forcing said lever down to cause its heel to sink into said notch and lock the gearing.

19. The combination, substantially as hereinbefore set forth, of the pivoted slack-lever, the tension-finger arranged to press upon the cord passing therethrough when slack is being taken up, and means whereby the pressure of said finger is removed from the cord when the lever is down, that the cord may be drawn freely from the source of supply.

20. The combination, substantially as hereinbefore set forth, of the pivoted slack-lever, the guide-eyes at its free end, the fixed eye supported from the frame, and the tension-finger arranged to act upon the cord passing through said guide-eyes between the fixed eye and the source of supply.

21. The combination, substantially as hereinbefore set forth, of the pivoted slack-lever, its guide-eyes, the fixed eye supported from the frame, the tension-finger with its stop-lug, the flange projecting laterally from the frame to intercept said lug and stop the finger when the lever falls, and the spring acting upon the finger and lever.

22. The combination, substantially as hereinbefore set forth, of the pivoted slack-lever, its guide-eyes, the fixed eye from the frame coming between the inner two of said guide-eyes, and the tension-finger arranged to press upon the cord between an outer guide-eye of the lever and said two inner eyes.

23. The combination, substantially as hereinbefore set forth, of the pivoted slack-lever, its guide-eyes, the fixed eye from the frame coming between the inner two of said guide-eyes, the tension-finger arranged to press upon the cord between an outer guide-eye of the lever and said two inner eyes, the stop-lug from the finger, and the stop-flange from the frame.

24. The combination, substantially as hereinbefore set forth, of the pivoted slack-lever, guide-eyes at the effective end thereof, the tension-finger pivoted to the slack-lever between its guide-eyes and proper pivot, the stop-lug on said finger, the stop-flange from the frame, the spring pressing upon the finger beyond its pivotal connection with the lever, and the lever-actuating cam.

25. The combination, substantially as hereinbefore set forth, of the pivoted slack-lever, guide-eyes at the effective end thereof, a guide-eye from the frame, the tension-finger pivoted to the slack-lever between its guide-eyes and proper pivot, means whereby said finger is stopped as the lever approaches the limit of the descent, the spring pressing upon the finger beyond its pivotal connection with the slack-lever, and the lever-actuating cam with its locking-notch.

26. The combination, substantially as hereinbefore set forth, of the pivoted slack-lever and the adjustable casting which supports it.

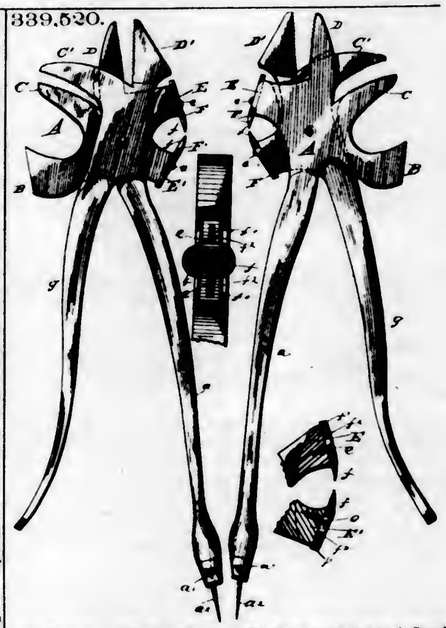
27. The combination, substantially as hereinbefore set forth, of the slack-lever, the casting which supports it, and the metal front transverse bar of the binder-frame, to which said casting is attached and along which it is adjustable.

28. The casting for the support of the slack-lever, formed with a vertical ear carrying the pivot for said lever, and a concentric series of adjusting-pins, and a hanger provided with guide-eyes practically in line with the eye or eyes in the free end of said lever.

339,519. COMPOSITION OF MATTER SUITABLE FOR CASTING MEDALLIONS, TILES, PICTURE-FRAMES, MOLDINGS, &c. WESLEY W. BARNES, New York, and JOHN D. EMACK, Baldwin, N. Y. Filed Mar. 11, 1886. (Specimens.)

Claim.—A composition of matter formed by combining soluble glass, ground flint, ground iron, and roll sulphur, in about the proportions set forth, in the manner described.

339,520. SHOE-MAKER'S TOOL. EMANUEL D. BEALS, Guyandotte, W. Va., assignor of one-half to Sanford C. Keenan and Alonzo M. Flower, both of same place. Filed Jan. 12, 1886. (No model.)



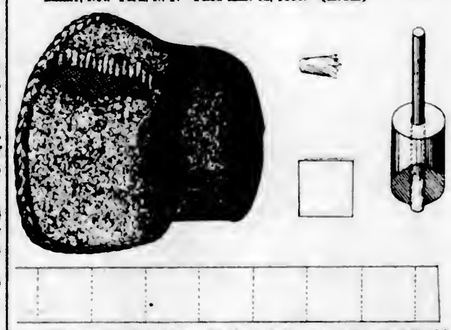
Claim.—1. The combination, with the pivoted heads A G and extensions E E' thereof, of the knives F F', having slotted arms *f'*, and adjustably secured to the upper grooved portions of extensions E E', substantially as described.

2. The countersunk head A, provided with the hammer B, curved jaw C, and extension E, having a knife, F, adjustably secured thereto, with the head G countersunk to fit on the head A, provided with curved jaw C' and extension E', having a knife, F', adjustably secured thereto, all substantially as and for the purpose specified.

3. As an improved article of manufacture, a tool formed of a countersunk head, A, having a curved jaw, C, and a straight jaw, D', and a handle, *a*, with a countersunk head, G, formed with a curved jaw, C', straight jaw D', and handle *g*, the heads forming, when united, a double pair of pinchers, substantially as and for the purposes specified.

4. As an improved article of manufacture, a tool having a head, A, countersunk, as described, formed with a hammer, B, curved jaw C, straight jaw D', extension E, having an adjustable knife secured to its outer surface, and a handle, *a*, with a countersunk head, G, formed with a curved jaw, C', straight jaw D', handle *g*, and extension E', having a cutting-knife adjustably secured thereto, the countersinks in the heads permitting them to be pivoted to each other, so that the several jaws of each head act against those of the opposite head in the required manner, all substantially as and for the purpose specified.

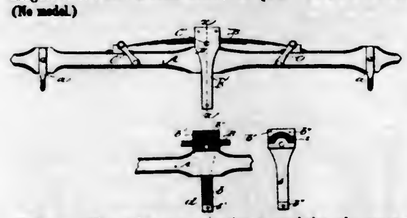
339,521. MANUFACTURE OF FABRIC FOR HATS, &c. JULIA B. BERRY, New York, N. Y. Filed Mar. 12, 1886. (Model.)



Claim.—1. A fabric made of cloth, lace, or gauze, coated with glue-paste, and then covered with tissue-paper forms, constructed in the manner described.

2. As an article of manufacture, a lady's hat made of a fabric of which the outer covering is tissue-paper forms, constructed as described.

339,522. SPRING-WHIFFLETREE. EDWIN D. BLAKE, Chicago, Ill., assignor of two-fifths to Frank Scales, same place. Filed Dec. 24, 1885. (No model.)

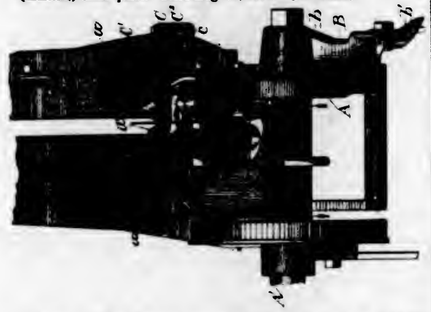


Claim.—1. The spring seat or socket *s*, consisting of a recess or opening formed in separate sections, and having its course varied from the general course of the spring by a shorter curve or angle, in combination with the spring having a portion bent from its general course adapted to fit the varied course of the socket, as and for the purpose specified.

2. In spring-whiffletrees, the safety-stop B', made in sections and having the spring seat or socket *s*, in combination with the spring B, such socket being made between the sections and having its course varied from the general course of the spring by a shorter curve or angle, and the spring also having a portion bent from its general course to fit the varied course of the socket, substantially as and for the purpose specified.

3. The whiffletree A, spring B, and safety-stop B', in combination with clevises C C, said clevises being pivotally connected to the tree and the ends of the spring, and the points of their connection on the tree being essentially nearer together than those at the ends of the spring, substantially as and for the purpose specified.

339,523. GRAIN-BINDER. JOSEPH P. BULLOCK, Milwaukee, Wis., assignor of two-thirds to the Deering Harvesting Machine Company, (Limited,) same place. Filed Aug. 12, 1884. (No model.)



Claim.—1. The flanged knotter-operating wheel, in combination with the knife-bar having finger *d*, and a guide attached to the breast-plate and projecting partly across the needle-opening.

2. The combination of the tyer-wheel, its flared flange B, and the knife-bar having finger *d*, with the cord-guide *d'*, as set forth.

3. The combination, with a knife-bar adapted to reciprocate across the breast-plate and having a finger for supporting the cord until the loop is made, of a guide adapted to support the cord in position to be taken by the bill and to guide the cord toward the shaft of the bill and down upon the finger.

339,524. MANUFACTURE OF GLASS CEMENT, &c. HUGH BURGESS, Ardmore, Pa. Filed Dec. 24, 1885. (No specimens.)

Claim.—1. As an improvement in the manufacture of glass, cement, ceramic ware, &c., the mode herein described of utilizing refuse carbonate of lime or caustic lime, or a mixture thereof, for such manufacture, said mode consisting in drying the refuse lime and sifting the dried material, substantially as set forth.

2. The mode herein described of preparing lime for the manufacture of glass, cement, ceramic ware, &c., said mode consisting in precipitating the carbonate of lime and drying the precipitate, substantially as specified.

3. As a new article of manufacture and sale, finely-comminuted precipitated carbonate of lime, substantially as specified.

4. The mode herein described of utilizing the waste carbonate of lime which results from the boiling of soluble carbonated alkalies with caustic lime, said mode consisting in washing and drying the carbonate, sifting it, and applying it to the manufacture of glass, cement, ceramic ware, &c.

5. The mode herein described of utilizing the mixture of carbonate of lime and vegetable charcoal which results from the boiling of recovered carbonated alkalies with caustic lime, said mode consisting in separating the foreign matters from the mixture and drying it preparatory to its use for the manufacture of glass, cement, ceramic ware, &c., substantially as specified.

6. The mode herein described of utilizing the mixture resulting from the treatment of recovered carbonated alkalies with caustic lime, said mode consisting in separating the foreign matters from the mixture, destroying the vegetable charcoal contained in it, and using the refined carbonate or caustic lime in the manufacture of glass, cement, ceramic ware, &c., all substantially as specified.

7. As an improvement in the art of making glass, ceramic ware, &c., the mode herein described of imparting color thereto, said mode consisting in employing vegetable charcoal with carbonate of lime in the manufacture, substantially as set forth.

8. As a new article of manufacture or sale, a mixture of finely-comminuted precipitated carbonate of lime and vegetable charcoal, all substantially as specified.

339,525. MANUFACTURE OF GLASS, CEMENT, CERAMIC WARE, &c. HUGH BURGESS, Ardmore, and SAMUEL H. ECOLY, Spring City, Pa. Filed Jan. 6, 1886. (No specimens.)

Claim.—The mode herein described of utilizing the waste alkaline earths resulting from the treatment of soluble carbonated alkalies, said mode consisting in adding to the waste mass freshly-burned caustic alkaline earth in about the proportion set forth, and thereby rendering the whole mass dry and friable, substantially as set forth.

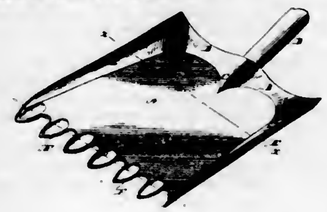
339,526. BULL-RINGER. THEODORE BUTTERWORTH, Quincy, Ill. Filed June 27, 1885. (No model.)



Claim.—1. In a bull-ringer, the combination, with two pivoted clamping-jaws to hold the nose of an animal, one of the jaws having an open side ring, of a third jaw pivoted thereto and carrying upon its tip a punch by which a hole may be made and a ring inserted while the animal is held by the clamping-jaws, substantially as described.

2. In a bull-ringer, the combination, with pivoted jaws A C, provided, respectively, with face *d*, and punch *a*, of the pivoted jaw B, having open-sided ring *c*, substantially as set forth.

339,527. SHOVEL. JOSEPH W. CALEF, North Easton, Mass., assignor of one-half to Charles S. Corfield, Philadelphia, Pa. Filed July 27, 1885. Renewed Feb. 17, 1886. (No model.)



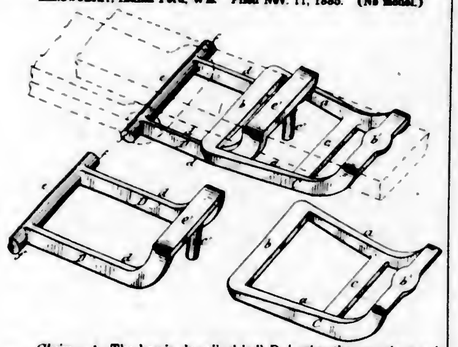
Claim.—1. A shovel having its lower edge provided with teeth which are concavo-convex or dishing, substantially as and for the purpose set forth.

2. A shovel having the lower edge cut out to form teeth tapering toward their points and concavo-convex in shape, having their concave sides facing upward, as and for the purpose shown and set forth.

3. A shovel having its upper and side edges raised to form flanges, and having its lower edge cut out to form teeth tapering toward their points and concavo-convex or spoon-shaped, with their concave sides facing upward, as and for the purpose shown and set forth.

4. A shovel having its upper side edges formed with flanges and the lower edge provided with teeth, which are tapering, concavo-convex, and sharpened, substantially as described.

339,528. HARNESS-BUCKLE. GEORGE P. CRANER and FRED B. LANGWORTHY, Indian Ford, Wis. Filed Nov. 11, 1885. (No model.)



Claim.—1. The herein-described bail D, having the cross-bars *e e'*, the curving side bars, *d*, one cross-bar, *e*, being within the tag, and having projections *f f*, the same being adapted for use with a harness-buckle clamp-loop, substantially as herein described.

2. The trace-buckle herein described, consisting of the bail D, having the tongue *e'* and the projecting ends *f f*, and the clamp-loop C, having the flaring side bars, *a a*, and the cross-bars *b b' c*, the curved tongue end of the bail fitting within the flaring end of the loop, so that the side bars of the latter will act upon the side bars of the bail and lift it in unbuckling.

339,529. PAINTING-MACHINE. JAMES F. CRAMPTON, Springfield, Mass. Filed Aug. 25, 1885. (No model.)



Claim.—1. The combination, with a receptacle having an adjustable handle, of a frame supported in said receptacle and adapted to be withdrawn therefrom, detachable rollers mounted in said frame, one of which projects beyond the receptacle through an opening therein, and an endless traveling belt arranged over said rollers, substantially as described.

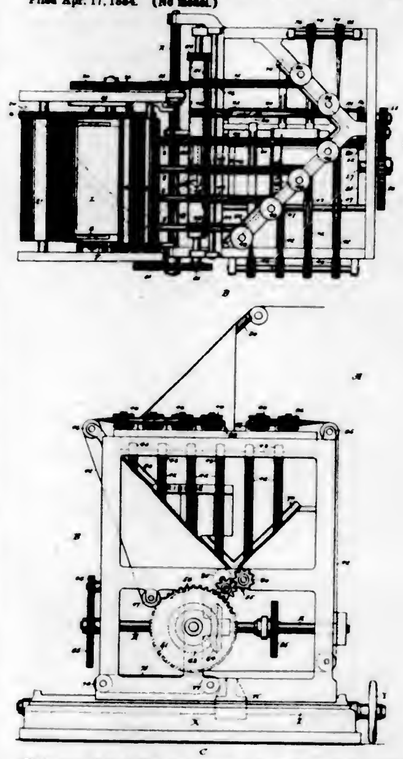
2. The combination, with a receptacle having a transverse opening, a removable frame arranged in said receptacle and supported therein by cleats or ways, detachable rollers mounted in said frame, and an endless traveling belt arranged over said rollers, substantially as described.

3. The combination, with the receptacle, of a handle pivotally connected thereto and held at an angle by means of a guide adapted to engage said handle and connected to the receptacle, substantially as described.

4. The combination, with a receptacle, of a handle having a slotted head, a bail pivotally connected to the receptacle and rigidly secured to the handle, and a curved guide arranged parallel with the handle, through the slotted head of which it passes and is secured at its ends to the receptacle, substantially as described.

5. The combination, with a receptacle having a transverse opening and parallel ways upon its end walls, of a frame arranged within the ways of the receptacle and having lugs *f' f'* at its rear ends and bearing-lugs *g g* on their inner faces, rollers having studs adapted to bear in said lugs *g g*, and an endless traveling belt arranged over the rollers and adapted to be rotated by frictional contact with the surface of a wall or ceiling, substantially as and for the purpose described.

339,530. DELIVERY APPARATUS FOR PRINTING-MACHINES. LUTHER C. CROWELL, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Apr. 17, 1884. (No model.)



Claim.—1. In a delivery apparatus, a longitudinal folder which is made adjustable or capable of being moved to different positions with relation to the preceding mechanisms, so that it can be caused to receive the sheet or web in such position that it will be folded in passing through the folder, or in such position that it will be simply guided or turned over one of the sides or internal guides of the folder without being folded, all substantially as described.

2. In a delivery apparatus, a longitudinal folder having one of its sides or internal guides of sufficient length to receive the full width of the web or sheet presented to the folder, and which is made adjustable or capable of being moved to different positions with relation to the preceding mechanisms, so that it can be caused to receive the sheet or web in such position that it will be folded in passing through the folder, or in such position that it will be simply guided or turned over one of the sides or internal guides of the folder without being folded, all substantially as described.

3. The combination, with a longitudinal folder which is adjustable or capable of being moved to different positions with relation to the preceding mechanisms, of a sheet-piling mechanism which is made adjustable to correspond with or conform to the position of the folder, all substantially as described.

4. The combination of two folding mechanisms arranged to act upon the web or sheet in succession, and the second of which mechanisms is a longitudinal folder, said mechanisms being adjustable with relation to each other, so that the web or sheet may be received by the second mechanism in position to be folded thereby, or in position to be simply guided by it without being folded, all substantially as described.

5. The combination, with a folding mechanism arranged to impart a fold to a web or sheet, of a secondary folding mechanism consisting of a longitudinal folder which is adjustable, so that the web or sheet may be received by it in position to be folded, or in position to be simply guided by it without being folded, all substantially as described.

6. The combination of two longitudinal folders arranged to act upon the web or sheet in succession, said folders being adjustable with relation to each other, so that the web or sheet may be received by the second in position to be folded thereby, or in position to be simply guided by it without being folded, all substantially as described.

7. The combination of two longitudinal folders arranged to act upon the web or sheet in succession, the second of said folders being adjustable, so that the web or sheet may be received by it in position to be folded, or in position to be simply guided by it without being folded, all substantially as described.

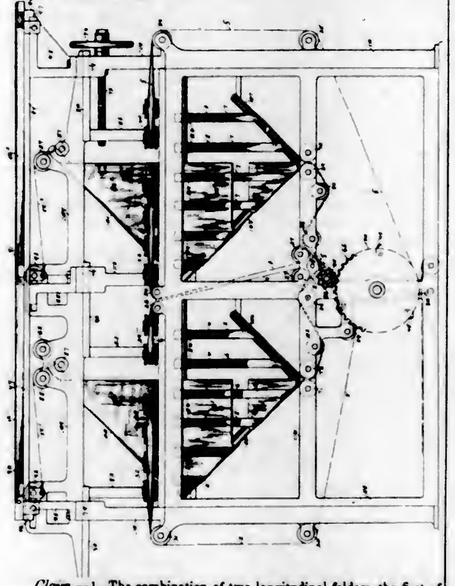
8. The combination of two longitudinal folders and an interposed folding mechanism, the three being arranged to operate upon the web or sheet in succession, and said longitudinal folders being adjustable with relation to each other, so that the web or sheet may be received by the second of said folders in position to be folded thereby, or in position to be simply guided by it without being folded, all substantially as described.

9. The combination of two longitudinal folders and an interposed folding mechanism, the three being arranged to operate upon the web or sheet in succession, and the second of said longitudinal folders being adjustable with relation to the other, so that the web or sheet may be received by it in position to be folded, or in position to be simply guided by it without being folded, all substantially as described.

10. The combination, with a stationary folding mechanism, of a folding mechanism mounted in a movable frame-work, whereby the position of the latter mechanism with respect to the former may be adjusted to operate as a guiding or folding mechanism, substantially as described.

11. The combination, with a stationary folding mechanism, of a longitudinal folding mechanism and a sheet-piling mechanism, both mounted in a movable frame, whereby while their corelation is maintained their position with respect to the other folding mechanism may be adjusted so as to guide and deliver or fold and deliver, substantially as described.

339,531. SHEET-DELIVERY MECHANISM. LUTHER C. CROWELL, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination of two longitudinal folders, the first of which is adjustable, so that it can be shifted to different positions whereby the product delivered from it will pass to the second in position, to be folded thereby, or in position to pass said second folder without being folded, all substantially as described.

2. The combination, with a folding mechanism composed of a plurality of longitudinal folders, of a second folding mechanism composed of a like number of longitudinal folders, the folders of said first mechanism being adjustable, so that they can be shifted to different positions whereby the product delivered from them may pass to the folders of the second mechanism in position to be folded thereby, or in position to pass said second folders without being folded, and a web-associating mechanism, all substantially as described.

3. The combination, with a folding mechanism composed of a plurality of longitudinal folders mounted in a movable frame, of a second folding mechanism composed of a like number of longitudinal folders arranged to receive and act upon the product after it leaves the first folders, the frame carrying the first folders being capable of such a movement that the product may pass to the second folders either in position to be folded thereby or in position to pass said folders without being folded, all substantially as described.

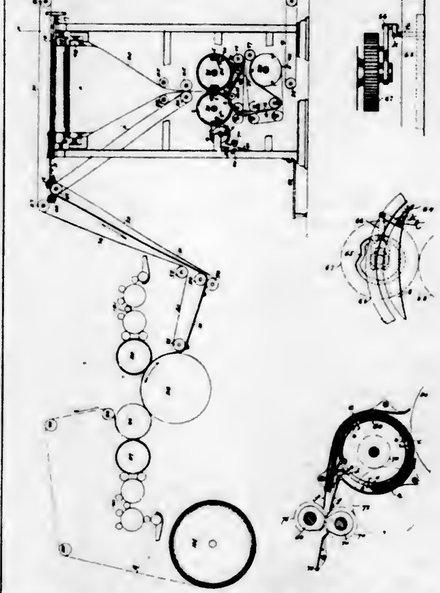
4. The combination, with a longitudinal folder, a transverse folding mechanism, and a second longitudinal folder, the three being arranged to act upon the product in the order named, and said first longitudinal folder being adjustable, so that it can be shifted to different positions whereby the product delivered from it may pass to the second longitudinal folder in position to be folded thereby, or in position to pass said second folder without being folded, all substantially as described.

5. The combination, with a folding mechanism composed of a plurality of longitudinal folders, of a second folding mechanism composed of a corresponding number of longitudinal folders, an interposed transverse folding mechanism capacitated to receive and act upon the product of all of the folders of the first mechanism, and means whereby the folders of the first mechanism may be shifted in position, so that the product may be delivered to the folders of the second longitudinal folding mechanism in position to be folded thereby or in position to pass said folders without being folded, all substantially as described.

6. The combination, with a longitudinal folder, of a web-turner for turning the web before it is presented to the folder, said web-turner being adjustable, so that webs of different widths may be properly presented to the folder, all substantially as described.

7. The combination, with a plurality of longitudinal folders, of a plurality of web-turners mounted in a movable frame and arranged to turn the webs and present them to the folders, and means for adjusting the position of the frame carrying the turners, all substantially as described.

339,532. SHEET-DELIVERY APPARATUS. LUTHER C. CROWELL, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Oct. 23, 1885. (No model.)



Claim.—1. The combination, with a longitudinal folder and a web-turner, of a web-severing mechanism which is capacitated to sever the web when in an unfolded condition, these three being so arranged that the web may be led either directly to the severing mechanism in an unfolded condition or to the folder and thence to the severing mechanism in a folded condition, all substantially as described.

2. The combination, with a longitudinal folder, a web-turner, and a web-severing mechanism, of a transverse folding mechanism, as the cylinder 30 and its auxiliaries, which is capacitated to act upon the sheets severed before they are longitudinally folded, these four being so arranged that the web or sheets may be led either directly to the transverse folding mechanism before being folded longitudinally or to the

longitudinal folder and thence to the transverse folder after being longitudinally folded, all substantially as described.

3. The combination, with the turning-bars 10 12, arranged to turn and associate the webs *a b*, of a longitudinal folder, as 20 or 21, for folding said associated webs, and a web-severing mechanism arranged parallel with the printing-cylinders for severing the associated and folded webs into sheets, all substantially as described.

4. The combination, with the turning-bars 10 12, arranged to turn and associate the webs *a b*, of a longitudinal folder, as 20 or 21, for folding said associated webs, and web-severing and transverse folding mechanisms arranged parallel with the printing-cylinders for severing the associated and folded webs into sheets and folding the sheets, all substantially as described.

5. The combination, with the turning-bars 10 12, arranged to turn and associate the webs *a b*, of a longitudinal folder, as 20 or 21, for folding said associated webs, and web-severing and sheet-associating mechanisms arranged parallel with the printing-cylinders for severing the associated and folded webs into sheets and associating the sheets, all substantially as described.

6. The combination, with the turning-bars 10 12, arranged to turn and associate the webs *a b*, of a longitudinal folder, as 20 or 21, for folding said associated webs, and web-severing, sheet-associating, and transverse folding mechanisms arranged parallel with the printing-cylinders for severing the associated and folded webs into sheets and associating and folding the sheets, all substantially as described.

7. The combination, with a plurality of longitudinal folders, of web turning and associating mechanism arranged to turn a plurality of webs which are running side by side, so as to change their direction of travel and bring them into line, whereby the webs may be led to different folders to be folded separately or associated and led to the same folder to be folded together, all substantially as described.

8. The combination, with the cutting-cylinders 30 31, adapted to receive and sever the full-width web, and arranged so that the web may be led directly to them, of a slitter, as 49, for dividing the web longitudinally into narrow webs, longitudinal folders, as 20 21, and turning-bars, as 10 12, which are arranged to operate upon the narrow webs before they enter the cutting-cylinders, whereby the narrow webs may be longitudinally folded and severed into sheets or be severed into sheets without being so folded, substantially as described.

9. The combination, with the cutting-cylinders 30 31, adapted to receive and sever the full-width web and arranged so that the web may be led directly to them, of a slitter, as 49, for dividing the web longitudinally into narrow webs, a longitudinal folder, as 20 or 21, and turning-bars 10 12, which are arranged to operate upon the narrow webs before they enter the cutting-cylinders, whereby the narrow webs may be associated and longitudinally folded and severed into sheets or be severed into sheets without being so associated and folded, substantially as described.

10. The combination, with a transverse folding mechanism, as the cylinder 30 and its auxiliaries, which is capacitated to act upon the sheets without their being folded longitudinally, of a slitter for dividing the web into narrow webs, longitudinal folders for folding the narrow webs, a web-turning mechanism, and a tranverse severing mechanism, these devices or mechanisms being so arranged that the webs may be led either directly to the transverse folding mechanism without being folded longitudinally or to the longitudinal folders and thence to the transverse folder after being longitudinally folded, all substantially as described.

11. The combination, with a transverse folding mechanism which is capacitated to act upon the sheets without their being longitudinally folded, of a slitter for dividing the web into narrow webs, a web turning and associating mechanism for associating the narrow webs, a longitudinal folder for folding the associated webs, and a transverse severing mechanism, these devices or mechanisms being so arranged that the webs may be led either directly to the transverse folder without being folded longitudinally or to the web associating and longitudinal folding mechanisms and thence to the transverse folder, all substantially as described.

12. The combination, with cutting-cylinders which are arranged parallel with the printing-cylinders and so that the web may be led directly thereto, and which are adapted to receive and sever the full-width web, of a longitudinal folder, as 20 or 21, and a turning-bar, which folder and bar are arranged to operate upon the web before it arrives at the cutting-cylinders, whereby the web may be longitudinally folded and then severed into sheets or be severed into sheets without being so folded, substantially as described.

13. The combination, with a transverse severing and folding mechanism adapted to operate upon and sever the full-width web and arranged so that the web may be led directly thereto, of a longitudinal folder, as 20 or 21, and a turning-bar, which are arranged to operate upon the web before it arrives at the transverse cutting and folding mechanism, whereby the web may be longitudinally folded and then severed into sheets and folded transversely or be severed into sheets and folded transversely without being longitudinally folded, substantially as described.

14. The combination, with a transverse severing and folding mechanism adapted to operate upon the full-width web and arranged so that the web may be led directly thereto, of a slitter, as 49, for dividing the web longitudinally into narrow webs, a longitudinal folder, as 20 or 21, and turning-bars, as 10 12, which folder and bars are arranged to operate upon the narrow webs before they arrive at the transverse severing and folding mechanism, whereby the web may be divided into narrow webs and the narrow webs associated and longitudinally folded and severed into sheets or be severed into sheets without being so associated and folded, substantially as described.

15. The combination, with a transverse severing and folding mechanism adapted to receive and sever the full-width web, and arranged so that the web may be led directly thereto, of a slitter, as 49, for dividing the web longitudinally into narrow webs, longitudinal folders, as 20 21, and turning-bars, as 10 12, which are arranged to operate upon the narrow webs before they arrive at the transverse severing and folding mechanism, whereby the web may be divided into narrow webs and the narrow webs longitudinally folded and severed into sheets or be severed into sheets without being so folded, substantially as described.

16. The combination, with the folding-cylinder 30 and a piling mechanism, as the carrier 32, for piling the sheets folded off said cylinder, of a sheet-collecting mechanism for receiving the sheets from said cylinder without their being folded thereby, and collecting them into lots, and a piling mechanism, as the fly 61, for piling the lots of sheets from the collecting mechanism, whereby the sheets may be folded off the cylinder and delivered by one piling mechanism or be collected off the cylinder without being folded thereby and delivered by another piling mechanism, all substantially as described.

17. The combination, with the cutting and folding cylinders 30 31 and a piling mechanism, as the carrier 32, for piling the sheets folded thereby, of a sheet-collecting mechanism for receiving the sheets from said cylinders without their being folded thereby and collecting them into lots, and a piling mechanism for piling the lots of sheets from the collecting mechanism, whereby the sheets may be folded off the cylinder and delivered by one piling mechanism or be collected off the cylinder without being folded thereby and delivered by another piling mechanism, all substantially as described.

18. The combination, with the cylinders 30 31, provided with auxiliary devices for folding and for associating and folding sheets, and a piling mechanism, as the carrier 32, for piling the sheets folded thereby, of a sheet-collecting mechanism for receiving the sheets from said cylinders without their being folded thereby and collecting them into lots, and a piling mechanism for piling the lots of sheets from the collecting mechanism, whereby the sheets may be folded off the cylinder or associated and folded off the cylinder and delivered by one piling mechanism or be collected off the cylinder without being folded thereby and delivered by another piling mechanism, all substantially as described.

19. The combination, with the cylinders 30 31, provided with sheet associating and folding devices, of a sheet-collecting mechanism, as the cylinder 60, and means for rendering said folding and associating devices inoperative, all substantially as described.

20. The collecting-cylinder 60, provided with means for collecting sheets upon its surface and made capable of contracting as the sheets accumulate upon it, all substantially as described.

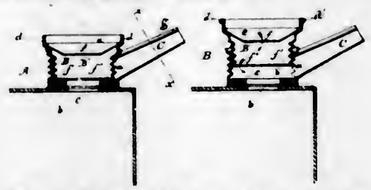
21. The combination, with the collecting-cylinder 60, of the yielding pieces c and the guides for holding the sheets onto the cylinder, all substantially as described.

22. The combination, with the collecting-cylinder 60, made capable of contracting as the sheets accumulate upon it, of the guides for holding the sheets onto the cylinder, all substantially as described.

23. The combination, with the collecting-cylinder 60, having the yielding pieces c, of the stripper-fingers *n*, for directing the lot of sheets off the cylinder, all substantially as described.

24. The combination, with a collecting-cylinder, as 60, of the segmental rolls 69 70, for receiving the lots of sheets as they are delivered from the cylinder, all substantially as described.

339,533. NOZZLE, &c., FOR CANS. EDWIN R. DEVEREAU, New York, N. Y. Filed May 19, 1885. (No model.)



Claim.—1. The stopper B, having air-holes *f* and *f' f'*, and constructed to form an air-chamber, B', in combination with a nozzle, A, having a seat for the stopper, all constructed and operated substantially as set forth.

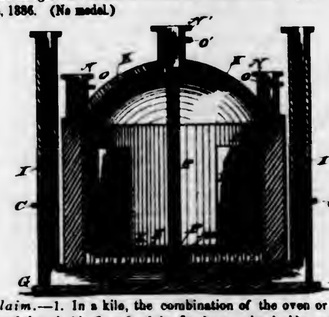
2. The winged spout C, in combination with the nozzle A and stopper B, constructed substantially as and for the purpose described.

339,534. SLEEVE-NUT. JOHN S. DICKSON, Pittsburg, Pa., assignor to the Pittsburg Hob-Nail Manufacturing Company, same place. Filed Dec. 14, 1885. (No model.)



Claim.—As a new article of manufacture, sleeve-nuts having an internal screw-thread at each end, and an enlarged unthreaded cavity in the middle, constructed of cast metal and annealed, substantially as described.

339,535. KILN FOR POTTERY, &c. SAMUEL W. DIXON, Findlay, Ohio, assignor of one-half to Thornton F. Morrison, same place. Filed Jan. 16, 1886. (No model.)

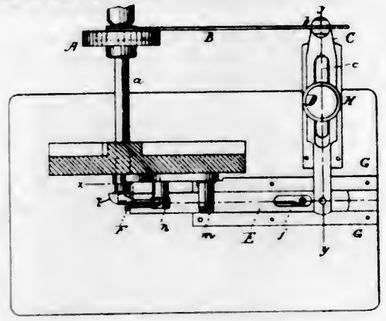


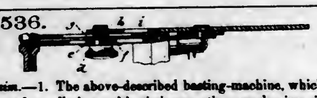
Claim.—1. In a kiln, the combination of the oven or body, the reticulated detachable floor S of the fire-boxes, the inside vertical flues H, communicating with said fire-boxes and having the sliding gates A B, the outside chimneys, I, having the sliding gates C, the flues F, and flues L and M, communicating with the flues F, substantially as specified.

2. In a kiln, the combination, with the oven or body, the reticulated floor S, the fire-boxes, and the flues L and M below the same, and constructed substantially as described, of the chimneys I N N', respectively provided with the gates C O O', the flues H, provided with the gates A B, and the temporary flues T, made of unbaked or green tiles, substantially as specified.

3. In a kiln having fire-boxes E, the combination of the oven-body, the reticulated floor S, and the flues L and M below the same, with the chimneys I N N', respectively provided with the gates C O O', the flues H, provided with the gates A B, and the temporary flues T, made of unbaked tiles, substantially as specified.

339,536. BASTING-MACHINE. WILLIAM DOCHHEIM, Boston, Mass., assignor to the Addax Basting Machine Company, same place. Filed Jan. 13, 1885. (No model.)



339,536. 

Claim.—1. The above-described basting-machine, which consists of a needle and needle-bar, with their operating mechanism, in combination with the feed-cam A and its operating mechanism, the pitman B, slotted lever C, with adjustable fulcrum D, consisting of set-screw *d*, slide *f*, piece *g*, plate H, and threaded nut A, whereby said lever is adapted to move longitudinally, as well as to vibrate on said fulcrum, and the feed-carriage E, with its operating mechanism, said devices being adapted and arranged, as herein described, to produce stitches of a length and character known as "basting-stitches," as and for the purposes specified.

2. In a basting-machine, the above-described adjustable fulcrum D, consisting of set-screw *d*, washer *e*, slide *f*, piece *g*, plate H, and threaded nut A, as herein described, and for the purposes specified.

339,537. TRICYCLE. CHARLES E. DURYEA, St. Louis, Mo., assignor to Charles H. Stone, same place. Filed July 6, 1885. (No model.)



Claim.—1. The attachment M, consisting of the frame *m*, provided with the post and saddle m' m^3, the crank-shaft and pedals m^3 m^4 m^4, the arms m^5 m^6, extended and provided with the handles m^9 m^9, the clips m^{11} m^{12}, and the sprocket-wheel m^{10}, substantially as described.

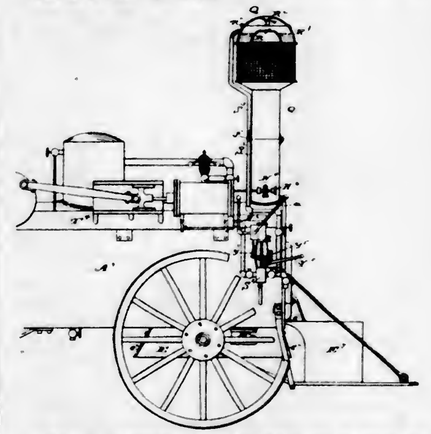
2. The combination of the frame *m*, shaped as described, with the crank-shaft and pedals m^3 m^4 m^4, the arms m^5 m^6, and the sides m^7 m^7, with the loop-frame L, having sides *l l*, substantially as described.

3. The combination of the frame *m*, having the arms m^5 m^6, with the loop-frame L, having sides *l l*, substantially as and for the purpose described.

4. The combination of the frame *m*, the arms m^5 m^6, the post and saddle m' m^3, and the crank-shaft and pedals m^3 m^4 m^4, the sprocket-wheels m^{10}, G, and F, and chains J J', substantially as described.

5. The combination of the attachment M, as described, with the post and saddle m' m^3, the pedals I and m^4, the loop-frame L, and the sprocket-wheels and the chains, all as described.

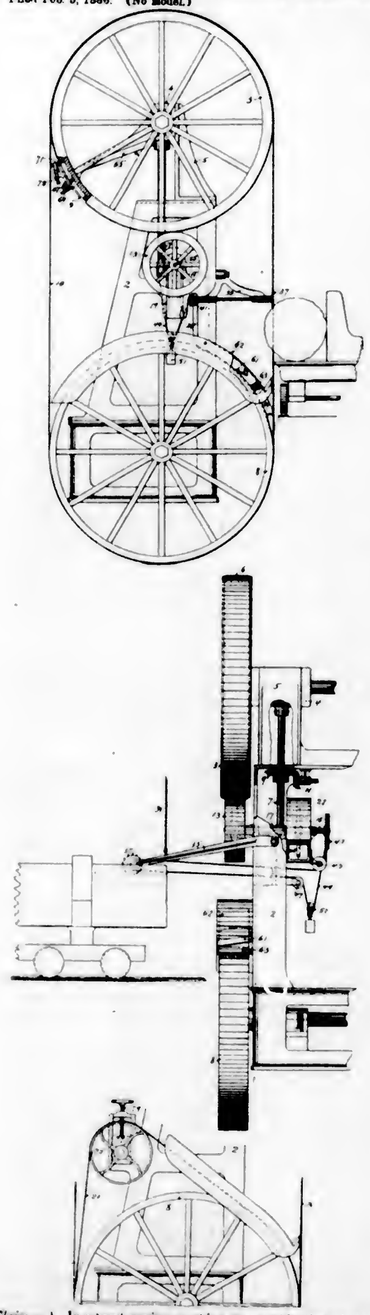
339,538. SPARK-ARRESTER. JOHN H. ELWARD, Stillwater, Minn., assignor, by mesne assignments, to E. S. Brown, receiver, same place. Filed Dec. 29, 1881. (No model.)



Claim.—1. In combination with the furnace and the smoke-stack, the netting *g*, and the spark-arrester Q', above the netting, and provided with a water-receptacle, and also with a deflector adapted to guide the sparks and cinders into said water-receptacle, substantially as set forth.

2. In combination with the furnace and the smoke-stack, hinged to permit the upper section thereof to fold down, the spark-arrester having a water-space, and the water-supply pipe S^9 S^9, arranged in sections and adapted to fold with the smoke-stack, substantially as set forth.

339,539. BAND-SAW MILL. CHARLES EPPLIN, Minneapolis, Minn., assignor of one-half to the Pray Manufacturing Company, same place. Filed Feb. 5, 1886. (No model.)



Claim.—1. In a band sawing-machine, the combination of an upper wheel, an independent rim within which said wheel is free to revolve, and a friction-wheel located within the band-saw in contact with said rim, substantially as described, and for the purpose set forth.

2. The combination, in a band sawing-machine, with the saw and the upper wheel, of a friction-wheel located within the saw and in contact with the rim of said upper wheel, substantially as described, and for the purpose set forth.

3. The combination, in a band sawing-machine, of an upper wheel and an independent rim having a flexible band thereon, said wheel and rim turning independently of each other, and a retarding-wheel located within the saw in contact with said band, substantially as described, and for the purpose set forth.

4. The combination, in a band sawing-machine, with the saw and band-wheel, of a pulley journaled upon bearings within the band-saw, and a flexible band passing around said pulley and around said band-wheel, between the rim of the wheel and the saw, substantially as described, and for the purpose set forth.

5. The combination, in a band sawing-machine, with the saw and the upper wheel, of a retarding-wheel located within the saw and driven by said upper wheel, the fan 25, the fan-casing 27, the tube 29, extending from said casing to a point below the cutting portion of the saw, and driving means between said fan and said retarding-wheel, substantially as described, and for the purpose set forth.

6. The combination, in a band sawing-machine, with the saw and the upper wheel, of a retarding-wheel located within the saw and driven by said upper wheel, the rosser 37, mounted in the swinging arm 35, and driving mechanism between said rosser and said retarding-wheel, substantially as described, and for the purpose set forth.

7. The combination, in a band sawing-machine, with the saw and the upper wheel, of the friction-wheel located beneath said upper wheel in contact with the rim thereof, the fan 25, driving means between said fan and said friction-wheel, the fan-casing 27, and the tube 29, extending from said casing to a point below the cutting portion of said saw, substantially as described, and for the purpose set forth.

8. The combination, in a band sawing-machine, with the saw and the upper wheel, of the friction-wheel located within the saw in contact with the rim of said upper wheel, the rosser 37, mounted in the swinging arm 35, and driving means between said rosser and said friction-wheel, substantially as described, and for the purpose set forth.

9. The combination, in a band sawing-machine, of the upper wheel, the sliding pillow-block on which said wheel is mounted, a retarding-wheel located beneath said upper wheel and rotated thereby, the slide carrying said retarding-wheel, the screw secured to said pillow-block and to said slide, and the adjusting-nut on said screw, whereby said upper wheel and said retarding-wheel may be moved vertically without changing their relative adjustment, substantially as described.

10. The combination, in a band sawing-machine, with the saw and band-wheel, of a scraper arranged within the saw and bearing on the rim of the wheel, substantially as described, and for the purpose set forth.

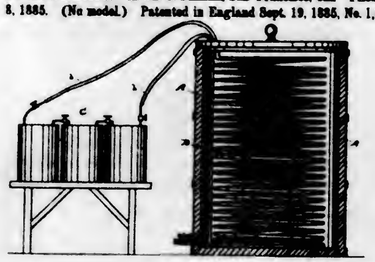
11. The combination, in a band sawing-machine, with the band-saw and wheel, of a brush secured to the frame of the machine and bearing on the rim of the wheel within the band-saw, substantially as described, and for the purpose set forth.

12. The combination, in a band sawing-machine, with the band-saw and the lower wheel, of the upper wheel, a sliding pillow-block on which said wheel is mounted, an arm secured to said pillow-block and extending to the rim of the wheel, and a scraper mounted on said arm and bearing on the rim of the wheel, substantially as described, and for the purpose set forth.

13. The combination, in a band sawing-machine, with the band-saw and the lower wheel, of the upper wheel, a sliding pillow-block on which said wheel is mounted, an arm secured to said pillow-block and extending to the rim of the wheel, and a brush mounted on said arm and bearing on the rim of the wheel, substantially as described.

14. The combination, in a band sawing-machine, with the saw and the upper wheel, of the double brush arranged in the angle between the saw and wheel, and bearing on the rim of the wheel and on the inner surface of the saw, and means for adjusting said brush, substantially as described.

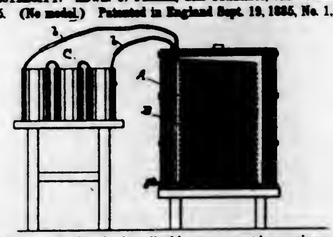
339,540. APPARATUS FOR TREATING WINES AND LIQUORS BY ELECTRICITY. EDWIN J. FRASER, San Francisco, Cal. Filed Sept. 8, 1885. (No model.) Patented in England Sept. 19, 1885, No. 1,153.



Claim.—1. The combination of a suitable vessel or receptacle to hold a body of liquid and an electro-magnetic helix, B, connected with a battery or generator for supplying electricity, substantially as described, for operation as set forth.

2. An apparatus for treating or working upon wines and liquors by induction, consisting of a suitable vessel or receptacle for the liquid and an electro-magnetic helix, within the field of which the liquid is held by the receptacle, substantially as herein described.

339,541. PROCESS OF TREATING WINES AND LIQUORS BY ELECTRICITY. EDWIN J. FRASER, San Francisco, Cal. Filed Sept. 8 1885. (No model.) Patented in England Sept. 19, 1885, No. 1,153.

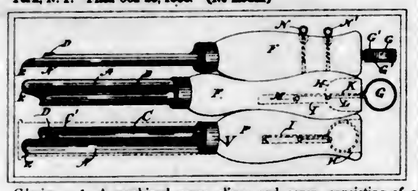


Claim.—1. The herein-described improvement in treating wines and liquors, which consists in placing the liquid within the field or influence of an electro-magnetic helix, substantially as set forth.

2. The herein-described method of producing an electric or magnetic state or action in a body of liquid for the purposes set forth, which consists in introducing the liquid within the field or influence of an electro-magnetic helix.

3. The method of producing and maintaining an electric or magnetic state or action in a body of liquid by induction, substantially as herein described.

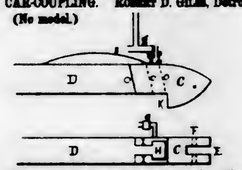
339,542. PARER, SLICER, AND CORER. PHILEMON T. GATES, New York, N. Y. Filed Oct. 20, 1885. (No model.)



Claim.—1. A combined parer, slicer, and corer, consisting of a blade, A, of sheet metal, bent or creased longitudinally, as described, to form a cutting-edge, B, and having a longitudinal slot, C, cut out along the crown or bend D of the blade, forming a discharge-opening, a speck-remover, E, upon the end of the blade and integral therewith, a handle, F, to said blade, and an adjustable coring-ring, G, upon the handle, substantially as described.

2. A combined parer, slicer, and corer, consisting of the blade A, of sheet metal, bent or creased longitudinally, as shown in the drawings, to form a cutting-edge, B, and having a longitudinal slot, C, cut out along the crown or bend D of the blade, forming a discharge-opening having curved ends C', a speck-remover, E, upon the end of the blade, the above-named elements being composed of but a single piece of metal, a handle, F, a coring-ring, G, to said handle, a slot, H, and hole I in said handle, projections K and L to said ring, the former being longer than the other, and provided with a hook, M, and pins N and N', passing through said handle, the former passing within said hook and the latter at the end of the projection L.

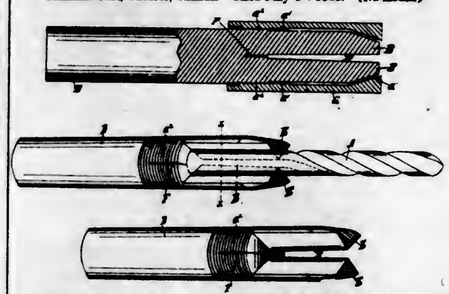
339,543. CAR-COUPLING. ROBERT D. GILES, Detroit, Mich. Filed Nov. 2, 1885. (No model.)



Claim.—1. The combination of the fixed draw-bar D, having a head, H, and provided with mortises L L, the coupling-hook C, having tenons I I, sliding on the draw-bar at right angles with the line of draft, the spring S, and the rock-shaft *g*, having a lever at one end and connected with the coupling-hook at its other end, substantially as described.

2. In combination with a fixed draw-bar having lateral inclined mortises cut in its upper and lower surfaces, a coupling-hook having thereon inclined tenons adapted to fit in said mortises, substantially as shown and described.

339,544. COMBINED BORING-TOOL AND HOLDER. SIMON P GRAHAM, Galt, Ontario, Canada. Filed July 14, 1885. (No model.)



Claim.—1. A drill or wood-bit shank, B, in which two grooves, C C, are formed throughout its entire length, for the purpose specified.

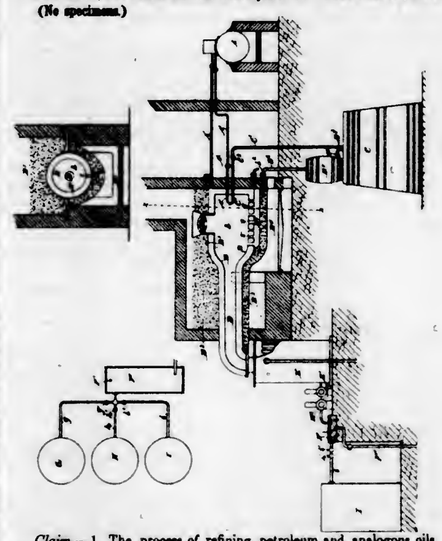
2. A drill or wood-bit, A, in which two grooves, C C, are formed throughout its entire length, substantially as shown and described, and for the purpose specified.

3. A drill or wood-bit shank, B, in which two grooves, C C, are formed, the metal between the two grooves C C being of one thickness in many different sizes of drills, substantially as shown and described, and for the purpose set forth.

4. A holder, D, formed with jaws or prongs E E, substantially as shown and described, and for the purpose set forth.

5. The combination of a drill-shank, B, in which grooves C C are formed, with the holder D, formed with prongs or jaws E E, and sleeve G, substantially as shown and described, and for the purpose specified.

339,545. PROCESS OF REFINING PETROLEUM. JAMES B. GRANT, New York, and ALLAN MASON, Brooklyn, N. Y. Filed June 30, 1885. (No specimens.)



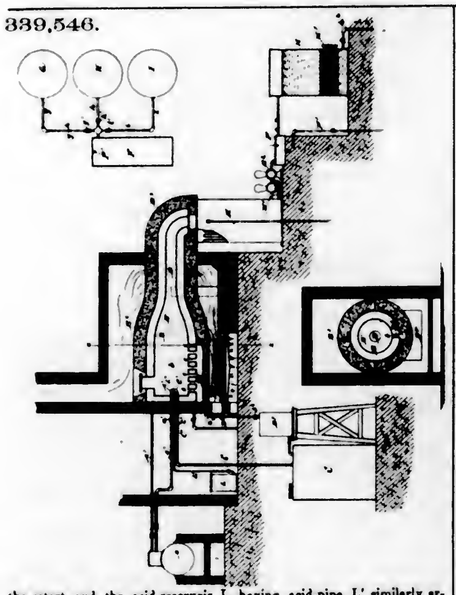
Claim.—1. The process of refining petroleum and analogous oils, which consists in introducing the oil and steam together in an atomized condition into a heated chamber, and removing by means of a vacuum-pump substantially the whole of the mixed vapor of oil and steam, without sensible condensation in the retort, into a condensing-chamber, as set forth.

2. The process of refining petroleum and analogous oils, which consists in introducing oil and steam together in an atomized condition into a heated chamber and instantaneously removing substantially the whole of the combined vapor of oil and steam, by means of a vacuum-pump, into a condensing-chamber, as set forth.

339,546. APPARATUS FOR REFINING OIL. JAMES B. GRANT, New York, and ALLAN MASON, Brooklyn, N. Y. Filed Aug. 13, 1885. (No model.)

Claim.—1. In an apparatus for refining oils, substantially as described, the combination, with a retort, as *b*, and a connected condenser and vacuum-pump, of the oil-pipe C', having its exit end arranged within

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the retort, and the acid-reservoir L, having acid-pipe L' similarly arranged, and having its exit closely adjacent to that of the oil-pipe, whereby the stream from either pipe is impinged directly upon that of the other, as set forth.

2. In an apparatus for refining oils, substantially as described, the combination, with a retort, as *b*, and a connected condenser and vacuum-pump, of the steam-pipe A', oil-pipe C, having its ends arranged within the retort, and the acid-pipe L', similarly arranged and having its exit closely adjacent to that of the oil and steam pipes, whereby the stream from the steam-pipe is impinged directly upon that of the others to atomize the passing liquids, as set forth.

3. In an apparatus substantially as described, the combination, with an oil-pipe, C', and a steam-jet for atomizing the oil as it leaves the pipe, and with a vacuum-pump, of the retort *b*, having tapered neck D of size approximating one-third the diameter of the retort and arranged on an approximate level with said steam and oil jets, whereby the combined vapor of oil and steam may be immediately conveyed from the retort with little or no resistance, as specified.

4. In an apparatus, as described, for refining oils, the combination, with the furnace-body, of the retort *b*, steam-jacket B B', and sand bath B^2, surrounding said steam-jacket and arranged to leave a space between itself and the furnace, as herein specified.

5. The combination, with the retort *b*, having steam-jacket, and with the furnace B^2, of the steam-generator A, having pipes A' A', one connecting with the steam-jacket and the other having its exit adjacent to that of an oil-pipe, as C', to atomize the oil within the retort at a point approximately opposite the exit D, as specified.

6. The retort *b*, having a jacket, B^2, and a connecting passage or passages, as *t t t*, for collecting the products of premature condensation or imperfect volatilization, as herein specified.

7. In an apparatus for refining oils, the vacuum-retort *b*, having pockets B^2, and passages *t*, in combination with the condenser E, air-pump E^2, or its equivalent, and pipe admitting steam under pressure, substantially as herein specified.

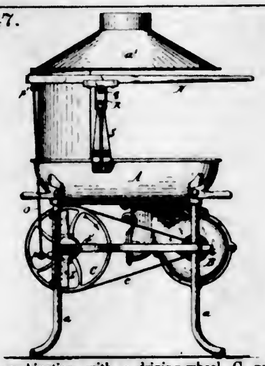
8. The combination of the pipe A', oil-pipe C', acid or alkali pipe L', retort *b*, condenser E, and tank H, having acid or alkali filter H', all arranged for joint operation, as herein specified.

9. In an apparatus for refining oils, the retort *b*, with means for heating it, having the neck D arranged as shown, in combination with the steam-pipe A', oil-pipe C', and acid or alkali pipe L', condenser B, and air-pump E^2, or equivalent means, for maintaining a vacuum in the retort, and its connections, arranged for joint operation, substantially as herein specified.

339,547. MECHANICAL MOVEMENT. CHARLES HANNEMANN, Buffalo, N. Y. Filed Oct. 26, 1885. (No model.)

Claim.—1. The combination, with a driving-wheel, C, provided with a clutch-disk, F, of a loose clutch-disk, G, which is turned alternately backwardly and forwardly, and which is thrown in engagement with the disk F on its forward movement and out of engagement on its backward movement, substantially as set forth.

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2. The combination, with a driving-wheel, C, provided with a clutch-disk, F, of a loose clutch-disk, G, and a collar, H, which is turned alternately backwardly and forwardly, and which throws the disk G alternately in engagement and out of engagement with the disk F, substantially as set forth.

3. The combination, with the driving-wheel C, provided with a clutch-disk, F, of a loose clutch-disk, G, provided with lugs A, and a collar, H, provided with inclined guides *j*, in which the lugs A engage, substantially as set forth.

4. The combination, with the driving-wheel C, provided with a clutch-disk, F, of the loose clutch-disk G, a collar, H, connected with the disk G, and provided with a pinion, J, and a reciprocating rack-bar, K, engaging with the pinion J, substantially as set forth.

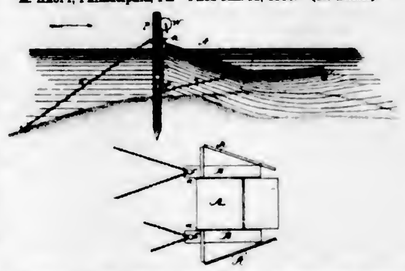
5. The combination, with the driving-wheel C, provided with a clutch-disk, F, of a loose clutch-disk, G, a collar, H, connected with the disk G, and provided with a pinion, J, a rack-bar, K, engaging with the pinion J, a hand-lever, N, and a rod, O, connecting the rack-bar with the hand-lever, substantially as set forth.

6. The combination, with a rotary blower, B, of a driving-wheel, C, provided with a clutch-disk, F, a loose clutch-disk, G, and a collar, H, connected with the disk G, and turned alternately backward and forward, substantially as set forth.

7. The combination, with the driving-wheel C, provided with a clutch-disk, F, of a loose clutch-disk, G, a collar, H, provided with a pinion, J, a rack-bar, K, and a casing, L, inclosing the rack-bar and provided with guides *l*, substantially as set forth.

8. The combination, with the wheel C, cast with a neck, E, and clutch-disk F, of the loose clutch-disk G, made in halves and mounted on the neck E by securing the halves together, substantially as set forth.

339,548. MEANS FOR IMPROVING RIVERS, HARBORS, &c. L. M. HAUPT, Philadelphia, Pa. Filed Jan. 12, 1886. (No model.)



Claim.—1. The system herein described for removing obstructions, alluvium, silt, or other matter from the channels of rivers and harbors, said system comprising floating, flexible, and adjustable deflectors having their axes of rotation supported at their ends at or near the surface of the water, substantially as set forth.

2. The flexible adjustable deflectors having their axes of rotation attached to points of support at or near the surface of the water, in combination with operating mechanism, substantially as set forth.

3. The combination, with the support, of the deflecting articulated shield having its axis of rotation at its upper edge at or near the surface of the water, and means for adjusting the lower part or member to different heights, substantially as set forth.

4. The combination of the flexible, articulated, and adjustable deflectors, the supporting piles, sheaves, or pulleys attached thereto, flexible torsion members, and operating mechanism, substantially as set forth.

5. The combination of vertical wings or curtains for deflecting the current laterally, with the adjustable inclined deflector for producing vertical deflection of the current, substantially as set forth.

6. In a system for improving the channels of rivers and harbors, the combination, with the adjustable deflector for directing the current downwardly against the bed of the stream, of means, substantially as described, for concentrating the current at the point or points where said adjustable deflector is located, substantially as described.

7. The combination, with the adjustable flaring wings or curtains and means for supporting the same, of the articulated, inclined, and adjustable deflector and its supporting means, substantially as and for the purposes described.

8. In a system for improving rivers and harbors, the means for producing lateral deflection of the current, said means comprising, in combination, the flexible adjustable curtains, the floating supports, and the flexible vertical members attached to said supports at the upper ends and anchored at the other in the bed of the stream, substantially as and for the purposes set forth.

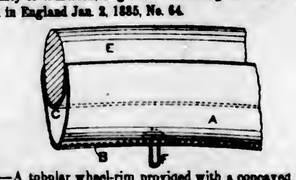
339,549. FRUIT-PICKER. CHARLES S. HILL, Centre, Berks County, assignor, by direct and mesne assignments, of three-fourths to George L. Knepp, James R. Miller, and Wellington Van Reed, all of Reading, Pa. Filed Sept. 4, 1885. (No model.)



Claim.—1. In a fruit-picker constructed substantially as shown and described, the combination of the re-enforce tensional spring D with the movable tube-frame B of the tube H by eyes D', links C E, looped lever-arms B^2, bar I, pole G, and pin F, substantially as and for the purpose specified.

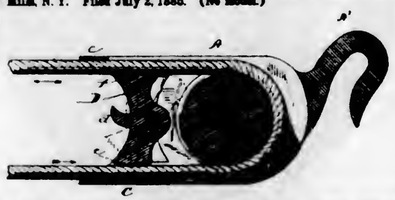
2. In a fruit-picker constructed substantially as shown and described, the combination of the fixed covered frame A, the movable tube-mouth frame or jaw B, stiffening-bar I, coil A', tangs A^2, springs B', looped lever-arms B^2, link C, re-enforce spring D, eyes D', link E, pin F, pole G, and tube H, all arranged and adapted to be operated as and for the purpose set forth.

339,550. WHEEL FOR VELOCIPEDES. JAMES HUDSON, Birmingham, County of Warwick, England. Filed Aug. 21, 1885. (No model.) Patented in England Jan. 2, 1885, No. 64.



Claim.—A tubular wheel-rim provided with a concaved or grooved periphery semicircular in cross-section, with a joint formed therein, and having its under side convex, nearly semi-elliptical in cross-section, and longitudinally thickened at the center, in combination with a rubber tire set in the periphery of said rim, as set forth.

339,551. CLOTHES-LINE FASTENER. JOHN J. HUSSEY, Evans' Mills, N. Y. Filed July 2, 1885. (No model.)

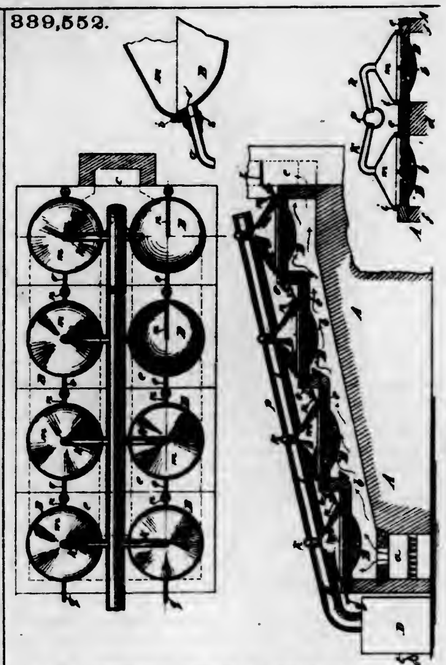


Claim.—In a clothes-line pulley and fastening, a casing provided with a hook, A', and cross-bars c C, in combination with a peripherally-grooved pulley journaled between the side pieces, and a catch, D, pivoted adjacent thereto, said catch being provided with a serrated end, *e*, thumb-piece *d*, and curved end *f*, substantially as described.

339,552. APPARATUS FOR CONCENTRATING ACIDS. JOHN HUSSEY, Stapleton, N. Y. Filed Aug. 6, 1885. (No model.)

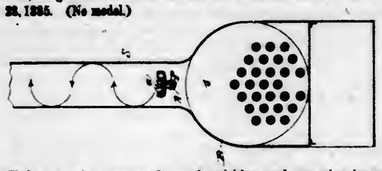
Claim.—1. In a concentrating apparatus, an evaporating-pan, B, made of porcelain, in combination with a cover, m, made of transparent glass, arranged and operating substantially as shown and described.

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2. In a concentrating apparatus, the combination, with a furnace, A, having fire-chamber *a* and flue or flues *b*, of the perforated top plates or tiles, *c*, porcelain pans *c'*, let into said tiles, and glass covers *m* over said pans, arranged and operating substantially as shown and described.

339,553. SPARK-EXTINGUISHER. QUINTON J. HOKE, Yorkville, S. C., assignor of one-half to Thomas S. Jeffreys, same place. Filed Nov. 28, 1885. (No model.)



Claim.—1. As a means for extinguishing and arresting incandescent particles carried along with the products of combustion through the smoke-stack of a steam-engine, injecting jets of steam into the base of the stack from points arranged in a circle concentric with the axis of the stack and on lines tangential to the said circle, substantially as and for the purpose specified.

2. Means for extinguishing and arresting incandescent particles carried along with the products of combustion through the smoke-stack of a steam-engine, which consists, essentially, in a multiplicity of steam-nozzles having their terminals arranged in a circle concentric with the axis of the stack, the terminals of said nozzles being curved inwardly and lying in different radial planes from those of their initials, substantially as and for the purpose specified.

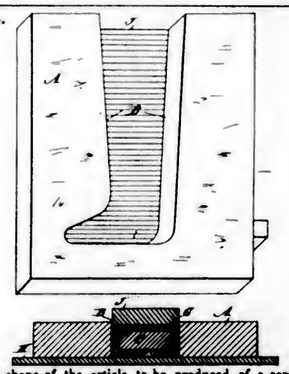
3. The combination, with the exhaust-pipe of a steam-engine and the smoke-stack of the boiler thereof, of the head A, having tubes *a*, arranged as described, in combination with the screw-plug A', said head being connected with the exhaust-pipe at or near the base of the smoke-stack, substantially as and for the purpose specified.

4. The combination, with the smoke-stack of a steam-boiler and the head A of the herein-described spark-arrester, of the screw-plug A', and an ordinary steam nozzle or pipe constructed to be interchangeably connected with said head A' to convert the spark-arrester into an exhaust-pipe, and vice versa, substantially as and for the purpose specified.

339,554. MACHINE FOR HARDENING SEAMLESS FELT BOOTS AND OTHER HOLLOW FELT ARTICLES. WALTER P. HYATT and NELSON F. HYATT, Matteawan, N. Y. Filed Nov. 25, 1885. (No model.)

Claim.—1. In a machine for hardening felt boots, shoes, and other hollow felt articles, the combination, with a mold provided with a cavity

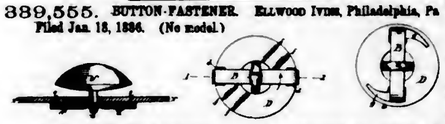
339,554.



or recess of the shape of the article to be produced, of a core smaller than the cavity, substantially as herein shown and described.

2. In a machine for hardening felt boots, shoes, and other hollow felt articles, the combination, with a mold having a recess or cavity of the shape of the article to be produced, of a core smaller than the cavity and of the hardening-board, substantially as herein shown and described

339,555. BUTTON-FASTENER. ELLWOOD IVINS, Philadelphia, Pa. Filed Jan. 18, 1886. (No model.)



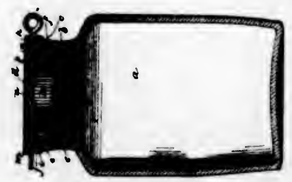
Claim.—1. A button-fastener in which a retaining-bar adapted to the eye of the button and having opposite hooked or bent ends is combined with a washer having recesses for the passage of said bent or hooked ends of the retaining-bar, whereby said ends may be adjusted to such position that on turning the bar or washer the ends of the bar will engage with portions of the washer, all substantially as specified.

2. The combination of the retaining-bar having hooked or bent ends with the washer having segmental slots and enlarged recesses communicating therewith, all substantially as specified.

3. The combination of the retaining-bar having bent ends, the washer having recesses through which said ends can be passed into position for engagement with the washer, and ribs or projections which engage with the retaining-bar after it has been adjusted so as to engage with the washer, and thereby prevent any backward movement of said retaining-bar into position for release from the control of the washer, all substantially as specified.

4. The combination of the retaining-bar having bent ends with the washer having segmental slots, enlarged recesses communicating therewith, and bent portions which can be turned down in order to close said recesses, all substantially as specified.

339,556. JAR. GEORGE W. JOHNSTON, Flemington, N. J. Filed Sept. 12, 1885. (No model.)



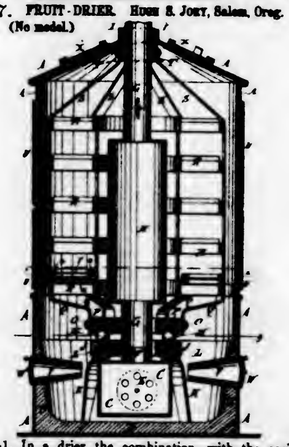
Claim.—1. The stopper *d*, having the cylindrical externally-screw-threaded portion *e*, hollow *k*, arched bottom *l*, flange *h*, having its under side concave, and the gasket *g*, fitted in a groove, *f*, in said stopper, combined with the vessel *a*, having an internally-screw-threaded neck and an edge to co-operate with the gasket and flange of the stopper, substantially as described.

2. The screw-stopper *d*, provided with the flange *h*, having the horizontal openings *m*, combined with a stopper-operating device, *n*, arranged in said holes and projecting beyond the stopper on either side to afford hand-holds for operating the stopper, and adapted to be partly withdrawn to serve as a lever, substantially as described.

3. The screw-stopper *d*, having the flange *h*, provided with horizontal openings *m*, combined with a stopper-operating device, *n*, arranged in said holes and projecting beyond the stopper on either side, and a washer or stop on said device to limit its range of movement in said holes, substantially as described.

4. The screw-stopper *d*, provided with the hollow *k* and flange *h*, having the horizontal openings *m*, combined with the stopper-operating device *n*, permanently secured in the holes in said flange and projecting beyond said flange on either side, to afford hand-holds for applying and removing the stopper, and straddling and co-operating with the said hollow to form a bail or handle for said stopper, substantially as described.

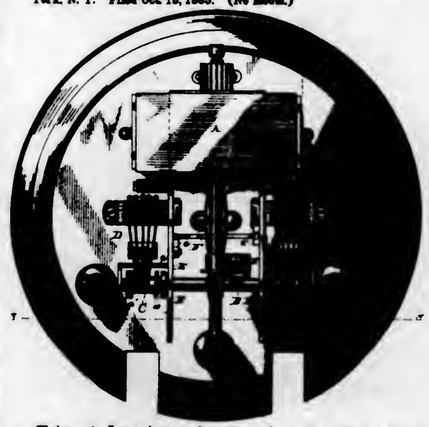
339,557. FRUIT-DRIER. HUGH S. JOBY, Salem, Oreg. Filed May 13, 1885. (No model.)



Claim.—1. In a drier, the combination, with the casing A, the furnace C, and the smoke-pipe G, extending out through the upper part of the casing, of the plate J, supported above the furnace and having an annular groove, L, the frame R, the plate O, secured to the said frame and having the annular groove P, and the balls M, between the said plates J O, substantially as herein shown and described.

2. In a drier, the combination, with the casing A, the furnace C, and the smoke-pipe G, having the enlargement H, of the annular grooved plate J L, supported above the furnace, the annular grooved plate O P, the balls M, the sleeve T, and the frame R, secured to the said grooved plate O P and the sleeve T by the rods Q S, respectively, substantially as herein shown and described.

339,558. STOCK-QUOTATION TELEGRAPH. PATRICK KELLY, New York, N. Y. Filed Oct. 15, 1885. (No model.)



Claim.—1. In stock-quotation-telegraph receivers, the combination of two sets of recording devices with separate tapes therefor, and a shifting mechanism throwing them alternately into operation, substantially as set forth.

2. In stock-quotation-telegraph receivers, the combination of two sets of recording devices with separate tapes therefor, and means controlled from the transmitting-office for throwing them alternately into operation, substantially as set forth.

3. In stock-quotation-telegraph receivers, the combination, with the line, of two sets of recording devices with separate tapes therefor connected with and operated from said line, and an electro-magnetic

shifting device in an independent circuit for throwing the recording devices alternately into operation, substantially as set forth.

4. In stock-quotation-telegraph receivers, the combination of two sets of recording devices, two sets of tape-feeding devices, and a shifting mechanism throwing the recording devices and corresponding feeding devices alternately into operation, substantially as set forth.

5. In chemical stock-quotation receivers, the combination of the two sets of pens, the two receiving-rollers, and the electro-magnetic shifting mechanism lifting the sets of pens alternately from the receiving-rollers, substantially as set forth.

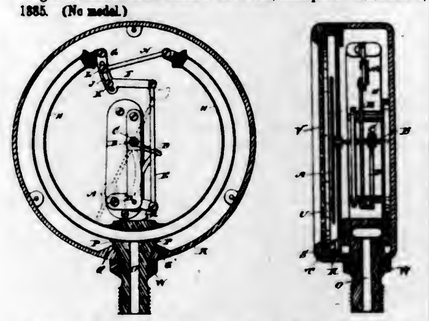
6. In chemical stock-quotation receivers, the combination of two sets of pens, the two receiving-rollers, the two sets of pressing-wheels, and the electro-magnetic shifting mechanism lifting the sets of pens and corresponding pressing-wheels alternately from the receiving-rollers, substantially as set forth.

7. In chemical stock-quotation receivers, the combination, with a receiving-roller and the recording-pens, of independently-bearing pressing-wheels taking on opposite ends of said roller, so as to hold the edges of the tape independently, substantially as set forth.

8. In chemical stock-quotation receivers, the combination, with the pen and motor wires, of an electro-magnetic circuit-opener located in the circuit of the pen-wires, substantially as set forth.

9. In chemical stock-quotation receivers, the combination, with the pen and motor wires, the former going to base through the pens, of an electro-magnetic circuit-opener located in a connection from the base to the common return for both pen and motor wires, substantially as set forth.

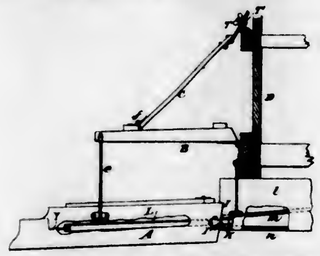
339,559. PRESSURE-GAGE. ERASTUS B. KUHLE, Fort Wayne, Ind., assignor to himself and William D. Bestwick, same place. Filed Dec. 4, 1885. (No model.)



Claim.—1. In a pressure or vacuum gage, the combination, with the spring-tube, of an angle-piece having one end pivoted to one end of the spring-tube, and the other end connected with the mechanism for operating the index or pointer, a plate held adjustably on said angle-piece, and a rod connecting said plate with the other end of the spring-tube, substantially as herein shown and described.

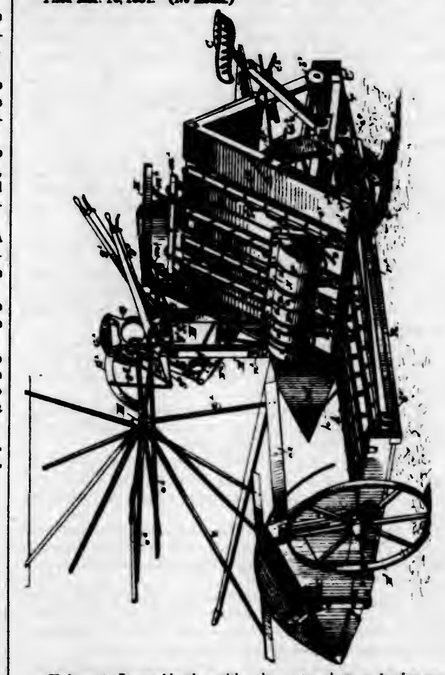
2. In a pressure or vacuum gage, the combination, with the spring-tube H, of the angle-piece F, pivoted to one end of the same, and provided with the curved slot J, the adjustable plate M, held on the piece F by a screw passed through the slot J, the rod N, connecting the plate M with the other end of the tube H, and of a rod connecting the piece F with the mechanism for operating the index or pointer, substantially as herein shown and described.

339,560. GRAIN-SPOUT FOR THRASHING-MACHINES. WARD LINCOLN, Little Rock, Ill. Filed Jan. 4, 1886. (No model.)



Claim.—A grain-spout for thrashing-machines, comprising the sieve-shoe A, hinged frame B, and hinged adjustable brace C, in combination with the spout of the winnower and the thrasher-frame D, substantially as and for the purpose specified.

339,561. HARVESTER. SYLVANUS D. LOCKE, Hoosick Falls, N. Y. Filed Mar. 16, 1881. (No model.)



Claim.—1. In combination with a harvester-platform having concave channels in its face, revolving spirals seated in and supported by said channels, as and for the purpose set forth.

2. In a raking or conveying mechanism, a series of channels or openings in a carrying-table having their sides beveled or curved, combined with a series of revolving spirals seated in said channels or openings, and sustained by the sides thereof, with their crests above the plane of the table.

3. In combination with a revolving spiral seated in a sustaining-channel, an internal bar to prevent the spiral from rising from said channel.

4. In combination with a raking or conveying spiral, a pinion provided with a perforated lug to receive the end of said spiral.

5. In a raking or conveying mechanism, substantially such as described, a supporting-block provided with a transverse opening to receive the driving-shaft and with a spindle to receive the driven pinion.

6. In a raking or conveying mechanism, substantially such as described, the combination of a block provided with a spindle, a pinion or head located on said spindle and carrying a revolving spiral, and a block or casting secured upon the spindle outside of the pinion and serving to retain the same in place, and also to support a bar or slat extending longitudinally through the spiral, as set forth.

7. In combination with a revolving spiral conveyer, an internal bar and a flanged block or bracket for supporting said bar, substantially as shown and described.

8. In a raking or conveying mechanism, a series of perforated blocks supporting a driving-shaft, a series of pinions secured upon said shaft and bearing against the face of the block, and a series of pinions mounted upon spindles projecting from said blocks, meshing with the pinions of the shaft, and provided with conveying or raking spirals, as set forth.

9. The combination, in a conveying mechanism, of block L, provided with spindle *l*, shaft b^4, passing through said block and provided with pinion a^4, pinion l', mounted upon the spindle, carrying spiral I' and meshing with pinion a^4, and a block or bracket, l^2, secured upon the spindle and serving to support the bar i^x, as shown.

10. In combination with the platform and elevator rakes, the cap covering the gearing at their intersection and forming a bridge over which the grain passes from one rake to the other.

11. In combination with gearing located at the foot of the elevator for imparting motion thereto, a hinged shield or guard placed over said gearing, to protect it from the grain and permit access thereto, and also forming a bridge between the platform and elevator rakes.

12. In combination with independent raking and elevating mechanisms placed end to end and a shield or bridge closing the gap between them, rotating star-wheels overlying the passage-way for the grain above said bridge and at the meeting point of said raking and elevating mechanism, to assist and regulate the grain in its passage from the surface of the former to the surface of the latter.

13. In combination with a spiral grain-conveyer, a star-wheel located at the receiving end of the conveyer, to assist the grain in entering the same, and rotated by the engagement of the spiral with its arms, as set forth.

14. In combination with an elevating mechanism, an overlying toothed wheel mounted upon a shaft above the base of said elevator and arranged to assist in delivering the grain thereto, and upwardly-extending float-rods pressing upon the grain and curved eccentrically to the axis of the wheel to strip the grain therefrom.

15. In combination with an elevating mechanism, an overlying toothed wheel mounted upon a shaft above the base of said elevator, to assist in delivering the grain thereto, a slotted guard or shield inclosing the shaft of said wheel, to prevent grain from coming in contact therewith, and float-rods exterior to the guard and eccentric to the axis of the wheel, to strip the grain from the teeth.

16. In combination with a grain-elevating mechanism, an overlying float suspended from an overhead support by elastic arms at its upper end, whereby it is permitted to adapt itself to varying quantities of grain.

17. In combination with grain-elevating mechanism, an overlying float hinged or jointed at its lower end and sustained by elastic arms at its upper end, as and for the purpose set forth.

18. In combination with grain-elevating mechanism consisting of a series of rotating spirals, an overlying float consisting of a series of rods placed between the spirals and connected at their upper extremities with a spring-sustained head or bar.

19. In combination with grain-elevating mechanism consisting of a series of revolving spirals, a series of presser-rods placed alternately between the spirals, to hold the grain properly upon the spirals, as set forth.

20. In combination with grain-elevating mechanism, a series of presser-rods overlying the same and individually pivoted or jointed at their lower ends, whereby they are permitted to move back independently one of another to accommodate large quantities of grain.

21. In combination with a rod, m, of the float, having its end bent laterally, as described, a clip, n', adapted to fit over said end and retain it in position, while at the same time allowing it to turn therein.

22. In a harvester, the combination of an inner and an outer divider, both extending forward in a plane parallel with the line of advance of the machine, and provided along their feet with inwardly-extending wings or flanges.

23. The combination, in a harvester, of dividers extending forward in a plane parallel with the advance of the machine and a reel arranged to sink as to its beaters between the vertical walls of said dividers and sweep alongside and close to them.

24. The combination, in a harvester, of dividers extending forward in a plane parallel with the advance of the machine, and provided along their feet with inwardly-extending wings or flanges, and a reel arranged to sink as to the ends of its beaters between the inner faces of said dividers and sweep along them and above the flanges.

25. In combination with the horizontal driving-belt running behind the rear sill of the harvester, a shield or guard above it at the junction of the platform and elevator.

26. In combination with the horizontal driving-belt running behind the rear sill of the harvester, the keeper c^4, forming also a brace for the rearwardly-extending beam, upon which the seat is supported.

27. The casting r^3, formed with bearings for the inner sprocket-wheel and idle-roller, and with a flange to cover the belt at the junction of the platform and elevator.

28. The casting r^3, arranged to bind the timbers at the junction of the platform and elevator, and formed with a flange to overlie and protect the gearing at said point.

29. The rotary feeder or sweep above the junction between the platform and elevator, supported or overhung from the front of the machine, to allow the heads of long grain to pass at the rear.

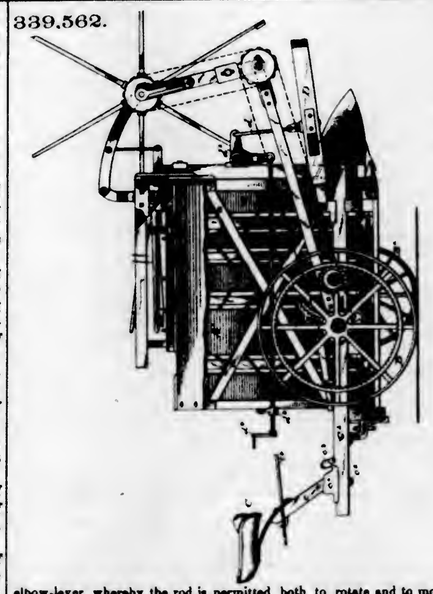
30. The combination of the overhung float and the overhung rotary feeder or sweep at its foot, whereby long grain may pass from the platform to the elevator and up the latter without interference.

339,562. **HARVESTER.** SYLVANUS D. LOCKE, Hesnick Falls, N. Y. Filed Jan. 23, 1886. (No model.)

Claim.—1. In combination with the draft-tongue hinged or jointed to the framing of the machine, an elbow-lever having one arm connected with the tongue and the other connected with a threaded rod passing through a correspondingly-threaded block or bracket, as and for the purpose set forth.

2. In combination with the hinged tongue, an elbow-lever connected therewith, and a threaded rod connected by a universal joint with the

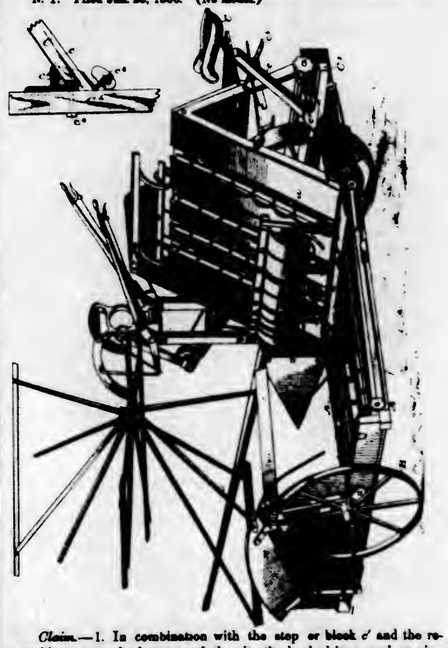
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elbow-lever, whereby the rod is permitted both to rotate and to move backward and forward with the lever in adjusting the tongue.

3. In combination with the tongue hinged near the front of the elevator, and with the driver's seat located directly in rear of the elevator, an elbow-lever connected with the tongue and a threaded rod passing longitudinally beneath the elevator, and at its front connected with the elbow-lever by a flexible joint and at its rear provided with a crank or hand-wheel within reach of the driver in his seat.

339,563. **HARVESTER-SEAT.** SYLVANUS D. LOCKE, Hesnick Falls, N. Y. Filed Jan. 23, 1886. (No model.)



Claim.—1. In combination with the step or block c' and the removable seat-standard supported therein, the hooked brace-rod running from the seat-standard to an eye on the frame.

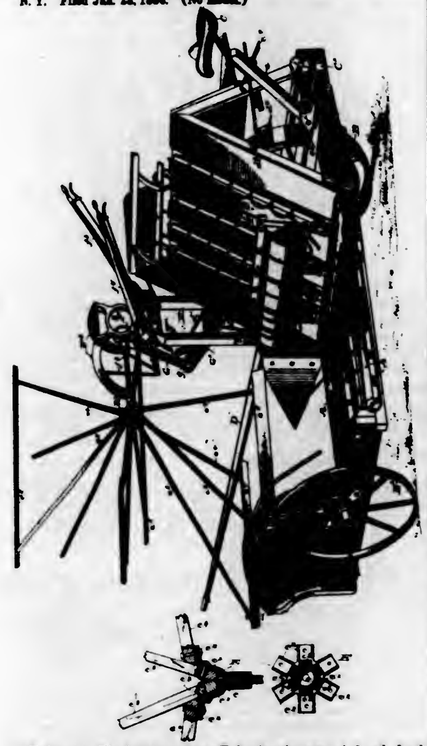
2. In combination with the adjustable step or block c' and the removable seat-standard supported therein, the brace-rod having a series of perforations at one end to take over a pin on said standard, and a hook at the other to take into an eye on the frame.

3. In combination with the rearwardly-extending wheel-frame beam C', the seat C, adjustable thereon, whereby the balance of the machine may be established and preserved.

4. The step or block c', formed, as described, with an inclined recess to receive the seat-standard and with the foot-rest c^3, as shown.

5. In combination with the rearwardly-extending wheel-frame beam C', provided with a series of holes, an adjustable block or step carrying the seat-standard, and a bolt adapted to pass through one of said holes and to secure the block or step to the beam.

339,564. **HARVESTER-REEL.** SYLVANUS D. LOCKE, Hesnick Falls, N. Y. Filed Jan. 22, 1886. (No model.)



Claim.—1. The head or casting E, having the arms e' e^2 and shoulders e^3, as and for the purpose set forth.

2. The harvester-reel herein described, consisting of a head or casting, E, having arms e' e^2 and shoulders e^3, the reel-bars e^4, lying against and secured to the inner reach of said arms, the braces e^5, lying against and secured to the outer reach and abutting against the shoulders, and the beaters secured to the extremities of the bars and braces.

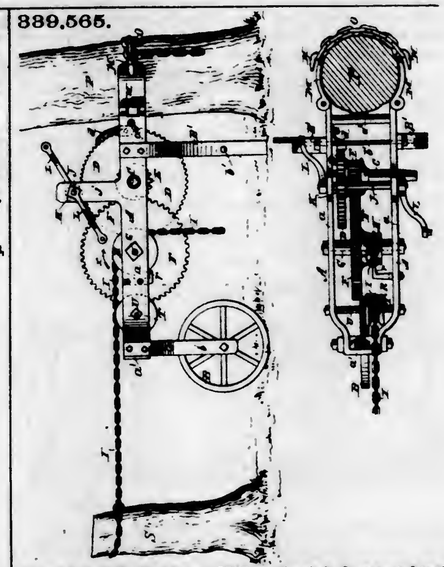
3. The combination of the two standards or supporting-posts, a swinging yoke pivoted between them and provided with a hand-lever for rocking it upon its pivot, and with a locking device engaging with a segment on one of said posts, arms jointed to the moving end of said yoke and carrying the reel, and a lever adapted and arranged to raise and lower said arms, and also provided with a locking device engaging with another segment on one of the pivot-posts, whereby the wheel may be raised or lowered, moved forward or backward, and held in any adjusted position.

4. In combination with the standards F F' and reel-adjusting devices, consisting of yoke F^2, arms F^3, and hand-levers supported by said standards, racks f f', secured one to each of said standards to receive the locking-dogs of the adjusting devices.

339,565. **STUMP-EXTRACTOR.** ALEXANDER LOGAN, North Sydney, Nova Scotia, Canada. Filed Sept. 12, 1885. (No model.)

Claim.—1. In a stump-extractor, the combination, with the frame A, supporting the chain-wheel H and its operating-gearing, substantially

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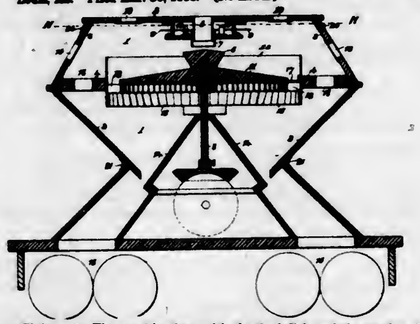
as described, of the hinged arms M M and the chain O, connected to the outer ends of said arms, substantially as herein set forth.

2. In a stump-extractor, comprising a frame, A, having rear supports, B', a chain-wheel journaled in the frame, gearing for operating said chain-wheel, and devices for anchoring the frame to a tree or stump, substantially as specified, the combination, with said frame, of a wheel, B, journaled at or to its forward end, substantially as shown and described, whereby should the anchorage give way the machine will rebound on the wheel B, as set forth.

3. In a stump-extractor, the combination, with the frame A, the chain-wheel H, provided with elongated peripheral recesses h, and the chain I, passed over the wheel into the recesses, of the arm R r, substantially as and for the purposes herein set forth.

4. In stump-extractors, the combination, with the frame A, the chain-wheel H, and its operating-gearing, substantially as specified, of the barrel T, for guiding the stump-pulling chain to the chain-wheel, substantially as herein set forth.

339,566. **FEEDER FOR ROLLER-MILLS.** RUFUS C. LOUDOUN, St. Louis, Mo. Filed Mar. 30, 1886. (No model.)



Claim.—1. The combination, with the feed-disk and the section 5, of the adjustable sleeve 7, the arm 9, and the inclined or stepped rack 10, upon which said arm rests, substantially as set forth.

2. The combination, with a feed-spout, of a rotating distributing-disk, an annular stop-plate surrounding said disk, and partitions for arresting the circular motion of the material within said annular stop-plate, as set forth.

3. The combination, with a feed-spout and a rotary disk, 11, for distributing the material by centrifugal action, as described, of an annular stop-plate, 12, surrounding said disk, and deflectors 16, for the purpose set forth.

4. The combination, with a feed-spout and a rotary distributing-disk, of an annular stop-plate surrounding said disk, partitions projecting

radially inward from said stop-plate, and adjustable deflectors below said partitions, for diverting the falling material from its natural course and causing it to flow in another direction, as and for the purpose set forth.

5. The combination, with a feed-spout and a distributing-disk, of an annular stop-plate surrounding said disk, the partitions for arresting the circular motion of the material, and deflectors below said partitions, for the purpose set forth.

6. The combination, with the rotary disk 11, the annular plate 12, surrounding the same, and the partitions 13, of the scraper 17, projecting from the periphery of said disk, for the purposes set forth.

7. The combination, with the feed-spout open at its lower end and the rotary feed-disk in close proximity thereto, upon which the material falls, of a rotary distributing-disk, upon which the material falls from the feed-disk, and an annular stop-plate for arresting the outward movement of the material and directing it downward, substantially as set forth.

339,567. STORM-DOOR. WILLIAM R. LYLE, Ripon, Wis. Filed Feb. 20, 1886. (No model.)



Claim.—1. The combination, with the frame of a screen-door, of a removable panel secured thereto, said panel being composed of two pieces, said pieces being adjustably secured together at their middle portions, as shown and described.

2. The combination, with the frame of a screen-door, of a removable panel secured thereto, said panel being composed of two pieces, which together are wider than the inside width of the frame and overlap each other at their middle portion, and a toggle-joint having a thumb-nut at its center securing said two pieces together at their top and at their bottom, as shown and described.

339,568. CAR-COUPLING. PETER MCALEER, Altoona, and JACOB K. JOHNSTON, Jefferson County, assignors of one-third to S. Simon, Philadelphia, Pa. Filed Feb. 4, 1886. (No model.)



Claim.—1. The draw-head A, having the side recess, K, substantially as described, in combination with the rotatable holder H, link G, and pivoted bar J, substantially as described.

2. The draw-head A, having recess K, in combination with the link G, the holder H, the pivoted bar J, and reciprocating rod L, having the head M, substantially as and for the purpose set forth.

3. A link-holder consisting of a rotary piece adapted to bear against the end of the link, an operating-lever attached to said piece, and a rod which is operated by contact with the opposite draw-head and moves said rod, and consequently the link-holder, thus releasing the link, substantially as described.

4. The draw-head A, having recess K, in combination with link G, the pin B, pivotally secured to the bar C, the block D, the sliding head with arm F, pivotally secured to said block D, the pivoted bar J, and sliding rod L, with shoulder M, all arranged, combined, and operated substantially as and for the purpose set forth.

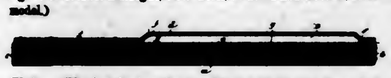
339,569. COMPOSITION FOR MARBLE OR STONE. JAMES F. MCCORMIC, Marion, Iowa, assignor of one-half to Giles R. Martin, same place. Filed Aug. 6, 1885. (No specimens.)

Claim.—1. A composition for artificial marble or stone, consisting of lime, marble-dust, or sand or analogous substance, plaster-of-paris, cement, and sulphur, mixed together, with water enough to make the mass plastic, substantially as specified.

2. A composition for artificial marble or stone, consisting of lime, marble-dust, or sand or analogous substance, plaster-of-paris, cement, and sulphur, made plastic and thoroughly mixed in water, with coloring-matter partially or thoroughly mixed therewith, to give it a variegated or solid coloring, as described.

3. A composition for artificial marble or stone, consisting of lime, marble-dust, or sand or analogous material, plaster-of-paris, cement, sulphur, and water, with glue, vinegar, molasses, or equivalent substance adapted to retard the hardening of the mass, substantially as set forth.

339,570. WRITING-TABLET. EDWIN C. MERRILL, Newark, N. J., assignor to Samuel I. Knight, New York, N. Y. Filed Nov. 21, 1885. (No model.)



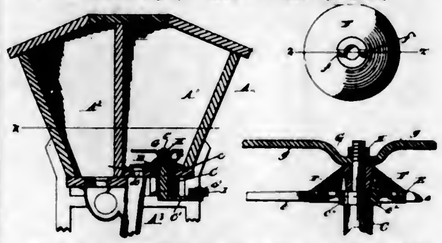
Claim.—The herein-described writing tablet or pad, consisting of the backing *a*, sheets of paper *b*, binding-strip *c*, and the hinged cover D, composed of the sheet *d*, covered with satin or similar fabric and embossed with a suitable design, substantially as described.

339,571. COMBINATION-GARMENT. ANN W. MIMMOR, Jacksonville, Oreg. Filed July 30, 1885. (No model.)



Claim.—As an improved article of manufacture, the combined vest and shirt constructed to open all the way down in front, and having vest-lapels *c c*, attached, as at *d*, to the inside of the vest portion A of the garment, shirt-bosom sections D D, secured, as described, to the inside of the vest, the convertible and detachable cuffs E F, secured to the inside of the sleeves of the garment, and the convertible and detachable collars G H, substantially as shown and described.

339,572. DRILL. ABRAHAM MILLER, Newark, Ohio, assignor to the Newark Machine Company. Filed Dec. 11, 1885. (No model.)



Claim.—1. In a fertilizing attachment for seed-planters, a stirrer-spider and a cutter-spider, each having a series of fingers and an oscillating movement, said spiders separated by a cone, all the parts locked upon and adapted to oscillate with a single shaft, as and for the purpose set forth.

2. The combination, with feed-apertures and oscillating shafts, of cutter-spiders, as E, having cutter-arms *e*, and shorter stirrer-arms *e'*, stirrer-spiders having arms and intermediate cones, the cutter-spiders locked to the shafts, and the upper stirrers and cones being forced to move with the lower cutter, as set forth.

3. In a fertiliser-distributer attachment as described, the combination, with the castings C C *c'* and bar I, of the cast-metal plate or bar D, having bearings *d*, cut away to prevent lodgment of fertiliser, as set forth.

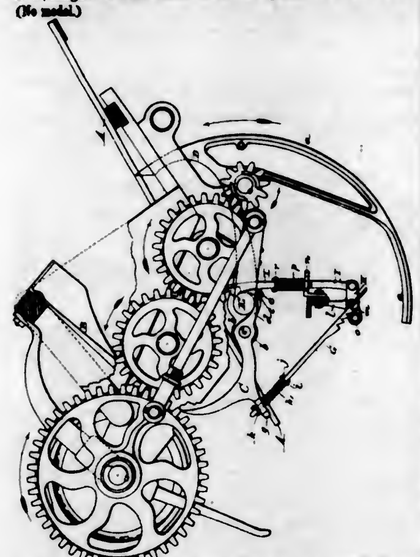
4. The combination, with the bar I and shafts C, crank-arms C', and pins *c'*, with cut-away portions *c*², of the metal plate or bar D, having bearings *d*, cut away at *d'*, the cutters, cones, and stirrers, and nuts H, substantially as specified.

5. In a fertiliser-distributer, the combination, with a hopper having adjustable feed-orifices *a'* and bearings or boxes *c*, of the stirrer-shafts C, and the cutters E, having boss *e*², cutter-arms *e*, and the stirrer-arms *e'*, as set forth.

6. In a fertiliser-distributer, the combination, with a hopper having adjustable feeding-orifices, of the lower stirrer E, cones F, and shafts C, having their lower bearings between the arms C' and the bottom of hopper, as and for the purpose specified.

7. In a fertiliser-distributer, the outer ends of the oscillating feeding-fingers on opposite sides of the shaft curved inwardly—that is, curved toward the opening in the hopper on the opposite sides of which said fingers are arranged—as and for the purpose set forth.

339,573. GRAIN-BINDING MACHINE. ANDREW C. MILLER, Auburn, N. Y., assignor to D. M. Osborne & Co., same place. Filed Jan. 5, 1885. (No model.)



Claim.—1. In combination with the needle, the compressor pivoted thereto and arranged to engage firmly therewith during the retrograde motion thereof, the latch G, to sustain the compressor, the pivoted detent by which the latch is sustained, the rod to disengage the detent, and the cam or shoulder operated in unison with the needle to actuate the rod.

2. In combination with a rising and falling compressor, the latch to sustain the same in operative position arranged to engage a rigid stop or support, and the spring applied between the latch and compressor, whereby the compressor is permitted to yield while the latch remains at rest.

3. The needle-arm and the cam *c*, in combination with the opposing compressor, the latch and spring to sustain the compressor, the pivoted detent H, the rod I, and the spring *p*, to urge said rod endwise.

4. In combination with the vibratory needle and the heel projection thereon or on its shaft, the opposing compressor pivoted to said needle and adapted to be lifted into action thereby, the adjustable bearing between the compressor and needle, whereby the compressor may be lifted to a greater or less height, and the locking devices adapted to sustain the compressor at different heights, whereby the machine may be adjusted to produce bundles of large or small size, as demanded.

5. In combination with a pivoted falling compressor to sustain the gavel, a supporting latch or arm provided with a series of teeth and adapted to maintain the compressor in the different positions to which it may be raised.

339,574. MACHINE FOR MAKING HORSESHOE-NAILS. WALWORTH M. MOONEY and HERBERT BETTS, Au Sable Chasm, N. Y.; said Betts assignor to said Mooney. Filed Aug. 26, 1885. (No model.)

Claim.—1. In combination with the cam *d'* and the rod *d*², having the arm *d*³, provided with stud *d*⁴ and extension *d*⁵, the shaft *b*, as described, the construction being such that the rod *d*² is held against revolution without interference with its freedom to move in a longitudinal direction.

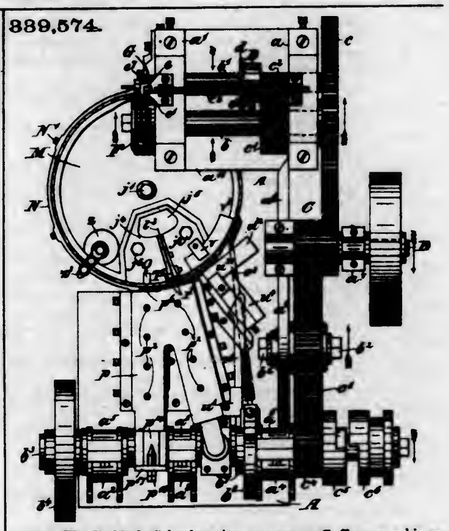
2. In combination with the conductor *e* and the rod *e*², having the finger *e'* and arm *e*³, the spring *e*⁴ and the cam *d'*, as described.

3. The conductor *e*, having the groove for the passage of the nail-blank, and the narrow slit *e'*, for the insertion of an implement, as and for the purpose described.

4. The large roll F, having a series of recesses, in combination with the small roll G, having a single recess, as described.

5. The roll F, consisting of the body portion *f*, round plate *f*², die-blocks *f*⁵ *f*⁵, and cover-plate *f*', as and for the purpose described.

6. In combination with the shaft *b*, having a bearing-shoulder, threaded portion, and set, the roll F, consisting of the body portion *f*, cover-plates *f*² *f*', and die-blocks *f*⁵ *f*⁵, the width of the die-block exceeding the width of the body-block, as and for the purpose set forth.



7. The die-block *f*⁵, having the two recesses *f*⁷ *f*⁷, arranged in opposite positions, as and for the purpose set forth.

8. In combination with the die-blocks *f*⁵, having the recesses *f*⁷ *f*⁷, the body-block *f*, having the recesses *f*⁷ *f*⁷, the recesses *f*⁷ *f*⁷ coinciding to form a continuous channel about the roll, as described.

9. In combination with the bar *i*¹¹, the block *i*⁹, and the removable face-plate *i*⁹, as described.

10. In combination with the supporting-block I, having the stud *i*¹⁴, the bar *i*¹², having the finger *i*¹³ at one end and the fork at the other, as and for the purpose described.

11. In combination with the roll G, having the recess *g*, the pivoted bar *i*¹², with finger *i*¹³ and spring *i*¹⁵, the spring being adjusted to cause the finger to bear upon the surface of the roll, as and for the purpose described.

12. In combination with the forked bar *i*¹², the set-screw *i*¹⁶, for adjusting the same, as described.

13. In combination with the block *h'*, the serrated blade *h*¹⁴, the block *h*², and the spring *h*¹⁵, as described.

14. In combination with the block A, having the set-bolt *h*¹, the block *h*¹⁵, the rear wall of which forms the front wall of the conductor, as described.

15. The combination of the die-block *f*⁵, having a recess, *f*⁶, with the finger *h*¹⁵, and mechanism for causing the finger to enter the recess and disengage the head of the nail-blank, substantially as described.

16. The combination of the rolls F and G, bars *i*¹¹ *h*¹⁵, and plates *l*⁹ and *l*¹¹ of a forwarding mechanism, the whole constructed and arranged substantially as described.

17. In combination with the bars *i*¹¹ *h*¹⁵, the flange *m*² and the plates *l*⁹ *l*¹¹ of the forwarding-ring.

18. In combination with the bar *i*¹¹, the plates *l*⁹ *l*¹¹ and the guide-plate N.

19. The combination of the rolls F and G and the disengaging mechanism, as described, base-ring K, having bearing-faces *k'* and *k*², intermittently-moving forwarding-ring L, having plates *l*⁹, and independent blocks *l*⁹, having plates *l*¹¹, and springs *l*¹⁴, the whole substantially as described.

20. The forwarding-ring L, having the plates *l*⁹, with the independent blocks *l*⁹, having plates *l*¹¹, and the springs *l*¹⁴, the whole combined substantially as and for the purpose described.

21. In combination with the forwarding-ring L, having the plates *l*⁹, independent blocks *l*⁹, having plates *l*¹¹, and springs *l*¹⁴, with a frictional surface arranged to operate the plates *l*¹¹, the whole substantially as described.

22. In combination with the lever O, the pawl-bar *o*², with ball-and-socket joint, and spring *o*⁴.

23. In combination with the pawl-bar *o*², the lever O, and the cam *b*², the spring *o*³, as described.

24. In combination with the projection *k*⁴, the pivoted bar *k*² and the series of presser-bars *k*², as described.

25. The combination of the presser-bar *k*², having bearing-face *k*²⁰, spring *k*¹¹, bar *k*², plates *l*⁹, independent blocks *l*⁹, having plates *l*¹¹, and springs *l*¹⁴, the whole substantially as described.

26. In combination with the presser-bar *k*², having a beveled edge, the plate *l*¹¹, having a beveled edge plate, *l*⁹, as described.

27. In combination with the swage-block p^4, the plate p^5, with open slots, the set-screws p^{11}, block p^6, and the swages p^7 p^8, as described.

28. In combination with the swage-block p^4, the adjusting mechanism p^{20}, p^{21}, p^{22}, p^{23}, p^{24}, and p^{25}, as described.

29. In combination with the swage-block having the part p', the arched spring p^{10}, as described.

30. In combination with the swaging mechanism, the springs-studs k^{12}, as and for the purpose described.

31. The spring-stud k^{13}, having the shank k^{15}, collar k^{14}, and spring k^{17}, supported by a plug, k^{16}, held in a recess, k^{18}, as described.

32. The cutters r' r', held at an angle from the horizontal line and having inclined ends, as and for the purpose set forth.

33. In combination with the cutter-block, the connecting-frame having the ball-and-socket joint, as described.

34. In combination with the cutter-block, the connecting-frame having journal-studs r^{12} r^{13} and the bearing-blocks r^{15} r^{16}, as described.

35. In combination with cutters r' r', for reducing the point of the nail-blank to shape, an independent plate, S, for holding the nail as the cutters are withdrawn, and mechanism, substantially as described, for actuating the plate.

36. In combination with the cutters, the independent plate S and the tumbler s^4 for actuating the plate.

37. The tumbler s^4, having the shoulder s^5, in combination with the base-block s', and cutter block having the stop-block r^7, as described.

38. In combination with the tumbler s^4, having the shoulder s^5, the base-block s', and the cutter-block having the stop-block r^8, as described.

39. The combination of the fixed cutter T with the auxiliary plate t^6, as described.

40. The combination, with the fixed cutter T and auxiliary plate t^6, of the clamping-plates and cotter-pins, as described.

41. The combination of the following elements: mechanism, substantially as described, for clamping the nail-blank during the action of cutting; mechanism, substantially as described, for cutting the blank, and mechanism, substantially as described, for holding the nail when the cutters are withdrawn.

42. The combination, with the cam b^7, of the wedge-bar u' and the movable block u^{10}, held upon the base-block u^4, as described.

43. In combination with the auxiliary block u^{10}, carrying the swage-bar, the adjusting-screw u^{19}, as described.

44. In combination with the supporting-block u^{20}, the bolt u^{17} and the clamping-plate u^{21}, as described.

45. In combination with the long anvil-bar v^3, of curved form, the long swage-bar u^{26}, as described.

46. In combination with the finger m^2, the spring-plate W, having the horizontal portion, as described.

47. The combination of the bearing-face k^2, spring-stud k^{13}, and conductor e, for conveying the nail-blanks from the rolls to the bearing-face k^2, substantially as described.

48. The combination of the plates l^9 l^{11} of the hereinbefore-described mechanism, with a lubricating mechanism consisting of a bath, z, and rollers z^2 z^3, constructed and arranged substantially as and for the purpose set forth.

49. The combination of the block j^3, constructed and arranged as described, fixed cutter T, projection T^9, plates l^8 l^{11} of the forwarding mechanism described, and the cutters r', the whole substantially as and for the purposes set forth.

50. The combination of the cutters r', fixed cutter T, with the clip-discharging mechanism, consisting, principally, of a spindle, y^9, spring y^7, and spring-plate y^{10}, substantially as and for the purpose set forth.

51. The combination of the plates l^8 l^{11}, spring l^{14} of the forwarding mechanism, with the plate i^{17}, having projections i^{19}, and pivoted lever i^{21} said lever having bearing-face i^{22}, and actuated by a spring, i^{23}, the whole constructed and arranged substantially as described, for the purpose set forth.

52. In a machine of substantially the described construction, the combination of the following elements: mechanism, substantially as described, for controlling the delivery of the nail-blanks to the rolls; mechanism, substantially as described, for rolling the same; mechanism, substantially as described, for forwarding the same; mechanism, substantially as described, for lubricating the same; mechanism, substantially as described, for swaging the blanks; mechanism, substantially as described, for cutting the blanks; mechanism, substantially as described, for discharging the clippings; mechanism, substantially as described, for swaging the points of the nails, and mechanism, substantially as described, for discharging the finished nail from the machine.

339,575. CAR-COUPLING. JOHN MYERS and SAMUEL L. MORRISON, Springfield, Ohio. Filed Jan. 11, 1886. (No model.)

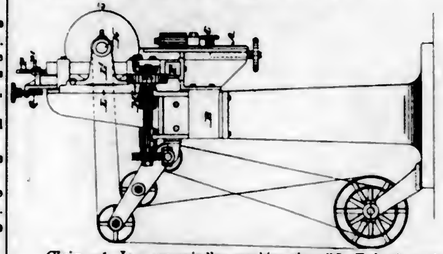
Claim.—In a car-coupling, the combination, with the slotted draw-head A, having the lug H formed near its under face, of the gravity-lever D, bifurcated at its extreme forward end, as described, and pivoted in the slot or opening B at its opposite end to the draw-head, the coupling-pin pivoted between the ears b of the bifurcated lever, and the gravity-pawl F, slotted longitudinally at its upper end to form ears c, between

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which ears the gravity-lever extends and is pivoted, all constructed and arranged substantially as shown and described.

339,576. MACHINE FOR SHARPENING SAWS. LYMAN O. ORTON, Philadelphia, Pa. Filed Aug. 6, 1885. (No model.)



Claim.—1. In a saw-grinding machine, the slide F, having suitable ways in the frame B, and provided with the dog D, with finger E, and adapted to move in a parallel direction to a saw held in a support on the frame B, in combination with the connecting-rod G, crank-wheel H, means for rotating said wheel H, and a vertically-adjustable saw-support, substantially as described.

2. In a saw grinding or sharpening machine, the combination of a grinding or sharpening wheel mounted on a rising and falling frame or head and a slide mounted on the frame of the machine provided with an inclined piece engaging with said head for raising and lowering the wheel, substantially as described.

3. The slide F, having a piece, M, pivoted thereto, in combination with the rising and falling head L, bar N, screw P, and nut P', substantially as and for the purpose set forth.

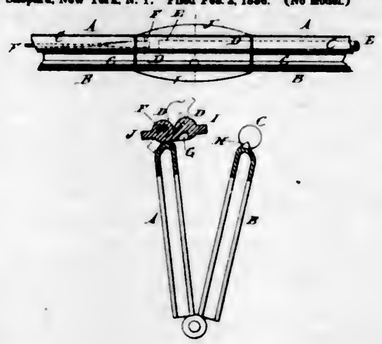
4. The slide F, having a piece, M, in combination with means, substantially as described, to operate said slide, the head L, having a bar, N, and the frame L', having a bearing for the axis K, carrying the grinding-wheel J, substantially as described.

5. The slide F, having a piece, M, in combination with means, substantially as described, for operating said slide, the rising and falling head L, having a bar, N, the frame O, having bearings for the shaft K, carrying the grinding-wheel J, and the frame B, having its upper portion formed of segmental sections joined by the bolt S', substantially as and for the purpose set forth.

6. In a grinding or sharpening machine, the combination of a rising and falling grinding or sharpening wheel and a slide provided with an adjustable lifting-piece which engages with the supporting frame or head of said wheel, substantially as described.

7. A saw-grinding machine having the frame B, with its upper portion formed of segmental parts joined by the bolt S and provided with a vertically-adjustable support, A, and a rising and falling head with a sliding laterally-adjustable frame carrying a grinding-wheel, said parts being combined and operating substantially as described.

339,577. FASTENING FOR POCKET-BOOK, PURSE, AND HAND-BAG FRAMES. LOUIS B. PRAHAR, Brooklyn, assignor to Prahar & Shepard, New York, N. Y. Filed Feb. 2, 1886. (No model.)



Claim.—In a fastening for pocket-book, purse, and hand-bag frames, the combination, with the frame A B, of a spring-latch, D, having a rearwardly-projecting flange, J, to come in contact with the side of the frame and prevent the said latch from being turned so far back as to break or injure the spring, substantially as herein shown and described.

339,578. SEEDING-MACHINE. GEORGE H. PRESTON, Shortsville, N. Y. Filed Aug. 10, 1885. (No model.)



Claim.—1. In combination with hopper C and seed-cups E, rotary shaft F, located in the lower part of the hopper and provided with projections extending upward into the hopper and downward into the mouths of the seed-cups beneath said hopper.

2. In combination with hopper C, end pieces or castings, G and H, provided, respectively, with a socket and with openings e, one to receive one end of the shaft and the other to permit the insertion and removal of the other end of said shaft with its driving-pinion, shaft F, provided with pinion J, and retaining-piece I, applied to casting H and serving to retain the shaft in place.

3. In a seeding-machine, the combination of a hopper, a series of seed-cups beneath said hopper, and a rotary agitator mounted in the lower part of the hopper projecting through the bottom thereof into the seed-cups and adapted to be removed at will, whereby the machine is adapted to distribute different kinds and qualities of seeds.

4. In combination with hopper C, provided with castings G H, seeding devices beneath said hopper, agitator-shaft F, provided with pinion J, retaining-piece I, applied above said shaft and serving as a cover for the pinion, and a fastening-bolt and nut for said piece I, all arranged substantially as shown and described.

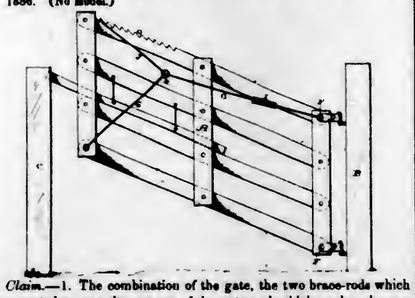
5. In combination with hopper C, having groove, agitator-shaft F, supported at its ends in suitable bearings and resting in the bottom of the groove at intermediate points, substantially as set forth.

6. In combination with reciprocating agitator P and actuating mechanism therefor, telescopic connecting-rod k and a fastening to unite the two sections of said rod, substantially as described and shown.

7. In combination with hopper C and agitator P, wabbling wheel or disk, upright rod, and telescopic rod k, connecting the rod and agitator-slide.

8. In a seeding-machine, the combination of a hopper, seed-cups beneath the hopper, a rotary agitator located in the lower part of the hopper and adapted to work therein and in the mouths of the seed-cups, and a secondary agitator located in the hopper above the first.

339,579. GATE. GEORGE P. PEER, Carlisle, Ohio. Filed Jan. 11, 1886. (No model.)

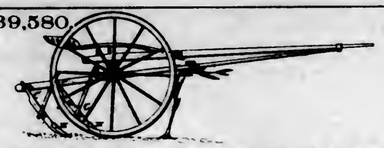


Claim.—1. The combination of the gate, the two brace-rods which are connected to opposite corners of the gate and which are loosely connected at their inner ends, and the U-shaped tightening-rod which passes up over the top edge of the gate and engages with notches which are formed in the top edge of the top bar of the gate, substantially as shown.

2. The combination of the gate, the diagonal brace-rods G, which are connected together by means of the rings H, and the tightening-rod J, which passes up over the edge of the gate and catches in the notches O, substantially as described.

339,580. CORN-CULTIVATOR. JAMES PRITCHARD, Le Mars, Iowa. Filed Sept. 16, 1885. (No model.)

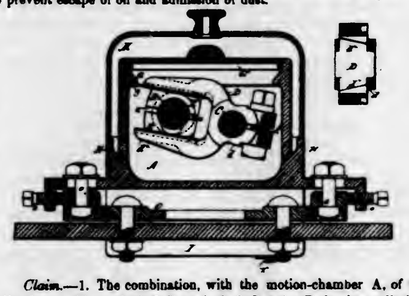
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Claim.—In a corn-cultivator, the combination, with the draft-pole and diverging beams A' A', of the hook F, secured to the under side of and pointing forward in line with said beams, substantially as and for the purpose set forth.

339,581. DOFFER-COMB HEAD FOR CARDING-MACHINES. JOHN H. PROCTOR and J. HENRY KNOWLES, Philadelphia, Pa., assignor to the Philadelphia Textile Machinery Company, same place. Filed Nov. 2, 1885. (No model.)

Brief.—A yoke having a split hub and fastened to the comb-shaft has a forked end which straddles part-boxes fitted on the crank-shaft and sliding in the forks. The bearing-surfaces of fork and boxes are beveled, and the comb-shaft has a taper bearing, so that by turning one adjusting-nut, which affords a bearing for end of the crank-shaft, lost motion is taken up between the several parts. An apron and oil-reservoir and a cover are all so combined with the actuating devices as to prevent escape of oil and admission of dust.



Claim.—1. The combination, with the motion-chamber A, of the adjusting-nut F, crank-shaft B, rock-shaft C, yoke D, having split hub d and forked end d^3, part boxes or bushings E E, and adjustable taper bearing c, said several parts being constructed and combined substantially as shown and set forth.

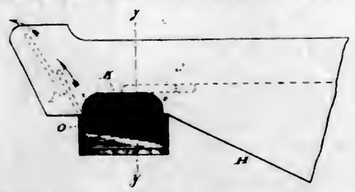
2. The combination, with a doffer-comb head, of an external oil tank or reservoir, constructed and adapted to catch and retain the oil that may escape from the motion-chamber of said head, substantially as shown and described.

3. A doffer-comb head having an apron or gutter extending around the outside of the motion-chamber, and adapted and designed to form a conduit for escaping oil from the motion-chamber to the oil-reservoir external to said chamber, substantially as shown and set forth.

4. A doffer-comb head having a motion-chamber, and an apron or gutter and tank or reservoir external to and completely surrounding the said motion-chamber, whereby any oil escaping at any point around the said chamber is caught and retained in such reservoir, substantially as shown and set forth.

5. The combination, with the head of a doffer-comb, having a motion-chamber, an apron, and an oil-reservoir, of a cover, M, which incloses said chamber, apron, and reservoir, and prevents the escape of oil and the admission of dust, &c., substantially as set forth.

339,582. WINNOWER FOR THRASHING-MACHINES. CYRUS ROBERTS, Three Rivers, Mich. Filed Nov. 5, 1884. (No model.)



Claim.—In a grain-separator for thrashing-machines, the combination, with the fan and with the trough I, having inclined sides and discharging at the side of the machine, of the riddle-frame, carrying-board J, arranged over the trough, and the inclined deflecting-board K, secured to the rear edge of the carrying-board and projecting well down into the trough toward the rear edge thereof, whereby part of the blast is allowed to escape laterally through the discharge end of the trough, and the grain

passing over the carrying-board is shielded from the blast by the deflecting-board until it reaches the bottom of the trough, as set forth.

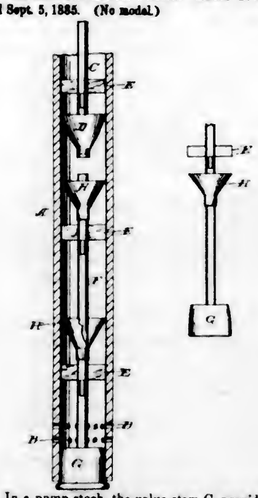
339,583. HORSESHOE. EDMUND P. ROGERS, Hyde Park, N. Y. Filed Feb. 28, 1885. (No model.)



Claim.—1. The toe-calk B, composed of a plate and two calks fastened to it, the calks having dowels under their bearings, which extend through the plate and shoe, and the plate provided with a screw-hole between the calks, as shown and described, and for the purposes set forth.

2. A horseshoe, in combination with the removable toe-calk B, which toe-calk is composed of a plate and two calks fastened to it, the calks having dowels under their bearings, which extend through the plate and shoe, and the plate provided with a screw-hole between the calks, as shown and described, and for the purposes set forth.

339,584. CHECK-VALVE FOR PUMPS. HENRY D. ROOT, Reading Ohio. Filed Sept. 5, 1885. (No model.)

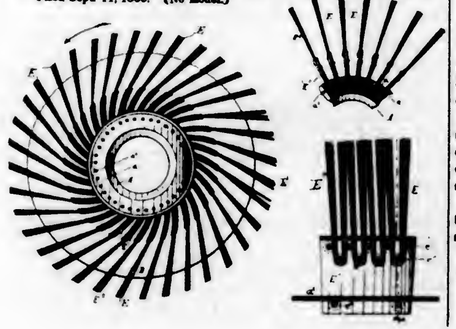


Claim.—1. In a pump-stock, the valve-stem C, provided with cup-valve D, and wings or guide-pieces E, at right angle to the stem, substantially as and for the purposes described.

2. A check-valve composed of a stem having on its lower end a head which serves as a plug for the lower end of the pump-tube, and on said stem one or more cup-valves and guides or arms projecting from said stem, in combination with the tube or pump-stock, substantially as herein set forth.

3. The combination of the tube A with the stem F, having the head or plug G, the valves H H, and the guides or wings E, substantially as herein set forth and described.

339,585. ROTARY WIRE BRUSH. TIMOTHY C. ROOT, Erie, Pa. Filed Sept. 11, 1885. (No model.)



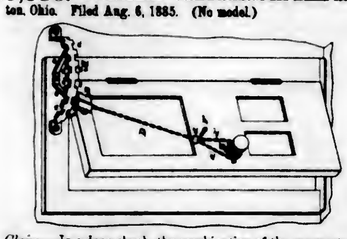
Claim.—1. In a rotary wire brush, the combination, with the hub and the wires forming the brush, of a flexible web or shank connecting said wires to the hub, substantially as set forth.

2. In a rotary wire brush, the combination, with the hub and the wires forming the brush, of a flexible non-metallic web or shank connecting said wires to the hub, substantially as set forth.

3. In a rotary wire brush, the combination, with the hub, of a series of flat brushes consisting of the wire bunches E^3 and the flexible shanks E', holding said bunches set radially in said hub, substantially as set forth.

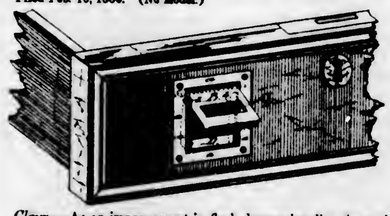
4. In a rotary wire brush, the combination, substantially as shown, of the hub A, with sockets therein, the flat brushes composed of the flexible shanks E', and wire bunches E^3, secured together and to said hub, substantially as shown, the flanges B B, and the flanges C C.

339,586. DOOR-CHECK. JOSEPH ROSHONG and ISAIAH ROSHONG, Canton, Ohio. Filed Aug. 6, 1885. (No model.)



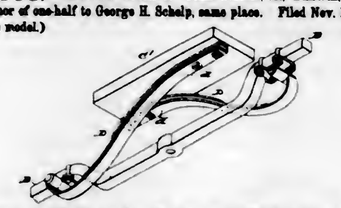
Claim.—In a door-check, the combination of the segment or locking-bar A, provided with the notches or recesses *a*, of the bolt *b*, provided with an actuating-spring, of the chain or cord D, provided with the ring *d*, of the door-knob provided with extensions for attaching the operating chains or cords *d' d'*, and the knob F, substantially as and for the purpose specified.

339,587. DRAWER-HANDLE. GEORGE P. RUSH, Minden, Nebr. Filed Feb. 16, 1886. (No model.)



Claim.—As an improvement in flush drawer-handles, the casing A and pivoted or journaled handle B, in combination with the pivoted lever D, provided with the arms *d*, all constructed and arranged to operate substantially as and for the purpose described.

339,588. VEHICLE-SPRING. FRED SCHELP, Jr., Ballwin, Mo., assignor of one-half to George H. Schelp, same place. Filed Nov. 16, 1885. (No model.)



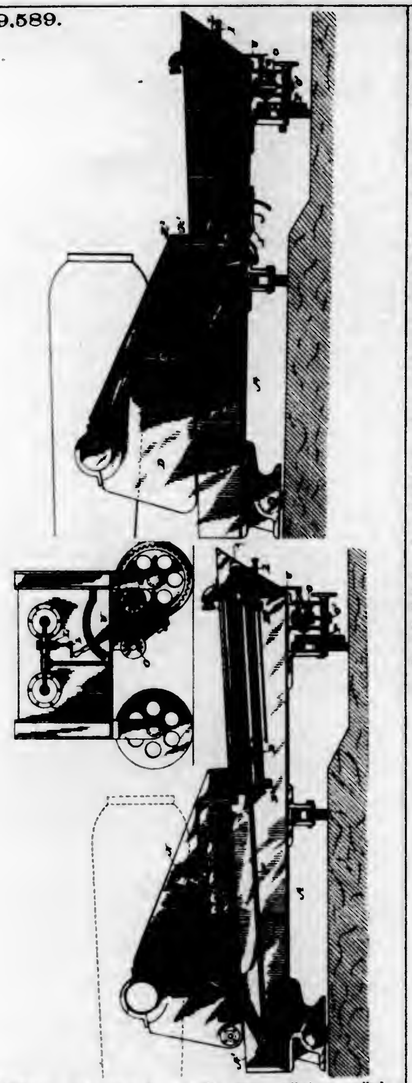
Claim.—1. The herein-described springs D D, whose inner ends lap and are attached to the body or the spring-bar of the vehicle, and whose outer ends extend in opposite directions and are respectively attached to opposite ends and respectively upon opposite sides of the axle.

2. The herein-described springs D D, whose inner ends lap and are attached to the vehicle-body, or to some part of the body well toward opposite sides, respectively, of the body, and whose outer ends extend in opposite directions, respectively, and are respectively attached to opposite ends and respectively upon opposite sides of the axle.

3. The springs D D, attached to the axle B upon opposite sides and toward opposite ends, respectively, of the axle, and at their upper ends supporting the vehicle-body at opposite sides, respectively, thereof.

339,589. PNEUMATIC GUN-CARRIAGE. HARRY A. SPILLER, Boston, Mass., assignor to the Pneumatic Gun-Carriage Company, Baltimore, Md. Filed Jan. 29, 1886. (No model.)

339,589.



Claim.—1. As a means for operating guns, a cylinder or cylinders having the piston-rod connected to the sliding portion of a gun-carriage, provided with suitable ports for the inlet and outlet of compressed air, and with an escape-valve operated by contact with a moving portion of the carriage upon the recoil of the gun, substantially as described.

2. As a means for operating guns, a cylinder or cylinders mounted upon the stationary portion of a gun-carriage and having their piston-rods connected to the sliding portion thereof, the said cylinders being provided with inlet and outlet ports and an escape-valve, an operating-rod connected to the escape-valve, and a projection on the sliding portion of the carriage, whereby the operating-rod is struck and the compressed air allowed to escape, substantially as described.

3. As a means for operating guns, a cylinder or cylinders mounted upon the base of a gun-carriage, having their piston-rods connected to the sliding portion of the carriage, the said cylinder being provided with inlet and outlet ports and an escape-valve, an operating-rod connected to the escape-valve and to a lever mounted upon the base of the carriage, and a projection from the sliding portion coming in contact with the lever, substantially as described.

4. As a means for operating guns, a cylinder or cylinders mounted upon the base of the carriage, having their piston-rods connected to the sliding portion thereof provided with inlet and outlet ports, a supply-pipe connected by branch pipes to the cylinder, a four-way cock placed at the juncture of the supply-pipe and branch pipes and connected with an operating-lever, a lever connected thereto and mounted upon the base of the carriage, and a projection from the sliding portion of the carriage for operating the same, substantially as and for purposes set forth.

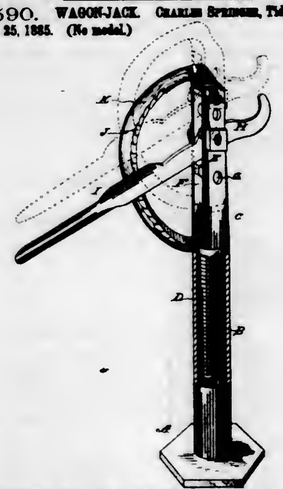
5. The combination, with the operating-cylinder of a gun-carriage, provided with an escape-valve and suitable supply-pipes, of the sliding portion of the carriage provided with two projections and two levers mounted upon the base of the carriage and in line of movement of said projections, and connected, respectively, to the cock governing the inlet of air to the cylinders and the escape-valves, substantially as described.

6. As a means for operating guns, a cylinder or cylinders mounted upon the base of a gun-carriage, having their piston-rods connected to the sliding portion thereof, the said cylinders being provided with inlet and outlet ports and an escape-valve, a supply-pipe connected by branch pipes to the cylinders and provided with a four-way cock connected to an operating-lever, a lever mounted upon the base of the carriage, connected to the operating-lever operated by a projection upon the sliding portion of the carriage, an operating-rod connected to the escape-valve and connected to a lever mounted upon the base of the carriage, and a second projection from the sliding portion of the carriage, whereby upon the recoil of the gun air is admitted upon the front portion of the piston, and then the compressed air in rear there is allowed to escape, substantially as described.

7. As a means of elevating and depressing the breech of a gun, one or more approximately horizontal cylinders provided with inlet and outlet ports and mounted upon the sliding portion of the carriage, their pistons, a depending arm or arms connected to the breech of a gun, and mechanism between such pistons and such arm or arms for converting the horizontal motion of the pistons into a vertical motion of the breech of the gun, substantially as described.

8. As a means for elevating and depressing the breech of a gun, one or more approximately horizontal cylinders mounted upon the cheeks of the carriage, having their piston-rods provided with a rack, a toothed bar or bars connected to the gun and set at an angle to the piston-rods, and a pinion meshing with the piston-rods and the bars, whereby a horizontal movement of the pistons is converted into an approximately vertical movement of the breech of the gun.

339,590. WAGON-JACK. CHARLES SPRINGER, Tidioute, Pa. Filed Nov. 25, 1885. (No model.)



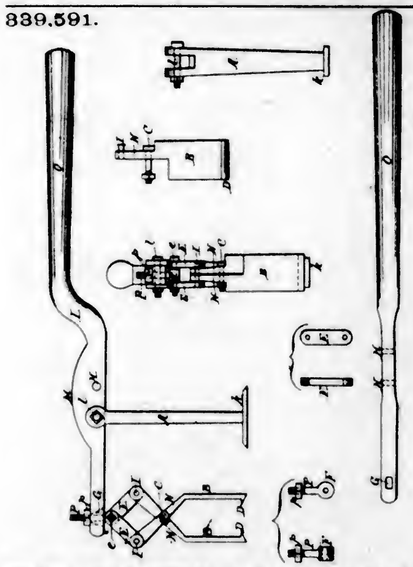
Claim.—1. As a new article of manufacture, a lever for wagon-jacks, having a curved portion which forms a rest for the axle of the vehicle, and having its long arm provided with a lip, substantially as and for the purposes specified.

2. The combination, in a wagon-jack, of the hollow internally-screw-threaded support erected upon a suitable base, a standard having a depending screw-threaded shank working in the hollow support, a curved rack-bar secured to the standard, and a lever pivoted to the said standard and provided with a lip which engages the teeth on the curved rack-bar, substantially as described and shown.

339,591. FLIGHT-EXTRACTOR FOR SCREW-CONVEYERS FOR FLOUR-MILLS. CLARENCE H. STEVENSON, Hastings, Minn. Filed Jan. 22, 1886. (No model.)

Claim.—1. The combination, with the standard A and the lever O pivoted thereto and having the end opening, G, of the eyed screw-bolt P, the pivoted tongs B, the pivoted links E, and the bolt *c*, whereby the

339,591.

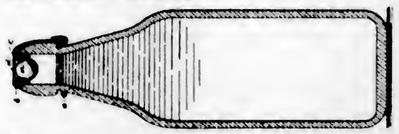


tongs have a swiveling connection with said lever, and the latter is fulcrumed upon a rigid support between the lever-handle and the tongs, as described, and for the purpose stated.

2. The combination of a pair of tongs, links pivotally connected to their upper ends, and a bolt pivotally connecting the links with a lever having a vertical aperture contracted at its highest point and expanded at its lowest point, and a stop, *p*, to secure said bolt in place, whereby the power is always transmitted from the lever to the tongs in a line parallel with the bolt, substantially as described.

3. The combination of the tongs composed of corresponding parts each consisting of a portion, B, terminating in a chisel-shaped jaw, D, bent at right angles thereto, and an upper inclined portion, N, cut away on each side, a pair of links connecting with the upper ends of the tongs, a bolt pivotally uniting the free ends of the links, and a lever apertured for the reception of the bolt, whereby the tongs are swivelly supported, for the purposes set forth.

339,592. BOTTLE-STOPPER. WILLIAM STEWART, Brooklyn, N. Y. Filed Oct. 19, 1885. (No model.)



Claim.—1. As an improved article of manufacture, the self-acting internal bottle-stopper composed of hard rubber or equivalent non-elastic material, and which is buoyant enough to float on the liquid and light enough to be impelled and seated against the packing-ring automatically by the gaseous pressure within the bottle without extraneous assistance or manipulation.

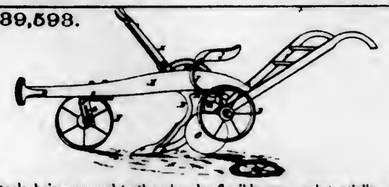
2. The combination, with a bottle for gaseous liquids, of the internal stopper composed of hard rubber or equivalent non-elastic material, and which is light and buoyant, and a packing-ring of soft material arranged in the neck of said bottle, the said stopper being seated against said packing-ring automatically by the gaseous pressure within the bottle without extraneous assistance or manipulation, substantially as specified.

3. The two semi-spherical shells of hard vulcanized rubber, united substantially as set forth, and constituting, when applied inside of a bottle containing gaseous liquid, a light, buoyant self-acting bottle-stopper, as described.

339,593. PLOW. GARLAND R. ST. JOHN, Kalamazoo, Mich. Filed Oct. 5, 1885. (No model.)

Claim.—1. In combination with an ordinary handle-plow, an inclined guide-wheel adapted to run in the corner of the furrow in advance of the share and gage the depth and width of the succeeding furrow, and a rear carrying-wheel adapted to run on the unplowed land opposite the mold-board and gage the depth of the furrow at that point, both of said

339,593.

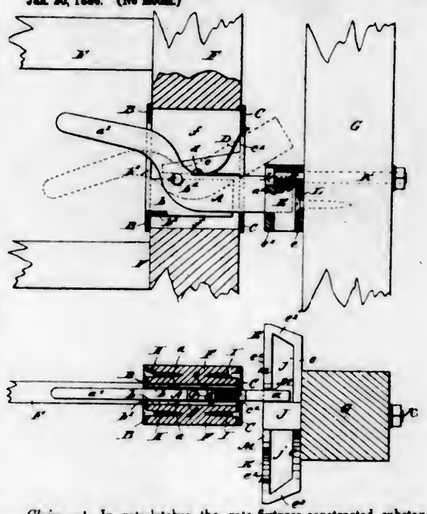


wheels being secured to the plow by flexible arms, substantially as and for the purpose set forth.

2. A plow having a disk-landside, forward gage-wheel, and rear carrying-wheel supported on flexible arms, substantially as and for the purpose set forth.

3. In combination with a plow having a disk-landside, a gage, and carrying-wheel set opposite to the mold-board, so as to run on the unplowed land, with means for vertical adjustment, and having a seat set partially over it, substantially as and for the purpose set forth.

339,594. GATE-LATCH. LOUIS S. STOLL, Arcadia, Iowa. Filed Jan. 20, 1886. (No model.)



Claim.—1. In gate-latches, the gate-fixtures constructed substantially as herein shown and described, and comprising a plate, B, provided with tongues *b b*, having notches *b' b'* and a slot, b^3, a plate, C, provided with tongues *c c* and slot *c'*, a latch-bar, A, having pivot-pins *a*, adapted to notches *b'*, and a spring, D, pressing the outer latching end of bar A downward, when the parts A B C D are assembled in relation to each other and to a slotted gate-post, as and for the purposes herein set forth.

2. In a gate-latch, the catch-plate E, formed with a stop-lug, J, projecting upward from its top edge, and notches M M in said upper edge, on opposite sides of the lug, the said upper edge tapering downward in opposite directions from the said notches, substantially as set forth.

3. In a gate-latch, the catch-plate E, made formed with two notches, M M, in its upper edge, and the stop-lug J, projecting from said upper edge between the notches, and tapering downward and inward from its upper end, the top edge of the catch-plate being inclined downward and outward in opposite directions from the notches M M, substantially as set forth.

4. In gate-latches, the catch-plate E, made with plates *e e'*, a central stop-lug, J, providing spaces *j j*, opposite inclines *m m* on plate *e'*, and notches M M in plate *e'* at opposite sides of the stop-lug J, substantially as and for the purposes herein set forth.

5. In gate-latches, the combination, with the catch-plate E, provided with a stop-lug, J, inclines *m m*, and notches M M, substantially as specified, and the latch-post G, of a bolt, K, having a square or flat-sided head, *k*, fitting a recess in plate E, and the screws L L, substantially as and for the purposes herein set forth.

6. The combination, with a gate, as at F, provided with a slot, *f*, and the latch-post G, of a plate, B, having tongues *b b*, notched at *b'*, and a slot, b^3, the latch-bar A, having pivot-pins *a*, resting in the notches *b'*; a plate, C, provided with tongues *c c* and slot *c'*, a spring, D, on latch-bar A, and pressing its outer end, *a'*, downward, and said plates B C secured

to the gate-post, substantially as specified, and a catch-plate, E, formed with plates *e e'*, a central stop-lug, J, inclines *m m*, and notches M M, and said plate E secured to the latch-post G, substantially as shown and described, and for the purposes herein set forth.

339,595. DRILL-CHUCK. CHARLES E. STONE, Amesbury, Mass. Filed Jan. 9, 1886. (No model.)

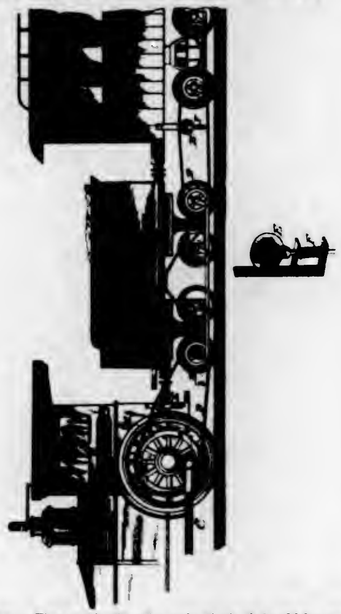


Claim.—1. In a drill-chuck, the combination, with the axially-bored externally-threaded countersunk shank A, of the internally-threaded sleeve B, having a conically-bored end, the clamping-jaws *b*, formed of segments of a cylinder grooved longitudinally, and having beveled ends, and the socket *d*, substantially as herein shown and described.

2. The combination, with the axially-bored countersunk shaft A, having an external thread at one end and an internal thread at the opposite end, of the internally-threaded sleeve B, having a conically-bored end, A, the jaws *b*, formed of segments of a cylinder, and having longitudinal grooves and beveled ends, the socket *d*, adapted to receive the shank of the drill and arranged to move longitudinally in the shank A without turning therein, and the adjusting-screw *g*, fitted to the internally-threaded part of the shank A and bearing against the socket *d*, substantially as herein described.

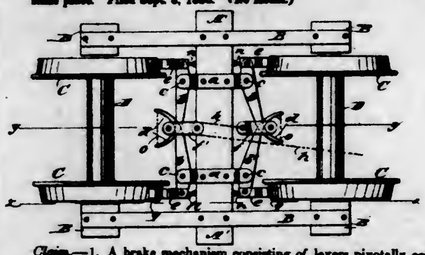
3. As an improved article of manufacture, a drill-chuck formed of a shank, A, threaded internally at one end and externally at the opposite end, countersunk and slotted internally, a socket, *d*, fitted to the bore of the shank and provided with a feather, *e*, received in the internal slot, the adjusting-screw *g*, received in the internally-threaded part of the shank and bearing against the back of the socket, the internally-threaded sleeve B, fitted to the externally-threaded part of the shank A, and having a conically-bored end, A, and jaws *b*, formed of segments of a cylinder grooved longitudinally on their adjacent faces, and having beveled ends, as herein specified.

339,596. MOTOR ATTACHMENT FOR LOCOMOTIVES. EDWIN J. STROUD, Laingsburg, Mich. Filed Jan. 5, 1886. (No model.)



Claim.—The combination of a train of wheeled vehicles connected together, substantially as described, whereby they may have a limited movement toward and from each other, independent belts connecting the end wheels of one vehicle with those of the adjacent one, such belts being slack, whereby the vehicles may round curves, and yielding pulleys arranged to bear on said belts between the connected wheels of the vehicles, substantially as and for the purposes specified.

339,597. CAR-BRAKE. CHARLES M. STRINGER, Birmingham, Ala., assignor to himself, THOMAS H. DE BARBOURT, and ALEXANDER O. LANE, all of same place. Filed Sept. 8, 1885. (No model.)



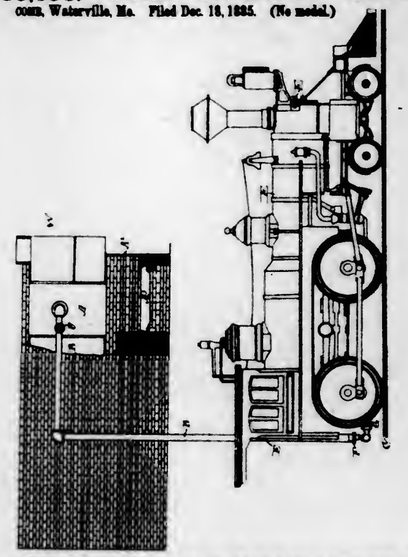
Claim.—1. A brake mechanism consisting of levers pivotally connected with the truck and brake-heads, a movable guide-block through which the long arms of the said levers project, and a chain leading to the ordinary manipulating mechanism, as set forth.

2. In a brake mechanism, the combination, with the truck-frame and its wheels, of levers *b b* and *b' b'*, supported in pivotal connection with the truck and being pivotally connected to the brake-head, blocks *f f'*, carrying sheaves *g g'*, and connected by a chain, as A, secured to one of the blocks and passing about a sheave carried by the other and leading to a manipulating mechanism, substantially as described.

3. In a brake mechanism, the combination of the following elements: truck frame and wheels, brake-heads *e e*, suspended by arms *n n*, and pivotally connected to levers *b b* and *b' b'*, that are operated by sheaves *g g'*, carried by blocks *f f'*, connected by a chain, A, which leads to the ordinary form of manipulating mechanism, substantially as described.

4. In a brake mechanism, the combination of the following elements: truck frame and wheels, brake-heads and shoes *q q*, suspended by arms *n n*, pivotally connected by levers *b b* and *b' b'*, chains *o o*, blocks *f f'*, and chain A, leading to any ordinary form of manipulating device, substantially as described.

339,598. PREVENTING BOILER EXPLOSIONS. WIDELOW TRUCOMB, Waterville, Me. Filed Dec. 18, 1885. (No model.)

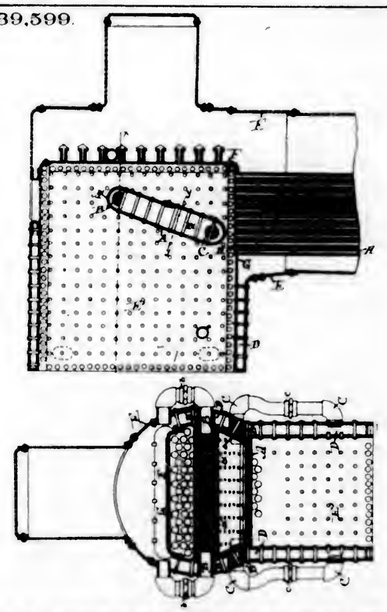


Claim.—The method or process herein described of decreasing the liability of steam-boilers to crack, leak, and explode by filling them with hot water surcharged with steam under pressure before starting the fire, substantially as described, and for the purpose specified.

339,599. WATER-DIAPHRAGM FOR STEAM-BOILERS. WIDELOW TRUCOMB, Waterville, Me. Filed Dec. 18, 1885. (No model.)

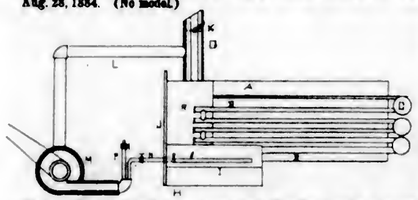
Claim.—1. In a locomotive-boiler, a water-diaphragm connected with said boiler by pipes passing through the water-legs of said boiler, and thence returning into said water-legs, said pipes having union-joints or other suitable connections which adapt them to be readily removed from said diaphragm, disconnecting it from the boiler, substantially as described.

339,599.



2. In a locomotive-boiler, a water-diaphragm connected with the lower portion of the water-legs of said boiler and with the upper portion of the water-space of said boiler by pipes passing outward through said water-legs, and thence returning into said boiler, said pipes being provided with union-joints, all substantially as and for the purposes set forth.

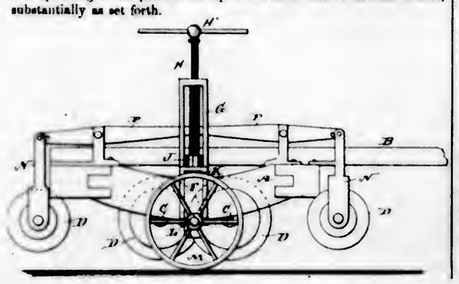
339,600. **FORMING A PERFECT COMBUSTION AND PREVENTING THE FORMATION OF SMOKE.** JAS. A. TREACY, Chicago, Ill. Filed Aug. 28, 1884. (No model.)



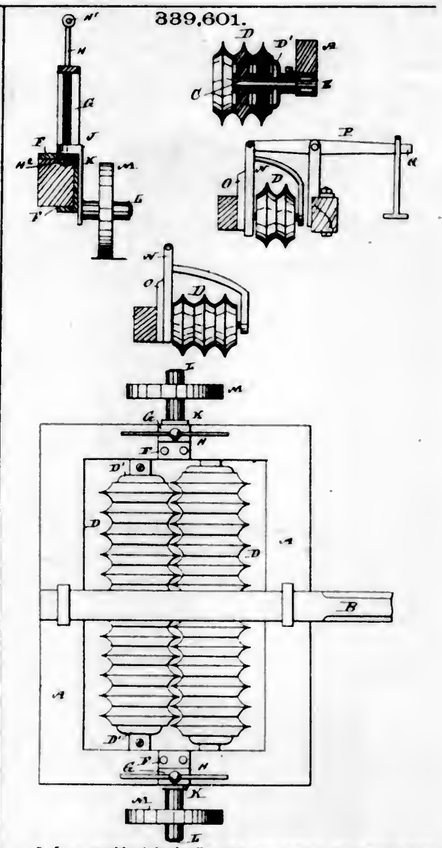
Claim.—In a boiler, the combination of the flues with rear transverse connecting-pipes and with front T's, whereby the flues are so connected that the gases pass back and forth through them, in the manner shown.

339,601. **COMBINED LAND-ROLLER AND CLOD-CRUSHER.** FRIEDRICH TWICK, Sheboygan, Wis. Filed Oct. 3, 1885. (No model.)

Claim.—1. A combined land-roller and clod-crusher comprising the frame having vertically-adjustable wheels, the central series of intermeshing disks journaled on the frame, and a smaller series of disks in front and rear of the main series, vertically-adjustable frames therefor, and operating-levers pivoted on top of the frame and to the said frames, substantially as set forth.

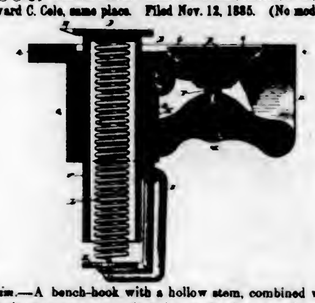


339,601.



2. In a combined land-roller and clod-crusher, the combination, with the frame having vertically-adjustable wheels, middle shafts, C C, having a series of disks, D, formed with beveled edges, the cutting-edges of one series of disks entering the spaces formed between the other series, of the auxiliary front and rear disks, D, mounted in the frames N, the guides O for said frames, and the operating-levers P, for raising the said frames N, substantially as set forth.

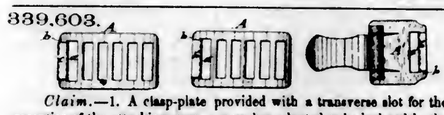
339,602. **BENCH-HOOK.** AARON J. TYLER, Albion, N. Y., assignor to Edward C. Cole, same place. Filed Nov. 12, 1885. (No model.)



Claim.—A bench-hook with a hollow stem, combined with a suitable bed-plate or support, a pivoted arm having a rough and bearing surface engaging said stem, and provided with an end extension or foot, a spring resting in said stem and on said foot, a knuckle-joint operating said arm, and a screw operating said joint, and having a manipulating head seated in the said bed-plate, substantially as specified.

339,603. **CLASP-PLATE FOR SHOE-CLASPS.** JACOB J. UEBELHOR, Syracuse, N. Y., assignor to Judson L. Thomson & Co., same place. Filed Feb. 5, 1886. (No model.)

339,603.

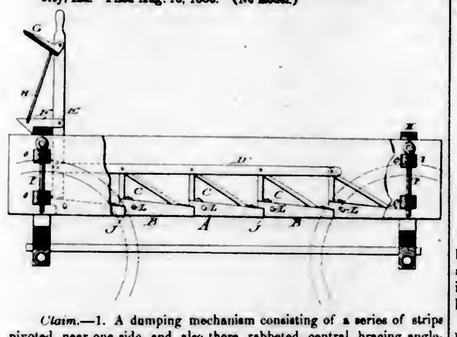


Claim.—1. A clasp-plate provided with a transverse slot for the reception of the attaching-strap, a cross-bar adapted to be inclosed in the fold of the said strap, and a plate folded around the said cross-bar and compressed in a plane parallel with that of the cross-bar, substantially as and for the purpose set forth.

2. A clasp-plate provided with a transverse slot for the reception of the attaching-strap, and a multiple cross-bar formed back of the slot by an integral extension of the width of said bar folded upon the bar proper, substantially as set forth.

3. A clasp-plate provided with a transverse incision terminating with longitudinal incisions extending part way toward one and the same end of the plate, and having the portion which is surrounded on three sides by the aforesaid incisions folded over upon the adjacent portion of the plate, substantially as described and shown

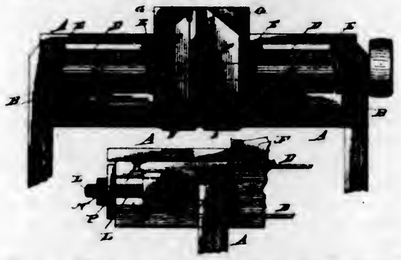
339,604. **DUMPING-WAGON.** ARTHUR C. VANKIRK, Fort Recovery, Ohio, assignor of one-half to Henry Raitzeur and J. J. Downing, Union City, Ind. Filed Aug. 18, 1885. (No model.)



Claim.—1. A dumping mechanism consisting of a series of strips pivoted near one side, and also there rabbeted, central bracing angle-frames on said strips, longitudinal bars connecting said frames at the angles, and a lever forming a continuation of one of the frames and carrying a catch or hook and handle connected to the same, said lever having direct connection to said strips, substantially as and for the purpose specified.

2. The combination, with a body consisting of sides and ends having eyes projecting through said sides and retained by pins, of a dumping mechanism consisting of a series of strips pivoted to said sides, connecting-strips, and a lever carried by one of the said strips, and provided with a catch or hook normally engaging over one end of the body, substantially as and for the purpose specified.

339,605. **SEPARATING-TABLE.** BENTON H. WELLNER, Norfolk, Va. Filed Oct. 17, 1885. (No model.)



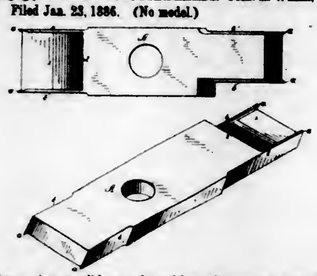
Claim.—1. The combination, with the picking-table, of the measuring boxes or receptacles extending below the level of the table, and having the raised guard-boards extending above said level, substantially as specified.

2. The combination, with a picking or separating table, of measuring-boxes having hinged bottoms and catches, substantially as specified.

3. The combination, with a picking or separating table, of removable measuring boxes and guards extending above the level of the table, substantially as specified.

4. A picking-table for peanuts, consisting of a main frame, a longitudinal series of measuring-boxes arranged therein, and endless belts arranged at opposite longitudinal sides of the said boxes, substantially as specified.

339,606. **KNIFE FOR CUTTER-HEADS.** JOHN H. WELLS, New York, N. Y. Filed Jan. 23, 1886. (No model.)



Claim.—A reversible wood-working plow-cutter provided on its working-faces with ribs located at its sides, to form projecting spurs in advance of the cutting-edges, and having its sides tapering slightly to the rear thereof, whereby in grinding the cutting-edges of the tool the spurs will present the same relative degree of projection beyond the line of such cutting-edges, substantially as and for the purpose set forth.

339,607. **WRENCH.** JACOB WILCOX, Plain City, Ohio. Filed Feb. 8, 1886. (No model.)



Claim.—1. A tool for twisting fence-wires, consisting of a flat bar having a shoulder at one edge formed with a notch and a jaw having an inwardly-curved beak projecting over the notched shoulder and having two lips pivoted upon the shoulder, and a spring bearing against the handle of the jaw, as and for the purpose shown and set forth.

2. In a tool for twisting fence-wires, the combination of a flat bar having pointed ends and having a notch in one edge near one end and a curved hook and a notched shoulder in the other edge, with a jaw having an inwardly-bent beak covering the notched shoulder and having a curved outer edge, and provided with two inwardly-projecting lips pivoted upon the sides of the shoulder, and a flat spring secured to the edge of the bar and bearing against the handle of the jaw, as and for the purpose shown and set forth.

339,608. **PNEUMATIC ACTION FOR ORGANS.** VINCENT WILLIS, Camden-Town, County of Middlesex, England. Filed Jan. 2, 1885. (No model.) Patented in England Nov. 17, 1884, No. 15,114.

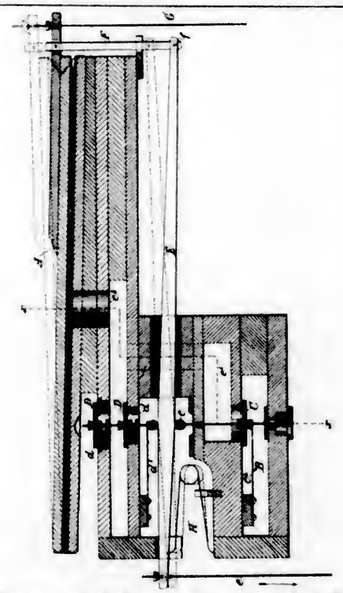
Claim.—1. The combination, with the valves of a pneumatic lever, of a floating lever or equivalent valve-actuating device directly connected with or controlled by the movements of the said pneumatic lever, substantially as described, so that the fulcrum or operative position of the said floating lever or valve-actuating device is shifted or changed synchronously with the movements of the pneumatic lever, and the said floating lever or its equivalent is brought into a position advantageous for instantly and without waste of air effecting the reverse movement of the pneumatic lever, substantially as set forth.

2. The combination, with the valves of a pneumatic lever or with one or more sets of valves in a series of pneumatic levers, of a floating lever or mechanical equivalent having a movable fulcrum, the position of the said fulcrum being determined and controlled by the opening or closing movement of one or other of the said pneumatic levers, as and for the purpose set forth.

3. The combination, with a pneumatic lever, A, and valves C D, of a floating lever, E, and connections *e* F for the purpose of alternately applying and removing pressure from the said valves, thus allowing them to close or reseat themselves so soon as they have effected the opening or closing of the said pneumatic lever, substantially as set forth.

4. The combination, with the valves of a pneumatic lever, of a floating lever or mechanical equivalent having a movable fulcrum the position of which is controlled by the pneumatic lever itself, the said floating lever being connected and arranged as either directly or indirectly through the intervention of a rocking bar or secondary lever, and link-rods or equivalent means for transmitting motion to actuate the said valves alternately at the will of the player, and so soon as they have effected the desired opening or closing of the said pneumatic lever to automatically relieve the said valves of pressure and allow them to reseat themselves, thereby preventing noise and waste of power, and enabling the pneumatic lever to be vibrated and perform its functions with greater rapidity and instantaneity than was possible heretofore.

339,608.



5. The combination, with a pneumatic lever, A, wind-chest B, and supply and exhaust valves C D, of a valve or bar, such as E, arranged to act upon the said valves and connected with the pneumatic lever A, substantially as described, whereby, whether the key be up or down, both valves will be closed in readiness for immediate action, either to open or close the pneumatic lever, and the movement of either valve under the influence of the performer is neutralized as soon as made by the resulting opening and closing movement of the pneumatic lever itself.

339,609. TYPE OR DIE FOR FORMING IMPRESSIONS IN METAL SURFACES. THOMAS D. WORRALL, Washington, D. C. Filed June 16, 1885. (No model.)

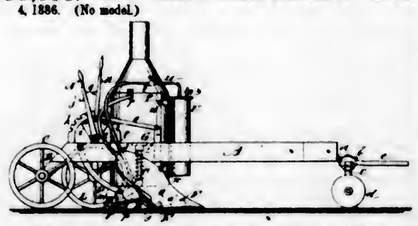


Claim.—1. A type or die for forming letters and characters in metal plates and cylinders, provided with a flange or enlarged portion above the letter or character, extending a uniform distance on every side from the center of said character, whereby the depth of the impression is regulated and the even surface of the plate or cylinder preserved, as set forth.

2. A type or die for forming letters and characters in metal plates and cylinders, provided with a flange or enlarged portion, the lower face of which is curved, as set forth.

3. A type or die, in combination with and adjustable in a holder, having a flange or enlarged portion above the letter or character, which acts as a gage thereto, for the purpose of regulating the depth to which said letters or dies shall enter the surface of metals or other substances, for the purpose herein described.

339,610. PLOW. GEORGE W. WRIGHT, Carterville, Mo. Filed Jan. 4, 1886. (No model.)



Claim.—1. In a plow, a mold-board provided with a steam-jacket upon the back thereof and means for supplying steam to the jacket and removing the water of condensation therefrom, substantially as herein specified.

2. The combination, with the mold-board or landside of a plow having apertures *a'*, of a steam-jacket placed on the back of the mold-board or landside for supplying a stratum of steam to the face thereof through the holes *a'*, substantially as described.

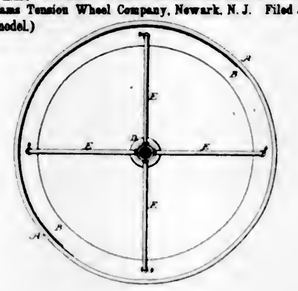
3. In a plow, a mold-board and landside, each provided with a steam-jacket on the back thereof, and means for supplying steam to the jackets and removing the water of condensation therefrom, substantially as herein specified.

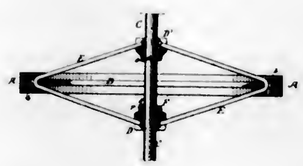
4. In a plow, the combination of the mold-board Q, provided with the steam-jacket R on the back thereof, and the landside S, provided with the steam-jacket T on the back thereof, the pipe *p*, connecting the steam-jackets R T and serving as a brace between the landside and mold-board of the plow, substantially as herein specified.

5. In a plow, the combination, with the mold-board Q, provided with the steam-jacket R, and the landside S, provided with the steam-jacket T, of the boiler P, carried by the frame of the plow, and pipe-connections between the steam-room of the boiler and the steam-jackets, substantially as herein shown and described.

6. In a plow, the combination, with the mold-board Q, provided with the jacket R, and the landside S, provided with the jacket T, of the pipe *p*, the boiler P, the water-reservoir U, provided with the air-cock *y*, the valves *w x*, and the flexible pipe-connections connecting the boiler and the water-reservoir U with the jackets R T, substantially as herein shown and described.

339,611. WHEEL. WILLIAM ZIEBER, Jenkintown, Pa., assignor to the Williams Tension Wheel Company, Newark, N. J. Filed Jan. 27, 1886. (No model.)







Claim.—1. A wheel having tension-spokes and an axle or axle-ox provided with a pin or projection, and a tensioning device having steps of different heights, combined with said pin or projection, substantially as specified.

2. A wheel having tension-spokes and an axle or axle-box provided with a pin or projection, and a tensioning device having inclined steps of different heights, substantially as described.

3. The combination of the tension-spokes of a wheel, and hubs to which the spokes are connected, with an axle or axle-box, a pin or projection thereon, and a nut, F, having steps of different heights interposed between one of the hubs and the pin or projection, substantially as set forth.

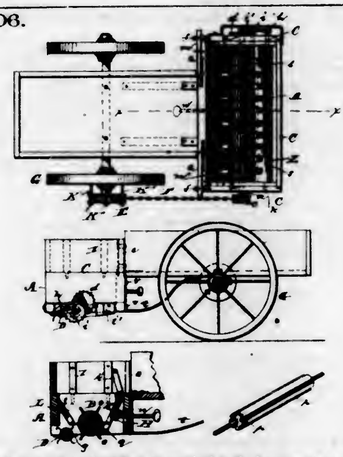
REISSUES.

10,706. FERTILIZER-DISTRIBUTER. JOHN R. ANTHONY, Sherman City, Kans. Filed Dec. 10, 1885. Original No. 278,483, dated May 29, 1883.

Claim.—1. The side boards C C and adjustable open side boards *e*, in combination with the frame A, whereby the frame can be adjusted to different wagons, as set forth.

2. In a fertilizer-distributer, a receptacle adapted to be secured to a wagon-body of ordinary construction, consisting of a box, A, having a superstructure with adjustable end boards located above the bottom

10,706.



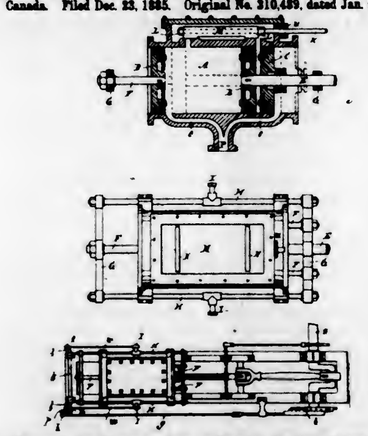
board of the wagon, inclined boards attached to the box so as to converge toward each other, a rotary cylinder driven from the wheel of the wagon, and a rapidly-rotating cylinder located and geared near the feeding-cylinder, the parts being combined and organized substantially as shown.

3. In combination with a wagon or cart, a fertilizer-distributer having means for attaching the same to the end of the wagon-body, the forward end board of the hopper being adjustable, so that the opening into the hopper and the wagon-body will be substantially the same width, the parts being constructed and combined substantially as shown, and for the purpose set forth.

4. In a fertilizer-distributer, the receptacle A, having journaled therein a rotary cylinder, B, and adjacent thereto a rapidly-rotating cylinder with projecting fingers, and inclined bottom board rigidly secured to the side of the receptacle, and a pivoted bottom board having a spring, H, against which bears a set-screw, *n*, the parts being combined and organized substantially as shown, and for the purpose set forth.

5. In a fertilizer-distributer, the receptacle A, detachably connected to a wagon-body of ordinary construction and provided with a rotary feeding-cylinder, the outer end of the shaft of which is provided with a pulley, *c*, a pulley, E, rigidly mounted on the hub of the supporting-wheel and attached to the spokes thereof by means of hooks K', and drive-chain F, the parts being organized substantially as set forth.

10,707. STEAM-ENGINE. WILLIAM S. ARNOLD, Chatham, Ontario Canada. Filed Dec. 23, 1885. Original No. 310,489, dated Jan. 6, 1885



Claim.—1. In a steam-engine, a cylinder having independent steam and exhaust ports and a steam-space shorter than the stroke of the piston, combined with two movable piston-heads reciprocatingly actuated so as to prevent the formation of a steam-space on the steam-side of the piston during the initial portion of the stroke, and to alternately close and open each exhaust-port, substantially as described.

2. In a steam-engine having separate steam and exhaust ports, the combination of the cylinder, movable piston cylinder-heads, a sliding frame by which these piston cylinder-heads are carried, and suitable connections with the crank-shaft for reciprocating said sliding frame to cause said piston-heads to alternately close and open each exhaust-port, substantially as described.

3. In a steam-engine having a cylinder provided with independent steam and exhaust ports, and the steam-space of which is shorter than the stroke of the piston, and is formed between movable piston-heads, a sliding frame to which said piston-heads are secured, and by means of which they are moved at the beginning of each stroke to translate the steam-space of the cylinder the necessary distance to accommodate it to the stroke of the piston and to alternately close and open each exhaust-port, substantially as specified.

4. In an engine having independent steam and exhaust ports, substantially as described, the combination of the movable piston-heads D C, the sliding frame to which they are secured, of suitable connection with the engine for reciprocating said sliding frame to cause said piston-heads to alternately close and open each exhaust-port, and of a crank-motion in said connection which stops on its centers so as to lock the sliding frame, all substantially as described.

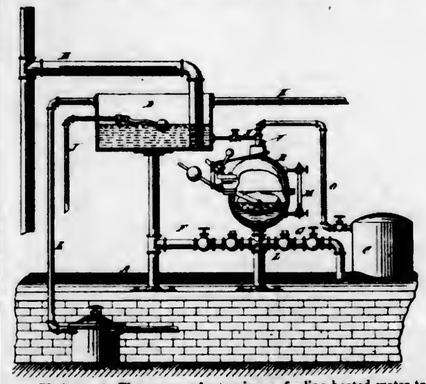
5. In an engine substantially as described, the combination of the movable piston-heads D C, the reciprocating sliding frame by which they are carried, the wrists I, the rock-shaft *k*, operated by the engine, the cranks *l* on said rock-shaft, and the links *m*, all substantially as described.

6. The combination, in a steam-engine, with the movable piston-heads C D, and the rods H and cross-heads G, connecting the same, of the crank-shaft *a*, disk *b*, having projection *c*, the plate *d*, with projections *e e''*, the crank-shaft *k*, and connection between the cranks *a k*, substantially as and for the purpose specified.

7. The combination, in a steam-engine, of the side bars, H H, provided with wrist-pins I I, the cross-heads G G, carried by said side bars, the piston-rods F F F, secured to cross-heads G G, the piston-heads C D, secured to piston-rods F F F, all having an intermitting reciprocating motion derived from and operated by the mechanism consisting of the disk *b*, with its projection *c*, said disk being secured to the shaft *a*, the plate *d*, with its projections *e e''*, the rod *g*, which connects the plate *d* to the upper end of the slotted rocking lever *i*, the sliding block *j*, the wrist-pins *o p*, the cranks *l l*, the crank-shaft *k*, and the connecting-rods *m m*, which connect the wrist-pins *o p* with the wrist-pins I I on the side bars, H H, all substantially as described, and for the purposes specified.

8. In a steam-engine cylinder, the combination of the movable piston-heads C D with the steam-ports N N, a valve, M, a piston, B, moving independently of the piston-heads C D, and the independent exhaust-ports O O, substantially as shown, and for the purposes specified.

10,708. APPARATUS FOR RETURNING AND FEEDING WATER TO STEAM-BOILERS. TIMOTHY J. KIELEY, New York, N. Y. Filed July 18, 1884. Original No. 273,367, dated Mar. 6, 1883.

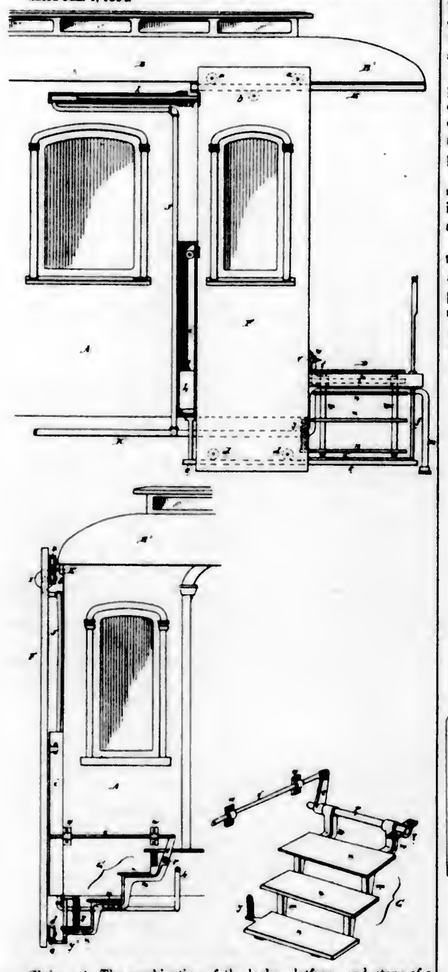


Claim.—1. The system of returning or feeding heated water to a boiler, which consists in collecting the water of condensation from a closed steam heating-coil in a drain-trap or receiving-vessel into which the water enters, and which is located at the lowest point of the closed system, of carrying said water upward to a tank above the water-level of the boiler, of delivering said water into said tank above said water-level, of adding thereto such additional water as may be necessary to supply the boiler, and of heating said combined water before it passes to a returning steam-trap by the exhaust from said trap, substantially as described.

2. The double valve shown, which consists of shaft V, provided with arms W W, projecting at right angles to and on the same side of

shaft V, and with two valves, S and T, one of which seats down and the other of which seats up, the valve S being closed while the valve T is opened, and vice versa, substantially as described.

10,709. **SAFETY-DOOR FOR RAILROAD-CAR PLATFORMS.** FRANK LAFFIN, Wilmington, Del., assignor, by mesne assignments, to E. M. Marter and George W. Marter. Filed Jan. 9, 1886. Original No. 291,363, dated Jan. 1, 1884.



Claim.—1. The combination of the body, platform, and steps of a car with a sliding door, F, constructed to be moved to a position in front of or away from the steps, substantially as set forth.

2. The combination of the body, platform, and steps of a car, and the counterbalanced sliding door F, with a plunger, H, and cylinder I, and with pipes, through which air or water under pressure may be introduced into the cylinder, all substantially as specified.

3. The combination of the body and platform of a car, and the sliding door F, and bolt r, with yielding steps G and mechanism whereby the movement of the steps is imparted to the bolt, substantially as described.

4. A car-body having one or more platforms or floors from which the passengers enter or leave the car, in combination with one or more safety-doors, adapted to be moved in front of or away from said platforms to prevent or enable the passage of the passengers, and mechanism, substantially as described, operating by an aeriform or fluid medium under pressure to actuate said safety door or doors, substantially as and for the purpose specified.

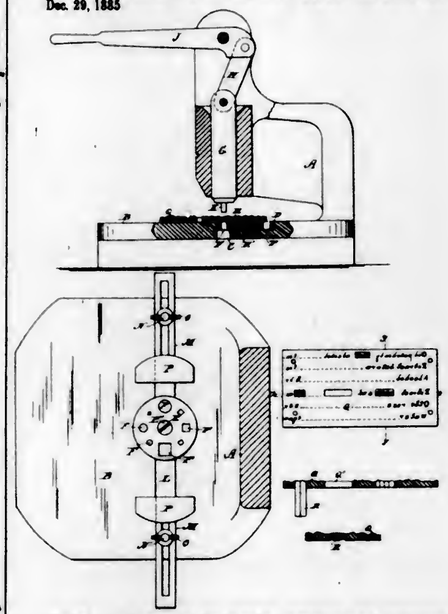
5. A car-body having one or more platforms or floors from which the passengers enter or leave the car, in combination with one or more safety-doors, adapted to be moved in front of or away from said platforms to prevent or enable the passage of the passengers, and mechanism, substantially as described, operating by an aeriform or fluid medium under pressure to actuate said safety door or doors, the mechanism for operating all of the doors being connected to the same source of power, whereby they all act simultaneously, substantially as and for the purpose specified.

6. A car having one or more safety-doors to prevent the egress of passengers except at the proper time, in combination with mechanism operating by an aeriform or fluid medium under pressure to operate said door, and pipes extending from one end of the car to the other communicating with said mechanism and adapted to be coupled with a supply-pipe on another car, substantially as and for the purpose specified.

7. A car provided with a safety-door to prevent the egress of passengers except at the proper time, in combination with suitable mechanism for operating said door from the locomotive or tender, substantially as and for the purpose specified.

8. A car-body provided with a movable door to close or open to the passage-way from the car, in combination with a locking device and a support over which the passenger walks, whereby the weight of the passenger automatically locks the opened door, preventing its being closed until he has passed the door, substantially as and for the purpose specified.

10,710. **MACHINE FOR MENDING STEREOTYPE-PLATES.** JACOB NORTH, Lincoln, Nebr. Filed Feb. 18, 1886. Original No. 333,325, dated Dec. 29, 1885



Claim.—1. A machine for mending stereotype and electrotype plates, consisting in the base B, standard A, having the plunger G, the revolvable die E on the base below the plunger, and having a series of type-sized apertures, F, and the clamps on opposite sides of the die E, substantially as set forth.

2. In a machine for mending stereotype and electrotype plates, the combination of the base having a circular recess, and the circular die E therein flush with the surface of the base, and provided with a series of type-sized apertures, and a series of type-sized male dies corresponding in size to the said apertures, substantially as set forth.

3. In a machine for mending stereotype and electrotype plates, the combination, with base B, having the grooves L and central recess, D, between the same, of the die E in the said central recess, and the slotted bars M, adapted to slide in the slots L, and provided with clamping-jaws P and set-screws N O, as set forth.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

THE CELLULOID MANUFACTURING COMPANY *v.* AMERICAN ZYLONITE COMPANY *et al.*

Decided March 4, 1886.

1. "This is a bill in equity to restrain the defendants from the alleged infringement of Letters Patent No. 156,353, granted October 27, 1874, to John W. Hyatt and Isaiah S. Hyatt, assignors to the complainant, for an improvement in the manufacture of celluloid. The defenses are want of novelty, non-patentability, and public use in the United States of the alleged improvement for more than two years before the application for the letters patent with the consent and allowance of the patentees. Under the defense of want of novelty the patents which the defendants introduced in evidence and relied upon were three American letters patent to Daniel Spill, No. 91,377, dated June 15, 1869, No. 97,454, dated November 30, 1869, and No. 101,175, dated March 22, 1870."

2. "The question of prime importance in the case is as to the patentability of the process." "It must be noted that the question is not whether the process was a patentable improvement over what was practiced in 1862 under the name of the 'Spill process,' but whether it was an invention in view of the state of the art in 1874. It was for an improved process, whereby, instead of mixing a solid and a liquid and straining the mass to remove undissolved particles, and evaporating the liquid in an air-tight condenser, the invention mixed two solids and added a liquid, then, having pressed out the moisture and masticated the compound in rolls, they relied upon heat and pressure to effect or complete the transformation with solid celluloid, the pressure being that described, and the degree of heat being less than that described in No. 5,928. The discussion in regard to these processes should not be confined to a comparison between the different methods of introducing the liquid solvent to the mixture, but the difference extends to the respective methods subsequently used in the process of transformation. It cannot be denied that No. 5,928 was clearly a new and patentable process, and that it radically differed from its predecessors. I think it is plain that the patent in suit is not an abandonment of No. 5,928 and a mere return to the old liquid solvent process, which consisted in first dissolving the solid pyroxyline in a large amount of liquid and then evaporating the solvent, but was a retention of the new process of perfect admixture of two solids, and then a transformation by heat and pressure, except as modified by the introduction of alcohol to the mixture of pyroxyline and dry camphor. Neither was the process of the patent in suit a mere change of proportions from those given in the Spill formula."

3. "The defendants also say that the process was publicly used for more than two years before the date of the application for a patent. During the experiments which resulted in the discovery of the patented process some poor dental plates were sold, Without going carefully into an examination of the testimony, the case is within the principles announced in *Pitts* v. *Hall* (2 Blatchf. C. C. R., 229) and *Elizabeth* v. *Pavement Co.*, (97 U. S., 236.)"

Mr. Frederic H. Betts and *Mr. William D. Shipman* for the complainant.

Mr. Horace M. Ruggles and *Mr. Benjamin F. Thurston* for the defendants.

SHIPMAN, *J.:*

This is a bill in equity to restrain the defendants from the alleged infringement of Letters Patent No. 156,353, granted October 27, 1874, to John W. Hyatt and Isaiah S. Hyatt, assignors to the complainant, for an improvement in the manufacture of celluloid. The defenses are want of novelty, non-patentability, and public use in the United States of the alleged improvement for more than two years before the application for the letters patent with the consent and allowance of the patentees. Under the defense of want of novelty the patents which the defendants introduced in evidence and relied upon were three American letters patent to Daniel Spill, No. 91,377, dated June 15, 1869, No. 97,454, dated November 30, 1869, and No. 101,175, dated March 22, 1870.

An understanding of the case depends materially upon a knowledge of the state of the art at the date of the patent in suit, and I therefore give a brief history of the article which is now known as "zylonite" or "celluloid."

Pyroxyline or gun-cotton, "an explosive obtained by immersing vegetable fiber in nitric and sulphuric acids and subsequent drying," (Knight's Mechanical Dictionary,) was invented by Schönbein in 1846. The great anticipations which were originally had of the invention as a substitute for gunpowder were never realized. It proved to be too dangerous and uncertain to be used as an explosive material. In 1847 or 1848 Dr. Maynard, of Boston, discovered that it could be dissolved in alcohol and ether and used as a vehicle for medicines and as a substitute for sticking-plaster, and gave the name "collodion" to this solution. Passing by the introduction of collodion by Frederick Scott Archer in 1851 to the art of photography, Alexander Parkes, of England, discovered in 1855 that a solution of pyroxyline mixed with other articles could be made after the solvent was evaporated into a substance having the qualities of ivory or of horn, and which could be easily molded or worked and receive any desired color. Mr. Parkes suggested a number of solvents, took out a number of patents, entered vigorously upon the manufacture of the material, which he called "Parkesine," and made exhibitions of the various articles into which it was wrought; but from some cause his enterprise lacked success, and was abandoned in 1867. The general question of solvents lay at the bottom of the practical difficulties in the manufacture. After the pyroxyline had been dissolved the problem was how to get rid of the solvent, so that the conversion of the dissolved material from a semi-fluid state into a hard substance, or a substance that would become hard, was practicable. Evaporation was the method which was used.

In 1869 Mr. Daniel Spill, of England, received the American Patent No. 97,454, which fairly represents the extent of information which the public or any individual had at that time on the question of pyroxyline solvents. His subsequent patent, No. 101,175, also represents the point which had been reached at its date in 1870 in the process of transforming dissolved pyroxyline into zylonite, the name which Mr. Spill gave to the completed article. In No. 91,377, dated June 15, 1869, he had described an invention relating to the production of compounds containing xyloidine, which in—

the admixture of xyloidine with animal, fish, vegetable, or mineral oils, oxidized or otherwise, such, for example, as vegetable or mineral tar, lard-oil, cod-liver oil, linseed-oil, or heavy coal-oils, or with mixtures of the same, together with the admixture of other ingredients, such as paraffine camphor, resins, fat, wax, india-rubber, gutta-percha, or balata gum, or mixtures of the same, so as to produce a material or materials which may be employed, either alone or in conjunction with pigments or other inert bodies, for the production of a compound which may be applied for useful purposes in the arts, such as for molding into forms, or for rolling into sheets, or otherwise, for spreading either upon or between fabrics, or otherwise, or for the coating of metals and wood.

No. 97,454 related, the patentee stated in his specification—

to the preparation and use of certain solvents of xyloidine and which differ from the ordinary or known solvents of xyloidine in that those menstrua which are employed are not necessarily in themselves solvents of xyloidine, but become so by the addition of the bodies, compounds, or substances herein referred to.

The inventions consisted in the employment, as a solvent of xyloidine, of one of seven described combinations of ingredients, and—

in the employment of any two or more of any of the before-mentioned solvents, either in the proportion of about equal parts or in other proportions.

The second solvent which the patentee described was—

camphor, or camphor-oil, or mixtures of the same, in conjunction with alcohol or spirits of wine, the same to be employed in about equal proportions.

It has been decided by Mr. Justice Blatchford that the public had been previously informed by Mr. Parkes that dehydrated or strong alcohol was of itself a solvent of pyroxyline, and was instructed to mix it with camphor as such solvent, and that therefore Mr. Spill's improvement so far as the use of camphor and alcohol was concerned was not patentable. (*Spill* v. *Celluloid Manufacturing Co.*, 22 *Blatchf., C. C. R.*, 441.)

This somewhat vague patent was followed by No. 101,175, which was for a method of converting vegetable fibers into xyloidine, for a process of bleaching, and for a process of dyeing it, and for a mode of preparing it for spreading upon surfaces or fabrics in a semi-fluid condition, and for a process of treating it so as to bring it to a nearly dry condition for the production of solid articles.

From the patent it appears that Spill's practice was to dissolve one part of xyloidine in from five to twelve parts of solvents. Five parts would produce a stiff paste, to which solution pigments were added, and the paste was then—

strained through a fine sieve, under pressure, to remove any mechanical impurities, after which operation it is in a fit condition for spreading upon surfaces or fabrics in a semi-fluid condition.

When the compound was to be prepared for the production of solid articles, the paste, after it had been strained, was placed in an air-tight chamber provided with mechanical stirrers, the chamber being "in connection with a condenser and a reservoir, and also, by preference, being in connection with an exhausting or vacuum-producing apparatus." Heat being applied to the mixing apparatus and the agitator being set in motion, the solvents are evaporated and conveyed away to the condenser for future use. It thus appears that Mr. Spill first made a paste, then strained the solution to remove mechanical impurities or undissolved particles of xyloidine, and to make solid articles the excess of volatile solvents was then evaporated in an air-tight machine connected with a condenser for saving such solvents. By this process zylonite was made at and prior to 1874. The article had defects incident to its method of manufacture. By reason of an imperfect admixture of xyloidine and an unnecessary amount of liquid solvent there remained lumpy particles of undissolved fiber. The excess of liquid must be mechanically evaporated, and notwithstanding the evaporation the solid article was too soft, unless made hard and strong by the admixture of some other substances.

In 1870 John W. Hyatt, Jr., and Isaiah S. Hyatt made the important discovery that camphor alone, when mixed with pyroxyline, the mass being treated to from 150° to 200° Fahrenheit, and subjected to heavy pressure, was a solvent of pyroxyline, the heat vaporizing or liquefying the camphor. The discovery and the new resulting process of making celluloid are described in the first reissue of No. 105,338, known as Reissue No. 5,928, dated June 23, 1874, as follows:

In the practice of our invention we prepare pyroxyline by grinding it in water to a fine pulp in a machine such as is used in grinding paper-pulp. We strain off the water as far as practicable, and then subject this pulp to powerful pressure—for example, in a perforated vessel, to further expel the aqueous moisture, and to bring it to a comparatively solid and dry state, yet still retaining sufficient moisture to prevent it from burning in the further stages of the process.

We comminute gum-camphor by grinding it in water, or, preferably, by pounding or rolling it, and thoroughly incorporate with the pyroxyline pulp in the condition last-above described this finely-comminuted camphor, in about the proportion of one part, by weight, of camphor to two parts, by weight, of the pyroxyline in the pulp. These proportions may, however, be somewhat varied with good results. The moisture in the pulp serves to counteract any tendency of the camphor to prematurely develop its converting power under any stimulus incident to its being incorporated with the pulp, or to the further stages of the process.

With the camphor we also thoroughly incorporate, with the pulp, any pigments, coloring matter, or other materials that may be adapted to the requirements of the articles into which the product is to be manufactured. The camphor, or camphor and other ingredients, having been thus thoroughly mixed with the pulp, we next subject the mass to a powerful pressure, in order to expel the remaining aqueous moisture, and thereby not only dry the mixture, but force the camphor into more intimate contact with the pyroxyline throughout the mass, so that every atom of the camphor shall be in condition and place to exert its utmost converting power as developed. The dried and compressed mass is next placed in a suitable mold or vessel open at the top, and into this open top is fitted a platen or plunger. The vessel is then placed in a hydraulic or other powerful press, and a heavy pressure, applied to the platen or plunger, is brought to bear upon the mixture, which, while thus under pressure, is heated up, by steam or other convenient means, to a temperature of from 150° to 300° Fahrenheit, varying according to the quantity of the mixture, and the mixture is kept at this temperature and under this pressure until the converting power of the camphor shall have been exerted upon the pyroxyline throughout the mass, the heat developing the latent converting power of the camphor, and the camphor exerting this converting power actively upon every atom of the pyroxyline, with which the pressure maintains it in close contact. The process of transformation is rapidly effected, and is completed almost as soon as the mass attains its maximum temperature, the resulting product being a homogeneous product, solidified collodion, or collodion compound having the qualities or properties hereinbefore specified. This product, as it comes from the press, is of a consistency resembling that of sole-leather, but upon exposure to the atmosphere it hardens, by reason of a slight evaporation of the camphor. The ultimate product includes, however, a large proportion of the camphor as a permanent accretion to the mass, which accretion is not only a great gain over the use of ether, alcohol, or other solutions or volatile solvents, which would be entirely expelled or lost, but by its presence gives the solidified collodion or compound the new capability of being again rendered plastic by heat, and remolded into any desired form or shape without requiring the use of solutions or volatile solvents, or the addition of fusible gums, as heretofore.

The discovery that camphor was a solvent of pyroxyline without the admixture of a liquid, though chemically important, was not practically available in the art, by reason of the danger of explosion of the pyroxyline when the camphor was heated to a melting-point. The patentees therefor devoted themselves, with the knowledge they had gained that liquid solvents could be dispensed with, to the discovery of a process which should be safe and yet possess the mechanical advantages in which the process of No. 5,928 was the pioneer. The invention described in the patent in suit was the result. The specification describes the invention as follows:

In our Reissued Letters Patent No. 5,928, granted June 23, 1874, camphor is set forth as a solvent of pyroxyline when the same is subjected to intimate mixture, and then to heat and pressure. Our present invention is made for lessening the quantity of camphor or equivalent solvent made use of; also the degree of heat required in the manufacture of celluloid.

We prepare a compound pulp composed of pyroxyline, gum-camphor, &c., as described in the said above-named reissued Letters Patent, but in different proportions, the proportions suited to this new process being about one hundred (100) parts of dry pyroxyline and from twenty-five (25) to forty (40) parts of gum camphor, (varying with the consistency required in the finished product,) together with such coloring or other material as may be desired.

When these ingredients are thoroughly intermixed, as set forth in such reissued Letters Patent, and the aqueous moisture expelled therefrom, which may be advantageously accomplished by the plan set forth in our Letters Patent of November 19, 1872, and numbered 133,229, from twenty (20) to forty (40) per cent. of alcohol is added, and the whole mass kept within a closed vessel until the alcohol is evenly diffused throughout all its parts, the proportions named in the reissued Letters Patent referred to being one hundred parts of dry pyroxyline to fifty parts of gum-camphor. After this even diffusion the mass is well masticated between rollers heated to 135° Fahrenheit. The particles of pyroxyline and other materials, such as coloring matter, are brought intimately into contact with the camphor by the action of the alcohol and the mastication, and a semi-transformation takes place, and the material is in a better condition for the final heating and converting process, so that from fifty to seventy-five degrees less heat is required to complete the transformation of the pyroxyline and solvents into celluloid than is required where no alcohol is used.

Nitrous ether and some other solvents of gum-camphor may be substituted for alcohol in this process.

The claim is as follows:

The process herein set forth of manufacturing celluloid by the addition to the mass composed of pyroxyline and camphor of a solvent of camphor, in about the proportion set forth, and previous to mastication, heat, and pressure.

To this process, and to the knowledge and skill which grew out of an acquaintance with it, is due the present commercial success of zylonite or celluloid as an article which can be devoted to a very great variety of uses.

The question of prime importance in the case is as to the patentability of the process. The plaintiff insists that Reissue No. 5,928 disclosed an invention which is admitted to have been novel and patentable, which broke the control heretofore held by liquid solvents, relied upon heat and pressure to develop the action of the solid solvent, and pointed the way toward success in the manufacture of solid celluloid, and that the patent in suit is an improvement upon the process of No. 5,928, and is therefore patentable.

The defendants say that the patent in suit is simply a return to the well-known spirits of camphor solvents, and that if the time of the application of the alcohol to the camphor is not an immaterial matter, yet, when it is once known that spirits of camphor are a solvent, there is nothing patentable in the order in which the liquid or camphor is introduced into the tub; but the changes or modifications in the manner of applying the solvent are only a carrying forward of the original thought, which does not constitute invention. It is true that it was well known in 1874 that spirits of camphor were a solvent of pyroxyline, and a mode in which the solvent could be applied was well known, and if the alleged invention consisted merely in a new and different method of mixing the spirits of camphor with the pyroxyline, whereby a better result was produced, it would contain nothing patentable. But the invention had a wider scope. It must be noted that the question is not whether the process was a patentable improvement over what was practiced in 1882 under the name of the "Spill process," but whether it was an invention in view of the state of the art in 1874. It was for an improved process whereby, instead of mixing a solid and a liquid and straining the mass to remove undissolved particles, and evaporating the liquid in an air-tight condenser, the invention mixed two solids and added a liquid, then, having pressed out the moisture and masticated the compound in rolls, they relied upon heat and pressure to effect or complete the transformation with solid celluloid, the pressure being that described, and the degree of heat being less than that described in No. 5,928. The discussion in regard to these processes should not be confined to a comparison between the different methods of introducing the liquid solvent to the mixure, but the difference extends to the respective methods subsequently used in the process of transformation.

It cannot be denied that No. 5,928 was clearly a new and patentable process, and that it radically differed from its predecessors. I think it is plain that the patent in suit is not an abandonment of No. 5,928 and a mere return to the old liquid solvent process, which consisted in first dissolving the solid pyroxyline in a large amount of liquid and then evaporating the solvent, but was a retention of the new process of perfect admixture of two solids, and then a transformation by heat and pressure, except as modified by the introduction of alcohol to the mixture of pyroxyline and dry camphor. Neither was the process of the patent in suit a mere change of proportions from those given in the Spill formula.

The defendant corporation has used from time to time, since its organization in 1882, the patented process, unless the fact that it mixes dry camphor with pyroxyline rendered abnormally dry and then adds the alcohol, and does not subject the mixture to pressure for the purpose of expelling dampness, constitutes a departure from the process described in the patent. Each method starts with wet pyroxyline. Hyatt brings the pulp in the first place to a comparatively dry state, adds the camphor, and then expels the remaining moisture. The defendants made the pulp abnormally dry in the first instance. They omit no step which the patent describes, and there is no substantial difference in the methods in which the process is used. The defendants also say that the process was publicly used for more than two years before the date of the application for a patent. During the experiments which resulted in the discovery of the patented process some poor dental plates were sold. Without going carefully into an examination of the testimony, the case is within the principles announced in Pitts v. Hall, (2 Blatchf. C. C. R., 229,) and Elizabeth v. Pavement Co., (97 U. S., 126.)

Let there be a decree for an injunction and an accounting.

U. S. Circuit Court—Southern District of New York.

FORSCHNER v. BAUMGARTEN *et al.*

Decided March 16, 1886.

1. "This suit is brought upon Patent No. 214,643, dated April 22, 1879, and granted to the plaintiff for an improvement in scale-

pans for weighing. The specification sets forth the scale-pan as 'made entire of glass,' with strong lugs, one on each side, opposite each other, with two holes in each for a suspending bow of metal divided at each end into two branches, to be put through the two holes in each lug and fastened there with nuts. The claim is for a scale-dish formed with extended lugs, each having two holes through it, in combination with double suspending bows passing down through the holes and secured beneath the same, substantially as specified. One of the defenses set up is want of patentable novelty." "The plaintiff merely combined a known glass dish with a known branching bow in substantially the same manner in which a metallic dish had been combined before, the difference being merely formal and mechanical. This does not appear to amount to such invention as to be sufficient to support a patent."

2. "The result is that the patent must be adjudged invalid." Decree entered that the patent is invalid and the bill dismissed, with costs.

Mr. R. B. McMaster for the plaintiff.

Mr. Louis C. Raegner for the defendant.

WHEELER, *J.*:

This suit is brought upon Patent No. 214,643, dated April 22, 1879, and granted to the plaintiff for an improvement in scale-pans for weighing. The specification sets forth the scale-pan as "made entire of glass," with strong lugs, one on each side, opposite each other, with two holes in each for a suspending bow of metal divided at each end into two branches, to be put through the two holes in each lug and fastened there with nuts. The claim is for a scale-dish formed with extended lugs, each having two holes through it, in combination with double suspending bows passing down through the holes and secured beneath the same, substantially as specified. One of the defenses set up is want of patentable novelty.

A scale-dish of glazed porcelain is shown to have been described in the *Mechanic's Magazine*, a printed publication in 1836, volume 25, page 23, as in use by a Mr. Juggins, a dealer in butter and cheese in London, and the forming of scale-pans of "glass, or, it may be, porcelain," is set forth as part of the invention of Edward Dowling in his specification for an English patent April 14, 1859. Metallic scale-pans suspended on branching bows, like those of the plaintiff's patent, are shown to have been made and on sale in this country prior to the plaintiff's invention. This fact is shown in part by catalogues, not set up in the answer, and objected to for that reason. They are considered, however, as evidence in support of allegations of prior knowledge and use by others properly made in their answer, and not as prior publications describing the invention and constituting anticipations, within the statute, of themselves. They appear to be properly in evidence for this purpose. The description of the scale-pans of Juggins and of Dowling do not show the modes of attachment to the bales. The metallic pans suspended on branching bows are shown to have been attached by lugs soldered or riveted to the dishes through which the branches of the bows are put and fastened with nuts. These bows and the fastenings on them are the same as those of the plaintiff's patent. The only difference between the lugs of the patent and those in use before is that those of the patent are extensions of the dish, while the others are fastened to the dish of the same material, and those of the patent are broad enough to include the two holes for the branches of the bow on each side in each lug, while the others are single for each branch of the bow. The office of the lugs is merely to suspend the dish, and the usefulness and operation of the dish are not altered by the difference between a single lug large enough for the two holes and single lugs for each for the two branches of the bow. The plaintiff had only to suspend a known glass dish by a known branching bow. An obvious method of doing that was by putting the branches of the bow through holes in the edges of the dish or extensions of the edges. This is a well-known way of suspension which any mechanic skilled in working the materials would use or might use. If it were a wooden dish or a metallic one, a mechanic who was shown the dish and the bale with branches and nuts for the ends of the branches, and who was put to suspend the dish on the bale if it were wooden, and he had skill for making holes through wood, or it was iron and he had skill for making holes through that, he would readily, by his mechanical skill, make the holes and put the branches of the bale through, and put on the nuts, and the dish would be suspended; and, likewise, the dish being glass, a worker in glass skilled to make holes in the edges of the dish through the glass, or to make a dish with the holes, would suspend it in the same manner. The plaintiff merely combined a known glass dish with a known branching bow in substantially the same manner in which a metallic dish had been combined before, the difference being merely formal and mechanical. This does not appear to amount to such invention as to be sufficient to support a patent. (*Hotchkiss* v. *Greenwood*, 11 How., 248; *Pearce* v. *Mulford*, 102 U. S., 112: *Hollister* v. *Benedict* Mfg. Co., 113 U. S., 59.) The result is that the patent must be adjudged invalid.

Let a decree be entered that the patent is invalid and the bill dismissed, with costs.

U. S. Circuit Court—Eastern District of Pennsylvania.

SHEEDER v. SHANNON. SHEEDER v. BICKING.

Decided October 10, 1885.

INFRINGEMENT.

Letters Patent No. 210,714 were granted to complainant for a combination of heating-pipes, and metallic plates applied thereto, constructed with flexible tubes, gum tubing, or suitable rock-joints, so as to permit the elevation or lowering of the pipes without interfering with the circulation of the steam through them. *Held*, that these flexible joints must be regarded as distinguishing and essential features of the construction of the pipes, and that a machine of which hinge-joints are not a constituent is not an infringement of said combination.

Mr. S. W. Pennypacker for the complainant.

Mr. H. M. Deckert for the respondent.

PER CURIAM:

The second claim of the complainant's patent is the only one in controversy here. It is for a combination of heating-pipes, D, and metallic plates E,

applied thereto, forming rests for the boards to be dried, and causing the heat from said pipes to be distributed uniformly over said boards, as set forth.

Referring to the body of the specification, the pipes D are "set forth" as constructed with flexible tubes, gum tubing, or suitable rock-joints, so as to permit the elevation and lowering of the pipes D without interfering with the circulation of the steam through them. These flexible joints must be regarded as distinguishing and essential features of the construction of the pipes D, and, in view of the prior state of the art, must be held to be the specific pipes designated in the second claim of the patent. Hinge-joints are not a constituent of the machine used by the defendant, and hence are not an infringement of the patented combination.

The bill must therefore be dismissed, with costs.

A similar decree will be entered in the case of *Sheeder* v. *Bicking*.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes: since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth.....$10 00

INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pp.—

Bound half-turkey	2 50
Bound in cloth	1 25
Paper covers	1 00

Issue of April 13, 1886.

Patents	459	No. 339,612 to No. 340,070, inclusive.
Designs	22	No. 16,606 to No. 16,623, inclusive.
Trade-Marks	21	No. 13,172 to No. 13,192, inclusive.
Labels	3	No. 4,786 to No. 4,788, inclusive.
Reissue	1	No. 10,711.
Total issue	506	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Montana Territory	.....	.....
Arizona Territory	.....	.....	Nebraska	2	.....
Arkansas	.....	.....	Nevada	1	.....
California	10	1	New Hampshire	6	.....
Colorado	4	.....	New Jersey	18	1
Connecticut	25	.....	New Mexico Territ'y	.....	.....
Dakota Territory	2	.....	New York	74	8
Delaware	1	.....	North Carolina	.....	.....
District of Columbia	8	.....	Ohio	51	.....
Florida	.....	.....	Oregon	1	.....
Georgia	2	1	Pennsylvania	64	3
Idaho Territory	.....	.....	Rhode Island	4	1
Illinois	36	3	South Carolina	1	1
Indian Territory	.....	.....	Tennessee	.....	.....
Indiana	16	.....	Texas	6	.....
Iowa	6	.....	Vermont	4	.....
Kansas	2	.....	Virginia	2	1
Kentucky	7	.....	Washington Territ'y	.....	.....
Louisiana	2	.....	West Virginia	1	.....
Maine	4	.....	Wisconsin	11	.....
Maryland	5	.....	Wyoming Territory	.....	.....
Massachusetts	34	1	United States Army	.....	.....
Michigan	12	2	United States Navy	.....	.....
Minnesota	8	.....			
Mississippi	2	.....	Total to citizens of the United States	452	23
Missouri	20	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria	.....	.....	Germany	5	.....
Barbadoes	.....	.....	Guatemala	1	.....
Belgium	.....	.....	Hawaii	.....	.....
Bermuda	.....	.....	Holland	.....	.....
Brazil	.....	.....	Mexico	.....	.....
Canada	5	.....	Newfoundland	.....	.....
Central America	.....	.....	New Zealand	.....	.....
Colombia, U. S. of	.....	.....	Scotland	1	.....
Cuba	.....	.....	South Australia	1	.....
Denmark	.....	.....	Switzerland	1	.....
Egypt	.....	.....			
England	13	.....	Total to citizens of foreign countries	29	1
France	2	1			

DESIGNS.

16,608.—TRAVELING BAG, &c.—*Charles H. Buchanan*, Philadelphia, Pa., assignor to *The American Novelty Shoe Company*, same place. Application filed November 28, 1885. Serial No. 184,225. Term of patent 3½ years.

16,609.—SHOE.—*Charles H. Buchanan*, Philadelphia, Pa., assignor to *The American Novelty Shoe Company*, same place. Application filed January 2, 1886. Serial No. 187,489. Term of patent 14 years.

16,610.—LAMP-STANDARD.—*Pierre E. Guerin*, New York, N. Y. Application filed March 4, 1886. Serial No. 194,068. Term of patent 3½ years.

16,611.—BOW FOR EAR-RINGS.—*Anthony Hessels*, New York, N. Y. Application filed February 17, 1886. Serial No. 192,309. Term of patent 7 years.

16,612.—TRAY.—*August Ledig*, Philadelphia, Pa. Application filed February 13, 1886. Serial No. 191,901. Term of patent 3½ years.

16,613.—DISHES AND TABLE-WARE.—*Homer Laughlin*, East Liverpool, Ohio, and *Elijah Cheteynd*, Hanly, county of Stafford, England; said *Chetwynd* assignor to said *Laughlin*. Application filed January 25, 1886. Serial No. 189,705. Term of patent 7 years.

16,614.—PADLOCK-CASE.—*Edwin C. Manning*, Washington, D. C. Application filed March 2, 1886. Serial No. 193,805. Term of patent 7 years.

16,615.—WOVEN FABRIC.—*James R. MacColl*, Pawtucket, R. I. Application filed January 7, 1886. Serial No. 187,924. Term of patent 7 years.

16,616.—BANNER-ROD.—*George R. Osborn*, New York, N. Y. Application filed August 5, 1885. Serial No. 173,059. Term of patent 7 years.

16,617.—EASEL.—*George R. Osborn*, New York, N. Y. Application filed March 1, 1886. Serial No. 193,684. Term of patent 14 years.

16,618.—DOOR-MAT.—*Michael O'Connor*, Jersey City, N. J., assignor to *The New Jersey Car Spring and Rubber Company*, same place. Application filed February 20, 1886. Serial No. 192,703. Term of patent 7 years.

16,619 to 16,623, inclusive.—CARPET.—*James G. Speck*, Philadelphia, Pa., assignor to *Ivins, Dietz & Magee*, same place. Applications filed March 12, 1886. Serial Nos. 195,011 to 195,015, inclusive. Term of patents 3½ years.

16,624 to 16,627, inclusive.—HUB-BAND.—*John Simpson*, Cleveland, Ohio, assignor to *The Cleveland Malleable Iron Company*, same place. Applications filed February 4, 1886. Serial Nos. 190,859 to 190,862, inclusive. Term of patents 14 years.

16,628.—OIL-STOVE.—*Charles O. Schwartz*, Milwaukee, Wis. Application filed October 24, 1885. Serial No. 180,785. Term of patent 7 years.

16,629.—BOX.—*Stephen F. Whitman*, Philadelphia, Pa. Application filed February 18, 1886. Serial No. 192,459. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

13,172.—TEAS.—*H. W. Banks & Co.*, New York, N. Y. Application filed March 16, 1886. Used since December 1, 1872.

"The representation of a black ball within which are contained the white letter 'E,' placed above the white letter 'Q,' and separated from the latter by a white line."

13,173.—LUBRICATING-OIL FOR WATCHES, CHRONOMETERS, AND CLOCKS.—*Rudolph Brandt* and *Carl Boss*, Chester, S. C. Application filed March 16, 1886. Used since January 1, 1886.

"The monogram 'R B.'"

13,174.—LEVER-BUTTONS FOR SLEEVES AND COLLARS.—*Robert S. Cutting*, Providence, R. I. Application filed February 25, 1886. Used since January 1, 1885.

"The word 'WESTMINSTER.'"

13,175.—CERTAIN NAMED GAME.—*Henry W. Edwards* and *William P. Bonbright*, Philadelphia, Pa. Application filed March 8, 1886. Used since February 1, 1886.

"The words 'PROGRESSIVE ANGLING.'"

13,176.—FAMILY SOAP.—*N. K. Fairbank & Company*, Chicago, Ill. Application filed February 10, 1886. Used since December 1, 1885.

"The word 'BULL.'"

13,177.—COUGH REMEDIES.—*Julius A. Fischer*, Atlanta, Ga. Application filed October 24, 1885. Used since 1881.

"The word and letters 'FISCHER'S N. E.'"

13,178.—SOAPS, LOTIONS, COSMETICS, TOILET-POWDERS, BANDOLINES, AND TOILET-WATERS.—*Charles Edwin Foote* and *Charles Clark Jenks*, Jackson, Mich. Application filed March 13, 1886. Used since March 1, 1884.

"The words 'LINDEN BLOOM.'"

13,179.—PRINTING AND EMBOSSING PRESSES.—*Merritt Gally*, New York, N. Y. Application filed March 5, 1886. Used since 1869.

"The word 'UNIVERSAL.'"

13,180.—WIRE NAILS.—*Hartman Steel Company, (Limited,)* Beaver Falls and Pittsburg, Pa. Application filed February 25, 1886. Used since January 1, 1885.

"The words 'NAIL FOR NAIL,' the first word 'NAIL' being formed of letters the different parts of which are wire nails, and the second word 'NAIL' being made of letters formed with ordinary cut nails."

13,181.—CERTAIN NAMED ARTICLES OF STATIONERY.—*Ivison, Blakeman, Taylor & Co.*, New York, N. Y. Application filed February 19, 1886. Used since 1860.

"The word 'SPENCERIAN.'"

13,182.—PREPARATION FOR TREATMENT OF COUGHS, COLDS, AND LUNG DISEASES.—*J. J. Mack & Co.*, San Francisco, Cal. Application filed December 28, 1885. Used since December 1, 1883.

"The words 'CURTIS COUGH-CURE' upon scrolls, one below the other, having ornamental ends and an ornamental engraved background, and diamond in outline suspended below the words and scrolls."

13,183.—BOTANIC NERVE-BITTERS.—*John P. Miller*, Philadelphia, Pa. Application filed February 19, 1886. Used since January 1, 1885.

"The representation of a pile of stones with bushes flanking it, in connection with the words 'BOTANIC NERVE BITTERS.'"

13,184.—TURPENTINE.—*W. B. Moore*, Chicago, Ill. Application filed March 16, 1886. Used since December, 1885.

"The word 'IMPERIAL.'"

13,185.—DENTAL CHEWING-GUM.—*Robert W. Morgan*, Lynchburg, Va. Application filed March 6, 1886. Used since February, 1886.

"The representation of a tooth inclosed or surrounded by or combined with a set of teeth comprising the teeth of the upper and lower jaw."

13,186.—WHEAT-FLOUR.—*Schoellkopf & Matheus*, Buffalo and Niagara Falls, N. Y. Application filed March 19, 1886. Used since May, 1876.

"The word 'SURPRISE.'"

13,187.—FURS FOR GARMENTS AND GARMENTS MADE WHOLLY OR IN PART OF FURS.—*René Alexandre Servant*, Lyons, France. Application filed January 9, 1886. Used since November 21, 1885.

"A monogram of the letters 'F' and 'H.'"

13,188.—WOVEN FABRICS.—*R. & H. Simon*, Union, N. J. Application filed February 18, 1886. Used since January 1, 1886.

"The representation of a female figure standing in a chariot, holding in the left hand a torch and in the right hand reins leading to a bird flying in front of the chariot."

13,189.—OLIVE-OIL.—*Société Hygiénique Alimentaire*, New York, N. Y. Application filed March 15, 1886. Used since January 18, 1886.

"The representation of the French Imperial crown, in colors of red and black and gold."

13,190.—EMULSION OF COD-LIVER OIL AND PLAIN COD-LIVER OIL.—*David M. Stiger & Co.*, New York, N. Y. Application filed March 4, 1886. Used since December 15, 1879.

"An escutcheon having a black band from its upper left to its lower right hand corner, in which are represented a foul anchor and two stars. The part above the band is dark and bears the representation of a cod-fish, and the part below is of lighter shade and bears three tridents."

13,191.—CRYSTALS OF PEPPERMINT-OIL AND PRODUCTS CONTAINING THE SAME.—*Albert M. Todd*, Nottawa, Mich. Application filed March 16, 1886. Used since August, 1884.

"The word 'PIPMENTHOL.'"

13,192.—CORSETS.—*Weedsport Skirt and Dress Company*, Weedsport, N. Y. Application filed March 16, 1886. Used since December 26, 1885.

"The word 'SECURITY.'"

LABELS.

4,786.—Title: "BRACKETT'S CELEBRATED CIDER BITTERS."—*Brackett Brothers*, Ipswich, Mass. Application filed March 22, 1886.

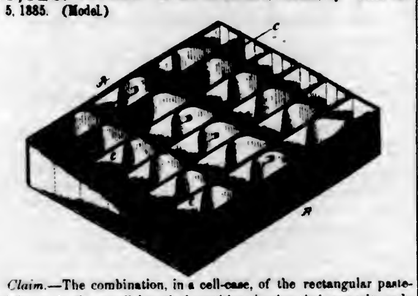
4,787.—Title: "COCA WINE WITH QUININE."—*Bartlett & Plummer*, New York, N. Y. Application filed March 20, 1886.

4,788.—Title: "WYNN'S STOVE POLISH."—*Lewis D. Wynn*, Sterling, Ill. Application filed March 19, 1886.

PATENTS

GRANTED APR. 13, 1886.

339,612. EGG-CASE. THOMAS M. APPLING, Auburn, Ky. Filed Oct. 5, 1885. (Model.)



Claim.—The combination, in a cell-case, of the rectangular pasteboard frame A, the parallel vertical partitions having their opposite ends bent and stitched to the opposite walls of the main frame, and the waved strips B, arranged in the said compartments and stitched at their curved portions to the partition-walls, to form crescent-shaped cells, substantially as specified.

339,613. CAR-WHEEL. JAMES C. BEACH, Bloomfield, N. J. Filed Dec. 30, 1885. (No model.)



Claim.—1. The combination, in a car-wheel, of a flange on an inwardly-projecting web of the tire, a corresponding groove in the body of the wheel, and a side plate overlapping the web of the tire and secured by a series of bolts passing through the side plate, the body of the wheel, and the web of the tire, substantially as and for the purpose set forth.

2. The combination, in a car-wheel, of a flange on an inwardly-projecting web of the tire, and a side plate shouldered over the flange of the web and secured by a series of bolts passing through the side plate, the body of the wheel, and the web of the tire, substantially as and for the purpose set forth.

3. The combination, in a car-wheel, of a flange on an inwardly-projecting web of the tire, and a corresponding groove in the body of the wheel with a flange on the opposite side of the web, and a side plate shouldered over the flange of the web adjacent to the side plate and secured by a series of bolts passing through the side plate, the body of the wheel, and the web of the tire, substantially as and for the purpose set forth.

339,614. HOUSEHOLD FURNITURE. WIBEL BEALS, New Madrid, Mo. Filed Nov. 23, 1885. (No model.)

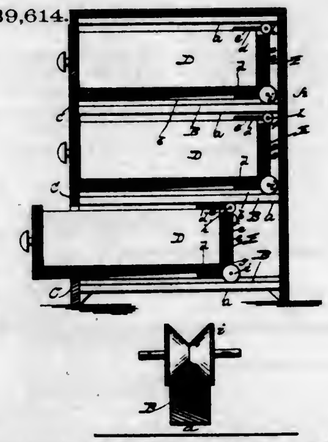
Claim.—1. A bracket for drawers, provided with angular extensions, a flat bearing, and a V-shaped bearing adapted for application to the rear or inner end of a drawer and for rails B, substantially as described.

2. The combination, with a drawer-bracket, of a cylindrical roller and a concave roller, substantially as described.

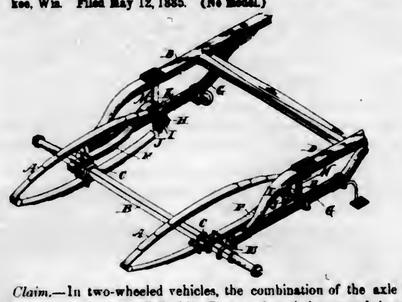
3. A bracket adapted for the rear end of a drawer, having right angular extensions and recesses at the angles thereof, in combination with anti-friction rollers applied in said recesses, substantially as described.

4. A drawer-bracket consisting of a vertical perforated portion, a right angular perforated portion, a recess in the angle, and an anti-frictional roller therein, as specified.

339,614.

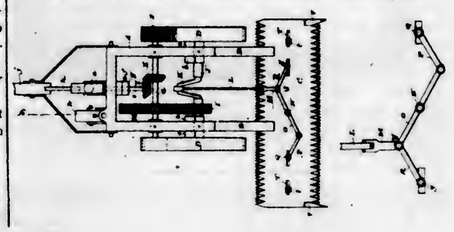


339,615. TWO-WHEELED VEHICLE. THOMAS H. BROWN, Milwaukee, Wis. Filed May 12, 1885. (No model.)



Claim.—In two-wheeled vehicles, the combination of the axle B, forward projecting springs F F, thills D, formed at their rear ends in two parts connected centrally by bars M M, arm H, adjusting-plates J, and retaining-keepers I, all substantially as and for the purpose set forth.

339,616. LAWN-MOWER. GEORGE CAMPBELL, Toronto, Ontario, Canada, assignor of one-half to John Richie, Jr., same place. Filed Mar. 25, 1884. (No model.) Patented in Canada July 7, 1884, No. 19,694.



Claim.—1. In a mowing-machine, the combination, with the upper knife rigidly secured to the frame of the machine, and provided with back and front V-shaped teeth with square edges, of the two lower knives provided with similar back and front teeth moving in opposite directions and each connected with the operating-lever by bolts working in slots in the knives, substantially as described.

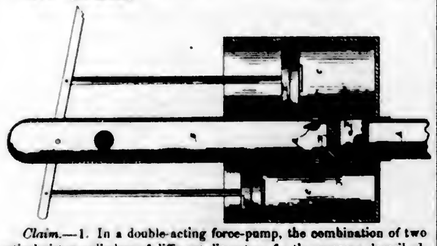
2. In a mowing-machine, the combination, with the three knives constructed as shown, of a lever pivoted at its center to the fixed knife and secured to the connecting-rod of the machine at one end, and short levers connecting at one end to the arms of the pivoted lever, and at their other ends connected to the center and lower knives, respectively, substantially as described.

3. In a mowing-machine, the combination, with the knives constructed as shown, of the guard W, consisting of a curved or rounded plate extending the entire length of the lower knife and secured to and reciprocating therewith, substantially as and for the purpose described.

4. In a mowing-machine, the combination of the crank K, connecting-rod L, toggle-levers O P R, and the knives connecting with said toggle-levers, substantially as described.

5. The combination, with the knives, of the toggle-levers O, P, and R, and pins S N Q, the center pin, N, being riveted to the top knife, the pin S to the second knife, a slot being made in the top knife for its passage, and the pin Q, riveted to the bottom knife, with similar slots in the top and middle knives, as and for the purpose specified.

339,617. **PUMP.** GEORGE F. CASE, Stanton, Mich. Filed Jan. 26, 1886. (No model.)



Claim.—1. In a double-acting force-pump, the combination of two vertical piston-cylinders of different diameters, for the purpose described, with an intermediate pump-stock impinging against said cylinders their entire length, the four horizontal ports directly through the walls of said cylinders, and pump-stock provided with valves, the diaphragm D, and the detachable well-tube provided at its upper end with a valve opening upwardly below said diaphragm, all substantially as specified.

2. In a forcing-pump, the combination, with two vertical cylinders of different diameters, ported as described, of a pump-stock ported to register with the ports through the walls of said cylinders, the four valves for said ports, the diaphragm D, the discharge-aperture below the upper closed end of said pump-stock, and a well-tube, A, provided with a valve, *a*, and detachably secured to the pump-stock, all substantially as described.

339,618. **SCHOOL-SLATE.** HERMAN H. CHRISTIE, Herkimer, N. Y. Filed Jan. 8, 1886. (No model.)

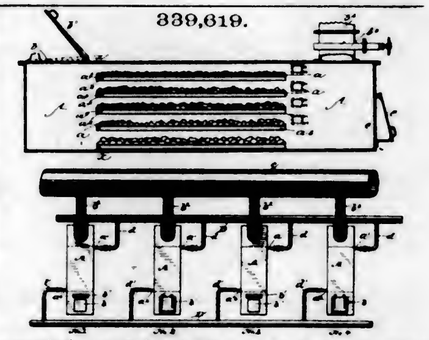


Claim.—A slate indelibly inscribed with a column of figures representing the numerals, and a series of marks accompanying each figure corresponding to the number of its units, the said series of marks being spaced into ones, twos, and threes, for the purpose set forth, substantially as described.

339,619. **APPARATUS FOR DRYING AIR.** JOHN H. CREMER, Braddock, Pa. Filed Sept. 12, 1885. (No model.)

Claim.—1. The combination, with the air trunk or main leading to the smelting-furnace or the like, of two or more desiccating-chambers

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communicating separately with said main, and provided with suitable valve mechanism whereby the air-supply may alternately pass through one or more of said chambers to be desiccated, and be cut off from the other of said chambers to allow for regeneration thereof, substantially as described.

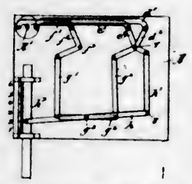
2. The combination, with the air-trunk or main leading to the furnace, of the desiccating-chamber connected therewith and having suitable valves to control its communication with the atmosphere and main, respectively, said chamber being provided with a series of shelves to contain the desiccating materials, and with supplemental inlet and outlet passages, whereby the excess moisture of the desiccants may be driven off, substantially as described.

3. The combination, with the desiccating-chamber having the series of hollow jackets, trays, or shelves arranged therein, of the supply and discharge pipes communicating with said jackets, substantially as described.

4. The combination, with the air trunk or main leading to the smelting-furnace or the like, of two or more desiccating-chambers communicating separately with said main, said chambers being provided with a series of shelves to contain the desiccating material, and with suitable valve mechanism whereby the air-supply may alternately pass through one or more of said chambers to be desiccated and be cut off from the other of said chambers to allow for regeneration, substantially as described.

5. The combination, with the air trunk or main leading to the smelting-furnace or the like, of two or more desiccating-chambers communicating separately with said main, said chambers being provided with means, substantially as described, for the regeneration thereof, and with suitable valve mechanism, whereby, during such regeneration, the air-supply will pass through the companion chamber or chambers for desiccation, substantially as set forth.

339,620. **MECHANICAL MOVEMENT.** GEORGE CROMPTON and HORACE WYMAN, Worcester, Mass., assignors to said George Crompton. Filed Jan. 22, 1886. (No model.)

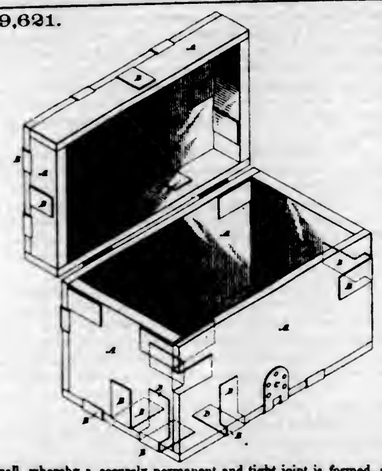


Claim.—Three semi-rotating wheels having crank-pins, three connecting-rods, three levers of the first order to which they are joined, a link supported by each of the said levers, a cross-piece connected with two of the said links and supporting a stud or fulcrum for the main lever, combined with a main lever having its fulcrum on the said cross-piece and joined to one of the said cranks, whereby by the movement of the said levers by the connecting-rods the front end of the main lever may be placed in any one of six positions, substantially as described.

339,621. **TRUNK.** GEORGE CROUCH, New York, N. Y. Filed Jan. 7, 1886. (No model.)

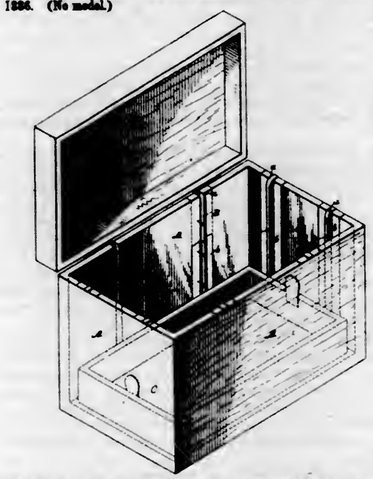
Claim.—As a fastening device for the walls of trunks, strips of canvas or other suitable fibrous material passing between the walls at their junction, two or more of them at each junction, and drawn taut, and the two secured in reverse, one end of one strip being secured to the inner surface of one wall and the other end to the outer surface of the other wall, and one end of the other strip being secured to the inner surface of the second wall and the other end to the outer surface of the

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first wall, whereby a securely permanent and tight joint is formed, and any loosening motion of either wall inward or outward at the joint is prevented, substantially as and for the purposes set forth.

339,622. **TRUNK.** JOHN D. CROUCH, New York, N. Y. Filed Jan. 11, 1886. (No model.)



Claim.—1. As an article of manufacture, a trunk for fragile articles, having one or more tubular strips of rubber secured to and forming a part of the vertical walls, one or more, of the trunk on the interior, whereby the tray is held from contact with the rigid wall of the trunk, substantially as and for the purposes set forth.

2. As an article of manufacture, a trunk for fragile articles, having two or more tubular strips of rubber secured vertically to and forming a part of the opposite vertical walls of the trunk on the interior, whereby the tray is held in place and kept from contact with the rigid walls of the trunk, and said walls are protected, substantially as and for the purposes set forth.

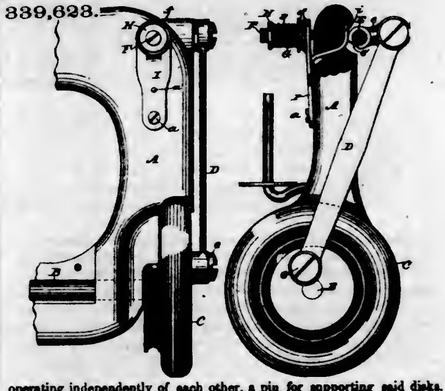
339,623. **TENSION DEVICE FOR SEWING-MACHINES.** PHILIP DUMB, Elizabeth, N. J., assignor to the Singer Manufacturing Company of New Jersey. Filed Oct. 10, 1885. (Model.)

Brief.—Tension-disks are mounted on a pin which has a shoulder, and a stiff spring having but little tendency to expand is placed between said shoulder and the disks, which latter bear against a vibrating arm operated by a cam on a rock-shaft.

Claim.—1. The combination, with the tension-disks, of a supporting-pin therefor having a shoulder, a stiff spring between said shoulder and disks, a nut on said pin, a light tension-spring between said nut and disks, a lever against which the latter are pressed by said springs, and a shaft having a flattened portion or cam for operating said lever.

2. The combination, with the tension-disks, light and stiff springs

339,623.

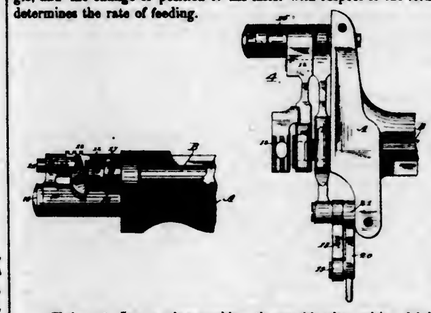


operating independently of each other, a pin for supporting said disks, and an adjusting-nut, of a shaft having a flattened portion or cam, and a lever forked to embrace said pin, and having an arm impinging against said flattened portion or cam on said shaft.

3. In an automatic or intermittent tension device, the combination, with the tension disks or plates and two independent springs separate from said disks or plates and of different strength and elasticity, said springs both pressing in the same direction against said disks or plates, of a movable lever or surface, against which said disks or plates are pressed by said springs, substantially as set forth.

339,624. **FEEDING MECHANISM FOR SEWING-MACHINES.** PHILIP DUMB, Elizabeth, N. J., assignor to the Singer Manufacturing Company of New Jersey. Filed Oct. 10, 1885. (Model.)

Brief.—All the movements of the "four-motioned" feed-bar are positive. The feeding movements are regulated by adjusting the hand-lever. To the frame of the machine a rocker is pivoted, to which the rear end of the feed-bar is jointed, the forward end of said bar being forked to embrace one of the two eccentrics on the driving-shaft. Near the rear end of said feed-bar is pivoted a yoke or bar forked or slotted to embrace the other of said eccentrics, the forward end of said yoke being jointed to a link, which latter is jointed to the feed-regulating lever near the free end or handle of the latter. The yoke and link form a toggle, and the change of position of the latter with respect to the former determines the rate of feeding.



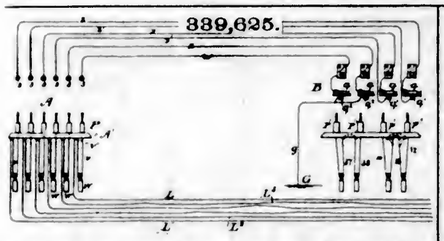
Claim.—1. In a sewing-machine, the combination, with a driving-shaft having two eccentrics, of a feed-bar carrying a feed-dog, and forked to embrace one of said eccentrics, a rocker, to which said bar is pivotally connected, a yoke jointed to said feed-bar and embracing the other of said eccentrics, a regulating-lever, and a link connecting the latter with said yoke, substantially as set forth.

2. In a sewing-machine, the combination, with the work-plate having a graduated segment, the driving-shaft having two eccentrics, the feed-bar, feed-dog, rocker, yoke, and link, of a regulating-lever projecting through said segment and provided with an index-pin, substantially as set forth.

339,625. **SYSTEM OF TELEPHONIC COMMUNICATION.** THOMAS B. DOOLITTLE, Bridgeport, Conn. Filed Nov. 23, 1885. (No model.)

Claim.—1. The hereinbefore-described system of electric intercommunication, comprising a number of central stations, metallic circuit, and single line or earth return-lines converging to each of the said stations, metallic-circuit trunk-lines connecting the said central stations, a testing switch-board at each principal or terminal central station of a series whereat the several converging lines terminate, and where they may be interchanged, for the purposes described, the said testing switch-boards

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being provided with apparatus for testing the electrical condition of the said lines, an operating switch-board at the said principal stations provided with annunciators, one for each line, and connecting and signal-sending devices, each annunciator being connected with one or more plug-sockets on the testing switch-board, and a series of intermediate switch-boards, one at each intermediate central station, combining the instrumentalities and functions of the two switch-boards at the principal central stations, all substantially as specified, and for the purposes set forth.

2. The combination, in a telephonic testing switch-board, of a series of plugs and cords each constituting a line-terminal, a series of plug-sockets forming singly or in pairs the terminals of loops or branch circuits including annunciators and spring-jacks and adapted to be connected with the plug line-terminals, a normally-open branch or loop circuit including electrical measurement-instruments, a second branch including signaling-keys and telephones, a third branch including telegraph-instruments, and switching devices, substantially as indicated, for connecting any of the said line-terminals with the said loop or branch circuits, for the purposes described.

3. The combination, substantially as hereinbefore described, in a central telephone-station, of a twisting switch-board comprising a series of line-terminals, plug-sockets connecting with annunciators and spring-jacks located at a separate operating switch-board, and loops or branch circuits including, respectively, electrical measurement apparatus, telephone and signaling devices, and telegraphic instruments, with an operating switch-board at which the said annunciators and spring-jacks are located, and provided, also, as indicated, with a series of double connecting cords and plugs for the interconnection of metallic circuits, a series of single cords and plugs for interconnection of single-line circuits, and means, as indicated, for signaling at will over either metallic or single-line circuits, as may be required.

4. The combination, in a telephonic switch-board, of a series of pairs of plugs and cords, each pair constituting the line-terminals of the two wires of a metallic circuit, a series of single plugs and cords each constituting the terminal of a single-line circuit, a series of loop continuations each including an annunciator and spring-jack, both ends of each loop terminating in a plug-socket for the reception of the metallic-circuit terminal-plugs, a series of single-circuit continuation or extension wires, terminating at one end in plug-sockets for the reception of the single-line terminal-plugs, and at the other end connected to ground-terminals after passing through an annunciator and spring-jack, whereby the several metallic circuit and single main lines may be interchanged at will with respect to their several annunciators and spring-jacks, for the purposes specified.

5. The combination of a metallic telephone-circuit, a conducting-cord and plug-connector constituting the terminal of each end thereof, a series of loop-extensions independent of the said terminal cords and plug, each including signaling and switching devices, and a series of conducting plug-sockets arranged in pairs, one pair being connected with and representing the two terminals of each loop-extension, whereby the metallic-circuit terminals may be connected with any of the said loops, as desired, substantially as specified.

6. The combination, in a telephone-exchange system, of a series of metallic-line circuits, a pair of conducting-cords and plug-connectors for each of the said circuits constituting the terminals of the two ends thereof, a series of single-line circuits, a conducting-cord and a plug-connector for each of the said single lines forming the central-station terminal thereof, a series of pairs of plug-sockets and a series of loop extensions connected therewith, one loop for each pair of sockets, a series of single plug-sockets, and a single-line wire extending therefrom to a ground-wire, switching and signal-receiving devices for each loop and single-wire extension, and a series of pairs of metallic circuits, and single circuit-conducting cords and plugs placed in proximity to the said switching devices, whereby any of the metallic or ground circuits may be connected to any desired loop or branch extension, and whereby any two of the said loops or branches may then be connected together, substantially as and for the purposes described.

7. In a telephone central station, the combination, with incoming line-wires, each of which terminates in a flexible conducting-cord and plug-connector, of a series of normally-open loops including severally suitable apparatus for electrical measurement, telephonic and signaling apparatus, and telegraph-instruments, one or more separate and independent loops to outlying stations a series of plug-sockets each connected with a ground-wire, a flexible cord and plug terminal also connected with a ground-wire, and switching devices whereby any of the said loops may be included in the circuit of any of the incoming lines or between any of the said lines and a ground-connection, as described herein.

8. The combination, with a series of electric-circuit terminals representing double-wire or metallic circuits, of a pair of signaling-keys, switching devices interposed between the said keys and the said circuit-terminals, whereby the said keys may be connected with any of the said terminals, and an electrical generator having its poles connected severally with the anvils of the said two keys, whereby any metallic circuit may be connected in circuit with the said generator by the simultaneous depression of both keys.

9. The combination, substantially as hereinbefore specified, of a series of circuit-terminals representing double or metallic and also single-wire circuits, of a pair of signaling-keys, switching devices interposed between the said keys and the said circuit-terminals, whereby the said keys may be connected with any two of the said circuit-terminals, an electrical generator having one of its poles connected directly with the anvil of one of the keys, and the other connected to ground and also through a switch with the other key-anvil, whereby, when the said switch is turned in one direction, both poles may be connected through the keys with any pair of line-terminals, and when the said switch is turned in the opposite direction one pole only of the said generator is connected with both keys, and the ground-wire attached to the other is brought into action, whereby signals may be sent by either key over a single-wire or ground circuit.

10. The combination, with a series of metallic and single-wire circuit terminals, of a pair of signaling-keys the back contacts of which are united through a telephone or telephones, switching devices interposed between the said keys and the said circuit-terminals, whereby the keys may be connected with any circuit or between any two circuits, an electrical generator having one of its poles permanently grounded, and wires extending from both poles to the keys, and a switch adapted to connect the key-anvils independently to the said two wires or to connect both to the wire connecting with the ungrounded pole, for the purposes herein specified.

11. The combination of a pair of signaling-keys adapted to be connected with an electric circuit, each key having a separate back contact-piece and anvil, of a two-point button-switch, and an electric generator having one of its poles connected directly to one of the key-anvils and to one point of the button-switch, and the other connected with the ground and with the other switch-button, the stem of the said switch being connected with the remaining key-anvil, whereby, when the said switch is turned in one direction, each generator-pole is connected with one of the key-anvils, and whereby when turned in the other direction both anvils are connected to the same pole, and the ground-connection only left on the remaining pole, for the purposes specified.

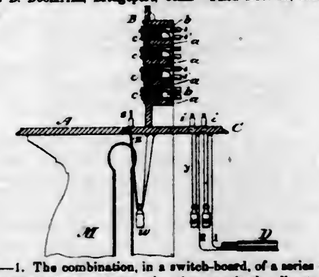
12. The combination, substantially as specified herein, of a series of circuit-terminals representing incoming lines, a pair of signaling-keys, a telephone-loop controlled by the said keys, a call-generator also controlled by the said keys, and a normally-open loop including a test-annunciator extending from the said keys to a pair of plug-sockets by which the said keys may be connected to any two circuit-terminals or to one of the said circuit-terminals and a ground-terminal, for the purposes described.

13. In a telephonic system of switching and signaling, the combination of a series of metallic and ground circuit line terminals, each including an annunciator and spring-jack, a series of pairs of double conductor cords and plugs adapted to connect any two metallic circuits, a series of pairs of single conductor-cords adapted to interconnect any two single-line circuits, an indactorium having two helices, one of which has its two terminals connected with a metallic-circuit spring-jack, the other having one end permanently grounded and the other end connected with a single conductor cord and plug for the purpose of connecting any metallic circuit to a ground-circuit, a single pair of signaling-keys united to wires branching to each pair of cords and controlling a telephone and generator-loop, and a looping-switch for each of the said pairs of cords adapted to connect one of the wires of said cords to the wires branching from the said signaling-keys, whereby one pair of keys is made to serve a number of the said cords, substantially as described.

14. In a telephonic switch-board, a series of pairs of connecting-cords terminating at each end in plugs and adapted to connect any two circuits together with a pair of signaling-keys having their back contacts connected through a telephone and their front contacts or anvils connected with a call-generator, a looping-in switch in the circuit of each connecting-cord, and a wire extending in branch circuit from each key to each of a pair of contact-buttons in the range of each of the said looping-in switches, whereby the said telephones or generator may be introduced into the circuit of any of the pairs of cords, as described.

15. The combination, with a spring-jack, of a metallic or double-wire circuit, and a pair of double circuit-connecting cords and plugs therefor, of a metal-lined plug-socket adapted to contain one plug of the said pair and to connect the two conductors thereof when the other plug is inserted in the spring-jack to answer a call, whereby the circuit of said pair is closed and continuity maintained, substantially as herein specified.

339,626. SWITCH-BOARD AND CENTRAL-OFFICE APPARATUS. THOMAS B. DOOLITTLE, Bridgeport, Conn. Filed Nov. 23, 1885. (No model.)



Claim.—1. The combination, in a switch-board, of a series of flexible conductors and plug-connectors therefor, constituting line-terminals, with a second series of flexible conducting-cords, provided also with plugs arranged in pairs, the two cords of each pair forming a continuous conductor or pair of conductors, and adapted thereby to act as a connecting-link between any two circuits, substantially as and for the purposes specified.

2. The combination, in an electric switch-board, of line-terminals comprising flexible conductors and plug-connectors, plug-sockets constituting the terminals of annunciators and adapted to receive the line-terminal plugs, whereby the said annunciators are connected in the line-circuits, spring-jacks, one for each annunciator, included in the circuit of the said annunciator between any two of the said sockets, and a series of pairs of connecting cords and plugs, each pair constituting a continuous conductor with a plug at each end thereof, which plugs are adapted for insertion in the spring-jacks of any two lines, substantially as described.

3. The combination, in an electric switch-board of short station-loops, each including an annunciator and a spring-jack, and terminating in two plug-sockets, one for each end of the said loop, of plug-connectors at the end of flexible cords, each plug constituting the terminal of a line-wire and adapted for insertion in one of the said sockets, and a series of sockets, *h*, united in pairs, also adapted to receive the said plugs, whereby the several line-terminals may be readily connected with any annunciator-loop, with any other line through the said loop, or with any other line direct, substantially as specified.

4. In an electric switch-board, a series of plugs and flexible cords, each forming the terminal of a separate line-wire, a series of pairs of plug-sockets therefor, each pair constituting the terminals of an annunciator, and a separate series of single-plug sockets constituting one terminal of an annunciator, the other terminal of which is attached to a ground-connection, whereby the said line-terminals may be united in pairs to form a metallic circuit through any of the first series of annunciators, or connected to ground through any annunciator, as herein described.

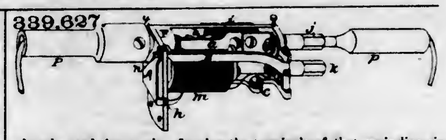
5. An electric switch-board comprising annunciators and spring-jacks, the said annunciators being furnished with terminal sockets at the rear side of the switch-board, the spring-jack orifice opening upon the front side of the same, a series of plug-connectors and flexible conductors, each forming a separate line-wire terminal located at the rear of said switch-board and adapted to unite any of the said line-terminals to any of the said annunciators by means of the terminal sockets thereof, and a series of paired plug-connectors and flexible conductors located at the front of said switch-board, the said plug-connectors being adapted to be inserted in the spring-jack orifices to connect any two of the lines together, substantially as hereinbefore described.

6. An electric switch-board having on each side thereof a separate series of flexible cords and connecting-plugs arranged as described, the plugs and flexible conductors at the rear, each constituting a single-line terminal, and those at the front side being arranged in pairs for the interconnection of any two circuits, together with annunciators and spring-jacks mounted on the said board and having common termical sockets, which sockets are adapted to receive any of the line-terminal plugs, the spring-jackets being in like manner adapted to receive the connecting-plugs, substantially as hereinbefore specified, and for the purposes set forth.

339,627. COMBINED ANNUNCIATOR AND SPRING-JACK. THOS. B. DOOLITTLE, Bridgeport, Conn. Filed Nov. 23, 1885. (No model.)

Claim.—1. In a spring-jack, a pair of separable contact-points in position to make electrical contact with the contact point or points of an appropriate spring-jack plug, combined with one or more fixed plug-sockets electrically connected to the terminals of the instrument to receive the cord tips or pins forming the terminals of that main-line circuit of which the spring-jack is intended to normally form a part.

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2. The combination, upon one frame or base, of an indicating-instrument, and a spring-jack consisting of a pair of separable contact-points, with one or more fixed plug-sockets, electrically connected to the terminals of the instrument, which are adapted to receive cord tips or pins forming the terminals of that main-line circuit of which the said instrument is intended to normally form a part.

3. The combination, in one instrument, of an annunciator with a spring-jack having a pair of separable contact-points arranged to form the terminals of the metallic circuit which normally includes said contact-points and the annunciator-magnet, a plug having two contact-points making electrical contact with the terminals of the metallic circuit, and electrical connections, substantially as described, so arranged that the insertion of the plug removes the magnet from circuit.

4. The combination, upon a metallic frame, of an electro-magnetic annunciator, a spring-jack consisting of one or more contact-points in position to make electrical contact with the contact-point of an appropriate jack-plug, one or more insulated wire terminals to receive the terminals of the main circuit of which the said instrument normally forms part, and an uninsulated screw-post located on the said frame, substantially as and for the purposes set forth.

339,628. HARNESS-SADDLE. JOHN DOUGLASS, Brooklyn, N. Y. Filed Aug. 24, 1885. (No model.)



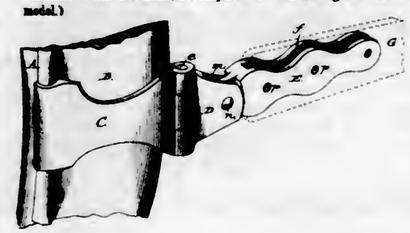
Claim.—1. The harness-saddle-tree frame A, constructed of two slotted angular end pieces, *b b*, united centrally by an interposed ridge-piece, *a*, and at their ends by parallel bars *d d*, substantially in the manner and for the purpose herein set forth.

2. The combination, with the slotted angular end pieces, *b b*, connecting ridge-piece *a*, and lateral bars *d d*, constituting the frame of the saddle-tree, of wooden side plates, E, fitted between the side bars and ridge-piece and having their ends inserted and secured within the slots of the end pieces, substantially in the manner and for the purpose herein set forth.

3. The combination, with the metallic frame and wooden side plates of the saddle-tree A, constructed substantially as described, of the covering-leather F and pad-leather H, extending laterally beyond the side bars, *d d*, of the frame, and the separate lateral flap-boards K K, inserted and secured between the projecting ends of said covering and pad leathers and held thereby against said side bars, *d d*, substantially in the manner and for the purpose herein set forth.

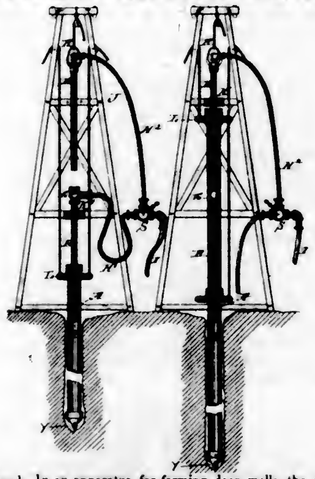
4. The combination, with each of the separate lateral flap-boards secured to the edges of the saddle-tree by its covering and pad leathers, of a plate carrying the back-band loop secured to the board and provided with lips to engage and clamp between them its edges, substantially in the manner and for the purpose herein set forth.

339,629. GUARD AND TRACE ATTACHMENT FOR HARNESS. JOHN DOUGLASS, Brooklyn, N. Y. Filed Aug. 24, 1885. (No model.)



Claim.—The combination, with a fixed guard-plate, C, secured to a hame to extend therefrom beyond the edge of the collar, of the hinge-block D, hinged to said guard-plate to swing upon an axis parallel with the length of the hame, and the trace-plate E, pivoted to the hinge-block to swing upon an axis at a right angle to that of the first hinge, substantially in the manner and for the purpose herein set forth.

339,630. APPARATUS FOR THE FORMATION OF DEEP WELLS. SAMUEL W. DOUGLASS, New York, N. Y. Filed Jan. 14, 1886. (No model.)



Claim.—1. In an apparatus for forming deep wells, the combination of a plunger with two detachable supply-conduits, and mechanism to close either inlet between the point of attachment of the conduits and the interior of the plunger, substantially as specified.

2. The plunger, in combination with a hollow stem, a three-way cock, and two detachable water-supply conduits, as specified and set forth.

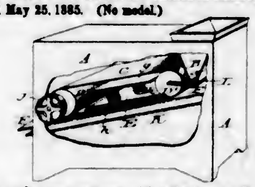
3. The combination, with a tube or pipe, of a plunger fitted within and having a hollow stem, a three-way cock, and two detachable water-conduits, as specified and set forth.

4. The combination of a plunger having a hollow stem connected with a three-way cock and two detachable water-supply conduits connected with a second three-way cock on the water-supply, as specified and set forth.

5. The combination of a tube or pipe with a plunger fitted within, in connection with a hollow stem, and a three-way cock, and two detachable water-supply conduits connected with a three-way cock on the water-supply, as specified and set forth.

6. The tube or pipe made in sections and a plunger fitted within one section, in combination with a hollow stem, a three-way cock, and two detachable water-supply conduits so arranged that additional sections of tube or pipe may be added at the upper end without interrupting a water-supply through the stem and plunger within the tube or pipe fed downward about the plunger, as specified and set forth.

339,631. GRAIN-SEPARATOR. GEORGE H. ELLSBURY, Tower City, Dak. Filed May 25, 1885. (No model.)

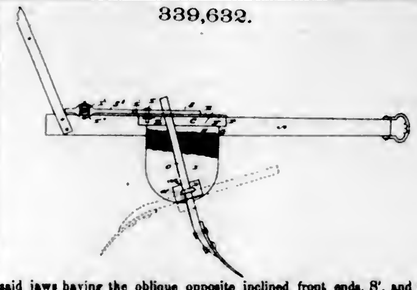


Claim.—A grain-separator comprising the hopper B, the fluted roll L, the cast-metal screen F, provided on its under side with stiffening-ribs, the endless steel apron C, the drums D D′ on which said apron is mounted, means for actuating the feed-roll and drums, the pressure-board E, coiled springs *h*, and resistance-board *g*, located between the upper and lower sides of said endless apron, substantially as described.

339,632. CULTIVATOR. THOMAS J. EUBANKS, Rogers, Tex., assignor of one-half to F. M. Chandler, same place. Filed Feb. 3, 1886. (No model.)

Claim.—1. The combination, in a plow or cultivator, of the pivoted plow-foot, the clamping-jaws for engaging the upper end thereof, the

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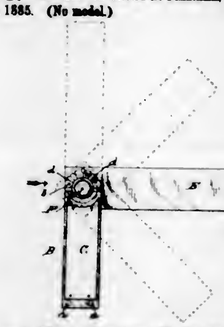


said jaws having the oblique opposite inclined front ends, S′, and the opening S², made in their opposing sides at the inner ends of the said oblique edges to receive the plow-foot, substantially as described.

2. The combination, in a plow or cultivator, of the pivoted plow-foot, the clip B, secured on the plow-beam and movable longitudinally thereon, the said clip having the extending plate E, provided with the opening F, and the spring-actuated clamping-jaws for securing the upper end of the plow-foot, substantially as described.

3. The combination of the beam, the clip G, firmly attached thereto, the plow-foot pivoted to an arm depending from clip G, and the clip B, movable longitudinally on the beam and provided with devices for engaging and locking the upper end of the pivoted plow-foot, substantially as described.

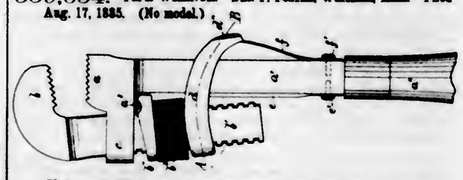
339,633. BEVEL. ELDRIDGE D. FARNHAM, Milton Mills, N. H. Filed Dec. 29, 1885. (No model.)



Claim.—1. The combination, with the stock having semicircular ends notched around their edge, of a blade pivotally secured between said ends and provided with an opening to register with the notches, whereby a true alignment may be obtained by the insertion of a tapering instrument through the opening and notches, substantially as herein-before specified.

2. A try-square composed of the following elements, in combination: a stock made in two parts secured together, leaving a space between them, each part terminating in semicircular reduced ends having corresponding radial notches, a blade adjustably clamped between the ends by a set-screw, and having an oblong opening at one side of the pivot-opening on a line drawn at right angles from one side through the pivot-opening, one-half of said opening corresponding with the notches in the semicircular ends, substantially as and for the purposes set forth.

339,634. PIPE-WRENCH. DAN P. FOSTER, Waltham, Mass. Filed Aug. 17, 1885. (No model.)
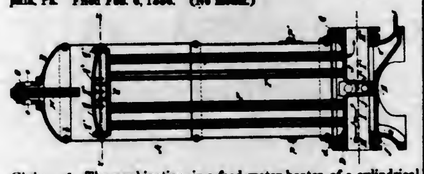


Claim.—1. The herein-described nut or pipe wrench, consisting of stationary jaw and shank *a a′*, having the fulcrum *a²* and stationary guide *c*, and movable jaw and shank *b b′*, having washer *b″* and nut *b²*, in combination with the lower movable guide, *d*, having one or two elastic bars secured to it and to the shank *a′*, as and for the purpose set forth.

2. In a nut or pipe wrench, the stationary shank *a′*, having stationary upper guide, *c*, and movable lower guide, *d*, provided with one or more elastic bars secured to it and to the shank *a′*, substantially in a manner and for the purpose set forth.

3. In a nut or pipe wrench, the stationary shank *a′*, having stationary upper guide, *c*, and movable lower guide, *d*, provided with one or more elastic connecting-bars secured to the said guide *d* and shank *a′*, and made vertically adjustable on the latter, as and for the purpose set forth.

339,635. FEED-WATER HEATER. HARRY C. FRANUM, Philadelphia, Pa. Filed Feb. 6, 1886. (No model.)



Claim.—1. The combination, in a feed-water heater, of a cylindrical heater-shell provided with a series of vertical tubes open at both ends but firmly secured therein, and supporting a hollow chamber having a movable cover and a series of baffling-plates therein, and steam inlet and outlet compartments, substantially as and for the purposes set forth.

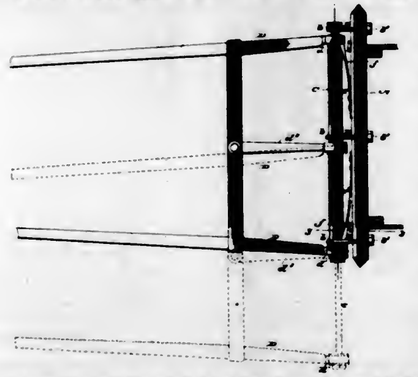
2. The combination, in a feed-water heater, of a cylindrical heater-shell provided with a series of vertical tubes open at both ends and supporting a hollow chamber having a removable cover and a series of baffling-plates therein, steam inlet and outlet compartments, a feed-water pipe secured in the standard and extending upward into said shell to a point at or above the center thereof, and tapering pockets in the legs of said standard, provided with discharge-pipes, substantially as and for the purposes set forth.

3. The combination, in a feed-water heater, of a cylindrical heater-shell provided with a series of vertical tubes secured to a standard, a hollow chamber supported by said tubes within said shell and having a series of baffling-plates therein, steam inlet and outlet compartments, a feed-water pipe extending upward into said shell, a med-chamber in said standard, the sides of which chamber form partitions between the steam inlet and outlet compartments, and a blow-off pipe leading from said chamber, substantially as and for the purposes set forth.

4. The combination, in a feed-water heater, of a cylindrical water-chamber provided with a series of vertical heating-tubes open at both ends, and secured to a dish-shaped standard, a hollow chamber within said shell, provided with a removable cover and a series of baffling-plates therein, a feed-water pipe extending upward into said shell, a pipe leading to the boiler from the top of said heater, and a scum-chamber provided with openings in the sides thereof in the upper part of said shell, substantially as and for the purposes set forth.

5. The combination, in a feed-water heater, of a cylindrical heater-shell provided with a series of vertical tubes therein, a hollow chamber supported by said tubes, a scum-chamber in the top of said heater, and annular openings opposite to one another in said shell, substantially as and for the purposes set forth.

339,636. SHIFTING THILL-COUPLING. GEORGE W. FRIED and WILLIAM F. WEAMER, Allentown, Pa. Filed Jan. 2, 1886. (No model.)



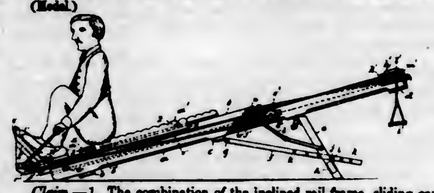
Claim.—The combination of the tube or sleeve C, secured to the sleigh or vehicle, the shaft having the draft-irons hinged on the tube, and movable laterally thereon, and the spring-detents F, secured at one end rigidly to the axle of the sleigh or vehicle, and having their other ends sprung or projected outward, so as to come in contact with the tube or sleeve C and catch against the draft-irons, and thumb-holds *f*, provided on the outer or free ends of the detents, so as to withdraw them from engagement with the draft-irons, substantially as described.

339,637. STOVE-HOOK. SELDEN F. GIBSON, Portland, Me., assignor of one-half to William H. Stevens, same place. Filed Oct. 31, 1885. (No model.)



Claim.—The combination of the handle A with a wire so turned as to form a spread or loop, C, having a bow, B, opposite the handle A, standing at right angles to the handle A and spread or loop C, in form and for the purpose substantially as shown and described.

339,638. EXERCISING-MACHINE. GEORGE GOLDIE, Princeton, N. J., assignor of one-half to Philip Rees, New York, N. Y. Filed May 14, 1885. (Model.)



Claim.—1. The combination of the inclined rail-frame, sliding carriage, and the system of cords *b′* and pulleys *c′*, consisting of a separate cord and pulley at each side of the carriage for each hand, substantially as described.

2. The combination of the inclined rail-frame, sliding carriage, and the system of cords *g′* and pulleys *l′*, substantially as described.

3. The combination of the inclined rail-frame, sliding carriage, and the system of cords and pulleys *b′ c′* and *g′ l′*, consisting of separate cords and pulleys at each side of the carriage for each hand, substantially as described.

4. The combination of the inclined rail-frame, sliding carriage, sliding seat, and the system of cords *b′* and pulleys *c′*, substantially as described.

5. The combination of the inclined rail-frame, sliding carriage, sliding seat, and the system of cords and pulleys *b′ c′* and *g′ l′*, substantially as described.

6. The combination of the inclined rail-frame having adjustable supporting-legs, the sliding carriage, and the system of cords *b′* and pulleys *c′*, consisting of a separate cord and pulley at each side of the carriage for each hand, substantially as described.

7. The combination of the inclined rail-frame having folding legs, sliding carriage having the folding foot-rest, and the system of cords *b′* and pulleys *c′*, substantially as described.

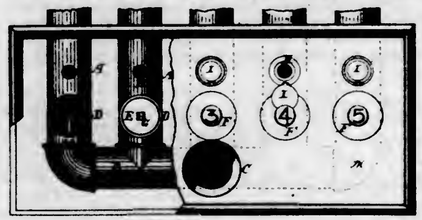
8. The combination of the swivel-pulleys *l′* with the inclined rail-frame, sliding carriage, and the system of cords *g′*, the said pulleys being swiveled in the axis of the run of the cords between them and said carriage, and having a hollow pivot for the working of the cords therethrough, substantially as described.

9. The combination of the sliding seat *x*, having a back extension, *a′*, adapted for the operator to lie on, with the sliding carriage, inclined rail-frame, and cords and pulleys for working said carriage, substantially as described.

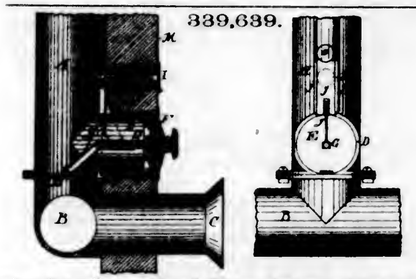
339,639. SPEAKING-TUBE. JAMES GORRIE, Cleveland, Ohio. Filed Apr. 1, 1885. (No model.)

Claim.—1. The combination, with a series of tubes, as A, connecting with a tube, as B, common to all such tubes, and each having a chamber, D, of a series of valves, E, hinged one at the junction of each chamber D with its tube A, and arranged to be forced upon its seat to cut off communication of the tube A with the tube B, or to be folded within its chamber D, to leave the tube clear, and means, as G, operating through said chambers, as and for the purposes set forth.

2. The combination, with a speaking-tube having a whistle-port,



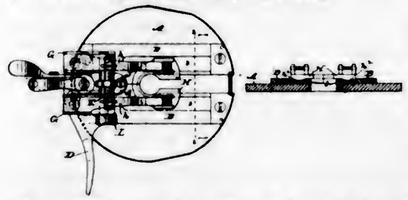
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and a valve, as E, of a perforated slide operating over said whistle-port, and connections between said slide and the valve-operating mechanism, arranged as described, whereby the location of the valve will automatically determine the desired position of the slide to cover or uncover the whistle-port, as set forth.

3. The combination, with the tubes A and whistle-ports H, and with the cross-tube B and valves E, of the slides J, the valve-operating rods G, and the links *g*, connecting said rods with the said slides J, all arranged for joint and automatic operation, as set forth.

339,640. CLAMP FOR BUTTON-HOLE SEWING-MACHINES. JAMES G. GREBER, Elizabeth, N. J., assignor to the Singer Manufacturing Company of New Jersey. Filed Dec. 3, 1885. (No model.)



Claim.—1. In a button-hole work-clamp, the combination, with the upper and lower laterally-movable clamping-jaws and a spreading-lever therefor, of an independently-movable clamping arm or lever arranged to be engaged by the said spreading-lever as the latter is moved to bring the clamping-jaws toward each other, substantially as set forth.

2. In a button-hole clamp, the combination, with the laterally-movable lower clamping jaws or plates and a spreading-lever for operating the same, of a clamping arm or lever having a projection arranged to be engaged by the spreading-lever, and upper clamping-jaws adapted to be raised to release the work when the said clamping arm or lever is operated by the said spreading-lever, substantially as set forth.

3. In a button-hole clamp, the combination, with the laterally-movable upper and lower clamping-jaws and a spreading-lever for operating the same, of a shaft having a crank connected with the said upper clamping-jaws, said shaft being provided with a device adapted to be engaged by said spreading-lever to throw the said crank past the dead-center, and springs for automatically lifting said upper clamping-jaws to release the work when the said crank is thus operated, substantially as set forth.

4. In a button-hole clamp, the combination, with the laterally-movable upper and lower clamping-jaws and a spreading-lever for operating the same, of a shaft having a crank, a link and cross-bar for connecting said crank with the said upper jaws, a clamping arm or lever having a projection adapted to be engaged by the spreading-lever, and springs for automatically lifting said upper jaws when the said crank is thrown past the dead-center by the impingement of the spreading-lever against the clamping-lever, substantially as set forth.

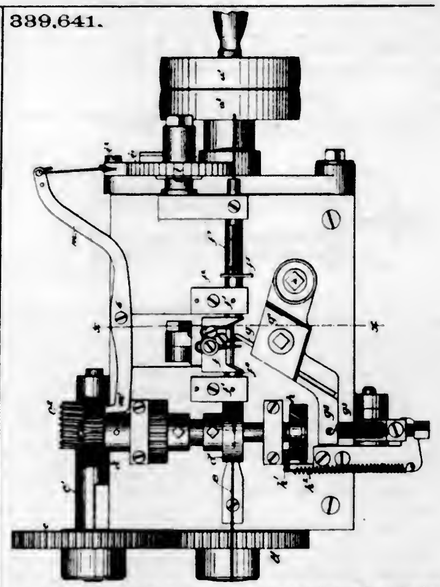
339,641. MACHINE FOR MAKING SAWS. GEORGE W. GRIFFIN, Franklin Falls, N. H. Filed Dec. 1, 1881. (No model.)

Claim.—1. In an organized machine for making saws, the following elements in combination: the feeding mechanism to move a continuous strip forward, the guide-block for the said strip, and means to oscillate it as described, and the cutter to act upon the said strip in the guide-block at the end of each oscillation thereof, substantially as and for the purpose set forth.

2. The feeding mechanism, oscillating guide-block and cutter, combined with disengaging mechanism, substantially as described, for the said cutter controlled by the said feeding mechanism, whereby untoothed spaces are left in the strip being fed, as and for the purpose set forth.

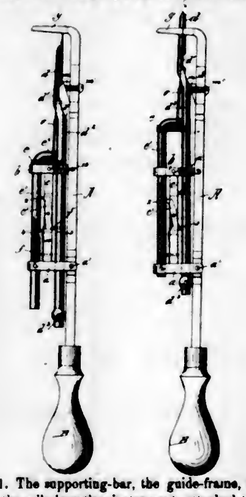
3. The strip-feeding mechanism, oscillating guide-block for said strip, and tooth-forming cutter, combined with an intermittingly-operating severing-cutter, whereby the said strip provided with teeth is severed to form independent blades of uniform length, substantially as described.

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4. In a saw-making machine, the main cam-shaft and mechanism connected therewith for feeding a strip to be provided with teeth, a severing-cutter for cutting the strip transversely into sections, and actuating mechanism therefor operated by said cam-shaft, combined with means connected with the feeding mechanism to control the time of operation of the said severing-cutter, substantially as and for the purpose described.

339,642. FABRIC-TURFING IMPLEMENT. GEORGE W. GRIFFIN, Franklin Falls, N. H. Filed Sept. 24, 1885. (No model.)



Claim.—1. The supporting-bar, the guide-frame, the needle-bar, the needle, and the pile-inserting instrument attached to the shank *s'*, and the arm *s*, connected to the needle-bar and engaging the said shank to move the pile-inserting instrument through the fabric, combined with the locking device, substantially as described, to lock the pile-inserting instrument in its extreme position through the fabric while the needle returns, and with mechanism, substantially as described, for releasing said locking device and permitting the pile-inserting instrument to return after the needle has returned, as set forth.

2. The supporting-bar, the guide-frame, the needle-bar, the needle, and its co-operating pile-inserting instrument attached to the rod *c'*, combined with the arm *s*, engaging the said pile-inserting instrument to push it through the fabric, and with the dog or locking device *c'* to engage the said pile-inserting instrument, and the projection *h*, to trip the said dog or locking device, substantially as and for the purpose described.

3. The guide-frame, the needle-bar provided with the incline, the needle, and pile-inserting instrument, the shank *s'*, and the supporting-bar pivoted with relation to the guide-frame, the cam-block *m*, co-operating with the needle-bar to move the supporting-bar laterally while the needle is penetrating the material, substantially as described.

4. The supporting-bar, its presser-foot, and needle and pile-inserting instrument, combined with the pivoted supporting-frame carrying the needle and pile-inserting instrument, and the cam-block, all as set forth.

5. The supporting-bar and its presser-foot, combined with a tubular needle, and pile-inserting instrument moving within the tubular needle, both needle and pile-inserting instrument being pivotally connected with the supporting-bar, and the cam-block for moving the supporting-bar forward while the needle remains in the fabric being turfed, substantially as described.

6. In a machine for turfing fabric, the needle and pile-inserting instrument, and a pivoted frame carrying the same, the cam to effect the feeding of the material being turfed by the needle and pile-inserting instrument, and the presser-foot to hold the material in place while the pile is being inserted, all substantially as described.

339,643. LETTER-COPYING PRESS. HORACE GRIFFIN, New Haven, Conn. Filed Jan. 18, 1884. (No model.)

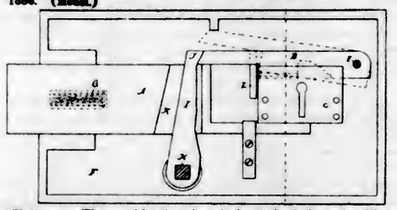


Claim.—1. The combination, with a platen, of a plunger attached thereto, a lever attached at its rear end to said plunger and having a central pivotal bearing, a cam adapted to operate upon said lever to force the plunger downward, and a lever or handle attached to the cam-shaft for the purpose of oscillating the same, substantially as set forth.

2. In a copying-press, the combination, with a base-plate provided at its ends with transverse standards having guideways at their ends, of a top plate, vertical end plates attached to said top plate and having teeth or projections, and rotary disks adapted to engage said projections and thus support and adjust said end and top plates, substantially as set forth.

3. In a copying-press, the combination, with a base-plate having transverse standards provided with guideways at their ends, of a top plate, vertical end plates attached to said top plate and having lugs or teeth on their outer faces, and rotary disks journaled in said standards and having on their inner faces spiral threads engaging said lugs or teeth, said disks being provided with thumb-pieces, by which they may be conveniently turned to adjust end plates and the top plate sustained thereby, substantially as set forth.

339,644. LOCK. DANIEL F. HAASE, Philadelphia, Pa. Filed Jan. 27, 1886. (Model.)



Claim.—1. The combination, in a lock, of the bolt A, tumblers B, knob-spindle H, and arm I with bent top J, the front ends of said tumblers and the rear end of said bent top J being beveled off, all substantially as and for the purposes set forth.

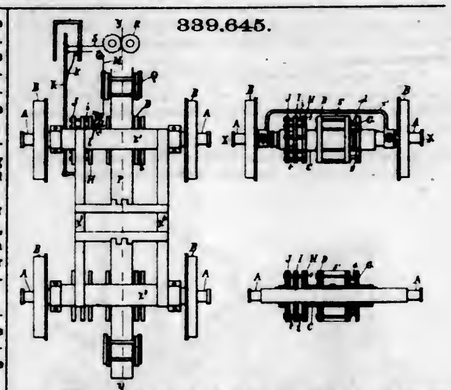
2. The combination, in a lock, of the bolt A, tumblers B, guide *a*, rod O, with arms N, arm I, and the key, all substantially as and for the purpose set forth.

339,645. CAR BRAKE AND STARTER. DANIEL HALL, Galt, Mo. Filed Aug. 3, 1885. (No model.)

Claim.—1. In a car brake and starter, the combination, with the axle, the sleeve, and drum carrying the helical spring, of the disk G, keyed to the axle and provided with depressions or pockets *g*, for engagement with the spring-pawls *d*, as shown and described, for the purpose specified.

2. The combination, with the disk J, of the lever K, spring *k*, cord or chain S, and the brake-shaft T, as shown and described, for the purpose specified.

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3. The combination, with the sleeve C and the disk H, provided with the notches *h*, of the pawl L, springs *l m*, cord or chain M, and lever K, as shown and described, for the purpose specified.

4. The combination, with the compressing clamp or brake P, of the compressing-frame Q, cord or chain R, and brake-shaft T, as shown and described, for the purpose specified.

5. The combination of the brake-shaft T with the cord or chain R and connected devices, and the cord or chain S and connected devices, as shown and described, for the purpose specified.

6. The combination, with the brake-shaft T and connected devices, of the gear-wheels V W, the double ratchet *c*, the pawl c^2, and the adjusting-plate c^3, as shown and described, and for the purpose described.

339,646. WIRE ROPE OR CABLE. ANDREW S. HALLIDIE, San Francisco, Cal. Filed Nov. 20, 1863. (No model.)

Brief.—The rope or cable is composed of strands formed of wires, the individual strands being covered with flat metal strips, and having between each of said strips a small thread or wire to prevent the strips from chafing at their edges. Fibrous filling is also placed between the wires forming the strand before the covering-strip is put on, in order to form a more complete and smooth cylindrical strand.

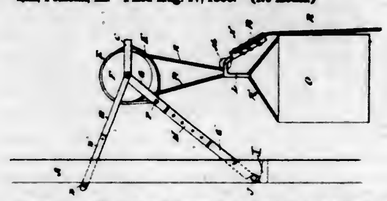


Claim.—1. As a new article of manufacture, a wire rope composed of a series of strands made up of individual wires, each of said strands being covered with flat strips wound around the same, whereby each strand presents a smooth surface circular in cross-section, and all abrasion of the strands is avoided, substantially as described.

2. As a new article of manufacture, a wire rope composed of a series of strands made up of individual wires having a fibrous filling between the same, each of said strands being covered with flat strips wound around the wires composing the same, whereby each strand presents a smooth surface circular in cross-section, and all abrasion of the strands is avoided, substantially as described.

3. In combination with the strands of a rope made of individual wires and having a covering of flat strips wound thereon, a thread or wire, *d*, interposed between the edges of the folds of said strips, substantially as described.

339,647. FIRE-ESCAPE. SAMUEL HARBRAVE, Sr., and ARTHUR M. LEE, Pomona, Ill. Filed Aug. 17, 1885. (No model.)



Claim.—1. The collapsible cage O, in combination with the curved suspension-frame K, ropes R R', pulley F, and friction-drum N.

2. The cross-bars C P, in combination with the shaft F', the sliding rods B B' G G', tubes H, supporting-bar D, and hooks J J.

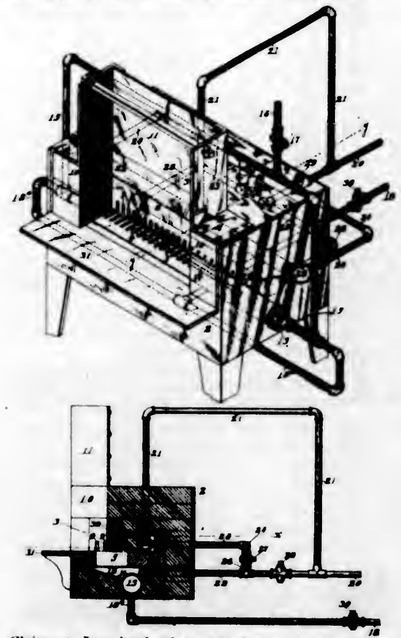
3. The pulley F, having shaft F', in combination with the bars B B' G D G G', the cover E, rope R, and friction-drum N.

4. The sliding rods B B' G G', in combination with the bars D C

K P, the pulley E, and rope R, and the collapsible cage O, whereby the apparatus will readily assume positions either of operation or of compactness for storage.

5. The frame composed of cross-bars C P, sliding rods B B' G G', tubes H H, suspension-bar D, and hooks J J, in combination with the cage O, frame-bar K, drum N, pulleys F M, and ropes R R', co-operating as and for the purpose set forth.

339,648. GAS-FURNACE. CHARLES B. HEAD and JOSEPH A. KAYLOR, Allegheny City, Pa. Filed Sept. 21, 1885. (No model.)



Claim.—1. In a heating-furnace for heating bolt-blanks, bars, or other articles, the combination of a combustion-chamber, 12, gas and air supply pipes discharging into the combustion-chamber, a heating-chamber adjoining the combustion-chamber, a floor, 4, and a back wall, 6, which separate the heating-chamber from the combustion-chamber, and are perforated to permit passage of the flame and heated products of combustion from the latter chamber into the lower part of the heating-chamber, substantially as and for the purposes described.

2. In a heating-furnace for heating bolt-blanks, bars, and other articles, the combination of a combustion-chamber, 12, gas and air supply pipes discharging into the combustion-chamber, a heating-chamber adjoining the combustion-chamber, and a floor, 4, a back wall, 6, and side walls, 8, which separate the heating-chamber from the combustion-chamber, and are perforated to permit passage of the flame and heated products of combustion from the latter chamber into the lower part of the heating-chamber, substantially as and for the purposes described.

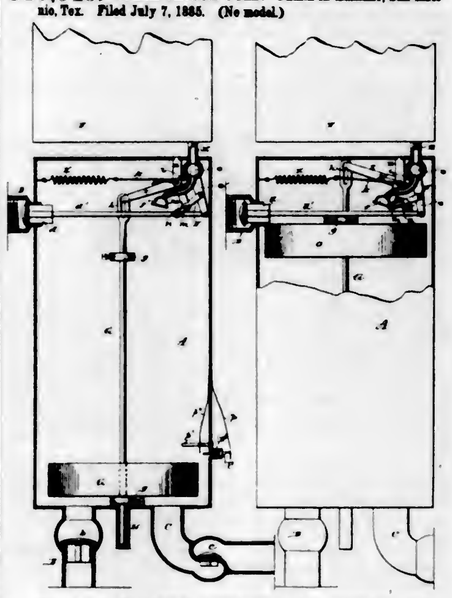
3. The combination of a combustion-chamber, 12, an adjacent heating-chamber, 3, communicating therewith and receiving burning-gases therefrom, a gas-burner pipe discharging into the combustion-chamber, a gas-supply pipe communicating with the gas-burner, an air-pipe, 19, discharging into the combustion-chamber, an air-supply pipe communicating with the pipe 19 through two systems of pipes, one of which traverses a highly-heated part of the furnace-body, while the other enters the pipe 19 in a course less affected by the heat, and valves or cocks for causing the air to traverse either of the two systems, substantially as and for the purposes described.

4. The combination of a combustion-chamber, 12, an adjacent heating-chamber, 3, communicating therewith and receiving burning-gases therefrom, a gas-burner pipe discharging into the combustion-chamber, a gas-supply pipe communicating with the gas-burner, an air-pipe, 19, discharging into the combustion-chamber, an air-supply pipe communicating with the pipe 19 through two systems of pipes, one of which traverses a highly-heated part of the furnace-body, while the other enters the pipe 19 in a course less affected by the heat, valves or cocks for causing the air to traverse either of the two systems, and an air-supply pipe entering the said gas-burner pipe, substantially as and for the purposes described.

5. In a furnace for heating bolt-blanks, bars, and like articles, the combination of a combustion-chamber, 12, an adjacent heating-chamber, 3, communicating therewith and receiving burning-gases therefrom, a gas-burner pipe discharging into the combustion-chamber, gas and air supply pipes discharging into the gas-burner pipe, and an air-pipe, 19, discharging into the combustion-chamber, substantially as and for the purposes specified.

6. In a heating-furnace for heating bolt-blanks, bars, and like articles, the combination of a combustion-chamber, 12, gas and air pipes discharging into the combustion-chamber, a heating-chamber adjoining the combustion-chamber, a floor, 4, and a back wall, 6, which separate the heating-chamber from the combustion-chamber, said heating-chamber communicating at its lower part with the combustion-chamber, so as to permit the passage of the flame and heated products of combustion from the combustion-chamber into the lower part of the heating-chamber, substantially as and for the purposes specified.

339,649. STEAM VACUUM-PUMP. FRANK A. HESSLEY, San Antonio, Tex. Filed July 7, 1885. (No model.)



Claim.—1. In a steam vacuum-pump, the combination, with a pump-cylinder, the water inlet and outlet pipes, a condenser-pipe, a steam-pipe, and valves located in the several pipes, of a vertically-movable rod having stops thereon, levers connecting the rod with the valves in the condenser-pipe and steam-inlet pipe, and a float loosely mounted on the rod and adapted to actuate the same, substantially as set forth.

2. The combination, with the pump-cylinder and the water feed and discharge pipes, of a steam and condenser pipe communicating with the cylinder, valves for opening and closing the steam and condenser pipes, valve-operating mechanism, substantially as described, connected with said valves, a longitudinally-movable rod connected with the valve-operating mechanism and provided with stops, and a float loosely mounted on the rod and adapted to actuate the same, the parts being arranged substantially as described, whereby the steam-valve is opened and condenser-valve closed when the cylinder is filled with water, and the steam-valve closed and condenser-valve opened when the water is discharged, substantially as set forth.

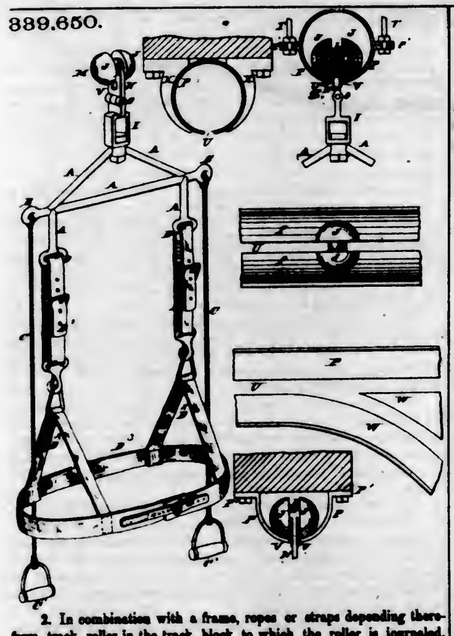
3. The combination, with the valves for opening and closing the steam and condenser pipes, of a system of valve-operating levers positively operated by spring-power, substantially as set forth.

4. The combination, with the valves for opening and closing the steam and condenser pipes, of a spring-actuated angle-lever connected with the valve-operating rods in elongated slots, whereby the effect of the spring-action is reversed and the spring allowed to positively actuate the valves, substantially as set forth.

339,650. APPARATUS FOR ASSISTING SKATERS AND SWIMMERS. JAMES W. HILL, St. Louis, Mo. Filed Dec. 26, 1884. (No model.)

Claim.—1. The combination of the frame A, having eyes B, ropes C, hand-holds C', eyes D, straps D', shoulder-straps D^2, and belt D^3, and the swivel-support, substantially as set forth.

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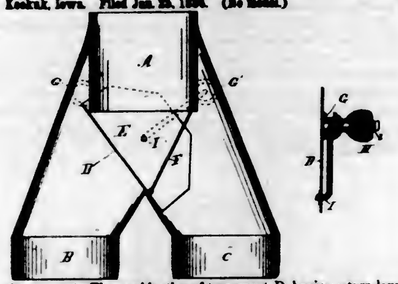
2. In combination with a frame, ropes or straps depending therefrom, track, roller in the track, block to which the roller is journaled, and having a downward projection, and a swivel hinged to the projection of the block and made fast to the frame, substantially as set forth.

3. The combination of a frame, ropes or straps depending therefrom, track, roller in the track, block to which the roller is journaled, having a downward extension provided with a friction-roller, and swivel secured to the projection and to the frame, substantially as set forth.

4. The combination of the tubular track having a slot in its lower portion, roller within the tube, frame supported by said tube and said roller, and means depending from the frame for the support of the person using the apparatus, substantially as set forth.

5. The combination of the tubular track having a slot in its lower portion, two-part roller within the tube, block between the two parts of the roller and having an extension protruding through the slot in the tube, provided with a friction-roller running in the slot, and means for the support of the person using the apparatus, substantially as set forth.

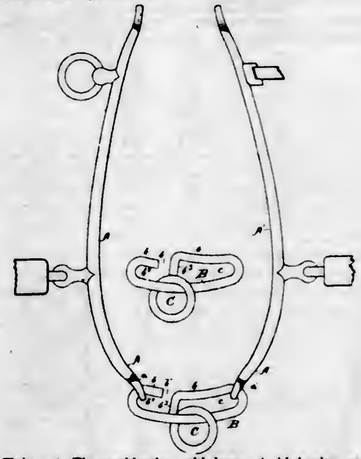
339,651. WATER CUT-OFF FOR CISTERNS. WILLIAM HORN, Jr., Keokuk, Iowa. Filed Jan. 25, 1886. (No model.)



Claim.—1. The combination of turn-spout D, having a turn-lever, with spout A B C, having two cavities, G G', and with spring-catch knob H, substantially as and for the purpose set forth.

2. The improved water-spout cut-off having the pivoted part D, provided with a hinged strainer, F, and with an operative handle, H, having a catch, and cavities G G', adapted thereto to hold it in alternative positions.

339,652. NAME-FASTENER. ISAAC HOWLAND, Chicago, Ill. Filed Dec. 7, 1885. (No model.)



Claim.—1. The combination, with hames A A', having eyes *a a'*, of kidney-shaped link B, having hook *b'* at one end and closed eye *c* at the other end, formed by the upper branch, *b*, and its bent end b^2, fitting against the lower branch of said link, and the ring C, substantially as specified.

2. The hame-fastener provided with kidney-shaped link B, hook b^2 at one end and eye *c* at its other end, formed by upper branch, *b*, of said link, having its end b^2 bent down against the lower branch of said link, so that said branch *b* and its end b^2 may be sprung open for insertion of the hame-eye, substantially as specified.

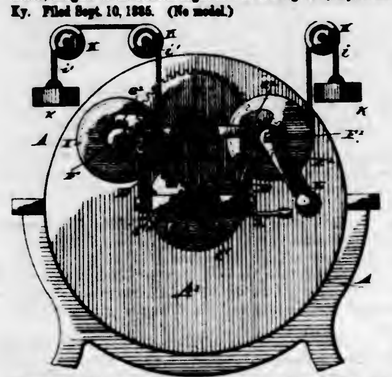
3. The kidney-shaped-link hame-fastener consisting of a kidney-shaped link, B, having a lower curved branch and an upper curved branch, said upper curved branch, *b*, having an opening, *b'*, near one end, forming a hook, b^2, and the end b^3 of said upper branch being turned down against said lower branch, forming an oblong eye, *c*, at the other end of said link for permanently attaching said link to the hame, in combination with a ring, C, secured in said eye *c*, substantially as specified.

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an orifice in the end of the bulb A, opposite its mouth, substantially as shown and described.

339,654. COMPOUND GEARING FOR AIR-PUMPS. LOUIS C. HUBER, Huber, assignor to the Eureka Light Manufacturing Company, Louisville, Ky. Filed Sept. 10, 1885. (No model.)

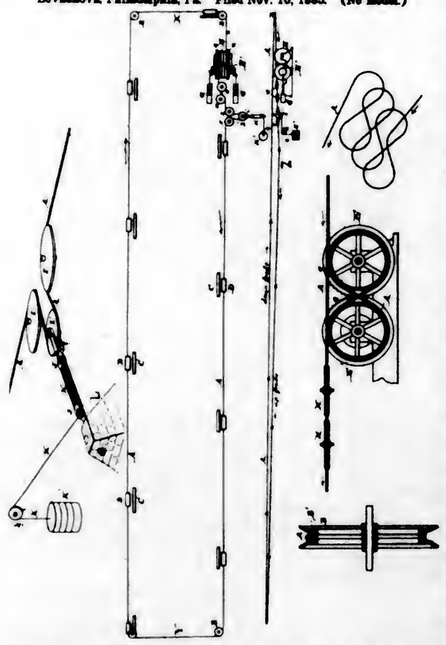


Claim.—1. The combination, with the actuating-shaft of a rotary cylinder air-pump and a gear-wheel on said shaft, of the gear-wheels *e f g*, secured, respectively, on the shafts E F F', turning in bearings in a frame adapted to be bolted to the head of the stationary cylinder of the pump, the gear-wheel *e*, being arranged to mesh with the gear-

wheel on the shaft, the drums I I′, secured to shafts F F′, respectively, the wire ropes *i i′*, respectively secured to the drums I I′, and the weights *k*, attached to the depending arms of said ropes, substantially as specified.

2. The combination, with the stationary cylinder-head A′, the shaft B of the rotating cylinder, the gear-wheel H, splined on said shaft, and the actuating-lever *h*, of the plate C, frame C′, shafts E F F′, gear-wheels *e f f′*, drums I I′, wire ropes *i i′*, pulley K, weights *k*, and crank-handle L, all constructed and arranged substantially as shown and described, for the purpose specified.

339,655. CABLE RAILWAY. WILLIAM G. HUEY and THOMAS J. LOVEMOVE, Philadelphia, Pa. Filed Nov. 10, 1885. (No model.)



Claim.—1. The combination, in a cable railway, of the cable A, driving-drums E E′, about which the said cable is wound, as shown, gearing or friction-wheels *e*, and engines G, substantially as and for the purpose specified.

2. In a cable railway, the cable A, in combination with the pulleys I I′, yoke *i*, pulley-blocks J, cable or rope K, and weights K′, substantially as and for the purpose specified.

3. In a cable railway, the cable A, in combination with pulleys I I′, yoke *i*, pulley-blocks J, cable or rope K, weights K′, and driving-drums E E′, about which the cable is wound, as shown, substantially as and for the purpose specified.

4. A cable railway arranged with three grades, in which the outer terminals of two adjacent grades coincide with the terminals of the other or third grade, substantially as and for the purpose specified.

5. A cable railway arranged with three grades, in which the outer terminals of two adjacent grades coincide with the terminals of the other or third grade, in combination with the driving machinery located in one of the said adjacent grades, substantially as and for the purpose specified.

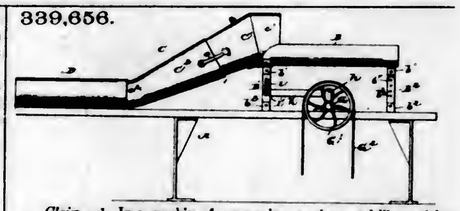
6. In a cable railway, the cable provided with a short downgrade portion, in combination with the driving mechanism located in said downgrade, substantially as and for the purpose specified.

7. In a cable railway, the cable provided with a short downgrade portion, in combination with the driving mechanism, and take-up devices located in said downgrade, substantially as and for the purpose specified.

8. The cable of a cable railway, combined with two driving-drums geared together and adapted to rotate in opposite directions, and about which the cable is wound or looped like a figure 8, substantially as and for the purpose specified.

339,656. MACHINE FOR ARRANGING CRACKERS. WILLIAM JAMESON, Allegheny, Pa., assignor to James McClurg, same place. Filed Jan. 5, 1886. (No model.)

339,656.



Claim.—1. In a machine for arranging crackers and like articles for packing, the combination of a supporting-frame, a vibrating hopper mounted thereon and movable throughout its entire area, a movable conducting and arranging tube connected to the hopper to receive the crackers therefrom, and a receiving-tray arranged in juxtaposition to the free end of the conducting-tube, substantially as described.

2. In a machine for arranging crackers and like articles for packing, the combination of a supporting-frame, a vibrating hopper supported thereon, a conducting-tube connected to the hopper and partaking of the motion thereof, and a tray for receiving the crackers and the like from the tube, substantially as described.

3. In a machine for arranging crackers and like articles for packing, the combination of a frame, a vibrating hopper mounted thereon, a conducting-tube connected to and partaking of the motion of the hopper, and provided with a section having a shape in cross-section corresponding to the shape of the crackers passing through the same, and a receiving-tray, substantially as described.

4. In a machine for arranging crackers and like articles for packing, the combination of the following elements—namely, a supporting-frame, a vibrating hopper mounted thereon, suitable mechanism for actuating said hopper, an inclined conical conducting-tube pivotally connected to the hopper, a tube-section of proper form connected to one end of the conducting-tube, and a suitable tray in communication with the tube-section, substantially as described.

5. In a machine for arranging crackers and like articles for packing, the combination of a frame, a vibrating hopper mounted thereon and adjustable vertically at one end to vary the inclination thereof, a conducting-tube pivotally connected to the hopper, and a receiving-tray, substantially as described.

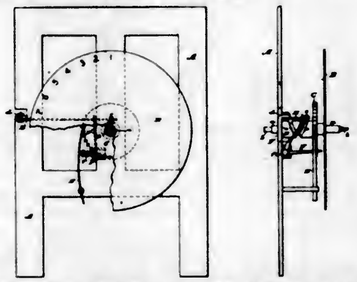
6. In a machine for arranging crackers and like articles for packing, the combination of a frame, a longitudinally-vibrating hopper, supporting-uprights for the hopper pivotally connected thereto and to the frame, the rear upright being vertically adjustable to vary the inclination of the hopper, a conducting-tube connected to and partaking of the motion of the hopper, and a receiving-tray, substantially as described.

7. In a machine for arranging crackers and like articles for packing, the combination of the following elements—namely, a main supporting-frame, a vibrating hopper, uprights pivotally connected to the hopper and frame, a crank-shaft having a pulley and belt, a rod connecting the crank-shaft with one of the hopper-supporting uprights, a conical conducting-tube pivotally connected to the hopper and having an angular discharge-foot, and a receiving-tray in communication with the tube, all arranged and combined substantially as described.

8. The combination of a vibrating hopper, a receiving-tray, and a sectional conducting-tube, substantially as described.

9. The combination of a movable hopper, a receiving-tray, and a sectional conducting and arranging tube, the lower section of said tube being detachably connected to the upper section and interchangeable with lower tube-sections of different sizes or shapes, substantially as described.

339,657. CALENDAR-CLOCK. URB. VIKTOR JARNE, Auburn, South Australia. Filed Dec. 17, 1885. (No model.)



Claim.—1. In a calendar-movement for clocks, the combination, with a rotatively-mounted indicator for the days of the month, of the hour-wheel arbor, the grooved boss D, mounted thereon, and means, substantially as described, for converting the continuous rotary motion of the said boss into intermittent rotary motion of the said day-indicator, as set forth.

2. The combination, with a rotatively-mounted indicator for the days of the month, the hour-wheel arbor, and the grooved boss D, mounted thereon, of the pivoted arm E, the pin *e*, rotatively mounted in said arm and engaging the groove in the boss D, and means, substantially as described, for converting the vibratory movement of the arm E into intermittent rotary motion of the said day-indicator, as set forth.

3. The combination, with the hour-wheel arbor and the grooved boss D mounted thereon, of the arm E, and its pin *e*, arranged to operate as shown, the pivoted pawl F, engaging ratchet-wheel C, and connected to arm E by an arm, F′, the said ratchet-wheel C, its spring-detent, and a day-indicator secured to said ratchet-wheel, substantially as set forth.

4. The combination, with the hour-wheel arbor and the boss D fixed thereon, and provided with the grooves *c c*, as shown, of the lettered calendar-dial B and its ratchet-wheel C, mounted loosely on the hour-wheel arbor, the detent to prevent the backward rotation of the ratchet-wheel, the pin *e*, engaging the grooves in the boss D, the pawl for driving the ratchet-wheel intermittently, and means, substantially as described, between the pin *e* and said pawl whereby the former actuates the latter, substantially as set forth

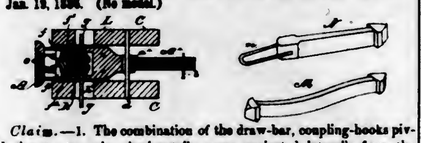
339,658. PLOW. LUTHER C. JAGGER, Stuart, Neb. Filed Jan. 19, 1886. (No model.)



Claim.—1. The combination, with the plow, of a shaft vertically journaled relative to the landside thereof, a cutter secured to the lower end of the shaft, and provisions for partially rotating the shaft to project the cutter laterally more or less beyond the plane of the landside, as and for the purposes set forth.

2. The combination, with the plow and standard, of a rod journaled to the standard, a cutter fastened to the lower end of the rod, a lever and pitman connected with the upper end of said rod to partially rotate it to retract the cutter wholly within the track of the plow and project it at an adjusted distance laterally from the landside, as desired, as and for the purposes set forth.

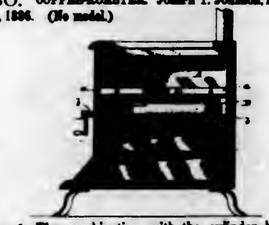
339,659. CAR-COUPLING. JOHN W. JOHNSON, Pendleton, Mo. Filed Jan. 19, 1886. (No model.)



Claim.—1. The combination of the draw-bar, coupling-hooks pivoted thereto to swing horizontally, arms projected laterally from the hooks, a yoke journaled in bearings on the draw-bar and having its ends bent downward, links connecting the extremities of such bent ends with the arms, a rear extension projected from the yoke between the bearings, an operating-lever, and suitable connections intermediate with the lever and rear extension of the yoke for rocking the latter in its bearings to operate the hooks, substantially as and for the purpose set forth.

2. In a car-coupler, the combination of a link having an arrow-shaped head and a loop pivoted to its opposite end, substantially as shown, and for the purposes specified.

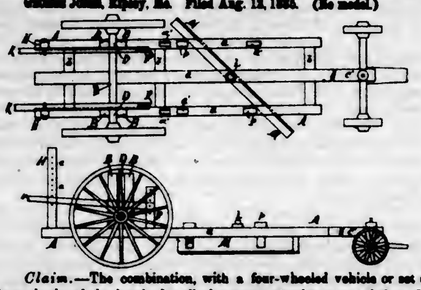
339,660. COFFEE-ROASTER. JOSEPH T. JOHNSON, Kansas, Ill. Filed Feb. 9, 1886. (No model.)



Claim.—1. The combination, with the cylinder having end journals, of the parallel strips adapted to engage the grate-flanges of an ordinary oven, and the bent-wire bearings for the journals secured to the said strips, substantially as specified.

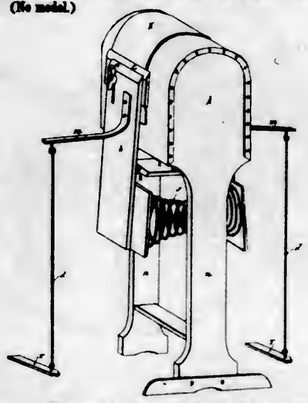
2. The combination, with the parallel strips adapted to engage the grate-flanges of an oven, of the wire bearings secured at opposite ends to the said strips, and the cylinder having closed ends provided with journals, and a detachable crank-handle adapted to engage one of the journals, substantially as specified.

339,661. ROAD-SCRAPER ATTACHMENT FOR VEHICLES. C. GUSTUS JONES, Ripley, Me. Filed Aug. 12, 1885. (No model.)



Claim.—The combination, with a four-wheeled vehicle or set of four wheels, of the herein-described scraper attachment consisting of a body or frame having a projecting center piece or tongue, a scraper pivotally and permanently secured to its under side, adjustable at various angles to the frame, and capable of being locked at various angles by stops passing downward through the side pieces of the frame, or in any equivalent manner, rigid upright double standards on each side and near the rear end of said frame, two arms pivoted to the side pieces of the frame in front of said double standards, two levers adjustably pivoted to said arms, two rigid upright single standards at the rear end of the frame behind the double standards, and so placed that the ends of the levers may be secured upon the single standards at various and different elevations, all as shown and described, and substantially as and for the purpose specified.

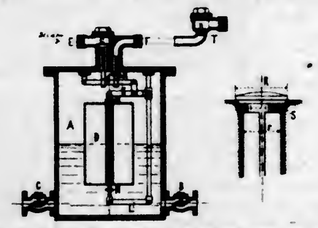
339,662. TOBACCO-BOOKING MACHINE. WASHINGTON JONES, Lancaster, Pa., assignor to Charles A. Inglis, same place. Filed Dec. 16, 1882. (No model.)



Claim.—1. The combination, with the booking-block A, of the levers *b*, hinged at the points *h*, the spring S, the hooks or arms *m*, the connecting-rods *d*, and the treadles T, all substantially as and for the purpose specified.

2. The combination, with a booking-block, of levers hinged to the sides, treadles connected to the levers, and a spring for forcing the upper ends of the levers against the block, for the purpose specified.

339,663. APPARATUS FOR ELEVATING LIQUIDS. ERNST KÖRTING, Hanover, Prussia, Germany. Filed Oct. 26, 1885. (No model.)



Claim.—1. In an apparatus for raising liquids by means of a compressed gaseous medium, the combination, with the chamber A, having valves B and C for the inlet and discharge of the liquid, an induction-

valve, G, for the operating medium opening outwardly, and an eduction-valve, H, for the same opening inwardly with respect to the said chamber, of the lever J, to which said valves G and H are connected, and the float D, connected, substantially as described, with said lever J, whereby the valves G and H are moved simultaneously in opposite directions by a movement of the float after it has overcome the pressure acting on one of the valves, substantially in the manner and for the purpose set forth.

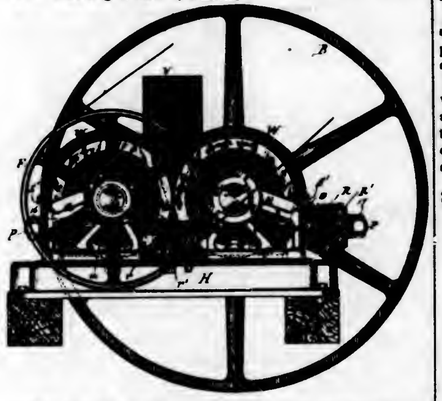
2. The combination, with the chamber A, valves B and C, and float D, of induction and eduction valves G and H, provided beneath their top or disk with a cylindrical appendage, S, adapted to engage with the tubular or guiding portion of the valve-seat, substantially as and for the purpose specified.

3. The combination, with the chamber A, valves B and C, and float D, of induction and eduction valves G and H, provided beneath their top or disk with a cylindrical appendage, S, as described, the surface of contact of the valves G and H with their seats being so reduced as that they will close upon their seats with the outer annular portion of their rim only, substantially as hereinbefore described, and for the purpose set forth.

4. The combination, with the chamber A and valves B, C, G, and H, arranged substantially as described, of a float, D, connected to the valves G and H, and provided with an open neck, P, through which the discharge-pipe O passes down into the float, as and for the purpose described.

5. The combination, with the chamber A, valves B, C, G, and H, and float D, connected to the valves G and H, of a check-valve, T, placed in the steam-eduction pipe, as and for the purpose specified.

339,664. ROLLER ORE-CRUSHER. STEPHEN R. KNOX, Plainfield N. J. Filed Aug. 4, 1884. (No model.)



Claim.—1. The combination, with the pair of crushing-rollers, of two movable pillow-blocks and two stationary pillow-blocks, tie-bolts passing through cylindrical openings in the pillow-blocks, nuts upon the tie-bolts at one end to adjust the moving pillow-blocks, springs, washers, and nuts at the other ends of the tie-bolts, the springs bearing against the pillow-blocks at one side, and fixed collars around the tie-bolts bearing against the other sides of such pillow-blocks, substantially as set forth, whereby the pressure of the springs can be adjusted without varying the position of the moving roller, and the moving roller can be adjusted without varying the tension of the springs, substantially as specified.

2. The combination, with the crushing-rollers and their shafts and pillow-blocks, of the housing-plates covering and inclosing the ends of the rollers below their shafts, and having depressions to receive the roller-shafts and elevated central portions, and the movable cheek-pieces applied inside of and adjustably connected to the said housing-plates, substantially as specified.

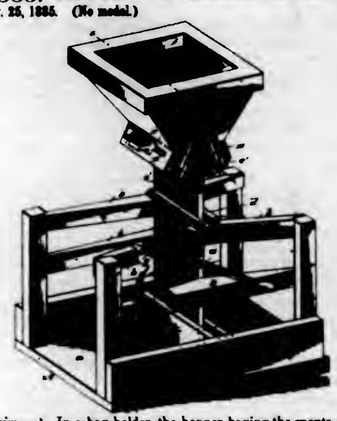
3. The cheek-pieces dovetailed at their edges, in combination with the stocks for the same, the housing-plates, and the attaching-bolts, substantially as set forth.

4. The combination, with the crushing-rollers, of the housing-plates bolted together, the movable cheek-pieces, the stocks for the same, the attaching-bolts, and the covers for the rollers, substantially as set forth.

5. The combination, with the crushing-rollers, the housing-plates, and the cheek-pieces, of hopper-plates one above the other and inclined in opposite directions, and the frame by which they are supported on the housing-plates, so that the material is spread evenly in passing to the rollers, substantially as set forth.

6. The combination, with the crushing-rollers and their shafts and pillow-blocks, of the housing-plates, and the movable covers to the rolls, for the purposes and substantially as set forth.

339,665. BAG-HOLDER. WILLIAM H. KNOBE, Hartford, Dak. Filed Nov. 25, 1885. (No model.)

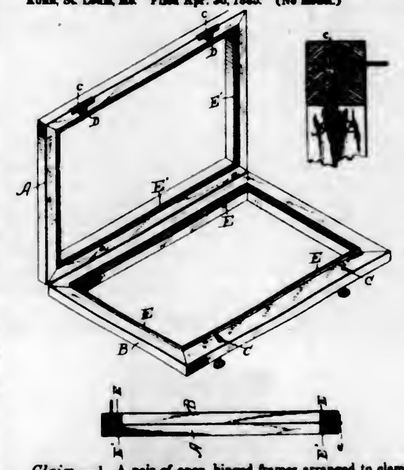


Claim.—1. In a bag-holder, the hopper having the spouts provided with the hinged keepers *e'*, attached to the sides or ends of the spouts, and having the inwardly-projecting sharpened points for passing through the mouth of the bag and entering openings in the spouts when the keepers are closed downwardly against the spouts, substantially as described.

2. In a bag holder and filler, the hopper having the spouts, and the slides for closing the openings therein, the said slides having the angle-plates bearing on the outer sides of the spouts to direct the slides, substantially as described.

3. The combination of the base having the side rails, and the transverse bars *c* and *d*, with the vertically movable standard inserted between and guided and supported by the side rails and the bars *c* and *d*, and the hopper having spouts, and the lever G, pivoted to the side rail on one side of the standard and connected to the latter, substantially as described.

339,666. DRYING-FRAME FOR SENSITIZED PAPER. HENRY KUHN, St. Louis, Mo. Filed Apr. 30, 1885. (No model.)



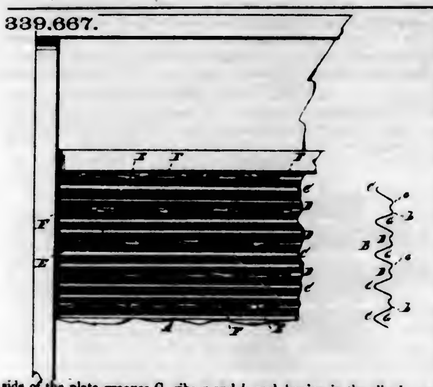
Claim.—1. A pair of open hinged frames arranged to clamp the sensitized paper or film between them, so that the frames, by reason of their thickness, will project on either side thereof at right angles to the paper to protect the surface of the same, in combination with a locking device, as set forth.

2. The combination, with the frame A B, having groove F and rubber strip E, of the turn-button C, as set forth.

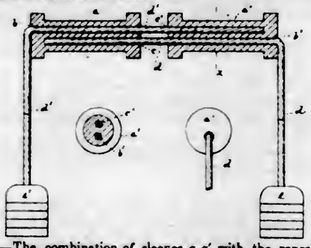
339,667. WASH-BOARD PLATE. JOSEPH H. LAPHAM and OWEN T. LAPHAM, Cleveland, Ohio. Filed Dec. 14, 1885. (No model.)

Claim.—In wash-boards, a metal plate having on one side thereof large transverse ribs C, and, alternating therewith, ribs D, of slight elevation as compared with said ribs C, and in the grooves between the ribs an alternating series of swells and depressions, and in the reverse side of the plate grooves G, ribs *a* and *b*, and having in the ribs *b* a series of depressions, substantially as described.

339,667.

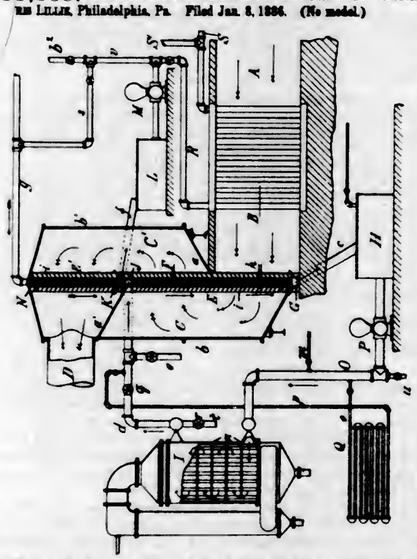


339,668. EXERCISING APPARATUS. ANTHONY P. LARGIADER, Strasburg, Germany. Filed Jan. 20, 1886. (No model.) Patented in Germany Nov. 4, 1884, No. 31,710; in Belgium Dec. 1, 1884, No. 67,065; in Austria-Hungary Aug. 10, 1885, No. 29,283 and No. 51,043, and in England Nov. 26, 1885, No. 14,524.



Claim.—The combination of sleeves *a a'* with the ropes *d d'* attached to one of the sleeves and passing loosely through perforations of the other sleeve, and carrying weights *e e'*, substantially as specified.

339,669. UTILIZING THE WASTE HEAT OF FURNACES. S. MORRIS LLLER, Philadelphia, Pa. Filed Jan. 8, 1886. (No model.)



Claim.—1. Apparatus for utilizing the heat in the gaseous products of combustion from the furnaces of boilers, &c., consisting of a wall permeable to the gases, located across a flue along which the gases are made to pass, suitable apparatus for causing a flow of the gases along the flue and through the permeable wall, means for projecting water or other liquid upon the wall and keeping it wetted, and apparatus for receiving the heated water or liquid flowing from the permeable wall and for utilizing it for heating or evaporating or for other purposes for which heated water may be used, substantially as specified.

2. The within-described apparatus for utilizing the heat in the gaseous products of combustion from furnaces for heating water or for evaporating solutions or liquids, consisting of a wall permeable to the gases placed across the flue along which the gases are made to pass, means for projecting water or liquid to be heated or evaporated upon the permeable wall, and a drain or suitable means for receiving and collecting the heated water as it flows from the wall, substantially as specified.

3. Apparatus for utilizing the heat and the gaseous products of combustion from furnaces, consisting of two or more sections of wall, or of two or more walls permeable to the gases located in the flue for the gases, apparatus for exhausting or forcing the gases along the said flue and successively through the sections of permeable wall, means independent for each section of wall for projecting water or liquid upon the same, and drains independent for each section of wall for collecting the heated liquid flowing from each, the arrangement permitting the heating of different liquids on the different sections or walls, or of heating the same liquid for different purposes, substantially as specified.

4. Apparatus for utilizing the heat in the gaseous products of combustion from the furnaces and boilers, &c., consisting of a vertical chamber, with which the flue from the furnace connects, an approximately-vertical wall permeable to the gases in the said chamber, shelves or deflecting-plates, such as *a*, extending from the wall alternately to opposite sides of the chamber and dividing the said chamber into a zigzag channel leading back and forth through the permeable wall, a flue leading from the furnace and connecting with one end of the zigzag channel in the chamber, an exhausting apparatus communicating with the other end of the zigzag channel and operating to draw the gases from the furnace to and through the zigzag channel, and means for projecting a liquid to be heated or evaporated upon the said permeable wall, substantially as specified.

5. The combination, with the permeable wall of an evaporator, constructed and operating substantially as described, of a pump or its equivalent, with suitable mains connecting it with the permeable wall, the pump and its connecting-mains operating to collect the partially concentrated or evaporated liquid flowing from the wall and to deliver it back onto the wall for further evaporation, substantially as specified.

6. The within-described apparatus for utilizing the heat in the gaseous products of combustion from the furnaces of boilers, kilns, &c., consisting of a permeable wall located across a flue, along which the products of combustion are made to pass, a perforated main or its equivalent for distributing a liquid upon the permeable wall, a drain or receptacle for receiving the liquid flowing from the wall, evaporating or heating apparatus connected with the said perforated distributing-main and with the said drain or receptacle by suitable connecting-pipes, and apparatus—such as a pump—for causing the flow of the liquid from the said drain or receptacle through the evaporating or heating apparatus to the said perforated distributing-main for the permeable wall, substantially as and for the purpose specified.

7. The within-described process of concentrating solutions or evaporating liquids to a certain degree by the gaseous products of combustion from the furnaces of boilers, &c., consisting in causing the solution or liquid to flow repeatedly over a permeable wall, through which the hot products of combustion from the furnaces are made to pass, substantially as specified.

8. The within-described process of continuous evaporation or concentration of liquids or solutions by means of the hot gaseous products of combustion from the furnaces of boilers, &c., consisting in causing the solution to flow repeatedly over a wall permeable to the gases, through which the gases are made to pass, in continuously adding the fresh and dilute solution to the circulating and evaporating solution, and in continuously drawing off the concentrated solution from the said circulating solution, the rate of introduction of the fresh solution and of the withdrawal of the concentrated solution being so regulated that the concentrated solution continuously drawn off may be of the desired density, substantially as specified.

9. The within-described process of utilizing the heat of the gaseous products of combustion from the furnaces of boilers, &c., for evaporating liquids, consisting in heating water or a saline solution, and in using the heated water or solution in an evaporator as the source of heat for effecting the evaporation, substantially as specified.

10. The within-described process of utilizing the heat of the gaseous products of combustion from the furnaces of boilers, &c., for evaporating liquids, consisting in heating water or a saline solution, in using the heated water or solution in an evaporator as the source of heat for effecting the evaporation, and in returning the partially-cooled water from the evaporator to the heating device, the water thus circulating through the system acting as a conveyer of heat from the products of combustion to the evaporator, substantially as specified.

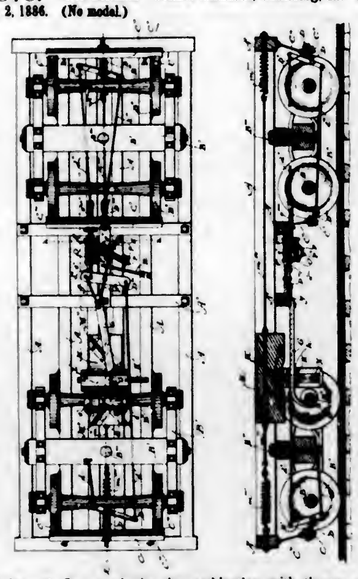
11. In the process and apparatus, substantially as described, for utilizing the heat in gaseous products of combustion for the evaporation

of solutions, and for other heating purposes, the use of a saline solution as the conveyer of heat from the products of combustion to the evaporator or heating apparatus, the use of such solutions permitting the conveyance of higher temperatures, substantially as specified.

12. In the process for evaporating by means of the gaseous products of combustion from furnaces herein described, the maintenance of a constant density, and consequently of a constant temperature in the saline solution used as a conveyer of the heat from the products of combustion to the evaporator, by admitting fresh water to the saline solution to replace the water lost from the same by evaporation, substantially as specified.

13. Apparatus for utilizing the heat in the gaseous products of combustion from the furnaces of boilers, kilns, &c., consisting of the combination, in the flues or conduits along which the hot products of combustion are made to pass, of a surface-heater, such as B, a water-scrubber, such as F, and suitable connecting-main, the water-scrubber serving to heat water to a degree preparatory to its being passed through and superheated in the surface-heater, substantially as specified.

339,670. **CAR-BRAKE.** JOSEPH LISHEOTH, Galesburg, Ill. Filed Jan. 2, 1886. (No model.)



Claim.—1. In a car-brake, the combination, with the car, of an axle, a cam secured thereto, a longitudinally-reciprocating and laterally-moving pull-bar connected to the brake-beams, and a longitudinally-moving wedge-block adapted to shift the pull-bar laterally into and out of working position, substantially as described.

2. In a car-brake, the combination, with the car, of an axle, a series of gradually-expanding or spiral cams, a longitudinally-reciprocating pull-bar connected to the brake-beams, and a cam-shaped wedge-block for moving the pull-bar both vertically and laterally into and out of its working position, substantially as described.

3. In a car-brake, the combination, with a car, of a cam secured to the axle, a longitudinally-reciprocating and laterally-moving pull-bar connected to the brake-beams, and a wedge-block provided with oppositely-inclined grooves or faces to engage with the pull-bar, and provided with means for moving it from either end of the car in opposite directions, substantially as and for the purpose specified.

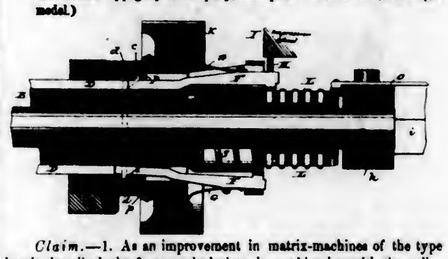
4. The combination, with the car, of the cam secured to the axle, the pull-bar connected to the brake-beams, the wedge-block, and a carrier-block supported in bearings to move laterally across the wedge-block and carry the pull-bar, substantially as described.

5. The combination, with the car, of the expanding cam E, secured to the axle, the pull-bar G, connected to the brake-beams and actuated by the expanding cam, the cam-faced wedge-block H, a pillow-block, K, adapted to provide bearings for the guide-rods of the carrier-block, and a spring, N, to hold the pillow-block against the cam-shaped face of the wedge-block, substantially as described.

6. In a car-brake, the combination of the pull-bar, rods, levers, and brake-beams with a trundle-wheel connected between the pull-bar and rods, and a pawl and ratchet actuated by the pull-bar to operate the trundle-wheel, substantially as and for the purpose specified.

7. In a car-brake, the combination of a pull-bar connected to the brake-bars, levers, and beams, with a cam secured to one of the car-axles to impart successive impulses to the pull-bar, and a nut and screw-bolt connected with and automatically operated upon by the pull-bar to take up lost motion in the linked connections, substantially as described.

339,671. **MACHINE FOR PRODUCING STEREOTYPE-MATRICES.** FRANK D. MALLEY, Washington, D. C., assignor, by mesne assignments, to the National Typographic Company, same place. Filed Nov. 3, 1884. (No model.)



Claim.—1. As an improvement in matrix-machines of the type herein described, the frame or bed-plate, in combination with the cylinder carrying the pressure-slides in its periphery, the type-wheel having a common axis with the cylinder, the pressure-wheel acting to apply pressure on the periphery of the type-wheel, bearings for the ends of the cylinder-shaft, a central collar or bearing-surface, *e*, encircling the cylinder and slides at a point between the end bearings, and a support for said collar on the opposite side of the cylinder from the pressure-wheel.

2. In a matrix-machine, in combination with a cylinder, its slides, the type-wheel, and the pressure or feed wheel, the ring *e*, encircling the cylinder and slides, and the vertically-adjustable rolls *f*, acting to sustain the ring.

3. In a machine of the type herein described, the combination of the pressure-wheel and the supporting-standards therefor hinged to the bed-plate, as described, whereby the instantaneous removal of the wheel may be effected to expose the parts thereunder.

4. In combination with the hinged key-board frame and the keys mounted thereon, the locking-bar U for the keys, also mounted on said frame.

5. In a machine of the type herein described, the combination of the bed-plate, the feed-wheel having its shaft movable endwise in bearings, and the lever N, pivoted on the bed-plate and provided with a rigid standard, which directly engages the end of the shaft, as described and shown, whereby the lever is adapted to effect the direct and positive adjustment of the feed-wheel and permit the latter to be lifted out at will.

6. In combination with the laterally-movable feed-wheel and the laterally-movable type-wheel, the hand-lever N, provided with a standard engaging the shaft of the feed-wheel, and the slide O, connecting the lever with the type-wheel, whereby the simultaneous and positive adjustment of the two wheels is effected.

7. In combination with the finger-keys, the locking-bar U, its sustaining-links, the bar *d'*, connected to the links, and the operating-cam *c'*.

8. In a machine of the type herein described, the improved feed-dog H, consisting of the spindle *f'* and the removable arm or dog proper, *g'*, constructed substantially as described and shown.

9. In combination with an indenting or printing mechanism, substantially as described, a friction device acting on the paper to control its tension, and governing mechanism, substantially as described, actuated by the machine and controlled by variations in the speed of the machine, to vary the resistance offered by the friction devices to the paper.

10. In combination with a rotary indenting or printing mechanism, substantially as described, a friction-brake to act on the paper strip or blank, and a governor driven by the machine, acting to adjust the brake, as described, whereby an increase in the speed of the machine is caused to effect an increase in the tension of the paper.

11. In a machine such as herein described, the combination of a cylinder, the pressure-dogs or slides F, mounted therein and removable endwise through the slots at the end of the cylinder, and the removable plate or ring *t*, whereby said dogs are retained in position.

12. In combination with an indenting or printing machine, a damping-wheel, automatic devices, substantially as described, presenting the paper thereto and lifting it therefrom, and a trip actuated by the paper to permit the presentation of the paper to the wheel.

13. In combination with the damping-wheel, the arm *w'*, provided with devices, substantially as described, to lift and depress the paper, the cam to lift said devices, and the trip actuated by the paper to release them.

14. In combination with the type-wheel and the pressure-slides or dogs revolving in unison therewith, the pivoted throat plate or guide, and the spring applied to effect its elevation.

15. In a machine of the type herein described, the improved feed-wheel having two or more circumferential series of feed surfaces or projections, each series mounted on an independent support.

16. In combination with the feed-wheel body, the series of separable independent rings, each provided with a series of feed surfaces or projections, substantially as described.

17. A type-wheel provided with two or more peripheral lines of type and movable laterally to bring one line or another in position for printing, in combination with a reciprocating indicator, substantially as described, connected to and movable laterally with the type-wheel, to show which of the lines of type is in operative position.

18. A type-wheel provided with two or more circumferential lines of type and movable laterally to bring one or another line into position for action, in combination with a series of finger-keys representing the different characters, an intermediate mechanism, substantially as described, whereby the operation of the keys is caused to effect the printing or indenting of corresponding characters, and a laterally-movable indicator located adjacent to the keys and connected with the type-wheel to be moved laterally thereby, said indicator being provided with characters adjacent to the keys to show the particular character and style of character which will be printed by the depression of the key.

19. In combination with the type-wheel and pressure devices, substantially as described, to force the paper against the type, the slotted throat-plate, arranged to be depressed by the pressure device, and the spring to lift the throat when relieved therefrom, substantially as described, whereby the paper is thrown positively into and out of contact with the type.

339,672. **SHORT-CIRCUITING DEVICE FOR MAGNETO-CALLS.** GEORGE A. MASON, 109 Farringdon Road, County of Middlesex, England. Filed May 14, 1885. (No model.) Patented in England Mar. 25, 1885 No. 3,850.



Claim.—1. The combination, with a curved or circular contact device, a handle or crank, and a shaft, of the curved spring connected at one end to the handle or crank and at the other end to the shaft, and means, substantially as described, for loosely securing the handle and shaft to each other, so as to allow a limited amount of play to the handle with respect to the shaft, substantially as and for the purpose described.

2. A short-circuiting apparatus which comprises in its construction shaft A, handle or crank C, spring E, connected at one end with the handle or crank and at the other end to the shaft, and a contact against which the spring normally bears, substantially as and for the purpose described.

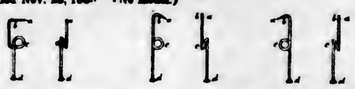
3. The combination of the short-circuiting contact device *f*, shaft A, post or pin *a*, handle or crank C, having slotted collar *d*, and spring E, connected by one of its ends to the post *a* and by its other end to the collar *d*, substantially as and for the purpose described.

339,673. **MANUFACTURE OF CEMENT.** HENRY MATHEY, New York, N. Y., assignor to H. G. Bond, same place. Filed Mar. 18, 1885. (No specimens.)

Claim.—1. The process for making cement, which consists in first crushing the rock to a suitable degree of fineness, then subjecting the rock thus crushed to heat in a revolving cylinder, whereby each particle of the rock is subjected to a heating action sufficient to thoroughly calcine it, and finally pulverizing the calcined material, substantially as set forth.

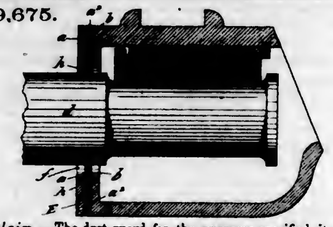
2. A cement made from cement-rock, said rock being crushed and then heated under agitation and finally pulverized, substantially as and for the purpose set forth.

339,674. **NAPKIN-PIN.** ALEXANDER MCDONALD, Cambridge, Mass. Filed Nov. 23, 1885. (No model.)



Claim.—As an improved article of manufacture, the napkin or tidy pin, substantially as described, composed of a piece of wire, headed at one end, pointed and hooked at the other, and coiled, as set forth, between the head and the hook, all being essentially and for use as represented.

339,675. **DUST-GUARD FOR CAR-AXLES.** WILLIAM MCKENZIE, East Boston, Mass. Filed Feb. 11, 1886. (No model.)



Claim.—The dust-guard for the purposes specified, it consisting, essentially, of a pair of stiffening-plates and an interposed layer or thickness of rawhide, the whole being firmly united, and having a cylindrical opening to fit the axle on which it is to be placed, substantially as set forth.

339,676. **INSTRUMENT FOR MEASUREMENTS FOR SPECTACLES.** FRANKLIN I. MILES, Elkhart, Ind. Filed Aug. 26, 1885. (Model.)



Claim.—1. In combination with the bar 1 and movable eye-pieces hung therefrom, the pupillary indexes also hung from said bar and adapted to slide thereon, substantially as set forth.

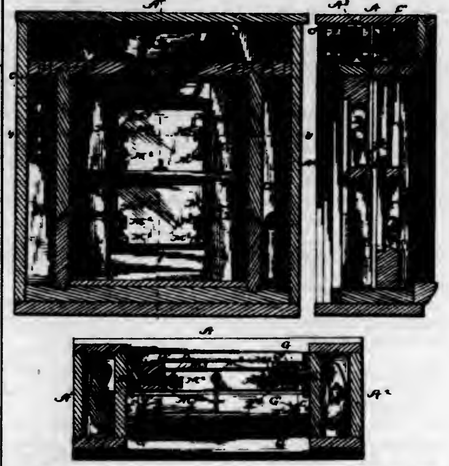
2. A pupillary index consisting of a slotted disk and a wing adapted to slide over the slot on said disk, substantially as set forth.

3. In combination with a pupillary index-finger, a second index of disk form hinged thereto and having slot and pivoted wing, substantially as set forth.

4. In combination with the main bar 1, a nose-piece in the center thereof and a pivoted bridge-piece thereon, substantially set forth.

5. In combination with the nose-piece, a pivoted bridge-piece thereon carrying an index-finger, and a scale on said nose-piece, over which said index-finger may travel, substantially as and for the purpose set forth.

339,677. **WINDOW.** MARTIN S. MILLARD, Kansas City, Mo., assignor of one-half to William Henry Harrison Tainter, same place. Filed July 21, 1885. (No model.)



Claim.—1. The combination, with the window-frame having the hollow sides and the hollow top provided with two single pulleys and two double pulleys, of the window-sashes having the vertical double grooves in their vertical side walls, the wire-cored flexible tubes secured in said double grooves, the cords C C', secured to the pivoted sliding strips, and the weights upon the cords C C', substantially as specified.

2. The combination, with a window-sash having double grooves in its vertical side rails, of the rubber tubing, with wire cores and staples for securing said tubing in the double grooves, substantially as specified.

3. The combination, with a window-sash and pivoted sliding strip, of the ratchet-bolt having the milled head and rectangular portion on the

stem near the head, and a ratchet-lever for turning said ratchet-bolt in a threaded seat in the sash, substantially as specified.

4. The combination, with the window-sash and pivoted sliding strip, of the threaded headed friction-bolt having the nick in the point of the threaded stem, substantially as specified.

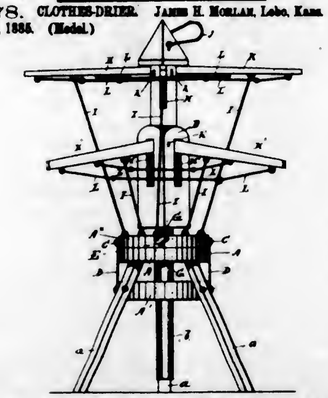
5. The combination, with the window-sash having the vertical double grooves in the outer edges of its side rails, of the wire-cored rubber tubes in said grooves, and the pivoted sliding strips having beaded inner edges, substantially as specified.

6. The combination, with the window-sash having the vertical double grooves in the outer edges of its side rails, of the wire-cored rubber tubes in said grooves, the pivoted sliding strip with beaded inner edges, and the ratchet-bolts with milled heads and integral nuts, and the sliding ratchet-levers on said ratchet-bolts, substantially as specified.

7. The combination, with the window-sash having longitudinal double grooves in its side rails, the wire-cored rubber tubes, and the securing-staples for holding said tubes in the double grooves, substantially as specified.

8. The combination, with a window-sash and the outer sliding bars, of the adjustable pivot and ratchet-bolt connecting and clamping the sash and sliding bars, as set forth.

339,678. CLOTHES-DRIER. JAMES H. MORLAN, Lobo, Kans. Filed Oct. 20, 1885. (Model.)



Claim.—1. In a clothes-drier, the post B, having a handle, J, and slots H H', and radial arms K K', pivoted therein, provided with links L and supporting-rods I, in combination with the circular piece A'', having a central opening for the passage of the lower part of the said post B, and the circular piece A, having legs *a*, secured to the periphery of a lower circular piece, A', as shown and described, and for the purposes set forth.

2. In a clothes-drier, the post B, having radial arms K K', provided with links L and supporting-rods I, secured to a circular piece of board, A'', having a central opening for the passage of the part *b* of said post B, in combination with a supporting-stool consisting of circular pieces of board A A', provided with legs *a*, the said piece A' having hooks D, whereby the upper part of the drier may be attached to said stool, as described, and for the purposes set forth.

339,679. MACHINE FOR MAKING AND INSERTING STAPLES IN MUSIC-ROLLERS. HENRY B. MORSE, Ithaca, N. Y., assignor to the Autophone Company, same place. Filed Oct. 8, 1885. (No model.)

Claim.—1. A machine for making and inserting staples in music-rollers, organized with an intermittingly-moved pattern, which governs the length and position of the staples, substantially as described.

2. A machine for making and inserting staples in music-rollers, organized with an intermittingly-moved pattern, which governs the position and length of the staples, said pattern being moved by a friction-feed, substantially as set forth.

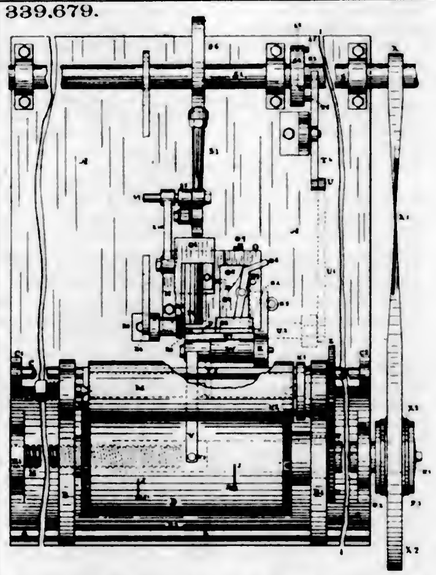
3. In a machine for making and inserting staples in music-rollers, the combination, substantially as set forth, of the feed-carriage, feed-screw, and pattern-roller, the said roller having its surface spirally grooved with the same pitch as the feed-screw.

4. In a machine for making and inserting staples in music-rollers, the combination, substantially as and for the purposes set forth, of a grooved pattern-roller with a perforated pattern-belt, said belt encircling the roller and having its perforations opposite said grooves.

5. The combination, substantially as described, of a perforated pattern-belt encircling a friction-driven roller, with a feeler-point arranged to press upon said pattern-belt and to detain the roller by engaging with a perforation in said pattern-belt.

6. The combination, substantially as before set forth, of the intermittingly-moved pattern-roller, the perforated pattern-belt, the feeler, the

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staple-driver, and means controlled by the feeler for reciprocating the staple-driver.

7. The combination, substantially as before set forth, of the perforated pattern-belt, the feeler, the revolving cam S^9, and means controlled by the cam for elevating the feeler above the pattern-belt.

8. In a machine for making and inserting staples in music-rollers, the pattern-belt pierced with parallel-sided slots J, said slots corresponding in length with the staples to be formed, substantially as set forth.

9. The combination of the perforation in the pattern-belt, consisting of the parallel-sided slots J, terminated by the larger holes J', with the feeler, composed of a point, V^2, of small diameter, and a part, V', of greater diameter, said devices being constructed and arranged with reference to each other, and operating substantially as and for the purposes set forth.

10. In a machine for making and inserting staples in music-rollers, the sliding head O, supporting the staple forming and driving devices, the head having a reciprocating motion, substantially as and for the purposes described.

11. The combination, substantially as set forth, of the intermittingly-moved pattern-roller, the sliding head O, and means actuated by the pattern-roller for moving the sliding head.

12. The combination, substantially as described, of the intermittingly-moved pattern-roller, the perforated pattern-belt, the feeler, the sliding head O, and means controlled by the feeler for governing the motion of the sliding head.

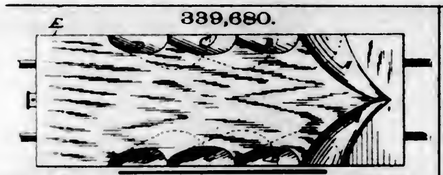
13. In combination with the sliding head O, the beveled reciprocating punch P', the die P, conformed thereto, and the beveled swage-plate O^4, all being arranged and operating with reference to each other, substantially as and for the purposes set forth.

339,680. SNOW-PLOW. JOHN R. NATHAN, New York, N. Y. Filed Sept. 11, 1885. (No model.)

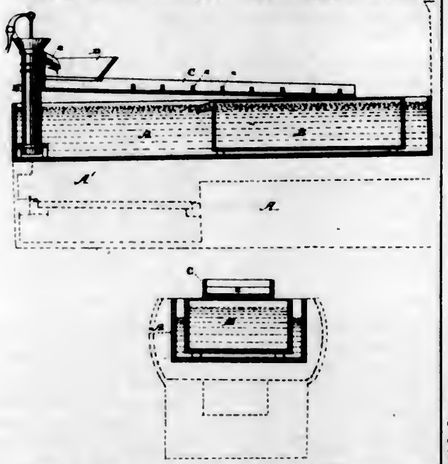
Claim.—A railway snow-plow consisting of two or more plows arranged one above the other in a continually-advancing series from the lowest plow, the lowest plow being the farthest back, and each succeeding plow being advanced beyond the one immediately below it, and each plow being provided with a continuous external channel extending to the top of the elevation of the snow, whereby the snow will be removed in successive layers, beginning at the top, substantially as described.



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339,681. APPARATUS FOR TREATING CRUDE ALKALINE MATERIAL. RUDOLPH G. NEUBERGERWARNER, San Francisco, Cal., assignor to William T. Coleman, same place. Filed June 15, 1885. (No model.)



Claim.—1. An apparatus for treating crude alkaline material, comprising a boiler or pan, a furnace or heater for heating the same, a chute to which the material is fed and by which it is discharged into the boiler, and a pump or other water-elevating device adapted to raise the water from the boiler and discharge it into the chute upon the material.

2. An apparatus for treating crude alkaline material, comprising a boiler, a furnace or heater for heating the same, a superposed inclined chute discharging into the boiler and having a feed-hopper at its upper end, to which the material is fed, and a pump by which the water from the boiler is raised and discharged into the hopper upon the material, substantially as herein described

3. An apparatus for treating crude alkaline material, comprising a boiler or main pan, a heater, an inclined chute discharging into the boiler, and provided with riffles *c* and a hopper, D, and the pump by which the water of the boiler is discharged into the hopper, substantially as herein described.

4. In an apparatus for treating crude alkaline material, the combination of the water-boiler or main pan A, and a heater with the supplementary receptacle or pan B, into which the water and material are fed and from which the liquid solution passes into the boiler, substantially as herein described.

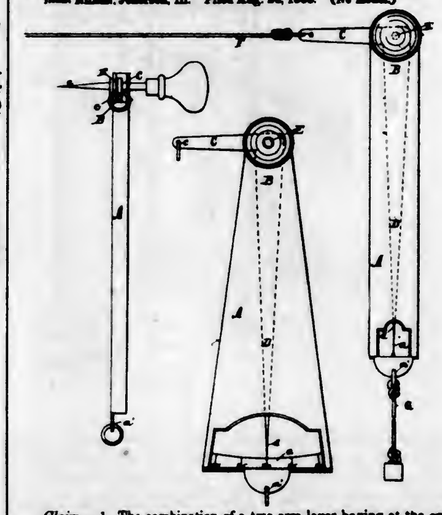
5. In an apparatus for treating crude alkaline material, the combination of a water-boiler or main pan, a furnace or heater for heating the same, a supplementary receptacle or pan adapted to discharge its liquid solution into the boiler and to retain the sediment, and a chute into which the water from the boiler and the alkaline material are fed, and from which they are discharged into the supplementary receptacle or pan, substantially as herein described.

6. An apparatus for treating crude alkaline material, comprising the boiler or main pan A, a furnace or heater, the chute C, a pump or water-elevating device, E, by which the water of the boiler is discharged into the chute, and a supplementary receptacle or pan, B, communicating with the boiler and receiving the contents of the chute, substantially as herein described.

7. An apparatus for treating crude alkaline material, comprising the boiler or main pan A, a furnace or heater, the supplementary receptacle or pan B within the boiler and having an overflow for discharging its contents into said boiler, the inclined chute C, discharging into the supplementary receptacle, and the pump E, adapted to discharge the water from the boiler into the chute, substantially as herein described.

8. An apparatus for treating crude alkaline material, comprising the boiler A, a furnace or heater, the supplementary receptacle or pan B within the boiler and connected therewith by an overflow, the inclined chute C, adapted to discharge into the supplementary receptacle, the hopper D at the upper end of the chute for the material, and the pump E, adapted to raise the water from the main boiler and discharge it over the material in the hopper, substantially as herein described.

339,682. SQUARE AND PROTRACTOR FOR BUILDERS' USE. ANDREW HELSEL, Jefferson, Ill. Filed Aug. 24, 1885. (No model.)



Claim.—1. The combination of a two-arm lever having at the end of one arm means for attaching a line, and having a pointer at the end of the other arm, with a plate having one end pivoted to said two-arm lever at the intersection of the arms thereof, and having at its free end a graduated dial and means for attaching a line thereto, substantially as and for the purpose set forth.

2. The combination of a two-armed lever having at the end of one arm means for attaching a line thereto, and having a pointer at the end of the other arm, with a plate pivoted to said lever at the intersection of the arms thereof, and having at its free end a dial and means for attaching a line to said plate, and means for attaching said device at its pivotal point to some external object, substantially as and for the purpose set forth.

3. The combination of a two-arm lever, having at the end of one arm means for attaching a line, and having a pointer upon the end of the other arm, with a hollow box pivoted to said lever at the intersection of the arms thereof, said box having at its free end means for attaching a line thereto, and having a dial upon the upper surface of its lower side and having its upper side cut away above said dial, substantially as and for the purpose set forth.

339,683. EMERY KNIFE-SHARPENER. WILLIAM H. PARKIN, Cleveland, Ohio. Filed June 30, 1885. (No model.)



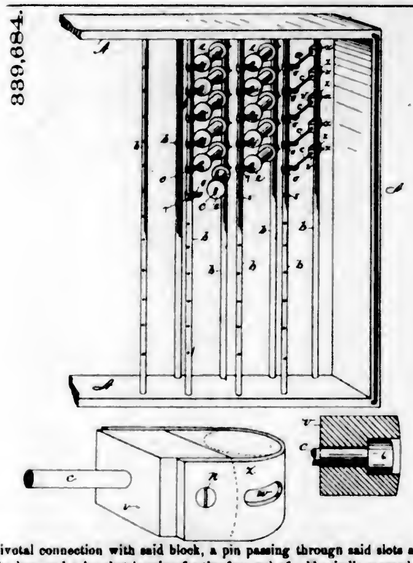
Claim.—A sharpener for knives, consisting of a handle formed with an outer opening, *b*, and inner opening, *b'*, a shaft, and a spindle imbedded in the shaft and secured in the inner opening, the outer opening forming a chamber surrounding the spindle between the shaft and the inner opening, substantially as set forth.

339,684. CREEL-FRAME FOR WARPING-MILLS. FRANK H. PATTEE, South Hadley Falls, Mass. Filed Dec. 26, 1885. (No model.)

Brief.—A series of vertical spindle-bars, arranged in pairs, are secured to the frame of the creel at their upper and lower ends, one bar of each pair having a perforation therethrough, by which means a bracket-bearing for one end of the spindle is secured thereto. To the other spindle-bar of each pair the spindle is connected by means of a strap, block, and pin, the latter passing through a slot in the strap and a perforation in the bar, by which means the spindle can be swung around to facilitate the disengagement of the bobbin therefrom.

Claim.—In combination, the frame A, a series of vertical spindle-bars arranged in pairs, having their upper and lower ends secured in said frame, and having transverse perforations therethrough, a series of spindles, *c*, a connection for each spindle with one of said pair of bars consisting of a block through which the spindle is passed, a strap partially surrounding one of said bars, having slots in its sides and having a

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pivotal connection with said block, a pin passing through said slots and the bar, and a bracket-bearing for the free end of said spindle secured on the second one of said pair of spindle-bars, substantially as set forth.

339,685. FLY-TRAP. J. MONROE PERRY, Oakland, Cal. Filed Jan. 27, 1886. (No model.)



Claim.—1. The spirally-curved rigid end pieces bent at an acute angle at the outer end, so as to bring the inner and outer edges in close proximity, and having legs fixed to the curved portion, in combination with the sheet of wire-netting bent to a similar curve, having its ends secured within these end pieces and its adjacent inner and outer edges secured to and supported by rigid parallel bars extending between the curved end supports, substantially as herein described.

2. The spirally-curved wire-net casing having the rigid end piece bent at an acute angle and the edge supports, in combination with the removable end caps with their spring-fastening, substantially as herein described.

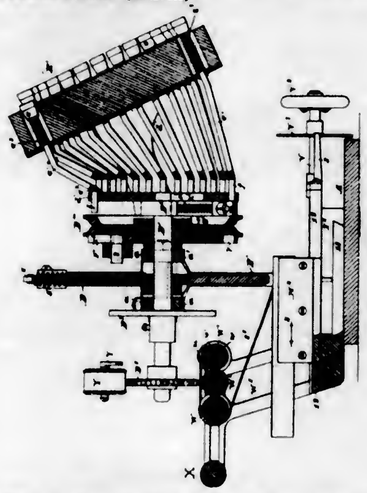
3. The spirally-curved net-casing with its rigid end and adjacent edge supports, having the removable end caps, as shown, in combination with the eyes or hooks secured to the flat side of the casing and by which it may be suspended, substantially as herein described.

339,686. PROCESS OF MANUFACTURING ALE, BEER, AND PORTER. NARCISSE PISSON and WILLIAM L. FLANAGAN, New York, N. Y. Filed Nov. 11, 1885. (No specimens.)

Claim.—1. The herein-described process of preparing barley for use in the manufacture of ale, beer, and porter, which consists in mashing the barley with barley-malt, the latter being added in fractional quantities and at different times, and the mash being kept at proper temperatures during the process, substantially as set forth, whereby the barley will be exfoliated at uninjurious temperatures, and the mash prepared for conversion into wort by subsequent treatment, substantially as described.

2. The herein-described process of producing a wort for the manufacture of ale, beer, and porter, which consists in mashing barley with barley-malt, the latter being added to the mash in fractional quantities and at different times, substantially as set forth, whereby the barley is exfoliated at low and harmless temperatures, and then introducing into the mash thus prepared an additional quantity of malt for saccharification, and continuing the mashing substantially as set forth, whereby fifty per centum or more of barley-malt as used in the common process is dispensed with and ordinary barley is substituted therefor, and a wort is produced substantially the equivalent of if not identical with the wort produced wholly from barley-malt.

339,687. PRINTING-MACHINE. JAMES L. POAIK, Philadelphia, Pa. Filed Mar. 27, 1885. (No model.)



Claim.—1. The combination, in a type-writing or matrix machine, of a frame carrying a movable matrix-block and a swinging frame provided with a type-wheel and movable stops for arresting the type-wheel in different positions, a power-driven wheel with frictional connections between the same and the type-wheel, and connections, substantially as described, between the said driven wheel and swinging frame, whereby the latter is forced down by the movement of said wheel after the motion of the type-wheel is arrested, substantially as set forth.

2. The combination of the swinging or movable frame carrying the type-wheel, driving-pulley, key H, and connections, substantially as described, between the key and driving-pulley, whereby the latter is caused to forcibly depress the frame when the key is operated, substantially as set forth.

3. The combination of a pivoted frame carrying the rotating type-wheel, a shaft supporting the type-wheel and provided with a stop-arm, a series of movable stops arranged in a circle and adapted to be projected separately in the path of the arm, and a drive-wheel or pulley rotating in frictional connection with the shaft or arm of the type-wheel, substantially as described.

4. The combination of the shaft carrying the type-wheel, and stop-arm provided with a lug or projection, and a driving-pulley carried loosely by the shaft and provided with a spring-ring in frictional contact with the lug upon the stop-arm, substantially as specified.

5. The combination, with the stationary frame supporting the matrix-block, of a movable frame supporting the type-wheel, driving-pulley, keys, and stops, and connections, substantially as described, between the driving-pulley and the two frames, and key for operating the same, whereby the movable frame is depressed by the rotation of the pulley upon the projection of the said key, substantially as set forth.

6. The combination of a stationary frame carrying the matrix and a movable frame carrying the stops and provided with detachable bearings for a shaft carrying the type-wheel and driving-pulley, substantially as described.

7. The combination of the stationary frame carrying the matrix-block, the movable frame carrying the type-wheel, stop devices, substantially as described, and driving pulley and cam, lever having a bearing upon the said cam, and a pin or stop movable in respect to the lever to limit the movement thereof, for the purpose set forth.

8. The combination, with the stationary frame and carrier for the matrix, of a second frame pivotally supported at one end by the stationary frame, and detachably supported at the opposite end by said stationary frame, and carrying the type-wheel and stop devices, substantially as and for the purpose set forth.

9. The combination, with the stationary frame, of a second frame pivoted at one end and movable at the other end, and carrying the type-wheel, driving-wheel and stops, and spring supporting the adjustable end of said second frame and detachable, as and for the purpose set forth.

10. The combination of the stationary frame, movable frame carrying the type-wheel, type-wheel shaft, and cam, a lever provided with a bearing upon said cam, and a movable pin and key, whereby said pin may be carried to and from the edge of the lever, for the purpose set forth.

11. The combination, with a stationary frame and carriers for a matrix block or sheet, of a pivoted frame carrying a shaft supporting two type-wheels, a series of stops arranged to arrest the type-wheels at the will of the operator, one type-wheel arranged above the said carriers and the other above a support, substantially as described, for a proof-sheet, as and for the purpose described.

12. The combination, with a stationary frame provided with platens for two independent blocks or sheets, of devices, substantially as described, for feeding each sheet, a swinging frame carrying type-wheels, and means, substantially as described, for automatically reciprocating said second frame to and from said platens, as and for the purpose set forth.

13. The combination, with the movable bed or support for the matrix-block, of a movable bed or support for a copy or proof sheet, a movable shaft carrying two printing-wheels, and connections, substantially as described, whereby the feeding movement of one bed is imparted to the other, substantially as set forth.

14. The combination, with the stationary and movable frames, of a support for the matrix, arranged below the type-wheel carried by the movable frame, a lever and connections, substantially as described, whereby the support is moved according to the movement of said lever, a bearing carried by the movable frame in position to strike said lever, and a cam carried by the movable frame, and constructed to adjust the said bearing to vary the movement of the lever and the extent of the feed according to the width of the imprint, substantially as set forth.

15. The combination of the matrix-carrier, a rack connected thereto, feed-wheel gearing with the rack and provided with an annular rib, feed-dogs biting upon said rib, a lever connected to operate said feed-dogs upon the upward movement of the frame carrying the type-wheel, and a movable lever, T, for unlocking the dogs from the wheel, substantially as described.

16. The combination, with the feed-wheel connected to operate the matrix-carrier, of a dog, L, and connections, substantially as described, whereby the said dog is caused to bite and arrest the wheel as soon as its feeding movement is completed, substantially as set forth.

17. The combination of the feed-wheel, feeding-dogs, and lever Q^2, connected to operate the said feeding-dogs, and a stop-dog, L, and operating-lever Q^3, connected therewith, a feed-slide with a bearing arranged to strike the lever Q^2, and a bearing carried by the frame C arranged to strike the lever Q^3 upon the upward movement of the slide, substantially as set forth.

18. The combination, with the frame carrying the printing-wheel, of a support or bed for a matrix-block having a curved face, said bed being fitted to and adjustable upon a curved bearing, substantially as described.

19. The combination of the reversible frame having detachable bearings, shaft D', carrying the type-wheel and fitted to said bearings, and disk d', carried by the frame and provided with a slot, x^3, lever F, having a pin, 8, and driving cam-wheel D, carried by said frame, and provided with a radial slot, x^2, substantially as set forth.

339,688. SYNCHRONIZING DEVICE FOR CLOCKS. CHESTER H. POND, Brooklyn, N. Y. Filed June 6, 1885. (No model.)

Brief.—Designed to synchronize the hands of a clock equipped with such a winding device as is shown in Patent No. 308,521. The controlling device completes a circuit through the winding-motor and at the same time places a lever operating the setting device in position to be actuated by mechanism moved by the motor. As soon as the hands are set a shunt-circuit is formed round the electro-magnet, and the parts are thereby restored to their original condition.

Claim.—1. The combination, substantially as hereinbefore set forth, with a clock and an electric motor for winding the same, of a synchronizing or setting device, an electro-magnet for completing the circuit of said motor, and mechanism for operating said setting device by the movement of said motor.

2. The combination, substantially as hereinbefore set forth, with a clock mechanism and an electric motor for winding the same, of a hand-setting device operated by said motor, an electro-magnet for completing the circuit-connections of said motor, and a shunt-circuit around said electro-magnet, the connections of which are completed by the operation of said hand-setting device.

3. The combination, substantially as hereinbefore set forth, with a clock mechanism, of an electric motor, a synchronizing device operated by said motor, means, substantially such as described, for completing the circuit-connections of said motor by the operation of said clock mechanism at predetermined intervals, and means for completing the connections of the same independently of said clock mechanism.

4. The combination, substantially as hereinbefore set forth, of a series of clocks, an electric motor for winding each of said clocks, means, substantially such as described, for placing said motors in circuit by the action of their respective clock mechanisms, one at a time, and means, substantially such as described, for placing all of said motors in circuit simultaneously.

5. The combination, substantially as hereinbefore set forth, with a series of clocks and devices for automatically winding the springs of the same at predetermined intervals, of a synchronizing device for each of said clocks, means for actuating the same by the instrumentality used to wind said clocks, and an electro-magnet applied to each of said clocks for setting in operation the winding devices of all of said clocks simultaneously.

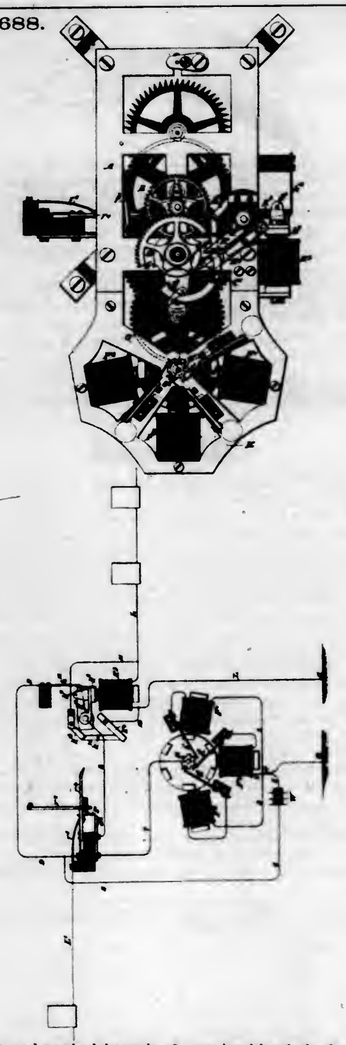
6. The combination, substantially as hereinbefore set forth, with a clock mechanism and a hand-setting device, of an electro-magnet, a revolving wheel having one or more pins projecting therefrom, a lever normally out of the path of said pins, means for moving said lever into the path of said pins by the action of said electro-magnet, and means for causing said wheel to revolve when said lever has been thus moved, and to thereby actuate said synchronizing device.

7. The combination, substantially as hereinbefore set forth, with a clock mechanism, of an electro-magnet, K^3, its armature, the lever K^2, the contact-spring, the arbor carrying said lever, the synchronizing-arm K', carried upon said arbor, one or more pins, k^2, and means, operated by said electro-magnet, for placing the arm K^2 in the path of said pins.

8. The combination, substantially as hereinbefore set forth, with the electro-magnet K^3 and its armature, of the arm K^2, pins k^2, the wheel or drum C^2, the projection upon the end of said arm, and the synchronizing-arm, all operated substantially as described.

339,689. WHIFFLETREE-HOOK. ORLANDO M. POND, Independence, Iowa. Filed Feb. 10, 1886. (No model.)

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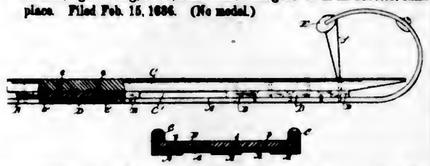


339,689.



Claim.—In a whiffletree-hook, a ferrule adapted to fit over the end of the whiffletree and cast with a slotted keeper having a notched seat, said keeper being curved forward, as shown, and extending out beyond the end of the ferrule, in combination with the U-shaped hook pivoted in the slot of the keeper and adapted to swing back over the end of the same to connect or disconnect the trace, substantially as and for the purpose set forth.

339,690. TOBOGGAN. WILLIAM H. PROCTOR and S. HARRISON MILLER, Ogdensburg, N. Y.; said Miller assignor to L. M. Proctor, same place. Filed Feb. 15, 1886. (No model.)



Claim.—1. A toboggan the body of which is composed of flat strips of varying thickness, the bottoms of the thinner strips being above the bottoms of the thicker strips, so that the weight is entirely supported by the latter, combined with cross-bars secured to said strips and serving to hold them firmly together, substantially as set forth.

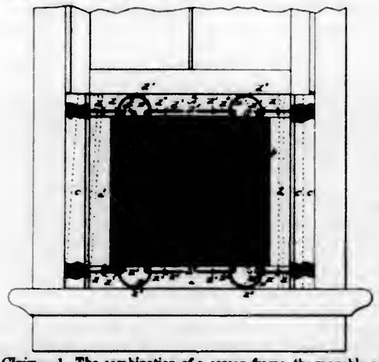
2. A toboggan the body of which is composed of alternate flat strips of varying thickness, the bottoms of the thinner strips being above the bottoms of the thicker strips, so that the weight is entirely supported by the latter, combined with cross-bars secured to said strips and serving to hold them firmly together, substantially as set forth.

3. In a toboggan, the combination, with the flat strips of varying thickness composing the body of the same, and the cross-bars by which said strips are secured together, of the fastening-screws passing from the tops or upper sides of the cross-bars downward through said bars and into the strips and terminating above the lower surfaces of the latter, substantially as set forth.

4. The combination, with the body and the cross-bars of a toboggan, of the side rails and the bracing or filling blocks secured beneath said rails and between the said cross-bars, whereby the said side rails may be strongly secured in place and the sides of the toboggan be properly braced, substantially as set forth.

5. The combination, with the strips composing the body of the toboggan, of the grooved block attached to the backwardly-turned ends of the strips and into which the said ends are entered, substantially as set forth.

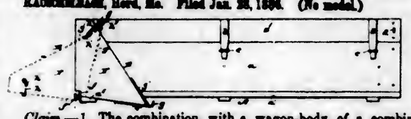
339,691. WINDOW-SCREEN. MARCHUS C. RADWAY, Ripon, Wis. Filed Feb. 2, 1886. (No model.)



Claim.—1. The combination of a screen-frame, the movable pressure-strips independent of the frame, and the springs carrying the strips, and comprising the horizontal arms d d^4, connected by an intermediate curved section, the arm d of each spring being secured to the strips, and the arm d^4 attached to the screen-frame, substantially as described.

2. As an improved article of manufacture, a window-screen comprising a frame, the movable pressure-strips independent of the frame, and the springs D, arranged at each corner of the frame and carrying the movable strips, said springs being bent from a single piece of wire and having the horizontal arms d d^4, and the curved section d^3, having the coils d^2, the arms d being secured to the strips and guided in staples on the frame, and the arm d^4 secured to the screen-frame, substantially as described.

339,692. COMBINED END-GATE AND SCOOP-BOARD. GUSTAV A. RAUSCHENBACH, Herd, Mo. Filed Jan. 28, 1886. (No model.)



Claim.—1. The combination, with a wagon-body, of a combined end-gate and scoop-board detachably hinged thereto and having the angular side pieces, F, provided with straps g' at their free end, having the hooks g, and the staples h^3, which the hooks engage when the tail-board is lowered, substantially as described.

2. The combination, with a wagon-body having the cleats a^3 and the recessed rail a^2, of a combined end-gate and scoop-board detachably hinged thereto, and comprising a bottom board, e, and the triangular side pieces, F, having the straps g', carrying the rigid hooks g, the pivoted hooks h', carried by the side pieces at the ends opposite the hooks g, and the staples h^3, with which the pivoted and rigid hooks h g are alternately engaged, according to the adjustment of the end-gate, substantially as described.

339,693. COMBINED RUFFLER AND PIPING ATTACHMENT FOR SEWING-MACHINES. EVAN C. REESE, Altoona, assignor to the American Buttonhole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Filed Dec. 27, 1884. (Model.)

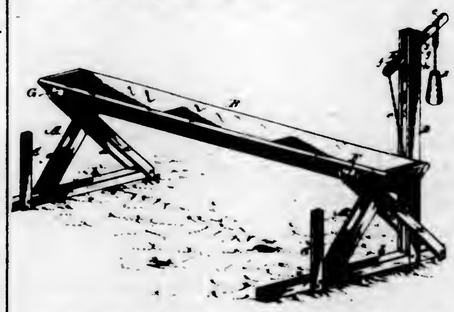


Claim.—1. The combination, substantially as set forth, of the bed-plate, the upright mounted on the bed-plate, the ruffling-blade hinged to the upright, the operating-arm, and the separator hinged to the upright concentrically with the ruffling-blade, whereby it may be swung away from the bed-plate when not in use.

2. The combination, substantially as set forth, of the ruffling-blade, the operating-arm, the upright, the guide hinged to the upright, the separator carried by the guide, and the stud j, against which the guide rests when the separator is in its operative position.

3. The combination, substantially as set forth, of the ruffling mechanism, the slotted bed-plate, and the guide-loop that retains the piping in place, secured to the bed-plate immediately in front of the slots.

339,694. FEED-TROUGH. SAMUEL A. RINE and JOHN M. RINE, West Carlisle, Ohio. Filed Feb. 23, 1886. (No model.)

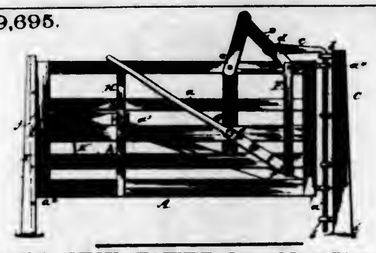


Claim.—A feeding-trough hinged at its front side to suitable frames for supporting the trough when in use, and posts connected to the frames for supporting it in an inverted position, in combination with a standard provided with a pivoted beam, a counterbalance-weight suitably connected to one end of said beam, and a chain connected to the other end thereof and to the trough, as shown and described, and for the purpose specified.

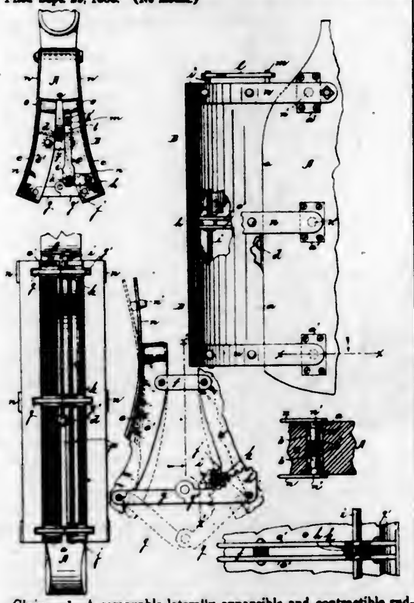
339,695. GATE. JAMES RIDDER, Arcadia, Ohio. Filed Nov. 9, 1885. (No model.)

Claim.—The combination, with the post B, having eyes b, the post I, having bars i, and the rod C, having the bent upper end, c, of the gate A, carrying latch J, with its spring K, the lever G, arms D E F, and rack-bar H, as described.

339,695.



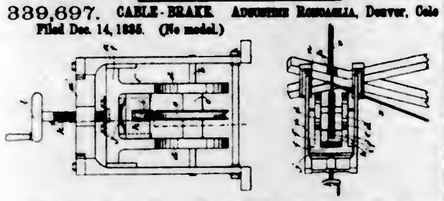
339,696. RUDDER ATTACHMENT. PATRICK C. ROACH, Chicago, Ill. Filed Sept. 29, 1885. (No model.)



Claim.—1. A removable laterally expansible and contractible rudder attachment or rudder extension, consisting, essentially, of the combination, substantially as specified, of the side plates, e e, linked or jointed to each other and adapted to clasp the rudder proper, and means for expanding and contracting the said plates and clamping them removably upon the rudder.

2. The combination, substantially as specified, of the rudder A, having thereon the sockets a'' a'', the side pieces, e e, having thereon the extension n n, on which are the studs n' n', the latter being arranged to enter the said sockets, the links or jointed bars f f in pivotal connection with the said side pieces, the jointed arms g and g', also in pivotal connection with the said side pieces, and one pair of the said arms having thereon the segmental parts h h, the shaft I and its pinions, the latter arranged to engage the said segmental parts, and an arm or lever for turning the said shaft, substantially as and for the purposes specified.

339,697. CABLE-BRAKE. ADOLPHUS ROSSALLA, Denver, Colo. Filed Dec. 14, 1885. (No model.)



Claim.—1. In a cable-brake, the combination of a suitable frame a, shaft b, hollow shaft c, provided with pulleys d d and e, sliding block f, provided with hangers f' f', movable block h, pulley i, spring j, screw-shaft k, and crank-wheel l, substantially as described.

2. In a cable-brake, the combination of a suitable frame, a, shaft b, provided with pulleys d d' and e, sliding block f, provided with hangers f' f', movable block h, pulley i, spring j, screw-shaft k, crank-wheel l, an endless cable, o, and suitable means of attaching cable o to a hook or other device supported upon a transfer-cable, substantially as shown and described.

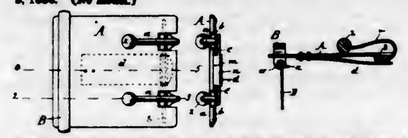
339,698. AUTOMATIC BRAKE. GEORGE W. SAMSON, Lower Gilmanton, N. H. Filed Feb. 15, 1886. (No model.)



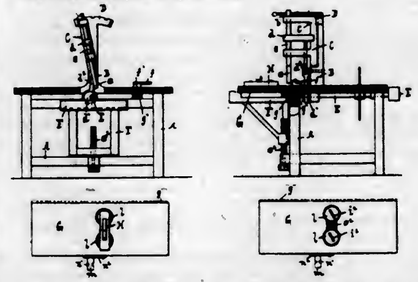
Claim.—1. In a buckle, the combination of plate A and tongues a a with a squared bar, c, adapted to turn with the tongues and with the spring d, the free end of which bears upon the square surfaces n or m of the bar c, the tongues a being pivoted to lower side and embracing edge of plate A, substantially as specified.

2. In a buckle, the combination of plate A and tongues a a, embracing rod b, with a squared bar, c, that connects the tongues, and with spring d, attached at one end to plate A, and bearing upon the square surfaces n or m of bar c, substantially as specified.

339,699. BUCKLE. SIMON SCHEIER, New York, N. Y. Filed Feb. 5, 1886. (No model.)



339,700. DOVETAILING-MACHINE. JOHN B. SCHEID, Baltimore, Md. Filed Jan. 4, 1886. (No model.)



Claim.—1. In a dovetailing-machine, the combination of the frame A, the standard B, attached to the frame, the frame C, pivoted to the standard and arranged to be placed at any desired angle on either side of a vertical plane, the rack D, secured to the standard and provided with notches which engage with the lever attached to the frame C, and the lever a, by which the frame is held at the desired angle, as set forth.

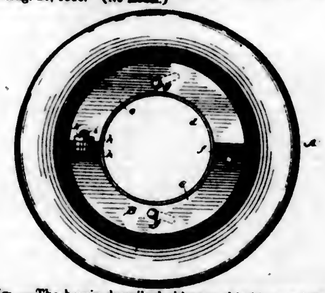
2. In a dovetailing-machine, the combination of the frame C, pivoted and arranged to be placed and held at the desired angle on either side of a vertical plane, the reciprocating rod c, arranged to hold a chisel, the cross-head d, connected to the rod c, the rod d^3, pivoted to the cross-head, the shaft E, and the eccentric d', by which the rod c is reciprocated and placed at the desired angle on both sides of a vertical plane.

3. In a dovetailing-machine, the combination of the frame A, the frame F, having a vertical adjustment, the screw e', to adjust the frame, the table G, having a horizontal movement, the rack g, secured to the table, the pinion g', geared with the rack g, the shaft g^3, extending from the pinion above the frame A, and the handle f, by which the table is moved sidewise, as set forth.

4. In a dovetailing-machine, the combination of the frame A, the pivoted frame C, arranged to carry the chisel, the table G, the guide H, having a diagonal movement, the pins i, secured to the guide and arranged to enter the slots i^2 in the plates l, the plates l, arranged to be partly turned on their centers, the bar m, connected to the plates l, by

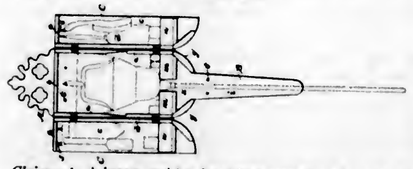
which the plates are moved in unison, and the latch n^3, arranged to hold the bar m in the desired position, the sector o, arranged on the guide, and the rack o^3, by which the guide is moved forward and the movement of the same directed diagonally, as set forth.

339,701. STOVE-PIPE THIMBLE. DELOS A. SMITH, Locke, Mich. Filed Aug. 20, 1885. (No model.)



Claim.—The herein-described chimney-thimble, consisting of the thimble A, having the slots *a*, the plate B, composed of two sections pivoted to one another and to the thimble, as described, and provided with the pins *g*, extending through the slots *a*, and legs *h*, having the securing-bolt *i*, the whole adapted to operate as shown and described.

339,702. BROOM AND BRUSH CABINET. JAMES L. SMITH, Princeton, Ind. Filed Feb. 25, 1885. (No model.)



Claim.—1. A broom and brush cabinet consisting of a case provided with doors and an opening through its lower end, and shelves arranged above said opening with an intervening space, as and for the purpose set forth.

2. A broom and brush cabinet consisting of a case having an opening through its lower end, boxes or shelves *m*, and intervening space *x*, and doors C C, boxes or shelves *n* upon said doors extending entirely across the latter, and suspending devices upon the doors and within the cabinet, substantially as and for the purpose set forth.

339,703. AUTOMATIC GUIDE-ROLL ATTACHMENT FOR PAPER-MACHINES. RICHARD SMITH, Sherbrooke, Quebec, Canada, assignor of one-half to the Fall Mountain Paper Company, Bellows Falls, Vt. Filed Nov. 21, 1885. (No model.)

Claim.—1. The combination, with a continuous traveling endless felt, of co-operating mechanism, substantially as herein described, whereby the lateral divergence of said felt shall cause automatic shifting of a guide-roll to compensate for such divergence.

2. A guide-roll attachment operated automatically by the lateral pressure of a continuously traveling endless apron against a transversely-reciprocating rod, whereby a rocking pawl-carrying shield imparts rotary movement to a toothed wheel to change the axial position of the guide-roll, substantially as set forth.

3. The combination, with the fixed frame, of the endless apron with a guide-roll provided with one fixed and one movable journal, the latter being mounted in a standard which slides upon the frame and is automatically actuated by lateral divergence of the endless apron.

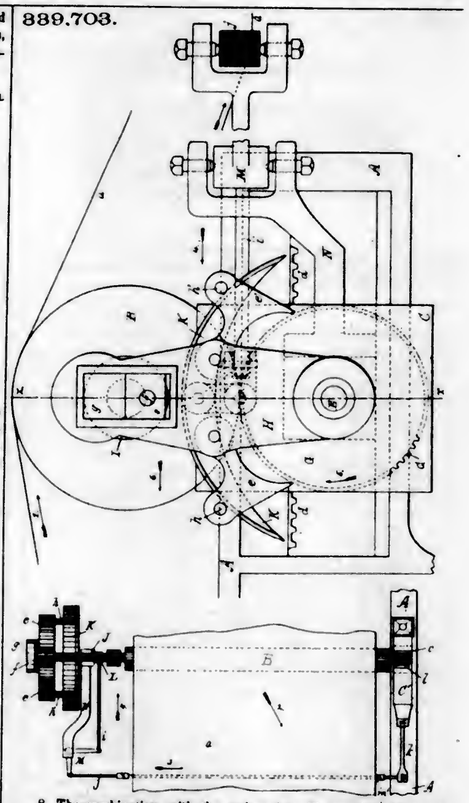
4. In combination, with a guide-roll, B, adjustably mounted at one end in the standard C, of the toothed gear G and its operating-pawls *e e'*, to which feed motion is imparted by a rocker-plate, H, actuated by the guide-roll, substantially as and for the purposes set forth.

5. In combination, the endless felt *a*, transverse rod *j*, rocker-shield K, actuated thereby, the pawls *e e'*, loosely pivoted to the rocker-plate H, toothed wheel G, pinion F, and fixed rack *d*, whereby the removable standard C is shifted to change the axial position of the guide-roll B, substantially as herein described.

6. A guide-roll operated automatically by the traveling endless apron, in combination with a toothed wheel, its actuating-pawls and their rocker-shield, and a stationary rack, for the purposes herein set forth.

7. The combination, with the rocker-plate H, carrying the pawls *e e'*, of the reciprocating rod *j*, bell-crank lever M, rod *i*, and rocker-shield K, whereby the latter maintains both pawls inactive while the apron remains in its normal path of travel, substantially as stated.

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8. The combination, with the rocker-plate H, carrying the pawls *e e'*, of the reciprocating rod *j*, bell-crank lever M, rod *i*, and rocker-shield K, whereby either end of the shield is depressed to actively engage the pawl pivoted thereat, and with the toothed wheel to rotate the latter and axially shift the roll B, substantially for the purposes described.

9. In combination, the reciprocating transverse rod *j*, connecting-rod *i*, and bell-lever M, pivoted to and carried by the sliding standard C, to operate said parts, as and for the purposes stated.

339,704. POTATO-DIGGER. SAMUEL E. SMITH, Davenport, Iowa, assignor of one-half to Frank H. Griggs and John W. Green, both of same place. Filed June 18, 1885. (No model.)

Claim.—1. In a potato-digger, the combination of a main beam made in two parts, and connected by a swivel-joint with a frame for supporting the forward part of said beam pivotally mounted upon a truck, and an adjustable clevis, by means of which the point of application of the draft-power may be vertically varied, as desired, on the front end of said forward part, substantially as described and shown.

2. In a potato-digger, the combination, with a main beam made in two parts, of a swivel-joint connecting the parts, and a truck supporting the forward part, substantially as described, and for the purposes set forth.

3. The combination, in a potato-digger, of a main beam in two parts connected by a swivel-joint, with curved handles projecting above the rear part of the beam, and serving as runners when the digger is reversed.

4. In a potato-digger, the combination of a main beam formed in two parts connected by a swivel-joint with a wheel-mounted support for the forward part, a screen connected with the rear portion of the digger for receiving the potatoes, and mechanism, also made in two parts connected by a swivel-joint, for communicating motion from the wheels of the said support to the said screen, substantially as described and shown.

5. The combination, in a potato-digger, of the beam A, cutter-point K, the inwardly-inclined landsides H H, the handles B C, attached both to the end of the beam and the landsides, the central standard, L, connecting the cutter-point with the beam, the runner N, rigidly attached by its rear end to the handles and at its front end to the cutter-point, and the open screen M, substantially as described and shown.

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6. The combination, with the main beam of a potato-digger, of the axle *h*, the wheel *l*, the geared hub, *m'*, the shaft *n'*, the crank *n*, the upright lever *o'*, the rod *r*, levers *z* and *z'*, the screen M, and the flexible and adjustable supports *s s*, substantially as described and shown.

7. The combination, in a potato-digger, of a truck carrying the forward end of the main beam, a rod passing to the rear part of the frame, mechanism connecting the shaft of said truck with said rod, and giving a forward and back reciprocating movement thereto, a pivoted lever connected with the rear end of said rod, a second pivoted lever geared with said first lever, and a screen connected with said second lever and receiving motion therefrom, substantially as described and shown.

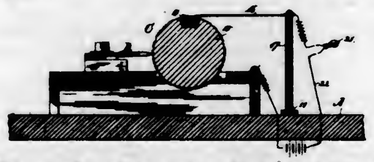
8. In a potato-digger, the combination of a forward truck, a screen for receiving the potatoes, mechanism provided with a swivel-joint connecting a rotary part of the truck with the screen and imparting motion thereto, and a clutch between said mechanism and said rotary part of the truck, whereby, when the rear part of the digger is inverted, the vibration of the screen may be suspended, substantially as described and shown.

339,705. YOKE FOR CONNECTING PENCILS AND PEN-HOLDERS. THOMAS W. F. SMYTHE, Brooklyn, N. Y. Filed Aug. 17, 1885. (No model.)



Claim.—The yoke herein described for connecting pencils and pen-holders, consisting of two or more cylindric sockets, *a*, arranged side by side and converging laterally toward each other in the direction of the pencil or pen-points, and the bridge or bridges *a'*, rigidly connecting the sockets and holding them at a fixed distance apart and at uniform angles of convergence, substantially as herein described.

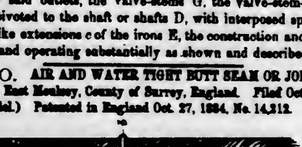
339,706. ELECTRICAL ATTACHMENT FOR EXHIBITING DEVICES. WILLIAM T. SMITH, Providence, R. I. Filed Dec. 28, 1885. (No model.)



Claim.—1. The combination, with a coin-tube, an oscillating lever provided with a coin-receiver to receive the coin from said coin-tube, a rotating shaft or cylinder, a motor for same, a flier in operative connection with said shaft, and a stop engaging the oscillating lever, of an electric circuit provided with one or more lamps and a circuit-controlling device, to operate as and for the purpose set forth.

2. The combination, with a coin-tube, an oscillating lever provided with a coin-receiver, a rotating shaft, a motor for same, a flier in operative connection with said shaft, and a stop-lever engaging the oscillating lever and flier, of an electric circuit having one or more incandescent lamps, and a circuit-breaker, one terminal of which consists of a wheel or disk having an insulator and arranged in operative connection with the rotating shaft, and the other terminal being nominally in contact with the insulator, substantially as and for the purpose set forth.

339,707. MOLE AND GOPHER TRAP. FLORIAN STAHER, San Francisco, Cal. Filed Aug. 11, 1885. (No model.)

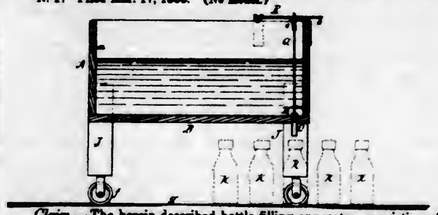


Claim.—A mole or gopher trap consisting of a wire frame, as described, having cross-wires *f f k l*, and a loop, *i*, for the purposes set forth, in combination with a coiled steel spring, *b*, having a foot, *d*, attached to the frame, and an arm, *c*, with a loop, *h*, and semi-collar c^x, a catch, *e*, with a lip for catching under cross-wire *l*, and a noose, *g*, attached to arm *c*, substantially as hereinbefore described, and for the purposes set forth.

339,708. LAMP-SHADE HOLDER. FREDERIK A. STRAHM, Waltham, Mass. Filed Mar. 24, 1885. Renewed Mar. 1, 1886. (No model.)

Claim.—The combination, in the form of a truss, of three or more wires, each having a hook, *a b c*, to be inserted in the chimney, and other beads, *c*, *d*, and *e*, so as to properly separate the shade from the chimney, with the band or ring *d d d*, to support lamp-shades from the top of the chimney, all substantially as described, and for the purposes set forth.

339,709. BOTTLE-FILLING DEVICE. REUBEN R. STONE, New York, N. Y. Filed Mar. 17, 1885. (No model.)



Claim.—The herein-described bottle-filling apparatus, consisting of the tank A, mounted on the rollers *f*, and having the inclined bottom B, the outlets C in the lowermost end of said tank, the valves H, co-operating with said outlets, the valve-stems G, the valve-stem-operating irons E F, pivoted to the shaft or shafts D, with interposed springs, and the handle-like extensions *e* of the irons E, the construction and arrangement being and operating substantially as shown and described.

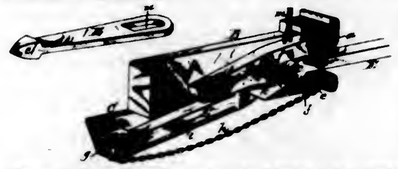
339,710. AIR AND WATER TIGHT BUTT SEAM OR JOINT. GEO. J. TAGG, East Moulsey, County of Surrey, England. Filed Oct. 27, 1885. (No model.) Patented in England Oct. 27, 1884, No. 14,312.



Claim.—In making an air and water tight joint between two boards or pieces of wood in constructional wood-work, the combination of a single or multiple fold of canvas or similar material previously sat-

arated in copal-varnish with the said two boards or pieces of wood, the whole substantially as described with reference to the accompanying drawings.

339,711. CAR-COUPLING. CHARLES H. TIBBY, Rigo, N. Y. Filed Feb. 12, 1886. (No model.)

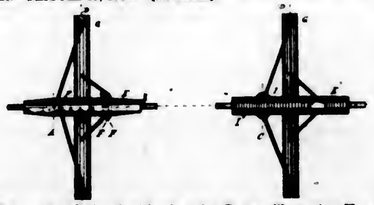


Claim.—1. In a car-coupling, a draw-head formed with a shoulder at its inner bottom side and inclining outwardly, and a coupling link or bar having a head formed with correspondingly-inclined shoulders, in combination with a weighted dog pivoted at its front end and formed with a recess to receive the head of the link or bar, and a shoulder corresponding to the inclination of the shoulder on the head of the link or bar, substantially as and for the purpose set forth.

2. In a car-coupling, the combination, with a draw-head provided with a pivoted dog having a recess and shoulder, as shown, of a slotted chute upon the under side of the draw-head, and which extends back beyond the rear end thereof, and a coupling link or bar adapted to rest therein, and a chain connected to the rear end of the link or bar, and the opposite end attached to the under side of the draw-head, substantially as and for the purpose specified.

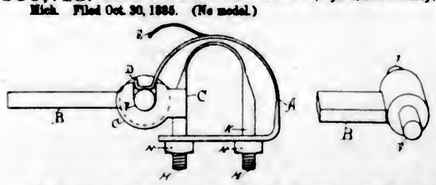
3. In a car-coupling, the combination, with the draw-head thereof and pivoted dog, of means for elevating said dog, consisting of an upright rod carrying a friction-roller and an endless chain extending around pulleys, and a double cam-block, to which the ends of the endless chain are connected, and a chain connecting the rod with the dog, substantially as and for the purpose specified.

339,712. WHEELBARROW-WHEEL. GEORGE W. THOMAS, Toledo, Ohio. Filed Jan. 23, 1886. (No model.)



Claim.—A vehicle-wheel having rim D, metallic spokes H, each rod forming two spokes, and combined with shaft E, and having or not having on said shaft E the ribs I' or lugs I, when the said spokes pass through perforations in the material of the shaft, which perforations are made and which spokes pass at or approximately at right angles to the axial line of the said shaft, substantially as shown and described.

339,713. THILL-COUPLING. DAVID THOMPSON, Byron, Kent County, Mich. Filed Oct. 30, 1885. (No model.)



Claim.—1. In a thill-coupling device, the spring A, provided with the ears D D, having concave under surfaces, in combination with the clip K, bolts H H, ears C C, and thill-iron journals F F, said spring adapted to hold the thill-irons in coupling position and keep them from rattling, and also to allow the ready removal and attachment of the thills to the vehicle, substantially as described.

2. In a thill-coupling device, the holding-spring A, provided with the slots S S and lips D D, in combination with the clip K, having ears C C, the thill-iron B, provided with the journals F F, and the bolts H H, provided with the nuts N N, said spring adapted to be adjusted longitudinally upon the bolts H H for the purpose of increasing the pressure of the spring upon the journals, substantially as described.

339,714. ELECTRIC SWITCH. ELIHU THOMSON, Lynn, Mass. Filed Aug. 10, 1885. (No model.)

Claim.—1. In an electric switch or turn-off, the combination, substantially as described, of a piston, a cylindrical cavity or guide for the piston, circuit-controlling devices operated by the piston rod or stem, and an actuating cam-piece engaging with the piston, as and for the purpose set forth.

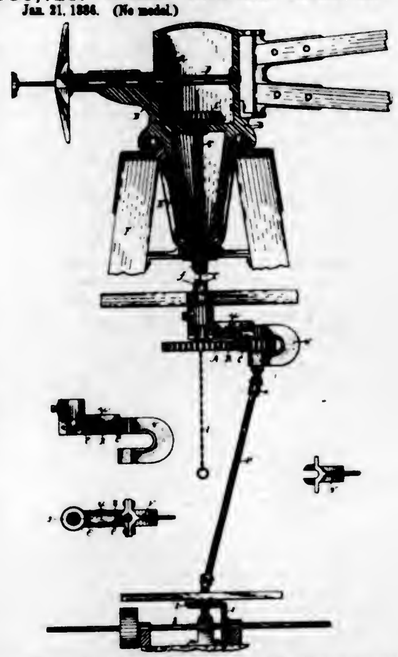


2. In an electric switch or turn-off, the combination of a reciprocating piston, a coiled spring surrounding the piston rod or stem and forming a portion of the electric circuit to the piston, and a spring-electrode, with which the piston rod or stem engages for the purpose of closing the electric circuit.

3. In an electric switch, an insulating-block having drilled recesses, as described, for the reception of a spring and spring-piston piece, a circular cam turning on an axis transverse to the piston, and suitable electric connections, as described.

4. The combination of the bored insulating-block, the piston working in said bore, a spring bearing against the piston and contained in the bore, a spring-contact in line with the end of the piston-rod, and a rotary cam-piece engaging with the outside face of the piston, as and for the purpose described.

339,715. WINDMILL. GEORGE TURNER, Kalamazoo, Mich. Filed Jan. 21, 1886. (No model.)

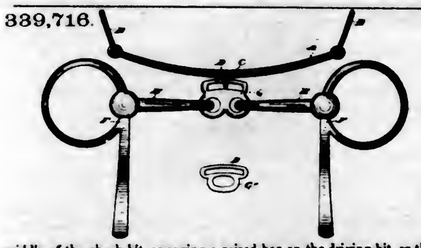


Claim.—1. In a power-windmill, the combination of a power-shaft and its lower gear, said shaft passing through and being rotatable in a vertical extension of the mill-head, a pinion-support secured to said extension, extending laterally therefrom and bearing a pinion meshing with the gear of the power-shaft, a machine-gear having a grounded bearing, and a shaft connecting with the axle of said pinion and the latter-named gear, substantially as set forth.

2. In a power-windmill, a shaft having a pinion attached to its upper end by a universal joint, said pinion having bearings in a support connecting with the mill-head, and meshing with a gear attached to the vertical power-shaft of the mill, the lower end of the first-named shaft being connected by a universal joint with machinery having a grounded bearing-support, all combined substantially as set forth.

339,716. BRIDLE-BIT. BENJAMIN TURTON, Newark, N. J., assignor to Crane & Co., same place. Filed Nov. 19, 1885. (No model.)

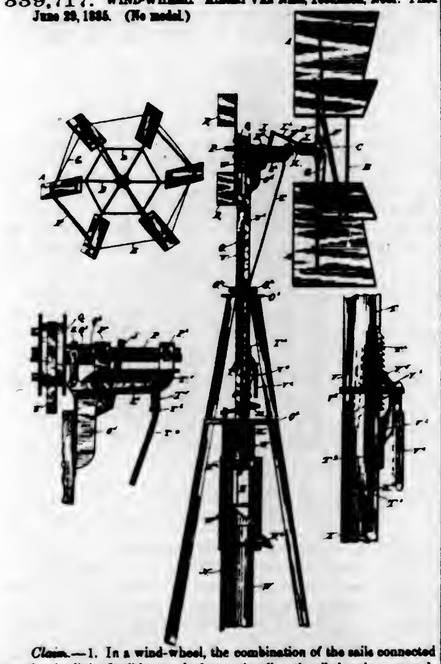
Claim.—1. An improved bridle-bit, consisting of a driving-bit or mouth-piece and a check-bit, the two pivotally or loosely connected together by a device or connection, substantially as described, fixed to the middle of the check-bit, engaging a raised bar on the driving-bit, so that the strain from the driving-bit or mouth-piece comes always on the middle of the check-bit and is borne equally by the check-straps at the two ends of the same in all positions of the driving-bit or mouth-piece, substantially as set forth.



2. An improved bridle-bit, consisting of a driving-bit or mouth-piece and a check-bit, the two connected together by a raised bar on the driving-bit or mouth-piece, and a single eye on the check-bit, said eye encircling said bar and being adapted to turn thereon laterally to a limited extent, as well as to slide lengthwise of the same, substantially as described.

3. The improved bridle-bit, consisting of a jointed mouth-piece or driving-bit having a central link provided with a raised bar, and a check-bit provided with a single eye encircling said bar, on which it may slide and also turn laterally to a limited extent, said eye serving always to bring the strain or pull upon the middle of the check-bit, substantially as described.

339,717. WIND-WHEEL. ALBERT VAN NESS, Tecumseh, Nebr. Filed June 29, 1885. (No model.)



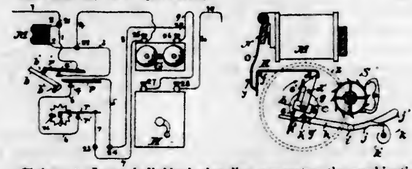
Claim.—1. In a wind-wheel, the combination of the sails connected together by links flexibly attached to each sail, and coiled springs extending between and joining two adjacent sails, each two sails being on diametric opposite sides of the wheel, substantially as described.

2. The combination of the sails linked together, coiled springs connecting the axle of one sail with the adjacent sail to throw the sails in the wind, a cord secured to one sail, passed over a pulley on the opposite sail, and thence through and over a pulley in the hub of the wheel to a sliding collar on the wheel-shaft, and mechanism, substantially as described, to shift said collar to throw the sails out of the wind, substantially as set forth.

3. In a wind-wheel, an elevating-drum sliding on the wind-wheel shaft, having secured to one side a fan or governor, and provided on its opposite side with a clutch-half, substantially as and for the purposes set forth.

4. In a wind-wheel, substantially as hereinbefore described, the combination of the drum, a strap attached thereto and having the bucket-supporting rope depending from it, the rod V, provided with an eye on its upper end encircling the bucket-supporting-rope, and having attached to its lower end a weighted pawl-carrying lever, the rod T, connected at its upper end to the clutch-shifting lever, and provided near its lower end with a ratchet-bar, T', all arranged and adapted to operate substantially as shown, and for the purposes set forth.

339,718. INDIVIDUAL ELECTRIC SIGNAL. ERNEST P. WARNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Mar. 13, 1885. (No model.)



Claim.—1. In an individual signaling apparatus, the combination of a clock-train, stop mechanism therefor comprising a hook or catch on one of the arbors of said train, and a pivoted lever adapted to engage the said catch and thereby stop the said clock-train, so as to hold the balance in tension, and starting mechanism consisting of a swinging weight, a hook-lever supporting the same against gravity over and in line with the stop-lever, an electro-magnet included in the main-line circuit, and an armature-lever operated thereby and adapted to trip the said hook-lever and release the said weight, allowing it to fall on the stop-lever and disengage the same, starting the clock-train, substantially as described.

2. The combination, with a clock-train, of a notched disk fixed to the pointer-arbor and a pivoted lever carrying a pin which is adapted to enter the notch in said disk and the balance-wheel arbor, the lever *j*, and the stop mechanism *k*, whereby the clock is stopped with the said balance in tension after every revolution of the said arbor, a swinging weight loosely attached to the said pointer-arbor, mechanism actuated by the clock-train for raising the said weight, a tripping-lever for maintaining the weight in position when raised, and an electro-magnet adapted when energized to lift the said lever and permit the said weight to fall upon the stop-lever and disengage the same for the purpose of starting the clock, substantially as described.

3. The combination, in an electrically-controlled clock-train, of a working-arbor driven by said train, a notched disk attached thereto, a hook or catch on the balance-wheel arbor, and a weighted pivoted lever adapted to engage with the said catch, with a shutter or weight loosely attached to and swinging on the said working-arbor, a carrier rigidly attached to said arbor and adapted to lift the said weight, for the purpose of furnishing starting-power, a hooked lever for holding the said weight when elevated in a position gravitating forward, and an electro-magnet controlling said lever and adapted to trip the same, whereby a low degree of magnetic strength is enabled to start a strong and powerful clock-train, substantially as described.

4. A sub-station signaling apparatus comprising the following instrumentalities: an electro-magnetic signal-instrument, a normally-closed circuit shunting the same, two independent circuit-changers included in said circuit, a clock-train adapted to actuate one of the said circuit-changers opening the said closed circuit, and thereby including the signal-instrument in a main circuit connected therewith once each revolution of the center arbor, in order that the individual station-alarm may be given, and to actuate the other circuit-changer, accomplishing the same operation at or immediately before the motor of said clock-train is exhausted, whereby all signals sent on the main circuit are received on the signaling-instrument, thus indicating the necessity of rewinding, an electro-magnet connected to the main line controlling the said clock-train, and a normally open branch circuit shunting the said electro-magnet and adapted to be closed by the action of said clock-work immediately after the same is set in motion and to be reopened before the said motion is arrested, substantially as described.

5. The combination of a main electric circuit, a branch or derived circuit therefor, and two independent circuit closers or changers, both included in the said branch circuit and controlling the continuity thereof, one of the said circuit-changers being operated by the center or pointer arbor of a train of clock-work and the other by separate devices actuated by the mainspring or winding-arbor of said clock-train, whereby the derived circuit may be opened and reclosed once in each revolution of the center arbor, and also opened for an indefinite period after one or more revolutions of the winding-arbor, substantially as described.

6. The combination, substantially as hereinbefore described, with a main electric circuit and a signaling-instrument adapted to be included therein, of a branch circuit normally shunting said signaling-instrument, and two independent circuit closers or changers included in and controlling said branch circuit, one of the said circuit-changers being operated by

the center or pointer carrying arbor of the clock-train, whereby the shunt-circuit is opened at a definite time once in each revolution of said arbor, and the signaling-instrument thus introduced into the main circuit for the purpose of individually sounding an alarm thereon, the other circuit-changer being operated directly by the mainspring-arbor of the said clock-work after a certain number of revolutions thereof, to break the shunt-circuit, for the purpose of introducing the signaling-instrument into the main circuit when the motor of said clock-train is completely or nearly run down, so that all signals may be thereupon sounded on the said signaling-instrument.

7. The combination, in an electric signaling system, of a main circuit and electric bell-alarm included therein, a normally-closed shunt-circuit around the magnet of said bell, two circuit-closers included in said shunt-circuit, a clock-train and starting-magnet therefor adapted to operate one of said circuit-changers, opening the shunt-circuit thereat when a signal is to be received and closing the same immediately thereafter, and mechanism for operating the second circuit-closer, opening the said shunt-circuit and holding the same open when the clock-motor has run down, substantially as described.

8. The combination, substantially as hereinbefore described, of one or more circuit closers or changers, a clock-train actuating the same, a stop mechanism therefor adapted to stop the said train with its balance-wheel in tension, a starting device comprising a weight raised by the clock-work itself during one revolution, and adapted by its fall to disengage the said stop mechanism, and an electro-magnet armature and book-lever controlled thereby, arranged to maintain the said weight normally in position, but to release the same, permitting it to fall for the purpose of starting the clock when the electro-magnet is energized, for the purpose specified.

9. The combination, in a train of clock-work, of the disk *g*, fixed to the driven arbor, and having the notch *g'*, the catch *k*, fixed on the balance-shaft, the drop-weight *d*, adapted to be raised by the power of the clock-train to a forwardly gravitating position, and provided with the pin *d'*, the hook-detaining lever therefor, and an electro-magnet controlling the same, and the pivoted stop-lever *h*, adapted to engage the catch *k* and to be released therefrom when struck by the pin *d'* of the falling weight, the said lever *h* being also provided with a projecting pin, *h'*, adapted to ride upon the periphery of the notched disk until the notch arrives opposite thereto for the purpose of maintaining the disengagement of the catch *k*, substantially as described.

10. The combination, substantially as hereinbefore described, of the lever *h*, the notched disk *g*, the pin *h'*, adapted to enter the notch in said disk, the weight *d*, and pin *d'*, attached thereto, whereby the weight when fallen is adapted to disengage the lever and disk and to maintain the said disengagement, and the carrier or driver *e e'*, for lifting the said weight, all co-operating as and for the purposes specified.

11. The combination, with an electrical signal apparatus and a clock-train controlling the same, the said clock being normally at rest and provided with a pointer fixed upon its working-arbor, and also adapted when started, to stop after a single revolution of said pointer, of a visual signal consisting of a disk having a toothed edge gearing with a pinion on the pointer-arbor, and adapted to rotate at a speed having a definite ratio to the speed of said pointer-arbor, the said disk having its face divided and a part thereof specially colored, and being arranged to show the colored portion only during the time that the line is being used, substantially as described.

12. The combination, with a clock-spring, of a weight which is raised by the force of said spring, a lever which normally holds said weight from falling, an electro-magnet in an electric circuit, and its armature for tripping said lever, so as to release the weight when the electro-magnet is energized, a lever or detent which normally holds the train and which is moved by the force of the falling weight, thereby releasing the clock-train and allowing the said clock-train to be started, actuated by the force of the spring, as described.

13. The clock-train normally held by the pivoted detent or lever which engages with a hook or catch upon the balance-wheel arbor, a weight moving freely around the working-arbor, a carrier for lifting said weight attached to and moving with the arbor, the lever by which the weight is held when raised by the carrier, an electro-magnet in an electric circuit, which when energized operates to trip the said lever and release the weight, which, falling upon the pivoted detent, disengages the same from the catch upon the balance-staff, whereby a portion of the force of the mainspring is stored and used to release the clock-train, substantially as described.

14. The combination, with the weight, of the carrier provided with the wire or arm *e'*, which comes under the weight and lifts the same, and the wire or arm *s*, extending in the opposite direction, which serves as a stop for said weight and prevents the same from swinging inordinately, and the shoulder upon the lever *h*, against which the weight rebounds, as and for the purpose specified.

339,719. CORSET. MARK A. WATERHOUSE, Boston, Mass., assignor to Al Waterhouse, Durham, Me. Filed Nov. 30, 1885. (No model.)

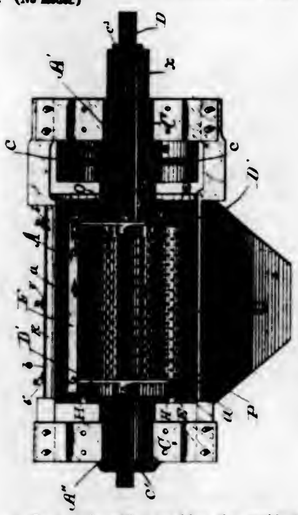


Claim.—1. In a corset of the character described, the combination of the following instrumentalities, to wit: a body provided with a clasp or other suitable means for securing it to the person of the wearer, and with two or more sheaths disposed at the back of said body and opening downwardly, a bustle provided with upwardly-extending springs adapted to enter said sheaths, and a cord and eyelets or other suitable means for attaching the bustle to the body of the corset, substantially as set forth.

2. In a corset of the character described, the combination of the following instrumentalities, to wit: a body provided with a clasp or other suitable means of securing it to the person of the wearer, two or more sheaths disposed at the back of said body and opening downwardly, a bustle divided vertically into two sections, eyelets and a lacing-cord or other suitable means for attaching the two sections of the bustle to each other, two or more springs forming a part of the bustle and adapted to enter said sheaths, and a cord and eyelets or other suitable means for attaching the bustle to the body of the corset, substantially as described.

3. The improved corset herein described, the same consisting of the body A, provided with the clasp J, sheaths *k*, eyelets *h*, lacing *f*, and eyelets *l*, and the bustle B, provided with the springs E, and eyelets *l* and the cord *v*, combined and arranged to operate as set forth.

339,720. GRAIN-CUTTING MACHINERY. ANDREW WEMPLE, Chicago, Ill., assignor to Ferdinand Schumacher, Akron, Ohio. Filed July 9, 1883. (No model.)



Claim.—1. In a grain-cutting machine, the combination, with a rotatory perforated cylinder and a central feed-conduit attached thereto, of an inner stationary frame-work having a cross-arm extending across the feed end of the conduit, and an auxiliary spout forming a continuation of the latter and attached to the frame-work, whereby the incoming grain may be delivered at a point of the cylinder within the frame-work, substantially as shown and described.

2. In a grain-cutting machine, the combination, with a rotatory perforated cylinder, of a fixed knife-holding apron partially surrounding the same, a feed-conduit, and a partition located longitudinally within the cylinder and at one side of the feed-conduit, whereby the amount of uncut grain passing through the cylinder is lessened, substantially as shown and described.

3. In a grain-cutting machine, the combination, with a rotatory perforated cylinder and its central feed-conduit, of a central stationary rod, cross-bars attached to the said rod, a roller journaled between said cross-bars, and bearing-pins registering with the perforations of the cylinder, and a shield or partition intermediate between the central feed-conduit and the roller, whereby the latter is protected from the incoming grain and its freedom of action preserved, substantially as shown and described.

4. In a grain-cutting machine, the combination, with a rotatory perforated cylinder, of an apron partially surrounding said cylinder and provided with a series of knives, a roller provided with pins registering with the perforations of the cylinder and a stationary brush located within and bearing against the inner surface of the cylinder, substantially as shown and described.

5. In a grain-cutting machine, the combination, with a rotatory perforated cylinder and a fixed series of external cutting-knives partially surrounding the same, of a roller located within the cylinder at a point opposite the cutting-knives and provided with pins registering with the perforations of the cylinder, and separate exit-spouts adjacent, respectively, to the knives and roller, whereby such grain as remains in the perforations uncut after their rotation past the knives is forced out and led off into a receptacle separate from that receiving the cut grain, substantially as shown and described.

6. In a grain-cutting machine, the combination, with a rotatory perforated cylinder, of a fixed series of cutting-knives exterior thereto, and a stationary brush located within the cylinder and bearing against its inner surface at a point intermediate of successive knives of the series, whereby grain remaining within the perforations and uncut by the first knives of the series will be forced outward and cut by the succeeding ones, substantially as shown and described.

7. In a grain-cutting machine, the combination, with a rotatory perforated cylinder, of a hopper and feed-spout at one end thereof, a stationary rod attending through the cylinder, an auxiliary spout, a brush, and a shield supported by said rod, and a roller having peripheral pins registering with the perforations of the cylinder, substantially as shown and described.

339,721. SPOKE-SOCKET. WALTER F. WESTON, Bangor, Me. Filed Jan. 15, 1886. (No model.)



Claim.—1. In combination with the spoke and felly of a wheel, a spoke-socket having a rim or plate surrounding its outer periphery at or near its base, and a hub projecting from the under side of the base of the socket proper and in continuation thereof, and a bolt fitting said hub having a head near the mid-length of its stem, and a screw-threaded point, so that the portion of the stem above the head may project beyond the exterior end of the hub when the parts are adjusted together and serve as a tenon or a continuation of the tenon of the spoke, substantially as described.

2. In combination with the spoke and felly of a wheel, a spoke-socket having a rim or plate surrounding its outer periphery at or near its base, and a hub projecting from the under side of the base of the socket proper and in continuation thereof, said hub having an internal screw-threaded bore, and a bolt fitting the bore of said hub and having a round point, a head near its mid-length, and an external screw-thread below such head for a distance substantially equal to the length of the bore of said hub, and corresponding to the internal thread of the bore thereof, substantially as described.

3. In combination with the spoke and felly of a wheel, a spoke-socket having a rim or plate surrounding its outer periphery at or near its base, and a hub projecting from the under side of the base of the socket proper and in continuation thereof, and a bolt having a countersunk head, a screw-threaded point engaging with the end of the spoke, and a smooth stem fitting the bore of said hub, substantially as described.

339,722. SEAMLESS FELTED FABRIC FOR FILTERS. THOMAS S. WILER, Albany, N. Y. Filed July 11, 1885. (No model.)



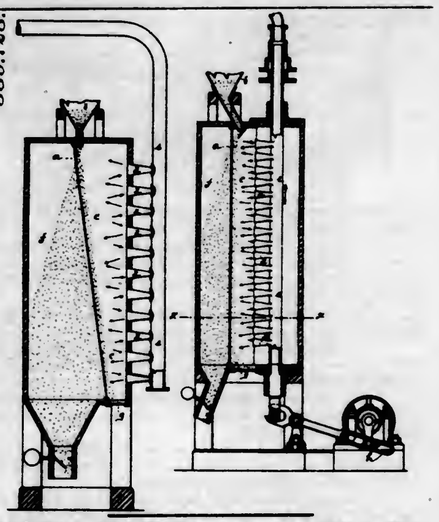
Claim.—A felted-fabric seamless tube or hose for filtering purposes, substantially as specified.

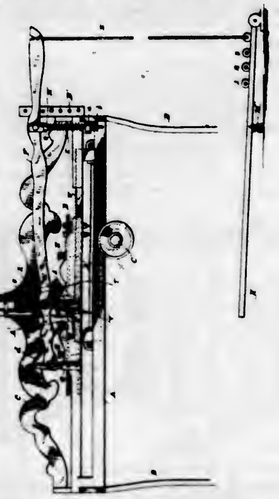
339,723. FLOUR-BOLT. FRIEDRICH G. WIEGLER, Zschopau, Germany. Filed Sept. 1, 1885. (No model.)

Claim.—1. The combination of bolting-cloth *a* and hopper *b* with the air-pump *c* and means whereby an air-current is alternately forced against and sucked from the cloth *a*, substantially as and for the purpose specified.

2. The combination of bolting-cloth *a* and hopper *b* with the pipe *c* and the nozzles *d*, and with a force and suction pump, A, connected to pipe *c*, substantially as specified.

339,724. TYPE-WRITING AND MATRIX-MAKING MACHINE. THOMAS D. WORRALL, Washington, D. C. Filed Apr. 30, 1885. (No model.)





Claim.—1. In a type-writing machine, a disk carrying a plurality of rows of type-pins, in combination with a lever operated by a treadle and carrying an arm in which are arranged a plurality of impression-keys to impinge on the type-pins, as set forth.

2. In a type-writing machine, a lever pivoted to the side of the machine and adapted to be operated by a treadle, as described, said lever being provided with an arm carrying adjustable impression-keys, in combination with type-pins, pawl-lever, and carriage-rack, as set forth.

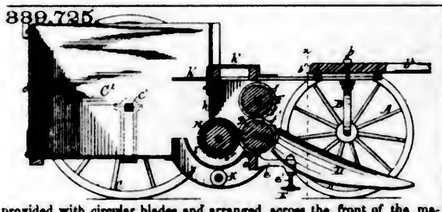
3. In a type-writing machine, a pawl for engaging the rack-bar of the paper-carriage, in combination with a treadle-lever which operates the type-pins to form the impression, the throw of said lever being adjustable, substantially as described, to regulate the spacing of the letters.

4. In a type-writing machine, the impression-lever F, paper-carriage, and connections, as set forth, in combination with the perforated bar B', and a suitable stop-pin inserted in said bar, whereby the throw of the lever is adjusted to move the paper-carriage more or less to space the letters.

339,725. COTTON-HARVESTER. CHARLES E. WRIGHT, Vicksburg, Miss. Filed Aug. 17, 1883. (No model.)

Claim.—1. In a cotton-harvester provided with cutting-disks E E, the combination of a horizontal toothed roll, and a companion roll

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provided with circular blades and arranged across the front of the machine and horizontally, substantially as specified.

2. In a cotton-harvester, the combination of horizontal rolls and transversely-arranged cutting-blades thereon, and a horizontal rotary brush, each adapted to be operated at a different speed from the others substantially as specified.

3. The combination of the longitudinal guide D, cutters E thereunder, and rolls F G, substantially as shown and described.

4. The combination of the guide D, cutters E, rolls F G, provided with transverse cutters *f'*, brush H, and concave I, substantially as shown and described.

5. In a cotton-harvester, the combination of the corrugated roll F, having cutters *f*, with the toothed roll G, having the cutters *f'*, substantially as shown and described.

6. With the frame of a cotton-harvester, the combination of horizontal rolls F G and brush H, gate *h*, concave I, chamber J, and conveyer, substantially as shown and described.

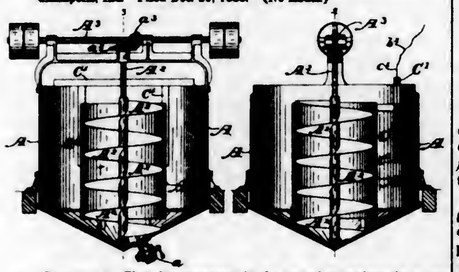
7. The combination of the horizontal rolls F G and brush H with receiver C^3, having the hinged end wall, c^3, substantially as shown and described.

339,726. **COMPOSITION FOR BUILDING PURPOSES.** JOSEPH WURZBURG, Chicago, Ill., assignor, by direct and mesne assignments, of two-thirds to Herman Meinke and Emil H. Benn, both of same place. Filed Dec. 19, 1885. (No specimens.)

Claim.—1. The herein-described composition of matter to be used for building purposes, consisting of pulverized brick, stone, or gravel, vegetable fiber, slaked lime, and salt, in the proportions specified.

2. The herein-described composition of matter to be used for building purposes, consisting of pulverized brick, stone, or gravel, slaked lime, and salt, in the proportions specified.

339,727. **ART OF MANUFACTURING SOAP.** ELIAS C. ATKINS, Indianapolis, Ind. Filed Dec. 29, 1885. (No model.)

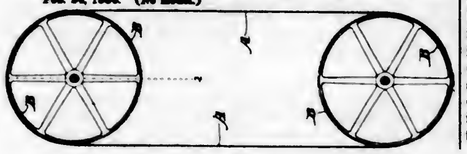


Claim.—1. That improvement in the art of manufacturing soap which consists in applying to and forcing through the ingredients while the soap is in process of being manufactured a current of electricity.

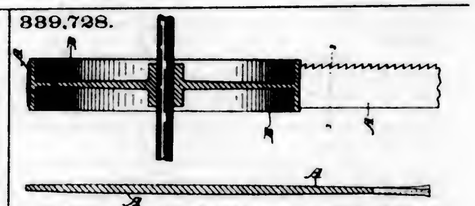
2. The combination, with a soap vat or receptacle, of an insulated electrode suspended therein, an electric machine or battery, and wires running from said machine or battery, one to said vat or receptacle and the other to said electrode, substantially as set forth.

3. The combination of a soap vat or receptacle, a mixer therein, an insulated electrode also therein, an electric machine or battery, and wires connecting said vat or vessel and said electrode to said machine or battery, whereby during the process of mixing the ingredients in said vat or vessel a current of electricity is also forced through the said ingredients, substantially as described, and for the purposes specified

339,728. **BAND-SAW.** ELIAS C. ATKINS, Indianapolis, Ind. Filed Feb. 24, 1886. (No model.)



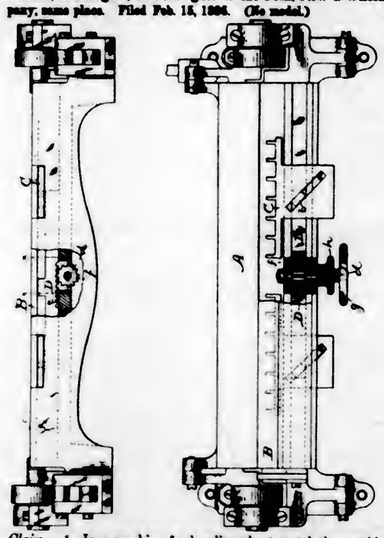
339,728.



Claim.—1. A band-saw formed convex or thicker in the middle or central portion than at the edges, substantially as shown and described.

2. The combination of the band-saw, formed thicker in the middle than at the edges, and saw-supporting wheels formed concave upon their bearing-surfaces, substantially as set forth.

339,729. **MACHINE FOR BENDING SHEET METAL.** WILLIAM J. RAYNER, Southington, Conn., assignor to the Peck, Stow & Wilcox Company, same place. Filed Feb. 15, 1886. (No model.)



Claim.—1. In a machine for bending sheet metal, the combination of the gage C, having inclined slots *a a*, the gage-bar D, having inclined studs *b b*, and the rack *c*, the shaft *d*, the handle *g*, and the pinion *f*, mounted on said shaft and engaging the rack of the gage-bar, substantially as described, and for the purpose specified.

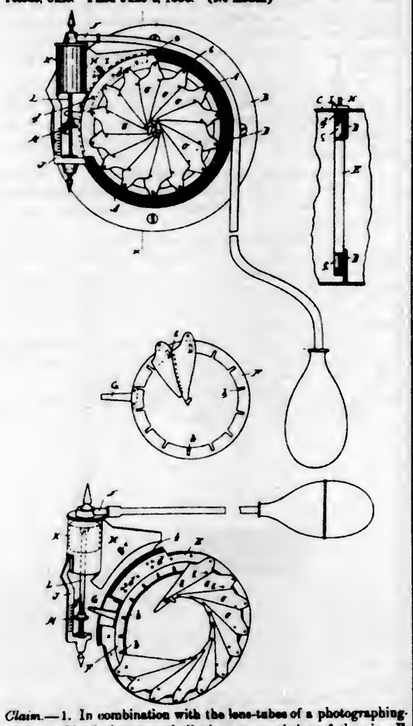
2. In a machine for bending sheet metal, the combination of the gage C, gage-bar D, for moving said gage, having the rack *c*, the handle *g*, shaft *d*, having the threaded portion in front of said handle, the pinion *f*, engaging the rack of the gage-bar, and the nut *h* on the threaded portion of said shaft, substantially as described, and for the purpose specified.

339,730. **ANTI-FREEZING BOX FOR TURBINE SHAFTS.** BENJAMIN F. BRICKWITH, JAMES B. BRICKWITH, and JOSEPH BURSON, Plum Hollow, Iowa. Filed Dec. 30, 1885. (No model.)



Claim.—The combination of a turbine water-wheel shaft, a tube having a flange at its upper end and secured by the said flange to a cross-beam above the water, and having its lower end enlarged to form a packing-box of greater exterior diameter than the tube proper, suitable packing in the said box, a cap having its sleeve entering the box from the under side and having an enlarged outer portion, and bolts having nuts and passing through the enlarged portions of the packing-box and of the cap, said packing-box and cap being above the wheel and the lower bearings of the shaft, the tube being filled with a non-freezing fluid, as and for the purpose shown and set forth.

339,731. **ATTACHMENT FOR CAMERAS.** SOLOMON S. BEISTLE, Toledo, Ohio. Filed June 4, 1885. (No model.)



Claim.—1. In combination with the lens-tubes of a photographing-camera, a combined shutter and diaphragm, consisting of the ring E, cam-ring F, and wings O, when constructed, arranged, and operating substantially in the manner and for the purposes set forth.

2. In combination, the lens-tubes B C, provided with a combined shutter and diaphragm constructed substantially as described, the cylinder K, provided with a piston and piston-rod, L, arranged to be projected and retracted instantaneously, and connected to the oscillating cam-ring F, substantially as and for the purposes specified.

3. In a device for the purpose described, the combination, with a combined shutter and diaphragm, and a piston and piston-rod arranged to be projected and retracted instantaneously, of the nut M upon the threaded end of said piston-rod, and constructed to limit the size of the diaphragm-opening, as set forth.

339,732. **FENCE-RAIL.** WILLIAM BILLINGS, Dover, Ill. Filed July 1, 1885. (No model.)



Claim.—As an article of manufacture, the described fence-rail, consisting of a flat metallic strip with a hole near each end, and bends *a'* made alternately in opposite directions, substantially as set forth.

339,733. **PITMAN-CONNECTION.** ARCHIBALD MCR. BLAIR, Deerfield, Va. Filed Jan. 27, 1885. Reissued Sept. 28, 1886. (No model.)

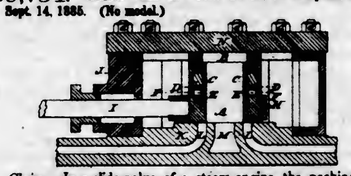


Claim.—1. In a pitman-connection, the combination of a socket, a tubular plug adjustable in the same, and a pitman-rod journaled in the said plug, substantially as and for the purpose set forth.

2. In a pitman-connection, the combination of a socket mounted laterally upon an eye or journal, a tubular plug adjustable in the said socket, and a pitman-rod journaled in the said plug, and having a shoulder at its inner end, substantially as and for the purpose herein set forth.

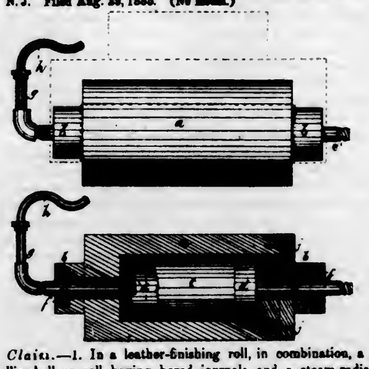
3. In a pitman-connection, the combination of an interiorly-screw-threaded socket having an eye or journal, a tubular plug adjustable in the said socket, and having a wrench-seat at its outer end, a pitman-rod journaled in the said tubular plug, and having a shoulder at its inner end, and adjusting-washers arranged below the collar of the wrench-seat and at the bottom of the socket, substantially as and for the purpose herein set forth.

339,734. **SLIDE-VALVE.** JOHN BOOTH, Indianapolis, Ind. Filed Sept. 14, 1885. (No model.)



Claim.—In a slide-valve of a steam-engine, the packing frame or ring D, in combination with the equalising frame or ring B, the packing-groove *c*, packing C, springs E E, and steam-vents F F, &c., substantially as described, and for the purpose set forth.

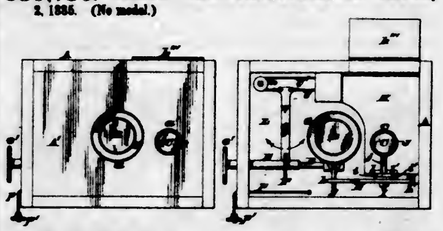
339,735. **STEAM-HEATED ROLLER.** ALBERT M. BOWERS, Newark, N.J. Filed Aug. 29, 1885. (No model.)



Claim.—1. In a leather-finishing roll, in combination, a hollow metallic shell or roll having bored journals, and a steam-radiator arranged in said roll, having tubes connected therewith and extending through the bored journals, and provided with steam-fittings, for the purpose set forth.

2. In a leather-finishing roll or ironer, in combination, a hollow roller having bored journals, one of which forms a removable plug, substantially as specified, and a steam-heated radiator arranged within said roller, having tubes connected with said radiator, which extend through the bored journals, for the purpose set forth.

339,736. **CAMERA.** CALVIN C. BRAGG, Avondale, Ohio. Filed July 2, 1885. (No model.)



Claim.—1. The combination, in a camera, of a pair of dissimilar lenses coupled together for simultaneous adjustment, substantially as herein described.

2. The combination, in a camera, of a secondary lens adjusted by a lever coupled to the main lens, the latter being operated by a rack and pinion, substantially as herein described.

3. The combination, in a camera, of a secondary lens adjusted by a lever coupled to the main lens, the latter being operated by a rack and pinion actuated by a shaft that controls the shutter of the instrument, substantially as herein described.

4. The combination, in a camera, of a secondary lens adjusted by a lever coupled to the main lens, the latter being operated by a rack and pinion actuated by a shaft that controls a shutter capable of affording either an instantaneous or time exposure, substantially as herein described.

5. The combination, in a camera, of the adjustable main lens B *b*,

adjustable secondary lens C J, pin *g*, pivoted lever H *h h'*, and shank *j*, for the purpose described.

6. The combination, in a camera, of the adjustable main lens B *b*, adjustable secondary lens C J, pin *g*, pivoted lever H *h h'*, shank *j*, pinion-shaft D *d d'*, and clutch-shaft E *e*, which latter carries a disk, F, for operating the shutter of the instrument in the manner described.

7. The combination, in a camera, of a flexible shutter having a suitable opening and capable of being uncoiled from one drum and wound around another drum, for the purpose of affording either a time or instantaneous exposure, said drums being journaled within the camera and one of them being provided with a pair of stops that engage with locking-pawls, the latter being coupled to a swinging lever actuated by an external pull, as *c'*, in order that said inclosed shutter may be operated without opening the camera, substantially as herein described.

8. The combination, in a camera, of a flexible shutter having a suitable opening and capable of being uncoiled from one drum and automatically wound around another drum, for the purpose of affording either a time or instantaneous exposure, said drums being journaled within the camera and one of them being provided with a pair of stops that engage with locking-pawls, the latter being coupled to a swinging lever actuated by an external pull, as *c'*, in order that said inclosed shutter may be operated without opening the camera, substantially as herein described.

9. The combination, in a camera, of a flexible shutter having a suitable opening and capable of being uncoiled from one drum and automatically wound around another drum, for the purpose of affording either a time or instantaneous exposure, said drums being journaled within the camera and one of them having a spring coiled therein, while the other drum is provided with a pair of stops that engage with locking-pawls, the latter being coupled to a swinging lever actuated by an external pull, as *c'*, in order that said inclosed shutter may be operated without opening the camera, substantially as herein described.

10. The combination, in a camera, of the flexible shutter O *o*, having its opposite ends secured to the cylinder N and drum N', said cylinder being operated by the spring *n*, coiled within it, and the drum N' being provided with cord *p*, grooved pulley P, cam-wheel R, stops *r r'*, pivoted pawls S *s* S' *s'*, spring *t*, cords U U' *u*, and swinging lever V, for coiling said shutter thereon, for locking the drum, and for liberating the latter, so as to afford either an instantaneous or time exposure, as herein described.

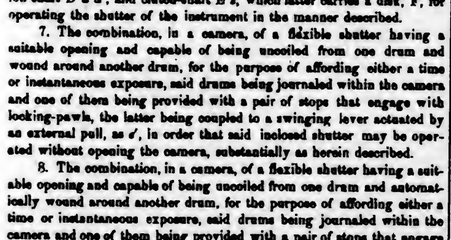
11. In combination with the flexible shutter O *o*, attached to the spring-cylinder N *n* and drum N', in the manner herein described, the shouldered and toothed cam-disk R *r r'*, pivoted pawls S S' T, pin *s'*, slot *s*, spring *t*, stop *t'*, and devices that operate said pawls, for the purpose stated.

12. In combination with the flexible shutter O *o*, attached to the spring-cylinder N *n* and drum N', in the manner herein described, the lug *p''*, pivoted stop-lever Q *q q'*, and slot *m'*, for the purpose stated.

13. In combination with the pivoted pawls S *s* S' *s'* T, arranged to operate with the shouldered and toothed cam-disk R *r r'*, in the manner described, the cords U U', and pivoted lever V *v*, the latter being provided with a fork, *v'*, that admits the disk F of the reciprocating shaft E, for the purpose stated.

14. The combination, in a camera, of spring-cylinder N *n*, drum N', flexible shutter O *o*, grooved wheel P, and cord *p*, which cord is wound around said wheel when said shutter is uncoiled from said drum N', as herein described.

339,737. SLAG-DUMP. SIDNEY E. BRETHERTON and WILLIAM COLBURN, Leadville, Colo. Filed Nov. 5, 1885. (No model.)



Claim.—1. The combination, with the dumping-ground and with a roadway leading to furnaces, of an inclined elevated railway extending above and over the dumping-ground, substantially as hereinbefore described.

2. The combination, with the roadway leading to the furnaces and with the dumping-ground having a recess, *x*, of an inclined railway extending from said recess to an elevated position, substantially as described.

3. The combination of the dumping-ground, recess *x*, inclined railway, cars adapted to said railway, and platform arranged to be level with the roadway leading to the furnaces when the cars are at the lowest position, substantially as described.

4. The combination of the dumping-ground having a recess, *x*, an inclined way extending at one end into the recess and below the surface of said dumping-ground and at the opposite end up and over the said surface, and cars traveling on the way and adapted to receive the slag-trucks from the roadway leading to the furnaces, substantially as described.

5. The combination, with an inclined railway, of two cars or trucks having horizontal platforms, a cable connecting the cars at their rear ends and passing over sheaves on the railway, a cable connected to the forward part of a car and connected to a power-driven drum, substantially as described.

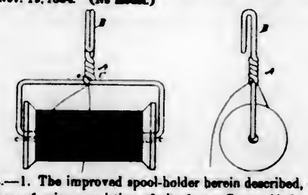
6. In combination with an inclined railway, a car having a horizontal platform, a clutch connected to the car, a connection on the platform for the clutch, and a foot-lever for loosening the clutch, substantially as described.

7. The combination, with an inclined railway, of a power-driven shaft carrying a friction-pulley, a drum-shaft carrying a friction-pulley, a brake-shoe, and adjusting devices for carrying the shaft-pulley to and from the brake-shoe and power-pulley, substantially as described.

8. The combination of the car and platform and automatic coupling, substantially as described.

9. The shaft formed eccentrically at one end, thereby permitting pulleys or wheels fastened thereon to be thrown in or out of gear with adjacent wheels or pulleys, substantially as described.

339,738. SPOOL-HOLDER. GEORGE E. BROOKS, New Haven, Conn. Filed Nov. 19, 1884. (No model.)



Claim.—1. The improved spool-holder herein described, made from a single piece of wire, consisting of the frame C, provided with an attaching device at one side thereof, made from a folded portion of said wire, having a twisted shank, with a thread-eye, *e*, formed in said twisted shank at its junction with the frame, substantially as shown and described.

2. A spool-holder made from a single piece of wire, comprising the frame C, the improved attaching-loop having converging spring sides adapted to clamp the material of the garment, and a shank for said attaching-loop, formed from doubled twisted wire, and with a thread-eye, *e*, at the junction of said twisted shank with the frame, substantially as shown and described.

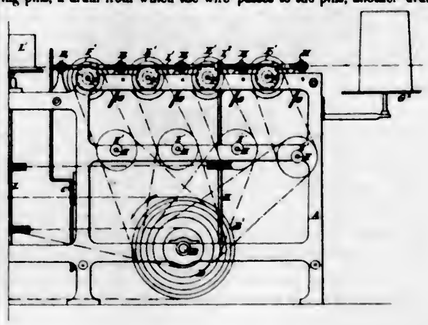
339,739. PROCESS OF AND APPARATUS FOR DRAWING AND STRAIGHTENING WIRE. SAML. H. BYERS, Brighouse, County of York, England. Filed Mar. 2, 1886. (No model.)

Claim.—1. The improvement in the process of dressing wire which consists in performing successive dressings at one operation by passing the wire through one set of dressing-pins, then around a drum on which it is not wound into a bundle, then through another set of pins, then around another drum, and so on for as often as may be desired.

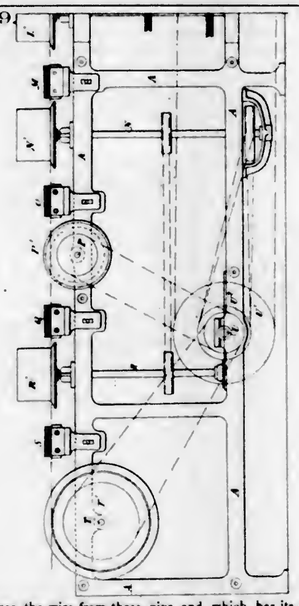
2. The improvement in the process of dressing wire which consists in passing the wire coming from a drum through a set of dressing-pins, then around a drum on an axis at an angle to that of the first drum, then through another set of pins, and so on for as often as may be desired.

3. The improvement in the process of dressing wire which consists in causing the wire to pass direct from the die to dressing-pins, through which it is dressed and straightened without winding the wire into a bundle between the die and the dressing-pins.

4. The combination, in a wire-dressing machine, of a set of dressing-pins, a drum from which the wire passes to the pins, another drum



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which receives the wire from these pins and which has its axis at an angle to the axis of the first drum, and a second set of dressing-pins receiving the wire from the second drum, substantially as described.

5. The combination, in a wire-dressing machine, of a set of dressing-pins, a drum from which the wire passes to the pins, another drum which next receives the wire, and a second set of dressing-pins receiving the wire from the second drum, substantially as described.

6. The combination, with a wire-drawing bench, of dressing-pins placed between the die or dies and the drum upon which the wire is wound into a bundle, substantially as described.

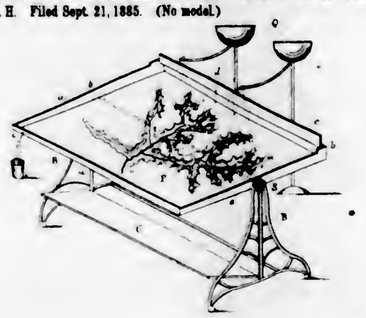
339,740. CLAMP FOR OVERSHOES. JOHN H. CALDWELL, Philadelphia, Pa. Filed Jan. 12, 1886. (No model.)



Claim.—1. The clamp A for overshoes, having the spring-arms B, and the rings or eyes C at the free ends of the said arms, substantially as described.

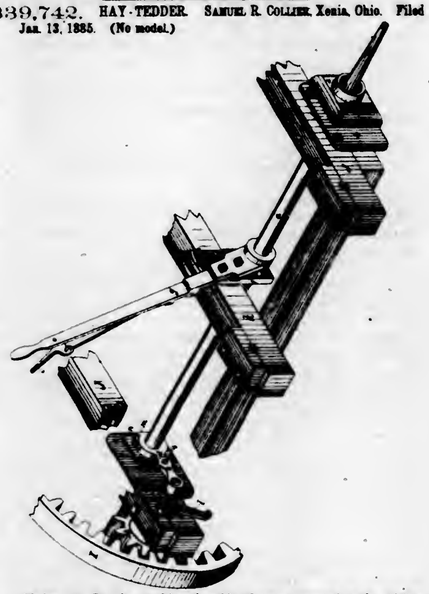
2. The combination, with an overshoe, of the clamp A, secured at its rear end above the counter and having the spring-arms B, substantially as described.

339,741. COMBINED TABLE, BLACKBOARD, AND MOLDING-BOARD FOR MAKING RELIEF-MAPS, &c. AARON S. CLOUGH, Meredith, N. H. Filed Sept. 21, 1885. (No model.)



Claim.—A combined table, blackboard, and molding-board for making relief-maps, having a pocket, *b*, with a lid, *c*, and a spigot, *e*, in combination with the rod *f*, clamp-wheel *g*, and standards B B, substantially as and for the purposes set forth.

339,742. HAY-TEDDER. SAMUEL R. COLLIER, Xenia, Ohio. Filed Jan. 13, 1885. (No model.)



Claim.—1. In a hay-tedder, the side plates connected to the sliding frame and provided with the openings to receive the boxes mounted upon the axle, in combination with the boxes fixed upon the axle, and mechanism for adjusting the frame fore and aft, whereby the crank-shaft pinion mounted on the frame may be thrown into and out of action with its driving mechanism by the backward and forward movement of the frame.

2. The side plates connected to the frame and having the openings formed therein, through which the axle passes, in combination with the short arms connected, respectively, to the frame and the axle, whereby the frame is moved forward or back by the rocking of the axle, substantially as and for the purpose set forth.

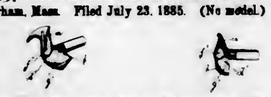
3. The lever-plate connected to the frame and provided with the slot or opening for the passage of the axle and with the lug or notches, in combination with the shipping-lever secured to the axle, and adapted to engage the lug or notches for holding the frame in either of its adjusted positions, substantially as described.

4. The combination of the side plates connected to the frame, and with the axle mounted therein, with the links for connecting the same together, having the shoulders formed thereon, substantially as and for the purpose set forth.

5. The combination of the box, having the lug formed thereon, with the arms secured to the axle, and provided with a corresponding lug to engage the lug formed on the box when the driving mechanism is in gear, substantially as and for the purpose set forth.

6. In a hay-tedder, the combination of side plates, C, boxes, *b*, hinged arms *d e*, lugs *m n*, lever *g*, and axle *a*, when arranged and operating substantially in the manner and for the purpose set forth.

339,743. LOOPER FOR SEWING-MACHINES. JOHN M. CURRY, Framingham, Mass. Filed July 23, 1885. (No model.)

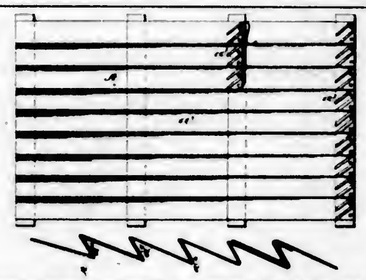


Claim.—The improved looper for sewing-machines, having the arms *a* and *b*, shaped on their outer ends as shown, and having the contiguous surfaces *f' g'* of these arms curved as shown, and forming the curved line of junction *d'*, as and for the purpose specified.

339,744. METALLIC ROOFING, SIDING, AND CEILING. WILLIAM H. COMACK, New York, N. Y., assignor of one-half to John Walter, same place. Filed Dec. 12, 1885. (No model.)

Claim.—1. As an article of manufacture, an interlocking metallic roofing and siding consisting of a corrugated sheet with the corrugations separated by plane surfaces, said corrugated portions extending under

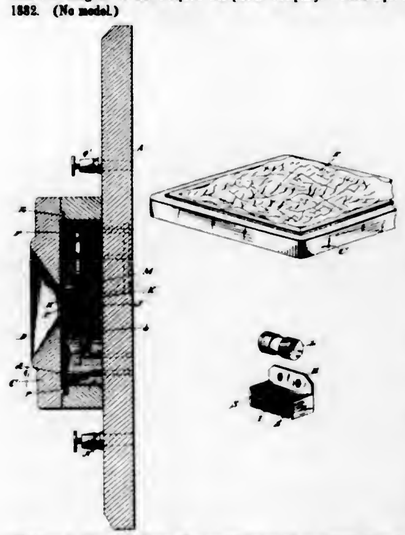
339,744.



and upward at an angle to the said plane surfaces, thereby forming overshoots on the front and drain-troughs in the back portion of said sheets, the sheets being adapted to be secured only on one side, substantially as described.

2. In a roofing and siding, the combination of sheets of flexible material, corrugations separated by plane surfaces formed in said sheets, said corrugations extending under and upward at an angle to the plane faces, and supplementary corrugations formed obliquely in the one side of each sheet and covered by the interlocking of the next sheet thereon, substantially as and for the purposes specified.

339,745. TELEPHONE TRANSMITTER. DANL. DRAWBAUGH, Eberly's Mill, Pa., assignor to the People's Telephone Company. Filed Apr. 25, 1882. (No model.)



Claim.—1. In a telephone, the combination of an elastic vibrating metallic diaphragm with a block of low-conducting material closely applied to its rear or inner side and substantially at its center, and with a second block of low-conducting material not in contact with the first block, the said two blocks being inclined to one another or having inclined faces placed relatively opposite each other, and with a loose block of low-conducting material which rests upon the opposite inclined sides or faces of the two blocks aforesaid and is held in place and in contact upon them by gravity, substantially as described.

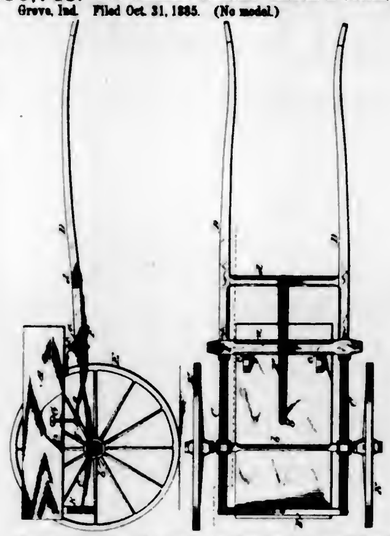
2. In a telephone, the combination of an elastic vibrating metallic diaphragm with a block of low-conducting material closely applied to the rear or inner side of said diaphragm and substantially at its center, and with a second block of low-conducting material not in contact with the first block, and with a loose block of low-conducting material which rests upon the two blocks aforesaid and is held in place and in contact upon them by gravity, substantially as described.

3. In a telephone, the combination of the metallic diaphragm E, the two supporting-blocks I J, of low-conducting material, the cylinder L, of low-conducting material, resting on said blocks, the partly-insulated brackets H and K for holding the blocks, and the bar M or its equivalent for preventing the cylinder falling out of place, substantially as described.

4. The combination, substantially as hereinbefore set forth, of a tympan or diaphragm connected with one of the terminals of an electric circuit, a beveled, inclined, or tapering conductor mounted on said diaphragm, a similarly-shaped conductor mounted on the box, case, or frame, and connected with the other terminal of the circuit, and an interposed conductor resting in sliding contact loosely upon the correspondingly-shaped portions of the supporting-conductors, so that the strength of the current traversing the circuit may be charged by variations in the area of the points of the surfaces in contact in the degree of pressure exerted on the electrodes and in the length of the interposed conductor traversed by the current.

5. The combination, substantially as hereinbefore set forth, of a tympan or diaphragm constituting one terminal of an electric circuit, a semi-conducting supporting-block mounted on said diaphragm and provided with a beveled, inclined, or tapering bearing or projection, a similar semi-conducting supporting-block mounted on the box, case, or frame of the telephone and connected with the other terminal of the circuit, an interposed semi-conductor having its surfaces inclined and resting loosely upon the supporting-blocks by gravity, and devices for retaining said interposed conductor in position upon the supporting-blocks.

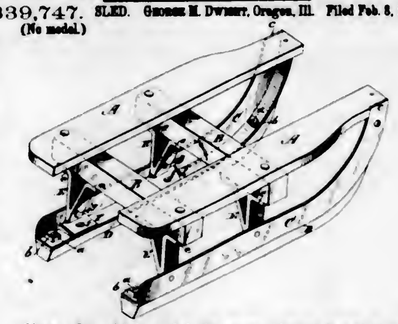
339,746. TWO-WHEELED VEHICLE. LEANDER L. DUNBAR, Lyra Grove, Ind. Filed Oct. 31, 1885. (No model.)



Claim.—1. In a vehicle, the body or box thereof provided with the side and cross springs, in combination with the shafts hinged to the under side of the body or box near its front end and also to the side springs, and a single equalizing-spring, extending centrally under the body or box, and connected thereto at its rear end by an adjusting device and at its forward end to the cross-bars of the shafts, substantially as and for the purpose set forth.

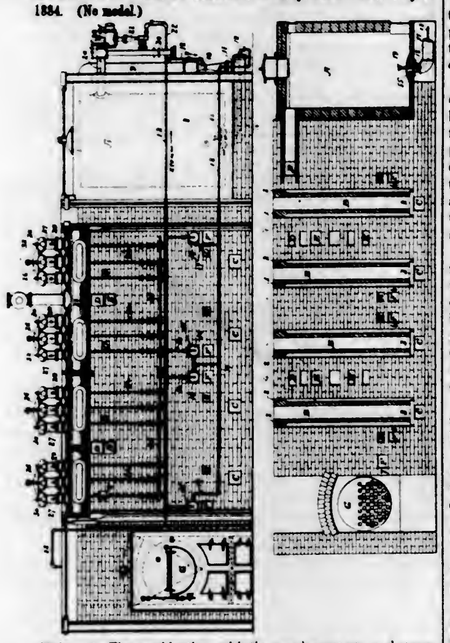
2. In a vehicle, the combination, with the box and shafts hinged together, of an equalizing-spring connected to the cross-bars of the shafts, and an adjusting-screw for attaching the spring to the box, substantially as and for the purpose specified.

339,747. SLED. GEORGE M. DWINNELL, Oregon, Ill. Filed Feb. 8, 1886. (No model.)



Claim.—In a sleigh or sled, the runners thereof formed of angle-iron, and bifurcated knees having laterally-extending flanges at their upper ends, and at their lower ends inwardly-extending chairs connected, respectively, to the benches and runners, in combination with shoes attached to the under side of the runners and projected below the same to protect the entire under surface from frictional wear, substantially as and for the purpose set forth.

339,748. APPARATUS FOR THE MANUFACTURE OF ILLUMINATING-GAS. HENRY H. EDGERTON, Danbury, Conn. Filed July 26, 1884. (No model.)



Claim.—1. The combination, with the cupolas, retorts, and steam-boiler, of one or more compressors or steam-ejectors for creating a strong current through said cupolas, the retort-chambers, and the steam-boiler, said cupolas being connected with said retort-chambers by flues for delivering the air-gas into the chambers, and being further provided with separate flues for carrying off the water-gas, and the said retorts being adapted to the separate manufacture of a rich gas, and therefore having no communication with either the retort-chambers or the water-gas flues, substantially as described.

2. The combination, with the cupolas and retorts, of the flues formed in the brick-work surrounding the retorts for conveying the heating-gas, the retort-chambers, and the hot-air flues also formed in the brick-work aforesaid, substantially as described, so that the retorts are heated by the combustion in the retort-chambers of the gas from the cupolas by means of the hot air from said flues, as set forth.

3. The combination, with the cupolas and retorts, of the compressor or steam-ejector for forcing air into said cupolas, the retort-chambers, the flues for conveying the heating-gas from the cupolas into the retort-chambers, the hot-air flues, and the compressor or steam-ejector for forcing the air into said flues, both the heating-gas flues and the hot-air flues being formed in the brick-work surrounding the retorts, substantially as described.

4. The combination, with upright retorts set in brick or tile work, of heating-gas flues formed in the said brick or tile work, the zigzag hot-air flues also formed in said brick or tile work alongside the retorts, and the take-off flues, the three sets of flues all communicating with the retort-chambers, substantially as described.

5. The combination, with the cupolas, retorts, retort-chambers, and steam-boiler, of the compressor for forcing air into said cupolas, the flues for conveying the gas therefrom into the retort-chambers, the zigzag hot-air flues formed in the brick or tile work of the retort sitting alongside the said retort-chambers, the compressor for forcing air into said flues, and the take-off flues connecting the retort-chamber with the steam-boiler, substantially as described.

6. The combination of the cupolas, retorts, retort-chambers, air-gas flues leading from the cupolas into said retort-chambers, and hot-air flues also leading into the retort-chambers, but from a source of fresh air and not from the cupolas, of the superheaters set in the brick or tile work of the retorts, and pipes for delivering the superheated steam into the cupolas, substantially as described.

7. A superheater consisting of a chamber placed adjacent to a flue for conveying hot gas, and communicating with the same through openings in the intermediate wall, and the superheating-pipes in said chamber, so that said pipes are heated by radiation and convection, and not by the direct circulation over them of the gases in said flue, substantially as described.

8. The combination, with the retort-chambers, the heating-gas flues, the hot-air flues, and the take-off flues, of the superheating-chambers placed adjacent to said take-off flue, and communicating therewith through openings in the wall between, and the superheating-pipes in said chambers, substantially as described.

9. The combination, with the cupolas or air and water gas generators, and the common flues for carrying off the air-gas from said cupolas, of the aspirator and connected pipes for drawing off the water-gas from either cupola and at the same time controlling or regulating the pressure therein, so as to enable the user to withdraw the water-gas independently of the air-gas without closing the communication between the cupolas, said pipes leading directly from the cupolas to the aspirator, and thus constituting simply conveyers to the water-gas, in contradistinction to pipes or passages constituting or forming part of vaporizing and fixing retorts, substantially as described.

10. In the manufacture of water-gas in connected generators by raising the coke to incandescence and admitting steam into contact with the incandescent coke alternately in the generators, the improvement consisting in maintaining and regulating the pressure of the water-gas in the generator at or above the pressure of the air-gas in the other generator, so that the water-gas may be drawn off independently without closing the communication between the two generators, and when desired may be delivered in greater or less quantities into the flues for carrying off the air-gas, substantially as described.

11. A gas-retort of general cylindrical form having the walls thickened at the mouth to constitute an exterior enlargement, the cylindrical bore extending from end to end of the retort, substantially as described.

12. A gas-retort of general cylindrical form having the walls thickened at the mouth to constitute an exterior enlargement, the said enlargement being squared, and the cylindrical bore extending from end to end of the retort, substantially as described.

13. A gas-retort provided at the mouth with an enlargement of frusto-pyramidal form, substantially as described.

14. In combination with a retort-chamber having rectangular openings, a series of upright cylindrical retorts each having at its mouth a squared enlargement and set in said chamber, substantially as described.

15. In combination with a retort-chamber, one or more retorts set therein and packed as explained, each retort having at the mouth an enlargement of tapering or frusto-pyramidal form, whereby wedge-shaped packing-spaces are left around the same, substantially as described.

16. The combination, with one or more retorts open at the inner end, of the sand-flue entering beneath the same and communicating with the interior of said retorts, substantially as described.

17. The combination, with the retort-chamber, the series of upright retorts, and the sand-flue under said retorts, substantially as described.

18. In the manufacture of oil-gas, an upright retort, in combination with the sand-packing for closing the lower end, and the supply-pipe descending to within a short distance of said sand, substantially as described.

19. The combination of the cupolas, the upright retorts, the retort-chambers, the heating-gas flues, the hot-air flues, and the take-off flues, the three sets of flues being formed in the brick or tile work surrounding the retorts and built up against the cupolas, substantially as described.

20. The combination of the cupolas, upright retorts, heating-gas flues, hot-air flues, take-off flues, superheater and steam pipes, substantially as described.

21. The combination of the cupolas, air-compressor, water-gas aspirator, heating-gas flues, hot-air flues, compressor for forcing air into said hot-air flues, retort-chambers, upright retorts, take-off flues, superheaters, boiler, steam-pipes, and oil-supply pipes, substantially as described.

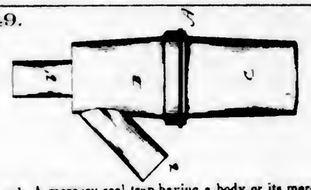
22. In a gas-flue, a damper composed of slides with a filling of granular material—such as sand—between them, substantially as described.

23. A plant for making a mixture of oil-gas and water-gas, consisting of the cupolas or water-gas generators, the oil-gas retorts, the separate purifiers, separate meters, and separate conveying-pipes for the two gases, and the common pipe for receiving and carrying away the gases after passing the meters, substantially as described.

24. The combination, with an upright closed retort, of an oil-delivery pipe extending to near the bottom of said retort, an outlet-pipe connected with the upper end, the heating-gas flues communicating with the upper part of the retort-chamber, and the take-off flues communicating with the lower part, substantially as described.

339,749. MERCURY-SEAL TRAP. ABRAHAM EDWARDS, New York, N. Y. Filed Aug. 4, 1885. (No model.)

339,749.

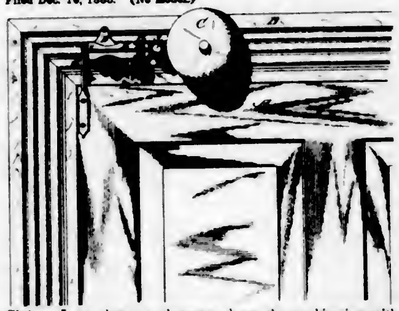


Claim.—1. A mercury-seal trap having a body or its mercury-containing chamber made of a prepared mixture or compound containing chlorine, as and for the purpose set forth.

2. A mercury-seal trap having a body or chamber made of vulcanized rubber and a mixture of chloride of sodium, as and for the purpose set forth.

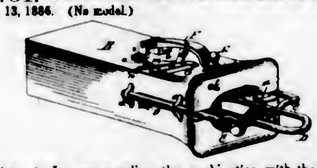
3. A mercury-containing chamber or reservoir for traps, water-closets, and like fixtures, composed of a compound mixed with chloride of sodium, substantially as described.

339,750. DOOR-ALARM. CHARLES G. EDWARDS, Rushford, Minn. Filed Dec. 16, 1885. (No model.)



Claim.—In an alarm attachment to doors, the combination, with a bell and an upwardly-extending arm connected, respectively, to the door-frame and door, of a striking mechanism consisting of a bracket formed with ears, a lever having ears pivoted to the ears of the bracket, a spring coiled around the pivot and having its ends bearing on the inner sides of the bracket and lever, said lever bent inwardly at its ends, as shown, and having attached to it a serpentine-formed rod carrying the hammer, substantially as and for the purpose set forth.

339,751. CAR-COUPLING. JAS. M. EDWARDS, Audubon, Iowa. Filed Feb. 13, 1886. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-head formed with L-shaped slots at its sides and stops at their outer extremities, and the ends of the draw-heads having curved recesses therein, of curved supporting-bars connected together by a pin and elongated slot, and provided with shanks supported in eyes in the sides of the draw-head, and carrying keys working in the slots, substantially as and for the purpose set forth.

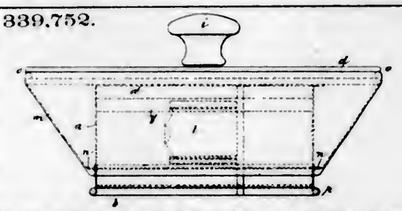
2. In a car-coupling, a draw-head recessed at its end and provided with extensible supporting-arms for the coupling-link, and means for locking the arms in a closed position in the recess, in combination with a coupling-pin, a pivoted arm, to which it is connected, a foot and a trip lever for supporting the arm, and a push-pin connected to the lever and extending out through the front end of the draw-head, substantially as and for the purpose described.

339,752. PORTABLE APPARATUS FOR USE WITH CLOSETS, COMMODES, AND THE LIKE, FOR DEODORIZING AND DISINFECTING PURPOSES. GEORGE H. ELLIS, London, England. Filed Dec. 16, 1885. (No model.)

Claim.—1. In combination with the box *a*, and with the fixed and with the false perforated bottoms in face contact with each other, the slide *l* in the side of the box, and the flexible band applied to and surrounding the box, and leaving a surrounding but inclosed space between such box and band, all substantially as and for the purposes set forth.

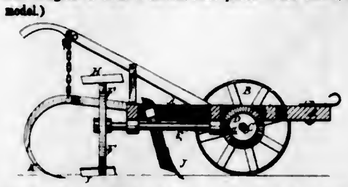
2. In combination with the cylindrical box for holding a deodorizing material, and adapted for insertion in an opening in the seat and for

339,752.



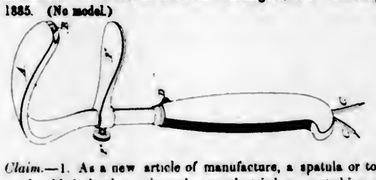
discharging the material, an elastic or flexible packing-band, *m*, applied to the exterior of the box, and cone-shaped or of increasing circumference from its bottom upward, and also serving to prevent the deodorized material from being deposited on the seat.

339,753. COTTON-CHOPPER. CHARLIE L. FERRIOTT, Tehuacana, Tex., assignor to John T. Erwin, same place. Filed Jan. 2, 1886. (No model.)



Claim.—In a cotton-chopper, the combination of an axle, a frame, a shaft journaled longitudinally in the frame, radial arms mounted on the said shaft, gearing connecting the said shaft with the axle, rectangular blades secured upon the ends of the said arms, the said blades being set diagonally, making their side edges parallel with the spiral path of the arms, as shown, and one blade being narrower than the others, substantially as shown and described, whereby each blade will exactly coincide with the spiral path of its motion and stands will be left uncut at equal intervals, as set forth.

339,754. COMBINED SPATULA AND ELECTRIC MOUTH-ILLUMINATOR. AUGUSTUS R. S. FOOTE, Washington, D. C. Filed Apr. 11, 1885. (No model.)

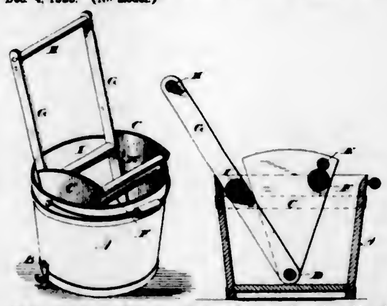


Claim.—1. As a new article of manufacture, a spatula or tongue-compressing blade having an incandescent electric lamp seated in a cavity in its forward end, whereby the lamp is presented in position to illuminate the throat and concealed from the eye of the operator.

2. The spatula or tongue-compressor consisting of the body provided with the blade extending at substantially right angles thereto, the electric lamp attached to said blade, and the clamping-arm E, adapted as described, for engagement beneath the chin of the patient.

3. The spatula or tongue-depressor consisting of the handle provided with the electric lamp at one end and with the detachable blade, substantially as described and shown.

339,755. MOP-WRINGER. ALBERT A. FRASER, Oneonta, N. Y. Filed Dec. 4, 1885. (No model.)

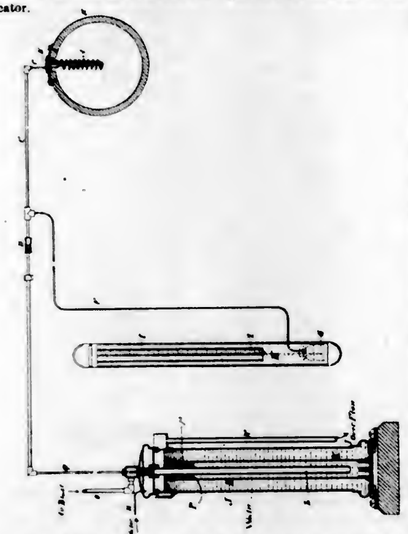


Claim.—A mop-wringer consisting of two triangular side pieces connected at their lower corners and at two corresponding upper cor-

ners by cross-pieces or rounds, a roller journaled at its ends under the upper round in the side pieces, two arms pivoted at their lower ends upon the lower round and having a handle connecting their upper ends, and a roller journaled between them and registering with the other roller, as and for the purpose shown and set forth.

339,756. PYROMETER. JOHN FREW, Langlean, near Coatbridge, County of Lanark, Scotland. Filed Dec. 19, 1885. (No model.) Patented in England Feb. 25, 1885, No. 2,568.

Brief.—The increased pressure of the air within the helical tube, due to heat from the hot-blast, causes a registration of the heat on the indicator.



Claim.—1. The combination, with an expansion-chamber containing an aeriform fluid and a tube containing an indicator, of a tube containing an aeriform fluid and connecting said expansion-chamber and indicator-tube, for the purpose set forth.

2. In a pyrometer, the combination, with an expansion tube or chamber having an outlet-nozzle and an inlet-tube, and a fluid forced therethrough, of a tube containing an indicator and a tube connecting said indicator-tube with the inlet-tube, substantially as set forth.

3. The combination of the spiral tube or expansion-vessel A, provided with inlet and outlet nozzles D E, the air-supply pipe C, and pressure-regulating apparatus J K L, branch pipe F, liquid-vessel G, and pipe H, provided with a graduated scale, substantially as and for the purpose set forth.

4. In a pyrometer, the combination, with an expansion tube or chamber having an outlet-nozzle and an inlet-tube, an indicator, and a tube connecting said inlet-tube and indicator, of an aeriform fluid forced through said inlet-tube, and a regulator for equalizing the pressure of said fluid, as set forth.

339,757. GAS-PRESSURE REGULATOR. LOUIS B. FULTON, Pittsburg, Pa. Filed Dec. 22, 1885. (No model.)

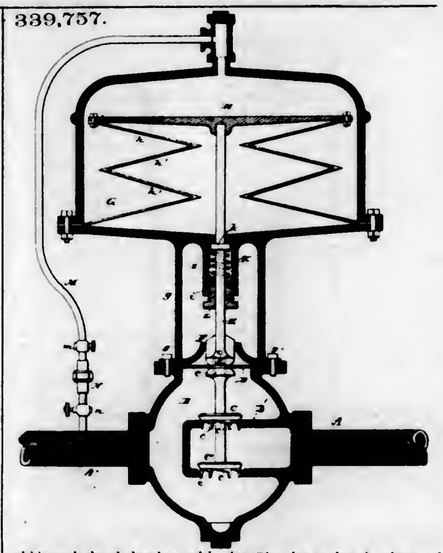
Claim.—1. In a gas-pressure regulator, the combination, with high and low pressure pipes, a valve for regulating the supply from the high-pressure pipe to the low-pressure pipe, a vibrating pressure-plate located within a chamber, and a pipe connecting said chamber with the low-pressure pipe, of a valve-rod connecting the valve and vibrating pressure-plate, the said valve-rod being free from engagement with packing.

2. In a gas-pressure regulator, the combination, with a vibrating pressure-plate located in a chamber communicating with the low-pressure pipe, of a flexible diaphragm stretched across the chamber in which the regulating-valve is located, and a piston-rod extending from the pressure-plate to the said diaphragm, and adapted to communicate the movements of the pressure-plate to the diaphragm, substantially as set forth.

3. In a gas-pressure regulator, the combination, with high and low pressure pipes opening into a chamber, a regulating-valve located within said chamber, and a valve-regulating plate located outside of said chamber, of a flexible diaphragm located between the valve and the valve-regulating plate, substantially as set forth.

4. The combination, with a vibrating pressure-plate, a piston-rod, and a regulating-valve adapted to be operated thereby, of a spring located

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within an inclosed chamber and having a bearing against the piston-rod, and adapted to hold the pressure-plate and valve in a normally-elevated adjustment, and means for regulating the tension of the spring, substantially as set forth.

5. The combination, with high and low pressure pipes communicating with a chamber, and a regulating-valve located within said chamber, of a pressure-chamber in communication with the low-pressure pipe, a pressure-plate located within said pressure-chamber, a bellows-shaped vertically-yielding cushion connecting the pressure-plate with the walls of the pressure-chamber, and means for communicating the movements of the pressure-plate to the valve, substantially as set forth.

6. In a gas-pressure regulator, the combination, with a pressure-plate and a bellows-shaped cushion connecting the pressure-plate with the walls of the pressure-chamber, of a valve-operating rod leading from the lower side of the pressure-plate to the regulator-valve, and a conduit connecting the pressure-chamber with the low-pressure pipe, substantially as set forth.

7. The combination, with high and low pressure pipes communicating with a chamber, and a valve located within said chamber, and provided with one or more inclines on the lower edge of its rim, of a pressure-chamber in communication with the low-pressure pipe, a pressure-plate located within said pressure-chamber, and a valve-rod connecting the pressure-plate and valve, substantially as set forth.

8. The combination, with high and low pressure pipes opening into a chamber, a valve located within said chamber, a pressure-chamber, a pressure-plate located therein, and a valve-rod connecting the pressure-plate and valve, of a flexible diaphragm located between the valve and pressure-plate and closely embracing the valve-rod, substantially as set forth.

339,758. NUT-LOCK. JAMES W. GANOR, Philipsten, Pa. Filed Dec. 5, 1885. (No model.)

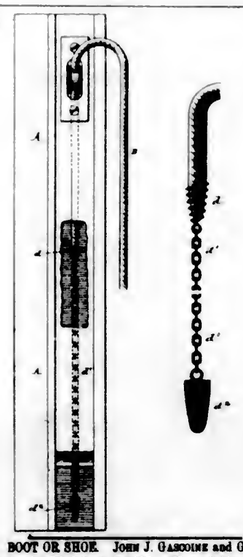


Claim.—As an improvement in nut-locks, the combination of the rails, the fish-plates, the through-bolts D, having the nuts, the washers F, fitted on the bolts and interposed between the nuts and fish-plates, and provided with the right-angled arm *f*, having an eye, *f'*, in its free upper end, located above the plane of the nuts, and the locking-bar having the arms h' h^2 and the trunnions h formed from a single piece of wire, substantially as described, for the purpose set forth.

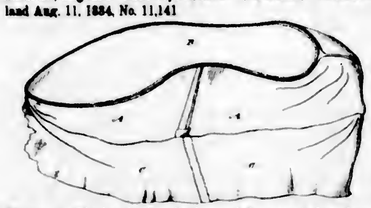
339,759. DEVICE FOR HANGING WINDOW-SASHES. EDWARD GARRAND and ALFRED A. GARRAND, New York, N. Y. Filed Oct. 19, 1885. (No model.)

Claim.—A device for lowering the sash-cord into the box of the sash-weight, consisting of a spring-clasp, a chain or cord, and a weight, substantially as described.

339,759.



339,760. BOOT OR SHOE. JOHN J. GASCOIGNE and GEORGE A. ROYCE, Leicester, England. Filed Sept. 8, 1885. (No model.) Patented in England Aug. 11, 1884, No. 11,141.



Claim.—1. The herein-described turned shoe, consisting of an upper, the permanent center piece or sole sewed thereto, and an outsole sewed exclusively to the upper by a line of stitches that run entirely around and outside of the line of stitches that unite the center piece or sole to said upper, substantially as described.

2. The herein-described turned shoe, consisting of an upper, the permanent center piece or sole sewed thereto, an outsole sewed exclusively to the upper by a line of stitches that run entirely around and outside of the line of stitches that unite the center piece or sole to the upper, and an insole secured to the center piece or sole, substantially as described.

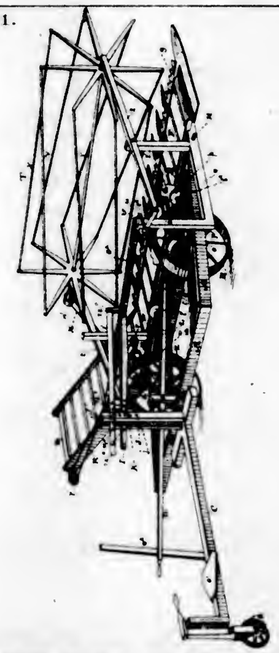
3. The herein-described turned shoe, consisting of an upper, the permanent center piece or sole sewed thereto, a lining for said upper, an outsole sewed to the latter by a line of stitches that run entirely around and outside of the line of stitches that unite the center piece or sole to the upper, an insole secured to said center piece or sole, and a stiffener, said parts being arranged substantially as described.

339,761. HARVESTER. LEWELL J. GILMAN, CHARLES W. FROST, and CHARLES H. FOSTER, Santa Rosa, Cal. Filed Feb. 28, 1885. (No model.)

Claim.—1. In a harvester, the wheeled main frame A, the push-beam C, hinged to its rear, and having standard J on its forward end, and the operating-lever D, by which the frame is inclined, in combination with the draper-frame or platform E, hinged to the forward end of the main frame, and provided with rearwardly-extending arms *e*, and the adjustable limiting-arm I, pivoted to and adjusted within the standard J, whereby when the rear of the main frame and the front of the tongue are depressed or elevated, the front of the draper-frame is lowered or raised to keep said draper-frame on a level, substantially as herein described.

2. In a harvester, the wheeled main frame A, the push-beam C, hinged to its rear, and having the standard J on its forward end, and the operating-lever D, by which the frame is inclined, in combination with the draper-frame or platform E, hinged to the forward end of the main frame, and having rearwardly-extending side arms, *e*, the uprights *e'* on said arms, and cross-bar e^2 between the uprights, and the limiting-arm I, pivoted in the standard J on the push-beam and on the cross-bar e^2, substantially as and for the purpose herein described.

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3. In a harvester, the wheeled main frame A, the push-beam C, hinged to its rear, and having the standard J, with a vertical series of holes, *j*, and the lever D, by which the main frame is inclined, in combination with the draper-frame or platform E, hinged to the forward end of the main frame, and having rearwardly-extending arms *e*, the uprights *e'* on said arms, and cross-bar e^2 between the uprights, and the limiting-arm I, pivoted on the cross-bar, and having horizontal series of holes *i*, by which it may be adjustably pivoted in the standard J on the push-beam, substantially as and for the purpose herein described.

4. In a harvester, the main frame A, having wheels B, on which it is balanced fore and aft, the push-beam C, hinged to the rear of the main frame, and having standard J, and the lever D, by which the frame is rocked on its wheels, in combination with the draper-frame or platform E, hinged to the front of the main frame, and having side arms, *e*, extending rearwardly to the line of the pivotal axis of the main frame, the uprights *e'* on said arms, passing upwardly in the plane of said axis, the cross-bar e^2, connecting the uprights, and the limiting-arm I, pivoted in the standard J and on the cross-bar e^2, arranged and adapted to operate substantially as herein described.

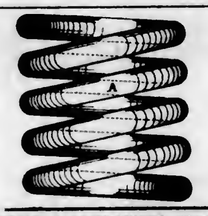
5. In a harvester, the main frame A, having wheels B, the sickle *g*, the reel T, and the draper F, in combination with the mechanism by which the sickle and reel are driven, consisting of the gear Z on the axis of one wheel, the pinion *z*, the counter-shaft L, crank *l*, pitman *l'*, pivoted lever l^2, the bevel-pinions *m m'*, counter-shaft M, pulleys *n n'*, and belt N, and the means by which the draper is driven, consisting of the gear O on the axle of the other wheel, the pinion *o*, counter-shaft P, having chain-pulley *p*, counter-shaft *q'*, having chain-pulleys *q*, the chain Q, the pulleys *r r'*, and belt R, substantially as and for the purpose herein described.

6. In a harvester, the draper-frame or platform E, as described, having the uprights *e' t'* and the cross-bar e^2, in combination with the reel T, and the means by which it is supported vertically adjusted and held, consisting of the levers *t*, pivoted to the standards *t'*, and carrying the reel-shaft, the rock-shaft U, journaled on cross-bar e^2, the links t^2, connecting the crank-shaft with the rear ends of the levers *t*, the notched arm or lever u^2, connected with shaft U, the standard J on the push-beam, and the cross-bolt *j'* in said standard, with which the notched arm or lever u^2 engages, substantially as herein described.

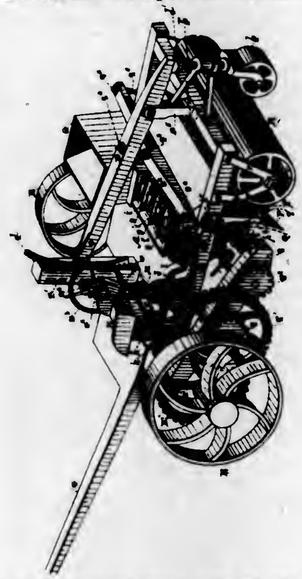
339,762. SPRING. GEORGE GOEWEY, Philadelphia, Pa., assignor of one-half to Jeremiah G. Shaw, Biddeford, Me. Filed Jan. 14, 1886. (No model.)

Claim.—A helical spring formed of a seamless metallic tube of any shape in the transverse section, substantially as herein shown and described.

339,762.



339,763. COMBINED HARROW, SEEDER, AND ROLLER. OCTAVE GRAVELLE, Garfield, Nev. Filed Aug. 24, 1885. (No model.)



Claim.—1. In a combined harrow, seeder, and roller, the main frame and a seeder and roller carried by the frame, in combination with the harrow C, located in front of the seeder, suitable gearing, operated by the travel of the machine, to rotate the harrow, the arms c, pivoted to the front of the machine, and in the rear ends of which the harrow is mounted, a pivoted lever, D, and suitable chains connecting the rear ends of the arms with the lever, whereby the harrow is vertically adjustable, substantially as herein described.

2. In a combined harrow, seeder, and roller, the main frame A and a seeder and roller carried by the frame, in combination with the harrow C, consisting of a rotating toothed cylinder-head, the arms *c*, pivoted to the front of the main frame and carrying the harrow, and the means by which the harrow is vertically adjusted, consisting of the pivoted lever D, having a segmental rack, *d*, the shaft a^2, having a crank-wheel, a^3, and a pinion, a^4, meshing with the rack, the bar c^2, secured to the lever D, and chains c^4, connecting the rear ends of the arms *c* with the ends of the bar, substantially as herein described.

3. In a combined harrow, seeder, and roller, the wheeled frame A, in combination with the rotating harrow C and the pivoted arms *c*, by which it is carried, the pivoted lever D, operated by a rack and pinion, as described, and the adjustable connection between said lever and the arms *c* of the harrow, consisting of the eyebolts c^3 c^3 in the lever and bar, the link c^5, connecting the bar with the eyebolt c^3, and the chains c^4, connecting the rear ends of the arms *c* with the eyebolts c^3 in the ends of the bar, substantially as herein described.

4. In a combined harrow, seeder, and roller, the main wheeled frame A, in combination with the harrow C and the pivoted arms *c*, in which it is mounted, the pivoted lever D, operated by the rack and pinion and crank-wheel, as described, the bar c^2, connected with the lever, and the chains c^4, connecting the rear ends of the arms *c* with the ends of the bar, whereby the harrow is adjusted, and the means by which the harrow is held in the position to which it is adjusted, consisting of the ratchet-wheel a^5 on the crank-wheel shaft a^3, the foot-lever F, and connecting-rod *f*, all arranged and operating substantially as herein described.

5. In a combined harrow, seeder, and roller, the seed-box G, having the notched adjustable plates H under its throat, for regulating its feed, in combination with the pivoted transverse shaft I, having arms *i* and fingers *i'* extending upwardly through the notches of the plates H into the throat of the seed-box, and a means, comprising a lever and operating-cam, for oscillating the shaft I, whereby the fingers are vertically reciprocated, substantially as herein described.

6. In a combined harrow, seeder, and roller, the main wheeled frame A, in combination with the seed-box G, having notched and adjustable feed-regulating plates H under its throat, the pivoted crank-shaft I, having arms *i* and fingers *i'* extending upwardly through the notches of the plates H into the throat of the seed-box, and the means by which the fingers are vertically reciprocated, consisting of the pivoted lever J on the crank-shaft I, the cam *k'* on the counter-shaft K, the pinion *k* on said shaft, and the spur-gear E on the axle of the driving-wheel of the main frame, substantially as herein described.

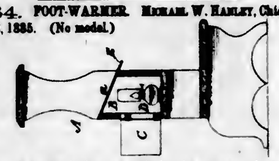
7. In a combined harrow, seeder, and roller, the main frame A, in combination with the seed-box G, having the notched adjustable feed-regulating plates H under its throat, the crank-shaft I, having arms *i* and fingers *i'* extending upwardly through the notches of the plates H into the throat of the seed-box, the means by which the fingers are vertically reciprocated, consisting of the lever J, attached to the crank-shaft I, the cam *k'*, and pinion *k* on the counter-shaft K, the spur-gear E, and the spring L, and the means by which the lever J is thrown out of contact with the cam, consisting of the pivoted cam-lever M, substantially as herein described.

8. In a combined harrow, seeder, and roller, the seed-box G, in combination with the chute O, having discharge-pipes *o*, and the drills P, fitted on said pipes, the arms *p* of said drills pivoted on a cross-shaft, *p'*, the guide-staples p^3 of said drills fitted on a cross-shaft, p^3, the adjustable hangers p^4, supporting said shaft, and the adjustable diagonal rods Q between the hangers and the cross-shaft, substantially as herein described.

9. In a combined harrow, seeder, and roller, the main frame A, having wheels B *b*, the harrow C, the roller R, and the seeding mechanism supported by the frame and operating between the harrow and the roller, in combination with the means by which the frame A and the parts it supports are raised and carried on its wheels, consisting of the lever D, operated in front by a rack and a pinion and bearing with its rear end on the spindle of the steering-wheel *b*, substantially as herein described.

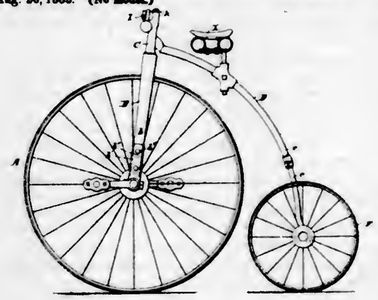
10. A combined harrow, seeder, and roller comprising the main frame A, having wheels B in front, and an adjustable steering-wheel, *b*, behind, the vertically-adjustable harrow C, mounted transversely under the frame, mechanism operated by the driving or traction wheel of the frame for rotating the harrow, the seed-box G on the frame, having adjustable feed-plates and vertically-reciprocating feed-fingers driven by the traction-wheel through suitable mechanism, the chute O and adjustable drills P behind the harrow, the roller R behind the drills and mounted under the frame, and the pivoted lever D, connected with the harrow and bearing on the spindle of the steering-wheel, all arranged and adapted to operate substantially as herein described.

339,764. FOOT-WARMER. MICHAEL W. HANLEY, Chicago, Ill. Filed May 23, 1885. (No model.)



Claim.—A barber's foot-rest, A, having a central metallic shelf, *a*, the said shelf having its lower edge toward the front of the rest, and having in its upper side, at or near its lower or front edge, a groove or channel, E, the said shelf also having below it a heating-chamber, B, the whole constituting a new article of manufacture, substantially as and for the purposes specified.

339,765. VELOCIPEDE. HARRIS B. HART, Philadelphia, Pa. Filed Aug. 26, 1885. (No model.)



Claim.—1. The combination, in a velocipede, of a front fork each member of which is made in sections, one of said sections being provided with a longitudinal slot and adapted to a recess in the side of the other section, and a set-screw extending through said slot and clamping the parts adjustably together, essentially as set forth.

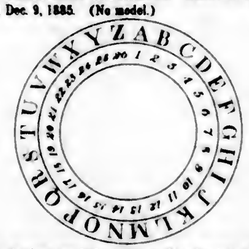
2. The combination, with the head of a velocipede, of a lug slotted on its upper side for the reception of the handle-bar, and retaining-hooks pivoted to the sides of the lug and adapted to fit over said bar, substantially as described.

3. In a velocipede, a crank-arm having its outer end curved or rounded on one side, combined with a pedal-shaft having a forked end adapted to be adjustably secured to said crank-arm, substantially as described.

4. The combination, with the rim of a wheel, of spoke-thimbles screwing into threaded openings in said rim and provided with interior-threaded recesses, substantially as described.

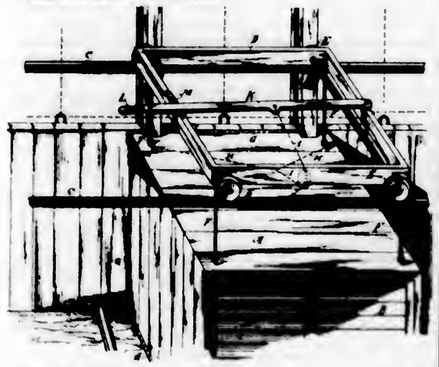
5. The combination, with a hub having grooved flanges, of caps fitting said flanges, headed spokes fitting the grooves in the flanges, and exteriorly-threaded thimbles, adapted to threaded openings in the rim of the wheel, and provided with recesses into which the threaded ends of the spokes are secured, substantially as described.

339,766. **TELEPHONIC APPARATUS.** HENRY N. HASTINGS, Lynn, Mass. Filed Dec. 9, 1885. (No model.)



Claim.—A device consisting of a surface having thereon words, letters or characters in combination with figures, a separate figure for each word, letter, or character, in combination with a telephone or other means of transmitting spoken words, substantially as set forth.

339,767. **FRUIT-DRIER.** ANDREW J. HATCH, San Francisco, Cal. Filed Dec. 23, 1885. (No model.)



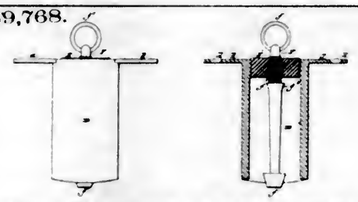
Claim.—1. In combination with the horizontal drying-chamber having doors at intervals upon the sides, through which fruit cars or trays may be introduced, the portable supplemental chamber having exterior doors, substantially as and for the purpose herein described.

2. A suspended swinging supplemental chamber, with its links or chains, in combination with a superposed carriage, from which the chamber is suspended, and a track upon which it travels parallel with the main chamber, substantially as herein described.

3. The carriage supported and traveling upon a line of rails parallel with and to one side of the main drying-chamber, in combination with a supplemental chamber suspended from said carriage by links or chains, and a lever mounted upon the car and having a rope or chain connecting with the suspended chamber, whereby the latter chamber may be drawn outward and upward simultaneously to clear it from the side of the main chamber and the floor, substantially as herein described.

339,768. **AXLE-LUBRICATOR.** ANDREW J. HAWKINS and SAM H. ALLEN, Strawn, Tex. Filed Feb. 2, 1886. (No model.)

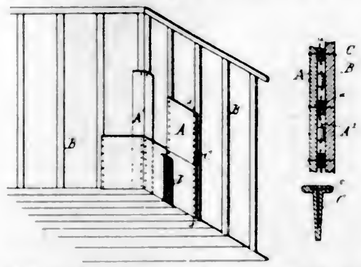
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Claim.—1. The combination, with the box B, having an aperture, *b*, of the cylindrical tube D, having its lower or inner end shaped to fit the curvature of the box around the aperture, the outer end of the tube being threaded interiorly, the cap E, threaded exteriorly to screw into and close the outer open end of the tube, and the stem or plunger F, working through a threaded opening in the cap, and having the conical plug *f'* at its lower or inner end, to neatly fit the aperture *b*, the diameter of the plug being considerably less than the inner diameter of the tube, so that the shank or stem need be screwed out but a short distance to lubricate the axle, as the lubricant is at all times over the top of the plug and around the aperture *b*, as set forth.

2. The combination, with the tube D', having the threaded outer end, of the cap E, threaded to close said end, and the shank or stem F, carrying the conical plug *f'* at its lower or inner end, and screw-threaded to work through a threaded perforation of the cap E, a shoulder, *f*³, being provided on the stem or shank at the base of the threads, operating to cause the unscrewing of the cap E by the continued turning of the shank or stem, as set forth.

339,769. **ASBESTUS LUMBER.** EDWIN A. HAYES, New York, N. Y. Filed May 29, 1885. (Specimens.)



Claim.—1. In a drying-room, the combination, with a lining of asbestus lumber, consisting of a number of pieces made of (preferably equal parts of) long-fiber asbestus, iron-flake fiber, pure asbestus, and kaolin, rolled and pressed into blocks or boards A, and adapted to be porous to moisture, but impermeable as regards heat, and with non-conducting devices C, adapted to fasten the various blocks or boards securely together, of a dead-air or ventilating flue, A², placed between the lining A and the frame of the drying-room, substantially as and for the purpose set forth.

2. In a drying-room, the combination, with the boards or blocks of asbestus lumber A, adapted to cover and protect any surface liable to be affected by undue heat, and with the studs or small blocks *a*, of the asbestus-fastening devices C, adapted to be driven through the board or block A, substantially as described.

3. In a drying-room, the combination, with the boards or blocks of asbestus lumber A, and with the angle or corner pieces A', of the same material, of the asbestus-fastening devices C, adapted to be driven through the board A and angle-piece A', substantially as set forth.

4. In a drying-room, the combination, with the boards of asbestus lumber A, and with the asbestus-fastening devices C, of the thin narrow strips of asbestus D, adapted to cover the same, substantially as and for the purpose set forth.

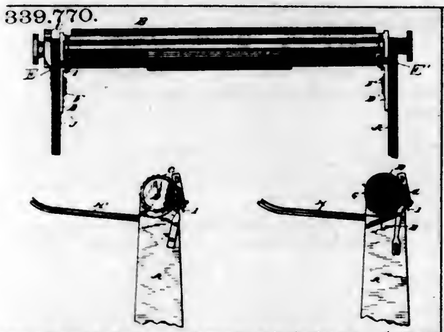
5. In a drying-room, a lining composed of the block A, constructed of (preferably equal parts of) long-fiber asbestus, iron-flake fiber, pure asbestus, and kaolin, rolled and pressed together substantially as described, provided with two flat parallel sides or faces, and having the edges tongued and grooved, substantially as and for the purpose set forth.

339,770. **COPY-HOLDER.** ABNER HAYWARD, Jr., New York, N. Y. Filed Sept. 11, 1885. (No model.)

Claim.—1. The combination, in a copy-holder, of the roll upon which the paper is wound and the strips having a space between them, one of said strips being movable, whereby the space may be increased or diminished.

2. The combination, in a copy-holder, of the roll provided with the

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spring-clip and the stationary and movable strips having a space between them and held against the roll by flexible means, substantially as described.

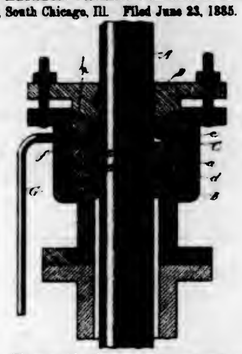
3. The combination, in a copy-holder, with the roll provided with the knobs at each end and the notched wheel, of the spring-pawl secured to the frame of the device and the strips bearing against the roll, and having a space between them, for the purpose set forth.

4. The combination, in a copy-holder, of the roll mounted in suitable bearings, the strips mounted in the arms, the upper strip being stationary and the lower one movable, and the spring attached at one end to the frame and at the other to the arms, substantially as described.

5. The combination, in a copy-holder, of the roll mounted in a suitable frame, the brackets having the stationary stud secured at its upper end, the screw-bolts carrying the movable strip, and the thumb-screws mounted in the arms and receiving the screw-bolts, and the springs for retaining the strips in position against the roll.

6. In combination with the roll, the strips having a space between them and held against the rolls and the wires secured to the frame and extending rearward, as described.

339,771. **METALLIC PACKING FOR STUFFING-BOXES.** FRANK HENNEBÖHLE, South Chicago, Ill. Filed June 23, 1885. (No model.)



Claim.—1. The combination, with a sectional packing-ring the sections of which are arranged with spaces therebetween, and a spring coiled around such sections, of a stuffing-box provided with channels leading from the packing-ring recess to the bore of the cylinder, as set forth.

2. The combination, with a sectional packing-ring the sections of which are arranged with spaces therebetween, and a spring coiled around such sections, and a stuffing-box provided with channels leading from the packing-ring recess to the bore of the cylinder, of a gland provided with a circumferential depression, and a waste-pipe communicating therewith, as set forth.

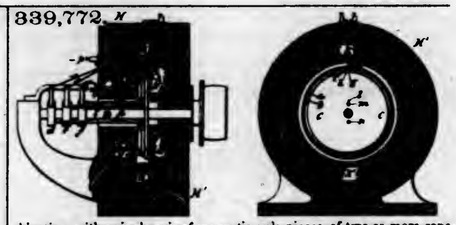
339,772. **UNIPOLAR DYNAMO-ELECTRIC MACHINE.** CARL HERING, Philadelphia, Pa., assignor of one-half to Charles H. Banes, same place. Filed Nov. 21, 1885. (No model.)

Claim.—1. In a multiple-disk unipolar electric machine or motor, the combination, with a single pair of field-magnet pole-pieces, of two or more separately-insulated induction-disks rotated between them in the same direction.

2. In a multiple-disk unipolar electric machine or motor, the combination, with each of two or more pairs of field-magnet pole-pieces, of two or more separately-insulated induction-disks rotated in the same direction between each of the separate pairs of pole-pieces.

3. In a multiple-disk unipolar electric machine or motor, the combination, with a single pair of magnetic pole-pieces, of two or more separately-insulated induction-disks rotated between them in the same direction and sliding contact-brushes, and conductors connecting and carrying off the currents generated in the separate disks in series.

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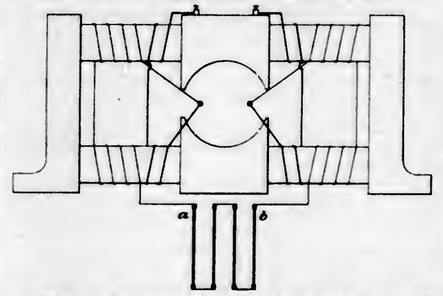


4. In a multiple-disk unipolar electric machine or motor in which two or more separately-insulated induction-disks furnished with sliding contact-brushes electrically connected therewith are rotated in the same direction in a single magnetic field, the combination, with each of the brushes thereof, of a conducting-wire leading out from one of the disks and back again to another disk, and so on through all the disks, thereby connecting them in series.

5. A compound multiple-disk unipolar electric machine or motor, consisting, substantially, in the combination, with two independent pairs of magnetic pole-pieces, between each of which two or more separately-insulated induction-disks are rotated in the same direction, of contact-brushes electrically connected therewith and conductors joined therewith, connecting the separate disks in series.

6. In a compound multiple-disk unipolar electric machine or motor, the combination of more than two sets of separately-insulated induction-disks with an independent pair of magnetic pole-pieces for each set of disks and with contact-brushes and their conducting-wires, connecting the separate disks in series with one another, substantially as described and specified.

339,773. **COMPENSATING RESISTANCE FOR DYNAMO-ELECTRIC MACHINES.** CARL HERING, Philadelphia, Pa., assignor of one-half to Charles H. Banes, same place. Filed Jan. 9, 1886. (No model.)



Claim.—1. In a dynamo-electric machine or motor, the combination, with its shunt field-magnet coils, of a resistance composed of carbon or other suitable material whose resistance on increase in temperature decreases to an amount equal to the increase in the resistance of the coils of copper or other material forming the shunt-magnet circuit, substantially as described and specified.

2. In a dynamo-electric machine or motor, a compensating resistance whose resistance on variation in temperature varies to an equal extent but in the opposite direction to the resistance of that part of the circuit which it is designed to compensate.

3. In a compound wound dynamo-electric machine or motor, the combination, with the shunt-coils thereof, of a compensating resistance, substantially as and for the purpose described.

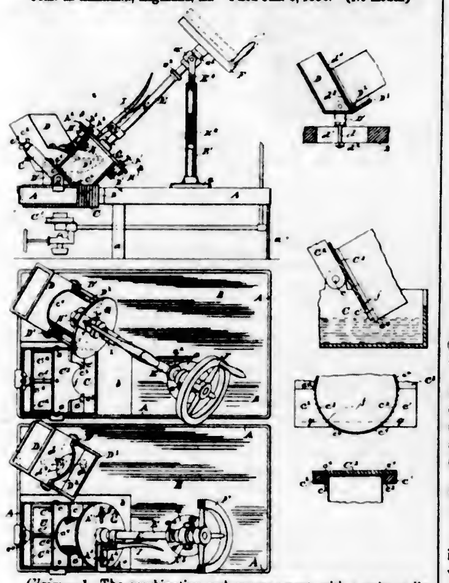
4. In a compound dynamo-electric machine or motor with constant potential, the combination, with the shunt-coils, of a compensating resistance whose variations in resistance, consequent on variations of temperature being in the opposite sense to that of the copper coils, automatically compensates for the effect of temperature in the coils.

5. In a dynamo-electric machine or motor, the combination, with the circuit of the magnet-coils, of a compensating resistance, of carbon or other suitable material, whose variations in resistance, consequent on variations of temperature being in the opposite sense to that of the copper coils, automatically compensates for the effects of temperature in the magnet-coils.

6. In the circuit of a dynamo-electric machine or motor, the combination, with the circuit of the magnet-coils, of a compensating resistance, of carbon or other suitable material, whose variations in resistance, consequent on variations of temperature being in the opposite sense to

that of the copper coils and leads to the lamps, automatically compensates for the effects of temperature in the magnet-coils and in the leads to the lamps.

339,774. COMBINED CAN ROSINING AND SOLDERING MACHINE. JOHN H. HERMANN, Highland, Ill. Filed Jan. 5, 1886. (No model.)



Claim.—1. The combination and arrangement, with a universally-adjustable rotating can-holder, of a rosin-box and solder pot or box, the rosin-box being adjustable within a frame, so as to receive the can when held by the rotating holder, and the solder pot or box having an adjustable soldering-iron within a hinged frame for receiving the can of the holder, substantially as herein shown and described, and for their respective purposes set forth.

2. The combination, with a can-holder shaft, E, of the slotted disk G, clutch device H H', and spring-lever I, substantially as and for the purpose set forth.

3. In a can-holder, the combination of the disk G, provided with slots *g* and *g'*, clutch-pieces H and H', slotted plate h^3, the respective bolts *h* and h^2, nuts *h'* and h^4, arms *k*, lug h^6 of the plate h^3, spring-lever I, fulcrumed at *i*, spring *i'*, and the holder-shaft E, substantially as herein shown and described, to form an improved adjustable spring-clutch device, for the purpose set forth.

4. The combination, with a can-holder shaft, E, of the slotted disk G, clutch device H H', spring-lever I, collars e^3 e^4, loose sleeve *e'*, and fork E^3, supported on a bed, B, substantially as shown and described, and for the purpose set forth.

5. The rosin-box D, provided with the scoop end D^2, as herein shown and described, and for the purpose set forth.

6. In a rosin-box, D, the combination, with a rosin-distributer, D^2, of the shape shown and described, of the opening d^2 in the face of the rosin-box, as and for the purpose set forth.

7. The rosin-box D, hinged within the adjustable frame D', as herein shown and described, and for the purpose set forth.

8. The combination, with a rosin-box, D, of the frame D', slot *d'* in the bed B, bolt *d*, and nut d^4, substantially as and for the purpose set forth.

9. The soldering-iron C^3, made adjustable on the hinged frame C^2 of the solder-box C by means of the rod c^6 and nut c^5, substantially as herein shown and described, and for the purpose set forth.

10. The combination, in a soldering-iron, C^3, of the solder-spreaders *c'* and c^3, having beveled segmental edges c^3, with the soldering-iron C^3 proper, having the notch *f*, substantially as and for the purpose set forth.

11. The combination and arrangement of the frame A, bed B, opening *b*, solder pot or box C, slot *d'*, rosin-box D, and a universally-adjustable rotating can-holder, E, substantially as herein shown and described, and for the purpose set forth.

339,775. COLLAR-BUTTON. ANTHONY HIMMEL, New York, N. Y. Filed Feb. 17, 1886. (No model.)

Claim.—1. A collar-button having its bottom disk made elliptical

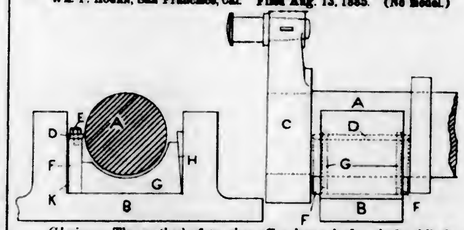
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or oval and having its under surface convexly curved on a line of the major axis of said bottom disk, substantially as shown and described.

2. A collar-button having its bottom disk made oval or elliptical and having its under surface convexly curved on a line of the major axis of the disk, the button being also constructed with a flat stem, shank, or post, which is parallel with the major axis of the bottom disk, substantially as shown and described.

339,776. METHOD OF TURNING JOURNALS OF CRANK-SHAFTS. WM. F. HOGAN, San Francisco, Cal. Filed Aug. 13, 1885. (No model.)



Claim.—The method of turning off a journal of a shaft while in position after removing the support from that journal, consisting in firmly securing to the pedestal of the bearing of the journal a tool having a series of cutting-teeth, then rotating the shaft in its remaining bearings against the cutting-tool, and in adjusting the cutting-tool longitudinally and transversely after each rotation of the shaft, substantially as described.

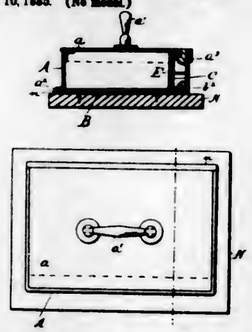
339,777. COMPOSITION TO BE USED FOR INSULATING WIRES. JOHN HOWE, Lowell, Mass. Filed Dec. 26, 1884. Renewed Sept. 21, 1885. (No specimens.)

Claim.—The herein-described composition of matter to be used for insulating wires, consisting of cotton-seed oil, asphaltum, rosin, paraffine-wax, and Venetian turpentine, in substantially the proportions specified.

339,778. PROCESS OF TREATING SILK FIBER. CARL HUGGENBERG, Chemnitz, Saxony, Germany. Filed Sept. 12, 1885. (No specimens.)

Claim.—The process herein described of treating silk threads, which consists in subjecting the threads to the action of a solution of a suitable tin-salt, and then subjecting them to the action of a solution of tungstate of soda, so as to fix the resulting tin-salt in or on the fibers, substantially as set forth.

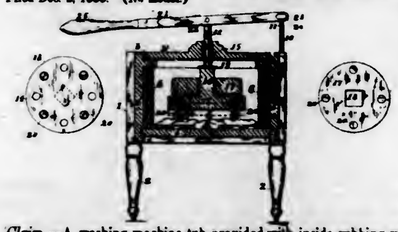
339,779. DEVICE FOR IMMOVABLY SECURING BOXES. CHARLES HUNTLEY, Philadelphia, Pa., assignor to George T. Weaver, same place. Filed Aug. 10, 1885. (No model.)



Claim.—1. The combination of the box having a flange projected laterally from its lower edge and apertures formed in its bottom near the side opposite the flange with a bed-plate having one side returned to form a groove for the reception of the flange of the box, hooked keepers projected from the plate opposite the flange, and a locking-bolt adapted to engage the keepers to lock the box to the bed-plate, substantially as and for the purpose set forth.

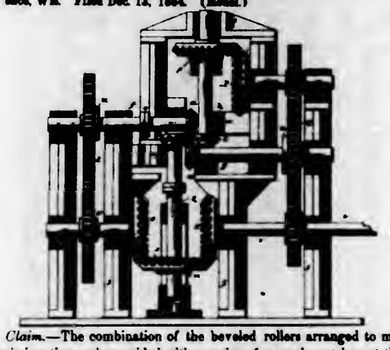
2. The combination of the bed-plate having a grooved projection near one edge and hooked keepers near its opposite edge with a box having a lateral flange to enter the groove and apertures in its bottom to receive the keepers, a hinged cover for the box, provided with keepers opposite its hinges, and a locking-bolt to engage the keepers on the bed-plate and hinged cover, whereby the cover is firmly locked and the box securely fastened in place, substantially as set forth.

339,780. WASHING-MACHINE. AUGUST IBELER, Gardnerville, N. Y. Filed Dec. 2, 1885. (No model.)



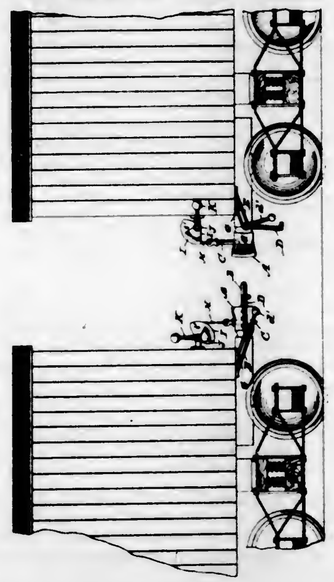
Claim.—A washing-machine tub provided with inside rubbing-surfaces, in combination with a perforated pounder, a handle pivoted to the pounder-stem, and a vertically-movable pounder secured to the pounder-stem, as set forth, and provided with pins which pass through perforations in the pounder 13, substantially as and for the purposes described.

339,781. WEDLESS-CHAIN MACHINE. MAXIMILIAN JACKER, Florence, Wis. Filed Dec. 12, 1884. (Model.)



Claim.—The combination of the beveled rollers arranged to miter at their junction and provided with a series of curved matrices at their peripheries, the ends of the matrices on one of the rollers being opposite the centers of the matrices on the opposite roller, the rollers being arranged so that the matrices will retain these relative positions as the rolls are rotated, substantially as specified.

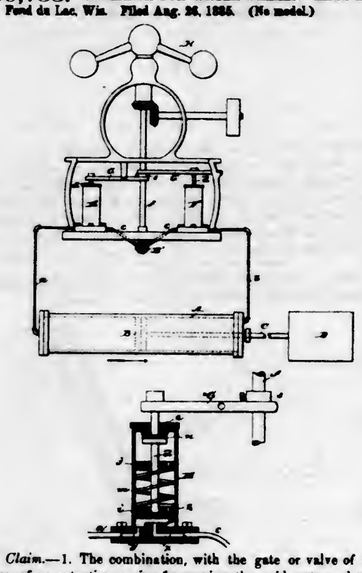
339,782. CAR-COUPLING. JOHN W. JACKSON, North Haverhill, N. H. Filed Sept. 24, 1885. (No model.)



Claim.—1. The combination, with the lifter D, having a central bend and a crank, *d*, of the inclined loop E, permitting the lifter to slide back and supporting the same, the slotted fastening-plate G, and the link B, as set forth.

2. The combination, with the coupling-pin C, of the chain H, the segment I, having groove *i* and weight *i'*, the rock-shaft J, and weighted cranks K K, as set forth.

339,783. GOVERNOR FOR WATER-WHEELS. HENRY E. JACOBS, Fond du Lac, Wis. Filed Aug. 26, 1885. (No model.)

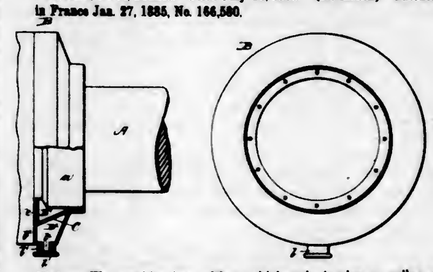


Claim.—1. The combination, with the gate or valve of a water-motor, of an actuating-engine for moving the said gate and two independent casings containing valves controlling the flow of motor-fluid to and from said engine, and a governor connected to operate the said valves, substantially as set forth.

2. The combination, with the gate of a water-motor, of an actuating-engine, casings E F, each containing valves and respectively communicating with different portions of said engine for regulating the flow of the motor-fluid to and from the engine, levers G G', each connected to one of said valves, and a governor provided with a stem extending through the levers G G', and provided with a lag, *s*, between said levers, substantially as set forth.

3. The combination, with the gate, actuating-engine, governor, and conducting-pipes, of valve-casings, each provided with a raised valve-seat with ports *x*, *y*, and *z*, with valves *h n*, having a common stem, *d*, with valve *h*, having perforations outside the valve-seat, and a spring, *m*, substantially as set forth.

339,784. METALLIC CUP FOR CARRIAGE-AXLES. ERNEST JACQUELIN, Niort, France. Filed July 11, 1885. (No model.) Patented in France Jan. 27, 1885, No. 166,560.

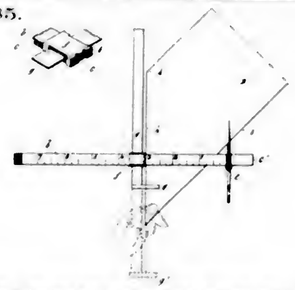


Claim.—The combination, with a vehicle-axle having a collar, *a*, of the casing B, having discharge-openings b^3, closed by a screw-cap, said casing being divided into two annular chambers by an inclined or flaring interior partition, C, substantially as and for the purpose specified.

339,785. SCISSORS CUTTING-GAGE. FRANK B. JOHNSON, Brooklyn, N. Y. Filed July 28, 1885. (No model.)

Claim.—1. As an article of manufacture, a cutting-gage constructed substantially as hereinbefore described, being composed of the graduated

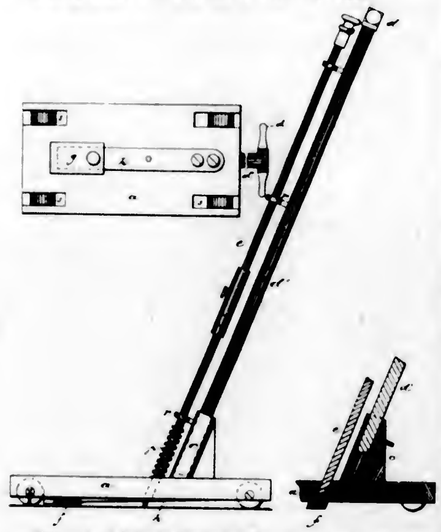
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bar *b*, the bar *c*, having recess or loop *d*, the movable sleeve *f*, and the cross-bar *g*, having guide-piece *g'*, as and for the purposes set forth.

2. In a cutting-gage for cutting parallel strips of textile fabric, the combination of the bars *b* and *c*, united at one end, and the said bar *c* having the loop or recess *d*, the sleeve *f*, the cross-bar *g*, having the guide-piece *g'* and the scissors *e*, fixed in said recess *d*, the whole constructed, as shown and described, to operate in the manner set forth.

339,786. BALANCING DEVICE FOR ROLLER-SKATERS. GEORGE D. KAYES, Orange, N. J. Filed Nov. 18, 1885. (No model.)



Claim.—1. A balancing device for roller-skaters, combining therein a weighted body arranged on rollers, a handle, and a brake, said parts being arranged and adapted to operate substantially as herein set forth.

2. In combination, the weighted body carried by rollers, a handle to push the same forward, a brake actuated by a rod extending to a point near the hand-piece of said handle, and a spring to hold said brake from frictional contact, substantially as set forth.

3. In combination, the metal body *a*, provided with wheels *b*, an inclined handle, and a brake having an actuating-bar extending to a point near the hand piece or portion of the handle, substantially as herein set forth.

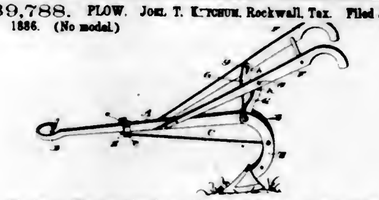
4. In combination, in a balancing device for skaters, a weight, *a*, rollers *b*, socket *c*, handle-bar *d'*, cross-bar *d*, braking-piece adapted to enter into frictional contact with the floor, and a rod, *e*, held in suitable bearings and adapted to depress said friction or braking piece, substantially as herein set forth.

5. In a balancing device for roller-skaters, the rod *e*, actuating the friction piece or brake and adapted to be lengthened or shortened to suit the size of the skater.

339,787. COMPOSITION OF MATTER FOR ELECTRICAL INSULATION. EDWARD D. KENDALL, Brooklyn, N. Y. Filed Aug. 23, 1885. (No specimens.)

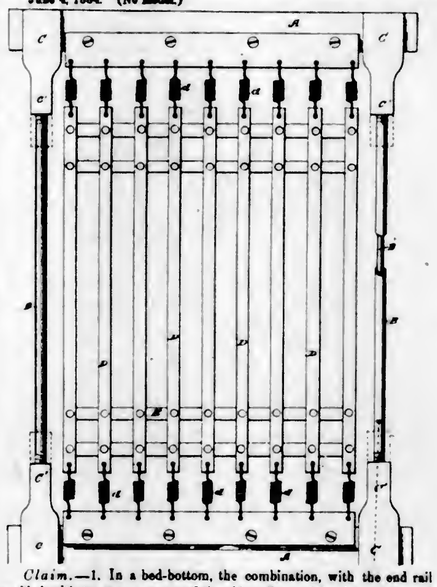
Claim.—The herein-described composition of matter, consisting of the so-called "wax-tailings," chicle, sulphur, and oil, in the proportions substantially as described.

339,788. PLOW. JOEL T. KITCHUM, Rockwall, Tex. Filed Jan. 8, 1886. (No model.)



Claim.—The combination, with a plow-beam, of a plow-standard pivotally secured to the rear end of said beam, a brace pivotally secured to the standard, and a sliding clamp for securing the front end of the brace to the beam, substantially as set forth.

339,789. BED-BOTTOM. CHESNEY KILBURN, Philadelphia, Pa. Filed June 4, 1884. (No model.)



Claim.—1. In a bed-bottom, the combination, with the end rail provided with transverse seats, of the side rails, each having at one end a corner-piece with a seat the inner walls of which are adapted to embrace the end rail, and each also having a projection which enters the transverse seat of the end rail, substantially as set forth.

2. In a bed-bottom, the combination, with the end rails provided with transverse seats, of the extensible side rails having at their ends corner-pieces provided with seats the walls of which are adapted to embrace the side rails, and projections on the side rails which enter the transverse seats of the end rails, substantially as set forth.

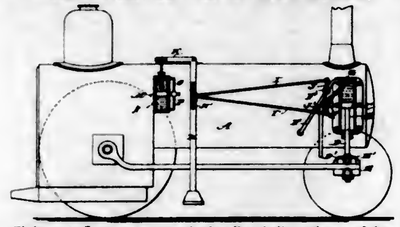
3. In a bed-bottom, the combination, with the end rails provided with transverse seats, of the extensible side rails having at their ends corner-pieces provided with seats the walls of which are adapted to embrace the end rails, and projections on the side rails adapted to enter and be rotated within the transverse seats of the end rails, substantially as set forth.

4. In a bed-bottom, the combination, with the end rails provided with transverse seats, of the side rails having at their ends forked corner-pieces provided with outwardly open seats to receive the end rails, and projections adapted to enter the transverse seats of the end rails, and the elastic fabric adapted to retain the end rails in the outwardly-open seats, substantially as set forth.

5. In a bed, the combination, with the bed-bottom, of the herein-described metallic legs arranged to support the bed-bottom within a bedstead, said leg being adjustable relatively to the bed-bottom, and consisting of the vertical portions F, the upper horizontal portions, *f*, attached to the bed-bottom, and the feet portion *f'*, substantially as set forth.

6. In a bed, the combination, with a bed-bottom having corner-pieces provided with the forked parts C C, between which the end rails lie, of the legs which support the bed-bottom in a bedstead seated in recesses c^2 formed in the parts C of the corner-pieces and adjustable in said recesses, substantially as set forth.

339,790. LEVELING APPARATUS FOR STEAM-BOILERS. JOHN M. KRAMER, Maria Stein, Ohio. Filed Oct. 2, 1885. (No model.)



Claim.—1. In an apparatus for leveling boilers, the pendulum H, the arms I and I', the levers J and J', the pipes F and G, and the valves F' and G', in combination with the boiler A, the cylinder B, the piston C, and the piston-rod D, resting on the bolster E of the truck-frame, substantially as shown and described.

2. In an apparatus for leveling boilers, the boiler A, provided with a cylinder, B, the piston C, and the piston-rod D, resting on the bolster E of the truck-frame, in combination with the pendulum H, operating the valve F', attached to the pipe F, which connects the cylinder B with the water-compartment of the boiler A, substantially as shown and described.

3. In an apparatus for leveling boilers, the boiler A, provided with a cylinder, B, the piston C, and the piston-rod D, resting on the bolster E of the truck-frame, in combination with the pendulum H, operating the valve G', attached to the pipe G, which leads to the upper end of the cylinder B, substantially as shown and described.

4. In an apparatus for leveling boilers, the pendulum H, having the arm K, in combination with the cylinder N, the piston M, the piston-rod L, and a device for connecting the upper and lower ends of the said cylinder N, as described, substantially as specified.

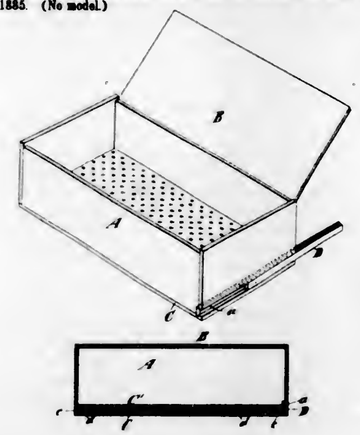
5. In an apparatus for leveling boilers, the boiler A, the cylinder B, the piston C, the piston-rod D, resting on the bolster E of the truck-frame, the pipes F and G, the valves F' and G', the levers J and J', and the arms I and I', in combination with the pendolum H, having a slot, H', the arm K, the piston-rod L, the piston M, the cylinder N, and a device for connecting the ends of the cylinder N, as described, all arranged substantially as specified.

339,791. FILTER. STAFFORD W. LAMBERTON, Newark, N. J. Filed July 16, 1885. (No model.)



Claim.—In combination, in a filter, the thimble having a perforated end wall and a shoulder, *j*, formed at the sides thereof, and a nozzle, K, held in position by said shoulder, and a ring secured in the open end of the thimble for holding the same upon the faucet, substantially as set forth.

339,792. CIGAR-BOX. LOUIS LEVI, New York, N. Y. Filed Dec. 16, 1885. (No model.)



Claim.—1. The cigar-box herein described, having a false perforated bottom, C', parallel with the bottom proper, and arranged at an approximately uniform distance therefrom throughout its extent, thereby forming a very shallow compartment, *c*, of sufficient depth only to receive a piece of blotting-paper or similar absorbent sheet, and open at one side of the box, and having a simple cover or shutter for closing the opening, substantially as and for the purposes herein set forth.

2. The cigar-box herein described, having a false perforated bottom arranged parallel with and at an approximately uniform distance from the bottom proper throughout its extent, thereby forming a very shallow compartment, open at the side of the box, and a slideway in which the opening is formed, and also having a sliding strip or shutter for closing the opening, substantially as and for the purpose herein set forth.

339,793. HOOD ATTACHMENT FOR BICYCLES. HOSEA W. LIBBEY, Boston, Mass. Filed June 25, 1885. (No model.)

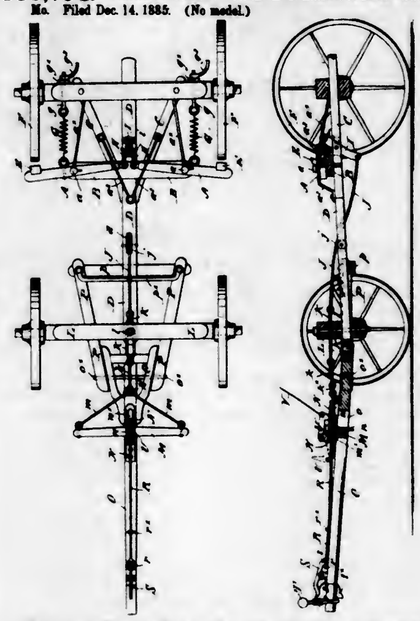


Claim.—1. The combination, with a bicycle or tricycle, of an adjustable hood, D, and a supporting-frame, C, attached to the steering-bar B, substantially as shown, and for the purpose set forth.

2. The combination of the folding hood D, the adjustable frames *h h'*, the bar *g*, clamp *d*, and thumb-screw *e*, with the frame C, as shown and described.

3. The combination, with the steering-bar B, of the frame C, the clamps *b b*, and thumb-screw *c*, as shown and described.

339,794. VEHICLE-BRAKE. JAMES L. T. LIMBON, Johnson County, Mo. Filed Dec. 14, 1885. (No model.)



Claim.—1. In a vehicle-brake, the combination, with the tongue O and the double-tree M, fitted to slide on the same, of the pivoted and spring-pressed brake-levers A, the pivoted lever I, the links H, connected to the inner ends of the brake-levers and to the lever I, the rod J, and the link K, to which the rod J is connected, the said link being connected to the double-tree, substantially as herein shown and described.

2. In a vehicle-brake, the combination, with the tongue O, the double-tree fitted to slide thereon, and the reach D, provided with the friction-wheel *j*, of the pivoted and spring-pressed brake-levers A, the

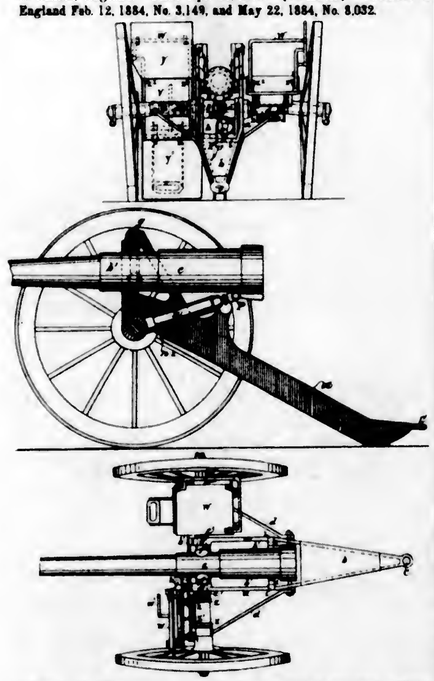
lever I, the links H, the rod J, the links K *k*, the ring *k'*, and the rods *m*, substantially as herein shown and described.

3. In a vehicle-brake, the combination, with the tongue, a double-tree fitted to slide thereon, pivoted brake-levers, and connections between the double-tree and brake-levers, of the pivoted hook U and the cord V, substantially as herein shown and described.

4. In a vehicle-brake, the combination, with the tongue, a double-tree fitted to slide thereon, pivoted brake-levers, and connections between the double-tree and brake-levers, of a pivoted catch on the end of the tongue, and a rod connected to the double-tree and adapted to be engaged by the said catch, substantially as and for the purpose set forth.

5. In a vehicle-brake, the combination, with the tongue, brake-levers, and double-tree fitted to slide on the tongue and connected to the brake-levers, of the rod R, having its inner end connected to the double-tree and provided with a loop on its outer end, and the lever S, pivoted on the outer end of the tongue and provided with the hook *s* for engaging the loop of the said rod, substantially as herein shown and described.

339,795. **GUN-CARRIAGE.** HENRY C. E. MALET, Brighton, County of Sussex, England. Filed Apr. 21, 1885. (No model.) Patented in England Feb. 12, 1884, No. 3,149, and May 22, 1884, No. 8,032.



Claim.—1. The combination, with the gun and its carriage, of links by which the gun is suspended from the carriage and a hydraulic recoil cylinder and piston pivotally connected with the gun and carriage, substantially as and for the purpose herein described.

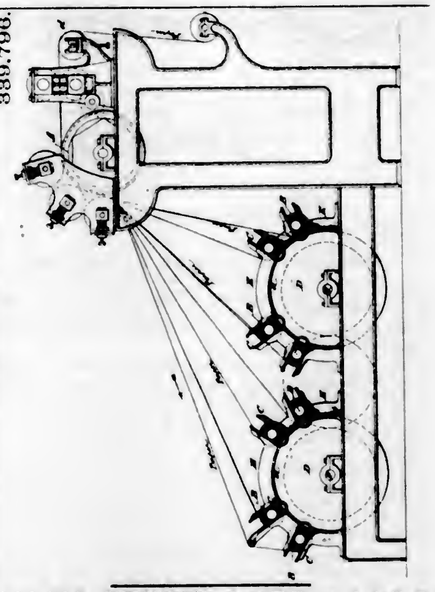
2. The combination, with the gun and its carriage, of links by which the gun is suspended from the carriage and a hydraulic cylinder and piston connected pivotally with the gun and with the axle of the carriage, substantially as and for the purpose herein described.

3 The combination, with the gun and its carriage, of links by which the gun is suspended from the carriage, a rack attached to the gun, a pinion gearing with said rack for elevating the gun, a box through which said rack passes and which carries said pinion, and links which suspend the said box from said carriage, substantially as herein set forth.

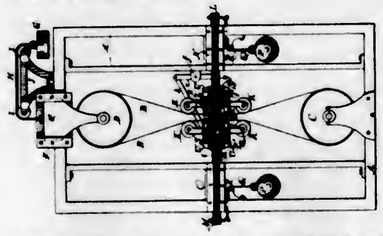
339,796. **MACHINE FOR WINDING PAPER WEBS.** JOHN J. MANNING, Great Barrington, Mass. Filed Nov. 12, 1885. (No model.)

Claim.—In apparatus for winding or spooling rolls of paper by surface-winding, the combination of the following elements: two or more power-cylinders or friction-cylinders, a series of spools arranged in boxes radiating from the axis of said cylinders and adapted to bear by gravity against the circumferences thereof, and an apparatus or device, substantially as described, for equalizing the speed between the said power-cylinders.

339,796.



339,797. **BAND-SAW MILL.** JOSEPH W. MAXWELL, Louisville, Ky. Filed Nov. 9, 1885. (No model.)



Claim.—1. The combination of a band-saw, wheels for mounting it, and rollers journaled in adjustable frames, the said rollers to bear against the outer face of the saw, between the mounting-wheels thereof, substantially as shown and described, whereby the two portions of the saw between the mounting-wheels may be brought near together, for the purpose set forth.

2. The combination of a band-saw, wheels for mounting the same, hangers for the said wheels, one or both of the said hangers mounted to slide in fixed bearings, weights or equivalent means for exerting continual tension to part the said hangers, two pairs of rollers placed opposite to each other and outside of the saw-band midway between the mounting-wheels, frames in which the said rollers are journaled fitted to slide laterally to the saw in fixed bearings, and weights or equivalent means for exerting continual pressure upon the said sliding frames to draw them together, substantially as shown and described.

3. The combination of the band-saw B, the wheels C and D, for mounting the same, the frames L and M, fitted to slide laterally to the saw, a pair of rollers, K, journaled in each of the said frames T and T', fitted to slide in the frames L and M, respectively, and rollers S, journaled in the frames T and T', substantially as shown and described.

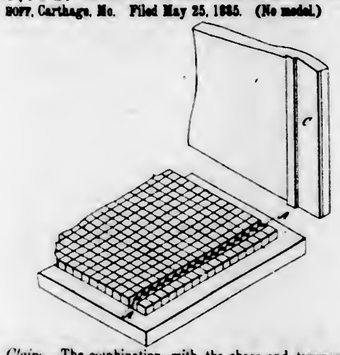
4. The combination of band-saw, wheels for mounting it, a frame, L, fitted to slide transversely to the saw, another frame, T, fitted to slide in the frame L, means for fixing the same thereto, a roller, S, journaled in the frame T, two saw-guides adjustably fixed to the frame T or L, and rollers K, journaled in the frame L, substantially as shown and described.

5. The combination of a band-saw, wheels for mounting the same, laterally self-adjusting side guides for the saw, and an equalizer connecting the two side guides, substantially as shown and described, whereby the two guides are impelled to approach or recede from a central plane equally relatively to each other, as set forth.

6. The combination, with a band-saw and the described guides adapted to cut two hoops at once from a hoop-pole, of the parting-blades *r*, two feed-rollers, *t*, two angle-levers, *u*, each carrying one of the rollers

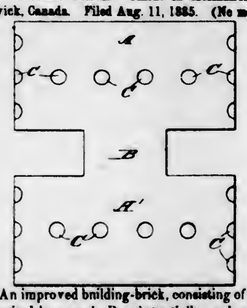
t on one of its arms and provided with a spring on its other arm, the two levers mounted on one axis or shaft, c^3, a drive-pulley, *v*, journaled on the same axis or concentric therewith, a belt-pulley on the shaft of each roller *t*, and belts connecting the said roller-pulleys with the pulley *v*, substantially as shown and described.

339,798. **PERFORATING-TYPE AND OVERLAY.** JULIUS MAYERHOFF, Carthage, Mo. Filed May 25, 1885. (No model.)



Claim.—The combination, with the chase and tympan of a printing-press and type held in said chase, of a series of tubular perforating-type slightly shorter than the said printing-type and an overlay on the face of said tympan and projecting from the same to afford a cutting-surface for the perforating-type, substantially as shown and described.

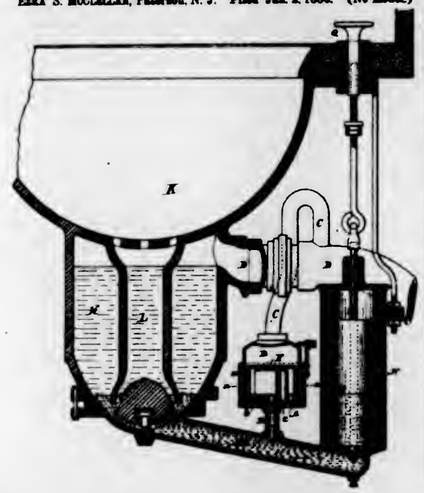
339,799. **DUPLEX BRICK.** JAMES A. MCALLISTER, Fredericton, New Brunswick, Canada. Filed Aug. 11, 1885. (No model.)



Claim.—1. An improved building-brick, consisting of the rectangular blocks A A', united by a neck, B, substantially as described.

2. An improved building-brick, consisting of the blocks A A', united by a neck, B, and formed with the indentations C C, substantially as described.

339,800. **AIR-INLET AND SEAL FOR WASTE-PIPES AND TRAPS.** EZRA S. MCCLELLAN, Paterson, N. J. Filed Jan. 2, 1886. (No model.)

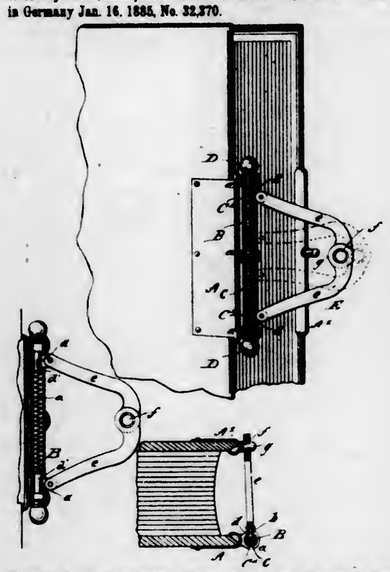


Claim.—1. The combination, with the vessel A and inlet air-pipe *c*, of the bell-shaped cylinder B and pipe C, leading to the waste-pipe D, and the inverted-cup-shaped valve F within the cylinder B, and the mercury seal, into which the lower end of the valve F passes, substantially as set forth.

2. The combination, with the vessel A, air-inlet pipe *c*, and cylinder B, of the pipe C, leading to the waste-pipe D, and the inverted-cup-shaped valve F, the trap H, the pipe M, leading from the bottom of the trap, the mercury-vessel N, the displacer P, and the pipe R, leading from the vessel A to the pipe M, whereby the mercury seal in the vessel A is raised and lowered simultaneously with the mercury seal in the trap H, substantially as set forth.

3. A vessel containing mercury, an inverted-cup-shaped air-valve, with the lower part thereof in the mercury, an air-inlet within the cup-shaped valve, a case, and a pipe to connect with a sewer or drain pipe, substantially as set forth.

339,801. **BOOK-CLASP.** JACOB MÖNCH, Offenbach, Germany, assignor to Sidney Posen, same place. Filed Jan. 4, 1886. (No model.) Patented in Germany Jan. 16, 1885, No. 32,370.



Claim.—1. In a book-clasp, the combination of the arm E, formed of the parts *e*, the eylet *f*, the parts *e* being jointed together upon the eyelet, and means for drawing the parts *e* together or separating them, substantially as herein shown and described.

2. In a book-clasp, the combination of the clasp-arm E, formed of the parts *e e*, jointed together, the tubular pintle B, the right-and-left-hand screw C, and nuts C', provided with ears *d*, and jointed to the ends of the parts *e* of the clasp-arm, substantially as herein shown and described.

3. In a book-clasp, the combination, with the clasp-arm E, formed of the parts *e*, jointed together upon the eyelet *f*, of the tubular pintle B, the right-and-left-hand screw C, and nuts C', provided with ears *d*, said ears being jointed to the parts *e* of the arm E, as herein specified.

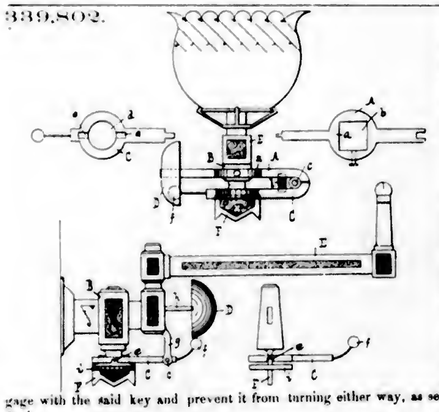
4. As an improved article of manufacture, a book-clasp formed of the plate A, provided with apertured studs *a*, the slotted tubular pintle B, received in the studs, the screw C and nuts C', inclosed by the tubular pintle, the clasp-arm E, formed of the parts *e e*, jointed to each other and pivoted to the ears *d*, and the plate A', provided with a stud, *g*, as herein specified.

339,802. **AUTOMATIC DEVICE TO LOCK CUT-OFF VALVES.** DAVID M. MONROE, Baltimore, Md. Filed Dec. 12, 1885. (No model.)

Claim.—1. The combination of a cut-off valve, B, provided with a key, a movable latch, C, connected to one of the said devices and in contact with the other, the two parts coming in contact being provided, the one with a projection and the other with a recess corresponding to the said projecting part, whereby the one may engage with the other and prevent the key from turning either way, thus dispensing with the usual key-stop and insuring the position of the key.

2. In combination with a cut-off valve provided with a key, the frame A, attached to the casing B, and the latch C, pivoted to the frame A, extending above the key, and provided with a recess which will en-

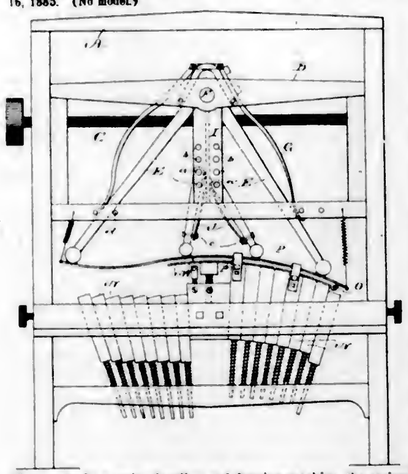
339,802.



gage with the said key and prevent it from turning either way, as set forth.

3. In combination with a cut-off valve provided with a key, the latch C, secured to one of the said devices and in contact with the other, the said latch being provided with a hammer and a recess corresponding to the form of the key, and the gong D, as and for the purpose set forth.

339,803. SPRING-BENDING MACHINE. GEORGE NORWOOD, Bridgeport, Conn., assignor of one-half to Frank Miller, same place. Filed Sept. 16, 1885. (No model.)

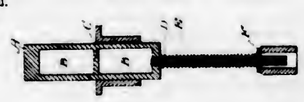


Claim.—1. In a spring bending and forming machine, the reciprocating carrier having pivoted thereto two pairs of presser-bars, one within the other, the inner bars being shorter and having their pivotal point below that of the other bars, each pair adapted to be distended against the action of springs or equivalents by the downward movement of the carrier, substantially as set forth.

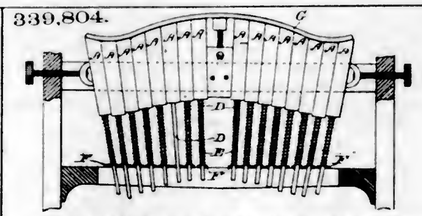
2. In a spring bending and forming machine, the combination, with the carrier having pivoted thereto the main presser-bars, of intermediate presser-bars adjustably pivoted to a cross-piece of said carrier in a lower horizontal plane than that in which the pivotal point of the main bars is located, substantially as shown and described.

339,804. SPRING-BENDING MACHINE. GEORGE NORWOOD, Bridgeport, Conn., assignor of one-half to Frank Miller, same place. Filed Sept. 16, 1885. (No model.)

Claim.—1. In a spring bending and forming machine, the former-bars having openings extending transversely through their bodies and provided with downwardly-projecting spindles, substantially as shown and described.

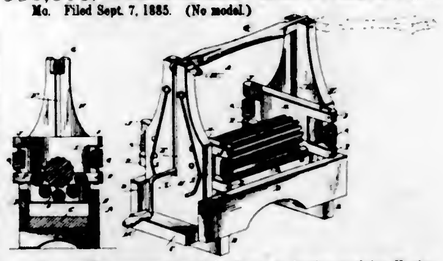


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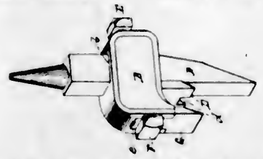
2. In a spring bending and forming machine, spring-actuated former-bars having contact with each other only at the outside edges of their faces, substantially as shown and described.

339,805. WASHING-MACHINE. SAMUEL C. PARKER, Farmington, Mo. Filed Sept. 7, 1885. (No model.)



Claim.—The combination of the frame A, having uprights E, slotted at their upper ends, brackets I, having laterally-extending arms J, the lower portion of each of said brackets being provided with a slot, K, blocks O, having laterally-extending arms P, springs connecting the arms of said brackets and blocks, a fluted roller, N, journaled in the said brackets, a series of segmentally-arranged rollers, R, journaled in the said blocks, and a crank, M, for operating the said fluted roller, substantially as shown and described.

339,806. MORTISING-CHISEL. BENJAMIN W. PETERSON and JOHN W. CONNELLY, Wheeling, W. Va. Filed Aug. 5, 1885. (No model.)



Claim.—1. In a gain-cutting attachment for mortising-machines, the combination, with a bit-stock which is adjustable on the main or slotting bit of the machine, of a leading or gain bit and an intermediate bit adjacent to the main bit, substantially as and for the purposes specified.

2. In a gain-cutting attachment for mortising-machines, a bit-stock having a slot and clamp-screw for securing the stock to the main bit of the mortising-machine, and provided with a recess or bit-seat for the reception of an auxiliary or intermediate bit, which is clamped between the bit-stock and bit of the mortising-machine, substantially as and for the purposes specified.

3. In a gain-cutting attachment for mortising-machines, the combination, with a slotted bit-stock which is vertically adjustable on the main or slotting bit of the machine, of a shouldered leading or gain bit, G, substantially as and for the purposes specified.

4. In a gain-cutting attachment for mortising-machines, a leading-bit and an intermediate straddle-bit, in combination with an adjustable bit-stock provided with clamp-screws, (the straddle-bit being clamped between the bit-stock and the main or slotting bit of the machine,) substantially as and for the purposes specified.

339,807. HEAD-REST. GEORGE PHILLIPS, Tilford, Ill. Filed Nov. 20, 1885. (No model.)

Claim.—1. The combination, in a head-rest, of side pieces, *a*, plates *a'*, yoke *b*, pad B, and the cords *d* and D, substantially as herein specified.

2. In a head-rest, the combination of the side pieces, *a*, having the curved ends to rest on the user's shoulder, the pad B at the upper ends of said side pieces, and the wings C, secured to the sides of the pad B and adapted to be folded, substantially as set forth.

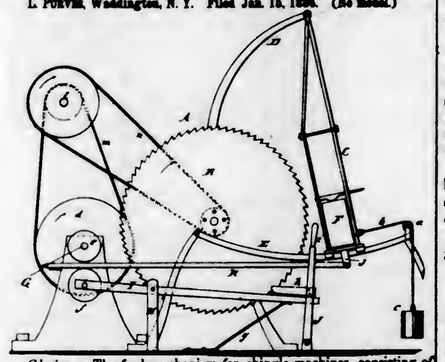
3. In a head-rest, the combination of the frame A, the pad B, the cords D, and the slides *e'*, provided with eyes *f'*, substantially as herein specified.

339,807.



4. In a head-rest, the combination, with the curved side pieces, *a a*, the pad B on the upper ends of said side pieces, and the wires *c*, attached to the sides of the pad, of the cords D, passed through one eye *f* of each wire, and adjusting-slides on the said cords, substantially as set forth.

339,808. FEED MECHANISM FOR SHINGLE-MACHINES. WILLIS L. PURVIS, Waddington, N. Y. Filed Jan. 15, 1886. (No model.)



Claim.—The feed mechanism for shingle-machines, consisting of the swinging frame C, hung in front of the saw and having the arm *j* on its lower end, the curved bed-piece E, having a pulley, *e*, on its front end, the weighted rope connected to the frame C and passed over pulley *e*, the shaft G in rear of the saw, and provided with the drive-pulley *d* and the friction-wheel *c*, the standard H, the lever I, pivoted to the said standard and having the friction-wheel *f* pivoted on its rear end, the forward end extending to a point adjacent to the front of the machine, the spring *g*, tending to separate the two friction-wheels, the lever J, having the bar *h* resting on the upper side of the lever I at its front end, and the bar *k* pivoted to the arm *j* of the swinging frame C and extended rearward between the two friction-rollers, all constructed and combined substantially as set forth.

339,809. PUPPET-VALVE. CHARLES F. PUTNAM, Fitchburg, Mass. Filed Jan. 12, 1886. (No model.)



Claim.—The valve-stem D, provided with the shoulders *d d'*, and the valves C C', in combination with screw-cap E and spring F, constructed an arranged substantially as and for the purpose set forth.

339,810. ANTI-INSECT FABRIC. JOHN P. REDAN, New York, N. Y. Filed Oct. 29, 1885. (No specimens.)

Claim.—1. The within-described paper or fabric for the protection of clothes and other articles from the ravages of moths and other insects, prepared by treatment with tobacco and cascarilla-bark, substantially as herein described.

2. In the preparation of the within-described anti-moth or anti-insect paper or fabric, first steeping the fabric to be prepared in a solution of tobacco and cascarilla-bark macerated in benzine, afterward drying said fabric, then steeping it in a solution of tobacco, cascarilla-bark, and hot water, and subsequently drying the fabric, essentially as specified.

339,811. HAIR-CLIPPER. CHARLES REINHARDT and HERMANN LIEBERS, Brooklyn, N. Y. Filed Aug. 6, 1885. (Model.)



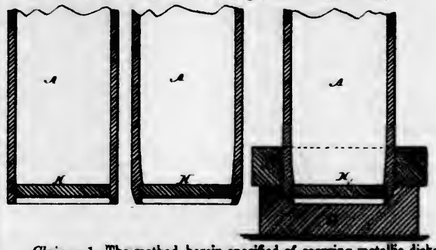
Claim.—1. The combination of a comb-plate having a longitudinal groove, a cutter-plate having also a longitudinal groove at the under side, an intermediate guide-tongue bent at both ends, a stationary handle attached to the comb-plate, an oscillating handle fulcrumed to the stationary handle and adapted to reciprocate the cutter-plate, and a cap-plate attached to the comb-plate, substantially as set forth.

2. The combination of a stationary comb-plate having a longitudinal groove, a cutter-plate having a longitudinal bottom groove coinciding with the groove of the comb-plate, an intermediate guide-tongue having bent retaining ends, a stationary handle attached to the comb-plate, an oscillating handle fulcrumed to a socket of the stationary handle and provided with a toothed segment meshing with a rack at the rear edge of the cutter-plate, a cap-plate, and a screw-bolt and nut for attaching the cap plate to the comb-plate, substantially as set forth.

3. The combination of a stationary comb-plate, a reciprocating cutter-plate having a rack at the rear edge, a stationary handle attached to the comb-plate and provided with a screw-socket, an oscillating handle pivoted to said socket, a screw for retaining the oscillating handle, a spiral spring acting upon said oscillating handle, an arm extending from the oscillating handle and having a toothed segment meshing with the rack of the cutter-plate, and a cap-plate attached by a screw-post and nut to the comb-plate, substantially as set forth.

4. In a hair-clipper, the combination of the stationary comb-plate having socket-holes with an auxiliary removable comb-plate having split spring clasps or studs for attaching it to the under side of the stationary comb-plate, substantially as set forth.

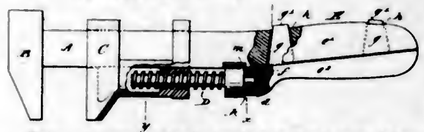
339,812. METHOD OF CLOSING THE ENDS OF WROUGHT-IRON PIPES. MATTHEW L. REYNES, New York, N. Y., assignor to the Eagle Tube Company, same place. Filed Aug. 31, 1885. (No model.)



Claim.—1. The method herein specified of securing metallic disks within the ends of wrought-iron pipes, consisting in heating the disk and the end of the pipe near the disk to a welding-temperature and thickening the metal of the pipe, and welding the disk and pipe together by endwise pressure upon the same while confined within the cup, substantially as set forth.

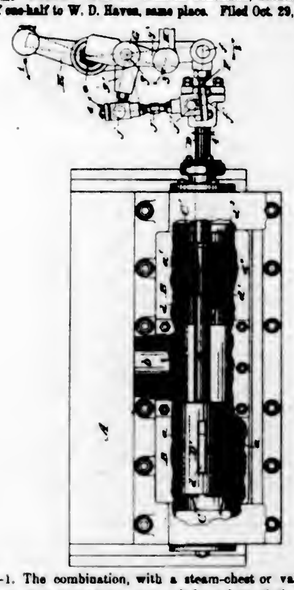
2. The method herein specified of securing metallic disks within wrought-iron tubes and rendering the exterior of the tube of uniform diameter, consisting in heating the disk and end portion of the tube to a welding-temperature, inserting the same into a die and cup, applying concussion or pressure endwise of the tube to thicken the same and weld the disk therein, then passing the tube through the die to reduce the exterior of the diameter of the tube to a uniform size, substantially as set forth.

339,813. WRENCH. JOHN RYAN and PATRICK RYAN, New York, N. Y. Filed Jan. 14, 1886. (No model.)



Claim.—A wrench having its handle formed in two parallel parts contacting throughout the length of the handle, one of which parts is a prolongation of the shank of the wrench, and which part is provided with mortises, and the other part of which handle is provided with lugs adapted to enter the mortises of the other portion, and in which latter portion the outer end of the adjusting-screw is journaled, as set forth.

339,814. STEAM-VALVE. FRANCIS SCHUMANN, Trenton, N. J., assignor of one-half to W. D. HAVEN, same place. Filed Oct. 29, 1885. (No model.)



Claim.—1. The combination, with a steam-chest or valve-casing having a steam-entrance port or ports, *a*, independent of the exhaust-port communicating with each end of the cylinder, and exhaust-ports, as described, of a valve-stem and valve carried thereby, said valve being provided with transverse end partitions and with a port or ports, *d*, at each end, adapted to register alternately with or to be cut off from the ports *a* by the rotation of the valve, and thereby place the cylinder in communication with the live-steam duct, substantially as set forth.

2. The combination, with a steam-chest or valve-casing having a steam-entrance port or ports, *a*, independent of the exhaust-port communicating with each end of the cylinder, and exhaust-ports, as described, of a valve-stem and hollow cylindrical valve carried thereby, said valve being provided with transverse end partitions, with an opening for receiving live steam into its interior, and with a port or ports, *d*, at each end, adapted to register alternately with or to be cut off from the first-mentioned ports by the rotation of the valve, substantially as set forth.

3. The combination, with a rotating and reciprocating valve, of a rock-lever connected therewith to reciprocate the same, a bell-crank lever pivoted upon the rock-lever, means for oscillating said bell-lever relative to the rock-lever, and connections between the bell-crank lever and the valve for oscillating the latter, substantially as described.

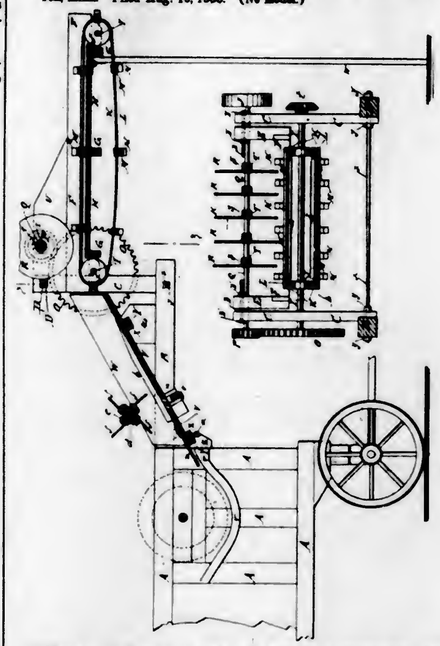
4. The combination, with a rotating and reciprocating valve, of a moving part for reciprocating the valve, a bell-crank lever mounted upon a pivot carried by said part, means for oscillating the bell-crank lever relative to said moving parts, and connections between the bell-crank lever and the valve for oscillating the latter, substantially as set forth.

5. The combination of the valve and valve-stem, a rock-lever for reciprocating the same, the bell-lever G, arm D^4, and rod J, universally jointed, as described, for oscillating the valve, and the link F, pivoted to said rock-lever and having the universal joint *f'*, with the valve-stem, substantially as set forth.

6. The combination, with a rotating and reciprocating valve, of a rock-lever connected therewith to oscillate the same, a bell-crank lever pivoted thereon, a speed-governor connected with said bell-lever for regulating its motion relative to the rock-lever, and connections between the bell-crank lever and the valve for oscillating the latter, substantially as set forth.

7. The combination, with a steam-chest or valve-casing having exhaust-ports, of the valve-stem D and the hollow operating portions D' D^2, for opening and closing the exhaust-ports by reciprocation, said portions being provided with ports which act by the oscillation of the valve, and the steam-chest being provided with the inlet *b*, communicating with the interiors of the said portions D' D^2, and with cylinder-ports corresponding to the ports of said portions, substantially as set forth.

339,815. BAND-CUTTER AND FEEDER. JAMES H. SHELDON, Warren, Miss. Filed Aug. 10, 1885. (No model.)



Claim.—1. In a band-cutter and feeder, the combination, with frame A and bars B, of the transversely-reciprocating chute V W, longitudinal ribs *b*, the projecting rods Y on the under side of the chute, bearings therefor on the frame and bars, the shaft *r*, a wheel, *g*, secured thereto and provided with a crank-pin, *p*, the pitman *o*, connecting the crank-pin and the chute, and gearing for driving the shaft *r*, substantially as set forth.

2. The combination, in a band-cutter and feeder, with the transversely-reciprocating chute having longitudinal ribs on its bottom and means for operating the said chute, of a rotary beater journaled over the chute, substantially as set forth.

3. In a band-cutter and feeder, the combination, with the thrasher-frame A, the horizontal bars B, and the upright bars C, and the bearings *x*, of the chute V W, the cross-bars X, projecting fixed and detachable rods Y, the ribs *b*, attached to the chute-bottom, and the rotary beater *d e f*, substantially as herein shown and described.

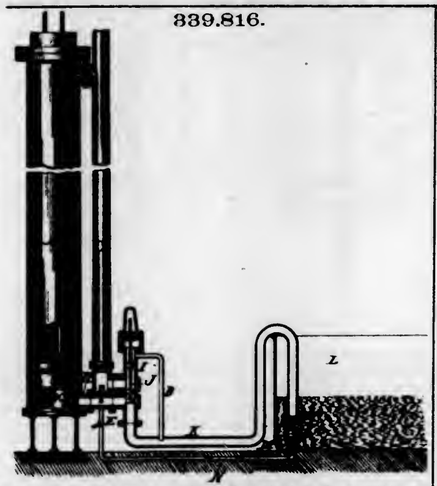
4. The combination, with the thrashing-cylinder and concave, the frame A, and bars B, of the downward-swinging chute having a hinged connection at its upper end with the bars B, and removably connected at its lower end to the frame adjacent to the concave, of the guard *u*, overlapping the adjacent edges of the chute and concave, and constructed to fold upward, substantially as set forth.

339,816. VALVE FOR HYDRAULIC ELEVATORS. RUDOLPH C. SMITH, Yonkers, assignor to Otis Brothers & Co., New York, N. Y. Filed Nov. 12, 1883. Renewed Oct. 23 1884. (No model.)

Claim.—1. The combination, with a water-discharge valve and with the discharge-pipe leading therefrom in a tank, of an automatically-operated regulating-valve arranged at the end of said pipe within the tank, to throttle the passage of the discharge-water and secure a pressure in the said pipe about equal to that in the space or chamber through which the water flows to the discharge-valve, substantially as described.

2. The combination, with the discharge-valve, discharge-pipe leading to a tank, and regulating-valve at the end of the latter within the tank, of a pipe, N, and means, substantially as described, whereby the water from the space or chamber through which water flows to the discharge-valve is brought to act upon the regulating-valve, substantially as described.

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3. The combination of the discharge-valve, discharge-pipe leading to a tank, regulating-valve within the tank, and pipe D, connecting the discharge-pipe and space above the discharge-valve, whereby the pressure on said discharge-valve is regulated, substantially as described.

4. The combination, with an elevator-cylinder, water-discharge valve, the discharge-pipe leading therefrom and a tank, of an automatically-operated regulating-valve arranged at the end of said pipe within the tank to throttle the passage of, the discharge-water and secure a pressure in the said pipe about equal to that in the space or chamber below the piston of the elevator, through which the water flows to the discharge-valve, substantially as described.

339,817. PEN AND PENCIL HOLDER. THOS. W. F. SMYTHE, Brooklyn, N. Y. Filed Aug. 19, 1885. (No model.)



Claim.—1. The combination, with two pen or pencil holders and a handle, of a connection between the said holders and the handle, comprising arms one or both of which are elastic or yielding, and which are arranged side by side, whereby pressure applied through the handle will cause the holders to spread or separate laterally, and whereby the holders will contract or be brought nearer together when the handle is relieved of pressure, substantially as herein described.

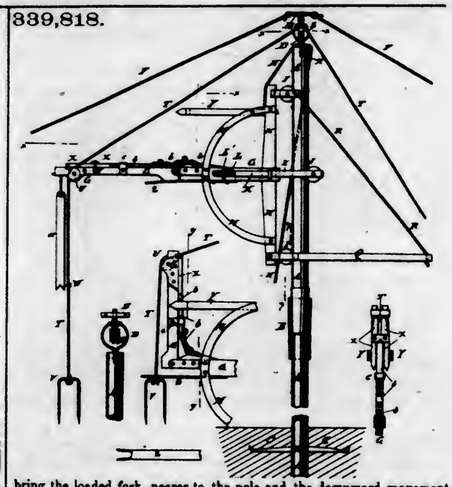
2. The combination, with two pen or pencil holders and a handle, of a connection between the holders and handle, comprising arms one or both of which are elastic or yielding, and which are arranged side by side, and on which the holders are secured and capable of lateral adjustment toward and from each other, whereby pressure applied through the handle will cause the arms and holders to spread or separate laterally, and whereby the arms and holders will contract to be brought nearer together when the handle is relieved of pressure, substantially as herein described.

3. The combination, with two pen or pencil holders and a handle, of a connection between the holders and handle, comprising arms one or both of which are elastic or yielding, and which are arranged side by side, and to which the holders are attached, and a cam which, by pressure applied through the handle, is introduced between the arms and made to spread them and their attached holders, substantially as herein described.

339,818. HAY-STACKER. LABAN SOUSMAN and THOMAS SOUSMAN, South Bend, Ind. Filed Jan. 26, 1886. (No model.)

Claim.—1. In a hay-stacker, the derrick-arm G, composed of two sections, the inner section being rigidly secured to a support and the outer one hinged to the inner one by a hinge at the upper side of the adjacent ends of the said stations, substantially as shown and described, whereby the outer section can be swung up into a vertical position to

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bring the loaded fork nearer to the pole and the downward movement of said section, beyond a horizontal position, limited, as set forth.

2. In a hay-stacker, the combination, with the jointed derrick-arm G, of the pivoted clamping-bars X, having beveled rear ends, and the jointed sliding bar *b*, having beveled forward end, and its keepers *c*, substantially as herein shown and described, whereby the rise of the outer part of the said derrick-arm will cause the said pivoted bars to clamp the hoisting-rope and allow the derrick-arm to be drawn back to a horizontal position by means of the trip-rope, as set forth.

3. In a hay-stacker, the combination, with the pole A and the derrick-arm G, of the vertical cross-bar H, the concaved rollers I J, arranged on the opposite sides of the said pole, the roller-supports, and the adjusting-rope N, substantially as herein shown and described, whereby the said derrick-arm can be swung around the said pole and moved up and down upon it, as set forth.

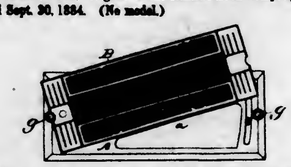
4. In a hay-stacker, the combination, with the derrick-arm G and the support K, for the center roller, J, of the swiveled-screw L and its stationary nut L', substantially as herein shown and described, whereby the said center roller can be readily adjusted to the pole, as set forth.

5. In a hay-stacker, the combination, with the vertical cross-bar H of the derrick-arm, of the lever Q and rope R, substantially as herein shown and described, whereby the said derrick-arm can be readily swung around the pole, as set forth.

6. In a hay-stacker, the combination, with the cross-bar H of the derrick-arm and the braces M, of the forked arm Y, substantially as herein shown and described, whereby the outer part of the derrick-arm, when raised, will be stopped in a vertical position and will be held from lateral movement, as set forth.

7. In a hay-stacker, the combination, with the inner part of the jointed derrick-arm, of the projecting forked bar Z, substantially as herein shown and described, to receive the hoisting-rope when the outer part of the said derrick-arm is raised and hold the loaded fork from swinging as the derrick-arm is swung around the pole, as set forth.

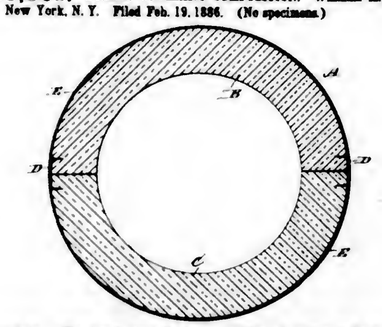
339,819. NAME AND DROP-LETTER PLATE. WILLIAM R. SPARER, New Haven, Conn., assignor to the Nashua Lock Company, Nashua, N. H. Filed Sept. 30, 1884. (No model.)



Claim.—1. The herein-described drop-letter plate, consisting of the back plate having a letter-mortise and the curved opening *b*, and the cover-plate pivoted thereto near one end, so as to turn edgewise, and having the projection *c*, working in the curved opening *b*, to serve as a stop, all substantially as described, and for the purpose specified.

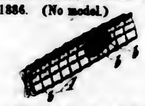
2. The herein-described drop-letter plate, consisting of the back plate having a letter-mortise, and the cover-plate pivoted near one end to said back plate, so as to swing edgewise, said plates being connected at the end which is opposite the pivot by means of a projection on one plate extending through a slot in the other plate, substantially as described, and for the purpose specified.

339,820. BOILER-COVERING COMPOSITION. WILLIAM M. SUHR, New York, N. Y. Filed Feb. 19, 1886. (No specimens.)



Claim.—The herein-described composition of matter to be used as a boiler or pipe covering, consisting of a solution of alum and soda, a mixture of hair or felt, asbestus fibers, mineral wool, cork and saw-dust, and plaster-of-paris or other similar substance, in the proportions specified.

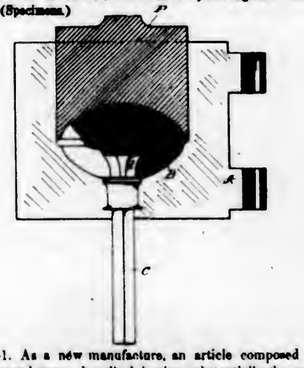
339,821. SYRINGE-TUBE. BENJAMIN F. SUTTON, Brooklyn, N. Y., assignor to himself, Russel Parker, and James H. Stearns, all of same place. Filed Jan. 25, 1886. (No model.)



Claim.—1. An expansible tube or conduit having embedded in it or incorporated between its inner and outer surfaces a spirally-wound thread or cord, the convolutions of which are widely separated or isolated from each other lengthwise of the tube or conduit, whereby the undue expansion of the tube or conduit is prevented, substantially as herein described.

2. An expansible tube which in its normal condition is collapsed or in longitudinal folds, and which has embedded in it or incorporated between its inner and outer surfaces a spiral re-enforcement of thread or cord, the convolutions of which are separated or isolated from each other lengthwise of the tube and which will collapse or fold with the tube and prevent its undue expansion, substantially as herein described.

339,822. MANUFACTURE OF ARTICLES MADE OF MOLDABLE VITREOUS SUBSTANCE WITH METAL PARTS EMBEDDED THEREIN. ALFRED SWAN, Lowfell, Gateshead-on-Tyne, England. Filed Jan. 27, 1886. (Specimens.)



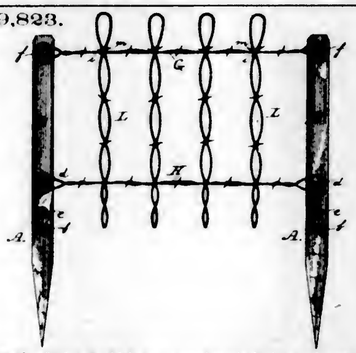
Claim.—1. As a new manufacture, an article composed of the moldable vitreous substance described, having substantially the same coefficient of expansion as brass, copper, or analogous base metal, and one or more pieces of such base metal inserted or embedded directly therein in the process of molding, as set forth.

2. As a new manufacture, an article—such as a door-knob—composed of vitrite, the same being a moldable vitreous substance having substantially the same coefficient of expansion as brass or copper or analogous base metal, and having the other properties herein set forth, and one or more pieces of such base metal inserted or embedded directly therein, substantially as described.

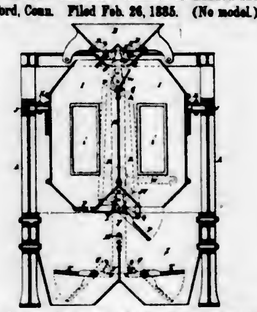
339,823. WIRE FENCE. JAS. TAGGART, Bowling Green, Ind. Filed Dec. 28, 1885. (No model.)

Claim.—An improved fence made in panels, consisting of longitudinal strands of wire to which are secured vertical wires and posts, each of which posts comprises a lower section adapted to be driven into the ground, and having a shouldered recess at its upper end, an upper section pivoted to the lower section in said recess, and provided at its top with a stud on which to secure the upper strand of the panel, and a screw-bolt passed through the two sections above the pivot for attachment thereto of the lower strand of a panel, and at the same time for holding the upper section of the post in a vertical position, as hereinbefore set forth.

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339,824. GRAIN-METER. WARREN H. TAYLOR and ENOCH STOCKWELL, Stamford, Conn. Filed Feb. 26, 1885. (No model.)



Claim.—1. In a grain-meter, a feeding-hopper provided with a regulating valve or valves, a measuring or weighing receptacle supported therebeneath in a balanced frame, said receptacle being provided at bottom with a valve or valves, as set forth, and a receiving-hopper located beneath the receptacle aforesaid, said receiver containing leaves adapted and arranged to regulate the flow of grain into the weighing-receptacle, substantially as shown and described.

2. The combination of the fixed feed-hopper with the double valve, adapted and arranged to be automatically operated by the weight of the grain passing through the hopper beneath the weighing-receptacle, substantially as shown and described.

3. In a grain-meter of the character herein specified, the combination, with a feed-hopper provided with two valves, as set forth, of a receiving-hopper at the bottom of the meter, wherein is located a pivoted leaf connected by a vertical bar to the valves of the feed-hopper, substantially as and for the use and purposes shown and described.

4. In a grain-meter, the combination, with an outlet for grain, of a valve-seat, E, and a valve-leaf having a lip upon its edge, adapted and arranged to overlap said seat E, substantially as shown and described.

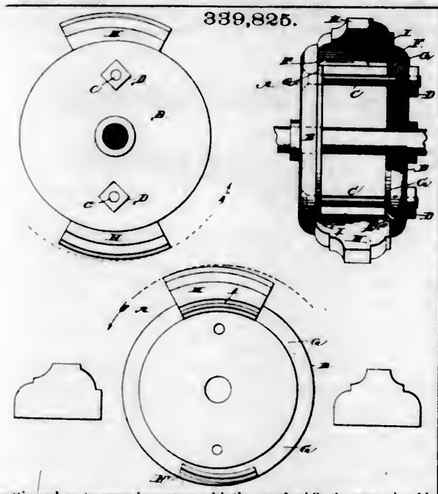
5. The combination, with vertical bar F, of the valve-leaves C, located at the bottom of the feed-hopper, and the regulating-leaves T, the whole arranged substantially as shown and described.

339,825. CUTTER-HEAD. CHARLES E. TEMPLE, Terre Haute, Ind. Filed Jan. 9, 1886. (No model.)

Claim.—1. The combination, with the cutter-head, of the segmental cutters secured thereto and tangentially therewith, and having cutting-edges arranged transversely on the cutter-head and parallel with the axis thereof, for the purpose set forth, substantially as described.

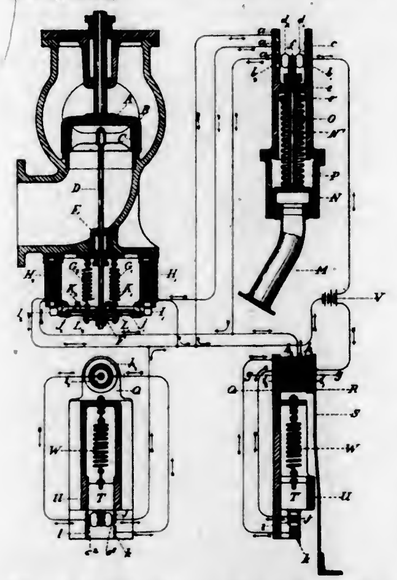
2. The combination of the cutter-head having the side plates provided with the rabbets in their outer edges on their opposing faces, and the tangential tongues F, with the segmental cutters having the transverse cutting-edges and sharpened at both ends, and thereby rendered reversible, the said cutters having segmental grooves I on their opposite sides concentric with their faces, whereby the cutters can be secured in the cutter-head and tangentially thereto, to cause only the transverse

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cutting-edges to come in contact with the wood while the cutter-head is rotating, for the purpose set forth, substantially as described.

339,826. ELECTRIC GOVERNOR FOR STEAM-ENGINES. AXEL O. TENGVALL, New York, N. Y. Filed Apr. 22, 1885. Renewed Jan. 13, 1886. (No model.)



Claim.—1. An engine-governor consisting of a throttle-valve, or a valve adapted to control the quantity or pressure of the fluid or gas from which power is derived, which valve is operated automatically by a number of independent electro-magnets, whose armatures are attached to adjustable levers connected with the valve-rod, and to which currents of electricity are communicated through a series of switches which are worked automatically, substantially as set forth.

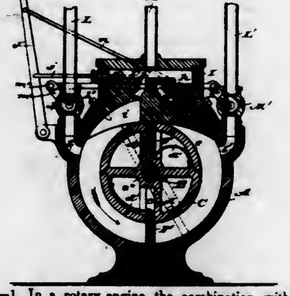
2. In a marine engine, a governor consisting of the following essential elements in combination, viz: a throttle-valve, or a valve adapted to control the quantity or pressure of the fluid or gas from which power is derived, provided with a number of independent electro-magnets adapted to be excited consecutively by an electric current, and to actuate consecutively the valve-rod, so as to increase or decrease the area of the valve, an electric battery or generator, a series of switches connecting said generator with the electro-magnets of the valve and adapted to be worked automatically by the varying speed of the engine, and a second set or series of switches connecting the generator with the electro-magnets of the valve, and adapted to be worked automatically by the varying hydrostatic pressure at the stern of the vessel, substantially as set forth.

3. The combination, in a throttle-valve for engines, of the main stop-valve, the fixed valve-seat having parallel grated openings, the movable throttle-valve having corresponding openings, the valve-rod having a disk or plate at its projecting end, the springs adapted to take up or compensate for the weight of the valve and valve stem or spindle, and a series of independently-operating electro-magnets provided with armatures connected to the plate or disk at the projecting end of the valve stem or spindle, so as to actuate the valve consecutively, thereby increasing or decreasing the area of the valve as the said electro-magnets are consecutively excited by an electric current, substantially as set forth.

4. The combination, in a throttle-valve for engines, of the main stop-valve, the fixed valve-seat having parallel grate-openings, the movable throttle-valve having corresponding openings, the valve-rod having a disk or plate at its projecting end, the springs adapted to take up or compensate for the weight of the valve and valve stem or spindle, a series of independently-operating electro-magnets, each having its appropriate armature fixed to one end of a vibrating lever, the sliding pieces attached adjustably upon the long arm of said lever, and the intermediate levers actuated by the said sliding pieces and bearing with their free ends against the disk or plate at the projecting end of the valve-spindle, substantially as set forth.

5. In an electric governor for marine engines, the automatically-operating switch apparatus for controlling the electro-magnets of the throttle-valve by the hydrostatic pressure at the stern of the vessel, consisting of a closed cylinder communicating with the sea by a pipe through the stern of the vessel, a piston and piston-rod sliding within said cylinder, a spring bearing against the piston with a tension or pressure adapted to be varied to conform to the normal pressure of the water entering the cylinder, a pair of contact-pieces in metallic contact with each other, fixed upon but insulated from the piston-rod, a series of fixed switches or contact-pieces adapted to come into consecutive contact with the sliding contacts on the piston-rod, and a circuit connecting the said fixed switches or contact-pieces with a series of corresponding electro-magnets adapted to operate the valve which controls the quantity or pressure of the medium from which power is derived, substantially as set forth.

339,827. ROTARY ENGINE. WILLIAM L. TOOK, Bay View, Wis. Filed Feb. 9, 1886. (No model.)



Claim.—1. In a rotary engine, the combination, with a circular cylinder in which there is arranged a non-concentric block, N, having recesses *i i* and steam-ports *s s'*, of a revolving piston having wings F F', a valve, I', exhaust-valves M M', a manipulating lever common to all valves and connecting devices, substantially as described.

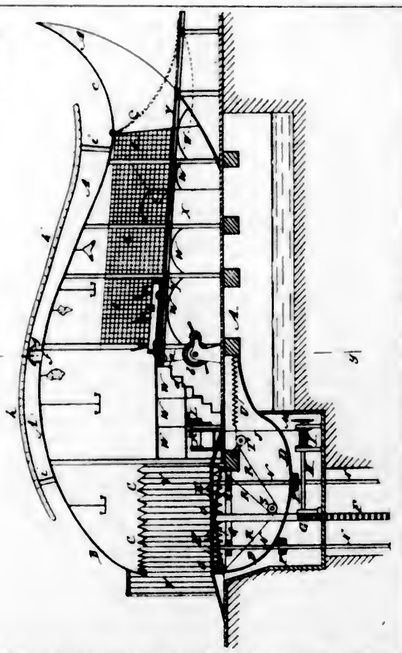
2. In a rotary engine, the combination, with a circular cylinder of the non-concentric block having recesses and steam-ports, of a piston having wings and radially slotted plates within which the ends of said wings move, a slide-valve, exhaust-valves, and a manipulating lever common to the valves and connecting devices, substantially as and for the purpose set forth.

339,828. WHALE-SHAPED MUSEUM BUILDING. ANTHONY WARD, Brooklyn, N. Y. Filed June 25, 1885. (No model.)

Claim.—1. A museum building made, substantially as herein shown and described, in the shape of a whale, and provided with a movable lower jaw to form an entrance-passage, as set forth.

2. In a whale-shaped museum building, the combination, with the stationary upper jaw, B, and the movable lower jaw, D, of the platform O, the rack and pinion F G, the cord or chain J, and the drums I K, having cranks M L, substantially as herein shown and described, whereby the said lower jaw can be readily closed and opened, as set forth.

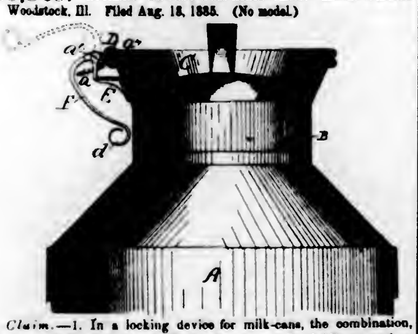
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3. In a whale-shaped museum building, the combination, with the movable lower jaw, D, the platform O, the rack-bar F, and the stationary upper jaw, B, having teeth C, of the movable teeth E, the springs Q, the cords and guide-pulleys R S T, and the springs U, substantially as herein shown and described, whereby the said teeth will be projected above and withdrawn below the said platform automatically as the said movable jaw is raised and lowered, as set forth.

4. The combination, with a whale-shaped museum building having an exit-opening in its tail, of the inclined track Y, the car Z, and the rope and windlass *a b*, substantially as herein shown and described, whereby the spectators can be carried out by gravity and the said car readily drawn back, as set forth.

339,829. LOCKING DEVICE FOR MILK-CANS. EDWIN WHITSON, Woodstock, Ill. Filed Aug. 18, 1885. (No model.)



Claim.—1. In a locking device for milk-cans, the combination, with the neck B, of the cover C, the lug or ear D, rigidly secured to said cover and provided with the opening *a*, the bracket E, secured to the neck of the can, and the locking-lever F, pivoted to said bracket, substantially as and for the purpose set forth.

2. In a locking device for milk-cans, the combination, with the cover C, of the lug or ear D, having the concavity a^2 and the convexity a^3, the bracket E, and the locking-lever F, provided with the cam end a', whereby said cover is securely locked in a closed position, substantially as set forth.

3. The combination, with a milk-can, of the cover C, the lug or ear D, provided with the opening *a*, the lever F, having the enlarged or coiled end *d*, and the bracket E, substantially as and for the purpose set forth.

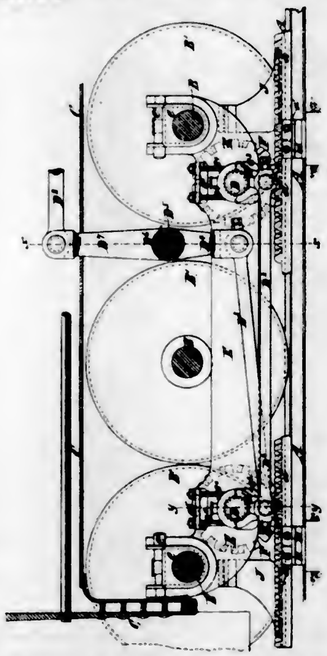
339,830. COMBINED PITCHFORK AND RAKE. ALBERT J. WILCOX and ELIZA B. WILCOX, Maple Rapids, Mich. Filed Jan. 4, 1886. (No model.)



Claim.—1. As an improvement in combined rakes and pitchforks, the combination, with the handle, of the head F, pivoted to the handle, and provided with a cut-out portion, f', a shoulder, f^2, and a curved face, f^3, and the spring-catch D, having a projecting nib, *d*, which fits in the cut-out portion f' and bears against the shoulder f^2 when the device is used as a pitchfork, and rides over the curved face, so as to engage against the flat opposite face of the head F, when employed as a rake, as and for the purpose set forth.

2. As an improvement in combined pitchforks and rakes, the combination, with the handle, of the head F, pivoted to the same and provided with a cut-out portion, f', and the spring-catch D, having a projecting nib fitting in the cut-out portion f' when the device is employed as a pitchfork, which nib rides over the head and catches against the flat face thereof opposite the cut-out portion f' when employed as a rake, as set forth.

339,831. LOCOMOTIVE. ROMAN ABT, Bitsaus, Switzerland, assignor of one-half to Otto Gruninger, New York, N. Y. Filed Jan. 16, 1886. (No model.)



Claim.—1. The combination, with the adhesion and supporting axles and wheels of a locomotive, of a frame consisting of parallel side portions E, having at their ends independently-adjustable boxes fitting the axles, and a pinion or pinions journaled in said frame and adapted to engage with a toothed rack-rail, substantially as herein described.

2. The combination, with the adhesion and supporting axles and wheels of a locomotive, of a frame supported independently of the springs of the locomotive, a shaft journaled in said frame and carrying a pinion for engaging a rack-rail, a crank on said shaft, and a rock-shaft and rod, through which motion is transmitted to the crank on the pinion-shaft, substantially as herein described.

3. The combination, with the adhesion and supporting axles and wheels of a locomotive, of a frame supported independently of the springs of the locomotive, a shaft journaled in said frame and carrying a pinion and cranks set at an angle relatively to each other, and two rock-shafts having arms connected by rods with the cranks on the pinion-shaft, and through which motion is transmitted for operating the pinion-shaft, substantially as herein described.

4. The combination, with the adhesion and supporting axles and wheels of a locomotive, of a frame supported independently of the springs of the locomotive, a shaft journaled in said frame and carrying cranks set at an angle relatively to each other and a pinion, and two concentric rock-shafts arranged one within the other and having arms connected by rods with the cranks on the pinion-shaft, substantially as herein described.

5. The combination, with the adhesion and supporting axles and wheels of a locomotive, of a frame supported independently of the springs of the locomotive, two shafts journaled in said frame and each carrying a pinion for engaging a rack-rail, cranks, and parallel rods, whereby the two pinion-shafts are coupled together, and connecting-rods through which motion is transmitted to the cranks on one pinion-shaft for driving both of said shafts, substantially as herein described.

6. The combination, with a locomotive and a frame supported independently of the springs thereof, of pinions journaled in said frame and coupled together, and adapted to engage with a rack-rail, each pinion having an elastic or yielding connection with its shaft, substantially as herein described.

7. The combination, with a railway-vehicle, of a pinion supported independently of the springs of the vehicle and adapted to engage with a rack-rail, the pinion being composed of two or more toothed disks arranged side by side and having an elastic or yielding connection with the shaft, whereby the disks may turn slightly one relatively to another, substantially as herein described.

8. The combination, with the adhesion and supporting axles and wheels of a locomotive, of a frame supported independently of the springs of the locomotive and pinions journaled in said frame and coupled together one in advance of the other, the teeth of the pinions being stepped or set out of line, so that the teeth of one pinion will engage the teeth of the rack-rail slightly in advance of those of the other pinion, substantially as herein described.

9. The combination, with the adhesion and supporting axles and wheels of a locomotive, of a frame supported independently of the springs of the locomotive, pinions journaled in said frame and coupled together, each pinion consisting of two or more toothed disks set with their teeth stepped relatively to each other, and the two pinions being coupled so that the teeth of one are stepped or engage with the rack-rail in advance of the teeth of the other pinion, substantially as herein described.

10. The combination, with the adhesion and supporting axles and wheels of a locomotive, of a frame supported independently of the springs of the locomotive and pinions journaled in said frame and coupled together, each pinion consisting of toothed disks having their teeth stepped one relatively to another, and having an elastic or yielding connection with their shaft, and the teeth of the two pinions being stepped one relatively to another, so that the teeth of one pinion will engage the teeth of a rack-rail slightly in advance of the teeth of the other pinion, substantially as herein described.

11. The combination, with a pinion-shaft and a pinion composed of toothed disks arranged side by side, of flanges between which the disks are confined and one or each of which carries a cylindric brake-drum, substantially as herein described.

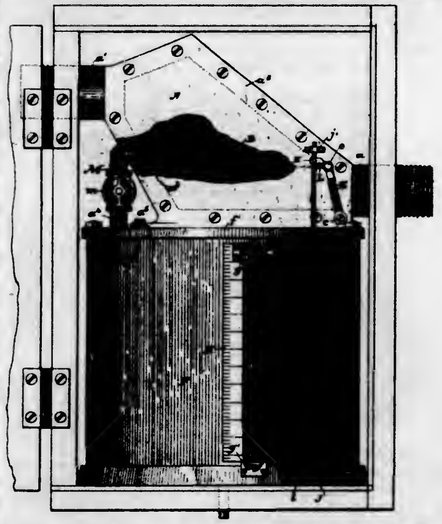
12. The combination, with a shaft and a hub or center fast thereon, of a pinion consisting of toothed disks encircling the hub or center and arranged side by side, and springs interposed between the hub or center and the several disks, whereby the several disks are individually enabled to yield circumferentially relatively to the hub or center and to each other, substantially as herein described.

13. The combination, with a shaft and a hub or center fast thereon and having grooves or spring-seats in its periphery, of a pinion composed of toothed disks arranged side by side upon the hub or center and having notches in their inner circumference opposite the grooves or spring-seats in the hub or center, and springs seated in the hub or center and engaging the notches in said disks, whereby the said disks are enabled individually to yield circumferentially relatively to the hub or center and to each other, substantially as herein described.

14. The combination, with the shaft D and hub I, fast thereon and having U-shaped spring-seats g^2 in its periphery, of a pinion composed of toothed disks encircling the hub side by side and having notches g^3 in their inner circumference, and the springs *g*, of U shape form, fitting the seats g^2, and having their ends which engage the notches g^3 provided with inward projections *g'*, which form stops to limit their elasticity, substantially as herein described.

15. The combination, with a rack-rail composed of toothed bars arranged parallel side by side with spaces between them, and a locomotive having a pinion or pinions engaging the rack-rail, of a snow-plow carried by the locomotive and having projections which enter the spaces between the parallel bars of the rack-rail and serve to clear said spaces, substantially as herein described.

339,832. PROPORTIONAL WATER-METER. NATHAN B. ACHESON, Youngstown, Ohio, assignor of two-thirds to John M. Walter, same place, and James M. Farris, Cleveland, Ohio. Filed Nov. 27, 1885. (No model.)



Claim.—1. In a meter, the combination of a vessel containing a valve-operating device which is actuated by the passage of the fluid through the vessel with a reservoir separate from said vessel and containing a liquid, and having a valve operated by the said valve-operating device in the vessel, whereby the quantity of fluid which passes through the vessel is proportionately measured by the quantity of liquid which escapes from the reservoir, substantially as set forth.

2. In a meter, the combination of a vessel provided with inlet and outlet pipes, a valve contained within the said vessel between the said pipes, a reservoir separate from said vessel and containing a liquid, and a valve operated by the said valve in the vessel, so that the quantity of fluid which escapes from the said reservoir is proportionate to that which passes through the said vessel, substantially as set forth.

3. In a meter, the combination of a vessel provided with inlet and outlet pipes, a valve contained within the said vessel between the said pipes, a reservoir containing liquid, a gage for indicating the quantity of liquid in the reservoir, and a valve operated by the said valve in the vessel, so that the quantity of liquid which escapes from the said reservoir is proportionate to that which passes through the said vessel, substantially as set forth.

4. In a meter, the combination of a vessel provided with inlet and outlet pipes, a valve contained within the said vessel between the said pipes, a reservoir containing a liquid, a replenishing-pipe provided with a stop-cock connecting the said vessel and reservoir, and a valve operated by the said valve in the vessel, so that the quantity of liquid which escapes from the said reservoir is proportional to that which passes through the said vessel, substantially as and for the purpose set forth.

5. The combination of a vessel provided with inlet and outlet pipes and a valve-seat between the said pipes, a valve contained within the said vessel and resting on the said valve-seat, a reservoir containing a liquid, the valve J, provided with a spindle, *j*, and lug K, for regulating the escape of the liquid from the said reservoir, and mechanism connecting the said valve in the vessel with the valve J, substantially as and for the purpose set forth.

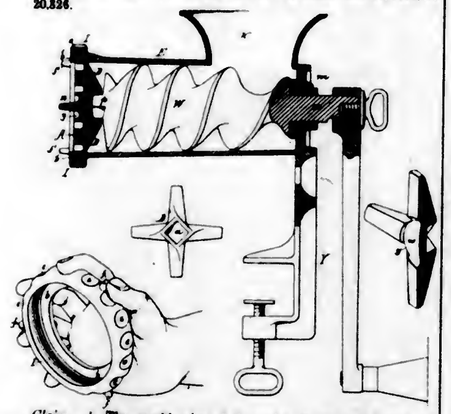
6. The combination of a vessel provided with inlet and outlet pipes and a valve-seat between the said pipes, the valve B, having the valve-spindle *b* pivoted within the said vessel, center pivots for supporting the said valve-spindle, a cam secured on the said valve-spindle, a reservoir containing a liquid, the valve J, provided with the spindle *j*, and the lug K, secured upon the valve-spindle *j*, substantially as and for the purpose set forth.

7. The combination of a vessel provided with inlet and outlet pipes and the valve-seat a^2, the valve B, having valve-spindle *b*, the center pivot, C, the adjustable center pivot, C', supported by a bracket, the cam L, a reservoir containing a liquid, the valve J, having spindle *j*, and the lug K, substantially as and for the purpose set forth.

8. The combination, in a meter, of a valve controlled by the flow of the fluid to be measured through the meter, a reservoir the pressure in which is independent of the pressure of the fluid to be measured, and a valve regulating the discharge of the contents of the reservoir, which

valve is governed by the first-named valve, substantially as and for the purpose set forth.

339,833. MEAT-CUTTING MACHINE. JOHN G. BAKER, Philadelphia, Pa., assignor to the Enterprise Manufacturing Company, same place. Filed Dec. 15, 1884. (No model.) Patented in Canada Dec. 31, 1884, No. 20,826.



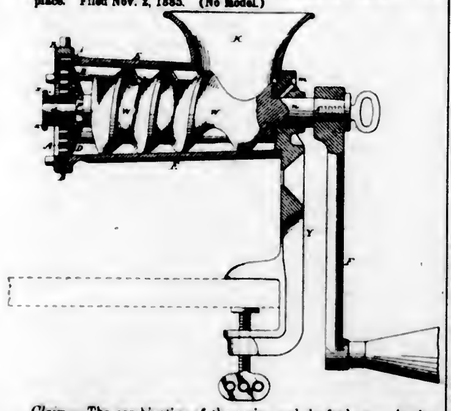
Claim.—1. The combination of the casing E and ring I with the perforated plate having a central projection, *x*, substantially as specified.

2. The perforated plate having a central projection and surrounding groove *y*, as set forth.

3. The combination of the casing E, the perforated plate A, and the knife D, having a recess at the back, with the screw W, having a projection, *p*, fitting loosely in the said recess, and bearing against the bottom of the same, substantially as described.

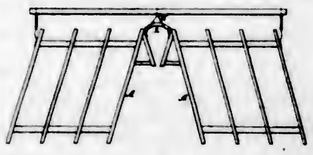
4. The combination of the casing and perforated plate with the knife D, having in its face a central recess, *w*, with convex bottom and openings *g*, as set forth.

339,834. MACHINE FOR CUTTING MEAT. JOHN G. BAKER, Philadelphia, Pa., assignor to the Enterprise Manufacturing Company, same place. Filed Nov. 2, 1885. (No model.)

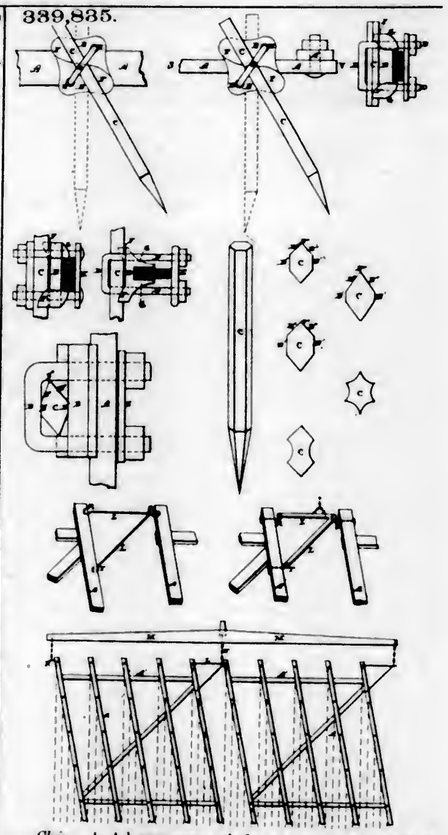


Claim.—The combination of the casing and the feed-screw, having a knife and carrying at its outer end a journal, *d*, with a perforated end plate, A, against which the knife cuts, the said perforated plate having a bearing, *x*, for the said journal, substantially as set forth.

339,835. HARROW. JAMES H. BARLEY, Sedalia, Mo., assignor of one-half to Thomas K. Barley, same place. Filed July 16, 1885. (No model.)



339,835.



Claim.—1. A harrow composed of two or more sections, with the beams thereof arranged to operate obliquely to the line of travel, in combination with the connection L, having the front ends of adjoining sections of the harrow attached thereto by hinge or loose joint connections, uniting said sections each one with the other at their inner front corners and to the draft-bar in advance thereof, substantially as and for the purpose specified.

2. A harrow composed of two or more sections placed side by side, with the beams thereof arranged to operate obliquely to the line of travel, in combination with the link or coupling L, hinging the inner front corners of the adjoining sections each one with the other, and connecting the front ends of said sections to the draft-bar, and the V-shaped connections which unite the outer front corners of the harrow-sections to the ends of said draft-bar, whereby lateral motion of the sections is prevented, substantially as described.

3. A harrow composed of two or more sections placed side by side, with the beams thereof arranged to operate obliquely to the line of draft, in combination with the connection L and brace M', hinging the inner front ends of the adjoining sections each one with the other and uniting said sections to the draft-bar, substantially as set forth.

4. A harrow composed of two or more sections placed side by side, with the beams thereof arranged to operate obliquely to the line of travel, with the triangular connection L, having the inner front corners of the adjoining sections hinged to the rear ends thereof and hinged to the transverse draft-bar in front of said sections, substantially as described.

5. In a harrow, the connection L, having its two rear corners hinged to the inner front corners of adjoining oblique sections, uniting said harrow-sections together and to the transverse draft-bar by a hinged-joint connection, whereby independent motion is permitted between said sections in a vertical direction only, substantially as described.

6. The combination of a harrow composed of two or more sections placed side by side, with the beams thereof arranged to operate obliquely to and in opposite directions from each other on either side of the central line of travel, with the extension or connection L, hinging the inner front corners of the adjoining sections together and to the draft-bar, and

the outer front connections which unite said sections to the ends of the transverse draft-bar, arranged in advance thereof, substantially as described.

7. The combination, with a harrow tooth and beam, of the plate B, having the openings H through digonally-opposite corners and the legs F on its other two corners, and the pronged clamp D, which extends diagonally across the face of the plate, said clamp being adapted to support the tooth in a vertical position, and the legs adapted to support it in an inclined position, substantially as described.

8. The combination of the harrow-beams, the toothed plate B, having stop-flanges G, openings H through diagonally-opposite corners, the legs F, and the pronged clamp D, which extends across the face of the plate, said clamp being adapted to support the tooth in a vertical position, and the legs adapted to support it in an inclined position, substantially as described.

9. The combination of the beam A, bevel-sided stops A''', and harrow-tooth having the bearing sides B', beveled edges B'', and cutting-edges B''', substantially as described.

10. A harrow-tooth having bearing sides B', beveled edges B'', and cutting-edges B''', substantially as described.

11. A harrow-tooth having bearing sides B', beveled edges B'', and cutting-edges B''', the bearing sides being arranged obliquely, so as to cause the cutting-edges of the teeth to run in a line with each other when the tooth is secured to an oblique beam, substantially as described.

339,836. LOOM-PICKER. JOHN W. BARLOW, Lawrence, Mass. Filed Oct. 14, 1885. (No model.)

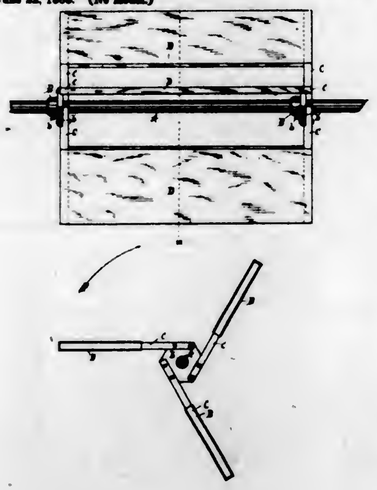


Claim.—1. A loom-picker made of two layers of rawhide and having a staple-formed re-enforce, substantially as described, in one piece of material arranged to extend within it from its rod-passage downward and embrace and cover the upper end portion of the inner of the two layers of rawhide comprising the body of such picker, and extend between it and the said rod-passage, all being essentially as represented.

2. A loom-picker having its body composed of two layers or sheets of rawhide, and within such body and next its rod-passage a staple-formed re-enforce, substantially as described, in one piece of material extending down from the said passage and embracing the inner layer of the body at and over one end thereof, and extend between it and the passage, as set forth, and secured on the body by rivets going through it and such body, as represented.

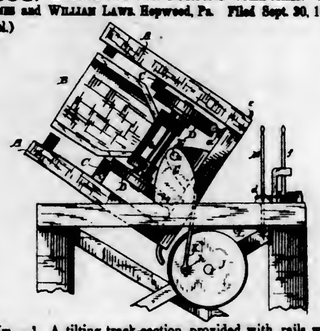
3. A loom-picker having its body composed of two layers or sheets of rawhide, and within such body a core made, as described, of a sheet of rawhide and one of metal rolled together in a helix or volute, and a re-enforce staple formed substantially as described and extending down from the rod-passage and embracing the inner layer or sheet of such body at one end portion thereof, the said body, re-enforce, and core being connected by rivets going through them laterally, as represented.

339,837. ROTARY FAN. CHARLES BARBER, Dayton, Ky. Filed June 22, 1885. (No model.)



Claim.—In a rotary fan of the character described, the combination, substantially as specified, of the shaft A, hubs B *b'*, secured upon the shaft at suitable distances apart, and the arms C, secured tangentially on the flanges of said hubs, with the webbing D between the opposite arms.

339,838. APPARATUS FOR DUMPING COAL-CARS. STAVEN A. BARNES and WILLIAM LAWS, Hopwood, Pa. Filed Sept. 30, 1885. (No model.)



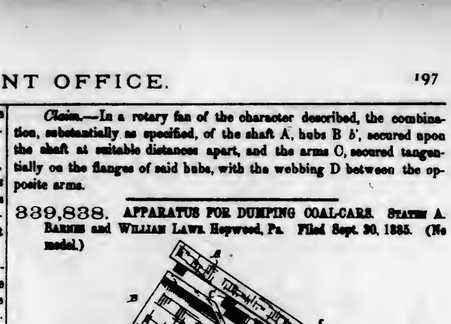
Claim.—1. A tilting track-section provided with rails which constitute a continuation of the rails of the main track, the axis on which said section turns being located above the plane of the rails, substantially as and for the purpose set forth.

2. A sidewise-tilting track-section upon which cars are run to be dumped, said section being provided with a counter-balance which restores it to its normal position after the car has been dumped, substantially as set forth.

3. A tilting track-section and a spring-catch which holds it from turning, in combination with a movable trip-block located on the section, which co-operates to release said track when the car is run upon said section, substantially as set forth.

4. A tilting track-section, in combination with a brake-wheel, a connecting-rod connecting said section with a crank-pin on said brake-wheel, an operating brake-lever, and a brake-strap which is secured at one end to a fixed support passing around the periphery of said wheel, and is attached at the other end to said brake-lever, substantially as set forth.

339,839. DYNAMO-ELECTRIC MACHINE. CHARLES BATCHELOR, New York, and HENRY E. WALTER, Clifton, N. Y. Filed July 6, 1885. (No model.)



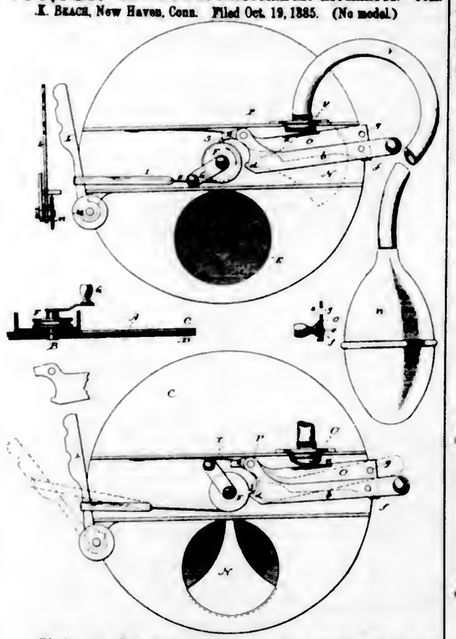
Claim.—1. In an electric generator or motor, the combination of two sets of radial conducting-bars revolving in opposite directions in the same magnetic field and electrically connected together, substantially as set forth.

2. In an electric generator or motor, the combination of two sets of radial conducting-bars electrically connected together and revolving in opposite directions in a uniform or practically uniform magnetic field, substantially as set forth.

3. In an electric generator or motor, the combination of the field-magnet, the two sets of separately-revolving radial bars, and the cross-connections between the bars connecting the outer end of a bar of one set with the outer end of one of the other set and the inner end of the latter bar with the inner end of the next bar of the former set, and so on, substantially as set forth.

4. In an electric generator or motor, the combination, with two sets of radial conducting-bars electrically connected together and revolving in opposite directions, of the field-magnet having poles practically covering the surfaces of said sets, substantially as set forth.

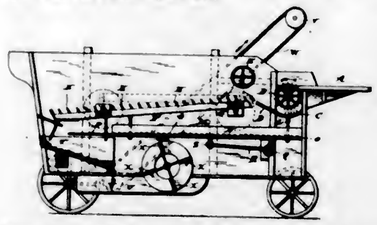
339,840. SHUTTER FOR PHOTOGRAPHIC APPARATUS. JOHN K. BEACH, New Haven, Conn. Filed Oct. 19, 1885. (No model.)



Claim.—1. In a photographic apparatus, a shutter hung upon an axis parallel with the axis of the exposure-opening, the said shutter constructed with an aperture adapted to pass across said exposure-opening, the combination therewith of a spring adapted to impart rotation to said shutter in one direction, the said shutter provided with a stop, S, which rotates with it, and a latching mechanism presenting two noses, R *d*, adapted to alternately engage the said stop S, the one to hold the shutter in its closed position and the other to hold the shutter with its aperture coincident with the exposure-opening, substantially as described.

2. In a photographic apparatus, a shutter hung upon an axis parallel with the axis of the exposure-opening, the said shutter constructed with an aperture adapted to pass across said exposure-opening, the combination therewith of a spring adapted to impart rotation to said shutter in one direction, the said shutter provided with a stop, S, which rotates with it, and two latches, O *b*, the one provided with a nose, R, and the other with a nose, *d*, the said latch *b* and its nose *d* adapted to be turned into or from the path of the said stud, substantially as and for the purpose described.

339,841. THRASHING-MACHINE. ROSWELL BEARDSLEY, Ashby, Minn. Filed Dec. 9, 1885. (No model.)

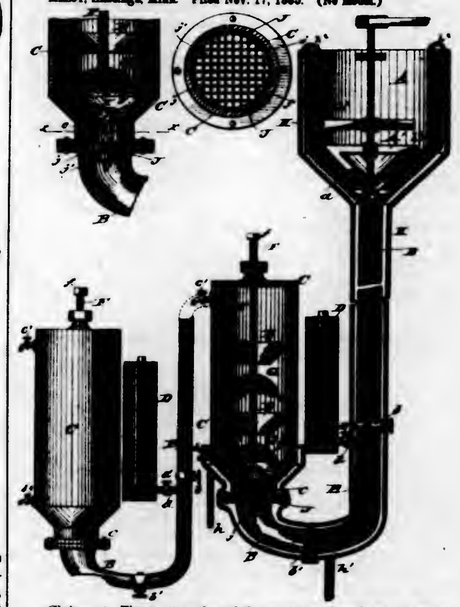


Claim.—1. In a thrashing-machine, the combination of the cylinder, the beater located in the rear of and above the concave, the oppositely-set revolving crank-shafts, the toothed rake-frame mounted thereon, the suspended horizontally-extending grain-conveyer consisting of side bars and a corrugated floor and rearwardly-extending rods, and the shoe hung at the rear and beneath the rake-frame and conveyer.

2. In a thrashing-machine, the combination, with the cylinder, the concave, and the beater located in the rear of and above the concave, of the rake-frame consisting of slats having each a row of teeth, and the revolving crank-shafts having their cranks oppositely set, upon which the said rake-frame is mounted.

3. In a thrashing-machine, the combination, with the revolving crank-shafts having their cranks oppositely set, of a rake-frame consisting of slats having each a row of teeth mounted upon said shafts, whereby one end of the rake-frame is rising as the other is descending.

339,842. AMALGAMATOR. BRUNO BRAUNER, St. Paul, and JOHN C. MELOY, Hastings, Minn. Filed Nov. 17, 1885. (No model.)



Claim.—1. The combination of the amalgamating-chamber having a discharge-valve near its top, the pulp-pipe discharging into the bottom of the said chamber and provided with a valve to stop the flow of pulp on its vertical part, and an amalgam-discharge valve on its horizontal part, and the mercury-chamber discharging from its lower end by a valve-controlled pipe, with the pulp-pipe just below the valve on its vertical part, substantially as specified.

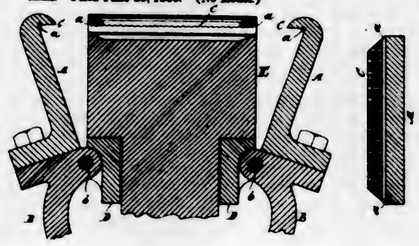
2. The combination of the pulp-pipe and the amalgamating-chamber having a conical bottom with the device I, secured over the entrance of the pulp-pipe into the chamber, the guide-plates E, and the guide-pieces G, substantially as specified.

3. The combination of the pulp-pipe B, provided with the valves *b b'*, and having a pulp-vessel on its upper end, the amalgamating-chamber C, having a conical bottom and provided with the discharge-valve *c'* near its upper end, the mercury-chamber D, communicating with the pipe B below the valve *b* by means of the valve-controlled pipe *d*, the device I, provided with the perforations *i*, the guide-plates E, and the guide-pieces G, substantially as specified.

4. The combination of the pulp-pipe having the valves *b b'*, the mercury-chamber connecting therewith by the pipe *d*, having its valve *d'*, and the amalgamating-chamber having the valves *c'* and *b²*, through the latter of which the amalgams lighter than mercury are drawn off from said chamber, substantially as specified.

5. The combination, with the pulp-pipe and amalgamating-chamber, of the frame J, having the cross-pieces *j*, forming between them the vertical channels *j'*, substantially as specified.

339,843. PAPER-BOX MACHINE. BERNARD K. BRIGHT, Boston, Mass. Filed June 29, 1885. (No model.)

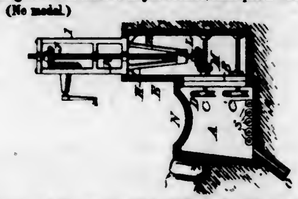


Claim.—1. In a paper-box machine, the folder-lips C, made at an angle less than a right angle with the face of the folder A, in combination with the beveled formers E, substantially as and for the purpose set forth.

2. The lips C, made with corrugated or serrated faces, as shown and described.

3. The serrated folder-lip C, provided with the longitudinal groove *a*, in combination with the folder A, said groove being at the angle of the folder and folder-lip, as and for the purpose set forth.

339,844. UNDERGROUND CONDUIT. JOHN BESLER, Cincinnati, Ohio, assignor of one-third to Elijah Coombs, same place. Filed Sept. 12, 1885. (No model.)

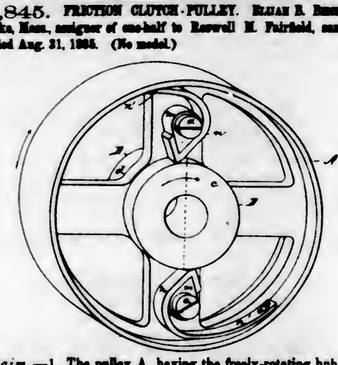


Claim.—1. In an underground conduit, the combination, with a tube located in the gutter of the street, the inner side of said tube being provided with hand-holes, of covered boxes located at suitable intervals in the curb and affording access to the interior of the tube through the hand-holes, substantially as set forth.

2. In an underground conduit, the combination, with a tube located in the gutter of the street, the inner side of said tube being provided with hand-holes, of covered boxes located at suitable intervals in the curb and affording access to the interior of the tube through the hand-holes, the upper surface of said tube being concaved, for the purpose stated.

3. The combination, in an electrical underground conduit, of tube A, hand-hole B, pulleys O O', and covered boxes E G, the shaft of said pulleys being journaled transversely of the lower portion of said boxes, and one of said shafts being provided with a bevel-wheel, M, that gears with a similar wheel, L, of a portable machine that is temporarily fitted in the upper end of one of the open boxes E, for the purpose specified.

339,845. FRICTION CLUTCH-PULLEY. ELIJAH B. BRIGHAM, Holyoke, Mass., assignor of one-half to Roswell M. Fairfield, same place. Filed Aug. 31, 1885. (No model.)



Claim.—1. The pulley A, having the freely-rotating hub B, provided with the flange *c*, having a circular periphery, combined with the dogs *m*, pivoted on said pulley opposite the periphery of said flange, and the spring-hooks *n*, receiving the wedge-shaped ends of said dogs and bearing directly on the periphery of said flange, and having the shank *n'* bearing on the inner side of the rim of the pulley, substantially as set forth.

2. The pulley A, the hub B, having a free rotary movement in said pulley and provided with the flange *c*, combined with one or more dogs, *m*, eccentrically pivoted on said pulley near said flange, and the spring-hook *n*, engaging with one end of said dog and having its shank bearing upon the inner side of said pulley, substantially as set forth.

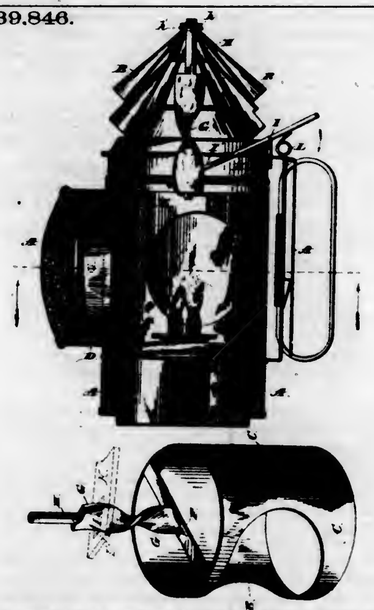
339,846. DARK-LANTERN. WILLIS BRUNER, St. Paul, Minn. Filed Nov. 17, 1885. (No model.)

Claim.—1. The combination, with the lantern-casing, of a screen pivoted therein provided with an inclined cam having its opposite sides substantially parallel, and a lever engaging the cam on each opposite side, substantially as and for the purpose described.

2. In combination with the lantern-casing, the rotary screen therein, the spiral rigidly connected with the screen, and the lever engaging such spiral, substantially as and for the purpose described.

3. In combination with the lantern, the rotary screen, the spiral

339,846.

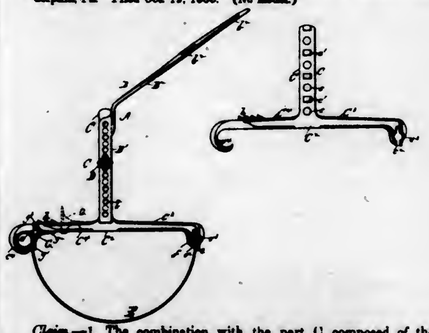


rigidly connected therewith, and the lever provided with the slot, through which the spiral passes, substantially as and for the purpose specified.

4. In combination with the lantern-casing, the shaft supported from the top of the lantern, the spiral, the rotary screen connected rigidly therewith, the lever slotted to engage the spiral projecting out through the casing in proximity to the handles of the lantern, and the spring engaging the lever, substantially as and for the purpose shown.

5. In a dark-lantern, in combination with the casing, the lever pivoted thereon above the handles, extending within the casing, and slotted at its inner end, the spring engaging the lever, the rotary screen within the casing, and the twisted bar or spiral rigidly connected with the screen and passing through the slot in the lever, substantially as and for the purpose set forth.

339,847. EAVES-TROUGH HANGER. WILLIAM H. BURGER, Philadelphia, Pa. Filed Oct. 19, 1885. (No model.)



Claim.—1. The combination, with the part C, composed of the standard C' and cross-bar C², said standard having adjusting-holes *c* and studs *c'*, of the shank B, consisting of vertical portion B' and incline B², said parts B' and B² being on planes at right angles to each other, and said part B' having adjusting-holes and a groove which receives the standard C', substantially as shown and described.

2. In a suspension eaves-trough hanger, a cross-bar, C², having at its inner end a notch or slit and offset for the reception of the edge of a trough and a key or fastener therefor, substantially as shown and described.

3. In a suspension eaves-trough hanger, the combination, with shank B, having vertical part B' and incline B², said parts standing in planes at right angles to each other, of part C, composed of standard C' and cross-bar C², said part C being in a plane with the part B' and ad-

justably fastened thereto, and said cross-bar having means for securing a trough to its under side, substantially as shown and described.

4. The combination, with the eaves-trough iron C, having a bend or hook, c^4, and a notch or tooth, h, of a thimble, G, substantially as shown and described.

5. The combination of an eaves-trough hanger having a hook or bend for receiving the bead or curl of a trough, E, and a series of notches or teeth, of a thimble, G, whereby an adjustable fastening for said trough is provided, substantially as set forth.

6. In an eaves-trough hanger, a fastening consisting of a sliding thimble, G, having an opening or bore for the passage of the hanger-iron and two lips, substantially as shown and described.

339,848. ROSETTE FOR BRIDLES. WILLIAM J. BITTER, Toledo, Ohio. Filed May 19, 1884. Renewed Mar. 12, 1886. (No model.)



Claim.—1. The combination, with the cap and the back plate formed with an angular slot, of the detachable loop-bar having bent ends, and secured to the plate by one end passing through the plate and the other end fitting in the angular slot, substantially as described.

2. The combination, with the cap and the back plate formed with an angular slot, of the detachable loop-bar having bent ends, and secured to the plate by one end passing through the plate and the other end through the angular slot, and a tang to cross said slot to lock the bar therein, substantially as described.

3. The combination, with the cap and the back plate formed with an angular slot, of a pivoted loop-bar having one end fitted in said slot, so as to move therein in the arc of a circle, and a catch to confine the bar in said slot, substantially as described.

339,849. ROSETTE FOR HARNESS. WILLIAM J. BITTER, Toledo, Ohio. Filed Jan. 28, 1884. Renewed Mar. 12, 1886. (No model.)



Claim.—1. The harness-rosette composed of the back plate having an upturned peripheral flange, the loop having its ends passed through said plate and bent to secure the loop and plate together, and a front plate having a depending peripheral flange fitting around the flange of the back plate, and having a projecting portion thereof bent onto the outer face of the back plate to hold the parts together, substantially as described.

2. The harness-rosette composed of the back plate having an upturned peripheral flange, the loop having its ends passed through said plate and bent to secure the loop and plate together, and the front plate fitting against the flange of the back plate and provided with depending tangs bent into the outer face of the back plate to hold the parts together, substantially as described.

339,850. CIGAR-BUNCHING MACHINE. GEORGE E. BOYER and SIGMUND BELMONT, New Orleans, La. Filed June 12, 1884. Renewed Jan. 7, 1885. (Model.)



Claim.—1. In combination with the bottom of the slideway provided with a transverse opening, the belt attached at each end to some fixed portion of the frame, and loose between such ends, so that a bight or pocket can be formed therein, the slide resting upon and having its front end extending squarely across the bottom of the slideway, and the bar on the front end of the slide engaging the under or rear side of the belt, and so arranged on or attached to the slide as to leave a space between it and the slide end, substantially as and for the purpose described.

2. In combination with the slideway having its bottom provided with a transverse opening or recess, the slide, the transverse bar hinged to the front of the slide, so as to leave a space between it and the slide end, and having its ends extended outward beyond the slideway to form handles, which can be grasped by the hands, and the belt fixed at one end at or near the forward end of the slideway, passing back over the front of the bar, and made fast at its rear end above the slide, substantially as and for the purpose described.

3. In a cigar-bunch-making machine, the way along which the bunch is moved as it is rolled, having in its sides at or near their forward or outward ends opposite recesses with inwardly-inclined forward or outer ends, substantially as and for the purpose set forth.

4. In a cigar-bunch machine, in combination with a stationary belt, a slide, a bar hinged to the forward end of the slide and provided with a plate, between which and the bar passes the belt, and side bars on each side of the belt formed with recesses having inwardly-inclined forward ends, substantially as and for the purpose described.

5. In a cigar-bunch-making machine, the beltway, the stationary belt, means, substantially as described, for causing a bight or pocket in the belt to move along the same, and the bars at the sides of the way provided with recesses to receive the end of the binder placed on the belt, which have their forward ends inclined inward, so as to fold the ends of the binder as it is wrapped around the tobacco in the bight of the belt, substantially as and for the purpose described.

6. In combination with the stationary belt of a cigar-bunch machine, the adjusting device therefor, consisting of a roller to which is attached one end of the belt, a shaft extending through the roller, and suitable standards on the frame, and thumb-nuts on the outer ends of shaft adapted to be screwed up against the standards to bind the roller between the latter and prevent its rotation, substantially as shown and described.

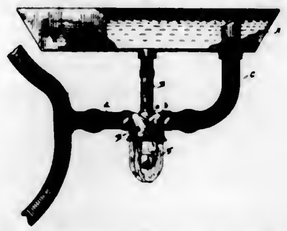
7. In a cigar-bunch-making machine, the slide provided with a series of teeth or projections on its upper side, in combination with the movable hopper-frame provided with a downwardly-projecting pawl or arm engaging the teeth or projections on the slide, whereby as the slide is moved the hopper will be raised and let fall, substantially as and for the purpose set forth.

8. In a cigar-bunch-making machine, the hopper-frame carried on a pivoted bar, in combination with the slide formed with a series of ratchet-shaped depressions in its upper face, and the pawl pivoted to the bar and adapted to engage these depressions and the ratchet portions of the slide between them as the slide is moved back, so as to raise and let fall the bar and frame, substantially as and for the purpose described.

9. In a cigar-bunch-making machine, in combination with the bar pivoted at its rear end and carrying the hopper-frame on its front end, the pawl pivoted to the lower side of the bar, so that it cannot swing back beyond a vertical line, but can swing forward and upward, and the belt-operating slide provided with a series of ratchet-shaped teeth having their abrupt faces toward the forward end of the slide, substantially as and for the purpose described.

10. In combination with the hopper, the feed-roller provided with the charge-receiving recess, the crank-arms attached to the roller, and the stop-pins on the frame to stop the arms when the recess in the roller is just below the hopper-bottom, substantially as shown and described.

339,851. SEWER-TRAP. BUCKLAND P. BOWER, Cleveland, Ohio. Filed Dec. 18, 1885. (No model.)



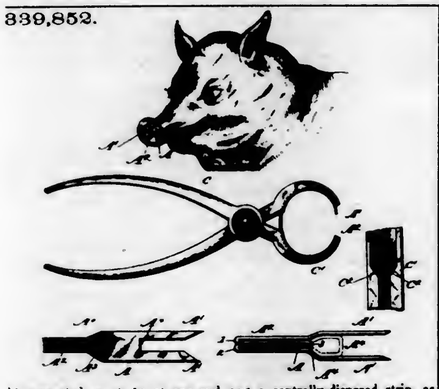
Claim.—The combination, with a trap consisting of a separable body and top, the latter being constructed of metal and provided with a discharge-outlet and the two inlets, substantially as described, connected together within the body of the trap and having a common discharge-mouth, of a floating valve located within the body of the trap below the common discharge-mouth of the inlet-pipes and adapted to close said mouth, substantially as set forth.

339,852. HOG-RING. WILLIAM L. CALDWELL, Upper Sandusky, Ohio. Filed June 12, 1885. (No model.)

Claim.—1. A hog-ring comprising a body portion terminating at one end with insertible prongs separated by a bar, and at the other end in a strip of a width substantially equal to the space between the prongs, substantially as specified.

2. A hog-ring formed of sheet metal and having insertible prongs

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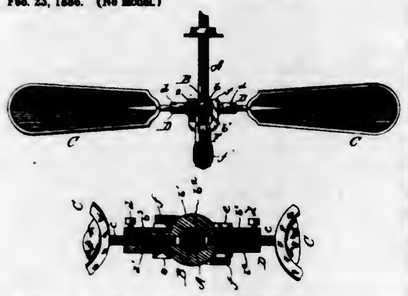


A', separated, as at A^4, at one end, and a centrally-disposed strip, as A^3, at the other end, substantially as specified.

3. The hog-ring A, comprising the insertible prongs A', separated, as at A^4, and a strip, A^3, merged into the body portion on inclined lines, as at A^3, substantially as shown and described.

4. A hog-ring comprising insertible prongs and an oppositely-disposed strip arranged to enter between the prongs and prevent their withdrawal, substantially as specified.

339,853. ROTARY FAN. JOSEPH CARR, Philadelphia, Pa. Filed Feb. 23, 1886. (No model.)



Claim.—1. A rotary fan having driving-shaft and axially-rotating fan-blade shafts, combined with a loose hand-piece surrounding or inclosing the driving-shaft and sliding up and down thereon, and in gear with and supported by the blade-shafts, as and for the purpose set forth.

2. A rotary fan and its driving-shaft, combined with a loose hand-piece surrounding the driving-shaft and suspended from the blade-shafts of the fan by a gear-connection, as and for the purpose set forth.

3. A rotary fan having a driving-shaft, aligning fan-blade shafts having gear-teeth, a hand-piece sliding up and down upon and surrounding the driving-shaft, and having racks engaging with said gear-teeth, and a swiveled collar for the hand-piece, substantially as and for the purpose set forth.

4. In a rotary fan, the combination of a driving-shaft, a wing or blade holder having lateral tubular wrist-pins, blades or wings having shafts adapted to the bore of the wrist-pins, and tubular sleeves with gear-teeth fitting upon the outside of said pins, stop mechanism for limiting the axial rotation of the blade-shafts, a loose sleeve surrounding the driving-shaft, and racks connected to the sleeve and in gear with the teeth upon the blade-shaft sleeves, as and for the purpose set forth.

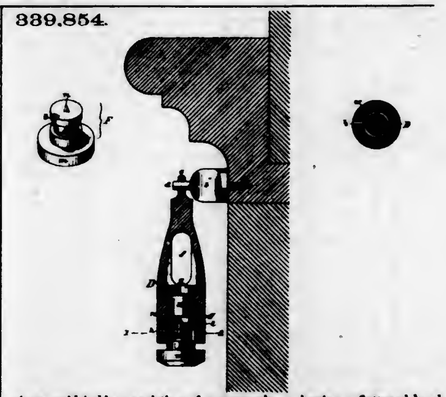
5. The combination of driving-shaft A, holder B, having wrist-pins b^3, blade or wing shafts C, having socket-sleeves D, with loose play between them and said wrist-pins, and having teeth *e*, the hand-piece F, surrounding shaft A and having upwardly-projecting and diagonally-arranged racks *f*, for engagement with gear *e*, as set forth.

6. In a rotary fan, the combination of driving-shaft A, holder B, having tubular wrist-pins b^3, blade or wing shafts C, having socket-sleeves D, adapted to wrist-pins b^3, and having gear-teeth *e*, slot d^2, and stop d^3, and the hand-piece F, having diagonally-arranged racks *f*, for engagement with gears *e*, as set forth.

339,854. BURGLAR-ALARM. SPENCER E. CARR, Philadelphia, Pa. Filed Feb. 3, 1886. (No model.)

Claim.—1. The within-described holder for a detonating burglar-

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alarm, said holder consisting of a screw-pin, *a*, having a flattened head, *b*, with projecting pin *d*, all substantially as specified.

2. The combination of the block D, having an opening for the reception of a cartridge, an exploding device, an annular flange formed on one of said parts and having a notch at one side and a retaining-pin on the other part for engagement with said notched annular flange, all substantially as specified.

3. The combination of the block D, having an opening for the reception of a cartridge, the internally-projecting pin h, and a firing-pin adapted to the opening in the block and having a recess, *i*, for the reception of the retaining-pin, said recess being of greater width than the diameter of the pin, all substantially as specified.

4. The combination of the block D, having an opening for the reception of a cartridge, the internally-projecting retaining-pin, and a firing-pin having a notched flange, *s*, and recess *i*, for the reception of the retaining-pin, all substantially as specified.

339,855. FENCE. JAS. O. CARTER, Peoria, Ohio. Filed Dec. 5, 1885. (No model.)



Claim.—The fence-panels having at one end parallel stiles flush with the ends of the bars and parallel stiles near the opposite end, the bars projecting beyond the latter, as described, in combination with the loops placed around the bars adjacent to the stiles at the extreme ends thereof, and over the long projecting ends of the bars of the other panel, which latter bear against the said stiles and strain the loops when the panels are placed in position to form the fence, substantially as described.

339,856. ERASER. OCTAVUS CATE, Boston, Mass. Filed Feb. 22, 1886. (No model.)

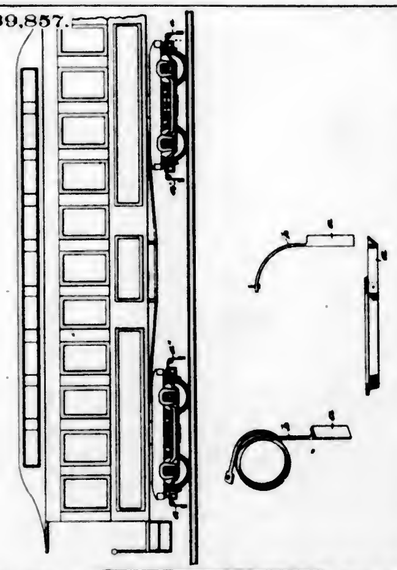


Claim.—An ink-eraser consisting of a head having on its opposite sides faces running at an angle and meeting at one end, and each face provided with parallel projecting knife edges or blades integral with the head, and their meeting ends rounded or smoothed off, substantially as described, for the purpose specified.

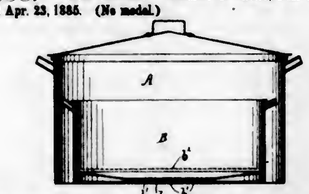
339,857. WHEEL-FENDER FOR RAILWAY-CARS. ALFRED L. CLARKE, Springfield, Ohio. Filed Oct. 6, 1885. (No model.)

Claim.—The combination, with a car, of a laterally-yielding spring-fender suspended beneath the car in advance of the car-wheel, said fender comprising a lower sheet-metal portion suspended in front of and obliquely to the width of the wheels, and an upper spring-metal portion bent near its upper end to form a helix or coil, which upper portion is secured to the car, substantially as set forth.

339,857.

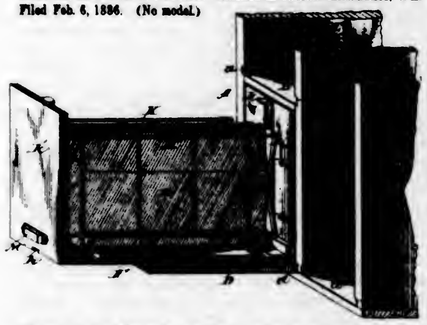


339,858. WASH-BOILER. WILLIAM B. CLONT, Fall River, Mass. Filed Apr. 23, 1885. (No model.)



Claim.—The draining attachment for wash-boilers, consisting in the drainer B, having the walls straight and cut away at b^2, and with their lower edges in a horizontal plane, the flat gauze partition b^2, the convex bottom b, perforated at b', the walls of said drainer extending below said bottom on all sides and forming the resting-surface, substantially as described.

339,859. DEVICE FOR HOLDING AND FILING LETTERS, BLANKS, AND OTHER PAPERS. ARTHUR L. COLTON, Milwaukee, Wis. Filed Feb. 6, 1886. (No model.)



Claim.—1. The frame for holding blanks, letters, &c., consisting of a horizontal bottom piece and vertical end pieces, in combination with clamping-frames and a vertical plate having ratchet-arms adapted to engage lugs on said clamp-frames, as set forth.

2. The frame for holding blanks, letters, &c., consisting of a horizontal bottom and vertical end pieces, clamping-frames crossing each other and pivoted to said vertical parts, and a vertical spring-plate having ratchet-arms adapted to engage lugs on the clamping-frames, in combination with links operatively connecting said clamping-frames, and a pin carrying a friction-block operative in vertical guides, as set forth.

3. The frame for holding blanks, letters, &c., consisting of a horizontal bottom and vertical end pieces, in combination with pivotally-adjustable clamp-frames and a series of division-frames operatively connected to said bottom piece, as set forth.

4. The frame consisting of a horizontal bottom piece and vertical end pieces, one of the latter provided with vertical guides, in combination with clamp-frames pivotally connected to said end pieces and provided with upwardly-extended arms, a friction-block operative in the vertical guides, links having their respective ends pivotally connected to the friction-block and to the arms of the clamp-frames, and a vertical spring-plate having ratchet-arms adapted to engage lugs on said clamp-frames, as set forth.

5. The combination, with the frame F, having the groove *h* and end pieces, *k k'*, and the paper-clamping devices, substantially as described, upon said frame, of the sliding base D, having the rib *f* and stop C, the fixed base *a*, having the groove *b*, and the sliding catch *i*, all constructed and arranged substantially as and for the purposes set forth.

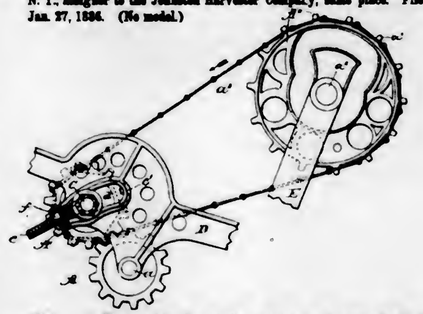
339,860. WATCH-CASE SPRING. HENRY F. COOK, Sag Harbor, N. Y., assignor to the Fahys Watch Case Company, same place. Filed Dec. 29, 1885. (No model.)



Claim.—1. A watch-case spring composed of a curved flat strip of metal bent laterally at one end to form a foot-piece, and provided at one edge, intermediate its ends, with a lateral flange extending outwardly from the convex surface of the strip to bear directly against the inside of the case-center, substantially as and for the purposes described.

2. The combination, with the case-center of a watch, of a spring consisting of a curved flat strip of metal bent laterally at one end to form the foot-piece 2, and having at one edge, intermediate its ends, a lateral flange, 4, extending outwardly to and bearing directly against the inside of the case-center, and a screw or pin passing through the cap-flat of the case-center into said flange, substantially as and for the purposes described.

339,861. CHAIN-BELT TIGHTENER. ORVILLE COOLEY, Batavia, N. Y., assignor to the Johnston Harvester Company, same place. Filed Jan. 27, 1886. (No model.)

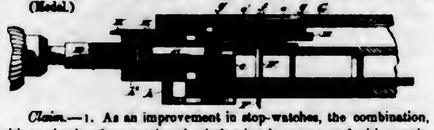


Claim.—1. The combination of the sprocket-tooth cam-wheel, the sprocket-chain, the small sprocket-wheel secured to the pinion, the flanged stud carrying the securing-nut, and the circularly-slotted supporting-iron, substantially as described.

2. The combination of the sprocket-wheels, the sprocket-chain, the flanged stud carrying the stud-securing nut, the circularly-slotted supporting-iron, and the eyebolt carrying the tightening-nut, substantially as described.

3. The combination of the circularly-slotted iron having the recess *d'*, the stud C, carrying the securing-nut and having the flange *c*, the eyebolt having the nut thereupon, and the ear *f*, substantially as described.

339,862. STOP-WATCH. CHARLES P. COBLISS, Elgin, assignor to the Elgin National Watch Company, Chicago, Ill. Filed Aug. 28, 1884. (Model.)



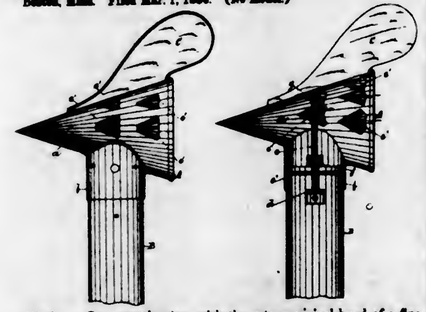
Claim.—1. As an improvement in stop-watches, the combination, with mechanism for returning the timing-hands to zero, and with a push-pin that is journaled within the case-stem, of a sleeve which surrounds the winding-arbor and is engaged by said push-pin, and a pawl that is pivoted only upon said sleeve and is adapted to engage with a ratchet-wheel, whereby the longitudinal movements of said push-pin will be communicated to and cause a step-by-step rotation of said ratchet-wheel, substantially as and for the purpose specified.

2. As an improvement in stop-watches, the combination of a push-pin which is journaled within the case-stem, a sleeve that encircles the winding-arbor and is engaged by said push-pin, a pawl which is pivoted only upon said sleeve, a ratchet-wheel that is engaged by said pawl and by rotation is adapted to actuate mechanism for starting, stopping, and returning the timing-hands to zero, and a spring which operates to hold said sleeve with a yielding pressure at the outer limit of its motion, whereby the longitudinal motion of said push-pin will cause a step-by-step rotation of said ratchet-wheel, substantially as and for the purpose shown.

3. As an improvement in stop-watches, a supplemental minute-hand arbor journaled at or within the axis of the main wheel of the winding attachment, substantially as and for the purpose shown and described.

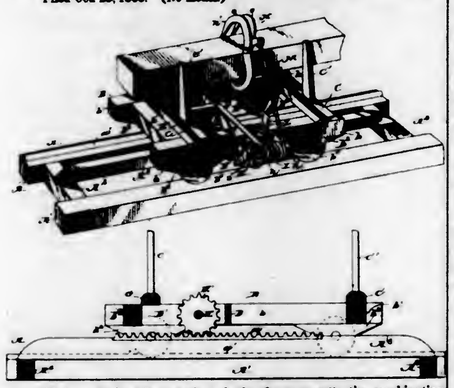
4. As an improvement in stop-watches, a supplemental minute-hand arbor which is journaled within the axis of the main wheel of the winding attachment in a line with the axis of the winding-arbor, substantially as and for the purpose specified.

339,863. VENTILATING CHIMNEY-COWL. MICHAEL W. COSTELLO, Boston, Mass. Filed Mar. 1, 1886. (No model.)



Claim.—The combination, with the rotary conical hood of a fine-ventilator or chimney-cowl, as described, of a series of air-inducts arranged in the upper half of such hood only, and opening out of it laterally, and open at their front and rear ends, all being substantially as represented.

339,864. LOG-TURNER. WILLIAM W. COYLE, East Springfield, Ohio. Filed Oct. 23, 1885. (No model.)



Claim.—1. In a log-turning device for saw-mills, the combination of a track, a log-carriage mounted thereon, a driving-shaft journaled in said carriage, a drum geared to the shaft, and flexible connections between the log and drum, substantially as described.

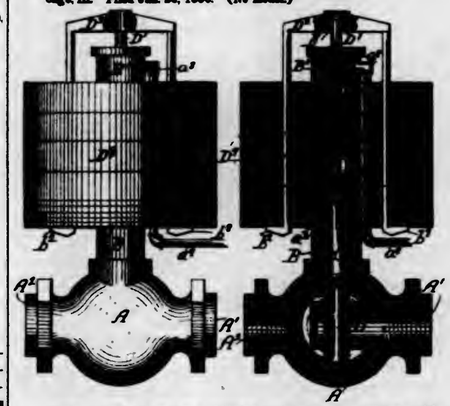
2. The combination of a track, a carriage mounted thereon, a rack, a driving-shaft journaled in the carriage and having a pinion meshing with and rotated by the rack, a drum geared to the driving-shaft, and a flexible connection between the log and drum, and adapted to be wound upon the drum to turn the log simultaneously with the return of the carriage, substantially as described.

3. The combination of the track, a log-carriage, a driving-shaft having a gear, a rack, a drum-shaft geared to the driving-shaft, a lever for throwing the said driving and drum shafts in and out of gear, and a chain connected to the log and adapted to be wound upon the drum to turn the log simultaneously with the return movement of the carriage, substantially as described.

4. The combination of a track, a carriage, a driving-shaft journaled therein, a drum geared to the driving-shaft, a rope or chain between the log and drum, and means, substantially as described, whereby the driving-shaft and drum are rotated to wind the rope or chain upon the drum to turn the log simultaneously with the return movement of the carriage from the saw, substantially as described.

5. The combination of the track having a rack, an inclined log-carriage mounted thereon and carrying log-supporting bars and stops, a shaft, E, journaled in the carriage and carrying gear-wheels E' F, the former of which meshes with the rack and rotates the shaft, a shaft, H, having a drum, I, and geared to the shaft E, a lever, L, for throwing the shafts E H out of engagement when the carriage is fed to the saw, a chain or rope, M, connected to the drum I, and a hook, N, secured to the free end of said chain or rope and engaging the log, whereby, when the carriage is returned from the saw, the cord or rope is wound upon the drum and turns the log on the carriage, substantially as described.

339,865. PRESSURE-REDUCING VALVE. GEORGE M. DAVIS, Chicago, Ill. Filed Jan. 26, 1886. (No model.)



Claim.—1. In a pressure-reducing valve, the combination, with a tubular piston provided exteriorly with a number of annular grooves or water-pockets and interiorly with a diaphragm, of the means described, whereby the product of condensation is allowed to gradually escape from said piston so as to constantly maintain a tight joint, substantially as and for the purpose set forth.

2. In a pressure-reducing valve, the combination, with a tubular piston having water-packing pockets and a diaphragm, as described, of a double-seated balance-valve, and a connecting-link pivoted to said piston and valve, whereby said parts are adapted to have a free lateral adjustment independent of each other, substantially as and for the purpose set forth.

3. The combination, with a valve-chamber, of a regulating cut-off valve inserted in the inlet-passage leading to said chamber, a steam-cylinder communicating with said chamber, a tubular piston provided with water-packing pockets and an interiorly-arranged diaphragm, a link connecting said cut-off valve and piston, a stem having a loose connection with said piston, and the weighted yoke, mounted on the projecting end of said stem, whereby the cut-off valve is adapted to have an automatic adjustment to reduce the pressure and maintain the same at any desired limit in the outlet-passage, no matter what the pressure may be in the supply-inlet.

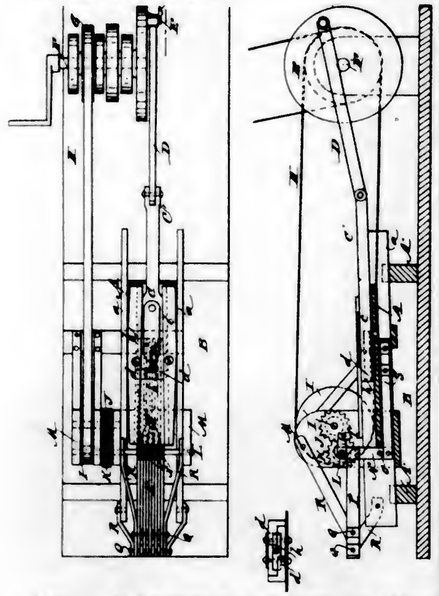
4. In a reducing-valve, the combination, with a steam-cylinder having the upper end closed with a hollow cap, of a tubular piston provided with water pockets and a diaphragm, a drop-tube inserted in said cap and extending down on the inside of said piston, and a drip-pipe leading from said cap, whereby the products of condensation are allowed to gradually escape, substantially as and for the purpose set forth.

5. In a pressure-reducing valve, the combination, with a tubular piston provided with water-pockets and a diaphragm, of a double seated cut-off valve, a link forming a pivotal connection between said piston and valve, and a loosely inserted and weighted stem adapted to move said piston and valve in a direction opposite to that of the steam pressure, substantially as and for the purpose set forth.

6. In a pressure-reducing valve, the combination, with a steam-cylinder, of the cap B, the tubular piston C, the tube b^4, and means for

carrying off the product of condensation from said cylinder, substantially as and for the purpose set forth.

339,866. RIVING-MACHINE. ISRAEL A. DAVIS, Englewood, Cal. Filed Aug. 6, 1885. (No model.)



Claim.—1. The combination, in a riving-machine, with a plunger or head-block, of frows in advance of the same, and springs connecting the frows at their opposite sides to the machine, whereby a clear passage is afforded the material being operated upon between the frows, substantially as set forth.

2. The combination, with the frows of a riving-machine, of movable arms extending between the frows and constructed to remove the split material, substantially as set forth.

3. The combination of the platform, the plunger or head-block, and the expansible block on the end of the same, of the frows in advance of said block, substantially as set forth.

4. A riving-machine having a platform provided with side pieces forming guides and upright frows at one end of said platform, in combination with an expansible sliding block on the platform between the side pieces and in front of the frows, substantially as set forth.

5. In a riving-machine, the combination, with a series of frows, of revolving arms between their upper ends, a sliding block for forcing the wood through the spaces between the frows, which block and the revolving arms are operated from the same shaft, substantially as herein shown and described.

6. In a riving-machine, the combination, with a series of frows, of a rotary shaft passed loosely through their upper ends, and of arms mounted on the shaft between the frows and constructed to remove the split material, substantially as herein shown and described.

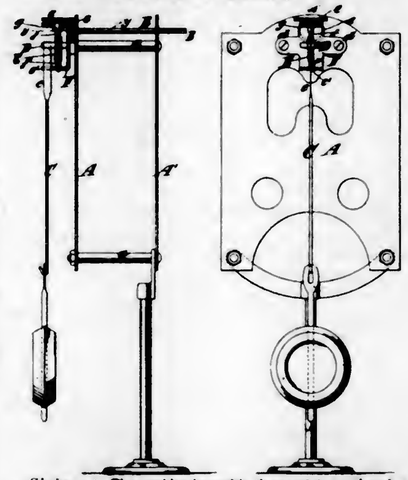
7. In a riving-machine, the combination, with the frows N, of the prings P and S, connecting the frows at their upper and lower ends to the machine, the rotary shaft L, journaled at the upper ends of the frows, and the arms T on the same and extending between the frows, substantially as herein shown and described.

8. In a riving-machine, the combination, with the frows N, of the platform A, in line with the frows, the sliding block C on the platform, the pivoted jaws *d* on the same, and the spring *k*, for pressing the jaws from each other, substantially as herein shown and described.

9. In a riving-machine, the combination, with the frows N, of the platform A, in line with the frows, the bars *b*, pivoted on the same, the sliding block C, the jaws *d*, pivoted on the same on opposite sides of the sliding blocks, and the spring *k*, for pressing the jaws apart, substantially as herein shown and described.

10. In a riving-machine, the combination, with the frows N, of the rotary shaft L, the arms T on the same between the frows, the cog-wheels K J, mounted on shafts L I', respectively, the pulleys I G, mounted on shafts I' F, respectively, the belt H, connecting the pulleys I G, the shaft F, the disk E on the shaft F, the rod D, connected to the disk E and to the sliding block C, the platform A, on which the block C slides, and the jaws *d*, pivoted on the end of the sliding block C, substantially as herein shown and described.

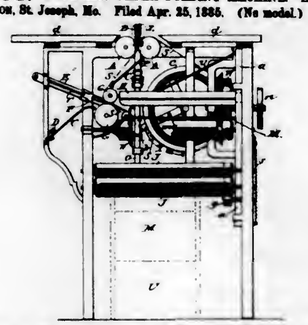
339,867. PENDULUM-REGULATOR FOR CLOCKS. WALKER D. DAVIS, Brooklyn, N. Y., assignor to the Ansonia Clock Company of Ansonia, Conn. Filed Dec. 15, 1885. (No model.)



Claim.—1. The combination, with the pendulum-rod and a nut from which it is hung, of a screw fitting the nut and bearings for the screw, the thread of the screw being of such length and the bearings so arranged that the nut may be lowered or raised clear of the thread, and a regulator-spindle geared with the screw for turning it, substantially as herein described.

2. The combination, with a pendulum-rod and a nut from which it is hung, of the bracket F, whereby the nut is guided and prevented from turning, the screw E, fitting the nut and journaled in the bracket, and having its thread so proportioned that the nut may run out of engagement therewith, a spring applied to the screw and permitting it to yield slightly upward, and a regulator-spindle geared with the screw for turning it, substantially as herein described.

339,868. BOOK AND PAPER FOLDING MACHINE. ADONIRAM J. DAVISON, St. Joseph, Mo. Filed Apr. 25, 1885. (No model.)

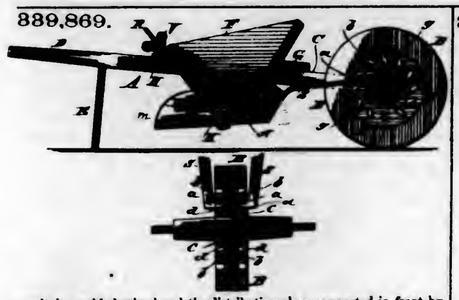


Claim.—1. The combination of folding knives or blades B F H K, bars O and *d*, carrying wheels *k* and X, respectively, straps P, N, and *y*, lugs or wipers Y, wheels *c* and W, belts S and T, and rollers A A, G G, *m m*, and J J, combined with the folding-blades B, F, H, and K, respectively, and the guide-rods C and I, provided, respectively, with the adjustable and removable stops D and *b*, whereby the paper may be discharged from the machine immediately from either the first, third, or fourth set of rollers after receiving one, two, three, or four folds, all substantially as described.

339,869. GUANO-DISTRIBUTER. SAMUEL A. REKEW, Greenville, S. C. Filed Apr. 27, 1885. Renewed Feb. 4, 1886. (No model.)

Claim.—1. The combination, with the hopper and its frame, of the

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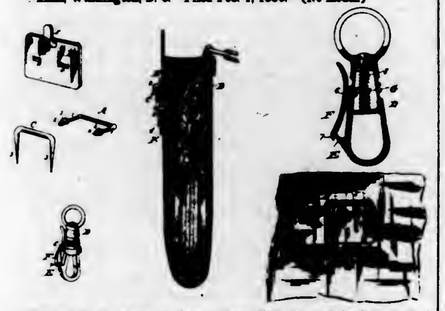


annularly-studded wheel and the distributing-shoe, supported in front by spring-arms engaging said wheel and in rear by an adjustable rod or regulator, substantially as specified.

2. The wheel having the annular series of oblique studs separated from the hub projection by a circular passage, in combination with the spring-arms of the distributing-shoe, having inwardly-turned ends, substantially as specified.

3. The combination, in a guano-distributer, of the shaking discharge-shoe arranged beneath the hopper, the spring-arms supporting the same in front and bearing on lateral projections of the wheel, the threaded rod passing through and supporting the shoe in rear, and the thumb-nut on the upper threaded end of the rod, having a bearing on the main frame, substantially as specified.

339,870. SAFETY ATTACHMENT FOR WATCHES, &c. OTTO G. VAHER, Washington, D. C. Filed Feb. 1, 1886. (No model.)



Claim.—1. A safety attachment consisting of a watch-chain swivel having its body or main portion adapted to secure a watch-ring, and having such body formed with a supplemental hook, and provided with a latch adapted to close said supplemental hook, substantially as set forth.

2. A safety attachment comprising, in combination, the chain-swivel having a ring for connection with the chain, a body or main portion by which to secure the watch-ring, and having its body formed with a supplemental hook, and a spring-actuated latch connected with said body and arranged to close the supplemental hook, substantially as set forth.

3. In a safety attachment, a chain-swivel having a supplemental hook and provided with a latch pivoted between its ends, forming a rear or handle extension and a point extension, the latter being rested upon and extended in advance of said hook, and a spring engaging said latch.

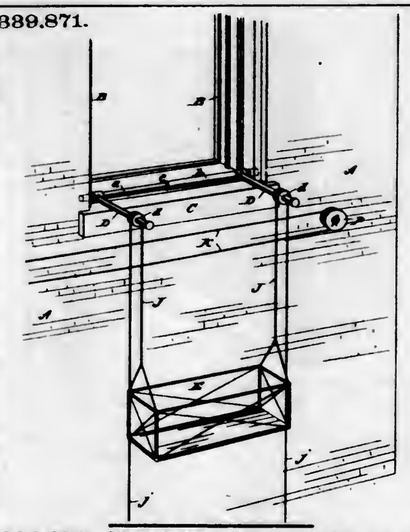
4. In a safety attachment, and as an improved article of manufacture, a chain-swivel having a pivoted tongue and a supplemental hook, and provided with a pivoted latch arranged to close said hook, and a spring engaging at opposite ends with the said latch and tongue, substantially as set forth.

5. In a safety attachment, the combination of the chain-swivel having a supplemental hook and a latch for closing the same, the hook plate having perforations, the supporting-bail having the ends of its arms perforated and provided with stop-shoulders, the fastening-staple having its arms passed through the perforations in the supporting-bail, and a latch arranged to engage and lock said staple, substantially as set forth.

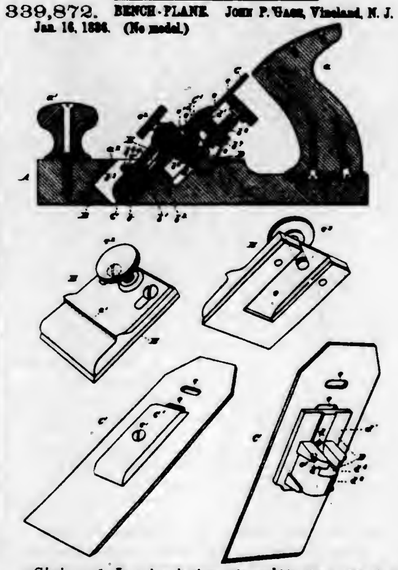
339,871. FIRE-ESCAPE. PATRICK FOGARTY, Milwaukee, Wis. Filed Aug. 28, 1885. (No model.)

Claim.—A fire-escape consisting of the telescopically-jointed bars *a b*, held by recesses formed in the window-casing, and adapted to be adjusted to windows of different widths, arms D D, attached to said bars, and sheaves *d d*, supported by said arms, hoisting-ropes carried by said sheaves, and an elevator-car, all substantially as and for the purpose set forth.

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339,872. BENCH-PLANE. JOHN P. GAGE, Vineland, N. J. Filed Jan. 16, 1886. (No model.)



Claim.—1. In a bench-plane, the combination, with the plane-stock, the tool-holder, slotted as described, and the adjusting-screw *b*, moving in a threaded opening in said tool-holder, of the tool C, the clamping-plate C' on the outer side of the tool, and the clamp D on the under side thereof, the said clamp being provided with the block d^0, passing through the slot b^1 of the tool-holder and having the recess d^0, which engages the disk b^2 of the screw *b*, and the screw holding the clamp to the tool, substantially as specified.

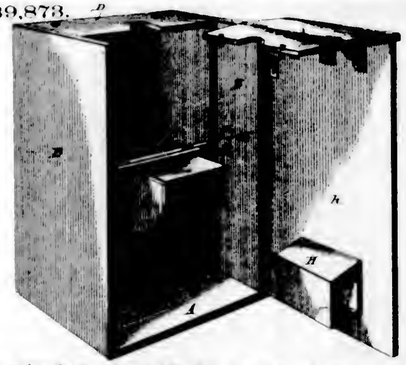
2. In a bench-plane, the combination, with the plane-stock and tool-holder, constructed as described, of the clamps C' and D, the tool C, arranged between the said clamps and having the transverse slots *c*, and the screw *d'*, for securing the clamps to the tool, substantially as specified.

339,878. CABINET STEAM OR VAPOR BATH. ROSHAN GALLAND, New York, N. Y. Filed May 6, 1885. (Model.)

Claim.—1. In a cabinet bathing apparatus, the combination of a base, A, stationary sides B, having grooves formed on the interior thereof, a movable section, D, having pins adapted to slide in the aforesaid grooves.

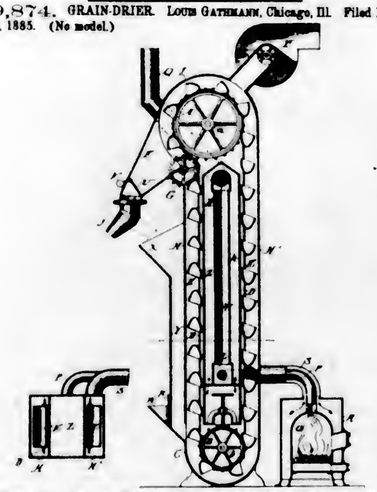
2. Section *a*, hinged to section A, and having shoulders adapted to

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bear against the front edges of the sliding sections, and provided with receptacle C and the usual hinged door, substantially as and for the purpose specified.

339,874. GRAIN-DRIER. LOUIS GATHMANN, Chicago, Ill. Filed Dec. 8, 1885. (No model.)



Claim.—1. A grain-drying apparatus consisting of an elevator and of a heating-radiator placed or formed between the legs of such elevator, substantially as set forth.

2. A grain-drying apparatus consisting of an elevator having perforated buckets and of a heating-radiator placed or formed between the legs of such elevator, substantially as set forth.

3. A grain-drying apparatus consisting of an elevator, of a heating-radiator placed or formed between the legs of such elevator, and of an exhaust-fan connected with such elevator, all substantially as set forth.

4. A grain-drying apparatus consisting of an elevator having perforated buckets, of a heating-radiator placed or formed between the legs of such elevator, and of an exhaust-fan connected with such elevator, all substantially as set forth.

339,875. WATCH-KEY. MORTON W. GEARY, Lock Haven, assignor of one-half to John D. Brown, Snow Shoe, Pa. Filed Nov. 6, 1885. (No model.)



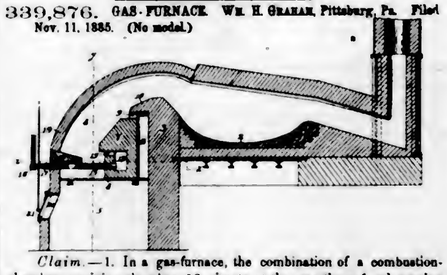
Claim.—1. In a watch-key, the combination, with an outer casing, of an inner casing carrying a collar, said collar and outer casing having engaging ratchet teeth and clamping-jaws for engaging the key-post, as set forth.

2. In a watch-key, the combination, with an outer casing, of an inner casing carrying a collar, said collar and outer casing having engaging ratchet-teeth, a spring inclosing the upper end of the inner casing and bearing at its upper end against nibs projecting from said casing, and at its lower end against an interior shoulder on the outer casing, as set forth.

3. The combination, with an outer casing, of an inner casing carrying a collar, said collar and outer casing having engaging ratchet-teeth, clamping-jaws in the inner casing, a pin fitting between the same, a spring-actuated push-bar having spring-arms to engage the notched upper ends of the clamping-arms, and a spring for holding the outer casing in engagement with the collar on the lower end of the inner casing, as set forth.

4. In a watch-key, the combination, with an outer casing, of the movable inner casing carrying the clamping-jaws, and the ratchet-connection of the inner casing with the outer casing, as set forth.

339,876. GAS-FURNACE. WM. H. GRAHAM, Pittsburg, Pa. Filed Nov. 11, 1885. (No model.)



Claim.—1. In a gas-furnace, the combination of a combustion-chamber, a mixing-chamber, 12, situate at the rear thereof and opening into the combustion-chamber toward the front wall, and a gas and air flue discharging into the mixing-chamber, substantially as and for the purposes described.

2. In a gas-furnace, the combination of a combustion-chamber, a mixing-chamber, 12, situate at the rear thereof and opening into the combustion-chamber toward the front wall thereof, an air pipe or flue, 15, discharging into the mixing-chamber, and a gas-pipe projecting into the air-pipe for the purpose of discharging a supply of gas mingled with an induced current of air into the mixing-chamber, substantially as and for the purposes described.

3. In a gas-furnace, the combination of a combustion-chamber, a mixing-chamber, 12, situate at the rear thereof and opening into the combustion-chamber toward the front wall, a gas and air flue discharging into the mixing-chamber, and a second air-flue discharging into the combustion-chamber below the exit of the mixing-chamber, substantially as and for the purposes described.

4. In a gas-furnace, the combination of a combustion-chamber, a mixing-chamber, 12, situate near the base and at the rear side of the combustion-chamber and communicating therewith, gas and air flues discharging into the mixing-chamber, and a rising air-flue, 8, situate in the wall of the furnace back of the mixing-chamber and discharging into the combustion-chamber above the exit of the mixing-chamber, substantially as and for the purposes described.

5. In a gas-furnace, the combination of a combustion-chamber, a gas and air flue opening into the rear of the combustion-chamber and discharging toward the front wall thereof, a second air-flue discharging into the combustion-chamber below the adit of said air and gas flue, and a deflecting tile or wall, 18, projecting within the combustion-chamber from the front wall and arranged in the path of the current from said second air-flue, for the purpose of deflecting said current toward the exit of the air and gas flue, substantially as described.

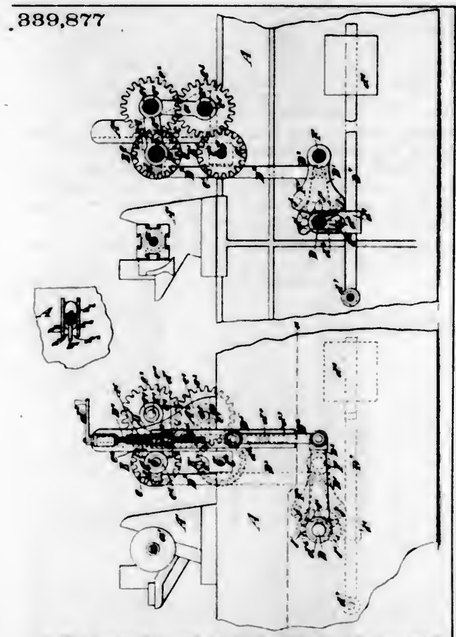
339,877. PLANING-MACHINE. WILLIAM H. GRAY, Brooklyn, assignor to the Glen Cove Machine Company, (Limited,) Green Point, N. Y. Filed Feb. 6, 1886. (No model.)

Claim.—1. The combination, with the lower feed-roll and the upper feed-roll journaled in vertically-movable boxes, of a rock-shaft provided with arms which are connected by rods with the movable boxes at opposite sides of the machine, and a screw and connections for turning said rock-shaft and raising or lowering said boxes, substantially as herein described.

2. The combination, with the lower feed-roll and the upper feed-roll journaled in vertically-movable boxes, of a rock-shaft provided with arms which are connected by rods with the movable boxes on opposite sides of the machine, a third arm projecting from the rock-shaft, and a screw and connections between it and said arm, for turning the rock-shaft and raising or lowering said boxes, substantially as herein described.

3. The combination, with the lower feed-roll and the upper feed-roll journaled in vertically-movable boxes, of a rock-shaft provided with arms projecting in one direction and connected by rods with the movable boxes at opposite sides of the machine, a third arm projecting from the rock-shaft in a direction opposite to the other two arms, and a screw and connections between it and said third arm for turning the rock-shaft and raising or lowering the boxes, substantially as herein described.

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4. The combination, with the lower feed-roll and the upper feed-roll journaled in vertically-movable boxes, of a rock-shaft provided with arms connected by rods with the movable boxes on opposite sides of the machine, a third arm projecting from said shaft, a vertically-movable slide connected with said third arm, and a screw for adjusting said slide upward and downward and so turning the shaft and raising or lowering the boxes, substantially as herein described.

5. The combination, with the upper feed-roll and the lower feed-roll journaled in vertically-movable boxes, of a rock-shaft provided with arms connected by rods with the said boxes on opposite sides of the machine, and by the turning of which shaft the roll-boxes are raised or lowered, and slotted bearings for said shaft, open at the bottom, save for ribs on which the shaft rests, and which extend lengthwise thereof, substantially as herein described.

6. The combination, with the lower feed-roll and the upper feed-roll journaled in vertically-movable boxes, of a rock-shaft provided with arms which are connected by rods with the movable boxes on opposite sides of the machine, a screw and connections, whereby the shaft is turned to raise or lower the said boxes, and weights connected with said rock-shaft for weighting the upper feed-roll, substantially as herein described.

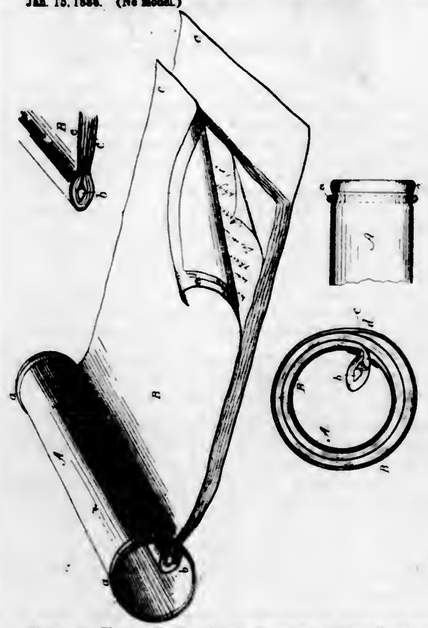
7. The combination, with the lower feed-roll journaled in stationary boxes, the upper feed-roll journaled in movable boxes, the upper and lower shafts, c^4 c^5, and gear-wheels c^6 c^6, fast on and turning with the shafts and geared with the feed-rolls and with each other, of bearings c^9, wherein the upper shaft, c^4, may turn, links c^8, fulcrumed concentric with the lower shaft and supporting said bearings c^9, and links c^{10}, connecting the bearings c^9 with the movable boxes of the upper feed-roll, substantially as herein described.

8. The combination, with the upper and lower feed-rolls, fixed boxes for the lower roll, and the upper and lower shafts, c^4 c^5, having fast upon and turning with them gear-wheels c^6 c^6, which are geared with the upper and lower feed-rolls and with each other, of movable boxes for the upper roll, provided with circular hubs c^{11}, concentric with the upper roll-journals, bearings c^9, for the upper shaft, c^4, links c^8, fulcrumed concentric with the lower shaft and supporting the bearings c^9, and links c^{10}, journaled on the bearings c^9 and on the hubs c^{11} of the upper-roll boxes, substantially as herein described.

9. The combination, with the upper and lower feed-rolls, B B', of the boxes C, for the upper roll, B, provided with the circular hubs c^{11}, the upper and lower shafts, c^4 c^5, having fast upon and turning with them wheels c^6 c^6, geared with the feed-rolls and with each other, the roll-stands A^3, provided with bearings and inwardly-projecting circular hubs c^7 for the lower shaft, c^5, the links c^8, pivoted on the hubs c^7, and having formed integral with them at their upper ends the bearings c^9, for the upper shaft, c^4, and the links c^{10}, pivoted on the bearings c^9 and on the hubs c^{11} of the boxes C, substantially as herein described.

10. The combination, with the upper and lower feed-rolls and vertically-movable boxes for the upper roll, of two rock-shafts geared together by sectors, so that a turning movement of one will be transmitted to the other, and one of which is supported in slotted bearings which permit of its rising and falling, rods connecting the vertically-movable boxes with arms on one of said shafts, a third arm projecting from the vertically-movable rock-shaft, and a screw and connections between it and said third arm, whereby the rock-shafts may be operated to raise and lower simultaneously the movable boxes on opposite sides of the machine, substantially as herein described.

339,878. COPYING-PRESS. EDWD. M. HADDIS, Dayton, Ohio. Filed Jan. 15, 1886. (No model.)



Claim.—1. The combination, in a copying-press, of the split spring-cylinder A and the copying-book B, the said cylinder being arranged to press outwardly against the book rolled upon it, substantially as herein shown and described.

2. In a copying-press, the combination of the split spring-cylinder A, the copying-book B, and the elastic bands *a*, substantially as herein shown and described.

3. In a copying-press, the combination of the split spring-cylinder A, the book B, and the elastic bands *d*, as herein shown and described.

4. In a copying-press, the combination of the split spring-cylinder A, the book B, having in the back thereof a rod, *b*, and means, substantially as described, for pressing the book upon the cylinder A, as herein specified.

5. In a copying-press, the combination of the split spring-cylinder A, having grooves near the ends thereof, the elastic bands *a*, and the book B, substantially as herein shown and described.

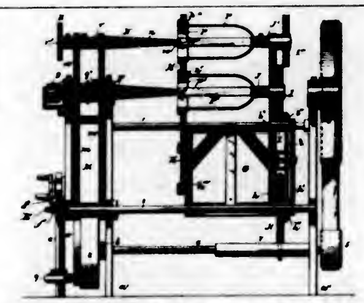
6. In a copying-press, the combination of the split spring-cylinder A, having grooves around the ends thereof, the elastic bands *a*, the book B, having the rod *b* in the back thereof, and the elastic bands *d*, substantially as herein shown and described.

339,879. LATHE FOR THE MANUFACTURE OF ARTIFICIAL LIMBS. JAMES E. HANGER, Richmond, Va. Filed Oct. 1, 1885. (No model.)

Claim.—1. The method herein described of making artificial limbs, the same consisting in forming from plastic material a pattern or former, then securing said pattern or former in position to be contacted with by a mandrel guiding and controlling the material presented to the cutter, and then manipulating the parts to cause the cutter to operate upon the material to form the limb-section, substantially as set forth.

2. The method herein described of making artificial limbs, the same consisting in securing a pattern or former in position to contact with a mandrel, guiding and controlling the material presented to the cutter, then adjusting the mandrel out of line with the cutter and manipulating the parts to cause the cutter to have a greater or less travel on said limb-section than that of the mandrel, substantially as set forth.

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3. The method herein described of making artificial limbs, the same consisting in causing a pattern or former to approach a mandrel and the limb material to approach the cutter at the same relative speed, and then longitudinally adjusting the mandrel to secure an extended or decreased operation of the mandrel and former compared with that of the material and cutter, substantially as set forth.

4. In a machine for making artificial limbs, the rotating baskets, arranged and operating substantially as set forth.

5. The combination, in a machine for making artificial limbs, of the baskets P and P', a cutter and mandrel, and devices for holding said baskets, substantially as set forth.

6. The combination, in a machine for making artificial limbs, of pattern and blank holders, a cutter and mandrel, devices for longitudinally adjusting said mandrel, and means for rotating said holders, substantially as set forth.

7. The combination, with the pattern and blank holders, of a cutter, devices for transversely adjusting said cutter, a mandrel, and means for rotating said baskets, substantially as set forth.

8. The combination, with the pattern and blank holders, of a frame carrying the same pivotally connected, as described, a spring, L'', and means for regulating the tension of the spring, and devices for rotating said holders, and a mandrel and cutter, substantially as set forth.

9. The combination, with a pattern and blank holders, of a frame carrying the same, a threaded shaft which moves said frame, and devices for rotating said shaft, and means for reversing the rotation of the same, substantially as set forth.

10. The combination, with a pattern and blank holders, of a frame carrying the same, a shaft upon which said frame travels, devices for rotating a threaded shaft, and hand appliances for rotating the same, substantially as set forth.

11. The combination, with a pattern and blank holders, of two vertical standards pivotally secured, a mandrel carried thereby, and devices, as described, for forcing said standards against the fixed portions of the machine-frame, and a cutter, substantially as and for the purpose set forth.

12. The combination, with a pattern and blank holders, of vertical standards pivotally secured, a mandrel carried thereby, and a thumb-screw for transversely adjusting said standards, and a cutter, substantially as described.

13. The combination, with a blank-holder, of a cutter and a spring-yielding lever for varying the position of the blank relative to the cutter, as set forth.

14. The combination, with the pivoted frame K, of a removable blank-holder, spring L'', a lever secured adjacent to said holder and provided with a spring-seated guide-arm, substantially as set forth.

15. The combination, with a pivoted frame, of blank and pattern holders, gearing for rotating said holders, and means for changing the direction of the rotation of the pattern-holder, substantially as set forth.

16. The combination, with a threaded shaft, of a shaft, 2, a carriage moved by said threaded shaft, and having an arm, L', bearing against said shaft, and devices for rotating said threaded shaft, substantially as set forth.

17. The combination, with a mandrel, of means for longitudinally adjusting said mandrel, an index carried by said mandrel, and a scale for indicating the degree of adjustment of said mandrel, substantially as set forth.

18. The combination, with a mandrel having its end portion bent to present an angular arm, of a roller mounted on said angular arm, substantially as set forth.

19. The combination of a sleeve having a longitudinal slot, of a mandrel bearing in said sleeve and provided with a pin engaging said slot, substantially as set forth.

339,880. NUT-LOCK. CICERO D. HARRISON, Philadelphia, Pa. Filed Feb. 11, 1886. (No model.)

Claim.—1. The combination, with a nut having a projection on its rear side, of a washer having locking-lugs and a reduced central portion

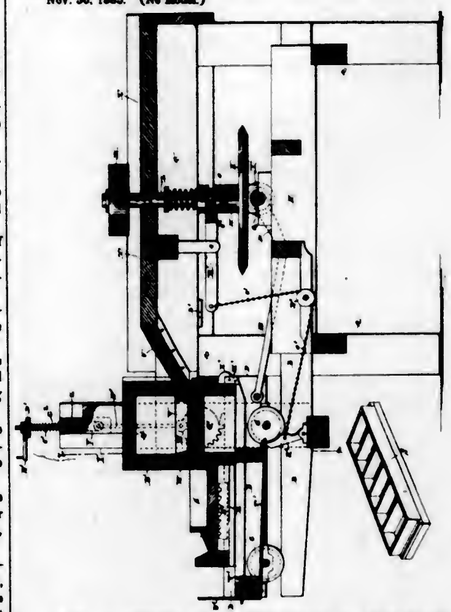
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divided into sections, leaving a space between each two sections for the reception of the projection on the nut, substantially as specified.

2. The combination, with a nut having a projection, of a washer having its central portion reduced and divided to form spring-sections, which latter have their upper face inclined from front to rear, substantially as shown, and for the purpose described.

339,881. BRICK-MACHINE. GUSTAV HAUT, Perham, Minn. Filed Nov. 30, 1885. (No model.)



Claim.—1. Combined with a movable carriage, in a brick-machine, a plunger having a cross-timber carrying spring-surrounded rods, toothed wheels on the plunger-supporting frames and connected to the said rods, and rack-teeth on the said carriage operating said wheels, substantially as specified.

2. In a brick-machine, a drive-shaft with a clutch-connection to the transmitting mechanism, a lever for operating said clutch, a reciprocating carriage, a catch on said carriage, and a lever pivoted to the frame connected to the clutch-lever and adapted to engage the catch on the carriage, substantially as specified.

3. The combination, with the reciprocating carriage D, mounted and actuated substantially as described, of a sliding frame thereon having an elevated floor and a depression in front of it to receive the mold-boxes, the stationary pressing-box located over said slide and provided with a plunger connected to a vertically-movable guided cross-head, the rods *c*, vertically movable through this cross-head and bearing sprocket-wheels tapped on them and connected by an endless chain, and seated on springs, the toothed wheels G', connected by pitmen to said rods *c*, and the racks H' on the carriage, all constructed and adapted to operate substantially as described.

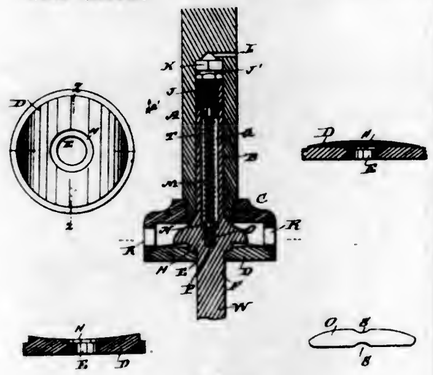
4. In a brick-making machine, the combination, with the press-box, its plunger, and a carriage bearing rack-teeth, of the spring-seated rods passed freely through the cross-head of the plunger, the toothed wheels actuated by said rack-teeth and connected to the said rods by pitmen, and the sprocket-wheels tapped on said rods and connected by an endless chain, substantially as described.

5. In a brick-making machine of the character described, the combination, with a press-box, a rolling carriage, and a sliding frame thereon, of the spring-actuated angular pawls K', pivoted to said sliding frame, the stops M' on the end of the carriage, and stops L' on the main frame, substantially as described.

6. The combination of the carriage D, actuated by cranks on the horizontal shaft G, and provided with a bent spring-actuated rod, T', the

lever N' on the main frame, located as described, the clutching device on the main driving-shaft, the actuating-lever for the clutch, and the chain connecting this lever with the lever N', all constructed and adapted to automatically stop the movement of the carriage at the proper times for removing the mold-boxes, substantially as described.

339,882. TENSION MECHANISM FOR SPINDLES OF METAL-WORKING MACHINES. JAMES HARTNESS, Torrington, Conn. Filed Oct. 9, 1885. (No model.)



Claim.—1. In a spindle, the combination, with a chuck-holder, of a cross-piece or key in the same, and a cam-plate against which the key or cross-piece is pressed, substantially as herein shown and described.

2. The combination, with a chuck-holder, of a cross-pin or key passed through the same, a spring acting on the said key, and a cam-plate on which the key is turned, substantially as shown and described.

3. The combination, with a revolving chuck-holder, of a key passed through the same, a cam-plate on which the key rests, a rod resting on the key, and a spring acting on the rod and pressing it on the key, substantially as herein shown and described.

4. The combination, with the tubular stock A and the cap C, of the spindle F, the rod M in the same, the key O, on which the rod M rests, and of the cam-plate D in the cap C, substantially as herein shown and described.

5. The combination, with the stock A and the cap B, of the spindle F, the tubular screw J, the rod M, the spring T, the key O, and the cam-plate D in the cap C, substantially as herein shown and described.

6. The combination, with the stock A, having the bore B, of the spindle F in the same, the screw J in the end of the spindle, the step K in the stock, the rod M, the spring T, the key O, the cap C, and the cam-plate D in the same, substantially as herein shown and described.

7. The combination, with a spindle, of a tension mechanism for the same, substantially as described, whereby the spindle is permitted to yield when the tool carried by the spindle is subjected to excessive strain, as set forth.

8. The combination, with a stock, and a spindle therein, of mechanism for automatically disengaging the spindle from the stock when the tool carried by the spindle is subjected to excessive strain, as set forth.

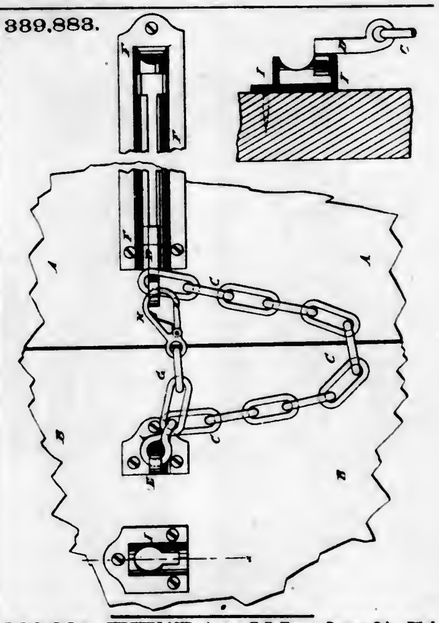
9. The combination, with a stock provided with a cam, of a spindle revolving in said stock, and provided with a key engaging the said cam, substantially as and for the purpose set forth.

339,883. CHAIN-BOLT. JAMES B. HAWES, North Tarrytown, N. Y. Filed Feb. 12, 1886. (No model.)

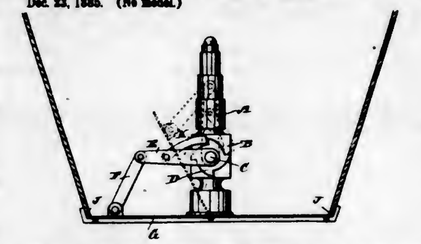
Claim.—1. The combination, with a sliding bolt and its chain applied to a door and its casing or a double door, of the supplementary chain with one end connected to the aforesaid chain or its support, and the other end detachably connected to said bolt or its chain, substantially as and for the purpose set forth.

2. The combination, with the chain C and its support E, and the sliding bolt D and its keeper F, of the chain G and hook H, substantially as herein shown and described, whereby a chain-bolt can be made to fasten a door fully closed, as set forth.

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339,884. STREET-LAMP. ALBERT F. B. HERRES, Denver, Colo. Filed Dec. 23, 1885. (No model.)



Claim.—1. The combination, with a lamp-frame, a gas-burner, and its cock, of a swinging door on the frame, a lever mounted loosely on the stem of the cock and connected to the door, and intermediate devices between the said lever and cock for turning the latter when the door is opened, whereby provision is made for turning on and off of the gas by the opening of the door, substantially as described.

2. The combination, with a lamp-frame, a swinging door on the same, a gas-burner therein, and its cock, of a ratchet-wheel on the cock, a lever pivoted to the burner and connected to the door, and a pawl pivoted to the lever and engaging the ratchet-wheel, substantially as and for the purpose set forth.

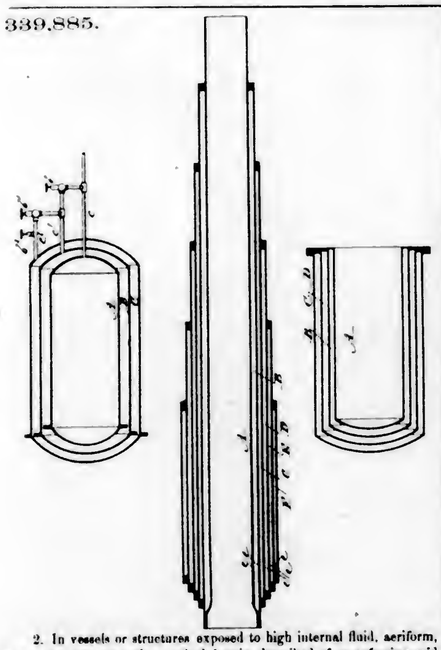
3. The combination, with a lamp-frame, a swing-door on the same, a burner therein, and its cock, of a ratchet-wheel on the stem of the cock, levers pivoted on the stem of the cock, a link connected to said levers and door, and a pawl pivoted to said levers and engaging the ratchet-wheel, substantially as herein shown and described.

4. The combination, with a lamp-frame, of a swinging door in the bottom part of the same, a ratchet-wheel on the stem of the cock of the burner in said lamp-frame, levers mounted to swing on the stem of the cock, a link connected with the said levers and with the door, and of a pawl pivoted to said levers and engaging with the ratchet-wheel on the stem of the cock, substantially as herein shown and described.

339,885. MODE OF RE-ENFORCING TUBULAR OR HOLLOW STRUCTURES. EBENEZER HILL, South Norwalk, Conn. Filed May 23, 1885. (No model.)

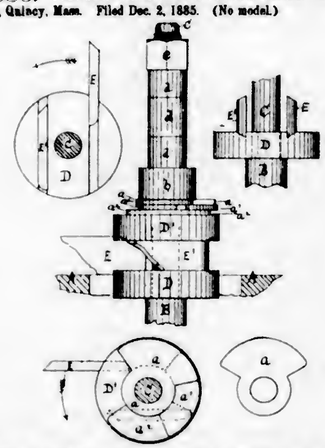
Claim.—1. In vessels or structures exposed to high internal fluid, aeriform, or gaseous pressures, the method herein described of re-enforcing said vessels or structures, which consists in inclosing them with a series of casings, each succeeding outer one of which is subjected to a pressure less than that to which the one next within it is subjected, the outer pressure being dependent upon the inner pressure, substantially as herein set forth.

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2. In vessels or structures exposed to high internal fluid, aeriform, or gaseous pressures, the method herein described of re-enforcing said vessels or structures, which consists in inclosing them in a series of casings, each succeeding outer one of which is charged with fluid, air, or gas of a less pressure than the one next within it, essentially as herein set forth.

339,886. COUNTER-BALANCE FOR CUTTER-HEADS. GEORGE W. HILL, Quincy, Mass. Filed Dec. 2, 1885. (No model.)

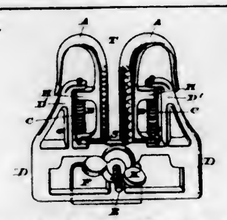


Claim.—In combination with a spindle upon which is arranged a cutting-head, one or more balancing-plates upon said spindle and bearing upon the head, the whole being clamped together by a nut, substantially as and for the purpose specified.

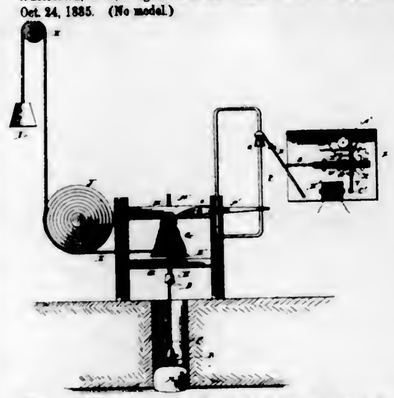
339,887. REIN-HOLDER. WILLIAM H. HILLER, Toronto, Ontario, Canada. Filed Oct. 26, 1885. (No model.) Patented in Canada Sept. 28, 1885, No. 22,543.

Claim.—In a rein-holder, the combination, with the frame D, having the projection S and upwardly-extending arms D' D', of the clamps A A, bent over at their upper portions and having upper and lower arms, H H, the lower arms being provided with lugs G G, for bearing against the projection S, the pins B B, held in frame D and arms D' D', and the coiled springs C C, encircling said pins, their ends bearing, respectively, against the arms D' D', and upper arms H H of the clamps A A, substantially as and for the purpose described.

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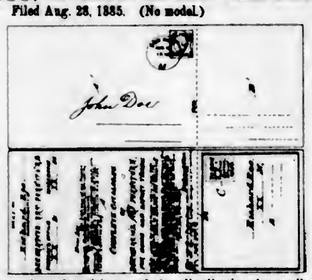
339,888. DEVICE FOR OPERATING VALVES. FRANK A. HINDS, Watertown, N. Y., assignor to Hinds, Moffett & Co., same place. Filed Oct. 24, 1885. (No model.)



Claim.—1. In an apparatus for closing gates or valves of water mains, the combination of the sliding poise for releasing the gate-opening drum, a rule-jointed prop supporting the poise and pivoted at its lower end, a horizontally-sliding bolt having a chain attached to one end and to the prop near its joint and provided with two outwardly projecting lugs or blocks, an eccentric disk journaled to fit between the lugs, a train of clock-wheels carrying the eccentric disk, a brake-wheel upon the said train of clock-wheels, a lever engaging the said brake-wheel and having an armature at its lower end, and a pair of magnets provided with suitable means upon their circuit for breaking or closing the circuit, as and for the purpose shown and set forth.

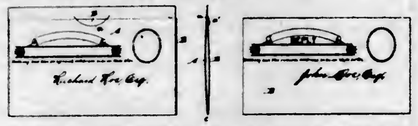
2. In combination with the gate-closing drum and the pawl-lever holding the said drum, the vertically-sliding poise for striking the free end of the pawl-lever, the rule-jointed prop for supporting the sliding poise, the horizontally-sliding bolt having a chain at one end attached to near the joint of the prop and formed with two outwardly-projecting blocks or lugs, a train of wheels in a clock-work, an eccentric disk fitted between the blocks and secured upon a shaft of the clock-work, a brake-wheel secured upon a shaft of the clock-work, a lever having a brake at one end and pivoted near its middle and having a spring for drawing it toward the ratchet-wheel and an armature at its lower end, a pair of magnets at the armature, and an open electric circuit having suitable keys for closing it, as and for the purpose shown and set forth.

339,889. ADVERTISING-CIRCULAR. WILLIAM HOMAN, New York, N. Y. Filed Aug. 28, 1885. (No model.)



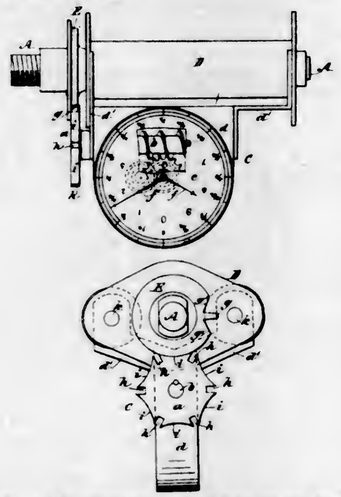
Claim.—An advertising-card for distribution by mail, printed on its face and having a space on its back for the name and address of the recipient, and provided with a detachable return-coupon having the name of the sender thereon and blank spaces to receive a return-message, as set forth, for the purpose specified.

339,890. REPLY POSTAL-CARD. WILLIAM HOMAN, New York, N. Y. Filed Nov. 9, 1885. (No model.)



Claim.—The reply postal-card described, unequally divided by a folding-line of perforations, *c c*, or analogous means, the part A being wider than B, and provided with a tongue, *a*, arranged to engage the edge of the part B when folded, as herein specified.

339,891. CYCLOMETER. GABRIEL P. B. HOYT, Jamaica, N. Y. Filed Nov. 23, 1885. (No model.)



Claim.—1. The combination, with the crank-pin and the pedal of a bicycle or similar vehicle, of a cyclometer, C, attached to the pedal, and means, substantially as described, for operating the cyclometer, as and for the purposes set forth.

2. The crank-pin A of a bicycle or similar vehicle, having an operating plate or device, E, rigidly secured thereto, in combination with registering mechanism attached to the pedal and an intermediate plate or device for causing the plate E to operate the registering mechanism, substantially as described.

3. The crank-pin A and notched or toothed plate E, secured thereto, and the pedal D, having the cyclometer C secured thereto, in combination with the notched and curved plate *a*, the worm-shaft *b*, and the gear mechanism of the cyclometer, the plate *a* being held in close contact with the toothed plate E on the crank-pin, substantially as described.

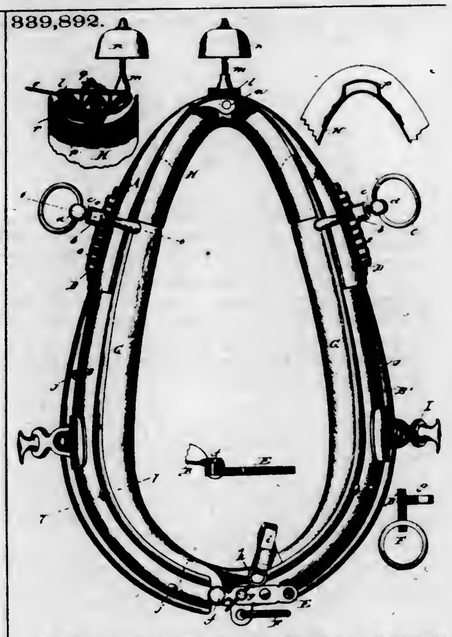
339,892. HORSE-COLLAR. CHARLES IPLAND, Chicago, Ill. Filed Dec. 28, 1885. (No model.)

Claim.—1. The hame-bars of a horse-collar, composed each of two sections overlapping each other, and one section provided with a loop, and a set-screw mounted in such loop, and the other with a plate having a series of sockets, substantially as and for the purpose set forth.

2. The combination, with sections A A', hinged at *a*, of link *l*, shield H, provided with loop *p*, and strap *q*, passed through the loop and link, as set forth.



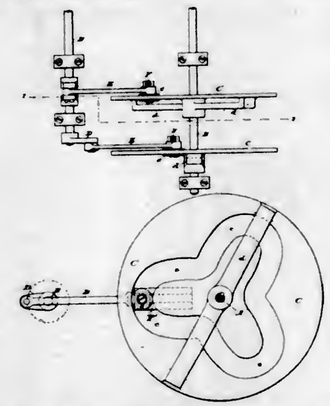
339,892.



3. The combination, with sections A A', hinged at *a*, of link *l*, shield H, provided with loop *p*, strap *q*, passed through the link and loop, and interposed padding *r*, as set forth.

4. The combination, with sections B B', plate D, and sockets *e*, of sections A A', loops *b*, and set-screws *c*, as set forth.

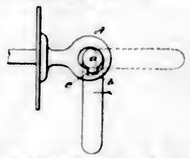
339,893. MECHANICAL MOVEMENT. ALBERT D. JEFFREY, Brooklyn, N. Y., assignor of one-half to William Sanderson, same place. Filed Sept. 16, 1885. (No model.)



Claim.—1. The combination, as a mechanism for transmitting multiplied rotary motion, of a driving-shaft, a cam thereon having a cycloidal slot or working-face, a roller engaged and reciprocated thereby, a driven shaft with a crank thereon, and a connecting-rod for communicating the motion of said roller to said crank, substantially as set forth.

2. The combination of a driving-shaft, two cams fixed thereon one in advance of the other, and each having a cycloidal slot or equivalent working-face, two rollers engaged and reciprocated by the respective cams, the driven shaft with two cranks thereon, one set a quarter-revolution in advance of the other, two connecting-rods, each communicating the motion of one of said rollers to the corresponding one of said cranks, and guides for said rollers restraining them to move in a direction toward and from the driven shaft, substantially as set forth.

339,894. HANDLE FOR DRAWERS. AUGUSTUS H. JONES, Meriden, Conn. Filed Feb. 19, 1886. (No model.)



Claim.—The herein-described drawer-pull, consisting of the U-shaped handle, its two legs turned into a common longitudinal or axial line to form trunnions, the said trunnions of cylindrical shape and constructed with a radially-projecting rib from the said cylindrical surface, combined with corresponding sockets adapted to receive the said cylindrical portion, and constructed with a recess to form a shoulder within the socket, against which the said rib may rest, substantially as described.

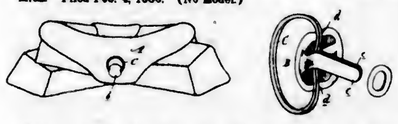
339,895. PAPER-CUTTER. WILLIS JONES, New York, N. Y., assignor to George H. Hyde, same place. Filed Feb. 5, 1886. (No model.)



Claim.—1. The combination of handle *b* with spring-blade *c*, placed beneath the handle and attached to the same at its rear edge, all being so constructed that the forward end of the blade diverges from the forward end of the handle, substantially as specified.

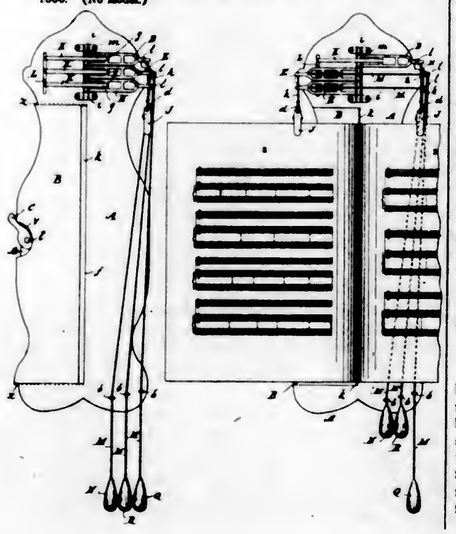
2. The combination of the handle *b*, having rounded edge *f*, with blade *c*, placed beneath the handle and attached with its rear edge to the rear edge of the handle, the blade *c*, having point *d*, that projects beyond the front edge of the handle, substantially as specified.

339,896. NECKTIE-FASTENER. WALTER B. KAUFFMANN, Detroit, Mich. Filed Feb. 4, 1886. (No model.)



Claim.—A device for attaching elastic loops to neckties, consisting of a staple provided with a head in which is formed on its inner face a groove for the reception of the loop, and tangs for securing such head to the shield, substantially as described.

339,897. MUSIC-HOLDER. PATRICK J. KEARNEY, Boston, Mass., assignor to himself and Timothy W. Murray, same place. Filed May 29, 1885. (No model.)



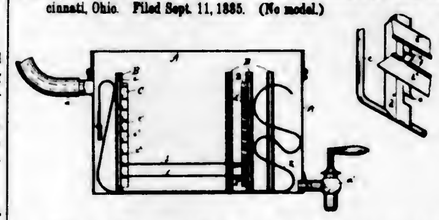
Claim.—1. In a music-holder, the combination of the following instrumentalities, to wit: a body, a clamp or means for securing the music to the body, a series of arms jointed or pivoted to the body and adapted to swing laterally, springs for drawing the arms from right to left when the arms are released, clamps connected with the arms and adapted to grasp the tops of the sheets or leaves of the music, cords attached to said arms, guide-eyes for said cords, and suitable weights or counter-balances for said springs attached to said cords and so disposed as to be within a convenient distance of the player or person using the holder, substantially as described.

2. In a music-holder, the clamp J, connected by the elastic cord or spring *d* with the rod *h*, in combination with the arm E, substantially as described.

3. In a music-holder, a clamp adapted to grasp the top of the sheet of music, an arm jointed to a fixed portion of the holder and adapted to swing from right to left and carry said clamp and sheet, a spring adapted to actuate said arm, and a counter-balance for said spring, combined and arranged to operate substantially as described.

4. The improved music-holder herein described, the same consisting of the body A, clamp B, lever C, arms D E H, rods h, cords *d*, straps K, cords M, eyes *l b*, and weights N R Q, constructed, combined, and arranged to operate substantially as described.

339,898. PHOTOGRAPHER'S WASH-BOX. THOMAS H. KELLEY, Cincinnati, Ohio. Filed Sept. 11, 1885. (No model.)



Claim.—1. The combination, in a photographer's wash-box, of the tank A, having inlet and outlet ports, as shown, with the racks C D, having horizontal shelves adapted to receive and support photographic plates in a horizontal position film side down, substantially as hereinbefore set forth.

2. The combination, substantially as specified, of the tank A, having inlet *a*, tap *a'*, and side guides, B, with the shelf-racks C D, arranged to slide vertically in and be supported by said guides, one of said racks having a pivoted or removable shelf, for the purpose set forth.

3. A rack for supporting photographic negatives film side down, consisting of two frames, each being provided with horizontal shelves, the shelves upon one frame being either removable or pivoted to afford access to all of said shelves for the purpose of placing negatives successively thereon or removing them therefrom, with suitable means, such as shown and described, to hold the said frames in their proper relative position, either for washing or drying, substantially as shown and described.

4. The combination, substantially as specified, of the tank A, inlet-port *a*, tap *a'*, and a series of vertical side guides or ways, B, with the racks C *c* and D *d*, and shelves c^3 and d^3.

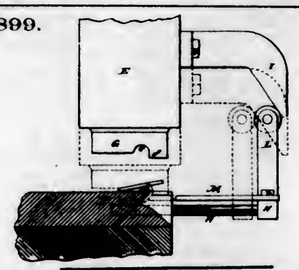
5. The devices hereinbefore set forth for supporting, washing, and drying photographic negatives, which consist of the following elements in combination, to wit: a washing-box having inlet and outlet ports and vertical ways upon opposite sides, shelf-racks adapted to enter and be sustained in a vertical position in said ways, with the shelves in a horizontal position, and a strap, as G, to secure the racks and plates together, so that they may be removed from the tank and used as a drying-rack.

6. The combination, substantially as specified, of the racks C D, the shelves c^3 d^3, supported upon said racks, the said shelves d^3 being removable or pivotally secured to said rack D, and when placed for use being inclined downward at an angle to a horizontal plane, for the purpose set forth.

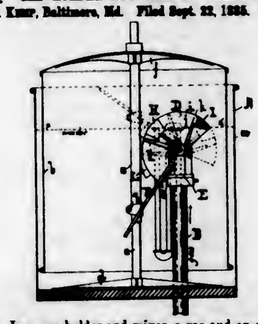
339,899. MACHINE FOR MAKING BUCKLES. JARVIS E. KELSEY, West Haven, Conn., assignor to the West Haven Buckle Company, same place. Filed Mar. 1, 1886. (No model.)

Claim.—The combination of the fixed die F, constructed with a longitudinal upwardly-projecting rounded rib, *a*, at its front edge, with recesses *b b* on the front, below said rib, the corresponding die, G, having in its face a cavity corresponding to the finished shape of the frame, and with a longitudinal recess, *e*, corresponding to the rib *a*, and also with a downward projection, *f*, forward of said recess *e*, with the horizontally-reciprocating follower M, constructed with projections *h h*, corresponding to said recesses in the front of the die F, substantially as and for the purpose described.

339,899.



339,900. GAS HOLDER AND MIXER. CLARENCE M. KEEP and CHARLES E. KEEP, Baltimore, Md. Filed Sept. 22, 1885. (No model.)



Claim.—1 In a gas holder and mixer, a gas and an air pipe terminating in the said holder, combined with a water-sealing hood or valve, substantially as specified.

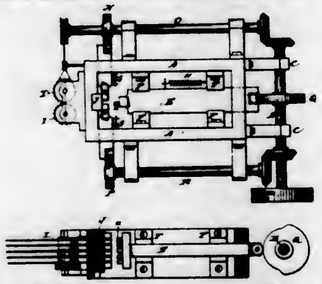
2. In a gas holder and mixer, a gas and an air pipe terminating in the said holder, combined with a discharging tilting hood situated over the said pipes, and means to operate the said hood from the movable section of the said holder, substantially as specified.

3. In a gas holder and mixer, a gas and an air pipe terminating within the holder, a tilting hood situated over the said pipes, a weighted lever to tilt the hood, and a lever to actuate the weighted lever connected to some part of the movable section of the said holder, all combined substantially as specified.

4. In a gas holder and mixer, a gas and an air pipe terminating in the said holder, combined with a discharging tilting hood situated over the said pipes having a separating-partition, as described, and means to operate the said hood from the movable section of the said holders, substantially as specified.

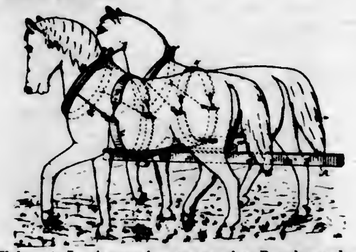
5. In combination with the tilting hood D, the air-pocket L, attached to the said hood, substantially as specified.

339,901. MACHINE FOR MAKING WIRE NAILS. JOHN T. KINNEDY, New Haven, Conn. Filed Feb. 8, 1886. (No model.)



Claim.—In a machine for making headed wire rivets and like articles, consisting in the combination of a feeding device adapted to receive and advance several lines of wire parallel with each other, a die-plate having a series of openings through it corresponding to the said series of wires and in line therewith, a reciprocating slide carrying a series of heading-punches corresponding to the said series of wires, and a series of cutters corresponding to said wires, substantially as described, and whereby a series of blanks are cut from the said wires and headed in a single apparatus.

339,902. HARNESS. CHARLES LA DOW, Albany, N. Y. Filed Feb. 19, 1886. (No model.)



Claim.—1. In a horse-yoke, an evener-bar, B, and curved yokes C C, laterally adjustable relatively to the bar B, in combination with draft-tags G.

2. In a horse-yoke, the bar B and yokes C C, in combination with links D D, said links being rigid in cross-section, pivoted to the yokes and evener-bar, and adapted to permit lateral movement of the yokes relatively to the evener-bar.

3. In a horse-yoke, the combination of yokes C C, tags G, and evener-bar B, arranged in rear of the yokes, said yokes having pivotal connections between them and the evener-bar, and also having straps F to support said yokes in proper working position.

4. In a horse-yoke, the evener-bar B and yokes C C, in combination with anti-friction roller, located between the yokes and evener-bar.

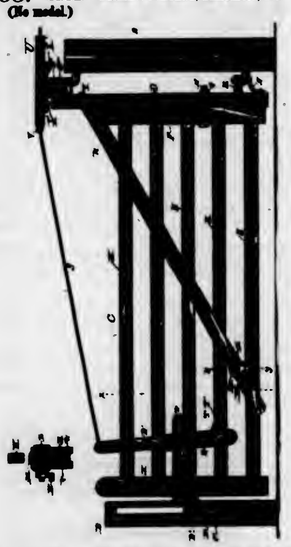
5. In a horse-yoke, the evener-bar B and curved yokes C C, in combination with the draft-link A', said draft-link being rigid in cross-section.

6. In a horse-yoke, the evener-bar B, curved yokes C C, and perforated links D D, adapted to regulate the distance between the yokes and evener-bar, and thereby prevent undue lifting of the evener-bar.

7. In a horse-yoke, the evener-bar B, with yokes C C, having their ends curved outward, in combination with suitable collars for attaching the yoke to the team, and connecting devices, substantially as described.

8. In a horse-yoke, the combination of vertically-curved yokes C C and an evener-bar, B, provided with holes *d*, or other equivalent means for adjusting and holding said yokes pivotally at any desired point relatively to each other on the bar.

339,903. GATE. ISRAEL L. LANDIS, Lancaster, Pa. Filed Oct. 15, 1885. (No model.)



Claim.—1. The combination, with the vertically-adjustable gate and its clamping-bolt, of the vertically-adjustable catch and the cam-lever, whereby the catch is held in an adjusted position, substantially as specified.

2. The combination, with the vertical hinged beam, of the upper hinge and bracket having horizontal lateral heads, to which the pulley is attached, substantially as specified.

3. The combination, in a gate, of the sliding bolt, the spring-bar to which said bolt is pivoted, and the adjustable pawl bearing against the said bar, whereby the latch is held in an adjusted position, and the grooved pulley and operating-ropes, whereby the gate is opened and closed, substantially as specified.

339,904. SLICING-MACHINE. ISRAEL L. LANDIS, Lancaster, Pa. Filed Jan. 5, 1886. (No model.)

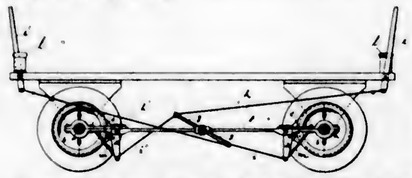


Claim.—1. The combination, with the frame D, having an oblique hole in the lower sill thereof, and the angular slotted bridge-piece H, secured thereto, of the regulating-board G, the angular plate L, provided with a loop extending through the slot in the bridge-piece, the wedge K, the plate F, provided with the pin *f*, set at an angle thereto and entering the hole in the sill, the plate E, and knife M, the plates L and F being attached to the regulating-board, substantially as and for the purpose specified.

2. The metallic knife-board E, slotted and flanged and secured to the frame D, as set forth, in combination with the adjustable knife secured thereto, substantially as and for the purpose specified.

3. In a slicing-machine, the main supporting-frame, the slotted angle-iron, and the grooved guide-pieces, combined with a reciprocating frame consisting of an adjustable knife and knife-board, a regulating-board provided with an angular pin and looped plate, a bridge-piece, and wedge, substantially as specified.

339,905. CAR-BRAKE. WILLIAM LANG, New York, N. Y. Filed July 22, 1885. (No model.)



Claim.—1. The combination of axles *a a*, having disks *b*, with bands *c*, levers *d*, and bar *g*, connected to the brake-levers, the levers *d* and bar *g* being pivoted to bar *f*, that connects axles *a a*, substantially as specified.

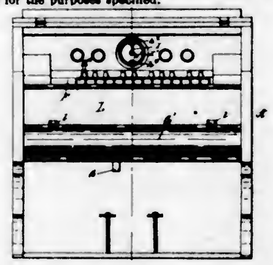
2. The combination of axle *a* with disk *b*, band *c*, attached to threaded pin *o*, and with lever *d*, having perforated bolt *n'*, adapted to receive pin *o*, substantially as and for the purpose specified.

3. The combination of axles *a* with disk *b*, bands *c*, levers *d*, bar *g*, pivoted to fixed support *f*, and with chains *h h' i i'*, the two ends of bands *c* being attached to levers *d*, substantially as specified.

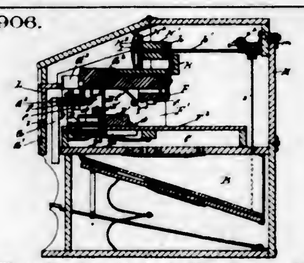
339,906. TRANSPOSING KEY-BOARD FOR MUSICAL INSTRUMENTS. ANDERS LARSSON, Chesterton, Ind. Filed Oct. 20, 1884. (No model.)

Claim.—1. The combination, with the laterally-adjustable key-board F, of the blocks F', having ways *f* and guide-arms F^4, substantially as and for the purposes specified.

2. The combination, with the disk H^2, having the opposite series of letters and numbers, as described, and mechanism, as set forth, for operating the same, of the perforations h^3 h^3, arranged as described, substantially as and for the purposes specified.



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3. The combination, with the disk H^2 and cylinder H', and mechanism, as described, for operating the same, of the shaft A', on which they are loosely mounted, the cord *i*, attached to said shaft and to the bellows B, the cord *i'*, attached to said shaft and to spring I^2, the index-finger I, and scale I', substantially as and for the purposes set forth.

4. The combination, with the plate H^2, having apertures h^2 h^3, and scale I', of the disk H^2, having the series of letters and numbers, and shaft A', having index-finger I and mechanism, substantially as described, for operating the said disk and shaft, substantially as and for the purposes specified.

5. The combination, with the scale I', of the shaft A', having index-finger I, and the cords *i i'*, attached to said shaft and to the bellows B and spring I^2, respectively, substantially as and for the purposes specified.

339,907. SOLDERING-IRON. JOHN LEE, Sterling, Ohio. Filed Aug. 25, 1885. (No model.)



Claim.—The soldering-iron consisting of the head, the shank connected to the head and provided with a ferrule at its outer end, centrally from which projects a tang, and the heat-non-conducting handle fitted and secured upon said tang, its inner end entering the cap or ferrule, substantially as and for the purpose set forth.

339,908. ELECTRIC LAMP. DAVID B. MACDONALD and HANNIBAL W. WOODMAN, Hamilton, Ontario, Canada. Filed Dec. 10, 1885. (No model.)



Claim.—1. In an electric lamp, the combination, with the lower stationary carbon and the upper movable carbon, located one above the other, of the insulating-body K, interposed between the points of said carbons, said upper carbon being constructed to rest by gravity upon the interposed insulating-body, substantially as described.

2. In an electric lamp, the combination, with the perforated stationary lower carbon, D', and the perforated upper movable carbon, D, of the interposed insulating-body K, having arms *d d*, fitting in the perforations in the carbons, substantially as described.

339,909. CONVERTIBLE TELEGRAPH-KEY. JAMES A. MALONEY, Washington, D. C. Filed Feb. 26, 1886. (No model.)

Claim.—1. In a telegraph-key, a flexible lever made in two sections, arranged in the same lineal plane, in combination with a space-regulating device secured to and revolving with said lever, substantially as described.

2. In a telegraph-key, a lever journaled in the plane of its longitudinal axis, in combination with an arm supporting an adjusting-screw secured to and revolving with said lever, substantially as described.

3. In a telegraph-key, a lever having a journal formed on one end, in combination with a frame supporting three fixed anvils, two of which are right and left hand, to receive the impact of the lever in any of its working positions, substantially as described.

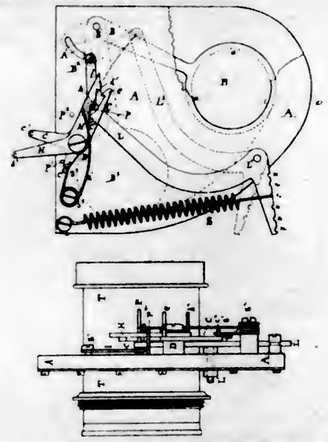
4. In a telegraph-key, the combination of a frame and opposite contact or anvils with a lever having a journal formed in one end, and insulated on the side opposite to its contact-point, substantially as and for the purpose set forth.

5. In a telegraph-key, a lever having a journal formed on one end, in combination with a space-regulating device, and a frame supporting

three contacts or anvils, two of which are right and left hand, and a screw for locking the lever in any of its working positions, substantially as described.

6. In a telegraph-key, a flexible lever having a journal formed on one end, in combination with a space-regulating device supported by the lever, a tension-spring, and fixed opposite contacts or anvils, substantially as described.

339,910. PHOTOGRAPHIC SHUTTER. CHARLES F. MARVIN, Washington, D. C. Filed Feb. 23, 1886. (No model.)



Claim.—1. In a photographic shutter, the combination of the vibrating plate B, the bell-crank lever-arm B^2, and the lever L, provided with the notched extension L^2, actuated by the spring S and connected to the plate B by its pin B^2, and the link *l*, all substantially as set forth.

2. In a photographic shutter, the combination of the lever L, and the hooked lever H, furnished with means *c'* for applying pressure to it and adapted to be acted upon by the spring B', to cause the hooks *h* and *h'* to engage the pin P of lever L, all substantially as described, and for the purpose specified.

3. In a photographic shutter, the combination of the lever L with the levers H and C, the latter furnished with a spring, S^2, to keep the hook *c* out of the path of the pin P on the lever L, and provided with a pin or stop, C^2, which presses against lever H, causing said lever to move when lever C is moved by pressure applied to the portion *c'*, adapted to receive said pressure, all substantially as described, and for the purpose specified.

4. The combination, in a photographic shutter, of the thin case A, provided with a circular opening, *a a a*, and carrying a vibrating plate, B, with the hooked levers C and H, the latter being adapted to act independently or in conjunction with the lever C, in manner and form specified.

339,911. SELF-REGULATING LAMP. VINCENT DI MARCO, Benicia, Cal. Filed July 20, 1885. (No model.)

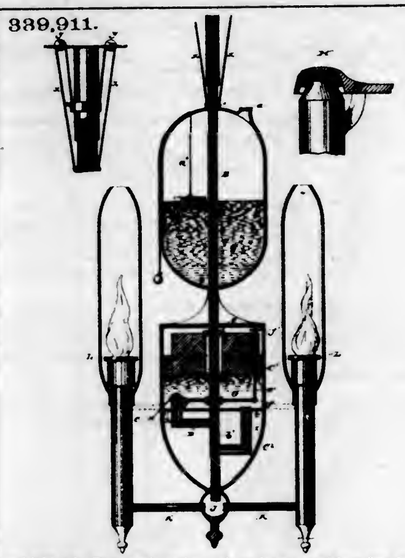
Claim.—1. In a lamp, the combination of the tube B, a primary oil reservoir or chamber surrounding the same, a separate supply-regulating chamber having inlet and outlet openings, also surrounding the said tube, the two chambers communicating through the tube, and a rod pivotally arranged in the regulating-chamber, provided at one end with the valve, and a float to which the rod is connected, substantially as described.

2. The combination, with the pipe or tube B, a primary oil chamber or reservoir surrounding the same, and a separate supply-regulating chamber, also surrounding the tube B, the two chambers communicating through the pipe, of a float located in said regulating-chamber, surrounding and guided by the tube B, and a valve operated by said float to open and close the inlet to the supply-regulating chamber, substantially as described.

3. In a lamp, the combination of the tube B, a primary oil reservoir or chamber surrounding the same, a separate supply-regulating chamber having inlet and outlet openings, also surrounding the tube, the float situated in the regulating-chamber having the collar *c*, surrounding and sliding upon the tube, and the valve-lever connected to the float and operating to open and close the inlet to the regulating-chamber.

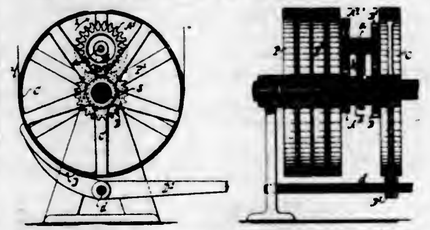
4. The combination, in a lamp, of the central tube, B, the main reservoir and the separate supply-regulating chamber upon said tube and communicating therethrough by means of the opening *b* in the tube

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and inlet-tube D, a supply-outlet, and a valve operated by a float in said supply-chamber to open and close the end of the inlet-tube, substantially as set forth.

339,912. MECHANICAL MOVEMENT. CHARLES B. MAYDON, Westerly, R. I. Filed Jan. 21, 1886. (No model.)



Claim.—1. The combination, with a shaft and with a pulley mounted loosely thereon, of a brake-wheel mounted loosely on said shaft, a cog-wheel carried by the loose pulley, the brake for the brake-wheel, and gears carried by the shaft and by the brake-wheel for transmitting a reverse motion from the cog-wheel of the loose pulley to the shaft when the brake-wheel is retained by the brake.

2. The combination, with a shaft and with a fast pulley and a loose pulley mounted thereon, of a brake-wheel mounted loosely on said shaft, a cog-wheel carried by the loose pulley, the brake for the brake-wheel, and gears carried by the shaft and by the brake-wheel for transmitting a reverse motion from the cog-wheel of the loose pulley to the shaft when the brake-wheel is retained by the brake.

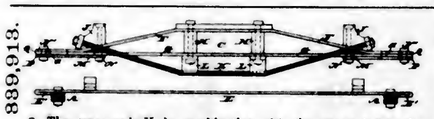
3. The combination, with a shaft, S, and the pulley P', mounted loosely thereon, of the gear-wheel A, carried by said pulley, the brake-wheel C, mounted loosely on the shaft, the cog-wheel B, carried by the brake-wheel, the cog-wheels A' B', mounted in the arm *b*, carried by the shaft S and gearing with the wheels A and B, respectively, and the brake D, substantially as shown and described.

4. The combination, with a shaft, S, and with the fast pulley P and the loose pulley P', mounted thereon, of the gear-wheel A, carried by said pulley, the brake-wheel C, mounted loosely on the shaft, the cog-wheel B, carried by the brake-wheel, the cog-wheels A' B', mounted in the arm *b*, carried by the shaft S and gearing with the wheels A and B, respectively, and the brake D, substantially as shown and described.

339,913. CAR-TRUCK. HARRY C. MCCARTY, Williamsport, assignor of one-half to John F. Bickel, Morton, Pa. Filed Aug. 31, 1883. (No model.)

Claim.—1. As an improvement in car-trucks, the hereinbefore-described bolster, composed of bars connected together at their ends, and having their centers united and held in relative vertical positions by means of posts and bolts, in combination with the truss-rods, substantially as and for the purpose set forth.

339,913.

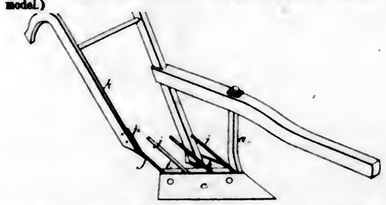


2. The truss-rods K, in combination with the upper bolster-bar, bearings J, for said truss-rods, which are secured to said bolster, the interposed block M, and the truss-rod seats L, which are interposed between said bolster and said truss-rods, substantially as and for the purpose set forth.

3. The lower bar, G, having flanges Q turned up on its ends, in combination with the arched upper bar, F, having its ends bearing against said flanges, the guide-plates P, bolted to the ends of said bars under the same, the stops or blocks M, inserted between bars F and G, near their ends, and the pillars H, also interposed between said bars, as stated.

4. The upper bolster composed of the boot bar F, straight bar G, and interposed columns M, in combination with the plates P, secured beneath the bars F G at their ends, and notched or grooved on their sides at *a*, to receive the columns B of the side irons, substantially as and for the purpose set forth.

339,914. PLOW POTATO-DIGGER. JAMES MCFARLAND, Moline, Ill., assignor of one-half to Oscar Peal, same place. Filed Feb. 4, 1886. (No model.)



Claim.—1. The finger attachment for a plow, consisting of the plate *i*, having the fixed parallel fingers *j*, the outer one whereof terminates in the plate-arms j^3, as shown, for the purpose stated.

2. The digging attachment consisting of the plate *i*, the fixed parallel fingers *j*, one of which has the arm j^3, combined with the plow-handles, and the plow-frame consisting of the standard *a*, landside *b*, share *c*, and the bolts *f*, the said fingers having their free ends standing between the handles to deliver and spread the potato-hills between them, as shown and described.

339,915. FEED-TROUGH. HIRAM MENDENHALL, Audubon, Iowa. Filed Jan. 19, 1886. (No model.)

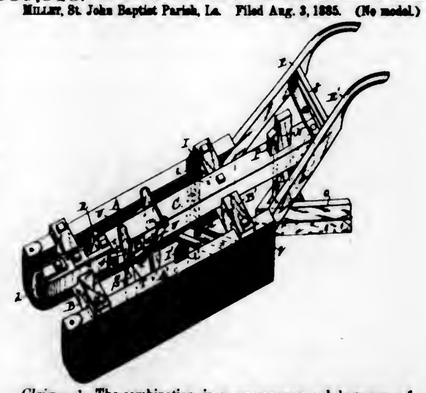


Claim.—1. In a feeding-trough, the combination, with a pivoted hopper located above the same and to supply the feed thereto, of a foot-board connected to the trough, said board and hopper extending the entire length thereof, substantially as and for the purpose specified.

2. A feeding-trough consisting of end sections having inwardly-projecting supports, the bottom and sides of the trough resting thereon, removable guard-boards provided with detachable extensions, and transverse bars connected to the boards and to the sides of the trough, substantially as and for the purpose set forth.

3. A feeding-trough provided with detachable or removable guard-boards and extensions thereto, also removable, and a pivoted supply-hopper supported above the trough and detachable therefrom, substantially as and for the purpose described.

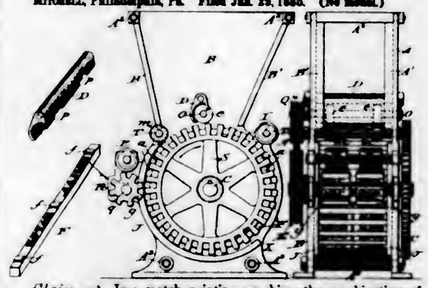
339,916. CANE-STUBBLE SHAVER AND DESTROYER. ADELARD MILLET, St. John Baptist Parish, La. Filed Aug. 3, 1885. (No model.)



Claim.—1. The combination, in a cane scraper and destroyer, of a pair of runners provided with adjustable scrapers, and a central beam secured to the cross-ties connecting same, with the colters R S W, secured to the beam in different lines of travel, the colter R adapted to operate in front of the colter S and the colter W in rear thereof, substantially as described, and for the purpose set forth.

2. In combination with a pair of runners and connecting ties or beams, a series of sharp-edged colters successively arranged on the beam in different lines of travel, as set forth, and an adjustable scraper provided with a cutting-point having a width about equal to that of an ordinary cane-row, the colter adapted to split the stubble, and the scraper-point and scraper to dig out and remove the same, substantially as set forth.

339,917. MACHINERY FOR PRINTING UPON MATCHES. J. H. MITCHELL, Philadelphia, Pa. Filed Jan. 29, 1885. (No model.)



Claim.—1. In a match-printing machine, the combination of a hopper, a picking-up wheel having receptacles whose bottoms are provided with type, and means whereby the splints are pressed inward against said type, substantially as set forth.

2. In a match-printing machine, the combination of a hopper, a picking-up wheel having receptacles adapted to receive and hold the splints, a printing-cylinder provided with a series of radially-projecting type so spaced as to register with the said receptacles, and means whereby said picking-up wheel and said cylinder are respectively rotated in the manner set forth.

3. In a match-printing machine, the combination of a hopper, a picking-up wheel having receptacles whose bottoms are provided with radially-movable type, a suitable pressing device for pressing said splints against said type, and a cam whereby said type are depressed during the period of reception of the splints, and subsequently moved outward to discharge them, substantially as set forth.

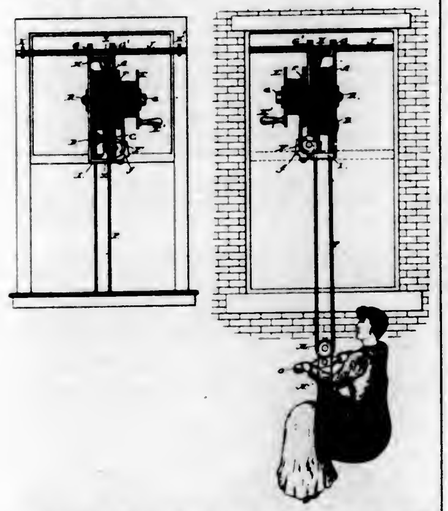
4. In a match-printing machine, the combination of a hopper, a picking-up wheel having receptacles whose bottoms are provided with radially-movable type, a printing-cylinder provided with a series of radially-projecting type so spaced as to register with the said receptacles,

and a cam whereby the type of the picking-up wheel are depressed during the period of reception of the splints and moved outward after the printing operation to discharge the splints, substantially as set forth.

5. The combination of the receptacles of the picking-up wheel with the type-pieces forming the bottom of said receptacle, and provided with bearing-surfaces *f*, which project beyond the faces of the type, whereby the splints are supported clear of the type until the printing operation occurs.

6. The combination, with the hopper and the picking-up wheel, of the shaft O, extending across the bottom of the hopper at the middle thereof, the disks *e*, mounted on said shaft, the shield D, arranged over said shaft and disks, and the second shaft, T, and disks *m*, extending across the bottom of the hopper at the rear end thereof, substantially as set forth.

339,918. FIRE-ESCAPE. JAMES A. NEILSON, Philadelphia, Pa. Filed Sept. 15, 1885. (No model.)



Claim.—1. The combination, in a fire-escape, with the grooved drum A A, of the cord P, made fast at one end to a fixed plate above the drum and carried over its periphery to bear thereon with frictional contact, the guide-pulley D, over whose inner face the cord is led from the drum, and the traveling sheave or pulley M, over which the cord is looped and carried back to and around the drum, substantially in the manner and for the purpose herein set forth.

2. The combination, in a fire-escape, with the grooved drum A, of the reel E, the grooved pulley B, whose axis is inclined to that of the drum, and the suspension-cord P, carried over the drum and pulley, substantially in the manner and for the purpose herein set forth.

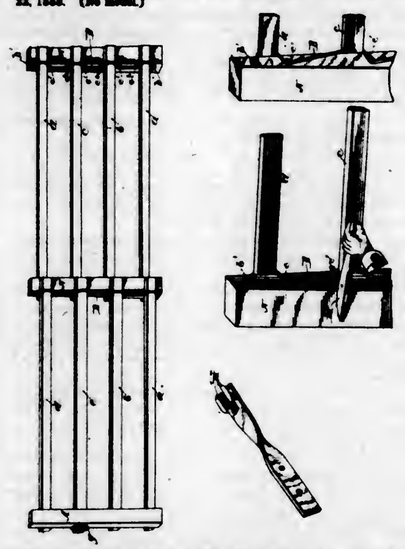
3. The combination, with the grooved drum A, the cord P, carried around the drum, the traveling pulley M, under which the cord is looped, and the fixed pulley C under the drum, under which the cord is led to pass over the drum, of the plate H, fixed above the drum and provided with a series of holes, *i i*, whereby the end of the cord P may be readily adjusted and secured in different positions to bear with varying friction upon the periphery of the drum, substantially in the manner and for the purpose herein set forth.

4. The combination, with the drum A and guide-pulley F, of the reel E, mounted to revolve independently upon the prolonged axis of the drum A, and in a direction opposed to the rotation of said drum, substantially in the manner and for the purpose herein set forth.

5. The combination, in a fire-escape, with its rope P, drum A, and traveling sheave or pulley M, carried upon the rope, of a lever, O, centrally pivoted between the cheeks or frame of the pulley-block upon an axis parallel with that of the sheave to swing from either side against its periphery, substantially in the manner and for the purpose herein set forth.

6. The combination, in a fire-escape, with the drum A, of the reel E, rotating upon the same axis, the lateral guide sheaves or pulley F, the grooved spacing or transferring pulley B, having its axis inclined to that of the drum A, the front guide-pulleys C D, rope P, sheave M, sling I, and supporting-rod J, substantially in the manner and for the purpose herein set forth.

339,919. FENCE. ABRAM NEWKIRK, Cleveland, Ohio. Filed July 22, 1885. (No model.)



Claim.—The combination, with the rails, posts, and wires B, arranged substantially as indicated, of the loop *g*, substantially as set forth.

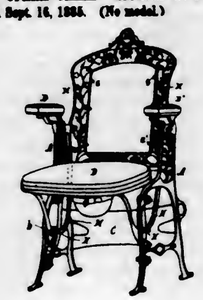
339,920. COAT, &c. PAUL F. PAULER, New York, N. Y. Filed Oct. 29, 1885. (No model.)



Claim.—1. A garment having two lapels, B B', each of which is provided with button-holes *b b'* and fastening devices *c c'*, arranged along the bonds of the lapels, and buttons *a a'*, arranged on the body of the garment in line with the button-holes in the lapels, substantially as shown and described.

2. A garment having two lapels, B B', each of which is provided with button-holes *b b'* and hooks and eyes or other fastening devices *c c'*, arranged along the bonds of the lapels, a secondary row of eyes or hooks, *d*, on one of the lapels, and buttons arranged on the garment in line with the button-holes in the lapels, substantially as shown and described.

339,921. OPERA-CHAIR. SEYMOUR W. PHENEGER, Minneapolis, Minn. Filed Sept. 16, 1885. (No model.)



Claim.—1. In an opera-chair, the combination, with the standards, of a seat pivotally secured thereto, an oscillating back having a rigid extension connected to the brackets, supporting said seat by a sliding connection having a pivot, and a spring bearing against the pivot of said sliding connection, substantially as described.

2. In an opera-chair, the combination, with the standards, of the back pivoted thereto and having slotted extension, a seat, and a rocking frame supporting said seat and pivoted to said standards, and provided with a projection engaging the slot in said extension, substantially as and for the purposes set forth.

3. In an opera-chair, the combination, with the standards and the back pivoted thereto and provided with slotted extensions, of a seat pivoted to said standards and provided with projections engaging the slots in said extensions, and springs secured to said standards and bearing against the projections on the seat, as set forth.

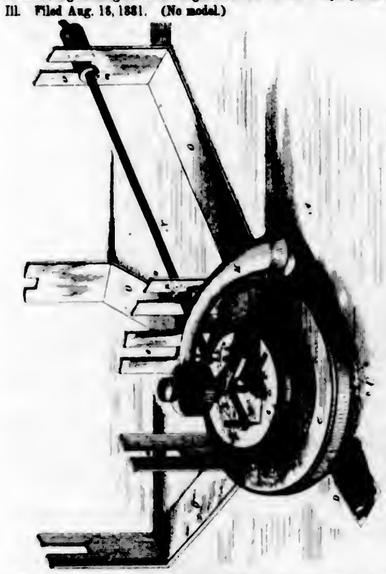
4. In an opera-chair, the combination of the standards, brackets E, pivotally secured to said standards, seat D, supported thereby, an oscillating back having sliding connection with said seat, and a spring secured to the standard and bearing against the pivot of said sliding connection, substantially as described.

5. In an opera-chair, the combination, with the rocking-seat having rocking frames E E and bosses N N, of the stops G G and springs O O, arranged to automatically rock the seat by their tension, substantially as described.

6. The combination, with the standards, brackets E E, pivoted to said standards and supporting the seat D, and bosses N on said brackets, of the back pivoted to said standards and having slotted extensions engaging said bosses, substantially as described.

7. The combination, with the standards, brackets E E, pivoted to said standards and supporting the seat D, and bosses N on said brackets, of the back pivoted to said standards and having slotted extensions engaging said bosses, and springs attached to the said standards and bearing against the bosses, substantially as and for the purpose specified.

339,922. **MACHINE FOR SPACING WATCH-DIALS.** FRANCIS B. PERKINS, Elgin, assignor to the Elgin National Watch Company, Chicago, Ill. Filed Aug. 18, 1881. (No model.)



Claim.—1. As an improvement in dial-spacing machines, a rotatable plate for receiving and sustaining a dial, provided with recesses for the reception of the feet of said dial, in combination with a centering-pin adapted to center the dial and hold the same down upon the plate, substantially as and for the purpose described.

2. A dial-spacing machine in which are combined a rotatable plate adapted to receive and sustain a dial, a centering-pin arranged to confine said dial upon said plate, and a spring-actuated pin arranged within the latter and adapted to engage with the seconds-arbor opening in said dial, substantially as and for the purpose set forth.

3. A dial-spacing machine in which the locking-pin for engagement with the seconds-arbor opening is made radially adjustable with reference to the dial-supporting plate, substantially as and for the purpose shown and described.

4. As an improvement in dial-spacing machines, the combination of a rotatable plate for sustaining a dial, provided with recesses for the reception of the dial-feet, a centering-pin adapted to engage with the center opening of said dial and to hold the same down upon said plate, and a spring-actuated pin which is arranged to engage with the seconds-arbor opening of such dial, substantially as and for the purpose specified.

5. As an improvement in dial-spacing machines, in combination with a centering-pin, trimming-gravers adapted to be swung around and moved vertically upon the same, substantially as and for the purpose shown.

6. In combination with the centering-pin, a head which is journaled thereon and provided with a number of gravers having different radial positions, and a spring that is adapted to press said head downward, substantially as and for the purpose set forth.

7. As an improvement in dial-spacing machines, a rotatable dial-supporting plate provided with means, substantially as described, for securing a dial in relative position thereon, and having around its periphery a series of equidistant notches, in combination with a pawl which is adapted to engage with either of said notches and to lock said plate in position, substantially as and for the purpose shown and described.

8. In combination with the rotatable dial-supporting plate provided with peripheral notches and an engaging-pawl, a pivoted table which furnishes for said plate a pivotal support, and is in turn provided with peripheral notches and an engaging-pawl, substantially as and for the purpose specified.

9. In combination with the rotatable dial-supporting plate, fixed guides that are adapted to receive rods for carrying ruling-blades and to permit the same to move longitudinally therein, substantially as and for the purpose shown.

10. As an improvement in dial-spacing machines, a ruling-blade having its scraping-edge arranged longitudinally upon a line which is oblique to the line of motion, substantially as and for the purpose set forth.

11. As an improvement in dial-spacing machines, ruling-blades arranged to simultaneously form the upper or the lower ends of a line of letters, substantially as and for the purpose shown and described.

339,923. **SHADE-HOLDER.** RUSSELL B. PERKINS, Meriden, Conn., assignor to Edward Miller & Co., same place. Filed Feb. 3, 1886. (No model.)



Claim.—The combination of the lamp-fount constructed with an opening outside the collar, and with an upward tubular extension, F, around said opening, the wick-adjusting rod D, arranged vertically through the said tubular extension F, the said rod carrying at its lower end a ring for attachment to the lower end of the wick, and the ring *a*, adapted to set around the neck or collar of the lamp, and constructed with a radial projection, *d*, corresponding to the tubular extension F on the fount, and with an opening upward through the said projection, through which the said rod works, the said ring provided with supports adapted to carry the shade or globe, substantially as described.

339,924. **ROD-PACKING.** EDWARD L. PERRY, Paterson, N. J., assignor to himself and Henry S. Winans, Long Island City, N. Y. Filed Oct. 30, 1885. (Model.)



Claim.—A rod or other packing consisting of an elastic or yielding core and a covering of duck or fibrous material having its entire surface on both sides coated with plumbago previous to its being wound in layers around the core, substantially as and for the purpose specified.

339,925. **ROD-PACKING.** EDWARD L. PERRY, Paterson, N. J., assignor to himself and Henry S. Winans, Long Island City, N. Y. Filed Oct. 30, 1885. (Model.)

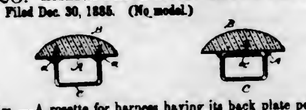
339,925.



Claim.—1. A packing divided horizontally and vertically into four sections, each of which is formed with an extension to form a clutch-connection when the sections are together, substantially as and for the purpose set forth.

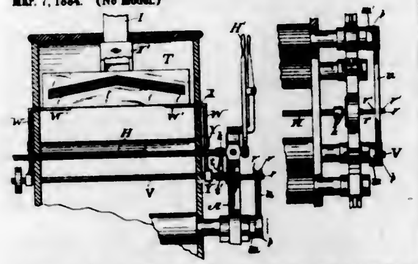
2. A packing consisting of four sections having rings of duck inserted in the packing, substantially as and for the purpose set forth.

339,926. **ROSETTE FOR HARNESS.** ERNST F. PFLUEGER, Akron, Ohio. Filed Dec. 30, 1885. (No model.)



Claim.—A rosette for harness having its back plate perforated to receive the loop ends, and countersunk or punched outwardly, in combination with the loop having its ends extended through said holes and resting in said countersunk space, and a filling of solder flowed around the ends of the loop and filling the countersink, substantially as described.

339,927. **ROLLER-MILL.** UDOLPHO H. ODELL, Dayton, Ohio. Filed Mar. 7, 1884. (No model.)



Claim.—1. In a grinding-mill, the combination, with a double set of crushing or reducing rolls, of the pulleys 1 and 2, the idler or tightening pulley 5, the guide-pulleys 3 4, the single belt R, and the main pulley and driving-shaft Q, arranged in the same vertical plane as said belt, substantially as described.

2. In combination with the reducing-rolls having pulleys 1 and 2 and 6 and 7, the shafts K L, having the driving-pulleys 3 and 4 and 8 and 9, the tightener-pulleys 5 and 10, their oscillating journals, and a lever for simultaneously stopping and starting the reducing-rolls, substantially as described.

3. In combination with the reducing-rolls, the transverse shafts E, the swinging journal-arms B, the housings F', formed on the frame, springs G, and set-nuts *d*, adapted to regulate the tension of the springs and hold the shafts E in their working position and yet allow them to yield to undue pressure on the rolls, substantially as described.

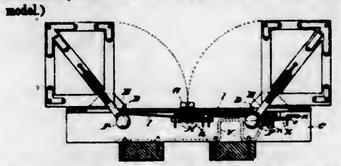
4. The combination of the crushing-rolls, the stationary hopper, the agitating feeding-hopper arranged longitudinally over the rolls within the stationary hopper, fast and loose pulleys and belt mechanism for connecting the agitating feeding-hopper with the rolls, the through-shaft H, and belt-shifting mechanism operated by the through-shaft for shifting the belt from the fast to the loose pulleys, to stop the movement of the feeding-hopper, substantially as described.

5. The combination, of the agitating feed-hopper T, the pivoted lever-arms W, having horizontal top extensions, W', connected with said hopper, and bifurcated lower ends, *y*, with the rotary shaft having eccentrics V, the stationary hopper, and the crushing-rolls, substantially as described.

6. In combination with the crushing-rolls of a roller-mill, the agitating feed-hopper T and the hopper above the rolls, the roller-driving mechanism, the through-shaft H, and the unshipping mechanism, whereby the agitation of the hopper T is stopped simultaneously with the spreading of the rolls, substantially as specified.

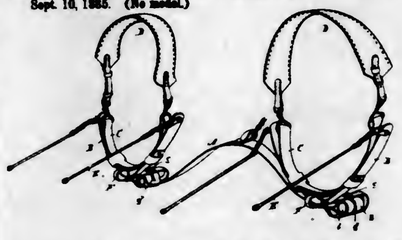
7. The combination, with the crushing-rollers of a roller-mill, of the stationary hopper, the agitating feed-hopper T, contained therein, shaking-levers pivoted on the stationary hopper and connected with the shaking hopper, a shaft having eccentrics engaging with and operating the shaking-levers, a belt-shipper acting on the belt, driving the eccentric carrying-shaft, and a through-shaft giving adjustment to the crushing-rolls and provided with a device for reciprocating the belt-shipper, whereby the agitation of the hopper is begun or ended simultaneously with the adjustment of the crushing-rolls, substantially as described.

339,928. **GATE.** JOHN F. CLEPATRICK and BENJAMIN F. GRANDSTAFF, Bunker Hill, Ind., assignors to John G. Grandstaff and Benjamin F. Grandstaff, same place. Filed Nov. 20, 1884. Renewed Feb. 4, 1886. (No model.)



Claim.—The combination, with the pivoted gate-sections and the road-cranks, of the lever-bar H, centrally pivoted in the road-boxing, the connecting-rods *l*, the triple-armed lever Z, pivoted near one end of said boxing, and the rods M and N connecting the arms of the triple lever with the central lever, H, and the road-cranks, respectively, as set forth.

339,929. **HARNESS.** JAMES F. RANDALL, South Haven, Mich. Filed Sept. 10, 1885. (No model.)



Claim.—1. The combination of the arched double-tree A and single-trees B, provided with the flexible belly-band C, arranged above the same, substantially as and for the purpose described.

2. The combination, with the single-trees B, provided with flexible belly-bands C, of the arched double-tree A, formed of a single piece of metal, and having its ends connected with said single-trees by a clevis and a rolling joint, substantially as and for the purposes specified.

3. In a plow-harness, the combination of the double-tree A, single-trees B, connected thereto by a rolling joint, belly-bands C, and clevis F, arranged between said single-tree and belly-band, all constructed, arranged, and operating substantially in the manner and for the purposes set forth.

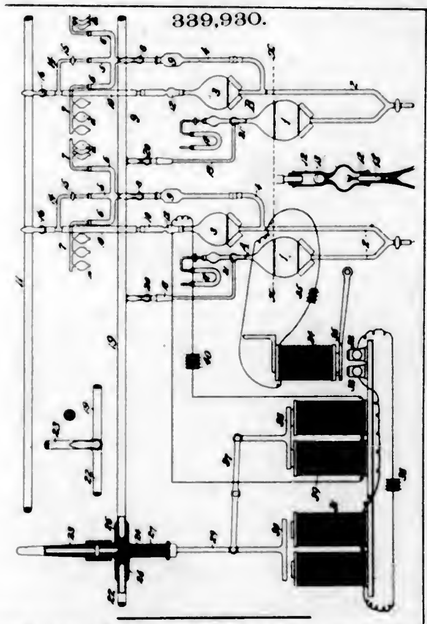
339,930. **APPARATUS FOR THE PRODUCTION OF HIGH VACUUMS.** ALBERT L. REHMANN, Pittsburg, Pa., and CHARLES G. OTT, Newark, N. J., assignors, by direct and mesne assignments, to George Westinghouse, Pittsburg, Pa. Filed Aug. 13, 1885. (No model.)

Claim.—1. In an apparatus for the production of high vacuums, a series of mercury-reservoirs, in combination with a like series of vacuum-chambers, each reservoir of the series being connected to one of the vacuum-chambers, as described, the vacuum-chambers being provided with suitable outlets for the escape of air therefrom, the mercury-reservoirs having suitable connections with a mechanical exhaust-pump and with the open air, a single valve mechanism arranged for admitting the air to each reservoir simultaneously, and also connecting the same with the exhaust-pump, substantially as set forth.

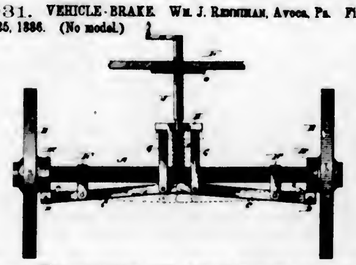
2. In an apparatus for the production of high vacuums, a series of vacuum-chambers, each having an uninterrupted connection with a continuously-operating mechanical exhaust-pump, in combination with a like series of mercury-reservoirs, each reservoir being connected to one of the vacuum-chambers and provided with a common connection with a mechanical exhaust pump or device and with the open air, and a valve mechanism controlling such connection, whereby the atmospheric pressure may be simultaneously varied in each of the mercurial reservoirs, substantially as set forth.

3. In an apparatus for the production of high vacuums, a series of vacuum-chambers each connected to a pipe leading to a continuously-operating mechanical exhaust-pump, in combination with a series of mercury-reservoirs, each reservoir being connected to one of the vacuum-chambers and provided with a common connection with a mechanical exhaust-pump and with the open air, a valve mechanism controlling such connection, and suitable mechanism interposed between the valve mechanism and vacuum-chambers and operated by the circulation of the mercury to and from the vacuum-chambers, substantially as set forth.

339,930.



339,931. VEHICLE-BRAKE. WM. J. REDNIHAM, Avoca, Pa. Filed Jan. 25, 1886. (No model.)



Claim.—1. The combination, with suitable operating mechanism, of the brake-levers pivoted to the axle and provided with brake-shoes, one of said levers being rounded on its inner end, and adapted to fit in a corresponding concavity in the inner end of the other, substantially as and for the purpose described.

2. The combination, with the brake-levers pivoted to the axle, of the block H, connected to the inner ends of the brake-levers, and having interposed between it and the axle a spring, substantially as shown and described.

3. The combination, with the brake-levers pivoted to the axle, of the block pivotally connected to the inner ends of the said levers, the spring interposed between the block and the axle, and the vertical operating-shaft, substantially as specified.

4. The combination, with the brake-levers pivoted to the axle, of the perforated block pivotally connected to the said levers, interposed spring, and vertical screw-threaded operating-shaft having a shouldered extension projecting into the aperture in the block, substantially as specified.

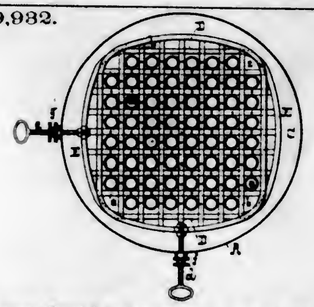
5. The combination, with the operating-shaft, the block pivotally connected to the brake-levers, and the interposed spring, of the brake-levers pivoted under the axle and arranged to bear upon the rim of the hub, the inner end of one of the said levers being rounded to fit in a corresponding concavity in that of the other, substantially as specified.

339,932. BOILER-SCRAPER. CHARLES A. ROCKSTROH, Baltimore, Md. Filed Sept. 25, 1885. (No model.)

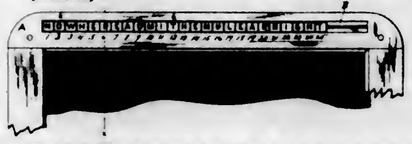
Claim.—1. In combination with the tube-sheet and the tubes of a boiler, a frame having bars which pass or extend between the tubes and projecting scrapers, and means to reciprocate the said device from the exterior of the boiler, substantially as specified.

2. In combination with the tube-sheet and the tubes of a boiler, the frames D and E, having bars at a right angle with each other, carrying scrapers F and G, and means to reciprocate the said frames independently of each other from the exterior of the boiler, substantially as specified.

339,932.



339,933. ABACUS FOR SLATES. CARLOTTA F. RODDEY, New York, N. Y., assignor to Augustus T. Gurlitz, same place. Filed Nov. 19, 1885. (No model.)

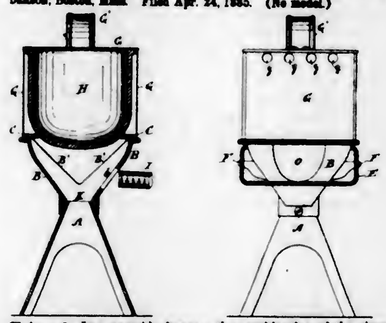


Claim.—1. The educational device described, consisting of a holder, A, having movable blocks arranged therein, in combination with indicative characters on the frame opposite to the individual blocks, when the same are in position at one end of the limit of their movement, the blocks adapted to be moved away from such characters, substantially as described and shown.

2. In an educational device such as described, a set of colored blocks arranged to be moved from one side of the holder to the other, in combination with a suitable holder having the name of each color impressed thereon opposite the position which the block of that color will occupy when the blocks are on one side of the holder, substantially as described and shown.

3. The slate-frame A, having a slot, B, provided with movable blocks, in combination with the figures on the frame A, opposite to each block when the blocks are in position at one end of the slot, such slot being of sufficient length to permit the blocks being moved away from their respective figures, substantially as described and shown.

339,934. PORTABLE FURNACE FOR TINNERS. GEORGE O. SANDERSON, Boston, Mass. Filed Apr. 24, 1885. (No model.)



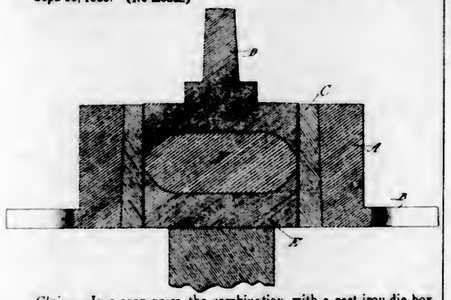
Claim.—1. In a portable furnace, the combination of the chamber B, the perforated plate C, the pot H, and cover G, provided with holes *g g*, as and for the purpose set forth.

2. The chamber or furnace B, provided with the supports F F, in combination with the bail E, for supporting the outer ends of the soldering-irons, as set forth.

339,935. DISINFECTANT. FERDINAND L. SARMENTO and WILLIAM G. GRIMM, Philadelphia, Pa., assignors of one-fifth to Samuel P. Sadtler, same place. Filed June 13, 1885. (No specimens.)

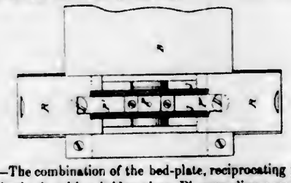
Claim.—A disinfectant or germicide formed of dry hypochlorites—such as hypochlorite of lime—with carbolic acid, whether free or in combination, as in a carbolate, whether pure or as it exists in crude mixtures, said parts being combined in substantially the proportions stated.

339,936. SOAP-PRESS. WILLIAM T. SCHUBERTH, Chicago, Ill. Filed Sept. 15, 1885. (No model.)



Claim.—In a soap-press, the combination, with a cast-iron die-box, of a brass ring situated in the bore of the same, as set forth.

339,937. PERFORATING-MACHINE. JACOB SCHUMACHER, Camden, N. J. Filed June 17, 1885. (No model.)



Claim.—The combination of the bed-plate, reciprocating punch, and a pair of feed-wheels, with a bridge-piece, P', extending across between the feed-wheels and carrying a detachable die, substantially as set forth.

339,938. RAILROAD-TIE. FREDERICK F. SCOTT, Hillsburg, Ind. Filed Feb. 18, 1886. (No model.)



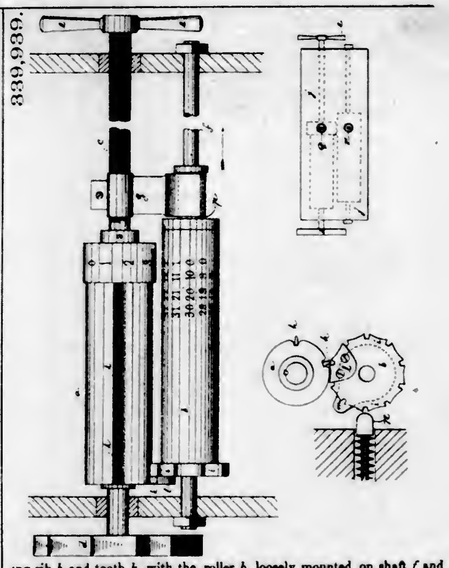
Claim.—A railroad-tie cast with chair-sections, as shown, in combination with similarly-formed chair-sections connected to the tie by bolts and nuts, a key provided with a dovetail head inserted in dovetail grooves in said chair-sections, the latter having dowel-pins extending through holes in the rail and holes in the opposite chair-sections, substantially as and for the purpose set forth.

339,939. REGISTER FOR GRAIN-WEIGHING MACHINES, &c. CHARLES SEEBELB, New York, N. Y. Filed Oct. 19, 1885. (Model.)

Claim.—1. The combination of roller *a*, having rib *h* and tooth *k*, with the roller *b*, having toothed wheel *i*, substantially as specified.

2. The combination of roller *a*, keyed to screw-spindle *c* and having rib *h* and tooth *k*, with the roller *b*, loosely mounted on shaft *f* and carrying toothed wheel *i*, substantially as specified.

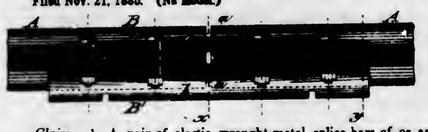
339,939.



3. The combination of roller *a*, having rib *h*, tooth *k*, and a circular numeral scale, with roller *b*, having toothed wheel *i* and a spiral numeral scale, substantially as specified.

4. The combination of the following elements: roller *a*, having rib *h* and tooth *k*, with roller *b*, spindle *c*, shaft *f*, hand-lever *e*, ratchet-wheel *d*, hanger *g*, and toothed wheel *i*, substantially as and for the purpose specified.

339,940. RAILWAY SPLICE-BAR. MORRIS SELLERS, Chicago, Ill. Filed Nov. 21, 1885. (No model.)



Claim.—1. A pair of elastic wrought-metal splice-bars of or approximately of standard length, each comparatively thick at its middle portion, and having its outer walls tapering therefrom to its ends, and each having suitably-shaped edges for taking a continuous bearing or seat on the under side of the rail-head and on the flange, in combination with the abutting rail ends of a railway-track, and with a bolt-and-nut fastening, as shown and described, with reference to securing a practically uniform flexibility and a continuous wave of deflection in all parts of the track, substantially as set forth.

2. An elastic wrought splice-bar having a comparatively thick middle portion and its outer wall tapering therefrom in its body portion each way to its ends, and having its inner wall straight, and having upper and lower bearing-edges of uniform thickness from end to end, and provided with suitably-spaced bolt-holes, substantially as set forth.

339,941. LOOM-SHUTTLE. ROBERT SHAND, Philadelphia, Pa. Filed June 29, 1885. (No model.)

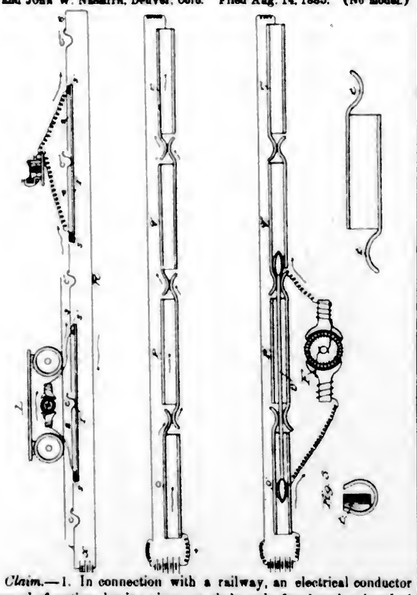


Claim.—1. The combination of a shuttle-body recessed for the reception of a cop, a drum, *g*, hung to a spindle near one end of said recess, a retainer, *f*, near the opposite end of the same, a spring acting upon the drum, and a flexible but inelastic strap connected at one end to the drum and having at the opposite end a catch adapted to the retainer *f*, all substantially as specified.

2. The combination of the shuttle-body having a recess for the reception of the cop, a lateral recess communicating with the said cop-receiving recess near one end of the same, a cop-holding strap, B, a retaining-pin, *f*, for one end of said strap, a drum, *g*, to which the other end of the strap is connected, a plate *m*, adapted to the lateral recess of the shuttle-body, a spring connected at one end to the drum and at

the opposite end to said plate, and a pin, *h*, passing through openings in the drum, plate, and shuttle-body, and serving as a spindle for the drum and as a retainer for the plate *m*, all substantially as specified.

339,942. CIRCUIT FOR ELECTRIC RAILWAYS. SIDNEY H. SHORT and JOHN W. NESBITH, Denver, Colo. Filed Aug. 14, 1885. (No model.)



Claim.—1. In connection with a railway, an electrical conductor composed of sections having pieces on their ends forming the electrical connections between said sections through the contact-points of said pieces, and adapted to close automatically, an insulating-bar carried on the car or other vehicle and longer than any one of the sections, said insulating-bar being adapted to pass between the contact-pieces and to separate them electrically during its passage between them, and having also conducting-pieces thereon which are in circuit with an electric receptive device, and are adapted to bear on the conductor on each side of the break caused by the bar when passing between the contact-pieces, all substantially as described.

2. In connection with a railway, an electrical conductor composed of sections having their ends adapted to automatically close the circuit, said conductor being in circuit with an electrical generator and return-wire, in combination with an insulating-bar carried on the car or other vehicle longer than any one section, and adapted to open and hold open the ends of the sections in passing said bar, having conducting-pieces thereon which are in circuit with an electric motor on the car, whereby the current is cut out of the conductor and made to pass through the motor, all substantially as described.

3. In connection with a railway, an electrical conductor composed of sections which are substantially in line with each other, and which have their ends adapted to come automatically into contact with each other to close the circuit, said conductor being in circuit with an electrical generator and return-wire, in combination with an insulating-bar carried on the car or other receptacle longer than any one of the sections, and adapted to open and hold open the ends of the sections in passing, said bar having conducting-pieces thereon which are in circuit with an electric motor on the car, whereby the current is cut out of the conductor and made to pass through the motor, all substantially as described.

4. In combination with a railway, an electrical conductor composed of sections which are substantially in line with each other, and which have their ends adapted to come automatically into contact with each other to close the circuit, said conductor being in circuit with an electrical generator and return-wire, in combination with an insulating-bar carried on the car or other receptacle longer than any one of the sections, and adapted to open and hold open the sections in passing, said bar having conducting-pieces on its ends, which conducting-pieces are in circuit with an electric motor on the car, and are adapted for contact with the sections of the conductor, while the intermediate portions of the bar separate the ends of the sections and break the circuit between them, all substantially as described.

5. A conductor composed of sections having spring or other connections between the sections, which when closed form a continuous conductor in connection with the generating device, a car or other vehicle moving on an adjustable way, a translating-loop for diverting the electric current from the conductor through the electromotor on the locomotive or car or vehicle, the said loop consisting, essentially, of two metal brushes or other devices of suitable conducting material, and placed at a distance apart greater than the length of any single section of the conductor, and connected together by means of a bar or other device consisting in whole or in part of some suitable insulating or non-conducting material and in constant contact with the conductor, and carried or moved along the conductor by suitable attachments to the locomotive or car, by which the circuit-closers or springs or bridging-pieces or devices connecting the sections of conductors are held open successively from the time that the first brush enters one until the second brush shall have passed it, the office of the translating-loop being to divert the electric current from the conductor through the first brush by a suitable wire or other conductor to the electromotor on the car, and thence to the last brush, a circuit-closer being always held open between the brushes by the insulating bar or device, to the two ends of which the brushes are connected, all these parts specified being combined and operating substantially as described.

6. In an electric-railway system, the combination of a single-line conductor in sections, with circuit-closers between each contiguous section, with an insulating-bar, the two ends of which are attached to brushes or conducting-pieces to hold open temporarily said sections and in connection with the electromotor, thereby diverting the entire current from the single-line conductor through the electromotor on the car, the parts being arranged as described, whereby each circuit closes automatically when the insulating-bar and the rear brush shall have passed them successively, as set forth.

339,943. WATCH-MOVEMENT PACKING-BOX. CARLOS H. SMITH, Elgin, assignor to the Elgin National Watch Company, Chicago, Ill. Filed Apr. 18, 1885. (No model.)



Claim.—1. As a means for inclosing watch-movements for transportation and storage, a box adapted within to hold and support a movement out of contact with its bottom and made angular in shape so as to make room for any portion or part projecting from the side of the movement, substantially as and for the purpose specified.

2. In combination with a metal ring or cup adapted to fit and hold a watch-movement, a box rectangular in general shape inclosing and holding such ring or cup, substantially as and for the purpose set forth.

3. As a means for inclosing watch-movements for transportation or storage, an angular box adapted to receive and support the movement out of contact with its bottom, in combination with a cover fitting such box and adapted to engage the dial-face thereof only at its edge, substantially as and for the purpose described.

4. In combination with the paper box rectangular in shape and adapted to support a watch-movement upon its upper edge, a cover adapted to fit the box and engage the movement dial-face only at its edge, while leaving the central portion of the dial-face and the hands free and unobstructed, and a metal box or casing inclosing the paper box, substantially as and for the purpose specified.

5. A paper box which is adapted to clasp the back, periphery, and dial of a watch-movement, and has its cover cut away over the portion of said dial which is traversed by the hands, substantially as and for the purpose shown.

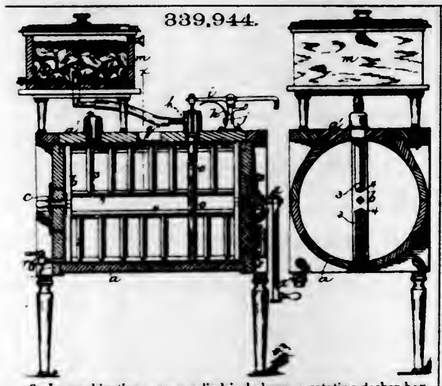
6. A box for inclosing a watch-movement, consisting of the lower portion adapted to receive and hold a watch-movement, and the cover adapted to engage the dial of the watch, and having its central portion cut away, and the opening thus formed covered by a piece of thin paper, substantially as and for the purpose described.

7. As a means for temporarily inclosing a watch-movement, a metal ring which embraces the periphery of such movement, a paper box that in plan view has a general rectangular form with rounded corners and is adapted to receive and contain said movement, and a metal box which corresponds to the shape of and is adapted to inclose said paper box, substantially as and for the purpose shown.

339,944. CHURN. SIDNEY SMITH, Cambridge, Mass. Filed May 24, 1884. (No model.)

Claim.—1. A cylindrical churn having a pump, means for operating the same, and a suitable opening to conduct air from the pump into the churn, combined with a dash having a hollow cross-bar adapted to coincide with said opening and conduct the air, as described, the churn being provided with a suitable opening for the escape of the gases generated during the process of churning.

339,944.



2. In combination with a cylindrical churn, a rotating dasher having marginal frames 2, with sharp edges, and having an open center, and with cross-bars 3, with sharp edges, extending from the side bars, 2, to sharp-edged bars 4, parallel with the side bars, as set forth.

339,945. SHINGLE. ROBERT C. SHOWDEN, Elizabeth, Pa. Filed Dec. 17, 1885. (No model.)



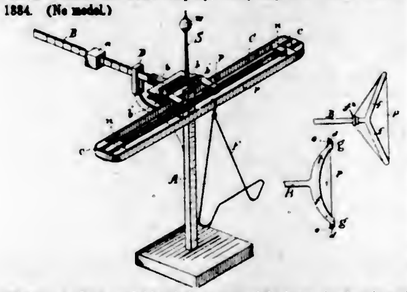
Claim.—1. A shingle having struck-up portions F and G, the former being depressed on a central transverse line and the latter being inclined downward toward the edge of the shingle, substantially as set forth.

2. A sheet-metal shingle having interlocking portions and provided with a lateral horizontal flange, said flange terminating short of the end of the shingle, whereby to form a stop for the adjacent shingle, substantially as set forth.

3. A sheet-metal shingle having its edge crimped upward at right angles and then down again, forming an interlocking loop, and provided with an extension lapped within the adjacent interlocking portion and projected horizontally outward beyond the same, substantially as set forth.

4. As an improved article of manufacture, a sheet-metal shingle having struck-up portions F and G, the former being depressed on a central transverse line, and the latter being inclined downward toward the edge of the shingle, provided with interlocking portions at two of its opposite edges and provided with a lateral horizontal flange, said flange terminating short of the end of the shingle, whereby to form a stop for the adjacent shingle, substantially as set forth.

339,946. TORSIONAL PIVOT-BALANCE. ALFRED SPRINGER and FREDERICK A. ROEDER, Cincinnati, Ohio, Frank Davis administrator of said Roeder, deceased, assignors, by mesne assignments, to the United States Torsion Balance and Scale Company, Jersey City, N. J. Filed June 14, 1884. (No model.)



Claim.—1. In a weighing-balance, a weight-beam having lateral extensions, in combination with one or more elongated elastic pivots held in tension between such extensions, substantially as set forth.

2. In a weighing-balance, in combination with a torsional pivot or pivots, as bands or wires of metal or other suitable elastic material, a beam provided with lateral projections between and upon which as struts the pivots are stretched and held in tension, as set forth.

3. In a torsional balance, in combination with a beam having lateral projections, a pivot or pivots held between said extensions, and means, substantially as described, for holding the pivot or pivots in tension, substantially as set forth.

4. A weighing-balance embodying one or more steelyard-beams suitably fulcrumed and provided with sliding weight-indicators, one or more torsional terminal pivots maintained in tension upon said beam or beams, and a scale-pan or equivalent support for the weighted body, in combination, substantially as set forth.

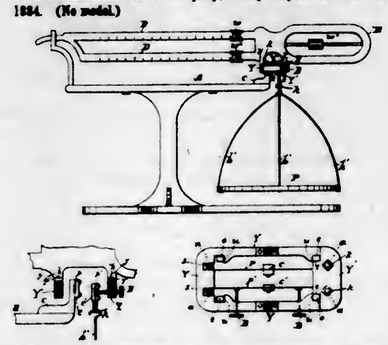
5. In a weighing-balance, the combination of two pivoted beams or levers fulcrumed in the same vertical plane, carrying terminal torsional pivots maintained in tension upon the beams or levers in horizontal planes, and a vertical standard or support for the scale-pan or weight-support secured firmly to said terminal pivots, substantially as set forth.

6. In a weighing-balance, the combination of a pivoted beam, a torsional pivot secured to said beam at its end across its axis in a horizontal plane, and a scale-pan support secured directly and rigidly to said end torsional pivot, substantially as set forth.

7. In a weighing-balance, the combination of a beam having its supporting-fulcrum acting torsionally and provided with a terminal torsion-pivot secured rigidly to said beam, and a platform secured to and suspended from said terminal torsion-pivot, essentially as set forth.

8. In a weighing-balance, the combination of a beam supported on a torsional pivot and having a terminal torsional pivot on one side of the fulcrum-pivot and a sliding weight on the other side, a parallel beam supported on a torsional pivot in the same vertical plane as the first-named, and having also a torsional terminal pivot, and a pan-support rigidly attached to the terminal torsional pivots of both beams, essentially as set forth.

339,947. TORSIONAL BALANCE. ALFRED SPRINGER and FREDERICK A. ROEDER, Cincinnati, Ohio, Frank Davis administrator of said Roeder, deceased, assignors, by mesne assignments, to the United States Torsion Balance and Scale Company, Jersey City, N. J. Filed Aug. 1, 1884. (No model.)



Claim.—1. In a torsional balance, the combination of a scale-pan and a beam provided with a yoke, Y, comprising a frame containing two torsional pivots, *p p'*, one of which serves as the fulcrum-pivot of the beam-structure and the other as the scale-pan fulcrum, substantially as described.

2. In a torsional balance, the combination, with a scale-beam and attached yoke having squared slots *s s*, of the torsional pivot bands or wires *p p'*, squared posts *a a*, having screw-threaded ends, and adjusting-nuts *k k*, adapted to be adjustably held in the squared slots of the yoke, substantially as described.

3. In a torsional balance, the combination of the slotted yoke Y, formed upon or attached to the scale-beam and provided with abutments *u*, the torsional bands or wire pivots *p p'*, holding-posts *a a*, covering-plates Y', provided with shoulders *t*, and the insertible wedges *e*, substantially as described.

4. In a torsional balance, the beam D, having yoke Y, provided with slots *s s* and abutment-legs *u u*, in combination with the pivot-holding posts *a a* and wedges *e e*, substantially as described.

5. In a torsional balance, the combination, with the yoke Y, of the covering-plates Y', posts *a*, torsional pivots *p p'*, wrapped on said posts, and the nuts *k* and wedges *e*, for tensioning and adjusting said pivots, substantially as described.

6. In combination with the yoke Y, covering-plates Y', posts *a*, wedges *e*, and stretched pivots *p p'*, the adjusting-screws B, for regulating the parallelism or horizontal distance of the pivots, substantially as described.

7. In combination with the yoke Y and covering-plates Y', posts

a, with nuts thereon contained, adapted to shift the vertical position of the bands, &c., substantially as set forth, and for the purpose specified.

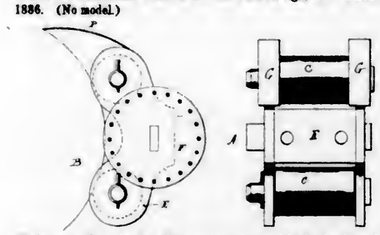
8. In a torsion-scale provided with counterpoise-weights M M, the combination of yoke Y, pivots *p p'*, stem L, and upper torsion-pivot, p^3, adapting the lower beam and yoke to hang horizontal and permit of the proper counterpoise action of the weights M M, substantially as and for the purpose specified.

339,948. **SUSPENDER-BUCKLE.** JAMES SPENCER, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Aug 24, 1885. (No model.)



Claim.—The herein-described buckle, consisting of three parallel bars, A B C, in the same plane, connected at their ends, forming two slots, *a b*, a hook, D, upon the lower edge of the bar C, the upper edge of said bar C extended to form a flange, *d*, the said flange turned inward and serrated upon its edge, all of a single piece of metal, substantially as described.

339,949. **BRAKE-SHOE FOR VEHICLES.** HENRY H. THOMAS, NICHOLAS F. HOWARD, and JOHN A. HOWARD, Dahlonega, Ga. Filed Feb. 6, 1886. (No model.)



Claim.—1. In a brake, the combination, with the brake-roller and securing means, of the brake-bar and perforated disk or plate placed on the same for engagement with the brake-lever, as set forth.

2. In a brake, the combination, with the brake roller or rollers and shoe, of the protectors or guards, as described, to prevent the entrance of mud and grit to the bearings, as set forth.

3. In a brake, the combination, with the roller or rollers, of a scraper extending above the rollers and clearing the dirt from the rim of the wheel, as set forth.

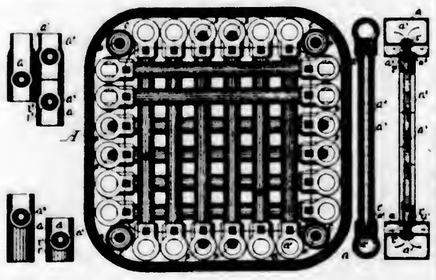
4. In a brake, the combination, with the brake shoe and rollers, of the removable bearings or journal-boxes Q, having the lips or flanges Q', for securing the same to the brake-shoe, as set forth.

339,950. **SECTIONAL FLASHER STEAM-BOILER.** ALVIN W. VAN DORSTON, Portland, Oreg., assignor of one-half to George Vandorston, Argos, Ind. Filed Jan. 4, 1886. (No model.)

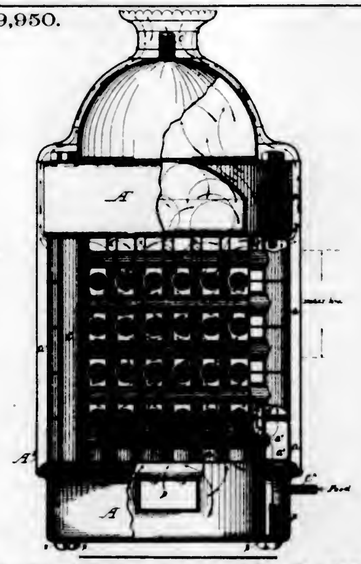
Claim.—1. In a sectional flasher steam-boiler, the combination of the series of vertical sectional columns, of the perforated tubes, and of the heating-tubes for the purpose of generating steam instantaneously, substantially as set forth and described.

2. In a steam-boiler, the combination of the vertical sectional columns provided with the recess a^2, with the water-base A, the recess a^2 and a^2, and the openings *l* and a^7 of the steam-dome, substantially as and for the purpose set forth.

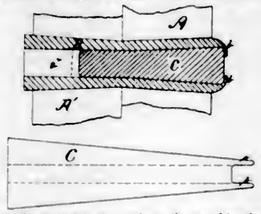
3. In a steam-boiler, the combination of a series of vertical water-columns and of the spray-tubes a^4, of the generating-tubes a^3, of the recess a^2, of the steam-dome A', and the water-base A, substantially as and for the purpose set forth.



339,950.



339,951. **BOLT.** HENRY A. WAHLERT, St. Louis, Mo., assignor to the American Brake Company, same place. Filed Jan. 20, 1886. (No model.)



Claim.—1. In a bolt-lock or rivet, the combination of a tapering mandrel and an expansible annulus, the parts being united or held together by upsetting the metal, substantially as and for the purposes specified.

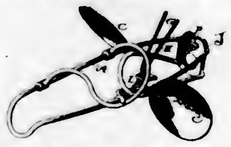
2. In a bolt-lock or rivet, the combination of a tapering mandrel and a longitudinally grooved or split annulus, substantially as and for the purposes specified.

3. In a bolt-lock or rivet, the combination, with an annular bolt having longitudinal grooves or splits at one end, of a tapered mandrel, substantially as and for the purposes specified.

4. In a bolt-lock or rivet, the combination, with an annular bolt having longitudinal grooves or splits at one end, and projecting clinch-lugs, of a tapering mandrel adapted to expand the split or grooved end of the bolt, substantially as and for the purposes specified.

5. In a bolt-lock or rivet, the combination of an annular bolt tapered at one end, and having longitudinal grooves or splits at the opposite end, and a tapering mandrel adapted to expand the grooved or split end of the bolt, substantially as and for the purposes specified.

339,952. **BAIT FOR CATCHING FISH.** ARCHER WAKEMAN, Cape Vincent, N. Y. Filed Sept. 3, 1885. (No model.)



Claim.—1. A fishing device having a skeleton frame or body to contain bait, and provided with wings or blades adapted to impart motion, substantially as set forth.

2. A fishing device consisting of a skeleton frame adapted to receive bait within it and expose the same to view, and provided with a clasp to secure the bait therein, substantially as explained.

3. A fishing device consisting of a skeleton frame provided with

hooks, a head or front section provided with inclined blades, and a clasp to secure the bait within the skeleton frame, said parts being combined and arranged to operate substantially as shown and described.

4. The herein-described fishing device, consisting of skeleton body A, head-section B, provided with blades C, swivel D, hooks F, and clasp G.

5. In a fishing device or bait substantially such as described, a clasp for securing edible bait in place within said device, consisting of plate J, having opening *p* and notches *o*, and swinging latch H, having spring-arms to enter said notches.

339,953. **RUBBER BOOT OR SHOE.** GEORGE WATKINSON, New Haven, Conn., assignor to the L. Candee & Co., same place. Filed Feb 8, 1886. (No model.)



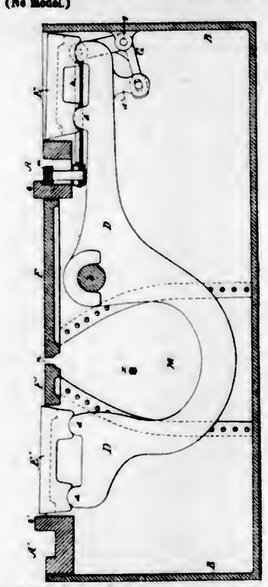
Claim.—A rubber boot or shoe the heel of which is provided with the projection *a* upon its face at the rear, the said projection being made an integral part of the heel, substantially as described.

339,954. **BRAIDED-WIRE TUBULAR SPRING.** JOSEPH L. WELLS, Philadelphia, Pa., assignor to the Wesson & Wells Manufacturing Company, Camden, N. J. Filed Apr. 9, 1885. (No model.)



Claim.—As a new article of manufacture, a tubular interwoven or braided wire spring flattened on one side, substantially as and for the purpose set forth.

339,955. **SWITCH FOR CABLE OR OTHER CONDUIT RAILWAYS.** WILLIAM WHARTON, Jr., and EDWARD SAMUEL, Philadelphia, Pa., assignors to William Wharton, Jr., & Co., (Limited,) same place. Filed Nov 23, 1885. (No model.)



Claim.—1. A switch-box, B, having a slot, *n*, for the passage of a cable-grip bar or a contact-bar.

2. A switch-box, B, having end openings, M, for the passage of a cable and a cable-grip bar or a contact-bar.

3. A switch-box, B, having a slot, *n*, for the passage of a cable grip, and end openings, M, for the passage of a cable and a cable-grip bar.

4. A rocking frame, D, having its arms on one side depressed and continued around under and outside of the cable, substantially as set forth.

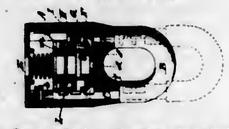
5. The combination of a railway-track, conduit for cable or other driving mechanism, movable platform, movable switch-point, and connecting mechanism for operating said switch-point from said movable platform passing beneath the driving mechanism in the conduit, all substantially as and for the purpose set forth.

6. The combination of switch-castings A A' with a box having end openings, M M, and a slot, *n*, for the passage of the cable and of the grip-bar of a cable-car, all substantially as described.

7. The movable tongue of a switch and movable operating-platform connected to the said tongue, in combination with a box, B, having end openings, M M, and a slot, *n*, all substantially as described.

8. The raised inclined rail *a*, when combined with a movable tongue, *a*, and with movable operating-platforms connected to the said tongue.

339,956. **PADLOCK.** CLARENCE L. WHEELER, Sharon Valley, Conn., assignor of two-thirds to Charles C. Gordon and Alonzo A. Bates, both of same place. Filed Dec. 28, 1885. (No model.)

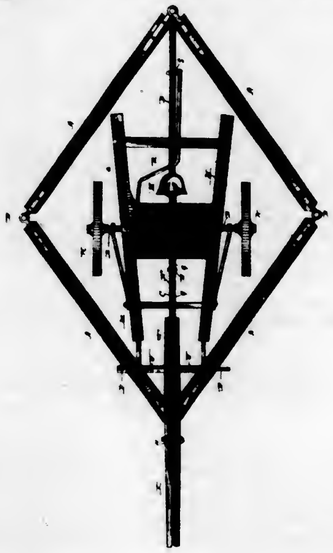


Claim.—1. In a padlock of the class described and in which the shackle is of U shape adapted to slide into and from the case, having combined therewith a series of tumblers arranged to turn in a plane at right angles to the legs of the shackle and to engage or disengage the said legs accordingly as the tumblers are in the locked or unlocked position, the tumblers when constructed with their adjacent surfaces roughened so as to produce slight protuberances thereon, substantially as described, and whereby the friction between the tumblers is increased.

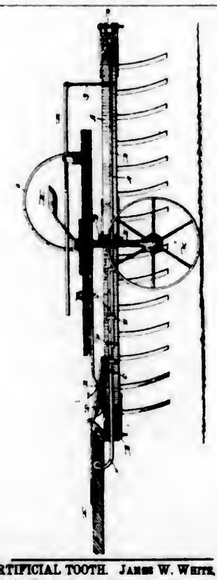
2. In a lock of the class described, a plate fixed in the case in a plane at right angles to the axis of the legs and a tumbler in a plane parallel therewith, the said plate forming a bearing upon which the tumbler may rotate, the plate and tumbler, the one constructed with a recess, *n*, and the other with corresponding projections, *m*, the said recesses forming stops to arrest the rotation of the tumblers at their two extremes of movement, substantially as described.

339,957. **WHEEL-HARROW.** ROBERT WHEELER, Okolona, Miss. Filed Sept. 15, 1885. (No model.)

Claim.—The improved harrow described, consisting of a frame formed of tooth-carrying beams hinged together at the ends, combined with the adjustable longitudinal brace, the truck and frame thereon, the lever supporting the rear of the frame, and the pivotally-supported tongue adjusting itself by means of a slotted connection to the front pivotal support of the truck-frame, substantially as and for the purpose specified.



339,957.



339,958. ARTIFICIAL TOOTH. JAMES W. WHITE, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed Jan. 5, 1886. (No model.)



Claim.—1. An artificial tooth having a vertical opening therein and flat or equivalent shaped approximal side or sides, substantially as described, whereby the tooth may be securely mounted upon a pin, and by the contact of its approximal side or sides with the adjacent tooth or teeth prevent any independent turning or rotative movement of the tooth about said pin, as hereinbefore fully set forth.

2. An artificial denture consisting of a bar or support fitted with a pivot pin or pins, and having a vertically-open tooth or teeth fitted upon said pin or pins with flat or equivalent abutting sides or edges, substantially as described.

3. An artificial tooth having a transverse groove extending entirely across the base or neck thereof, and a laterally-enlarged but shorter recess or chamber in the body of said tooth communicating with said basal groove, substantially as described.

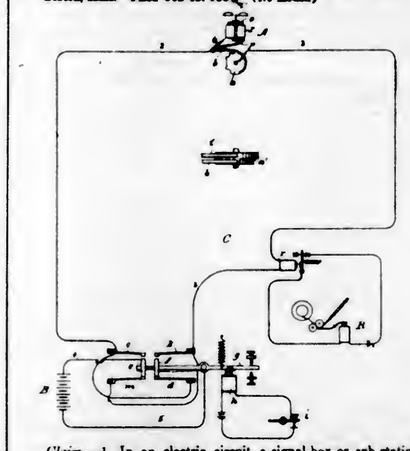
4. An artificial tooth having a transverse groove in its base to receive the upper side or edge of a bridge-bar or truss, a recess or chamber above said bar or truss, and a vertical opening extending from said chamber through to the face or grinding, cutting, or masticating end of the tooth, substantially as described, whereby the tooth may be securely mounted upon a truss or bridge-bar having a retaining-pin projecting therefrom to fit the vertical opening of said tooth by means of a cement or plastic material packed or run into said recess or chamber to envelop said truss or bar, as hereinbefore fully set forth.

339,959. WAGON. JAMES H. WHITING, Flint, Mich. Filed Dec. 17, 1885. (No model.)



Claim.—In a wagon, the axle A, reach C, sand-board G, and king-bolt B, passing through said axle, reach, and sand-board, in combination with the tongue H, having elongated slot h, the hounds E, terminating in parallel ends *b*, embracing said tongue, bolt *c*, passed through said ends and slot, draw-bars I, slide J, clips *d*, hammer-strap K, and bolt L, all constructed, arranged, and operating substantially as described.

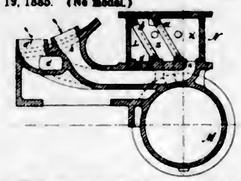
339,960. DISTRICT SIGNALING APPARATUS. JOHN C. WILSON, Boston, Mass. Filed Oct. 13, 1884. (No model.)



Claim.—1. In an electric circuit, a signal-box or sub-station containing a break-wheel and a polarized signaling-instrument and device for interposing the latter in the circuit after the signal has been transmitted by the break-wheel, combined with a battery-reversing instrument located at the station where the signal of the said break-wheel is received for operating the said polarized signaling-instrument at the sub-station, substantially as described.

2. The notched circuit-wheel *a*, and contact-springs *b* and *t* co-operating therewith, combined with the polarized signaling-instrument connected in a branch between the said springs, and the battery-reversing instrument at the station where the signal produced by the said circuit-wheel is received for operating the said polarized signaling-instrument, the said circuit wheel having a portion of its periphery notched for its entire width, and another portion of its periphery of full diameter where co-operating with one spring, and of reduced diameter where co-operating with the other spring, substantially as described.

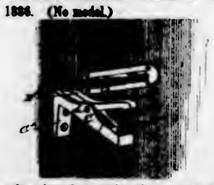
339,961. STEAM-ENGINE. WILLIAM WILSON, Bloomington, Ill. Filed Dec. 19, 1885. (No model.)



Claim.—1. The combination of the steam-chest provided with two partitions and valve-seats *a b*, each having ports, with a space between the valve-seats divided into two parts or chambers by a partition, *d*, with an admission-valve and exhaust-valves, substantially as and for the purposes specified.

2. In combination with a steam-cylinder, a steam-chest provided with partitions and valve-seats *a b*, each having ports, a chamber, K, to receive steam from a boiler, chambers T S between the two valve-seats, a chamber, L, to receive exhaust-steam, an admission-valve, exhaust-valves, a passage for the admission of steam from the boiler to the chamber K, passages from the chambers T S to the steam-cylinder, and exhaust-passages C C, substantially as and for the purposes specified.

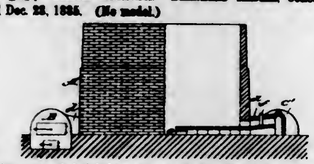
339,962. BURGLAR-ALARM. JASPER N. YELTON, Catawba, Ky. Filed Feb. 9, 1886. (No model.)



Claim.—In a burglar-alarm, a bracket provided with a longitudinal recess for the reception of a bow-spring and a recess for the reception of a cartridge, and an angular lever or hammer pivoted in said longitudinal

recess directly over the crown of the bow-spring, so as to be operated upon by the same and explode the cartridge, in combination with an adjustable operating-bolt, substantially as described.

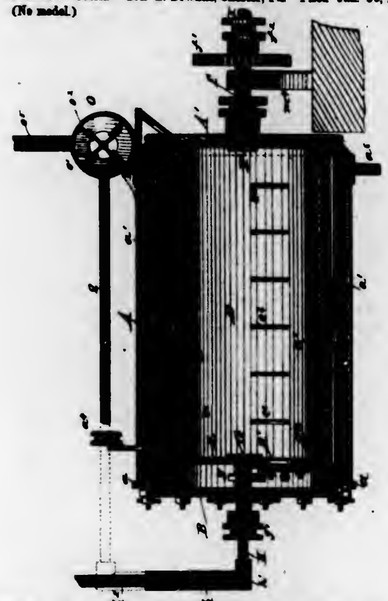
339,963. BRICK-BURNER. BERNHARD ALBERS, Conception, Mo. Filed Dec. 22, 1885. (No model.)



Claim.—1. A brick-burner provided with furnaces arranged in pairs, each pair being connected by an arch in which there is a flue, the said flue being centrally divided by a partition, and side flues leading from the main flue to the kiln, substantially as described.

2. In a brick-burner, the combination, with furnaces B B' C C', of flues D, divided by partitions E', the said furnaces being provided with interchangeable grates E, and flues *d d*, leading in from the main flues to the interior of the kiln, said flues *d* being provided with sliding partitions *f*, substantially as described.

339,964. APPARATUS FOR SEPARATING VEGETABLE FROM ANIMAL FIBER. TOM B. BOWERS, Chester, Pa. Filed Jan. 30, 1886. (No model.)



Claim.—1. In a machine to remove vegetable fiber from wool by means of acid and salt, the combination of the cylindrical steam-jacket, the rotating cylinder having the tubular shafts secured to its ends, the stuffing-boxes on the ends of the tubular shafts, the retort, and the short tubes running through the tubular shafts and serving to conduct the volatilized acid into and out of the cylinder, substantially as specified.

2. In a machine to remove vegetable fiber from wool by means of acid and salt, the combination of the cylindrical steam-jacket, the closed cylinder having a door at the front end, the tubular shafts secured to the ends of the cylinder, mechanism, substantially as described, to rotate said cylinder, the retort, the short tubes passing through the tubular shafts and conducting the volatilized acid into and out of the cylinder, and the vertical tubes to create a draft from the cylinder, substantially as specified.

3. In a machine to remove vegetable fiber from wool by means of acid and salt, the combination of the cylindrical steam-jacket, the cylinder rotating therein and having the tubular shafts secured to its ends, the blower, the retort, the short tubes passing through the tubular shafts, the tubing connecting the blower to the front short shaft, and mechanism, substantially as specified, whereby the cylinder may be rotated independently, or the cylinder and blower rotated simultaneously, substantially as specified.

4. In a machine for removing vegetable fiber from wool by means of acid and salt, the combination, with the steam-jacket, the cylinder rotating therein, discharging apparatus, substantially as described, secured to the front of the cylinder, tubular shaft F, and stuffing-box f^3, of the short tube I and cylindrical retort J, provided with the bent tube k', to connect to the tube I, and the feeding-tube K, having upon its flanged upper end the pivoted door *k*, substantially as specified.

5. In a machine to separate vegetable fiber from wool by means of acid and salt, the combination, with the retort and cylinder rotating within the steam-jacket and provided with the door E, of the bolts e^2, secured to said door e', provided with the curved extensions e^3 and handle e^4, and the nuts e^5, substantially as specified.

6. In a machine for the purpose described, the combination, with the steam-jacket provided at its open end with the circular plate *a*, of the bolts C, pivoted upon said plate, the hinged door B, provided with the notches b', and the nuts *c*, substantially as specified.

7. In a machine for the purpose specified, the combination, with the cylinder rotating within the steam-jacket, the blower, the retort, the tubing connecting the retort and cylinder, and the discharge-tubing, substantially as described, of the gear-wheel f^7 on the tubular shaft E, the shaft M, driven by the engine by means of a crank and connecting-rod and provided with the worm m, gear-wheel m^1, and clutch m^2, actuated by the lever m^3, the shaft N, provided with the gear-wheel n and pulley n', fan o^3 of the blower, pulley o^3 on the end of the fan-shaft, and belt o^4, connecting the pulleys o^3 and n, all constructed and arranged substantially as and for the purpose specified.

339,965. STEAM-ENGINE. THOMAS BRANTLEY, Eufaula, Ala. Filed Dec. 12, 1885. (No model.)

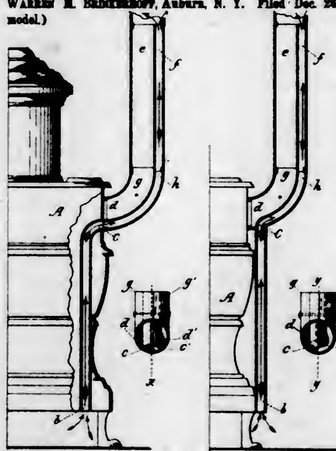


Claim.—1. The valve-seat having the openings *c*, communicating with the surface thereof, the oil-cups for supplying oil to the openings *c*, and the wicks or absorbent located in said openings for feeding the oil to the face of the valve-seat, and the blow-off valves at the outer ends of the openings *c*, for the purpose set forth, substantially as described.

2. In a steam-engine, the cylinder having the grooves *a*, communicating with the exhaust-ports, and the grooves *b*, having the absorbent packing or wicks, and oil-cups communicating with the said grooves *b*, for supplying oil thereto to lubricate the piston, substantially as described.

3. The combination of the cylinder having the closed ends, the longitudinal slots F in its sides, and the annular grooves *a*, communicating with the exhaust-ports, with the cylindrical piston G in the cylinder, and having the projecting pins L, working in the slots F, substantially as described.

339,966. VENTILATING ATTACHMENT FOR HEATING-STOVES. WARREN M. BRINKERHOFF, Auburn, N. Y. Filed Dec. 24, 1885. (No model.)



Claim.—1. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, and provided with an air-duct fol-

lowing the wall of said elbow and lying adjacent thereto, said duct communicating with the outer air at the end nearest the stove and at the other end discharging into the elbow or smoke-pipe, substantially as described.

2. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, and provided with an air-duct following the wall of said elbow, the wall of the elbow forming one wall of said duct, the latter communicating with the outer air at the end nearest the stove and at the other end discharging into the elbow or smoke-pipe, substantially as described.

3. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, said elbow having an air-duct following its wall, the wall of the air-duct and elbow having integral connection, and the said duct communicating with the outer air at the end nearest the stove, and at the other end discharging into the elbow or smoke-pipe, substantially as described.

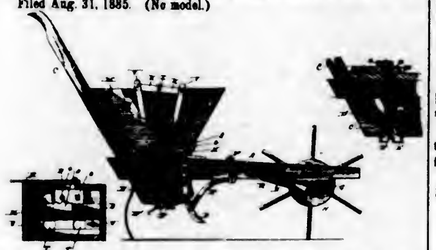
4. The combination, with a stove, of an elbow provided with an air-duct, which follows its wall and is of unequal diameter in cross-section, said duct communicating with the outer air at the end nearest the stove, and at the other end discharging into the elbow or smoke-pipe communicating therewith, substantially as described.

5. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, said elbow being provided with an air-duct following its wall and lying adjacent thereto, and communicating at the end nearest the stove with a ventilator-passage, which extends toward the floor, and at the other end discharging into the elbow or smoke-pipe, substantially as described.

6. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, said elbow having an air-duct following and lying adjacent to the wall thereof, and communicating with a ventilator-passage at the end nearest the stove, said ventilator-passage extending toward the floor at a point outside the heater, while the duct discharges into the elbow or the smoke-pipe connected thereto, substantially as described.

7. As a new article of manufacture and sale, an elbow for a smoke-pipe, having an air-duct which follows the wall of said elbow and is permanently connected therewith, said duct having communication at the end nearest the stove with the outer air and extending toward the discharge end of the elbow, substantially as described.

339,967. COMBINED SEED-PLANTER AND FERTILIZER-DISTRIBUTER. RHODOM M. BROOKS and JAMES M. BROOKS, Jenkinsville, Ga. Filed Aug. 31, 1885. (No model.)



Claim.—A planter consisting of a suitable hopper with chambers or compartments, an agitator and seed-dropping mechanism contained therein, pitmen leading therefrom to a crank-shaft carrying the drive-wheel, adjustable guides leading from the bottom of the said chambers, respectively, forward and rearward, and a funnel surrounding said guides, substantially as specified.

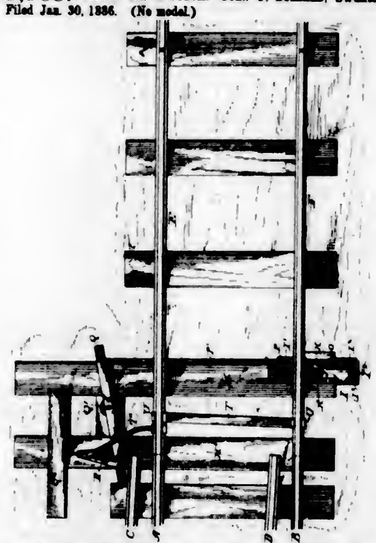
339,968. SUSPENDERS. J. TALMAN BUDD, Buffalo, N. Y. Filed Dec. 26, 1885. (No model.)



Claim.—1. In suspenders, in combination with a hanger for attachment to shoulder strap or straps, flexible fabric ends for pants or drawers supports provided with an adjustable attachment consisting of a strip or strips of leather or other suitable material rigidly attached to flexible fabric ends and adjustably attached to a hanger, substantially as shown and described.

2. In suspenders, the pants or drawers supports consisting of the flexible fabric ends, *g g*, and the stripe *g' g²*, of leather or other suitable material, rigidly attached to the fabric ends *g g*, and adjustably attached to a hanger, substantially as shown and described.

339,969. RAILWAY-SWITCH. JOHN F. BULLARD, Swanton, Vt. Filed Jan. 30, 1886. (No model.)



Claim.—1. The combination, with the main and side tracks and the switch-rails connected by the tie-rod, and the hinged flanged lock with back rib and guard thereon, of the lever O, bar P, connected thereto and to the shifting-rod P', the lever Q, the crank-rod, and the arms connecting the switch-rails to the lever Q, and the crank-rod, substantially as specified.

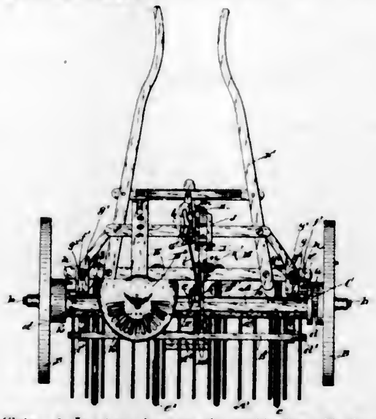
2. The combination, with the base-plate I', having lugs K K, of the hinged flanged lock I, provided with the slot N, the lever O, with arm N', the bar P, operating-rod P', the lever Q, and rods connecting the lock I with the lever of the switch-stand, substantially as specified.

339,970. CEMENT FOR ROOFING, &c. ELDRIDGE J. BURCHELL, La Fargeville, N. Y. Filed July 15, 1885. (No specimens.)

Claim.—1. The herein-described cement for roofing and other purposes, consisting of coal-tar, water-lime, coal-ashes, plaster-of-paris, oil solution, and soda solution, in or about the proportions specified.

2. A roofing-cement in which is combined coal-tar, a dead-oil solution, water-lime, and plaster-of-paris, in or about the proportions specified.

339,971. HORSE HAY-RAKE. HIRAM M. BURDICK, Ilion, N. Y. Filed Apr. 17, 1885. (Model.)



Claim.—1. In a horse hay-rake, the combination, with the pawls engaging with the ratchets on the wheel-hubs and connected at one end by a rod-connection, and having on their other ends pins or projections, of the adjustable plates having pendants at their rear ends, the thill-irons, and the end disks having pivots or projections for connection with said thill-irons, said disks being slotted for passage of said pins or projections, substantially as shown and described.

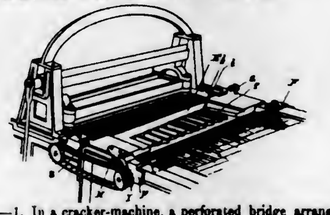
2. In a horse hay-rake, the combination, with the lever G, the spring-actuated bar or arm, and the rod-connection D, said lever connected to said bar or arm by rod *i*, of the pawls connected to each end of said rod-connection having a lateral projection or pin on their outer ends, and the end disks having slots for passage of said projections or pins, and the adjustable plates having pendants at their rear ends, said end plates having pivots or projections for connection with the thill-irons, substantially as shown, and for the purpose specified.

3. In a horse hay-rake, the combination, with the spring-actuated bar or arm and the lever having a rod connecting with the lower end, of said bar or arm of the rod-connection, the pawls engaging with ratchets on the wheel-hubs and carrying pins or projections, and the adjustable plates having pendants at their rear ends, said pawls being connected at one end to said rod-connection, substantially as shown and described.

4. In a horse hay-rake, the combination, with the supporting-wheels having ratchets on their hubs, of the rake-head, a rod mounted thereon, pawls engaging said ratchets and secured to said rod, a pendent arm on said rod, a spring lying in a tube connected with the rake-head and bearing against said arm, a lever connected to said arm by a connecting rod and fulcrumed to a lever provided with a foot-rest and hooked end, and a tilting lever adapted to engage said hooked end, substantially as shown and described.

5. In a horse hay-rake, the combination, with the end disks and the pawls having pins or projections passing through slots of the said disks, of the adjustable plates having pendants at their rear ends, substantially as shown and described.

339,972. CRACKER-MACHINE. WILLIAM S. CRANE and ALFRED EDEN, Detroit, Mich. Filed June 25, 1885. (No model.)



Claim.—1. In a cracker-machine, a perforated bridge arranged in the path of the sheet of dough between the cutters and the peel end of the machine, and constructed and operated to form a scrapping device, substantially as described.

2. In a cracker-machine, two aprons to carry the dough, a perforated bridge arranged in the path of the sheet of dough between the cutters and the peel end of the machine and between said aprons, and constructed and operated to form a scrapping device, as set forth.

3. In a cracker-machine, a hinged and perforated separator combined with the carrier for the dough and means for shaking said separator, as set forth.

4. In a cracker-machine, the hinged and perforated bridge E, in combination with a shaking device, as the arm H and ratchet I, substantially as described.

5. In combination with the carrier-aprons A B, separated by an intervening gap, the perforated bridge E, removably secured in position and forming the path across said intervening gap, substantially as described.

6. The combination, with the carrier A, of the perforated bridge E, and means, substantially as described, for separating the scraps from the crackers as the same pass over said bridge, as set forth.

7. The combination, with the carrier-apron A, of the apron B, supported at one end in movable bearings, and a separator for separating the scraps from the crackers, removably secured between said aprons, substantially as and for the purpose specified.

8. In a cracker-machine, the combination, with the apron A, of the bridge E, provided with fingers *b*, substantially as and for the purposes specified.

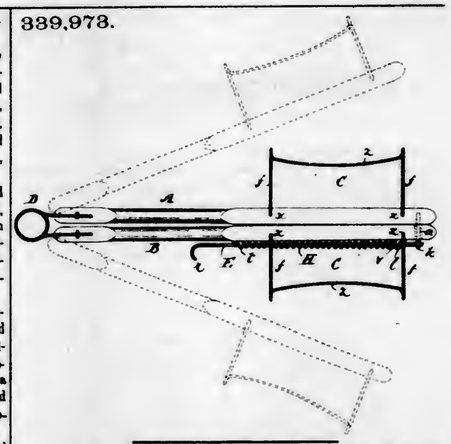
9. In a cracker-machine, a scrapping device consisting of the bridge E, having fingers *b* and hinges *a*, the arm H, and the ratchet-wheel I, all combined and operating as described.

10. In combination with the bridge E, having fingers *b*, the scraper-rod *c*, secured crosswise between said fingers, substantially as and for the purpose specified.

339,973. PLATE-LIFTER. CHARLES A. CRAWFORD, Thompson, Conn. Filed Jan. 2, 1886. (No model.)

Claim.—In a plate-lifter, the legs *l l*, spring H, eye *k*, and rod E, provided with the pull *e*, in combination with the handles A B, provided with the spring D, and holders C C, constructed, combined, and arranged to operate substantially as set forth.

339,973.



339,974. PRODUCING SULPHITE OR BISULPHITE OF SODIUM. WILLIAM O. CROOKER and WILLIAM P. CROOKER, Turner's Falls, Mass. Filed May 27, 1885. (No specimens.)

Claim.—1. The herein-described method of producing sulphite-of-sodium liquor from sulphate of sodium for the reduction of wood to pulp, consisting in mixing sulphate of sodium with carbonaceous matter, roasting the mixture, leaching out the soluble part, evaporating to dryness, granulating the product, then heating it and agitating it in contact with air or oxygen until incandescence ceases, and making into a solution, substantially as set forth.

2. The herein-described method of producing sulphite and bisulphite-of-sodium liquor from sulphate of sodium for the reduction of wood to pulp, consisting in mixing sulphate of sodium with carbonaceous matter, roasting the mixture, leaching out the soluble part, evaporating to dryness, granulating the product, then heating it and agitating it in contact with air or oxygen until incandescence ceases, converting it into a solution, and charging it with a portion of sulphurous acid, substantially as described.

3. The herein-described method of strengthening or re-enforcing the action of the sulphite of sodium in making wood pulp, consisting in providing it with an additional portion of sulphurous or other acid before the solution is introduced into the digester, substantially as set forth.

4. In converting wood into pulp by means of sulphite or bisulphite of sodium, decomposing the sulphide or sulphate of sodium by the addition of bisulphite of calcium, substantially as set forth.

339,975. PROCESS OF MAKING BISULPHITES. WILLIAM O. CROOKER and WILLIAM P. CROOKER, Turner's Falls, Mass. Filed Sept. 24, 1885. (No specimens.)

Claim.—1. The herein-described method of producing bisulphite-of-sodium liquor, consisting in suspending by agitation neutral sulphite of calcium in neutral sulphate-of-sodium solution, and then charging the mixture with sulphurous acid until decomposition has taken place, as set forth.

2. The herein-described method of obtaining bisulphite-of-sodium liquor, consisting in roasting the acid sulphate of sodium to reduce it to neutral sulphate and recover one proportion of sulphuric acid, suspending neutral sulphite of calcium in the neutral sulphate-of-sodium solution, and finally charging the mixture with sulphurous acid, as specified.

3. The herein-described method of obtaining bisulphite-of-sodium liquor from crude acid sulphate of sodium, consisting in roasting the crude sulphate of sodium to reduce it to a neutral sulphate and recover one proportion of sulphuric acid, treating the neutral solution with sulphite of calcium suspended by agitation, and charging with sulphurous acid obtained by decomposing the sulphuric acid recovered, as specified.

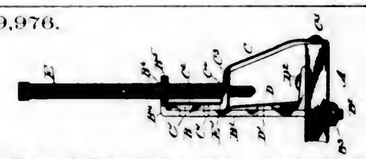
4. The herein-described process of obtaining bisulphite-of-sodium liquor, consisting in suspending by agitation neutral sulphite of calcium obtained by treating the used bisulphite-of-sodium liquor with oxide or carbonate of calcium in a neutral sulphate-of-sodium solution, and then charging the mixture with sulphurous acid until decomposition has taken place, as specified.

339,976. WAGON-STAKE. JOHN M. DEITZ, Otisco, Mich. Filed Feb. 3, 1886. (No model.)

Claim.—1. The upright B, provided with the apertured head B^2 and the apertured bracket C, substantially as specified.

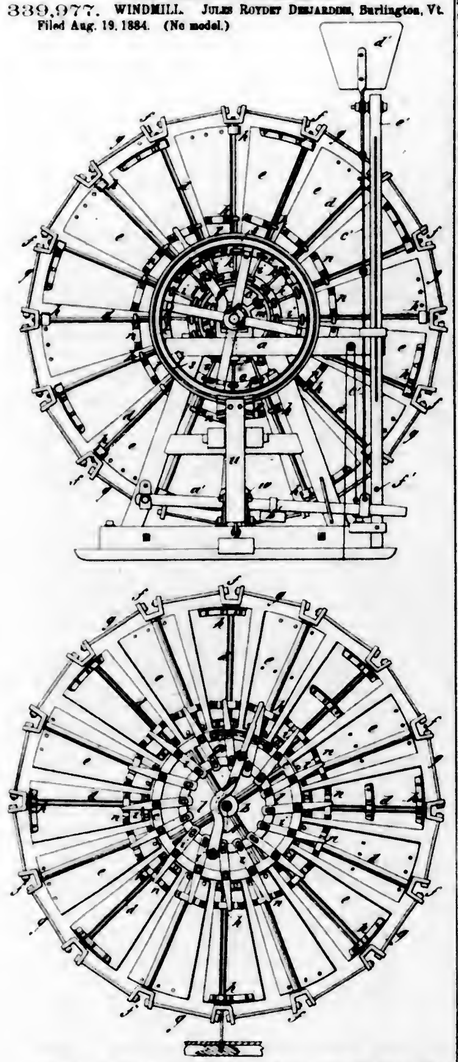
2. The combination, with a bolster of a wagon having the upright B, formed with the head B^2, apertured, as at B^3, and the bracket C, formed with the knee portion C^2, apertured, as at C^4, of the bar or pin E, formed with the shoulder E', substantially as specified.

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3. The upright B, formed of a single piece of metal, and having the tapered or shouldered screw-threaded lower end, B^2, and the apertured head B^3, and the brace C, substantially as specified.

339,977. WINDMILL. JULES ROYDET DESJARDINS, Burlington, Vt. Filed Aug. 19, 1884. (No model.)



Claim.—1. The combination, in a wind-wheel, with the hinged fans, of vertically sliding stops at opposite sides thereof, laterally-moving rings *m*, below the lower ends of said pins, horizontal pins supporting said rings, and spring *p* on the pins for pressing the rings outward, substantially as set forth.

2. The combination, in a wind-wheel, of the hinged fans *e*, the ring *c*, to which said fans are hinged, the inner rotatable rings, *l*, within the ring *c*, and connected by cross-bars, the stops *i*, movably connected with the rings *c* and *l* at or near their lower and middle portions, the lever *q*, secured to one ring *l*, and the rack *q'*, secured to the ring *c* and adapted to engage the free end of said lever, the upper ends of the stops *i* extending on opposite sides of the lower ends of the said fans, substantially as set forth.

3. The combination, in a wind-wheel, of the vertical hinged fans, the fixed ring to which they are secured, and the inner rotatable rings, eyes on said inner and outer rings, headed pins held by said eyes, and the upper ends of the pins extending on opposite sides of the said fans, substantially as set forth.

4. The combination, in a wind-wheel, of the outer ring, *c*, the hinged fans *e*, the inner rotatable rings, *l*, and means for operating them, with the vertically-sliding pins connected to the rings *l* and *c*, and the laterally-adjustable rings *m*, on the peripheries of which the inner ends of the pins rest, the horizontal pins *o*, on which said rings *m* are mounted, and the springs *p* for pressing the rings *m* outward, substantially as set forth.

5. The combination, with a wind-wheel and its shaft, of brake-wheel *s*, having beveled edges and V-grooved rim, and the levers *u*, carrying brake-shoes *v*, substantially as described.

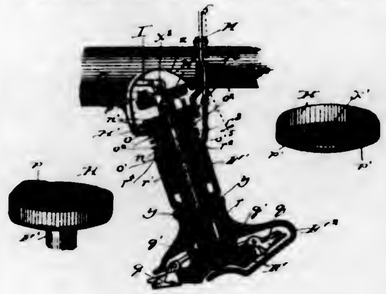
6. The combination, with a wind-wheel and its shaft, of brake-wheel *s*, brake-levers *u*, toggle-bars *w*, and lever *a'*, substantially as described, for operation as specified.

7. The combination, with a wind-wheel, its shaft and a brake-wheel thereon, of a brake-shoe, a weighted lever connected with said shoe forcing it away from said brake-wheel, a vertically-swinging vane, and a rod connecting the vane and lever below the pivoted point of the latter, whereby when the lever assumes a horizontal position it will raise the lever and engage the brake-shoe with the brake-wheel, and when the vane is vertical the weighted lever will withdraw the brake-shoe from the brake-wheel, substantially as set forth.

339,978. SEED-PLANTER. PAUL DICKINSON, Chicago, Ill. Filed Dec. 8, 1885. (No model.)

Claim.—1. In a seed-planter, a flat wheel connected with the machine, to be normally in contact with the ground, in combination with means, substantially as described, for causing the seed to be planted automatically at regular intervals, and actuated by the rotary movement of the flat wheel, produced by the locomotion of the machine, substantially as set forth.

2. In a seed-planter, the yielding flat wheel connected with the





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machine, to be normally in contact with the ground, in combination with means, substantially as described, for causing the seed to be planted at regular intervals, and actuated by the rotary movement of the flat wheel, produced by the locomotion of the machine, substantially as set forth.

3. In a seed-planter, a yielding flat wheel to be raised from and lowered to its normal position in contact with the ground, in combination with means, substantially as described, for causing the seed to be planted automatically at regular intervals, and actuated by the rotary movement of the flat wheel in frictional contact with the ground and produced by the locomotion of the machine, substantially as set forth.

4. In a seed-planter, a flat wheel connected with the machine, to be normally in contact with the ground and rotated by the locomotion of the machine, a lever in position to be tripped at one end by the flat wheel in its rotary movement, clutch mechanism, substantially as described, upon the main axle of the machine, controlled by the lever at its opposite end and released by the tripping of the latter to move into mesh, and means, substantially as described, actuated by the said clutch mechanism to effect the automatic planting of seed with each tripping of the lever by the rotation of the flat wheel, substantially as set forth.

5. In a seed-planter, a flat wheel connected with the machine, to be normally in contact with the ground and rotated by the locomotion of the machine, a lever in position to be tripped at one end by the flat wheel in its rotary movement, spring-clutch mechanism, substantially as described, upon the main axle of the machine, which is encircled by a loose sleeve carrying toward its opposite extremities a desired distance apart beveled gear-wheels provided centrally with clutch-teeth, the said spring-clutch mechanism being controlled by the said lever and released by the tripping of the same to mesh with the clutch-teeth upon the adjacent beveled gear-wheel and afford a rotary movement to the sleeve carrying the said gear-wheel, and means, substantially as described, connected with the said beveled gear-wheels and actuated by the rotary movement of the same to plant seed, substantially as set forth.

6. In a seed-planter, a flat wheel connected with the machine, to be normally in contact with the ground and rotated by the locomotion of the machine, a lever in position to be tripped by the flat wheel in its rotary movement, spring-clutch mechanism, substantially as described, upon the main axle of the machine, which is encircled by a loose sleeve carrying toward its opposite extremities a desired distance apart beveled gear-wheels provided centrally with clutch-teeth, the said spring-clutch mechanism being normally engaged by the said lever and released by the tripping of the same to mesh with the clutch-teeth upon the adjacent beveled gear-wheel and afford a rotary movement to the sleeve carrying the said gear-wheels, a beveled pinion in mesh with each gear-wheel and provided with a shaft carrying at its extremity a combined scoop and seed-chamber provided with means, substantially as described, for automatically supplying the seed, and actuated from the pinion by the rotary movement of the gear-wheel to effect planting, substantially as set forth.

7. In a seed-planter, a flat wheel, F, having a shaft, F', carrying at its upper extremity a cam-disk, H, and connected with the machine, to be normally in contact with the ground and rotated by the locomotion of the machine, a lever, I, in position to be tripped at one end by the cam-disk with each revolution of the flat wheel, clutch mechanism, substantially as described, upon the main axle of the machine, engaged by the lever at its opposite end and released by the tripping of the latter to move into mesh, and means, substantially as described, actuated by the said clutch mechanism to effect the automatic planting of seed with each tripping of the lever by the rotation of the flat wheel, substantially as set forth.

8. In a seed-planter, a flat wheel, F, connected with the machine, to be normally in contact with the ground, and provided with a housing, F^3, and carrying pivoted shoes *q*, in combination with means, substantially as described, for causing the seed to be planted automatically at regular intervals, and actuated by the rotation of the flat wheel, produced by the locomotion of the machine, substantially as set forth.

9. In a seed-planter, a flat wheel, F, having a shaft, F', carrying at its upper extremity a cam-disk, H, provided with a recess, *p'*, on its lower side, the flat wheel being connected with the machine, to be normally in contact with the ground and rotated by the locomotion of the machine, a lever, M, connected with the flat wheel, to permit raising and lowering of the same, and provided with a perforated segmental branch, M', a loose collar, H', supported on the shaft F' below the cam-disk H, having a projection, n^2, on its upper side, a cam, o^2, on its lower side, and peripheral projections *n'*, to be engaged by the segmental branch M' to raise the collar H', and thereby rotate the shaft F' and parts connected therewith and set the flat wheel, a lever, I, in position to be tripped at one end by the cam-disk with the revolution of the flat wheel, and means, substantially as described, actuated by the tripping of the lever to plant the seed, substantially as set forth.

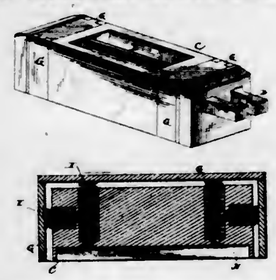
10. In a seed-planter, a flat wheel connected with the machine, to be normally in contact with the ground and rotated by the locomotion of the machine, a lever, I, in position to be tripped at one end with each revolution of the flat wheel, and bent, as shown, toward its opposite end, and provided with a lug, m^3, wedge-shaped projections *m*, and pivot m^2, inserted into the frame of the machine, a spring, *s*, and a recessed clutch-block upon the main axle of the machine, to receive the lever I and projections *m* thereon, a loose sleeve, C, surrounding the main shaft and carrying toward its opposite extremities the desired distance apart beveled gear-wheels D and D', cams *t'* upon the gear-wheel D, to engage with the lug m^3 on the lever I, central clutch-teeth, *t*, upon the said gear-wheel, to be engaged by the clutch-block E with the tripping of the lever I, and thereby cause the rotary movement of the main axle to be imparted to the sleeve C, and means, substantially as described, connected with the gear-wheels D and D', and actuated by the rotary movement of the same to plant seed, substantially as described.

11. In a seed-planter, a rotary scoop, L, in combination with means, substantially as described, to rotate it at predetermined intervals, whereby it excavates soil and deposits it in the excavation, substantially as and for the purpose set forth.

12. In a seed-planter, a rotary scoop, L, provided with a seed-chamber, *l*, in combination with a feeding seed-box, L', communicating with the seed-chamber *l*, with the scoop in one position, but closed from such communication with the scoop in other positions, and means, substantially as described, to rotate the scoop at predetermined intervals, whereby it excavates soil, casts the seed, and deposits the soil in the excavation, substantially as and for the purpose set forth.

13. In a seed-planter having scoops L, actuated at predetermined intervals to plant seed, the combination, with the main axle B and axle B', carrying the wheels A', of a rock-shaft, N', actuated by a lever, N, engaging with a registering rack, *r'*, and intermediate connecting-links, to raise and lower the forward part of the machine, and thereby control the depth of penetration of the scoops, substantially as set forth.

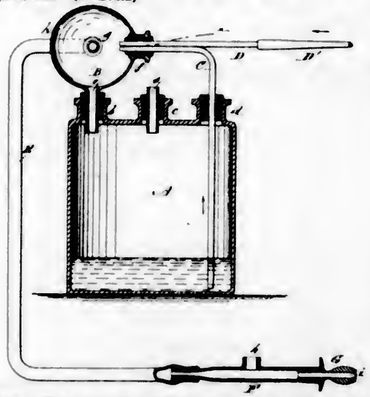
339,979. BALANCE SLIDE-VALVE. WILLIAM A. DOBSON, Bloomington, Ill. Filed Feb. 7, 1885. Renewed Dec. 31, 1885. (No model.)



Claim.—The combination, with the reciprocating valve C, having a central steam-space, E, and grooves F, with connecting steam-passages, of the jointed packing-bars G, located in the grooves, the springs I, lo-

cated in vertical and horizontal recesses, the valve-rod and its connections, and the cover L, all arranged to operate substantially in the manner specified.

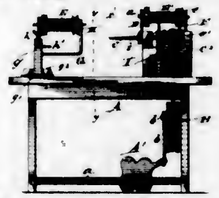
339,980. INHALER. GEORGE A. EVANS, Brooklyn, N. Y. Filed Apr. 6, 1885. (No model.)



Claim.—The combination, with the receptacle or bottle A for holding the liquid to be vaporized, having three mouths or openings, *b c d*, of the spray-chamber having apertures *e f g*, arranged out of line with each other, as described, and the spraying tubes or devices arranged to connect the one of said apertures with the liquid-space of the receptacle, while another of said apertures connects with said receptacle by a drip tube or passage, essentially as described.

339,981. SPINNING-MACHINE. WILDER M. FOX, Upper Stillwater, Me. Filed Feb. 13, 1886. (No model.)

Brief.—The fixed parts of the machine comprise a frame-work, two spindles, and a treadle-motor for actuating them. Two removable spools provided with whirls, a removable frame provided with bearings to receive the spools, and with guide-loops, and a second removable frame provided with a guide-loop, adapt the machine to be used for spinning, for doubling, and for twisting.



Claim.—1. The combination of the spindle-block having two spindles journaled thereon and provided with bearings on standards midway between the bearings of the spindles, the two similar spools, each adapted to rest in said bearings and each having one end flange converted into a pulley or cord wheel, the cord or band adapted to pass over said flange and over pulley-blocks on the spindles, and mechanism, substantially as described, whereby the spindles and attached pulley-blocks are rotated in one direction, substantially as specified.

2. The combination of the spindle-block, the two spindles journaled therein, the spools, each having one flange converted into a pulley and adapted to rest in the bearings secured to the spindle-block, the pulleys on the spindle, the frame attached to the removable plate and provided with guide-loops for the threads, the guide-loop at one side of the spindle-block, and mechanism, substantially as described, for operating the machine.

3. The combination of the spindle-block, the two spindles journaled therein, mechanism, substantially as described, to rotate said spindles and either of two similar removable spools simultaneously, the removable plate and the frame attached thereto, and provided with bearings adapted to receive the journals of the removable spools, and with guide-loops *h'*, to guide the thread from the spools to the spindles, substantially as specified.

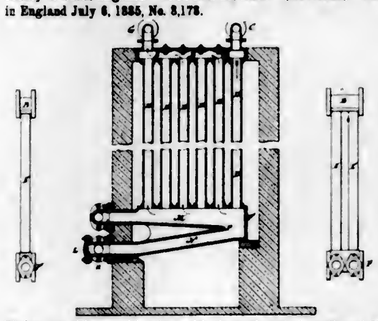
4. The combination of the main frame A, treadle A', pulley B, provided with the wrist-pin *b'*, pitman *b*, block C, spindles *c c'*, attached thereto, spools E E', frame G, provided with bearings H for the spools, and guide-loops *h h'* for the thread, removable plate *g*, and standard I, provided with the guide-loop *i*, all constructed and arranged substantially as and for the purpose specified.

339,982. NUT-LOCK. GREEN L. FOWLER, Clarksburg, Md. Filed Feb. 8, 1886. (No model.)



Claim.—The nut provided with recess adjacent to the bolt, groove intersecting the same from the side of the nut, inclined groove intersecting the recess from a different side of the nut, and provided with a key, substantially as shown, in combination with the bolt, as and for the purpose set forth.

339,983. FEED-WATER HEATER. EDWARD GREEN, Wakefield, County of York, England. Filed Dec. 29, 1885. (No model.) Patented in England July 6, 1885, No. 8,178.



Claim.—1. The combination, with the series of pipes D and E, the upper box, B, and the water-inlet pipe C, communicating with the pipes D, of the diaphragm A, located in said box between the inlet-pipe C and pipes D, and the series of pipes E, substantially as described.

2. In a feed-water heater, the combination, with the upper and lower boxes, B and F, and connecting-pipes E, of the inlet D for the cold water to the lower box, said inlet being disconnected from the upper box, substantially as described.

3. The combination, with the upper box, B, inlet-pipe C, and series of pipes E and D, of the lower box, F, having an inclined bottom wall, J, to widen the box at its outer end, and a sludge-cock, K, connected with said widened outer end, substantially as described.

4. The combination, with the upper box, B, inlet-pipe C, and series of pipes E and D, of the lower box, F, having an inclined bottom wall, J, the inclined wing located in the lower box to separate the same into two compartments, and a sludge-cock, K, connected with the outer end of said box, substantially as described.

5. The combination, with the upper box, B, inlet-pipe C, and the two series of pipes E and D, of the diaphragm A, located in the upper box between the pipes D and E, and the lower box containing the inclined wing to divide it into two compartments, M and N, substantially as described.

339,984. CAR-COUPLING. PETER C. GREENAWALT, Wampum, Pa. Filed Jan. 29, 1886. (No model.)

Claim.—1. The combination of the pivoted coupling-hooks C C' having the construction as at $n\ n'\ n^2\ n^3\ n^4$, guiding-supports B, slotted at *f*, draft-bars D, pivots *d*, spring *g*, chain *h*, pin E, spring G, chain-rod F, chain *m*, and uncoupling-chain *k*, substantially as and for the purpose described.

2. The combination of the bumpers K, pivoted bumper-plate *p* spring *q*, coiled on pivot-pin *p'* and the connecting stay-rod L, divergent or oblique coupling-hooks C C', shaped as at $n\ n'\ n^2\ n^3\ n^4$, guiding-supports B, slotted at *f*, draft-rods D, pins *d*, and the devices, substantially as described, for centralizing, restraining, and uncoupling the hooks, substantially as and for the purpose set forth.

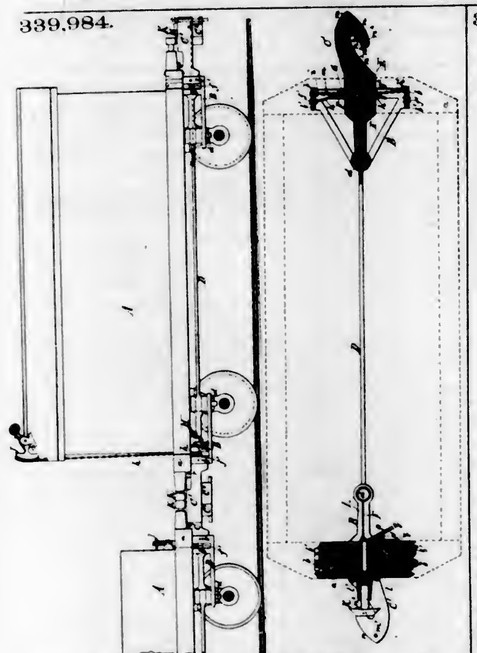
3. The combination, with the triangular guiding-supports B, having screw-fastening and pulley-bearing standards, of the coupling-hooks C C', draft-rod D, and pins *d*, substantially as and for the purpose described.

4. The coupling-hooks provided with pins E, in combination with the guiding-supports B, pulleys, chains, rods, and springs, substantially as described.

5. The coupling-hooks C C', having their jaws oblique or divergent from the central line of draft, and shaped as at $n\ n'\ n^3\ n^2\ n^4$, and extended down, as at C^3, below their shanks, substantially as and for the purpose described.

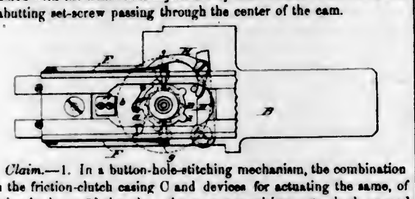
6. The coupling-hooks provided with the passages g^2 and pins E, in combination with chain-rod and springs arranged in the passages, substantially as described.

339,984.



339,985. FEED MECHANISM FOR BUTTON-HOLE SEWING-MACHINE ATTACHMENTS. WILLIAM H. GILBERT, Philadelphia, Pa. Filed May 15, 1884. Renewed Sept. 18, 1885. (No model.)

Brief.—This invention relates to the combination, with the base-plate and clutch-casing, of the friction-brake secured to the former and impinging frictionally against the latter; to the construction of the tappet-levers in the form of spring-bars having their free ends bent inwardly so as to pass beneath the carrier, and to the yoke and its cloth-carrying slide, combined with the heart-cam adjustable by a dovetailed connection, and the abutting set-screw passing through the center of the cam.



Claim.—1. In a button-hole-stitching mechanism, the combination with the friction-clutch casing C and devices for actuating the same, of a spring-brake or friction-shoe, the same comprising a standard secured to the base-plate and having a curved shoe which impinges frictionally against the rim of the clutch-casing to prevent forward or backward abnormal movement thereof, substantially as described

2. In a button-hole-stitching mechanism, the combination, with the feed-slide carrier and the tappet through which said slide is oscillated, of the levers F F, consisting of spring or elastic bars rigidly secured to said carrier and bent inwardly and beneath the carrier, substantially as described.

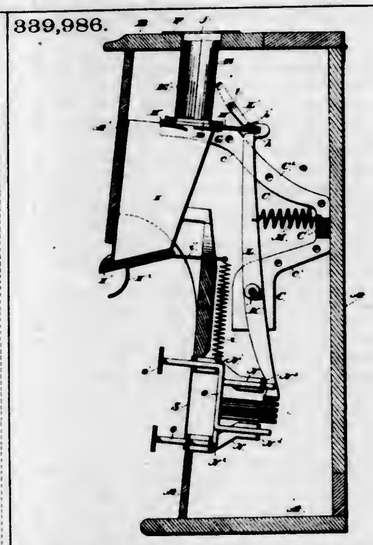
3. The combination, with the yoke and feed-slide, the heart-cam and its dovetailed supporting-slide, and the correspondingly-grooved friction-clutch casing, of the screw *k*, passing through the center of said cam and contacting with the surface of the groove, and mechanism, substantially as set forth, for operating the clutch-casing, as shown and described.

339,986. MONEY-CHANGER. CAREL B. HOPKINS, Louisville, Ky., assignor to the Hopkins & Robinson Manufacturing Company, same place. Filed June 30, 1885. (No model.)

Claim.—1. In combination with two or more coin-delivering devices and levers connected therewith to operate the same, a movable key adapted to operate the several levers, substantially as and for the purpose described.

2. In combination with several coin-holders and delivery devices acting in connection therewith, levers for actuating such devices and a

339,986.



movable key so connected with the several levers as to operate them together, substantially as and for the purpose described.

3. In combination with the series of coin-holders and coin-delivery devices acting in connection therewith, the series of levers for operating the delivery devices and a series of keys, each one adapted to operate a combination of two or more of the levers as it is moved, substantially as and for the purpose described.

4. In combination with two or more of the levers for actuating the coin-delivery devices of a money-changer, a movable key and suitable connecting means between the levers and the key, whereby as the key is moved the several levers will be actuated, substantially as and for the purpose described.

5. In combination with two or more coin-delivery devices and levers connected therewith to actuate the same, a movable key adapted to engage portions of the levers to actuate several levers at the same time, substantially as and for the purpose described.

6. In combination with an actuating-key, two or more levers provided with lugs or projections to be engaged by the key when it is moved and separate coin-delivery devices connected with and operated by the levers, substantially as and for the purpose described.

7. In combination with a series of actuating-keys, a series of levers connected with and actuating coin-delivering devices, and provided with lugs or projections so situated that as a key is moved one or more levers will be actuated to deliver together a combination of coins, such as to make up the desired amount of change, substantially as and for the purpose described.

8. In combination with a series of separate coin-delivery devices, the series of levers connected therewith, provided with lugs and movable keys adapted to engage the lugs on two or more of the levers at a time, so as to move such levers, substantially as and for the purpose described.

9. In combination with a series of coin-holders and the series of separate coin-delivering devices for taking and delivering coins from the same, the series of levers connected with such devices, the series of movable keys, some adapted to engage portions of single levers to operate such levers singly, and others adapted to engage portions of two or more of the levers together, to cause combinations of coins to be delivered to make up different amounts of change, substantially as and for the purpose described.

10. In combination with the series of coin-holders and the delivery devices therefor, the series of push-keys and the series of levers for actuating the coin-delivery devices, having the horizontal portions behind the series of keys provided with lugs adapted to be engaged by the keys as the latter are pushed in, substantially as and for the purpose described.

11. In combination with the series of push-keys suitably marked to indicate different amounts of change, the series of coin-holders, the series of coin-delivering devices therefor, the series of levers for actuating such devices, provided with arms or portions behind the series of keys, and lugs on such arms or portions so situated that as any key is pushed in it will engage the lug on the proper lever or the lug on the proper combination of levers, according as it is a key designated by the

amount of one coin or of several combined, substantially as and for the purpose described.

12. In combination with the two holders for ten-cent coins and the two delivery devices therefor, the two levers connected with such devices, the ten and the twenty cent keys, the lug on one of the levers adapted to be engaged by the ten-cent key, and the lug on each lever adapted to be engaged simultaneously by the twenty-cent key, substantially as and for the purpose described.

13. In combination with the coin-holders and the devices for taking coins separately therefrom, the series of push-keys suitably numbered to indicate the different coins and amounts made up of combinations thereof, the levers for actuating the coin-delivery devices and adapted to be operated singly by the respective keys indicated by the amounts of single coins, and together in proper combination to deliver several coins to make up other amounts of change by the other keys, substantially as and for the purpose described.

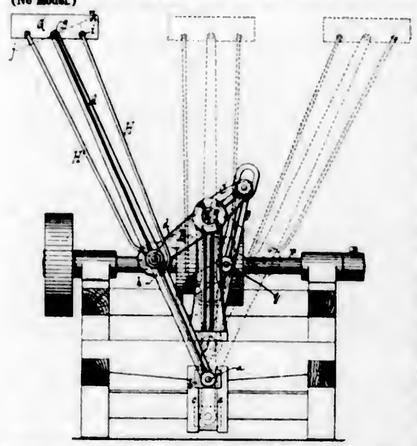
14. In combination with a front and rear guide-plate, the push-key consisting of the forward and rear portions passing through and guided in the front and rear plates, respectively, and the part connecting such portions substantially at a right angle thereto, substantially as and for the purpose described.

15. In combination with the frame having the upper and lower front plates and the upper and lower back plates, the series of push-keys consisting of rods passing in through the upper front plate, then bent downward, and at their rear ends passing through the lower back plate, and the series of similarly-formed inverted keys having their forward ends passing through the lower front plate and their rear ends through the upper back plate, substantially as and for the purpose described.

16. In combination with the series of push-keys, the series of coin-delivery devices and the actuating-levers therefor having lugs or projecting portions adapted to be engaged by and normally resting against the push-keys, and the springs for returning the levers to their normal positions after they have been moved by any of the keys, substantially as and for the purpose described.

17. In combination with the coin-holder support and the lid of the casing, the stationary half-tubes attached to the coin-holder support and the half-tubes attached to the lid and adapted to form with the stationary half-tubes whole tubes when the lid is down, substantially as and for the purpose described.

339,987. **MECHANICAL MOVEMENT.** OTTO HUPELAND, Mount Vernon, assignor to J. C. Stephens, New York, N. Y. Filed Jan. 15, 1886. (No model.)



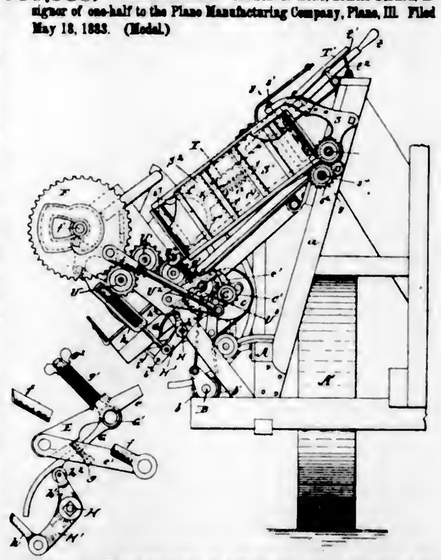
Claim.—1. The combination, with the lever A and its fulcrum-pin *a*, of a movable support for the fulcrum-pin, guides for this support, constructed to compel said support to move in a straight line, an oscillating arm, a pivotal connection between this arm and the lever A, a revolving shaft, and suitable connections between said arm and the shaft, substantially as shown and described.

2. The combination, with the lever A and its fulcrum-pin *a*, of a movable support for the fulcrum-pin, guides for this support constructed to compel said support to move in a straight line, an oscillating arm, a pivotal connection between this arm and the lever A, a revolving shaft, a cam, E, mounted on said shaft, and suitable connections between said cam and the oscillating arm, substantially as shown and described.

3. The combination, with the lever A and its fulcrum-pin *a*, of a movable support for the fulcrum-pin, an oscillating arm, a pivotal connection between this arm and the lever A, a carriage pivoted to the lever A, and a connecting-rod pivoted at one end to the carriage and at the opposite end to the oscillating arm, substantially as shown and described.

4. The combination, with the lever A and its fulcrum-pin *a*, of a movable support for the fulcrum-pin, guides for this support constructed to compel said support to move in a straight line, an oscillating arm, a pivotal connection between this arm and the lever A, a carriage pivoted to the lever A, and a connecting-rod pivoted at one end to the carriage and at the opposite end to the oscillating arm, substantially as shown and described.

339,988. **GRAIN-BINDER.** GEORGE G. HUNT, Bristol Station, assignor of one-half to the Plano Manufacturing Company, Plano, Ill. Filed May 18, 1883. (Model.)



Claim.—1. The main frame, in combination with a truss-rod at the binder end of the frame, and a central support for the latter arranged in a vertical plane inside of the vertical plane passing through the terminal attachments thereof, substantially as and for the purposes set forth.

2. The main frame, in combination with the truss-rod *d'*, attached at its ends to the front and rear corners of the frame, and the bracket D, provided with a stud, *d*, over which the truss-rod passes and arranged in a vertical plane inside of a vertical plane passing through the end fastenings of said rod, substantially as and for the purposes set forth.

3. The stop-arm *e*, in combination with the lever G, the compressor-shaft H, the crank-arm H', provided with a projection, *h'*, and the trip connected to the compressor-shaft, substantially as and for the purposes set forth.

4. The stop-arm e, in combination with the lever G, the adjusting set-screw *g*, and the crank-arm H', provided with the projection *h'*, substantially as and for the purposes set forth.

5. The stop-arm e, independent of the crank-arm *e'*, in combination with the lever G, eyebolt G', mounted on a pivot fixed upon the main frame, spring *g'*, and adjusting-nut g^2, substantially as and for the purposes set forth.

6. The stop-arm *e*, in combination with the lever G, eyebolt G', mounted on the journal of said lever, spring *g'*, adjusting-screw *g*, compressor-shaft H, crank-arm H', and trip I, connected to the compressor-shaft, all constructed and operating substantially as and for the purposes set forth.

7. The cord-holding-disk M, in combination with the plunger-bolt N, arm O', attached to the bolt and carried thereby, and the spring-pawl O, pivoted to said arm, substantially as and for the purposes set forth.

8. The cam-wheel K, provided with the camway *k'*, having a projection, k^2, in combination with the plunger-bolt N, spring *n*, and pawl O, substantially as and for the purpose set forth.

9. The sliding bar mounted in suitable ways, in combination with cam-wheel K, arranged to act directly to reciprocate said bar, and the tucker adapted to be operated positively by the reciprocation of the said bar, substantially as described.

10. The sliding bar mounted in suitable ways, in combination with the cutter and cord guide and stripper, both mounted thereon, the tucker adapted to be operated by the sliding bar, and mechanism for reciprocating said bar, whereby the guide and stripper, cutter and tucker are all operated positively, substantially as described.

11. The cam-wheel K, provided with the cam-rim *k*, in combination with the sliding bar P, mounted at the lower part of the breast-plate and provided with pins p^3 and notch p^3, and the tucker R, provided with a lug, *r*, arranged to engage with the notch in the bar, substantially as and for the purposes set forth.

12. The cam-wheel K, provided with the cam-rim *k*, and the stud k^3, in combination with the sliding bar P, provided with pins p^3 and notch p^3, and the tucker R, provided with two lugs, *r r'*, substantially as and for the purpose set forth.

13. The cam-wheel K, provided with a cam-rim, *k*, and stud k^3, in combination with the sliding bar P, provided with pins p^3 and notch p^3, the tucker R, and the guide and stripper *p*, and cutter *p'*, both attached to the bar, substantially as and for the purpose set forth.

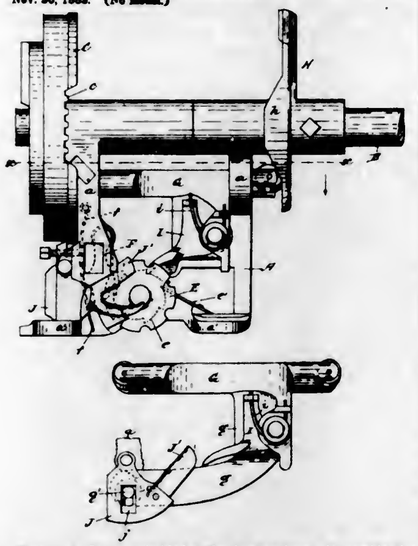
14. The angular bracket S, in combination with the driving-shaft *s'* of the batt-adjuster mounted in the two arms of the bracket, the bevel-pinion s^3 on the shaft, the shaft S^2, mounted on the spindle of said bracket and provided with pinions s^4 s^5, and the elevator-shaft provided with a pinion engaging with the pinion s^5, all constructed and operating substantially as and for the purpose set forth.

15. The grain-guard T, hinged at its upper edge to a suitable support, in combination with a lever, *t*, whereby it may be adjusted by the driver, substantially as described.

16. The hinged grain-guard T, in combination with the lever *t*, provided with pins *t'*, and the link t^2, substantially as and for the purposes set forth.

17. The main driving-pinion C, in combination with the main gear-wheel F of the binding mechanism, and a train of gears, U U' U^2 U^3, the first and last of the train having the same number of teeth, and the two middle ones having the same number of teeth but differing in number from the two former, substantially as and for the purposes set forth.

339,989. **GRAIN-BINDER.** GEORGE G. HUNT, Bristol Station, assignor of one-half to the Plano Manufacturing Company, Plano, Ill. Filed Nov. 30, 1883. (No model.)



Claim.—1. In a grain-binder, the knotter-frame, in combination with the plunger-bolt mounted loosely in bearings on said frame, and revolving cams arranged to operate alternately on opposite ends of the bolt to reciprocate the latter positively in each direction, substantially as described.

2. The plunger-bolt mounted in bearings, in combination with the cam-wheel C, provided with the broken ring-cam *c'*, and the wheel H, provided with the short cam A, substantially as and for the purposes set forth.

3. The knotter-frame, in combination with the reciprocating plunger-bolt mounted thereon, the rotating cord-holder arranged some distance below the plunger-bolt, and the bent pawl pivoted directly to a projection of the plunger-bolt, substantially as and for the purposes set forth.

4. The knotter-frame, in combination with the reciprocating plunger-bolt mounted on the upper portion thereof, the disk cord-holder arranged some distance below the plunger-bolt and provided with a ratchet, and the spring-pawl pivoted directly to a projection of the plunger-bolt and bent to cause the toe to move in a straight line about tangential to the ratchet-wheel, substantially as and for the purposes set forth.

5. The reciprocating plunger-bolt, in combination with cord-holder, the actuating-pawl of the cord-holder connected to said bolt, and the cord-cutter pivoted to the knotter-frame and also connected to the plunger-bolt, whereby the reciprocation of the latter operates both the cord-holder and cutter, substantially as and for the purposes set forth.

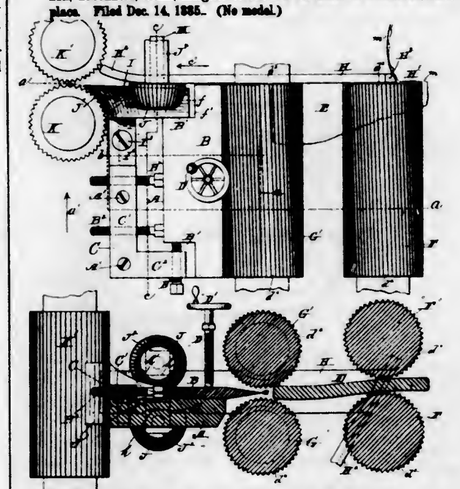
6. The reciprocating plunger-bolt provided with the bent extension, substantially as specified, in combination with the angular pivoted cutter, substantially as and for the purposes set forth.

7. The reciprocating plunger-bolt provided with the extension *g*, carried downward and across the knotter-frame, in combination with the stud g^3 upon its outer end, and pivoted angular plate J, provided with the slot *j'*, through which a pin, *g'*, extends to connect the plate to the stud, and the cutter J', attached to the said plate, substantially as and for the purposes set forth.

8. The knotter-frame, in combination with the reciprocating plunger-bolt mounted loosely in bearings thereon, devices arranged to operate alternately on opposite ends of said bolt to reciprocate it positively, and a vibrating cord-cutter pivoted to the knotter-frame and connected with the plunger-bolt, whereby it is moved positively by the latter, substantially as and for the purposes set forth.

9. The knotter-frame, in combination with the reciprocating plunger-bolt mounted loosely in bearings thereon, devices arranged to operate alternately on opposite ends of said bolt to reciprocate it positively, a vibrating cord-cutter pivoted to the knotter-frame and connected with the plunger-bolt, a cord-holder, and a pawl on the plunger-bolt for operating the cord-holder, substantially as and for the purposes set forth.

339,990. **SCRAP-LEATHER-SPLITTING MACHINE.** JOHN A. JOHNSLIN, Brookfield, Mass., assignor of one-half to Alice L. Twitchell, same place. Filed Dec. 14, 1885. (No model.)



Claim.—1. The combination, with the splitting-knife B, feed-rolls F F', stationary leather-opening guide I, and flattening-rolls K K', of the seam and edge guide H, having its rear end curved out from the stationary leather-opening guide I toward the outer flattening-roll, substantially as and for the purposes set forth.

2. The combination, with the bearings J^3 J^3 of the burr feed-rolls J J, of the double notched and beveled seam-guide H, substantially as and for the purposes set forth.

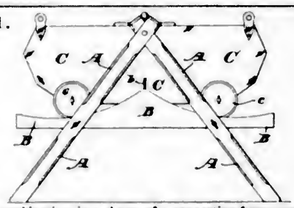
3. The combination, with the bed-plate A and splitting-knife B, of the back and end knife-support, C, provided with knife-adjusting bolts B^2, and upright holding bolt or screw D, substantially as and for the purposes set forth.

4. The combination, with the seam-guide H and leather-splitting knife B, of the feed-rolls G G', provided with angular flutes d^2, made substantially as described, so that as the feed-rolls revolve to feed the scraps of leather through to the splitting-knife the ends of the flutes next to said seam-guide H will be a little back of the centers of said rolls G G' when their opposite ends have passed the centers thereof, substantially as and for the purposes set forth.

339,991. **CHURN.** JAMES P. KELSO, Morgantown, Ind., assignor of one-half to James Hickey, same place. Filed Dec. 2, 1885. (No model.)

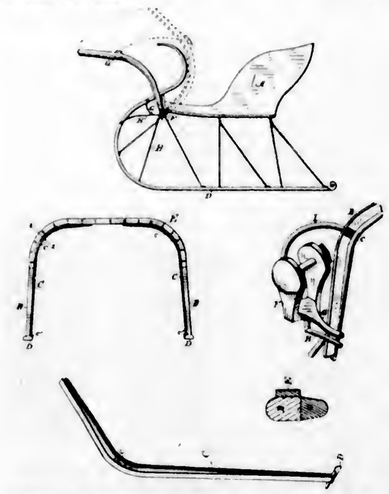
Claim.—1. The combination of the supporting-frame, double inclined tracks, the inclination whereof is in the form of curved lines, said curvature terminating in a slight upward inclination at the outer ends, and a churn-body provided with trucks or wheels and mounted on said track, substantially as described.

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2. The combination, in a churn, of a supporting frame-work, double inclined tracks thereon, and a churn-body mounted on said tracks, the ends of said body being formed of a general concave shape, with surfaces composed of a series of angles, substantially as shown and described, and for the purposes specified.

339,992. SLEIGH. CHARLES F. KIMBALL, Chicago, Ill. Filed Feb. 12, 1886. (No model.)



Claim.—1. A trotting-sleigh having a long front arched bar, constructed as described, combined with a shaft-jack placed at the rear of the said bar, substantially as described.

2. A sleigh having a shaft-jack, F, placed at the rear of the front post, substantially as and for the purposes set forth.

3. In a sleigh, a shaft-jack, F, combined with the bar B and the rods G, H, and I, whereby said jack is firmly held in position, substantially as described.

4. In a sleigh, a front arched bar, B, strengthened by the metal strip C, thickest at the bends, and the bent metal strip E at its rear and top, and combined with the runners D, substantially as described.

5. In a sleigh, the combination of the front arched bar, B, strengthened by the metal strip C at its sides and bends, and the bent metal piece E, with the shaft-jack F, rods G, H, and I, and the runners D, substantially as described.

6. In a sleigh, the combination of the arched bar B with the inside curved metal strips, C, one on each side, both thickest at the bends, and each extending from near the middle of the bar to its foot, substantially as and for the purposes set forth.

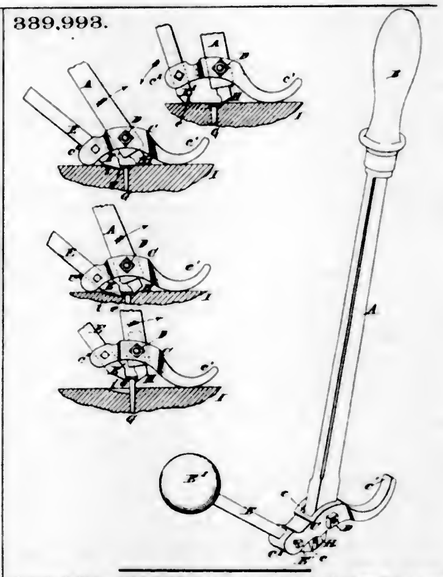
339,993. NAIL-EXTRACTOR. PHINEAS F. KING, Kansas City, Mo. Filed Jan. 18, 1886. (No model.)

Claim.—1. The combination of the lever A, with removable jaw or set H, the fulcrum-shoe carrying a curved bar, c, and a projection, c', in which is held the weighted shank E of the jaw E', substantially as and for the purpose set forth.

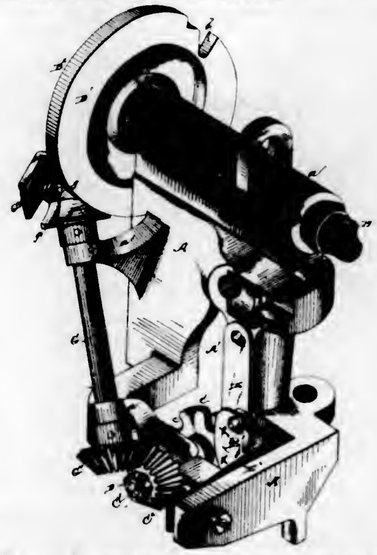
2. The combination of lever A, with jaw H secured in its end, fulcrum-shoe C, pivoted to the lever having a curved fulcrum-arm, c, and a projection, c', mortised to receive the shank E of the jaw E', said shank being adjustable in the mortise and secured by set-screw therein.

3. The combination of lever A, with jaw H secured in its end, fulcrum-shoe C, pivoted to the lever having a curved fulcrum-arm, c, and a projection, c', mortised to receive the shank E of the jaw E', said shank having a weight or ball, E^3, upon it, and being adjustable in the mortise and secured by set-screw therein

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339,994. CORD-HOLDER FOR GRAIN-BINDERS. JOHN G. LEONARD, Plymouth, Ind. Filed May 20, 1884. (No model.)

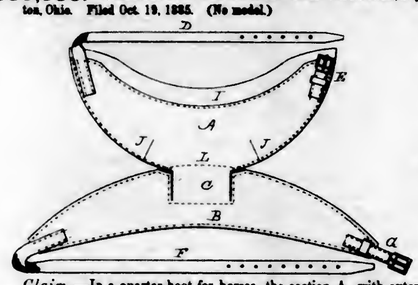


Claim.—1. In a cord-holder for grain-binders, a notched cord-holding disk secured upon a shaft, in combination with a driving-pinion adjustably secured upon the same shaft, whereby the relative positions of the disk and the pinion may be changed to compensate for wear and consequent lost motion, substantially as shown and described.

2. In a cord-holder for grain-binders, a notched holding-disk having its shaft turned down or reduced in diameter to form a shoulder against which its driving-pinion abuts, said driving-pinion formed with a serrated face, in combination with a retaining-nut upon the end of the shaft also formed with a serrated face, substantially as and for the purpose set forth.

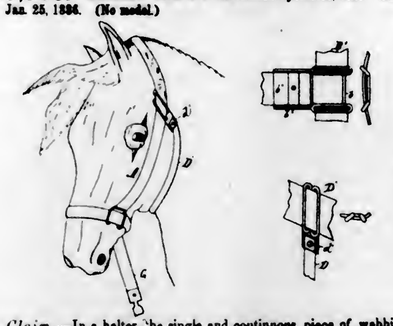
3. The driving-shaft B, and disk B', formed with a single tooth or cog, b', and having a locking-flange, B^3, with notch b, in combination with the pinion G^3, having a many-sided collar, g', and means, substantially as set forth, for connecting the pinion with the cord-holding disk C, substantially as and for the purpose set forth.

339,995. QUARTER-BOOT FOR HORSES. EMIL A. LEONHARD, Dayton, Ohio. Filed Oct. 19, 1885. (No model.)



Claim.—In a quarter-boot for horses, the section A, with extension C and section B, cut out of one piece of leather, and independent fastenings to bind the upper section about the pastern-joint and the lower section about the hoof, substantially as shown and described.

339,996. HALTER. ERNEST R. MENAMIN, Sycamore, Ohio. Filed Jan. 25, 1886. (No model.)



Claim.—In a halter, the single and continuous piece of webbing forming the crown-piece, cheek-straps, nose and chin piece, and hitching-straps, in combination therewith of the buckles B B', cross-bar b, and connecting-plates b' b^2 c' c^2 c^3 c^4, throat-strap D, inverted-V-shaped buckle F, and buckles D' D' and hitching-strap fastenings, all constructed and arranged substantially as described, and for the purpose set forth.

339,997. MOWING-MACHINE. GEORGE L. K. MORROW, Detroit, Mich., assignor to Dexter M. Ferry, same place. Filed Jan. 29, 1886. (No model.)



Claim.—1. In a mowing-machine or harvester, the combination, with the cutter-bar and inclined rotary head for giving motion to the same, of a pitman formed at the cutter-head end into a spherical ball housed in spherical boxing, the whole secured together by a bolt, d^3, said pitman at its other end shaped into a hollow hemispherical head seated within a corresponding cavity in the rotary head, and the whole secured by a square stem-bolt, D^3, with the under surface of its head spherically shaped and adapted to wear against the inner surface of said hemispherical end of the pitman, substantially as described.

2. As a means for connecting a pitman, D, with the cutter-bar of a mower or reaper, a spherical ball, d, provided with double conical openings, boxing composed of the two parts C' C^3, the lower part connected to the cutter-bar, and both parts provided with corresponding spherical-shaped bearings for the ball, and a central bolt passing through said boxing and ball, substantially as described.

3. The combination, with the pitman D, of the spherical ball at its end, with a double conical opening, boxing composed of two parts, C' C^3, the lower part connected to the cutter-bar, and both parts provided with corresponding bearings, and a bolt passing through the heel of the cutter-bar, the boxing, and the ball, and provided with a nut at its upper end, said nut capable of adjustment to compensate for wear upon the boxing and ball, substantially as described.

4. The combination, with the pitman D and the rotary head B, of a hollow hemispherical head at the end of the pitman, a corresponding recess in the rotary head, a square stem-bolt provided with spherical-shaped bearings beneath its head, and a nut for holding the parts in place, substantially as described.

5. The combination, with the pitman D and the rotary head B, of the hemispherical end of the pitman, the bolt D^3, and nut at its end, said nut adapted to be adjusted to any desired degree and locked in any position, substantially as described.

6. The combination, with the hemispherical end of the pitman formed with the enlarged slots D^3, the rotary head, and square stem-bolt D^3, the nut provided with a ratchet-face and spring-pawl, substantially as and for the purpose described.

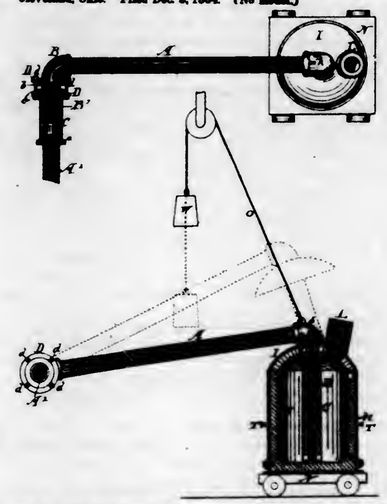
339,998. MAN-HOLE COVER. ROBERT MUNROE, Allegheny, Pa. Filed Sept. 14, 1885. (No model.)



Claim.—A metal plate or head for boilers, &c., having a man-hole therein, said hole or opening being surrounded by a flange integral with the head, as described, in combination with a cover having a circumferential groove therein for the reception of the flange, substantially as set forth.

339,999. WITHDRAWN.

340,000. APPARATUS FOR MAKING STEEL. EZRA NICHOLSON, Cleveland, Ohio. Filed Dec. 5, 1884. (No model.)



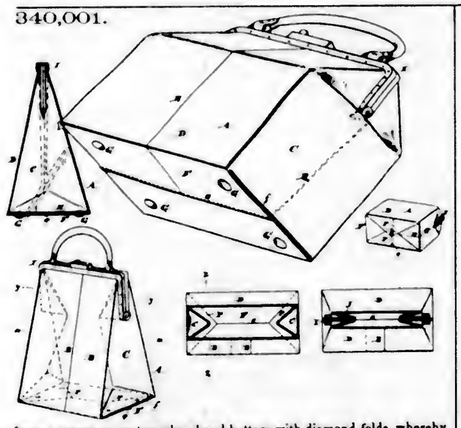
Claim.—In combination with pipes A, A', and H and vessel J, arranged as described; the tapering elbow B, which is attached to pipe A and free to turn therewith, and the sleeve C, having a corresponding internal taper and attached to pipe A', said parts B C constituting a joint which allows turning, and also telescopic adjustment to compensate for wear, substantially as set forth.

340,001. SATCHEL OR HAND-BAG. JOHN P. OSTERHOUT, Philadelphia, Pa. Filed Jan. 15, 1886. (No model.)

Claim.—1. In a satchel or hand-bag, the metallic hinged bag-frame extending only part way down on the ends of the bag-body, in combination with the body formed of one piece of material, and in which the angles or edges are formed by bends and folds without seams, substantially as and for the purpose specified.

2. The method of forming a satchel or hand-bag body from a tube, consisting in securing or sealing one end of the tube and folding it up to

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form a square or rectangular closed bottom with diamond folds, whereby all seams or sewing may be completed before forming the bottom, substantially as and for the purpose specified.

3. A satchel or hand-bag having a hinged frame and a box-shaped body, the ends thereof where attached to the frame being wider than the part next to the bottom, whereby when the bag-body is completed the lower portion thereof will be box-shaped, substantially as and for the purpose specified.

4. A satchel or hand-bag having a hinged frame and a box-shaped body, the ends thereof where attached to the frame being wider than the parts next to the bottom, and also a bottom made square or rectangular, but formed of the same and integral material forming the sides and ends, whereby seams around the lower edge or bottom of the bag are obviated, substantially as and for the purpose specified.

5. The method of forming a satchel or hand-bag body from a tube of material having one end closed or sealed, consisting in opening said tube and pressing up a square or rectangular bottom and forming diamond folds, substantially as and for the purpose specified.

6. In a satchel or hand-bag, the frame J, in combination with the body A, having ends C, provided with central seams, B, and made wider at the top than at the bottom, and bottom F, having diamond folds P, substantially as and for the purpose specified.

7. In a satchel or hand-bag, the frame J, in combination with the body A, having the ends C, and the bottom F, having the diamond folds P, substantially as and for the purpose specified.

8. In a satchel or hand-bag, the frame J, in combination with the body A, having the ends C, and bottom F, having the diamond folds P, and rivets or feet G, securing the edges of the bottom F to the diamond folds P, substantially as and for the purpose specified.

9. In a satchel or hand-bag, the frame J, in combination with the body A, having ends C, made wider at the top than at the bottom, and bottom F, having diamond folds P, substantially as and for the purpose specified.

10. The method of forming a satchel or hand-bag body from a tube of material having one end closed or sealed, consisting in opening said tube and pressing up a square or rectangular bottom and forming diamond folds, and said diamond folds being united to the body by sewing or riveting, to make said bottom rigid, substantially as and for the purpose specified.

11. A satchel or hand-bag consisting of the frame J, in combination with the body A, made of the single piece of material forming the sides D and ends C, the latter being provided with central or middle seams, B, substantially as and for the purpose specified.

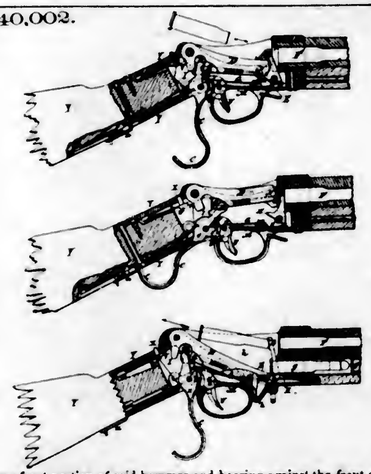
12. A satchel or hand-bag consisting of the frame J, in combination with the body A, made of the single piece of material forming the sides D and ends C, the latter being provided with central or middle seams, B, and made wider at the top than at the bottom, substantially as and for the purpose specified.

13. In a satchel or hand-bag, the body portion formed with a square or rectangular bottom, the ends of said bottom being formed with diamond folds, and said diamond folds being bent up or over and secured to one of the faces of the bag, substantially as and for the purpose specified.

340,002. BREECH-LOADING FIRE-ARM. JACQUES PHILIPPE PERRI, Paris, France. Filed Jan. 27, 1886. (No model.) Patented in France June 13, 1884, No. 162,700; in Spain July 8, 1884, No. 4,352; in England Aug. 14, 1884, No. 11,278, and in Belgium Jan. 22, 1885, No. 67,613.

Claim.—1. The combination of block D, lever C, engaged with said block, hammer I, spring G, beneath block D, engaged with the

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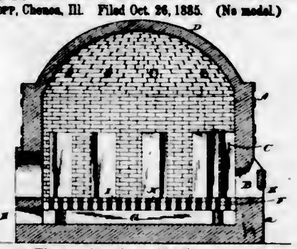
lower front portion of said hammer and bearing against the front of lever C, trigger U, and the sear K, formed with nose J, to engage with the hammer, spring M, engaging with the sear, pivoted extractor B, formed with shoulder A and tail E, for the block D to engage with, and spring H under extractor B, substantially as described.

2. The combination of the trigger U, having the nose-piece *d* at its rear, and the pivoted lever C, connected with the breech-block to move it downward when the lever is swung away from the gun-stock, said lever having its cheek-piece *c* provided with the projection *b*, and the sliding bolt *a* on the stock to slide between the stock and the free end of the lever and prevent said free end of the lever coming against the stock, thereby bringing the nose-piece and projection in engagement to set the gun at safety, substantially as described.

3. The combination of the extractor B, formed with shoulder A and tail E, block D, to strike against tail E and engage with shoulder A, lever C, engaged with block to move the same, and provided with nose *b*, trigger U, provided with projection *d*, to engage with nose *b*, hammer 1, and springs G, H, and *m*, substantially as described.

4. The combination of pivoted block D, lever C, engaging with said block, hammer I, spring G, forward of said lever and hammer and bearing against both of said parts, trigger U and its sear K, to engage with the hammer, and the spring *w*, provided with button *x*, and located at the top of the stock, back of the hammer, and engaging, as described, with the hammer to be projected by the latter, substantially as and for the purposes described.

340,003. TILE AND POTTERY KILN. EDWARD M. PIKE and JOSEPH B. SCHOPP, Chenoa, Ill. Filed Oct. 26, 1885. (No model.)



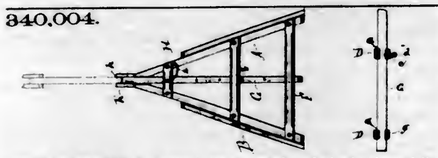
Claim.—1. The combination, with the superstructure, of the furnace having a series of furnaces, B, connecting with the upper part thereof, and the intervening floor having flues I, the substructure being provided with an annular flue, E, cross-flues F, and transverse flue G, the latter leading to the smoke-stack, substantially as and for the purposes specified.

2. The combination, with the door of the furnace, of the iron frame L, located therein, and the bands extending around the furnace, the ends of said bands at the door being bent and fastened over the outer edge of the frame, substantially as specified.

340,004. TRESTLE FOR SCAFFOLDING. MERRIL PINKTON, Garnett, Kans. Filed Jan. 30, 1886. (No model.)

Claim.—1. The herein-described trestle for scaffolding, comprising the main legs A, the pivoted props B, the grooved brace-bars D F, the chain C, the perforated bar H, and the adjustable upright G, provided

340,004.

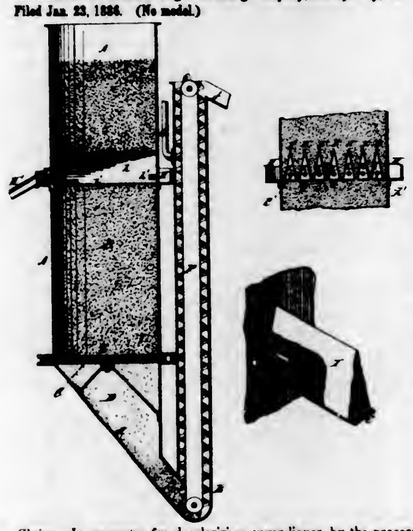


with the perforations *b*, grooved upper end, *h*, and pin *d*, substantially as and for the purpose described.

2. The combination, in a trestle having adjustable props, of the adjustable upright G, having the perforations *b*, the grooved cross-bars D F, the perforated cross-bar H, and the pin *d*, substantially as and for the purpose described.

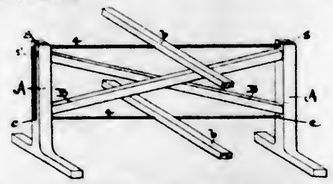
3. The combination, in a trestle, of the adjustable upright G, having the grooved upper end, *h*, and the grooved cross-bars, substantially as and for the purpose described.

340,005. DRAINING DEVICE FOR UPWARDLY-ACTING BONE-BLACK FILTERS. EDWARD E. QUIMBY, Orange, assignor to the F. O. Matthiessen & Wiechers Sugar Refining Company, Jersey City, N. J. Filed Jan. 23, 1886. (No model.)



Claim.—In apparatus for decolorizing sugar-liquor by the process of upward filtration through a column of bone-black, the combination of the filtering-chamber, provided with suitable discharge-outlets in its side walls, with a series of pipes which have their lower portions perforated, and which extend transversely through the column of bone-black in appropriate relation to the openings in the side walls, respectively, whereby transverse discharge-channels are established for the withdrawal of the sugar-liquor from the column of bone-black at a prescribed elevation above the bottom thereof.

340,006. TORSIONAL PIVOT-BALANCE. FREDERICK A. ROEDER, Cincinnati, Ohio, assignor, by mesne assignments, to the United States Torsion Balance and Scale Company, Jersey City, N. J. Filed Apr. 11, 1884. (No model.)

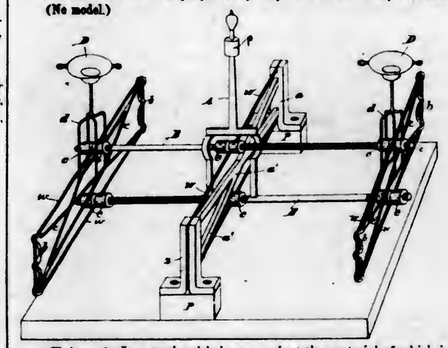


Claim.—1. In a torsional pivot-balance, in combination with the beam, a pivot of other than circular cross-section, tensioned between bolding-abutments and secured to the beam in correspondingly-formed sockets, whereby the pivot is held by its engagement in said sockets without other fastening against rotation, as set forth.

2. The combination, in a weighing-balance, of pivot-holding abutments having sockets, as described, duplicate scale-beams suitably connected, and a single wire of other than circular cross-section stretched and returned between the holding-abutments in parallel lines, constituting fulcrum-pivots for the duplicate beams, and engaging the beams and holding-abutments in correspondingly-formed sockets, forming a rigid connection against rotation therein, substantially as set forth.

3. In a torsional pivot-balance, in combination with the balance-beam, a terminal pendent frame having plane-faced sockets at top and bottom, and a torsional pivot of other than circular cross-section stretched upon the frame and engaging in said sockets by means of its said plane face or faces, substantially as set forth.

340,007. TORSIONAL PIVOT-BALANCE. FREDERICK A. ROEDER, Cincinnati, Ohio, Frank Davis administrator of said Frederick A. Roeder, deceased, assignor, by mesne assignments, to the United States Torsion Balance and Scale Company, Jersey City, N. J. Filed May 26, 1884. (No model.)



Claim.—1. In a torsional balance, a pivot the material of which is disposed at the sides of and approximately in a common plane with the axis of torsion, substantially as set forth.

2. A weighing-scale constructed with flat torsion strip or strips stretched horizontally and set up edgewise, substantially as and for the purpose specified.

3. In torsional pivot-balances, a beam provided with adjustable collars arranged to clamp and secure the beam to the pivots, substantially as and for the purpose set forth.

340,008. TORSIONAL PIVOT-BALANCE. FREDERICK A. ROEDER, Cincinnati, Ohio, Frank Davis administrator of said Frederick A. Roeder, deceased, assignor, by mesne assignments, to the United States Torsion Balance and Scale Company, Jersey City, N. J. Filed July 10, 1884. (No model.)

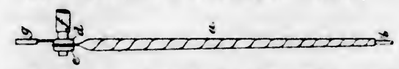


Claim.—1. In a torsional pivot-balance, a balance-beam provided with a standard rising above the beam in a vertical line of the fulcrum-pivot, in combination with a counterpoise-weight proportioned to the molecular resistance of the pivots and adjustable both vertically and horizontally on said standard, substantially as and for the purpose set forth.

2. In a torsional pivot-balance, a balance-beam mounted upon a torsional fulcrum-pivot and provided with a standard projecting in vertical line with said pivot, of a poise mounted upon said standard in position to locate the common center of gravity above the pivot, and adjustable both laterally and vertically, as set forth.

3. In a torsional pivot-balance, the combination of a beam, a central vertical standard rigidly attached thereto, and a counterpoise-weight eccentrically mounted upon said standard, as and for the purpose set forth.

340,009. POINTER FOR INDICATING APPARATUS. THOMAS W. SHEPHERD, Peabody, Mass. Filed Dec. 26, 1885. (No model.)

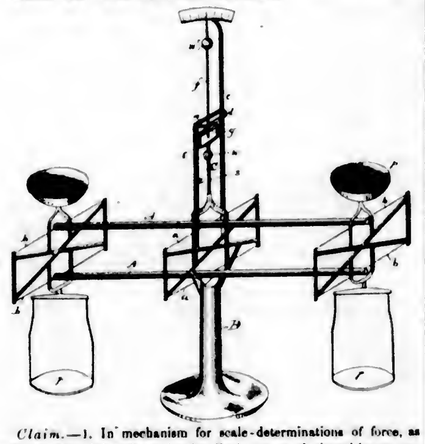


Claim.—1. As an improved article of manufacture, a pointer for indicating-instruments, composed of a thin strip of material rolled spirally and provided at one end with a device for connecting it with the arbor or part from which it is to receive its movement, substantially as described.

2. The combination of the main portion of the pointer consisting of a tube composed of a strip of thin material rolled spirally with a tip inserted in the end of the said tube, substantially as described.

3. The combination of the main portion of a pointer composed of a strip of thin material rolled spirally and flattened at one end, a collet or hub having a tubular projection passing through an opening in the flattened end of the tube, and a washer by which the flattened part of the tube is fastened to said hub, substantially as described.

340,010. MOLECULAR PIVOT-BALANCE. ALFRED SPRINGER, Cincinnati, Ohio. Filed Feb. 2, 1885. (No model.)



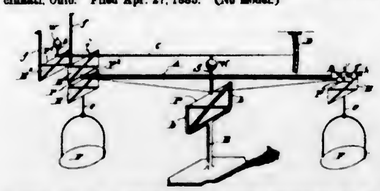
Claim.—1. In mechanism for scale-determinations of force, as gravity, and involving the molecular displacement of pivotal beam-connections, the combination, with a beam and its molecular connections, of an oscillating weight arranged to counteract the molecular resistance of the beam-connections, and an auxiliary oscillating weight arranged in connection with the beam and its counterpoise, so that a defective horizontal alignment of the beam structure, producing an abnormal statical moment of the beam-counterpoise and affecting the beam in one rotative direction, is counterbalanced and neutralized by a corresponding statical moment of the auxiliary weight, affecting the beam in an opposite rotative direction, thus preserving the beam and connections in normal equilibrio, the arrangement being such, also, that the rotation of the beam compels the joint action of the main and auxiliary poises in opposition to the molecular resistance of the beam-connections, substantially as set forth.

2. In a weighing-balance embodying pivotal beam-connections acting by molecular displacement, the combination of an oscillating balance-beam, two pivoted levers, (one of which may be rigidly attached to the balance-beam and act pivotally upon its fulcrum,) and two weights attached to and oscillating with the levers, the beam and levers being connected in such relation that the statical moments of the weights upon one side of their zero positions neutralize each other and upon the other combine in opposing the molecular resistance of the beam-connections, substantially as set forth.

3. In a molecular pivot-balance, the combination of the balance-beam, a weight arranged to oscillate with the beam and normally oppose the molecular resistance of the pivotal connections, and an auxiliary weight arranged in suitable oscillating connection with the first to counteract any abnormal statical moment thereof due to imperfect leveling of the balance, substantially as set forth.

4. In a molecular pivot-balance, in combination with a balance-beam provided with a fixed vertical standard rising above its fulcrum-pivot and carrying a poise-weight, an independently-pivoted vertical standard pivotally connected with the beam and also carrying a poise-weight in such relation that the poises oscillate in opposite directions, as and for the purpose set forth.

340,011. MOLECULAR PIVOT-BALANCE. ALFRED SPRINGER, Cincinnati, Ohio. Filed Apr. 27, 1885. (No model.)

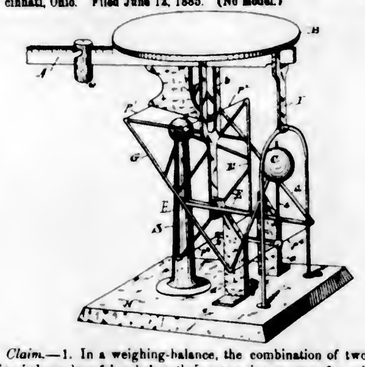


Claim.—1. In a molecular pivot-balance embodying one or more leverage multiplications, the combination, with the balance-beam lengthened at its load-suspension end beyond the normal unit of leverage multiplication, of an auxiliary multiplying beam or marker independently fulcrumed and connected with the main beam by a torsional frame, substantially as described.

2. In a molecular pivot-balance, the combination of a balance-beam having a torsional fulcrum, an auxiliary multiplying beam or marker independently fulcrumed, a torsional pivot-connection between said beams, and a horizontally-adjustable weight-support upon the balance-beam at the end opposite its connection with the auxiliary beam, substantially as described.

3. In a molecular pivot-balance, the combination of the main beam A, the independently-fulcrumed beam or marker C, the connecting-frame E', having torsional pivots p^3 p^3, the terminal torsion-frames E E, and the horizontally-sliding block i, for adjustably connecting one of said terminal frames to the end of the main beam opposite its torsional connection with the marker, substantially as described.

340,012. MOLECULAR PIVOT-BALANCE. ALFRED SPRINGER, Cincinnati, Ohio. Filed June 12, 1885. (No model.)

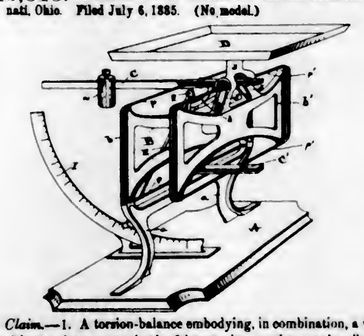


Claim.—1. In a weighing-balance, the combination of two beams having independent fulcra below their respective centers of gravity, and arranged in a common vertical plane at different elevations, so that their proximate ends oscillate in opposite vertical arcs, in combination with elastic pivots secured to the said proximate beam ends, and a rigid connection between said pivots carrying the weight-platform, substantially as set forth.

2. In a molecular pivot weighing-balance, the combination of a steelyard balance-beam fulcrumed below its center of gravity, a radius-arm fulcrumed below and in the vertical plane of the balance-beam in such relation that it oscillates in an arc opposite to that of the pivot end of the balance-beam, an oscillating poise-weight carried by said radius-arm vertically above its fulcrum, and a pan-support rigidly connecting the terminal pivots of the radius-arm and balance-beam, substantially as set forth.

3. The combination, in a weighing-balance, of a weight-beam, A, auxiliary beam D, elastic pivots p' p^2 p^3 p^4, rigid connecting-link b, a weight-pan, standard S, and weight C, arranged and operating substantially as set forth.

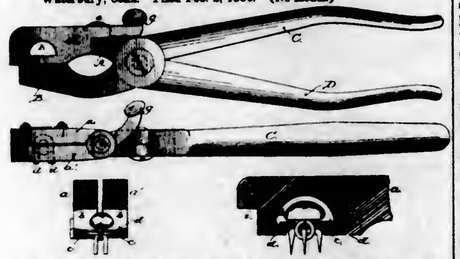
340,013. TORSION PIVOT-BALANCE. ALFRED SPRINGER, Cincinnati, Ohio. Filed July 6, 1885. (No model.)



Claim.—1. A torsion-balance embodying, in combination, a weight-lever fulcrumed upon an elastic fulcrum-pivot acting torsionally and a suitable indicator whereby the amount of beam-deflection against the torsional resistance of the pivot measures the weight applied to the beam, substantially as set forth.

2. The combination, in a gravity-balance, of a case, A, pedestal B, torsion-pivots p p', terminal connection b', a weight platform or support, an indicating-finger, and connecting mechanism for actuating the same over a graduated arc plate by the deflection of the beam, substantially as set forth.

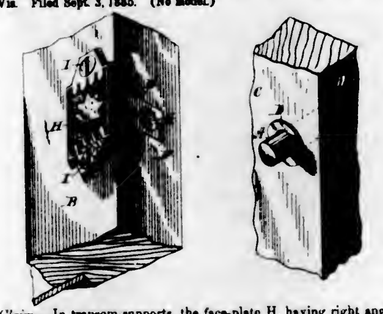
340,014. BUTTON-SETTING INSTRUMENT. EDWARD D. STEELE, Waterbury, Conn. Filed Feb. 2, 1886. (No model.)



Claim.—1. As an improved article of manufacture, the herein-described setting-instrument composed of the jaws A B and handles C D, the upper jaw, A, of which is divided into a stationary section, a, and movable section a', each of which is provided with arched openings b, and wedge-shaped bottoms having recesses to receive and hold the head of a metallic fastener, said stationary section a being provided with a forked spring, d, and end recess, i, and the movable section a' being pivoted to the section a and provided with thumb-lever g, and side projection, h, and the lower jaw, B, of the instrument being provided with dies k, substantially as and for the purpose specified.

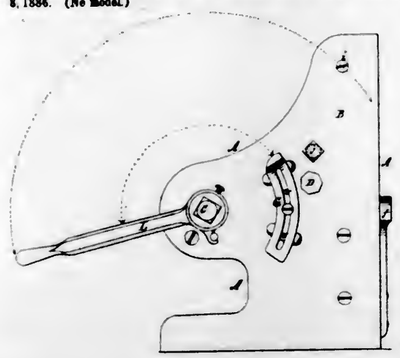
2. In a setting-instrument, the upper jaw, A, composed of the stationary section a, formed integral with the handle D and provided with the opening b, forked spring d, end recess, i, and wedge-shaped bottom, in combination with the movable section a', pivoted to the rear part of the stationary section a and provided with thumb-lever g, arched openings b, and side projection, h, substantially in the manner shown, and for the purpose described.

340,015. TRANSOM-SUPPORT. CHARLES F. STELLER, Milwaukee, Wis. Filed Sept. 3, 1885. (No model.)



Claim.—In transom-supports, the face-plate H, having right angular portion F and pivotal bearing G, made integral therewith, in combination with the pivot or pintle A, substantially as and for the purpose specified.

340,016. SAW-SWAGE. ALONZO STEVENS, Warsaw, Wis. Filed Feb 8, 1886. (No model.)

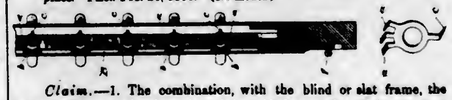


Claim.—1. In the swage-frame consisting of a pair of slightly-separated and bolt-clamped standard-plates, the transversal turn-shaft having power-lever and intermedial fore-eccentric, in combination with the horizontally-moved and vertically-reversible stamp-block having the intervening eccentric-block, interchangeable stamp-dies, return-motion arm-spring, and screw-set tooth-gage, and with the transversal shaft-anvil having several sides and inclined angle-edges, all made and adjusted as herein described, to simultaneously and automatically co-operate with the adjunctive clamping apparatus adjustably attached upon and in the rear standard side of said swage-frame, and consisting of the cam-roller adjusted upon the rear end of said eccentric-shaft and having the spiral incline in its outer and engaging face, the engaged roller of the horizontally-bracketed clamping-lever, and its return springing push-pin inwardly projecting through said rear frame-side toward the set-screw counterpointing through the front frame-side, all substantially as and for the purposes herein specified.

2. In the swage-frame herein described, the combination, with the fore-eccentric transversal turn-shaft, of the reversible stamp-block, horizontally slid in counterfacing and supporting slot-grooves in the inner faces of the separated frame-sides, and having the intervening eccentric-block, interchangeable stamp-dies, returning arm-spring, and counter-springing screw-set tooth-gage, and of the stamp-block transversal shaft-anvil having several interchangeable sides and angle-edges, substantially as and for the purposes herein specified.

3. In the swage-frame containing the saw-tooth swaging portion of the machine herein described, the combination, with the said fore-eccentric swaging-shaft, of the said adjunctive saw-clamping portion, consisting of the said shaft-coupling and automatically-engaging cam-roller, the vertically-pivoted and horizontally bracket-hung clamping-lever having at the end of its long arm the power-connective friction-roller, and at the curved end of its clamping short arm the return springing push-pin, substantially as and for the purposes herein specified.

340,017. DEVICE FOR OPERATING BLIND-SLATS. BENJAMIN D. STEVENS, Burlington, Vt., assignor of one-half to Theodore S. Peck, same place. Filed Feb. 26, 1886. (No model.)



Claim.—1. The combination, with the blind or slat frame, the toothed slide, and the slats pivoted in said frame, of partial gears consisting of sheet-metal rings encircling the slat-tenons, and provided with teeth bent so as to project laterally from the rings, and with means for securing them to the ends of the slats, substantially as and for the purposes set forth.

2. The sheet-metal ring adapted to encircle the slat-tenon, and formed with teeth to engage the operating-slide, and with a retaining-prong by which it can be fastened to the end of the slat, substantially as and for the purpose set forth.

340,018. SPINDLE-STEP. CLARENCE S. TRASK, Lowell, Mass. Filed May 20, 1885. (No model.)

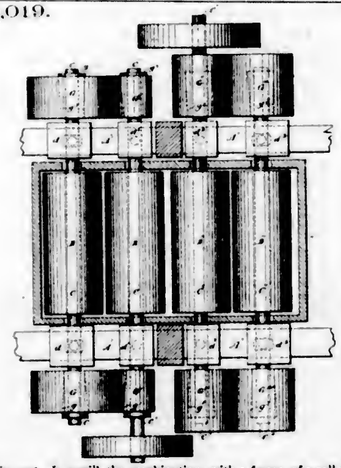
Brief.—The step-box has a downwardly-extending projection to enter the hole in the rail, and is provided with a socket in which fits tightly a bearing-block having exterior vertical flange and perforations just above the bearing, whereby oil has free access to the bearing. Within the step-box is fitted a case having at its top an annular concave flange having perforations, the object of the flange being to prevent the escape of the oil by ascending the spindle.



Claim.—As an improvement in spindle-steps, the combination of a step-box having a downwardly-extending projection, a cylindrical bearing-block arranged in a socket in said projection, and having exterior vertical flanges fitting tightly in the latter, and horizontal perforations arranged between the flanges and directly above the bottom of the step or bearing, and an inner case fitted in the step-box, and provided at its upper edge with a downwardly and inwardly extending annular concave flange or cup provided with openings or perforations, all arranged and operating substantially as and for the purpose herein set forth.

340,019. ROLLER GRINDING-MILL. PIETER VAN GELDER, Sowerby Bridge, County of York, England. Filed Dec. 9, 1884. (No model.) Patented in England Jan. 20, 1884, No. 2,290.

340,019.



Claim.—1. In a mill, the combination, with a frame, of a roll mounted in stationary bearings, and provided at one end with a removable friction driving-wheel, a roll mounted in movable bearings, and likewise provided with a friction driving-wheel, said friction driving-wheels being of the same material as the rolls, and having a combined diameter exceeding that of the rolls.

2. In a roller grinding-mill, the combination, with a frame, of rolls mounted therein and provided at their ends with removable friction driving-wheels of the same material as the body of the roll and of a combined diameter slightly exceeding that of the rolls.

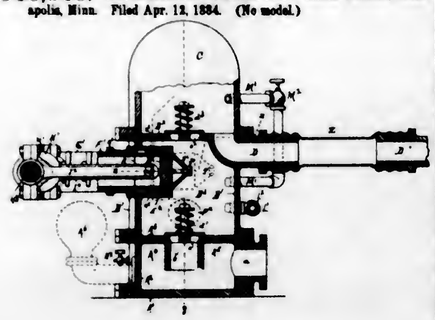
3. In a roller grinding-mill, the combination, with a frame, of a roll carried in stationary bearings, a roll mounted in movable bearings, a spring between the roller-bearing at each end, a pin mounted in the frame, a spring encircling said pin and bearing against the front face of the movable bearing, a rocking lever bearing at one end against the pin, a hand-lever journaled in the frame, and a link connecting the hand-lever and the rocking lever.

4. In a roller grinding-mill, the combination, with the frame, of a roll carried in stationary bearings, a roll mounted in movable bearings, a spring interposed between the rolls at each end, a pin bearing against the outer face of the movable bearing, a rocking lever journaled in the frame and bearing at one end against the pin, a hand-lever journaled on the frame, and a link connected at one end to the pivoted lever, and at the other end to the hand-lever eccentrically, whereby the hand-lever may be made to lock the rolls in position, as shown.

5. In a roller grinding-mill, the combination, with a frame, a roll mounted in stationary bearings, and a roll mounted in movable bearings, of springs interposed between said rolls to urge them apart, a rocking lever arranged, substantially as shown, to compress said spring, a hand-lever journaled in the frame, and a link connecting the hand-lever with the rocking lever.

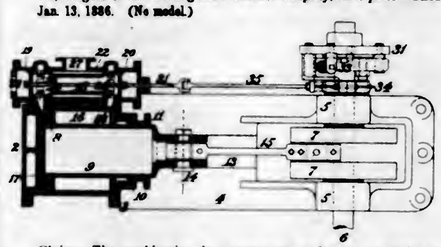
6. In a roller grinding-mill, the combination of a pair of grinding-rolls and friction-wheels carried by said rolls and bearing directly one against the other, said friction-wheels having faces of a width determined by the character of the material to be ground by the rollers, and adapted to wear at a uniform rate therewith, whereby the relative diameters of the rolls and the friction-wheels are caused to remain always the same.

340,020. DOUBLE-ACTING FORCE-PUMP. JAMES WATERS, Minneapolis, Minn. Filed Apr. 12, 1884. (No model.)



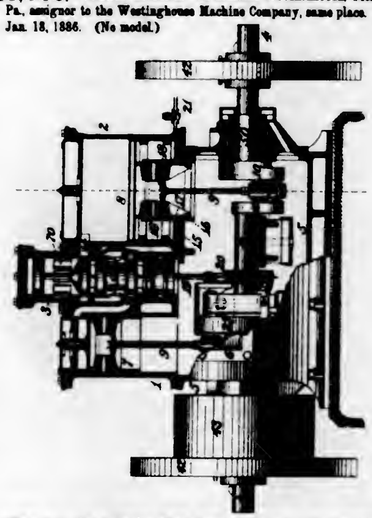
Claim.—The combination of the plunger F' F², open to the outer air, the water-chambers in which the plungers work, the air-chamber C, communicating with the water-chambers, and the plunger-cylinders E' E², having water-ducts A² A³, leading from the air-chamber to the inner surfaces of the said plunger-cylinders, whereby the pressure on the water in the ducts from the outer air, water in the water-chambers and in the air-chamber is equalized, for the purpose herein set forth.

340,021. STEAM-ENGINE. H. HERMAN WESTINGHOUSE, Pittsburg, Pa., assignor to the Westinghouse Machine Company, same place. Filed Jan. 13, 1886. (No model.)



Claim.—The combination, in a compound engine, of a cylinder or cylinders having piston-spaces of differential volumes, a main or steam-distribution valve adapted to effect successively the admission of boiler-steam to the smaller piston-space, the exhaust of steam therefrom into the larger piston-space, and the exhaust from the larger piston-space, an eccentric mounted on the crank-shaft, with the capacity of movement transversely to the crank-line, and having its strap coupled to the stem of the distribution-valve, and a governor fixed upon the crank-shaft and coupled to said eccentric, substantially as set forth.

340,022. STEAM-ENGINE. H. HERMAN WESTINGHOUSE, Pittsburg, Pa., assignor to the Westinghouse Machine Company, same place. Filed Jan. 18, 1886. (No model.)



Claim.—1. In a single-acting compound engine, the combination of a crank-case, a high-pressure cylinder and a low-pressure cylinder of larger diameter connected to said crank-case, and pistons fitting said cylinders and open to the crank-case through surfaces of equal area on their sides adjacent thereto, substantially as set forth.

2. In a single-acting compound engine, the combination of a crank-case, a high-pressure cylinder and a low-pressure cylinder of larger diameter connected to said crank-case, a trunk fixed to the low-pressure piston on the side adjacent to the crank-case and corresponding in diameter with the high-pressure piston, and a head closing the crank-case end of the low-pressure cylinder, and provided with a sleeve or casing inclosing the trunk of its piston, substantially as set forth.

3. In a single-acting engine, a cylinder having a closed internal cushion-chamber on the side of its piston opposite to that which receives steam-pressure, substantially as set forth.

4. In a single-acting engine, the combination of a cylinder and a piston working therein and having a trunk on its side opposite that which receives steam-pressure, said trunk passing through a head in the adjacent end of the cylinder and forming with the piston a closed cushion-chamber therein, substantially as set forth.

5. In a single-acting engine, the combination of a cylinder, a piston working therein and having a trunk on its side opposite that which receives steam-pressure, said trunk passing through a head in the adjacent end of the cylinder and forming with the piston a closed cushion-chamber therein, and a check or relief valve controlling a passage leading out of said cushion-chamber, substantially as set forth.

340,023. COATING METAL FOR WIRE-DRAWING. GEORGE W. WHYTE, Ann Arbor, Mich., assignor, by mesne assignments, to said Whyte and John Cahill, Joliet, Ill. Filed Jan. 18, 1886. (No specimens.)

Claim.—That improvement in the art of treating rods or wire in wire-drawing which consists in subjecting the rods or wires to a bath of copper solution and alumina, lime, or soapstone, drying the treated rods or wire, and then reducing the diameter of the rods or wire by wire-drawing process, substantially as set forth.

340,024. DEVICE FOR FORMING MOWER-KNIVES. GEORGE M. WILLIAMS, Newark, Del., assignor to the W. L. Nassau Manufacturing Company, same place. Filed Aug. 18, 1885. (No model.)



Claim.—1. A former for spiral knives, consisting of a stock having a spiral groove, a pressing-bar pivotally connected by a link to the said stock, and a slotted lever pivotally secured to one end of the stock and connected to said pressing-bar, all combined substantially as described.

2. The stock A, having spiral slot B, in combination with the bar C, having a pin and connected to said stock by the link D, and lever E, having slot G, and pivotally secured to said stock A, all combined substantially as and for the purpose set forth.

340,025. LEMON-SQUEEZER. GEORGE R. WILSON, Jr., Washington, D. C., assignor of one-half to Michael J. O'Connell, same place. Filed Feb. 25, 1886. (No model.)



Claim.—1. A lemon-squeezer consisting of two jaws, one of which is recessed to receive a lemon, and provided in said recess with a conoidal cutting and straining body, and the other jaw provided with a recessed follower having a configuration that conforms to the shape of the lemon-recess and its sharpened conoidal body, substantially as described.

2. In a lemon-squeezer having hinged jaws, the combination, with a lemon-receptacle located in one of said jaws and provided with an inward-projecting sharpened and perforated conoidal body, of a recessed follower located on the other jaw and conforming to the lemon-receptacle and its conodial body, substantially as described.

340,026. PROCESS OF ORNAMENTING WALL AND OTHER PAPERS. WILLIAM V. WILSON, Jubilee Street, Mile End, County of Middlesex, England. Filed Oct. 15, 1885. (No specimens.)

Claim.—1. The herein-described process of ornamenting wall-paper, which consists in coating the printed paper with a thin transparent varnish composed, essentially, of a solution of nitro-cellulose, and subsequently embossing the said varnished paper throughout its substance after the varnish has become dry, substantially as set forth.

2. The herein-described process of ornamenting wall-paper, which consists in first coating the printed paper with a transparent varnish of nitro-cellulose solution, and then frictioning and embossing the said varnished paper throughout its substance after the varnish has become dry, substantially as set forth.

3. As an improved article of manufacture, a web of printed wall-paper having its printed surface coated with a thin transparent varnish of nitro-cellulose, the said varnish being embossed to present a silk, satin, or horse-hair finish, substantially as set forth.

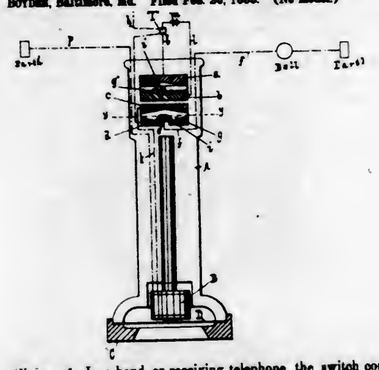
340,027. PAN FOR WASHING DISHES. HARRIET B. ALLEN, St Louis, Mo. Filed Apr. 6, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a sheet-metal dish-pan having its upper edge provided with an elastic guard for preventing the breaking of dishes, substantially as described.

2. As an article of manufacture, a sheet-metal dish-pan having its upper edge beaded and wired, and provided with an elastic guard to prevent the breakage of dishes, substantially as described.

340,028. TELEPHONE-SWITCH. JOHN A. BLATTAU and GEORGE A. BOYDEN, Baltimore, Md. Filed Feb. 26, 1885. (No model.)

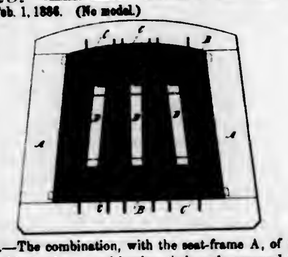


Claim.—1. In a hand or receiving telephone, the switch comprising the chambers *g* and *g'*, formed by the electrodes of their respective circuits, and both chambers provided with a movable conducting material, for the purpose as herein specified.

2. In a hand or receiving telephone-switch, the battery-line, connected to the battery and to the electrodes *a* and *b*, the bell-wire *f*, arranged in the usual relation to the bell and passing into the chamber *g* through the electrode *d*, and insulated therefrom, the line-wire *h*, attached to the electrode *d*, and the ground-wire *p*, attached to the disk c, by which the circuits are made and broken, according to the position in which the hand-piece is placed.

3. In a telephone-switch, the casing A, the disks *a* and *b*, forming the electrodes of the battery-circuit *l l*, and the disks c and *d*, forming the electrodes of the line and bell circuits, in combination with the movable conductors arranged with their respective circuits, whereby the circuits are independent of each other.

340,029. CHAIR-SEAT. REINHARD P. BURKHARDT, Dayton, Ohio. Filed Feb. 1, 1886. (No model.)



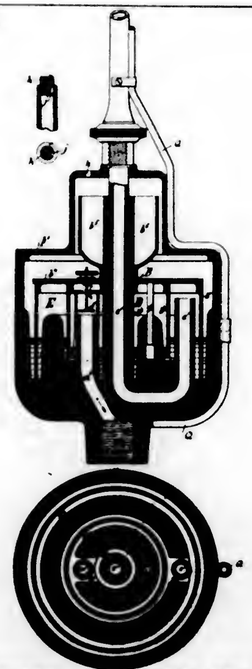
Claim.—The combination, with the seat-frame A, of the bars B B on a level with the frame, and having their ends recessed in the frame, double coiled springs C, whose lower ends engage with the under side of the frame and are supported thereby, and whose upper ends project inwardly to form loops above the level of the top of the frame, the straps D, connecting the opposite pairs of said springs, and the covering E, the whole constructed and arranged substantially in the manner and for the purpose specified.

340,030. GAS-REGULATING BURNER. JOSEPH J. BUTCHER and JOHANN H. WÜSTER, Newcastle upon-Tyne, County of Northumberland, England. Filed July 28, 1885. (No model.) Patented in England May 26, 1885. No. 6,336

Claim.—1. The combination of the outer casing, A, provided with a series of annular fluid grooves or chambers, connected by transverse slots *s s'*, the inlet-pipe extending to a point at or near the tops of said chambers, with the vertically-movable valve B, consisting of the cover-plate b^4, the concentric cylinders b' b^2 b^3, extending into the said annular grooves or chambers, the cylinder b^2 being of less depth than the other cylinders, and the cover F, screwing on the outer casing, A, above the valve, substantially as set forth.

2. The combination, with the outer casing, its annular fluid-chambers, and the inlet-pipe, of the vertically-movable valve consisting of a

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cover, and depending cylinders registering with the fluid-chambers, an outlet-pipe leading from the space between the valve-top and fluid-chambers to the burner, and an adjustable pressure-governor for the inlet and the outlet pipes, substantially as set forth.

3. The combination, with the casting A, having the central opening, *a*, the inlet-pipe *a'*, inclining outward and upward from said opening, the communicating concentric chambers, one being of less depth than the others, and the bent outlet-pipe having a short arm and a long arm, the latter extending up through the center of the casting, of the vertically-movable valve consisting of a cover apertured centrally to slide on the long arm of the outlet-pipe, and provided with the depending cylinders entering the chambers, the cylinder for the shallow chamber being shorter than the others, substantially as set forth.

4. The combination, with the casting A, having the annular chambers described, the central aperture, *a*, the inclined inlet-pipe *a'*, the bent outlet-pipe *c'*, the long arm of which extends up through and above the center of the casting, and threaded, the valve B b' b^3 b^4, vertically movable on the long arm of the outlet-pipe, and the casing-cover F, having screw-threaded portions to register with the threads on said long arm, substantially as set forth.

5. The combination, with the casting A, its fluid-chambers, inlet and outlet pipes, of the vertically-movable valve B, provided with a guide for preventing its revolution, and having cylinders registering with the fluid-chambers, and the pressure-regulator *f* over the upper open end of the inlet-pipe and secured adjustably to the top b^4 of the valve B, substantially as set forth.

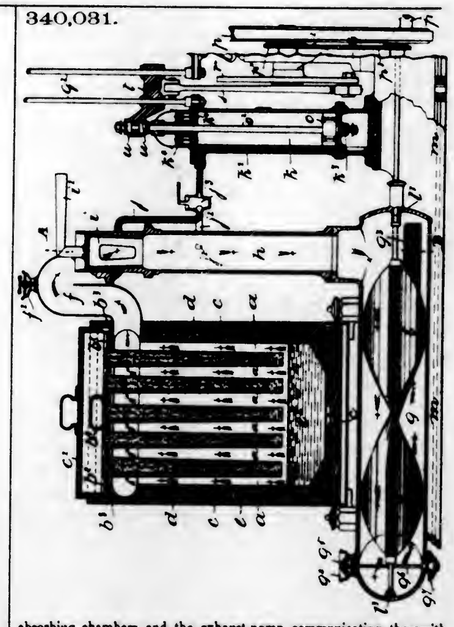
6. The combination, with the casting A, its fluid-chambers, and inlet and outlet pipes, of the vertically-movable valve B, having the depending cylinders b' b^3 b^5, the pressure-governor *f*, directly over the top of the inlet-pipe, and the depending guide-pin *g*, working in a hole in the casting A, substantially as set forth.

340,031. FREEZING OR REFRIGERATING MACHINE. JULIUS CROTE, Aston, near Birmingham, County of Warwick, England. Filed Oct. 24, 1885. (No model.) Patented in England Mar. 14, 1886, No. 3,317.

Claim.—1. In a freezing machine or apparatus, the combination, with the freezing-chamber containing acid, the absorbing-chamber, and a suitable exhaust-pump, of the tubular passages or tubes leading from the freezing and absorbing chambers and communicating with the pump, and the valve located between the said chambers and arranged and adapted to alternately close and open the communication between the same, substantially as and for the purpose set forth.

2. In a freezing apparatus, the combination, with the freezing and

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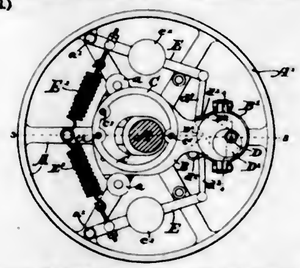
absorbing chambers and the exhaust-pump communicating therewith, of devices, substantially as described, whereby communication between the two chambers may be alternately closed and opened, so that after mechanical exhaustion of each separately further and complete evaporation may be effected by the acid in the absorbing-chamber.

3. In a freezing apparatus, the twin acid-chambers *g g'*, communicating with each other at one end, and at the other end leading to tubular columns A h^2, which are in communication with the freezing-chamber and with the exhaust-pump, substantially as described.

4. In a freezing apparatus, the combination, with the acid-chambers *g g'*, containing axially-mounted agitators, of the cap g^4, cup g^5, spindle g^6, and seat g^7, substantially as described.

5. In a freezing apparatus, the air-pump *k*, having a piston, *o*, and piston-rod o^2, whose stroke is greater than the length of the barrel, said piston-rod being provided at its upper end with collars o^3 o^4, neck o^5, and springs *u u*, the latter lying in sockets in one of the cross-head, substantially as described.

340,032. GOVERNOR. WILLIAM R. CUNNINGHAM, Lafayette, Ind., assignor of one-half to John Temple, same place. Filed Feb. 2, 1886. (No model.)



Claim.—1. The combination of the main shaft of an engine, a wheel thereon, a plate mounted in bearings on said wheel at one end and upon an eccentric, by which it is operated, at the other end, and carrying an adjustable ring thereon set eccentrically to said main shaft.

2. The combination, in a governor, of a plate mounted in bearings upon a wheel at one end and upon an eccentric at the other end, which is in turn mounted upon another eccentric, whereby, by the combined operation of said two eccentrics or double eccentric, said plate is moved in a direct line on its bearings, substantially as set forth.

3. The combination of a main or driving shaft, a wheel thereon, a slotted plate surrounding said shaft and mounted in bearings on said wheel at one end and upon a double eccentric mounted on a stud-shaft

also on said wheel at the other end, and means of operating said double eccentrics, substantially as set forth.

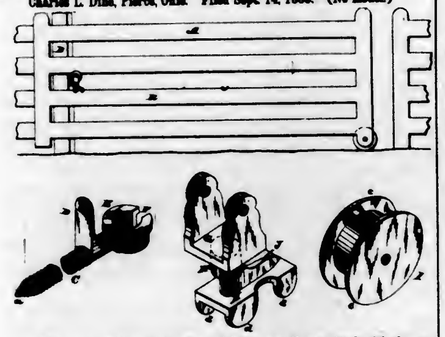
4. The combination of the shaft A, the wheel A', the plate B, mounted in bearings on said wheel at one end, the double eccentric D' D^2, upon which said plate is mounted at the other end, pivoted arms carrying weights and held inwardly by springs, and connecting rods or links connecting said pivoted arms to arms on said eccentric or double eccentric, substantially as set forth.

5. The combination of the shaft A, the wheel A', having grooved rollers *a* secured thereto, a plate, B, mounted and capable of being moved on said rollers, a stud-shaft, D, on said wheel, carrying a double eccentric, one portion of which is mounted upon the other, and a connection between said double eccentric and said plate, whereby, as said eccentric is operated, said plate will be moved in a direct line.

6. The combination, with a double eccentric for shifting the eccentric for driving a valve, of pivoted arms carrying weights and connections connecting said arms to said double eccentric, whereby said double eccentric will be operated by centrifugal force, substantially as set forth.

7. The combination of a shaft, A, wheel A', plate B, mounted in bearings on said wheel at one end and on a double eccentric at the other end, pivoted arms secured to said wheel at one end and connected to said double eccentric at the other end by means of rods or links, springs operating to hold said arms inwardly, and weights which tend, by means of centrifugal force, when the wheel is in motion, to force said arms outwardly, substantially as set forth.

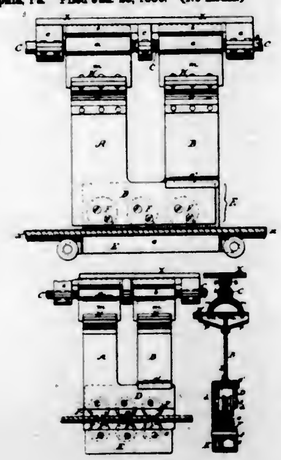
340,033. GATE. JOHN M. DIPP, Canton, assignor of one-half to Charles L. Dine, Pierce, Ohio. Filed Sept. 14, 1885. (No model.)



Claim.—1. The combination, with the arm C, provided with the extension D and eye E, having opening F, of the wheel-support G, provided with the portions H and H', and the wheel or roller I, substantially as and for the purpose specified.

2. The combination, with the arm C, having eye E and opening F, of the wheel-support G, provided with the extensions *d d* and the flange J, the roller I and the gate A, all arranged substantially as shown and described, and for the purpose specified.

340,034. GRIPPING DEVICE FOR CABLE CARS. GEO. H. DODGE, Philadelphia, Pa. Filed Jan. 25, 1886. (No model.)



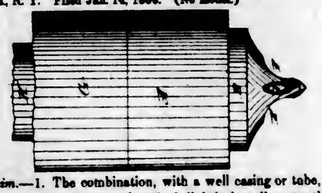
Claim.—1. The combination of the boxes D E, movable in opposite directions, with cable-gripping cams hung to one box and having portions engaging with the other box, all substantially as specified.

2. The combination of the boxes D E, movable in opposite directions, a cable-support on said box E, and cable-gripping cams hung to the box D and operated by engagement with the box E, all substantially as specified.

3. The combination of the boxes D E, cable-gripping cams hung to one box and having portions engaging with the other box, and a right-and-left screw and nuts, whereby the boxes are caused to move in opposite directions, all substantially as specified.

4. The combination of the nuts and the right-and-left screw for operating the same, with bars A B, carrying gripping mechanism and hung to bars N, free to slide laterally in the nuts, all substantially as specified.

340,035. POINT FOR DEEP WELLS. SAMUEL W. DOUGLASS, New York, N. Y. Filed Jan. 14, 1886. (No model.)



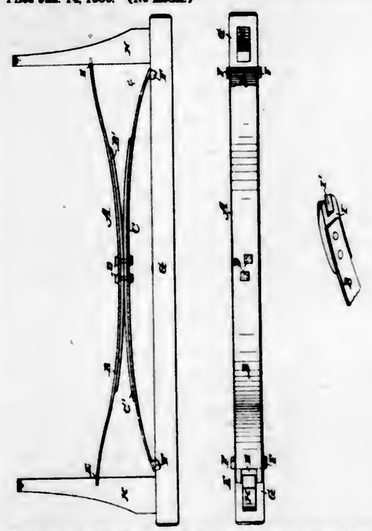
Claim.—1. The combination, with a well casing or tube, of a shoe, A, having an internal screw-thread of slightly less diameter than the internal diameter of the well casing or tube, substantially as described.

2. The combination, with a well casing or tube, of a shoe having an internal screw-thread of slightly less diameter than the internal diameter of the well casing or tube, and a nozzle-point having an external screw-thread fitting in the internal screw-thread of the shoe, substantially as specified and set forth.

3. The combination, in a nozzle-point, of an external screw-thread, C, and an internal screw-thread, D, in the chamber, one thread being in the opposite direction from the other, substantially as specified.

4. The combination, with a well casing or tube, of a shoe having an internal screw-thread, a nozzle-point having an external thread to correspond therewith, and an internal thread in the chamber in a reverse direction from the external thread, and a drill-rod having an external thread corresponding with the internal thread of the nozzle-point

340,036. VEHICLE-SPRING. ADAM EDELMANN, Germantown, N. Y. Filed Jan. 14, 1886. (No model.)

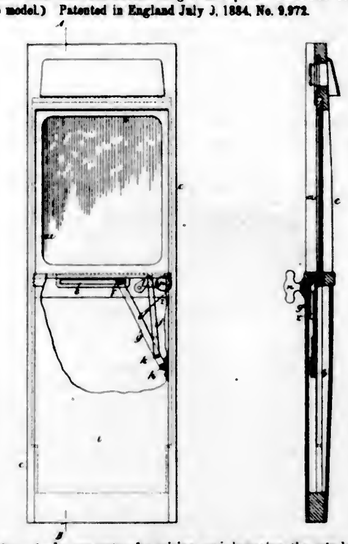


Claim.—1. A spring composed of two members centrally united at their backs, of which the lower member is provided at its ends with downwardly-extending lugs and the upper member is provided with recesses, substantially as herein shown and described.

2. The spring A, composed of the member B, having recesses E, and of the member C, having lugs F, said members being fastened together by means of the bolts D or other suitable devices, in combination

with the bolster G, having the stakes H, substantially as herein shown and described.

340,037. APPARATUS FOR ADJUSTING CARRIAGE-WINDOWS. WALTER FROST, London, England, assignor of two-thirds to Harry Edmund Winter and Jean Lodois Mérigot, same place. Filed Feb. 17, 1885. (No model.) Patented in England July 3, 1884, No. 9,972.



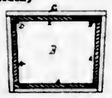
Claim.—1. In apparatus for raising and lowering the windows of railway and other carriages, the combination of a radiating lever jointed at one end to the frame of the door or window, and having its other end sliding in a slot in the sash-frame, with a link and crank, substantially as and for the purposes hereinbefore described.

2. In apparatus for raising and lowering the windows of railway and other carriages, the combination of a radiating lever jointed at one end to the frame of the door or window, and having its other end sliding in a slot in the sash-frame, with a link, and a crank rigidly fixed on the spindle of a handle working in the frame of the carriage door or window and a counterbalancing-spring, (or a weight,) all arranged substantially as and for the purposes hereinbefore described, and represented in the accompanying drawings.

3. In apparatus for raising and lowering the windows of railway and other carriages, the combination of the described arrangement of radiating lever, slot, link, and crank with a ratchet mechanism and handle, substantially as and for the purposes hereinbefore described, and represented in the accompanying drawings.

4. In apparatus for raising and lowering the windows of railway and other carriages, the combination of the described arrangement of radiating lever, slot, link, crank, ratchet mechanism, and handle with a counterbalancing-spring, substantially as and for the purposes hereinbefore described, and represented in the accompanying drawings.

340,038. COFFIN. ROBERT M. FRYER, Brooklyn, N. Y., assignor, by direct and mesne assignments, to the Carbon Casket Company. Filed Sept. 10, 1885. (No model.)



Claim.—A coffin or casket provided with a lining of charcoal in the form of slabs secured to the inner surface, substantially as described.

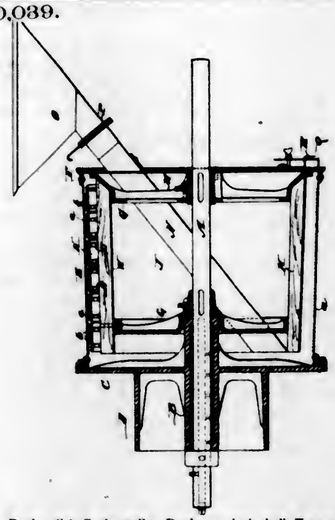
340,039. COFFEE-HULLER. JOSÉ GUARDIOLA, Chocola, Guatemala. Filed June 8, 1885. Renewed Mar. 17, 1886. (No model.)

Claim.—1. In a coffee-huller, the combination, with a revolving shell having projections on its inner surface, of a fixed conical part within the shell having grating-plates on its outer surface, substantially as herein shown and described.

2. In a coffee-huller, the combination, with a revolving conical shell having projections on its inner surface, of a fixed conical part within the shell, grating-plates on the inner conical part, and a feed-chute extending through the inner conical part, substantially as herein shown and described.

3. In a coffee-huller, the combination, with the fixed shaft A, of the

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sleeve B, the disk C, the pulley D, the conical shell E, provided with projections on its inner surface, and the fixed conical part J within the shell, substantially as herein shown and described.

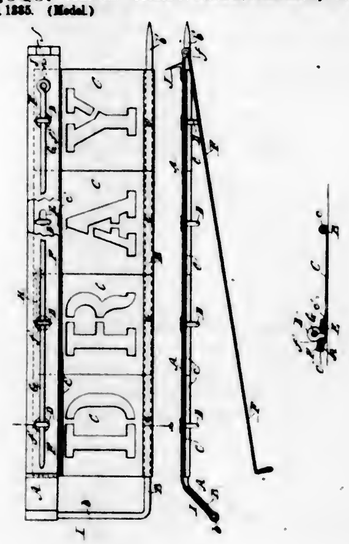
4. In a coffee-huller, the combination, with the fixed shaft A, of the sleeve B, the disk C, the shell E, the ring F on the free end of the same, and the conical part J within the shell, substantially as herein shown and described.

5. In a coffee-huller, the combination, with the fixed shaft A, of the sleeve B, the disk C, the shell E, the ring F, the wheels G, the staves H, and the plate M, substantially as herein shown and described.

6. In a coffee-huller, the combination, with the fixed shaft A, of the sleeve B, the disk C, the shell E, the ring F, the plate M, having a chute, Q, the wheels G, the staves H, the chute N, and the hopper O, substantially as herein shown and described.

7. In a coffee-huller, the combination, with a revolving shell having projections on its inner surface, of a conical part within the shell, plates hinged on the conical part and provided with projections on their outer surfaces, and springs to give to the plates the proper elasticity in the direction from the surface on which they are hinged, substantially as herein shown and described.

340,040. STENCIL. GEORGE F. GUNTHER, Louisville, Ky. Filed Oct. 22, 1885. (Model.)



Claim.—1. A stencil comprising a top plate, A, a wire or rod, B, bent upward at one end and connected to the top plate, A, the opposite end of the rod being disconnected from the top plate and adapted to have stencil-plates strung on it, and a retainer connected to the top plate, for preventing lateral movement of said stencil-plates, substantially as set forth.

2. The combination of the top plate, A, having a retainer for the stencil-plates, of the wire or rod B, bent upward at one end and connected to the top plate, the free end of the rod B being pointed, as at *b*, and extended beyond the end of the top plate, to allow of the ready stringing of the stencil-plates, substantially as set forth.

3. A stencil comprising a plate, A, provided with eyes D, a rod, B, connected to plate A and ranging parallel therewith, letter-plates C, strung upon the rod B and having slots, as at E, through which the eyes D pass when the letter-plates rest on plate A, and a retaining device passed through the eyes D, over the letter-plates, substantially as herein set forth.

4. A stencil comprising a plate, A, provided with eyes D, a rod, B, connected to the plate A and ranging parallel therewith, letter-plates C, strung upon the rod B and having slots, as at E, through which the eyes D pass, a clamp-plate, F, provided with apertures *f'*, for the passage of eyes D, and placed over the letter-plates, and a retaining device passed through the eyes over the clamp-plate, substantially as herein set forth.

5. The combination, in a stencil, of the plate A, having eyes D, a rod, B, connected at one end to the plate A, letter-plates C, strung upon rod B and having slots E, through which the eyes D pass, a clamp-plate, F, connected to plate A, provided with apertures *f'*, for the passage of eyes D, and adapted to hold the letter-plates to plate A, and hooks or a wire, G, passed through the eyes D, outside of the clamp-plate, substantially as herein set forth.

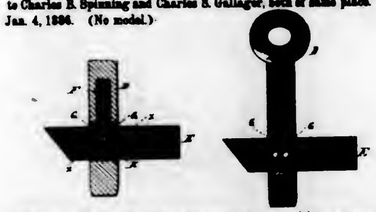
6. In a stencil comprising a plate, A, a rod, B, connected to and ranging parallel therewith, to receive the letter-plates and allow them to rest on the plate A, the connected ends of the plate A and rod B being bent upward to form a handle, as at I, substantially as herein set forth.

7. The stencil-plate C, herein shown and described, formed with an upward bend at one longitudinal edge and with an eye, *c*, along its opposite edge, the said eye being formed on the upper surface of the stencil, whereby the bottom surface of the stencil will be perfectly flat, substantially as set forth.

8. In a stencil, the letter-plate C, formed with eyes *c* at one edge, adapting them to be strung upon a rod, B, substantially as herein set forth.

9. In a stencil comprising a plate, A, a rod, B, connected to and ranging parallel therewith, and letter-plates C, strung on rod B and resting on plate A, said plates C bent at *c'*, substantially as shown and described, whereby the entire surface of the plates in which the characters are cut will lie flat on the surface to be marked, as set forth.

340,041. SEAL-LOCK. HENRY K. HARKER, Cincinnati, Ohio, assignor to Charles B. Spinning and Charles S. Gallagher, both of same place. Filed Jan. 4, 1886. (No model.)



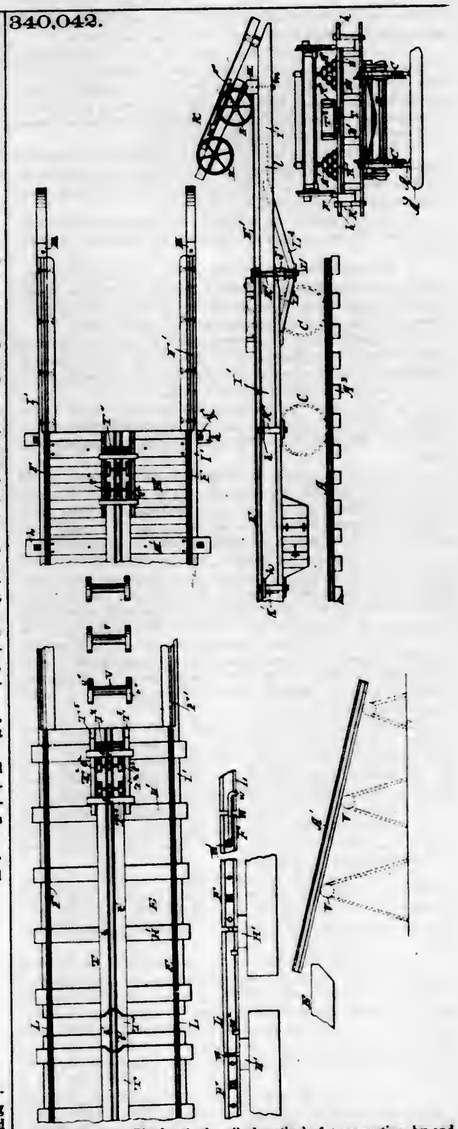
Claim.—1. In a seal-lock, the combination, with a transversely-slotted pin provided with an internal chamber carrying a gravitating locking device, of a key adapted to be inserted through said slots, and having its upper edge cut away to form a recess to receive the locking device, said recess being enlarged at its bottom to form retaining-shoulders to prevent the withdrawal of the locking device.

2. In a seal-lock, the combination, with a transversely-slotted pin provided with an internal chamber carrying one or more gravitating locking-balls, of a key adapted to be inserted through said slots, and having its upper edge cut away to form a recess to receive said ball or balls, said recess being enlarged at its bottom to form retaining shoulders to prevent the withdrawal of said ball or balls.

3. In a seal-lock, the combination, with the pin D, having transverse slots G G, and chamber F, carrying a gravitating locking device, of a key, E, having the cut-out portion K, with shoulders L' L', substantially as and for the purpose specified.

340,042. APPARATUS FOR LAYING RAILROAD-TRACK. GEO. F. HARRIS, New York, N. Y., assignor to Gordis Day Harris, Keene, N. H., and George Edwin Harris, Mahopac Falls, N. Y. Filed Jan. 4, 1884. (No (Model.) Patented in Canada Apr. 15, 1881, No. 12,365.

340,042.



Claim.—1. The herein-described method of transporting by and delivering from a construction-train of cars the material for a permanent track, it consisting in placing the loose ties upon the rear cars of the train and the loose rails upon the forward cars, the latter being arranged in two piles on each rail-car, then carrying over the loose rails on the train and delivering to the ground in front a large number of ties simultaneously, and transporting the loose rails to the front of the train on lines between the two aforesaid piles of rails which are on each car, substantially as set forth.

2. The combination of the platform-car and extension beams or bars situated on or near the horizontal planes of the main longitudinal beams or sills of the platform-car, substantially as set forth.

3. The combination, with a platform-car, of extension beams or bars running forward from the car and secured thereto, and a tie-carrier supported upon said beams or bars and adapted to carry material thereon to points ahead of the car, substantially as described.

4. The combination of the platform-car, extension beams or bars situated on or near the horizontal plane of the main longitudinal beams

or sills of the platform-car, a track supported upon said beams, and a car whose wheels are fitted to said track, substantially as set forth.

5. The combination, with the forward car of a construction-train, of detachable extension-beams extending forward from said car substantially horizontally, to support a tie-carrier, devices, substantially as described, for clamping said beams to the car rigidly, and a supplemental tie-carrying car adapted to be supported and to run upon the said extension-beams, substantially as described.

6. The combination, with the construction-car, of the detachable extension-beams, which provide a track for an upper supplemental car, and detachable braces, as at L^4, for supporting the forward parts of the said extension-beams, substantially as described.

7. The combination, with the detachable extension-beams, of stops or abutments M, secured thereto, substantially as and for the purposes set forth.

8. The combination, with the forward car of a construction-train, of detachable extension-beams beveled or rounded at their forward ends, whereby they are adapted to receive the impact of a tie-carrier at points below their upper edges, substantially as shown and described.

9. The combination, with a construction-car, of a car adapted to move thereon and provided with two frames, one of which is movable relatively to the other, whereby the unloading of the material from the car can be facilitated, substantially as set forth.

10. The combination of the construction-car and the tie-car moving thereon, made in two parts permanently connected together, but of which one is adapted to move relatively to the other, substantially as set forth.

11. In an apparatus for delivering track material to the ground from a construction-train, the combination of a car adapted to be moved upon the car which carries the construction material and a stop or abutment which stops the forward movement of the car at the point where the unloading of the latter is to be effected, substantially as set forth.

12. In an apparatus for delivering track material from a construction-car, the combination, with said car, of a carriage adapted to move thereon and provided with a frame for supporting the material, which frame can swing upward, and a stop arranged substantially as described, whereby the motion of the carriage is arrested, substantially as set forth.

13. In a device for transporting ties from one part of a construction-train to another, the combination of a main frame, as at N' N', a sliding frame thereon, the plate P', secured to one of said frames and having the engaging portion *p*, wherewith it engages with the other frame, substantially as set forth.

14. In a device for transporting ties from one part of a construction-car to the other, the combination of the movable main frame, a frame connected thereto which can slide relatively, the anti-friction rollers *o'*, interposed between the frames, and connecting devices which prevent a vertical displacement of the sliding frame, but arranged, substantially as set forth, to permit it to move longitudinally, as described.

15. The combination of the main frame N', the sliding frame O O', a connecting-plate, P P', and stops o^4, to limit the movements of the sliding frame, substantially as set forth.

16. The combination, with a construction-car for transporting track material, of a series of two or more independent trestles (in contradistinction from a chute) in front of the construction-car, each being provided with independent rollers adapted to be arranged in gradually lower planes.

17. In a track-laying apparatus, the combination of the following elements, namely: a series of transporting-cars, an anti-friction guide or track for the loose metal rails extending from one to another of said cars and arranged centrally longitudinally of the train, an apparatus for delivering said rails, consisting of a series of rollers directly in front of the central part of the train, and a supplemental car moving centrally of the train and over the aforesaid guide for the metal rails, substantially as set forth.

18. In a track-laying apparatus, the combination of a construction-car, a track upon said car, a supplemental track in front of said car, substantially coinciding with the track on the construction-car, and a support, which holds said supplemental track in an elevated position above the ground, substantially as set forth.

19. The combination of a construction-car, a track upon said car, a supplemental track in front of said car and substantially coinciding with the track thereon, a tie-carrying car adapted to move on said track, and anti-friction rollers in front of the construction-car, to support the metal rails as they descend, substantially as set forth.

20. The anti-friction rail-guide having the horizontal roller and the vertical rollers, the latter being arranged immediately above the horizontal roller, substantially as set forth.

21. In a track-laying apparatus, the combination, with a construction-car, of a support in front of said car for track material preparatory to its being lowered to the ground, that part of said support over which the material is transported being substantially horizontal and the rear end thereof being detachably connected with the construction-car, substantially as set forth.

22. The combination, with the train of two or more cars, of a continuous track above and upon said cars, adapted to guide a supplemental vehicle, and a support in front of the forward car adapted to hold track material preparatory to its being lowered to the ground, substantially as set forth.

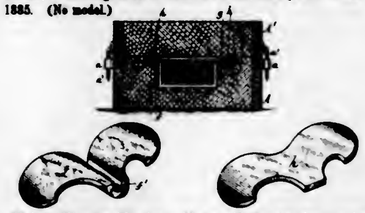
23. The combination, with the train of two or more cars, of a supplemental vehicle adapted to move above and longitudinally over said cars, means at the ends of the cars to support said vehicle while passing from one to the other, and a support in front of the forward car to hold the material brought forward by the said vehicle, substantially as set forth.

24. The combination, with a construction-car, of a supplemental car for transporting iron rails over the construction-car, said supplemental car having supporting-wheels, which rest upon the construction-car, and having a downward-projecting guide, the construction-car having a corresponding way for said guide, substantially as set forth.

25. The combination, with a construction-car, of a supplemental car for transporting iron rails over the construction-car, said supplemental car having wheels or rollers, which rest upon the construction-car, and a guide which engages with a way on the construction-car, and an anti-friction roller on the supplemental car adapted to support the rails when they are being pushed forward and off from the supplemental car, substantially as set forth.

26. The combination, with a construction-car having track-rails secured thereto and the intermediate removable rail-sections, of the supporting-bars for the said intermediate rail-sections secured to the rails on the construction-car, and each constructed, substantially as set forth, to have an arm situated below and across an intermediate detachable rail-section, whereby the latter can rest upon and be held by said supporting-bar, as described.

340,043. **MOLD FOR FORMING CASTINGS.** WILLIAM H. HARRIS, Buffalo, N. Y., assignor to Jeanette E. Harris, same place. Filed Dec. 17, 1885. (No model.)



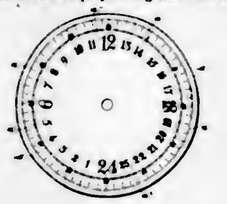
Claim.—The combination, with a mold for forming castings, of a core, G, provided with projecting rods *g g*, grooved plates *f*, embedded in the mold and supporting the projecting rods of the core, and plates A, covering the grooved plates *f*, and confining the rods *g* in the grooves thereof, substantially as set forth.

340,044. **WATCH-DIAL.** GEORGE HUNTER, Elgin, assignor to the Elgin National Watch Company, Chicago, Ill. Filed Dec. 11, 1883. (No model.)



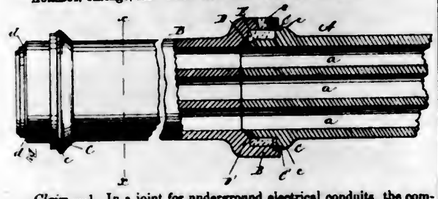
Claim.—A watch-dial having the circle of twenty-four consecutive hour-numbers, with the number 12 at the top and the number 24 at the bottom of the dial, and provided with a representation of half the globe or earth entirely within the circle of numbers, and having its upper portion light and its lower portion clouded, substantially as and for the purpose shown.

340,045. **WATCH-DIAL.** GEORGE HUNTER, Elgin, assignor to the Elgin National Watch Company, Chicago, Ill. Filed Dec. 11, 1883. (No model.)



Claim.—A watch-dial in which is employed a series of twenty-four consecutive hour-numbers arranged in a circle and having the numbers at the quarters of the circle made conspicuous and distinguished from the rest, substantially as and for the purpose described.

340,046. **UNDERGROUND ELECTRICAL CONDUIT.** DANIEL N. HURLBUT, Chicago, Ill. Filed Nov. 14, 1885. (No model.)

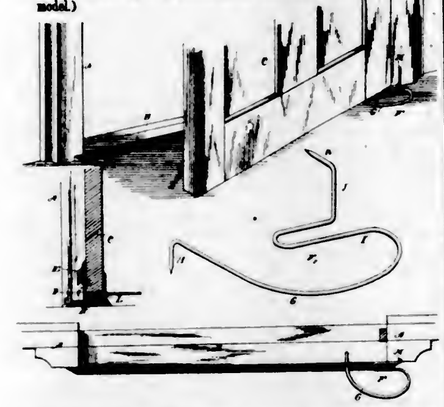


Claim.—1. In a joint for underground electrical conduits, the combination, with the section having a flaring or bell-shaped end, of the other section constructed to enter said end, the meeting edges of the sections being provided with flexible packings, and an annular space or pocket being formed between the two sections containing a flexible or plastic filling, substantially as and for the purpose specified.

2. The combination, with the section B, having flaring end B' with seats *c'* and *d'*, of the section A, provided with seats *c* and *d*, and packings C' and D' to form the closed annular space E, said space being filled with a permanently plastic or flexible filling, whereby a flexible joint between the sections is provided, substantially as and for the purposes specified.

3. The combination of the sections A and B, capable of movement relative to each other, and having at their junction an annular space, E, filled with a flexible filling—such as Trinidad asphaltum—and flexible packings arranged in suitable seats formed at the meeting edges of said pipes, substantially as and for the purposes specified.

340,047. **WEATHER-STRIP.** DAVID M. HYRE, Rich Hill, Mo., assignor to Harrison L. Hyre, Lexington, Ill. Filed Aug. 18, 1885. (No model.)

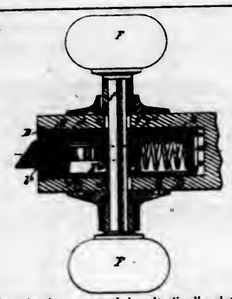


Claim.—1. A bracket for raising the lower edge of a weather-strip, consisting of a rod bent to form a curved portion, having its outer end bent downward and pointed, having its inner portion bent inward and doubled parallel to itself, bent upward at a right angle, and bent outward from the curve and pointed, as and for the purpose shown and set forth.

2. In combination with a door having a weather-strip capable of upward displacement, a bracket consisting of a rod formed with a curved horizontal portion, a downwardly-bent pointed portion at one end of the curved portion driven into the sill of the door, an inwardly-bent portion doubled back parallel with itself, and an upwardly-bent portion at the end of the doubled portion, having its end bent at a right angle to it and pointed and driven into the jamb of the door at the hinge edge of the door, as and for the purpose shown and set forth.

340,048. **KNOB-LATCH.** EDGAR KNIGHT, New York, N. Y., assignor of one-half to William Reynolds and Amos W. Butler, Brookville, Ind. Filed May 5, 1885. (No model.)

Claim.—1. In a knob-latch, the combination, with the inclosing-case and face-plate, of the latch-bolt slotted at *c'* and having the inwardly-projecting rack c^3, and the shoulder-bearings c^2 and c^4, engaging the wall of the case, the spring D, and the pinion E, having hubs *e* and



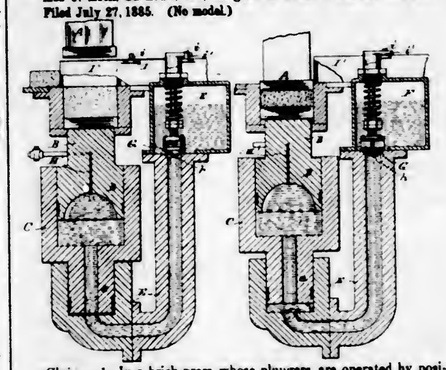
e', having bearings in the case and longitudinally slotted to receive the knob-spindle *f*, substantially as described, and for the purpose set forth.

2. In a knob-latch, the combination, with the case inclosing the operating mechanism, and having the interior of the wall at its forward end threaded, of a face-plate provided with a threaded boss on its rearward face, whereby the face-plate may be screwed into and thus seated upon the end of the case, as specified.

3. The combination, with the latch-bolt C, its slot *c'*, rack c^3, bearings c^2 and c^4, and pinion E, of spring D, and inclosing-case A, provided with face-plate B and inwardly-turned rearward edges *a* and disk or end plate, *a'*, as and for the purpose set forth.

4. The combination, in a knob-latch, with the bolt C, having a transverse slot, *c'*, in which is the inwardly-projecting rack c^3, the operating-pinion E, having hubs *e* and *e'*, and the spring D, of the inclosing-case A, having the slots a^2 and a^4, and the screw-cap a^3, together with the face-plate B, as and for the purpose specified.

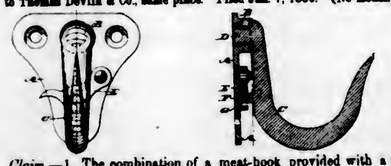
340,049. **PRESSURE-REGULATOR FOR BRICK-MACHINES.** JULIUS J. KOCH, St. Louis, Mo., assignor to Frank Wichard, same place. Filed July 27, 1885. (No model.)



Claim.—1. In a brick-press whose plungers are operated by positive mechanical powers, the combination of a water-cylinder provided with a safety-valve, with one or both plungers, substantially as herein shown and described, and for the purpose set forth.

2. In a brick-press, the combination of a water-cylinder, C, pipe E, water-reservoir F, safety-valve G, check-valve A, air-valve H, with one or both plungers, substantially as herein shown and described, and for the purpose set forth.

340,050. **MEAT-HOOK.** JOHN KOERBERLE, Philadelphia, Pa., assignor to Thomas Devlin & Co., same place. Filed Jan. 7, 1886. (No model.)

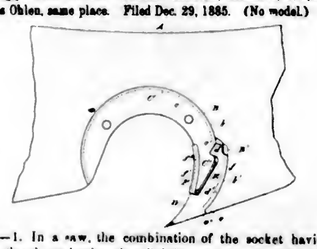


Claim.—1. The combination of a meat-hook provided with a lug on its rear side, a supporting-plate to which said hook is removably attached, and a lock which is connected with the plate and engages with the lug of the hook, substantially as described.

2. The combination of a meat-hook having a threaded shank and a lug on its rear side, a plate having a threaded opening, and a dog or lock engaging with the lug on the hook for retaining the same in position, substantially as described.

3. The combination of a meat-hook having a threaded shank and a lug, a plate, A, with a threaded opening, and a dog, E, with slot G, pivoted to said plate and adapted to engage the lug, substantially as described.

340,051. SAW-TOOTH. ANDREW KRIEGER, Columbus, Ohio, assignor to James Ohlen, same place. Filed Dec. 29, 1885. (No model.)



Claim.—1. In a saw, the combination of the socket having the tooth-recess, the clamp having the slightly-convex part on its edge adjacent to its end, and the tooth having the notch with a straight bottom, which recess lies upon the slightly-convex part of the edge of the clamp, and by its coaction therewith keeps the pressure between the outer edge of the tooth and the meeting edge of the tooth-recess equal throughout their entire lengths, substantially as specified.

2. In a saw, the combination of the socket having the tooth-recess, the clamp having the slightly-convex part on its edge, the tooth having the notch with a straight bottom, and the shield having one portion between the bottom of the notch and the slightly-convex part on the edge of the clamp, and another portion lying against the inner edge of the clamp and provided with the side flanges, which rest against the opposite sides of the clamp, substantially as specified.

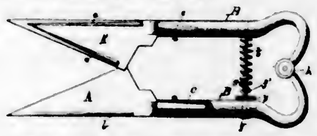
3. In a saw, the combination of the socket B, having the rib *b* on its edge, and provided with the tooth-recess having the rib *b'*, the tooth-clamp C, provided with the groove *c*, notch *c'*, and slightly-convex portion C' on its edge, the tooth D, provided with the foot *d*, groove *d'*, and notch E, having the straight or flat bottom, and the shield F, having the strip *f*, which lies between the tooth and clamp, and the part or extension *f'*, which lies against the edge of the clamp, and is provided with the flanges f^2, substantially as specified.

340,052. SHOE. EDWIN LUNT, Newburyport, Mass. Filed Nov. 30, 1885. (No model.)



Claim.—As a new or improved article of manufacture, a shoe or cloth slipper composed of an upper or vamp and quarters and two outer soles lapped together and combined with and by a row of stitches extending through and about them near their edges, and of a lining arranged within the upper and including an insole, and connected to the upper at the mouth thereof by a binding stitched to both lining and upper, all being substantially as set forth, such insole being integral with or connected to the portion of the lining extending from it without being stitched to the outer sole and the vamp.

340,053. SHEEP-SHEARS. ANDREW J. LYTLE, Hillsborough, Ohio, assignor to O. S. Price and S. P. Scott, both of same place. Filed July 31, 1884. Renewed Oct. 15, 1885. (No model.)

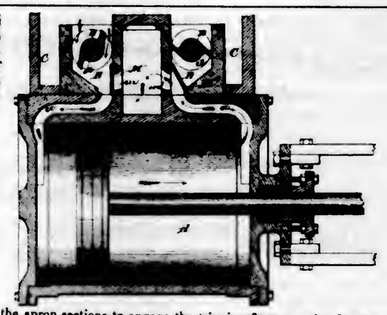


Claim.—Sheep-shears having blades constructed with guarding and re-enforcing ribs and tapered shanks, shear-arms bowed and jointed at their rear ends, a coiled spreading-spring, a screw-threaded guide-pin, a sliding collar, and an adjustable thumb-screw thereon, all constructed and adapted to operate substantially as and for the purposes described.

340,054. STEAM-VALVE GEAR. MERRIT MURPHY, Milwaukee, Wis. Filed Jan. 9, 1886. (No model.)

Claim.—1. The combination, with the inlet and exhaust ports, of a pair of oscillating valves located therein, and carrying each upon its shaft a tripping finger, a reciprocating frame carrying a two-part pivoted apron having a sustaining-spring, tripping-springs located each upon one

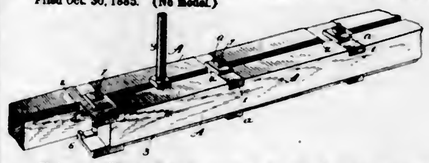
340,054.



of the apron-sections to engage the tripping-fingers, and a fixed oscillating cam-arm operating to raise and depress the apron-sections, substantially as described.

2. The combination, with the cylinder and valve-chest, with the inlet and exhaust ports thereof, and the flap-valves M, connected therewith, of the valves D, located in the inlet-ports and carrying the tripping-fingers E upon their shafts, the reciprocating frame *f*, carrying the pivoted apron-sections F' F', the sustaining-spring G, and tripping-springs F, and the fixed oscillating cam G', connected by arm H and rod H' to the governor, substantially as set forth.

340,055. HAY-CARRIER TRACK. PHILIP A. MYERS, Ashland, Ohio. Filed Oct. 30, 1885. (No model.)



Claim.—1. The track for hay-carriers, formed of two beams placed side by side, with a space between them, combined with upper and lower clamps, the connecting-bolts passing vertically through the clamps holding the two beams in fixed relation to each other, and suspending-rods inserted between the beams, substantially as described.

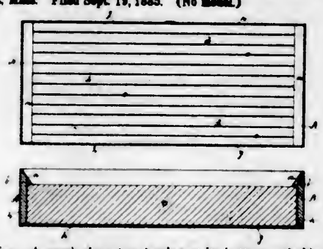
2. The track for hay-carriers, formed of two beams placed side by side, with a space between them, combined with upper and lower clamps having a ridge separating the beams, the connecting-bolts passing vertically through the clamps holding the two beams in fixed relation to each other, and suspending-rods inserted between the beams, substantially as described.

3. The track for hay-carriers, formed of beams placed side by side, with a space between, combined with upper and lower clamps fitted to hold the beams in a fixed relation to each other, and a bolt passing through the upper and lower clamps and extended to form a suspending-rod, and nuts to hold the clamps, all substantially as described.

4. The wooden beams made in pieces of uniform length, and having gains cut regularly therein, so as to cause the gains to coincide with each other and with the joints of the beam-sections, combined with clamps fitted to the gains, whereby the beams are made to present a smooth surface for the track, all substantially as described.

5. The wooden beams made in pieces of uniform length, and having gains cut regularly therein, so as to cause the gains to coincide with each other and with the joints of beam-sections, in combination with clamps having ridges separating the beams, and with suspending-bolts in the space between the beams, all substantially as described.

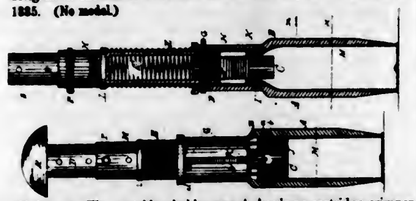
340,056. SHOW-BOX FOR COMBS. WILLIAM H. NOYES, Newburyport, Mass. Filed Sept. 19, 1885. (No model.)



Claim.—A comb show-box having at its bottom and sides two end partitions shaped or inclined inwardly from its top, and also having in

the inner face of each of such end portions a series of parallel grooves extending downward from the lower part of the said edge, in combination with a series of partitions extending from one to the other of such end portions, and inserted in their grooves, all being substantially as set forth.

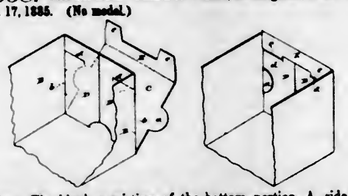
340,057. CARTRIDGE-CRIMPER. WILLIAM E. NYE, Monmouth, Ill., assignor of one-half to John W. Matthews, same place. Filed July 3, 1885. (No model.)



Claim.—1. The cartridge-holder case A, having a cartridge-crimper at its upper end portion, formed with the neck K, of a size to permit the cylinder-plunger H to have a vertical reciprocating movement inside of it and outside of the crimped cartridge-neck, and the central plunger, C, combined therewith, to have a vertical reciprocating movement independent of the plunger H by means of the slot E' through it, the pin G, and spring F, whereby the neck of the cartridge is crimped inward and the crimp doubled inside of the cartridge-shell, as specified.

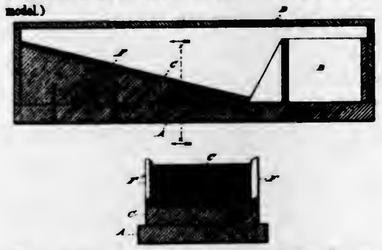
2. The holder A and neck K, formed in one piece, and the top portion of the inside of the holder being curved inward to contract the end of the shell, in combination with the central plunger, C, which operates inside of the cartridge to form the inside of the crimp, and the cylindrical plunger H, which surrounds the plunger C and operates inside of the holder A to form the complete return-crimp *a b c*, with its lower part resting on the wad J, as specified and shown.

340,058. PAPER BOX. FRANK M. OVIATT, Birmingham, Conn. Filed Aug. 17, 1885. (No model.)



Claim.—The blank consisting of the bottom portion, A, side portions, B B, and end portions, C C, the said side portions, B, constructed with a projection, D, at each end, the said projections having a longitudinal slit, *d*, formed in each, and the transverse slit *b* on the line between the sides and their respective extensions, the end portions constructed with transversely-projecting tongues *a a*, corresponding to the slits *b*, and also constructed with longitudinally-projecting tongues *c c*, corresponding to the slits *d*, substantially as described.

340,059. SCOURING-BOX. HARRY D. PLAGE, Newark, Ohio, assignor of one-fourth to Oliver P. Seek, same place. Filed Sept. 17, 1885. (No model.)

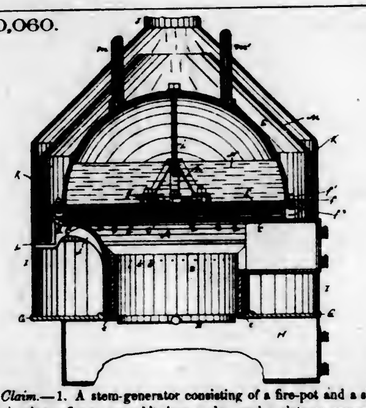


Claim.—1. As an improved article of manufacture, the scouring-box described, consisting of the base having its edges extended to form a support for the cover, the inclined scouring-block secured to the said base and provided with the parallel edge beads, the powder-box having side extensions inclined toward the scouring-block, and the cover, all constructed substantially as specified.

2. The combination, with the base and the inclined scouring-block, of the powder-box having the projecting sides with inclined edges, substantially as specified.

340,060. STEAM-GENERATOR. LUCIUS W. POND, Worcester, Mass. Filed Nov. 23, 1885. (No model.)

340,060.



Claim.—1. A steam-generator consisting of a fire-pot and a shell or dome having a flange around its lower edge, and a plate or crown-sheet attached at its edges to said flanged edge of the shell or dome, forming a water-tight boiler, said boiler resting upon said fire-pot, but disconnected therefrom, as described, and for the purpose set forth.

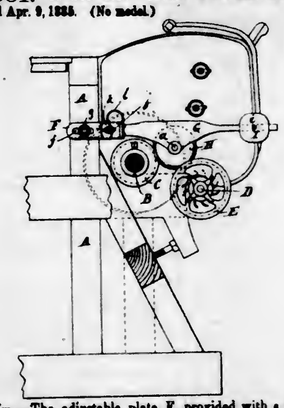
2. The steam-generator consisting of a fire-pot and a water-tight boiler resting on but disconnected from said fire-pot, said boiler consisting of a shell or dome, its lower edge forming a flange, an annular ring corresponding with said flange, and a plate or crown-sheet having its edge clamped between said flange and annular ring, which are firmly drawn together, as described, and for the purpose set forth.

3. In a steam-generator, the combination, with a fire-pot having its top flaring and having a series of spurs supporting the boiler, and a rim inclosing the edge of the boiler, said rim having a series of fine-openings, of a boiler consisting of a shell and crown-sheet, as described, and for the purpose set forth.

4. The combination, with a steam-generator, consisting of a flaring fire-pot and a boiler resting thereon, as described, said fire-pot having a fine-opening and an inclosing-case, of a series of prongs projecting outwardly from said fire-pot, and a guard-plate held by said prongs opposite the flue-openings of the fire-pot, as described, and for the purpose set forth.

5. The combination, with the boiler of a steam-generator, consisting of a shell or dome and a plate or crown-sheet, of a stay-rod whose head rests upon the outer surface of the shell or dome, and whose inner end is attached to said crown-sheet, substantially as described, and for the purpose set forth.

340,061. COTTON-GIN. GEORGE L. ROLLINS, Bridgewater, Mass. Filed Apr. 9, 1885. (No model.)

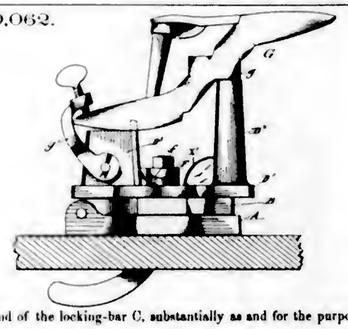


Claim.—The adjustable plate F, provided with a slot, *j*, through which passes a bolt, *k*, on the end of lever G, which is provided with a friction-wheel, H, in combination with spring *l*, lever G, and sheaves C and E, substantially as shown, and for the purpose set forth.

340,062. LAST-SUPPORTING JACK. HENRY STOCKMAN, Philadelphia, Pa. Filed Sept. 29, 1885. (No model.)

Claim.—1. The combination, with an adjustable base and a jack pivoted to said base, and means, substantially as described for locking said base at any desired point of adjustment, of lever F, fitting over the

340,062.



upper end of the locking-bar C, substantially as and for the purpose set forth.

2. The combination, with the base A, having guides a^2 and slot a', of the hinged sub-base B, having central aperture, b^2, and guide b^3, the segmental bar C, pin C', and last-supporting jack, as set forth.

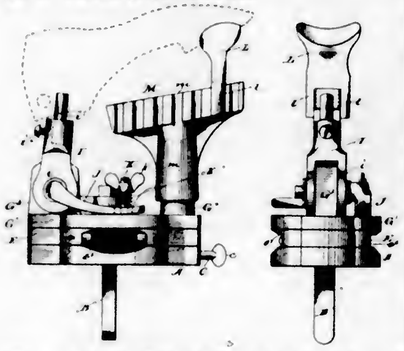
3. The combination, with the hinged base B and jack D, having rotary movement thereon, and a cam-face, as d, of an adjusting-bar, as C', and a lever-nut, as F, having corresponding cams, f, as set forth.

4. In a last-jack, as described, the combination, with a lever, as H, and a last-holding device having last-pin, as i, of a threaded bolt and thumb-nut for moving and holding the lever, as set forth.

5. The combination, with the jack D, having independent adjustments on planes at right angles to each other, of removable interchangeable devices, as L, M, H, and I, and locking-screws, as k m', as set forth.

6. The combination, with the jack D, having standards D^2 D^3 and rib x', of the frame toe-rest M, lever H, holder I, and set-screws, as and for the purpose set forth.

340,063. LAST-SUPPORTING JACK. HENRY STOCKMAN, Philadelphia, Pa. Filed Nov. 25, 1885. (No model.)



Claim.—1. A last-holding jack having a sub-base secured to a suitable support, a base mounted thereon, and a frame interposed between and hinged, respectively, to the base and sub-base, substantially as described.

2. In a last-holding jack, a sub-base secured to a suitable support, a base mounted thereon, a frame interposed between and hinged, respectively, to said base and sub-base, and a pivoted holding-bar, substantially as described.

3. In a last-holding jack, a sub-base secured to a suitable support, a base mounted thereon, a frame interposed between, extending transversely of and hinged at its opposite ends to the base and sub-base, respectively, a holding-bar pivoted to the base and extending through the sub-base and a locking-bar, substantially as described.

4. In a last-holding jack, a sub-base secured to a suitable support, a base mounted thereon, and a frame interposed between and pivotally connected at its opposite ends to the base and sub-base, in combination with a jack-body having its plane of motion at right angles to the plane of motion of the base, substantially as described.

5. In a last-holding jack, and in combination, a sub-base secured to a suitable support, a base mounted thereon, a frame interposed between and pivotally connected at its opposite ends to the base and sub-base, respectively, a holding-bar pivoted at its top to the base, and a last-holding jack-body having toe and heel supporting standards and locking-lever, substantially as described.

6. In a last-holding jack, a sub-base secured to a suitable support and provided at its middle with an aperture to receive the base-holding bar, and lugs to receive a locking-rod, in combination with a base having an apertured middle to secure the holding-bar, and a frame interposed between and hinged at its opposite ends to the base and sub-base, respectively, substantially as described.
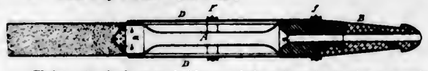
7. The combination, in a last-holding jack having a plane of motion at right angles to the plane of motion of its base and provided with a toe-standard and apertured heel-standard, of a removable swinging heel-standard having a bifurated lower end, its operating-lever, which determines the pressure, and the tension-spring, substantially as described.

8. In a last-holding jack, the combination of a jack-body having a fixed heel-standard provided with a transverse aperture, with a swinging heel-standard having a removable last-receiving pin, a bifurcated lower end having apertures, and a spring-controlled lever which determines the pressure with which the last is held in position, substantially as described.

9. In a last-holding jack, a jack-body provided with a fixed toe-supporting standard having an adjustable toe-support, a fixed heel-supporting standard having a swinging heel-support, and a tension-regulating lever, in combination with a base, a sub-base, a frame interposed between and hinged at its opposite ends to the base and sub-base, respectively, and the base holding-bar and locking-rod, substantially as described.

10. In a last-holding jack, and in combination, a sub-base, A, having upwardly-projecting lugs on one side thereof, a hinged connection, as D, pivoted at one end to said lugs and at its opposite end to the opposite side of the base E, a holding-bar, B, a locking-rod, C, a centrally-pivoted jack-body, G, having cam-face g, and a cam-lever, H, substantially as described.

340,064. CIGARETTE-HOLDER. CLEMENTE STOPPA, Philadelphia, Pa. Filed July 9, 1885. (No model.)



Claim.—1. A cigarette-holder consisting of a tube having a mouth-piece and a cylindrical head or barrel, a, in combination with clamps, whereby the paper wrapper of a cigarette may be secured to said cylindrical head or barrel, all substantially as specified.

2. A cigarette-holder consisting of a tube having a mouth-piece and a cylindrical head or barrel with flaring guide in advance of the same, in combination with clamps, whereby the paper wrapper of a cigarette may be confined to said cylindrical barrel, all substantially as specified.

3. The combination of the retaining-arms D with tube A, having a mouth-piece at one end and at the opposite end a conical head with perforations b, as specified.

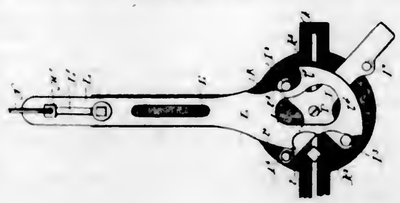
340,065. CARBON-HOLDER FOR ARC LAMPS. SIMON H. STUPAKOFF, Hartford, Conn. Filed Feb. 8, 1886. (No model.)



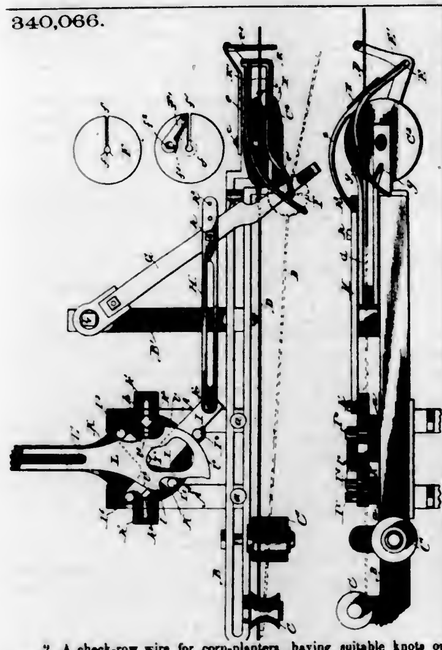
Claim.—The carbon-holder 3, provided with a central recess for the reception of a carbon, and with the converging recesses 4, 5, and 6, for the reception of three balls, each converging recess being provided with an opening into the central recess wide enough to permit the protrusion, but not wide enough to permit the passage of its ball thereout, all substantially as described.

340,066. CHECK-ROWER CORN-PLANTER. CHARLES E. SWEMET, Pierceton, Ind. Filed Dec. 14, 1885. (No model.)

Claim.—1. In a check-rower corn-planter, the combination, with suitable supports for the check-row wire, of a wire provided with a disk or plate mounted thereon and suitable guides for engaging with said disk or plate to throw the wire from the machine, substantially as described.



340,066.



2. A check-row wire for corn-planters, having suitable knots or stops at intervals throughout its length, and having a disk or plate loosely mounted thereon, substantially as described.

3. A check-row wire for corn-planters, having suitable knots or stops at intervals throughout its length, and having a slotted disk or plate mounted thereon, substantially as described.

4. In a check-rower, the combination, with suitable supports for the check-row wire, of a wire provided with a suitable throw-off device and a suitable guide for engaging with said throw-off device, said guide being formed separate from the usual wire-supports and adapted to be attached to the machine, substantially as described.

5. In a check-rower, the combination, with suitable supports for the check-row wire and a wire provided with a suitable throw-off device, of a guide for said throw-off device, comprising curved guide-arms, substantially as described.

6. In a check-row corn-planter, the combination, with a suitable trip-lever for the knotted wire, of an oscillating lever connected with the trip-lever and provided with studs and a slide-bar in suitable connection with the mechanism that operates the seed-slides, and having stops to engage with the studs on the oscillating lever, substantially as described.

7. In a check-rower corn-planter, the combination, with a suitable trip-lever for the knotted wire, of the oscillating lever provided with the studs, and the slide-bar, provided upon its opposite edges with the stops, and said slide-bar being in suitable connection with the mechanism that operates the seed-slides, substantially as described.

8. In a check-rower corn-planter, the combination, with a suitable trip-lever for the knotted wire, of an oscillating lever connected with the trip-lever and provided with studs and guide-pins, and a slide-bar in suitable connection with the mechanism that operates the seed-slides, and having stops to engage with the studs on the oscillating bar, and having cam-faces to coact with the guide-pins on said bar, substantially as described.

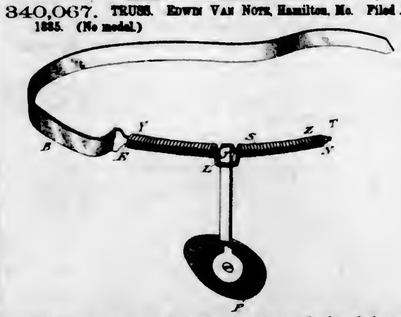
9. In a check-rower corn-planter, the combination, with a suitable trip-lever for the knotted wire, of the oscillating lever I, provided with studs I^2 and I^3, and with guide-pins, and the slide-bar L, having upon its opposite edges stops and friction-shoulders to engage with said studs and guide-pins, and having upon its under side cam-recesses to coact with the friction-pins, substantially as described.

10. In a check-rower corn-planter, the combination, with a suitable trip-lever for the knotted wire, of an oscillating lever connected with the trip-lever and provided with studs and with guide-pins, and a slide-bar in suitable connection with the mechanism that operates the seed-slides, and having stops to engage with the studs, and having friction-shoulders to engage with the guide-pins of the oscillating lever, substantially as described.

11. In a check-rower corn-planter, the combination, with a suitable trip-lever for the mounted wire, of an oscillating lever adjustably connected with the trip-lever, a slide-bar for operating the seed-slides, and an adjustable base-plate for sustaining said oscillating lever and slide-bars, substantially as described.

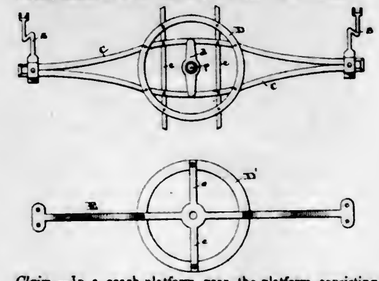
12. In a check-rower corn-planter, the combination, with a suitable trip-lever for the knotted wire, of an oscillating lever connected with the trip-lever, and a slide-bar co-operating with said oscillating lever adjustably connected with the rod that communicates motion to the seed-slide, substantially as described.

340,067. TRUSS. EDWIN VAN NOTE, Hamilton, Mo. Filed Apr. 4, 1885. (No model.)



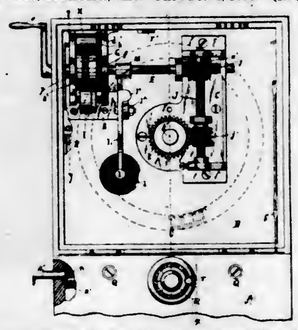
Claim.—A truss substantially as herein described and shown, consisting of the support provided at its opposite ends with non-circular portions E and X, the coil-spring having the coils at its opposite ends formed non-circular and conformed to the portions E and X of the support, and the pivoted pad-arm engaged by said spring, substantially as set forth.

340,068. COACH-PLATFORM. AUGUST WUUCK and CHARLES E. WUUCK, Cincinnati, Ohio. Filed Dec. 7, 1885. (No model.)



Claim.—In a coach-platform gear, the platform consisting of the braces C C, cross-braces c, and base-ring D of the fifth-wheel, as constructed, substantially as and for the purpose set forth.

340,069. REGISTERING AND CANCELING BALLOT-BOX. RICHARD G. WOOD, Cincinnati, Ohio. Filed Dec. 4, 1885. (No model.)



Claim.—1. In a ballot-box, the combination of the printing-roll F, the type-band G, the puncturing-point A', the inking-roll I, and pressure-roll H with the shaft E and crank for operating said rolls, substantially as shown and described.

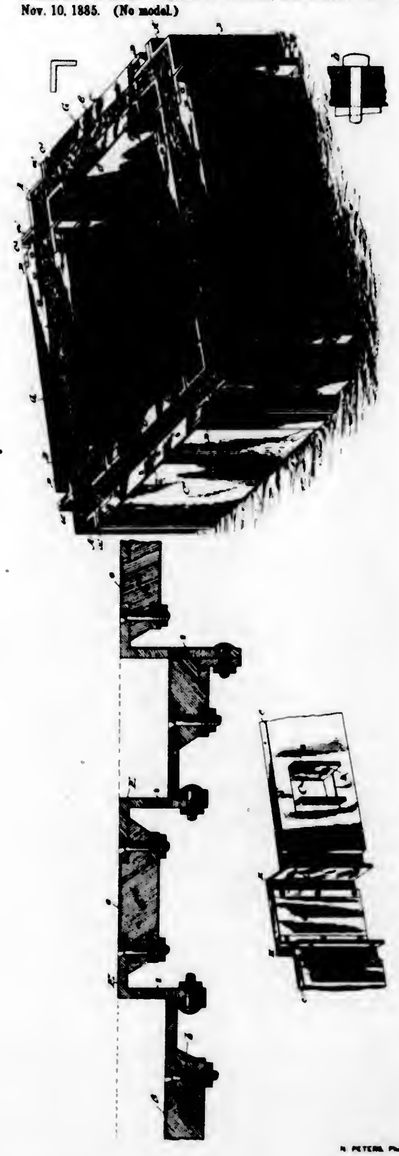
2. A ballot-box mechanism adapted to convey a ballot into the box and print the same in its passage through the feeding-rolls, in combina-

tion with the printing-band and a puncturing-point, A', to puncture the ballots conveyed into the box.

3. In combination with a registering ballot-box, the revolving dial K, located outside of the box and actuated by the feeding mechanism, which conveys the ballots into the box, with a knocker also actuated by the mechanism which feeds the ballots to strike said dial and give audible notice when a ballot is deposited.

4. The combination, substantially as specified, of the shaft E, the cam secured upon said shaft, the dial K, upon the outside of the box and revolved by suitable gearing, such as shown, driven by the shaft E, lever L, the spring P, to hold one end of the said lever in contact with the cam M, the knocker l' at the opposite end of the arm, and the top of the box provided with the opening l, through which the knocker strikes the dial to sound an alarm when a ballot is deposited.

340,070. MOLD AND ANGLE-PIECE USED IN CONSTRUCTING CONCRETE WALLS. THOMAS W. CARRICO, San Antonio, Tex. Filed Nov. 10, 1885. (No model.)



Claim.—1. The herein-described angle-piece A, having outwardly-projecting flanges provided with holes, in combination with the second angle-piece, B, having inwardly-projecting flanges having holes therein, and the side pieces provided with angle-pieces and bolts for securing the whole together, substantially as described.

2. The herein-described angle-pieces having elongated holes or slots extending at right angles to the line of the wall and extending at right angles to the side pieces, in combination with the side pieces, the bolts, and means for securing the flanges together, as set forth.

3. In apparatus for making concrete walls, &c., the sheet-metal-lined side pieces, C and C', in combination with the laterally-adjustable angle-pieces having flanges provided with slots which extend at an angle to the side pieces, and means for securing the same together, as set forth.

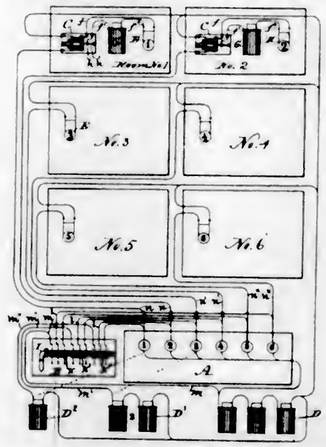
4. In a device of the character described, the side pieces and angle-pieces adjustable to and from the wall and having horizontal slots, in combination with the bolts *b*, provided with tightening devices, whereby the angles-pieces may be drawn tightly together and adjusted, as set forth.

5. The angle-pieces A and B, having two long sides and two short sides or flanges having holes or lugs, as set forth, in combination with bolts and side pieces for securing and holding said angle-pieces in place, substantially as shown, and for the purposes explained.

6. In apparatus for forming concrete walls, the mold-pieces C'', having angle-irons secured thereto, said angle-irons having flanges provided with slots extending at right angles to the side pieces, in combination with the side pieces having corresponding angle-pieces or flanges and bolts for securing them together, substantially as described, whereby the mold-pieces C'' may be moved in or out to form depressions or projections in the wall, at set forth.

REISSUES.

10,711. HOTEL-ANNUNCIATOR AND FIRE-ALARM. ALBERT T. HIBB, Des Moines, Iowa, assignor to the Iowa Electrical Company, same place. Filed Dec. 18, 1885. Original No. 288,570, dated Nov. 13, 1883.



Claim.—1. The non-conducting hinged bar I, carrying a series of electric conductor switch-sections, *k k' k''*, in combination with the series of wires *l*, the wires *m*, *m'*, and *m''*, the series of batteries D D' D², and corresponding series of wires, *n n' n''*, and bells E, substantially as and for the purposes set forth.

2. In an electric annunciator and alarm, the combination of the hinged switch I *k k' k''*, the wires *l m m' m''*, a series of batteries, D D' D², a series of wires, *n n' n''*, a relay, C, a battery, G, a bell, E, and wires *f f' f''*, substantially as shown and described, to operate in the manner set forth, for the purposes specified.

3. In an electric annunciator and alarm, the combination of two or more batteries, two or more electric circuits, a series of circuit-closers in an office or station, a series of bells in a series of rooms or separate points, an electric switch, and one or more relays at remote points from the batteries, to operate in the manner set forth, for the purposes specified.

4. In an electric annunciator and alarm, the combination of two or more batteries, two or more electric circuits, a series of circuit-closers in an office or station, a series of bells in a series of rooms or separate points, and an electric switch, to operate in the manner set forth, for the purposes specified.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of New Jersey.

SCOTT MANUFACTURING COMPANY v. SAYRE.

Decided August 31, 1885.

1. PATENTABLE COMBINATION.

A patentable combination is not necessarily affected by the fact that all the elements forming it are old if by their coaction a new and useful result follow; but there must be a coaction among them to take the case out of the category of a mere assemblage or aggregation of parts.

2. INVENTION—MECHANICAL SKILL.

Merely assembling old parts together or placing them in juxtaposition does not indicate invention. Some new or peculiar function produced by such a combination must be developed, and unless this follows the new arrangement is the mere exhibition of mechanical skill.

3. AGGREGATION NOT INVENTION.

An assemblage of old parts, each of which performs the same function that it has performed in other old combinations, does not form the subject of a valid claim.

4. PARTICULAR PATENT.

The first and third claims of Letters Patent No. 192,057, of June 19, 1877, to Charles P. Dewey and Robert P. Scott, for improvement in ice-creepers, do not cover patentable combinations.

Mr. G. H. Howard for the complainant.

Messrs. A. Q. Keasbey & Sons for the defendant.

NIXON, *J.*:

This suit is brought on Letters Patent No. 192,057, dated June 19, 1877, and issued to Charles P. Dewey and Robert P. Scott, for improvement in ice-creepers. The complainant alleges the infringement of the first and third claims of the patent, both of which are combination claims. The elements of the combination of the first are a calk-plate, a rod or spindle, and adjustable jaws. The third claim has the same elements, to which is to be added a locking device consisting of a spiral spring on the rod or bolt to hold the calk-plate in position. I have no doubt that the mechanism of the ice-creeper of the defendant infringes the patent of the complainant. There are some minor differences, but the constituents and the mode of operation of the two are substantially the same. Both are fastened to the heel of the shoe by a screw-clamp. Both have the reversible calks, which, when adjusted for use, extend to a greater or less extent over the area of the under side of the heel, and when in their inoperative position are turned or folded under the instep of the shoe. In each the calks move upon a rod extending across the shoe, the rod being provided with a thread and thumb, and having clamps, one fixed and the other free upon the rod, the wheels being rendered efficient by a locking device which is a spring surrounding the rod.

The real question in the case, and the one principally noticed at the final hearing, is whether the combinations of the patent are, in fact, patentable. There seems to be a growing sentiment among inventors that the Supreme Court, in its more recent decisions, has become, I will not say more exacting, but less liberal, in its construction of patents for a combination. Such cases as *Pennsylvania R. Co.* v. *Locomotive Co.*, (110 U. S., 491; S. C., 4 Sup. Ct. Rep., 220;) *Phillips* v. *Detroit*, (111 U. S., 604; S. C., 4 Sup. Ct. Rep., 580;) *Tack Co.* v. *Two Rivers Manuf'ng Co.*, (109 U. S., 117; S. C., 3 Sup. Ct. Rep., 105;) *Hollister* v. *Benedict & B. Co.*, (113 U. S., 59; S. C., 5 Sup. Ct. Rep., 717,) and *Thompson* v. *Boisselier*, (114 U. S., 1; S. C., 5 Sup. Ct. Rep., 1042,) are quoted in support of this view. Whether true or not, it is my duty to examine the present claims in the light of these decisions, and to give them such interpretation and effect as the deliberate judgment of that court declares they are entitled to.

Speaking generally, a person, to obtain a valid patent, must have invented or discovered some new and useful art, machine, manufacture, or composition of matter, or some new and useful improvement thereof. (Section 4886 Rev. St.) It is not easy to obtain a satisfactory definition of a patent for a combination. It is not necessarily affected by the fact that all the elements forming it are old. They may be old, and yet may be so arranged in combination that by their coaction a new and useful result may follow; but there must be a coaction among them to take the case out of the category of a mere assemblage or aggregation of parts. In *Reckendorfer* v. *Faber* (92 U. S., 347) the Supreme Court said:

> The combination to be patentable must produce a different force, effect, or result in the combined forces or processes from that given by their separate parts. There must be a new result by their union; if not so, it is only an aggregation of separate elements.

In the later case of *Pickering* v. *McCullough* (104 U. S., 310) they took a step in advance, and held that—

> In a patentable combination of old elements all the constituents must so enter into it as that each qualifies the other. * * * It must form either a new machine of a distinct character and function or produce a result due to the joint and co-operative action of all the elements, and which is not the mere adding together of separate contributions; otherwise it is only a mechanical juxtaposition, and not a vital union.

Mervin, in his valuable work on the patentability of inventions, in commenting on this last case, (page 401,) remarks that—

> it may be gathered from this that in a patentable combination there must be a new interaction of some sort between the several elements. * * * It is not sufficient that one element is ineffective without the others—that its function is useless except in combination with other functions; but the function of one must be modified in some way by the function of another, so that the function of one element is not the same in the combination that it was in the place whence it was taken. A peculiar function must be developed in the combination. This need not be true of every element in the combination, but it must be true of some one element, or of several elements, and the virtue of the combination must inhere in this peculiarity of function developed by it.

I fear that the complainant's patent cannot stand this test. It is clear that all the elements are old. The records of the Patent Office furnish a large number of patents for ice-creepers of every style and variety. The state of the art shows that the patentee, by searching among these, could have selected all the constituents of his combination. Without stopping to designate the particular patent from which the separate part or element is taken, I think he could have found everything embodied in his alleged invention, or its mechanical equivalent, in the patent of Morrison in 1858, of Krauser in 1863, of White in 1867, of Greene in 1865, of Richardson and Morse in 1866, of Farley in 1868, of Turner in 1871, of Earle in 1873, of Cone and Furniss in 1876, and in the defendant's Exhibit No. 19, which reveals the mechanism of ice-creepers sold in Cincinnati in the open market as early as 1869.

As before stated, a patent for a combination is not invalid because all the parts are old; but merely assembling them together or placing them in juxtaposition does not indicate invention. Some new or peculiar function, produced by such a combination, must be developed. Unless this follows the new arrangement is the mere exhibition of mechanical skill.

It appears to me that the difficulty about the complainant's patent as a combination is that none of the parts shown in the construction perform any different function than they had performed in other patents or combinations. For this reason I am constrained to hold that upon the evidence and the law the case is with the defendant.

The bill must be dismissed.

U. S. Circuit Court—Northern District of New York.

PIPER *v.* SHEDD *et al.*

Decided November 9, 1885.

1. MACHINES FOR MOWING UNDER WATER.
   Letters Patent No. 154,900, of September 8, 1874, to Thomas Piper, for improvement in floating mowing-machines, are valid, but the claims are narrow and cover the combination of elements shown, or known equivalents therefor.
2. EQUIVALENTS—INFRINGEMENT.
   The patent described and claimed the combination, with a boat, of the ordinary cutting device of a mowing-machine, whereby grass and weeds could be cut below the surface of the water, the reciprocation of the sickle being effected through a vertical vibrating lever pivoted near its center and connected at one end to the sickle and at the other to machinery on the boat. Defendants employed the same devices, except that they communicated motion to their sickle by means of a vertical revolving shaft having a short crank connected to the sickle. *Held* that, as this shaft and crank performed the same function as complainant's lever, and no other, and was a known equivalent, the charge of infringement was fully sustained.
3. PIPER'S INVENTION STATED.
   The problem solved by the patentee was the adapting of the ordinary cutting apparatus of a mowing-machine to the use of cutting weeds and grass under water by suspending such cutting apparatus from a boat and imparting motion to the cutter from machinery on the boat, and its solution required more than mechanical skill.
4. ANTICIPATION.
   This patent not anticipated by devices for dragging scythe-blades under water at the stern of a boat; by a device for cutting weeds alongside of a railroad-track, consisting of the cutting apparatus of an ordinary mowing-machine extended from the side of a car or truck, nor by pile-cutters having circular or reciprocating saws working under water from motion imparted to them by machinery above the water through shafts or levers.

Messrs. Coburn & Thatcher for the complainant.

Messrs. Munday, Evarts & Adcock and *Mr. W. B. Gibbs* for the defendants.

BLODGETT, *J.*:

By this bill the defendants are charged with infringement of a patent granted to the complainant on September 8, 1874, for an improvement in floating mowing-machines. The patentee in his specification describes the scope and purpose of his machine as follows:

> This invention relates to a mowing-machine for cutting water-plants, and clearing weeds and grass from the water; useful for clearing the water for ice-making purposes, and for freeing ornamental lakes and bodies of water in parks of unsightly weeds. The machine is chiefly intended to be used for clearing the water of weeds for the purpose of making ice.

The leading feature and characteristic of the device consists in suspending the common cutting apparatus of a mowing-machine from the side of a boat to such a depth below the surface of the water as shall be necessary, and actuating this cutting apparatus by means of machinery placed upon the boat, so that as the boat progresses through the water the sickle cuts the grass and weeds, substantially in the same manner that the grass is cut by the ordinary mowing-machine. By means of two dependent standards, P P, the cutting device is suspended in the water, and the depth which these standards shall reach in the water is regulated by a pivot at the point where the frame of the machine is fastened to the boat. A vertical lever, J, pivoted at or near its center, reaches to the sickle, and is connected therewith, and a reciprocating motion being given to this lever by machinery on the boat the same motion is transmitted to the sickle.

The claims are:

> 1. The sickle L, sickle-bar M, lever J, the dependent standards P P, and the boat A, combined and operating as specified.
> 2. The frame-work B, pivoted at *b* to the boat A, the dependent standards P P, and sickle-bar M, combined as specified, for raising and lowering the sickle.

The defenses set up are non-infringement, and that the patent is void for want of novelty.

The machine used by the defendants shows the same cutting apparatus as that used by the complainant—that is, both have adopted this same old and well-known sickle-bar and reciprocating sickle used in mowing-machines; but the defendants, instead of communicating motion to their sickle by a vibrating lever like that shown in the defendants' machine, use a vertical revolving shaft with a short crank upon the lower end, and this crank being connected with the sickle gives it the desired vibratory motion.

The complainant does not claim to have invented the sickle or cutting apparatus, but only claims to have arranged and adapted it to cut weeds and grass under water, and this he does by combining the old cutting device of a mowing-machine with a boat to float upon the water, and transmitting motion to the cutter by means of his vibrating lever J. The defendants have substituted their vertical crank-shaft for the complainant's lever J. This shaft performs the same function as the complainant's lever, and no other, and is a known equivalent for the lever. So it seems to me the difference is only colorable, and I am of opinion that the charge of infringement is fully sustained.

In support of the allegation of want of novelty defendants have put in evidence several old patents for sawing off piles under water—the patent of J. Hinds, of September 5, 1840, and the patent of Peter J. Stone, of August 2, 1870, for cutting grass under water, and the patent to J. S. Boicourt, of December 17, 1867, for cutting weeds alongside of railroad-tracks. The Hinds and Stone patents show devices for dragging common scythe-blades under water at the stern of a boat, while the Boicourt patent is an adaptation of the ordinary mowing-machine to the work of cutting grass or weeds alongside of a railroad-track by means of a sickle-bar extending from the side of a car or truck. The pile-cutting machine shows circular or reciprocating saws working under water from motion imparted to them by machinery above the water through shafts or levers. The problem which the complainant seems to have solved by his device was to adapt the ordinary cutting apparatus of a mowing-machine to the use of cutting weeds and grass under water, where the water or mud was too deep to allow of the use of the ordinary farm-mower, by suspending the cutter in the water from the deck of a boat and imparting motion to the cutter from machinery on the boat. No new thing was invented to do this work, but a combination of old elements was made which produced the desired result.

The patent is narrow, and covers the combination of elements shown, or known equivalents therefor. It does not seem to me that the older devices shown in the proof anticipated this combination, or that the complainant's device can be said to be a new use of an old machine. It seems to me to have required more than mechanical skill to combine a mowing-machine with a boat in such a way as to make it operate successfully for mowing under water. The defendants are therefore found to infringe, as charged by the bill, and a reference to a master to compute damages will be made.

U. S. Circuit Court—Northern District of Illinois.

WILSON *v.* CUBLEY *et al.*

Decided January 4, 1886.

1. INFRINGEMENT.
   The first claim of Letters Patent No. 255,229, of March 21, 1882, to Charles C. Wilson, for improvement in hand-stamps, *held* valid and infringed.
2. FEATURE SHOWN BUT NOT CLAIMED IN PATENTEE'S EARLIER PATENT.
   The fact that the complainant showed a feature in an earlier patent did not of itself preclude him from claiming it in a subsequent patent, under the rule in *Graham* v. *McCormick* (11 Fed. Rep., 859) and cases there cited.
3. ADDITIONAL FUNCTION PERFORMED BY INFRINGING DEVICE.
   The fact that defendants' device is an improvement, and as such patentable, does not entitle him to use the patented device without license.

Messrs. Peirce & Fisher for the complainant.

Mr. H. Henderson for the defendants.

BLODGETT, *J.*:

This is a bill for an injunction and accounting, by reason of an alleged infringement of Letters Patent No. 255,229, issued to complainant March 21, 1882, for an improvement in hand-stamps. The first claim of the patent only is claimed to be infringed. The elements of this claim are shown in figures 6 and 7 of the drawings of the patent, and are one modification of the invention covered by the patent.

The claim reads as follows:

> In a hand-stamp, the plate F, having a receiving-slot and catch-lug, in combination with the type, and detachable spring-catches for engaging said lug, substantially as shown and described.

The defendants make and sell a hand-stamp in which they use a plate like complainant's plate F, with a receiving-slot for the type and lugs, with detachable springs for holding the type in place by engaging the spring with the lugs. Complainant's patent shows the type arranged upon a band around a shell or cylinder, and by moving this band the desired type are brought to the lower part of the shell, where they are passed into the slot in the plate F, and kept there by means of the catch-spring and lugs. Defendants set their type into a metal box or frame and insert the box in the slot and retain it in place by means of a catch-spring and lugs. It is true, as contended by defendants, that their screw-lugs may have an additional function not shown in the complainant's patent—that is, the element of adjustability by which the lugs can be shortened or screwed down as the face of the type wears away, so as to keep the type in the slot even with the rest of the type in the stamp; but there can be, I think, no doubt that the defendants' lugs and spring perform the same function in the defendants' stamp that is performed by the lugs and springs in complainant's patent, and the fact that they put their type into a metal box or frame and set this box or frame into the slot in no way changes the operation of their machine from that of the complainant.

The evidence of prior use and as to the prior state of the art does not, it seems to me, defeat the complainant's patent for want of novelty, or so limit it as to allow the defendants to use these parts in their combination. The fact that the complainant showed a feature analogous to the function and operation of this feature in one of his earlier patents did not, I think, preclude him from taking this patent, under the rule laid down in *Graham* v. *McCormick* (11 Fed. Rep., 859) and the cases there referred to.

The adjustable screw-lugs used by the defendants may be an improvement on the fixed and rigid lugs shown by the patent, and for that reason might form the subject of a further patent; but that is no reason why the defendants should use them without license from the plaintiff. The finding, therefore, is that the defendants infringe the first claim of the complainant's patent, and there should be a reference for the purpose of taking an account.

U. S. Circuit Court—Southern District of New York.

HOE *et al.* *v.* KAHLER.

Decided March 24, 1886.

1. "This suit is for infringement of a patent. After an opinion on final hearing sustaining the patent a motion for rehearing was made and heard, and an opinion was filed denying the motion, and a final decree referring to the proceedings upon the motion as well as the former proceedings, was entered."
2. An appeal was taken, and appellant requested the clerk "to leave the proceedings and opinion on the motion for a rehearing out of the transcript, and to certify that the rest is a true and complete transcript," which the clerk refused to do. A motion was made that he be directed to do this, and on hearing of same *held* that "the motion papers in connection with the record illustrate the opinion, and, the disposition of the motion being referred to in the decree, the whole would seem to be proper parts of the record to be transcribed within the meaning of the statute and rule taken together." "Motion denied."

Mr. W. H. L. Lee for the appellant.

Mr. James A. Hovey for the appellee.

WHEELER, *J.*:

This suit is for infringement of a patent. After an

opinion on final hearing sustaining the patent a motion for rehearing was made and heard, and an opinion was filed denying the motion, and a final decree referring to the proceedings upon the motion as well as the former proceedings, was entered. An appeal has been taken and allowed, and a transcript of the record, as directed by law to be made, and copies of the proofs, and of such entries and papers on file as may be necessary on the hearing of the appeal, are to be transmitted from this court to the Supreme Court, as required by section 698 Revised Statutes. Rule 8 of the Supreme Court requires a copy of the opinion or opinions filed in the case to be annexed to and transmitted with the record. The form of certificate used by the clerk reads, that the transcript to which it is attached is a true and complete transcript. The appellant requests the clerk to leave the proceedings and opinion on the motion for a rehearing out of the transcript, and to certify that the rest is a true and complete transcript, which the clerk deems that he cannot in duty do. A motion is made that he be directed to do this and has been heard. The transcript of the record is understood to be transmitted from this court as such under its seal to the Supreme Court, so that the clerk, in making and certifying the transcript, acts as an officer of and under the general direction and control of this court in the first instance, subject, of course, to the further order of the Supreme Court on proceedings on suggestion of diminution of the record. Therefore a direction of this court in a doubtful case, where the clerk is requested to insert in the transcript by one party what he is requested to leave out by the other, would seem to be proper. As argued by the appellant's counsel, the only question before the Supreme Court will be whether the decree appealed from was right when made, and the opinion or opinions to be annexed are such as bear upon that decree and expound the reasons for making it. The motion in this case was founded largely upon the record as it stood at the time of the first opinion, and went much upon the ground that later decisions of the Supreme Court would lead to a different conclusion. The second opinion reviewed the case in view of these decisions. The decree was entered in accordance with its reasoning as well as with that of the first opinion. (*Hoe* v. *Kahler*, 25 Fed. Rep., 271.) This opinion, therefore, comes within the requirements of the rule of the Supreme Court. The motion papers in connection with the record illustrate the opinion, and, the disposition of the motion being referred to in the decree, the whole would seem to be proper parts of the record to be transcribed within the meaning of the statute and rule taken together.

Motion denied.

U. S. Circuit Court—Southern District of New York.

TATE v. THOMAS.

Decided December 28, 1885.

1. Decision in *Tate* v. *Thomas* (30 O. G., 345) affirmed.
2. If by the addition of certain elements a machine is constructed which is properly the subject of a patent as an improvement, it does not follow that the original patented construction has not been appropriated.

Mr. Edwin H. Brown and Mr. Edward N. Dickerson for the complainant.

Mr. Solomon J. Gordon for the defendant.

WALLACE, *J.*:

A careful study of the Nicoll patent, aided by the testimony of the experts for the parties, has resulted in the conviction that this patent has no material bearing upon the validity or the construction to be given to the eighth claim of the complainant's patent. It shows a series of needles set in two rows with longitudinal and lateral feeding devices in a sewing-machine organized to stitch pieces of fabric together by double rows of stitching in parallel lines. There is no fair suggestion in the patent of any organization of needles and feeding devices by means of which the lines of stitching made by the needles are to have any such relation to each other as is indispensable to produce the result contemplated and effected by Tate—viz., to produce a diamond pattern by the juxtaposition of the parallel zigzag lines at the angles of the apexes.

The troublesome question in the case is whether the defendant's machine, constructed pursuant to the specification of the patent to Manning A. King, of June 9, 1874, is an infringement of the eighth claim of the complainant's patent, and the patent to Nicoll does not afford any assistance in its solution. This question has been fully reconsidered since the hearing of the cause, and the conclusion originally reached has been confirmed, although not without some vacillation of opinion.

The defendant's machine produces diamond patterns by employing the alternating needles with the necessary feeding devices, which are the subject of the claim, and to the extent to which these parts co-operate to produce the new result of the patent (whether that he considered the making of the diamond pattern or making them by conjoining zigzag lines of stitches) it is not apparent that there is any difference in their mode of operation in the patent and in the machine. If it be conceded that King by employing additional needles has made a machine which is properly the subject of a patent as an improvement upon Tate's, it does not follow that he has not appropriated Tate's invention.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

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Patents	466	No. 340,071 to No. 340,536,	inclusive.
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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	....	1	Nebraska	2	....
Arizona Territory	1	....	Nevada	....	....
Arkansas	1	....	New Hampshire	2	....
California	2	1	New Jersey	29	....
Colorado	....	....	New Mexico Territ'y	1	....
Connecticut	17	1	New York	90	11
Dakota Territory	....	....	North Carolina	3	....
Delaware	2	....	Ohio	44	1
District of Columbia	5	....	Oregon	....	....
Florida	....	1	Pennsylvania	57	7
Georgia	....	....	Rhode Island	6	1
Idaho Territory	....	....	South Carolina	3	....
Illinois	43	5	Tennessee	2	1
Indiana	15	1	Texas	2	1
Indian Territory	....	....	Utah Territory	....	....
Iowa	11	....	Vermont	3	....
Kansas	3	....	Virginia	4	1
Kentucky	9	....	Washington Territ'y	....	....
Louisiana	3	1	West Virginia	2	....
Maine	3	....	Wisconsin	7	....
Maryland	8	1	Wyoming Territory	....	....
Massachusetts	41	3	United States Army	....	....
Michigan	16	2	United States Navy	....	....
Minnesota	3	....			
Mississippi	2	....	Total to citizens of the United States	456	8
Missouri	13	8			
Montana Territory	1	....			

To citizens of foreign countries: Patents and Designs, 36 Trade-Marks and Labels, 2.

DESIGNS.

16,630.—TURKEY-HANDLE.—*James H. Alexander*, Philadelphia, Pa., assignor to *Thomas Devlin & Co.*, same place. Application filed February 18, 1886. Serial No. 192,461. Term of patent 7 years.

16,631.—AX.—*Thomas Bakewell*, Sewickley, Pa. Application filed February 2, 1886. Serial No. 190,648. Term of patent 14 years.

16,632.—BUST.—*Bernard Dreyfuss*, New York, N. Y. Application filed March 11, 1886. Serial No. 194,906. Term of patent 3½ years.

16,633.—DISH.—*Emile Gérard*, Limoges, France, assignor to *Oliver A. Gager*, Brooklyn, N. Y. Application filed May 2, 1885. Serial No. 164,240. Term of patent 7 years.

16,634.—PARASOL.—*Alfred C. Hirsh*, Philadelphia, Pa. Application filed March 15, 1886. Serial No. 195,361. Term of patent 3½ years.

16,635.—SURFACE ORNAMENTATION OF WALLS.—*Frederick Mankey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,717. Term of patent 7 years.

16,636.—SURFACE ORNAMENTATION OF WALLS.—*Frederick Mankey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,719. Term of patent 7 years.

16,637.—SURFACE ORNAMENTATION OF WALLS.—*Frederick Mankey*, Williamsport, Pa. Application filed November 2, 1885. Serial No. 181,710. Term of patent 7 years.

16,638.—RUG.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed March 11, 1886. Serial No. 194,904. Term of patent 3½ years.

16,639.—RUG.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed March 11, 1886. Serial No. 194,905. Term of patent 3½ years.

16,640.—RUG.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed March 11, 1886. Serial No. 194,903. Term of patent 3½ years.

16,641.—RUG.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed March 11, 1886. Serial No. 194,902. Term of patent 3½ years.

16,642.—HANDLE FOR A SPOON OR LIKE ARTICLE.—*William Rogers*, Hartford, Conn. Application filed March 13, 1886. Serial No. 195,179. Term of patent 7 years.

16,643.—TYPE.—*Edwin C. Ruthven*, Philadelphia, Pa., assignor to *David Wolfe Bruce*, New York, N. Y. Application filed March 4, 1886. Serial No. 194,072. Term of patent 14 years.

16,644.—MUFF.—*Jacob A. Spitzer*, Philadelphia, Pa. Application filed October 28, 1885. Serial No. 181,203. Term of patent 7 years.

16,645.—RUBBER BOOT OR SHOE.—*Frederick M. Shepard*, East Orange, N. J. Application filed February 16, 1886. Serial No. 192,166. Term of patent 14 years.

16,646.—CHAIR.—*William B. Savage*, West Somerville, Mass. Application filed March 6, 1886. Serial No. 194,350. Term of patent 7 years.

16,647.—BADGE.—*James H. Whitehouse*, Brooklyn, assignor to *Tiffany & Co.*, New York, N. Y. Application filed March 25, 1886. Serial No. 196,595. Term of patent 7 years.

16,648 and 16,649.—PARLOR-STOVE.—*Gurdon G. Wolfe* and *August Lisewski*, Troy, N. Y., assignors to *The Fuller & Warren Company*, same place. Applications filed June 1, 1885. Serial Nos. 167,350 and 167,351. Term of patents 7 years.

16,650.—SINK-LEG.—*Isaac J. Baxter*, Peekskill, N. Y. Application filed March 11, 1886. Serial No. 194,893. Term of patent 3½ years.

16,651.—GIMP.—*Lucia D. Hambner*, New York, N. Y. Application filed March 11, 1886. Serial No. 194,894. Term of patent 3½ years.

16,652.—WINDOW TOP SASH LIFT.—*William Heyser*, Baltimore, Md. Application filed March 16, 1886. Serial No. 195,475. Term of patent 7 years.

16,653.—MOLDING.—*Frederick Manbey*, Williamsport, Pa. Application filed November 13, 1885. Serial No. 182,755. Term of patent 7 years.

16,654.—HEATING-STOVE.—*Abram C. Mott*, Philadelphia, Pa., assignor to *The Abram Cox Stove Company*, same place. Application filed September 29, 1885. Serial No. 178,584. Term of patent 7 years.

16,655.—MOLDING.—*Frederick Manbey*, Williamsport, Pa. Application filed November 13, 1885. Serial No. 182,756. Term of patent 7 years.

TRADE-MARKS.

(Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.)

13,193.—FACE-POWDER.—*E. C. Andrew*, Montgomery, Ala. Application filed March 22, 1886. Used since 1879.

"The words 'CRAB'S EYE.'"

13,194.—BEER.—*Anheuser-Busch Brewing Association*, St. Louis, Mo. Application filed March 26, 1886. Used since January, 1884.

"The word 'LIEBOTSCHANER,' displayed upon an obliquely-inclined band."

13,195.—BEER.—*Anheuser-Busch Brewing Association*, St. Louis, Mo. Application filed March 27, 1886. Used since January, 1884.

"An obliquely-inclined red band."

13,196.—BEER.—*Anheuser-Busch Brewing Association*, St. Louis, Mo. Application filed March 27, 1886. Used since January, 1884.

"The words 'OLD BURGUNDY LAGER,' displayed upon an obliquely-inclined band."

13,197.—BEER.—*Anheuser-Busch Brewing Association*, St. Louis, Mo. Application filed March 27, 1886. Used since January, 1884.

"The words 'THE ERLANGER,' displayed upon an obliquely-inclined band."

13,198.—BEER.—*Anheuser-Busch Brewing Association*, St. Louis, Mo. Application filed March 27, 1886. Used since January, 1884.

"The words 'THE PALE LAGER,' displayed upon an obliquely-inclined band."

13,199.—BEER.—*Anheuser-Busch Brewing Association*, St. Louis, Mo. Application filed March 27, 1886. Used since January, 1884.

"The words 'ANHEUSER-BUSCH STANDARD,' displayed upon an obliquely-inclined band."

13,200.—BEER.—*Anheuser-Busch Brewing Association*, St. Louis, Mo. Application filed March 27, 1886. Used since January, 1884.

"The words 'THE "FAUST" BEER,' displayed upon an obliquely-inclined band."

13,201.—PRINTING-PRESSES.—*The Babcock Printing Press Manufacturing Company*, New London, Conn. Application filed March 25, 1886. Used since November 2, 1885.

"The word 'ARTIFEX.'"

13,202.—OOLONG TEAS.—*H. W. Banks & Co.*, New York, N. Y. Application filed March 16, 1886. Used since April 1, 1883.

"The representation of a clover-leaf, within which are contained the letters 'B,' 'W,' and 'M.'"

13,203.—ABRASIVE PAPER.—*Herman Behr & Co.*, New York, N.Y. Application filed March 20, 1886. Used since January 7, 1886.

"The word 'RUBY.'"

13,204.—OPTICAL GOODS OF ALL KINDS.—*F. Benoist & L. Berthiot*, Paris, France. Application filed March 17, 1886. Used since February 1, 1886.

"Two ovals crossing one another, combined with the initials 'A⁴ B.'"

13,205.—COMPOSITION STOCK-FOOD.—*Ehphalet W. Blatchford* and *Nathaniel H. Blatchford*, Chicago, Ill. Application filed February 12, 1886. Used since January, 1885.

"The representation of a Maltese cross with an ox's head in the upper arm, a sheep's head in the right arm, a horse's head in the lower arm, and a swine's head in the left arm."

13,206.—BUSTLES.—*Augustus H. Brinkman*, Baltimore, Md. Application filed March 29, 1886. Used since May 10, 1885.

"The word 'PATTI.'"

13,207.—SMOKING AND CHEWING TOBACCO AND CIGARS.—*Charles W. Allen Company*, Chicago, Ill. Application filed March 24, 1886. Used since January 1, 1886.

"The words 'HELP TOBACCO' appearing across and on the representation of a flag."

13,208.—DANDRUFF-CURE.—*William Cheesman*, Detroit, Mich. Application filed March 8, 1886. Used since January 1, 1886.

"The portrait of WILLIAM CHEESMAN, the registrant."

13,209.—CIGARS.—*Davis Brothers*, Chicago, Ill. Application filed March 30, 1886. Used since January, 1886.

"The words 'CHICAGO LIGHTS.'"

13,210.—ANATOMICAL HEALTH-CORSETS AND OTHER NAMED HEALTH AND SURGICAL APPLIANCES.—*Sarah A. Drewry*, New York, N. Y. Application filed March 13, 1886. Used since November, 1879.

"The capital letters, 'S. A. D.,' each letter followed by a period."

13,211.—PLUG-TOBACCO FOR CHEWING OR SMOKING.—*John A. Drinkhouse*, San Francisco, Cal. Application filed March 22, 1886. Used since December 23, 1885.

"The letter 'D,' inclosing the numerals '4' and '9.'"

13,212.—CIGARS.—*Eduardo H. Gato*, Key West, Fla. Application filed March 5, 1886. Used since August 19, 1885.

"The portrait of EDUARDO H. GATO and a scroll below and across the same, bearing the name of EDUARDO H. GATO."

13,213.—CAKES, CRACKERS, BISCUITS, SNAPS, JUMBLES, PREPARED FLOURS, AND CONFECTIONS.—*Thomas R. Herd & Co.*, Allegheny City, Pa. Application filed March 25, 1886. Used since June 5, 1882.

"The words 'KEYSTONE BISCUIT WORKS' and the representation of a keystone."

13,214.—MEDICATED SALTS FOR BATH AND TOILET PURPOSES.—*M. J. Jaccard & Co.*, Chicago, Ill. Application filed March 18, 1886. Used since September 29, 1885.

"The words 'KURA KURA.'"

13,215.—BLEACHED, BROWN, AND COLORED COTTON GOODS.—*Low, Harriman & Co.*, New York, N. Y. Application filed March 6, 1886. Used since August 30, 1883.

"The representation of a rooster standing on one foot and holding a horn with his other foot, the mouth-piece of the horn being placed in the rooster's mouth, and its flared end rising above the rooster's back."

13,216.—ROASTED AND GROUND COFFEE.—*Maynard & Irwin*, Boston, Mass. Application filed March 26, 1886. Used since January 15, 1886.

"The word 'CAWAHLIN.'"

13,217.—SPECIFIC FOR THE TREATMENT OF GONORRHŒA AND GLEET.—*John J. Miles*, Memphis, Tenn. Application filed March 9, 1886. Used since March, 1884.

"The figures '12-9-11.'"

13,218.—VEHICLE-SPRINGS.—*Hollis W. Moore* and *Mills W. Barse*, Olean, N. Y. Application filed March 20, 1886. Used since October, 1885.

"The words 'RAM'S HORN.'"

13,219.—CONDIMENTS AND SAUCES.—The Copartnership of *Peter Nicholson* and *Jane Nicholson*, doing business under the name of *David Nicholson*, St. Louis, Mo. Application filed March 25, 1886. Used since 1867.

"A shield bearing the representation of a rampant lion, having over it an eagle, and a bunch of thistles forming a background."

13,220.—REMEDY FOR DIARRHŒA, DYSENTERY, GRAVEL, DISEASES OF THE KIDNEYS, &c.—*William H. Preble*, Chicago, Ill. Application filed February 15, 1886. Used since January 1, 1886.

"The word 'GENEFER.'"

13,221.—SALT FISH.—*David Connell Stull*, Provincetown, Mass. Application filed March 29, 1886. Used since March 11, 1886.

"The word 'SWANSDOWN.'"

13,222.—CHEWING AND SMOKING TOBACCO.—*Terry & Shroyer*, Dayton, Ohio. Application filed March 22, 1886. Used since January 20, 1886.

"A silver crescent and the words 'SILVER MOON.'"

13,223.—SPECIFIC FOR ALL AFFECTIONS OF THE BOWELS.—*Domenico Celli Thaldi*, New Orleans, La. Application filed March 19, 1886. Used since December 15, 1884.

"The name 'MEPHISTO's' and the figure of Mephistopheles."

13,224.—CHINA-WARE.—*Tressemanes & Vogt*, Limoges, France. Application filed March 17, 1886. Used since January 15, 1885.

"The representation of a bell."

13,225.—WHISKY.—*S. B. Wortmann & Co.*, New York, N. Y. Application filed March 8, 1886. Used since March 1, 1886.

"The words 'HOME RULE.'"

LABELS.

4,789.—Title: "BARKER'S UNIVERSAL MALARIA CURE."—*James H. Barker*, Providence, R. I. Application filed March 25, 1886.

4,790.—Title: "RAILROAD SERVICE" (FOR OVERALLS.)—*Carter & Churchill*, Lebanon, Pa. Application filed March 27, 1886.

4,791.—Title: "COMPOUND WHITE PINE COUGH SYRUP."—*Harry P. Chace* and *George Walter Flood*, Highland Falls, N. Y. Application filed February 26, 1886.

4,792.—Title: "WHITE PINE AND BALSAM OF FIR COUGH SYRUP." *Harry P. Chace* and *George Walter Flood*, Highland Falls, N. Y. Application filed March 25, 1886.

4,793.—Title: "DR. KALB'S LACTATED SODA MINT TABLETS."—*H. L. De Kalb*, Bustleton, Pa. Application filed February 23, 1886.

4,794.—Title: "GRAY'S ARSENICATED EMULSION OF PURE NORWEGIAN COD LIVER OIL."—*Henry V. Gray*, Roanoke, Va. Application filed February 19, 1886.

4,795.—Title: "KINGAN & Co." (FOR PORK PRODUCTS.)—*Kingan & Co.*, Indianapolis, Ind. Application filed March 30, 1886.

4,796.—Title: "DR. SALFORT GREGORY'S POWDER."—*Luhs McDermott*, Amsterdam, N. Y. Application filed February 26, 1886.

4,797.—Title: "DR. BOMAR'S AMERICAN CHILL TONIC."—*John Clayton Morgason*, Gainesville, Texas. Application filed March 24, 1886.

4,798.—Title: "MADAME JULYE MYERS' FLAGROOT CORDIAL." *Julye Myers*, Boston, Mass. Application filed March 25, 1886.

4,799.—Title: "REVERSIBLE" (FOR BRUSSELS CARPETS.)—*John W. Priestley*, Philadelphia, Pa. Application filed March 29, 1886.

4,800.—Title: "DOUBLE FACE" (FOR TAPESTRY CARPETS.)—*John W. Priestley*, Philadelphia, Pa. Application filed March 29, 1886.

4,801.—Title: "DOUBLE FACE" (FOR BRUSSELS CARPETS.)—*John W. Priestley*, Philadelphia, Pa. Application filed March 29, 1886.

4,802.—Title: "REVERSIBLE" (FOR TAPESTRY CARPETS.)—*John W. Priestley*, Philadelphia, Pa. Application filed March 29, 1886.

4,803.—Title: "DR. BUCKLAND'S SCOTCH OATS ESSENCE."—*Scotch Oats Essence Co.*, New York, N. Y. Application filed September 25, 1885. (Trade-Mark Registered.)

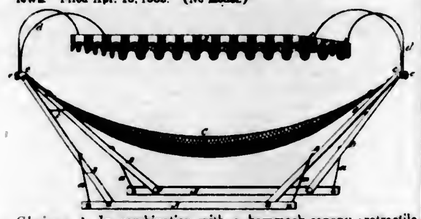
4,804.—Title: "DR. VAN WERT'S BALSAM FOR THE LUNGS."—*The Van Wert Chemical Co.*, Watertown, N. Y. Application filed July 20, 1885.

4,805.—Title: "DR. WITHERSPOON'S SPECIAL FORMULA No. 268."—*Pierre E. Witherspoon* and *Frank Sugnet*, Harrison, Mich. Application filed December 4, 1884.

PATENTS

GRANTED APR. 20, 1886.

340,071. HAMMOCK-SUPPORT. HENRY A. ADAMS, Cedar Rapids, Iowa. Filed Apr. 18, 1885. (No model.)

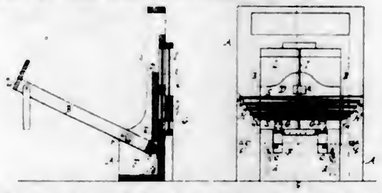


Claim.—1. In combination with a hammock-canopy, retractile spring-arms depending from the ends of the canopy and pivoted at their lower ends to the frame of the hammock-support, whereby the canopy is stretched at all times, notwithstanding the inward flexure of the frame, and the whole canopy is adapted to tilt in the arc of a circle, substantially as and for the purpose set forth.

2. The curved bifurcated retractile spring-arms *d d*, pivoted at their lower ends to the frame of a hammock-support, and at their divergent ends connected with the canopy and adapted to support and stretch said canopy and tilt the same in the arc of a circle, substantially as and for the purpose specified.

3. The combination of the described hammock-support, canopy, and retractile spring-canopy-supporting arms pivoted to the frame at some distance below the canopy, and all constructed and arranged substantially as and for the purpose set forth.

340,072. WARDROBE-BED. JOSEPH J. ADGATE, New York, N. Y. Filed Oct. 4, 1883. Renewed Feb. 24, 1885. (No model.)



Claim.—1. In a wardrobe-bed, the stationary supporting-frame A, the movable frame L, pivoted to the stationary frame A, the strip E, the head-board D, brackets G G, series of weights S S S, and supports H H', provided with the notches *n n n n' n' n'*, constructed as described.

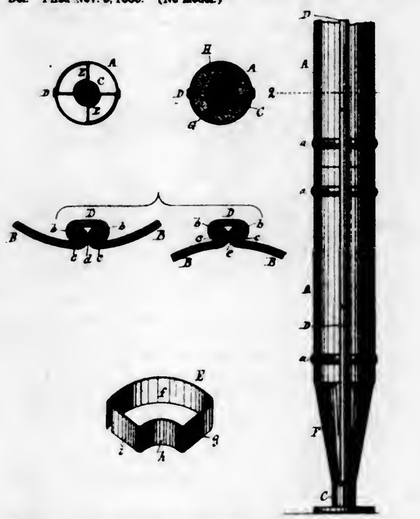
2. In a wardrobe-bed, the stationary supporting-frame A, provided with the grooves *b b* and tracks *d d*, the movable frame L, pivoted within the stationary frame A upon the rollers *a a*, and provided with the rollers *c c*, the strip E, head-board D, brackets G G, series of weights S S S, and the supports H H' for the same, constructed as described.

3. The series of weights S S S, the guide-rod I, the stationary frame or case A, provided with the grooves *b b*, supports H H', the movable frame L, provided with the rollers *a a*, strip E, and the vertically-moving head-board D, provided with the brackets G G, all constructed substantially as described.

4. In a wardrobe-bed, the stationary frame A, provided with the grooves *b b* and tracks *d d*, the movable frame L, provided with the rollers *a a c c*, strip E, head-board D, guide *e*, and rod *f*, combined and operating substantially as set forth.

5. In a wardrobe-bed, the stationary supporting-frame provided with the grooves *b b* and tracks *d d*, the movable frame provided with the rollers *a a c c*, pivoted therein, the strip E, head-board D, and brackets G G, attached thereto, guide *e*, rod *f*, series of weights S S S, the rod I, and frames H H', for guiding and supporting said weight-bars, constructed, combined, and operating substantially as described.

340,073. CASING FOR PIPES. WILLIAM H. ADSWORTH, Wilmington, Del. Filed Nov. 5, 1885. (No model.)



Claim.—1. A pipe-casing composed of cylindrical sections A A, placed end to end, each section being composed of two similar semi-cylindrical portions, B B, which are put around the pipe to be inclosed, with their longitudinal edges *b b* in contact, the adjoining longitudinal edges *b b* of said half-cylinders being bent away from each other in opposite directions, in combination with elongated locking-keys D D, having oppositely-bent edges *c c*, which take under the adjoining edges *b b* of the half-cylinders B B, said keys also lapping by the joints between adjoining sections A A, with their bent edges taking under the bent edges *b b* of said adjoining sections A A, whereby said sections A A and the half-cylinders B B of each section are locked together, substantially as set forth.

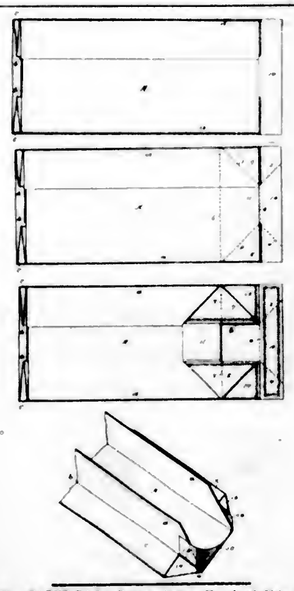
2. The casing and the inclosed pipe, in combination with temporary unattached holding-springs, said springs having concentric portions which rest against the surfaces of said casing and pipe, respectively, substantially as set forth.

3. The casing A and the inclosed pipe C, in combination with temporary unattached holding-springs E E, each of said springs having a curved side, *f*, which fits against the inner surface of the casing A, a curved side, *h*, which fits against the outer surface of the pipe C, a radial portion, *g*, connecting the sides *f h*, and a radial portion, *i*, connected to side *h*, which limits the play of side *f*, substantially as set forth.

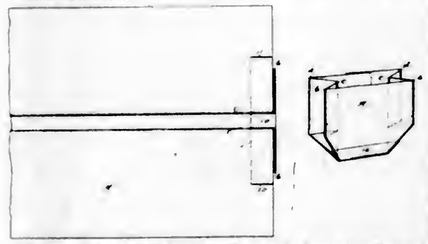
340,074. PAPER BAG. DANIEL APPEL, Cleveland, Ohio, assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed June 13, 1885. (No model.)

Claim.—The herein-described bellows-sided square-bottom bag having the corner flaps, 7 8, folded inward between the plies of the portions *a* of the bellows sides, and the lip 10 folded over onto the outside of the portion 11, whereby when the bag is distended the flaps 7 8 lie within the bottom of the bag, substantially as described.

340,074.

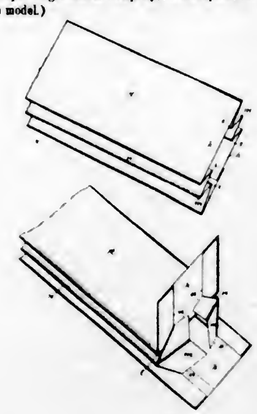


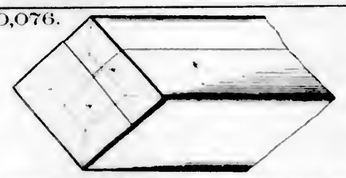
340,075. PAPER BAG. DANIEL APPEL, Cleveland, Ohio, assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed June 17, 1885. (No model.)



Claim.—As a new article of manufacture, the herein-described bellows-sided bag, provided with the two bottom-closing flaps 10 15, the one folded within the bottom of the bag in one direction, and the other folded on the outside thereof in the opposite direction, substantially as described.

340,076. PAPER BAG. DANIEL APPEL, Cleveland, Ohio, assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed July 25, 1885. (No model.)



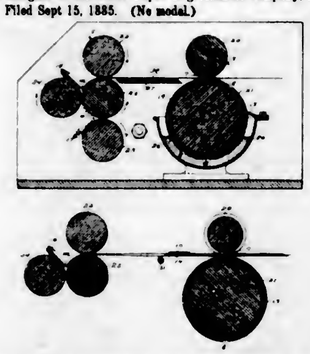


Claim.—1. A bag having bellows sides formed by the inward folds *i* and outward folds *n*, and a satchel-bottom consisting of the interior flaps *m* and the inwardly-folded sides *k*, substantially as described.

2. A bag having bellows sides formed by the inward folds *i* and outward folds *n*, and a satchel-bottom consisting of the interior flaps *m*, which lap and are pasted together, and the inwardly-folded sides *k*, substantially as described.

3. A bag having bellows sides formed by the inward folds *i* and the outward folds *n*, and a satchel-bottom consisting of the interior flaps *m*, which lap and are pasted together, and the inwardly-folded sides *k*, which also lap and are pasted together, substantially as described.

340,077. PAPER-FOLDING MACHINE. DANIEL APPEL, Cleveland, Ohio, assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed Sept 15, 1885. (No model.)



Claim.—1. The combination, with a pair of folding-rolls, as 23 24, of a feeding mechanism for advancing the web or sheet, a creasing mechanism for creasing the fold-line, and a stopping device, as 16, for arresting the leading end of the web or sheet, whereby the fold-line is entered into the bite of the folding-rolls by the action of the feeding mechanism and stopping device without the aid of a folding-blade or similar means to act upon the fold-line, all substantially as described.

2. The combination, with the rolls 22 23 24, arranged to form a pair of feeding-rolls and a pair of folding-rolls, of a creasing mechanism for creasing the fold-line, and the stopping device 16, for arresting the leading end of the web or sheet, whereby the fold-line is entered into the bite of the folding-rolls by the action of the feeding-rolls and the stopping device without the aid of a folding-blade or similar device to act upon the fold-line, all substantially as described.

3. The combination, with a pair of folding-rolls, as 23 24, of a feeding mechanism for advancing the web or sheet, a creasing and wetting mechanism for creasing and wetting the fold-line, and a stopping device, as 16, for arresting the leading end of the web or sheet, all substantially as described.

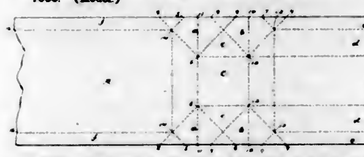
4. The combination, with the rolls 22 23 24, arranged to form a pair of feeding-rolls and a pair of folding-rolls, of a creasing and wetting mechanism for creasing and wetting the fold-line, and the stopping device 16, for arresting the leading end of the web or sheet, all substantially as described.

5. The combination, with the rolls 22 23 24 25, arranged to form a pair of feeding-rolls and two pairs of folding-rolls, of a creasing mechanism for creasing the fold-lines, and the stopping devices 16 17, for successively arresting the leading end of the web or sheet, all substantially as described.

6. The combination, with a pair of folding-rolls, as 23 24, of a feeding mechanism for advancing the web or sheet, a creasing mechanism for creasing the fold-line, and a roll, as 16, arranged to co-operate with one of said folding-rolls, to arrest and feed backward the leading end of the web or sheet, all substantially as described.

7. The combination, with a pair of folding-rolls, as 23 24, of a feeding mechanism for advancing the web or sheet, and a roll, as 16, arranged to co-operate with one of said folding-rolls, to arrest and feed backward the leading end of the web or sheet, all substantially as described.

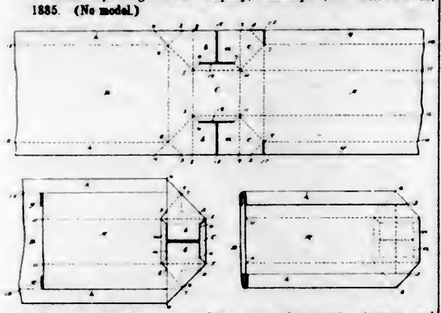
340,078. PAPER BAG. DANIEL APPEL, Cleveland, Ohio, assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed Oct. 19, 1885. (Model.)



Claim.—1. A bag having two side seams and a seamless bottom, and having the triangular points formed at opposite sides of the bottom by bringing together the triangular portions *c* and the portions *a b*, substantially as described.

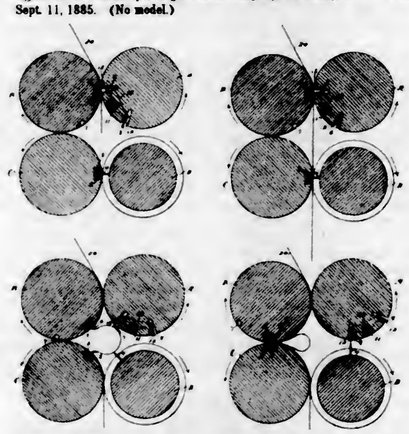
2. A bag having two side seams and a seamless bottom, and having the triangular points formed of the portions *a b c*, folded inward and secured to the bottom, substantially as described.

340,079. PAPER BAG. DANIEL APPEL, Cleveland, Ohio, assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed Oct. 19, 1885. (No model.)



Claim.—A bag having two side seams and a seamless bottom, and having the free portions *a b*, formed by the cuts and slits 18 19, folded inward and secured to the bottom, substantially as described

340,080. FOLDING-MACHINE. DANIEL APPEL, Cleveland, Ohio, assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed Sept. 11, 1885. (No model.)



Claim.—1. The combination, with the rolls B C, provided with devices for taking and holding the web or sheet upon the fold-lines *m n*, of the rolls or carriers A D, equipped to present the web or sheet in position to be taken by the holding devices upon the rolls A C, all substantially as described

2. The combination, with the rolls B C, provided with means for taking and holding the web or sheet upon the fold-lines *m n*, of the rolls or carriers A D, provided with the tucking-blades 4 9, all substantially as described.

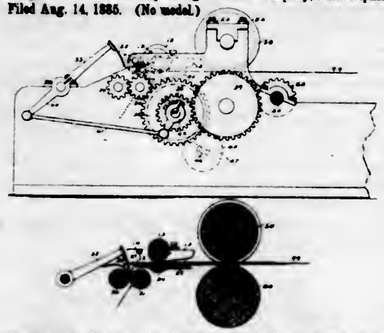
3. The combination, with the rolls B C, provided with means for taking and holding the web or sheet upon the fold-lines *m n*, of the rolls or carriers A D, provided with the tucking-blades 4 9 and the severing-blade 8, all substantially as described.

4. The combination, with the rolls B C, having the grooves 2 6, of the rolls or carriers A D, having the tucking-blades 4 9, all substantially as described.

5. The combination, with the rolls B C, having the grooves 2 6, of the rolls or carriers A D, having the tucking-blades 4 9 and the severing-blade 8, all substantially as described.

6. The combination, with the rolls B C, provided with means for taking and holding the web or sheet upon the fold-lines *m n*, of the roll or carrier A, having the moving tucking-blade 9 and severing-blade, and the roll or carrier D, having the tucking-blade 4, all substantially as described.

340,081. PAPER-BAG MACHINE. DANIEL APPEL, Cleveland, Ohio, assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed Aug. 14, 1885. (No model.)

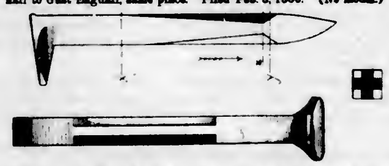


Claim.—1. The combination, with the folding-rolls 30 31, of the edges 8 9 and the blade 32, substantially as described.

2. The combination, with the folding-rolls 30 31, of the edges 8 9, blade 32, and a pasting apparatus, substantially as described.

3. The combination, with the folding-rolls 30 31, of the edges 8 9, blade 32, and the revolving pasting-blade 14, and paste-fountain and fountain-roll, substantially as described.

340,082. SPIKE. ANDREW BARROWS, Chicago, Ill., assignor of one-half to Gust Engdall, same place. Filed Feb. 8, 1886. (No model.)



Claim.—1. A spike of iron or other metal having its corners rabbeted or recessed with curved or angular recesses from a point just above the commencement of the bevel or taper which terminates in the wedge-shaped point of the spike, so as to leave on each edge of the spike a lance-shaped barb flanking a rib or tongue of metal down the middle of the spike on its front and rear sides, substantially as described.

2. A spike of iron or other metal rabbeted or recessed on its corners above the bevel or taper which terminates in the point, so as to leave a central rib or tongue down the front and rear sides of the spike, the edges of the spike forming on each side of such rib or tongue a barb to increase the holding power of the spike when driven.

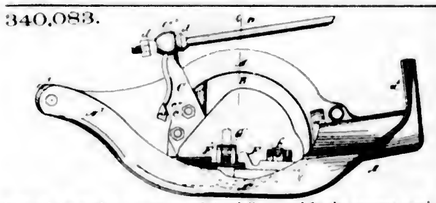
3. A spike of iron or other metal having a lance-shaped barb on each edge, formed by cutting out a recess in each corner of the spike, above the tapering point, so that when driven the wood may close in above the point and give the spike a greater holding power, and still leaving the spike of its full size and strength in the upper portion, where strength and rigidity are needed.

4. A spike of iron or other metal having a recess cut or rabbeted out from each corner, above the commencement of the bevel or taper to the point, taking away a portion of the material, so as to form a lance-shaped barb on each edge above the commencement of the taper to the point of the spike, so as to increase the holding power of the spike when driven, while also decreasing its weight.

340,083. SHOE FOR MOWING-MACHINES. GEORGE H. BARTLETT, Madison, Wis. Filed Feb. 5, 1885. (No model.)

Claim.—1. An inner or main shoe for a mowing-machine, consisting of two parts, one within the other, the inner part supported at the top and bottom on the outer part by segmental bearings, the upper bearing being formed on segments of circles of different diameter from the bottom or side bearing, whereby the two points of bearing are coacting to resist the strain in raising the cutter-bar and the strain from the

340,083.



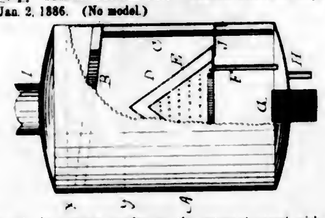
thrust of the cutting apparatus, substantially as and for the purpose specified.

2. A main shoe for a mowing-machine, composed of two segmental parts, one part working within the other and held together by the arcs of two pairs of rings or circles concentric with each other, one pair of arcs being located on one side of the shoe, and the other pair on the opposite side of the shoe, substantially as and for the purpose described.

3. A circle or ring, A, side extensions, A', and cross-bar A'', having the recess *a''*, in combination with the circle or ring B, bottom B', and extension B'', having tongue *b''*, for supporting the cutting apparatus, substantially as and for the purposes specified.

4. The circle or ring A and circle or ring B, in combination with the arm C and guide-clip E, for maintaining the rings against end movements, substantially as specified.

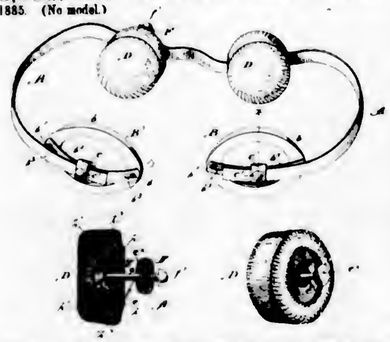
340,084. STEAM-CONDENSER. ERHARD BAUMANN, Dayton, Ohio. Filed Jan. 2, 1886. (No model.)



Claim.—1. In a steam-condenser, the external vessel with pipes G and I to convey the steam and pipe H to convey the water of condensation, the cone D, and perforated cone E, attached to a common base with pipe F, and held concentric to said vessel, and the inclined trough attached to said vessel with pipe C to carry off the water of condensation, all substantially as shown and described.

2. A steam-condenser composed of vessel A with pipes G and I, the cone D, and perforated cone E, with pipe F, attached to a bottom common to both cones and provided with a rim about its central orifice, substantially as set forth.

340,085. TRUSS. GEORGE W. BELL, St. Joseph, Mo. Filed Dec. 16, 1885. (No model.)

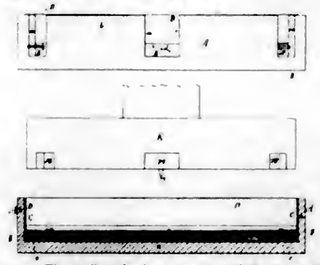


Claim.—1. In a truss, the combination of a band, a pad, B, having headed pins, a slotted spring working over the pins, and a clasp to which the spring is connected, and having a set-screw to adjust the pad on the band, substantially as described.

2. In a truss, the combination, with a band, of a pad, D, having a chambered partition, b^3, a flexible sheath inclosing the partition, and a yielding packing interposed between the sheath and partition, substantially as described.

3. In a truss, the combination, with a band, of a pad comprising a plate, a chambered partition, b^3, a sheath inclosing the plate and partition, a yielding packing, and a rod having its head seated in the chamber of the partition, and secured at its other end to the band, substantially as described.

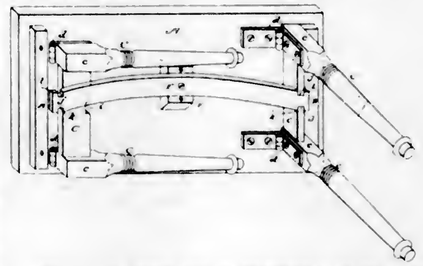
340,086. BUFFING-WHEEL GAGE. ROBERT BIRD, South Windham, Conn. Filed May 6, 1885. (No model.)



Claim.—1. The buffer-wheel gage, substantially as described, consisting of the shallow cylindrical tray or vessel A, notched in its rim, as described, the flanged annulus B, and the flat ring C, such annulus B having holes arranged in it, and all being for use substantially as set forth.

2. The buffer-wheel gage, substantially as described, consisting of the shallow cylindrical tray or vessel A, notched in its rim, as described, the flanged and perforated annulus B, and the flat ring C, in combination with the guide-ring D, inserted in the vessel A, and with the plunger E, and the marker *g*, all being to operate substantially in manner and for the purpose specified.

340,087. FOLDING TABLE. HENRY T. BIRCHARD, Montrose, assignor of one-half to Charles H. Birchard, Philadelphia, Pa. Filed Jan. 30, 1886. (No model.)



Claim.—1. In a folding table, the combination of the top, the battens secured thereto, hinged legs C, arranged in pairs at each end of the top and having the notched tie-bar, C', a block, E, secured to the top between the legs and lying on a plane above the lower edges of the cross-bars C', and a spring-bar, F, secured to the block E and having its ends notched to provide the locking-shoulders *k l*, substantially as described.

2. A folding table comprising a top, the transverse battens B, foldable legs C, hinged to the top and having the cross or tie bars C' provided with notches or recesses *i* in their lower edges, a transverse block, E, secured to the middle of the top and provided with the inclined or curved ends, and a longitudinal spring-bar, F, secured to the block and having its free ends notched on opposite sides and provided with locking-shoulders *k l*, whereby when the legs are unfolded the ends of the spring-bar will lie flush in the recesses *i* of the tie-bar C' and the shoulders *k l* will fit on opposite faces of the said bars, substantially as described.

340,088. SUSPENDER BUCKLE. CHARLES B. BIRD, Sioux City, Iowa, assignor to Ellen O. Bird, same place. Filed Jan. 28, 1885, Serial No. 154,215. Divided and this application filed Aug. 24, 1885. (No model.)



Claim.—1. A buckle comprising a slide carrying a pivoted angular clamp and having guides formed upon it at opposite ends of the clamp, and a guard or cover moving upon the guides and entirely covering the clamp and preventing its release, substantially as described.

2. A buckle comprising a slide, C, carrying a pivoted bearing-tongue, D, and having guides *s* formed on the slide on opposite sides of the bearing-tongue, and a guard having guides *s'*, substantially as described.

3. A suspender-buckle comprising a slide provided with an opening to receive the bearing-tongue, an angular bearing-tongue pivoted in the said opening, oppositely-converging guides formed on the slide on each side of the opening, and a guard or cover provided with guides to engage with and move upon the guides upon the slide and having means of connection to the suspender-end, substantially as described.

4. A buckle comprising a slide formed of a single piece of metal bent to leave a passage for the strap and leave a space between the opposite edges to receive the bearing-tongue, and having its opposite edges turned back to form guides, an angular bearing-tongue pivoted in the guides thus formed, and a guard covering the tongue and preventing its release, formed of a single piece of metal having its edges turned over to form guides to slide upon the guides on the slide and provided with slots *n*, substantially as described.

5. A buckle comprising the following elements: a slide, C, having opening *t*, having converging sides and guides *s*, a bearing-tongue, D, pivoted in the opening *t*, and a guard, E, having guides *s'*, substantially as described.

340,089. SUSPENDER-BUCKLE. CHARLES B. BIRD, Sioux City, Iowa, assignor to Ellen O. Bird, same place. Filed Oct. 16, 1885. (No model.)



Claim.—1. The suspender-buckle, substantially as herein shown and described, comprising a slide and a clamp detachably pivoted in the slide, as set forth.

2. A buckle comprising a slide having a cut-away part, *t s s'*, and a clamp detachably inserted into the cut-away part of the slide, substantially as described.

3. A buckle comprising the following elements: a slide having the cut-away part *t s s'*, and a clamp comprising the plate *p* and head *o*, bent at right angles to the plate, said plate being provided with the recesses *n*, whereby the said clamp is detachably adjustable to the slide, as set forth.

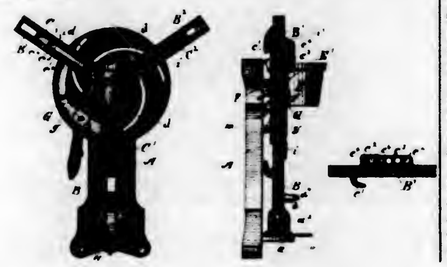
4. The suspender-buckle, substantially as herein shown and described, comprising a slide and a clamp detachably pivoted in the slide and provided with means for attaching the suspender-end thereto, as set forth.

340,090. SIGNAL-LANTERN AND FLAG HOLDER. WILLIAM H. BRIGGS and GEORGE M. CLARK, Chicago, Ill. Filed Apr. 14, 1885. (No model.)

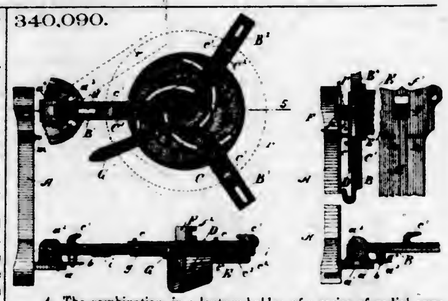
Claim.—1. The signal-lantern holder consisting of a supporting-plate, in combination with a spider hinged to said plate and having movable hook-carrying slides, and the eccentrically-slotted plate engaging with and actuating the slides, substantially as specified.

2. The signal-lantern holder consisting of a supporting-plate, in combination with a spider hinged to said plate and having movable hook-carrying slides, a rotatable eccentrically-slotted plate engaging with and moving the slides, and a pawl and ratchet for securing the plate against rotation, substantially as specified.

3. The combination of a supporting-plate, a hinged lantern-holder adapted to fold up against the plate, a lock for securing in it the folded position, and a flag-socket borne upon the lantern-holder, substantially as set forth.



340,090.



4. The combination, in a lantern-holder, of a series of radial arms, slides in said arms provided with hooks for engaging the lantern and having pins *c*, a rotating slotted plate pivoted upon said arms and engaging said pins, a ratchet-disk on the same pivot and attached to said plate, and a spring-pawl pivoted to said arms and engaging said disk, substantially as specified.

5. The combination, in a lantern-holder, of a series of radial arms, in combination with slides working in said arms and provided with hooks *c'* and pins *c*, a rotating slotted plate pivoted upon said arms and engaging all said pins, one of said slides having also a perforated depending flange, and the arm in which the same is located having depending projections, by means of which flange and projections all the slides may be locked, substantially as specified.

6. The combination of plate A, having opening *f'*, with the swinging holder having a retaining-button to enter said opening, and the flag-socket secured to the same pivot with said button, substantially as specified.

7. The plate A, having opening *f'*, the swinging holder having a retaining-button to enter said opening, and a flag-socket, in combination with a spring-pawl carried on the holder and a locking-ratchet, the socket, ratchet, and button being fast upon the same pivot, substantially as specified.

8. The combined lantern and flag holder consisting of the attaching-plate A, provided with the locking-opening, in combination with a spider having one of its arms hinged to said plate, hooks for securing the lantern attached to the arms of said spider, a retaining-button mounted on said spider, and a socket attached to the shank of said button, substantially as specified.

340,091. SHAFT-TIP. WILLIAM H. BROOKS, Waterbury, Conn., assignor to the Waterbury Manufacturing Company, same place. Filed Feb. 12, 1886. (No model.)



Claim.—1. A shaft-tip made of thin metal, and having its open end bent outward for the forward edge of the leather covering of the shaft to abut against, substantially as set forth.

2. A shaft-tip made of thin metal, and having its forward end thrown outward to form a bead, against the outer edge of which the forward edge of the leather covering of the shaft abuts, substantially as set forth.

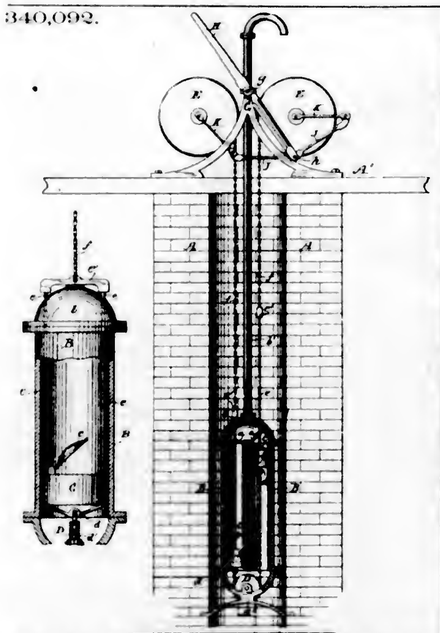
340,092. FORCE-PUMP. OLIVER K. CRANER, Oaklin, Minn. Filed Nov. 12, 1885. (No model.)

Claim.—1. The combination, with the double pump-casing, of the stool A^3, anchored in the well-curbing and bearing a pulley, the valved buckets in said casing, the chain connecting said buckets and passed under said pulley, the dome at the top of the casing, having a discharge-pipe, the valves opening into the dome, the bucket or piston rods connected by chains to oscillating pulleys, and the compound system of levers, as described, for actuating the buckets.

2. The combination, with the pump-casing, its buckets, the connecting-chain, the piston-rods, and pulley, of the chains *f f*, connected to the peripheries of oscillating pulleys, the hand-lever, the links J J, pivoted to this lever, and the levers K K, connected to the journals of said oscillating pulleys, all adapted to operate substantially as described.

3. The combination, with a double-acting pump, as described, and its chain connections, of two oscillating pulleys, E E, of equal diameter, and having their sides in the same vertical plane and their axis in the same horizontal plane, the levers K K on the journals of these pulleys, the vibrating hand-lever, and the link-connections of this lever with the said levers K K, substantially as described.

340,092.



340,093. SPINDLE AND BOBBIN. CHARLES H. CHAPMAN, Groton, assignor to the Eureka Spindle Company, Ayer, Mass. Filed Dec. 18, 1885. (No model.)

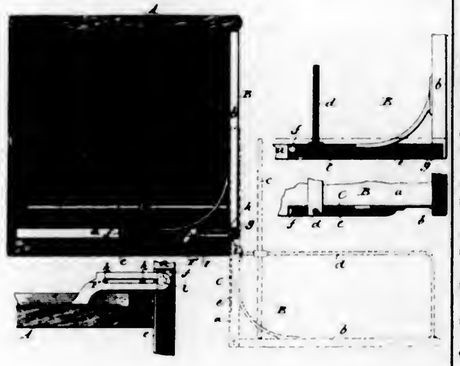
Brief.—The upper part of the sleeve of the whirl is spherical or oval to allow the bobbin, when distorted, to come to a seat without tendency to spring the spindle. To further effect the object, the upper end of the bobbin is constructed to have a bearing upon the spindle at one point only.



Claim.—1. A spindle provided with a spherical seat to receive and drive the bobbin, combined with a bobbin internally tapered at its lower end, and adapted to sleeve such seat and wedge thereon, as set forth.

2. A spindle provided with a spherical seat to receive and drive the bobbin, combined with a bobbin adapted to be driven by such seat, and provided with an upper steadying-bushing adapted to bear upon the spindle-tip at one line of contact only and permit the bobbin to rock thereon as it finds its seat below, as shown and described.

340,094. FILE-BOX. WILLIAM H. H. CLAGUE, Rochester, N. Y. Filed Aug. 24, 1885. (No model.)



Claim.—1. In combination with the case or cabinet, a file-box having flanged plates *e*, attached to its opposite edges, and two side bars or arms provided with studs to engage the flanged plate and attached to slide horizontally in the cabinet at opposite sides of the file-box, whereby the box is sustained at both sides and permitted to tip downward when withdrawn from the case.

2. The supporting case or cabinet and a file-box provided with the horizontally-flanged plates C, in combination with the sliding file-box support F, having its arms united by sliding connections with the case and its extremities provided with studs to engage the flanged plates of the file-box and suspend the same when withdrawn.

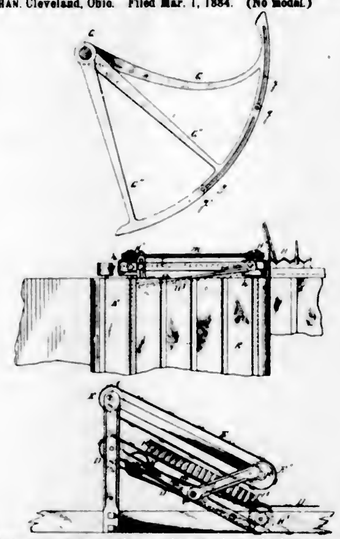
3. In combination with the cabinet or receptacle, the file-box B, substantially as described, the plates C, secured to the edges of the file-box and each provided with flanges *e* and stops *f*, and the plate F, attached by a sliding connection to the case and provided at its forward end with studs *i*.

4. In combination with an inclosing case or cabinet and the sliding bar having inwardly-projecting studs *i*, the plate C, provided with stops *f* and flanges *e*, the latter terminating at a distance from the trunk of the file-box, whereby the boxes may be detached and removed, as desired.

5. The combination, with the case or cabinet, of the cross-bar F, having the horizontal slotted arms and inwardly-projecting studs *i*, pins attached to the case and entering said slots, the file-boxes, and the plates C, secured to the file-box and provided with a flange, *e*, and stops *f* and *g*.

6. In combination with a file-box, an inclosing case or cabinet with guide-pins at its sides and the sliding plate F, provided with elastic slotted arms adapted to spring outward into engagement with the guide-pins, as described, whereby the disconnection of the slide is permitted at will.

340,095. HARVESTER AND BINDING MACHINE. CHARLES COLAHAN, Cleveland, Ohio. Filed Mar. 1, 1884. (No model.)



Claim.—1. A harvesting-machine having a single apron-carrier extending to the binder-table and a vertically-reciprocating horizontally-vibrating butting-rake extending over the delivery end of the carrier, beneath the upper apron, combined with an automatic grain-binder, whereby the grain may be forced directly into the binder by the pressure of said aprons and butting-rake in suitable condition for binding without the use of packing-arms.

2. The vibrating, reciprocating, butting, and gathering rake H^3, actuated by the cam-cylinders H'' H'' and their shafts, substantially as shown and described.

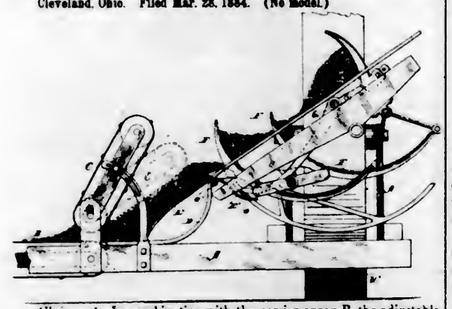
3. The binder-arm G, having its folding arms G'' G''' hanging loosely on its vibrating shaft G', with its guide-pins *g'* and the guide-slots *g*, operating substantially as shown and described.

4. The butting-rake H^3, having a horizontal and also a vertical movement imparted to it by the action of its grooved cam-cylinders H'' H'' and their actuating-shafts H' H', operating substantially as shown and described.

5. In a harvester, the combination of the carrier D, its delivery end elevated at the heel of the cutter-bar, actuated by shaft *a* and its pinion, the short supplemental adjustable compressing-apron E, clearing-rake H^3, binder-table F, and gavel-arm G, operating substantially as shown and described.

6. The compressing-apron E and its pivoted standard E', combined with the delivery-apron D', and the butting-rake H^3, and the gavel-arm G, whereby an expanding receptacle is created for the accumulation of grain and straightening the same when the gavel is being formed.

340,096. GRAIN-BINDING HARVESTER. CHARLES COLAHAN, Cleveland, Ohio. Filed Mar. 23, 1884. (No model.)



Claim.—1. In combination with the carrier-apron B, the adjustable apron C, the receiver D, and the binder-arm G, operating substantially as shown and described.

2. The combination of the apron B, the adjustable apron C, and the receiver D, provided with an independent device and means for raising and lowering the same to contract and expand the receiver, so as to permit an accumulation of grain in the receiver during the binding operation, as and for the purposes specified.

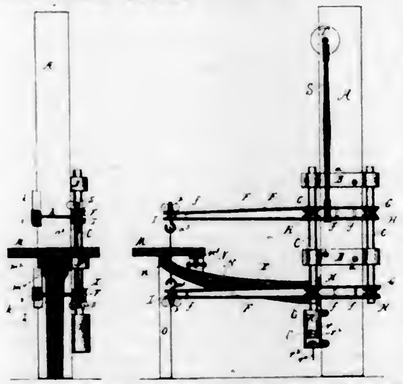
3. The aprons B C, the receiver D, the alternately rising and falling fingers E, combined with the binder-arm G, and the packers F F, constructed and operating substantially as set forth.

4. The combination, with a harvester and binder, of the receptacle D, provided with the vibrating fingers E, for alternately enlarging and contracting the space in the receiver and guiding the grain to the binder as it is forced forward by the aprons B C during the process of gathering and binding the grain.

5. The combination of the apron B, the forcing-apron C, and the receiver D, provided with an independent device and means for raising the same to aid in guiding the grain to the binder during the formation of the bundle, and for lowering the same during the binding operation to enlarge the receptacle, so as to permit an accumulation of grain during the binding operation, substantially as and for the purposes specified.

6. The concave receptacle D, combined with the forcing-apron C, the vibrating fingers E, and the binder packing-arms F F, constructed and operating substantially as shown and described.

340,097. SCROLL-SAWING MACHINE. EDWARD COLLINS, New York, assignor of one-half to James K. Frothingham, Brooklyn, N. Y. Filed June 1, 1885. (No model.)

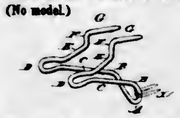


Claim.—1. In a scroll-sawing machine, the movable rods or tubes C C, fastened to the saw-arms F F, and sliding in guide-brackets B B, secured to the post A and operated by crank-rod S, substantially as and for the purpose set forth.

2. In a scroll-sawing machine, the saw-arms F F, constructed as described, in combination with the movable tubes or rods C C, held to the post A by brackets B B, and operated and held in position by crank S, substantially as and for the purpose set forth.

3. In a scroll-sawing machine, the combination of the rods or tubes C C, having fastened thereto the arms F F, the guide-brackets B B, secured to post A, the crank-rod S, the crank T, placed at the upper end of the machine, the air-cushion R, placed at the bottom and underneath the tubes C C, the tilting table M, attached to bracket N, and the bracket L^4, attached to post A, substantially as and for the purpose set forth.

340,098. TOOL-HOLDER. GEORGE A. COLTON, Syracuse, N. Y. Filed Mar. 30, 1885. (No model.)

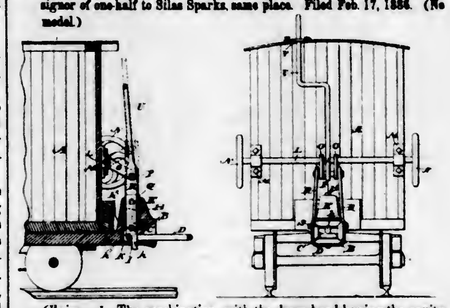


Claim.—1. A suspension device constructed of a single piece of wire comprising hook portions and bracket portions, united at their lower ends by an obtusely-curved bearing portion, the hook portions terminating at their upper ends in form for attachment to a fixture, substantially as specified.

2. A suspension device formed of a single piece of suitable material and having a bent portion, as A, bracket portions, as C, hook portions, as E, driving-shoulders, as F, and attaching devices, as G, substantially as shown and described.

3. A wire suspension device having the obtuse bend A, the bends B and D, to form brackets, and a bearing portion for the same, the bends D and E, forming suspension-hooks and bent to form driving-shoulders, and prongs G, substantially as shown and described.

340,099. CAR-COUPLING. WILLIAM CORNER, Pearson, Ohio, assignor of one-half to Silas Sparks, same place. Filed Feb. 17, 1886. (No model.)



Claim.—1. The combination, with the draw-head having the cavity or recess K, of the vertically-movable pin H, having the shoulder *h'*, for bearing on the inner end of the coupling-link to raise the outer end thereof, for the purpose set forth, substantially as described.

2. The combination of the draw-head having the cavity or recess K, the vertically-movable pin H therein, having the shoulder *h'*, the rock-shaft L, having the arms O, and the links connecting the said arms with the pin H, whereby the latter may be raised or lowered, for the purpose set forth, substantially as described.

340,100. BORING AND ROUTING BIT. TRUMAN D. COOK, Topeka, Kans. Filed July 10, 1885. (Model.)



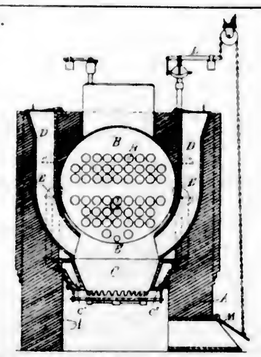
Claim.—A boring and routing bit constructed with two or more equidistant lateral lips, *a*, with cutting-edges *b*, the lips terminating at the working end of the bit in cutting-edges extending in the same plane to and meeting at the center or axis of the bit, or extending only to or near to the bases of the lips *a*, and slightly but uniformly receding toward these bases from the plane of the terminal circumference of the bit, the whole being constructed substantially as and for the purpose hereinbefore described.

340,101. FEEDING FUEL. JOHN T. CORBETT, Aurora, Ill. Filed Dec. 10, 1885. (No model.)

Claim.—1. In a horizontal boiler, a fuel-magazine not only communicating directly with the fire-pot, but also curving upward therefrom around and in near proximity to the boiler near its front, substantially as and for the purposes set forth.

2. In combination with a horizontal cylindrical boiler having a fuel-magazine extending upward in curves in close proximity to the outside

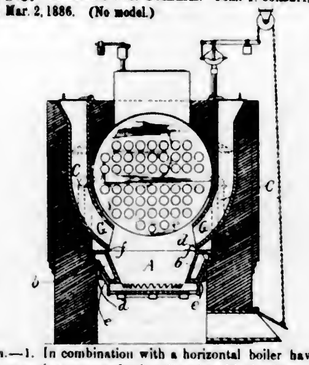
340,101.



of the boiler and near its front, the described system of passages serving to convey hot air first beneath the boiler from front to rear, next through the lower boiler-flues from rear to front, and finally through the upper boiler-flues from front to rear directly into the smoke-stack.

3. In combination, the horizontal boiler, the fuel-magazine communicating directly with the fire-pot and curving upward therefrom in near proximity to the curve or periphery of the boiler, as set forth, the heat-passage F, partition I, lower set, G, and upper set, H, of boiler-flues, and smoke-stack J, these parts being arranged and operating as set forth.

340,102. FIRE-BOX FOR BOILERS. JOHN T. CORBETT, Aurora, Ill. Filed Mar. 2, 1886. (No model.)

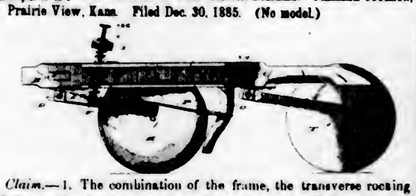


Claim.—1. In combination with a horizontal boiler having a fuel-supplying magazine communicating directly with the fire-pot, a water-holding fire-box located under the boiler, and closed at all sides, and communicating by pipes inclosed within the masonry or outer walls with the water in the boiler, all substantially as set forth.

2. In combination with a horizontal boiler having a fuel-magazine communicating by curved feeding-passages directly with the fire-pot, a spacious water-holding fire box or pot and hot-water pipes C C, each connecting the upper part of such water-holding box with the water in the boiler, all substantially as and for the purposes set forth.

3. A water fire-pot constituting a spacious hollow water-chamber closed at all sides, provided with an extension or projection, and suspended or supported thereby in the masonry or casing of the boiler, combined with two similar and inclosed tubes, C C, one on each side, severally connecting such water-chamber with the water-space in the boiler.

340,103. ATTACHMENT FOR GRAIN-DRILLS. JEREMIAH COURSON, Prairie View, Kans. Filed Dec. 30, 1885. (No model.)



Claim.—1. The combination of the frame, the transverse rocking bar I thereon, having the slotted openings i, the beams F, hinged to the frame, and carrying the trailing colters and the discharge-nozzles, and the rods L, attached to the hinged beams and passing up through the openings in the rocking bar, substantially as described.

2. The combination of the frame, the transverse rocking bar I thereon, having the slotted openings i, the beams F, hinged to the frame, and carrying the trailing colters and the discharge-nozzles, the rods L, attached to the hinged beams, the bearing-springs on the said rods, and the nuts M on the upper ends of the rods L, for the purpose set forth, substantially as described.

340,104. STEREOTYPE-BLOCK. GEORGE DAMON, Cranford, N. J., and ELIAS S. PERTS, New York, N. Y. Filed Jan. 23, 1886. (No model.)



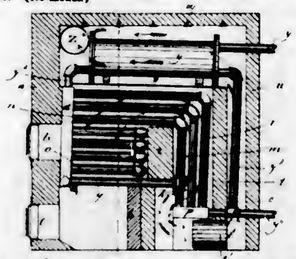
Claim.—The combination of a plate, A, flanged, as at B B', with a central supporting-block, C, and side locking-blocks, D D', constructed and operating substantially as and for the purpose set forth.

340,105. CARRIAGE-TOP JOINT. CHARLES F. DERNELL, Indianapolis, Ind., assignor of one-half to George H. Herpick, same place. Filed Jan. 18, 1886. (No model.)



Claim.—The above-described carriage-top joint, consisting of bar A, clips *d* and *e*, and bar B, divided longitudinally into two similar parts, having the clips *j* and *k* and shoulder *l*, all combined and arranged to co-operate in the manner specified.

340,106. STEAM-GENERATOR. WESTON T. EASTMAN, Rockland, assignor of one-half to Albert F. Kelley, Cambridgeport, Mass. Filed July 27, 1885. (No model.)



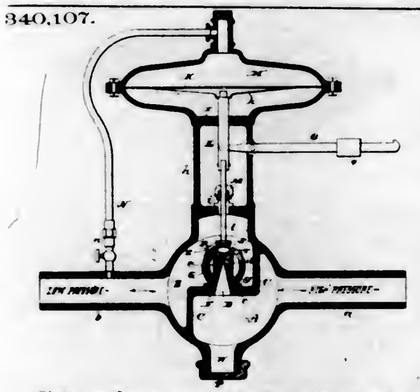
Claim.—1. In a steam-generator, a fire-chamber and a water-chamber or casting at the front thereof, combined with a bridge-wall and water-inlet chamber at the rear of the said bridge-wall, the return-pipe y^4 and a number of pipes extending from the water-chamber at the front of the fire-chamber rearward over the said fire-chamber and then downward at the rear of the bridge-wall to the water-inlet chamber, substantially as described.

2. The fire-chamber, and ash-pit, and partition and bridge walls at the rear thereof, combined with a rearwardly-extending partition above the fire-chamber and a substantially vertical partition at the rear of the bridge-wall provided with a flue or passage in its lower end, and with a water and steam chamber above the partition over the fire-chamber, and pipes below the said partition and at the rear of the bridge-wall, connected at different levels with the steam and water chamber, the products of combustion surrounding the said pipes and then flowing through the flue in the vertical partition and surrounding the steam and water chamber, substantially as described.

3. The masonry inclosing the steam-generator, the former being provided with partitions at the front of its rear wall and below its top wall, and a steam and water chamber above the first-mentioned partition, combined with a water-chamber lining the front wall of the furnace and constituting the front of the fire-chamber, a series of pipes from the lower portion thereof constituting bars of the grate, a rear wall for the ash-pit supporting said pipes and bridge-wall supported thereon, a series of pipes extending from said water-chamber around the remaining three sides of the fire-chamber, and a series of pipes extending from said water-chamber over the bridge-wall and down at the rear thereof, and a water-inlet chamber connected with the lower end of the said pipes, the water-chamber at the front of the fire-chamber and the water-inlet chamber being each connected with the steam and water chamber above the partition over the fire-chamber, substantially as described.

340,107. PRESSURE-REGULATOR. LOUIS B. FULTON, Pittsburg, Pa. Filed Jan. 29, 1886. (No model.)

340,107.

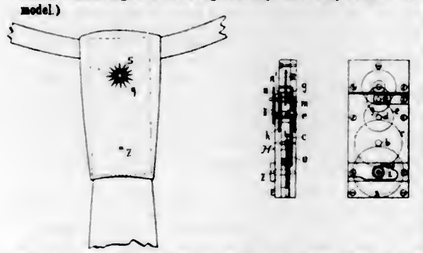


Claim.—1. In a pressure-regulator, the combination, with a diaphragm adapted to receive the pressure from the pressure-regulator chamber, of a valve-seat having a raised portion, the latter having an opening or openings therein, the valve adapted to surround the raised portion of its seat, and the valve-operating rod connecting the valve with the diaphragm, substantially as set forth.

2. In a pressure-regulator, the combination, with a diaphragm adapted to receive the pressure from the pressure-regulating chamber, and the valve-seat consisting of a solid head or disk supported over the opening by legs or standards, of a globular-shaped valve adapted to closely embrace and slide on the raised portion of the seat, and the valve-operating rod connecting the valve and diaphragm, substantially as set forth.

3. In a pressure-regulator, the globular-shaped valve and the valve-seat, the latter being provided with a raised portion, substantially as set forth, and with a groove around its opening, and the former being a wedge-shaped edge adapted to fit the groove, and a chamber at its top adapted to fit the top of the raised portion of the valve-seat, substantially as set forth.

340,108. ROTARY JEWEL. HEINRICH GAENSSLEN and GOTTHILF GAENSSLEN, Esslingen, Würtemberg, Germany. Filed July 25, 1885. (No model.)



Claim.—1. In jewelry, the combination consisting of the jewels mounted upon arbors, one within the other, the arbors adapted to be rotated in opposite directions by watch or clock mechanism.

2. In jewelry, the combination consisting of the barrel-wheel *a*, draw-pivot Z, spring-wheel *b*, wheel *c*, spring-wheel *d*, wheel *e*, escapement-wheel *g*, plates H and *o*, wheel *h*, wheels *i m*, bridge *v*, spring-wheel *n'*, wheel *n*, fixed wheel *k*, and stars *q* and *s*, the whole forming a complete device, substantially as shown and described.

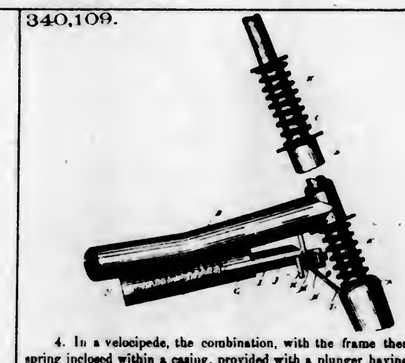
340,109. VELOCIPEDE. FRANCIS J. J. GIBBONS, Wolverhampton, County of Stafford, England. Filed Dec. 31, 1885. (No model.) Patented in England Mar. 19, 1885, No. 3,575.

Claim.—1. In a velocipede, the combination, with the frame thereof, having a plunger inclosed within a casing and provided with a cross-head, of a spring which presses against said plunger and normally keeps the steering-wheel in a straight line.

2. In a velocipede, the combination, with the fork thereof, having arms which support the steering-bar, of the plunger inclosed within a casing and provided with a cross-head, and the spring which presses said plunger against the steering-bar and normally keeps the steering-wheel in a straight line.

3. In a velocipede, the combination, with the fork thereof, having arms which support the curved steering-bar, of the plunger inclosed within a casing and provided with a cross-head, and the spring which presses said plunger against the steering-bar and normally keeps the steering-wheel in a straight line.

340,109.



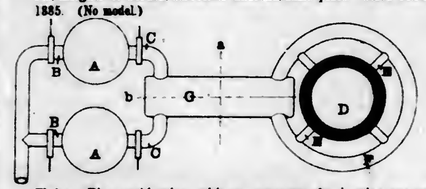
4. In a velocipede, the combination, with the frame thereof, of a spring inclosed within a casing, provided with a plunger having a cross-head, and a fork provided with a steering-bar, against which the cross-head of the plunger abuts, whereby the steering-wheel is normally kept in a straight line.

5. In a velocipede, the combination, with the fork thereof, having arms which support the steering-bar, of the spring inclosed within the casing, whose exterior is provided with guide-bars, and a plunger having a cross-head, the spring pressing the plunger against the steering-bar, and the guide-bars directing the movement of the plunger.

6. In a velocipede, the combination, with the fork thereof, having arms which support a curved steering-bar, of the spring inclosed within the casing, whose exterior is provided with guide-bars, and a plunger having a cross-head, the spring pressing the plunger against the steering-bar, and the guide-bars directing the movement of the plunger.

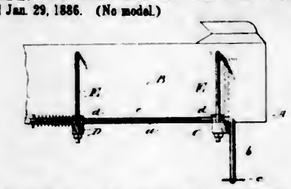
7. In a velocipede, the combination, with the fork thereof, having upwardly-extending arms which support a curved steering-bar, of the spring inclosed within a casing, whose exterior is provided with guide-bars, and the plunger having a cross-head, the spring pressing the plunger against the steering-bar, and the guide-bars directing the movement of the plunger.

340,110. HOT-BLAST CONDUIT. FRED. W. GORDON, Philadelphia, Pa., assignor to Gordon, Strobel & Laurean, same place. Filed Oct. 26, 1885. (No model.)



Claim.—The combination, with an apparatus for heating gaseous fluids and an apparatus for utilizing such heated fluids, of a conduit connecting the two apparatus and provided with a mass of heat-absorbing material arranged to be traversed by said fluids.

340,111. STEP FOR VEHICLES. JOHN T. GRAY, Deep Water, Mo. Filed Jan. 29, 1886. (No model.)



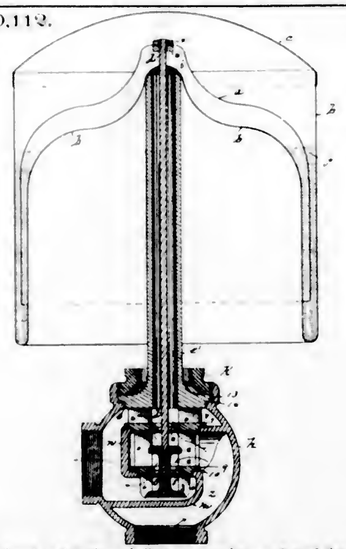
Claim.—1. In a vehicle-step, the endwise-moving rocking bar *b*, attached to the vehicle and carrying the step, and the spring for locking the bar and step in position when the latter is uptorned, substantially as described.

2. The bent bar journaled to the vehicle and carrying the step, and having the brace or arm *f* to bear under the body or bed of the wagon or other support to prevent the step from swinging under the same, substantially as described.

340,112. GAS-REGULATOR. HENRY H. GRIDLEY, Holyoke, Mass. Filed Jan. 18, 1886. (No model.)

Claim.—1. A gas-regulator consisting of the following elements, viz: a valve-case, *h*, having the requisite inlet and outlet openings and an screw-threaded opening in its upper side, through which the valve-cage

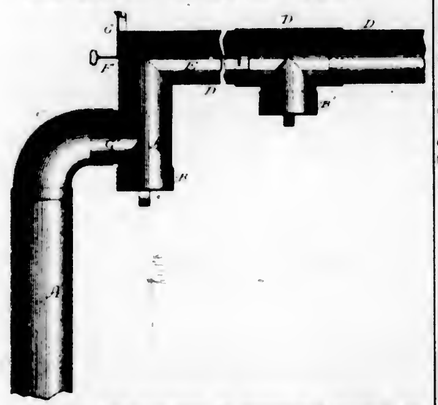
340,112.



is introduced, and having a hollow cage-receiver, *n*, formed therein, one end of which is open to receive gas, and whose upper and lower walls are perforated to receive the valve-cage, combined with a valve-cage, *e*, having side openings and valve-seats therein and flanges thereon to bear on said walls of the receiver, and having the head 13, provided with the tubular stem *e'*, the nut K, the double-headed valve *o*, the gas-holder *a*, the valve-spindle *d*, connecting the latter and said valve, and the glycerine-cup *b*, permanently attached to the upper end of said hollow stem, substantially as set forth.

2. The valve-case *h*, having the hollow cage-receiver *n* therein, the valve-cage *e*, passing vertically through said receiver and provided with two valve-seats and the hollow stem *e'*, the nut K, securing said cage to the case *h* and to said receiver, the double-headed valve *o*, the gas-holder *a*, the spindle *d*, passing through said stem and connected to the said holder and valve, and the glycerine-cup *b*, permanently attached to said hollow stem, combined and operating substantially as set forth.

340,113. SOOT-ACCUMULATOR. ANDREW J. GRUSH and JOHN B. S. CASE, Defiance, Iowa. Filed Jan. 26, 1885. (No model.)

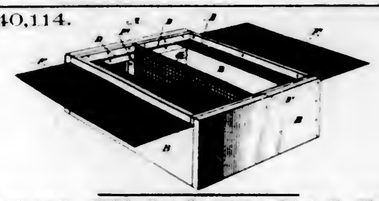


Claim.—In a soot-accumulator, the combination of the pipe D, having a pocket, B', provided with a removable cap, scraper E, and slide G, all arranged to operate substantially as set forth.

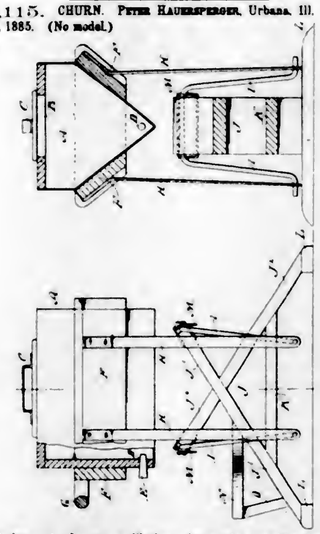
340,114. BEE-TRAP. WILLIAM P. HAMLIN, Rogers, Ark. Filed Dec. 22, 1885. (No model.)

Claim.—The bee-trap herein described, consisting of the body portion having the two sliding bottom pieces, a suitable cover, and a vertical sliding partition, substantially as described.

340,114.



340,115. CHURN. PETER HAUERSPERGER, Urbana, Ill. Filed June 16, 1885. (No model.)



Claim.—1. In an oscillating churn, the combination, with the cream-box A and frame F, of the series of bars H, supporting the same, and the corresponding series of rods, I, pivoted at their lower ends to the said bars, and at their upper ends to the cross-pieces J' and J² of the main standard J, substantially as shown and described.

2. In an oscillating churn, the combination, with the cream-box A, having a wedge-shaped bottom and an aperture in its end, of a frame, F, surrounding the same, and provided with the handle G, a series of supporting-bars, H, attached to the frame, and a series of suspending-rods, I, pivoted at their lower ends to said bars, and at their upper ends to the cross-pieces J' and J² of the standard J, substantially as shown and described.

3. In an oscillating churn, the combination, with the cream-box A having a wedge-shaped bottom and apertures B and D, of a frame, F, surrounding the box, provided with handle G, a series of supporting-bars, H, a series of suspending-rods, I, and the standard J, formed of the cross-pieces J' and J², the cross-rests or feet L, the handles M, and the platform N, substantially as shown and described.

340,116. PERCH AND FOOD HOLDER FOR CAGES. GEORGE C. HINMAN, Springfield, Mass. Filed Sept. 26, 1884. (No model.)



Claim.—1. In combination, a perch and diverging spring holding pieces secured thereto and formed with grooves to engage with the cage-bars, substantially as described.

2. A perch-holder consisting of a base-piece, whereby it is secured to the perch, and formed with diverging spring-arms having grooves in their free ends to engage with the bars of the cage, substantially as described.

3. The bird-perch holder herein described, consisting of the cross-head c, with means to secure it to the end of the perch, and the diverging spring-arms *d d'*, formed with vertical grooves *f* in their free ends, substantially as described, and for the purpose stated.

4. The perch-holder consisting of the cross-head c, with means to secure it to the end of perch, the diverging spring-arms *d d'*, provided with vertical grooves *f* in their free ends, and extended finger-pieces *e*, substantially as described, and for the purpose stated.

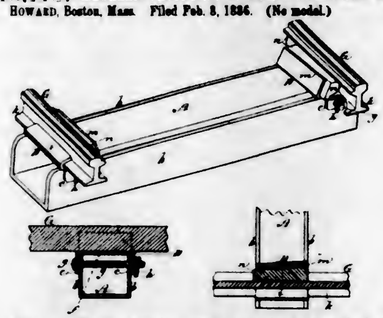
5. The perch-holder consisting of the cross-head c, with means to secure it to the end of the perch, the diverging spring-arms *d d'*, formed with vertical grooves *f* in their free ends, and the bottom piece, *g*, substantially as described, and for the purpose stated.

340,117. RIVET. OLIVER G. HOLT, Louisville, Ky. Filed Mar. 13, 1885. (No model.)



Claim.—A rivet for leather, composed of the undivided tube A, the heads B and D, and the tapering solid post C, the head B and the post C being formed of one piece of metal, the two portions adapted to be applied substantially as and for the purpose described.

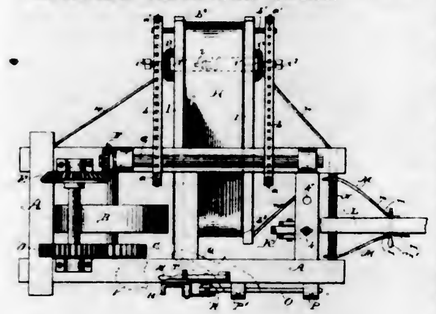
340,118. METALLIC CROSS-TIE FOR STREET-RAILWAYS. HENRY HOWARD, Boston, Mass. Filed Feb. 8, 1886. (No model.)



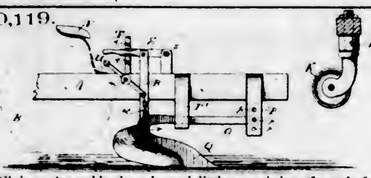
Claim.—1. The combination, with a cross-tie, A, formed of channel-iron, having its open side uppermost to receive the paving-blocks, of a rail clamp or chair adapted to rest upon the upper edges of the vertical side flanges of the tie, and having ears or lugs *c* extending down upon the outer sides of the said flanges, and secured thereto by a transverse bolt, *g*, passing through the same, substantially as set forth.

2. The combination, with a cross-tie, A, formed of channel-iron, having its open side uppermost to receive the paving-blocks, of a rail clamp or chair, D, provided on one side with a lip, *i*, extending over the base-flange of the rail, and on the opposite side with a flange, *m*, inclined inwardly toward the top and side of the rail, and extending nearly up to the top of the same, and the wedge *n*, adapted to be driven in between the said flange *m* and the side of the rail, said clamp resting upon the upper edges of the vertical side flanges, *b*, of the tie, and having ears or lugs *c* extending down upon the outer sides of the said flanges *b*, and secured thereto by a transverse bolt, *g*, passing through the same, all constructed to operate substantially in the manner and for the purpose described.

340,119. COMBINED GRADER AND DITCHER. GEORGE D. HUFFMAN, Rossville, Ill. Filed Dec. 16, 1885. (No model.)

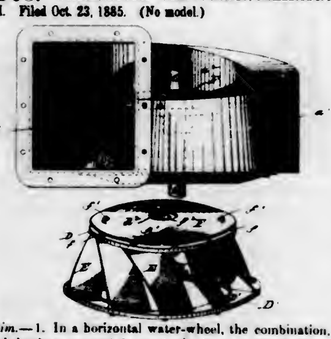


340,119.



Claim.—A combined grader and ditcher consisting of a main frame, A, a single driving-wheel, B, an adjustable plow, Q, a carrier-frame, I I, and endless apron H, sprocket-wheels *a a a' a'*, and chain-belts *b b*, an adjustable wheel, K, and the device consisting of the adjustable hounds M M, constructed to effect the purpose described, all constructed, combined, and arranged to operate substantially as set forth and described.

340,120. WATER-MOTOR. JOHN P. HUSSEY, Gilmanton Iron Works, N. H. Filed Oct. 23, 1885. (No model.)



Claim.—1. In a horizontal water-wheel, the combination, with an upper disk having a central depression and provided with three or more perforations, as shown, and a lower concaved disk of about one-fourth greater diameter, having a central opening, of floats formed slightly twisting, their tops and bottoms being placed tangentially, respectively, with the periphery of said central depression in upper disk and the central opening in lower disk, whereby their inner edges assume a more acute angle than do their outer edges, all constructed and operating substantially as and for the purpose set forth.

2. The combination, in a water-wheel having upper and lower disks and interposed floats, substantially as described, of a circular convexed cap-piece and partitions formed on its under side, and on the same angle as are the tops of said floats relative to the periphery of said cap-piece, whereby an auxiliary force is obtained from waste water escaping upward between the upper disk of the wheel and its conduit, as specified.

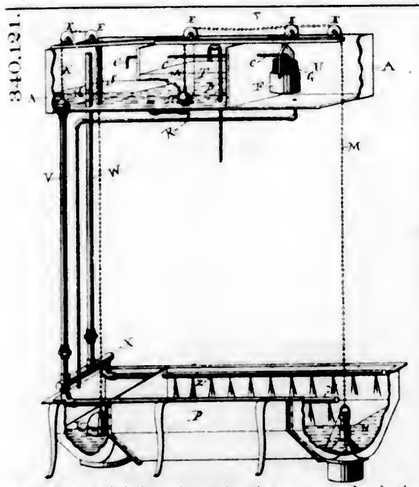
3. In a water-wheel and conduit, all constructed and operating substantially as described, the combination, with the upper disk of said wheel and an annular flange formed upon the inner wall of said conduit, of a circular cap or plate piece secured by cap-screws to said upper disk and extending slightly over said annular flange, and partitions formed underneath and on the same angle as are the tops of the floats of said wheel, as and for the purpose described and set forth.

340,121. AUTOMATIC DISCHARGE FOR VESSELS HOLDING LIQUIDS. THOMAS HYDE, Albany, N. Y. Filed Jan. 12, 1884. (No model.)

Claim.—1. As a new article of manufacture, an automatic discharge for vessels holding liquids, consisting of a vessel to hold such liquid divided into three chambers by suitable partitions, two of which chambers shall be connected by means of a bent pipe, a conducting-pipe extending from the chamber which is connected to the inlet-chamber of said vessel by said bent pipe to a vessel having perforations in or near the bottom thereof in the third chamber of the vessel first above mentioned, which vessel having the perforations in or near its bottom is hung from a chain running over pulleys placed in a proper manner above or on top of said first above-mentioned vessel, upon one end of which chain is a valve to close a hole in the bottom of the inlet-chamber of said first above-mentioned vessel, and upon the other end of which chain is another valve to close the opening leading into any pipe outside of and separated from said vessel, subdivided as aforesaid, which it may be desired to close, for the purposes set forth.

2. As a new article of manufacture, an automatic discharge for vessels holding liquids, consisting of three vessels suitable for holding liquids, two of which shall be connected together by means of a pipe, a conducting-pipe extending from the vessel connected by said pipe to the other vessel into which the liquid first enters to a fourth vessel having a perforation in or near the bottom thereof situated in the third vessel, which fourth vessel having perforations in or near the bottom thereof is hung from a chain running over pulleys placed in a proper manner above or on the top of the vessel in which said fourth vessel is placed, upon

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one end of which chain is a valve to close the entrance to the pipe leading from the bottom of the inlet-chamber to the second chamber to which the inlet-chamber is connected, and upon the other end of which chain is another valve to close the opening leading into any pipe outside of and away from said three vessels which it is desired to close, for the purposes set forth.

3. As a new article of manufacture, an automatic discharge for vessels holding liquids, consisting of a vessel to hold such liquids divided into two chambers, (one of which shall be an inlet-chamber,) a conducting-pipe extending from the said inlet-chamber to a third vessel having perforations in or near the bottom thereof placed in the second chamber of said vessel, which third vessel having the perforations in or near its bottom is hung from a chain resting over pulleys placed in a proper manner above or on top of said vessel having the two chambers, upon one end of which chain is a valve to close a hole in the bottom of said inlet-chamber of said vessel, and upon the other end of which chain is another valve to close the opening leading into any pipe outside of and separated from said vessel, subdivided as aforesaid, which it may be desired to close, for the purpose set forth.

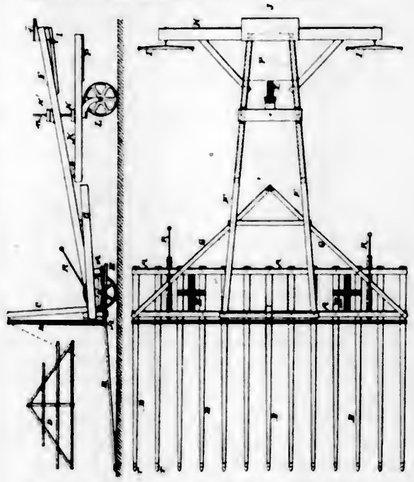
4. As a new article of manufacture, an automatic discharge for vessels holding liquids, consisting of two vessels suitable for holding liquids, (one of which shall be an inlet-vessel,) a conducting-pipe extending from said inlet-vessel to a third vessel having perforations in or near the bottom thereof placed in the second vessel, which third vessel having said perforations in or near its bottom is hung from a chain running over pulleys placed in a proper manner above or on top of said second vessel, upon one end of which chain is a valve to close a hole in the inlet-vessel, and upon the other end of which chain is another valve to close the opening leading into any pipe outside of and separated from said vessels which it may be desired to close, for the purpose set forth.

5. As a new article of manufacture, an automatic discharge for vessels holding liquids, consisting of a vessel to hold such liquids divided into three chambers by suitable partitions, one of which (the inlet-chamber) shall be connected to a second chamber by means of a pipe, a conducting-pipe extending from the chamber that is connected by said pipe to the inlet-chamber to a second vessel having perforations in or near the bottom thereof placed in the third chamber of said first vessel, which second vessel having the perforations in or near its bottom is hung from a chain running over pulleys placed in a proper manner above or on top of said third chambered vessel, upon one end of which chain is a valve to close the hole in the inlet-chamber leading into the pipe connecting said inlet-chamber to the second chamber, and upon the other end of which chain is another valve to close an opening leading into any pipe outside of and separated from said three-chambered vessel which it may be desired to close, and the valve in the chamber connected, as aforesaid, by said pipe to the inlet-chamber, connected by a chain running over a pulley placed above or on top of said three-chambered vessel to a floating valve in an outside vessel, for the purposes set forth.

6. As a new article of manufacture, an automatic discharge for vessels holding liquids, consisting of three vessels suitable for holding liquids, one of which (the inlet-vessel) shall be connected by means of a pipe to a second, a conducting-pipe leading from said second vessel to a fourth vessel having perforations in or near the bottom thereof placed in the third vessel, which fourth vessel having said perforations is hung from a chain running over pulleys placed in a proper manner above or on top of said inlet and third vessels, upon one end of which chain is a valve in the inlet-vessel to close the hole leading into the pipe connecting said inlet with said second vessels, and upon the other end of which chain is another valve to close the opening leading into any pipe outside of and separated from said three vessels, and a valve in said second vessel connected, as aforesaid, to said inlet-vessel, connected by a chain running over a pulley placed above or on top of said second vessel to a floating valve in a fifth vessel, for the purposes set forth.

7. In an automatic discharge for vessels holding liquids, the combination of a vessel, A, to hold such liquid, divided into three chambers, S T U, by suitable partitions, one of which chambers, being an inlet-chamber, shall be connected by a pipe, D, to a second chamber, *a*, conducting-pipe, C, extending from the said second chamber connected, as aforesaid, to said inlet vessel, to a vessel, F, having perforations in or near the bottom thereof, placed in the third chamber of said vessel A, which vessel F is hung from a chain, M, running over pulleys E E, placed in a proper manner above or on top of said vessel A, upon one end of which chain M is a valve, L, placed in said inlet-chamber to close the hole leading from said inlet-chamber to said connecting-pipe D, and upon the other end of which chain M is another valve, N, to close the entrance to a pipe leading from a basin, P, also a valve, H, placed in said second chamber to close the entrance to a pipe, U, leading from said second chamber, which valve H is connected to another float, I, by a chain running over pulleys E E, placed above or on top of said second chamber of the vessel A, an overflow-pipe, W, in said second chamber of said vessel A, an inlet-pipe, B, entering into said inlet-chamber, and a waste-pipe, R, leading from said third chamber of said vessel A to a basin, P, also the horizontal pipe X, connected to the pipe V and overflow-pipe W, and also to the horizontal perforated pipes Y and Z, and the basin P, for the purposes set forth.

340,122. HORSE HAY RAKE AND CARRIER. BYRON JACKSON San Francisco, Cal. Filed Oct. 27, 1884. (No model.)



Claim.—1. A horse-rake mounted upon wheels, having a rearwardly-extending frame rigidly connected with it and a seat upon the rear end of this frame, in combination with a supplemental frame having its front end hinged to the main frame, and consisting of the timbers K and the cross-timbers N N', a caster-wheel supporting the center of the supplemental frame, and provided with a stem which passes through the cross-timbers, and a platform at the rear of the frame, to which the operator may transfer his weight from the seat, substantially as herein described.

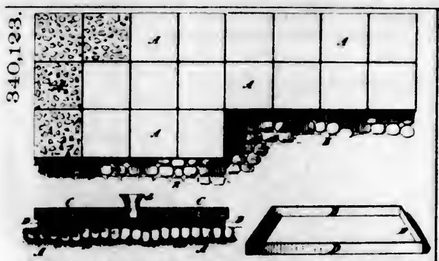
2. A rake supported upon wheels, having a frame rigidly connected and extending rearwardly from it, a transverse bar fixed to the rear end, and to which the team may be connected, a supplemental hinged lever-frame having its front end connected with the main lever or frame, and its center supported by a caster-wheel, as herein described.

340,123. PAVEMENT. FRANK G. JOHNSON, New York, N. Y. Filed Sept. 17, 1885. (No model.)

Claim.—1. In the construction of pavements, the combination of melted iron *a a* and crushed stone *b b*, substantially in the manner and for the purposes described.

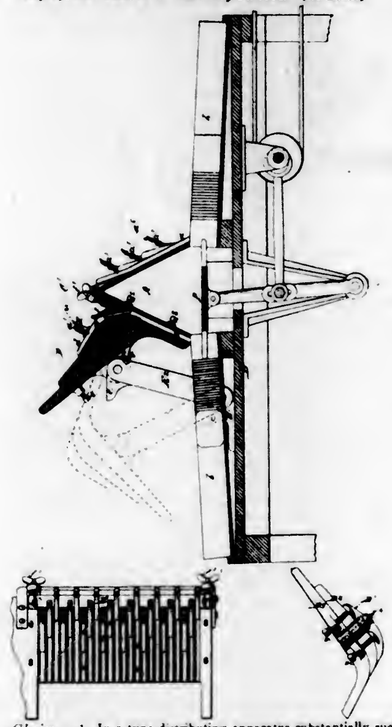
2. In the construction of pavements, the combination of melted iron *a a*, crushed stone *b b*, and the foundation-stone B B, substantially as and for the purpose set forth.

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3. In the construction of pavements, the combination of melted iron *a a*, crushed stone *b b*, and molding-frame D D D, substantially as and for the purpose described.

340,124. TYPE-DISTRIBUTING APPARATUS. LOUIS K. JOHNSON and A. AUGUSTUS LOW, Brooklyn, assignors to the Alden Type Machine Company, New York, N. Y. Filed May 12, 1884. (No model.)



Claim.—1. In a type-distributing apparatus substantially such as herein designated, the combination, with a type-receiver, of a guard-rail or gage-plate projecting into the receiver at a point between its widened receiving-surface, upon which the types are dropped, and its narrower portion, through which they pass to the conduits, for the purpose described.

2. In a type-distributing apparatus substantially such as herein designated, the combination, with a type-receiver, of a guard-rail or gage-plate projecting into the receiver at a point between its widened receiving-surface, upon which the types are dropped, and its narrower portion, through which they pass to the conduits, the said guard or gage plate being made adjustable with relation to the floor of the receiver, for the purpose and substantially in the manner described.

3. In a type-distributing apparatus substantially such as designated, a series of superimposed receiving-plates, each formed with receiving-channels, the lower ends of which form convex curves which conduct the types into conduits placed at an opposed angle to that of the plates, in combination with the said conduits for conducting the type into the containing-channels, substantially in the manner and for the purpose described.

4. In a type-distributing apparatus substantially as described, a series of superimposed receiving-plates, the upper ones of which are formed with tongues or projections which enter a prescribed distance into the type-channels formed in those next immediately below, for the purpose and substantially in the manner described.

5. In a type-distributing apparatus substantially such as described, a series of superimposed receiving-plates, the upper ones of which are formed with tongues or projections which enter the type-channels formed in those next immediately below, the said receiving-plates being adjustable upon and with relation to each other, for the purpose and substantially in the manner described.

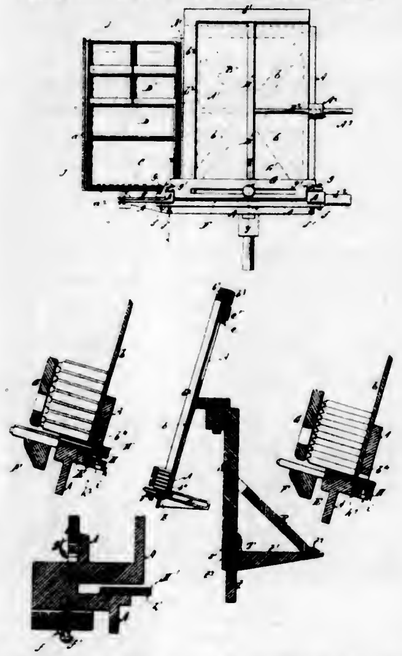
6. In a type-distributing apparatus substantially such as described, the combination, with the intermediate conduit-plates which conduct the types to the containing-channels, of a series of superimposed plates formed with receiving-channels, the lower ends of which form convex curves which conduct the types into the conduits which are opposed in inclination to the receiving-plates, which latter are adjustable with relation to the said intermediate conduit-plates, for the purpose and substantially in the manner described.

7. In a type-distributing apparatus substantially such as described, the combination, with the conduits and with the convex ends of the receiver-channels, of concave receiving and guiding surfaces opposed thereto, arranged in connection with the conduits, for the purpose and substantially in the manner described.

8. In a type-distributing apparatus substantially such as designated, the combination, with the conduits for conducting the types to the setter-channels and with the convex receiver-channels, of concave receiving and controlling surfaces or guides which are adjustable with relation to the said receiver-channels, substantially in the manner and for the purpose described.

9. In a type-distributing apparatus substantially such as described, in combination with the conduits for conveying the types to the containing or setter channel, a series of superimposed receiving-plates mounted upon the bed of the apparatus in such manner that they may be swung back away from the said conduits, substantially in the manner and for the purpose described.

340,125. TYPE HOLDER AND SEPARATOR. LOUIS K. JOHNSON and A. AUGUSTUS LOW, Brooklyn, assignors to the Alden Type Machine Company, New York, N. Y. Filed June 15, 1885. (No model.)



Claim.—1. In combination with the type-column shoulder and the pivoted separator for detaching the lowest line of type therefrom, an independent type-line support situated in front of, below, and parallel to the said type-column shoulder, for the purpose and substantially in the manner described.

2. In combination with the type-column shoulder and the pivoted separator for detaching the lowest line of type therefrom, the independent parallel type-line support, suspended upon the frame of the device by means that permit of its adjustment in position with relation to the said type-column support, substantially in the manner and for the purpose described.

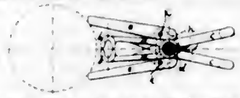
3. In combination with a type-column support, a type-line support, and a pivoted type-line separator and forwarder, a type-guard situated above and supported upon the frame of the device by means which permit of its adjustment with relation to the type-line support, substantially in the manner and for the purpose described.

4. In combination with the type-column and type-line supports, the pivoted type-line separator and forwarder, the body of which is formed of two parallel blades or plates which are adjustable with relation to each other, substantially in the manner and for the purpose described.

5. In combination with the type-column and type-line supports and the pivoted separator and forwarder, an independent type-holder or back-rest suspended upon the frame of the device by means which permit of its adjustment with relation to the said type-column support, substantially in the manner and for the purpose described.

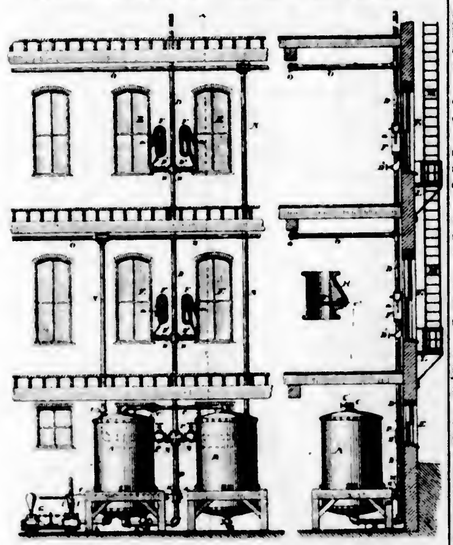
6. The combination and arrangement in a single device, substantially as herein described, with the stationary type-column support, of an adjustable line-support, an adjustable front guard, an adjustable type-holder or back-rest, and a pivoted type separator and forwarder which is adjustable in thickness, substantially in the manner and for the purpose described.

340,126. POT-LIFTER. LOUIS T. KARRAS, Dresden, Saxony, Germany. Filed Feb. 1, 1886. (No model.)



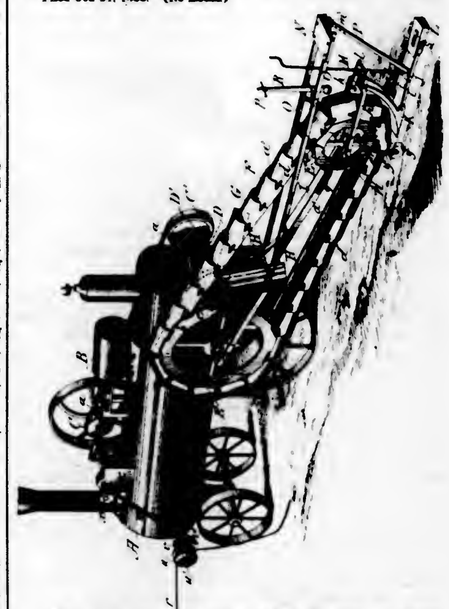
Claim.—In a pot-lifter or instrument for handling pots, crucibles, and other vessels, the combination of the arms or legs *a a*, the claws *b*, handles *c*, and bell-mouthed hand-protector *g*, with the stays *e e*, substantially as and for the purpose described in the foregoing specification and shown in the accompanying drawings.

340,127. APPARATUS FOR EXTINGUISHING FIRES. EDWARD KENDALL, Cambridgeport, Mass. Filed Jan. 23, 1884. (No model.)



Claim.—In an apparatus for extinguishing fires, the combination of one or more tanks or receptacles filled with air and water under pressure, a discharge-pipe leading therefrom to the top of the building, a pump for supplying water to said tank, a valve or gate in said discharge-pipe arranged and adapted to be operated by the movement of the water through said pipe, and a rod connecting said valve or gate with the valves of the pump, whereby the upward flow of water through said discharge-pipe will cause said pump to be set in motion, substantially as and for the purposes described.

340,128. DITCHING-MACHINE. ROBERT H. KERSEY, Lebanon, Ind. Filed Oct. 31, 1885. (No model.)



Claim.—1. As an improvement in ditching-machines, the bottomless and endless scoops G, having a U-shaped cross-section smaller at one end than the other and united by pivotal connections to form a continuous chain or trough, substantially as shown and described.

2. The series of bottomless, endless, and tapering scoops united by pivotal connection, forming an endless and continuous trough, in combination with the wheel E, which closes the open side of the scoops during the time their contents are in contact with the periphery of said wheel while being elevated to the discharging-point, as set forth.

3. The continuous chain of bottomless and endless tapering and overlapping scoops, in combination with the spring-scraper arranged and operating substantially as and for the purpose described.

4. The continuous chain of bottomless, endless, and overlapping scoops, in combination with the spring-scraper and discharging-chutes arranged to discharge the earth upon one or both sides of the ditch, and operating conjointly, in the manner specified.

5. In a ditching-machine, the sprocket driving-wheel E, provided with recessed side flanges, *b b*, and connecting web or bottom *c*, arranged to carry the scoop-chain and form a bottom for its open side while the chain is in contact with the wheel, as set forth.

6. The scoop-chain or trough F, in combination with the wheels E E', constructed as described, and inclined bifurcated swinging frame I, extending between the wheels and forming a support for the spring-scraper and discharging-chutes, as set forth.

7. The combination, with the scoop-chain and its supporting devices, of the vertically-adjustable plow K, bars *h*, swiveling-nut, and adjusting-screw, constructed and arranged to carry and adjust the plow and shape the bottom of the ditch, as set forth.

8. The combination, with the scoop-chain and plow K, of the straps or bars *h*, provided with cutters *k'*, for trimming the sides and edges of the ditch, as set forth.

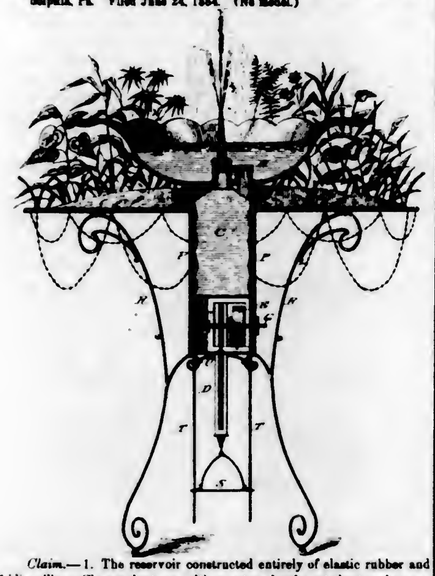
9. The combination of the plow K with the fulcrum-block or sledge L, connected to the plow by jointed bars *i*, and the adjusting-screw M, for tipping the plow-point, all arranged and operating conjointly, for the purpose specified.

10. In a ditching-machine, the excavating mechanism, in combination with the adjusting devices, a pendulum provided with a sight-bar, and a spirit level or levels attached to the machine to aid in keeping the predetermined line and to show the inclination or grade of the bottom of the ditch as excavated.

11. In a ditching-machine, the combination, with the swinging frame provided at its rear end with arms *z z*, of the removable caster-wheel *y*, having shank *y'*, for connection with said arms, in the manner and for the purpose described.

12. The plow K, provided with straps *h h*, having swiveled cross-bar *l*, adjusting-screw M, cross-bar *j*, bars *i i*, and sledge L, as shown and described, for changing the inclination of its point, in combination with a spirit-level for determining the amount and direction of such inclination, substantially as shown and described.

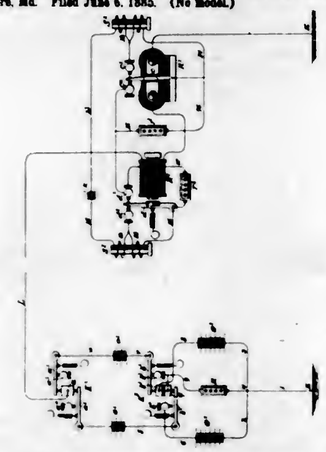
340,129. SELF-ACTING PARLOR-FOUNTAIN. JOHN KERR, Philadelphia, Pa. Filed June 24, 1884. (No model.)



Claim.—1. The reservoir constructed entirely of elastic rubber and folding like a Chinese lantern, with spout and valve at the top, in combination with the operating-bar D, the winding-spring, and the pinion, substantially as herein described.

2. The self-acting valve H, placed in bottom of basin A, combined with reservoir C, said valve consisting of the scalloped cork disk K, with hole in center, said hole covered with leather, *m*, substantially as and for the purpose herein specified.

340,130. QUADRUPLEX TELEGRAPH. JOSEPH W. LARNER, Buffalo, N. Y., assignor to the Baltimore and Ohio Telegraph Company, Baltimore, Md. Filed June 6, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth of a main line, two batteries, conductors permanently connecting the positive pole of one and the negative pole of the other with the earth, two smaller batteries, a key for either connecting the negative pole of the first larger battery with the positive pole of one of the smaller batteries, and simultaneously connecting the positive pole of the second larger battery with the negative pole of the other smaller battery, or connecting said poles of the smaller batteries with the earth independently of the larger batteries, and a key for connecting either the negative pole of the first smaller battery or the positive pole of the second smaller battery with the main line.

2. The combination, substantially as hereinbefore set forth, with a local battery, of two receiving-instruments in the circuit thereof, and means for shunting the coils or a portion of the coils of either one or both of said instruments, substantially as described.

3. The combination, substantially as hereinbefore set forth, with a main line, and a neutral and a polar relay included therein, of a local battery having a permanently-closed circuit, two receiving-instruments having their electro-magnet coils included in branch or derived circuits, and means for completing and interrupting the connections through such branch circuits through the instrumentality of said relays.

4. The combination, substantially as hereinbefore set forth, with a main line and two relays, of a local battery, conductors leading from the contacts and the armature-levers of said relays to each pole of said battery, and a receiving-instrument having a portion or the whole of its coils included in the portion of the conductor between the lever and one of the contacts of each relay.

5. The combination, substantially as hereinbefore set forth, with a telegraphic line and two relays, of a local battery, conductors constituting a permanently-closed circuit for said battery leading from each pole of the battery to both the front and back contact-stops and the armature-lever of one of said relays, and a receiving-instrument included between said lever and one of said contacts, substantially as described.

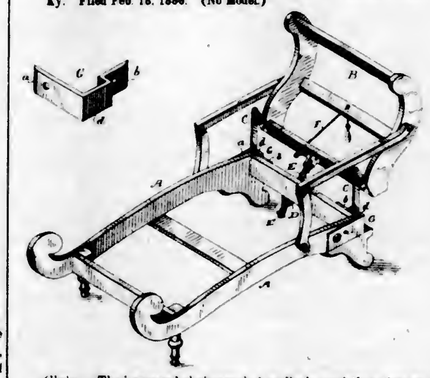
6. The combination, substantially as hereinbefore set forth, of two relays, their armature-levers and contacts, a local battery, a conductor leading from one pole of said battery to one of said contacts, from said contact to the corresponding lever, from said lever to the remaining corresponding contact, from this contact to one of the contacts of the other relay, from the last-named contact to the corresponding lever, from the last-named lever to the remaining contact, and from this contact to the remaining pole of the battery, and two receiving-instruments having their coils or a portion thereof respectively included between one of said contacts and the corresponding lever of each relay.

7. The combination, substantially as hereinbefore set forth, with a main line and two relays, of a local battery, conductors leading from the contacts and the armature-levers of said relays to each remaining pole of said battery, and a receiving-instrument having a portion or the whole of its coils included in the portion of the conductor between the lever and one of the contacts of each relay, and an artificial resistance included in the portions of the conductor leading from each lever to the remaining contact of the same.

8. The combination, substantially as hereinbefore set forth, of two relays, a local battery, two differentially-wound receiving-instruments, a permanently-closed circuit for said battery in which both coils of each receiving-instrument are included, and means for controlling shunt-connections around one coil of either or both receiving-instruments by the operation of said relays.

9. The combination, substantially as hereinbefore set forth, of two relays, a local battery, two differentially-wound receiving-instruments, a permanently-closed circuit for said battery in which both coils of each receiving-instrument are included, and means for controlling shunt-connections around one coil of either or both receiving-instruments by the operation of said relays, and for simultaneously inserting a compensating resistance.

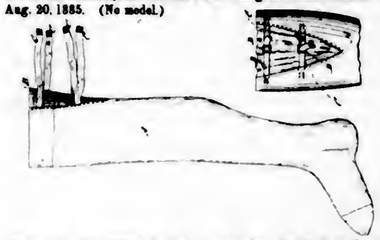
340,131. RECLINING-CHAIR COUCH. CARL A. LINDNER, Louisville, Ky. Filed Feb 18, 1886. (No model.)



Claim.—The improved chair-couch described, consisting of the main frame, the head-section, the hinges C, connecting the head-section with the main frame, the hinged arms connected to the side rails of the main frame and head-section, the hinged cap, the slotted casting secured to

the forward portion of the main frame, and the rack-brace pivoted to the head-section, all arranged to operate substantially as described.

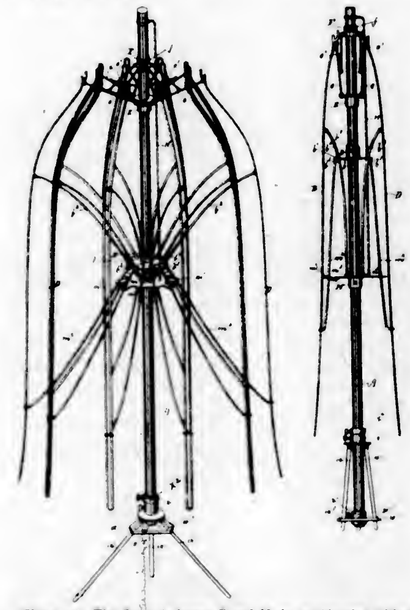
340,132. STOCKING. HANS LOESSER, New York, N. Y., and FLORA B. PERSCH, Philadelphia, Pa., said Persch assignor to said Loesser. Filed Aug. 20, 1885. (No model.)



Claim.—1. A stocking having a gore-piece inserted in the upper end of the body of the stocking, and having bands the ends of which are extended between the gore-piece and the body and attached to the latter, substantially as described.

2. A stocking having a gore-piece inserted in its upper end, and having bands the ends of which are extended between the gore and body piece of the stocking and connected thereto by the seam which unites the gore and stocking, substantially as described.

340,133. SKIRT-FORM. MARY A. LUCEY, Boston, Mass. Filed May 16, 1885. (No model.)



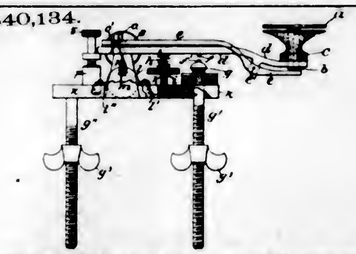
Claim.—1. The flanged sleeves B and M, in combination with the braces b^2 and m^1, ribs D, and post A, the braces of one sleeve extending through holes in the flange of the other sleeve, substantially as described.

2. In combination, pole A, having a stationary scale, H, secured lengthwise of the pole, and a skeleton frame supported upon the pole, and provided with sleeves which slide up and down the pole along the scale H, whereby the frame is adjusted to the size desired.

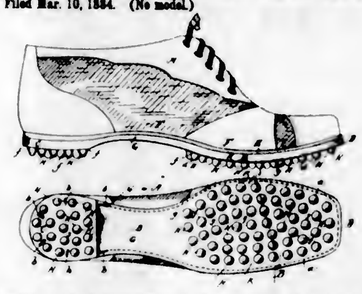
340,134. ELECTRIC-TELEGRAPH KEY. ROBERT A. MACREADY, New York, N. Y. Filed June 1, 1885. (No model.)

Claim.—1. In a telegraphic key, the combination of a tilting chamber containing mercury and electrical conductors connected with the mercury, with levers forming the operating-key.

2. In a telegraphic key, the combination, substantially as shown and described, consisting of the knob *a*, squared shank *b*, hollow knob *c*, tongue *d*, screw *5*, base *k*, nut *p*, spring *h*, platinum points *f f'*, pins *g' g''*, finger-nuts g^2 g^3, pin *i*, nut *o*, slot *o'*, chain *n*, lever *e*, pin *e'*, tilting chamber *l*, disk l^2, axle *m*, mercury *t*, and spirally-wound conductors *f f'*, the whole forming a complete device.



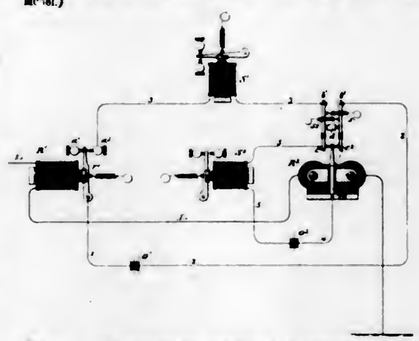
340,135. BOOT OR SHOE. HOWARD T. MARSHALL, Brockton, Mass. Filed Mar. 10, 1884. (No model.)



Claim.—1. A boot or shoe having an outer sole permanently secured to the upper and inner sole, and its outer or treading surface made of india-rubber or any of its compounds, and provided with independent projections integral with said rubber and severally separated from each other, and with the surface of the sole exposed between and around them, substantially as described, and for the purpose specified.

2. A boot or shoe having an outer sole permanently secured to the upper and inner sole, and its outer or treading surface made of india-rubber or any of its compounds, and provided with independent projections integral with said rubber of conoidical and in planes parallel with said outer surface of circular or substantially circular form, and severally separated from each other, and with the surface of the sole exposed between and around them, substantially as described, and for the purpose specified.

340,136. LOCAL CIRCUIT FOR QUADRUPLEX TELEGRAPHS. WILLIAM MAVER, Jr., Jersey City, N. J., assignor to the Baltimore and Ohio Telegraph Company, Baltimore, Md. Filed Sept. 5, 1885. (No model.)



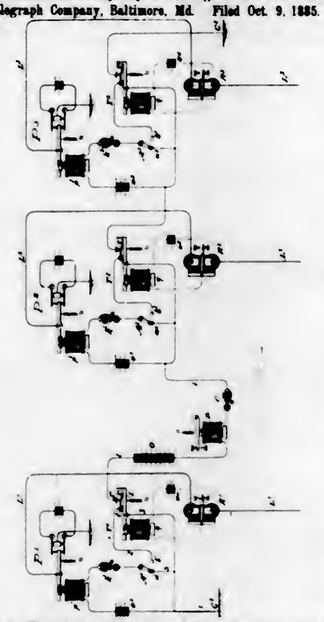
Claim.—1. The combination, substantially as hereinbefore set forth, with a polarized and a neutral relay, of a local circuit the connections of which are controlled by said neutral relay, two contact-levers applied to the lever of said polarized relay and included in said local circuit, a contact-stop for said levers through which the connections between said levers are normally completed, and means for causing one or the other of said levers to be separated from said stop by currents of the strength required to operate said neutral relay.

2. The combination, substantially as hereinbefore set forth, with a polarized and a neutral relay, and a sounder responding to the movements of the neutral relay, of a local battery for actuating said sounder, a circuit-controlling device applied to the armature of the polarized relay for maintaining the circuit of said local battery, interrupted by the operation of said polarized relay when actuated by currents of the strength required for operating said neutral relay, and consisting of a stationary contact and two movable contacts resting against the same, except when one or the other is pressed away by the armature of the polarized relay.

3. The combination, substantially as hereinbefore set forth, of a polarized and a neutral relay, a sounder responding to the movements of the neutral relay, a circuit-controlling device applied to the polarized relay, a local battery having its circuit-connections completed only through said circuit-controlling device, the coils of said sounder and the armature-lever and contact-point of the neutral relay.

4. The combination, substantially as hereinbefore set forth, with a main line, a polarized and a neutral relay, and a local battery having its circuit through the armature-lever of the neutral relay, of a circuit-interrupting device included in said circuit, and consisting of two contact-levers and a stop against which they tend to rest, one or the other of which levers may be pressed away from said stop by the operation of said polar relay under the influence of currents of the strength employed for operating said neutral relay.

340,137. BRANCH CIRCUIT FOR QUADRUPLEX TELEGRAPHS. WILLIAM MAVER, Jr., Jersey City, N. J., assignor to the Baltimore and Ohio Telegraph Company, Baltimore, Md. Filed Oct. 9, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a series of quadruplex-telegraph main lines and the set of instruments pertaining to one side of the same, of a loop-conductor connecting two or more of said sets of instruments, which conductor extends through a branch office and transmitting and receiving apparatus included therein.

2. The combination, substantially as hereinbefore set forth, of a series of quadruplex-telegraph main lines converging to a single station, a branch office, a loop-conductor extending from said station to include said office, and means for transmitting upon all of said lines and through said loop-conductor simultaneously.

3. The combination, substantially as hereinbefore set forth, of a series of main lines, transmitting and receiving devices applied to each of the same, means for transmitting upon all of said lines simultaneously, a branch office or station, telegraphic instruments located at said office, a circuit including said instruments, and means for controlling the connections of said circuit operated by any of the said transmitting or receiving devices, substantially as described.

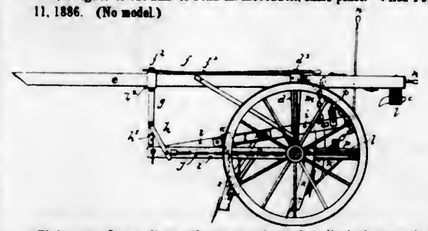
4. The combination, substantially as hereinbefore set forth, in a quadruplex system, of means for transmitting upon radiating lines of said system either independently or together, a branch station, and a conductor extending from one of said line-transmitters through said station to a second of said line-transmitters, substantially as described.

5. The combination, substantially as hereinbefore set forth, of two or more transmitters, electro-magnets, and local circuits for operating the same, two or more receiving-instruments, local circuits having their connections controlled thereby, transmitting devices operated by currents in the last-named local circuits, means for connecting one of the first-named local circuits through one of said transmitting devices with a second of the first-named local circuits, a battery included in the circuit thus formed, and a telegraph receiving and transmitting instrument also included therein.

6. The combination, substantially as hereinbefore set forth, of the lines L' and L^2, the transmitters T' and T^2, the batteries o', o^2, and O, the loop-conductor *l*, the instruments included therein, means for operating said transmitters, and the circuit-connections, substantially as described.

7. The combination, substantially as hereinbefore set forth, of a series of quadruplex-telegraph main lines converging to a single station, a loop-conductor connecting the various quadruplex sets in said single station, and means for transmitting upon all of said lines and through said loop-conductor simultaneously.

340,138. SULKY-CULTIVATOR. WILLIAM R. MCCONNELL, Anderson, S. C., assignor of one-half to John M. McConnell, same place. Filed Feb. 11, 1886. (No model.)

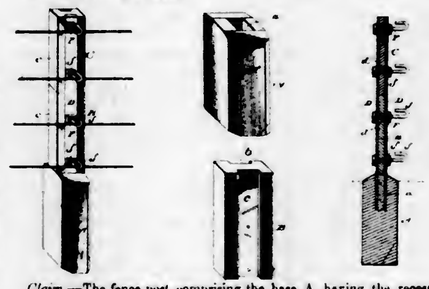


Claim.—1. In a sulky-cultivator, as above described, the combination, with the frame having the side pieces, *a a'*, and end pieces, *b b'*, and the bowed axle *d*, of the tongue *e*, its rear end pivoted to the lower face of said axle *d* by bolt *e'*, its front end playing between the bars *b'* and b^2, lever *f*, having the slot f^4, and pivoted on the upper face of the tongue *e* by a bolt, *f'*, bowed strap f^2, bolted over said lever *f* and on the upper side of the bar *b'*, bolt f^3, passing through strap f^2, slot f^4, and bar *b'*, and catches d^2 on the upper side of axle *d*, adapted to hold the rear end of the lever *f* in place, substantially as shown and described, and for the purposes set forth.

2. In a sulky-cultivator, as above described, the combination, with the frame, of the bar b^3, having the longitudinal slots b^3, perforated plates g^3, perforated arms *g*, having the perforated bent upper ends, *g'*, and bolts g^3, passing through said perforated plates g^3, slot b^3, and bent ends *g'*, and held in place by nuts, substantially as shown and described, and for the purposes set forth.

3. In a sulky-cultivator, as above described, the combination, with the frame, as shown, of the slotted plate b^3, arms *g*, secured to the same, as described, swing *h*, pivoted to said arms, plow-beams *i*, pivoted to said swings *h*, chains *m*, hooked to said plow-beams *i* and to the bowed part of the axle *d*, and levers *n*, adapted to be secured under the pins *o*, substantially as shown and described, and for the purposes set forth.

340,139. FENCE-POST. GEORGE W. MCEWEN, Milton, Pa. Filed Feb. 19, 1886. (No model.)

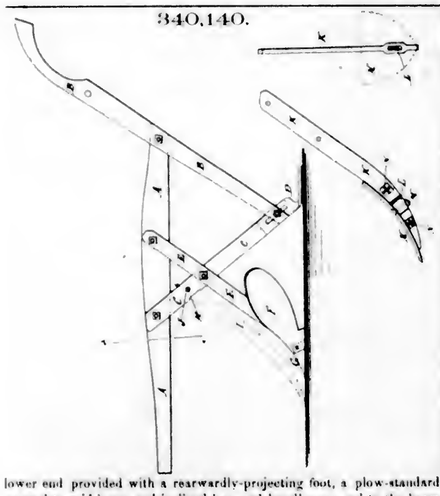


Claim.—The fence-post comprising the base A, having the recess *a* in its upper end, the vertical standards D, having their lower ends inserted in opposite sides of the recess in said base and secured therein by cement, and the upper section, having the vertical grooves on opposite sides to receive the standards D, and secured between the said standards by means substantially as described

340,140. PLOW. ANDREW MCL. MCGREGOR, Moss Point, Miss. Filed June 11, 1885. (No model.)

Claim.—1. In a plow, the combination, with a beam, of a rearwardly-inclined bar having its upper end secured to the beam and its

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lower end provided with a rearwardly-projecting foot, a plow-standard secured to said beam and inclined bar, and handles secured to the beam and lower end of the inclined bar, substantially as herein shown and described.

2. In a plow, the combination, with the beam A, handles B, and stock-bar C, of the foot D, having slotted shank, substantially as herein shown and described, whereby the said foot can be readily adjusted to regulate the pitch of the plow, as set forth.

3. In a plow, the combination, with the beam A, handles B, and rearwardly-inclined bar C, of the rearwardly-projecting foot D, slotted and secured to the lower end of the said inclined bar, the bar and handles being secured by the same bolt, substantially as herein shown and described.

4. In a plow, the combination, with the beam A, handles B, stock-bar C, having mortise H and provided with a foot, D, and one or more plow-standards and plows, E F, of the colter I and screw or bolt J, substantially as herein shown and described, whereby the said colter will be firmly supported and securely held, as set forth.

340,141. DITCHING-MACHINE. JOHN MCLACHLAN, Chicago, Ill. Filed Nov. 2, 1883. Renewed Mar. 24, 1886. (No model.)

Brief.—An excavator-bucket wheel with flanged collars secured to the end disks is mounted on a stationary tubular shaft having bearing-collars therefor, an opening above to receive from the buckets, and interior right and left spiral conveyers discharging through openings at the shaft ends. A supporting-track is provided with a rack engaged to propel the machine by a pinion-shaft driven from the main shaft through a ratchet-wheel, rocking arm, pawl, and eccentric-rod. To permit advance of track-section, the machine is raised therefrom and caused to bear on side longitudinal timbers through screw-rods simultaneously rotated by an arrangement of intergearing shafts and pinions. A way is made for the machine by a rotary harrow, spiral clearing-conveyer, and roller.

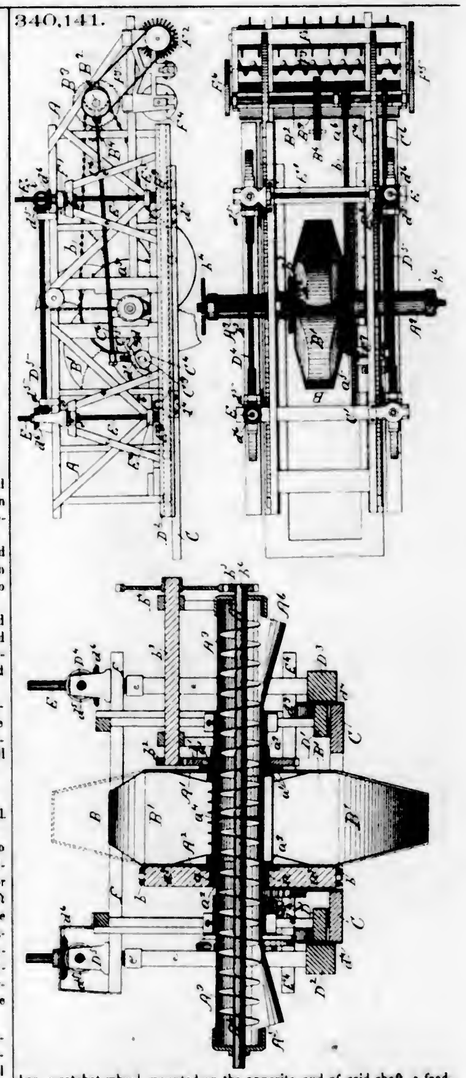
Claim.—1. In a ditching-machine, the combination, with an excavating-wheel composed of a number of curved buckets, arranged as described, of a stationary tubular shaft or chamber around which said wheel is adapted to revolve, the top part or upper side of said shaft inclosed by said wheel being provided with an elongated opening corresponding to the open space at the base of each bucket, and through which the earth gravitates into the tubular shaft from each bucket in regular order, as described.

2. The combination, with an excavating-wheel consisting of a number of curved buckets attached to a common hub, of a tubular shaft upon which the excavating-wheel is mounted, having a suitable opening in the upper side thereof, and a spiral conveyer arranged on the inside of said shaft and having a right and left pitch from a common center, whereby the earth discharged from the buckets into the shaft is carried outward toward each end and deposited out of the way on each side of the ditch being excavated, substantially as described.

3. The combination, with a series of radially-arranged excavating-buckets, of the flange-disks A' A^2, the angular bearing-boxes *a a*, the bearing-collars a^2 a^3, and the tubular stationary shaft A^3, substantially as and for the purpose described.

4. In a ditching-machine, the combination, with a track adapted to have an independent adjustment and movement relative to the supporting frame-work, of a rack-bar attached to said track, a pinion mounted on the inner end of the shaft C^2 and adapted to engage with said rack-

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bar, a ratchet-wheel mounted on the opposite end of said shaft, a feed-dog pivoted to the rocking arm C^3 and engaging with said ratchet-wheel, and the rod C^4, having one end secured to the rocking arm and the opposite end having an eccentric connection with the main driving-shaft, whereby the machine is intermittently moved forward in the manner described.

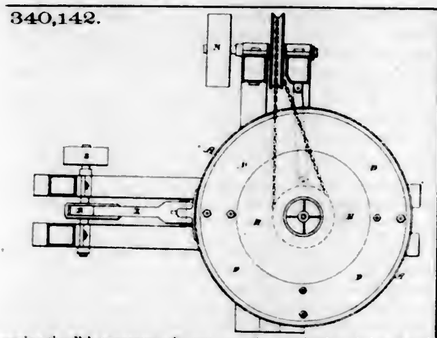
5. In a ditching-machine, the combination, with a system of horizontally and vertically arranged shafts having a series of bevel gear-wheels mounted on each of said shafts and adapted to engage with each other, of the track on which the machine is moved forward and the outside base-timbers, D^2 D^2, whereby the weight of the machine proper may be alternately transferred from one to the other, substantially as and for the purpose set forth.

6. In a ditching-machine, the combination, with a rotating harrow, of a spiral conveyer located just back of said harrow and a roller located back of the conveyer, substantially as and for the purpose set forth.

340,142. CONCENTRATING AND AMALGAMATING MACHINE. HARRISON B. MERCH, Cleveland, Ohio. Filed Dec. 21, 1885. (No model.)

Claim.—1. The combination of the pan mounted upon rocking supports and a mechanism for giving the pan a reciprocating motion with the grinding-disk having a revolving movement and a mechanism for

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causing the disk to revolve, the two operating mechanisms being placed at right angles to each other, substantially as shown.

2. The combination of the pan having a convex bottom which is provided with a trough around its outer edge and an opening through its center with the concave disk provided with a series of grinding surfaces or blocks, E, which extend from its outer edge inward, and which serve to force the pulp up the inclined bottom to the discharge-opening, substantially as described.

3. The combination of the pan A B B', mounted upon movable supports, with the rotary disk provided with grinding-blocks, the hopper which is attached to or forms a part of the disk, the driving-shaft, and the two operating mechanisms which are placed at right angles to each other, substantially as specified.

340,143. DOOR-CHECK. JOHN MEREDITH, Dayton, Ohio, assignor of one-half to George P. Weed, same place. Filed Dec. 22, 1885. (No model.)

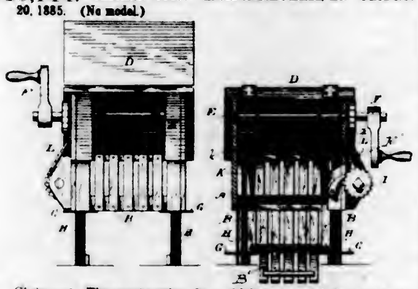


Claim.—1. A pneumatic door-check consisting of a cylinder hinged at one end to the door, a rack-bar or toothed plunger hinged at its outer end to the door-frame, a pawl adapted to engage the toothed plunger, a spring surrounding the plunger, and means for operating the pawl, substantially as specified.

2. A pneumatic door-check having a toothed plunger operating in a cylinder and adapted to be engaged and held by a pawl having a manipulating cord or wire, substantially as specified.

3. The combination, with a door, of a cylinder hinged to the door-frame, a rack-bar working therein and having a spring surrounding the said bar, the said bar being hinged to the door, a pawl adapted to engage the rack-bar, and an operating-cord connected to a hand-lever, whereby the said pawl may be made to engage and disengage the said rack, substantially as specified.

340,144. CHICKEN-COOP. ENOCH MODLIN, Edina, Mo. Filed Nov 20, 1885. (No model.)

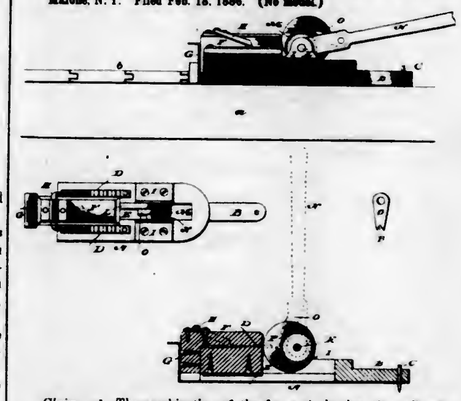


Claim.—1. The combination, in a chicken-coop, of the outer casing, A, supported upon legs, the interior portion, B, provided with guides encircling said legs, and means, substantially as described, for raising or lowering the inner section.

2. The combination, in a chicken-coop, of the outer casing, A, provided with depending legs, the inner movable portion, B, provided with guides encircling said legs, and the two windlasses mounted in the casing A, and the ropes connecting the said movable section and the windlass.

3. The combination, in a chicken-coop, of the outer housing or casing, A, supported upon legs and provided with a hinged top, the inner movable portion, B, provided with guides encircling the supporting-legs of the casing A, and the windlasses at right angles to each other, and connected with the movable portion B by means of ropes, substantially as described.

340,145. FLOOR-CLAMP. ALBERT P. MORSE and HARRY H. HAWLEY, Malone, N. Y. Filed Feb. 18, 1886. (No model.)

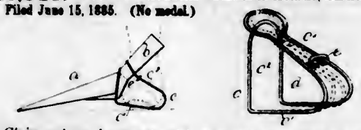


Claim.—1. The combination of the frame A, having the spike at one end, the guideway E at the opposite end, and the ratchet-bars D, with the movable head in the guideway, having the pawls H, for engaging with the ratchet-bars D, to prevent retrograde movement of the head, the cam journaled to the frame A and bearing against one end of the head, and the lever for rotating the said cam, for the purpose set forth, substantially as described.

2. The combination, in a flooring-clamp, of the frame and the movable head therein with the cam journaled to the frame and bearing against one end of the head, the wheel L, having the teeth and secured eccentrically to the cam, and the pivoted hand-lever having the pawl for engaging with the teeth of the wheel L, substantially as described.

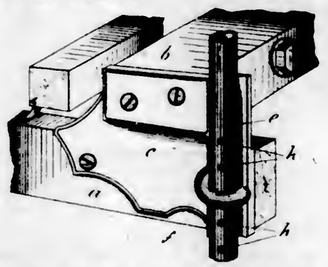
3. The combination, in a flooring-clamp, of the movable head, the cam bearing against one end thereof, the wheel L, having the teeth and secured eccentrically to the cam, and the pivoted hand-lever having the pivoted pawl or dog, the latter having its engaging end provided with engaging points on opposite sides, whereby the hand-lever may be moved in either direction to rotate the cam, substantially as described.

340,146. DUST-PAN HOLDER. DANIEL H. MURPHY, Hartford, Conn. Filed June 15, 1885. (No model.)



Claim.—As an improved article of manufacture, a dust-pan holder formed of wire bent to shape of a foot-receiving frame with a base, the upright arm or loop rising from the base and adapted to engage the pan, the clamping-arms, also rising from the base, and the clamp, whereby the latter arms are caused to grasp the handle of the pan, and the whole device detachably secured thereto, all substantially as described.

340,147. BEDSTEAD. WILLIAM J. MYERS, Hartford, Conn. Filed Aug. 19, 1885. (No model.)

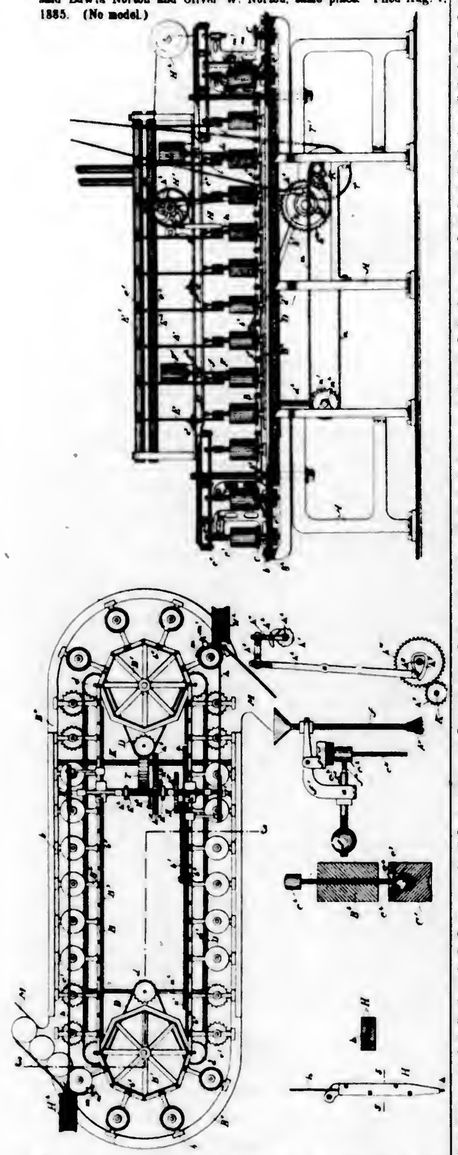


Claim.—In combination, the bed-posts *s*, provided with the sunken sockets A, made in the substance thereof, the corner-iron *c* of the bed-

frame, and the clamping-bolts *f*, fitting directly against the bed-posts, and having the stud *i* inside the hook thereof fitting to said sockets, all substantially as described, and for the purposes set forth.

340,148. MACHINE FOR SOLDERING CAPS UPON SHEET-METAL CANS.

EDWIN NORTON and JOHN G. HODGSON, Chicago, Ill., assignors to said Edwin Norton and Oliver W. Norton, same place. Filed Aug. 1, 1885. (No model.)



Claim.—1. In a can-cap-soldering machine, the combination, with a series of stationary burners for heating the cans, of an acid-brush, a wire-solder feed-guide, a tube for applying water to cool the cans, an intermittently-moving carrier, and a series of revolving can-holders mounted thereon, substantially as specified.

2. In a can-cap-soldering machine, the combination of an intermittently-moving carrier, a series of revolving can-holders mounted thereon, a series of stationary burners or heaters arranged in the path of said carrier, and a solder-applying device, substantially as specified.

3. In a can-soldering machine, the combination of an intermittently-moving carrier, a series of revolving can-holders mounted thereon, a series of stationary burners or heaters arranged in the path of said carrier, an acid-applying device, and a solder-applying device, substantially as specified.

4. The combination, in a can-cap-soldering machine, of an intermittently-moving carrier, a series of revolving can-holders mounted thereon, each consisting of an upper and lower revolving disk or head and a stationary cam or track having a depressed portion, to operate the can-holder disk to clamp the can and hold the cap until it is soldered, and a raised portion to withdraw the cap-holder disk from the can and hold the same withdrawn, to permit the cans to be removed from and placed in the machine, substantially as specified.

5. The combination, in a can-cap-soldering machine, of an intermittently-moving carrier, a series of revolving can-holders mounted thereon, each consisting of an upper and lower revolving disk or head and a stationary cam or track having a depressed portion, to operate the can-holder disks to clamp the can and hold the cap until it is soldered, and a raised portion to withdraw the cap-holder disk from the can and hold it so withdrawn, to permit the cans being placed in and taken out of the machine, an aciding device, and a solder-applying device, substantially as specified.

6. The combination, in a can-cap-soldering machine, of an intermittently-moving carrier, a series of revolving can-holders mounted thereon, each consisting of an upper and lower revolving disk or head and a stationary cam or track having a depressed portion, to operate the can-holder disk to clamp the can and hold the cap until it is soldered, and a raised portion to withdraw the cap-holder disk from the can and hold it so withdrawn, to permit the cans being removed from and placed in the machine, a device for heating the cans, and a solder-applying device, substantially as specified.

7. The combination, in a can-cap-soldering machine, of an intermittently-moving carrier, a series of revolving can-holders mounted thereon, each consisting of an upper and lower revolving disk or head, a stationary cam or track having a depressed portion to operate the can-holder disks to clamp the can and hold the cap until it is soldered, and a raised portion to withdraw the cap-holder disk from the can and hold it so withdrawn, to permit the cans to be placed in and removed from the machine, a device for heating the cans or joints, an aciding device, a solder-applying device, and a cooling device, substantially as specified.

8. The combination of a pivoted link or chain carrier, B, provided with can-holder frames B^2, with a track or guideway for said chain carrier, can-holding disks C C', journaled on said holder-frames B^2, gears or wheels *c'* on the spindles, and an endless chain, D, for revolving said can-holder disks, substantially as specified.

9. The combination of a pivoted link or chain carrier, B, provided with can-holder frames B^2, with a track or guideway for said chain carrier, can-holding disks C C', journaled on said holder-frame B^2, gears or wheels *c'* on the spindles, and an endless chain, D, for revolving said can-holder disks, and a track or guideway for said chain D, substantially as specified.

10. The combination of a pivoted link or chain carrier, B, provided with can-holder frames B^2, with a track or guideway for said chain carrier, can-holding disks C C', journaled on said holder-frames B^2, gears or wheels *c'* on the spindles, and an endless chain, D, for revolving said can-holder disks C, and a stationary cam or track for raising and lowering said can-holder disks C to clamp and release the cans, substantially as specified.

11. The combination of a pivoted link or chain carrier, B, provided with can-holder frames B^2, with a track or guideway for said chain carrier, can-holding disks C C', journaled on said holder-frames B^2, gears or wheels *c'* on the spindles, and an endless chain, D, for revolving said can-holder disks, a series of burners or heaters, E, and a solder-applying device, substantially as specified.

12. The combination, with an intermittently-moving carrier provided with a series of revolving can-holders mounted thereon, of an acid-applying brush mounted in the path of the cans on said carrier, and mechanism for depressing said brush against the joint of the can when the same is brought into position by the carrier, substantially as specified.

13. The combination, with a moving carrier having a series of can-holders mounted thereon, of an acid-applying brush or device, a pivoted lever on which the same is mounted, provided with a cam or projection for depressing said brush, and a projection or device on the can-holders for operating said cam-lever, substantially as specified.

14. The combination, with a moving carrier having a series of can-holders mounted thereon, of an acid-applying brush or device, a pivoted lever on which the same is mounted, having a weight for raising said brush, and provided with a cam or projection for depressing said brush, and a projection or device on the can-holders for operating said cam-lever, substantially as specified.

15. The combination of an intermittently-moving carrier, B, provided with a series of revolving can-holders consisting each of a pair of disks C C', mounted in a frame, B^2, said disk C' having a spindle, c^2 provided with a head or projection, c^3, acid-brush F, pipe *f*, lever *f'*, weight f^2, and cam projection f^3, substantially as specified.

16. The combination, in a can-cap-soldering machine, of an intermittently-moving carrier provided with a series of can-holders, of a cooling device consisting of a movable water-brush and mechanism for depressing the same against the head of the can when the can is brought beneath the same by the carrier, substantially as specified.

17. The combination of a pivoted link or chain carrier, B, provided with can-holder frames B^2, with a track or guideway for said chain carrier, can-holding disks C C', journaled on said holder-frames B^2, gears or wheels *c'* on the spindles, and an endless chain, D, for revolving said can-holder disks, a series of burners or heaters, E, an acid-applying device, and a solder-applying device, substantially as specified.

18. The combination of a pivoted link or chain carrier, B, provided with can-holder frames B^2, with a track or guideway for said chain carrier, can-holding disks C C', journaled on said holder-frames B^2, gears or wheel *c'* on the spindles, and an endless chain, D, for revolving said can-holder disks, a series of burners or heaters, E, an acid-applying device, and a solder-applying device, and a cooling device, substantially as specified.

19. The combination of a pivoted link or chain carrier, B, provided with can-holder frames B^2, tracks B^3 B^4 for said carrier, a series of revolving can-holders mounted on said carrier, each consisting of an upper and a lower revolving disk, and a stationary cam or track, c^4, to operate the upper disks to clamp and release the cans, substantially as specified.

20. The combination, in a can-cap-soldering machine, of an intermittently-moving carrier provided with a series of revolving can-holders, with a wire-solder guide arranged in the path of said carrier, a heating device adapted and arranged to heat the joint to be soldered without directly acting upon the wire solder or its feed-guide, and a wire-solder-feeding device constructed, adapted, and arranged to feed and force the wire solder in definite lengths against the heated joint, whereby the same is melted as it is fed or forced against the joint, substantially as specified.

21. The combination, with a movable carrier provided with can-holders consisting each of a pair of revoluble disks, C C', a stationary cam or track for raising and lowering said disk C', and a stationary delivery-shield, *m*, arranged in the path of the cans, substantially as specified.

22. The combination, with a movable carrier provided with can-holders consisting each of a pair of revoluble disks, C C', a cam or track for raising and lowering said disk C', and a stationary delivery-shield, *m*, arranged in the path of the cans, and a projecting stop, *m'*, to tilt or raise the rim of the can out of the centering recess or groove in said disk C' before the can comes in contact with said delivery-shield, substantially as specified.

23. The combination, with a movable carrier, B, provided with revoluble can-holders C C', of an adjustable cam or track, c^4, to operate said can-holders to clamp and release the cans, whereby the machine may be adapted to cans of different sizes, substantially as specified.

24. The combination, with movable pivoted link or chain carrier B, provided with a series of revoluble can-holders, of supporting-trucks B^3 B^4, reciprocating slide b^2, provided with a pawl or pusher, as b^4, projections, as b^3, on said carrier B, and means for reciprocating said slide, substantially as specified.

25. The combination, with movable pivoted link or chain carrier B, tracks B^3 B^4 therefor, mechanism for driving said carrier intermittently, a series of can-holder frames, B^2, mounted on said carrier, can-holder disks C C', spindles *c* of disk C, provided with gears *c'*, chain D, guideway *d* therefor, cam or track c^4, burners E, aciding device F, wire-solder guide H, and cooling device K, substantially as specified.

26. In a soldering-machine, the combination of an endless link-chain carrier, furnished with revolving can-holder disks at intervals, with wheels upon and around which said carrier travels, substantially as specified.

27. In a soldering-machine, the combination of an endless link-chain carrier, furnished with revolving can-holders at intervals, with wheels upon and around which said carrier travels, and a track or guide to support said carrier, substantially as specified.

28. In a soldering-machine, the combination of an endless flexible carrier wheels, upon and around which said carrier travels, and revoluble can-holder disks mounted on said endless carrier, substantially as specified.

29. In a soldering-machine, the combination of an endless flexible carrier, wheels upon and around which said carrier travels, and revoluble can-holder disks having spindles journaled on said endless carrier, said spindles being provided with gears for revolving the same, substantially as specified.

30. In a soldering-machine, an endless flexible carrier furnished with a series of revoluble can-holders, in combination with wheels upon and around which said carrier travels, and means for moving said carrier, substantially as specified.

31. In a soldering-machine, the combination of an endless flexible carrier, wheels upon and around which said carrier travels, can-holder disks having spindles journaled on said carrier, gears on said spindles, and means for driving said gears, substantially as specified.

32. The combination, with a solder-applying device, of an endless flexible carrier, B, wheels B' B', and revolving can-holder disks C C', means for reciprocating one of said disks to clamp and release the can, and mechanism for revolving said can-holders mounted on said carrier, substantially as specified.

33. In a soldering-machine, the combination, with an endless flexible carrier, of wheels upon and around which said carrier travels, can-holder disks mounted on said carrier, and heating devices for heating the cans as they are carried around on said carrier, substantially as specified.

34. The combination, with an endless flexible carrier, of wheels upon and around which said carrier travels, can-holders mounted on said carrier, a track to support the carrier, and a solder-applying device, substantially as specified.

35. The combination of a revolving can-holder or chuck with a wire-solder feed-guide, a device for heating the joint to be soldered, and a wire-solder feeding device constructed, adapted, and arranged to feed and force the wire solder in definite lengths against the heated joint, whereby said solder is melted as it is forced against the joint, substantially as specified.

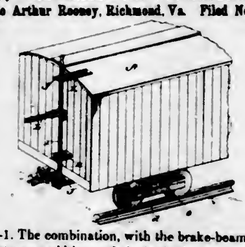
36. The combination, with a revolving can-holder or chuck, a wire-solder feed-guide, a device for heating the joint to be soldered, a wire-solder feed-wheel, and means for adjusting or regulating the extent of feed, said heating device, feed-guide, and feed mechanism being adapted and arranged to feed or project the wire solder against the heated joint to melt the solder, substantially as specified.

37. The combination, with a wire-solder feed-guide, of a device for heating the joint to be soldered and a wire-solder feeding device constructed, adapted, and arranged to feed and force the wire solder in definite lengths against the heated joint, whereby the same is melted as it is fed, said heating device being adapted and arranged to heat the joint to be soldered without directly acting upon the wire solder or its feed-guide, substantially as specified.

38. In a soldering-machine, an endless link-chain carrier, as B, furnished with can-holder frames, as B^2, and can-holder disks, as C and C', having spindles journaled on said frames, substantially as specified.

340,149. CAR-BRAKE.

JOHN W. OWENS, Diana Mills, assignor of one-half to Arthur Rooney, Richmond, Va. Filed Nov. 23, 1885. (No model.)

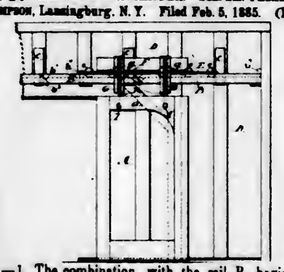


Claim.—1. The combination, with the brake-beams and the bar J, of connections between said bar and the brake-beams, a vertically-arranged pivoted lever connected pivotally at its lower end to the bar J, and a bumper, L, pivoted to said lever, substantially as set forth.

2. The combination, with the brake-beams and the bar J, of connections between the bar and brake-beams, the lever I, pivoted to the front of the car and pivotally connected with said bar, a bumper pivoted to the lever, and a slotted plate secured to the top of the car and having teeth, substantially as set forth.

340,150. SLIDING-DOOR HANGER.

STEPHEN PALMER and CHARLES E. THOMPSON, Lansingburg, N. Y. Filed Feb. 5, 1885. (Model.)



Claim.—1. The combination, with the rail B, having a concave groove, *b*, and the traveling bar F, having a concave groove, *f*, of the carriage E, provided with a series of transverse pins, *e'*, and containing a series of spherical rollers, *e*, loosely fitted on the pins *e'*, as herein described, the said grooved rail, traveling bar, and carriage being arranged in relation to each other, to operate as herein specified.

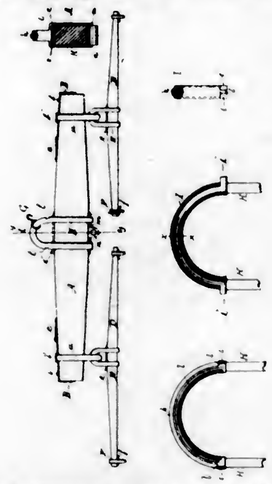
2. The grooved rail B, having a removable section, B', as herein described, the said removable section being provided with fastening-buttons b^2, as and for the purpose herein specified.

3. The combination, with brackets C, each consisting of a back plate, c', provided with a vertical lug, c^2, and with two vertical planes, c^3 and c^4, which are formed by the offset c, directly in said back plate, the lower plane, c^3, (which is in advance of the upper plane, c^4,) forming a bearing to which the rail B is secured, whereby said rail is centralized in the space D, as herein described, of the grooved rail B, the carriage E, provided with spherical rollers e', and the traveling bar F, all constructed and arranged to operate as herein specified.

4. The combination, with a rail, B, of a stop, b^4, made in the form of a right-angled knee having its vertical limb inserted through the rail B and its horizontal limb secured to the under face of said rail, as and for the purpose herein specified.

5. The combination, with a grooved rail, B, and a carriage, E, provided with spherical rollers e, as herein described, of the traveling bar F, having secured thereto the suspenders G, provided with hooks g', as described, and the door A, provided with hook-bolts H, which engage with the hooks g', in the manner and for the purpose herein specified.

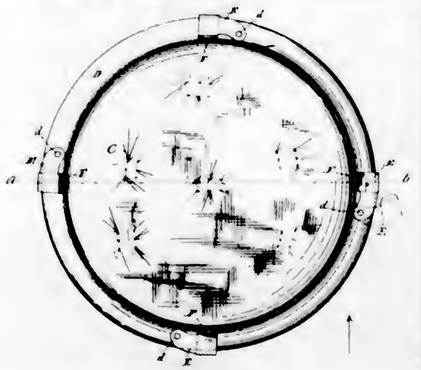
340,151. WHIFFLETREE. HENRY S. PAYNE, Camden, N. J. Filed Oct. 28, 1885. (No model.)

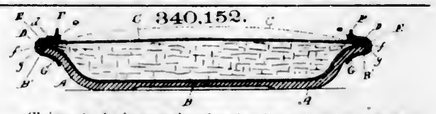


Claim.—1. In combination with the swing-bar A, having hinged straps B B, with arches b' b' and springs c c, the clevises a a, and double clevis H, having the arch h, with recesses l l, and being provided with a hook, G, the rub-iron I, with claws i i, the strap m, having the eye n, and the wedges e', substantially as herein described.

2. The combination of the swing-bar A, having straps B B, with arches b' b' and springs c c, clevises a a, and double clevis H, having the arch h, a strap, m, having an eye, n, the wedge e', the single-trees D D, having double clevises E E, wedges e e, tug-hooks F F, and wedges f f, substantially as herein set forth.

340,152. PIE-CRUST CLAMP. REUBEN W. PERRY, Saundersville, Mass. Filed May 21, 1885. (No model.)

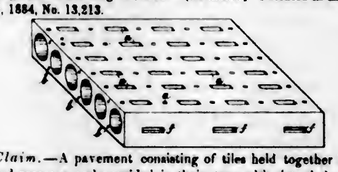




Claim.—1. A pie-crust-clamping ring, in combination with clamping or holding fingers for securing it to the edge of the pie-plates, substantially as described.

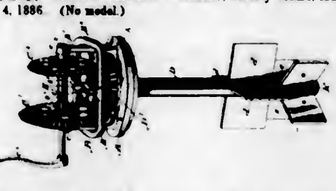
2. The combination, with the pie-crust-clamping ring D, provided with curved edges e and f, of gripping or holding fingers E, provided with clamping projections F, substantially as and for the purposes set forth.

340,153. PAVING-BLOCK. ARTHUR PIRIE, Southsea, County of Hants, England. Filed Aug. 11, 1885. (No model.) Patented in England Oct 6, 1884, No. 13,213.



Claim.—A pavement consisting of tiles held together by dowel-pins and recesses, and provided in their tops with slots independent of said recesses, said tiles having internal passages with which said slots communicate for the purpose of allowing water to drain off from the surface of the pavement through the interior thereof, substantially as set forth.

340,154. CHURN. ANDREW J. RABBET, Liberty Centre, Ind. Filed Jan. 4, 1886. (No model.)

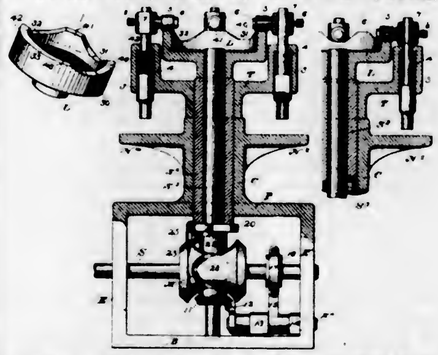


Claim.—In a churn, the combination, with the churn-top A, the vertical standards B', secured thereto, a horizontal frame, B^2, secured to the standards by bolts b^2, and having a central cross-bar, a driving-shaft, C, journaled in bearings in the standards and having bevel gear-wheels C' C^2, keyed thereon, a tubular dasher-staff, D, having blades d and a gear-wheel, D', keyed thereon, and a dasher-staff, E, journaled in the cross-bar of the horizontal frame by a pin and provided with blades and a gear-wheel, E', keyed thereon, substantially as described.

340,155. METHOD OF CLEANING WHEAT. ELIAS REIST, Williamsville, N. Y. Filed Oct. 23, 1885. (No specimens.)

Claim.—The herein-described method of cleaning wheat, which consists in mixing bran and wheat and then subjecting the same to the action of suitable scouring devices, substantially as set forth.

340,156. MECHANICAL MOVEMENT. FRANCIS H. RICHARDS, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Sept. 16, 1885. Renewed Mar. 27, 1886. (No model.)



Claim.—1. The combination, in a mechanical movement having stations arranged in a circuit, of one or more slides, mechanism, substantially as described, carrying said slide or slides to each of said stations successively, and mechanism, substantially as described, imparting a reciprocating movement to the slide or slides at one or more of said stations, substantially as set forth.

2. The combination, in a mechanical movement having stations arranged in a circuit, of an intermittently-rotating turret having bearings corresponding to said stations, slides in said bearings, a cam operating said slides at said stations, and means, substantially as described, operating said turret and cam, substantially as set forth.

3. The combination, in a mechanical movement, of turret T, having bearings for slides, slides J, carried in said bearings and having rolls or pins 5, cam L, having sections formed to impart a reciprocating movement to said slides, and means, substantially as described, imparting an intermittent rotary movement to said turret, and a rotary reciprocating movement to said cam, substantially as set forth.

340,157. CHECK-VALVE FOR SOIL-PIPE VENTILATORS. LEMUEL B. SAWYER, Boston, Mass. Filed Oct. 19, 1885. (No model.)



Claim.—1. In combination with the drain-pipe C, the soil-pipe D, and the stand-pipe E, a perforated valve-casing, a series of pivoted valves and adjustable stops, for regulating the extent of opening to be given to the valves, substantially as described

2. In combination with the drain-pipe C, the soil-pipe D, the stand-pipe E, the perforated casing, and pivoted valves, the inverted conical deflector extending downward below the valves, substantially as and for the purposes described.

3. In combination with the drain-pipe C, the soil-pipe D, the stand-pipe E, the perforated casing, and pivoted valves, the hood inclosing the upper portion of said casing and extending downward to the bottom of the openings in said casing, substantially as and for the purposes described.

340,158. LINK. JAMES SCOTT, Jr., Menominee, Mich. Filed Sept. 29, 1885. (No model.)



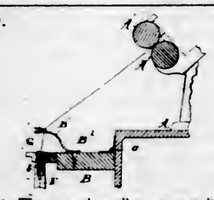
Claim.—1. A link composed of two half-links pivoted together at one end, each half-link having a portion cut from one side to provide an opening, and having on its other side, opposite its said opening, a raised portion adapted to fit into and close the opening in the side of the other half-link when the two halves are shut together, substantially as shown and described.

2. The herein-described link, composed of two half-links pivoted together at one end, each having a portion cut from the side thereof, presenting outwardly-inclined ends, and a corresponding raised portion opposite the intercepted ends, for the purposes described, and a screw to fasten the opposite ends together, substantially as set forth.

340,159. RING-SPINNING FRAME. MORTIMER SHERMAN, Lowell, assignor to Geo. Draper & Sons, Hopedale, Mass. Filed Feb. 16, 1885. (No model.)

Brief.—The top of the spindle is grooved longitudinally and extends up into and has a bearing in the guide-board, said bearing being slotted or notched or open.
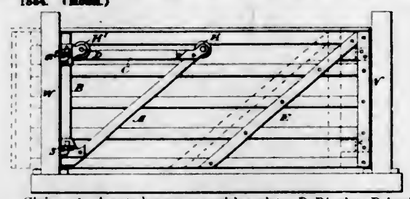
340,159.



Claim.—1. The step, the rail to support it, and the spindle provided at its top with a groove or channel, combined with a slotted or notched or open bearing for the top of the spindle, and with a support for the said bearing, the combination being and operating substantially as described.

2. The step, the step-rail, and the spindle having a longitudinal groove or channel in its top and extending up into the guide-board, combined with such guide-board, and a slotted, notched, or open bearing for the said stop of said spindle arranged in said guide-board, substantially as shown and described.

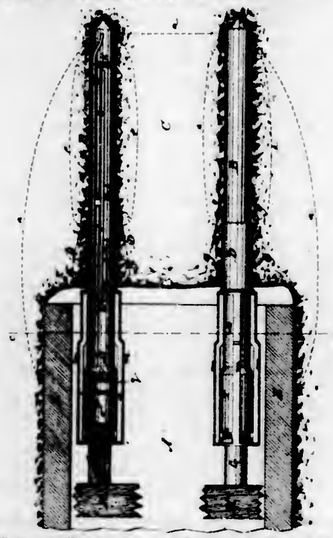
340,160. GATE. DANIEL SLAUSON, Monticello, Iowa. Filed Nov. 3, 1884. (Model.)



Claim.—1. A gate-hanger comprising plates D D', plate D having an inwardly-projecting flange, a^2, and both plates having projecting lugs b', and a roller journaled between the lugs b', substantially as set forth.

2. The combination, with a gate and a gate-post provided with pintles, of a triangular frame carrying a journaled roller at its forward end, the plates D D', secured to the said frame, plate D having a flange, a^2, provided with an opening corresponding to one of the gate-post pintles, the lugs b', projecting from the plates D D', a roller journaled between the said lugs, and the plate S, secured to the lower part of the said frame and provided with an opening corresponding to another of the gate-post pintles, substantially as set forth.

340,161. TUNNELING APPARATUS. CHARLES SOOTHSMITH, New York, N. Y. Filed Jan. 22, 1886. (No model.)



Claim.—1. The freezing-pipes B, provided with conduits for freezing-fluids and for thawing-fluids, substantially as and for the purpose described.

2. The pipe B, provided with conduits for freezing-fluids and for thawing-fluids, combined with the sleeve D, substantially as described.

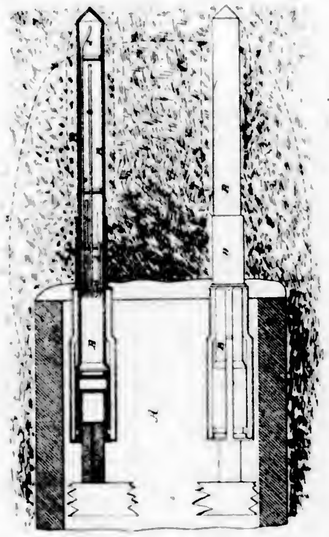
3. The pipe B, having transverse partitions combined with the conduits *b*, *d*, and *f*, and with the sleeve D, substantially as described.

4. The combination of the pipe B and sleeve D with the block G, cylinders F and I, and arms *m*, substantially as and for the purpose herein shown and described.

5. In the art of tunneling through quicksand or soft soil, the pipe B, provided with inner conduits, all arranged so that a vehicle of cold and a vehicle of heat can be circulated successively through desired portions of said pipe for alternately freezing and thawing around said pipe, as specified.

6. The combination of a pipe for freezing the soil to be tunneled with a pipe for thawing the soil around said freezing-pipe, substantially as herein shown and described.

340,162. PROCESS OF PREPARING SOIL FOR TUNNELING AND EXCAVATING. CHARLES SOOYSMITH, New York, N. Y. Filed Feb. 27, 1886. (No model.)



Claim.—1. The process of preparing soft soil for tunneling, which consists in first freezing the soil around one or more pipes, in then thawing part of the frozen soil around each of the pipes, and in then advancing said pipes through the thawed portion and freezing again, substantially as described.

2. The process of preparing soft soil for tunneling, which consists in first freezing the ground around one or more pipes and sleeves, in then thawing around each pipe, in then advancing each pipe through the thawed ground, in then thawing around each sleeve and advancing each sleeve through the thawed portion, and in finally freezing the thawed portion again, as specified.

340,163. HOT-BLAST OVEN. VICTOR O. STROBEL, Allegheny, Pa. Filed Feb. 5, 1885. (No model.)

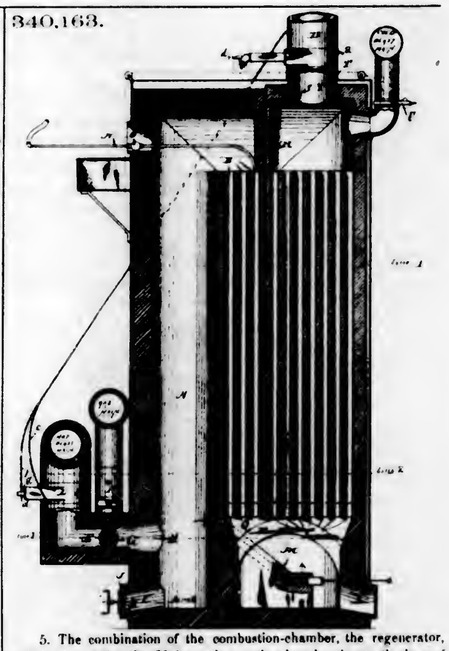
Claim.—1. In a hot-blast stove, the combination of a supporting structure at the base of the regenerator, chord-walls and ordinate walls rising from the same and forming flues reaching a portion of the height of the regenerator, thinner continuations of said walls to the top of the regenerator, and thin chord and ordinate walls interposed between said continuations and serving to increase the number and decrease the area of the flues in the upper portion of the regenerator.

2. In a hot-blast stove, the separating-wall R, split or formed in two thicknesses independent of but in contact with each other, substantially as and for the purpose set forth.

3. In a hot-blast stove, the separating-wall R, solid at its base and split or formed in two thicknesses independent of but in contact with each other above the solid portion, substantially as and for the purpose set forth.

4. The combination of the combustion-chamber, the regenerator, and one or more flues leading from the combustion-chamber to the foot of the uptake portion of the regenerator, for the purpose of forming a short path for a portion of the hot products of combustion from the combustion-chamber to the regenerator.

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5. The combination of the combustion-chamber, the regenerator, and the descending flue M from the combustion-chamber to the base of the regenerator, for the purpose of carrying hot products of combustion to the base of the regenerator and bringing gas-deposits into the chamber below the regenerator.

6. The combination of the combustion-chamber, the regenerator, the descending hot-product flue M, and the sliding plug-valve provided with a handle exterior to the stove.

7. The combination of the combustion-chamber, the regenerator, the descending flue M for hot products and gas-deposits, and the cleaning-opening X in the wall of the stove.

8. In a hot-blast stove, the combination, substantially as set forth, of the brick-work and the brick roof of the stove, a metal shell and metal roof inclosing the same, a metal chimney-connection joining and supported by the metal roof, and a nozzle rising from the brick roof and entering the metal chimney-connection a short distance and forming a slip-joint therein.

9. In a hot-blast stove, the combination, substantially as set forth, of the brick-work and the brick roof of the stove, the metal shell and roof inclosing the same, a metal chimney-connection joining and supported by the metal roof, and a nozzle seating in a tapering opening in the brick roof and projecting a short distance into the chimney-connection and forming a slip-joint therein.

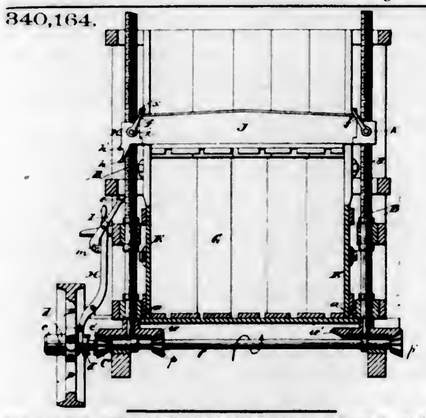
10. In a hot-blast stove, the combination of the brick-work and brick roof of the stove, a metal shell and roof inclosing the same, a metal chimney-connection joined to and supported by the metal roof, and a nozzle consisting of segmental brick with a vertical sectional contour parallel at one end and wedge-shaped at the other end, forming a tapering seating in the brick roof of the stove, and a short parallel slip-joint in the metal chimney-connection.

11. The combination, substantially as set forth, of the pipe E, projecting outward from near the base of the combustion-chamber and into communication with the hot-blast main, a hot-blast valve between the stove and hot-blast main, a gas-pipe tapping said pipe between such valve and the stove, and opening into the combustion-chamber directly below the opening by which said pipe communicates with the stove, and a valve at said opening for controlling the admission of air of combustion and for closing such opening when the stove is under blast.

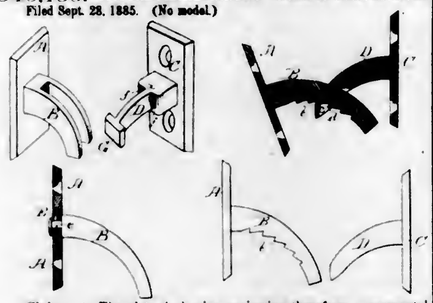
340,164. COTTON AND HAY PRESS. WILLIAM H. TAPPEY, Petersburg, Va., assignor to Tappey & Steel, same place. Filed Feb. 18, 1886. (No model.)

Claim.—The combination, with the shifting-lever H, of the finger I, pivoted thereto and forked at its upper end, and the projections A and A', formed on the nut K, substantially as and for the purposes herein set forth.

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340,165. PICTURE-FRAME HANGER. GIDEON R. TAXIS, Mc...ia, Ill. Filed Sept. 28, 1885. (No model.)



Claim.—1. The plate A, having projecting therefrom a segmental arm, in combination with a screw-plate, C, having a segmental arm projecting therefrom in direction of said plate A.

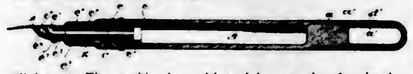
2. The combination, with plate A and segmental arm B, of plate C and segmental arm D, having a longitudinal vertical slot therein.

3. The combination, with plate A and segmental arm B, provided with serrations *b* on its under edge, of plate C, segmental arm D, having a longitudinal vertical slot, *d*, and a web, *c*, the upper edge of which is sharpened.

4. The combination, with plate A and segmental arm B, oscillatingly connected thereto, of plate C and segmental arm D.

5. The combination, with plate A, segmental arm B, shank *e* thereof passing through said plate, and concavo-convex disk-spring E, secured on said shank so as to bear against the side of plate A opposite to that from which arm B projects, of the plate C and segmental arm D.

340,166. FOUNTAIN-PEN. CLARENCE W. TAYLOR, Janesville, Wis. Filed Feb. 12, 1886. (No model.)



Claim.—1. The combination, with an ink-reservoir, of a plug having an ink-conduit, an ink-well located on the upper face of the plug below the discharge end of the ink-conduit, and a capillary feeder in open communication with the discharge end of the conduit, substantially as set forth.

2. In fountain-pen, an ink-conduit communicating with the reservoir and provided with superposed channels for conducting ink from the reservoir and conduit by capillary action separating the sediment from such ink, substantially as set forth.

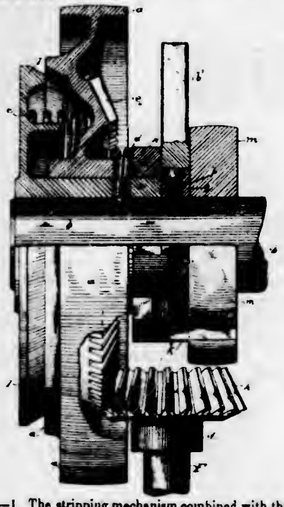
3. In a fountain-pen, a plug having a longitudinal ink-conduit communicating with the ink-reservoir and also with the upper surface of the plug, and provided with longitudinal capillary channels communicating with the ink-duct, said channels serving to separate the ink from its sediment and to convey the ink to its outlet, substantially as described.

4. In a fountain-pen, a plug having a longitudinal ink-conduit communicating with the reservoir and with the upper surface of the plug, capillary channels extending longitudinally of said duct in its upper surface, and a capillary feeder formed in the upper surface of said plug and communicating with the ink-duct, substantially as and for the purpose set forth.

5. The combination, with a reservoir, a socket-piece secured within the open end thereof and having the cot c^2 for holding the pen proper, of the adjustable plug E, having a longitudinal conduit, *e*, the channels e' e^2 e^3, a feeder, e^3, on the upper surface of the plug and in communication with the conduit, the well e^4, also in communication with the conduit, and the ridge e^5, and the cap A', having the projection *a'* and perforation a^2, substantially as and for the purpose set forth.

340,167. MECHANISM FOR STRIPPING THE FLAT CARDS OF CARDING-MACHINES. EDWARD W. THOMAS, Lowell, Mass., assignor to the Lowell Machine Shop, same place. Filed Sept. 24, 1885. (No model.)

Brief.—The pulley which drives the stripping mechanism is loose upon the main shaft of the card, and at predetermined times is made to engage either with a friction-disk fast on the end of the shaft, whereby the mechanism is caused to move rapidly while stripping a flat, or with a slow moving pinion, whereby the mechanism is caused to move slowly from one flat to another.



Claim.—1. The stripping mechanism combined with the pinion *i h* and a means of driving the same, the disk I and a means of driving it, the spring *c*, the pulley *a*, provided with means of engaging with the pinion *i h* and the disk I, a means, actuated from the stripping mechanism, of shifting the pulley *a* longitudinally upon its support, and means for driving the stripping mechanism from the pulley *a*, substantially as described, and for the purpose specified.

2. The stripping mechanism combined with the pinion *i h* and means of driving the same, the disk I and means of driving it, the spring *c*, the pulley *a*, provided with a means of engaging with the disk I and the pinion *i h*, the shifting mechanism *r* and *n*, means of actuating the said shifting mechanism from the stripping mechanism, and means for driving the stripping mechanism from the pulley *a*, substantially as described, and for the purpose set forth.

3. The stripping mechanism combined with the disk I and a means of driving the same, the pulley *a*, provided with means of engaging with the disk I, a means, actuated from the stripping mechanism, of shifting the pulley *a* longitudinally upon its support, and means of driving the stripping mechanism from the pulley *a*, substantially as described, and for the purpose specified.

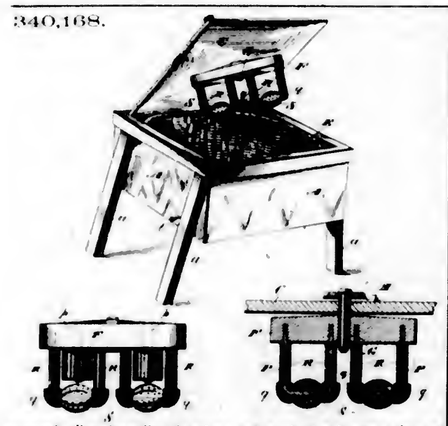
4. The stripping mechanism combined with the disk I and means of driving the same, the pulley *a*, provided with a means of engaging with the disk I, the shifting mechanism *r* and *n*, means of actuating the said shifting mechanism from the said stripping mechanism, and means of driving the said stripping mechanism from the pulley *a*, substantially as described, and for the purpose set forth.

5. The stripping mechanism combined with the disk I and means of driving the same, the pulley *a*, provided with means of engaging with the disk I, the shifting mechanism *r* and *n*, means of actuating the said shifting mechanism from the stripping mechanism, the spring *c*, and means of driving the stripping mechanism from the pulley *a*, substantially as described, and for the purpose specified.

340,168. WASHING-MACHINE. GEORGE H. THOMPSON, Reading, and WILLIAM H. ROTHERMEL, Maiden Creek, Pa. Filed Nov. 10, 1885. (No model.)

Claim.—1. In a washing-machine, the combination, with the box, of the reticulated or perforated inclosed basket, the rotary bar and loosely-

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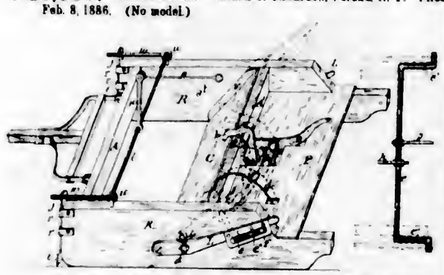
mounted rollers depending therefrom, and mechanism for supporting and rotating said bar, substantially as described.

2. In a washing-machine, the combination, with the box, its lid, and the rotary support pivoted to the under side of said lid, of the staple-like frames depending from said rotary support, and the corrugated rollers and soap-boxes mounted on said frames, substantially as described.

3. In a washing-machine, the combination, with a revolving clothes-pressing device, of the loose perforated soap-boxes, substantially as described.

4. In a washing-machine of the kind described, the combination, with the rotary bar, of the depending staple-like frames having the elastic shoulders *q q*, and the corrugated loose rollers, substantially as described.

340,169. ICE-SCRAPER. JOSEPH T. THOMPSON, Verona, N. Y. Filed Feb. 8, 1886. (No model.)



Claim.—1. In an ice-scraper, the combination of two runners, a scraping-plate pivoted transversely between the runners and on a vertically-movable axis, a latch adapted to retain the scraping-plate in its operative position and to release it for dumping, and a lever for raising and lowering the axis of the scraping-plate, substantially as and for the purpose set forth.

2. In an ice-scraper, the combination of two runners, a scraping-plate pivoted transversely between the runners and on a vertically-movable axis, a latch adapted to engage and release said scraping-plate, a lever for raising and lowering the axis of said plate, and a lever for dumping the scraping-plate, substantially as set forth.

3. The combination of the runners R R, the levers L L, pivoted on said runners, the shaft *a*, attached to said levers, the scraping-plate C, pivoted on said shaft, and the latch *b*, adapted to retain the plate C in its operative position, substantially as described and shown.

4. The combination of the runners R R, provided with the slots *c c*, the levers L L, pivoted to the outer sides of the runners, the shaft *a*, extended through said slots and connected to the levers, the scraping-plate C, pivoted on said shaft, the latch *b*, adapted to retain the plate C in its operative position, and the lever *d*, for dumping the scraping-plate, substantially as described and shown.

5. The combination of the runners R R, provided with slots *c c*, the levers L L, pivoted on the outer sides of the runners, the shaft *a*, extended through said slots and connected to the levers, the scraping-plate C, pivoted on said shaft, the shaft *e*, having cranked arms *e' e'* connected with the free ends of the levers L L, and the lever D, attached to the shaft *e*, for turning the same, substantially as set forth and shown.

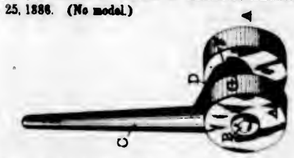
6. The combination of the runners R R, provided with slots *c c* and united by cross-bars A A', the levers L L, pivoted on the outer sides of the runners, the shaft *a*, extended through said slots and connected to said levers, the scraping-plate C, pivoted on said shaft, the slotted plates *f f*, attached to the levers L L, the shaft *e*, having cranked arms *e' e'*, entering the slotted plates *f f*, the lever D, and cam *h*, attached to the shaft *e*, the latch *b*, pivoted on the cross-bar A', and actuated by the aforesaid cam, and the lever *d*, attached to the scraper-plate, substantially as described and shown.

7. In combination with the runners R R and the scraping-plate C between said runners, the scrapers *i i*, connected vertically adjustable on the front end of the runners, substantially as and for the purpose set forth.

8. In combination with the runners R R and the scraping-plate C between said runners, the scrapers *i i*, connected vertically adjustable on the front end of the runners and standing convergent toward the space between the runners, substantially as and for the purpose set forth.

9. In combination with the runners R R and the scraping-plate C between the runners, the scrapers *i i*, connected vertically adjustable on the front end of the runners, the shaft *l*, pivoted on top of the runners and having arms *m m*, connected with the scrapers *i i*, the lever-arm *n*, projecting vertically from the shaft *l*, and the rod *o*, extended rearward from the said arm, substantially as described and shown.

340,170. CASTER. RACHEL S. THOMPSON, Hamilton, Ohio. Filed Jan. 25, 1886. (No model.)

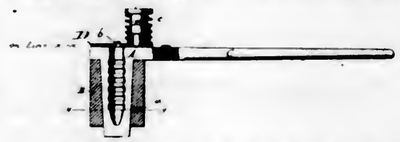


Claim.—1. In a caster, the combination of an axle, two floor-wheels upon the same, a stem adapted to engage and rotate within a socket in furniture or the like, and a wing integrally formed upon the base of the stem and provided with a hole engaging the axle between the two floor-wheels and adapted for oscillation upon the axle, substantially as and for the purpose set forth.

2. In a caster, the combination of an axle, two floor-wheels upon the same, a block disposed between the floor-wheels and engaging over the axle, a stem adapted for attachment to furniture or the like, and a wing integrally formed with a stem and projecting between the two floor-wheels and engaging the axle and the block, substantially as and for the purpose set forth.

3. In a caster, the combination of axle B, two floor-wheels, A, upon the same, a stem, C, fitted to engage and rotate in a socket in furniture or the like, a wing, D, integrally formed with the stem and projecting outward over the base thereof between the two floor-wheels, the hole E in the wing encircling the axle, the pivot-bearings F, formed upon the wing, and the block G, disposed upon the axle between the floor-wheels and engaged by the pivot-bearings of the wing, substantially as and for the purpose set forth.

340,171. MEANS FOR PRODUCING AND SWAGING BULLETS. DAVID S. TRIMMER, Springfield, Ohio. Filed July 24, 1885. Renewed March 25, 1886. (No model.)



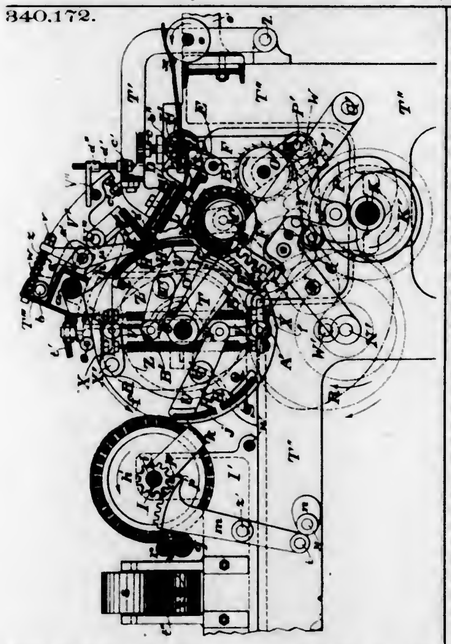
Claim.—1. In combination with the divided mold and its encircling ring, the movable plate provided with the inlet-orifice *b*, and the plunger E.

2. In combination with the divided mold having a conical exterior surface, the encircling ring B, the movable plate D, having the orifice *b*, the plunger E, and the spring to retract such plunger.

340,172. MACHINE FOR COMBING FIBROUS MATERIALS. HENRI TRUELLE, Lure, France. Filed Mar. 2, 1883. (No model.) Patented in France Dec. 2, 1879, No. 133,954; in Germany Dec. 20, 1879, No. 10,141, and Sept. 24, 1881, No. 15,137; in England Aug. 24, 1880, No. 3,422, and in Belgium Aug. 25, 1880, No. 52,400, Dec. 13, 1880, No. 53,302, and Dec. 5, 1881, No. 56,402.

Brief.—The fiber is fed through a sliding grate-box on an oscillating table acting in conjunction with a stop-comb. The end of the sliver is seized by the jaws of a revolving nipper-cylinder and a tuft torn off, the end within the jaws being combed by an oscillating segmental comb and the outer end by being drawn through the fixed comb. Before the tuft is entirely separated the jaws open for an instant and the tuft is drawn out, so that a straight comb can enter between the jaws and the portion previously held by them, whereby the noil is wholly removed. At the opposite side of the cylinder, the jaws deliver the tuft to a rotary brush, the position of the taft upon the brush being reversed by an oscillating segmental blade and formed into a continuous sliver, which is removed by rolls in an ordinary manner.

340,172.



Claim.—1. The combination of a nipper-cylinder and two intermeshing elliptical gear-wheels, one of which is secured to said cylinder, with the driving-shaft, the gearing between said shaft and the second elliptical wheel, and the supporting-frame, substantially as set forth.

2. The combination of a nipper-cylinder and two intermeshing elliptical gear-wheels, one of which is secured to said cylinder, with the driving-shaft, the gearing between said shaft and the second elliptical wheel, the supporting-frame, a comb, C', operating within the nipper-cylinder, the arms D', carrying said comb, the shaft T on which said arms are mounted, and the means for oscillating said shaft T and comb C', consisting of a cam carried by the driving-shaft and levers and gearing operated by said cam, substantially as set forth.

3. The combination of the driving-shaft and a cam carried thereby with an oscillating shaft, T, levers and gearing between said shaft, whereby the cam on the former oscillates the latter shaft, a stationary shaft, Z, having two curves of different radius, the nipper-jaws H H', rollers traveling on the curves of said cam, springs for holding said rollers against the latter, and levers and arms, through which the said nipper-jaws are actuated by said rollers and doubly-curved cam, substantially as set forth.

4. The combination of a nipper-cylinder having jaws, driving-shaft, and intervening gearing with levers and cams for operating the said jaws, a shaft oscillated by said driving-shaft, a cam, levers, and gearing for communicating motion from the latter shaft to the former, and a comb carried by said oscillating shaft and operating within said nipper-cylinder, substantially as set forth.

5. The combination of two pairs of segmental nippers, each pair formed of a stationary and a movable jaw, end plates to which the stationary jaws are secured, means for revolving said end plates, levers to which the movable jaws are affixed, said levers being fulcramed on said end plates, two double cranks, each consisting of a pin passing through one of the end plates, an arm secured to said pin inside the end plate, a second arm secured to said pin outside the said end plate, a roller mounted on each of the external arms, stationary cam-surfaces on which said rollers are caused to bear, links connecting the internal arms of said double-cranks to the levers carrying the movable nipper-jaws, and springs connecting the internal arms of the double cranks, all substantially as and for the purpose set forth.

6. The combination of a rotary brush and its shaft with a segmental blade surrounding part of said brush, supporting-arms for said blade mounted on said shaft, a pinion fast on the hub of one of said arms, a segment engaging said pinion, a lever, a shaft and cam for oscillating said segment, and devices for feeding the fibrous material to said brush and removing it therefrom, substantially as set forth.

7. The combination of the sides frames T'', and driving-shaft K, journaled therein, with the gears *k'*, *r'*, and R R, the end plates, Q Q, shaft T, the stationary jaws H H, rigidly connecting said end plates, the movable jaws H', levers U, pins U', fast to end plates, Q, links V, the double cranks, each consisting of arm X, pin X', and arm X'', the springs B', caps A', friction-rollers Y, and the cams Z, which are fast to side frames of the machine.

8. The combination of the two end plates Q, the shaft T, the side frames, T'', the stationary nipper-jaws H, rigidly connecting said end plates, the pins U', rigidly secured to the end plates, the levers U, movable nipper-jaws H', applied to said levers, double cranks, each consisting of an arm, X, pin X', and arm X'', rollers Y, cams Z, fast to said frames T'', links V, caps A', and the helical springs B', with the two elliptical gear-wheels R, engaging each other, wheel *r'*, pin W' fast to one of said frames T'', gear-wheel *k'*, and the driving-shaft K, which is journaled in said side frames, T'', all substantially as set forth.

9. In combination with the driving-shaft and feeding mechanism consisting of a vertically-movable table, a horizontally-movable grate-box arranged on said table, cams on the driving-shaft, levers, segments, and racks actuated by said cams, to effect the horizontal reciprocation of said grate-box, additional cams on the driving-shaft for effecting vertical motion of said table, and levers whereby said motion is transmitted from said cams to the latter, substantially as set forth.

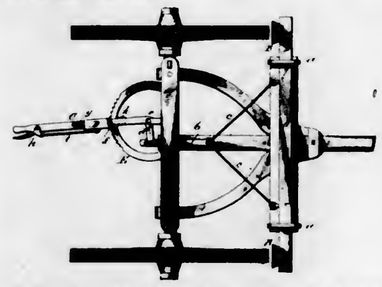
10. In combination with the nipper-cylinder, sliding grate-box, feeding-table, driving-shaft, and cams, levers, and arms, whereby said shaft opens and closes the nippers of said nipper-cylinder, raises and lowers said table, and gives horizontal reciprocatory motion to said grate-box, the rocking segmental comb C', the cam, levers, arms, and shaft, whereby the driving-shaft oscillates said comb, the stationary stop-comb, the straight comb Q' between the nipping-cylinder and stop-comb, the arms and levers which support said comb Q', a rock-shaft having arms connected to one of said supporting-arms of the latter comb, an additional arm of said rock-shaft, and a cam carried by the nipper-cylinder which acts on the latter arm to oscillate said rock-shaft and said straight comb, substantially as set forth.

11. The oscillating comb C' and the comb Q', arranged, respectively, inside and outside of the nipper-cylinder, in combination with the latter, means, as described, for rotating said cylinder, the driving-shaft, the supporting-frame, cams, levers, rock-shafts, and arms, whereby the oscillating motions of said combs are effected, and cams, levers, and arms for opening and closing the nipper-jaws of said cylinder, substantially as set forth.

12. The stationary nipper-jaws H and movable nipper-jaws H', in combination with the driving-shaft, a cam on said shaft, the shaft T, intervening levers E' F'', the noses *g* on the latter shaft, the rollers *g'*, arranged to be actuated at times by said noses, the levers U, pins U', plates Q, links V, arms X, pins X', arms X'', and the supporting-frame of the machine, substantially as set forth.

13. In combination with the nipping-cylinder having movable jaws H' and stationary jaws H, and the extracting-roller R', bearing against the same, with the straight comb Q', the driving-shaft and levers, shafts, cams, and gearing, whereby the said driving-shaft actuates said comb and cylinder, as described, substantially as set forth.

340,173. WAGON-BRAKE. FREDERICK ULRICH, Peru, Indiana. Filed Dec. 10, 1885. (No model.)



Claim.—In a wagon-brake, the combination, with a segmental ratchet-bar having the teeth upon its outer edge, and a pivoted operating-lever, of a sleeve, through which the lever passes, sliding thereon and controlled by a rod and pivoted latch, said sleeve having a tooth to engage with the ratchet-teeth, and a depending guard or guide extending down upon one side of the ratchet-bar, substantially as and for the purpose set forth.

340,174. SHEET-METAL-ROOF-SEAMING IMPLEMENT. PETER Vanden BERGHE, Philadelphia, Pa. Filed Oct. 16, 1885. (No model.)



Claim.—1. In a tinner's seaming implement, the combination, with one of the two coincident jaws thereof, of a detachable forming-slide, whereby the longer of two vertical members of a seam is forced into a horizontal position across the upturned vertical portion of the shorter member.

2. In a seaming implement, the combination, with one of the jaws thereof, of a detachable forming-slide and a hinged follower or bending and compressing plate, the slide operating to accomplish the first positive step in the operation of forming the seam, and the follower operating to accomplish the second positive step, substantially as described.

3. The combination, in a tinner's seaming implement, of a pivoted jaw, a compressing-plate or follower which has rotary movement upon the jaw, and a stop which is pivoted upon the jaw, and which engages with the compressing-plate to diminish its range of movement.

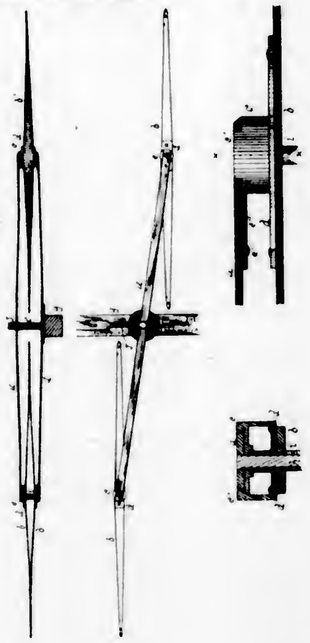
4. The combination, in a tinner's seaming implement, of a jaw which is provided with a stop, the stop being pivoted upon the handle of the jaw, and operating to engage the handle of the opposite jaw and diminish the extent of the arc within which it has movement.

5. In a tinner's clamping implement or seamer, the combination, with one of the jaws thereof, of a supporting block which is pivoted to the jaw, and a stop which consists of a set-screw which is provided with a lateral spur or guard, which engages the pivoted block to retain it in its supporting position.

6. The combination, with the jaw B, having the guide-lugs or holding-plates *b'*, of the detachable forming-slide B^3 and means for retaining the slide in its position within the guide-lugs.

7. The combination of two coincident clamping-jaws, each jaw being provided with an elevating-block, and one of the jaws being provided also with a compressing-plate or follower, and with a pivoted stop which acts in connection with such compressing-plate or follower.

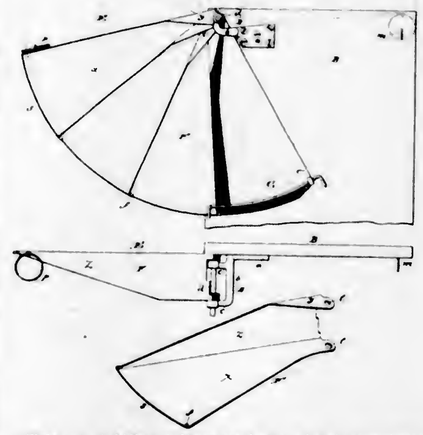
340,175. WHIFFLETREE. THOMAS M. VAUGHAN, Fuller's Point, Ill. Filed Dec. 21, 1885. (No model.)



Claim.—1. In whiffletrees, the combination of a pair of coextensive approximately parallel bars having dovetail formations on their respective ends, pivot-heads having dovetail recesses that fit over the ends of the bars, single-trees centrally pivoted between the opposite ends of said bars and provided with plates that engage the pivot-heads, suitable means of securing the bars to the single-trees, and a brace at the longitudinal center of the bars for maintaining relative rigidity, as set forth.

2. In whiffletrees, the combination of bars *a*, longitudinally coextensive and approximately parallel pivot-heads *c*, dovetailed on bars *a*, and secured longitudinally thereon by rivets *c'''*, through arms *c''*, single-trees *b*, provided with plates *d*, and central braces *i*, securing bolts *h* and central brace *e* in the position shown, as and for the purpose set forth

340,176. TABLE EXTENSION-LEAF. SIMON W. WARDWELL, Jr. Woonsocket, R. I. Filed Sept. 5, 1885. (No model.)



Claim.—1. A folding shelf composed of a series of sector-shaped sections pivotally secured together at their narrow ends, and adapted to fold one within the other, substantially as and for the purpose set forth.

2. A folding shelf composed of a series of sector-shaped sections adapted to fold one within the other and pivoted at the inner ends to a vertical pivot, and stops for preventing each section from being separated from the adjacent section, substantially as and for the purpose set forth.

3. The combination, with a platform, of a shelf composed of a series of sections pivoted at their inner ends to a vertical pivot, and capable of folding one within the other, substantially as and for the purpose set forth.

4. The combination, with a platform, of a bracket secured thereto, a shelf composed of a series of sector-shaped sections pivoted at their inner ends to said bracket, said sections adapted to fold one within the other, and stops for limiting the movement of the sections, substantially as and for the purpose set forth.

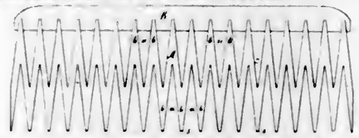
5. The combination of the platform, a bracket secured thereto at the corner, and a shelf composed of a series of sector-shaped sections pivotally supported by the bracket, and provided with stops for limiting the spread of the sections, substantially as and for the purpose set forth.

6. The combination of the platform, a bracket secured thereto at the corner, and a shelf composed of a series of sector-shaped sections pivotally supported by the bracket, and provided with stops for limiting the spread of the sections, and a retaining device for securing the sections when spread, substantially as and for the purpose set forth.

7. The combination of the platform, a bracket secured thereto, a shelf composed of a series of sector-shaped sections, each formed with a side brace and ear projecting laterally therefrom, said sections being pivoted to the bracket and adapted to fold one within the other, stops for limiting the spread of the sections, and a retaining device for securing the sections in place when spread, substantially as and for the purpose set forth.

8. The combination of a table or other like support, a bracket secured thereto, a shelf composed of a series of sector shaped sections pivoted at their inner ends to the bracket and adapted to fold one within the other, stops for limiting the spread of the sections, and the guide-rod, substantially as and for the purpose set forth.

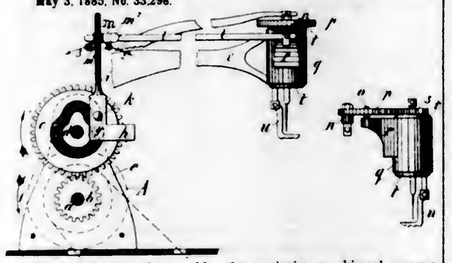
340,177. STIFFENER FOR BOOTS OR SHOES. WALTER H. WATSON, Sharon, Mass. Filed Feb. 4, 1886. (No model.)



Claim.—1. The improved heel-stiffener composed of a piece of leather or leather-board and the improved re-enforce, substantially as described, consisting of two ranges of teeth in which the angular space between any two teeth of each range is extended into a tooth of the other range from its base toward its point, essentially as set forth, and each of the teeth of either or each range is hooked or bent near its point at an angle to the rest of the tooth.

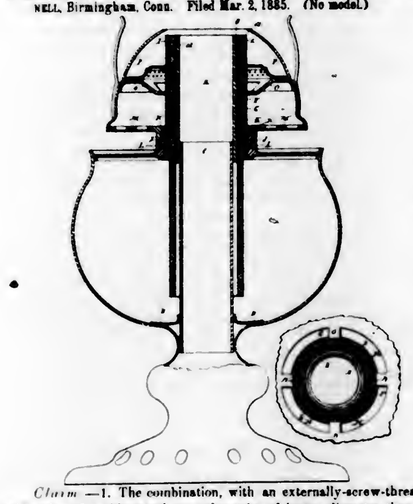
2. The improved heel-stiffener composed of a piece of leather or leather-board and the improved re-enforce, substantially as described, consisting of two ranges of teeth in which the angular space between any two teeth of each range is extended into a tooth of the other range from its base toward its point, essentially as set forth.

340,178. SEWING-MACHINE. ALBERT WEDERMANN, Vienna, Austria-Hungary. Filed Dec. 15, 1885. (No model.) Patented in Germany May 3, 1885, No. 33,298.



Claim.—In a sewing-machine for producing a whipped or overcast seam, the combination of the toothed wheel *b*, the toothed wheel *c*, provided with groove *f*, the bar *i*, provided with the roll *g*, yoke *h*, and studs *k*, rod *l*, provided with the links *m m' m²*, toothed segment *p*, toothed wheel *s*, cylinder *t*, sleeve *q*, and cloth-feeder *u*, substantially as and for the purpose described.

340,179. OIL-BURNER. SAMUEL S. WILCOX and GEORGE W. BUNNELL, Birmingham, Conn. Filed Mar. 2, 1885. (No model.)



Claim.—1. The combination, with an externally-screw-threaded wick-tube, of a thin-metal operating-tube of larger diameter than the wick-tube and surrounding the same, and longitudinally corrugated to produce elevations upon its inner and depressions in its outer face, and a burner-cone and a coupling-plate surrounding, coupled with, and operating the said operating-tube, the corrugations of which engage with the wick and form passages for currents of air flowing upward from below the coupling-plate, substantially as set forth.

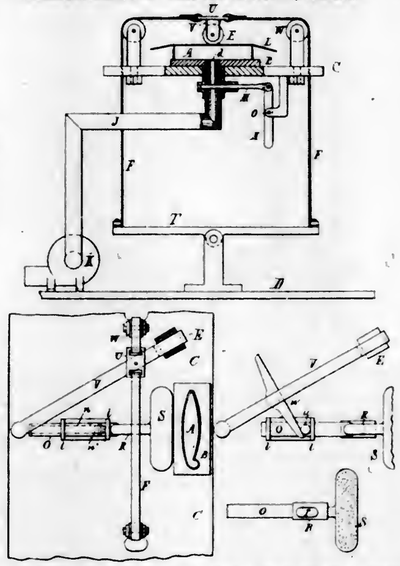
2. The combination, with an externally-screw-threaded wick-tube, of a thin-metal operating-tube longitudinally corrugated to produce elevations upon its inner and depressions in its outer face, and provided with external ribs, and a movable burner-cone carrying a plate engaging with the operating-tube through the said ribs, substantially as set forth.

3. The combination, with the font of a lamp, of an externally-threaded collar secured thereto, an externally-threaded wick-tube, a wick-operating tube fitting within the said collar and provided with a ledge resting upon the upper edge thereof, a plate screwed upon the collar and provided with a shoulder extending over the ledge of the wick-operating tube which it holds in place, and a movable burner-cone coupled with the wick-operating tube, substantially as set forth.

4. In a lamp, the combination, with a font, of a draft-tube passing through it, a wick-tube connected with the draft-tube, and a wick-operating tube inclosing the wick-tube, the draft-tube being of smaller external diameter than the wick-tube, substantially as set forth.

5. The combination, with an externally-threaded wick-tube provided at its upper end with an oil-chamber separated from the thread by an unbroken horizontal shoulder, of a wick-operating tube made larger than the wick-tube and surrounding the same, substantially as set forth.

340,180. MACHINE FOR CUTTING CIGAR-WRAPPERS. JOHN R. WILLIAMS, Newark, N. J. Filed Feb. 10, 1883. (No model.)



Claim.—1. The combination, with a cutter having a perforated holding-plate, as described, of a carrier having a perforated holding-plate, as set forth, and means, substantially as described, for exhausting the air alternately from the two perforated plates, so as to clamp or hold the material alternately to the cutter and the carrier, as herein shown and described.

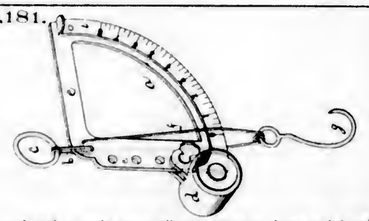
2. The combination, with the cutter A, roller E, and its swinging arm V, of a pneumatic carrier, S, mounted to move to and from the cutter, as described, and a connection to the arm V for moving the carrier automatically, substantially as shown and described.

340,181. WEIGHING APPARATUS. LOREN R. WITHERELL, Davenport, Iowa, assignor to Edward Russell, John N. Greer, and Henry B. Harford, all of same place. Filed Oct. 24, 1885. (No model.)

Claim.—1. In a weighing apparatus, a swinging arc formed of one piece of metal, suspended by its vertical arm from a knife-edged loop and having an adjustable counterpoise, *d*, arranged upon said vertical arm and a graduated scale attached to the curved portion, in combination with the index-rod and scale-hook, arranged and constructed as shown and described, and for the purposes set forth.

2. In a weighing apparatus, the arm *e*, having a series of perforations to admit of the adjustment of the counterpoise *d*, arranged as shown, in combination with the curved graduated scale *i*, index-rod *f*, loop *b*,

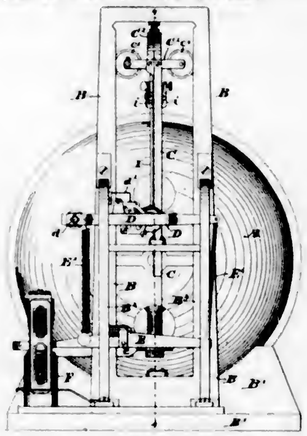
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ring *c*, and hook or scale-pan *g*, all constructed as shown and described, and for the purposes set forth.

3. In a weighing apparatus, a swinging arc provided with an adjustable counterpoise, constructed as described, said arc having upon its face an engraved or printed scale graduated to show different rates of postage, or values, or weights, according to different systems, in combination with the index-rod and tray, substantially as specified and shown, and for the purposes set forth.

340,182. ELECTRIC LAMP. LEONIDAS G. WOOLLEY, Grand Rapids, Mich., assignor to Henry H. McGaffey and Chester Bradford, both of Indianapolis, Ind. Filed May 12, 1885. (No model.)



Claim.—1. The combination, in an electric lamp, of a frame-work having ways therein, the carbon-carrying frame, a cross-head thereon which enters and moves in said ways, mechanism mounted on said frame-work for controlling the movements of said carbon-carrying frame, a solenoid mounted on the base of said frame-work, and connections between said solenoid and said mechanism.

2. The combination, in an electric lamp, of the frame-work having ways therein, the carbon-carrying frame, a cross-head thereon having widely-extended arms, pivot shafts or axles mounted in said arms, anti-friction trucks having long hubs and formed to fit and run in the ways in the frame-work and mounted on said axles, a clock-work mechanism for governing the carbon-carrying frame, and the solenoid and connections thereto for governing said mechanism, substantially as set forth.

3. In an electric lamp, in combination with the frame D, carrying the clock-work, the screw-threaded rod *b*, having bearings for the pivots of said frame in its ends, and nuts *b'* upon each side of the portion of the frame through which it passes, whereby it and said frame D may be adjusted, substantially as shown and specified.

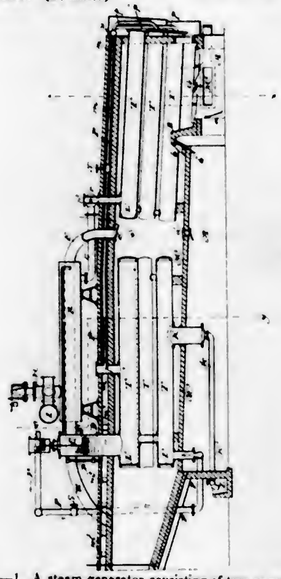
4. The combination, in an electric lamp, of the frame-work, the carbon-carrying frame, the pivoted frame carrying the clock-work, the pivoted bar E, connected to the armature of the solenoids at one end and at the other end to said pivoted frame carrying the clock-work by means of a connecting-rod, substantially as set forth.

5. The combination, in an electric lamp, of the frame D, carrying the clock-work, pivoted bar E, connected to the armature of the solenoids at one end and to said frame D at the other by a connecting-rod, and the spring E^2, connecting said frame D and bar E, substantially as shown and specified.

6. The combination, in an electric lamp, of a base, B', therefor, the frame B thereto, the solenoid F, mounted on said base, the frame D, mounted on said frame B, a carbon-carrying frame, mechanism for regulating the movements thereof mounted on said frame D, and connections running from said mechanism to said solenoid, substantially as set forth.

7. The combination, in an electric lamp, of the frame carrying the clock-work, vibrating bar connected thereto and to the armature of the solenoid, and having upon its end outside of said solenoid an enlarged portion or weight, a dash-pot arranged in the same frame with and alongside the solenoids, and a connection between said bar and said dash-pot, substantially as shown and specified.

340,183. STEAM-BOILER. ALEXIS YACOUBENCO, Kieff, Russia. Filed Jan. 9, 1886. (No model.)



Claim.—1. A steam-generator consisting of two or more connected boilers or groups of such arranged in battery, tandem fashion, or one behind the other, in a chamber common to all the boilers or groups or boilers, substantially as and for the purpose specified.

2. A steam-generator consisting of two or more connected boilers or groups of such arranged in battery, tandem fashion, or one behind the other, in a chamber common to all of them, in combination with a furnace and chimney located, respectively, at opposite ends of said chamber, substantially as and for the purpose specified.

3. A steam-generator consisting of two or more connected boilers or groups of such arranged in battery, tandem fashion, or one behind the other, in a chamber common to all of them, in combination with a furnace located at one end of said chamber, a boiler-feeder located at and connected with the end of the boiler or group of boilers farthest from the furnace, and a chimney located at the end of the chamber opposite to that at which the furnace is located, substantially as and for the purpose specified.

4. The herein-described improvement in steam-generators, consisting of two or more connected boilers or groups of such arranged tandem fashion, or one behind the other, in a chamber common to all of them, a non-interrupted passage for the heat and products of combustion extending in a straight line along and around said boilers from the furnace to the chimney, and a non-interrupted air-circuit extending through the walls of said chamber, having its initial open to the atmosphere and its terminal underneath the furnace-grate, substantially as and for the purpose specified.

5. The herein-described improvement in steam-generators, consisting of two or more connected boilers or groups of such arranged tandem fashion, or one behind the other, in a chamber common to all of them, a non-interrupted passage for the heat and products of combustion extending in a straight line along and around said boilers from the furnace to the chimney, a passage in the roof of the chamber connected with the different groups of boilers, and a passage or chamber below said boilers in communication with the boiler-chamber and the ash-pit by valved passages, substantially as and for the purpose specified.

6. A steam-generator consisting of two or more connected boilers arranged in battery, tandem fashion, or one behind the other, one or more of said boilers being arranged on an inclined plane, as and for the purpose specified.

7. A steam-generator consisting of two or more groups of connected boilers arranged in battery, tandem fashion, or one group behind the other, one or more of the series being arranged on an inclined plane, as and for the purpose specified.

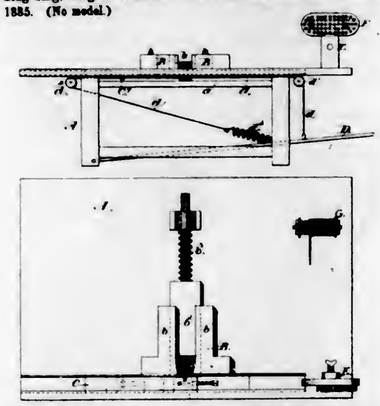
8. In a steam-generator, two or more boilers or groups of boilers arranged in battery, tandem fashion, or one behind the other, a furnace located at one end of the series of boilers or groups of boilers, and a boiler-feeder located at and connected with the end of the boiler or group of boilers farthest from the furnace and operating to feed all the boilers or groups of boilers, in combination with a heater for heating the feed-water as it passes from one boiler or group of boilers to the other, substantially as described.

9. In a steam-generator, a furnace, two or more boilers or groups of boilers arranged tandem fashion, or one behind the other, and a steam dome or reservoir common to all the boilers or groups of such, in combination with a heater operating to dry or superheat the steam in the dome or reservoir by means of heat derived from the furnace, substantially as described.

10. In a steam-generator, an inclosing-structure for the boiler and furnace, in whose lateral walls and roof are formed air-ducts, a fire-bridge extending across the draft passage or passages in rear of the furnace, an ash-pit below the furnace-grate, and an air-chamber in rear of the fire-bridge below the sole or bottom of the structure in communication with the ash-pit and draft-passages through valved openings, the air-ducts in the walls and roof of the structure forming an air-circuit that has its initial in communication with the atmosphere and its terminal in the space below the grate, substantially as and for the purpose specified.

11. In a steam-generator, the combination, with one or more boilers or groups of boilers arranged tandem fashion, or one behind the other, and a steam dome or reservoir common to all such boilers, of a boiler-feeder consisting of a float operating a stop or valve in the feed-pipe and located in a float-chamber connected with the last boiler or one of the boilers of the last group of such of the series and with the steam-reservoir, said float-chamber being arranged at a higher level than the highest level of the series of boilers, substantially as and for the purpose specified.

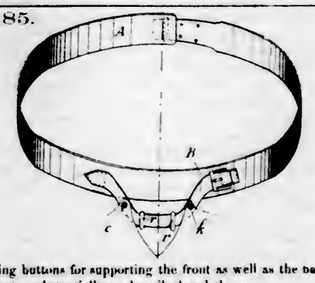
340,184. MACHINE FOR MAKING BRUSHES. LEONARD YOUNG, Sing Sing, assignor to Patrick D. Tierney, Albany, N. Y. Filed Apr. 11, 1885. (No model.)



Claim.—1. In a brush-making machine, a sliding plate, C, composed of a top and bottom plate secured together and provided with a notch, *c*, in one edge, an adjustable end plate, *c'*, having a hooked point, c^2, and a central plate, c^4, having a hooked point, c^3, fitted between the said top and bottom plates, the said central plate, c^4, having an endwise sliding movement that is independent of the movement of the sliding plate C, but is produced by the mechanism which operates the latter, as and for the purpose herein specified.

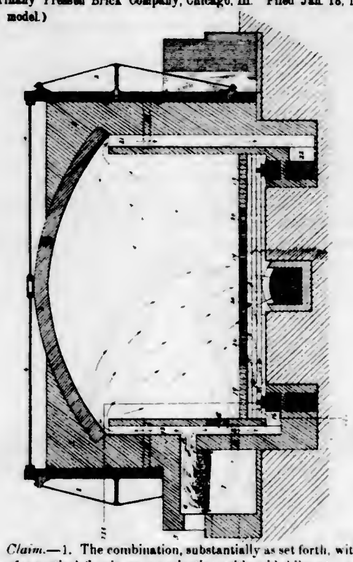
2. In a brush-making machine, a stockholder, B, having curved side pieces, *b*, to form the contracted throat *b'*, and the spring-actuated slide b^2, in combination with the plate *a* of the table A whereon the bristles are butted and sustained, as and for the purpose herein specified.

340,185. COMBINED BELT AND SUSPENDER. JACOB ADLER, Cologne, Germany. Filed Aug. 3, 1885. (No model.) Patented in Germany Apr. 21, 1885, No. 33,256; in Belgium Apr. 21, 1885, No. 68,589; in France Apr. 25, 1885, No. 168,500; in Austria-Hungary June 27, 1885, No. 23,977 and No. 571,341; in England July 24, 1885, No. 8,932; in Luxemburg Dec. 9, 1885, No. 622; in Italy Dec. 9, 1885, and in Spain Dec. 9, 1885.



Claim.—The hereinbefore-described device for holding or suspending pants, composed of a belt, A, buckled in front and provided at its rear, for the purpose of supporting the back portion of pants, with an elastic band B, which is sewed at one end to the belt and provided at the other with the buckle and the intermediate rings, *r r*, the said device having buttons for supporting the front as well as the back portions of the pants, substantially as described and shown.

340,186. BRICK-KILN. WILLIAM ALSIP, Momence, assignor to the Tiffany Pressed Brick Company, Chicago, Ill. Filed Jan. 18, 1886. (No model.)



Claim.—1. The combination, substantially as set forth, with a brick-kiln, of a vertical flue in communication with said kiln at or near the top and at the bottom thereof, and a fire-box in communication with said flue at a point about midway between the upper and lower ends thereof, said flue being provided with dampers for reversing the current above and below the opening communicating with the fire-box.

2. The combination, substantially as set forth, with a brick-kiln, of a vertical flue opening into the kiln near the top thereof and extending below the bottom thereof, a furnace having an elevated fire-box communicating with said flue about midway between its upper and lower ends, said vertical flue being provided with dampers above and below the opening communicating with the fire-box, and flues connecting the lower end of said vertical flue with the bottom of the kiln through openings in the floor thereof.

3. The combination, substantially as set forth, with a brick-kiln, of a vertical flue opening at its upper end into the kiln near the top thereof and extending below the bottom thereof, an elevated fire-box in communication with said flue at a point about midway between the upper and lower ends thereof, said vertical flue being provided with dampers above and below said points of communication, a horizontal flue extending longitudinally of the kiln and in communication with the lower end of the vertical flue, and transverse distributing-flues connected with said horizontal flue and in communication with the interior of the kiln through the openings in the floor thereof.

4. The combination, substantially as set forth, with a brick-kiln, of a vertical flue opening at its upper end into the kiln near the top thereof and extending below the bottom thereof, an elevated fire-box in communication with said flue at a point about midway between the upper and lower ends thereof, said vertical flue being provided with dampers above and below said points of communication, a horizontal flue extending longitudinally of the kiln and in communication with the lower end of the vertical flue, transverse distributing-flues connected with said horizontal flue and in communication with the interior of the kiln through the open-

ings in the floor thereof, vertical descending flues, also opening near the top of the kiln, and a horizontal exit-flue below said longitudinal distributing-flue for connecting said descending flue with the smoke-stack.

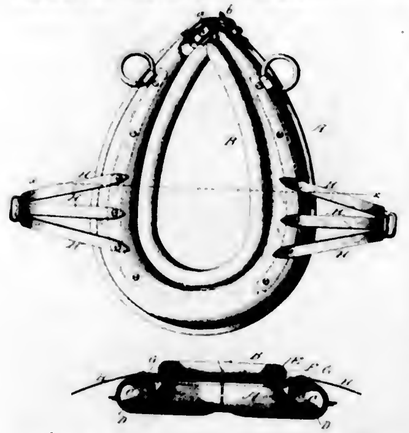
5. A brick-kiln having a floor which is solid near the side walls and perforated in its central portion, said kiln being provided with main flues connected with said perforated floor, and with auxiliary perforations in its sides near the floor for the admission of heat to the bricks on the solid portions of the floor, substantially as described.

6. The combination, substantially as set forth, of a brick-kiln having a floor which is perforated in its central portion and solid at its side portions, a series of transverse flues or channels beneath said floor, and longitudinal distributing-flues at the sides of the kiln below said transverse flues, provided with top openings into said transverse flues, and flues connecting said longitudinal distributing-flues with the fire-boxes.

7. The combination, substantially as set forth, with a brick-kiln having a perforated floor, of the elevated fire-boxes 6, the vertical flues 12, provided with dampers 13 and 14, with fire-holes 11, and with openings 16 at their lower ends, the longitudinal distributing-flues or fire-chambers 17, the transverse distributing-flues 18 immediately below the perforated floor, the descending flues 21, provided with dampers, the horizontal exit-flues 23, provided with dampers, and the horizontal central exit-flue, 24, provided with a damper.

8. The combination, substantially as set forth, of a kiln, the elevated fire-boxes 6 at the sides thereof, the vertical flues 12, provided with fire-holes 11 about midway between their upper and lower ends, with the dampers 13 and 14 above and below said fire-holes, and with the perforations 15 between said fire-holes and the lower dampers, 14, the partially-solid and partially-perforated floor 19, the transverse flues 18 beneath said floor and in communication with said flues 12, and the central exit-flue, 24, in communication with said transverse flues.

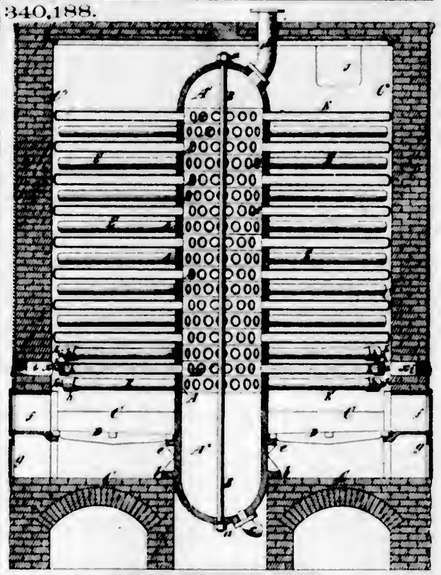
340,187. HORSE-COLLAR. JOHN AMBROSE and GEORGE J. ATKINS, Youngstown, Ohio. Filed Dec. 29, 1885. (No model.)



Claim.—1. A horse-collar consisting of an inflated sack provided with a roll formed of an elastic tube, said sack and tube having a covering of leather, and re-enforce plates or strips interposed between the covering and sack, substantially as and for the purpose set forth.

2. A horse-collar consisting of an inflated sack provided with a leather covering, a roll connected thereto and consisting of a rubber tube and a covering of leather, and re-enforce plates or strips and draft-straps suitably connected to the leather covering of the collar, substantially as and for the purpose described.

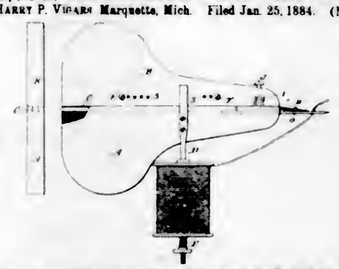
340,188. STEAM-GENERATOR. BENJAMIN T. BABBITT, New York, N. Y. Filed Aug. 31, 1885. (No model.)



Claim.—1. In a steam-generator, the combination, with a central upright reservoir or chamber composed of a series of rings superposed one on another in edge-to-edge contact, and heads above and below the rings, of a central bolt connecting the heads and securing the heads and rings together, and horizontal series of tubes made separate from the rings and inserted radially therein, substantially as herein described.

2. In a steam-generator, the combination, with a central upright cylindric reservoir or chamber and radial tubes extending therefrom, the reservoir or chamber being provided near its base with a laterally-projecting flange or ledge, *e*, of a furnace surrounding the reservoir or chamber, and a number of grates arranged around the reservoir or chamber, and having their inner ends supported on the said flange or ledge, substantially as herein described.

340,189. RAG OR WORSTED WORKER. SAMUEL W. BAILEY and HARRY P. VIGARS, Marquette, Mich. Filed Jan. 25, 1884. (No model.)



Claim.—1. The combination of the parts A B, which are adapted to be worked back and forth upon each other, rod D, secured to one of the parts and adapted to carry a spool upon one end, its opposite end extending over the other part, stops that are adjustably secured to one of the parts for the purpose of striking against the rod D and limiting the play of the parts, needle O, and loop-retainer H, substantially as described.

2. The combination of the parts A B, which are adapted to be worked back and forth upon each other, stops for regulating the play of said parts, needle O, loop-retainer H, pivoted at its inner end, spring I, for pressing the loop-retainer outward, and screw J, for limiting the play of the loop-retainer, and thereby regulating the length of the stitch, substantially as described.

3. The combination of the two parts of the frame with the needle and the loop-retainer, the needle being provided with grooves on its inner face, and the loop-retainer being provided with points on its extended end for entering the grooves in the needle, substantially as described.

4. The combination of the blocks A B, needle O, loop-holder H, holding devices for securing it loosely to the block B, spring, and set-screw, substantially as specified.

5. In an embroidering implement, the combination, with sliding or reciprocating means, as blocks A B, of a needle and a loop-holder, attached, respectively, to the forward ends of said blocks, one of the same being substantially concave and the other substantially convex, as set forth.

340,190. GRAIN-DRILL. HENRY C. BEERS, Canton, Ill. Filed Sept. 22, 1885. (No model.)

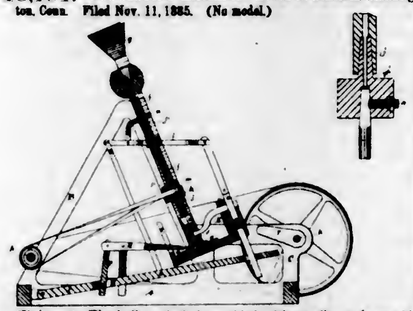
Claim.—1. The combination, in a grain-drill, with the hopper and an oscillating tube, A, of the rotary colter.

2. In a grain-drill, the combination, with a tube, A, having an annular flange on its upper end, and annulus or elliptical frame in the bottom of a seed-box having segmental slots, through which pass suitable bolts from said flange to secure the same, of the concavo-convex rotary colter



3. The combination, in a grain-drill, with a tube, A, having an annular flange, *a*, and an elliptical frame, B, having segmental slots, through which suitable bolts from the said flange pass to secure the same, of the bearing-box D, band *d*, surrounding said tube, and concavo-convex colter.

340,191. NUT-TAPPING MACHINE. EDWIN N. BISHOP, Southington, Conn. Filed Nov. 11, 1885. (No model.)



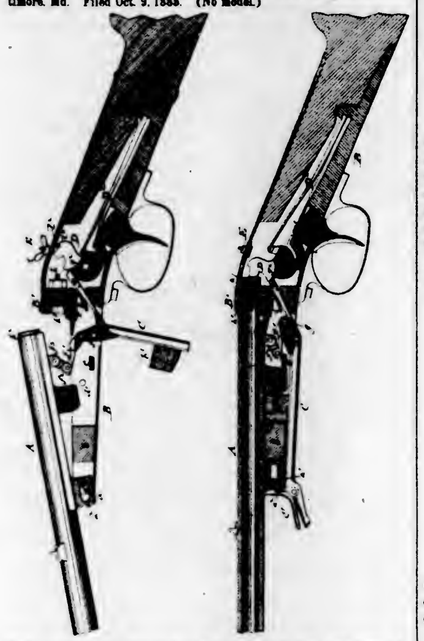
Claim.—1. The hollow shaft *j*, provided with a collar, *s*, in combination with the lever *l*, connecting-rod *v*, lever I, and cam J on the shaft *k*, as set forth.

2. The levers I, provided with jaws F on their lower ends, as described, in combination with the wedge G on slide *o*, the lever *l*, connecting-rod *v*, lever I, and cam J on shaft *k*, as set forth.

3. The finger-lever H, in combination with connecting-rod *p*, lever I, and cam J on shaft *k*, as set forth.

4. The hollow shaft *j* and chuck *m'*, provided with the catch *n*, as described, in combination with the clutch *m* on the shaft *j*.

340,192. BREECH-LOADING FIRE-ARM. RICHARD A. BERGER, Baltimore, Md. Filed Oct. 9, 1885. (No model.)



Claim.—1. The combination of the stock B, having a fulcrum, *a'*, a fixed cross-block, *b*, a locking-pin, *d'*, and a stop, *e*, a barrel, A, having a slotted lug, *a*, and a grooved lug, *d*, a hammer, D, a fulcrumed lever, C, having an interlocking lug, *b'*, pivot-links *f' f²*, connecting the lever to the barrel, and a setting-rod, *g*, pivoted to said lever and abutting against said hammer, whereby the barrel is shifted and raised and the hammer set simultaneously by the action of the lever C, substantially as described.

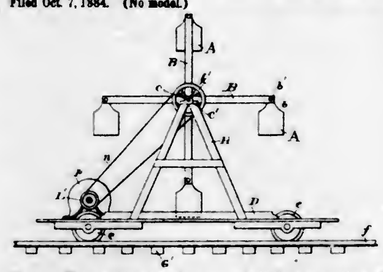
2. The combination of the stock B, having a fulcrum, *a'*, a fixed cross-piece, *b*, a pin, *d'*, and a transverse stop, *e*, a barrel, A, having a slotted lug, *a*, and a grooved lug, *d*, a fulcrumed lever, C, having a lug, *b'*, links *f' f²*, connecting the lever with the barrel, and a spring-pressed catch-piece, *c'*, fulcrumed to the front end of the lever and engaging a nose, *a²*, of the slotted lug *a* of the barrel, substantially as set forth.

3. In a breech-loading fire-arm, the combination, with the stock, of a barrel pivoted thereto and adapted to shift longitudinally on its pivot, a hammer in said stock, and a lever pivoted to said stock and adapted to shift and raise the barrel and to set the trigger simultaneously by a downward and backward movement of said lever, substantially as described.

4. The combination of the stock B, fulcrumed barrel A, operating-lever C, means, substantially as described, for locking the barrel and lever to the stock or releasing them therefrom, a hammer-setting rod, *g*, pivoted to the operating-lever, guide-block *g'*, extractor F, pivoted in said stock and provided with the spring *i*, compressed by rod *g*, and hammer D, having a heel, *g²*, against which said rod *g* presses to cock the hammer, substantially as described.

5. The combination, with the pivoted and spring-actuated hammer D, having the nose *l²* at the upper part, of the hammer-guard E, located in the stock directly above the hammer, said guard comprising a disk, *l'*, having a downwardly-projecting abutment, *l²*, at one edge thereof, and an exterior thumb-piece, *l*, for operating the same, whereby said disk is adapted to be turned axially to throw said abutment through an arc of a circle into or out of line with said hammer and engagement with the nose thereon, substantially as described.

340,193. ROTARY SWING. WILLIAM J. BISHOP, Baltimore, Md. Filed Oct. 7, 1884. (No model.)



Claim.—The combination of a carriage wholly supported on wheels resting on the track, a horizontal shaft, *c*, resting in bearings on the carriage, a swing-frame supported on the horizontal shaft to rotate in a vertical plane, a pulley attached to the said shaft of the swing-frame, a crank-shaft on the carriage provided with a pulley, a cog-wheel, *q*, on the carriage-axle, gearing connecting the said crank-shaft and cog-wheel, and a drive-belt, *n*, connecting the pulley on the swing-frame shaft with that on the crank-shaft, as set forth.

340,194. CHURN. WESLY M. CLINE, Rogersville, Tenn. Filed Aug. 17, 1885. (No model.)

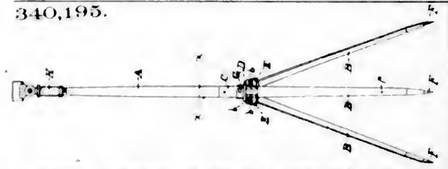


Claim.—The combination of the tapered churn-box, its dasher and dash-rod, and mechanism for actuating the latter, as described, with a cover, J, having a concavo-convex dish, *d*, a rim, *f*, flanges *e g*, and a corrugated skirting or flange, *g'*, as shown and described.

340,195. TRIPOD. HENRY P. CURTIS, Boston, Mass. Filed Feb. 4, 1886. (No model.)

Claim.—1. A tripod having pivoted to its head or socket legs which

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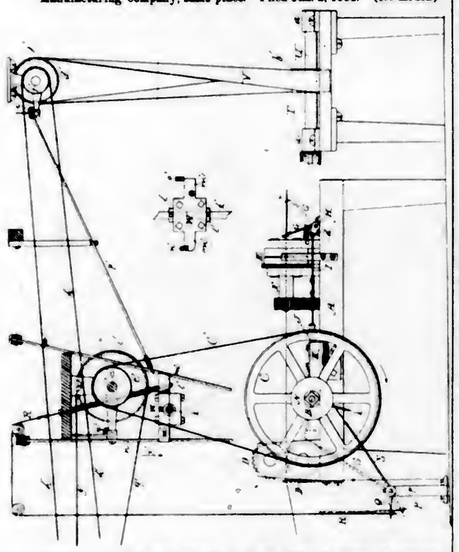
are component longitudinal segments of a pointed staff or stake, and which, when pressed closely together, form a single complete staff or stake, pointed at its lower end, substantially as described.

2. A tripod consisting of a single staff supported in a head or socket and of legs having substantially the form of sectors of a cylinder terminating in a point and pivoted to the head with the vertex of each sector turned inward, whereby when the legs are pressed closely together they form a complete staff continuous with the upper portion, and terminating in a point, substantially as described.

3. A tripod consisting of a single staff in its upper portion, a socket for said staff, and of three legs jointed or hinged to said socket, so that they may be turned upward and folded against said staff, in the manner and for the purpose substantially as described.

4. A tripod having the feet or points of its three legs constructed substantially in the form of segments of an inverted cone or pyramid produced by longitudinal sections through the vertex thereof, whereby when the feet are pressed closely together they will form a single conical or pyramidal point, substantially as described.

340,196. **MACHINE FOR MANUFACTURING BARBED FENCING.** JOHN D. CURTIS, Worcester, Mass., assignor to the Washburn & Moen Manufacturing Company, same place. Filed Jan. 2, 1885. (No model.)



Claim.—1. A device placed in front of the barbing mechanism and in the path of the barbs, and connected with mechanism for disconnecting the driving-power of the barbing portion of the machine, in combination with mechanism for disconnecting the driving-power of the twisting and spooling portion of the machine, whereby when the first device fails to be operated in a proper manner the barbing and the twisting and spooling portions of the machine, which are operated independently of each other, will be automatically stopped, substantially as set forth.

2. The combination, with the hinged or pivoted arm G, sliding bar J, and intervening mechanism, substantially as described, of driving-pin M, loose plate N, provided with lug *j* and arm *k*, and lever-arm S, connected with means for disconnecting the driving-power, to automatically stop the barbing and the twisting and spooling portions of the machine, substantially as set forth.

3. The combination, with hinged or pivoted arm G, sliding bar J, and intervening mechanism, substantially as described, collar L, and driving-pulley C, provided with driving-pin M, of the loose plate N, provided with lug *j* and arm *k*, and hinged or pivoted lever-arm S, connected with mechanism for disconnecting the driving-power of the machine and automatically stopping the barbing and the twisting and spooling parts thereof, substantially as set forth.

4. The combination, with the hinged or pivoted arm or lever G, sliding bar J, and intervening mechanism, substantially as described, of pin M, loose plate N, and lever-arm S, connected with cord R, for drawing down said cord to ship the driving-belts and automatically stop the barbing and the twisting and spooling portions of the machine, substantially as shown and described.

5. The combination, with hinged or pivoted arm or lever G, sliding bar J, and intervening mechanism, substantially as described, of pin M, loose plate N, lever-arm S, operated by said plate and cord R, and means for shipping the driving-belts or disconnecting the driving-power to automatically stop the barbing and the twisting and spooling portions of the machine, substantially as shown and described.

6. In a machine for manufacturing barbed fencing in which the barbing and the twisting and spooling portions of the machine are operated independently of each other, a device placed in front of the barbing mechanism and in the path of the barbs, and means, substantially as described, for disconnecting the driving-power of the barbing portion of the machine, in combination with means, substantially as described, for disconnecting the driving-power of the twisting and spooling portion of the machine, whereby when said first device fails to be operated in a proper manner the barbing and the twisting and spooling portions of the machine will be automatically stopped, substantially as set forth.

7. The combination, with lever-arm S and means for operating the same, substantially as described, of the cord or wire R, and rocking-lever holder W, and belt-shipping device, and lever for operating said shipping device, substantially as shown and described.

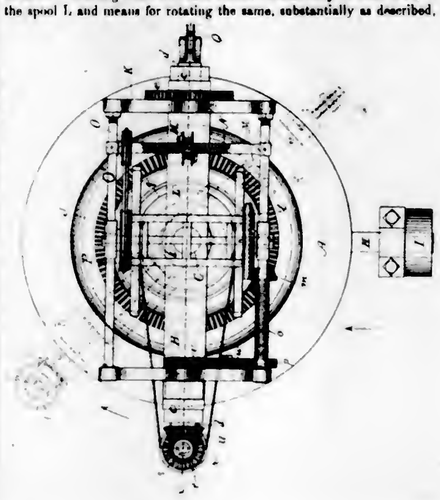
8. The combination, with a belt-shipping device provided with and operated by a lever and a spring, of the lever-holder W, connected with and operated by a pivoted lever-arm, S, so that at the proper time the lever-holder W will be automatically moved and the belt or belts shipped to stop the machine, substantially as set forth.

9. The combination, with a belt-shipping device or belt-shipping devices provided with and operated by a lever or levers and a spring or springs, of the lever-holder W, connected with and operated by a pivoted lever-arm, S, and means, substantially as described, for operating said lever S, to automatically ship the belts and stop the machine at the proper time, substantially as shown and described.

340,197. **MACHINE FOR TWISTING AND SPOOLING WIRE STRANDS.** JOHN D. CURTIS, Worcester, Mass., assignor to the Washburn & Moen Manufacturing Company, same place. Filed Jan. 15, 1885. (No model.)

Brief.—The revolving frame or flier is mounted upon the end of a spindle passing up through the base-piece, and which is made to revolve by gearing with the driving-shaft. The spool-frame mounted in said flier, and which revolves with the said flier, has also an independent rotary motion of its own on its own axis, the said movement being given it by suitable gearing and connections with the stationary base. A spool mounted on said spool-frame has also a yielding intermittent rotary motion upon its axis, whereby as the wires are twisted together they may be wound onto said spool.

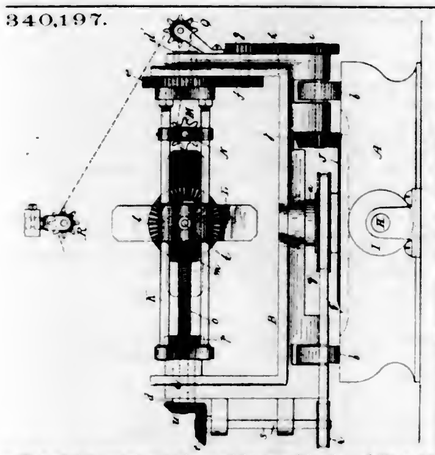
Claim.—1. The combination, with flier B and spool-frame K, and means for rotating said flier and frame, substantially as described, of the spool L and means for rotating the same, substantially as described,



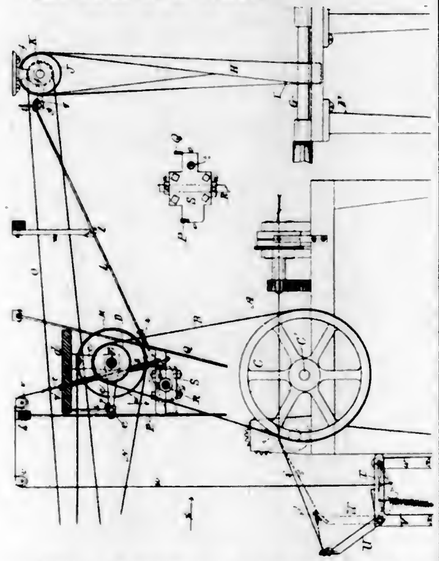
to allow of the intermittent take-up of the material, substantially as set forth.

2. The combination, with flier B and spool-frame K, and means for rotating said flier and frame, substantially as described, of the spool L, bevel-gears *l* and *m*, spring *o*, and gear *p*, and means for operating said gear *p*, substantially as described, and for the purpose stated.

340,197.



340,198. **APPARATUS FOR AUTOMATICALLY STOPPING MACHINES FOR MAKING WIRE FENCING.** JOHN D. CURTIS, Worcester, Mass., assignor to the Washburn & Moen Manufacturing Company, same place. Filed Nov. 18, 1885. (No model.)



Claim.—1. The combination, with a wire-fence machine and belt-shipping device, and lever for operating said shipping device, of a lever-arm provided with one or more guide-holes, for the purpose stated, pivoted at the rear end of the machine, and the hinged arm T, cord *u*, and rocking-lever holder S, constructed substantially as and for the purpose stated.

2. The combination, with pivoted lever-arm U, provided with one or more guide-holes, for the purpose statod, hinged arm T, cord *u*, and lever-holder S, of a belt-shipping device provided with an operating-lever, and with one or more springs to ship the belt automatically and stop the machine driven by said belt, substantially as set forth.

3. The combination, with a wire-fence machine and belt-shipping device having an operating-lever, and provided with and operated reversely by a spring, of lever-holder S, cord *u*, and hinged arm T, operated by the pivoted lever-arm U, provided with one or more guide-holes, for the purpose stated, in the manner substantially as shown and described.

4. The combination, with a belt-shipping device provided with and operated by a lever and a spring, of the lever-holder S, connected with and operated by a pivoted lever-arm, U, provided with one or more guide-holes, for the purpose stated, so that at the proper time the lever-holder S will be automatically moved and the belt shipped to stop the machine, substantially as set forth.

5. The combination, with sliding rod *e*, spring *p*, loop *i*, and lever P, of rocking lever-holder S, rod *t*, spring *s*, cord *u*, hinged arm T, and lever-arm U, provided with one or more guide-holes, for the purpose stated, substantially as set forth.

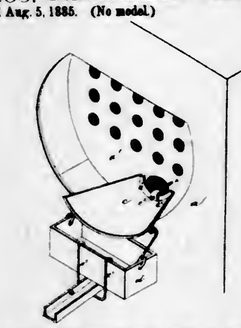
340,199. **TANNING HIDES AND SKINS.** STODDARD J. DOBSON, Lincoln, Nebr., assignor to the Dobson Patent Tanning Process Company, same place. Filed Jan. 23, 1886. (No specimens.)

Claim.—1. The improved process, substantially as hereinbefore described, of treating the hides, it consisting in subjecting them to the action of a bath of salt-water or brine, next to fumes of burning sulphur, next to a bath of tanning extract or coloring-liquor, and afterward to fumes of burning sulphur, all essentially as specified.

2. Subjecting the hides to a bath of strong salt-water or brine, next to fumes of burning sulphur, and afterward tanning them by a solution of tanning extract or a decoction of bark, or other proper tanning agent, all being substantially as specified.

3. Subjecting hides in the process of tanning them to the action of a bath of brine or common salt, and next exposing them to contact with the fumes of burning sulphur, all being essentially as set forth.

340,200. **BOILER ATTACHMENT.** WILLIAM DOWDALL, Chicago, Ill. Filed Aug. 5, 1885. (No model.)



Claim.—1. The combination, with a steam-boiler, of a chute having its inner end flanged and a clamp for securing said chute to the escape or drain opening of the boiler, substantially as and for the purpose set forth.

2. The combination, with a steam-boiler, of a chute for directing off the waste water in cleaning, and a receptacle placed under the end of said chute, substantially as and for the purpose set forth.

3. The combination, with a steam-boiler, of a chute detachably secured to its escape-opening, a box or receptacle placed under the end of said chute, and an adjustable trough for conducting the water off to a convenient point, substantially as and for the purpose set forth.

4. The combination, with the flanged chute *c* and its securing-clamp c^2, of the box *d*, having a flanged opening, *d'*, and the trough *e* and its adjustable supporting-yoke *e'*, all constructed and arranged to operate substantially as and for the purpose set forth.

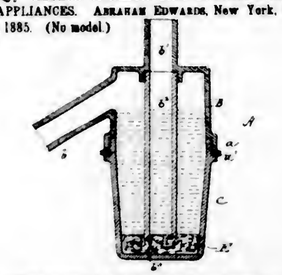
340,201. **BOTTLE-STOPPER.** BENJAMIN K. DORWART, Lancaster, Pa., assignor of one-fourth to Jacob E. Rote, same place. Filed Oct. 12, 1885. (No model.)



Claim.—The combination of a hollow metallic stopper open at both ends, and provided with a flange, *a*, and a recess in its lower end, the tubes *b b'* extending therefrom, and the hollow faucet, which fits inside

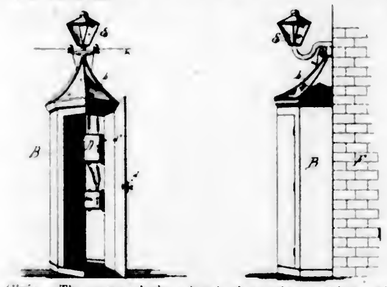
of the stopper, and is provided with openings *d* to correspond with the tubes, and the stop upon its lower end, substantially as shown and described.

340,202. METHOD OF DESTROYING DISEASE-GERMS IN SANITARY APPLIANCES. ABRAHAM EDWARDS, New York, N. Y. Filed Sept. 19, 1885. (No model.)



Claim.—The method herein described for forming corrosive sublimate in mercury-seal traps, which consists in mixing or incorporating chlorine or its compounds as an ingredient of the material of which the trap is composed, as set forth.

340,203. POLICE TELEGRAPHIC AND TELEPHONIC SIGNAL SYSTEM. LEROY B. FIRMAN, Chicago, Ill., assignor to E. Bruce Chandler, Austin Doyle, and John P. Barrett, all of same place. Filed June 30, 1881. (No model.)



Claim.—The sentry telephone-box having a glass roof, in combination with a lamp-supported above the box, substantially as specified.

340,204. MOLD FOR CASTING TEETH FOR DIAMOND-SAWS. EMANUEL FOERSTER, New York, N. Y. Filed Aug. 22, 1885. (No model.)



Claim.—1. The combination, in a mold of casting teeth for diamond-saws, of recessed side walls, side plates, a bottom plate, and laterally-adjustable cheeks within the recesses of the side walls, said cheeks having their inner faces flush with the inner faces of the side walls when in operative position, whereby they constitute parts of the mold-surface in line with said walls, and set-screws threaded into the side plates and engaging said cheeks, substantially as described.

2. The combination of a mold-body having recessad side walls, side plates, and a bottom plate, of laterally-adjustable cheeks provided alternately with projecting pins and set-screws threaded into the side plates and engaging sockets of said cheeks, substantially as set forth.

3. The combination of the recessed supporting side walls, A A, covering side plates, *d d*, bottom plate, B, cheeks *c c*, set into the recesses of the side walls and having socket-holes, and set-screws *c' c'*, threaded into the side plates and having smooth ends for engaging the socket-holes of the cheeks, substantially as described.

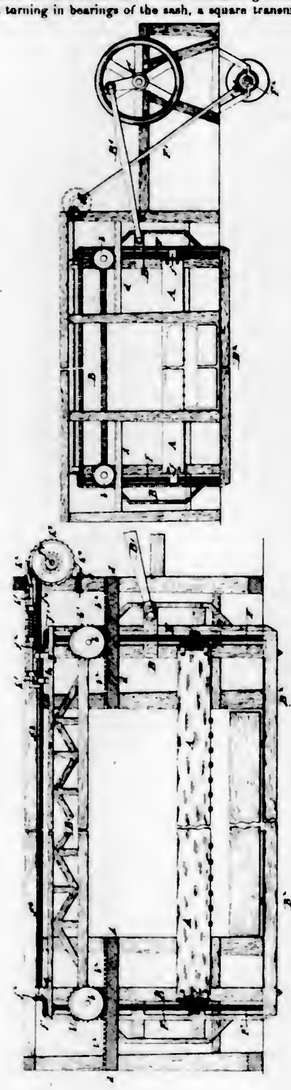
340,205. MACHINE FOR SAWING STONE. EMANUEL FOERSTER, New York, N. Y. Filed Oct. 22, 1885. (No model.)

Claim.—1. The combination, in a stone-sawing machine, of a reciprocating sash, a saw-blade provided with diamonds carried by said sash, and mechanism, substantially as described, for imparting successively a positive lifting and a lowering movement to the sash at or near the ends of each stroke, and a continuous rectilinear movement between the lowering movement at one end of the stroke and the lifting movement at the opposite end of the same stroke.

2. The combination, in a machine for sawing stone, of a reciprocating sash, a saw-blade provided with diamonds carried by said sash, longitudinally-grooved guideways, rollers on said guideways supporting said sash, provided with eccentric flanges for imparting successively a lifting and a lowering movement to the sash at or near the ends of each stroke, and devices, substantially as described, for imparting a continuous rectilinear movement to said sash between the lowering movement at one end of the stroke and the lifting movement at the opposite end of the same stroke.

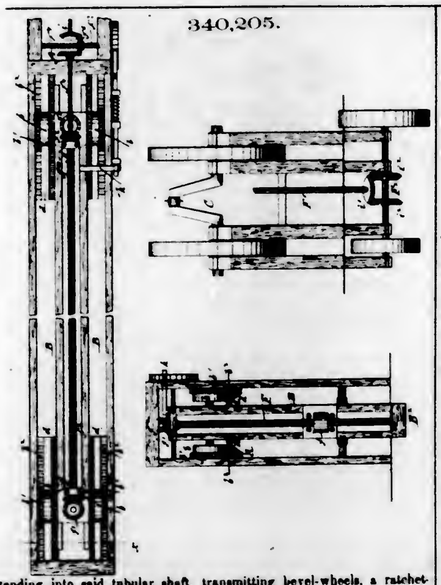
3. The combination of a reciprocating sash, a saw-blade having transverse screw-nuts, vertical screw-nuts, a hollow tubular shaft, bevel-gears connecting said shaft with the screw-rods, a square transmitting-shaft extending into said tubular shaft, a ratchet-wheel, spring-pawls engaging said ratchet-wheel, and being alternately actuated by the sash, and transmitting bevel-wheels between the ratchet-wheel and tubular shaft, substantially as set forth.

4. The combination of a reciprocating sash, a saw-blade having nuts at both ends, vertical screw-rods, transmitting bevel-gears, a tubular shaft turning in bearings of the sash, a square transmitting-shaft extending into said tubular shaft, transmitting bevel-wheels, a ratchet-wheel on the shaft of one of said bevel-wheels, a guided and spring-actuated rod having a spring-pawl engaging said ratchet-wheel, a lug on the sash engaging said rod, and a spring-pawl, also engaging the ratchet-wheel, whereby the saw is fed forward at the end of each stroke, substantially as specified.

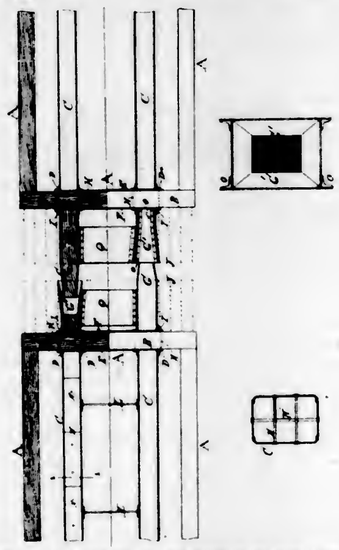


5. In a machine for sawing stone, a sash having downwardly-extending sides and a longitudinal brace connecting the lower ends of said sides below the stone-supporting carriage and its track, substantially as set forth.

340,205.



340,206. RAILWAY-CAR. EDWARD W. FURRELL, St. Louis, Mo., assignor of one-half to Paul Bakewell, same place. Filed Feb. 11, 1886. (No model.)



Claim.—In a railroad-car, the application to the lower frame-work of iron or steel plate girders C, in combination with spigot and faucet projections G G' at the ends of the car, substantially as shown, and for the purpose described.

340,207. LATHE. ALEXANDER GORDON, Hamilton, Ohio, assignor to the Niles Tool Works, same place. Filed Dec. 10, 1884. (No model.)



Claim.—1. In a lathe, the combination of a head-stock, a lathe-spindle fitted to rotate therein and to be locked against rotation and provided with a frontal nose, a center spindle fitted to slide axially in said lathe-spindle, a face-plate fitted to rotate loosely upon said nose and to be locked thereto, so as to rotate with it, a chuck-body having a cylindrical periphery fitting the bore of said nose and having a concentric bore fitting the said sliding center spindle, and a pinion-spindle journaled in and projecting outside of the lathe-spindle, substantially as and for the purpose set forth.

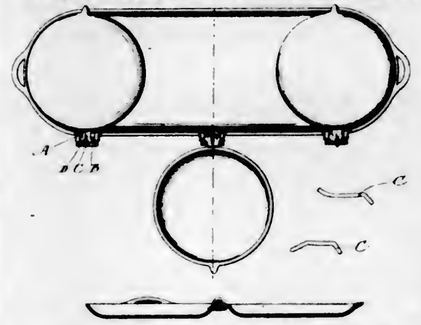
2. In a lathe, the combination of a head-stock, a lathe-spindle fitted to rotate therein and to be locked against rotation and provided with a frontal nose, a center spindle fitted to slide axially in said lathe-spindle, a face-plate fitted to rotate loosely upon said nose and to be locked thereto, so as to rotate with it, and a chuck-body having a cylindrical periphery fitting the bore of said nose and having a concentric bore fitting said sliding spindle, substantially as and for the purpose set forth.

3. In a lathe, the combination of a head-stock, a lathe-spindle fitted to be rotated therein and to be locked against rotation and provided with a frontal nose, a center spindle fitted to slide axially in said lathe-spindle, a face-plate fitted to rotate loosely upon said nose and to be locked thereto, so as to rotate with it, and a chuck disposed within said nose, substantially as and for the purpose set forth.

4. In a lathe, the combination of a head-stock supporting a frontal nose provided with an exterior cylindrical bearing-surface for a face-plate and a concentric interior bearing-surface for a chuck, a face-plate fitted to revolve upon the exterior bearing-surface of said nose, and a chuck-body fitted to revolve in the interior bearing-surface of such nose, substantially as and for the purpose set forth.

5. In a lathe, the combination of a head-stock supporting a frontal nose, a center spindle supported by said head-stock axially with reference to said nose, and a cylindrical chuck-body fitting the bore of said nose and having a concentric bore fitting said center spindle, substantially as and for the purpose set forth.

340,208. HINGE FOR CAKE-GRIDDLES, &c. SAMUEL A. GOULD, Chicago, Ill. Filed Sept. 3, 1883. Renewed Dec. 31, 1885. (No model.)



Claim.—A hinge with a T-shaped projection, having a groove in the center of the same, a projection provided with two or more perforated ears, and a notch or groove corresponding to the groove in the T-projection, and the wire or pin forming the lock or fastening, substantially as described and shown.

340,209. CAR-COUPLING. IRA HAMMOND, Somerville, Mass. Filed Jan. 28, 1886. (No model.)

Claim.—1. The rotary adjustable draw-bar consisting of the extension B and projecting buffer F G, having the eccentric body H and



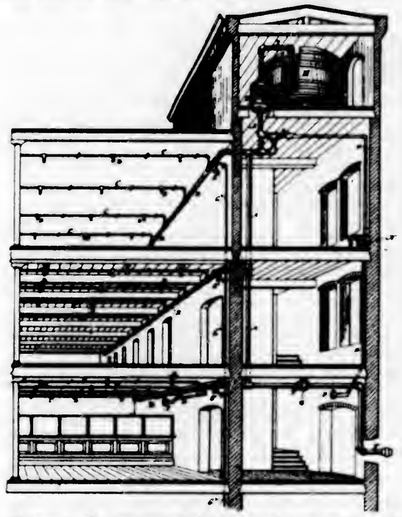
340,209.



hook D, projecting downwardly in diagonal position to the vertical and longitudinal lines, substantially as shown and described.

2. The combination, with the rotary draw-bar consisting of the extension B, having the projecting buffer F G and eccentric body H and hook D, of the hand-lever E, chain K, rod N, bracket M, and hooks e r, arranged, as shown and described, for operating the said coupling-hook, as set forth.

340,210. **FIRE-EXTINGUISHING APPARATUS.** WILLIAM HARKNESS, New York, N. Y. Filed Sept. 22, 1885. (No model.)



Claim.—1. The combination of a system of pipes, and a series of automatic valves adapted to being unsealed by the action of heat, with an elevated tank and non-freezing fire-extinguishing liquid within the pipes and tank, and an elevated water-holding tank, and a connection between the two tanks that remains empty, or partially so, in its normal condition, and means, substantially as specified, for causing the water to flow through this connection when the fire-extinguishing liquid runs out of the tank that holds the same, as set forth.

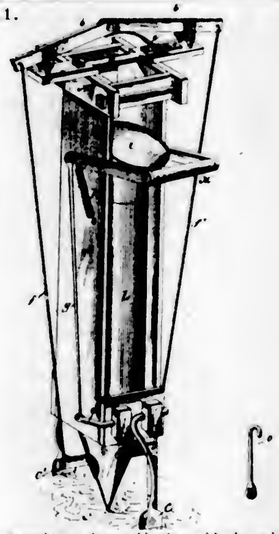
2. A system of pipes or conduits and automatic sprinklers or valves unsealed by the action of heat, and containing a non-freezing fire-extinguishing liquid, in combination with a reservoir for such non-freezing fire-extinguishing liquid, and a water-supply pipe connected with the system of pipes and leading to the outside of the building, and a check-valve to the same for retaining the non-freezing fire-extinguishing liquid, whereby water through the hose-connection at the outside of the building is caused to follow up and assist the fire-extinguishing liquid in the pipes in subduing the fire, substantially as specified.

3. The combination, with the system of pipes and a series of automatic valves adapted to being unsealed by the action of heat, of non-freezing fire-extinguishing liquid within the pipes, an elevated tank for holding the same, a water-holding reservoir, and a pipe connecting such reservoir to the tank containing the non-freezing fire-extinguishing liquid, and a float and valve to the pipe, substantially as specified.

340,211. **TRANSPLANTER.** JOSHUA W. HARRIS, Avis, Va. Filed July 22, 1885. (No model.)

Claim.—1. In a transplanter, the combination, with the casing having at its top portion a cross-piece having pivoted in suitable bearings arms *b b'*, pivoted together at their inner ends and provided with elongated slots, of a spring, *c*, connected to said cross-piece and bearing under said arm or arms, as shown and described.

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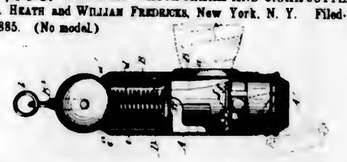


2. In a transplanter, the combination, with the casing, cross-piece B, spring *c*, pivoted arms *b b'*, shovels D D', hoes or coverers C C', and the handle M, of the levers *f f'*, and arms *g g'*, said levers connected to the ends of the arms *b b'* and to the shovels, the arms *g g'* pivoted to the handle and grippers, and the feed-pipe L, having the reversible mouth-piece *l*, as shown and described.

3. The transplanter herein described, consisting of the casing A, cross-piece B, having spring *c*, the arms *b b'*, pivoted to the cross-piece and provided with elongated slots b^2, the feed-pipe L, having the reversible mouth-piece *l*, the shovels D D', pivoted to the bottom of the casing, the hoes or coverers C C', hinged to the sides of the casing, the levers *f f'*, pivoted to the ends of the arms *b b'* and to the shovels, and the arms *g g'*, connected to the handle M and to the coverers, as shown and described.

4. The combination, with a transplanter, of the plunger-rod having a gage-ring and set-screw, as and for the purposes set forth.

340,212. **COMBINED WATCH-CHARM AND CIGAR-CUTTER.** JOHN E. HEATH and WILLIAM FREDRICKS, New York, N. Y. Filed May 15, 1885. (No model.)



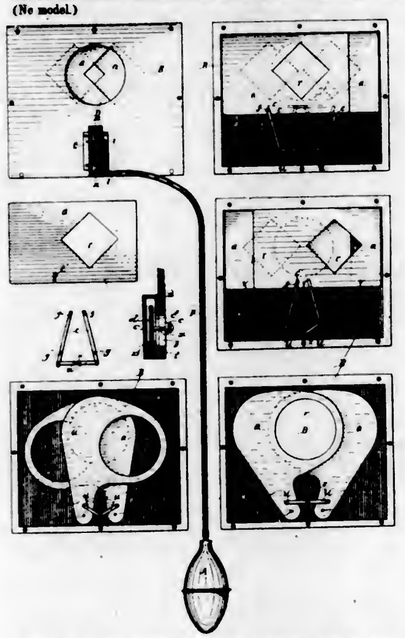
Claim.—1. The combination, in a cigar-tip cutter, of a tubular guide-shell having a side opening, and provided at its top with an inward flange having a recess, a spring-actuated tubular shank which reciprocates within said shell, provided with a cutter, and a spline which slides in said recess during the reciprocation of the shank, substantially as described.

2. In a cigar-tip cutter, a guide-shell having a side opening and an inward flange at its upper end, said flange being provided with a recess, in combination with a sliding and axially-turning tubular shank within said shell, provided with a cutter, and with a spline which slides in said recess during the reciprocation of the shank and engages said flange when the shank is pushed into and turned axially within the shell, substantially as described.

3. The combination, in a cigar-tip cutter, of a tubular guide-shell having a side opening, and provided at its top with an inward flange having a recess, a spring-actuated tubular shank which reciprocates within said shell, provided with a cutter, with a spline which slides in said recess, and with an arc-shaped flange at its lower end, and a spring-catch attached to said shell and engaging said arc-shaped flange, whereby the shank is permitted to turn axially within the shell while being held by the catch, substantially as described.

4. In a cigar-tip cutter, a guide-shell having a side opening, and provided at its top with an inward flange having a recess, in combination with a sliding and axially-turning tubular shank within said shell, provided with a cutter, and with a spline which slides in said recess during the reciprocation of the shank, and engages said flange when the shank is pushed into and turned axially within the shell, an arc-shaped flange attached to the lower end of said shank, and a spring-catch attached to said shell and engaging said arc-shaped flange, whereby the shank is permitted to turn axially within the shell while being held by the catch, substantially as described.

340,213. **PHOTOGRAPHIC SHUTTER.** JOHN A. HOUDEMAKER and GEORGE W. O'HARRA, Kalamazoo, Mich., assignors of one-half to Daniel O. Roberts and Frank S. Hillhouse, both of same place. Filed Aug. 10, 1885. (No model.)



Claim.—1. The combination of the apertured shutters movable simultaneously and laterally toward and from each other to throw the openings into and out of alignment, a cylinder, a movable piston having a laterally-projecting pin, intermediate toggle-levers connecting the movable shutters and pin, for operating the former when the latter is moved, and means for operating the piston and its pin, substantially as described.

2. The combination of the horizontally-sliding apertured shutters movable laterally with respect to each other, an air-cylinder, a reciprocating piston provided with a pin, toggle-levers connecting each of the shutters with the pin of the piston, a supply-pipe entering the cylinder beneath the piston, and an elastic bulb, substantially as described.

3. The combination of the laterally and simultaneously movable shutters having openings, an air-cylinder, a reciprocating piston therein provided with a pin, pivoted levers *c*, connected with the shutters, levers *u*, pivoted to the levers *c*, and carried by the movable pin of the piston, flexible supply-pipe, and an elastic pressure-bulb fitted on the free end of the said pipe, substantially as described.

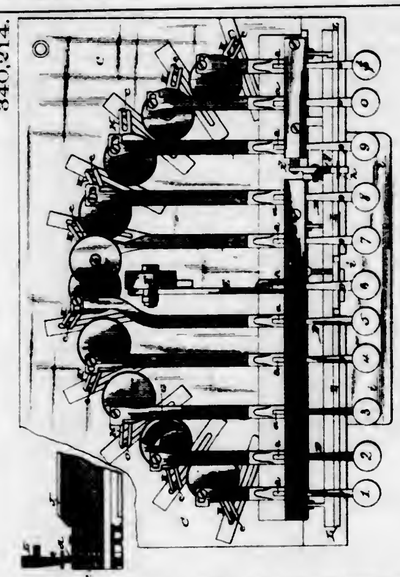
340,214. **MACHINE FOR PUNCHING DRAFTS AND CHECKS.** JAS. M. HOPKINS, Louisville, Ky. Filed Jan. 12, 1885. (No model.)

Claim.—1. The combination of a series of endwise-moving punch-frames arranged in less than a half-circle, arms or rods for connecting the springs and punch-frames, rods for moving the punch-frames into position, levers connected to the rods for operating the punches, and springs for drawing the punch-frames, rods, and levers back into position when left free to move, substantially as shown.

2. The combination of the endwise-moving rods, operating-levers for the punches, pivoted to the rods, springs connected to the rods, punch-frames also connected to the springs, and having an endwise sliding movement, and a bar for depressing the punches, substantially as described.

3. The combination of the levers for operating the punches, the pivoted and spring-seated bar L, having a projection for operating the punches, and a lever, *g*, which is operated by the bar, rod *i'*, pawl and ratchet, and wheels for moving the check or draft, substantially as set forth.

340,214.

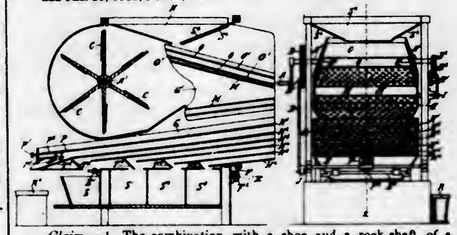


4. A series of sliding punch-frames, each one provided with a punch and die and arranged in less than a half-circle, and adapted to be moved forward, one at a time, to a common center, in combination with a spring for each frame, operating-rods, and connections substantially as described, between the punch-frames and springs and springs and rods, substantially as described.

5. A series of punch-frames arranged in less than a half-circle, and adapted to be moved forward, one at a time, to a common center, each frame being provided with a punch and die, substantially as shown.

6. A series of sliding punch-frames, each one provided with a punch and die and arranged in less than a half-circle, and adapted to be moved forward, one at a time, to a common center, in combination with the springs, operating-rods, a lever for operating the punches, and connections, substantially as described, between the punch-frames and springs and springs and rods, substantially as set forth.

340,215. **GRAIN-SEPARATOR.** WILLIAM E. HOWARTH, St. Thomas, Ontario, Canada. Filed Sept. 10, 1885. (No model.) Patented in Canada Jan. 11, 1882, No. 13,978.



Claim.—1. The combination, with a shoe and a rock-shaft, of a strap pivotally connected at one end to the shoe and adjustably connected at the other end to the rock-shaft, substantially as set forth.

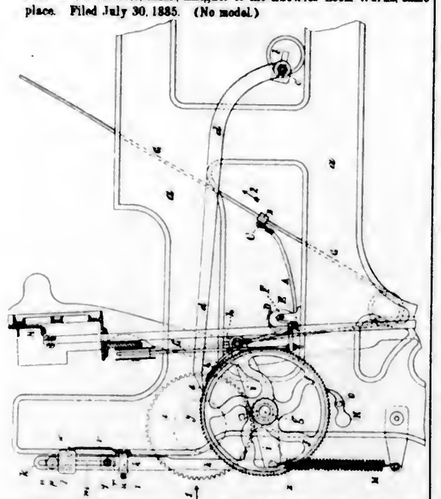
2. The combination, with the shoe G and the rock-shaft E, of the hinge F, consisting of the perforated strap *a*, the strap *a'*, and the bolt *b'*, by which they are connected, and the set-screw F^2, by which it is secured to the rock-shaft, for the purpose set forth.

3. The combination, with the shoe G, having the grooves I^2, the screen H^2, and the chute T^2, of the chute T', the screen H', terminating some distance from said chute T', and the slide P, occupying said grooves and adapted to bridge the space between the tail of the screen H' and the adjacent side of the chute T', at the will of the operator, substantially as and for the purpose set forth.

4. The combination, with the shoe G, having the grooves I^2 and the screen H^2, of the chute T', the transverse partition *b*, the screen H', terminating some distance from the partition *b*, and the slide P, fitting in said grooves and adapted to bridge the space between the tail of the screen H' and the partition *b* or to cover the chute T', at the will of the operator, for the purpose set forth.

5. The combination, with a shoe and a crank-shaft by which it is supported at one end, of a rock-shaft having an adjustable hinged connection with said shoe at the other end, substantially as set forth.

340,216. VARIABLE TAKE-UP MOTION FOR LOOMS. GEORGE F. HUTCHINS, Worcester, Mass., assignor to the Knowles Loom Works, same place. Filed July 30, 1885. (No model.)



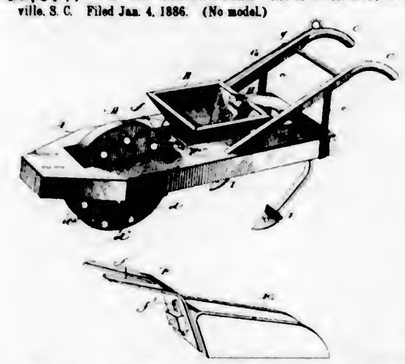
Claim.—1. The combination, with the ratchet-wheel *f*, the pawl *d*, and the crank for operating the latter, of the movable shield, the shield-support, the link attached to said support, the piece *q*, adjustably secured to said link, the stand *l*, and the spring *s*, substantially as set forth.

2. The combination, with the ratchet-wheel *f*, the pawl *d*, and means for operating the latter, of the shield-support, the link attached to said support, the notched stand *l*, the piece *t*, adjustably secured to said link, and the spring *v*, carried by the said adjusting-piece and adapted to engage the notch in the said stand, substantially as set forth.

3. The combination, with the ratchet-wheel, the pawl, means for operating the latter, the shield, and the movable support for said shield, of the vertically-movable link *k*, the adjusting-pieces *q* and *t*, attached to said link, the springs *s* and *v*, and the stand *l*, substantially as set forth.

4. The combination, with the ratchet-wheel *f*, the pawl *d*, and means for operating the latter, of the movable shield *h*, the shield-support *i*, the spring for moving said support in one direction, the box-chain G, and a cord attached to said support and adjustably connected with said box-chain, and thereby adapted to move said support in opposition to the movement imparted thereto by said spring, substantially as set forth.

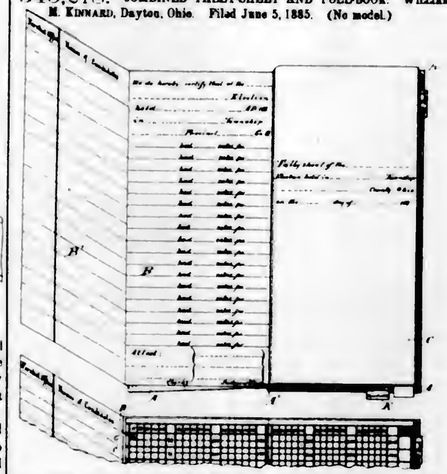
340,217. FERTILIZER-DISTRIBUTER. SIDNEY W. JACKSON, Cranesville, S. C. Filed Jan. 4, 1886. (No model.)



Claim.—1. In a fertilizer-distributer, the combination of a frame, a hopper, a drive-wheel having projecting pins, an oscillating discharge-spout suspended beneath the hopper, a trip having a longitudinal slot, and the angular arms arranged in the path of movement of the pins or the drive-wheel, and a bolt passing through the slot of the trip to adjustably secure the same to the discharge-spout, whereby the trip can be adjusted and vary the inclination of the discharge-spout and the quantity of fertilizer dropped therefrom, substantially as described.

2. In a fertilizer-distributer, the combination of the following elements: a frame, A, a hopper, a drive-wheel, D, mounted in the frame, a vertically-oscillating discharge-spout eccentrically suspended beneath the hopper, a trip having a longitudinal slot and forwardly-inclined or curved fingers, a bolt for adjustably securing the slotted trip to the discharge-spout, a rod connected to the trip for throwing the same into and out of operation, and a slotted cut-off plate located in the hopper and vertically adjustable in the discharge-opening therein, the whole combined and adapted to serve as and for the purpose described.

340,218. COMBINED TALLY-SHEET AND POLL-BOOK. WILLIAM M. KINNARD, Dayton, Ohio. Filed June 5, 1885. (No model.)



Claim.—1. A combined tally-sheet and poll-book having its first sheet of a greater width than the back of the book, and creased so as to be folded upon itself when the book is closed, said sheet containing on its left-hand page the names of the respective offices in one column and the names of the respective candidates in an opposite column, and upon its right-hand page a certificate of the number of votes cast for each candidate, and tally-sheets folding over the right-hand page of said sheet, and provided with numbered spaces that are brought in line with the lines of offices and candidates, respectively, substantially as described.

2. A tally-sheet folded into leaves and provided with numbered squares for the tally, separated by double lines in color, in combination with a double leaf folding upon itself, and containing blanks for the names of the candidates, so arranged as to be next to each leaf of the tally-sheet as it is turned over for use, substantially as described.

3. A combined tally-sheet and poll-book containing double leaves folding upon themselves in the manner described, and pages divided into squares numbered by horizontal and perpendicular rows of figures, in combination with blank certificates, the whole being bound into a single book or volume, substantially as described.

340,219. KEY-BOTTOM FOR PIANOS. SALVADORE LA GRASSA, New York, N. Y. Filed Nov. 20, 1885. (No model.)



Claim.—1. A cast-metal key-bottom for pianos, consisting of a plate having upon its under side longitudinal strengthening-ribs, substantially as herein described.

2. A cast-metal key-bottom for pianos, consisting of a plate having upon its under side longitudinal and transverse strengthening-ribs, substantially as herein described.

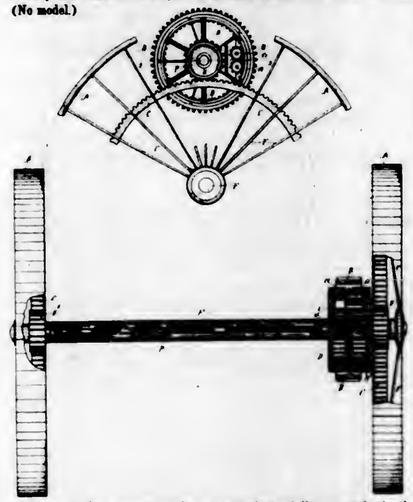
3. A cast-metal key-bottom for pianos, having a flat upper surface for the support of a key-frame, and having strengthening-ribs upon its under side, substantially as herein described.

4. A cast-metal key-bottom for pianos, having its upper surface flat and continuous or unbroken in those portions on which the key-frame is to rest, and having openings between such portions, and strengthening-ribs on its under side, substantially as herein described.

5. The cast-metal key-bottom A, having a flat upper surface with

openings *a*, and panels C, covering the openings, and having on the under side strengthening-ribs *a'* *a²*, substantially as herein described.

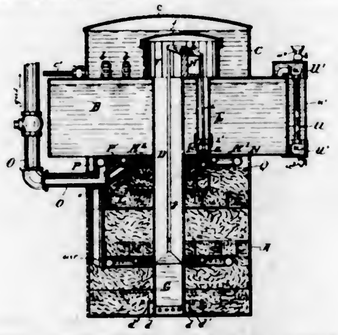
340,220. COMPENSATING GEAR FOR TRACTION-ENGINES. A. B. LEWIS LAMB, Kalamazoo, Mich., assignor of two-thirds to George H. Sheedy and John M. Sheedy, both of same place. Filed Jan. 16, 1886. (No model.)



Claim.—1. In a compensating gear, substantially as set forth, the power-gear having spokes connecting its outer rim with its hub, provided with a tray rigidly connecting with two of the spokes and supported by them, lapping pinions having rigidly-connected axles, with rotable bearings at each end in the side walls of said tray, in combination with the internal gears of the shaft, which forms a meshing engagement at each end with the gears of the traction-wheels, substantially as set forth.

2. In a compensating gear, substantially as set forth, the combination of the power-gear provided with the tray, and the lapping pinions having axle-bearings at each end in the side walls of said tray, and the internal gears, one of which is loose on its shaft and the other is adjustably keyed to its shaft, whereby it may be adjusted laterally, substantially as and for the purpose set forth.

340,221. CARBURETOR. ROBERT S. LAWERSON, Washington, D. C. Filed Dec. 5, 1885. (No model.)



Claim.—1. The combination, with the tank of a carburetor, of a series of concentrically-arranged perforated distributing-pipes, one of said pipes being connected with the inlet-pipe, and all the pipes of the series connected with each other, substantially as described.

2. The combination, with the tank of a carburetor, of a series of concentrically-arranged perforated distributing-pipes, the perforations in the vicinity of the pipe-connections being smaller than those at a distance therefrom, substantially as described, and for the purpose set forth.

3. In a carburetor, the combination, with the tank, a float-well located in the center of the tank, and a distributing-pan secured at its center to the well and at its outer edges to the tank, of a series of concentrically-arranged distributing-pipes located close up under the bottom of said pan and giving support thereto, the pipes being attached at the center to the well and resting on braces, which are also attached to the well and to the tank, substantially as described.

4. In a carburetor, the combination, with the tank, of an outlet-pipe and a series of concentrically-arranged perforated gathering-pipes connected therewith, for the purpose set forth.

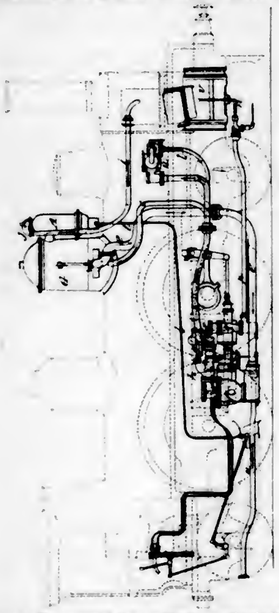
5. In a carburetor, the combination, with the tank, of an outlet-pipe and a series of concentrically-arranged perforated gathering-pipes independently connected with the outlet-pipe, in the manner and for the purpose substantially as set forth.

6. In a carburetor, the combination, with a tank, an oil-reservoir on top of the tank, and a float-well located in the center of the tank and reservoir, of a series of concentrically-arranged perforated gathering-pipes at the top of the tank and against the bottom of the reservoir, said pipes receiving partial support from the well, to which they are attached at the center, and being further supported by braces attached to the well and to the tank, in the manner described, and for the purpose set forth.

7. The combination, with an oil-tank, of a water-sealed gage, substantially as described, and for the purpose set forth.

8. The combination, with an oil-tank, of a glass water-sealed gage, the casing for holding the water that seals the gage being provided with a glass front and an inlet-cock and an outlet-cock, substantially as described, and for the purpose set forth.

340,222. FEEDING LOCOMOTIVES WITH HOT WATER. ALEXANDRE LENCAUCHEZ, Paris, France. Filed Mar. 5, 1886. (No model.)



Claim.—1. The combination, with the engine-boiler, the engine exhaust-pipe, and the cold-water pump, of a steam-purifier for extracting the grease from the exhaust-steam of the engine, a feed-water heater into which is introduced the cold water supplied by the said pump, and into which the exhaust-steam is delivered after passing through the said purifier, and a hot-water pump for delivering to the boiler from the said heater the hot water resulting from the mixture of cold water and exhaust-steam in the said heater, substantially as herein described.

2. The combination, with the engine-boiler, the cold-water pump *b*, the engine exhaust-pipe *i*, the cylinder-jackets *v*, the escape-pipes *n* of the cylinder-jackets, the feed-water heater G, which receives the exhaust-steam from the engine exhaust-pipe and the water from the cold-water pump, the hot-water pump *f*, which takes the hot water from the feed-water heater, and the pump *q*, which takes the water from the escape-pipes of the cylinder-jackets, the said pumps having their plungers coupled in one, all substantially as herein described.

3. The combination, with the feed-water heater, the hot-water pump *f*, for taking the water from said heater, and the pump *p*, for taking the water from the cylinder-jackets, the said pumps having their plungers coupled in one, of the regulator consisting of the cylinder *h*, and the contained piston *m'*, interposed between the discharge-pipes of said pumps, substantially as and for the purpose herein set forth

4. The purifier for extracting the grease from the exhaust-steam,

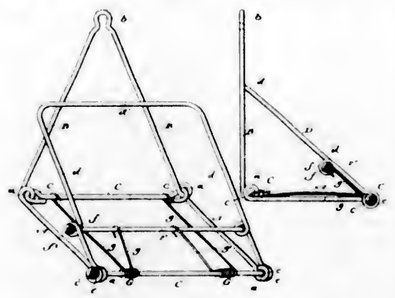
consisting of the combination of the casing A, the central pipe, C, entering said casing at the top and having its lower end open and serrated, the annular plates D D', and the circular series of upright channeled bars surrounding the open serrated lower end of said pipe, substantially as herein described.

5. The feed-water heater consisting of the combination of the casing G, the contained cylinder composed of a series of ferrules, H, having side openings, P, the pans I, having central overflow, the interposed pans J, with overflow at the outer margins, the feed-pipe L, passing through said cylinder and pans, the exhaust-steam pipe *e*, entering said casing below said cylinders and pans, the central pipe, M, within the feed-pipe, and double safety-valve T U, all substantially as herein described.

340,223. MODE OF FORMING COMPOUND PLATES OF NICKEL AND SILVER OR PLATINUM. MAURICE L'EPINE, Paris, France, assignor to the firm Société de Laminage du Nickel, same place. Filed Feb. 19, 1886. (No specimens.)

Claim.—The within-described improvement in the art of manufacturing compound plates or wires composed of a plate or wire of nickel or one of its alloys, and a plate or wire of silver or platinum or one of their alloys, said improvement consisting in enveloping the plates or wires to be united by fusion or soldering in an envelope of sheet metal having an interior coating of lime, magnesia, or similar refractory substance, and while thus enveloped subjecting them to the heat necessary to fuse or solder them together and the hammering or rolling necessary to complete their union, substantially as herein set forth.

340,224. PAPER-HOLDER. MILTON LESTER, Jr., Suffield, Conn. Filed Feb. 13, 1886. (No model.)



Claim.—1. A holder for letters, papers, and the like, comprising the connected supporting-arms, the suspending-arms, and a spring-actuated clamping-frame pivoted on the supporting-arms and normally held in an inclined position against the suspending-arms, substantially as described.

2. A holder for letters, papers, and the like, comprising the supporting and suspending arms bent from a single piece of wire and arranged at an angle to each other, the cross-bars connecting the supporting-arms, and a spring-actuated frame pivotally connected to one of the cross-bars and normally held in an inclined position to bear against the suspending-arms, substantially as described.

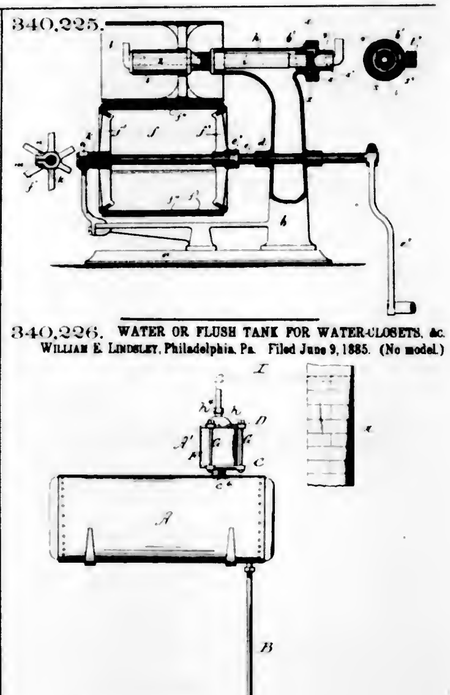
3. A holder for letters, papers, and the like, comprising the supporting-arms, the suspending-arms arranged at an angle to the supporting-arms, rods C C', a clamping-frame bent from a single piece of wire and comprising side and cross bars, the side arms being pivotally connected to the rod C', and springs coiled around the rod C' for normally holding the clamping-frame in an inclined position in contact with the suspending-arms, one arm of each spring being connected to the rod C and the other arm to the clamping-frame, substantially as described.

340,225. IRONING-MACHINE. CHARLES A. LIES and CHARLES L. HEINS, New York, N. Y., assignors to said Heins, and John H. Lee, Norwalk, Conn. Filed Oct. 31, 1884. (No model.)

Claim.—1. The combination, with the conical heads f' f^2 and shaft *e*, of the two sheet-metal cylinders, one within the other and split lengthwise, and the fibrous covering for the bed-cylinder, the latter being expanded by the sheet-metal cylinders, and the conical heads acting upon the same, substantially as set forth.

2. The combination, with the ironing-roller and its crank-shaped shaft, of a standard having a tubular box, *h*, at its upper end supporting the shaft, a cylindrical flange, *b'*, upon the box *h*, a split shell with projections upon it, a hub by which the shell is attached to the shaft, and a lever pivoted upon the hub for moving the shaft, and a fork, f', of the lever for tightening the split shell upon the cylindrical flange, substantially as set forth.

340,225.



340,226. WATER OR FLUSH TANK FOR WATER-CLOSETS, &c. WILLIAM E. LINDSLEY, Philadelphia, Pa. Filed June 9, 1885. (No model.)

Claim.—1. A detachable overflow attachment for flushing tanks or reservoirs, composed of separable top and bottom plates, a tubular body, a float-valve having a loose or sliding connection with a bridge formed in a chamber on said top plate, a vent-pipe for said chamber, and screw-bolts for securing said plates and body together, substantially as shown and described.

2. A flush-tank attachment, A', composed of plate C, having screw-nozzle c^4, shoulder c', gasket or packing c^3, and bolt-holes c^4, tubular body F, plate D, having central opening, d^3, valve-seat, d^2, shoulder *d*, gasket or packing *d'*, bolt-holes d^4, and chamber *h*, having vent-pipe I, and bridge *h'*, with opening h^2, the valve E, having screw-connection *e'*, with bridge *b'*, float e^3, and fastening-wires e^4, and bolts G, for securing said parts in position relatively to one another, substantially as shown and described.

3. In combination with tank A, having float-valve attachment A', a single service or an inlet and outlet pipe, B, having check-valve *b*, and a valved branch pipe, *k'*, above said check-valve, substantially as shown and described

340,227. MECHANICAL MOVEMENT. THOMAS A. MACAULAY, New York, N. Y. Filed Feb. 2, 1886. (No model.)

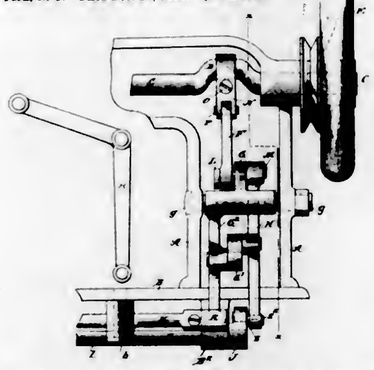
Claim.—1. A mechanical movement consisting of a main rotary shaft having a crank, as D, a primary pitman-lever, as F F^2, operatively connected with a primary vibrating lever, as G G^2, a horizontal lever, as K, a secondary pitman-lever, as H, pivoted to an arm of said primary lever, and connected by suitable devices with said primary pitman-lever, to cause a lateral motion therein, and a shaft, as I, suitably connected with said pitman-lever H, to impart a rotary motion to said shaft I, as and for the purpose specified.

2. A mechanical movement consisting of a main rotary shaft having a crank, as D, a pitman, as F, operatively connected with a primary vibrating lever, as G G^2, a horizontal lever, as K, a pitman-lever, as H H^2, suitably connected, to cause a lateral movement therein, and a shaft, as I, suitably connected with said pitman-lever, to impart a rotary motion to said shaft I, as and for the purpose set forth.

3. A mechanical movement consisting of a main rotary shaft having a crank, as D, a pitman, as F, operatively connected with an arm, as G, a pitman-lever pivoted to said arm G, and connected by suitable devices to impart to it a vibratory movement, and a shaft, as I, suitably connected with said pitman-lever, to cause a rotation in said shaft, as and for the purpose set forth.

4. A mechanical movement consisting of a main rotary shaft having a crank, as D, a primary pitman-lever, as F F^2, operatively connected with an arm, as G, a secondary pitman-lever, as H, pivoted to said arm G, and suitably connected with said primary pitman-lever H, to impart to it a lateral motion, and a shaft, as I, suitably connected with said secondary pitman-lever, to cause said shaft I to rotate, as and for the purpose specified.

340,228. MECHANICAL MOVEMENT. THOMAS A. MACAULAY, New York, N. Y. Filed Feb. 26, 1886. (No model.)



Claim.—1. A mechanical movement consisting of the following elements in combination: a main driving-crank, D, an intermediate lever, as G G^2, suitably connected with said crank to impart to it a vibratory movement, a pitman, H, having a vertical movement, and suitably connected with said intermediate lever to impart to it a lateral movement, and a crank, J, suitably connected with said pitman to receive a rotary movement, substantially as and for the purpose specified.

2. A mechanical movement consisting of the following elements in combination: a crank, as D, a pitman, as F, an angular lever, as G G^2, a pitman, H, a connection, G^3, and a crank, as J, substantially as and for the purpose specified.

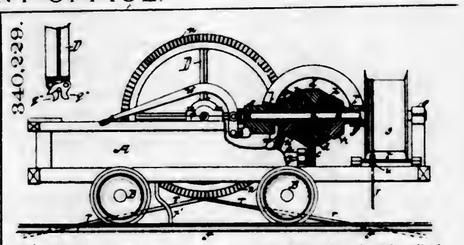
3. A mechanical movement consisting of the following elements in combination: a crank, D, operating a lever, G G^2 R, and connected with a lever, as K, a pitman, as H, a connection, as G^3, and a crank, J, substantially as and for the purpose specified.

4. A mechanical movement consisting of the following elements in combination: a main driving-crank, D, an intermediate lever, G G^2, suitably connected with said crank, to impart to it a vibratory movement, a pitman, H, suitably connected with said intermediate lever, to impart to it a vertical movement, and provided with a connection, G^3, operatively connected with a moving part of the machine, to cause a lateral movement in said connection H, and a crank, J, suitably connected with said pitman H, to cause a rotation in said crank J, substantially as and for the purpose specified.

340,229. MEANS FOR APPLYING MOTIVE POWER. DAVID L. MASTERS and JAMES B. COREY, Braddock, Pa. Filed May 29, 1885. (No model.)

Claim.—1. In combination with a pinion, *c*, secured on a shaft, *a*, and connected to a motive power, a toothed wheel, *d*, on each side of which is a deep conical recess, *k*, the friction-clutches *i k*, mandrels *l l'*, shaft *e*, lever *w*, master-wheel D, one side of which is beveled, gearing *n*, and a cable, *r*, all constructed and operated as shown and described.

340,229.



2. In combination with a motive power and car, A, such as described, an open-topped box or pipe, *y*, constructed in sections and bolted together, a pipe, *x'*, leading thereto and connected with the exhaust of the engine placed within the car A, substantially as described.

3. In combination with a motive power, truck, or car, A, such as shown and described, a master-wheel, D, about the perimeter of which are placed automatic clutches *q'*, for gripping the cable *r*, and pulleys q^2, for sustaining the rope *r* a short distance above the lowest point of the wheel, substantially as set forth.

340,230. PRUNING-SHEARS. PETER C. MATHERSON, Brooklyn, assignor of one-fourth to Amelia F. Scott, New York, N. Y. Filed Dec. 3, 1885. (Model.)



Claim.—The combination, with two handles pivoted together and having extensions beyond or forward of the pivot which connects them, of two blades or cutters each pivoted to the extensions of both handles at points forward of or beyond the pivot which connects the handles, whereby the pivotal points of each blade are moved in opposite directions by the closing of the handles, substantially as herein described.

340,231. PROCESS OF CONVERTING NATURAL GAS INTO ILLUMINATING-GAS. JOHN MCKAY, Titusville, Pa., assignor of one-half to Walter B. Roberts and Erastus T. Roberts, same place. Filed Jan. 20, 1886. (No specimens.)

Claim.—The process above described of converting natural gas into illuminating-gas by mingling with it in the gas-scrubber a combined jet of crude petroleum or naphtha and steam introduced under heavy pressure, and then passing the product through a bed of incandescent coal, coke, or similar substance, and from thence to a superheater, substantially as described, and for the purposes herein set forth.

340,232. PROCESS OF TREATING NATURAL GAS. JOHN MCKAY, Titusville, Pa. Filed Feb. 15, 1886. (No specimens.)

Claim.—1. The process above described of treating natural gas of

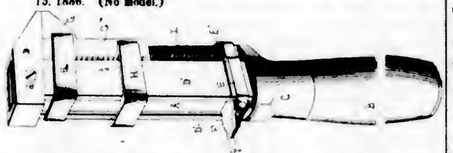
varying quality and converting it into an illuminating-gas of the desired candle-power by passing the natural gas, in connection with a jet of steam, up through and in direct contact with an incandescent bed of coke, anthracite coal, or similar substance, which forms the bed of fuel in any water-gas apparatus or generator, and simultaneously spraying on top of the bed of fire any suitable hydrocarbon by means of a stream of natural gas, or its equivalent, under pressure, and then passing the combined gases thus formed through a superheater, substantially as described, and for the purposes herein set forth.

2. The process above described of manufacturing gas, which consists of converting natural gas of varying quality into illuminating-gas of the desired candle-power by passing the natural gas, together with steam, through a body of incandescent or highly-heated fuel, whereby decompositions and recompositions are effected and the natural gas is converted into a fixed illuminating-gas.

3. The process above described of manufacturing gas, which consists in converting natural gas of varying quality into illuminating-gas of the desired candle-power by passing the natural gas, together with steam, through a body of incandescent or highly-heated fuel, whereby decompositions and recompositions are effected and the natural gas is converted into a fixed gas, and mixing with such gas hydrocarbon vapor for forming an illuminating-gas.

4. The above-described process of manufacturing gas, which consists in converting natural gas of varying quality into illuminating-gas of the desired candle-power by passing the natural gas, together with steam, through a body of incandescent or highly-heated fuel, whereby decomposition and recomposition are effected and the natural gas is converted into a fixed gas, and simultaneously carbureting such gas by injecting into it a suitable proportion of hydrocarbon by a jet of natural gas or its equivalent.

340,233. WRENCH. Austin McNally, Cascade, Iowa. Filed Feb. 15, 1886. (No model.)

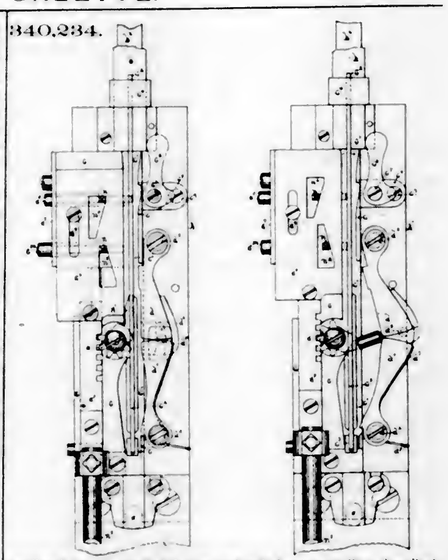


Claim.—1. The combination, with the stock and a jaw pivoted thereto having wings extended alongside the body of the stock, of a sliding jaw held on said wings and carried laterally to and from the stock by the vibratory movement of the pivoted jaw, as and for the purpose set forth.

2. The combination of the stock, a jaw pivoted to the head thereof and provided with wings extending alongside the body of the stock, a clip uniting the lower ends of the wings, a cam pivoted between the ends of the clip to limit the movement of the pivoted jaw, and a jaw held to the wings and free to have a longitudinal movement thereon, and having teeth to interlock with the stock, substantially as and for the purpose specified.

3. The combination of the jaw pivoted to the head of the stock and provided with wings adapted to rest against the sides of said stock, a clip uniting the lower ends of the wings and provided with a socket on its under side, a cam pivoted between its upper ends, a jaw secured to and free to slide on the wings of the pivoted jaw and having a longitudinal bore formed therein, a bolt resting in the socket of the clip and projected part way within the bore of the sliding jaw, and a spring seated in said bore and socket and surrounding the bolt, substantially as described.

340,234. MACHINE FOR FEEDING CARTRIDGE-SHELLS. Joe V Myers, Lowell, Mass. Filed Nov. 6, 1883. (No model.)



Claim.—1. The combination of the conduit c', for conducting the cartridge-shells, with the movable stop c^{2a}, the reversing-finger e', and mechanism adapted to reverse the same, substantially as described.

2. In combination with the shell-conduit c', the movable stops c^{2a} and c^2, the reversing-finger e', and mechanism adapted to reverse the same, substantially as described.

3. In combination with the shell-conduit c', the reversing-finger e', mechanism adapted to reverse the same, and opposite yielding levers $d\,d'$, adapted to conform to the path of the shell, and constructed to maintain a pressure thereon during the reversing process, substantially as described.

4. In combination with shell-conduit c', the reversing-finger e' mechanism adapted to reverse the same, and opposite levers $d\,d'$, provided with the slot d^6, substantially as described.

5. In combination with the shell-conduit c', formed with three sides closed and one open, the hinged bar c^3, forming the fourth side, substantially as described.

6. In combination with the shell-conduit c', the reversing-finger e', mechanism adapted to reverse the same, and stop-lever c^4, substantially as described.

7. In combination with the shell-conduit c', the reversing-finger e', mutilated gear e, attached thereto, and rack e^2, substantially as described.

8. In combination with shell-conduit c', the plunger-stop c^{2a}, provided with stud n, and plate c^5, provided with cam-groove n^2, and mechanism adapted to reciprocate the plate, substantially as described.

9. In combination with shell-conduit c', the plunger-stops c^2 c^{2a}, provided with studs n n, and plate c^5, provided with cam-grooves n^2 n^2, and mechanism adapted to reciprocate the plate, substantially as described.

10. In combination with the shell-conduit c', the hopper B, tubes b b^2, the reversing-finger e', and mechanism adapted to reverse the same, substantially as described.

11. In combination with the shell-conduit c', the hopper B, tubes b b^2, movable stop c^{2a}, the reversing-finger e', and mechanism adapted to reverse the same, substantially as described.

12. In combination with the shell-conduit c', the hopper B, tubes b b^2, movable stops c^2 c^{2a}, the reversing-finger e', and mechanism adapted to reverse the same, substantially as described.

13. In combination with the reversing-finger e' and mechanism adapted to reverse the same, the gear e, rack e^2, plate c^5, provided with cam-grooves n^2 n^2, and plunger-stops provided with studs n n, substantially as described.

14. In combination with the shell-conduit c', the bar c^3, pivoted at one end, and the sliding sleeve c^4, provided with a mortise fitting over the bar at the other end, substantially as described.

15. In combination with the reversing-finger e' and mechanism adapted to reverse the same, the shell-conduit c', formed with an enlargement transversely just below the axis of the finger, substantially as described.

16. In combination with the shell-conduit c', the shell-reversing finger e' and mechanism adapted to reverse the same, substantially as described.

17. In combination with the shell-conduit c', provided with groove m^3, the finger e' and mechanism adapted to reverse it, substantially as described.

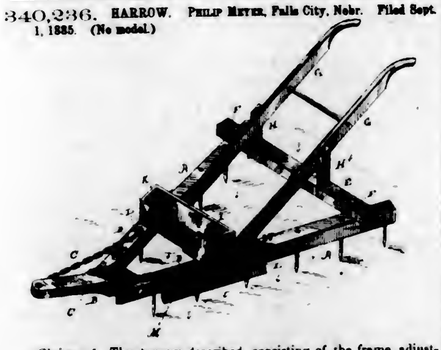
340,235. CAR-COUPLING. Luther Merrill, Astoria, Ill. Filed Feb. 20, 1886. (No model.)



Claim.—1. In a car-coupler, the combination, with head A, of pin C, having extension D, and working vertically through the head, and cranked cross-shaft E, arranged and operating substantially as described, to raise the pin.

2. In combination with head A, pin C, cranked shaft E, sliding block F, provided with stud f, spring g, and shoulders i j, and bolt G, all arranged and operating substantially as described.

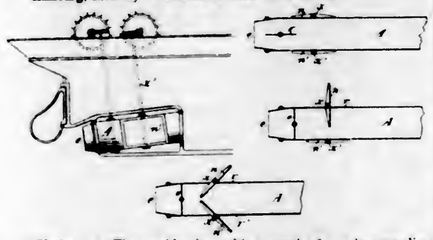
340,236. HARROW. Philip Meyer, Falls City, Nebr. Filed Sept. 1, 1885. (No model.)



Claim.—1. The harrow described, consisting of the frame adjustable as to width, the adjustable pivoted draft-beam, the weight-box, and the vertically-adjustable guards or shields, substantially as and for the purpose specified.

2. In combination with the side beams of a V-shaped harrow, the vertically-adjustable guards or shields consisting of plates with edges at an angle to the main portions, and slotted for the passage of the securing devices, substantially as and for the purpose specified.

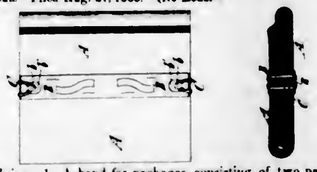
340,237. APPARATUS FOR THE HYDROPROPULSION OF VESSELS. August C. Nagel, Reinhold H. Kaemp, and Adolf Linnenbrock, Hamburg, Germany. Filed Jan. 6, 1886. (No model.)



Claim.—1. The combination, with a vessel, of a tube extending rearward outside the vessel at the lower part thereof, and having in its portion which is exposed beyond the vessel lateral openings r r', and the swinging valves or flaps n n', vertically pivoted in said openings, so that they may swing into line with the sides of the tube to close said openings or at angles to the tube to permit and direct the flow of water laterally from the tube through said openings, substantially as herein described.

2. The combination, with a vessel, of a tube extending rearward outside the vessel at the lower part thereof, and having lateral openings r r' in its portion which is exposed beyond the vessel, the flap or valve o, pivoted centrally in the tube in rear of said lateral openings, and the swinging flaps or valves n n', vertically pivoted in said openings, so that they may be swung into line with the sides of the tubes to close said openings or at angles to the tube to permit and direct the flow of water laterally from the tube through said openings, substantially as herein described.

340,238. BAND FOR PACKAGES. Isaac E. Palmer, Middletown, Conn. Filed Aug. 27, 1885. (No model.)

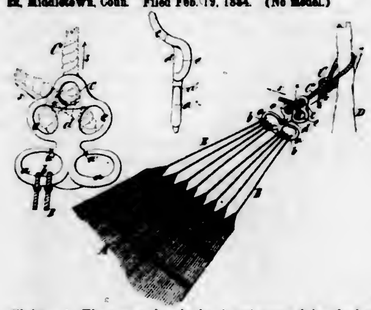


Claim.—1. A band for packages, consisting of two parallel members connected at one end and provided at their other ends with integral tongues b, extending inward from their ends and formed by slotting the two members, as described, and an extensible connection engaging said tongues and serving to connect the two members, substantially as herein set forth.

2. A band for packages, consisting of two parallel members connected at one end and provided at their other ends with integral tongues b, extending inward from their ends and formed by slotting the two members, as described, and an endless elastic band engaging said tongues and detachably connecting the two members, substantially as herein set forth.

3. A band for packages, consisting of two parallel members, B B, provided at their ends with tongues b, and elastic bands C C, engaging with said tongues and detachably connecting the said members at their ends, substantially as herein described.

340,239. SUSPENSION DEVICE FOR HAMMOCKS. Isaac E. Palmer, Middletown, Conn. Filed Feb. 19, 1884. (No model.)

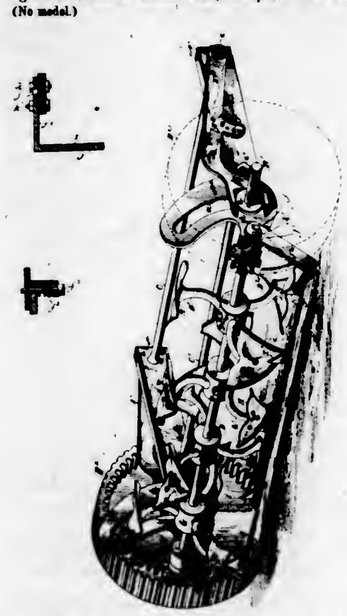


Claim.—1. The suspension device for a hammock herein described, having at one end an eye or eyes for the attachment of the suspension-cords B and at the other end a neck, d, and an eye, c, arranged at an angle to the neck, for the attachment of one end portion of a suspension-rope, substantially as herein described.

2. A suspension device for a hammock, having at one end a divided eye or eyes on which looped suspension-cords may be slipped, and which may then be closed to confine the cords, and having at the other end a neck and an eye arranged at an angle to the neck, for the attachment of one end portion of a suspension-rope, substantially as herein described.

3. The suspension device for a hammock, consisting of a neck, d, an eye, c, arranged at an angle to the neck, guard-eyes e e at opposite sides of the neck, and an eye or eyes for the attachment of suspension-cords, substantially as herein described.

340,240. LAWN-MOWER. Thomas J. Perrin, Springfield, Ohio, assignor of one-half to William Perrin, same place. Filed July 31, 1885. (No model.)



Claim.—1. The knives made in the triangular or spear-head form, convex on their outer faces from point to heel, and with their cutting-edges bent outward, adapting them to be ground on their outer faces, substantially as described.

2. The combination of the triangular or flattened spear-head-shaped

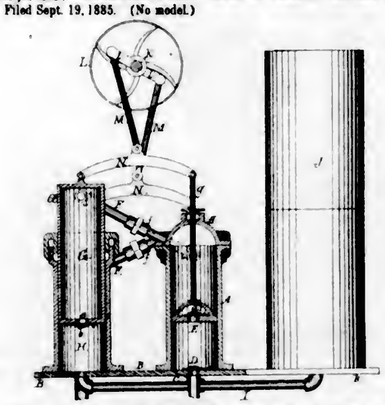
cutters with the shaft rotating on a horizontal axis, and a fixed or stationary blade or cutter, substantially as described.

3. The side bars of the main frame, provided with the slotted standards adapted to be adjusted on the drive-wheel axle or axle-blocks, as described, in combination with the forked lever-arms, and means for holding said arms and the frame-bars and axle at the desired relative adjustment, substantially as described.

4. The combination of the main frame, the stud-axles secured thereto, the forked lever-arms for setting and holding the frame and axles at the desired relative adjustment, the rotating cutter-shaft mounted in bearings in said frame, and the adjustable stationary cutter secured to said frame, all arranged and operating substantially as described.

5. The stationary cutter or ledger-plate provided with the curved tapering fingers, in combination with the curved and rotating spear-head cutters, substantially as described.

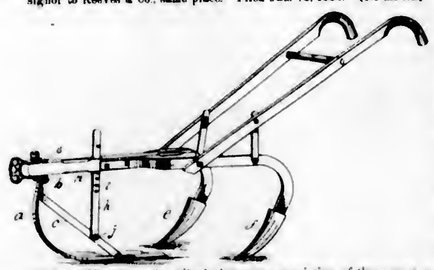
340,241. BALANCED PUMP. HALEY S. RAMSEY, Comanche, Tex. Filed Sept. 19, 1885. (No model.)



Claim.—1. The combination, with the vertical cylinders arranged parallel with each other, of the reciprocating plungers and their valves, the exit-pipes leading to the reservoir, the swiveled tubes connecting the cylinders A with the plungers G, and the cross-arms and operating mechanism, the whole arranged substantially as and for the purposes specified.

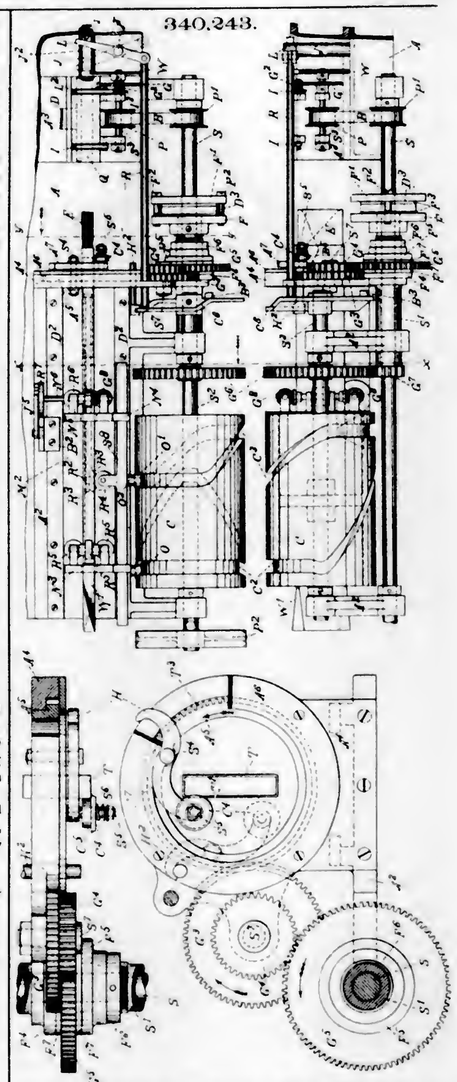
2. The combination of the vertical parallel cylinders, their valved plungers, and operating mechanism, the pipe-connections and receiver, and the swiveled connections F F and extension-joints *f f*, substantially as and for the purposes specified.

340,242. PLOW-GAGE. ALFRED B. REEVES, Columbus, Ind., assignor to Reeves & Co., same place. Filed Jan. 18, 1886. (No model.)



Claim.—The above-described plow-gage consisting of the runner *a*, having eye *b*, staple *c*, brace *e*, adjusting-bar *h*, and pin *n*, all constructed in the manner described, and arranged to co-operate with a plow-beam, as and for the purpose specified.

340,243. MACHINE FOR COUNTING, PACKING, AND BANDING ENVELOPES. FRANCIS H. RICHARDS, Springfield, Mass., assignor of one half to the Pratt & Whitney Company, Hartford, Conn. Filed June 10, 1884. (No model.)



Claim.—1. The combination, in an envelope-counting mechanism, of a packing-box adapted to receive envelopes, means, substantially as described, for putting envelopes into said box one at a time, a plunger, substantially as described, adapted to push said envelopes laterally in said box, an intermittently-moving stop constructed to arrest the action of said plunger during the packing of a given number of envelopes, and escapement mechanism, substantially as described, operating said stop from the envelopes passing into the box, substantially as set forth.

2. The combination, in an envelope-counting mechanism, of a box, Q, plunger D, and the hook or arm I, having thereon a pallet, P', wheels P' and W, gearing connecting said wheels, and plunger J, substantially as set forth.

3. The combination of box Q, plunger D, plunger J, and tube T, substantially as set forth.

4. The combination, in an envelope counting and packing mechanism, of shuttle M, having tube T, means, substantially as described, for supporting said shuttle, and band cutting-off mechanism, arranged and operating substantially as set forth.

5. The combination, with a suitable frame-work, of ring A^3, shaft S^4, arm A^7, carrying-stud S^5, cutter C^4, constructed to revolve and slide on said stud, and spring S^6, all arranged to operate substantially as set forth.

6. The combination, with tube T, of a frame, as A^4, ring A^3, shaft S^4, arm A^7, having the rotary cutter C^4 and hook H and stop H^2, whereby said cutter is first swung away from said tube and then said ring held from rotation, substantially as set forth.

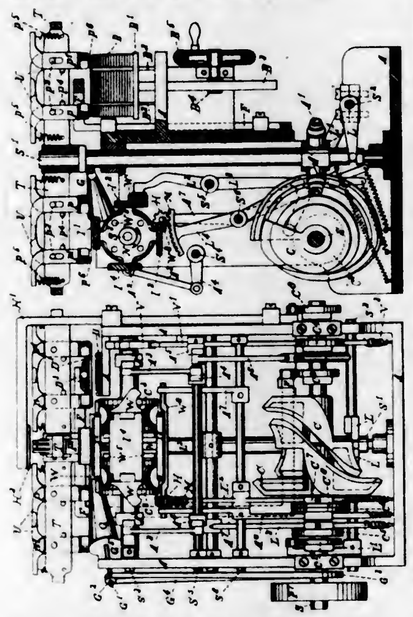
7. The combination of a frame, as A^4, ring A^3, shaft S^4, arm A^7, having a cutter, C^4, and hook H, stop H^2, and cam C^6, substantially as set forth.

8. The combination of tube T, ring A^4, arm A^7, having stud S^5, rotary cutter C^4, having rollers C^5, and spring S^6, substantially as set forth.

9. The combination of plunger J, having a pin, J', lever L, rod R, and shaft S^7, having a part, as C^6, with a lug, B^2, substantially as set forth.

10. The combination of a shuttle, M, having tube T, slide M^2, having devices, substantially as described, for carrying said shuttle, piston T', having rollers R^2, slide S^8, the cam C, provided with cam-grooves C^2 and C^3, connections from one of said grooves to slide S^8 and from the other to slide M^2, substantially as set forth.

340,244. ENVELOPE-MACHINE. FRANCIS H. RICHARDS, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Apr. 30, 1884. (No model.)



Claim.—1. The combination of a picker-turret, a gum-roll, and a series of pickers supported in said turret and carried thereby over and in contact with said roll, substantially as described.

2. The combination of a series of traveling pickers, means, substantially as described, for supporting and moving said pickers in a circuit, and gum-delivering mechanism, substantially as described, for putting gum onto said pickers while they are traveling in said circuit, substantially as set forth.

3. The combination of a revolving turret, one or more pairs of pickers supported on said turret, and a conical gum-roll, the apex of which coincides substantially with the axis of said turret, substantially as described, and for the purpose set forth.

4. The combination of turret T and the swinging pickers P and P', arranged in pairs, which are set in said turret radially to the axis thereof, substantially as described.

5. The combination of a turret, T, having pickers arranged in two concentric circles, and the creasing-die D', arranged to be supported and operated between said circles, substantially as described.

6. The combination, with the turret and its pickers, arranged in pairs set radially, as described, of the die D', a frame, substantially as shown and described, for carrying said die, and actuating mechanism, substantially such as described, for imparting to said frame and die a reciprocating motion, substantially as set forth.

7. The combination of the pickers P P', having arms U, a presser H^3, and means, substantially as described, for operating said presser, substantially as set forth.

8. The combination of a picker-holding turret, pickers P and P', pivotally supported in said turret, and springs connected to said pickers for holding them in position, substantially as described.

9. The combination of a series of blank-taking traveling pickers and a series of blank-receiving traveling folding-beds, substantially as described.

10. The combination of shaft S^9, arms A^7, folder W^2, having pinion H, lever L^4, having segment M, and cams C^8 and C^7, substantially as described.

11. The combination of a folding-bed, as I, end-flap folding-wings W, pivoted to the ends of said bed, and cam C^2, having cam-groove W^2 operating said wings, substantially as described.

12. The combination of shaft S^9, a series of folding-beds carried on said shaft, shaft S^9, an arm or lever carried on said shaft S^9, and a folding-wing carried on said arm by a flexible connection, substantially as described, to operate against said beds, substantially as described.

13. The combination of shaft S^9, folding-beds carried on said shaft, shaft S^8, the oscillating seal-flap folder W^3, carried in arms on rock-shaft S^9, and means, substantially as described, for operating said folder to fold the flaps of envelope-blanks on said beds, substantially as set forth.

14. The combination of a series of folding-beds moving in a circuit, end-flap folding-wings moving with said beds in said circuit, a back-flap folder arranged to operate upon a folding-bed at one point in said circuit, and a seal-flap folder arranged to operate upon a folding-bed at another point in the circuit, substantially as described.

15. The combination of an arm, a folding-wing, and a flexible piece connecting said wing to said arm, substantially as described.

16. The combination of an arm, a folding-wing, a flexible piece connecting said wing and arm, and a bearing-point for sustaining said flexible piece against the pressure of said arm, substantially as described.

17. The combination of a folding-wing, elastic strip K^2, and flexible cover K', substantially as described.

18. The combination of the rotary reciprocating cams C^2, folding-bed disk N, friction devices, substantially as described, between said cams and said disk, shaft S^9, stop-wheel V, lever V', and cam C^4, substantially as set forth.

19. In an envelope-machine, the combination of one or more pickers arranged to move about an axis, a gum-delivering, a blank-supporting, a blank-creasing, and a blank-folding mechanism, each substantially as described, and arranged in a circle around said axis, and mechanism, substantially as described, adapted to first pass said pickers over the gum-delivering mechanism, next to pass it to and stop it at the blank-supporting mechanism, then to the blank-creasing, and then to the blank-folding mechanism, all arranged substantially as set forth.

20. The combination, in an envelope-machine, of devices to support the blanks, mechanism to fold envelope-blanks, with mechanism arranged between the blank-supporting devices and the folding mechanism to crease the blanks prior to folding, and with an intermittingly-acting non-retreating blank-carrying picker to take the blank from its supporting devices and carry it to the creasing-dies, and when creased to carry it to the folding mechanism, substantially as described.

21. The combination, in an envelope-machine, of a folding-bed, an end-flap folding-wing at each end of said bed, a blank-picker constructed to hold an envelope-blank by its side flaps, and mechanism, substantially as described, operating said carrier and wings to first present a blank so held onto said folding-bed, then to close said wings to fold the end flaps and hold the blank onto said bed, and then to withdraw the carrier from the side flaps, substantially as set forth.

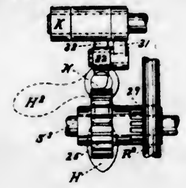
340,245. ENVELOPE-BLANK-FEEDING MECHANISM. FRANCIS H. RICHARDS, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Jan. 31, 1885. (No model.)

Claim.—1. The combination of a set of lifters, R, rod M, and connecting-gearing interposed between said rod and set of lifters, substantially as described.

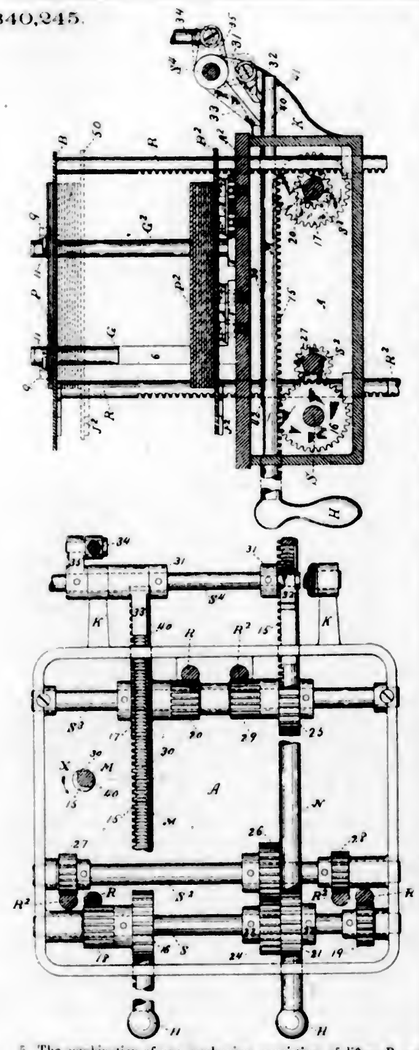
2. The combination of plate P, lifters R, and springs J^3, substantially as described.

3. The combination of a plate, as B, vertically-movable lifters upholding said plate, a sliding rod or part, as M, provided with ratchet-teeth, means, substantially as described, for operating said lifters from said part, and a ratchet mechanism, substantially as described, for operating said part, substantially as set forth.

4. The combination of one mechanism consisting of plate-lifters, and devices, substantially as described, for operating them, with another and similar mechanism consisting of substantially duplicate lifters and devices, said mechanisms being each adapted to be operated independently, substantially as set forth.



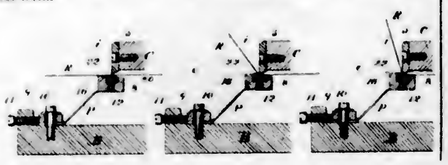
340,245.



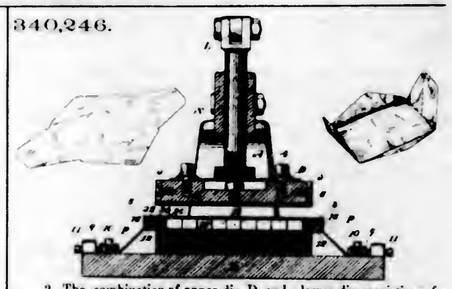
5. The combination of one mechanism consisting of lifters R, rod M, and intermediate gearing, substantially as described, with another and similar mechanism consisting of lifters R^2, rod N, and intermediate mechanism, substantially as described, said mechanisms being each adapted to be operated independently of the other, substantially as set forth, and for the purpose described.

340,246. MECHANISM FOR CREASING ENVELOPE-BLANKS. FRANCIS H. RICHARDS, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Sept. 7, 1885. (No model.)

Claim.—1. The combination, in a blank-creasing mechanism, of a die of fixed size and a die consisting of a series of bars, substantially as described, having a downward and a closing movement, substantially as set forth.



340,246.

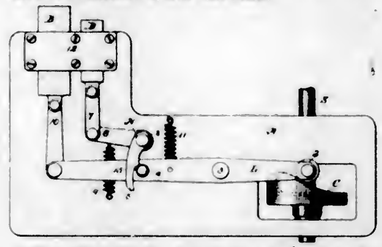


2. The combination of upper die, D, and a lower die consisting of a series of rabbeted bars supported on spring-plates, whereby said bars are caused to have a closing movement derived from their downward movement, substantially as set forth.

3. The combination, with die D, of spring-plates P, bars 16, divided into sections, as described, bars 8, supported in said sections, and means, substantially as described, for holding said plates P, substantially as set forth.

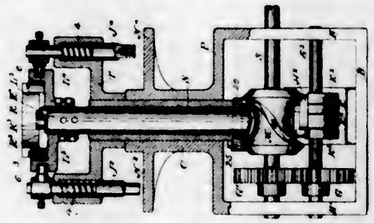
4. The combination of creaser 5, bar 8, having surface 20, ledge 22, and angle 24, and means, substantially as described, supporting said bar, to have a downward and simultaneously a closing movement, substantially as set forth.

340,247. MECHANICAL MOVEMENT. FRANCIS H. RICHARDS, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Oct. 29, 1885. (No model.)



Claim.—The combination, in a mechanical movement, of a pair of slides, as B D, lever L, connected to slide B and having a roller or pin, 4, a cam-arm pivoted substantially as described and operated by said roller or pin, connections from said arm to slide D, and actuating mechanism, substantially as described, operating lever L, substantially as set forth.

340,248. MECHANICAL MOVEMENT. FRANCIS H. RICHARDS, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Oct. 19, 1885. (No model.)



Claim.—1. The combination, in a mechanical movement having stations arranged in a circuit, of one or more slides, mechanism, substantially as described, carrying said slide or slides to each of said stations successively, one or more lifters, substantially as described, operating said slides, and mechanism, substantially as described, imparting a reciprocating movement to the lifters at one or more of said stations, substantially as set forth.

2. The combination of a mechanical movement having stations arranged in a circuit, of an intermittently-rotating turret having bearings corresponding to said stations, slides in said bearings, non-rotating slide-lifters, substantially as described, corresponding to said stations, cams operating said lifters at said stations, and means, substantially as described, operating said turret and cams, substantially as set forth.

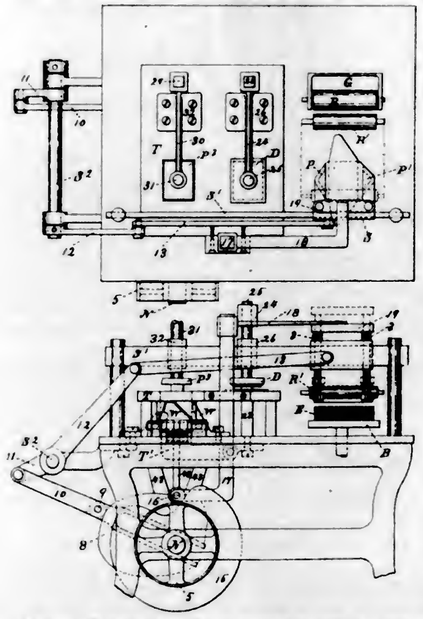
3. The combination, in a mechanical movement, of turret T, having bearings for slides, slides J, carried in said bearings, and having rolls or pins 6, lifters L, having grooves 3, rods R, and means, substantially as described, imparting an intermittent rotary movement to said turret and a vertically-reciprocating movement to said rods, substantially as set forth.

340,249. PICKER FOR ENVELOPE-MACHINES. FRANCIS H. RICHARDS, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Jan. 21, 1886. (No model.)



Claim.—The improved picker or gummer herein described, it consisting in a body formed of rubber or the like elastic material, and having an increasing degree of rigidity from the face upward, substantially as described.

340,250. ENVELOPE-MACHINE. FRANCIS H. RICHARDS, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Jan. 23, 1884. Renewed Mar. 13, 1886. (No model.)



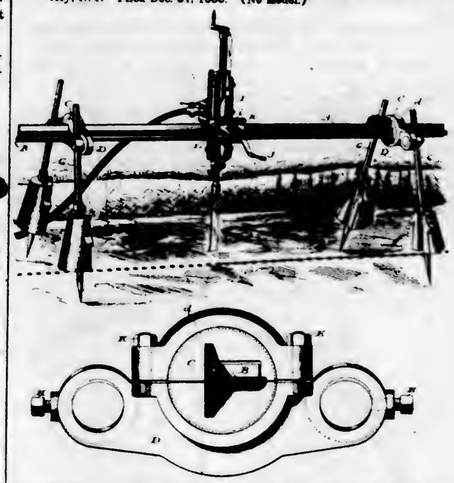
Claim.—1. The combination, in an envelope-machine, of a blank-supporting table, a blank-folding mechanism, a blank-creasing mechanism situated between said table and folding mechanism, a blank-taking picker, and means, substantially as described, for operating said picker to take a blank from said table and present it first to the creasing and then to the folding mechanism, substantially as set forth.

2. The combination, in an envelope-machine, of a blank-supporting table, blank-creasing mechanism, blank-folding mechanism, a blank-carrying picker adapted to travel in a course from said table first to said creasing mechanism and then to folding mechanism, and means, substantially as described, for applying gum to said picker, substantially as set forth.

3. The combination, in an envelope-machine, of a blank-creasing mechanism, a blank-folding mechanism, and means, substantially as described, for presenting blanks first to said creasing mechanism and then to said folding mechanism, substantially as set forth.

4. The combination, in an envelope-machine, of a blank-supporting table, a blank-creasing mechanism having a movable upper die, a blank-folding mechanism, a picker-holder traveling from said table to said mechanisms at one side thereof, a vertically-reciprocating picker carried by its stem in said holder, said picker being formed at one side of its stem and arranged to pass under said upper die, and means, substantially as described, for operating said holder and picker, substantially as set forth.

340,251. QUARRY-DRILL FRAME. WILLIAM L. SAUNDERS, Jersey City, N. J. Filed Dec. 31, 1885. (No model.)
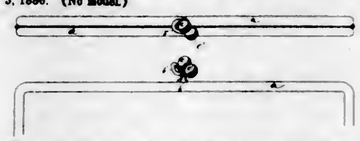


Claim.—1. In a quarry-drill frame, the combination of a bar, a drill mounted thereon, removable supports for the bar, and means for adjusting the bar both longitudinally and axially within its supports, substantially as described.

2. In a quarry-drill frame, the combination of a horizontal rack-bar, a drill mounted and moving thereon, removable end supports for the bar, and means, as described, for adjusting the bar both longitudinally and axially within its supports, as set forth.

3. In a quarry-drill frame, the combination of a horizontal rack-bar, vertically and longitudinally adjustable end supports therefor, divisible circular bearings for said bar mounted within the end supports and capable of rotation therein, and a drill mounted and adapted to be moved laterally upon the bar, substantially as shown and described.

340,252. FASTENER FOR TRAVELING-BAGS, POCKET-BOOKS, AND OTHER ARTICLES. SIMON SCHEUER, New York, N. Y. Filed Mar. 3, 1886. (No model.)



Claim.—1. The combination of jaws *a* with shank *b*, carrying ball *c*, and with swiveled loop-shaped shank *b'*, carrying ball *c'*, substantially as specified.

2. The combination of jaws *a* with shank *b*, carrying ball *c*, and with swiveled loop-shaped shank *b'*, carrying ball *c'*, the shank *b'* being curved so as to be higher at its center than at its ends, substantially as specified.

340,253. LATHING. LAUREN S. SCOTT, Bristol, Vt. Filed May 21, 1884. (No model.)



Claim.—1. The described lathing fabric, composed of lath-strips united or woven together by twine, cords, or wire, having a selvage formed of projecting lath ends alternating with intervals, substantially as shown and described, for the purposes set forth.

2. The described lathing fabric, composed of lath-strips united or woven together by cords, twine, or wire, having selvages formed of alternating projecting lath ends and corresponding intervals, substantially as specified, whereof the edges of the lath are beveled, in the manner described, and for the purposes set forth.

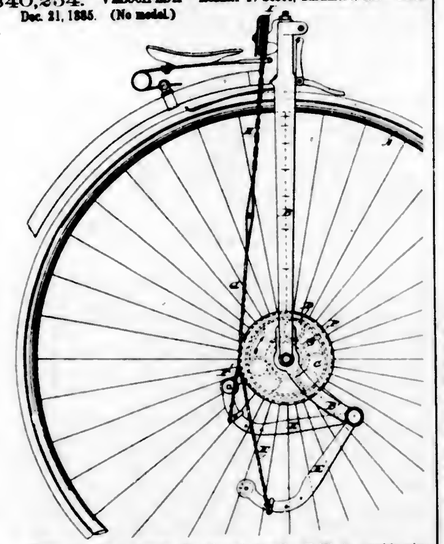
3. The described lathing fabric, composed of lath-strips united or woven together by means of twine, cord, or wire, having selvages formed of alternating projecting lath ends and corresponding intervals.

substantially as specified, the several strips whereof are punctured or perforated for the reception of the nails, substantially as described and set forth.

4. The described lathing fabric, composed of lathing-strips united or woven together by warp threads or wires, as shown, having selvages of alternating projecting lath ends and corresponding intervals, said strips being beveled and perforated substantially in the manner described, and for the purposes set forth.

5. The lathing-sheet consisting of the independent and separated ordinary wooden laths and the interlacing or crossing wires traversing the series of laths immediately adjacent to each other on both sides, binding them together without springing them transversely, substantially as herein described.

340,254. **VELOCIPEDE.** ROBERT P. SCOTT, Baltimore, Md. Filed Dec. 21, 1885. (No model.)



Claim.—1. In a bicycle, the hinged treadles E E', in combination with drums D D', so arranged as to revolve the said drums back and forward, together with means for transmitting the entire propelling-power over the periphery of the drive-wheel, substantially as described.

2. In a bicycle, the hinged treadles E and E', in combination with the drums D and D', chains G and G', together with the chain H, running over a suitable pulley, I, whereby the entire propelling-power is passed through one drum and the second drum drives the machine, substantially as described.

3. The roller-clutch C, having the inner frame, *c*, loose about the center, to allow for lateral motion, substantially as and for the purpose described.

4. In the roller-clutch of a bicycle, the setting-up plates *c'*, substantially as described.

5. In the roller-clutch of a bicycle, the separable bed-plates *c''*, substantially as described.

6. In a bicycle, the drums D, running upon two rows of balls, *d'* and *d''*, the inner row of balls, *d'*, serving as a bearing for the end of the axle *a*, and the outer row, *d''*, bearing in a plate or disk, J, substantially as described.

7. The plate or disk J, which serves as the outer bearing for the axle of a bicycle, said plate provided with a boss, J', fitting into a spherical recess of the fork B, substantially as and for the purpose described.

8. In a bicycle, the mud-guard K, arranged to give to the pressure of the rider's foot and bear down against the tire of the back wheel, substantially as and for the purpose described.

9. In a bicycle-wheel hub, the slotted recess L, so formed in the hub as to be molded in the manner described.

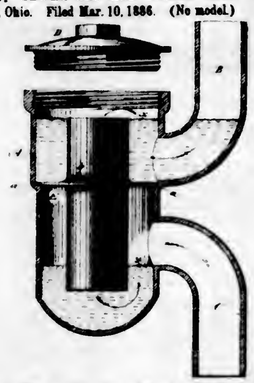
10. In a bicycle, the combination of the drums D D', operated as described, treadles E E', chains G, G', and H, pulley I, and clutch C, with suitable bearings for shaft and other parts, substantially as described.

11. In a bicycle, the combination of drums D D', operated as described, treadles E E', chains G, G', and H, pulley I, a double row of balls, *d' d''*, such as described, for shaft and drum bearings, together with suitable clutching mechanism, substantially as described.

12. In a ball-bearing for a bicycle, two disks provided with annular V-grooves in their circular faces, said faces coming nearly together and inclosing a circle of balls, and means for adjusting said disks one toward the other.

13. In a bicycle, the double row of balls *d' d''*, inclosed between grooves cut in the circular faces of the bearing-disks, the bearing consisting of one middle and two outside disks, the axle bearing toward the inside and the drum bearing on the outside, together with means for adjusting, consisting of a threaded screw working in the outer disk, which clamps against the fork end, substantially as described.

340,255. **SEWER-GAS AND STENCH TRAP.** THOMAS SHEHAN, Cleveland, Ohio. Filed Mar. 10, 1886. (No model.)



Claim.—1. The combination of the trap-body, the inlet and outlet pipes, and the removable tubular section making a water-tight joint with the trap-body at a point between the inlet and outlet pipes, and extended both above and below said joint far enough with reference to the inlet and outlet openings to hold a water-seal at each of its ends, substantially as and for the purposes hereinbefore set forth.

2. The combination of the trap-body, the inlet and outlet pipes, the removable tubular section making a water-tight joint with the trap-body at a point between the inlet and outlet pipes, and arranged, substantially as described, to hold a water-seal in the trap, and a counterbalanced valve controlling the water-passage in said tubular section, substantially as and for the purposes hereinbefore set forth.

340,256. **GREASE-FEEDER FOR LUBRICATING PURPOSES.** C. A. THOMPSON, Flushing, N. Y. Filed Feb. 12, 1886. (No model.)



Claim.—1. In combination with a grease-cup having the removable top threaded thereon, the heat-conductor in the form of a coiled spring within the cup, bearing against the under side of the cover, having the straight projection extending through and nearly filling the feeding-orifice and arranged to conduct heat to the grease near the walls of the cup, but not touching the walls, substantially as shown and described.

2. The herein-described grease-feeder, composed of the cup, the removable cover threaded upon the top of the cup, and the heat-conductor bearing against said cover, the conductor being constructed in the form of a spring extending near to but not touching the walls of the cup up in the central part thereof, and straight through the feeding-orifice, all arranged substantially as shown and described, and for the purposes set forth.

340,257. **STOPPER-FASTENER.** FRANK DELLA TORRE, Baltimore, Md. Filed Feb. 9, 1886. (No model.)



Claim.—1. The combination of a bail, a neck-wire constructed to act upon one side of the bail as a stop and a lever constructed to act at the opposite side of the bail as a stop, substantially as specified.

2. The combination of a neck-wire, a bail, and a lever, the neck-wire and lever being provided with stops and the bail being adapted to spring into a locked position between the stops, substantially as specified.

3. The combination of a bottle, a bail, neck-wire, and lever, the latter constructed to project from the bottle-neck and out of contact therewith when the bail is locked, and provided with a stop to act upon one side of the bail, and the neck-wire having a stop to act upon the opposite side of the bail, substantially as specified.

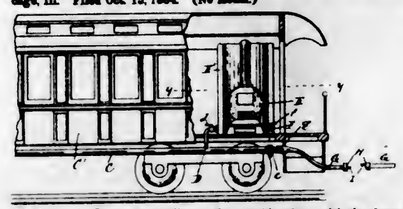
4. A neck-wire constructed of a single piece and provided with beveled pintles projected to form stops which permit the passage of a bail in both directions, substantially as specified.

5. In a stopper-fastener, the lever E, provided at each of its ends with the eyes E' E² and the stops E³, substantially as specified.

6. The combination of the bottle A, stopper B, bail D, a neck-band, G, and lever E, having the stop E³, substantially as specified.

7. The combination of the bottle A, stopper B B' B², the bail D, having pintles D', neck-wire G, having the pintles G' G², and the lever E, having the eyes E' E² and stops E³, substantially as shown and described.

340,258. **HEATER FOR RAILWAY-CARS.** CHARLES TURNER, Chicago, Ill. Filed Oct. 15, 1884. (No model.)



Claim.—1. In a car-ventilator, the combination, with the funnels B, arranged as specified, of the pipe C, having its several sections connected by flexible tubing, and provided with branch pipe D, hollow screen E', connected therewith and having an outlet-pipe, and heater E, substantially as and for the purposes specified.

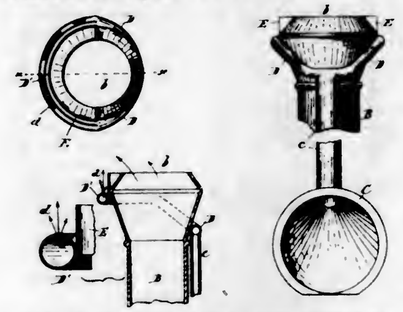
2. In a car-ventilator, the combination, with the main air-supply pipe C, of hollow screen E', connected thereto by a branch pipe, D, and having an outlet-pipe, F, the said screen having the partitions *e*, extending alternately from the top and bottom almost to the opposite end of the screen, and heater E, substantially as and for the purposes specified.

3. In a car-ventilator, the combination, with car C' and heater E, arranged therein in one corner thereof, of hollow screen E', partly surrounding said heater and having a branch pipe, D, at the side thereof farthest from the car-door, and communicating with the supply-pipe C, and an outlet-pipe, F, at the side nearest the car-door, substantially as and for the purposes specified.

4. In a car-ventilator, the combination, with supply-pipe C, having a stop-cock, *c*, at each end of the car, of hollow screen E', branch pipe D, connecting the two and having a stop-cock, *d*, and outlet-pipe F, having stop-cock *f*, substantially as and for the purposes specified.

5. In a car-ventilator, the combination, with the locomotive A, of the funnels B, arranged as specified, and supply-pipe sections C, arranged immediately under the foot-boards *b*, substantially as and for the purposes set forth.

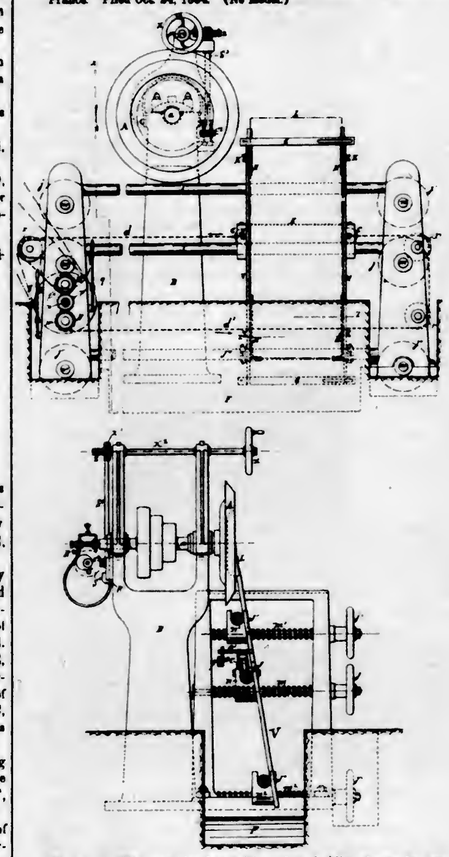
340,259. **ATTACHMENT FOR LOCOMOTIVE SMOKE-STACKS.** CHARLES TURNER, Chicago, Ill. Filed Oct. 15, 1885. (No model.)



Claim.—1. The combination, with a locomotive smoke-stack, of pipe D, encircling the same, and having the slotted portion D' around the rear upper edge of the stack, and a pipe, *c*, connecting pipe D with a funnel, C, arranged as described, substantially as and for the purposes specified.

2. The combination, with the smoke-stack B, of pipe D, having slotted portion D', arranged as described, guard E, attached thereto, pipe *c*, and funnel C, substantially as and for the purposes specified.

340,260. **GLASS-BEVELING MACHINE.** NICOLAS VOGLET, Lyons, France. Filed Oct. 24, 1884. (No model.)



Claim.—1. The combination, with a glass-holding frame for supporting a plate in an inclined position and a rotary grinder having a horizontal shaft and a discoid face, of a spring, E⁴, for applying pressure endwise to the said shaft, a cam or eccentric, S, for adjusting said spring to vary its pressure, and mechanism, substantially as herein described, for turning the said cam, as and for the purpose herein set forth.

2. The glass-holding frame consisting of the channel-iron side pieces having holes *c c*, the plates E G, on which said side pieces are laterally adjustable, the gibs H and H', fitted to the channels of the side pieces, and the screws K, passing through the hole *c c* and entering the gibs, all substantially as herein described.

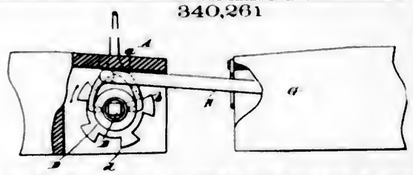
3. The combination, with the glass-holding frame furnished with rollers C, the supporting-bars J J' J'', the adjustable supports *n n' n²*, for said bars, and the screws J J' J'', for carrying and adjusting said supports, substantially as herein described.

4. The combination, with the inclined glass-holding frame and supporting-bars for the same, of the cords *d d'*, the pulleys *r r*, for guiding the said cords, the rollers M N, for winding and unwinding the said cords, and means, substantially as herein described, for imparting to the said rollers rotary motion in opposite directions alternately, for producing a reciprocating motion of the said frame, all substantially as herein described.

340,261. **CAR-COUPLING.** HUGH WALLACE, Richmond, Ohio. Filed Feb. 15, 1886. (No model.)

Claim.—1. In a car-coupling, the combination of the shaft, the loose wheel thereon having the peripheral teeth, and the sliding collars engaging with the said wheel to prevent it from turning in one direction, substantially as described.

340,261



2. The combination, in a car-coupling, of the draw-head, the shaft, the wheel loose thereon and having the peripheral teeth and the ratchet-teeth on opposite sides, and the sliding collars having the ratchet-teeth to engage with the similar teeth of the wheel, for the purpose set forth, substantially as described.

3. The combination, in a car-coupling, of the link, the draw-head having the shaft, the wheel loose thereon and having the peripheral notches to receive one end of the link, and the ratchet-teeth on opposite sides, the sliding collars having ratchet-teeth to engage with those of the wheel and lock the latter to the shaft, and the levers for moving the collars to engage or disengage the wheel, substantially as described.

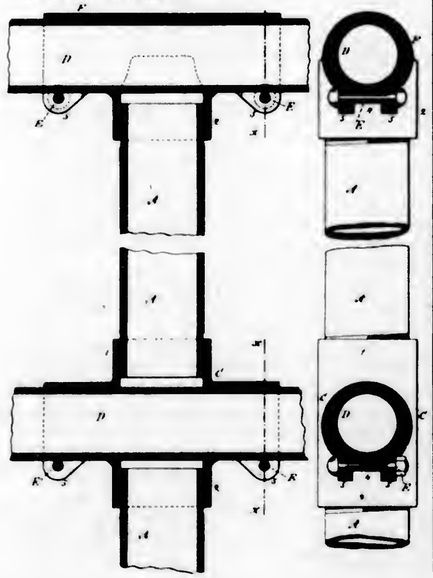
340,262. SHUTTER-FASTENER. GEORGE C. WATERHOUSE, New Albany, Ind., assignor to John S. Fite and Josiah F. Perrin, both of same place. Filed Jan. 8, 1886. (No model.)



Claim.—1. The combination, with a window-shutter provided with a fixed staple, I, and with a sash, C, of a lever, H, pivoted upon the sill and having two arms, *b d*, at an angle to each other extending from opposite sides of the trunnions, one of the arms having a lug for engaging with the staple, and the other extending beneath the sash, substantially as set forth.

2. The combination, in a shutter-lock, of a lever having two arms at an angle to each other, trunnions extending across the lever and projecting below its lower edge, and a yoke-plate having ears *f*, and recessed to receive the trunnions, substantially as described.

340,263. TUBULAR IRON RAILING. THEODOR R. A. WEBER, New York, assignor to himself, John H. Pendleton, Brooklyn, and Robert I. Sloan, Cornelius Tiers, and Alexander H. Tiers, New York, N. Y. Filed Dec. 26, 1885. (No model.)

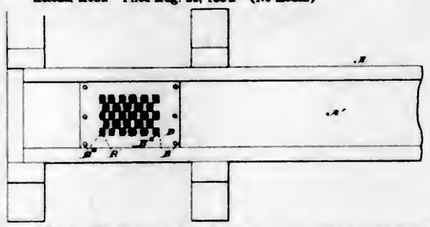


Claim.—1. The metallic posts formed of the tubular sections A and the intersection-pieces C and cap-pieces F, permanently screwed together, such intersection-pieces and cap-pieces being slotted at 4, and provided with ears 5, in combination with the rails D, passing entirely through the respective intersection-pieces and cap-pieces, and the bolts or rivets E, by which the rails are clamped, substantially as set forth.

2. The end posts for the iron railing, formed of the tubular sections A, intersection-pieces C', each having an opening at one side for the reception of the rail, the cap-pieces F', formed as a bend, there being the slots at 4, and ears at 5, in combination with the rails D and clamping-screws or rivets E, substantially as specified.

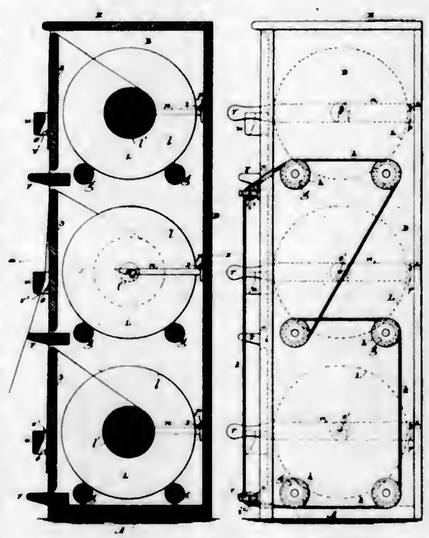
3. The intersection-pieces C, having screw-sockets for the reception of the post-sections, and openings for the passage of the rails, and the ears 5 for the rivets or bolts to clamp the rails, there being enlarged openings in the junction-pieces between the ears and the socket, substantially as set forth.

340,264. SCREENED CHUTE OR WATER-WAY. LEVI B. WELLS, Helena, Mont. Filed Aug. 29, 1884. (No model.)



Claim.—The herein-described chute or water-way, provided with a screen consisting of a metal plate having oblong perforations formed therein in parallel rows, leaving an imperforate convex portion between each two perforations of a row, said perforations of a row being directly opposite the convex portions of the adjacent rows, substantially as and for the purposes set forth.

340,265. HOLDER FOR EMBROIDERY. JONATHAN B. WEST, Rochester, assignor to L. N. Axiel & Co. and Berthold Galland, all of New York, N. Y. Filed July 31, 1884. (No model.)

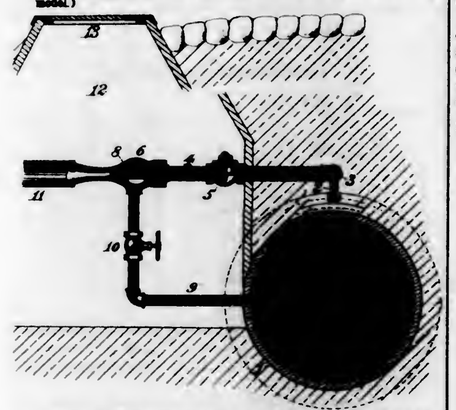


Claim.—1. The combination, with the spools having circular heads and projecting pivot-pins, of a case to receive the same, rollers to support and revolve such spools, and latches to hold the pivot-pins and spools while being rotated, substantially as set forth.

2. The cabinet-case having front plates pivoted near their lower edges, in combination with the pins *o*, the guide-bars *n*, and the end plates, *v'*, for supporting the guide-bars *n*, substantially as specified.

3. The combination, with the cabinet-case and spools, of the latch-arms *n*, the back bar, *p*, and means for supporting the back bar and allowing it and the latch-arms to be moved, substantially as set forth.

340,266. MEANS FOR PREVENTING LEAKAGE IN GAS-MAINS. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Filed Feb. 3, 1886. (No model.)



Claim.—1. The combination of a gas-main, a chamber formed in or around a joint thereof, a leakage-pipe leading from said chamber to a delivery-pipe adapted to convey gas to a point of discharge for utilization, and an exhausting apparatus receiving gas from said leakage-pipe and actuated by gas supplied from the main, substantially as set forth.

2. The combination of a gas-main, a series of chambers, each formed in or around a joint thereof, leakage-pipes connecting said chambers with a leakage-line, and exhausting-pipe leading from said leakage-line to the discharge-nozzle of an ejector, a gas-supply pipe leading from the main into the ejector-chamber, which incloses said nozzle, and a delivery-pipe adapted to convey gas from the discharge end of said ejector-chamber to a point of discharge for utilization, substantially as set forth.

3. The combination of a gas-main, a chamber formed in or around a joint thereof, a leakage-pipe leading from said chamber to an ejector discharge-nozzle, a supply-pipe leading from the main to an ejector-chamber inclosing said nozzle, and having its discharge end opening into a chamber or reservoir, and a delivery-pipe connecting said chamber with a low-pressure main, substantially as set forth.

340,267. PIPE-JOINT FOR GAS-MAINS. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Filed Mar. 1, 1886. (No model.)



Claim.—1. The combination of a bowl or socket ended pipe-section, a plain or spigot ended pipe-section inserted therein, an annular strip or plate of sheet metal interposed between the bowl and spigot, and a packing of soft metal filling the space within the bowl on each side of said strip, substantially as set forth.

2. The combination of a bowl or socket ended pipe section a plain or spigot ended section inserted therein, two adjacent annular strips or plates of sheet metal grooved or corrugated in opposite directions to form a leakage-chamber and interposed between the bowl and spigot, and a packing of soft metal filling the spaces between said strips and the surfaces of the bowl and spigot, substantially as set forth.

3. The combination of a bowl or socket ended pipe section, a plain or spigot ended pipe-section inserted therein, two adjacent annular strips or plates of metal interposed between the bowl and spigot, a packing of compressed fiber or like material fitting between said plates, and a packing of soft metal filling the spaces between said strips and the surfaces of the bowl and spigot, substantially as set forth.

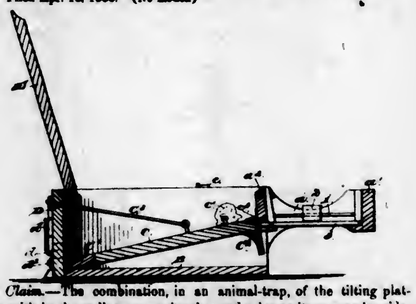
340,268. PIPE-JOINT FOR GAS-MAINS. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Filed Mar. 1, 1886. (No model.)



Claim.—1. The combination of a bowl or socket ended section, a spigot or plain ended section inserted therein, a packing of rubber, fiber, or analogous material inclosing the spigot-end, a protecting cover of metal surrounding said spigot-packing, and a soft-metal packing filling the space in the bowl exterior to said cover, substantially as set forth.

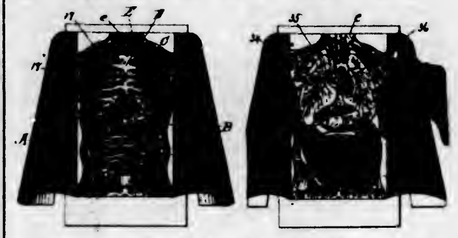
2. The combination of a bowl or socket ended pipe-section, a spigot or plain ended section inserted therein, a packing of rubber, fiber, or analogous material formed in two sections, separated by an intervening space constituting a leakage-intercepting chamber, a protecting cover of metal surrounding said spigot-packing, and a soft-metal packing filling the space in the bowl exterior to said cover, substantially as set forth.

340,269. ANIMAL-TRAP. WILLIAM E. WRENN, Robbinsville, N. C. Filed Apr. 10, 1885. (No model.)



Claim.—The combination, in an animal-trap, of the tilting platform with its depending arm or bracket and a lug on its rear under side, and carrying a pivoted rod which projects through the front of the trap, a latch to engage the rod when set and to cover the entrance when closed, a pivoted trigger or lever at the rear of the trap, a rotating and longitudinally-adjustable weight, and a hinged top or cover, all constructed and adapted to operate substantially as set forth.

340,270. ANATOMICAL CHART. LEVI W. YAGGY, Chicago, Ill., assignor to the Western Publishing House, Levi W. Yaggy and James J. West proprietors, same place. Filed Nov. 14, 1885. (No model.)



Claim.—1. The secondary sheet E, attached to the upper portion of the base-sheet C, in combination with the flap G, representing the exterior of the heart and the lungs in section, and flexibly connected to the sheet E at the lower edge thereof, substantially as and for the purposes set forth.

2. The secondary sheet E, flexibly attached to the base-sheet C, in combination with the flaps F and G, flexibly connected to the sheet E, the former at the respective side edges and the latter at the lower edge of said sheet E, and all containing the representations, substantially as described.

3. The base sectional chart-sheet C, in combination with the secondary sheet or flap H, representing the liver and flexibly attached to the said base-sheet by a separate joint at one edge thereof, whereby it may be turned outward independently, substantially as and for the purposes set forth.

4. The base chart-sheet C, in combination with the secondary sheet or flap H, composed of two parts or flaps containing exterior and sectional views of the liver flexibly hinged together at their lower edges, and one flexibly jointed to the base-sheet at its outer edge, substantially as and for the purposes set forth.

5. The base chart-sheet C, in combination with the secondary flap or sheet I, representing the exterior of the stomach, and connected by independent flexible joints to the base-sheet, whereby it may be turned outward independently, substantially as and for the purposes set forth.

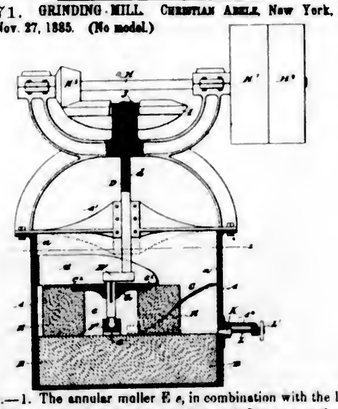
6. The base chart-sheet C, in combination with the secondary flap or sheet K, representing the intestines and a sectional view of the stomach, and flexibly connected to the base-chart at the lower portion thereof, whereby it may be separately turned down, substantially as and for the purposes set forth.

7. In anatomical charts, a base-sheet, C, containing a sectional view of the trunk, in combination with the sheets A and B, containing front

views of the same trunk, as described, and attached at opposite sides or edges to the sheet C, and independent secondary sheets representing the internal organs and flexibly and independently connected to said base-sheet, substantially as and for the purposes set forth.

8. In anatomical charts, the main sheets A, B, and C, in combination with the secondary sheets D, E, F, G, H, I, and K, all containing the representations and constructed, arranged, and operating substantially as and for the purposes set forth.

340,271. GRINDING-MILL. CHRISTIAN ABELE, New York, N. Y. Filed Nov. 27, 1885. (No model.)



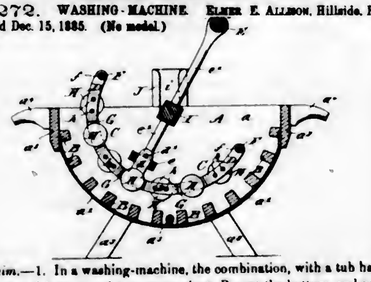
Claim.—1. The annular muller E *e*, in combination with the larger bed-stone B, inclosing-casing A, the crank-shaft D D', for gyrating and also rotating the muller eccentrically, and means, as the key D^2, for holding the parts loosely engaged, so that they may rock or tilt, all substantially as herein specified.

2. The wing M, forming a channel directing the material inward obliquely from the exterior to a point near the center of the mill, in combination with the casing A, bed-stone B, annular muller E *e*, and means for both gyrating and revolving the latter, all arranged for joint operation as herein specified.

3. The casing A, bed-stone B, crank-shaft D D', driving-wheel I, and its loose connections, in combination with the annular muller E *e*, having a step on which the weight of the shaft rests, all arranged to serve substantially as herein specified.

4. The hollow revolving muller E *e*, bed-stone B, casing A, and one or more inclined spiral shelves, C, and wings M, combined and arranged for joint operation, as herein specified.

340,272. WASHING-MACHINE. ELMER E. ALLISON, Hillside, Pa. Filed Dec. 15, 1885. (No model.)



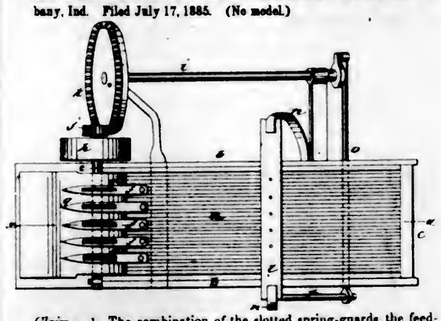
Claim.—1. In a washing-machine, the combination, with a tub having a concaved bottom and transverse cleats B next the bottom, and provided also with opposite vertical slot-bearings, as at *i i*, substantially as specified, of a rubber, C, comprising a series of bars, D, provided with disks H and attached to a handle, and said handle journaled in the bearings *i i*, substantially as and for the purposes herein set forth.

2. In a washing-machine, a rocking rubber constructed with a series of bars, D, and a series of disks, H, fixed to the bars, and said bars fixed to a handle-frame adapted to be journaled in the clothes-holding tub, substantially as herein set forth.

3. In a washing-machine, a rocking rubber constructed with a series of bars, D, crimped or bent flatwise, to form alternate recesses, G, at opposite sides, and a series of disks, H, fixed to the bars within recesses G, and said bars D, fixed to a handle-frame adapted to be journaled in the clothes-holding tub, substantially as herein set forth.

4. In a washing-machine, a rocking rubber constructed with a series of bars, D, having lugs *d*, keys *d'*, a series of disks, H, fixed to the bars, tie-bars F F at the ends of bars D, and a handle-frame consisting of bars *e e'* E I, said bar I forming the journals for the rubber, substantially as herein set forth.

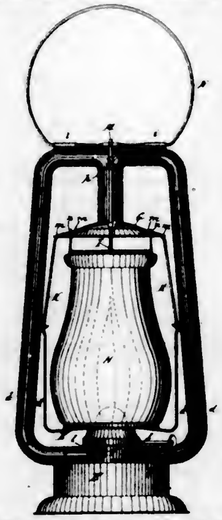
340,273. BAND-CUTTER AND DISTRIBUTER FOR THRASHING-MACHINES. BENJAMIN F. APPLEGATE and BENJAMIN F. LAGEL, New Albany, Ind. Filed July 17, 1885. (No model.)



Claim.—1. The combination of the slotted spring-guards, the feed-chute, a plate, *g*, secured to the bottom thereof and formed with slots, and the rotary circular knives *d*, projecting through the slots, the slots in the plate *g* being sufficiently close-fitting to prevent the passage of grain, substantially as set forth.

2. The combination, with the feed-chute *a b* and the rotary band-cutters *d* in the bottom thereof, of the slotted spring-guards *f* over the cutters, substantially as set forth.

340,274. MANUFACTURE OF TUBULAR PARTS OF LANTERN-FRAMES. LEWIS F. BEITS, New York, N. Y., assignor to Frederick Dietz, same place. Filed Oct. 21, 1885. (No model.)



Claim.—1. The herein-described tubes formed of the two matching parts stamped, flanged, and locked together, and combined with the top elbows formed of separate stamped and locked pieces, substantially as and for the purposes set forth.

2. The herein-described blanks for forming the side tubes, lower elbows, and connecting-sections, said blanks being similar in form and size, and proportioned and arranged to be cut from the stock, substantially as shown and described.

3. The herein-described top piece composed of the top elbows and the central pipe, the same being formed of the two matching parts united at their edges, substantially as and for the purposes set forth.

4. The combination, with the side pipes having the beading at their upper ends, of the top elbows, also beaded and secured upon the ends of the side pipes, substantially as shown and described.

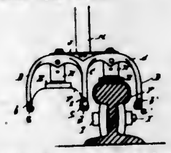
5. The combination, with the side tubes, of the top piece comprising the top elbows and central pipe, the several parts of the top piece and side tubes being united substantially as explained, so as to leave the strengthening-ribs, substantially as and for the purposes set forth.

6. The herein-described blanks for forming the top piece, comprising the top elbows and central pipe, said blanks being similar in form and size, substantially as and for the purposes set forth.

7. The combination, with the top piece, made of the two similar parts, locked together as explained, of the bail-ears formed integrally with one of the halves of said top piece, substantially as and for the purposes set forth.

8. The top elbows, central pipe, side pipes made separate from the top elbows, bottom elbows, and connecting-sections, united and arranged substantially as specified, so as to leave the strengthening-ribs upon the outer and inner margins, substantially as and for the purposes set forth.

340,275. TORPEDO-ADJUSTER. JAMES H. BEVINGTON, Cleveland, Ohio. Filed Apr. 29, 1885. (No model.)



Claim.—1. A torpedo-adjuster constructed substantially as described, and having its head connected by a transverse yielding bar to the bottom of the handle, substantially as and for the purposes specified.

2. A torpedo-adjuster having a head from which project three arms, the two outer of said arms having chambers opening toward the center arm, which has a chamber opening on each side toward the outer arms, and having a central bridge, as and for the purposes set forth.

3. In combination with a torpedo-adjuster constructed substantially as described, a telescopic handle secured to the spring interposed between the head of the device and said handle, substantially as and for the purposes described.

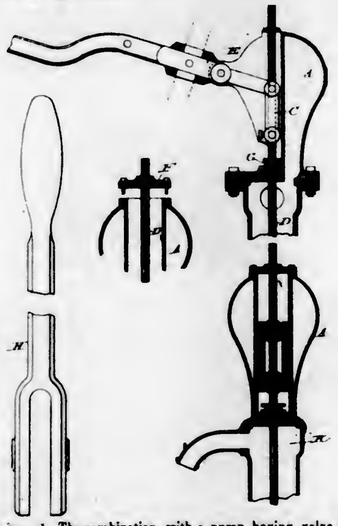
4. A torpedo-adjuster consisting of a head from which project three arms, constructed substantially as described, two springs to bear upon the upper surface of the torpedo, a handle, and a spring interposed between the handle and head, substantially as and for the purposes specified.

340,276. EXPLOSIVE COMPOUND. MAX BERLFHOLT, Kalk, near Cologne, Germany. Filed Oct. 22, 1885. (No specimens.)

Claim.—1. An explosive mixture consisting of nitro-cellulose in a solution of nitrate of ammonia in water of ammonia, as set forth.

2. An explosive mixture consisting of nitro-glycerine and nitro-cellulose with nitrate of ammonia in water of ammonia, as specified.

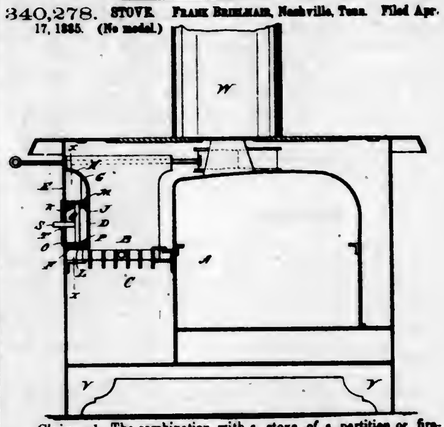
340,277. FORCE-PUMP. JAMES W. BRADLEY, Lockport, N. Y. Filed Oct. 2, 1885. (No model.)



Claim.—1. The combination, with a pump having valve-chamber K, piston-rod D, and mechanism for operating the rod, of the air-chamber A, having slot therein, with supports E E on either side thereof, thereby providing a passage-way for the rod, and a fulcrum for the cross-head B, without building an offset for either air-chamber or fulcrum, substantially as shown.

2. As an article of manufacture, the herein shown and described air-chamber A, provided with a slot therein, whereby the placing of an air-chamber directly over or in line with a valve-chamber is made possible, and the necessity of providing an offset therefor is obviated, substantially as described.

340,278. STOVE. FRANK BEHLMAIR, Nashville, Tenn. Filed Apr. 17, 1885. (No model.)

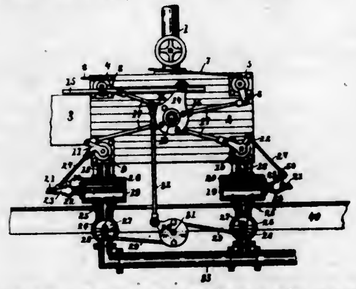


Claim.—1. The combination, with a stove, of a partition or fire-wall on one side of the fire-box, between which partition and the outer wall of the fire-box a compartment is formed within the fire-box, slides within the compartment formed by said wall of the fire-box and said partition, and a perforated outer casing, through which a lug on the slide passes, the above-mentioned partition being provided with apertures at its top and bottom, substantially as herein shown and described.

2. The combination, with the stove A, having apertures U in its side, of the partition D, the bottom F, having apertures L, the partition J, having apertures K, and the connected apertured sliding plates O and M on the bottom F, and partition J, substantially as herein shown and described.

3. The combination, with the stove A, having apertures U and a slot, T, in its side E, of the partition D, the bottom having apertures L, the partition J, having apertures K, the apertured slides O and M, the rods Q, and the bars R S, substantially as herein shown and described.

340,279. CONDENSER. LUCIUS BRIGGS, Glasgo, Conn. Filed Feb. 2, 1886. (No model.)



Claim.—1. In a condenser, the injector coacting and connected with its corresponding exhaust-valve, substantially as set forth.

2. In combination, the exhaust-valve and its coacting injector, which is operated by said exhaust, substantially as and for the purpose described.

3. In combination, the condenser-valve and its corresponding exhaust-valve, both coacting with and connected to the wrist-plate and operating together, but in a reverse manner, substantially as set forth.

4. The combination, with the condenser-valve and the exhaust-valve, both connected indirectly to and operated by the wrist-plate, of the condenser lying between and communicating with said valves, and provided with an injector which is operated by said exhaust-valve, substantially as described.

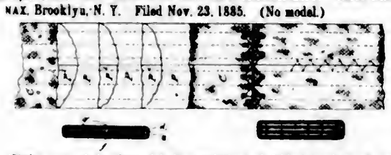
5. In combination, the two condensers, substantially as described, which are operated automatically by the cut-off motion of the steam-valves, and which condense the exhaust and steam alternately, substantially as and for the purpose described.

6. The combination, with the condenser-chamber 19, provided with the injector 20, which has the valve 22, of the exhaust-valve which operates said injector, substantially as described.

7. The combination, with the condenser, substantially as set forth, of the wrist-plate 14, connected therewith and coacting the exhaust-valve, the injector 20, and the condenser-valve 27, all substantially as and for the purpose described.

8. The combination, with the condensers, substantially as set forth, operated by the cut-off motion, of the rods 27, disk 30, and the rod 32, all substantially as and for the purpose described.

340,280. BELTING FOR DRIVING MACHINERY. AMOS BROADMAX, Brooklyn, N. Y. Filed Nov. 23, 1885. (No model.)



Claim.—1. A laminated belt consisting of folded laminæ of paper and canvas combined and stitched together, substantially as described.

2. In a belt consisting of canvas and paper, the paper folded in double laminæ independently of each other and of the canvas, the paper laminæ being inclosed by the canvas and stitched, substantially as described.

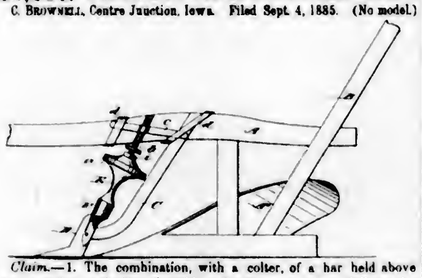
3. In a belt consisting of canvas and paper, the paper and canvas interfolded and stitched together, as set forth.

4. In a belt composed of canvas and paper, the combination of stretched, oiled, and dried canvas with paper inclosed by the canvas, the paper and canvas being united to form the belt.

5. A belt consisting of several separate laminæ of paper infolded covered, and stitched together, substantially as described.

6. A belt consisting of separate laminæ of paper combined with canvas, said canvas inclosing the paper and united thereto to form the belt, substantially as described.

340,281. SELF-CLEARING BREAKING-PLOW COLTER. BENJAMIN C. BROWNELL, Centre Junction, Iowa. Filed Sept. 4, 1885. (No model.)



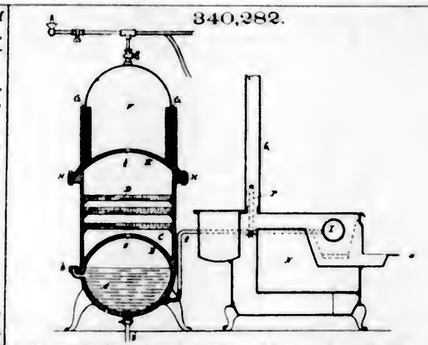
Claim.—1. The combination, with a colter, of a bar held above the same, and a vertically-adjustable roller thereon, substantially as described.

2. The combination, with a plow-beam, a standard secured thereto, and a colter on the lower end of said standard, of a bar secured to the beam and colter in an inclined position in front of the colter-standard, and a vertically-adjustable roller on said bar, substantially as herein shown and described.

3. The combination, with a plow-beam and colter, of a threaded rod secured to the beam and colter, a roller on said rod, and nuts above and below the roller, for adjustably securing the same on the rod, substantially as herein shown and described.

4. The combination, with the beam A, the standard C, and the colter D, provided with the shield F, of the threaded rod *b*, the roller E, the nuts *i*, the plate *c*, and clips *d*, substantially as herein shown and described.

340,282. GAS-MAKING APPARATUS. ELLSWORTH S. BRYANT, ALEXANDER W. FINLAYSON, and GEORGE R. COULS, Detroit, Mich. Filed Oct. 15, 1885. (No model.)



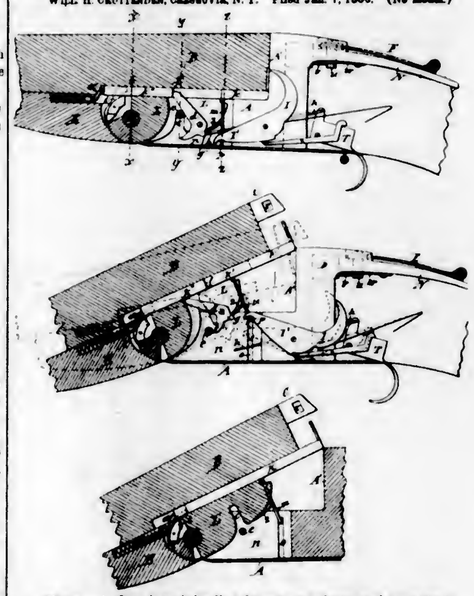
Claim.—1. The combination, with a retort, of a gas-washing chamber connected therewith, a purifying-chamber formed integral with said washing-chamber and provided with a dome having a water seal, and a gas-holder above said dome working in said water seal, substantially as described.

2. The combination, with a retort, of a gas-washing chamber connected therewith and provided with a dome, a purifying-chamber arranged above the washing-chamber and having communication therewith through perforations in said dome, a dome to the purifying-chamber having perforations, and a gas-holder above said dome, substantially as described.

3. The combination, with a retort, of a gas-washing chamber connected therewith and provided with a perforated dome, a purifying-chamber arranged above the washing-chamber and provided with racks D and a perforated dome, a water seal on said dome, and a gas-holder working in said water-seal, as set forth.

4. The chambers A D, formed integral and separated by a perforated dome, combined with the detachable perforated dome E, having formed integral therewith the water seal G, substantially as and for the purposes specified.

340,283. BREECH-LOADING FIRE-ARM. MILTON E. CARD and WILL H. CRITTENDEN, Canisteo, N. Y. Filed Jan. 7, 1886. (No model.)



Claim.—1. In a breech-loading fire-arm, an ejector under constant strain of a propelling-spring, a lever pivoted on the lug and adapted to engage and release the ejector, a shifter connected with the trigger and arranged to throw the aforesaid lever into engagement with the ejector automatically with the pulling of the trigger, and a catch on the frame arranged to actuate the lever to repress the ejector, and subsequently release the same automatically with the tilting of the barrels into their open position, substantially as described and shown.

2. In combination with the ejector, a spring-actuated plunger arranged parallel with the stem of said ejector and pressing rearward on the same, a lever pivoted on the lug of the barrels and pressing forward on the ejector, and a catch on the frame actuating said lever to repress the ejector and suddenly release the same during the dropping of the barrels, substantially as set forth.

3. In combination with the ejector, the spring-actuated plunger *a*, located in the fore-end, the lug L, provided with the slot *c*, the lever *d*, pivoted on the lug and engaging by one of its arms the ejector-stem, and the bar *e*, secured to the frame and projecting through the slot *c*, all combined to repress and suddenly release the ejector automatically when dropping the barrels, substantially as set forth.

4. In combination with the frame and barrels, the spring-propelled ejector K K", the lever *d*, pivoted on the lug and adapted to repress the ejector, the catch *s*, secured to the frame and engaging the lever *d*, and a push-bar arranged to throw the said lever in position to engage the ejector, substantially as set forth.

5. In combination with the frame, trigger, and barrels, the spring-propelled ejector K K", the lever *d*, pivoted on the lug and adapted to repress the ejector, the catch *s*, secured to the frame and engaging the lever *d*, and the push-bar *h*, connected to the trigger and engaging the lever *d*, to throw the same in position to engage the ejector, substantially as described and shown.

6. In combination with the frame, trigger, and barrels, the automatic ejector having its stem extending through the lug, and provided with the shoulder *f*, the spring-actuated plunger located in the fore-end and bearing on the end of the ejector-stem, the lug L, provided with the slot *c*, the bar *e*, secured to the frame and projecting through said slot, the bell-crank lever *d*, pivoted on the lug and having one of its arms adapted to engage the shoulder *f* and its other arm extending under the bar *e*, and provided with the heel projection *g* and the push-bar *h*, connected to the trigger and adapted to engage the heel projection *g*, all constructed and combined substantially in the manner specified and shown.

7. The combination of the extractor, actuated positively by a lever or cam arranged at the hinge of the barrels, a spring-actuated plunger arranged to press rearward on the extractor-stem and follow the same in its movements, an ejector-lever pivoted on the lug and adapted to be thrown in and out of engagement with the extractor, and a catch on the frame engaging the ejector-lever, substantially as set forth.

8. In a double-barreled breech-loading gun, two extractors arranged in separate channels and operated by one and the same cam or lever arranged at the hinge of the barrels and central thereof, substantially as set forth.

9. In a double-barreled breech-loading gun, two extractors operated positively by one and the same cam or lever connected to the hinge of the barrels and central thereof, two spring-actuated plungers, each pressing one of the extractors rearward, and two ejector-levers arranged to operate independently of each other, and each adapted to engage one of the extractors and repress the same in opposition to the spring-plungers, substantially as described and shown.

10. The combination, with the extractor-stem, of a supplemental stem arranged movable independently of the former stem and provided with a catch arranged to engage the extractor-stem during the movement of the supplemental stem, a spring-actuated plunger pressing rearward on the supplemental stem, and a lever adapted to engage said supplemental stem and press the same forward in opposition to the aforesaid plunger, substantially as described and shown.

11. In combination with the lever *i*, the extractor-stem K, formed with the attenuated rear end portion, K', the supplemental stem K", sliding at the side of the attenuated stem-section K', and provided with the shoulder *l*, the spring-actuated plunger *a*, bearing on the forward end of the supplemental stem K", and the lever *d*, engaging the rear end of said supplemental stem, substantially as described and shown.

12. In combination with the barrels, the frame provided in opposite sides of the mortise *n* with grooves *o o*, extending from the bottom of the mortise part way toward the top of the frame, and the link *m*, hung on the lug and having lateral projections *p p*, extending into the aforesaid grooves, substantially in the manner described and shown.

13. In combination with the frame and barrels hinged thereon, the mortise *n*, provided with the grooves *o*, the link *m*, having projections *p*, extending into the grooves *o*, and the spring 2, connected at one end to the lug and bearing with its opposite end down on the link *m*, substantially as described and shown.

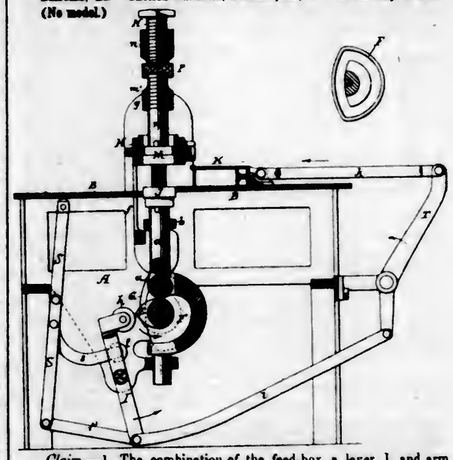
14. In combination with the frame and barrels hinged thereon, and the check-link *m*, hung on the lug of the barrels, the hammer formed in one piece with the forward-projecting arm I', engaging the said link, substantially as shown.

15. In combination with the frame and barrels hinged thereon, the check-link *m*, hung on the lug of the barrels, and provided with the lateral projections *p p*, and the two hammers, each formed in one piece with the forward-projecting arm I', bearing on one of the projections *p*, substantially in the manner described and shown.

16. In combination with the rib-extension C, provided with the aperture *r*, the bolt D, pivoted vertically back of the recoil-plate and having the horizontal hook *s*, entering the aperture *r*, and formed eccentric on its inner side and beveled on its under side, to crowd the barrels B rearward and downward, substantially as described and shown.

17. In combination with the rib-extension C, provided with the aperture *r*, the frame provided back of the recoil-plate with the channel H, extending from the under side vertically part way through the frame, the bolt D, seated in the upper end of said channel, and provided with the horizontal hook *s* at its upper end and with the notch *t* at its lower end, the shaft *u*, extending vertically through the tang, the lever F, attached to the upper end of the shaft, the lug *v*, projecting from the shaft and into the notch *t*, and supporting the bolt in the channel H, and the spring *w*, bearing on the lug *v*, all constructed and combined substantially in the manner specified and shown.

340,284. MACHINE FOR PRESSING PLASTIC MATERIAL INTO BRICKS, &c. GEORGE CARNELL, Philadelphia, Pa. Filed July 9, 1885. (No model.)



Claim.—1. The combination of the feed-box, a lever, I, and arm S, connected to said box, as described, and the shaft D, having a single feed-box-operating cam, G, which acts successively upon the lever I and arm S, all substantially as specified.

2. The combination of the feed-box, the lever I and arm S, coupled for joint operation and connected to the feed-box, and the driving-shaft, having a single feed-box-operating cam, G, which acts successively upon said lever I and arm S, all substantially as set forth.

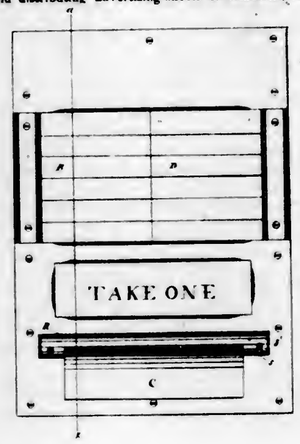
3. The combination of the feed-box, the driving-shaft having a cam, G, the lever I and arm S, coupled for joint operation, and the lever T, connected to the feed-box and to said coupled arm and lever, all substantially as specified.

4. The combination of the fixed upper plunger, M, the lower plunger, J, and a cam for reciprocating the same, with a guided mold-box, H, its frame *f*, and a flanged cam, F, for acting on said frame and imparting a positive movement in both directions to the mold-box, all substantially as set forth.

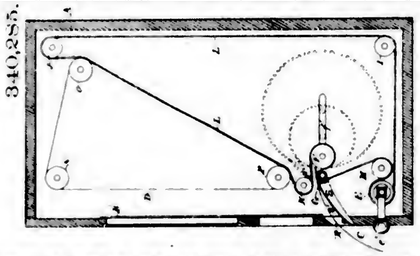
340,285. ADVERTISING-MACHINE. JAMES CASTLE, Toronto, Ontario, Canada. Filed Oct. 5, 1885. (No model.) Patented in Canada Oct. 14, 1885, No. 22,633.

Brief.—This invention comprehends, essentially, the combination in a device for exhibiting movable but permanently-attached advertising matter, of mechanism for distributing separable advertisements, such as handbills, &c.

Claim.—1. The combination, in an advertising and bill-distributing machine, of an inclosing-case provided with a glass panel in its front side, an elongated transverse opening or slot beneath said panel, mechanism for carrying an endless advertising sheet, consisting, essentially, of a series of rollers suitably mounted within said case, and mechanism for receiving and distributing advertising-sheets or handbills, consisting, es-



340,285.

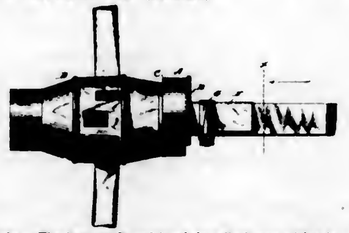


sentially, of a series of rollers and elastic bands, a driving-roller, and a bill receiving and discharging roller, both mechanisms being adapted to be put in motion by the simple withdrawal of one of the bills, substantially as described and shown.

2. In a combined bill-distributing and advertising machine, the rollers G H I J K, elastic bands L L, the driving-roller E, and the receiving and discharging roller F, all combined and arranged for operation substantially as and for the purpose set forth.

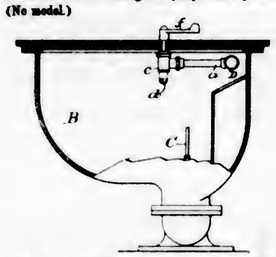
3. The combination, in a bill-distributing and advertising machine, with the rollers E F G H I J K, elastic bands L L, rollers N O P, traveling sheet D, of the operating sheet or bill C, all substantially as described and shown, and for the purposes set forth.

340,286. SAND-BAND FOR VEHICLES. JAMES R. CLARK, Watson N. Y. Filed Jan. 11, 1886. (No model.)



Claim.—The improved sand-band described, comprising in a single element the disk B, outwardly-projecting flange C, and the shank F, in the form of a rectangular box with one side removed, the said disk being cut away coincident with the open side of the shank, as at *a*, and the flange cut away coincident with the cut-away portion of the said disk, as at *a'*, substantially as shown, and for the purpose specified.

340,287. WATER-CLOSET. JOHN CLIFFORD, Chicago, Ill., assignor to the L. Wolff Manufacturing Company, same place. Filed Dec. 12, 1885. (No model.)



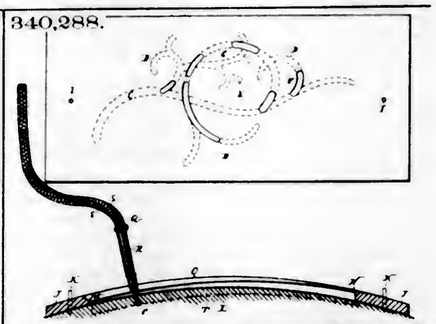
Claim.—In combination with the trunk and with the source of supply of water to the bowl of a closet, a device arranged within the trunk and operating to discharge water in spray or in jets against the whole interior surface of said trunk, and a suitable cock or valve for diverting the supply of water from the bowl to said device for discharging water against the interior walls of the trunk, all substantially as hereinbefore set forth.

340,288. APPARATUS FOR CARVING. ROBERT B. CODLING, Bristol, Conn. Filed July 3, 1885. (No model.)

Claim.—1. Pattern-plates for carving, respectively cut out in non-intersecting lines to form different portions of the same design, the breaks in the lines in one plate being supplied in another plate, substantially as set forth.

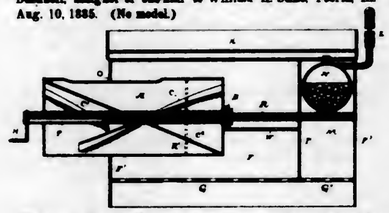
2. Pattern-plates for carving, cut out to form the pattern and provided in the lines of the same with elevations or depressions, to regulate the width and depth of the incision made by the carving-tool, substantially as set forth.

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3. Carving apparatus consisting of pattern-plates cut out to form the pattern and provided in the lines of the same with elevations or depressions, and a carving-tool rotated by a flexible shaft and controlled in the character of the incision made by it by the described vertical conformations of the plates, substantially as set forth.

340,289. COFFEE AND PEANUT ROASTER. CHARLES L. COLE, Bushnell, assignor of one-half to William A. Stine, Peoria, Ill. Filed Aug. 10, 1885. (No model.)



Claim.—1. In a coffee and peanut roaster, the combination, with the furnace having an opening through one end thereof, the rod projecting rigidly from the end thereof opposite to said opening, the tubular hub loosely mounted upon said rod, and the roasting-cylinder fixed on said hub, of the ways W, fixed to the lateral walls of said furnace parallel to said rod, and the cross-bar B, loosely secured to said tubular hub and having its ends resting upon said ways, substantially as specified.

2. In a coffee and peanut roaster, the combination of the furnace having one or more auxiliary furnace-chambers, the steam-boiler in one of said chambers, the warming-tray situated upon the furnace, and a pipe for conveying steam from the boiler to the tray, substantially as and for the purpose specified.

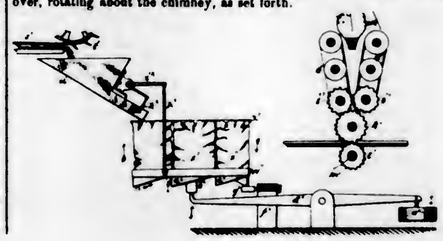
3. In a coffee and peanut roaster, the combination of the furnace having the auxiliary furnace-chamber, the steam-boiler in said chamber, the warming-tray located upon said furnace, the whistle, and pipes for conveying steam from said boiler to said tray and whistle, as and for the purpose set forth.

4. In a coffee and peanut roaster, the combination of the furnace having an opening through one end thereof and the transverse partition near the other end of the furnace, of the rod passing through said partition, and fixed to the adjacent end of the furnace, and having no other support, and the roasting-cylinder mounted upon said rod, as and for the purpose specified.

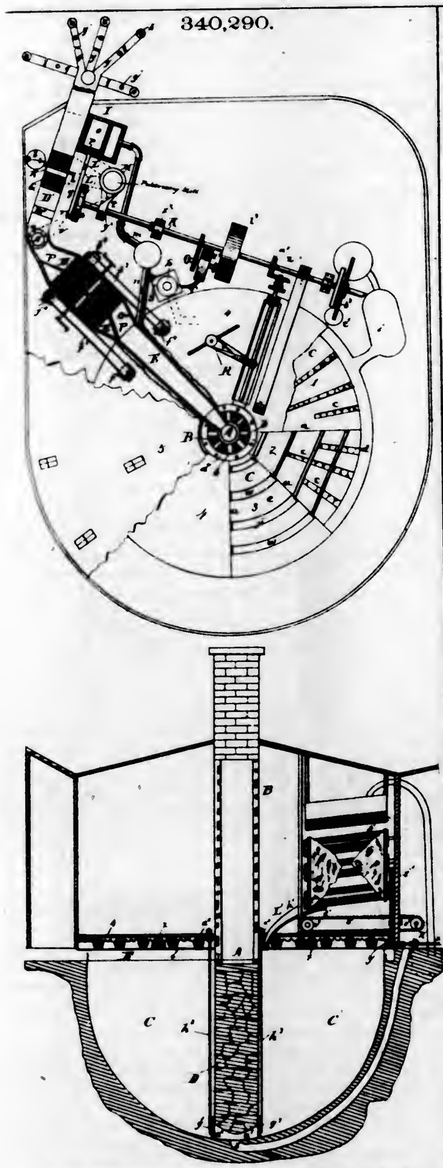
5. The combination, with the roasting-cylinder, of the incomplete spiral ribs A A', as and for the purpose specified.

340,290. APPARATUS FOR COLLECTING AND DRYING SEDIMENTARY MATTER OF SEWAGE, &c. ROBT. CORSCADEN, Providence, R. I. Filed Feb. 3, 1886. (No model.)

Claim.—1. The combination of the sewer, the group of precipitating-tanks, the chimney, the heating-chamber, and the drying-floor there over, rotating about the chimney, as set forth.



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2. The combination, with the main sewer or sewers, the furnace, and the circular heating-pipe under the drying-floor, of one or more air-ducts *m*, as and for the purpose specified.

3. The combination of the sewer, the air-pump, the basins and chimney, and the drying-chamber, as set forth.

4. The combination, with the fifth-hoist, of the endless belts and the drying-floor, as set forth.

5. The combination, with the circular heating-pipe, of the rotating drying-floor, substantially as set forth.

6. The combination, with the rotating drying-floor, of the compressing-rolls and their straining-belts, as and for the purposes set forth.

7. The device for separating the liquid sewage from the solid, comprising the two inclined series of rollers and their straining-belts, as set forth.

8. The combination of the two inclined series of rollers and their belts arranged out of level, the end closures, the hopper, and the chute, as set forth.

9. The combination, with device for separating the liquid sewage from the solid, as described, of the rotating drying-floor and the discharging-belt provided with scrapers, as set forth.

10. The combination, with the sewer and its branches having the check-valves at their termini, of the catch-basin having the S-traps or their equivalent in their connections with the sewers, and the air-tight man-holes, as set forth, and for the purposes specified.

11. The combination of the separating device with the rotating drying-floor and the stirrers or mixers, as set forth.

12. The combination, with the rotating drying-floor, of the fixed circular portion around the chimney, the pipes and rods extending down through the same, and the gates g^3, as set forth.

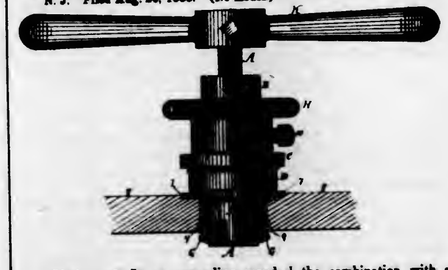
13. The combination, with the precipitating-tanks and effluence-drain, of the adjustably-jointed cast-iron pipe, as set forth, and for the purposes specified.

14. The combination of the rotating drying-floor, the belt carrying the scrapers, the hopper, and the bag-holder, as set forth.

15. The combination of the basins, the effluence-reservoir *i*, the pumps *c* and c^3, and their operating means, as set forth.

16. The combination of the motor, the main shaft, the rotating drying-floor, separator, the discharging-belt, the pumps, the mill, and the stirrers, as set forth.

340,291. EXPANDING-MANDREL. HERBERT COTTRELL, Newark, N. J. Filed Aug. 26, 1885. (No model.)



Claim.—1. In an expanding-mandrel, the combination, with a main stock, of a bearing-piece loosely mounted thereon, a base-piece supporting pendent rollers in radial openings in said base-piece, said base-piece being loosely connected with and having an independent longitudinal and rotary movement on said bearing-piece, a central core having a cone-shaped base, and means for imparting to said core a longitudinal and rotary movement, substantially as set forth and described.

2. The combination, with a central core, A, outwardly inclined at its base and having a longitudinal movement through the main stock B by means of thread-and-screw engagement therewith, of bearing-piece D, having an independent rotary movement at the base of said main stock, intermediate piece, E, having telescopic connection with bearing-piece D, base-piece F, firmly screwed to piece E and provided with vertical openings, and pressure-rollers G, pendent in said openings and supported at one end by suitable bearings therein, whereby, through the upward movement of the cone-shaped core, the free ends of said rollers are inclined outwardly, substantially as and for the purpose set forth and described.

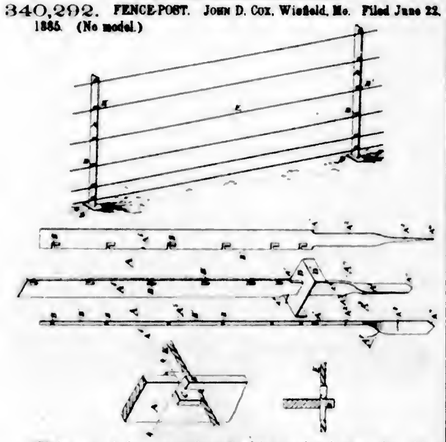
3. The combination, with main stock B, provided with an annular flange around its base, of central core, A, having a longitudinal movement in said stock by means of thread-and-screw engagement therewith, bearing-piece D, cap C, screwed upon and securing said bearing-piece in position, intermediate piece, E, base-piece F, having vertical openings 12 therein, and pendent rollers G, having a free swinging movement in and out of said openings, whereby, through the upward movement of the cone-shaped base of the central core, the free ends of the rollers are pressed outwardly, substantially as set forth and described.

4. The combination, with a central core having cone-shaped end and means for rotating it, of pendent pressure-rollers operated by said core, as shown and described, main stock B, through which core A has a longitudinal movement by means of thread-and-screw connection therewith, and having a flange around its base and an annular groove in the lower face of said flange, bearing-piece D, having corresponding groove in its upper end, anti-friction rollers 2, loosely resting in said groove, cap C, screwed upon said bearing-piece and holding the rollers in place, as shown and described, whereby, through the rotation of the main stock, when the core is turned, excessive upward pressure on the pendent pressure-rollers is prevented, substantially as set forth.

5. The combination of central core, A, having a screw thereon, main stock B, provided with a threaded opening for the engagement of said core, and a flanged base with annular groove in its lower face, hand-piece H, secured to said main stock by set-screw 10, bearing-piece

D, with roller-track in its upper end, cap C, anti-friction rollers 2, intermediate piece, E, telescoped into bearing-piece D, as shown and described, base-piece F, provided with vertical openings, and pressure-rollers G, loosely journaled at one end in annular supporting-plate 5 and provided with a flanged edge to retain the head of said rollers in position, substantially as set forth.

340,292. FENCE-POST. JOHN D. COX, Wiefield, Mo. Filed June 22, 1885. (No model.)

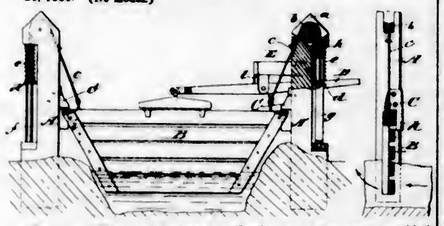


Claim.—1. A fence-post formed with a pointed extremity, A^1, a flat side, A^3, extending from the top to the extremity, a blade, A^2, extending at right angles from the post at the opposite side over the extremity, a flat side, A^4, extending from the top to the blade, and notches for the wires, substantially as shown and described.

2. A metal fence-post formed with a pointed extremity, A^1, a drive-point consisting of upper portion, A^2, tapering blade A^2 at right angles to the upper portion, and rounded edges A^7 A^7 and rounded top A^8 between the upper portion and blade, a flat side, A^3, extending from the top of the post to the extremity, a flat side, A^4, extending from the top of the post to the blade, shoulders A' A' in the edges of the post above the upper portion of the drive-point, and notches for the reception of the wire in the edge of the post, substantially as shown and described.

3. A fence-post formed with a pointed extremity, A^1, a flat side, A^3, extending from the top to the extremity, a tapering blade, A^2, extending at right angles from the post at the opposite side over the extremity, a flat side, A^4, extending from the top to the blade, shoulders A' A', and notches for the wires, in combination with a plate, D, having flanges D', substantially as shown and described.

340,293. FLOOD-GATE. JOHN DAILEY, Van Wert, Ohio. Filed Jan. 26, 1886. (No model.)



Claim.—1. The combination, in a flood-gate, of the posts provided with stops, a gate suspended from the posts and resting against the under faces of said stops, and means for raising the gate when forced away from the stops, substantially as set forth.

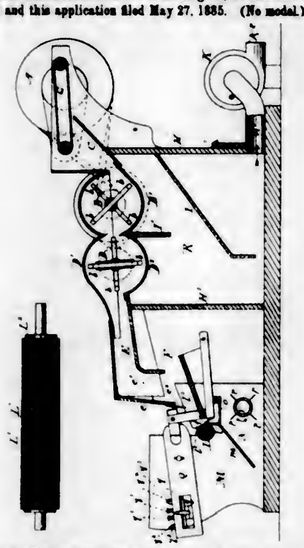
2. The combination, with the post provided with stops on their adjacent faces, the stops each having a horizontal and a perpendicular bearing-surface, of a gate suspended from the posts, with its upstream corners resting within the angles of the stops, and means for raising the gate when forced away from the stops, substantially as set forth.

3. The combination, with the posts provided with ⅂-shaped stops facing downstream, of a gate bearing at its corners in the angles of the stops, a lever pivoted to one post and to the central part of the gate, and devices for raising the gate when forced away from the stops, substantially as set forth.

4. The combination of the posts provided with sheaves at their upper ends and ⅂-shaped stops on their adjacent faces, of the gate bearing at its upper corners in the angles of the stops, ropes connected to the gate and passed over the sheaves, and springs acting on the opposite ends of the cords to pull them down, substantially as set forth.

5. The combination, with the posts having sheaves on their upper ends and stops on their inner adjacent faces, of a gate resting at the ends of its upper edge against said stops, ropes connected to said ends and passed over the sheaves, slotted standards on the outer faces of the posts, between which the free ends of the ropes pass, plates on the ends of the ropes within the slots, and springs surrounding said standards and bearing on the plates to force the ropes down, and thereby raise the gate when forced from the stops, substantially as set forth.

340,294. COTTON-GIN. WYMAN DEARBORN, Boston, assignor to F. Rockwood Hall, Brookline, Mass. Filed Aug. 11, 1884, Serial No. 140,236. Divided and this application filed May 27, 1885. (No model.)



Claim.—1. The combination, with the feed-table, presser-bar, and roll of a cotton-gin, of the smooth-edged clearer l^3 P, whose motion past the line of the upper edge of the presser-bar l is regulated to compel and allow the clearer l^3 in its downward throw to descend past the said upper edge of the bar l a distance twice as far, or more, than the clearer l^3 ascends above the line of the upper edge of said presser-bar l in its upward throw, substantially as described.

2. The combination of the gibs q, set-screws q', drawing-screws q^2, and spring-washers q^3 with the slotted clearer-arms and crank-boxes of a cotton-gin, substantially as described.

340,295. FILTERING DEVICE OR STONE. REINHARD L. DE LISSER, Brooklyn, N. Y. Filed Dec. 19, 1884. (No specimens.)

Claim.—1. The described filtering device composed of asbestus and combustible material combined with clay, which, being burned, solidifies and acts as a binder for the asbestus and the coal of the combustible material, substantially as and for the purposes set forth.

2. The described filtering device, consisting of asbestus mixed with a water-absorbent material, such as clay, and which, being burned, will solidify and act as a binder to hold the asbestus in place, substantially as and for the purposes set forth.

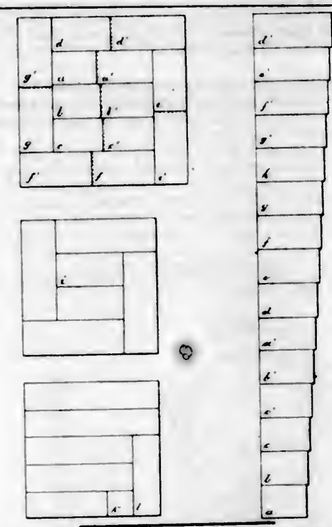
3. The described filtering device, composed of asbestus, clay, and a hardening material, such as flint, sand, and the like, the whole being mixed together, molded into form, and burned, substantially as and for the purposes set forth.

340,296. PUZZLE. JOHN L. DIBBLE, Brooklyn, N. Y. Filed May 13, 1885. (No model.)

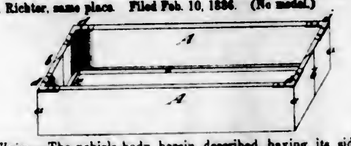
Claim.—1. A puzzle consisting of one or more series of rectangular pieces susceptible of being arranged in contact, edge to edge, in the form of a square of given dimensions, the pieces in each series being of graduated dimensions and not all of them aliquot parts of any other piece or of the whole square, substantially as set forth.

2. In combination with a puzzle composed of a series of pieces of varying dimensions, each piece being in the form of a rectangular parallelogram, and the whole of the pieces susceptible of being arranged in contact in the form of a square having a superficial area equal to the aggregate superficial area of the pieces, an additional piece of similar form and of approximate dimensions, substantially as and for the purposes set forth.

340,296.



340,297. VEHICLE-BODY. JAMES DIXON, New York, N. Y., assignor to Henry Brewster, John W. Britton, Channing M. Britton, and Charles J. Richter, same place. Filed Feb. 10, 1886. (No model.)



Claim.—The vehicle-body herein described, having its sides and ends composed of portions which are bent squarely, so as to form square or angular corners, and are joined between the corners, as distinguished from a body in which the pieces constituting the sides and ends are bent to form curved or rounded corners, substantially as and for the purpose herein set forth.

340,298. CAR-COUPLING. JOHN P. EAKIN, Jollytown, Pa. Filed Feb. 26, 1886. (No model.)



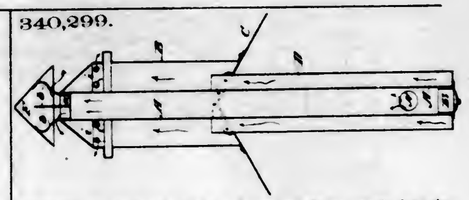
Claim.—1. In a car-coupling, the combination, with draw-heads provided with spring-latches and vertical slots through said heads, of vertically-sliding coupling-links having notches with which the latches engage, and slots enlarged at their lower ends, and a draw-bolt provided with enlarged heads to engage with the links, and a bumper to operate the latches, substantially as and for the purpose set forth.

2. In a car-coupling, a draw-bar having enlarged heads and a bumper, and links provided with notches and stops and slots enlarged at their lower ends, in combination with suitable draw-heads provided with spring-latches consisting of rods having at their extremities arms, and a spring coiled around the rods, substantially as and for the purpose specified.

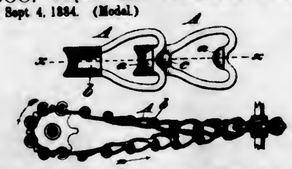
340,299. COMBINED CHIMNEY AND VENTILATOR. JOHN S. EBERHART, Laporte City, Iowa. Filed Feb. 24, 1886. (No model.)

Claim.—A combined chimney and ventilator consisting of the flue A, having a soot-box, E, in its lower end, and a pipe-opening, N, near said lower end, the casing B, surrounding the upper part of the flue, contracted at its upper end to fit said flue, and provided with the openings *i*, the foot-plate C, secured to the lower edge of the casing B and projecting inward a short distance toward the flue A, the inclosing-tube D around the lower half of the flue and secured at its upper end to the inner edge of the plate C, the cap F, having the arms *b*, and the ring *a* connecting the lower ends of the said arms and fitting snugly into the upper end of the flue A, substantially as set forth.

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340,300. DRIVE-CHAIN. FRED EDELSTEIN, Jr., Cincinnati, Ohio. Filed Sept. 4, 1884. (Model.)



Claim.—1. As an improvement in drive-chains, a detachable sprocket-link having at one end a re-entrant bend, and at the opposite end an internally-grooved hook, the bent throatway of which corresponds in outline with the re-entrant bend of a second link of like construction, whereby one link may be coupled with another by bringing the two in planes at right angles, or nearly so, one to the other.

2. As an improvement in drive-chains, a detachable sprocket-link having at one end a re-entrant spheroidal knob, and at the opposite end a cup-shaped hook adapted to receive and serve as a bearing for the knob of an adjacent link of like construction.

3. As an improvement in drive-chains, a sprocket-link provided at one end with a re-entrant spheroidal knob whose diameter in the line of the length of the link is less than its diameter at right angles thereto, and at the opposite end with a cup-shaped hook, the throat of said hook being formed in such manner as to admit the re-entrant knob of an adjacent link of like construction when its shortest diameter is presented thereto, but otherwise to bar its passage.

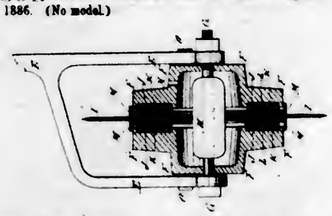
4. As an improvement in drive-chains, a sprocket-link having at one end a re-entrant spheroidal-faced knob, and at the other end a cup-shaped hook the interior of which is adapted to receive and serve as a bearing for the re-entrant knob of an adjacent link of like construction, and provided with a lug or projection which partly closes the throat of the hook.

5. As an improvement in drive-chains, a detachable sprocket-link having at one end a re-entrant spheroidal-faced knob, and at the opposite end a hook grooved in its outer and inner face, the inner groove forming a concave socket adapted to receive and serve as a bearing for the spheroidal-faced knob of an adjacent link of like construction, and the outer groove serving as a guide and bearing for the sprocket-pins.

6. As an improvement in drive-chains, a sprocket-link having at one end a re-entrant spheroidal knob, the side bars of said link extending rearward, outward, and forward from said knob, and merging at the other end in a solid band grooved in its upper and lower face and turning up and over to form a hook, and provided with a lug partly closing the mouth of said hook.

7. The combination, to form a metallic chain flexible in all its axes, of a series of detachable links, each provided at one end with a re-entrant spheroidal knob, and at the other end with a cup-shaped hook adapted to receive and serve as a bearing for the re-entrant knob of an adjacent link, and having its throat partly closed by a lug, which bars the accidental escape of said knob, substantially as described.

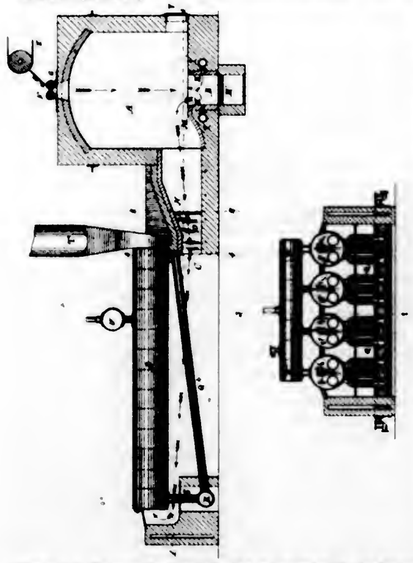
340,301. ROTARY COLTER. JOHN FISHER, Lenzburg, Ill. Filed Jan. 13, 1886. (No model.)



Claim.—The combination, with the forked standard E, the bolt G, and the cutting-plate I, of the hub-box F, made in two parts, recessed at their inner ends, and having annular flanges around their said inner ends and projections O upon their outer ends, and having annular grooves

J and studs L in the inner sides of their flanges, the square wooden hub H, placed upon the said bolt within the said hub-box, the annular leather washers K, placed in the grooves of the said hub-box, and the annular flanged metallic washers M, interposed between the said leather washers and the cutting-plate, substantially as herein shown and described.

340,302. BAGASSE-BURNER. GEORGE W. FISHER, St. Louis, Mo., assignor of one-half to the Fulton Iron Works, same place. Filed Dec. 15, 1885. (No model.)



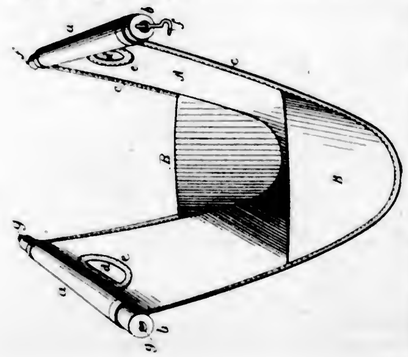
Claim.—1. The combination of the bagasse-chamber A, the furnace B, below the floor or hearth of the chamber A, a side opening, V, for cleaning out the bagasse-chamber, a receiving opening at the top of the bagasse-chamber provided with feed-rollers, and a reverberatory arch at one side, substantially as described.

2. The combination, with a bagasse-burner having a feed-opening at its top and a furnace at its bottom, of blow-pipes and tuyeres below the bottom of the burner and a reverberatory arch at one side, substantially as set forth.

3. The combination, substantially as set forth, of the bagasse-chamber having a feed-opening in its top, a furnace located directly under said opening and below the floor of the chamber, a discharge-opening at one side of the chamber, and the reverberatory arch over said discharge-opening, substantially as described.

4. The combination of the burner A, having a feed-opening at its top and a furnace below its floor, of the fire-bridge and the reverberatory arch depressed and widened as it extends away from the opening into it from the burner, substantially as described.

340,303. WOOD-CARRIER. CHARLES G. FRAMSON, Norway, Mich. Filed Feb. 19, 1886. (No model.)



Claim.—1. In a harness, hames having swivels at their vertical extremities and inclosed within a collar, substantially as described.

2. The combination, with swiveled hames surrounded by a collar, of a frame surrounding the same, substantially as described.

3. The combination, with a frame, of swiveled hames within a collar removably supported thereby and inclosed therein, substantially as described.

4. The combination, with a frame, of swiveled hames, detachably supported thereby and inclosed within a collar, and means for locking said hames to the frame, substantially as described.

5. The combination, with hames within a horse-collar, of a frame surrounding and supporting the same, and provided with draft attachment independent of the said collar and hames, substantially as described.

6. In a harness, two frames, hames inclosed within a collar swiveled within each frame, and a self-adjusting telescopic draft attachment connected with said frames, substantially as described.

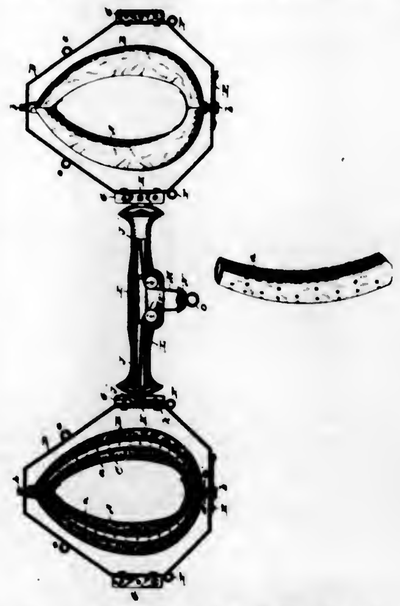
7. The combination, with the two frames and the swiveled hames inclosed within collars and supported thereby, of a telescopic bar, substantially as specified, having pivotal connection with said frames, substantially as described.

8. The combination, with the two frames and a telescopic bar connecting the same, of a rope having its ends attached to the sliding parts of said bar and adapted to support in its bight the pole, substantially as described.

9. The combination, with two spring-frames and hames within collars swiveled therein, of a bar directly connected to said frames and provided with draft attachment, substantially as described.

10. A horse-collar provided with an interior perforated hame provided with pivots and adapted to serve substantially as and for the purpose specified.

340,304. HARNESS. WILLIAM H. GIBBONS, Watson, N. Y. Filed Jan. 25, 1886. (No model.)



Claim.—1. In a harness, hames having swivels at their vertical extremities and inclosed within a collar, substantially as described.

2. The combination, with swiveled hames surrounded by a collar, of a frame surrounding the same, substantially as described.

3. The combination, with a frame, of swiveled hames within a collar removably supported thereby and inclosed therein, substantially as described.

4. The combination, with a frame, of swiveled hames, detachably supported thereby and inclosed within a collar, and means for locking said hames to the frame, substantially as described.

5. The combination, with hames within a horse-collar, of a frame surrounding and supporting the same, and provided with draft attachment independent of the said collar and hames, substantially as described.

6. In a harness, two frames, hames inclosed within a collar swiveled within each frame, and a self-adjusting telescopic draft attachment connected with said frames, substantially as described.

7. The combination, with the two frames and the swiveled hames inclosed within collars and supported thereby, of a telescopic bar, substantially as specified, having pivotal connection with said frames, substantially as described.

8. The combination, with the two frames and a telescopic bar connecting the same, of a rope having its ends attached to the sliding parts of said bar and adapted to support in its bight the pole, substantially as described.

9. The combination, with two spring-frames and hames within collars swiveled therein, of a bar directly connected to said frames and provided with draft attachment, substantially as described.

10. A horse-collar provided with an interior perforated hame provided with pivots and adapted to serve substantially as and for the purpose specified.

11. The combination, with swiveled hames inclosed within a collar, of a spring-frame inclosing and supporting the same and provided with means, as specified, for detachably securing the draft attachments, substantially as described.

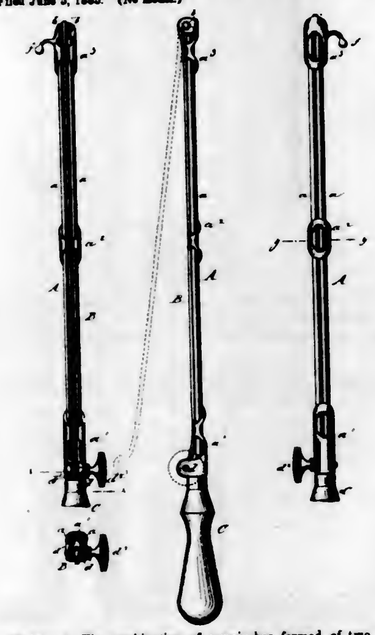
12. The combination, with two spring-frames and hames inclosed within collars swiveled therein, of a self-adjusting telescopic connection, as specified, between said frames, substantially as described.

13. The combination, with two spring-frames and hames inclosed within collars swiveled therein, of a self-adjusting telescopic bar, as specified, pivotally connected to said frames, substantially as described.

14. The combination, with the spring-metal frame, and the hames swiveled therein and inclosed within the collar, of the plates G, secured to the sides of said frame, and the removable pins H, whereby said frame is adapted for use singly or in pairs, as set forth.

15. The spring-frame having the hames inclosed within a collar and swiveled within said frame, said frame having secured to its opposite sides, as shown, the plates G, each plate provided with a plurality of holes, *f f*, substantially as and for the purpose specified.

340,305. NEWSPAPER-FILE. JULIUS HARTSHEUER, Chicago, Ill. Filed June 5, 1885. (No model.)



Claim.—1. The combination of a main bar formed of two wires and metallic retaining-clasps, a clamping spring-wire hinged to the outermost clasp, and a clamping device, substantially as described, for locking or releasing the inner end of the spring-wire to or from the lower clasp, substantially as set forth.

2. The combination of the supporting main bar formed of two wires and metallic retaining-clasps, a clamping spring-wire hinged to the outer clasp, said spring-wire having a bent lower end, and a clamping device formed of a fixed cheek made integral with the lower clasp, a movable cheek, and a clamping-screw passing through said cheeks, substantially as set forth.

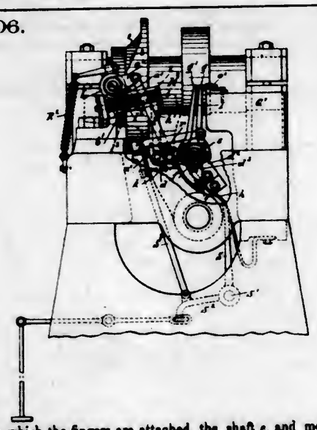
340,306. BOLT-MACHINE. CHARLES HALL, New York, N. Y., and JOHN YOUNG, Newark, N. J., assignors to said Charles Hall. Filed Dec. 11, 1885. (No model.)

Claim.—1. The combination, with jaws for holding the bolt-rod I and for forging the sides of the bolt-head, of automatic mechanism, substantially as specified, for giving to the bolt a partial rotation, while the holding and forging jaws are opened, substantially as set forth.

2. The combination, with the holding-jaws, dies for forging up the sides of the bolt-head, and plunger for pressing upon the bolt-head, of fingers at opposite sides of the bolt-rod, springs for pressing the fingers toward each other, and mechanism, substantially as specified, for moving the fingers and partially rotating the bolt at the time the holding-jaws are opened, substantially as specified.

3. The combination, with dies for holding the bolt-rod and for forging the head, of fingers *g g'*, one at each side of the bolt-rod, cross-

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head *f*, to which the fingers are attached, the shaft *e*, and mechanism, substantially as specified, for giving to the same a partial rotary movement, as set forth.

4. The combination, with the holding and forging dies in a bolt-machine, of the fingers *g g'*, cross-head *f*, shaft *e*, having a screw near one end, and mechanism, substantially as specified, for giving to the said shaft *e* a partial rotary movement to turn the bolt-rod and to move it endwise, substantially as specified.

5. The combination, with the holding and forging dies in a bolt-machine, of the fingers *g g'*, cross-head *f*, to which they are pivoted, shaft *e*, and spring *h*, that acts to press the fingers upon the bolt-rod, and mechanism, substantially as specified, for partially rotating the shaft *e*.

6. The combination, with the holding and forging dies in a bolt-machine, of the fingers *g g'*, a spring to cause the pressure of the fingers upon the bolt-rod, a treadle, and connections for throwing out of action the said spring, and mechanism, substantially as specified, for moving the fingers in opposite directions, substantially as set forth.

7. The combination, with the holding and forging dies in a bolt-machine, of the fingers *g g'*, the cross-head *f*, shaft *e*, a cam and shaft for giving motion to the shaft *e*, connecting-rod, and adjustable crank and pin for varying the extent of motion given to the fingers, substantially as set forth.

8. The combination, with the fingers *g g'*, cross-head *f*, and shaft *e*, of the spring *h*, to press one finger toward the other, the tubular shaft *d'*, and crank-arm d^3, acting upon the spring *h*, and mechanism, substantially as specified, for giving motion to the respective parts to rotate the bolt-rod and then to relieve the pressure of the fingers upon the same during the return movement, substantially as set forth.

9. The combination, with the holding and forging dies in a bolt-machine, of the fingers *g g'*, the cross-head *f*, and shaft *e*, the hook *n*, and latch *n'*, the spring *h*, tubular shaft *d'*, and crank-arm d^3, and mechanism for giving motion to the respective parts, substantially as and for the purposes set forth.

10. The combination, with the holding and forging dies, of the cam D', shaft *a*, tubular shaft *b*, arms at the ends of the respective shafts, shaft *e*, tubular shaft *d'*, and the crank-arms and connecting-rods, the cross-head *f*, fingers *g g'*, the spring *h*, to close the fingers, and arm d^3, for pressing back the spring, the hook *n*, and the spring *r*, for opening the fingers, and the latch *n'* upon the holding-jaw H^3, substantially as set forth.

11. The combination, with the holding and forging dies, of the fingers *g g'* and the mechanism, substantially as specified, for moving the same, the spring *h*, for pressing the fingers upon the bolt-rod, the treadle and lever for pressing back the spring, the hook *n*, latch *n'*, and spring *r*, substantially as set forth.

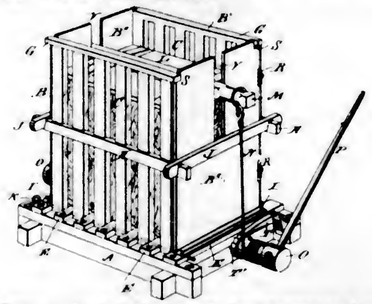
12. The combination, with the holding and forging dies, of fingers for giving a partial rotation to the bolt-rod, the connections, and a crank-pin and a crank-arm in which the pin is adjustable by a screw and mechanism for moving the crank and its pin, whereby the extent of motion given to the bolt-rod is varied by adjusting the crank-pin, substantially as specified.

13. The dies containing recesses for gripping the bolt-rod and flat surfaces for forging up the sides of the head, and a plunger for applying pressure endwise of the rod or bolt, in combination with fingers acting in opposite directions and at opposite sides of the bolt-rod to give to such rod a partial rotation between each stroke of the jaws that forge the polygonal head, substantially as specified.

14. The dies containing recesses for gripping the bolt-rod and flat surfaces for forging up the sides of the head, and a plunger for applying pressure endwise of the rod or bolt, in combination with automatic mech-

anism acting at opposite sides of the bolt-rod for giving to such rod a partial rotation between each stroke of the jaws and forging the polygonal head, substantially as set forth.

340,307. **HAY AND COTTON PRESS.** HANS G. HANSEN, Calumet, Mich. Filed Oct. 3, 1885. (No model.)



Claim.—1. In a hay and cotton press, the sides composed of a series of alternate strips and spaces, in combination with a bottom consisting of a corresponding series of strips and spaces, so as to receive the hinged ends of the sides in the spaces between the bottom strips, substantially as herein described.

2. In a press for baling hay and cotton, the independent detachable sides and base, constructed and arranged substantially as herein described, having the independent ends B", notched below the side rails, G, substantially as and for the purpose herein set forth.

340,308. **NUT-LOCK.** HAYWARD A. HARVEY, Orange, N. J. Filed Nov. 24, 1885. (No model.)



Claim.—1. The new article of manufacture herein shown and described, the same consisting of a spring-washer in the form of a single convolution of a helix, and provided with a projecting rib adjacent to the concave edge of that one of its faces which is intended for impact against the face of the nut.

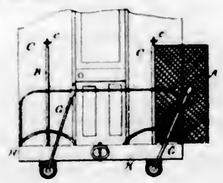
2. The combination, as herein set forth, of a bolt and nut of ordinary construction with a helically-curved spring-washer provided upon that one of its faces which bears against the nut with a projecting rib, the apex of which, by the screwing home of the nut, is made to embed itself in the face of the nut, and to thereby compress upon the bolt a portion of the metal of the nut immediately adjoining the bolt.

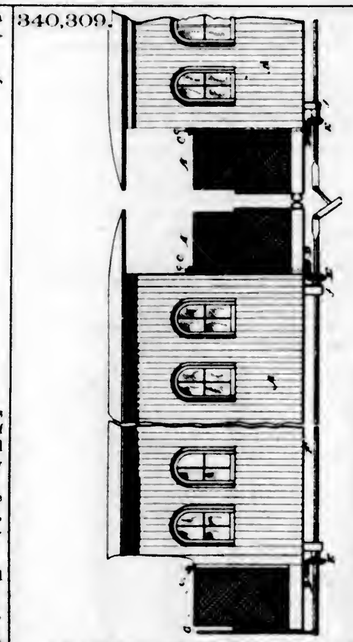
340,309. **DEVICE FOR OPERATING CAR-PLATFORM GATES.** WILLIAM HASLAM, Philadelphia, Pa., assignor to Joseph J. Bisel, same place. Filed Aug. 22, 1885. (No model.)

Claim.—1. In combination with the safety doors or gates of a series of cars and the axially-movable rods to which they are attached, the longitudinal rock-shafts F, flexible couplings between said shafts, gearing connecting them respectively with said rods on each side of the train, and levers for actuating the said shafts, substantially as set forth.

2. In combination with the safety doors or gates of a series of cars and the axially-movable rods to which they are attached, the longitudinal rock-shafts F, the gearing connecting the said shafts to said rods, the levers for actuating said shafts, and two coupling-pieces between each two of said shafts, said coupling-pieces being longitudinally movable with respect to one another, for the purpose set forth.

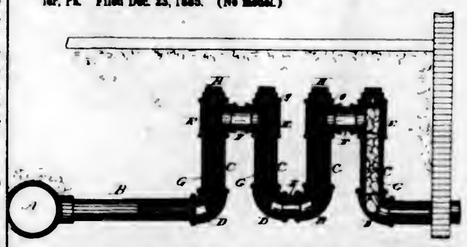
3. The grooved pivoted coupling-piece J, having the grooves open at their outer end, in combination with the corresponding pivoted coupling-piece, I, having studs *i*, which move in said grooves and may be drawn out at the end thereof, the shafts F, to which said coupling-pieces are respectively attached, the rods which turn the safety-doors, and the intervening gearing, substantially as set forth.





4. In combination with a pair of rock-shafts and door-operating rods actuated thereby, a pair of coupling-pieces between said shafts, which are automatically detachable on the separation of the cars, substantially as set forth.

340,310. **MEANS FOR ODORIZING GAS.** CHARLES HASLETT, Butler, Pa. Filed Dec. 23, 1885. (No model.)



Claim.—1. A gas-odorizing apparatus consisting of a removable wire or open-work basket or casing containing gum-camphor or other odorizing substance located in the main or supply pipes of a gas conveying or supplying system, substantially as described.

2. The gas-odorizing apparatus herein described, consisting of a series of connected and substantially-parallel tubular sections containing wire baskets or open-work casings or tubes adapted to contain gum-camphor or other odorizing substance, and arranged substantially as described.

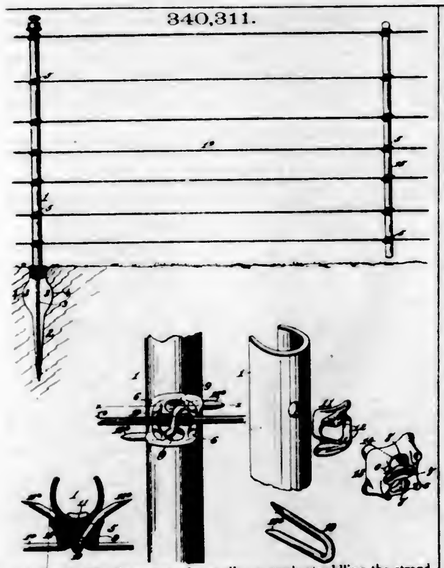
340,311. **WIRE-FASTENING DEVICE FOR METALLIC FENCE POSTS.** WILLIAM B. HAYDEN, Columbus, Ohio. Filed Feb. 15, 1886. (Model.)

Claim.—1. A metallic fence-post provided with a lateral boss or projection having divergent passages to receive, guide, and spread the prongs of a staple to secure a fence-strand across said boss or projection, substantially as described.

2. In a metallic fence, the combination, with a metal post, of seats for the fence-strands connected to said posts, each seat being provided with a horizontal channel to receive the fence-strand, and having above and below said channel openings for the legs of the attaching-staples, said openings diverging, the one to the right and the other to the left of the post, substantially as described.

3. In an all-metal fence, the combination, with a metallic post, of a boss or projection mounted upon said post, and provided with a channel to receive the fence-strand, and with laterally-divergent passages to

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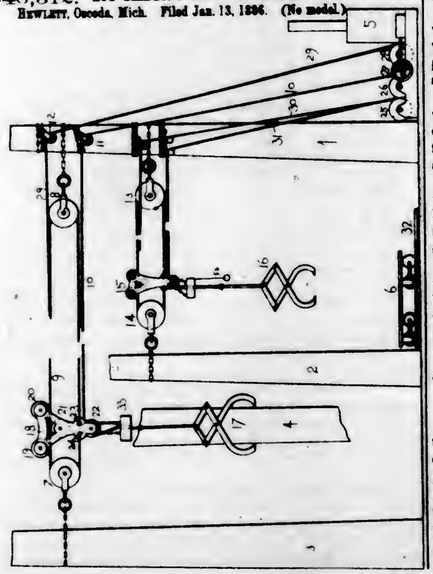


receive and guide the prongs of an ordinary staple straddling the strand, substantially as described.

4. In an all-metal fence, the combination, with a metallic post, of seats for the fence-strands, having channels formed at right angles to said post, and having their centers depressed below the ends, and provided also with laterally-divergent openings for the prongs of an ordinary staple bestriding the strand, depressing the same toward the center of the channel, and having its prongs spread laterally by driving home, substantially as described.

5. In an all-metal fence, the combination, with a metallic post of semi-cylindrical form, of skeleton pieces seated thereon at intervals, bosses superposed upon said skeleton pieces, both the latter and said bosses having channels, which when properly placed form divergent opening for the prongs of an attaching-staple, and a stud or rivet formed upon the back of the boss, and projecting through the skeleton piece and through an opening in the post, substantially as described.

340,312. **LOG SKIDDING AND LOADING MACHINE.** HENRY N. HEWLETT, Oceola, Mich. Filed Jan. 13, 1886. (No model.)



Claim.—1. In combination with an endless track stretched between two supports, a carrier secured to and moving with said track, a drag-rope running through a pulley on said carrier and running through a spring-clutch suspended from said carrier, an outhaul-rope secured to the half of the track not fastened to the carrier, and suitable winding devices for operating said drag and outhaul ropes, substantially as shown and described.

2. In a log-skidding machine, the combination of the endless track 9 with the carrier 18, the opposite ends of said track being firmly secured to said carrier to move the carrier back and forth, substantially as shown and described.

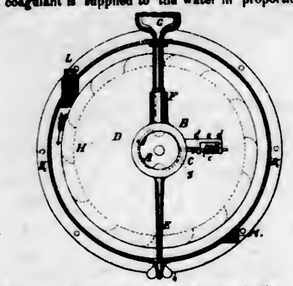
3. In combination with the drag and outhaul ropes of a log-loading machine, a shaft having therein two loose drums, two friction-clutches, 45 46, rigidly connected to said shaft, a loose collar between said drums, and mechanism, substantially such as described, whereby said collar can be moved in either direction, substantially as shown and described.

4. The combination of the endless track 9, carrier 18, having the opposite ends of said track firmly secured thereto, and outhaul-rope 29, substantially as shown and described.

5. In combination with the endless track 9, the carrier 18, having the two ends of the track firmly secured thereto, and having thereon the wheels 19, 20, and 21, and the blocks 7 and 8, provided with means of attachment to supports, substantially as shown and described.

340,313. **AUTOMATIC WATER-PIPE-FEEDING ATTACHMENT.** JOSEPH C. ENGLISH, New Brunswick, N. J. Filed Aug. 1, 1885. (No model.)

Brief.—This device is placed in a water-service system. The incoming water operates a motor, which, in turn, operates a device by which a coagulant is supplied to the water in proportion as it is consumed.



Claim.—1. In an automatic water-pipe-feeding attachment, the combination, with the external case, K, of the bearings J J and shaft *a*, carrying a motor-wheel, H, the cam D, the cylinder A, having one or more pockets, *b b*, in its outer surface, the induction-pipe F, the box B, and arm *e*, substantially as herein shown and described.

2. In an automatic water-pipe-feeding attachment, the combination, with the driving-shaft *a*, which rotates in the bearings J J, of the motor-wheel H, the cam D, the cylinder A, the pockets *b b*, the induction-pipe F, the box B, and the arm *e*, substantially as herein shown and described.

3. In an automatic water-pipe-feeding attachment, the combination, with the cylinder A, of the pockets *b b*, the box B, having therein a cylindrical chamber, in which the cylinder A revolves, the axle *a*, and a pipe for conducting water on the motor-wheel H, substantially as herein shown and described.

4. In an automatic water-pipe-feeding attachment, the combination, with the box B, of the arm *e*, extending horizontally from the side of said box B, supporting-lugs *d d*, carrying the cut-off gate C, the spring *c*, the cylinder A, the cam D, and the spar *f*, substantially as herein shown and described.

5. In an automatic water-pipe-feeding attachment, the combination, with the box B, of the tightening-rod E, extending downward from the bottom of the box B through the bottom of the case K, and having the thumb-nut *h* at the lower end, the induction-pipe F, the outer casing, K, and the journal-bearings J J, substantially as herein shown and described.

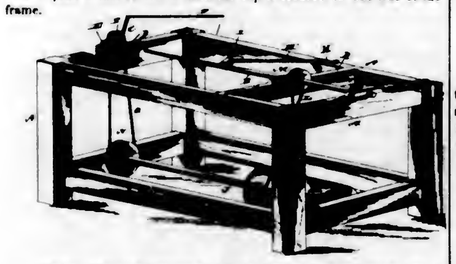
340,314. **WATER-PROOF MATERIAL FOR BINDING LEATHER OR CLOTH OR FOR LEATHER FOR DECORATING, &c.** JULIUS HOFMEIER, Vienna, Austria-Hungary. Filed Oct. 29, 1885. (Specimens.)

Claim.—1. The process herein specified for the purpose of manufacturing a water-proof material as a substitute for book-binders' linen, cloth, or leather, and for leather hangings, furniture-covers, and other purposes, consisting in mixing equal or about equal parts of albumen and glycerine, and adding about ten per cent. (of the quantity of albumen employed) of a metallic salt—such as nitrate or sulphate of magnesia, or chloride of calcium, or chloride of magnesium—and about five per cent. (of the quantity of albumen employed) of basic borate of soda, substantially as specified.

2. The process herein specified for the purpose of manufacturing a water-proof material as a substitute for book-binders' linen, cloth, or leather, and for leather hangings, furniture-covers, and other purposes, consisting in impregnating and covering textile fabrics of any kind or cellulose with a mixture of equal or about equal parts of albumen and glycerine, and adding about ten per cent. (of the quantity of albumen employed) of a metallic salt—such as nitrate or sulphate of magnesia, or chloride of calcium, or chloride of magnesium—and about five per cent. (of the quantity of albumen employed) of basic borate of soda, and transforming or converting this into a coagulum by heat, substantially as specified.

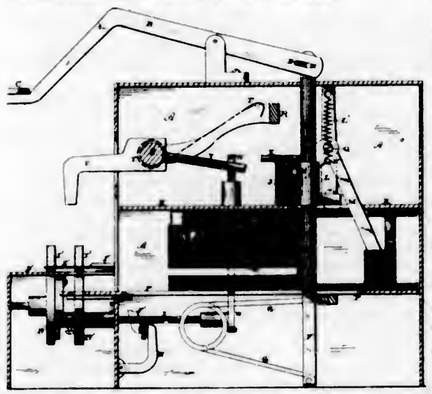
340,315. COP-WINDING MACHINE. SIDNEY W. HOLMAN, Orange Factory, N. C. Filed July 23, 1885. (No model.)

Brief.—The spindle is supported in bearings on one end piece and a cross-piece of the frame, and has mounted on it between said bearings a pulley, by which it is rotated by means of a belt from the driving-drum. The flier is mounted in a bearing on the other end piece of the frame, and is obliquely journaled to the frame. An adjustable arm carrying a conical head which serves to form the cop is secured to one side of the frame.



Claim.—The combination of a frame having two end pieces and a cross-piece, a spindle secured in bearings upon one end piece and said cross-piece, a pulley upon said spindle between said bearings, a flier secured in bearings upon the other end piece and revolving obliquely to said spindle, an arm adjustably secured to the side of the frame, the free end of which is provided with a conical head, a rotating shaft having a pulley at one end and a drum at the other, and bands connecting said drum and pulley with said spindle and flier, as shown and described.

340,316. STAMP FOR PUNCHING CHECKS, &c. JAMES M. HOPKINS, Louisville, Ky. Filed July 16, 1885. (No model.)



Claim.—1. The combination of pivoted operating-levers, the vertically-moving rods connected to the inner ends of the levers, springs for retracting the rods, slotted arms or projections secured to the rods, the pivoted levers, which are operated by the rods, and the sliding punch and die frames, substantially as shown.

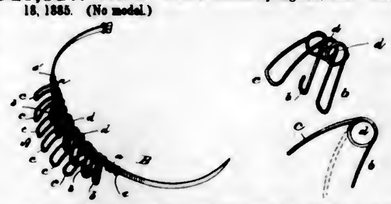
2. The combination of the operating-levers, the vertically-moving rods, the springs for retracting the rods, the arms or projections secured to the rods and provided with angular slots, the crank-levers, which are provided with pins to pass through the slots in the arms or projections, and the sliding punch and die frames, substantially as described.

3. The combination of the operating-levers, the vertically-moving rods, the springs for retracting the rods, the angularly-slotted arms or projections secured to the rods, the angular levers, the springs connected to the angular levers, and the sliding punch and die frames, substantially as set forth.

4. The combination of the sliding punch and die frames, the operating-levers, the vertically-moving rods, the springs for retracting the rods, the slotted arms or extensions which are secured to the rods, the levers for moving the punch and die frames, the partially-revolving shaft, which is provided with an arm or lever for operating the punch, and the arms which project from the rods and operate said shaft, substantially as specified.

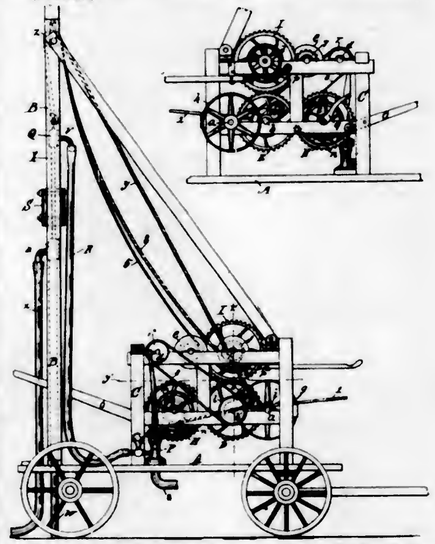
5. The combination of the partially-revolving shaft S and an arm or lever, V, the slotted rod W, the shaft X, the dog attached to the shaft, and the ratchet and feed wheels, substantially as specified.

340,317. BUSTLE. JOHN J. HOFFER, Springfield, Ohio. Filed June 18, 1885. (No model.)



Claim.—The combination, with an extensible bustle consisting of the alternating bearing and supporting loops and the coils between the same, all formed of a single piece of wire, of a non-elastic band passing through said coils and attached to the respective ends of the bustle by means which permit of an adjustment thereon, substantially as specified.

340,318. MACHINE FOR DRIVING WELL-TUBES. JOSEPH ISLER, Garrett, assignor of three-fourths to Lewis A. Wright, Avilla, and Frank Falker and Marlin C. Osborn, Fort Wayne, Ind. Filed Dec. 31, 1885. (No model.)



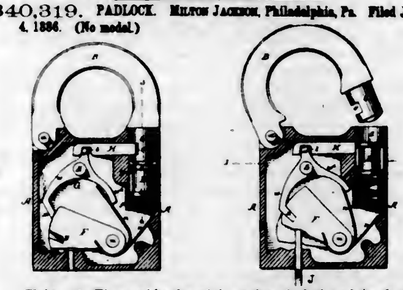
Claim.—1. In a machine for sinking well-tubes, the derrick, the drill-rod, windlass *c*, crank-shaft *b*, pulley *k*, and rope *y*, all combined and arranged to co-operate in the manner and for the purpose specified.

2. In a machine for sinking well-tubes, the combination, with the derrick, the tube, the rod arranged to slide vertically within the tube, the windlass *c*, the crank-shaft *b*, and the rope *y*, of the brake arranged to control the movement of the windlass, substantially as and for the purpose specified.

3. In a machine for sinking well-tubes, the combination, with the bed-frame, the derrick erected thereon, the machine-frame, windlasses c and *f*, gear-wheels H and I, and driving-shaft *a*, having pinions *i* and *j*, of shaft *b*, gear-wheels D and E, and levers 1 and 2, whereby either or both of said windlasses may be operated from the driving-shaft, substantially as set forth.

4. In a machine for sinking well-tubes, the combination, with a bed-frame, a derrick erected on said frame, a well-tube arranged vertically under said derrick, and a tubular drill-rod arranged to slide vertically in said tube, of a force-pump mounted on the bed-frame, a hose connecting the discharge-pipe of said pump with the drill-rod, and means, substantially as shown and described, for reciprocating the drill-rod and operating the pump simultaneously, all arranged to co-operate substantially as and for the purpose specified.

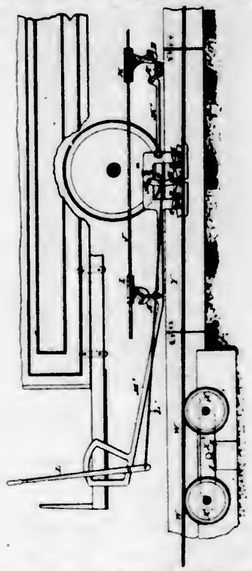
340,319. PADLOCK. MILTON JACKSON, Philadelphia, Pa. Filed Jan. 4, 1886. (No model.)



Claim.—1. The combination of the casing of a lock and the shackle having a notched stem with the notched tumblers, the sliding bolt engaging with the notched stem of the shackle, and a pivoted dog having an arm engaging with said bolt, and a nose adapted to enter the notches of the tumblers when the latter have been adjusted by the key, all substantially as specified.

2. The combination of the casing of a lock, the shackle having a notched stem, the notched tumblers, the sliding bolt engaging with the notched stem of the shackle, a spring-plug for ejecting the shackle when released from the control of the bolt, and a pivoted dog having an arm engaging with said bolt, and having also a nose entering the notches in the tumblers when the latter have been adjusted by the key, all substantially as specified.

340,320. CABLE TRACTION FOR STREET-CARS. ORLANDO H. JADWIN, New York, N. Y. Filed Aug. 26, 1885. (No model.)



Claim.—1. A gripping attachment for cable traction suspended from the car at two points and having its gripping devices between said points balanced, or nearly so, by the hand-lever and its supporting-bar, substantially as and for the purpose described.

2. The combination, with a car, of a gripping attachment suspended therefrom on each side of the gripping-jaws by links or chains of unequal length, and having the longer chain remote from the hand-lever, as and for the purpose described.

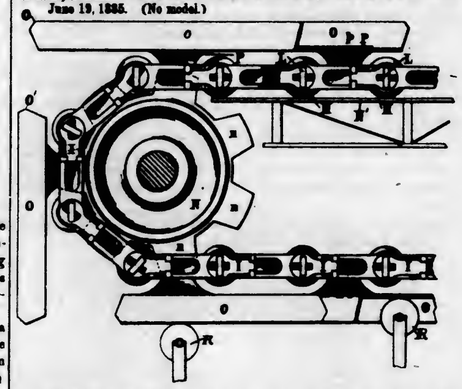
3. The combination of bar J, having hooks I H, the gripper-frame M and M^2, jointed rod M', and the chain-links A and A', supporting the gripper upon opposite sides.

4. The combination, with a pulley-support having shoulders or rests *s s*, of the lever X^3, bearing pulleys X X, the said lever being limited in its oscillation by said shoulders, as and for the purpose described.

5. The combination, with the grip-frame M, of the toggle-joint, the attached foot D, shoes D^2 D^3, and links C C, the said links, shoes, and foot being fastened together by a single joint-pin, substantially as and for the purpose described.

6. The grip-frame M, having a vertical joint, *a*, in the same, substantially as and for the purpose described.

340,321. CONVEYER. JOSEPH A. JEFFREY, Columbus, Ohio. Filed June 19, 1885. (No model.)



Claim.—1. In an endless conveyer, a drive-chain composed of separable links and connecting end bars, in combination with separable carrier-sections, each having a bottom plate and upwardly-projecting sides, and means, substantially as described, for attaching the carrier-sections to the chain-links, substantially as set forth.

2. In an endless conveyer, a supporting and driving chain having separable links and end bars, in combination with separable carrier-sections, the bottom of each section having a length greater than the distance between the centers of the end bars of each link, the forward end of each bottom plate overlapping the rear end of the adjacent section, substantially as set forth.

3. In an endless conveyer, the combination, with an endless chain, of carrier-sections provided with lateral projections adapted to traverse a support arranged on a line parallel with the bottom of the conveyer, substantially as set forth.

4. In a conveyer, the combination, with a series of open-ended carrier-sections, of the chain-links provided with anti-friction rollers and a supporting-track traversed by the rollers, substantially as set forth.

5. In a conveyer, a series of open-ended carrier-sections, in combination with a series of chain-links having anti-friction rollers arranged below the carrier-sections, substantially as set forth.

6. In a conveyer, the combination of an open-ended carrier-section with a chain-link having separable side bars and an anti-friction roller supported upon the end bars, substantially as set forth.

7. In a conveyer, a carrier-section having a portion of its bottom projecting downward below another portion of its bottom, in combination with a chain-link having an anti-friction roller mounted thereon, substantially as set forth.

8. In a conveyer, the combination of a carrier-section with a chain-link having an anti-friction roller mounted thereon, and having also its side bars expanded and projecting above the plane of the anti-friction roller, to receive the carrier-section, substantially as set forth.

9. In an endless conveyer, the combination of a series of overlapping carrier-sections having lateral projections and supports arranged on lines parallel with the bottoms of the carrier-sections and engaging with the lateral projections, substantially as set forth.

10. The herein-described conveyer-section, having a bottom, upward-projecting sides, and a transverse partition arranged intermediately between its ends, substantially as set forth.

11. The combination, with an endless chain and carrier-sections mounted thereon so as to form a practically continuous conveyer, of driving and supporting wheels at the ends of the chain and intermediate supporting-rollers arranged between the ends of the chain and below the lower line thereof and engaging with the carrier-sections, substantially as set forth.

12. The combination, with the drive-chain and the carrier-section, of the supporting and driving wheels at the ends of the doubled chain and the intermediate supporting-wheels arranged to enter between the sides of the carrier and engage with the bottom of the carrier, substantially as set forth.

13. In an endless conveyer, carrier-sections each having its bottom recessed upon its upper surface at one end and recessed upon its lower surface at the opposite end, substantially as set forth.

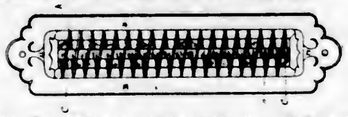
14. In a conveyer, the combination of parallel lines of supporting and driving chains and a series of thin metal carrier-sections each attached at each of its ends to a single link of the chain, and having one edge underlapping an adjacent carrier-section, and having also its opposite edge overlapping an adjacent carrier-section, substantially as set forth.

15. In a conveyer, the combination of parallel lines of chains having centrally-open links adapted to receive the spurs of sprocket-wheels, in combination with a series of overlapping carrier-sections attached at their ends to the chains, substantially as set forth.

16. The herein-described carrier-section, having a thin metal supporting-plate attached at its ends to links of chains, the links being adapted to be coupled or uncoupled from similar links when the carrier-sections are placed at about a right angle to each other, substantially as set forth.

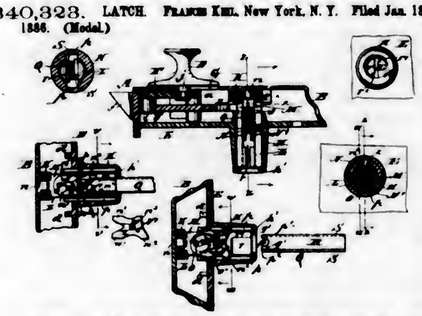
17. In an endless conveyer, the combination of a series of carrier-sections mounted on an endless chain, supports upon each section arranged entirely outside the edges of the section, and supports below the conveyer for the returning lower line of the conveyer, substantially as set forth.

340,322. PEN-RACK OR PEN AND PENCIL HOLDER. JAMES M. KEEP, New York, N. Y. Filed Feb. 24, 1886. (No model.)



Claim.—In a spring pen-rack, the combination, with the spring, of a base provided with loop-holes or suitable openings, said base constructed to admit of the spring being attached thereto by passing its coils in and through the loops or openings, as and for the purpose shown and described.

340,323. LATCH. FRANCIS KIEL, New York, N. Y. Filed Jan. 13, 1886. (Model.)



Claim.—1. The combination, with a latch-casing provided with an L-shaped slot and a sliding spring-actuated bolt, of a dog pivoted at one end to said bolt, and provided at its free end with a stem extending through said L-slot in the casing, and with a hook-lug adjacent to said stem, and of a lug on the casing adjacent to said L-slot, substantially as shown and described.

2. The combination, with the spring-actuated bolt of a night-latch, an armed dog for retracting said bolt, and a grooved housing on the latch-casing, of a slotted barrel integral with said dog, spring-actuated tumblers pivoted in said barrel, and a gravity-tumbler also pivoted in said barrel, substantially as shown and described.

3. The combination, with a grooved housing, a barrel fitted to turn therein, and a gravity-tumbler pivoted in said barrel, of two tumblers pivoted in said barrel at the sides of and opposite to said gravity-tumblers, and each provided with arms extending toward the pivot of the gravity-tumbler, and a spring acting on one arm of each of the said two-armed tumblers, substantially as shown and described.

4. The combination, with a grooved housing, of a diametrically-slotted barrel formed integrally with the retracting-dog of the latch and held to turn in the housing, and tumblers pivoted in the said barrel and normally engaging the grooves of the housing, substantially as shown and described.

5. The combination, with a retracting-dog and a barrel projecting from the same, provided with tumblers normally engaging grooves in the housing of the barrel, and provided with operating-shoulders, substantially as set forth, of a key having shouldered flanges to engage the shoulders of said tumblers, substantially as shown and described, whereby an endwise movement of said key will withdraw the tumblers from engagement with the housing.

6. A barrel projecting from the retracting-dog of a latch-bolt slotted diametrically for carrying locking-tumblers, and provided with a diametrical slit extending from the slot carrying the tumblers to its outer end, and said slot having two side extensions, substantially as shown and described.

7. The combination, with a slotted barrel carrying tumblers and provided with a slit having side extensions, substantially as set forth, of a key having a flat main portion or body and edge flanges, and adapted to fit in said slit of the barrel, substantially as shown and described.

8. The combination, with a slotted barrel provided with shouldered tumblers and a three-part slit, as set forth, of a key having a flat main portion or body and oppositely-arranged side flanges, said flanges being cut away to form shoulders, and said main body being recessed at its operating end, substantially as shown and described.

9. A key formed with a flat main portion or body and with side flanges, substantially as shown and described.

10. A key formed with a flat main portion or body, and with oppositely arranged side flanges, and said main body and flanges cut away to form engaging shoulders, substantially as shown and described.

11. The combination, with a diametrically-slotted barrel, of a tumbler pivoted at one end centrally in said barrel, and provided at its free end at each corner with a point extending in lines parallel with the longitudinal axis of the dog, substantially as shown and described.

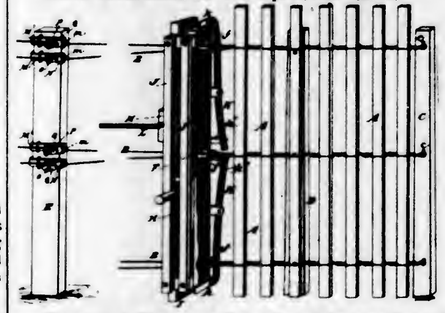
12. The combination, with a slotted barrel, of two oppositely arranged tumblers pivoted therein, each provided at one end with an engaging-point and an operating-shoulder, and at the other end with two opposite arms, and of a spring acting on one arm of each tumbler, substantially as shown and described.

13. The combination, with a grooved housing and a slotted barrel held therein, of the tumbler O, having the points *v v'*, the pivot-pin *z*, the tumblers N N', having each the arms *n'*, point n^2, and shoulder n^3, the pin *t*, and the spring *x*, substantially as shown and described.

14. The combination, with the casing B, having stud *n*, and the bolt A, of the dog K, mounted on said stud and carrying the slotted barrel L, the housing H, carried by the back plate and having the flange *h'*, the tumblers N O N', pivoted in said barrel, and the spring *x*, substantially as shown and described.

15. The combination, with the bolt, the retracting-dog, the barrel L, carrying the locking-tumblers, and provided with the slit *r r'*, of the housing H, having the grooves *p* and flange *h'*, substantially as shown and described.

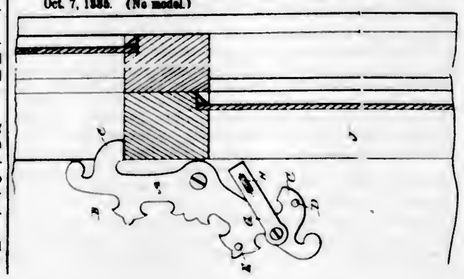
340,324. MACHINE FOR MAKING SLAT AND WIRE FENCES. MICHAEL KELLER, Burket, Ind. Filed Sept. 28, 1885. (Model.)



Claim.—1. A sliding carrier, H, and frame I, having guide-bars J J, in combination with sprocket chain and wheels carrying twister-tubes, as shown and described.

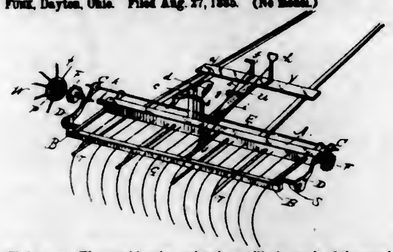
2. The combination, with frame I and a twisting mechanism having the tubes *f f*, of the levers K K, having arms *k*, the pivoted rods *k'*, the crank-lever L, and the bearing-block M, substantially as and for the purpose set forth.

340,325. SASH-FASTENER. ROBERT KEMPER, Foster, Ky. Filed Oct. 7, 1885. (No model.)



Claim.—The combination, with the lever A, having the lugs C at the top and bottom ends, of the brace-lever G, pivoted on the same, substantially as herein shown and described.

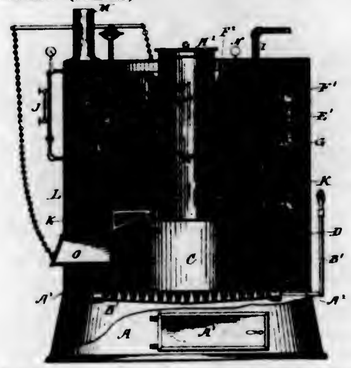
340,326. HORSE HAY-RAKE. JOHN A. KINHARDT and WILLIAM R. FUNK, Dayton, Ohio. Filed Aug. 27, 1885. (No model.)



Claim.—1. The combination, with the oscillating rod, of the notched catch and the lever connected thereto by a spring, the pull-rod and its foot-lever, the arms and dogs raised and lowered by said oscillating rod, the rake head and teeth, and the ground-wheel axle provided with means substantially as shown, for engaging with the dogs to dump the rake-head, as set forth.

2. The combination, with rod E on the rake-head, of the notched catch *a* and lever *b*, connected by spring *d*, the rod *c* and foot-lever *f*, the arms and dogs C C D D, adapted to be raised and lowered by rod E, the rake-head A and its teeth, the combined loose spur and ratchet wheels F and axle *k*, and the ground-wheels W, provided in their hubs with a spring-pawl, P *p*, as set forth.

340,327. STEAM-BOILER. DEX M. KIRBY, Auburn, N. Y. Filed Dec. 22, 1885. (No model.)



Claim.—1. In a steam-generator of the class described, the combination of a fire-box, consisting of an annular hollow cast section having radial recesses at its upper end, with a hollow annular cast cap and a pendent magazine resting on said cap, substantially as described.

2. In a steam-generator of the class described, a fire-box consisting of a hollow annular section having radial recesses, a hollow cap, and pipe-connections communicating with the interior of the under section and of the cap, substantially as specified.

3. In a steam-generator, the combination of a hollow annular cast section having radial recesses in its upper end, a hollow cast cap, a series of pipes connecting the cap with the annular section, and a coil communicating with the connecting-pipes and with the interior of the lower section, substantially as specified.

4. The combination of a fire-box consisting of an annular hollow section, a cap mounted thereon and communicating therewith by means of exterior pipes, a coil communicating with one of said pipes at its upper end, and with the hollow section at its lower end, and a depending inclosing cylinder or diaphragm, substantially as specified.

5. The combination of the hollow annular section having radial recesses in its top, the cap mounted thereon and connected therewith, as described, a depending diaphragm, and exterior jacket with an uptake, substantially as specified.

6. The combination of the section C, provided with the pipe D, and with the recesses C', the coil E, the cap F, and the connecting-pipes F' G, substantially as shown and described.

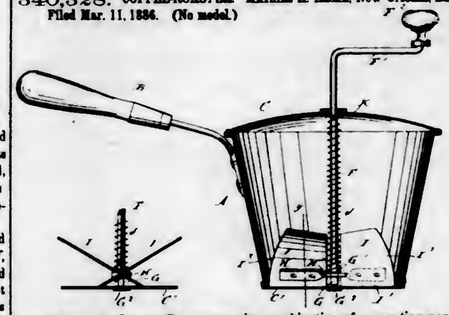
7. The combination of the section C, the cap F, the coil E, the pipes F' G, uniting the section C and its cap, and the diaphragm K, resting on the cap, substantially as shown and described.

8. The combination of the cap F, having conical opening F^2, and the flange F^3 at the bottom thereof, and the magazine H, having the flange H', substantially as shown and described.

9. The combination of the base A, the grate B, the section C, having the pipe D, communicating with the lower portion of the interior thereof, the coil E, the cap F, having the flange F^3, the magazine H, having the peripheral flange H', pipes F' and G, and the outlet-pipe I, substantially as shown and described.

10. The cap F, provided with the pipes F', in combination with the annular fire-box section C, provided with the pipes G, substantially as shown and described.

340,328. COFFEE-ROASTER. MATHIAS A. LASKA, New Orleans, La. Filed Mar. 11, 1886. (No model.)

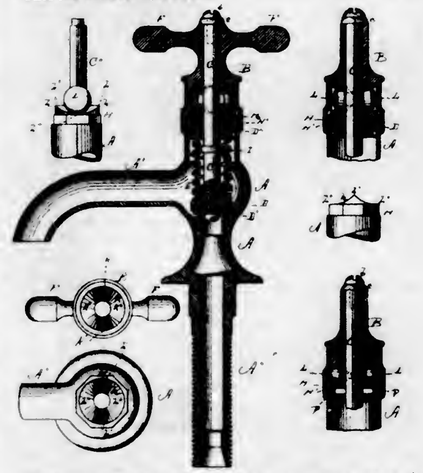


Claim.—1. In a coffee-roaster, the combination of a roasting-pan with a shaft, a spiral spring, and stirring arms or blades held in contact with the bottom of the roasting-pan by the said spiral spring, substantially as shown and described.

2. In a coffee-roaster, the combination of a roasting-pan and a shaft, having a squared part near its lower end, with a cross-plate provided with stirring arms or plates set at angles to each other and having a straight lower edge, and a spiral spring coiled on the said shaft and holding the said lower edges of the stirring arms or plates in contact with the bottom of the roasting-pan, substantially as shown and described.

3. In a coffee-roaster, the pan A and the shaft F, provided with the squared part G, the head G^2, and the collar K, in combination with the cross-plate H, the stirring-plates I, and the spiral spring J, substantially as shown and described.

340,329. SELF-CLOSING FAUCET. HENRY B. LEACH, Boston, Mass. Filed Jan. 21, 1886. (No model.)



Claim.—1. In a self-closing faucet, the combination, with the reverse inclines or sets of inclines placed opposite each other, one of which inclines or sets of inclines is capable of partial rotation, of one or more intermediate free rollers, substantially as and for the purpose set forth.

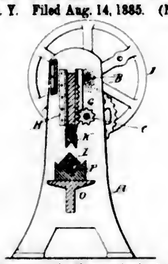
2. The combination of the rotary cap B, provided on its under side with a curvilinear track, the stationary diaphragm H, supported by the body of the faucet, and provided on its upper surface with a curvilinear track, said tracks having their similarly-formed points of elevation and

depression located opposite to each other, the free rollers L, placed between the tracks, the valve-stem C, and the spring E, all arranged to operate substantially as shown and described.

3. The combination of the cap B, provided on its under side with one or more inclines, *k*, the diaphragm H, supported by the body of the faucet, and provided on its upper surface with one or more inclines, *h*, and one or more free rollers, L, placed between the inclines on the cap and the inclines on the diaphragm, substantially as and for the purpose set forth.

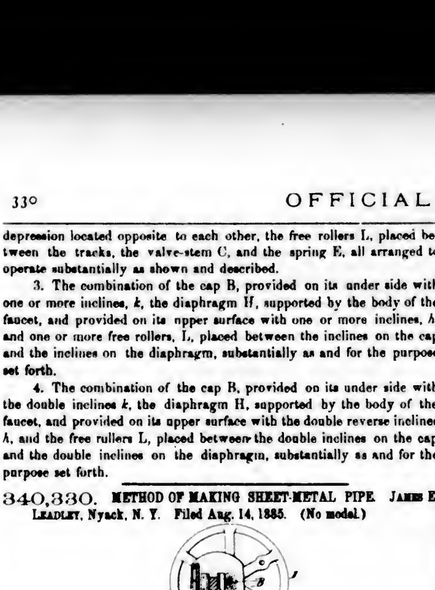
4. The combination of the cap B, provided on its under side with the double inclines *k*, the diaphragm H, supported by the body of the faucet, and provided on its upper surface with the double reverse inclines *h*, and the free rollers L, placed between the double inclines on the cap and the double inclines on the diaphragm, substantially as and for the purpose set forth.

340,330. METHOD OF MAKING SHEET-METAL PIPE. JAMES E. LEADLEY, Nyack, N. Y. Filed Aug. 14, 1885. (No model.)



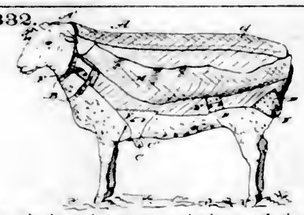
Claim.—The improvement in the method of manufacture of sheet-metal pipe, which consists in first bending a sheet of metal into a plane-sided tube, and thereafter forming ribs, flutes, or projections on said tube by the application of external pressure thereto while supported internally on detached longitudinal lines, substantially as set forth.

340,331. JACK FOR BOOTS OR SHOES. EVERETT D. LEE, Boston, Mass. Filed Jan. 18, 1886. (No model.)



Claim.—The combination, with the frame and its last-supporting arm *h*, provided with the slot *k'*, ears *m m'*, and chamber *n*, of the part *i*, provided with the last-holding pin *j*, and finger *k*, pin *l*, follower *o*, and spring *p*, as set forth.

340,332. SHEEP-PROTECTOR. WILLIAM L. LEWIS, Sweet Springs, W. Va. Filed Sept. 10, 1885. (No model.)



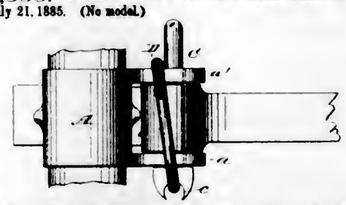
Claim.—1. An animal covering or protector provided with groups of pin-apertures at the edges, substantially as herein shown and described.

2. An animal covering or protector having re-enforcing pieces provided with numerous pin-apertures adapted for use in securing the edge of the protector to the animal, substantially as herein shown and described.

3. The combination, with the covering or protector A, of the neck-straps B B', the belly-straps C C', and the apertured pieces D, secured on the covering at the edges, substantially as herein shown and described.

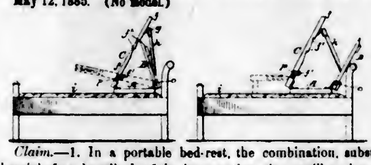
4. The combination, with the covering or protector A, of the sheets or pieces G and H, secured on the upper surface of the same, the sheets or pieces H hanging down at the sides, substantially as herein shown and described.

340,333. THILL-COUPLING. BENJAMIN LUGGET, Tucson, Ariz. Filed July 21, 1885. (No model.)



Claim.—The combination, with the clip A and eye *b*, of the bolt C, formed with a recessed head, *c*, and a solid point, *e*, and held in position by a band, D, which rests in the recess of the head *c* and bears against one of the lugs of the clip A, back of the point *e*, substantially as described.

340,334. INVALID BED-REST. CHARLES F. LILLEY, Troy, Pa. Filed May 12, 1885. (No model.)



Claim.—1. In a portable bed-rest, the combination, substantially as hereinbefore described, of the base-section, the auxiliary base-section provided with a rack-bar and hinged to the base-section, and the back-section, also hinged to said base-section, and provided with a hinged brace for engaging with the rack-bar on the auxiliary base-section.

2. The combination of the base-section, the auxiliary base-section hinged thereto and provided at its outer end with beveled tips, and the back-section hinged to said base-section and provided with notches at its rear side, substantially as described, whereby said auxiliary base may operate as a direct adjustable brace for the back-section.

3. The combination of the base-section, the auxiliary base-section hinged to said base-section, and provided with a rack-bar and beveled tips, and the back-section provided with notches at its back, and also with a hinged brace, substantially as described, whereby said back-section may be rigidly and firmly adjusted at various inclinations and in various locations on a bed, as set forth.

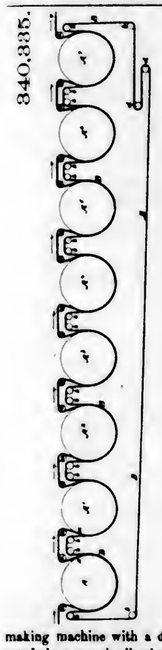
4. The combination, with the three bed-rest sections, of the table provided with a bar adapted to engage with the edges of the auxiliary base and the back section, and thus be mounted for service, substantially as described.

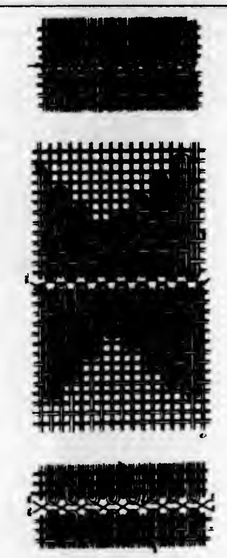
5. The combination, with the bed-rest, of the commode provided with coupling-hooks for detachably connecting it with the back-section near its base, and projecting forwardly therefrom and having a pendent front end, substantially as described.

6. The combination, with a bed-rest base-section, of the downwardly-curved transverse sharp-edged friction-bar, substantially as described, and for the purposes specified.

340,335. PAPER-MAKING MACHINE. WILLIAM A. LINDSAY, Wilmington, Del. Filed Feb. 23, 1886. (No model.)

Claim.—1. The combination of the drying-cylinders of a paper-making machine with a drier-apron consisting of wire-gauze or perforated sheet metal, all substantially as specified.

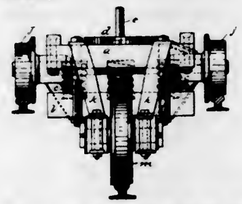




2. A drier-apron for paper-making machines, consisting of a wire-gauze strip, with each end of which is interwoven a wire forming a series of projecting loops for the reception of a lacing-wire, all substantially as set forth.

3. The combination of the wire-gauze strip, forming the drier-apron, with the lacing-loop wire *w*, the extent of projection of which into the strip is differential, all substantially as and for the purpose set forth.

340,336. CAR-TRUCK. WILLIAM B. MACK, Boston, Mass. Filed Feb. 1, 1886. (No model.)

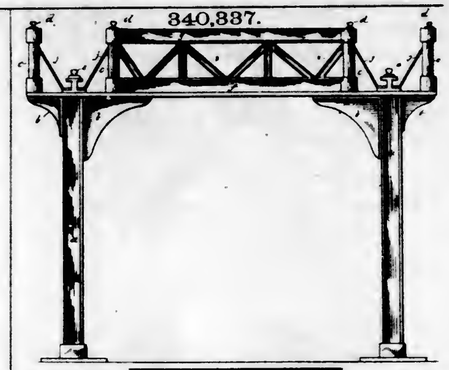


Claim.—A railway-car truck provided with wheels on its opposite sides adapted to travel on rails at the same points, and a wheel or wheels of larger size journaled in boxes at the center of the truck, and a lower horizontal plane than the first-mentioned wheels and adapted to travel on a rail arranged between and below said first-mentioned rails, as set forth.

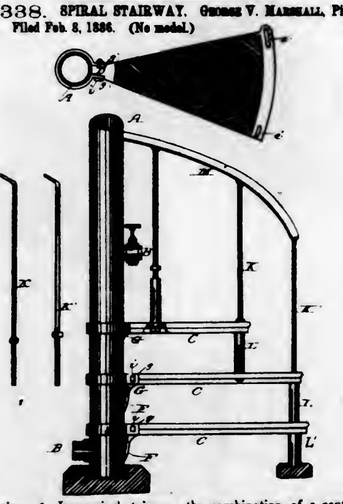
340,337. ELEVATED RAILWAY. WILLIAM B. MACK, Boston, Mass. Filed Feb. 17, 1886. (No model.)

Claim.—1. An elevated railroad of two substantially parallel tracks, each track supported on a single line of pillars, *a a*, and consisting of three rails, two arranged on pillars or posts parallel to each other, as usual, and a third arranged at a lower horizontal plane between the two first mentioned, the two tracks being bound together at substantially regular intervals by girders and braces, and the pillars supporting the upper rails of each track being sustained firmly in position by braces extending inwardly from their upper ends to the road-bed, as set forth.

2. An elevated railroad of two substantially parallel tracks, each track supported on a single line of pillars, *a a*, braces or brackets *b b* of said pillars, pillars *c c*, rails *d d*, rails *e*, intermediate of said rails *d d*, and arranged at a lower horizontal plane, braces *j j*, extending from the top of pillars *c c* to the road-bed to or near the rail *e*, and girders *f g* and their braces *i i*, as set forth.



340,338. SPIRAL STAIRWAY. GEORGE V. MARSHALL, Pittsburg, Pa. Filed Feb. 8, 1886. (No model.)



Claim.—1. In a spiral stairway, the combination of a central column with a series of steps attached thereto by means of bands or clamps surrounding the pillar and bolted to the step, the outer ends of the successive steps being fastened together, substantially as described.

2. In a spiral stairway, the combination, with a central column having a series of steps attached thereto, of balusters having removable collars surrounding their lower ends, said ends passing through the front edge of a step and the back edge of the next lower step and fastened thereto, whereby the series of steps are mutually supported and braced, substantially as described.

3. In a spiral stairway, the combination, with a central column having a series of steps attached thereto by bands or clamps which encircle said column and are attached to said steps, of balusters which pass from one step to the next and through surrounding collars or distance-pieces, which support the outer edges of the steps, said balusters having retaining-nuts at the lower end, substantially as described

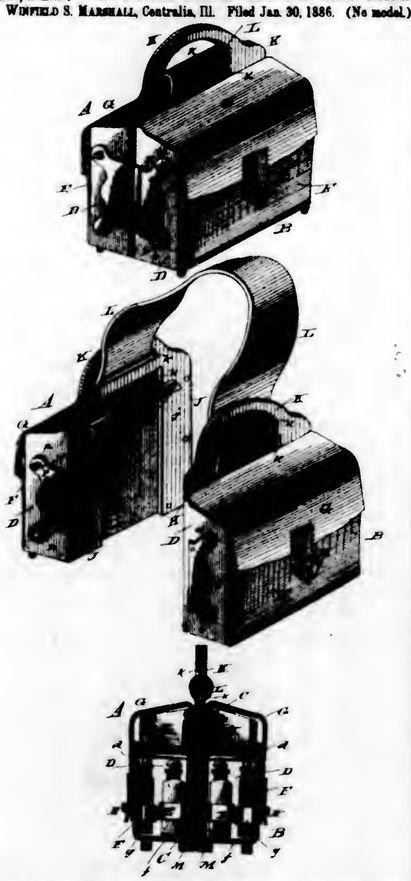
4. In a spiral stairway, the combination, with the central hollow column, A, having couplings B B', of a series of steps supported by said column and held in position thereon by clamps or bands G, and supported at their outer ends by balusters K, encircling collars L, and retaining-nuts, substantially as described.

5. In a spiral stairway, the combination of two successive steps attached to the central pillar, having overlapping edges and coinciding slots or holes *e' e'*, with a connecting rod, bolt, or baluster passing through said slots or holes, distance-pieces L, and a nut or nuts adapted to screw on said rod, bolt, or baluster and draw both steps tightly against the ends of said distance-pieces, substantially as described.

6. In a spiral stairway, the combination of two successive steps adjustably attached to the central column, having one or more coinciding elongated slots, *e'*, with a connecting-bolt or tie-rod passing vertically through the outer slot of one step and the inner slot of the step below, and one or more clamping-nuts, substantially as described whereby the steps may be independently adjusted in the circular direction.

340,339. CONVERTIBLE SADDLE-BAGS AND HAND-TRUNK.

WINFIELD S. MARSHALL, Centralia, Ill. Filed Jan. 30, 1886. (No model.)



Claim.—1. The combination, with two independent cases having handles, as described, of a strap passed through said handles and having a longitudinal sliding movement, and limited in such movement by cross-bars at its ends, substantially as set forth.

2. The combination, with two independent cases, of a sliding-strap connection, said strap having cross-bars at its ends to engage the bottom edges of the cases, substantially as and for the purpose set forth.

3. The combination, with two cases each provided with a combined guide and handle frame, of a movable strap provided with cross-bars at its ends and connected to said frames, substantially as set forth.

4. The combination, with two independent cases adapted to be secured together back to back, of handles which may be brought together to form a single handle, a sliding strap, L, and a hinge device and catch-plate to connect the cases, substantially as set forth.

340,340. VELOCIPEDE.

SAMUEL MARTIN, Mill Rock, Ohio. Filed Oct. 31, 1885. (No model.)

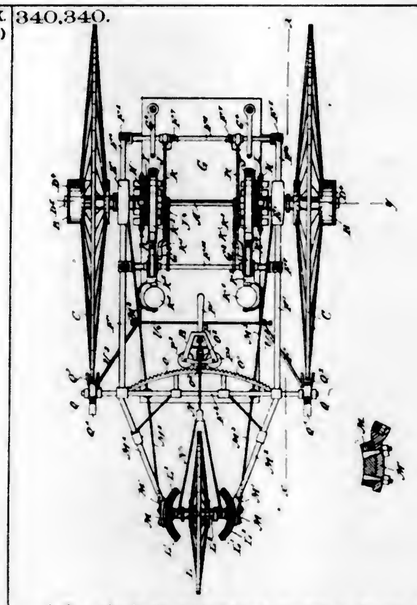
Claim.—1. In a tricycle, the shaft A, the ratchet-block D, provided with the slot D', the sliding pawls D^2, the springs D^3, the hubs B, and the driving-wheels C, all arranged as shown and described.

2. In a tricycle, the shaft A, the wheel I, and the ratchet-teeth I' in combination with the wheel H, the sliding pawls H', the springs H^2 and the lever H^7, substantially as shown and described.

3. In a tricycle, the shaft A, the wheel I, and the ratchet-teeth I', in combination with the belt-pulley J, the sliding spring-pawls J^2, the belt K^2, and the lever K, substantially as shown and described.

4. In a tricycle, the shaft A, the wheel I, the ratchet-teeth I', the ratchet-block D, the sliding pawls D^2, the springs D^3, the hubs B, and the driving-wheels C, in combination with the wheel H, the sliding pawls H', the lever H^7, the belt-pulley J, the sliding pawls J^2, the lever K, and the belt K^2, substantially as shown and described.

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5. In a tricycle, the combination of the shaft A, the hub B, the driving-wheels C, the frame F, the swinging platform G, and the seat G^3, substantially as shown and described.

6. In a tricycle, the combination of the shaft A, the hub B, the driving-wheels C, the frame F, the supports M^2 and M^3, the block M, the segments L, having recesses L^2, and the guiding-wheel L, substantially as shown and described.

7. In a tricycle, the guiding-wheel L, the segments L', having the recesses L^2 and the supporting-blocks M, in combination with the forked lever N, the rack O, the teeth O', the pawl O^2, and the lever-frame P, provided with the handle P' and the rollers P^2, substantially as shown and described.

8. In a tricycle, the forked lever N, the lever-frame P, the handle P', the roller P^2, the pawl O^2, and the spring O^3, in combination with the rack O, teeth O', and the guide-wheel L, substantially as shown and described.

9. In a tricycle, the combination of the guide-wheel L, the segments L', the recesses L^2, the blocks M, and the castings M', supported from the main frame F by the rods M^2 and M^3, substantially as shown and described.

10. In a tricycle, the combination, with the shaft A, the sleeve E, the frame-block E', the frame F, the swinging platform G, and the seat G^3, substantially as shown and described.

11. In a tricycle, the combination, with the shaft A, the sleeve E, the frame-block E', the frame F, the swinging platform G, the seat G^3, the supports M^2 and M^3, the driving-wheels C, and the guide-wheel L, all arranged substantially as shown and described.

12. In a tricycle, the shaft A, the ratchet-blocks D, the pawls D^2, the hubs B, the driving-wheels C, and the wheels I, provided with teeth I' on each side, in combination with the wheels H, the spring-pawls H', the springs H^5, the levers H^7, the belt-pulleys J, the pawls J^2, the levers K, the belts K^2, the straps K^4, and the stirrups K^5, substantially as shown and described.

13. In a tricycle, the shaft A, the wheel I, the ratchet-teeth I', the hub I^2, and the nut I^3, in combination with the belt-pulley J, the pawls J^2, the springs J^3 and J^4, the forked arm J^5, the lever K, the spring K^7, the belt K^2, the strap K^4, and the stirrup K^5, sliding on the rod G^3, all arranged substantially as shown and described.

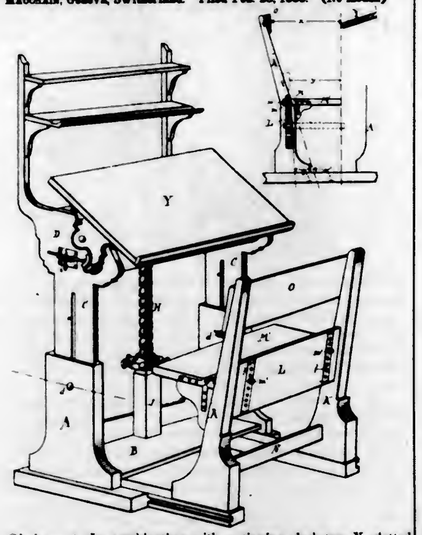
14. In a tricycle, the combination of the shaft A, the hubs B, the driving-wheels C, the pawl-block D, the sleeve E, the frame-block E', the frame F, the swinging platform G, the seat G^3, the wheel H, the spring-pawls H', the wheel I, the ratchet-teeth I', the belt-pulley J, the spring-pawls J^2, the spring J^3, the forked arm J^5, the lever K, the spring K^7, the belt K^2, the pulleys K^3, the adjustable straps K^4, the stirrup K^5, the guiding-wheel L, the segment L', the block M, the casting M', supported by the rods M^2 and M^3, the forked lever N, the toothed rack O, the lever-frame P, the handle P', the rollers P^2, and the pawl O^2, all arranged substantially as shown and described.

15. In a tricycle, the brake-frame Q', having a slot, Q^2, and the brake-shoe Q^3, in combination with the lever U, the brake-shoe U', the spring U^3, the arm U^5, and the cross-rod U^4, substantially as shown and described.

16. In a tricycle, the brake-frame Q', having a slot, Q^2, the brake-shoes Q^3 and U', the lever U, the spring U^3, the arm U^5, and the cross-rod U^4, in combination with the cross-rods F^2 and F^{11}, of the main frame F, and the driving-wheels C, substantially as shown and described.

340,341. ADJUSTABLE DESK AND SEAT FOR SAME.

ARNAUD MAUCHAIN, Geneva, Switzerland. Filed Feb. 23, 1885. (No model.)



Claim.—1. In combination with a tipping desk-top, Y, slotted standards c, standards A, bolts d, and plank or rest B, the screw H, nut I, and post J, beneath the desk, for raising or lowering the same and firmly supporting such desk in addition to the support from the standards, as set forth.

2. The combination, with the hinged seat M', the standards K, and cross-board L, having vertical rows of holes in the same, and the attaching-bolts m', for varying the height of the seat, substantially as set forth

340,342. GRAIN-BINDER.

CHARLES MILLER, Auburn, N. Y. Filed Apr. 1, 1885. (No model.)

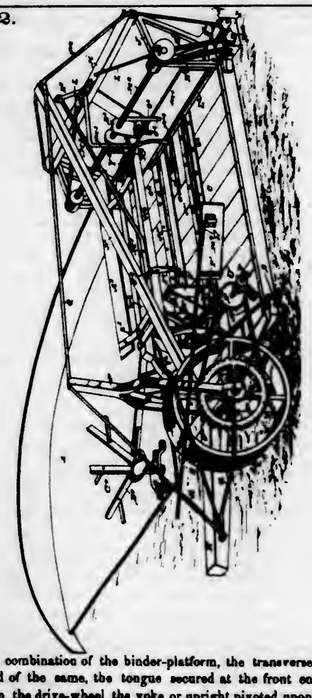
Claim.—1. In a grain-binder, the combination of the binder-platform secured to the side of the grain-platform, suitable brackets or frames at the rear end of the same, a transverse beam connecting the upper rear corners of the said brackets or frames, a truss connected to the ends of the said beam and having its ends connected to the under side of the rear end of the platform, and a downwardly and forwardly extending beam or stringer connecting the apex of the said truss with the rear end of the tongue, said stringer being directly over and extending lengthwise of the binder-platform, substantially as herein described, for the purpose set forth.

2. In a grain-binder, the combination of the binder-platform, a bracket extending forwardly from the same, the tongue secured upon the said bracket, a brace connecting the side of the tongue with the front end of the platform, an axle mounted in said bracket and brace, a drive-wheel mounted upon the said axle, and a balance-weight secured upon the front end of the tongue, substantially as and for the purpose herein set forth.

3. In a grain-binder, the combination of the binder-platform, the tongue secured to the front end of the same, substantially as described, and having a balance-weight, an axle mounted transversely in a bracket and a brace connecting the tongue to the platform, a drive-wheel mounted upon the said axle, a yoke or upright mounted pivotally upon the said axle, a transverse truss at the rear end of the binder-platform, a longitudinal truss connecting the apex of said transverse truss with the tongue and resting at its apex upon the yoke or upright pivoted upon the axle of the drive-wheel, and a longitudinal beam or stringer connecting the rear end of the tongue with the apex of the rear transverse truss, substantially as and for the purpose set forth.

4. In a grain-binder, the combination of the binder-platform, the transverse truss at the rear end of the same, the tongue secured at the front end of the said platform, and a longitudinal beam or stringer hinged to the rear end of the tongue and engaging with the apex of the rear transverse truss, substantially as and for the purpose herein set forth.

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5. The combination of the binder-platform, the transverse truss at the rear end of the same, the tongue secured at the front end of the said platform, the drive-wheel, the yoke or upright pivoted upon the axle of the same, the longitudinal stringer-beam, and the longitudinal truss having an interposed spring, all arranged and operating substantially as and for the purpose set forth.

6. The combination of the binder-platform, the tongue secured at the front end of the same, the drive-wheel axle, a yoke or upright mounted pivotally upon the latter, and a brace secured to one side of said yoke or upright and connected at its ends to the side of the tongue and to the front end of the binder-platform, respectively, substantially as and for the purpose herein set forth.

7. The combination of the longitudinally-slotted binder-platform, the grain-carriers arranged to slide in said slots and having cross-heads, the under sides of which are provided with downwardly-extending lugs at their front and rear ends, longitudinal bolts arranged in the said lugs, a cross-piece or brace arranged to slide upon said bolts, coiled springs arranged to force the said cross-piece in a forward direction, and a pivoted rod connecting the said cross-piece with a drive-chain arranged to run over horizontal chain-wheels journaled under the binder-platform near the front and rear ends of the latter, substantially as and for the purpose herein set forth.

8. In a grain-binder, the combination of the longitudinally-slotted platform, a horizontal drive-chain arranged longitudinally under the binder-platform, and the longitudinally sliding or reciprocating grain-carriers connected to and operated by the said drive-chain and capable of having a longitudinal motion independent of their connection with the said chain, substantially as herein described, for the purpose set forth.

9. In a grain-binder, the combination of the platform, frames or brackets at the rear corners of the same, a transverse beam connecting the upper rear corners of the said brackets, uprights at the front end of the said platform, a pair of longitudinal beams secured to the said uprights, a plate connecting the rear ends of the said beams with the transverse beam at the rear end of the platform, and brackets extending laterally from the said longitudinal beams and supporting an inclined guide, substantially as and for the purpose set forth.

10. The combination of the binder-platform, frames or brackets at the rear corners of the same, a transverse beam connecting the rear corners of the said brackets, the longitudinal beams supported above the binder-platform, a longitudinally-sliding rod attached to one of the said longitudinal beams and having its rear end connected pivotally with a cord-guide pivoted to the rear transverse beam, a pivoted downwardly-extending arm attached to the front end of the said longitudinally-sliding rod, a spring arranged to hold the said arm in position, and the longitudinally-reciprocating grain-carriers arranged to actuate the sliding rod by

contact with the downwardly-extending arm of the latter, substantially as and for the purpose herein set forth.

11. The binding-cord guide consisting of a bent lever pivoted to a transverse beam at the rear end of the binder-platform and having an arm bifurcated at its lower end, in combination with the longitudinally-sliding operating-rod having a downwardly-extending pivoted arm, a spring arranged to hold the said arm in place, and the longitudinally-reciprocating grain-carriers, said arm having an independent longitudinal motion with relation to the drive-chain with which said carriers are connected and by which they are operated, substantially as herein shown and described.

12. In a grain-binder, the combination of the parallel rock-shafts having toothed segments engaging each other and provided with curved compressor-arms, a radial arm extending downwardly from one of the said shafts, a tension-spring connecting said arm with the rear end of the under side of the platform, a lever pivoted to the under side of the platform and having an arm extending under one of a series of longitudinal slots in the same, a link connecting the other end of said lever with the arm extending downwardly from the compressor rock-shaft, and the longitudinally-reciprocating grain-carriers adapted to engage the said lever and thereby actuate the compressor-shafts, substantially as herein described, for the purpose set forth.

13. The combination of the binder-platform, a transverse beam supported above the rear end of the latter, a pair of longitudinal beams supported above the platform, a plate connecting the rear ends of said longitudinal beams with the transverse beam, a spring-actuated beveled latch extending from the side of said plate, a stud arranged to limit the forward movement of said latch, the transverse rock-shafts having compressor-arms, one of which is adapted to engage and be retained by the said latch, and suitable operating mechanism, substantially as and for the purpose herein set forth.

14. The combination of the transverse rock-shafts having toothed segments engaging each other and provided with radially-extending compressor-arms, a spring-actuated latch arranged to be engaged by one of the compressor-arms and thereby retain the several arms in a raised or operative position, the revolving knotter-shaft having radially-extending ejector-arms, one of which is adapted to engage the latch and thereby to release the compressor-arms and suitable operating mechanism, substantially as herein described, for the purpose set forth.

15. The combination of the longitudinally-slotted platform, the longitudinally-reciprocating grain-carriers, the drive-chain connected with and adapted to operate the said carriers, the transverse rock-shafts having the radially-extending compressor-arms, and adapted to be operated by the longitudinally-reciprocating carriers, the revolving knotter-shaft, mechanism connecting said knotter-shaft with the drive-chain of the grain-carriers, whereby it is operated, mechanism for retaining the compressor-arms when lifted in their raised or operative position, so that the whole power of the drive-chain shall be transmitted to the knotter-shaft, and mechanism for releasing the compressor-arms automatically when the bundle has been tied, substantially as and for the purpose herein set forth.

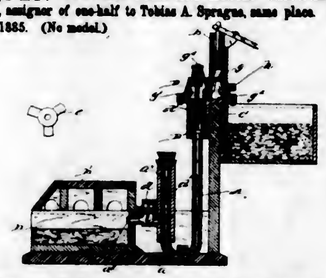
16. The combination of the transverse parallel rock-shafts having the compressor-arms, the needle hinged or pivoted to an arm extending radially from one of the said shafts, a radially-extending arm at the outer end of the said shaft, and a cord connecting the said arm with the heel of the needle, said cord passing through suitable eyes or guides and being provided with an interposed spring, substantially as and for the purpose herein set forth.

17. The combination of the binder-platform, the longitudinally-reciprocating grain-carriers, the transverse rock-shafts at the rear end of the binder-platform having the compressor-arms, the transversely-arranged vertical hinged board, a spring arranged to retain the latter normally in a raised or vertical position, the revolving knotter-shaft having the ejector-arms, and suitable operating mechanism, all arranged and operating substantially as and for the purpose herein shown and specified.

18. In a grain-binder, the combination of the drive-chain arranged to operate the longitudinally-reciprocating grain-carriers and the binding mechanism, mechanism connecting one of the shafts of said drive-chain with a pinion mounted on one end of the tubular shaft and having a clutch, a shaft arranged to slide within the said tubular shaft and having a clutch adapted to engage the clutch-pinion of the latter, a box journaled on one end of said sliding shaft, a lever pivoted to an upright and connected pivotally with the said box, a suitably-arranged vertical lever, a rod connecting the lower end of the latter with the horizontal lever, the harvester-rake having arms adapted to strike or engage the upper arm of said vertical lever, and a chain connecting a chain-wheel upon the sliding shaft with a chain-wheel upon the drive-wheel of the binder, whereby the operating mechanism of the binder shall be thrown into gear by contact of one of the rake-arms with the upper end of the upright lever, substantially as set forth.

19. The combination of a transversely-sliding shaft connected with the drive-wheel of the binder and having a clutch through which motion may be transmitted to the operating mechanism of the binder, a lever suitably connected with the said shaft and adapted to throw it into gear by contact with one of the arms of the harvester-rake, a spring arranged to throw the said shaft out of gear automatically, a catch arranged to engage a lever connected with said shaft and retain it in or out of gear, and the longitudinally-reciprocating grain-carriers adapted to actuate the said catch, substantially as herein described, for the purpose shown and specified.

340,343. **COMBINED PUMP AND MOTOR.** JOSEPH MILLS, Cornell, Ill., assignor of one-half to Tobias A. Sprague, same place. Filed Sept. 9, 1885. (No model.)



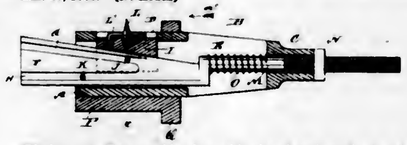
Claim.—1. The combination, with the siphon having an upward extension, the water-wheel carrying a pulley on its shaft contained within a casing on the discharge-pipe, of the vacuum-chamber having sub-chambers connected by a valve, the water-wheel having its shaft extended beyond said casing and carrying a pulley, and the pipe connected to said casing and entering the tank or reservoir, substantially as shown and described.

2. The combination, with the vacuum-chamber, of the water-wheel having its shaft passed through the casing of said vacuum-chamber and carrying a pulley, and having a stuffing or lubricant box, and the tri-legged apertured support or bearing contained within an enlarged upward extension of the siphon, substantially as shown and described.

3. The combination of the siphon, the casing connected to an extension thereof, the water-wheel secured within said casing carrying a pulley on its shaft, the enlarged upward extension, the tri-legged apertured support, the water-wheel having its shaft provided with a pulley, and the vacuum-chamber having a pipe leading to the tank or reservoir, substantially as shown and described.

4. The siphon-pipe having its shorter leg or arm provided with an upwardly-extended pipe having a casing securing a water-wheel with its shaft carrying a pulley, in combination with the vacuum-chamber connected to its longer leg or arm, and the supply or receiving pipe connected to said vacuum-chamber, substantially as and for the purpose specified.

340,344. **TUBE-CUTTER.** JOHN C. MIDDO, Bunker Hill, Ill. Filed Mar. 20, 1885. (No model.)



Claim.—1. The combination, with the slotted stock A, of the grooved cutter-block I, fitted in the slot of the stock and provided with the pins J, and the wedge-piece F, fitted in the groove of the cutter-block and provided with grooves G to receive the pins J, substantially as herein shown and described.

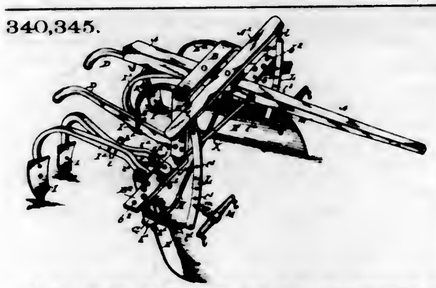
2. The combination, with the stock A, of the block I, carrying a cutter, the wedge-piece F, having the grooves G and H, the pins J, projecting from the block I into the grooves G, and the pins K, projecting from the stock into the groove H, substantially as herein shown and described.

3. The combination, with the stock A, the cutter-block I, and the wedge-piece F, of the flanged sleeve P Q, surrounding the stock and removably secured thereto, substantially as herein shown and described.

340,345. **COMBINED CORN HILLER AND CULTIVATOR.** ELIAS MERRIAM, Union, Mich. Filed Jan. 30, 1886. (No model.)

Claim.—1. In a machine to hill corn or other plants, the combination of the tongue, the transverse supporting-frame secured thereto and provided with the horizontal extensions B^2, having the rows of holes b', the shovel-frames F, having the hilling-shovels secured to their lower ends, and provided with the upward-extending arms f^2, and the plates G, having the arms f^2 secured to them near their ends, and provided with the holes g', by means of which and proper bolts engaging the holes b' the shovel-frames are rendered adjustable on the extensions B^2, substantially as specified.

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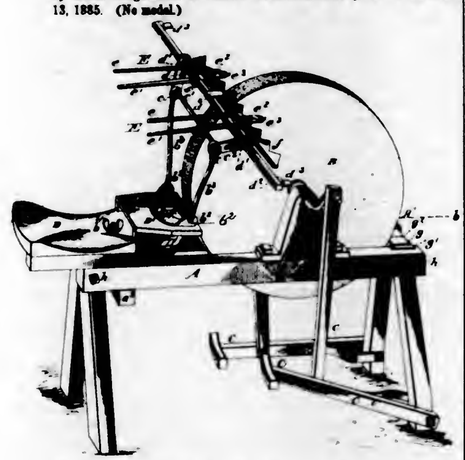


2. In a machine to hill corn or other plants, the combination of the tongue, the transverse supporting-frame secured thereto and provided with the horizontal extensions B^2, the plates G, adjustably secured to said extensions, and provided with the holes g, the shovel-frames F, having the shovels secured to their lower ends and provided with the threaded upwardly-extending arms f^2, and the nuts f^2 and f^2 f^2, whereby the shovel-frames are adjusted on the plates G, substantially as specified.

3. In a machine to hill corn or other plants, the combination of the tongue, the supporting-frame B, provided with the horizontal extensions B^2, the shovel-frames F, secured to said extensions by means of the plates G and proper bolts, the hilling-shovels secured to the lower ends of the frame F, the rods H, secured at their upper ends to the tongue, and with their lower ends passing through openings in the stems of the frames F, and the nuts h', by means of which and said rods the lower edges of the shovels are adjusted outward and inward with reference to the machine, substantially as specified.

4. The combination of the tongue A, frame B, adapted to carry and adjust the hilling-shovels E E, or the cultivators I I, and provided with the vertical portions B, having rows of openings b, and the handles D, rigidly secured to the main frame and adapted to have their inner ends bolted higher or lower on the vertical portions B of said frame through the holes b, substantially as specified.

340,346. **ATTACHMENT FOR HOLDING SICKLE-BARS WHILE BEING GROUND.** JAMES I. METTLER, Creston, Ill., assignor of one-half, by mesne assignments, to Charles Woodward, same place. Filed Mar. 13, 1885. (No model.)

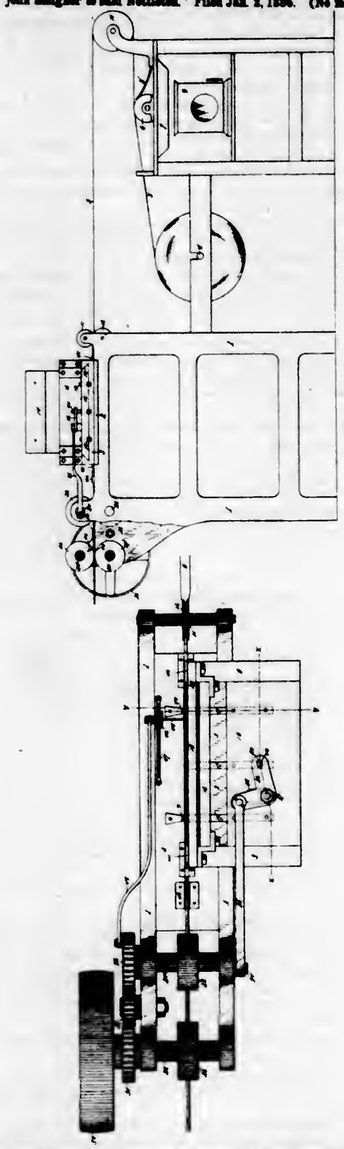


Claim.—1. In combination, with a grindstone-frame, the adjustable seat and table and the adjustable sickle-bar frame having at its upper portion a tong supporting and guiding bar, substantially as described.

2. The combination, with a grindstone-frame, of a slotted table or support, a curved base-plate adjustably connected to said slotted table and having upwardly-extending ears, an upwardly-extending bent bar supported within the eared base-plate, and having at its upper portion a connecting and tong supporting and guide bar and bracket-arms, a sickle-holding bar supported within said bracket-arms, and tongs for gripping the sickle or knife, substantially as set forth.

3. A sickle-bar frame consisting of an adjustable base-plate, upright rod or rods held at their lower part in the base-plate and at their upper ends by a horizontal guide and supporting rod, said horizontal rod supporting and guiding the tongs and sickle-bar support in their transverse movements, the bracket-arms and sickle-bar holder, and the tongs for holding the sickle-bar in position, constructed and operated substantially as described.

340,347. **MACHINE FOR COVERING CORSET-STAYS.** WILLIAM A. NETTLETON and CHARLES F. LITTLEJOHN, Bridgeport, Conn.; said Littlejohn assignor to said Nettleton. Filed Jan. 2, 1886. (No model.)



Claim.—1. In a machine for covering stays, the magazine and reciprocating fingers for forcing the stays out singly, in combination with the folder, drawing-rollers, and a cutter.

2. The magazine having holes 19 and a slot, 21, and reciprocating fingers adapted to force the stays out singly through said slot, in combination with the folder, drawing-rollers, and cutting-rollers, as and for the purpose set forth.

3. In a machine for covering stays, the combination, with the magazine and reciprocating fingers for forcing the stays out singly, of rollers 11 and 12, which form the strip to receive the stays, the folder, drawing

and pressing rollers 22 and 23, and rollers 26 and 27, one of which is provided with a cutter adapted to divide the strip between the stays.

4. In a machine for covering independent stays, the magazine and the reciprocating fingers for forcing the stays out singly, in combination with pasting-rollers, forming-rollers, a folder, and drawing and pressing rollers.

5. In a machine for covering corset-stays, the combination, with forming-rollers 11 and 12, a folder, drawing-rollers, and cutting-rollers, of a magazine having a slot at the back of just sufficient height to permit one stay to pass out, and holes 19 at the front, and reciprocating fingers which enter said holes, catch the lowermost stay, and force it through said slot and into the covering-strip.

6. In a machine for covering stays, the forming-rollers, drawing-rollers, cutting-rollers, and the folder, in combination with the magazine, a weight which holds the stays down flat, and reciprocating fingers which press them out singly into the covering-strip.

7. In a machine for covering stays, the combination, with the folder and drawing-rollers, of a magazine, the reciprocating fingers, and stops 49, as and for the purpose set forth.

8. The drawing-rollers and folder, in combination with the magazine, reciprocating fingers, stops 49, and a rest, 45, moving with the stay, whereby the latter is prevented from becoming turned.

9. The drawing-rollers, folder, magazine, and reciprocating fingers, in combination with rest 45, attached to sleeve 46, rod 47, by which said sleeve is carried, and a rod, 48, connecting said sleeve to one of the shafts.

10. In a machine for covering independent stays, the pasting, turning, and forming rollers, magazine, and reciprocating fingers, in combination with a folder, drawing-rollers, and a cutter.

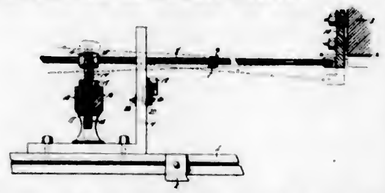
11. The magazine and reciprocating fingers, in combination with trough 41, stops 49, rest 45, a folder, and the drawing-rollers.

12. The forming-rollers, stops, and moving rest 45, in combination with the magazine, reciprocating fingers, a folder, and the drawing-rollers.

13. In a machine for covering independent stays, drawing-rollers, cutting-rollers, a magazine, and trough 41, in combination with a cross-slide and fingers 17, bell-crank lever 34, and connecting-rod 35.

14. The drawing-rollers, folder, magazine, weight, and fingers, in combination with shaft 24, carrying gear 32, rod 47, sleeve 46, rest 45, and connecting-rod 48.

340,348. MACHINE FOR CUTTING KEYWAYS. JOHN L. OSTRANDER, North Adams, Mass. Filed Feb. 1, 1886. (No model.)



Claim.—1. The combination, with a tool-block, a bar pivoted thereto, and a reciprocating platen, of a cutter secured to said bar, a box carried by the platen, which supports the outer end of the bar, and a rest, also carried by the platen, which supports the piece to be operated upon.

2. The cutter, cutter-bar, and rest, in combination with a box which supports the outer end of the bar but slides freely over it, a yoke provided with a threaded shank, by which the box is carried, standard 12, and nuts 17, whereby the box may be adjusted at any desired position.

3. The cutter, cutter-bar, and adjustable box, in combination with plate 4, secured to a reciprocating platen, and a V-shaped rest adjustably secured to the plate.

4. The cutter, cutter-bar, and rest, in combination with the box, pointed screws 13, the yoke, standards, and nuts 17.

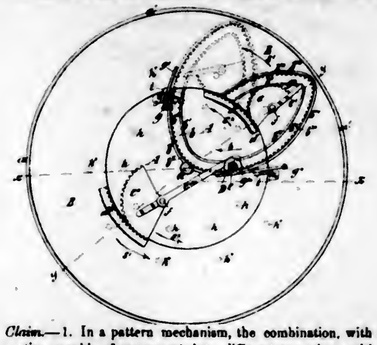
5. The angle-plate having central slot, 6, and slots 19, and rest 18, having tongues 20 and bolts 21, in combination with the cutter, cutter-bar, and adjustable box.

6. The tool-block, plate 10, pivoted thereto, and the cutter and cutter-bar, in combination with an angle-plate secured to a reciprocating platen and provided with a central slot, through which the bar passes, an adjustable work-rest carried by the angle-plate, and an adjustable box carried by a standard upon the platen, which supports the outer end of the bar.

7. The standard, yoke having a threaded shank, and nuts 17, in combination with box 11, held in the yoke by pointed screws, the cutter, cutter-bar, and rest 18.

8. In a keyway-cutter, an adjustable bar supported at both ends and having a cutter attached thereto, in combination with an adjustable work-rest carried by a reciprocating platen.

340,349. PATTERN MECHANISM FOR QUILTING-MACHINES. FRANK L. PALMER, New London, Conn. Filed Dec. 23, 1885. (No model.)



Claim.—1. In a pattern mechanism, the combination, with a pattern portion capable of movement into different operative positions, of a shaft or device engaging therewith and a switch or shifting-gear to be acted upon by the shaft or device to move the pattern portion into different operative positions, substantially as herein described.

2. In a pattern mechanism, the combination, with two pattern portions, one of which is movable into different operative positions relatively to the other, of a shaft or device engaging therewith and a switch or shifting-gear to be acted upon by the shaft or device to shift the movable pattern portion into different operative positions, substantially as herein described.

3. In a pattern mechanism, the combination, with a pattern portion capable of movement into different operative positions, of a shaft or device engaging therewith, a switch or shifting-gear to be acted on by the shaft or device to move the pattern portion into different operative positions, and a locking device for securing the pattern portion against accidental movement, substantially as herein described.

4. In a pattern mechanism, the combination, with a pattern portion capable of movement into different operative positions, of a shaft or device engaging therewith, a switch or shifting-gear to be acted on by the shaft or device to move the pattern portion into different operative positions, and an automatic locking device for holding the pattern portion against accidental movement, and acted upon by the shaft or device to unlock the pattern portion, substantially as herein described.

5. In a pattern mechanism, the combination, with a pattern portion capable of movement into different operative positions, of a shaft or device engaging therewith, and a switch or shifting-gear consisting of a rack and gear-sector, and a lever on which the shaft or device acts to shift the movable pattern portion into different operative positions, substantially as herein described.

6. In a pattern mechanism, the combination of pattern portions, one of which is movable relatively to the other or others in order to make connection therewith when in the different positions to which it is moved, substantially as herein described.

7. In a pattern mechanism, the combination of two pattern portions, each being movable relatively to the other in order to make connection with each other when in different positions, substantially as herein described.

8. In a pattern mechanism, the combination, with two pattern portions, of a shaft or device for engaging therewith, one of said pattern portions being movable relatively to the other to bring their ends into coincidence when in different positions relatively to each other, so that the shaft or device may pass from one to the other of them while in different relative positions, substantially as herein described.

9. In a pattern mechanism, the combination, with two pattern portions, of a shaft or device for engaging therewith, each pattern portion being movable relatively to the other to bring their ends into coincidence when in different positions, so that the shaft or device may pass from one to the other of them when in their different positions, substantially as herein described.

10. In a pattern mechanism, the combination, with two pattern portions, of a shaft or device for engaging therewith, each pattern portion being movable relatively to the other to bring their ends into coincidence when in different operative positions, so that the shaft or device may pass from one to the other of them, and switches or shifting-gear to be acted upon by the shaft or device to shift the movable pattern portions into their different operative positions, substantially as herein described.

11. In a pattern mechanism, the combination of two rotary pattern portions, to be turned each independently of the other, whereby they may be made to register one with the other in different positions, substantially as herein described.

12. In a pattern mechanism, the combination, with two rotary pattern portions, each comprising a groove or guide, and arranged to be

turned each independent of the other, whereby the two grooves or guides will be made to coincide or register one with the other alternately at opposite ends thereof and in different positions around the center of the pattern, substantially as herein described.

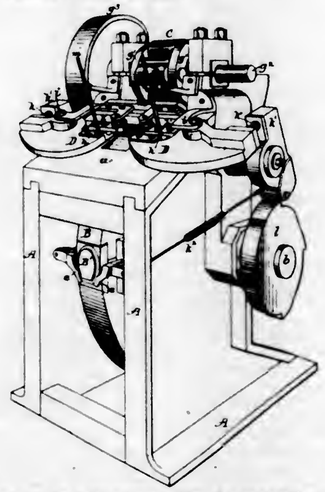
13. In a pattern mechanism, the combination of a central rotary portion, consisting of a track in pattern form, and an outer or surrounding rotary portion, also consisting of a track in pattern form, the two rotary portions being arranged to be turned independently of each other, whereby they may be made to register one with another in different positions around the center, substantially as herein described.

14. In a pattern mechanism, the combination of a central rotary portion and an outer rotary portion arranged to turn independently of each other, whereby they may be made to register one with another in different positions around the center, a shaft or device engaging said pattern portions, and switches or shifting-gear connected with the pattern portions and arranged to be operated by the shaft or device while in engagement with one pattern portion to turn the other automatically to a new position, substantially as herein described.

15. In a pattern mechanism, the combination of central and surrounding pattern portions, arranged to be turned each independently of the other, whereby they may be made to register one with another in different positions, a shaft or device engaging said pattern portions, switches or shifting-gear connected with the pattern portions and arranged to be operated by the shaft or device while in engagement with one pattern portion to turn the other automatically to a new position, and locking devices for holding the pattern portions against accidental turning, and arranged to be operated by the shaft or device to unlock the pattern portions at the desired times, substantially as herein described.

16. In a pattern mechanism, the combination with inner and outer rotary pattern portions, arranged to be turned one independently of the other, and a shaft or device engaging with said pattern portions, of locking-levers and attached locking-bolts upon which the shaft or device operates while in engagement with one pattern portion to unlock the other pattern portion and permit of its turning to a new position, substantially as herein described.

340,350. HORSESHOE-MACHINE. CHARLES H. PERKINS, Providence, R. I. Filed Feb. 1, 1886. (No model.)



Claim.—1. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the series of forwardly-moving shoe-forming dies, the series of automatic lever-jaws carried in pairs with and adjacent to each forming-die, and a hammer whereby bent blanks or shoes carried on said forming-dies may be successively presented to said hammer and properly clamped by said jaws during the hammering operation.

2. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the circular rotative die-bed having a horizontal axis, the series of forming-dies on the periphery of said bed, the series of automatic lever-jaws carried by said bed in pairs adjacent to each die and the rotary hammer.

3. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the series of forwardly-moving shoe-forming dies, the series of automatic lever-jaws carried in pairs with and adjacent to each die, a pair of stationary pendent studs common to all of said dies, and a hammer whereby a straight blank is partially bent by each of said dies and said pair of studs, a finishing bend developed by said automatic lever-jaws, and the bent blank then delivered to the hammer and firmly clamped by said jaws during the hammering operation.

4. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the circular rotary bed on a horizontal axis, the series of shoe-forming dies on the periphery of said bed, the pair of stationary pendent studs, the series of automatic lever-jaws mounted on said bed in pairs adjacent to each die, and the rotary hammer whereby a straight blank delivered to either of the dies will be initially and finally bent, then hammered, and then released from said die when inverted by the continued rotation of said bed.

5. In a horseshoe-machine, the combination, substantially as hereinbefore described, of a series of forwardly-moving shoe-forming dies, a series of automatic lever-jaws moving in pairs with and adjacent to each forming-die, a hammer, a pair of swaging jaws or dies, and a pair of stationary bending-studs located between said swaging-jaws and the hammer, whereby a straight blank delivered to said swaging-jaws will be thickened at its ends, then initially bent by some one of the forming-dies co-operating with said studs, then finally bent by the lever-jaws co-operating with said die, and then delivered to the hammer and be firmly held by said lever-jaws during the hammering operation.

6. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the circular rotative die-bed mounted on a horizontal axis, the series of shoe-forming dies on the periphery of said bed, the stationary bending-studs, the blank-swaging jaws in front of said studs, the series of automatic jaw-levers mounted in pairs on said bed adjacent to each forming-die, and the rotary hammer.

7. In a horseshoe-machine, the combination, substantially as hereinbefore described, of a series of forwardly-moving forming-dies, a pair of pendent studs, common to all of said dies, and co-operating therewith for initially bending a blank, and a series of automatic jaw-levers moving in pairs with each of said forming-dies and co-operatiog therewith in completing the bend in a blank.

8. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the circular rotary bed mounted upon a horisontal axis, a series of shoe-forming dies on the periphery of said bed, the pair of stationary studs co-operating with all of said dies for making initial bends in blanks, and the seriees of automatic lever-jaws mounted on said bed in pairs adjacent to each forming-die and co-operating therewith for making the finishing bend in each blank carried by said forming-die.

9. In a horseshoe-machine, the combination, substantially as hereinbefore described, of a series of forwardly-moving forming-dies, a pair of swaging-dies for thickening the ends of straight blanks, a pair of stationary studs at the rear of said swaging-dies for co-operating with all of said forming-dies in making initial bends in blanks, and a series of automatic lever-jaws moving in pairs with and adjacent to each forming-die for making the finishing bend in each blank.

10. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the circular rotary bed on a horizontal axis, the series of shoe-forming dies on the periphery of said bed, the stationary studs co-operating with all of said forming-dies, the pair of swaging-jaws in front of said studs, and the series of lever-jaws mounted on said bed in pairs adjacent to and co-operating with each of said forming-dies.

11. In a horseshoe-machine embodying a series of forwardly-moving shoe-forming dies, the combination, with each of said dies, of a pair of lever-jaws moving therewith and adjacent thereto, stationary cam-plates for lifting said lever-jaws from a depressed position, stationary abutting-plates for swinging said jaws into working relations with their forming-dies, and stationary fingers for thereafter engaging with the inner ends of said jaws for throwing them away from their forming-die and permitting them to retire from their working positions.

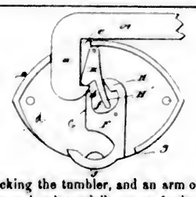
12. In a horseshoe-machine, the combination, substantially as hereinbefore described, of the rotary bed on a horizontal axis, the series of shoe-forming dies on the periphery of said bed, the series of lever-jaws mounted in pairs on said bed adjacent to each forming-die, the longitudinally-reciprocating rock-shafts on which said jaws are mounted, the stationary cam-plates for lifting said jaws and their rock-shafts, the stationary abutting-plates for swinging said lever-jaws toward their dies, and the stationary fingers for engaging with the inner ends of said jaws for throwing them away from their forming-dies and permitting them to drop on arriving at a substantially upright and vertical position during the rotation of the bed.

13. In a horseshoe-machine, the combination, with a traveling shoe-forming die, of the pair of vertically-reciprocating lever-jaws moving therewith and mounted respectively on sliding rock-shafts, a stationary cam-plate for lifting each jaw and its shaft, stationary abutting-plates for swinging the inner ends of said jaws toward the die, and stationary fingers for thereafter throwing the inner ends of said jaws outwardly and permitting them to drop below the die.

340,351. SEAL-LOCK. HENRY H. PERKINS, Las Vegas, N. Mex. Filed May 6, 1885. (Model.)

Claim.—1. In a lock, the combination, with a casing, of a pivoted tumbler, a hasp adapted to be engaged by the tumbler to lock said hasp.

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a pivoted plate for locking the tumbler, and an arm on the lower end of said plate to receive a seal, substantially as set forth.

2. In a lock, the combination, with a casing, of a pivoted tumbler having an extension, a hasp adapted to be engaged by said tumbler, a pivoted plate having a hooked finger to bear against the outer side of the tumbler-extension, and an arm on the lower end of said plate to receive the seal, substantially as set forth.

340,352. TIRE-TIGHTENER. ALONZO H. PERRY, Louisville, Ky., assignor of one-fourth to R. T. Colston, same place. Filed Jan. 23, 1886. (No model.)



Claim.—1. The combination of a tire, the lugs, an adjustable bolt, a casing which comprises two detachably-connected sections, one of which has a retaining or locking arm that fits beneath the bolt, and the other section having an extended arm that fits in an opening of the felly-section, substantially as described.

2. The combination, with a tire having the lugs and an adjusting-bolt, of a sectional casing inclosing the bolt and lugs, one section having an opening, *h*, therein, and the other section an arm, *h'*, fitting in the opening and lying flush with the other section, substantially as described.

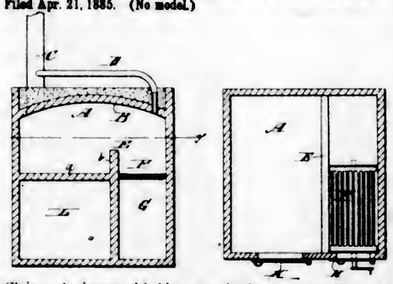
340,353. LEAD FOR SETTING STAINED GLASS. JACOB PFLEGING, New York, N. Y. Filed Feb. 16, 1886. (No model.)



Claim.—1. As a new article of manufacture, a grooved lead for setting stained glass, having a strip of stiffening material applied to it, substantially as described.

2. The lead *f*, having grooves *h h* formed in it, in combination with the stiffening-strips *e*, embedded in the lead, substantially as described.

340,354. BAKER'S OVEN. SOLOMON M. RAINES, Logansport, Ind. Filed Apr. 21, 1885. (No model.)



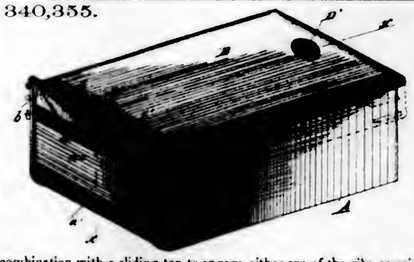
Claim.—An improved baking-oven having its grate F on a level with the bottom of the said oven, and provided with the wall E, projecting upward between the bottom and grate, and the vent-pipe D, extending from directly over the grate to the outside of the oven, and thence across the same to the chimney, substantially as herein shown and described.

340,355. HOLDER FOR ENVELOPES, &c. PAUL RABBER, Montezuma, Iowa. Filed June 8, 1885. Renewed Mar. 29, 1886. (No model.)

Claim.—1. A box composed of a sliding front, a back having its inner lower angle curved outwardly and downwardly and its bottom inclined slightly downward and outward, in combination with a follower adapted to overlie the contents of the box, and a spring situated between the top of the box and the follower and arranged to push the latter and the contents of the box downward, so that the articles adjacent to the bottom of the box will tend to move outward, aided by the inclination of the bottom, into easy position for removal, substantially as specified.

2. A box provided on its sides with two or more ribs or guides, in

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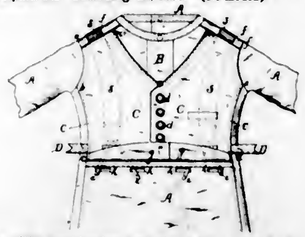


combination with a sliding top to engage either one of the ribs or guides, substantially as and for the purpose set forth.

3. In a box, the combination of the back having the curved portion *a'*, the sliding front having its lower edge curved at *b'* to correspond with the curved portion *a'*, and notched on its edge for convenience of removal of the articles within the inclined bottom, cut away at its front edge at *a³*, and means, substantially as described, for forcing the contained articles downward.

4. In an envelope or card case, the combination, with a rectangular box, A, provided with curved portion *a'*, opening *a³*, and a series of ribs or flanges, C, and an adjustable lid, B, provided with curved portions *b' b²*, and opening *b³*, adapted to engage the ribs C, of a partition or follower, D, controlled by a spring, D', and adapted to force the envelopes into position for withdrawal, substantially as described.

340,356. COMBINED SHIRT AND VEST. WILLIAM K. RANDOLPH, Philadelphia, Pa. Filed Aug. 21, 1885. (No model.)



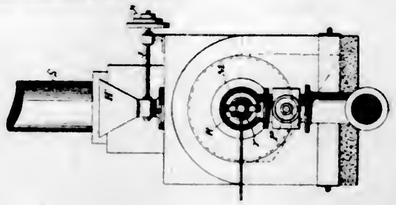
Claim.—The combination, with the ordinary shirt-body, A, having slits *f* and *h* at the shoulders and waist thereof, respectively, of the bosom B, the imitation vest-front C, of washable material, sewed to said body on the lines *a b*, *c d*, and *e f*, and to said bosom on lines *m n*, similar to the turned-over or cut-away portion of an ordinary vest, the bottom flaps *g*, covering and concealing the slits *h*, and the adjusting buckle-straps D all substantially as and for the purpose specified.

340,357. MANUFACTURING CEMENT, &c. FREDERICK RANSOME, Lower Norwood, County of Surrey, England. Filed Jan. 18, 1886. (No model.) Patented in England May 2, 1885, No. 5,442.

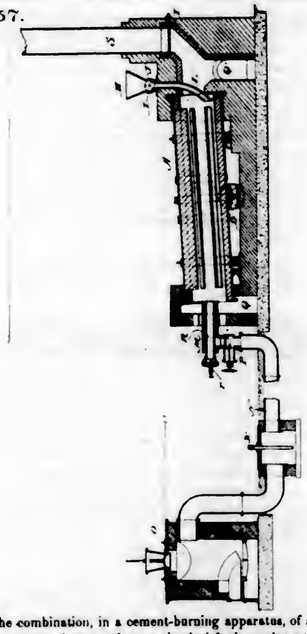
Claim.—1. The process herein described of manufacturing cements, &c., which consists in first reducing the cement material to a powder and then burning the same in a suitable furnace by keeping it in a continuous movement therein while exposed to the flame produced by introducing into said furnace gas produced in a separate chamber distinct from the furnace, and mixing with said gas after it has left the gas-producer a suitable amount of oxygen, substantially as described.

2. The process herein described of manufacturing cements, &c., which consists in first reducing the cement material to a powder and then burning the same in a revolving chamber while exposed to the flame produced by introducing into said chamber gas made in a separate producer distinct from the furnace, and mixing with said gas after it has left the gas-producer a suitable amount of oxygen, substantially as described.

3. The combination, in a cement-burning apparatus, of a revolving cylinder, a gas-producer, and a trap between said gas-producer and cylinder, substantially as described.



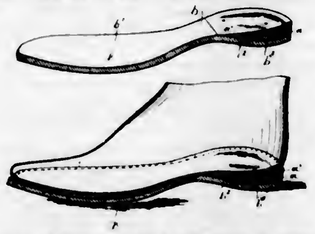
340,357.



4. The combination, in a cement-burning apparatus, of a revolving cylinder, a gas-producer, and a mechanical feeder, substantially as described.

5. The combination, in a cement-burning apparatus, of a revolving cylinder, a gas-producer, and a gas-pipe connecting said producer with the revolving cylinder, and an air-tube passing through said gas-pipe to supply the same with oxygen, whereby the air is heated by the gas and the two are mixed in the revolving cylinder, substantially as described.

340,358. BOOT OR SHOE SOLE. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed Jan. 14, 1886. (No model.)



Claim.—As an improved article of manufacture, an outsole, B, having a spring-heel blank, A, comprising the lifts *a a'*, shaped substantially as described, and attached to the upper section of the heel-section *b²* by metal fastenings, cement, or other means, and before the outsole is attached to the insole, substantially as described.

340,359. CIGAR-PRESS. ADAM REIN, Hamilton, Ohio. Filed Oct. 23, 1885. (No model.)



Claim.—1. In a cigar-press, the combination of a base-piece provided with upwardly-projecting fixed supports for the upper plate of a cigar-mold, a clamp for securing the upper plate of the cigar-mold firmly to such supports, an upwardly-facing reciprocating plunger adapted to receive the lower plate of a cigar-mold, projections above the plunger adapted for engaging above and pulling downwardly upon the lower plate of a cigar-mold, and mechanism for imparting vertical reciprocations to the plunger, substantially as and for the purpose set forth.

2. In a cigar-press, the combination of a base-piece, housings rising from the ends thereof, a clamp at the top of the housings, inwardly-projecting ribs at the housings below the clamp, a plunger sliding vertically within the base-piece, flanges projecting upward at the ends of the plunger, ribs projecting from the flanges, a shaft journaled in the base-piece and provided with cams engaging the plunger, and hand-lever mechanism for rotating the shaft, substantially as and for the purpose set forth.

3. In a cigar-press, the combination of a base-piece, housings projecting upwardly therefrom, supports for the upper plate of a cigar-mold projecting inwardly from the housings, a clamp for securing such mold-plate firmly to its support, a plunger sliding vertically within the base-piece, projections upwardly from the plunger adapted to engage above the lower plate of a cigar-mold, an adjustable gage upon the plunger to regulate the inner position of the lower plate of a cigar-mold, and mechanism for reciprocating the plunger, substantially as and for the purpose set forth.

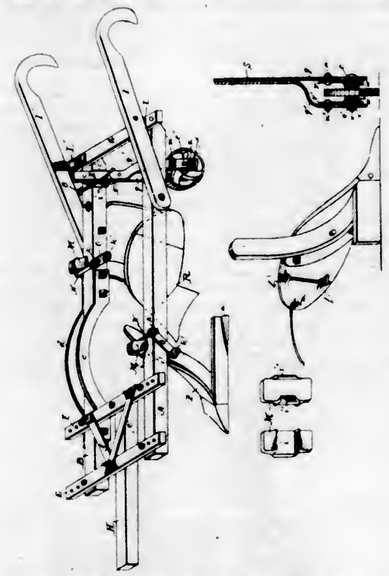
4. In a cigar-press, the combination of base C, housings D, projecting upwardly and fitted to receive the upper plate of a cigar-mold, plunger G, provided with flanges K, fitting within panels in the housings and presenting their inner faces flush with the inner faces of the housings, and provided with projections to engage over the lower plate of a cigar-mold, and mechanism for reciprocating the plunger, substantially as and for the purpose set forth.

5. In a cigar-press, the combination of base C, housings D, adapted to receive the upper plate of a cigar-mold, plunger G, finger-slots N, and mechanism for reciprocating the plunger, substantially as and for the purpose set forth.

6. In a cigar-press, the combination of base-piece C, housings D, adapted to receive the upper plate of a cigar-mold, plunger G, flanges K, guide-ribs O, engaging slots in the housings, and mechanism for reciprocating the plunger, substantially as and for the purpose set forth.

7. In a cigar-press, the combination of base-piece C, housings D, ribs E, clamp F, plunger G, flanges K, ribs L, eccentric-shaft H, and hand-lever mechanism J, substantially as and for the purpose set forth.

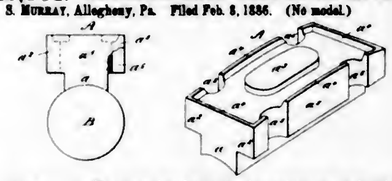
340,360. PLOW. GEORGE B. REESE, Hobson Solms, La. Filed Nov. 24, 1885. (No model.)



Claim.—1. The combination, in a ridging-plow, of the beam A, central arched beam, B, the adjustable cross-bars having a tongue secured thereto, forward plow, P, the rear plow, R, having a mold-board with a hinged section and an adjusting-rod, substantially as shown and described.

2. The combination of the beam A, arched beam B, adjustable cross-bars E F G, and draft-tongue H, the plow P, rear plow, R, with hinged mold-board, and a gage-wheel adapted to be secured to the rear part of the frame or beams, substantially as described, and for the purpose set forth.

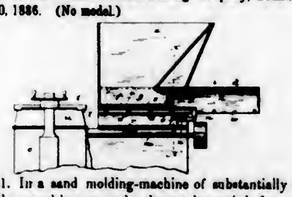
340,361. CAR-AXLE-BOX BRASS. DANIEL REYNOLDS and JOSEPH S. MURRAY, Allegheny, Pa. Filed Feb. 8, 1886. (No model.)



Claim.—1. The brass bearing A for journal-boxes, made with a narrow portion, *a*, adapted to the journal, and with a broad top providing sides a^3 a^3, overhanging part *a*, and having vertical notches or oil-passages a^4, substantially as and for the purposes herein set forth.

2. The brass bearing A for journal-boxes, made with a narrow portion, *a*, adapted to the journal, and with a broad top providing sides a^3 a^3, overhanging part *a*, and having vertical notches or oil-passages a^3, and the top of the brass A made convexed lengthwise and recessed to provide a central bearing, a^5, and an edge rim or flange, a^4, substantially as and for the purposes set forth.

340,362. SAND MOLDING-MACHINE. ARTHUR REE, New Albany, Ind., assignor to the Peerless Manufacturing Company, Louisville, Ky. Filed Jan. 20, 1886. (No model.)



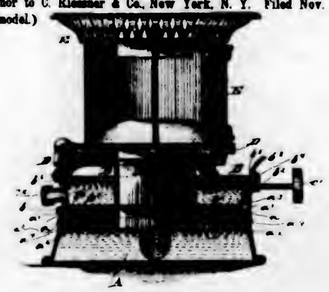
Claim.—1. In a sand molding-machine of substantially the construction set forth, a sand-hopper and a drawer beneath it for conveying a charge of sand from the hopper to the flask to be filled, combined with means for moving such drawer when filled from the hopper to the flask and returning it to the hopper when its charge has been deposited in the flask, the same consisting of the return-screw *m*, the traveler *o*, arranged in suitable guides on the frame of the machine and engaging the thread of the return-screw to be traversed back and forth therein, and the rod *n*, connecting the traveler and drawer to transmit the motion of the return-screw through the traveler to the drawer, substantially as and for the purpose specified.

2. In a sand molding-machine, a sand-hopper, a sand-drawer arranged therein, means to move it to carry the charge of sand to the flask, and a movable bottom for said drawer supported on holders attached to the drawer, and guards secured to the sides of the drawer and covering the space between the drawer and its bottom, combined substantially as described.

3. In a sand molding-machine, a sand-hopper provided with a movable drawer, an independently-movable bottom for said drawer, and a return-screw, combined with a traveler, and a slotted rod connecting the traveler and bottom, and a stop connecting the drawer and bottom, substantially as and for the purpose described.

4. The combination, in a sand molding-machine, of a flask to receive the charge of sand, and a binder to cover the flask while molding or compressing the sand, and projections *t'*, interposed between the flask and binder, to separate the two sufficiently to vent the flask while the compression of the sand is going on, substantially as described.

340,363. OIL-STOVE. CHRISTOPHER RIESSNER, Washington, D. C., assignor to C. Riessner & Co., New York, N. Y. Filed Nov. 25, 1885. (No model.)



Claim.—1. The combination, in a stove, of the oil-chamber A, having the shoulder *a'*, the depending portion a^4, the circumferential recess a^3, and the flange a^2, formed at its upper end by bending the upper portion of its body, and the water-pan B, hinged at *b* on the oil-chamber, and provided on its bottom with the depending flange *b'*, to enter the oil-chamber and bind on the part a^4, substantially as specified.

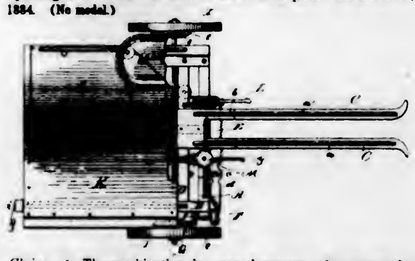
2. The herein-described oil-stove, composed of the oil-chamber A, provided with the shoulder *a'*, recess a^3, depending part a^4, the water-pan B, hinged at *b* upon the oil-pan, provided with the discharge-tube c^3, and on its bottom with the depending flange *b'*, the spring-catch b^3 opposite the hinge *b*, the wick-tubes C, passing through and secured to the water-pan, the frame D, resting upon the water-pan, and the stove-body E, hinged to said frame, all constructed substantially as and for the purpose specified.

340,364. HARVESTER-SICKLE. JOHN A. RITTER, Jr., and WILLIAM VAN RITTER, West Baden, Ind. Filed May 4, 1885. (No model.)



Claim.—The herein-described endless sickle, composed of the knives and connecting-links, arranged alternately, consisting each of a single piece of metal provided at one end thereof with the upwardly and outwardly projecting lugs, arranged as described, and at the other with a suitable aperture, to adapt the knives and links to be hinged or connected together to form an endless chain of knives, as described.

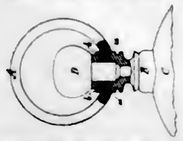
340,365. CORN-HARVESTER. HARRISON ROBERTS, Brandenburg, Ky., assignor of one-third to James A. Harris, same place. Filed Feb. 14, 1884. (No model.)



Claim.—1. The combination, in a corn-harvester, of a rectangular supporting-frame, main axle bearing transversely therein and provided with the carrying-wheels, a stationary and pivoted platform, J K, secured in an inclined converging position in the said main frame at the rear of the shaft, detent devices located on the front of said frame and connected to the pivoted platform by a cord or cable, parallel bars C C, extending forward from the center of the frame, a horizontal saw or cutter-bar located in transverse guides at the rear of the bars C C, and devices located in the front of the frame for reciprocating said cutter-bar, substantially as set forth.

2. The combination, in a corn-harvesting machine, of a main frame mounted upon the shaft and carrying wheels, inclined stationary and pivoted platforms secured at their upper ends to each side of the frame and converging downwardly to the center of the frame, lever and detent devices located on the front of the frame and connected to the pivoted platform by a cord and cable, a transverse horizontal saw or cutter-bar, and parallel guide-bars C C, located centrally on the front of the frame, devices for operating said saw, and a vertical shaft bearing at the front of the frame and provided with a series of radial arms, and devices actuated from the axle for revolving said arms above the cutter-bar, substantially as set forth.

340,366. WATCH-CASE PENDANT AND BOW. THEODULE ROBIN, Hyde Park, assignor, by mesne assignments, to himself and JAMES A. MAILLOUX, Boston, Mass. Filed Nov. 30, 1885. (No model.)



Claim.—The pendant-bow provided with a right-threaded screw on one of the parts to enter the stem, and a left-threaded screw on the other of such parts, in combination with the carrier or stem having its pendant-receiving holes screw-grooved to engage with such right and left threaded screws, all being substantially as set forth.

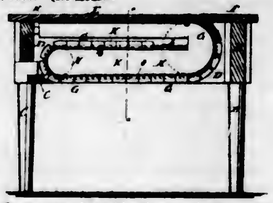
340,367. ANIMAL-POKE. DAVID R. SAUNDERS and JOHN E. WELDON, Leesburg, Ky. Filed Jan. 29, 1886. (No model.)



Claim.—1. In an animal-poke, the combination of a cross-bar secured to a yoke and having a reduced central portion formed with shoulders at its ends, a poke-bar having a bearing for the said reduced portion, and U-shaped guards secured to the sides of the poke-bar at the bearing, having their upper curved portions bearing against the shoulders of the cross-bar, and having their lower ends connected by transverse bolts, as and for the purpose shown and set forth.

2. In an animal-poke, the combination of a cross-bar having transverse bolts in recesses at its ends, and having the poke-bar rocking upon its middle, metallic strips having their doubled portions passed around the bolts, and having their upper portions united, and yoke-straps of leather having their lower portions passed around the doubled portions of the metallic strips and riveted to the same, and having their other ends united by a buckle, as and for the purpose shown and set forth.

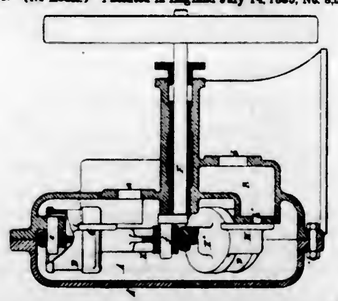
340,368. EXTENSION-TABLE. GEORGE SCHMITT, New York, N. Y. Filed Jan. 5, 1886. (No model.)



Claim.—1. In an extension-table, the combination, with the frame A B C, the stationary parts E F of the table-top, the connected slats G, and the extension-slides H I J, of the side plates, D, attached to the end and center frames, the slotted side boards, K, having rounded ends and rabbeted edges, the metallic straps L, attached to the projecting parts of the said rabbeted edges, and the metallic tongues M, attached to the grooved inner sides of the said connected slats, substantially as herein shown and described, whereby the table can be closed into a small space and opened to any desired extent, as set forth.

2. In an extension-table, the combination, with the side plates, D, attached to the end and center frames, B C, the slotted and recessed side boards, K, having rounded ends and rabbeted edges, and provided with a metallic guide-strap, L, and the connected slats G, provided with metallic tongues M, of the friction-wheels N, pivoted to the said side plates, substantially as herein shown and described, whereby the said connected slats will be made to pass easily around the rounded edges of the said side boards, as set forth.

340,369. FLUID-PRESSURE ENGINE. WILLIAM A. G. SCHÖNHEYDER, Shepherd's Bush, County of Middlesex, England. Filed Dec. 14, 1885. (No model.) Patented in England July 14, 1885, No. 8,543.



Claim.—1. In a fluid-pressure engine, the combination, with a closed casing, of a central crank-shaft journaled therein, three or more cylinders and pistons pivotally mounted within said casing and connected with the single crank by a bushed bearing, and facing plates carried by arms oscillated by each cylinder, said plates having openings which register alternately with prime and exhaust openings in the casing, substantially as described.

2. In a fluid-pressure engine, the combination, with a closed casing, of a shaft having a crank within the casing, three or more cylinders and pistons mounted on pivots of oscillation around the crank and each connected therewith, and facing plates carried by arms oscillated by the said cylinders and pistons and covering and uncovering entrance and discharge ports in said casing, one of said oscillating arms on each cylinder being provided with a passage to and from the cylinder, substantially as described.

3. In a fluid-pressure engine, the combination, with a closed casing having prime and exhaust ports, of a crank-shaft, three or more cylinders mounted on pivots of oscillation around the crank within said casing and each having a piston connected with said crank, facing plates mounted upon bearings on the wall of the casing and having peripheral gearing meshing with a central gear controlled from outside, and a hollow arm leading to and from each cylinder and provided with a mouth which is adapted to be opened and closed by the oscillation of the piston upon facing piece, each of the latter being provided with a discharge-opening and an edge, k^3, substantially as described.

340,370. ILLUMINATING TILE-PLATE. WILLIAM A. SCHREIBER, Cincinnati, Ohio, assignor to the L. Schreiber & Sons Company, same place. Filed Dec. 19, 1885. (No model.)

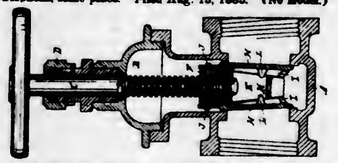


Claim.—1. In combination with the plate A, provided with the lens-apertures, the rim C, secured thereto by rivets and provided with a same-sized aperture, and the conical lens B, having its lower portion of of larger diameter than the openings in plate A and rim C, and secured between the plate and rim, substantially as specified.

2. In combination with the plate A, pierced with lens-apertures, the cup C, formed from plate metal and with converging sides, as described, and the curved lip *c* and conical lens B, secured under the apertures in the plate by riveting the rim to the plate, substantially as specified.

3. In combination with the plate A, pierced with lens-apertures and bent in a curved form, the rims C, stamped from plate metal, and provided with a lens-aperture and secured to the curved plate A and holding the lenses B in their seats, substantially as specified.

340,371. GATE-VALVE. WILLIAM SCOTT, Detroit, Mich., assignor to Rue Stephens, same place. Filed Aug. 13, 1885. (No model.)

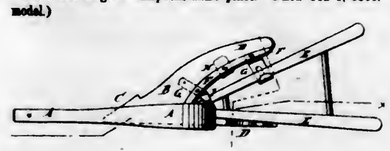


Claim.—1. In a gate-valve, as described, the combination, with the bifurcated wedge having ledges M upon the inner surface, of the disks H, loosely hung upon the said wedge and having studs L, arranged to engage said ledges, and the whole arranged to serve with a stem and case, as set forth.

2. In a gate-valve operated by a screw-stem, the combination of a shell with two disks having loops K and studs L, and a bifurcated wedge, E, having lugs J and ledges M, substantially as and for the purpose described.

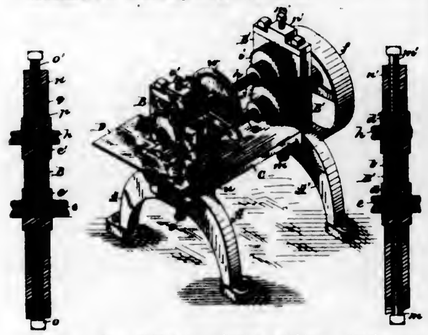
3. In a gate-valve, the combination of a shell with disks having loops and studs and rear inclined projections, and a bifurcated wedge having ledges, as M, and having a hub which has lugs projecting therefrom, the parts being constructed and operating substantially as and for the purpose specified.

340,372. PLOW. WELLINGTON SHAVER, Madison, N. Y., assignor to himself and Eugene Campbell, same place. Filed Oct. 5, 1885. (No model.)



Claim.—In a plow, the combination, with the beam, the mold-board and the handle, of the extension-plate, the adjustable braces, one brace connected to the mold-board, and the extension-plate being intermediately offset between its points of connection with the extension-plate and mold-board, and turned inward and bearing at its upper end against the beam, the other brace being connected to the extension-plate and adjustably to the handle, and the clip or clasp connected to the extension-plate and overlapping the mold-board and bearing against the inner side of the mold-board, substantially as and for the purpose set forth.

340,373. PINKING OR SCALLOPING MACHINE. ELIJAH SHAW, Milwaukee, Wis. Filed July 1, 1885. (No model.)



Claim.—1. In a pinking or scalloping machine, a circular corrugated knife, *k*, rigid on and rotating with shaft *h*, and shaft *h*, in combination with cylinder *g*, rigid on and rotating with shaft *e*, and a supporting-frame in which said shafts have their bearings, one of said shafts being rotated by power supplied directly from the power-supplying mechanism, and the other shaft being rotated by power received from the first shaft by and through pinions on each shaft gearing with each other or equivalent means, substantially as described.

2. The corrugated knife-edged disk *k*, centrally rigid on shaft *h*, shaft *h*, provided with toothed wheel *i*, and having journal-bearings in the vertically-moving blocks *c'* and *d'*, and the cylinder *g*, centrally rigid on the shaft *e*, shaft *e*, provided with toothed wheel *j*, meshing with wheel *i*, and driving-wheel *f*, and having journal-bearings in vertically-moving blocks *c* and *d*, in combination with the supporting-frame consisting of the legs A A', the plate C, and the upright standards B and B', in which standards said journal-blocks are supported and move, all substantially as and for the purpose set forth.

3. In a pinking or scalloping machine, the circular knife-carrying shaft *h* and its vertically-moving journal-block *c'*, in combination with the set-screw *o'* and the spiral spring *p*, interposed between the set screw and the journal-block *c'*, substantially as and for the purpose described.

4. In a pinking or scalloping machine having a circular rotating knife, the knife-carrying shaft *h* and its vertically-moving journal-block *c'*, in combination with the set-screw *o'*, the spiral spring *p*, interposed between the set-screw *o'* and the journal-block *c'*, the lever *r*, centrally pivoted and supported on the frame and having its short arm resting against the shaft *h* on its under side, and the supporting-frame, all substantially as set forth.

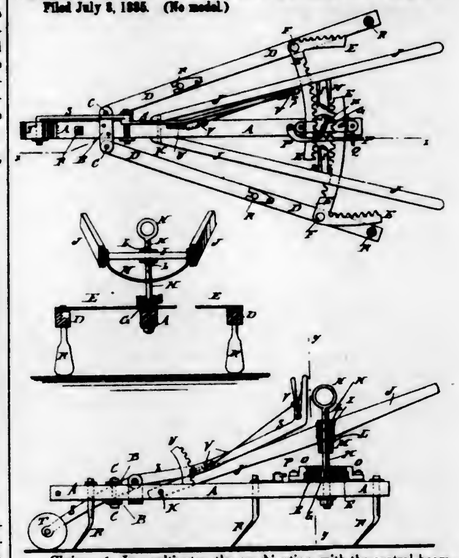
5. In a pinking or scalloping machine, the combination of the rotating knife *k*, the bearing-cylinder *g*, and the apron D, said apron being provided with the guide *v* and an aperture for the cylinder *g*, and being adjustable horizontally at right angles to the plane of motion of the knife *k*, all supported on the frame, substantially as and for the purpose set forth.

340,374. RUBBER BOOT OR SHOE. FREDERICK M. SHEPARD, East Orange, New Jersey. Filed Feb. 16, 1886. (No model.)



Claim.—A rubber boot or shoe having a narrow rubber band or strip extending across the upper on the outside of the same, the ends of said band or strip being fastened to the sole on each side of the boot or shoe, substantially as and for the purposes set forth.

340,375. CULTIVATOR. NORRIS H. SHEPARDSON, West Halifax, Vt. Filed July 8, 1885. (No model.)



Claim.—1. In a cultivator, the combination, with the central beam, A, the hinged side beams, D, and the cross-bar and handles I J, of the angular rack-bars E, having unequal arms, the pinion-wheel G, engaging with the said rack-bars, and the shaft H, carrying the said pinion-wheel, substantially as herein shown and described, whereby the said cultivator can be readily expanded and contracted, as set forth.

2. The combination, with the main beam and the hinged side beams of a cultivator, of the angular rack-bars pivoted at their angles to the side beams, and having long and short toothed arms, and a pinion on the main beam for operating the long or short toothed arms of the said rack-bars, substantially as set forth.

3. In a cultivator, the combination with the main beam and the side beams, of the angular rack-bars having teeth on both arms and pivoted at their angles to the side beams, a pinion on the main beam for operating the rack-bars, and a locking-lever engaging the pinion to prevent its rotation, substantially as set forth.

4. The combination, with the main beam having a keeper, O, on its rear end, a pinion journaled within the keeper, and the side beams hinged to the forward end of the main beam, of the angular rack-bars, each having one toothed arm passed through the keeper on opposite sides of and in engagement with the pinion, the swiveled lever P, having teeth for locking the pinion and a catch for engaging the free end of the said lever, substantially as set forth.

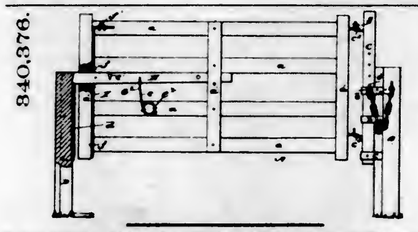
5. The combination, with the main beam having the vertical shaft H, journaled on its rear end, and the pinion G on the shaft, of the side beams having the pivoted angular rack-bars E, the handles J, pivoted at their forward ends to the beam A, and the apertured cross-beam I on the shaft H and connecting the handles, the beam I being vertically adjustable on the shaft for adjusting the height of the handles, substantially as set forth.

6. The combination, with the main beam and side beams hinged thereto, and provided with pivoted angular rack-bars E, of the vertical apertured shaft H on the beam A, the pinion G, meshing with the angular rack-bars, the handles J, pivoted to the main beam, the apertured cross-bar I on the shaft H, pins L in the apertures of shaft H, and the curved brace M, having a central aperture, through which the shaft H passes, and secured at its ends to the cross-bar I, substantially as set forth.

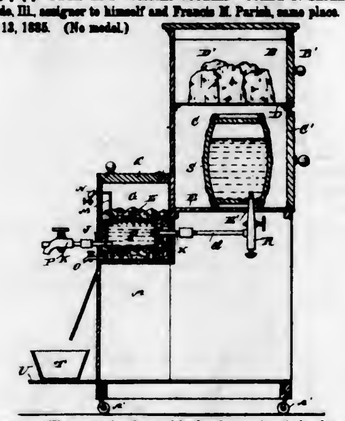
340,376. FARM-GATE. GEORGE SHIER, Bangor, Mich. Filed Jan. 29, 1886. (No model.)

Claim.—As an improvement in swinging gates, the combination of the following elements, to wit: a hinge-post, B, having the straps *b*, a perforated adjustable upright, C, having the guiding-strap *c* at its lower end loosely encircling the reduced portion of the post, a pin, *c'*, confined to the post B by a cord or chain, a gate, A, the hinges c^2 c^3, the latch-post D, having the battens and the serrated face, a sliding latch, E, arranged between and supported by the uprights of the gate, and a spring, E, having the coil e^2 secured to the gate, and an arm, e^3, connected to the latch, the whole combined and arranged substantially as described.

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340,377. BEER AND WATER COOLER. JOSEPH F. SHOMATE, El Dorado, Ill., assignor to himself and Francis M. Parish, same place. Filed July 13, 1885. (No model.)



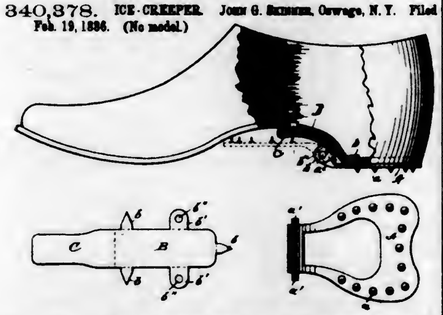
Claim.—1. The combination, with the frame A, of the box C for receiving a barrel, keg, or other receptacle, the box G, the cylinder F in the same, and a pipe for conducting the liquid from the barrel into the cylinder, and a pipe for drawing the liquid from the cylinder, substantially as herein shown and described.

2. The combination, with the frame A, of the box C for receiving a keg or other receptacle, the box G, the cylinder F in the same, a tube connecting the cylinder with the keg, the tube J, projecting from the cylinder, and the faucet P, the tube M, projecting from the cylinder, and the cock or faucet N on the front or outer end of the same, substantially as herein shown and described.

3. The combination, with the frame A, of the box C for receiving a keg or other receptacle, the box G, the cylinder F in the same, the spigot R, the tubes K Q, connecting the same with the cylinder F, the tube J, projecting from the front of the cylinder, the faucet P, the tube M, projecting from the cylinder, the cock or faucet N on the same, and the faucet or cock O for drawing water from the box G, substantially as herein shown and described.

4. The combination, with the frame A, of the box C, the ice chamber or box B above it, the box G in front of and below the box C, the cylinder F in the box G, tubes for connecting the cylinder F with a keg in the box C, and of a tube and faucet for drawing the liquid from the cylinder F, substantially as herein shown and described.

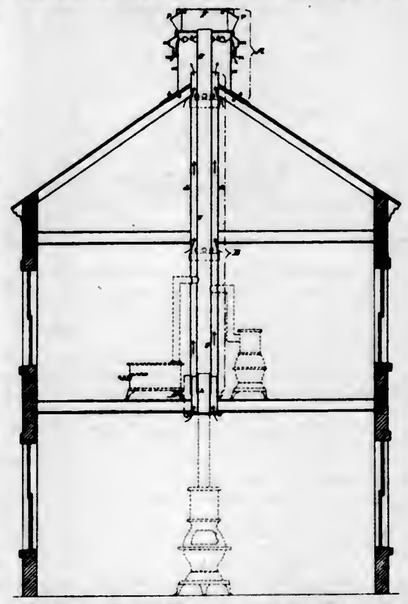
340,378. ICE-CREEPER. JOHN G. SKINNER, Oswego, N. Y. Filed Feb. 19, 1886. (No model.)



Claim.—1. An ice-creeper consisting of a fastening-plate and a spring formed from a single blank and a sparred heel-plate, one end of the heel-plate being journaled in ears on the fastening-plate and resting on the free end of the spring, substantially as described, and for the purpose set forth.

2. The combination, with a fastening-plate and a spring formed from a single blank, the said fastening-plate having prongs adapted to be passed through the bottom of the shoe and clinched on the inside, of a heel-plate journaled in ears on the fastening-plate, the journaled end of the heel-plate being bent upwardly and resting on the free end of the spring, substantially as described.

340,379. COMBINED CHIMNEY AND VENTILATOR. SAMUEL W SKIPWORTH, Blue Mound, Kans. Filed Jan. 23, 1886. (No model.)



Claim.—1. The combination, in a combined chimney and ventilator, of the following elements, namely: the top section, A, consisting of a casing, *a*, the roof-plate *b*, and the smoke-flue *g*, secured to the top of the casing, the intermediate section, B, having a roof-plate, *e*, and tube *d*, inclosing the flue *g*, and the lower section, D, having two tubes, *f* and *h*, forming a telescopic joint with the tube *d* and flue *g*, all substantially as specified.

2. The combination of the top section, A, of the ventilator, consisting of a casing, *a*, and roof-plate *b*, the section B, consisting of a tube, *d*, with roof-plate *e*, and the smoke-flue *g*, secured to the top of said upper section and projecting down through the tube *d*, all substantially as specified.

3. The combination of the top section of a ventilator and the smoke-flue *g* with the arched hood F and the inclined deflectors *p* at the ends of the same, all substantially as specified.

4. The combination of the top section, A, and its smoke-flue *g* with the arched hood F, having at its ends inclined deflectors *p*, forming contracted air-passages immediately beneath the hood, all substantially as specified.

340,380. CIGAR-BUNCHING MACHINE. FREDERICK C. SMALSTIG, Allegheny City, Pa. Filed Dec. 19, 1885. (No model.)

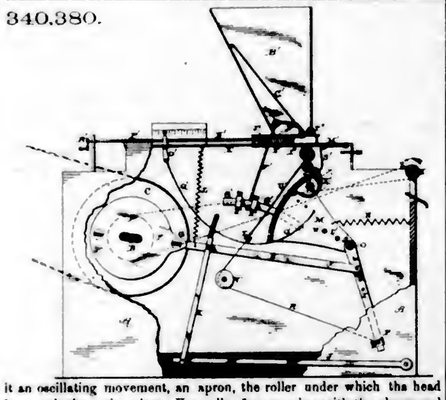
Claim.—1. The combination, in a bunching-machine, of a movable head, the connecting-rod H, the operating-shaft provided with means for moving the connecting-rod and head, the treadle for bringing the connecting-rod into operation, a spring for returning the rod to position, and a second spring for returning the head to place, substantially as described.

2. The combination of the movable head, the apron, the take-up lever, the guiding-pulleys, the connecting-rod H, the operating-shaft provided with means for moving the rod and the head, the treadle, and springs for returning the rod and the head to position, substantially as set forth.

3. In a cigar-bunching machine, the combination of the head N, a mechanism for operating it, the apron connected directly to one end of the head, the rollers W T', and the curved spring-clamp X, having a recess in its end, so as to receive the bunch, substantially as described.

4. The combination of the movable head, devices for imparting to

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it an oscillating movement, an apron, the roller under which the head is moved, the spring-clamp X, a roller for engaging with the clamp and discharging the bunch, and a means for operating the roller, substantially as shown.

5. The combination of the movable head, a mechanism for imparting to it an oscillating movement, the apron, the guiding-roller V, the flexible connection R, the take-up lever I, and connecting-rod H, the take-up lever being made longer than the head and to move a greater distance, substantially as described.

6. The combination of the movable head, a mechanism for reciprocating it, the apron, and a suitable guiding-pulley, V, with a pivoted arm or lever which is connected to the head, the connecting-rod, a cut-off, and an ejector placed in the hopper, substantially as set forth.

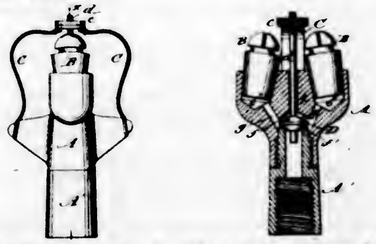
7. The combination of the hopper, the ejector placed therein, the movable back connected to the ejector and moved thereby, devices for connecting the ejector to the head, the sliding knife, a spring-actuated rod for operating the knife, a cord for connecting the rod to the head, the head, and a mechanism for operating it, substantially as specified

8. The combination of the head, a mechanism for moving it, the apron, the hopper, the ejector placed in the hopper and operated by the head, the cut-off, a mechanism for moving it, and the depositor provided with an arm which is moved by the head, substantially as shown.

9. The head N, formed of two adjustable side pieces provided with flanges upon their inner sides, in combination with means for holding the heads in contact with the top, substantially as set forth.

10. The combination of the head, a mechanism for moving it, a flexible connection, Q', the spring-actuated rod N', clamp O', connected thereto, the knife J', the slide L', the hopper, the ejector placed inside of the hopper, and a set-screw, R', for limiting the movement of the slide, substantially as specified.

340,381. AUTOMATIC CUT-OFF FOR GAS-BURNERS. THOMAS J. L. SHELEY and CHARLES H. STOMBS, San Francisco, Cal. Filed Aug. 13, 1885. (No model.)



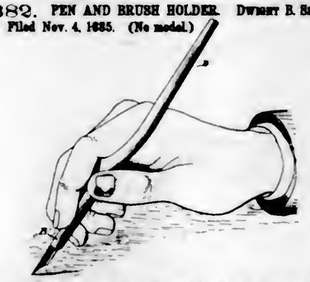
Claim.—1. The combination, with a gas-burner, of a valve fitted loosely in the same and provided with a stem projecting upward through the burner, and thermostatic fingers secured to the burner and extending upward and engaging the valve-stem, substantially as shown and described.

2. The combination, with a gas-burner, of a valve fitted loosely in the same and provided with a headed stem projecting upward through the burner, and thermostatic fingers secured to the burner and projecting under the head of said stem, substantially as herein shown and described.

3. The combination, with the burner provided with one or more passages, *g*, and the seats *f f'*, of the double-faced valve D, provided with the stem *d*, projecting through the burner, and the thermostatic fingers C, engaging the valve-stem, substantially herein shown and described.

4. In combination with the burner-body, its independent reverse or double faced valve D, and valve-seats *f f'*, the valve-stem *d*, provided with an adjustable head or nut, *c*, and the thermostatic fingers or springs C, essentially as specified.

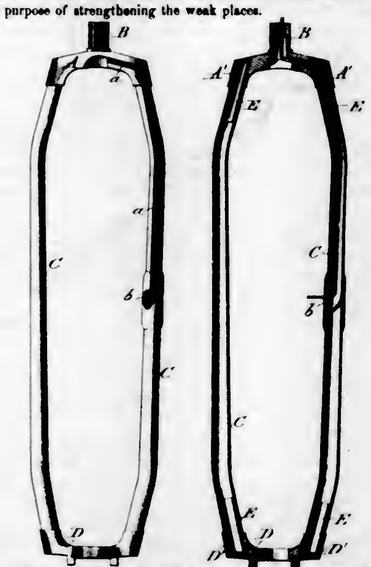
340,382. PEN AND BRUSH HOLDER. DWIGHT B. SMITH, Vevay, Ind. Filed Nov. 4, 1885. (No model.)



Claim.—A pen or brush holder consisting of a lower straight portion, a shoulder formed by a laterally-projecting slightly-curved horn, and an upper straight portion slightly bent to one side at its lower end, and thereupon passing upward parallel to the lower portion, as and for the purpose shown and set forth.

340,383. FLIER. JOHN A. V. SMITH, Manchester, N. H. Filed Feb. 12, 1886. (No model.)

Brief.—The tubular arms are secured in the shoulder and bottom pieces, as usual. Within the ends of the arms are inserted bushings for the purpose of strengthening the weak places.



Claim.—1. The combination, with the upper shoulder and the bottom piece of a flier, of tubular arms secured to said shoulder and bottom pieces, and bushings secured within the extremities of the arms for the purpose of strengthening them, substantially as described.

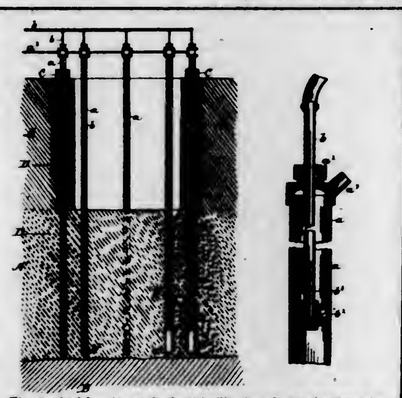
2. The combination of the upper shoulder having sockets for the arms, the bottom piece likewise having sockets for the arms, the connecting tubular arms having their lower extremities enlarged, and the interior strengthening-bushings for the arms, substantially as described.

3. The combination of the upper shoulder-piece, A, having sockets A' A', bottom piece, D, having sockets D' D', arms C C, whose extremities are secured within the sockets, and the bushings E, secured within the extremities of the arms, substantially as herein specified and shown.

340,384. METHOD OF SINKING SHAFTS THROUGH QUICKSAND. WILLIAM S. SMITH, Chicago, Ill. Filed Mar. 10, 1886. (No model.)

Claim.—1. The method herein set forth of facilitating the making of excavations through water-bearing strata, which consists in inserting pipes into the earth, sending a freezing medium through said pipes until a sufficient area around said pipes has been frozen, and afterward conducting a thawing medium through a certain portion of said pipes, substantially as and for the purpose described.

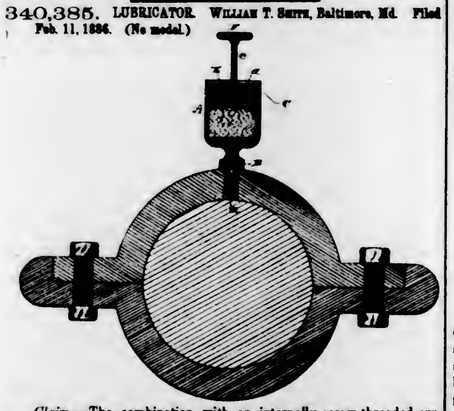
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2. The method herein set forth of facilitating the production of excavations, which consists in inserting an outer row of freezing-pipes into the earth and an inner row of thawing-pipes, sending first a current of freezing-fluid in the outer row, to consolidate water-bearing strata, and afterward sending a warm current through the inner row, thawing the earth contained within the outer row, substantially as and for the purpose described.

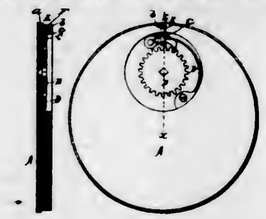
3. The method herein set forth of facilitating the making of excavations through firm and loose strata, which consists in protecting the ground to be excavated through the firm stratum against the effects thereon of freezing-pipes by inclosing a portion of said pipes in non-conducting shields or piles and driving them, with the freezing-pipes, through said stratum into the loose stratum to the depth desired, and passing a freezing medium through said pipes, substantially as and for the purpose described.

340,385. LUBRICATOR. WILLIAM T. SMITH, Baltimore, Md. Filed Feb. 11, 1886. (No model.)



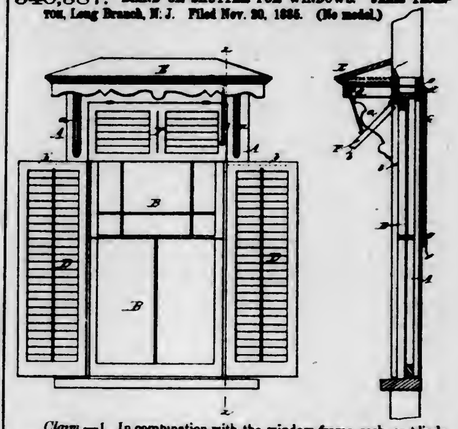
Claim.—The combination, with an internally screw-threaded cup having a screw-tap for attaching it to a bearing, and having an internal screw-thread extending from top to bottom, of a concave-faced plunger located wholly within the cup, and having a threaded periphery and a reduced operating-stem formed on the upper surface of said plunger integral therewith, substantially as set forth.

340,386. DEVICE FOR LETTING DOWN THE MAINSPRINGS OF WATCHES. RYLAND L. TAFT, Springfield, Ill., assignor to the Illinois Watch Company, same place. Filed Jan. 9, 1886. (No model.)



Claim.—The combination, with the notched and recessed pillar-plate, of the ratchet-wheel B, spring-pressed pawl C, and the pin E, having the recesses *b c* in its upper face, substantially as specified.

340,387. BLIND OR SHUTTER FOR WINDOWS. JAMES THOMPSON, Long Branch, N. J. Filed Nov. 20, 1885. (No model.)



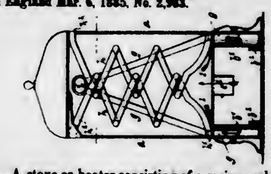
Claim.—1. In combination with the window-frame, sash, or blinds, a transom blind or shutter hung above or over the blinds D D, and connected with the interior of the apartment by a chain, so that it can be operated and adjusted from the interior without opening the window, substantially as specified.

2. The combination of the window-frame provided with the opening *e*, the sash, the transom-blind, the chain, and the pulleys, substantially as specified.

3. The combination of the hood E with the transom-blind, connected with the window in the manner described, substantially as specified.

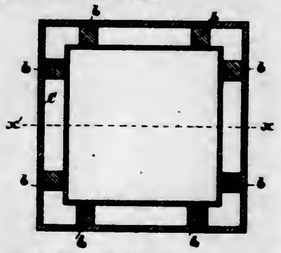
4. The combination of the hood E, transom-blind F, pulleys *d d'*, chain G, and window-frame provided with opening *e*, substantially as specified.

340,388. GAS OR OIL BURNING STOVE. CHARLES TOOPS, London, County of Middlesex, England. Filed Aug. 27, 1885. (No model.) Patented in England Mar. 6, 1885, No. 2,983.



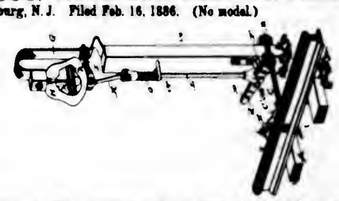
Claim.—A stove or heater consisting of a casing and having a lamp or heating chamber at the lower part separated from the main body by a partition furnished with an inclosure for the lamp or supply of heat, an aperture to allow the ascent of the hot-current tubes or tubular legs beneath said partition, communicating with openings in said partition fixed dipping into said tubes or tubular legs, and air-circulating tubes traversing the stove, substantially as set forth.

340,389. PROCESS OF PRESERVING FRUIT. JOHN F. TORRANCE, Montreal, Quebec, Canada. Filed Mar. 15, 1886. (No model.) Patented in Canada Feb. 13, 1886, No. 23,409.



Claim.—The method of preserving fruit and other substances, as herein described, which consists in surrounding the same with infusorial or foraminiferous earth, substantially as set forth.

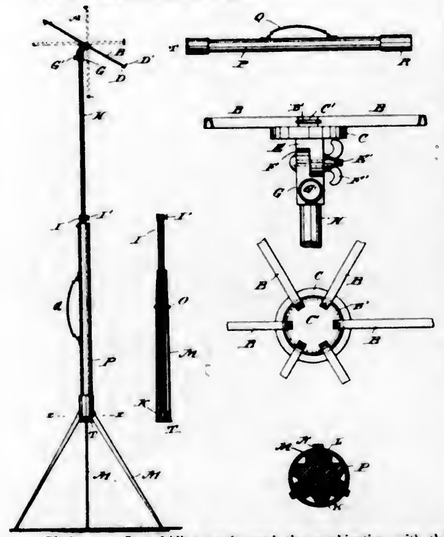
340,390. RAILROAD ALARM-SIGNAL. HENRY S. UHANOST, Phillipsburg, N. J. Filed Feb. 16, 1886. (No model.)



Claim.—1. The combination, in a railway-signal, of the post A, the spring G, secured thereto and carrying the bell, the rock-shaft having the tappet-arm adapted to be operated by the wheels of a passing train, and the lever-arm having the series of openings *d*, the link K, and rod A, connecting the spring G with the lever-arm, and the spring O for raising the lever-arm and tappet-arm as each wheel of the train passes, substantially as described.

2. The combination, in a railway-signal, of the tappet-arm adapted to be operated by the wheels of a passing train and the bell connected to the said tappet-arm and operated thereby, the said bell having the guideways A, to prevent circular motion of the clapper, for the purpose set forth, substantially as described.

340,391. FOLDING MUSIC-STAND. OSWALD S. VAUGHAN, Glasgow, Mo. Filed June 30, 1885. (No model.)



Claim.—1. In a folding music-stand, the combination, with the tube P, of the tube I in the same, the legs M, pivoted to the lower end of the tube I, and having notches N in their upper ends for engaging the tube P, the rod H in the tube I, and a rack on the upper end of the said rod, substantially as herein shown and described.

2. The combination, with the tube I, provided with the block K, of the pivoted legs M, having notches N in the upper ends, and of the tube P, substantially as herein shown and described.

340,392. COIN-COUNTER. GEORGE H. WAHLER and LUTHER H. LEBER, Littlestown, Pa., assignors to said Luther H. Leber. Filed Nov. 16, 1885. (No model.)



Claim.—A device for holding and delivering coins, consisting of the following elements, viz: an inclosing-case having a chute and delivery-opening, a series of coin-holders formed from a solid rectangular block, a platform having elongated slots and flanged guides, a series of sliding plates supported thereby, a series of pivoted keys or buttons and springs acting thereon, and rods attached at one end to the buttons and extending down through perforations in the sliding plates and through the elongated slots in the platform, and operating to force the plates forward upon depressing the keys or buttons, substantially as and for the purpose set forth.

340,393. WRENCH. MICHAEL S. WELLER, Charlestown, W. Va. Filed Mar. 10, 1886. (No model.)



Claim.—1. The combination, with a wrench-head provided at the base or juncture of its jaws with a hook-like seat or socket, of the removable face-piece provided at its lower end with a hooked portion fitted to the seat or socket of the wrench-head, substantially as set forth.

2. A wrench comprising a wrench-head having at the juncture of its jaws a hook-like seat or socket and provided at such point with a rib extended in the direction of length of the jaws, and the removable face-piece having its lower end slotted to fit over the rib of the head and formed with a hook-like portion, substantially as set forth.

3. The combination, with the wrench-head having a seat or socket, C, at the juncture of its jaws, and provided near the end of one of its jaws with a lug, D, of the face-piece having a hook-like portion adapted to engage the said seat or socket, and a mortise fitted to receive the lug D, substantially as set forth.

4. The combination of the wrench-head provided with a seat or socket, C, and with a lug, D, having a notch, *d*, the face-piece having a hook portion fitted to seat C, and a socket whereby to receive lug D, and a spring-latch connected with said face-piece and arranged to engage in notch *d*, substantially as set forth.

5. As a new article of manufacture, a removable face-piece for wrenches provided at one end with a hook-like portion, *c*, and with a slot, 2, and having in its rear side near its opposite end a mortise, 3, and provided with a spring secured in said mortise, substantially as set forth.

340,394. LEAD-AND-WIRE SEAL. THEODORE WEIR, Brooklyn N. Y., and EDWARD J. BROOKS, East Orange, N. J., assignors to E. J. Brooks & Co., New York, N. Y. Filed Feb. 13, 1886. (No model.)



Claim.—1. A shackle-wire having one or each end provided with a solid circumferential anchoring-enlargement of conical shape, forming an annular withdrawal resisting-shoulder, and tapering therefrom toward the adjacent extremity of the wire, in combination with a compressible soft-metal seal-disk having an opening to admit said anchoring-enlargement, substantially as herein specified.

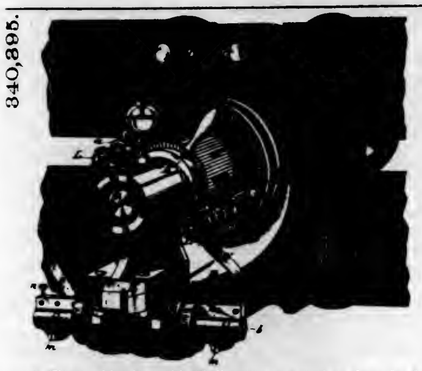
2. In a lead-and-wire seal, a seal-disk having an eccentric body portion extending upward to the upper edge of the disk provided for the reception of one or each shackle end, with a cell, the entrance to which is exposed at the upper edge of said disk, said body portion being otherwise solid and constructed with a peripheral groove or recess in its extended bottom and lateral edges, substantially as herein specified.

340,395. DYNAMO-ELECTRIC MACHINE. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Dec. 27, 1884. (No model.)

Claim.—1. In a dynamo or magneto electric machine, the combination, with stationary terminals or binding-posts and adjustable brush-holders, of flexible conductors composed of flat copper strips united at their ends by metal plates, forming screw-clamps that are secured to studs in electrical connection with the binding-posts and the brushes, respectively, in the manner set forth.

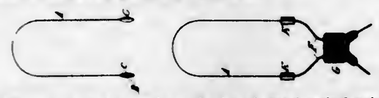
2. The combination, with the stationary binding-posts of a dynamo-electric machine consisting of a plate, *c*, stud *b*, and casting O, formed as a clamp secured to the stud, of flexible straps composed of strips of copper bound together at their ends by plates, forming clamps secured, respectively, to the adjustable brush-holders and the binding-posts, as set forth.

340,395.



3. The combination, with binding-posts secured to the pole-piece of a dynamo-machine and consisting of head or plate *c*, with studs *b* and *d* extending therefrom, and a clamp, O, provided with holes and screws for retaining the wires, of flexible conductors composed of copper strips bound together at their ends by plates, forming clamps connected to the studs *d*, and the rods L on the adjustable plate K, that carry the brushes, as set forth.

340,396. INCANDESCENT LAMP. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Aug. 26, 1885. (No model.)



Claim.—1. A carbon conductor having electro-deposited stubs or ends of carbon incased in electro-deposited casings or shells of metal, in combination with supporting-wires formed with tubes or sockets at their ends, into which the stubs are inserted, as set forth.

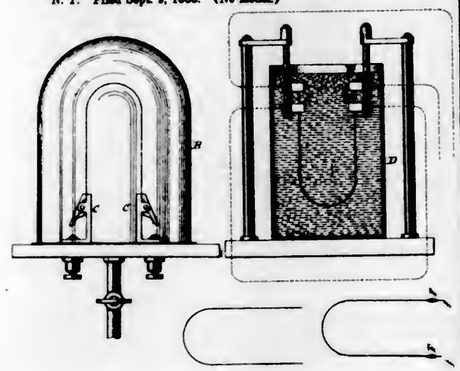
2. A carbon conductor having electro-deposited stubs or ends of carbon incased in electro-deposited casings or shells of metal, in combination with supporting-wires of platinum flattened at their ends and rolled or drawn into tubes or sockets, into which the stubs are inserted, as set forth.

3. A carbon conductor having electro-deposited stubs or ends of carbon incased in electro-deposited casings or shells of nickel, in combination with supporting-wires of platinum formed with tubes or sockets on their ends, into which the stubs of the carbon are inserted, as set forth.

4. A carbon conductor having electro-deposited stubs or ends incased in electro-deposited metallic casings or shells, as set forth.

5. The method or process of mounting the conductors of incandescent lamps, which consists in forming or building up on the ends of a carbon strip enlargements or stubs, re-enforcing said stubs with a casing or shell of an electro-deposited metal, such as nickel, and uniting said stubs to the supporting-wires, all substantially as herein set forth.

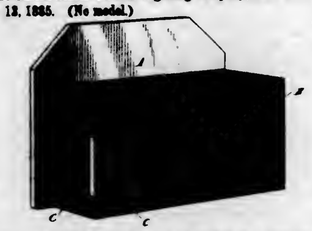
340,397. MANUFACTURE OF CARBON CONDUCTORS FOR INCANDESCENT ELECTRIC LIGHTS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Sept. 9, 1885. (No model.)



Claim.—1. The method or process of manufacturing carbon conductors, which consists in raising the carbons to high incandescence by an electric current and then heating the carbons at or near the ends only in a hydrocarbon or similar vapor or oil, to form enlarged stubs thereon, as set forth.

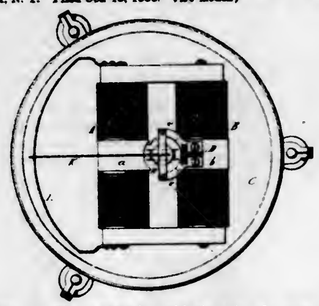
2. The method or process of manufacturing carbon conductors, which consists in raising the carbons to high incandescence by an electric current, then heating the carbons at or near the ends only in a hydrocarbon vapor or oil, to form enlarged stubs thereon, and then heating the entire carbons in a similar vapor until their electrical resistance is brought to the desired point, as set forth.

340,398. RHEOSTAT. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 12, 1885. (No model.)



Claim.—The combination, with an insulating-frame and resistance-coils contained therein, of an inclosing cover or casing made of wire-gauze, as and for the purpose set forth.

340,399. ELECTRICAL INDICATOR. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 13, 1885. (No model.)



Claim.—1. The combination, with the poles of a magnetic system, of a coil suspended within the field formed thereby, and capable of a movement across the lines of force, a stationary sectional magnetic core about which the coil is arranged to move, means for opposing the movement of the coil, connections for passing a current through it, and a pointer for indicating its movement, all as herein set forth.

2. The combination, with magnetic poles forming a uniform or symmetrical field, of a coil suspended within said field so as to be capable of movement across the lines of force, a stationary sectional magnetic core within said coil, means for passing a current through the coil, and a pointer and scale for indicating its changes of positions, as described.

3. The combination, with the poles of a magnetic system, of a supporting arm or frame secured thereto, a coil suspended from said arm in the magnetic field, and capable of a given movement across the lines of force, a stationary sectional magnetic core within the coil and secured to the poles of the magnets, and a pointer and scale for indicating the changes of position of the coil, substantially as described.

4. In an electrical indicator or measuring-instrument, the combination, with a coil movable in the magnetic field, of a stationary core within said coil, composed of iron sections with insulating material between them.

5. In an electrical indicator or measuring-instrument, the combination, with a coil movable in the magnetic field, of a stationary cylindrical core composed of a central rod with iron plates or disks strung thereon and separated by an insulating substance, as set forth.

340,400. INCANDESCENT-LAMP HOLDER. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Nov. 5, 1885. (No model.)

Claim.—1. The combination, with an incandescent-lamp globe having a cylindrical neck, a metal cylinder secured to the neck, a plug of insulating material of smaller diameter than the cylinder, secured to the same by a flange or crimped edge, and carrying contact-terminals, of a

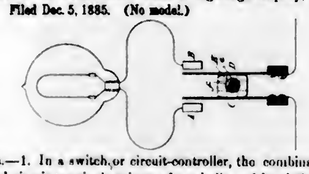
340,400.



socket containing contacts adapted to unite with those on the plug, and means for securing the lamp and socket together, as set forth.

2. The combination, with an incandescent-lamp globe having a cylindrical neck, a metal cylinder secured to the neck, a plug of insulating material smaller than the bore of the cylinder, and having a groove into which the edge of the cylinder is turned or crimped, of a socket, means for securing the lamp in the socket, and contact-terminals carried by the plug and socket, respectively, all as set forth.

340,401. ELECTRICAL SWITCH. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Dec. 5, 1885. (No model.)

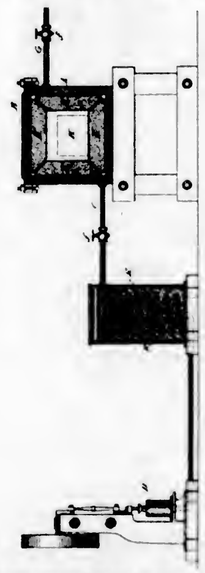


Claim.—1. In a switch or circuit-controller, the combination, with contacts and circuit-terminal springs, of a spindle and insulating-cam for forcing the springs against the contacts, the cam being provided with grooves or slots in its faces, as and for the purpose set forth.

2. In a switch or circuit-controller, the combination, with contacts and circuit-terminal springs, of a spindle and insulating-cam capable of a limited movement on said spindle and adapted to bring the springs into or out of engagement with the contacts, the cam being provided with grooves or slots in its faces, as and for the purpose specified.

3. The combination of stationary contacts, spring-terminals between the same, and a spindle and insulating-cam between the springs, for making and breaking contact between said springs and the stationary contacts, the said cam being provided with grooves or slots in its faces, as and for the purpose specified.

340,402. PROCESS OF MAKING INCANDESCENTS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Jan. 4, 1886. (No model.)

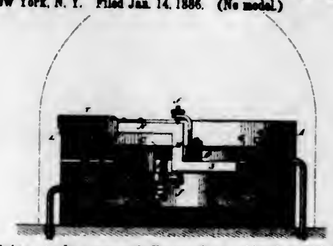


Claim.—1. The improvement in the process of making or treating carbon conductors, which consists in placing the carbons, after removal from the carbonizing-furnace and while cooling, in a close vessel or chamber and exhausting the air and gas from the same.

2. The improvement in the process of treating carbon conductors, which consists in placing the muffle, with the carbons contained therein, after removal from the carbonizing-furnace and while cooling, in a close vessel or chamber and exhausting the air and gas from the same.

3. The method of treating carbons herein described, which consists in transferring the muffle, filled with carbons, from the carbonizing-furnace to a close vessel or chamber, packing the muffle with asbestus to retard cooling, and exhausting the air and gas from the vessel.

340,403. ELECTRIC-CURRENT INDICATOR. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Jan. 14, 1886. (No model.)

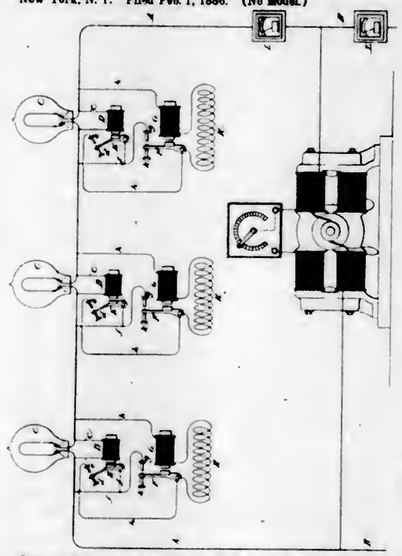


Claim.—1. In a current-indicator, the combination, with a conducting-disk with electrical connections for passing a current from its center to periphery, or conversely, of a magnetic bar passing through and pivoted at the center of the disk, and bent so that its ends lie close to opposite sides of the disk, and a scale for indicating changes in the position of the bar incident to variations in the strength of the current passing through the disk, as set forth.

2. In a current-indicator, the combination, with a conducting-disk thickened at its center and around its edge, and provided with means for forming circuit-connections at these places, of a magnetic bar passing through a perforation at the center of the disk, and supported by pivots placed above and below the disk, the bar being bent or formed so that its polar ends lie close to the opposite faces of the disk, and a scale for indicating changes in the position of the bar, as herein described.

3. The combination, with a current-indicator composed of a conducting-disk having means for passing a current through it from center to periphery, or conversely, and a pivoted magnetic bar passing through the center of the disk, and bent or formed so that its polar ends lie close to the opposite faces of the disk, of an iron box inclosing the said indicating mechanism for protecting the same from external magnetic influences, as set forth.

340,404. SYSTEM FOR ELECTRIC LIGHTING. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Feb. 1, 1886. (No model.)

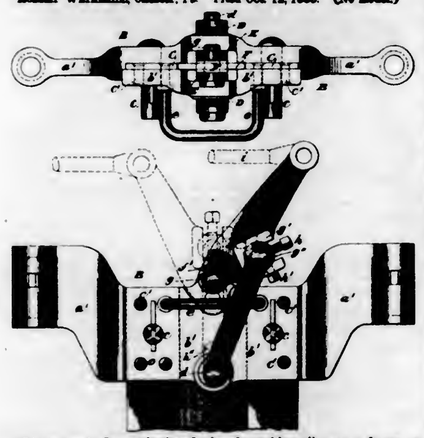


Claim.—1. In a system of electric lighting wherein the incandescent lamps are included in series in the circuit, the combination, with each of said lamps, of a constantly-closed shunt-circuit of high resistance and a normally-open resistance shunt-circuit, an electro-magnet in closed shunt adapted to complete the resistance-circuit when the lamp is extinguished, and an electro-magnetic locking mechanism in the resistance-circuit for preserving the continuity of the same when once established, as set forth.

2. In a system of electric lighting wherein the incandescent lamps are included in series in branches or multiple circuits from the mains, the combination, with each of said lamps, of a constantly-closed shunt of high resistance and a normally-open shunt-circuit containing a resistance equal to that of a lamp, an electro-magnet in the closed shunt adapted to complete the resistance-circuit when the lamp is extinguished, and electro-magnetic locking mechanism in the resistance-circuit, for preserving the continuity of said circuit when once established, as set forth.

3. In a system of electric lighting wherein the incandescent lamps are included in series in branches or multiple circuits from the mains, the combination, with each lamp, of a closed shunt-circuit of high resistance and a normally-open shunt-circuit, electro-magnets with circuit-closing armatures connected with each of the said shunts, respectively, circuit-connections, substantially as described, whereby, on the extinguishment of the lamp, the magnet in the closed shunt completes the circuit through the other magnet and causes it, by the attraction of its armature, to maintain its circuit closed, and resistances for compensating for lamps extinguished, as set forth.

340,405. GRIPPING DEVICE FOR WIRE-CABLE RAILWAYS. ROBERT WETHERILL, Chester, Pa. Filed Oct. 13, 1885. (No model.)

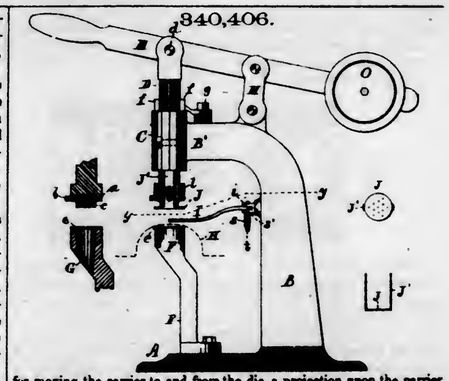


Claim.—1. In a gripping device for cable railways, a frame secured under the car, made in two sections and provided with means for securing the two sections detachably together, hanging frames, a slotted operating-bar, a lever pivoted to the operating-bar and having a step formed with or attached thereto, a pair of links pivoted at one end to the frame, a cross-head mounted in the step and having pins to which the other end of the said links are pivoted, and means for adjusting the cross-head within the step, all combined substantially as set forth.

2. In a gripping device for cable railways, a frame secured under the car, made in two sections, and provided with means for securing the two sections detachably together, hanging frames, a slotted operating-bar, a lever pivoted to the operating-bar and having a step formed with or attached thereto, a pair of links pivoted at one end to the frame, a cross-head mounted in the step and having pins to which the other end of the said links are pivoted, and means for adjusting the cross-head within the step, combined with a hand-lever suitably mounted at the front platform of the car, and a rod connection, substantially as set forth.

3. In a gripping device for cable railways, a frame consisting of two sections, combined with hanging frames secured to one section of said frame and means for securing the two sections detachably together, substantially as set forth.

340,406. HAT-VENTILATING PUNCH. GEORGE YULE, Newark, N. J. Filed Aug. 1, 1885. (No model.)



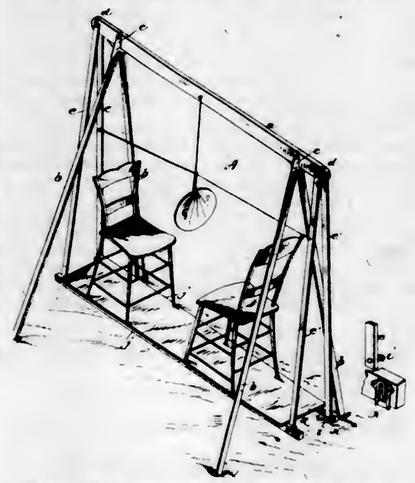
Claim.—1. A hat-ventilating punch constructed with a single punch-holder having two or more sets of punches of different lengths secured therein, a die provided with holes for all of said punches, a carrier to move the punch-holder to and from the die, and a stop connected movably to the frame of the machine and arranged and operated to arrest the movement of the carrier after the longer punches have perforated the felt and before the shorter punches have entered the holes in the die, substantially as shown and described.

2. A hat-ventilating punch constructed with a movable carrier carrying a holder having two or more sets of punches of different lengths secured therein, a die provided with holes to fit all such punches, means for moving the carrier to and from the die, a projection upon the carrier, and a hinged stop adapted to intercept said projection and arrest the motion of the carrier after the longer punches have perforated the felt and before the shorter punches have entered the die, substantially as herein set forth.

3. The combination, in a hat-ventilating punch, of the following instrumentalities: a die supported upon a suitable frame by a standard adapted to enter the inside of a hat-crown, punches constructed and operated to perforate the hat when laid upon the die, an indicator stationed movably above the center of the die when adjusting the hat thereon and removed therefrom when operating the punch, the indicator being freely movable upon the frame to and from the center of the die, and provided with a stop to limit its motion when moved into its operative position, substantially as herein set forth.

4. In a hat-ventilating punch, the combination, with a suitable frame, a die mounted upon a standard adapted to enter the inside of a hat-crown, and punches constructed and operated to perforate the hat, of an indicator freely movable upon the frame to and from the center of the die, a stop to limit the said movement, and a spring to hold the indicator normally in its operative position.

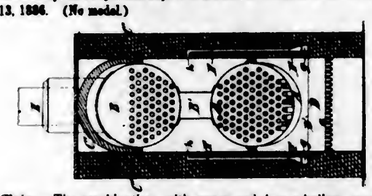
340,407. PORTABLE SWING OR CRADLE. GEORGE W. ZIEGLER, Washington, D. C. Filed Dec. 17, 1885. (No model.)



Claim.—1. The combination, with a single-support having an oblique slot at each end, of two pairs of rigid pendants united at the top by a pin and held in the slots, rigid strips connecting the corresponding pendants, and a slide and pin by which the same are pivotally and separably united.

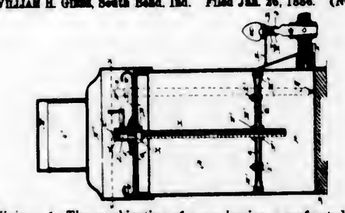
2. The combination, with the clamps and supports, and the rider formed with a slot near each end, of the rigid pendants suspended in said slots, the connecting-strips for the body or platform, and a pin and slide for detachably connecting such strips to the pendants, substantially as described.

340,408. STEAM-GENERATOR. WILLIAM D. ADAMS, New York, assignor to Henry Blendermann and Jacob Blendermann, New York, John Cummiskey, Brooklyn, and Sophie E. Adams, New York, N. Y. Filed Feb 13, 1886. (No model.)



Claim.—The combination, with upper and lower boilers arranged one above the other and connected for circulation, as described, of a setting including a furnace below the lower boiler and sheet-flues constructed in the side walls of the furnace and having an inlet or inlets for fresh air and series of outlet holes or openings arranged lengthwise of and between the boilers, whereby heated air will be discharged to mingle with the unconsumed gases as they pass between the boilers, substantially as herein set forth.

340,409. MILK AND CREAM CAN. GEORGE W. ALRAUGH and WILLIAM H. GIBBS, South Bend, Ind. Filed Jan. 26, 1886. (No model.)



Claim.—1. The combination of a can having a perforated cover, a perforated cross-piece secured thereon having its ends curved upward, and a rod passing through said perforations and having a follower at its lower end, as shown and described.

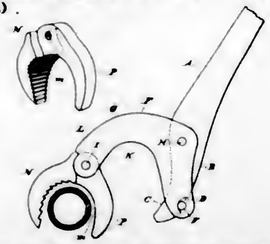
2. In a milk-can, the combination of a can having ears at its sides and a cover, a cross-piece secured to said ears, and a top having a cut-away portion fitting the top of said can and said ears, as shown and described.

3. In a milk-can, the combination of a can having upwardly-projecting perforated ears, a cover having a cross-strip having slotted ends fitting over the said ears, a bolt passing through the ears above the strip, a follower fitting within the can and having a central female threaded bearing, and a screw having the said bearing fitting upon it and having its upper end turning in the bearing of the cover, and having a collar below the bearing and a crank for turning it above the bearing as and for the purpose shown and set forth.

4. In a milk-can, the combination of a can having a tube extending from its lower end to its top, a follower fitting in the can, and a screw fitting and turning in a threaded bearing in the follower and having means for revolving it, said tube opening into said can below said follower, as and for the purpose shown and set forth.

5. In a milk-can, the combination of a can having perforated ears, a cover having slotted ears fitting upon the ears of the can and having a notch in one of the slots, a bolt passing through the ears of the can above the cover and having an eye at one end registering with the notch in the slot, and a padlock having its bail inserted through the said eye and through the notch of the slot, as and for the purpose shown and set forth.

340,410. PIPE-WRENCH. ISAAC ANDERSON, Saginaw, Mich., assignor of one-half to Thomas A. Perrott, same place. Filed Aug. 3, 1885. (No model.)



Claim.—The handle having the cam-arm provided with the concave bearing C and the notch bearing D, the pivoted jaw-head composed of the two parallel parts G G and having the stop, and the curved biting-jaw having the serrated bearing, and the guard-arm pivoted to the forward end of the said jaw-head, all combined to form a wrench, substantially as specified.

340,411. PROCESS OF TREATING MINERAL OILS. CHARLES L. BAILLARD, Rouen, Department of the Seine-Inférieure, France. Filed Dec 24, 1885. (No specimens.)

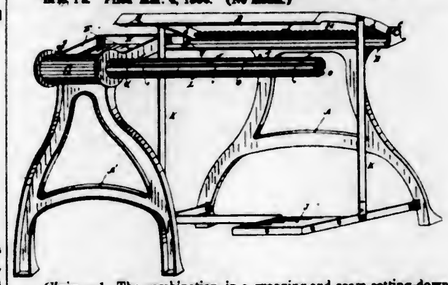
Claim.—1. The process of treating mineral oils of the general formula C_nH_{n+2} by oxidating the same, and thereby rendering them analogous to the ternary oils of animal or vegetable origin, and capable of use in place of the same, substantially as described.

2. The process of oxidating mineral oils by treating the same with oleic acid of distillation or saponification, or with rancid oil or fat, substantially as described.

3. The described improvement in the arts employing oils, whereby the necessity of employing oils of animal or vegetable origin for many purposes is avoided, the said improvement consisting in oxidating mineral oil and applying the oxidated oil in said industries, substantially as described.

340,412. WITHDRAWN.

340,413. GROOVING AND SEAMING MACHINE. PHILLIP BIRCH, Erie, Pa. Filed Mar. 4, 1886. (No model.)



Claim.—1. The combination, in a grooving and seam-setting-down machine, of a stake or mandrel mounted in the frame of the machine and provided with one or more longitudinal grooves therein, one of the edges of which grooves is movable, with a hammer mounted in the frame of the machine adapted to strike downward upon said stake or mandrel, substantially as and for the purpose set forth.

2. In a grooving and seam-setting-down machine, a stake or mandrel having one or more longitudinal grooves therein, one of the edges of which grooves is movable, substantially as and for the purpose set forth.

3. The combination, in a grooving and seam-setting-down machine, of standards connected together at one end thereof by a cross-frame, a pivoted hammer provided with retracting-springs, and treadle mechanism for operating the same mounted in said frame, with a sleeve on one of said frames adapted to receive and support the stake or mandrel upon which said hammer strikes, substantially as and for the purpose set forth.

4. The combination, in a grooving and seam-setting-down machine, of a removable stake or mandrel having longitudinal grooves therein, with a tubular sleeve or bearing on the frame of said machine adapted to support said removable stake or mandrel under the face of the hammer of said machine, substantially as and for the purpose set forth.

5. The combination, in a grooving and seam-setting-down machine, of a pivoted hammer mounted in the frame of said machine, having a rivet-punch in the face thereof, with a removable stake or mandrel mounted in a sleeve or bearing on said frame, and having therein one or more longitudinal grooves, one of the sides of which grooves is movable, and having openings in the face of the groove for the entry of the punch in the face of the hammer, substantially as and for the purpose set forth.

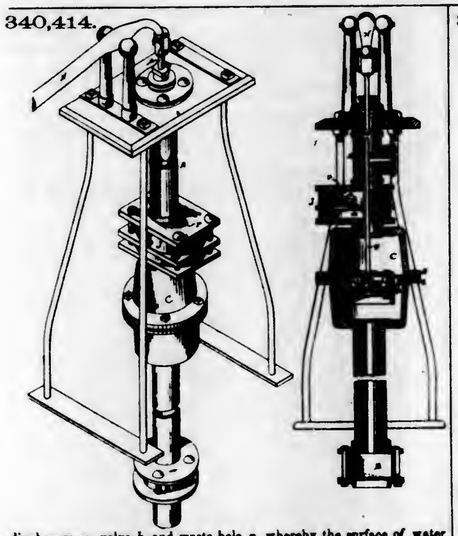
6. The combination, in a stake for grooving and seam-setting-down machines, of longitudinal grooves N, having the fixed edge *n*, with the movable edge or guide O, resting upon the springs *o*, and adapted to be forced downward during the setting down of the seam, substantially as set forth.

7. The combination, in a grooving and seam-setting-down machine, of the upright frames A A', and cross-frame F, the hammer D, provided with the retracting-spring H, mounted in the top of the frame A, and the treadle J, mounted in the lower part of the frame A, and connected with the arms *d d* of the hammer D by connecting-rods K K, with a tubular bearing or sleeve, G, on the top of the frame A', and the removable stake or mandrel L supported thereby, all substantially as and for the purpose set forth.

340,414. PUMP. PETER J. BOOS, Duquesne, Ill. Filed Dec. 18, 1885. (No model.)

Claim.—1. In a pump, the combination of the diaphragm D, diaphragm-chamber C, and pump-rod *g* with the offset chamber J, with its

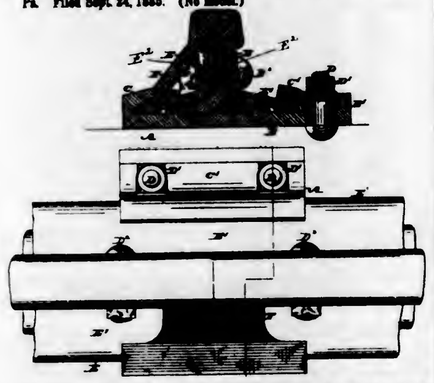
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diaphragm *m*, valve *k*, and waste-hole *p*, whereby the surface of water in the pump may sink to the level of said top, but not to the level of the valve, as set forth.

2. The combination of the offset chamber J, provided with a partition, *m*, and waste-hole *p*, with the check-valve *k*, adapted to close the port in the partition *m*, and when off said port to close the waste-hole *p*, as set forth.

340,415. RAILROAD-RAIL JOINT CHAIR. WILSON BROWN, York, Pa. Filed Sept. 24, 1885. (No model.)



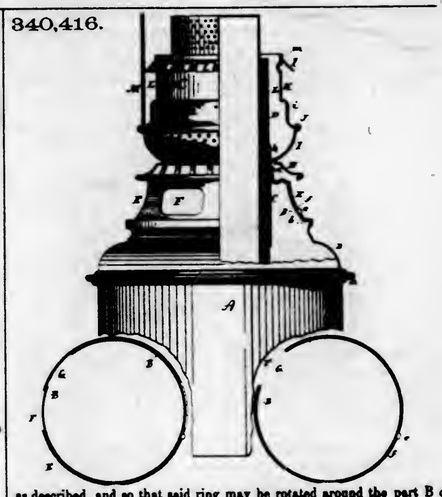
Claim.—1. A chair for the joint of railroad-rails, having the slotted base A, a splice-piece with parts E' F², the part E' being in contact with the base, the bolt D², which passes through the part F² and the web of the rail, and the cheek resting on the part E' and secured by the bolt D to the base, substantially as described.

2. A chair for the joint of railroad-rails, having a base and cheek-pieces on opposite sides, annular splice-pieces, and vertical and horizontal bolts, said splice-pieces being formed of parts E' F², the said part E' being in contact with the said base, the cheeks resting on the parts E' of the splice-pieces and connected with the base of the chair, and the horizontal bolts passing through the parts F² of said splice-pieces and the web of the rail, substantially as described.

340,416. LAMP. EDSON L. BRYANT, Arcouia, Conn., assignor of one-half to Wallace & Sons, same place. Filed Sept. 7, 1885. (No model.)

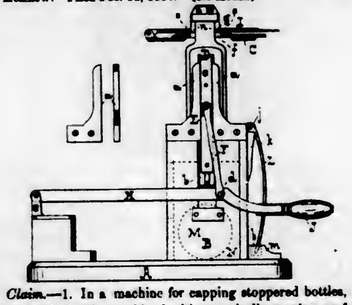
Claim.—A lamp-fount constructed with the upward extension B, of circular shape in horizontal section, the said extension constructed with an opening, G, into the fount, the said extension provided with the annular rib *d* around its upper edge, combined with the ring E, surrounding that portion of the fount in which is the opening G, the upper edge of said ring resting beneath said rib *d*, and the said ring constructed with an opening, F, corresponding to the opening G in the fount, substantially

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as described, and so that said ring may be rotated around the part B of the fount to bring the openings F G in the two to register or to close the same.

340,417. BOTTLE-CAPPING MACHINE. ALONZO CALDWELL, Baltimore, Md., assignor of two-thirds to Martin Sheeler and Wilberforce R. McKnew. Filed Feb. 11, 1886. (No model.)

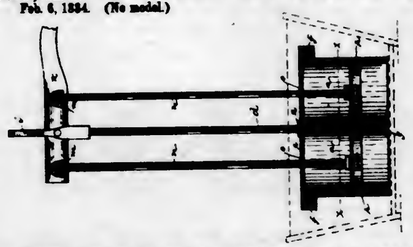


Claim.—1. In a machine for capping stoppered bottles, a stand or support for the bottle, combined with a vertically-moving perforated capping-head, having a perforated follower to hold a cap-blank thereto, situated over the said stand, substantially as specified.

2. In combination with the block B, the vertically-moving capping-head C, follower I, hinged to said head, button *h*, pivoted links F, and the lever H, substantially as specified.

3. In combination with the lever H, the rotative handle J, with its stem *i*, provided with a right and left hand thread, threaded jaws K, and curved bar L, substantially as specified.

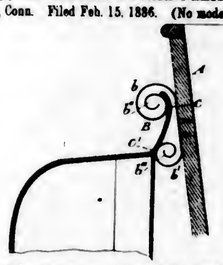
340,418. WASHING-MACHINE. JOHN W. CASE, Clyde, Ohio. Filed Feb. 6, 1884. (No model.)



Claim.—In a washing-machine, the combination of a number of open-ended cylinders with a central web uniting said cylinders at their bottoms, a flanged cover uniting them at their tops, an upright rod secured to said web and cover and forming a handle at its upper portion, a lever secured to said upright rod and provided with a pair of cross-arms, a piston-rod secured to the ends of each of the cross-arms and passing through holes in the cover of a larger diameter than the diame-

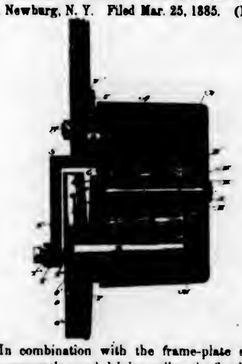
ter of the said piston-rods, and a piston-head secured to the end of each of said piston-rods within said cylinders, substantially as and for the purpose set forth.

340,419. DEVICE FOR SUPPORTING HATS. ABRAHAM T. CLASON, Danbury, Conn. Filed Feb. 15, 1886. (No model.)



Claim.—A hat-holder consisting of the base *a*, the upper, curved holder, *b*, having the bearing-point *c*, and the lower curved holder, *b'*, provided with the bearing-point *c'*, the plane in which the point *c* stands being nearer the base than is the plane occupied by the point *c'*, substantially as set forth.

340,420. LAWN-EDGE TRIMMER. THOMAS COLDWELL and WILLIAM H. COLDWELL, Newburg, N. Y. Filed Mar. 25, 1885. (No model.)

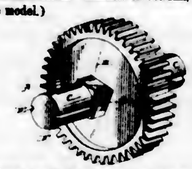


Claim.—1. In combination with the frame-plate substantially at right angles to the supporting and driving roller, the fixed knife attached to the plate, and extending downward and outward at an angle thereto, the revolving cutter revolving on an axis at right angles to the plate, having the forward sides of its blades inclined outward and rearward, and the inner sides adapted to shear close to the fixed knife, substantially as and for the purpose described.

2. The revolving cutter consisting of the hub and the blades attached thereto, having their forward faces or sides inclined outward and rearward, and the lines of their inner sides inclined outward from the hub, substantially as and for the purpose described.

3. In combination with the taper roller and the frame-plate substantially at right angles to the axis of the roller, the fixed knife attached to the plate, and extending downward and outward at an angle thereto, the revolving cutter revolving on an axis at right angles to the frame-plate, having the forward sides of its blades inclined outward and rearward, and the inner sides adapted to shear close to the fixed knife, substantially as and for the purpose described.

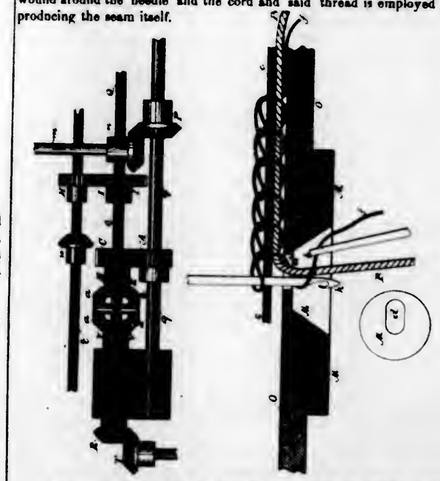
340,421. FENCE-MACHINE. ALBERT R. CONGER, Eaton, Ohio. Filed Feb. 26, 1886. (No model.)



Claim.—In a twister-head for a machine for making picket and wire fencing, the combination of a spindle having an angular central portion and cylindrical ends, and formed with diametrically-opposite longitudinal grooves in its sides, a pinion having an angular central aperture fitting upon the angular central portion of the spindle, and cross-pieces upon the ends of the spindle having perforations in their ends registering with the ends of the grooves, as and for the purpose shown and set forth.

340,422. METHOD OF AND MACHINE FOR FIXING CORDS OR BRAIDS TO TEXTILE FABRICS, &c. EMIL CORNELY, Paris, France. Filed June 16, 1885. (No model.) Patented in France May 23, 1882, No. 149,127.

Brief.—The method embraced differs from that of Patent No. 311,644, February 3, 1884, to same party, wherein the thread is wound around the cord and taken into the seam, as in this case the thread is wound around the needle and the cord and said thread is employed in producing the seam itself.



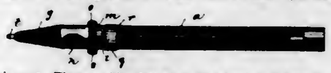
Claim.—1. The method of fastening a cord, braid, or similar article to a fabric by a hook-needle, by winding a thread around the cord and the needle, and forming from said thread a series of stitches in the fabric, so that the thread envelops the cord and secures it to the fabric, substantially as described.

2. The combination, with the hook-needle and cloth-plate, of the cord-guide below the cloth-plate, and the thread-carrier, also below the cloth-plate, for wrapping the thread around the cord, as well as to introduce it in the needle-hook, substantially as described.

3. The combination, with the hook-needle, the cloth-plate, and the mechanism for controlling the direction of the feed, of the continuously-revolving thread-carrier below the cloth-plate, connected with and governed by said feed-controlling mechanism, substantially as described.

4. The combination, with the needle-book and the cloth-plate, of the continuously-revolving thread-carrier and the cord-guide, both below the cloth-plates, and the mechanism for operating said needle, thread-carrier, and cord-guide, substantially as described.

340,423. LEAD-PENCIL. CHARLES A. COTTRELL and LENDELL A CONNER, Jr., Washington, D. C. Filed Mar. 16, 1886. (No model.)



Claim.—1. The combination of a lead-holder fitting in a hollow case and a rotatory threaded propelling-nut engaging with the lead-holder, so as to propel the same when the nut is rotated, and situate and arranged at or near the point of the pencil-case, so as to be operated by the finger of the dexter hand, substantially as and for the purpose specified.

2. In a propelling lead-pencil, the combination, with the case or body of a pencil, of an externally-threaded lead-holder adapted to grip the lead, a threaded nut of slightly larger diameter than the body of the pencil, and a feather and spline, said devices being arranged so as to impart a non-rotary longitudinal movement to the lead from the rotation of the nut, substantially as described.

3. The combination of the body of the pencil, the end piece, the externally-threaded lead-holder having jaws for holding the lead, the propelling-nut screwing on the threaded lead-holder, and a sleeve attached to the end piece, *g*, slotted circumferentially, so as to permit of the projection of the circumference of the nut beyond the surface of the sleeve, and having a slot at the end, so as to permit of the introduction of the nut into the sleeve, substantially as and for the purposes described.

340,424. GATE. JAMES R. COVERT, Greenville, Mich. Filed Feb. 11, 1886. (No model.)

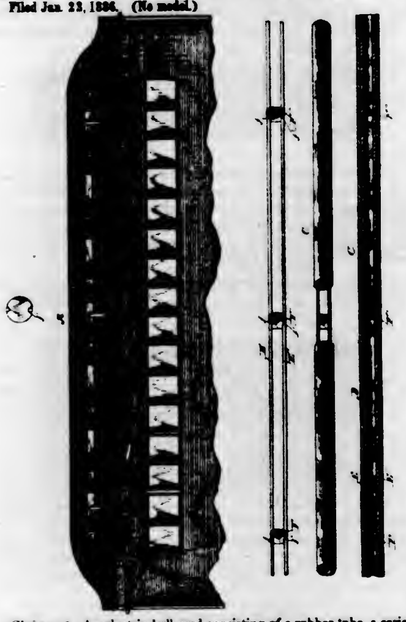
Claim.—The combination, in a sliding and swinging gate, of a hinged gate-supporting frame consisting of the standard B, bar C, an inclined bar, D, friction-rollers located on the bar C, and a gate mounted thereon

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and provided with bent springs *l m*, and post E, having vertical bar *k*, substantially as set forth.

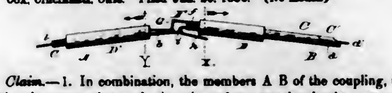
340,425. ELECTRIC BELL CORD. HARRY B. COX, Cincinnati, Ohio. Filed Jan. 23, 1886. (No model.)



Claim.—1. An electric bell cord consisting of a rubber tube, a series of insulating-disks of a diameter equal to the interior diameter of said tube, located therein at intervals, and two wires held apart and against the interior of the tube by said insulators, as set forth.

2. The combination, with the continuous rubber tube D, of the insulating-disks F, of a diameter to fit said tube, provided with notches in their peripheries, and the two wires E E', passing through said notches and held apart by means of said insulators, as set forth.

340,426. COUPLING FOR ELECTRIC BELL-CORDS. HARRY B. COX, Cincinnati, Ohio. Filed Jan. 26, 1886. (No model.)



Claim.—1. In combination, the members A B of the coupling, the double wires traversing each, the wires of one member having eyes and those of the other having hooks, the circuit-closer F, normally in contact with one of said double wires, and a spring by which it is held out of contact with the other, as set forth.

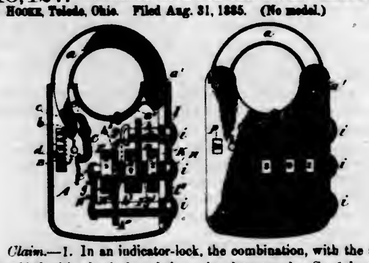
2. In combination, the two lines of wires *a b* and *a' b'*, the circuit-closer having flanges *f* and F', and the spring G, as and for the purpose set forth.

3. In combination, the wires *a b a' b'*, the insulating-blocks E E', the tubes D D', the circuit-closer F, and the spring G, as set forth.

4. In combination, two lines of wire insulated from each other, the circuit-closer F, having flange *f* normally in contact with one line, and a flange, F', and a spring for holding said flange above the wires by maintaining the two members of the coupling at an angle to each other, whereby the straightening of the cord brings said flange F' into contact with the other line, thus closing the circuit, as set forth.

5. In combination, the insulated wires, the circuit-closer normally in contact with one line thereof and having the flange F', with beveled or inclined edge, making it wider at the end nearest the other line, and the spring which normally holds it out of contact with said second line, but permits it to be brought into contact therewith to close the circuit by pulling on the cord, as set forth.

340,427. INDICATOR LOCK FOR CAR-DOORS. HENRY A. DE LA HOOKE, Toledo, Ohio. Filed Aug. 31, 1885. (No model.)



Claim.—1. In an indicator-lock, the combination, with the shackle *a*, provided with a hook, *b*, and the spring detent or dog C, of the toothed wheel B, whereby, when the said shackle is released, the wheel may be revolved thereby, substantially as set forth.

2. In an indicator-lock, the combination, with the hooked shackle *a*, provided with the tongue *k*, and the toothed wheel B, of the shafts G, H, and I, having gearing, the geared and numbered wheels D, E, and F, and the spring-bar K, substantially as set forth.

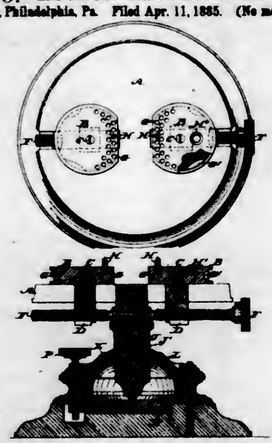
340,428. FRUIT-JAR. JOSEPH L. DE STERKER and EDWARD A. DE STERKER, La Salle, Ill. Filed Feb. 24, 1886. (No model.)



Claim.—1. The combination, with a fruit-jar having the encircling groove below its shoulder and the vertical grooves extending from said encircling groove to the top of the jar, of the semicircular wire fastening with vertical end arms having inwardly-projecting hooks at their upper ends, and the jar-lid having the inclined peripheral flanges, substantially as specified.

2. The combination, with a jar having diametrically-opposite vertical external grooves below its shoulder, of the semicircular wire fastening with vertical hook-arms at its ends, and the cover with the inclined peripheral flanges, substantially as specified.

340,429. ENGRAVER'S TURN-TABLE OR HOLDER. JAMES H. DICKSON, Philadelphia, Pa. Filed Apr. 11, 1885. (No model.)



Claim.—1. The rotary slotted table A, provided with adjustable sliding blocks B, having recesses on the upper face, and provided with pins H, having shouldered portions, in combination with the right-and-

left-threaded screw F, swiveled in the standard J and working in the ears D, substantially as and for the purpose set forth.

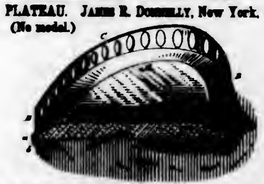
2. The adjustable blocks B, having right-line portions G and curved scallops G' on the rim thereof, in combination with the rotary table A and right-and-left-threaded screw F, the said blocks B having ears D, which are secured to the said blocks by means of screws, whereby the said blocks may be adjusted so as to present different portions of their rims to each other, substantially as and for the purpose set forth.

3. An engraver's turn-table composed of a rotary table with sliding blocks, a right-and-left-threaded screw, a standard in which said screw is journaled, a base, a ball-and-socket joint connecting the standard with the base, and a clamping device, said parts being combined and operating substantially as and for the purpose set forth.

4. An engraver's turn-table composed of a rotary table with blocks having both a lateral and a rotary adjustment and provided with pins adapted to be inserted in recesses in said blocks, a right-and-left-threaded screw, a standard for said table having a flange at the lower end, a socket secured to the base embracing said flange, and a clamping device bearing on said flange, substantially as and for the purpose set forth.

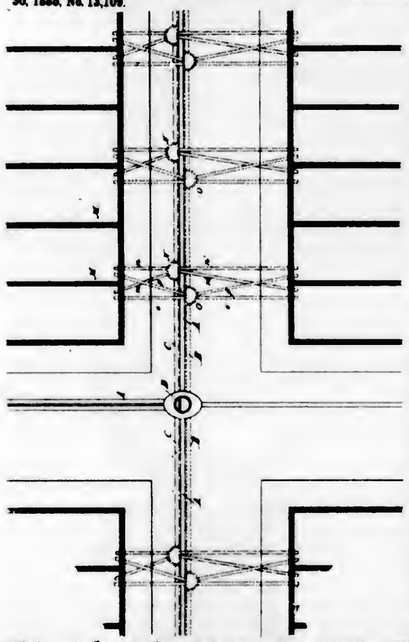
5. The table A, having a standard, J, in combination with the flange K, socket L, secured to the base of the table, lever-bar *m*, and screw P, substantially as described.

340,430. PLATEAU. JAMES R. DOBBELLY, New York, N. Y. Filed Feb. 9, 1886. (No model.)



Claim.—The combination, substantially as set forth, of the beveled glass plate and the sheet-metal frame bent to form a flange under the plate around its extreme edge, to which the feet are attached, then bent to embrace a portion of the beveled edge, and then extended up beyond the upper surface of the plate, so as to form a surrounding rim.

340,431. UNDERGROUND CONDUCTOR. DANIEL H. DOBBETT, Chicago, Ill. Filed Oct. 15, 1885. (No model.) Patented in England Oct. 30, 1885, No. 13,109.



Claim.—1. In an underground system, the combination, with deeply-buried main conduits composed entirely of a plastic insulating material, of branch conduits from the same to the buildings along the way buried nearer the surface of the street or roadway and made of iron pipes filled with an insulating material, as set forth.

2. In an underground system, the combination, with deeply-buried conduits composed entirely of a plastic insulating material, of man-holes placed at the intersections of the streets and molded from the same or similar material, insulating hand-holes or junction-boxes placed at intervals along the conduits and branch pipes from the same buried nearer the surface than the mains and made of iron pipes filled with an insulating material, as set forth.

3. In an underground system, the combination, with three deeply-buried and parallel conduits containing, respectively, trunk, local-signaling and electric-light lines and composed entirely of insulating material, man-holes placed at the intersections of the streets and to which all the conduits are led, hand-holes placed at intervals along the conduits containing the local-signaling and electric-light lines, the man-holes and hand-holes being composed of insulating material, and branch conduits from the hand-holes to the buildings buried above the main conduits and near the surface of the street or road and composed of iron pipes with a filling of insulating material provided with ducts or passages for the wires, as set forth.

340,432. CONDUIT FOR ELECTRIC CONDUCTORS. DANIEL H. DOBBETT, Chicago, Ill. Filed Oct. 15, 1885. (No model.) Patented in England Oct. 30, 1885, No. 13,109.



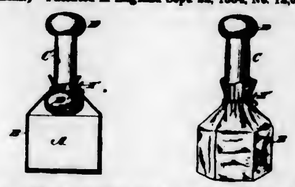
Claim.—An underground conduit composed of sections each formed of an iron casing or tube with couplings, and a filling of insulating compound composed of coal-tar, paraffine, siliceous sand, pulverized ashes and cinders, oxide of manganese, and ammonium chloride, the said filling being provided with one or more passages or ducts for containing electric conductors, all as set forth.

340,433. CONDUIT FOR ELECTRIC CONDUCTORS. DANIEL H. DOBBETT, Chicago, Ill. Filed Oct. 15, 1885. (No model.) Patented in England Oct. 30, 1885, No. 13,109.



Claim.—A man-hole or subterranean chamber for systems of underground electric conductors, having one or more insulating interior partitions, the whole being formed or molded in one piece of a plastic insulating material and oblong or oval in shape, in combination with two or more lines of pipes or conduits entering the compartments through the broader sides of the chamber, as herein set forth.

340,434. MODE OF WRAPPING COLORS. KNOWLES EDGE, Raphael Street, Bolton, County of Lancaster, England. Filed Nov. 18, 1885. (Specimens.) Patented in England Sept. 22, 1884, No. 12,606.



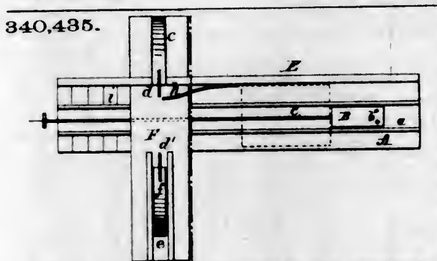
Claim.—A bluing or color package consisting of the bag B and a handle, C, having a bead, D and D', at opposite ends, said bag being detachably secured to the handle adjacent to one of said beads, as described.

340,435. ICE-CUTTING MACHINE. ROBERT S. ELLIOTT, LAFAYETTE W. PAGE, and HENRY F. LEWIS, Shreveport, La. Filed Feb. 2, 1886. (No model.)

Claim.—1. In an ice-cutting machine, the combination, with the table A, of the fixed cutter *d*, arranged at right angles to the table, and the movable cutter *d'*, moving in the plane of the cutter *d*, substantially as herein shown and described.

2. The combination, in an ice-cutting machine, of the longitudinally-slotted table A, slide B, adapted to the table and provided with spurs *b* and the rod C, the transverse bar F, secured to the table A, the fixed cutter *d*, and the movable cutter *d'*, substantially as herein shown and described.

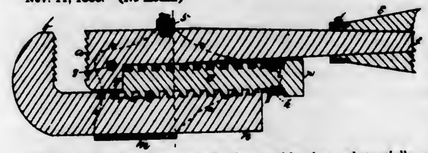
340,435.



3. In an ice-cutting machine, the combination of the longitudinally-slotted table A, the slide B, received in the slot of the table and provided with the spurs *b* and the rod C, the transverse bar F, the block *c*, the serrated cutter *d*, fixed in the block *c*, and the sliding head *f* and serrated cutter *d'*, carried thereby, substantially as herein shown and described.

4. As an improved article of manufacture, an ice-cutting machine formed of the longitudinally-slotted table A, the slide B, provided with the spurs *b* and the rod C, the transverse bar F, having the guide *e*, the sliding head *f* and serrated cutter *d'*, carried thereby, the block *c* and serrated cutter *d*, supported thereby, the board E, and spring *h*, substantially as herein shown and described.

340,436. PIPE-WRENCH. JAMES A. FAIRBANKS, Augusta, Me. Filed Nov. 11, 1885. (No model.)



Claim.—1. In a pipe-wrench, the combination, substantially as described, of the shank *f*, having jaw *a* thereon, the shank *n*, having jaw *b* thereon and screw-threads cut in the throat thereof, and the bolt *c*, with external screw thereon, all connected and inclosed by the pin 8 and case *m*.

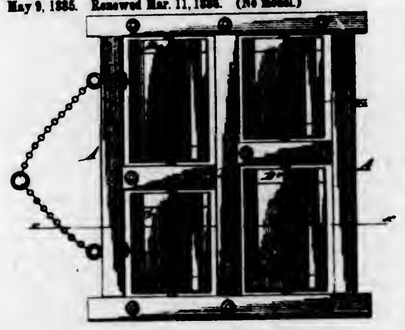
2. In a pipe-wrench, the combination of the shank *f*, having jaw *a* thereon, said jaw operating against the bolt *c* at 4, as described, the shank *n*, with jaw *b* thereon and screw-threads cut in the throat thereof, and the bolt *c*, with screw cut thereon, all inclosed and connected by pin 8 and case *m*, as set forth.

3. In a pipe-wrench, the combination, as described, of the shank *f*, having jaw *a* thereon, the shank *n*, having jaw *b* thereon and screw-threads cut in the throat thereof, and the bolt *c*, with external screw thereon, all inclosed, connected, and operated by case *m*, pin 8, and spiral spring 5.

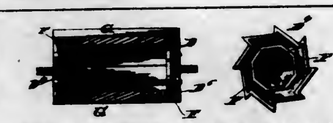
4. In a pipe-wrench, the combination of the shank *f*, having jaw *a* thereon, the shank *n*, with jaw *b* thereon and screw-threads cut in the throat thereof, and the bolt *c*, with external screw thereon, the threads on said bolt being cut off on one side to give a quick return, all inclosed and connected by case *m* and pin 8, as described.

5. In a pipe-wrench, the combination of the shank *f*, having jaw *a* thereon, the shank *n*, with jaw *b* thereon and screw-threads cut in the throat thereof, and the bolt *c*, with external screw thereon, said bolt having slot *i i* cut therein to allow longitudinal motion thereof, all inclosed and connected by case *m*, pin 8, and screw *k*, as and for the purposes set forth.

340,437. LAND-ROLLER. STEPHEN J. FISHER, Packerton, Ind. Filed May 9, 1885. Renewed Mar. 11, 1886. (No model.)



340,437.



Claim.—1. The combination, with the cast-metal heads having peripheral projections and grooves in the inner faces, of the bars or staves G, and the securing rods and nuts, and journals on their outer faces, substantially as specified.

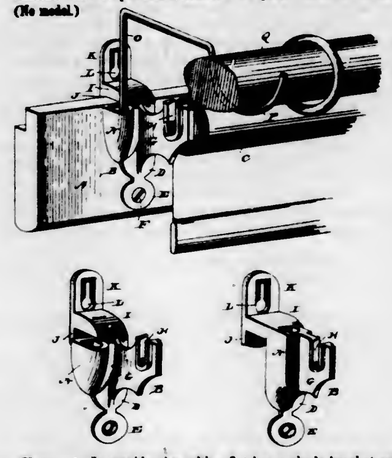
2. The combination, with the cast-metal heads having peripheral projections, grooves in their inner faces, and journals projecting from their outer faces, of the bars or staves G and the securing rods and nuts connecting the heads and staves, as set forth.

340,438. WINDOW-SHADE HANGING. JOHN W. GREENE and ASBURY H. GREENE, Oregon, Mo.; said Asbury H. Greene assignor to John T. Thatcher and Philip J. Zillen, both of same place. Filed Oct. 19, 1885. (No model.)



Claim.—In a device for hanging window-shades, the combination of a bar having the shade journaled upon its front side, and having vertical recesses in its rear side extending to the upper edge of the bar, and formed with beveled edges and with stopping-shoulders at their upper ends and with vertical recesses in their bottoms, and plates having beveled edges fitting in the recesses and formed with key-hole-shaped slots having their enlargements at their lower ends, and with stops at their lower ends for bearing against the shoulders, as and for the purpose shown and set forth.

340,439. SHADE-HANGER. JOHN W. GREENE and ASBURY H. GREENE, Oregon, Mo.; said Asbury H. Greene assignor to James T. Thatcher and Philip J. Zillen, both of same place. Filed Nov. 12, 1885. (No model.)



Claim.—1. In combination with a flat bar, a shade-bracket consisting of a base-plate having an eye at its lower end for a fastening-screw, and having at its upper end a downwardly-projecting lip for clamping the upper edge of the flat bar, as and for the purpose shown and set forth.

2. In combination with a flat bar, a shade-bracket consisting of a base-plate having an eye at its lower end for a fastening-screw, and having at its upper rearwardly-bent end a downwardly-projecting lip for clamping the upper edge of the bar, and an eye for suspending it, as and for the purpose shown and set forth.

3. In a shade-hanger and curtain-support, the combination of a flat bar, brackets consisting of base-plates having eyes at their lower ends for fastening-screws, and having at their upper ends downwardly-projecting lips for clamping the upper edge of the bar, and upwardly-projecting eyes for suspending the bar, and being further formed with upwardly-opening sockets upon their bracket portions, and bars fitting with

their lower ends into the said sockets, and having their upper ends bent forward and formed into forwardly-projecting curtain-rod-supporting hooks, as and for the purpose shown and set forth.

340,440. HORSESHOE. CHAS. W. HAYES, Washington, D.C. Filed Feb. 12, 1886. (No model.)



Claim.—1. The combination, with a horseshoe provided with projections, of plates adapted to be secured to the under side of the foot to engage said projections, substantially as set forth.

2. The combination, with a horseshoe provided with projections, as described, of plates adapted to be secured to the under side of the foot, openings in said plates to engage said projections, and a locking device for securing said projections in said plates, substantially as set forth.

3. The combination, with a horseshoe provided with projections having perforations, as described, of plates adapted to be secured to the under side of the foot to engage said projections, and a spring, a^2, and pin a^3, substantially as set forth.

4. The combination, with the plates A A B, of a shoe provided at its front with pins to engage said plate B, and at its under sides or quarters with projections to engage the plates A A, substantially as set forth.

5. The combination, with plate C, having horizontal openings, of a shoe carrying a removable-clamp, pins *e e* on said clamp, and plates A A, and devices for locking said shoe to said plates, substantially as set forth.

6. The combination, with a shoe having clamps and projections *e e*, as described, of a series of plates, A A B, adapted to be secured to the under side of the hoof, substantially as set forth.

340,441. AUTOMATIC ALARM APPARATUS. CHARLES L. HORACK, Brooklyn, N. Y. Filed Dec. 22, 1884. (No model.)

Claim.—1. The valve V in the fluid-supply pipe, the lever Y, and connections between the valve and the lever, whereby a movement of the valve actuates the lever, in combination with the movable weight W, which is guided on the lever, and alarm mechanism actuated by said lever, substantially as set forth.

2. The valve V in the fluid-supply pipe, the lever Y, and connections between the valve and the lever, whereby a movement of the valve actuates the lever, in combination with the movable weight W, which is guided on the lever, the spring P, and alarm mechanism actuated by said lever, substantially as set forth.

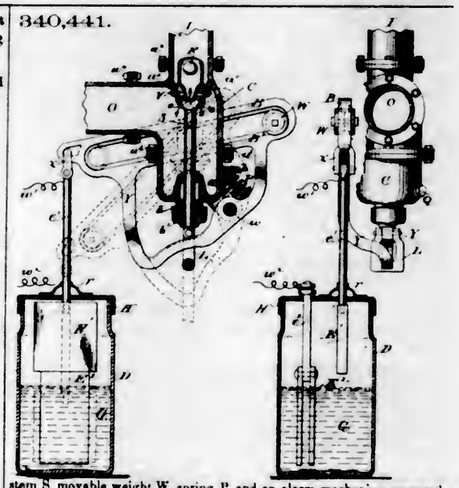
3. In an automatic alarm apparatus, the perforated straightway valve V, containing the float F, substantially as set forth.

4. In an automatic alarm apparatus, the perforated straightway valve V, containing the float F, in combination with the lever Y, valve-stem S, and an alarm mechanism operated by the lever, substantially as set forth.

5. In an automatic alarm apparatus, the perforated straightway valve V, containing the float F, in combination with the lever Y, valve-stem S, movable weight W, and an alarm mechanism operated by the lever, substantially as set forth.

6. In an automatic alarm apparatus, the straightway perforated valve V, containing the float F, in combination with the lever Y, valve-

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stem S, movable weight W, spring P, and an alarm mechanism operated by the lever, substantially as set forth.

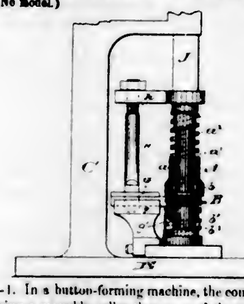
7. In automatic alarm apparatus, the straightway valve V, having water-passages *o*, in combination with the elastic float F, substantially as set forth.

8. The straightway valve V and valve-stem S, in combination with the lever Y, link L, and alarm mechanism actuated by said lever, substantially as set forth.

9. The automatic alarm-casing C, having a pocket, *a*, in the lower part thereof, and a closable outlet in said pocket, substantially as set forth.

10. The valve-casing C, provided with lugs *l* and stuffing-box *b* at its lower part, in combination with the stem S, pivoted lever Y, and alarm mechanism actuated by said lever, substantially as set forth.

340,442. BUTTON-MAKING MACHINE. WILLIAM HORNER, Newark, N. J., assignor to Thalheimer Brothers, same place. Filed Dec. 14, 1885. (No model.)



Claim.—1. In a button-forming machine, the combination, with the lower die, having a movable collar thereon, and the upper die, provided with a spring-actuated collar, and a stamping bar or die working through said spring-actuated collar, of mechanism constructed and adapted to engage automatically with and hold the said movable collar on the lower die immovable when the upper die is depressed and the said stamping-bar is forced downward through the spring-actuated collar into the lower movable collar, for the purposes set forth.

2. In a button-forming machine, the combination, with the lower die, having a movable collar thereon, and the upper die, provided with a spring-actuated collar, and a stamping bar or die working through said spring-actuated collar, of a reciprocating slide, and mechanism for causing said slide to engage with the said movable collar on the lower die and hold the same immovable when the dies impinge, substantially as and for the purpose set forth.

3. In a button-forming machine, the combination, with the lower die, having a movable collar thereon, and the upper die, provided with a spring-actuated collar, and a stamping bar or die working through said collar, of mechanism for holding the collar on the lower die immovable when the dies impinge, consisting of a reciprocating slide having a slot therein, the end of which nearest the dies is inclined or beveled, a rod connected and moving with the upper die and engaging with the beveled end of the slot in its downward movement, and a repressing-

spring, all said parts being arranged and operating substantially as and for the purposes set forth.

4. In a button-making machine, in combination, an upper die consisting, essentially, of a stamping-bar, a spring-actuated collar and a spring, a lower die consisting of a movable collar, a stamping-bar on which said collar moves, and a spring engaging with said collar, a slotted reciprocating slide, a repressing-spring engaging with said slide, a rod or arm connected and moving with the upper die, and a button-forming tool adapted to be inserted between the upper and lower dies, and of such a length as to prevent the rod connected with the upper die from engaging with the reciprocating slide, for the purposes set forth.

340,443. CAP FOR FLASKS, &c. WILLIAM C. JOHNSON, Philadelphia, Pa. Filed Feb. 26, 1886. (No model.)

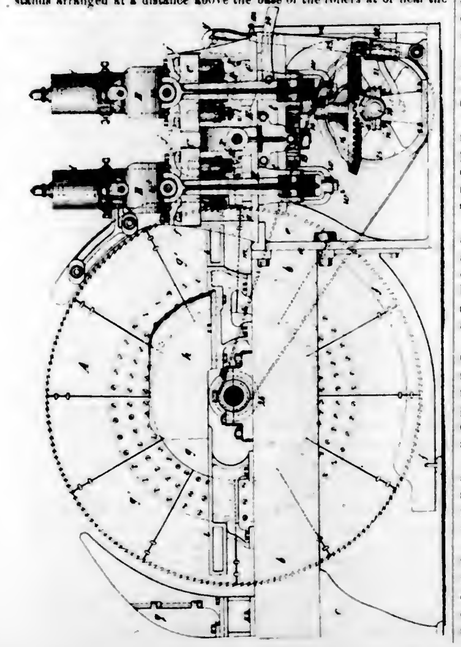


Claim.—The within-described cap or stopper for flasks, said cap consisting of the outer metallic shell, the internal flexible disk for closing the mouth of the flask, and a flat rubber washer interposed between the disk and the top of the cap and providing a uniformly elastic backing for that portion of the disk which is caused to bear upon the mouth of the flask, whereby said disk is free to yield to accommodate itself to inequalities in the mouth, all substantially as specified.

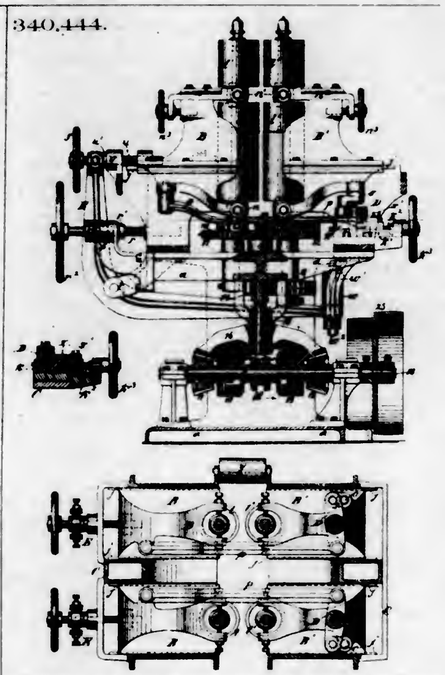
340,444. RESAWING-MACHINE. ISAAC R. JOSLIN, New York, N. Y. Filed Mar. 31, 1885. (No model.)

Claim.—1. In a resawing-machine, the combination, with a series of feed-rollers, a main carriage on which the stands are mounted, adjustable transversely to the saw, independent roll-stands B B', adjustable on said carriage, equalizing-bar D, pivoted on said carriage, and links *o p*, connecting said bar with the opposite stands, substantially as and for the purpose set forth.

2. In a resawing-machine, the combination, with the feed rollers, of the adjustable roll-stands having the sliding guides or ways of said stands arranged at a distance above the base of the rollers at or near the



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average center of grasp on the board, substantially as and for the purpose set forth.

3. In a resawing-machine, the combination, with the pair of feed-rollers and their adjustable roll-stands, and the supporting-frame on which said roll-stands slide, of the equalizing-bar D, pivoted on the supporting-frame and linked at opposite sides with the respective roll-stands, with the segment *x*, attached to said equalizing-bar and adapted to be clamped to or unclamped from the supporting-frame, and with the disconnectible link *p* between the equalizing-bar and the opposite roll-stand, substantially as shown and described.

4. In a resawing-machine, the combination, with a pair of feed-rollers and their roll-stands, of the equalizing-bar D, connecting-link *p* between said bar and stands, and adjustable slide or support *k*, on which said bar is pivoted, substantially as herein set forth.

5. The combination, with the main carriage C and roll-stands B B', mounted to slide thereon, and rollers *l l'*, carried by said stands, of the pivotal slide *k*, fixed on the main carriage C, equalizing-bar D, pivoted on said slide, connecting-links *o p* between said equalizing-bar and the roll stands, and means for adjusting said slide, substantially as herein set forth.

6. In a resawing-machine, the combination, with a fixed frame and a pair or series of feed-rollers, and a main carriage on which the same are mounted, and independent roll-stands adjustable on the same, of the elbow-lever E, pivoted on and moving with said carriage, with one end bearing on one of the roll-stands, and the other end loaded to press the said stand and its roller toward the opposite roller, substantially as shown and described.

7. In a resawing-machine, the combination, with the main carriage C and a pair or series of feed-rollers mounted thereon, of the movable roll-stand B, adjusting-screw *u*, engaged with said roll-stand, fixed abutment *v*, extending from said main carriage and through which screw passes, collar *u'* on said screw bearing against said abutment, and the elbow-lever E, having one arm engaged with said collar and the opposite arm loaded with a spring or its equivalent, substantially as set forth.

8. The combination, with the carriage C, a pair of feed-rollers, and an adjustable roll-stand, B, of the elbow-lever E, pivoted on said carriage and having one arm bearing against said roll-stand, with the yoke *w'* fixed to said carriage, and spring *w* bearing on the opposite arm of said lever within said yoke, substantially as shown and described.

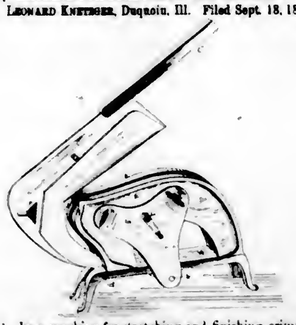
9. In a resawing-machine, the combination, with the series of feed-rollers and gearing connecting them, of the bevel gear-wheel 16, connected with the said roller-gearing, with the driving-shaft 18, arranged diametrical to said wheel, and provided with the double friction-cone clutch 20, sliding on a key thereon, with the pinions 17 17, loose on said shaft and engaging with the opposite sides of said wheel 16, and

provided with the friction-cups 19 19, substantially as shown and described.

10. In a resawing-machine, the combination, with the saw and saw-arbor *d* and the feed-rollers, with the gearing connecting them, of the pulley 26 on the saw-arbor, and pulley 25, to which motion is imparted with the shaft 18, pinions 17, clutches 19, and sliding clutch 20 on said shaft, with the bevel-wheel 16, meshing with said pinions and geared with the roller-gearing, substantially as shown and described.

11. In a resawing-machine, the combination, with the feed-rollers and gearing connecting them, of the bevel-wheel 16, geared with said gearing, driving-shaft 18, placed diametrical to said wheel, pinions 17 17, loose on said shaft and geared with opposite sides of said wheel, and provided with friction-cups 19, double sliding clutch 20, movable on a key on said shaft, between said cups, with the operating elbow-lever 21 and hand-lever 23, arranged and operating substantially as shown and described.

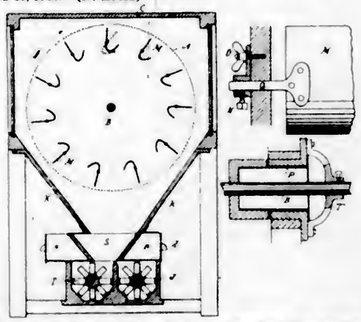
340,445. **MACHINE FOR STRETCHING AND FINISHING CRIMPED UPPERS.** LEONARD KNETSCHER, Duquoin, Ill. Filed Sept. 18, 1885. (No model.)



Claim.—1. In a machine for stretching and finishing crimped boot-uppers, the combination, with the matrix-plates E and blade B, provided with the slots *q*, of the sliding grip *r*, to grip and arrest the edge of the leather before the blade B has completed its movement.

2. In a machine for crimping and stretching boot-uppers, the combination of the blade B, matrix-plates E, and elastic plates G, having bearing-wings A *i*, and a tension-screw, L, whereby the pressure of said matrix-plates upon the leather being crimped is always in equilibrium, as set forth.

340,446. **BOLTING-REEL.** BRUNO KNIFFLER, Cleveland, Ohio. Filed Oct. 29, 1885. (No model.)

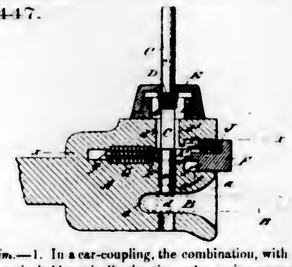


Claim.—1. In a bolting-cylinder as described, the combination, with the bolting-cylinder A, of the buckets M, having axes passing through the heads of said cylinder, slotted rock-arms N, the set-screws O, and the pinching-screws, whereby the relation between the buckets and bolting-cloth may be adjusted at will, as set forth.

2. In a bolting-cylinder, the combination of a bolting-cylinder, a series of buckets adjustably secured on pivots in the heads of the bolting-cylinder, the slotted rock-arms provided with index *c*, and clamping devices for holding them in their adjusted positions, substantially as described.

3. In a bolting-reel, the combination, with the bolting-reel, the buckets and their pivots, and as a means of adjustably securing the said buckets on their pivots in the heads of the bolting-cylinder, the rock-arms N, each provided with an aperture to receive the pivot of the bucket, and a set-screw, and a curved slot, *b*, to receive a thumb-screw, substantially as herein shown and described.

340,447. **CAR-COUPLING.** GEO. H. LIPE, China Grove, N. C. Filed Dec. 4, 1885. (No model.)

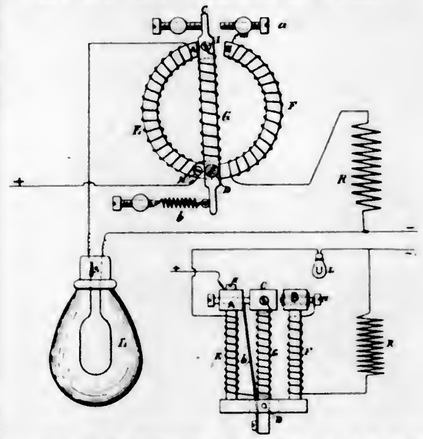


Claim.—1. In a car-coupling, the combination, with the draw-head, a coupling-pin held vertically therein, and a spring-pressed trip-plate, F, of a spring-pressed latch-plate, I, held to slide in plate F, and notched at *i* at its rear edge and slotted at *k*, and the limiting-screws K, passed through slots *k*, substantially as herein shown and described, and for the purposes set forth.

2. In car-couplings, the combination of the draw-head having a link-socket, *a*, the coupling-pin C, having a rectangular part, *c*, and fitted in a vertical hole in the draw-head, having stop-shoulders at d^3, a trip-plate, F, springs forcing said plate forward beyond the face of the draw-head, and said plate being slotted vertically at H, to support the pin and let it fall, a spring-pressed latch-plate, I, fitted to the trip-plate F, and adapted to operate with the coupling-pin substantially as specified, a spring, D, on the pin C, above the part *c*, and a removable cap, E, secured to the draw-head above the spring, substantially as herein set forth.

3. In car-couplings, the combination, with the draw-head socketed at *a*, a trip-plate, as at F, and a coupling-pin, C, and spring D, adapted to operate with the trip-plate F, substantially as specified, of a neck or projection, L, on the draw-head, provided with opposite angular slots, *l l*, and a cap, E, provided with a pin, l', and screw l^2, adapted to the slots *l*, substantially as herein set forth.

340,448. **CUT-OUT INSTRUMENT FOR INCANDESCENT LAMPS.** FRANKLIN P. LITTLE and WILLIAM H. MCDONALD, Albany, assignors to Joseph A. Powers, Troy, N. Y. Filed Nov. 16, 1885. (No model.)



Claim.—1. The electric cut-out formed of the cores A B and their helices, the pivoted armature-core provided with a helix, G, in combination with circuit-connections, substantially as set forth.

2. The cut-out for incandescent electric lamps formed of the electro-magnet cores A B, the armature C, pivoted upon such electro-magnet, the helix G around the armature, the stop *a*, and the circuit-connection through the respective helices, substantially as set forth.

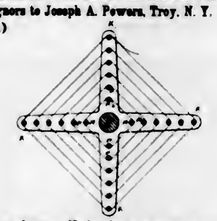
3. In a cut-out for incandescent electric lamps, the combination, with the electro-magnet cores, of an armature and helix adapted to vibrate between the poles of such electro-magnet, a stop to which one of the electro-magnet helices is connected, a spring to move the armature into contact with the said stop, and a resistance in the shunt-circuit passing through said stop, the incandescent lamp being connected in the circuit through the armature-helix, substantially as set forth.

4. In an electric cut-out, a split-ring-shaped core to which one of the circuit-wires is connected, an armature pivoted to the said core and swinging between the poles of the same, helices around the respective portions of the split-ring core, a helix around the armature, a stop for the armature to which one end of one of the magnet-helices is connected, a resistance connected to the other end of said helix, and a spring to swing the armature into contact with the stop, and the circuit-connections for including the incandescent lamp or similar device in the circuit of the armature-helix and one of the ring-magnet helices, substantially as set forth.

5. The combination, with the double magnet formed of the cores A B, armature-core C, and helices around such cores, of the rheostat having coils of wire around metallic bars covered with fire-proof electric insulating material, the rheostat-wires being wound so as not to touch each other, substantially as set forth.

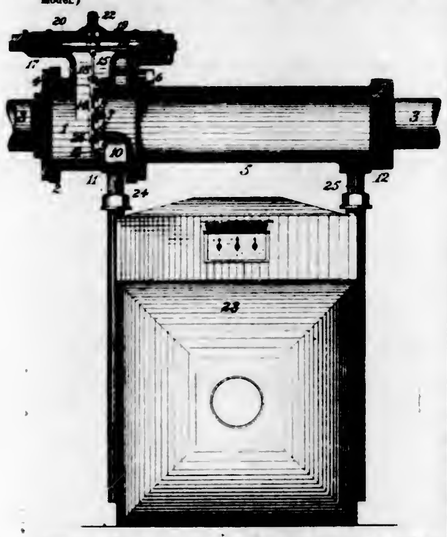
6. The base Q, in combination with the double magnet-cores A B C and their respective helices, the pendent support beneath the base, the cross-frames K, the ranges of connecting-wires *n o*, the fire-proof electric insulating material upon such connecting-wires, the coils of wire wound around such ranges of connecting-wires, and the movable perforated case surrounding such wires and frames, substantially as set forth.

340,449. **RHEOSTAT.** FRANKLIN P. LITTLE and WILLIAM H. MCDONALD, Albany, assignors to Joseph A. Powers, Troy, N. Y. Filed Jan. 22, 1886. (No model.)



Claim.—The cross-frames K, having connecting-wires and fire-proof electric insulating material upon their surfaces, in combination with the coils of wire wound around the ranges of connecting-wires, substantially as set forth.

340,450. **PRESSURE-REGULATOR FOR PROPORTIONAL GAS-METERS.** FRANK MOORE, Pittsburg, Pa. Filed Jan. 23, 1886. (No model.)



Claim.—1. The combination of a gas-supply pipe, a series of direct delivery-ports, and a meter port or ports whose area is a determined fraction of the combined areas of the direct delivery-ports, the direct delivery-ports and meter-ports each communicating with the supply-pipe, a regulating-valve governing the flow of gas through all of said ports, an independent pressure-regulator coupled to said regulating-valve, and a gas-meter adapted to receive a supply of gas from the meter port or ports and to deliver the same to a passage communicating with the discharge end of the direct delivery-ports, substantially as set forth.

2. The combination of a gas-supply pipe, a valve-chest interposed in and forming portion of the length thereof, a partition extending transversely in said chest and having a series of ports establishing communication directly between the ends thereof, and a port or ports of determined lesser area establishing communication between the supply end of the chest and a meter-supply passage, a regulating-valve governing communication through all of said ports, a diaphragm coupled to said valve and working in a pressure-chamber communicating with the supply end of the chest on the side of the diaphragm adjacent to the valve, a port or passage establishing communication between the delivery end of the chest and the pressure-chamber on the side of the diaphragm farthest from the valve, and a gas-meter having a supply-pipe communicating with the meter-supply passage, and a delivery-pipe communicating with the delivery end of the valve-chest, substantially as set forth.

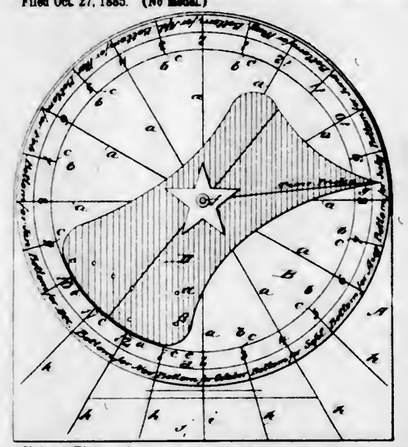
3. The combination of a valve-chest having a supply-nozzle or flanged opening at one end and a longitudinal extension terminated by a delivery nozzle or opening at the other, each of said end openings being suited for connection to a gas-supply pipe, a transverse partition having a series of ports establishing direct communication between the supply and delivery openings, and a port of determined lesser area establishing communication between the supply-opening and a lateral meter-supply passage leading to an opening in the wall of the chest, a regulating-valve adapted to work over all of said ports, a diaphragm coupled to the regulating-valve and extending across a pressure-chamber communicating with the supply-opening of the chest, a passage establishing communication between the delivery side of the valve-chest and the pressure-chamber on the side of the diaphragm farthest from the valve, and a meter-delivery passage formed in the wall of the longitudinal extension of the valve-chest, substantially as set forth.

340,451. **SOAP COMPOUND.** MARTIN S. MOOT, New York, N. Y. Filed Dec. 31, 1885. (Specimens.)

Claim.—1. The process described of dissolving rosin in light hydrocarbon oil and gradually mixing with soap at common temperatures in the presence of a small quantity of water, substantially as herein specified.

2. The compound described of soap and water, naphtha and rosin, combined in the manner and substantially in the proportions herein specified.

340,452. **STAR TIME-CHART.** JOSEPH B. MORSE, Brandon, Vt. Filed Oct. 27, 1885. (No model.)



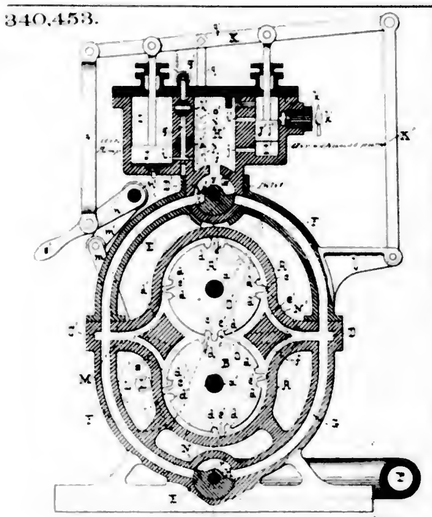
Claim.—The combination, with the back A, provided with radial lines *h i*, and the horizon-line *j*, of the graduated disk B, index D, having on one end a pointer and carrying at the opposite end a figure of a constellation, and a stud, *f*, projecting from the back and forming a common pivot for the disk B and index D, as herein specified.

340,453. **GAS-ENGINE.** NATHAN E. NASH, Westerly, R. I., assignor of one-half to Robert H. Staley, Jersey City, N. J. Filed Oct. 12, 1885. (No model.)

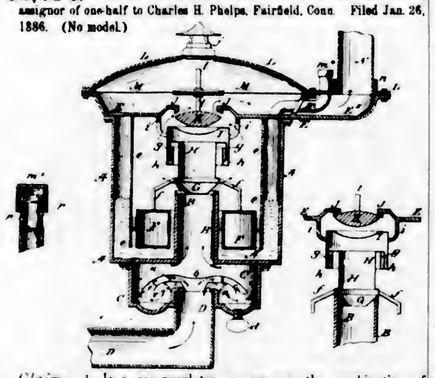
Claim.—1. In a gas-engine, the combination of a casing, a pair of rotary pistons with interlocking teeth situated within the casing, an explosion-chamber in communication with the interior of the said casing, valves to control the admission of the explosive gases to and others to control the exit of the said gases from the said casing, and means to supply the explosive mixture to the said explosion-chamber, substantially as specified.

2. In combination with the explosion-chamber of a gas-engine, a pipe to admit hydrocarbon fluid or gas thereto, having valves and suitable mechanism to control its flow to the said chamber, an air-pump to force air to the said chamber, and an air-exhaust pump to draw in a flame and effect the explosion of the mixture in the said chamber, substantially as specified.

340,453.



340,454. GAS-REGULATOR. ALONZO F. OLDS, New York, N. Y., assignor of one-half to Charles H. Phelps, Fairfield, Conn. Filed Jan. 26, 1886. (No model.)

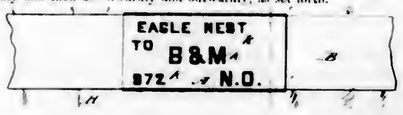


Claim.—1. In a gas regulator or governor, the combination of two valvular devices or mechanisms acting independently of each other and in a compensatory manner, as shown and described, and operated upon respectively by the pressure of gas in the supply-main and by the reduced pressure of gas within the main chamber of the regulator, so that in proportion as the valve first acted upon by the incoming gas will be opened will the valve through which the gas has next to pass be closed by the increased pressure within the chamber of the regulator, all substantially as and for the purposes hereinbefore set forth.

2. In a gas regulator or governor, the combination, with the gas-induction passage, the gas-eduction passage, and the main chamber, of the regulator, of one or more deflectors arranged or located between the gas-induction passage and the main chamber of the regulator, and operating, as described, to arrest or deprive the inflowing gas of its tarry ingredients and cause the same to collect in a suitable receptacle beneath the arresting devices, from which chamber such matter may be drawn off from the regulator, as set forth.

340,455. SHIPPING-TAG. JOHN A. PEGG, Jonestown, Miss. Filed July 27, 1885. (No model.)

Claim.—1. A metallic tag or label consisting of a plate with serrated edges on two opposite sides, which are bent downwardly and inwardly and then downwardly and outwardly, as set forth.



340,455.

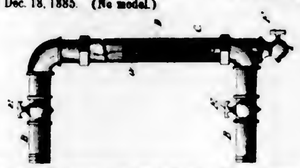


2. A metallic tag or label consisting of a plate having inwardly-projecting flanges *b d* and outwardly-projecting points *i* on two opposite sides, substantially as described.

3. The combination, with the bale-cover and the tie, of a metal tag or label in which two opposite sides are bent downward, inward, and outward, and the outwardly-projecting portion is formed with points or prongs, substantially as described.

4. The combination, with the bale-cover and the tie, of a metal shipping tag or label in which the shipping marks or devices are cut through the body of the tag, and in which two opposite sides are bent downward, inward, and outward, and the outwardly-projecting portion is formed with points or prongs, substantially as described.

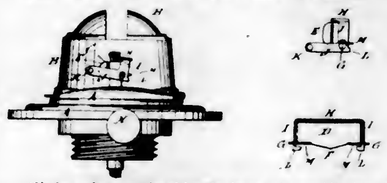
340,456. FLOAT FOR WATER-GAGES. RICHARD N. R. PHELPS, New York, N. Y., assignor to the New York Safety Gage Company. Filed Dec. 18, 1885. (No model.)



Claim.—1. A transparent gage-tube of ordinary type, with unobstructed interior, provided with boiler-connections having valves, as explained, combined with an elongated cylindrical float, of thin metal, provided with a guard, substantially as set forth.

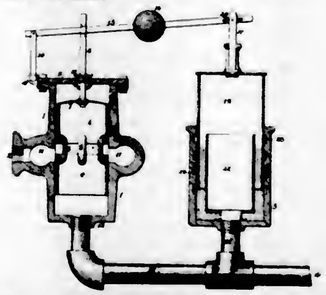
2. An elongated cylindrical float, of metal, provided with a wire guard at one of its ends and bent over or trained down along its sides, substantially as and for the purpose set forth.

340,457. LAMP-EXTINGUISHER. JACOB PHILIPPI, New York, N. Y., assignor to Charles M. Lamline, Kaufmann Kaufmann, and Isaiah Kaufmann, all of same place. Filed Sept. 29, 1885. (No model.)



Claim.—In an extinguisher for lamps, the combination, with the supporting-plate D and the loosely journaled or mounted plate H, having downwardly and forwardly projecting arms I J, and provided with a weight, K, of the points L, formed upon the downwardly-projecting arms of the loosely journaled or mounted plate H, and the lugs M, formed upon the lower edge of the supporting-plate D, substantially as herein shown and described, whereby the said hinged plate, when raised, by the upward movement of the wick will be swung to the rearward, as set forth.

340,458. FLUID-REGULATING VALVE. JOHN W. RAMSEY, Beaver Falls, Pa., assignor of one-half to John Corbus, same place. Filed Feb. 13, 1886. (No model.)



Claim.—1. A cylinder having an annular opening, and a tubular valve or cut-off located in the cylinder having an annular opening therein, and an imperforate head against which the steam-pressure is exerted, in

combination with a plunger-cylinder containing the plunger, lever-connections between the valve and plunger, and pipe-connections between the same, substantially as set forth.

2. A fluid-pressure pipe, an automatic cut-off valve located therein, an exterior corrugated cylinder, an interior cylinder fastened thereto, a liquid arranged between the two cylinders, and a piston-plunger working in the exterior cylinder, with lever-connections between it and the cut-off valve, the whole in combination, essentially as set forth.

3. In a fluid-pressure regulator, a valve-chamber, a tubular valve located in said chamber having an imperforate head at one end and an open head at the other, and steam-ports in both the chamber and valve, in combination with a cylinder having a piston, and lever and pipe connections between the same, as specified.

4. A fluid-pressure pipe, an automatic cut-off valve located therein, a cylinder containing a liquid, a tubular plunger having a closed head at one end working in the cylinder and liquid, and lever and pipe connections between said cylinder and the cut-off valve, all in combination, as set forth.

340,459. BAG AND SATCHEL FRAME. WILLIAM ROEMER, Newark, N. J. Filed Dec. 23, 1885. (No model.)

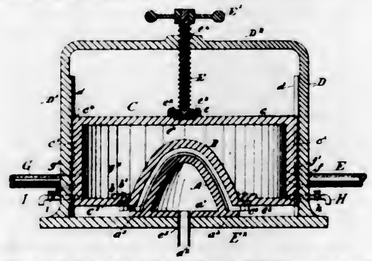


Claim.—1. A bag or satchel frame having grooved side sections adapted to receive the edge of the bag material which is secured to said side sections, the upper side of said groove being formed by a projecting bead, and the lower side projecting downward and outward under the bag material, for the purposes set forth.

2. A bag or satchel frame having grooved sides provided with perforations therein, to or within which the bag material is secured on the outside by stitches passing through the said perforations, the upper side of said groove being formed by a projecting bead, and the lower side projecting downward and outward under the edge of the bag material, for the purposes set forth.

3. A bag or satchel frame having grooved sides adapted to receive the edge of the bag material, the lower edge or portion of said groove projecting outwardly beyond the upper edge of the said groove under the bag material, the said outwardly-projecting portion being provided with perforations therein through which the stitches or rivets pass that secure the bag material to the frame, substantially as and for the purposes set forth.

340,460. METHOD OF PREPARING MOLDS FOR THE ELECTRO-DEPOSITION OF METALS. LEWIS H. ROGERS, Kansas City, Mo. Filed Mar. 8, 1886. (No model.)

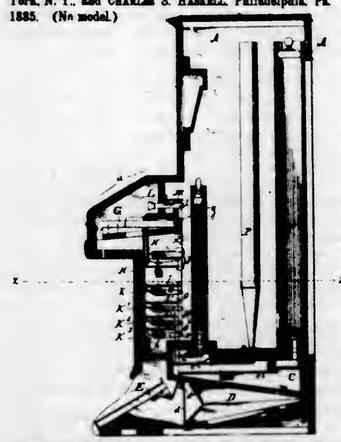


Claim.—1. The method herein described of preparing forms for the manufacture of metallic vessels or fac-similes in whole or in part, consisting of first making a rigid male form approximating to the form of the article desired to be reproduced, then forming upon the outer surface of said male form an auxiliary form of wax or equivalent substance of the exact size of the article to be reproduced, and rendering the surface of said auxiliary form conductive by the application of black-lead or its equivalent, and then immersing said form in a metallic solution or bath, in which bath are placed anodes connected electrically with a suitable electro machine or generator.

2. The herein-described method of treating forms for the electro-deposition of metals, consisting, first, of making a male form approximating to the size of the article desired to be manufactured, and then covering said form with an auxiliary form of wax or equivalent substance, and then inclosing said form and the wax formed thereon in a female form of the exact size of the article to be manufactured and subjecting said form to a suitable temperature, for the purpose described.

3. The herein-described method of treating forms for the electro-deposition of metals, consisting of first making a male form approximating the size of the article desired to be manufactured and treating said form to a solution of melted wax or its equivalent, then inserting said form in a female form of the exact size of the article to be manufactured and inclosing the extreme surfaces of said female form in a reservoir subjected to application of the heating and cooling agents, as and for the purpose specified.

340,461. CABINET PIPE-ORGAN. HILBORNE L. ROOSEVELT, New York, N. Y., and CHARLES S. HASKELL, Philadelphia, Pa. Filed Jan. 7, 1885. (No model.)



Claim.—1. In combination with the wind-chest of a pipe-organ, bellows-feeders applied directly to and forming the bottom of said wind-chest, substantially as and for the purposes set forth.

2. In a cabinet pipe-organ, the combination of a wind-chest placed horizontally in the lower part of the case, pipes superimposed upon said wind-chest, and bellows-feeders applied directly to and forming the bottom of said wind-chest, substantially as and for the purposes set forth.

3. In a pipe-organ, the combination of a wind-chest, bellows-feeders applied directly to and forming the bottom of said wind-chest, and a bellows-reservoir disposed in an upright position and having direct communication with said wind-chest, substantially as and for the purposes set forth.

4. In a cabinet pipe-organ, the combination of a wind-chest placed horizontally in the lower part of the case, pipes superimposed upon said wind-chest, bellows-feeders applied directly to and forming the bottom of said wind-chest, and a bellows-reservoir vertically disposed within the case and having direct communication with the wind-chest, substantially as set forth.

5. In a cabinet pipe-organ, the combination of a wind-chest placed horizontally in the lower part of the case, pipes superimposed upon said wind-chest, bellows-feeders applied directly to and forming the bottom of said wind-chest, a bellows-reservoir vertically disposed within the case, and a key action or mechanism for at will causing the movement of a key to control a pipe placed beneath the key-board and in front of the pipes, substantially as set forth.

6. In a pipe-organ key-action, a series of sets of key-levers disposed as to the levers of adjacent sets at divergent angular inclinations, but as to the levers of alternate sets in parallelism, and respectively connected as to their respective extremities with stickers and with trackers, substantially as shown and described, and for the purposes specified.

7. The combination, in a pipe-organ key-action, of a series of sets of key-levers disposed as to the levers of adjacent sets at divergent angular inclinations, but as to the levers of alternate sets in parallelism, and respectively connected as to their respective extremities with stickers and with trackers, and a series of pivoted lever-bars upon which the respective sets of key-levers have their fulcra, substantially as set forth.

8. The combination, in a pipe-organ key-action, of a series of sets of key-levers disposed as to the levers of adjacent sets at divergent angular inclinations, but as to the levers of alternate sets in parallelism, and respectively connected as to their respective extremities with stickers and with trackers, a series of pivoted lever-bars upon which the respective sets of key-levers have their fulcra, and a series of draw-stops corresponding in number with the lever-bars and adapted to control the set of said lever-bars with respect to their pivots, substantially as set forth.

9. In a cabinet pipe-organ key-action, the combination of a board of keys, a series of stickers corresponding in number to the keys, a series of sets of key-levers, the levers of each of which sets correspond in number with the stickers and are disposed in adjacent sets at divergent angular inclinations, but in alternate sets in parallelism, and a series of trackers arranged and connected with the key-levers, substantially in the

manner hereinbefore set forth, and controlling the pallet-levers of the pipes, substantially as described.

10. In a cabinet pipe-organ key-action, the combination of a board of keys, a series of stickers corresponding in number to the keys, a series of sets of key-levers, the levers of each of which sets correspond in number with the stickers and are disposed in adjacent sets at divergent angular inclinations, but in alternate sets in parallelism, a series of trackers arranged and connected with the key-levers, substantially in the manner hereinbefore set forth, and controlling the pallet-levers of the pipes, and a series of pivoted lever-bars upon which the respective sets of key-levers have their fulcra, substantially as described.

11. In a cabinet pipe-organ key-action, the combination of a board of keys, a series of stickers corresponding in number to the keys, a series of sets of key-levers, the levers of each of which sets correspond in number with the stickers and are disposed in adjacent sets at divergent angular inclinations, but in alternate sets in parallelism, a series of trackers arranged and connected with the key-levers, substantially in the manner hereinbefore set forth, and controlling the pallet-levers of the pipes, a series of pivoted lever-bars upon which the respective sets of key-levers have their fulcra, and a series of draw-stops corresponding in number with the lever-bars and adapted to control the set of said lever-bars with respect to their pivots, substantially as set forth.

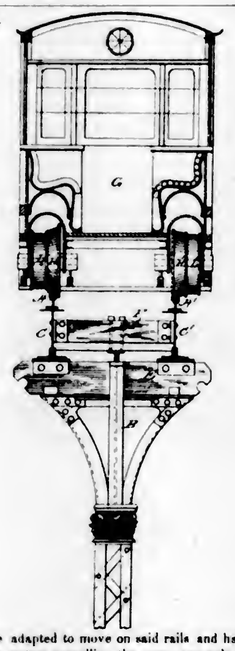
12. In a cabinet pipe-organ, the combination of a board of keys, each of which is connected with a given sticker, and through the medium of said sticker with a series of key-levers belonging to different sets of key-levers disposed as to the levers of adjacent sets at divergent angular inclinations, but as to the levers of alternate sets in parallelism, a series of stickers, a series of sets of key-levers, and a series of trackers controlling the pallet-levers of pipes an octave apart either in the same or in different stops with given trackers, of which series given key-levers of adjacent sets having a common sticker are respectively connected, substantially as hereinbefore set forth.

13. In a cabinet pipe-organ key-action, the combination of a series of sets of key-levers disposed as to the levers of adjacent sets at divergent angular inclinations, but as to the levers of alternate sets in parallelism, a series of pivoted lever-bars upon which the respective sets of key-levers have their fulcra, a series of draw-stops corresponding in number with the lever-bars and adapted to control the set of said lever-bars with respect to their pivots, and a series of trackers connected with pallet-levers of the pipes passing through holes in the inner ends of the key-levers and equipped with buttons, which in the normal set of the parts are beyond range of contact with the key-levers when deflected by the keys, and which are only in range of given key-levers when the lever-bars of said levers are lifted by the action of a draw-stop, substantially as set forth.

14. The combination, in a pipe-organ key-action, of a series of sets of key-levers disposed as to the levers of adjacent sets at divergent angular inclinations, but as to the levers of alternate sets in parallelism, all of the levers of adjacent sets being of corresponding lengths rearwardly from their fulcra, but the lengths of all the levers of given alternate sets being different, and a series of sets of trackers disposed by sets in parallel longitudinal planes, and by sets connected with key-levers of given lengths, substantially as set forth

15. The combination of a draw-stop having an incline upon its rod or body, a draw-stop lever, one part of which rests and travels upon said incline, a stop-action wire, and a pivoted key-action lever-bar, substantially as and for the purposes set forth.

340,462. **ELECTRIC RAILWAY.** ERNST W. SIEMENS, Berlin, Prussia, Germany. Filed Oct. 10, 1885. (No model.) Patented in Germany Jan. 19, 1880, No. 14,786; in Belgium Jan. 23, 1880, No. 50,357; in France Jan. 27, 1880; in Austria-Hungary Jan. 30, 1880, No. 4,247 and No. 1,133; in England Feb. 10, 1880, No. 583, and in Italy Sept. 23, 1881, No. 13,392.



Claim.—1. In an electric railway, the combination of rails A A' and longitudinal bearers C C', acting as conductors and insulated from each other by insulating transverse bearers E on standards B, substantially as herein described.

2. In electric railway-vehicles, the combination of the wheels H H' on separate axles running in insulated bearings, with the dynamo-electric machine I, with the poles of which the wheels H H' are respectively connected, and whose armatures impart motion, by pulleys K and belts or cords M, to pulleys L, fixed or formed on the said wheels H H', substantially as herein described.

3. In an electric railway, the combination of one or more stationary dynamo-electric machines with conductors extending along the whole line and formed wholly by rails insulated from the ground and from each other, and raised upon standards, so as not to obstruct travel or traffic, on which rails are vehicles having electro-dynamic motors fixed thereon for imparting motion thereto, the electrical connection between the electro-dynamic motors and the stationary dynamo-electric machine being maintained continuously by the wheels of the vehicle.

4. In an electric railway, the combination of one or more stationary dynamo-electric generators driven by suitable power, a conducting-circuit formed wholly of rails insulated from the ground and from each other and raised upon standards, so as not to obstruct travel or traffic, a wheeled vehicle adapted to move on said rails and having one or more electro-dynamic motors propelling the same, one pole of said motor being in electrical connection with the stationary generator through one line of elevated rails and the other electrically connected with the other line of elevated rails, for completing the circuit through the stationary generator.

5. The combination of the insulated rails A A', insulated longitudinal conducting-bearers C C', transverse insulating-bearers E, of wood, glass, or suitable insulating material, and iron standards B, as and for the purpose described.

6. The carriage G, having wheels H on one side, insulated from wheels H' on the other, the insulated rails A A', the insulated bearers C C', the insulating-bearers E, and the standards B, all combined as and for the purposes described.

7. In an electric railway, the combination of iron or steel conducting-standards, transverse insulating-bearers, longitudinal conducting-bearers supporting the rails and forming therewith insulated conductors, and electrical connections between the longitudinal conducting-bearers and the conducting-standards, whereby the current from a rail and its conducting-bearer may be put to earth, as and for the purpose described.

8. The combination of iron or steel conducting-standards, transverse insulating-bearers, longitudinal conducting-bearers supporting the rails and forming therewith insulated conductors, a carriage having its wheels on one side insulated from those on the other, and an electro-dynamic motor mounted upon the carriage, having one of its poles connected with the wheels on one side and one of its poles connected with the wheels on the other side, as and for the purpose described.

9. In an electric vehicle, the combination of wheels running in insulated bearings and an electro-dynamic motor depending from the floor of the vehicle, the poles of which are electrically connected with the axles of the vehicle, as and for the purpose described.

10. The combination of a car or vehicle, a circuit of conductors from a stationary dynamo-electric machine, an electro-dynamic motor included in the circuit of conductors, the axis of which has pulleys at each of its ends, wheels having pulleys fixed or formed on their sides, and mechanical connections between the pulleys on each end of the axis of the motor and the pulleys upon the wheels, as and for the purpose described.

11. The combination of longitudinal girders C C' and the claws N on the under side of the carriage, as and for the purpose described.

12. In an electric railway, the combination of rails insulated from each other and a conducting bearer or bearers insulated from the ground and electrically connected with one or both of the rails, whereby a large conducting-surface is effected for the current, as and for the purpose described.

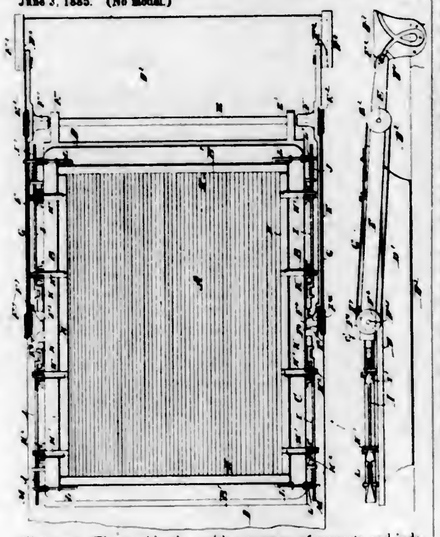
340,463. **LOOM-SHUTTLE.** WILTON H. SPENCER, Providence, R. I. Filed July 11, 1885. (No model.)

340,463.



Claim.—The split expanding spindle B, formed with diverging heel portions grooved on their outer sides, substantially as described, in combination with the frame C, having the lips *d d*, and the separate springs *n n*, adapted to engage with the said grooved heel portions, substantially as specified.

340,464. **TYMPAN.** GEORGE H. SQUIER, Trempealeau, Wis. Filed June 3, 1885. (No model.)



Claim.—1. The combination, with a tympan, of separate and independent paper-clamping strips at the edges and of mechanism for automatically opening the said strips, substantially as herein shown and described.

2. The combination, with a tympan, of paper clamping-strips secured on pivoted levers, springs acting on the said levers, sliding rods having wedges for swinging the levers from each other, and forked pieces for operating the said rods, substantially as herein shown and described.

3. The combination, with a tympan-frame, of pivoted paper-clamping strips, sliding rods for swinging said strips from each other, and forks secured on the table for receiving the paper, which forks operate the said rods, substantially as herein shown and described.

4. The combination, with a tympan-frame, of the paper-clamping strips H, the pivoted levers H', secured to the strips and having hook ends H^3, the sliding rods I on the tympan-frame, having wedge parts I', and of the forked pieces for moving the rods I, substantially as herein shown and described.

5. The combination, with a tympan-frame, of the paper-clamping strips H, the pivoted levers H', having hook ends H^3, the sliding rods I, having wedge-shaped parts I', the U-shaped pieces K on the inner ends of the rods I, and of the forks Q, substantially as herein shown and described.

6. The combination, with a tympan-frame, of the clamping-strips H at the sides and ends, the pivoted levers H', secured to the side strips H and having hooks H^3, the sliding rods I, having the wedge-shaped pieces I' and the wedge-shaped heads M at the ends, springs acting on the rods I, the rods L, secured to the end strips H, and the springs L', surrounding and acting on the rods L, substantially as herein shown and described.

7. The combination, with the track-plate, of the sliding carriage on the same, the plate or bed on the carriage, and a tympan-frame held between bars pivoted on the bed-plate, and carrying pins which pass into cam-tracks in lugs projecting from the track-plate, substantially as herein shown and described.

8. The combination, with the track-plate, of a carriage on the same, a bed-plate on the carriage, a tympan-frame pivoted between bars pivoted on the bed-plate, pins carrying rollers on the ends of the said bars, and of the jaws D^3, having looped V-shaped cam-tracks D^4, substantially as herein shown and described.

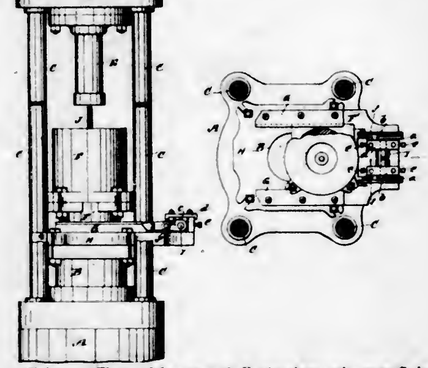
9. The combination, with a sliding carriage, of a bed-plate on the same, bars mounted to turn on the bed-plate, a tympan-frame pivoted between the bars, pieces having cam-tracks acting on the opposite ends of the bars, pulleys on the pivots of the tympan-frame, fixed pulleys on the bars between which the tympan-frame is pivoted, and of the endless belts passing around the pulleys on each side of the tympan-frame, substantially as herein shown and described.

10. The combination, with a sliding carriage, of a bed-plate on the same, bars pivoted to the bed-plate, a tympan-frame pivoted between the bars, pins carrying rollers on the ends of the bars opposite those to which the tympan-frame is pivoted, pieces having cam-tracks in which the rollers on the pins run, pulleys on the pivots of the tympan-frame, fixed pulleys on the bars between which the tympan-frame is pivoted, belts passed over the pulleys on each side of the frame, ratchet-wheels on the pulleys on the pivots of the tympan-frame, and of pawls pivoted to the bars between which the tympan-frame is pivoted, the said pawls engaging with the ratchet-wheels formed on the pulleys on the pivots of the tympan-frame, substantially as herein shown and described.

11. In a printing-press, the combination, with a sliding carriage and tracks therefor, of bars pivoted to opposite sides of the carriage near their forward ends, a tympan pivoted centrally between the rear ends of the said bars, a cam acting on the forward ends of the bars to swing the same, and mechanism, substantially as described, for swinging the tympan automatically in relation to the bars when said bars swing in one direction, and holding the tympan fixed in relation to the bars when said bars swing in the opposite direction, substantially as and for the purpose set forth.

12. The combination, with a tympan-frame having paper-clamping springs on both surfaces, of the sheet or blanket held in the frame, bars between which the tympan-frame is pivoted, mechanism, substantially as described, for reversing the tympan in relation to the bars when the bars swing in one direction, and for holding the tympan fixed in relation to the bars when the said bars swing in the opposite direction, forks on the table on which the paper is deposited, sliding rods on the tympan-frame for actuating the clamping-pieces, and of U-shaped pieces on the sliding rods, which U-shaped pieces are engaged with the forks, for the purpose of automatically grasping and clamping or releasing the sheet, substantially as herein shown and described.

340,465. **MACHINE FOR MAKING LEAD PIPE.** CHRISTOPHER C. TRACY, Brooklyn, assignor to the Colwell Lead Company, New York, N. Y. Filed Dec. 28, 1885. (No model.)



Claim.—1. The receiving-reservoir F, placed upon the ways G, in combination with the capstan I, having cranks connected by suitable connecting-rods to the receiving-reservoir, substantially as described.

2. The combination, with the piston of the press, of the intermediate plate, H, and receiving-reservoir F, placed upon or in the ways G, formed or secured upon the plate H, substantially as described.

3. The capstan I, held in adjustable bearings and connected with the receiving-reservoir F, for moving and adjusting the same, substantially as described.

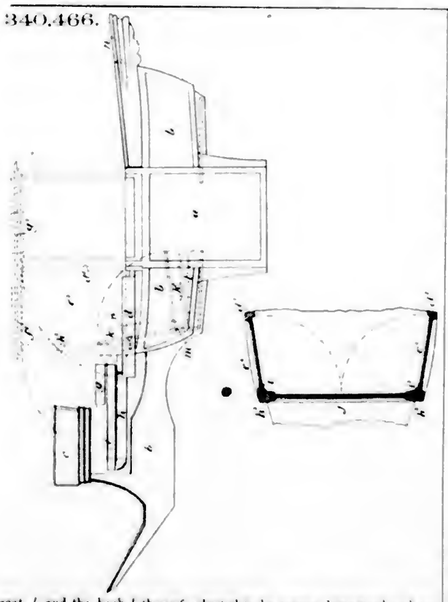
4. The combination, with the movable receiving-reservoir F and capstan I, connected by cranks *a* and rods *b* with the receiving-reservoir, of stops *f*, arranged to stop the cranks *a* and rods *b* in line with the axis of the capstan, as and for the purposes set forth.

340,466. **CARRIAGE.** ROBERT S. TUCKER, Flushing, N. Y. Filed Feb. 27, 1886. (No model.)

Claim.—1. In combination with the forward seat, *l*, the back *k*, adapted to swing downward, and the forward frame, *h*, and side panels or lights, *e'*, adapted to be folded, substantially as described.

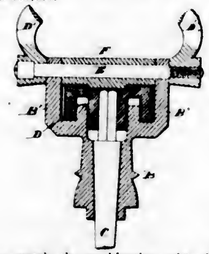
2. In combination, the forward frame, *h*, pivoted to the carriage-body, the side panels or lights, *e'*, pivoted to the frame *h*, the forward

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seat, *l*, and the back *k* thereof, adapted to be swung downward and extending upward above the level of the bottoms of side lights or panels *e'*, substantially as described.

340,467. WATCH PENDANT AND BOW. LOUIS J. VILLEROT, Besançon, France. Filed Aug. 5, 1885. (No model.) Patented in France Aug. 8, 1884, No. 163,667.

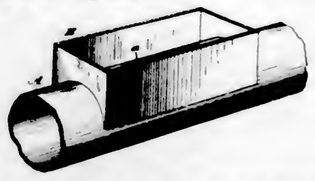


Claim.—1. In a watch, the combination, with the pendant terminating at its upper end in a chamber, a stem projecting into said chamber and carrying the crown, a plate placed in said chamber over the crown and the ring, of a pin or pins passing through the ring and through the pendant and plate, as described.

2. In a watch, the combination, with a pendant terminating at its upper end in a chamber, a stem projecting into said chamber and squared at that end, a crown mounted thereon, a plate fitted in said chamber over the crown, and the ring, of a pin or pins passing through said ring, pendant, and plate, as described.

3. The combination, in a watch, with the pendant B, stem C, crown D, and plate E, of the ring D' and pin F, constructed and arranged substantially as described.

340,468. TOBACCO-DRIER. EDWARD WALTON, Cartersville, Va. Filed Oct. 28, 1885. (No model.)

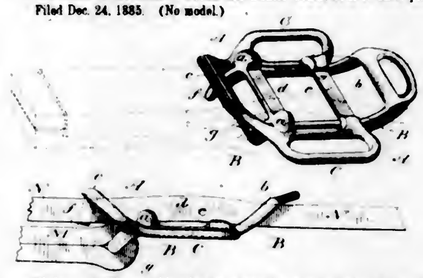


Claim.—1. An evaporating-pan for tobacco-curing apparatus, having its bottom wall concaved from end to end to form pendent contracted side channels, and adapted to set securely upon the heat-conveying flues, substantially as and for the purpose described.

2. The combination, with a heat-conveying flue, of an evaporating-pan having its bottom wall concaved from end to end to form pendent contracted side channels, arranged, respectively, along the sides of the flue, said bottom wall resting in contact with the surface of the flue, substantially as described.

3. The combination, with a heat-conveying flue, of an evaporating-pan having at one end a connecting-pipe, *b*, and provided with a concaved bottom wall resting in direct contact with the outer surface of the flue, and forming pendent contracted channels at the sides of the pan, substantially as described.

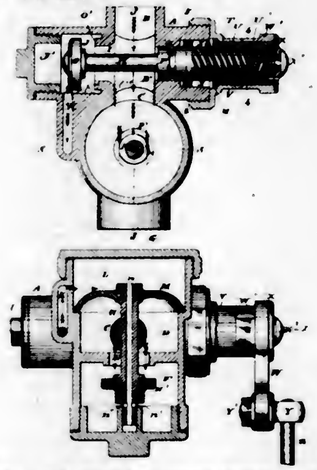
340,469. BUCKLE. CLARK W. WHEELER, Kenosha, Wis., assignor of two-thirds to Hermann F. Hoehn and Daniel Toner, both of same place. Filed Dec. 24, 1885. (No model.)



Claim.—1. The combination, in a buckle, of the section A, having its sides upwardly inclined at one end and provided with cross-bars *c* and *e*, and a section, B, having its sides upwardly inclined at the opposite end and provided with cross-bars *b* and *d*, the curved sides of each of said sections being arranged to engage with the other section, and when draft is applied to the trace to draw said cross-bars *b* and *c* toward said cross-bars *d* and *e* and clamp said trace at different points between them, substantially as and for the purposes set forth.

2. The combination, in a buckle, of the section A, upwardly or outwardly curved at its front end and provided with cross-bars *c* and *e* and depending tongue *f*, and the section B, upwardly or outwardly curved at its rear end and provided with the cross-bars *b* and *d* and the lateral projections *a a*, substantially as and for the purposes set forth.

340,470. VALVE. PATRICK J. WHITY, St. Louis, Mo. Filed Mar. 2, 1885. (No model.)



Claim.—1. The combination, with the chambers B' and D, communicating with each other through the passage C, and having the induction and eduction ports B and E, respectively, of the valve N', seated against the pressure in the chamber D and closing the eduction-port E, the valve-stem N, to which it is secured, passing through port E, the cup or disk M, secured to said stem, a chamber, L, above said cup or disk M, the duct K and port I, through which the chambers L and B' communicate, the valve O, for controlling said port I, and a duct of smaller area than the duct K opening from the chamber L, for the escape of the fluid therefrom, substantially as set forth.

2. In a valve, the combination, with a chamber having an induction-port, an eduction-port, and a balancing-bore opening thereinto, of a valve located on the outside of the chamber, for closing said eduction-port against the pressure of fluid within the chamber, and a packing fitting in said balancing-bore, said valve and packing being connected and each having an equal area exposed to the action of the fluid within the chamber, whereby the parts are balanced, substantially as set forth.

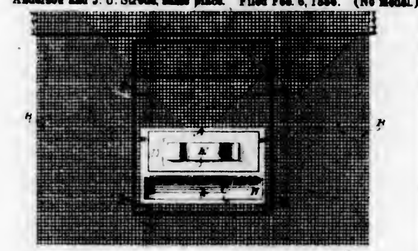
3. The combination of a valve having a passage, B B' C, communicating with the middle chamber, D, of an automatic valve, a port and valve, I O, between said passage and chamber J, a duct, K, leading from chamber J to the upper chamber, L, an inverted elastic cup separating chamber L from the chamber D, and a valve-stem secured to the inverted cup and to a valve closing the connection between the chamber D and discharge-chamber F, and having a duct, *n n'*, leading from the chamber L to the chamber F.

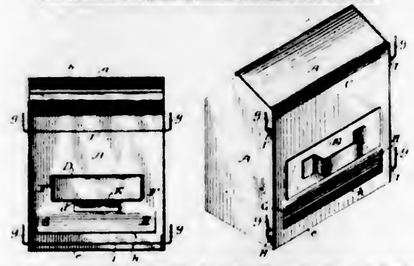
4. In a valve, the combination, with the chamber B', having the induction-opening B, of the balancing-bore Q and the discharge-port I, of equal diameter, opening thereinto at diametrically-opposite points, the valve-stem H, passing through said chamber and through the port I, the packing P, secured to the stem and working within the bore Q, and the valve O, secured to said stem outside of the chamber B', closing the port I against the pressure of the fluid within the chamber, as set forth.

5. In a valve, the combination, with a screw-threaded stem and guides for preventing its rotation, of an internally-screw-threaded nut having a lateral projection or flange, a cap having a circular groove in which said projection or flange engages, and a lever engaging with said nut, for the purpose set forth.

6. The combination, with the valve-case A, having the bore Q and grooves or ways S, of the valve-stem H, having the guides R and the screw-thread T, the internally-screw-threaded nut U, having the cylindrical exterior and flange *u*, the shouldered cap V, and the lever W, engaging said nut, substantially as and for the purposes set forth.

340,471. FLY-TRAP. CLARK ANDERSON, Holden, Mo., assignor to A. Anderson and J. U. Strode, same place. Filed Feb. 6, 1886. (No model.)





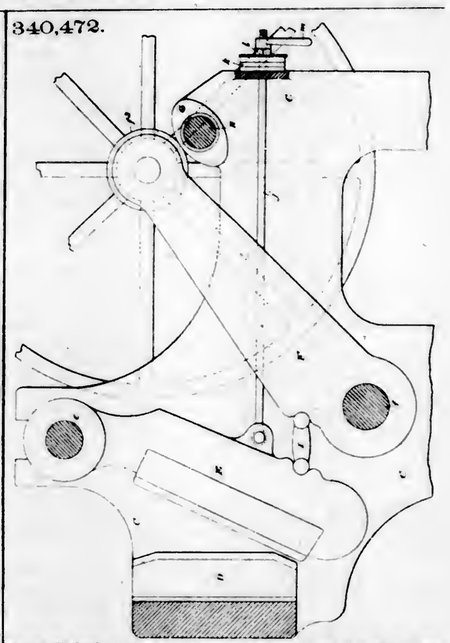
Claim.—1. As an improved article of manufacture, a fly-trap formed of sheet metal, having a drawer-opening, and an entrance in its rear wall, an opening in its roof to admit light and form an outlet-passage, a drawer adapted to hold bait, and wire arms for securing the whole to a screen, substantially as specified.

2. The combination, with a window or door screen having an opening, as described, of a trap having an opening in its roof to admit light and form an outlet-passage, a drawer-opening and inlet-aperture in its rear wall adapted to coincide with the opening in the screen, a removable bait-holder, and the arms for securing the trap to the screen, substantially as set forth.

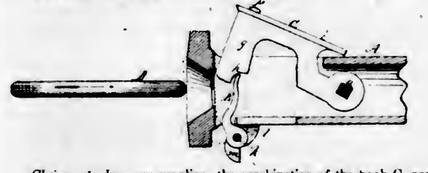
340,472. ORE-CRUSHER. THOMAS ARCHER, Jr., Gateshead-on-Tyne, England. Filed Feb. 24, 1885. (No model.) Patented in England Nov. 25, 1884, No. 15,521; in Germany Feb. 1, 1885, No. 32,636; in France Feb. 13, 1885, No. 166,996, and in Belgium Feb. 14, 1885, No. 67,889.

Claim.—In a machine for crushing ores, the combination, with the frame C, having the fixed jaw D, of the movable jaw E, hinged at top, the vibrating lever F, fulcrumed at one end and provided with an anti-friction roller, *f*', at the other, a thrust or toggle piece, I, interposed between the back of the movable jaw and the adjacent face of the lever F above its fulcrum, the operating-shaft, H, having cam G, the rod *j*, and the spring *k*, all constructed and arranged to operate substantially as set forth.

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340,473. CAR-COUPLING. ALBERT ARMITAGE, Lyons, N. Y., assignor of two-thirds to Edward F. Gilbert and Edward F. Kershner, both of same place. Filed Sept. 21, 1885. (No model.)



Claim.—1. In a car-coupling, the combination of the hook C, provided with a curved notch, *h*, in its lower end, and the dog E, provided with a counter-weight at its outer end, the dog rising and entering the notch when the hook is elevated and supporting the same, as set forth.

2. In a car-coupling, the combination of the hook C, provided with a curved notch, *h*, in its lower end corresponding with the circle of the link in cross-section, and the dog E, provided with a counter-weight at the outer end, the notch serving to hold the link in place to engage with the coupling on the next car, and the dog resting in contact with the link at any adjustment of the latter, as set forth.

340,474. ELECTRIC BATTERY AND MEANS FOR EMPTYING AND RECHARGING IT WITH THE EXCITING-FLUID. JAMES T. ARMSTRONG, London, England. Filed Dec. 9, 1885. (No model.) Patented in England June 5, 1885, No. 6,878.

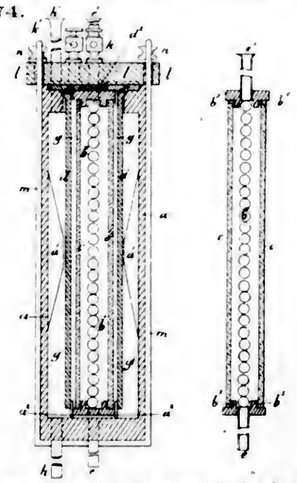
Claim.—1. In an electric battery or battery-trough, the combination of the frame *b*, the flanges b^2 on the inner face thereof, electrodes, as *b'*, fitting at one end in a metallic trough and at the other in an insulated groove, and porous plates *c*, fitting against flanges b^2, substantially as and for the purposes described.

2. In an electric battery, the combination of frame *b*, provided with flanges b^2, electrodes *b'* between said flanges, as specified, porous plates *c*, fitting outside of said flanges, electrodes *d* outside of said plates, and distance-pieces, as a^2, between said electrodes and plates, substantially as described.

3. In an electric battery, the combination, with frame *b*, electrodes *b'*, and porous plates *c*, of the outer trough, *a*, and electrodes *d*, formed with flanges d^2, said flanges resting on frames *a* and *b*, and suspending the electrodes, substantially as described.

4. In an electric battery, the combination, with a box, *a*, having

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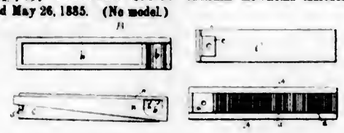


electrodes *d* suspended therein, of the frame *b*, having flanges *b²*, and provided with side plates, *c*, and electrodes *b'*, inclosed within frame *b*, and having their ends fitting between flanges *b²*, substantially as described.

5. In an electric battery, the combination of frame *b*, electrodes *b'* within the same, porous plates *c*, closing the sides of said frame, electrodes *d*, fitting outside of said plates, inlet-pipe *h* and exit-pipe *h'* to the space between box *a* and electrodes *d*, and inlet and exit pipes *e e'*, communicating with the space between frame *b* and plates *c*, substantially as described.

6. The combination of a battery composed of closed elements with a pair of liquid-reservoirs, *o o'*, adapted to move up and down, and a stationary cistern, *u*, the said reservoirs being connected with the cells of the battery at the top and bottom, as described, and the cistern *o'*, with the stationary cistern *u*, in manner substantially as and for the purposes described, and shown on the drawings.

340,475. PRINTER'S QUOIN. RICHARD ATWATER, Meriden, Conn. Filed May 26, 1885. (No model.)



Claim.—1. A quoin formed of a straight way-piece, with a cogged rack on its interior face, a wedge chambered transversely for nearly its entire length, and a tapering follower-piece, the whole held in proper relative position each to the other by means of inwardly-projecting lugs on the adjacent faces of the two outer pieces and the central slot of the intervening wedge-piece, into which the said lugs engage, the whole held together by a transverse rivet or bar, which holds the parts loosely together, substantially as shown and set forth.

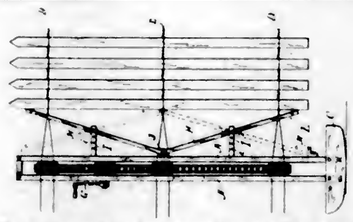
2. The parallel-sided way-piece A, cogged on its interior face, and also provided with an inwardly-projecting lug, *a'*, near one of its ends on the same face, the tapering follower-piece C, with a similar lug, *c*, near its wider end, and the central wedge, B, chambered for nearly its entire length, for the longitudinal movement therein of the said interlocking lugs *a'* and *c*, the whole combined as described and set forth.

3. In a quoin, a sliding wedge seated between a parallel-sided sliding way and a tapering follower-block, the way-piece and the follower attached together by a connecting bar or rivet, which passes through a central longitudinal slot in the wedge, said quoin being adapted to be operated by a turning key or winch fitted into an aperture or notch in the wedge, and arranged to engage with a cogged rack on the way-piece, substantially as shown and set forth.

340,476. MACHINE FOR MANUFACTURING FENCES. RILEY J. AULTMAN, Clark's, Ohio. Filed Nov. 23, 1885. (No model.)

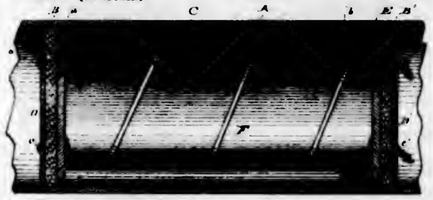
Claim.—1. In a fence-making machine, the combination, with a suitable upright provided with a stop, K, and suitable brackets or projections, I, of levers H, pivotally mounted near their outer ends in said brackets or projections, pivoted to each other at their inner ends, and provided with handle J and pins L, as and for the purpose set forth.

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2. In a fence-making machine, the combination, with suitable frames and wire-twisting wheels mounted therein, of projections or brackets I, secured to the frame, levers H, pivoted in said brackets or projections and provided with pins L and handle J, and stop K, secured to the frame, as and for the purpose set forth.

340,477. CARRIER FOR PNEUMATIC TRANSMISSION. SIGMUND BERGMANN, New York, N. Y., assignor to Bergmann & Co. Filed Feb. 20, 1886. (No model.)

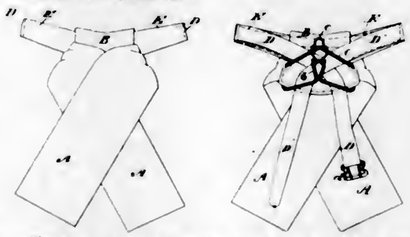


Claim.—1. In a pneumatic carrier, the combination of a flexible rubber cylinder closed at one end and a rubber cap for closing the other end, substantially as set forth.

2. The cylinder for a pneumatic carrier, molded of soft rubber, with one end open and the other closed, and a screw-thread at the open end, in combination with the rubber cap for closing the same, substantially as set forth.

3. In a pneumatic carrier, the combination of the cylinder of flexible rubber having a flange at one end, the flanged rubber cap closing the other end, and the felt disks secured one to said flanged end, the other to said cap, substantially as set forth.

340,478. NECKTIE. MAURICE K. BURGER, New York, N. Y. Filed July 23, 1885. (No model.)



Claim.—1. A neck tie or scarf provided with a flexible curved piece, as E, the ends whereof project beyond the sides of the scarf, for the purpose explained, each of said ends being provided with a band, whereby the scarf may be secured in position, substantially as set forth.

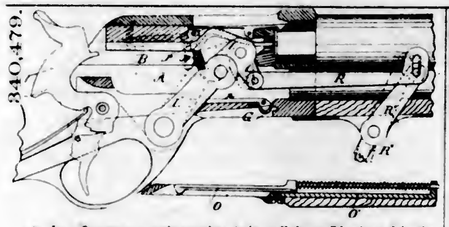
2. A neck tie or scarf comprising a supporting-shield, a loop, B, flexible curved piece E, whose ends project from the sides of said loop and beyond the sides of the scarf, and bands permanently secured to the ends of said curved piece E, substantially as set forth.

3. A neck tie or scarf provided with a curved piece, as E, whose ends project beyond the sides of the scarf and are provided with bands, as shown, and the cord *c*, whereby said bands are held against the back of the shield of the scarf, substantially as set forth.

340,479. MAGAZINE-GUN. ANDREW BURGESS, Owego, N. Y. Filed Nov. 10, 1883. (No model.)

Claim.—1. The combination, with the reciprocating bolt of a fire-arm, of a locking-link, as L', pivoted in the bottom and extending obliquely forward to locking position, a locking-link, L, pivoted to said first-mentioned link and forming therewith a toggle-lever, said link L being pivoted to the bolt, and a reciprocating rod or bar connected to said links and to a suitable operating-handle, substantially as described, whereby the links may be unlocked and the bolt moved back by a backward movement of the bar, and vice versa, as set forth.

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2. In a fire-arm, a reciprocating bolt, a link, as L', pivoted in the bottom of the frame, a second link, L, pivoted to said link L' and to the bolt, and having an arm, *l*, which forms with said link L a bell-crank lever, a reciprocating rod or bar connected to said arm *l*, and an operating-handle for said rod, all combined substantially as set forth.

3. The combination, with the locking mechanism of a breech-loading fire-arm, constructed substantially as described, of a reciprocating rod, as R, connected thereto, and a pivoted lever connected to said rod by slot-and-pin connection, whereby the rod may be reciprocated by swinging the lever, substantially as set forth.

4. The combination, with a reciprocating bolt, of a firing-pin moving longitudinally therein, a bolt-supporting brace pivoted in the forward part of the bolt and locking against a resistance-piece in the receiver when the bolt is in its forward position, and a lever pivoted in the bolt in position to engage the firing-pin and bolt-brace, said lever being engaged by the locking-brace and the lever and pin held back by such engagement, except when the bolt is completely locked, as set forth.

5. The combination, with a reciprocating bolt, of a firing-pin moving longitudinally therein, a brace pivoted in the forward part of the bolt and locking against a resistance-piece in the receiver when the bolt is in its forward position, a lever pivoted in the body of the bolt in position to engage said firing-pin and brace, and operated by the brace at the beginning of its unlocking movement to retract the firing-pin, and a reciprocating rod connected with the locking-brace, extending forward and connected to an operating-handle under the barrel, all substantially as described.

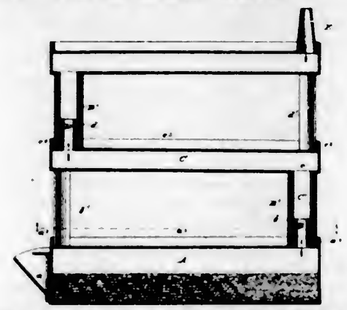
6. A reciprocating breech-bolt, a sliding firing-pin therein, a lever, as *n*, pivoted in the bolt so as to bear against said pin when forced back, a spring to press said lever forward, and locking-links, one pivoted in the frame and the other to the bolt and both pivoted together to form a toggle-lever, whereby the spring forces lever *n* forward to straighten the toggle and the toggle forces back the lever to withdraw the firing-pin, all combined substantially as set forth.

7. The combination, with a vibrating carrier, of a lever pivoted therein, a spring arranged to raise the rear end of the lever, and an abutment in the frame which forces the lever down when the carrier falls, substantially as described.

8. A reciprocating breech-bolt, an ejector arranged obliquely therein, a fixed stud in rear of said ejector, and a spring-pin in the frame, arranged, substantially as described, so as to be thrown back by the stud as the bolt is drawn back, and to throw the ejector quickly forward immediately thereafter, all combined substantially as stated.

9. The combination, with the frame of a magazine-gun, of a plate, O', secured to said frame and extending forward inside the stock, and a loading-gate having its bearing in said plate, substantially as shown and set forth.

340,480. FRUIT-DRIER. HENRY R. BURNER and JAMES C. ANDERSON, Newark, Ohio. Filed Dec. 5, 1885. (No model.)



Claim.—In a fruit-drier, the combination of the boiler A, provided with the opening *a* in one end, the opening *a'* in its roof, near the opposite end, the flange a^2, and the standards *b'*, the pipes B B', rising from the roof around the opening *a'* and forming the water-space *b* between them, the steam-chamber C, having the flange c^2, and provided with an its roof, near one end, with a steam-discharge pipe, substantially as described, and on its floor, near the opposite end, with an opening, *c'*, and the pipes C', depending from the floor of the chamber C, surrounding the opening *c*, and having its lower end adapted to enter the water-space *b*, substantially as described.

340,481. NECKTIE-FASTENER. GEORGE D. BURTON, Boston, Mass. Filed Feb. 6, 1886. (No model.)



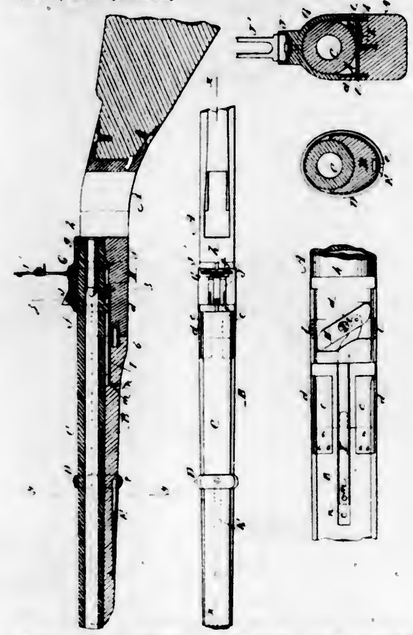
Claim.—1. A necktie-fastener consisting of a band provided with loops or equivalent fastening means and a bow provided with a spring-clasp or fastening device, B, substantially as described, adapted to be connected to the band, as set forth.

2. In a tie-fastener, a band secured around the neck and provided in front with loops or receptacles, as described, in combination with a tie provided with a fastener, B, which is adapted to hold the tie in place by extending through the loops or receptacles, substantially as set forth.

3. The herein-described necktie-fastener, consisting of a band provided with loops or receptacles for engaging with a fastener, in combination with a tie provided with a fastener having curved ends, to prevent the fastener from chafing the neckband or the wearer's neck or the collar, substantially as described.

4. In a necktie-fastener, the combination of a water-proof band provided with receptacles for receiving a fastener in front and fastenings *a a* at the back, in combination with a tie having a fastener secured thereto, substantially as described.

340,482. FIRE-ARM. SALVATORE J. BUSEMI, New York, N. Y. Filed Jan. 15, 1886. (No model.)



Claim.—1. The combination, with the stock A of the gun and the detachable barrel C, of the independent and separately-detachable barrel-holding cap G, made to engage with the barrel and stock in advance of the rear end of the barrel, and of strap or saddle-like construction, with its closed end shaped to clip the upper portion of the barrel, but left wholly free or open beneath the barrel, whereby said cap may be fitted down over the barrel after the latter has been inserted to its place, and the barrel cannot be detached till after the cap has been disengaged, substantially as specified.

2. The combination, with the stock A, having a partial socket portion, *d*, and the barrel C, fitting down within said socketed portion, of

the detachable saddle-like independent barrel-holding cap G, of closed construction at its upper end, but left wholly open beneath, and adapted to engage with the stock and barrel, and means for securing said cap when so engaged, essentially as described.

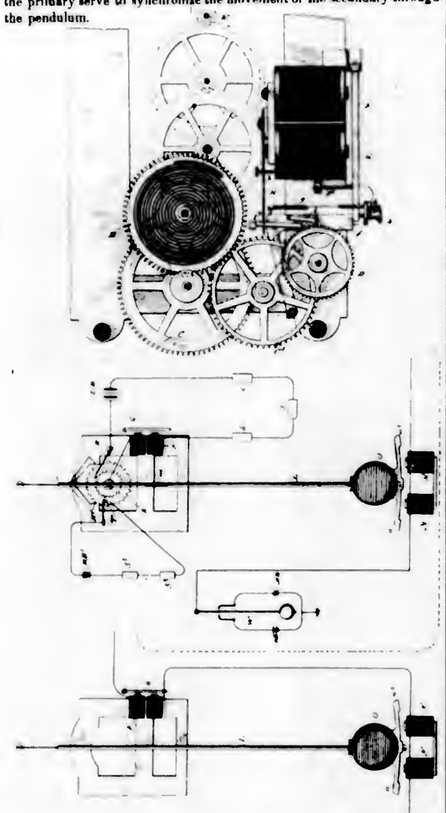
3. The combination, with the half-socketed portion *d* of the stock, the detachable barrel C, and detachable fore-arm B, of the barrel-holding detachable saddle-like cap G and the button H with its attached hook-bar I, adapted to lock or hold said cap and fore-arm to their places, substantially as specified.

4. The combination, with the stock of the fire-arm and its detachable fore-arm B, constructed to engage with the stock, of the automatic-locking hook-bar or catch I, connected and engaging at its opposite ends, respectively, with the stock and fore-arm, essentially as and for the purpose herein set forth.

5. The clamping ring or band D, arranged to embrace both the barrel and fore-arm of the gun, and the hook-bar I, connected with the stock of the gun and arranged to engage with the fore-arm thereof, in combination with the detachable saddle-like cap G, the detachable barrel C, and the detachable fore-arm B, substantially as specified.

340,483. **ELECTRIC CLOCK SYSTEM.** JULIAN E. CAREY, New York, N. Y., assignor to the Electric Time Company. Filed June 26, 1884. (No model.)

Brief.—A clock actuated by a spring or weight is kept wound by electric impulses controlled by a primary clock. Similar impulses from the primary serve to synchronize the movement of the secondary through the pendulum.



Claim.—1. The combination, substantially as described, in a secondary electric clock, of a driving device, such as a spring or weight, electrically-operated winding devices for keeping the spring or weight wound, electric synchronizing devices applied to the regulating portion of the clock mechanism, and a main or controlling clock connected to the circuit of the synchronizing devices for transmitting the electric impulses for keeping the action of the regulating devices driven by the electrically-wound spring or weight in isochronism with those of the main controller.

2. The combination, with a clock-movement, of electrically-actuated winding devices, and synchronizing devices for keeping the clock mechanism continuously synchronous with a primary or controlling clock through constantly-recurring impulses sent in time with the normal beat of the regulating-clock.

3. The combination, with a clock-movement, of electrically-operated winding devices, and a pendulum electrically synchronized by devices on the same circuit with the winding devices.

4. The combination, in a secondary clock, of means for synchronizing said clock on a circuit with devices for sending controlling or synchronizing electric impulses, and winding devices actuated by the synchronizing impulses.

5. The combination, with a clock-movement, of an electrically-operated winding device, and constantly-operating synchronizing devices for said movement, both in a circuit controlled independently of the working of the clock mechanism.

6. The combination, with a synchronized clock-movement, of electrically-operated winding devices in a circuit controlled independently of the action of the clock mechanism, and electric synchronizing devices acting upon the regulating mechanism for regulating the speed of the clock-train under the action of the electrically-wound spring or weight, to keep the movements or vibrations of said regulating mechanism isochronal with those of a primary or controlling clock.

7. The combination, with a clock-movement, of a driving-spring or weight, a reducing-train connected with the winding-arbor of the clock, a winding-magnet for turning said train and thereby winding up the spring or weight, said magnet being in a circuit controlled independently of the action of the clock mechanism, and means for transmitting electric impulses over said circuit.

8. The combination, with a secondary electric clock, of a winding-magnet, a magnet or magnets controlling the movements of the pendulum for said clock, a main or controlling source provided with a primary clock which controls the sending of the electric impulses that govern the movements of the pendulum, a circuit connecting the pendulum magnet or magnets with the controller, and a battery or other generator of electricity having means for connection to the circuit containing the winding-magnet.

9. The combination, in a secondary electric clock, of a driving spring or weight, a winding magnet or magnets connected with mechanism for operating on the winding-arbor of the spring or weight, a pendulum connected to the escapement of the train of wheels driven by said spring or weight, and a magnet or magnets acting on said pendulum and connected with a controller-clock, so that the movements of said pendulum, under the influence of the winding-magnet and spring or weight actuated thereby, may be kept isochronous with those of the controller-clock.

10. The combination, with a spring or weight driven clock, of a winding-magnet in a circuit independent of the action of the clock, a source of electricity for energizing said magnet, and circuit-controlling devices operated by means independent of the clock, whereby the magnet may be energized to wind the clock without reference to the operation of the time mechanism.

11. The combination, with the actuating-pawl and its operating-magnet and retractor, of a supplemental retracting-spring stop, and means for adjusting said stops so as to determine the point at which it shall come into play.

12. The combination, with the actuating magnet and pawl, of a retracting spring or weight in constant engagement, and supplemental retracting blade-spring having an adjusting set-screw for determining its time of engagement, as and for the purpose described.

13. The combination, with a clock-movement, of an actuating-magnet, an actuating-pawl operated in one direction by the magnet and in the other by a retractor adapted to exert an increasing power, as described, and a supplemental retractor, arranged as described, to come into action at or near the completion of the motion under the influence of the magnet.

14. The combination, with a clock-movement, of a winding or actuating magnet, and two retractors for said magnet's armatures, one of said retractors being in constant connection therewith, while the other is applied so as to exert its retracting influence only when the armature has nearly completed its movement under the influence of the magnet.

15. The combination, with a clock-movement, of a winding wheel or shaft connected through an intermediate reducing-train with a wheel upon which an actuating pawl or ratchet acts, an operating-magnet for said pawl, arranged to throw the pawl back to position for re-engagement, and two retractors actuating the pawl so as to turn the wheel, one of said retractors being arranged to act only near the end of the pawl's movement under the influence of the magnet, as and for the purpose described.

16. The combination, with a clock-movement, of a winding-magnet, a reducing-train of wheels between the magnet and the driving spring or weight for the clock, and an actuating-pawl for said train operated by the magnet and arranged to engage with a wheel of the train upon a reverse movement of the magnet's armature under the influence of its retractor.

17. The combination, with a clock-movement, of an actuating-magnet, a reciprocating pawl carried by the armature and arranged to engage with a wheel on the reverse movement of the armature under the influence of a retractor, and a supplemental retractor arranged in proper position to act at or near the end only of the armature's forward movement.

18. The combination, with the winding wheel or shaft for a clock-movement, of a reducing-train, an actuating-pawl operated by an armature-lever and engaging with a wheel of said train on the reverse movement of the armature from its magnet, and a retractor for causing the pawl to turn the wheel with which it engages, said retractor being adapted to exert an increased pull when the armature is near the magnet.

19. The combination, with two or more electric clocks in the same general circuit, of winding-magnets therefor placed on the circuit and operated simultaneously by an electric current or currents sent by a controlling mechanism operated or controlled at a common point.

20. In a clock mechanism, the combination, with a driving spring or weight connected with a time-train, of a winding-magnet, a shaft or arbor operated by said magnet, a winding arbor or shaft connected to the driving spring or weight, and one or more intermediate shafts or arbors between the winding shaft or arbor and the shaft or arbor operated by the winding-magnets, said intermediate arbor or arbors carrying a portion of the intermediate gear, through which the magnet may exercise the power requisite to wind the spring or weight.

21. The combination, with the winding-arbor of a spring or weight driven clock, of a wheel, as B, secured thereto, a winding-gear train connected with said wheel, and an actuating pawl and magnet for imparting movement directly to said train, so as through said train to wind up the spring or weight.

22. The combination, with the winding-arbor for a weight or spring driven clock, of a wheel and pinion reducing-train geared to the winding-arbor and having its shafts or arbors mounted parallel with said winding-arbor in a suitable frame, and an electro-magnet for imparting movement to said train, so as to wind the spring or weight.

23. The combination, with a secondary electric clock, of a main or primary clock connected to the secondary clock by a main line, and electrically-operated winding devices energized by an electric current controlled by the main or primary clock.

24. The combination, with a clock-movement of the ordinary kind, of an impelling spring or weight, a winding electro-magnet, and an intermediate series of wheels and pinions having their arbors mounted in a frame and arranged parallel with those of the time-train, said wheels and pinions constituting a reducing-train between the spring or weight arbor and the electrically-operated wheel or arbor.

25. The combination, substantially as described, of a time-train and a winding-train of wheels, all mounted in a common frame with their arbors parallel to one another, a spring or weight arbor between the time-train and the winding-train, and electro-magnetic operating devices applied to the arbor or wheel of the winding-train remote from the spring or weight, so as to give a mechanical advantage to the magnetic devices in the operation of winding.

26. The combination, with an electric clock, of a winding-magnet therefor placed in a circuit leading to the time-controlling source, and devices at the latter point for admitting an electric current to said winding-magnet independently of the clock to which the winding-magnet is applied.

27. The combination, in an electrically-actuated clock, of a time-train, a power spring or weight, a series of parallel shafts for conveying power through suitable gearing from the actuating electro-magnet to the driving spring or weight, and means for operating said magnet for the purpose of winding the spring or weight.

28. The combination, with the winding-arbor for a weight or spring driven clock, of an electrically-operated wheel or arbor, and one or more intermediate arbors located between the winding-arbor and the electrically-operated arbor, as and for the purpose described.

29. In a system of electrical time-control, the combination, with the time-train for a controlled clock, of electrically-operated winding mechanism energized by a current over the same general circuit over which the electric synchronizing or setting of the clock to correspondence with a main or controlling clock is effected.

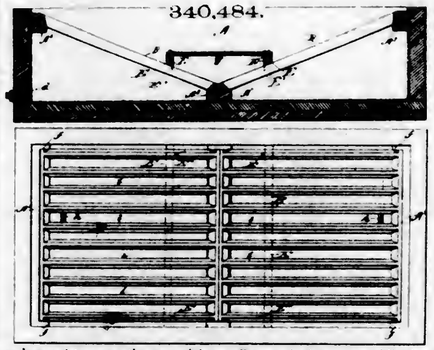
30. In an electric clock, the combination of a time-train, a magnet transmitting power to the driving spring or weight, a magnet or magnets controlling or maintaining the vibrations of the pendulum, and a main circuit to which said magnets are both connected and over which they receive their energizing electric current.

340,484. **BOX FOR WASHING MATERIAL FOR CONCRETE.** THOS. W. CARRICO, San Antonio, Tex. Filed Sept. 21, 1885. (No model.)

Claim.—1. The box A, in combination with the beveled-edged grates B B, arranged within the box and inclined toward each other toward the center of the box, substantially as set forth.

2. The box A, having opening *d*, to let out the water under the grating, in combination with the inclined grating, which is arranged within the box in an inclined position with the central portion depressed

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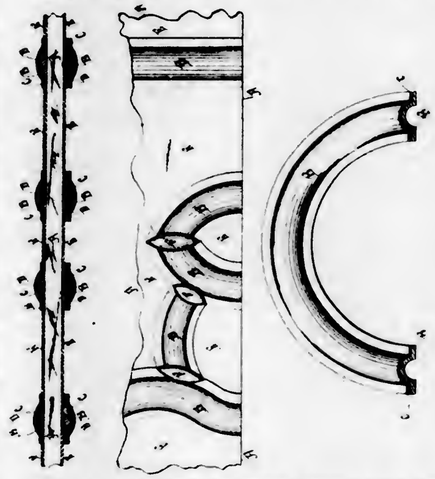
or lowered to cause the material to roll toward the center while being washed, substantially as set forth.

3. The box A and the inclined grating, in combination with the cross-pieces E on top of the grating, and supports therefor, substantially as set forth.

4. The box A, in combination with the two end sections of inclined grating, and the central flat horizontally-extended grating C, arranged within the box between the inclined grates, substantially as set forth.

5. The herein-described metal-lined box, having the inclined grating inside of the box, arranged as described, with the bars of the grating inclined toward the center of the box, in combination with the cleats which support the same, and the hole *d*, as set forth.

340,485. **METHOD OF IMITATING STAINED GLASS.** ALBERTA M. F. CASPAR, London, England, assignor of one-half to Eugene Pearis, New York, N. Y. Filed Mar. 10, 1885. (Specimens.) Patented in England Oct. 11, 1884, No. 13,442.



Claim.—1. As a new article of manufacture, imitation stained glass consisting of a sheet of glass upon the surface whereof are adhered card-board or pasteboard imitation leads, the spaces between the leads on either side of the glass being filled with adhesive coloring-matter, substantially as and for the purposes set forth.

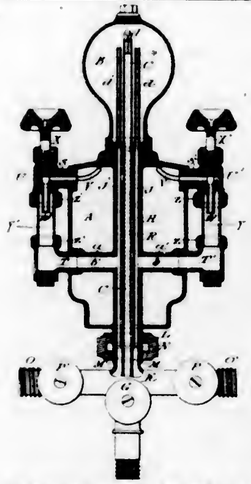
2. As a new manufacture, imitation stained glass consisting of a sheet of glass upon the surface whereof are adhered card-board or pasteboard imitation leads and adhesive coloring-matter applied to the glass coinciding with the leads, and a protecting coat of weather-proof varnish applied to the surface of the coloring-matter, substantially as and for the purposes set forth.

3. The herein-described concavo-convex imitation lead for use in the manufacture of imitation stained glass.

340,486. **STEAM-ENGINE LUBRICATOR.** WARREN H. CRAIG, Lawrence, Mass. Filed Jan. 11, 1886. (No model.)

Claim.—1. In a sight-feed lubricator, the combination of the following: a condenser, a steam-pipe leading thereto, and a pipe leading from the condenser through the oil-reservoir to a shank or support below such

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reservoir, and having means of communicating with the top of the oil-reservoir, the construction being such below the oil-reservoir that the incoming steam and outgoing oil will not commingle, such separate passages being formed in the metal of such shank and oil-reservoir, substantially as shown or described.

2. The combination, with a lubricator having a condenser and oil-reservoir with means of communication, of a column cast through such reservoir, with steam and oil passages arranged therein, one for the discharge of steam to the condenser and one for the discharge of steam and oil, the latter passage having a duct leading from such passage to the bottom of a sight-feed chamber, all being substantially as represented.

3. In a lubricator of the character described, the shank K being formed therein, a steam-inlet, C, it being concentric with and connecting to a passage formed integral with the lubricator, for the conveyance of steam from the boiler to the condenser, such shank being recessed at its junction with the cup in such a manner as to communicate with the passage J and the oil-discharge M, substantially as shown and described.

4. In a sight-feed lubricator having an oil-reservoir and condenser, the combination of the passage C, passage J and *b*, and sight-feed glass Y, passage W, valve X, and passage U, all being for the purpose set forth.

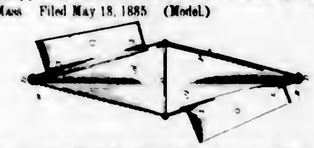
5. The shank K, provided with passages M and C, its valves G and P, in combination with the oil-reservoir A, its passages C and J, and condenser B, substantially as described.

6. The combination, with an oil-reservoir having a column, H, cast therein, and a passage, C, to lead steam to the condenser, of the passages J and J', to lead such steam from the condenser to the oil-discharge passages M and M', such passages having means of communication with the sight-feed chambers and oil-reservoir, substantially as set forth.

7. The combination, with a lubricator having a condenser and observation-chamber and oil-reservoir, of the passage C, passing through such reservoir, this passage having a check-valve, I, and also having a pipe leading out of the condenser, and communicating with the oil-reservoir and oil-discharge passages, substantially as set forth.

8. In a sight-feed lubricator, the combination of the shank K, having steam and oil passages passing through the same, and separate and distinct from one another, of a recess within such shank, into and out of which one of such passages opens, all being substantially as set forth.

340,487. ELBOW FOR STOVE-PIPES. ALONZO W. CRAM, Haverhill, Mass. Filed May 18, 1885. (Model.)



Claim.—1. An elbow for stove-pipes, composed of two heads or disks, one of which is concavo-convex, and a rod connecting said disks, in combination with a U-shaped band or coupling and the collars which are connected to the heads, substantially as shown.

2. An elbow for stove-pipes, composed of two disks, one of which is concavo-convex, and each having their outer edges turned at an angle, so as to form suitable overlapping flanges, the rod C, which passes through their centers and connects them together, and the collars O, which are attached to the heads, substantially as described.

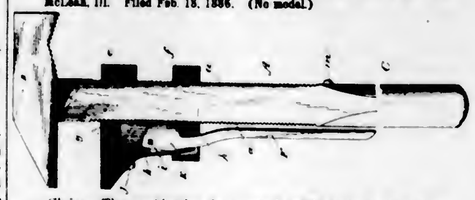
3. An elbow for stove-pipes, composed of two disks or heads, one of which is concavo-convex, and which have their outer edges turned at an angle, so as to form suitable overlapping flanges, a suitable band or coupling which extends around the outer edges of the heads and is provided with a means for tightening it in position, and the collars which are attached to the heads, substantially as described.

4. In an elbow for stove-pipes, the combination, with the collars O, provided with grooves at their inner ends, which grooves extend entirely around the collars at other than a right angle to their axes, of the two heads, one of which is concavo-convex and each provided with an opening in which the collars O are swiveled by their grooves, whereby they can be revolved and made to stand at different angles to the heads, substantially as set forth.

5. In an elbow for stove-pipes, the combination of the two heads A, one of which is concavo-convex, bolt C, band D, and collars O, provided with grooves at their inner ends which extend entirely around the collars at other than a right angle to their axes, and which collars are swiveled in the heads, substantially as specified.

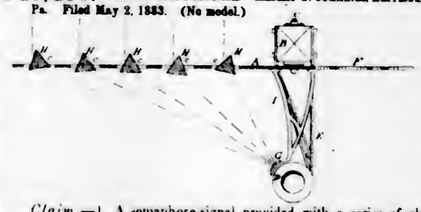
6. The combination of the heads A, provided with openings to receive the collars, and slits leading from the openings, a band for securing the heads together, a tightening device for the band and the collars which are held in the openings in the heads, substantially as shown.

340,488. WRENCH. LEWIS P. CROSWELL and CHARLES A. FUNK, McLean, Ill. Filed Feb. 18, 1886. (No model.)



Claim.—The combination, in a wrench, of the body A, having the rigid jaw B, and provided with teeth on its front and rear sides, of a movable jaw or casting, D, mounted on said body below said rigid jaw, and having the integral toothed portions *e f* and plain portions *g h*, and a spring cam-head pivoted in said casting, and having teeth to engage the front teeth of the body, and a handle, F, for said cam-head, substantially as set forth.

340,489. SEMAPHORE-SIGNAL. ALBERT G. CUMMINGS, Harrisburg, Pa. Filed May 2, 1883. (No model.)



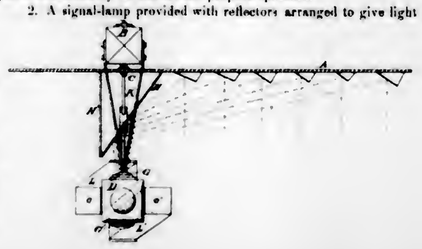
Claim.—1. A semaphore-signal provided with a series of glass surfaces of forms adapted to refract rays of light from one common source, substantially as and for the purpose specified.

2. The combination of semaphore-signal A and lamp D, with lens G attached to semaphore A and arranged to project light thereon, substantially as and for the purpose set forth.

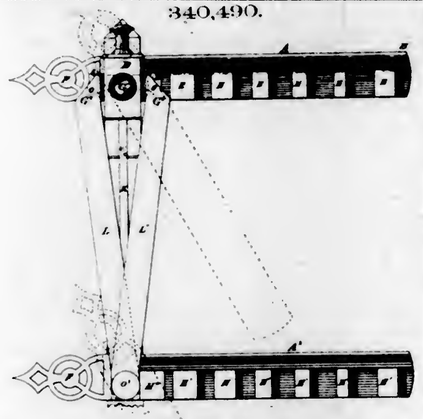
340,490. SEMAPHORE-SIGNAL. ALBERT G. CUMMINGS, Harrisburg, Pa. Filed May 2, 1883. (No model.)

Claim.—1. The combination of a lamp and a semaphore with a reflector arranged thereon to project light from the lamp onto the semaphore, substantially as and for the purpose specified.

2. A signal-lamp provided with reflectors arranged to give light to



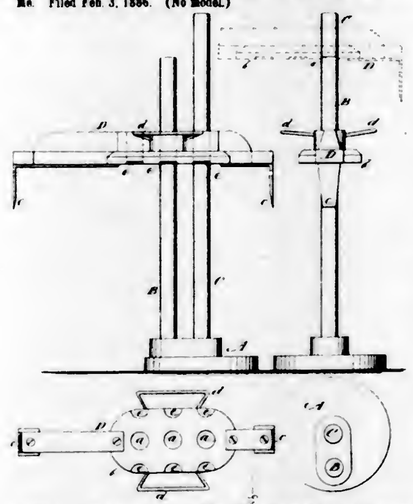
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two semaphores provided with series of reflecting-surfaces, said semaphores facing in the same direction, all combined substantially as and for the purpose specified.

3. A signal-lamp provided with reflectors O O' O² O³, arranged to illuminate two semaphores facing in the same direction and provided with reflecting-surfaces, substantially as and for the purpose specified.

340,491. SAW-MILL DOG. NATHANIEL J. CUSHMAN, North Paris, Me. Filed Feb. 3, 1886. (No model.)

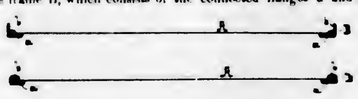


Claim.—1. The combination, with the base-plate A and standards B C, of different lengths, of the arm D, provided with the points *e*, having apertures *a*, for receiving the standards B C, and provided with recesses *c*, for engagement with the end of the shorter standard, B, substantially as herein shown and described.

2. The combination, in a saw-mill dog, with the base having the vertical standards, of the transverse arm having a greater number of vertical apertures than there are standards, through which apertures the standards may pass to allow the arm to be adjusted, and log-engaging teeth depending from opposite ends of the said arm, substantially as set forth.

340,492. BAKER'S PAN OR TRAY. HENRY S. DOSH, Baltimore, Md. Filed June 12, 1885. (No model.)

Claim.—In a baker's pan or tray, the combination of the sheet A and the frame B, which consists of the connected flanges *a* and *b*, the

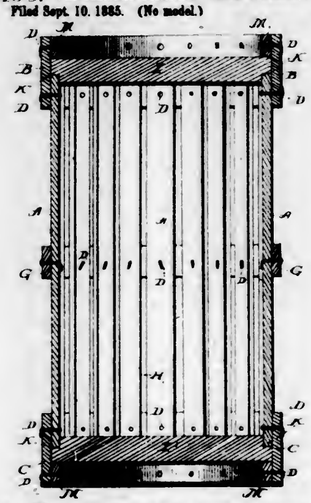


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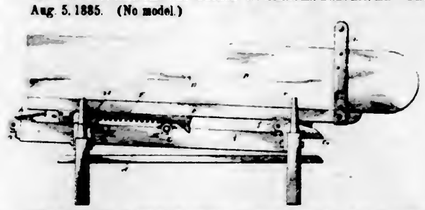
former being in one continuous piece, and the latter separated or notched at the corners, the two flanges engaging the sheet on opposite sides, substantially as specified.

340,493. VENTILATED BARREL. JAMES C. DOZIER, Jr., Louisville, Ky. Filed Sept. 10, 1885. (No model.)



Claim.—The combination, with the staves nailed to the end hoops and intermediate hoop, and having spaces between them, of the shouldered heads resting against the ends of the staves, and the circular securing-hoops secured to the end hoops, substantially as specified.

340,494. DUMPING-WAGON. JOSEPH W. DUNHAM, Englewood, and FRANK P. KEINGER and GEORGE W. KEINGER, Danville, Ill. Filed Aug. 5, 1885. (No model.)



Claim.—1. In a dumping-wagon, the combination, with a wagon-bed, a shaft journaled thereto, and a pinion secured to said shaft, of a sliding body, a rack-bar secured to said body and adapted to engage the pinion on the shaft, and a rope or other flexible device secured to the shaft and body and passing around a pulley journaled to the front portion of the bed, substantially as set forth.

2. In a dumping-wagon, the combination, with a wagon-bed, a shaft journaled thereto, a pinion secured to said shaft, and stops secured to the rear end of the wagon-bed, of a wagon-body, abutments secured thereto and adapted to engage the stops on the bed, a rack-bar secured to said body and adapted to engage the pinion, and a rope or chain connecting the shaft and body and passing around a pulley journaled to the bed.

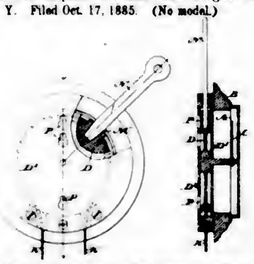
3. The combination, with a wagon-bed having inclined bearings or blocks secured thereto, of a movable body having a series of inclined bearings or blocks adapted to rest on the bearings or blocks on the bed when the wagon-body is in its normal position.

4. The combination, with a movable bed mounted on rollers, of the inclined blocks secured to said bed and body and adapted to hold the body elevated and take the weight off the rollers when the body is in its normal position, substantially as set forth.

5. The combination, with a wagon-bed, rollers journaled thereto near the rear end thereof, and bearings located behind the rollers, the upper or bearing surfaces of said bearings being below the upper surfaces of the rollers, of a wagon-body mounted on said rollers and provided with abutments adapted to come in contact with the rollers when the wagon-body is moved rearwardly, substantially as set forth.

6. The combination with a wagon-bed, a sliding and tilting wagon-body mounted thereon, upwardly-projecting standards secured to the opposite sides of said body near the rear end thereof, and a bar connecting the upper ends of said standards, of a gate pivoted to said bar and adapted to be moved and swung longitudinally thereon, and devices, substantially as described, for locking the gate to the body.

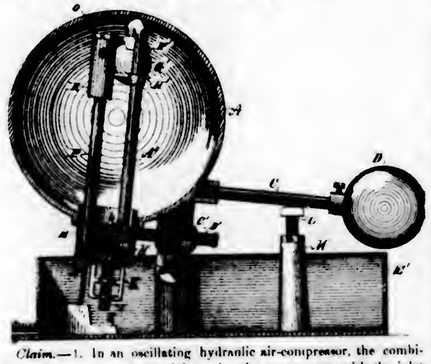
340,495. INDICATOR FOR GAS-COCKS. JOSEPH B. EATON and GEORGE CASH, Philadelphia, Pa.; said Cash assignor to Harry Keel, Brooklyn, N. Y. Filed Oct. 17, 1885. (No model.)



Claim.—1. In a gas-regulator, a dial in combination with a grooved disk or pulley connected therewith, and recessed plates $D' D^2$, which form the bearings for said pulleys and inclose the same, the periphery of the pulley having a socket, and the plates having at their rim a narrow opening to receive the handle N, which is adapted to be inserted into the socket M, substantially as and for the purpose set forth.

2. A gas-regulator composed of the following parts: the grooved disk D, having the socket M in its periphery, the recessed plates $D' D^2$, with a space between their rims, index C, secured to said disk, handle N, adapted to be inserted in said socket M, a dial, the casing B, endless belt K, and key F, having pulley H mounted thereon, all of said parts being arranged, combined, and operated substantially as described.

340,496. HYDRAULIC AIR-COMPRESSOR. JAMES B. ERWIN, Milwaukee, Wis. Filed Dec. 3, 1885. (No model.)



Claim.—1. In an oscillating hydraulic air-compressor, the combination and arrangement of the inlet and outlet water-ports, with the inlet and outlet water-valves and valve-stem, both of said valves being connected together and located between the seats of said inlet and outlet water-ports, and adapted to be moved in one direction by their gravity and water-pressure and in the other direction by contact of said stem with a stop, as said receiver with its counterpoise oscillates upon its pivotal support, substantially as set forth.

2. In an air-compressor, the combination, with its receiver mounted upon a pivotal support and counterpoised by a weight, of a valve-chamber provided with both an inlet and outlet water-passage through which water enters and escapes from said receiver, inlet water-controlling valve *b*, and outlet water-controlling valve H, the said valves connected and moving together, valve-stem I, valve-seat G, and supporting-tank E', said inlet-valve being adapted to be closed and said outlet-valve to be opened by contact of said valve-stem with a stop at the bottom of said tank, and reversed in their movement by their gravity and water-pressure, substantially as and for the purpose specified.

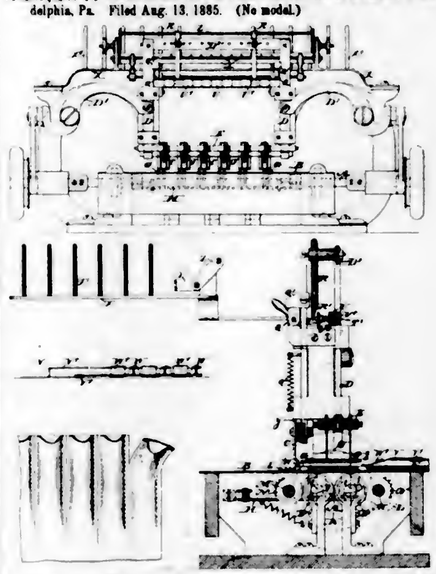
3. The combination, with the valve-chamber E, provided with hose-connection F, and having a downwardly-opening inlet water-port, of the opposing valve-seat or outlet water-port G, provided with a guide-bracket, K, valve-stem I, operating in said guide-bracket, and valves *b* and H, adapted to vibrate between said valve port and seat, with said valve-stem, substantially as set forth.

4. The combination of the inlet air-tube D, valve or screw-threaded nut, O, elastic bearing S, guide-walls R, fitted to the periphery of said tube and serving to guide and retain said valve thereon, and valve-stem N, protruding from the lower end of said tube, and adapted by contact with a stop to raise said valve, substantially as set forth.

5. The combination, with the valve-chamber E, affixed to the receiver and provided with an outlet air-duct, of an air-tube, A', communicating from said air-duct to the upper part of said receiver and provided with an enlarged downward-opening mouth, float G', and float-supporting bracket H, substantially as and for the purpose set forth.

6. In an air-compressor having an oscillating receiver mounted upon a pivotal support and counterbalanced by a weight above a tank, the combination of the weight-supporting lever C, adjustable screw or stop L, standard M, and tank E', substantially as and for the purpose specified.

340,497. MULTIPLE SEWING-MACHINE. LOUIS ESCHNER, Philadelphia, Pa. Filed Aug. 13, 1885. (No model.)



Claim.—1. The single bar B, with needles secured as described, in combination with a series of presser-feet, C, each presser-foot having diagonally-arranged slots and a throat therein, and a series of cutters adapted to operate in said throat, substantially as described.

2. A multiple sewing-machine having the plate H, the feed-bar G, attached to said plate H, a series of needles, the shaft M, having pinion N thereon, and means, substantially as described, for rotating said shaft, the pinion P, meshing with said pinion N, and having an axle carrying at each end a looper, F, said parts being combined and operating substantially as described.

3. The plate H, having a series of feed-bars, G, in combination with presser-feet C, and guide-bars V, having upper and lower plates, and ribs, substantially as described.

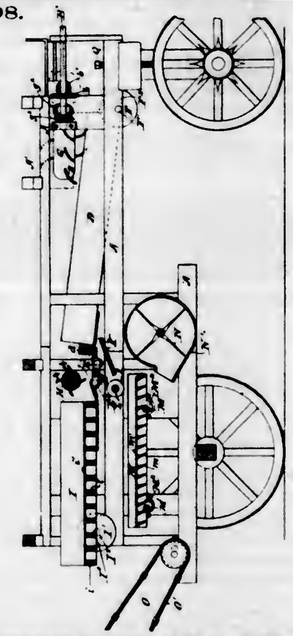
4. In a multiple sewing-machine, needles and loopers arranged in pairs, in combination with cutters arranged in relation to said needles, each between the members of a pair thereof, substantially as described.

5. The needle-bars D, in combination with single bar E, having cutters J, and bars D^2, with rods R, having beveled ends R', horizontally-sliding bar T, with pins T', stationary bar U, blocks U', and springs U^2, said parts being arranged and operated substantially as and for the purpose set forth.

340,498. THRASHING-MACHINE. FRANK EVIN, Ortonville, Minn., assignor of one-fifth to Charles Petersen, Lockport, N. Y. Filed Jan. 21, 1885. (No model.)

Claim.—1. The combination, in a machine of the class described, with means for carrying the straw, of a straw-distributer consisting of a shaft arranged diagonally across the line of travel of the straw and provided with a series of distributing-arms, and means for rotating said shaft, as and for the purpose set forth.

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2. The combination, in a machine of the class described, with the cylinder and concave and straw-carrying platform, of a straw-distributer consisting of a revolving shaft arranged diagonally across said platform and provided with a series of distributing-arms, as and for the purpose set forth.

3. The combination, in a machine of the class described, with the straw-carrier, of the straw-distributers G G, each consisting of a revolving shaft arranged diagonally across the straw-carrier and provided with a series of distributing-arms, as and for the purpose set forth.

4. The combination, in a thrashing-machine, with the platform D, of the straw-distributers G G, arranged diagonally across said platform and provided with a series of distributing-arms, means for moving the platform, and means for rotating the distributers, as and for the purpose set forth.

5. In a grain-separator, the platform D, sloping from the center toward the sides, and provided with the diagonally-placed notched bars D', as and for the purpose set forth.

6. The combination, with the platform D, having projecting rods *d d* in the rear end thereof, and means, as described, for longitudinally and vertically moving the platform, of the shaft H, having arms *h*, passing between the rods *d d*, and means for rotating shaft H, whereby the straw is taken from the rods *d d* and carried over the shaft H, substantially as described.

7. The combination, with the platform D, having rods *d d*, and the shaft H, having arms *h h*, said shaft being arranged as described, of the grain-board K, the spiral conveyers *l l*, and the screen M, said board K and conveyers *l* being located beneath shaft H, substantially as described.

8. The combination, with the shaft E, having the oppositely-set cranks E' E^2, of the platform D and separator I, each having one end mounted on said cranks, and their opposite ends mounted on revolving cranks of equal throw, as and for the purpose set forth.

9. The combination, in a machine of the class described, with a shaft, having oppositely-set cranks, of a straw-carrying platform having one end mounted on two of said cranks, and its other end mounted on revolving cranks of equal throw, and a screen having one end mounted on the opposite cranks of said shaft, and its other end mounted on revolving cranks of equal throw, all substantially as described.

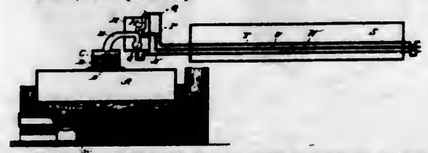
10. The combination of the platform D, having rods *d*, the double-crank shaft E, the screen I, and the shaft H, having arms *h*, as and for the purpose set forth.

11. In a thrashing-machine, the straw-belt O, consisting of ropes O', bars O^2, clasps O^3, and screws O^4, as and for the purpose set forth.

12. The combination, with the frame A and the forward wheel of a thrashing-machine, of the screw Q, mounted in said frame, with its point directly over the top of said wheel, as and for the purpose set forth.

13. The screen M, comprising the series of bars having upwardly-inclined tapering recesses between them, and the series of cross-wires secured by staples to the tops of said bars, as and for the purpose set forth.

340,499. PROCESS OF AND APPARATUS FOR DISTILLING HYDROCARBON OIL. HERMAN FRASCH, London, Ontario, Canada. Filed Nov. 11, 1885. (No model.)



Claim.—1. An oil-still having in immediate proximity to the still and in free communication therewith a dome of the proportions and filled with irregular blocks or pieces of about the size stated, and having also the vapor-escape pipe leading from said dome, so that the hydrocarbon vapors in leaving the still pass by tortuous paths without appreciable resistance through material of practically the temperature of the boiling oil, and deposit thereon any particles of liquid held in suspension without being themselves condensed to a material extent, substantially as described.

2. In combination with an oil-still, columns or sections of a column connected in series and receiving in succession the mixed vapors from the still, each column or section being provided inside with a series of alternating disks and rings, and having its individual outlet at the bottom, so that the oil is drawn off separately as distillates of different fire-test from the different columns or sections, substantially as described.

3. A column or upright pipe divided by an offset or bend into sections having each a series of rings and disks inside the same, and provided with separate outlets for the condensed liquid or oil, substantially as described.

4. An apparatus comprising tubular parts or sections of a column placed at different levels and connected in series, so that the vapors pass through them successively, and immersed in or surrounded by a common medium for lowering the temperature in said parts or sections, each part or section being provided with its own liquid-outlet and with a series of alternating rings and disks inside the same, substantially as described.

5. The combination, with a still, of a group of parallel columns having inlets at the bottom and outlets at the top, a box containing said columns, a series of alternating rings and disks in each column, a manifold at the lower ends of said columns, a vapor-pipe leading from the still to said manifold, and a pipe for drawing off the liquid from said manifold, said columns communicating with a common chamber in said manifold, so that the vapor may pass at once into all the columns, substantially as described.

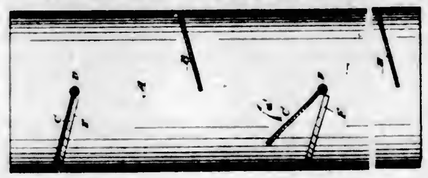
6. The combination, with the inclosing pipe or column, of the rings and disks, the tie-rods, the separating sleeves, and the suspending plate or frame, substantially as described.

7. In the fractional condensation of hydrocarbon vapors by passing the vapors successively through a number of columns or sections of a column, so as gradually to lower the temperature of the vapors, and drawing off the condensed liquid from each column or section separately, the improvement consisting in exposing the vapors in each chamber to a succession of showers or streams of the liquid condensed in that chamber, and thus effecting the desired successive partial condensations by repeated exposure of the vapors to hot hydrocarbon liquid approximating the vapors in temperature, and, like them, gradually diminishing in temperature for each column or section, as well as by the lower temperature in each column or section, the said improvement being carried out in an apparatus—such as the series of columns or sections provided inside with alternating rings and disks and immersed in or surrounded by a hot medium—calculated to induce a gradual reduction of the vapors in temperature, and to effect a repeated contact between the vapors and the condensed liquid, substantially as described.

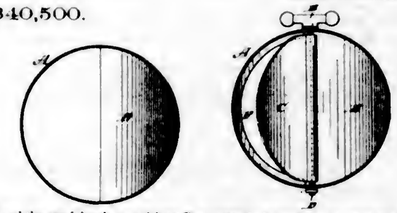
340,500. STOVE-PIPE DAMPER. GEORGE C. FRASER, Port Sanilac, Mich. Filed May 22, 1885. (Model.)

Claim.—1. The combination, with the stove-pipe A, of the semicircular ribs F, the semicircular partitions B, and the pivoted semicircular dampers C, substantially as herein shown and described.

2. The combination, with the stove-pipe A, of the semicircular ribs



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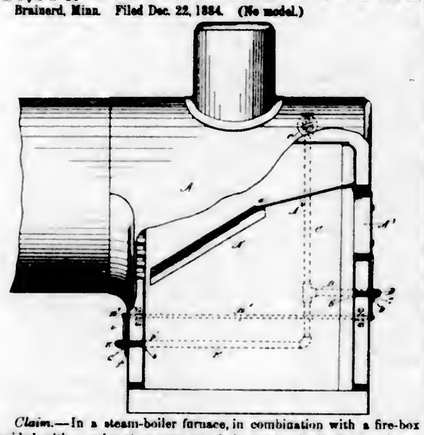


F and the semicircular partitions B, arranged alternately on opposite sides of the pipe, and dampers C, pivoted at the inner ends of the ribs, substantially as herein shown and described.

340,501. VULCANIZED RUBBER AND TEXTILE FABRIC. ELLA M. PEESLEY, New York, N. Y. Filed Dec. 30, 1884. Renewed Oct. 2, 1885. (Specimens.)

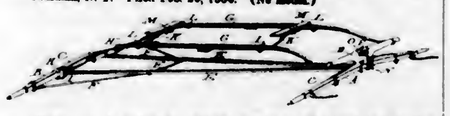
Claim.—As an improved article of manufacture, hard or soft vulcanized rubber or textile fabric of which vulcanized rubber is a component part, dipped in a solution of salicylic acid and alcohol, or in a solution of bark of oak, bark of hemlock, bark of sumac, water, salicylic soda, Russian jachten extract, alcohol, ether, and salicylic acid, in the proportions and in the manner specified, or dipped in both of said solutions, substantially as and for the purpose described.

340,502. FURNACE. CHARLES H. GREWCOX and FRED YETTER, Brainerd, Minn. Filed Dec. 22, 1884. (No model.)



Claim.—In a steam-boiler furnace, in combination with a fire-box provided with a series of apertures and short tubes in its front and rear walls, the series of apertures in the rear wall being arranged in a plane above the series in the front wall, a valved steam-pipe communicating with the steam-space of the boiler, perforated branch pipes secured to the outside of the front and rear walls of the fire-box, and connected to said steam-pipe and arranged contiguously to the series of apertures of the fire-box, sliding perforated valves or gates adapted to move in cleats arranged between the pipes and apertures of the fire-box, an operating-lever pivoted to the rear valve, and a rock-shaft connected at one end to said lever, and at its other end provided with a link pivoted to the front valve or gate, all arranged and adapted to serve as herein set forth.

340,503. SPRING-GEAR FOR VEHICLES. HENRY W. HAMELL, Potsdam, N. Y. Filed Feb. 26, 1886. (No model.)



Claim.—1. A spring for vehicles, composed of a long leaf having eyes formed in the ends thereof and one or more shorter leaves, the long leaf and lower short leaf being arched downwardly and the upper leaves being arched upwardly, and the two sets of leaves drawn together by bolt or clips, so that the middle portion of the springs shall be approximately straight, with downwardly-curved ends, as set forth.

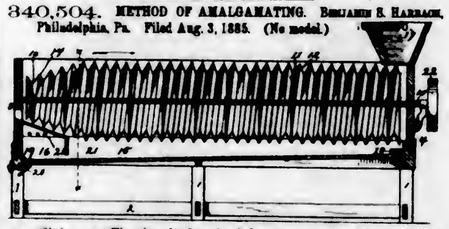
2. A platform cross-spring having a downward projection across the ends of the lower leaf and an elongated hole transversely thereto, as set forth.

3. A shackle for spring-bearings, consisting of a bearing, I, link H, and covering J, as set forth.

4. The combination of a shackle for spring-bearings, consisting of a bearing, I, link H, and covering J, said shackle being clipped to the under side of hind axle, and the link standing in an upright position and its lower end resting in the bearing and the upper end attached to side spring, as set forth.

5. The combination of the side springs, G G, having the lower leaf, G^2, foreshortened, of the platform-springs K K, having elongated holes L^2, and clips L L, whereby the platform-springs are supported on the clip-ties, as set forth.

340,504. METHOD OF AMALGAMATING. BENJAMIN S. HARBACH, Philadelphia, Pa. Filed Aug. 3, 1885. (No model.)



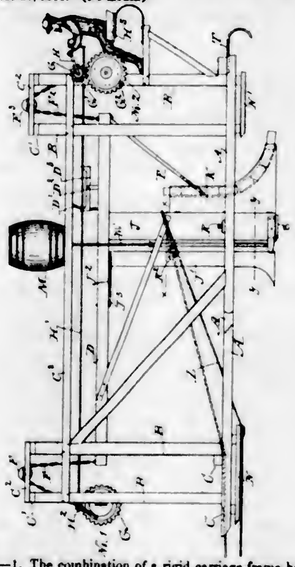
Claim.—1. The herein-described improvement in the art of separating metal from earth or refuse, consisting in moving a mass of ore or refuse in a dry state over a mass of mercury by an iron conveyer, rolling said ore or refuse on lines oblique to the path of advance, and preserving the main body of the mercury in an undisturbed state, substantially as set forth.

2. The herein-described improvement in the art of separating gold from refuse or earth, consisting in moving a mass of ore or refuse in a dry state over an elongated mass of mercury, the ore or refuse being caused to roll while partly supported by stationary walls and partly supported by the mercury, the main body of the latter being kept in an undisturbed condition, substantially as set forth.

3. The herein-described improvement in the art of separating gold from earth or refuse, which consists in rolling a mass of the earth and gold mingled together in a dry state over a body of mercury of gradually-increasing depth by a conveyer, substantially as set forth.

4. The herein-described improvement in the art of separating gold from earth or refuse, which consists in moving a mass of mingled material over a body of mercury by means acting positively and independently of the movements of the mercury, and causing said mercury, while the solid material is upon its surface, to flow in a current in the direction of the advance of the solid material, and withdrawing the amalgamated portion from the machine before it can be returned to the feeding end, substantially as set forth.

340,505. DITCHING AND TILE-LAYING MACHINE. EDWIN G. HASTINGS, Nevada, Iowa, assignor of one-half to Jay A. King, same place. Filed June 27, 1885. (No model.)



Claim.—1. The combination of a rigid carriage-frame having sleds rigidly fixed under its ends, and a suspended and adjustable beam carrying a ditching-plow at its central portion, and a hitching device adjustably connected with the plow and rigid frame to operate in the manner set forth, for the purposes stated.

2. A rigid carriage-frame provided with fixed sleds under its ends, and having a windlass at its front end, a windlass at its rear end, and a plow-beam suspended in the frame by means of chains connected with the drums of the windlasses, arranged and combined to operate in the manner set forth, for the purposes specified.

3. The frame composed of the planks A, posts B, cross-pieces C C' C^2, side pieces, C^3, sleds N and N', the plow-beam D, the windlasses Nos. 1 and 2, and mechanism for operating them, constructed, arranged, and combined, substantially as shown and described, to carry and operate a ditching-plow and tile-laying device.

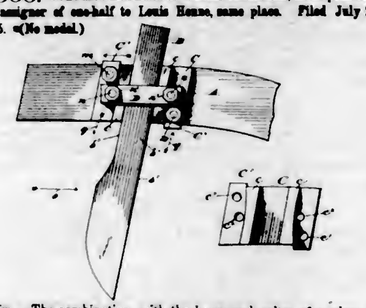
4. In combination with the frame and sleds, as described, the gear-shaft G G', windlass No. 2, crank-shaft H' H^2, gear-wheel G, windlass No. 1 and chain, and the plow-beam D, substantially as shown and described.

5. The bearers R and R^1, carrying wheels in their ends, the upright J, the draft-rods L, and the plow J', suspended in the rigid frame having runners fixed under its ends, arranged and combined substantially as shown and described, for the purposes stated.

6. The rigid carriage-frame having fixed sleds under its ends, the beam D, the upright J, the adjustable plow J', and the adjustable device J^3 J^3, arranged and combined to operate in the manner set forth, for the purposes stated.

7. A tile-laying machine composed of a rigid frame having sleds fixed under its ends, having a windlass at each end, and mechanism to operate both windlasses from the rear end, a ditching-plow, and tile-laying chute fixed to a plow-beam suspended in the frame and connected with the windlasses by means of chains, and adjustable level and fixed scale carried on the plow-beam, a water-reservoir and water-distributing tube, and a hitching device, substantially as shown and described.

340,506. COLTER-FASTENING. HENRY HEDACKER, Metropolis City, Ill., assignor of one-half to Louis Hesse, same place. Filed July 29, 1885. (No model.)



Claim.—The combination, with the beam and colter of a plow, of the colter attachment, substantially such as herein shown and described, consisting of a plate having lugs at diagonally-opposite corners, which extend over opposite sides of the beam, outwardly-projecting parallel and re-enforced ribs, and a clip which overhangs said parallel ribs, said plate and clip having perforations to receive the securing-bolts, whereby the clip is secured to the plate and the plate to the beam, as and for the purpose set forth.

340,507. WATCH-DIAL. GEORGE HUNTER, Elgin, assignor to the Elgin National Watch Company, Chicago, Ill. Filed Dec. 11, 1883. (No model.)



Claim.—1. A dial having the circle of twenty-four consecutive hour-numbers arranged upon a uniform background, with the number 12 at the top and the number 24 at the bottom of the dial, and the space within the circle of numbers, of which the lower portion is dark or cloudy and the upper portion is light, substantially as shown.

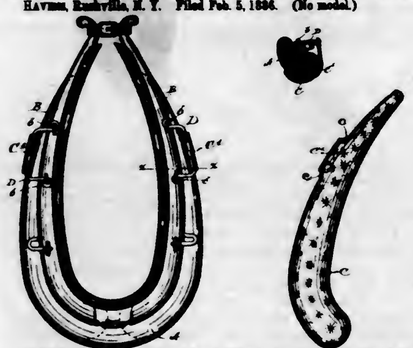
2. A dial having the circle of twenty-four consecutive hour-numbers arranged with the number 12 at the top and the number 24 at the bottom of the dial, and the space within the circle of numbers made cloudy over its lower portion and on its upper portion made light, and provided with the representation of rays of light radiating downward from below the twelve or noon mark, substantially as described.

340,508. WATCH-DIAL. GEORGE HUNTER, Elgin, assignor to the Elgin National Watch Company, Chicago, Ill. Filed Dec. 11, 1883. (No model.)



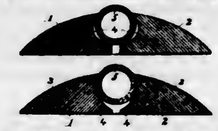
Claim.—The watch-dial provided with a series of twenty-four hour-numbers, which are arranged in a circle on a background of uniform color, with the number 12 at the top and the number 24 at the bottom of the dial, and of which the numbers designating the day hours are made lighter than the others, substantially as and for the purpose specified.

340,509. HORSE-COLLAR PAD. WILLIAM HUELSKOET and BYRON B. HAVENS, Rushville, N. Y. Filed Feb. 5, 1886. (No model.)



Claim.—In combination with a horse-collar, a pad having a profile agreeing substantially with the body of the collar, and provided with loops C', adapted to receive wires or thongs for connecting the pad to the collar in a manner adapted to allow the collar to move without changing the position of the pad, as and for the purpose set forth.

340,510. THRESHOLD. JOSEPH JOHNSTON, Hudson, assignor of one-half to John E. Erwin, Kinnickinnick, Wis. Filed Nov. 23, 1885. (No model.)

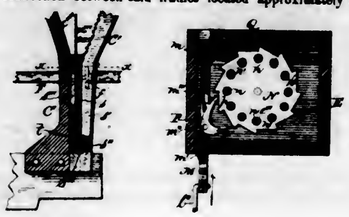


Claim.—1. In a threshold, the combination, with a base having an undercut seat, of a packing-tube occupying said seat and projecting above the surface of the base, substantially as and for the purpose set forth.

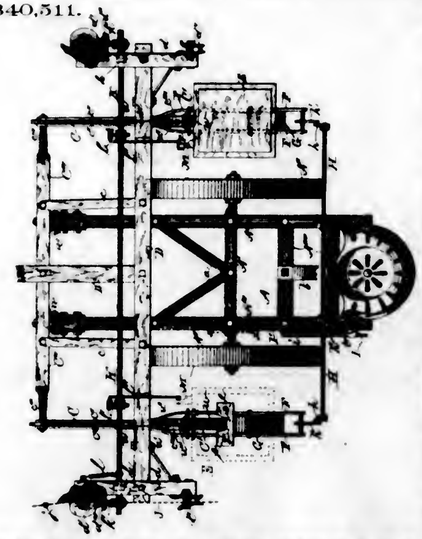
2. In a threshold, in combination with a two-part base, metal protecting-plates covering said base, a longitudinal seat cut in said base at its central dividing-line, and a packing-tube inserted in said seat, substantially as and for the purpose set forth.

340,511. CHECK-ROW CORN-PLANTER. JOHN KAYLOR, Decatur, Ill. Filed Jan. 2, 1886. (No model.)

Claim.—1. In a corn-planter, in combination, a rear frame mounted on wheels, a forward frame carrying the seeding devices and runners or furrow-openers, and having the tongue fixed to said forward frame, and a hinge-connection between said frames located approximately at the



340,511.



front ends of both the forward and rear frames, substantially as and for the purpose specified.

2. In a corn-planter, in combination, a rear frame mounted on wheels and carrying a driver's seat, a forward frame carrying the seeding devices and runners or furrow-openers, and having the tongue rigidly fixed to said forward frame, and a hinge-connection between said frames located approximately at the forward ends of both the forward and rear frames, substantially as and for the purpose specified.

3. In a corn-planter, in combination, a rear frame mounted on wheels, a forward frame carrying the seeding devices and runners or furrow-openers, a tongue fixed to the forward frame, a hinge-connection between said frames located approximately at the front ends of both the forward and rear frames, and a crank-arm projecting from a shaft mounted on the rear frame and connected with a rear projection from the forward frame by a link or its equivalent, substantially as and for the purpose specified.

4. In a corn-planter, in combination, a rear frame mounted on wheels, a forward frame carrying the seeding devices, and runners or furrow-openers, a tongue fixed to the forward frame, a hinge-connection between said frames located approximately at the front ends of both the forward and rear frames, a shaft extending across the rear frame and provided with cranks or arms which are hinged to extensions from the forward frame, and a hand-lever adapted to oscillate said transverse shaft and raise and lower the forward frame, substantially as and for the purpose specified.

5. In a corn-planter, in combination, a rear frame mounted on wheels, a forward frame carrying the seeding devices, and runners or furrow-openers, a tongue fixed to the forward frame, a hinge-connection between said frames located approximately at the front ends of both the forward and rear frames, a shaft extending across the rear frame and provided with cranks or arms which are hinged to extensions from the forward frame, and a hand lock-lever adapted to oscillate said transverse shaft and raise and lower the forward frame, substantially as and for the purpose specified.

6. In a corn-planter, in combination, a rear frame mounted on wheels and carrying a driver's seat, a forward frame carrying the seeding devices and runners or furrow-openers, a tongue fixed to the forward frame, a hinge-connection between said frames located approximately at the front ends of both the forward and rear frames, a shaft extending across the rear frame and provided with cranks or arms which are hinged to extensions from the forward frame, and a hand-lever adapted to oscillate said transverse shaft and raise and lower the forward frame, substantially as and for the purpose specified.

7. In a corn-planter, in combination, a rear frame mounted on wheels, a forward frame carrying the seeding devices and runners or furrow-openers, a tongue fixed to said forward frame, a hinge-connection between said frames located approximately at the front ends of both the forward and rear frames, and a hand-lever mounted on the rear frame and hinged to the front frame, substantially as and for the purpose specified.

8. In a corn-planter, in combination, a rear frame mounted on wheels, a forward frame carrying the seeding devices and runners, a tongue rigidly connected with said forward frame, a rock-shaft extending across the rear frame in rear of the axle and provided with arms which are connected by hinges with extensions from the forward frame, and a driver's seat supported also in the rear of the axle, substantially as and for the purpose specified.

9. In a corn-planter, in combination, a rear frame mounted on wheels, a forward frame carrying the seeding devices and supported on runners hinged at its front end to the front end of the rear frame and provided with rear extensions which carry covering-wheels, and a lever mounted on the rear frame and hinged to said extensions from the forward frame, substantially as and for the purpose specified.

10. In a corn-planter, in combination, a rear frame supported on wheels, a forward frame carrying the seeding devices and runners, and hinged at its forward end to the forward end of the rear frame, and provided with rear extensions carrying covering-wheels, a rock-shaft extending across the rear frame in rear of the axle, and provided with crank-arms which are hinged to the rear extensions from the forward frame, substantially as and for the purpose specified.

11. In a corn-planter, in combination, a rear frame supported on wheels, a forward frame carrying the seeding devices and runners, and hinged at its forward end to the forward end of the rear frame and provided with rear extensions carrying covering-wheels, a rock-shaft extending across the rear frame in rear of the axle, and provided with crank-arms which are hinged to the rear extensions from the forward frame, and a lever geared with said rock-shaft, substantially as and for the purpose specified.

12. In a corn-planter, in combination, a rear frame mounted on wheels, a forward frame carrying the seed-boxes, and connected with the rear frame by hinge-connections which permit of vertical movement of both frames, and check-row devices consisting of beads supporting the rock-shaft K, and forked levers mounted on a bar, D, which constitutes a support for the check-row devices, and a frame-bar of said forward frame, substantially as and for the purpose specified.

13. In a corn-planter, in combination, a rear frame mounted on wheels, a front frame carrying the seed-boxes and runners, a bar, D, carrying the check-rower devices, and constituting at same time a frame-bar of the forward frame, and a tongue fixed to the forward part of the forward frame and to the bar D, substantially as and for the purpose specified.

14. In a corn-planter, in combination, a rear frame mounted on wheels, a forward frame, hinged to said rear frame and carrying the seed-boxes and runners, a bar, D, adapted for use as a frame-bar of the forward frame, and extended at its ends and provided with beads *d*, which support the check-rower devices, substantially as and for the purpose specified.

15. In a corn-planter, in combination a rear frame supported on wheels, a forward frame hinged to said rear frame and carrying the seeding devices and runners, and bars F, pivotally secured to the seed-tubes, adjustably connected with the front ends of the runners, and provided with the covering-wheels G near their rear ends and in rear of the seed-tubes, substantially as and for the purpose specified.

16. In a corn-planter, in combination, the rear frame mounted on wheels, the forward frame hinged to the rear frame and carrying the seed-boxes and runners, the bars F, pivotally secured to the seed-tubes and adjustably connected with the front ends of the runners, the covering-wheels G, shaft H, cranks A, and links A', substantially as and for the purpose specified.

17. In a corn-planter, in combination, the rear frame mounted on wheels, the forward frame hinged to the rear frame and carrying the seed-boxes and runners, the bars F, pivotally secured to the seed-tubes and adjustably connected with the front ends of the runners, the covering-wheels G, shaft H, cranks A, links A', and a lever, I, geared with said shaft H, substantially as and for the purpose specified.

18. In a corn-planter, in combination, a seed-cup wheel having ratchet-teeth, a slide-bar, and an integral pawl and detent hinged to the slide-bar and adapted to act on the seed-cup wheel to give it successive partial rotations and to arrest its movement, substantially as and for the purpose specified.

19. In a corn-planter, in combination, a seed-cup wheel having ratchet-teeth, a slide-bar, and a spring-actuated integral pawl and detent hinged to the slide-bar and adapted to act on the seed-cup wheel to give it successional partial rotations, substantially as and for the purpose specified.

20. In a corn-planter, in combination, a seed-box, a seed-cup wheel, a slide-bar, M, guides *m*, and a swinging bar, *m'*, hinged at one end to the seed-box and at its other end to the slide-bar, substantially as and for the purpose specified.

21. In a corn-planter, and in combination, a rock-shaft which is operated by forked levers and a check-line, a crank-arm extending from said rock-shaft and adapted to actuate the seed-slides in the seed-box, and another crank-arm extending from same shaft and adapted to actuate the lower valve or discharge-valve in the seed-tube, substantially as for the purpose specified.

22. In a corn-planter, in combination, a rock-shaft, K, forked levers *k'*, check-line J, spring *l*, crank *l'*, rod *l''*, slide-bar M, crank *u*, rod *u'*, bell-crank lever *u''*, rod *u'''*, and discharge-valve *t*, substantially as and for the purpose specified.

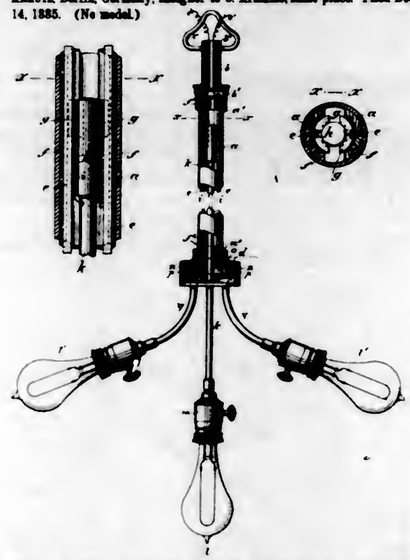
23. In a corn-planter, in combination with a rock-shaft, forked levers mounted on said rock-shaft, a spring, and a check-line, a crank-arm projecting from the rock-shaft and connected with the devices for operating the seed-slides in the seed-box, and another crank-arm projecting from same shaft and connected with the devices for operating the discharge-valve in the seed-tube, substantially as and for the purpose specified.

24. In a check-row corn-planter, in combination with the shaft which receives motion from an index check-line, seed-slides in the seed-box adapted to receive motion from connection with said shaft, and a valve in the seed-tube, also adapted to receive motion from said shaft by a connection of its own therewith, and not through any connection with the seed-slide, substantially as and for the purpose specified.

25. In a corn-planter, a seed-tube formed in two parts with a partition, *s*, at their union, the front part having a duct for the valve *t* and the rear part having a duct for the seed, substantially as and for the purpose specified.

26. In a corn-planter check-rower, in combination with a check-row shaft, D, and forked levers loosely mounted on said shaft, a lug, *k'''*, projecting from each forked lever, and a staple, *k''*, secured to the rock-shaft and adapted to coact with the forked levers and rock-shaft, substantially as and for the purpose specified.

340,512. SUSPENDING DEVICE FOR ELECTRIC LAMPS. PAUL KRAUTS, Berlin, Germany, assignor to C. KRAMME, same place. Filed Dec. 14, 1885. (No model.)



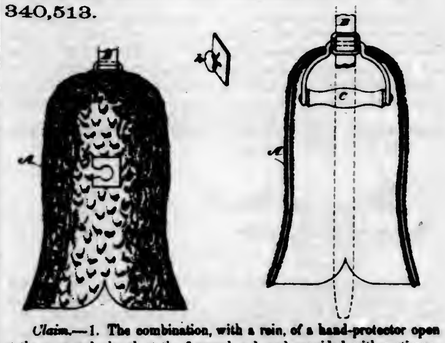
Claim.—1. The combination, with the outer tube of a suspension device for electric lamps, of longitudinal segmental strips of non-conducting material, vertical stationary conducting-rods located in said strips, service-wires connected with said rods, a tubular lamp-carrying rod provided at its inner end with grooved contact-pieces engaging and sliding on the conducting-rods with frictional contact, to hold the tubular rod in any position to which adjusted, and electrical conductors attached to the contact-pieces and entering into the tubular rod, substantially as described.

2. In a vertically-adjustable electric lamp, the combination, with a tube, insulating-strips therein, and conducting-rods mounted on said strips, of a core-piece carrying contacts sliding on the conductors, wires soldered to the contacts, a tube attached to the core-piece and containing said wires, and a lamp carried by the tube.

3. In an electric light, the combination, with a tube, insulating-strips contained therein, and conducting-rods mounted on the same, of a core-piece carrying contacts and sliding on the conductors, wires soldered to the contacts, a tube attached to the core-piece and containing said wires, an insulating-ring beneath the conducting-rods, conducting-pieces set in said ring and connected with the rods by wires, and stationary and movable lamps, the latter on the tube and the former on fixed brackets, substantially as described.

340,513. DRIVING APPARATUS. CHARLES LOWTHER, New York, N. Y. Filed Dec. 22, 1885. (No model.)

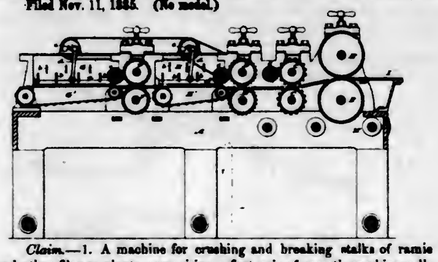
340,513.



Claim.—1. The combination, with a rein, of a hand-protector open at the rear and closed at the forward end, and provided with a stirrup-formed holding device arranged in the interior of the same for holding the reins, substantially as shown and described.

2. The combination of reins with two hand-protectors, substantially such as described, provided with a plate, *g*, and stud *h*, or equivalent devices, for engaging the hand-protectors together and disengaging them at will, substantially as and for the purpose set forth.

340,514. RAMIE-MACHINE. EDWARD LUAN, Honolulu, Hawaii. Filed Nov. 11, 1885. (No model.)



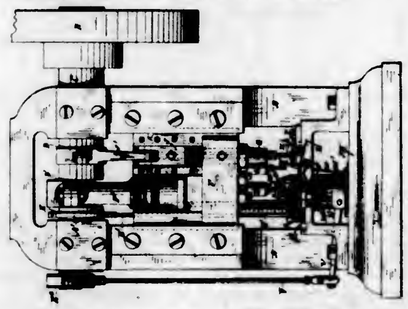
Claim.—1. A machine for crushing and breaking stalks of ramie and other fibrous plants, comprising a first pair of smooth crushing-rolls and two or more pairs of corrugated or fluted rolls, the corrugations in the said rolls being coarsest in that pair next the feeding end of the machine, and finer in those of the succeeding pairs, substantially as set forth.

2. The combination, with the plain rolls and corrugated rolls arranged in pairs and in the order described, of one or more sets of beaters, all constructed and arranged to operate substantially as set forth.

3. The herein-described process of treating ramie and other fibrous stalks, which consists in first crushing them, then breaking them, then drying them, and then finishing with beaters, substantially as set forth.

4. The combination of the plain rolls A, the coarsely-corrugated rolls B, the more finely corrugated rolls C, the carrier E', the beater E, the finely-corrugated rolls F, the carrier G', and the beater G, said rolls and beaters being arranged in the succession shown and described.

340,515. MACHINE FOR MAKING METALLIC BEADS. BAXTER LYON and WILLIAM I. MACOMBER, Providence, R. I., assignors to George L. Vose, same place. Filed Aug. 31, 1883. (No model.)



Claim.—In a machine for making hollow metallic beads, the combination of the cutting and forming die N, hollow punching-tool H, forcing-tool I, held within the punching-tool and operating in timely relation

to the up-and-down movement of the said punching-tool, the intermittently-revolving carrier-disk P, provided with holding-jaws and means for operating the same, perforating-tool H', its cutting-die K', located under the carrier-disk, forming-tool H^3, spring-operated spindle *s*, the opposing forming-tool H^3, clearer T, and mechanism for operating the several devices in timely relation to each other, substantially as described.

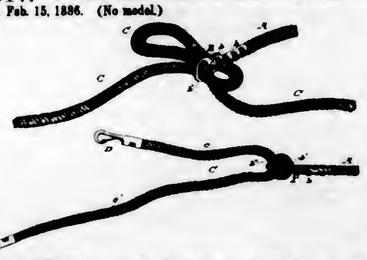
340,516. PIPE-WRENCH. WILLARD MOSTON, Weavertown, N. Y. Filed Feb. 27, 1886. (No model.)



Claim.—1. In a pipe-wrench, the combination of a slotted and grooved handle having a rigid jaw, a movable jaw having a tongue fitting the groove and adjustable toward and away from the rigid jaw, an adjustable carrier having a pivoted lever connected to the movable jaw and provided with an arm, and a cam pivoted to the arm and bearing against the handle for holding the carrier at any desired adjustment thereon, substantially as described.

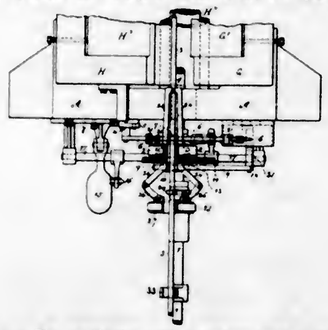
2. In a pipe-wrench, the combination of a handle having a rigid jaw, B, and a longitudinal slot and dovetailed groove, a movable jaw, C, provided with a tongue closely fitting the groove and a slot, an adjustable serrated block bearing against a similar face of the handle and having an arm, E', projected through the slot of said handle, a lever, D, pivoted to the block and having an arm, *d*, engaging the slotted movable jaw, and a cam, F, pivoted to the arm E', all arranged and combined substantially as described.

340,517. DRIVING-LINE. ROBERT H. MULLEN, Cincinnati, Ohio. Filed Feb. 15, 1886. (No model.)



Claim.—The driving-rein or check-line for double harness, comprising a single length of rope or cord having a clip secured thereto, as described, said clip being provided with a round and an oblong eye, one end of the rope or cord passed through the round eye, and both through the oblong one, and having at their free ends suitable fastenings, substantially as set forth.

340,518. BOLT-MACHINE. GEORGE J. MURDOCK, New York, N. Y., assignor to Charles Hall, same place. Filed Dec. 26, 1885. (No model.)



Claim.—1. The combination, with a stationary and a swinging head-block and dies in a bolt-making machine, of a rack-bar, a rack-wheel and motor-wheel acted on by such rack-bar and the movement of the head-block, and mechanism, substantially as specified, for giving motion to the bolt-rod and turning the same progressively as the forging of the head progresses, as set forth.

2. The combination, with the motor-wheel 11, of a notched carrier-wheel and pinchers pivoted to the notched carrier-wheel and grasping and progressively rotating the bolt-rod, substantially as set forth.

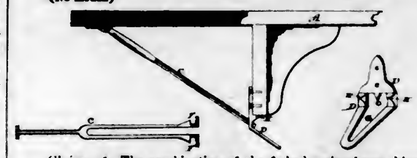
3. The combination, with the motor-wheel 11, of a notched carrier-wheel, pinchers pivoted to the carrier-wheel, links and a link-ring, a yoke supporting the link-ring, and means for moving the yoke and acting on the pinchers, substantially as set forth.

4. The combination, with the swinging frame and motor-wheel, of the notched bar 6 and pin 7, and the mechanism, substantially as set forth, for grasping and rotating the bolt-rod, and the treadle and lifter for raising the notched bar and stopping the movements of the parts, substantially as set forth.

5. The combination, with the motor-wheel and carrier-wheel and the devices for turning the bolt-rod, of the swinging frame, the notched bar, the treadle and lifter, and the lever 21 and pin 20 on the carrier-wheel, for automatically raising the notched bar and stopping the rotating mechanism, substantially as set forth.

6. The combination, with the swinging frame and the pinions 12, of the motor-wheel 11, the rack-wheel and rack to give motion to the motor-wheel, the stationary head-block and die, and the moving head-block and die, by which the motor-wheel receives its movement, and mechanism, substantially as set forth, for grasping and progressively rotating the bolt-rod, substantially as set forth.

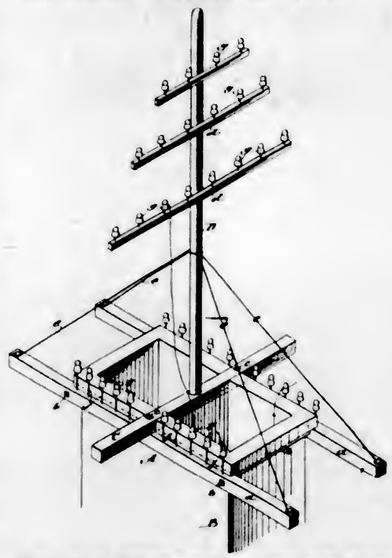
340,519. TABLE-LEAF SUPPORT. JAMES PLEUKHARP, Columbus, Ohio, assignor to Jas. Pleukharp & Co., same place. Filed Feb. 9, 1886. (No model.)



Claim.—1. The combination of the forked spring-brace hinged to the table-leaf with a guiding-hasp provided with an opening, through which the brace passes, and the spur which catches between the prongs of the brace, substantially as shown.

2. The hasp having its lower end inclined downward at an angle and provided with a V-shaped slot or opening, in combination with the brace provided with spring-prongs, substantially as set forth.

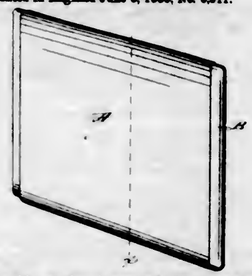
340,520. CHIMNEY-SUPPORT FOR TELEGRAPH-WIRES. ALBERT POTTS, Philadelphia, Pa. Filed Dec. 31, 1885. (No model.)



Claim.—1. A chimney-support for telegraph-wires, formed of a frame adapted to be clamped to the chimney-top, and provided with a pole and suitable insulators for supporting the wires above the chimney in position to be led down the interior of the chimney, as and for the purpose specified.

2. The combination of the side bars, *a*, bolts *b*, extending through the side bars and clamping them to the chimney-top, the cross-bar C, the telegraph-pole D, braces *e*, and insulators *g*, supported by the pole and the bars *a*, substantially as shown and described.

340,521. MAKING-UP BOARD FOR PIECE GOODS. CHAS. PRIESTLEY, Bradford, County of York, England. Filed Sept. 14, 1885. (No model.) Patented in England June 8, 1885, No. 6,911.



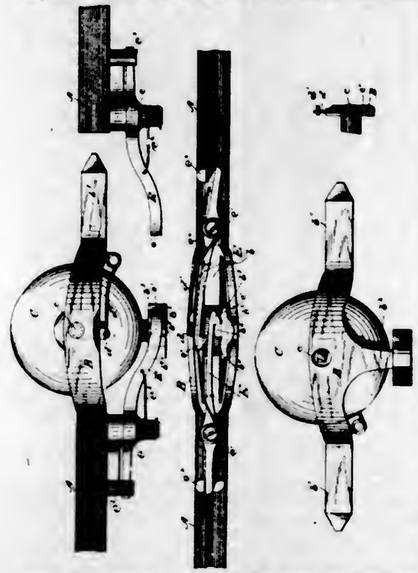
Claim.—A making-up board provided with a seamless cover, substantially as described.

340,522. PROCESS OF PREPARING BURNING-OIL FOR LAMPS AND RESULTING PRODUCT. JAMES ROOTS, Baker Street, Middlesex, assignor to Dunsdar & Co., London, England. Filed Oct. 26, 1885. (No specimens.)

Claim.—1. The process of improving the illuminating quality of hydrocarbon fluids for burning in the ordinary way in ordinary lamps, consisting in dissolving in such fluids naphthaline in proportion of from, say, eight to fifteen per cent., according to the volatility of the fluid, substantially as described.

2. The burning-fluid herein described, consisting of an admixture of hydrocarbon oil—such as petroleum, colza, or sperm—and from eight to fifteen per cent. of naphthaline.

340,523. POSITIVE SHUTTLE-MOTION FOR LOOMS. CHARLES B. RUSSELL, Homer, N. Y., assignor of two-thirds to Charles A. Skinner and George D. Daniels, both of same place. Filed Mar. 6, 1884. (No model.)

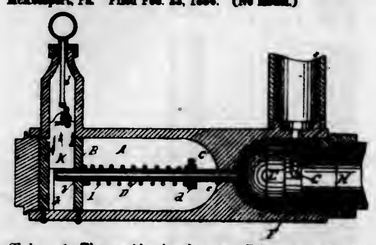


Claim.—1. The shuttle-frame having the extended end projections and the lateral arm provided with the opposite inclines and the central rib or stud, and having the elongated slot formed through it transversely, in combination with the bobbin arranged within said slot and mounted upon a pivot passing vertically through the shuttle-frame, substantially as described.

2. The combination, with the shuttle-frame having the extended end projections and the lateral arm provided with the opposite inclines and the central rib or stud, and having the elongated slot formed through it transversely, of the bobbin arranged within the said slot and mounted upon a pivot passing vertically through the shuttle-frame, and the shuttle-carrying arms having the sockets in the ends, and the pawls on the sides provided with springs for operating them, substantially as described.

3. The shuttle-carrier arms, each having the socket in its end, the pawl on its side, the spring for depressing the outer end of the pawl, and the stop for limiting the downward movement of the pawl, in combination with the shuttle-frame having the extended ends, and the lateral arm having the opposite inclines and the central rib or stud, substantially as described.

340,524. CUT-OFF FOR NATURAL-GAS PIPES. GEORGE RUSSELL, McKeesport, Pa. Filed Feb. 23, 1886. (No model.)

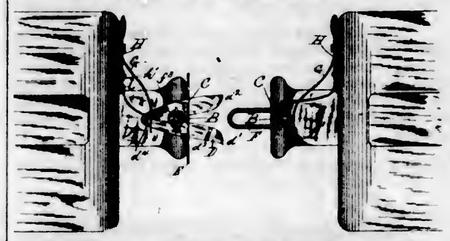


Claim.—1. The combination, in a cut-off for gas-supply pipes, comprising a valve-chest, a stem-valve arranged to move lengthwise therein, an adjusting or closing spring attached to the valve-stem, and a gravity block or catch constructed and arranged as described, of a service-pipe communicating with said valve-chest by a port in the side thereof, said port being opened and closed by the valve, as set forth.

2. In a cut-off device for gas-supply pipes, the combination, with the valve-chest and a longitudinally-moving stem-valve adapted to open and close the outlet from said chest, of the partition C, designed and adapted to prevent the accumulation of gas behind said valve-head, and a lateral port communicating with the valve-chest near the valve and forward of said partition, substantially as shown and described.

3. In a cut-off device for gas-supply pipes, comprising a valve-chest having a lateral port opening in front of the valve, a stem-valve arranged to move lengthwise thereof, an adjusting or closing spring, and a gravity block or catch, the partition C, arranged substantially as shown and described, whereby, when the valve is open, said partition will serve as a seat for the valve-head E, and thereby prevent the accumulation of gas behind said head, as set forth.

340,525. CAR-COUPLING. JOHN W. EYKARD, Abbeville, S. C. Filed Oct. 1, 1884. Renewed Oct. 10, 1885. (No model.)



Claim.—1. In a car-coupling, the self-adjusting link mechanism, consisting of the slotted plate to hold the link, in combination with the plate having the curved outer ends, and the spring-bar, substantially as described.

2. The combination of the link-holding slotted plate E, the plate D, provided with the outer curved ends and the upright guard d^2, substantially as and for the purpose described.

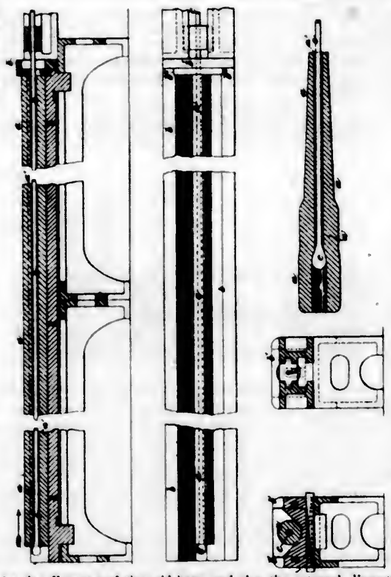
3. An automatic car-coupling comprising, in combination with the draw-head, the lever and arm, the slotted and notched cylinder, the spring-bar, the plate provided with the curved outer ends and upright guard, and the link-supporting plate, substantially as described.

340,526. MANUFACTURE OF SEAMLESS TUBES. WILLIAM C. STIFF and HERBERT R. S. BENNETT, Birmingham, County of Warwick, England. Filed Nov. 17, 1885. (No model.)

Claim.—1. The method, substantially as herein described, of manufacturing seamless tubes, which consists in forming a hole or bore through the ingot, bar, bloom, or block, and then passing through said hole or bore a mandrel having an enlarged head or bulb, whereby the diameter of the hole or bore, and also the external diameter of the blank being operated upon, is increased, as set forth.

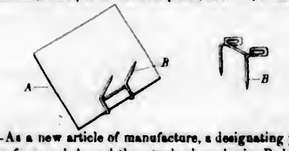
2. The method, substantially as herein described, of manufacturing seamless tubes, which consists in forming a hole or bore through the ingot, bar, bloom, or block, and then forcing through said hole or bore, while the said ingot, bar, bloom, or block is heated and unconfined against radial external enlargement, a mandrel having an enlarged head or bulb,

340,526.



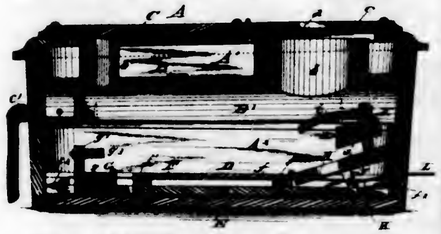
whereby the diameter of the said bore, and also the external diameter of the blank, is increased, substantially as set forth.

340,527. TAG. JOHN C. ST. JOHN, New York, N. Y., assignor to Stephen Williams, same place. Filed Sept. 13, 1885. (No model.)



Claim.—As a new article of manufacture, a designating pin-ticket consisting of the face-card A and the staple-shaped pin B, having its ends passed through the ticket from the rear side to the face, thence bent laterally outward to the edge, and thence bent downward and inward from the edge to the loop portion or points of entrance, and thence downward substantially at right angles to the plane of the card, as shown and described.

340,528. CORPSE-PRESERVER. SAMUEL STOCKTON, Lambertville, N. J. Filed Jan. 30, 1886. (No model.)



Claim.—1. In a corpse-preserver, the combination, with the cooling-board composed of the grating F and board E, provided with the notch or recess *e*, of the hinged flap and head-rest secured thereto, substantially as described, and the foot-rest composed of the foot-plate *g'*, and the block *g*, provided with the flanges g^2, substantially as specified.

2. In a corpse-preserver, the combination, with the cooling-board composed of the grating F and board E, provided with the detent-notches K, of the hinged flap H, detents J, pivoted thereto, standard I, and head-rest I', all constructed and arranged substantially as and for the purpose specified.

3. In a corpse-preserver, the combination of the cooling-board provided with detent-notches, the hinged flap bearing the head-rest, the detents pivoted to said flap and connected by a transverse bar, and the cord secured to said bar and passing through an opening in the casing above said bar for the purpose of lowering the flap and head-rest while the casing is closed, substantially as specified.

340,529. CAR-COUPLING. CHARLES R. TUBER, Adrian, Mich. Filed Feb. 18, 1886. (No model.)

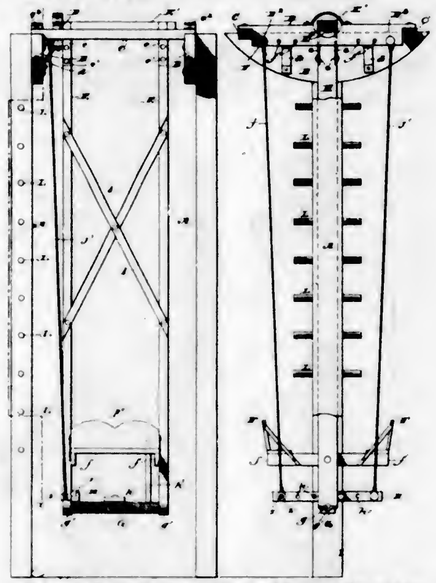


Claim.—1. The draw-head having a partially-open bottom, a weighted coupling-bar working therein, as described, and provided with a notch or recess in its rear end, in combination with the uncoupling-shaft provided with a lifting-lever adapted to engage with the notch in the rear end of the coupling-bar as the uncoupling-shaft is turned, all arranged and operating substantially as shown and described.

2. A draw-head provided with slots in its opposite sides, a coupling-bar, substantially as described, having side pins engaging with the slots in the draw-head and provided with a notch or recess in its rear end, in combination with an uncoupling-shaft provided with a lifting-lever adapted to engage with the notch in the rear end of the coupling-bar as the uncoupling-shaft is turned, all arranged and operating substantially as shown and described.

3. The draw-head A, having a partially-open bottom, a weighted coupling-bar, B, working therein, as described, and provided with a notch or recess, *d*, in its rear end, in combination with the uncoupling-shaft D, having the lifting-lever E, all arranged and operating substantially as shown and described.

340,530. SWING. WILLIAM C. TUTTLE, Bardett, Mo. Filed Oct. 9, 1885. (No model.)



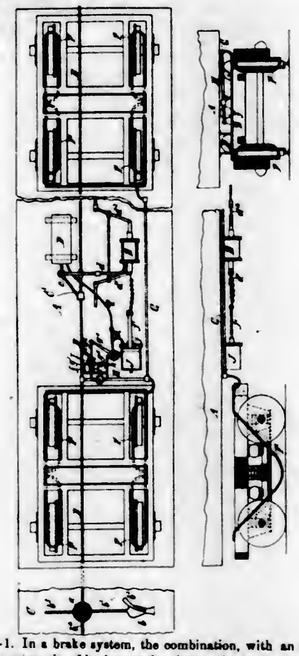
Claim.—1. In a swing, the combination of the supporting uprights, cross-beams B secured thereto, a rock-shaft journaled in the cross-beams, seat-suspending arms rigidly secured to the rock-shaft, a rock-shaft, G, journaled in the lower ends of the suspending-arms, a cross-beam, H, rigidly secured to the rock-shaft G, and connecting rods or cords detachably secured to the cross-beam B and the bar H, and adapted to be adjusted laterally on each side of the pivot of said bars, substantially as described.

2. In a swing, the combination, with the supporting-uprights A, the cross-beams B, rigidly secured to the uprights at their upper ends, an oscillating bar journaled in bearings e^3, secured to the beams, seat-suspending arms E, rigidly secured to the oscillating bar, a rock-bar, G, journaled in bearings *g'*, secured to the suspending-arms E at or near their lower ends, a cross-bar, H, rigidly secured to the rock-bar and arranged at right angles thereto, operating cords or rods secured to the cross-bar H and the beam B, a treadle, K, secured to the rock-bar G, an operating-lever, K', and a seat secured to the suspending-arms above the rock-bar G, all arranged substantially as described.

3. In a swing, the combination of the supporting-uprights, braced cross-beams secured to the uprights, an oscillating bar journaled in the cross-beams, suspending-arms secured to said oscillating bar and carrying a seat, a cross-bar, D, having adjustable pins D', secured to the cross-beams, a rock-shaft, G, journaled in the lower end of the suspending-arms, a cross-bar, H, secured thereto and having adjustable pins I, and cords connecting the pins D' I, substantially as described.

4. In a swing, the combination of the supporting-uprights A, cross-beams B secured thereto, lateral braces C to said cross-beams, a cross-bar, D, having apertured and adjustable pins D', carrying frictional wheels, an oscillating beam journaled in the cross-beams B, suspending-arms E, secured to the oscillating beam and having a seat, a rock-shaft, G, journaled in the arms E, and having a treadle and an operating-lever, a cross-bar, H, secured to the rock-shaft and having adjustable pins I, carrying frictional wheels, and cords or chains J', connecting the pins I D', substantially as described.

340,531. RAILWAY-BRAKE. HIRAM K. WHITNER, New York, N. Y. Filed Sept. 29, 1885. (No model.)



Claim.—1. In a brake system, the combination, with an auxiliary compressed-air reservoir, of brakes rendered operative by the compressed air in said reservoir when a vent is created in the main air-pipe, and a secondary compressed-air reservoir vented to apply power to the brakes when a vacuum is created in said main air-pipe, substantially as specified.

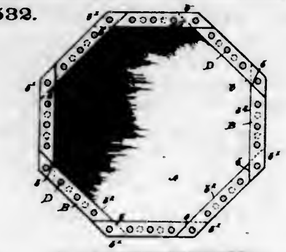
2. In a brake system, the combination, with an auxiliary compressed-air reservoir, of brakes rendered operative by the compressed air in said reservoir when a vent is created in the main air-pipe, a secondary compressed-air reservoir, a connection between said secondary reservoir and the main air-pipe, a valve operating to prevent a reflow of air from the secondary reservoir to the main air-pipe, and mechanism, substantially such as described, whereby, when a vacuum is created in the main air-pipe, the compressed air in the secondary reservoir will be caused to exert force to apply the brakes, substantially as specified.

3. In a brake system, the combination, with an auxiliary compressed-air reservoir, of a secondary compressed-air reservoir consisting of frangible pipes disposed about a car-truck or its appurtenances, substantially as specified.

340,532. WATER-TANK. JAMES F. WILSUR, Richford, N. Y. Filed Sept. 28, 1885. (No model.)

Claim.—A tank constructed, as herein shown and described, of segments arranged with their ends and inner edges set alternately against the ends and inner edges of their adjoining segments, each horizontal series of segments having the same formation and being arranged in reverse order to its vertically-adjacent series in order that each alternate series of segments may strengthen the joints of the adjacent series, all secured together by spikes or screws, as and for the purpose set forth.

340,532.



340,533. MOVEMENT-CURE APPARATUS. WILLIAM F. WORTHEYER, Chicago, Ill. Filed Sept. 12, 1885. (No model.)



Claim.—1. A manipulator comprising a rotating frame and a series of rollers mounted to rotate freely upon axes arranged radially with reference to the axis of rotation of the frame, whereby all of said rollers may act together upon a plane surface, substantially as described.

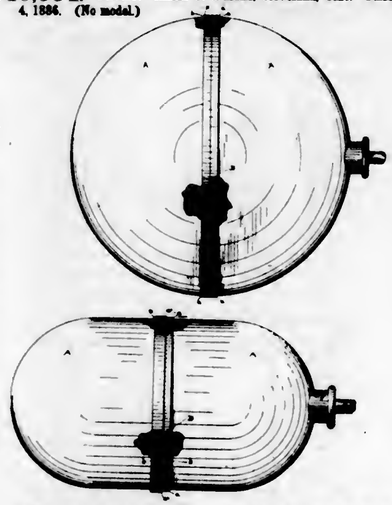
2. A manipulator comprising a rotating frame and a series of conical rollers mounted to rotate freely upon the frame, substantially as described.

3. A manipulator comprising a rotating frame and a series of conical rollers mounted upon the frame with their apices directed inwardly and their conical surfaces tangent to a plane perpendicular to the said axis of rotation of the frame, substantially as described.

4. The combination, with a series of conical rollers, of a frame provided with radially-arranged pivots affording bearings for the rollers, and adapted for attachment to a driving-shaft, substantially as described.

5. The combination, with a series of conical rollers, of a frame provided with pivots affording bearings for the rollers, and consisting of a plate constructed for attachment to a driving-shaft, and provided with a central post and exterior arms supporting the said pivots, substantially as described.

340,534. FLOAT. ALLEN J. WEBSTER, Cleveland, Ohio. Filed Feb. 4, 1886. (No model.)



Claim.—1. A float consisting, essentially, of a shell made in two parts and joined together by means of an internal band arranged to overlap the joint, the two parts of the shell being preferably forced and shrunk upon the band, substantially as set forth.

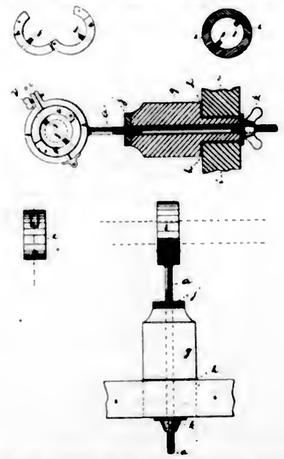
2. In a float, the combination, with a shell made in two parts, of an internal band arranged to span the external joint, said band having one or more inside ribs or flanges, substantially as set forth.

3. In a float, the combination, with a shell made in two parts, of an internal band for uniting the two parts of the shell, said shell having

offsets or shoulders for engaging the edges of the internal band, substantia y as set forth.

4. In a float, the combination, with a shell made in two parts that are joined by an internal band, of a lock-joint formed by spinning or compressing the edge of one part of the shell over a shoulder, flange, or projection of the other part of the shell, substantially as set forth.

340,535. **WORK-SUPPORT FOR LATHES.** EMIL ZIMMERMANN, New York, N. Y. Filed Feb. 2, 1886. (No model.)

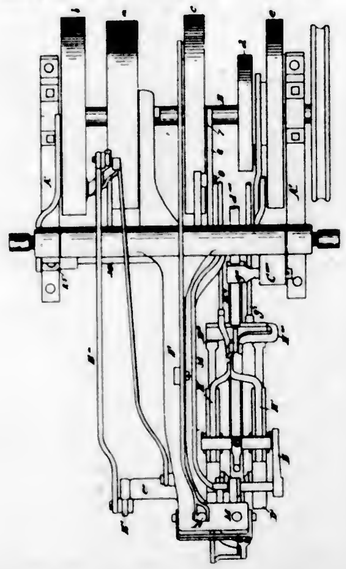


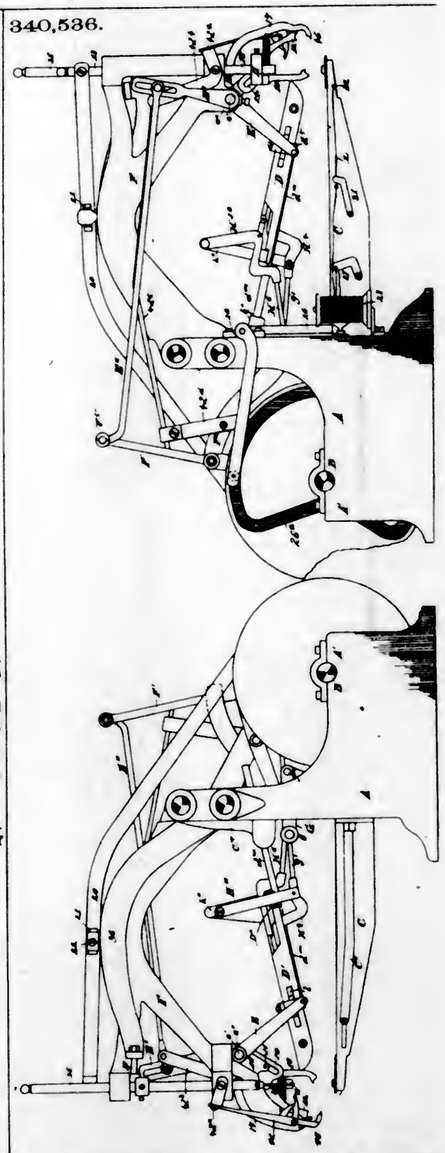
Claim.—1. The combination of post *a*, carrying sectional ring *b*, with the collar *e*, provided with adjusting-screws *f*, substantially as specified.

2. The combination of screw-threaded post *a*, carrying sectional ring *b*, having lugs *c* and screw *d*, with the collar *e*, having screws *f*, and with the block *g*, that embraces post *a*, substantially as specified.

3. The combination of screw-threaded post *a*, ring *b*, and collar *e*, with the block *g*, having offset *h*, and perforated head *j*, and with the winged nut *k*, substantially as specified.

340,536. **MACHINE FOR SEWING ON BUTTONS.** AARON A. BROWN and JAMES A. LARSH, Cincinnati, Ohio; said Larsh assignor of four-fifths to said Brown. Filed Aug. 7, 1885. (No model.)





Claim.—1. In a machine for sewing on buttons, the combination, with the reciprocating clamp-jaws D D′, of carrying-clamps 1, carried by crank-arms having shafts journaled in the said clamp-jaws, and adapted to hold the button in position for drawing through the first loop or stitch, and mechanism, substantially as described, for rotating the clamp, turning the button, and holding it in position for drawing the second loop through the eye, as substantially herein specified.

2. In combination with the reciprocating clamp-jaws D D′, a mechanism for driving, opening, and closing the same, the reversing-clamps 1 1, and the reversing-pinion and rack operated by bars H H′, and means, substantially as described, for reciprocating said bars, substantially as herein specified.

3. In a machine for sewing on buttons, the combination, with the stitch-forming mechanism, of the reciprocating clamp-jaws operated by the crank-arms E E′, the latter operated by the lever connected to a cam from the main shaft, substantially as herein specified.

4. In combination with the clamp-jaws D D′ and the clamps 1, the pinions upon the shafts of said clamps, the racks engaging with said pinions, and the reversing mechanism consisting of bars H H′, operated by a cam and connection from the main shaft, substantially as herein specified.

5. In combination with the jaws D D′, operated by cams on the main shaft, the spreading mechanism O″ *d′ d‴*, operated by a pitman connected to a lever and driven by the cam G″ on the main shaft, substantially as herein specified.

6. In combination with the jaws D D′, clamps 1, the oscillating top clamp, 12, operated by the crank-arm 16 simultaneously with the movements of crank-arms E E′ and jaws D D′, means, substantially as described, for operating the crank-arms E E′, the stitch-forming mechanism, and the vibrating supporting-hook 17, connected to and operating in unison with the clamp 12, substantially as herein specified.

7. In combination with the clamps 1 and their operating mechanism, the stitch-forming mechanism, the top stationary clamp, 10, and vibrating clamp 12, having their extreme ends pointed, so as to spread the thread for drawing the loops over the button, and the complementary supporting devices holding the button below, substantially as herein specified.

8. In combination with the hook-needle, the stitch-forming mechanism, the thread-releasing mechanism consisting of a guard, 43, pivoted hook 41, attached to the vibrating bar 42, and means, substantially as described, for operating said bar, substantially as herein specified.

9. In combination with the top clamp, 12, and the supporting-hook 46, the hook-needle and complementary stitch-forming mechanism, and means for moving the same in proper relation to said clamp and supporting-hook, substantially as described.

10. In combination with the crank-arms E. E′, operated by lever and cam mechanism from the main shaft, the jaws D D′, the pivotal clamps carried thereby, the reciprocating bar 13, carrying the top and supporting-clamps operated by a lever and a cam on the main shaft, substantially as herein specified.

11. In combination with the reciprocating jaws D D′, operated by cranks and cams on the main shaft, the arms H H′, pivoted to bell-crank and connected by reciprocating rod H^2, moving through the pivoted wrist 5, journaled on the lever 6 and driven by the cam 8, the clamps 1 1, pivotally mounted in said jaws, the pinions on the shanks of said clamps, the racks driving said pinions, and the stitch-forming mechanism, substantially as herein specified.

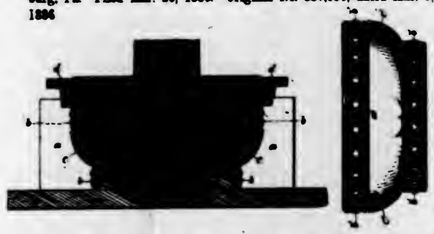
12. In combination with the jaws D D′ and their connecting and driving mechanism, the pitman H^4, connected to its driving-lever by shank *g′*, reciprocating in the journal-wrist *g*, the bell-crank lever carrying said wrist, the cam operating said lever, and the cross-bar O″, having inclined slots engaging with pins on the said jaws D D′, whereby the pitman is reciprocated independently to open and close said jaws, substantially as herein specified.

13. In combination with the stitch-forming mechanism, means, substantially as described, for supporting and holding the button, the reciprocating jaws D D′, the arms H H′, having the oscillating wrist-connection to the cam on the main shaft, the reciprocating spreading mechanism operated by pitman H^4, connected to oscillating and reciprocating mechanism driven by a cam on the main shaft, and crank-arm, lever, and cam-connections of the jaws D D′, whereby the three several mechanisms are operated independently from the main shaft simultaneously with the movements of the other parts, and each performing its several functions successively, substantially as herein specified.

14. In combination with the needle-bar and hooked needle, the take-up bar 26, the looper-bar C″, having a stud, and the cam *a′*, mounted on shaft B, to feed and draw the thread as the button is presented to the needle in reverse positions by the button-clamping mechanism, substantially as described.

REISSUES.

10,712. **MANUFACTURE OF GLASSWARE.** GEORGE W. BLAIR, Pittsburg, Pa. Filed Mar. 29, 1886. Original No. 337,656, dated Mar. 9, 1886.

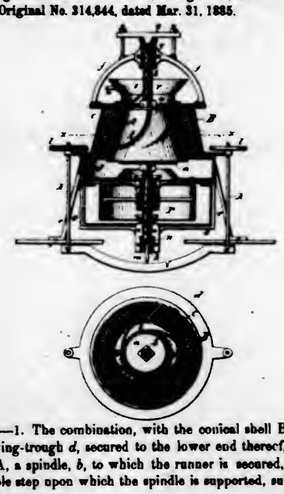


Claim.—1. The method of making ornamented glassware which consists in pressing a clear-glass article with prismatic figured bands or zones, and an interposed plain band or zone, and then laying a lustrous transparent coloring-matter on the plain zone, and finally firing or baking the color in, substantially as and for the purposes described

2. A pressed crystal-glass vessel having transverse figured bands or sections with an interposed colored plain band or section, substantially as and for the purposes described.

3. A pressed crystal-glass vessel having figured bands or sections with interposed lustrous tinted bands or sections, substantially as and for the purposes described.

10,713. **PULP-GRINDER.** WILLIAM H. HOWELL, Thorold, Ontario, Canada, assignor to William Wilkeson, Youngstown, N. Y. Filed Feb. 18, 1886. Original No. 314,844, dated Mar. 31, 1885.



Claim.—1. The combination, with the conical shell B and the annular receiving-trough *d*, secured to the lower end thereof, of the conical runner A, a spindle, *b*, to which the runner is secured, and a vertically-movable step upon which the spindle is supported, substantially as set forth.

2. The combination, with the conical shell B and the annular receiving-trough *d*, secured to the lower end thereof, of the hangers *o*, secured to said trough, the bearing *n*, supported by said hangers, the vertically-movable step *h*, arranged in said bearing, the conical runner A, and the spindle *b*, resting on the step *h*, substantially as set forth.

3. The combination, with the conical shell B and the annular receiving-trough *d*, secured to the lower end thereof, of the hangers *o*, secured to said trough, the bearing *n*, supported by said hangers, the vertically-adjustable bar *i*, supporting the step *h*, and the conical runner A and spindle *b*, substantially as set forth.

4. The combination, with the conical shell B and annular receiving-trough *d*, secured to the lower end thereof, of the hangers *o*, depending from the trough *d*, a pulley, *p*, arranged between said hangers, the conical runner A, and spindle *b*, and a vertically-adjustable step-bearing, *h*, attached to the hangers *o* below said pulley, substantially as set forth.

5. A pulp-grinder consisting, essentially, of the conical running-stone A, shaft *b*, to which said stone is clamped, the fixed stone B, surrounding the said running-stone, the casing *c*, surrounding the fixed stone, spout *d*, secured to the lower edge of said casing, the hangers *o*, secured to the under side of spout *d*, cross-bar *i*, the vertically-adjustable rods *k*, connecting the outer ends of the cross-bar with the frame above said cross-bar, step *h* in the hangers *o*, center *m* between the step and cross-bar *i*, pulley *p* on the shaft *b*, within the hangers *o*, the bridge-trees *f*, mounted on top of casing *c* and provided with the bearing *g*, and cross-bar *g*, bearing on the upper end of shaft *b*, to prevent vertical movement thereof, and a hopper, *r*, substantially as set forth.

6. The combination, with the conical running-stone A and the hollow conical fixed stone surrounding the same, of the hopper *r*, provided with the inclined flanges *s*, extending from the top to the bottom of the hopper and acting to force the material into the space between the stones, and the pipe *u*, for directing a stream of water between the stones to cool them, substantially as set forth.

10,714. **HARDENING RESINS.** ALBERT KNAUS, Frankfort-on-the-Main, Germany, assignor to C. Zimmer, same place. Filed Sept. 8, 1885. Original No. 308,436, dated Aug. 12, 1884. Patented in Germany Mar. 5, 1884, No. 30,000; in France May 13, 1884, No. 162,096; in Belgium May 13, 1884, No. 65,143, and in England May 21, 1884, No. 8,096.

Claim.—1. The conversion of the acids contained in the balsams or resins hereinbefore referred to, or in their products or compounds, or by-products, or in mixtures of such resins with other substances, as mentioned, by means of caustic lime or other caustic alkaline earths into the salts of those earths respectively, in order to harden such resins, resinous by-products, or resin preparations.

2. The act of combining caustic lime or other caustic alkaline earth with the acid or acids contained in either or any of the resins or resinous products hereinbefore referred to, in order to harden such resin or resinous product, or to raise the same to a higher softening-point, substantially as described.

3. The method of hardening of either or any of the resins or resinous products hereinbefore referred to, by partially or wholly neutralising the acid or acids contained therein, by the combination of such acid or acids with caustic lime or other caustic alkaline earth, substantially as described.

4. The herein-described resin or resinous product brought to a higher softening-point by the partial or entire neutralization of the acid or acids contained therein, by combination of such acid or acids with caustic lime or other caustic alkaline earth, to form a salt or salts of such alkaline earths respectively.

10,715. **HAY-KNIFE.** GEORGE F. WEYMOUTH, Dresden, assignor to Hiram Holt, Wilton, Me. Filed Mar. 26, 1886. Original No. 112,400, dated Mar. 7, 1871; Reissue No. 10,072, dated April 4, 1882.



Claim.—The improved hay-knife above described, consisting of the curved blade A, having knife-edged serrations B, and handles C C', placed as shown, all substantially as specified.

PHOTO LITH. NORRIS PETERS WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

THE YALE LOCK MANUFACTURING COMPANY, APPELLANT, *v.* SARGENT.

Decided March 29, 1886.

"The bill in this case was filed by the appellee for an injunction to restrain the defendant below, the appellant, from an alleged infringement of Letters Patent No. 98,622, dated January 4, 1870, granted to James Sargent, for an improvement in permutation-locks and for an account, &c. On final hearing on bill, answer, replication, and proofs there was a final decree for the complainant for an injunction and for $400.75 damages and costs. The defendant has appealed." The only question in the case is the fact of infringement. *Held* "that the defendant does not use the same combination, and employs no device as an equivalent and substitute for the omitted element. It is not, therefore, liable as an infringer. (*Water Meter Company* v. *Desper*, 101 U. S., 332; *Gage* v. *Herring*, 107 U. S., 640.) The decree of the circuit court is accordingly reversed, and the cause is remanded, with directions to dismiss the bill."

Mr. Frederic H. Betts for the appellant.

Mr. George Ticknor Curtis and *Mr. Edmund Wetmore* for the appellee.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

Mr. Justice MATTHEWS delivered the opinion of the Court.

The bill in this case was filed by the appellee for an injunction to restrain the defendant below, the appellant, from an alleged infringement of Letters Patent No. 98,622, dated January 4, 1870, granted to James Sargent for an improvement in permutation-locks, and for an account, &c. On final hearing on bill, answer, replication, and proofs there was a final decree for the complainant for an injunction and for $400.75 damages and costs. The defendant has appealed.

The question involved is the fact of infringement, and that in its turn depends upon the proper construction of the complainant's patent.

The specifications and claim of the patent, with the accompanying drawings, are as follows:

Figure 1 is an elevation of the lock, with the back plate removed to show the interior; Fig. 2, a vertical cross-section of the same; Fig. 3, a diagram showing the cam and the disconcerting-eccentrics in perspective.

Like letters of reference indicate corresponding parts in all the figures.

Nature of the Invention.

This lock is an improvement upon that of Linus Yale, in which an eccentric roller is combined with the cam for disconcerting the action upon tumblers.

The invention consists in combining with the cam an arrangement of two or more eccentric rollers of varying eccentricity turning upon the same bearing, so that in revolving one or both may turn and alternate in action, thereby greatly increasing the difficulty of mapping out or locating the position of either.

General Description.

In the drawings, A represents the case of the lock; B, the cylinder for holding the tumblers or wheels; C, the spindle; D, the cam; E, the dog which falls to release the bolt, and G the bolt.

Fig. 1.

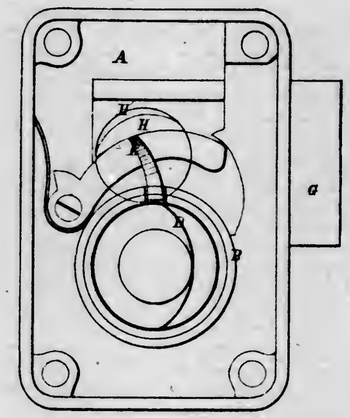


Fig. 2.

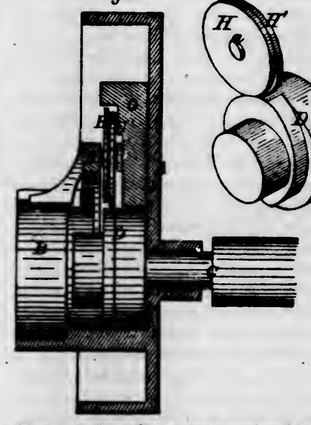
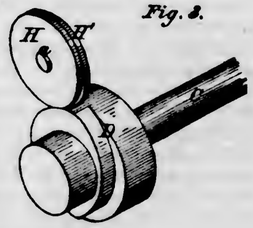


Fig. 3.



These are the ordinary parts employed in combination-locks, and may be arranged in any desired manner; hence they need no special description here.

A single eccentric roller, H, pivoted at a to a suitable arm or bearing, and resting upon the cam D, has been before employed, as already stated. Its object is to disconcert the action inside the lock, so that an expert lock-pick or burglar cannot tell the position of the tumblers when operating upon the lock. It has been found by experiment, however, that such a device is not proof against the skill of an expert lock-pick, for by the use of a delicate instrument attached to the spindle outside, and by careful manipulation, the shape and position of this roller can be actually mapped out or ascertained and the lock opened. To obviate this

difficulty as far as possible, I combine with this roller one or more rollers, H', pivoted to the same arm or bearing, and resting upon the periphery of the cam in the same manner; but all these rollers are made of varying eccentricity and of different shape, and therefore when the cam is turned the several rollers strike at different positions, and when one touches the other may be removed from contact, thus alternating in action. They may also turn in different directions. By this means, owing to the different contact of the several rollers, the difficulty of mapping out and locating the same is very greatly increased. In transferring the action from one roller to the next, the loss of contact with the first disarranges the position, and thus renders it indefinite. In this manner, and for this reason, the addition of another roller to the one already in use does not produce an accumulation of the same effect in action, but produces a different action altogether by breaking the continuity of rotation and movement and contact.

I disclaim the employment of a single eccentric; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The arrangement of two or more rollers, H H', of varying eccentricity, when combined with the cam, in the manner and for the purpose specified.

Mr. Henry B. Renwick, an expert, called by the complainant, in explanation of the patent, says:

I have examined the patent, and believe that the words "varying eccentricity," as applied to the rollers, means that the rollers shall have their axes at different points in their diameters. If the two rollers be each three-fourths of an inch in diameter, and one have its axis thirty-five one-thousandths of an inch from the nearest point in its periphery and the other have its axis forty-one thousandths of an inch from the nearest point of its periphery, then they will be of varying eccentricity. This variation of distance of the axis from the nearest point of the periphery need be no greater than the smallest distance that can be measured by the sensitive micrometers used in lock-picking, for the reason that the whole aim of the patented contrivance is to avoid picking by means of a micrometer.

The same witness was also examined upon the question of infringement, upon a comparison with the patent, of a lock made by the defendant, marked as an "Exhibit Cole No. 1." He said:

I have examined the lock Cole No. 1. It has two disconcerting-rollers in combination with a cam upon which they ride. These rollers being for the purpose of preventing a lock-picker from ascertaining the position of the rotary tumblers by means of a micrometer, in this respect it is substantially identical with the contrivance described in the patent. Whether these rollers in the exhibit are of varying eccentricity or not I cannot positively determine, although they appear to be so by examination of them without instruments. A variation of eccentricity between the two rollers, which could be measured by a micrometer only, would be sufficient to secure the object which these rollers are designed to effect, and they may have such eccentricity, and yet it may be impossible to determine it by the eye alone.

On cross-examinat on he admitted that he could not tell with certainty whether the rollers were or were not of varying eccentricity. No other witness on the part of the complainant is able to prove the fact of a variation of eccentricity between the rollers used by the defendant, while, on the other hand, the testimony on the part of the defendant does not permit us to doubt that the rollers used in its locks are identical in their eccentricity and shape. If, therefore, a variation of eccentricity in the rollers is a material feature of the invention, or is made material by the description and claim of the patent, no infringement has been proved. It does not meet and answer the difficulty to say, as has been suggested in argument, that although the rollers in the defendant's locks may be of the same eccentricity and shape as respects each other, yet that when in revolution they vary in eccentricity in reference to the cam which operates them, so that in action their eccentricity varies, and the same result is produced, because the description in the patent and the claim require that the variation of eccentricity should be between the rollers themselves, and not a variation in action in reference to the cam, and unless the same result is produced by the same means there is no infringement of the invention. Besides, the fact is not as claimed. It is impossible mechanically for the rollers, being identical in eccentricity and shape with each other, to have the same relation at all times to the cam as though they varied in eccentricity. For, as is pointed out in the evidence on the part of the defendant, when the rollers are the same in eccentricity and shape with each other there must be intervals of time at which the two rollers, having been rotated to a point at which their peripheries exactly coincide, both would revolve together for a short period, until some slight impediment or change in the periphery of the cam would cause one to bear more directly than the other upon the periphery of the cam, when this one would revolve with the cam, the other remaining stationary, and so on.

And this feature in the action of two rollers identical in eccentricity, it is said, introduces an additional irregularity into the operation of the mechanism, which increases its disconcerting power and adds to the difficulty of calculating the movement which enables the expert to pick the lock. So that the mode of operation is different accordingly as the rollers are of the same or varying eccentricities. Were it otherwise, however, it would still be necessary to regard the feature of a variation of eccentricity as essential to the invention, because made so by the description and claim of the patent, although an equally good or even the same result might be obtained without it. The defendant does not use the same combination, and employs no device as an equivalent and substitute for the omitted element. It is not, therefore, liable as an infringer. (*Water Meter Co.* v. *Desper*, 101 U. S., 332; *Gage* v. *Herring*, 107 U. S., 640.)

The decree of the Circuit Court is accordingly reversed, and the cause is remanded, with directions to dismiss the bill.

Supreme Court of the United States.

THE YALE LOCK MANUFACTURING COMPANY, APPELLANT, v. GREENLEAF.

Decided March 29, 1886.

ANTICIPATION OF INVENTION.

In complainant's lock the key fitted closely in each of the wheels through which it passed, so that they were held in position by the key, while in the anticipating lock the key passed through irregular apertures in the wheels, permitting them some freedom of movement, and therefore the key of complainant's lock performed an office not performed by the key in the anticipating lock. *Held*, first, that the difference between the two structures did not avoid anticipating the patent, because the shape and size of the key-holes were not mentioned in the claim of complainant's patent as one of the elements of his combination, although information in this respect was given in the specification. "The scope of letters patent must be limited to the invention covered by the claim, and while the claim may be illustrated it cannot be enlarged by language used in other parts of the specification." *Held*, secondly, it required no invention to make the anticipating lock correspond precisely in the fitting of the key in the wheels with complainant's lock, and therefore the anticipation of complainant's claim was complete.

STATEMENT.

This was a bill in equity brought by the appellee, Halbert S. Greenleaf, to restrain the infringement by the appellant, the Yale Lock Manufacturing Company, of the first and fourth claims of the reissued letters patent granted to George Rosner, July 25, 1871, for an improvement in permutation-locks. The original patent bore date September 18, 1860. The defense was that the alleged invention and substantial and material parts thereof claimed as new were prior to any invention thereof by said George Rosner known and publicly used by divers persons in this country, and that among such persons were D. H. Rickards, of Boston, and the firm of Evans & Watson, of Philadelphia. The circuit court decided that the patent was valid, and that the defendant had infringed, and, upon the report of a master of the damages sustained by the plaintiff rendered a decree in his favor for

$2,963.50. The present appeal brings that decree under review.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

Mr. Frederic H. Betts for the appellant.

Mr. Edmund Wetmore and *Mr. George Ticknor Curtis* for the appellee.

Mr. Justice WOODS delivered the opinion of the Court.

It is conceded that the damages for which the court rendered its decree were allowed for the infringement of the first claim only of the Rosner patent, which, therefore, is alone to be considered upon this appeal.

The invention covered by this claim was described as follows in the specification:

This invention consists in combining with a set of permutation wheels or tumblers, constructed each of a rim and center, an arrangement of bolts or equivalent devices, which fasten and unfasten said rims and centers by the use of a key inserted through holes in the cams in the wheels, by which said bolts or equivalent devices are operated, the effect being to enable the relative position of the rims and centers to be changed so as to make a new combination by moving the driving-pins to different positions relatively to the slots in the wheels. It further consists in the arrangement of parts, as hereinafter described.

* * * * * * * * *

Prior to my invention, in order to change the combination where a single set of wheels only was used, made up each of a center hub and rim, the wheels had to be removed from the lock and adjusted by hand and then replaced.

I obviate this difficulty by the following arrangement: Opposite the center or hub *q* of each wheel, and located in the outer rim, I place a locking device or bolt, *r*, which, when forced in against the said center or hub, holds the same firmly in place with the outer rim, but when thrown out disengages said parts and allows the centers to turn free while the rims remain stationary. Against the locking device or bolt *r* rests a cam or eccentric *s*. Through each or all of these cams, and also through the back plate of the lock, is inserted a key, P, Fig. 6, by turning which it will be seen that said locking or fastening device may be forced in or drawn out at pleasure. When the key is inserted and the fastening device thrown back, it will be seen that the rims of the wheels are held stationary by the key, while the centers may be turned to any different position by the spindle, thus setting the lock to a new combination.

* * * * * * * * *

The novelty in the first part of my invention consists in the combination of the fastening devices *r* with the wheels, constructed of three parts each, an outer rim and a center or hub composed of two parts, secured together so that by inserting the key the parts composing the wheels may be loosened and the outer rims held stationary while the centers or hubs are turned to a different position by the action of the spindle to rearrange the combination, and then the parts locked in place again, and all accomplished without removing the wheels themselves from the lock. In all prior locks with a single set of wheels, (each wheel made up of a rim and center hub,) so far as I am aware, the wheels had to be removed from the lock and the combination changed by hand.

* * * * * * * * *

What I claim, and desire to secure by Letters Patent, is—

1. In a permutation-lock, in combination with a set of wheels consisting each of an outer ring or rim and a central disk or hub, a set of fastening devices or bolts, *r r*, which is made to fasten or unfasten said parts composing the wheels by the insertion of a key through each or all of the wheels, whereby the combination of the lock may be changed, substantially as herein specified.

The testimony showed that on the 13th of March, 1852, the D. H. Rickards named in the answer of the defendant filed in the Patent Office an application for a patent for an improvement in locks, which was either rejected or withdrawn, and that locks made substantially in accordance with the description contained in Rickard's specification were manufactured and sold by Evans & Watson, safe-makers, of Philadelphia, as early as the year 1853. A copy of the application of Rickards is found in the record, and one of the locks made by Evans & Watson in 1853 was produced as an exhibit upon the trial in this court.

A comparison of the specification and model of the plaintiff's patent with the application of Rickards and the lock made by Evans & Watson shows that the device of Rickards and the lock of Evans & Watson were an anticipation of the invention covered by the first claim of the plaintiff's patent.

It is clear from the statement in the specification of Rosner's patent that he believed that prior to his invention it was necessary, in order to change the combination in a permutation-lock, to remove the wheels from the lock-case and adjust them by hand and then replace them; but Rosner was in error in making this statement. The evidence shows that what Rosner thought had never been done before had been done by means of the device of Rickards, embodied in the lock of Evans & Watson, which is substantially the same contrivance as that covered by the first claim of Rosner's patent. The Rickards device embraces a set of wheels consisting of an outer rim or hub and a set of fastening devices or bolts so constructed as to engage and disengage with a set of cogs on the central hub. When the bolts are in place, the outer rim and the central hub are firmly fastened together; when withdrawn, the hub may be made to revolve without moving the rim. The bolts are withdrawn by means of a key. Each of the wheels has an opening in it for the passage of the key by which the bolts are moved. These openings in the wheels are placed opposite each other and also opposite a key-hole in the lock-case, so that the key may be passed from the exterior of the lock-case through all the wheels, and thus withdraw the bolts which fasten the rims to the hubs of the wheels, thereby permitting the hubs to be moved and a change to be made in the combination of the lock. When the change is made, the key is withdrawn and the bolts are forced back into their places by springs. By this means the combination of the lock is changed without removing the wheels from the lock-case, or even opening the case.

The only difference between the Rosner device and that of Rickards which the plaintiff's counsel have been able to point out is thus stated: In the Rosner contrivance the key, in addition to locking and unlocking the fastening devices, performs, when in the lock, the function of holding the outer rims in place while the combination of the lock is changed by moving the hubs. It is insisted that this key is adapted to perform this office by the fact that it fits snugly the series of holes in the rims of the wheels through which it passes, and thereby prevents any motion of the rims. The Rickards device has a key-hole in the lock-case which the key neatly fits; but the holes in the rims of the wheels through which the key passes are irregular apertures, not fitted to the shape or size of the key, so that they allow some motion to the rims of the wheels.

We think this difference between the two locks does not give validity to the Rosner patent for two reasons: First, because the shape and size of the key-hole is not mentioned in the claim of the Rosner patent as one of the elements of the combination. The scope of letters patent must be limited to the invention covered by the claim, and while the claim may be illustrated it cannot be enlarged by language used in other parts of the specification. (*Keystone Bridge Co.* v. *Phœnix Iron Co.*, 95 U. S., 274; *Railroad Co.* v. *Mellon*, 104 Id., 112.) Secondly, if it were found to be necessary to hold the rims of the wheels rigidly immovable while the combination of the lock was being changed, the idea of changing the irregular aperture in the wheels through which the key in the Rickards device was thrust to one of the shape and size of the key would occur to the rudest and most unskilled mechanic. The suggestion of such a change could not be called invention, and

ought not to be dignified by letters patent. (*Atlantic Works* v. *Brady*, 107 U. S., 192; *Slawson* v. *Grand Street Railroad Company*, 107 U. S., 649; *Lhillips* v. *Detroit*, 111 U. S., 604.) We are of opinion, therefore, that the first claim of the plaintiff's patent was anticipated by the application and specification of Rickards, and by the locks manufactured by Evans & Watson, and that it is therefore void. It follows that the decree of the circuit court must be reversed and the cause remanded, with directions to dismiss the bill; and it is so ordered.

FOREIGN PATENT LAWS.

PATENT LAW OF VENEZUELA.

The following translation of the Venezuelan patent law has been made from an official copy in Spanish, and forwarded for publication by Messrs. W. P. Thompson & Boultz, Liverpool and London:

The Congress of the United States of Venezuela ordains:

1. Any one who has invented or discovered any new and useful manufacture, a machine, a process, or a combination of materials, or also any new and useful improvement on the same, can obtain a patent therefor upon payment of the sum fixed by this law, and subject to the other provisions of the said law: *Provided*, That the invention, discovery, or improvement be not already known to or used by others dwelling in this country, that it has not been either patented or described in a public print published either in the Republic or abroad, or that it has neither been in public use nor offered for sale for more than two years preceding the application, or that the discontinuance of same has not been proved.

2. The patent documents are to be issued by the Executive in the name of the United States of Venezuela, and only countersigned by the minister.

3. The Government guarantees neither the correctness nor the utility nor the priority of the patented invention or discovery.

4. Any person desirous of obtaining a patent must accompany the application with a description of the invention or discovery, machine, manufactures, composition, or improvement, wherein the nature and object of same are clearly set forth, together with the corresponding drawings or samples.

5. The applicant must in his application make a declaration under oath that he is the true inventor or discoverer of the art, machine, process, composition, or improvement for which he desires to obtain a patent, and any opposition calling the correctness of this declaration in question must be decided in ordinary course of law by the interested parties before the state courts.

6. Patents are granted for five, ten, or fifteen years, and become void six months, one year, and two years, respectively, after the grant, unless the invention or discovery to which they relate has been carried into operation within the specified time. The patent will state the duration and time of expiration. Its duration dates from the day of grant.

7. Applications for patents are to be addressed to the State Executive through the Minister of Commerce.

8. If the conditions stipulated by this law have been fulfilled, a patent will be granted to the applicant, which empowers him to make use of his invention, discovery, or improvement in the whole territory of the United States of Venezuela and its territories. The patent will be granted by the State Executive through the Minister of Commerce in the form prescribed below. It must contain a title or a short description exactly setting forth the nature and object of the invention or discovery, as also the exclusive permission to the patentee, his heirs and assigns to produce, use, or sell the invention or discovery.

"The President of the Republic with the assent of the Federal Council:

Whereas ——— has appeared before the federal Executive and has applied for a patent for the purpose of, [here give the nature of the application,] and having complied with the conditions prescribed in the law of May 25, 1882, in accordance with Article 8 of the above-cited law, and in the name of the United States of Venezuela, I grant unto him the present patent for the period of ——— years for the sole use of the above-mentioned industry for his own profit, or the profit of his heirs or assigns, but in such manner that the Executive does not guarantee either the utility, the correctness, or the priority of the patented discovery or invention.

"After ——— from the present date this patent shall cease and determine, unless the invention has been put into operation in the interim.

"Signed, sealed, and countersigned, in the palace of the federation at Caracas, the ———, &c."

9. Patents are subject to the payment of a tax of 80 francs (Bolivars) annually in the case of an invention or discovery, and of 60 francs (or Bolivars) annually when the subject is an improvement of a known process.

10. The tax prescribed in the previous article is payable into the national treasury of the public service. Every applicant for a patent who applies to the Executive according to Article 7 must accompany the application with a certificate that he has paid the half of the duty corresponding to the period of protection required. If, conformably to the provisions of this law, the patent cannot be granted, the applicant shall lose the sum deposited, which shall be applied for popular education. If the patent be granted, the amount paid shall be deducted from that which the applicant has to pay for the period of the patent. The Executive shall have power to relieve such patentees of industrial discoveries or products of the taxes due under Article 9 of this law as are in their opinion worthy of this favor.

11. Every person who has obtained a patent may publish the fact in advertisements and in his trade-mark without this publication constituting a guarantee of the Government for the quality of the product, or of the priority of the invention or discovery, or becoming of any undue value whatever to the prejudice of the prior rights of a third party.

12. Every person who has had a patent granted to him for an invention or discovery in a foreign country can also obtain a patent in this: *Provided*, That it has not already been granted to any one. In such case the patent shall only be granted for a period equal to the unexpired term of the patent in the foreign country.

13. On the expiration of a patent the description of the discovery or invention shall be published in the *Official Gazette*, and from this time forward the use of the discovery or invention, together with the manufacture or sale of the industrial product hitherto protected by the patent, shall be open to any one.

14. The patent shall also be published if the same, according to Article 6 of this law, lapse before the invention or discovery has been carried into operation, conformably to Article 6 of this law, or when before its expiration or lapse it is declared null and void, except in the case provided for under Article 18.

15. All specifications, drawings, and samples necessary for obtaining a patent are to be deposited with the Minister of Public Affairs.

16. After an application for a patent has been accepted by the Executive, the same shall be notified in the *Official Gazette*; but the patent (in the event of its being granted) shall not be issued until the expiration of thirty days after this notification has appeared.

17. Inventions, improvements, or new manufactures prejudicial to health, public order, morals, or prior rights shall not be patentable. Pharmaceutical preparations and medicines in any shape or form cannot be patented, but remain subject to the special legislation and regulations therefor provided.

18. Besides the cases provided for under Article 6, patents are null and void if the Executive Government decide that the patent granted is detrimental to the rights of a third person, as well as if the actual working of the patented industry has been discontinued for a whole year, excepting unforeseen circumstances or force majeure.

19. Infringements of the rights secured by patent will be adjudicated upon by the federal courts in conformity with the laws.

20. The patent law made on May 20, 1878, is hereby annulled.

Given in the palace of the Executive Government, at Caracas, May 25, 1882, &c.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

VOL. 35—NO. 4. TUESDAY, APRIL 27, 1886. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1884, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of April 27, 1886.

Patents	433	No. 340,537 to No. 340,969, inclusive.
Designs	13	No. 16,656 to No. 16,668, inclusive.
Trade-Marks	30	No. 13,226 to No. 13,255, inclusive.
Labels	5	No. 4,806 to No. 4,810, inclusive.
Reissue	2	No. 10,716 to No. 10,717, inclusive.
Total issue	483	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	.....	Montana Territory	.....	.....
Arizona Territory	.....	.....	Nebraska	1	.....
Arkansas	2	.....	Nevada	.....	.....
California	9	2	New Hampshire	1	.....
Colorado	2	.....	New Jersey	21	1
Connecticut	16	.....	New Mexico Territ'y	.....	.....
Dakota Territory	2	.....	New York	79	11
Delaware	1	.....	North Carolina	4	.....
District of Columbia	4	.....	Ohio	36	.....
Florida	.....	.....	Oregon	3	.....
Georgia	1	.....	Pennsylvania	59	4
Idaho Territory	.....	.....	Rhode Island	11	1
Illinois	20	8	South Carolina	1	.....
Indian Territory	.....	.....	Tennessee	6	.....
Indiana	11	.....	Texas	7	1
Iowa	8	.....	Utah Territory	1	.....
Kansas	3	.....	Vermont	1	.....
Kentucky	3	2	Virginia	1	1
Louisiana	.....	.....	West Virginia	2	.....
Maine	5	1	Wisconsin	9	1
Maryland	5	.....	Wyoming Territory	.....	.....
Massachusetts	43	.....	United States Army	.....	.....
Michigan	17	.....	United States Navy	.....	.....
Minnesota	10	1			
Mississippi	.....	.....	Total to citizens of the United States	415	34
Missouri	8	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria-Hungary	1	.....	Germany	3	.....
Barbadoes	.....	.....	Guatemala	.....	.....
Belgium	.....	.....	Hawaii	.....	.....
Bermuda	.....	.....	Holland	.....	.....
Brazil	.....	.....	Newfoundland	.....	.....
Canada	14	.....	Russia	1	.....
Central America	.....	.....	Scotland	1	.....
Colombia, U. S. of	.....	.....	South Australia	.....	.....
Cuba	.....	.....	Switzerland	.....	.....
Denmark	.....	.....			
Egypt	.....	.....	Total to citizens of foreign countries	31	1
England	11	1			
France	.....	.....			

DESIGNS.

16,656.—ORNAMENTATION OF HARDWARE.—*George S. Barkenton*, New Haven, assignor to *P. & F. Corbin*, New Britain, Conn. Application filed October 6, 1885. Serial No. 179,174. Term of patent 14 years.

16,657.—BRANDING OR MARKING TOOL.—*Walter E. Banning*, Syracuse, N. Y. Application filed March 12, 1886. Serial No. 195,034. Term of patent 3½ years.

16,658.—PLATE OF AN UPRIGHT PIANO.—*Paul Gmehlin*, New York, N. Y. Application filed March 13, 1886. Serial No. 195,181. Term of patent 14 years.

16,659.—RAILWAY-CAR BODY.—*Azariah B. Harris*, Springfield, Mass. Application filed March 13, 1886. Serial No. 195,180. Term of patent 14 years.

16,660 and 16,661.—ORNAMENTATION OF KNIFE-HANDLES.—*Wallace N. Kenyon*, Birmingham, Conn., assignor to *The Silver Plate Cutlery Company*, of same place. Applications filed March 29, 1886. Serial Nos. 197,046 and 197,047. Term of patents 3½ years.

16,662.—TOP OF A COOKING-STOVE.—*James A. Marsh*, Cleveland, Ohio. Application filed November 16, 1885. Serial No. 183,053. Term of patent 7 years.

16,663.—ORNAMENTATION OF INNER-SOLE LININGS.—*James N. Moulton*, Haverhill, Mass. Application filed December 26, 1885. Serial No. 186,830. Term of patent 7 years.

16,664 and 16,665.—COOKING-STOVE.—*John F. Martens*, Cincinnati, Ohio, assignor to *Redway & Burton*, same place. Applications filed March 15, 1886. Serial Nos. 195,358 and 195,359. Term of patents 3½ years.

16,666.—BUTTON.—*Frederick Turner*, Philadelphia, Pa. Application filed March 3, 1886. Serial No. 193,910. Term of patent 14 years.

16,667.—BADGE OR PIN.—*Frederick Turner*, Philadelphia, Pa. Application filed March 3, 1886. Serial No. 193,911. Term of patent 14 years.

16,668.—TILE.—*David H. Watts*, Philadelphia, Pa., assignor to himself and *William O. Sharpless*, same place. Application filed March 1, 1886. Serial No. 193,683. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

13,226.—SMOKING AND CHEWING TOBACCO.—*Charles W. Allen Company*, Chicago, Ill. Application filed April 3, 1886. Used since September 1, 1885.

"The words 'MIGHTY NAVY.'"

13,227.—REMEDY FOR KIDNEY AND LIVER COMPLAINTS.—*W. J. Austen & Co.*, Oswego, N. Y. Application filed March 6, 1886. Used since December 23, 1885.

"The representation of a crescent and a tomahawk."

13,228.—PAPER-HANGINGS AND WALL-COVERINGS.—*Frederic Aumonier*, London, England. Application filed March 30, 1886. Used since January 1, 1881.

"The representation of a bag of wool having the letter 'W' in the middle with four projecting knot-corners, and two lambs hanging from bands encircling the bag of wool."

13,229.—BORING-MACHINES.—*Thomas B. A. David*, Pittsburg, Pa. Application filed March 31, 1886. Used since April, 1884.

"The word 'AJAX.'"

13,230.—BOOTS AND SHOES.—*Guthmann, Carpenter & Telling*, Chicago, Ill. Application filed April 2, 1886. Used since January 1, 1883.

"The fac-simile signature 'JOHN TELLING.'"

13,231.—BOOTS AND SHOES.—*Guthmann, Carpenter & Telling*, Chicago, Ill. Application filed April 5, 1886. Used since January 1, 1886.

"The letters 'J. T.'"

13,232.—JEWELRY, COMPRISING CHAINS AND CHAIN-TRIMMINGS.—*Hamilton & Hamilton, Jr.*, Providence, R. I. Application filed March 15, 1886. Used since January, 1880.

"The character and letters 'H & H,' preceded by the representation of a star."

13,233.—CAN-STOCK, CANS, RANGE-BOILERS, COAL-HODS, PAILS, BUCKETS, PANS, SODA-FOUNTAINS, MILK-COOLERS, &c.—*Iron Clad Manufacturing Company*, New York, N. Y. Application filed March 13, 1886. Used since January 1, 1871.

"The word-symbol 'IRON-CLAD.'"

13,234.—PLUSH.—*Jaeger & Timme*, New York, N. Y. Application filed March 31, 1886. Used since March 1, 1886.

"The word 'VILLOSART.'"

13,235.—LINIMENT.—*Henry Bradley Jones*, Burton, Tex. Application filed March 29, 1886. Used since January 1, 1886.

"The word-symbol 'JO-HE.'"

13,236.—PATTERNS FOR GARMENTS FOR WOMEN AND CHILDREN.—*Elizabeth C. Mosey*, New York, N. Y. Application filed March 2, 1886. Used since March 1, 1880.

"The words 'FRENCH PATTERN ROOMS,' arranged on three bars, which are one above the other and attached together by chains at the corners thereof, with the second bar shorter than the first, and the third bar shorter than the second, the word 'FRENCH' on the top or first bar, 'PATTERNS' on the second, and 'ROOMS' on the third."

13,237.—CERTAIN BUILDERS' MATERIALS.—*The Newark Lime and Cement Manufacturing Company*, Newark, N. J., and Rondout, N. Y. Application filed March 25, 1886. Used since March 20, 1886.

"The words 'OLD NEWARK CO.'"

13,238.—CANNED SALMON OR FISH.—*North Shore Packing Company*, Oakland, Cal. Application filed March 6, 1886. Used since February, 1886.

"The word 'ARGONAUT' and the pictorial representation of a bear and walrus."

13,239.—CANNED SALMON OR FISH.—*North Shore Packing Company*, Oakland, Cal. Application filed March 4, 1886. Used since February, 1886.

"The pictorial representation of a flag attached to a staff and represented in waves or folds, and the words 'THE UNITED KINGDOM.'"

13,240.—ALL KINDS OF MANUFACTURED TOBACCO.—*The Pemberton & Hill Tobacco Manufacturing Company*, Richmond, Va. Application filed April 3, 1886. Used for thirty years.

"The representation of a bluehorse."

13,241.—SPECIFIC FOR RHEUMATISM.—*N. H. Pike* and *O. S. Elder*, Chenoa, Ill. Application filed March 10, 1886. Used since July 1, 1885.

"The representation of RIP VAN WINKLE."

13,242.—CERTAIN PRODUCTS OF COFFEE AND SPICE MILLS.—*Reid, Murdoch & Fischer*, Chicago, Ill. Application filed March 25, 1886. Used since July 1, 1884.

"The representation of a lion's head and the words 'MONARCH MILLS.'"

13,243.—PILLS.—*Joshua H. Reeves*, New York, N. Y. Application filed March 22, 1886. Used since December 1, 1885.

"The word 'ELECTROBOLE.'"

13,244.—PUBLICATIONS RELATING TO CUTTING GARMENTS FOR MEN, WOMEN, AND CHILDREN.—*The Rood Magic Scale Company*, Quincy, Ill. Application filed March 18, 1886. Used since August 15, 1878.

"The words 'MAGIC SCALE.'"

13,245.—CIGARETTES.—*George A. Scott*, New York, N. Y. Application filed March 16, 1886. Used since September 1, 1879.

"The word 'ELECTRIC.'"

13,246.—SPECIFIC FOR THE CURE OF DISEASES OF THE BLADDER AND KIDNEYS.—*Winfield S. Shanahan* and *Jacob Fidler*, East Chatham, N. Y. Application filed March 16, 1886. Used since January 1, 1886.

"The figure of a female holding a pair of scales above her head in her left hand, and a sword at rest in the other. The figure is surrounded by a wreath of flowers or leaves and the word 'EUREKA' is placed beneath the wreath and figure."

13,247.—SMOKING-TOBACCO.—*Francis Shields*, Albany, N. Y. Application filed January 27, 1886. Used since January, 1876.

"The words 'BLUE LINE.'"

13,248.—CERTAIN DRAWING MATERIALS AND INSTRUMENTS.—*E. G. Soltmann*, New York, N. Y. Application filed March 29, 1886. Used since May, 1880.

"The word 'HERCULES,' within quotation-marks."

13,249.—PARCHED AND GROUND COFFEES.—*P. J. Towle & Co.*, Chicago, Ill. Application filed March 23, 1886. Used since February 1, 1886.

"The words 'KNIGHTS OF LABOR.'"

13,250.—CIGARS.—*Frederick Turner*, Philadelphia, Pa. Application filed March 19, 1886. Used since March 1, 1886.

"The representation of a triangle inclosed within a circle and associated with the monogram of the letters 'G A.'"

13,251.—CIGARS.—*Van Pietersom Bros.*, Milwaukee, Wis. Application filed March 26, 1886. Used since February 7, 1886.

"The words 'NEW DEPOT CIGAR,' in connection with the pictorial representation of the Chicago, Milwaukee, and St. Paul passenger depot, in Milwaukee, Wisconsin, as shown."

13,252.—STOVE-POLISH.—*John Peter Wallgren*, Orono, Me. Application filed April 6, 1886. Used since March 1, 1886.

"The words 'GOOD LUCK.'"

13,253.—FLOUR.—*Washburn, Crosby & Co.*, Minneapolis, Minn. Application filed February 8, 1886. Used since August 19, 1880.

"The words 'WASHBURN'S GOLD MEDAL' upon a gold-colored disk."

13,254.—PORCELAIN SQUARE-TOP WATER-CLOSETS.—*Richard H. Watson*, Philadelphia, Pa. Application filed March 31, 1886. Used since March 1, 1884.

"The word 'IDEAL.'"

13,255.—GRANULATED SUGAR.—*Wehncke & Co.*, New York, N. Y. Application filed March 12, 1886. Used since May, 1885.

"The five letters, two O's, two B's, and N, arranged to form a cross, the N being in the center."

LABELS.

4,806.—Title: "BEAVERS'S RHEUMATIC REMEDY."—*Christopher Beavers*, Scranton, Pa. Application filed April 5, 1886.

4,807.—Title: "HAGLEY MILLS" (FOR WRITING PAPER.)—*Du Pont & Co.*, Louisville, Ky. Application filed June 26, 1883.

4,808.—Title: "LENNI MILLS" (FOR WRITING PAPER.)—*Du Pont & Co.*, Louisville, Ky. Application filed June 26, 1883.

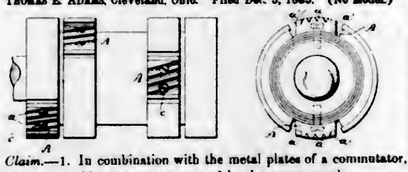
4,809.—Title: "I. A. POTTER'S NEW AMERICAN STRENGTHENING PLASTER."—*Ira A. Potter & Co.*, Watertown, N. Y. Application filed January 30, 1886.

4,810.—Title: "DR. ALBERTI'S TEA."—*Emil Thiele*, Chicago, Ill. Application filed April 6, 1886.

PATENTS

GRANTED APR. 27, 1886.

340,537. COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES. THOMAS E. ADAMS, Cleveland, Ohio. Filed Dec. 5, 1885. (No model.)



Claim.—1. In combination with the metal plates of a commutator, insulating removable cut-out segments of hard gummy woods.

2. The combination, with the metal plates of a commutator, of the removable cut-out segments of lignum-vitæ.

3. In combination with the metal plates of a commutator, the insulating cut-out segment provided with transverse grooves in its wearing-surface.

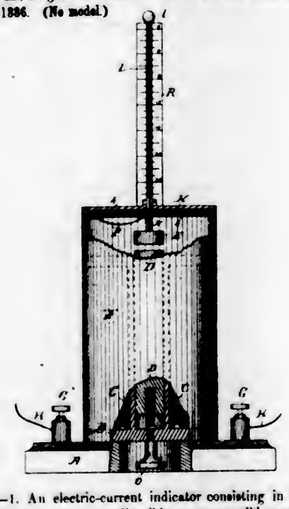
4. In combination with the metal plate of a commutator, the insulating cut-out segments provided with transverse grooves cut diagonally to the axis of the commutator.

5. The combination, with the metal plates of a commutator, of the removable cut-out segments provided with V-shaped grooves.

6. The combination, with the metal plates of a commutator, of the cut-out segments of insulating material tipped with refractory material at the end.

7. The combination, with the metal plates of a commutator, of insulating cut-out segments formed of wood and having the end grain presented for wear.

340,538. ELECTRIC-CURRENT INDICATOR. EDWARD H. AMET, Chicago, Ill., assignor to himself and H. A. Streeter, same place. Filed Jan. 28, 1886. (No model.)



Claim.—1. An electric-current indicator consisting in the combination of an electro-magnet, a collapsible or compressible vessel containing a liquid, and an indicating-tube connected therewith, substantially as specified.

2. The combination, with an electro-magnet and its movable armature, of a compressible vessel having a flexible diaphragm or head connected directly with said armature, and an indicating-tube connected with said vessel, substantially as specified.

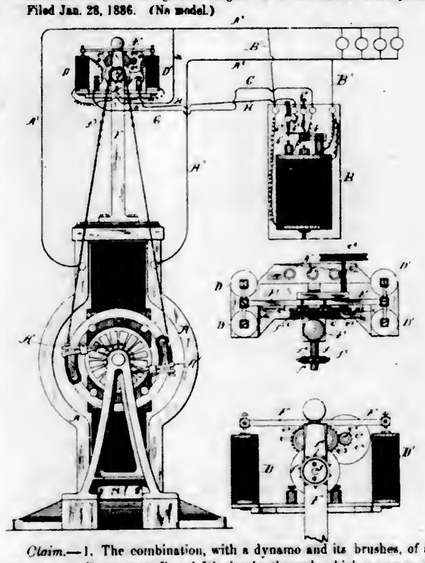
3. The combination, with an electro-magnet and its movable armature, of a compressible vessel, an indicating-tube connected with said vessel, and a graduated scale attached to said tube, substantially as specified.

4. An electric-current indicator consisting in the combination of an electro-magnet, a collapsible or compressible vessel containing a liquid, and an indicating-tube connected therewith, having a hollow open bulb, *l*, at its upper end, substantially as specified.

5. An electric-current indicator consisting in the combination of an electro-magnet, a collapsible or compressible vessel containing a liquid, and an indicating-tube connected therewith, and a set-screw for adjusting the relative position of the core and armature of said magnet, substantially as specified.

6. The combination, with an electro-magnet and its movable armature, of a compressible vessel, K, having a thin flexible sheet-metal bead or diaphragm, *k*, of large area connected directly with said armature, and an indicating-tube of small bore connected therewith, having an enlarged hollow bulb, *l*, at its upper end, substantially as specified.

340,539. BRUSH-SHIFTER FOR DYNAMO-ELECTRIC MACHINES. EDWARD H. AMET, Chicago, Ill., assignor to H. A. Streeter, same place. Filed Jan. 28, 1886. (No model.)



Claim.—1. The combination, with a dynamo and its brushes, of a relay-magnet, B, magnets D and D', circuits through which are opened and closed by said relay-magnet, rocking lever E, provided with constantly-driven wheels *e* and *e'*, one on each side of its pivot, shaft *f*, furnished with wheel *f'*, engaging with one or the other or neither of said wheels *e* and *e'*, according as said rocking lever is tilted in one direction or the other or occupies its normal position, and a connection between said shaft *f* and said brushes, substantially as specified.

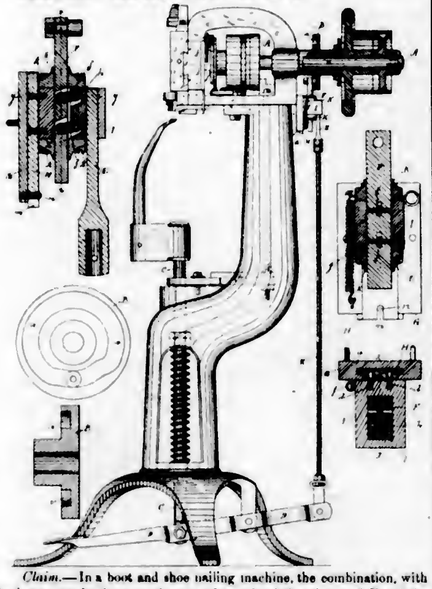
2. The combination, with a dynamo and its brushes, of a relay-magnet, B, magnets D and D', circuits through which are opened and closed by said relay-magnet, rocking lever E, provided with constantly-

driven wheels e and e', one on each side of its pivot, shaft f, furnished with wheel f', engaging with one or the other or neither of said wheels e and e', according as said rocking lever is tilted in one direction or the other or occupies its normal position, wheel f³, and chain or band f⁴, connecting said wheel f³ and said brushes, substantially as specified.

3. The combination, with a dynamo and its brushes, of a relay-magnet, B, magnets D and D', circuits through which are opened and closed by said relay-magnet, rocking lever E, provided with constantly-driven wheels e and e', one on each side of its pivot, shaft f, furnished with wheel f', engaging with one or the other or neither of said wheels e and e', according as said rocking lever is tilted in one direction or the other or occupies its normal position, wheel f³, friction-rings or clamp f⁴, connecting said wheel f³ to said shaft f, and a chain or band, f⁵, substantially as specified.

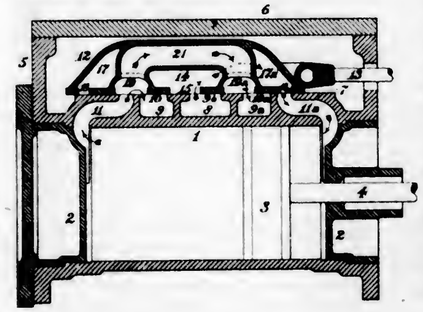
4. The combination, with a dynamo and its brushes, of a relay-magnet, B, two magnets, D and D', having a lever or armature furnished with two oppositely-driven wheels, and mechanism for communicating the motion of one or the other of said wheels to said brushes according as said lever is moved in one direction or the other, substantially as specified.

340,540. BOOT OR SHOE NAILING MACHINE. HENRY S. BACON, Milford, Mass. Filed Aug. 29, 1885. (No model.)



Claim.—In a boot and shoe nailing machine, the combination, with the horn-post, its lever, and connecting-rod, of the short rod F and the actuating-cam, the block h and links f, pivoted thereto and to the short rod, and the sliding block I, all arranged substantially as and for the purpose set forth.

340,541. STEAM-ENGINE VALVE. CHARLES W. BARNABY, Salem, Ohio, assignor of one-half to the Buckeye Engine Company, same place. Filed Jan. 27, 1886. (No model.)



Claim.—1. The combination, in a steam-distribution valve, of two or more steam-chambers, each having a port or opening on the face of the valve, two or more similarly-ported exhaust-chambers, a longitudinal passage or passages connecting the steam-chambers, and a longitudinal passage or passages connecting the exhaust-chambers, substantially as set forth.

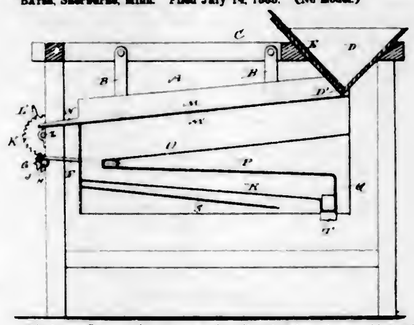
2. The combination, in a steam-distribution valve, of a series of alternate steam and exhaust chambers, each having a port or opening on the face of the valve and extending transversely to the line of traverse thereof, a steam-passage extending longitudinally through the valve and communicating with each of the steam-chambers, and an exhaust-passage extending longitudinally through the valve and communicating with each of the exhaust-chambers, substantially as set forth.

3. The combination, in a steam-distribution valve of box or chambered form, of a series of transverse chambers, each having a port or opening on the face of the valve, a central longitudinal passage communicating with alternate members of the series of chambers which extend below it and beyond its outer sides, and two lateral longitudinal passages, each communicating with both ends of alternate members of the series of chambers extending below them and between their inner sides, substantially as set forth.

4. The combination, in a steam-distribution valve, of a longitudinal exhaust passage or channel passing over a transverse steam-chamber and port and connecting two exhaust ports or passages, and a longitudinal steam passage or channel passing over a transverse exhaust chamber and port and connecting two steam ports or passages, substantially as set forth.

5. A multiported steam-distribution valve having a series of transverse exhaust-chambers, each interposed between two transverse steam-chambers, each of said chambers having a port or opening on the face of the valve, a longitudinal exhaust-passage extending over each of the steam-chambers and communicating with each of the exhaust-chambers, and a longitudinal steam-passage extending over each of the exhaust-chambers and communicating with each of the steam-chambers, substantially as set forth.

340,542. MACHINE FOR SEPARATING FLAXSEED. JEREMIAH BATES, Sherburne, Minn. Filed July 14, 1885. (No model.)



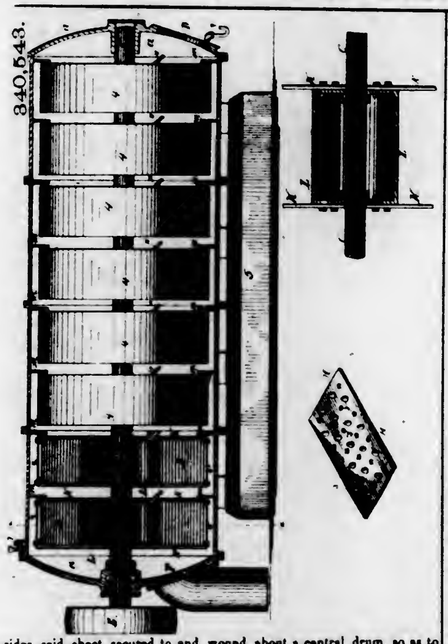
Claim.—In a seed-separator, the vibrating box A, provided with the inclined sieve M, extending from end to end of the box, with its lower end projecting beyond the same and forming a spout, N, the sieve O, inclined in the same direction as the sieve M, and extending from the front of the box nearly to the rear end thereof, the partition P, extending from the lower end of the sieve O nearly to the forward end of the box in an inclined direction reverse to that of the said sieve, the sieve R, extending from the rear end of the box to a spout, T, at the side of the same, near its forward end, and inclined in the same direction as the partition P, and the partition S, extending from the rear end of the box under the sieve R to nearly the lower end of the same, substantially as herein shown and described.

340,543. GAS-SCRUBBER. WILLIAM R. BEAL, New York, N. Y. Filed Sept. 21, 1885. (No model.)

Claim.—1. In an apparatus for treating gas, a cylinder or casing having openings therein for the admission and discharge of gas and liquid, a coil or coils of sheet metal, said sheet having turned-up edges and acting as a continuous trough for the passage of liquid from the circumference to the center of said coil, with intervening spaces between each layer for the transverse passage of gas, and means for rotating said coil or coils within the cylinder, substantially as set forth and described.

2. In a machine for treating gas, a sheet of metal having turned-up

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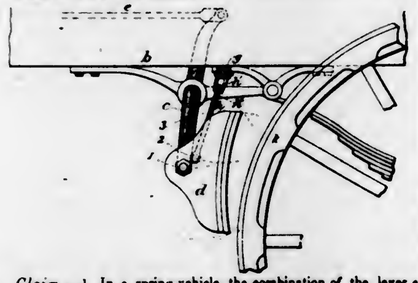
sides, said sheet secured to and wound about a central drum, so as to form a continuous trough for the passage of liquid from one end of the coiled sheet to the other, said drum having openings for the admission and discharge of liquid, and intervening spaces between the several layers of the coil for the passage of gas, an inclosing-casing having openings for the admission and discharge of gas and liquid, and means for rotating the coil or coils therein, substantially as set forth and described.

3. The combination of a sheet or sheets of metal having corrugated turned-up edges and coiled upon itself, acting when rotated as a continuous trough for the passage of liquid from the circumference to the center of the coil, with an intermediate plate having projections on both sides thereof for the separation of the trough-shaped sheets, an inclosing-casing having openings for the admission and discharge of gas and liquid, and means for rotating said coil or coils therein, substantially as set forth and described.

4. The combination of coiled sheets having corrugated turned-up edges, and of coiled intermediate sheets provided with indentations forming points of rest, with a central drum provided with openings to receive the liquid lifted by the coiled trough-sheets, and with tubes to discharge said liquid, and means for rotating said coils, substantially as set forth.

5. The combination of coiled sheet B, having turned-up edges, intermediate plate, H, having points of support thereon, central drum, L, having openings to receive and discharge liquid, shaft C, radial arms K, rim 4, annular flanges M M, and casing A, having openings D F, for the admission of gas and the discharge thereof, and 7 8, for the admission and discharge of liquid, and means for the rotation of the coils, substantially as set forth and described.

340,544. WAGON-BRAKE. WILLIAM BRENNET, Allegheny City, Pa. Filed Mar. 9, 1885. (No model.)

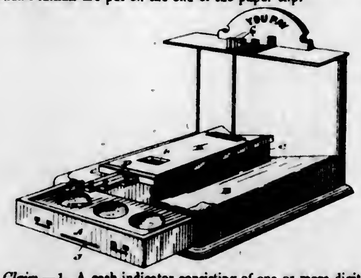


Claim.—1. In a spring-vehicle, the combination of the lever c, rubber d, and the single link h, pivoted directly to the body of the wagon and to the upper part of the rubber above the pivotal point of the lever to the rubber, so as to impart an axial movement to the rubber from the movement of the lever, substantially as and for the purpose specified.

2. The combination of the lever c, rubber d, and adjustable pivoted link h, substantially as and for the purposes described.

340,545. CASH INDICATOR AND RECORDER FOR CASH-DRAWERS. EDWARD W. BLAKEMALL, Toronto, Ontario, Canada, assignor of one-half to John Henry Smith, Buffalo, N. Y. Filed Nov. 9, 1885. (No model.)

Brief.—Before putting the machine in the hands of the clerk the salesman's initials are put on the end of the paper slip.



Claim.—1. A cash-indicator consisting of one or more digit-plates, G, having numbers or figures marked thereon carried in an adjustable box, F, in combination with one or more fingers, E, attached to one or more bars, D, having figures printed on its or their top to correspond with the figures on the digit-plates G, arranged substantially as and for the purpose specified.

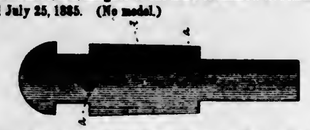
2. The bars D, carried on the board K, through which an aperture, A, is made to expose figures made on the top of the bars D, fingers E, formed on the end of the bars D, designed to fit below digit-plates G, having numbers or figures marked thereon corresponding with the figures exposed through the aperture A, in combination with the said board K, digit-plates G, and a slide, J, having beveled head, a box, F, arranged to be supported by the beveled head g of the slide J, so that the said box F shall be raised or lowered according to the direction in which the slide J is adjusted for the purpose of exposing the figures on the digit-plates G, substantially as and for the purpose specified.

3. A cash indicator and recorder consisting of one or more digit-plates, G, having numbers or figures marked thereon, in an adjustable box, F, carrying said plates, bar or bars D, a finger or fingers, E, attached to one or more bars, D, having figures on its top to correspond with the figures of the digit-plates G, and a type-plate, a, placed on its bottom, so that each number on the said plate a shall be below the corresponding number on the top of its particular bar D, in combination with the roll of paper L, arranged to receive impressions from the plate a, and means for adjusting the box F so as to expose figures on the digit-plates G corresponding with the figures imprinted on the paper L, substantially as and for the purpose specified.

4. The hinged board K, forming a cover for the top C and carrying the bars D, and the recording devices operated by the said board K, as specified, in combination with the drawer A and spring-catch j attached thereto, and the sliding plate P, arranged to actuate the spring-catch j, and a spring, Q, for operating the drawer A, as specified.

5. One or more adjustable bars having indicating figures or letters on one side and corresponding type on the opposite side, to record an impression of the figure or letter, as specified, in combination with the paper slip and mechanism attached to the cash-drawer, and so arranged that the opening of the drawer shall record a letter or figure and expose a letter or figure corresponding with the one recorded.

340,546. LOOM-PICKER. ALBERT A. BLAKESLEY and JAMES S. COMPTON, Baltimore, Md., assignor of one-third to Andrew D. Jones, same place. Filed July 25, 1885. (No model.)

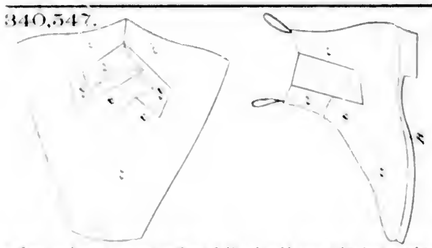


Claim.—As a new article of manufacture, a loom-picker composed of the wood of trees of the genus *Eucalyptus* soaked in water or oil, and having pins or rivets driven therein in diverse directions.

340,547. SHOE. BÖHM C. K. BÖHM, South Natick, Mass. Filed Feb. 27, 1886. (No model.)

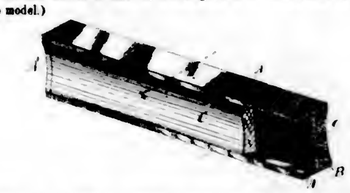
Claim.—The shoe herein described, consisting of the sole B and upper attached thereto, said upper comprising in a single piece the vamp

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a, front and rear quarter portions, *b b' c c'*, said upper having openings *d d'* cut between the said front and rear quarter-pieces, and an independent piece, *e*, attached to one of the fore quarter portions, as *b'*, to complete the upper, all as set forth.

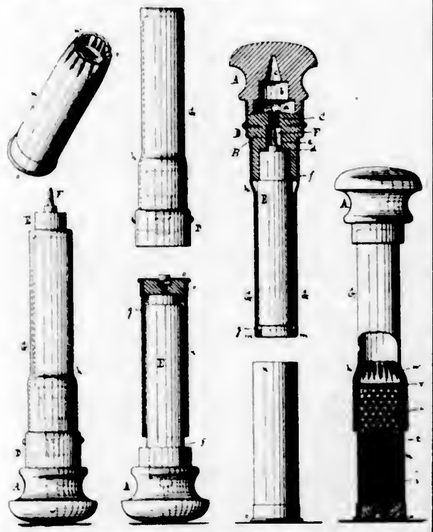
340,548. FURNITURE FOR PRINTERS' FORMS. CHARLES W. BROWN and EDWIN H BROWN, Washington, D. C. Filed Oct. 26, 1885. (No model.)



Claim.—1. A piece of printers' furniture having metallic side plates connected by a longitudinal binding-strip or spreader, as described, and strips of wood covering both faces of the spreader, substantially as described.

2. The combination, with the metallic side plates and spreader-bar, the side plates having overhang, as described, of the beveled strips secured against the spreader in the dovetail groove, substantially as described.

340,549. CARTRIDGE IMPLEMENT. DANIEL BROWN, Johnston, R. I. Filed Feb. 26, 1886. (No model.)



Claim.—1. The cap-expelling tool herein described, consisting of the handle A, the block B, having the ferrule D to receive said handle, the lipped tube G, fitted upon the block B, and the shouldered rod E, inserted through said tube and engaged at one end within the bore *d* of the block B, and having at its opposite end the pin F, substantially as shown.

2. The wad-seating tool herein described, consisting of the handle A, the block B, having the ferrule D to receive said handle, the lipped tube G, fitted upon the block B, and the shouldered rod E, having its plain end flush with the smaller end of the tube and its pin-mounted end inclosed in the bores *d e* of the block B, substantially as described.

3. The cap-seating tool herein described, consisting of the rod E, having the shoulder *g* and the centrally-bored handle A, to support the cartridge-shell and the tobe G, the block B, the screw C, and the ferrule D, to fit over and upon the shell and seat the cap, substantially as specified.

4. In a combined decapping and cartridge-loading tool, the combination of the block B, having the central bores, *d e*, the reversible rod E, having the expelling-pin F and shoulders *f g*, and adapted to fit into and engage with the block B, the lipped tube G, mounted upon the block B, and a suitable handle connected with said block, all arranged and operating substantially as specified.

5. The combined decapping, recapping, wad-seating, loading, and crimping tool herein described, consisting of the centrally-bored handle A, the centrally-bored block B, the screw C, centrally inserted in said block, the ferrule D, surrounding said block, the reversible and shouldered rod E, having the pin F, the reversible and lipped tube G, with an expanded end from A, all arranged in the several relative positions and adapted to operate substantially as and for the purposes specified.

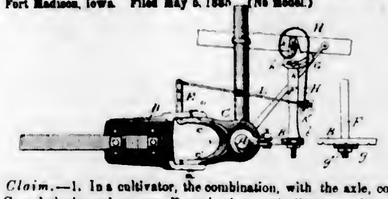
340,550. METHOD OF ORNAMENTING GLASS AND OTHER SURFACES. EDWIN L. BROWN, Chicago, Ill. Filed Sept. 28, 1885. (Model.)



Claim.—1. The process of ornamenting the surfaces of glass, stone, metal, or other equivalent material by first delineating the design or picture thereon, by means of a jet or spray of sensitized gelatine or equivalent resistant substance or material, and, secondly, submitting the surface so prepared to the action of a sand-blast or other known abrading or etching process, substantially as specified.

2. Glass, stone, metal, or other equivalent material, the surface or surfaces of which are ornamented by drawing the design or picture thereon by means of a jet or spray of sensitized gelatine or equivalent resistant substance or material, and afterward subjected to the action of a sand-blast or other known abrading or etching process, substantially as shown and described.

340,551. SPRING CULTIVATOR-BEAM LIFTER. WM. J. BROWNE, Fort Madison, Iowa. Filed May 5, 1885. (No model.)



Claim.—1. In a cultivator, the combination, with the axle, coupling C, and clevis, and an arm, E, projecting vertically from said coupling at a point in the rear of the pivotal connection of said coupling and clevis, of a spring attached to said arm E and adapted to counterpoise the weight of the shovel-beam secured to said clevis.

2. In a cultivator, the combination, with the axle A and coupling C, having a vertical arm, E, extending from it in the rear of the pivotal point of the clevis, and said clevis having a segmental slot in its upper articulating lug through which said arm E passes, of a suitable spring attached to said arm and adapted to counterpoise the weight of the shovel-beams secured to said clevis.

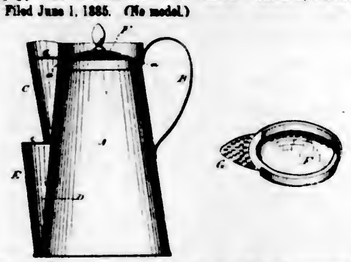
3. In a cultivator, the combination, with the axle A, frame B, and coupling C, having a vertical arm, E, of a vertical post, F, spring H, and means for connecting said arm E and spring H.

4. The combination, in a cultivator, with the axle A, frame B, having a longitudinal slot therein parallel to said axle, and coupling C, adjustable laterally on said axle between the ends of frame B, and having a vertical arm, E, of a spring secured to frame B, and adjustable within the limits of the slot thereof, and means for connecting said spring and arm E.

5. The combination, in a cultivator, with axle A, frame B and coupling C, having arm E, of the vertical post F, T-frame G, pivoted near the upper end thereof, and means, as described, for maintaining said frame G at any desired angle, spring H, and a rod or links for connecting said spring H and arm E.

6. The combination in a cultivator, with axle A and U-frame B, having a longitudinal slot therein in the part parallel to said axle, and having transverse notches in its under surface, of the spring H, bolt or post, locking-washer *g*, and nut.

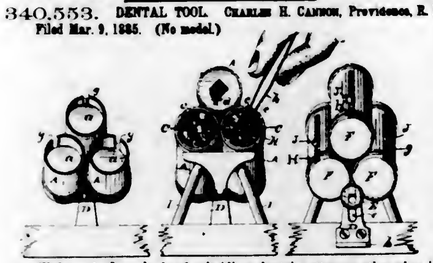
340,552. TEA OR COFFEE POT. ORDELLA BRUMBLE, Frederick, Dak. Filed June 1, 1885. (No model.)



Claim.—1. The combination, in a tea or coffee pot composed of the body A, handle B, and discharge-spout C at the top edge, of the opening D at its bottom edge and tapered offset E *e*, substantially as described, for the purposes specified.

2. The combination, in a tea or coffee pot, with the body A, formed with a shoulder, *a*, below its top edge, handle B, and discharge-spout C, of the lid F, fitting within the top end of the pot, below the edge thereof, and upon the shoulder *a*, formed with a strainer, G, projecting from the front edge thereof, which conforms in outline to the interior of the discharge-spout and closely fits therein, as shown and described, for the purposes specified.

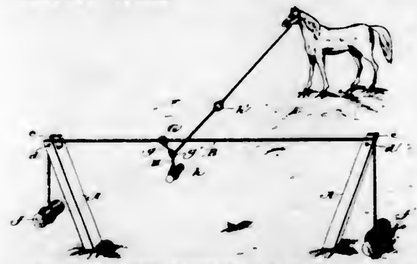
340,553. DENTAL TOOL. CHARLES H. CANNON, Providence, R. I. Filed Mar. 9, 1885. (No model.)



Claim.—1. In a device for holding dental cotton or other absorbent material, one or more vertically inclined and supported tubes or hollow cylinders closed at the lower end and open at the upper end, and each having a longitudinal slot in its wall, in combination with an inclosed feeding-slide for each tube, accessible through the slot in the tube for adjustment, substantially as described.

2. In a device for holding dental cotton, one or more longitudinally-slotted vertically-inclined tubes provided with inclosed friction feeding-slides having knobs or handles projecting through the slots, said tube or tubes being closed at the lower and open or partially open at the upper end, and supported on legs or brackets provided, as described, with means for attachment to a base.

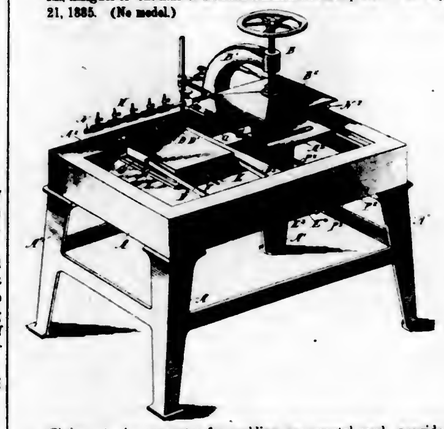
340,554. TETHER. CORODON S. CANNON, Galesburg, Mich. Filed Jan. 28, 1886. (No model.)



Claim.—1. In a tether, the combination of the posts, a track connecting the posts, a movable ring, G, traversing on the track, a swiveled ring suspended from the movable ring, and a weighted rope to be connected to the animal and having a stop intermediate its ends adapted to come in contact with the swiveled ring and suspend the weight out of contact with the ground, substantially as described.

2. In a tether, the combination of the posts A, a cable, B, passing over the posts and having the weights *f f* connected to the free ends thereof and of unequal heaviness, a movable ring, G, traversing on the cable, a ring, *g'*, suspended from the movable ring by an intermediate swivel-connection, *g*, and a rope, H, adapted to be secured to an animal and having a weight, *h*, at one end, and a stop-ring, *h'*, to suspend the weight out of contact with the ground, substantially as described.

340,555. APPARATUS FOR MOLDING ORNAMENTAL WORK IN PAPIER-MACHÉ AND OTHER MATERIAL. JOSEPH CARDONA, Chicago, Ill., assignor of one-half to Edward Burkhardt, same place. Filed Sept. 21, 1885. (No model.)



Claim.—1. An apparatus for molding ornamental work, provided with a press and a sliding die carrier or bed arranged to be shifted into or out from the press, substantially as described.

2. An apparatus for molding ornamental work, provided with a press, a shifting die bed or carrier, and means suitable for heating the upper one of two dies carried by the die-bed, the said die-bed being arranged to permit the dies to be shifted into and out from the press, substantially as described.

3. The shifting bed carrying a stationary lower die or matrix and a swinging upper hollow die, in combination with one or more burners situated to permit the flame or flames therefrom to heat the upper hollow die when the latter is in a raised position, substantially as described.

4. The lower die or matrix and its sliding support, in combination with the upper die, D, hung to slide along and turn upon a guide-rod, and means suitable for heating the upper die after it has been raised from the lower die or matrix, substantially as described.

5. The sliding bed E, provided with the radially-arranged slots, combined with the lower die or matrix provided with ribs adapted to fit into the slots of the said bed, whereby the position of the die or matrix is insured, substantially as set forth.

6. The radially-slotted bed E, combined with the lower die, C, provided with ribs to fit the slots of the bed, and clamps F, adapted to secure the die in rigid connection with the bed, substantially as described.

7. The combination, with the bed-frame, of the sliding die-bed E, provided with one or more racks, the geared spindle for reciprocating the sliding bed, and a press situated in the path of the sliding bed, substantially as described.

8. The combination, with the lower die carried by a sliding support, of the upper hollow die hung upon and adapted to slide along a stationary guide, and the burners H, in position for heating the hollow upper die when the latter is in a raised position at one side of a press, which is arranged to act upon the upper die after the latter has been lowered and shifted, substantially in the manner described.

9. The combination, with the press, of the dies and a sliding support arranged to move the dies into or out from the press, and the burners for heating the upper die, adjustably supported, whereby they can be raised and lowered, substantially as described.

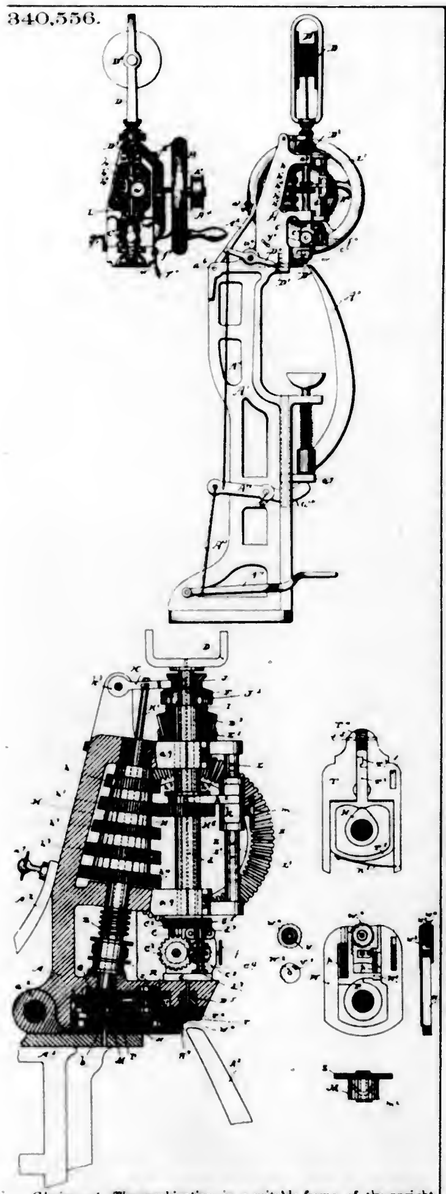
10. The combination, with the sliding die-bed and the upper hollow die, of a burner arranged below the platen of a press in position to enter the hollow die when the die-bed is adjusted into position to bring the latter under the press-platen, substantially as described.

11. The combination, with the press, the sliding die-bed, and the dies, of the vertically-adjustable burners, the worm-gear for raising and lowering the burners, and the spindle E^3, supported by the main frame and available from the front side of the same, substantially as described.

12. The combination, with the press having its platen arranged over a bed-frame, of the reciprocating die-bed applied to slide under and to one side of the press-platen, a lower die or matrix attached to the sliding die-bed, an upper hollow die, and means suitable for heating the upper hollow die preparatory to and after its removal from one side of to a point under the press-platen, substantially as described.

340,556. NAILING-MACHINE FOR BOOTS OR SHOES. ANDREA CAVALLI, San Francisco, Cal. Filed Aug. 26, 1884. (No model.)

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Claim.—1. The combination, in a suitable frame, of the upright tubular shaft *d*, the driving-shaft geared into it, the spindle F, geared into the tubular shaft, to receive rotation therefrom, having the bobbin-carrier D on the upper end and the head C on the lower end, the feed-rolls G in the head, and mechanism whereby said rolls are rotated from the revolution of the spindle to advance and force the wire through a set of thread-forming dies, D^4, held in the frame below a wire-cutting device, and work-feeding device having intermittent movement and action alternating with the wire-driving mechanism and located below the said dies, and mechanism whereby the said devices receive intermittent movements from the revolving spindle, and are brought into action and thrown out automatically and alternately with the wire-feeding rolls, and a work-supporting horn, substantially as described.

2. In a machine for the purposes described, the combination of the work-feeding and wire-cutting devices and mechanism connecting them with or to the lifting-rod K', and acting to throw up the spindle-gear and arrest the movement of the spindle when the said devices are brought into action.

3. The combination of the continuously-revolving shaft *a*, the spindle F, geared thereto by the gears I J', the lever K, and lifting-rod K', and mechanism, substantially as described, applied to and acting against the lower end of the lifting-rod and actuated from the continuously-revolving shaft to raise and hold up said rod at intervals in the rotation of the shaft to stop the spindle, and a spring to draw the rod down again.

4. The combination, with the upright shaft I, having the sliding pinion H^2, of the adjusting-slide to move and set the pinion, the inclined spindle H, having the set of cone-gears, the cams N P, the rotating hub M, geared into the spindle, the yoke T', having the cutter-bar and cutter adapted to or against a fixed cutter, the slide W', carrying the rack to actuate the feed-wheel, the springs *n' p*, to hold the parts in working contact with their respective cams, and the stop mechanism operated from the raised spindle through the system of gears, as described, to throw out the wire-driving mechanism as the cams begin to act, substantially as described.

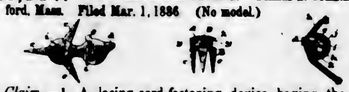
5. In combination with the cam-shaft geared into the wire-driving mechanism through the gears Q R, and carrying cams by which the feeding and wire-cutting devices are actuated, the gears R' S, hub M, with cam-groove m^2, the lifting-pin *b*, and the rod K, resting on the pin *b* and connected by the clutch I J, by which the wire-driving mechanism is coupled to the driving-shaft *d*.

6. The combination, with the frame W, carrying the feed-wheel-actuating mechanism, of the independently-sliding feed-wheel carrier W^2 W^3, stud W^4, slotted slide-plate f^5, with slotted extension f^{10}, to take the stud W^4, the clamp device f^7 f^8, to lock the plate, and the lever F^4, attached to the slide, and pivoted to the machine-frame to move the slide and set the feed-wheel, substantially as herein described.

7. The combination, with the hollow gear carrying spindle H and the rod K, of the collar Y, loose on the spindle and fixed to the rod, the lifting device y^5 Y^2, and the spring Z, substantially as herein described.

8. The combination of the slide a^2, carrying the work-support A^3, the lever A^{10}, bearing against the slide and so connected with the treadle A^{14} as to move the support as the treadle is depressed, and the pointer D^9, having movement over a scale, D^{10}, and connected with the lever A^{10}, substantially as herein described, to operate as set forth.

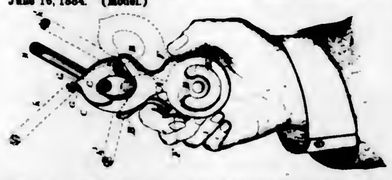
340,557. SHOE-LACE FASTENING. FRANK B. COMINS, New Bedford, Mass. Filed Mar. 1, 1886. (No model.)



Claim.—1. A lacing-cord-fastening device having the following elements, viz: a hook or stud having a base-collar, a neck, an outer head provided with a pendent lip and prongs or other suitable means of securing it to the boot or shoe, and a two-armed pawl or dog pivoted between the base-collar and outer head of said hook, and arranged to grip the lacing-cord between its upper end and said pendent lip, substantially as described.

2. In a shoe-lace-fastening device, the combination of a hook having the base-collar *h*, the neck *f*, the outer head, *g*, the pendent lip *d*, and the stop-lug *e*, with the two-armed pawl or dog *k*, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

340,558. SNAP-HOOK. MARCHIL D. CONVERSE, Yonkers, N. Y. Filed June 16, 1884. (Model.)



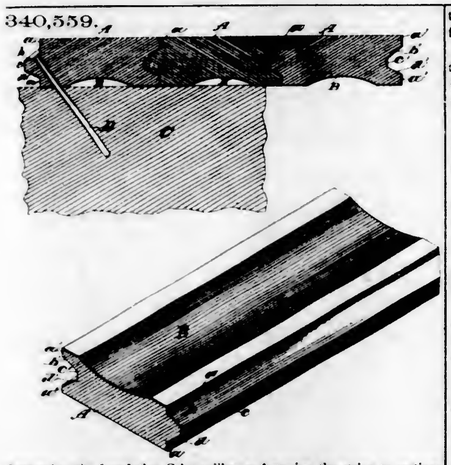
Claim.—The improved snap-hook herein described, consisting of the shanks A, secured by a pivotal rivet, D, provided with branches B, constructed and operating substantially as and for the purposes set forth.

340,559. CONSTRUCTION OF FLOORING AND SHEATHING. WILSON J. CONWAY, Milwaukee, Wis. Filed June 8, 1885. (No model.)

Claim.—1. An improved flooring or sheathing, consisting of strips or sections of wood, A, tongued and grooved, and guttered with the convex gutter or groove B on the under side of said strips, as and for the purposes herein contained.

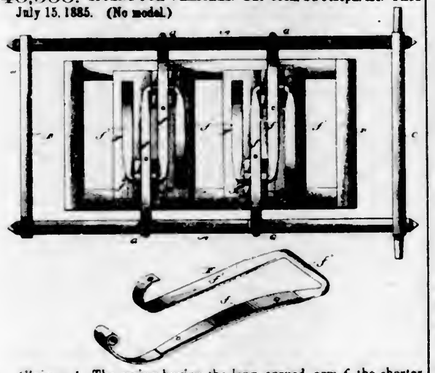
2. A floor or sheathing constructed of the strips or sections of wood A, tongued and grooved, and guttered with the convex gutter or groove B on the under side of said strips, laid contiguous to each other, and

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fastened to the foundation C by nailing or fastening the strips or sections A in the manner and for the purposes herein contained.

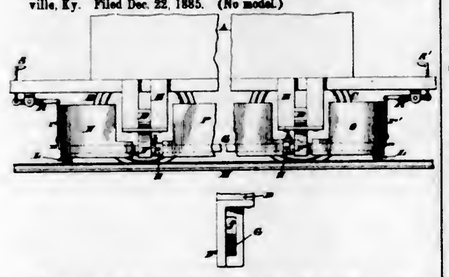
340,560. SPRING FOR VEHICLES. DEY COOK, St. Joseph, Mo. Filed July 15, 1885. (No model.)



Claim.—1. The spring having the long curved arm *f*, the shorter parallel straight arm *f'*, having the upturned curve at its outer end, and the torsion wrist portion f^2, connecting the long and short arms, to convey a portion of the strain from the long arm to the short arm, substantially as described.

2. In a side-bar vehicle, the springs F, having the long curved arms *f*, attached to the side bars at their outer ends, the shorter parallel straight arms, *f'*, having the upturned curves at their outer ends, which are attached to the body of the vehicle, and the connecting torsion wrist portions f^2, journaled in boxes on the bottom of the vehicle, substantially as described.

340,561. WHEEL-GUARD AND TRACK-CLEANER. HARRY M. CREAGER, Cincinnati, Ohio, assignor of one-third to Everett B. Fox, Louisville, Ky. Filed Dec. 22, 1885. (No model.)



Claim.—1. A wheel-guard consisting of a pair of side bars adapted to be raised and lowered within vertically-slotted hangers depending from the axle-boxes of a car, the front ends of said bars being provided with fenders, for the purpose described.

2. A combined wheel-guard and track-cleaner consisting of a pair of side bars adapted to be raised and lowered within hangers depending from the axle-boxes of a car, the front ends of said bars being provided with fenders and obliquely-disposed cleaners, for the purpose specified.

3. The combination, in a wheel-guard and track-cleaner, of boxes D, slotted hangers F *f*, side bars, G G' *g g'*, obliquely-disposed cleaners I L I' L', wheel-guards N N', cross-rod *n*, link *r*, pivoted lever R, and treadle S, for the purpose specified.

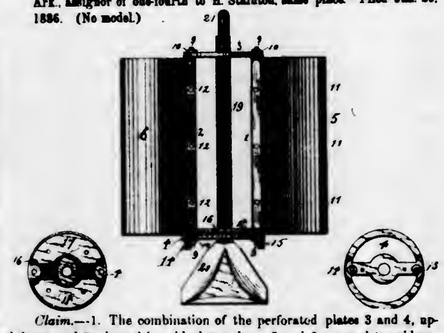
4. A wheel-guard consisting of a pair of side bars adapted to be raised and lowered within vertically-slotted hangers depending from the axle-boxes of a car, the front and rear ends of said bars being provided with fenders, as herein described.

5. In combination, with the side bars, G G', of a wheel-guard and track-cleaner supported in vertically-slotted hangers, as herein described, the adjustable collars H and cushions *h*, for the purpose described.

6. A safety attachment consisting of a fender secured to a pair of side bars that automatically rise within slotted hangers secured to the axle-boxes when a wheel of said fender comes in contact with an obstruction, as herein described.

7. A wheel-guard consisting of a pair of side bars adapted to be raised and lowered within vertically-slotted hangers depending from the axle-boxes of a car, the front and rear ends of said bars being provided with fenders, and the central portions of said bars being furnished with side plates, P P', for the purpose herein described.

340,562. WELL-BORING MACHINERY. ROBERT U. DONAL, Emmet, Ark., assignor of one-fourth to H. Staiston, same place. Filed Jan. 29, 1886. (No model.)



Claim.—1. The combination of the perforated plates 3 and 4, uprights 1 and 2, pivoted in said plates, doors 5 and 6, secured to said uprights, and valves 17 and 18, hinged on the upper face of the perforated plate 4, substantially as shown and described.

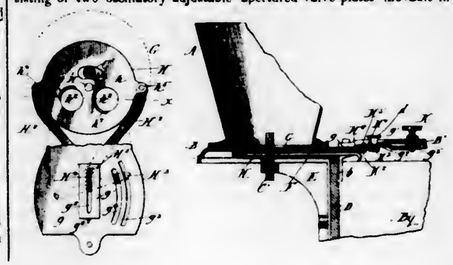
2. In a sand-pump, as above described, the trimmers 14 and 15, secured to the lower plate, 4, substantially as shown and described.

3. In a sand-pump, as above described, the cylindrical doors 5 and 6, secured to the pivoted uprights 1 and 2, and having tongues or laps 11 and depressions 12, substantially as shown and described, and for the purposes set forth.

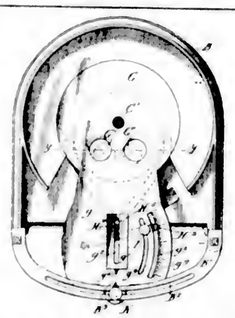
4. In a combined drill, sand-pump, and trimmer, the combination of the said pump having the valves 17 and 18, trimmers 14 and 15, and hinged doors 5 and 6, with drill-section 19, pivoted in the center perforations of the plates 3 and 4, rope-holder 21, screwed on the upper end of said drill-section, and drill-point 20, screwed on the lower end of the same, substantially as shown and described, and for the purposes set forth.

340,563. SEEDING-MACHINE. LLOYD EBERHART and IRVING D. STEVENS, Joliet, Ill. Filed July 23, 1885. (No model.)

Claim.—1. In a seeding-machine for sowing broadcast, the rotary distributer arranged below the hopper, in combination with the double valve applied to vary the area of the hopper outlet or outlets, and consisting of two oscillatory adjustable apertured valve-plates movable in



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opposite directions, and having their apertures disposed to open or close the hopper-discharge outlet or outlets from and toward the center of each opening, substantially as described whereby a variation in the area of a discharge-outlet shall not shift the point of discharge relatively to the distributer, and means suitable to operate said valve-plates and maintain said relationship of their apertures.

2. In a seeding-machine, the combination, with the rotary distributer and the hopper provided with an adjustable apertured bottom, of a double valve consisting of two oscillatory apertured valve-plates pivoted to the adjustable hopper-bottom, substantially as described.

3. In a seeding-machine, the rotary distributer and the apertured hopper-bottom, in combination with a double valve composed of two double-apertured independent rotary adjustable valve-plates, and means suitable for simultaneously adjusting said valve-plates in opposite directions, substantially as and for the purpose described.

4. The combination, with the hopper provided with an oscillatory adjustable apertured bottom, of the double valve H, comprising two oscillatory double-apertured plates, *h* and *h'*, each having their ports or apertures h^2 disposed as set forth, and both pivoted to the hopper-bottom eccentric to the axis about which the latter is arranged to oscillate, substantially as described.

5. The combination, with the rotary distributing-fan, the hopper-base arranged over the fan, and provided with a curved discharge-aperture, and the oscillatory adjustable apertured hopper-bottom operative over said apertured hopper-base, of a double valve, substantially as described, pivoted to the hopper-bottom, for the purpose set forth.

6. The two oscillatory adjustable valve-plates pivoted to the hopper-bottom, in combination with the vibratory lever carried by an extension of the hopper-bottom, and means, such as described, connecting the lever with the valve-plates to simultaneously operate the latter in opposite directions, for the purpose set forth.

7. The two valve-plates pivoted to the adjustable apertured hopper-bottom, in combination with the vibratory lever connected with the valve-plates, substantially as described, and an index arranged to serve, in conjunction with the lever, as a means for indicating the position of the valve-plates with reference to the discharge.

8. The combination, with the double valve pivoted to the hopper-bottom, of the valve-operating lever pivoted to an extension of the hopper-bottom, and having its free end extended up through a slot in the same, substantially as described.

9. The hopper-bottom and the double valve pivoted thereto, in combination with the valve-lever pivoted to an extension of the hopper-bottom, and means, substantially as described, for holding the valve-lever in its adjustment.

10. The oscillatory apertured hopper-bottom operative over a slotted base-plate, and provided with an extension, substantially as set forth, in combination with a slotted plate rigid with the base-plate and disposed over the hopper-bottom extension, and a set-screw carried by the hopper-bottom extension and working through the slotted plate over the same, substantially as described.

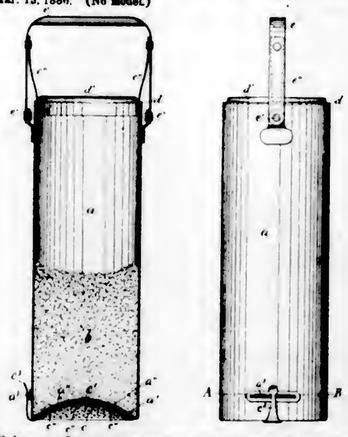
11. The two valve-plates pivoted to the hopper-bottom, in combination with the valve-lever, links or pitmen connected with the valve-plates, a link connecting said pitmen with the valve-lever, and means, substantially as described, for guiding said link.

12. The apertured hopper-bottom, in combination with the apertured oscillatory valve-plates, the hopper-bottom being provided on its under side with one or more ribs, each extending into an aperture of the upper valve-plate, and the latter being provided with a notch at the side of each aperture to receive one of said ribs when the valve-plates are in position to open the hopper-bottom apertures, substantially as described, and for the purpose set forth.

13. The combination, with the rotary distributer and the hopper, of the hopper-base provided at one end with depending lugs *b*, fitted against one side of the end-gate board, and the brackets E, applied against the opposite side of the end-gate board and upholding the hopper-base, substantially as described.

14. The combination, with the hopper, of the rotary distributer provided with a cap-plate, C^2, arranged over and secured to the wings of the rotary distributer, and having a central opening, substantially as set forth.

340,564. PLASTER-CAN. JOHN W. ELLIOTT, Beverly, Mass. Filed Mar. 13, 1886. (No model.)



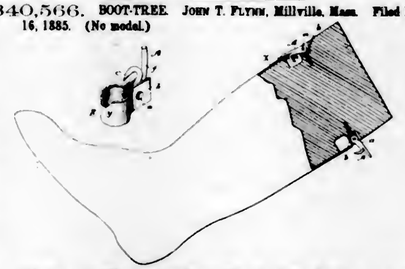
Claim.—1. In a plaster-can, the receptacle *a*, having the stationary perforated bottom *a'*, the perforated regulator *c*, pivoted to it and provided with the locking projection c^3, adapted to be locked into any one of the recesses a^3 on the side of the can *a*, as and for the purpose set forth.

2. The can *a*, having the removable cover *d*, with its upwardly-projecting circular extension *d'*, in combination with the bail *e*, hinged to the sides of the can *a*, and provided with the locking-springs *e''* *e''*, for securing the cover *d* to the top of the can and for holding the bail *e* in an upright position while in use.

340,565. COMPOSITION OF MATTER FOR THE MANUFACTURE OF SOAP. JOHN ERICKSEN, Albert Lea, Minn. Filed Jan. 21, 1886. (No specimens.)

Claim.—The herein-described composition of matter for the manufacture of hard soap, prepared as specified, and consisting of water, glue, unslaked lime, sal-soda, tallow, rosin, benzine, linseed-oil, and borax, in the proportion specified.

340,566. BOOT-TREE. JOHN T. FLYNN, Millville, Mass. Filed Dec. 16, 1885. (No model.)



Claim.—1. The combination, with a boot-tree having a recess in the leg, of a hook pivoted adjacent to said recess, and consisting of a strip of wire sharpened and bent into a hook at one end, having a loop, *e*, for the passage of the pivot, and prolonged to form an arm, *f*, substantially as set forth.

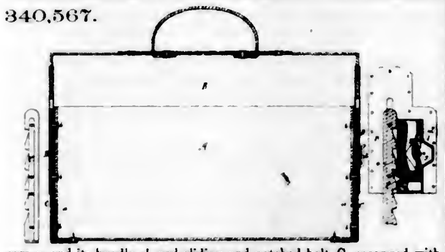
2. The combination, with a boot-tree, of the loop terminating in ears *b*, and a hook consisting of a strip of wire bent to form a hook, *c*, loop *e*, and arm *f*, substantially as set forth.

3. The combination, in a boot-tree, of a yoke, B, having a notch, *y*, and ears *b*, in combination with a hook pivoted between said ears, and provided with a stem, *f*, substantially as set forth.

340,567. VALISE, &c. NATHANIEL GRANT FRENCH, Norway, assignor by mesne assignments, to said Nathaniel G. French and Newell Washburn Brainerd, Waterville, Me. Filed Jan. 25, 1886. (No model.)

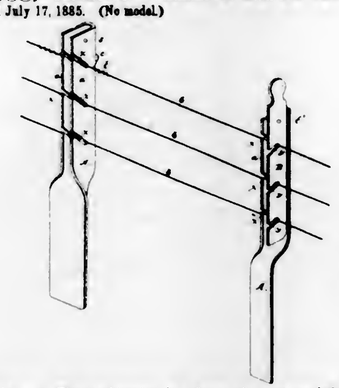
Claim.—In an extension valise or portmanteau, as described, having serrated or toothed racks fixed to each of the opposite ends of its body A, the combination of the hooked latch E, its arched spring F,

340,567.



cam c, and its handle *d*, and sliding and notched bolt G, arranged with each other and in a case, D, applied to one end of the cover, and adapted to operate together and with the next adjacent rack, C, substantially as set forth.

340,568. FENCE-POST. WELLESLEY W. GAGE, New York, N. Y. Filed July 17, 1885. (No model.)



Claim.—1. The combination, in a fence, of a post consisting of a single plate bent at the upper end to form two parallel cheeks, *a*, and provided with downwardly-inclined coinciding slots *x*, wires *b*, extending through said slots, and a retaining device for securing the wires, substantially as described.

2. The combination, with the post having cheeks *a a* and downwardly-inclined coinciding slots *x*, of a plate, B, having inclined slots *y*, at an angle to the slots *x*, substantially as set forth.

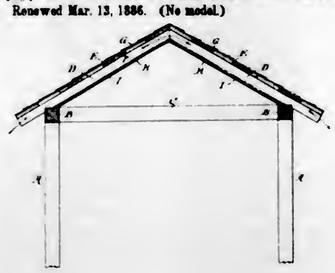
340,569. SIDEWALK. CHARLES C. GILMAN, Eldora, Iowa. Filed Oct. 15, 1885. (No model.)



Claim.—1. A sidewalk or pavement consisting of a surface layer of asphalt mastic or its equivalent and a foundation composed of slabs or blocks of terra-cotta lumber saturated or impregnated with asphaltum, substantially as described.

2. A sidewalk or pavement consisting of a surface layer of asphalt mastic or its equivalent and a foundation composed of two layers of blocks of terra-cotta lumber saturated or impregnated with asphaltum and arranged to break joints with each other in both directions, substantially as described.

340,570. ROOF. CHARLES C. GILMAN, Eldora, Iowa. Filed July 13, 1885. Renewed Mar. 13, 1886. (No model.)

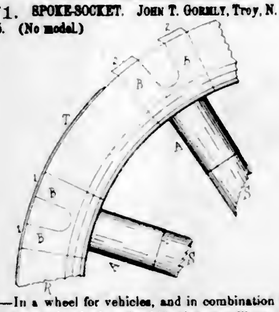


Claim.—1. A roof constructed of a series of rafters with a ceiling secured to the under surface and blocks or slabs of porous terra-cotta to the outer surface thereof, and having the spaces between the rafters unobstructed at the outer ends, so as to provide a series of passages for the circulation of air, substantially as described.

2. A roof constructed of a series of rafters covered on their outer and inner surfaces with a heat non-conducting material, said rafters being left uncovered at their outer ends, so as to provide a series of air-passages, substantially as described.

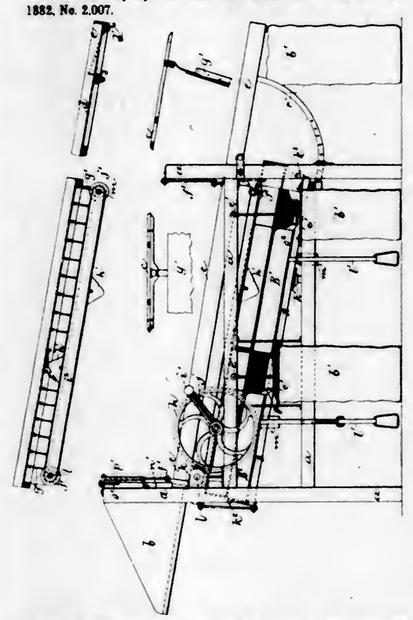
3. A roof constructed of a series of rafters covered on their outer and inner surfaces with slabs or blocks of porous terra-cotta, said rafters being left uncovered at their outer ends, so as to provide a series of air-passages, substantially as described.

340,571. SPOKE-SOCKET. JOHN T. GORELY, Troy, N. Y. Filed Dec. 28, 1885. (No model.)



Claim.—In a wheel for vehicles, and in combination with the felly and spoke in one entire device, the following metallic parts: the sleeve A and cap C with double flanges B B, whose ends are battened under and held by the tire, substantially as described, and for the purpose set forth.

340,572. POTATO CLEANING AND SORTING MACHINE. CARL F. A. GRAMKE, Stettin, Germany. Filed May 9, 1883. (No model.) Patented in Germany Apr. 22, 1881, No. 16,542, and in England Apr. 28, 1882, No. 2,007.

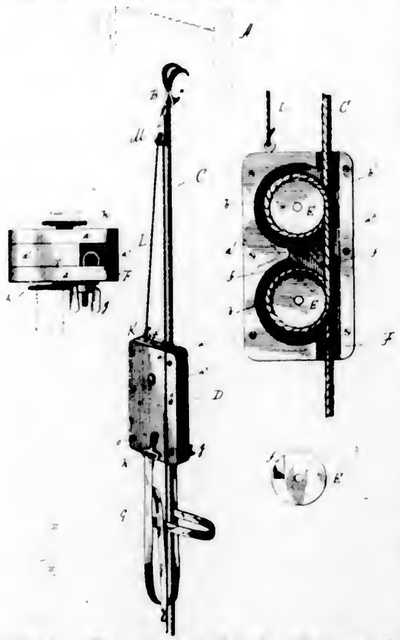


Claim.—1. The combination, with the frame *a*, the spouts a^2, and the screen for sorting, of the additional screens B' B^2, provided with pivots b^2 b^2, whereby they are capable of being inclined to either side in order to discharge the potatoes through said spouts.

2. The combination, with the frame c and the sorting-screen provided with pivoted or hinged flaps *g'*, of means for pressing said flaps upward against the under side of the screen, so as to force out any potatoes that may have stuck fast in the meshes.

3. The combination, with the sorting-screen provided with the flaps g', of the traveling band i^2, and projections h', for the purpose specified.

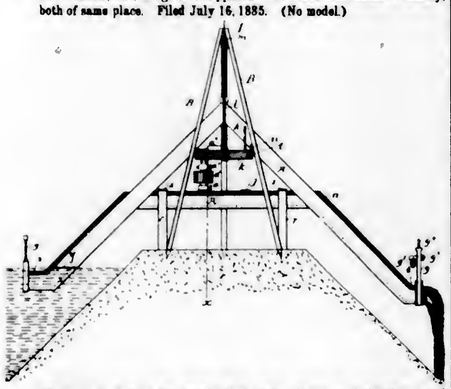
340,573. **FIRE-ESCAPE.** FRANK E. HAMLIN and GEORGE W. SMITH, Allen, Mich. Filed June 1, 1885. (No model.)



Claim.—1. The combination, with the block D, having spring-strips $f\,f$ and brake-staple F, operated by thumb-screw g, of the pulleys E E, having recess f', and the escape-rope C, as set forth.

2. The combination, with the block D, of the spring-strips $f\,f$, the pulleys E E, having recess f', the escape-rope C, and the thumb-screw clamp F, the stirrup-chair G, attached to said block by ears $h\,h$, the pull-rope L, and the pulley M, attached to the window-hook B, as set forth.

340,574. **DEVICE FOR CONDUCTING WATER.** HENRY P. HANDY, Fort Collins, Col., assignor to Appleton T. Gilkison and Lizzie C. Handy, both of same place. Filed July 16, 1885. (No model.)



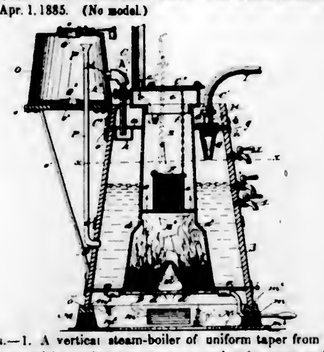
Claim.—A device for conducting water from an irrigating-canal and accurately measuring the same, said device consisting of a siphon extending from the water in the canal over the bank to the farm lateral, said siphon having a gate at each extremity, in combination with a supporting apparatus consisting of frame A, tripod B, windlass k, rope l, and pulley m, substantially as described, and for the purpose set forth.

340,575. **BUTTON.** EDWIN E. HAMP, Wilmington, Del. Filed Feb. 24, 1886. (No model.)



Claim.—The detachable button herein shown and described, having bead A, rivet B, clamping device C, with its tongue-pieces $c\,c$, working loosely or swiveled to the rivet B, so that both the head A and clamping device C will revolve thereon, substantially in the manner as and for the purpose set forth.

340,576. **AGRICULTURAL BOILER.** CHRISTOPHER HEPPT, Pekin, Ill. Filed Apr. 1, 1885. (No model.)



Claim.—1. A vertical steam-boiler of uniform taper from base to top, having an axial tapering passage connected at its upper end with a draft-flue, and a short cylinder of less diameter than, and arranged within, said passage at a point intermediate of the extremities thereof, substantially as and for the purpose specified.

2. A vertical steam-boiler of uniform taper from base to top, having an axial tapering passage connected at its upper end with a draft-flue, a short cylinder, E, of less diameter than, and arranged within, said passage at a point intermediate of its extremities, and a damper or valve for said short cylinder, substantially as and for the purpose specified.

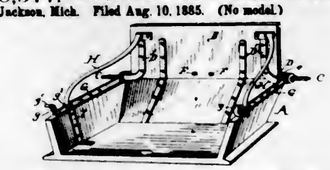
3. A vertical steam-boiler of uniform taper from base to top, having an axial tapering passage connected at its upper end with a draft-flue and enlarged at its lower end, and having an offset, a^2, a short cylinder, E, of less diameter than, and arranged within, said passage above the offset, and a damper or valve for said short cylinder, in combination with a cone arranged axially at the base of the enlarged portion of the tapering axial passage for contracting said enlarged portion, substantially as and for the purpose specified.

4. A vertical steam-boiler of uniform taper from base to top, having an axial tapering passage enlarged at its base, and having an offset, a^2, a cap provided with a charging door or gate and connected with a draft-flue applied to the upper end of said passage, and a perforated cone and a grate applied to the base of the enlarged portion of the passage, in combination with a short cylinder of less diameter than, and arranged within, the axial passage above the offset a^2, and a valve or damper connected with and adapted to be operated from the charging-door of the cap of said passage, substantially as and for the purpose specified.

5. A vertical boiler having an annular base-flange, in combination with an annular foot-ring, M, provided with a slot, m, door m', groove m^2, and foot-flanges m^3, substantially as and for the purpose specified.

6. The combination, substantially as described, with the flange a of the boiler and the tapering pipe C, open at both ends and screw-threaded at g, of the tubular valve-plug H, said parts being constructed for operation as shown and described.

340,577. **SHIFTING-RAIL FOR VEHICLES.** JACKSON W. HEWITT, Jackson, Mich. Filed Aug. 10, 1885. (No model.)

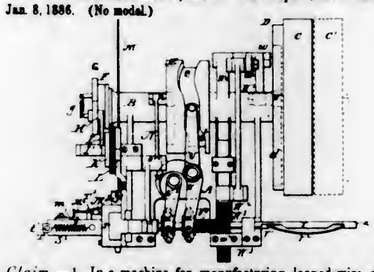


Claim.—1. The combination, with the seat-body provided with sockets at its rear corners, of the bolts adapted to engage in said sockets, the side rail-sections detachably held at their rear end upon said bolts, and the side rods secured at their rear ends to the back of the seat-body, and at their forward ends detachably connected with the side rail-sections, substantially as set forth.

2. The combination, with the seat-body, of the sectional rail composed of side and back quarters held at the rear corners of the seat-body by bolts passing through eyes at the meeting ends of said sections and screwed into sockets rigid with the seat-body, the side rods attached at their rear ends to the back of the seat-body, and at their forward ends fitted into sockets formed through the side rail-quarters, and supports for the forward end portions of the side rail-quarters, attached to the sides of the seat-body, substantially as described.

3. The combination, with the seat-body, of the back and side rail-quarters, E and G, the bolts C and F, securing said quarters, substantially as described, and the side rods, H, detachably connected with the side quarters, substantially in the manner specified.

340,578. **MACHINE FOR MAKING LOOPED-WIRE STAPLES.** ISAAC W. HEYDENDEL, Philadelphia, Pa. Filed Apr. 1, 1885. Renewed Jan. 8, 1886. (No model.)



Claim.—1. In a machine for manufacturing looped-wire staples with twisted necks, the combination of mechanism for feeding the wire, cutting it into lengths in the machine by a suitably-adapted cutter, drawing the middle portion of the length of wire out laterally into a loop by a transversely-acting draw-bar, and twisting the neck of the said loop by rotating the said draw-bar, bending down the ends of the wire blank to form legs by a suitable staple-forming plunger, and afterward releasing the completed staple, the whole constructed to operate substantially as described.

2. In a machine for making wire staples, in combination with mechanism for feeding and cutting the wire into lengths to form staples and bending down the legs thereof, a transversely moving, sliding, and rotating drawing and twisting bar adapted to draw out a portion of the said staple-length transversely and form the same into a loop or ring attached to the said staple by a twisted neck integral therewith, substantially as and for the purpose described.

3. In a machine for making wire staples, in combination with mechanism for feeding the wire into the machine and cutting the same into lengths, a loop-forming bar adapted to seize the middle part of said length of wire and draw the same out transversely into a loop, together with a suitable staple-forming plunger adapted to bend down the legs of the said staple-length upon a suitable anvil beneath, substantially as shown and described.

4. In a machine for making looped-wire staples with twisted necks from a single continuous length of wire, the combination of driving-shaft C^2, cams d, e, e', and G, cam-levers W, U, N, and I, or their equivalents, intermittent feed-rolls L L', wire-cutter M^2, bifurcated staple-forming block R', anvil T, transversely-moving drawing and twisting bar V, and rack and pinion to rotate the said bar W^2 V^2, or their equivalents, the whole constructed to operate substantially as herein shown and described.

5. In a machine for making looped-wire staples, the drawing and twisting bar V, having gripping and releasing jaws V^3 V^4, bearings V^5 V^6, in which the said bar V is adapted to slide and rotate, and mechanism for sliding and rotating the said bar V in said bearings, substantially as and for the purposes herein shown and described.

6. In a machine for making looped-wire staples, in combination with the wire feeding and cutting mechanism, a wire-guiding block, R^2, having transverse grooves across the upper surfaces of the bifurcated sides thereof to receive the outer portions of the length of wire, and a drawing-bar adapted to seat itself between the said bifurcated sides of R^2 and grasp and draw out into a loop the middle portion of the said length of wire while the ends thereof are held in the grooves from displacement during the operation of drawing out the loop, substantially as described.

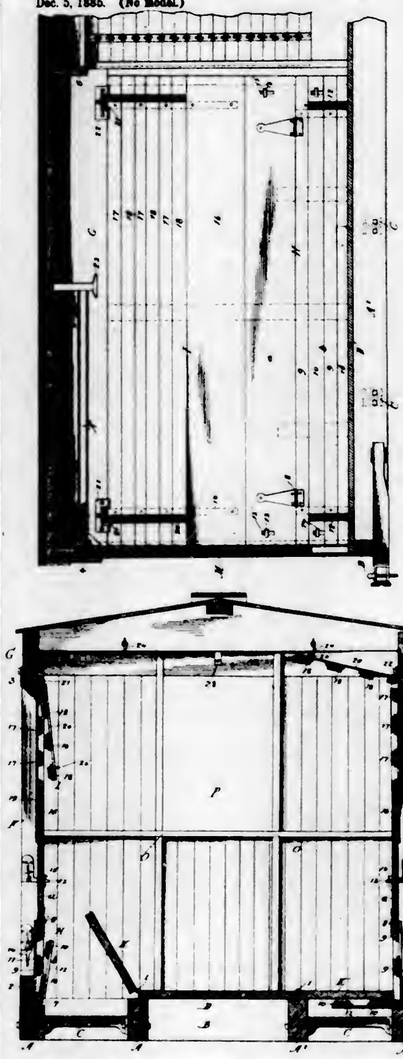
7. In combination with the wire-receiving grooves in the upper surface of the offset-block R^2, opening upward, the cap or covering block R', adapted to close the grooves from above and prevent the upward displacement of the wire from said grooves during the movements of the draw-bar V, substantially as described.

8. In combination with the drawing and twisting bar V, the anvil-bar T, which abuts against the head of the said bar V when the same is seated between the bifurcated sides of R' R^2, and moves forward to take the place of the head of the said bar V when the same is withdrawn, so as to form an anvil, around the sides of which the staple-legs y' y^2 are to be bent down by the descent of the bifurcated block R', substantially as described.

9. The anvil-block T, in combination with the drawing and twisting bar V and the wire-holding grooves in the block R^2, said anvil-block T having an overhanging thumb-piece, T^2, to prevent the lifting of the side of the staple during the operation of twisting the neck of the same, substantially as described.

10. In a machine for making looped-wire staples, in combination with the drawing-bar V, the bifurcated staple-forming bar or block R', reciprocating vertically in a slotted portion of the plunger R, in which it is adapted to move freely, being limited below by the transversely-grooved offset R^2 and above by the offset at the head of R, corresponding thereto, and the anvil T, seated between the bifurcated sides of the said block R' and said offset R^2, substantially as and for the purposes set forth.

340,579. **FREIGHT-CAR.** MORRIS M. HIRSH, Chicago, Ill. Filed Dec. 5, 1885. (No model.)



Claim.—1. A freight-car provided with side walls formed each of two sections, each of which sections is subdivided and adapted to be folded within the car-body, as set forth.

2. The combination, in a freight-car, and with a sectional floor thereof, of sectional side walls adapted to be folded under sections of said floor, as set forth.

3. In a freight-car, the side walls composed of sections I, arranged

to be turned under the roof, and of sections H, to be turned under the floor, substantially in the manner and for the purpose set forth.

4. In a freight-car, the sections H or J, secured to the floor-beams by hinges 7, and composed each of two sub-sections, *a* and *b* or c and *d*, hinged together to be folded upon each other, and adapted to be turned into the spaces between the floor-beams of the car, and to be concealed by trap-doors that form part of the floor of the car, all substantially as and for the purpose set forth.

5. In a freight-car, the sections H, secured to the floor-beams by hinges 7, and composed each of two sub-sections, *a* and *b*, hinged together to fold upon each other, the section *b* being composed of bars 9 and 10, separately connected to bars 11 and 12, all substantially as and for the purpose set forth.

6. In a freight-car, vertical bars 11 and 12, for supporting horizontal bars 9 and 10, each pair pivotally secured to a single hinge, 7, forming part of a post-holding socket, 2, substantially as described and shown.

7. In a freight-car, the sections H, hinged at 7, in combination with latches 13 and 14, secured to posts F, and adapted to lock such sections on their upright positions, all substantially as set forth.

8. In a freight-car, the sections I, hinged to roof-beams G in a manner to be turned from a vertical to a horizontal position, and to be temporarily secured by a holding device, 29, all substantially as and for the purpose set forth.

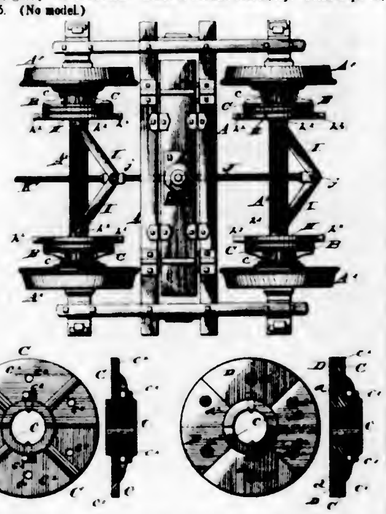
9. In a freight-car, the sections I, composed of horizontal bars 17, secured to vertical bars 19, and of horizontal bars 18, secured to vertical bars 20, such bars 19 and 20 being pivotally suspended to the roof-beams, all substantially as and for the purpose set forth.

10. In a freight-car, the sections I, composed of bars 17, secured to vertical bars 19, and of bars 18, secured to vertical bars 20, each pair of bars 19 and 20 being suspended on a common hinge, 21, that forms part of casting 22, all substantially as and for the purpose set forth.

11. In a freight-car, the sections I, composed of bars 17, secured to hinge-bars 19, in combination with bars 18, secured to hinge-bars 20, and arranged to be suspended under the roof of the car by hooks 24, all substantially as and for the purpose set forth.

12. In a freight-car, the standards R, pivotally secured by bolts S, to be turned into notches T of floor-beams A and A', all substantially as described, for the purpose specified.

340,580. CAR-BRAKE. LOUIS C. HUBER, Huber, Ky. Filed Sept. 10, 1885. (No model.)



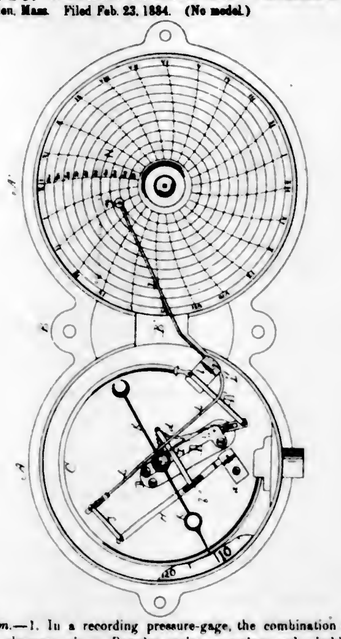
Claim.—1. In a car-brake, the friction-disk B, adapted to be secured to an axle by bolts c^2, and composed of the disk C, made in halves c', each having one-half of the hub c made in one piece with it, and each provided with the threaded openings c^3, and the four quadrants D, provided with the holes *d*, and secured to the inner surface of the disk C by the bolts d', substantially as specified.

2. In a car-brake, the combination of the iron semicircular brake-shoe H, provided with the semicircular notch *h* on its straight lower edge, and the rectangular horizontal extensions *h'* at its corners, with the hangers F, adapted to be bolted to the sills of the car-body, and provided at their lower ends with the rectangular horizontal recesses f^3, and pivoted shields G, substantially as specified.

3. In a car-brake, the combination of the friction-disks B, each composed of the disks C, and quadrants D, the hangers F, provided with the pivoted shields G, the brake-shoes H, having the extensions *h'*, supported by the recesses in the hangers, and mechanism, substantially as described, whereby the brake-shoes can be forced outward against the friction-disks, substantially as specified.

4. In a car-brake, the combination of the friction-disk B, the hangers F, the pivoted shields G, the brake-shoes H, the brake-levers I, the coupling-rod J, and the draft-bar K, all constructed and arranged substantially as shown and described, for the purposes specified.

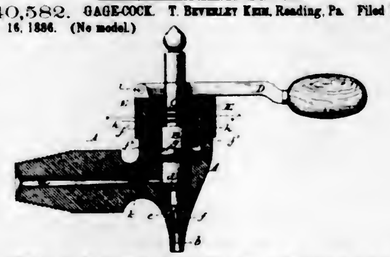
340,581. RECORDING PRESSURE-GAGE. FLORENTINE A. JONES, Malden, Mass. Filed Feb. 23, 1884. (No model.)



Claim.—1. In a recording pressure-gage, the combination of the following elements, viz: a Bourdon spring or springs and suitable connecting mechanism, a non-multiplying lever operating a device for recording the extent and variations of pressure, and an independent multiplying-lever intermediate with the said delineating-lever and the said spring or springs, substantially as and for the purpose set forth.

2. In a recording pressure-gage, the combination, with the Bourdon spring or springs provided suitable connecting mechanism, a delineating-lever, whereby the extent and variations of pressure may be recorded, and an independent multiplying-lever intermediate with the said delineating-lever and the said springs, of an independent lever intermediate with said multiplying-lever and said springs, and provided with suitable connections with both, substantially as and for the purpose described.

340,582. GAGE-COCK. T. BEVERLEY KERR, Reading, Pa. Filed Feb. 16, 1886. (No model.)



Claim.—1. In a gage-cock, the body having the passage *a b* therethrough and the valve-spindle movable across the mouth of passage *a*, the conical bearings *d* and *g* on the spindle above and below the passage, respectively, and the corresponding seats in the body to receive the two bearings alternately.

2. In a gage-cock, the combination of the body having the finid-passage *a b* therethrough and the vertically-movable spindle having a bearing-surface to close the passage *a*, and a separate bearing-surface to close the passage *b*.

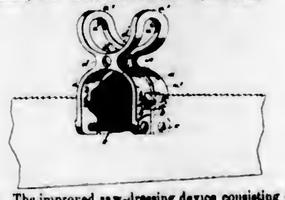
3. In a gage-cock, the body having the passages *a b*, in combination with the spindle having a bearing-surface *c*, above the passage *a*, and the bearings *d e* below said passage.

4. In a gage-cock, the body having the fluid-passage therethrough, in combination with the vertical spindle having bearings to close said passage, and having also, above said fluid-passage, bearings c and f^2, adapted and arranged to seat themselves against corresponding bearings in the body when the spindle is raised and lowered.

5. In a gage-cock, the body having the fluid-passage therethrough, in combination with the spindle B, having the bearing-surface *f* to close the same, and also bearing-surfaces *c* and f^2, to co-operate with corresponding surfaces in the upper part of the body, whereby the passage of fluid through the top of the body is prevented both when the valve is closed and when it is opened.

6. The body having the fluid-passage therethrough and the flange *f'* therein, in combination with the spindle adapted to close said passage, and provided with bearings *g* to act against the flange, and the actuating-spring inclosed within and protected by the flange, as described.

340,583. SAW-TOOTH-DRESSING DEVICE. HENRY O. KELSEY, West Salamanca, N. Y. Filed Feb. 10, 1886. (No model.)



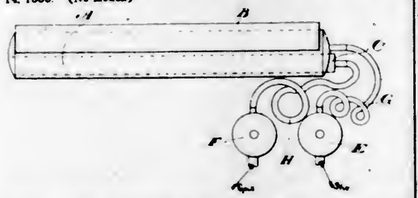
Claim.—1. The improved saw-dressing device consisting of a casting, A, provided with a slit, *a*, to receive a saw, file-sections B, to dress the sides of said saw, and adjusting means to adjust said sections, substantially as described.

2. The improved saw-dressing device consisting of a casting having a slit, *a*, extending from its top nearly to its bottom, as shown, and arms *b* and transverse adjusting-screws *c c*, said arms having recesses b^2, to receive file-sections B, and an adjusting-screw to adjust said sections nearer to or farther from each other, substantially as described.

3. The body A, provided with a central slit or opening to receive the saw, and a file-section on each side of the opening, as set forth.

4. The body A, provided with a central slit or opening, forming arms, and seats a^2 in the arms to receive the file or emery sections, as set forth.

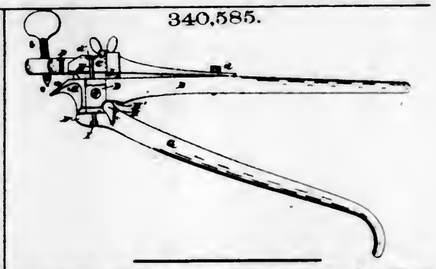
340,584. FURNACE. WILLIAM KENT, Jersey City, N. J. Filed Aug. 14, 1885. (No model.)



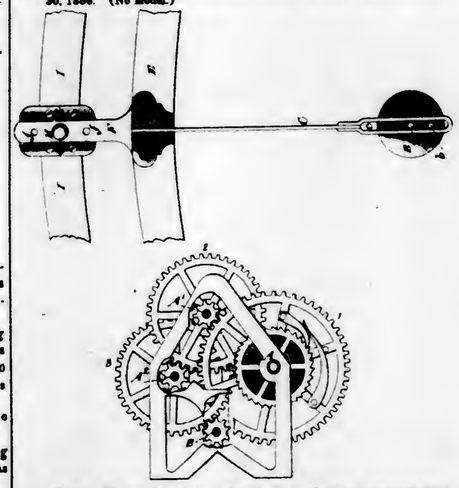
Claim.—1. The combination, in a furnace, of an outer tube slotted longitudinally, and having mounted thereon a correspondingly-slotted burner of fire-resisting material, with an inner tube having a longitudinal slot or series of perforations, and a pair of blowers connected to said tubes, and adapted to supply gases or gas and air thereto, substantially as set forth.

2. The combination of tubes A and C, one within the other, slotted longitudinally and in the same vertical plane, the slotted burner mounted on tube A, and the blowers E F, adapted to supply combustible gases to said tubes under pressure, as and for the purpose specified.

340,585.



340,586. MOTOR. FREDRICK P. KREMER, Marietta, Ohio. Filed Jan 30, 1886. (No model.)



Claim.—The combination, with a clock mechanism, substantially as described, of the wheel B', having crank-pin *b*, the pitman C, having the slot *c*, the plate D, attached to the cradle E, the plate F, having holes *f*, the screw-bolt H, the plate G, and the support I, substantially as shown and described.

340,587. AUTOMATIC CAR-BRAKE. KARL H. H. LEINWEBER, South Chicago, Ill. Filed Sept. 22, 1885. (No model.)

Claim.—1. In a car-brake, the combination, with a movable draw-head and a casting, M, connected therewith, the latter provided with a V-shaped slot, of a pin passed through such slot, a lever pivoted upon such pin, brake-shoes, and intermediate connections between the lever and the shoes, as and for the purpose set forth.

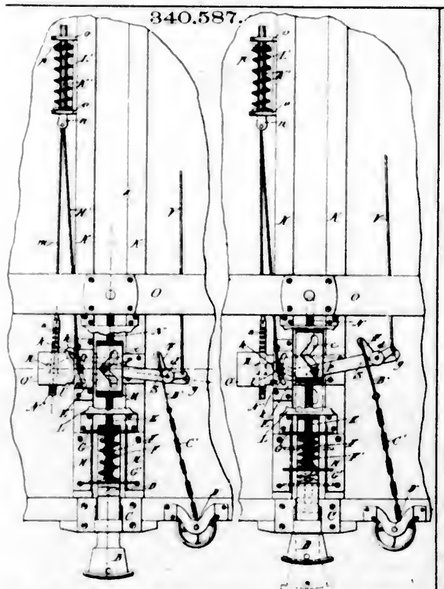
2. In a car-brake, the combination, with a movable draw-head and a casting, M, connected therewith, the latter provided with a V-shaped slot, of a pin passed through such slot, a lever pivoted upon such pin and provided with a bent and slotted end, pin passed through such slotted end, suitable brake-shoes, and intermediate connections between the lever and the shoes, as and for the purpose set forth.

3. In a car-brake, the combination of the following elements: a movable draw-head, a casting, M, connected therewith and provided with a V-shaped slot, a pin passed through such slot, a lever pivoted upon such pin, and at one end bent and slotted, a pin passed through the slotted and bent end of the lever, a rod connecting such pin with a suitable spring, brake-shoes, and intermediate connections between the lever and shoes, as and for the purpose set forth.

4. In a car-brake, the combination of the following elements: a movable draw-head, a casting, M, connected therewith and provided with a V-shaped slot, of a pin passed through such slot, a lever pivoted upon such pin, a spring for holding such lever in a given position, a push-bar connected with the pin, and a rack connected with the push-bar and spring, and arranged to render the spring inoperative, when desired, as set forth.

5. In a car-brake, the combination of the following elements: a movable draw-head, a casting, M, connected therewith and provided with a V-shaped slot, a pin passed through such slot, a lever pivoted upon such pin, a bell-crank lever mounted upon one end of the lever, and means for connecting such bell-crank lever with the brake-shoes, and a brake-wheel shaft, as set forth.

340,587.



6. In a car-brake, the combination of the following elements: a movable draw-head, a casting, M, connected therewith and provided with a V-shaped slot, a pin passed through such slot, a lever pivoted on such pin, a bell-crank mounted on a shaft passed through such lever, a spring coiled around such shaft, and suitable means for connecting the bell-crank with the brake-shoes, and a brake-wheel shaft, as set forth.

7. In a car-brake, the combination, with draw-head B, and a casting, M, connected therewith, said casting provided with V-shaped slot c, of a pin, P, a lever, S, suitable brake-shoes, and concections between such shoes and lever S, as set forth.

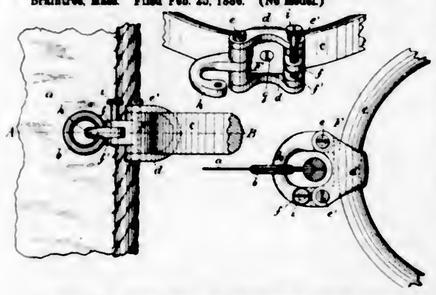
8. In a car-brake, the combination of the following elements: a movable draw-head, B, a casting, M, connected therewith and provided with a V-shaped slot, *c*, pin P, lever S, provided with bent and slotted end *h*, pin *l*, suitable brake-shoes, and connections between the brake-shoes and lever S, as set forth.

9. In a car-brake, the combination of the following elements: draw-head B, casting M, connected therewith and provided with slot *c*, pin P, lever S, bent and slotted as described, pin *l*, rod H', spring L', suitable brake-shoes, and connections between the shoes and lever S, as set forth.

10. In a car-brake, the combination of the following elements: draw-head B, casting M, connected therewith and provided with slot *c*, pin P, lever S, rod H', spring L', push-bar R, rack N', and rod M', as set forth.

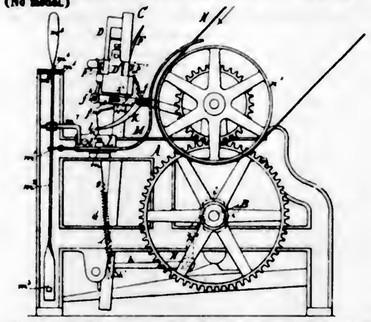
11. In a car-brake, the combination of the following elements: draw-head B, casting M, connected therewith and provided with slot *c*, pin P, lever S, bell-crank lever T, and means for connecting the bell-crank with the brake-shoes, and a brake-wheel shaft, as set forth.

340,588. SAIL-FASTENING DEVICE. GEORGE E. LUDDEN, East Braintree, Mass. Filed Feb. 25, 1886. (No model.)



Claim.—The herein-described sail-fastening device, consisting of the shield-plate *d* and back plate, F, secured together in a detachable manner by means of the screws *e e'*, combined with the bow A, hinged to one end of plate F, and adapted to be secured to the other end of such plate by the set-screw or thumb-screw *i*, as and for the purpose set forth.

340,589. LOOM. ROBERT MAIR, Bridesburg, assignor to the Bridesburg Manufacturing Company, Philadelphia, Pa. Filed Aug. 1, 1884. (No model.)



Claim.—1. The combination of spring G with ordinary shuttle-binding mechanism, shaft *f*, arm F, arm f^2, shaft B, cam I, and lever H, substantially as and for the purpose described.

2. The combination of spring G with the lathe C, shuttle-box D, shuttle-binder *d*, binder-spring d^2, loom-shaft B, protector-shaft *f*, pressure-arm F, arm f^2, cam I, and lever H, substantially as described.

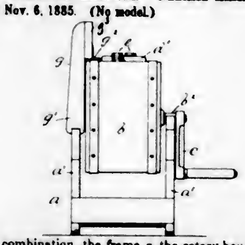
3. The combination of the spring G with the lathe, shuttle-box, shuttle-binder, binder-spring, arm F, shaft *f*, arm f^2, rod *g*, elbow-lever H, having arms h h^2, cam I, having depressions i' i' and elevations i i, and the loom-shaft B, substantially as described.

4. The combination, with the lathe and its shuttle-box, the shuttle-binder, and the binder-spring, of pressure-arm F', cam I, loom-shaft B, lever H, spring G, rod *g*, lever f^2, shaft *f*, shaft f^3, slotted lever *j*, and lever *j'*, having a pin, j^2, substantially as described.

5. The combination of the lathe and the shuttle-boxes at opposite ends thereof, the shuttle-binders and the binder-springs, the slide L and lever m^2, and a belt-shipper with the arms F F', lever H, cam I, loom-shaft B, spring G, rod *g*, lever-arms f^2 and K, shafts *f* and f^3, and levers *j* and *j'*, substantially as described.

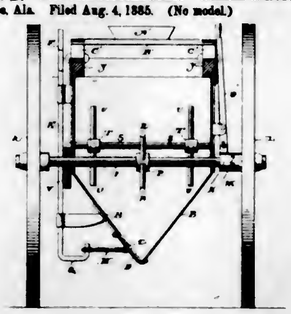
6. The combination of the spring G with the lathe C, shuttle-box D, binder *d*, binder-spring d^2, shaft *f*, arm f^2, arm F, rod *g*, lever H, adjusting-nut h', cam I, and shaft B, substantially as described.

340,590. WASHING-MACHINE. NARCISSE MASSICOTTE, Hartford, Conn. Filed Nov. 6, 1885. (No model.)



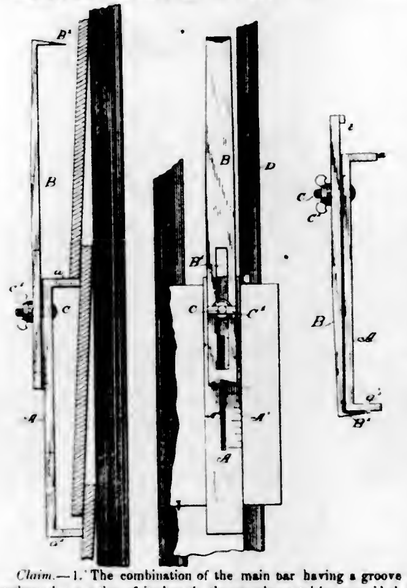
Claim.—In combination, the frame *a*, the rotary box *b*, with crank-handle *c* and clamp device *g*, with means for removably attaching it to the frame and to the box, all substantially as described.

340,591. MANURE-DISTRIBUTER. WILLIAM C. MCTYEIRE, Hatchechubbee, Ala. Filed Aug. 4, 1885. (No model.)



Claim.—The combination of the hopper, the shaft I, having the driving and supporting wheels, the stirring-arms and the eccentric, and the rock-shafts journaled in the hopper, and having the stirring-arms and the cranks, and the eccentric-rod connecting the eccentric to the cranks, whereby the rock-shafts are oscillated by the rotary motion of the shaft I, substantially as described.

340,592. GAGE. JAMES E. MONTGOMERY and WILLIAM C. HATCHER, Norborne, Mo. Filed Feb. 1, 1886. (No model.)



Claim.—1. The combination of the main bar having a groove or slot through a portion of its length, the supplemental bar provided on its lower end with a lug which works in the groove or slot in the main bar, and on its upper end with a marker or pointer, and a screw and thumb-nut for securing the two bars together, whereby they may be adjusted longitudinally, the one over the other, and folded, substantially as set forth.

2. The herein shown and described weather-boarding gage, consisting of a main bar having its ends bent at right angles and provided with a slot or groove through a portion of its length, a supplemental bar having its upper end bent at a right angle and sharpened, and provided with a slot near its lower end, and having a lug or boss at its lower end, which works in the groove or slot in the main bar, and a screw passed through a hole in the main bar and the slot in the supplemental bar, and provided with a thumb-nut, substantially as specified.

340,593. CLEANER FOR PIPES AND CIGAR-HOLDERS. ALEXANDER W. M. MOORE, Dublin, Ireland. Filed Nov. 23, 1885. (No model.)

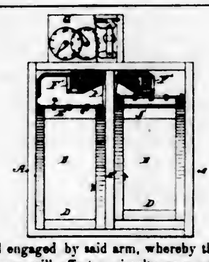


Claim.—A cleaner for pipes and cigar-holders, formed of a length of twine, cord, or string, unplaited or untwisted at one end to form it into a tassel, and at the other end cut to a point and stiffened by stiffening material applied to it, substantially as described.

340,594. SACK-SCALE. GEORGE P. MORLOCK, Plymouth, Ind. Filed Jan. 26, 1886. (No model.)

Claim.—1. The combination of the vertically-movable platforms, a segment pivotally supported above them, connections uniting the platforms with the opposite ends of the segment, an arm projecting from the axial line of the segment, a bifurcated grain-spout, a pivoted cut-off located at the point of divergence of the spout, and a lever projected from said cut-off and engaged by said arm, whereby the vertical movements of the platforms will effect a simultaneous adjustment of the cut-off.

340,594.

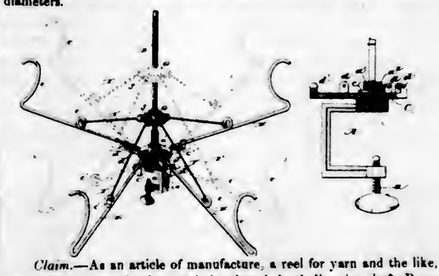


2. The combination, with the vertically-movable platforms, a pivoted segment, connections uniting the platforms with the opposite ends of the segment, a pivoted cut-off having a lever extending therefrom, and an arm projecting from the axial line of the segment and interlocking with said lever, of a register, a sliding pawl engaging its mechanism, a vertically-pivoted lever connected at its upper end to the pawl, and an arm projecting laterally from its lower end and engaging the arm extending from the axial line of the segment, whereby said arm simultaneously actuates the register and cut-off, substantially as described, and for the purposes specified.

3. A grain-meter comprising the following elements in combination: a frame, a division-wall dividing the same into two compartments, a pair of levers pivoted to the sides of the compartments, yokes uniting the rear ends of each pair, and having rearwardly-projecting arms to receive counterpoises, platforms suspended from the front ends of each pair of levers, a segment pivoted in line with the division-wall, connections uniting the platforms with the segment, a slotted arm projected from the axial line of the segment, a register having an actuating-arm engaging the slot in said arm, and a bifurcated grain-spout provided with a pivoted cut-off having a rearward-projecting lever working in the slot in the said arm, the parts being constructed and operating in the manner substantially as hereinbefore specified.

340,595. REEL. ALBERT P. MOORE, Malone, N. Y. Filed Dec. 5, 1885. (No model.)

Brief.—The clamp provided with a short tubular threaded spindle has removably secured into said spindle a rod or shaft. A spider is journaled on said short spindle and provided with pivot and supporting lugs for radial arms pivoted thereto. A collar sliding on the rod or shaft is connected to the radial arms by brace-arms, whereby the radial arms may be moved together to adjust them to receive skeins of yarn of different diameters.



Claim.—As an article of manufacture, a reel for yarn and the like, comprising a clamp having a tubular threaded spindle, *a'*, a shaft, B, removably secured in said spindle, a spider, C, journaled on the spindle and having pivot and supporting lugs *d d'*, radial arms E, pivoted to the lugs *d*, and having eyes *e*, a sliding collar, G, traversing on the shaft, and having a perforated annular flange, *g*, and brace-arms F, pivoted to the flange of the collar, and connected with the eyes of the radial arms, substantially as described.

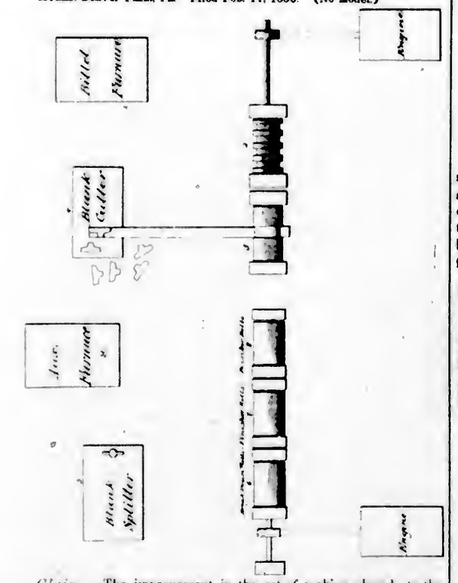
340,596. STUDENT'S BOOK-REST. ARTHUR MOWAT, Toronto, Ontario, Canada. Filed July 24, 1885. (No model.) Patented in Canada Aug. 4, 1885, No. 22,193.



Claim.—1. A board, C, provided with the fingers *f* and held vertically adjustable between the supports B, a ratchet-rack, *e*, formed in the back of the said board, in combination with the pawl *d*, fixed to the crank-rod D, which is suitably journaled on the supports B, substantially as and for the purpose specified.

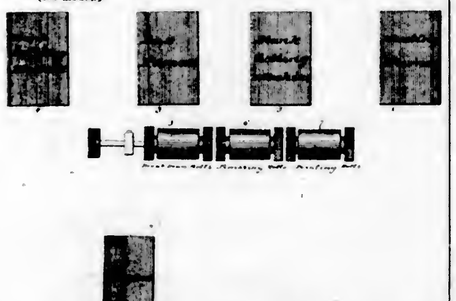
2. The board C, held between the supports B, and provided with fingers *f*, and blocks F, supported on the ends of the pins G, passing through holes in said board, combined with the fingers *g*, held in said blocks and capable of angular adjustment, substantially as and for the purposes specified.

340,597. METHOD OF MANUFACTURING SHOVELS. HENRY M. MYERS, Beaver Falls, Pa. Filed Feb. 11, 1885. (No model.)



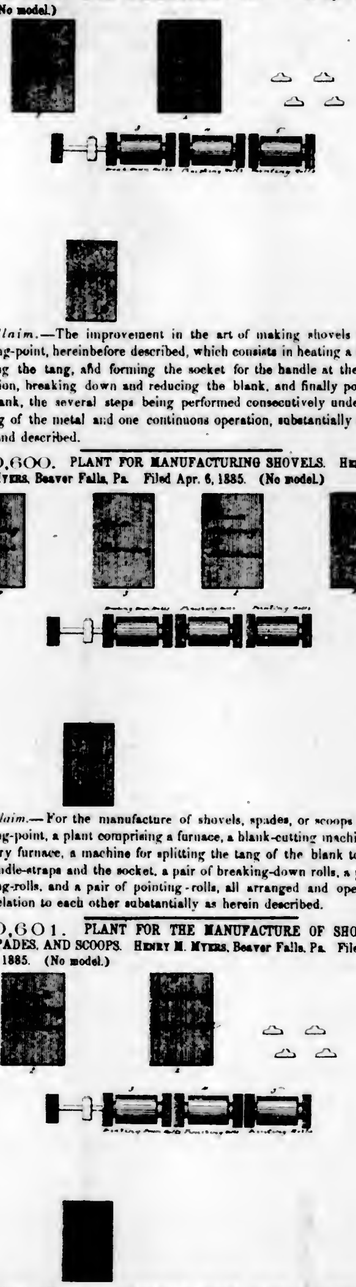
Claim.—The improvement in the art of making shovels to the shearing-point hereinbefore described, which consists in heating a billet of metal, rolling it into bars of a predetermined width and thickness, cutting blanks for shovels from said bars, splitting the tang of the blank and forming the socket for the handle at the same operation, breaking down and reducing the blank, and finally pointing the blank, the several steps being performed consecutively under one heating of the metal and one continuous operation, substantially as set forth and described.

340,598. METHOD OF MANUFACTURING SHOVELS, SPADES, AND SCOOPS. HENRY M. MYERS, Beaver Falls, Pa. Filed Apr. 8, 1885. (No model.)



Claim.—The improvement in the art of making shovels to the shearing-point, hereinbefore described, which consists in heating a bar of metal, cutting blanks for shovels from said bar, splitting the tang of the blank, and forming the socket for the handle at the same operation, breaking down and reducing the blank, and finally pointing the blank, the several steps being performed consecutively under one heating of the metal and one continuous operation, substantially as set forth and described.

340,599. METHOD OF MANUFACTURING SHOVELS, SPADES, AND SCOOPS. HENRY M. MYERS, Beaver Falls, Pa. Filed Apr. 8, 1885. (No model.)



Claim.—The improvement in the art of making shovels to the shearing-point, hereinbefore described, which consists in heating a blank, splitting the tang, and forming the socket for the handle at the same operation, breaking down and reducing the blank, and finally pointing the blank, the several steps being performed consecutively under one heating of the metal and one continuous operation, substantially as set forth and described.

340,600. PLANT FOR MANUFACTURING SHOVELS. HENRY M. MYERS, Beaver Falls, Pa. Filed Apr. 6, 1885. (No model.)

Claim.—For the manufacture of shovels, spades, or scoops to the shearing-point, a plant comprising a furnace, a blank-cutting machine, an auxiliary furnace, a machine for splitting the tang of the blank to form the handle-straps and the socket, a pair of breaking-down rolls, a pair of finishing-rolls, and a pair of pointing-rolls, all arranged and operating with relation to each other substantially as herein described.

340,601. PLANT FOR THE MANUFACTURE OF SHOVELS, SPADES, AND SCOOPS. HENRY M. MYERS, Beaver Falls, Pa. Filed Apr. 6, 1885. (No model.)

Claim.—For the manufacture of shovels, spades, or scoops to the shearing-point, a plant comprising a furnace, a machine for splitting the tang of the blank to form the handle-straps and the socket, a pair of "breaking-down rolls," a pair of "finishing-rolls," and a pair of pointing-rolls, all arranged and operating with relation to each other substantially as herein described.

340,602. SHOVEL. HENRY M. MYERS, Beaver Falls, Pa. Filed Feb. 10, 1885. Renewed Oct. 22, 1885. (No model.)



Claim.—1. As a new article of manufacture, a shovel, the blade A and handle-straps B B of greatest thickness at the center throughout the length thereof, and gradually diminishing in thickness toward the side edges, C C, substantially as herein described, and for the purpose set forth.

2. As a new article of manufacture, a shovel, the blade A of greatest thickness at the center throughout the length thereof, and gradually diminishing in thickness toward the side edges, C C, substantially as herein described, and for the purpose set forth.

340,603. BLANK FOR SHOVELS. HENRY M. MYERS, Beaver Falls, Pa. Filed Feb. 10, 1885. Renewed Oct. 22, 1885. (No model.)



Claim.—As a new article of manufacture, a shovel, scoop, or spade blank of the form shown in Fig. 2, in which the part marked F from the point D to the point C is substantially equal to the width intended for the shovel-blade, as herein described, and for the purpose set forth.

340,604. METHOD OF MAKING SHOVELS. HENRY M. MYERS, Beaver Falls, Pa. Filed Feb. 24, 1883. Renewed Oct. 22, 1885. (No model.)



Claim.—The method hereinbefore described of manufactoring blanks for the making of plain-back shovels, scoops, or spades, consisting in rolling or hammering a bar of iron or steel to a determined thickness, width, or length, heating it and forming an opening transversely through it, again heating it, and forging or drawing out that part of said bar through which said opening is made for forming the front and back handle-straps.

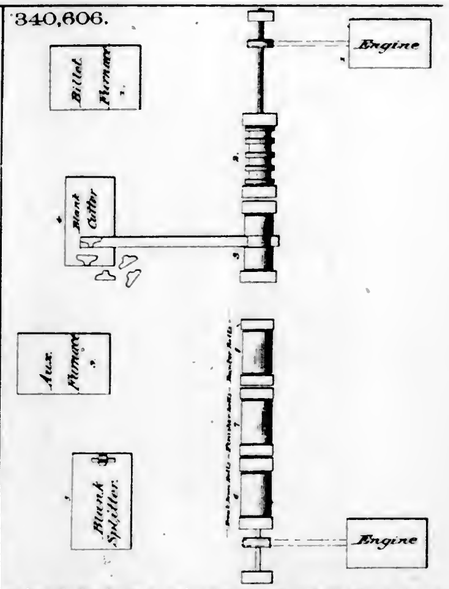
340,605. BLANK FOR PLAIN-BACK SHOVELS. HENRY M. MYERS, Beaver Falls, Pa. Filed Feb. 10, 1885. Renewed Oct. 22, 1885. (No model.)



Claim.—A new article of manufacture, a shovel, scoop, or spade blank reduced in thickness lengthwise, and having an increased thickness at its center extending its entire length, and gradually diminishing in thickness from the center toward each side of the blank, substantially as herein described, and for the purpose set forth.

340,606. PLANT FOR THE MANUFACTURE OF SHOVELS. HENRY M. MYERS, Beaver Falls, Pa. Filed Feb. 10, 1885. Renewed Oct. 22, 1885. (No model.)

Claim.—For the manufacture of shovels, scoops, or spades, a plant consisting of a furnace for heating billets, rollers for reducing them to bars, a machine for cutting the blanks, a machine for splitting the tang to form the handle-straps, and socket-rollers for reducing the blank, and a point-reducer, all arranged and operated with relation to each other substantially as described.



340,607. BAR FOR MAKING SHOVEL-BLANKS. HENRY M. MYERS, Beaver Falls, Pa. Filed Mar. 27, 1885. Renewed Oct. 26, 1885. (No model.)



Claim.—A rolled bar of the form shown and described for making blanks for shovels, spades, or scoops, the width of said bar being about equal to that of a finished shovel, spade, or scoop made from a blank severed therefrom, substantially as described.

340,608. BAR FOR MAKING SHOVELS. HENRY M. MYERS, Beaver Falls, Pa. Filed Mar. 27, 1885. Renewed Oct. 26, 1885. (No model.)



Claim.—A rolled bar for forming blanks for making shovels, spades, and scoops, said bar having a series of indentations and projections on one edge of it, and adapted to be cut into sections for making said blanks, substantially as herein described.

340,609. PREVENTING DISCOLORATION OF BURNED BRICK. WILLIAM W. NEUER, Wilkes-Barré, Pa. Filed Feb. 5, 1886. (No specimens.)

Claim.—1. The herein-described composition of matter to be used for preventing the discoloration and preserving brick, &c., and terra-cotta, consisting of vegetable oil, petroleum-oil, beeswax, and turpentine.

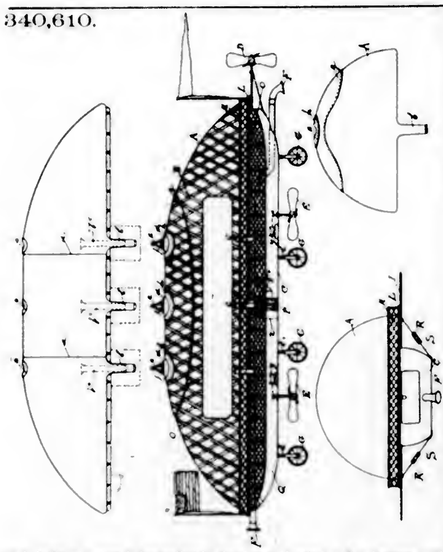
2. The method of preventing discoloration of bricks, &c., the same consisting in first applying petroleum and vegetable oil to fill up the pores and interstices of the material and subsequently applying beeswax, vegetable oil, and turpentine to protect the surface of the material, substantially as described.

3. The method of preventing discoloration of bricks, &c., the same consisting in first applying to the bricks or other material a cleansing compound of nitric acid and water, then applying a composition of petroleum and vegetable oil to fill the pores of the material, and finally applying a composition of beeswax, vegetable oil, and turpentine to protect the surface of the material, substantially as set forth.

340,610. STEAM AIR-SHIP. WILLIAM PATTERSON, San Francisco, Cal. Filed June 20, 1885. (No model.)

Claim.—1. In an air-ship, the combination of a car, of the form and construction substantially as shown and described, having a flat top,

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and balloon secured immediately thereupon having a flat bottom and rounded top, and having throats or tubes leading into the car, and gas-tight closets over the exits or mouths of said tubes in the body of the car, as set forth.

2. In an air-ship, the combination, with the balloon and car, of the throats *b* upon the balloon, the gas-tight closets into which they lead, and the escape-pipes $b^{\times}$, leading from the said closets to the exterior of the structure.

3. In an air-ship, the combination, with the car, of the extensible arms *u*, canvas or parachute secured thereupon in the manner set forth, and means, substantially as described, for extending and withdrawing said arms.

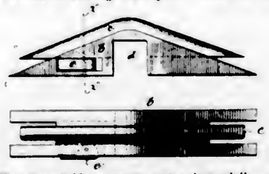
4. The combination of the extensible arms and parachute of flexible material secured thereon with the chains or cords *q'*, pulleys *s*, secured on or near the side of the car, over which the chains or cords *q'* pass, and the center shaft, *q*, having the chains or cords secured to it, substantially as and for the purpose set forth.

5. In an air-ship, the combination, with the crane-frame secured in the car of the ship with liberty to swivel thereon, of the propeller secured on a shaft connected with said crane-frame, and the engine *w*, secured in said crane-frame and having its piston-rod connected with the propeller-shaft, as set forth.

6. In an air-ship, the combination, with guide or keeper *o*, inside the car of the ship, of the wheel G, having the form *m*, with collar $n^{\times}$, and stem *n*, extending up into the ship and into the part *o*, and the spring *l*, placed round the stem *n*, between the collar $n^{\times}$ and the bottom of the car, substantially as set forth.

7. The combination, with the crane-frame J, swiveled in the car, the engine secured in said frame, the propeller having shaft extended out from said frame, and a pipe covering said shaft, and the braces *j*, connected at the inner end to the crane-frame and at the outer end to the collar *h*, and the tiller-arms *k*, adapted to receive connections for swinging the frame and its appended parts.

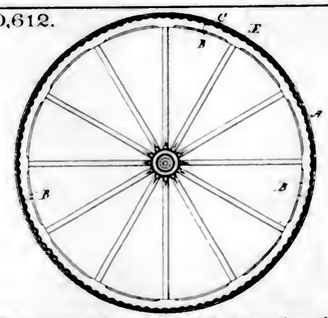
340,611. HOSE-BRIDGE. JOB S. PEDEN, New York, N. Y., assignor of one-fourth to Jean M. Eldredge, same place. Filed Jan. 16, 1886. (No model.)



Claim.—The hose-bridge constructed substantially as set forth, and provided with the cam-lever *c*, fulcrumed in the side of the bridge, and thereby adapted to bind against a railroad-track rail to clamp the bridge thereon, substantially as described.

340,612. WHEEL-TIRE. J. WILLARD PIERCE and ISRAEL L. G. RICE, Brookline, Mass. Filed Jan. 11, 1886. (No model.)

340,612.

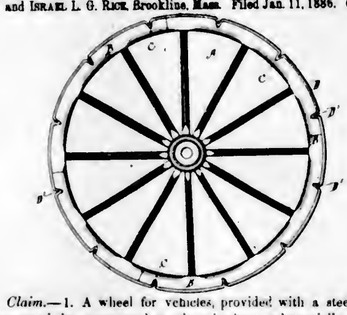


Claim.—1. The combination, in a wheel, of an inner tire made of spring metal, corrugated or bent, with a smooth outside tire, substantially as and for the purposes set forth.

2. The combination, in a wheel, of an inner tire made of spring metal, corrugated or bent, grooved fellies, and smooth outside tire, substantially as and for the purposes set forth.

3. The combination, in a wheel, of an elastic corrugated tire and corrugated fellies with a smooth tire, substantially as and for the purposes set forth.

340,613. WHEEL-TIRE. J. WILLARD PIERCE, JAMES H. BOWDITCH, and ISRAEL L. G. RICE, Brookline, Mass. Filed Jan. 11, 1886. (No model.)



Claim.—1. A wheel for vehicles, provided with a steel or other spring-metal tire, corrugated or otherwise bent, substantially as and for the purposes herein set forth.

2. In a wheel for vehicles, an elastic corrugated tire, in combination with the corrugated fellies, substantially as and for the purpose herein set forth.

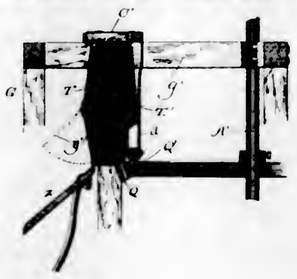
340,614. DITCHING-MACHINE. DAVID J. POWERS, Chicago, Ill. Filed July 7, 1884. (No model.)

Claim.—1. A ditching-machine bucket with a longitudinally-slatted periphery, in combination with a rake device co-operating therewith, substantially as and for the purpose specified.

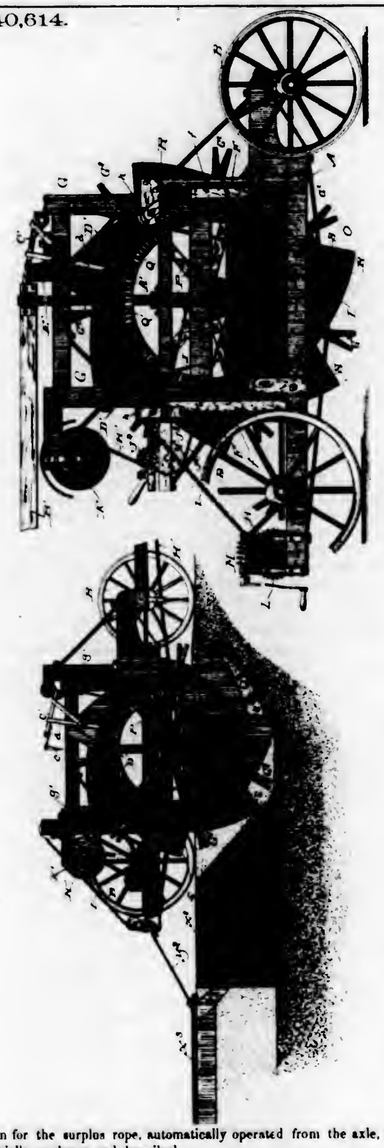
2. A ditching-machine bucket having a slatted periphery, in combination with a closing-plate, F', substantially as and for the purpose specified.

3. In a ditching-machine, the combination, with the pivoted rake device C', provided with a dependent lever, *d*, of the wheel O and its slatted buckets, and cam-pieces D', for operating the rake-lever, substantially as shown and described.

4. In a wheel ditching-machine adapted to be moved forward to its work by a rope or cable, the combination, with the excavating-wheel axle having the propelling-cable spool mounted thereon, of a winding-



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drum for the surplus rope, automatically operated from the axle, substantially as shown and described.

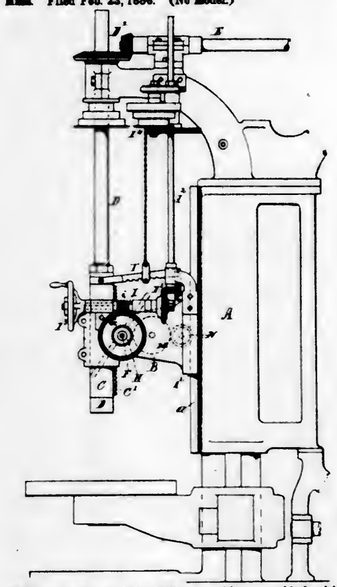
5. In a wheel ditching-machine adapted to be moved forward to its work by a rope or cable, the combination, with the excavating-wheel axle having the propelling cable spool mounted thereon, of a winding-drum for the surplus rope, and take-up sheave-wheels intermediate between the axle and winding-drum, substantially as shown and described.

6. In a ditching-machine adapted to be moved forward to its work by a rope or cable, the combination, with the bucket-wheel having a pulley-axle and means for revolving the same, of sheave-wheels and a winding-spool, both receiving motion from the pulley-axle, whereby when the cable tightens upon the said axle the slack is taken up by the sheave-wheels and wound upon the spool, substantially as shown and described.

7. In a ditching-machine adapted to be moved forward to its work by a rope or cable, the combination, with the bucket-wheel having a pulley-axle and means, substantially as described, for rotating the same, of a winding-spool receiving motion from the pulley-axle, the said receiving-spool being adapted to traverse back and forth and wind up the cable as the latter is delivered to it, substantially as shown and described.

8. In combination with a wheel ditching-machine, the follower X, having an inclined front or pitch-board, X', and side boards, X^2, substantially as described.

340,615. DRILLING-MACHINE. ALBERT F. PRENTICE, Worcester, Mass. Filed Feb. 23, 1886. (No model.)



Claim.—1. An upright drilling-machine provided with feed-racks, both on the upright frame and the quill, in combination with operating-gearing and shifting-clutches mounted in connection with the head, and connecting said racks with the power feed-shaft, substantially as hereinbefore described, whereby automatic feeding of the drill is interchangeably effected either by action of the head upon the upright or by action of the quill in the head, as set forth.

2. The combination, with the drill-spindle, quill C, having rack C', upright frame A, having rack A', and head B, of the shaft F, the clutch-sleeve J', carrying gear J, loose on said shaft, the clutch-sleeve K, splined to said shaft and having a gear, K', mounted thereon, the gear N, meshing with rack A', the shaft *n*, and the gears F and M, substantially as and for the purposes set forth.

3. The combination, with the gears M, P, and N and shaft F, of the sleeve K, fitted on said shaft with a spline, *f*, and the gear K', longitudinally movable upon and fitted to said sleeve by a spline, *v*, substantially as and for the purpose described.

4. In combination, substantially as described, the head B, drill-spindle D, quill C, with rack C', the worm-wheel G, clutch-hub H, shaft F, clutch-sleeve J', with gear J, clutch-sleeve K, gear K', hand-levers L, gears M, P, and N, shaft *n*, and rack A', substantially as and for the purposes set forth.

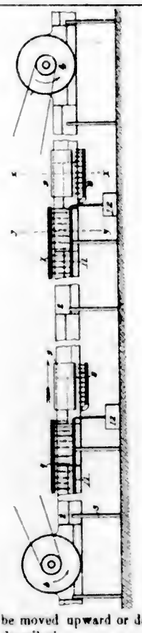
340,616. MEANS FOR TRANSPORTATION AND DISTRIBUTION OF GAS. THOMAS P. ROBERTS, Pittsburg, Pa. Filed Dec. 24, 1885. (No model.)

Claim.—1. An improvement in the art of long-distance gas-distribution, consisting in introducing the gas from the well into a continuous main or conduit of such sufficient diameter in proportion to the natural pressure of the gas as to reduce the pressure to or nearly to that of the atmosphere, and drawing and forcing the gas through such main by means of fans or equivalent pneumatic pumps placed at suitable intervals along the line, substantially as described.

2. An improvement in the art of gas distribution and transportation, which consists in conveying the gas through a main and assisting or creating the current of gas therethrough by the application of heat at one point and the chilling of the gas at another point, substantially as and for the purposes described.

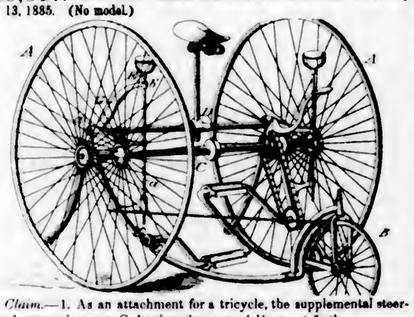
3. An improvement in the art of gas transportation and distribution, which consists in conveying a non-liquefiable gas through a main at low pressure and creating or assisting the upward and downward current of gas therethrough by varying the temperature of the gas in the

340,616.



main accordingly as it has to be moved upward or downward, substantially as and for the purposes described.

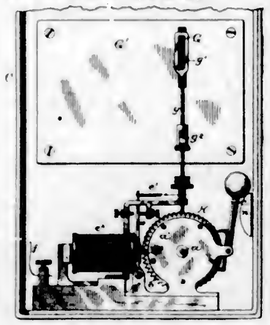
340,617. TRICYCLE. HENRY A. ROBINSON, Foxcroft, Me. Filed May 13, 1885. (No model.)



Claim.—1. As an attachment for a tricycle, the supplemental steering-rod-supporting arm C, having the eyes *a' b'*, as set forth.

2. In a tricycle, the combination of the bar D, the steering-rod *a*, the ordinary steering-rod-supporting arm *b*, and the supplemental steering-rod-supporting arm G, the two arms being independent of each other, both held on the bar D and both supporting the rod *a*, as set forth.

340,618. FIRE-ALARM APPARATUS. CHARLES D. ROGERS, Providence, R. I. Filed June 20, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a public fire-alarm box provided with means for operating it by hand in a usual manner, a box-controller therein which embodies driving mechanism and electro-magnet, and a stop which normally restrains said mechanism from continuously operating, but which is released therefrom and reapplied through said magnet, and one or more local electric circuits which include the coil of said magnet and are provided with keys or switches, whereby the box may be operated, as usual, by hand, and whereby said driving mechanism may be repeatedly released by the manipulation of any one or more keys in any one or all of the circuits, and enable repeated alarms to be turned in from one or more points in any one circuit or in different local circuits.

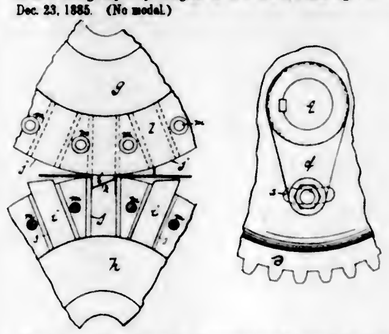
2. The combination, in an electric fire-alarm system, of a public district or station alarm-box electrically communicating with fire-alarm headquarters and provided with means for operating it by hand in a usual manner, and a box-controller in said box containing driving mechanism, a stop-disk which by its rotation operates the box and can be rotated in but one direction, an electro-magnet, a stud normally engaged with said stop-disk, but released therefrom by said magnet, and one or more local electric circuits including said electro-magnets, and provided with keys or switches, whereby said magnet may be made to release said disk and enable an alarm to be repeatedly turned in from any one or more keys in either circuit or successively turned in from keys in different circuits.

3. The combination, with a complete fire-alarm box provided with means for operating it by hand in a usual manner, of the mechanically-driven stop-disk, the reciprocating link by which said disk is loosely connected to the box-operating lever, the stop for said disk, the electro-magnet by which said stop may be moved, and one or more local electric circuits including the coil of said magnet and provided with keys, substantially as described, whereby said box can be operated in the usual manner, or one or more successive alarms turned in either from one or more keys on the same local circuit or from keys in different circuits.

4. The combination, with a complete fire-alarm box provided with means for operating it by hand in a usual manner, of a box-controller operated through local electric circuits, and embodying driving mechanism having a star-wheel and a vibrating-governor operating as a signal-striker, substantially as described.

5. The combination, with a public fire-alarm box provided with means for operating it by hand in a usual manner, of a box-controller embodying driving mechanism controlled through a local electric circuit, and keys in said circuit, which are housed within casings having locked covers, and are guarded by paper seals clamped by said covers, substantially as described.

340,619. MACHINE FOR BARBING METALLIC STRIPS. CHARLES ROGERS, Allegheny City, assignor to O. D. Lewis, Pittsburg, Pa. Filed Dec. 23, 1885. (No model.)



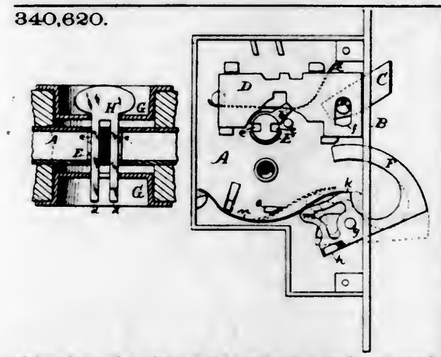
Claim.—1. In a machine for barbing metallic strips, the combination of the roll-carrying shafts, the barbing-rolls provided with adjustable and detachable male and female dies, gearing for rotating said shafts, and a crank secured to one of the shafts, said crank being formed with a slot at one end, whereby one of the gear-wheels may be adjusted substantially in the manner and for the purpose stated.

2. In a machine of the character described, the combination of one or more male and female dies, each of which said female dies is provided with an open groove of triangular form along one side thereof, and an oblique cutting-edge at one end of the groove, and a rounded heel over which the barb is bent, said male dies being of a triangular prism shape having an oblique cutting-edge and rounded heel, which, in conjunction with the above-described female die, bends the barb at right angles to the plane of the strip without breaking or in anywise impairing the same.

340,620. LOCK FOR SLIDING DOORS. HENRY E. RUSSELL, Jr., New Britain, Conn., assignor to the Russell & Erwin Manufacturing Company, same place. Filed Mar. 1, 1886. (Model.)

Claim.—1. In a lock for sliding doors, the combination of the case

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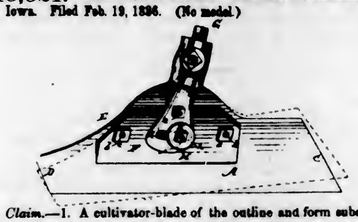


and face-plate having suitable inclined guides, the straight lock-bolt C, arranged to move within said guides in a right line at an oblique angle to the face-plate, and the slide D, for operating said bolt, substantially as described, and for the purpose specified.

2. The combination, with the lock of a sliding door, of the key-hole sockets and the key having a handle adapted to be received within said sockets, and a stem adapted to operate the lock when inserted therein at different points, according to the varying thicknesses of different doors, substantially as described, and for the purpose specified.

3. The combination of the case having a longitudinal slot in its face-plate, the handle F, having the pull or eye at its upper end, with its lower end provided with the finger-piece *h* and corners *m k*, said handle being pivoted to the case, as at *g*, and the spring *n*, for acting upon said lower end of the handle, substantially as described, and for the purpose specified.

340,621. CULTIVATOR-BLADE. BENJAMIN F. ROBBINS, Dunlap, Iowa. Filed Feb. 19, 1886. (No model.)

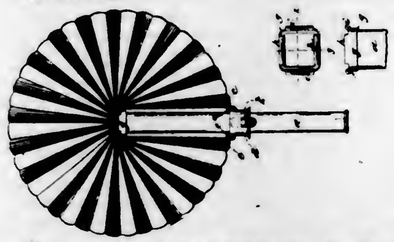


Claim.—1. A cultivator-blade of the outline and form substantially as herein shown and described—that is, having its lower edge straight, its front and rear ends parallel and inclined backward, the former being double in width of the latter, its upper edge from the front end first straight, and then running in an upward oval curve, and ending in a sloping one at the heel or rear end, and also having its upper front portion curved backward, with the central portion embraced by the oval line curved forward.

2. In combination with the blade A, constructed as described, the strengthening-plate F, provided with the pins *e* and *f*, and the standard G, having its lower end flat and provided with the slot *h*, as and for the purpose set forth.

3. In combination with the blade A, strengthening-plate F, and standard G, the device K, consisting of a malleable grooved casting, L, with eyebolt M, washer *m*, and tightening-nut *n*, for adjustably attaching the standard to the plow-beam, as shown and described.

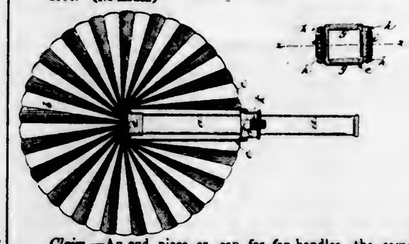
340,622. FAN. SIMON SCHEUER, New York, N. Y. Filed Feb. 24, 1886. (No model.)



Claim.—1. An end piece or cap for fan-handles, the same being formed of a frame, *g*, having lips *h h*, by which it is adapted to be secured to the handle, and provided with lips *i i*, to serve as bearing-surfaces for the side folds of the web, substantially as set forth.

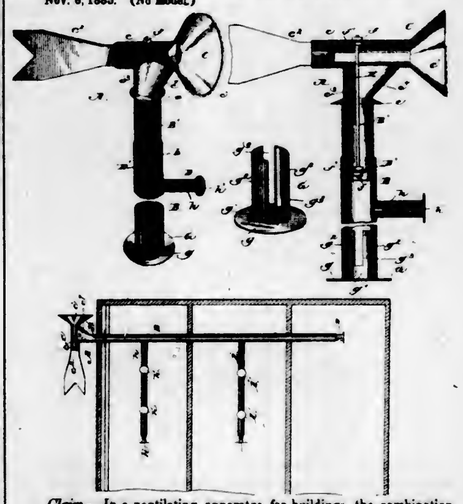
2. The combination, in a fan, of the handle *a*, the web *b*, and the sleeve *d*, formed with lips *e e* and secured to the web, substantially as set forth.

340,623. FAN. SIMON SCHEUER, New York, N. Y. Filed Feb. 24, 1886. (No model.)



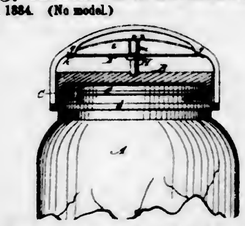
Claim.—An end piece or cap for fan-handles, the same being formed of a frame, *e*, lips *g g*, bearings *h h h h*, and rollers *i i*, substantially as set forth.

340,624. VENTILATOR. JAMES K. SELLARS, Eagle Lake, Tex. Filed Nov. 6, 1885. (No model.)



Claim.—In a ventilating apparatus for buildings, the combination of a main conducting-pipe, B, a collecting-hood rotatably and detachably mounted thereon, a removable regulating-vane connected to the hood, a vertical rod, E, inclosed within the pipe and hood and having nuts *f f'* at its ends, distributing branch pipe or pipes communicating with the main pipe, and regulating-valves adapted to slide in proper openings of the pipes and having slotted arms adapted to be withdrawn from the openings, all arranged and adapted to serve substantially as and for the purpose set forth.

340,625. FRUIT-JAR. HENRY K. SHAFFER, Rochester, N. Y. Filed Nov. 28, 1884. (No model.)



Claim.—In a fruit-jar, the combination of the clamping-ring provided with a cross-bar having inclined grooves or ways, a follower consisting of a metallic strip secured across the cross-bar, a spring above the follower, with its ends resting loosely in the grooves or ways, and a pin or bearing acted upon by the spring, passing through the follower and

resting on the jar-cover, as shown and described, and for the purpose specified.

340,626. HORSESHOE. MARSHALL L. SHAY and CHRISTOPHER WORDEN, Cleveland, Ohio. Filed Oct. 29, 1885. (No model.)



Claim.—1. In a horseshoe, the combination of a pair of lugs or ribs projecting from the shoe proper, and forming a dovetail or undercut groove between them, shoulders projecting from the ends of one lug toward the other, forming a recess, a wedge-shaped calk fitting in said recess, and a tapering key driven between the calk and the face of the opposed lug, substantially as and for the purposes set forth.

2. A horseshoe constructed with a pair of inclined-faced ribs forming a dovetail or undercut groove, and one of them recessed to form a calk-seat, in combination with a wedge-shaped calk fitting in said seat, and a tapering key wedge-shaped in cross-section, and having a thin end for clinching and an offset or shoulder for driving it out, said key being driven between the calk and the face of the opposed lug to confine the calk in its seat, as shown and described.

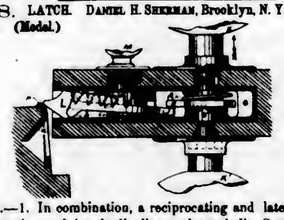
340,627. EYEGLASSES. HENRY C. SHEPPARD, Philadelphia, Pa. Filed Aug. 15, 1885. (Model.)



Claim.—1. The combination, with the lens-frames connected by a spring, B, which in use is held above and out of contact with the nose of the wearer, of the hinged arms C, having bearing-arms E, whereby the glasses are held in position by arms C only, as and for the purpose set forth.

2. In eyeglasses as described, the combination, with the lens-frames and their connecting-spring, as B, of hinged arms C, having swiveled bearing-arms E, arranged and adapted to serve as set forth.

340,628. LATCH. DANIEL H. SHERMAN, Brooklyn, N. Y. Filed Aug. 19, 1885. (Model.)



Claim.—1. In combination, a reciprocating and laterally-tipping latch, L, a rotating and longitudinally-moving spindle, S, a stop, H, for locking said latch and carried on said spindle, and a spring, A, for restoring said spindle and stop to their normal position, substantially as and for the purpose set forth.

2. In combination with a latch, L, a longitudinally-moving spindle, S, provided with a stop, H, and a spring for holding said stop and spindle in their normal position, substantially as and for the purpose set forth.

3. In combination with a latch, L, a rotating spindle, S, provided with a stop, H, and a spring for holding said stop and spindle in their normal position, substantially as and for the purpose set forth.

4. The combination, substantially as described, of the reciprocating and laterally-tipping latch L, the rotating and longitudinally-moving spindle S, the boss B, secured to said spindle and carrying a stop, H, and a double-acting spring, A, for restoring the spindle and stop to their normal position.

5. The combination, substantially as described, of a latch, L, the spindle S, the boss B, carrying the stop H, and the thimble N, attaching the boss to the spindle.

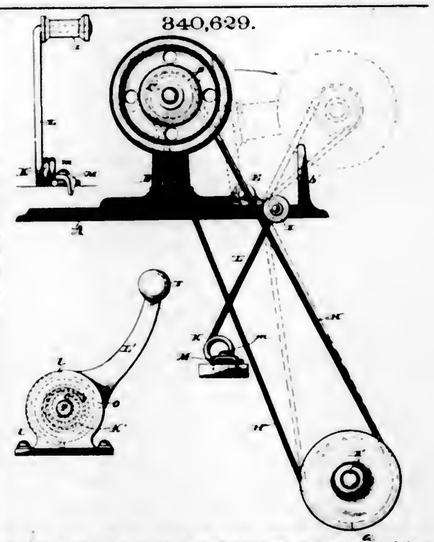
6. The combination, with a latch-case provided with a stop, e, of the rotary bolt D, recessed and balanced in the manner described, and the latch L, provided with an opening for the rotary bolt, substantially as described.

340,629. BELT CATCHER AND SUPPORTER. SAMUEL N. SILVER, Auburn, Me. Filed Jan. 26, 1886. (No model.)

Claim.—1. In a sewing-machine, the combination, with a belt connecting the drive-shaft with the needle-shaft, the latter being journaled in a tilting frame, of a yielding peg or spool located in the path of the belt, and adapted to catch and support the same when the frame is tilted, substantially as set forth.

2. In a sewing-machine, the combination, with a belt connecting

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the drive-shaft with the needle-shaft, the latter being journaled in a movable frame, of a peg or spool secured to the end of a spring arm, and adapted to clutch and support the belt when the table is tilted, substantially as set forth.

3. In a sewing-machine in which the needle-shaft is journaled to a support adapted to be moved toward and away from the drive-shaft, a belt catcher and supporter consisting, essentially, of an arm carrying a peg or spool on its upper end and connected with a rigid support in a yielding rocking adjustment, the said peg or spool adapted to catch and support the belt while the table remains in a tilted position, substantially as set forth.

4. The belt catcher and support consisting, essentially, of the spring-wire bent at its upper end to support the spool and at its lower end to receive the clamp, and coiled between its upper and lower end to give it elasticity for the purpose, substantially as set forth.

340,630. VALVE. HENRY W. SHERR, Bay City, Mich. Filed Aug. 26, 1885. (No model.)



Claim.—In a valve, the casing *a*, having the grooves *u* in the side walls thereof, and the valve *d*, provided with the wings *s* and upward-extending part *p*, the packing-ring *n* below and the packing-ring *i* above the valve, in combination with the packing-strips *h* within the said grooves *u*, and arranged with the part *v* projecting beyond the plane of the inner surface of the casing, substantially as and for the purpose set forth.

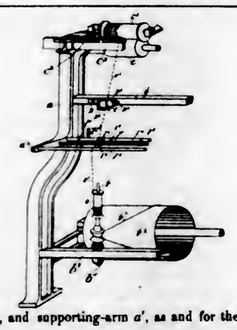
340,631. TENSION DEVICE FOR SILK-SPINNING MACHINES. GEORGE SINGLETON, Dover, N. J. Filed May 19, 1884. (No model.)

Brief.—Two rollers are pivoted to the frame at an angle to the horizon, between which rollers the strand passes. The pivot of these rollers is capable of adjustment to vary the angle of said pivot, and, as a consequence, the amount of tension imparted to the strand. Below this device there is furnished a rod provided with a handle, to which rod is attached by means of a coil a wire hook through which hook the strand passes. The hook rests on a rod which is connected to the first-named rod by links. By operating the handle of this device the slack in the strand is taken up or let out on stopping or starting the machine.

Claim.—1. The combination, with the roll B^2 and pin B', for supporting the roll, of the bracket B, the screw *d'*, for securing the bracket to the rail, the rail *d*, the guide C, as described, and the tension-roll B^2, adapted to journal on and slide over pin B', for tension, substantially as and for the purpose set forth.

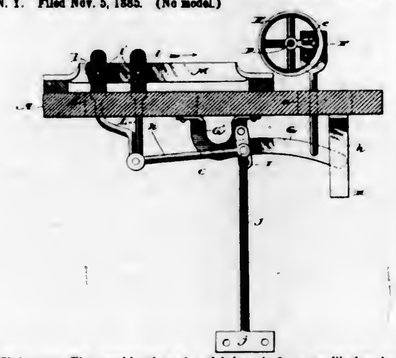
2. The combination, with the rod F, having handle F', for operating said rod, of the coil f^3, arranged on said rod, the links f^2, the rod f^4, the

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hook f^3, the rod f', and supporting-arm *a'*, as and for the purpose set forth.

340,632. THRASHING-MACHINE. CHARLES A. SMITH, Dresden, N. Y. Filed Nov. 5, 1885. (No model.)



Claim.—1. The combination of a driving-shaft, an oscillating bar actuated by the shaft, a cross-head adjustable laterally with respect to the pivot of the bar, a shoe, a rod intermediate of the cross-head and shoe, a rigid holding-bar, an adjusting-arm having sleeves movable on the bar and adapted to be rigidly held thereon, and a link connecting the adjusting-arm and cross-head, substantially as described.

2. The combination of a shoe, a pivoted oscillating bar, a driving-shaft, a guide for the bar, a sliding cross-head mounted thereon, a rod intermediate of the shoe and cross-head, an adjusting-arm carrying sleeves and set-screws, a bar on which the sleeves are secured, and a link connected to the cross-head and adjusting-arm, substantially as described.

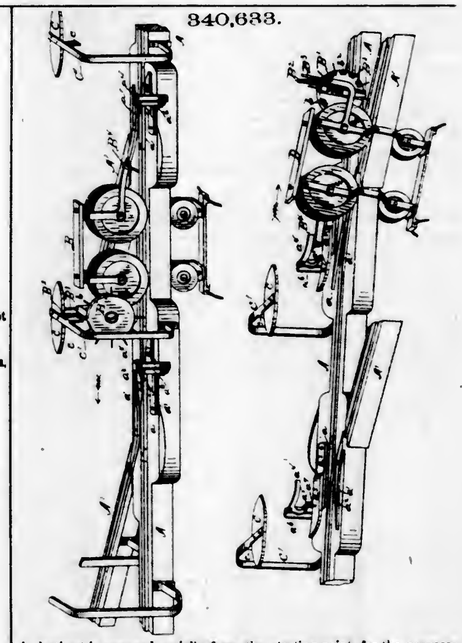
340,633. CONVEYER APPARATUS. HERVEY SMITH, Erie, Pa. Filed Dec. 22, 1885. (No model.)

Claim.—1. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a main track having a series of switch or branch tracks, switch-moving devices placed at each switch or branch point, cars for traversing said tracks which have thereon movable tappets for operating upon said switch-moving devices when they are brought into proper position, and means, substantially as described, for moving said tappets into position as the car progresses along the track.

2. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a main track having a series of switch or branch tracks, switch-moving devices placed at each switch or branch point, cars for traversing said tracks which have thereon movable tappets for operating upon said switch-moving devices when they are brought into proper position, said tappets being mounted on an equally-spaced wheel in certain relative position, as set forth, and means, substantially as set forth, for moving said wheel a fixed distance at certain periods of the car's advancement along the track, whereby the said tappets will be brought into operative position at certain predetermined points, as set forth.

3. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a main track having a series of switch or branch tracks, switch-moving devices placed at each switch or branch point, cars for traversing said tracks which have thereon an equally-spaced wheel, means, substantially as set forth, for moving said wheel one space as the car passes each station or switch, and tappets for operating the switch-moving mechanism mounted on said wheel at points between which there are as many spaces as the station to which the car

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is destined is removed serially from the starting-point, for the purposes mentioned.

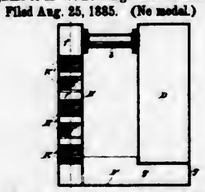
4. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a main track having a series of switch or branch tracks, switch-moving devices placed at each switch or branch point, cars for traversing said tracks which have thereon an equally-spaced tappet-wheel, for the purposes set forth, means, substantially as set forth, for moving said tappet-wheel one space as the car passes each station, and a locking device for preventing any untimely movement of said wheel, substantially as and for the purposes set forth.

5. In a conveyer apparatus, the combination, substantially as herein set forth, of a main track, a switch-track, a movable switch-tongue, a lever for moving said switch, a tappet on the forward end of the car for moving said lever, a catch for retaining said lever, and a second tappet on the rear of said car for disengaging said catch.

6. In a conveyer apparatus, the combination, substantially as herein set forth, and for the purposes mentioned, of the tappet-wheel B' on the car, a locking device for preventing untimely movement of said wheel, a fixture near the track for moving said tappet-wheel as the car passes, and a cam for releasing said locking device at the time the fixture acts upon the tappet-wheel.

7. In a conveyer apparatus, the combination, substantially as herein set forth, and for the purposes mentioned, of the tappet-wheel B' on the car, the locking-lever B^3, for preventing an untimely movement of said wheel, the fixed post B^2, and the cam C on the arch C', in position to pass between the lever B^3 and post B^2.

340,634. GAS-GENERATOR. JAMES E. SMITH, New York, assignor of three-eighths to A. W. Le Fargo and Francis Buckley, both of Brooklyn, N. Y. Filed Aug. 25, 1885. (No model.)



Claim.—1. In a gas-generator, a mixing-chamber having a series of longitudinal partitions arranged in inclined alternate directions, a steam-generating chamber, connections between said chambers, a heating-base, a supply-tank, pipes connecting chambers and tank, an automatic supply-valve in the water-supply pipe, and a regulating-valve in the oil-supply pipe, substantially as described.

2. In a gas-generator, the combination, with the steam and mixing

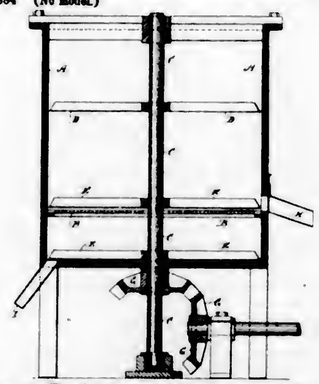
chambers, of a supply tank and pipe and an automatic supply-valve comprising a shell, a valve-rod working in a tapered seat, a valve-disk mounted thereon, a float, and an elbow connected to the valve-seat, all arranged and adapted to serve as described.

3. In a gas-generator, and in combination with the steam and mixing chambers thereof, a tank, a supply-pipe to the mixing chamber or retort, and a valve, H, in the retort-supply pipe and comprising a shell having educt and exit ports in different planes, a plug having a longitudinal bore and provided with transverse bores leading from the longitudinal bore to the educt and exit ports of the shell or casing, as set forth.

4. In a gas-generator, the combination of a retort comprising an elongated casing or shell and longitudinal partitions arranged in horizontal planes and alternately inclined positions, a water-chamber having a steam-space, a heating base or plate on which the retort and chamber are mounted, a tank having oil and water chambers, supply-pipes leading from the chambers of the tank to the water-chamber and the retort, the supply-pipe to the said retort entering the same at one end of the upper flue thereof, a connecting-pipe from the steam-space of the water-chamber and entering the retort near the point of the oil-educt port, an automatic valve in the water-supply pipe, and a regulating-valve in the oil-supply pipe, all arranged to serve substantially as set forth.

340,635. TREATING COTTON-SEED TO REMOVE THE LINT.

WILLIAM H. STEAD, Liverpool, County of Lancaster, England. Filed Nov. 18, 1884. (No model.)



Claim.—1. The dry process of cleaning cotton-seed herein described, which consists in bringing commercial sulphuric acid, without submersion and consequent soaking, into contact with the fiber only by simultaneously spreading or spraying the mass and stirring it until the fiber is partially saturated, and then treating the mass under agitation with alkaline earth, whereby the lint or fiber is removed in the form of dust and the acid remaining on the surface of the seed is neutralized and the resultant sulphate removed without washing and consequent dampening, as set forth.

2. The dry process of cleaning cotton-seed herein described, which consists in treating the mass with commercial sulphuric acid without submersion and consequent soaking of the shell by the acid, then treating the mass with pulverized lime, and then brushing the same, whereby the lint is removed in the form of dust, the acid neutralized without soaking, and the sulphate of lime is removed by friction, substantially as set forth.

3. The dry process of cleaning cotton-seed, which consists in bringing commercial sulphuric acid without submersion into contact with the fiber, stirring the mass until the fiber is separated from the seed in the form of powder or dust, and then treating the mass under agitation with dry alkaline earth.

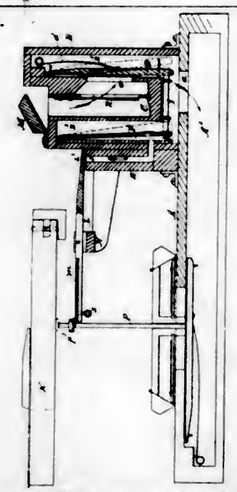
340,636. SUB-BASS ATTACHMENT FOR REED-ORGANS.

FRANK STONE, Worcester, Mass., assignor to Munroe Organ Reed Company, same place. Filed June 1, 1885. (No model.)

Claim.—1. A sub-bass for reed-organs, provided internally with an exhaust-chamber, as B', surrounding the tube-board, and within which are arranged valves for closing the several reed-cell passages thereinto, and a corresponding series of pneumatic motors, as F, severally connected for operating the respective valves, with air-inlet passages leading into said pneumatics from the exterior of the casing, and a series of stops or valves closing said inlet-passages, and adapted for connecting with the manual action in a reed-organ, substantially as set forth.

2. The combination, substantially as hereinbefore described, of the casing B, inclosing the air-chamber B', the tube-board C, having cells for containing reeds supported within said chamber, the valve D, the

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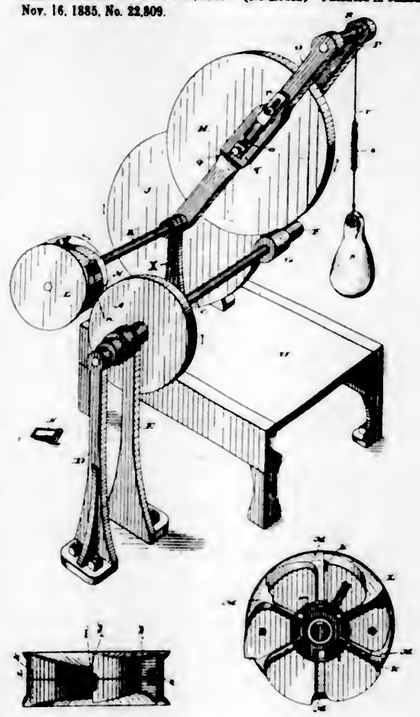
spring *d*, the tracker-pins I, the pneumatic motors F, having passages leading to the exterior of the case, the inlet-stop valves, the levers L, controlled by the manual-keys, for the purpose set forth.

3. The combination in a sub-bass for reed-organs, of the tube-board C, containing reeds R, the valves D, pneumatics F and tracker-pins I, arranged for operation substantially as set forth.

4. The combination, substantially as hereinbefore described, of the sub-bass section B, provided with reed-cells C and passages J, disposed as shown, the valves D, tracker-pins I, pneumatic fingers F, adjustable levers L, carrying valve-pads L', the fulcrum-support N, pitmen P, having buttons P', and manual-keys K, for the purposes set forth.

340,637. GRINDING MACHINERY.

JAMES D. STORIE, Oshawa, Ontario, Canada. Filed Oct. 29, 1885. (No model.) Patented in Canada Nov. 16, 1885, No. 22,809.



Claim.—1. The combination, with a grinding-wheel, of a holding-wheel, L, having a series of recesses, M, and notches *k*, as shown and described.

2. The combination, with a grinding-wheel, of a wheel, L, having a series of recesses shaped to receive the castings to be acted upon, in combination with mechanism, substantially as described, designed to impart a revolving movement to the wheel L, so that each recess shall be brought opposite to and the casting contained therein held against the said grinding-wheel sufficiently long to remove from the surface of the said casting the gate or ragged edge, as specified.

3. A wheel, L, having a series of recesses made in it and fastened to the axle K, on which the wheel J is secured, the arms O P, journaled on the axle K, designed to support the friction-pulley I, which is held in contact with the pulley J, in combination with the revolving pinion designed to impart motion to the pulley H, which is secured to the friction-pulley I, substantially as and for the purpose specified.

4. A wheel, L, having a series of recesses made in it and fastened to the axle K, on which the pulley J is secured, the arms O P, journaled on the axle K, designed to support the pulley H and friction-pulley I, which latter is held in contact with the pulley J, in combination with the weight S, connected to the arms O P by the rope R, and spring *s*, designed to hold the pulley H against the pinion F.

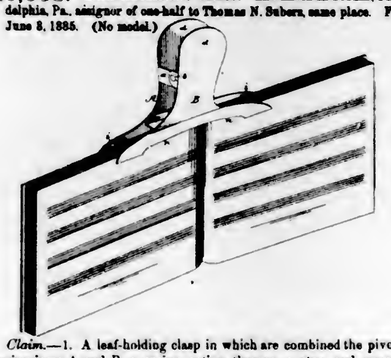
5. The axle-boxes *q*, designed to support the axle K and fit into slots made in the arms O P, in combination with the spring *o* and spring-holder *p*, adjustably connected to the arms O P, substantially as and for the purpose specified.

6. The holding-wheel L, connected to a shaft, K, deriving motion as specified and supported on a bracket attached to the table U, in combination with mechanism, substantially as described, for adjusting the said table U, so as to bring the wheel L closer to or farther from the grinding-wheel A without stopping the driving mechanism, substantially as and for the purpose specified.

7. A holding-wheel, L, having a series of recesses, M, made in it as specified, in combination with the spring *m*, designed to form an elastic bottom for each recess, substantially as and for the purpose specified.

340,638. LEAF-RETAINING CLASP.

LAWRENCE A. SUBERS, Philadelphia, Pa., assignor of one-half to Thomas N. Subers, same place. Filed June 8, 1885. (No model.)



Claim.—1. A leaf-holding clasp in which are combined the pivoted clamping-jaws A and B, a spring acting thereon, a stop, and opposite bearing-studs, as set forth.

2. A book-holding clasp in which front and rear spring-clamps are combined with a stop, *g*, said front clamp having a central recess, *n*, in the edge, as specified.

3. The combination of the rear clamp having a stop, *g*, and bearing studs *i*, the front clamp having a recessed edge, *n*, and the spring *f*, as set forth.

4. The combination of the rear clamp having screw-stems *m*, with the elastic studs *i*, adapted to said screw-stems, as set forth.

340,639. TARGET-TRAP.

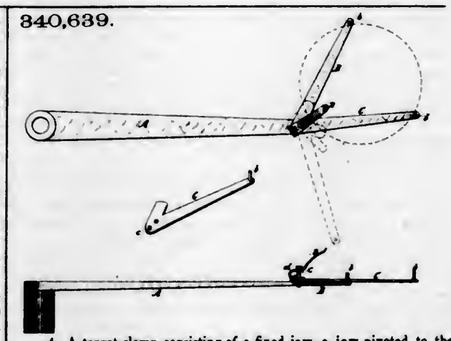
BENJAMIN TRIPH, Covington, Ky., assignor to the Ligowsky Clay Pigeon Company, Cincinnati, Ohio. Filed Jan. 6, 1886. (No model.)

Claim.—1. A target-clamp consisting of a fixed rear jaw and a pivoted delivery-jaw, both adapted to engage with the periphery of the target, substantially as described.

2. In combination with the throwing-lever of a target-trap, a target-clamp having a fixed rear jaw, a delivery-jaw pivoted to the main throwing-lever, and a spring adapted to regulate the friction of the delivery-jaw upon its bearing, substantially as and for the purpose set forth.

3. A target-clamp consisting of a fixed jaw, a jaw pivoted to the throwing-lever, both adapted to engage with the periphery of the target, and a clamp adapted to hold the target against vertical displacement, substantially as described.

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4. A target-clamp consisting of a fixed jaw, a jaw pivoted to the throwing-lever and spring-pressed thereagainst, and a clamp adapted to hold the target against vertical displacement, substantially as described.

5. A target-clamp consisting of a fixed jaw, a jaw pivoted to the throwing-lever, and a spring-clamp adapted to hold the target against vertical displacement, substantially as described.

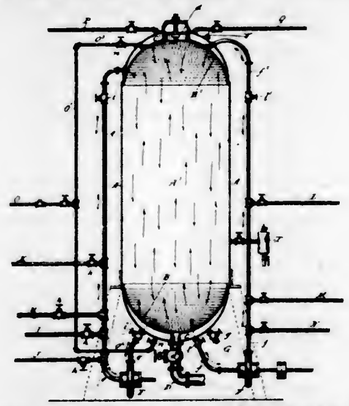
6. In combination with the throwing-lever of a target-trap, a target-clamp consisting of a fixed jaw, a jaw pivoted to the throwing-lever, said jaws being provided with stops adapted to engage with the periphery of the target, and a clamp adapted to hold the target against vertical displacement, substantially as described.

7. In combination with the throwing-lever of a target-trap, a target-clamp consisting of a fixed jaw, a jaw pivoted to the throwing-lever, and a spring-clamp adapted to hold the target against vertical displacement and to press the pivoted jaw against its bearing, substantially as described.

8. In combination with the throwing-lever of a target-trap, a target-clamp consisting of a fixed jaw, B, a pivoted jaw, C, said jaws being provided with stops *b*, adapted to engage with the periphery of the target, and a spring-clamp, D *d*, adapted to hold the target against vertical displacement and to press the pivoted jaw against its bearing, substantially as described.

340,640. PROCESS OF TREATING VEGETABLE SUBSTANCES FOR MAKING PAPER-STOCK.

JOHN D. TOMPKINS, Nassau, assignor of one-half to James Arkell, Canajoharie, and Charles Wetherwax, Albany, N. Y. Filed July 2, 1885. (No model.)



Claim.—1. In the manufacture of paper stock or fiber, the process above described of dissolving the gums, acids, and other water-soluble matters associated with the cellulose of wood, straw, and other vegetable materials, which consists in confining the material within a chamber which is between two adjoining and oppositely-located chambers and separated from each by a perforated diaphragm, then subjecting this confined mass of material to the action of highly-heated water, which is repeatedly circulated through all of said chambers and the confined mass in alternating reversed directions by means of reversely-operating pumps which are operated at alternate times, substantially as described.

2. In the manufacture of paper stock or fiber, the process above described of disintegrating wood, straw, and other vegetable substances, and dissolving the gums, acids, and other matters not soluble with water and associated with the cellulose in said material, which consists in con-

fining a mass of said material within a chamber situated between two adjoining and oppositely-located liquid-chambers, which are separated from the former by perforated diaphragms, then subjecting this confined mass of material to the action of a chemical liquid which is capable of dissolving the said gums and other matters when heated under pressure of steam, and repeatedly circulating the same through all the said chambers and through the confined mass in alternating reversed directions by means of reversely-operating pumps which are operated at alternate times, substantially as described.

3. In the manufacture of paper stock or fiber from wood, straw, and other vegetable materials, the process above described of gathering and depositing below the mass of previously-disintegrated cellulose the dissolved gums, acids, and other matters associated with said cellulose, which consists in drawing for a suitable length of time by means of a pump the cooking-liquor from the upper end of the chamber containing the mass, and again introducing the same liquor by means of the same pump into said chamber at its lower end and below the mass to circulate upwardly, while the disintegrated cellulose operates as a strainer, substantially as described.

4. In the manufacture of paper stock or fiber, the process above described of bleaching in bulk the cleaned disintegrated cellulose or fiber, which consists in confining the mass of fiber within a chamber situated between two adjoining and oppositely-located liquid-chambers, and separated from each by a perforated diaphragm, then subjecting this confined mass of cleaned fiber to the action of a bleaching-liquor, which is repeatedly circulated through all said chambers and through the said confined mass of fiber in alternating reversed directions by means of reversely-operating pumps which are operated at alternate times, substantially as described.

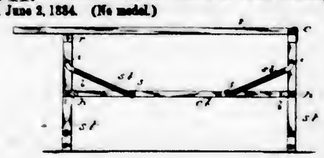
5. In the manufacture of paper stock or pulp or fiber, the process above described of washing, rinsing, and clearing the disintegrated fiber from the dissolved matters and chemicals adhering to and associated with the fiber after the withdrawal of the previously-treating liquids or liquors, which consists in subjecting the mass of fiber, when confined within a chamber situated between two neighboring and oppositely-located chambers and separated therefrom by perforated diaphragms, to the action of repeated circulations of pure water by the force of reversely-operating pumps which are operated at alternate times through all said chambers and the confined mass in alternating reversed directions, with suitable durations of circulation in each direction, substantially as described.

6. In the manufacture of paper stock or fiber, the process above described of treating wood, straw, and other vegetable materials for reduction to pulp or fiber, which consists in confining the material within a digesting-chamber which is separated by perforated diaphragms from liquid-chambers which adjoin the respective opposite ends of the digesting-chamber, then filling all the chambers with cooking liquid or liquor and heating the same under pressure of steam, then holding the material in suspension in the cooking-liquid by the alternate operations of reversely-operating pumps and coacting pipes provided with suitable cocks and having connection with both said liquid-chambers, and repeatedly circulating the cooking-liquid in alternating reversed directions by means of the same pumps operated at alternate times through this suspended mass of material, with suitable durations of circulation in each direction for preserving such suspension, substantially as described.

7. In the manufacture of paper fiber or stock from wood, straw, grasses, or other known equivalent material, the continued progressive process above described, which consists in circulating the differing and respective cooking-liquids above described through the material in the digester in alternating reversed directions with that of the hot-water cooking, followed by the hot-water washing and rinsing and preceding the alkaline cooking, substantially as described.

8. In the manufacture of paper stock or fiber from wood, straw, grasses, or other equivalent material, the continuous and progressive process above described, which consists in circulating in the order substantially as above described the respective treating-liquids set forth through the mass of material contained within the digester in alternating reversed directions, with the alkaline cooking following the hot-water washing and rinsing, preceded by the water-cooking, and followed by the alternating reversed circulations of the bleaching-liquor through the same mass after the alkali has been washed and rinsed therefrom, the material being retained within the digester all the while it is being treated with the respective treating liquids and liquors, all substantially as and for the purposes set forth.

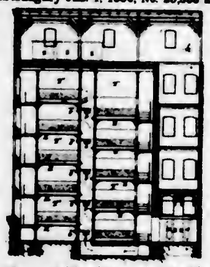
340,641. IRONING-TABLE. CALVIN G. UDELL, Indianapolis, Ind. Filed June 2, 1884. (No model.)



Claim.—1. An ironing-table composed of upright standards *st*, connected by the cross-bar *cb*, hinged to the central portion of the standards by the hinges *h*, the slotted braces *sb*, pivoted to the standards above such cross-bar and provided with right-angled slots at the opposite end, which move upon the steps *s*, secured to the cross-bar *cb*, the removable top *t*, the clamp *c*, and the rubber friction-strip *r*, all combined substantially as described.

2. An ironing-table composed of a folding frame supporting a removable top, one end of which is held in place by a suitable clamp and the other resting upon a rubber friction-strip connected with the other standard, substantially as described.

340,642. APPARATUS FOR MALTING. CARL VÖLCKNER, Vienna, Austria-Hungary. Filed Sept. 23, 1885. (No model.) Patented in France July 13, 1885, No. 170,110; in Germany July 14, 1885, No. 34,114; in Belgium July 14, 1885, No. 69,589; in England July 17, 1885, No. 9,652, and in Austria-Hungary Jan. 1, 1886, No. 25,853 and No. 67,396.

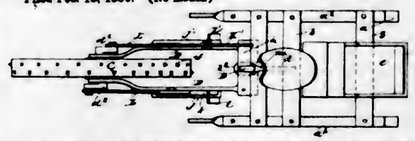


Claim.—1. In a malting-house, the combination, with a single vertical air-shaft, of a series of malting tanks or floors arranged spirally around said air-shaft and having a space below their perforate false bottom, in communication with the air-shaft through suitable valved ports, substantially as and for the purpose specified.

2. In a malting-house, the combination, with a single vertical air-exhaust shaft and an air-exhausting apparatus connected with said shaft at the bottom thereof, of a series of malting tanks or floors arranged spirally around said air-shaft and having a space below their perforate false bottoms communicating with the air-shaft through valved ports, substantially as and for the purpose specified.

3. In a malting-house, the combination, with a single air-exhaust shaft, an air-exhausting apparatus connected therewith at its lower end, and a series of malting tanks or floors arranged spirally around the air-exhaust shaft having spaces below their perforate bottoms in communication with said shaft through suitable valved ports, of an air-supply shaft in communication with the malting tanks or floors through suitable valved ports, and means for cooling and for purifying the air admitted and charging the same with moisture, substantially as and for the purpose specified.

340,643. ICE-VELOCIPEDE. ANDREW WAGNER, Kingston, N. Y. Filed Feb. 13, 1886. (No model.)



Claim.—1. The combination of the sled-frame, a driving-wheel having the cranks, the draw-bars loosely connected at one end to the shaft of the driving-wheel, the king-bolt connecting the draw bars and sled-frame, the operating handles or levers carried by the draw-bars, and links intermediate of the operating-handles and the cranks of the driving-wheel, substantially as described, for the purpose set forth.

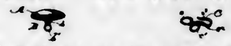
2. The combination of the sled-frame, the driving-wheel having the cranks, the bifurcated draw-bars arranged on opposite sides of the driving-wheel and having one of their ends loosely connected to the shaft thereof, the transverse plates connecting the rear ends of the arms of the bifurcated draw-bars, the king-bolt pivotally connecting the plates and the sled-frame together, the pivoted levers carried by the draw-bars, and links intermediate of the levers and the cranks of the driving-wheel, substantially as described.

3. The combination of the sled-frame, a driving-wheel having the cranks, the draw-bars arranged on opposite sides of the driving-wheel and loosely connected at one end to the shaft thereof, said draw-bars being bifurcated to provide the upper and lower arms, d^3 d^3, the transverse plates A A', connecting the free ends of the draw-bar arms, a staple, A^2, secured to the sled-frame, a king-bolt passing through the transverse plates and the staple and sled frame to pivotally connect the same together, the operating-levers pivoted on the draw-bars, the guides *j j'* for said levers, carried by the draw-bars, the links intermediate of the levers and cranks of the drive-wheel, and the foot-pieces *l l'*, carried by the arms d^3 of the draw-bars, substantially as described.

4. In a vehicle adapted to be used upon ice, the combination of a driving-wheel, provided upon its periphery with spurs and at its center with cranks, with draw-bars D D', levers K K', connecting-rods L, king-bolt B, leaf-spring *m*, and body A of the vehicle.

5. In an ice-vehicle, a body, A, having a spring-rod, *m*, adapted to bear against a king-bolt, B, thereby causing a wheel, C, connected by draw-bars D D' to said king-bolt to bear with greater or less force upon the ice, as and for the purpose set forth and described.

340,644. GARMENT-FASTENING. ANDER WALTHER and MATHIAS SUPPLE, Fond du Lac, Wis. Filed Oct. 13, 1885. (No model.)



Claim.—A button-fastener consisting of a button provided with two rigidly-attached eyes, one above the other, and a hook having a downwardly-projecting curved portion near its free end, as herein shown and described.

340,645. ROPE-CLAMP. PHILIP WERUM, Stryker, Ohio. Filed Dec. 23, 1885. (No model.)



Claim.—1. In a rope clamp or binder, a body having an aperture to receive a cord, a gripping-jaw, and a releasing-handle, in combination with a hinged gripping-jaw, substantially as described.

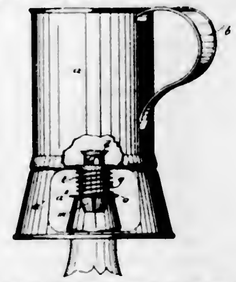
2. In a rope clamp or binder, a hinged gripping-jaw having a hook-shaped outer end, in combination with a body having a hinged gripping-jaw, substantially as described.

3. In a rope clamp or binder, a hinged gripping-jaw having a hook-shaped outer end, in combination with a body having an aperture to receive a cord, a gripping-jaw, and a releasing-handle, substantially as described.

4. In a rope clamp or binder, a body having a releasing-handle and a stationary gripping-jaw, substantially as described.

5. In a rope clamp or binder, a body having a stationary gripping-jaw, in combination with a hinged gripping-jaw having a broad curved rope-bearing surface, as and for the purpose set forth.

340,646. APPARATUS FOR MEASURING LIQUIDS AND DISCHARGING THE SAME INTO BOTTLES. JOSEPH D. WHITCOMB, Worcester, Mass., assignor, by direct and mesne assignments, of three-fourths to Frank N. Eddy, Alfred Elcock, and William E. Hadwen, all of same place. Filed Apr. 20, 1885. (No model.)



Claim.—1. A liquid-holding receptacle or measure having a tube fitted to its base, and having a frusto-conical valve-seat formed therein, and an extended base portion, *a'*, combined with a sliding valve placed within the said tube, and having a nozzle, *m*, terminating at a point above the plane upon which the receptacle rests, the said valve opening inward when placed in the neck of a bottle, and automatically closing when removed therefrom, substantially as described.

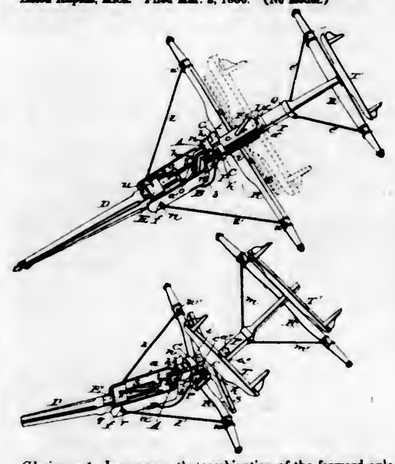
2. A liquid-holding receptacle having a tube fitted to its base, a frusto-conical valve-seat formed therein, and an extended base portion, *a'*, having an opening, a^2, combined with a hollow sliding valve, comprising the valve *d*, stem *e*, frusto-conical nozzle *m*, and a flange, *m'*, all substantially as described.

3. A liquid-holding receptacle having a tube fitted to its base and a valve-seat formed therein, combined with a hollow sliding valve, comprising the valve *d*, stem *e*, nozzle *m*, having grooves or vent-openings *o*, flange *m'*, having vent-openings *o'*, and sleeve *g*, all substantially as described.

4. A liquid-holding receptacle having a tube fitted to its base and a valve-seat formed therein, combined with a hollow sliding valve, comprising the valve *d*, stem *e*, having holes *n*, nozzle *m*, having grooves or vent-openings *o*, flange *m'*, having vent-openings *o'*, sleeve *g*, and a base portion attached to the receptacle, protecting the valve from contact with the floor or bench, all substantially as described.

5. A liquid-holding receptacle having *d* tube fitted to its base, a valve-seat formed therein, and an extended base portion, *a'*, combined with a hollow sliding valve terminating at a point above a plane upon which the receptacle rests, and comprising the valve *d*, stem *e*, frusto-conical valve-seat *m*, and flange *m'*, and with a spring, *t*, to operate substantially as described.

340,647. RUNNING-GEAR FOR WAGONS. EPHRAIM E. WHIPPLE, Eaton Rapids, Mich. Filed Mar. 2, 1886. (No model.)



Claim.—1. In wagons, the combination of the forward axle with the bounds, having two plates, between which the reach extends in advance of the axle, and through one end of which passes the king-bolt, also having arms extending laterally forward on each side of the tongue, and held perpendicular to the axle by rods extending from the forward end to the axle, substantially as set forth and described.

2. In wagons, the combination of the reach having a guard back of the forward axle for guiding the rear end of the bounds, and plates of iron on the top and bottom of the forward end, with the bounds having an upper and lower plate extending back on the top or bottom of the reach, and connected with the reach by the king-bolt, and again attached to the reach, either in advance or back of the axle, by clamps or other suitable lockage, substantially as set forth and described.

3. In wagons, the combination of the bounds having an upper and lower plate extending back of the axle, in which the upper plate has a slot or groove, and also having arms extending forward on both sides of the wagon-tongue, with clamps or suitable equivalent devices for attaching the bounds to the reach, either in advance of or behind the axle, and the tongue-iron pivotally connected to the arms of the bounds, substantially as set forth and described.

4. In wagons, the combination of the bounds connected at one end to the center of the axle by the king-bolt, and connected at the other end to the ends of the axle by rods or braces, with the independent dogs or clamps bolted to the bounds by a plate or cap, and connected at the bottom by a rod or spring, the wagon-tongue connected to the bounds by a swivel-joint, and a suitable guard for tripping the clamps attached to the rear end of the tongue, substantially as set forth and described.

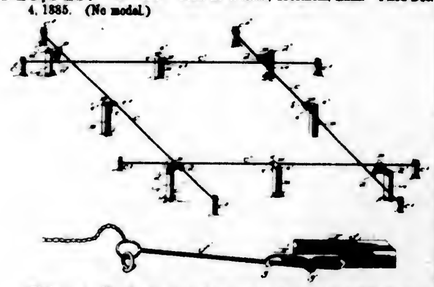
5. The combination, in wagons, of the king-bolt F, the reach P, the axle R, the bounds B, the clamps C C', secured to the bounds B, with the plate A, the rods *z z*, the tongue-iron E, and the tongue D, having an oval guard, *t*, substantially as set forth and described.

340,648. REMEDY FOR HOG-CHOLERA. MARCELLUS S. WHITMORE, Marion, Mo. Filed Jan. 18, 1886. (No specimens.)

Claim.—The herein-described remedial agent, consisting of the described gelatinous residuum resulting from boiling together refuse meat

and solution of potash, combined with copperas, salt, sulphur, sal-soda, turpentine, and coal-oil, in or about in the proportions specified.

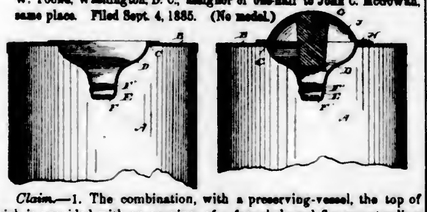
340,649. TETHER. JOHN D. WILSON, Greenleaf, Kans. Filed Dec. 4, 1885. (No model.)



Claim.—1. The herein-described anchor or hopple, consisting of a weight, a casting secured thereon, a rod journaled so as to rotate in the casting and free to move longitudinally therein, and a rope or chain connected to the rod, substantially as described.

2. The herein-described tether, comprising corner-posts having angular plates D, secured thereto, and provided with guides arranged at an angle to each other, the intermediate posts having castings E, and the stakes C^2, in combination with the wires loosely mounted in the guides and castings, substantially as described.

340,650. CLOSURE FOR CANS AND OTHER VESSELS. TAPLEY W. YOUNG, Washington, D. C., assignor of one-half to John C. McGowan, same place. Filed Sept. 4, 1885. (No model.)



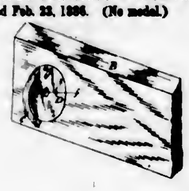
Claim.—1. The combination, with a preserving-vessel, the top of which is provided with an opening, of a funnel-shaped flange extending downwardly from the edge of the said opening and having at the lower edge of its neck or spout an inwardly and upwardly turned rim or flange, substantially as and for the purpose herein shown and specified.

2. The combination, with a preserving-vessel, the top of which is provided with an opening, of a funnel-shaped flange extending downwardly from the edge of the said opening, and a concavo-convex disk of ductile metal secured to the top of the can over the opening in the same, and having a suitable stopper attached to its under concave side and registering with the neck of the funnel, substantially as and for the purpose herein set forth.

3. The combination, with a preserving-vessel, the top of which is provided with an opening, of a funnel-shaped flange extending downwardly from the edge of the said opening, and having at the lower edge of its neck or spout an inwardly and upwardly turned rim or flange, and a concavo-convex disk of ductile metal secured to the top of the can over the opening in the same, and having a suitable stopper attached to its under concave side, substantially as and for the purpose herein set forth.

4. The combination, with a preserving-vessel having a screw-threaded neck and a washer or gasket placed thereon, of a detachable cover constructed with a downwardly-extending screw-threaded flange, said cover being also constructed or provided with a downwardly-extending funnel having an inwardly and upwardly turned flange at the lower edge of its neck, and a concavo-convex disk of ductile metal secured to the upper side of the said cover over the funnel of the same, and having a suitable stopper attached to its under concave side, substantially as and for the purpose herein set forth.

340,651. BED-SLAT FASTENER. WILLIAM J. ACKERMAN, Grand Rapids, Mich. Filed Feb. 23, 1886. (No model.)



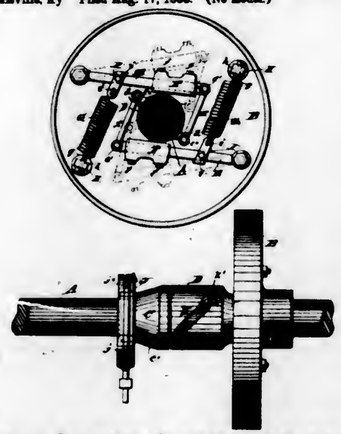
340,651.



Claim.—1. In a bed-slat fastening, the disk D, turning on the countersunk screw *f*, and having a semicircular lug, *c*, with flange *d* thereon, and the finger-post *e*, in combination with a locking side plate, as shown and described.

2. In a bed-slat fastening, the disk D, turning on the countersunk screw *f*, and having a semicircular lug, *c*, with flange *d* thereon, having also the finger-post *e*, in combination with the side plate, C, having the slot *b* and flange *a*, substantially as shown and described.

340,652. GOVERNOR FOR STEAM-ENGINES. GEORGE H. ADAM, Louisville, Ky. Filed Aug. 17, 1885. (No model.)



Claim.—1. In a governor, the combination of the main shaft of engine, valve-stem, and sleeve feathered on the said main shaft provided with a pin standing out from the periphery and having a conical portion adapted to engage in a slot on the enlarged end of the cut-off valve-stem, with a sleeve turning loosely on the feathered sleeve, and provided with an inclined slot, and engaging the pin on the feathered sleeve, and mechanism, substantially as described, secured to the main shaft and adapted to partially rotate the loose sleeve on the feathered sleeve.

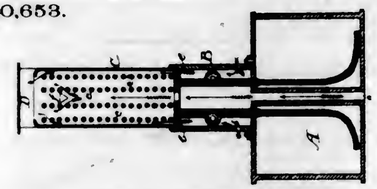
2. In a governor, the combination of the main shaft, the disk rotating therewith, the loaded levers having their outer ends pivoted to the disk and the inner free end adapted to be thrown outward by centrifugal force, and the adjustable springs arranged to draw the said free ends inward, with the sleeve sliding on a feather on the main shaft, the pin standing out from the same, the stem riding on a conical part of said sleeve, and the sleeve turning loosely on the sleeve engaging the feather, and provided with the S-shaped slot engaging the pin on the former sleeve, and the pivoted link-bars connecting the loose sleeve to the free ends of the lever pivoted on the disk, substantially as specified.

3. In a governor, the combination of the main shaft A of the engine, the disk B, weighted levers E, spring G, pivoted block H, hook-blocks I, links *x*, and loose sleeve D, provided with the slot K, and connected by the ears *d* with the links *x*, the stem J, and pin *k'*, having upon it the frictional roller k^2, and coiled spring L, acting against the head of the valve-stem and the support *l*, substantially as specified.

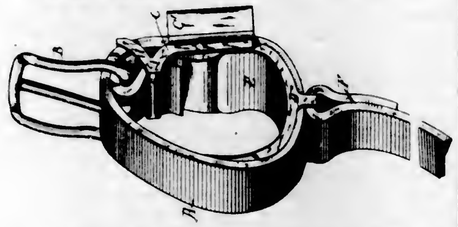
340,653. OIL-STOVE. JOHN AMES, Cleveland, Ohio. Filed Aug. 29, 1885. (No model.)

Claim.—The combination, with oil-stove A, provided with wick-tube casing B, having openings *b b* and *c*, and wick-tubes within said casing, of a combustion-chamber, C, communicating with the casing B by the openings *c c*, and provided with the rods *c c* above and between the openings *c* and the wick-tube, as shown and described, and for the purpose set forth.

340,653.



340,654. THILL-TUG. FREDERICK BENOIT, Chicago, Ill. Filed Feb. 23, 1884. (No model.)



Claim.—1. The thill-tag consisting of the strap A, buckles B and C, frame D, and the cushion, all combined substantially as specified.

2. The combination, with the tag-strap, of the buckle C, constructed as shown, for holding the ends of the strap, substantially as specified.

3. The thill-tag provided with a movable cushion serving as a thill-support and held upon the interior surface of the tag by frame D, substantially as specified.

4. The frame D, having the cross-bars *d'*, in combination with the thill-support or cushion sprung into said frame, substantially as specified.

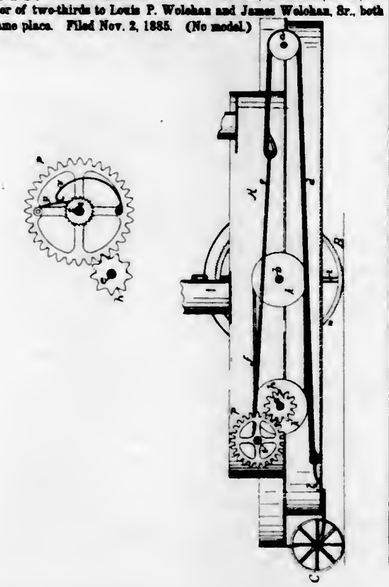
5. The combination, with the tag-strap, of the frame D, having the cross-bars *d'* and the thill-support or cushion secured in said frame, substantially as specified.

6. The cushion having the retaining-piece, in combination with the frame D, having cross-bars *d'*, substantially as specified.

7. The thill-support or cushion E and the tag-strap, in combination with the frame D, supported upon said strap and provided with a loop or cross-bar, d^2, substantially as specified.

8. The combination, with the thill-tag and girth, of a frame, D, movable upon the interior surface of the tag and supporting the girth, substantially as specified.

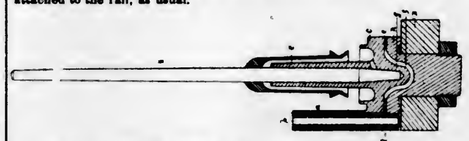
340,655. TOY VEHICLE. JOHN H. BOEHER, Rochester, N. Y., assignor of two-thirds to Louis P. Welehan and James Welehan, Sr., both of same place. Filed Nov. 2, 1885. (No model.)



Claim.—A toy vehicle having a body in the form of a boat, in combination with a shaft, *b*, provided with a sprocket and driving-wheels for the vehicle, said driving-wheel being provided with buckets and extending below the body of the vehicle, a shaft, *t*, with gear *p*, shaft *e*, with pinion and sprocket, a chain, *f*, for said sprockets, an elastic driving-cord secured to the lower part of said body and carried forward over a pulley secured to said body, a cord, *g*, secured to said driving-cord and passed around said shaft *t*, and a supporting-wheel, C, substantially as shown and described.

340,656. SPINDLE-BOLSTER. WILLIAM T. CARROLL and EDGAR J. CARROLL, Worcester, assignors to the Eureka Spindle Company, Ayer, Mass. Filed Dec. 22, 1885. (No model.)

Brief.—The bolster is formed in two parts, one of which supports the spindle and has, eccentric to the axis of the spindle, a tube or stud adapted to fit a stud or tube on the base portion which is adapted to be attached to the rail, as usual.

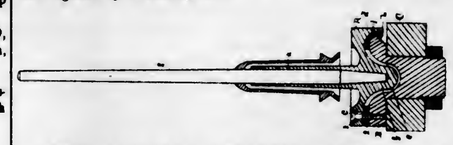


Claim.—1. A spindle and its sleeve-whirl, a combined bolster and step for such spindle, provided with a supporting arm or extension, a bolster-base adapted to be attached to the bolster-rail, as usual, and a connecting pin or stud located outside of or eccentric to the axis of the spindle, and adapted to connect the said bolster and base and support the bolster against the band-pull, as set forth.

2. A spindle and its sleeve-whirl, a combined bolster and step for such spindle, having a vertical tube or socket formed on the base of the bolster at a point eccentric to the axis of the spindle, a bolster-base adapted to be attached to the bolster-rail, as usual, and provided with a fixed pin or stud adapted to enter the said tube or socket and support the bolster therefrom, as set forth.

340,657. SPINDLE-BOLSTER. WILLIAM T. CARROLL, Worcester, assignor to the Eureka Spindle Company, Ayer, Mass. Filed Dec. 22, 1885. (No model.)

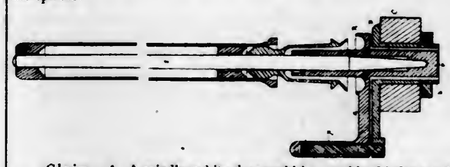
Brief.—The bolster consists of a lower section secured to the bolster-rail and provided with an upturned flange on one side, and an upper section adapted to receive the spindle and provided with an extension adapted to interlock with the upturned flange. The sections are further held together by a retaining-screw.



Claim.—A compound or sectional bolster consisting of a lower section adapted to be attached to the bolster-rail, as usual and provided with an elevated flange on one side and an upper section having a supporting-tube to receive the spindle, and provided with an extension adapted to interlock with said elevated flange, as set forth.

340,658. SPINDLE-BOLSTER. CHARLES H. CHAPMAN, Groton, assignor to the Eureka Spindle Company, Ayer, Mass. Filed Feb. 23, 1886. (No model.)

Brief.—The combined bolster and step is provided with a supporting arm, flexible vertically, and having a vertical socket adapted to fit and be positively locked to a vertical stud attached to the bolster-base, which has an open tubular neck to receive the bolster without contact. The torsional elasticity of the vertical stud permits lateral vibration of the spindle.



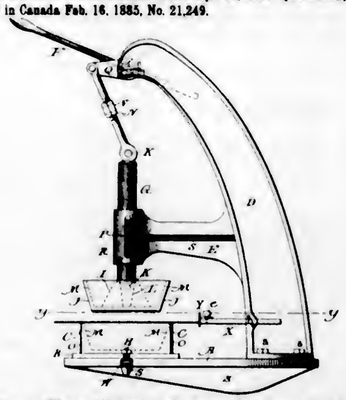
Claim.—1. A spindle and its sleeve-whirl, a combined bolster and step for such spindle provided with a supporting-arm or extension having a vertical tube or socket and a supporting pin or stud adapted to fit within the said tube or socket and positively locked thereto, as set forth.

2. A spindle and its sleeve-whirl, a combined bolster and step therefor provided with a vertical tube or socket connected to the bolster by

means of an intermediate flexible supporting-arm, and a supporting pin or stud adapted to fit within the said tube or socket and support the bolster therefrom, as set forth.

3. A spindle and its whirl, a bolster therefor provided with a downward extension to receive the foot of the spindle and having a supporting arm or extension, and a bolster-base having a supporting pin or stud adapted to engage the said arm and support the bolster therefrom, and provided with an open tubular neck adapted to receive the said downward extension and permit it to pass downward through and below the same without contact therewith, as set forth.

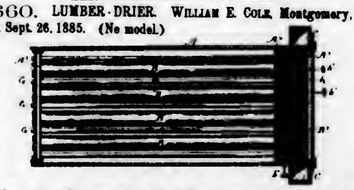
340,659. MACHINE FOR MAKING PANS. WILLIAM CHURCHILL, Yarmouth, Nova Scotia, Canada. Filed Apr. 20, 1885. (No model.) Patented in Canada Feb. 16, 1885, No. 21,249.



Claim.—1. The combination, with the machine having the stationary female die C and the movable die J, and means for operating the latter, of the gage consisting of the slide-rod X, held adjustably on the frame of the machine, and the arms Y Y, adjustable on the rod X and on each other, substantially as and for the purpose set forth.

2. The slide-rod X, for holding and adjusting the position of the slotted arms Y Y, in combination with these arms and the set-screws *e e*, for holding them, whereby sheets of metal of any shape or size may be guided to the proper place for bending into shape, substantially as shown and described.

340,660. LUMBER-DRIER. WILLIAM E. COLE, Montgomery, Ala. Filed Sept. 26, 1885. (No model.)



Claim.—1. The combination of the chamber A', having an air-escape flue out of its ceiling over its front end, doors at both ends, and walls A^3 A^4 at said ends, a series of arches, B, and air-pipes G, parallel with the arches and passing through the walls A^3 A^4, with the rear wall, A^5, and horizontal spark-arresting screens *h*, extending across the chamber substantially on a level with its floor and between the walls A' A^4, substantially as and for the purpose described.

2. The combination of the chamber A', having doors at both ends and an air-escape flue over its front end, a floor having fire-arches, and air-pipes extending parallel with said arches the whole length thereof, chimneys at the rear corners, and a transverse flue leading from the fire-arches to said chimneys, substantially as and for the purpose described.

340,661. NUT-LOCK. GEORGE P. CRAGIN, Fergus Falls, Minn., assignor, by direct and mesne assignments, to C. D. Baker and Ida L. Cragin, both of same place. Filed Dec. 29, 1885. (No model.)



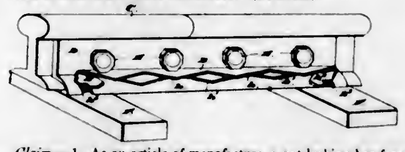
Claim.—As an article of manufacture, a nut-locking bar consisting of two end seats having securing-recesses formed therein, a central web cast integral with the end seats of less transverse breadth and vertical thickness than said seats, and projections forming seats for said web, having arches formed between them, whereby the bar is rendered light in construction, strong, and durable, substantially as described.

340,662. NUT-LOCK. GEORGE P. CRAGIN, Fergus Falls, Minn., assignor, by direct and mesne assignments, to C. D. Baker and Ida L. Cragin, both of same place. Filed Jan. 5, 1886. (No model.)



Claim.—As an article of manufacture, a nut-locking bar made of sheet metal and having two end projections in the lower portions thereof connected by a recessed web, a top web bent at an angle to the lower web and having a series of projections forming side washers for the nuts, formed by recesses in the upper web, and means for securing the bar when in position, substantially as described.

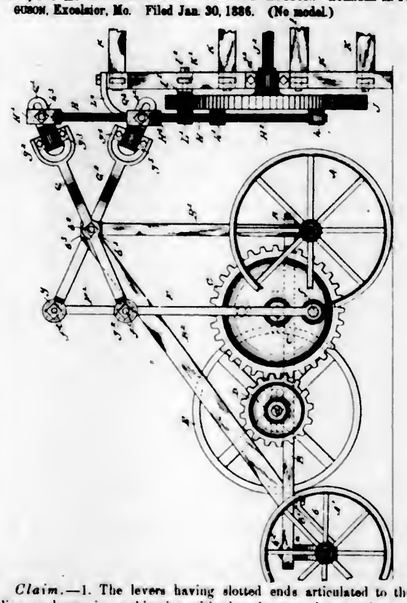
340,663. NUT-LOCK. GEORGE P. CRAGIN, Fergus Falls, Minn., assignor, by direct and mesne assignments, to C. D. Baker and Ida L. Cragin, both of same place. Filed Jan. 9, 1886. (No model.)



Claim.—1. As an article of manufacture, a nut-locking bar formed from thin metal, having suitable indentations and projections, and having end seats formed therewith and bent upon the bar, such bar being bent at or about its central longitudinal line, whereby the projections will form side washers for the nuts in the upper part and base-rests in the lower part, said indentations and projections being arranged substantially as described.

2. In a nut-locking bar, a blank, B, bent at an angle to form an upper and lower portion, projections *b'*, and indentations *b*, formed on the outer edges, being arranged as set forth, the said projections forming side washers for the nuts in the upper part of the bar and base-rests in the lower part thereof, and seats b^2, having recesses b^2, for securing the bar entire to the sleepers, substantially as described.

340,664. POWER FOR CONVERTING MOTION. ZUANGLE R. FERGUSON, Excelsior, Mo. Filed Jan. 30, 1886. (No model.)

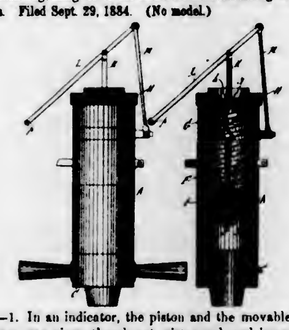


Claim.—1. The levers having slotted ends articulated to their bodies, as shown, in combination with the pitmen and gear-wheels arranged to operate a band-wheel, as specified, the frame provided with momentum-wheels arranged to operate as described, and the intermediate pitmen connecting the motion of the parts, as and for the purpose set forth.

2. The combination of the pitmen angularly connected to the crank-disk on the driving-shaft, and the crank-disks on the shafts provided with the momentum-wheels, and the longitudinal pitman connected to the crank-disks on the shafts provided with the momentum-wheels, arranged to operate as and for the purpose set forth.

3. The guide-frame affixed to the rear supporting-frame, in combination with the latter, and the pitmen connected to the momentum-wheels, and levers arranged to operate the band-wheel, as and for the purpose set forth.

340,665. INDICATOR-PISTON AND ATTACHMENT. EARLE H. GOWING, Reading, assignor to the Ashcroft Manufacturing Company, Boston, Mass. Filed Sept. 29, 1884. (No model.)

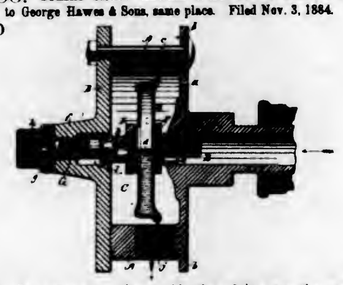


Claim.—1. In an indicator, the piston and the movable parts, viz: the socket-piece, cap-piece, thumb-nut, piston-rod, and lower spring-fitting connected with said piston, any one or all of said parts being made of aluminum or aluminum alloy, substantially as and for the purposes set forth.

2. The combination of the piston having the inwardly-projecting neck, the socket-piece, thumb-nut, cap, and piston-rod having the ball at its lower end, all arranged to be united, substantially as and for the purposes set forth.

3. In an indicator of the character herein set forth, the combination, with the returning-spring, of an aluminum or aluminum-alloy fitting applied upon its lower end, and an aluminum or aluminum-alloy piston having the hollow neck extending up into the body of the piston and arranged to be coupled with said fitting, substantially as and for the purposes set forth.

340,666. STEAM-TRAP. EDWARD C. HAWES, Providence, R. I., assignor to George Hawes & Sons, same place. Filed Nov. 3, 1884. (No model.)



Claim.—In a steam-trap, the combination of the case, the removable head, expansible vessel, the valve, the adjusting-screw having a screw-thread at its head, the bearing-shoe prevented from rotation by means of the angular shank and loosely-fitting holding-socket, and the screw-cap adapted for the screw-thread of the head of the adjusting-screw, substantially as described.

340,667. MAKING FELT FOOT-WEAR. ALFRED A. HAWLEY, Kennebunk, Me., assignor to the Merino Shoe Company, same place. Filed Feb. 17, 1886. (No model.)

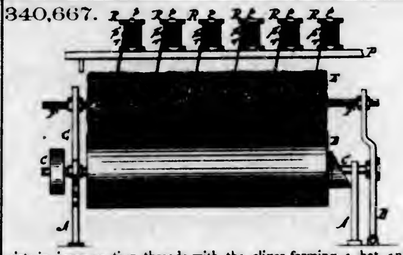
Claim.—1. A machine for making articles of the kind described, provided with a frame for supporting spools of thread, as set forth.

2. The combination of a carding-machine, a former-frame, and a thread-spool supporting-frame, as set forth.

3. As an improved step in the process of making articles of the kind described, the incorporating with the sliver threads as distinguished from a prepared fabric, as set forth.

4. The process of making articles of the kind described, which consists in incorporating threads with the sliver forming a bat, and then manipulating said bat in any of the ordinary ways, as set forth.

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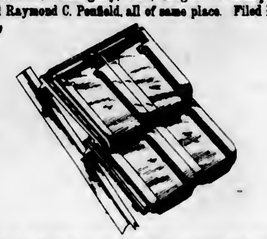
5. As an improvement in the art of making articles of the kind described, a bat consisting of felting material with which are incorporated simple threads as distinguished from a prepared fabric, as set forth.

6. As an improved article, felted foot-wear in which are incorporated threads as distinguished from a prepared fabric, as set forth.

7. As an improved material, felt with which is incorporated simple threads as distinguished from a prepared fabric, as set forth.

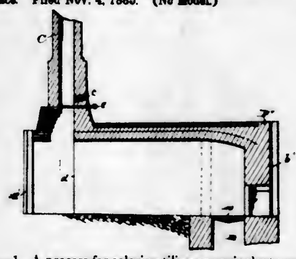
8. As an improved material, felt with which is incorporated threads crossing one another, in manner as set forth, as distinguished from threads in a prepared fabric.

340,668. ROOFING-TILE AS AN ARTICLE OF MANUFACTURE. FRANK HENGSBACH, Willoughby, Ohio, assignor to himself, James W. Penfield, and Raymond C. Penfield, all of same place. Filed Nov. 4, 1885. (Specimen.)



Claim.—As an article of manufacture, a roofing-tile colored to imitate the color of ordinary roofing-slate, the color of the tile extending through the body of the tile, so that a fractured part of the tile will show substantially the same color as the outside of the tile.

340,669. PROCESS OF COLORING TILES OR EQUIVALENT POROUS POTTERY MATERIALS. FRANK HENGSBACH, Willoughby, Ohio, assignor to himself, James W. Penfield, and Raymond C. Penfield, all of same place. Filed Nov. 4, 1885. (No model.)



Claim.—1. A process for coloring tiling or equivalent porous pottery material, consisting in passing steam and smoke into the same while the tiles are in a heated condition, substantially as set forth.

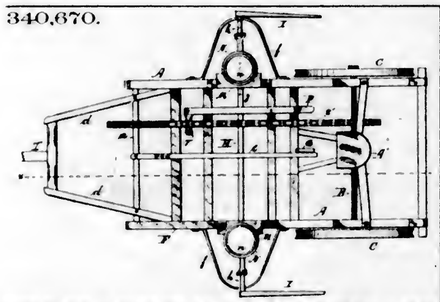
2. A process for coloring tiling or equivalent porous pottery material, consisting in permeating the same with steam and smoke while in the heated condition of the product at the end of the burning process, substantially as set forth.

3. A process for coloring tiling or other porous pottery, consisting in subjecting the same to the combined action of steam and smoke while in a heated condition and excluding the air during the coloring, substantially as set forth.

340,670. CORN-PLANTER. BENJAMIN KENOYER, Marquette, Nebr. Filed Sept. 10, 1885. (No model.)

Claim.—1. In combination with a frame, A, and running-gear, the movable frame F, shaft H, sprocket-wheel K, blocks M M, having the holes *s* and slot *s'*, beveled cog-wheel *n*, having a pin, *u*, a cog-wheel, O, having a hole, *o*, box N, spout R, having a pivoted strip, *v*, and

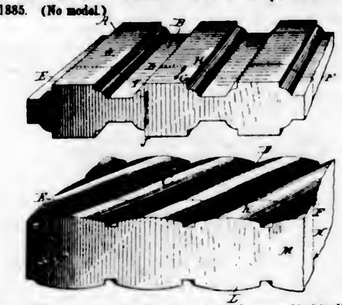
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spring w, lever G, having pins *p p*, and chain *c'*, substantially as herein described.

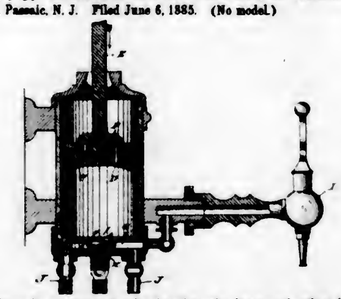
2. In a corn-planter, the movable frame F, having a shaft, H, sprocket-wheel K, jointed arms *h h*, markers I I, supports *f f*, having guides *f' f'*, and lever G, having pins *p p*, substantially as described.

340,671. PROCESS OF MANUFACTURING ORNAMENTAL BALUSTERS, POSTS, &c. FREDERICK MANKEY, Williamsport, Pa. Filed Nov. 13, 1885. (No model.)



Claim.—The process of making ornamental many-sided bodies, substantially as herein set forth, which consists in first producing upon a board or plank a new configuration of elevations and depressions disposed at an angle to the direction of grain of said board; second, dividing said board longitudinally into strips; third, producing on the flat faces of said strips a new configuration analogous to that already formed on said strips.

340,672. APPARATUS FOR DRAWING ALE, &c. RICHARD MORRELL, Passaic, N. J. Filed June 6, 1885. (No model.)



Claim.—In an apparatus for drawing ale, beer, and other liquors, a discharge-cock and a pipe connecting it to a reservoir of liquor, in combination with a force-pump attached to said pipe and arranged to be operated independently of said cock, whereby air may be forced down the pipe into the cask, and the liquor placed under pressure and caused to ascend the pipe through which the air is forced, and to be delivered at the discharge-cock.

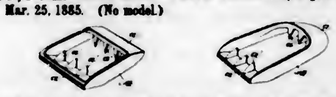
340,673. MUCILAGE-BOTTLE. HENRY C. NATHAN, New York, N. Y. Filed Mar. 5, 1886. (No model.)



Claim.—1. The combination, with a cap adapted to be fitted to the mouth of a mucilage-bottle, of a sponge inserted in the upper portion of the cap, and a plate arranged in the cap below the sponge, and having notches or openings in the edge portion, substantially as specified.

2. The combination, with a cap adapted to be fitted to the mouth of a mucilage-bottle, of a sponge inserted in the upper portion of the cap, and a plate arranged in the cap below the sponge, and having a concave upper surface and notches or openings in the edge portion, substantially as specified.

340,674. HOOP-LOCK. NELSON NEWMAN, Springfield, Ill. Filed Mar. 25, 1885. (No model.)

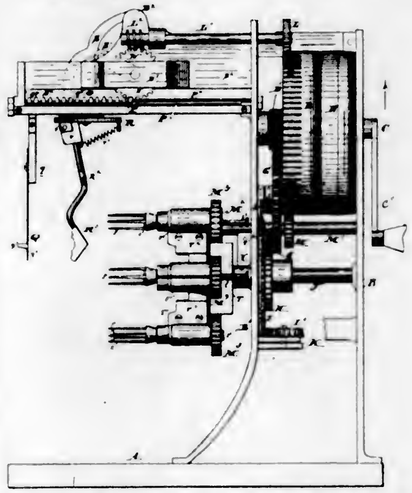


Claim.—1. As an article of manufacture, a hoop-lock consisting of a loop with its opening unobstructed, adapted to receive the overlapping ends of a hoop or band, and provided with sharp ratchet-shaped teeth projecting from opposite faces of the opposite ends, and having their abrupt ends turned toward the middle of the loop, substantially as and for the purpose described.

2. As an article of manufacture, the loop adapted to receive the overlapping ends of a hoop or band provided on each end with ratchet-shaped teeth with their inclined edges made sharp, so situated that the teeth on the opposite ends of the loop engage the outer sides of the overlapping hoop or band ends, substantially as and for the purpose described.

3. As an article of manufacture, the hoop-lock consisting of the loop having on the opposite faces of the opposite ends of the loop ratchet-shaped teeth with sharp longitudinal edges on their inclined sides and with their abrupt ends turned in opposite directions, substantially as and for the purpose described.

340,675. APPLE PARER, CORER, AND SLICER. WILLIAM A. C. OAKS, Antrim, N. H., assignor to the Goodall Company, same place. Filed May 20, 1885. (Model.)



Claim.—1. In an apple-paring machine, an improved device for successively bringing the apples in front of the knives and holding them there long enough to complete the operations of paring, coring, and slicing, consisting of a revolving fork-bearing reel, in combination with a toothed arc driven intermediately from the crank-axle, a latch for preventing the reel moving too far forward, and a pawl pressing against the notched edge of a wheel secured to the shaft, to which the reel is also secured, all substantially as shown and described.

2. The combination, with the paring-knife carriage provided with a rack, O, and mounted to reciprocate in suitable guides of the frame, of the worm-shaft L', connected with the driving gearing, and having worm L^2, worm-wheel N, gearing with rack O, and having a portion of its teeth cut away, as described, bent lever S, pivoted to the machine-frame, link S^2, pivoted to said lever and to the knife-carriage, and the crank S', carried by the shaft of the worm-wheel N, substantially as described.

3. The combination, with the reel provided with a series of fork-shafts, each having a central doffer-pin and mechanism for intermittingly

rotating the reel, of the curved cam-lever K, bevel-pinion F', to which said lever is attached, and a gear for operating said pinion, substantially as described.

4. An improved coring and slicing knife for an apple-paring machine, having a portion of the main blade of the knife projecting below the coring-prong, for the purpose of forming an even bearing against the apple, as set forth and described.

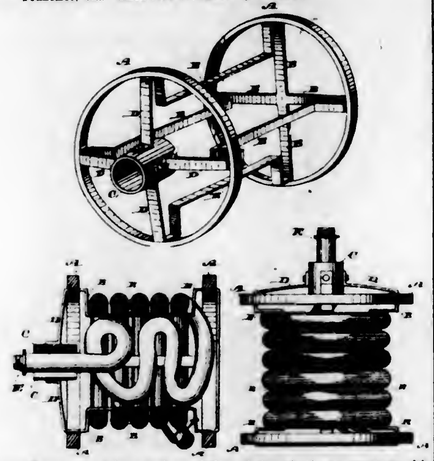
5. In an apple-paring machine, the combination of a paring-knife and its supporting-arm with a heel-piece in which the supporting-arm can turn freely through a small arc, having its own axis for a center, the said motion being limited by a pin in the arm under the heel-piece abutting against stops or the sides of a recess, and a spiral spring attached to projecting points of both knife-arm and turn-table, operating to keep the arm in the central position of its possible motion, all constructed substantially as shown and described.

6. In an apple-paring machine, the combination of the paring-knife arm and heel r with the turn-table R and a wedge-shaped piece of metal, W, screwed to the turn-table, so that it may be pushed more or less under the heel of the knife-arm for adjustment, all substantially as and for the purpose specified.

7. The combination of the intermittingly-revolving fork-bearing reel T with the reciprocating knife-carriage P, driven during the cutting-stroke by a rack, O, and pinion N, and during its return-stroke by a combination of links, S S^2, operated by a crank, S', upon the axis of the wheel N, all substantially as shown and described.

8. In an apple-paring machine, the combination of the driving-pulley D, intermediate gears, D' and G, revolving fork-reel T, intermittingly rotated by a toothed arc, *g*, and held in place by the pawl H^2 and automatic latch V, the paring-knife R', rotating with the turn-table R and reciprocating on the guide I^2 by means of the pinion L, shaft L', endless screw L^2, spur-wheel N, and rack O, the improved quick-return mechanism consisting of the lever S, link S^2, and the crank S', coring and slicing knife Q, and the push-off device K, all substantially as shown and described.

340,676. HOSE-REEL AND IRRIGATOR. JOSEPH PERKINS, San Francisco, Cal. Filed Feb. 17, 1886. (No model.)



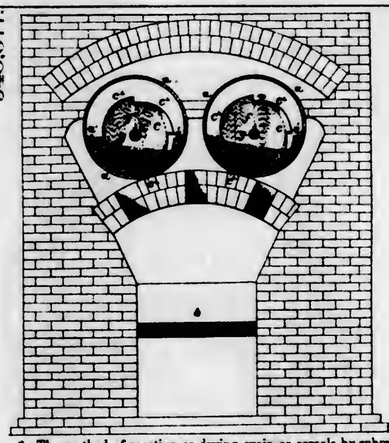
Claim.—1. A hose-reel consisting of the wheels or supports with the uniting-bars forming a reel and an interior space, in combination with an axially-placed ring or sleeve at one end, through which the interior coil of hose may be extended or held, substantially as herein described.

2. A hose-reel having an open space inside the supports for the external coil of hose, within which a secondary coil may be formed, in combination with a hollow hub or central ring, through which the secondary coil of hose may be extended or held, substantially as herein described.

340,677. PROCESS OF AND APPARATUS FOR PREPARING GRAIN OR CEREALS TO BE USED IN BREWING AND DISTILLING. ALEXANDER PERRY, Fairfield Road Bow, County of Middlesex, and ALEXANDER W. GILLMAN and SAMUEL SPENCER, Castle Brewery, St. George's Road, Southwark, County of Surrey, England. Filed Dec. 7, 1885. (No model.)

Claim.—1. The improved method of preparing grain or cereals, substantially as herein described, which consists in first subjecting it to the action of hot water and then drying it by commingling with a heated granular material, as set forth.

340,677.



2. The method of roasting or drying grain or cereals by submitting the same to a bath of heated sand, substantially as herein shown and described, and for the purposes stated.

3. The combination, in apparatus for roasting or drying grain, of a shell, *a*, supplied with sand, side pockets, *a'*, furnace *b*, wire-cloth cylinder *c* c^3, feeding-cylinder *c'*, pockets or lifters c^4, hopper *d*, feed-screw *f'*, screw-conveyer *f*, shaft *g*, and discharge-aperture *s*, substantially as herein shown and described, and for the purpose stated.

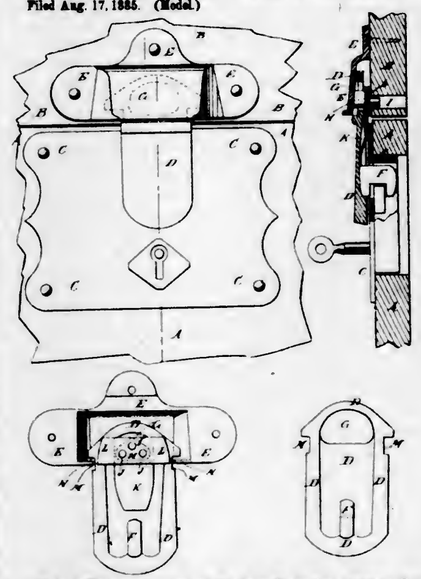
340,678. PELLET FOR TORPEDOES. CONRAD PHLEGER, East New York, N. Y. Filed Feb. 6, 1886. (No model.)



Claim.—1. A torpedo-pellet consisting of a fulminate compound and an inclosing-envelope of fire-proof composition, substantially as herein described.

2. A torpedo-pellet consisting of a fulminate compound and an inclosing-envelope composed of mineral wool and an adhesive cement, substantially as herein described.

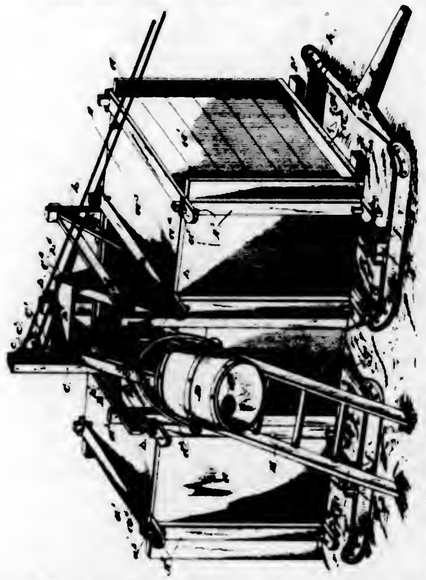
340,679. TRUNK-LOCK HASP. WILLIAM H. PLANT, Brooklyn, N. Y. Filed Aug. 17, 1885. (Model.)



Claim.—The combination of the hasp D, having aperture G and edge recesses M, the base-plate E, recessed upon its inner side, and having stud H and flanges N, the spring K, and the cap-plate L, substan-

tially as herein shown and described, whereby the said hasp will have sufficient play to compensate for the shrinking of the trunk and to allow the hasp-hook to be readily inserted in the aperture of the lock, as set forth.

340,680. LOG-ROAD-MAKING MACHINE. HENRY W. ROBERTS, Cheboygan, Mich. Filed Dec. 28, 1885. (No model.)



Claim.—1. In a road-making machine, the combination of a box divided into suitably-connected compartments, buckets operated by guy-ropes for filling the same with water, openings in the bottom of the central compartment for distributing the water, and means for transporting the same from one position to another, substantially as described.

2. In a road-making machine, the combination of a box divided into suitably-connected compartments, buckets operated by guy-ropes for filling the same with water, openings in the bottom of the central compartment for distributing the water, ladders adapted to rest against the sides of said box and up which the buckets are drawn, and a double set of sleigh-shoes pivotally connected to the said box, substantially as described.

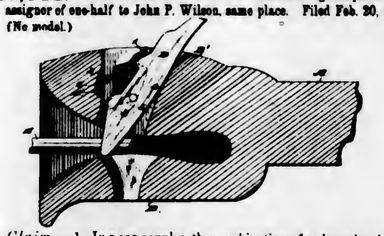
3. In a log-road-making machine, the combination of a box divided into suitable compartments, apertures in the divisional partitions connecting said compartments, suitable guard-rails and inclined rests mounted upon the top of the box, buckets operated by guy-ropes passing through pulleys connected to a vertical post adapted to fill the compartments with water, openings in the bottom of the central compartment for distributing the water, ladders adapted to be set at an incline against the sides of the box and up and down which the buckets are operated, and united sleigh-shoes having a relative movement and upon which the box is mounted, substantially as described.

4. In a log-road-making machine, the combination of the box divided into suitable compartments, apertures for connecting the same, buckets having suitable valves for filling the central compartment with water, openings in the bottom of the central compartment adapted to distribute the water, ladders adapted to rest against the sides of the box, up and down which the buckets pass, suitable guy-ropes for operating these buckets, removable rods closing apertures in the bottom of the box, which allow the water to flow out thereof when open, and combined pivotal sleigh-shoes or bob-sleighs having a relative movement and adapted to run either direction, substantially as described.

5. In a log-road-making machine, the combination of a box divided into a series of compartments, the central one of which is filled with water, apertures connecting these compartments and allowing the water to run into the other divisions, means for filling the compartments with water and allowing it to flow out, and combined relatively-moving sleigh-shoes on which the box is mounted adapted to have the pole and tree attached to either end, substantially as described.

6. In a log-road-making machine, the combination of the box A, divided into compartments A^1 A^2 and A^3, buckets D, operated by guy-ropes C^2 C^3, and sliding up and down the ladders E E, adapted to fill the central compartment, A^2, with water, and openings a^4 in the bottom thereof, to allow the water to flow out, connecting the compartments, suitable guard-rails, B, on the top of the box A, and pivotal sleigh-shoes or bob-sleighs G G, suitably braced and united and adapted to run from either end upon which the box A is mounted, substantially as described.

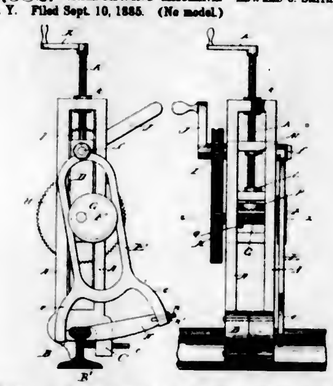
340,681. CAR-COUPLING. JACOB G. SLATER, Poughkeepsie, N. Y., assignor of one-half to John P. Wilson, same place. Filed Feb. 20, 1886. (No model.)



Claim.—1. In a car-coupler, the combination of a draw-head having a vertical longitudinal slot therethrough provided with indentations and projections at the front end thereof and transverse slots about midway of the vertical longitudinal slot recessed into the sides thereof and forming camways, a link-pin having wrist-pins or gudgeons on either side thereof, and projections and indentations on the front part thereof, corresponding to the indentations and projections in the front end of the vertical longitudinal slot, substantially as described.

2. In a car-coupler, the combination of a draw-head having a rib on the upper portion thereof, and provided with a vertical longitudinal slot and vertical transverse slots through said rib and head, said vertical longitudinal slot having projections and indentations at the front end thereof, and the transverse slots being recessed in such shape as to form camways, a link-pin having projections and indentations on the front part thereof corresponding to the indentations and projections at the front end of the vertical and longitudinal slot, whereby said link is prevented from rising up when in place, and also wrist-pins or gudgeons to carry said link-pin up and down the camways out of and into place where the coupler is used, substantially as described.

340,682. RAIL-SAWING MACHINE. EDWARD C. SMITH, Brooklyn, N. Y. Filed Sept. 10, 1885. (No model.)



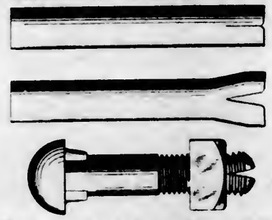
Claim.—1. In a rail-sawing machine, the combination of a vertical frame, a movable carriage mounted therein, a saw-frame pivoted to said carriage, a horizontal shaft mounted in the carriage, provided with a grooved eccentric arranged within the saw-frame, and gear-wheels for actuating said shaft, as set forth.

2. In a rail-sawing machine, the combination of a main frame provided with ways, a carriage moving in said ways, a saw-carrying frame pivoted to a shaft projecting from the carriage, and a horizontal shaft mounted on said carriage and provided at one end with an eccentric confined between the side bars of the saw-frame, and at the other with a gear-wheel which engages a gear-wheel mounted on a shaft projecting from the upper part of said carriage, as set forth.

3. The combination of the main frame, the sliding carriage, the driving-shaft carrying an eccentric, its operating mechanism, and a vertical screw-shaft swiveled to the sliding carriage and provided with a crank, as and for the purpose set forth.

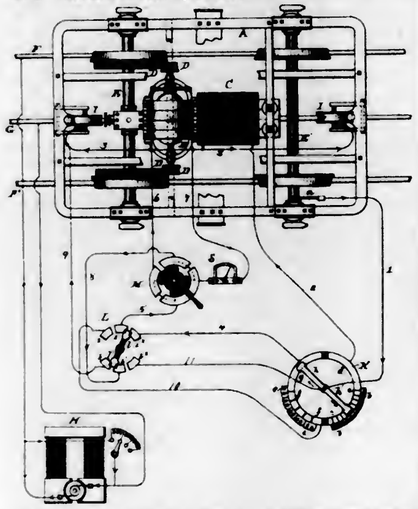
4. In a machine for sawing off rails, the combination of a frame, a carriage mounted in said frame, with a pivoted saw-holding frame, a horizontal shaft carrying an eccentric, its operating mechanism, and a vertical screw-shaft journaled in the carriage and having a cog-wheel on its lower end adapted to engage with a stud on the main shaft, whereby the carriage is lowered to feed the saw, as set forth.

340,683. METHOD OF MAKING SPLIT BOLTS. FREDERICK A. SMITH, Cleveland, Ohio, assignor to the Hotchkiss & Upson Company, Farmington, Conn. Filed Dec. 7, 1885. (No model.)



Claim.—That improvement in the art of forming divided-end bolts which consists of first splitting the ends and spreading them apart, then pressing the two sides thereof together, and finishing the bolt in any ordinary manner, the thread of the finished bolt being formed on the split end, substantially as described, and for the purpose specified.

340,684. ELECTRIC RAILWAY. FRANK J. SPRAGUE, New York, N. Y. Filed Nov. 24, 1885. (No model.)



Claim.—1. The combination, with a car or train of cars on an electric railway, of a braking-generator operated by the movement of the train, having its main field-magnet coils supplied from the line and its armature supplying a local circuit, and an electro-magnetic brake operated by the current in said local circuit, substantially as set forth.

2. The combination, with a car or train of cars on an electric railway, of a braking-generator operated by the movement of said car or train, having its main field-magnet coils supplied from the line and its armature supplying a local circuit, and an adjustable resistance in said local circuit, substantially as set forth.

3. The combination, with a car or train of cars on an electric railway, of a braking-generator operated by the movement of said car or train, having its main field-magnet coils supplied from the line and its armature supplying a local circuit, and means for regulating the strength of said field-magnet, substantially as set forth.

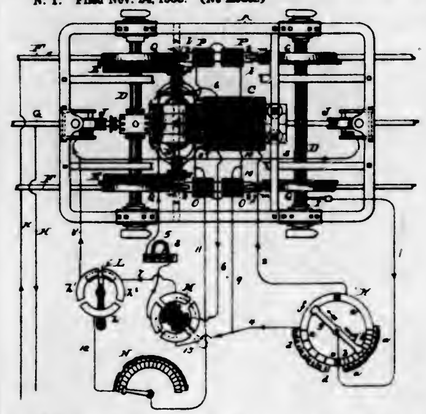
4. The combination, with a car or train of cars on an electric railway, of a braking-generator operated by the movement of said car or train, having its main field-magnet coils supplied from the lines, and its armature supplying a local circuit, a resistance in said local circuit, and means for regulating the strength of said field-magnet, substantially as set forth.

5. The combination, with a car or train of cars on an electric railway, of a braking-generator operated by the movement of said car or train, having its main field-magnet coils supplied from the line and its armature supplying a local circuit, an adjustable resistance in said local circuit, and an adjustable resistance for regulating the current supplied to said main field-magnet coils, substantially as set forth.

6. The combination, with a car or train of cars on an electric railway, of a dynamo-electric machine having its armature-shaft connected mechanically with a driving-axle, and its main field-magnet coils permanently connected electrically with the line, means for regulating the strength of said field-magnet, a local armature-circuit, and means for connecting the armature electrically either with said local circuit or with the line, substantially as set forth.

7. The combination, with an electric railway, of a dynamo-electric machine adapted to be used either as a propelling-motor or a braking-generator and a device indicating strength and direction of current in the armature-circuit thereof, substantially as set forth.

340,685. ELECTRIC RAILWAY. FRANK J. SPRAGUE, New York, N. Y. Filed Nov. 24, 1885. (No model.)



Claim.—1. The combination, with a car or train of cars on an electric railway, of a braking-generator operated by the motion of the train, having its main field-magnet coils supplied from the line and its armature supplying a local circuit, and an electro-magnetic brake operated by the current in said local circuit, substantially as set forth.

2. The combination, with a car or train of cars on an electric railway, of a braking-generator operated by the motion of the train, having its main field-magnet coils supplied from the line and its armature supplying a local circuit, an electro-magnetic brake operated by the current in said local circuit, and means for regulating the strength of said field-magnet, substantially as set forth.

3. The combination, with a car or train of cars on an electric railway, of a braking-generator operated by the motion of the train, having its main field-magnet coils supplied from the line and its armature supplying a local circuit, an electro-magnetic brake operated by the current in said local circuit, and an adjustable resistance for regulating the current applied to said main field-coils, substantially as set forth.

4. The combination, with a car or train of cars on an electric railway, of a braking-generator operated by the motion of the train, having its main field-coils supplied from the line and its armature supplying a local circuit, an electro-magnetic brake operated by the current in said local circuit, and an adjustable resistance in said local circuit, substantially as set forth.

5. The combination, with a car or train of cars on an electric railway, of a dynamo-electric machine having its armature-shaft mechanically connected with a driving-axle and its main field-coils supplied from the line, means for electrically connecting the armature either with the line or with a local circuit, and an electro-magnetic brake operated by current in said local circuit, substantially as set forth.

6. The combination, with a car or train of cars on an electric railway, of a dynamo-electric machine having its armature shaft mechanically connected with a driving-axle and its main field-coils supplied from the line, means for electrically connecting the armature with either the line or a local circuit, an electro-magnetic brake operated by current in said local circuit, and means for regulating the strength of the field-magnet, substantially as set forth.

7. The combination of a car or train of cars on an electric railway a dynamo-electric machine having its armature-shaft mechanically connected with a driving-axle and having its main field-magnet coils supplied from the line, an electro-magnetic brake, a local armature-circuit, means for connecting said local circuit with the magnet or magnets of said brake, and means for connecting the line with said magnet or magnets, substantially as set forth.

8. The combination, with a car-wheel, of a brake comprising an electro-magnet having a fixed core and a movable extension of said core in proximity to said wheel, and a circuit for energizing said magnet, substantially as set forth.

9. The combination, with two car-wheels, of an electro-magnet be-

tween the same having a movable core and two pivoted extensions, each of which is in proximity to one of said wheels, and a circuit for energizing said magnet, substantially as set forth.

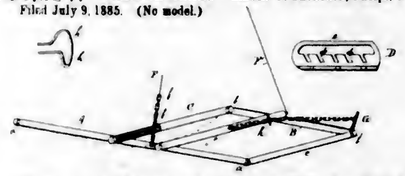
340,686. BUTTON-FASTENER. JAMES F. THAYER, Providence, R. I. Filed Mar. 6, 1886. (No model.)



Claim.—1. A button-fastener formed from wire doubled at the center of its length, the connected portion of said wire being swaged to form a penetrating end, the free ends of the wire being bent outward at right angles to the doubled portion, forming arms which constitute the base or head portion of the fastener, substantially as herein set forth.

2. The button-fastener herein described, formed from wire, comprising the prong 1, having swaged end 3, and the arms 2 2, bent at right angles to the prong and adapted for use substantially as specified.

340,687. HAMMOCK-CHAIR. LESTER P. THOMPSON, Phelps, N. Y. Filed July 9, 1885. (No model.)

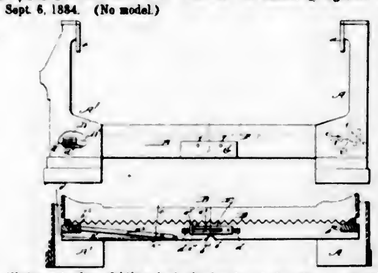


Claim.—1. In a hammock-chair, the arms C C, plates D D, having recesses *d d* and guards *e e*, and the chains *f f*, having links *f' f'*, and the posts A A, arranged substantially as herein described.

2. In a hammock-chair, the bars *c c*, staples *h h*, having the narrowed portions *h' h'*, the chains *g g*, and foot-rest G, for the purposes herein set forth.

3. A jointed hammock or swing chair formed of the posts A A, rungs *a a*, posts B B, rungs *b b*, pivoted arms C C, pivoted bars *c c c c*, seat H, plates D D, having recesses *d d* and guards *e e*, ropes F F', chains *f f*, having links *f' f'*, foot-rest G, chains *g g*, and staples *h h'*, arranged substantially as herein described.

340,688. FOLDING BED. ISAAC R. VAN SLYKE, Chicago, Ill. Filed Sept. 6, 1884. (No model.)



Claim.—1. In a folding bed, the head and foot frames, A A', and the side rails, B B, hinged in their center, and also in the head and foot frames, in combination with the woven-wire bottom D, cross-bars b^2, one of which is provided with pins d^2, resting in a slotted casting, D', on the side rails, the jointed braces D^2, connected to the cross-bar and to the adjacent portion of the side rail, and the cords *e e'*, connected to said braces and led to a convenient point for operating them, substantially as and for the purpose set forth.

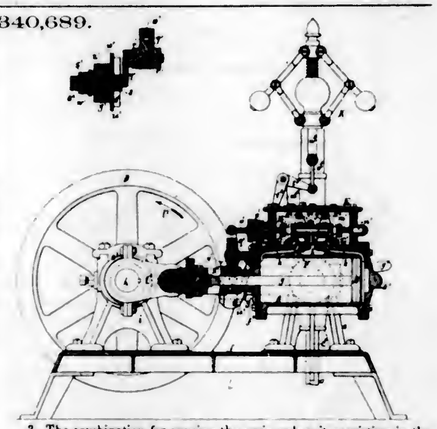
2. The bed-frame B B, hinged at its ends, and arranged to fold upward at its center, in combination with the head and foot frames, A A', having hinged covering-leaves *a a*, and pivoted supporting-bars *a'*, substantially as and for the purpose as set forth.

340,689. OSCILLATING STEAM-ENGINE. FRANK J. WATERS, Providence, R. I. Filed Feb. 25, 1886. (No model.)

Claim.—1. The combination, with each tubular trunnion *a* or *b* of the steam-engine cylinder, and with the chambered bearing or box of such trunnion, of the sleeve *p*, arranged in such bearing and trunnion, and of the flanged and corrugated compound metallic packing, substantially as described, applied to such sleeve and trunnion and the bearing of the latter and to operate therewith, essentially as set forth.

2. The combination of the re-enforces *y* and *z*, substantially as described, applied to each tube *s* of the compound elastic packing, with such packing, and with the tubular trunnion of the steam-engine cylinder, the chambered bearing or box of such trunnion, and the sleeve arranged in such bearing and trunnion, all being substantially as described.

340,689.



3. The combination for moving the main valve, it consisting in the eccentric d^3, collar c^3, connecting-rod b^3, slide *y'*, reverser *u'*, box *s'*, lever *q'*, valve-stem *o'*, and yoke H, such eccentric being fixed on the driving-shaft, and all being arranged and to operate substantially as set forth.

4. The combination, with the reverser and the rest of the mechanism for imparting to the main valve its reciprocating motions, of the mechanism for effecting a reversal of the motion of the engine, and consisting of the lever g^3, slide-bolt h^3, lever i^3, curved rack k^3, link f^3, arm e^3, and shaft *v'*, all being substantially as set forth.

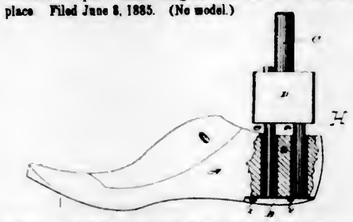
5. The combination, substantially as described, for actuating the auxiliary or cut-off valves G G' by means of the governor K, it consisting in the cylindrical tube n^3, (fastened to the main valve and opening into the exhaust-chamber *k'* thereof by the passage o^3,) the cylindrically-chambered boxes q^3 r^3, (applied to the valves G G' by means as described,) boxes w^3, the two shafts x^3, their forks y^3, and dogs z^3, the tappets d^3, (having curved arms e^3 and projections h^3,) spring g^3, stops i^3, stud f^3, slide k^3, (provided with the friction-roller m^3,) slotted slide p^3, (having an arm, r^3,) connecting-rod s^3, bell-crank t^3, arm u^3, and rod v^3, the latter being pivoted to the sliding sleeve w^3 of the governor K, and all being arranged and to operate essentially as represented.

6. The combination of the rabbets a^4 in the flanges of the tubes of the metallic packing of each trunnion and its sleeve, and the passage b^4 through the trunnion-bearing, with such trunnion, its bearing, and the said metallic packing, all being substantially as set forth.

7. The combination, substantially as described, for actuating the cut-off valves G G' by means of the set cut-off, as described, such combination consisting in the cylindrical tube n^3, (fastened to the main valve and opening into the exhaust-chamber *k'* thereof by the passage o^3,) the cylindrically-chambered boxes q^3 r^3, (applied to the valves G G' by means as described,) boxes w^3, the two shafts x^3, their forks y^3, dogs z^3, and stops i^3, all being arranged and applied essentially as set forth.

8. The main valve constructed as described, provided with ports *g' h'*, exhaust-chamber *k'*, and the depressions *i'*, rib *l'*, and the tube n^3, secured thereto and provided with the passages p^3 o^3, communicating with each other and with the said exhaust-chamber *k'*, in combination with the auxiliary or cut-off valves G G', and their operative boxes q^3 r^3, provided with trunnions, the valves G G' being so constructed as to admit steam from the valve-chest to the ports *g' h'* in two directions.

340,690. LAST AND SUPPORT FOR THE SAME. ELLERY C. WRIGHT, Campello, Mass., assignor to James W. Brooks, trustee, same place. Filed June 8, 1885. (No model.)



Claim.—A spindle and attached block having two pins *e e*, of greater length than the vertical thickness of the cone or heel of the last, combined with a last having two holes to receive the said pins, and having at or near its bottom a metal rest-plate, against which bear the ends of the said pins to determine the position of the bottom of the last, the said

plate and pins sustaining the pressure exerted when the heel is being applied, the last being supported only by the said pins, the latter preventing the tipping or twisting of the bottom of the last out of the proper plane, all substantially as described.

340,691. STEAM-PIPE AND BOILER COVERING. LA FAYETTE ALDRICH, Milwaukee, Wis. Filed June 25, 1885. (No model.)

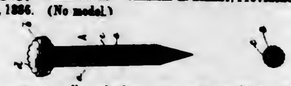


Claim.—1. In a boiler-covering, the combination, with the first sheet-metal wall surrounding the boiler or steam-pipe, of the studs C, having elongated heads extending inward toward and resting upon the surface of the boiler or pipe, and bodies of less diameter extending through said sheet metal and riveted down against its exterior surface, substantially as and for the purpose set forth.

2. In a covering for steam-pipes or boilers, the combination of the sheet-metal plate B, supporting-studs C, adapted to rest upon the boiler or pipe and support said plate B at a distance therefrom, sheet E, resting upon the outward ends of said studs, asbestus paper *d*, felt G, sheet H, and exterior cover, I, substantially as set forth.

3. The combination, with the steam-pipe A, of the covering consisting of the several sheets of metal, paper, and felt, the supporting-studs C, secured in the inner sheet-metal plate and supporting the same at a distance from the pipes or boilers, bolts L, securing the several parts of the covering together, bands K' K', secured to said covering by said bolts L, and bolts M, as adapted to draw the ends of said bands together and secure the covering in place around the pipe, as set forth.

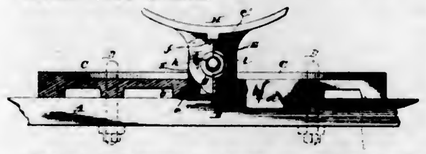
340,692. WIRE NAIL. CHARLES E. BAILEY, Providence, R. I. Filed Jan. 4, 1886. (No model.)



Claim.—1. A nail made from wire and provided with longitudinal ridges and channels, said nail being provided with an integral head of substantially the same configuration as the shank, substantially as herein set forth.

2. The nail A, consisting of the shank *a*, provided with the longitudinal ridges *c* and channels *e*, and provided with the head *b*, having corresponding ridges and channels, substantially as described.

340,693. FIFTH-WHEEL. ADOLPH BOEHMOLE, South Bend, Ind. Filed Jan. 29, 1886. (No model.)



Claim.—1. In a fifth-wheel mechanism, the combination, with a bar having an opening therein and a head-block adapted to form a pivot on which the axle swings, the said head-block passing through the opening in the bar, and having an enlarged head resting in contact with the under surface of said bar, of a wagon-body support secured to the head-block in tilting adjustment, substantially as set forth.

2. In fifth-wheel mechanism, the combination, with an axle, a bar rigidly secured thereto and having an opening therein, a head-block having an enlarged head, the latter resting in contact with the under surface of said bar, and a reach-bar passing loosely through the head-block, of a body-support secured to the head-block in tilting adjustment, substantially as set forth.

3. The combination, with the bar connecting the ends of the curved guide-bar and means for securing the said connecting-bar to the axle, of the head-block extending loosely through the connecting-bar and provided with an enlarged head adapted to rest on the axle, substantially as set forth.

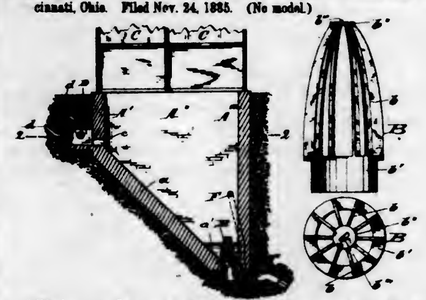
4. The combination, with the head-block resting on the axle and a bar secured to the axle and holding the head-block in position, of the spring-rest and the reach extending through the head-block and locking the spring-rest in tilting adjustment thereto, substantially as set forth.

5. The combination, with the head-block resting on the axle and having a rounded upper end, and a bar secured to the axle and holding the head-block in position thereon, of the spring-rest resting on the rounded upper end of the head-block and the reach extending through the head-block and locking the spring-rest in tilting adjustment thereto, substantially as set forth.

6. The combination, with the axle secured to the reach in tilting adjustment and the circle-bar extending beneath the reach, of the swinging washer or hanger-plate, substantially as described, adapted to hold the circle-bar in close proximity to the reach, substantially as set forth.

7. The fifth-wheel mechanism, consisting, essentially, of the head-block resting on the axle and secured thereto by a removable bar carrying the circle-bar, the spring-rest bearing on the head-block and secured thereto by the reach, and the plate for securing the circle-bar to the reach, substantially as set forth.

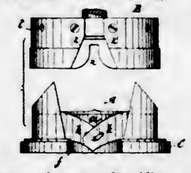
340,694. SANITARY CATCH-BASIN. HENRY C. BUDDENBERG, Cincinnati, Ohio. Filed Nov. 24, 1885. (No model.)



Claim.—1. In a catch-basin, the combination of a preliminary liquid-waste receiver, D, having discharge-openings *c*, with inclined plane *a*, the former's floor being about level with highest point of the latter.

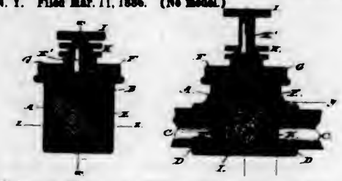
2. In a catch-basin, the combination of liquid-waste receiver D with inclined plane *a* and grate B.

340,695. PROCESS OF MAKING COLLARS. ROBERT BUTTERWORTH, Somerville, assignor to himself and the Reversible Collar Company, Boston, Mass. Filed Jan. 18, 1886. (No model.)



Claim.—The improved process of molding or forming a turn-down paper or cloth-faced paper collar herein described, the same consisting, essentially, in folding the blank on its folding line or crease, wrapping the collar thus folded tightly around a hub or body adapted to keep it distended in circular form, with its folded edge inserted in or disposed immediately adjacent to an annular groove formed in a suitable bed, said groove being curved in cross-section and adapted to receive said folded edge, and then forcing the body of the collar or a portion thereof at its folded edge into said groove by means of an annular flange or flanged die on a cylinder adapted to pass between the flap and band of the collar while wrapped around the hub, whereby the folded edge will be permanently molded or formed on a large curve, and the stock so stretched and molded at and near the folding-line that the collar will have the requisite spring, substantially as described.

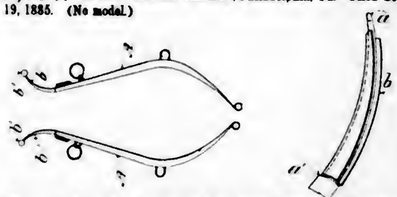
340,696. GAS-REGULATOR. ALEXANDER CALDWELL, New York, N. Y. Filed Mar. 11, 1886. (No model.)



Claim.—1. The combination, with a pipe or conduit for gas and a plug traversing the opening therein, of a cellular or fibrous mass interposed and confined in said conduit under the plug, substantially in the manner and for the purpose herein described.

2. A gas-tight sponge-receptacle provided with openings for connection with gas-pipes, in combination with a plug fitted in said receptacle to traverse said openings and a body of cellular or fibrous material interposed between the openings and under the plug, substantially in the manner and for the purpose herein described.

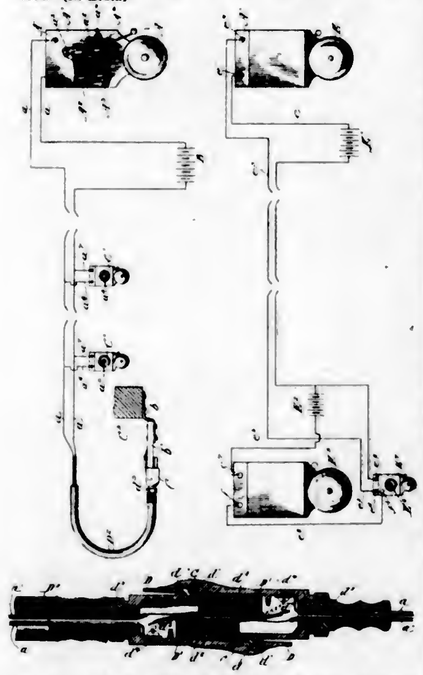
340,697. HAME. ROBERT CAMERON, Philadelphia, Pa. Filed Sept. 19, 1885. (No model.)



Claim.—1. The hame A, having the drawn-down top *a*, in combination with the metal shell *b* and a fastening means on the end of the hame that projects beyond the said shell, substantially as and for the purpose set forth.

2. The hame A, having the drawn top *a* and shoulder *a'*, in combination with the metal shell *b* and a part, as *b'*, placed upon the end of the hame which projects through the shell, to secure said shell in place, substantially as shown and described.

340,698. RAILWAY-SIGNAL. GEORGE F. CARLILE, Cincinnati, Ohio, assignor of one-half to George L. Thomas, same place. Filed Dec. 31, 1884. (No model.)



Claim.—1. In an electric signal system for railway-trains, the alarm-gong A, located on the engine and provided with a vibrating clapper-arm, of the magnets A^1 A^2, the electric wires *a a'*, the battery B, the detachable electric couplings, boxes C, each having spring-plate d^3, the end of one wire being connected with the spring and the other with the box, and the signal-box C', located in each car and having proper connection with the main circuit, whereby signals may be sent to the engine and repeated back, substantially as set forth.

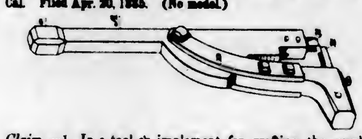
2. The combination, with the electric couplings C C, of the main circuit-wires *a a'*, the ends of one wire being attached to the spring-plates d^3 d^3, and the ends of the companion wire attached to the screws d^4 d^4, whereby the circuit through the couplings, when connected, is normally open, and closed when uncoupled, substantially as and for the purpose set forth.

3. The combination of the electric coupling-boxes C, each having an extension, D', provided with an insulating-block, d^2, having one end rigidly secured to the block, and the main circuit-wire *a* and *a'*, substantially as described.

4. The combination of the main circuit-wires *a* and *a'* and the electric coupling-boxes C, each having the overlapping ends D, with a recess *d*, the projecting end D', having the rib *d'*, the insulating-block c^3, and the spring-plate d^3, substantially as described.

5. The combination of a gong located on the engine, the main circuit-wires *a* and *a'*, connecting the locomotive and cars, the coupling-boxes each having the wires *a* and *a'* connected to distinct parts, one of which is insulated when the boxes are coupled, and the signal-box located in each car and connected with the main circuit-wires, substantially as described.

340,699. GRAFTING IMPLEMENT. ORVILLE H. COMBAR, Pasadena, Cal. Filed Apr. 20, 1885. (No model.)



Claim.—1. In a tool or implement for grafting, the combination, with a suitable handle, of an approximately U-shaped knife for penetrating the edge of the stock, and a blade seated in a pivoted frame and operating at right angles and at the base of the knife for penetrating the side of the stock, substantially as herein described.

2. In a tool or implement for grafting, the combination, with a suitable handle, of an approximately U-shaped knife, means for adjusting the same, and a frame pivoted to the handle and provided with a blade arranged at right angles to and at the base of the knife, substantially as herein described.

3. In a tool or implement for grafting, a handle having an approximately U-shaped knife secured to its lower end and adapted to penetrate the edge of the stock, in combination with a swinging hammer-head pivoted to the handle and moving at right angles thereto, and a blade secured in the hammer-head and operating at its base and at right angles to the knife, whereby the core cut by the knife is detached and a mortise formed, substantially as and for the purpose herein described.

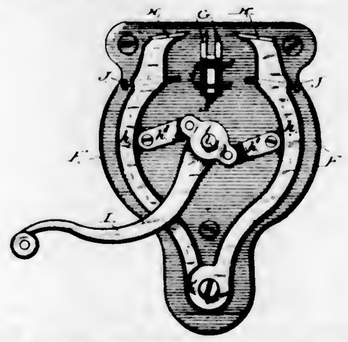
4. In a tool or implement for grafting, the handle A, having a head, *a*, to receive a blow, and the approximately U-shaped knife B, seated in the base of the handle, in combination with a hammer-head, C, the yoke D, pivoting said hammer-head and handle, and the angular gouge blade or chisel E in the inner face of the hammer-head and operating at right angles to the U-shaped knife and at its base, substantially as described.

5. In a tool or implement for grafting, the handle A, having a socket in its base, in combination with the metal casing *b'* in said socket, the U-shaped knife B in the casing, the set-screws b^2, holding said casing in the socket, and holding the knife in the casing, substantially as described.

6. In a tool or implement for grafting, the handle A, in combination with the U-shaped knife B, seated in its lower end, the casing *b'*, and the core *b*, having a bevaled portion for the discharge of the chips, substantially as herein described.

7. In a tool or implement for grafting, the handle A, having a socket in its base, the casing *b'* in said socket, the knife B in said casing, the set-screws b^2, by which the parts are seated, and the washers b^4 between the rear end of the knife and the rear wall of the socket, whereby the adjustment of said knife is effected and controlled, substantially as described.

340,700. GRAFTING IMPLEMENT. ORVILLE H. COMBAR, Pasadena, Cal. Filed Jan. 16, 1886. (No model.)



Claim.—1. In a tool or implement for grafting, parallel spaced knives set edgewise for receiving the end of the scion between them and shaving its sides, in combination with knives working at right angles to the parallel spaced knives and on each side, whereby the shaved sides of the scion are detached, forming a tenon thereon, substantially as described.

2. In a tool or implement for grafting, the longitudinally-adjustable spaced knives G G for receiving the scion between them and cutting its sides to a suitable length by reason of said adjustment, in combination with the transverse knives H H, working at right angles to the knives G G for cutting the shoulders of the tenon, substantially as described.

3. In a tool or implement for grafting, the bench or base F and the seat-strip *f*, secured thereto and having a slot, in combination with the knives G G, secured to each side of said strip *f*, and suitable bolts, whereby the knives may be adjusted laterally and longitudinally, substantially as described.

4. In a tool or implement for grafting, the spaced adjustable knives G G for receiving and shaving the sides of the scion, in combination with the transverse knives H H for detaching the shaved sides of the scion, whereby a tenon having square shoulders is formed, the pivoted handles *h*, on which the knives are secured, and the pivoted lever I and links h^3, whereby said knives H H are operated, substantially as described.

5. In a tool or implement for grafting, the combination of the spaced adjustable knives G G, the transverse knives H H, having pivoted handles *h*, operated as described, and the screw-stops J in said handles, acting against the knives G G to define the limits of approach of the knives H H, substantially as described.

340,701. ADVERTISING DEVICE. WILLIAM J. CRANE, New York, N. Y. Filed June 8, 1885. (No model.)

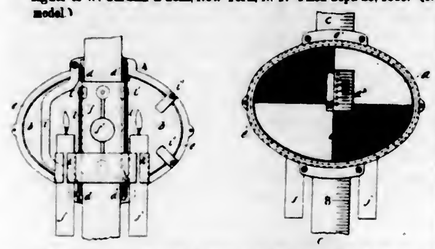


Claim.—1. The combination, with a railroad-car, A, of a board, H, adapted to exhibit advertisements, and of means, as the wheels G and adjustable rail C, for allowing the board and its attachments to move by its inertia or momentum forward or backward with changes of motion of the car, as herein specified.

2. The casing B, rail C, and cushions I, in combination with wheels G and an attached advertisement arranged for joint operation, as specified.

3. The casing B, rail C, and adjusting means D, in combination with each other and with the board H, and wheels G, adapted for joint operation, as herein specified.

340,702. SURVEYOR'S TARGET. ALFRED CRAVEN, Irvington, assignor to W. Gardam & Sons, New York, N. Y. Filed Sept. 25, 1885. (No model.)



Claim.—1. In a surveyor's target, a transparent or translucent target plate or face, substantially as and for the purpose set forth.

2. In a surveyor's target, the combination, with a transparent or translucent target plate or face, of a light reflecting or diffusing backing-piece, substantially as and for the purpose set forth.

3. In a surveyor's target, the combination, with a transparent or translucent target plate or face, of an artificial illuminant attached to the rear side of the target, substantially as and for the purpose set forth.

4. A surveyor's target plate or face composed of a transparent or translucent material having right-angled indicating-lines dividing the same into four quarters—two colored and two plain—the central portion being transparent and provided with a vernier-scale, substantially as set forth.

5. In combination, a light-transmitting target-plate, a leveling-staff, an adjustable holding-frame by which the target-plate is attached to the staff, and an artificial light-holder attached to the rear side of the target-frame, substantially as and for the purpose set forth.

6. In combination, a light-transmitting target-plate, a frame in which the target-plate is held, a light-reflecting backing-piece, and springs attached to the frame and arranged to bear on the backing-piece to hold it against the rear side of the target-plate, substantially as set forth.

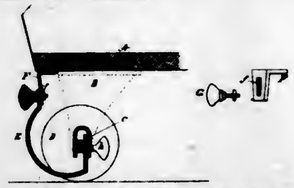
7. In combination, the target plate or face *a*, the rings *a' a'*, side pieces, *d d'*, back plate, *f*, spring-plate *g*, and staff *c*, substantially as set forth.

8. In a surveyor's target, in combination, the open-side frame-pieces *d d'*, the target-plate rings *e e'*, and back plate, *f*, connecting the two pieces *d d'* together, the staff *c*, and the spring *h*, secured to the side piece *d'*, with its central part bearing on the staff through the open space of said side piece, as and for the purpose set forth.

9. In a surveyor's target, in combination, the light-transmitting target-plate *a*, the holding-rings *e e'*, the translucent backing-piece *b*, and the holding-springs *i' i'*, substantially as set forth.

10. In a surveyor's target, in combination, the light-transmitting target-plate *a*, the holding-frame *d d' e e' f*, the staff *c*, and the artificial light-holder *k k l l'*, substantially as set forth.

340,703. ROLLER-SKATE. CHARLES C. DAVIS, Cincinnati, Ohio. Filed Apr. 6, 1885. (No model.)

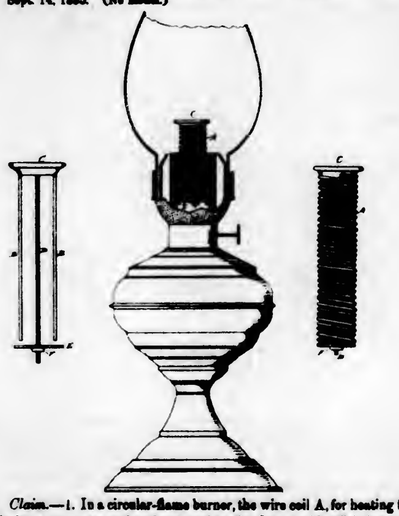


Claim.—1. In combination with the sole-plate of a roller-skate, a hanger-frame secured thereto and carrying rollers, and a flexible bar attached at one end to the sole-plate and at its other end to the truck-axle, and extending in rear of the roller in proximity to the floor-level.

2. In combination with the rear truck of a roller-skate, a flexible band or bar of metal or other suitable material attached to the foot-plate of the skate by a flexible or universal joint and to the truck, and exposing a curved surface to the floor in the rear of the axle, and extended to such proximity to the floor-level as to have its curved surface brought into contact with the floor by slightly raising the toe of the skate, substantially as described.

3. In combination with the rear truck of a roller-skate, a brake-band having its ends attached, respectively, to the axle and to the heel of the skate, and its intermediate curved surface brought into proximity to the floor-level in the rear of the axle, and adapted to be brought into contact with the floor by raising the toe of the skate, substantially as described.

340,704. LAMP. WM. DUFFIELD, London, Ontario, Canada. Filed Sept. 14, 1885. (No model.)



Claim.—1. In a circular-flame burner, the wire coil A, for heating the air in its passage upward and outward to the flame, said coil being supported and adjusted by the rods D and B, the button or cap C, and plate E, substantially as shown, and for the purpose set forth.

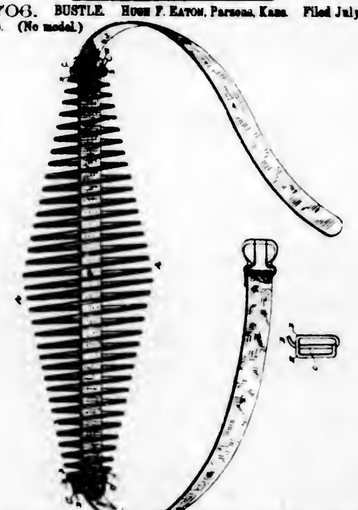
2. In combination with the coil A, the button or cap C, the wires

B D, bar E, and not F, for supporting and regulating said coil, substantially as shown and specified.

340,705. PROCESS OF TREATING AND RECOVERING THE GLUTINOUS AND FINE NITROGENOUS MATTER RESULTING FROM THE MANUFACTURE OF STARCH. WILBERT DURYEA, Brooklyn, N. Y. Filed Aug. 7, 1885. (No specimens.)

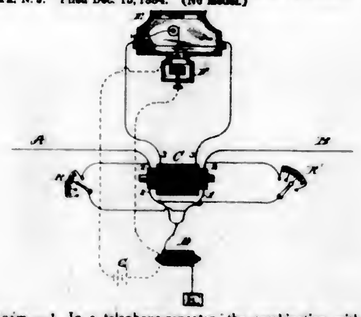
Claim.—In combination with other methods for reclaiming the waste products resulting from starch or glucose manufacture, the process for the treatment and recovery of the glutinous or nitrogenous matter contained in the alkaline spent liquor or waste water which is allowed to escape in practicing these methods, consisting in saving such spent liquor or waste water and treating it with an acid, so as to cause a precipitation and coagulation of the glutinous matter contained therein, and the use of such glutinous matter, substantially as and for the purposes herein described.

340,706. BUSTLE. HUGH F. EATON, Parsons, Kans. Filed July 20, 1885. (No model.)



Claim.—The combination, with an inelastic body belt or strap, of a bustle consisting of a spiral spring inclosing the same, with adjusting-clamps at each end for retaining or securing the ends of the spring upon the strap at desired positions, said clamps consisting of a parallelogram connected to the spring by a lateral continuation of the same extending across the said parallelogram parallel to one of the longer sides, substantially as and for the purposes specified.

340,707. TELEPHONIC REPEATER. THOMAS A. EDISON, Menlo Park, N. J. Filed Dec. 15, 1884. (No model.)



Claim.—1. In a telephone-repeater, the combination with two telephone-lines, of a receiving induction-coil having two opposing primary circuits and a repeating induction-coil whose secondary circuit is connected with both the primary circuits of the receiving induction-coil, substantially as set forth.

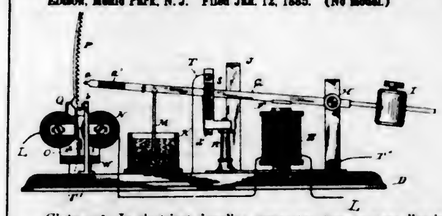
2. In a telephone-repeater, the combination, with two telephone-lines, of a receiving induction-coil having two opposing primary circuits, a repeating induction-coil whose secondary is in circuit with both said primary circuits, and a repeating telephone-receiver operated by induction from the receiving induction-coil, substantially as set forth.

3. In a telephone-repeater, the combination, with two telephone-lines, of a receiving induction-coil having two opposing primary circuits connected with said lines, a repeating telephone-receiver in the secondary circuit of such receiving-coil, a transmitting induction coil having its secondary in circuit with the opposing circuits of the receiving induction-coil, and a repeating telephone-transmitter worked by the receiver and located in the primary circuit of the repeating induction-coil, substantially as set forth.

4. In a telephone-repeater, the combination, with two telephone-lines, of a receiving induction-coil having two opposing primary circuits, a repeating induction-coil whose secondary circuit is connected with both said primary circuits, and resistances for balancing the lines, substantially as set forth.

5. In a telephone-repeater, the combination, with two telephone-lines, of a receiving induction-coil having two opposing primary circuits, a repeating induction-coil whose secondary circuit is connected with both said primary circuits, and resistances located in shunts around each opposing primary circuits for balancing the lines, substantially as set forth.

340,708. ELECTRICAL SIGNALING APPARATUS. THOMAS A. EDISON, Menlo Park, N. J. Filed Jan. 12, 1885. (No model.)

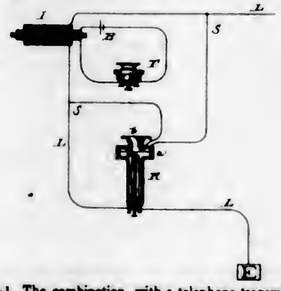


Claim.—1. In electrical signaling apparatus, two or more line-instruments, each comprising a moving contact and a stationary contact of a local signaling-circuit, all said stationary contacts being situated differently relative to the moving contacts, and mechanical means controlled from the signaling-station for setting said moving contacts in motion, in combination with means at the signaling-station for stopping the movement of said contacts at any determined point to close the desired local circuit, substantially as set forth.

2. In electrical signaling apparatus, two or more instruments, each controlling a local circuit and each comprising an electro-magnet in the main line, a contact-arm moved by said magnet and connected with the local circuit, means for retarding the movement of said arms, a stationary local-circuit contact, all said stationary contacts being situated differently relative to said moving contact-arms, and a polarized relay in the line for stopping the movement of said contact-arms at any determined point to close the desired local circuit, in combination with a line-circuit breaker and reverser at the signaling-station, substantially as set forth.

3. In an electrical signaling apparatus, two or more signaling-instruments, each comprising a local-circuit contact having, when set in motion, a continuous retarded movement, electro-magnetically controlled means affected by the line-current for setting the same in motion, a stationary local-circuit contact, all said stationary contacts being situated differently relative to said moving contacts, and an electro-magnetic device in the line for stopping the movement of said moving contact and closing the local circuit when the desired stationary contact is reached, in combination with means at the signaling-station for affecting first the devices setting the contacts in motion and then the devices stopping the same, substantially as set forth.

340,709. TELEPHONE-CIRCUIT. THOMAS A. EDISON, Menlo Park, N. J., and EZRA T. GILLILAND, Boston, Mass. Filed Oct. 14, 1885. (No model.)

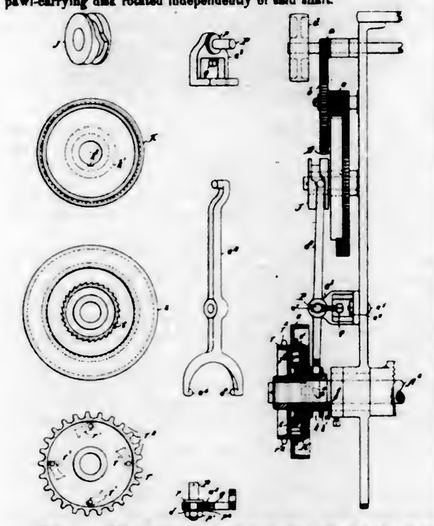


Claim.—1. The combination, with a telephone transmitter and receiver and an induction-coil in the line, of a shunt around the induction-coil and a circuit-controller in said shunt carried by the receiver, substantially as set forth.

2. The combination, with a telephone-transmitter and its induction-coil, of the receiver having a loose ear-piece and a shunt-circuit around the induction-coil controlled by the movement of said ear-piece, substantially as set forth.

340,710. MECHANISM FOR STRIPPING THE FLATS OF CARDING-MACHINES. THOMAS C. ENTWISTLE, Lowell, Mass. Filed Nov. 12, 1885. (No model.)

Brief.—The object is to drive the stripping mechanism slowly while passing from one flat to another and rapidly while actually stripping. The pulley which drives the stripping mechanism is loose, but does not slide, on the main shaft of the card, and is adapted to be rotated by a friction-clutch sliding on said shaft engaged therewith at predetermined times, or at a slower speed than that of the main shaft, by a pawl-carrying disk rotated independently of said shaft.

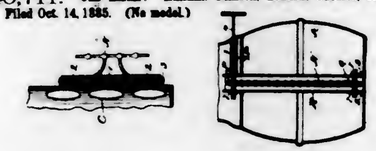


Claim.—1. The combination of the main shaft, the stripping mechanism and its frame, the pulley turning loosely on said main shaft, a disk loose on said shaft, and means, as described, of rotating the same independently thereof, and adapted to engage said loose pulley and to rotate the same, said loose pulley forming one part of a clutch, the other part of said clutch sliding on said main shaft and rotating therewith, and adapted to be engaged with said loose pulley, to rotate the same at a speed greater than that of said disk, and means, as described, for engaging and disengaging the parts of said clutch at predetermined times, as and for the purpose specified.

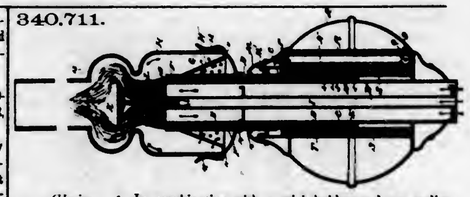
2. The combination of the main shaft, the stripping mechanism and its frame, the pulley turning loosely on said main shaft, a disk provided with pawls adapted to engage said loose pulley, means of rotating said disk independently of said shaft, said loose pulley forming one part of a clutch, and the other part of said clutch sliding on said shaft and rotating therewith, and adapted to be engaged with said loose pulley, to rotate the same at a speed greater than the speed of said disk, and means, as described, for engaging and disengaging parts of said clutch at predetermined times, as and for the purpose specified.

3. The combination of the main shaft provided with a spline, the pulley loose on said shaft and forming part of a friction-clutch, the other part of said friction-clutch provided with a groove and sliding on said shaft and caused by said spline to rotate therewith, said loose pulley being provided with a ratchet concentric therewith, a disk turning loosely on said shaft and provided with pawls adapted to engage the teeth of said ratchet, and means for rotating said disk at a slower speed than the speed of said shaft, and means, as described, for engaging and disengaging the parts of said clutch at predetermined times, as and for the purpose specified.

340,711. OIL-LAMP. HERMAN FRASCH, London, Ontario, Canada. Filed Oct. 14, 1885. (No model.)



340,711.



Claim.—1. In combination with a wick-holder and an endless chain for raising and lowering the same, means, substantially such as the perforated projection and lugs and the removable connecting-pin described, whereby the wick-holder is detachably connected with said chain, as set forth.

2. The combination, with the central draft-tube, the endless chain, and the wick-holder detachably connected with said chain, of the outer tube surrounding the draft-tube and wick and detachably connected with its support, so that the outer tube being removed the wick-holder may be detached from the chain and be removed also, substantially as described.

3. The combination, with the wick and wick-holder, of the stationary absorbent or capillary body outside of and around said wick, having a vertical slot on one side, and the wick-raising mechanism connected with the wick-holder through said slot, substantially as described.

4. The combination, in a wick-raising mechanism, of a wheel, a perforated journal for said wheel, a bearing for said journal open at the end to leave the said journal accessible, and an operating-rod fixed in said journal for turning said wheel, the accessibility of the journal permitting the operating-rod to be inserted in said journal after the other parts have been assembled, substantially as described.

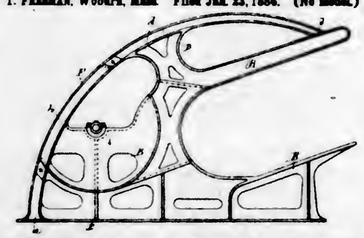
5. The combination, with the wheel of a wick lowering and raising mechanism, to which the power is applied, and the lamp-bowl or oil-reservoir, of a perforated journal, and a stationary tube open at the ends and surrounding said journal and extending to the side of the lamp-bowl or oil-reservoir, with which it makes a close joint, the perforation being lengthwise of said journal to receive a rod for revolving said wheel, substantially as described.

6. The combination, with the bowl or oil-reservoir of a lamp, of the endless chain therein, the sprocket-wheels, the trough which incloses said chain and in which the wheels are journaled, and the operating-rod, one of said sprocket-wheels having a tubular journal, and the operating-rod fitting in said journal, and the said rod, wheels, and chain forming a wick raising and lowering mechanism, substantially as described.

7. The combination, in a lamp, of the following elements: a bowl or oil-reservoir, a tube passing through and projecting above the same, a wick-holder surrounding said tube and sliding upon the same, the slotted cylinder depending from a ring at the top of the bowl or reservoir, the exterior tube surrounding the aforesaid tube detachably connected with the bowl or reservoir and supporting the chimney holder or basket, and the endless chain provided with a projection extending through the slot in the said cylinder and detachably connected with the wick-holder, substantially as described.

8. In a lamp, the combination, with the draft-tube and the button for spreading the flame, of the small tube, the grooved ring in the end of the tube, and the rod fixed in said plug and supporting the button, substantially as described.

340,712. FRAME FOR LEATHER-WORKING MACHINES. JAMES T. FREEMAN, Woburn, Mass. Filed Jan. 23, 1886. (No model.)

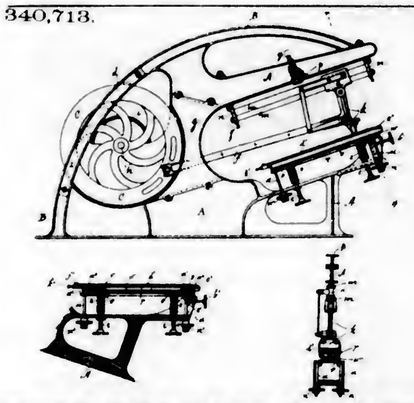


Claim.—A leather-dressing machine having a projecting arm and an upwardly curved brace integral with said arm and supporting it at its outer end, said brace extending rearwardly to the base of the machine, substantially as set forth.

340,713. LEATHER-DRESSING MACHINE. JAMES T. FREEMAN, Woburn, Mass. Filed Apr. 30, 1885. Reserved Mar. 11, 1886. (No model.)

Claim.—1. A glassing-jack frame having a tool-supporting arm projecting forward above the table, combined with an upwardly-curved

340,713.



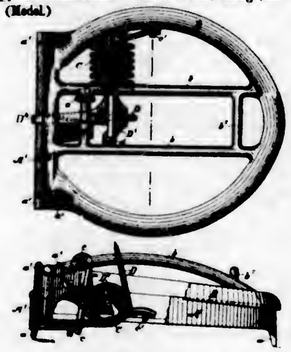
brace extending from the forward end of said arm to the rear portion of the base of the frame, in combination with a glassing-tool and its operating mechanism, the slide-rod *m*, and its adjustable block *p*, for the purposes and substantially as described.

2. The combination, with the glassing-tool and its operating mechanism, of the upper slide-rod, *m*, and its adjustable block *p*, set in the frame, for the purposes and substantially as described.

3. The combination, with the glassing mechanism of a glassing-jack, of the table *r* and its bolster *d'*, provided with an adjusting-clamp, whereby the bolster may be tightened as desired, substantially as shown and described.

4. The combination, with the glassing mechanism of a glassing-jack, of the table *r*, provided at either end with the inclined faces *a'*, and held in position laterally by the projections *v*, and the plate *w* and its adjusting-screw, said plate *w* having corresponding inclines *a'*, whereby the table *r* may be raised or lowered, substantially as described.

340,714. ANIMAL-TRAP. JOHN C. GOULD, Chicago, Ill. Filed Aug. 4, 1885. (Model.)



Claim.—1. In a trap, a frame carrying a coiled spring and the cover hinged to said frame in upwardly-open bearings, in combination with said spring and a link connecting the same with the cover, substantially as specified.

2. The trap consisting of the frame having the arm C' *d*, the cover carrying the stop-arm E, the bait-holder, and the spring and link, substantially as set forth.

3. The trap consisting of the frame A A' and arm C' *d*, cast in one piece, the cover B B' and arm E, cast in one piece, the bait-holder and its extension, cast in one piece, the spring, and the link, substantially as specified.

4. The trap consisting of an open frame carrying within it a support for the spring and bait-holder, a cover hinged to said frame in open bearings and having a stop-arm, a bait-holder, a spring, and a link connecting the spring to the cover, all combined and operating substantially as specified.

5. The bait-holder D D', having the rear extension acting as a counter-weight, in combination with the support *d*, substantially as specified.

6. The bait-holder consisting of the under grooved piece, D', and the point D, in combination with the inverted-V-shaped support *d*, substantially as specified.

7. The bait-holder D D', having the rear extension and the support *d*, in combination with the bars A' B', substantially as specified.

8. The bait-holder D D', having the rear extension and guard *w*, and the support *d*, in combination with the stop-arm E, substantially as specified.

9. In a trap, a frame and a hinged spring-cover, the latter overlapping the edge of the frame when closed thereon, substantially as specified.

10. The cover and its stop-arm E, in combination with the frame and its guard *o*, substantially as specified.

340,715. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. JOHN R. HARER, Springfield, Ohio, assignor to the Harris Button-Hole Attachment Company, New York, N. Y. Filed July 27, 1885. (No model.)



Claim.—1. In a button-hole attachment for sewing-machines, the combination, with a feed-bar having a cloth-clamp at its forward end and a guiding-slot at its rear end, of a series of pins arranged centrally of said guiding-slot, an intermittingly-rotated ratchet-wheel, a pinion operated by said wheel, and a hub or boss between said wheel and pinion, for holding the latter in continuous engagement with said pins, substantially as set forth.

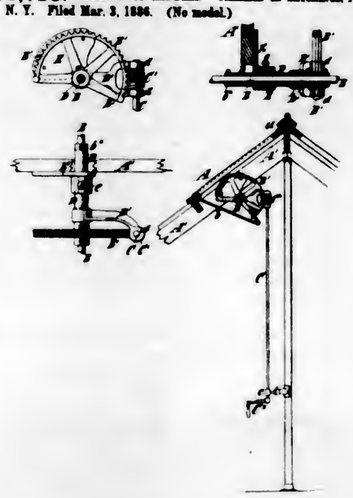
2. In a button-hole attachment for sewing-machines, the combination, with a feed-bar having a cloth-clamp at its forward end and an adjustable or extensible guiding-slot at its rear end, of a series of pins arranged centrally of said guiding-slot, an intermittingly-rotated ratchet-wheel, a pinion operated by said wheel, and a hub or boss between said wheel and pinion, for holding the latter in continuous engagement with said pins, substantially as set forth.

3. In a button-hole attachment for sewing-machines, the combination, with a feed-bar having a cloth-clamp at its forward end and an adjustable or extensible guiding-slot at its rear end, of an intermittingly-rotated pinion and a cylinder having several rows of pins projecting radially from its periphery, said rows being of different lengths, and said cylinder being adapted to be rotated to bring any one of said rows into operative position relative to said pinion, substantially as set forth.

4. In a button-hole attachment for sewing-machines, the combination, with the feed-bar, cloth-clamp, and intermittingly-rotated pinion, of a cylinder having several rows of pins and a grooved head, a bracket in which said cylinder is journaled, a pivoted locking-latch for said cylinder, and a catch for securing said latch in locking position, substantially as set forth.

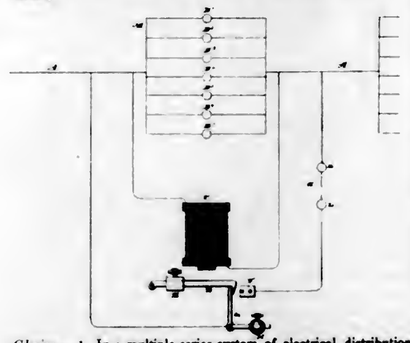
5. In a button-hole attachment for sewing-machines, the combination, with a feed-bar having a cloth-clamp and a rack, of a pinion gearing with said rack, a ratchet-wheel for operating said pinion, and an adjusting hand-wheel below said ratchet-wheel, whereby the feed-bar may be adjusted independently of the operating-pawl of the ratchet-wheel, substantially as set forth.

340,716. TRANSOM-LIFTER. CHARLES E. HITCHCOCK, New York, N. Y. Filed Mar. 3, 1886. (No model.)



Claim.—In a pivoted sash-worker, the combination, with a rock-shaft carrying arms to be connected with the sash, an operating-shaft, and gearing connecting the two shafts, of a sleeve forming a bearing for the rock-shaft, and having a projecting arm carrying the bearing for the operating-shaft, and a hanger wherein said sleeve is supported, and in which it may be turned and adjusted axially, substantially as herein described.

340,717. MULTIPLE-SERIES SYSTEM OF ELECTRICAL DISTRIBUTION. ARTHUR J. HOLT, Grand Rapids, Mich., Frances A. Holt administratrix of said Arthur J. Holt, deceased. Filed June 18, 1885. (No model.)



Claim.—1. In a multiple-series system of electrical distribution, the combination, with a group of electro-receptive devices and a shunt-circuit around said group, of another shunt-circuit having a resistance less than that of any one of the electro-receptive devices of the group and greater than the resistance of all of said electro-receptive devices, and an automatic cut-out or shunting device constructed and arranged so that upon the failure of any one or of any predetermined number of the electro-receptive devices of the group it will automatically throw in circuit, parallel with the remaining electro-receptive devices of the group, the shunt of the predetermined resistance, as specified, substantially as set forth.

2. In a multiple-series system of electrical distribution, the combination, with a group of electro-receptive devices, of a shunt of high resistance around the group having an electro-magnet included therein, and a supplemental shunt of less resistance than any one of the electro-receptive devices and of greater resistance than all of said electro-receptive devices, and containing a circuit-controlling device that is actuated by said electro-magnet, substantially as set forth.

3. In a multiple-series system of electrical distribution, the combination, with a group of electro-receptive devices, of a constantly-closed shunt of high resistance having an electro-magnet included therein, and a supplemental shunt around the group of electro-receptive devices, said shunt adapted to remain open in the normal operation of the electro-receptive devices of the group, and having a resistance less than the resistance of any one of the electro-receptive devices of the group and greater than all of said electro-receptive devices, and devices, actuated and controlled by the magnet in the constantly-closed shunt-circuit, for automatically closing the supplemental shunt-circuit on the failure of one or more of the electro-receptive devices of the group, substantially as set forth.

4. In a multiple-series system of electrical distribution, the combination, with a group of electro-receptive devices, of devices controlled by the current in a shunt-circuit around the group, and adapted to automatically reduce the flow of current through the remaining electro-receptive devices of the group on the failure of any one or more of them to operate, substantially as set forth.

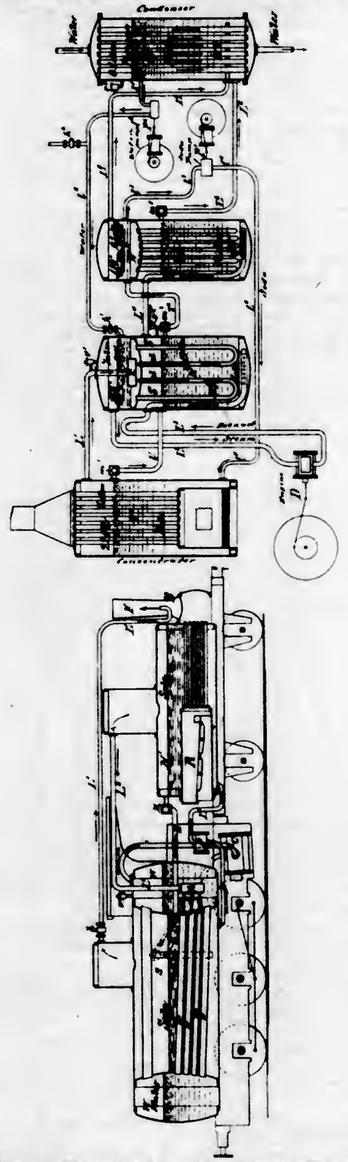
5. In a multiple-series system of electrical distribution, the combination, with a group of electro-receptive devices, of a constantly-closed shunt of high resistance including an electro-magnet, a normally-open shunt including a resistance less than the working resistance of any one of the electro-receptive devices, an armature adapted to be actuated by said electro-magnet, and a circuit-closer controlled by the armature and adapted to close the normally-open shunt, substantially as set forth.

6. In a multiple-series system of electrical distribution, the combination, with a group of electro-receptive devices, of an electro-magnet included in a constantly-closed shunt, a switch-lever included in a normally-open shunt, and an armature constructed to engage said switch-lever and retain it in its open position, and to be released by the attraction of the electro-magnet, substantially as set forth.

7. In a multiple-series system of electrical distribution, the combination, with a group of electro-receptive devices, of a constantly-closed shunt of high resistance around the group, and an electro-magnet included therein, a normally-open shunt around the electro-magnet, and devices, actuated and controlled by the electro-magnet, for automatically closing the shunt and diverting a portion of the current around the electro-magnet, substantially as set forth.

8. In a multiple-series system of electrical distribution, the combination, with a group of electro-receptive devices, of a shunt-circuit around said group, and mechanism, actuated and controlled by the current, for diverting a portion of the current through the shunt and a reduced portion through the remaining electro-receptive devices of the group on the failure of any one or more of them to operate, substantially as set forth.

340,718. METHOD OF DRIVING STEAM-ENGINES. MORITZ HOHENEMSER, Aix-la-Chapelle, Germany. Filed Nov. 14, 1885. (No model.)



Claim.—1. The combination, with a soda steam-boiler comprising a vessel for containing a solution of high boiling-point, into which exhaust-steam is absorbed, and a generating-vessel for containing water from

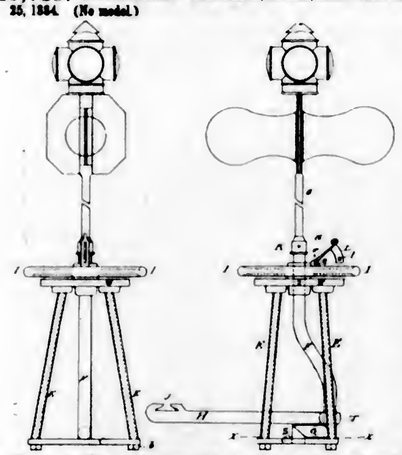
which steam is to be generated by the heat produced by such absorption, of an evaporating-vessel for the reconcentration of said solution, and a pipe connecting said evaporating-vessel and said generating-vessel, substantially as herein described, for conducting the steam generated in said evaporating-vessel into the water in the said generating-vessel, and so utilizing the heat of said steam to assist in evaporating the solution in said soda steam-boiler, and at the same time utilizing the water of said steam to partly supply the steam-generating vessel of said boiler, as herein set forth.

2. The combination, with the soda steam-boiler comprising a vessel for the steam-absorbing solution and a generating-vessel for the water for generating steam by the heat evolved from said solution, of an evaporating-vessel for reconcentrating the said solution, a steam-pipe leading from said evaporating-vessel into said generating-vessel, and a check-valve in said pipe to prevent the return of the water from the said generating-vessel to said evaporating-vessel, substantially as herein described.

3. The combination, with the soda steam-boiler comprising a vessel for the steam-absorbing solution and a generating-vessel for the water for generating steam by the heat evolved from said solution, of an evaporating-vessel with a heating-furnace for reconcentrating said solution, a steam-pipe leading from said evaporating-vessel into the soda steam-boiler, for heating both the water and solution in said boiler, and a steam-pipe from the vessel containing the steam-absorbing solution to the chimney of said furnace, substantially as and for the purpose herein specified.

4. The combination, with the solution-vessel of the soda steam-boiler and an evaporating apparatus for reconcentrating the said solution, of a pump and connections for transferring the solution from the said vessel to the said evaporating apparatus, and a pipe between said vessel and said evaporating apparatus for the return of the solution in a concentrated state to the said vessel, and a float-valve in the latter pipe for regulating said return, all substantially as herein described.

340,719. **SWITCH-STAND.** JOHN JERVIS, St. Paul, Minn. Filed June 25, 1884. (No model.)



Claim.—1. The combination, with the switch-rod, of the vertical curved crank-shaft, the switch-rod adapted to be slipped on and off of the crank-shaft above its crank-arm, substantially as described.

2. The combination, with the curved crank-shaft having the lever-wheel mounted thereon, carrying the automatic gravity locking-pawl, of the top plate of the switch-stand, having a series of slots with which the locking-pawl engages, substantially as described.

3. The combination, with the vertical crank-shaft, curved as shown and described, of the target-staff detachably connected thereto, substantially as described.

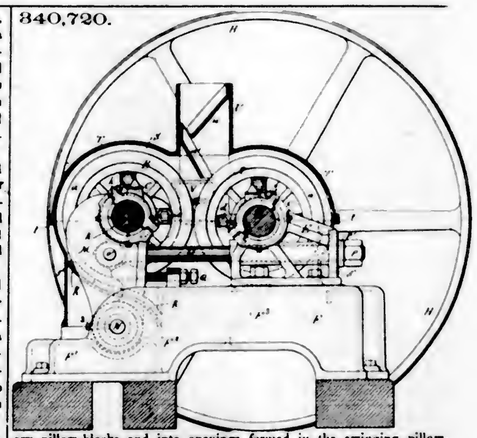
4. The combination, with the switch-stand constructed with removable parts, of the curved vertical crank-shaft having the switch-rod removably connected thereto by a sliding connection above the crank-arm of the vertical shaft, substantially as described.

5. The combination, with the top and bottom plates having the ends of the vertical curved crank-shaft removably journaled therein, of the rods connecting the plates together and inclosed in sleeves, the bottom plate being removable, substantially as described.

340,720. **ORE-CRUSHER.** STEPHEN R. KNOX, Plainfield, N. J. Filed May 18, 1885. (No model.)

Claim.—1. The combination, in an ore-crusher, with the crushing-rollers A B, stationary pillow-blocks for the shaft of the roller A and the bed-plate, of swinging pillow-blocks M, the shaft N, by which they are pivoted to the bed-plate, the tie-bolts O, passing through the stationary pillow-blocks and into openings formed in the swinging pillow-blocks, and the pins *o'*, by which said tie-bolts are pivotally connected to said pillow-blocks, said pins *o'* being beneath and close to the shaft K of the roller B, substantially as specified.

340,720.



2. The combination with two crushing-rollers and their shafts and bearings, of swinging pillow-blocks having a pivot-shaft at their lower ends and a rigid connection extending across from one pillow-block to the other at the lower ends, a bed-plate beneath such rollers, receiving the pivot-shaft of the swinging pillow-blocks, and adjustable tie-bolts between the pillow-blocks of one roller and the pillow-blocks of the other roller, substantially as specified.

3. The combination, with the crushing-rollers, their shafts and bearings, of swinging pillow-blocks, a pivot-shaft at the lower ends of such pillow-blocks, a bed-plate below the swinging pillow-blocks and to which they are pivoted, and tie-bolts and adjusting-nuts below the shafts of the rollers and connecting the pillow-blocks of one roller and the pillow-blocks of the other roller, substantially as specified.

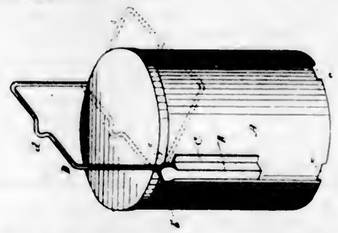
4. The combination, with the crushing-rolls A B, their shafts and bearings, of swinging pillow-blocks, bed-plates, a pivot-shaft between the bed-plate and the lower ends of the swinging pillow-blocks, and an inclined apron, R, below the roller B and between the swinging pillow-blocks, substantially as specified.

5. The combination, with the crushing-roller shafts and tires, of one hub fixed permanently on each shaft, and one split hub on each shaft, and bolts or nuts to draw or force the split hubs toward the stationary hubs, so that the tires will be firmly fixed and held in place and the split hubs will close tightly on the shafts, for the purpose and substantially as set forth.

6. The combination, with the crushing-rollers, their shafts and bearings, of the swinging pillow-blocks M M, the tubular connection *m'* between the same at their lower ends, the bed-plate with the projections between which the swinging pillow-blocks are received, and the pivot-shaft passing through the bed-plate and pillow-blocks, substantially as specified.

7. The combination, in an ore-crushing machine, of two rollers, their shafts and bearings, swinging pillow-blocks, a bed-plate, a pivot-shaft connecting the lower ends of the swinging pillow-blocks to the bed-plate, the tie-bolts between the respective pairs of pillow-blocks, and the screw-stops Q, for the swinging pillow-blocks, substantially as specified.

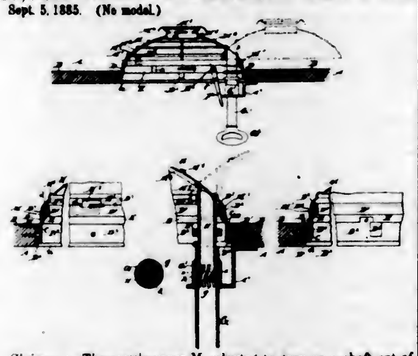
340,721. **PAINT-CAN.** ISAAC W. LITCHFIELD, Warwick, assignor of one-half to Phillip K. Dumarsq, New York, N. Y. Filed Sept. 16, 1885. (No model.)



Claim.—1. The combination of the boxes B, having the spaces *b*, the ears *b'*, and the bail D, having the shoulders *d²* upon its ends, whereby the bail is adapted to be moved vertically from an operative to an inoperative position, all substantially as described.

2. The can A, provided with the vertically-movable bail D, and the recess upon its under surface for receiving the bail of another can, as and for the purposes described.

340,722. **SCUTTLE.** ALFRED H. LOSTON, New York, N. Y. Filed Sept. 5, 1885. (No model.)



Claim.—1. The scuttle-cover M, adapted to turn on a shaft out of the center, in combination with means for raising and turning it by power applied to said shaft from below, substantially as herein specified.

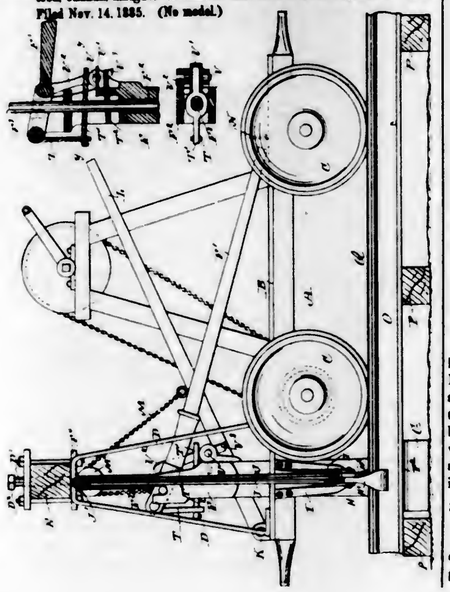
2. The screw-threaded shaft H A, with its collar H', in combination with the correspondingly screw-threaded hollow shaft G *g*, and with a scuttle-cover and a coaming having an internal part, D^4, arranged to match the collar H', arranged for joint operation, as herein specified.

3. In combination with a scuttle-cover, M, capable of both a vertical and a turning motion, the stop J, arranged to arrest the motion when it is turned to the proper extent in either direction, as herein specified.

4. In a scuttle, the locking-ring E, having hooks E', in combination with a coaming, D, and means D^3 for supporting said ring, and with a hatch-cover, M, having hooks M^4, arranged for joint operation, as herein specified.

5. The coaming D, having a soldering-recess, D^5, in combination with the roof A, having an aperture, *a*, and with the metal covering B and solder C, and with a suitable scuttle-cover, M, and means for operating it, all combined and arranged to serve substantially as herein specified.

340,723. **TRACK-LIFTER.** JAMES W. MCDONALD, Winnipeg, Manitoba, Canada, assignor to himself and Robert D. Bathgate, same place. Filed Nov. 14, 1885. (No model.)



Claim.—1. In a track-lifter, the combination, with the hand-car A, of the jacks F, the plank G, the cross-beam E, supported on the platform of the hand-car A, and the automatic grips H, substantially as shown and described.

2. In a track-lifter, the hand-car A, the jacks F, the plank G, the cross-beam E, and the standards D, in combination with the levers L, the chains M, and the pulleys M', substantially as shown and described.

3. In a track-lifter, the hand-car A, the jacks F, the plank G, the cross-beam E, and the supports D, in combination with the grips H, each consisting of the levers H' and H^2, fulcrumed to a bracket, I, attached to the side of the platform B and connected with the cross-beam E by the rods J, screw-eye J', and nut J^2, substantially as shown and described.

4. In a track-lifter, the hand-car A, the jacks F, the plank G, the cross-beam E, the supports D, the bolts D', and the nuts D^2, in combination with the grips H, the rods J, attached to the cross-beam E, and the brackets I, substantially as shown and described.

5. In a track-lifter, the hand-car A, the supports D, the bolts D', the nuts D^2, the grips H, the rods J, attached to the cross-beam E, the brackets I, the cross-beam E, and the plank G, in combination with the jack F, having the cylinder F^2, provided with a base-plate, F^3, and the plunger F^2, provided with the plate F^4, and having a device for operating the said plunger F^2, substantially as shown and described.

6. In a track-lifter, the cross-beam E and the plank G, in combination with the jack F, consisting of the cylinder F^2, provided with the base-plate F^3, the plunger F^2, provided with the plate F^4, the handle-lever F', the arm T, the lifting-lever T', the retaining-lever T^2, and a device for throwing the levers T' and T^2 in or out of gear with the plunger F^2, substantially as shown and described.

7. The jack F, consisting of the cylinder F^2, the plunger F^2, the lever F', the arm T, the lifting-lever T', and the retaining-lever T^2, in combination with shaft U, the arm U', and the handle U^2, having the lug U^3, substantially as shown and described.

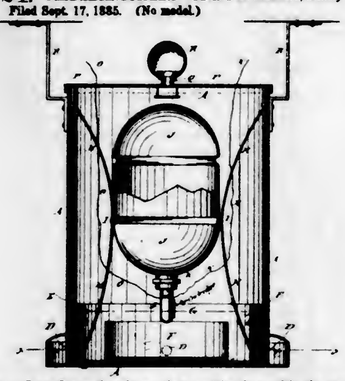
8. The combination, with a hand-car, of a frame mounted on said car, grips suspended from the frame, and jacks attached to the frame, substantially as described.

9. The combination, with a hand-car and a suitable frame mounted thereon, of track-grips suspended from the frame, and jacks having their pistons connected to said frame, substantially as shown and described.

10. The combination, with a hand-car, of a beam mounted to have a short vertical movement upon standards on the car, track-grips suspended from the beam, and jacks having their pistons connected to said beam, substantially as shown and described.

11. The combination, with a hand-car, a frame mounted thereon, track-grips suspended from said frame, and jacks having their pistons secured to said frame, of a windlass and chains connected with said jacks, substantially as shown and described.

340,724. **FIRE-EXTINGUISHER.** GEORGE A. MORRON, Jersey City, N. J. Filed Sept. 17, 1885. (No model.)

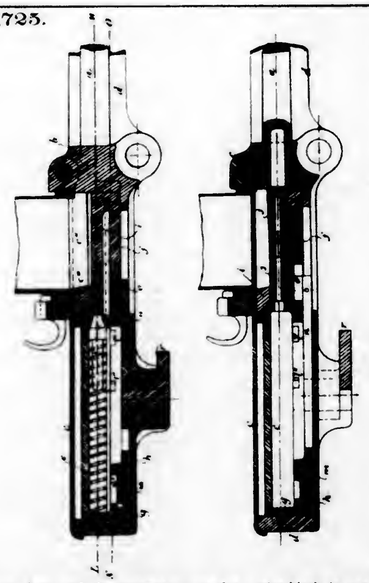


Claim.—In a fire-extinguisher, the combination, with the case A, having openings D and annular compartment C, and the compartments F G, concentric with each other and with the compartment C, of the suspended glass case J, having discharge-openings in its lower end, and the glass tube L, secured in the said discharge-opening, having closed lower end and provided with a cartridge, M, connected by wires N O with the poles of an electric machine or battery, substantially as herein shown and described, whereby a gradual formation of carbonic-acid gas is secured, as set forth.

340,725. **MACHINE-GUN.** THORSTEN NORDENFELT, 53 Parliament Street, Westminster, England. Filed June 18, 1884. (No model.)

Claim.—1. The combination of the transversely moving cartridge-carrier, provided with recesses for the cartridges, the reciprocating plungers acting upon the cartridges in the recesses of the cartridge-carrier

340,725.

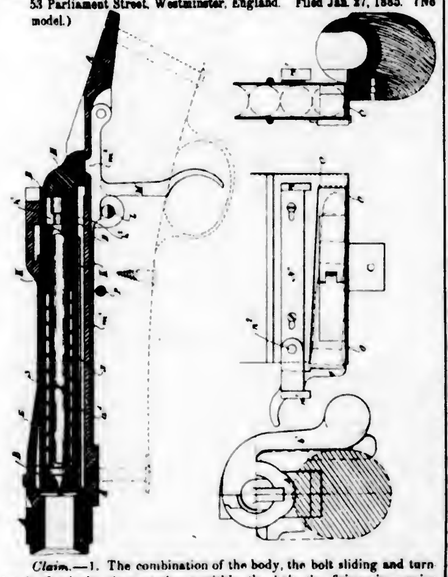


to advance them, and the transversely-moving action-block in rear of the cartridge-carrier having recesses to receive the plungers when retracted, all substantially as and for the purpose set forth.

2. The combination of the recessed plungers, the extractors having lugs projecting into the recesses of the plungers, and the firing-pins passing through the extractor-lugs, substantially as and for the purpose set forth.

3. The combination of the action-lever having the tail a', the spring-bar having the recess for engagement by the action-lever, and the trigger-comb having the projection for engagement by the tail end of the action-lever, the hammers, the hammer-springs, and the engaging-lugs on the hammer and the trigger-comb, substantially as and for the purpose set forth.

340,726. BREECH-LOADING FIRE-ARM. THORSTEN NORDENFELT, 53 Parliament Street, Westminster, England. Filed Jan. 27, 1885. (No model.)



Claim.—1. The combination of the body, the bolt sliding and turning in the body, the cam-sleeve within the bolt, the firing-pin passing through the cam-sleeve, and the hammer attached to the firing-pin and having an incline operated against by the cam-sleeve when the bolt is turned, substantially as and for the purpose set forth.

2. The combination, with the body and the hammer, of the combined trigger, spring, and sear, the spring being supported by connections at its front and rear ends with the body, and the trigger and sear arranged between the front and rear supporting-connections, substantially as and for the purpose set forth.

3. The combination of the body, the sliding hammer, and trigger-spring having the trigger and the sear and supported by connection at its opposite ends with the body, whereby the hammer is engaged with and released by the sear by the flexure of the spring between its ends, substantially as set forth.

4. The combination of the body, the trigger-spring provided with the sear, and having at its opposite ends supporting connection with the body, the sliding hammer, the trigger, and the intermediate support for the trigger-spring, substantially as and for the purpose set forth.

5. The combination of the body, the trigger-spring having supporting connection at its opposite ends with the body, and operating by flexure between its ends, and the notched turning locking-bolt L, for limiting the flexure of the trigger-spring and constituting a half-cock appliance, substantially as set forth.

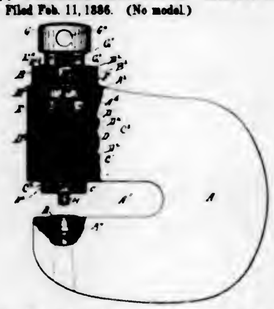
6. The combination of the body, the sliding hammer having the oblong hole with the lip h^3, the turning and sliding bolt, and the firing-pin, the rear end of which enters the hole in the hammer, and is provided with a groove engaging the lip thereof, substantially as and for the purpose set forth.

7. The combination of the body slotted at top, the extractor provided with the recess e', and having guideway-connection with the body, and the turning and sliding bolt having the flanged lug b^3, which engages with the recess in the extractor, substantially as and for the purpose set forth.

8. The combination of the body, the sliding and turning bolt having lug-and-groove connection with the body, and provided with the lug b^3, the cam-sleeve having the groove-and-feather connection with the bolt, and the double-flanged pin engaging the cam-sleeve with the lug b^3 of the bolt, substantially as and for the purpose set forth.

9. The combination of the body, the sliding and turning bolt, the magazine attached to the body, the magazine-slide O, the feed-bar N, connected with said slide, the fixed and pivoted projections n' n^2 at the opposite ends of the feed-bar, and the sliding extractor actuated by the bolt, and provided with the lug e^3, for operating the feed-bar by engaging its projections, substantially as set forth.

340,727. PORTABLE HAND-PUNCH. GEORGE E. NUEBLING, Reading, Pa. Filed Feb. 11, 1886. (No model.)

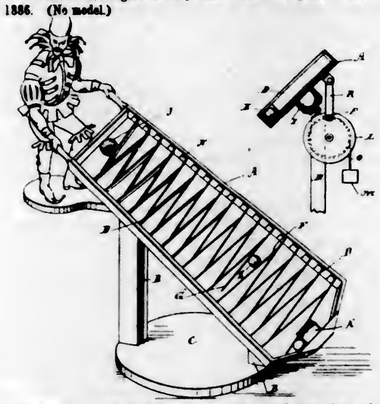


Claim.—1. The combination, with the frame A and head A^2, of a portable hand-punch, of a non-revoluble spindle, C, having a counterbore at its inner end forming a seat, C', for a removable nut, D, a counterbore at its outer end forming a seat, C^2, for the head of the punch, and a feather-key or its equivalent, C^3, moving in a spline, A^4, adapted thereto, said nut D removably secured to the spindle C by a pin, D^2, substantially as shown, described, and for the purpose set forth.

2. In combination with a non-revoluble spindle and nut of a hand-punch, its head and frame, as shown and described, a screw-spindle, E, having a collar, E', fitted to revolve in the cap B, a beveled upper face or seat, E^2, neck E^3, and removable head G, cap B, threaded extension B', counterbore-seat B^2, adapted by bore B^3 to the neck of the screw, with a series of anti-friction rollers, F, surrounding the neck E^3 and held between the cap-seat B^2 and collar-seat E^2, substantially as and for the purpose specified.

3. In a portable hand-punch, the combination, essentially, of the following elements: a frame, A, having jaws A', head A^2, threaded counterbore A^3, die-seat A^4, tapered aperture A^5, spline A^6, with cap B, threaded to fit counterbore A^3, adapted to the neck of the screw-spindle, and having a seat or bed for the anti-friction rollers F formed in the same, the top forming a seat for the operating-head G, a non-revoluble spindle having a removable nut, D, therein, and feather-key C^3, reservoir J, punch H, and die I, all arranged, combined, and adapted to be operated in the manner and for the purpose set forth.

340,728. MECHANICAL TOY FOR CHILDREN. PETER J. OWENS, New York, N. Y., assignor to Mary Jane Owens, same place. Filed Jan. 4, 1886. (No model.)

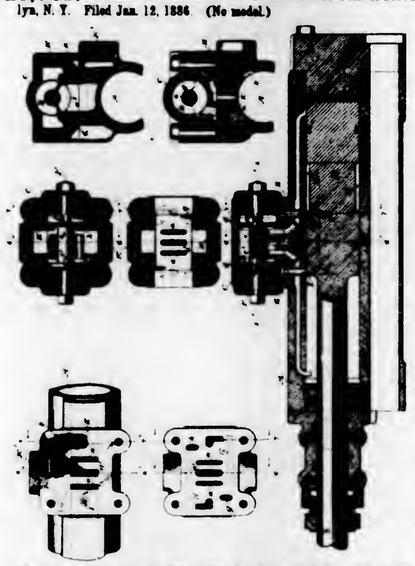


Claim.—1. A mechanical toy constructed and operating substantially as herein described, consisting of an oscillating tray, A, provided with hinged inclined stripe D and a return-channel, I, as set forth.

2. In a mechanical toy constructed and operating substantially as herein described and shown, in combination with the oscillating inclined tray A, the stripe D, hinged to the opposite sides of the tray, with their opposite free ends F resting upon each other, respectively, with sufficient space between their free ends and the sides of the tray to permit a ball to pass from one strip to another to ascend the tray, as set forth.

3. A mechanical toy consisting of the oscillating inclined tray A and stripe D, secured alternately to the opposite sides of said tray by hinges or flexible connections, respectively, so that a ball may pass from strip to strip in ascending the inclined tray, in combination with the driving mechanism, substantially as herein described and shown.

340,729. STEAM-ACTUATED VALVE. FRANCIS M. PIERCE, Brooklyn, N. Y. Filed Jan. 12, 1886. (No model.)

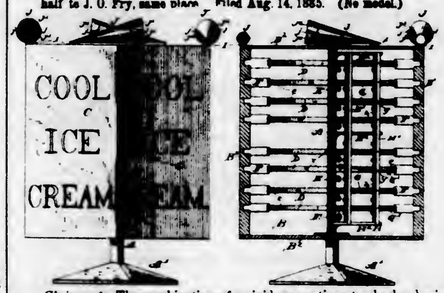


Claim.—1. The combination, with the steam-cylinder and steam chest, of a reciprocating valve controlling the steam and exhaust passages to the cylinder, supplemental steam and exhaust passages for positively actuating the valve, the supplemental steam-passages being controlled by the valve, and means carried by the piston of the engine for alternately opening and closing the valve-controlling passages, as described.

2. The combination, with the cylinder of a drilling-engine, of a reciprocating spool-shaped valve, a longitudinal fixed support for said valve, steam ports and passages extending from the longitudinal portion of said valve along its support and to the ends of the steam-chest, supplementary exhaust-passages leading from the ends of the steam-chest to the main exhaust, a piston formed with a recess therein and adapted to alternately open and close the valve-operating passages, as described.

3. The combination, with the drilling-engine having a suitable steam-chest, of the spool-shaped valve D, having steam-ports e e', a longitudinal fixed support therefor provided with the steam-passages f f', the exhaust-passages G H, tubes I K, passages i k, and the piston provided with recess L substantially as shown and described.

340,730. SIGN. JOEL A. PRATT, Mount Ayr, Iowa, assignor of one-half to J. O. Fry, same place. Filed Aug. 14, 1885. (No model.)



Claim.—1. The combination of a rigid supporting-standard, a horizontal rotatable sign-frame journaled on the standard, and a series of collecting-hoods rigidly secured in a horizontal or approximately horizontal position on the sign-frame at the upper edges thereof and disposed at different angles to each other, each hood being made cone-shaped and comprising two longitudinal sections that are pivoted together at their enlarged ends and adapted to be opened at their reduced ends when the force of the wind increases above the strength of the wind to which the sections of the hood are proportioned, substantially as described.

2. The combination of a rigid standard, a rotating sign-frame mounted thereon and carrying bands or rings provided with lever-operating means, a series of bells, and movable bell-hammers arranged to be actuated by the said means on the rings or bands to strike the bells when the sign-frame is rotated, substantially as described.

3. The combination of a rigid standard, a horizontally-rotatable sign-frame supported thereon, and having rings or bands provided with lever-operating means, a series of bells of different tone or quality, and a series of pivoted bell-hammers adapted to be operated by the devices on the rings or bands to strike the bells, substantially as described.

4. The combination of a rigid supporting-standard, a rotatable sign-frame journaled thereon, and provided with rings having operating devices, a series of bells of different tones, a frame, and a series of bell-hammers supported in the frame and adapted to be operated by the operating devices on the bands of the sign-frame to strike the bells, substantially as described.

5. The combination of a rigid standard, A, a horizontally-rotatable sign-frame supported thereon, a series of rings or bands secured to the said frame and provided with spaced pins, a series of bells of variable tone or quality, a rigid frame supported on the standard, and a series of bell-hammers pivoted in the rigid frame and having their ends free to be acted on by the pins and to strike the bells, substantially as described.

6. In a sign, the combination of a vertical rigid standard, A, a horizontally-rotatable sign-frame supported thereon, a series of rings or bands, D, secured on the sign-frame and provided with spaced pins e, a series of bells mounted on the standard, a rigid frame, H, secured to the standard and having an inner and outer upright, and a series of bell-hammers pivoted in the outer upright of the frame and having their opposite ends guided in the inner upright of said frame, substantially as described.

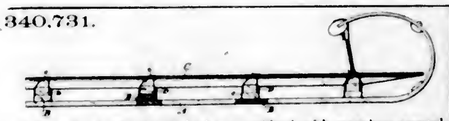
7. In an advertising-sign, the combination of a supporting-standard, a horizontally-revolving sign-frame mounted on said standard, a series of rings secured to the sign-frame and having a series of pins, a series of bells secured on the standard, a lever-supporting frame secured to the standard and slotted, as described, a series of bell-striking levers having a weighted end and pivoted in the supporting-frame, and a series of sectional pivoted collecting-hoods mounted on the sign-frame, substantially as described.

340,731. TOBOGGAN. LAWRENCE M. PROCTOR and WILLIAM H. PROCTOR, Ogdensburg, N. Y. Filed Mar. 19, 1886. (No model.)

Claim.—1. A toboggan the body of which is composed of flat strips of varying thickness, the thin strips having at their edges projecting lips, and the thick strips having undercut grooves, in which the said lips fit, substantially as set forth.

2. A toboggan the body of which is composed of alternate thick

340,731.

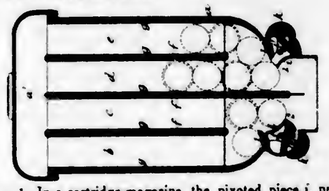


and thin strips having beveled edges, combined with cross-bars secured to said strips, substantially as set forth.

3. The combination, with the body and the cross-bars of a toboggan, of the side rails and the blocks placed between said rails and cross-bars, whereby said rails are held a suitable distance above said body without making said cross-bars unnecessarily thick and heavy, substantially as set forth.

4. The combination, with the body of a toboggan, of the side rails the cross-bars, the blocks between the latter and the side rails, and the flexible fastenings for securing said rails in place, substantially as set forth.

340,732. CARTRIDGE-MAGAZINE. THOMAS QUILLIAN, London, England. Filed Dec. 16, 1884. (No model.) Patented in England Sept. 3, 1884, No. 11,945; in France Nov. 21, 1884, No. 165,517; in Belgium Nov. 22, 1884, No. 66,978; in Germany Nov. 29, 1884, No. 31,875, and in Canada Dec. 13, 1884, No. 21,810.

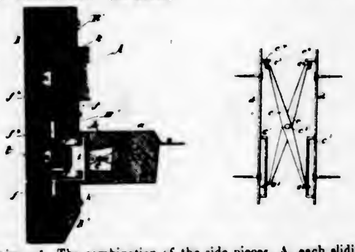


Claim.—1. In a cartridge-magazine, the pivoted piece *i*, provided with the eccentric surface, in combination with the spring *m* and the finger-piece *k*.

2. In a cartridge-magazine having two adjacent compartments, the pivoted piece *i*, having the eccentric surface, and provided with the spring *m* and the finger-piece *k*, in combination with the detaining-piece *l*, substantially as set forth.

3. In combination, with the partitions *f*, the covering *g*, of leather or other material, so as to form a "lift" or ledge whose thickness is equal to the difference between the size of the head and the body of the cartridge, so that a space, *h*, is left for the flanges or heads of the cartridges to run in, and any undue play of the bodies of such cartridges is prevented, as herein set forth.

340,733. WINDOW-SASH. LUCIUS ROBERTSON, Mount Carmel, Ohio. Filed Nov. 24, 1884. (No model.)



Claim.—1. The combination of the side pieces, A, each sliding in and secured to the window-frame, and the sash *a*, pivoted for swinging laterally away from one side of the window-frame and extensible laterally therefrom, substantially as and for the purposes specified.

2. The combination of the window-frame, sliding side pieces, A, and sash *a*, connected by extensible hinge to a side piece, substantially as and for the purposes specified.

3. The combination of the window-frame, sliding side pieces, A, arms *c c*, pivoted at c^3, guides c' c', pins c^3, and tongues c^4, substantially as and for the purposes specified.

4. The combination of the window-frame, side pieces, A, sash *a*, plates *d*, carrying pins c^3, tongues c^4, guides c', and arms *c*, connected to said tongues and guides and centrally pivoted, substantially as and for the purposes specified.

5. The combination of the sash *a*, window-frame, side pieces, A, roller *r r*, axle Z, and the spring *t*, having its free end connected to axle Z and forming the journal-bearing of said axle, substantially as and for the purposes specified.

6. The combination of the sash *a*, window-frame having guides *k'*, and pieces A, having guides *k*, substantially as and for the purposes specified.

7. The combination of window-frame carrying guide *k'*, side pieces A, having guide *k*, and rollers and sash, substantially as and for the purposes specified.

8. The combination of the window-frame carrying guide *k'*, side pieces, A, having guide *k* and rollers, sash *a*, and roller-spring, substantially as and for the purposes specified.

9. The combination of the window-frame carrying guide *k'*, side pieces, A, having guide *k*, sash *a*, roller *r r*, and spring *t*, forming journal-bearing for roller, substantially as and for the purposes specified.

10. The combination of the slide-pieces A, sash *a*, hinged to one slide-piece and extensible laterally therefrom, and recesses *e'*, and tongues or studs *e*, substantially as and for the purposes specified.

11. The combination of the slide-pieces A, sash *a*, hinged to one slide-piece and extensible laterally therefrom, the other slide-piece having shoulder or stud *w*, and button or catch *a'*, substantially as and for the purposes specified.

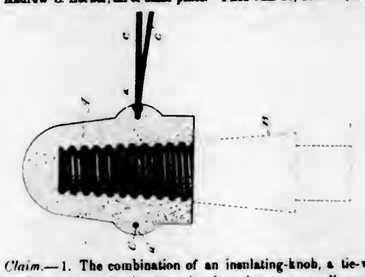
12. The combination of the slide-pieces A, sash *a*, hinged to one slide-piece A and extensible laterally therefrom, the other slide-piece having shoulder or strip *w*, and button or catch *a'*, studs *e*, and recesses *e'*, substantially as and for the purposes specified.

13. The combination of the window-frame, strips B', beveled groove *f*, and channel *f'*, side pieces, A, guides *k'*, guides *k*, and sash *a*, substantially as and for the purposes specified.

14. The combination of the grooved window-frame, guides *k'*, side pieces, A, sash *a*, guides *k*, sash *a* hinged to one side piece A by hinges *c c*, pivoted together at center and working on tongues c^2 and guides c', rollers *r r*, spring *t*, recesses *e'*, studs *e*, shoulders *w*, and sash *a*, provided with beveled edge *w'*, substantially as and for the purposes specified.

15. The combination of the window-frame, sliding pieces A, extensible hinge, and sash *a*, substantially as and for the purposes specified.

340,734. ELECTRIC-WIRE INSULATOR. BERT SEABOLDT, Salt Lake City, Utah, assignor of three-fourths to Geo. Goss, Samuel H. Gilson, and Andrew L. Horner, all of same place. Filed Jan. 27, 1886. (No model.)

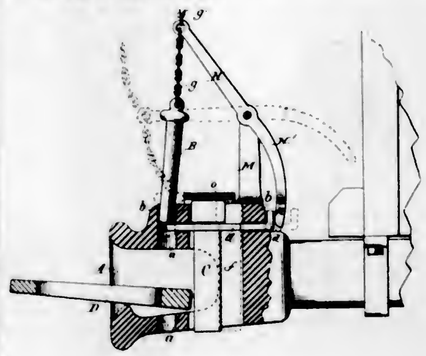


Claim.—1. The combination of an insulating-knob, a tie-wire encircling the same and having its ends adapted to support a line-wire, and a covering for the tie-wire, consisting of a plastic insulating and waterproof material joined to the body of the insulator-knob, substantially as set forth.

2. The combination of an insulating-knob and a tie-wire, the knob being formed of a plastic insulating material and inclosing the wire, substantially as set forth.

3. The combination of the knob A, the wire C, encircling the same and inclosed, and the line-wire supported by the wire C, substantially as set forth.

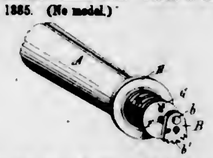
340,735. CAR-COUPLING. JOHN L. SHITT, North Uniontown, Ohio. Filed Sept. 26, 1885. (No model.)



Claim.—1. The combination, with the draw-head and its coupling-pin, of a sliding plate, *d*, having a downwardly-projecting pin, C, a lever, N, connected to the coupling-pin, and having an arm, N', substantially as described.

2. The combination, with the draw-head and its coupling-pin, of a sliding plate, *d*, having a point, *d'*, and being provided with a downwardly-projecting pin, C, a lever, N, connected to the coupling-pin, and having an arm, N', said lever being mounted on a standard, M, substantially as described.

340,736. WAGON-AXLE NUT. FRANK O. SLANKER, Pomona, Cal. Filed Nov. 11, 1885. (No model.)



Claim.—1. A lock for axle-nuts, comprising a gravitating dog eccentrically pivoted to the axle-arm, so as to engage the interior of the nut screwed onto the axle, substantially as herein set forth.

2. A lock for axle-nuts, comprising a gravitating dog eccentrically pivoted to the axle-arm, and the nut provided with an annular groove, as at *c*, into which the dog swings when the nut is screwed onto the axle-arm, substantially as herein set forth.

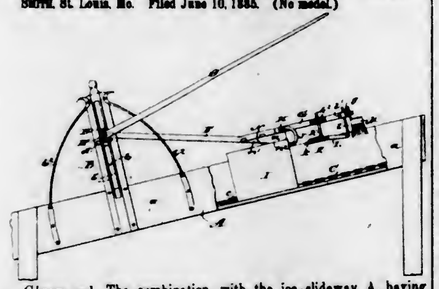
3. In a lock for axle-nuts, the combination, with a gravitating dog eccentrically pivoted to the axle-arm and adapted to engage the interior of the nut, of a stop, G, on the axle-arm, substantially as herein set forth.

4. A lock for axle-nuts, comprising a gravitating dog, B, eccentrically pivoted to the axle-arm and adapted to engage the interior of the nut screwed onto the axle, and said dog having a hole, D, to receive a pin, substantially as and for the purpose herein set forth.

5. In a lock for axle-nuts, the gravitating dog B, eccentrically pivoted to the axle-arm and adapted to engage the interior of the nut and provided with a hole, D, and said axle-arm having a hole, F, substantially as and for the purpose herein specified.

6. In a lock for axle-nuts, the combination, with the threaded end *a* of the axle-arm, of a capped nut, C, provided with an end aperture, *c'*, and the gravitating dog B, pivoted eccentrically to the end of the axle-arm and adapted to engage the interior of the nut, and to be disengaged therefrom by a pin passed through the aperture *c'*, substantially as herein set forth.

340,737. ICE PLANING AND RIDGING MACHINE. STEPHEN L. SMITH, St. Louis, Mo. Filed June 10, 1885. (No model.)



Claim.—1. The combination, with the ice-slideway A, having slotted standards B, and the cutter-frame G, of the shaft E, adjustably journaled in the standards B, the lever O, fixed to shaft E, and the bars F, connecting the frame G rigidly to said shaft, substantially as shown and described, whereby by operating said lever O the entire cutter-frame can be raised to permit free passage of poor blocks of ice, as set forth.

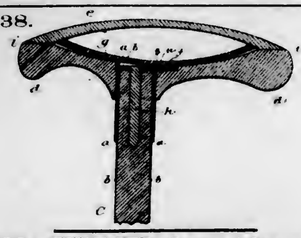
2. In an ice planing and ridging machine, the combination, with the ice-slideway A, its carrier, and the cutter-carrying frame G, of the gage-shoes *n*, having inclined faces *n'* and bearing-faces n^2, and fixed to frame G, substantially as herein set forth.

3. In an ice planing and ridging machine, the combination, with the ice-slideway A, its carrier, and the planing and ridging knife K, supported above the slideway, of the presser-bars L, substantially as herein set forth.

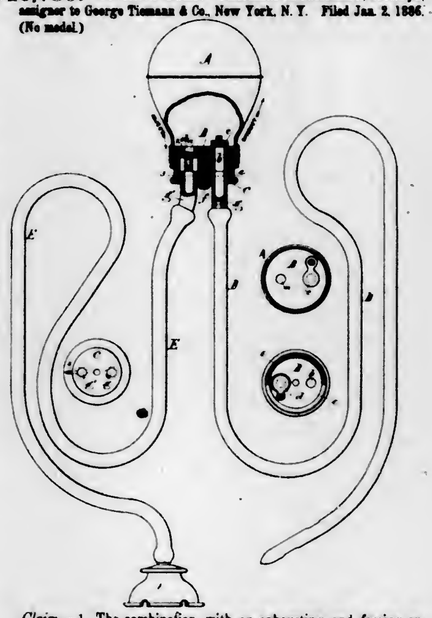
340,738. ELASTIC-PRESSURE WALKING-CANE. JOHN SPARR, New Bedford, Mass. Filed Apr. 27, 1885. (No model.)

Claim.—A walking-cane comprising in combination a hollow handle made in two parts or sections, a resisting-spring, *g*, within said handle, sliding tube *a*, tube *b*, angle-piece *f*, and screw *h*, the latter named passing through the angle-piece and entering downwardly into the stick, all substantially as and for the purpose set forth.

340,738.



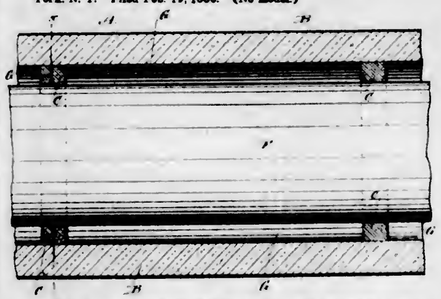
340,739. STOMACH-PUMP. FREDERICK A. STOHLMANN, Brooklyn, assignor to George Tiemann & Co., New York, N. Y. Filed Jan. 2, 1886. (No model.)



Claim.—1. The combination, with an exhausting and forcing apparatus, of the tubes and base B and disk C, removably connected to each other, the valves *c d* upon the valve-base B, and acting in opposite directions, the rim *e* upon the disk B, and partially removed to form a slot, the pin 3, to limit the movement of one disk upon the other and determine the position of the valves in relation to the tubes, substantially as specified.

2. An exhausting and forcing apparatus having a valve-base and seats and valves working in opposite directions, in combination with a disk and tubes connected therewith, and means, substantially as specified, for connecting the disk to the valve-base, so that the relative positions of the tubes and valves can be reversed, substantially as specified.

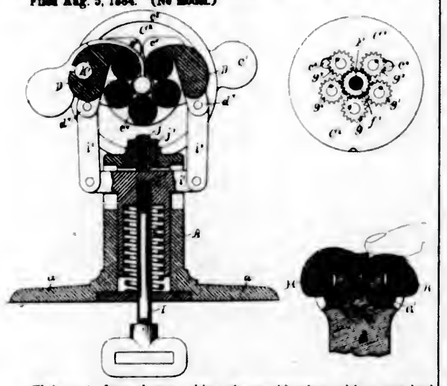
340,740. BOILER OR TUBE COVERING. WILLIAM M. SUER, New York, N. Y. Filed Feb. 19, 1886. (No model.)



Claim.—1. In a boiler or tube covering, a shell provided with solid annular strips, substantially as shown and described.

2. In a boiler or tube covering, a shell provided with solid annular strips resting on the boiler or tube, covered and placed a suitable distance apart from each other, so as to form separate closed annular air-spaces between the boiler or tube covered, the shell, and the strips, substantially as shown and described.

340,741. CIGAR-MACHINE. GEORGE W. TANNER, Providence, R. I. Filed Aug. 5, 1884. (No model.)



Claim.—1. In a cigar-machine, the combination, with a standard located at one end of the molding-rolls, and having a tip-cavity, d^3, of a pair of co-operating separable blocks suitably recessed and pivoted to said standard, for the purpose described.

2. The combination, with a standard having a tip-cavity, d^3, and located at one end of the rolls contained in the movable side pieces, which are each secured to a separable block suitably recessed and pivoted to said standard, of a sliding gage, K, located at the other end of said rolls, for the purpose described.

3. In a cigar-machine, a pair of blocks separably secured to the movable side pieces of the frame and containing the bearings for the rolls, and also provided with recesses to complete the form of the tip-cavity, substantially as described.

4. The combination, with the frame A B, of the closed housing C, the movable side pieces, D, and the separable blocks H, constructed and arranged as described.

5. The combination, with the frame A B, the closed housing C, the side pieces, D, and the separable blocks H, of the shaft F, carrying the pinions f^3, and the rolls G G' G^2 G^3 G^4, carrying the pinions g g' g^2 g^3 g^4, and the connections for operating the side pieces, as described.

6. The combination, with the pedestal A, the support B, carrying the housing C and end piece, d, side pieces, D, and the hinged blocks H, of the driving-shaft E, carrying the pinion e', the plug C', carrying the shaft F, with its pinions f f^3, the face-plate C^3, the rolls G G' G^2 G^3 G^4, with their pinions, the blocks H, and the rod I, slide I', spring i, and links i^3, all constructed and arranged substantially as shown and described.

7. The combination, with the pedestal A and the side pieces of the frame, of the cap J, the screw j, the lock-nut j', the arms i^3, the slide I', and the stem I, as set forth.

8. In a cigar-machine, the combination, with the closed housing having the slotted face-plate and the movable rolls, of the pivoted plates connected with said rolls and arranged to close the slots in the face-plate when the machine is opened, substantially as described.

9. The combination, in a cigar-machine, of the pedestal and support, the fixed rolls mounted thereon, the side pieces supporting the movable rolls, and the spring-pressed slide I', the arms, and the treadle, as and for the purposes set forth.

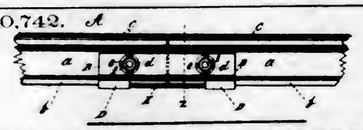
10. The combination, with the pedestal A, the support B, carrying the housing C and end piece, d, side pieces, D, hinged block H, and gage or slide K, of the driving-shaft E, carrying the pinion e', the plug C', carrying shaft F, with its pinions f f^3, the face-plate C^3, the rolls G G' G^2 G^3 G^4, with their pinions, the blocks H, the rod I, slide I', spring i, and links i^3, as described.

11. The combination, with the standard d, having the tip-cavity d^3, of the separable blocks H H, pivoted to said standard d, for the purpose described.

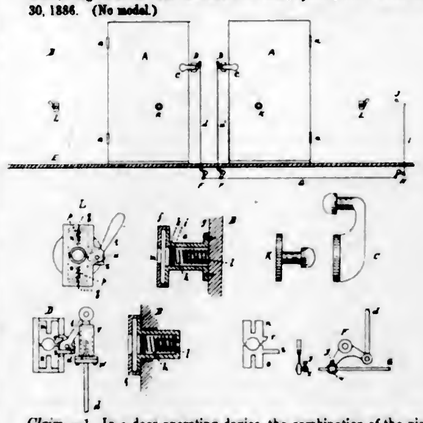
340,742. RAILROAD-COUPLING FOR RAILS. JACOB VREELAND Saddle River, Bergen County, N. J. Filed Sept. 9, 1885. (No model.)

Claim.—The coupling-plate consisting of the vertical part B, extended obliquely to overlie the foot of the rail, and having its lower intermediate part folded to fit beneath the rail, and its lower end parts extended laterally to rest upon the ties, the vertical parts being adapted to be bolted through the web of the rail, substantially as set forth.

340,742.



340,743. DEVICE FOR FASTENING, OPENING, AND HOLDING DOORS FOR FIRE-ENGINE HOUSES. GEORGE D. WALKER, Holyoke, Mass., assignor of one-half to Michael J. Kelley, same place. Filed Jan. 30, 1886. (No model.)

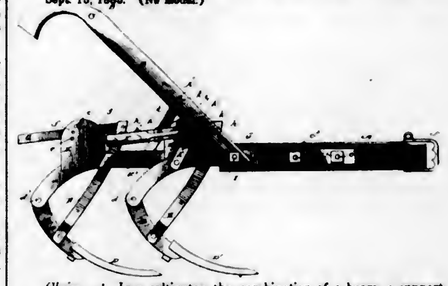


Claim.—1. In a door-operating device, the combination of the pins C and K, the releasing and holding devices D and L, and the rods, bell-cranks, and levers, substantially as and for the purpose described.

2. In a door fastening and releasing device, the combination of the slides n o, cam-lever t, pin K, and spring k, substantially as and for the purpose set forth.

3. In a door-operating device, the combination of the connecting-piece v, bell-cranks with eyes x, and set-screws y, and the connecting-rods therefor, all substantially as and for the purpose described.

340,744. CULTIVATOR. FELIX P. WARREN, Mulberry, Tenn. Filed Sept. 15, 1885. (No model.)

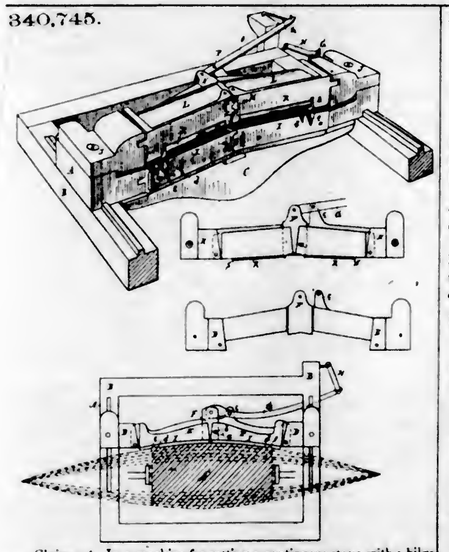


Claim.—1. In a cultivator, the combination of a beam, a supporting-arm rigidly secured to the beam, a shovel-arm pivoted to the rear end of the supporting-arm, a perforated plate mounted on the supporting-arm, an operating-lever pivoted to the perforated plate and carrying a pivoted spring-actuated arm or latch adapted to enter one of the perforations of the plate, and an arm or link pivotally connected to the front end of the shovel-arm beyond the pivots of said lever and shovel-arm, as set forth.

2. In a cultivator, the combination of the beam, supporting-arms rigidly secured thereto and curved and bifurcated at their rear ends, shovel-arms pivoted between the bifurcated ends of the supporting-arms, perforated plates E, rigidly secured upon the supporting-arms, operating-levers pivoted to the supporting-plates, an arm or latch, F, pivoted on the operating-lever and normally pressed into engagement with one of the apertures of the plate E by a spring, a link or arm, H, pivotally connected to the lower end of the shovel-arm and adjustably and pivotally connected to the free end of the operating-lever beyond its pivot, and guides E', for said connecting link or arm, substantially as described.

340,745. MACHINE FOR CUTTING SHEET-STAVES. JASPER A. WATERMAN and JAY W. CHAPMAN, Reading, Mich. Filed Oct. 15, 1885. (No model.)

340,745.



Claim.—1. In a machine for cutting a continuous stave with a bilge from the circumference of a rotating log, a cross-head and suitable supports therefor, combined with a curved knife formed of two equal parts hinged together at their adjoining ends, while their outer ends are pivotally connected to the sides of said cross-head, substantially as and for the purposes described.

2. In a machine for the purposes described, and in combination with a curved cutter made in two parts hinged together, the means, substantially as hereinbefore described, for gradually lessening the curvatures of said knife in the same ratio as the circumference of the log which is being acted upon by said knife diminishes, for the purpose specified.

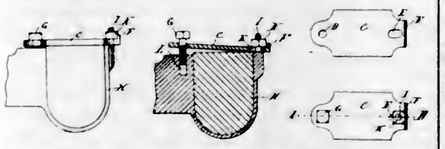
3. In a machine for the purposes described, and in combination with a curved cutter made in two parts hinged together, a pair of concave-faced pressure-rolls, adjustable to and from the face of the cutters, and means, substantially as described, for compelling said rolls to adapt themselves to the varying curvatore of the cutter, substantially as set forth.

4. In a machine for stave-cutting purposes, a cross-head and a cutter carried thereby, having formed integral therewith croze and chine cutters, substantially as specified.

5. In a machine for the purposes described, and in combination with the pressure-rolls and cutters I thereof, rotating cutters journaled upon the outer ends of such rolls, substantially as and for the purpose set forth.

6. In a machine for the purposes described, the combination of the following elements: a cross-head carrying a curved cutter made in two parts, and mechanism for varying the curvatores of such knife, two pressure-rolls with concave surfaces and carrying upon their outer ends rotating cutters, and the mechanism described for compelling the rolls to conform to the varying curvature of the knife, the parts being constructed, arranged, and operating substantially as and for the purpose specified.

340,746. THILL-COUPLING. JACOB H. WEAVER and ENOS B. WEAVER, East Lampeter, Lancaster County, Pa. Filed Mar. 26, 1886. (No model.)



Claim.—In combination with the thill-clip H, a strap with a projecting flange and an oblong hole for the screwed shank of the clip, by which means the projecting flange can be brought in contact with the side of the nut K and held there by means of the tap-bolt G, so as to form a positive lock for the same, substantially as herein set forth and described.

340,747. PYROTECHNIC MATCH. CARL WEBACH, Pittsburg, Pa. Filed Nov. 21, 1885. (Specimens.)

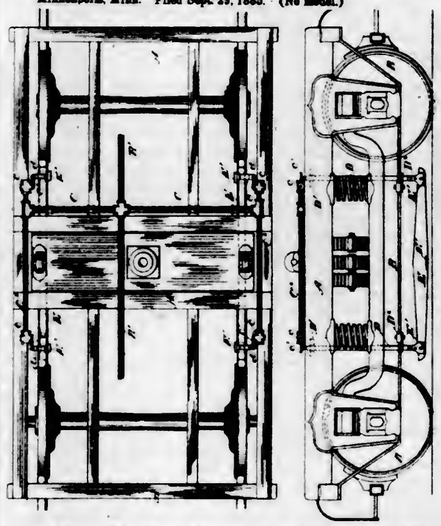


Claim.—1. As a new article of manufacture, a match consisting of a stick having its head coated with a friction igniting compound and a portion of the body adjoining the head coated with a pyrotechnic compound, substantially as described.

2. In a match, the combination, with the stick O and the head F, of the pyrotechnic compound G, adapted to be ignited by the combustion of said head, in the manner set forth.

3. In a match, the combination, with a stick having an ignitible bead, of a coating or covering adjacent to said bead of compounds of different ingredients adapted when lighted to produce lights of different colors, as set forth.

340,748. CAR-BRAKE. EARL A. WESCOTT and EDMOND R. BRISTOL, Minneapolis, Minn. Filed Sept. 29, 1885. (No model.)



Claim.—1. The combination, with the air-pipes of an atmospheric brake provided with valves, of a truck having a series of vertically-operating rods hung in guides thereon, the upper end of each rod connected directly with the levers of an air-pipe valve, and longitudinal beams secured to the lower ends of said rods, as set forth.

2. The combination, with the air-pipes of an atmospheric brake provided with valves, of a truck having a series of vertically-operating rods, the upper end of each rod connecting with an air-pipe valve, and longitudinal beams convex upon their under sides and secured to the lower end of said rods, as set forth.

3. The combination, with the air-pipes of an atmospheric brake provided with valves, of a truck having a series of inwardly-projecting guides upon its pedestal brace, a series of rods vertically operative in said guides and connected to the air-pipe valves, and longitudinal beams having their respective ends each secured to a rod and provided upon their under faces with fender-plates, as set forth.

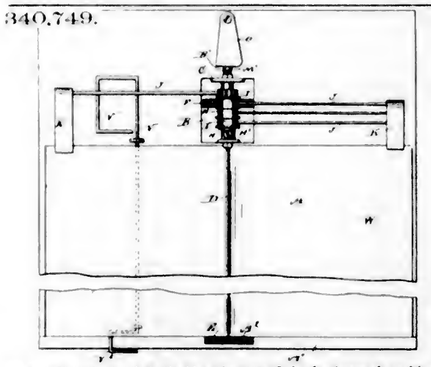
340,749. MUSIC-LEAF TURNER. LOUIS L. WHITE, Portland, Oreg. Filed Sept. 16, 1885. (No model.)

Claim.—1. In a music-rack, the combination, with a shaft, of a cog-wheel sliding on and revolving with said shaft, a series of pinions mounted on an additional shaft, and each having a flange at its bottom and a recess in the toothed edge, a rod on each pinion, and a paper-holding clip on the swinging end of each rod, substantially as herein shown described.

2. In a music-rack, the combination, with a shaft, of the cog-wheel F, the shaft G, pinions H, the rods J, the clips K on the ends of the same, the spring P on the shaft D, and below the cog-wheel F, and of mechanism for keeping the spring compressed, substantially as herein shown and described.

3. In a music-rack, the combination, with the shaft D, of the cog-wheel F, the shaft G, the pinions H, the arm L, sliding on the shaft, the rod M, to which the arm L is secured, and of the spring P below

340,749.



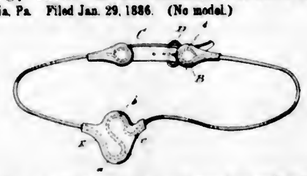
the arm L, and a latch for locking the arm L in the lowered position, to keep the spring P compressed, substantially as herein shown and described.

4. In a music-rack, the combination, with the shaft D, of the cog-wheel F, the shaft G, the pinions H, the rods J, the clips K, the arm L, the spring P, the rod M, having the bent part M', and of the latch O, substantially as herein shown and described.

5. In a music-rack having the opening B and slot B', the shaft D, the cog-wheel F, the pinions H, the rods J, the clips K, the spring P on the shaft D, the arm L, the rod M, to which the arm L is secured, and which rod has a bent top part, M', and of the latch O, substantially as herein shown and described.

6. The combination, with the rack A, of the rods J, the clips K, and the rod V, having the bends V' and V², substantially as herein shown and described.

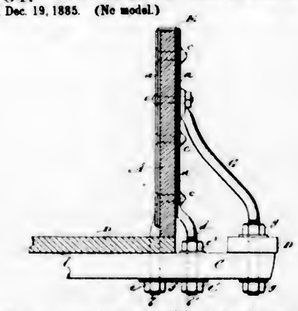
340,750. TRUSS. EDWARD WILLIAMS, Jr., and RALPH M. LASHELL, Centralia, Pa. Filed Jan. 29, 1886. (No model.)



Claim.—1. A truss formed of a wire curved to conform to the figure of the body, and bent back and forth upon itself to form loops for the frame-work of the pad, and a suitable covering and filling for the pad, substantially as herein shown and described.

2. As an improved article of manufacture, a truss formed of wire bent back and forth upon itself to make the frame-work of the pad, a casing enveloping the frame-work of the pad and inclosing a suitable filling, eyes formed upon the ends of the wire and inclosed in pads, and a strap and buckle for connecting the ends of the wire, substantially as herein shown and described.

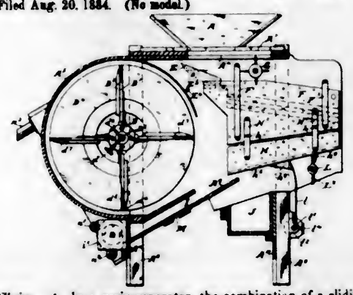
340,751. WAGON-BOX BRACE. MATT. F. ALLEN, Nashville, Tenn. Filed Dec. 19, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a strap-brace for wagon-boxes, consisting of the double-legged strap-brace E, having its legs *a a'* perforated to receive fastening bolts or screws, and formed at their lower ends into screw-threaded shanks *b b'*, the leg *a* being provided with the offset *d*, as set forth.

2. The combination, with a wagon-box, of the double-legged strap-brace E, having its legs *a a'* perforated and provided with screw-threaded shanks *b b'*, one of which is provided with an offset, *d*, the nuts *c c' c²*, and the screws or bolts *c*, substantially as herein shown and described.

340,752. GRAIN-SEPARATOR. JACOB BACHMAN, Stony Run, Pa. Filed Aug. 20, 1884. (No model.)



Claim.—1. In a grain-separator, the combination of a sliding hopper having an open bottom and flanges at the base of it, registering with the open bottom of the said hopper and regulating the feed therefrom, and with guides in which the hopper-flanges may slide back and forth, substantially as and for the purpose set forth.

2. In a grain-separator, the combination of a revolving fan-shaft having a hub secured thereon, the main fan-wings, the screw-arms *d'*, securing the fan-wings to the said hub, the lock-nuts for securing the said arms when the fan-wings are turned out of line with the shaft, and the thin central disk, D^4, for connecting the main fan-wings together, substantially as and for the purpose set forth.

3. In a grain-separator, the combination of the revolving shaft B, having hub D, the main fan-wings D', having chamfers d^6 and d^6 upon their edges, the arms *d'*, screwed into the said hub and provided with lock-nuts, the thin central disk, D^4, connecting the main wings together, the auxiliary wings D^5, having chamfers *d''*, the sliding hubs D^6, having set-screws d^{12}, and the rods d^4, substantially as and for the purpose set forth.

4. The combination of a shaking-shoe, the lower shaker, *e*, journaled in the said shoe and having two rows of tines, *e'* and e^2, and the pivots e^3 and e^4, the pin e^5, passing through an eye in the bent end of the pivot e^3, the roller e^6, journaled in the end of the pivot e^4, the spring e^7, and the sloping track e^{10}, for communicating a sinuous movement to the said shaker, substantially as and for the purpose set forth.

5. The combination of the upper shaker, E, having a longitudinal movement, the lower shaker, *e*, having a sinuous movement, and the tosser G, provided with tines G^2 and having a continuous rotary movement, substantially as and for the purpose set forth.

6. The combination of a shaking-shoe consisting of side pieces held together by cross-pieces at each end, the frame F^3, made in two pieces and supported by the said side pieces, a series of slats having tongues *f*, placed between the pieces of the frame, and the screws *f''*, for securing the said tongues, substantially as and for the purpose set forth.

7. The combination of the frame F^3, made in two pieces, the screws *f''* for drawing the two pieces of the frame together, a series of movable slats having tongues *f* at their ends and grooves f^8, f^9, and f^{10} upon their surfaces, and the bars F^4, having screw-threaded portions f^8 thereon of increasing pitch for engaging with the said tongues and regulating the distance between the said slats, substantially as and for the purpose set forth.

8. The combination of the shaking-shoe F, the spring-links F', pivoted to it at their lower ends, the side casings of the machine having pins projecting therefrom and pivotally engaging with the upper ends of links F', the cam K, the rotating pulley K', the spindle K^2, provided with a flange for attaching it to the side casing, the bent rod *k*, projecting from the side of the said shoe, and the roller k^3, bearing upon the face of the said cam, substantially as and for the purpose set forth.

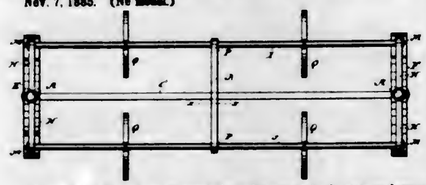
9. The combination of the shaking-shoe H, provided with striker-blocks h^3 and blocks h^5, the spring-links for supporting the shoe, the strikers I^2, secured upon a revolving shaft, the springs *l*, the shaft *l'*, the brackets l^3, the hand-wheel l^4, and the thumb-screws l^5, for adjusting the pressure of the said springs, substantially as and for the purpose set forth.

10. The combination of the lower shoe, H, mechanism for shaking it longitudinally, the upper shoe, F, mechanism for shaking it laterally, the spring-links H', connecting the two shoes together, the stationary pins pivotally engaging with the middle parts of links H', so that the said shoes move simultaneously in opposite directions, the spring-links F', the lower shaker, *e*, journaled in the sides of the shoe F, and provided with the pivots e^3 and e^4, the pin e^5, the spring e^7, the roller e^6, and the sloping track e^{10}, substantially as and for the purpose set forth.

11. A grain-separator comprising a revolving fan, a series of shaking-screens for cleaning the grain, the chute I for conducting the clean grain to the lower front end of the machine underneath the fan-casing, the screw-conveyer *i*, the conveyer-box provided with the circular flange *n*, the adjustable screw-elevator N, and the elevator-box provided with the flanged rollers *n'*, pivotally connecting it to the conveyer-casing, substantially as and for the purpose set forth.

12. A grain-separator comprising a revolving fan, a series of shaking-screens for cleaning the grain, the mechanism for actuating the said screens driven by revolving pulleys L' and K', the fan-shaft B, provided with the pinion B^3, and the friction device B^5 at one end of it, and having the collar *o*, the pulley *o'*, and the sliding friction-washer o^2 on the other end of it, the spring o^4, the spring-box o^5, and the screw o^6, for pressing the sliding washer o^2 against the said pulley, the arm P, carrying the said screw, the bracket P', bolted to the framing of the machine and having the lower end of the said arm pivoted to an extension of it by the pin *p*, the grooved pulley P^2, the pin p^2, having the screw-threaded end p^3 and head p^4, the foot-lever R, connected to the pulley P^2 by a cord, and the belt S, communicating a variable velocity from the pulley *o'* to the said pulleys L' and K', according to the position of the said foot-lever, substantially as and for the purpose set forth.

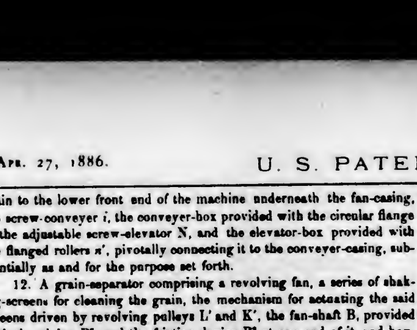
340,753. CLOAK-RACK. JOSEPH BARDSLEY, Newark, N. J. Filed Nov. 7, 1885. (No model.)



Claim.—1. A cloak-rack consisting of the standards mounted upon feet and connected by strengthening-bars, combined with the arms H H, rods I J, and brace N, the rods being retained in apertures in the ends of said arms and brace, substantially as set forth.

2. A cloak-rack consisting of the standards mounted upon feet and connected by bars C D, combined with the arms H H, brace N, and rods I J, the brace passing down on each side of and being seated in the bar C, the whole being constructed and arranged substantially as and for the purposes set forth.

340,754. CONVERTIBLE CHAIR. NICHOLAS BARTELLE, Two Rivers, Wis., assignor to the Two Rivers Manufacturing Company, same place. Filed Oct. 19, 1885. (No model.)



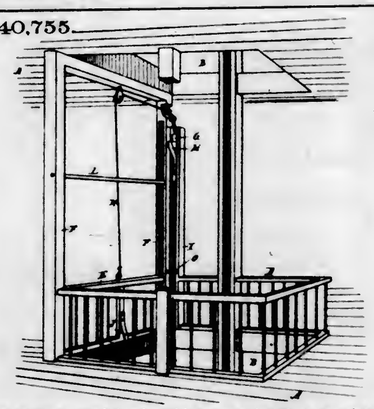
Claim.—1. In a convertible chair, the seat thereof provided with a depending front piece having a vertical groove and horizontal socket, in combination with a pivoted vertical latch hung in said groove, a spring located in the horizontal socket and designed to impinge against the latch, and a suitable stop secured to a brace-piece that unites the upper ends of one pair of pivotal chair-legs, as set forth.

2. In a convertible chair, the seat thereof provided with a depending front piece having a vertical groove and horizontal socket, and depending pins or stops upon the under side of said seat, in combination with a pivoted vertical latch hung in the groove of the depending front piece, a spring located in the horizontal socket and designed to impinge against the latch, a stop adapted to limit the movement of said latch, and a stop secured to a brace-piece that unites the upper ends of one pair of the pivotal chair-legs, as set forth.

340,755. ELEVATOR-HATCHWAY. LEWIS J. BATES, Detroit, Mich. Filed Jan. 14, 1886. (No model.)

Claim.—1. The combination, with an elevator-car having a lug upon one side thereof, of a gate vertically sliding in suitable guides and provided with a spring, and a stationary rod arranged in the path of said spring, such spring engaging with said lug in the upward movement of the car, and thereby raising or opening the gate, substantially as described.

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2. The combination, with an elevator-car having a lug upon one side thereof, of a gate vertically sliding in suitable guides and provided with a spring, such spring engaging with said lug in the upward movement of the car, and thereby opening or raising the gate, with a stop upon the frame-work of the elevator in the path of said spring, which releases the spring from its engagement with said lug, whereby the gate is allowed to descend to its original position, substantially as described.

3. The combination, with an elevator-car having a lug upon one side thereof, of a gate vertically sliding in suitable guides and provided with a spring of the form shown, such spring engaging with said lug in the upward movement of the car, and thereby opening or raising the gate, with a stop upon the frame-work of the elevator connecting said guides, and which releases the spring from its engagement with said lug, whereby the gate is allowed to descend to its original position, such descent being regulated by a counterbalance-weight, substantially as described.

4. In combination with an elevator-car, C, the gate E, sliding in vertical guides F, spring J on said gate, lug K on the car, and rod L, connecting said guides and arranged in the path of the spring J, substantially as and for the purposes set forth.

5. The combination of the elevator C and gate E, provided with the counter-weight G, the spring M on said weight, lug N on the car, and stop O, arranged in the path of said spring, substantially as and for the purposes described.

6. The combination, with the elevator-car C, provided with lugs K and N, of the gate E, provided with spring J in the path of the lug K, and the rod L, arranged in the path of the said spring, the cord H, attached at one end to said gate and carrying at its other end a weight, G, provided with spring M, arranged in the path of the lug N, and the stop O in the path of the spring M, all substantially as and for the purpose specified.

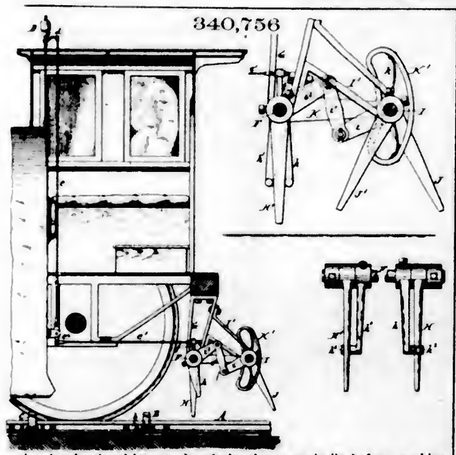
340,756. RAILWAY-SIGNAL. JOHN B. BATT, Buffalo, N. Y., assignor to the Batt Railway Crossing Signal Company, same place. Filed Jan. 19, 1885. (No model.)

Claim.—1. The combination, with the shaft F and the signal apparatus operated by said shaft, of an arm or lever mounted loosely upon said shaft, and a stop rigidly secured to said shaft and adapted to bear against one side of the arm or lever, whereby the latter will turn the shaft in one direction and move loosely on the shaft in an opposite direction, substantially as set forth.

2. The combination, in a railway signal apparatus, of an actuating-arm mounted loosely on the engine or vehicle to which the signal is applied, an arm, *h*, connected with the signal apparatus to open the signal when the arm H is moved in one direction, and not operated by the arm H when the latter is moved in an opposite direction, and an arm, J, connected with the signal apparatus to close the signal, and placed in an operative position by the arm H upon opening the signal, while the arm J places the arm H in an operative position upon closing the signal, substantially as set forth.

3. The combination, in a railway signal apparatus, of an actuating-arm, H, mounted loosely on the engine or vehicle to which the signal apparatus is applied, an arm, *h*, connected with the signal apparatus to open the signal, and operated by the arm H when the latter is moved in one direction, and not operated when said arm is moved in an opposite direction, an arm, J, connected with the signal apparatus to close the signal, and placed in an operative position by the arm H upon opening the signal, and similar arms, H', *h'*, and J', which are operated in like manner when the engine or vehicle moves in an opposite direction,

340,756



whereby the signal is opened and closed automatically before reaching the point to be signaled, whether the engine or vehicle moves backward or forward, substantially as set forth.

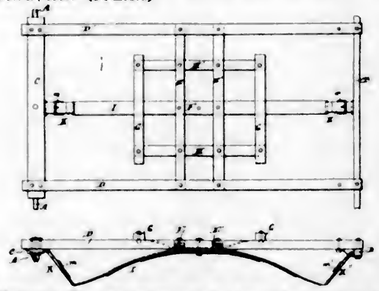
4. The combination, with the shaft F and the signal apparatus operated by said shaft, of arms H H', mounted loosely upon said shaft, and arms h h', rigidly secured to said shaft, and provided with stops h^2 h^3, arranged on opposite sides of the arms H H', whereby the arms H H' are adapted to turn said shaft in one direction and to move loosely on the shaft in an opposite direction, substantially as set forth.

5. In a railway signal apparatus, the combination, with the shafts F and I, of an arm, H, mounted loosely on the shaft F, arms h and i^3, rigidly secured to the shaft F, and arm i, rigidly secured to the shaft I, a link, i', connecting the arms i i^3, and an arm, J, secured to the shaft I, substantially as set forth.

6. In a railway signal apparatus, the combination, with the shafts F and I, provided with actuating-levers H and J, of a segmental stop, K', secured to the shaft F, and adapted to engage against the shaft I and limit the movement of the shaft F, substantially as set forth.

7. In a railway signal apparatus, the combination, with the shaft F, provided with actuating-arms H H', mounted loosely on said shaft, and stops h^2 h^3, rigidly secured to said shaft and engaging against opposite sides of the arms H H', of a shaft, I, provided with depending arms J J', and connected to the shaft F by links i i' i^3, whereby the movement of the shaft F is imparted to the shaft I, and the arms J J' caused to change their position, substantially as set forth.

340,757. WAGON-SPRING. WILLIAM BLUHM, Scranton, Pa. Filed Nov. 12, 1885. (No model.)



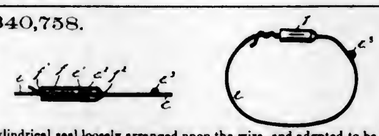
Claim.—1. The combination, with the front and rear axles and the head-piece of the former, of the two outer wooden springs, D and D', serving as a reach for the vehicle, and one or more metal springs, I, arranged between said wooden springs and having flexible connections with the said head-piece and the rear axle, substantially as set forth.

2. The combination, with the front and rear axles, of the metal spring I, the flexible straps by which the said spring is connected with said axles, and the buckles by which the tension of the said spring may be varied, substantially as set forth.

340,758. SEAL FOR FREIGHT-CAR AND OTHER LOCKS. CLARENCE V. BOUGHTON, Buffalo, N. Y. Filed Nov. 25, 1885. (No model.)

Claim.—1. A seal for freight-car locks, &c., consisting of a wire having its two ends adapted for union one with the other, and a hollow

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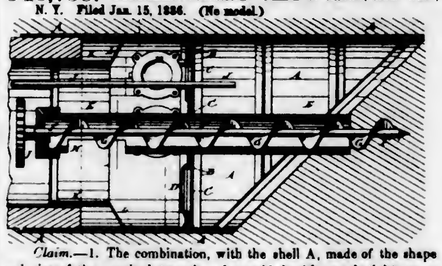


cylindrical seal loosely arranged upon the wire, and adapted to be pushed over and envelop such united ends and be compressed thereon, substantially as shown and described.

2. A seal for freight-car locks, consisting of the wire E, having the loop E' and hook E^2 at its ends, and the hollow cylindrical seal f, loosely arranged thereon, and adapted to envelop the ends E' E^2 after their union and be compressed thereon, substantially as shown and described.

3. A seal for freight-car locks, consisting of the wire E, having the twist E^3 and loop E' and hook E^2 at its ends, and the hollow cylindrical seal f, with open end f' and contracted opening f^3, such seal being loosely arranged upon the wire between the hook E^2 and twist E^3, and adapted to envelop the ends after their union and be compressed thereon, substantially as shown and described.

340,759. TUNNELING-MACHINE. FRANK O. BROWN, New York, N. Y. Filed Jan. 15, 1886. (No model.)



Claim.—1. The combination, with the shell A, made of the shape and size of the required tunnel, and provided with an air-tight cross-partition, B, having man-holes C, closed by plates D, of the tube E, the flanged shaft F G, a driving mechanism and a steam-pipe, J, substantially as herein shown and described, whereby the earth is removed in front of the machine and the machine is forced forward by air-pressure, as set forth.

2. In a tunneling-machine, the combination, with the exterior shell, A, having cross-partition B, and provided with a conveyer, E F G, of the interior shell, K, and the supporting-brackets L, connecting it with the said exterior shell, A, substantially as herein shown and described, whereby the wall of the tunnel can be laid within the rear part of the said exterior shell, as set forth.

3. The combination, with the shell A, beveled at its forward end, and provided with an air-tight cross-partition, B, having man-holes, of the interior shell, K, and the supporting-brackets L, substantially as herein shown and described.

340,760. AIR HEATING AND DRYING APPARATUS. SOLOMON N. CARVALHO, New York, N. Y. Filed June 19, 1885. (No model.)

Claim.—1. In an air heating and drying apparatus, the combination of a heating furnace or chamber having upright flues, through which the products of combustion are passed and about which the air to be heated circulates, a connecting chamber or reservoir from which the supply of heated air is delivered, and valve or gate connecting the cold-air supply-duct with hot-air delivery-reservoir, substantially as and for the purposes specified.

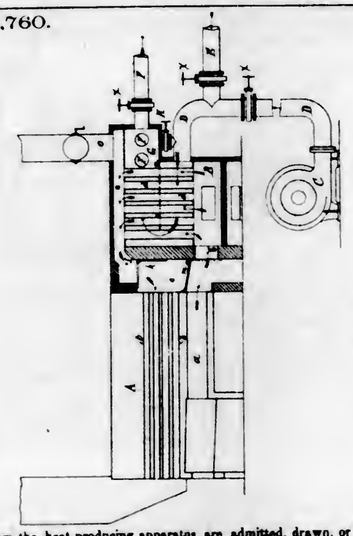
2. In an air heating and drying apparatus, gates or diaphragms h and m, connecting the furnace of a boiler or heat-producing apparatus with the furnace or chamber of an air heating and drying apparatus, whereby communication is opened or closed between the same, substantially as and for purposes specified.

3. In an air heating and drying apparatus, the combination of the cold-air-inlet pipes D or E, upright flues or tubes d, and one or more diaphragm-plates, n, located within the air heating and drying chamber, the hot-air reservoir, duct, or chamber G, and one or more hot-air outlets or ducts, F, substantially as and for purposes specified.

4. In an air heating and drying apparatus, the combination of the heating furnace or chamber B, connecting hot-air receiver or reservoir G, inlet pipes or ducts D or E, through which the air to be heated is admitted, one or more hot-air delivery-pipes, F, branching from the reservoir G, and one or more gates or valves, H, connecting the cold-air admission pipes or ducts with the hot-air delivery-reservoir G or branch pipes F, substantially as and for purposes specified.

5. In an air heating and drying apparatus, the combination of a boiler or heat-producing apparatus, gates or dampers h and m, and an air heating and drying chamber or connection, whereby products of combustion from the heat-producing apparatus are admitted, drawn, or forced through the air heating and drying chamber, substantially as specified.

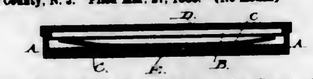
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6. In an air heating and drying apparatus, the combination of an air-heating furnace or connection, B, hot-air reservoir or chamber G, inlet pipes or ducts D and E, and an intercommunicating connection or valve, H, whereby the heated and dried air is tempered to the degree required, substantially as set forth.

7. In an air heating and drying apparatus, the combination of an air-heating furnace or connection, B, hot-air reservoir or chamber G, delivery pipes or ducts F, and one or more intercommunicating valves, H, whereby the heated or dried air may be delivered at required variety of temperature, substantially as set forth.

340,761. INK-PAD HOLDER. EDMUND D. CHAMBERLAIN, Westfield, Union County, N. J. Filed Mar. 27, 1885. (No model.)



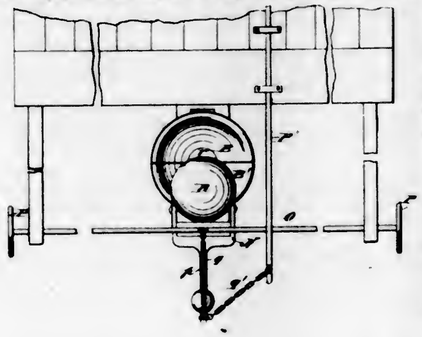
Claim.—The ink-holder B and cloth covering D and plate E, in combination with the spring C, placed between the ink-holder and the bottom plate, E, substantially as and for the purpose set forth.

340,762. CAR-COUPLING. CLIFTON T. CHAPPELL, Macon, Ga. Filed Dec. 9, 1885. (No model.)

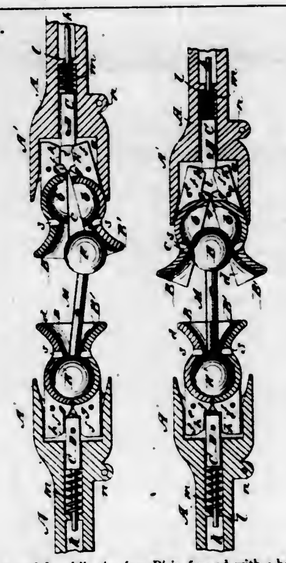
Claim.—1. The combination, with a draw-head formed with a recess, a, of pivotally-mounted coupling-jaws provided with recesses b b and heels f, having recesses i, a locking-dog, C, and a manipulating mechanism, substantially as described.

2. The combination, with a draw-head, of two locking-jaws formed with recesses b, flaring mouth d, heels f, provided with recesses i, pivot-pin e, a locking-dog, C, spring m, lever N, chain q, and shaft O, substantially as described.

3. The combination, with a draw-head formed with a recess, a, of the locking-jaws B B', the jaw B being formed with a heel, f, and

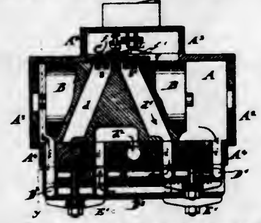


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beveled faces g and h, while the jaw B' is formed with a beveled face, g', and curved face h', the two jaws being held to the draw-head by pivot-pins e e, a locking-dog, C, formed with a shank, k, spring m, a lever, N, pivotally mounted on the draw-head and connected by a link, o, to the bar D of the locking-dog, a chain, q, and a shaft, O, substantially as described.

340,763. GAS AND STEAM PISTON METER. AUGUST C. CHRISTENSEN, Brooklyn, N. Y. Filed Jan. 21, 1886. (No model.)



Claim.—1. The combination of an inclosing-casing having a chest at the upper part and a bottom with short vertical passages, reciprocatory pistons having channels forming slide-valves, slide-valves resting on said pistons, detachable cross-pipes connecting the vertical passages in the bottom of the casing, and fastening devices for attaching said cross-pipes to the bottom of the casing, substantially as set forth.

2. The combination of an inclosing-casing having a chest at the upper part and a bottom with vertical channels, reciprocating pistons having channels forming slide-valves, gridiron slide-valves resting on said pistons, diagonal cross-pipes connecting the bottom-passages of the casing, bails for retaining said cross-pipes, and binding-screw posts for attaching the bails and pipes to the bottom of the casing, substantially as set forth.

3. The combination of an inclosing-casing having cylinders and longitudinal guide-rails, reciprocatory pistons, curved gridiron slide-valves resting on said pistons, and screws attached to the pistons and passing through slots at the slide-valves, substantially as set forth.

4. The combination of an inclosing-casing having cylinders and guide-rails, reciprocatory pistons, gridiron slide-valves resting on said pistons, screws connecting the pistons with the slide-valves, and helical springs interposed between the heads of the screws and slide-valves, substantially as set forth.

340,764. NUT-LOCK. FRED CLARK, Luling, Tex. Filed Feb. 27, 1886. (No model.)

Claim.—1. In a nut-lock, the combination, with a bolt and nut, of a pair of pivoted arms adapted to bear against the nut, and means for securing the arms against lateral movement, substantially as set forth.

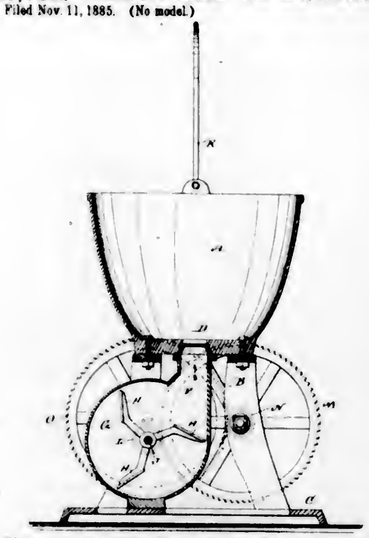
2. In a nut-lock, the combination, with a screw-threaded bolt and nut, of a pair of arms pivoted or hinged together, said arms having an-

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nular screw-threaded grooves formed therein adapted to register with the threads on the bolt, and means for locking the arms together, substantially as described.

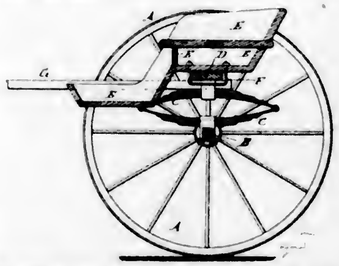
340,765. PLUMBER'S FURNACE. JOHN CLEGG, Providence, R. I. Filed Nov. 11, 1885. (No model.)



Claim.—1. A portable furnace for plumbers' use, comprising a base, C, an open frame, B, mounted thereon, the fire-pot D, having a central opening in its bottom and secured to the top cross-pieces of the frame, a blower on the base below the fire-pot having a neck, F, registering with opening in the bottom of the fire-pot, the shaft J, having the wings H within the blower, and the operating-gear for said shaft, substantially as set forth.

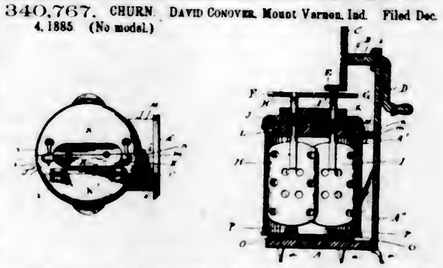
2. The combination, with a portable melting-pot provided in its bottom with an aperture, of the frame B, on which the said pot is secured, a blower on said frame and below the pot, and provided with a neck extending into the aperture in the bottom of the pot, cog-wheels pivoted on the said frame B for driving the blower, and of the bail R on the melting-pot, substantially as herein shown and described.

340,766. ROAD-CART. SAMUEL COLER, Valhalla, N. Y. Filed Nov. 16, 1885. (No model.)



Claim.—The combination, with the axle bearing the springs and the shafts secured upon the springs, of the cross-bar having a convexed upper surface and secured upon the shafts and the body independently balanced upon the cross-bar and having enlarged staples loosely embracing the cross-bar, substantially as shown and described.

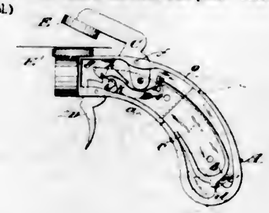
340,767. CHURN. DAVID CONOVER, Mount Vernon, Ind. Filed Dec. 4, 1885. (No model.)



Claim.—1. In combination with the body of the churn, having lugs L, a cover consisting of two pieces, J J', and a raised portion, K, the said parts J J' provided with hooks *i* and staples *i'*, and a hinged door, K', as described, and for the purposes set forth.

2. In combination with the vertical piece A', the crescent-shaped piece M, having slot *m*, the strap R, and the churn-body having a lug, *n*, as described, and for the purposes set forth.

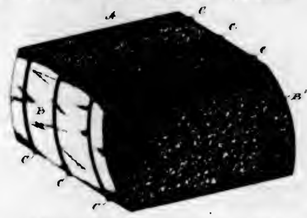
340,768. SEAL-PRESS. EMORY Q. DARR, Shelbyville, Ind., assignor to himself and Charles Morrison, same place. Filed Dec. 7, 1885. (No model.)



Claim.—1. In a seal-press, the combination, with a handle carrying a die, of a hammer controlled by a spring and carrying a corresponding die, and an actuating mechanism consisting of a dog engaging with a trigger and linked to said spring and pivoted to the hammer intermediately of the trigger and spring, substantially as described.

2. In a seal-press, the combination of the following elements: frame *a*, dies E E', hammer C, spring *b*, tripping-dog B, link *e*, and trigger D, substantially as described.

340,769. BALING SHORT-CUT HAY OR STRAW. EMERY M. DAVENPORT, Poland, N. Y. Filed Feb. 26, 1886. (No model.)



Claim.—A bale provided at its ends with single binder-pieces about the same size as the ends of the bale, and suitably bound thereto by cords or wires, substantially as shown and specified.

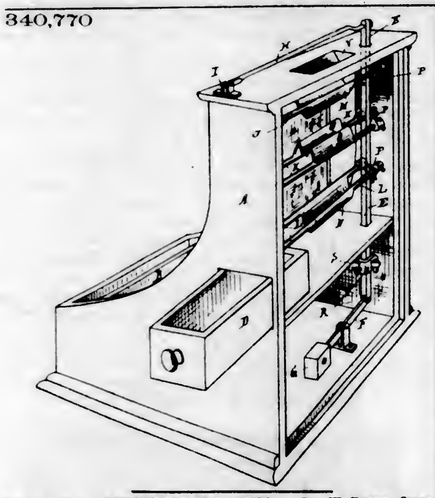
340,770. CASH-RECEIVER. DAVID W. DAVIS and WILLIAM G. LATIMER, Detroit, Mich., assignors to said William G. Latimer. Filed Dec. 3, 1885. (No model.)

Claim.—1. In a cash-receiver, substantially as described, the combination of the case A, provided with groups of rock-shafts J K L, carrying wings M, O, and N, and the bar E, arranged to operate said rock-shafts, substantially as and for the purposes set forth.

2. In a cash-receiver, the combination of the case A, shafts J K L, wings M O N, rock-arms P, vertical bar E, and rod H, all constructed, arranged, and operating substantially in the manner and for the purposes described.

3. In a cash-receiver, the combination of the case A, drawer C, vertically-reciprocating bar E, hooked lever S, fulcrumed in said casing, with one end arranged in the path of said bar and its other end hooked to engage the rear edge of said drawer, and spring T, substantially as and for the purposes set forth.

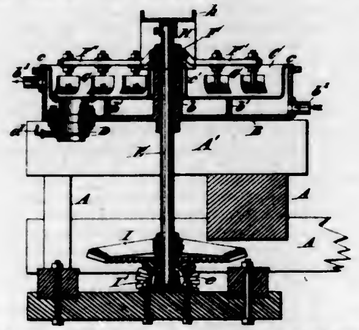
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340,771. REMEDY FOR HOG-CHOLERA. GEO. W. EACHUS, Greencastle, Pa., assignor to Addison Imbrie and John S. Pittenger, same place. Filed Oct. 3, 1885. (No specimens.)

Claim.—The remedy for hog-cholera, consisting of water, coal-oil, spirits of turpentine, sulphate of iron, charcoal, sulphur, and carbolic acid, in the proportions stated.

340,772. WHITE-LEAD COOLER. FRED ECKSTEIN, Jr., Cincinnati, Ohio. Filed Jan. 7, 1885. (No model.)



Claim.—1. An apparatus for cooling white lead and analogous purposes, consisting of a pan or receptacle having a hollow space beneath its bottom and behind its walls connected together to form a single chamber, and an inlet and an outlet aperture and connections for passage and circulation of a cooling medium, as water, a rotating shaft set upright in said receptacle and provided with a scraping device, the edges of which are set to run against the surfaces of the said receptacle, and mechanism, substantially as specified, for imparting rotation to said shaft, as set forth.

2. A white-lead cooler having flat bottom and perpendicular sides, with a hollow space or chamber surrounding the bottom and sides of said cooler to contain a cooling medium, as water, an inlet and an outlet in the said space or chamber, with connections having cocks to control the flow of the cooling medium, and a scraping device on which are scraping-edges set to work against the interior surfaces of the receptacle, and mechanism for imparting motion to said scraping device, substantially as herein specified, to operate as set forth.

3. The combination, substantially as hereinbefore set forth, of the circular pan and the spout leading therefrom near its periphery, the jacket beneath said pan having a series of flanges reaching alternately from one side to near the other, upon which the bottom of the pan rests, the induction and discharge tubes connecting with the chamber thus formed, the spout leading from the pan through the jacket near the outer edge of the former, the spindle, and the stirrers carried by said spindle, and arranged to travel upon the bottom of the pan and gradually edge the material toward the spout.

4. The combination, substantially as hereinbefore set forth, of the stirring-pan, a revolving spindle axial of said pan, an arm carried by said spindle and reaching over the pan toward its periphery, and a series of share-shaped stirrers depending from said arm to sweep the floor of the pan, and so arranged that each inner one in succession turns its furrow toward the next outer.

5. The combination, substantially as hereinbefore set forth, of the stirring-pan, its jacket with induction and eduction tubes, the spindle arranged in the axial line of said pan and jacket, an arm or wing borne by said spindle and reaching toward the side of the pan, and a series of share-shaped stirrers depending from said arm, and arranged to throw their furrows from the center toward the circumference.

6. The combination, substantially as hereinbefore set forth, of the jacketed stirring-pan, the spindle, two or more arms borne by said spindle and reaching toward the sides of the pan, and the gangs of share-shaped stirrers carried by said arms, the stirrers of one gang being arranged to overlap the stirrers of the gang in advance.

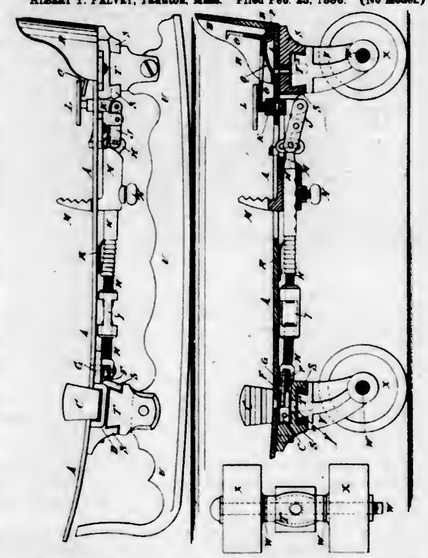
7. The combination, substantially as hereinbefore set forth, of the jacketed stirring-pan, the spindle arranged axially of said pan, the stirrers carried by said spindle, and the feed chute or chutes borne upon the head of said spindle and revolving therewith to distribute the material evenly at the center of the pan.

8. The share-shaped stirrer formed substantially as shown or described, and having a stock whereby it may be attached to its supporting-arm.

9. The combination, substantially as hereinbefore set forth, of the stirring-pan, the spindle, the arm or arms carried thereby, the gang or gangs of share-shaped stirrers depending from said arm or arms, and means by which each may be adjusted with respect to its angle with its respective carrying-arm.

10. The combination, substantially as hereinbefore set forth, with the share-shaped stirrers and the arms by which they are supported, of the screw-threaded stocks integral with said stirrers, and the clamping-nuts whereby they are adjustably connected with the arms.

340,773. SELF-FASTENING SKATE. EUGENE M. FLORENTIN and ALBERT T. FALVEY, Taunton, Mass. Filed Feb. 23, 1886. (No model.)



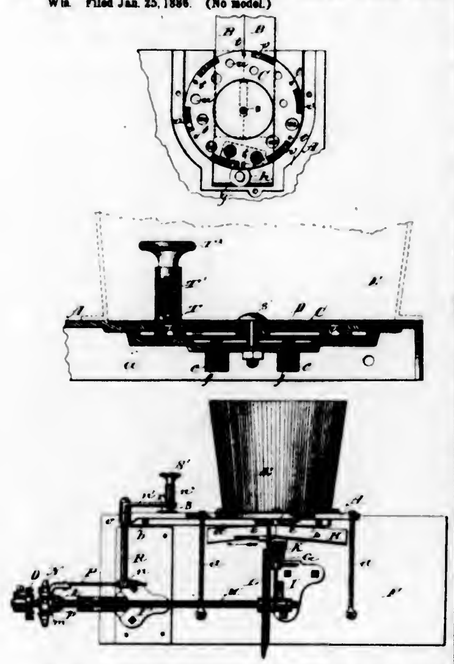
Claim.—1. In a skate, the combination, with the stock A, of the forward clasps, C, held apart by a spring, E, the heel-clasp M, provided with a tubular shank and a set-screw, N, the curved bars F, pivoted to the shanks of the clasps C, the studs G, attached to the stock A, the connecting-rod H, made in two parts connected by a long nut, I, and provided with annular ratchet-teeth, the spring-pawl R, to engage with the said ratchet-teeth, the pivoted lever J, connected with the said connecting-rod, and the stud K and button L, substantially as herein shown and described, whereby the said clasps will be operated to clamp the shoe sole and heel by a downward pressure upon the said button, as set forth.

2. In a skate, the combination, with the stock A and the button L, of the pivoted angular clasp O and the spring Q, substantially as herein shown and described, whereby the said clasp will be operated to grasp the shoe-heel by the downward movement of the said button, as set forth.

3. The combination, with the skate-stock A, horizontally-movable sole-clamps, and a longitudinally-movable heel-clamp, of a longitudinal adjustable bar pivotally connecting the sole and heel clamps, and a button at the heel portion of the stock, having shank extending through the stock and pivotally connected to the connecting-rod for operating said rod and clamps, substantially as set forth.

4. The combination, with the skate-stock A, of the bearings S, having transverse dovetailed recesses, the front and rear walls of the front recess being rounded, as shown, the dovetailed heads fitting in said transverse recesses, the front head being rounded on its front and rear sides, and the screws Y, passed through the stock into the said heads, substantially as set forth.

340,774. BROADCAST SEED-SOWER. STEPHEN FREEMAN, Racine, Wis. Filed Jan. 25, 1886. (No model.)



Claim.—1. In a sower, a rotary adjustable disk having its body portion provided with a series of graduated openings arranged in pairs, and a series of perforations around near its outer edge, in combination with a suitable dog or stop adapted to engage said perforations, as set forth.

2. In a sower, a rotary adjustable disk having its body portion provided with a series of graduated openings arranged in pairs, a series of perforations, and a series of indicators around its outer edge, said perforations and indicators being relative to the openings, as set forth.

3. In a sower, the floor thereof, provided with depending seats and suitable springs located in said seats and designed to exert their power against the cut-off plates, whereby the latter are held up against the under side of the graduated disk, as set forth.

4. In a sower, the floor thereof, consisting of a single casting integrally formed with a distributer-shaft bearing, spring-seats, depending vertical flange, tooth-quadrant, and rock-shaft bearing, said casting being suitably recessed to receive the cut-off, seed-delivery, and top plates, as set forth.

5. In a sower, the floor thereof, consisting of a single casting suitably recessed to receive the cut-off and seed-delivery plates, in combination with a top plate having beveled openings, as set forth.

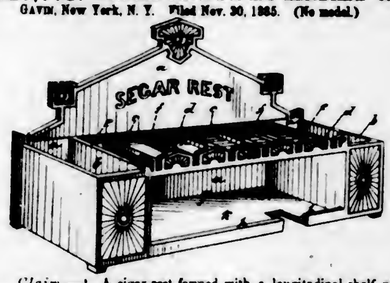
6. In a sower, the floor thereof, provided with a slot at an angle to its horizontal plane, in combination with a rotary adjustable disk having a series of graduated openings arranged in pairs, and a top plate having beveled openings, said openings in the disk and top plate arranged on the same relative plane with the floor-slot when in operative position, as set forth.

7. In a sower having a clutch-faced sprocket-wheel adapted to engage a fixed clutch on the driving-shaft, the hub of said wheel made plain, in combination with an angular arm operated by a rock-shaft and terminating in a ring adapted to fit the hub, and a binding-collar, also adapted to fit said hub and retain the ring in operative position, as set forth.

8. In a sower, a detachable top plate provided with a suitable dog and having seed-delivery openings, in combination with a rotary adjustable disk having graduated openings arranged in pairs, and perforations adapted to engage the top-plate dog, and cut-off plates arranged to bear closely against said disk, as set forth.

9. In a sower, a detachable top plate cut away at its forward end, and having an integral housing and beveled openings, in combination with a rotary adjustable disk provided with a series of graduated openings arranged in pairs and adapted to be brought into register with said top-plate openings, the disk having a series of perforations near its outer edge, designed to engage an automatic dog operative in the top-plate housing, said disk also having a series of indicators exposable at the cut-away portion of the top plate, as set forth.

340,775. COMBINED CIGAR-REST AND MATCH-SAFE. JOHN E GAVIN, New York, N. Y. Filed Nov. 30, 1885. (No model.)



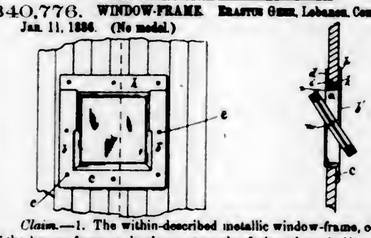
Claim.—1. A cigar-rest formed with a longitudinal shelf placed over an underlying ash-receiver, and provided with a series of notches or serrations at or near its edge, adapted to support a series of cigars transversely, and having openings through the shelf to permit the ashes to fall from the supported cigar into the ash-receiver below.

2. In a cigar-rest, the combination, with a cigar-supporting shelf adapted to support a series of lighted cigars transversely, and having openings for the passage of ashes, of an ash-receptacle beneath the shelf and a protecting base or back plate, *a*, extending up above said shelf back of the ash-opening, substantially as and for the purpose set forth.

3. In a cigar-rest, the combination, with a cigar-supporting shelf having a series of cigar-supporting notches or sockets at its front edge, adapted to receive a series of cigars transversely, of a protecting metallic base or back plate, *a*, extending up above said shelf, and adapted to cover the lighted ends of the cigars.

4. The combined match-box and cigar-rest herein shown, formed of the base or back *a*, with the match-pockets *b b* on each end thereof, a cigar rack or shelf, *c*, extending between said pockets, and provided with openings *f* for the passage of ashes, and an ash-receptacle, *g*, beneath said shelf, also extending between said match-pockets, substantially as shown and described.

340,776. WINDOW-FRAME. ERASTUS GERE, Lebanon, Conn. Filed Jan. 11, 1886. (No model.)



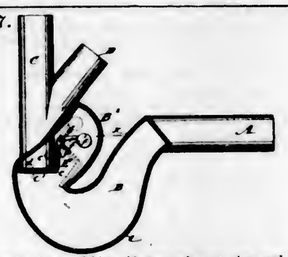
Claim.—1. The within-described metallic window-frame, consisting of the box or frame *a*, having rectangular facing-plates *b*, *b'*, and *c*, and the upwardly-extending ledge *d*, as described, in combination with a locking-plate formed substantially as specified, and adapted to complete the outer facing of said window-frame.

2. A window-frame of the class referred to, consisting of a cast-metal box or frame whose upper wall is inclined to turn water outward, and provided with the upwardly-extending ledge *d*, and whose outer edge has the integral facing-plates *b*, *b'*, and *c*, as described, in combination with a removable plate adapted to complete the rectangular facing, all being substantially as and for the object set forth.

340,777. PLUMBER'S TRAP. FREDERIK C. GERSTENBERG, Astoria, N. Y. Filed Feb. 2, 1886. (No model.)

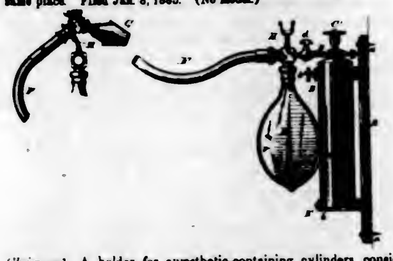
Claim.—A plumber's trap consisting of the D-trap B, open at one side, formed with a rabbet around the edge of its open side, the recess

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B', and the projection *a* within said recessed part, the vertical pipe C, extending into the trap at the recessed end B', the horizontal valve *c*, the weighted bell-crank lever *f*, pivoted on the stud *a*, the outlet A, leading from the trap at a point above the lower end of the pipe C, and the cover-plate B', fitting within the rabbeted edges of the trap B, substantially as set forth.

340,778. HOLDER FOR GAS-INHALERS. WILLIAM H. GILBERT, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed Jan. 8, 1885. (No model.)



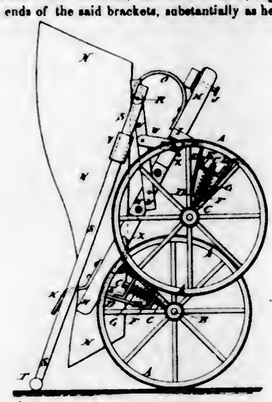
Claim.—1. A holder for anæsthetic-containing cylinders, consisting of a wall-plate, a ring at the upper end of said plate, and a ring or rest having a support for the cylinder to rest upon at the lower end of said plate, substantially as described.

2. A holder for anæsthetic-containing cylinders, consisting of a wall-plate, a ring at the upper end of said plate having internally-projecting points or ribs, and also fitted with a clamp-screw working therethrough, and a ring or rest at the lower end of said plate, containing a seat for the lower end of the cylinder, substantially as described.

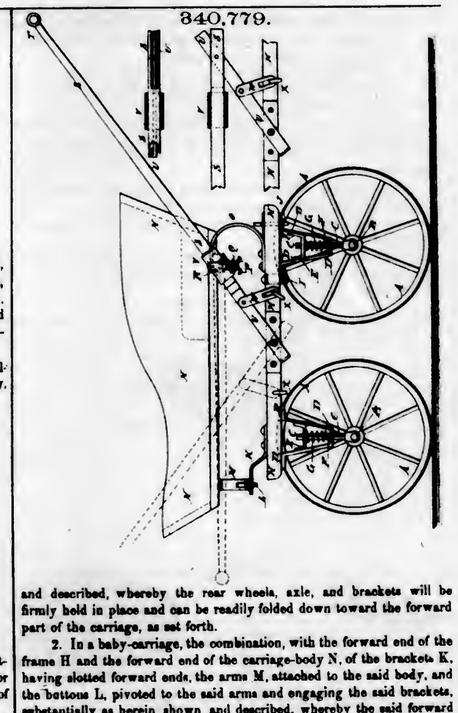
3. The combination, in an anæsthetic-administering apparatus, of the anæsthetic-containing cylinder, the gas-bag, the rigid pipe-connection between and supporting the gas-bag from the upper end of said cylinder, the valve in the upper end of said cylinder, and the stop-cock in said pipe-connection between said valve and the gas-bag, substantially as described.

340,779. FOLDING BABY-CARRIAGE. CHAS. HALLER, New York, N. Y. Filed Mar. 2, 1886. (No model.)

Claim.—1. In a baby-carriage, the combination, with the rear axle, B, and the frame H, of the standards C, the brackets D, sliding upon the said standards and having braces E, the spiral springs G, placed upon the said standards and carrying the said brackets, the legs I, hinging the forward upper ends of the brackets, and the buttons J, engaging with the slotted rear ends of the said brackets, substantially as herein shown



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and described, whereby the rear wheels, axle, and brackets will be firmly held in place and can be readily folded down toward the forward part of the carriage, as set forth.

2. In a baby-carriage, the combination, with the forward end of the frame H and the forward end of the carriage-body N, of the brackets K, having slotted forward ends, the arms M, attached to the said body, and the buttons L, pivoted to the said arms and engaging the said brackets, substantially as herein shown and described, whereby the said forward end of the carriage-body will be firmly supported and can be readily folded down within the forward end of the said frame, as set forth.

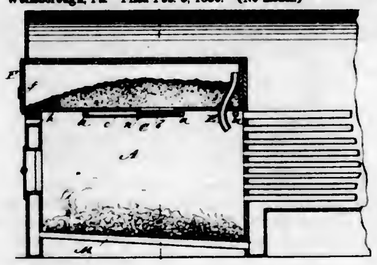
3. In a baby-carriage, the combination, with the rear end of the frame H and the rear end of the carriage-body N, of the curved bars O, attached to the said frame, the U-shaped rods P, hinged to the bars O, the spiral springs Q, placed upon the said rods P, and the cross-bar R, attached to the said carriage-body and engaging with the said U-shaped rods P and the spiral springs Q, substantially as herein shown and described, whereby the rear end of the carriage-body will be supported and the said body allowed to swing forward when being folded and enfolded, as set forth.

4. In a baby-carriage, the combination, with the handle-bars S, having slotted lower ends, of the hinge-bars U, forming a joint with the said handle-bars, the sleeves V, the brace-bars W, having slots in their lower ends, and the two sets of buttons X, substantially as herein shown and described, whereby the handle can be adjusted forward or rearward or folded down upon the forward part of the frame, as set forth.

340,780. PROCESS OF BURNING BRICK. SCHUYLER HAMILTON, Jr., New York, N. Y. Filed Dec. 10, 1885. (No specimens.)

Claim.—The method hereinbefore described of burning brick, which consists in first subjecting them to a coke-fire and then continuing the heat and completing the burning of the brick by adding to the fire coke and coal mixed.

340,781. FURNACE FOR BURNING FINE COAL. ANTON HARDT, Wallaborough, Pa. Filed Feb. 5, 1886. (No model.)



Claim.—1. The combination, with a fire-box or furnace, of a retort provided with charging and discharging openings having covers, and of a gas-discharge pipe, substantially as described.

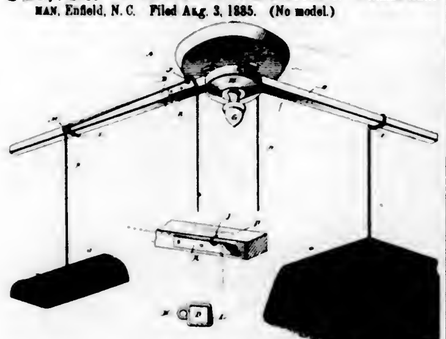
2. The combination, with a fire-box, of a retort formed with an opening, *b*, and arranged above said fire-box, a slide, C, and a tube, E, substantially as described.

3. In a furnace, the combination, with a fire-box, of retorts arranged above the fire-box, and formed with openings that are closed by movable slides, said retorts being provided with tubes, as E E, substantially as described.

4. In a furnace, the combination, with the fire-box, of retorts arranged above said fire-box, and supported by water-pipes *a a*, a slide, C, formed with a lug, *n*, and connecting pipes or tubes E E, substantially as described.

5. In a furnace, the combination, with a fire-box formed with an opening, *h*, of retorts B B', slides C, formed with lugs *n*, and pipes or tubes E, substantially as described.

340,782. **DEVICE FOR SUPPORTING NETTING.** WARREN HARTMAN, Enfield, N. C. Filed Aug. 3, 1885. (No model.)



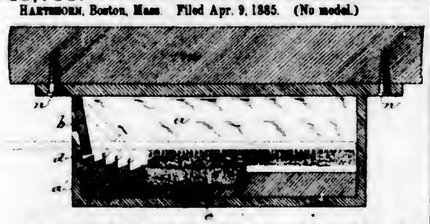
Claim.—1. The combination, with a circular plate having a rabbet around its upper edge, of supporting-arms pivotally secured thereto, and provided with a supporting and clamping device, and a hooked supporting-plate secured to said arms and having its hooked end engaging with said rabbet, substantially as and for the purpose set forth.

2. The combination of a vertical pivot supported under the ceiling, arms turning with their inner ends upon the pivot and having eyes or pulleys upon their sides, and having cord-clamps at their inner ends, and the net-supporting cords passing through the eyes or pulleys and clamped in its adjusted position by the clamps, as and for the purpose shown and set forth.

3. The combination of the circular plate having the inclined rabbet around the upper side of its periphery, the screw-bolt and confining-plate, the arms turning with their inner ends upon the said bolt, the upwardly and inwardly bent lips clamping into the rabbet of the plate and secured upon the upper sides of the arms, the sleeves sliding upon the arms and having eyes or pulleys, the eyes or pulleys upon the inner ends of the arms, the clamping-plates having their inner ends bent slightly outward, and the net-supporting cords passing through the eyes or pulleys and clamped by the bent ends of the clamping plates, as and for the purpose shown and set forth.

4. The combination, with the supporting-bars pivotally secured to the ceiling, of a sleeve or collar adjustable upon said bars, and having an eye or pulley adapted to receive the net-supporting cords, as and for the purpose set forth.

340,783. **HOLDER FOR POLISHING MATERIALS.** EUGENE H. HARTSHORN, Boston, Mass. Filed Apr. 9, 1885. (No model.)

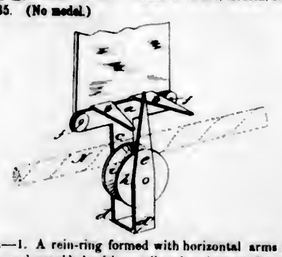


Claim.—1. A box provided with a receptacle for powder and an automatically-closing door or lid which yields to permit the introduction of a brush and closes when the brush is withdrawn, whereby the powder is prevented from scattering after the withdrawal of the brush, as set forth.

2. A powder-holding box provided with an automatically-closing door or lid and internal ridges or corrugations near said door, whereby the surplus powder is dislodged from the brush, as set forth.

3. The block provided with the ridges or corrugations and with a recess to hold a powder-box.

340,784. **REIN-RING.** JULIUS C. HOBBS, Hobton, N. C. Filed Dec. 28, 1885. (No model.)

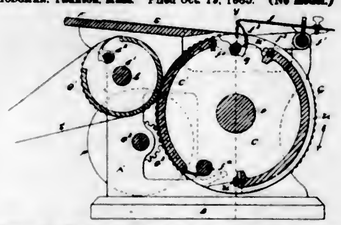


Claim.—1. A rein-ring formed with horizontal arms *b b* and a vertical arm, *e*, and provided with a roller, *h*, substantially as described.

2. The combination, with a back-band buckle, of a rein-ring consisting of the arms *b b* and *e*, and a roller, *h*, substantially as described.

3. The combination, with a back-band buckle, of a rein-ring consisting of arms *b b*, the ends of which project forward, a vertical arm, *e*, and a grooved roller, *h*, substantially as described.

340,785. **UNDER GUIDE FOR PRINTING-MACHINES.** WILLIS K. HODGMAN, Taunton, Mass. Filed Oct. 19, 1885. (No model.)



Claim.—1. In a printing-press having a continuously-rotating impression-cylinder, the combination, with the feed-board and front guides, of said impression-cylinder fitted with under guides in the form of raised ribs, substantially as set forth.

2. The continuously-rotating impression-cylinder C, having under guides consisting of the raised ribs U, attached to its surface, and extending from the gripper-edge to the tail end of the impression-surface on the opposite side of the cylinder from the impression-surface, substantially as shown, for the purpose specified.

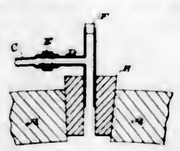
340,786. **APPARATUS FOR AUTOMATICALLY FEEDING WINE-CASKS IN CELLARS.** GEORGE JOHNSTON, San Francisco, Cal. Filed July 27, 1885. (No model.)

Brief.—The weights I raise the tank H at intervals as the liquid flows therefrom.

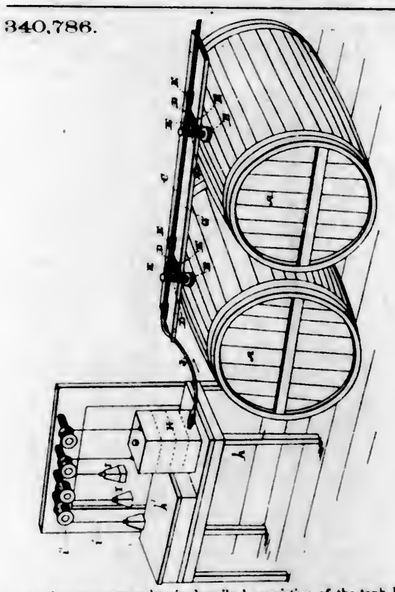
Claim.—1. In an apparatus for supplying the storage casks or vats of a wine or other liquor or spirit cellar, the combination of a supply-tank suspended so as to rise to a given point as its contents are discharged, a service-pipe, and suitable T tubes, the said tank, pipes, and tubes being made of glass, and rubber couplings and connections, substantially as herein described.

2. An apparatus for automatically supplying the storage casks or vats of a wine or other liquor or spirit cellar, comprising the supply-tank H, suspending weights connected with the tank and adapted to raise it to a given point as its contents are discharged, and a pipe-service connecting the tank with the casks, substantially as herein described.

3. An apparatus for supplying the storage casks or vats of a wine or other liquor or spirit cellar, comprising the tank H, the suspended lifting-weights I, connected with the tank, and having different elevations, the platform *h'*, on which the weights successively rest, and a pipe-service connecting the tank with the casks, substantially as herein described.

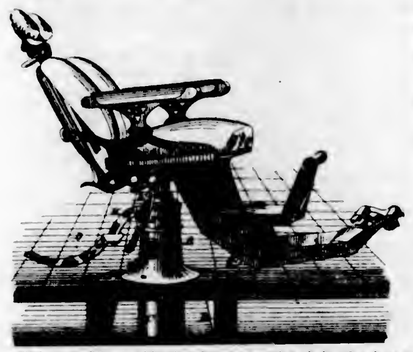


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4. An apparatus as herein described, consisting of the tank H, the tank-lifting weights I, suspended at different elevations, the platform *h'*, on which they successively rest, the service-pipe C, connecting the casks or vats in the cellar by means of suitable T-tubes, and the flexible tube J, connecting the service-pipe with the tank, substantially as and for the purpose herein described.

340,787. **DENTIST'S CHAIR.** WILLIAM A. JOHNSTON, Clifton, and ARTHUR W. BROWNE, Westfield, N. Y., assignors to the S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed June 10, 1885. (No model.)



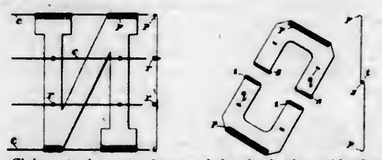
Claim.—1. The combination, in an operating-chair, of a base or pedestal resting upon the floor or platform of the operating-room, a chair body or seat elevating and supporting mechanism mounted in said base and extending below said base or pedestal through the floor or platform on which it rests, and a turning or swiveling connection between said elevating and supporting mechanism and said base or pedestal, substantially as described, whereby increased range of vertical adjustment is imparted to the seat or body of the chair without interfering with its turning or horizontal movements relatively to the base thereof.

2. The combination of a hollow base or pedestal, a base-plate or support bolted or secured thereto, and a fluid cell or reservoir fastened to said base-plate and extending below it, substantially as described.

3. In combination with the floor or platform of an operating-room, an operating-chair consisting of a base or pedestal resting on said floor or platform, elevating and supporting mechanism mounted upon said base and extending below it through the floor or platform, operating mechanism by which said elevating mechanism is controlled mounted above said floor or platform, and the chair-seat or chair-body mounted upon said elevating and supporting mechanism, substantially as described.

340,788. **RURAL ADVERTISING SIGN.** JOHN G. JORY, Baltimore, Md. Filed Mar. 17, 1884. (No model.)



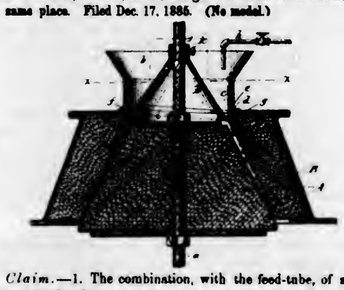


Claim.—1. A support for a rural sign, having in combination posts A, provided with holes *b*, a stake, *e*, driven in the ground at one side of each post, and each stake provided with a hook, *f*, bars *d*, each having one end braced against a post and the other end made fast to a hook-stake, and wire *c*, passed through the holes in the posts and each end made fast to one of the said hooks, and sheet-metal letters attached to the wires, as set forth.

2. A support for a rural sign, having in combination the posts, tightly-drawn wires extending between the posts, suspended truss-wires having each end made fast to a post, sagging between two posts and attached to one or more of the tightly-drawn wires, and sheet-metal letters attached to the wires, as set forth.

3. A rural sign having, in combination, the posts, tightly-drawn wires extending between the posts, and sheet-metal letters made in sections, the upper section of which has at its top a hook, *p*, and at its bottom a hook, *s*, and the lower section of which has at its top a hook, *t*, for engagement with the bottom hook of the upper section, whereby the upper section of the letter may be attached to the wire first, and then the lower section hung to the upper one, as set forth.

340,789. **FEEDING DEVICE FOR GRINDING-MILLS, &c.** M. OSDEN KASSON, Buffalo, N. Y., assignor of one-half to Charles F. Bitter, same place. Filed Dec. 17, 1885. (No model.)



Claim.—1. The combination, with the feed-tube, of a revolving feed-cone having its lower edge arranged obliquely to the axis of rotation, substantially as set forth.

2. The combination, with the feed-tube, of a revolving feed-cone having its surface made of varying inclination at different points circumferentially, whereby a rising and falling motion is imparted to the material resting on the feed-cone, substantially as set forth.

3. The combination, with the feed-tube, of a revolving feed-cone, having its surface made of varying inclination at different points circumferentially, and its lower edge arranged obliquely to the axis of rotation, substantially as set forth.

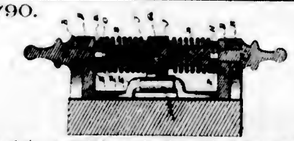
4. The combination, with the feed-tube, of a revolving feed-cone having an elliptical lower edge, *d*, arranged obliquely to the axis of rotation, and a feed-passage, *c*, of uniform width between the lower edge, *d*, of the feed-cone and the surrounding feed-tube, substantially as set forth.

5. The combination, with the grinding-cone A, spindle *a*, and surrounding shell B, of the revolving feed-cone D, secured to the spindle *a* above the grinding-cone, and provided with an annular flange, *i*, which rests upon the grinding-cone, substantially as set forth.

340,790. **SPRING-HINGE.** HENRY P. KOCHERSPERGER and GEORGE M. WALDORF, Freeport, Ill. Filed Mar. 2, 1886. (Model.)

Claim.—1. In a spring-hinge, the combination of the spindle provided with a central flange and two studs at equal distances from the central flange, with the hook-bearing sleeves fitting upon the spindle at

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both sides of the central flange, bearing with their outer ends against the studs and having longitudinal grooves in their bores for sliding over the said studs, as and for the purpose shown and set forth.

2. In a spring-hinge, the combination of the spindle formed with transverse notches in its ends, the buttons fitting upon the ends of the spindle and having reduced inner ends, and having a notch in the outer faces extending into the central bore, and the springs fitting upon the spindle and having their outer ends bent inward, and fitting in the notches of the buttons and ends of the spindle, as and for the purpose shown and set forth.

3. In a spring-hinge, the combination of a spindle having a central flange and transverse notches in its ends, and provided with studs at equal distances from the central flange, hook-bearing sleeves fitting upon the spindle and having flanges at their inner ends formed with a notch each in the outer faces and bearing with their outer ends against the studs upon the spindle, and having grooves in their bores for sliding over the studs, buttons having reduced inner portions and fitting upon the ends of the spindle, having each a notch in the outer face extending into the bore, and springs having their inner portions fitting upon the sleeves, with the inner ends resting in the notches of the flanges of the sleeves, and having their outer portions fitting upon the reduced inner portions of the buttons and their outer ends bent inward and placed into the notches of the buttons and ends of the spindle, as and for the purpose shown and set forth.

4. In a spring-hinge, the combination of hinge-leaves having outwardly-projecting ears at their inner ends, pivoted together and provided with perforated ears or bails upon the middles of their inner edges, a spindle, sleeves turning upon the center of the spindle and having wide hooks projecting from them engaging the ears or bails upon the inner edges of the leaves, and springs coiled around the ends of the spindle and secured to the sleeves and to the outer ends of the spindle, as and for the purpose shown and set forth.

5. In a spring-hinge, the combination of two hinge-leaves having obliquely-projecting ears pivoted together by pintles, and having perforated ears or bails at the middles of their inner edges, a spindle having a central flange and having notches in its ends and studs at equal distances from the flange, sleeves having longitudinal grooves in their bores for sliding over the studs of the spindle, and bearing with their outer ends against the studs, and having flanges at their inner ends provided with notches in the outer faces and hooks for engaging the bails of the leaves, buttons fitting on the ends of the spindle having notches in their outer flanged faces extending into the central bores, and springs fitting upon the sleeves, with their inner portions having their inner ends engaging the notches in the flanges, and having their outer portions fitting upon the reduced portions of the buttons, and having their outer ends inserted through the notches of the buttons and of the ends of the spindle, as and for the purpose shown and set forth.

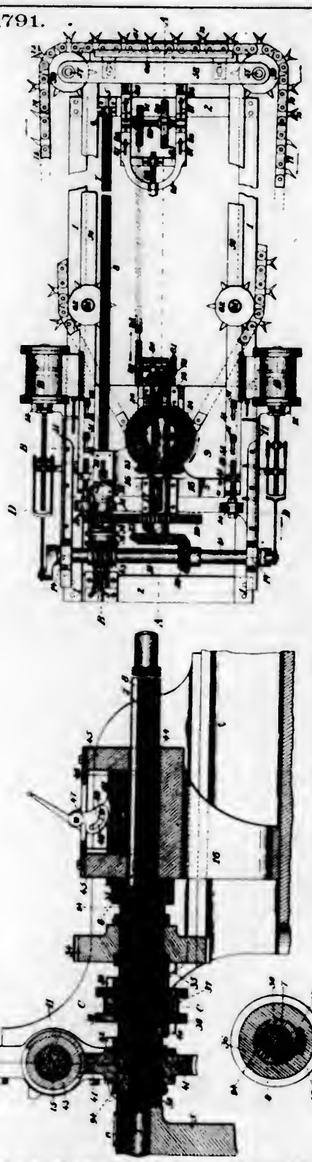
340,791. COAL-MINING MACHINE. VAN AMBURG LECHNER and SAMUEL C. LECHNER, Columbus, Ohio, assignor of two-thirds to Francis M. Lechner, same place. Filed June 8, 1885. (No model.)

Claim.—1. In a coal-mining machine, the combination of a sliding carriage carrying cutters for cutting the coal, a rotary screw-shaft, a nut situate on said carriage and gearing with the screw-shaft for moving the carriage, reversely-moving gear-wheels sliding loosely over the screw-shaft and revoluble thereon in opposite directions, and a sliding clutch mounted on the screw-shaft capable of engaging with either of said gear-wheels, substantially as and for the purposes described.

2. The combination of the screw-shaft with the sliding carriage, a nut mounted on said carriage and capable of engaging with the screw-shaft, a sliding tube mounted on the screw and connected with the carriage, gear-wheels mounted on said hollow shaft and turning loosely in opposite directions, and a clutch arranged between said wheels, having a feather-and-spline connection with the screw-shaft and capable of engaging with either of the said reversely-moving wheels, substantially as and for the purposes described.

3. In a coal-mining machine having a sliding carriage and cutter-chains revolving in opposite directions, the combination, with the said cutter-chains, of a vertical driving-shaft provided with a sprocket chain-wheel, a hollow shaft stepped on the first-named shaft and provided with a sprocket chain-wheel, said shafts being provided with separate gearing-connections and revoluble in opposite directions for moving the cutter-chains, substantially as and for the purposes described.

4. In a coal-mining machine, the combination of a series of laterally-operating cutters arranged to move and cut at the front of the machine and a driven vertical cutter arranged at the front of the machine



to move and cut a kerf transversely to the kerf of the laterally-operating cutters, for the purpose of preventing lateral displacement of the machine, substantially as described.

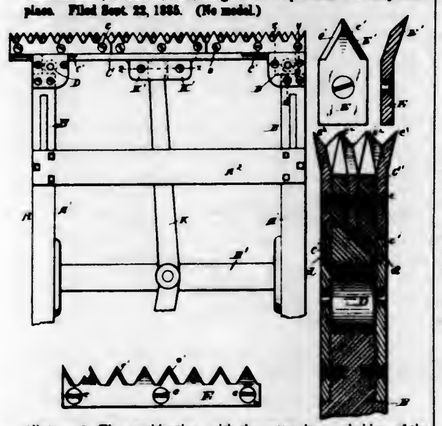
5. In a coal-mining machine, the combination of a driving-shaft, 18, sprocket-wheels 77 and 78 driven thereby, a chain connecting the sprocket-wheels 77 and 78, a sprocket-wheel, 82, geared with the wheel 78, a vertical cutter, 90, mounted on a rotary shaft, and provided with a sprocket-wheel, 91, and a chain, 92, connecting the sprocket-wheels 82 and 91, substantially as and for the purposes described.

6. In a coal-mining machine, the combination of a traveling frame or carriage bearing cutters and a cutter, 90, arranged so as to be rotary in a plane transverse to the first-named cutters, and mounted on said frame or carriage on bearings which are movable and adjustable longitudinally relatively to the line of motion of the traveling frame or carriage, substantially as and for the purposes described.

7. In a coal-mining machine having a sliding frame, the combination of a cutter-chain moving across the front end of the machine and flanged guideways within which the cutter-chain moves, whereby it is prevented from rising or buckling in its passage, substantially as and for the purposes described.

8. In a coal-mining machine, the combination of a traveling-frame or carriage bearing moving cutters, a rotary screw-shaft, a non-revoluble nut fixed on the carriage and engaging with the shaft, and an engine mounted on the carriage and geared with the screw-shaft, for the purpose of rotating said shaft, and thus advancing or retracting the carriage, substantially as described.

340,792. CUTTER FOR MINING AND OTHER MACHINES. BENJAMIN A. LEE, Columbus, Ohio, assignor to Joseph Andrew Jeffrey, same place. Filed Sept. 22, 1885. (No model.)



Claim.—1. The combination, with the cutter bar or holder, of the separately-formed cutters secured to the bar and arranged on two or more lines longitudinally of said bar or holder, and having serrated operative portions with teeth inclined some upward and some downward, substantially as set forth.

2. The combination, with the cutter bar or holder, of a series of detachable cutters secured to said bar or holder, the cutting plates or teeth proper being inclined alternately in opposite directions, and the supporting or fastening parts being arranged on a common line, substantially as described.

3. The combination, with the cutter bar or holder, of a series of cutters formed separately from said bar and secured thereto on a longitudinal line, and a second series of separately-formed cutters secured to the cutter-bar on a longitudinal line other than that of the first aforesaid series, some of the teeth of each series being inclined toward the cutters of the other series, substantially as set forth, whereby their cutting-edges are brought into conjunction, as described.

4. The combination of the cutters lying in front of the non-cutting parts, a reciprocating bar carrying said cutters and provided with a guide formed on or secured to said bar, whereby it is held in place on its support, substantially as set forth.

5. The combination of the cutters lying in front of the non-cutting parts, and the reciprocating bar carrying said cutters and provided with a guide which is situated directly behind the cutters, substantially as set forth.

6. The herein-described detachable cutter, having a part, E, for securing it, and a cutting portion, E', inclined to the part E and provided with two cutting-edges, substantially as described.

7. The combination, with the cutter-bar, of the separately-formed cutters, each having bevels upon one of its faces, the bevels of some teeth lying upward and those of others lying downward, substantially as set forth.

8. The combination of the cutter-supports C', the separately-formed cutters secured to the face of said support and having the cutting-teeth inclined some in one direction relative to the path of advance and some in the other direction, substantially as set forth.

9. The combination, with the cutter-bar having a chamber or recess therein, of the cutters secured in said chamber or recess, and the cutters secured to the outside of the bar, substantially as set forth.

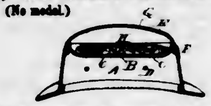
10. The combination of a cutter bar or holder, means for reciprocating said bar in both directions across the path of advance of the machine, said bar having the parts C' and the part C² with a chamber or recess between them, and cutters inserted into said chamber or recess, and adapted, substantially as set forth, to cut the material while moving in either direction, as described.

11. The combination, with a reciprocating cutter bar or holder having the part C' and the part C² with a chamber or recess between them, of the cutters inserted into said recess, and arranged, substantially as set forth, to have a cutting-edge above said parts C' C² and a cutting-edge below them, substantially as set forth.

12. The combination, with the cutter-bar, the devices carried by the said bar at or near the center thereof for connecting the power-transmitting mechanism, of the cutters projecting forward from said bar, and being alternately inclined oppositely with relation to the path of advance, substantially as set forth.

13. The combination, with the cutter bar or holder, of two or more series of cutters, each series being composed of several sections, and each section having several teeth and a common bar or plate, whereby they can all be detached from the aforesaid cutter bar or holder together and can be secured thereto together, substantially as set forth.

340,793. HAT. GEORGE H. LEONARD, Landisburg, Pa. Filed Dec. 22, 1885. (No model.)

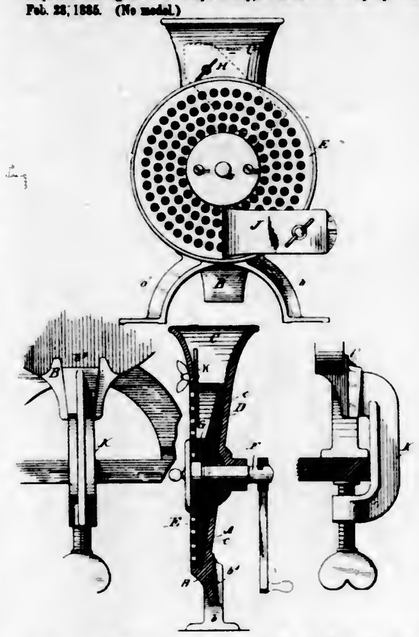


Claim.—1. The combination, with a hat-body having a perforated concave top, of a detachable crown-piece having perforations therein, and an absorbent material between the top of the body and the crown, as set forth.

2. The combination, with a hat-body having a perforated concave top, of a detachable perforated crown-piece extending over the same, external clasps to retain said crown-piece, and an absorbent material between the body and crown, as set forth.

3. A hat-body having a perforated concave top and external rabbet, a perforated detachable crown-piece extending over said top, an absorbent material between the hat body and crown, and external ornamental clasps, which attach the body and crown-piece, substantially as described.

340,794. MEAT-CUTTING MACHINE. CHARLES F. LEOPOLD, Philadelphia, Pa., assignor to the Lloyd & Supplee Hardware Company. Filed Feb. 23, 1885. (No model.)



Claim.—1. The combination, with a casing having a closed end provided with an inner beveled surface, of two disks rotated by a central shaft, the outer disk being perforated and revolving continuously in the same plane, and the inner having a lateral vibratory motion from its center simultaneously with its revolving motion, and a stationary cutting-blade bearing against the outside surface of said perforated disk, whereby meat or other compressible substance is forced against said perforated disk and through the perforations thereof, and is cut by contact with said stationary cutting-blade, substantially as described.

2. The combination, with a suitable casing, of a central rotating

shaft having a disk secured thereto and forming the outer end of said casing, said disk being perforated by holes rectangular or straight sided upon the inside face and passing to a circular form on the outside face of said disk, mechanism to force meat or other compressible substance against said rotating disk, a stationary cutting-blade secured to said casing and having a flat knife-edge bearing against the outer perforated surface of said rotating disk, and a stationary clearing-blade bearing against the inner surface of said disk, substantially as set forth.

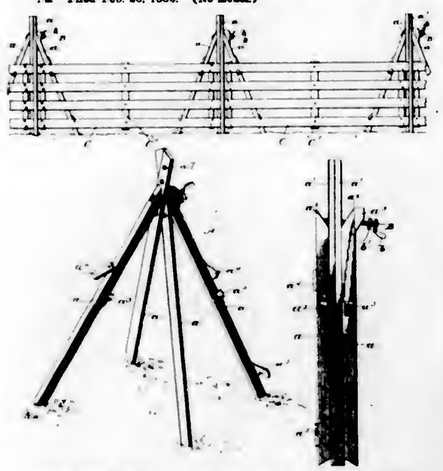
3. The combination, with a casing having a closed end, provided with a beveled inside surface, and a central shaft passing longitudinally through the same, of a disk rotated by said shaft and having a simultaneous lateral vibratory motion from its center, whereby any compressible substance may be forced with pressure against a perforated plate in the opposite end of said casing, substantially as described.

4. The combination, with a suitable casing, of a perforated disk forming one end of said casing, and rotated by means of a central shaft passing longitudinally through said casing, a second disk having a lateral vibratory motion from its center simultaneously with its revolution, a central collar between said disks, beveled, to conform to the motions of said disks, and a stationary cutting-blade bearing against the outside surface of said perforated disks, substantially as set forth.

5. The combination, with a suitable casing, of a central rotary shaft carrying two disks, with mechanism whereby said disks are caused to diverge from and converge toward each other at the same time, but at diametrically-opposite points on their inner faces at each half-revolution thereof, one of said disks closing the outer end of said casing, and being perforated by holes rectangular or straight-sided upon the inside, passing to a circular form on the outside, and the other of said disks being provided on its inner beveled face with grooves radiating from the center, widening toward the periphery, and at angle from a diametrical line across the face of said disk, whereby meat or other compressible substance is compressed between said disks at the convergence thereof, and thence carried by the said grooves of the inner disk against the straight-sided perforations of the outer disk, and there divided and forced through said perforations, substantially as set forth.

6. The combination, with a suitable casing, of a perforated disk forming the outer end thereof, mechanism for forcing meat or other compressible substance under pressure against said disk, and a central driving-shaft operating said forcing mechanism, and having its projecting cylindrical end provided on a part of its periphery with a flat surface and recessed at right angles with said flat surface, and a crank-handle having a journal provided with an internal projection to fit said recess in the end of the shaft and lock in the same, substantially as and for the purpose described.

340,795. **FENCE.** JOHN T. LESHER, Jordan, Northumberland County, Pa. Filed Feb. 20, 1886. (No model.)



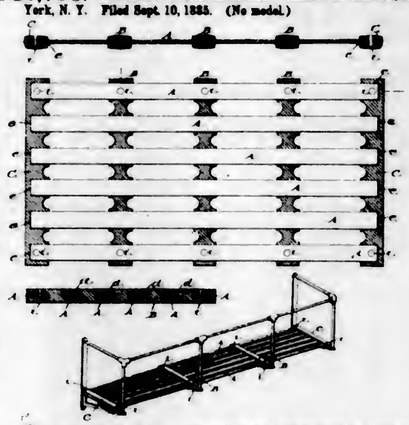
Claim.—1. A fence-post consisting of the four legs, two being beveled at their upper ends, and a bolt passing through the upper ends, substantially as described.

2. A fence-post consisting of the four legs, two being beveled at their upper ends, and a bolt passing through the legs near their upper ends and just above the lower end of the bevel, substantially as described.

3. A fence-post consisting of the four legs, two of which are provided near their upper ends with a series of holes, and the other two of which are beveled, and a bolt passing through the upper ends thereof, substantially as described.

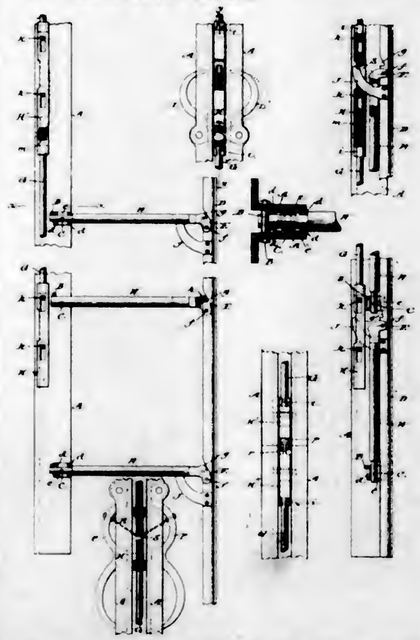
4. The combination, in a folding fence-post, of the four legs connected by means of a bolt forming a pivot upon which the legs work, two of said legs being provided with brackets and buttons, substantially as described, whereby fence-sections may be held in place.

340,796. **FLOORING FOR BALCONIES.** ALBERT H. LORRIMER, New York, N. Y. Filed Sept. 10, 1885. (No model.)



Claim.—A metallic grating or flooring constructed of a series of longitudinal bars led through apertures in a series of cross-bars, and which are fitted at each end into sockets in the end bars, the whole made fast by rivets pinning the two outer longitudinal bars to the end and cross bars, substantially in the manner and for the purpose herein set forth.

340,797. **FIRE-ESCAPE LADDER.** ALBERT H. LORRIMER, New York, N. Y. Filed Jan. 19, 1886. (No model.)



Claim.—1. In a fire-escape ladder, the combination, with a slotted block, H, inserted in the length of its locking-bar, of a curved arm, J, fitted to project inward from the outer movable rail, D, of the ladder in position to pass into the slot in said block when the ladder is closed, and formed with a beveled end to engage the upper end of the slot, and thereby lift the locking-bar in entering the slot, substantially in the manner and for the purpose herein set forth.

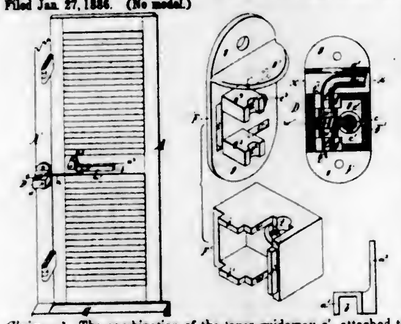
2. In a fire-escape ladder, the combination, with a slotted block, H, inserted in the length of its locking-bar, of a curved arm, J, fitted to project inward from the outer movable rail of the ladder in position to pass into the slot in said block when the ladder is closed, and formed with an inclined or curved under face to fit against a counterpart, oppositely-inclined or curved face formed at the lower end of the slot in said block, whereby when the block is moved upwardly it will force the arm and the rail which carries it outwardly, substantially in the manner and for the purpose herein set forth.

3. The combination, with the curved slotted hinge-block formed or fitted at the outer end of the round of a folding fire-escape ladder to embrace the inwardly-projecting flange of its outer rail, and with said rail, of an offset, *h*, formed to project outwardly between the jaws of the hinge-block, and enter when the ladder is open a recess, *g*, in the edge of said flange, substantially in the manner and for the purpose herein set forth.

4. The combination, with the casing of a folding fire-escape ladder, and with one or more of its pivoted rounds, of vertical strips *d d*, placed in pairs opposite each other within the casing on each side of the pivot-pin of the round, so that its inner end shall be embraced closely between and braced by said strips when the round is swung outward in the open ladder, and be removed from contact therewith when the ladder is closed, substantially in the manner and for the purpose herein set forth.

5. The combination, with the lifting-bar in a folding fire-escape ladder, and a lever, P, pivoted at one end to the casing upon one side of the rod, of a chain, R, extending from the lever below its pivot to play freely through an aperture at a still lower point on the rod, and which is made fast at its opposite end on the opposite side of the rod at a point above said aperture, substantially in the manner and for the purpose herein set forth.

340,798. **SHUTTER-WORKER.** FRANK B. MALLORY, Orange, N. J. Filed Jan. 27, 1886. (No model.)



Claim.—1. The combination of the lever-guideway *a'*, attached to the outside of the shutter, lever-arm *a*, having a vertical journaled portion which enters the housing and turns therein, and horizontal portion having a bent-up end which enters the groove of the lever-guideway and works freely therein, the worm-wheel *w*, applied between the journals of the lever-arm, the worm-shaft and worm *c'*, and the housing D, formed of the two parts F F' united, substantially as and for the purpose described.

2. The combination of the part F of the housing D, provided with half bearing-seats *f' f'* and with riveting-apertures, with the part F', having half bearing-seats *t t* and riveting projections or pintles, substantially as and for the purpose described.

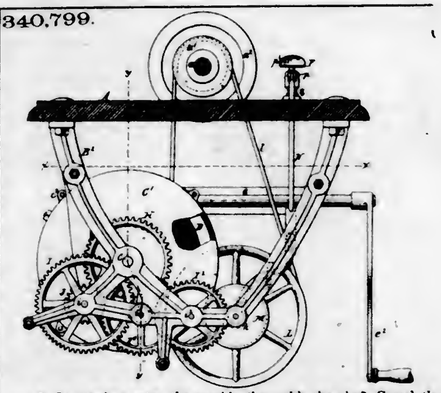
3. The combination, with the two-part housing D and the lever-arm *a*, of the weather-guard *g'*, applied to the part F of the housing and acting as a guard, and also serving to keep the journaled end of the lever-arm in position in the housing, substantially as described.

340,799. **SPRING-MOTOR.** GEORGE W. MANSON, West Buxton, Me., assignor of one-half to Thomas D. Harrison, Jersey City, N. J. Filed Oct 9, 1885. (No model.)

Claim.—1. In a spring-motor, the combination, with the shaft C, and the drum C', mounted loosely on said shaft, of a spring, D, connected at one end to the drum C' and at its opposite end to the shaft C, a gear-wheel, E', secured to the shaft C, and a worm-wheel, E, engaging with the gear-wheel E', substantially as set forth.

2. In a spring-motor, the combination, with the shaft C, and the drum C', mounted loosely on said shaft, of the spring D, inclosed in said drum and secured at its opposite ends to the shaft C and drum C', a gear-wheel, E', secured to the shaft C, a worm-wheel, E, engaging with the gear-wheel E', and an alarm device secured to the drum C' and operated by the shaft C, substantially as set forth.

340,799.



3. In a spring-motor, the combination, with the shaft C and the spring D, secured thereto, of a drum, C', mounted loosely on the shaft C, a gear-wheel, E', secured to the shaft C and engaging with a worm-wheel, E, a bell, G, spring-hammer *g*, toothed wheel F, stop *g'*, and tooth *f*, substantially as set forth.

4. In a spring-motor, the combination, with the shaft C, spring D, and the drum C', inclosing said spring and mounted loosely on the shaft C, of the gear-wheel E', secured to the shaft C and engaging with a worm-wheel E, a gear-wheel, H, secured to the drum C', a shaft, K, provided with a pinion, *k*, and a train of gear-wheels, I I' I², and pinions J J' J², whereby motion is transmitted from the drum C' to the shaft K, substantially as set forth.

5. In a spring-motor, the combination, with the shaft C, spring D, and drum C', of the gear-wheel H, secured to said drum, shaft K, provided with a pinion, *k*, gear-wheels I I' I², and pinions J J' J², forming a communication between the drum C' and shaft K, a brake-wheel, M, secured to the shaft K, and a brake-arm, N, provided with a pressure-finger, *n*, substantially as set forth.

340,800. **SHEET-METAL PIPE.** FREDERICK MARION, Philadelphia, Pa., assignor of one-half to Emanuel Stain, same place. Filed Oct. 31, 1885. (No model.)



Claim.—A sheet-metal pipe composed of two longitudinally-parted halves or sections, one of said sections having on each of its longitudinal edges a rectangular flange or tongue cut away at its extreme end, and the other of said sections having on each of its longitudinal edges a rectangular grooved flange, except at its extreme end, which is flattened down to form a projecting lip at right angles therewith, whereby said sections are held together by means of said rectangular tongues fitting into said rectangular grooved flanges, and locked therein by means of said projecting lips lying within the opposite section and abutting against the ends of the flanges thereof, substantially as described.

340,801. **PIPE-COUPLING.** FRANCIS I. MAULE, Philadelphia, Pa. Filed Sept. 29, 1884. (No model.)

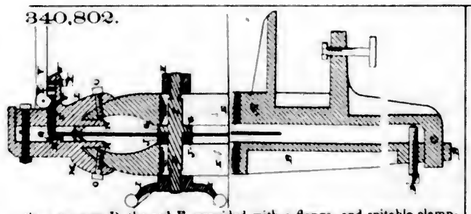


Claim.—The combination of the section A of the coupling having an annular bed of soft metal or alloy, the face of which is flush with that of the coupling, with the section B, having an annular rib bearing on said bed and an annular tongue which fits the central bore of the section A, as set forth.

340,802. **CONVERTIBLE SAW SETTING AND JOINTING DEVICE.** ADDISON C. MCEWEN, Jersey City, N. J. Filed Mar. 6, 1886. (No model.)

Claim.—1. The combination of the jaws A B, provided with vertical slots and having their lower ends connected loosely together, with

340,802.



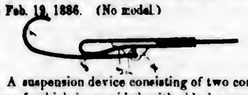
the set-screw D, the rod F, provided with a flange, and suitable clamping devices, substantially as shown.

2. The combination of the two jaws A B, having vertical slots E, and having their lower ends adjustably connected together, the set-screw D, the rod F, provided with a flange, and suitable clamping devices, the washer J, placed upon the rod F, the two jaws of the set mechanism, and the die and lever connected therewith, substantially as described.

3. The combination of the two jaws L M with the two jaws A B, upon which they are placed, each one of the jaws L M being provided with tenon N, set-screw O, the clamping-bolt S, the die U, anvil Q, lever V, and set-screw X, substantially as set forth.

4. The combination, with the jaws A B and adjusting devices thereof, of the interchangeable jaws M L Y Z, substantially as described.

340,803. SUSPENSION DEVICE. GEORGE W. McGILL, New York, N. Y. Filed Feb. 19, 1886. (No model.)



Claim.—1. A suspension device consisting of two connected spring-jaws, the rear one of which is provided with side lugs, and a cam-lever pivotally connected with the lugs and provided at its free end with a laterally-projecting hook, the hooked end portion projecting longitudinally beyond and laterally over the connected ends of the jaws when the lever is in its clamping position, substantially as described.

2. A suspension device consisting of two connected spring-jaws, the front jaw having a bend to bring its clamping end parallel to the clamping end of the rear jaw, and a cam-lever pivotally connected with the rear jaw and having a lateral hook at its outer end, the hooked end portion extending longitudinally beyond the connected ends of the jaws when the lever is in its clamping position, substantially as described.

3. A suspension device consisting of two connected jaws, one having a bend to bring its clamping end parallel to the clamping end of the other, and a cam-lever pivotally connected with the rear jaw and having a lateral hook at its outer end, such hooked end portion in the clamping position of the latter extending longitudinally beyond the connected ends of the jaws, substantially as described.

340,804. SUSPENSION DEVICE. GEORGE W. McGILL, New York, N. Y. Filed Feb. 19, 1886. (No model.)

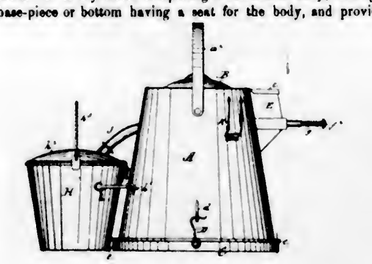


Claim.—1. A suspension device consisting of two connected spring-jaws, the rear one of which is provided at it side edges adjacent to its ends with rearward-projecting oppositely-arranged side lugs and pin-guards, a double-pronged pin pivoted in the lugs, and a front cam-lever pivotally connected with forward extensions on the rear jaw, substantially as described.

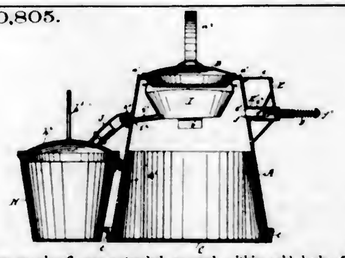
2. A suspension device consisting of two connected jaws, the rear one provided with pivot-lugs, pin-guards, and intermediate ears, and the front one formed with a bend to bring its clamping end parallel to the clamping ends of the rear jaw, a double-pronged pin pivoted in the lugs, and a cam-lever pivoted to the ears, substantially as described.

340,805. DRY CLOSET. GEORGE F. McMURRY, Eureka Springs, Ark. Filed June 4, 1885. (No model.)

Claim.—1. A dry closet comprising a bottomless body, an imperforate base-piece or bottom having a seat for the body, and provided



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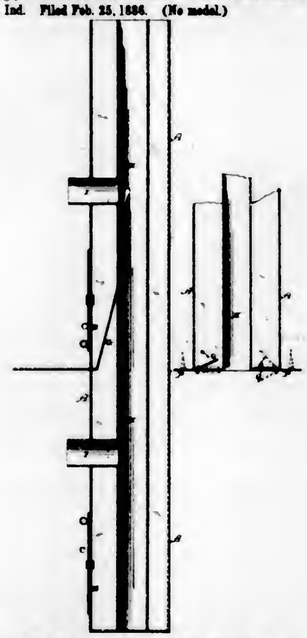
with an annular flange extended upward within said body, forming a protector, and fastenings whereby said body and bottom may be detachably connected, substantially as set forth.

2. In a commode, the combination, with the body provided with an inwardly-projected and downwardly-inclined flange, *a*, and a lug, *i*, arranged in said body below said flange, of the segmental urinal rested on the lug *i*, and having its rear wall fitted up under the flange *a*, substantially as set forth.

3. The combination, with the body and the chamber E, communicating with the body A through an opening, *e'*, and having a partition, E', provided with an opening, *e²*, of the discharger F, located below said partition E', and having a vertical wing, *f*, and a receiving-plate, *f'*, substantially as set forth.

4. In a dry closet, the combination of the imperforate base-piece or bottom, the bottomless body seated at its lower end on the bottom, and the flanges *c c'*, secured to the bottom and projected upwardly above and on opposite sides of the lower edge of the body, the flange *c'* being extended to form a protector, substantially as set forth.

340,806. VENTILATOR. DANIEL T. McNIER and JOHN B. CARTER, Kokomo, Ind. Filed Feb. 25, 1886. (No model.)

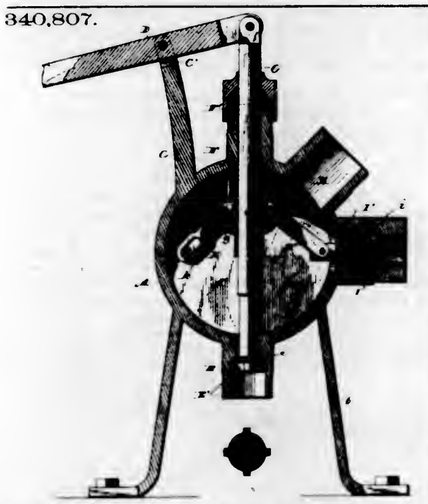


Claim.—The flue A, provided with the openings B, the registers C, and the guards G, with the pipes H I, combined and arranged substantially as described.

340,807. STOP AND WASTE COCK. JOHN M. McVEY, Lima, Ohio. Filed Feb. 18, 1886. (No model.)

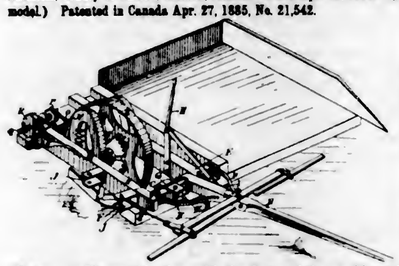
Claim.—1. A valve for the purpose set forth, a casing having a removable cap, and inwardly-projecting pin formed integral with or attached to one of the sides of the casing for the reception of the slotted end of a link, said link being attached to an adjustable sleeve secured on the valve-stem, so as to limit the play of said stem, in combination with the valves E' and I', substantially as shown, and for the purpose set forth.

340,807.



2. A casing, A, provided interiorly with a vertical reciprocating valve-stem, G, a sleeve, G', adjustably secured thereon, said sleeve having projecting ears *g*, to which are pivotally attached links K and K', one of said links being slotted and connected to the casing, while to the other is attached a sliding valve, a valve, F', attached to the base of the same, the parts being combined and organized substantially as shown, and for the purpose set forth.

340,808. HARVESTER. FREDERIK D. MERCER and JOHN S. MERCER, Dereham, County of Oxford, Ontario, Canada. Filed Apr. 15, 1885. (No model.) Patented in Canada Apr. 27, 1885, No. 21,542.



Claim.—1. The combination, with the frame of the machine, of a tongue, the link G, pivotally connecting the two, and means for holding said tongue in either of two positions, substantially as described.

2. The bar C, the tongue B, pivoted thereto, the braces D, and link G, pivotally connecting said bar to the frame, combined with the brackets E, fixed to said frame and provided with detachable pins F, substantially as and for the purpose specified.

3. A tongue, B, pivoted on a bar, C, and stayed thereto by the braces D, in combination with the brackets E, fixed to the frame A, and provided with detachable pins F, and the tilting lever H, pivoted in the ordinary way on the frame A and detachably connected to the tongue B, substantially as and for the purpose specified.

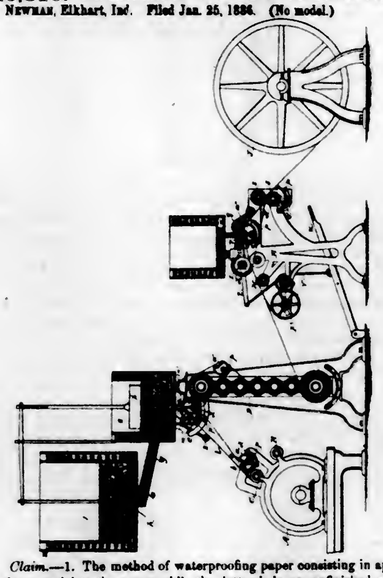
4. A link, G, pivoted substantially on the corner of the frame A at one end, and at its other end to the bar C, on which the tongue B is pivoted, in combination with brackets E and J, provided with holding-pins, the whole operating substantially as and for the purpose specified.

340,809. BUGGY-TOP. JOHN METCALFE, Brantford, Ontario, Canada, assignor of one-half to Charles Champion, same place. Filed Feb. 6, 1886. (No model.)



Claim.—The front joint, A, provided with eye *a*, having square hole, and the hollow sleeve G, having square end to engage the hole in said eye, combined with the back joint, B, having eye *b*, provided with square hole, the spindle E, having square end engaging the hole in said eye *b*, the said spindle passing through the hollow sleeve, and the handles D F, fixed to the ends of the sleeve C and spindle E, respectively, substantially as herein shown and described.

340,810. PAPER-MAKING. FREDERICK W. MILLER and JOHN J. NEWMAN, Elkhart, Ind. Filed Jan. 25, 1886. (No model.)



Claim.—1. The method of waterproofing paper consisting in applying the material to the paper while the latter is in an unfinished condition, and subsequently finishing the paper, substantially as set forth.

2. In combination with a machine for making paper, a distributer adapted to apply waterproofing material and arranged in advance of the finishing devices, whereby the material will be applied to the paper while the latter is in an unfinished condition, substantially as set forth.

3. In a paper-machine, a distributer, substantially as described, having a portion of its surface depressed, whereby a delivery or spreading edge and a reducing-edge are provided, substantially as set forth.

4. In a paper-machine, a distributer having a portion of its surface depressed, forming delivery and spreading edges, and adjustably supported, whereby the web of paper may be caused to move in close contact with such edges, substantially as set forth.

5. In a paper-machine, the combination, with a distributer having a discharge and a valve controlling the same, of a pivoted lever connected with the valve and having a bearer adapted to rest upon and be supported by the web of paper, whereby normally the valve will be open, and in case of breakage of the web or slacking thereof the valve will be closed, substantially as set forth.

6. The combination, in a paper-machine, with a distributer and a tank, of a pipe connecting such parts, and a steam-pipe disposed in said connecting-pipe, substantially as set forth.

7. In a paper-machine, and as a means for spreading paraffine and the like on the upper surface of a web, a foraminous size-roll, *r*, substantially as described, and for the purposes specified.

8. The cylindrical automatic size-box with its steam-pipe *d*, supply-tanks 1 and 2, with steam-coils and connecting-pipe *g*, inclosed in supply-pipe *s*, automatic valve *h*, slide-valve *c*, combination-lever *j*, connecting slide-valve *c*, and dance-roll *k*, substantially as set forth.

9. In combination with a distributer and devices by which to guide the paper in contact therewith, a supply-tank connected with said distributer and comprising inner and outer casings and heating-pipes interposed between said casings, substantially as set forth.

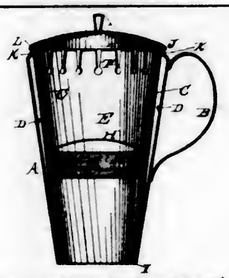
10. The combination of the framing or support having guides for the paper being treated, the lever *l*, pivoted to said support, the foraminous size-roll, and the roll *q*, supported in said lever, substantially as set forth.

340,811. PERCOLATOR. RICHARD L. NELSON, Orange County, Va. Filed Oct. 17, 1885. (No model.)

Claim.—1. A percolator having a strainer-bottom, an inner compartment, and a surrounding water-jacket, the inner compartment having at its upper part connection with said surrounding water-jacket, substantially as set forth.

2. A percolator having a strainer-bottom, a surrounding water-

340,811.

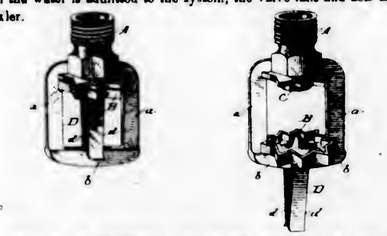


jacket, a central compartment having at its upper portion communication with said water-jacket, and a strainer adapted to fit within said central compartment, for the purpose of confining the material to be percolated and permitting of the gradual supply of water thereto, substantially as set forth.

3. A percolator of conical or taper form, having a surrounding water-jacket and a strainer-bottom, a central compartment to receive the material to be treated and the water to be percolated therethrough, and having at its upper portion connection with said water-jacket, and a water-strainer adapted to fit within said inner compartment for the purpose of confining the coffee or other material at the bottom and permitting of the gradual flow of the water thereto, substantially as set forth.

340,812. FIRE-EXTINGUISHER. WILLIAM NERACHER, Cleveland, Ohio. Filed Sept. 8, 1885. (No model.)

Brief.—This sprinkler belongs to an empty-pipe system. The springs hold the valve lightly in place merely to keep out dirt, dust, &c. When the water is admitted to the system, the valve falls and acts as a sprinkler.



Claim.—1. In combination with a valve and distributer and its seat and the frame connected thereto, spring-arms adapted to maintain the valve in a closed position when not under pressure, and to yield and open the valve when the water is turned on, substantially as described.

2. In combination with the valve, the seat and its supporting-frame, and the spring-arms *d d*, adapted to grip the cross-bar *b*, all substantially as described.

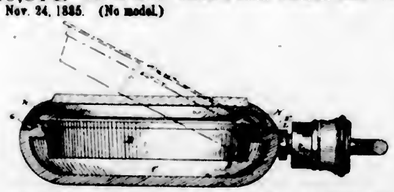
340,813. BRASS MUSICAL INSTRUMENT. DANIEL O'HARE, Newark, N. J., assignor of one-half to Frederick R. Maddox, same place. Filed Mar. 12, 1885. (No model.)



Claim.—1. The combination, with the seat *a* and finger-piece *b* of a brass musical instrument substantially such as described, of a rubber cushion, *c*, substantially as and for the purposes set forth.

2. In a brass musical instrument, the combination, with the seat *a* and key *b*, of a rubber cushion, *c*, and rubber washer *d*, substantially as and for the purposes set forth.

340,814. WATCH-CASE. DANIEL O'HARA, Waltham, Mass. Filed Nov. 24, 1885. (No model.)



Claim.—In a watch-case, the combination of a movement ring or band surrounding and containing the watch-movement and having a flange surrounding it, a case center or shell, and a hinge or joint covered by the flange of movement-ring and joining same to case-center, which is cut away for the passage of the flange of movement-ring in the swing of said ring on its hinge, substantially as described, for the purpose specified.

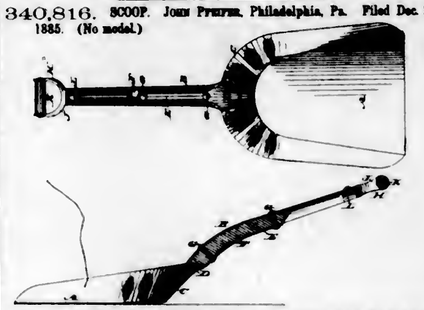
340,815. ELECTRIC BELT. MORGAN PAYNE and DANIEL BEMBON, Cardington, Ohio. Filed June 1, 1885. (No model.)



Claim.—1. A battery-cell for electric belts, composed of two plates, one of copper and one of zinc, cemented together at their edges by means of insulating material, the plates being so shaped as to leave a space for the exciting material, substantially as specified.

2. A battery-cell for electric belts, consisting of plates of copper and zinc of oval shape having a portion cut away, as described, the parts being united by insulating material, and the slotted portion provided with a bent wire secured around its edges, substantially as specified.

340,816. SCOOP. JOHN PFEIFER, Philadelphia, Pa. Filed Dec. 23, 1885. (No model.)

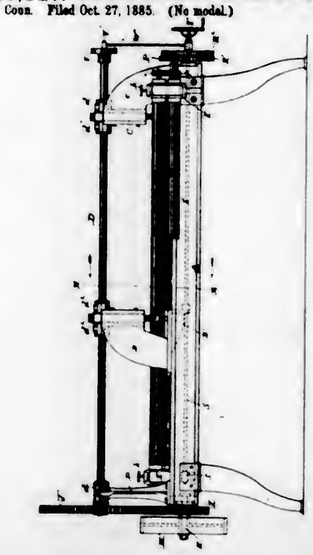


Claim.—1. A shovel or scoop having the blade A of sheet metal, with the crimp C, and having both the top and bottom edges of the rim uncorrugated or plain, substantially as described.

2. A shovel or scoop composed of a blade, A, of sheet metal, a hollow handle, a wooden stiffener extending from the blade along a portion of the handle, a pad, and a tang, the latter being secured to the handle and stiffener and connected with the pad, substantially as described.

3. A scoop or shovel composed of the blade A of sheet metal, having a crimp, C, substantially as described, a tubular handle, B, welded to said blade, and the pad D, secured to the rim of the blade, and having its tang E, extending along the back of the handle and conforming to the shape thereof, substantially as and for the purpose set forth.

340,817. PUNCHING-MACHINE. EDWARD H. PHIPPS, New Haven, Conn. Filed Oct. 27, 1885. (No model.)



Claim.—1. In combination with the bed and two or more heads supported thereon, the rotary shaft passing through suitable bearings on the heads, the punching mechanism supported entirely upon the heads and driven by connection with the shaft, substantially as and for the purpose described.

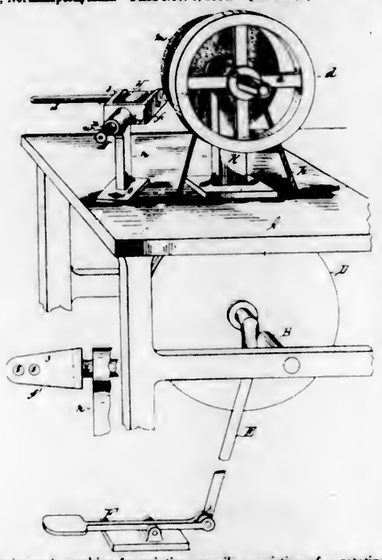
2. In combination with a suitable supporting-bed, the fixed head on the bed, the rotary shaft journaled in bearings on such head, the standard, and the bearing thereon for the end of the shaft, the movable head supported on the bed, the bearings for the shaft on the latter head, and suitable punching devices carried and entirely supported by the heads and driven from the shaft, substantially as and for the purpose described.

3. In combination with a suitable bed, a head fixed thereon at or near one end, a standard at or near the other end, journal-bearings for the shaft on the head and standard, a movable head supported on the bed, bearings on this head through which the shaft passes, suitable punching devices carried and supported entirely by the heads and driven from the shaft, and an adjusting-screw engaging a portion of the movable head, substantially as and for the purpose described.

4. In a punching-machine, the stationary punching-head, the movable punching-head, the adjusting-screw for the latter, and the pairs of feed-rolls on opposite sides of the heads, all in combination, substantially as and for the purpose described.

5. In combination with the toothed wheel for driving the feed-rolls of a punching-machine through suitable connecting-gearing, the pivoted arm, the double pawl pivoted thereon, provided with a wedge-shaped projection on its back or outer side, the spring-bolt engaging such side of the pawl, the connecting-rod, the crank-disk, and the crank-pin thereon made adjustable diametrically across the disk, substantially as and for the purpose described.

340,818. MACHINE FOR SHARPENING PENCILS. DAVID F. RAMNEY, Northampton, Mass. Filed Nov. 9, 1885. (No model.)

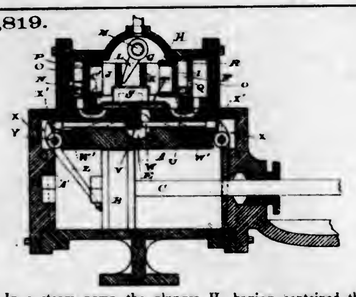


Claim.—A machine for pointing pencils, consisting of a rotating shaft having a grinding-wheel, substantially as described, secured thereon, combined with pencil-holding devices supported on a suitable standard near said wheel, consisting of a bifurcated yoke having notches in the ends of its arms and a hollow shank by which said yoke is secured to said standard, a hollow holder located between said arms and capable of a horizontal motion therebetween, and having a stem extending through the hollow shank of the yoke, and having a head on its end, a coiled spring on said stem between said head and the inner end of the cavity in said yoke-shank, and means, substantially as described, for imparting a rotary motion to said shaft, substantially as set forth.

340,819. STEAM-ACTUATED VALVE. JOHN J. REILLY, San Francisco, Cal. Filed Oct. 1, 1884. (No model.)

Claim.—1. In a steam-pump, the combination, with the main slide-valve S, of the auxiliary slide-valve T, the rods W, provided with heads to form valves, and levers Z, contained within the steam-cylinder and operated by the piston-head B, substantially as shown, for the purpose set forth.

340,819.

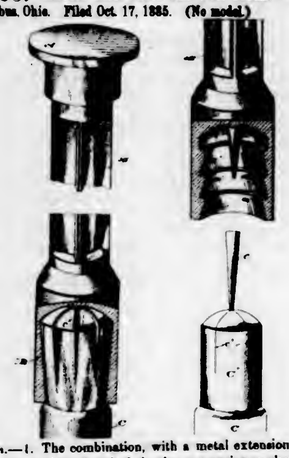


2. In a steam-pump, the plunger H, having contained therein straight plug-valves O O, working in valve-chambers P P, and provided with valve-seats N N, which are so located within the plunger as to have steam-spaces constantly below them, the said plunger having also steam-passages Q and R, communicating through the end of the plunger with chambers P P, in combination with steam-ports X', controlled by the plunger H, substantially as shown and described.

3. In a steam-pump, the plunger H, having steam-passages C C', communicating at intervals with the steam ports or passages X' in the main cylinder, substantially as shown and described, for the purpose set forth.

4. In a steam-pump, the combination and arrangement of the main steam-ports W', controlled by the slide-valve S, and the auxiliary steam ports or passages U, controlled by the auxiliary valve T, having a lower depending lug, V, which valve T is operated by the rods W W, provided with heads to form valves, and the levers Z Z, substantially as shown and described.

340,820. METAL EXTENSION-CAP FOR PILES. HYLAS SABIN, Columbus, Ohio. Filed Oct. 17, 1885. (No model.)



Claim.—1. The combination, with a metal extension-cap for piles, consisting, essentially, of a shaft having a tapering socket at the lower end adapted to receive the upper end of the pile, the said socketed portion of the shaft being integral with the main body of the shaft, of a wedge for expanding the upper end of the pile in the socket after the extension-cap has been placed on the pile, substantially as set forth.

2. The combination, with a metal cap for piles, said cap having a socket for receiving the tenon or end of the pile, said socket having ridges or projections for indenting the wood, of one or more wedges, tapering plugs, or suitable device for expanding the tenon or end of the pile in the said socket, substantially as set forth.

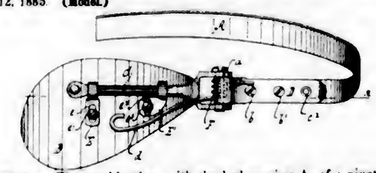
340,821. THILL-COUPLING. NICHOLAS SCHERER, Allegheny City, Pa. Filed June 3, 1885. (No model.)



Claim.—The combination of a thill having an eye for connecting the thill with the shackle, the thill-eye being recessed or countersunk at both of its termini, a shackle having arms inclosing the thill, both of said

arms being recessed or countersunk interiorly and opposite to the recesses of the thill-eye, and bushes or washers, each of which is shaped in the form of two cones having their bases in conjunction, interposed between the thill and each of the shackle-arms and between the countersunk recesses thereof, substantially as and for the purposes described.

340,822. **TRUSS.** HENRY SCHEUERLE, New York, N. Y. Filed Nov. 12, 1885. (Model.)



Claim.—The combination, with the body-spring A, of a pivot-pin, *a*, connected with one end thereof, the arm C, hinged by said pin, the pad-plate B, hinged to the arm to turn axially around the latter, and the spring F, coiled on the pivot-pin and having a prolongation, *d*, acting on the said arm and extending along the pad-plate and bearing thereupon at one side of its hinge-line, whereby the spring tends to turn the arm on its pivot, and also to turn the pad-plate axially on the arm, substantially as described.

340,823. **SHUTTLE-OPERATING MECHANISM FOR LOOMS.** CHAS. SCHILLING, Auburn, N. Y. Filed Oct. 9, 1885. (No model.)



Claim.—1. The combination, with the shaft *b*, provided with two actuating cams or arms, B B, of two picker-shafts, C C, made movable toward and from said actuating cams or arms, picker-staffs connected with said picker-shafts, and a shipper whereby said movable picker-shafts are connected and simultaneously thrown out of or into engagement with the actuating cams or arms at the will of the operator, thereby stopping or starting the picker mechanism, substantially as set forth.

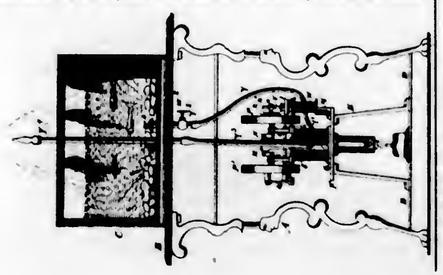
2. The combination, with the shaft *b*, provided with two actuating cams or arms, B B, of two picker-shafts, C C, stationary bearings and movable bearings supporting opposite ends of the picker-shafts, and a shipper connecting said movable bearings, and whereby said shafts are simultaneously thrown in and out of their operative position, substantially as set forth.

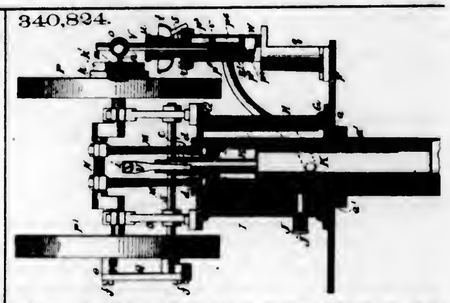
3. The combination, with the picker-shafts C C, of the movable rings H H', provided with stops J, segmental supports I, upon which said rings turn, and against which said stops engage, and a shipper connecting said rings, substantially as set forth.

4. The combination, with the shaft *b*, provided with actuating cams or arms B, of the picker-shafts C C, provided with arms D, movable bearings in which said picker-shafts are journaled, a shipper-rod, *k*, connected with the movable bearings, a shaft, *l*, provided with an arm, L, which is connected with the shipper-rod *k*, and a treadle, M, secured to the shaft *l*, substantially as set forth.

340,824. **HOT-AIR OR STEAM MOTOR.** ARTHUR SCHMALZ, Dundee, Ill., assignor of two-thirds to August Nolte and Wilhelm Lorenz, both of same place. Filed Oct. 21, 1885. (No model.)

Claim.—1. The combination of the motor-piston cylinder, the vent-tube J, connected therewith, the displacer, and the piston in said cylinder, the crank-shaft, the rods connecting the shaft and piston, the pitman connected to the displacer, the shaft to which the pitman is connected,





and connections between the two shafts to operate the piston and displacer conjunctively, substantially as described.

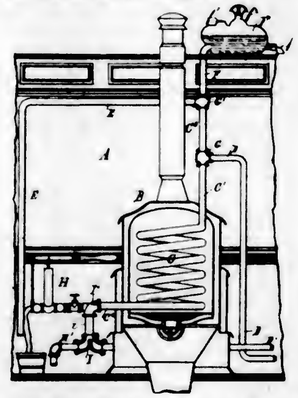
2. The combination of the pump-cylinder having inlet and exit openings, the piston formed with flattened sides and perforated heads, the piston-rod, a motor embodying a piston and a displacer, and a jointed coupling eccentrically connecting the rod and motor, substantially as described.

3. The combination, with a motor having a cylinder, I, a piston and displacer reciprocating therein, and a fly-wheel, P, moved from said piston and displacer, of a reservoir, H, a pump-cylinder, W, connected with said reservoir, a piston reciprocating and rotating within the pump-cylinder, a piston-rod, and a jointed coupling eccentrically connecting the piston-rod and fly-wheel of the motor to reciprocate and rotate said pump-piston, substantially as described.

4. The combination, with vessels C and H and a pipe leading from one to the other, of a pump-cylinder, W, connected with vessels C and H by separate pipes, a piston-rod and a reciprocating and rotating piston in the pump-cylinder for withdrawing water from vessel C and forcing it into vessel H, and from thence into vessel C, a motor embracing a cylinder, I, piston L and displacer K, reciprocating therein, and a fly-wheel, P, revolved from said piston and displacer, and a jointed coupling eccentrically connecting the piston-rod and fly-wheel for reciprocating and rotating the piston; substantially as described.

5. The combination of the cylinder I, the displacer K and piston L, reciprocating therein, the crank-shaft N, carrying fly-wheels P and P', the rods M, connecting said shaft and piston, shaft S, pitman T, connected by elastic straps U with displacer K and arm R, and link Q, connecting fly-wheel P' and shaft S, substantially as described.

340,825. **CAR AND HOUSE WARMER.** JOHN Q. C. SEARLE, Chicago, Ill. Filed Dec. 3, 1883. (No model.)



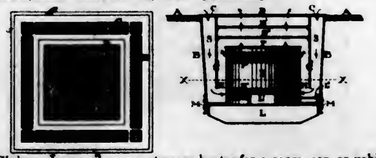
Claim.—1. The combination of fittings G G', provided with diaphragms g g^2 and orifices g' g^2, with the coil C and leading-pipes D and E, and expansion-chamber F' of a hot-water warming apparatus for railway-cars, when arranged and operating substantially as and for the purpose described.

2. The combination of coil C, fittings G G', having the perforated diaphragms g g^2 and the elbow I, with the pipes D D' and E E', constituting the short and long circuits of a hot-water warming apparatus for railway-cars, when arranged and operating substantially as and for the purpose described.

3. The combination of fitting G', provided with a diaphragm, g^2, and orifice g^2, with the coil C, expansion-chamber F', pipes E E', and

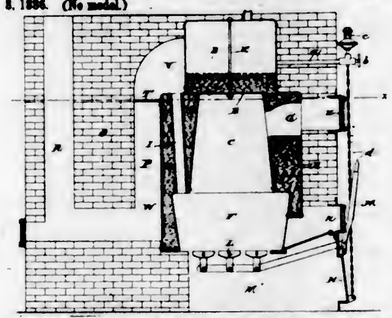
the customary heat-radiators under the car-seats, to form a single circuit for the hot water in the warming apparatus of railway-cars, when arranged and operating in the manner substantially as described.

340,826. **HEATER FOR CARS, ROOMS, &c.** WILLARD T. SEARS, Boston, Mass. Filed Feb. 20, 1885. (No model.)



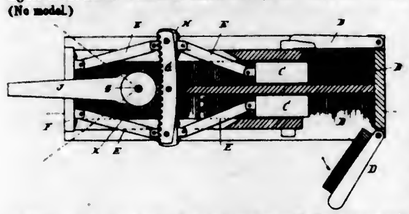
Claim.—In an oil or gas stove or heater for a room, car, or vehicle, the combination of the outer case, B, adapted to fit into the floor and to receive a grill, D, and the inner case, C C C' C', having grills D' D', with the stove E L, all operating together substantially as described, and for the purpose set forth.

340,827. **BOILER.** THOMAS SHIVERS, Oskaloosa, Iowa. Filed Jan. 8, 1886. (No model.)



Claim.—The boiler comprising the vertical shell A, the steam-dome, of less diameter, on the upper end thereof, the magazine and fire-box located in the boiler, the said magazine being largest at its lower end, and the said fire-box being largest at its upper end, the flues I from the fire-box and extending through the upper end of the boiler, and the casing O, surrounding the boiler and having the upper chamber, V, surrounding the steam-dome and the upper end of the boiler, and with which the flues I communicate, and the lower chamber, W, surrounding the lower portion of the boiler and communicating with the upper chamber, V, for the purpose set forth, substantially as described.

340,828. **HAY-PRESS.** ADRIAN SIMPSON, Smith Creek, Mich., assignor of one-half to William R. Gillett, same place. Filed Jan. 14, 1886. (No model.)



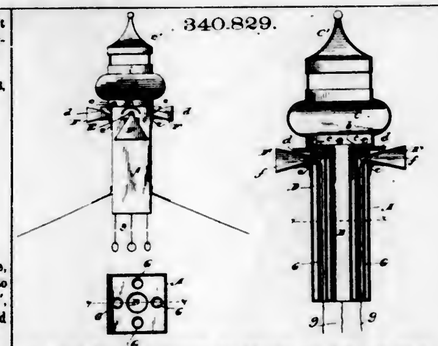
Claim.—1. In a hay-press, the combination, with the transversely-arranged rack G, head-block F, and plungers C, of the toggle-levers, pivotally connected with said plungers, rack, and head-block, as described, and the sweep-lever J and pinion K, carried thereby and engaging said rack, substantially as and for the purposes specified.

2. In a hay-press, the combination, with the top plate, L, having lateral grooves *d*, of the feed-doors M, provided with the fingers *b*, as and for the purposes described.

3. In a hay-press, the combination of the baling-chambers B, plungers C, doors D, toggle-levers E, rack G, lever J, pinion K, and feed-doors M, provided with the fingers *b*, when constructed, arranged, and operating substantially as and for the purposes specified.

340,829. **VENTILATOR.** MICHAEL H. SHANLEY, Granbury, Tex. Filed Feb. 25, 1886. (No model.)

Claim.—1. The improved combined flue and ventilator herein described, consisting of an outer casing, A, surmounted by a cap and provided with a central flue, funnels F, hinged to the outer casing and provided with flexible connections for elevating the same, and means for conducting the air downward from said funnels, substantially as shown, and for the purpose set forth.



2. In a combined flue and ventilator, an outer casing, A, having screens or shields *d* attached thereto, openings located under said shields, and hinged funnels adapted to be elevated from within the building, and a central flue through the outer casing, the parts being organized substantially as shown, and for the purpose set forth.

3. In a combined flue and ventilator, an outer casing provided with a central flue and tube, G, located between said flue and casing, and funnels F, hinged to the outer portion of the casing, so as to lead into the tube G, and means for elevating said funnel from the interior of the building, substantially as shown, and for the purpose set forth.

340,830. **SNAP-HOOK.** JOHN H. SHAW, New Haven, Conn., assignor to Sargent & Co., same place. Filed Mar. 1, 1886. (No model.)



Claim.—In a snap-hook, the combination of the body A, constructed with a loop, *a*, at one end, and with a hook, *b*, at the other end, the sides of the said body turned toward each other, but so as to leave a space between them longitudinally, the said space interrupted by a lug, *d*, midway of the length of the sides, with a spring, *g*, and bolt *e* in said body, the bolt provided with a thumb-piece extending out through the slot forward of the said lug, the said thumb-piece and lug operating to arrest the inward movement of the bolt, substantially as described.

340,831. **CLASP.** CHRISTOPHER C. SHELBY, Paterson, N. J. Filed Feb. 24, 1886. (No model.)



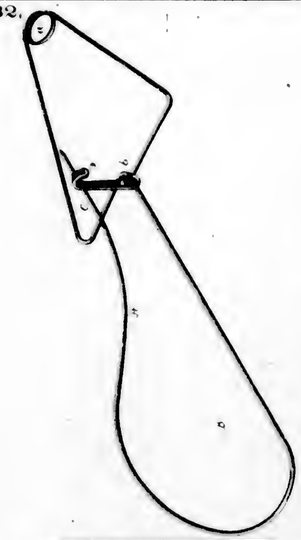
Claim.—1. The combination, with the base-plate adapted to be secured to the webbing and having the longitudinal slot and the recess near one end thereof, of the locking-plate pivoted to the base-plate and having a longitudinal slot corresponding to that in the base-plate, and the stud or button at its end adapted to co-operate with the recess in the base-plate and secure the fabric, and the slide or button adapted to slide in the slots in the base and locking plates and hold the two plates firmly together, substantially as described.

2. The combination, with the webbing A, the base-plate having the transverse slot at its forward end and the ears or teeth at its rear end for securing the end of the webbing to the body of the latter and to the plate, and having also the longitudinal slot and recess, of the pivoted locking-plate having the button or projection and the slide for securing the two plates together when the latter is swung down, substantially as described.

340,832. **BILL AND LETTER FILE.** ALFRED M. SLACK, Du Bois Pa., assignor of one-half to H. Loeb, same place. Filed Feb. 18, 1886. (No model.)

Claim.—As an improved article of manufacture, a bill-file formed of a single piece of wire having the attaching-eye *a*, and the outwardly, downwardly, and inwardly directed branches united by wrapping, the hook formed from one branch extending forwardly from the wrapped connection, and a downward loop terminating in a pointed free branch to engage the said hook, substantially as specified.

340,832.



340,833. FASTENING DEVICE FOR BOTTLES. H. D. THATCHER and H. P. BARNHART, Potsdam, N. Y. Filed Dec. 23, 1885. (No model.)



Claim.—1. The combination, with an open-mouthed vessel, of a cover therefor held in engagement therewith by a pivoted bail secured to the vessel, and provided with a tie-bar or chord spanning the arc of the bail within its extremities, and bearing upon the superior surface of the said cover, as set forth.

2. The combination, with an open-mouthed vessel, of a cover therefor held in engagement therewith by a bail pivoted to the vessel, and provided with an elastic or spring tie-bar or chord spanning the arc of the bail within its extremities, and bearing upon the superior surface of the said cover, as set forth.

3. The combination, with an open-mouthed vessel, of a cover therefor provided with a concavity or depression in its superior surface, a bail pivoted to the vessel and provided with an elastic or spring tie-bar or chord for engagement with the said cover, and having a lug or projection on its inferior surface, and spanning the arc of the bail within its extremities, as set forth.

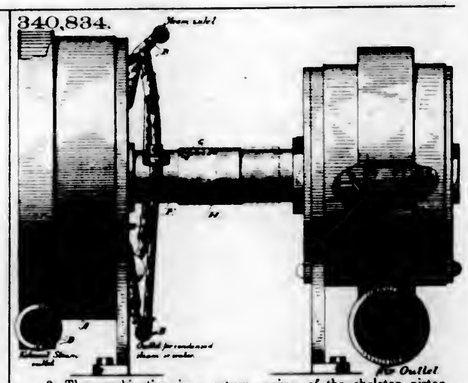
4. The combination, with the open circular-mouthed vessel A, having sockets *a'*, the circular cover B, having the flange *b* and central concavity, *b''*, the pivoted bail C, having inturned extremities, the flat spring E, provided with the downwardly-projecting protuberance *e*, and spanning the arc of the bail between its extremities, whereby the upper portion of the bail is adapted for use as a handle, and the extremities of the bail are more securely held within their sockets when the tension of the spring is increased, as set forth.

340,834. COMBINED ROTARY ENGINE AND BLOWER. THOMAS THORNTON, Tidioute, Pa. Filed Oct. 6, 1885. (No model.)

Claim.—1. The combination, in a rotary engine, of the skeleton frame carrying piston-blades, said blades having flanges and arranged at an angle tangential to the stationary end of the cylinder, with the live-steam inlet-ports at like angles oppositely arranged, substantially as set forth.

2. The combination, in a rotary engine, of the main shaft common to the rotary engine and blower, the sleeve on said shaft forming a pocket for lubricating material, and the sliding sleeve or cover arranged outside the stationary sleeve E, all operating together as set forth.

340,834.



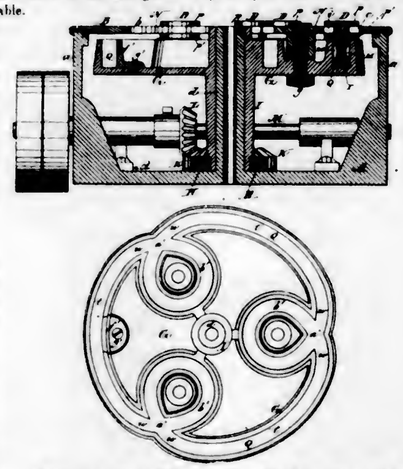
3. The combination, in a rotary engine, of the skeleton piston-head carrying piston vanes or blades, said blades being arranged at an angle to the inner face of the cylinder-head, with the tapering exhaust-port arranged at a circumference larger than the circumference of the piston, as set forth.

4. The combination, in a rotary engine, of the piston having its blades or piston-vanes angular and set tangential to the periphery of the cylinder and provided with flanges having the same angle, whereby the steam is made to impinge against the cylinder-head, and expanding against the piston-blade, and deflected tangentially into the exhaust-port beyond the periphery of the engine, substantially as set forth.

5. The combination, in a rotary engine, of the cylinder, the piston-head, having the piston-blades set at an angle, as described, the supply-ports B, and pipes I, said ports being equally arranged around the cylinder-head, whereby the same pressure of steam is given to the piston-wheel at the several points described for balancing the same, substantially as set forth and described.

340,835. MACHINE FOR MAKING CORDAGE, &c. JAMES P. TOLMAN, West Newton, Mass. Filed Jan. 4, 1886. (No model.)

Brief.—The revolving plate or cam-table has a continuous endless cam-groove or pathway for directing the feet of the travelers, such groove being so curved as to cross itself at suitable points and to move the travelers in proper succession from the notches in the guide-ring into the notches in the carrier-gears, and at the proper times return them into other notches in the said guide-ring, without the aid of switches or other traveler-selecting devices or accessories. The spool-carrying travelers move in the cam-groove or pathway of said revolving plate or table.

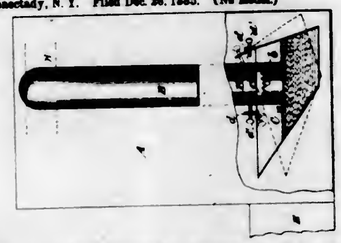


Claim.—1. A revolving table or platform, G, having a continuous endless cam-groove or pathway, Q, curved to cross itself at suitable points and form loops or circular portions *b'*, lying within the circle of the outer or peripheral portions, and provided with notched carrier gears or heads N, in combination with the guide-ring or traveler-holding plate H and means for revolving the table or platform G, substantially as and for the purpose set forth.

2. The combination, with a series of spool-carrying travelers provided with feet, and a guide-ring or traveler-holding plate having notches or recesses for receiving and holding the necks of the travelers, of a revolving table or platform and means for rotating the same, said table or platform having a continuous endless cam-groove or pathway for directing the feet of the travelers, and notched carrier gears or heads mounted on said table or platform for moving the travelers from one position to another in said guide-ring, the cam-groove being so curved as to cross itself at suitable points and form loops or circular portions lying within the circle of the outer or peripheral portions, whereby the travelers are moved in proper succession from the notches in the guide-ring into the notches in the carrier-gears, and at the proper times returned into other notches in the said guide-ring without the aid of switches or other traveler-selecting devices or accessories, substantially as described.

3. A revolving table or platform provided with a continuous endless cam-groove or pathway, Q, having peripheral portions *t* and inwardly-curved portions *w*, crossing each other at *a'* and forming loops or circular portions *b'*, lying within the circle of the outer portions, *t*, in combination with means for rotating said table or platform, and a series of intermittingly-moving spool-carrying travelers, a guide-ring or traveler-holding plate having notches or recesses for receiving and holding the necks of the travelers, and notched carrier gears or heads mounted on the revolving table or platform over the portions *b'* of the cam-groove, and adapted to move the travelers from one position of rest to another in said guide-ring and around the portion *b'* of the cam-groove, substantially as and for the purpose set forth.

340,836. FLUSH-TANK AND SIPHON. BENJAMIN VAN VRANKEN, Schenectady, N. Y. Filed Dec. 26, 1885. (No model.)

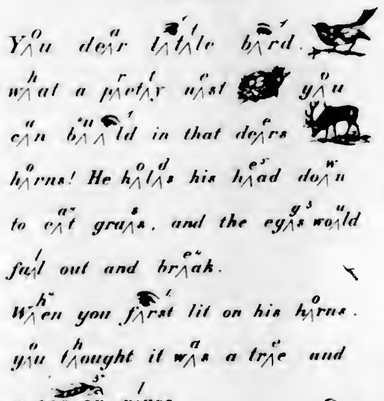


Claim.—1. A siphon provided at the extremity of its longer arm with a tip-basin, substantially as described.

2. A flushing device for sewers and the like, consisting of a tank having an exit-opening adapted to connect with the sewer-pipe, a siphon-pipe having its longer arm within the tank and its shorter arm outside of the same, and a tip-basin below the longer arm of said siphon, substantially as described.

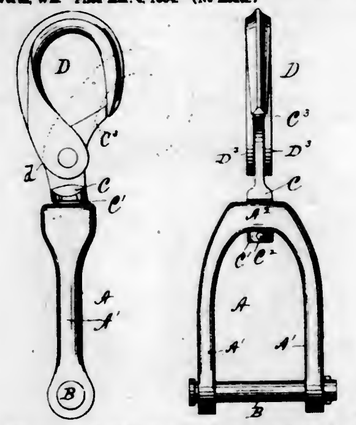
340,837. METHOD OF INDICATING ORTHOGRAPHY. MARY E. WALKER, Oswego, N. Y. Filed Jan. 31, 1884. (No model.)

PRIMARY.



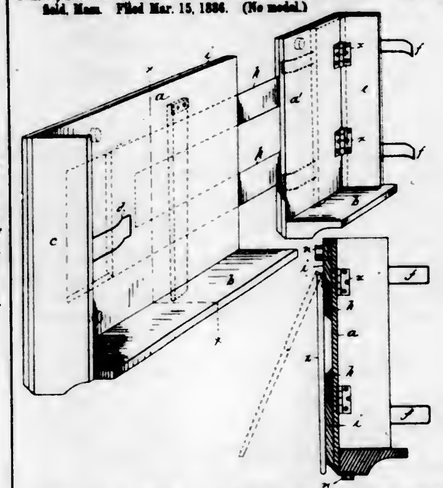
Claim.—The method of teaching the correct orthography of words, which consists in omitting letters from the word-line and placing above the same letters or characters, to which special attention is directed, as set forth.

340,838. CLEVIS. EDWIN A. WALTERS and HENRY L. AYERS, Walworth, Wis. Filed Mar. 4, 1884. (No model.)



Claim.—A clevis consisting of the following elements in combination: a link, a draft-latch swiveled therein, and a hook pivoted to the draft-latch and limited in its forward and backward movement thereby, the parts being arranged and operating substantially as and for the purposes specified.

340,839. BOOK AND MUSIC HOLDER. AMELIA H. WARD, Springfield, Mass. Filed Mar. 15, 1886. (No model.)



Claim.—A book and music holder consisting of the back piece *a*, having the undercut slats *i i* thereon, the back piece *a'*, having the bevel-edge strips *h* secured thereto, having a sliding engagement with said slats *i*, the end piece *c*, fixed to one end of said back piece *a*, and having the leaf-holder *d* thereon, the end piece *e*, hinged at one end of said back piece *a'*, and having one or more leaf-holders *f* thereon, and a base-strip, *b*, in two parts, fixed at the lower edge of said back parts and projecting at right angles therefrom, substantially as set forth.

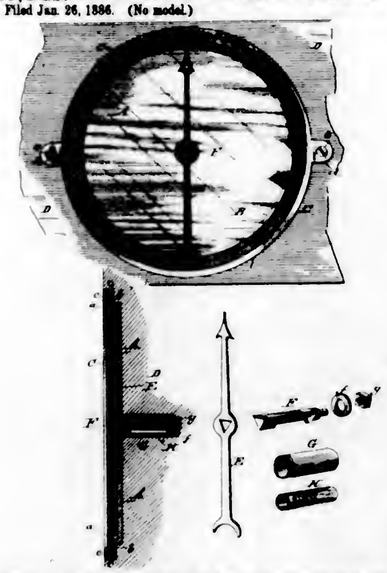
340,840. FLY-SCREEN. ELMORE J. WEBB, Lamoeta, Mo. Filed Nov. 20, 1885. (No model.)



Claim.—1. The combination, with a door or window screen, of the elongated box provided with a narrow entrance and the overhanging flange, substantially as described.

2. In combination with a door and window screen, the elongated trap provided with a narrow entrance, the inwardly-projecting flange forming a narrow passage, and the removable end, substantially as set forth.

340,841. PLUMB-LEVEL. MICHAEL S. WELLER, Charlestown, W. Va. Filed Jan. 26, 1886. (No model.)

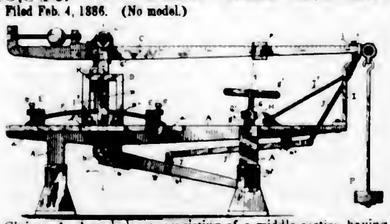


Claim.—1. In a carpenter's level, the combination of the index and pivot shaft with the tubular bearing having a glass lining, as shown and described, for the purpose specified.

2. In a carpenter's level, the combination, with the tube G, of the index and its shaft, made triangular and having its middle portion cut out, as shown and described.

3. In a carpenter's level, the combination of the index and its pivot or shaft and the counterbalance nut and washer with a tubular cylindrical bearing, through which said shaft extends, as shown and described.

340,842. TESTING-MACHINE. THOMAS D. WEST, Cleveland, Ohio. Filed Feb. 4, 1886. (No model.)



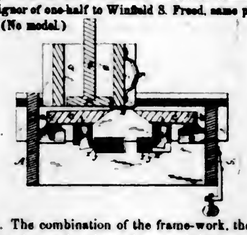
Claim.—1. A scale-beam consisting of a middle section, having an open center and forwardly and rearwardly projecting flanges, and the end sections secured to said flanges, the said head having internal and external knife-edge bearings, substantially as set forth.

2. The combination, with guides, vertically-movable supports passing through said guides, and a scale-beam resting between and on the upper ends of said supports, of mechanism engaging the lower ends of said supports for elevating them, substantially as set forth.

3. In a combined testing and weighing apparatus, the combination, with a scale-beam and vertically-moving supports for the beam, of a vertically-moving stop for the scale-beam, connecting mechanism for moving the said supports and stop in unison, substantially as described, whereby the scale-beam is kept approximately in a horizontal position.

4. In a testing and weighing apparatus, the combination, with a scale-beam and vertically-moving supports for the scale-beam, of stops to limit the depression of the said movable supports, said stops being integral or rigidly connected with the supports, substantially as described, whereby the distance of the stops from the table indicates the deflection or elongation of the metal tested.

340,843. VEGETABLE-SLICER. JOHN R. WHARRY, Moundsville, W. Va., assignor of one-half to Winfield S. Freed, same place. Filed Feb. 17, 1886. (No model.)



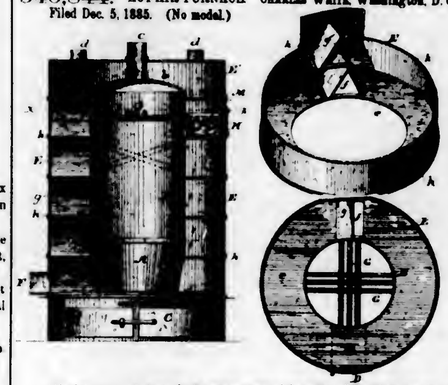
Claim.—1. The combination of the frame-work, the knife, the bottom pieces, means for moving these pieces, and the box, which is moved back and forth over the knife, with the pivotal plates, which are provided with the pivots at their upper ends, substantially as shown.

2. The combination of the frame-work, the knife, the bottom pieces, means for moving these pieces, and the box, which is moved back and forth over the knife, with the pivotal plates, which are provided with pivots at their upper ends and the turned-out flanges at their lower ends, substantially as described.

3. The combination of the frame-work, the pivoted bottom pieces, the grooved cross-pieces, and the cams, which have their edges to catch in the grooves of the cross-pieces, so as to give the bottom pieces a positive movement up and down, substantially as set forth.

4. The combination of the frame-work, the pivoted bottom pieces, the knife, the cross-pieces provided with inclined grooves, and the cams provided with inclined flanges and stops, substantially as specified.

340,844. HOT-AIR FURNACE. CHARLES WHITE, Washington, D. C. Filed Dec. 5, 1885. (No model.)



Claim.—1. A hot-air furnace comprising the following parts: a fire-box, a drum, a dome for covering said drum, the cross-tubes, the outlet-pipe c, the casing E, formed of annular rims K, inwardly-extended flanges *e*, having the openings *f*, deflecting-plates *g*, and annular flanges A, the top-section, E, having outlet-pipes *d*, cold-air pipe F, and door H, all substantially as and for the purpose described.

2. The combination, with a hot-air furnace, of the annular rim-sections, provided with the horizontal flange *e*, having the openings *f*, the inclined deflecting-plates *g*, and flanges A, the lower of said sections being provided with an air-inlet and the upper with air-outlets, with the drum B, and cross-tubes G, said tubes all opening in one air-chamber, substantially as and for the purpose described.

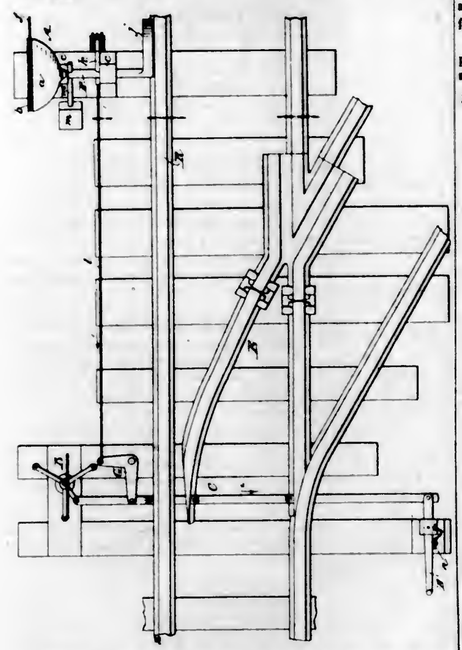
340,845. CAR-WHEEL. WARREN J. WILLITS and EDWARD B. LINDLEY, Three Rivers, Mich., assignors to the Sheffield Velocipede Car Company, same place. Filed Feb. 3, 1886. (No model.)



Claim.—1. Wrought plate-metal tire having outwardly and inwardly projecting flanges E and G, bent into shape from a plain tire-ring or from a circular plate, so that the whole tire is nearly of the same thickness, the inwardly-projecting flange E being provided with bolt-holes, substantially as set forth.

2. The combination, in a car-wheel, of the hub and body of the wheel with a tire having outwardly and inwardly projecting flanges E and G, and bolts D, passing only through the rim of the wheel-body and the flange E, substantially as set forth.

340,846. RAILWAY-SIGNAL. CLEMENT P. WILLSHAW, Brooklyn, and ALEXANDER WILLSHAW, New York, N. Y. Filed Mar. 17, 1886. (No model.)



Claim.—1. In a signal, the shaft F, provided with a curved arm, *j*, and connected to the gong-striking mechanism, and provided with a counterweight, *m*, in combination with a line, *l*, connected with the shaft for turning it to elevate the weight and lower the curved arm, substantially as described.

2. The bell-crank lever G and signal B, connected with the switch-rod C, in combination with the shaft F, curved arm *j*, line *l*, counterweight *m*, gong *a*, and mechanism for striking the same connected with the arm *d* of the shaft F, substantially as described.

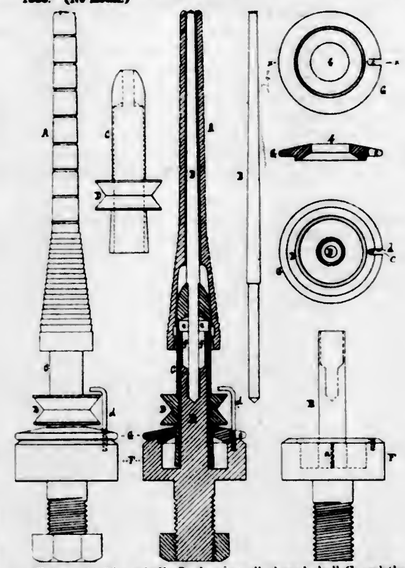
340,847. SCHOOL-DESK. JOSEPH A. WILSON, Hood River, Oreg. Filed Aug. 4, 1885. (No model.)



Claim.—1. In a desk, the combination, with the hinged cover, of the curved slotted bar attached to its under side, the fixed bar secured to the body of the desk and having a slot in its horizontal portion, and a clamp-screw working in the slots of both bars, as shown and described, for the purpose specified.

2. The combination, with a book-support, of angular clamps which pass through the latter and springs applied to their shanks on the inner side of the support, substantially as shown and described.

340,848. SPINDLE. LEVI WILSON, Providence, R. I. Filed Apr. 10, 1885. (No model.)



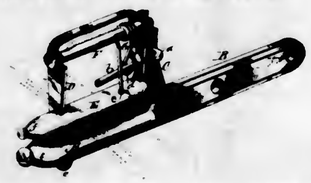
Claim.—1. The spindle B, the centrally-bored shell C, and the reservoir F, in combination with the standard E, fitting within said shell C, to form an air-cushion, *e*, to partially sustain the weight of the spindle, substantially as specified.

2. The combination of the standard E, having slot *a* and oil-receptacles F *f*, the spindle B, seated within said standard above the plane of the band-pull of the whirl, the shell C, having the whirl D, and which surrounds the standard E, and descends into the oil-tank F of said standard for the purpose of conducting oil from the tank F to the receptacle *f*, substantially as described.

3. The combination of the shell C, whirl D, standard E, and spindle B, whose foot is seated in said standard above the plane of the whirl, substantially as described.

4. The combination, with the spindle B and the shell C, having whirl D, of the standard E, projecting upward into said shell, said standard being provided with an oil-receptacle, F, that receives the lower end of the shell, and an oil-receptacle, *f*, that receives the lower end of the spindle above the plane of the band-pull of the whirl, the relative position of the said parts being such that an air-cushion is formed in a space, *e*, between the shell and upper end of the standard, substantially as described.

340,849. REIN-HOLDER. EDGAR M. WINFREY and ALBERT G. BRANHAM, Fort Worth, Tex. Filed Mar. 10, 1886. (No model.)



Claim.—In a driving-rein holder, a stationary gripping-jaw having an inclined serrated face, a shank extending out to one side in a horizontal direction to provide means for attaching the holder to the dash-board of the vehicle, a standard provided with a fulcrum-rod and stop, in combination with a movable jaw having a convex serrated face, a frame formed thereon, an adjusting screw-rod connecting the frame to the standard, and a spring coiled around said rod, one end of the spring

hooked around the fulcrum-rod and the opposite end entering a perforation in the movable jaw, substantially as and for the purpose set forth.

340,850. STEM WINDING AND SETTING MECHANISM FOR WATCHES. CHARLES V. WOOD, Waltham, Mass. Filed Nov. 9, 1885. (No model.)



Claim.—1. The combination, with a watch-movement, of a longitudinally sliding and turning arbor, H K, made in attachable and detachable parts, to permit, detached, the then removal of the movement from its case, and provided with two wheels, M O, one, M, immovable thereon, to engage the hand-setting train for setting the hands, and the other, O, loose, but otherwise confined against movement thereon, to engage the winding-train for winding the watch, and a clutch, N R, in two parts, one, N, immovable, and the other, R, loose thereon, and of its said loose wheel O, substantially as described, and operating together as specified.

2. The combination, with a watch-movement, of a longitudinally sliding and turning arbor, H K, made in attachable and detachable parts, to permit, detached, the then removal of the movement from its case, and provided with two wheels, M O, one, M, immovable thereon, to engage the hand-setting train for setting the hands, and the other, O, loose but otherwise confined against movement thereon, to engage the winding-train for winding the watch, and a clutch, N R, in two parts, one, N, immovable, and the other, R, loose thereon, and of its said loose wheel O, and also provided with two peripheral bearing-surfaces, V, running at opposite angles to its axis, and of a spring-arm, U, confined at one end, and at its other and free end having a bearing upon said bearing-surfaces of the arbor to prevent the accidental sliding of the arbor, substantially as described, and operating together as specified.

340,851. TREATING OR REFINING PORPOISE-OIL. ALEXANDER P. ASHBOURNE, Philadelphia, assignor of one-half to Charles Young, Malvern, Pa. Filed Dec. 3, 1885. (No specimens.)

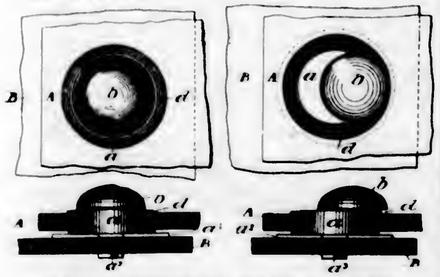
Claim.—1. In the process of refining porpoise-oil, treating the same with common salt and cold water, separating the oil, treating it with fresh water, and then boiling the oil, substantially as described

2. In the process of refining porpoise-oil, treating the same with salt, boiling the same, and then bleaching the oil, substantially as described.

3. The process of refining porpoise-oil, consisting in treating the oil with salt, boiling the same, then separating the oil and bleaching it, and finally filtering the same, substantially as described.

4. The process of refining porpoise-oil, consisting in first washing the crude oil in a solution of salt and cold water by agitating the mixture, then allowing it to rest from twenty-four to forty-eight hours, after which the supernatant oil is removed; second, washing the partially-prepared oil in a bath of cold water from six to eight hours; third, boiling the oil thus prepared with water and alum, then separating the oil; fourth, bleaching the oil with a dilution of hydrochloric acid, substantially as described.

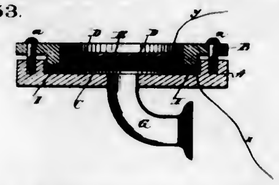
340,852. GLOVE-FASTENER. FRANCIS ROBERT BAKER, Birmingham, County of Warwick, England, assignor to Joel Cadbury, same place. Filed July 24, 1885. (No model.) Patented in England Mar. 21, 1885, No. 3,635; in France June 23, 1885, No. 157,071, and in Germany July 9, 1885, No. 34,194.



Claim.—The combination, in a glove or other like fastener, of a fixed box-like stem or body, *a*, a movable head, *b*, eccentrically adjustable with reference to said body, a spring which bears upon the stalk or stem b^2 of said head, and an eyelet, substantially as described.

340,853. TELEPHONE-TRANSMITTER. EMILE BERLINER, Washington, D. C. Filed Aug. 17, 1885. (No model.)

340,853.



Claim.—1. In a telephone-transmitter, the combination of a series of carbon rods resting loosely between a conducting diaphragm and a loose conducting-weight.

2. In a telephone-transmitter, the combination of two plates of conducting material forming the two electrodes of a circuit and a series of carbon cylinders located between them.

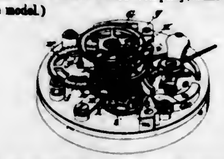
3. In a telephone-transmitter, the combination of two carbon plates forming the electrodes of a circuit and a series of carbon cylinders located between them.

4. In a battery-transmitter, the combination of a plate and diaphragm of conducting material forming one electrode of a circuit, and two or more carbon cylinders forming the other electrode of said circuit.

5. In a battery-transmitter, the combination of a carbon plate or diaphragm rigidly fixed in position, a series of carbon cylinders resting upon said plate by their own gravity, and a plate of carbon resting upon the said cylinders.

6. In a telephone-transmitter, the combination of an inclosing-case in two sections, in one of which is located a metal ring, and a carbon diaphragm firmly held in position by the second section, a series of carbon cylinders resting upon the diaphragm and a carbon plate resting upon the cylinders.

340,854. WATCH. ALBERT D. BISSHAM, New Haven, Conn., assignor to the New Haven Watch Company, same place. Filed Feb. 3, 1885. (No model.)



Claim.—1. As an improvement in watch-movements, a time-train in which the first and fourth arbors are journaled at the center of the movement-plates, and the second, the third, the fifth, and the sixth arbors and the escape-wheel arbor are journaled around said center, substantially as and for the purpose specified.

2. As an improvement in watch-movements, a time-train which is composed in part of a main or first arbor, an escape-wheel arbor, and five intermediate arbors, with their wheels and pinions, and said first arbor and the fourth arbor are journaled at the center of the movement, and the remaining arbors, with the escapement, are arranged around the same, substantially as and for the purpose shown.

3. As an improvement in watch-movements, a time-train which is composed of a first arbor that carries a wheel having forty-eight teeth, a second-arbor which has a sixteen-leaf pinion and a wheel with fifty-four teeth, a third arbor having a sixteen-leaf pinion and a wheel that has seventy-five teeth, a fourth arbor which is provided with a twelve-leaf pinion and a wheel with eighty teeth, a fifth arbor that has a ten-leaf pinion and a wheel with seventy-five teeth, a sixth arbor which has a ten-leaf pinion and a wheel with eighty teeth, and an arbor that is provided with an eight-leaf pinion and carries an escape-wheel having fifteen teeth, said parts being combined substantially as and for the purpose set forth.

4. A watch-movement in which the mainspring is located in rear of the time-train, and is contained within a recess that is formed by and between the rear movement-plate, and a covering-disk which at its edge embraces and is secured to the periphery of said plate, substantially as and for the purpose shown and described.

5. As a means for winding a mainspring, an annular toothed ring adapted to be reciprocated around a spring-containing ring or barrel, in combination with means whereby said outer ring, when thus reciprocated, may be caused to engage with and move said inner ring or barrel upon its forward motion, substantially as and for the purpose shown and described.

6. In combination with the mainspring Q, inclosed between the flanged cover P and back plate, A, and having its inner end attached to the collet *d*, the ring R, provided with the peripheral ratchet-teeth *r*, the ring S, having the radial flange *s* and peripheral spur-teeth *s'*, the spring-pawls s^2 and U, the stem-arbor T, and the spur-wheel *t*, substantially as and for the purpose specified.

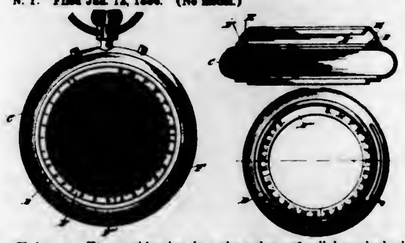
7. In combination with the ring R, inclosing the mainspring Q, and adapted to be rotated around and with the same, the spring-pawl U, arranged to engage with the toothed periphery of said ring, and provided with the arm *u*, which projects through the slot *a* in the plate A, substantially as and for the purpose shown.

8. In combination with the dial-wheel X, the yoke B', pivoted near one end upon the plate B, and provided within its long arm with the circular recess *b*, the spring C', engaging with the short arm of said yoke, the spur-wheel E', placed within said recess *b*, and the spur-wheel F', pivoted upon the short arm of said yoke, said parts being constructed to operate in the manner and for the purpose substantially as set forth.

9. In combination with the yoke B' and its connecting parts, the bar D', pivoted upon the plate B and provided with the cam end *d'*, which is adapted to impinge upon and move the short arm of said yoke, substantially as and for the purpose shown and described.

10. In combination with the yoke B' and its connecting parts, the spring C', secured to the plate B and engaging with the short arm of said yoke, and the bar D', pivoted upon said plate, and adapted to have its inner end engage with and lock the short arm of said yoke, when the latter is in position to permit the hands to be set, substantially as and for the purpose specified.

340,855. CALENDAR-WATCH. GEORGE BLANCHARD, New York, N. Y. Filed Jan. 12, 1886. (No model.)



Claim.—1. The combination, in a time-piece, of a dial marked with characters indicating the days of the month, a hand or index co-operating with said dial and passing each day from one to another of said characters, and a rim or bezel adjustable with reference to the dial, and having an inner bevel next to the dial, and an outer bevel resting on the case of the time-piece, one of said bevels being marked with a series of characters representing the days of the week and spaced to correspond substantially with the characters on the dial representing the days of the month, substantially as and for the purpose set forth.

2. The combination, in a time-piece, of a dial marked with numbers representing the days of the month, a hand or index co-operating with the numbers on the dial to indicate the days of the month, a rim or bezel susceptible of angular adjustment with reference to the dial, and having an inner bevel next to the dial, on which is marked a series of characters representing the days of the week, substantially as and for the purpose set forth.

3. The combination of the case C, the dial A, marked with numbers indicating the days of the month, the suitably-actuated hand D, the screws E E, set in the case, and the bezel B, marked with characters indicating the days of the week, and having the flange B'', provided with notches adapted to pass over the heads of said screws, substantially as and for the purpose set forth.

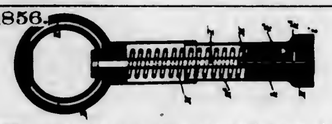
4. The combination of the case C, the numbered dial A, the hand D, the bezel B, having the notched flange B'', the screws E E, set in the case and adapted to pass through the notches in the flange B'' when the bezel is in proper position with reference to the case, and the notches F F', formed in the bezel and case, respectively, and adapted to register when the notches in the rim B'' register with the screws E E, substantially as and for the purpose set forth.

340,856. APPARATUS FOR SEPARATING, DAMPING, AND FIXING POSTAGE-STAMPS, &c. ALBU BROWETT, 161 Highbury Hill, County of Middlesex, England. Filed Mar. 18, 1885. (No model.) Patented in England Feb. 12, 1885, No. 1,976; in France Feb. 18, 1885, No. 167,131; in Belgium Feb. 19, 1885, No. 67,931, and in Germany Feb. 24, 1885, No. 32,282.

Claim.—1. The combination of the table carrying a cutter and a moistening-block, with a corresponding plunger constructed to cause the stamps or labels to adhere to the plunger, substantially as set forth.



340,856.

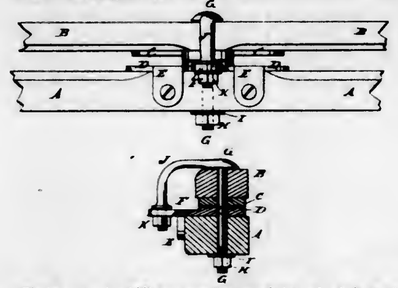


2. The combination of a plunger constructed to cause the stamp to adhere thereto, with a table carrying a cutter and a moistening-block, and a guide, B, overlying the cutter to facilitate the separation of the stamp from the sheet on the withdrawal of the plunger with the adherent stamp.

3. The combination of a plunger constructed to cause the stamps to adhere thereto, with a table carrying a cutter, a guide, B, and a spring-plunger, G, to facilitate the separation of the stamp.

4. The combination of a plunger constructed to cause the stamps to adhere thereto, with a table having a capillary moistening-block, D, spring-plunger G, and cutter, substantially as described.

340,857. WHIFFLETREE-COUPLING. HIRAM C. BROWN, Winsted, Conn. Filed Aug. 11, 1885. (No model.)



Claim.—1. A whiffletree-coupling consisting of a bolt having a curved arm formed on its head, and a plate provided with an apertured lug for the reception of the end of the curved arm, as set forth.

2. In a whiffletree-coupling, the combination, with the cross-bar A and the whiffletree B, of the plate D' secured to the cross-bar and provided with the apertured lug F, the bolt G, having the curved arm J formed on its head, and the nuts H K on the ends of the bolt and arm, respectively, substantially as herein shown and described.

340,858. FOLDING BED. WILLIAM A. BROWN, Ligonier, Ind. Filed Aug. 27, 1885. (No model.)



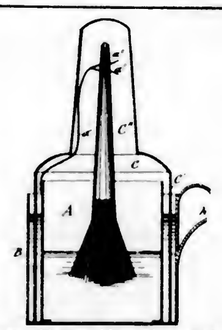
Claim.—1. In a folding bed, the bed-frame D, having the side rails thereof provided with the grooves *a*, overhanging rods *b*, and coiled springs *c*, the outer ends of said springs encircling said rods *b*, and adapted to move thereon to aid in folding the bed-frame, substantially as set forth.

2. In a folding bed, the spring-clamp *f*, consisting of a metallic bar having its ends secured to the cross-frame *d*, and provided with a centrally-raised portion, *f'*, terminating in elongated spaces between said bar and cross-frame *d* for the reception and retention of the knotted ends of the cords *e*, to maintain the mattress in a vertical position when the bed-frame is foled up, substantially as set forth.

340,859. PAINT OR VARNISH PAIL. CLARENCE H. CARLEY, Syracuse, N. Y. Filed Jan. 16, 1886. (Model.)

Claim.—1. A varnish or paint can arranged within a can, with a water-space between their vertical sides and a cover entering with its bottom edge the aforesaid water-space, substantially as and for the purpose set forth.

340,859.

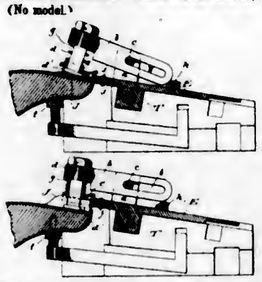


2. The combination, with a varnish or paint can, of a water-jacket surrounding the vertical sides of the can, and a cover provided with a downward extension entering between the can and water-jacket, and provided also with an upward extension for the reception of the handle of the brush, substantially as set forth.

3. The combination, with a varnish or paint can, of a water-jacket surrounding the can and extending from the bottom part way the height thereof, to form a water-overflow at the top, and a cover having a downward extension entering the water-jacket, substantially as set forth.

4. The combination, with a varnish or paint can, of a water-jacket surrounding the can, a cover formed with a downward extension entering between the water-jacket and can, and with an upward extension for the reception of the handle of the brush, and a brush-support attached to the can and engaging the handle of the brush, substantially as described and shown.

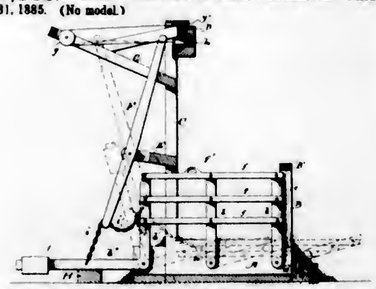
340,860. LASTING-MACHINE. FRANK CHASE, Boston, Mass. Filed Mar. 5, 1886. (No model.)



Claim.—1. The combination of the toe-wipers, the retarder, and the hold-down vertically movable independently of said retarder, substantially as and for the purposes hereinbefore set forth.

2. The combination of the toe-wipers, the hold-down, the tilting and longitudinally-movable frame carrying the same, the retarder mounted and capable of sliding upon said frame to and from the hold-down, and pressed toward the same by a spring, substantially as and for the purposes hereinbefore set forth.

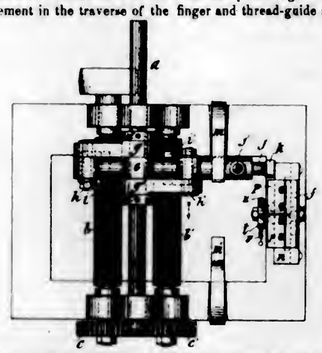
340,861. GATE. COMMODORE B. CLARK, Williams, Cal. Filed Dec. 31, 1885. (No model.)



Claim.—In a folding gate, a casing located beneath the road-bed and provided with a slot in which are pivotally secured the ends of the bars *b b'*, the bar *b'* having a member projecting at right angles therewith, and provided with a weight, the uprights C C, supporting a bar, D, a frame, G, and block E, in combination with the pulleys *d d' g g' h*, and cords *e e'*, which pass over said pulleys and are attached to the end of a pivoted lever, F, said lever being connected at its lower end to the bars *b'* and *b''* of the gate, the parts being organized substantially as shown, and for the purpose set forth.

340,862. TRAVERSE MECHANISM FOR THREAD-WINDING MACHINES, &c. WILLIAM CLARK, Newark, N. J. Filed July 24, 1884. (No model.)

Brief.—The shaft carrying the thread-guides is caused to reciprocate longitudinally in its bearings by means of two half-nuts carried by said shaft, which engage alternately with two screws revolved in opposite direction. A finger rigidly connected to the shaft between the two half-nuts, and extending to one side thereof, engages at each end of the traverse with springs, whereby the alternate engagement of the nuts and revolving screws is occasioned. The end of said finger travels alternately above and below a plate, which is given a reciprocating movement by means of a cam and star wheel, thus producing an increment and decrement in the traverse of the finger and thread-guide shaft.



Claim.—1. In combination, a shaft for carrying the thread-guide, mechanism, substantially as described, for causing the said shaft to traverse longitudinally, a finger moved in conformity with said traverse, mechanism, substantially as described, connected with said finger, whereby the direction of traverse is changed by a motion of the finger, a plate engaging the finger and maintaining the position of the same from end to end of the traverse, and mechanism, also substantially as described, whereby said plate is vibrated in both directions, all combined, substantially as set forth, whereby changes in the position of the plate change the extent of traverse at both ends thereof, as set forth.

2. In combination, a shaft for carrying the thread-guide, mechanism, substantially as described, for causing the said shaft to traverse longitudinally, a finger moved in conformity with said traverse, springs arranged in the path of the finger, whereby it is thrown upward at one end of the traverse and downward at the other end, a plate engaging said finger and holding it up during its traverse in one direction and down during its traverse in the opposite direction, and mechanism, substantially as described, whereby said plate is vibrated in each direction, thereby producing decrements and increments in the traverse, substantially as described.

3. In combination, a shaft for carrying the thread-guide, mechanism, substantially as described, for causing the said shaft to traverse longitudinally, a finger and mechanism, substantially as described, for actuating the same, whereby the traverse is changed, said finger having four motions around the projecting edge of a plate, the plate and mechanism, also substantially as described, whereby said plate is vibrated in each direction, whereby the distance through which the finger has to traverse in passing around the plate is varied, substantially as described.

340,863. QUILTING-MACHINE. DAVID H. COLES, New York, N. Y., assignor to himself, A. G. Darwin, Glen Ridge, and James C. Beach, Bloomfield, N. J. Filed Oct. 29, 1885. (No model.)

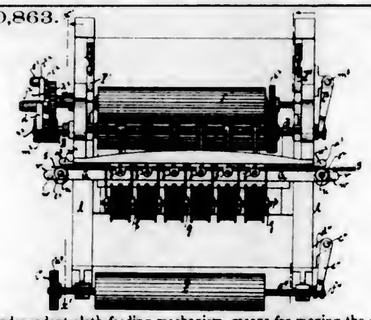
Claim.—1. The combination, in a quilting-machine, of stitch-forming devices comprising a needle, feed-bars G and H, for clamping the material, means for imparting a step-by-step motion to said feed-bars to present the material to the needle, intermittently-rotating feed-rollers, and means for moving the said rollers laterally to present a fresh part of the material to the feed-bars and needle, substantially as described.

2. The combination, with a stitch-forming mechanism, of feed-bars G and H, feed-rollers, and mechanism, substantially as described, for alternately operating said feed-bars and rollers and imparting to them, respectively, intermittent motions, as set forth.

3. The combination, with stitch-forming devices, of a primary feed mechanism, means for imparting thereto intermittent movements, the intermittently-rotating feed-rollers, and mechanism for moving the rollers laterally, substantially as described.

4. The combination, with stitch-forming devices, of a primary feed mechanism, means for imparting thereto at intervals a step-by-step motion, independent cloth-feeding mechanism, means for moving the same to feed the material forward, and means for transversely reciprocating said cloth-feeding mechanism, substantially as described.

340,863.



5. The combination, with a stitch-forming mechanism, of an intermittently-operating primary feed mechanism constructed to carry the work in a closed figure, and mechanism, substantially as described, for causing the stitch-forming mechanism to make one or more stitches in excess of the number of feed motions of the primary feed mechanism, substantially as described.

6. The combination, with the stitch-forming mechanism and the intermittently-moving primary feed mechanism, of the mutilated gear-wheel M, the pinion N, and intermediate connections for imparting said intermittent movements to the primary feed mechanism, substantially as and for the purpose described.

7. The combination, with the stitch-forming mechanism and the intermittently-moving primary feed mechanism, of the mutilated gear-wheel M, provided with a cam-groove, P, the pinion N, carrying the pin *h'*, and intermediate connections for imparting said intermittent movements to the primary feed mechanism, substantially as and for the purpose described.

8. The combination, with the stitch-forming mechanism, of the upper and lower feed-bars, mechanism for imparting a step-by-step movement to said bars, an independent cloth-feed mechanism, and means for moving the latter in a rectilinear path, substantially as described.

9. The combination, with a stitch-forming mechanism, of a primary feed mechanism, the shafts v', the eccentric pins e^2 on the shafts, mechanism for imparting motion to the same, and the connecting devices, substantially as shown and described.

10. The combination, with a stitch-forming mechanism, of the primary feed mechanism, the shafts v', the adjustable eccentric pins e^2 on said shafts, mechanism for imparting motion to the same, and the connecting devices, substantially as shown and described.

11. The combination, with the stitch-forming mechanism, of the upper and under feed-bars, G and H, the shafts v', the eccentric pins e^2 on said shafts, mechanism for imparting motion to the same, and springs *t*, substantially as shown and described.

12. The combination, with stitch-forming devices, of the upper and lower feed-bars, G and H, the shafts v', the eccentric pins e^2 on said shafts, the ratchet-wheel *p'*, the pawl *o'*, the rotary shaft C', having the cam Q, and connecting devices between said rotary shaft and the ratchet-wheel and between the latter and the shafts v', substantially as and for the purposes described.

13. The combination, with the stitch-forming mechanism and the primary feed mechanism, of the mutilated gear-wheel M and the pinion N, with the shafts C and C', the latter carrying the cam Q, and connecting devices, substantially as and for the purpose described.

14. The combination, with a stitch-forming mechanism, of the primary feed mechanism, the independent cloth-feed mechanism, devices for alternately and intermittently operating said feed mechanisms, means for moving the independent cloth-feeding mechanism in a rectilinear path, and the feed-bar-lifting mechanism, substantially as shown and described.

15. In a cloth-feed for quilting-machines, the combination of the feed-rollers I and J, mounted in standards F', the adjusting-screws F^2, and mechanism for intermittently rotating said rollers and moving them laterally, substantially as shown and described.

16. The combination, with a stitch-forming mechanism, of a primary feed mechanism, an independent cloth-feed mechanism, the guide *r*, and the feed-bar G, having the openings *s*, substantially as described.

17. The combination, with a stitch-forming mechanism, of a primary feed mechanism, an independent cloth-feed mechanism, the guide *r*, the tuft-cutting bars S T, and mechanism for operating them, substantially as shown and described.

18. In a machine for tufting quilts, the combination of the cutting-bar S and the guide-bar T, the upper feed-bar, G, having the opening *s*, the lever U, cam i^4, and shaft L, as shown and described.

19. In a machine for tufting quilts, the combination of the cutting-bar S and the guide-bar T, loosely secured to the feed-bar, G, the lever U, and the cam i^4 and shaft L, substantially as and for the purpose described.

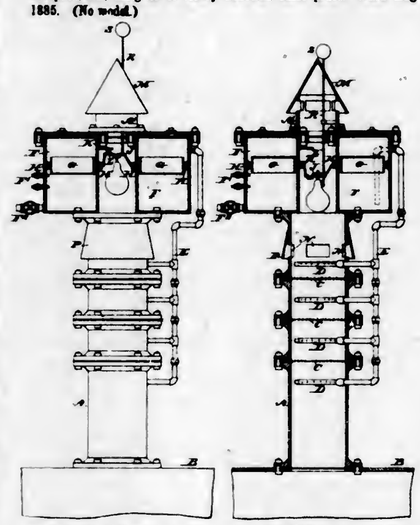
20. In a machine for tufting quilts, the combination of the cutting-bar S and the guide-bar T, loosely secured to the feed-bar G, and adapted to be raised independent of the latter, and the lifting devices for said bars, substantially as described.

21. In a machine for tufting quilts, the combination, with the cutting-bar S and the guide-bar T, of the rod w^3, the lever v^3, the cam w^3, and the shaft L, substantially as and for the purpose described.

22. In a machine for tufting quilts, the combination of the upper feed-bar, G, with the cutting-bar S, provided with cutting-notches j^3, and a guide-bar, T, provided with notches k^3, said notches being made to register, and mechanism for imparting endwise motion to the cutter-bar S, substantially as described.

23. The combination, with a stitch-forming mechanism, of a guide for introducing the tufting material to said mechanism, a primary feed mechanism, an independent cloth-feed mechanism, a tuft-cutting device, and mechanism for operating said cutting device, substantially as shown and described.

340,864. ATTACHMENT TO OIL-TANKS FOR PREVENTING EXPLOSIONS AND EXTINGUISHING FIRES. FRANCIS L. DARRACH, Philadelphia, Pa., assignor to Henry Darrach, same place. Filed Aug. 7, 1885. (No model.)



Claim.—1. An oil tank or vat provided with the column A, having a series of diaphragms, C, in combination with the pipe E, having jets D, and an automatic fire-extinguishing apparatus having a vessel in communication with said pipe E, substantially as and for the purpose set forth.

2. An oil-tank in combination with column A, having perforated diaphragms D therein, weights, pivoted vessels G, closed chamber F, and pipe E, having jets D, the said pipe E leading from said vessel F into the column A, substantially as and for the purpose set forth.

3. An oil tank or vat provided with a column having openings at top, in combination with an automatically-operated fire-extinguisher having a pivoted vessel in a closed chamber operated by a weighted crank, and a rod with a ball attached thereto, actuated by said crank, substantially as and for the purpose set forth.

4. An oil tank or vat, in combination with the column A, having side opening and provided with diaphragms C, closed chamber F, having central walled opening, pivoted vessels G in said chamber F, crank J, carrying weight, and connected vessels G, fusible connection L, and pipe E, having jets D, the said pipe leading from said vessel F to said column A, substantially as and for the purpose set forth.

5. An oil tank or vat, in combination with the column A, having a diaphragm, the chamber F, having a central walled opening, the tube A', forming an extension of the column A, the shield M, vessels G, having weighted crank J, fusible connection L, and rod R, having ball S, said parts being operated substantially as described.

6. The chamber F, provided with cocks F' and F^2 and having a central walled opening, in combination with vessels G, weighted crank J, fusible connection L, pipe E, leading from said vessel F and having jets D, and column A, having diaphragm, substantially as and for the purpose set forth.

7. An oil-tank having the column A provided with a series of diaphragms, in combination with an automatic fire-extinguisher located at the top of said column, substantially as described.

340,865. FOUNTAIN-PEN. DEWITT C. DEMAREST, Denver, Colo. Filed Aug. 22, 1885. (No model.)



Claim.—1. A feed-tube open at both ends and having two side apertures, *f* and *g*, one above the other, both located between the pen and the reservoir-holder, in combination with the pen-holder, whereby to supply ink to the pen and air to the reservoir, substantially as described.

2. In a fountain-pen, the ink-supplying tube *e*, having the side apertures, *f* and *g*, below the closed end of the reservoir, in combination with a holder for the pen and a feed-stem, *l*, located within the feed tube, having an air-vent, *o*, substantially as described.

3. The combination, with the reservoir and ink-tube having the side apertures, *f* and *g*, of an ink-feeding device consisting of a fibrous conductor connecting said apertures outside of said ink-tube, substantially as described.

4. The combination, with the feed-tube of a fountain-pen, having two side apertures, *f* and *g*, one above the other, of an ink-feeding device connecting the said apertures outside of said ink-tube, and a feed-stem within said feed-tube, having an air-vent, *n*, at its lower end, substantially as described for the purpose specified.

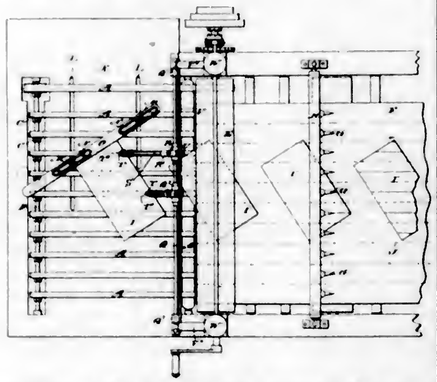
5. The combination, with the reservoir and a pen-holder, of the ink-feeding tube having a sliding adjustment into said reservoir, and a side ink-supplying aperture, whereby to allow for the use of pens of different lengths, substantially as described.

6. The combination, with the handle-reservoir and ink-tube provided with ink-outlet and air-vent, of an ink-feeding device constructed to supply the pen-point with ink from said tube by capillary attraction, and an adjustable band for regulating the flow of air through said aperture, substantially as specified.

7. The combination, with the ink-tube having ink-outlet and air-vent, as described, of the stemmed stopper, having a vent, inserted in said tube, substantially as and for the purpose specified.

8. The combination, with the ink-tube having ink-outlet and air-vent, of the string or strings over said openings, and the bands serving the double function of string-holder and feed-regulator, as set forth.

340,866. RULING-MACHINE. JAMES W. DICKINSON, Brooklyn, N. Y. Filed Sept. 12, 1885. (No model.)



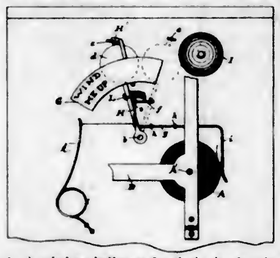
Claim.—1. The combination of the machine-table K, having a sheet-carrier, a diagonally-arranged gage above said carrier, and diagonally-arranged rollers in advance of the gage, with the rollers B E, through which the sheets pass from the carrier, the endless apron F, the pens G above the apron, and the endless cords J, for holding the sheet in its gaged position for the action of the pens, substantially as set forth.

2. In a ruling-machine, the combination, with a table and sheet-carrier, of pivoted rods carrying rollers above the sheet-carrier, and of a gage above the sheet-carrier, substantially as herein shown and described.

3. In a ruling-machine, the combination, with a table and sheet-carrier, of the rod Q, the sleeves R on the same, the sleeves R' on the sleeves R, the rods S, passed through the sleeves R', and the rollers T in the ends of the rods S, substantially as herein shown and described.

4. In a ruling-machine, the combination, with a table and sheet-carrier, of the shaft Q, the sleeves R R', the rods S, the rollers T, the rod V, and the springs U, substantially as herein shown and described.

340,867. WINDING-INDICATOR FOR TIME-PIECES. JAMES E. EHRLICH, Baltimore, Md. Filed Feb. 12, 1886. (No model.)

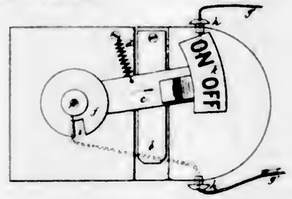


Claim.—1. A wind-up indicator for clocks, having, in combination, a pivoted yoke, an indicator-sign attached to the yoke, the driving-spring of a clock-movement, a shifter device having a frame or head provided with a slot which is occupied by an arm of the pivoted yoke, and a trigger, *i*, acted on by the driving-spring and connected with the shifter device, whereby the indicator-sign will be exposed instantaneously, as set forth.

2. A wind-up indicator for clocks, having, in combination, a pivoted yoke, an indicator-sign attached to the yoke, the driving-spring of a clock-movement, a shifter device having a frame or head provided with a slot which is occupied by an arm of the pivoted yoke, a trigger, *i*, acted on by the driving-spring and connected with the shifter device, and a retracting-spring, *k*, connected with the shifter device, as set forth.

3. A wind-up indicator for clocks, having, in combination, a pivoted yoke, an indicator-sign, and a hammer attached to the yoke, a signal-gong, I, the driving-spring of a clock-movement, a shifter device having a frame or head provided with a slot which is occupied by an arm of the pivoted yoke, and a trigger, *i*, acted on by the driving-spring and connected with the shifter device, as set forth.

340,868. ELECTRICAL CUT-OUT. JOHN M. FAIRCHILD, Portland, Oreg., assignor to himself and JAMES O'CONNOR, same place. Filed Dec. 17, 1885. (No model.)



Claim.—1. A cut-out for electric circuits, consisting of contacts connected to the conducting-wires, a rotary adjustable switch-bar having its axis formed as a key-pin, a separable key for turning the switch-bar, a yielding locking-bar for holding the switch-bar disconnected from its contact, a push-button for disengaging the locking-bar from the switch-bar, and a spring for retracting the switch-bar and closing the current through the cut-out and short-circuiting the line, as described.

2. A cut-out for electric current, consisting of contacts connected to the connecting-wires, a notched and rotary adjustable switch-bar having its axis formed as a key-pin, a notched covering-disk, *f*, a separable key for turning the switch-bar, a yielding locking-bar for holding the switch-bar disconnected from its contacts, a push-button for disengaging the locking-bar from the switch-bar, and a spring for retracting the switch-bar and closing the current through the cut-out and short-circuiting the line, as described.

3. The combination of the bifurcated contact *a*, the rotary adjustable switch-bar *c*, having its axis formed as a key-pin on one side and a binding-post on the other, the retracting-spring *d*, the yielding locking-bar *b*, and the push-button, substantially as shown and described.

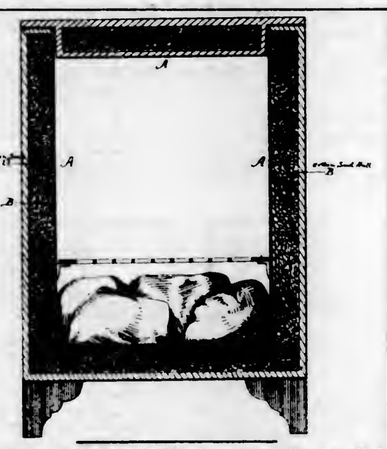
340,869. LINING FOR REFRIGERATORS. JNO. S. FAIRLY, Charleston, S. C. Filed Aug. 20, 1885. (No model.)

Claim.—1. The improved insulating-filling for packing, consisting of cotton-seed hulls, substantially as set forth.

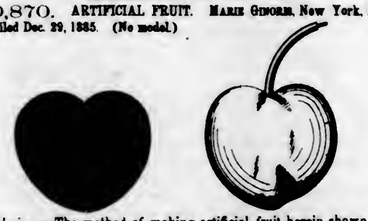
2. As an improvement in the art of refrigerating and preserving, the utilization of cotton-seed hulls as an insulator, substantially as set forth.

3. As a new article of manufacture, a refrigerating-package having a packing of cotton-seed hulls, substantially as set forth.

340,869.

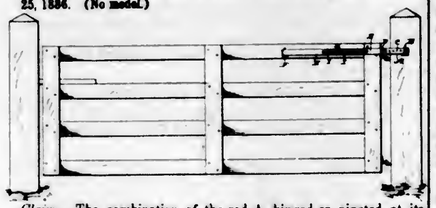


340,870. ARTIFICIAL FRUIT. MARIE GINOUR, New York, N. Y. Filed Dec. 29, 1885. (No model.)



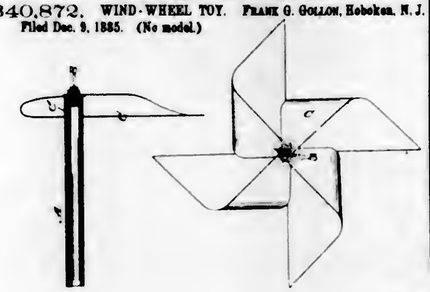
Claim.—The method of making artificial fruit herein shown and described, which consists in forming a mold of the exact shape of the fruit to be imitated, and made in two parts, then covering the curved surfaces of the parts of the mold with cloth wet with cement, then drying the cloths, then cutting off the projecting edges of the cloths, then removing the cloths from the parts of the mold, then cementing the edges of the cloths to each other with a wire stem inserted between them, and then painting the body thus formed to represent the fruit, all as set forth.

340,871. CHECK FOR DOORS AND GATES. JACOB GLASS, Harrisburg, Ohio, assignor of one-half to OWEN T. CURRY, same place. Filed Feb. 25, 1886. (No model.)



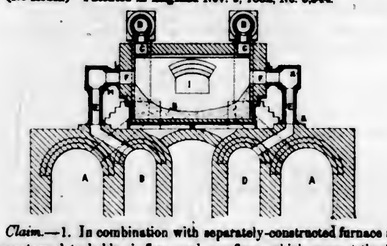
Claim.—The combination of the rod A, hinged or pivoted at its inner end and provided with a series of perforations, with the rod E, which is pivoted or hinged upon the gate and provided with a slot and a catch at its inner end, and the holding devices, which pass through the slot and connect the two rods together, substantially as shown and described.

340,872. WIND-WHEEL TOY. FRANK G. GOLLON, Hoboken, N. J. Filed Dec. 9, 1885. (No model.)



Claim.—The combination, with a tube having one end closed, and having an aperture near said closed end, of a pin projecting from the said closed end, and of a wheel mounted to revolve on the pin and the said tube, the air-opening being inside of the said wheel, substantially as shown and described.

340,873. GAS AND AIR PORT FOR REGENERATIVE FURNACES. WILLIAM HACKNEY, Swansea, County of Glamorgan, and JOHN W. WARLEN, Wednesbury, County of Stafford, England. Filed Nov. 2, 1885. (No model.) Patented in England Nov. 9, 1882, No. 5,344.



Claim.—1. In combination with separately-constructed furnace and regenerators, detachable air-flues and gas-flues, which connect the furnace and regenerators, said flues being separate and independent one from the other, and delivering into the furnace at different points, substantially as and for the purposes specified.

2. The combination, with an open-hearth regenerative furnace having a basic lining which extends to the gas and air flues, of independent or detachable pipes or flues having a refractory lining of reduced thickness at its juncture with the basic lining of the hearth, substantially as and for the purposes specified.

340,874. AMALGAMATOR. BENJAMIN S. HARBACH, Philadelphia, Pa. Filed Oct. 24, 1885. (No model.)



Claim.—1. In an amalgamator, the combination of the open-bottomed cylinder, a mercury-holder outside of and below the cylinder, means, substantially as described, for advancing the ore through the cylinder and over the upper surface of the mercury while in contact therewith, and an inclined support at the discharge end of the cylinder for the escaping refuse, substantially as set forth.

2. The combination of means, substantially as described, for advancing the ore, a mercury-holder, and inclined walls for holding and retaining the ore converging toward the mercury-holder to points inside of the sides of the mercury-holder, substantially as described.

3. The combination of means, substantially as described, for advancing the ore, a pulp-holder having an opening in its bottom, and a mercury-holder, constructed and arranged as set forth, wider than the said opening, as described.

4. The combination of means, substantially as set forth, to advance the ore, an ore-holder, a mercury-holder, and a wall or partition transverse to the path of the ore and extending down into the mercury and constructed, substantially as set forth, to provide a passage for the mercury below the top of the partition, as described.

5. The combination of means, substantially as described, for advancing the ore, the ore-holder having its lower walls substantially circular in section and with an opening between them, and the mercury-holder wider than said opening and arranged, substantially as described, to have the surface of the mercury at or near the edges of the opening, as set forth.

6. The combination, with the means for advancing the ore and the walls which hold or confine the ore, of the mercury-holder having an inclined bottom and an opening at the top communicating continuously with the cylinder along the bottom thereof, substantially as set forth.

7. The combination, with the mercury-holder having the inclined bottom, the cylinder or pulp-holder above the mercury-holder, and the conveyer for advancing, of means for continuously supplying and continuously withdrawing the mercury, substantially as set forth.

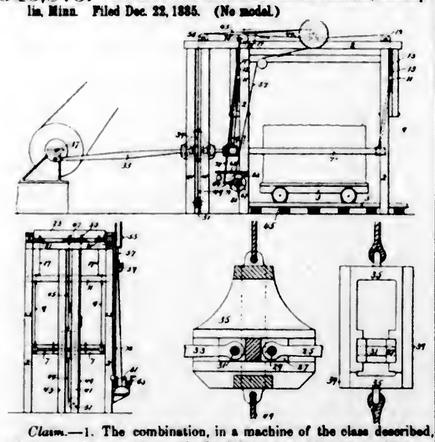
8. The combination, with the cylinder or pulp-holder, the conveyer, and the mercury-holder, of the vertical partition or wall 21, arranged, substantially as set forth, to have the ore pass over it and the mercury pass under it, substantially as set forth.

9. In an amalgamator, the combination, with means for advancing

and containing the ore, of a mercury-holder adapted, substantially as set forth, to have the mercury move continuously through it, and provided with an orifice for the overflow of surplus mercury, substantially as set forth.

10. In an amalgamator, the combination of a mercury-holder, a cylinder or chamber for the ore above the mercury-holder, a conveyer arranged, substantially as set forth, to advance the ore over the surface of the mercury, and the lifting-plates secured to the conveyer-blade and arranged, substantially as set forth, to take up the ore and drop it upon the surface of the mercury, substantially as set forth.

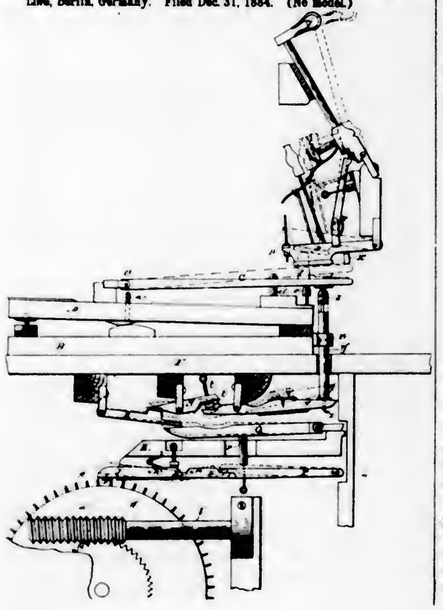
340,875. STONE-SAWING MACHINE. HENRY HARTLEY, Minneapolis, Minn. Filed Dec. 22, 1885. (No model.)



Claim.—1. The combination, in a machine of the class described, with the saw-frame, of the vertically-sliding support 35, means for moving said support, the transversely-moving block 27, mounted in said support, the connecting-rod secured to the saw-frame and pivoted to said block, and the pitman pivoted to said block and connected with the crank-shaft of the machine, substantially as described.

2. The combination, in a machine of the class described, with the vertically-adjustable saw-frame, of the vertically-sliding support 35, means for moving said support, the transversely-moving block mounted in said support, the connecting-rod 25, and the pitman 33, pivoted to opposite ends of said block, substantially as described.

340,876. MECHANICAL MUSICAL INSTRUMENT. PAUL H. HARTLING, Berlin, Germany. Filed Dec. 31, 1884. (No model.)

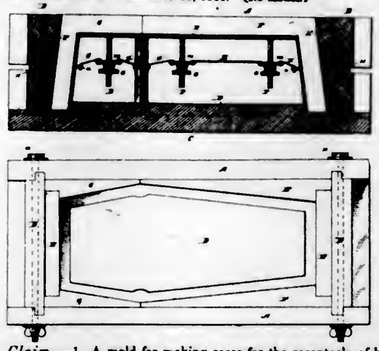


Claim.—1. In combination, the key J, levers L, P, Q, R, S, and T, and the adjustable jack *p*, as set forth.

2. In combination with the pin-barrel and key J, the manual key, the lever C, mounted thereon, the series of levers connecting the key J and lever C, and the counterbalancing-spring *k*, as set forth.

3. In combination, the pin-barrel, its key J, the lever C, and the series of connecting-levers, the lever T of said series being provided with an elastic extension, V, for the purpose set forth.

340,877. MOLD FOR MAKING COFFIN-CASES. WILLIAM R. HASSARD, Union, N. J. Filed Dec. 10, 1885. (No model.)



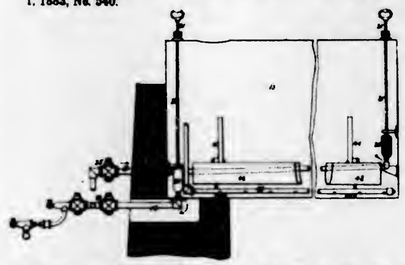
Claim.—1. A mold for making cases for the receptacle of burial-caskets, constructed with side pieces, A A, end gates, B B, with bolts H passing through the said side and end pieces, for binding same together, the bottom C, having elevated portion D, and the tapering slides E F G, all substantially as and for the purpose set forth.

2. The core-box constructed as herein set forth, having detachable sides and ends and bottom, the same being controlled by means of hooks on the disks *m m*, working in eyebolts on the side plates, I I', and end plates, J J, said plates being regulated and operated by the thumb-screws on rods P P, which rods project from the bottom of the core-box on the inside thereof, substantially as and for the purpose set forth.

3. In combination with an exterior detachable mold, a core-box having removable bottom, side, and end pieces, removable transverse brace M, fitting in grooves in corner pieces, *x*, screw-threaded rods P, projecting from the bottom of the core-box, on the inside thereof, and provided with thumb-screws O, and plates *m*, placed on the rods P, and provided with hooks N, to detachably engage with the side and end pieces of the box, and the transverse brace M, substantially as herein shown and described.

4. In combination with a detachable knockdown mold having a raised portion, D, on its bottom of the general shape of the article to be molded, a core-box constructed of detachable bottom, side, and end pieces, and adapted to fit over the raised portion of the bottom of the mold, substantially as set forth.

340,878. APPARATUS FOR DISTILLING OR REFINING MINERAL OILS. NORMAN M. HENDERSON, Broxburn, County of Linlithgow, Scotland. Filed June 11, 1885. (No model.) Patented in England Feb 1, 1883, No. 540.



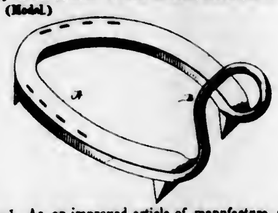
Claim.—1. The combination of the still and its inlet and outlet pipes, having the usual stop-cocks outside the still, with weighted valves 20, applied to the said pipes within the still, and having handles extending to the outside, all substantially as specified.

2. In combination with the set of three connected stills working at graduated temperatures, the feed-heaters consisting each of an outer pipe, through which the vapor from the still is passed, and which has within it a pipe having a closed inner end and fixed by its outer end, through which outer end inlet and outlet pipes for the feed-oil are inserted, substantially as hereinbefore described.

3. The dishes or plates 42, arranged to promote circulation in the still and also to receive the coke, the said dishes being hinged at their outer sides, and having a space between each and the bottom of the still, and also a central longitudinal space between the two dishes, substantially as and for the purposes hereinbefore described.

4. The combination of the still with dishes or plates therein to receive the coke, and having a longitudinal space between them, and a perforated steam-pipe to promote circulation around said dishes, substantially as set forth.

340,879. HORSESHOE. AUGUST JAHNKE, Osceola, Iowa. Filed Mar. 26, 1884. (Model.)

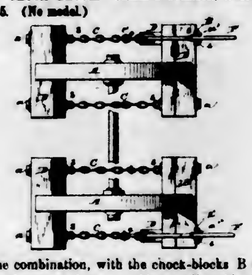


Claim.—1. As an improved article of manufacture, a horseshoe having an integral rear guard, substantially as specified.

2. A horseshoe having a guard secured to its ends and curved upwardly in rear, substantially as specified.

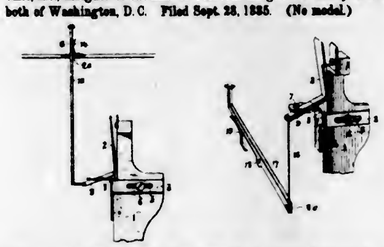
3. A horseshoe having a guard extending in a transverse plane and secured to its opposite ends, substantially as specified.

340,880. CHOCK-BLOCK. JAMES O. JOHNSON, Wolcott, Ind. Filed Nov. 19, 1885. (No model.)



Claim.—The combination, with the chock-blocks B D, beveled on their inner sides and connected at one end by an adjustable chain, of a lever pivoted at the other end of one of said blocks, a chain connected to the other end of the other chock-block and adjustably engaging the lever, and a spring-catch for locking said lever in a depressed position, substantially as set forth.

340,881. TYPE-WRITING MACHINE. GEORGE W. JOHNSTON, Boonville, Mo., assignor of one-half to Octavius Knight and Harry E. Knight both of Washington, D.C. Filed Sept. 28, 1885. (No model.)



Claim.—1. The combination, with the movable feed-pawl, of an adjustable dog or stop mounted on the fixed feed-pawl, setting the limit of movement of the movable feed-pawl for spacing between letters.

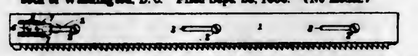
2. The combination, with the movable feed-pawl, of an adjustable dog mounted on the fixed feed-pawl, and a spring for retaining the dog in the position in which it is set.

3. The combination, with the movable feed-pawl, of an adjustable dog mounted on the fixed feed-pawl, and means, substantially as shown and described, for shifting and setting the dog.

4. The combination, with a fixed feed-pawl, a movable feed-pawl, and a bracket secured to the fixed feed-pawl, of an adjustable dog mounted on the bracket, and on which the movable feed-pawl bears, means, substantially as described, for shifting the dog, and a spring for holding the dog in the position in which it is set.

5. The combination, with the adjustable dog, of the bracket for supporting the dog in proximity to the movable feed-pawl, which consists in a blank or plate having a horizontal bend or projection, and provided with slot 5 and set-screw 6, for securing the bracket to the fixed feed-pawl.

340,882. TYPE-WRITING MACHINE. GEORGE W. JOHNSTON, Boonville, Mo., assignor of one-half to Octavius Knight and Harry E. Knight, both of Washington, D.C. Filed Sept. 28, 1885. (No model.)

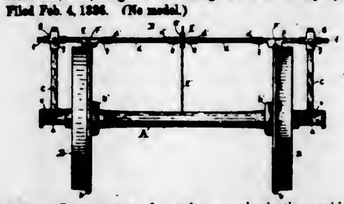


Claim.—1. The combination of a fixed rack, a sliding rack, elongated slot-and-pin connection between the racks, and a stop adjustable over a slot limiting the movement of the pin therein and fixing the stroke of the sliding rack.

2. In combination with a movable feed-rack and an adjustable stop mounted thereon and extending over a slot therein for limiting its motion, a spring-dog for retaining said stop in adjusted position.

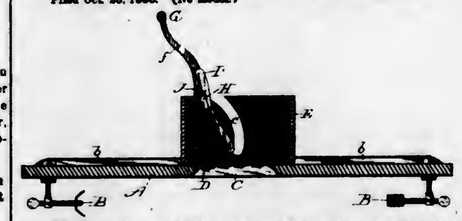
3. In combination with a movable feed-rack, a pivoted stop thereon and the stop-pins.

340,883. TEST-GAGE FOR SETTING CAR-WHEELS. ROSS KELLS Cleveland, Ohio, assignor to the Paige Car Wheel Company, same place. Filed Feb. 4, 1886. (No model.)



Claim.—In a test-gage for setting car-wheels, the combination, with the templets or plates arranged to fit, respectively, between the shoulders of the journal-bearings of a car-axle, of notched plates arranged to fit, respectively, on the wheel-flanges when the latter are secured at the standard distance apart, and a suitable connecting-frame for holding the notched plates and templets rigidly, substantially as set forth.

340,884. VEGETABLE-CUTTER. JOSEPH A. KIRK, Pittsburg, Pa. Filed Oct. 28, 1885. (No model.)



Claim.—1. In a vegetable cutter or slicer, a base-plate provided with cutting-knives, and a vegetable-containing box, which slides back and forth on said base-plate, said box having slots in its sides, in combination with levers pivoted to said box, and a feeding presser-plate having journals adapted to operate within said slots and carried by said levers, substantially as set forth.

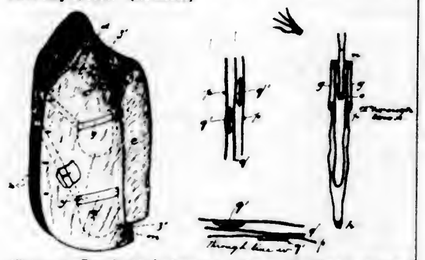
2. In a vegetable cutter or slicer, a sliding vegetable-box, levers pivoted thereto, and a handle connecting the free ends thereof, in combination with a cross-bar rotatively mounted in said levers, and a feeding presser-plate connected with said cross-bar by sliding connection, substantially as set forth.

3. In a vegetable cutter or slicer, a sliding vegetable-box, levers pivoted thereto, and a handle connecting the free ends of said levers, in combination with a cross-bar carried by said levers between their pivots and the handle and at a point nearer to the pivots than to the handle, and a feeding presser-plate carried by said cross-bar, substantially as set forth.

4. In a vegetable cutter or slicer, a sliding vegetable-box having its sides provided with open arc-shaped slots, levers pivoted exteriorly to the sides of said box, and an operating-handle connecting the free ends of said levers, in combination with a cross-bar rotatively mounted in said levers between their pivots and handle, which cross-bar travels in said slots, and a feeding presser-plate carried by said cross-bar, substantially as set forth.

5. A base-plate provided with a central aperture and with knives, and a vegetable-containing box, which slides back and forth on said base-plate across said knives, in combination with levers pivoted to said box, an operating-handle connecting the free ends of said levers, a cross-bar rotatively mounted in said levers, and a feeding presser-plate within the box carried by said cross-bar and connected therewith by a sliding connection, substantially as set forth.

340,885. REVERSIBLE COAT. JOSEPH LOEWENTHAL, Newark, N. J. Filed July 2, 1885. (No model.)



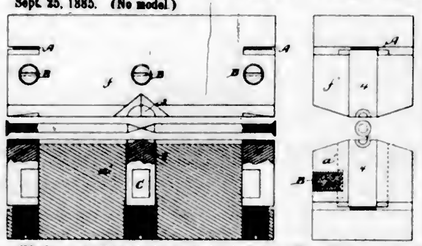
Claim.—1. In a double jacket or coat, the combination of outer and inner sections or portions, the corresponding sections on each side being of the same size and shape and matching each other, and edge stitches and armpit-stitches uniting both the inner and outer sections or portions at these points, substantially as set forth.

2. A double garment made of outer and inner sections, the corresponding sections on both sides being of the same size and shape, and provided with pockets secured to the corresponding sections of both sides, with facings on both sides and welts tacked through both sections or thicknesses of the garment, whereby the pocket is equally accessible from either side and will draw equally upon both sides.

3. A coat or jacket having a concealed fly, as described, secured between the opposite sides or facings thereof, and provided with a button on each side of the fly and a button-hole in each side or facing, substantially as and for the purpose set forth.

4. In a double garment having pockets lying between the two thicknesses of goods and having facings on both sides, the combination, with said thicknesses of goods and with said pockets and facings, of the stay-pieces *m' m'*, united to the corners of the pockets and extending between the thicknesses of goods to the edges and armpits, respectively, and united thereat, so that the strain of pockets shall come upon these points and prevent the bagging of the garment.

340,886. DIE FOR WIRE-NAIL MACHINES. CLINTON LOVELL, Boston, Mass., assignor to the Albert Nail Company, New York, N. Y. Filed Sept. 25, 1885. (No model.)



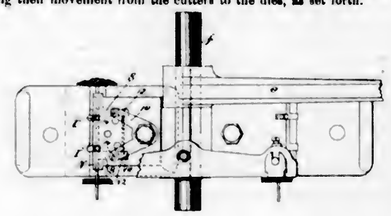
Claim.—1. The blocks *a' f'*, having the adjustable cutting and pointing dies formed to point two nails simultaneously, and means for holding said dies in any position to which they be adjusted.

2. The blocks *a' f'*, having cutting and pointing dies, adjustable gripping-dies, and means for holding said gripping-dies in any position to which they may be adjusted.

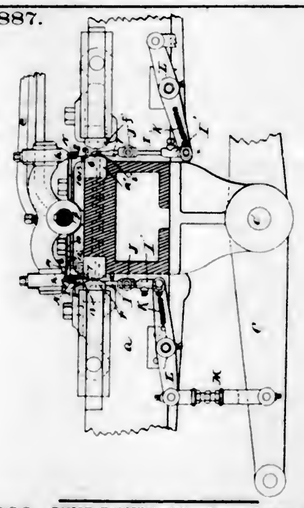
3. The blocks *a' f'*, having cutting and pointing dies and barb-forming dies, whereby the nails are barbed while being formed, as set forth.

340,887. WIRE-NAIL MACHINE. CLINTON LOVELL, Boston, Mass., assignor to the Albert Nail Company, New York, N. Y. Filed Sept. 25, 1885. (No model.)

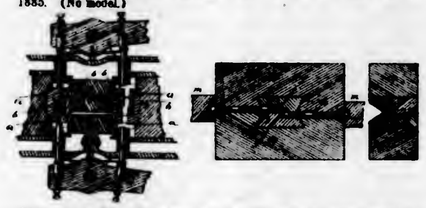
Claim.—The combination of the cutters which sever the wire-lengths from the main wire, the severing and pointing dies located below the cutters, and means, substantially as described, for holding said lengths during their movement from the cutters to the dies, as set forth.



340,887.



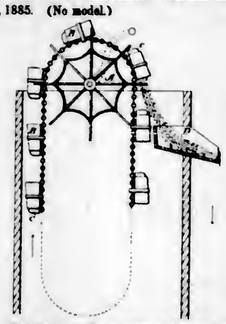
340,888. RIVET-FORMING DIE. CLINTON LOVELL, Boston, Mass., assignor to the Albert Nail Company, New York, N. Y. Filed Sept. 25, 1885. (No model.)



Claim.—1. The rivet-forming dies having the wire-receiving grooves *c c* and the shearing-blades or offsets *f f*, arranged and operating substantially as described.

2. The combination, with the rivet-forming dies, of headers or hammers arranged to form heads on the outer ends of two rivets held by said dies, as set forth.

340,889. ELEVATOR-BUCKET. WILLIAM MILD, Hamilton, Ohio. Filed Oct. 7, 1885. (No model.)



Claim.—1. The flat link F, having a dovetailed slot, I, to receive a projection, G, of a ring, E, when said ring is used for securing said elevator-buckets to the chain, substantially as herein set forth.

2. The combination of the slotted flat links F with the round loop-links K, ring E, and conical buckets B, the whole arranged as and for the purpose substantially as herein set forth.

340,890. THERMOSTAT. JOSEPH A. MILLER, Providence, R. I. Filed Apr. 23, 1885. (No model.)

Brief.—Both circuits may be closed circuits.

Claim.—1. The combination of two independent main circuits, one normally closed and the other normally open, with a thermostatic device breaking the normally-closed circuit and closing the normally-open circuit upon a sufficient rise of temperature, as specified.

340,890.



2. In combination, a normally-closed and a normally-open circuit and a thermostat having a rigid and a resilient arm, said resilient arm, when depressed, preserving the continuity of the said closed circuit, and when released breaking this circuit and closing the said open circuit by contact with said rigid arm, substantially as described.

3. The combination, with a suitable shell or casing and a cap secured thereon by fusible solder, of a rigid arm, a binding-screw placed near to said arm, and a spring-arm interposed between the fixed arm and the screw, and held in contact with the screw by the cap, and moving into contact with the rigid arm when released by said cap, substantially as and for the purposes described.

4. The combination, with the frame A, having the extensions *a*, the shell B, having the notches *b*, and the cap C, having the projections *c* secured to it by fusible solder, of the binding-posts *d d' d² d³*, the screws *f e³ h²*, the wires *i i' i² i³ g g' g²*, the arm *a*, having bent end *e'*, and the arm *h*, having bent end *h²*, as and for the purposes set forth.

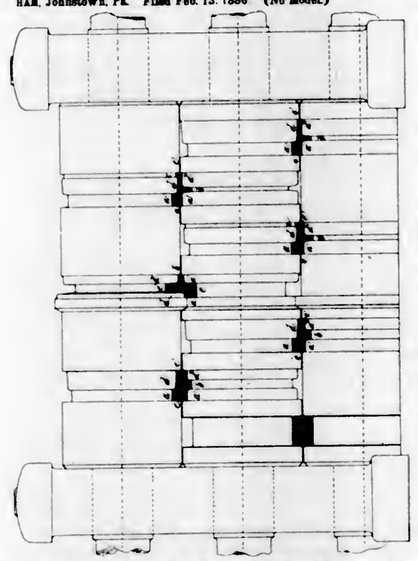
5. In combination, two independent main circuits and a thermostat normally preserving the continuity of one circuit, and upon a sufficient rise of temperature breaking this circuit and closing the normally-open circuit to send an alarm-signal, as specified.

6. In combination, two main circuits, one normally open and the other normally closed, and a thermostat in the normally-closed circuit, and closing the normally-open circuit to send an alarm upon a sufficient rise of temperature.

7. The combination, with the base-plate A, provided with binding-posts connecting the line-wires and the arm *h'*, of the case B, the cap C, normally secured by solder, and the contact-point *e'* and the contact-stop *f*, for the purpose described.

8. The combination of two independent circuits and a thermostat normally preserving the continuity of one circuit, and breaking this circuit and establishing the continuity of the other upon an increase of temperature, as described.

340,891. ROLLS FOR ROLLING GIRDER-RAILS. ARTHUR J. MOXHAM, Johnstown, Pa. Filed Feb. 13, 1886. (No model.)



Claim.—1. A set of rolls for rolling metal rails, provided with passes, substantially as hereinbefore described, having the conformations indicated in the accompanying drawing by the numbers from 1 to 7, inclusive, substantially as and for the purposes set forth.

2. A set of rolls provided with finishing passes, as indicated in the accompanying drawing by the Nos. 6 and 7, one or both, and with one or more edging passes, as indicated in the accompanying drawing by the No. 4, and with flattening passes having the conformations substantially as described, and indicated in said drawing, substantially as and for the purposes set forth.

340,892. RIDING-SADDLE. JOHN W. NEWMAN, Decatur, assignor to himself, and Drury Presley Shaw, Aurora, Tex. Filed Nov. 13, 1885. (No model.)



Claim.—1. In a saddle attachment, substantially as described, the combination, with the saddle-strap and the girth, of the combined hook and buckle having passages *a b*, whereby to receive the different lengths of the saddle-strap, and having a closed hook for the girth-ring, all arranged substantially as and for the purposes specified.

2. A combined hook and buckle comprising the body A, provided with separated passages *a b*, separated by bar B, adapted to receive the different lengths of the saddle-strap, the hook *d*, adapted to receive the girth-ring, and the tongue *c*, pivoted between its end to the body, and having one end movable toward and from the point of the hook, and its other end abutting the cross-bar B, all arranged and adapted for use substantially as specified.

3. The improved combined buckle and hook herein described, consisting of the body A, having an extension, 1, curved, forming a hook, *d*, and provided with lugs 2, and a slot or socket extended between said lugs and forward along the extension, and having passages *a b*, separated by bar B, the tongue pivoted between its ends and having one end abutting the bar B, and its other or point end movable into or out of the socket and toward and against the point of hook *d*, and the billet F, secured to the body A and depending in rear of the hook *d*, all arranged and adapted for use substantially as set forth.

340,893. STREET-PAVEMENT. MICHAEL O'ROURKE, Philadelphia, Pa. Filed Sept. 14, 1885. (No model.)

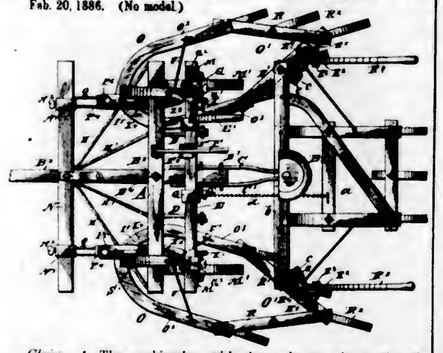


Claim.—1. A Belgian block pavement in which the granite blocks composing the surface of the pavement are combined with a foundation of artificial stone or cement, forming a rigid and homogeneous bed, all substantially as and for the purpose set forth.

2. The combination of the granite surfacing-blocks, the sand or gravel bed, and the foundation of cement and broken stone, forming a

rigid and homogeneous support for the pavement, all substantially as specified.

340,894. CULTIVATOR. HENRY C. PRATT, Canandaigua, N. Y. Filed Feb. 20, 1886. (No model.)



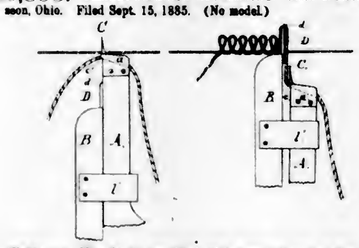
Claim.—1. The combination, with the main cross-beam, the stirrup-frame, and tongue connected by the brace-rods and a bolt to the cross-beam and stirrup-frame, of the evener-bar provided with the castings N', having hooks N³, the perforated arms N⁴, the main cultivator frames O, the castings P', journaled on the rods P³, having bearings in the bracket P⁴, the horizontal beams P⁵, and slotted standards and riding-wheels, substantially as specified.

2. The combination, with the cultivator-frame having the stirrup-frame, the tongue, and evener-bar, of the main cultivator-sections connected to the evener-bar by the perforated arms N⁴ and links Q, with hooks Q', the hinged roll-bar with the hand-lever and detent-lever, the springs S S', the chains S⁴, hinge-rods U U', connecting the chains S⁴ and front parts of the cultivator-frames, the horizontal beams P⁵, with swivel-castings at their forward ends, the slotted standards, and riding-wheels, substantially as specified.

3. The combination, with the cultivator-frame, the tongue, and evener-bar, of the main cultivator-sections connected at their forward ends by link and swivel connections to the evener-bar, the roll-bar having the hand-lever and detent-lever, the springs S S' on the main cross-beam, the link-rods and chains S⁴, and the slotted standards and riding-wheels connected by the horizontal beams to the swivels, substantially as specified.

4. The combination, with the wooden bar R' of the cultivator-frames, of the flanged casting R⁴ and the handle R³, pivoted to the arm R⁴ of said casting R⁴, and held by the bolt R⁵, substantially as specified.

340,895. FABRIC-TURFING IMPLEMENT. JOHN C. ROBBE, Wauseon, Ohio. Filed Sept. 15, 1885. (No model.)



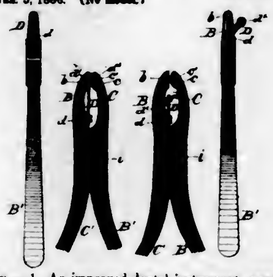
Claim.—1. Handle A, provided with punch C and orifice *a'*, said punch being upon one side of a stop, limiting its advance through the fabric, and said orifice being upon the other side of said stop, in combination with means for forming a loop, substantially as shown and described, for the purposes set forth.

2. Handle A, provided with plate *a*, punch C, and notch or orifice *a'*, said punch and orifice being on opposite sides of a stop, limiting the advance of said punch through the fabric, in combination with means for forming a loop, substantially as shown and described, for the purposes set forth.

3. In a turfing implement as a means for forming, inserting, and leaving the loop in place, so that the same shall not be sewed through the yarn of previously-formed loops, the bar or loop-maker D, in combination with punch C and means for delivering the yarn in the line of travel of said bar upon the side of the fabric next to handles A B, substantially as shown and described, for the purpose specified.

4. Handles A B, connected by suitable device, and provided with suitable means for obtaining feed, (or motion of the machine forward,) in combination with punch C, bar or loop-maker D, and suitable means for delivering the yarn to the loop-maker on the side of the fabric next to the handles, substantially as shown and described, for the purpose specified.

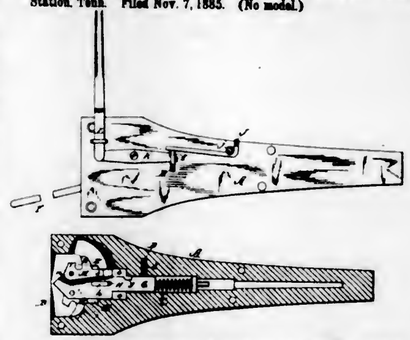
340,896. DENTAL PLIERS. ELI T. STARR, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed Jan. 5, 1886. (No model.)



Claim.—1. An improved dental instrument, consisting of a pair of pliers, one of the pivoted jaws of which has a depression or recess, and the other jaw a knob or projection to fit said recess in the opposite jaw, in combination with an adjustable punch-plate fitted to said pliers, substantially as described, whereby the instrument is adapted both for contouring or shaping and for punching up projections on metal bands for artificial dentures.

2. The pivoted or adjustable plate having a locking or holding projection on one side and a punch projection on the opposite side, substantially as described.

340,897. CAR-COUPLING. ALEXANDER H. STEPHENS, Thompson's Station, Tenn. Filed Nov. 7, 1885. (No model.)



Claim.—1. The combination of the draw-head having a mouth, and provided with recess *c*, extended from the inner end of said mouth, the longitudinally-movable draw-bar, and a grapple, M, pivoted at its forward end to the draw-bar and having a trip projection and a stop extension adapted to enter the recess *c* when the draw-bar is forced inward, substantially as set forth.

2. The combination of the draw-head, the draw-bar, the detent, and the lever mechanism for releasing such detent, substantially as set forth.

3. The combination of the draw-head, the draw-bar, the detent having its ends projected beyond the draw-head, and the spring having a bail extended across the draw-head and its ends or arms engaging the ends of the detent, substantially as set forth.

4. A draw-head having a mouth, B, mortise C, recess *c*, and groove E, combined with a draw-bar having a groove, *m*, and a grapple, M, pivoted in said groove, and having a hook, 1, a projection, 2, and an extension, 3, all arranged and operating substantially as set forth.

5. The combination, in a car-coupling, with a draw-head having an internal longitudinal groove, of a draw-bar and a grapple pivoted thereto and projecting into said groove, substantially as set forth.

6. In a car-coupler, the combination of a draw-head having a recess, *c*, a draw-bar supported and movable longitudinally in said draw-head, a grapple pivoted to the draw-bar and having a hook, a trip projection and a stop-extension, the latter being adapted to enter the recess *c* when the draw-bar is forced inward, and detent mechanism whereby to secure the draw-bar when it is forced inward, substantially as set forth.

7. In a car-coupler, the combination, with a draw-head, a draw bar movable longitudinally therein, and detent mechanism whereby to secure said draw-bar when it is forced inward, of a grapple pivoted to the draw-bar and adapted to secure a link, said grapple being provided with a trip projection arranged and adapted to receive the impact or blow of the link, whereby the grapple and draw-bar will both be adjusted to locked position, substantially as and for the purposes specified.

8. In a car-coupler, the combination of the draw-head, the draw-bar, the detent, the lever-arms pivoted to the draw-head and having their rear ends arranged to engage the detent, and the tripping-rod having its end bifurcated and connected with the lever-arms, substantially as set forth.

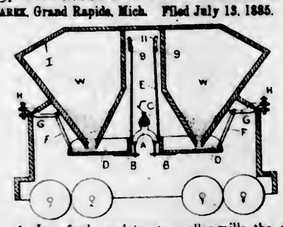
9. A draw-head having a mouth provided with a groove, E, and provided with a recess, *c*, combined with the longitudinally-movable draw-bar and a grapple pivoted thereto and having a stop-extension arranged to enter recess *c* in the coupled position of the parts, or abut the forward wall or groove E when such parts are uncoupled, substantially as set forth.

10. The combination of the draw-head having a transverse and a longitudinal mortise, the draw-bar placed in the longitudinal mortise and having a notch movable into register with the transverse mortise, and a detent placed in the transverse mortise and movable into the draw-bar notch when the latter is registered with such mortise, substantially as set forth.

11. A car-coupling comprising the draw-head having a mouth and a mortise extended longitudinally from the inner end of same and having the wall of said mortise recessed to receive the grapple and enlarged at its outer end to form a way for the link, the draw-bar, and the grapple, substantially as set forth.

12. The improvement in car-couplings, substantially as herein described and shown, consisting of the draw-head having a mouth and a mortise extended therefrom, and having a recessed wall and a transverse mortise intersecting such mortise, the draw-bar having a notch movable into register with the transverse mortise, the grapple pivoted to the draw-bar, the detent located in the transverse mortise of and extended laterally beyond the draw-head, the spring bearing upon the ends of the detent, the lever-arms pivoted to the draw-head and arranged to engage such lever-arms, and the tripping-rod having its end bifurcated and connected with the lever-arms, substantially as set forth.

340,898. FEED-REGULATOR FOR ROLLER-MILLS. WLADISLAUS ST. MIELCAREK, Grand Rapids, Mich. Filed July 13, 1885. (No model.)



Claim.—1. In a feed-regulator for roller-mills, the combination, with a case having hoppers, of shoes arranged below the hoppers, an oscillating shaft, C, yokes A, fitted upon the latter, the springs *a*, the blades 7, and the plates B, having the slots through which the blades pass, as set forth.

2. In a feed-regulator for roller-mills, the combination, with a case and the hoppers, of shoes located beneath the hoppers and pivotally supported at their outer ends, a shaft, C, means, substantially as described, for connecting the inner ends of the shoes with the latter, the arm J, having slot P, formed with grooves P', the lever O, having a sleeve, L, a shaft, U, having pulley 12, and journaled in the sleeve and formed with an eccentric pin, T, the block Q, to receive the pin, the rollers, one of which has an extended shaft, and pulley 13, and means, substantially as described, for connecting pulleys 12 and 13, as set forth.

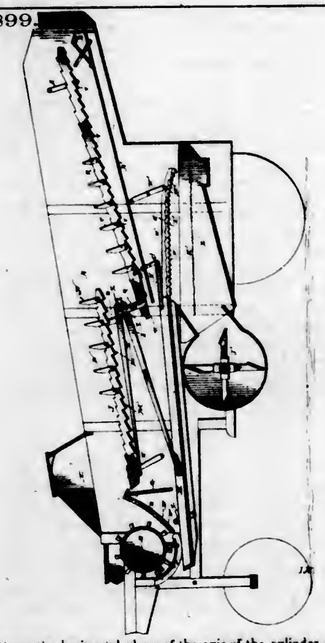
3. The combination, with the case and the hoppers, of the shoes arranged below the hoppers, the pivoted levers G, the screws H, the supports pivotally connecting the levers and shoes, the hangers E, the pivoted levers 9, to which the hangers are pivoted, and the thumb-screws 10, for operating the levers 9, as set forth.

340,899. THRASHING AND SEPARATING MACHINE. FREDERICK STROBEL, Marion, Ohio. Filed Dec. 10, 1885. (No model.)

Claim.—1. In a thrashing-machine, the combination, with the thrashing-cylinder and concave, of a rearwardly and upwardly curved grate extending from the rear edge of the concave to a point above the horizontal plane of the axis of the cylinder, and a substantially vertical deflector secured to the upper edge of the grate and facing the cylinder-discharge, as and for the purpose shown and set forth.

2. In a thrashing-machine, the combination of a casing having a bulge in its top to the rear of the cylinder, the cylinder and concave, a grate curved rearward and upward from the rear edge of the concave to

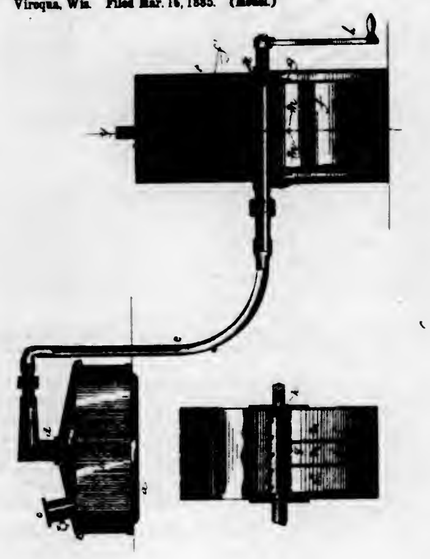
340,899.



a point above the horizontal plane of the axis of the cylinder, a substantially vertical deflector suspended from the upper edge of the grate and facing the cylinder-discharge, and a shaker to the rear of the grate, as and for the purpose shown and set forth.

3. In a thrashing-machine and separator, the combination, with a crank-shaft having two double cranks at the ends and formed with two pairs of stepped cranks diametrically opposite to them, the said stepped cranks forming each a larger and a shorter crank, of a forward rack, pitmen pivotally connecting it with the larger of the stepped cranks, a rear rack, pitmen or arms pivotally connecting it with the outer cranks, and a grain-pan having arms pivoted to the smaller cranks, as and for the purpose shown and set forth.

340,900. WASHING AND BLEACHING MACHINE. SQUIRE TOMEY, Viroqua, Wis. Filed Mar. 16, 1885. (Model.)



Claim.—1. In a washing-machine, substantially as described, the combination of the boiler and its connecting-hose with a clothes-containing and perforated cylinder surrounded by a casing and revolving therein on a hollow perforated mandrel surrounded by a perforated tube, substantially as described.

2. In a washing-machine, a perforated clothes-containing cylinder having a hinged lid and provided with a central perforated tube, and combined with its surrounding case having a lid and a hollow perforated mandrel shouldered at its outer end, all constructed and operating as described.

3. In a washing-machine, as described, a clothes-containing cylinder revolving on a hollow perforated and steam-distributing mandrel, and provided with a central tube surrounding said mandrel, and a series of internal vertical wires, whereby the clothes are prevented from winding about said mandrel, as shown and described.

340,901. DOOR-MAT. HENRY T. WINDT, Toronto, Ontario, Canada, assignor to the Toronto Wire Mat Company, same place. Filed Apr. 3, 1884. (Model.) Patented in Canada Apr. 30, 1884, No. 19,254.

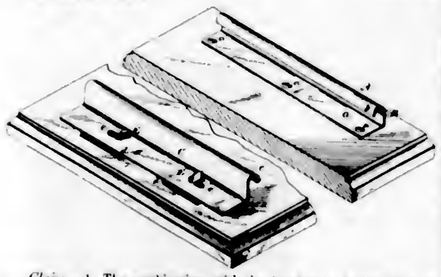


Claim.—1. As an improved mat, a series of wire coils linked together parallel with each other and braced by a similar series of coils screwed into the mat at about right angles to the other coils, in combination with a stiffening-bar inserted into the corners of the mat, substantially as and for the purpose specified.

2. A mat composed of a series of coiled wires meshed together, as specified, in combination with the hinged bracket E, provided with the lip *b*, and having a locking-head, F, substantially as and for the purpose specified.

3. A mat composed of a series of wire coils linked together parallel with each other and braced by a similar series of coils screwed into the mat at about right angles to the other coils, and provided with a stiffener-bar inserted into the corners of the mat, combined with a bracket having a lip and a locking-head, substantially as and for the purpose specified.

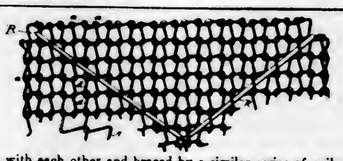
340,902. CARPET-FASTENER. HENRY T. WINDT, Toronto, Ontario, Canada. Filed Jan. 11, 1886. (No model.) Patented in Canada Apr. 30, 1884, No. 19,254.



Claim.—1. The combination, with the bracket A, having lip *b*, to engage the edge of a mat, of the hinged bracket C, provided with lip *c*, and a locking-stud, E, substantially as and for the purpose specified.

2. The bracket C, having lip *c*, to engage the edge of a mat, and hinged at *d*, the upper half of said bracket being provided with elongated slot *e*, and the lower half with a locking-head, E, designed to engage said slot, substantially as and for the purposes specified.

340,903. WIRE FABRIC. HENRY T. WINDT, Toronto, Ontario, Canada. Filed Jan. 11, 1886. (Model.) Patented in Canada Apr. 30, 1884, No. 19,254.

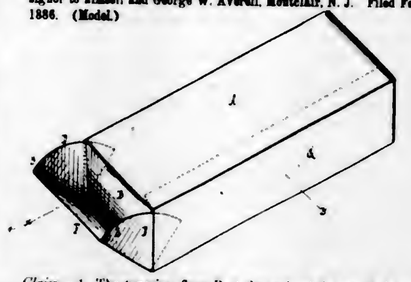


Claim.—1. As an improved wire fabric, a series of wire coils, A, linked together, combined with a similar series of coils, B, interwoven with the coils A diagonally to the sides of the fabric and at about right angles to the said coils A, substantially as described.

2. As an improved wire fabric, a series of wire coils, A, linked together parallel with each other, combined with a similar series of coils, B, screwed into the coils A at the point where they intersect each other at about right angles to said coils, and diagonally to the sides of the fabric, substantially as described.

3. As an improved wire fabric, a series of wire coils linked together parallel with each other and braced by a similar series of coils screwed into said coils at about right angles thereto and diagonally to the sides of the fabric, the ends *a* of each coil being bent around the spiral body of the coil next to it, substantially as and for the purpose specified.

340,904. PAPER BOX. WILLIAM J. AUCHTERLONIE, Newark, assignor to himself and George W. Averell, Montclair, N. J. Filed Feb. 6 1886. (Model.)



Claim.—1. The tapering flaps B at the ends of the top A, in combination with the swinging head F D D, formed at the ends of the bottom E, and with the sides C G, substantially as shown and described.

2. A paper box made from a single blank having tapering flaps B at the ends of the top A, the swinging head F D D at the ends of the bottom E, and the sides C G, and the pasting-flap H, substantially as shown and described.

340,905. HORSE-HITCHING DEVICE. ALEXANDER H. BUCKINGHAM, New Haven, Conn., and ARCHIE G. HOHENSTEIN, New York, N. Y.; said Hohenstein assignor to said Buckingham. Filed Feb. 8, 1886. (No model.)



Claim.—1. As an article of manufacture, the herein-described hitching device for driving-reins, consisting of the slide A, adapted to be placed and movable longitudinally upon the driving-rein, and constructed with an opening, *a*, combined with the segment-shaped hook C, also adapted for attachment to the same rein, substantially as described.

2. The herein-described hitching device, consisting of the driving-rein, the hook C, fixed upon the rein and projecting from one of the flat sides thereof, with its open end toward the bit, combined with the slide A, arranged upon the rein between the said hook and the bit-ring, and constructed with an opening, *a*, therein toward said hook, the said opening adapted to be engaged with and disengaged from said hook, substantially as described.

340,906. ROLLING COLTER. HOWARD H. BUTLER, Canton, Ohio. Filed Jan. 21, 1886. (No model.)



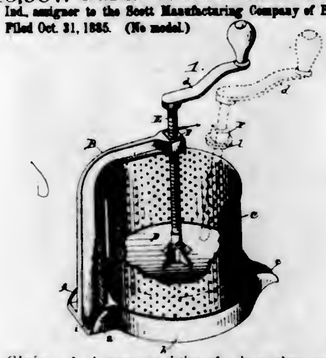
Claim.—1. The frame A, provided with the parallel arms *a a*, and having attached thereto the pendent arm or bracket B, provided with the connecting-arm C, having mounted thereon the colter-arms E, substantially as and for the purpose specified.

2. The frame A, provided with the parallel arms *a a*, having attached thereto the pendent arm or bracket B, the connecting-arm C, attached to said pendent arm or bracket D, and the corrugated or serrated surfaces D and D', substantially as and for the purpose specified.

3. The combination of the frame A, provided with the parallel arms *a a*, of the pendent arm or bracket B, provided with the slot *d*, of the connecting-arm C, having mounted thereon the colter-arms E, of the eye or socket F, provided with the extensions *f*, and of the grooves or recesses *f'*, substantially as and for the purpose specified.

4. The combination, with the frame A, provided with the pendent arm or bracket B, having the slot *d*, of the connecting-arm C, pivotally attached to the bracket B, substantially as and for the purpose specified.

840,907. DOMESTIC HAND-PRESS. JOHN W. CONDON, Logansport, Ind., assignor to the Scott Manufacturing Company of Baltimore City. Filed Oct. 31, 1885. (No model.)



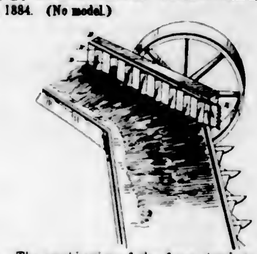
Claim.—1. A press consisting of a base-plate, an overhanging bracket with an opening for a nut in the same, in combination with a platen, a screw-rod provided with a handle, and a nut arranged upon the threads of said shaft and fitting the opening in the bracket to prevent turning, and provided with a flange on its lower side to resist the pressing strain, the said nut and screw-shaft being detachable laterally from the bracket, substantially as shown and described.

2. A press consisting of the combination of a base-plate, an overhanging bracket, having an opening in the same to receive the nut, a screw-shaft having a flanged nut on its threads, and a platen disconnected from the screw-shaft, and provided with a concave seat in its upper side to receive and centralize the screw-shaft, as and for the purpose described.

3. The combination, in a press, of a base-plate having the offset *e*, with lips *f f* on its sides, and a bracket-standard having a flanged bottom, *h*, with holes or slots *g g* in the same, and rivets or screws passing through said holes and the offset, substantially as and for the purpose described.

4. The combination, in a press, of a base-plate and a bracket-standard formed in separate pieces and riveted, screwed, or bolted together, and a galvanized or coherent filling of zinc firmly united to both surfaces of the joint, and forming a non-detachable and permanently-solid connection between said standard and base, as and for the purpose described.

340,908. GRAIN-ADJUSTER. EMANUEL F. CRIPE, Goshen, Ind. Filed Sept. 2, 1884. (No model.)

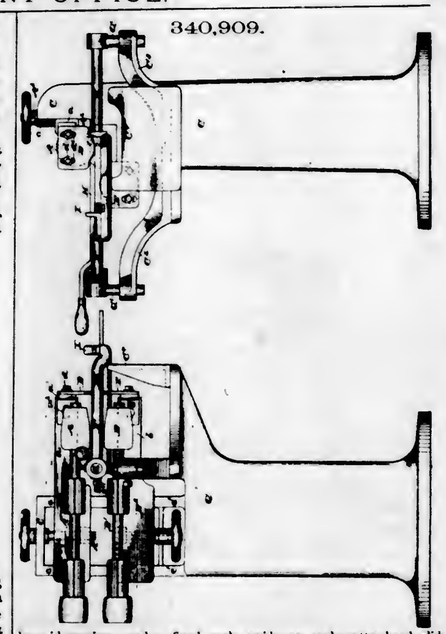


Claim.—The combination of the frame having a cross-piece near one end, provided with eyes or perforations, the adjusting-board having transverse slats and provided with guide-fingers working in the eyes of the said cross-piece, and the operating crank-shaft journaled transversely in the frame, and having its crank journaled in a block upon one side of the adjusting-board, substantially as and for the purpose set forth.

340,909. SPOKE-THROATING MACHINE. WILLIAM H. DOANE, Cincinnati, Ohio. Filed Jan. 30, 1886. (No model.)

Claim.—1. The combination, substantially as before set forth, of a spoke-carriage, two fixed cutter-heads, which are arranged, respectively, on opposite sides of the plane or path along which the spoke is moved by said carriage, and a fixed spoke-guide on each cutter-head slide, whereby the two sides of a spoke can be throated successively without reversing it.

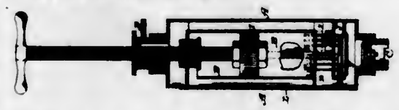
340,909.



2. The combination, substantially as before set forth, of a spoke-carriage, two fixed cutter-heads, which are arranged one in advance of the other, and respectively on opposite sides of the plane or path along which the spoke is moved by said carriage, and a fixed spoke-guide on each cutter-head slide, whereby the two sides of a spoke can be throated successively at a single pass and without reversing the spoke.

3. The combination, substantially as before set forth, of a hinged spoke-carriage, two fixed horizontal cutter-heads, which are arranged respectively, on opposite sides of the plane or path along which the spoke is moved by said carriage, a screw applied to the supporting-slide of each cutter-head for vertically adjusting the same, and a fixed spoke-guide on each cutter-head slide.

340,910. DOUBLE-ACTING PUMP. JAMES FERRICK, Nashville, Tenn. Filed Mar. 12, 1886. (No model.)



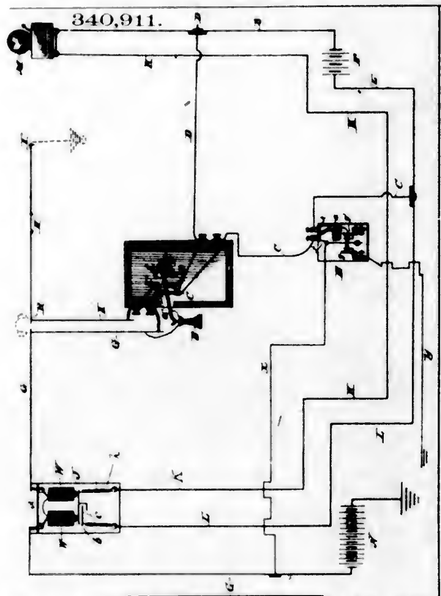
Claim.—In a double-acting pump, the combination of the piston, the cylinder provided with the two water-passages I I, the two double-acting valves F H, the water-chamber J, located below the lower end of the cylinder and between the inlet-passage and the water-passage I, the two valves being made to alternately close both of the openings in the lower end of the cylinder and both of the openings in the water-chamber, substantially as shown.

340,911. TELEPHONIC SIGNALING AND SWITCHING SYSTEM. GEORGE H. GLASS and WALTER CLARK, Raleigh, N. C. Filed May 13, 1885. (No model.)

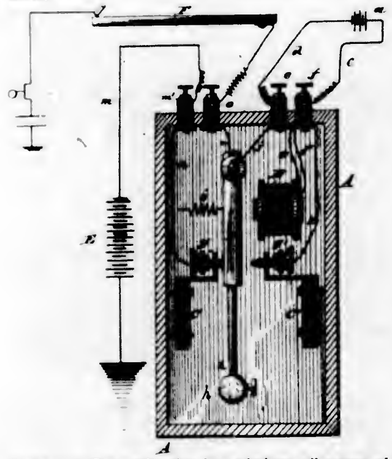
Claim.—1. The combination, in a telephone signaling system, of a main line, a local circuit having a circuit-breaker included therein, to make and break for signaling purposes, a distinct circuit around the signaling-battery, and a lever adapted to interrupt said first-mentioned circuit when a telephone is hung thereon, and complete the local circuit, substantially as described.

2. The combination, in a telephone signaling system, of a main line, a switch device included therein and having a lever adapted to interrupt said main line when a receiving-instrument is hung thereon, and a head receiving-instrument designed for connection with said line to bridge or complete the same, substantially as set forth.

340,911.



340,912. CIRCUIT-BREAKER FOR TELEPHONE LINES. GEORGE H. GLASS and WALTER CLARK, Raleigh, N. C. Filed June 23, 1885. (No model.)

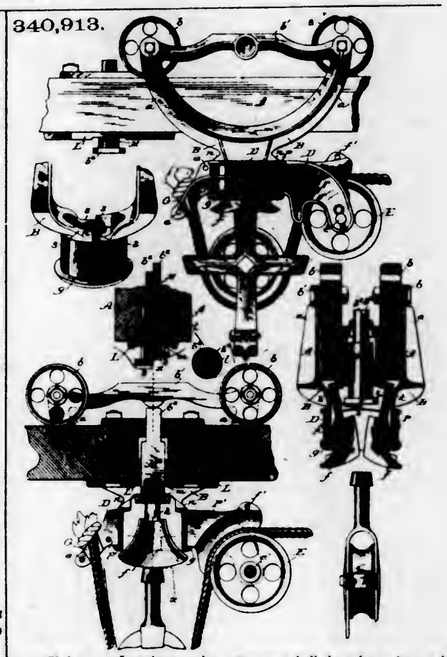


Claim.—1. The combination, in a telephone-call system, of the main line, a circuit-breaker provided with a single magnet, the coils of which are always in the local circuit, and a short-circuit derived from said local circuit, an armature adapted to be attracted by said magnet and retracted therefrom by a spring, and contacts for said main and short circuits on the opposite sides of the armature, said armature being designed to close said short-circuit, and thereby demagnetize the magnet, whereby the movement of the armature alternately breaks the main and short circuits, substantially as set forth.

2. The combination, in a telephone-call system, of a circuit-breaking device consisting of a single magnet, B, wires *e f*, included in the local circuit and forming the coils of said magnet, an armature, D, wires *j k*, leading from said local circuit and connecting, respectively, with armature D and with a contact, *g'*, a contact, *g*, main battery line connecting therewith, and line-wire connecting with said armature, whereby said main circuit is broken only on one side of said magnet, substantially as set forth.

340,913. HAY-CARRIER. EDWIN L. HALL, Deavertown, Ohio. Filed Jan. 30, 1885. (No model.)

340,913.



Claim.—1. In a hay-carrier, a two-part bell-shaped gravity-catch having its upper end adapted to receive and catch the stem of the hoisting-pulley, and having also upwardly-extending arms adapted to be spread by the plate on the under side of the track, substantially as described.

2. In a hay-carrier, a two-part bell-shaped gravity-catch pivoted in the lower hollow extension or neck of the carrier-frame, and having upwardly-extending arms adapted to be opened by a plate on the under side of the track, combined with a gravity-bolt, and with the inclined edges at the upper opening of the carrier-neck, substantially as described.

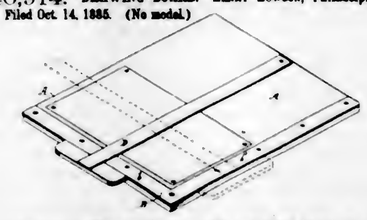
3. In a hay-carrier, the combination, with the inclined edges at the upper opening of the carrier-neck, of a gravity-catch bolt adapted to be lifted by the incline and to drop into the opening, substantially as described.

4. In combination, in a hay-carrier, a gravity-catch for the stem of the hoisting-pulley, located within an opening in the carrier-neck, and having upwardly-extending arms; the said opening having inclined upper edge, a gravity locking-bolt adapted to be lifted by the inclined edge of the opening, and a plate on the under side of the track adapted to spread the arms of the gravity-catch and release the stem of the hoisting-pulley, substantially as described.

5. A locking-bolt set in the track and adapted to fall and project below the under surface thereof, in combination with a carrier having a central chamber and suitable catch for the stem of the hoisting-pulley, said chamber being adapted to receive the locking-bolt, substantially as described.

6. In a hay-carrier, the combination, with a locking mechanism for the stem of the hoisting-pulley and the inclined edges at the upper opening of the carrier-neck, of the cut-down portions 2 2 and a divided locking-bolt, substantially as described.

340,914. DRAWING-BOARD. HENRY HOWSON, Philadelphia, Pa. Filed Oct. 14, 1885. (No model.)

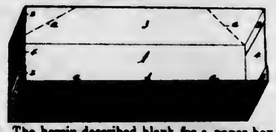


Claim.—1. The combination, with a drawing-board, of a right-angled metallic strip permanently attached to the upper surface of said board, substantially flush with the same, extending along two or more of its edges and forming the bearing for a T-square head, all substantially as specified.

2. The combination, with a drawing-board, of a right-angled metallic strip permanently attached to the upper surface of said board, presenting a face substantially flush with the same and projecting beyond the edges of the board, forming the bearing for a T-square head, all substantially as set forth.

3. The combination, with a drawing-board, of a right-angled metallic strip permanently attached to the upper surface of said board, presenting a face substantially flush with the same, and having a downwardly-projecting flange, to form a more extended bearing for the head of the T-square, all substantially as specified.

340,915. KNOCKDOWN PAPER BOX. JAMES C. HURD, Springfield, Mass. Filed June 22, 1883. (Model.)



Claim.—1. The herein-described blank for a paper box, consisting of the bottom and end parts, A 4 4, and the continuous side parts, 3 3, having the indented or scored folding-lines *a a* therein, running at an angle of forty-five degrees to their edges, and the flaps 2 2 on the ends thereof, and provided with the folding-lines 8 9 therein at the junction of said side and end parts with said bottom part, substantially as set forth.

2. A box having its bottom, sides, and ends in one piece of material, the sides and ends being bent up and united, and either both sides or both ends provided with creases or scores extending obliquely across them from corners to the upper edge, whereby the box may be knocked down flat, substantially as described.

340,916. HOLLOW GRATE AND FEED-WATER HEATER. DAVID JONES, Paris, assignor of one-half to S. W. Cooley, Henry County, Tenn. Filed Feb. 24, 1886. (No model.)

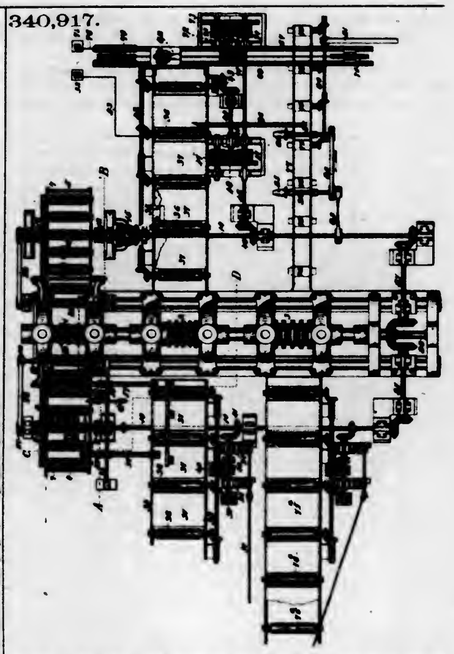


Claim.—1. A feed-water heater consisting of a series of tubes forming the grate-bars of the furnace, the outer tube resting on the walls of the said furnace for about half its length, and passing under to the other wall and supporting the other tubes, as set forth.

2. A feed-water heater consisting of tubes forming the grate-bars of the furnace and supported about its center by the outer tube, that rests upon the walls of the furnace, which passes from one side of the furnace to other, and is provided with an inlet, outlet, and blow-off pipes, as set forth.

340,917. FEEDING APPLIANCE FOR ROLLING-MILLS. WILLIAM R. JONES, Braddock, Pa. Filed July 20, 1885. (No model.)

340,917.



Claim.—1. The combination, in a rolling-mill, of a rising and falling feed-table having geared feeding-rollers, with a fixed driving mechanism arranged at the feed side of the pass, whereby the feeding-rollers are driven toward the pass when the table is brought to a feed position, substantially as and for the purpose described.

2. The combination, in a rolling-mill, of a rising and falling feed-table having a feed-roller provided with a friction gear-wheel, with a driving friction-wheel occupying a fixed position relatively to the table in a different horizontal plane, whereby the friction-wheel on the table shall come automatically in contact therewith when the table comes to a feeding position, substantially as and for the purposes described.

3. The combination, with a three-high mill, of simultaneously rising and falling feed-tables arranged on opposite sides of the rolls and provided with feed-rollers, and fixed mechanism placed below the table on one side and above the table on the other side, whereby the feed-rollers of the tables shall come automatically into connection with the driving mechanism when they assume position on the feeding side of a pass, and shall be automatically disconnected when they move away from such position, substantially as and for the purposes described.

4. The combination, in a three-high mill, of a rising and falling feed-table having geared feeding-rollers and a friction-wheel connected with such rollers, with a driving friction-wheel occupying a fixed position relatively to the table, with which the friction-wheel on the table in another horizontal plane shall come automatically into driving-contact when the table is raised or lowered to a feeding position, substantially as and for the purposes described.

5. The combination, in a rolling-mill, of a rising and falling feed-table having geared feed-rollers, with a fixed driving mechanism, which is in driving connection with the feed-rollers when the table is in a feeding position, and out of connection when it is in a receiving position, and a driven roller arranged on the delivery side of the rolls between the rolls and the receiving-table, substantially as and for the purposes described.

6. The combination of a set of rolls having a rising and falling feed-table, with a second set of rolls having a feed-table, and inclined slideways pivoted at the second feed-table, and having their free ends terminating at the first for the purpose of transferring the piece from the first set of rolls to the second, substantially as and for the purposes described.

7. The combination, in a rolling-mill, of a set of rolls having a rising and falling feed-table, pivoted inclined slideways having their free ends terminating at an upper pass of the rolls, and supporting-arms sustaining the free ends of the slideways and connected with the table, and mechanism for operating said arms, whereby the free ends of the slideways shall fall below the said upper pass at the rise of the table, and shall rise and lift the bloom from the table as the latter falls, substantially as and for the purpose described.

8. The combination, in a rolling-mill, of a set of rolls having a rising and falling feed-table, pivoted inclined slideways having their free ends terminating at an upper pass of the rolls, a rock-shaft provided with oscillating arms which sustain the slideways, and levers connected to said rock-shaft, actuated by the table, whereby the fall of the table shall cause the slideways to rise and lift the bloom from the table, substantially as and for the purposes described.

9. The combination, in a three-high mill, of a rising and falling feed-table having feed-rollers, with stationary guides projecting up between the feed-rollers, having inclined surfaces between the upper and lower passes to shift the bloom laterally and turn it radially as the table descends, and a fixed driving mechanism arranged below the table, which comes into automatic connection with the feed-rollers when the table reaches its lower position and the bloom is shifted and turned, so that the bloom may at once be automatically driven by the feed-rollers of the table into the next pass without turning or other manipulation, substantially as and for the purposes described.

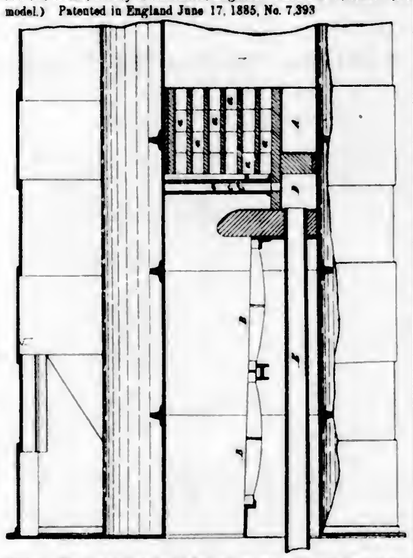
10. The combination, in a rolling-mill, of two sets of rolls, with inclined slideways pivoted near the lower pass of one set of rolls, and extending to the upper pass of the first set of rolls, and mechanism for supporting the free ends of the slideways and raising them, for the purpose

of receiving and raising the bloom from the first set of rolls and transferring it by gravity to the other rolls, substantially as and for the purposes described.

11. The combination, in a rolling-mill, of two sets of rolls, each provided with feed-tables, with a carrier for transferring the bloom laterally from one feed-table to the other, substantially as and for the purposes described.

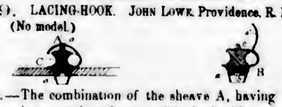
12. The combination, in a rolling-mill, of two of sets rolls, one set having a feed-table and the other set having driven flanged feed-rollers arranged in front of its first pass, with transfer-bars extending from the feed-table to the feed-rollers, so that the bloom may be shifted laterally thereon from the feed-table to the feed-rollers, substantially as and for the purposes described.

340,918. **MEANS FOR CONSUMING SMOKE.** WILLIAM KNEEN, Barrow-in-Furness, County of Lancaster, England. Filed Feb. 2, 1886. (No model.) Patented in England June 17, 1885, No. 7,393



Claim.—The combination of a fire-place or furnace with heated zig-zag passages in communication therewith and means for passing air in a finely-divided state into said zigzag passages, substantially as and for the purpose set forth.

340,919. **LACING-HOOK.** JOHN LOWE, Providence, R. I. Filed Mar. 3, 1886. (No model.)

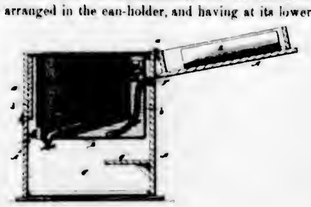


Claim.—The combination of the sheave A, having an eyelet, *a*, whereby it can be secured to the material, the bushing-piece B, and the pulley C, all constructed substantially as and for the purpose described.

340,920. **CREAMER.** WALTER S. MUMMERY, Elba, Mich. Filed Aug. 15, 1885. (No model.)

Claim.—1. In a creamer, the combination of a tank and a stationary can-holder therein, said tank and holder having coincident orifices, so that the interior of the holder communicates with the exterior of the tank, with a can arranged in the can-holder, and having an outlet extending through the orifices in the tank and can-holder, substantially as described.

2. In a creamer, the combination of a tank and a can-holder fitted water-tight therein, said tank and holder having coincident orifices, so that the interior of the holder communicates with the exterior of the tank, with a can arranged in the can-holder, and having at its lower portion a



340,920.



faucet extending through the orifices in the tank and holder, substantially as described.

3. In a creamer, the combination of a case, a tank supported therein, and a can-holder fitted water-tight in the tank, said tank and holder having orifices and a cut-away portion, c^2, in their lower portions, so that the interior of the holder communicates with the exterior of the tank, with a can arranged in the holder, and having a faucet and an indicator-glass, both extending through the orifices in the holder and tank, substantially as described.

4. The combination of the tank having a horizontal bottom wall and a can-holder having an inclined bottom wall, said holder and tank having coincident orifices, and fitted water-tight therearound, so that the interior of the holder communicates with the exterior of the tank, with a can arranged in the can-holder, and having an outlet extending through the orifices in the holder and tank, substantially as described.

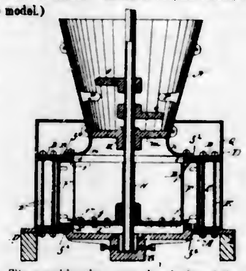
5. In a creamer, the combination of an inclosing-case, a tank supported therein and separated therefrom by air-spaces, a chamber under the tank, a can-holder fitted water-tight in the tank, said holder and tank having coincident orifices in their lower portions, and a can arranged in said can-holder, and having an outlet extending through the orifices in the holder and tank, substantially as described.

340,921. **TABLE.** WILLIAM H. NEWTON, Assumption, Ill. Filed May 20, 1884. Renewed Mar. 2, 1886. (No model.)



Claim.—The anti-frictional rolls *b'*, secured to the table-top, in combination with the shafts *d* and *e*, supporting, respectively, the revolving shelves B' and B², and the notted rod *f*, substantially as shown and described.

340,922. **BARK-MILL.** BENEDICT OTT, La Crosse, Wis. Filed Dec. 2, 1885. (No model.)



Claim.—1. The combination, with the shaft and the main frame having a bearing for the lower end thereof, of the hopper divided longitudinally into sections, and frames connected one with each of said sections, each of said frames being provided with a segment of a bearing for the shaft, substantially as set forth.

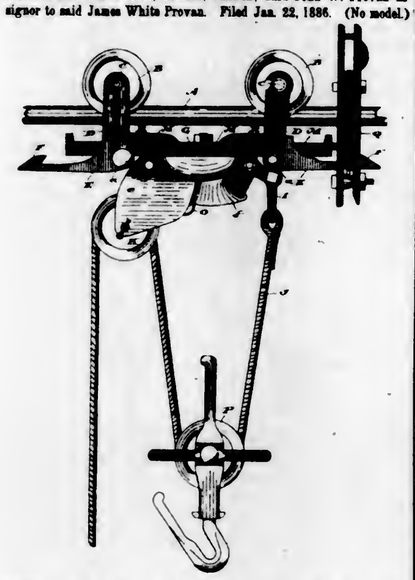
2. The combination, with the top and base plates, of the uprights placed between them and having their sides formed in lines diverging outwardly, the cutter-cylinder sections, and the carrier, substantially as set forth.

3. The combination, with the cutter-cylinder, the carrier-plate, and the shaft, of a presser provided with a base-flange rested on said plate, and fastening-bolts passed through said flange into the plate, substantially as set forth.

4. The combination, with the top and bottom plates, of the cutter-

cylinder sections and the bolts *f'*, connecting said sections at or near their ends with said plates, whereby by releasing one end of said sections they may be turned on the bolts at the opposite ends as on pivots, substantially as set forth.

340,923. **HAY-CARRIER.** JAMES WHITE PROVAN, Oshawa, and JOHN W. PROVAN, Toronto, Ontario, Canada; said John W. Provan assignor to said James White Provan. Filed Jan. 22, 1886. (No model.)



Claim.—1. A hay-carrier in which the supporting-wheel is connected to an arm attached to or forming part of the latch, which latch is pivoted to the body-plate, combined with a supporting-eye independent of said latch, substantially as and for the purpose specified.

2. In a hay-carrier, the body-plate and the wheel, arm, and latch pivoted to the body-plate, in combination with a head arranged to support the eye and sheave-pulley of the bale or draft rope, and so connected to the body-plate that it will revolve thereon independent of the latch, substantially as and for the purpose specified.

3. In a hay-carrier, a body-plate, G, on which the latches F are pivoted, in combination with the head H, arranged to support the bale-rope eye I and sheave-pulley K, the said head being pivoted upon the body-plate G independent of the latches, substantially as and for the purpose specified.

4. In a hay-carrier, a body-plate, G, on which the latches F are pivoted, and the trip-bar M, adjustably supported, in combination with a head, H, arranged to support the bale-rope eye I and sheave-pulley K, the said head being pivoted upon the body-plate G, substantially as and for the purpose specified.

5. In a hay-carrier, a trip-bar, M, adjustably supported upon the body-plate G, and having a projection formed upon or attached to it, to project through a hole in the said body-plate, and supporting the hook L, in combination with the head H, supported by an annular flange, *b*, formed on the body-plate G, and a spring, O, arranged to act on the hook L, substantially as and for the purpose specified.

6. The combination, with the trip-bar M and swiveled head H, of supporting-hook L, pivoted to the trip-bar M, and provided with a tail, *p*, arranged to engage with the guides *q*, formed on said head H, substantially as and for the purpose specified.

7. A latch, F, connecting to or forming part of the arm D, which carries the wheels B, and is pivoted on the body-plate G, in combination with an arm, R, designed to extend through a hole in the body-plate G immediately over the bell-mouth opening *f*, formed in the head H, substantially as and for the purpose specified.

8. A head, H, supported on an annular flange, *b*, formed on the body-plate G, and having a bell-mouth opening, *f*, formed in it on one side of or off the center of the annular flange *b*.

9. A latch, F, connected to or forming part of the arm D, which carries the wheels B, and is pivoted on the body-plate G, in combination with an arm, R, designed to extend through a slot, *g'*, in the trip-bar M, and provided with a lug, *h*, to strike the top surface of the body-plate G, substantially as and for the purpose specified.

10. In a hay-carrier, a body-plate, G, having a flange, *i*, formed on each end of it to support the trip-bar M, and an annular flange, *b*, to support the head H, substantially as and for the purpose specified.

11. In a stop-block formed by a stop-lever, *j*, supported by the latch *i*, the combination of a projection formed upon one of said parts, so that the upward movement of the lever above the hook on the latch will push the said hook clear of the lever, substantially as and for the purpose specified.

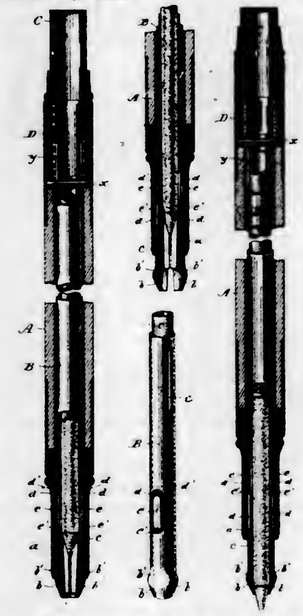
12. In a hay-carrier, an arm carrying the supporting-wheel, and a latch rigidly attached to or forming part of said arm and pivoted to the body-plate, substantially as and for the purpose specified.

340,924. **BUTTON-SHOE.** OTIS D. RANDALL, Austin, Ill. Filed July 6, 1885. (No model.)



Claim.—A shoe constructed with a foxing consisting of the parts B B', the part B forming the portion of the foxing on the outer side of the shoe, and the part B' the main portion of the foxing on the opposite side, and with the overlapping button-flap D, attached to the part B on a front central line, substantially as shown, provided with button-holes, and adapted to button upon the inner side of the shoe to the portion B, substantially as described.

340,925. **LEAD AND CRAYON HOLDER.** GUSTAV R. SANDELL, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed Mar. 23, 1886. (No model.)

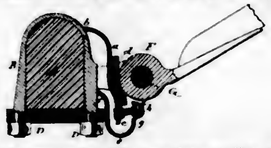


Claim.—1. The combination of the sheath or handle, the collapsible or split nozzle, the longitudinally-movable spring-controlled and normally-open lead-grasping jaws, provided each with a longitudinal stop-gage slot and shoulder, and the arms or pressers arranged and adapted to bear externally upon the jaws and to operate in connection with said slots and shoulders, substantially in the manner and for the purposes hereinbefore set forth.

2. The combination of the sheath or handle, the collapsible or split

nozzle, the longitudinally-movable lead-grasping jaws provided each with a longitudinal stop-gage slot and shoulder, and rearwardly extending arms or prongs fast to the split nozzle, projecting into and through said slots and arranged and adapted to operate in connection with said shoulders, as and for the purposes hereinbefore set forth.

340,926. THILL-COUPLING. LEVI B. STUART, Seymour, assignor of one-half to Henry C. Cook, Ansonia, Conn. Filed Oct. 12, 1885. (No model.)

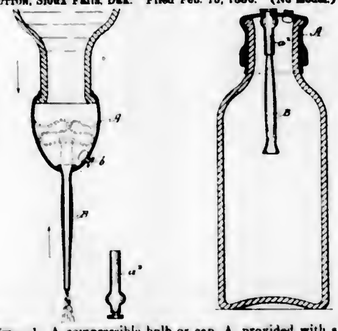


Claim.—1. In combination with a carriage-coupling, the plate *a*, adapted to be set in rear of the shaft-eye and its upper end to take a bearing above the shaft-eye, its lower end extending below the shaft-eye, the U-shaped spring *e*, one end taking a bearing in rear of the lower end of the said plate, the other extending up forward of the plate, with a screw, *h*, through the outer end of said spring into the lower end of said plate, substantially as described.

2. In combination with a carriage-coupling, the plate *a*, adapted to be set in rear of the shaft-eye and its upper end to take a bearing above the shaft-eye, its lower end extending below the shaft-eye, the U-shaped spring *e*, one end taking a bearing in rear of the lower end of the said plate, the other extending up forward of the plate, with a screw, *h*, through the outer end of said spring into the lower end of said plate, and the plate *a*, provided with a flexible pad, *d*, between it and the shaft-eye, substantially as described.

3. In combination with a carriage-coupling, the plate *a*, adapted to be set in rear of the shaft-eye and its upper end to take a bearing above the shaft-eye, its lower end extending below the shaft-eye, the U-shaped spring *e*, one end taking a bearing in rear of the lower end of the said plate, the other extending up forward of the plate, with a screw, *h*, through the outer end of said spring into the lower end of said plate, the face of the spring beneath the head of the screw constructed with an outward projection, *i*, to engage the head of the screw, substantially as described.

340,927. SYRINGE ATTACHMENT FOR BOTTLES. ANAXIMANDER B. TUTTON, Sioux Falls, Dak. Filed Feb. 15, 1886. (No model.)



Claim.—1. A compressible bulb or cap, A, provided with a nozzle and an opening for the neck of a bottle, and adapted to be alternately expanded and collapsed, to form a syringe attachment or be folded back over the neck of the bottle to form a stopper for the same, substantially as shown and described.

2. A compressible bulb or cap, A, provided with a nozzle and a separate stopper, *b*, and an opening for the neck of the bottle, and adapted to be alternately expanded and collapsed to form a syringe attachment or be folded back over the neck of the bottle to form a stopper, substantially as shown and described.

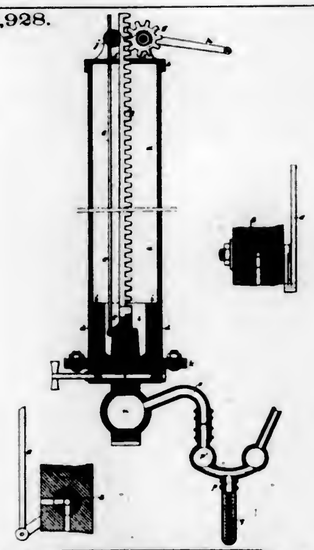
340,928. AIR-PUMP. PANTELEYMON WRADY, St. Petersburg, Russia. Filed Sept. 24, 1885. (No model.)

Claim.—1. The herein-described vacuum-pump, consisting of a cylinder having a cock at its lower end and a piston provided with a fine conduit and cock therein, as described.

2. The combination of an exhaust-pump with a vacuum-indicating device consisting of a tube communicating with the chamber to be exhausted, and having an oil-reservoir, substantially as specified.

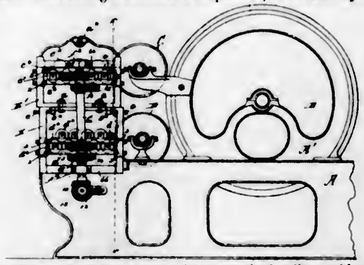
3. The combination of the cylinder *a* of a vacuum-pump having a cock at its lower end with a piston having a fine conduit and valve and a controlling-rod, *c*, for the latter at the outside of the cylinder, substantially as described.

340,928.



340,929. CONDENSER FOR FINISHER-CARDS. ELIJAH WRIGHT, North Andover, Mass., assignor to the Davis & Furber Machine Company, same place. Filed Feb. 8, 1886. (No model.)

Brief.—Each set of rub-rolls is contained in a frame adjustable horizontally one upon the other at right angles to the axes of the rolls, to permit the placing of the rub-rolls at the proper distance from the doffers. The driving mechanism is adapted to permit such adjustment.



Claim.—1. A frame containing a set of rub-rolls, combined with a second superimposed independent frame containing a set of rub-rolls, one frame being adjustable horizontally upon the other at right angles to the length of the rub-rolls to enable each set of rub-rolls to be placed at the proper distance from the doffer with which it co-operates, substantially as described.

2. Two or more doffers, two or more sets of rub-rolls, and their co-operating stripper-rolls, combined with two or more separate frames, and carriages therein to support the journals of the said rolls, one frame, with its set of rub-rolls and stripper-rolls, being made adjustable on or with relation to the other frame and its set of rub-rolls and stripper-rolls to insure the placing of the said rub or stripper rolls at the proper distance from the said doffers, substantially as and for the purpose described.

3. The two independent frames E E', made adjustable one on or with relation to the other, their carriages, rub-rolls supported thereon, and the upright shaft provided with eccentrics, and the connecting-rods, combined with the spherical pipe-boxes, and in which the said shaft has its journals and bearings therefor, substantially as described.

340,930. VISE. HORACE WYMAN, Worcester, Mass. Filed Aug. 24, 1885. (No model.)



Claim.—The within-described vise, consisting of the stationary member A, having a rack-bar, B, and supporting-ways for the movable member, the movable member C, supported by and movable on the said stationary member, and the worm-shaft *e* and toothed block *f*, operated longitudinally by the oscillation of said shaft, and having the inclines f', engaging the stationary inclines f^2, to raise and lower said block as it is moved longitudinally by the shaft, substantially as set forth.

340,931. INSULATING ELECTRIC WIRES. DAVID BROOKS, Jr., Philadelphia, Pa., assignor of one-half to Henry B. Tatham, same place. Filed Nov. 5, 1885. (No model.)



Claim.—1. In an electric conductor, a woven or braided tape composed of threads of fibrous material and metallic wire coiled thereon, substantially as and for the purpose set forth.

2. A bunch of insulated wires with flexible tapes formed of fibrous material and metallic strips or wire interposed between said insulated wires, and having their edges exposed at the surface of the bunch, substantially as described.

3. A cable formed of a bunch of fibrous-covered wires with tapes formed of fibrous material and metallic strips or wire, and exterior incasement, and an insulating material, for the purpose set forth.

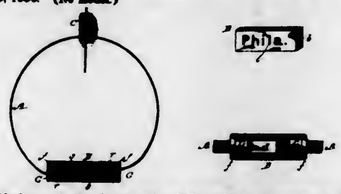
4. In an electric conductor, a woven or braided tape composed of threads of fibrous material and metallic wire coiled thereon, the coils having spaces between the same, substantially as and for the purpose set forth.

5. A cable formed of wires having between portions of the same tapes or braids composed of threads of fibrous materials with metal strips wrapped spirally on said threads, the edges of the said metal strips not being in contact, substantially as described.

6. A cable formed of wires E, the tape B, surrounding the wires at the central portion of the cable, and tape C, extending from the tape B to the periphery of the cable, substantially as described.

7. In an electric conductor, a woven or braided tape formed of threads of fibrous material having metallic wire coiled thereon, the said braid placed between the electric wires and having its edges exposed at the surface of the bunch, substantially as and for the purpose set forth.

340,932. SELF-FASTENING SEAL. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Feb. 25, 1886. (No model.)



Claim.—1. An improved self-fastening seal composed of a hard and brittle sealing-tube with open ends and a flexible metallic shackle having at its respective extremities snap-catches adapted to interlock with each other within said tube, and provided with guards fast on the respective shackle ends and fitted to the ends of the tube, substantially as herein specified.

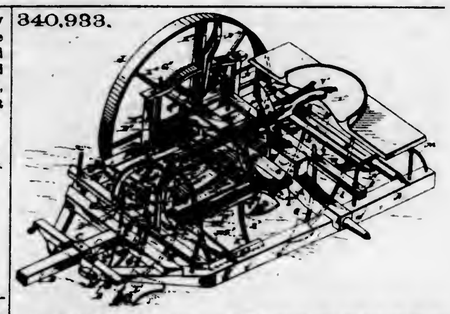
2. In a self-fastening seal, the combination of a hard and brittle sealing-tube, the bore of which is non-circular in cross-section, and a flexible metallic shackle of narrow flat wire, having snap-catches formed on its respective extremities and provided with rigid guards fast on the wire fitted to the respective ends of said bore and occupying the same when the seal is fastened, substantially as herein specified.

3. The combination, in a self-fastening seal, of a hard and brittle sealing-tube having a symmetrical bore extending through it from end to end and a flexible metallic shackle having snap-catches at its respective extremities adapted to interlock with each other within said tube, and provided with rigid guards fast on the respective ends of the shackle, occupying the ends of said bore when the seal is fastened, and having flanges which abut against the ends of the tube, substantially as herein specified.

340,933. CULTIVATOR AND COTTON-CHOPPER. THOMAS J. BROWN, Iola, assignor of two-thirds to David A. Darbey, Darby, and J. B. Jamesson, Iola, Tex. Filed Oct. 12, 1885. (No model.)

Claim.—1. The combination of the rear transverse sliding bar sliding with its perforated ends upon guides upon the frame, the short levers fulcrumed upon the brackets projecting rearwardly from the axle and having the said sliding cross-bar secured to their forward ends, the foot-board secured to the rear ends of the said levers, the rock-shaft rocking

340,933.



with its ends in bearings upon the side pieces of the main frame to the rear of the said sliding bar, and the cultivator-blades having standards secured adjustably in the said sliding cross-bar, and having the curved braces secured adjustably in the rock-shaft, substantially as described, for the purpose set forth.

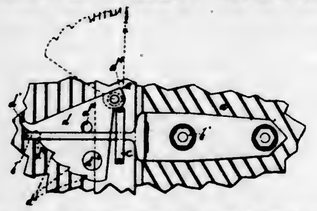
2. In a combined cultivator and cotton-chopper, the combination of the side pieces of the frame, the bails secured in an upright position upon the side pieces and having curved forward sides, and supporting the seat of the driver at their rear ends, and a cultivator-supporting cross-bar sliding with its perforated ends upon the curved forward sides of the bails and having means for raising it, as and for the purpose shown and set forth.

3. The combination of the forward curved upright guides upon the side pieces of the main frame, the forward transverse sliding bar sliding with its perforated ends upon the said curved uprights, the rock-shaft rocking with its ends in bearings upon the side pieces of the main frame to the rear of the said sliding bar, and provided with the central upwardly-projecting arm, the upright segment having the transverse perforations and secured centrally upon the axle, and the lever having its downwardly-curved bifurcated forward end pivotally secured to the said sliding cross-bar, the said lever being pivoted upon the upper end of the said upright arm of the said rock-shaft and having the slot near its rear end sliding upon the said segment, and having a spring-latch engaging the perforations of the said segment, all constructed and arranged as described, for the purpose set forth.

4. The combination of the main frame having the axle and the forward transverse rock-shaft, the vertically-adjustable bearing secured to the said rock-shaft and axle, the chopper-shaft having the projecting arms carrying the chopper-blades and journaled longitudinally in the said vertically-adjustable bearings, the cogged rim secured upon one of the drive-wheels, the longitudinally-sliding shaft having a pinion meshing with the said cogged rim, and carrying also a sprocket-wheel, means for adjusting the said longitudinally-sliding shaft to throw its pinion into or out of gear with the cogged rim on the drive-wheel, and the endless chain passing around the sprocket-wheel on the longitudinally-sliding shaft and a similar sprocket-wheel on the chopper-shaft, substantially as described.

5. The combination of the main frame having the axle and the forward transverse rock-shaft, the adjustable bearings consisting of the brackets having the vertical series of apertures at their upper ends, the chopper-shaft having its ends journaled in the said vertically-adjustable brackets, the bolts passing through the perforations of the said brackets into the axle and forward rock-shaft, and means, substantially as described, for rotating the chopper-shaft.

340,934. LOCK FOR FREIGHT-CAR DOORS. GEORGE J. BURLEY and ANDREW F. MCGLASHAN, Buffalo, N. Y. Filed June 3, 1885. (Model.)



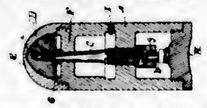
Claim.—1. An automatic lock or fastening for freight-car doors, &c., consisting of a hasp slotted vertically, a staple arranged vertically, and a pivoted notched clip arranged to operate in conjunction with the vertical slot of the hasp, all combined substantially as shown and described.

2. The combination, with the slotted hasp *b* b^2 and staple *c*, of the pivoted segmental clip *d*, provided with the lip d' and notch d^4, substantially as shown and described.

3. The combination, with the slotted hasp *b* b^2 and staple *c*, of the pivoted segmental clip *d*, provided with the lip d^2, notch d^3, and supplemental notches d^4, substantially as shown and described.

4. The combination, with the slotted hasp *b* b^2 and staple *c*, of the pivoted segmental clip *d*, provided with the lip d^2, notches d^3 and d^4, and shoulder d^5, substantially as shown and described.

340,935. PERCUSSION-SHELL. ELMORE BUTLER, Collinsville, Ill., assignor of one-half to William L. Brown, same place. Filed Dec. 30, 1885. (Model.)



Claim.—1. The combination, with a hollow body, a base, a nipple secured to said base, and a point covering the front end of said body, of a longitudinally-movable hammer resting in contact with the inner face of the point, substantially as set forth.

2. The combination, with a hollow body, a base secured to the rear end thereof and provided with a nipple, and a point secured to the front end of said body, of a hammer located within the body and a spring for holding one end of the hammer in contact with the inner face of the point, substantially as set forth.

3. The combination, with a hollow body having one or more bridges, a base having a nipple, and a point having a concave inner face, of a longitudinally movable hammer and a head secured to the front end of said hammer, the said head resting in contact with the inner surface of the point, substantially as set forth.

4. The combination, with the body, base, and point, of the hammer, the head secured to the front end of said hammer, and a spring for holding the head in contact with the inner surface of the point, substantially as set forth.

340,936. WATCH-BARREL. SEWALL T. J. BYAM, New Haven, Conn., assignor to the New Haven Watch Company, same place. Filed Apr. 28, 1885. (No model.)



Claim.—1. As a means for connecting a mainspring with a barrel a divided ring which is interposed between the outer coil of said spring and the interior of said barrel, is connected with said outer coil, and has at one end such peripheral engagement with said barrel as to cause it to be rotated thereby until said spring is wound, substantially as and for the purpose specified.

2. In combination with a spring-barrel having a notched inner periphery, a divided ring which is adapted to fit closely into said barrel and to have one of its ends engaged by the outer end of a mainspring, and is provided near said point of engagement with a peripheral lug that by the rotation of said ring within said barrel may be caused to engage with either of the notches within the interior of the latter, substantially as and for the purpose shown.

3. The combination of a spring-barrel provided within its interior with notches, a mainspring having its inner end attached to a journal-arbor, and a divided ring which has attached thereto the outer end of said spring, is interposed between the same and the interior of said barrel, and is combined with and rotated by the latter through the engagement of one of its ends therewith, substantially as and for the purpose set forth.

4. The combination of the pillar plate or housing, the spring-arbor, the toothed ring or barrel provided with interior notches, the divided ring having an engaging-lug, the mainspring, and the stem-arbor pinion, substantially as and for the purpose shown and described.

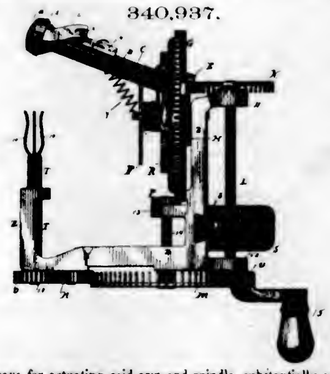
5. The combination of the recessed pillar-plate provided with a cover, the spring-barrel having a notched interior, the divided ring adapted to engage frictionally with said barrel, the mainspring, the spring-arbor, and the stem-arbor pinion, substantially as and for the purpose specified.

6. A watch-movement in which the mainspring-barrel is contained within a recess that is formed in the pillar-plate and is inclosed by the superimposed dial, substantially as and for the purpose shown.

7. A mainspring-barrel which is composed of a toothed ring that incloses the spring peripherally, the pillar-plate which incloses the lower side of said ring, and the dial that incloses the upper or outer side of the same, substantially as and for the purpose set forth.

340,937. FRUIT-PARING MACHINE. HERBERT COTTRELL, Newark, assignor to Louis A. Sayre, Madison, N. J. Filed Sept. 21, 1885. (No model.)

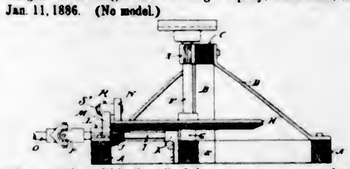
Claim.—1. The combination, with an annular cutter having an opening across its circumference, of supporting-arm C, having projecting plate 4, slotted piece 5, secured to said plate by set-screw 6, spindle B,



and means for actuating said arm and spindle, substantially as set forth and described.

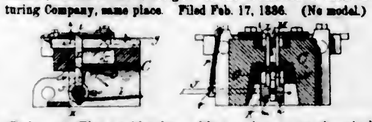
2. The combination, with an annular rotary cutter having a break in the continuity of its edge, of supporting-arm C, spindle B, carrying cutter-head A, cutter 2, and pinion E, cam F, spring 9, revolving fork T, and means for actuating said arm, spindle, and fork, substantially as set forth and described.

340,938. HORSE-POWER. GEORGE W. CRANE, Minneapolis, Minn., assignor to the Paige Manufacturing Company, Painesville, Ohio. Filed Jan. 11, 1886. (No model.)



Claim.—The within-described horse-power, composed of a frame, A, beam C, braced by bars D, cross-sill E, located with reference to beam C substantially as shown, box S, secured to the side of said beam, step G, secured to the top of said sill, shaft F, carrying master-wheel H and journaled in said box and step, boxes K and L, secured, respectively, to said sill and frame A, shaft I, carrying pinion J, meshing with the master-wheel and journaled in boxes K and L, the arch M, straddling box L and formed with sleeve R, and the stud S', carrying idler N, to bear on the master-wheel above pinion J, the said several parts being relatively arranged substantially as shown and described.

340,939. MACHINE FOR MAKING BARBED FENCING. JOHN D. CURTIS, Worcester, Mass., assignor to the Washburn & Moen Manufacturing Company, same place. Filed Feb. 17, 1886. (No model.)



Claim.—1. The combination, with two lever-arms loosely hinged or pivoted in front of the barbing mechanism and in the path of the barbs, of a third lever-arm provided with a swivel-piece projecting out in the path of said lever-arms and acted upon by the same, substantially as set forth, and for the purpose stated.

2. The combination, with a lever-arm provided with a swivel-piece and connected with means for disconnecting the driving-power of the machine, of two lever-arms loosely hinged or pivoted in front of the barbing mechanism and in the part of the barbs, and acted upon by the barbs, moving forward in a proper manner, to draw over said first lever-arm and prevent the machine from being automatically stopped as long as it continues to operate in a proper manner, substantially as set forth.

3. The combination, with lever-arm N, provided with a swivel-piece, O, and secured upon a rocking shaft, J, said shaft being connected with means for disconnecting the driving-power of the machine in case the lever-arm N fails to be moved forward or drawn over, of the two lever-arms L and M, loosely hinged or pivoted in front of the barbing mechanism and in the path of the barbs, and acted upon by the barbs, moving forward in a proper manner, to operate the lever-arm N, and to prevent the machine from being automatically stopped as long as it continues to operate in a proper manner, substantially as set forth.
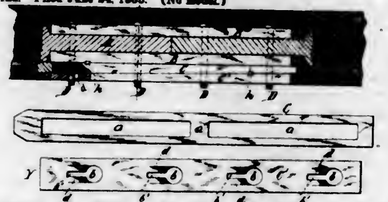
4. The combination, with rocking shaft J, bushing K, and lever-arm N, secured thereon, and provided with a swivel-piece, O, of the lever-arms L and M, turning loosely on said bushing K, and means for

holding said lever-arms in an upright position, so that their upper ends will be in the path of the barbs, to be acted upon by the barbs moving forward after they have been applied to the fence-wire, substantially as set forth, and for the purpose stated.

5. The combination, with the barbing mechanism, of a device placed in front of the barbing mechanism and in the path of the barbs, consisting of two loosely mounted lever-arms, L and M, and a lever-arm, N, provided with a swivel-piece, O, said lever-arm N being connected with means for disconnecting the driving-power and automatically stopping the machine in case it fails to operate in a proper manner, substantially as shown and described.

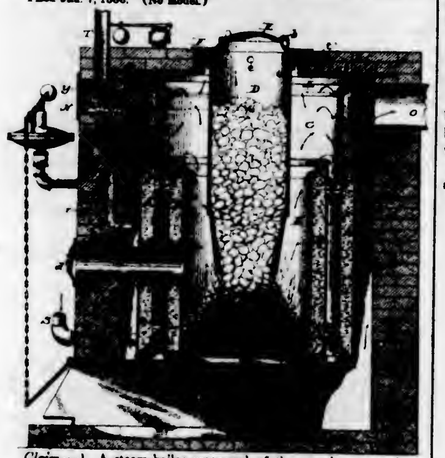
6. In a machine for making barbed fencing, the combination, with a device placed in front of the barbing mechanism and in the path of the barbs, and consisting of two loosely-mounted hinged or pivoted lever-arms, L and M, and lever-arm N, provided with swivel-piece O, of means for disconnecting the driving-power of the machine and automatically stopping the same in case it fails to operate in a proper manner, substantially as shown and described.

340,940. FISH-PLATE LOCK. MORRIS H. DEVORE, Lawrenceburg, Ind. Filed June 24, 1885. (No model.)



Claim.—The combination of the rails A A, fish-plates B B, wedge-shaped piece C, provided with the elongated openings *a* and strengthening-neck *a'*, wedge-shaped piece C', provided with a series of bolt-holes, *b*, each having an elongated lateral slot, *b'*, the edges of which are beveled, bolts D, having neck *e* and head *e'*, the latter provided with beveled faces e^2, and keys *h*, substantially as and for the purposes specified.

340,941. STEAM-BOILER. WILLIAM R. DUNNING, Geneva, N. Y. Filed Jan. 7, 1886. (No model.)



Claim.—1. A steam-boiler composed of the annular water-chambers A and B, of uniform thickness throughout their length, but of different lengths, the shorter one being arranged within the outer one and connected thereto by the tubes or passages *a a*, and both having their lower ends set in the same horizontal plane, or substantially so, whereby the enlarged combustion-chamber C is formed within the upper portion of the outer water-chamber, and made to extend to the top thereof, substantially as shown and described.

2. The combination, in a steam-boiler, of the two annular water-chambers A and B, connected and arranged in relation to each other substantially as shown, and the centrally-located magazine D, with the concentric heat-flue H, arranged to convey the products of combustion upward in direct contact with the exterior wall of the magazine to the enlarged combustion-chamber C, substantially as shown and described.

3. A steam-boiler composed of the two concentric water-chambers A and B, connected at top and bottom by the water-passages *a a*, the central magazine, D, with the heat-flue H, combustion-chamber C, and heat-flue I, all constructed and arranged for joint operation, substantially as shown and described.

4. In combination with the two annular water-chambers A and B, the covering-plate L, provided with the flange *g* for encircling the upper end of the water-chamber A, and made to extend beyond the same laterally over the outer smoke-flue and rest upon the surrounding wall, whereby it is made to cover the heat-chamber and smoke-flues, hold the upper end of the boiler in position, and form a support for the brick or other covering and the magazine, substantially as shown and described.

5. In combination with the two annular water-chambers A and B, the covering-plate L, provided with the central opening, and the surrounding collar *t*, with the magazine D, provided with the lateral flange F, and holes *e*, arranged to rest upon said collar, with an annular space between the collar *t* and the magazine, the whole being constructed and arranged to operate as set forth.

340,942. COMBINATION-LOCK. CHARLES F. ELLIOTTO and JOHN W. MCGARVEY, Seneca Falls, N. Y.; said McGarvey assignor to said Elliotto. Filed Aug. 20, 1885. (No model.)



Claim.—1. In combination with the bolt-guide A, collars E E, and loosely-mounted disks C C, the washer *h*, interposed between the collar and adjacent disk, and set-screws *i i*, passing through the collar and bearing on the disk, substantially as described and shown, for the purpose set forth.

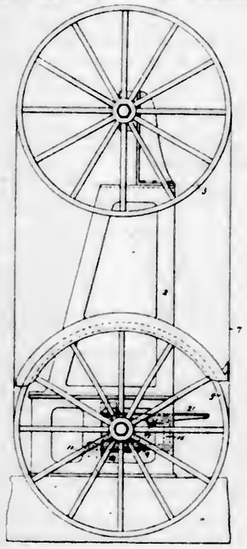
2. The combination of the bolt-guide A, provided with the groove *s* and notches *a a*, the bolt B, provided with lugs *b b*, the rotary disks C C, provided with the notch *n* and countersinks *d*, and the washers D, seated in said countersinks, and provided with slots *c*, and embracing thereby the notched portions of the bolt-guide, substantially as described and shown.

3. The improved combination-lock, composed of the bolt-guide A, provided with the groove *s* and notches *a a*, the bolt B, provided with lugs *b b*, the rotary disks C, provided with notches *n* and countersinks *d*, the washers D, seated in said countersinks and provided with the slots *c*, and the collars E E, detachably secured to the bolt-guide at the ends of the series of disks C C, and indexes on the exterior of disks and collars, substantially as described and shown.

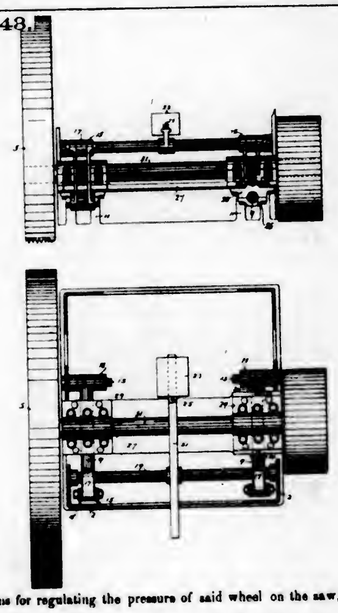
340,943. BAND-SAW MILL. CHARLES EPPLER, Minneapolis, Minn., assignor of one-half to the Pray Manufacturing Company, same place. Filed Jan. 22, 1886. (No model.)

Claim.—1. The combination, in a band sawing-machine, with the band-saw and the upper wheel, of the lower wheel mounted in movable boxes and bearing upon the saw with a yielding pressure, whereby said wheel automatically regulates the tension of the saw, as set forth.

2. In a band sawing-machine, and in combination with the saw and upper supporting-wheel, the lower wheel mounted in movable boxes



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and means for regulating the pressure of said wheel on the saw, as set forth.

3. The combination, in a band sawing-machine, with the lower wheel, its shaft and boxes, of pivoted bars 9, supporting said boxes, a shaft, 19, provided with crank-arms 17, links 15, connected with said crank-arms and with the free ends of said pivoted bars, a transverse bar, 21, secured to the shaft 19, and a sliding weight, 23, on said bar, all substantially as described.

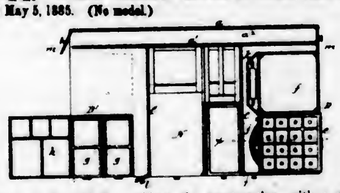
4. The combination, in a band sawing-machine, with the saw and the upper wheel, of the lower wheel, its shaft mounted in yielding bearings, and adjusting means for horisontally and vertically moving the end of the shaft farthest from said lower wheel, as and for the purpose set forth.

5. The combination, in a band sawing-machine, with the supporting-frame and the band-saw, of an upper supporting-wheel mounted in fixed adjustable bearings and a lower driving-wheel mounted in yielding bearings, for the purpose set forth.

6. The combination, in a band sawing-machine, with the saw and the upper wheel, of the lower wheel, a shaft supporting said wheel upon one end and adjustable at its opposite end both horizontally and vertically for the purpose of training the saw, substantially as described.

7. In a band sawing-machine, and in combination with the saw, and the upper wheel mounted in fixed bearings, an automatically-adjustable lower wheel for regulating the tension of the saw, substantially as described.

340,944. KITCHEN-CABINET. EDWARD H. FOWLER, Buffalo, N. Y. Filed May 5, 1885. (No model.)

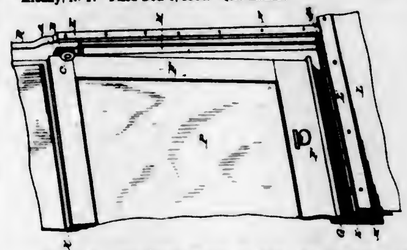


Claim.—1. In a kitchen-cabinet, the combination, with a stationary central portion provided at its front with suitable drawers, of a pivoted end case having drawers on its outside, the pivots of the case being arranged equidistant from the front end and the outer and inner sides of the swinging case, substantially as set forth.

2. In a kitchen-cabinet, the combination with the central portion, N, having its front provided with suitable drawers, of the pivoted end cases, D D', and hinged doors *l*, closing the spaces between the central portion and the cases and giving access to said spaces, substantially as set forth.

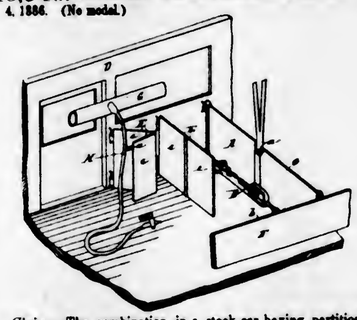
3. In a kitchen-cabinet, the combination, with the central portion, N, and rear compartment, a^3, of the pivoted end cases, D D', and hinged doors *m*, closing the ends of the rear compartment and the spaces between the rear compartment and the cases, substantially as set forth.

340,945. ANTI-SASH-RATTLING DEVICE. GEORGE E. GORHAM, Albany, N. Y. Filed Dec. 6, 1884. (No model.)



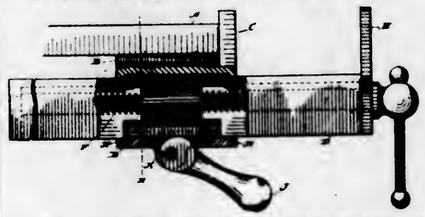
Claim.—The anti-rattling device for drop-sashes, consisting of a base-plate having the perforation A, and slot D, with the pinion S, and loosely-turning friction-roller C, of resilient material, the said roller being mounted upon said base-plate at one side of the center thereof in such a manner that it shall extend at unequal distances from the opposite sides of the base-plate, thereby providing for unequal distances between the parting-strip and the sash, substantially as and for the purposes specified.

340,946. STOCK-CAR. GEORGE GROSSMAN, Lancaster, Pa. Filed Feb. 4, 1886. (No model.)



Claim.—The combination, in a stock-car having partitions hinged to the side and extending but partially across said car when opened to form stalls, of flexible connections between the top of the swinging ends of said partitions and the feed-trough or manger, whereby the said partitions are held open and at the same time prevent any animal which has freed itself from its halter from passing into an adjoining stall, substantially as specified.

340,947. BENCH-VISE. PERRY HUNTLEY, Bridgeport, Conn., assignor to C. S. Lent, same place. Filed Mar. 5, 1884. (No model.)



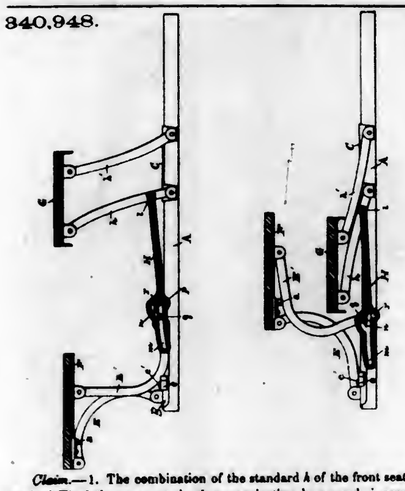
Claim.—1. In a vise of the character described, the combination, with the stationary jaw, movable jaw, and operating-screw, of a sectional nut pivoted within the stationary jaw and adapted to engage and be disengaged from said screw, substantially as set forth.

2. In a vise of the character described, the combination, with the screw, of a nut made in two parts, both of which are movable and pivoted within the vise-body, substantially as set forth.

3. In combination with the two movable parts of the nut, as described, a lever adapted to act as a cam against the lower extremities of the parts of said nut and cause the latter to close, substantially as shown and described.

340,948. JUMP-SEAT. GEORGE H. HUTTON, Jr., and HILLARD B. HUTTON, Baltimore, Md. Filed Feb. 24, 1886. (No model.)

340,948.

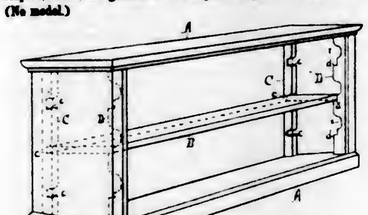


Claim.—1. The combination of the standard A of the front seat, the standard E' of the rear seat, having a projecting lower end, *i*, provided with two lugs, *q r*, and a connecting-bar, H, having at its front end a pivot-hole attached to the front-seat standard, and at its rear end a slot having two branches, each of which may be occupied by one of said two lugs, as set forth.

2. The combination of the standard A of the front seat, the standard E' of the rear seat, having a projecting lower end, *i*, provided with two lugs, *q r*, and a connecting-bar, H, having at its front end a pivot-hole attached to the front-seat standard, and at its rear end a slot having two branches, and on the lower branch a stop-shoulder, *o*, and an offsetting lock-notch, *p*, as set forth.

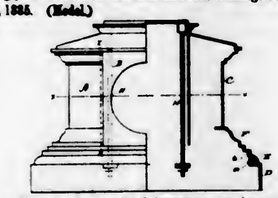
3. The combination of the standard A of the front seat, the standard E' of the rear seat, having a projecting lower end, *i*, provided with two lugs, *q r*, and a connecting-bar, H, having at its front end a pivot-hole attached to the front-seat standard, and at its rear end a slot having two branches, and a rigid tongue, *n*, separating the branches, as set forth.

340,949. ADJUSTABLE SHELVING. GEORGE R. JACKSON, Grand Rapids, Mich., assignor to G. W. Gay, same place. Filed Oct. 30, 1885. (No model.)



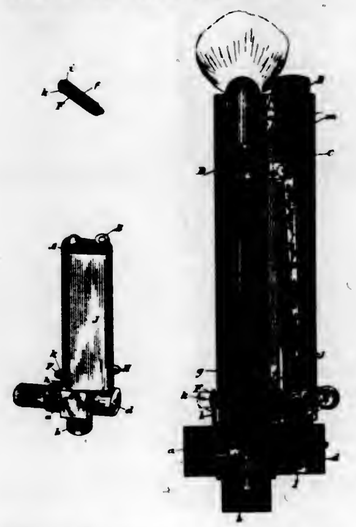
Claim.—In a case for adjustable shelving, the shelf B, in combination with the supports C and D, the support C provided with supporting-notches *c c*, and the support D provided with supporting-notches *d d* and recessed notches *r r*, the whole adapted to the ready adjustment of the shelf to different positions within the case, substantially as described.

340,950. CLOCK-CASE. EDWARD M. JUDD, Wallingford, Conn. Filed Sept. 25, 1885. (Model.)



Claim.—The herein-described improvement in cast-metal clock-cases, in which one or more of the sections are divided vertically into parts or portions, the said parts or portions arranged to rest upon a section below and support a section above, the said upper and lower sections constructed with wedge-like lugs A, adapted to bear upon the inner surface of the front or back of said portions, and the surfaces of said section and corresponding ends of the portions constructed one with recesses and the other with lugs to engage said portion with the respective sections, combined with vertical bolts, whereby the said several sections may be drawn together and upon said portions of the divided section, substantially as and for the purpose described.

340,951. AUTOMATIC CUT-OFF FOR GAS-BURNERS. ELIAS A. JUKES, St. Catharines, assignor of one-half to Arthur Jukes Johnson, Toronto, Ontario, Canada. Filed July 3, 1885. (No model.)



Claim.—1. The combination, with the burner A, of a tube, B, supported substantially parallel with and in proximity thereto, the cut-off valve F, and lever E, pivoted to the burner connected with said tube B and engaging with said cut-off valve, whereby the contraction of the tube B will actuate said valve to cut off the supply of gas to the burner, substantially as specified.

2. A burner, A, and a tube, B, supported substantially parallel with and in proximity to the burner A, a pendant, C, attached to the tube B and forming a support for the pivot connecting it to the lever E, in combination with said lever, the lug *e*, attached to the burner A and forming a support for the pivot connecting it to the lever E, and a cut-off valve connected with said lever, substantially as and for the purpose specified.

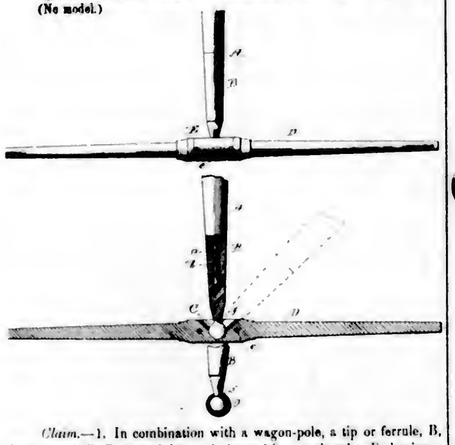
3. A burner, A, and a tube, B, supported substantially parallel with and in proximity to the burner A, a lever, E, provided with two pivots, one connecting it to the tube B and the other to the burner A, in combination with a cut-off valve, F, situated as specified and provided with a notch or projection to connect it with the lever E, substantially as and for the purpose specified.

4. A burner having passage-way *g*, and a cock-passage at right angles thereto, a cut-off valve arranged in said cock-passage and provided with an aperture, *f*, to correspond with the passage-way *g*, and a slot, *i*, to form a passage-way, and the pin *h*, in combination with the tube B, a spring, I, arranged to actuate the cut-off valve F, the lever E, trip H, and intermediate connections, substantially as described, between said tube, lever, and burner, said valve being also provided with a stop for limiting the movement thereof, substantially as and for the purpose specified.

5. The combination, with a gas pipe and burner, of a cut-off valve, the tube B, lever E, a trip, H, pivoted to said valve and provided with a notch, *j*, intermediate connections, substantially as described, between said tube, lever, and burner, and a spring, I, arranged to actuate the valve F outwardly and the trip H upwardly, substantially as and for the purposes specified.

6. A burner, A, a tube, B, supported substantially parallel with and in proximity thereto, a cut-off valve, F, the lever E, pivoted to the burner connected with tube B and engaging with said cut-off valve, combined with the jet-tube *m*, extending from the burner adjacent to the flame thereof, and outside of and in close proximity to said tube, substantially as and for the purpose specified.

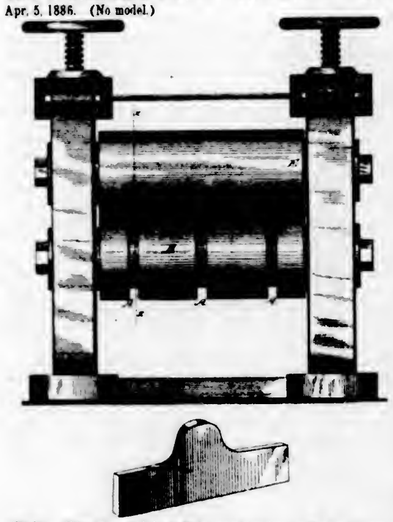
340,952. NECK-YOKE. LOUIA C. LOOMIS, Doud's Station, Iowa, assignor of one-half to Thomas G. McClure, same place. Filed Oct. 22, 1885. (No model.)



Claim.—1. In combination with a wagon-pole, a tip or ferrule, B, having a ball, C, formed integral therewith, a neck-yoke, D, having a semicircular socket and cut-away portions *f*, a plate, *e*, attached to the neck-yoke so as to hold the same upon the tip B, substantially as shown, and for the purpose set forth.

2. The neck-yoke herein described, having a semicircular socket at its central portion and a longitudinal recess which tapers inwardly toward said socket, a plate, *e*, with a similar shaped socket and recess, said plate being secured to the neck-yoke by rivets *e'*, the member B, connected to the wagon-tongue and provided with a ball, C, at its end, the parts being combined and organized substantially as shown, and for the purpose set forth.

340,953. MACHINE FOR ROLLING BLANKS FOR SHOVELS, &c. HENRY M. MYERS, Beaver Falls, Pa. Filed Mar. 27, 1885. Renewed Apr. 5, 1886. (No model.)



Claim.—The upper plain roll in combination with the lower roll having one or more grooves provided with a series of indentations properly spaced to form projections on the edge of a bar of metal, substantially as described.

340,954. MACHINE FOR FORMING SHOVEL-BLANKS. HENRY M. MYERS, Beaver Falls, Pa. Filed Mar. 27, 1885. Renewed Apr. 5, 1886. (No model.)

Claim.—1. In a machine for forming blanks or bars for blanks for the manufacture of shovels, a die having a fixed bottom and a fixed side, a movable top for the die, and a plunger, substantially as described.

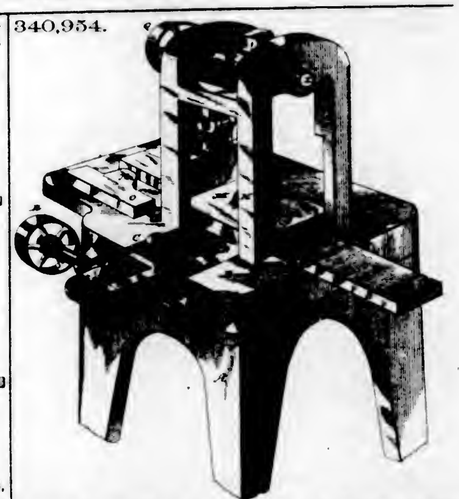
2. In a machine for forming blanks or bars for blanks for the manufacture of shovels, a die having a fixed bottom and a fixed side provided with a recess, a laterally-movable plunger, and a vertically-movable top for the die, substantially as described.

3. In a machine for forming blanks or bars for blanks for the manufacture of shovels, a bed-plate or die provided with a fixed bottom, a recess in its side, and an opening for receiving the cutter, in combination with a laterally-movable plunger, a movable top for the die, and a vertically-movable cutter adapted to project into the opening in the bed-plate, substantially as described.

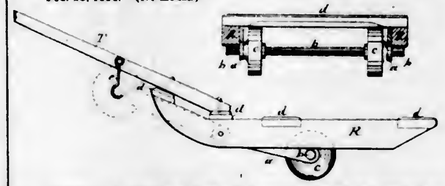
4. In a machine for forming blanks or bars for blanks for the manufacture of shovels, a bed-plate or die having a recess formed in its side, and a laterally-movable plunger, in combination with a frame supported by the bed-plate and a vertically-reciprocating plate guided by the frame and adapted to form a top or cover for the die, substantially as shown.

5. In a machine for forming blanks or bars for blanks for the manufacture of shovels, a bed-plate or die provided with recesses, as C, G, and S, and the opening V, in combination with a laterally-movable plunger, a movable top or cover for the die, and a vertically-movable cutter, substantially as described.

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340,955. HAND-TRUCK. FRANK A. ODIN, Syracuse, N. Y. Filed Feb. 23, 1886. (No model.)



Claim.—1. In a hand-truck, the combination of the truck-frame formed with sleigh-runners and carrying rollers permanently connected with said frame and adapted to be shifted from their carrying position to an elevation above the tread of the aforesaid runners, as set forth.

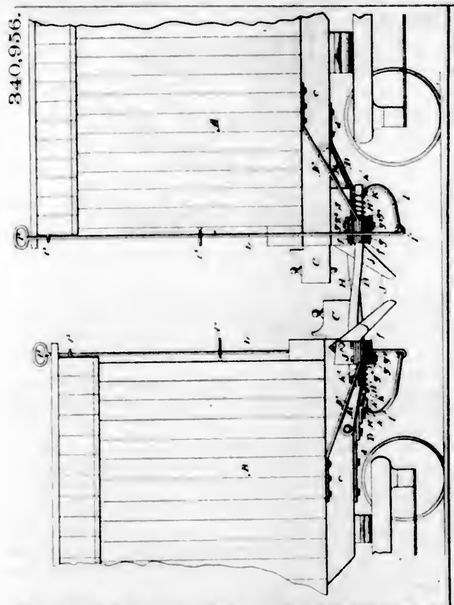
2. A hand-truck composed of runners R R, framed together, arms *a a*, pivoted on the runners at points forward from the center thereof and reaching part way toward the rear of the same, an axle, *b*, extended across the under side of the runners and connected to the free ends of the arms *a a*, and rollers *c c* on said axle, substantially as described and shown.

3. The combination of a truck-frame composed of runners R R, framed together by cross-bars *d d*, the tongue T, rigidly attached to said frame, the arms *a a*, pivoted on the sides of the runners at points forward from the center thereof and reaching part way toward the rear of the same, the axle *b*, extended across the under side of the runners and connected to the free ends of the aforesaid arms, rollers *c c* on said axle, and the hook or catch *e* on the tongue, adapted to support the axle in its elevated position in front of the runners, substantially as described and shown.

340,956. CAR-COUPLING. GEORGE O. ROSS and MARTIANUS ROSS, Ottawa, Kans. Filed Jan. 21, 1886. (No model.)

Claim.—1. In a car-coupling, the combination, with a car-body, of

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a block secured thereto and carrying a coupling-hook and a shoe, the supports for which are rigidly secured on said block, said block being of sufficient thickness to bring the coupling devices carried thereby on the plane of the coupling devices of the car to be connected therewith, whereby a uniform standard height is attained and the draft is brought in a straight line, substantially as described.

2. In a car-coupling, a car-body having a draw-head or bumper, in combination with a coupling-hook or shoe located on a plane beneath said body and its draw-head or bumper, and in no wise connected to the latter, substantially as described.

3. In a car-coupling, a car-body, in combination with a block secured to the body and a shoe and coupling-hook rigidly supported on the block and located on a plane beneath the car-body and its bumper or draw-head, and supported entirely independent of the latter, substantially as described.

4. In a car-coupling, in combination with a car-body having a draw head or bumper, the inclined shoe located on a plane beneath the draw-head and a car and a pivoted coupling-bar arranged in or below the plane of the shoe, said shoe and bar being rigidly supported entirely independent of the draw-head or bumper, substantially as described.

5. In a car-coupling, the combination of the beams c, the straps secured thereto, a cross bar or bars secured to the straps, a coupling-bar connected to one end of the cross-bar, and a shoe secured to the opposite end of said bar, substantially as described.

6. The combination of the beams *c*, straps bolted thereto, and having sockets at their forward ends, a transverse bar or bars secured in the sockets of the straps, braces bolted to the free ends of the transverse bar or bars, a coupling-bar, and a shoe, substantially as described.

7. The combination of the beams c, straps D, bolted thereto, and having loops at their front ends, transverse plates or bars E, secured in the loops of the straps, one end of the plates having a socket, a coupling-bar bolted in the socket, and an inclined shoe secured to the free opposite end of the transverse bars, substantially as described.

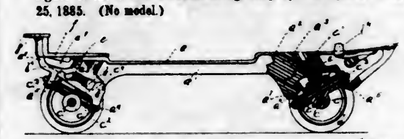
8. The combination of the cross plates or bars E, having a socket, a perforated cap bolted thereto, a coupling-bar extended through the cap of the socket, and pins for limiting the movement of the coupling-bar, substantially as described.

9. The combination of the beams c, a transverse bar or bars secured thereto, a shoe secured to one end of the said bar, a pivoted plate or bar located in rear of the shoe, and a rock-shaft having a crank-arm to act on the pivoted plate, substantially as described.

10. The combination of the beams *c*, the straps D, bolted thereto, and having loops or sockets, a transverse bar or bars, E, a shoe, J, secured to one of the free ends of said bar, a coupling-bar, H, a pivoted uncoupling-plate, a rock-shaft having a crank-arm and an extended horizontal arm, and an operating-rod connected with the horizontal arm, substantially as described.

11. The combination, with the car-body, of the transverse bar or bars E, a shoe secured to one end of the bar and inclined forwardly and downwardly, and a pivoted coupling-bar, the transverse bar E and the coupling-bar and the shoe being located on a plane beneath the lower edges of the car-body, and supported on the latter independently of the draw-head or bumper thereon, substantially as described.

340,957. ROLLER-SKATE. GEORGE W. SHAMP, Buffalo, N. Y., assignor to the S. & L. Manufacturing Company, same place. Filed May 25, 1885. (No model.)



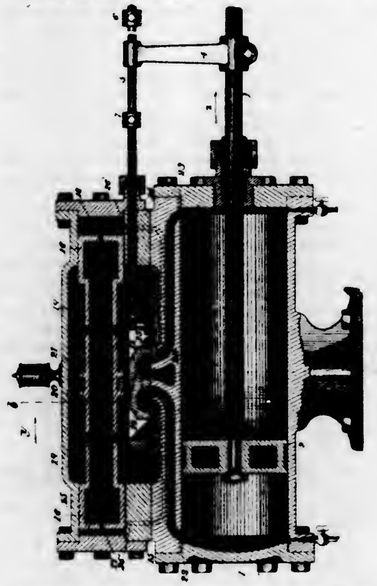
Claim.—1. In a roller-skate, the combination, with the bearing for the rollers, and with the spring, of a hinged backing-plate acted upon by the spring and in contact with the bearing, substantially as shown and described.

2. In a roller-skate, the combination, with the bearing for the rollers and with the spring, of the hinged backing-plate, having the frame *b*, the socket *b'* for the spring, the end wings, b^2 b^2 and b^4 b^4, and the bearing b^3, adapted to operate within the recess or socket a^4 of the skate-frame, substantially as shown and described.

3. In a roller-skate, in combination, the spiral spring *e* and adjusting-screw *e'*, both seated within the barrel a^3 of the skate-frame, the backing-plate *b b'*, with its wings b^2 b^2 and b^4 b^4, and bearing b^3, adapted to rest loosely and turn in the socket a^4 of the skate-frame *a*, and the bearing or carrier having the sleeve *c*, the wedge-shaped plate c^4, which rests against the backing-plate *b*, and the sleeve *c*, adapted to receive the axle *c'*, upon which the rollers *d* turn, all arranged substantially as shown and described.

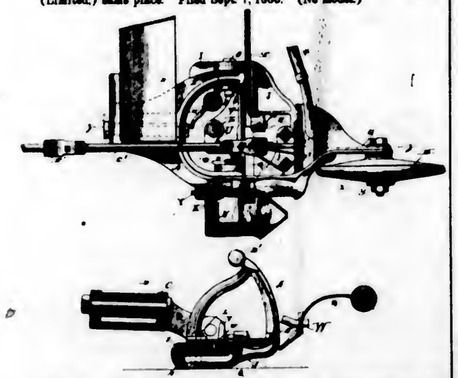
4. In a roller-skate, the toe-clamp, consisting of the plates l' and l^2, having at their inner ends the engaging segmental gearing l^3 l^3 and at their outer ends the upright lugs l^4 l^4, the plate l', having the arm l^5 with socket l^6, and adjusting-screw l^7, and the plate l^2, having the arm l^8, against which the screw l^7 abuts, all arranged and operating substantially as shown and described

340,958. STEAM-ACTUATED VALVE. WILBUR L. SHEPARD, Hartford, assignor to the Shepard Manufacturing Company, Naugatuck, Conn. Filed Jan. 25, 1886. (No model.)



Claim.—The combination of the auxiliary valve and frame attached to the valve-rod 5, and the main valve 11, attached to the valve-piston 16 and located within the frame of the auxiliary valve, the construction and arrangement of the parts being such that the main valve is normally actuated by the valve-piston, but when the valve-piston fails to move the main valve that valve is actuated directly by the auxiliary valve.

340,959. SHOE FOR MOWING-MACHINES. NILS O. STAREK, Madison, Wis., assignor to the Fuller & Johnson Manufacturing Company, (Limited,) same place. Filed Sept. 7, 1885. (No model.)



Claim.—1. In a shoe for mowing-machines, the combination of the yoke, the stubble side of which terminates in a transversely-perforated lug, and the grain side of which is extended forwardly and provided with the ground-wheel, and with a downwardly-extending perforated lug registering with the perforated lug of the stubble side, with the central rocking frame, consisting of an upper and a lower plate, and means for securing them together, and clamping between them the finger-bar, and having suitable ways or bearings for the cutter-bar, said upper plate being provided with perforated lugs, whereby it is connected with the main frame of the shoe, substantially as and for the purpose herein set forth.

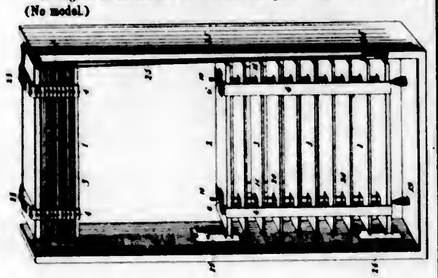
2. In a shoe for mowing-machines, the combination, with the herein-described yoke, of the central hinged or rocking frame, composed of an upper and a lower plate suitably connected by means of vertical bolts, the finger-bar clamped and secured between the said plates, the laterally-reciprocating cutter-bar arranged to slide in suitable ways or bearings in the said plates and having an eye at its inner end, the operating-rod or pitman having a hooked end entering the said eye, and a flanged guard-plate secured to the upper shoe-plate by means of one of the connecting-bolts, substantially as and for the purpose herein set forth.

3. In a shoe for mowing-machines, the combination of the yoke, the central hinged or rocking frame comprising an upper and a lower plate, between which the finger-bar is securely clamped, and the tilting arch securely attached to the upper plate of the said rocking frame, substantially as and for the purpose herein shown and specified.

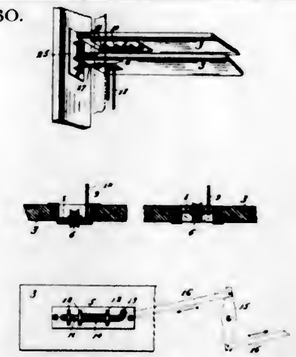
4. In a shoe for mowing-machines, the combination of the yoke, the hinged or rocking frame carrying the cutting apparatus, the tilting arch secured to the upper side of the said rocking frame, and an operating-rod for manipulating the said rocking frame, said operating-rod being provided at one or both ends with universal joints, by means of one of which it is connected with the upper end of the said tilting arch, substantially as and for the purpose herein shown and specified.

5. In a mowing-machine, the combination of the yoke connected by means of suitable hinge-joints with braces C and U, attached to the main frame of the machine, the rocking frame hinged transversely to the said yoke and carrying the cutting apparatus, the tilting arch mounted upon the said rocking frame, and an operating-rod connected with the said tilting arch by a universal joint, substantially as and for the purpose herein set forth.

340,960. VENETIAN BLIND. BENJAMIN D. STEVENS, Burlington, Vt., assignor of one-half to T. S. Peck, same place. Filed Jan. 12, 1886. (No model.)



340,960.



Claim.—1. In a Venetian blind, the combination, with an upper blind-section, of an independent lower blind-section detachably connected to the upper section, substantially as and for the purposes hereinbefore set forth.

2. The combination, in a Venetian blind, of two or more independent sections, each having its own slats, sustaining-tapes, and elevating-cords, and means, substantially as described, for at will connecting or disconnecting such sections, substantially as and for the purposes set forth.

3. The combination, in a Venetian blind, of two or more independent blind-sections, and an elevating-cord for each section located within and passing through such section only, substantially as and for the purposes set forth.

4. The combination, with the blind-slats and their supporting-tapes, of pulleys connected to the top slat, and elevating-cords attached to the lower slat, passing thence up through the slats, around the pulleys, and back to and through the lower slat, substantially as and for the purposes hereinbefore set forth.

5. The combination, with the blind-slats and their supporting-tapes, of pulleys connected to the top slat, elevating-cords attached to the lower slat, passed up through the slats, around the pulleys, and back to and through the lower slat, and cord-fasteners attached to and carried by the lower slat, substantially as and for the purpose hereinbefore set forth.

6. The combination, with a frame and a Venetian blind composed of independent detachably-connected sections, of means, substantially as described, for independently supporting said sections, substantially as and for the purposes hereinbefore set forth.

340,961. PIN-TICKET OR TAG. JOHN C. ST. JOHN, New York, N. Y., assignor to Alonzo Kimball, same place. Filed Feb. 6, 1886. (No model.)

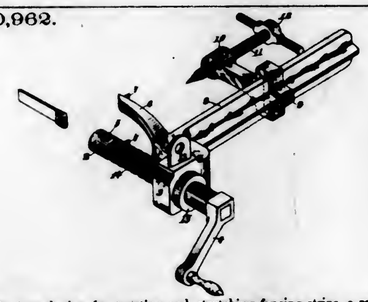
Claim.—A tag or pin-ticket consisting of a card, A, and staple B, attached to said card, as shown, the ends of the staple being passed through the card from the face, and the loop portion thereof being bent over the edge of the card to lie substantially flat on both the face and back portions thereof and between the prongs of the staple on the back of the card, thereby affording a support and an abutment for the prongs, and clamping and locking the staple on the card, substantially as herein shown and described.

340,962. DEVICE FOR TWISTING AND STRETCHING FENCING-STRIPS. JOHN STUBER, Pittsburg, Pa., assignor to H. B. Scott & Co., (Limited,) same place. Filed Oct. 14, 1885. (No model.)

Claim.—1. A device for twisting and stretching fence-strips, consisting of a rotary spindle having a wire-securing catch fixed to the spindle so as to rotate therewith, a crank for rotating the spindle, a head in which the spindle is journaled, and a securing device for affixing the head to a post, substantially as and for the purposes described.



340,962.



2. As a device for twisting and stretching fencing-strips, a rotary spindle journaled in a head, and having a slot, 5, made in the spindle and opening laterally through the circumference thereof, of larger width at its inner end than at its outer end, substantially as and for the purposes described.

3. The combination of the rotary spindle 2, provided with means for attaching a fence strip or wire thereto, and a crank for operating the spindle, a head in which it is journaled, a bracket, 8, affixed to the head, clamp-arms 6, projecting therefrom, and an adjustable clamp-arm mounted on the bracket and longitudinally movable thereon, substantially as and for the purposes described.

4. In a device for twisting and stretching fencing-strips, the combination of a rotary spindle, screw-threaded and journaled in an unthreaded bore in the head, said spindle having a wire-securing catch fixed thereto, and a removable key arranged to engage with the thread on the spindle, whereby the strip may be twisted and drawn longitudinally, substantially as and for the purposes described.

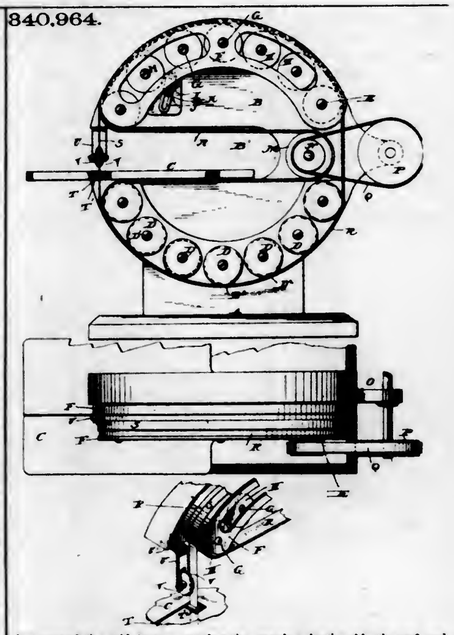
340,963. BEER-COOLING APPARATUS. JOHANN STUBER and JACOB STUBER, Syracuse, N. Y. Filed Oct. 28, 1885. (No model.)

Claim.—In beer-coolers, the combination, with the tank for containing the cooling solution, of an air-pump, a pipe leading from the tank above the solution to the pump, and a second pipe leading from the pump to the same tank and ending in the solution near the bottom of the tank, whereby the air may be drawn from the tank and returned thereto, thus keeping the contents of the tank in a state of ebullition, thereby increasing its cooling capacity and preventing caking or incrustation in the tank, substantially as set forth.

340,964. CLOTH-CUTTING MACHINE. JOSEPH THOMAS, New York, N. Y., assignor to the Thomas Machine Cutting Company. Filed Feb. 8, 1886. (No model.)

Claim.—1. The combination, with a circular frame having an opening in one of its sides, of an endless belt supported by and traveling around the said frame, entering the opening in the side thereof and passing around a roller journaled within the said frame opposite the said opening, and an endless cutting-blade fitting tightly around and traveling with the exterior side of the endless belt, except at the point where it spans the opening in the said frame.

340,964.



2. The combination, with a circular frame having an opening in one of its sides and provided with a series of rollers upon one of its sides, of an endless belt supported by and traveling around the said rollers entering the opening in the side of the frame and passing around a roller journaled within the frame opposite the said opening, and an endless cutting-blade fitting tightly around and traveling with the exterior side of the endless belt, except at the point where it spans the opening in the said frame.

3. The combination, with a circular frame having an opening in one of its sides, of the lower series of rollers having the flanged outer ends and arranged as described, the semicircular roller-frame carrying the upper series of rollers journaled therein and pivotally secured at one of its ends to the side of the circular frame, means for supporting and adjusting the free end of the said roller-frame, the endless belt supported by and traveling around the said rollers entering the opening in the side of the circular frame and passing around a roller journaled within the frame opposite the said opening, and an endless cutting-blade fitting tightly around and traveling with the exterior side of the said endless belt, except at the point where it spans the opening in the said circular frame.

4. The combination, with the circular frame having an opening in one side, of a bracket adjustably secured thereto by means of a set-screw, said bracket being slotted at each end and having a pair of guide-disks journaled within the slot at one end and engaging with the set-screw at the other.

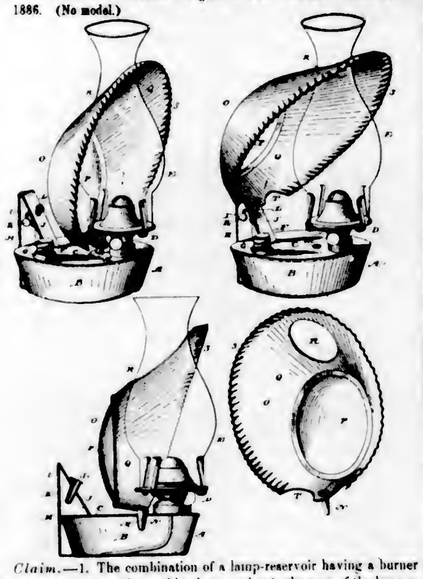
5. The combination, with the circular frame having the block secured to its side, of the semicircular roller-frame having the series of rollers journaled therein and pivotally secured at one end to the side of the circular frame in such a position that its free end is normally supported by the said stationary block, and having pivotally secured to its free end the slotted plate, and a set-screw passing through the said slotted plate into the said stationary block on the circular frame, an endless belt, and an endless cutting-blade, substantially as described, for the purpose set forth.

6. The combination of the circular frame having an opening in one of its sides and having an outwardly-projecting bracket diametrically opposite to the said opening, a pulley journaled upon the side of the circular frame and having a belt-disk upon its outer side, a drive-pulley journaled upon the side of the outwardly-projecting bracket, a belt passing over the said pulley and around the belt-disk, the endless belt supported by and traveling around the circular frame, entering the opening in the side thereof and passing around the pulley journaled upon the side of the

frame, and an endless cutting-blade fitting tightly around and traveling with the exterior side of the endless belt, except at the point where it spans the opening in the side of the circular frame.

7. The combination, with the circular frame having an opening in one of its sides, of the semicircular roller-frame carrying the series of rollers journaled therein, around which the endless belt and endless cutting-blade pass, and pivotally secured at one end to the side of the circular frame, means for supporting and adjusting the free end of the said roller-frame, and the adjustable bracket having the guide-disks journaled therein, all constructed and arranged as described, for the purpose set forth.

340,965. LAMP. ROBERT E. WILLIAMS and WILLIAM A. TRAMMELL, Dallas, Tex.; said Trammell assignor to said Williams. Filed Feb. 11, 1886. (No model.)

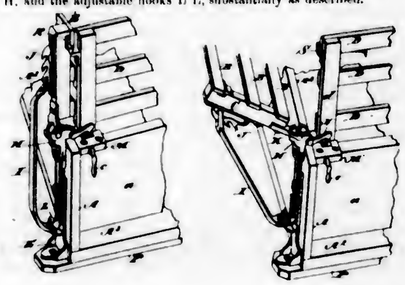


Claim.—1. The combination of a lamp-reservoir having a burner and chimney near one edge and having a socket to the rear of the burner, a strip secured to the top of the reservoir diametrically opposite to the burner, and consisting of an upright portion having an aperture or slot and an inclined portion having a socket, and a reflector having a flaring flange provided in its wider upper portion with an aperture for the chimney, and having the lower portion of the flange cut away, and provided with a plug or thimble fitting in either of the sockets in the top or in the strip, as and for the purpose shown and set forth.

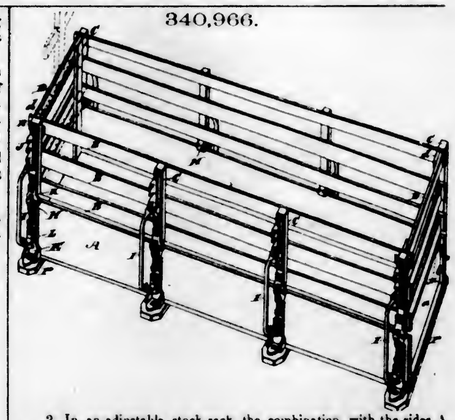
2. The combination of a lamp-reservoir having a vertical socket in its top near the burner, and a flaring reflector having a vertical plug or thimble secured to its lower portion, said reflector being provided with a perforation in its upper portion and having a cut-away portion at each side of said plug at its lower portion, as shown and described.

340,966. STOCK-RACK. JOHN YOUNG, Litchfield, Mich. Filed Jan. 6, 1886. (No model.)

Claim.—1. In an adjustable stock-rack, the combination, with the sides A A, ends *a a*, bottom A^2, and battens P P, of the bracket-irons E E, secured to sides A A and having serrations *e*, the arm lock-heads H H, and the adjustable hooks L L, substantially as described.



340,966.

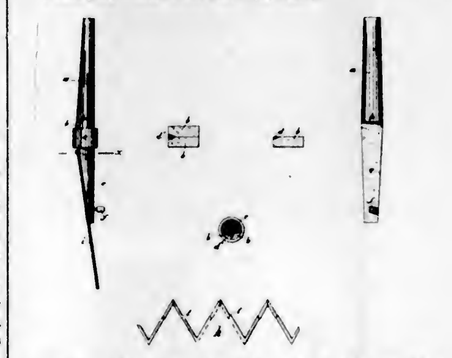


2. In an adjustable stock-rack, the combination, with the sides A A, ends *a a*, bottom A^2, and battens P P, of the bracket-irons E E, the arm lock-heads H H, hooks L L, arm lock-plates K K, rack-plates J J, braces I I, arms C C, and slats B B, substantially as described.

3. The combination, with the arms C C and lock-heads H H, of the plates M, secured to the end-gates *a a*, the eccentrics *o o*, pivoted in said plates, the levers O O, connected with said eccentrics, and the hooks N N, pivoted to the lock-heads H H, substantially as described.

4. The combination, with the swinging side slats, B B, connected together by the arms C C, and the end slats, D D, connected together by the posts *d d*, of the lock-plates R and S, substantially as described.

340,967. SAW-SET. ARNOLD W. ZIMMERMAN, Fernwood, Ill., assignor of two-thirds to George H. Reynolds and Nathan S. Gilbert, both of same place. Filed Oct. 10, 1885. (No model.)



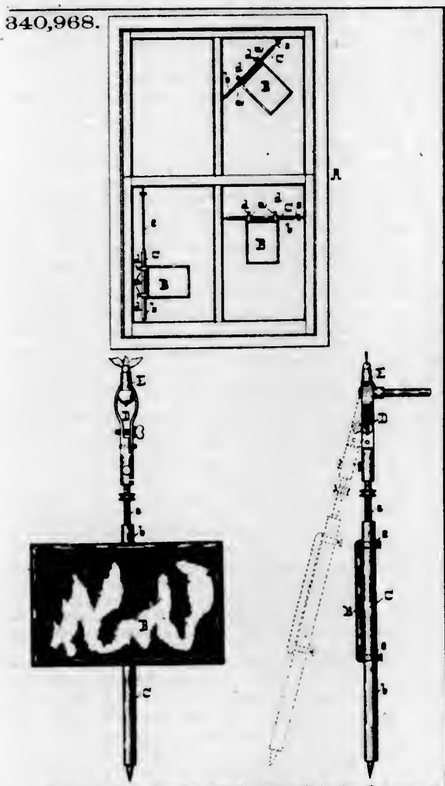
Claim.—1. In a saw-set, the combination, with the shouldered stock or body *a*, having two flat surfaces forming an angle at *g*, of the band *c* and two-part die *b*, each part having a beveled corner, substantially as specified.

2. In a saw-set, the combination, with the shouldered stock or body *a*, having two flat surfaces forming an angle at *g*, of the set-screw *f*, band *c*, and two-part die *b*, each part having a beveled corner, substantially as specified.

340,968. SUPPORT FOR SHAVING-MIRRORS. FRANKLIN W. LEVERING, Baltimore, Md. Filed Jan. 28, 1886. (No model.)



340,968.

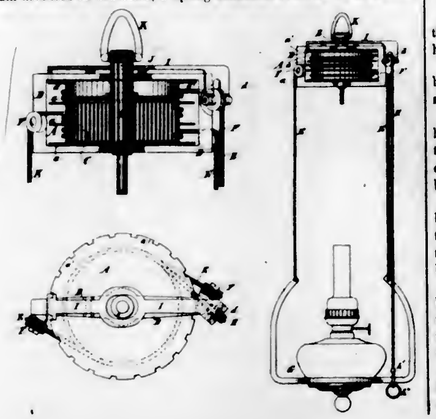


Claim.—1. In combination with the mirror B, having the eyes *a a*, the extensible bar C, formed of the two parts *b* and *c*, the outer ends of which are pointed, and set-screws *d*, to secure the said bar within the said eye, substantially as specified.

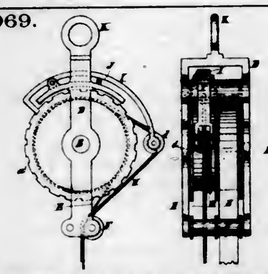
2. In combination with the mirror B, having the extensible supporting-bar C, the clamp D, having a socket therein adapted to fit over the end of the said bar, and a set-screw to hold it in place, substantially as and for the purpose specified.

340,969. SUSPENSION DEVICE FOR LAMPS, &c. EBENEZER BLACKMAN, Brooklyn, assignor to Charles J. Petersen, Port Chester, N. Y. Filed Sept. 18, 1885. (No model.)

Claim.—1. In a suspending device, the combination of an arbor, a drum mounted on the same, a spring connected to the arbor and drum,



340,969.

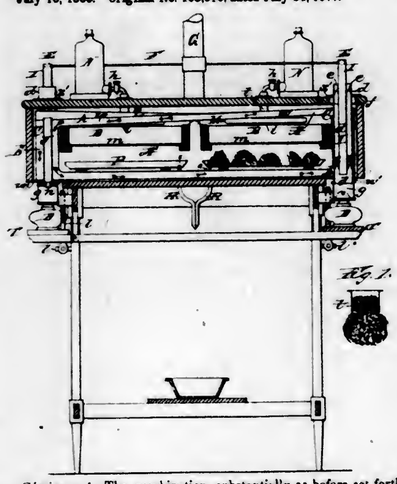


a cord, chain, or like device wound upon the drum and depending therefrom to support any desired article or part, a stop, lock, or brake for securing the drum, another cord, chain, or like device wound upon the drum and passing thence to the stop, lock, or brake and depending from the latter, substantially as specified.

2. In a suspending device, the combination of the arbor B, drum A, spring C, frame D, a cord, chain, or like device, E, a stop, lock, or brake, as I, and a cord, chain, or like device, H, wound upon the drum, passing thence to the stop, lock, or brake and depending from the latter, substantially as specified.

REISSUES.

10,716. INCUBATOR. EDWARD S. RENWICK, Millburn, N. J. Filed July 10, 1885. Original No. 193,616, dated July 31, 1877.



Claim.—1. The combination, substantially as before set forth, of the incubating-chamber, the egg-holder, the heat-flue, and the waste-heat chimney.

2. The combination, substantially as before set forth, of the incubating-chamber, the egg-holder, the heat-flue, the waste-heat chimney, and the chimney-valve.

3. The combination, substantially as before set forth, of the incubating-chamber, the heater in the incubating-chamber, the egg-holder, the air-pipe arranged to supply air into the upper part of the incubating-chamber, and the water-tray by which moisture is supplied to the air before said air comes in contact with the eggs.

4. The combination, substantially as before set forth, of the incubating-chamber, the egg-holder, the water-tray for supplying moisture to the incubating-chamber, and the stationary ventilating-chimney arranged to discharge the air from the lower part of the incubating-chamber.

5. The combination, substantially as before set forth, of the incubating-chamber, the egg-holder, the water-tray for supplying moisture to the incubating-chamber, the stationary ventilating-chimney arranged to discharge air from the lower part of the incubating-chamber, and the ventilating-valve which regulates such discharge.

6. The combination, substantially as before set forth, of the incubating-chamber, the egg-holder, the water-tray for supplying moisture to the incubating-chamber, the air-pipe for supplying air to the upper

part of said incubating-chamber, and the stationary ventilating-chimney arranged to discharge air from the lower part of said chamber.

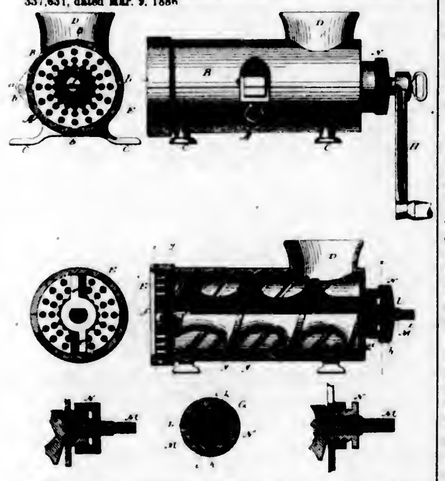
7. The combination, substantially as before set forth, of the incubating-chamber, the egg-holder, the water-tray arranged in the upper part of the incubating-chamber, and the under water-tray.

8. The combination, substantially as before set forth, of the incubating-chamber, the egg-holder, the ventilating-chimney, and the thermostatic chamber, whereby the air escaping from the incubating-chamber is caused to pass through the thermostatic chamber.

9. The combination, substantially as before set forth, of the incubating-chamber, two egg-holders, the thermostatic chamber arranged between the said two egg-holders, and the ventilating-chimney communicating with said thermostatic chamber.

10. The combination, substantially as before set forth, of the incubating-chamber, the egg-holder, the water-tray, and the drain-pipe whereby surplus water is conducted from the incubating-chamber.

10,717. **MINCING-MACHINE.** JOHN H. SHAW, New Haven, Conn., assignor to Sargent & Co., same place. Filed Mar. 25, 1886: Original No 337,631, dated Mar. 9, 1886



Claim.—1. The combination of the cylindrical case, the perforated plate E, rigidly supported in one end of the case, the case provided with a hopper near the opposite end, a feed-screw arranged longitudinally within the said case and carrying one or more radial cutters at its end next said perforated plate, the said cutters adapted to revolve in a plane parallel with and adjacent to the inner surface of said perforated plate, the shaft of the said feed-screw extending through a bearing at the end of the case opposite the perforated plate and there provided with means for its rotation, with a screw-nut at said bearing around the shaft, between the end of the case and the said means for the rotation of the said shaft, adapted to adjustably support said feed-screw and cutters against longitudinal movement from said perforated plate, substantially as described.

2. The combination of the cylindrical case, the perforated plate E, rigidly supported in one end of the case, the case provided with a hopper near the opposite end, a feed-screw arranged longitudinally within the said case and carrying one or more radial cutters at its end next said perforated plate, the said cutters adapted to revolve in a plane parallel with and adjacent to the inner surface of said perforated plate, the shaft of the said feed-screw extending through a bearing at the end of the case opposite the perforated plate and there provided with means for its rotation, a bushing around said shaft and interlocked with the bearing to prevent the rotation of the bushing with the shaft, and yet leave the bushing free for longitudinal movement, the said bushing being adapted to bear against a shoulder on said feed-screw, and a nut on said bearing adapted to bear said bushing against said shoulder on the feed-screw, to adjustably support said feed-screw and cutters against longitudinal movement from said perforated plate, substantially as described.

3. The combination of the cylindrical case, a perforated plate, E, rigidly supported in one end of the case, the case provided with a hopper near the opposite end, a feed-screw arranged longitudinally within said case and carrying one or more radial cutters at its end next said perforated plate, the said cutters adapted to revolve in a plane parallel with and adjacent to the inner surface of said perforated plate, the shaft of the said feed-screw extending through a bearing at the end of the case opposite the perforated plate and there provided with means for its rotation, and an adjusting device, substantially such as described, at the bearing in the end of the case opposite said perforated plate and between the said end of the case and the means for the rotation of the shaft, whereby the relation of the cutters to the plate may be adjusted, substantially as described.

4. The combination of the cylindrical case, a perforated plate, E, rigidly supported in one end of the case, the case provided with a hopper near the opposite end, a feed-screw arranged longitudinally within said case and carrying one or more radial cutters at its end next said perforated plate, the said cutters adapted to revolve in a plane parallel with and adjacent to the inner surface of said perforated plate, the inner surface of the case provided with spiral ribs around its inner surface, the inclination of which is greater than that of the spiral rib which forms the feed-screw, the internal diameter of said ribs corresponding to the external diameter of the spiral rib on the feed-screw, substantially as described.

PHOTO LITH. NORRIS PETERS WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

THE YALE LOCK MANUFACTURING COMPANY, APPELLANT, *v.* SARGENT.

Decided April 5, 1886.

1. Reissued Letters Patent No. 4,496, granted to Sargent, January 2, 1872, declared to be valid as to the first claim.

2. REPRODUCTION OF ORIGINAL CLAIMS IN REISSUES NOT AFFECTED BY LAPSE OF TIME.

In this suit infringement of the first claim only was asserted, and the Court finds that this claim was the substantial reproduction of the first claim of the original patent, and therefore not affected by the delay in applying for the reissue.

3. ANTICIPATIONS MUST BE SEPARATELY COMPLETE.

The Court finds that neither of the supposed anticipations had the same construction, or the same combination or arrangement of elements, or the same mode of operation as described in such first claim, and therefore did not invalidate the same.

4. INFRINGEMENT WHERE MODE OF OPERATION IS THE SAME AND THE CLAIM DOES NOT LIMIT THE CONSTRUCTION AND ARRANGEMENT.

The infringing lock had the pivoted bolt of the first claim of the patent, and although the bolt of the infringing lock served as a stop to two sets of bolt-works instead of one, as in the patent, and was pivoted differently and connected differently from that in the patent, yet, as such changes in construction and arrangement came fairly within the terms of said first claim, and the operation of the two locks were the same in respect to the combination of said claim, the court finds that such claim was infringed.

5. LOSS OF PROFITS A MEASURE OF DAMAGES.

Where patentee granted no licenses, had no established royalty, but manufactured his own locks in sufficient numbers to supply the demand, a reduction in the price of his own locks, forced by the competition of the defendant, is a fair measure of damages.

6. COSTS WHERE REISSUE IS SUSTAINED IN PART ONLY.

One of the claims of the reissue being invalid, the complainant cannot recover costs in the court below, and in this Court each party pays his own costs, and the expense of printing the record is shared equally.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

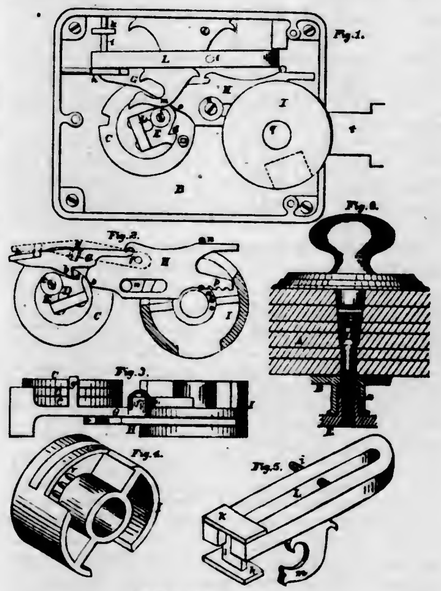
Mr. Frederic H. Betts for the appellant.

Mr. Edmund Wetmore and *Mr. George Ticknor Curtis* for the appellees.

Mr. Justice BLATCHFORD delivered the opinion of the Court.

This is a suit in equity, brought in the Circuit Court of the United States for the Southern District of New York by James Sargent against the Yale Lock Manufacturing Company, to recover for the infringement of Reissued Letters Patent No. 4,496, granted to Sargent, January 2, 1872, for an improvement in locks, on an application therefor filed September 25, 1871, the original patent, No. 57,574, having been granted to him August 28, 1866.

The specification and drawings of the reissue are as follows:



Nature of the Invention.

My invention consists in combining with the ordinary combination-wheels, and the other working parts of a combination lock which has no sliding lock-bolt, a bolt turning on a pivot or bearing which is so isolated or removed from contact with the said wheels as to receive any pressure or strain which may be applied through the separate bolt-work of the safe or vault door and cut off the communication between the bolt-work of the door and the wheels or fence-lever of the lock, whereby the position of the slots in the wheels can be determined and the lock "picked," as can be done in most cases where the ordinary sliding bolt is used without some mechanical device to prevent.

General Description.

In the drawings, Figure 1 is an elevation of my improved lock with the back plate removed; Figs. 2 and 3, an elevation and top view, respectively, of the pivoted bolt, the combination-wheels, the cam, and the lever-work that connects them; Fig. 4, a perspective view of the pivoted bolt; Fig. 5, a similar view of the magnet and armatures; Fig. 6, a view showing the manner of applying the spindle and cam to a safe or vault door.

A represents the plating of a safe-door, and B the case of the lock which is applied thereto. C C C are the combination-wheels, and D the operating-spindle. The spindle passes through a hollow stud, *a*, of the case, and has screwed upon its inner end the cam E, as shown most clearly in Fig. 6. The wheels themselves rest on the stud *a*. I is the bolt, turning on a pivot or bearing, *g*. Its location is such as to rest closely in the rear of the stem *t* of the heavy bolt-work of the door and to hold it out when in one position, but to allow it to retract to free the bolt-work when in the other position, said bolt I turning on its pivot or bearing to allow this to be done. H is a sliding bar which gives motion to

the bolt as it is thrown forward or backward, being connected together by cog-teeth *p r*. The bar slides on studs *n n*, by which it keeps its horizontal position. G is a lever, pivoted at *f* to bar H and serving to throw the latter back. It has a hook, *b*, Fig. 2, which engages with the bit *d* of the cam to draw the bar back. The forward motion is given by the cam striking the end *o* of the bar H. I, is a magnet, of the form shown in Fig. 5, which is suspended on a pivot, *i*. Its open end rests between armatures *h k*, which are separated by a brass pendant, *l*. The armature *h* is attached to the end of lever G. When the magnet is in contact with the lower armature, *h*, the dog *g* will be held away from the wheels; but when raised and brought in contact with the upper armature, *k*, the lever is released and the dog is then allowed to fall into the notches of the wheels to release the bolt. The magnet is raised by a roller, *c*, of the cam, which strikes a bearing, *m*, of the magnet.

In general principle the magnet is the same as that covered by the patent of Sargent and Covert, May 2, 1865; but the construction and arrangement of the magnet and armatures are much simpler and more effective and constitute one feature of my present invention.

An important feature in my invention is the employment of the bolt I turning on a pivot or bearing instead of the sliding bolt heretofore in use. It is isolated, so to speak, from the combination-wheels and the other main working parts of the lock, and therefore any strain which is brought to bear upon it by the heavy bolt-work will be expended on the bolt itself, and not upon the wheels. In the old form of lock the sliding bolt extends back so as to connect with or come near to the wheels, and any strain thereon is liable to disarrange the lock-works.

Another important advantage of the isolation of the bolt is that it increases the difficulty of "picking" by being removed from all contact with the wheels. A common mode of picking ordinary locks is to force the bolt back, so as to get a contact with it and the edges of the wheels, by which their position is ascertained. In my lock this cannot occur, as the bolt simply turns on its bearing or pivot and no back action can bring it or the lever-work against the wheels.

The bolt may not only be of the circular form shown in the drawings, but of segmental form, which will serve the same purpose.

I am aware that the combination-wheels themselves have been made with notches and so arranged that the ordinary sliding bolt which rests against their edges may fall back and within the notche when they are all set. Such is not the equivalent of my invention, as my express purpose is to avoid all contact of the bolt with the edges of the wheels.

The claims of the reissue, five in number, are as follows, but only claim 1 is alleged to have been infringed:

1. I claim, in a combination-lock for safe or vault doors, a bolt, I, which turns on a pivot or bearing, when said bolt I is used in a lock having no ordinary sliding lock-bolt, and in connection with the separate bolt-work of the door, and so arranged as to receive the pressure of the said bolt-work without transmitting it to the wheels or other equivalent works of the lock.

2. In a combination-lock for safe and vault doors, I claim the combination of the bolt I, bar H, and cog-connection *p r*, when said bolt I turns on a pivot or bearing and receives the pressure of the bolt-work situated outside the lock-works, and intervenes between the bolt-work and the wheels.

3. I claim, in combination with the bolt I, the bar H, and lever G, arranged and operating as herein set forth.

4. I claim, in combination with the vibrating magnet I, the armatures *h k* and pendant *l*, arranged as herein described.

5. I claim the combination and arrangement of the wheels C C, cam E, lever G, bar H, and bolt I, as herein described.

The defenses set up were want of novelty, non-infringement, and invalidity of the reissue. After a hearing on pleadings and proofs, an interlocutory decree was entered finding the reissued patent to be valid and to have been infringed, and awarding a perpetual injunction and an account of profits and damages. The master reported $7,771 damages in favor of the plaintiff. The defendant excepted to the report, but the exceptions were overruled by the court and a final decree was entered for the plaintiff for $7,771 damages and $650.17 costs. The defendant has appealed to this court.

It is contended that the first claim of the reissue is void for unlawful expansion, after unreasonable delay in applying for the reissue.

The original patent had three claims, as follows:

1. The rotating tumbler I, when separated and isolated in action from the permutation-wheels, and so arranged that any inward pressure upon the bolt will be exerted on the bearing of said tumbler, and have no action nor effect upon the said permutation-wheels, substantially as and for the purpose herein specified.

2. In combination with the turning tumbler I, the cog-bar H and lever G, arranged and operating as herein set forth.

3. The combination and arrangement of the combination-wheels C, cam-disk E, pivoted lever G, cog-bar H, and turning tumbler I, the whole operating as herein specified.

Claim 3 of the reissue is substantially the same as claim 2 of the original, and claim 5 of the reissue is substantially the same as claim 3 of the original, while claims 2 and 4 of the reissue are new claims.

The defendant directs attention to these facts: When Sargent applied originally for his patent on February 6, 1866, he asked for claim 1 in this form:

The turning bolt I, resting on its bearing *q*, in combination with the mechanism of a combination-lock, in such manner as to practically isolate or disconnect it from the main operating parts, substantially as set forth.

Claim 1 having been rejected on the 24th of March, 1866, Sargent, on the 29th of June, 1866, changed the claim to the form it has in the original patent as issued, and his attorneys at the same time, in a letter to the Patent Office, explained the new form of claim thus:

The substance of the first substituted claim consists, essentially, in providing a rotating tumbler in connection with the bearing on which it rests and the stem of the bolt-work which rests against it, when said tumbler is isolated or disconnected from the combination-wheels, so that any inward motion of the bolt against this tumbler will expend its force against the bearing on which the tumbler turns and rests, and will not reach or affect the permutation-wheels.

The attorneys also said:

In Mr. Sargent's device it will be observed that the combination or permutation wheels are on a different bearing, and located at a distance from the revolving tumbler I, and never in contact therewith, so that the two are practically isolated from each other, and there is no connection between them except through the lever H, which is not within the reach or influence of the pick-lock.

And the specification of the original patent contained this language:

The principal advantage of this tumbler consists in its isolation, so to speak, from the combination-wheels and the main working parts. It rests alone on its bearing *q*, the only part connected being the cog-bar H. In ordinary locks the sliding bolt extends back in direct connection with the main working mechanism, and by its constant action and the strain that comes upon it frequently disarranges those parts. This is especially true when the stem or projection *t* of the heavy bolt of the safe-door rests against the sliding bolt. In this case, when force is applied to the bolt, the wrenching strain upon the bolt and mechanism is very great. In my lock it will be seen that this difficulty is obviated, for any strain that comes upon the circular tumbler, either from the stem *t* or any other source, is simply expended upon the strong bearing *q*, and does not reach back to the combination-wheels or any part of the working mechanism. This is of the utmost importance.

It is urged that emphasis was thus laid on the fact that the turning bolt or tumbler was mounted on a different bearing from the permutation-wheels, and that it was that arrangement which prevented pressure on it from reaching back to the permutation-wheels; that the original claim, in speaking of the rotating tumbler as "separated and isolated in action from the permutation-wheels," meant that it was mounted on its own separate bearing, and did not allow of its being mounted in any other way; that the specification of the reissue does not say that the tumbler I "rests alone on its bearing *q*;" that the limitation thus contained in claim 1 of the original patent is not found in claim 1 of the reissue, and that thereby an unlawful expansion was made, the application for the reissue having been filed more than five years after the original patent was granted. But we think the reissue is not fairly open to this objection. The tumbler in the one claim and the bolt in the other are the same instrument. The words "rotating tumbler I," in the original claim, refer to the tumbler described as resting on a bearing "around which it turns." The claim of the reissue, in saying that the bolt I "turns on a pivot or bearing," expresses the same idea. The words in the claim of the reissue—

When said bolt I is used in a lock having no ordinary sliding lock-bolt, and in connection with the separate bolt-work of the door, and so arranged as to receive the pressure of the said bolt-work without transmitting it to the wheels or other equivalent works of the lock—

are justified by these words in the original claim—

and so arranged that any inward pressure upon the bolt will be exerted on the bearing of said tumbler, and have no action or effect upon the said permutation-wheels.

The word "bolt" in the claim of the original meant what in the claim of the reissue is called "the separate bolt-work of the door," because what is called in the former "the rotating tumbler I," is called in the latter "a bolt, I, which turns on a pivot or bearing." The proviso in the claim of the reissue that the bolt I is to be "used in a lock having no ordinary sliding lock-bolt" does not expand the claim, but, if anything, restricts it. The statement, in the claim of the reissue, that the bolt I is so arranged as to receive the pressure of the separate bolt-work of the door without transmitting it to the wheels, is justified by the statement in the original claim, that the rotating tumbler I is so arranged that any inward pressure upon the bolt will be exerted on the bearing of the tumbler, and have no action or effect on the permutation-wheels.

The words in the original claim, "when separated and isolated in action from the permutation-wheels," applied to the rotating tumbler, do not indicate that the mounting of the tumbler alone on its bearing is required, but mean no more than that the tumbler shall be separated and isolated in action from the wheels, and the words of the claim of the reissue have no broader meaning in that regard. If the rotating tumbler or bolt is thus isolated in action from the wheels, the arrangement referred to in both claims is reached. The patentee set forth, as he was bound to do, the method he used, and which he thought advisable; but any method of mounting the revolving bolt which effects the isolation referred to is within either claim. The words "or other equivalent works of the lock" have no expanding force.

The invention of Sargent consists in combining with the ordinary combination-wheels, and the other working parts of a combination-lock which has no sliding lock-bolt, a bolt turning on a pivot or bearing, which is so isolated or removed from contact with the said wheels as to receive any pressure or strain which may be applied through the separate bolt-work of a safe-door, and cut off the communication between the bolt-work of the door and the wheels or fence-lever of the lock, so that the position of the slots in the wheels cannot be determined for picking the lock, as in the use of the ordinary sliding lock-bolt, which extends back so as to connect with the wheels. The turning bolt is an incomplete cylinder, or one in which parts of the periphery are cut away. An extended part of the bolt-work of the door bears against a part of the complete periphery of the turning bolt in such manner that the turning bolt receives all pressure and does no allow it to reach the combination-wheels. The ordinary sliding lock-bolt is therefore dispensed with.

Three alleged anticipating devices are set up—Defendant's Exhibit A, Defendant's Exhibits C and D, and Defendant's Exhibit E.

Exhibit A has in the lock-casing a sliding bolt, and, also, what is alleged to be a turning bolt; but the latter is only the well-known swiveling-dog, long used to prevent the retraction of sliding bolts, and so arranged as to be swiveled by a spring when the combination-wheels are gated. As a consequence, the stump or fence bears on the wheels not only with the pressure of its own weight but with the added force of the spring. Any swiveling force applied to the dog causes the stump to bear on the peripheries of the wheels, and the picking of the lock is facilitated. The dog prevents the retraction of the sliding bolt. In Sargent's patent the lever which carries the stump is so constructed that no turning of the revolving bolt can bring the lever-work against the wheels. The Sargent revolving bolt must be acted upon by the user, while the swiveling-dog in Exhibit A is an automatic latch. In Sargent's structure the revolving bolt, the lever which carries the stump, and the wheels are sufficient to prevent the retraction of the bolt-work, while in Exhibit A the sliding bolt, the swiveling-dog, the stump-lever, and the wheels are all of them necessary.

The drawings, Exhibits C and D, show the Linus Yale lock, which is also illustrated by a lock mechanism. It is a revolving lock which permits and prevents the retraction of the bolt-work of the door, and there is no sliding bolt; but there are no permutation-wheels or revolving tumblers, nor any oscillating or sliding tumblers, but the ancient device of pins is used to prevent the revolution of the bolt, the pins entering into holes in the bolt, and a cross-strain can be brought upon the pins, making the picking of the lock comparatively easy. Moreover, the bolt is not isolated from the pins, as it is from the wheels in Sargent's lock, but parts of the pins are in sockets in the bolt. The pins are thus in immediate connection with the bolt, while Sargent interposes lever-work between the bolt and the wheels to effect the isolation of the bolt.

In the Butterworth padlock, Exhibit E, there is a revolving bolt combined with the wheel-tumblers by means of a lever, but there is no "separate bolt-work of the door," which is one element of the claim in Sargent's reissue. Of this padlock the plaintiff's expert, Mr. Henry B. Renwick, says:

The padlock has the ordinary hasp attached to the case, and the bolt acts to prevent this hasp from being drawn away from the axis upon which the bolt revolves, and not to prevent bolt-works from being forced toward that same axis. The hasp is a contrivance which must be used with two staples, or one staple and a slotted bar, all of which must be outside of the door. Whereas, on the contrary, bolt-works must be inside of the door and shoot into sockets in the jambs, it being clear that the hasp could not be used in place of bolt-works, or bolt-works in place of a hasp, even if the former were located outside of the door. I do not think that this lock would even suggest the idea of the combination referred to in the first claim of the Sargent reissue. In order to make the lock fit to be used in combination with bolt-works, even after such idea had been suggested, it would be necessary, first, to provide the lock-case with means of securing it to the door; second, to elongate the spindle and so contrive it and the dial-plate that they could be separated from the wheel-tumblers and put together again, with the door between them; third, to alter the direction of the slot in the case through which the hasp enters, so that the tail of the bolt-works could press upon the revolving bolt in the line of a radius thereof. If the tail of bolt-works were introduced into the present slot, any hammering of the bolt-works by the handle upon the periphery of the revolving bolt would tend to turn the revolving bolt upon its axis, and thus cause the stump to be pressed upon the wheel-tumblers in such a manner as to facilitate picking, this result being due to the fact that the line of direction through the slot is not in line of the radius to the bolt, but in line of a sector thereof; further, the revolving bolt in a padlock, owing to its being necessary that it should enter a slot in the hasp, is weakest at the very point where it should be strongest, if it were to be used in connection with bolt-work, and any good constructer would alter the revolving bolt of the padlock, so that it would be strongest where it is now weakest, in case it was desired to use a revolving bolt in combination with bolt-works.

It is a marked feature of Sargent's lock that the direction of the pressure of the bolt-work of the door on the revolving bolt is in the line of a radius of that bolt, so that the pressure has no tendency to revolve the bolt. This feature is not found in the Butterworth padlock.

We are of opinion that, as against anything found in the old structures, there was patentable novelty in what Sargent did and what he claimed.

As to the question of infringement, the defendant's lock, Cole No. 2, has in it a bolt which turns on a pivot, and is substantially identical with the like bolt in Sargent's patent. It prevents and permits the retraction of the bolt-work of the door in the same manner as Sargent's bolt. There is no sliding bolt. The turning bolt is arranged to serve as a stop to two sets of bolt-works, insead of one; but in respect to one set there is the same mode of operation in both locks. As the claim of Sargent's reissue does not require that the bearing of the rotating bolt should be distinct from the bearing of the wheels, the fact that in Cole No. 2 the bearing of the turning bolt is on the stud on which the wheels turn makes no difference in principle, because the action of the bolt is as wholly separated and isolated from the wheels in the one lock as in the other, and in each the strain from the bolt-work is expended on the turning bolt and not on the wheels. So, too, the fact that in Sargent's patent the fence-lever is connected with the turning bolt by a rack on the end of the lever engaging with cog-teeth on the bolt, while in Cole No. 2 the end of the lever is pivoted directly to the turning bolt, does not affect the identity of the arrangement as part of the combination covered by claim 1 of the reissue. The defendant's lock must be held to infringe that claim.

On the question of damages, the defendant contends that there was no sufficient or legal proof that the plaintiff suffered the damages reported and adjudged, or any other damages. The action of the master, the character of the exceptions to his report, and the view taken by the circuit court are fully shown by its opinion, reported in 17 *Blatchf.*, (17 O, G., 105 C. C. R., 244,) which was as follows:

The master reports that there is no basis from the proofs adduced before him to find what profits have been made by the defendant by the use of the "turning bolt" (the infringing device) in the locks made and sold by it; and that therefore, on the testimony before him, he cannot find what profits, if any, are due from the defendant for the use of the "turning bolt."

The patent on which this suit is brought is a reissue granted January 2, 1872. The master reports that after that time, and in 1873, in consequence of the defendant's offering and selling to the plaintiff's principal customers, and to the trade generally, locks containing the infringing device at a less price than the plaintiff was obtaining, a reduction of prices was enforced on the plaintiff, such reduction being, in round numbers, $1 on each No. 5 lock and $2 on each No. 3 lock. Exception 1 of the defendant is to such finding and report, and alleges that the master should have reported that no such reduction was enforced, and that there was no proof of the amount of any reduction caused by the defendant's infringement, and that there was no method of computing such reduction, even if it actually existed.

The master also reports that it is in evidence that during the period covered by the accounting the plaintiff could have manufactured, in addition to the locks he did manufacture, and without materially increasing his manufacturing facilities, all the locks manufactured and sold by the defendant. Exception 2 of the defendant is to such finding and report, and alleges that the master should have reported that no such additional manufacture by the plaintiff was possible, or that it was impossible without a very great extension of his facilities.

The master also reports that it is in evidence that during the period covered by the accounting the plaintiff would have made sales to many of the persons who were induced to purchase from the defendant, at his own established prices, had not the defendant offered its locks at lower prices. Exception 3 of the defendant is to that part of the report, and alleges that the master should have found and reported that no such sales would have been made, or that, even if made, they would not have been at the plaintiff's own established prices.

The master also reports that the plaintiff has suffered damage in respect to the matters to which exceptions 2 and 3 relate. Exception 4 of the defendant is to that part of the report, and alleges that the master should have found and reported no damage whatever from the competition of the defendant.

The master further reports that the locks sold by the defendant contained, in addition to the "turning bolt," a device patented by the Rosner patent, for which infringement a claim is made against the defendant in another suit; that as to the proportion of the reduction of prices above set forth, which should be allowed to the device claimed under the Rosner patent, it is claimed by the plaintiff, and nowhere effectually disputed by the defendant, "that, in computing the profits on these locks, one-third belonged to and was charged by him to the Rosner patent;" and that, admitting this proposition, and allowing in addition thereto for any superior external attractions of the defendant's locks, and for the number of combinations which they had over those of the plaintiff, and for the shape of the case of the lock, and for the commercial success of the defendant in effecting sales where the plaintiff would have failed, the master is of opinion that the plaintiff is entitled to recover from the defendant as damages one-half of the amount of the reduction in prices caused by the defendant since January 2, 1872—that is, on 1,009 No. 3 locks, $1 per lock, being $1,009, and on 13,524 No. 5 locks, at 50 cents per lock, $6,762; being a total of $7,771. Exception 5 of the defendant excepts to the finding and report that the plaintiff is entitled to recover from the defendant as damages one-half of the amount of the reduction in prices caused by the defendant since January 2, 1872, and alleges that the master should have reported "no reduction in prices, or no proof of such," caused by any infringement by the defendant since said date, and "hence no damages" to the plaintiff, "and consequently no method of calculating them." Exception 6 of the defendant excepts to the report for that the master erred in making the apportionment of the alleged reduction in the plaintiff's prices, charging one-half thereof to the alleged infringement of the "turning-bolt" patent, and alleges that no basis existed in the proof or in law for such, or for any apportionment, or for any award of damages. Exception 7 of the defendant excepts to the report for that the master erred in assessing damages which are not the damages suffered by the plaintiff, but are those suffered by the firm of Sargent & Greenleaf, and alleges that the master should have reported that the damage, if any, found to have been suffered by said firm is not the damage of the plaintiff, who is only one member of said firm, but that the plaintiff's damage is merely a portion thereof. Exception 8 of the defendant excepts to the report for that the master erred in finding and reporting as damages the sum mentioned in his report, or any damages whatsoever, and in not reporting that there was no proof of any actual damage suffered by the plaintiff from the alleged infringement.

The defendant contends that the competition of the defendant was not the sole cause of the reduction of the plaintiff's prices, and that the proportionate effect of the defendant's competition is not attempted to be estimated or ascertained by the proofs. It alleges that the defendant is not responsible for the reduction made in 1873; that there were many other causes which contributed to this reduction, and that the lowering of prices was caused principally by the competition of other fire-proof-safe-lock makers, and notably the New Britain Lock Company, by the fact that safe-makers were making, and threatening to make, their own safe-locks, and by the general lowering of the prices of material and labor, and the depression of business. Reduction of prices and consequent loss of profits enforced by infringing competition is a proper ground for awarding damages. The only question is as to the character and sufficiency of the evidence in the particular case. I think that, on the whole evidence, the reduction of prices by the plaintiff after January 2, 1872, on safe-locks containing his invention is shown to have been directly and solely caused by the defendant's infringement.

The master, in his report, allows damages only for the reduction of prices on the locks sold by the plaintiff—that is, 1,009 No. 3 locks and 13,524 No. 5 locks. Although the master states that the plaintiff suffered damage in losing the sale of locks sold by the defendant, he awards no damages for that cause. He confines his award to the loss on the locks which the plaintiff sold.

The defendant also contends that the plaintiff is not entitled to recover from the defendant as damages the entire amount of the reduction enforced by the defendant's competition, but only the damages occasioned by the effect of the presence of the infringement; that the burden of proof is on the plaintiff to fix the value of and to separate the effect of the infringing devices; that he failed to do so by any proper proof, and that no basis was afforded to the master on which such damages could be computed. But as the master allowed damages only for the reduction of prices on the locks sold by the plaintiff, and as an essential feature of those locks was the "turning-bolt" device, and as an essential feature of the infringing locks was the infringing "turning-bolt" device in them, and as the plaintiff could not sell his "turning-bolt" device unless it was embodied in a lock, and as he was thereby enabled to make his profit on the entire lock, and as he was deprived by the acts of the defendant in selling at low prices locks containing the patented "turning-bolt" device of the profit he would otherwise have made on the locks which he actually sold containing the "turning-bolt" device, it seems plain that the defendant's infringement must be held to have caused the entire loss of the plaintiff by the reduction of prices, after allowing a proper sum for any other patented device contained in the defendant's locks and for any other causes which gave to the defendant an advantage in selling its locks. This is the basis on which the master proceeded, and it seems to me, on a consideration of the evidence, that the master has made all proper allowances, and has arrived at a correct conclusion in fixing as damages one-half of the amount of reduction in prices.

The plaintiff, as the owner of the patent, is entitled to recover the damages in this case. He may be accountable to his copartner for a part of them, but the copartner could not sue, on the patent, for such damages or any part of them.

This is a case where the patentee granted no licenses, and had no established license-fee, but supplied the demand for his lock himself, and was able to supply that demand. The market for the lock was limited to safe-makers. No one but a safe-maker wanted or would buy such a lock. The master was unable to determine from the proofs what profits, if any, the defendant had made from the use of the turning bolt. He disallowed all items of damage from the loss to the plaintiff of the sale of infringing locks sold by the defendant, and confined his award to the enforced reduction of price on the locks which the plaintiff sold, caused by the infringement. That this is a proper item of damages, if proved, is clear. It is a pecuniary injury caused by the infringement, and is the subject of an award of damages, although the defendant may have made no profits and the plaintiff may have had no established license-fee. As the plaintiff, at the time of the infringement, availed himself of his exclusive right by keeping his patent a monopoly and granting no licenses, the difference between his pecuniary condition after the infringement and what his condition would have been if the infringement had not occurred is to be measured, so far as his own sales of locks are concerned, by the difference between the money he would have realized from such sales if the infringement had not interfered with such monopoly and the money he did realize from such sales. If such difference can be ascertained by proper and satisfactory evidence, it is a proper measure of damages. The damages to be recovered (*Rev. Stat.*, sections 4,919 and 4,921,) are "actual damages;" and they may properly include such losses to the plaintiff as were allowed in this case. (*McComb* v. *Brodie*, 1 *Woods*, 153, 161; *Philp* v. *Nock*, 17 *Wall.*, 460, 462.)

The turning bolt was the essential feature of the Sargent lock. The defendant adopted Sargent's arrangement, and then reduced the price of the lock, forcing Sargent to do the same, in order to hold his trade. The evidence shows that the reduction of prices by Sargent was solely due to the defendant's infringement. The only competitor with Sargent in the use of his turning-bolt arrangement during the period covered by the accounting was the defendant.

We think the master made proper allowances for all other causes which could have affected the plaintiff's prices; that the proper deduction was made for the use of the Rosner device in the defendant's lock, and that the damages awarded are no greater than the testimony warranted.

The decision that the plaintiff, as owner of the patent, was entitled to recover the damages was correct.

The bill alleges infringement of the reissue generally and especially of the first claim. The answer alleges that the reissue is not for the same invention as the original patent. The defendant contends that this is true as to claims 2 and 4 of the reissue, and that, as no disclaimer of those claims was entered at the Patent Office before this suit was brought, the recovery in this case should have been without costs, under the provisions of sections 4,917 and 4,922 of the Revised Statutes, and the decision in *Gage* v. *Herring*, (107 U. S., 640, 648.) That case holds that the invalidity of a new claim in a reissue does not impair the validity of a claim in it which is only a repetition and separate statement of a claim in the original patent. It also holds that a reissued patent is within the letter and the spirit of the provisions of sections 4,917 and 4,922; and that where a defendant has infringed such a restated valid claim of a reissue the plaintiff, on filing a disclaimer of the new and invalid claims of the reissue, may have a decree, without costs, for the infringement of such valid claim, where there has been no unreasonable delay in entering the disclaimer.

There can be no doubt that claim 4 of the reissue was invalid, as an unlawful expansion of the original patent, on an application for the reissue filed more than five years after the original patent was granted. But the patent has expired, and therefore no disclaimer can now be filed. There was no unreasonable delay in filing a disclaimer, as the validity of claim 4 was sanctioned by the Commissioner of Patents in granting the reissue, and this suit was commenced in July, 1872, and the claim was not held invalid by the circuit court, (both the interlocutory and final decrees having been entered before the decisions of this Court, at October term, 1881, on the subject of reissued patents were made.) The result, therefore, is that the decree below must be reversed as to the award of costs, and affirmed in all other respects, with interest until paid at the same rate per annum that decrees bear in the courts of the State of New York, and the case be remanded to the circuit court, with a direction to modify the decree accordingly. Each party will bear his own costs in this court and one-half of the expense of printing the record. (*Silsby* v. *Foote*, 20 Howard, 378, 387.)

U. S. Circuit Court—District of Connecticut.

HARTFORD MACHINE SCREW COMPANY v. REYNOLDS *et al.*

Decided February 9, 1886.

1. CONSTRUCTION OF CLAIM.

The fourth claim of Reissued Letters Patent No. 9,290, of July 13, 1880, to Christopher M. Spencer, for machine for making metal screws, is in its most important particulars a reproduction of the first claim of the original patent, No. 143,306, of September 30, 1873, and is valid.

2. EQUIVALENTS—INFRINGEMENT.

The claim of the patent sued on was for a combination of mechanical devices for feeding forward a rod as screws were cut from it, and covered a combination of a hollow mandrel, a conical-ended sleeve, and a friction-feed device or tube, arranged concentrically, one within the other, and in the order named. Defendants used the same parts, but placed the conical-ended sleeve outside the mandrel. *Held*, That this was an immaterial difference, and such arrangement was an infringement.

Mr. Charles E. Mitchell for the plaintiff.

Mr. John K. Beach and *Mr. Benj. F. Thurston* for the defendants.

SHIPMAN, *J.*:

This is a bill in equity to restrain the infringement of Reissued Letters Patent No. 9,290, issued July 13, 1880, to Christopher M. Spencer, assignor to the complainant, for an improved machine for making metal screws. The original patent, No. 143,306, was dated September 30, 1873. The machine, as a whole, is a very important and useful one. The brief statement which the inventor gives in the reissued specification of the character of the invention is as follows:

The machine automatically makes screws upon the end of a rod. This my improved machine has been organized with special reference to operate upon the end of a rod, form a screw, remove the threading-tool from the screw-thread cut on the rod, cut off the said screw, and then to automatically feed the rod forward and make another screw, and so on until the rod is exhausted.

By my plan the intermittent feeding of the rod is effected by a frictional feeding device made as a slotted rotating and reciprocating tube, and the rod is rotated by a rotating chuck having jaws, the chuck having no function whatever in the forward movement of the rod; and in connection with such mechanism to feed forward and rotate the rod at the proper time, I have combined and arranged a rotating tool-carrying turret, the tools of which are brought intermittingly into proper position to turn

down and thread the end of the rod; and the screw having been threaded and the threading-tool removed from it, a cutting-off tool is moved forward and made to cut the screw from the end of the rod.

By feeding the rod forward by means of a friction-feed such as herein employed, rather than by a chuck, I am enabled to simplify the construction of the chuck, as it has but one motion—viz., that of rotation—and by employing a rotary tool-carrying turret and cutting-off tool, as hereinafter set forth, I am enabled to form and thread the screws and cut them off, all in the simplest and most expeditious manner, my mechanism, by reason of its simplicity and mode of operation, increasing the speed of manufacturing screws and decreasing their cost beyond what would be the case if the turning-down and threading tools were operated by independent carriers; and so, also, by withdrawing the threading-tool from the screw before it is cut from the rod the use of a screw-driver to remove the screw from the threading-tool is obviated.

It will be seen that the mechanism is threefold: First, for feeding forward and rotating the rod; second, for forming and threading the screw upon the end of the rod; and, third, for cutting off the completed screw. The alleged infringement relates to the first-named portion of the machine and to the fourth claim of the reissue. This part of the mechanism is described by Mr. Shepard, one of the plaintiff's experts, as follows:

These parts consist of a revolving chuck provided with suitable holding-jaws. This chuck is mounted upon the end of a revolving shaft which has no longitudinal movement, the shaft being made hollow to receive the friction-feed device and the rod from which the screws are to be formed. The friction-feed device consists of a tube of a size which will allow the rod to pass through it, said tube being split at its forward end, and the two opposite sides impinge upon the rod with sufficient friction to carry the rod forward when the tube is moved in the direction of the chuck, while, on the other hand, if the rod is pinched between the jaws of the chuck the feed device or split tube will slip upon the rod as it is drawn back. One end of the feed device is provided with an annular groove to receive a projection on a slide or slipper, which slide is reciprocated by a cam, thereby imparting the necessary reciprocating movement to the feed device. The jaws are forced together and permitted to open by means of a conical-ended sleeve which is outside of the friction-feeding device or feeding-tool. This sleeve is also provided with a slipping-groove, connected by means of a suitable slide to another cam, whereby a reciprocating movement is imparted to the conical-ended sleeve. These cams, feed device, and conical-ended sleeve are so combined with each other and with the chuck that the feeding device is fed forward at a time when the conical-ended sleeve is withdrawn, so as to permit the jaws to open, and, after the feeding device has reached the extent of its forward movement, said conical-ended sleeve operates to close the jaws, and hold the rod from slipping backward while the feeding device is drawn back to get a fresh hold on the rod. This friction-feed device reaches well up toward the jaws, so that it will feed the rod until only a very short piece is left.

The friction-feed device or tube runs inside the conical-ended sleeve, which runs inside the revolving shaft or mandrel. Thus there are three concentric sleeves, the mandrel being outside.

In the application for the present reissue the patentee claimed as a distinct invention "the friction-feed device made as a tube, slotted at its end, and sprung together to grasp the rod," but acquiesced in the refusal of the Patent Office to allow that claim, and erased it from the application. It must be assumed, therefore, that the invention consists in the combination of the devices mentioned in the respective claims. The gist of that part of the invention which relates to the feeding mechanism was the automatic feeding device, acting in connection with the jaws, to feed the rod forward when the jaws are open—the chuck and rotating shaft having no longitudinal movement—and when the jaws are shut and the stock is being held and operated upon, to slip back and take a new hold, preparatory for a new feed, and the location of the feeding device within the sleeve which closes the jaws, whereby the stock can be worked up with great economy of material. It is thus apparent that, although the friction-tube must be considered to be old, it is a very important member of the combination which includes the feeding mechanism. This part of the machine is claimed in the first claim of the original patent as follows:

In combination with revolving chuck A having jaws o o, the inner and outer sleeves o so, the former, by intermittent reciprocating motion produced by cam H, feeding the stock a suitable length through chuck A; the latter by a similar motion produced by cam L alternately opening jaws o o, to permit the passage of stock, and closing them to hold stock to be operated upon by suitable tools.

The same combination is claimed in the fourth claim of the reissue as follows:

In combination, the revolving chuck *g*, provided with jaws *g'*, the friction-feed device *d*, to grasp the rod and the sleeve *f*⁴, the cam *e*, or its equivalent, to reciprocate the tube *d* intermittingly to feed the rod forward, and the cam *f*, or its equivalent, to reciprocate the sleeve *f*⁴ to close the jaws while the rod is being rotated and the tube *d* drawn back, and to permit the jaws to be opened as the tube is moved forward to feed the rod forward, all substantially as described.

This claim is in its most important particulars a reproduction of the first claim of the original patent, and differs from the second and third claims of the reissue in that they specify that the conical-ended sleeve is located between the friction-sleeve and the hollow shaft. The location of the sleeves with reference to each other or to the mandrel is not stated in the fourth claim; but, in order to avoid the vice of an improper expansion of the original patent, the claim must receive the same construction which properly belonged to the first claim of the original, and the two sleeves are the inner and outer sleeve of that claim.

Looking more closely into the claim, the defendants insist that the two sleeves are not only an inner and outer sleeve, with reference to each other, but that it is indispensable that nothing should be interposed between them, while the plaintiff says that the claim had no reference to the location of the sleeves with reference to the mandrel. The there sleeves of the Spencer device are so constructed that the conical sleeve is interposed between the mandrel and the friction tube; but I do not perceive that in the specification or in the claims of the original patent that form of construction was made an indispensable feature of the mechanism, as it was apparently made in the second claim of the reissue. The first claim of the original was, so far as the two sleeves are concerned, for an inner friction slotted tube and an outer conical sleeve, which are in fact concentrically arranged within the hollow shaft; but it was not designed that the form of the arrangement with reference to this shaft should be so essential that a known equivalent method of arrangement should be without the patent. The language of the claim did not require such a construction, and the invention did not consist in the exact order of arrangement with reference to the hollow shaft, but had the broader scope which has been stated. The feed devices of the defendants' mechanism are the counterparts of the plaintiff's machine, except that the conical sleeve slides upon the outside of the hollow shaft which carries the chuck, and acts upon the jaws of the chuck in the same way as the corresponding sleeve of the Spencer machine does, while the friction-tube operates in each machine in the same way with reference to the other members of the combination. This is an immaterial difference. The feeding device in the Matthews machine for making from a rubber rod rubber washers of about three thirty-seconds of an inch thick for bottle-stoppers is claimed to be an anticipation of the fourth claim. There are some analogies between the two feeding mechanisms which are skillfully used to make out a similarity between the machines; but the two devices are as radically different as the purposes for which they were respectively used differ. The Matthews machine did not have the friction slotted tube, and did not have the chuck, except by a strained use of words. It did not have the parts of the Spencer combination nor the combination, and could not be adapted to the making of machine metal screws.

Let there be a decree for an injunction and an accounting with reference to the use of the fourth claim.

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